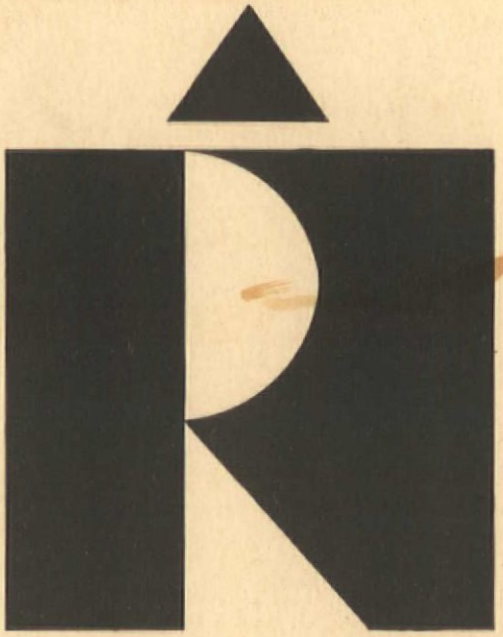


1933

EST BORN

THE ARCHITECTURAL RECORD

HOUSES • LINDEBERG HOUSE CONSTRUCTION • BUILDING RECOVERY

Brass Pipe and/or Copper Tubes

A common sense standard for the selection of water pipe

NO one metal is ideal for every piping installation. *That is obvious.* For certain jobs, some metals lack sufficient durability to make their use truly economical. For other jobs, the cost of super-quality may not be justified by the corrosion or mechanical factors involved. These are facts . . . and you can't get away from them.

Years ago, The American Brass Company discontinued the manufacture and sale of just "brass pipe". We analyzed water conditions and made a 10-year corrosion study on a wide range of alloys. As a result, we standardized on two scientific alloys of brass . . . Anaconda "67" for normally corrosive waters and Anaconda "85" Red-Brass for highly corrosive waters.

Installations of record prove that brass pipe of the correct alloy, connected with standard pipe fittings, is second to no other commercial pipe material in durability and satisfactory performance.

Anaconda Deoxidized Copper Water Tubes

Copper Tubes available in long lengths and coils, are readily bent for ordinary turns and offsets, offering obvious installation advantages.

For years, The American Brass Company has made seamless Copper Tubes for countless uses. Within comparatively recent years, these tubes, connected with so-called compression or flared fittings, have been used with entire success for water service and distribution lines.

Intensive study of performance records now leads to the endorsement of cast solder fittings, with these tubes in sizes up to and including 4", where conditions of pressure and temperature are normal. The American Brass Company does not manufacture fittings but there are now good standard lines of high quality solder fittings available on the market which can advantageously be assembled with Anaconda Deoxidized Copper Water Tubes. Cast solder fittings, because they hold heat during the soldering operation, and also because they are not likely to become distorted from handling, make possible sound, leak-proof solder joints.

All Anaconda Deoxidized Copper Water Tubes stocked by Anaconda distributors are drawn to the accurate sizes required for use with cast solder fittings and comply fully with the tolerances issued by the Federal Specifications Board. While tubes of so-called underground sizes (A.S.T.M. Class A) are recommended for general plumbing work, "interior plumbing" sizes (A.S.T.M. Class B) are considered satisfactory for distribution lines in buildings. The wall thicknesses required by A.S.T.M. Specifications for Classes A and B tubes are shown in the accompanying table.

Anaconda Standard Brass Pipe of the correct alloy for the local water condition . . . assembled with threaded screw fittings . . . is recommended for all sizes over 2" in diameter. Copper tube branch lines may be connected directly to the standard size pipe with special fittings now available.

ANACONDA COPPER WATER TUBES

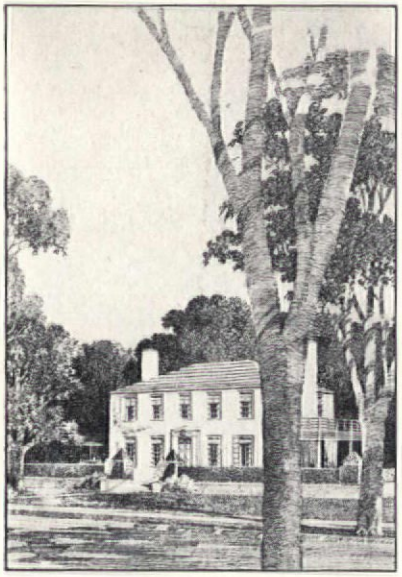
Nominal Size, Inches	Wall Thickness		Weight, lbs. per ft.*	
	A.S.T.M. Class A	A.S.T.M. Class B	A.S.T.M. Class A	A.S.T.M. Class B
⅛	.0320	.0250	0.085	0.068
¼	.0320	.0300	0.134	0.126
⅜	.0490	.0350	0.269	0.198
½	.0490	.0400	0.344	0.284
¾	.0650	.0450	0.641	0.454
1	.0650	.0500	0.839	0.653
1-¼	.0650	.0550	1.040	0.882
1-½	.0720	.0600	1.360	1.140
2	.0830	.0700	2.060	1.750
2-½	.0950	.0800	2.920	2.480
3	.1090	.0900	4.000	3.330
3-½	.1200	.1000	5.120	4.290
4	.1340	.1100	6.510	5.380

** Variations in these weights must be expected in practice.*

ANACONDA
from mine to consumer

THE AMERICAN BRASS COMPANY

General Offices: Waterbury, Connecticut
Offices and Agencies in Principal Cities



House Design by H. T. Lindeberg.
Rendering by Daniel Neilinger.

THE ARCHITECTURAL RECORD

OCTOBER, 1933
VOLUME 74
NUMBER 4

Published monthly by
F. W. DODGE CORPORATION
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Sanford D. Stockton, Jr., *Secretary*
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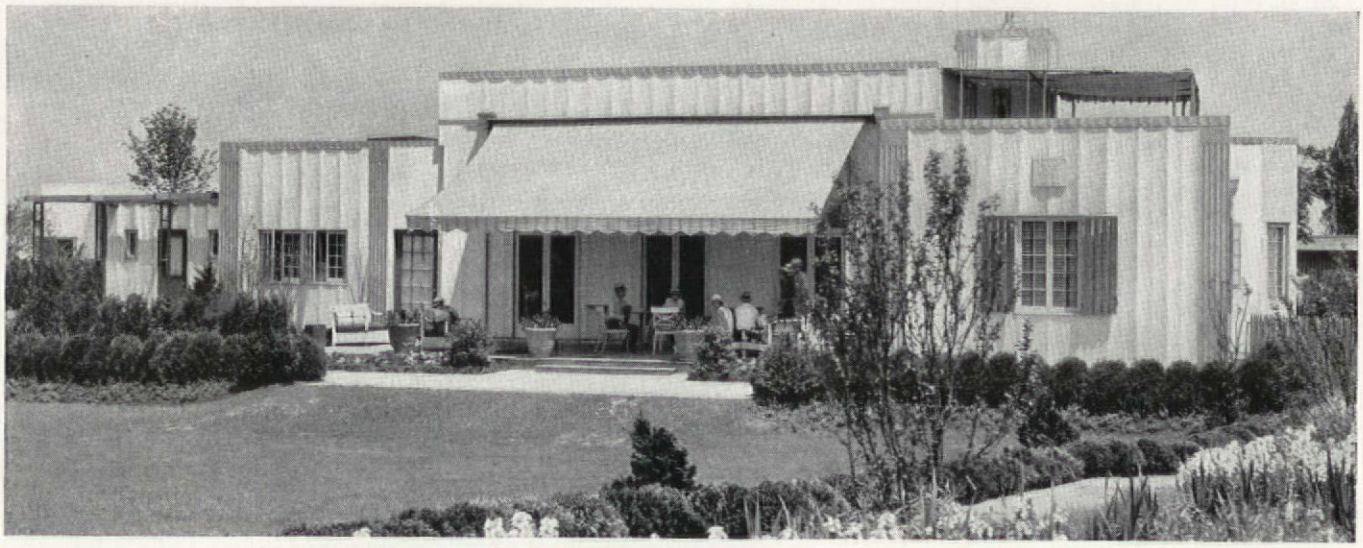
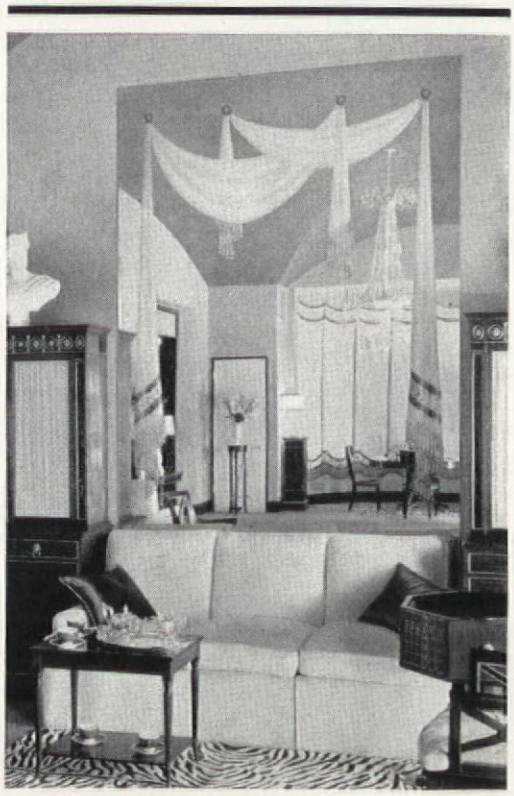
Entered as second class matter May 22, 1902, at the Post Office at New York, N. Y., under the Act of March 3, 1879. Printed in U. S. A.

