THE

ARCHITECTURAL

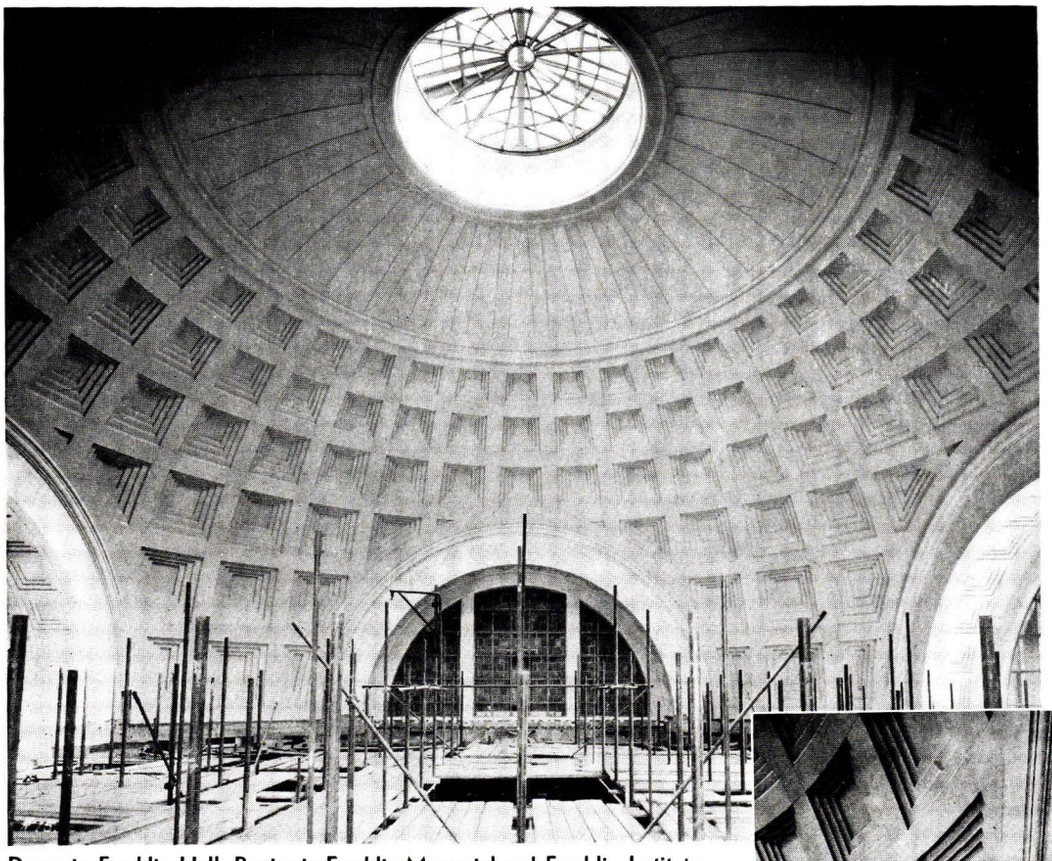
FORUM

INCLUDING "BUILDING MONEY"

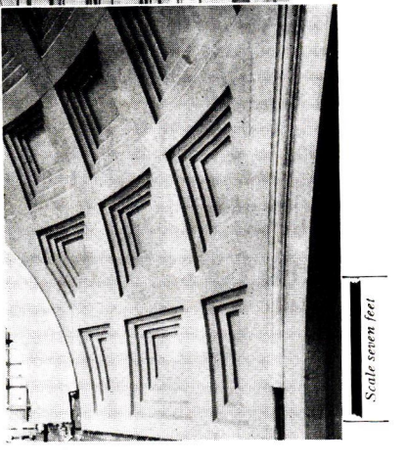
DECEMBER, 1934

LESCAZE CITY HOUSE . . INDUSTRIAL ART . . KNICKERBOCKER VILLAGE . . H. A. B. S. DETAILS

ACOUSTIC MASONRY



Dome in Franklin Hall, Benjamin Franklin Memorial and Franklin Institute Museum, Philadelphia. John T. Windrim, *Architect*



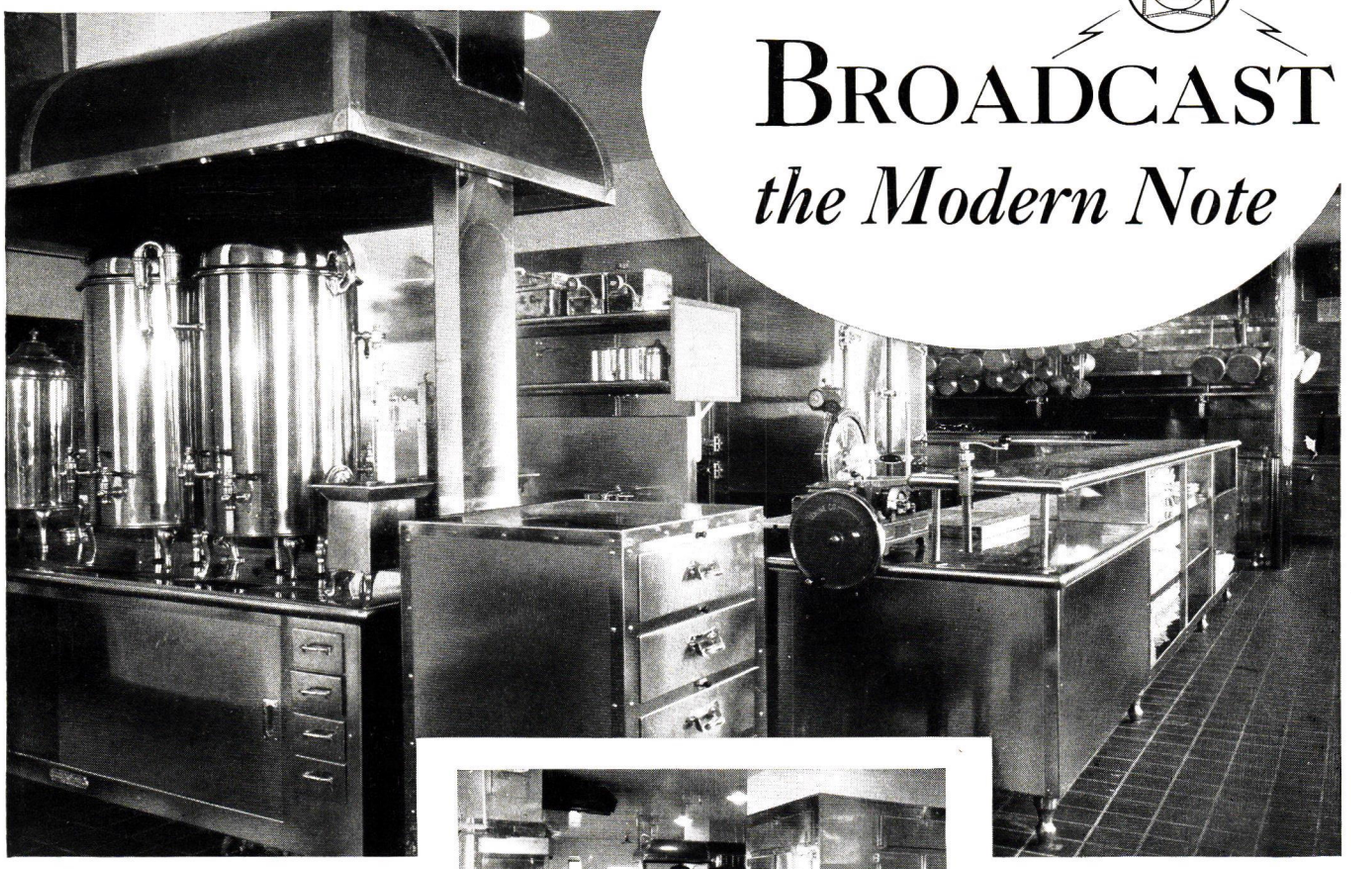
This Timbrel Tile Ceiling Vault is an all-masonry construction without metal lath or steel and indicates the use of Guastavino Timbrel Tile Ceilings with cast AKOUSTOLITH coffers in units as large as 6′ 8″, indicating possibilities of design and permanency. This construction also offers possibilities of color and texture in addition to its sound absorption qualities.

R. GUASTAVINO COMPANY

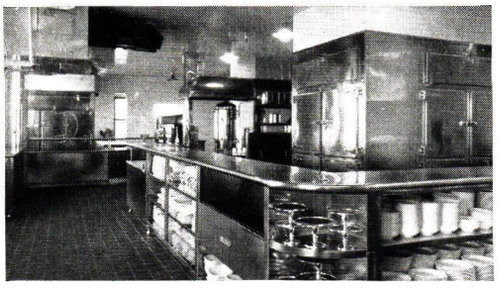
500 FIFTH AVENUE, NEW YORK, N. Y. 40 COURT STREET, BOSTON, MASS.

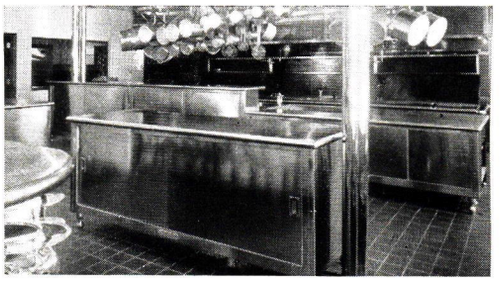
R. GUASTAVINO CO. OF CANADA, Ltd., Architects Building, Montreal, P. Q.

RESTAURANTS *that* BROADCAST *the Modern Note*



General view of typical Monel Metal Cooks Tables and kitchen equipment installed in Rockefeller Restaurant in New York City by the Duparquet, Huot & Moneuse Co. Architects: REINHARD & HOFMEISTER, *New York City.* Kitchen Consultant: G. E. SWEET. *General Contractors: Hegeman Harris Co.*





Every detail is planned to save work, time, and steps in the preparation and serving of meals and in cleaning up afterwards. The installation is 100% Monel Metal.

. . .

These kitchens serve public dining rooms on the 65th floor, and private dining rooms of six large corporations located on the 64th floor. Naturally every detail of equipment has to be absolutely top quality and most modern. All equipment installed by Duparquet, Huot & Moneuse Co., New York, N. Y.

Rockefeller Center's main kitchen features all the latest improvements in Monel Metal

JUST as Rockefeller Center overshadows every other building development in New York . . . so, too, the Rockefeller Center Roof Restaurants overshadow every other eating place in the development.

The kitchen illustrated above serves as main kitchen for "The Rainbow Room" and "The Patio" (two dining and dancing establishments); The Rockefeller Center Luncheon Club, which utilizes the entire 65th floor from 11 to 3 daily; and private dining rooms (located on the 64th floor) which serve the following corporations: Westinghouse, Standard Oil of New Jersey, Shell Union, Rockefeller Foundation, Radio Corporation of America and American Cyanamid Company.

Judged by its efficiency, this kitchen rates absolute top. The Architects (REINHARD & HOFMEISTER) and their Consultant (G. E. SWEET) have planned every detail of layout and arrangement so as to save effort, facilitate the preparation and serving of food, and speed every movement of cooks and waiters.

Every part is Monel Metal. *Surfaces* that must stand wear, the constant abrasion of stacks of dishes and heavy pots and pans. *Edges* and corners that must take shocks and bangs and bumps. *Shelves* and *tables* that must never rust, that must withstand contact with foods of all sorts, that must be easy to clean.

Monel Metal, *alone*, of all the materials tested showed a combination of *all* these qualities in the highest degree. It is strong, as strong as mild steel. Tough. Solid; no coating to wear off or peel away. And by every test of popularity, it is today's most *modern* material.

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Monel Metal is a registered trade-mark applied to an alloy containing approximately two-thirds Nickel and one-third copper. Monel Metal is mined, smelted, refined, rolled and marketed solely by International Nickel.

MONEL METAL

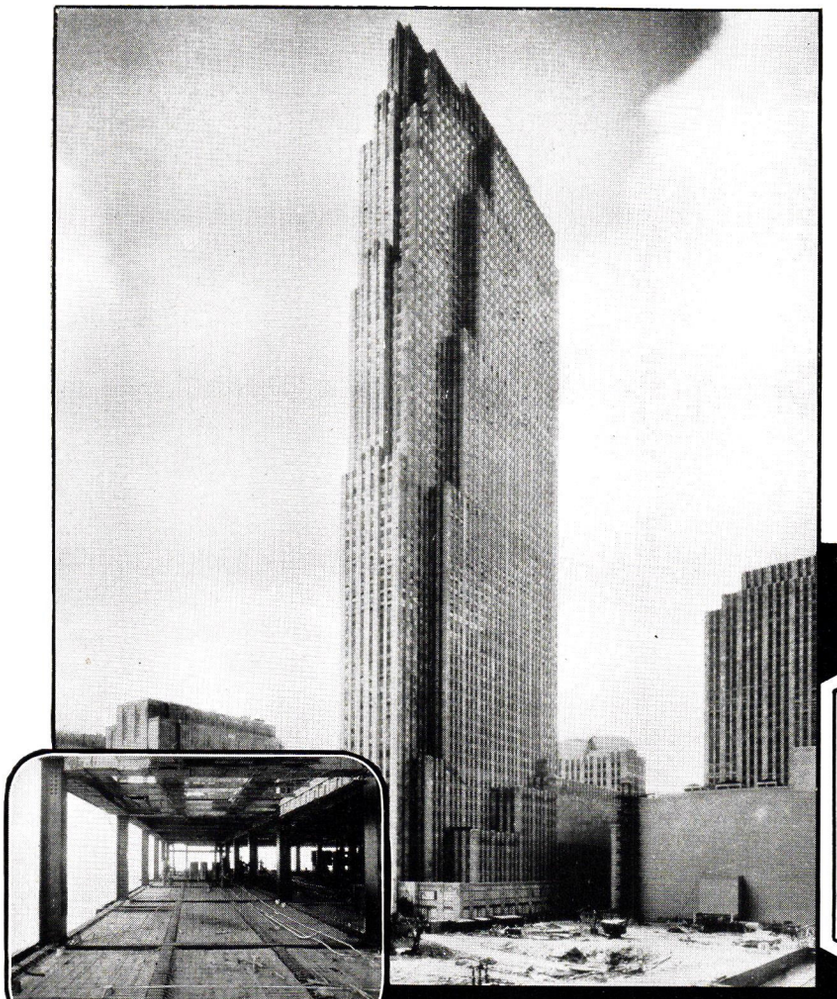
THE ARCHITECTURAL FORUM

Published Monthly by Rogers and Manson Corporation, Howard Myers, President. Publication Office, 160 Maple Street, Jersey City, N. J. Yearly Subscription: U. S. A., Insular Possessions and Cuba, $7.00. Canada, $8.00. Canadian duty, 60c per year additional. Foreign Countries in the Postal Union, $9.00. Single issues, including Reference Numbers, $1.00. Entered as Second Class Matter at the Post Office at Jersey City, N. J. under the Act of March 3, 1879. Additional entry at New York, N. Y.

Spiral Binding U. S. Pat. Nos. 1516932 and 1942026. Other Patents Pending.

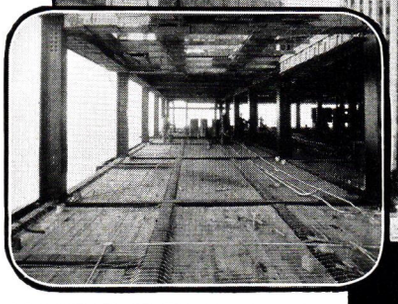
VOLUME LXI
Number 6

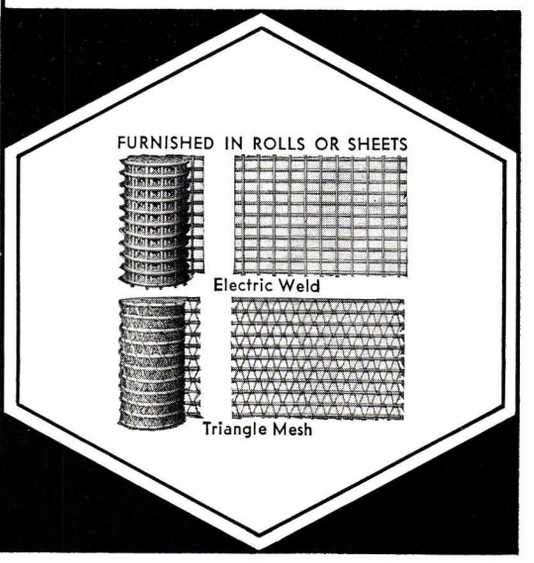
ROCKEFELLER CENTER



has WIRE FABRIC

THE STEEL BACKBONE OF CONCRETE





ROCKEFELLER CENTER, New York City *Builders and Managers:* Todd, Robertson, Todd Engineering Corporation and Todd & Brown, Inc., *Architects:* Reinhard & Hofmeister; Corbett, Harrison & MacMurray; Hood & Fouilhoux, *Structural Engineer:* H. G. Balcom. *All of New York City.*

ON a site covering three blocks in the heart of New York City—several structures are moving skyward. These buildings bear the name of Rockefeller Center and when completed will set a new standard of beauty and usefulness. It is significant that the architects chose cinder concrete floor slabs reinforced with American Steel & Wire Company Wire Fabric to make them fire proof and load proof. This is but one of many current examples that definitely indicate the trend in concrete floor slab construction. American Steel & Wire Company Wire Fabric is made of cold drawn high yield point steel. Its use gives greatest efficiency with low installation cost since it is easy to handle. Additional information furnished upon request.

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AMERICAN STEEL & WIRE COMPANY

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76 BOSTON SCHOOLS are protected with BARRETT ROOFS

The Public Latin School is one of the best-known of the 76 Barrett-roofed Boston schools. Latin School graduates include five signers of the Declaration of Independence. Architects: McLaughlin and Burr, Boston. Gen'l Cont.: John Bowen Co., Boston. Barrett Approved Roofer: Cavanaugh & Earley, Inc., Cambridge.

Boston is justly proud of its famed school buildings, and Barrett is proud of its record of 76 Barrett Roofs which have been applied on them. Year after year, in scores of communities, Barrett Roofs are selected to protect new buildings . . . and old ones as well. No other roof, it seems, so completely satisfies the exacting requirements of school roof construction.

Barrett Specification Roofs provide the maximum of fire-safety—they carry Fire Underwriters' Class A Rating. They provide, also, the maximum of expense-free, trouble-free service at the lowest cost per year. They are bonded against repair and maintenance expense for periods up to 20 years, and built to outlast the term of their bonds by many years.

These are factors which appeal particularly to school boards anxious to give taxpayers the most value for their money. Consult with us or your local Barrett Approved Roofer on any roofing or waterproofing problem.

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● Eighty years of progress in roofing materials and roofing construction . . . 80 years of time-tested performance and economy . . . make Barrett Roofs a sound investment in proved value. Roofing, reroofing and repairs, the Barrett way, eliminate roof problems from any building or remodeling program.

RECOVER RIGHT WITH *Barrett* **ROOFS**

• This is how Eagle Home Insulation is blown between the joists in the attic floor by a special pneumatic method. The hose is run in through an open window. There is no muss downstairs.

"To be really effective, INSULATION MUST BE THICK"

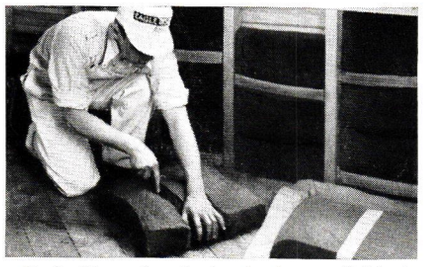
Eagle Home Insulation gives your clients wall-thick insulation at moderate cost

"What is the *best* insulation?" A great deal of technical research has been done to find the answer.

The answer itself is simple and definite. All authorities come to the same conclusion. The *best* insulation is thick insulation. Not half-an-inch thick. Not one-inch thick. But *full wall thickness.*

Eagle Home insulation provides this "wall-thick" insulation at moderate cost. Eagle Home Insulation is a soft, fluffy "wool" that is made from rock. It is blown between the joists in the attic floor and into the hollow spaces between wall studdings by a special pneumatic process. It packs evenly and will not settle. Trained operators do the work. In most homes the complete job takes from one to two days. No building alterations are necessary. And there is no mussing up inside.

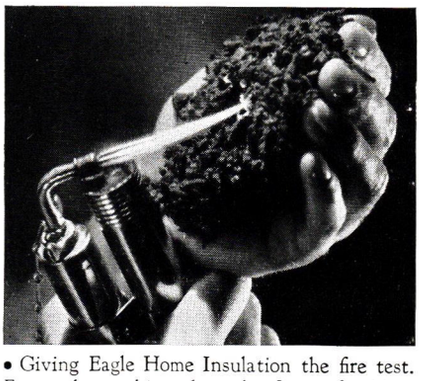
• No building alterations are necessary when Eagle Home Insulation is installed. To gain access to hollow spaces between wall studdings, operator removes a few pieces of siding, or a few bricks, or makes small openings in stucco.



• Eagle Home Insulation is also available in "bat" form for new construction. These bats, or pillows, are 15″ by 18″ and 3⅝″ thick. Easy to fit between wall studdings and attic joists.

U. S. Bureau of Standards tests give Eagle Home Insulation the exceptionally low conductivity rating of 0.27 (at 103° F. mean temperature). In ordinary wall thickness (3⅝″) Eagle Home Insulation has the insulating efficiency of a solid concrete barrier *eight feet thick!*

For complete data, see catalog in Sweet's. For free sample, send coupon.



• Giving Eagle Home Insulation the fire test. Even when subjected to the flame of a blow torch, it does not char or burn. By filling hollow walls which ordinarily act as flues once a fire starts, Eagle Home Insulation provides real protection against the fire hazard.

EAGLE HOME INSULATION

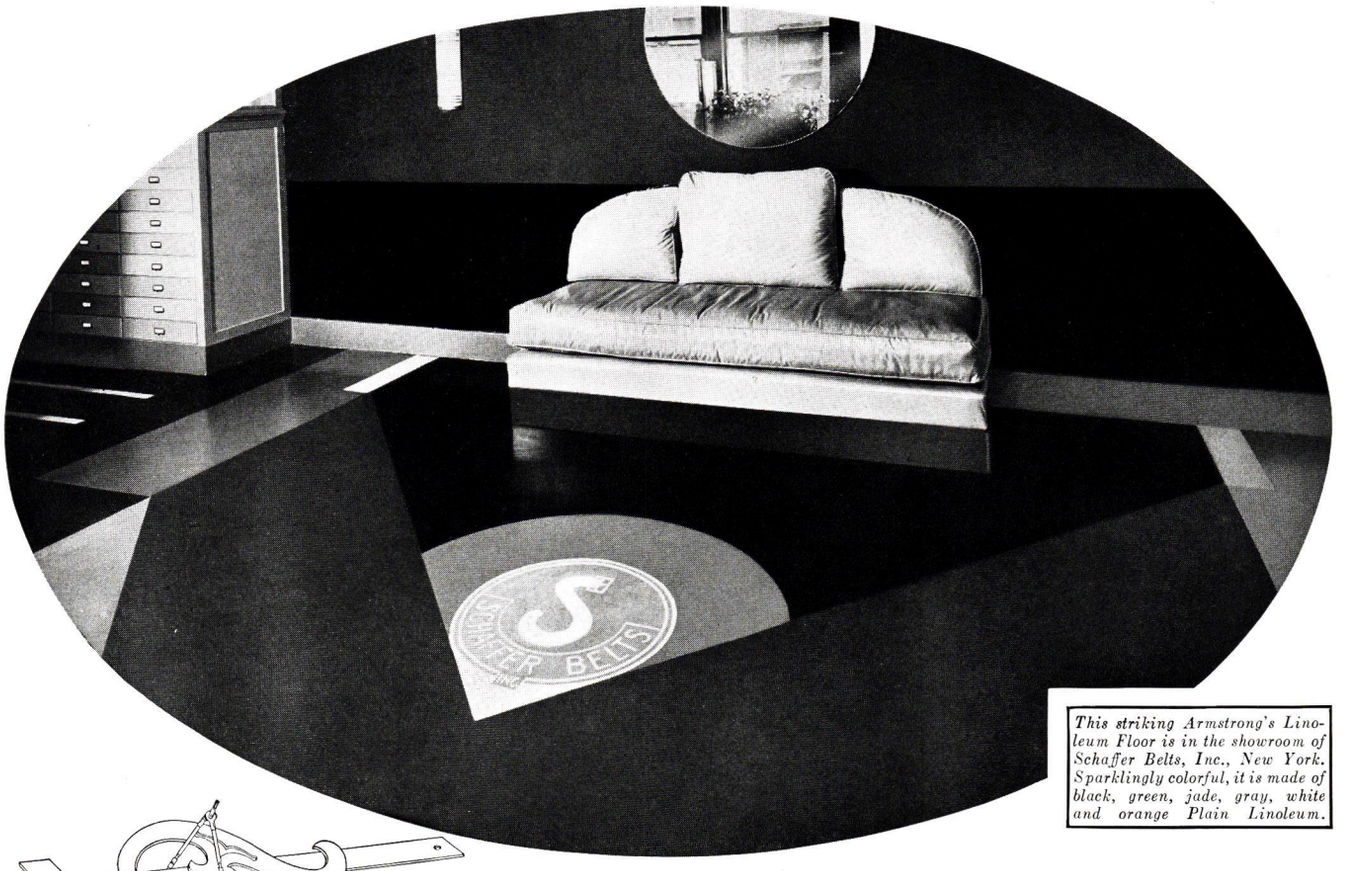
• The Eagle-Picher Lead Company, Dept. AF12, Cincinnati, Ohio. Please send me free samples of Eagle Home Insulation.

Name_____

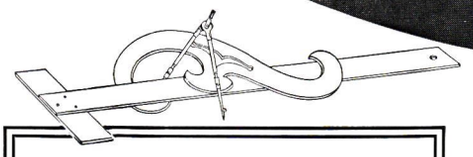
Address_____

City_____ State_____

Have you been overlooking this versatile medium for floor designs?



This striking Armstrong's Linoleum Floor is in the showroom of Schaffer Belts, Inc., New York. Sparklingly colorful, it is made of black, green, jade, gray, white and orange Plain Linoleum.



VERSATILE

You can have a free hand with Armstrong's Linoleum . . . can make the floor a definite element in the design of the interior.

DURABLE

Armstrong's Linoleum resists wear, even where thousands of feet tramp over it daily.

PRACTICAL

It's a sensible floor in every way. Being resilient instead of hard, it is comfortable and quiet underfoot. And the exceptionally smooth, impervious surface makes Armstrong's Linoleum easier to clean.

ECONOMICAL

You won't have to eliminate some other feature your client wants in order to install Armstrong's Linoleum Floors. They cost no more than other fine floors—often not as much!

SATISFACTORY INSTALLATION

Trained layers are employed by Armstrong Floor contractors everywhere, assuring you of careful rendering of your design and proper installation.

YOU can have a free hand in designing floors of Armstrong's Linoleum. Any floor you can lay out on your drafting board can be faithfully reproduced in this versatile medium.

But that's only half the story. Armstrong's Linoleum has many other definite advantages seldom found in a single flooring material. It's economical—costs less than other types of fine floors. It's easy and inexpensive to keep in perfect condition—and your clients will like *that!* It wears and wears, and doesn't show it. Even where traffic is heaviest, it takes only a washing with mild soap and waxing with Armstrong's Linogloss to maintain its sparkling beauty.

If you want the 1935 Armstrong Pattern Book showing the complete line of designs and colors, drop us a note on your letterhead. A list of local Armstrong Floor contractors will also be sent for your files. Armstrong Cork Company, Floor Division, 1203 State Street, Lancaster, Pennsylvania.

See Sweet's Catalogue File for colorplates, specifications, and other details.

Armstrong's

LINOLEUM FLOORS

LINOTILE ~ CORK TILE ~ ACCOTILE ~ RUBBER TILE ~ LINOWALL

LETTERS

The Forgotten Naught

Forum:

. . . In reading over your very interesting story of Rockefeller Center, I find what appears to be a mistake in your figures. . . . Where you say "Thus a table of total charges against the property would read something like this:

Rent	$3,100,000
Operating Costs	1,200,000
Taxes	1,800,000
Interest	325,000
	$6,425,000"

In the preceding paragraph you say "Besides there is interest of 5 per cent a year on the $65,000,000 mortgage held by the Metropolitan Life Insurance Company." This interest, to my way of calculating, amounts to $3,250,000, whereas you have listed it at $325,000, a difference of no less than $2,925,000 per year.

C. S. Brown, Jr., *Vice-President*
Brown, Wheelock, Harris & Co., Inc.
New York

Forum:

. . . Interest on the Metropolitan's $65,000,000 mortgage at 5 per cent per annum is given as $325,000. Is it possible that the Rockefellers used the same kind of calculations in showing that the project was self-supporting?

Robert C. Hazard, *Vice-President*
John K. Culver, Inc.
Baltimore, Md.

To every magazine there comes a time when it is guilty of an error of such proportions as that referred to in the above letters. In careful checking for subtle errors to maintain customary Forum accuracy this perfectly obvious omission of a zero was overlooked. The corrected figure indicates an estimated current annual loss of between $4,950,000 and $5,450,000. To Messrs. Brown, Hazard, and the numerous others who caught the error, thanks — and to all Forum readers — apologies. — Ed.

Rented Goelet

Forum:

. . . "Patiently waiting for an overflow, the Goelet Building, completed 1930, 90 per cent vacant."

I am quite at a loss to understand why you should publish such a grossly inaccurate statement. The Goelet Building is nearly 80 per cent occupied, and has been for some months, and I feel you ought to give this statement the same publicity that you have given the other statement.

H. O. Weaver
Estate of Ogden Goelet
New York

To the Goelet Estate our sincere regrets. A hitherto reliable source of information will no longer be used. To the Building Money staff two rebukes. Three is out! — Ed.

Acoustics

Forum:

In a recent issue, in describing a Georgian type house, is the following statement: "For the interiors, an acoustic wallboard, homasote, was used instead of plaster as a base for papering and painting."

For any wallboard to be termed "an acoustic wallboard" it would mean that it was capable of absorbing sound. In order for any material to absorb sound, it must be directly exposed to the sound. It is not possible to cover it with either paper or painting, unless same is perforated so that the sound can get through the paper or paint surface and thus be absorbed within the material.

Therefore it is self-evident that it would be a physical impossibility for a material to be known as "an acoustic wallboard" which could be used as a base for papering and painting.

I want to take this opportunity to compliment you on the various improvements that you have made in your magazine. The Building Money section is especially interesting. All of which is an indication that in times of depression we all make greater efforts to find a way to render a better service, so that the whole building industry should now be in a position to render a continually increasing better service to all with whom they come in contact.

F. E. Berry, Jr.
Boston, Mass.

FHA

Forum:

I have been very much interested in the campaign of stimulating advertising that *Time* and The Architectural Forum have been running periodically in *Time*. Such helpful efforts will assuredly be beneficial to the objective of the Federal Housing Administration and to business generally.

The constructive attitude which The Architectural Forum has displayed toward the Better Housing Program from the very beginning is appreciated. I sincerely hope that you will continue to lend it your effective support and believe you will find a responsive interest among your readers.

James A. Moffett
Administrator
Washington, D. C.

Function, Precision, Passion

Forum:

I was — late at night — reading your article in the October issue of The Forum and do not wish to wait until the morning to dictate a letter. . . .

"Contrary to popular belief the suppressed classes of our world today are as avid for beauty as ever but they have for so long done without, that they have become incapable of articulate demand." This indeed is the fundamental difficulty: to regain the immediate enjoyment of design in practical and spiritual use instead of the highbrow enjoyment of the archæologically trained or the subscriber of the architectural fashion magazine. Fortunately there are, as I found, quite a few men and women who have an unspoiled freshness to enjoy without special intricate guidance and not by inert and worthless maladjusted imitation.

. . . I believe I have cared so much about the real truth in this matter that I spent my life in patient preparation for the moment when I found one little thing real to pass on to others, as you say.

Richard J. Neutra
Los Angeles, Calif.

Forum:

. . . I have read this article with great interest. The ideas expressed by Mr. Cox seem to me to be pertinent and expressed in a persuasive manner. Naturally, I do not agree with all of his ideas, and I am especially out of sympathy with his interpretation of architectural history, but these things do not prevent me from a keen appreciation of his thesis as a whole.

Joseph Hudnut, *Dean*
Columbia University
New York

Forum:

. . . May I say that I think Mr. Cox lets rhetoric run away with him? It may sound well to say that Michelangelo, Rembrandt and Beethoven had mad souls — but the fact is that they were three of the most magnificent craftsmen the world has known and saner men it would be hard to find if we regard their art. Nor did they "with one magnificent gesture" throw overboard, etc., etc., "and stated the epochal theorem that the whole purpose of art was to express the anguish and despair of the artist." They threw nothing overboard. They built on solid experience when it came their turn and time to create. Nor did such men state theorems, epochal or otherwise. They were too busy for such foolishness. Mr. Cox reads into the psychology of other epochs the self-consciousness of the present era.

I could go on, but I have said enough to indicate my general impression of the whole article. In nearly every paragraph I find some statement that all my experience, all my reading, rejects. "Mutual self-admiration!" How can self-admiration be mutual? The artist, the real artist, will continue to dispense with "a statistic of psychology" — whatever that may mean. One of the troubles with artistic matters of the present day is that there is too much blurb about it, too much talk and not enough of the sweat of the conscientious artist. Too many try to get away with talk instead of performance. And the critic must be careful.

H. Van Buren Magonigle
New York

The word mad was not used to connote insanity, but to mean "aroused or controlled by intense emotion, especially when leading to abnormal or excessive manifestation" (Webster's New International Dictionary). These letters constitute, in a small way, a "statistic of psychology." — Ed.

LETTERS

(*Continued from page 7*)

Understanding Tradition

Forum:

It is not easy for me to offer an opinion on Mr. Leonard Cox's article Function, Precision, Passion, because I do not know whether to trust to the extremely sympathetic impression that I derived from it as a whole, or whether to question its conclusions in view of a brief but very important passage in which the writer seems to me fundamentally in error.

The condemnation both of excessive individualism and of the self-sufficience of the academies is criticism very much to the point; and the description of the low estate to which most modern art has sunk is perfectly just. The ideals expressed on the last page of the article are, I think, so close to what must be striven for amidst the near chaos of the present time that I should feel safe in trusting the judgment that formulated them, were it not that ideals must be checked up through specific examples. And when I come back to the sentence that treats Michelangelo, Rembrandt and Beethoven as possessed of "mad souls" I cannot but think that Mr. Cox is breaking with the surest of our tradition, even while accusing those artists of snapping its thread, as he does in his next paragraph.

The four centuries since Michelangelo's rise to fame have been almost unanimous in acclaiming him; only less complete, but still increasing in strength, has been the sanction of Rembrandt's genius — both by simple and by learned men, during the three centuries since his maturity. Such lengths of time and such esteem surely constitute tradition. If the hundred years since Beethoven's death are not sufficient to place him in the same position, then I can only fall back on the opinion of the best judges I know who, on hearing a Toscanini or a Schnabel interpret the works of Beethoven, are led without a break along the line carrying us to Mozart, to Bach, and to the men before him.

That is the other, and better, way of determining tradition, which, if understood in its entirety, gives us our judgment of all art. When I say "in its entirety" I mean that tradition has one phase — probably its most important one — which is too often overlooked: that of renewal, by virtue of elements not used before. The art which has been most of all placed in a position of authority, the Greek, gives the clearest example of adding to the range of its predecessor, the Egyptian, whose tradition is incomparably longer and more consistent than any other. Even within Greek art, I believe that the separation between the great archaic works at Delphi and those of Scopas — to go no further — is as great as that between a Michelangelo and the Laocoön which he studied. A Rembrandt portrait and one from the Fayoum corroborate each other by their sense of humanity and character, while a composition like the Syndics seems to me to be precisely as inevitable in the salience of the figures from the background and in their relation to one another as is the pediment of the Parthenon.

About Beethoven, the best words I know are those of Delacroix who, after noting the way in which the earlier masters are followed during the composer's first period, traces his development into the complete grandeur of his prime. If the painter acknowledges himself puzzled by the evolution of Beethoven's latest work, he has faith that, with more time, men will find that all the difficulties disappear, remarking "One must always bet on genius." With more of that spirit I think that we shall find the logic of the modern period as demonstrable as Mr. Cox finds the evolution from the basilica to the cathedral. What is needed is less a matter of abstract ideals (on which, I repeat, I am probably in agreement with the writer) than a constant and intelligent study of what is going on. If one has that, one need not fear to mistake imitation for creation, or self-glorification for the continuance of life through the unchanging principles that the artist arrives at — individually or collectively — according to his epoch.

WALTER PACH

New York

Great these three men undoubtedly were. Nevertheless they first introduced the purely personal in the work of art and, so far, broke with tradition. — ED.

NHA Bulletins

Forum:

We wish to compliment your firm on the splendid Bulletin on the plans of the new NHA loans for the building industry which was sent to us by the Upson Co.

Kindly enter our subscription for a year to your magazine and send us six more copies of this article and bill same with the magazine. (Please mail at once as we intend to start our campaign to secure some of this business by running a quarter page ad next week in the local newspapers based on these facts.)

A ONE BUILDING MATERIAL CO., INC.
Evansville, Ind.

A new bulletin on Titles II and III of NHA is now available at 5 cents each. — ED.

Great Nichols

Forum:

I am especially pleased to note that you have given the Nichols development the kind of write-up it deserves [October, page 302]. Clyde Nichols is one of the greatest.

HUGH POTTER, *President*
National Assn. of Real Estate Boards

Ass in Lion's Skin

Forum:

I am very much impressed by the way THE FORUM is produced today, but not so much by the way you treat the architecture of today.

On page 336 of your May issue you refer to an "International Style." I doubt very much whether your term is correct at all. If so, then you have to admit the existence of some national style in architecture. There exist styles as Renaissance, Baroque, Gothic, etc., and we know Italian, French or German Renaissance just as with other styles. They all form part of Italian, French or German architecture. Only a layman can speak of "French Style," because strictly speaking, this term doesn't indicate anything. I consider it as an insult to call the international architecture of today just a style. It isn't a new make-up or a mode as 90 per cent of people think (as they do think of architecture in general).

I wish you could illustrate that the architecture of today as the result of the progress in the building industry isn't merely a skin-deep style (or even plastered on).

It is notable how many clients, through their architects, imitate buildings which are centuries old, although supplying those with G. E. kitchens, plumbing fixtures of the latest models.

I wonder that nobody yet has degenerated enough in his romanticism as to prefer to cross oceans in old sailing ships and supply them with a system of sirocco fans in order to keep sails in proper shape through all weathers, just the way he has seen them on pictures and in his dreams.

Mr. F. L. Wright has spared few words for these make-ups, they are:

"An ass in lion's skin."

ANDREW SCHERBININ

Buenos Aires, Argentina

The phrase International Style is used by nearly all critics of the architecture of today to describe a certain type of design. Until a better term is devised it will have to suffice. — ED.

Two Cheers

Forum:

This was the best and most comprehensive article I have ever read of its kind. (Phenomenon of Exploitation, THE ARCHITECTURAL FORUM, October, 1934, pages 292–298 inclusive.) It should be published separately and placed in the hands of every real estate factor.

FRANK LORD

Cross & Brown
New York

Forum:

Your magazine is great, especially the London section. The way it is bound is a great help as it will lay flat while it is being used. We have some of the modern stuff and your book has been a big help. . . .

R. MARION PRICE

Sarasota, Fla.

THE NEW CATALOG OF

EXTRUDED BRONZE SHAPES

by

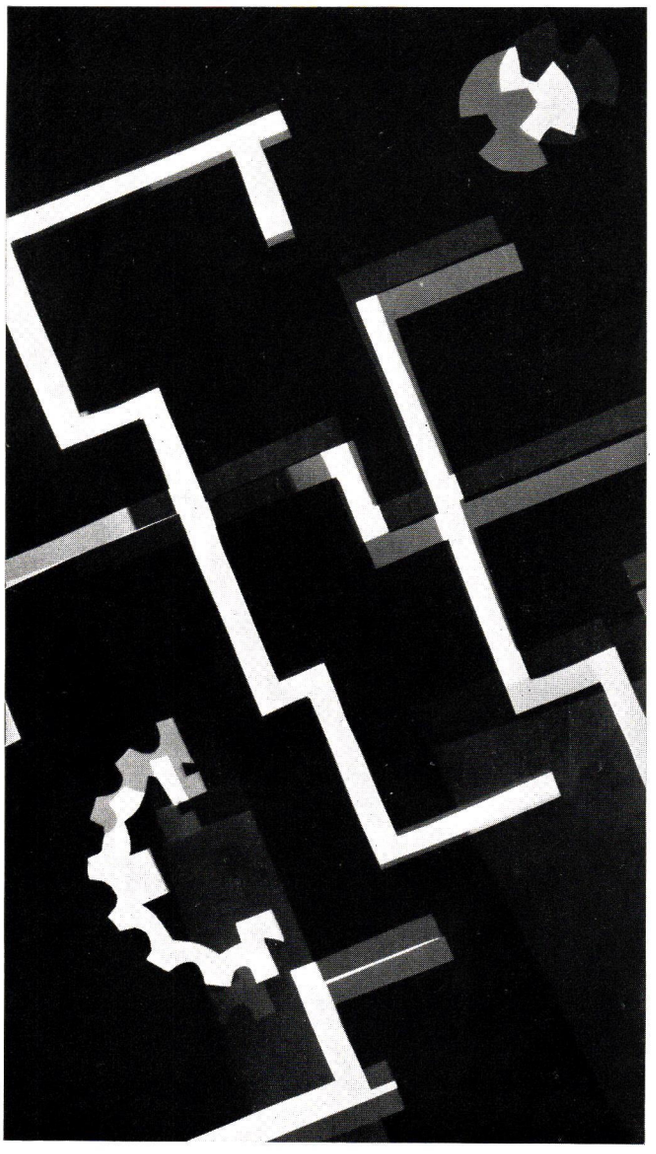
CHASE

. . . . IS JUST OFF THE PRESS

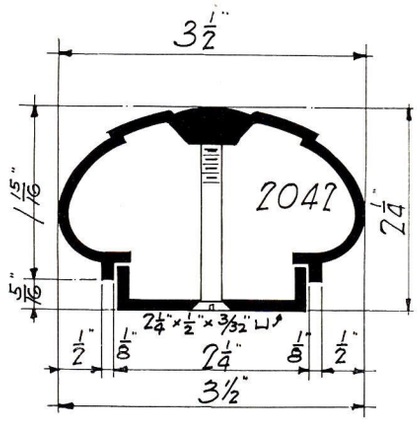
A TYPICAL SPREAD IS ILLUSTRATED ON THE FOLLOWING TWO PAGES

CHASE

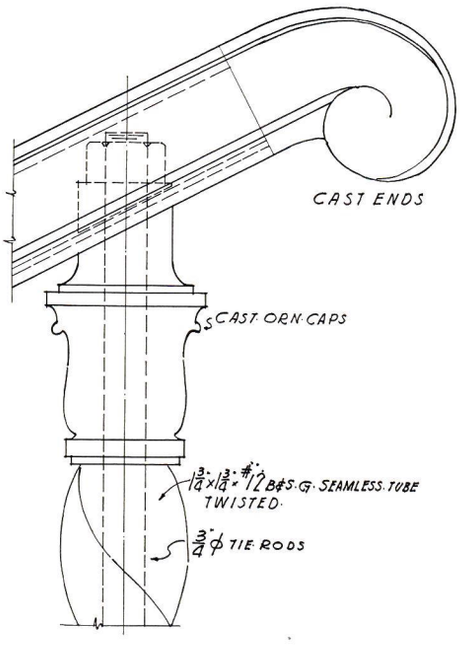
ACKNOWLEDGMENTS . . for more than ten months Chase has been collecting photographs and drawings that would be helpful in explaining the varied uses of extruded shapes. In this work we are deeply indebted to many architects, specification writers and draftsmen whose suggestions, information and help were freely given to us. With their assistance we have been able to produce a book that we believe will be of great help to every Architect in specifying Bronze and Nickel Silver in extruded forms.



1 HANDRAILS



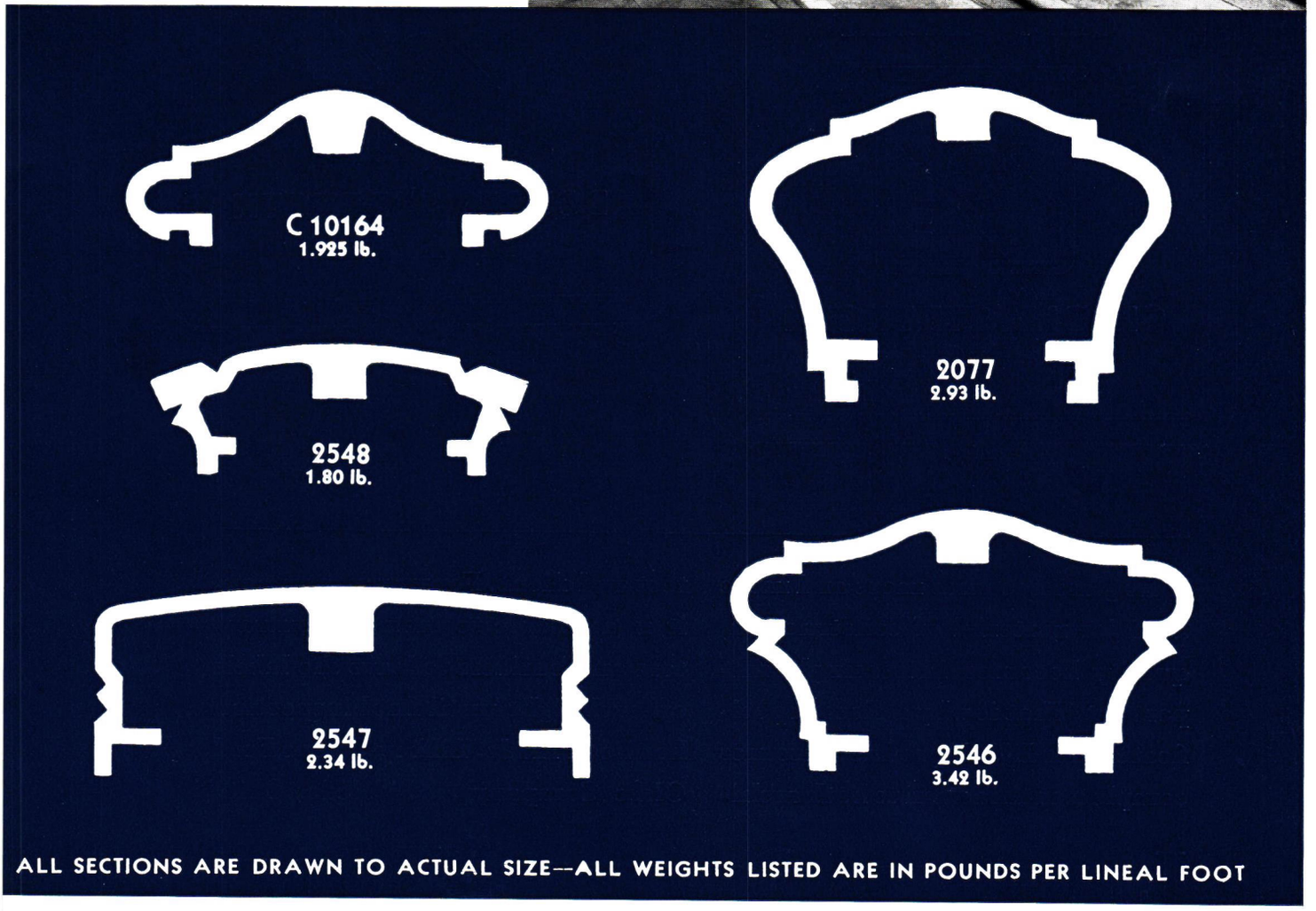
NOTE: when hand rail sections are to be bent or curved be sure to specify material as fully annealed.



WHAT THE NEW CHASE CATALOG CONTAINS

Full size sections of over 600 Architectural Extruded Shapes are illustrated, also photographs and detail drawings of actual installations. A typical spread from this catalog is reproduced on these two pages. The new spiral binding has been used so the book opens flat and stays open.

This photograph shows the hand rail on an entrance. This rail illustrates the use of Chase Standard Shape No. 2042 shown below. The detail drawing is on page 1.



HOW TO GET A COPY

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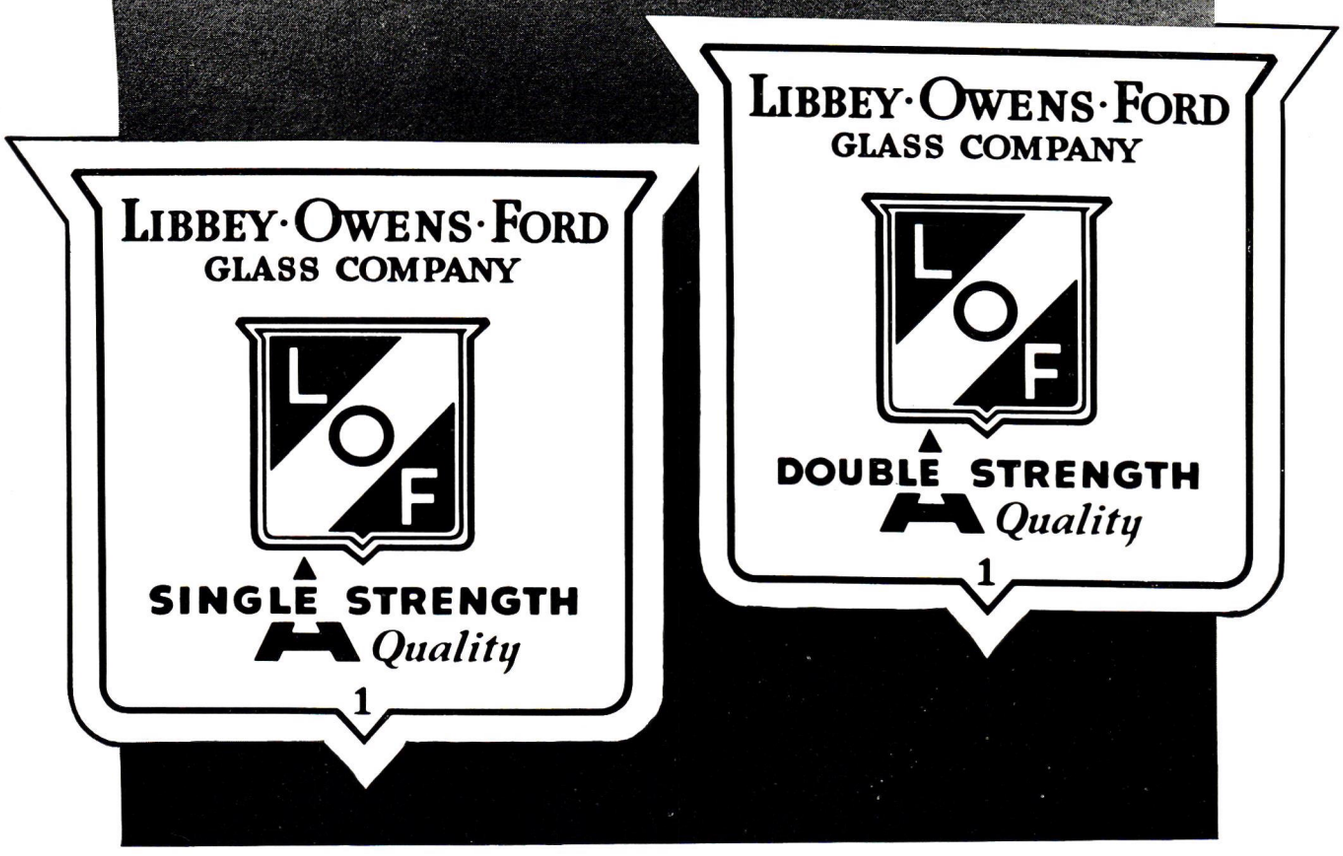
Confidence



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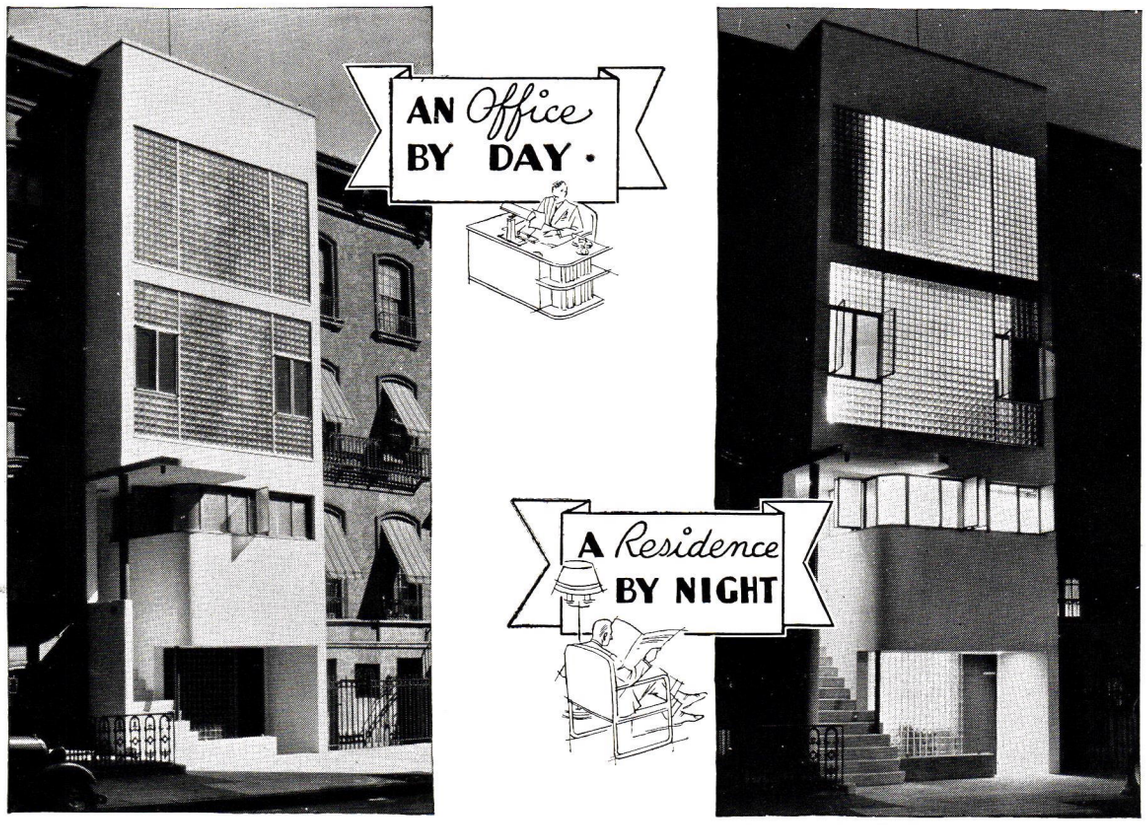

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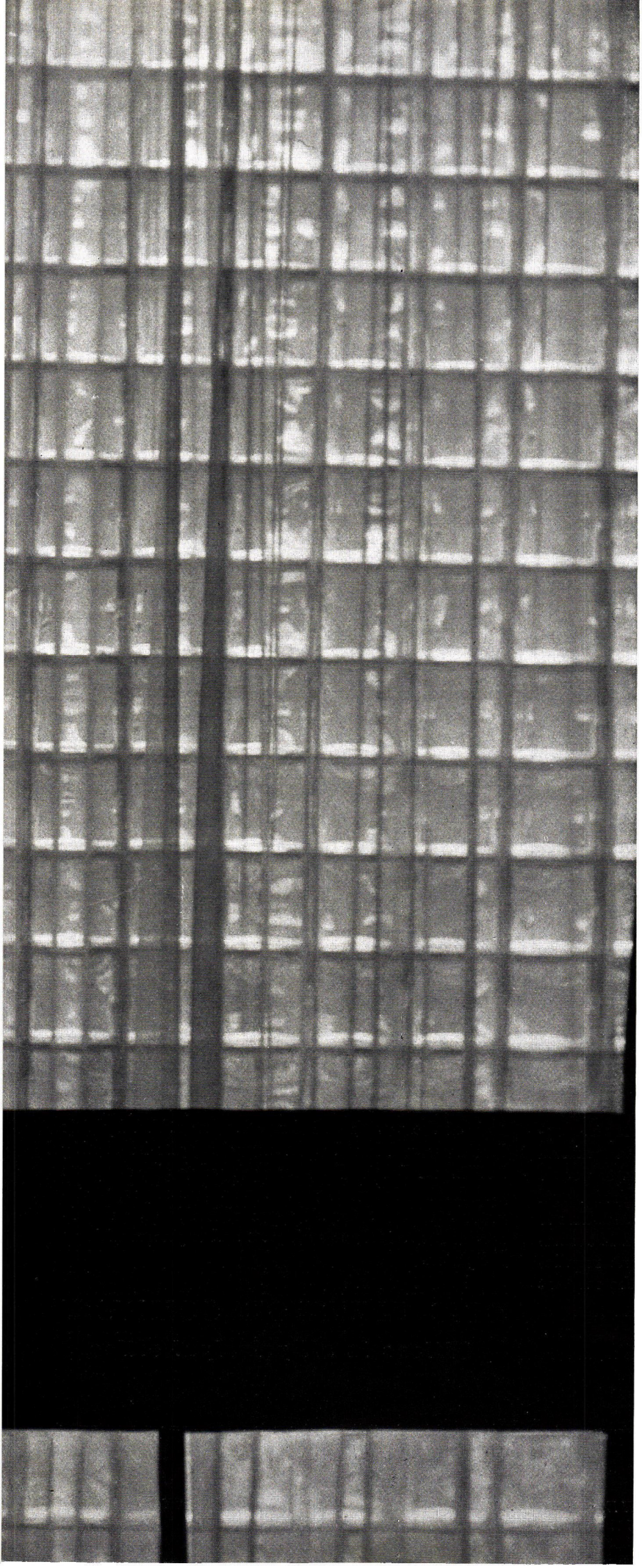
Pictured above: Combination office and residence, by and for Mr. W. E. Lescaze of the architectural firm of Howe and Lescaze, New York City.



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The photograph shows a view in the house of William Lescaze, Howe & Lescaze, Architects

WHAT IS MODERN ELEVATOR PRACTICE IN OFFICE BUILDINGS?

SIGNAL Control Elevators, first installed in the Standard Oil Building in New York City and since furnished by the Otis Elevator Company for over 350 other high-class office buildings, are now so generally recognized as the accepted standard for modern office buildings that, in recent years, few such buildings have been equipped with any other type of control. Improvements and simplification in design and construction have not only materially reduced the cost of Signal Control but have added so greatly to its flexibility that its field of application has been rapidly extended to embrace the six-story office building as well as the towering skyscraper.

The tremendous advantages of Signal Control from the standpoint of both quantity and quality of elevator service have been so thoroughly established that to install anything but Signal Control in even a moderate-size office building is to risk elevator obsolescence before the building is completed.

For all but intermittent service elevators in low-rise office buildings, gearless machines with Unit Multi-Voltage and two-way self-leveling are taken for granted by most owners, architects and tenants of modern office buildings. Maximum smoothness, convenience and passenger-handling ability require in addition Otis Signal Control which, with recent refinements, now offers the following outstanding characteristics:

1. The pressing of a hall button by a prospective passenger automatically stops the first available car traveling in the desired direction.

2. An audible gong and a hall signal lantern advise the waiting passenger which car will stop and sufficiently in advance of the arrival of the car to permit the passenger to move without unusual haste to the proper opening. The interval by which the light precedes the arrival of the car is adjustable within ample limits to permit each installation to be arranged with that light interval best suited to the requirements of the building. This is a notable advance in the Elevator Art and is accomplished without sacrificing the all-important requirement that only the light corresponding to the car that is to stop shall be illuminated.

3. The car and hatchway doors open automatically as the car stops level with the floor.

4. The car stops automatically at the floor corresponding to the button pressed by the attendant in the car.

5. Excellent service is assured independently of the skill or memory of the operator. False stops are eliminated and the possibility of failing to stop for a waiting passenger is avoided.

6. The control is so arranged that when desired the cars will stop and reverse automatically at the point of highest call. During the morning peak period this new and important improvement adds considerably to the passenger-handling capacity of the elevators, as the time required to travel unnecessarily above the highest point for which there is a car or hall call is completely eliminated—round-trip time is reduced and more trips from the ground floor can be made during the period of intensive service.

This same arrangement, which also includes a buzzer in the car, makes every car available for night service without the additional complication of a night service annunciator.

7. To assure the maximum service of which an elevator installation is capable, it is necessary that they be dispatched with the proper interval and in proper sequence—all of which is accomplished with a minimum of attention on the part of the starter by the Otis Scheduling Device.

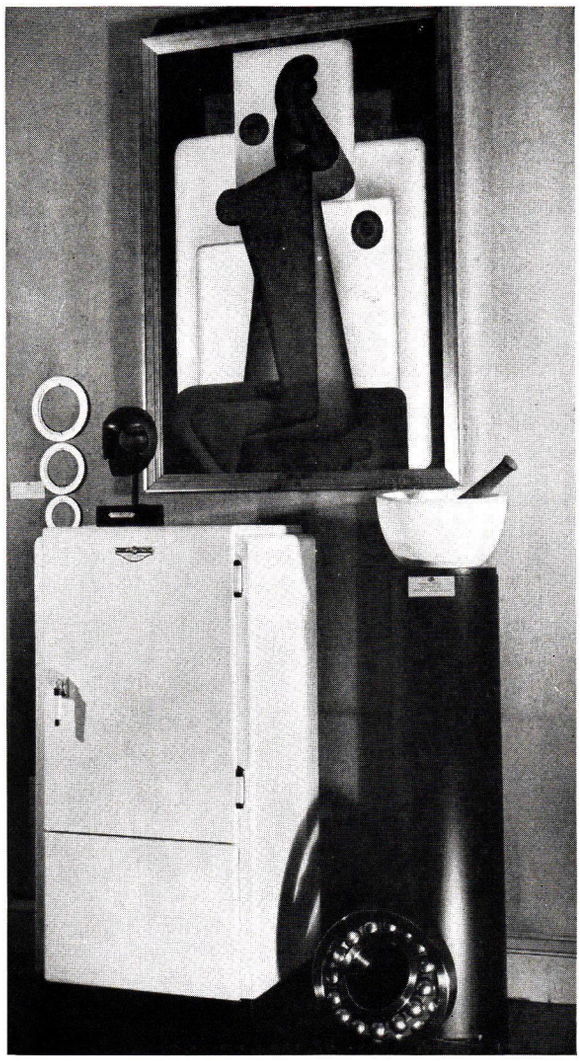
The number, capacity and speed of elevators required to provide adequate elevator service in a modern office building can best be determined by taking advantage of the wealth of information assembled by Otis Engineers and based upon extensive tests in existing buildings. All Otis offices are equipped to give complete and detailed information on the subject of proper elevator equipment for all types of buildings, and this service is available to architects and engineers without obligation.