Preference is better than a prize



The W. & J. Sloane "House of the Today", like the majority of exhibits in the Home Planning Section at the Chicago World's Fair, is glazed with L·O·F Quality Glass. Corbett, Harrison, and MacMurray were the architects. The Still Construction Company, Chicago, were the General Contractors. The large decorative mirror, a Semon-Bache product made of L·O·F Polished Plate Glass, is an arresting example of the uses for glass in home furnishing.



No awards are being given, in Chicago, for the finest Polished Plate or Window Glass, but the products of Libbey·Owens·Ford have won an honor high above ribbons, medals or certificates of merit. They are used in the great majority of houses in the Home Planning Section, in which is exemplified the finest creative design of contemporary architecture. Surely, the significance of such a signal honor is apparent.

LIBBEY·OWENS·FORD QUALITY GLASS

LIBBEY·OWENS·FORD GLASS COMPANY, TOLEDO, OHIO, *manufacturers of Highest Quality Flat Drawn Window Glass, Polished Plate Glass and Safety Glass; also distributors of Figured and Wire Glass manufactured by the Blue Ridge Glass Corporation of Kingsport, Tennessee.*

DUTCH BOY ROUNDS OUT THE LINE!

3 new products so that now you can specify Dutch Boy QUALITY *throughout!*

●Three new products, including an *improved* soft-paste white-lead, now make it easy to insure Dutch Boy quality throughout on every white-lead painting job. By rounding out this famous family, these products enable you to specify beautiful and durable finishes, either interior or exterior, that are "Dutch Boy" even to colors-in-oil and drier.

Dutch Boy ALL-PURPOSE Soft Paste White-Lead is the first of these improved paint products. It is a rapid-mixing soft-paste which can be used for inside or outside work with equal ease and success. Mixed with linseed oil, it gives a durable exterior gloss finish—the kind that Dutch Boy is noted for. With flatting oil, it produces a fine, washable inside flat finish, without a vestige of "flashes" or shiny spots.

Dutch Boy Colors-in-Oil comes next. This is a line of best quality oil colors specially developed for tinting white-lead paint. These colors have strong tinting power and are absolutely accurate in color tone. They disperse into the paint quickly without streaking because they are made in a "short," buttery paste form.

Dutch Boy Liquid Drier is the third of these newcomers. This is a paint drier that is properly "balanced"...a drier of uniform quality and strength, made up of just the right ingredients. You can depend upon it to give characteristic Dutch Boy performance.

These three products, together with their older Dutch Boy companions listed on this page, greatly simplify your job of specifying white-lead finishes, and insure the results that you demand and that your clients desire.

NATIONAL LEAD COMPANY

111 Broadway, New York; 116 Oak St., Buffalo; 900 W. 18th St., Chicago; 659 Freeman Ave., Cincinnati; 820 W. Superior Ave., Cleveland; 722 Chestnut St., St. Louis; 2240 24th St., San Francisco; National-Boston Lead Co., 800 Albany St., Boston; National Lead & Oil Co. of Pa., 316 4th Ave., Pittsburgh; John T. Lewis & Bros. Co., Widener Building, Philadelphia

Other Members of the Dutch Boy Family of Paint Products

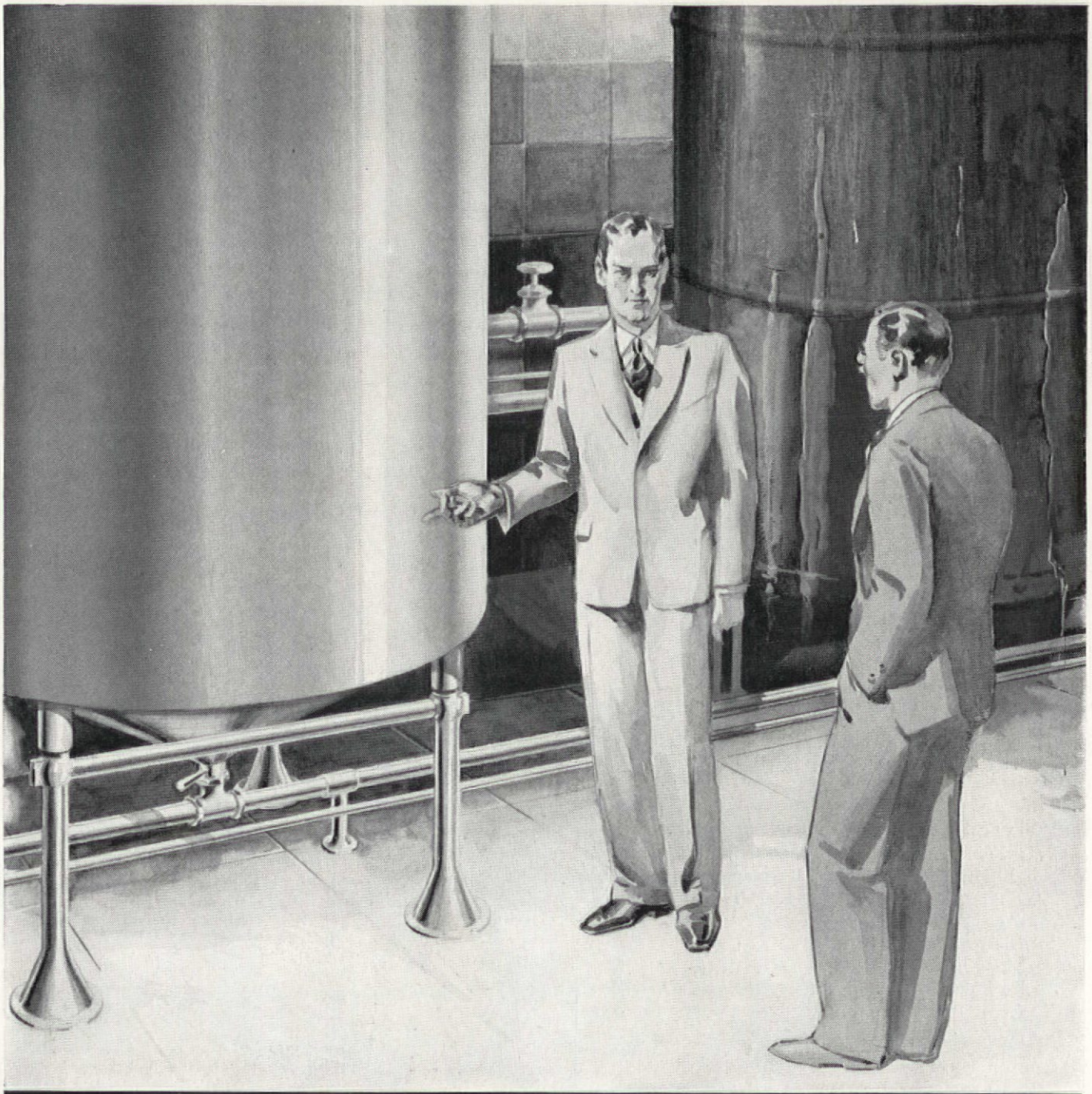
★

DUTCH BOY LINSEED OIL. Pure, clear, well-settled linseed oil—either raw or boiled. Only the best of selected oil is sold in these sealed cans.

DUTCH BOY FLATTING OIL. A skillfully blended flatting liquid for use with white-lead to produce both flat and semi-flat paint for modern interior painting. Gives a finish which is sanitary, washable, durable, beautiful and economical. For use also as a blending, glazing and bronzing liquid.

DUTCH BOY WALL PRIMER. A special primer developed for use in white-lead painting. Stops suction, seals fire cracks and, at same time, serves as first coat. Possesses exceptional hiding power. Forms a tightly adhering foundation for succeeding coats of white-lead. Works equally well on all interior surfaces—plaster, wallboard, insulating board, brick, concrete.

DUTCH BOY RED-LEAD. Unexcelled for protecting iron and steel against corrosion. A pure, fine, highly oxidized red-lead, supplied in either paste or liquid form.



SURE CURES FOR SHORT LIVES

Is corrosion shortening the life of costly equipment?—Eating into your profits? If so, it will be worth your while to let our metallurgists help you investigate the possibilities of lengthening life and reducing costs by the use of USS Stainless Steel at danger points. Among the many types of USS Stainless and Heat-Resisting Steels there is one ideally suited to virtually every requirement—in resistance to specific corrosive agents, resistance to high temperatures, resistance to physical wear and deterioration.

USS

STAINLESS AND HEAT-RESISTING STEELS

USS CHROMIUM-NICKEL ALLOY STEELS ARE PRODUCED UNDER LICENSES OF THE CHEMICAL FOUNDATION, INC., NEW YORK, AND FRIED. KRUPP A. G. OF GERMANY

SEE STEEL MAKING — OUR EXHIBIT AT CENTURY of PROGRESS

Illinois Steel Company
CHICAGO, ILLINOIS

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This World's Fair Building Breathes its Air through *DUSTOP*

● To protect valuable mural exhibits from damage by dust-wear, the Johns-Manville building at "A Century of Progress" cleans its air by Dustop glass wool filters. The air for the building—laden with dust stirred up by the official busses which pass along the adjacent roadway—is cleansed of all impurities (96% to 98%) through two Dustop filter banks. (See lower right hand illustration.)

This is but another instance which shows how Dustop is solving air purifying problems in modern buildings. High dust, pollen and bacteria removing effectiveness, great dust retaining capacity, and low installation and upkeep costs are key factors which cause leading builders to specify Dustop. For further information on the Dustop filter, send your name today, indicating the nature of your air filtering requirements. Owens-Illinois Glass Company, Industrial Materials Division, Toledo, Ohio. (Dustop is assembled and installed in Canada by General Steel Wares, Ltd., Toronto, Canada.)

1873 • SIXTIETH ANNIVERSARY • 1933

We invite you to visit the Owens-Illinois Glass Block Building at "A Century of Progress". Here you will find the interesting official exhibit of the National Warm Air Heating and Air Conditioning Association.

Building designed by Ely Jacques Kahn

Air intake on dusty roadway

OWENS-ILLINOIS DUSTOP AIR FILTERS

MONOLITHS IN CONCRETE

ST. JOSEPH'S CHURCH
SEATTLE
A. H. Albertson, Architect

Consider the simplicity of this construction: from foundation to top of tower—the walls *and their exterior and interior surfaces;* the floors, piers, stairs, beams, roof and dome—there is but one material: Reinforced Concrete.

Colors: Exterior, a light tan; interior, stained rust or wine color with the suggestion of tarnished silver underneath. Seating capacity, 1,000; ample institutional space. Approximate cost (1930), $300,000.

Monolithic concrete construction is equally suitable for small churches.

Information sent on request—free.

Address Your Inquiries to Room 2810

PORTLAND CEMENT ASSOCIATION **33 W. GRAND AVE., CHICAGO**
CONCRETE FOR PERMANENCE

a broad-shouldered coat won't make a Dempsey out of a puny man. The name "iron," used as a cloak, never turned an imitation into the real thing.

When You Need REAL Iron—

Be Sure That You Get It!

There are certain pipe installations that demand pipe made of real iron—genuine Puddled Iron, such as Reading makes. In these installations, no substitute metal, no pipe which merely calls itself iron, will do the job so well. For genuine Puddled Iron is unique in its ability to resist a *combination of destructive forces* longer than any other metal.

Reading Puddled Iron Pipe has been known and used since 1848. It has established records of endurance that are unequalled. It has received harder punishment, more thorough testing in actual service than any other kind of pipe. That is why you are SURE of satisfaction and economy when you use it for installations in which it can serve best.

- *For Underground Service Connections*

  In acid or alkaline soils, Reading Puddled Iron Pipe pays for itself many times over in freedom from repair and replacement costs. Under electrolytic action—the destroyer of all metals—Reading Pipe is the *least* affected.

- *For Cold and Hot Water Lines*

  Reading Puddled Iron Pipe assures *generations* of trouble-free service with all ordinarily corrosive waters. In thousands of such installations, it has been proved that the life of Reading Pipe is from two to five times longer than that of ordinary pipe.

- *For Drains*

  Alternating wet and dry conditions often mean swift death for most kinds of pipe. Reading Puddled Iron Pipe is especially adapted to give long service under such conditions.

- *For Heating Supply Risers, Distributing Mains and Return Lines*

  Due to its high melting point (300 Degrees F. higher than that of steel) and because of the presence of non-metallic silicate, Reading Puddled Iron is far less subject to destructive oxidation than other ferrous metals.

READING PUDDLED IRON

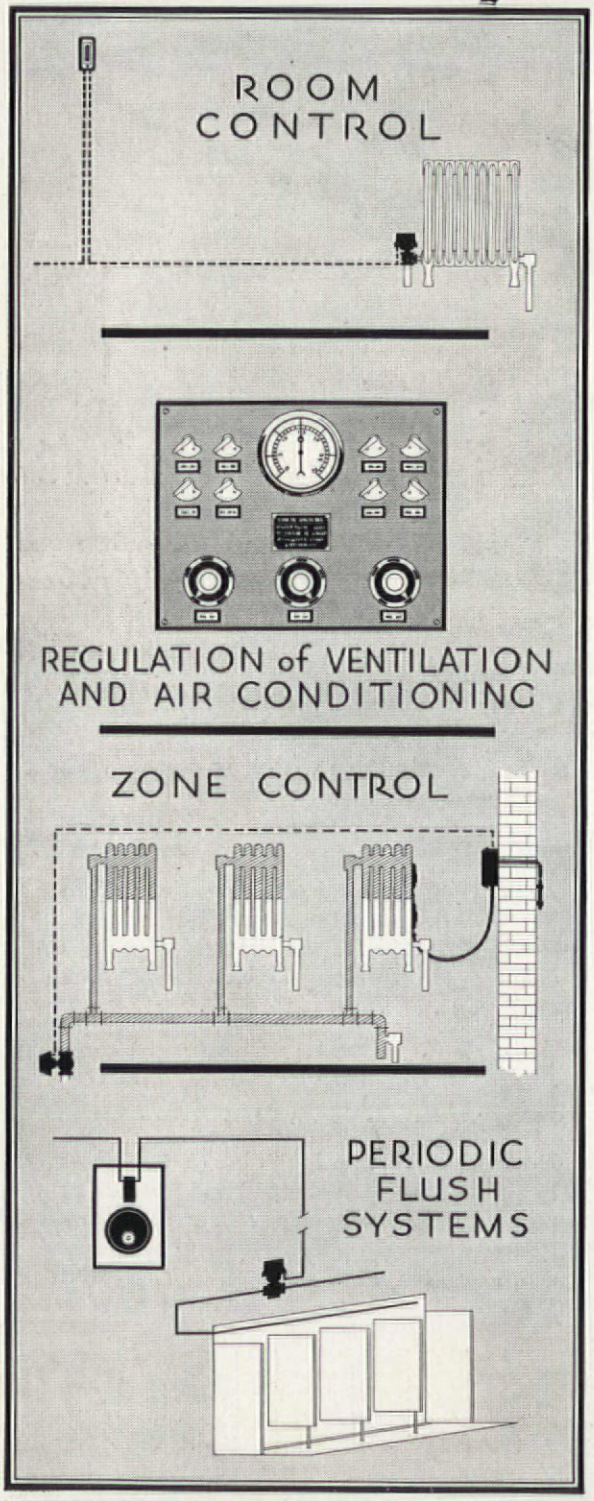
SINCE 1848

READING IRON COMPANY PHILADELPHIA

Science and Invention Have Never Found a Satisfactory Substitute for Genuine Puddled Iron

Modernize for Economy!

NRA MEMBER U.S. WE DO OUR PART



JOHNSON

Automatic Control Systems are "Economy Insurance"

THOROUGHLY MODERN, yet based on nearly half a century of experience in design, manufacture, and installation, *Johnson apparatus* is available for a variety of applications. It plays an important part in the modernization of the mechanical plant in any type of building.

To control ROOM TEMPERATURES, *Johnson thermostats* operate simple, rugged radiator valves or mixing dampers. Room thermostats may be had in the single temperature pattern or with the well-known *Johnson "Dual"* arrangement, providing a reduced, economy temperature when certain sections of the building are unoccupied. . . . For VENTILATION AND AIR CONDITIONING plants, there are thermostats, humidostats, and switches to control valves and dampers, start and stop motors on temperature and humidity variation. Heating, cooling, humidifying, dehumidifying—whatever the problem, *Johnson equipment* is the answer . . .