OTIS ELEVATOR COMPANY

Offices in all principal cities

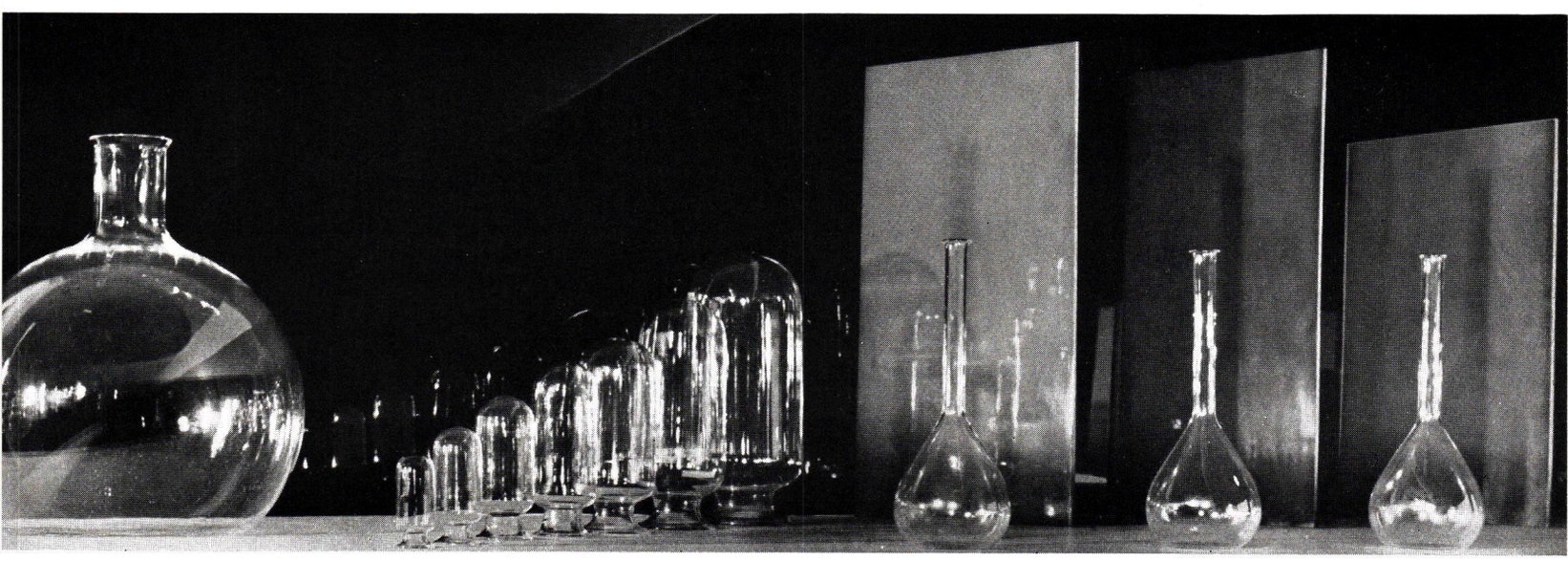
All photos, Elizabeth R. Hibbs

JM OF EVENTS



DYNAMIC ART

IN an exhibition of "Dynamic Design," Philadelphia's Art Alliance has made an exciting attempt to show how much contemporary industrial design owes to modern painting and sculpture. Various groups of articles have been assembled which have qualities in common. At the left is a photograph of cartons and bottles for Old Schenley Rye, designed by George Sakier and exhibited by Schenley Distributors, shown with glasses by Sakier; and chemical glass by Arthur H. Thomas Co. The background is "Der Horende" by Paul Klee, lent by Mrs. Leopold Stokowski. Below is more chemical glass from Arthur H. Thomas Co. together with Vitrolite from Vitrolite Products Co. At the right is a more complex grouping. The refrigerator is designed by Henry Dreyfuss and exhibited by Judson, Burns Co. The mask that stands on it, by Pablo Gargallo, and the painting by Flouquet were lent by The LaFrance Institute. The rings and the mortar and pestle are again from Arthur H. Thomas Co., while the ball bearings are exhibited by The Atlas Ball Co. The exhibition though scheduled to close at the end of November may be continued as a result of the public's interest.



FORUM OF EVENTS

HOUSING STUDIES

THROUGH the generosity of the Lavanburg Foundation, the Slum Clearance Committee for the city of New York has been enabled to publish the charts prepared by them for the Municipal Housing Authority. With these are published the charts prepared by the Land Utilization and Zoning Division of the New York Building Congress. The resulting large single volume containing 137 pages of factual charts is a comprehensive and exhaustive presentation of the actual conditions that must be understood before any theory may be erected for the solution of the housing problem. Such matters as the profit and loss of real estate operation in various parts of the city have, properly, received the same careful study as the factors of population densities and assessed values of land. Had such studies been made in the past many of our present difficulties might have been avoided entirely and most of the others considerably modified.

URBAN MURALS

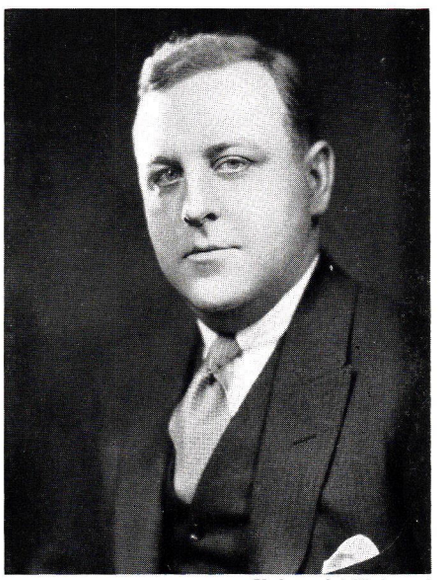
To many citizens of Manhattan, Brooklyn remains the city unvisited except when the sticky days of summer suggest a trip to the Hotel Bossert's Marine Roof. That roof offers a view of lower Manhattan that satisfies even the most critical enthusiast, and the Bossert, quick to capitalize on it, has invested what undoubtedly turned out to be very profitable money in advertising view, food and music in taxicabs and other local media. The Bossert now has yet another inducement to offer its patrons — a brand new mural, one of the things that nowadays no self-respecting hotel seems willing to neglect.

Gretl Urban, daughter of the late Stage Designer Joseph, painted it with assistants (*see cut*). Hanging in the ballroom, Miss Urban's 1,680 square feet of murals, gaily and inconsequentially portray the lighter aspects of medieval romance. Gretl Urban is a pleasant, unaffected person who for several years helped her father do sets for the Metropolitan Opera. Last May, Manhattan's Marie Sterner Galleries gave an exhibition of her portraits. She has been married and divorced. She likes to turn the radio on when she works, says she studies comparative religion because she feels "it helps her to understand people." In Paris, where she studied for several years, she exhibited at the Salon d'Automne, the Tuileries, the Gallerie Zak. Besides being the daughter of Joseph Urban, she is a niece of the late Heinrich Lefler, early Viennese modernist painter.

DAUGHTER URBAN & ASSISTANTS
Working on Bossert Mural

ARCHITECTS *vs.* U. S. TREASURY

WITH Ely Jacques Kahn and the late Raymond Hood, Ralph Thomas Walker, president of the New York chapter of A.I.A., used to be known as one of the "Three Musketeers of the new order of architecture." Last month Musketeer Walker fired a blast against the U. S. Treasury. Writing to every Congressional candidate in New York State, he said: "Throughout the country there is a growing concern over the increasing invasion of private business by the Federal Government. . . . Along with others, the architectural profession is becoming more and more apprehensive of the way in which bureaucracy is encroaching on the field of its work. A climax has been reached in the recent order of the Treasury Department that private architects are no longer to be commissioned for the work on the Public Buildings program of the Department, but that this work is to be done by the Supervising Architect's Office of the Procurement Division.



Underwood & Underwood

RALPH THOMAS WALKER
He Fired a Blast at U. S. Treasury

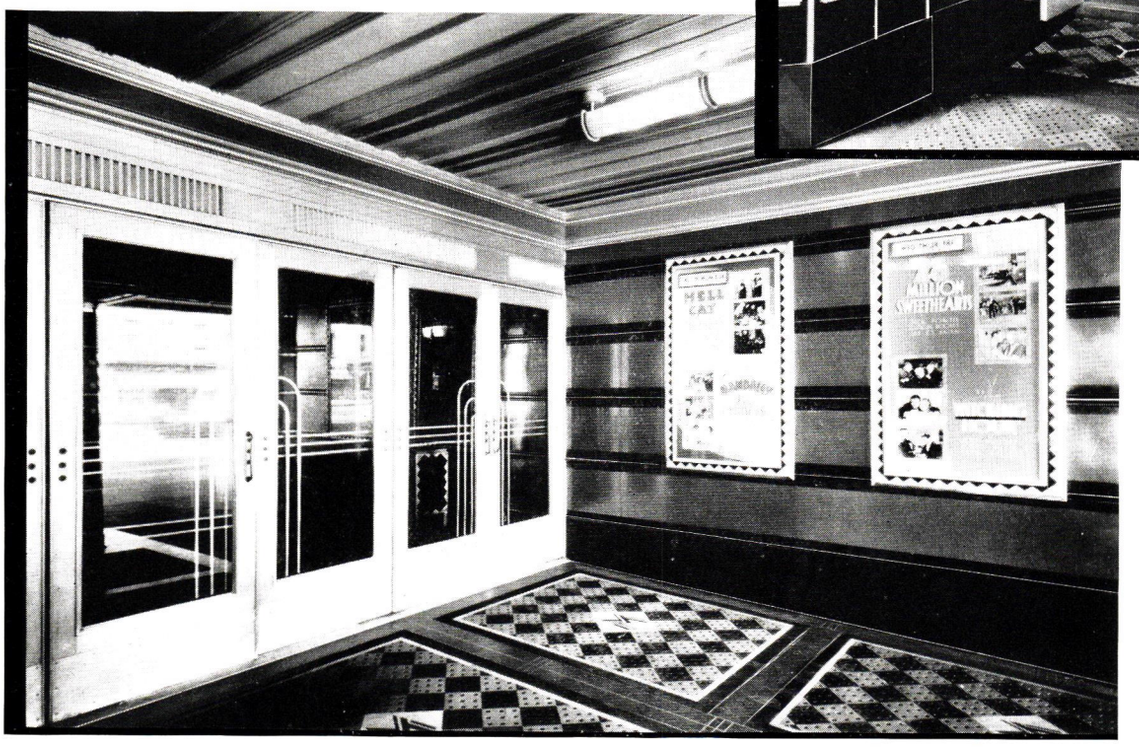
"When the Public Works program was inaugurated architects believed, and were encouraged to believe, that their services would be brought into play. . . . At the beginning of the year the Treasury Department promised that private architects would be commissioned to handle all projects costing over $60,000.

"The order of June 29, 1934, refutes all this, and the Supervising Architect's Office has been steadily increasing its forces to handle the enormously increased volume of work. Draftsmen, engineers, and technicians have been brought to Washington and enlarged quarters provided in which to house these workers. Architects in private practice have been asked to come to Washington and accept temporary positions on a salary basis, to design the buildings and supervise the augmented forces of the Supervising Architect's Office.

"The Treasury Department, in justifying this procedure, states: 'By so doing the Government avails itself of the skill and experience of the designer and his knowledge of local conditions, and at the same time greatly expedites the completion of the

(*Continued on page 32*)

THEATRE LOBBIES *modernized with* FORMICA



•THESE pictures of the Yorktown and the Midtown theatres, both on Broadway, New York, show the way in which Formica with metal trim is being used to modernize wall spaces of this type. The effect is most attractive and modern — it produces a really *new room*. Formica for walls may be had in solid colors, in combinations of colors, or with metal inlays pressed into the surface. It is simply and easily installed by carpenters. Get the facts about Formica before you plan your job.

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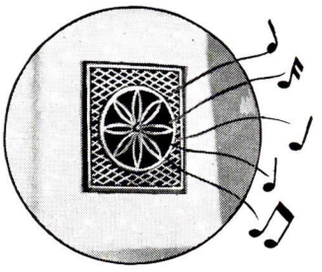

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THE ARCHITECTURAL FORUM

CONTENTS FOR DECEMBER 1934

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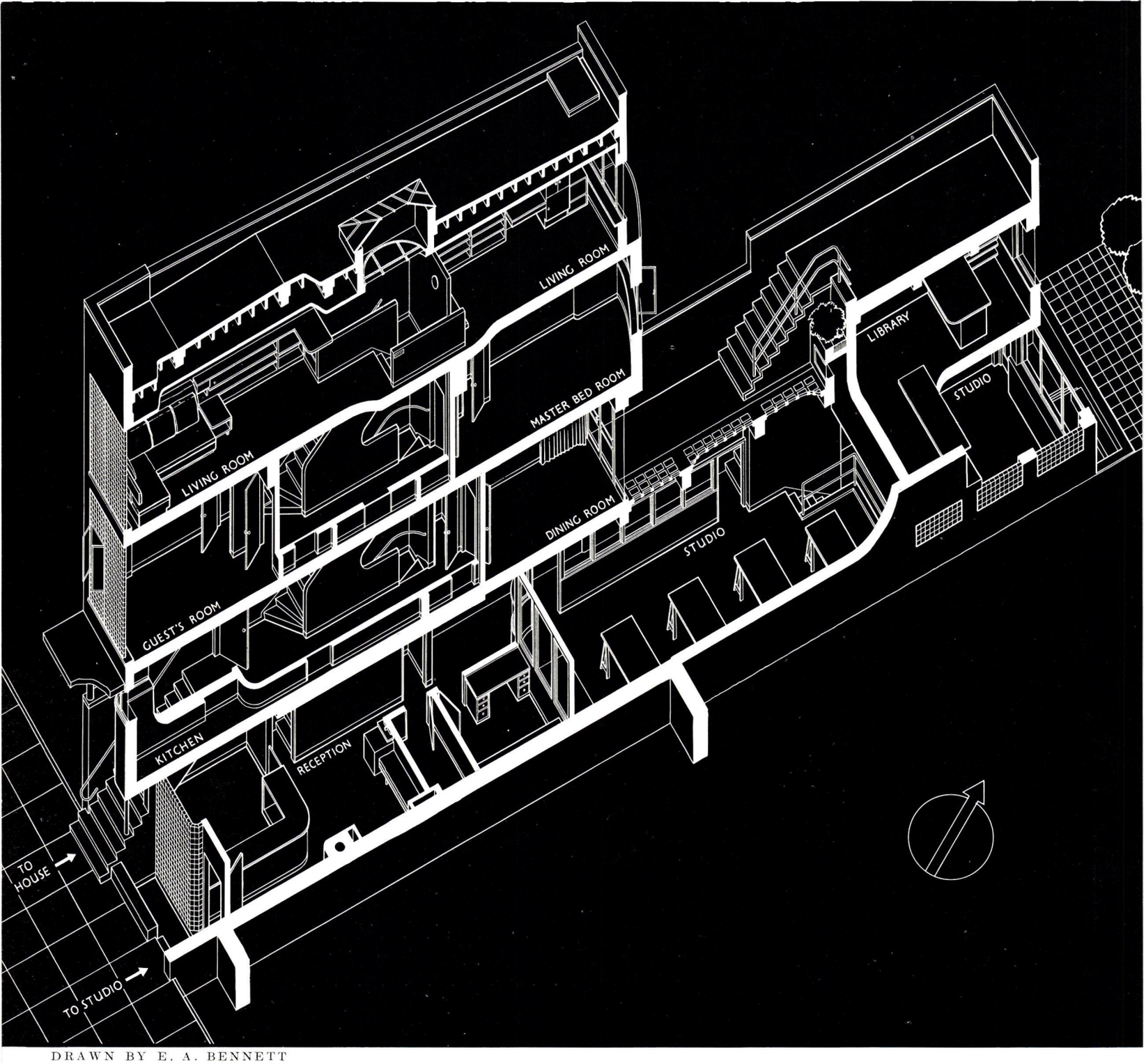
VOLUME LXI NUMBER SIX



DRAWN BY E. A. BENNETT
FOR THE ARCHITECTURAL FORUM

HOUSE OF WILLIAM LESCAZE, NEW YORK

HOWE AND LESCAZE, ARCHITECTS

ALBERT A. LUTZ CO., INC., BUILDERS

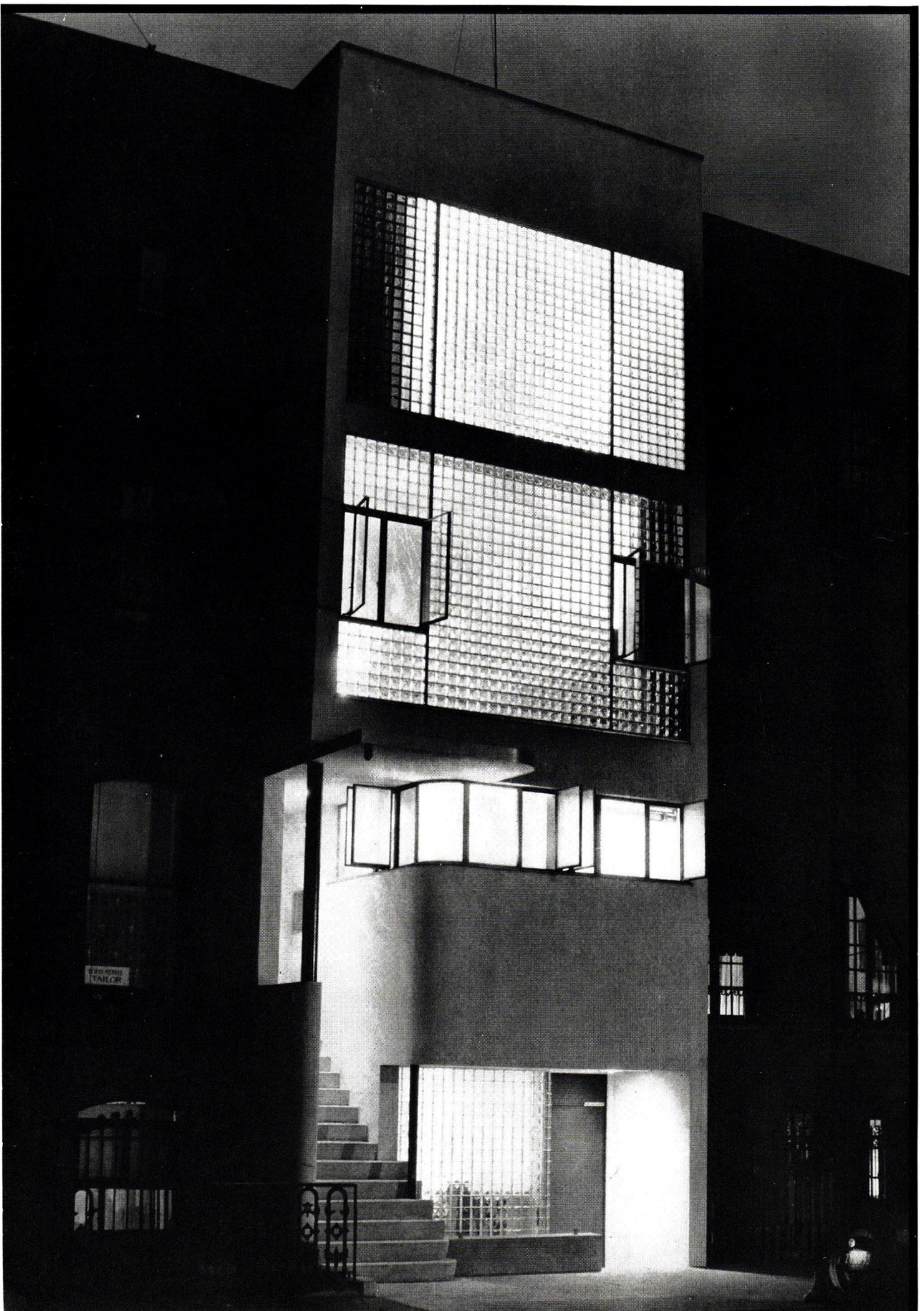
Nearly all U. S. experiments with the modern forms of housing have been with detached units in suburban or country surroundings. It is interesting therefore to see what can be done with the conventional New York City brownstone front to make it conform with contemporary ideals of living. When, in addition, the house is the residence of the architect himself and also contains his workshop, it offers a case study of the greatest importance. It requires no prophet to see the great possibilities for the reclamation of much deteriorated housing if the slogan about walking to work can be amended to read, "walk downstairs to work." The section above shows the arrangement by which life and work are integrated.

ALL PHOTOGRAPHS BY RALPH STEINER

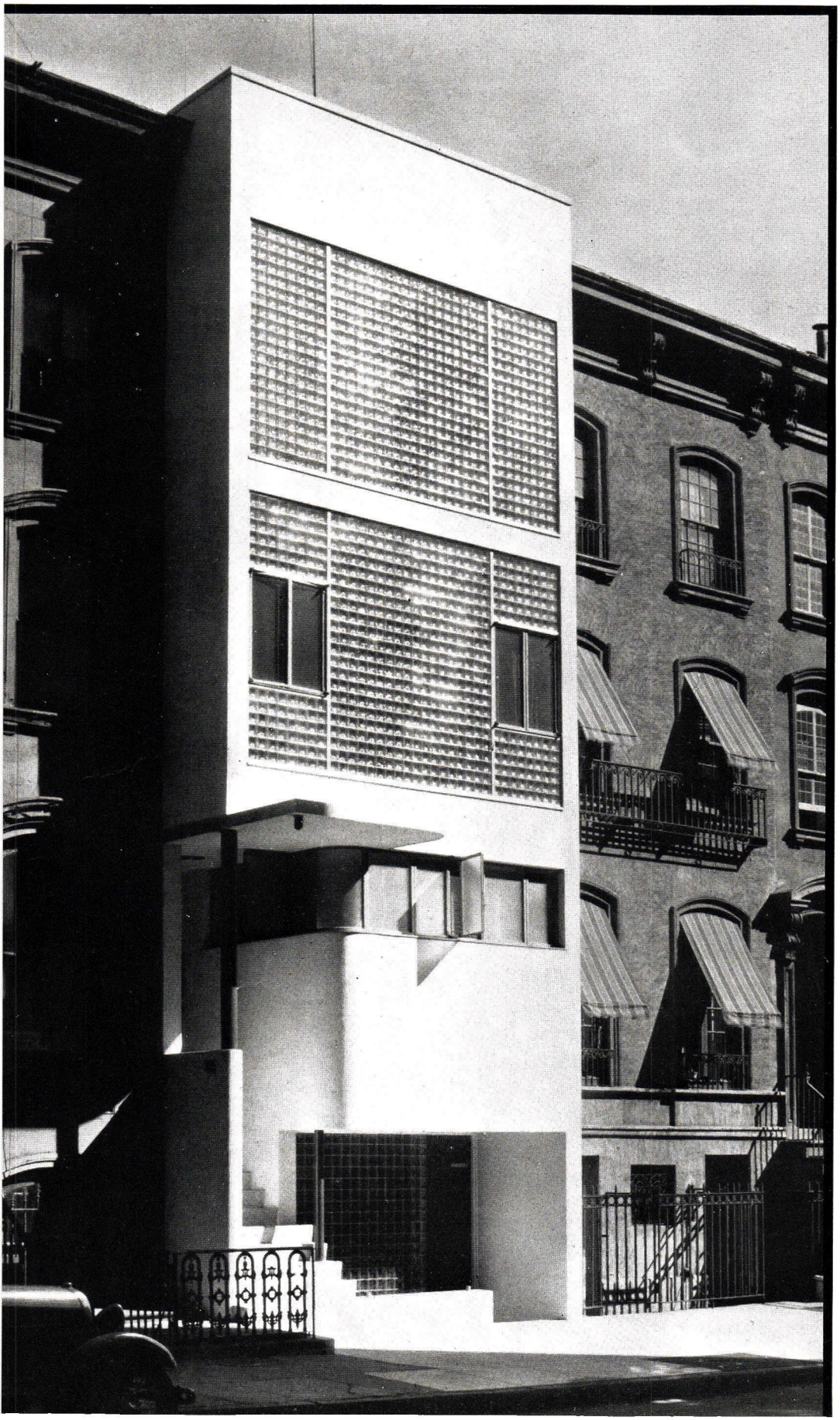
CITY HOUSE OF WILLIAM LESCAZE, NEW YORK

HOUSE OF WILLIAM LESCAZE, NEW YORK

In the houses on either side, privacy is secured by the drawing of curtains that shut off life within from life without. In Mr. Lescaze's house, perfect privacy is assured by modern methods of using glass. Instead of shutting off life from the rest of the world this glowing facade is at night as frankly expressive of the life within as it is by day.



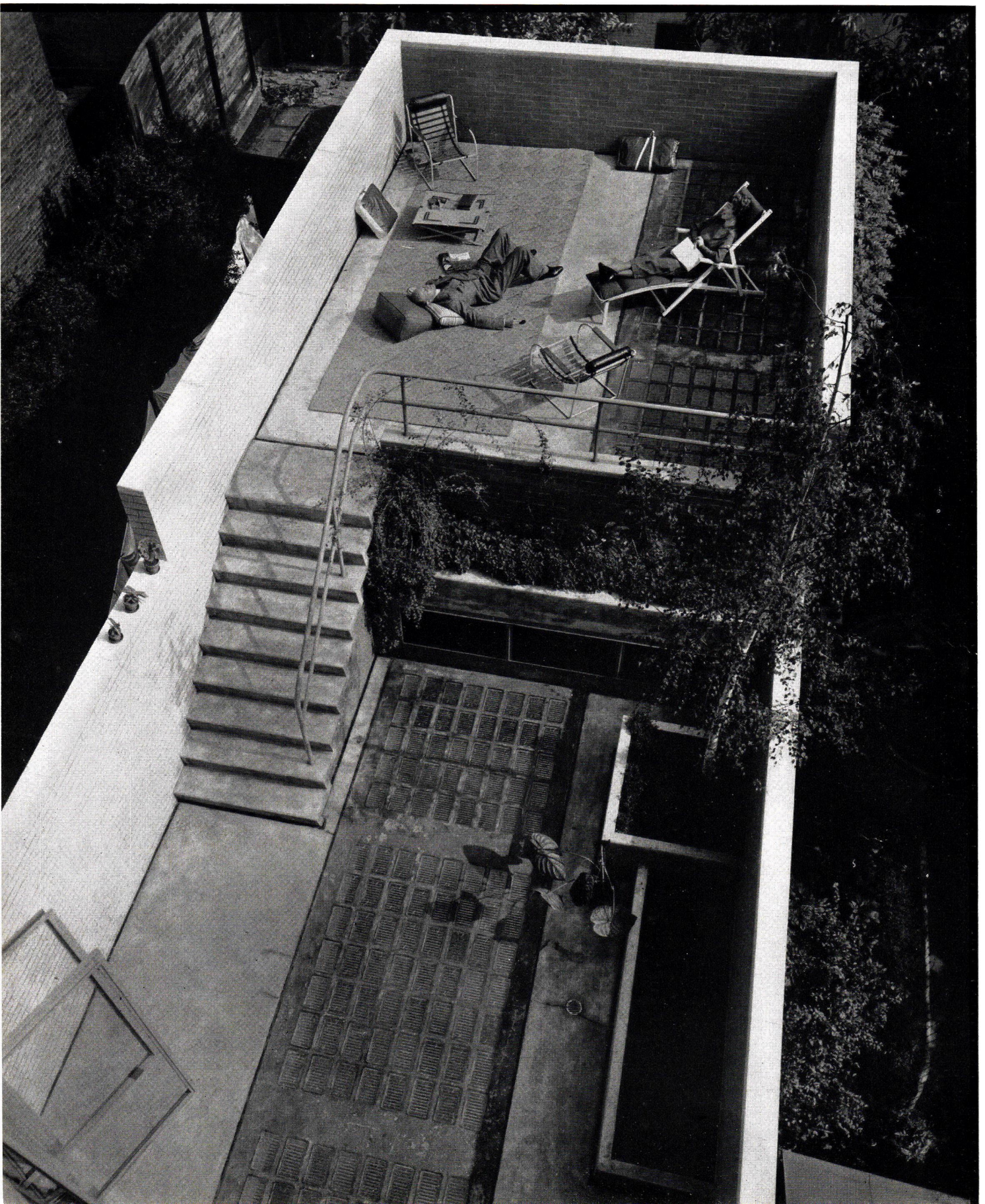
Legal, engineering, and human requirements nicely balanced and fulfilled. The glass wall of the air conditioned living room on the top floor admits sunlight and obscures an unattractive prospect. The guest room because it is used only occasionally has no air conditioning, hence windows.



BEFORE

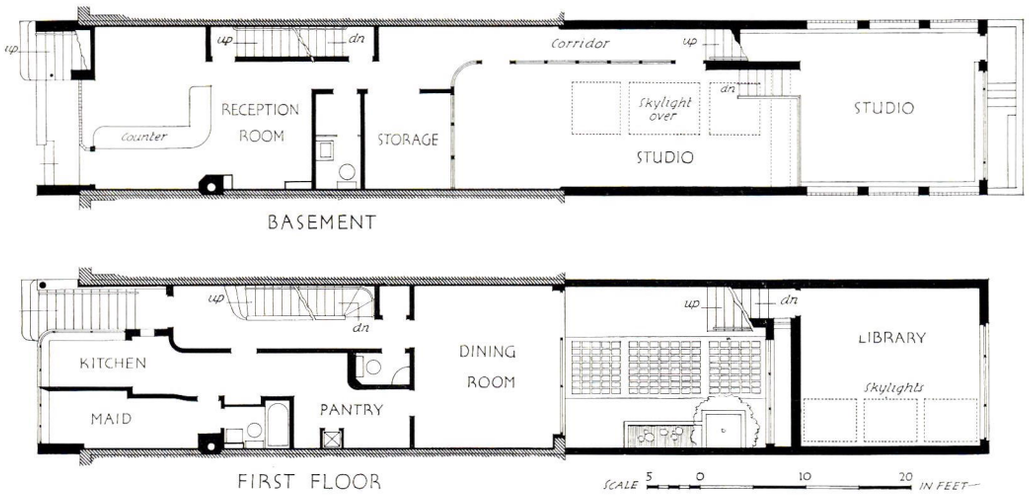
HOUSE OF WILLIAM LESCAZE, NEW YORK

Sun decks do not have to be confined to country or suburban houses. They may well be a part of urban life. The glass tiles give light to the rooms below superior to that gained from windows opening on insufficient courts or yards. Every accessory to complete living has been remembered, including the flower beds and the slender birch.

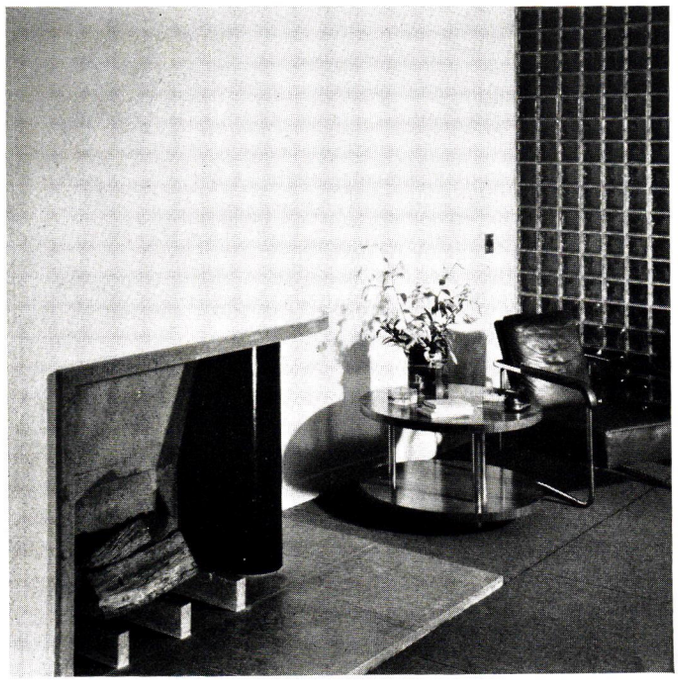


New York's peculiar orientation provides some sunlight on all four sides of a house. The owner's bedroom has been curved out to take full advantage of this fact and to afford a better view over Turtle Bay's celebrated gardens. The dining room has its own little garden view below. The living room on the top floor here has the outlook that it neither needs nor has in front.

HOUSE OF WILLIAM LESCAZE, NEW YORK



The plans above show the little that could not be included in the section. Below is the dining room.



At right is the fireplace and below the general view of the more social part of the living room. An interesting detail is the use of built-in refractory bricks in the fireplace instead of andirons. The difference between this and the working end of the living room is clearly marked in the arrangement and design of the furniture. The forms in the right foreground are the dwarf partitions around the stairs. All the lighting in this room is indirect. Part comes from the skylight in the center of the ceiling and part from a concealed unit behind the beam over the sofa at the left. In the ceiling in the background can be seen one of the two openings for supplying conditioned air.

HOUSE OF WILLIAM LESCAZE, NEW YORK

The reception room in the basement. This room more than any other in the house demonstrates the value of glass walls in modern life. It would be impossible to light this room properly by ordinary means and not expose the young lady to the gaze of every casual passerby. As the ceiling is quite low it is covered with sound absorbing tiles and plaster. The ingenious lighting fixtures provide fine illumination with relatively low current consumption. The entire ensemble strikes the note of realistic approach to life's problems by the architect.

WILLIAM LESCAZE

Blackstone Studios

MANY a seasoned speaker might envy the gift of phrase of William E. Lescaze. He is graphic, to the point, and he has certain ideas which he violently cherishes. Not that the ideas are exclusively his but Lescaze has a way of expressing them that makes good newspaper copy. Witness an interview in the New York *Herald-Tribune* (1931): "There is too much of what I refer to as 'monkey's tail' architecture. A building can be likened to a human body since the primary function of each is to house life. In the development of the latter there came a time when the tail became unnecessary . . . and so the tail vanished. . . . The same people who sneer at modern architecture today are probably descendants of the people who laughed at tail-less men in the prehistoric days." Or the 1934 New York *Times* story which gave a new journalistic twist to a completely normal proposition by suggesting that a home-builder be virtually psychoanalyzed before the architect draws a line or plots a square foot of his house.

These are the kind of statements publications like. Examples could be multiplied. The point is that Lescaze has a knack for expressing himself graphically, that therefore his name for the past few years has been familiar in newspapers as an ardent advocate of modernism. The public may not be able to name Lescaze buildings but alert newspaper readers recognize his name and the principles for which he stands. This is one of the early earmarks of a leader.

His brother architects know that William Lescaze was born in Geneva, Switzerland (1896), that he studied under Karl Moser at the Zurich Technische Hochschule where ornamentation is as taboo as plus fours at an opening night. By 1929 he had not yet won a big name in architecture. He had built an excellent but not conspicuous bus terminal in New York City, he had decorated the sophisticated Philadelphia apartment of Mr. and Mrs. Leopold Stokowski. But two things happened in 1929 which advanced Lescaze into importance. He formed his famed partnership with George Howe, and Leopold Stokowski gave a new nursery school to the Oak Lane Country Day School, near Philadelphia, and suggested that the trustees speak to Lescaze about it.

George Howe is a Harvard graduate who spent ten years in conservative partnership with Philadelphia's Walter Mellor and Arthur I. Meigs. But Howe was no conservative. During his student days he was influenced by the new Jugendstil in Germany, and he kept in touch with European developments after he went to Philadelphia. When he joined forces with Lescaze, it was no illogical progression for either architect. Their first joint job was Stokowski's school. Their others are known to all architects.

When Lescaze was a youngster in Geneva he had two passionate interests, both of which he has now practically given up. He adored playing the violin and he loved to paint. With a talented brother who died of appendicitis at 21, he formed part of an amateur stringed quartet which met and played regularly. After his brother's death Lescaze gave up the fiddle. Now he plays only rarely and at such times quickly stops because he gets irritated at his maladroitness due to lack of practice. The story of his painting is less somber. It is Lescaze's notion that he painted principally as an emotional release when he was either not doing the work he wanted or did not have enough such work to keep him busy. These days, for him, are happily past and he only occasionally picks up a brush. But at one time he used to take long trips in the Swiss mountains, paint furiously and with satisfaction sufficient to make him remove his mother's old darkened heirloom pictures from their heavy gold frames in the Lescaze home in Geneva and substitute his own. This always annoyed Mme. Lescaze. But the situation now has an amusing reversal. Enormously proud of her talented son, Mme. Lescaze now keeps his pictures in full view and Lescaze, no longer thinking them worthy, wishes to heaven she would hide them.

Without any of the faddism of French Riviera colonists, William Lescaze worships the sun. Architects have guessed the fact from his passionate pleas for bigger and bigger windows in the houses he designs. He likes riding, loves to play tennis (he plays even in New York City), is a good shot, but his favorite rural relaxation is to lie quietly in the sun. He abhors, however, the idea of living in the country.

He is indifferent to foods, particular about wines, likes *Pelleas et Mélisande*, *Tristan*, and *Don Giovanni*, reads Proust and Paul Valery. A good play will send him home determined to design stage sets which he begins but never finishes. He detests parlor games or cards, likes to give occasional parties but does not like the bother of arranging for them. That job, however, is gracefully assumed by Mrs. Lescaze, the former Mary C. Hughes of New York, who, although she writes, insists she has no creative ability, is at present engaged in learning to read her husband's architectural plans.

HOMESTEADING 1934

Decentralization in the making, but still minus an industry. River and rail transportation available. Workers, with self-built homes nearly completed and the first crops harvested, await the complement to their subsistence — wages.

The U. S. provides its industrial derelicts with cows, chickens, and a house on a patch of earth — dabbling in Communism, 100 per centers call it: it may become America's new way of life.

THE New Deal dumped overboard the Hoover policy toward unemployment. Not only did it admit the problem, but it went further and traced the trouble back to the days when the economic machinery had been operating without any audible squeaks. Regarded thus, it became at once apparent that in taking positive steps about setting things right it would be necessary to do something more than to restore 1929 conditions.

Even if Industry's wheels clattered along at the 1929 pace, there would still be some 3,000,000 people workless. Since complete stability of employment at a point high enough to absorb all those able to work appeared to require long range planning, it was decided to experiment with new industrial methods that would make the system more resilient to periodic lulls in production. Through this door entered subsistence homesteads.

Like most New Deal remedies subsistence homesteading has for its basic ingredient an economic principle. In this case, it is industrial decentralization: the location of factories adjacent to open land areas where the workers may supplement their wages by potatoes, onions, carrots of their own raising.

There was nothing particularly new or original about the idea except in application. It had been tried before in a sort of perverse way by industries looking for an isolated spot where they could sweat labor in privacy. And for the last ten years fully a dozen bills have been bobbing about Congress, all of them advocating some form of rural colonization coupled with industrial decentralization.

In Europe the idea is even older. In 1840, before Hitler and before the Kaisers, the King of the independent German State of Wurtemburg pondered the question of whether it would be better to have the workers go to the factories or the factories go to the workers. With kingly wisdom, he decided on the latter. His reasoning was that centralization was fine as long as production held up, but that when work slackened or stopped, there would be sad days in Wurtemburg. Thus a shotgun wedding between agriculture and industry took place long before Bismarck started dreaming about a German Empire.

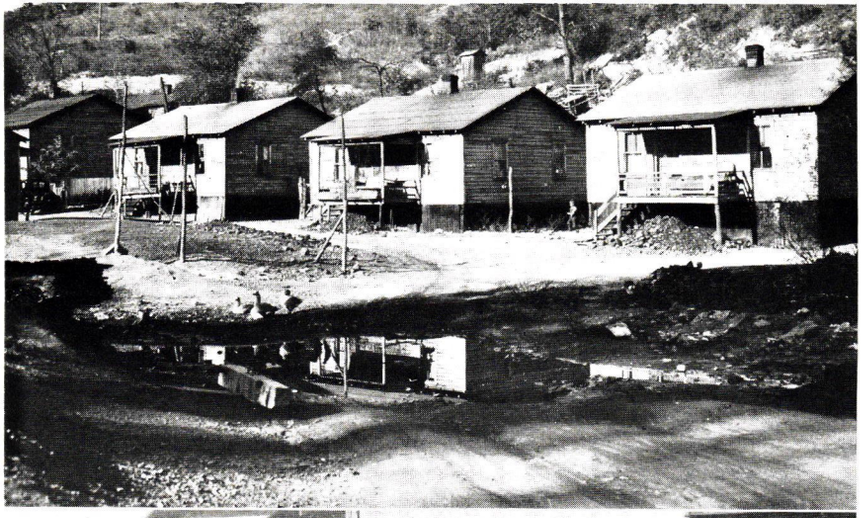
Subsistence homesteading continued to grow in Europe and took a particular spurt after the World War. The reason is easy to find. The more mature countries had discovered an annoying relationship between top heavy industrial populations and king-killing and the less violent forms of underdog protest.

In the U. S. no such consequences are anticipated, but the problems of over-concentrated industry and unemployment are no less severe. Thus provision was made in the National Recovery-Public Works Act for a revolving fund of $25,000,000 for subsistence homesteading.

Not so generous as it was in the latter part of the last century when 160-acre homesteads were parceled out to pioneer spirits for slightly more than a song, Congress decreed that all homesteads should eventually be paid for — self-liquidating is the term it used.

Officially, Washington gave Mr. Roosevelt credit for sponsoring the venture. Unofficially, Mrs. Roosevelt was given the bulk of the applause. She had long been interested in such matters, and her interest turned into zealous activity as soon as she became the No. 1 Lady.

A Subsistence Homesteads Division was created in the Interior Department under its forthright Secretary Harold L. Ickes. For the first ten months the Division was run by Dr. M. L. Wilson. But last June Charles E. Pynchon, who had been an Ickes man in PWA, stepped into the post when Dr. Wilson moved over to Agriculture. There were no positive indications that Dr. Wilson had rowed with Secretary Ickes over administrative policies. But with the ascendancy of Mr. Pynchon came abrupt changes. Instead of running each project through a local subsidiary corporation, the Homestead Division recaptured the stock of all local corporations and all responsibility was shifted to Washington. (See THE ARCHITECTURAL FORUM, August, 1934, page 142, for discussion of the Dayton, Ohio, Federal-local squabble.)



Shacks like these provoked the tears, then the action of Mrs. Roosevelt and other social-minded New Dealers. These are industry's driftwood, left behind when the coal veins yielded no more.

Economic orphans whose world is a dingy house set down in a dingy town. Their future, unaided by their Government, would be a school-less childhood, a workless manhood, a cheerless old age.

A mother's command to bathe would be futile, since there is no place but the muddy river. After a scanty supper in the kitchen-living-dining room, all are privileged to flop into the same bed for all the sleep a lone bed can offer five tired children.

Off, not to the county poorhouse, but to sunshine, fresh vegetables, wages, and a new house which some day they will own. On such a journey this and 641 other families started last year. If subsistence homesteading accomplishes its aims, thousands of other families will leave scenes like these for greener pastures.

Homesteads are not all of a kind. Thirty of the 40 now being built are of the basic industrial type — the 2- to 5-acre farm variety within a few miles of an existing industrial city. As typical as any is Project No. 23 on the banks of the Wichita River close to Wichita Falls. No. 23's inhabitants will be oil workers whose wages have been cut by Oil Administrator Ickes' curbed production program.

Besides his $1,600 house, each homesteader will be sold 4 acres of rich, irrigated land, a coopful of chickens, 2 pigs, 1 horse, 1 cow, tools, pressure cookers, canners and sealers. For everything the homesteader pays $2,500, no down payment, approximately $12 per month for 20 years.

Of its rural rehabilitation projects, the Division is proudest of Project No. 3, down in Pender County, North Carolina. Here it is proposed to point a new way of life for the hapless tenant farmers of the South whose lot is frequently as bad as that of Negro share-croppers. Pender County homesteaders will not only feed themselves with what they raise, but will market their crops collectively. No. 3, with its 4,825 acres and its 300 homesteads is bigger than most units, will have community buildings and all the other accessories of a model community. Built under the force account system, houses are already completed, and the first crops have been harvested at a profit.

Unique among all the projects is the cooperative industrial homestead now approaching the moving-in stage at Hightstown, N. J. When completed, it will be as close an approximation of a small soviet as anything in the U. S. Its occupants will be skilled needleworkers, culled from New York's lower East Side, all Jewish, and all with mild or intense leanings toward Communism, Socialism, etc. On the Ickes' list, it is No. 8. Its 200 needleworking families will occupy 1-acre homes, will run collectively a small clothing factory, dairy, truck farm, and general store. Besides the $500,000 the U. S. is putting into the homesteads the homesteaders themselves are contributing $100,000.

The kind of project likely to become more important in future plans of the Homestead Division is the "stranded group" type, which as its name implies is designed to house workers previously engaged in industries which no longer have need of them. So far the Division has concentrated on coal miners. Six projects, the most advanced of which is in Westmoreland County, Pa., are under construction. One hundred families are being transported to Westmoreland from Pennsylvania mining towns where the mines have been exhausted. Eventually, the Division hopes to bring private industries to the homestead communities to give the ex-miners some form of employment other than agricultural pursuits.

Finally, there is the "experimental" homestead, of which there is only one, and of which there are likely to be no more. Located at Reedsville, West Va., it is Mrs. Roosevelt's personal hobby. She watched the workers dig foundations, spent two or three days and nights with the homesteaders, and tried in vain to persuade the usually agreeable Congress to build a post office equipment plant there. Actually, Reedsville is a stranded group type of community. It bears the name experimental simply because it was the first of all homesteads — and because it made so many mistakes that some explanation had to be made. (See THE ARCHITECTURAL FORUM, May, 1934, page 398.)

General Manager Pynchon is now thinking about adding two new types. One would take care of the industrially handicapped — slightly maimed workers who cannot hold their own under the present competitive system. The other is aimed at the industrially superannuated — those between the ages of forty and fifty who can find no work despite the fact that they have many years of work left in them.

Besides the 40 projects already announced, General Manager Pynchon has seventeen others taken care of in his budget. Like Colonel Horatio B. Hackett of the PWA Housing Division, he lets no word creep out about their location because of the desirability of buying up the land in secrecy. So far he has been able to do his buying at an average price of about $50 an acre. The top figure was $455.43 each for 140 acres in the suburbs of Los Angeles, where the potential returns to homesteaders will more than offset the $3,000 that each will have to pay for his house, lot and orchards. Lowest price paid was $3.04 an acre in Richton, Miss. In addition to the fact that nearly all Mississippi land is cheap, the Division assembled its future homestead area from cut over land.

In size, individual homesteads vary from the acre or two of the worker's garden type to from 20 to 30 acres in rural projects. The average is about five acres. Houses range from three to six rooms and costs from $1,200 to a maximum of $3,000.

The purchase price includes in most cases essential farming and gardening equipment, seed and fertilizer, a small flock of chickens, a pig or two, and possibly a cow, a horse or a mule.

Naturally, projects do not start themselves, nor are they started by the Division's specialists by arbitrarily sticking approval pins into maps of the nation. All were local inspirations. No sooner had the broad outline of the homestead policy been released than politicians, realtors, architects and industrialists put forward suggestions for projects in their own bailiwicks. Altogether, requests have been made which if granted would require an expenditure of $5,000,000,000. Out of them all, 601 (costing $500,000,000) have been considered more or less seriously.

Final approval rested primarily on the likelihood of the project's paying out, coupled with its proximity to what Labor Secretary Perkins calls an "unemployment pool."

Although, as in all things in the Interior Department, the "yes" or "no" was eventually spoken by Secretary Ickes, decisions rested largely with the Planning Division, presided over by Sociologist Clarence E. Pickett. Because projects are submitted in varying stages of development, procedure after approval also varies. The invariable first step, however, is the naming of a project manager to whom falls the full responsibility for coordinating site acquisition, regional and architectural planning, construction, selection of homesteaders.

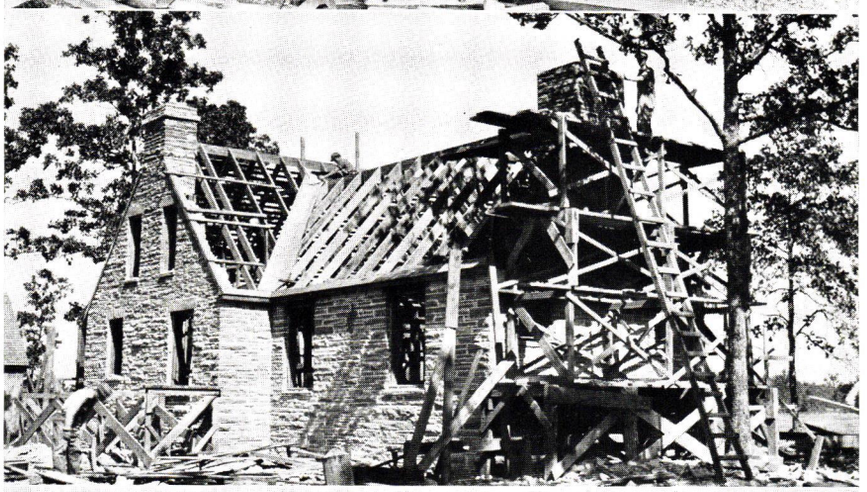
Whenever possible, a local architect is chosen to design the entire project, and supervise construction. When no local man is available, the work is done in Washington, and supervision is maintained by an architect near enough to make periodic visits to the area, or by a man sent from Washington. No fat fees are paid to homestead architects.

When the first homesteads were laid out, acreage was pieced off to give each settler his individual acres. But now it has been found more economical to allot less land per person, and to reserve the bulk for cooperative farming — with equipment owned collectively, and profits split proportionately. 100 per cent Americans may call it Communism, but the Homestead Division is more interested in the economical operation of its units than it is in political philosophies.

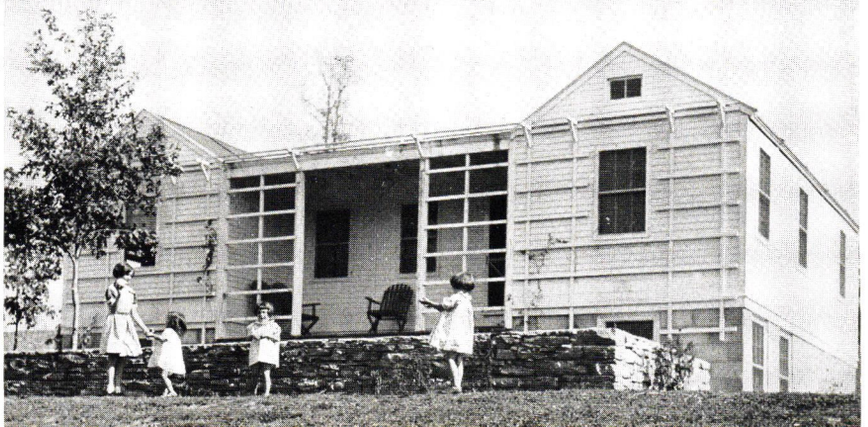
Homestead architects have shied away from drastic

Until their house is completed, a temporary shack harbors the homestead family. In all but one respect, the shack is little better than the one they left behind. The one exception — hope.

Sometimes with skilled labor hired at prevailing local rates, and sometimes with only the labor of the homesteaders working on force account, houses rise on the new land. At Crossville, Tenn., where still live some of the few craftsmen able to produce hand-hewn timber, the old tradition has been followed.



Local materials, more economical and more familiarly used by the workmen, are employed in construction. Stone quarries, saw mills, cinder block plants will in many cases become permanent fixtures of the homestead areas, and will provide wage-labor if outside industries do not choose to establish local plants.



The completed house, designed by an architect, and constructed under his supervision, forms a happy background for play, for living. Kept to a minimum in cost, suitable for enlargement in the future, homestead houses average in price well under similar houses in urban areas.

reform in construction and design. The theory has been to go as far as possible toward providing for the comfort and convenience of the settlers and toward increasing the standards of living while keeping the costs at a minimum. But cost comes first. If the accepted amenities cannot creep in under the $3,000 limit, they are left out. The Division is even hopeful that out of this approach may grow a new solution of low cost home building.

Specifically, the standards of the Division require: (1) simplicity in design and the elimination of unnecessary ornamentation; (2) suitability to local climatic conditions and traditions; (3) planning to encourage the usability of all rooms and space; (4) provision of living rooms with light and ventilation on at least two sides, and with adequate space for family use; (5) arrangement for easy access between kitchen and living room in order that at least one meal a day may be served in the living room (due to cost few separate dining rooms can be provided); (6) provision of kitchens with cross ventilation and essential built-in equipment; (7) bedrooms with cross-ventilation wherever possible, and adequate bedroom space for each member of the family — at least one bedroom in each house should be large enough for twin beds.

Because sleeping five and six in one room, three and four in one bed was commonplace in the past lives of homestead families, enough bedrooms and beds is a prime rule in homestead planning. In general the abolition of cellars is advocated as an economy. But many a homesteader, brought up with old country traditions, regards his cellar as an essential for wine making. If cost rules out plumbing fixtures at the outset, connections are roughed in for later installation of fixtures.

Though prefabrication has not been extensively used, the Federal architects are open-minded. Steel houses, it is felt, still cost too much. Tests are now being made with precast concrete blocks. Half a dozen other systems have been picked apart, but none in their opinion hits the mark. In fact one prefabricated lumber system fell so wide of the mark that an architect had to be hired to re-design the houses after they had been assembled on the job.

Most of the work is let to general contractors on competitive bids. Practically all of the industrial type projects are built in this way. But in the comparatively small number of stranded group and rural projects the relief element looms larger. Costs must be cut to the bone since the settlers have no funds to start with, and none immediately in sight. The policy, therefore, is to use homestead labor as much as possible on force account, the workers living in temporary structures until their own houses are completed. In return for his work, the homesteader receives cash for two days a week and the balance of time is credited against the cost of his house and plot of ground.

Where homestead labor is used and lumber plentiful, central planing and saw mills are set up, thereby cutting costs and giving more work relief. Moreover it helps to solve the furniture problem.

When Secretary Ickes first got his $25,000,000, social workers sounded the warning that there would be grief aplenty unless the applicants were hand-picked. With 13,934 applicants for 2,176 homesteads, there was ample opportunity to do so, and judging by the attention the sifting process received the warning has apparently been heeded.

The hand-pickers employed the familiar social service tactics of prying loose the information without letting the applicant family see the crowbar. During a roundabout discussion of the weather, the crops, and the best way of curing a cold, the investigator managed to elicit the following information:

Nationality of parents, family as an harmonious unit, personality-temperament, marital situation—dominant member, parents' ambition for the children, stability and resourcefulness, moral habits and general conduct, tenure period at different addresses, present living conditions.

The investigator then turned to health, intelligence, personal appearance, financial status, attitude toward subsistence homesteading, and industrial qualifications and skill. Under the heading of attitudes, he sought to ascertain such fine points as whether the applicant is "intelligently enthusiastic" or "naïvely enthusiastic." Throughout the informal interview he was ever on the alert for any remarks members of the family might drop that would indicate their character and habits. In case the first investigator overlooked anything, a second one was sent around and the two reports compared.

Later on, the references given by the applicant are checked and his credit rating is investigated. The application blanks are then sorted into three groups according to their degree of excellence.

Particular attention is given to farm experience. While not absolutely essential, a farm background is held to be highly desirable. Attention is also given to the relative needs of the applicants. There are two rules from which there are no departures. The homesteader must be an American citizen. He must be married or have dependents. Single persons simply cannot be homesteaders, at least not with the Government's aid. The Division wants homesteaders aged between 23 and 50 and only under exceptional circumstances are older or younger applicants accepted.

An analysis of a typical project of the predominant industrial type disclosed that the average family had two and one-half children; the income of the average family was $1,000 a year (cash income); 40 different professions and trades were represented among the settlers.

The Government believes that a family of five can make ends meet on $1,000 cash income yearly. The following is an average of several families now living on an industrial homestead. Food raised by the the family is estimated to amount to between $400 and $450 per year.

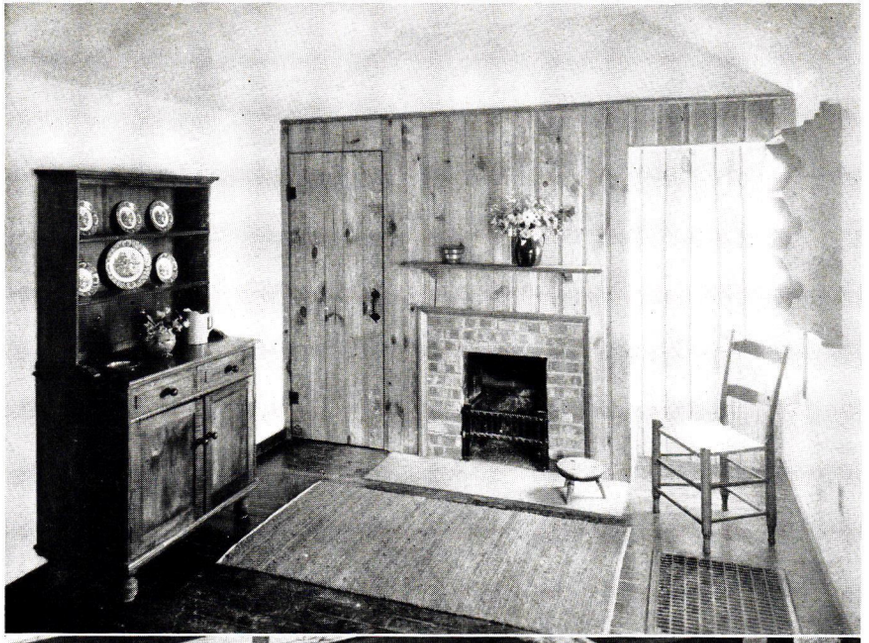
Clothing	$150.00	15%
House	240.00	24%
Cash food in addition to homesteads subsistence	155.00	15½%
House operation	80.00	8%
Agricultural operation	75.00	7½%
Medical care, etc.	70.00	7%
Education, recreation, community welfare, etc.	90.00	9%
Furnishings and equipment	50.00	5%
Transportation, automobile and miscellaneous personal	90.00	9%
Total	$1,000.00	100%

Because one of the avowed purposes of the Federal venture into subsistence homesteading is:

> "To act as experimenter and demonstrator, so that States, municipalities, and private enterprise may be encouraged to undertake subsistence homestead programs of their own, and in their undertakings be able to follow a path thoroughly tested and proven . . ."

the giant question mark is: Will the projects really be self-liquidating?

Officials feel confident about the industrial type projects



Without as within, the typical homestead house reflects a happy contrast with what had gone before. At Reedsville, West Virginia, all the furniture was made in a cooperative craftsmen's shop. When all the homesteads have been furnished, production will continue for outside consumption.

In Tennessee it is molasses, in Texas it may be fruit canning. Whatever the cooperative opportunity homesteaders will pursue it. Here at Crossville, the homesteaders this year tinned 600 gallons of molasses, and sold it all. Initial equipment was included in the all-over cost of the homestead.

A coopful of chickens in many cases is part of the Government's initial stake. All to be paid back out of egg-earnings, the hens contribute a proper share to balancing the homestead budget. In some instances, one family has all the homestead chickens, another all the homestead cows; but in most, a few chickens, a pig, a cow are part of each family's dowry.

Peas, beets, beans, and barley grow — or whatever the climate calls for. Cooperative farming is frequently the base of homestead living. Horses, ploughs are U. S. supplied.

which constitute the large majority and are most likely to attract private enterprise. They involve little decentralization, however, since they are located adjacent to existing industries. The workers will travel a little farther to their factories and they will have better homes. Otherwise things will go on much the same.

The eight stranded groups, rural and experimental projects are a different story. The hope has been that industrial plants could be enticed into these locations. The hope still remains but so far nothing has come of it. Moreover when the Government took the bit in its own mouth and proposed to construct a Post Office equipment plant at Reedsville, Congress squelched the idea at the request of manufacturers who felt that their business was threatened. Using the small amount of funds left to the Homestead Division for anything else than legitimate homestead work would not be permitted. Thus loans could not be made for building a plant or factory.

But the promise of a way out has been developed by a natural process. On the site of each of these projects the Government has built planing mills, saw mills and other small plants for fabricating materials. The Government does not have to tear plants down and it is not accountable if the settlers elect to continue their operations. The homesteaders are aware of this situation. They are beginning to think in terms of commercial operations and beginning to turn out house furnishings. It has been said in this connection that living room furniture that would cost anywhere from $200 on up can be produced at the homesteads for as little as $30.

While the work of the Subsistence Homestead Division has a certain effect on the relief situation, it is not primarily intended to combat immediate unemployment. In most cases the homesteaders must have a cash income so that the project offers no haven to the destitute who are entirely dependent on public aid. What are in effect subsistence homesteads are being undertaken by Relief Administrator Hopkins but these are on a slightly lower plane than Pynchon's projects.

Actually, there is no conflict between the two types or between the two agencies pushing them. The long and the short of it is that the Relief Administration can make grants and the Subsistence Homestead Division cannot. The relief money is made available to the States as grants. After the grants are made the funds may be used by the State relief administrations entirely unhampered by the numerous restrictions and regulations that surround Federal money.

As a matter of fact, Mr. Hopkins believes his projects will pay out. So far they all come under the head of rural colonization. The first such project completed by the FERA is at Woodlake, Tex. The community now has 90 resident families many of which were taken off the relief rolls in Houston, 100 miles distant. A total of 42,000 cans of tomatoes has been put up and most of them sold commercially. A second project is now nearing completion at Red House, West Va., in the vicinity of Charleston. Already 33 houses have been built. The cost of these houses is being kept well under $2,000. In a third project in Mississippi County, Ark., some of the smaller houses have been built for $900, including plumbing, a barn and a well. Altogether, Mr. Hopkins has 50 projects in mind and twelve already planned. It goes without saying that relief labor is used exclusively.

All indications are that there will be an expansion of subsistence homesteading in the Public Works program to be submitted to Congress. As matters now stand, the probability is that there will be more emphasis on the relief and special types of projects. Only in these is there any real decentralization.

One type of project, for instance, which both the Relief Administration and the Subsistence Homestead Division have in mind involved bringing the New York City and Chicago Negroes back to the South. The theory is that in many Northern cities, the Negroes constitute industrially exploited groups — the lowest paid and the first to be dismissed. In taking them away, fields of employment will be left to higher priced labor when the factories and plants are going full blast again. Plans are being considered that involve the building of plants with Government money. One thing is certain — the next Congress will be more inclined to approve the supplemental plant idea.

So far as encouraging private enterprise, the United States has not yet proved its point. Dozens of industrialists, realtors and building men have studied the operation of the Homestead Division at first hand. But they are awaiting further results before committing themselves.