JOHNSON ZONE CONTROL has been developed to a fine point. Groups of radiators are controlled by the *Johnson "Duo-Stat"* in accordance with the proper relationship between outdoor and radiator temperatures. . . . JOHNSON PERIODIC FLUSH SYSTEMS are simple, dependable, utilizing the full force of the water supply for cleansing, and reducing the load on supply and waste pipes by intermittent flushing in various parts of the building . . .

ECONOMY is the direct dividend paid by *Johnson installations.* Comfort and convenience are the inevitable by-products. . . . Sales engineers located at thirty branch offices in the United States and Canada will survey and report on *your* requirements, without obligation, just as they have done in the case of countless buildings and groups of buildings all over the continent.

JOHNSON SERVICE COMPANY

MAIN OFFICE AND FACTORY, MILWAUKEE, WIS.
BRANCH OFFICES IN ALL PRINCIPAL CITIES

JOHNSON HEAT CONTROL

Entire custom-built installations, standard bar designs from stock, or individual dispensing units of every type, are a part of the complete Liquid Line. Send for descriptive literature.

NRA WE DO OUR PART

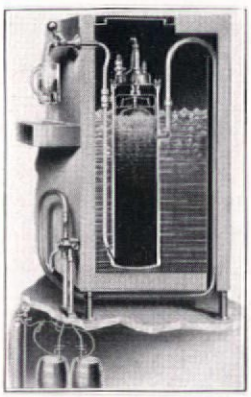
FOR SUCCESS!

in Satisfying Clients on Bar and Taproom Layouts

● The architect can provide the elements of success for installations of this type. He strikes the atmospheric keynote which influences patrons favorably. But it is his ultimate interest, as it is ours, that success shall be fully realized as planned.

● In the details of such commissions he will find many points on which our specialized designers and engineers can offer valuable cooperation. Architects on club, restaurant or other similar jobs are invited to use our practical experience and broad facilities which include unexcelled layout service.

● As manufacturers of every type of beer drawing equipment from complete bars to tapping bungs we can assure the successful performance of the completed installation. Make contact with the nearest "Liquid" branch or write us for full information.



The Liquid-Zahm Controlled Pressure Beer Drawing System is typical of Liquid's leadership in serving beer at its best. The brewery quality of any brand is preserved in customer's glass. You gain the profitable economy of more steins per barrel.

Liquid

Modern Bars and Beer Drawing Equipment

THE LIQUID CARBONIC CORPORATION

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HAVE you tried colorful terrazzo in clubs and residences for the floors of recreation rooms, game rooms, refreshment rooms? It is particularly well suited for them. It is easily placed in areas of odd shape, as well as in those more conventional. Impervious to scuffling feet and scraping chairs and tables, hard to stain, easy to keep clean, a fine terrazzo floor takes hard punishment and keeps its good looks. It can be made to form a sure footing around the ping-pong tables and a smooth-as-silk surface for dancing. And when you let fancy dictate unusual murals you can continue your theme in the floor, for in fine terrazzo *you* design the figures and pattern and *you* select the colors—*any* colors. With the provision, of course, that it is *fine* terrazzo, which any good terrazzo contractor will tell you is made with white portland cement. (Many of them will automatically say Atlas White portland cement.) We'll be glad to furnish details. Write Universal Atlas Cement Co. (*Subsidiary of United States Steel Corporation*), 208 South LaSalle Street, Chicago.

ATLAS WHITE FOR FINE TERRAZZO

ATLAS WHITE PORTLAND CEMENT—PLAIN OR WATERPROOFED

BETTER LIGHT BETTER SIGHT

SMART • EFFICIENT • MODERN

The Magnalux Luminaire

ALL of the requirements of the most modern lighting practice are combined in the Magnalux luminaire: Smart appearance . . . maximum efficiency . . . modern design . . effective light distribution.

Its hyperbola-shaped basin, made of dense Galax glass, is furnished in both plain and ornamental designs. A slender stem connecting the canopy and husk completes the simple lines, enhancing its appearance.

Light from Magnalux luminaires is distributed evenly on the ceiling, and also is so softly diffused through the basin that glare is avoided. So accurately is the light distributed that one is not even conscious of its overhead source.

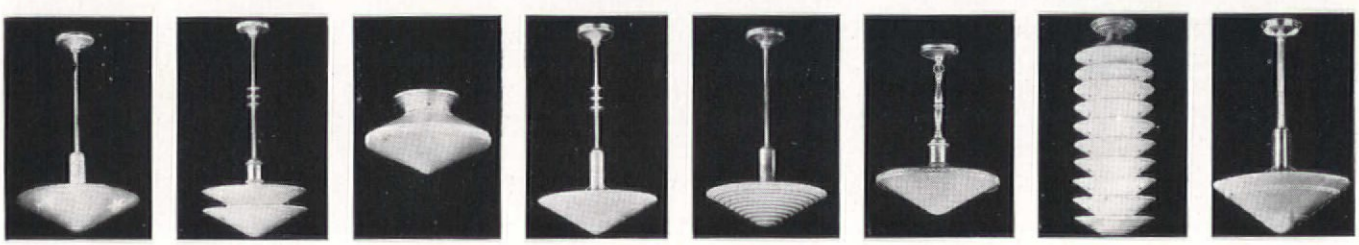
The reflecting properties of the Galax glass basin contribute to the unit's high efficiency, which is above 90 per cent . . . unequalled by any other semi-indirect lighting fixture.

The Magnalux luminaire is available for either semi-indirect or totally-indirect illumination in homes, offices, stores or other commercial buildings.

The Westinghouse representative near you will gladly furnish complete information—or simply address Westinghouse, Room 2-N, East Pittsburgh, Pa. T 79673

WESTINGHOUSE
ELECTRIC & MANUFACTURING COMPANY

COMBINATION POSSIBILITIES OF MAGNALUX LUMINAIRES



The ARCHITECT'S LIBRARY

From The Landscape of England

A COTSWOLD WOOL TOWN—NORTHLEACH, GLOUCESTERSHIRE

THE LANDSCAPE OF ENGLAND. By Charles Bradley Ford. B. T. Batsford, Ltd., London; and Charles Scribner's Sons: 597 Fifth Avenue, New York City. 67 pages text. 135 plates. $3.75

In this book, the eighth of the "English Life Series," England is divided into five main regions which are carefully described and illustrated, although the text is necessarily brief. The illustrations tell a complete pictorial story with drawings by Brian Cook and well-chosen photographs of the English landscape.

The text analyzes the features and character of the different regions, forming a valuable record of the appearance of England during the earlier years of the twentieth century.

Reference is made to the main sociological and industrial movements of past and present generations, geological elements and physical conditions, and their effect upon the development of agriculture, architecture and building. The easy narrative style of the text, and the illustrations make the book a delightful addition to one's general library.

A complete index is given at the end of the book.

•

A METHOD OF LIGHTING THE STAGE. By Stanley R. McCandless. Theatre Arts, Inc., 119 West 57th Street, New York City. 132 pages. Diagrammatically illustrated. $1.50

The method of stage lighting described herein has been used with success professionally. The book describes the dramatic qualities of light, analyzes the various functions of light on the stage, and presents a method for the solution of stage lighting problems.

The author tackles the subject in a logical and simple manner, analyzing the lighting effect to be produced and determining the characteristics of the simplest standard lighting units necessary for the purpose. This definite plan encourages the technician, designer and producer to use light in all its qualities within the practical limits established by the instruments.

Five sections comprise the plan: (1) the procedure by which the lighting of a scene progresses from the script to the stage; (2) area lighting through the use of lens units; (3) toning and blending by borders and footlights; (4) background lighting; (5) use of special instruments for special effects.

Readily applicable technical data are given, also tables and formulas of value to the artist, the designer, the technician and the director.

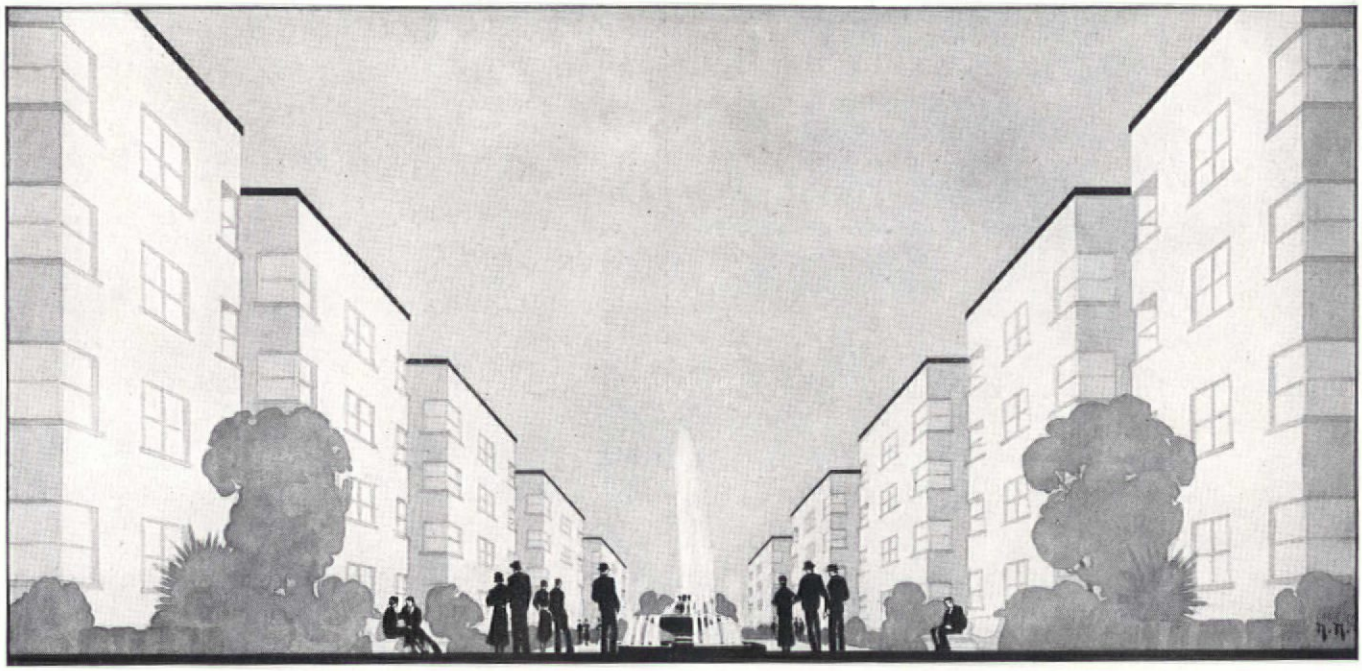
•

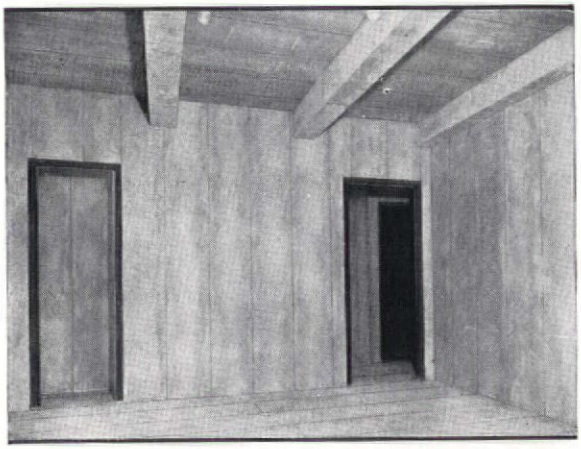
GRAPHS FOR ENGINEERS AND ARCHITECTS. By Donovan H. Lee, Technical Director, Aston Construction Co., Ltd. E. & F. N. Spon, Ltd., London; and Spon & Chamberlain, 120 Liberty Street, New York City. 88 pages. Illustrated. $2.00

Mr. Lee has arranged the information he has gathered during many years of experience to form a practical labor saver for structural engineers, architects and surveyors. The graphs he has used in this volume give direct results and may be used in conjunction with existing tables and technical handbooks.

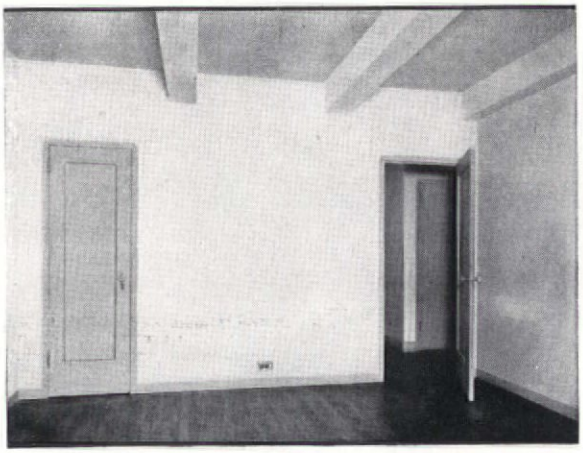
Graphs are given of height of buildings, economic depth and size of foundations, weight of brick walls, window sizes and deductions, floor constructions, panel loads, safe load on brick piers, timber beams, structural steelwork and stanchions. There are also chapters and illustrations on wind stresses and reinforced concrete columns and beams. Although the book was written primarily for English consumption, wherever likely to be useful, scales are given in United States tons or in pounds.

IT'S A "NATURAL" FOR HOUSING PROJECTS





Plank *erected, ready for finish.*



Finished wall and ceiling of Plank.

GYPSTEEL GYPSUM PLANK has the qualities most sought after by planners and builders of housing projects, large or small. It is fire-resistive. It is easily handled—can be bored, cut, sawed or nailed like wood and without detailed specifications, since it is so standardized. It has durability *and* lightness in weight. For floors and roofs, joints of *Gypsteel Plank* are broken at random, regardless of steel framework. For partitions, full length units reach from floor to ceiling.

Gypsteel Plank is a solid slab of factory-cast gypsum—2 inches thick, 15 inches wide, 10 feet long—bound and re-inforced with galvanized steel, tongued and grooved.

This modern, fast, construction unit can be used to advantage for floors, walls, roofs, partitions.

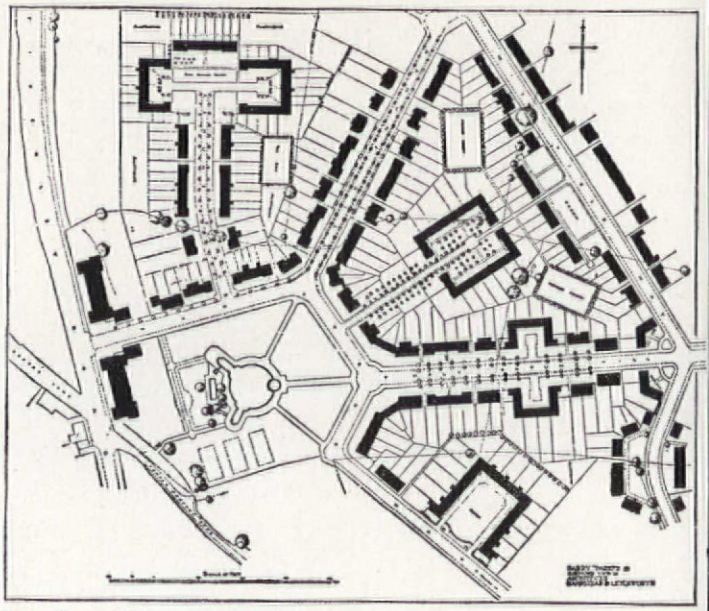
Write us for the new booklet on Gypsteel Gypsum Plank

GYPSTEEL PLANK gypsum

Trade-Mark

U.S. Pat. No. 1,854,396. Canadian Pat. No. 328,519
Other U.S. and Foreign Patents Pending

STRUCTURAL GYPSUM CORPORATION
535 Fifth Avenue, New York



From Town Planning in Practice

HAMPSTEAD GARDEN SUBURB. SUBSIDIARY CENTRE

TOWN PLANNING IN PRACTICE. An introduction to the Art of Designing Cities and Suburbs. By Sir Raymond Unwin, F. R. I. B. A. The Century Co., 353 Fourth Avenue, New York City. 416 pages. Illustrated. $10.50

The popularity and value of this book are evidenced in this, the eighth printing. The author is a leader in the field, president of the Royal Institute of British Architects and past president of the Town Planning Institute. He has been adviser on many American projects, including the regional plan of New York City.

For reference purposes this book covers the subject in all its fine points and intricacies. The illustrations, numerous and complete, are indexed alphabetically and in the margins of the text pages numbered references are made to appropriate illustrations.

•

ARTIFICIAL LIGHT AND ITS APPLICATION IN THE HOME. Prepared by the Committee on Residence Lighting of Illuminating Engineering Society. Mariquita Dygert, Chairman. McGraw-Hill Book Company: 330 West 42nd Street, New York City. 145 pages. Illustrated. $1.50

Designed primarily as a textbook for house planning and home economics classes, this volume will interest only those architects who are seeking a simple explanation of the elementary principles of illumination. The text is nontechnical, and does not proceed far beyond a lay discussion of fundamentals. Recommendations are made for lighting outlets, wall switches and convenience outlets in various rooms, for various types of fixtures and for sizes of lamp bulbs.