THE AVERAGE SUBSISTENCE HOMESTEAD PROJECT

. . . costs $377,386.83. Excepting in one instance otherwise annotated, the following cost figures are averages of itemized expenditures on the eight "industrial" projects under construction June 30. The status of these projects has been taken into account, where necessary, in estimating complete costs. The so-called "rural" projects are left out of consideration here, because of their low land costs. Average number of homesteads in the eight projects dealt with is 153; the average number of acres, 817.86; the complete cost per homestead, $2,466.58.

Land cost and acquisition expense	$47,097.05
Clearing and improving [1]	42,000.00
Temporary structures	1,602.89
Office equipment	1,106.32
Automobiles, machinery and equipment	5,320.43
Cost of materials and labor on houses [2]	194,403.33
Stone quarry and sawmill operations [1]	8,000.00
General overhead expenses during construction [3]	42,856.81
Homesteaders' supplies [1]	10,000.00
Farming and gardening [1]	15,000.00
Community buildings [1]	10,000.00
Total project cost	$377,386.83

[1] Estimated.

[2] Based on figures from the Houston, Tex., McComb, Miss., and Jasper-Putnam Co., Ga., projects.

[3] Figured at double what it stood June 30. Few projects are half done, but much of this item was taken to be initial cost.

Steuben Glass Trident Punch Bowl by Corning Glass Company. Designed by Sidney B. Waugh.

Eugene Hutchinson

CONTEMPORARY QUINQUENNIAL

The Metropolitan Museum's show demonstrates the tremendous stride U. S. designers have made in a few years and foreshadows a still more brilliant future.

In 1925 when Secretary of Commerce Herbert Hoover was asked by the French Government to send an exhibit of modern design to the exposition to be held in Paris, he replied that there was no modern design in the United States. As a result of that immortal and, at the time, correct statement, New York City's Metropolitan Museum of Art determined to prove that there were designers in this country who could face all comers if given a chance. In order to prove the point, it held its now celebrated 1929 exhibition of design in the industrial arts.

At this show designs were presented for rooms conceived by such men as the late Raymond Hood, the late Joseph Urban, Ely Jacques Kahn, Ralph Thomas Walker, Eliel Saarinen, John Wellborn Root, Jr.

The exhibition was received with the éclat that it richly merited and a movement was begun that was destined to be extremely fruitful. It also opened on the eve of the Crash. November 5, this year, five years later, opens another showing of the work of these same designers, now reenforced by a host of others whom they have inspired. Comparisons between this show and that of 1929 are extremely revealing.

In 1929 the goose hung high. There was money to burn. We had, according to our great thinkers, reversed for all time the previous history of economics and had discovered that there could be no end to prosperity. All the schemes therefore were based on that glittering assumption. Everyone was going to have even more money next year than last. Rooms that would not have disgraced the home of the most ostentatious of millionaires were offered as the proper thing for the humblest citizen. The keynote was gorgeousness.

In 1934 the story is different. We have been through five years of depression and the whole system is now geared to a rigid economy. Misguided observers might suppose that the design of the architect and his allied industrial designer would suffer thereby. The contrary is the case. The dictates of economy required that the designer get down to some sort of reality and offer things that are within the reach of the most limited budget.

As a result, the visitor to the Metropolitan Museum today will see things that he can not only pay for but can take to his heart and learn to love. Gone is the self-consciously clever design of five years ago, supported by an economic scheme only a little more false than its accompanying social concept.

Perhaps the most poignant contrast is afforded by the two rooms designed five years apart by Chicago's famous John W. Root, Jr. These are illustrated on page 411. The first design was denominated, for some inscrutable reason, the bedroom of a lady. Regardless of any misgivings as to the gentility of any lady who would find herself in such a surrounding, the design was unmistakably predicated on a *nouveau riche* concept of society. Today, Mr. Root has designed a brilliant room for Montgomery Ward & Co. which their suave salesmen assure us will be listed in the next edition of their celebrated catalogue at $500 inclusive of everything except the hangings and pictures. As the pictures are neither appropriate nor good in themselves this seems a bargain, even though one hankers a bit for the hangings.

Where, on a social and economic basis, these two rooms emphasize the changes that have taken place, two rooms by Eliel Saarinen emphasize the changes in conceptions of appropriate design. In 1929 the great Finnish architect's scheme was still in the Jugendstil, or North German Art Nouveau. Today it is perhaps the freshest and smartest of all. More than any other design in the show it calls attention to the fact that the new office of industrial designer can claim no superiority over the well-trained architect. This is emphasized by the tea urn produced by The International Silver Company from Saarinen's design.

The general plan of the show called for three separate galleries each under the general supervision of an architect. In each of these are ensembles directed by either an architect or an industrial designer. In each ensemble are many objects produced, either from stock or especially for this exhibition, by various concerns. The total number of these manufacturers rises to the amazing figure of 237.

The first gallery is under the ægis of suave Ely Jacques Kahn. Here one finds on the left a "Woman's Dressing Room," by Irvin L. Scott, inheritor of some portion of Joseph Urban's mantle. One of the most consistent of all the exhibits, it is a little forbidding in its white chastity. One cannot help feeling that no woman would really care to be mistress of quite so impersonal a room as this. The combination table lamp and clock is particularly fine. Across the gallery is what is called a general group. This is a skillfully arranged collection of heterogeneous objects by ten or fifteen people. Nothing better illustrates the strength and the weakness of our modern designers. Margaret Kay has, for example, a very charming table in chromium plated metal and sharkskin, and one of the most awful centerpieces that can be imagined.

Opposite Scott's aseptic boudoir is a display case of objects in metal, clay and glass, arranged by Walter von Nessen. Everything here is good; nothing is remarkable except the arrangement.

Next is a group of textiles arranged by Kahn which suffers from the fact that no one has yet found the right way to show textiles. Beyond is a dining room by Donald Deskey. This is amusing if not so good as some other things of Deskey's designed when his budget was even more limited. The center ornament of the table is particularly titillating in spite of the firm conviction that it was originally done as a picture by someone else.

From this gallery one proceeds through combination grilles and lighting fixtures by Walter Kantack to the center gallery. For the general staff work here Arthur Loomis Harmon is credited. The first exhibit is a bedroom by Ralph Thomas Walker. Designed to be reproducible for $250 this is a vast improvement over the study for a mythical, and somewhat doubtful, man done five years ago. Particularly interesting is Johns-Manville's Flexboard on the walls. The cool mottled gray of these surfaces and the obvious ease of cleaning are very attractive.

Next to this comes the room by Root already mentioned. The best evidence of the complete success of this is the fact that there is nothing that one would either damn or praise above the rest. Beyond this again is Saarinen's room for a lady. This time the lady is indisputably a lady and the room a suitable background of white and black. Here again it is difficult to pick out a single item from a very consistent whole.

Directly across the central gallery is a dining room by Eugene Schoen. Again consistent, there are nevertheless one or two things that are either conspicuously good or bad. The china just misses being excellent. So does the lighting fixture over the table. The wall material, a black textile resembling very thin leather, suffers from an indifferent installation. Best is the rounded bay window with Venetian blinds.

Next to this comes a living room by William Lescaze. The general pleasant effect of this is somewhat mitigated by the third appearance of the same mantelpiece since the Philadelphia exhibition of 1931. It should be noted, however, that Mr. Lescaze evidently considers this the ultimate fireplace since he has included it in his own house (see page 397 of this issue). In spite of this perhaps trifling defect, this is the best of the rooms without strict budgetary limitation.

Finally, in this group there is a living porch by Archibald M. Brown. Here again the window treatment, as in Mr. Schoen's room, is the outstanding element. Even the artificial hedge has been given a by-line (Chelsea Realistic Products Co.) as has a nice water color sketch by one Edrem.

Leaving the central gallery through doorways by V. F. von Lossberg (Edward F. Caldwell & Co. Inc.) the visitor arrives in the Gallery of the genial Paul Philippe Cret. At the left is a dining room by Walter Dorwin Teague. Admirably held together and restrained, it is marred by very uninspired table glass, and by a certain febrile air as of one over anxious to please. What the tableware lacks is more than made up for by the superb technical production of the glass rods in the grille in the background.

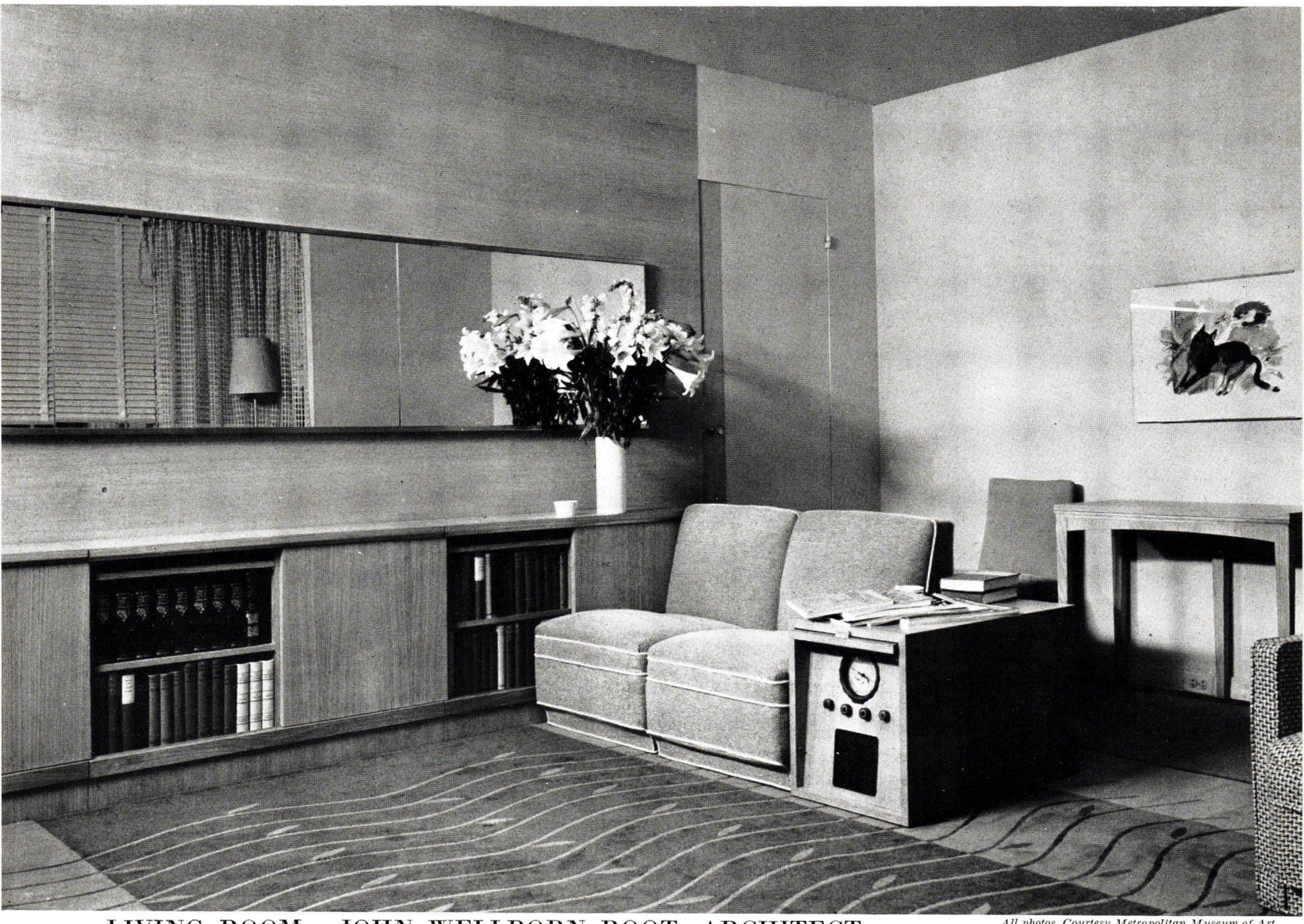
Opposite is a music room corner by Gilbert Rohde. The most conspicuous object is of course the piano from Steinway, with metal legs by Leo J. Uris. The piano case is fine. So are the legs. The combination is terrible — as it will continue to be until someone redesigns the piano in terms of twentieth century living and modern music.

Separated from this by a decorative group by Gustav Jensen is a designer's office and studio by no less a team than Lee Simonson and Raymond Loewy. The sidelighted cork board against a blue and yellow color scheme is a fine background for designer's sketches.

Opposite is a general group, mounted by Cret. Here is a very fine set of silverware designed by Victor Proetz. Also metalware in aluminum and copper by Russel Wright that is not up to his usual standard. In the same category is his floor lamp which is reminiscent of some accessory of a moving picture operating room. Here also is a cabinet, designed by Jules Bouy. It is perfectly awful.

The structural and electrical work, and the general setting of the exhibition were done by the Metropolitan Museum's own workshops under the direction of Richard F. Bach. It is safe to say that every designer's work has been given its best possible presentation under his painstaking supervision. His enthusiasm for his task is evident throughout the entire set of three galleries.

It is unfortunate that space forbids detailed remarks on the work of each one of the 237 exhibitors. The photographs will show most of these and the list of names accompanying will do some measure of justice to their cooperation. If some objects have been signalized here as not quite so successful as others, it is only fair to say that their failure is conspicuous chiefly because they have aspired to so much. The progress of five years has been enormous. If the progress in the next five is in proportion, the exhibition of 1939 will be something from which to date history.



LIVING ROOM JOHN WELLBORN ROOT, ARCHITECT

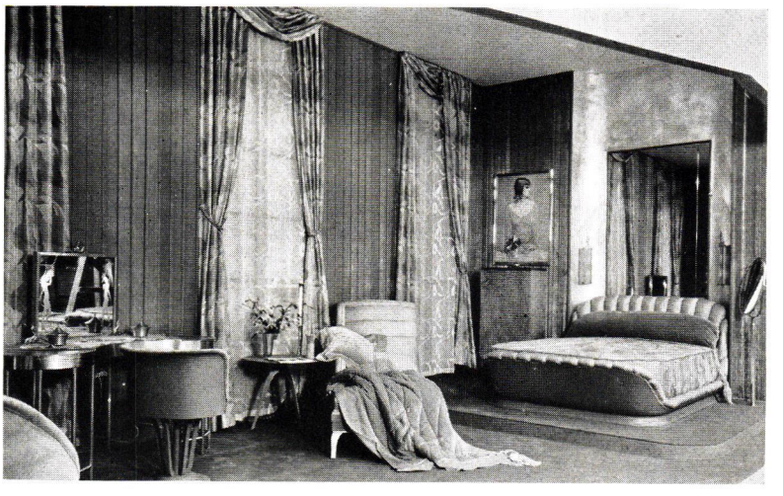
All photos, Courtesy Metropolitan Museum of Art

General setting and individual objects designed by John Wellborn Root for Montgomery Ward & Company and produced by the following firms and individuals:

FURNITURE, Kroehler Manufacturing Co. COVERINGS, Ranlo Manufacturing Company and Witcombe, McGeachin & Company. RADIO, Wells-Gardner Company. DRAPERIES, Witcombe, McGeachin & Company. RUGS, Bigelow-Sanford Company. LAMPS, Metallic Arts Corporation. LAMP BASES, VASES AND ASH TRAYS, The Haeger Potteries, Inc. LAMP SHADES, The Red Wing Pottery. MIRRORS AND PICTURE FRAMES, Kawneer Company. GLASS, Pittsburgh Plate Glass Company. WATER COLORS, Edgar Miller. HARDWARE, Reading Hardware Corporation. METAL SASH, Kawneer Company and Pittsburgh Plate Glass Company. BLINDS, Columbia Mills. SPECIAL CONSTRUCTION AND DOOR, Albert A. Lutz Company. WALLS, Sheetrock by U. S. Gypsum Company. SANITAS, Standard Textile Products Company. SUNFLEX PAINT, Craftex Company, applied by George Miller. FLEXWOOD, U. S. Plywood Co. LIGHTING, Frink Corporation. BOOKS, Various publishers.

LIVING ROOM JOHN WELLBORN ROOT, ARCHITECT

JOHN WELLBORN ROOT — 1929



ROOM FOR A LADY ELIEL SAARINEN, ARCHITECT

General setting and individual objects designed by Eliel Saarinen unless otherwise noted, and produced by the following firms and individuals:

FURNITURE, Robert W. Irwin Company. REFLECTING DEVICE, Renaissance Metal Works. WALL HANGING, Cranbrook Looms. ALL OTHER TEXTILES, Cranbrook Looms. GOWNS, Designed and executed by Pipsan Saarinen Swanson. TEA URN AND OTHER SILVER, International Silver Company. WALLS, Sheetrock Sanitas, and Sunflex Paint as in other rooms. LIGHTING, Frink Corporation. SPECIAL CONSTRUCTION, Albert A. Lutz Company.

ELIEL SAARINEN — 1929

COFFEE URN

DESIGNED BY ELIEL SAARINEN, INTERNATIONAL SILVER CO.

WOMAN'S DRESSING ROOM IRVIN L. SCOTT, ARCHITECT

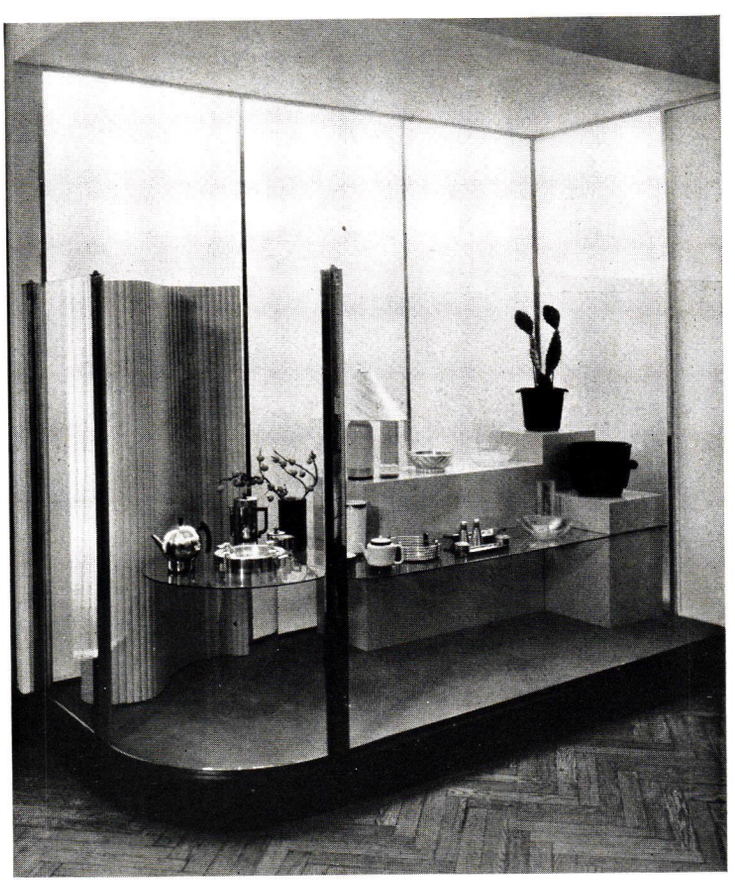
General setting and individual objects designed by Irvin L. Scott and executed by the following:

FURNITURE, Thonet Brothers. CABINETS AND WOODWORK, A. Bronson, Inc. CARPET, Bigelow-Sanford Carpet Co. HARDWARE, Regal Art Glass Company. METAL MOLDINGS, Charles H. Biele & Son. LIGHTING FIXTURES, A. Ward Hendrickson, Inc. LEATHER FURNITURE, COVERING AND WALL TREATMENT, Blanchard Bros. & Lane. MIRRORS AND GLASS, Semon Bache & Company. DRESSING TABLE ACCESSORIES, Tommi Parzinger for Rena Rosenthal, Inc. CEILING PAINTING, Sunflex paint as for other rooms.

DINING ROOM DONALD DESKEY, DESIGNER

Designed and arranged by Donald Deskey. Individual objects manufactured from Mr. Deskey's designs, unless otherwise noted, by the following:

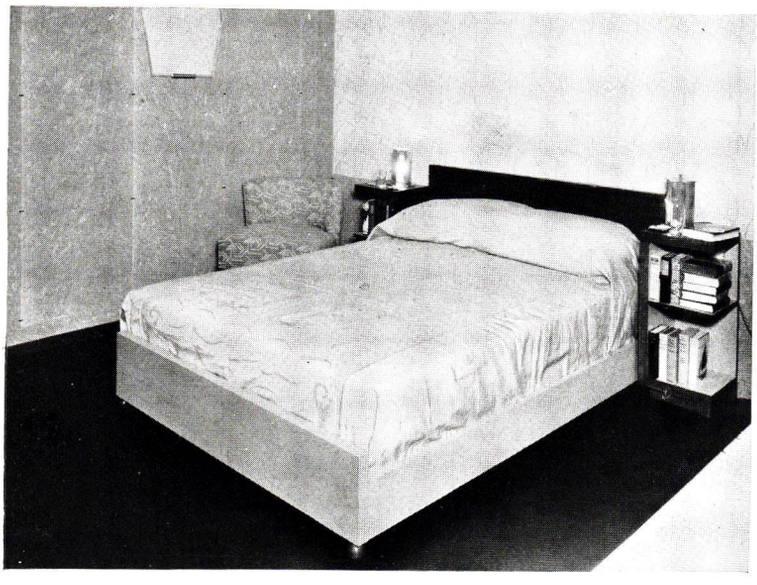
METAL FURNITURE, Metallon Corporation. WOOD FURNITURE, Schmieg-Hungate & Kotzian, Inc. COVERINGS, Blanchard Bros. & Lane. CURTAINS, Chicopee Sales Corporation. Installed by M. J. Antman & Company. CARPET, Bigelow-Sanford Carpet Company. RUBBER FLOORING, Voorhees Rubber Manufacturing Company. Installed by William Gold, Inc. SILVERWARE, International Silver Company. CHINA, Shapes by Victor Schreckengost, decoration by Donald Deskey. Manufactured by Limoges China Company. GLASSWARE, Libbey Glass Manufacturing Company. STRUCTURAL GLASS, Structural Glass Company. PLATE GLASS AND MIRRORS, Pittsburgh Plate Glass Company. CONSTRUCTION AND DISPLAY CASE, Albert A. Lutz Company. PEDESTAL, Metallon Corporation. WALLS, Wallboard, covering and paint, as for other rooms. LIGHTING, Beaux-Arts Lighting Company.



DISPLAY CASE
WALTER VON NESSEN, DESIGNER

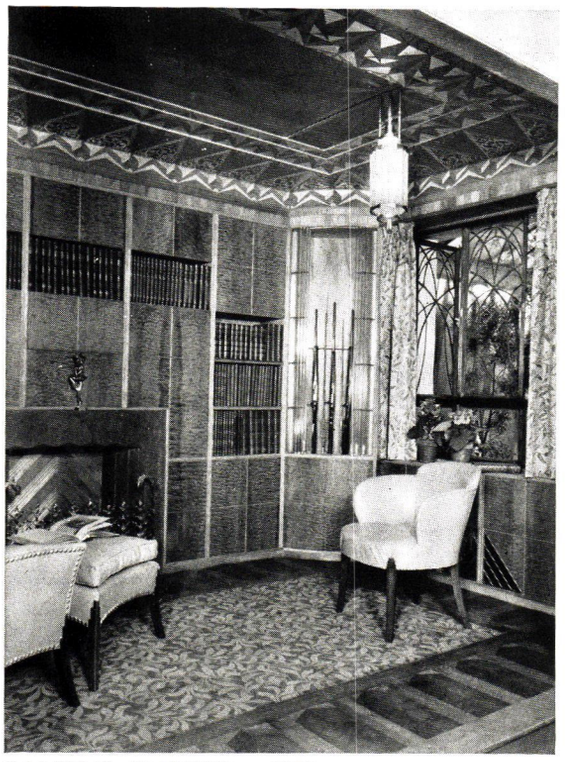
BRASS AND COPPER, Chase Brass and Copper Company. CAST IRON, Bradley & Hubbard Company. CHINA, Efcolite Corporation. GLASSWARE, A. H. Heisey Glass Company. PLATE GLASS, Semon Bache & Company. CASE AND ILLUMINATION, Nessen Studio, Inc. METAL MOLDINGS, Chase Brass & Copper Company. PAINTING, Sunflex Paint as for others.

A BEDROOM RALPH T. WALKER, ARCHITECT



The general setting and, unless otherwise noted, the individual objects are designed by Ralph T. Walker, and executed as follows:

FURNITURE, Designed in collaboration with Marianna von Allesch. Executed by Modernage Furniture, Inc. DRAPERY AND FURNITURE COVERINGS, Oliver & Kaufman. DRAPERY HARDWARE, H. L. Judd Company, Inc. CURTAINS, Installed by Crown Curtain Company. WALL PAPER, Imperial Paper and Color Corporation. Installed by Barker Painting Company. LINOLEUM FLOOR, Congoleum-Nairn Company. RUGS AND DOILIES, The Brown Company. LAMPS, Cassidy Company. BEDSPREAD, BLANKETS AND LINEN, Cannon Mills. BOX SPRING MATTRESS AND PILLOWS, Englander Spring Bed Company. MIRROR AND DRESSING TABLE ACCESSORIES, Treitel-Gratz Company, Inc. GLASS AND BOWL, T. G. Hawkes & Company. POTTERY, Designed and executed by Dorothy Spalding. WALLS, Johns-Manville Corporation. Erected by Asbestos Construction Company. METAL DOORS, Haskelite Manufacturing Corporation. Painted by Barker Painting Company. PAINTING, Sunflex paint as for others. LIGHTING, Frink Corporation.



RALPH T. WALKER — 1929

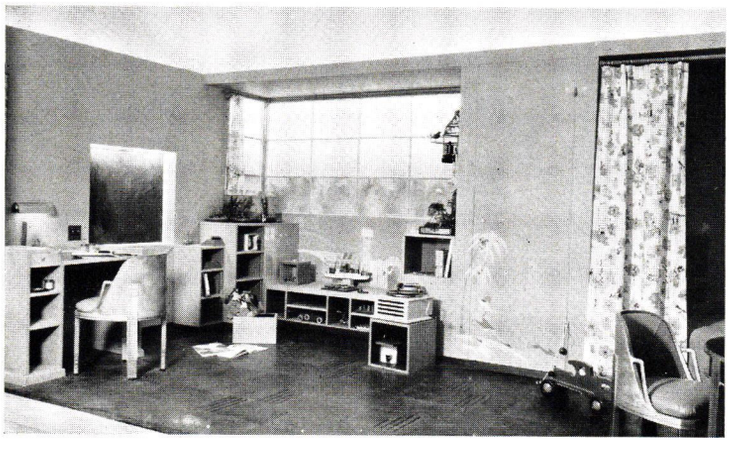
All objects as well as general arrangement by Gilbert Rohde unless otherwise noted. All objects manufactured by the following:

PIANO CASE AND BENCH, Steinway & Sons. METAL LEGS, Leo J. Uris. TABLE AND CHAIR, Warren MacArthur. WALL PAPER, Imperial Paper and Color Corporation. TEXTILE, Designed in collaboration with Grete Franke, manufactured by Willich-Franke Studios. RUGS, for Nelson S. Fink, V'Soske Shops. LAMP, Mutual Sunset Lamp Manufacturing Company. BOWL AND VASE, Gladding-McBean Company. METAL MOLDINGS, The Metallon Corporation, with metals from American Brass Company and International Nickel Company.

MUSIC ROOM CORNER GILBERT ROHDE, DESIGNER

DINING ROOM EUGENE SCHOEN, ARCHITECT

EUGENE SCHOEN — 1929



General setting and individual objects designed by Eugene Schoen, except as otherwise noted, and produced by the following firms and individuals:

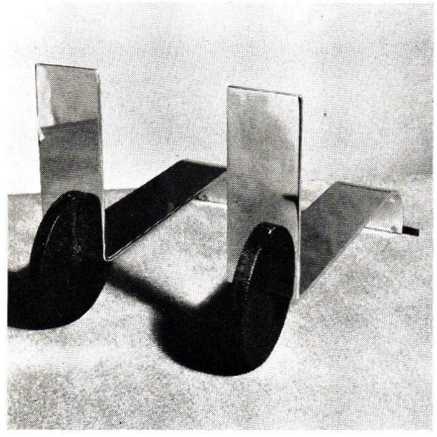
FURNITURE AND COVERINGS, Schmieg-Hungate & Kotzian, Inc. DINING TABLE, Designed in cooperation with Doris Royce. DRAPERY FABRIC, Celanese Corporation of America, installed by Lancaster Shop. Curtain tracks, Kirsch Company. CARPET, The Klearflax Linen Looms, Inc. Installed by Persian Rug Manufactory. LIGHTING FIXTURE, Designed in cooperation with Maurice Heaton, Lightolier Company. FLATWARE AND HOLLOW WARE, Stainless Metals, Inc., cooperating with Electro Metallurgical Company. CHINA TABLEWARE, Designed with S. H. Slobodkin, James River Pottery. GLASSWARE, United States Glass Company. DECORATIVE POTTERY, Designed by Waylande Gregory, Waylande Gregory Studio. TABLE LINEN, Robert McBratney & Company. LITHOGRAPHIC PAINTING, Hugo Gellert. WALL MATERIAL, Athol Manufacturing Company. Installed by Lancaster Shop. SASH, C. E. Halback & Company. Metal by Aluminum Company of America. Glass by Semon Bache & Company. Special construction of walls to receive sash by Albert A. Lutz Company. BLINDS, J. G. Wilson Corporation. PAINTING OF CEILING, Sunflex Paint by Craftex Company. Applied by George Miller. GENERAL LIGHTING, Century Lighting Equipment, Inc.

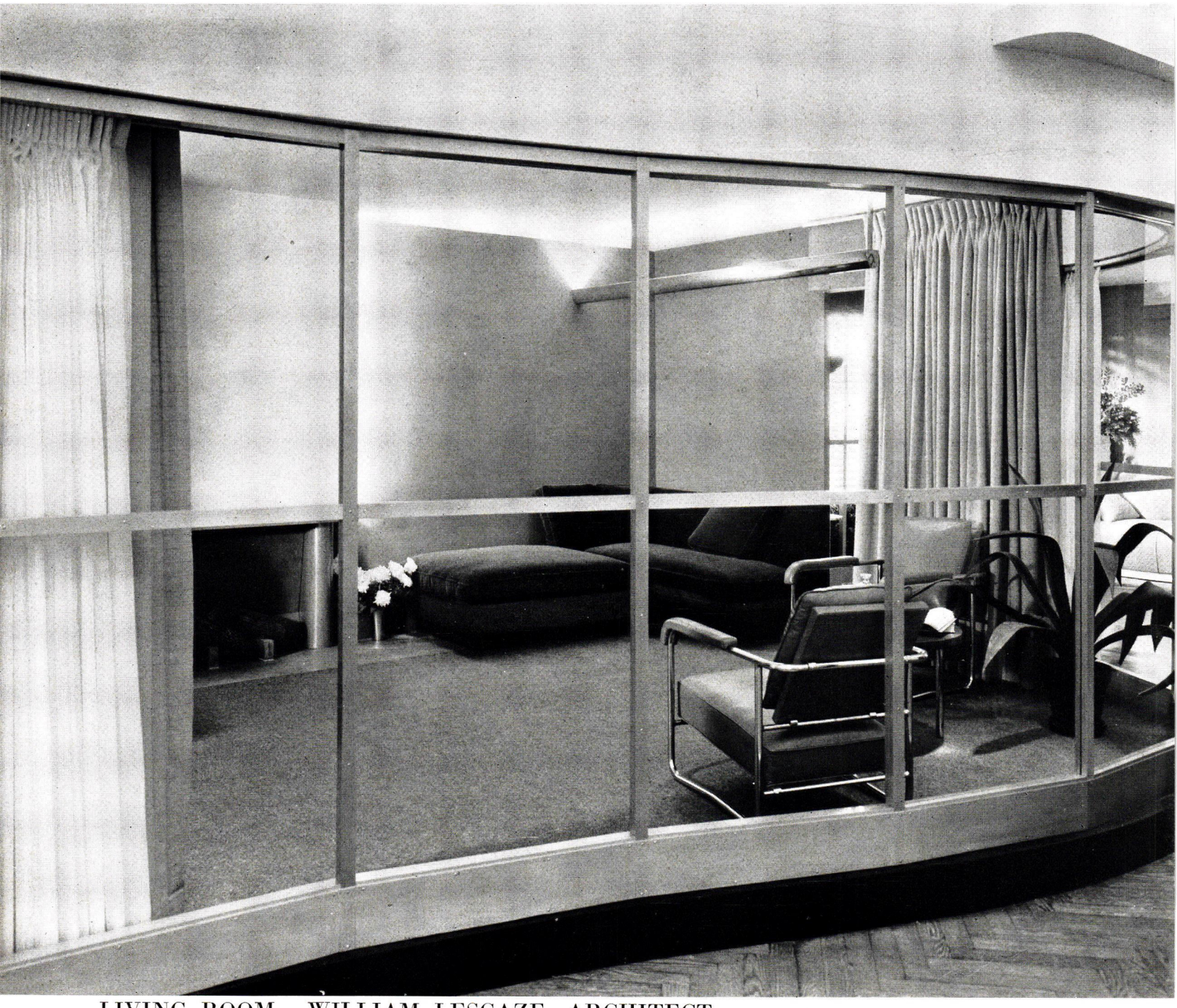
DINING ROOM WALTER DORWIN TEAGUE, DESIGNER

General setting and individual objects designed by Walter Dorwin Teague and produced by the following firms:

TABLE, Pittsburgh Plate Glass Company. CHAIRS, S. Karpen & Bros. RUG, L. C. Chase & Company. LIGHTING FIXTURES, Curtis Lighting Company. GLASSWARE, CENTERPIECE, CANDLESTICKS, AND FLATWARE, Corning Glass Works. CHINAWARE, James River Pottery. TABLE LINEN, Mosse, Inc. GLASS RODS IN GRILLE, Corning Glass Works. CABINETWORK AND DISPLAY CASES, CONSTRUCTION AND PAINTING, Jacob Froehlich Cabinet Works. Plywood and Micarta, United States Plywood Company. PAINTING OF CEILING, Sunflex paint as for the rest.

ANDIRONS — RUSSEL WRIGHT





LIVING ROOM WILLIAM LESCAZE, ARCHITECT

General setting and individual objects designed by William Lescaze, produced by the following firms:

FURNITURE, METAL, Garland Furniture Company. LEATHER CHAIR COVERINGS, Blanchard Bros. & Lane. FURNITURE, WOOD, Charak Furniture Company. CHAIR COVERINGS, Marshall Field & Company. RADIO CABINET, Philco Radio and Television Corporation. DRAPERY FABRICS, L. C. Chase & Company, installed by Charles H. Kenney Studios, Inc. CURTAIN FABRICS, Celanese Corporation of America, installed by Charles H. Kenney Studios, Inc. CURTAIN TRACKS, Kirsch Company. CARPET, The Klearflax Linen Looms, Inc., installed by Persian Rug Manufactory. MANTEL AND FIREPLACE, Jacobson & Company. DESK LIGHT, Renaissance Metal Works. DESK PAD AND BASKET, Star Case Company. BOOKS, by various publishers selected by The American Institute of Graphic Arts. SASH, C. E. Halback & Company. Metal by Aluminum Company of America. Plate glass by Libbey-Owens-Ford Company. WALLS, Sheetrock, Sanitas, Sunflex paint as throughout. SPECIAL CONSTRUCTION TO FRAME WINDOW AND BACK WALL, Albert A. Lutz Company. LIGHTING, Century Lighting Equipment, Inc. PLANTS, Hawthorne Flower Shop.

HIGHER HOUSING FOR LOWER RENTS

Housing Study Guild presents a new formula for universal application which challenges certain existing housing dogmas

THOUGH most of the proposals to solve the housing problem with tall fireproof buildings come to us from European sources the idea is not new in this country. Long before PWA critics refused to approve the Rutgerstown project for New York as likely to create "vertical sanitary slums," the principle of reducing land cost per room by increasing the population density through higher buildings had been advanced.

Probably the first appearance of the idea was in the tentative report to The New York State Board of Housing by their consulting architects * in 1925. Housing Chairman Darwin R. James' Board that later approved Rutgerstown was sympathetic to it. Building money men were not. Chief critic was Metropolitan Life Insurance Company's Walter Stabler who declared that his company would not lend money for such a scheme. Realistic Mr. James and his Board shelved the idea and did the best they could to get housing built.

Since then there have been other attempts to convince the skeptical that this was probably the only practicable solution in districts with high land values. The chief difficulties have been that many critics felt that operation of automatic elevators was beyond the capabilities of those who should occupy these houses. Another objection: the cost of fireproof construction over non-fireproof neutralized other demonstrable savings. Curiously enough many of those who felt that such buildings were socially undesirable saw no harm in making women climb three, four, and even five flights of stairs, or requiring them to depend on fire escapes for egress from burning buildings in any weather.

Now New York's Housing Study Guild, organized to find facts in such subjects (THE ARCHITECTURAL FORUM, August, 1933, page 21, and September, 1933, page 44), has taken an important step forward. Taking a typical modern plan it has carefully analyzed the differences in cost per room caused by building a house 2, 4, 6, 8, 10, and 12 stories in height. All of the buildings are considered as of fireproof construction. The two-story and four-story units are walk-ups. The six-story unit has a single elevator, the other units have two elevators.

Each item that goes into the cost of construction has been carefully studied and the cost tabulated. If the increase in height from six to eight stories requires that the main water supply from the street to the house shall be increased in diameter by 1 in., the difference in price is accounted for. These cost figures are not the Guild's ideas of what such figures should be, but the results of much work by manufacturers and contractors. They are, of course, based on present prices, but as the whole system is relative it is difficult to envision a sharp rise or fall in the cost of a single item which would throw the derived results out of line.

The results of this analysis startled even some of the members of the Housing Study Guild who thought that they knew that a two-story flat was the cheapest possible form of housing. Instead it developed that the higher types, varying slightly one from the other, were on the whole cheaper in the New York Area to which this set of figures applies. This relation to a lesser degree was also found to exist in the matter of maintenance. Here the figures were very close, but a difference did exist.

These studies put in the hands of everyone who has an interest in housing facts which until now were only guessed at. Even if the plan under study for a specific area is not the same as that used as the basis for these studies it will be a simple matter to interpolate the different quantities and, using the same unit prices, arrive at similar relations to those given. This will enable the architect, the building money man, and the public housing official to make a first-rate analysis of their particular situation. It should be noted here that any departure from these relations can be made only with a radically different plan as basis.

It will then be possible for all to decide just what type of building must be built on the site in question in order to neutralize the land costs. Some cases will be adequately taken care of with two-story buildings. Other cases will occur when this will not be possible. In these cases it will be possible to decide what must be done with a complete knowledge of the actual factors involved.

Elsewhere in this issue will be found reviews of sources of further information on this question of higher buildings (see Book Reviews). These sources of information, developed in England and in Europe, have until now been the only authoritative ones. Thanks to the Housing Study Guild, we now have even more accurate and complete information of our own which takes account of our peculiar methods of building and design.

THE FOLLOWING IS THE HOUSING STUDY GUILD'S SUMMATION OF THE METHODS PURSUED IN THE ANALYSIS.

THE Housing Study Guild in working up and presenting this analytic study of the variation of cost with height of buildings (number of stories) is presenting a rational method for use anywhere in the country. Like others of its studies, such as the Rapid Method for Evaluating Differences in Monthly Rental among Different Plans, the purpose is to enable us to determine characteristic cost differences as among different schemes with a satisfactory

* Arthur C. Holden and Associates.

degree of accuracy. Such facts should be part of our ready equipment as architects, and should not be matters of opinion and of more or less uninformed disputes.

Despite the fact that we know as a result of this study that an eight-story building costs eighteen cents more in rent per room per month for the same apartment than a four-story walk-up, we may still choose the eight-story building for other reasons, but at least we know that the difference exists and how much it is. Unless there are local or social reasons to the contrary, we should naturally build to the number of stories which give the cheapest rental for the same accommodation.

In examining this Study and applying it, the following basic facts should be borne in mind:

1. *All* items of cost, later reduced to rent, have been considered, except land prices. The cost items came under three heads:

a. "Vertical" costs. These are the costs usually considered as construction costs to complete a building. See Charts 5 and 6.

b. "Horizontal" costs. These are the costs of utilities — both public and private — gas, water, sewer, electric mains, steam mains, if any — sidewalks, landscaping, etc. See Chart 7.

c. Maintenance-Operation Costs. See Chart 8.

1. All cost items are figured per room, on plans that are strictly comparable. For example, plans for every height have the same number of rooms per apartment, thus eliminating any accidental differences in plumbing costs due to more or less bathrooms or kitchens; as nearly as possible rooms in all plans contain the same number of square feet. Exactly comparable structural systems were used, except that the two-story flat was made fireproof-wall-bearing to test the economy of that special system.

Initial cost items under (a) and (b) are reduced to rent, by multiplying initial cost by a percentage which is the sum of interest rate, amortization rate and municipal tax rate. See Master Charts No. 1, 1-A, 1-B and 1-C. These charts are so constructed that easy interpolation of money rates is possible. See Charts No. 1-A, 1-B and 1-C.

2. Attention is directed to the operating-maintenance item, so important and so often neglected as against first cost items. This is particularly important when the *total* living costs to the tenant are considered. It is evident that different systems of supplying heat, gas and electricity result in great variations in living economy to the tenant. These items are shown on the Master Charts No. 1, 1-A, 1-B and 1-C and Charts 8 and 10 which bring into striking relief the importance to the tenant's living budget of the method of production and distribution of heat, gas and electric current.

3. It should be borne in mind that major emphasis was placed on the proper comparability of plans for various heights (see Chart 4), site coverage for various heights (see Chart 3) and standards of maintenance and operation, rather than on the absolute merit of any plan adopted, or the absolute accuracy of any cost. At the start of the study the tendency was to take a lot of time to try to find out the best in each branch — floor plan, site plan, etc., but it was soon realized that we should never get to the study itself. It was decided that the important issue was to make all factors strictly comparable. Accuracy of relative differences has been maintained — though it may well be that in maintenance-operation, for example, one might differ with the absolute figures.

4. The figures were made up on the basis of a definite specification which is found in full in our report* an outline of which appears on Chart 7 and the notes column of Charts 5, 6 and 7; specific estimates were obtained from contractors and operating men, checked by the Guild against its own breakdown, and unit costs obtained from builders and manufacturers. In our report appear the unit prices, prices of basic materials, and wage-scales, so that the figures can always be readily revised for changes in these items.

5. For the New York area, to which these figures definitely apply, it appears that the six-story building results in the lowest rent (lower even than for the two-story flat, which omits janitor service). This is a surprising result to those who have assumed that the tall building is always costly, and shows the value of such a study.

This result is in great measure due to conditions local to New York. For instance, New York contractors are used to building tall buildings, hence methods of economy have been highly developed for them, rather than for the lower building. In some sections of the country this would not be so. Again in maintenance items, the water rate in New York is, for example, considerably higher per room for lower buildings because of the frontage rate method of charge.

6. What has been brought out under No. 5 indicates that it would be wrong to apply the *factual results* of this study elsewhere without careful study. But the importance and great significance of the study are in the *method* evolved and employed. Every section of the country should work out its own facts on such a method. Once the facts have been established for any locality, the results can be considered final. For unless wage rates, prices or financial rates change violently, the *comparative* results will not be appreciably changed. Each locality will naturally make its study for the kind of buildings most appropriate there — single and two-family houses, detached or semi-detached will be included; these were not included in our study because it seems unlikely that they will be considered in the New York area.

Again, it must be repeated: for us the factual results obtained are of the utmost importance, because they end a long-standing controversy on the relative economy of different heights. For other sections the importance of what we have done is to establish a method by which each section can similarly end loose controversies by establishing facts with finality, facts which once determined will guide the designer in choosing types until some revolutionary changes take place either in building technique or materials, in maintenance costs or in financial rates.

The Guild wants to give special credit to Mr. Emil W. Klee for his devoted and intensive work on the study — the form of the charts are particularly due to him; to Mr. Paul Grotz, and to Mr. S. R. Rio for their no less excellent work; to Mr. George Chadeayne, of the office of Percival R. Moses, for the layouts and calculations of the heating and generating systems; to Mr. L. A. Panza for his laborious calculations; to Mr. William Cobb for his work on maintenance; and to Mr. C. Sulzer and others for the drafting.

Thanks are also due to many contractors, builders, managers and utility company representatives.

*Available December 15 at the Housing Study Guild, 101 Park Ave., New York City.

RENT PER ROOM PER MONTH — LAND EXCLUDED

When heat is furnished by owners' central plant and electric current and gas are purchased from utility companies by tenant at retail rates — the electric current and gas charges are paid by the tenant in addition to the rent.

Factors for financing and services are for New York area.

ANALYTIC STUDY OF COST DIFFERENTIALS FOR THE 2-STORY FLAT AND 2-, 3-, 4-, 6-, 8-, 10-, 12-STORY APARTMENTS

OWNER - SERVICES
INCLUDED IN RENT

FROM OWNER'S PLANT
HEAT

TENANT - CHARGES
IN ADDITION TO RENT

O

ELECTR. / GAS — FROM UTILITY CO'S AT RETAIL RATES

INITIAL COSTS

A — INITIAL VERTICAL BUILDING COSTS EXCLUDING HEATING INSTALLATION, GAS LINES, ELEC. METERS, PANS AND LOOPS
FOR DESCRIPTION OF WORK REFER TO CHART VII ITEM A
FOR COSTS REFER TO CHARTS V AND VI

B — INITIAL VERTICAL HEATING AND DOMESTIC HOT WATER COSTS.
FOR DESCRIPTION OF WORK REFER TO CHART VII ITEM B-5
FOR COSTS REFER TO CHART VIII SYSTEM 5

C — INITIAL VERTICAL COSTS FOR GAS LINES INCLUDING VALVES.
FOR DESCRIPTION OF WORK REFER TO CHART VII ITEM C-I
FOR COSTS REFER TO CHARTS V AND VI.

D — INITIAL VERTICAL COSTS FOR ELECTRIC METERS, PANS AND LOOPS.
FOR DESCRIPTION OF WORK REFER TO CHART VII ITEM D-I
FOR COSTS REFER TO CHARTS V AND VI

E — INITIAL HORIZONTAL PROJECT COSTS.
FOR DESCRIPTION OF WORK REFER TO CHART VII ITEMS E-I, E-II, E-III, E-IV, E-V-I, E-VI-I, AND E-VII
FOR COSTS REFER TO CHARTS VII AND VIII

OPERATING & MAINTENANCE COSTS

F — GAS FUEL COSTS.
FOR DESCRIPTION REFER TO CHART VII ITEM F-I
FOR COSTS REFER TO CHART X

G — ELECTRIC CURRENT USED BY TENANT WITHIN THE APARTMENT.
FOR DESCRIPTION REFER TO CHART VII ITEM G-I
FOR COSTS REFER TO CHART X.

G — ELECTRIC CURRENT FOR PUBLIC SPACE LIGHT AND POWER.
FOR DESCRIPTION REFER TO CHART VII ITEM G-I
FOR COSTS REFER TO CHARTS IX AND X

H — CITY WATER.
FOR DESCRIPTION REFER TO CHART VII ITEM H
FOR COSTS REFER TO CHART IX

J — HEAT AND DOMESTIC HOT WATER.
FOR DESCRIPTION & COSTS REFER TO CHART VIII SYSTEM 5

K — JANITORIAL SERVICES, MAINTENANCE AND REPAIRS EXCLUDING GAS FUEL, ELECTRIC CURRENT, CITY WATER, HEAT AND DOMESTIC HOT WATER.
FOR DESCRIPTION REFER TO CHART VII ITEM K
FOR COSTS REFER TO CHARTS IX AND X

OPERATION, MAINTENANCE AND LABOR INCLUDING WORKMENS COMPENSATION INSURANCE

NOTE
FOR DETAIL OF FINANCIAL FACTOR USED HERE REFER TO NOTES ON CHART II.

	INITIAL COSTS (A B C D E) SUB-TOTALS	INITIAL COSTS TOTALS	× AMORT-IZATION INTEREST & TAXATION FACTOR	= INITIAL COST RENT PER ROOM PER YEAR	+ MAINTENANCE, OPERATING & LABOR COSTS PER ROOM PER YEAR (G H J K) SUB-TOTALS	MAINTENANCE TOTALS	= RENT PER ROOM PER YEAR WITHOUT VACANCY ALLOWANCE	÷ MONTHS PER YEAR CORRECTED FOR VACANCY ALLOWANCE	= TOTAL RENT PER ROOM PER MONTH	+ ITEMS PAID BY TENANT PER ROOM PER MONTH IN ADDITION TO THE RENT (F G) SUB-TOTALS	ITEMS PAID TOTALS	= GRAND TOTAL PAID BY TENANT PER ROOM PER MONTH
2 STORY FLAT WALL BEARING CONST NO BASEMENT	A 667.00 B 54.72 C 7.00 D .62 E 39.54	768.88	× .077	= 59.20	+ G .60 H 3.90 J 8.10 K 24.97	37.57	= 96.77	÷ 11.4	= 8.49	+ F .43 G .98	1.41	= 9.90
2 STORY APT. CANTILEVER CONST. FULL BASEMENT	A 670.55 B 58.12 C 7.00 D .62 E 39.07	775.36	× .077	= 59.70	+ G 2.78 H 3.90 J 8.48 K 31.08	46.24	= 105.94	÷ 11.4	= 9.29	+ F .43 G .98	1.41	= 10.70
3 STORY APT. CANTILEVER CONST. FULL BASEMENT	A 662.40 B 53.11 C 7.00 D .58 E 30.88	753.97	× .077	= 58.06	+ G 2.49 H 3.36 J 7.64 K 29.45	42.94	= 101.00	÷ 11.4	= 8.86	+ F .43 G .98	1.41	= 10.27
4 STORY APT. CANTILEVER CONST. FULL BASEMENT	A 624.80 B 53.19 C 7.00 D .73 E 26.58	712.30	× .077	= 54.85	+ G 2.20 H 3.07 J 7.52 K 27.24	40.03	= 94.88	÷ 11.4	= 8.32	+ F .43 G .98	1.41	= 9.73
6 STORY APT. CANTILEVER CONST. PARTIAL BASEMENT	A 601.20 B 41.91 C 7.00 D .94 E 17.55	668.60	× .077	= 51.48	+ G 2.96 H 2.53 J 6.92 K 30.23	42.64	= 94.12	÷ 11.4	= 8.26	+ F .43 G .98	1.41	= 9.67
8 STORY APT. CANTILEVER CONST. PARTIAL BASEMENT	A 649.85 B 40.09 C 7.00 D .93 E 14.97	712.84	× .077	= 54.89	+ G 3.47 H 2.48 J 6.68 K 29.37	42.00	= 96.89	÷ 11.4	= 8.50	+ F .43 G .98	1.41	= 9.91
10 STORY APT. CANTILEVER CONST PARTIAL BASEMENT	A 638.25 B 39.28 C 7.00 D .90 E 13.60	699.03	× .077	= 53.83	+ G 3.55 H 2.44 J 6.68 K 28.46	41.13	= 94.96	÷ 11.4	= 8.33	+ F .43 G .98	1.41	= 9.74
12 STORY APT. CANTILEVER CONST. PARTIAL BASEMENT	A 628.80 B 39.01 C 7.00 D .88 E 13.66	689.35	× .077	= 53.08	+ G 4.40 H 2.42 J 6.68 K 27.80	41.30	= 94.38	÷ 11.4	= 8.28	+ F .43 G .98	1.41	= 9.69

COMPUTATIONS BY S.R.RIO - COMPUTATIONS CHECKED BY E.W.KLEE - CHART DRAWN BY L.A.PANZA S.R.RIO C.SULZER - CHART EDITED BY E.W.KLEE
STUDY COMPLETED OCT. 15, 1934

CHART I

RENT PER ROOM PER MONTH — LAND EXCLUDED

When heat is furnished by owners' central plant and electric current and gas are purchased from utility companies by tenant at retail rates — the electric current and gas charges are paid by the tenant in addition to the rent.

Blanks are left for the interpolation of purely local variables.

ANALYTIC STUDY OF COST DIFFERENTIALS FOR THE
2-STORY FLAT AND 2-, 3-, 4-, 6-, 8-, 10-, 12-STORY APARTMENTS

OWNER - SERVICES
INCLUDED IN RENT

HEAT — FROM OWNER'S PLANT

TENANT - CHARGES
IN ADDITION TO RENT

O

ELECTR. / GAS — FROM UTILITY CO.'S AT RETAIL RATES

INITIAL COSTS

A — INITIAL VERTICAL BUILDING COSTS EXCLUDING HEATING INSTALLATION, GAS LINES, ELEC. METERS, PANS AND LOOPS
FOR DESCRIPTION OF WORK REFER TO CHART VII ITEM A
FOR COSTS REFER TO CHARTS V AND VI

B — INITIAL VERTICAL HEATING AND DOMESTIC HOT WATER COSTS.
FOR DESCRIPTION OF WORK REFER TO CHART VII ITEM B-5
FOR COSTS REFER TO CHART VIII SYSTEM 5

C — INITIAL VERTICAL COSTS FOR GAS LINES INCLUDING VALVES.
FOR DESCRIPTION OF WORK REFER TO CHART VII ITEM C-1
FOR COSTS REFER TO CHARTS V AND VI

D — INITIAL VERTICAL COSTS FOR ELECTRIC METERS, PANS AND LOOPS.
FOR DESCRIPTION OF WORK REFER TO CHART VII ITEM D-1
FOR COSTS REFER TO CHARTS V AND VI.

E — INITIAL HORIZONTAL PROJECT COSTS.
FOR DESCRIPTION OF WORK REFER TO CHART VII ITEMS E-I. E-II. E-III. E-IV. E-V-I. E-VI-I. AND E-VII
FOR COSTS REFER TO CHARTS VII AND VIII

OPERATING & MAINTENANCE COSTS

F — GAS FUEL COSTS.
FOR DESCRIPTION REFER TO CHART VII ITEM F-1
FOR COSTS REFER TO CHART X

G — ELECTRIC CURRENT USED BY TENANT WITHIN THE APARTMENT.
FOR DESCRIPTION REFER TO CHART VII ITEM G-1
FOR COSTS REFER TO CHART X

G — ELECTRIC CURRENT FOR PUBLIC SPACE LIGHT AND POWER.
FOR DESCRIPTION REFER TO CHART VII ITEM G-1
FOR COSTS REFER TO CHARTS IX AND X

H — CITY WATER.
FOR DESCRIPTION REFER TO CHART VII ITEM H
FOR COSTS REFER TO CHART IX

J — HEAT AND DOMESTIC HOT WATER.
FOR DESCRIPTION & COSTS REFER TO CHART VIII SYSTEM 5

K — JANITORIAL SERVICES, MAINTENANCE AND REPAIRS EXCLUDING GAS FUEL, ELECTRIC CURRENT, CITY WATER, HEAT AND DOMESTIC HOT WATER.
FOR DESCRIPTION REFER TO CHART VII ITEM K
FOR COSTS REFER TO CHARTS IX AND X

OPERATION. MAINTENANCE AND LABOR INCLUDING WORKMENS COMPENSATION INSURANCE

	INITIAL COSTS (SUB-TOTALS)	INITIAL COSTS (TOTALS)	× AMORTIZATION INTEREST & TAXATION FACTOR =	+ INITIAL COST RENT PER ROOM PER YEAR	MAINTENANCE, OPERATING & LABOR COSTS PER ROOM PER YEAR (SUB-TOTALS)	MAINTENANCE, OPERATING & LABOR COSTS PER ROOM PER YEAR (TOTALS)	= RENT PER ROOM PER YEAR WITHOUT VACANCY ALLOWANCE	÷ MONTHS PER YEAR CORRECTED FOR VACANCY ALLOWANCE =	+ TOTAL RENT PER ROOM PER MONTH	ITEMS PAID BY TENANT PER ROOM PER MONTH IN ADDITION TO THE RENT (SUB-TOTALS)	ITEMS PAID BY TENANT PER ROOM PER MONTH IN ADDITION TO THE RENT (TOTALS)	= GRAND TOTAL PAID BY TENANT PER ROOM PER MONTH
2 STORY FLAT WALL BEARING CONST. NO BASEMENT	A 667.00 B 54.72 C 7.00 D .62 E 39.54	768.88	----	----	G .60 H 3.90 J 8.10 K 24.97	37.57	----	----	----	F .43 G .98	1.41	----
2 STORY APT. CANTILEVER CONST. FULL BASEMENT	A 670.55 B 58.12 C 7.00 D .62 E 39.07	775.36	----	----	G 2.78 H 3.90 J 8.48 K 31.08	46.24	----	----	----	F .43 G .98	1.41	----
3 STORY APT. CANTILEVER CONST. FULL BASEMENT	A 662.40 B 53.11 C 7.00 D .58 E 30.88	753.97	----	----	G 2.49 H 3.36 J 7.64 K 29.45	42.94	----	----	----	F .43 G .98	1.41	----
4 STORY APT. CANTILEVER CONST. FULL BASEMENT	A 624.80 B 53.19 C 7.00 D .73 E 26.58	712.30	----	----	G 2.20 H 3.07 J 7.52 K 27.24	40.03	----	----	----	F .43 G .98	1.41	----
6 STORY APT. CANTILEVER CONST. PARTIAL BASEMENT	A 601.20 B 41.91 C 7.00 D .94 E 17.55	668.60	----	----	G 2.96 H 2.53 J 6.92 K 30.23	42.64	----	----	----	F .43 G .98	1.41	----
8 STORY APT. CANTILEVER CONST. PARTIAL BASEMENT	A 649.85 B 40.09 C 7.00 D .93 E 14.97	712.84	----	----	G 3.47 H 2.48 J 6.68 K 29.37	42.00	----	----	----	F .43 G .98	1.41	----
10 STORY APT. CANTILEVER CONST. PARTIAL BASEMENT	A 638.25 B 39.28 C 7.00 D .90 E 13.60	699.03	----	----	G 3.55 H 2.44 J 6.68 K 28.46	41.13	----	----	----	F .43 G .98	1.41	----
12 STORY APT. CANTILEVER CONST. PARTIAL BASEMENT	A 628.80 B 39.01 C 7.00 D .88 E 13.66	689.35	----	----	G 4.40 H 2.42 J 6.68 K 27.80	41.30	----	----	----	F .43 G .98	1.41	----

COMPUTATIONS BY S.R.RIO - COMPUTATIONS CHECKED BY E.W.KLEE - CHART DRAWN BY L.A.PANZA S.R.RIO C.SULZER CHART EDITED BY E.W.KLEE
STUDY COMPLETED OCT. 15, 1934

CHART 1A

RENT PER ROOM PER MONTH — LAND EXCLUDED

When heat is furnished by owners' central plant and electric current and gas are purchased from utility companies by owner at wholesale rates — the electric current and gas charges are reflected in the tenant's rent.

Blanks are left for the interpolation of purely local variables.

ANALYTIC STUDY OF COST DIFFERENTIALS FOR THE 2-STORY FLAT AND 2-, 3-, 4-, 6-, 8-, 10-, 12-STORY APARTMENTS

OWNER - SERVICES INCLUDED IN RENT

HEAT — FROM OWNER'S PLANT

ELECTR, GAS — FROM UTILITY CO'S AT WHOLESALE RATES

TENANT - CHARGES IN ADDITION TO RENT

O

O

O

INITIAL COSTS

A — INITIAL VERTICAL BUILDING COSTS EXCLUDING HEATING INSTALLATION, GAS LINES, ELEC. METERS, PANS AND LOOPS
FOR DESCRIPTION OF WORK REFER TO CHART VII ITEM A
FOR COSTS REFER TO CHARTS V AND VI

B — INITIAL VERTICAL HEATING AND DOMESTIC HOT WATER COSTS.
FOR DESCRIPTION OF WORK REFER TO CHART VII ITEM B-5
FOR COSTS REFER TO CHART VIII SYSTEM 5

C — INITIAL VERTICAL COSTS FOR GAS LINES INCLUDING VALVES.
FOR DESCRIPTION OF WORK REFER TO CHART VII ITEM C-2
FOR COSTS REFER TO CHARTS V AND VI

D — INITIAL VERTICAL COSTS FOR ELECTRIC METERS, PANS AND LOOPS.
FOR DESCRIPTION OF WORK REFER TO CHART VII ITEM D-3
FOR COSTS REFER TO CHARTS V AND VI

E — INITIAL HORIZONTAL PROJECT COSTS.
FOR DESCRIPTION OF WORK REFER TO CHART VII ITEMS E-I, E-II, E-III, E-IV, E-V-2, E-VI-2, AND E-VII
FOR COSTS REFER TO CHARTS VII AND VIII

OPERATING & MAINTENANCE COSTS

F — GAS FUEL COSTS.
FOR DESCRIPTION REFER TO CHART VII ITEM F-2
FOR COSTS REFER TO CHART X

G — ELECTRIC CURRENT FOR APARTMENT USE AND PUBLIC SPACE LIGHT AND POWER.
FOR DESCRIPTION REFER TO CHART VII ITEM G-2
FOR COSTS REFER TO CHART X

H — CITY WATER.
FOR DESCRIPTION REFER TO CHART VII ITEM H
FOR COSTS REFER TO CHART IX

J — HEAT AND DOMESTIC HOT WATER.
FOR DESCRIPTION & COSTS REFER TO CHART VIII SYSTEM 5

K — JANITORIAL SERVICES, MAINTENANCE AND REPAIRS EXCLUDING GAS FUEL, ELECTRIC CURRENT, CITY WATER, HEAT AND DOMESTIC HOT WATER.
FOR DESCRIPTION REFER TO CHART VII ITEM K
FOR COSTS REFER TO CHART IX

OPERATION, MAINTENANCE AND LABOR INCLUDING WORKMENS COMPENSATION INSURANCE

	INITIAL COSTS (A B C D E) SUB-TOTALS	INITIAL COSTS TOTALS	× AMORTIZATION INTEREST & TAXATION FACTOR	= INITIAL COST RENT PER ROOM PER YEAR	+ MAINTENANCE, OPERATING & LABOR COSTS PER ROOM PER YEAR (F G H J K) SUB-TOTALS	MAINTENANCE TOTALS	= RENT PER ROOM PER YEAR WITHOUT VACANCY ALLOWANCE	÷ MONTHS PER YEAR CORRECTED FOR VACANCY ALLOWANCE	= TOTAL RENT PER ROOM PER MONTH	+ ITEMS PAID BY TENANT PER ROOM PER MONTH IN ADDITION TO THE RENT SUB-TOTALS	TOTALS	= GRAND TOTAL PAID BY TENANT PER ROOM PER MONTH
2 STORY FLAT WALL BEARING CONST. NO BASEMENT	A 667.00, B 54.72, C 4.70, D .00, E 43.05	769.47	× ----	= ----	F 4.42, G 7.82, H 3.90, J 8.10, K 24.90	49.14	= ----	÷ ----	= ----	+ .00	.00	= ----
2 STORY APT. CANTILEVER CONST. FULL BASEMENT	A 670.55, B 58.12, C 4.70, D .00, E 42.58	775.95	× ----	= ----	F 4.42, G 8.50, H 3.90, J 8.48, K 31.01	56.31	= ----	÷ ----	= ----	+ .00	.00	= ----
3 STORY APT. CANTILEVER CONST. FULL BASEMENT	A 662.40, B 53.11, C 4.70, D .00, E 33.81	754.02	× ----	= ----	F 4.40, G 7.96, H 3.36, J 7.64, K 29.38	52.74	= ----	÷ ----	= ----	+ .00	.00	= ----
4 STORY APT. CANTILEVER CONST. FULL BASEMENT	A 624.80, B 53.19, C 4.70, D .00, E 29.54	712.23	× ----	= ----	F 4.39, G 7.64, H 3.07, J 7.52, K 27.17	49.79	= ----	÷ ----	= ----	+ .00	.00	= ----
6 STORY APT. CANTILEVER CONST. PARTIAL BASEMENT	A 601.20, B 41.91, C 4.70, D .00, E 18.94	666.75	× ----	= ----	F 4.32, G 8.23, H 2.53, J 6.92, K 30.16	52.16	= ----	÷ ----	= ----	+ .00	.00	= ----
8 STORY APT. CANTILEVER CONST. PARTIAL BASEMENT	A 649.85, B 40.09, C 4.70, D .00, E 16.05	710.69	× ----	= ----	F 4.28, G 8.45, H 2.48, J 6.68, K 29.30	51.19	= ----	÷ ----	= ----	+ .00	.00	= ----
10 STORY APT. CANTILEVER CONST PARTIAL BASEMENT	A 638.25, B 39.28, C 4.70, D .00, E 15.05	697.28	× ----	= ----	F 4.26, G 8.45, H 2.44, J 6.68, K 28.39	50.22	= ----	÷ ----	= ----	+ .00	.00	= ----
12 STORY APT. CANTILEVER CONST PARTIAL BASEMENT	A 628.80, B 39.01, C 4.70, D .00, E 14.83	687.34	× ----	= ----	F 4.25, G 9.04, H 2.42, J 6.68, K 27.73	50.12	= ----	÷ ----	= ----	+ .00	.00	= ----

COMPUTATIONS BY S.R.RIO - COMPUTATIONS CHECKED BY E.W.KLEE - CHART DRAWN BY S.R.RIO C.SULZER - CHART EDITED BY E.W.KLEE
STUDY COMPLETED OCT. 15, 1934

CHART 1B

RENT PER ROOM PER MONTH — LAND EXCLUDED

When heat and electric current are furnished by owners' central plant and gas is purchased from utility company by owner at wholesale rates — the gas cost is reflected in the tenant's rent and the electric current paid by tenant in addition to rent.

Blanks are left for the interpolation of purely local variables.

ANALYTIC STUDY OF COST DIFFERENTIALS FOR THE 2-STORY FLAT AND 2-, 3-, 4-, 6-, 8-, 10-, 12-STORY APARTMENTS

OWNER – SERVICES INCLUDED IN RENT	TENANT – CHARGES IN ADDITION TO RENT
HEAT — FROM OWNER'S PLANT	O
ELECTR. — FROM OWNER'S PLANT	O
GAS — FROM UTILITY CO. AT WHOLESALE RATES	

INITIAL COSTS

- **A** — INITIAL VERTICAL BUILDING COSTS EXCLUDING HEATING INSTALLATION, GAS LINES, ELEC. METERS, PANS AND LOOPS. — FOR DESCRIPTION OF WORK REFER TO CHART VII ITEM A; FOR COSTS REFER TO CHARTS V AND VI
- **B** — INITIAL VERTICAL HEATING AND DOMESTIC HOT WATER COSTS AND ELECTRIC GENERATING PLANT — FOR DESCRIPTION OF WORK REFER TO CHART VII ITEM B-3; FOR COSTS REFER TO CHART VIII SYSTEM 3
- **C** — INITIAL VERTICAL COSTS FOR GAS LINES INCLUDING VALVES. — FOR DESCRIPTION OF WORK REFER TO CHART VII ITEM C-2; FOR COSTS REFER TO CHARTS V AND VI
- **D** — INITIAL VERTICAL COSTS FOR ELECTRIC METERS, PANS AND LOOPS. — FOR DESCRIPTION OF WORK REFER TO CHART VII ITEM D-4; FOR COSTS REFER TO CHARTS V AND VI
- **E** — INITIAL HORIZONTAL PROJECT COSTS. — FOR DESCRIPTION OF WORK REFER TO CHART VII ITEMS E-I, E-II, E-III, E-IV, E-V-2, E-VI-3, E-VII; FOR COSTS REFER TO CHARTS VII AND VIII

OPERATING & MAINTENANCE COSTS

- **F** — GAS FUEL COSTS. — FOR DESCRIPTION REFER TO CHART VII ITEM F-2; FOR COSTS REFER TO CHART X
- **G** — ELECTRIC CURRENT USED BY TENANT WITHIN THE APARTMENT. — FOR DESCRIPTION REFER TO CHART VII ITEM G-5; FOR COSTS REFER TO CHART X
- **G** — ELECTRIC CURRENT FOR PUBLIC SPACE LIGHT AND POWER. — FOR DESCRIPTION REFER TO CHART VII ITEM G-5; FOR COSTS REFER TO CHART X
- **H** — CITY WATER. — FOR DESCRIPTION REFER TO CHART VII ITEM H; FOR COSTS REFER TO CHART IX
- **J** — HEAT AND DOMESTIC HOT WATER. — FOR DESCRIPTION & COSTS REFER TO CHART VIII SYSTEM 3
- **K** — JANITORIAL SERVICES, MAINTENANCE AND REPAIRS EXCLUDING GAS FUEL, ELECTRIC CURRENT, CITY WATER, HEAT AND DOMESTIC HOT WATER. — FOR DESCRIPTION REFER TO CHART VII ITEM K; FOR COSTS REFER TO CHARTS IX AND X

OPERATION, MAINTENANCE AND LABOR INCLUDING WORKMENS COMPENSATION INSURANCE

	INITIAL COSTS (A B C D E) sub-totals	INITIAL COSTS totals	× AMORTIZATION INTEREST & TAXATION FACTOR	= INITIAL COST RENT PER ROOM PER YEAR	+ MAINTENANCE, OPERATING & LABOR COSTS PER ROOM PER YEAR (F G H J K) sub-totals	MAINTENANCE totals	= RENT PER ROOM PER YEAR WITHOUT VACANCY ALLOWANCE	÷ MONTHS PER YEAR CORRECTED FOR VACANCY ALLOWANCE	= TOTAL RENT PER ROOM PER MONTH	+ ITEMS PAID BY TENANT PER ROOM PER MONTH IN ADDITION TO THE RENT (G) sub-totals	ITEMS totals	= GRAND TOTAL PAID BY TENANT PER ROOM PER MONTH
2 STORY FLAT — WALL BEARING CONST. NO BASEMENT	667.00, 63.82, 4.70, .50, 43.49	779.51	× ----	= ----	4.42, .10, 3.90, 8.10, 24.90	41.42	= ----	÷ ----	= ----	+ .1575	.1575	= ----
2 STORY APT. — CANTILEVER CONST. FULL BASEMENT	670.55, 67.22, 4.70, .50, 43.02	785.99	× ----	= ----	4.42, .50, 3.90, 8.48, 31.01	48.31	= ----	÷ ----	= ----	+ .142	.142	= ----
3 STORY APT. — CANTILEVER CONST. FULL BASEMENT	662.40, 62.71, 4.70, .50, 33.19	763.50	× ----	= ----	4.40, .41, 3.36, 7.64, 29.38	45.19	= ----	÷ ----	= ----	+ .131	.131	= ----
4 STORY APT. — CANTILEVER CONST. FULL BASEMENT	624.80, 62.37, 4.70, .50, 28.59	720.96	× ----	= ----	4.39, .35, 3.07, 7.52, 27.17	42.50	= ----	÷ ----	= ----	+ .126	.126	= ----
6 STORY APT. — CANTILEVER CONST. PARTIAL BASEMENT	601.20, 51.20, 4.70, .75, 20.82	678.67	× ----	= ----	4.32, .74, 2.53, 6.92, 30.16	44.67	= ----	÷ ----	= ----	+ .114	.114	= ----
8 STORY APT. — CANTILEVER CONST. PARTIAL BASEMENT	649.85, 49.04, 4.70, .75, 17.68	722.02	× ----	= ----	4.28, .89, 2.48, 6.68, 29.30	43.63	= ----	÷ ----	= ----	+ .11	.11	= ----
10 STORY APT. — CANTILEVER CONST. PARTIAL BASEMENT	638.25, 48.48, 4.70, .75, 16.22	708.40	× ----	= ----	4.26, .96, 2.44, 6.68, 28.39	42.73	= ----	÷ ----	= ----	+ .116	.116	= ----
12 STORY APT. — CANTILEVER CONST. PARTIAL BASEMENT	628.80, 49.01, 4.70, .75, 14.72	697.98	× ----	= ----	4.25, 1.10, 2.42, 6.68, 27.73	42.18	= ----	÷ ----	= ----	+ .104	.104	= ----

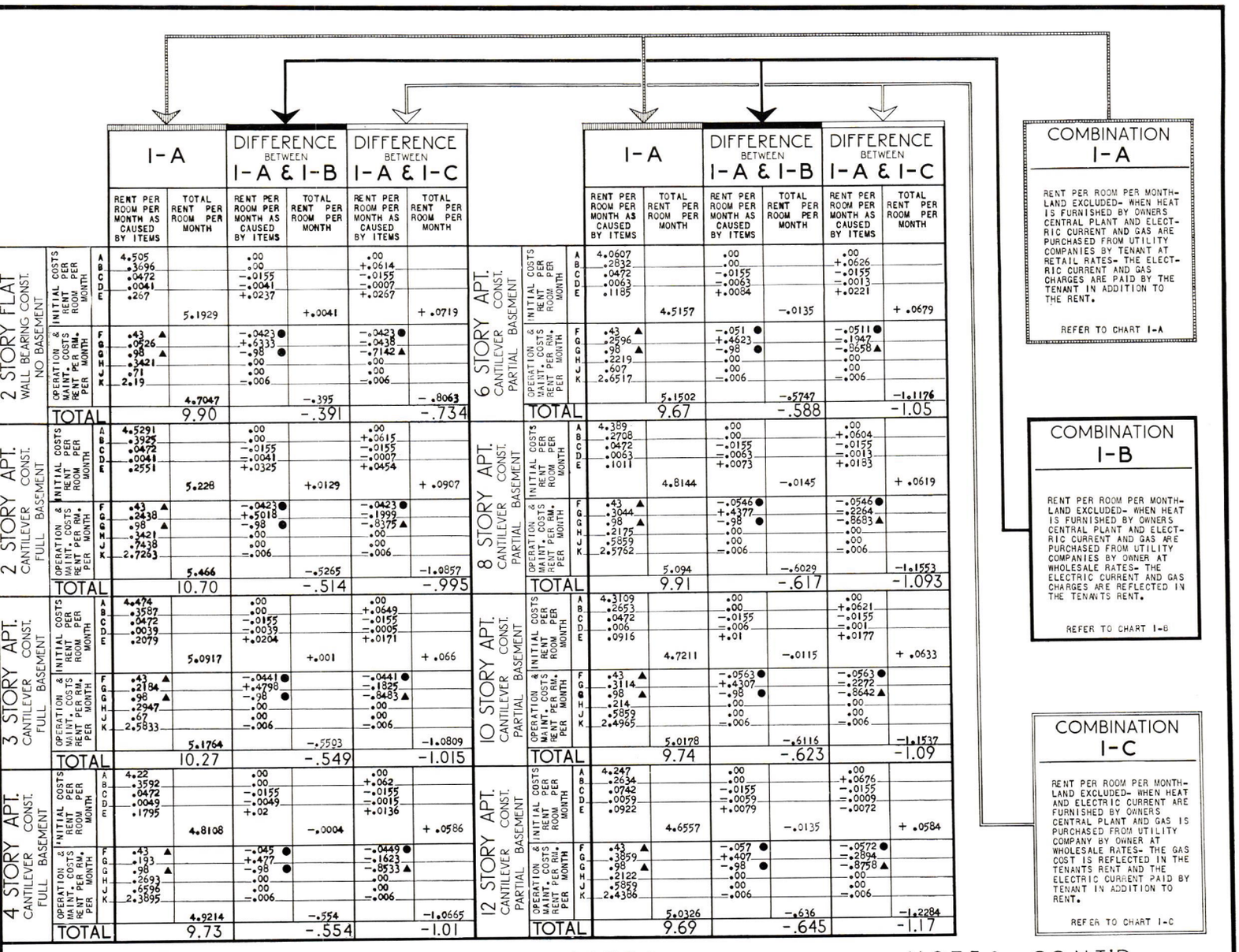
COMPUTATIONS BY S.R.RIO – COMPUTATIONS CHECKED BY E.W.KLEE – CHART DRAWN BY L.A.PANZA S.R.RIO C.SULZER – CHART EDITED BY E.W.KLEE
STUDY COMPLETED OCT. 15, 1934

CHART 1C

UMMARIZED COMPARISONS OF RENT PER OOM PER MONTH — LAND EXCLUDED

or three methods of combining the use of central plant eat — electricity generated by owner or purchased from tility companies at retail or wholesale rates — gas pur- hased from utility companies at retail or wholesale rates.

NALYTIC STUDY OF COST DIFFERENTIALS FOR THE -STORY FLAT AND 2-, 3-, 4-, 6-, 8-, 10-, 12-STORY APARTMENTS



LEGEND

A. INITIAL VERTICAL BUILDING COSTS EXCLUDING HEATING INSTALLATION. GAS LINES. ELECTRIC METERS. PANS AND LOOPS.
REFER TO CHARTS V AND VI AND CHART VII ITEM A.
B. INITIAL VERTICAL HEATING AND DOMESTIC HOT WATER COSTS. THE ELECTRIC GENERATOR IS INCLUDED UNDER THIS ITEM FOR COMBINATION I-C.
REFER TO CHART VIII.
C. INITIAL VERTICAL COSTS FOR GAS LINES INCLUDING VALVES.
REFER TO CHARTS V AND VI AND CHART VII ITEM C.
D. INITIAL VERTICAL COSTS FOR ELECTRIC METER PANS AND LOOPS.
REFER TO CHARTS V AND VI AND CHART VII ITEM D.
E. INITIAL HORIZONTAL PROJECT COSTS.
REFER TO CHART VII AND VII ITEM E.
F. GAS FUEL COSTS.
REFER TO CHART X AND CHART VII ITEM F.
G. ELECTRIC CURRENT USED BY TENANT WITHIN THE APARTMENT.
REFER TO CHART X AND CHART VII ITEM G.
G. ELECTRIC CURRENT FOR PUBLIC SPACE LIGHT AND POWER.
REFER TO CHART X AND CHART VII ITEM G.
H. CITY WATER.
REFER TO CHART IX AND CHART VII ITEM H.
J. HEAT AND DOMESTIC HOT WATER.
REFER TO CHART VIII.
K. JANITORIAL SERVICES. MAINTENANCE AND REPAIRS EXCLUDING GAS FUEL. ELECTRIC CURRENT. CITY WATER. HEAT AND DOMESTIC HOT WATER.
REFER TO CHART IX AND CHART VII ITEM K.

NOTES

SITE PLANS----REFER TO CHART III
THE SITE PLAN IN EACH CASE COVERS AN AREA OF 12 BLOCKS 1/8 SQ. MILE FROM CENTRE LINE TO CENTRE LINE OF BORDERING STREETS AND ALL DATA IS BASED ON THE ENTIRE 12 BLOCK AREA.

	COVERAGE	NUMBER OF ROOMS FOR 12 BLOCKS	NUMBER OF BUILDING UNITS FOR 12 BLOCKS	DENSITY PER GROSS ACRE
2 STORY FLAT	37 %	11136	696	139 PEOPLE
2 STORY APT.	35.1 %	11136	696	139 PEOPLE
3 STORY APT.	30.25 %	14400	600	180 PEOPLE
4 STORY APT.	27.7 %	16128	504	216 PEOPLE
6 STORY APT.	23.5 %	20736	108	259 PEOPLE
8 STORY APT.	23.1 %	24576	96	307 PEOPLE
10 STORY APT.	20.2 %	26880	84	336 PEOPLE
12 STORY APT.	17.3 %	27648	72	346 PEOPLE

ROOMS
THE AVERAGE NUMBER OF ROOMS PER APARTMENT = 4.

BUILDING UNITS
THE FLOOR PLANS AND SECTIONS OF ONE UNIT FOR EACH STORY HEIGHT BUILDING ARE SHOWN ON CHART IV.

DENSITY
THE TOTAL POPULATION FOR THE 12 BLOCK AREA DIVIDED BY THE NUMBER OF ACRES CONTAINED IN THE 12 BLOCK AREA, 1/8 SQ. MILE.

NOTES CONT'D.

FINANCIAL FACTORS
THE RENT PER ROOM PER MONTH IS ARBITRARILY ARRIVED AT BY ASSUMING 100% LOAN TO BE AMORTIZED IN 33 YRS. AT 1.51% INTEREST AT 4% AND MUNICIPAL TAXATION AT 2.2% OR 2.7% OF 80% OF THE ASSESSED BUILDING VALUATION. A VACANCY FACTOR OF 5% IS USED.
THE ABOVE AS EXPRESSED BY FORMULA

$$\frac{\text{INITIAL COST} \times (1.5\% + 4\% + 2.2\%)}{11.4 \text{ MONTHS}} + \frac{\text{MAINT. \& OPER. PER YR.}}{11.4 \text{ MONTHS}} = \text{RENT PER ROOM PER MONTH LAND EXCLUDED}$$

REFER TO CHART I FOR EXAMPLE.

▲ PAID BY TENANT TO UTILITY COMPANIES IN ADDITION TO RENT.
● REFLECTED IN THE TENANTS RENT.

COMPUTATIONS BY	S.R.RIO	OCT. 1934
COMPUTATIONS CHECKED BY	L.A.PANZA	OCT. 1934
CHART DRAWN BY L.A.PANZA	S.R.RIO C.SULZER	OCT. 1934
CHART EDITED BY	E.W.KLEE	OCT. 1934

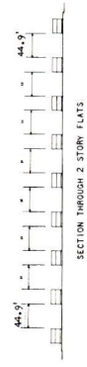
STUDY COMPLETED OCT. 15, 1934

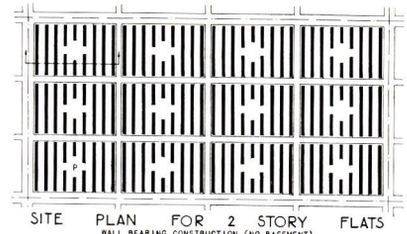
CHART II

NOTE: In the chart the first G and in the legend the second G should read G'.

SITE PLANS FOR THE 2-STORY FLATS AND 2-, 3-, 4-, 6-, 8-, 10-, 12-STORY APARTMENTS

ANALYTIC STUDY OF COST DIFFERENTIALS



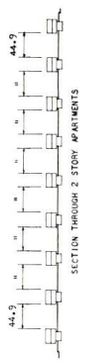


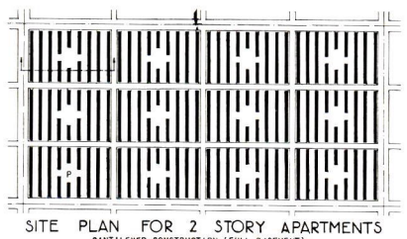
SITE PLAN FOR 2 STORY FLATS
WALL BEARING CONSTRUCTION (NO BASEMENT)

BLOCK SIZE (PROPERTY LINE TO PROPERTY LINE)...386 × 610 FT.
STREETS BORDERING 12 BLOCK AREA, WIDTH OF.... 80 FT.
INTERMEDIATE STREETS, WIDTH OF..... 40 FT.
SIDEWALKS, WIDTH OF..... 5 FT.
POPULATION FOR 12 BLOCKS..... 11136 PEOPLE
COVERAGE..... 37 %
PLAY AREA FOR 12 BLOCKS..... 46440 SQ. FT.
DENSITY PER GROSS ACRE..... 139 PEOPLE

NUMBER OF BUILDINGS 12 BLOCKS	NUMBER OF UNITS IN 12 BLOCKS	NUMBER OF ROOMS PER UNIT	TOTAL NUMBER OF ROOMS IN 12 BLOCKS
72 BUILDINGS 7 UNITS EACH	504	16	8064
48 BUILDINGS 3 UNITS EACH	144	16	2304
24 BUILDINGS 2 UNITS EACH	48	16	768
GRAND TOTAL	696 UNITS		11136 ROOMS

P INDICATES LOCATION OF PLAY AREAS



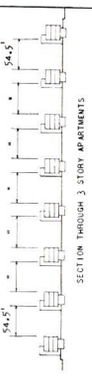


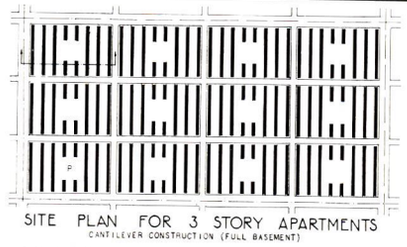
SITE PLAN FOR 2 STORY APARTMENTS
CANTILEVER CONSTRUCTION (FULL BASEMENT)

BLOCK SIZE (PROPERTY LINE TO PROPERTY LINE)...386 × 610 FT.
STREETS BORDERING 12 BLOCK AREA, WIDTH OF.... 80 FT.
INTERMEDIATE STREETS, WIDTH OF..... 40 FT.
SIDEWALKS, WIDTH OF..... 5 FT.
POPULATION FOR 12 BLOCKS..... 11136 PEOPLE
COVERAGE..... 35.1 %
PLAY AREA FOR 12 BLOCKS..... 46440 SQ. FT.
DENSITY PER GROSS ACRE..... 139 PEOPLE

NUMBER OF BUILDINGS 12 BLOCKS	NUMBER OF UNITS IN 12 BLOCKS	NUMBER OF ROOMS PER UNIT	TOTAL NUMBER OF ROOMS IN 12 BLOCKS
72 BUILDINGS 7 UNITS EACH	504	16	8064
48 BUILDINGS 3 UNITS EACH	144	16	2304
24 BUILDINGS 2 UNITS EACH	48	16	768
GRAND TOTAL	696 UNITS		11136 ROOMS

P INDICATES LOCATION OF PLAY AREAS



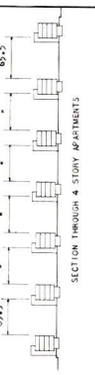


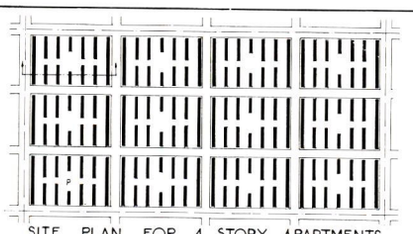
SITE PLAN FOR 3 STORY APARTMENTS
CANTILEVER CONSTRUCTION (FULL BASEMENT)

BLOCK SIZE (PROPERTY LINE TO PROPERTY LINE)...386 × 610 FT.
STREETS BORDERING 12 BLOCK AREA, WIDTH OF.... 80 FT.
INTERMEDIATE STREETS, WIDTH OF..... 40 FT.
SIDEWALKS, WIDTH OF..... 5 FT.
POPULATION FOR 12 BLOCKS..... 14400 PEOPLE
COVERAGE..... 30.25 %
PLAY AREA FOR 12 BLOCKS..... 60000 SQ. FT.
DENSITY PER GROSS ACRE..... 180 PEOPLE

NUMBER OF BUILDINGS 12 BLOCKS	NUMBER OF UNITS IN 12 BLOCKS	NUMBER OF ROOMS PER UNIT	TOTAL NUMBER OF ROOMS IN 12 BLOCKS
72 BUILDINGS 7 UNITS EACH	504	24	12096
48 BUILDINGS 2 UNITS EACH	96	24	2304
GRAND TOTAL	600		14400

P INDICATES LOCATION OF PLAY AREAS



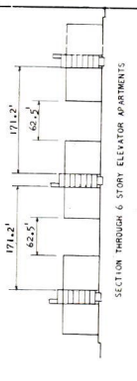


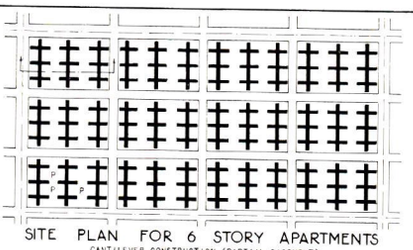
SITE PLAN FOR 4 STORY APARTMENTS
CANTILEVER CONSTRUCTION (FULL BASEMENT)

BLOCK SIZE (PROPERTY LINE TO PROPERTY LINE)...384 × 585 FT.
STREETS BORDERING 12 BLOCK AREA, WIDTH OF.... 80 FT.
INTERMEDIATE STREETS, WIDTH OF..... 60 FT.
SIDEWALKS, WIDTH OF..... 10 FT.
POPULATION FOR 12 BLOCKS..... 16128 PEOPLE
COVERAGE..... 27.1 %
PLAY AREA FOR 12 BLOCKS..... 67500 SQ. FT.
DENSITY PER GROSS ACRE..... 216 PEOPLE

NUMBER OF BUILDINGS 12 BLOCKS	NUMBER OF UNITS IN 12 BLOCKS	NUMBER OF ROOMS PER UNIT	TOTAL NUMBER OF ROOMS IN 12 BLOCKS
24 BUILDINGS 7 UNITS EACH	168	32	5376
96 BUILDINGS 3 UNITS EACH	288	32	9216
24 BUILDINGS 2 UNITS EACH	48	32	1536
GRAND TOTAL	504		16128

P INDICATES LOCATION OF PLAY AREAS



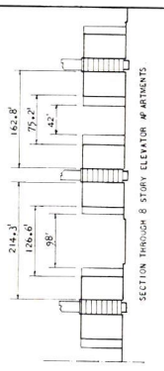


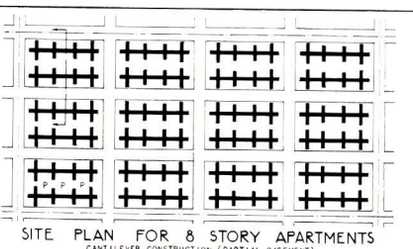
SITE PLAN FOR 6 STORY APARTMENTS
CANTILEVER CONSTRUCTION (PARTIAL BASEMENT)

BLOCK SIZE (PROPERTY LINE TO PROPERTY LINE)...373 × 595 FT.
STREETS BORDERING 12 BLOCK AREA, WIDTH OF.... 80 FT.
INTERMEDIATE STREETS, WIDTH OF..... 60 FT.
SIDEWALKS, WIDTH OF..... 10 FT.
POPULATION FOR 12 BLOCKS..... 20736 PEOPLE
COVERAGE..... 23.5 %
PLAY AREA FOR 12 BLOCKS..... 86400 SQ. FT.
DENSITY PER GROSS ACRE..... 259 PEOPLE

NUMBER OF BUILDINGS 12 BLOCKS	NUMBER OF UNITS IN 12 BLOCKS	NUMBER OF ROOMS PER UNIT	TOTAL NUMBER OF ROOMS IN 12 BLOCKS
108 BUILDINGS 1 UNIT EACH	108	192	20736
GRAND TOTAL	108		20736

P INDICATES LOCATION OF PLAY AREAS



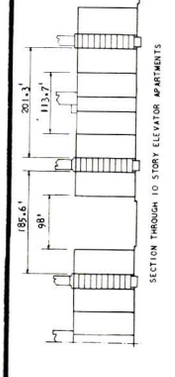


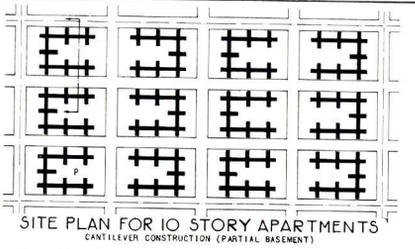
SITE PLAN FOR 8 STORY APARTMENTS
CANTILEVER CONSTRUCTION (PARTIAL BASEMENT)

BLOCK SIZE (PROPERTY LINE TO PROPERTY LINE)...360 × 580 FT.
STREETS BORDERING 12 BLOCK AREA, WIDTH OF.... 80 FT.
INTERMEDIATE STREETS, WIDTH OF..... 80 FT.
SIDEWALKS, WIDTH OF..... 10 FT.
POPULATION FOR 12 BLOCKS..... 24576 PEOPLE
COVERAGE..... 23.1 %
PLAY AREA FOR 12 BLOCKS..... 102500 SQ. FT.
DENSITY PER GROSS ACRE..... 307 PEOPLE

NUMBER OF BUILDINGS 12 BLOCKS	NUMBER OF UNITS IN 12 BLOCKS	NUMBER OF ROOMS PER UNIT	TOTAL NUMBER OF ROOMS IN 12 BLOCKS
96 BUILDINGS 1 UNIT EACH	96	256	24576
GRAND TOTAL	96		24576

P INDICATES LOCATION OF PLAY AREAS



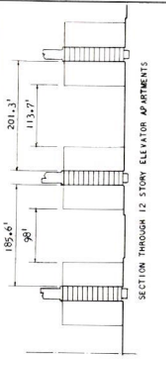


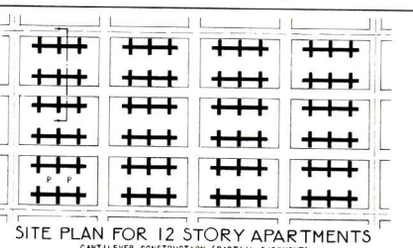
SITE PLAN FOR 10 STORY APARTMENTS
CANTILEVER CONSTRUCTION (PARTIAL BASEMENT)

BLOCK SIZE (PROPERTY LINE TO PROPERTY LINE) ...360 × 580 FT.
STREETS BORDERING 12 BLOCK AREA, WIDTH OF..... 80 FT.
INTERMEDIATE STREETS, WIDTH OF..... 80 FT.
SIDEWALKS, WIDTH OF..... 10 FT.
POPULATION FOR 12 BLOCKS..... 26880 PEOPLE
COVERAGE..... 20.2 %
PLAY AREA FOR 12 BLOCKS..... 112100 SQ. FT.
DENSITY PER GROSS ACRE..... 336 PEOPLE

NUMBER OF BUILDINGS 12 BLOCKS	NUMBER OF UNITS IN 12 BLOCKS	NUMBER OF ROOMS PER UNIT	TOTAL NUMBER OF ROOMS IN 12 BLOCKS
84 BUILDINGS 1 UNIT EACH	84	320	26880
GRAND TOTAL	84		26880

P INDICATES LOCATION OF PLAY AREAS





SITE PLAN FOR 12 STORY APARTMENTS
CANTILEVER CONSTRUCTION (PARTIAL BASEMENT)

BLOCK SIZE (PROPERTY LINE TO PROPERTY LINE)...360 × 580 FT.
STREETS BORDERING 12 BLOCK AREA, WIDTH OF.... 80 FT.
INTERMEDIATE STREETS, WIDTH OF..... 80 FT.
SIDEWALKS, WIDTH OF..... 10 FT.
POPULATION FOR 12 BLOCKS..... 27648 PEOPLE
COVERAGE..... 17.3 %
PLAY AREA FOR 12 BLOCKS..... 115450 SQ. FT.
DENSITY PER GROSS ACRE..... 346 PEOPLE

NUMBER OF BUILDINGS 12 BLOCKS	NUMBER OF UNITS IN 12 BLOCKS	NUMBER OF ROOMS PER UNIT	TOTAL NUMBER OF ROOMS IN 12 BLOCKS
72 BUILDINGS 1 UNIT EACH	72	384	27648
GRAND TOTAL	72		27648

P INDICATES LOCATION OF PLAY AREAS

NOTES

SITE PLAN

THE SITE PLAN IN EACH CASE COVERS AN AREA OF 12 BLOCKS (1/8 SQ. MILE FROM CENTRE LINE TO CENTRE LINE OF BORDERING STREETS) AND ALL DATA IS BASED ON THE ENTIRE 12 BLOCK AREA.
THE ADOPTED SITE IS EQUAL IN SIZE TO AN AVERAGE NEW YORK CITY 20 BLOCK AREA. FOR THE SAKE OF ECONOMICAL PLANNING AND BETTER PROPORTIONED BLOCKS, THE AREA WAS ARBITRARILY DIVIDED INTO 12 BLOCKS.

COVERAGE

THE PERCENTAGE OF BLOCK AREA FROM PROPERTY LINE TO PROPERTY LINE COVERED BY THE BUILDINGS.

A BUILDING

A BUILDING COMPRISES ONE CONTINUOUS ROW OF 2 STORY FLATS OR 2-3-4 STORY APARTMENT UNITS IRRESPECTIVE OF THE NUMBER OF UNITS CONTAINED IN A ROW.
A BUILDING COMPRISES ON UNIT OF THE 6-8-10-12 STORY APARTMENTS.

A UNIT

THE FLOOR PLANS AND SECTIONS OF ONE UNIT FOR EACH STORY HEIGHT BUILDING ARE SHOWN ON CHART NO. IV.

PLAY AREAS

IN EACH BLOCK A PLAY AREA IS PROVIDED TO SERVE ONLY CHILDREN BETWEEN THE AGES OF 5 AND 7 INCLUSIVE. PROVISION IS MADE FOR 25 SQ. FT. OF PLAY AREA FOR EACH CHILD BETWEEN THE AGES OF 5 AND 7 INCLUSIVE. IT IS ASSUMED THAT CHILDREN ABOVE THE AGE OF 7, WHO REQUIRE MUCH GREATER PLAY SPACE WILL USE PLAY AREAS ADJOINING SCHOOLS, PLAY-GROUNDS IN PARKS OR NEIGHBORHOOD PLAY FIELDS.

STREET WIDTH

THE STREET WIDTH IS MEASURED FROM PROPERTY LINE TO PROPERTY LINE AND INCLUDES THE SIDEWALKS.

BUILDING CONSTRUCTION

FOR THE CONSTRUCTION OF BUILDINGS AND SPECIFICATIONS OF MATERIALS REFER TO CHARTS NO. IV-V-VI AND THE REPORT.

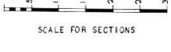
A FLAT BUILDING

FOR DESCRIPTION REFER TO COLUMN OF NOTES CHART NO. IV.

AN APARTMENT BUILDING

FOR DESCRIPTION REFER TO COLUMN OF NOTES CHART NO. IV.

SCALE FOR SITE PLANS



SCALE FOR SECTIONS

SITE PLANS & DATA BY
A.B.GALLION W.GOTTSCHALK
S.R.R10 MARCH 1934

CHART DRAWN BY
J.H.CAHALIN N.J.RUZZA
S.R.R10 JULY 1934

DATA CHECKED BY
J.A.ROSS JULY 1934

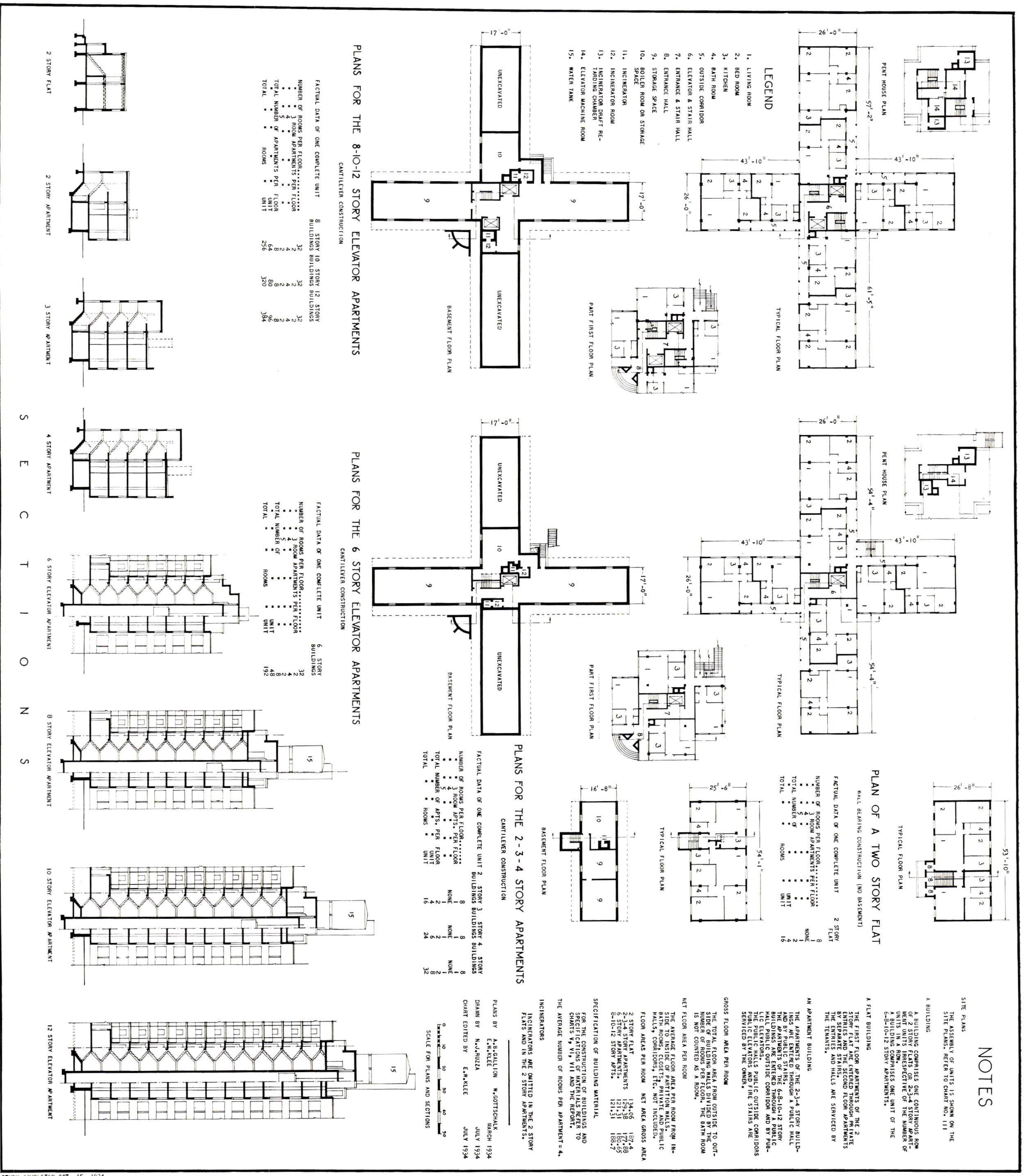
CHART EDITED BY
E.W.KLEE JULY 1934

STUDY COMPLETED OCT. 15, 1934

CHART III

FLOOR PLANS AND SECTIONS OF ONE UNIT FOR EACH OF THE 2-STORY FLAT AND 2-, 3-, 4-, 6-, 8-, 10-, 12-STORY APARTMENTS

ANALYTIC STUDY OF COST DIFFERENTIALS



PLANS FOR THE 8-10-12 STORY ELEVATOR APARTMENTS — CANTILEVER CONSTRUCTION

FACTUAL DATA OF ONE COMPLETE UNIT	8 STORY BUILDINGS	10 STORY BUILDINGS	12 STORY BUILDINGS
NUMBER OF ROOMS PER FLOOR	32	32	32
" " 3 ROOM APARTMENTS PER FLOOR	2	2	2
" " 4 " " "	4	4	4
" " 5 " " "	2	2	2
TOTAL NUMBER OF APARTMENTS PER FLOOR	8	8	8
" " " " UNIT	64	80	96
TOTAL " " ROOMS " UNIT	256	320	384

PLANS FOR THE 6 STORY ELEVATOR APARTMENTS — CANTILEVER CONSTRUCTION

FACTUAL DATA OF ONE COMPLETE UNIT	6 STORY BUILDINGS
NUMBER OF ROOMS PER FLOOR	32
" " 3 ROOM APARTMENTS PER FLOOR	2
" " 4 " " "	4
" " 5 " " "	2
TOTAL NUMBER OF " " "	8
" " " " UNIT	48
TOTAL " " ROOMS UNIT	192

PLAN OF A TWO STORY FLAT — WALL BEARING CONSTRUCTION (NO BASEMENT)

FACTUAL DATA OF ONE COMPLETE UNIT	2 STORY FLAT
NUMBER OF ROOMS PER FLOOR	8
" " 3 ROOM APARTMENTS PER FLOOR	1
" " 4 " " "	NONE
" " 5 " " "	1
TOTAL NUMBER OF " " "	2
" " " " UNIT	4
TOTAL " ROOMS " UNIT	16

PLANS FOR THE 2-3-4 STORY APARTMENTS — CANTILEVER CONSTRUCTION

FACTUAL DATA OF ONE COMPLETE UNIT	2 STORY BUILDINGS	3 STORY BUILDINGS	4 STORY BUILDINGS
NUMBER OF ROOMS PER FLOOR	8	8	8
" " 3 ROOM APTS. PER FLOOR	1	1	1
" " 4 " " "	NONE	NONE	NONE
" " 5 " " "	1	1	1
TOTAL NUMBER OF APTS. PER FLOOR	2	2	2
" " " " UNIT	4	6	8
TOTAL " " ROOMS " UNIT	16	24	32

NOTES

SITE PLANS

THE ASSEMBLY OF UNITS IS SHOWN ON THE SITE PLANS. REFER TO CHART NO. III

A BUILDING

A BUILDING COMPRISES ONE CONTINUOUS ROW OF 2 STORY FLATS OR 2-3-4 STORY APARTMENT UNITS IRRESPECTIVE OF THE NUMBER OF UNITS IN A ROW.
A BUILDING COMPRISES ONE UNIT OF THE 6-8-10-12 STORY APARTMENTS.

A FLAT BUILDING

THE FIRST FLOOR APARTMENTS OF THE 2 STORY FLAT ARE ENTERED THROUGH PRIVATE ENTRIES AND THE SECOND FLOOR APARTMENTS BY SEPARATE STAIRS.
THE ENTRIES AND HALLS ARE SERVICED BY THE TENANTS.

AN APARTMENT BUILDING

THE APARTMENTS OF THE 2-3-4 STORY BUILDINGS ARE ENTERED THROUGH A PUBLIC HALL AND BY PUBLIC STAIRS.
THE APARTMENTS OF THE 6-8-10-12 STORY BUILDINGS ARE ENTERED THROUGH A PUBLIC HALL PUBLIC OUTSIDE CORRIDOR AND BY PUBLIC ELEVATORS.
THE PUBLIC HALLS PUBLIC OUTSIDE CORRIDORS PUBLIC ELEVATORS AND FIRE STAIRS ARE SERVICED BY THE OWNER.

GROSS FLOOR AREA PER ROOM

THE TOTAL FLOOR AREA FROM OUTSIDE TO OUTSIDE OF BUILDING WALLS DIVIDED BY THE NUMBER OF ROOMS PER FLOOR. THE BATH ROOM IS NOT COUNTED AS A ROOM.

NET FLOOR AREA PER ROOM

THE AVERAGE FLOOR AREA PER ROOM FROM INSIDE TO INSIDE OF PARTITION WALLS.
BATH ROOMS, CLOSETS, PRIVATE AND PUBLIC HALLS, CORRIDORS, ETC. NOT INCLUDED.

FLOOR AREAS PER ROOM	NET AREA	GROSS AREA
2 STORY FLAT	134.06	187.4
2-3-4 STORY APARTMENTS	129.38	177.88
6 STORY APARTMENTS.	121.31	180.65
8-10-12 STORY APTS.	121.31	188.7

SPECIFICATION OF BUILDING MATERIAL

FOR THE CONSTRUCTION OF BUILDINGS AND SPECIFICATIONS OF MATERIALS REFER TO CHARTS V, VI, VII AND THE REPORT.

THE AVERAGE NUMBER OF ROOMS PER APARTMENT = 4.

INCINERATORS

INCINERATORS ARE OMITTED IN THE 2 STORY FLATS AND IN THE 2 STORY APARTMENTS.

PLANS BY	A.B.GALLION W.GOTTSCHALK E.W.KLEE	MARCH 1934
DRAWN BY	N.J.RUZZA	JULY 1934
CHART EDITED BY	E.W.KLEE	JULY 1934

STUDY COMPLETED OCT. 15, 1934

BREAKDOWN OF INITIAL VERTICAL COSTS FOR THE 2-STORY FLAT AND 2-, 3-, 4-STORY APARTMENTS

ANALYTIC STUDY OF COST DIFFERENTIALS

GENERAL NOTES:- UNIT PRICES GIVEN BELOW INCLUDE LABOR, MATERIAL, SUPERVISION, OVERHEAD AND PROFIT.
ESTIMATES ARE BASED ON QUANTITIES OF 5000 ROOMS.
SEE CHART NO. III FOR THE SITE PLANS.
" " " IV " " BUILDING UNIT PLANS.
" " " VII " HORIZONTAL PROJECT COSTS.
" " " VIII " HEATING COSTS.
" " " IX " OPERATION AND MAINTENANCE COSTS.
" " " X " ELECTRICITY AND GAS RATES.
THE AVERAGE NUMBER OF ROOMS PER APARTMENT = 4.

		2 STORY FLAT WALLBEARING CONSTRUCTION WITHOUT BASEMENT				2 STORY APARTMENTS CANTILEVER CONSTRUCTION BASEMENT BETW. COLUMNS				3 STORY APARTMENTS CANTILEVER CONSTRUCTION BASEMENT BETW. COLUMNS				4 STORY APARTMENTS CANTILEVER CONSTRUCTION BASEMENT BETW. COLUMNS				NOTES PERTAINING TO ITEMS
		QUANTITY FOR ONE UNIT	UNIT PRICE	TOTAL PER UNIT 16 ROOMS	PRICE PER ROOM	QUANTITY FOR ONE UNIT	UNIT PRICE	TOTAL PER UNIT 16 ROOMS	PRICE PER ROOM	QUANTITY FOR ONE UNIT	UNIT PRICE	TOTAL PER UNIT 24 ROOMS	PRICE PER ROOM	QUANTITY FOR ONE UNIT	UNIT PRICE	TOTAL PER UNIT 32 ROOMS	PRICE PER ROOM	FOR FURTHER DETAILS & SPECIFICATIONS SEE REPORT
BASEMENT	STEAM SHOVEL EXCAVATION & DISPOSAL					252.5 CY	.65	164.10		252.5 CY	.64	161.60		252.5 CY	.64	161.60		NORMAL SOIL CONDITIONS ASSUMED-NO ROCK NO WATER
	HAND EXCAVATION & DISPOSAL	70.0 CY	1.30	91.00		42 CY	1.30	54.60		44 CY	1.30	57.20		48 CY	1.28	61.45		" " " " " " " "
	BACKFILL	30 CY	.32	9.60		55 CY	.32	17.60		55 CY	.32	17.60		55 CY	.32	17.60		
	ROUGH GRADING	1000 SF	.013	13.00		1000 SF	.013	13.00		1000 SF	.013	13.00		1000 SF	.013	13.00		TO 10' OUTSIDE BLDG. LINE & 6" BELOW FIN. GRADE
	CONCRETE FOOTINGS & BSMT. WALLS INC. FORMS & REINFORC.					48 CY	14.10	676.80		49.15 CY	14.10	693.00		50.5 CY	14.10	712.00		BEARING VALUE OF SOIL-3 TONS PER SQ. FT.
	" " " " " " " . NO REINF.	46.5 CY	12.50	581.25														" " " " " " "
	STRUCTURAL STEEL H COLUMNS (STREHAN SYSTEM)					1.5 T	65.00	97.50		1.85 T	65.00	120.25		1.90 T	65.00	123.50		INCLUDING STEEL COLUMN CHANNEL HEADS
	FLOOR-CINDER FILL.CINDER CONCRETE. CEMENT FINISH					825 SF	.19	156.75		825 SF	.19	156.75		825 SF	.19	156.75		6" CINDER FILL.4" CINDER CONCRETE.1" FINISH
	INTEGRAL WATERPROOFING PER CUBIC YARD OF CONCRETE	41 CY	.52	21.30		48 CY	.52	24.95		49.15 CY	.52	25.55		50.5 CY	.51	25.75		1 TON HYDRATED LIME TO 75 CU. YDS. OF CONCRETE
				TOTAL 716.15	44.75			TOTAL 1205.30	75.35			TOTAL 1245.00	51.85			TOTAL 1271.65	39.75	
BASEMENT FINISH	BASEMENT STAIRS-CONCRETE FORMS & REINFORCING					1 CY	14.10	14.10		1 CY	14.10	14.10		1 CY	14.10	14.10		FROM ENTRANCE HALL FLOOR LEVEL TO BASEMENT
	6" HOLLOW TILE WALLS					160 SF	.36	57.50		161 SF	.36	58.00		150 SF	.36	54.00		
	2" SOLID PLASTER PARTITIONS					145 SF	.202	29.30		145 SF	.202	29.30		145 SF	.202	29.30		PREFAB. SECT. OF MET. LATH-3 COATS PLAS. EA. SIDE
	WOOD PARTITIONS & HARDWARE FOR PERAMBULATOR BINS					175 SF	.104	18.20		175 SF	.104	18.20		175 SF	.104	18.20		4 BINS PER UNIT REGARDLESS OF STORY HEIGHT
	STEEL SASH & GLAZING					36 SF	.51	18.35		36 SF	.51	18.35		36 SF	.51	18.35		STANDARD 1" SECTIONS-DOUBLE THICK QUAL. B GLASS
	FIREPROOF DOORS & BUCKS INCL. HARDWARE					3 EA	18.70	56.10		3 EA	18.70	56.10		3 EA	18.70	56.10		FURNITURE STEEL COV.DOORS-16 GA.COMB.STEEL BUCKS
	WHITEWASHING WALLS & CEILS. PAINTING DOORS & WINDOWS							26.00				26.00				26.00		2 COATS GLOSS OIL PAINT ON DOORS & WINDOWS
	ELECTRICAL OUTLETS INCL. LIGHTING FIXTURES					7	4.68	32.75		7	4.68	32.75		7	4.68	32.75		UNIT PRICE GIVEN IS PER OUTLET
	SLOP SINK					1	44.00	44.00		1	44.00	44.00		1	44.00	44.00		
								TOTAL 296.30	18.50			TOTAL 296.80	12.35			TOTAL 292.80	9.15	
STRUCTURE & ENCLOSURE — CANTILEVER	STRUCTURAL STEEL H COLUMNS (STREHAN SYSTEM)					3.05 T	65.00	198.10		4.55 T	65.00	295.80		6.75 T	65.00	438.50		INCLUDING STEEL CHANNEL COLUMN HEADS
	SETTING OF ANCHOR BOLTS FOR COLUMN BASE PLATES					17	.52	8.85		17	.52	8.85		17	.52	8.85		UNIT PRICE GIVEN IS PER BOLT
	GROUTING OF COLUMN BASE PLATES					8.5 EA	.52	4.40		8.5 EA	.52	4.40		8.5 EA	.52	4.40		
	FLAT FLOOR SLAB-CONCRETE FORMS & REINFORCING					2646 SF	.49	1296.55		3969 SF	.48	1905.10		5292 SF	.48	2540.15		6" STONE CONCR. GIRDERLESS SLAB-REINF. BOTH WAYS
	FLAT ROOF SLAB - " " " "					1314 SF	.49	643.85		1314 SF	.48	630.70		1314 SF	.48	630.70		" " " " " " "
	6" HOLLOW TILE WALLS					520 SF	.36	187.20		790 SF	.36	284.20		980 SF	.36	353.00		
	CURTAIN WALLS-STUCCO OUTSIDE & PLASTER INSIDE					1095 SF	.475	519.90		1537 SF	.475	729.50		2317 SF	.475	1100.20		NAILCRETE IN METAL STUD-ECOD MTLATED LATH 2 SIDE
	PLASTERING & INSULATION OF EXPOSED ENDS OF SLABS					332 LF	.114	37.85		442 LF	.114	50.40		574 LF	.114	65.45		ECOD METALLATED LATH & STUCCO
	STEEL SASH & GLAZING					668 SF	.68	454.25		1002 SF	.68	681.35		1336 SF	.68	908.50		STANDARD 1" SECTIONS-DOUBLE THICK QUAL. B GLASS
	INSULATION OF FIRST FLOOR SLAB					1240 SF	.104	129.00		1240 SF	.104	129.00		1240 SF	.104	129.00		1 1/2" CORK BOARD ASPHALT DIPPED-NAILED TO SLAB
STRUCTURE & ENCLOSURE — WALL BEARING	OUTSIDE BEARING WALLS-8" SELECTED COMMON BRICK	22.25 M	55.10	1226.00														
	INSIDE " " -8" COMMON BRICK	20. M	39.50	790.00														INCLUD. PARTY WALLS BETWEEN UNITS-EVERY 107 -8"
	GROUND FLOOR-CINDER FILL CINDER CONCRETE. CEMENT FINISH	1300 SF	.19	247.00														6" CINDER FILL.4" CINDER CONCRETE.1" FINISH
	SECOND FLOOR-TRUSSES. 2" CONCRETE SLAB. HUNG CEILING	1240 SF	.514	637.50														OPEN TRUSS JOISTS-METAL BACK RIP LATH FOR SLAB
	ROOF DECK-TRUSSES, FERRO BOARD. HUNG CEILING	1240 SF	.44	546.00														" " " -6" FERRO BOARD 20 GAUGE METAL
	6" HOLLOW TILE WALLS	500 SF	.35	175.00														
	STEEL LINTELS	.7 T	50.00	35.00														
	PRECAST STONE SILLS	85 LF	.52	44.20														
	STEEL SASH & GLAZING	360 SF	.51	183.60														STANDARD 1" SECTIONS-DOUBLE THICK QUAL. B GLASS
	INSULATION OF GROUND FLOOR	1250 SF	.104	130.00														1 1/2" CORK BOARD ASPHALT DIPPED-NAILED TO SLAB
				TOTAL 4024.90	251.55			TOTAL 3479.95	217.50			TOTAL 4719.30	196.65			TOTAL 6178.75	193.10	
STAIRHALL & BULKHEAD	STAIR LANDINGS-CONCRETE FORMS & REINFORCING					62 SF	.49	30.40		120 SF	.48	57.60		150 SF	.48	72.00		6" STONE CONCR. GIRDERLESS SLAB REINF. BOTH WAYS
	FLAT ROOF SLAB- " " " "					114 SF	.49	55.85		114 SF	.48	54.70		114 SF	.48	54.70		" " " " " " " "
	STAIRWELL WALLS-6" HOLLOW TILE GLAZED BOTH SIDES					300 SF	.52	156.00		725 SF	.52	377.00		875 SF	.51	446.25		
	" " -8" " " " " " "					330 SF	.65	214.50		375 SF	.64	240.00		500 SF	.64	320.00		
	FELT FLASHING INCLUDING FLASHING BLOCKS									24 LF	.68	16.30		24 LF	.68	16.30		
	BULKHEAD DOOR & BUCK									1 EA	17.15	17.15		1 EA	17.15	17.15		FURNITURE STEEL COV.DOORS-16 GA.COMB.STEEL BUCKS
	" " " HARDWARE									1 EA	7.85	7.85		1 EA	7.85	7.85		
	ENTR. STOOP & HALL FLOOR-CINDER FILL & CINDER CONCRETE	95. SF	.19	18.05		60 SF	.19	11.40		60 SF	.19	11.40		60 SF	.19	11.40		
	CEMENT FINISH OF TREADS & LANDINGS	195 SF	.13	25.35		186 SF	.13	24.20		325 SF	.13	42.25		436 SF	.13	56.70		APPLIED TO STEEL TREADS & STEEL & CONCR.LANDINGS
	SCREEDED CINDER CONCRETE ROOF FILL	135 SF	.11	14.85		114 SF	.11	12.55		114 SF	.11	12.55		114 SF	.11	12.55		
	ROOF INSULATION- 1" THERMAX	135 SF	.073	9.85		114 SF	.073	8.30		114 SF	.073	8.30		114 SF	.073	8.30		
	ROOFING- 3 PLY	135 SF	.073	9.85		114 SF	.073	8.30		114 SF	.073	8.30		114 SF	.073	8.30		TAR & GRAVEL ROOF. BARRETT SPEC. 10 YR. GUAR. TEE
	COPPER GRAVEL STOP	8 LF	.26	2.10		20 LF	.26	5.20		44 LF	.26	11.45		44 LF	.26	11.45		16 GAUGE METAL
	STEEL STAIRS & INTERMEDIATE LANDINGS			130.00				135.30				309.90				397.30		COMPLETE WITH NEWELS RAILS BALUSTERS & FASCIAS
	STEEL SASH & GLAZING	15.8 SF	.51	8.05		28 SF	.51	14.30		84 SF	.51	42.85		112 SF	.51	57.10		STANDARD 1" SECTIONS-DOUBLE THICK QUAL. B GLASS
	FIREPROOF ENTRANCE DOOR. BUCK & GLAZING	1 EA	27.00	27.00		1 EA	27.00	27.00		1 EA	27.00	27.00		1 EA	27.00	27.00		FURNITURE STEEL COV.DOORS-16 GA.COMB.STEEL BUCKS
	" " " HARDWARE	1 EA	21.60	21.60		1 EA	21.60	21.60		1 EA	21.60	21.60		1 EA	21.60	21.60		
	PAINTING OF STAIRS,CEILINGS,WINDOWS & DOORS			19.95				19.95				45.15				59.90		2 COATS GLOSS OIL PAINT
	ELECTRICAL OUTLETS INCL. LIGHTING FIXTURES	4	4.50	18.00		4	4.68	18.70		6	4.68	28.10		7	4.68	32.75		
	BELLWORK INC. PUSHBUTTONS & MAILBOXES			23.00				34.85				46.60				55.80		INCLUDING REMOTE DOOR OPENING DEVICE
	OUTSIDE BEARING WALLS-8" SELECTED COMMON BRICK	2.25 M	55.10	123.95														
	ROOF DECK-TRUSSES, FERRO BOARD. HUNG CEILING	135 SF	.44	49.40														OPEN TRUSS JOISTS-6" FERRO BOARD 20 GAUGE METAL
	6" HOLLOW TILE WALLS	180 SF	.35	63.00														
	STAIRWELL WALLS-6" HOLLOW TILE GLAZED ONE SIDE	230 SF	.47	108.10														
	" " -4" " " " " "	56 SF	.32	17.90														
	" " -4" " " " BOTH SIDES	135 SF	.40	54.00														
	COPPER FLASHING	16 LF	.94	15.05														16 GAUGE METAL
	COPPER GUTTER & LEADER	26 LF	.94	24.45														" " "
				TOTAL 783.50	49.00			TOTAL 798.30	50.00			TOTAL 1386.05	57.75			TOTAL 1694.40	52.95	
ROOF	SCREEDED CINDER CONCRETE ROOF FILL	1240 SF	.11	136.40		1230 SF	.11	135.30		1230 SF	.11	135.30		1230 SF	.11	135.30		
	ROOF INSULATION- 1" THERMAX	1310 SF	.073	95.60		1230 SF	.073	89.75		1230 SF	.073	89.75		1230 SF	.073	89.75		
	ROOFING- 3 PLY	1310 SF	.073	95.60		1230 SF	.073	89.75		1230 SF	.073	89.75		1230 SF	.073	89.75		TAR & GRAVEL ROOF. BARRETT SPEC. 10 YR. GUAR. TEE
	COPPER LEADER BOX	1	7.30	7.30		1	7.30	7.30		1	7.30	7.30		1	7.30	7.30		16 GAUGE METAL
	COPPER GRAVEL STOP	112 LF	.26	29.10		112 LF	.26	29.10										" " "
	PARAPET-8" HOLLOW TILE GLAZED INSIDE STUCCOED OUTSIDE									385 SF	.75	288.20		400 SF	.75	300.00		
	PARAPET COPING-GLAZED VITRIFIED TILE									110 LF	.54	59.40		113 LF	.54	61.00		
	FELT FLASHING INCLUDING FLASHING BLOCKS									113 LF	.68	76.85		113 LF	.68	78.85		
				TOTAL 364.00	22.75			TOTAL 351.20	22.00			TOTAL 746.55	31.10			TOTAL 759.95	23.75	
FINISH & EQUIPMENT	STEEL COLUMN FIREPROOFING-2" HOLLOW TILE & PLASTER					450 SF	.31	139.50		675 SF	.31	209.50		940 SF	.31	291.50		
	2" SOLID PLASTER PARTITIONS	1320 SF	.203	267.95		2000. SF	.203	406.00		3000 SF	.203	609.00		4000 SF	.203	812.00		PREFAB SECT OF MET LATH-3 COATS PLAS EA SIDE
	PLASTERING OF INT. MASONRY WALLS. EXCEPT WHERE GLAZED	2800 SF	.068	190.30		1000 SF	.068	68.00		1500 SF	.068	102.00		1900 SF	.068	129.20		3 COATS OF PLASTER
	FIREPROOF DOORS,.BUCKS & SADDLES	4	18.75	75.00		4	18.75	75.00		6	18.75	112.50		8	18.75	150.00		FURNITURE STEEL COV.DOORS-16 GA.COMB.STEEL BUCKS
	" " HARDWARE	4	4.70	18.80		4	4.70	18.80		6	4.70	28.20		8	4.70	37.60		
	WOOD DOORS, BUCKS & SADDLES	20	8.90	178.00		14	8.90	124.60		21	8.90	186.90		28	8.90	249.20		1 3/8" VENEER DOORS& OAK SADDLES
	" " HARDWARE	20	1.60	32.00		14	1.60	22.40		21	1.60	33.60		28	1.60	44.80		
	HARDWOOD FLOORS-7/8" THICK LAID IN MASTIC	2200 SF	.208	457.60		2284 SF	.208	475.10		3426 SF	.208	712.65		4568 SF	.208	950.20		
	WOOD BASE BOARD	800 LF	.067	53.60		800 LF	.067	53.60		1200 LF	.067	80.40		1600 LF	.067	107.20		
	WOOD PICTURE MOULDING	700 LF	.047	32.90		700 LF	.047	32.90		1050 LF	.047	49.40		1400 LF	.047	65.70		
	TILE FLOOR & BASE FOR BATHROOMS	64 SF	.90	57.60		100 SF	.90	90.00		150 SF	.90	135.00		200 SF	.90	180.00		INCLUDES TILE RING UNDER TOILET
	PAINTING -WALLS,CEILINGS,FLOORS,DOORS & WINDOWS	4 AP	85.60	342.40		4 AP	96.80	387.40		6 AP	96.80	581.10		8 AP	96.80	774.80		2 COATS PT. WALLS DOORS CEILS-FLRS 2 CTS. SHELLAC
	WARDROBES-METAL	14	12.50	175.00		16	12.50	200.00		24	12.50	300.00		32	12.50	400.00		ENAMEL FINISH BY MANUFACTURER
	KITCHEN CABINETS- WOOD	4	45.00	180.00		4	45.00	180.00		6	45.00	270.00		8	45.00	360.00		
	MEDICINE CABINETS-METAL	4	6.50	26.00		4	6.50	26.00		6	6.50	39.00		8	6.50	52.00		ENAMEL FINISH BY MANUFACTURER
	WINDOW SHADES	26	.65	16.90		26	1.00	26.00		39	1.00	39.00		52	1.00	52.00		
	GAS RANGES	4	25.00	100.00		4	25.00	100.00		6	25.00	150.00		8	25.00	200.00		
	ELECTRIC REFRIGERATORS	4	80.00	320.00		4	80.00	320.00		6	80.00	480.00		8	80.00	640.00		
	PLASTERING, FURRING & WATERPROOF. OF OUTS. BRICK WALLS	1270 SF	.243	308.60														
				TOTAL 2932.65	183.30			TOTAL 2745.30	171.60			TOTAL 4118.25	171.60			TOTAL 5496.20	171.75	
PLUMB.	PLUMBING PER FIXTURE-COST OF RAIN LEADER PRO-RATED PLUMBING COSTS FOR GAS LINES LISTED BELOW	16	102.70	1643.20		16	102.70	1643.20		24	97.75	2346.00		32	95.25	3048.00		
				TOTAL 1643.20	102.70			TOTAL 1643.20	102.70			TOTAL 2346.00	97.75			TOTAL 3048.00	95.25	
ELECTR.	ELECTRICAL OUTLETS INCLUDING LIGHTING FIXTURES COSTS OF METER PANS & LOOPS LISTED BELOW	46	4.50	207.00		44	4.68	206.00		66	4.68	309.00		88	4.68	412.00		
				TOTAL 207.00	12.95			TOTAL 206.00	12.90			TOTAL 309.00	12.85			TOTAL 412.00	12.85	
INCINERATORS	CONCRETE FOOTINGS INCLUDING FORMS & REINFORCING									1 CY	14.10	14.10		1 CY	14.10	14.10		
	FIRE BRICK LINING FOR FLUE & COMBUSTION CHAMBER									3 M	101.10	303.30		3.5 M	101.10	353.85		
	COMMON BRICKWORK " " " " "									4.5 M	50.55	227.50		5 M	50.55	252.75		
	EQUIPMENT FOR COMBUSTION CHAMBER									1	104.00	104.00		1	104.00	104.00		GRATES, DOORS, ETC.
	HOPPER DOORS									6	7.80	46.80		8	7.80	72.40		2 PER APARTMENT FLOOR.
	PLASTERING OF CHIMNEY IN ROOM SPACE									400 SF	.068	27.20		500 SF	.068	34.00		
	FELT FLASHING INCLUDING FLASHING BLOCKS									13 LF	.68	8.85		13 LF	.68	8.85		
												TOTAL 731.75	30.50			TOTAL 839.95	26.25	
HEAT	INITIAL VERTICAL HEATING AND DOMESTIC HOT WATER COSTS FOR DESCRIPT. OF VERTICAL ELEMENTS REFER TO CHART VIII			875.52	54.72			929.92	58.12			1274.64	53.11			1702.08	53.19	FOR OTHER SYSTEMS OF HEATING REFER TO CHART VIII
GAS	INITIAL VERTICAL COSTS OF GAS LINES-INDIVIDUAL METERS FOR DESCRIPTION REFER TO CHART NO. VII ITEM C-1			112.00	7.00			112.00	7.00			168.00	7.00			224.00	7.00	
ELECT.	ELECTRIC METER PANS AND LOOPS-INDIVIDUAL METERS FOR DESCRIPTION REFER TO CHART NO. VII ITEM D-1			8.00	.62			10.12	.62			13.92	.58			23.36	.73	
TOTAL	WHEN HEAT IS FURNISHED BY OWNERS CENTRAL PLANT AND ELECTRIC CURRENT AND GAS ARE PURCHASED FROM UTILITY COMPANIES BY TENANT AT RETAIL RATES				729.34				736.29				723.09				685.72	

INITIAL VERTICAL COST ITEMS GIVEN BELOW ARE INTERCHANGEABLE VARIATIONS DEPENDING ON WHAT SYSTEM OF HEATING IS USED & HOW ELECTRIC CURRENT & GAS ARE PURCHASED

Item	2 Story Flat			2 Story Apartments			3 Story Apartments			4 Story Apartments			Notes
I. INITIAL VERTICAL HEATING AND DOMESTIC HOT WATER COSTS	COSTS FOR SYSTEM NO. 5 GIVEN ABOVE			COSTS FOR SYSTEM NO. 5 GIVEN ABOVE			COSTS FOR SYSTEM NO. 5 GIVEN ABOVE			COSTS FOR SYSTEM NO. 5 GIVEN ABOVE			FOR OTHER SYSTEMS OF HEATING REFER TO CHART VIII
II. INITIAL VERTICAL COSTS OF GAS LINES													
1. INDIVIDUAL METERING	COSTS GIVEN ABOVE	112.00	7.00	COSTS GIVEN ABOVE	112.00	7.00	COSTS GIVEN ABOVE	168.00	7.00	COSTS GIVEN ABOVE	224.00	7.00	REFER TO CHART NO. VII ITEM C-1
2. MASTER METERING		75.20	4.70		75.20	4.70		112.80	4.70		140.40	4.70	REFER TO CHART NO. VII ITEM C-2
III. ELECTRIC METER PANS AND LOOPS													
1. INDIVIDUAL METERING-ELECTRICITY PURCHASED	COSTS GIVEN ABOVE	9.92	.62	COSTS GIVEN ABOVE	9.92	.62	COSTS GIVEN ABOVE	13.92	.58	COSTS GIVEN ABOVE	23.36	.73	REFER TO CHART NO. VII ITEM D-1
2. MASTER METERING-ELECTRICITY PURCHASED		.00	.00		.00	.00		.00	.00		.00	.00	REFER TO CHART NO. VII ITEM D-3
3. SUB-METERING-ELECTRICITY PURCHASED		8.00	.50		8.00	.50		12.00	.50		16.00	.50	REFER TO CHART NO. VII ITEM D-2
4. INDIVIDUAL METERING-ELECTRICITY GENERATED BY OWNER		8.00	.50		8.00	.50		12.00	.50		16.00	.50	REFER TO CHART NO. VII ITEM D-4
IV. ELECTRIC METERS													
1. SUB-METERING-ELECTRICITY PURCHASED		52.00	3.25		52.00	3.25		78.00	3.25		104.00	3.25	REFER TO CHART NO. VII ITEM D-2
2. INDIVIDUAL METERING-ELECTRICITY GENERATED BY OWNER	INCLUDED IN COSTS ON CHART NO. VIII			INCLUDED IN COSTS ON CHART NO. VIII			INCLUDED IN COSTS ON CHART NO. VIII			INCLUDED IN COSTS ON CHART NO. VIII			REFER TO CHART NO. VII ITEM D-4

QUANTITIES COMPUTED BY	P.GROTZ S.R.RIO N.J.RUZZA	JULY 1934
QUANTITIES CHECKED BY	L.PANZA	AUG. 1934
COSTS COMPILED BY	P.GROTZ	AUG. 1934
CHART DRAWN BY	J.H.CAHALIN S.R.RIO C.SULZER	SEPT. 1934
CHART EDITED BY	P.GROTZ E.W.KLEE	AUG. 1934

STUDY COMPLETED OCT. 15, 1934

CHART V

BREAKDOWN OF INITIAL VERTICAL COSTS FOR THE 6-, 8-, 10-, 12-STORY ELEVATOR APARTMENTS

ANALYTIC STUDY OF COST DIFFERENTIALS

GENERAL NOTES:- UNIT PRICES GIVEN BELOW INCLUDE LABOR, MATERIAL, SUPERVISION, OVERHEAD AND PROFIT.
ESTIMATES ARE BASED ON QUANTITIES OF 5000 ROOMS.
SEE CHART NO. III FOR THE SITE PLANS.
" " " IV " " BUILDING UNIT PLANS.
" " " VII " HORIZONTAL PROJECT COSTS.
" " " VIII " HEATING COSTS.
" " " IX " OPERATION AND MAINTENANCE COSTS.
" " " X " ELECTRICITY AND GAS RATES.
THE AVERAGE NUMBER OF ROOMS PER APARTMENT = 4.