THE REDUCTION OF NOISE IN BUILDINGS. Recommendations to Architects. By Hope Bagenal and P. W. Barnett. Building Research Bulletin No. 14, Department of Scientific and Industrial Research, London. 30 pages, with tables and diagrams. Copies obtainable at 20 cents each, prepaid, from the British Library of Information, 270 Madison Avenue, New York City.

This most recent report of the Building Research Station, although limited in pages, provides much compact and valuable information. Recommendations are made for siting the building and its various rooms, designing a structural defense against noise, minimizing equipment noises and preventing other internal noises.

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INDUSTRIAL LIGHTING. Part I—Docks, Warehouses and Their Approaches. By J. S. Preston. Illumination Research Technical Paper No. 14, Department of Scientific and Industrial Research, London. 34 pages. Illustrated. Copies obtainable at 20 cents each, prepaid, from the British Library of Information, 270 Madison Avenue, New York City.

This paper—the fourteenth of a series—has been compiled, for the guidance of illuminating engineers in undertaking dock lighting installations, to define adequate and suitable systems of illumination and to offer practical suggestions for the improvement of existing lighting conditions in docks.

Other papers in this series include: (No. 6) The Natural Lighting of Picture Galleries; (No. 7) Penetration of Daylight and Sunlight into Buildings; (No. 10) The Effect of Distribution and Color on the Suitability of Lighting for Clerical Work; (No. 11) The Efficiency of Light Wells; and (No. 12) The Daylight Illumination Required in Offices.

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COMPOSITION AND RENDERING. By A. Thornton Bishop. John Wiley & Sons, Inc., 440 Fourth Avenue, New York City. 128 pages. Illustrated. $2.75

Information for pencil draftsmen is contained in this book, concerning medium and material and the delineation of various textures. The text matter is presented in five parts, individual in themselves, but all related to the subject, "Composition": (I.) Composition; (II.) A Review of Criticisms; (III.) Lead Pencil Indication; (IV.) Composition in the Theater; (V.) Visualization.

Part III is of particular interest, being concerned with methods of indicating, in pencil, building materials and accessories used in architectural renderings. Interpretations are shown of types of building materials, including brick, limestone, fieldstone, rubble stone, granite, stucco, half-timber, clapboard, slate and shingles, and roofing tiles. There are plates also of doorways, windows, grilles and ironwork, interiors and furniture, and gardens. All illustrations occur on left-hand pages with the descriptive matter on the facing page.

ARCHITECTS' ANNOUNCEMENTS

P. B. Kapp and D. E. Kennedy, architects, have moved their offices from the Leitzell Building to the Glennland Building, State College, Pennsylvania.

James Lloyd Berrall, architect, announces the opening of offices for the practice of architecture at 22 South Park Street, Montclair, New Jersey.

Carlton Brush, architect, announces that he has closed his office in Nashville, Tennessee, having accepted the position of Maintenance Engineer in the Birmingham Branch Office, Service Division, Mortgage Loan Department, of The Prudential Insurance Company of America, with offices in the Jackson Building, Birmingham, Alabama.

Joseph Hoover, architect, has opened an office for the practice of architecture at 605 Starr Building, Grant Street and Third Avenue, Pittsburgh, Pennsylvania.

Harold H. Ehlert, architect, announces the removal of his office from 2437 Tyler Avenue, to 29 Collingwood Avenue, Suite 203, Detroit, Michigan.

William H. Elliott, architect and engineer, has established an office in the Stewart Building, Room 215, Easton, Maryland, for the general practice of architecture and engineering.

WATER COLOR EXHIBITION

The Pennsylvania Academy of the Fine Arts and The Philadelphia Water Color Club announce an exhibition of original work by living artists (of any nationality) in water color, black and white, pastel, or drawing with pencil, crayon or pen, not before publicly shown in Philadelphia, to be held at the Academy from November 5th to December 10th, 1933.

All work intended for exhibition must be entered upon official entry cards, which must be properly filled in and sent to the Academy by Monday, October 9th. Further information may be obtained from The Pennsylvania Academy of the Fine Arts, Broad Street, Philadelphia, Pennsylvania.

STUDY OF SLUMS AND BLIGHTED AREAS

The Phelps-Stokes Fund has announced a comprehensive and intensive study of slums and blighted areas, their causes, prevention, elimination and conversion for proper housing or other uses.

Professor James Ford of the Department of Sociology at Harvard University and Editor of the twelve volumes of the President's Conference on Home Building and Home Ownership, will be Director of this investigation; George N. Thompson, until recently Assistant Chief of the Division of Building and Housing of the United States Bureau of Standards in Washington, will be Associate Director.

This research will include a history of slum prevention, demolition and rebuilding in New York City, supplemented by whatever is pertinent and valuable in the experience of other American and European cities.

An office for this investigation will be opened and maintained at 101 Park Avenue, New York City, in connection with those of the Conference on Home Building and Home Ownership.

Mr. I. N. Phelps Stokes and Dr. Thomas Jesse Jones, Educational Director of the Phelps-Stokes Fund, will cooperate actively in the study.

CALENDAR OF EXHIBITIONS AND EVENTS

October 25-27	National Conference on Low-Cost Housing, Cleveland, Ohio, sponsored by The Cleveland Engineering Society.
Until November 1	"A Century of Progress," International Exposition at Chicago.
November 5-December 10	Annual Philadelphia Water Color Exhibition, to be held at the Pennsylvania Academy of the Fine Arts, Broad Street, Philadelphia.
1934 February 5-9	Third International Heating and Ventilating Exposition, to be held at Grand Central Palace, New York City.
Until June, 1934	Remodeling Competition, conducted by the Good Housekeeping Studio, 57th Street and Eighth Avenue, New York City.

THE COLONIAL AND FEDERAL HOUSE. By Rexford Newcomb, A.I.A. J. B. Lippincott Company: Philadelphia and London. 174 pages, 100 plates. $3.50

This volume is written for architects and prospective home owners wishing to plan or select a house on authentic Colonial or early Federal lines, yet adapted to contemporary modes of living. The illustrations, including plans and diagrams, are devoted to such houses and serve also as a general reference.

Mr. Newcomb welcomes the Colonial revival, and, for the layman in particular, describes carefully the architectural features of the period, talking in general of Colonial plans and design, and materials and construction.

In the chapters devoted to exterior walls and details, the roof, the doorway, windows and window treatment, the porch and sleeping porch, the interior, fireplaces and mantels, the stairway, hardware, and lighting, advice and recommendations are offered. There is also a profusely illustrated chapter on fences, gates, trellises, pergolas and garden houses. A carefully compiled bibliography of books on Colonial and Federal houses, exterior and interior, as well as regional studies is given at the end of the book.

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PUBLISHER'S PAGE

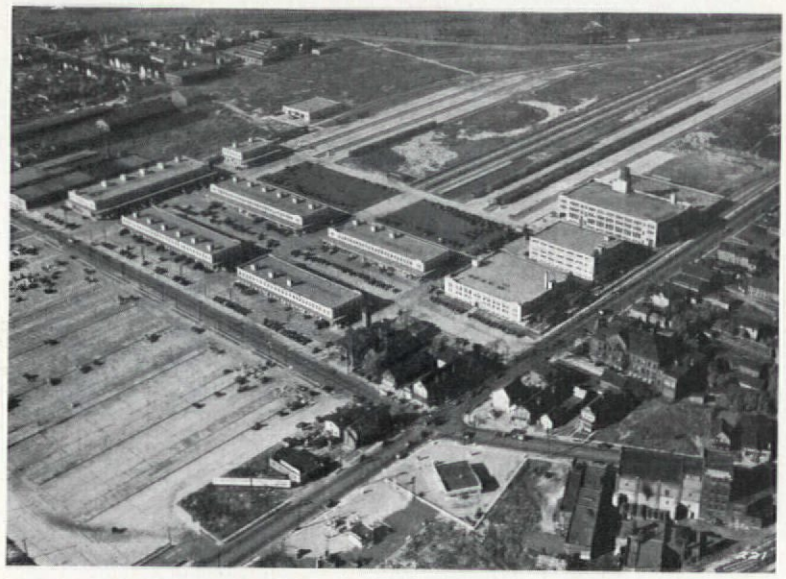
THIS ISSUE

The Work of H. T. Lindeberg, Architect.

H. T. Lindeberg, architect, is known as a foremost designer of country homes. An issue of The Architectural Record in April, 1924, was devoted to his earlier designs. With this issue The Record brings to date the more recent work of this architect.

A Cellular Steel-Unit House

By an extension of the use of the module, which in principle is merely a standard of measure employed to achieve uniform results, Mr. Lindeberg has originated what is in effect a new system of construction. The system involves the prefabrication of a steel structural unit in convenient modular sizes of which the entire shell of the house is welded together—walls, floors and roof. The cellular construction automatically provides conduits for air conditioning, including heating, refrigeration and humidification, and for electric wiring and plumbing.



NEXT MONTH

Niagara Frontier Food Terminal, Buffalo, New York. George S. Rider Company, architects and engineers; Hudson and Hudson, associate architects.

Food products, raw and processed, brought from a distance by railway and from the neighborhood by farm trucks, are exposed for sale to wholesalers and to buyers for chain stores, hotels, grocery and other retail distributors. There are storage buildings as well as markets, so that buyers may remove their purchases as they need them. The project is a valuable contribution both to the city planning and to economy in food distribution.

Modernization and Alteration—Bar and tavern, dining rooms, and office of Knickerbocker Hotel, Chicago. A solution of the problem of how to re-plan public space in a downtown hotel. Alteration by J. R. Davidson, architect.

Chain Store for Ladies' Dresses, by J. R. Davidson, architect—An alteration with unusual features for exterior and interior display and for economy in heating and ventilating.

Heating Equipment for Small Houses, by Theo. F. Rockwell—A study of heating and ventilating equipment for private dwellings ranging in cost from $3,000 to $30,000—designed for incomes of $1,500 to $15,000 a year.

Progress Reports on the Recovery Program

Architect and Client a Century Ago, by Hobart Upjohn.

Portfolio of Small and Medium-cost Houses.

Westland Cippolino

WESTLAND CIPPOLINO finds much of its popularity centered in bank screens. But its flowing design, and soft marine tints, insure the greatest versatility in interior use. It has been used with unusual success and harmony in many important structures throughout the country, and has most recently made its appearance in the new United States Post Office at Boston.

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V E R M O N T M A R B L E

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THE ARCHITECTURAL RECORD

OCTOBER, 1933 VOLUME 74—NUMBER 4

A CELLULAR STEEL-UNIT HOUSE

The module is a familiar device both in design and in construction. Its practical usefulness is attested by its ancient lineage. By an extension of the use of the module, which in principle is merely a standard of measure employed to achieve uniform results, Harrie T. Lindeberg has designed what is in effect a new system of construction. The system involves the prefabrication of a steel structural unit in convenient modular sizes of which the entire shell of the house is welded together—walls, floors and roof. The cellular construction automatically provides conduits for air conditioning, including heating, refrigeration and humidification, and for electric wiring and plumbing. To test the unlimited adaptability of the system, Mr. Lindeberg has produced a series of drawings illustrating a remarkable diversity of plans and elevations of both small and large houses.

That an architect of Mr. Lindeberg's antecedents has directed his experience and capacity as a designer towards the erection of a system of prefabrication is of course interesting as a biographical memorandum but is also an authentic sign of the trend in architecture. Trained in the office of McKim, Mead and White, Mr. Lindeberg early acquired distinction, particularly in country house design, through an imaginative use of materials in a traditional and picturesque setting. The drawings presented herewith show that the imaginative urbanity characteristic of his past work is not trammeled by the system of construction which he has achieved.

H. T. LINDEBERG, ARCHITECT . . . . By C. MATLACK PRICE

With the post-war decade it was inevitable that architecture should seek new expressions in form motivated in part by the subversive new ideas that reached the world through the Paris Exposition in 1925, and in part by a new conviction that architecture, or, more exactly, building, should be somehow integrated with the Machine Age; should in fact, find some development in the direction of volume production. In an analogy more imaginative than accurate, the production of houses suddenly found itself likened to the production of motor cars and ready-made clothing.

Two important factors tend to impair the hoped-for analogy between the successful mass production of houses and mass production of various other things. One lies in the strong human desire, amounting to a demand, for individual expression in the dwelling; the other lies in the factor of depreciation, which, even in a poorly built house, offers the manufacturer no replacement market. Houses built of wood in Massachusetts nearly three centuries ago are standing and occupied today.

Some time before residential architecture became preoccupied with the idea of any change at all, there appeared in 1923 the report of an investigation by Herbert Hoover, then Secretary of Commerce. This investigation, conducted by the Commission on Waste, covered the building trades and revealed, among other things, the amazing fact that waste in building operations averaged 53 per cent. Examining this figure further the Federation of American Engineering Societies allocated this extraordinary condition 65 per cent to management, 21 per cent to labor and 14 per cent to the public.

In the same year, 1923, the United States Bureau of Labor reported that it was unable to find a single building contractor, superintendent or foreman who had any record of work done per man per hour on any work in progress, or in

© Frontispiece (opposite page): House with Application of Module Design, by H. T. Lindeberg, architect. Rendered in color by John Wenrich. Renderings of houses, pages 256-288, by Daniel Neilinger; F. H. Frankland of the American Institute of Steel Construction, consulting engineer.

previous work, in spite of the volume of articles and interviews in trade journals and newspapers on the relative inefficiency of labor at this time as compared to the years before the general unionization of the building trades.

In addition to the implications of such conditions as these, there is the statement that the average buyer of a small house in a speculative real estate development pays nearly a third of the purchase price—not for land and house—but for the opportunity of buying. Here the high cost of overhead, organization, advertising and high-pressure salesmanship is obviously transferred to the purchaser.

Public indifference to wrong conditions being what it is, it is not surprising that the years of prosperity following 1923 saw no noticeable or effective effort to correct such conditions or to formulate any constructive approach to the whole problem. There was needed, apparently, a breakdown of the national and world financial structure, as of 1929, to stimulate realistic action on a statistically proved waste of 53 per cent in building operations—deplorable at any time, but impossible now. Architects, builders, manufacturers of materials, prospective house owners must do something about it.

The challenge of modern conditions and objectives to residential architecture must be met simultaneously on two fronts—the economy-efficiency front, and the aesthetic front. And it must appear to any seriously judicial observer that we have met something very like defeat on the second, if not on the first.

If this seems to be a sweeping statement, let us examine the evidence. We can do no better than to repeat a set of questions propounded in a valuable article which appeared in a recent issue of "The Technology Review," an article which examines "Six Basic Methods That Have Been Suggested for Producing Better Houses Cheaper." The article is unusual and refreshing in its simple combination of clear vision and critical mind, and its writer, Mr. Burchard, very rightly takes the stand that any really successful solution of the problem in hand must satisfactorily answer the following questions:

"Is the system susceptible of almost universal application, regardless of site and climatic conditions? Can the parts of the house be made repetitively? Are these parts of a unit type permitting a wide flexibility of plan and elevation to meet a widely varying demand? Do the parts lend themselves to rapid assembly and early occupancy? Can they be put together simply and without any unusual equipment? Are the parts light enough to be shipped widely? Do these parts, when assembled, produce anything more than a structure? If finish is incorporated in the plan, is it of a type and quality acceptable to the buyer? Does the construction make a real effort to provide for accessories in such a way as to eliminate later cutting and fitting? Will the completed house be dry, easy and economical to heat in the winter, cool in the summer, will it shed snow and deflect the burning rays of the summer sun? Does the system make any effort to cope with tradition? Perhaps the most important of all, is the house actually cheaper for what is offered?"

With these questions Mr. Burchard interpolates a little brief but extremely vital commentary. On the first question he points out, and very rightly, that "Unusual roofs, cellarless houses, houses without heating plants, will not do. Making such economies dodges the problem. The house must be easily constructed on rolling land or on the flat, in city and country, over ledge or sand." He pertinently reminds that relatively few types of parts, and repetitive manufacture are essential to mass production. He sees a necessary concession to the human demand for individuality in implied flexibility of construction and construction units as affecting design. Again looking toward mass production, he points out that such unit weights as would necessitate cranes would involve too great a capital for the small construction company, and that the same question of too-great unit weights would make against wide shipment, and "Unless relatively few plants can make the houses, mass production will not be achieved." For each question he suggests, in his article, ample justification for its asking and an equal need for a satisfactory answer.

A part of the admirable clearness and directness of Mr. Burchard's presentation of six basic types of modern house construction lies in the fact that he confined his commentary, except by implication, to construction and economy. The whole question is vastly complicated by checking construction against design, whether you ignore traditional design entirely, or whether you try to effect some workable and acceptable compromise between the two.