Column groups: **6 STORY APARTMENTS** — CANTILEVER CONSTRUCTION, PARTIAL BSMT. ONE ELEVATOR (total per unit 192 rooms); **8 STORY APARTMENTS** — CANTILEVER CONSTRUCTION, PARTIAL BSMT. TWO ELEVATORS (total per unit 256 rooms); **10 STORY APARTMENTS** — CANTILEVER CONSTRUCTION, PARTIAL BSMT. TWO ELEVATORS (total per unit 320 rooms); **12 STORY APARTMENTS** — CANTILEVER CONSTRUCTION, PARTIAL BSMT. TWO ELEVATORS (total per unit 384 rooms). NOTES PERTAINING TO ITEMS — FOR FURTHER DETAILS & SPECIFICATIONS SEE REPORT.

Section	Item	6 Story: Quantity for one unit	6 Story: Unit price	6 Story: Total per unit 192 rooms	6 Story: Price per room	8 Story: Quantity for one unit	8 Story: Unit price	8 Story: Total per unit 256 rooms	8 Story: Price per room	10 Story: Quantity for one unit	10 Story: Unit price	10 Story: Total per unit 320 rooms	10 Story: Price per room	12 Story: Quantity for one unit	12 Story: Unit price	12 Story: Total per unit 384 rooms	12 Story: Price per room	Notes pertaining to items
BASEMENT	STEAM SHOVEL EXCAVATION & DISPOSAL	742 CY	.63	467.45		827 CY	.63	521.00		827 CY	.63	521.00		827 CY	.63	521.00		NORMAL SOIL CONDITIONS ASSUMED-NO ROCK NO WATER
	TRENCH MACHINE " " "	59 CY	.95	56.05		59 CY	.95	56.05		57 CY	.95	54.15		59 CY	.95	56.05		" " " " " " " "
	HAND " " "	170 CY	1.26	214.20		383 CY	1.26	482.60		435.5 CY	1.26	548.75		588 CY	1.26	740.90		" " " " " " " "
	BACKFILL	210 CY	.32	67.20		359 CY	.32	114.90		387 CY	.32	123.90		458 CY	.32	146.60		
	ROUGH GRADING	4800 SF	.013	62.40		5000 SF	.013	65.00		4900 SF	.013	63.70		4950 SF	.013	64.35		TO 10 OUTSIDE BLDG. LINE & 6" BELOW FIN. GRADE
	CONCRETE FOOTINGS & BSMT. WALLS INC. FORMS & REINFORC.	225 CY	14.10	3172.50		297 CY	14.10	4187.70		356 CY	14.10	5019.60		396 CY	14.10	5583.60		BEARING VALUE OF SOIL-3 TONS PER SQ. FT.
	STRUCTURAL STEEL H COLUMNS (STREHAN SYSTEM)	7.2 T	65.00	468.00		8.5 T	70.00	595.00		9.9 T	70.00	693.00		11.3 T	70.00	791.00		INCLUDING STEEL CHANNEL COLUMN HEADS
	FLOOR - CINDER FILL. CINDER CONCRETE. CEMENT FINISH	2300 SF	.18	414.00		2660 SF	.18	478.80		2660 SF	.18	478.80		2660 SF	.18	478.80		6" CINDER FILL. 4" CINDER CONCRETE. 1" FINISH
	INTEGRAL WATERPROOFING PER CUBIC YARD OF CONCRETE	221 CY	.51	112.70		277 CY	.51	141.25		330 CY	.51	168.30		369 CY	.51	188.20		1 TON HYDRATED LIME TO 75 CU. YDS. OF CONCRETE
	TOTAL			5034.50	26.20			6642.30	25.95			7671.20	23.95			8570.50	22.30	
BASEMENT FINISH	INT. & EXT. BSMT. STAIRS- CONCRETE FORMS & REINFORC.	12.5 CY	14.10	176.25		13.3 CY	14.10	187.55		13.3 CY	14.10	187.55		13.3 CY	14.10	187.55		FROM GRADE OR FIRST FLOOR TO BASEMENT FLOOR
	6" HOLLOW TILE WALLS	580 SF	.35	203.00		694 SF	.35	242.90		694 SF	.35	242.90		694 SF	.35	242.90		
	STEEL COLUMN FIREPROOFING-2" HOLLOW TILE & PLASTER					148 SF	.31	45.90		148 SF	.31	45.90		148 SF	.31	45.90		
	WOOD PARTITIONS & HARDWARE FOR PERAMBULATOR BINS	750 SF	.104	78.00		985 SF	.104	102.45		1220 SF	.104	126.90		1455 SF	.104	151.30		ONE BIN FOR EVERY 3 APARTMENTS
	STEEL SASH & GLAZING	72 SF	.51	36.70		78 SF	.51	39.80		78 SF	.51	39.80		78 SF	.51	39.80		STANDARD 1" SECTIONS-DOUBLE THICK QUAL. B GLASS
	FIREPROOF DOORS & BUCKS INCL. HARDWARE	4	18.70	74.80		5	18.70	93.50		5	18.70	93.50		5	18.70	93.50		FURNITURE STEEL COV.DOORS-16 GA.COMB.STEEL BUCKS
	PIPE RAILING & STANDARDS 3 HIGH-AT EXT. BSMT. STAIRS	14 LF	2.10	29.40		15 LF	2.10	31.50		15 LF	2.10	31.50		15 LF	2.10	31.50		1 1/2" BLACK PIPE-STANDARD RAILING
	PIPE HAND RAILS & BRACKETS- AT EXT. & INT. BSMT.STAIRS	19 LF	1.05	19.95		19 LF	1.05	19.95		19 LF	1.05	19.95		19 LF	1.05	19.95		1 1/2" " " "
	WHITEWASHING WALLS & CEILS. PAINTING DOORS & WINDOWS			85.80				85.80				85.80				85.80		2 COATS GLOSS OIL PAINT ON DOORS & WINDOWS
	ELECTRICAL OUTLETS INCL. LIGHTING FIXTURES	21	4.70	98.70		22	4.70	103.40		22	4.70	103.40		22	4.70	103.40		UNIT PRICE GIVEN IS PER OUTLET
	SLOP SINK	1	44.00	44.00		1	44.00	44.00		1	44.00	44.00		1	44.00	44.00		
	TOTAL			846.60	4.40			996.75	3.90			1021.20	3.20			1045.60	2.70	
STRUCTURE & ENCLOSURE	STRUCTURAL STEEL H COLUMNS (STREHAN SYSTEM)	61.8 T	65.00	4017.00		92.6 T	70.00	6482.00		129 T	70.00	9030.00		170.7 T	70.00	11949.00		INCLUDING STEEL CHANNEL COLUMN HEADS
	SETTING OF ANCHOR BOLTS FOR COLUMN BASE PLATES	64	.52	33.30		76	.52	39.50		76	.52	39.50		76	.52	39.50		UNIT PRICE GIVEN IS PER BOLT
	GROUTING OF COLUMN BASE PLATES	32	.52	16.65		38	.52	19.75		38	.52	19.75		38	.52	19.75		
	WINDBRACING OF END WALLS	2 T	65.00	130.00		3.25 T	70.00	227.50		5.5 T	70.00	385.00		6 T	70.00	420.00		
	FLAT FLR. SLAB-CONCRETE FORMS & REINFORCING	30156 SF	.47	14173.30		40208 SF	.455	18294.65		50260 SF	.455	22868.30		60312 SF	.455	27442.00		6" STONE CONCR. GIRDERLESS SLAB-REINF. BOTH WAYS
	FLAT ROOF SLAB- " " " "	5026 SF	.47	2362.20		5026 SF	.455	2286.85		5026 SF	.455	2286.85		5026 SF	.455	2286.85		" " " " " " " "
	6" HOLLOW TILE WALLS	6210 SF	.35	2173.50		8465 SF	.35	2962.75		10805 SF	.35	3781.75		12470 SF	.35	4364.50		BETWEEN BUILDING UNITS & APARTMENTS
	CURTAIN WALLS-STUCCO OUTSIDE & PLASTER INSIDE	15740 SF	.475	7476.50		21885 SF	.475	10395.40		26610 SF	.475	12639.70		32669 SF	.475	15518.00		NAILCRETE IN METAL STUD-ECOD MTLATED LATH 2 SIDE
	PLASTERING & INSULATION OF EXPOSED ENDS OF SLABS	2690 LF	.114	316.65		3400 LF	.114	387.60		4072 LF	.114	464.20		4891 LF	.114	557.55		ECOD METALLATED LATH & STUCCO
	STEEL SASH & GLAZING	7344 SF	.68	4993.90		9792 SF	.68	6658.55		12240 SF	.68	8323.20		14688 SF	.68	9988.00		STANDARD 1" SECTIONS-DOUBLE THICK QUAL. B GLASS
	INSULATION OF FIRST FLOOR SLAB	4650 SF	.104	483.60		4870 SF	.104	506.50		4870 SF	.104	506.50		4870 SF	.104	506.50		1 1/2" CORK BOARD ASPHALT DIPPED-NAILED TO SLAB
	TOTAL			36166.60	188.40			48261.05	188.50			60344.75	188.60			73091.65	190.35	
PUBLIC HALL & STAIR HALLS - BULKHEAD OPEN CORRIDORS-ELEVATOR SHAFTS	STRUCTURAL STEEL INCL. WATER TANK BASE	5 T	65.00	325.00		11.5 T	70.00	805.00		13.5 T	70.00	945.00		15.5 T	70.00	1085.00		ANGLE COLUMNS & I BEAMS
	CONCRETE FLOOR SLABS-PUBL. HALLS CORRIDORS STAIR LAND.	4183 SF	.47	1966.00		6376.4 SF	.455	2902.00		7961.4 SF	.455	3622.00		9546 SF	.455	4344.00		6" STONE CONCR. GIRDERLESS SLAB REINF. BOTH WAYS
	CONCRETE ROOF SLABS-PUBL. HALLS CORRIDORS & PENTHOUSE	808 SF	.47	380.00		1070 SF	.455	487.00		1070 SF	.455	487.00		1070 SF	.455	487.00		" " " " " " " "
	6" HOLLOW TILE WALLS GLAZED BOTH SIDES	680 SF	.51	346.80		2015 SF	.51	1027.70		2520 SF	.51	1285.20		3025 SF	.51	1542.75		
	6" " " " " ONE SIDE	5400 SF	.46	2484.00		8675 SF	.46	3990.70		10545 SF	.46	4850.70		12425 SF	.46	5715.70		
	6" " " " NOT GLAZED	175 SF	.35	61.25		1090 SF	.35	381.50		1280 SF	.35	448.00		1470 SF	.35	514.50		
	STEEL STAIRS & INTERMEDIATE LANDINGS	6.5	102.00	663.00		16.5	116.00	1914.00		20.5	120.00	2460.00		24.5	125.50	3075.50		COMPLETE WITH NEWELS RAILS BALUSTERS & FASCIAS
	EXTERIOR STEEL STAIRS-FOR 6 STORY APARTMENT ONLY	6.5	223.20	1450.80														INCLUDING GATES AT OUTSIDE CORRIDORS
	SHIPS LADDER & RAILINGS IN PENTHOUSE	1	31.20	31.20		1	36.45	36.45		1	36.45	36.45		1	36.45	36.45		LEADING FROM PENTHOUSE TO ELEVATOR MACHINE FLOOR
	EXTERIOR CORRIDOR RAILINGS-POSTS & CHANNEL RAILS	6	301.60	1809.60		8	301.60	2412.80		10	301.60	3016.00		12	301.60	3169.20		STEEL TUBING POSTS SET INTO FLR SLAB TOP & BOTTOM
	" " -1" ANGLE IRON OUTSIDE EDGE OF SLAB	575 LF	.16	92.00		840 LF	.16	134.40		1050 LF	.16	168.00		1260 LF	.16	201.60		STOP FOR ASPHALT MASTIC FLOORING
	" " -COPPER DRIP AT OUTSIDE EDGE OF SLAB	575 LF	.31	178.20		840 LF	.31	260.40		1050 LF	.31	325.50		1250 LF	.31	387.50		FLASHED UNDER ASPHALT FLOORING
	" " -COPPER FLASHING FOR RAILING POSTS	102	2.10	214.20		168	2.10	352.80		210	2.10	441.00		252	2.10	529.20		
	" " -1" ASPHALT MASTIC FLOOR COVERING	2850 SF	.34	969.00		4100 SF	.34	1394.00		5135 SF	.34	1746.00		6170 SF	.34	2098.00		CONCRETE SLAB PITCHED FOR DRAINAGE
	" " -6" ASPHALT WALL BASE	740 LF	.52	385.00		1050 LF	.52	546.00		1310 LF	.52	681.00		1570 LF	.52	816.40		AT BASE OF OUTSIDE WALLS
	" " -CORRUG. CEM. ASBEST. BET. RAILS	2015 SF	.125	252.00		2940 SF	.125	367.50		3675 SF	.125	460.00		4410 SF	.125	551.00		FOR INFILL OF RAILING 3 -6" HIGH
	MAIN ENTRANCE STEPS & FOUNDATION-CONC. FORMS & REINF.	5.8 CY	14.10	82.00		4.5 CY	14.10	63.45		4.5 CY	14.10	63.45		4.5 CY	14.10	63.45		
	CEMENT FINISH-ALL FLOORS TREADS & STAIR LANDINGS	1590 SF	.13	206.70		2900 SF	.13	377.00		3650 SF	.13	474.50		4300 SF	.13	559.00		APPLIED TO STEEL TREADS & STEEL & CONCR.LANDINGS
	SCREEDED CINDER CONCRETE ROOF FILL	810 SF	.11	98.10		1070 SF	.11	117.80		1070 SF	.11	117.80		1070 SF	.11	117.80		
	ROOF INSULATION- 1" THERMAX	160 SF	.073	11.70		370 SF	.073	27.00		370 SF	.073	27.00		370 SF	.073	27.00		
	ROOFING- 3 PLY	808 SF	.073	59.00		1070 SF	.073	78.10		1070 SF	.073	78.10		1070 SF	.073	78.10		TAR & GRAVEL ROOF. BARRETT SPEC. 10 YR. GUAR TEE.
	FELT FLASHING INCL. FLASHING BLOCKS	80 LF	.68	54.40		100 LF	.68	68.00		100 LF	.68	68.00		100 LF	.68	68.00		
	COPPER GRAVEL STOP FOR PENTHOUSE ROOF	70 LF	.26	18.20		83.5 LF	.26	21.70		83.5 LF	.26	21.70		83.5 LF	.26	21.70		16 GAUGE METAL-FOR PENTHOUSE ROOF
	COPPER GUTTER & LEADER-MAIN ENT. ROOF & PENTHOUSE ROOF	45 LF	.83	37.35		65 LF	.83	53.95		65 LF	.83	53.95		65 LF	.83	53.95		" " " -FOR PENTHOUSE & MAIN ENTRANCE ROOF
	STEEL SASH & GLAZING FOR PENTHOUSE	24 SF	.68	16.30		48 SF	.68	32.65		48 SF	.68	32.65		48 SF	.68	32.65		STANDARD 1" SECTIONS-DOUBLE THICK QUAL. B GLASS
	FIREPROOF ENTRANCE DOOR, BUCK & GLAZING	1	27.00	27.00		1	27.00	27.00		1	27.00	27.00		1	27.00	27.00		FURNITURE STEEL COV.DOORS-16 GA.COMB.STEEL BUCKS
	" " " HARDWARE	1	21.60	21.60		1	21.60	21.60		1	21.60	21.60		1	21.60	21.60		INCLUDES DOOR CHECK. DOOR STOP & HOOK
	FIREPROOF DOORS, TRANSOM, BUCKS & GLAZING	14	36.20	507.00		18	36.20	651.60		22	36.20	796.40		26	36.20	941.20		LEADING FROM PUBLIC HALL TO EXTERIOR CORRIDORS
	" " & " HARDWARE	14	8.75	122.50		18	8.75	157.50		22	8.75	192.50		26	8.75	227.50		INCLUDES DOOR CHECK. DOOR STOP & HOOK
	FIREPROOF DOORS, BUCKS & HARDWARE	10	21.35	213.50		22	21.35	469.70		26	21.35	555.10		30	21.35	640.50		LEADING FROM PUBLIC HALL TO STAIRS
	" " HARDWARE	10	3.10	31.00		22	3.10	68.20		26	3.10	80.60		30	3.10	93.00		INCLUDES DOOR CHECK. DOOR STOP & HOOK
	FIREPROOF VENTILATED DOORS & BUCKS	3	23.40	70.20		4	23.40	93.60		5	23.40	117.00		6	23.40	140.40		TO SLOP SINK CLOSET
	" " " HARDWARE	3	2.60	7.80		4	2.60	10.40		5	2.60	13.00		6	2.60	15.60		
	PAINTING OF ALL IRONWORK, DOORS, CEILINGS & WINDOWS	6	61.20	367.20		8	56.10	448.80		10	56.10	561.00		12	56.10	673.20		2 COATS GLOSS OIL PAINT
	ELECTRICAL OUTLETS INCL. LIGHTING FIXTURES	73	5.73	418.30		105	5.73	601.65		128	5.73	733.45		151	5.73	865.25		KEY SWITCHES ARRANGED ON MAIN FLOOR
	BELLWORK INCLUDING PUSHBUTTONS & MAILBOXES			542.25				703.20				864.25				1025.20		INCLUDING REMOTE DOOR OPENING DEVICE
	SLOP SINK- EVERY OTHER FLOOR	3	117.50	352.50		4	117.50	470.00		5	117.50	587.50		6	117.50	705.00		
	HUNG CEILING UNDER PUBL. HALL ROOF OF 8-10-12 STY BLDG					210 SF	.20	42.00		210 SF	.20	42.00		210 SF	.20	42.00		TO PROVIDE SPACE FOR HOT & COLD WATER DISTR.LINES
	TOTAL			14511.15	75.60			21147.15	82.50			25902.90	81.00			30737.90	80.05	
ROOF	SCREEDED CINDER CONCRETE ROOF FILL	5026 SF	.11	553.00		5026 SF	.11	553.00		5026 SF	.11	553.00		5026 SF	.11	553.00		
	ROOF INSULATION- 1" THERMAX	5026 SF	.073	367.00		5026 SF	.073	367.00		5026 SF	.073	367.00		5026 SF	.073	367.00		
	ROOFING- 3 PLY	5026 SF	.073	367.00		5026 SF	.073	367.00		5026 SF	.073	367.00		5026 SF	.073	367.00		TAR & GRAVEL ROOF. BARRETT SPEC. 10 YR GUAR TEE.
	FELT FLASHING INCLUDING FLASHING BLOCKS	466 LF	.68	317.00		490 LF	.68	333.20		485 LF	.68	323.00		495 LF	.68	336.60		
	COPPER LEADER BOXES	4	7.30	29.20		4	7.30	29.20		4	7.30	29.20		4	7.30	29.20		16 GAUGE METAL
	PARAPET-8" HOLLOW TILE GLAZED INSIDE STUCCOED OUTSIDE	1396 SF	.74	1033.05		1467 SF	.74	1085.60		1436 SF	.74	1062.65		1480 SF	.74	1095.20		
	PARAPET COPING-GLAZED VITRIFIED TILE	466 LF	.53	247.00		490 LF	.53	259.70		485 LF	.53	257.05		495 LF	.53	262.35		
	TOTAL			2913.25	15.25			2994.70	11.70			2958.90	9.25			3010.35	7.85	
FINISH & EQUIPMENT	STEEL COLUMN FIREPROOFING-2" HOLLOW TILE & PLASTER	5376 SF	.31	1666.00		7170 SF	.31	2223.00		8960 SF	.31	2778.00		10750 SF	.31	3332.00		
	2" SOLID PLASTER PARTITIONS	25068 SF	.203	5089.00		33424 SF	.203	6785.00		41780 SF	.203	8481.00		50136 SF	.203	10178.00		PREFAB. SECT. OF MET. LATH-3 COATS PLAS. EA. SIDE
	PLASTERING OF INTERIOR HOLLOW TILE WALLS	15576 SF	.068	1059.00		20700 SF	.068	1408.00		26320 SF	.068	1790.00		30672 SF	.068	2086.00		3 COATS OF PLASTER
	FIREPROOF DOORS, BUCKS & SADDLES	48	18.75	900.00		64	18.75	1200.00		80	18.75	1500.00		96	18.75	1800.00		APARTMENT ENTRANCE DOOR-FURNITURE STEEL COVERED
	" " HARDWARE	48	4.70	225.60		64	4.70	301.80		80	4.70	376.00		96	4.70	451.20		
	WOOD DOORS, BUCKS & SADDLES	240	8.90	2136.00		320	8.90	2848.00		400	8.90	3560.00		480	8.90	4272.00		BETWEEN ROOMS-1 3/8" VENEER DOORS & OAK SADDLES
	" " HARDWARE	240	1.60	384.00		320	1.60	512.00		400	1.60	640.00		480	1.60	768.00		
	WOOD DOORS, BUCKS & SADDLES	60	8.90	534.00		80	8.90	712.00		100	8.90	890.00		120	8.90	1068.00		TO BUILT-IN CLOSETS-1 3/8" VENEER DRS. & OAK SAD.
	" " HARDWARE	60	1.33	79.80		80	1.33	106.40		100	1.33	133.00		120	1.33	159.60		
	HARDWOOD FLOORS-7/8" THICK LAID IN MASTIC	25310 SF	.208	5265.00		33745 SF	.208	7019.00		42180 SF	.208	8773.00		50615 SF	.208	10530.00		
	WOOD BASE BOARD	8810 LF	.067	590.00		11750 LF	.067	787.00		14700 LF	.067	985.00		17630 LF	.067	1180.00		
	WOOD PICTURE MOULDING	8770 LF	.047	412.00		11690 LF	.047	549.00		14610 LF	.047	687.00		17530 LF	.047	824.00		
	TILE FLOOR & BASE FOR BATHROOMS	1230 SF	.90	1107.00		1640 SF	.90	1476.00		2050 SF	.90	1845.00		2460 SF	.90	2214.00		INCLUDES TILE RING UNDER TOILET
	PAINTING-WALLS, CEILINGS, DOORS & WINDOWS	48 AP	96.80	4646.40		64 AP	96.80	6195.20		80 AP	96.80	7744.00		96 AP	96.80	9292.80		2 COATS PT. WALLS DOORS CEILS-FLRS 2 CTS. SHELLAC
	HUNG CEILING-UNDER ROOF SLAB OF 8-10-12 STY. BLDGS.					4417 SF	.20	883.40		4417 SF	.20	883.40		4417 SF	.20	883.40		TO PROVIDE SPACE FOR HOT & COLD WATER DISTR.LINES
	WARDROBES-METAL	132	12.50	1650.00		176	12.50	2200.00		220	12.50	2750.00		264	12.50	3300.00		ENAMEL FINISH BY MANUFACTURER
	EQUIPMENT FOR BUILT-IN WARDROBES	60	3.00	180.00		80	3.00	240.00		100	3.00	300.00		120	3.00	360.00		
	KITCHEN CABINETS-WOOD	48	45.00	2160.00		64	45.00	2880.00		80	45.00	3600.00		96	45.00	4320.00		
	MEDICINE CABINETS-METAL	48	6.50	312.00		64	6.50	416.00		80	6.50	520.00		96	6.50	624.00		ENAMEL FINISH BY MANUFACTURER
	WINDOW SHADES	294	1.00	294.00		392	1.00	392.00		490	1.00	490.00		588	1.00	588.00		
	GAS RANGES	48	25.00	1200.00		64	25.00	1600.00		80	25.00	2000.00		96	25.00	2400.00		4 BURNERS, OVEN & BROILER
	ELECTRIC REFRIGERATORS	48	80.00	3840.00		64	80.00	5120.00		80	80.00	6400.00		96	80.00	7680.00		4.7 CUBIC FEET CONTENT
	TOTAL			28689.80	149.45			39134.80	152.90			48725.40	152.25			58231.00	151.65	
PLUMB.	PLUMBING PER FIXTURE-COST OF RAIN LEADER PRO-RATED; PLUMBING COSTS FOR GAS LINES LISTED BELOW	192	81.40	15628.80		256	102.20	26163.20		320	102.20	32704.00		384	102.20	39244.80		FOR THE 8-10-12 STORY BLDG.-WATER TANK, PUMP & FIRE LINE COSTS ARE PRO-RATED
	TOTAL			15628.80	81.40			26163.20	102.20			32704.00	102.20			39244.80	102.20	
ELECTR.	ELECTRICAL OUTLETS INCLUDING LIGHTING FIXTURES; COSTS OF METER PANS & LOOPS LISTED BELOW	576	5.95	3427.20		768	5.80	4454.40		960	5.70	5472.00		1152	5.65	6508.80		EXCLUDING ELEVATOR POWER LINES, METER PANS & LOOPS
	TOTAL			3427.20	17.85			4454.40	17.40			5472.00	17.10			6508.80	16.95	
ELEVATORS	ELEVATOR WITH COLLECTIVE AUTOMATIC CONTROL	1 EL	4992.00	4992.00														FOR 6 STORY BLDG. ONLY
	ELEVATORS WITH DUPLEX AUTOMATIC CONTROL					2 EL	5512.00	11024.00		2 EL	6448.00	12896.00		2 EL	6864.00	13728.00		FOR 8-10-12 STORY BLDG. ONLY
	ELEVATOR HOLLOW METAL DOORS INCL. SADDLE & HARDWARE	7	88.40	618.80		18	88.40	1591.20		22	88.40	1945.00		26	88.40	2298.00		ENAMEL FINISH BY MANUFACTURER
	ELEVATOR ELECTRIC WIRING	1 EL	140.40	140.40		2 EL	159.10	318.20		2 EL	177.85	355.70		2 EL	196.55	393.10		
	TOTAL			5751.20	29.95			12933.40	50.50			15196.70	47.50			16419.10	42.75	
INCINERATORS	CONCRETE FOOTINGS INCLUDING FORM & REINFORCING	6.7 CY	14.10	94.50		13.5 CY	14.10	190.35		13.5 CY	14.10	190.35		13.5 CY	14.10	190.35		
	FIRE BRICK LINING FOR FLUE & COMBUSTION CHAMBER	4.6 M	104.60	481.15		5.5 M	104.60	575.30		5.6 M	104.60	585.75		5.6 M	104.60	585.75		FOR COMBUSTION CHAMBER & 35 FT. OF FLUE
	COMMON BRICKWORK " " " " "	19.3 M	55.35	1068.25		34.8 M	55.35	1926.20		41.8 M	55.35	2313.60		47.5 M	55.35	2629.00		
	EQUIPMENT FOR COMBUSTION CHAMBER	2	137.80	275.60		2	182.00	364.00		2	228.80	457.60		2	228.80	457.60		GRATES, DOORS, ETC.
	HOPPER DOORS	12	11.70	140.40		16	11.70	187.20		20	11.70	234.00		24	11.70	280.80		2 PER APARTMENT FLOOR
	PLASTERING OF CHIMNEY IN ROOM SPACES	770 SF	.068	52.40		1280 SF	.068	87.05		1600 SF	.068	108.80		1920 SF	.068	130.55		
	FIREPROOF DOORS & BUCKS INCL. HARDWARE	2	18.70	37.40		2	18.70	37.40		2	18.70	37.40		2	18.70	37.40		LEADING TO INCINERATOR ROOM
	DRAFT.RETARD. CHAMBER-6" HOLLOW TILE GLAZED OUTSIDE	372 SF	.46	171.10		352 SF	.46	162.00		352 SF	.46	162.00		352 SF	.46	162.00		
	" " " -4" " " NOT GLAZED	64 SF	.32	20.50		64 SF	.32	20.50		64 SF	.32	20.50		64 SF	.32	20.50		
	" " " -4" CONCRETE SLABS	20 SF	.40	8.00		20 SF	.40	8.00		20 SF	.40	8.00		20 SF	.40	8.00		FOR ROOF & DRAFT RETARDING BAFFLE
	" " " -2 X 3 CAST IRON ACCESS DOORS	2	8.85	17.70		2	8.85	17.70		2	8.85	17.70		2	8.85	17.70		FOR ACCESS FROM ROOF TO CHAMBER
	" " " -ROOFING- 3 PLY	95 SF	.073	6.95		95 SF	.073	6.95		95 SF	.073	6.95		95 SF	.073	6.95		TAR & GRAVEL ROOF. BARRETT SPEC. 10 YR. GUAR TEE.
	" " " -FELT FLASHING INCL. FLAS. BLOCKS	59 LF	.68	40.10		62 LF	.68	42.15		62 LF	.68	42.15		62 LF	.68	42.15		
	" " " -COPPER GRAVEL STOP	34 LF	.26	8.85		30 LF	.26	7.80		30 LF	.26	7.80		30 LF	.26	7.80		
	" " " -COPPER GUTTERS & LEADERS	16 LF	.83	13.30		30 LF	.83	24.90		30 LF	.83	24.90		30 LF	.83	24.90		
	TOTAL			2436.20	12.70			3657.50	14.30			4217.50	13.20			4601.45	12.00	
HEAT	INITIAL VERTICAL HEATING AND DOMESTIC HOT WATER COSTS FOR DESCRIP. OF VERTICAL ELEMENTS REFER TO CHART VIII			7946.72	41.91			10263.04	40.09			12569.60	39.28			14979.84	39.01	FOR OTHER SYSTEMS OF HEATING REFER TO CHART VIII
GAS	INITIAL VERTICAL COSTS OF GAS LINES-INDIVIDUAL METERS FOR DESCRIPTION REFER TO CHART NO. VII ITEM C-1			1344.00	7.00			1792.00	7.00			2240.00	7.00			2688.00	7.00	
ELECT.	ELECTRIC METER PANS AND LOOPS-INDIVIDUAL METERS FOR DESCRIPTION REFER TO CHART NO. VII ITEM D-1			180.48	.94			238.98	.93			288.00	.90			337.92	.88	
TOTAL	WHEN HEAT IS FURNISHED BY OWNERS CENTRAL PLANT AND ELECTRIC CURRENT AND GAS ARE PURCHASED FROM UTILITY COMPANIES BY TENANT AT RETAIL RATES				651.05				697.87				685.43				675.69	

QUANTITIES COMPUTED BY	L.A.PANZA		
	N.J.RUZZA	AUG. 1934	
QUANTITIES CHECKED BY	P.GROTZ	AUG. 1934	
COSTS COMPILED BY	P.GROTZ	AUG. 1934	
CHART DRAWN BY	J.H.CAHALIN		
	S.R.RIO		
	C.SULZER	SEPT. 1934	
CHART EDITED BY	P.GROTZ		
	E.W.KLEE	SEPT. 1934	

INITIAL VERTICAL COST ITEMS GIVEN BELOW ARE INTERCHANGEABLE VARIATIONS DEPENDING ON WHAT SYSTEM OF HEATING IS USED & HOW ELECTRIC CURRENT & GAS ARE PURCHASED

Item	6 Story	6 Story: Total	6 Story: Per room	8 Story	8 Story: Total	8 Story: Per room	10 Story	10 Story: Total	10 Story: Per room	12 Story	12 Story: Total	12 Story: Per room	Notes
I. INITIAL VERTICAL HEATING AND DOMESTIC HOT WATER COSTS	COSTS FOR SYSTEM NO. 5 GIVEN ABOVE			COSTS FOR SYSTEM NO. 5 GIVEN ABOVE			COSTS FOR SYSTEM NO. 5 GIVEN ABOVE			COSTS FOR SYSTEM NO. 5 GIVEN ABOVE			FOR OTHER SYSTEMS OF HEATING REFER TO CHART VIII
II. INITIAL VERTICAL COSTS OF GAS LINES													
1. INDIVIDUAL METERING	COSTS GIVEN ABOVE	1344.00	7.00	COSTS GIVEN ABOVE	1792.00	7.00	COSTS GIVEN ABOVE	2240.00	7.00	COSTS GIVEN ABOVE	2688.00	7.00	REFER TO CHART NO. VII ITEM C-1
2. MASTER METERING		902.40	4.70		1203.20	4.70		1504.00	4.70		1804.80	4.70	REFER TO CHART NO. VII ITEM C-2
III. ELECTRIC METER PANS AND LOOPS													
1. INDIVIDUAL METERING-ELECTRICITY PURCHASED	COSTS GIVEN ABOVE	180.48	.94	COSTS GIVEN ABOVE	238.08	.93	COSTS GIVEN ABOVE	288.00	.90	COSTS GIVEN ABOVE	337.92	.88	REFER TO CHART NO. VII ITEM D-1
2. MASTER METERING-ELECTRICITY PURCHASED		.00	.00		.00	.00		.00	.00		.00	.00	REFER TO CHART NO. VII ITEM D-3
3. SUB-METERING-ELECTRICITY PURCHASED		144.00	.75		193.00	.75		240.00	.75		288.00	.75	REFER TO CHART NO. VII ITEM D-2
4. INDIVIDUAL METERING-ELECTRICITY GENERATED BY OWNER		144.00	.75		193.00	.75		240.00	.75		288.00	.75	REFER TO CHART NO. VII ITEM D-4
IV. ELECTRIC METERS													
1. SUB-METERING-ELECTRICITY PURCHASED		624.00	3.25		832.00	3.25		1040.00	3.25		1248.00	3.25	REFER TO CHART NO. VII ITEM D-2
2. INDIVIDUAL METERING-ELECTRICITY GENERATED BY OWNER	INCLUDED IN COSTS ON CHART NO. VIII			INCLUDED IN COSTS ON CHART NO. VIII			INCLUDED IN COSTS ON CHART NO. VIII			INCLUDED IN COSTS ON CHART NO. VIII			REFER TO CHART NO. VII ITEM D-4

STUDY COMPLETED OCT. 15, 1934

CHART VI

HOUSING STUDY GUILD

CHARTS 9 & 10

OPERATION AND MAINTENANCE COSTS PER ROOM PER YEAR FOR THE 2-STORY FLAT AND 2-, 3-, 4-, 6-, 8-, 10-, 12-STORY APARTMENTS

ANALYTIC STUDY OF COST DIFFERENTIALS

CHART 9

			2 STORY FLAT WALK-UP. WALL BEARING CONSTRUCTION. NO BASEMENT		2 STORY APARTMENT WALK-UP. CANTILEVER CONSTRUCTION. FULL BASEMENT		3 STORY APARTMENT WALK-UP. CANTILEVER CONSTRUCTION. FULL BASEMENT		4 STORY APARTMENT WALK-UP. CANTILEVER CONSTRUCTION. FULL BASEMENT		6 STORY APARTMENT 1 ELEVATOR CANTILEVER CONSTRUCTION. PARTIAL BASMT.		8 STORY APARTMENT 2 ELEVATORS CANTILEVER CONSTRUCTION. PARTIAL BASMT.		10 STORY APARTMENT 2 ELEVATORS CANTILEVER CONSTRUCTION. PARTIAL BASMT.		12 STORY APARTMENT 2 ELEVATORS CANTILEVER CONSTRUCTION. PARTIAL BASMT.	
JANITORIAL SERVICE	WAGES	$70 PER MONTH, 10 HR. DAY $.20 PER DAY PER MAN	.00		5.25		4.37		3.28		5.82		4.92		4.60		4.37	
	SUPPLIES		.00		.45		.38		.28		.50		.42		.39		.38	
	TOTAL			.00		5.70		4.75		3.56		6.32		5.34		4.99		4.75
REDECORATION OF TENANT SPACE	CONTRACT-LABOR AND MATERIAL	PARTITIONS ETC. EVERY 3 YRS. FLOORS & CEILINGS 6 YRS. WAGES AT $1.28 PER HR.	.	6.11	.	5.79	.	5.79	.	5.79	.	5.92	.	5.92	.	5.92	.	5.92
BUILDING REPAIR AND MINOR REPLACEMENT ▲	CARPENTRY-L & M.	ONE MAN PER 3000 RMS. AT $100 PER MONTH	.90		.90		.90		.90		.90		.90		.90		.90	
	MASONRY & PLASTER	EST.	.10		.10		.10		.10		.10		.10		.10		.10	
	ROOFING & FLASHING	COST FOR AVERAGE YR. DURING 35 YR. LIFE	.87		.87		.58		.44		.38		.31		.27		.26	
	PAINTING-PUBLIC SP.	EXT. SASH ETC 5 YRS. INT. STAIRS 10 YRS.	.37		.80		.94		.92		.72		.62		.67		.67	
	PLUMBING	TOILET SEAT & WASHTUB COVER EVERY 3 YRS.	.29		.29		.29		.29		.29		.29		.29		.29	
	ELECTRIC	APT. FIXTURES & PUBLIC SPACE BULBS	.33		.42		.41		.40		.49		.49		.46		.47	
	ING APPARATORS	$15 PER UNIT PER YR.	.00		.00		.63		.47		.16		.12		.09		.08	
	ELEVATORS	ESTIMATE OF THE MAINTENANCE COMPANY	.00		.00		.00		.00		1.59		2.44		2.10		1.82	
	REFRIGERATORS	LABOR & MATERIAL	.63		.63		.63		.63		.63		.63		.63		.63	
	RANGES	$.90 PER APT. PER YR.	.20		.20		.20		.20		.20		.20		.20		.20	
	SHADES AND AWNINGS	EVERY 4 YRS.	.30		.41		.41		.41		.37		.37		.37		.37	
	GENERAL EQUIPMENT	KEYS, DOORMATS, ASHCANS, ETC.	.22		.22		.22		.22		.22		.22		.22		.22	
	MISC. LABOR	1 HANDYMAN PER 500 RMS. AT $90 PER MONTH	2.16		2.16		2.16		2.16		2.16		2.16		2.16		2.16	
	TOTAL			6.37		7.00		7.47		7.14		8.12		8.90		8.48		8.17
REPAIRS AND REPLACEMENT FOR HORIZONTAL DIST SYSTEMS	ELECTRIC LINES	FOR DESCR. REFER TO CHART VII ITEM E-VI-1	NONE		.12		.08		.07		.03		.03		.02		.02	
	WATER LINES	FOR DESCR. REFER TO CHART VII ITEM E-IV	.13		.08		.06		.04		NONE		NONE		NONE		NONE	
	GAS LINES	FOR DESCR. REFER TO CHART VII ITEM E-V-1	.08		INCLUDED IN HEAT AND DOMESTIC HOT WATER ITEM LISTED BELOW						.04		.03		.02		.02	
	HEATING LINES	FOR DESCR REFER TO CHART VIII SYSTEM 5	.20		.14		.10		.21		NONE							
	SEWER LINES										.04							
	TOTAL			.41		.20		.28		.21		.07		.06		.04		.04
GROUNDS UPKEEP	WAGES	1 HEAD, 6 FULL TIME, 3 SUMMER GARDENERS	1.04		1.04		.80		.72		.51		.47		.43		.42	
	SUPPLIES	REPLACEMENT, SEED, FERTILIZER, TOOLS, ETC.	.15		.15		.12		.11		.09		.07		.07		.06	
	TOTAL			1.19		1.19		.92		.83		.60		.54		.50		.48
MISC. EXPENSE	CONTINGENCIES	EXPENSE DUE TO ABUSE, LEAKS, ETC.		1.50		1.50		1.50		1.50		1.50		1.50		1.50		1.50
COMPENSATION INSURANCE		NOT INCLUDING LABOR FOR HEATING PLANT OR OFFICE FORCE. RATE $2.20 PER $100.		.05		.16		.14		.11		.16		.14		.13		.12
CAPITAL RESERVE FOR REPLACEMENT	ELECT. REFRIG.	REPLACED EVERY 10 YRS. 4 RM. APTS. $80	2.00		2.00		2.00		2.00		2.00		2.00		2.00		2.00	
	GAS RANGES	REPLACED EVERY 10 YRS. 4 RM. APTS. $25	.63		.63		.63		.63		.63		.63		.63		.63	
	PLUMBING FIXTURES	REPLACED ONCE DURING 35 YR. LIFE OF BLDG. 4 RM. APTS. $155	1.10		1.10		1.10		1.10		1.10		1.10		1.10		1.10	
	TOTAL			3.73		3.73		3.73		3.73		3.73		3.73		3.73		3.73
OFFICE EXPENSE	SALARIES	MANAGERS, CLERKS, RENT COLLECTORS, ETC.	4.06		4.06		3.52		3.14		2.69		2.27		2.20		2.14	
	GEN. EXP. & OVERHEAD	SUPPLIES, TELEPHONE ETC. INCL. COMP. INS.	.98		.98		.84		.75		.68		.57		.57		.56	
	LEGAL & ACCOUNTING	FEES & EXPENSE	.36		.36		.30		.27		.23		.19		.19		.18	
	TOTAL			5.40		5.40		4.66		4.16		3.60		3.03		2.96		2.88
ELECTRIC CURRENT	N.Y.& Q.L.T.& P.CO.	FOR PUBLIC SPACE LIGHT & POWER ONLY REFER TO CHART VII ITEM G-I		.60		2.78		2.49		2.20		2.96		3.47		3.55		4.40
CITY WATER		FOR PUBLIC SPACE & TENANT USE. NOT METERED.		3.90		3.90		3.36		3.07		2.53		2.48		2.44		2.42
HEAT & DOMESTIC HOT WATER	FUEL, REPAIRS & MAINTENANCE	HEATING SYSTEM NO. 5 SEE CHART 8. INCL. WORKMENS COMPENSATION INSURANCE.		8.10		8.48		7.63		7.52		6.92		6.68		6.68		6.68
GAS LINES VERTICAL ELEMENT	MAINTENANCE & REPAIRS ONLY.	INDIVIDUALLY METERED GAS.		.21		.21		.21		.21		.21		.21		.21		.21
TOTAL●	OPERATION AND MAINTENANCE COSTS WHEN HEAT IS FURNISHED BY OWNERS CENTRAL PLANT AND ELECTRIC CURRENT AND GAS ARE PURCHASED FROM UTILITY COMPANIES BY TENANT AT RETAIL RATES. THE ELECTRIC CURRENT AND GAS CHARGES ARE PAID BY THE TENANT IN ADDITION TO THE RENT.			37.57		46.24		42.94		40.03		42.64		42.00		41.13		41.30

MAINTENANCE COST ITEMS GIVEN BELOW ARE INTERCHANGEABLE VARIATIONS DEPENDING ON WHAT SYSTEM OF HEATING IS USED & HOW ELECTRIC CURRENT & GAS ARE PURCHASED

	COST	FOR	SYSTEM NO. 5	GIVEN	ABOVE.	FOR	OTHER	SYSTEMS	REFER	TO	CHART	VIII.		
I. COMPLETE HEATING SYSTEM. REFER TO CHART VIII														
II. ELECTRIC LINES, HORIZONTAL ELEMENTS.														
1. INDIVIDUAL METERING. REFER TO CHART VII ITEM E-VI-1	COSTS GIVEN ABOVE													
2. SUB-METERING. REFER TO CHART VII ITEM E-VI-1		.00	.00		.00		.00		.00		.00		.00	.00
3. MASTER METERING. REFER TO CHART VII ITEM E-VI-2		.00	.00		.00		.00		.00		.00		.00	.00
4. METERING ELECTRICITY GENERATED IN OWNERS CENTRAL PLANT.	COSTS ARE INCLUDED UNDER REPAIRS AND MAINTENANCE ON CHART NO. VIII.													
III. ELECTRIC METERS														
1. INDIVIDUAL METERING. REFER TO CHART VII ITEM D-I		.00	.00		.00		.00		.00		.00		.00	.00
2. SUB-METERING. REFER TO CHART VII ITEM D-2		.08	.08		.08		.08		.08		.08		.08	.08
3. MASTER METERING. REFER TO CHART VII ITEM D-3		.00	.00		.00		.00		.00		.00		.00	.00
4. METERING OF ELECTRICITY GENERATED IN OWNERS PLANT.	INCLUDED ON CHART NO. VIII													
IV. GAS LINES, VERTICAL ELEMENTS														
1. INDIVIDUALLY METERED GAS		.21	.21		.21		.21		.21		.21		.21	.21
2. MASTER METERED GAS		.14	.14		.14		.14		.14		.14		.14	.14

NOTES

COMMUNITY FEATURES

COMMUNITY FEATURES SUCH AS PLAY GROUNDS, CLUBROOMS, ETC. HAVE NOT BEEN INCLUDED IN THE PROJECT. THE PLAY SPACES FURNISHED FOR PRE-SCHOOL CHILDREN DO NOT REQUIRE PAID SUPERVISION. IT IS ASSUMED THAT THE COST PER ROOM FOR COMMUNITY FEATURES ARE CONSTANT AND THEREFORE CANCEL OUT.

JANITORIAL SERVICE

NO JANITOR SERVICE FOR THE FLATS.
2 STORY APARTMENTS- 1 JANITOR TO 10 UNITS.
3 & 4 STORY APTS. - 1 " " 8 "
6 STORY APARTMENTS- 1 1/3 " " 8 "
8 " " - 1 1/2 " " 8 "
10 " " - 1 3/4 " " 8 "
12 " " - 2 " " 8 "
JANITORS LIVING QUARTERS NOT PROVIDED BY THE OWNER.

REFRIGERATOR REPAIRS

ONE SERVICE MAN AT $220 PER MONTH CAN TAKE CARE OF 2000 TO 3000 BOXES, INSPECTING EACH ONCE IN 3 MONTHS. PARTS AVERAGE $1.20 PER BOX PER YEAR. DATA FROM NORGE CO.

OFFICE EXPENSE

DOES NOT INCLUDE ELECTRICITY FOR OFFICE, DEPRECIATION ON FURNITURE AND EQUIPMENT, ADVERTISING(NOT THOUGHT NECESSARY) WATCHMEN, COMMUNITY OR SOCIAL DIRECTORS. SALARIES AND NUMBER OF PERSONNEL VARIES WITH SIZE OF PROJECT.

SITE PLANS

REFER TO CHART NO. III

BUILDING UNIT PLANS

REFER TO CHART NO. IV

MATERIALS

REFER TO CHARTS NO. V AND VI AND THE REPORT.

ELEVATORS

COLLECTIVE AUTOMATIC CONTROL. CARS STOP AT EACH FLOOR.

SEE CHART NO. III FOR THE SITE PLANS.
" " " IV " " BUILDING UNIT PLANS.
" " " V & VI FOR THE VERTICAL PROJECT COSTS.
" " " VII FOR THE HORIZONTAL PROJECT COSTS.
" " " VIII FOR THE HEATING COSTS
" " " X FOR THE ELECTRICITY AND GAS RATES.
THE AVERAGE NUMBER OF ROOMS PER APARTMENT 4.

▲ DOES NOT INCLUDE COST OF REPAIRS REQUIRED DUE TO ABUSE, LEAKS, ETC. SEE MISCELLANEOUS EXPENSE ITEM.

● TOTALS DO NOT INCLUDE ELECTRIC CURRENT AND GAS USED BY TENANT WITHIN THE APARTMENT. FOR COSTS REFER TO CHART NO. X.

COSTS COMPILED BY	W.B.COBB		AUG. 1934
CHART DRAWN BY	L.A.PANZA	S.R.RIO C.SULZER	SEPT. 1934
CHART EDITED BY	W.B.COBB	E.W.KLEE	AUG. 1934

VARIOUS ELECTRICITY AND GAS RATES PER ROOM PER YEAR FOR THE 2-STORY FLAT AND 2-, 3-, 4-, 6-, 8-, 10-, 12-STORY APARTMENTS

ANALYTIC STUDY OF COST DIFFERENTIALS

CHART 10

ELECTRIC CURRENT			2 STORY FLAT WALL BEARING CONST NO BASEMENT		2 STORY APT. CANTILEVER CONST. FULL BASEMENT		3 STORY APT. CANTILEVER CONST FULL BASEMENT		4 STORY APT. CANTILEVER CONST. FULL BASEMENT		6 STORY APT. CANTILEVER CONST. PARTIAL BASEMENT		8 STORY APT. CANTILEVER CONST. PARTIAL BASEMENT		10 STORY APT. CANTILEVER CONST PARTIAL BASEMENT		12 STORY APT. CANTILEVER CONST. PARTIAL BASEMENT	
			RATE PER KWH	CURRENT COST PER ROOM PER YEAR	RATE PER KWH	CURRENT COST PER ROOM PER YEAR	RATE PER KWH	CURRENT COST PER ROOM PER YEAR	RATE PER KWH	CURRENT COST PER ROOM PER YEAR	RATE PER KWH	CURRENT COST PER ROOM PER YEAR	RATE PER KWH	CURRENT COST PER ROOM PER YEAR	RATE PER KWH	CURRENT COST PER ROOM PER YEAR	RATE PER KWH	CURRENT COST PER ROOM PER YEAR
N.Y. & QUEENS ELECTRIC LT. & POWER CO.	INDIVIDUAL METERING	PUBLIC SPACE LIGHT & POWER SEE KWH COMPUTATIONS	.0549	.60	.049	2.78	.0482	2.49	.0488	2.20	.0273	2.96	.0262	3.47	.0254	3.55	.0254	4.40
	BUILDINGS NOT ▲ INTER-COMMUNICATING LESS THAN 100 FT. APART	TENANTS LIGHTS & REFRIGERATORS 800 KWH PER APT. PER YR.	.0582	11.72	.0582	11.72	.0582	11.72	.0582	11.72	.0582	11.72	.0582	11.72	.0582	11.72	.0582	11.72
	MASTER METERING	PUBLIC SPACE LIGHT & POWER SEE KWH COMPUTATIONS	.024	.38	.0232	1.31	.022	1.14	.0215	.97	.0197	2.13	.0191	2.53	.0188	2.62	.0187	3.24
	BUILDINGS NOT ▲ INTER-COMMUNICATING LESS THAN 100 FT. APART	TENANTS LIGHTS & REFRIGERATORS 1240 KWH PER APT. PER YR.	.024	7.44	.0232	7.19	.022	6.82	.0215	6.67	.0197	6.10	.0191	5.92	.0188	5.83	.0187	5.80
N.Y. EDISON CO.	INDIVIDUAL METERING	PUBLIC SPACE LIGHT & POWER SEE KWH COMPUTATIONS	.046	.60	.0319	1.81	.0309	1.60	.0311	1.40	.0246	2.68	.0305	4.04	.0272	3.76	.0285	4.75
	BUILDINGS NOT ▲ INTER-COMMUNICATING LESS THAN 100 FT. APART	TENANTS LIGHTS & REFRIGERATORS 800 KWH PER APT. PER YR.	.0582	11.72	.0582	11.72	.0582	11.72	.0582	11.72	.0582	11.72	.0582	11.72	.0582	11.72	.0582	11.72
	SUB-METERING	PUBLIC SPACE LIGHT & POWER SEE KWH COMPUTATIONS	.0259	.25	.0238	1.35	.0231	1.19	.0228	1.03	.0215	2.37	.0246	3.33	.0246	3.35	.0241	4.18
	BUILDINGS NOT ▲ INTER-COMMUNICATING LESS THAN 100 FT. APART	TENANTS LIGHTS & REFRIGERATORS 800 KWH PER APT. PER YR.	.0270	5.37	.0263	5.25	.0256	5.11	.0253	5.06	.0240	4.86	.0271	5.52	.0271	5.50	.0266	5.32
PRIVATELY OWNED GENERATING PLANT	INDIVIDUAL METERING	PUBLIC SPACE LIGHT & POWER SEE KWH COMPUTATION	.008	.10	.00704	.50	.00722	.41	.00727	.35	.0065	.74	.00634	.89	.0062	.96	.0061	1.10
	ELECTRICITY A BY-PRODUCT OF HEATING	TENANTS LIGHTS & REFRIGERATORS 800 KWH PER APT. PER YR.	.0105	1.89	.00954	1.71	.00972	1.58	.00977	1.52	.0090	1.37	.00884	1.34	.0087	1.39	.0086	1.25

PUBLIC LIGHT & POWER K.W.H. CONSUMPTION PER YEAR FOR 12 BLOCKS.

HALLS, ETC.	111780	620500	735840	706400	1720000	2085600	2237000	2270700
GROUNDS	9636	9636	9636	19270	38500	28900	21700	24100
ELEVATORS					486000	806400	1134000	1080000
PUMPS						337000	368000	420000
TOTAL	121416	630136	745670	725670	2244500	3257900	3760700	4794800

GAS FUEL			RATE PER CU. FT.	GAS COST PER ROOM PER YEAR	RATE PER CU. FT.	GAS COST PER ROOM PER YEAR	RATE PER CU. FT.	GAS COST PER ROOM PER YEAR	RATE PER CU. FT.	GAS COST PER ROOM PER YEAR	RATE PER CU. FT.	GAS COST PER ROOM PER YEAR	RATE PER CU. FT.	GAS COST PER ROOM PER YEAR	RATE PER CU. FT.	GAS COST PER ROOM PER YEAR	RATE PER CU. FT.	GAS COST PER ROOM PER YEAR
CONSOLIDATED GAS CO.	INDIVIDUAL METERING	TENANTS RANGES 18000 CU. FT. PER APT. PER YR.	.00028	5.17	.00028	5.17	.00028	5.17	.00028	5.17	.00028	5.17	.00028	5.17	.00028	5.17	.00028	5.17
	MASTER METERING	TENANTS RANGES 18000 CU. FT. PER APT. PER YR.	.00025	4.42	.00025	4.42	.00024	4.40	.00024	4.39	.00024	4.32	.00024	4.28	.00024	4.26	.00024	4.25

NOTES

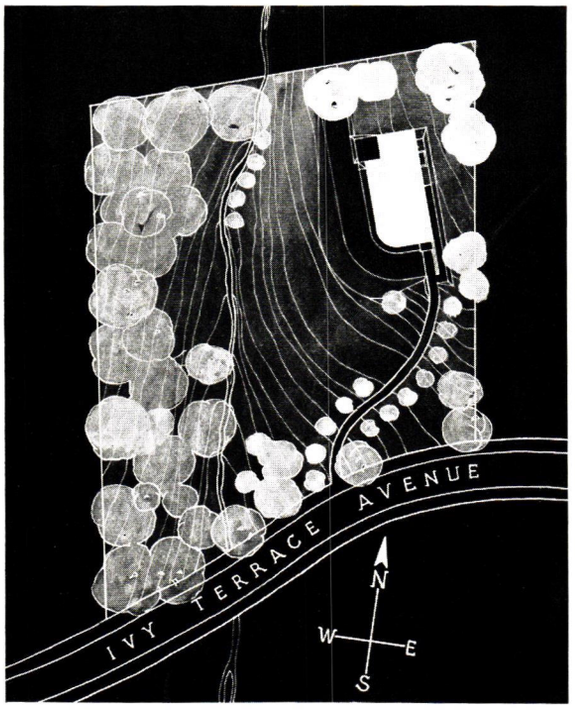
WHOLESALE RATES N.Y.& Q. EL. LT. & P. CO. WHOLESALE RATES OF N.Y. & QUEENS ELECTRIC LT. & POWER CO ARE BASED ON THE CONSUMPTION WITHIN ONE BLOCK UNDER THEIR SERVICE CLASSIFICATION NO. 9. THE CHARGE IS A FUNCTION OF MAXIMUM DEMAND AS WELL AS OF ENERGY CONSUMPTION.
UNDER MASTER METERING ELECTRICITY CHARGES ARE INCLUDED IN THE RENT. HENCE THE TENANTS CONSUME MORE CURRENT THAN WHERE THEY ARE BILLED FOR IT DIRECTLY. THEIR YEARLY CONSUMPTION FOR LIGHTS IS ESTIMATED AT 840 KWH RATHER THAN THE NORMAL 400 KWH. THIS, PLUS 400 KWH FOR REFRIGERATORS GIVES THE 1240 KWH USED.
WHOLESALE RATES N.Y. EDISON CO. WHOLESALE RATES OF THE N.Y. EDISON CO. ARE BASED ON THEIR SERVICE CLASSIFICATION NO. 3 WITH RIDER F. THIS STIPULATES THAT THE BUILDINGS MUST BE UNDER ONE OWNERSHIP AND LESS THAN 100 FT. APART. HENCE THE RATES ARE BASED ON THE CONSUMPTION OF THE ENTIRE TWELVE BLOCKS EXCEPT FOR THE 2-STORY DEVELOPMENTS IN WHICH THE BUILDINGS ARE MORE THAN 100 FT. APART ACROSS THE TRANSVERSE STREETS AND MUST THEREFORE BE FIGURED ON A BASIS OF THREE BLOCKS. THIS EXPLAINS THE HIGHER RATES FOR THE 8-10-12 STORY BLOCKS. UNDER THIS CLASSIFICATION THE CHARGE IS BASED ON ENERGY CONSUMPTION ALONE.
INDIVIDUAL METERING
WHERE INDIVIDUAL METERING IS USED WITH EITHER COMPANY THE OWNER BUYS CURRENT FOR PUBLIC SPACE LIGHT AND POWER AT THE WHOLESALE RATES DESCRIBED ABOVE.
PRIVATELY OWNED ELECTRIC GENERATING PLANT FOR NOTES REFER TO CHART NO. VIII.
REFRIGERATORS
RATES GIVEN HERE ARE BASED ON ONE ELECTRIC REFRIGERATOR IN EACH APARTMENT. NO ELECTRIC RANGES USED.
METER READING & BILLING SUB-METERING METER READING AND BILLING CALCULATED AT 1/4¢ PER KWH PER YEAR AND IS INCLUDED IN THE TENANTS CURRENT CHARGES UNDER SUB-METERING.
▲ INTER-COMMUNICATION OF BLOCKS. N.Y.E.CO. LOWER RATES ARE OBTAINABLE FROM THE N.Y.E. CO. USING THEIR SERVICE CLASSIFICATION NO. 4 RIDER B, WHICH STIPULATES THAT BUILDINGS BE UNDER ONE OWNERSHIP AND "INTER-COMMUNICATING" BY MEANS OF CONTINUOUS UNDERGROUND PASSAGES. INTER-COMMUNICATION WAS NOT INCORPORATED AS PART OF THIS STUDY SINCE GREAT DISTANCES BETWEEN BUILDINGS CAUSED THE CARRYING CHARGES ON TUNNELS PLUS THE COST OF CITY FRANCHISES FOR TUNNELS UNDER STREETS TO BE IN EXCESS OF CURRENT COST SAVINGS ACCRUED DUE TO INTER-COMMUNICATION.

COSTS COMPILED BY	W.B.COBB	AUG.1934
CHART DRAWN BY	L.A.PANZA S.R.RIO	SEPT.1934
CHART EDITED BY	W.B.COBB E.W.KLEE	AUG.1934

STUDY COMPLETED OCT. 15, 1934

CHARTS IX & X

HOUSES NEW AND REMODELED



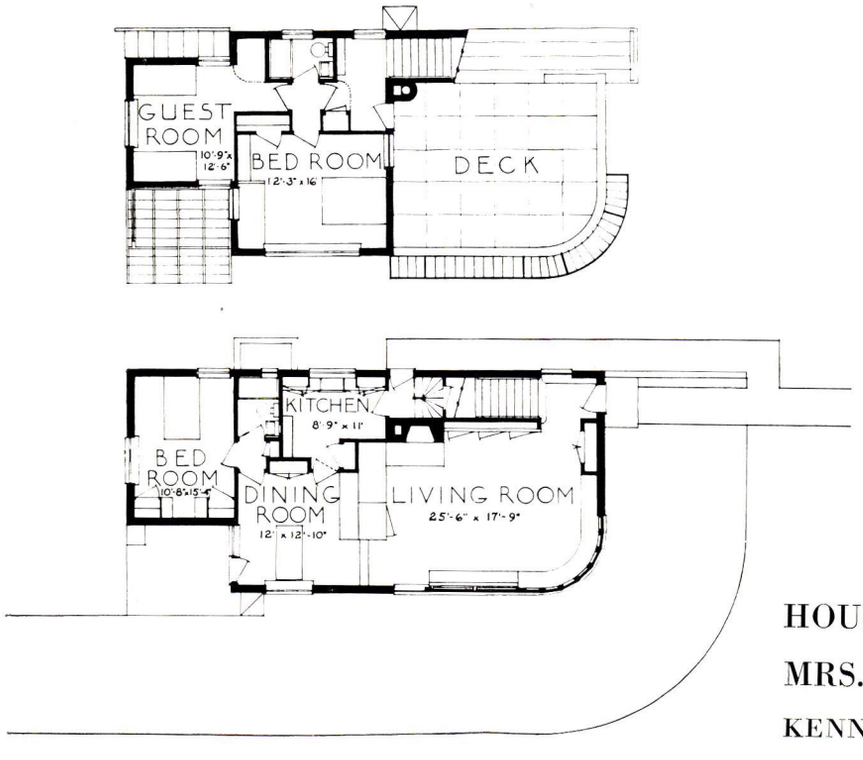
HOUSE OF MRS. JAMES A. COLE CHARLOTTESVILLE, VA.

KENNETH DAY
ARCHITECT

The shade of Jefferson broods over Charlottesville. Misunderstood, embalmed by little minds in static thought, the revolutionist must turn forever in an angry grave. The grandeur of his University looks down at sycophants who ape his cornices at puny scale, forget his sense of space, and strive forever to repeat the form without the soul. To follow in his footsteps means to move, to build with philosophic meaning and dynamic force. Were he alive today, his far-seeing mind could not admit that a community can hold through changing ages to a changeless style, nor that true harmony can come by anything but true expression of enlightened needs. How could he deny that in small buildings the first importance attaches to commodity, or welcome the congested cottages with center halls that are erected in his name? In all humility, my first consideration in this house was Jefferson."

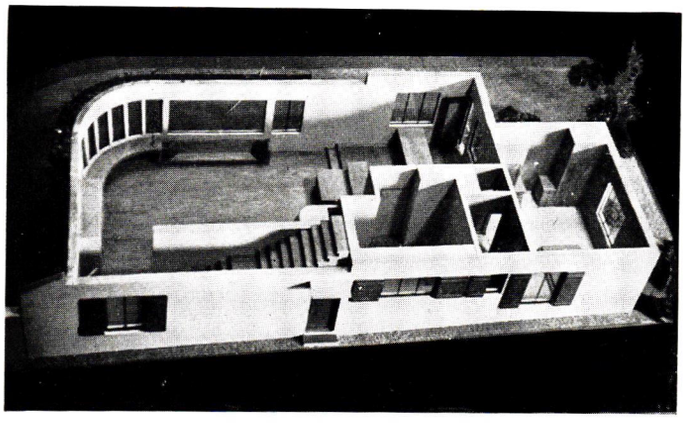
KENNETH DAY

Photos, Richard T. Dooner



HOUSE OF
MRS. JAMES A. COLE, CHARLOTTESVILLE, VA.
KENNETH DAY, ARCHITECT

The commodious effect of spaces related to the out of doors determined the general scheme of this inexpensive house designed for two sisters. The first thing one sees on entering is the two-story height of the stair hall. The second view is through the combined living and dining room to the trees beyond. Still a third, through the long window to the south, is a sweep of lawn falling to a stream. Privacy dictated the downstairs bedroom. Practical considerations led to its being considered as a future study. When that day comes the deck on the second floor level will make way for the second bedroom. The kitchen is entirely electric. Heat is furnished by an oil burning furnace which also acts as waterheater. The whole house is serviced with one soil stack, one chimney, and one downspout. All interior lighting is indirect except for necessary movable lamps. The arrangement of doors to the cellar stairs permits the heating plant to be operated by either the owner or a maid-by-the-day



HOUSE OF MRS. JAMES A. COLE
KENNETH DAY, ARCHITECT

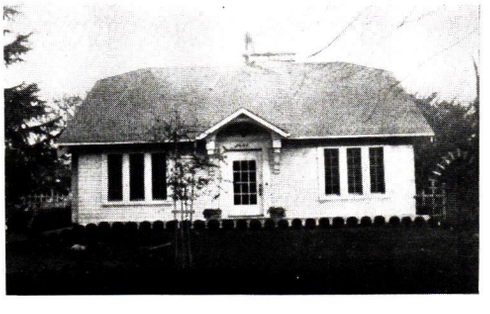
The necessary economy was furthered by the use of brick veneer for the exterior walls. This system has the advantage of providing very good natural insulation. Diagonally sheathed balloon frame was covered with aluminum foil building paper. Casein-whitewashed brick were attached with metal hangers and supported over all openings by steel lintels. A one-inch air space improves insulation. The aluminum was reenforced by four inches of rock wool under the flat roof for even better results. The sundeck is of precast cement tiles laid on bonded roofing. The top roof is of slag while that of the staircase is metal.
LEFT, A MODEL SHOWING INTERIOR ARRANGEMENT

REMODELED HOUSE FOR R. W. GRINSTEAD, PASADENA, CALIF.

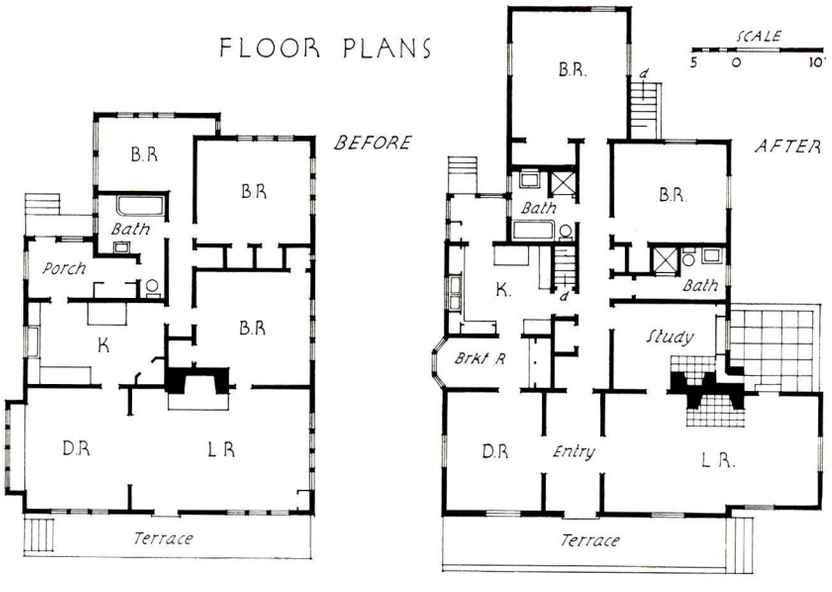
WILLIAM J. STONE, ARCHITECT

From nondescript to Cape Cod cottage was a transformation that cost only $3,000. The exterior changes comprised removing the canopy over the entrance door, removing a bay window and the casement sash. A small cornice, three dormers, and double hung sash were installed instead. The front entrance was given pilasters and a new door. The entire interior was considerably remodeled. This is more clearly shown by the plans on the next page. What the plans do not show is the complete new plumbing system, new tile work in the baths, new hardwood floors throughout, linoleum floor in the kitchen and breakfast room, and the considerable changes in location of electric outlets. Most of the rooms were papered, while the den was finished in knotty pine. Altogether a remarkable architectural feat at so small a price.

BEFORE



FLOOR PLANS



REMODELED HOUSE FOR
R. W. GRINSTEAD, PASADENA
WILLIAM J. STONE, ARCHITECT

All photos, William M. Clarke

REMODELED HOUSE FOR J. H. RUSSELL, LOS ANGELES, CALIF.

GORDON B. KAUFMANN, ARCHITECT

BEFORE ALTERATION

ENTRANCE DETAIL

LIVING ROOM INTERIOR
AFTER REMODELING

REMODELED HOUSE FOR

J. H. RUSSELL, LOS ANGELES

GORDON B. KAUFMANN, ARCHITECT

An example of the difference between a house designed by a builder and one designed by an architect. No essential changes in plan have been made, simply a moving of windows and doors to achieve some sort of order out of the original chaos. Here and there some particularly offensive ornamental detail has been removed, such as the three horrible little arches over the living room window. The addition of the balcony over the front door and an overhanging eave all around completed the exterior change. The house was once of the sort that might be described as "an elegant Spanish type residence." It is now a sophisticated suburban house of the best sort, reminiscent of the indigenous Monterey architecture. The architect has not stopped at the house but has carried through into the grounds and gardens as well. The differences in the planting immediately around the house are even more marked than those in the house itself.

REMODELED HOUSE OF J. H. RUSSELL

GORDON B. KAUFMANN, ARCHITECT

Gymnasium brown textured plaster has been removed all through the house. In the dining room a decorative painting by Martinez gives the atmosphere of the California desert. Simple cornices replace heavy beamed ceilings, and the old gentleman over the living room mantel looks out through French doors to the dining terrace instead of to Japanese lily ponds and grottoes.

All photos, Ed. M. Rosenfeld

HISTORIC AMERICAN BUILDINGS

Old Swedes, Holy Trinity, Church

Wilmington, Delaware

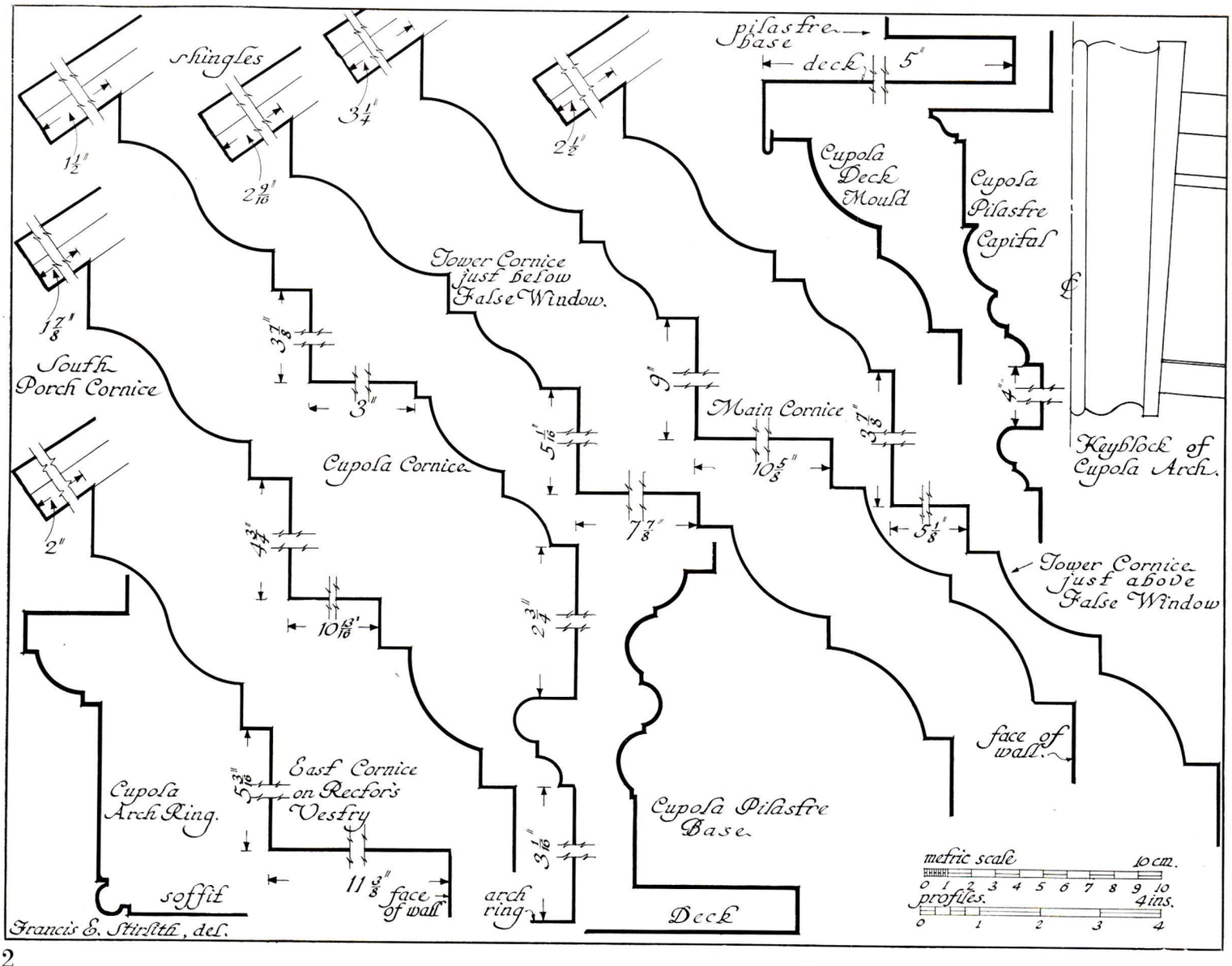
MOST of the communities along the Atlantic Seaboard which came into being during the seventeenth century were founded by men and women who emigrated from their native land as a result of religious belief. It was only natural, therefore that their first formal building should be a symbol of religion rather than a symbol of the State. One of the oldest of these still standing and still used for worship is Old Swedes (Holy Trinity) Church in Wilmington, Delaware.

The cornerstone of this early palladium of religious freedom was laid May 28, 1698, by a group of Swedish Lutherans at the north end of the east gable. For sixty years before the church's dedication on Trinity Sunday, June 4, 1699, the ground on which it stood had been used as a burying ground. From that day services were continuous for 131 years. In 1830, the congregation moved, leaving the church to fall into decay. In 1842, badly needed repairs were made, largely with funds left by the will of one Henrietta Allmond. In 1898 it was again carefully restored under the direction of a New York architect, William H. Mersereau, and the Brooklyn firm of Ferguson & Brown.

Today the church presents a somewhat different appearance from that seen by the congregation on that first Sunday two hundred and thirty-five years ago. The changes are enumerated and illustrated on the following pages.

Old Swedes,
Holy Trinity,
Church

Wilmington,
Delaware



BUILDING MONEY

A monthly section devoted to reporting the news and activities of building finance, real estate, management and construction

U. S. AGENCIES CONCERNED WITH BUILDING

So many and so varied are the activities of U. S. agencies in building that the following brief summary is printed for the convenient reference of Building Money readers.

Federal Housing Administration

Created under the National Housing Act, and headed by James A. Moffett. Its divisions are:

1. *Repair and Remodeling Division*, which will exist only until January 1, 1936. It will promote a nationwide campaign for improvements on all types of buildings, will guarantee against loss lending institutions making loans during the campaign. Deputy Administrator, Albert L. Deane.

2. *Mutual Mortgage Insurance Division.* A permanent agency which will insure mortgages on new and existing homes and low cost housing projects. Also in charge of National Mortgage Associations, private agencies, not financed by the U. S., but under the control of the Housing Administration. Designed to take place of title companies, to re-establish the guaranteed mortgage business. Deputy Administrator, J. Howard Ardrey.

Public Works Administration

PWA, now more than a year old, is still the money source for Federal and Non-Federal public works. Under Secretary of Interior Ickes, its Administrator, it allots money to all government departments for their buildings, it makes loans and grants to states and municipalities for public works. Agencies which are controlled by, or which receive their funds from the PWA are:

1. *Procurement Division of the Treasury Department*, which has taken over the functions of the Assistant Secretary of the Treasury in charge of Public Works. The Procurement Division, headed by Admiral C. J. Peoples, appoints private architects for all Federal jobs costing over $60,000, and governs the office of the Supervising Architect, which does minor architectural work itself, and deals with private architects on Federal jobs.

2. *Housing Division of the Public Works Administration.* Once under Robert D. Kohn and now under Col. Horatio B. Hackett, the Housing Division builds its own housing and lends money to municipal housing authorities for slum clearance and low cost housing projects after it has examined them from top to bottom and approved them.

Subsistence Homesteads

Launched with a $25,000,000 allotment from PWA, the Subsistence Homesteads Division of the Department of Interior is pretty much on its own. It finances and builds model rural communities usually near industrial centers so that homesteaders may supplement their seasonal wages with the crops raised on homesteads.

Federal Home Loan Bank Board

An administrative body, which is to home financing institutions what the Federal Reserve Board is to commercial banks. Chairmanned by John H. Fahey, it governs the following:

1. *The Federal Home Loan Bank System*, composed of member institutions throughout the country (like the Federal Reserve System). Its members are primarily building and loan associations but among them are some savings banks, a few life insurance companies. Its principal function is to discount home mortgages held by members.

2. *Home Owners' Loan Corp.* Familiarly known as the HOLC, the corporation refinances home mortgages IN DISTRESS, and also lends money through its newly created Reconditioning Division directly to owners of refinanced homes for repair and remodeling. With the NHA, Congress widens HOLC activities by authorizing an increase in the amount of bonds it is permitted to issue, from $2,000,000,000 to $3,000,000,000.

3. *Federal Savings and Loan Associations.* In communities where adequate home financing is not constantly available, the Federal Home Loan Bank Board permits, even encourages, establishment of Federal savings and loan associations, which are in effect government-supervised by privately operated building and loan associations.

4. *Federal Savings and Loan Insurance Corp.* Newly created by the National Housing Act, the corporation insures up to $5,000 of the investments of shareholders in building and loan associations.

Real Property Inventory

The Bureau of Foreign & Domestic Commerce of the Department of Commerce has recently completed the most important survey of real estate and building ever made. Sixty-four cities were probed and their building statistics recorded. The facts, invaluable to manufacturers and lenders, and useful to all the building industry, are published for the first time on pages 320–332, November issue.

Reconstruction Finance Corp.

Oldest of the emergency agencies, the RFC is still the most powerful. As a general source of credit to the country, its funds have been available to building and loan associations, banks, insurance companies, as part of Federal effort to ease mortgage tightness. Now under the "small industries" act passed at the last session of Congress, it will lend money directly to industrial and commercial concerns to improve their property as well as for other needed expenditures. Loans are available in certain cases for contractors needing working capital.

CONTENTS

John Cushman Fistere
Editor

BLUEPRINTS FOR FHA MORTGAGE LENDERS

A Presidential decree sets Title II's interest rate at 5 per cent; new rules for developers and slum clearers.

JUST two days later than he predicted, and just two months earlier than Washington wise men had figured, Federal Housing Administrator James Andrew Moffett made public the first batch of rules and regulations for putting Titles II and III of the National Housing Act into action. If Administrator Moffett had simply said, "These are the rules," chances are the nation's newspapers would have relegated the story to the back pages. Well knowing that his rules would make drab reading, Administrator Moffett employed a neat device to catch the eyes of editors.

The device was a letter from President Roosevelt:

The White House
Washington, November 1, 1934

Dear Mr. Moffett:

I have before me your letter of November 1 raising the question of interest rates to be permitted on mortgages to be insured under Title II of the National Housing Act.

One of the major purposes of the National Housing Act was to encourage a greater uniformity in mortgage interest rates throughout the country and especially to eliminate as far as possible exorbitant and usurious rates charged in many places. The mortgage system embodied in Titles II and III of the National Housing Act ought to make for a greater uniformity, especially in insured mortgages.

I realize that your task and program do not involve the lending of government funds. You are seeking, rather, to encourage the investment of private capital in the home mortgage field.

I am aware that a uniform rate may in the beginning cause less response to your program on the part of lenders and investors in some sections of the country than in others.

Nevertheless, the National Housing Act should not foster the continuation of high interest rates on insured mortgages in any part of the country.

We all know that even in those sections where first mortgage money has been available at reasonable costs, home ownership has had to struggle under the handicap of exorbitant second mortgage interest rates.

Almost everybody knows of practices far too widespread where lenders have demanded and received 8 per cent, 10 per cent and 12 per cent on first mortgages and much higher rates on second mortgages.

These methods and practices in the field of home financing have been the opposite of commendation.

Your special task in putting Title II into operation is to call the attention of lenders and borrowers in the home mortgage field, first, to the Government's policy of keeping home mortgage interest rates as low as possible and, secondly, to the excellence and security of this type of investment.

I am firm in the conviction that every practical attempt at lowering the cost of homes to the great mass of our people is worthy of our best efforts. It is time to make these lower interest rates apply to every part of the country.

I think, therefore, that you should announce the program for the whole country on the basis of a basic maximum of 5 per cent interest.

Very sincerely yours,
FRANKLIN D. ROOSEVELT

Even though many shrewd commentators thought they recognized this as stage play, it made good reading and persuaded thousands of laymen who would otherwise have ignored the story to read at least a part of the rules and regulations.

There were few surprises. Couched in legalistic procedure by astute Frank Watson, FHA's young and handsome Assistant General Counsel, the rules were an elaboration of what the Act provided.

Though the principles of Mutual Mortgage Insurance have been proed and conned for the last three months in sophisticated financial circles, the great mass of builders and lenders are as yet untutored not only in the meaning of mortgage insurance but in its likely effect on their business. Briefly, Mutual Mortgage Insurance is a method of reforming current home lending practices. Its intent is not primarily to stimulate new construction immediately, but with the security and liquidity it gives to the lending institution, it will probably make more home building money available. It is not a new building program; it is a mortgage program. It is just as pertinent to old as to new buildings.

One departure it makes from many other New Deal remedies is that it involves no huge expenditure of United States money. The total which the Federal Housing Administration can contribute to its operation is $10,000,000.

FHA lends money to nobody. It is, instead, a large mutual insurance corporation; but instead of insuring a man against loss of his life, it insures a lending institution against loss on its mortgages. For this insurance, the mortgagee pays an annual insurance premium which he in turn collects in monthly installments along with interest and amortization from the mortgagor. In return for the added charge of insurance,

Moffett's Right Hand, Stewart McDonald

Harris & Ewing

Field Boss J. D. Dusenberry

Wide World

Special Assistant G. H. Buckley

Harris & Ewing

Appraisal Chief Frederick Babcock

the mortgagor receives other benefits, primarily lower interest rates and reduced charges of other kinds.

Mortgagees. Immediate problem of Deputy Administrator Ardrey is to line up a host of eligible mortgage lenders. No such rush for the bandwagon as accompanied Title I (Repair and Remodeling) is anticipated, because Title II does not offer such attractive interest rates. But what is more important, mutual mortgage insurance is a novel economic principle, and novel economic principles are invariably approached by bankers clad in their full armor of skepticism.

It was no surprise to anyone that the Guaranty Trust Company of New York was the first to qualify. Deputy Ardrey's last job was being its executive vice president. Nor did it surprise the nation's capital that Riggs National Bank was second, for Riggs's president Robert V. Fleming has been from the first an NHA enthusiast.

Of private lenders there were none, for although in the past they did about 20 per cent of all the mortgage lending, they are automatically ineligible for insurance. Reason the line was drawn at private lenders was their inability "to service" after they had made them. In the days of straight mortgages, there was little or no servicing; but with all insured mortgages calling for monthly payments, FHA felt that no private lender had the facilities to follow up his clients. Later on, it is thought possible, the cream of private lenders may be permitted to participate.

In order to qualify a bank must be "a corporate investor having succession, engaged principally in the business of lending its own funds, and indicating a willingness to deal in a reasonable volume of mortgages." The institution must have a paid-in capital of at least $100,000, and be located in a town of more than 6,000 population.

Until it learns more about the business it is in, FHA is expected to grant insurance privileges only to the finest of institutions, and to loosen its restrictions later on.

Mortgages. FHA's rules did not elaborate much on the Act itself in defining the kind of mortgages it will accept for insurance. The rules repeated that monthly payments of interest, amortization, and insurance must be made, that taxes and fire insurance must be included in the payment. They repeated also that 1–4 family houses only are eligible, that no mortgage could be for more than $16,000, that 80 per cent of the value of house and lot was the maximum permitted, and that amortization might be stretched over a period as long as 20 years.

At the time the insurance is issued there can be no second mortgage on the property. On an existing house, for instance, if there were a first of 50 and a second of 25, the two would be combined into a 75 per cent amortized first mortgage. Though FHA is powerless to prevent an owner from putting an additional mortgage on his property after insurance has been granted, it will warn all owners against such a practice, will plead with lenders not to be party to it.

Mortgagor. The Housing Administration looks with disfavor upon the principle of establishing the security of a loan solely through the present and future value of the property. Amortization — the theory on which mutual mortgage insurance is based — depends for its success on the ability of the borrower to meet his payments. Therefore, FHA is going to satisfy itself thoroughly on the borrower's credit standing. Its examination is going to be as thorough as the usual character examination on an unsecured commercial loan.

Eligible Properties. Though it is frequently referred to as the new construction part of the Housing Act, Title II applies just as much to houses now standing as it does to houses yet unbuilt. FHA's experts believe, in fact, that insurance of refinanced old mortgages will be the first part of their operations to reach any volume. They think that the likely procedure will be that bankers will go through their mortgage loan portfolio, pick out a handful of loans they don't feel too sanguine about, and forward them to Washington for insurance. After they have become familiar with the meaning and operation of insurance, they will look with more favor on insurance of all their home mortgages.

The only properties eligible for insurance are 1–4 family houses, which include row houses as well as the other standard types. It may even be possible to insure the mortgage on a property which is partly commercial, provided the general character of the building is residential. Besides houses, special insurance has been created for low cost housing projects when sponsored by local housing authorities, Federal or State bodies, or limited dividend corporations approved by the Administrator.

Charges. Not until the Roosevelt letter popped up on Administrator Moffett's desk did FHA officials know for certain what charges they were going to permit. Three different schemes were proposed: making a blanket ruling of 5 per cent for the country, and then adjusting the rates as the squawks came in; dividing the nation into 5 per cent and 5½ per cent States according to prevailing rates; and the third one was to set a rate of 5 per cent for the ten big Eastern cities where money is plentiful, 5½ per cent for the New England and Middle Atlantic States, and 6 per cent for the rest of the

country. It was the last plan which the President vetoed. The full schedule of charges as definitely approved is shown in the table below.

Mortgagors' payments of the charges plus amortization, taxes and fire insurance will be lumped together in monthly payments to the lending institution. When taxes and fire insurance come due, the mortgagee pays them with the mortgagor's money, and it credits itself with the mortgage insurance premium since it is required to pay the yearly premium in advance to FHA.

Assuming a home constructed after June 27, 1934, the following would be a typical set-up of a mortgagor's payments.

Appraised value of home	$6,250
Loan	5,000
Percentage of value loaned	80%
Interest rate	5%
Service charge	½ of 1% per annum
Mortgage insurance premium	½ of 1%

Item	*Payments per month fifteen year amortized loan*	*Payments per month twenty year amortized loan*
Monthly payment, interest and principal	$39.55	$33.00
Service charge	1.30	1.40
Mortgage insurance premium	2.10	2.10
Sub-total	$42.95	$36.50
*Taxes	10.43	10.43
** Fire Insurance	2.00	2.00
†Total	$55.38	$48.93

* Taxes assumed at 2 per cent of actual appraised value.

** Fire insurance figures at ½ of 1 per cent annually on an assumed value of $4,800 for the house (as distinguished from the lot).

† In order to make this total comparable with rent, an item for upkeep, say 1½ per cent annually of the value of the house, or six dollars a month, should be added.

In case there are no great losses from the fund to which a particular mortgage is assigned, the borrower may receive a refund during the last year of the loan, amounting possibly to as much as 50 to 70 per cent of the total mortgage insurance premiums paid in.

To state the whole mortgage insurance proposition in another way: Under the fifteen-year plan, the borrower would pay out $42.95 a month for 180 months, amounting to a total of $7,731. Of this, $5,000 represents repayment of principal, $2,122 interest, $234 service charge, and $375 mortgage insurance premium, with a possibility of 50 to 70 per cent refund of the last item at the beginning of the fourteenth year.

Under the twenty-year plan, the borrower would pay out $36.50 a month for 240 months, amounting to a total of $8,760. Of this, $5,000 represents repayment of principal, $2,924 interest, $336 service charge, and $500 mortgage insurance premium, with a possibility of 50 to 70 per cent refund, of the last named amount, toward the end of the eighteenth or the beginning of the nineteenth year.

Besides the amount of principal outstanding, FHA's bonds will cover taxes and fire insurance paid by the mortgagee. At the same time it will issue a certificate of claim to the mortgagee covering reasonable costs of foreclosure, including attorney's fees, etc. When the property is disposed of, FHA will first pay itself for redemption of the bonds, then satisfy the certificate of claim, and finally give the balance, if any, to the mortgagor.

Organization. To handle the details of insuring thousands of mortgages, FHA is going to have a staff that will probably eventually match HOLC's in number even in the latter's balmiest days. There are to be eleven regions, each with a director and a supervisor for each of the 48 States. It expects to open 60 offices, each to be staffed with a chief insurance underwriter, appraisers, credit investigators, and architectural consultants in as great profusion as business demands.

Foreclosure. No insignificant part of Title II is the foreclosure procedure which was incorporated definitely in the law itself. The Housing Administration pays out no cash to the mortgagor in event of foreclosure. Instead it issues 3 per cent debenture bonds maturing 3 years after the date when the mortgage itself would have matured if payments had been kept up. Bonds issued before January 1, 1937, will be guaranteed as to principal and interest by the U. S.; after that they will simply be obligations of the insurance funds deposited with FHA. Actuarial studies made by competent insurance executives before the law was passed indicate that the ½ of 1 per cent insurance will be ample to cover even the worst of anticipated losses.

FHA takes title to the property when the mortgage is foreclosed. It will act as selling, leasing and managing agent, just as the foreclosed property division of the HOLC now operates. Instead of dumping properties on the market as happened when private companies foreclosed, FHA will hold its properties until such time as a good market appears. This, in itself, should do much to stabilize home realty values.

When an application for insurance is received, the appraiser and credit man delve into the property and the owner. The project is then checked against basic economic and social data which FHA will have gathered, data similar to that unearthed in the Real Property Inventory and the Financial Survey of Urban Housing. (See THE ARCHITECTURAL FORUM, November, 1934, page 321.) Even admitting the entry of some politics, FHA will come as close to scientific appraising as any plan ever attempted in the U. S.

Operative Builders. Though speculation is no crime the term has connotations as nearly criminal as can be found within the law. For that reason FHA does not recognize speculative builders. It has, instead, devised a new name which means the same thing. FHA's name is operative builder. He is a man who builds houses for sale.

Realizing that approximately 80 per cent of all the houses constructed in the U. S. are built for sale, NHA permits "commitments" to insure on unbuilt houses. The effect of this is simply that the real estate developer can go to his bank for a construction loan as he did in the past and get from the mortgagee a commitment to insure the mortgages after the houses are built — provided the future buyer is a man of accepted credit.

While it would seem that this would let loose the same flood of speculative building that ordinarily marks normal construction periods, FHA was wise enough to surround its commitments with anti-boom regulations. Before it agrees to insure a mortgage it will want to satisfy itself on three points: (1) The standing of the operative builder as a credit risk and as a competent home builder, (2) The demand for the kind of house he wants to build and, (3) Whether the proposed house conforms in cost and quality to the needs of the intended occupants and to FHA construction standards.

Mortgage Indebtedness Arising From	Interest Rate Exclusive of Premium Charge	Service Charge	Mortgage Insurance Premium
Financing (without change in lender) of Bona Fide Sale or Resale of Property Existing on June 27, 1934	Not to exceed 5% per annum	None	½ of 1% per annum
Loan to Borrower for Financing Acquisition by him of Property Constructed After June 27, 1934	Not to exceed 5% per annum	½ of 1% per annum	½ of 1% per annum
Refunding of Present Indebtedness (without change of borrower or lender) on Property Existing on June 27, 1934	Not to exceed 5½% per annum	None	1% per annum
Refunding of Present Indebtedness (with change of lender) on Property Existing on June 27, 1934	Not to exceed 5½% per annum	½ of 1% per annum	1% per annum

By Rooseveltian Decree: The Charges

To learn these things the Administration will require the operative builder to show that he is putting in actual cash or other equity over and above the mortgage. He will have to submit plans and specifications for the house and, if the land is undeveloped, he will have to submit original plans for the entire area together with the factors influencing the permanent value of his development.

What such regulations are likely to mean to present practices in land development is this: subdivisions submitted will be subject to the same kind of scrutiny which now attends the approval of low cost housing projects by a State Housing Board or by the Housing Division of PWA. To guide uninstructed developers FHA's Technical Division has prepared a booklet with all the do's and don'ts. While, no doubt, cries of protest will fill the air, the good operative builder will have no cause for complaint, for FHA's intention is not to hinder but to encourage the intelligent subdivision of land.

Low Cost Housing. What may yet become the prime source of financing for slum clearance projects, are the limited dividend corporations which FHA will encourage. In the Housing Act, Section 207, special insurance privileges are extended to low cost housing projects, if they are sponsored by "Federal or State instrumentalities, private limited dividend corporations or municipal instrumentalities which are regulated or restricted by law or by the Administrator as to rents, charges, capital, rate of return or method of operation."

Important to private investors is the fact that limited dividend corporations approved by the Administrator are eligible for mortgage insurance benefits. Restrictions on limited dividend corporations will be like those now imposed by State housing laws: no regular dividends over 6 per cent, no stock issues in excess of original equity, no stock retirement before the mortgage is paid and no sale of property to other than an approved limited dividend corporation.

But Deputy Administrator J. Howard Ardrey will probably hold out one added incentive for the formation of such corporations — a ruling whereby he may from time to time permit the distribution of extra dividends. Probably it will be that if the surplus ever mounts to a point where it exceeds the gross rent for the preceding year, half will go to the tenants as a rebate, and half will be a melon for stockholders. Such distribution, however, would not be permitted if the equity has been wholly or partially amortized.

One other concession FHA will make to limited dividend corporations — it will insure mortgages which run higher than 80 per cent of the project's value provided the risk seems unusually good. But in no case could the sponsors' equity be less than the value of the land, and in all cases the sponsors would have to have a working capital of at least 3 per cent.

Unlike the State housing laws which usually say the $12.50 per room per month (or some lower figure) constitutes low cost housing, FHA will not commit itself definitely on what is or what isn't low cost. Instead it will judge each project by itself. It will, after considering such things as the relation of proposed rents to the general community level, the average earnings of the probable tenants, decide whether the project is low cost or not.

National Mortgage Associations. Without Title III, which paves the way for the formation of privately owned but Federally controlled National Mortgage Associations, Title II would be partially ineffective, for National Mortgage Associations are the agency to which FHA will look for the permanent liquidity of the mortgage market. Their purpose is to buy mortgages initiated by local lending institutions and to issue bonds against them. They are, in effect, like the old guaranteed mortgage companies, the only difference being that they will actually have some basis for the guarantee. An NMA must have an initial capital of not less than $5,000,000. It may issue bonds only on FHA insured mortgages and only in a total amount not exceeding ten times the aggregate par value of its outstanding capital stock.

National Mortgage Associations, it is believed, will be established only in large cities where capital is available in large quantities. They will, however, buy and sell all over the country, thus giving the communities where inadequate funds are available a larger volume of mortgage money. Their bonds, it is thought, will be listed on security exchanges, providing investors with a readily salable instrument.

KNICKERBOCKER VILLAGE

Lower Manhattan's best at $12.50 per room per month. A bad block becomes an exhibition block through Fred F. French and the RFC. But sociologists are not pleased.

KNICKERBOCKER VILLAGE is two simple (their only decoration is a terra cotta coping at the top) rectangular buildings, just east of the Bowery and New York City's Chinatown and on a block whose original name of Long was many decades ago corrupted into "lung" because of the block's own tubercular corruption. Knickerbocker Village was conceived in pre-Depression 1929 as a high class apartment group and ended by renting its most expensive penthouse apartments for only $87.50; it was prematurely hailed as an answer to Manhattan's crying need for slum clearance and adequate low-priced housing and turned out to be nothing of the sort; it started out as a canny private real estate venture and ended by borrowing $8,075,000 from Reconstruction Finance Corporation and having the Federal Government and the New York State Housing Board for nursemaids. It has been damned by theorists who consider it a sociological failure because it has not cleared but only transferred slums and been praised by responsible citizens like Alfred Emanuel Smith for exactly the same reason. Knickerbocker Village is a paradox that merits attention.

Its story begins with a series of fantastic real estate operations by the fantastic Mr. Fred Fillmore French. In 1917 Mr. French had a small office in the Bronx. To him one day came an architect, John S. Van Wart, and in order to make room for him Mr. French had to rent an extra room from the Central Union Gas Co. offices. Architect Van Wart was the man who later was going to design Knickerbocker Village.

In lush 1929 few men in Manhattan were more conscious of their Midas touch than Mr. French. Skimpy offices in the Bronx were no longer in order. Under the Fred F. French ægis an incredible Tudor mushroom had sprouted at the eastern end of 42nd Street — Tudor City, a white collar apartment house development which discovered the slogan "Walk to Work" and was intended to provide homes for the thousands of clerks, junior officials and so forth who every morning crowded into the near-by maze of advertising offices, magazine offices, brokerage and real estate offices, oil company offices, architects' offices, industrial design offices, and practically every other kind of office you can think of.

Mr. French began to plan another such development in downtown Manhattan. He would buy 45 acres of land between Manhattan and Brooklyn Bridges, clear them of their vermin and tuberculosis infested tenements and build another Tudor City. The buying had to be secret — let the word get around that Fred French was concentrating his buying in a particular area and prices would leap as many dollars as stocks were soon to lose points. Mr. French gathered about him a group of trusted associates (one of whom swindled him out of $115,000) and swore them to a secrecy that would do credit to a Maffia organization.

Strangely named dummy corporations (Dikram Ehramjian, Inc., Allied Metal Markets, Southern Markets, Inc.) began buying. Mr. French became so ill he was crawling on the floor of his apartment, peering at plans spread on the carpet. All this time, although some may have guessed, no one knew for certain that Fred French was buying the land. In 1931, Mr. French asked for tax reductions on the land he had acquired and the cat was out of the bag. The trouble was that by this time, not even Mr. French knew what to do with the cat.

The Reconstruction Finance Corporation finally gave him a partial answer. The RFC was prepared to lend money to building projects under certain conditions. One of these was that the building company had to be a limited dividend corporation, another demanded that the project have something to do with the clearance of slums. Fred French saw his chance and took it — it probably cost him a $1,500,000 loss but it kept him from losing more; it did not take care of all the tenement land he had acquired but it did put his and other organizations to work and it did abolish the "lung block" which as early as 1834 had already acquired its malodorous reputation.

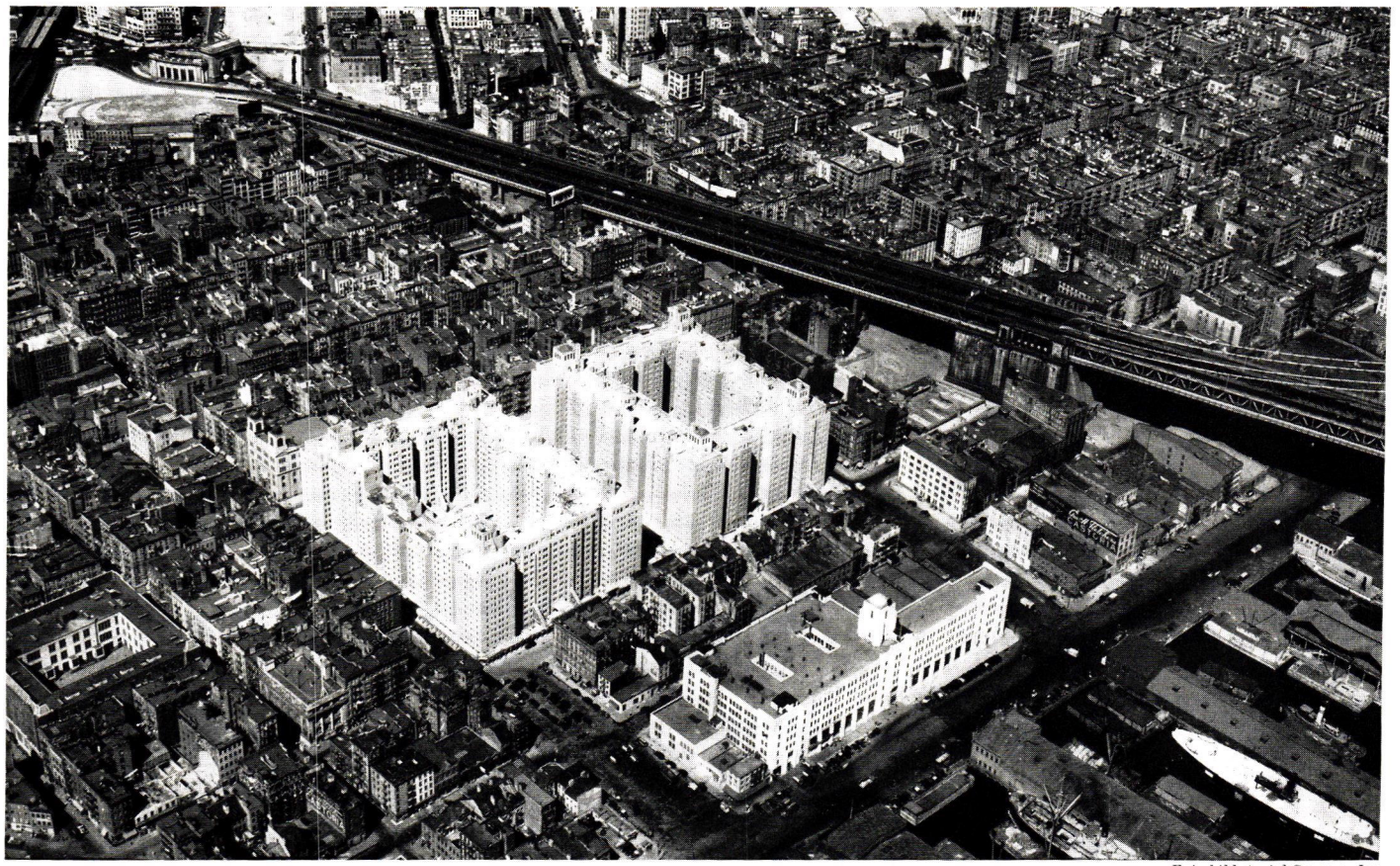
October 1, 1934 found one unit of Knickerbocker Village almost completed, the other promised for tenancy a month later. The unfinished unit was 60 per cent rented, the completed building figured its occupancy at 97 per cent. It was a rush job and it nearly got finished on time. The opening was gala. Jesse Jones made a speech for RFC. Al Smith spoke for New York

Smith

Jones

French

Keystone Photos



Fairchild Aerial Surveys, Inc.

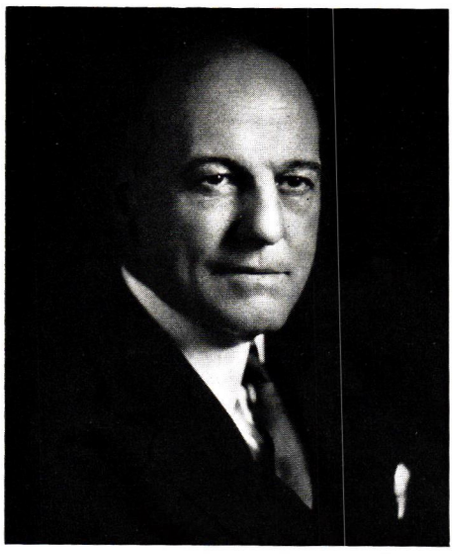
Bright against a drab background are the twin units of Knickerbocker Village. The building on the waterfront is a Hearst printing plant.

City and jokingly offered to trade his 28 per cent occupied Empire State Building. Fred French was ready with an address. The tenants were shortly to discover how hurried the job had been and from a protective association to demand better elevator service, to complain that some of the toilet seats were not in place, that there was plaster in the bathtubs, that the floors were unfinished, the laundry dryer not installed, the incinerator so hot it heated the building to an uncomfortable temperature. The association thought it only fair that a month's rent be returned to each tenant. Reason for the delays was chiefly a series of jurisdictional labor disputes with which no organization, no matter how smoothly geared, could have hoped to cope successfully.

The Housing Board got alarmed, meetings were held, and the fracas began to simmer down. But although service was unquestionably not at its peak, even the crankiest tenant had to admit that Knickerbocker Village was an amazing experiment for New York City and even the gloomiest conceded that it gave promise of eventually functioning properly.

They had no easy time becoming tenants, these pioneer 700-odd families who struggled the first few weeks with unfinished apartments or took sulky refuge in a hotel until peace and order descended upon the settlement. They had first to file an exhaustive application describing their present apartments and utilities, their rents, ages, occupations, salaries, other income, other wage earners. It seemed as if only one's politics and ancestry were not inquired into.

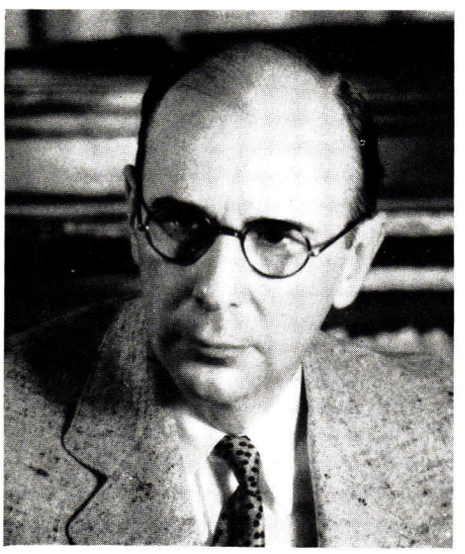
James



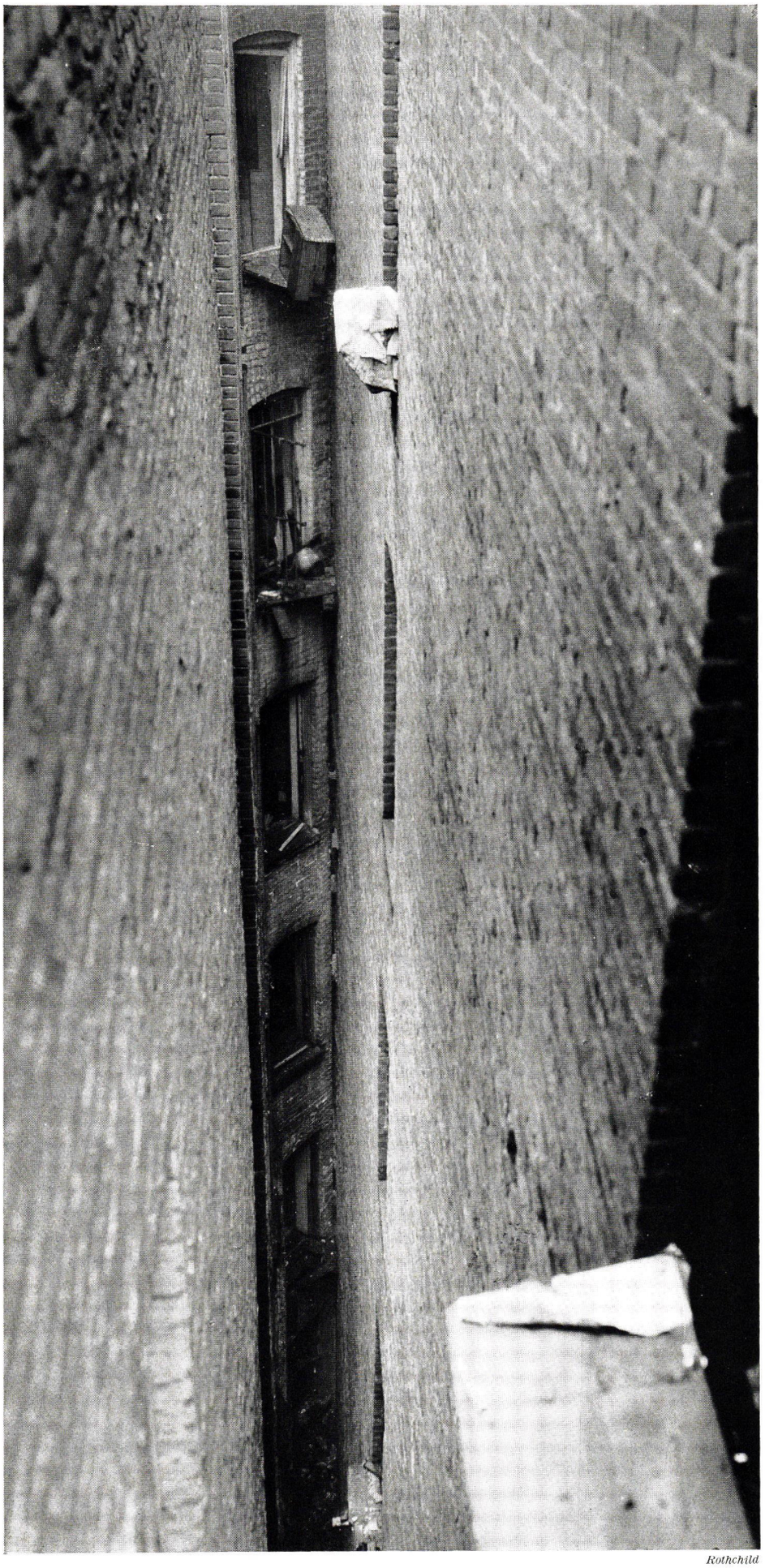
Van Wart

Bachrach

Gove



Abbott



Rothchild

With the application went one month's rent which, if the application was turned down would be returned; if accepted, would be deposited in a savings bank where it would draw interest and be applicable to the *last* month's rent. Payment of the *first* month's rent was also expected in advance and shortly after the application had been approved.

Mr. French and the Messrs. Darwin James and George Gove of the Housing Board were, as can be seen, taking no chances on welshers and were trying to pick out the whitest and most deserving collars in the class. Top income of tenants was to be $4,000. Exceptions were allowed in the case, for instance, of two unmarried girls whose incomes as stenographers were $2,200 each and who wished to room together. Their joint incomes, according to the letter of the law, would bar them from Knickerbocker Village but, if they seemed desirable tenants, they were allowed the larger quarters they could afford by joining forces. This is, of course, far removed from providing dwelling for the inhabitants of slums. As everyone expected, all but a scattered few of the tenants have telephones.

And this is what the tenants got or are about to get. Two big, twelve-story structures, built around two courts, with an additional playground court between — the whole covering approximately the area of four city blocks. Coverage of land amounts to 45.9 per cent, an unheard of ratio in a district where formerly a three and one-half foot air shaft was considered amply adequate for the admittance of air and light. There are refrigerators, gas stoves. Elevators are self-operating. Rentals range from $22.50 for a 2½-room apartment on a lower floor to $87.50 for a 5½-room penthouse. Average charge per room cannot exceed $12.50 per month. That the lower income bracket of white collars was most attracted was evidenced by the enormous demand for the 2½-room flats.

Mr. French spent $10,000 advertising his project and publicizing another "walk-to-work" slogan. But only about 50 per cent of the tenants work downtown and the majority do not walk the several blocks it takes to get there. Eventually Knickerbocker Village (completed: 1,593 apartments, 6,031.5 rooms) will be a city of 6,000 within a city, differing therein from any other apartment group in Manhattan. Practically self-contained, it looks forward to renting space to a grocery store, fruit and vegetable market, meat market, beauty shop, barber shop, news stand, liquor store, drug store, soda fountain, restaurant and cafe-

What Knickerbocker Village Replaced

This is a three and one-half foot air shaft through which painfully filtered all the daylight and air the inhabitants of the apartments shown received.

teria. There are plans for an assembly room where, presumably, the tenants may hold protest meetings if they still feel like protesting. The courtyards will be properly landscaped, will offer facilities for open air concerts and meetings, playgrounds for children.

But although the developers thought they recognized in Knickerbocker Village an ideal settlement for young families with babies, it turned out that the Village's baby population was surprisingly low Estimated number of babies in the two units is only 300. The Village's "average family" has not yet been statistically placed. But it is easy to guess safely. It is a family of two or three (a couple and a mother, brother, sister, child) with income, as we know, of approximately $4,000. They have a telephone, no servant. They are clerks, advertising or magazine writers, city employes, brokerage house and bank assistants. Husband and wife, in the majority of cases, have jobs (Knickerbocker Village is nearly empty during the daytime). Their age is around thirty. For the most part Knickerbocker Village's tenants have cultural pretensions, have been to college, certainly to high school. Their nights are not strident with parties.

Knickerbocker Village's twin units gleam white against the tawdry background that is the lower East Side slums. A few blocks away, bums still stagger from the effects of New York's peculiar bootleg liquor called "smoke." Odors are pungent and unpleasant in the summer streets and the Old Law tenements crazily court the disaster of fire. Was Knickerbocker Village a step forward in the clearance of this area? Physically, the answer is obviously affirmative. Knickerbocker Village now stands where once festered the worst block of all New York's slums. But, sociologically, the Village only indicates an answer to the hoary question of Manhattan slum clearance. Knickerbocker Village, in this light, cleared no slums; it simply moved them. Which is another way of saying that it created new slums. All of which also bears inspection.

When Mr. French announced his plans the Lavanburg Foundation was quick to realize that in tracing the exodus of the families living on the Village's land it would achieve an excellent and important case history of a slum clearance project. With the help of Hamilton House, a neighborhood settlement, it got to work. The area studied included portions of Catherine, Market, Cherry and Monroe Streets and all of Hamilton Street (now closed and included in the project). In other words the Village's exact area was examined before and after its metamorphosis. Altogether the area contained 1,085 apartments (as against Knickerbocker Village's 1,593) of which 652 were vacant, 433 occupied. For such convincing reasons as refusal of admission, forty-seven of the occupied apartments remained unstudied. Members of the families occupying the remaining 386 apartments totaled 1,745 (as against a population of approximately 6,000 in the Village). It will, of course, instantly be seen that Knickerbocker Village has increased concentration which, considering the nature of the Village, is by no means a disparaging remark but should be noted as a matter of record. For the Village was designed to take care of that concentration; the concentration did not just happen and the Village's care, it must be remembered, is fireproofed and clean and of pleasant nature.

Space will not permit an elaborate report on the Lavanburg Foundation's and Hamilton House's figures. But their first conclusion merits attention and thought: "The great majority of tenants expressed a desire to remain in the immediate neighborhood and, when forced to vacate, only 14 per cent left the district, 86 per cent settling in the district." There is a pathetic corollary included later in the report:

Families planning to move into Knickerbocker Village:	
Yes	3
No	383
Families wishing to move into Knickerbocker Village:	
Yes	379
No	7

One of the results, therefore, of Knickerbocker Village has been not only to increase concentration on its specified area by offering facilities to an approximate 6,000 families where before there were only 386 plus a number of boarders of whom no census was taken, but further to increase this concentration by moving 86 per cent of the pre-Knickerbocker Village families into directly adjoining slums. It should be noted that these slums were approximately 25 per cent vacant so that there was ample bad housing to receive the moving families.

Knickerbocker Village, therefore, increased slums. A few of the landlords of adjoining properties, spurred on by the Village's example in cleanliness and by their increased returns from new tenants, did make scattered improvements in their houses, but the area surrounding the Village is still slum. What lesson does this case history indicate? In the first place it must be noted that this discussion takes place in a field where Mr. French and the Housing Board are present in a capacity which does not represent them to the fullest of their powers. It was and is all to Mr. French's credit that Knickerbocker Village obliterated the lung block. But remember that Mr. French originally intended a private venture. Although he could derive moral comfort from having cleared a block of its slums, he had no reason to feel morally responsible for the future whereabouts of the slum dwellers.

The same holds true of the Housing Board and the RFC. They helped Mr. French because Mr. French's project did mean razing an infected area. But neither Mr. French nor the RFC nor the Housing Board have solved anything about Manhattan slum clearance where the term, as it properly should, means providing decent dwelling for families who were paying rentals of from $4 a month for two rooms. Two general conclusions, however, seem to be in order: 1) slum families like to remain where they have been living, welcome a decent home in that area provided they can afford it; 2) a slum area may be razed, rebuilt, and quickly filled with a *different* population. Neither of these conclusions has the quality of a bombshell but they have rarely been so aptly demonstrated. It is by no means the function of this report on Knickerbocker Village to go further than to indicate them. But the obvious corollary that a good way to attack slum clearance may perhaps be to build two developments simultaneously — one to bring in a new, richer population, the other to lure away from its haunts the entrenched population — may be mentioned. The battle goes no further. It rests with the economists, the architects, the taxers of land.

No real estate man or sociologist, however, can look at Knickerbocker Village without wondering: can it and should it be done again? The answer seems to be that certainly it can. The Village turned down enough applications to fill more than a third unit and could undoubtedly have rented

The communal toilet, portable and stationary. Notice that the seat is no longer on hinges. The door to the right leads to an apartment.

International News

The area between the two Knickerbocker Village units backgrounded by lower East Side tenements. The chairs are being installed in preparation for the inaugural ceremonies but they also demonstrate the possibilities of communal outdoor activities.

most of its space at a higher rate than the $12.50 maximum. But it is not clear that the experiment should be repeated. Filling the lower East Side with Knickerbocker Villages would mean a tremendous drainage from the uptown residential sections of Manhattan. Which, on its face, does not seem to be a sound economical idea. What will become of the lower East Side, which shows no indication of ever becoming industrialized, remains any man's guess. Ironically, considering the set-up of the city and its land values, the fact that the section is slum-ridden seems a manifestation of its logical destiny.

A way out might be found by building spaced Knickerbocker Villages and having the city authorities condemn the intervening and unimproved lands for park purposes, reducing total coverage to 20 per cent and pegging the density of population to that presently existing. Unfortunately, with city politics being what they almost always are, the scheme seems a far distance from realization.

In the old days (the quality of their goodness is equivocal) when Mr. French was buying land and his salesmen were selling stock in his companies, the sky was the limit. But when the RFC and the Housing Board got on the job, the limit was 6 per cent. Which simply means that RFC would lend no money to a company unless it limited its dividends to 6 per cent. Mr. French, seeing the turn of affairs, was quite willing. It now remains to be seen whether Mr. French will ever enjoy any portion of his percentage. The most optimistic have thought that he might begin to get some money back in ten years. But others have been willing to bet he would never make a clear cent.

In the first place Mr. French took a whopping loss on his land. By the time he had acquired it and held it, its cost averaged $22 a sq. ft. But Knickerbocker Village was built on an estimate of $14.02 a sq. ft. which meant that its 219,736 sq. ft. is listed at $3,081,627.40 (including legal fees, title search, title policy, acquisition costs, etc.). At $22 a sq. ft. the figure would be $5,834,192 — a loss at the very outset of more than $2,000,000.

The figures appearing on our chart are based on an estimated loan from RFC of $8,075,000. Actually the loan will be smaller. But since actual costs of building have not yet been estimated, the maximum figure has been used as a basis of computation. The eight million dollar figure represents the maximum RFC is prepared to lend. Should money above that figure be needed, Mr. French would have to supply it without Federal aid. It is important to note that Mr. French must supply fifteen cents of every dollar spent on Knickerbocker Village. Critics have erroneously accused the Government of completely subsidizing the development, giving Mr. French a comfortable out from a bad proposition, and leaving him the chance of ultimate profit. Under the fifteen-cents-of-every-dollar arrangement Mr. French must supply $1,425,000 as his corresponding contribution to RFC's maximum loan of $8,075,000. Total maximum cost of the project therefore is $9,500,000.

By the terms of the contract with RFC and the State Board of Housing Mr. French can draw no money from his equity in the project until RFC's mortgage ($8,075,000) has been reduced to 55 per cent of the final cost of the project — allowing for a 1½ per cent annual depreciation. Thus, while the mortgage is being reduced, the building also depreciates and the 55 per cent figure, according to the French economists, cannot be reached for ten years. The economists throughout have been conservative; there is little reason to doubt their conclusions. They have kept their vacancy estimate at 5 per cent which is high for the first unit and, from present indications, will also be high for the second. They carry their operating cost per room at $45 — which is also a high figure. In 1945, then, if all goes well, Mr. French may begin drawing interest on his $1,425,000 equity represented (always at maximum) by $317,000 common stock and the balance in 6 per cent income

Rothchild

One of the inner courts of a unit showing the air and sunlight received by inside apartments. Knickerbocker Village's coverage of land amounts to only 45.9 per cent.

BUDGET OF COST, FINANCING AND OPERATING

(at maximum)

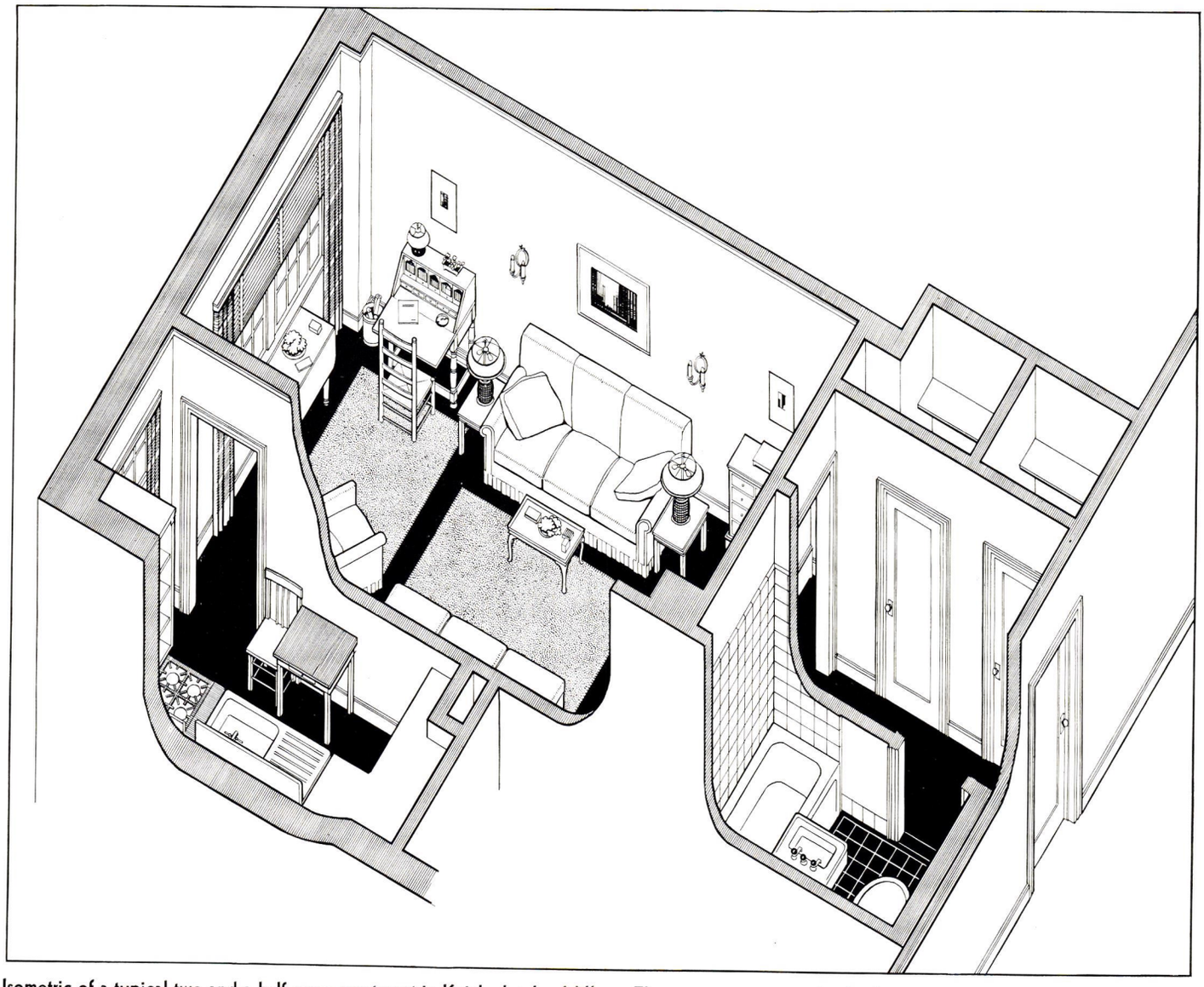
KNICKERBOCKER VILLAGE, INC.

COST OF LAND:	
219,736 sq. ft. @ $14.02 (approximate)	$3,081,627.40
COST OF IMPROVEMENT:	
Demolition of existing structures and construction of new building	$5,110,875.00
Safety margin*	520,757.60
General contractor's fee	450,000.00
Financing Expenses:	
Interest — $8,075,000 @ 5% for 4½ months**	151,406.00
Taxes during construction	35,334.00
Balance reserved for carrying charges, expenses of organization, financing, supervision, accounting, etc.	150,000.00
COST OF PROJECT	$9,500,000.00
FINANCING:	
Mortgage — RFC: 5%**	$8,075,000.00
Income Debentures — FFF Co.***	1,108,000.00
Common Stock***	317,000.00
Total Financing	$9,500,000.00
INCOME:	
6,031.5 Rooms @ $150.00 per year per room	$ 904,725.00
Stores	45,550.00
Basement — 16,766 sq. ft. @ $.50	8,383.00
Submetering Current	38,770.00
Total Income	$ 997,428.00
EXPENSES:	
Interest on RFC Mortgage @ 5% averaged for ten years	$ 333,344.00
Amortization of RFC Mortgage — Fixed by RFC Contract	285,239.00
Amortization of RFC Mortgage — From application of net income, averaged for ten years	57,556.00
Operating 6,031.5 Rooms @ $45.00 (Includes taxes and insurance)	271,418.00
Vacancies 5%	49,871.00
Total Expenses	$ 997,428.00
Depreciated value of project at 1½% per annum at the end of ten years after completion	$8,553,472.00
RFC loan at the end of ten years after completion	4,647,106.00
Ratio of RFC Loan to depreciated project at the end of ten years after completion	54.33%

* No part of this amount is to be included in the cost of the project unless actually expended.

** Reduced to 4% for five years provided RFC does not dispose of its bonds.

*** Owned by French Companies, these debentures and common stocks will pay no interest until the mortgage has been reduced to an amount not exceeding 55% of the project's cost, less depreciation at 1½% per year. Interest is cumulative.



Isometric of a typical two and a half room apartment in Knickerbocker Village. These apartments were by far the most in demand in the development.

debentures. Interest on these debentures is cumulative.

To Mr. French goes a builder's fee of $450,000, a yearly management fee of $20,000. Of course, neither of these figures represents a net. Construction throughout has been by sealed bids and checks to subcontractors go direct after an O. K. from RFC and the Board of Housing. The project got under way before NRA made for uniform bids. Since NRA, contracts have been split and so apportioned as to spread work among as many companies as possible.

From its 6,031.5 rooms at $12.50 a month Knickerbocker Village can expect an income of $904,725 (allowing for no vacancies). Stores will bring $45,500, basement room leased to the stores for storage purposes should yield $8,383. Income from submetering current has been estimated at $38,770 for a total income of $997,428 (see chart). Whether this income will serve to meet operating expenses, pay off the mortgage and how far it will go toward writing off Mr. French's initial losses remains the big practical question about Knickerbocker Village.

One not unforeseen pitfall still lies in the Village's way. That is the Board of Taxes and Assessments. The 1934 assessment of the Village's land was $1,019,000. It was agreed that the buildings should be tax exempt. But 1935's assessment on the land is $1,850,000 which, taking a general and inexact tax figure of .03, would mean an increase in taxation of upward of $20,000. Knickerbocker Village is well aware that in three years the assessed value of the land of the Amalgamated project in the Bronx increased 400 per cent. This kind of increase might very easily break the financial set-up of the project wide open. Obviously the Board of Taxes and Assessments must have had in mind the fact that Knickerbocker Village improved the land upon which it stood, that, therefore, an increase in its assessed value was clearly in order. The trouble is that if such assessments increase and if efforts are continued to keep the project solvent, the maximum charge of $12.50 per room per month might have to be raised. If sociologists have been displeased because they considered a $12.50 maximum too high, their displeasure at the above contingency may well be imagined. The problem is further complicated by other landlords who also cater to the white collar class but at higher rental charges. To them Knickerbocker Village is even more distasteful than it has been to a degree disappointing to sociologists. For naturally Knickerbocker Village has taken some of their tenants. Should the Village have to raise its rents, it would be greatly to their satisfaction.

Thus Knickerbocker Village, New York City's city within a city, which is not privately owned nor owned by the Government, which is not a slum clearance project and yet managed to rid the city of its worst block — Mr. French's child whom he intended to send to private school and who went instead to public school on Mr. Jesse Jones' money, with Darwin James and George Gove of the Housing Board as teachers, and Al Smith of the sidewalks to cheer him on his way. The opening was gala if a little hasty. Four special policemen were delegated to guard over the welfare of the tenants. And at $12.50 per month the rooms were the best in the neighborhood which looked up to the new glistening structure with a mixture of envy, surprise and awe tinged with the forlorn hope that some day somebody might do the same thing all over again and manage to charge less.

BY TIMELY TAILORING

Prudential's 15% stake in an Oregon neighborhood is preserved.

For several years the Brice Mortgage Co., Portland, Ore., correspondent for the Prudential Insurance Co., has been spending Prudential money on houses acquired through foreclosure, to make them salable.

Breezing into many a badly planned old house, Brice employs often as many as twenty men per dwelling, repairing crumpled eaves and shattered window-panes, removing bunglesome built-in buffets and bookcases, rearranging partitions, etc., in order to meet the needs of present day small house purchasers whom Brice officials say are "just as selective" and in search of "just as much for their money as the purchasers of large homes."

Last March Brice chalked up fifteen sales, a figure which dropped to three in April, leveled out to an average of five for succeeding months up to October, during which month Brice sold a dozen houses. Reason for the drop: the longshoremen's strike which wore on through the summer and materially depressed West Coast business. Portland, seeing the need, sprang its renovize campaign in the thick of the trouble. To stimulate renovizing, the First National Bank hauled a dilapidated cottage into the business district and remodeled it (The Architectural Forum, August, 1934, page 148), but to many this demonstration proved as unconvincing as it was unnatural. However, in a job out in Portland's Mount Tabor district which Brice opened as a show place shortly thereafter, there was evidence aplenty of modernization's merits.

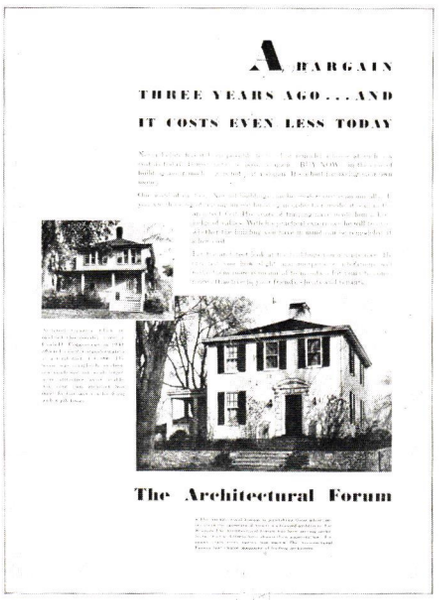
A residential area predominantly given over to $5,000 to $10,000 homes built since 1925, Portland's Mount Tabor is spotted here and there with houses of another day and vintage. One such, owned by Prudential, was square-built and resembled a house published in an Architectural Forum advertisement in *Time* (April 17, 1933). This advertisement gave Brice the idea of making the house salable and at the same time improving the district, in which about 15 per cent of the houses are mortgaged by Prudential, through modernization.

At a cost of $3,200, Prudential's old house was relieved of its excess porches, given a covering of 10 in. double spruce siding, and otherwise revamped. On this job Brice officials sought the advice of Joseph W. Heiler, an architect working for the U. S. on the locks for the Bonneville Dam. So satisfied were they with his work that they have retained him on all subsequent jobs.

To students of building economics, as well as to prospective Portland modernizers, the Brice Mortgage Co.'s Architectural Forum-inspired modernization job was well worth serious study last month. For besides certain primary results (such as the very self-sufficient one that with an expenditure of $3,200 added to Prudential's original investment of $2,400 the property has been sufficiently upped in value to command a sale price of $6,450, or a rental of $65 per month, where nothing had been obtainable before) other more important and profound considerations emerged.

Reported the Brice company: "A surprising number of other jobs were started in the same neighborhood soon after work on our house was completed. In fact, next door a new house was built immediately upon the assured fact that we were going to complete the work on our property in the manner outlined. The owners had previously purchased the lot next door, but had held it for a number of years without building, due to the condition of our property.

"We had hundreds of calls from individuals interested in remodeling their homes. Many of them, in fact, either wanted references as to who could do similar work for them or requested that we supervise their work. Having only a limited force in our conditioning department, we did not think it advisable."



See "Time," April 17, 1933

Casting a blight on property for blocks around, this house, before modernizing, was more than a white elephant to Prudential, with mortgages on many a home nearby. Self-justified, the job occasioned others in the neighborhood, including a new home next door.

EARNINGS

Last month earnings reports for the first nine months of 1934 of the following representative building supply companies were available for comparison with reports for the same period last year:

(000's omitted; D=deficit)

	1934	1933
Air Reduction	3,077,199	2,137,324
American Rolling Mill	1,453,919	312,258 D
Bohn Aluminum & Brass	1,263,456	1,159,229
Briggs Manufacturing	4,825,576	890,645
Brunswick-Balke-Collender	48,181 D	452,822 D
Dresser, S. R., Manufacturing (*heaters*)	82,048	45,547
Evans Products (*flooring, etc.*)	1,256,134	216,038
Follansbee Bros.	399,852 D	475,349 D
Formica Insulation	31,949	7,272 D
General Electric	13,645,551	8,817,891
Johns-Manville	586,554	417,140 D
Libby-Owens-Ford	2,819,067	3,684,018
Long-Bell Lumber	1,080,712 D	2,166,086 D
Minneapolis Honeywell Regulator	551,959	280,953
Otis Elevator	194,031 D	1,257,893 D
Parker Rust-Proof	696,654	480,245
Revere Copper & Brass	989,817	180,642
Yale & Towne	8,256 D	41,011

HOW MUCH FOR HOUSING

the President only knows; direct subsidy rears its head; the Housing Division's score.

SOME time near Christmas the President will tell the building industry just how big a sugar plum, in the form of low cost housing, subsistence homesteads and public buildings, he is going to drop into its slowly filling stocking. Some say it will be $2,000,000,000 and some say it will be $3,000,000,000. But like the Santa Claus of the North, the White House gift-giver is keeping his plans to himself. Whatever the amount, it will certainly be larger than building's pittance out of the first $3,300,000,000 allotted for PWA a year ago last fall.

All the President's aides agree that building is the locked door to recovery — but they are far from agreement on the best way to break through. Teamed are Donald R. Richberg, new "assistant President" and FHAdministrator James A. Moffett against PWAdministrator Harold L. Ickes and FERAdministrator Harry L. Hopkins. The last two have come out strongly for big U. S. expenditures, while Richberg and Moffett are trying to incline the President's mind toward such forms of private stimulation as the Federal Housing Administration now offers.

Ickes backed up his contention with a well-timed report on how much good his PWA money has done so far, how much it will do this Winter.

"By actual count there were 437,000 employed on PWA construction projects during May. When the peak was reached in mid-summer the count was close to 700,000. In August, there were 637,000 workers on construction site, and in September 549,000."

From these figures Ickes deduced that this Winter would see 2,000,000 drawing wages from PWA projects direct or in industries fed by construction.

A few months back Richberg won a policy victory over the departed General Hugh S. Johnson. With his star apparently in the ascendancy, he may, despite Ickes' figures, score again. Moffett shares with him the attitude that if the FHA fails, it will be time enough to start talking about using big wads of U. S. funds. What would then happen is a matter of conjecture. Not the least likely possibility is direct subsidies to individual home builders of from 10 to 20 per cent of the cost of the house. Such a program, similar in base to the British plan, is held by some economists to be as logical as direct subsidies to shipping or any other industry which the Government has in the past helped out by direct grants.

While the housing program for next year was worrying the Presidential advisers, Ickes released a summary of what his Housing Division has done so far.

Of the $150,000,000 it had to spend, the Division has allotted about $11,500,000 to limited dividend corporation projects (see page opposite) and $138,500,000 to 39 Federal projects. Besides the twelve private jobs there are nine large Federal projects, involving an expenditure of $73,000,000. On nineteen other projects, quick action is expected soon; and on the rest additional study is being made. The Division also has tucked away waiting for more money from Congress twenty other projects toward which it looks with kindness. The status of the specific projects is as follows:

FEDERAL PROJECTS

New York. After as fitful a battle as accompanies any Ickes approval, the first of the New York housing projects was stamped O. K. It was the $12,000,000 Williamsburg Brooklyn development, covering twelve city blocks and housing 2,500 families. The word to go ahead was issued when Ickes received assurance from the city that the necessary schools and playground areas would be constructed. The area is between Bushwick Avenue, Leonard, Maujer and Scholes Streets, now covered by cheap, dilapidated three- and four-family tenements. Tentative plans indicate two-, three- and possibly four-story walk-up apartments.

Other projects under consideration. Around 5,000 living units will be provided under the program according to preliminary estimates.

Chicago. Eventually the Windy City is to have $25,000,000 worth of housing, but like New York it will not get it all at once. Last month, the U. S. filed condemnation proceedings for the acquisition of 35 acres in the Negro section north of 39th Street, as a site for the $7,000,000 development which will house 1,400 Negro families.

Atlanta Techwood. Allotment, $2,700,000. Title acquired for site and demolition of existing buildings started. To provide 603 living units (white) and dormitory quarters for Georgia Institute of Technology. New housing to consist of three-story dormitory and two and three-story apartments.

Atlanta University. Allotment, $2,100,000. Title acquired for site and demolition of existing buildings started. To provide 617 living units (Negro). New housing to consist of two- and three-story flats and row houses.

Cleveland. Allotment, $3,000,000. Title acquired for Cedar-Central project and demolition bids taken. Contract for demolition will be awarded in the immediate future. Project provides 799 living units (white). Three-story apartments.

Indianapolis. Allotment, $3,000,000. Condemnation proceedings started. Project provides 1,044 living units (Negro). One-, two- and three-story flats and apartments.

Cincinnati. Allotment, $6,000,000. Option work started. Preliminary estimate, 1,950 living units (white and Negro).

Detroit. Allotment, $6,000,000. Option work started. Size of project dependent upon extent of site acquired. (Negro)

Montgomery. Allotment, $320,000. Condemnation proceedings filed on site. Project to provide 160 row houses. (Negro)

✚ One problem in the future is still worrying Administrator Ickes, and his housing chief, Col. Horatio B. Hackett — management. From all parts of the U. S. they have called experts, asking for help on what their procedure should be once the buildings were tenanted. And no small problem it is — for European experience has been that unless supervision is exercised it takes only a limited time for former slum occupants to reduce a model housing unit into a slum again.

LIMITED DIVIDEND PROJECTS

Hillside Housing Corporation — New York City. Allotment, $5,060,000. Estimated total cost, $5,717,871. To provide about 1,388 living units. Approximately 15 per cent complete. (Apartments)

Boulevard Gardens — New York City. Allotment, $3,450,000. Estimated total cost, $4,086,000. To provide approximately 957 living units. Approximately 20 per cent complete. (Apartments)

Juniata Park — Juniata Park Housing Corporation — Philadelphia. Allotment, $1,039,000. Estimated total cost, $1,153,607. To provide approximately 284 living units. Approximately 49 per cent complete. (Apartments)

Neighborhood Gardens — Neighborhood Gardens Corporation — St. Louis. Allotment, $640,000. Estimated total cost, $730,000. To provide around 252 living units. Approximately 4 per cent complete. (Apartments)

Alta Vista Housing Corporation — Alta Vista, Va. Allotment, $84,000. Total cost, $100,000. Project consists of 50 small, single-family houses. Houses complete. Street improvements to be put in.

Euclid Homes — Euclid Housing Corporation — Euclid, Ohio. Allotment $1,000,000. Project consists of individual and double houses to be erected by persons owning property with Corporation aid. Approximately 14 houses complete.

Boylan Housing — Boylan Realty Company — Raleigh, N. C. Allotment, $198,600. Estimated total cost, $233,600. To provide about 54 living units. (Apartments) Ready to start.

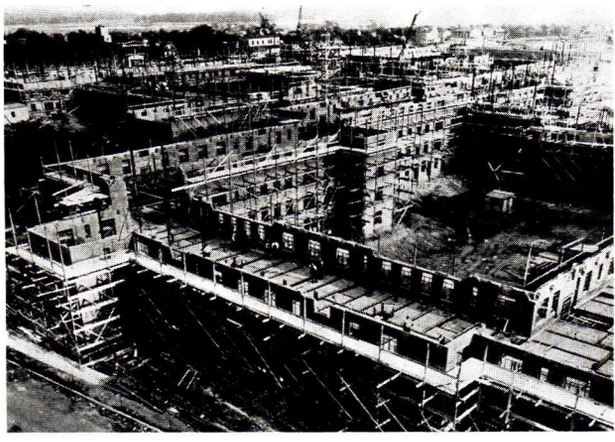
Also in **Brooklyn,** Ickes last month approved the allotment of $1,670,000 for the Brooklyn Polytechnic Institute for its 1,500-room project. To many the allotment came as a surprise for it had been thought that the Administrator was definitely fed up with limited dividend corporation projects. Turned down several times, the Institute revised its set-up until it finally was approved.

Houses like these at Euclid, Ohio, and Alta Vista, Va., received PWA approval because of special circumstances. The Euclid house (left) is one of fourteen built out of 250 planned, while Alta Vista's 50-house project is complete.

Globe

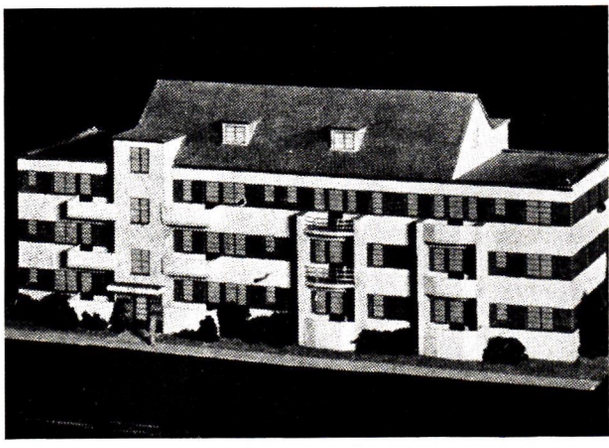
New York shares substantially in actual spending under way. Here the Boulevard Gardens project at Woodside, L. I. (left), and the Hillside project in the Bronx, in their present state, attest to housing's blossoming.

N. Y. Sun



Most like Europe's housing are Philadelphia's hosiery workers' project (left) and Neighborhood Gardens in St. Louis.

Wide World



27th Div. Aviation, N. Y. N. G.

Present and accounted for here are each of the eight limited dividend projects with PWA approval, excepting one at Raleigh, N. C., on which Washington has not yet given the order to proceed, and one in Brooklyn approved last month despite the PWA's statement that no more loans to limited dividend corporations would be made. Spending now directly out of its own pocketbook, the PWA is at work in a dozen cities acquiring sites like the one at the left for Brooklyn's Williamsburg project.

THE ILLEGALITY OF OVERCROWDING

is to be established in Great Britain's newest housing scheme. New flats for rotten cores.

ALL Britain was agog over housing last month, as it has been, off and on, ever since the year 1919. Parliament was about to consider some brand new legislation bound to rank alongside the five major post-War statutes without which, according to many an economist, England's recent rapid strides toward Recovery would have been impossible.

For twenty years well over half the houses built in Great Britain have been built with the aid of the Government. First of England's important efforts to provide "Homes Fit for Heroes" was the Addison Act of 1919, supplying funds to make up losses sustained by local authorities and loans for public utility societies. Action taken under this act was stopped by the Government which passed it, and it was superseded in 1923 by "the Chamberlain scheme." This provided subsidies for local authorities, but gave them an incentive to economize, since losses had to be made up out of local taxes. Passed by a Conservative Government, this act was enforced by a Labor Government and ultimately brought to an end by another Conservative Government.

With "the Wheatley Scheme," enacted in 1924 by the Laborites but actively operated by the Conservatives, the Government again undertook to assume losses on locally built projects. Fourth was the Greenwood Act of 1930, largely elaborating the aims and purposes of the Wheatley Act. Passed by a Labor Government, the Greenwood Act provides the statutory basis for the 300,000-house program initiated this Spring by the present (Conservative) Government (see THE ARCHITECTURAL FORUM, May, 1934, page 395).

Last year legislation passed in 1925 empowering local authorities to guarantee loans of up to 90 per cent of property values by building societies was rejuvenated through the Hilton Young Act, providing a 50 per cent guarantee on losses sustained by local authorities in making such guarantees. Not unlike our National Housing Act, insofar as it encourages the extension of private capital, the Hilton Young Act, unattended by the ballyhoo of slum-clearers, has been little heard of in the United States.

As Sir Edward Hilton Young, the Minister of Health, went speechmaking throughout the country month before last, it became clear that the forthcoming legislation would embody at least three new methods of attack not heretofore given a try.

First expedient is to be a Government-set limit on the number of persons per house. After a set date overcrowding in excess of this limit is to be made illegal. Said Health Minister Hilton Young in explaining his Government's plan for "a permanent raising of our standard of civilization":

"Supposing Mr. Smith, shall we say, and six other people are living in a house, the standard for which is fixed at five people. When alternative accommodation is provided, two of these people will have to leave the house, and from then onwards only five people will be allowed to live there. This means that if Mr. Smith's aunt dies in some other town and his uncle wants to come to live with him he cannot do so, unless one other member of the family leaves to make room for him."

The standard fixed is expected to provide for the separation of the sexes at the age of ten, and for space for the increasing family and growing children at appropriate rents.

The attack on overcrowding will be facilitated by a national survey of the need for new homes to fulfill the standards set. And with overcrowding apparently at its worst at the cores of England's ancient industrial towns, what amounts to a third objective is the Government's plan to redevelop these inner areas with well-planned blocks of modern flats.

HOUSE CONSTRUCTION IN ENGLAND, 1919 TO 1933

(Reprinted from "England's Achievement in Housing," by Harry Chapman, in "America Can't Have Housing," Copyright 1934, The Museum of Modern Art, New York.)

Year ended September 30	*Subsidized Houses*				*Unsubsidized Houses*	*Total*
	Addison Scheme 1919 Acts	*Chamberlain Scheme 1923 Act*	*Wheatley Scheme 1924 Act*	*Greenwood Scheme 1930 Act*		
1919	.....	.....	.....	.....		
1920	6,127	.....	.....	.....		
1921	67,945	.....	.....	.....	30,000	210,237
1922	106,165	.....	.....	.....		
1923	24,998	991	.....	.....	52,749	78,738
1924	5,525	30,934	.....	.....	73,032	109,491
1925	1,492	78,409	12,385	.....	66,735	159,026
1926	975	84,431	46,489	.....	65,689	197,584
1927	527	115,073	97,316	.....	60,313	273,229
1928	30	47,969	53,792	.....	64,624	166,415
1929	18	80,240	53,516	.....	71,083	204,867
1930	14	.....	51,310	.....	110,375	161,699
1931	.....	.....	61,615	420	132,909	194,944
1932	.....	.....	62,530	5,146	132,886	200,562
1933	.....	.....	44,131	6,302	167,880	218,313

A LETHARGY IN STOCKS

brings report of a new type lease on Wall Street.

HAD the New York Stock Exchange carried through its great threat to move to New Jersey last year, Wall Street building owners would have been no worse off than they were last month. With transactions on the Exchange totaling 279,886,161 shares for the first ten months of 1934, as compared with 586,293,330 for the same period in 1933, business in the Wall Street section showed a 50 per cent drop.* Although the most logical thing to blame was the Securities Act of 1934, most Exchange members found, said the arch-Republican New York *Herald-Tribune*, that "disinterest in security trading is caused by more fundamental issues than the Federal regulatory law."

Eighteen thousand, continued the *Herald-Tribune*, had lost their jobs since November last. With brokerage houses merging right and left, financial district building owners, in order to keep their buildings full were said to be resorting to a new form of lease, based on the volume of transactions on the Stock Exchange (as many a chain store lease is based on sales). Investigation found no one ready to admit he had made such a lease, but reports of two actual instances persisted.

Consensus among Wall Street lessors was that such a scheme was not workable, due to the extreme variations of business on the Exchange and the impossibility of meeting fixed charges under such a plan. Remembering that early last year a delegation of brokers had approached the management of the Equitable Building with a proposition of very much the same sort, and the thumping refusal they got, few shuddered at the report, more were quick to term it poppycock.

* Reflecting in part conditions outside of New York, official figures of the Stock Exchange showed that 97 branch offices were no longer listed. The 1,106 branch offices as of November 1 this year compare with 1,658 offices at the end of 1929.

WITHOUT COMMENT

Ardrey, J. Howard, deputy administrator in the Federal Housing Administration in charge of new home building: "I'm not doing a stunt. We are establishing a system."

• • •

Ayres, Col. Leonard P., chairman, reporting for the American Bankers Association's economic policy commission: " . . . It is appropriate to discuss briefly two sets of conditions which appear to be chiefly responsible for the prevailing restricted activity of the banking business. The first of these is the existing stagnation in privately financed building construction. . . . The cause seems to be simply that the costs of new building are too high to encourage new construction. . . . The other outstandingly important cause of shrinkage in the volume of banking activity appears to be the decline in the volume of new corporate financing."

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McDonough, Michael J., president of the building trades department of the American Federation of Labor: "As a matter of cold fact, there is a real advantage in building now, for the costs are lower now than they are likely to be when building gets into full swing in the Spring."

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Babson, Roger W., statistician: "Although these years have seen great changes in transportation and communication, there has been little change in housing — excepting as to toilet conveniences. . . . Air conditioning, radio heating and a dozen other pending changes are going to revolutionize buildings. What has happened to transportation during the past decade will hit housing during the next decade. Both the profits and losses of the next business cycle will focus on housing."

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Best, William E., ex-Home Loan Bank boardman: "In my opinion it [the HOLC] does not know where it is going, will not know when it gets there, and, if it ever gets back, will not know where it has been."

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Collins, Kenneth, department store advertising copy livener, formerly of Macy's, now of Gimbel Brothers, New York City, urging retailers to be alert to opportunities in marketing air conditioning units: "We mustn't let this second opportunity slip through our fingers. Air conditioning producers are already flirting with the idea of setting up distributive systems similar to those which the automobile interests were compelled to establish when stores proved cool to the idea of handling cars."

• • •

Purnell, Frank, president of the Youngstown Sheet and Tube Co., in an employes' bulletin: "Let us attempt to make a frank estimate of what is ahead of the steel industry this winter. . . . While we hope and expect that operations will be somewhat higher than the present rate, the outstanding fact is that we cannot expect a large increase in the consumption of steel until the country as a whole once more undertakes substantial construction and plant rehabilitation projects — pipe lines, roads and bridges, homes and office buildings, power houses, locomotives, large plant repair and improvement programs, and the like. These things will not be undertaken until it is possible to finance them on a long-term basis, through the sale of bonds or stock. Investors will not buy securities of this sort until they have some assurance of monetary stability. Without monetary stability, we cannot expect many new bond or stock issues; without such issues we cannot expect the undertaking of big new projects involving the use of steel."

• • •

Watson, Frank, assistant general counsel in the Federal Housing Administration: "If there is any desire again to enter that business of private lending of money, I think the National Housing Act offers something very substantial and is assured of overwhelming success. If that initiative is dead, and if the banking business of the country is to become merely a business of accumulating government bonds, I have little doubt but that the National Housing Act is doomed to failure."

• • •

Wood, Arthur B., president of the Sun Life Assurance Co. of Canada, reciting the latest statistics on life insurance companies investments at the American Life Convention: "Mortgages, which still represented 38.03 per cent of the total invested assets at August last, absorbed only 4.22 per cent of the new money invested in the first eight months of this year; while United States Government bonds, which in August, 1933, were but 3.86 per cent of the total, and had risen by August, 1934, to 7.46 per cent of the total, represent about 56 per cent of the current investments. The comparison is deserving of close study for its many implications."

• • •

Wood, Will C., vice-president of the Bank of America National Trust and Savings Association, Oakland, Calif.: "The percentage of loss on total real estate loans the country over is less than the percentage of loss on total commercial loans; less in fact than the percentage of loss on total bond investments. This is true in spite of the fact that a large percentage of real estate loans have been flat loans."

AN APPRAISAL SOCIETY

is born at the U. S. Building & Loan League Convention.

WHEN the 1,200 delegates to the United State Building and Loan League Convention left New Orleans month before last, they boasted a new subsidiary — The Society of Residential Appraisers. Along with other sound thinkers in the building and lending field, the Leaguers had come to the conclusion that sound appraisals are at the base of sound home financing.

The Society will endeavor to establish authentic price indices for various types of property. All factors affecting the value of homes, including cost of construction with various materials, current market prices, sales activity, rentals and similar matters, will be regularly reported to the Society, compiled in distributable form, and transmitted to all members. The League hopes to have the cooperation of insurance companies and savings banks, and other major factors in home financing.

Besides its new appraisal society, the League when it quit New Orleans had a new president, Houston's Israel Friedlander who moved up from the vice-presidency.

The new national chief of the $7,000,000,000 building and loan business is chairman of the Advisory Committee to the Federal Home Loan Board at Washington; chairman of the board of the Federal Home Loan Bank of Little Rock, and has served for several years as chairman of the Advisory Committee on State Legislation for the Building and Loan League.

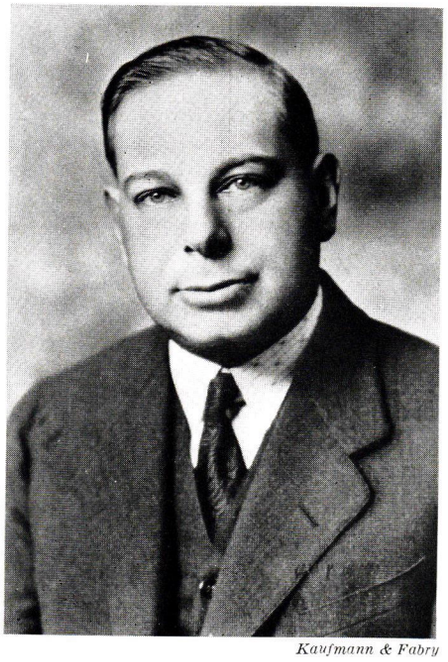
Convention Highlights. From President Roosevelt, who at about the same time was issuing similar salve to the wounded feelings of the American Bankers Association at Washington the League received this word of encouragement:

"It is my sincere hope that such institutions as your own members may presently be in a position to resume their normal functions in behalf of thrifty investors and home owners alike. To that extent the building and loan associations will relieve the Federal Government of a task which it was forced to assume during the emergency but which properly belongs in the hands of private enterprise and initiative now that the crisis is being met."

The will of the delegates to resume their normal functions in accordance with the President's hope was evident in a dozen or more different statements on the part of the leadership. Notable among them was that of the League's Executive Vice President Morton Bodfish: "It would be regrettable if after attaining the highest standard of housing for the working classes that the world has ever seen almost exclusively through the work of building and loan associations and funds raised by the teaching of thrift and savings, we should turn to paternalism in financing home ownership."

Early in the convention sessions, Deputy FH Administrator J. Howard Ardrey, in charge of mutual mortgage insurance and national mortgage associations, emphasized that the only relationship which the Government has to the mortgage insurance plan is one of supervision. Mr. Ardrey pointed out that the Housing Administration was not interested in fostering cheap building of homes, but reported that it is setting up standards for home construction.

General Counsel Horace Russell, of the Federal Home Loan Bank Board, forecast a rich field of endeavor for the home financing industry, and national improvement in home quality. In twenty years instead of an aggregate value on homes of



Kaufmann & Fabry

New League President Friedlander

$50,000,000,000 he foresaw urban homes valued at $100,000,000,000.

"If in twenty years we are going to have $100,000,000,000 worth of homes, the funded debt on them will be at least $50,000,000,000 at the peak in the accomplishment of this task." He added that a great responsibility rests on the people who supply the mortgage funds to provide so great a fund of money on a reasonable basis and to see to it that it is made available for sound and economical home financing.

The extent to which building and loan associations during the past year were functioning in the lending field was brought out in the secretary-treasurer's report for the League. H. F. Cellarius, of Cincinnati reported that for the year ended January 1, 1934, home loans of $435,000,000 had been made. This was about a fourth of the lending activity of building and loan associations in a normal year.

Chairman John H. Fahey granted an important position in the future home financing structure to the Federal Home Loan Bank System, possibilities of which he declared to be limitless. At the same time his treatment of the Home Owners Loan Corporation heralded the gradual cessation of its activities and served notice on thousands of today's applicants that they will have to look to the private lending institutions for their refinancing as long as they are abundantly able to meet their obligations and are having no real difficulty with their present mortgages (see page 30).

"The Federal Home Loan Bank System has seen a remarkable growth," Mr. Fahey reported. "Today it has over 2,800 members, with combined resources of $3,500,000,000. They are in a position with this great strength in combination to issue and market bonds of such a character as to rank next to those of the Government itself. No security has ever been offered to the American people by private institutions assuring greater safety or dependability and through their utilization it should be possible to obtain money from American investors at a very low rate."

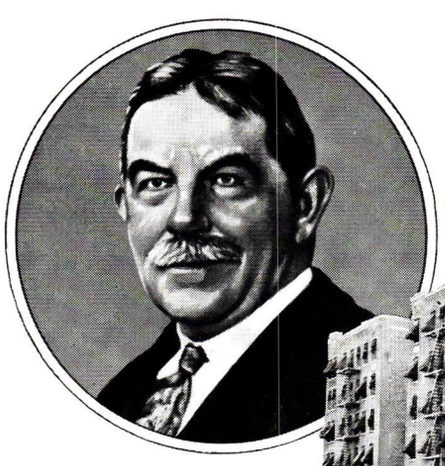
Too early to demonstrate any significant results in its ability to bring new funds into the home mortgage field, the Federal Savings and Loan Insurance Corporation is just beginning to function, said Fred W. Catlett, youngish Home Loan Bank boardman in charge of the insurance program.

"It is designed to and will establish the confidence of the people in the security of their savings in building and loan associations," he pointed out. "It will without much question redirect the flow of those savings from the postal savings system and the insured commercial banks into the thrift institutions of the country."

A belief in the returning favor of real estate investments was another dominant note in the convention halls and the natural concomitant of this trend, the rising prices of existing homes, was anticipated by several speakers. Executive Vice President Bodfish in his address advised associations which have real estate on hand not to be too hasty about disposing of it at sacrifice prices with an assured rise in quotations in the offing.

H. O. Walther, Chicago District Manager of the Home Owners Loan Corporation, recalled the tendency of the investing public to change its mind about liquidating investments when they know that the investments can be liquidated. The trend of prices on homes during the next few years seems to be definitely upward and the change is already noticeable in some of our metropolitan areas, he said. Little building can come as long as building costs are higher than the prices of homes for sale. It is reasonable to assume that in most communities there is potential demand for homes since the apparent oversupply at this time is simply the result of families moving together because of economic conditions. As long as the supply of these houses has not increased materially, Mr. Walther pointed out, prices will go up.

"Electrolux has proved not only a VALUABLE RENTAL APPEAL . . ."

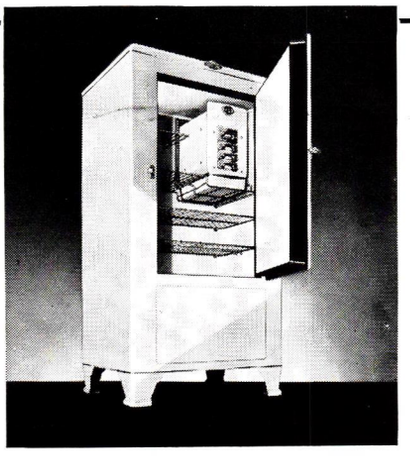


Left—Mr. John McNulty who has already equipped 30 apartment buildings with Electrolux.

". . . its complete dependability in hottest summer weather has definitely removed the old 'bugaboo' of service that is still associated with the idea of automatic refrigeration," says MR. JOHN McNULTY, Builder, of 282 East 206th Street, New York City

TWO things make Mr. McNulty's experience with Electrolux of especial importance to every builder and owner who is contemplating the purchase of refrigerators for his properties. *First*, it is based on the performance of Electrolux, not in one or two, but in 30 Electrolux-equipped buildings. And *second*, it is typical of the experience of realtors the country over.

"In my many years of construction and management experience," writes Mr. McNulty, "I've found that it pays to take time in fully investigating the equipment that goes into any apartment building. So, naturally, when I came to choose automatic refrigerators the same rule applied. I made a careful study of all the leading makes and found that the one that offered the most both for me and for my tenants was Electrolux. Today, I have thirty (30) buildings equipped with this modern refrigerator, both air- and water-cooled models.



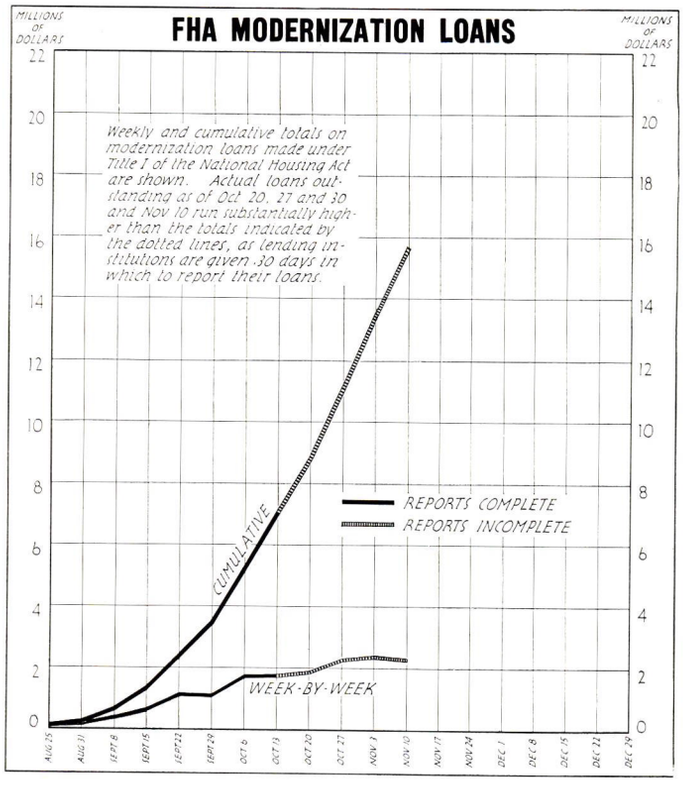
"So satisfied have I been with my choice, so well has Electrolux lived up to every expectation, that I can—and have many times—recommended it with full confidence to my friends. Electrolux has proved not only a valuable rental appeal because of its low operating cost and permanent silence, but also its complete dependability even in hottest summer weather has definitely removed the old 'bugaboo' of service that is still associated with the idea of automatic refrigeration. Now, as four years ago, I sincerely believe that the most practical and most successful refrigerator for any type of building is Electrolux."

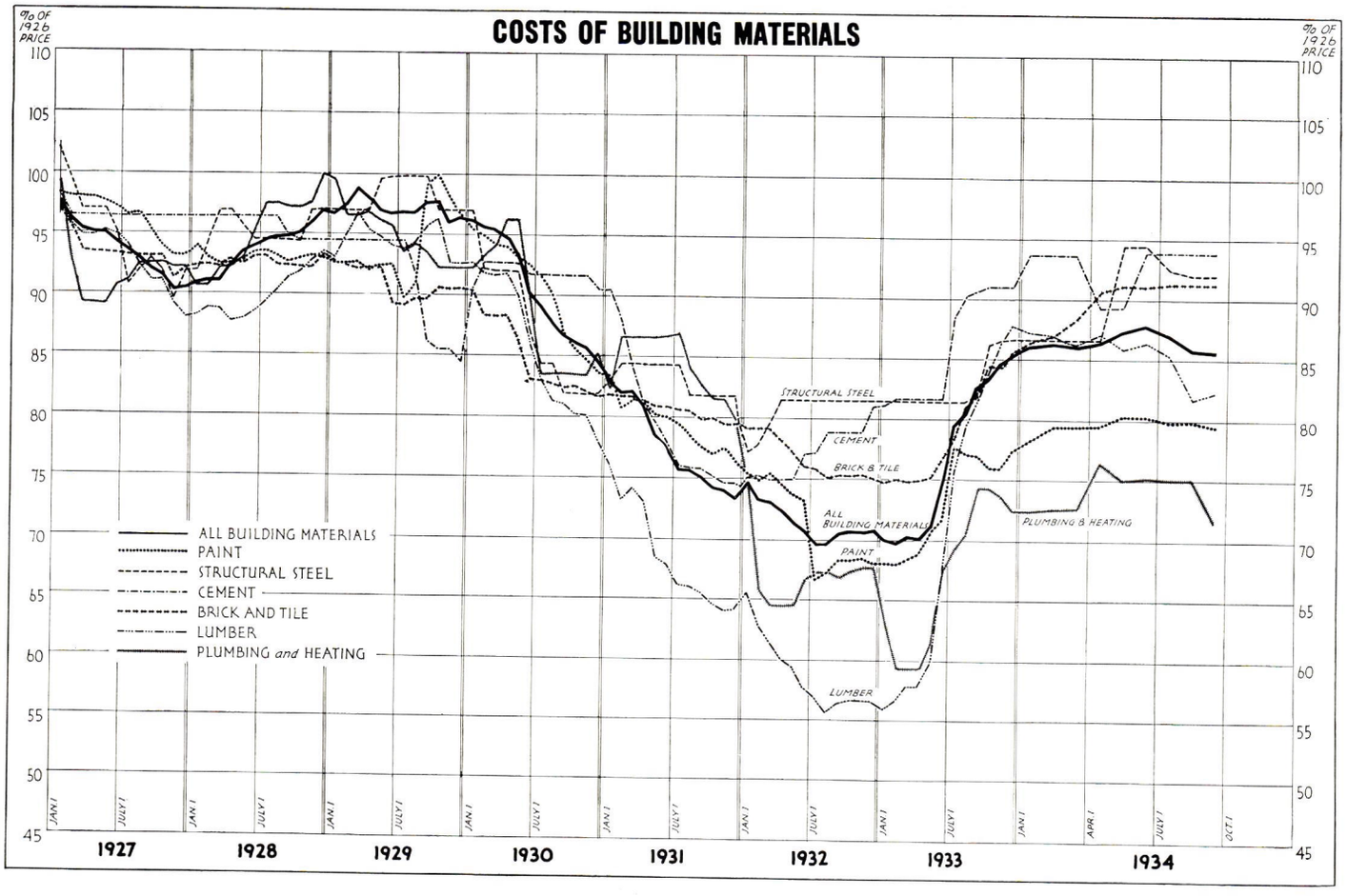
Your local gas company *also* recommends Electrolux to you. See this modern refrigerator at the showroom! Ask any questions you wish. Know that they will give you the real facts, for your gas company values your good will above everything else. They would never do anything to endanger it. Electrolux Refrigerator Sales, Inc., Evansville, Ind.

NEW *Air-Cooled*
ELECTROLUX
THE SERVEL *Gas* REFRIGERATOR

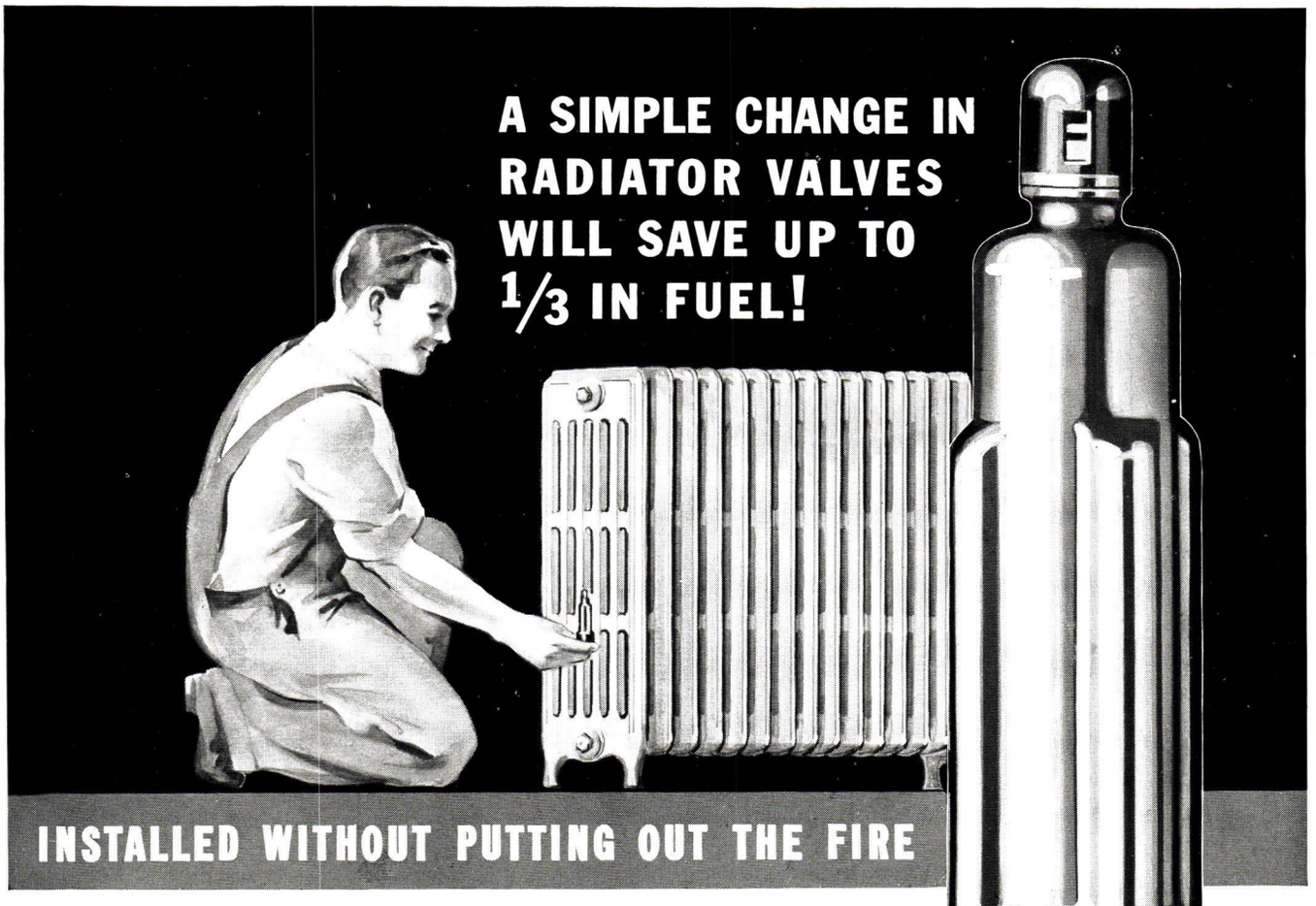
THE FHA SNOWBALL

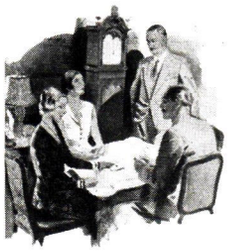
explained. Meanwhile the U. S. bond tapeworm wriggles upward, costs drop.





How to make a steam plant pay an "INSIDE PROFIT"





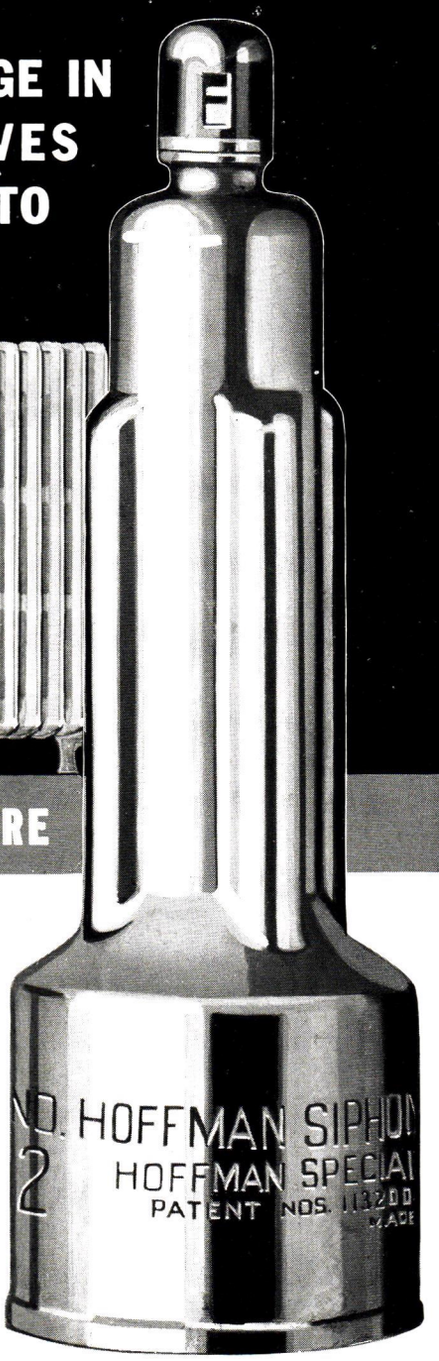
GREATER WARMTH
AND COMFORT

In these days of reduced rentals, making properties pay a profit lies in your ability to cut maintenance expense. And what is a more logical item to trim than fuel expense — the biggest single maintenance cost?

Fuel savings *as great as one-third* can be effected in steam heated buildings by replacing old radiator air valves with Hoffman Vacuum Valves. This is because Hoffman Valves *vacuumize* — or remove heat-resisting air — from the heating system.

The change-over is a simple one — no ripping out of pipes and radiators — no disturbing tenants. Any good Heating Contractor can quickly do the necessary work without even putting out the fire.

Not only do Hoffman Vacuum Valves save money, but they increase comfort amazingly. Since the heating system is cleared of air, radiators heat up almost immediately after opening drafts and stay hot long after the fire is banked. But for *genuine* vacuumizing results, insist on *genuine* Hoffman Valves — they alone have the patented Double Air Locks. For complete information, send the coupon.



HOFFMAN
VACUUM VALVES

Also Makers of Supply Valves, Traps and Hoffman-Economy Pumps

HOFFMAN SPECIALTY CO., Inc.
Dept. AF-7, Waterbury, Conn.
Send me full information on Hoffmanizing and how it will reduce fuel bills.

Name.....

Address.....

City.....*State*.....

FAHEY SHUTS THE DOOR

on HOLC applications, and it may not open again.

For months the SRO sign has been hanging outside local offices of the Home Owners Loan Corporation. Last month Chairman John H. Fahey announced there was no longer even standing room — that no more applications would be accepted until further notice, if ever.

HOLC's decision was prompted by the realization that the Corporation had in its files applications for more loans than it had money for. By the middle of last month, the Corporation had disbursed about $2,000,000,000 to refinance mortgages on 650,000 homes and the remaining $1,200,000,000 was expected to take care of 400,000 of the applications then pending.

Whether or not Chairman Fahey will ask Congress for another appropriation at its next session is still an unanswered question. At the moment, he is inclined not to do so. But since aiding home owners to obtain loans has been a source of much good will building for Democrats as well as Republicans, pressure from local politicians may be too much for the Chairman.

In making his announcement, Chairman Fahey indicated that he believed private institutions, by altering the terms of their mortgages, could well take care of many of the applications which the HOLC has received. He pointed also to a marked decrease in the number of applications filed at State and district offices. Said Chairman Fahey:

"At the same time there is steadily increasing evidence that a large proportion of the private lending agencies of the country are now getting in position to resume their normal lending functions and to handle the refinancing of mortgages. A great many of the applications being filed with us can and should be taken care of by the private lending institutions.

"In round figures, the HOLC has already paid out $2,000,000,000 to take over the mortgages on about 650,000 small homes. More than 90 per cent of this money has gone to the commercial banks, savings banks, insurance companies, building and loan associations and mortgage companies and has had the effect of strengthening their resources in a very important way.

"By February or March the balance of the funds now at the disposal of the corporation will be disbursed. About 400,000 more loans will be made in this process with the result that in a few weeks a total of $3,000,000,000 will have been distributed — practically all of it to the lending institutions of the country."

Mr. Fahey said that the corporation had received a total of 1,766,000 applications, totaling $5,560,000,000, but that a careful resurvey had satisfied it that a very substantial portion was not eligible.

"In spite of every precaution taken," he added, "we continue to receive thousands of applications which we find after investigation are not eligible and cannot possibly be made the basis of a loan by the corporation. Most of these ineligible cases are cases where the mortgagor and mortgagee should work out their mutual problem."

But the decision to accept no more applications was by no means an end to HOLC. As a matter of fact, its work is just beginning — for there still remains the greater problem of getting its money back. So far its attitude toward delinquents has been extremely lenient — but the time is not far off, in the opinion of many, when it will have to harden its heart.

AN ELEVATOR STRIKE

threatens the nation's codeless building owners and managers.

Few properties today are more than meeting present operating costs, taxes and interest, and literally thousands are failing to meet these costs. To increase operating costs necessarily means to augment the new lists of foreclosures by those who would otherwise be able to carry on."

Argument like this went far to obtain exemption from codification under the National Industrial Recovery Act for all U. S. building owners and managers last July. The above quotation, however, is from a statement made last month by the Real Estate Board of New York, in a very skittish frame of mind on the eve of a building service workers' strike in Manhattan's garment district.

The statement went on long-windedly to say that "the Real Estate Board committee has recommended, and the board of governors has approved the recommendation, that a thorough survey of the field be made to review the scale of wages compiled by the Board's employes committee for the guidance of its members, in order to determine what recommendations the Board will be prepared to make."

Not content to wait the ten days which Board President Lawrence B. Cummings said it would take to make the survey, 5,700 elevator operators, starters, porters, et al., all members of Local 32-B of the Building Service Employes International Union, seven-and-one-half-month-old A. F. of L. affiliate, left their posts one morning five days later, and great was the consternation they occasioned.

Five hundred lobbies were in an uproar as union "squadrons" went from place to place to call out workers still remaining on the job. Radio cars, summoned by harried building managers, screamed through throngs of sympathetic garment workers, averse to riding scab-manned elevators. On the stairsteps of the Garment Originators' Building Sam Schiff and Ben Silver sat and mopped their brows for cameramen. One door north a plate glass window smashed on top a crowd.

At his office in a West 42nd Street hotel, James J. Bambrick, president of Local 32-B, a chunky little man with tortoise shell glasses, told reporters the strike had been hanging fire for two months, detailed the union's demands, which included minimum wages of $35 to $75 for various types of employes, a 40-hour week and closed shop agreements.

By the end of the first day Union President Bambrick could proudly proclaim that "The effectiveness of the strike thus far has exceeded our wildest expectations, thanks not only to the solidarity of our own members but to the magnificent support of the other unions in the garment center, as well." Two hundred of the building owners affected had accepted closed shop contracts and agreed to wage stipulations representing some concessions by the union.

Word was next day, as the strike closed, that another 200 owners had followed suit. Apparently the only snag encountered by the strikers was the Title and Mortgage Rehabilitation Bureau of the State Insurance Department, which controls 10 per cent of the buildings in the area affected, and which stoutly maintained its inability to enter into any agreement offered by the union.

Said President Bambrick: "Nothing can stop the strike from spreading unless it is a change for the better for the workers. We are going to secure the same rights for building service employes in other sections of the city as we are getting in the garment center."

Elaborated Eastern Representative George Scalese: "If the other locals in the Eastern area profit by our victory here, there is no doubt but that working conditions will be improved throughout the country."

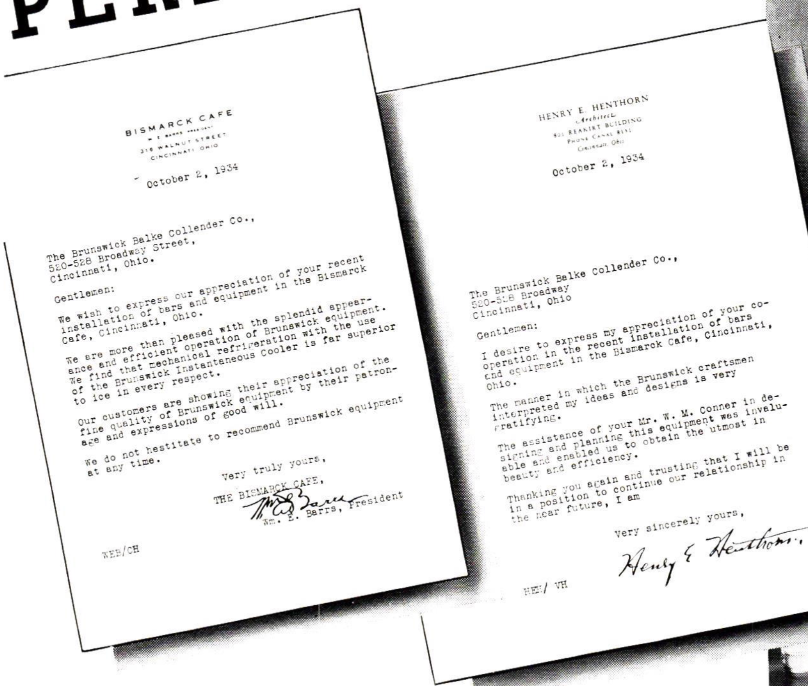
✚Finding themselves in what they called a "Washington revolving door," that took them in and out of NRA offices with nothing to show for their efforts but sympathy, New York's building contractors banded together last month for their own defense. In solemn conclave three organizations representing nearly all the important general and sub-contractors in the city issued a statement saying that it would resist every effort made to increase wages or to shorten hours.

Their move was prompted by the recent success of the electrical workers union in getting eight hours pay for a seven-hour day. To prevent the spreading of similar demands the contractors took action.

Said Christian G. Norman, contractor spokesman: "This virtual ultimatum is something we dislike because it is likely to stop any one who has any idea of putting up a building. At the same time a man would be blind not to see what's coming."

Labor's only comment was, "You know how the employers are — they get frightened and blow off steam."

Three Floors of PERFECT SATISFACTION



BISMARCK CAFE
W. E. BARRS PRESIDENT
316 WALNUT STREET
CINCINNATI OHIO

October 2, 1934

The Brunswick Balke Collender Co.,
520-528 Broadway Street,
Cincinnati, Ohio.

Gentlemen:

We wish to express our appreciation of your recent installation of bars and equipment in the Bismarck Cafe, Cincinnati, Ohio.

We are more than pleased with the splendid appearance and efficient operation of Brunswick equipment. We find that mechanical refrigeration with the use of the Brunswick Instantaneous Cooler is far superior to ice in every respect.

Our customers are showing their appreciation of the fine quality of Brunswick equipment by their patronage and expressions of good will.

We do not hestitate to recommend Brunswick equipment at any time.

Very truly yours,
THE BISMARCK CAFE,
Wm. E. Barrs, President

WEB/CH

HENRY E. HENTHORN
Architect
801 REAKIRT BUILDING
PHONE CANAL 8151
Cincinnati, Ohio

October 2, 1934

The Brunswick Balke Collender Co.,
520-528 Broadway
Cincinnati, Ohio

Gentlemen:

I desire to express my appreciation of your cooperation in the recent installation of bars and equipment in the Bismarck Cafe, Cincinnati, Ohio.

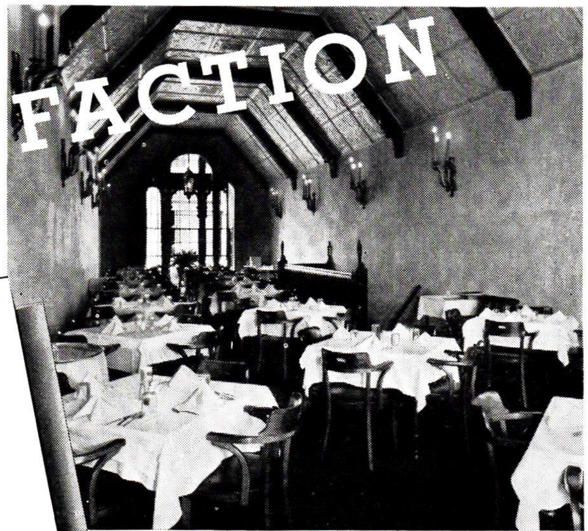
The manner in which the Brunswick craftsmen interpreted my ideas and designs is very gratifying.

The assistance of your Mr. W. M. Conner in designing and planning this equipment was invaluable and enabled us to obtain the utmost in beauty and efficiency.

Thanking you again and trusting that I will be in a position to continue our relationship in the near future, I am

Very sincerely yours,
Henry E. Henthorn

HEH/ VH



Brunswick-equipped rathskeller, dining room and taproom in beautiful new Bismarck Café in Cincinnati.

There are three floors of perfect satisfaction in the Bismarck Café in Cincinnati. A delighted owner is doing a $600-a-day business. An enthusiastic architect is pointing to a beautiful job well done. And in rathskeller, dining room and taproom, Brunswick craftsmanship and efficient service fixtures are doing their part to keep customers satisfied — and to keep them coming back.

Mr. Henthorn's letter and Mr. Barrs' letter are typical of many in our files, testifying to the excellent results that architects have had in coöperating with Brunswick. Like many others, they have found that Brunswick is headquarters for everything in modern service equipment for restaurants, bars, taverns and taprooms.

Phone for a Brunswick man whenever he can be of service to you. You'll find him a gold mine of helpful information. It's his business to help you get the best results out of every job.

Write today for latest information on Brunswick Service Fixtures, Billiard Tables, Bowling Alleys, Lawn Bowls, Toilet Seats and Squash Courts.

NRA

The job is completely mechanically cooled, using three Brunswick Instantaneous Coolers. All tapping is done in the basement back bar, where they make use of a special No. 8 B section. The balance of the beer is stored in the large basement storage cooler, of which a portion is used for the storage of meats, foods, etc.

THE BRUNSWICK·BALKE·COLLENDER CO.
623-33 S. Wabash Ave., Chicago, Illinois • Established 1845
Branches and Distributors in Principal Cities of the United States

FORUM OF EVENTS

(*Continued from page 20*)

drawings by affording the architects the facilities of the Supervising Architect's Office. . . . The desirability of expeditious results and in no sense discrimination against the architectural profession prompted the order.'

"Without in any way questioning the sincerity of this statement, it is plainly evident that the procedure adopted can have only a most demoralizing effect on the architectural profession. There is every evidence that private building, except in the case of small residence work, will be practically non-existent for some time to come — indeed it is because of this that the public buildings program is being pushed so frantically at this time.

"But instead of the program operating to enable existing architectural organizations to continue in business . . . the Federal Government, becomes an agency in the elimination of those offices which have, through their continuous experience and development, made American architecture the foremost in the world today.

"The architect, who through force of circumstances must accept the temporary employment thus offered, is faced with two alternatives: He must give up his office entirely if his lease can be terminated, thus increasing local unemployment, or he must carry it along at a total loss.

"In either case he must remove himself from the sphere of his normal activities and abandon contact with such prospective commissions as might develop. And at the termination of the temporary employment both the architects and the draftsmen are likely to find themselves in a worse predicament than ever."

To back up his arguments, Mr. Walker presented a list of 38 Federal building projects costing upwards of $60,000 and not employing the services of private architects. What Mr. Walker heard in reply from New York's Congressional candidates he has not yet divulged.

COMPETITION

THE Association of the Alumni of the American Academy in Rome is holding its ninth annual collaborative competition for architects, landscape architects, painters and sculptors. Competition closes January 18, 1935. American Pencil Co. (Venus pencils) is offering prizes of $300, $150 and $75 respectively to the first three winning teams. These prizes have hitherto been given in virtual anonymity. Competition is open to any group of art students, or to anyone employed in offices or studios. For further details letters should be addressed to Roscoe Guernsey, Association of the Alumni of the American Academy in Rome, 101 Park Ave., New York City.

DEATH

PENROSE V. STOUT, 47, A.I.A.; of a heart attack; in Boston. He was born in Montgomery, Ala., graduated from Alabama Polytechnic Institute in 1909, practiced in Pensacola and New York City. As a member of the 27th Aero Squadron of the First Pursuit Group he was shot through the shoulder and lung near Charney, France, was awarded the D.S.O. After the War he practiced in New York, Virginia, North and South Carolina. He acquired a national reputation as a designer of country residences, built many buildings in Bronxville, N. Y., where he lived.

AWARD

TO the College of Fine Arts of New York University; the University medal of the Groupe Americain de la Société des Architectes Diplomes; for excellence in architecture. An annual award since 1920, the medal is given to the U. S. college or university having "the best record of accomplishment in the teaching of architecture" along the lines followed by the Beaux Arts. The medals, designed by Louis Bottée, supplied by the Beaux Arts, are semi-official. N. Y. U. won the award in 1931 also. Other winners: Pennsylvania, Carnegie Institute of Technology (twice), M. I. T., Columbia, Yale (three times), Catholic University, Illinois, Harvard (twice), Princeton.

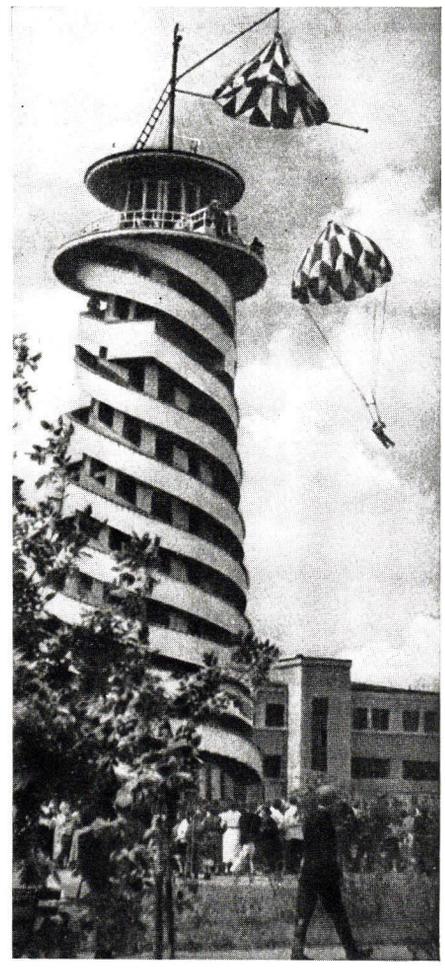
DADDY'S WILL

THAT extraordinary late real estate operator, Edward West ("Daddy") Browning loved publicity so much that one of his greatest prides was one of its necessary and often irritating concomitants — a fabulous amount of mail. He stored it in a special "letter room" stacked to the ceiling with mail from all over the world, most of which, he cheerily admitted, contained requests for money. The U. S. became aware of him when he took to wife Frances ("Peaches") Heenan who nowadays appears in burlesque.

To observers of his career, it would undoubtedly seem that architects and engineers would be the class least likely to benefit by the terms of Mr. Browning's will. Yet one out of six "Browning prizes" which the will establishes is of concern to these professions. The prize will be given annually as a reward for the "production of the most serviceable invention or useful discovery; or architectural improvement in fireproofing and sanitation or otherwise; or the most important work of art in paintings, sculpture or literature." Although the specifications are so general as to make competition for the prize seem a vague procedure, there is no reason to believe that in future years some architect or engineer may not unexpectedly find himself the recipient of a pleasant sum of money. Other Browning prizes, provided for in the will, will go to "the spreading of the Gospel under Protestant auspices . . . the increased production or improvement of fish, birds, or animals . . . the prevention of cruelty to children or animals, or the promotion of peace and international harmony." The estate is estimated at approximately $7,000,000.

SOVIET PARK

THE Maxim Gorky Central Park of Culture and Rest in Moscow occupies 750 acres. In order not to get lost you have to hire a guide. It has open air theaters, playgrounds, forests, gardens, and practically



IVAN GOES PARACHUTING
Russia turns a trick Chicago missed

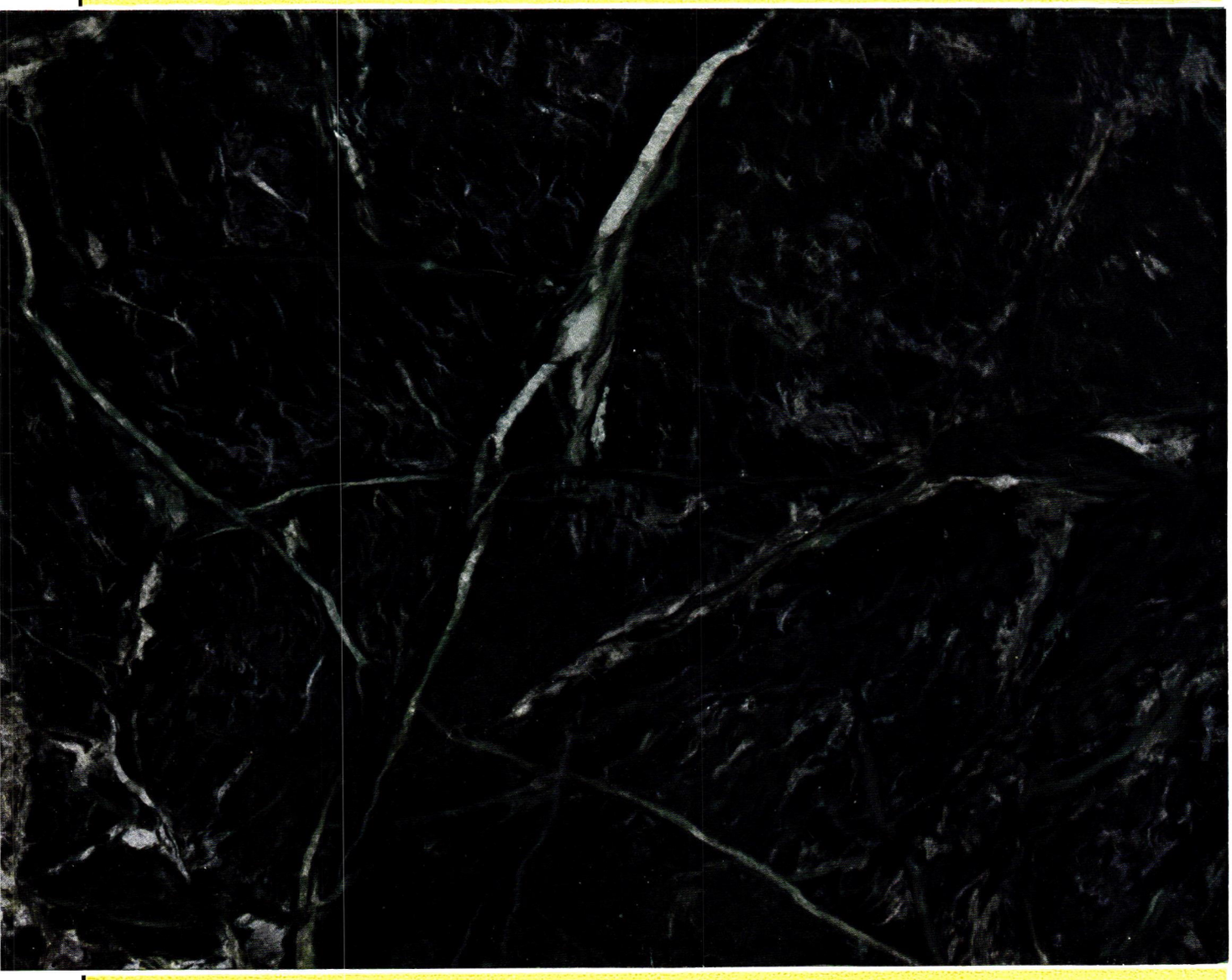
everything else that you have ever heard of. On one day alone, 500,000 Muscovites visited it. Last summer, 8,000,000 people went to it seeking rest and culture.

Neither culture nor rest is the parachute tower in one of the amusement spots. Russia is one of the most parachute-conscious nations in the world and the tower one of the most popular places in the Park. Ivan climbs up the spiral ramp, takes hold of a gaily colored open parachute, and at a given signal soars to earth. The Century of Progress Fair missed a good trick when it overlooked this one.

(*Continued on page 35*)

VERDE ANTIQUE

Vermont Verde Antique is particularly suitable for high-contrast effects in association with light-colored marbles — as in floor squares (a motif which has come down through the centuries and is never outmoded). It is used extensively for corridor base, ashlar and decorative trim. It is unexcelled also in polished form for exterior building work. In strong relief against a color base of deep, blackish green is a network of veins of variegated order and delicate light-green and gray tints. Notable examples of Verde Antique interiors are: The Goelet Building in New York, the Union National Bank Building in Pittsburgh, and the Phoenix (Arizona) Title & Trust Building. We invite architects to write for "Color Plates of Vermont Marble," showing 23 varieties in full color. Vermont Marble Company, Proctor, Vt.



VERMONT MARBLE

BEAUTIFUL • PRACTICAL • DURABLE

ARMSTRONG'S ACOUSTICAL PRODUCTS

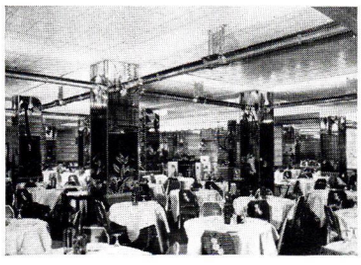
are especially suited for

AIR CONDITIONING INSTALLATIONS

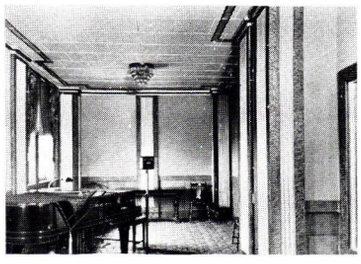
These modern sound-absorbing materials provide the efficient **HEAT INSULATION** ***needed to insure minimum operating cost of any air conditioning system***

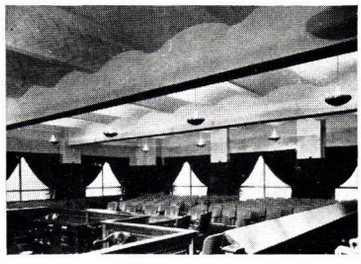
AIR CONDITIONED OFFICE *at the John Morrell Company, Ottumwa, Iowa. Armstrong's Corkoustic applied over the old ceiling guards against heat penetration and makes the office a quiet place in which to work.*

IN GRILL ROOM *of the Muehlebach Hotel, Kansas City, the shuffle of dancing feet is hushed with a decorative ceiling of Armstrong's Corkoustic.*

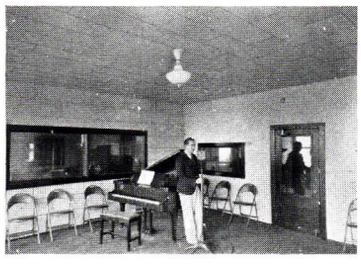


STATION WCOA *at the San Carlos Hotel, Pensacola. The entire studio is treated with Acoustical Temlok, painted to carry out the interior color scheme.*





COMMISSIONERS' ROOM *at the Allegheny County Court House, Pittsburgh, Pa. Note the herringbone treatment for the curved-arch ceiling achieved with Corkoustic.*



ON THE AIR *at Station WAZL, Hazleton, Pa. Armstrong's Corkoustic provides the absolute quiet necessary, plus a pleasing interior decorative treatment.*

AN increasing demand for air conditioning, both for new projects and for modernized old buildings, makes the use of adequate insulation more important than ever. And one of the best ways to secure this protection against the passage of heat is with Armstrong's Acoustical Products—Corkoustic and Acoustical Temlok. These efficient modern materials offer two other important advantages: (1) the restful atmosphere which acoustical treatment gives, and (2) pleasing decorative effects for walls and ceilings furnished by the panel surfaces.

Armstrong's Corkoustic is a cork product with a high sound absorption efficiency and a distinctive and interesting texture. Each panel is individual, thus eliminating monotonous repetition of surface appearance. *Armstrong's Acoustical Temlok* fills the need for a lower-priced material that is wholly satisfactory for many types of installations. Both Corkoustic and Acoustical Temlok are easily applied over existing ceilings or walls, and can be furnished prepainted at the factory to harmonize with any decorative scheme. Write, without obligation, for data and samples direct to Armstrong Cork & Insulation Co., 900 Concord St., Lancaster, Pa.

Armstrong's

CORKBOARD ~ CORK COVERING
ACOUSTICAL PRODUCTS ~ VIBRACORK
INSULATING BRICK ~ TEMLOK INSULATION

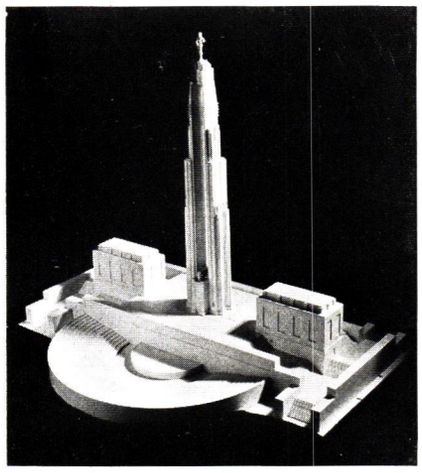
FORUM OF EVENTS

(*Continued from page 32*)

LENIN MEMORIAL

ALTHOUGH plans for a Lenin memorial in Leningrad have temporarily been shelved by the Russian Government, photographs of one of the models submitted in competition have been made public. Architect is Michael J. De Angelis, R.A., of Pittsburgh, who estimates the cost of his project at 6,000,000 rubles.

Mr. De Angelis explains his monument thus: "The three buildings are supported on a base of granite 40 ft. high with stairs leading to the plaza, and to a stadium to seat 10,000 people.



DE ANGELIS LENIN MEMORIAL
Progress shoots rays the world over

"The tower shall be entered from two sides leading into a hall and vestibules, main hall to be half circle in plan with the map of Russia in the background. All lighting will be concealed. There are two elevators and stairs leading to the different levels of the tower, also a beacon to illumine the finial. This would be directional (by color) for air, land and sea, the light revolving within colored glazed windows. The symbol is a depiction of Lenin progress shooting its rays to all parts of the world.

"Buildings on each side of the tower will be a museum and a library; in these buildings could be housed the works of Lenin and the history of the New Russia as well as relics of days gone by and the passing of Imperial Russia. The two buildings have entrances from the plaza facing the Tower. The base could be excavated and could be utilized. . . ."

BUILDING now in Moscow is the Palace of the Soviets which, when it is completed, will top the Empire State Building (1,248 feet) by more than 100 feet. Its architect, Boris Michaelovitch Iofan, recently in New York as head of a group of visiting Russian architects, is best known for his "First House of the Soviets" apartment group. He has planned a Romanesque structure of six concentric fluted cylinders which will form a giant pedestal for a 260-foot statue of Lenin with his face toward his tomb in the Red Square. The monument caused comment in the U. S. when Architect William Zorach complained that ideas he had submitted in competition had been adopted by the U.S.S.R. architect.

FISH INTO FAUCET

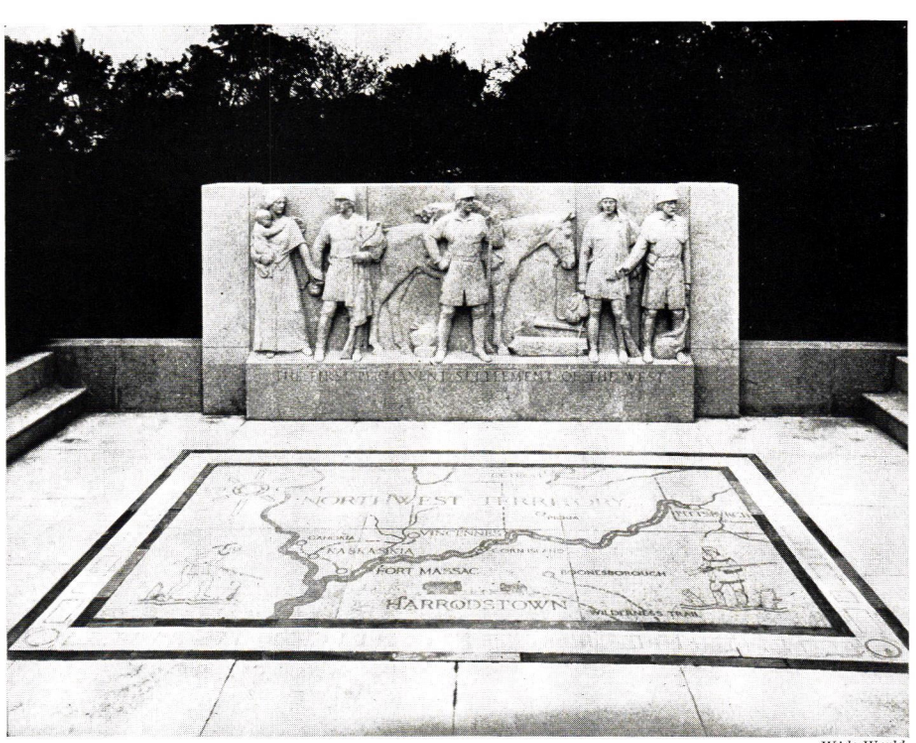
HERMAN FOSTER, Deputy Commissioner of Water Supply in the Bronx, New York, is a worried man. Time and again the same complaint comes to him. A Bronx citizen has just turned on a water tap and a fish has landed in the bowl. In each case Deputy Commissioner Foster dispatches a bacteriologist to examine the faucet water. Invariably the bacteriologist reports that the water's potability and purity have not been impaired. But, equally invariable are the citizen's mistrust and dissatisfaction.

Mr. Foster explained the piscatorial appearances as follows. There are always fish in the Bronx reservoir. There are, roughly speaking, two kinds. One is a predatory kind, which eats the other kind which, in turn, eats the miniscule but evidently nourishing food that some fish can find in water. Now, as everyone knows, reservoir waters are occasionally treated with chemicals in order to preserve their purity. It so happens that these chemicals are death on the predatory fish and seem to make no difference to the food fish (in this particular case, the food fish are known as "alewives"). The result has been that with the decline in population of the fish-eating fish, the alewives have prospered mightily. So much so, in fact, that the little ones are able to slip through the wire mesh through which the reservoir water must flow before it is piped. Hence the presence of alewives in the Bronx wash bowls and kitchen sinks. And hence the perturbation of Deputy Commissioner Foster.

Two courses of action are open to him. He cannot reduce the aperture-size of the wire mesh because that would interfere with the pressure of city water. But he might be able to find a chemical which would harm alewives as much as it does the predatory fish. Failing that, he will probably have to introduce more predatory fish in a rather arbitrary attempt to restore the balance of population.

HABS

THE Historic American Buildings Survey whose work was originally undertaken as a temporary relief measure has now been organized as a permanent institution (THE ARCHITECTURAL FORUM, September, 1934, pages 203–216 inclusive). The total number of drawings completed to date is, 5,739, while the number of photographs, 3,474. Approximately 700 historic notes have been made to supplement the drawings and photographs of 888 separate projects.



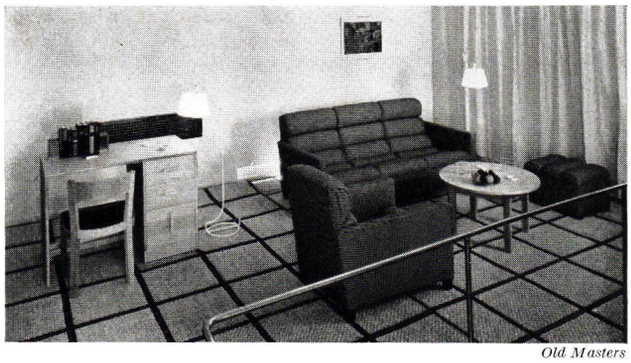
Wide World

THE WEST'S FIRST PERMANENT SETTLEMENT
is memorialized at Harrodsburg, Ky. Above a mosaic map on the floor a frieze symbolizes a frontier farewell at the left, youth and old age at the right. In the center panel is George Rogers Clark, pioneer soldier statesman. Sculptor Ulric Ellerhusen and Architect Francis Keally won the Federal commission in a nation-wide contest.

BOOKS

AMERICA CAN'T HAVE HOUSING, edited by Carol Aronovici, The Museum of Modern Art, New York, 78 pp., 1 illus., 7½ x 10, 50 cents.

The front cover title of this symposium, published to accompany the opening of the Museum of Modern Art's exhibition of housing, is printed upon a background of question marks. This is strikingly appropriate in view of the contents. While stating definitely why America can't have housing the sixteen authors are yet sufficiently constructive to make these statements actually questions. When these questions are finally answered it may then be possible for America to have housing.



Old Masters

Room in housing of the future. Housing exhibition of the Museum of Modern Art

The simplest way to give an idea of the content is to quote, without comment, a significant paragraph or so from the article of each contributor. **Sir Raymond Unwin,** London's Regional Plan Director, says: "There have been communities founded on different units; our community is founded on the single-family unit; so long as that is so, the essential of all housing must be to provide homes, not mere shelters, for all our family units who are not in a position to command the supply of these for themselves.

"The good old word home is itself no mean definition of what the minimum standard must be, how it must be planned and equipped and how the units must be grouped in relation to each other."

PWA's former Housing Director, **Robert D. Kohn:** "Can we ever hope to get to the point which England has reached? There when a district is declared officially to be a slum all property can be taken at its land value appraised only for its use for low-cost housing purposes. All the 'improvements' are ignored, only salvage value, if any, being paid for the buildings. We must go a long way to revise our national viewpoint regarding ownership rights as against community rights in land."

Critic **Lewis Mumford:** "Meanwhile an important fact had escaped notice, namely, that the housing of the 'more fortunate' classes when appraised by standards of what was desirable and technically attainable, was almost as low as that of the underpaid and 'underprivileged' workers. This fact even escaped the attention of a revolutionary critic like Friedrich Engels when he wrote about the housing problem."

Catherine Bauer, Executive Secretary of Philadelphia's Labor Housing Conference:

"Let us face the facts clearly and recognize that bitter and organized opposition is not only unavoidable but perfectly natural. In the course of a real housing movement the whole flimsy structure of speculative real estate 'values' will necessarily be punctured. This will doubtless necessitate drastic changes in systems of municipal taxation. The right of property-owners to make profits out of substandard dwellings will exist no longer. Interest rates must be cut."

Author **Edith Elmer Wood:** "In any wisely planned national housing problem, Class 3 dwellings will be slated for ultimate demolition by Public Housing Authorities. If the cities under the Real Property Inventory [THE ARCHITECTURAL FORUM, November, 1934, pages 320–332] are a fair sample of American urban conditions, as seems probable, that would mean, adding Class 4 and some interspersed Class 2 houses which would have to come down for the sake of the layout, new urban building for something like 4,000,000 low-income families."

Harry Chapman, Organizing Secretary of International Federation of Housing and Town Planning: "(England's) individual insanitary houses can be dealt with without necessarily being in an improvement area. If the house is capable of being repaired at reasonable cost, the authority may serve notice on the owner, with right to appeal at the County Court. Where the owner fails to comply with the order, the authority may act at his expense and may purchase the land at site value."

Walter Curt Behrendt, on post-war housing in Germany: "With the building industry finally established on such a changed basis, the architect also, for the first time, found the way clear to turn his attention to the practical, technical and architectural problems of small dwelling construction. Until now the architect has been more or less the hired man of private interests and their basic principle had been to figure out by tricky methods how to cover the greatest proportion of the land with buildings. But now it has become the architect's business under the stimulus of actual necessity to develop a new elementary form for the small dwelling with the aid of all the means of modern technical science."

Walter Gropius: "Only by means of the tall apartment house is the tenement freed from tedious and time-wasting housework. Centralized mechanical equipment, such as a central heating plant and hot water supply, a central laundry, elevators, refrigerators, air conditioning, communal clubrooms, facilities for sport and a kindergarten may be offered to the tenants without heavy costs."

Werner Hegemann, city planner: "Real improvement of housing is possible only in times of a general rise in employment and in wages. Employment and wage statistics are almost the equivalent of housing statistics. If the latter are lacking or unreliable, the former will tell the story. Nothing but the most miserable and incidentally most expensive kind of housing can be provided from the dole given the unemployed."

Architect **Hans Bernoulli,** on post-war cooperative housing in Switzerland: ". . . the best plan is public land ownership, cooperative construction of the buildings, individual ownership and possession."

Alberto Sartoris, Italian writer on functional architecture: "In the field of low-cost dwellings the large building of many stories represents the most satisfactory solution. Its use presupposes that the density of the population should not depend upon the height of the building, but upon the ratio between the cubical volume and the area of the lot."

Charles S. Ascher, Secretary of Chicago's Public Administration Clearing House: "Most of the thousand zoning ordinances in this country were framed in days when cities looked forward to doubled populations and before adequate scientific analysis of urban communities had become available. As a result, when we ask federal officials to impose standards of economic and social soundness for the projects to which they are to extend credit, even if the officials agree with us in principle, we are hard put to it to find for them in many cities any adequate data upon which standards might reasonably be based."

The Real Property Inventory has already been mentioned. In reporting on it its technical director, **Robinson Newcomb,** calls attention to the fact that "Aside from the shortage of housing revealed by the inventories, the most significant fact disclosed is the unbelievably low standard of American housing. In cities in which median rents were under $15 over a

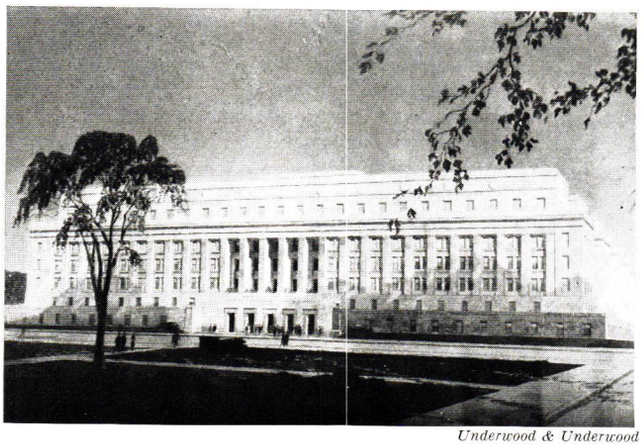
(Continued on page 40)

FORUM OF EVENTS

(*Continued from page 35*)

NEW GOVERNMENT BUILDINGS

WITH dignified public interest and publicity the President last month took time off to assist with Chief Justice Charles Evans Hughes at the dedication ceremonies of Washington's new $11,000,000 Department of Justice building (architect: Zantzinger, Borie and Medary). Only slightly smaller than the



Underwood & Underwood

Architect's Drawing: Department of Interior Building

Capital's largest Department of Commerce Building which it resembles, the structure gives a permanent home to a Department that has never had one since the creation of the office of Attorney General in 1789. The building has usable floor space of approximately 550,000 sq. ft. The entries to the court (largest in the U. S.) are decorated with 11,000 sq. ft. of mosaic ceilings.

Also in the direct classic tradition of Governmental buildings is the new $10,000,000 Department of Interior building (*see cut*), plans for which were approved last month by the Fine Arts Commission. Waddy B. Wood is architect. It will cover two city blocks between C and E Streets, and 18th and 19th. Eight stories high, completely air conditioned, it will have six wings, each 55 ft. long, will contain 2,200 rooms.

RESIGNING ARCHITECT

JAMES A. WETMORE, onetime supervising architect of the Treasury Department, chairman of the Procurement Division, Public Works Branch, was 71 last month. On that date he announced his resignation. As supervising architect, his

Underwood & Underwood

On 1,000 cornerstones his name: James A. Wetmore

name (together with those of various Postmaster Generals and Secretaries of State) has appeared on more than 1,000 cornerstones of public buildings. No man in the United States can best his record.

BOOKS

(*Continued from page 36*)

third of the units had no waterclosets; nearly half have neither tubs nor showers, and a sixth were without running water."

Henry Wright: "In the rapidly growing cities of the past few decades the search for better homes resulted in a general exodus from the center to the periphery of the urban unit. The speculative builder took advantage of the first manifestations of this suburban migration, and gave it further impetus. Though this commercial activity profited its advocates, the public in general gained little benefit, unless we consider bankrupt cities an asset. This rapidly increasing ring of suburbs demanded new services and drained the population which had been paying for the already existing services in the central area. Regardless of the ultimate fate of the large city, one of the outstanding problems for the present generation must be to try to salvage its assets and prevent a recurrence of the damages resulting from speculative building."

Abraham Goldfield, Executive Director of the Lavanburg Foundation on "The Management Problem in Public Housing": "It is easy to realize that without rigid checks the publicly owned houses would soon be filled with families who could afford more expensive accommodations but who would make every effort to take advantage of any opportunity to reduce their rental budget. American municipal government being what it is, the pressure from political personages for the admission of unqualified 'friends' is likely to be all but irresistible."

Carol Aronovici, Director of the Housing Research Bureau of New York City sums up: "Many of our slums are merely the hand-me-downs of past generations and the areas which they occupy are often better suited for uses other than low-cost housing. These slum areas if cleared and replanned would solve many other problems such as value depreciation, transit congestion, etc."

THE DESIGN OF RESIDENTIAL AREAS, Volume VI, Harvard City Planning Studies, by Thomas Adams, Harvard University Press, Cambridge, Mass., xiv, 296 pp., XI plates, 65 illus., 6 appendices, index, 7¼ x 10, $3.50.

Any volume of the Harvard City Planning Studies which also bears Thomas Adams' name is bound to be eagerly read by those interested in the always complicated subject of town planning. No such reader will be disappointed in this volume. Beginning with a survey of the present state of our cities, Mr. Adams discusses step by step the growth of urban centers with a realistic appreciation of ordinarily forgotten factors that testifies to the fact that his point of view has been derived from years of practical experience.

At only one point is it possible to say that one of Mr. Adams' conclusions does not necessarily follow previous reasoning. On page 39 Mr. Adams says, "It is a fallacy to think that an increase in the permitted density of a district brings about a lowering of rents. This rarely has produced such an effect. Rental scales are not unaffected by the law of supply and demand, and are generally more of a reflection of what the people in any locality are able to pay than of the initial cheapness or dearness of the land." This is immediately followed by the statement, italicized by the author, "Too often the problem of dealing with blighted areas by means of reconstruction schemes is approached from the point of view of how to obtain sufficient volume or density of new buildings to maintain land prices that are based on past overcrowded uses; whereas the approach should be how to obtain the reduction in land prices that is necessary to make a desirable density of building financially practicable." No one is likely to dispute the fact that this is one approach and perhaps the most desirable, but there are those who maintain that a more immediately prac-

(*Books continued on page 41*)

BOOKS

(*Continued from page 40*)

ticable way is to consider replanning such districts for a different economic class. Without attempting to argue the respective merits of these avenues of attack it does not seem that Mr. Adams has here sufficiently proved the inevitability of his conclusions.

If it seems captious to pick on this minor fault, the only defense can be that the fault looms larger than it otherwise might in the light of the impeccable reasoning throughout the rest of the book. This is so generally the case that it is difficult to single out any particular passage to cite. The book should be read in its entirety. If there is any part that is more worthy of comment than another it is the masterly Chapter VII on "Basic Principles and Requirements in Civic Design." This should be carefully considered by architects. The Harvard University Press contributes its customary beautiful typography and press work to make the reading of this work as pleasant as it is interesting.

SLUM CLEARANCE AND REHOUSING, The Council for Research on Housing Construction, P. S. King & Son Ltd., London, 139 pp., 20 pp. plates, 20 illus., 8¾ x 11¼.

This is the first report of the Council for Research on Housing Construction for Great Britain. This council grew out of a number of private investigations, each conducted separately. It finally seemed wise to coordinate these activities to secure a greater efficiency and a broader front of attack. It has remained a body of individuals who act in their private capacities and not as representatives of other organizations. While this may rob the report of some fancied prestige of official backing, it also removes any suspicion of prejudice from its findings.

Before starting on their investigations the council wisely decided to limit the subject matter to be covered in their first report. It seemed best to consider first the question of rehousing of those now living in slum areas and particularly the question of multi-story buildings made necessary by high land costs. Accordingly the council made exhaustive investigation, from actual plans of three types of buildings, three, five, and ten stories high. The conclusions as to the relative cost per room of bare building differ slightly from those obtained from similar studies made in this country (see page 421) but the relative costs per room and land are much the same. Beautifully laid out and printed, this publication might well serve as a model of the right way to present an important report.

CONSTRUCTION MATERIALS INDEX, Construction Materials Research Co., San Francisco, 191 pp., 8⅜ x 11.

This first issue of a book projected as an annual feature will be found very useful to the architect who has to accumulate information on some phase of practice to which he has hitherto not given much attention. Thoroughly and simply classified and cross indexed, it is an exhaustive bibliography of books and articles on all sorts of architectural subjects. In spite of its title the book is by no means confined to construction materials, but covers architectural history as well as the various engineering fields.

SOUTHERN PINE MANUAL OF STANDARD WOOD CONSTRUCTION, Southern Pine Association, New Orleans, La., 188, xii, pp., 12th Ed., 16vo., $1.50.

This is a very useful little book for figuring everything that is normal to wood construction where yellow pine is used. Its complete usefulness to the architect, however, is a good deal mitigated by the fact that there are no tables for other woods except in one or two instances.

PRODUCTS & PRACTICE

(Continued from page 38)

1201. ILLUMINATION HANDBOOK

The Westinghouse Lamp Co. in a new handbook announces the production of a new and simplified method for the design of floodlighting installations. Known as the "Lumens in the Beam" method, it should prove of great assistance to all architects and engineers who find it necessary to calculate illumination.

1202. NEW CUTTING MACHINE

The Linde Air Products Co. announces a new addition to its large line of oxyacetylene cutting machines. This machine, known as The Oxweld Monitor or CM-8 Cutting Machine, is designed for automatic straight line cutting of unlimited length, straight bevel cutting, circle or ring cutting of diameters up to 100 in., and the cutting of curved or irregular shapes. Special care has been given to speed control, and sensitive indicators are provided to eliminate all guess work. By setting the indicator and shifting the gear lever any speed may be obtained from 2 to 48 in. per minute.

1203. NEW INSULATION

United States Rubber Products Co. has recently produced a new insulation under the name of Laytex which has many points of superiority over existing flexible wire insulation. It is claimed for it that it is the most flexible, has the greatest tensile strength and resistance to compression, the highest dielectric strength of any flexible insulation now on the market. It is derived directly from latex from which are removed by patented processes all proteins, sugars and water solubles. Because of its physical properties, it permits insulating walls considerably thinner than other materials. In certain applications a reduction of 25 per cent in the outside diameter and 50 per cent in the weight of the conductor are effected.

1204. RANGE TIMER

Among new appliances from the Specialty Appliance Sales Department of the General Electric Co. is a new timer and clock for ranges. Known as model T20, it is fully automatic with dials for setting "on" and "off" to control current to oven or appliances. A self-starting Telechron motored electric timer, its price is only slightly above that of a handwound clock.

1205. FLAKICE

The York Ice Machinery Corp. announces that it has acquired exclusive rights for the manufacture and distribution of the mechanical equipment necessary for the production of FlakIce Frozen Water Ribbons. The ice is produced by a patented process of mechanical freezing on the outer surface of a slowly revolving steel cylinder and peeled off in ribbons. Designed to take the place of crushed ice or ice cubes, and said to have a refrigerating action quicker than that of ice in any other form, this "ribbon" ice should be useful in cafeterias and restaurants.

1206. BLOWER FAN

Ilg Electric Ventilating Co. eighteen months ago began the development of a new line of small blowers suitable for low pressure small volume work. Officially named Ilg Type "B" Volume Blowers, these blowers come in five sizes, are now available. Free air capacities range from 180 CFM to 2,100 CFM and pressure ranges to 1½ in. static pressure. The motors can be supplied for a.c. or d.c., single or three phase, for any of the commercial voltages. Shipping weights range from 45 to 225 lbs. Quiet and smooth running, with a wide capacity range in small steps with low power consumption and high efficiency, the blowers are suitable for ventilating and drying jobs of various sorts.

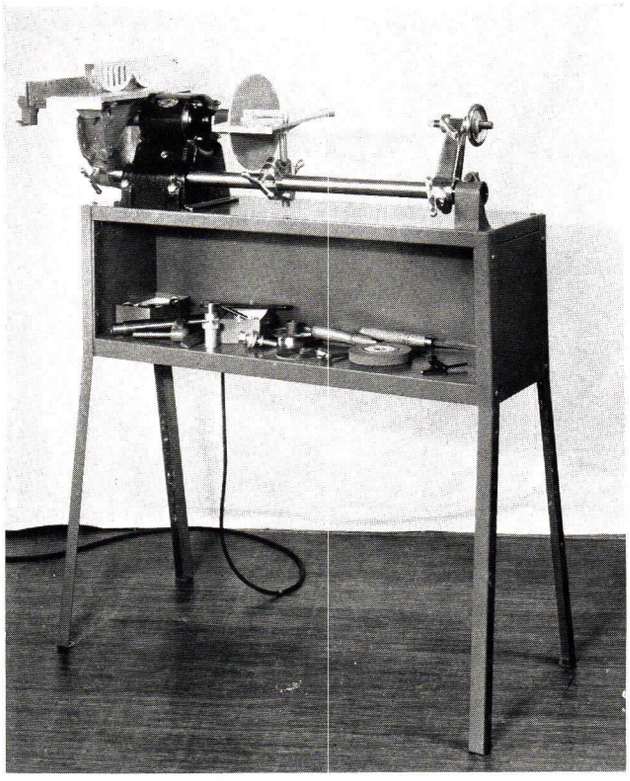
(*Continued from page 42*)

1207. DRIP TRAP

Jas. P. Marsh Corp. is now producing a new drip trap designed for the removal of air and condensation from short steam mains, branches or risers. Known as Marsh No. 17, its operating characteristics make it especially desirable for installation on unit ventilators, small unit heaters or other equipment which may be subjected to freezing temperatures during periods when the heating system is not in operation. The trap may be readily suspended on the piping itself with no other means of support. All working parts are easily accessible through the removable trap bonnet, and are of bronze and Monel metal with the exception of the seamless copper float.

1208. ELECTRIC WORKSHOP

Architects and engineers who like to do odd jobs of wood and metal work will be interested in the new G. E. Workshop recently announced by the General Electric Co. The cut shows the general appearance of this gadget and its equipment. Occupying a floor space 18 x 38 in., and capable of being set up



G. E. Electric Workshop

for operation in half an hour, this little workshop will cross-cut or rip-saw up to 1¾ in. thick, at any angle; turn wood with a limit of 9 in. diameter; take lengths of 30 in. between centers; turn brass and aluminum; sand flat surfaces and contours. In addition, scroll work on wood up to 2 in. thick, and on metals including sheet iron, may be done. It will drill both wood and metal, make mortises and tenons, and cut rebates and grooves. The entire machine represents the best in materials and finish.

1209. ACOUSTICAL INFORMATION

Bulletin No. II, just published by the Acoustical Materials Association, contains the latest tables of absorption coefficients and specifications of the leading acoustical tiles, boards and blankets, and plasters. This will enable the architectural specification writer to select acoustical materials for any particular job with all of the necessary information in hand.

(Continued from page 43)

1210. REGISTERS AND GRILLES

Forced air installations have rendered obsolete many of the older types of grilles and registers. The Independent Register & Mfg. Co. has just placed on the market a new adjustable directed air flow register in which the grille bars can be set at a predetermined angle before installation. If it is later found that the angle is not exactly right, the changing of the angle is a matter of only a few moments. Adapted for both horizontal and vertical deflections, the grilles fill a great many needs.

1211. NEW BOILERS

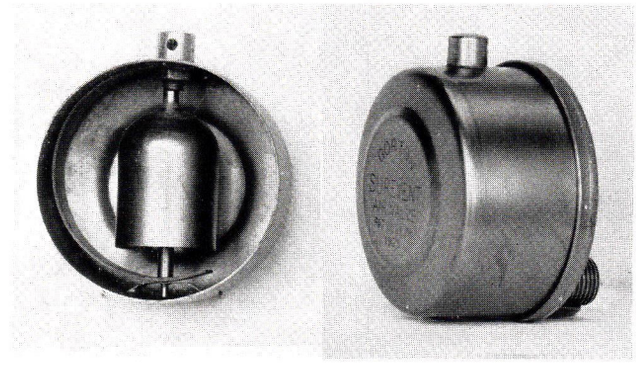
For the utmost efficiency and economy, automatic coal-firing devices and heating boilers must be scientifically designed to work together. American Radiator Co. therefore announces an Ideal Boiler No. 21 especially designed for use with the Electric Furnace-Man to provide automatic heating. An outstanding advantage of this combination is the possibility of using the smaller, lower-priced sizes — buckwheat or rice — of anthracite coal. Like most modern boilers, it has an attractive enameled jacket which in this case is designed to match that of the equally attractively finished Electric Furnace-Man. The entire combination can be controlled thermostatically.

1212. FINANCE PLAN

More manufacturers of building materials are announcing special plans to back the Government's Federal Housing Administration. The latest of these is the well-known Ruberoid Co. with an elaborate finance plan for loans similar to those provided for by the National Housing Act. This will enable many a householder to re-roof where otherwise he could not.

1213. EQUALIZING VALVES

Valves especially designed to equalize unbalanced conditions of room temperature are manufactured by the Gorton Heating Corp. and sold under the name of Surevent Equalizing Valves. These valves, placed on radiators in rooms which



For Balanced Heating

are furthest from the boiler, vent the air from these radiators at much greater speed than ordinary valves. This permits rapid heating of these rooms and insures that they will not be cold when the thermostat in some other room shuts off the fire.

1214. WINTER CONSTRUCTION

The International Cement Corp. has recently published a bulletin on winter construction with their "Incor" 24-hour cement, in addition to a mimeographed folder containing valuable tables of times of setting of cement under various weather conditions. Particularly valuable is the table of minimum heat protection requirements for winter construction at various outdoor temperatures.

(Continued from page 44)

1215. WELDING TECHNIQUE

The October, 1934, number of *Oxy-Acetylene Tips*, published by The Linde Air Products Co., contains a very useful article on the use of welded pipe for light industrial or other

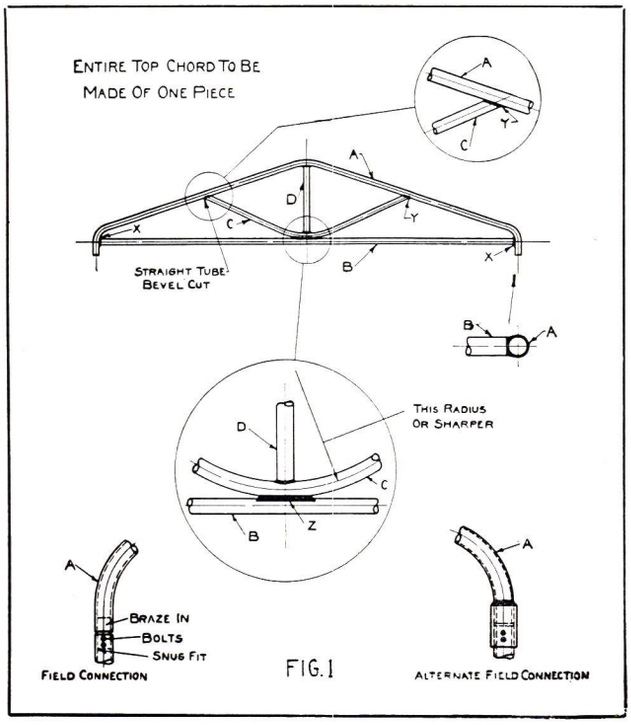


FIG. 1

structures. Drawings and details are given for various forms of light trusses, etc. Welded tubing or pipe permits the design of certain types of trusses of minimum weight and maximum strength. It is not necessary to use new pipe as in many cases second-hand pipe is equally efficient.

1216. ANCHOR BOLTS

Harrison-Weise Co. is now making a new window washers' safety anchor. This has received approval by Safety Councils, Underwriters Laboratories, window washing organizations, and is favored by individual window washers themselves. This anchor is manufactured from U. S. Naval Bronze and each bolt has a tensile strength of 65,000 lbs. per square inch. This device differs from customary anchors in that it has not only twin heads but twin bolts to be built into the masonry.

1217. AIR CONDITIONING EQUIPMENT

Lewis Air Conditioners, Inc. is producing a cabinet air conditioning unit for use as a humidifier in homes of ten to twelve rooms, and other spaces of equivalent area. Connected with hot water, steam or vapor heating plant, it performs the major functions of humidification, heating, air circulation and filtration. By the use of mechanical refrigeration or low temperature water this unit may be converted for cooling.

1218. MOSAICS

The New Department of Justice Building in Washington has many mosaic ceilings manufactured by the Earley Studios by a new process. The mosaics were made of selected aggregates and sand entirely without the use of pigments. By special methods developed over years, the mosaics were made up into precast slabs which acted as forms for the pouring of the concrete floors above. This of course eliminates large items of expense for forming work. As there are no pigments used, the colors should be entirely permanent.

MANUFACTURERS' PUBLICATIONS

Among the manufacturers' publications recently received were the following:

1219. Drapery Hardware

A bound series of six catalogues comprising General Catalogue No. 38 of the Kirsch Co., illustrating their complete line of drapery hardware.

1220. Air Conditioning

Catalogue No. 221 of the John J. Nesbitt Co., Inc., and Buckeye Blower Co., containing illustrations and technical data on the Nesbitt Air Conditioner.

1221. Wiring Devices

Catalogue "V" of the Hart & Hegeman Division of The Arrow-Hart & Hegeman Electric Co., containing illustrations and descriptions of their entire line of switches, sockets, receptacles, etc.

1222. Door Hangers

A new catalogue, A.I.A. File No. 27-C-6, showing the complete line of overhead garage door hangers manufactured by the Richards-Wilcox Manufacturing Co.

1223. Convection Heating

A series of three folders from Warren Webster & Co. containing, among other things, architectural details for the enclosing of convection heaters.

1224. Water Closets

A new catalogue from the John Douglas Co. setting forth the advantages of their siphonproof water closet bowl.

1225. Lighting Fixtures

A folder describing the advantages of Permaflector Lustroliers as manufactured by the Pittsburgh Reflector Co.

1226. Metal Caging

Bulletin 25, A.I.A. File No. 4-f, Mitchell-Tappen Co., describing and illustrating an improved type of standardized metal caging for the reenforcement of concrete fireproofing and corrosion proofing of structural steel girders, beams and columns.

1227. Aluminum Spandrels

Under the title of Contemporary Spandrel Design, an attractively printed booklet from the Aluminum Co. of America, showing examples of aluminum spandrel design by celebrated architects, and technical details showing various methods of anchoring.

1228. Packless Valves

Catalogue No. SV 934, A.I.A. File No. 30-C-5, from Hoffman Specialty Co., Inc., illustrating and describing their complete line of packless valves for steam heating systems.

1229. Oil Heater

An attractively printed and unusually well-arranged catalogue of the new oil heat and air conditioning equipment now being manufactured by Gar Wood Industries, Inc. This catalogue contains important and useful technical data in addition to illustrations and descriptions.

1230. Rugs and Carpets

From the Bigelow-Sanford Carpet Co., Inc., a beautifully edited and printed description of the technical processes and machinery used in producing their widely varied line of rugs and carpets.

1231. Roofing Materials

A new catalogue from Koppers Products Co. listing and illustrating, with suggested specifications, Koppers roofing materials and coal tars.

1232. Pipe Corrosion

A reprint from *Water Works Engineering* of an article entitled "Experiments in Pipe Corrosion" comes from Copper & Brass Research Association. The article, by Frank E. Hale, director of laboratories for New York's Department of Water Supply, contains an account of experiments, and the conclusions drawn from them, made with waters of different chemical characteristics.

1233. Furniture

An attractive brochure from Brower Furniture Co. shows hotel, bar, cafeteria, and club furniture in both traditional and contemporary styles.

1234. Abrasives

From the Norton Co., a small booklet illustrating and describing the manufacturing processes of various types of abrasives. Also a folder specifically devoted to their Bortz (Diamond) Wheels, and an attractive and ingenious pencil pointer for architects in which the abrasives are selected from their line.

1235. Boilers and Radiators

From American Radiator Co. a new booklet describing at some length the characteristics and advantages of the various items in its line.

1236. Paints

Pittsburgh Plate Glass Co. has just issued a little folder explaining its manufacturing facilities and listing, under use headings, the extensive line of paints, lacquers and varnishes.

1237. New Boiler Unit

The Babcock & Wilcox Co. is producing a new boiler unit particularly applicable in industrial plants. This is described in a mimeographed announcement giving all characteristics.

1238. Residence Elevators

A single sheet from Otis Elevator Co. shows illustrations and space requirements of a small automatic elevator for residences that requires no penthouse and can operate on any lighting circuit.

REQUEST FOR DATA

To obtain any of the publications reviewed on these pages, indicate the number and send coupon to The Architectural Forum, 220 East 42nd St., New York.

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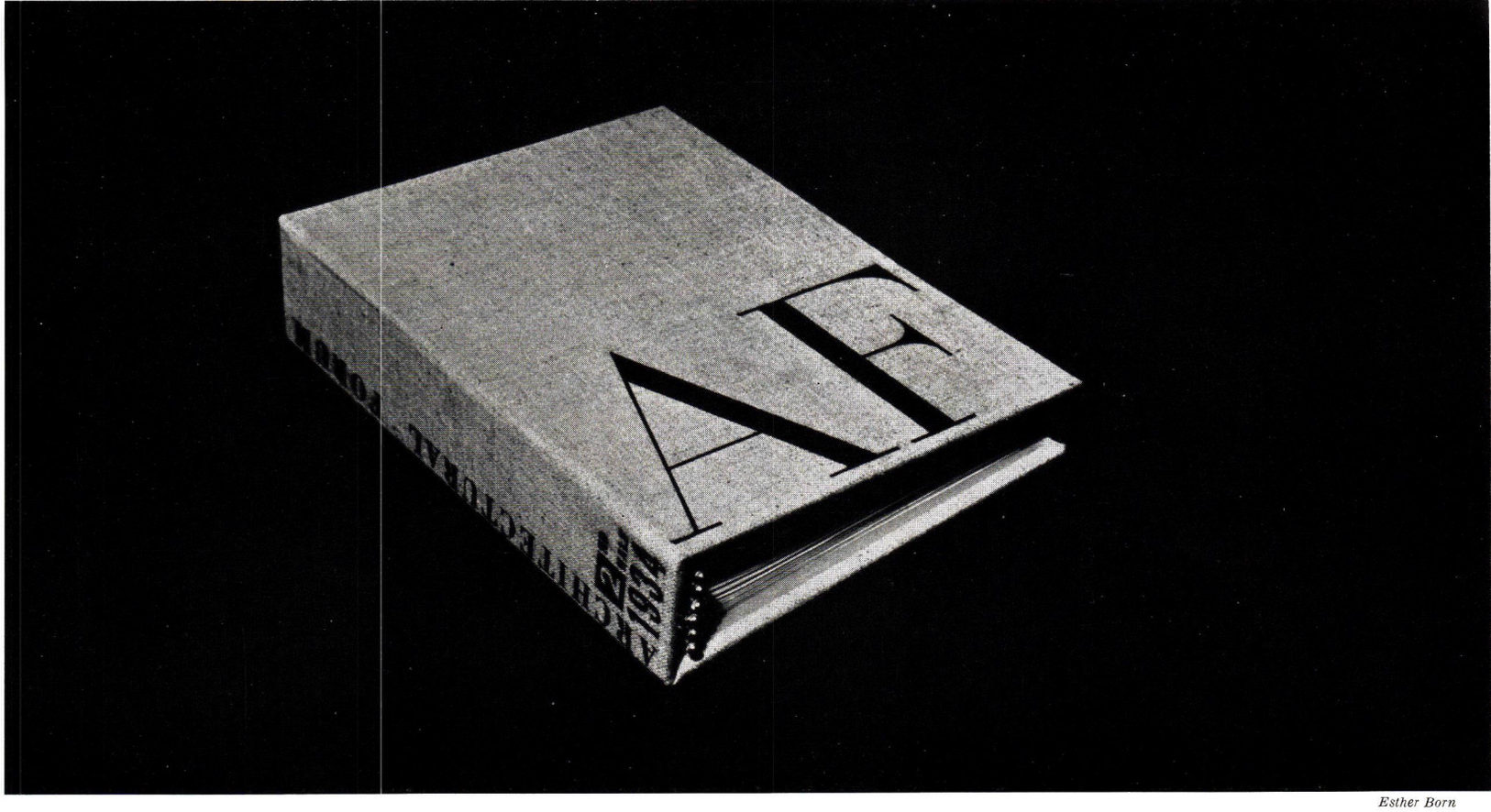

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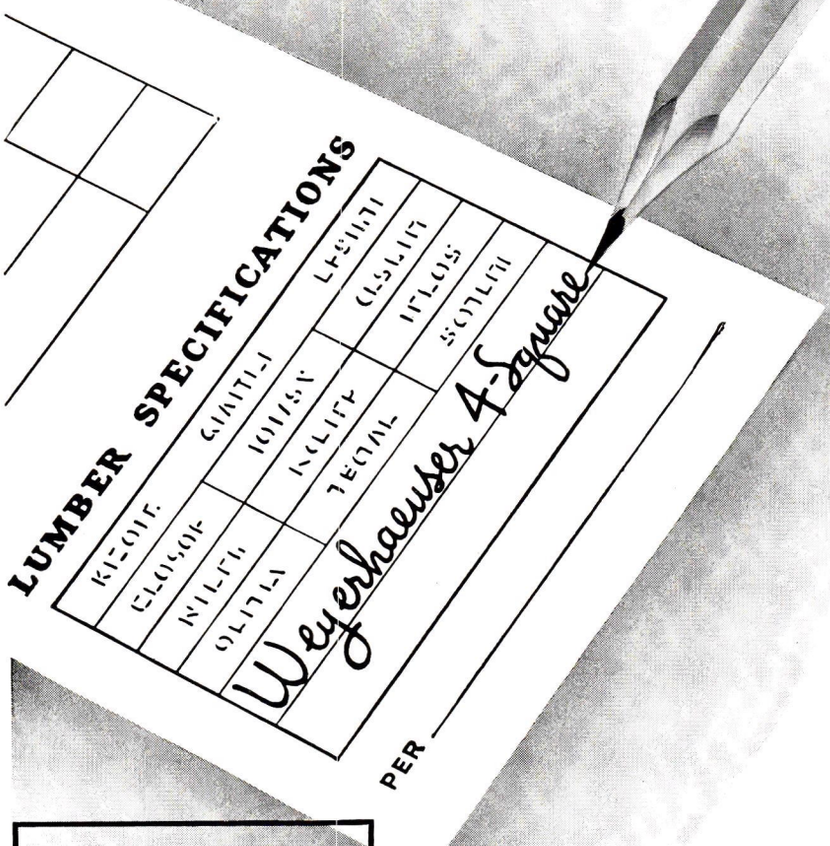

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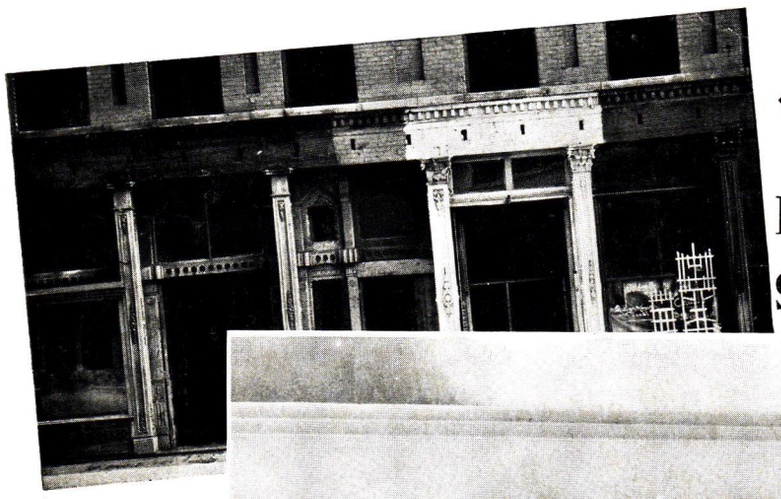

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