With this brief survey of modern developments in residential architecture, uniting as it does insistence on new economics (probably by means of mass production) with new aspects of plan and stylization, we reach the objective of this article by presenting the manner in which the dual challenge is met by Harrie T. Lindeberg, a sane traditionalist, even a romanticist in architecture, with a background of fine and highly discriminating taste.

His whole experience built strong and abiding personal convictions that any house may be well-planned, comfortable and economic as a dwelling and pleasing in appearance. To achieve these ends and at the same time to design with the trend of the times, particularly with the objective of a maximum economy, might (but not necessarily would) involve certain compromises. He would see how few these compromises might be, if the architect could keep his presence of mind in the

face of modernism and thoroughly rationalize the problem and its possible solution.

One way to win a game is to change the rules, but this was no part of Mr. Lindeberg's intention or method. Without, therefore, changing the rules, he evolved a type of house which satisfactorily answers the set of realistic questions earlier quoted from Mr. Burchard's article—and based the evolution on a set of rigid premises:

1. Economy of construction,
   (a) By means of mass-production of units.
   (b) By means of simple construction and coordination of labor.
2. Economy and efficiency in terms of living comfort.
3. A module scheme of design, deriving from the construction units.
4. Elimination of ornament (even the cornice).

These represent radical departures for a traditionalist in architecture, while the ultimate house represents the stated objective of the newer designers.

To date the efforts to evolve a house mainly of mass-production steel units have gone toward steel-frame schemes, or to pre-fabricated units too large and heavy for wide shipment or easy manipulation on the job. Mr. Lindeberg's steel unit is a structural wall-unit, so that there is no frame, the same unit serving for walls, floor and roof.

Considering this unit, for the moment, as a subject for mass production, it is seen to lend itself to the simplest standardization—the perfect answer to Mr. Burchard's second question.

Answering his third question, the unit is sufficiently small to allow of such ample flexibility in both plan and elevation as to meet any reasonable variety of demand, of which flexibility there is graphic evidence in the accompanying illustrations.

On the fourth point, concerning rapid assembly and early occupancy, as well as unusual equipment necessary for handling this unit, its lightness, remarked before as necessary for wide shipment, also makes it easy to handle. The assembly is rapid, consisting solely of welding. The window and door frames, being of metal, are welded into the wall structure, making permanently tight joints, and the entire construction is dry above the foundation walls, which are of poured concrete in standard forms.

In the small house the floor construction runs from wall to wall, with two-inch curtain walls made of a composition of gypsum and acoustolithic plaster.

The cellular form of the construction units of the outer wall is such as to eliminate all the waste of cutting and fitting, since it provides for any form of heating and acts as conduit for air conditioning, humidifying, telephone and electric wiring and plumbing. This universal provision represents incalculable saving in the accumulated lost time of a variety of artisans working at cross-purposes in the customary lack of coordination in their work. Before Mr. Lindeberg had gone very far in his effort to evolve an effective new scheme for building he discussed every phase of residential work with specialists in structural, heating, sanitary, electrical and acoustic engineering, and this new type of construction represents a successful coordination of the work of several artisans in these fields on the job. Recalling that 21 per cent of the waste cited in the Hoover report of a total as 53 per cent in building operations was allocated to labor, this coordination is seen as attacking waste at one of its major sources.

As the floor and roof construction is of units similar to the wall units, the cellular nature of the entire structure is continuous, allowing for the practical possibility of heating the walls and floors at a low temperature, supplementing and conserving any central heating equipment and effecting insulation from the outside. This insulation, virtually eliminating loss of heat, is further made effective by the installation of vacuum glass in the metal sash, of which the frames are welded into the wall structure.

The entire scheme, moreover, is so simple—not only in principle but in actual construction—that no verbal description could achieve correspondingly few parts, or tell the story so clearly as the structural drawing included with the illustrations.

In brief, we are asked to envision a house which is virtually all in one piece (after the welding is

(*Continued on page 313*)

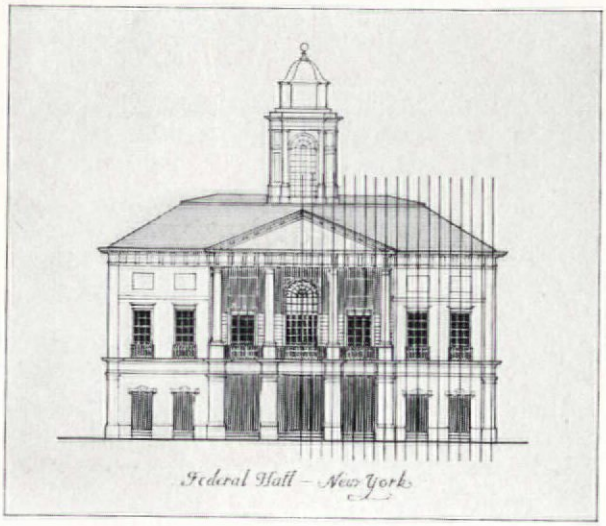
HOUSE AT POCANTICO HILLS, NEW YORK

A RETURN OF REASON IN ARCHITECTURE

By H. T. LINDEBERG

A paradox that must have been forcing itself increasingly upon the attention of all thoughtful architects is one that might well be called "the monotony of variety." Controlled variety—variety with reason behind it—has produced all the charm of picturesque accident and individuality that endears much old architecture to our more sensitive associations—but not the uncontrolled variety credited with having wrecked the Tower of Babel.

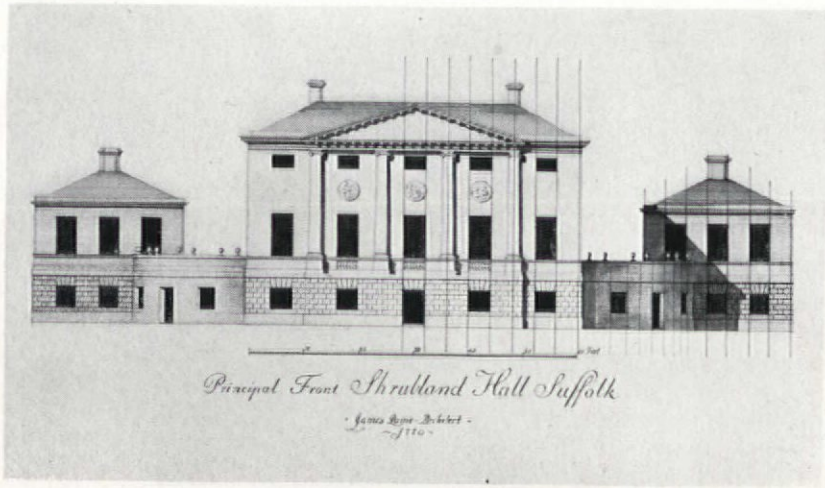
City or suburb—it does not matter—presents for the most part a monotonous patchwork of borrowed and half-assimilated styles, sometimes poor from a lack of imagination, sometimes poor from a too self-conscious straining toward the always hazardous objective of "originality." Here is none of the charming variety that developed naturally, in old countries, from variations on a consistent theme—as the difference between one Cotswold house and another, or one Pennsylvania farmhouse and another.



In an age which has subjected the human nerve centers to a variety of unrelated and mostly unexpected noises, often violent, scientific inquiry has measured the effects of these afflictions, in the unit called a decibel, upon the long-suffering human nervous system. It would be interesting if scientific inquiry could develop and chart a unit of shock based on the visual affliction afforded by today's architectural confusion. There can be no question but that visual shock, the violent affront to the logic and consistency of aesthetics "does things" to our aesthetic nerve centers. Violence is done to sensitivity—and where sensitivity does not exist, certainly the development of any sound or constructive aesthetic sense is hopelessly confused and discouraged.

When did this thing happen, this development of the distressing monotony of ill-advised variety?

Not in Greece, which, for all its heritage from Egypt, achieved pure creative design in architecture, and provided inescapable logical source-material for all time. Not in Rome, where the dominant minds were preoccupied with conquest, with administration, with legislation—and in the field of building, with engineering even more than with creative architecture, and with architecture largely as a material visualization of Roman pride



MODULE SPACING USED BY JAMES PAINE AND OTHER ARCHITECTS OF THE EIGHTEENTH CENTURY

These continued the Palladian tradition wherein certain proportions and size relationships were definitely established.

Drawings accompanying this article demonstrate the exactness with which similar dimensions are repeated. The design formulas of classical antiquity were based on order. Vitruvius, Vignola and Palladio codified the principles of a module system.

of Empire. Rome glorified the arch and developed older forms that were to motivate an even greater period of adaptation—the Renaissance.

But still there was order and authority—and sufficient of these to come alive again after the amazing architectural adventure of the interlude of dogma and mystery called the Middle Ages. The Gothic style came to flower on its separate stem and withered without perpetuating seed.

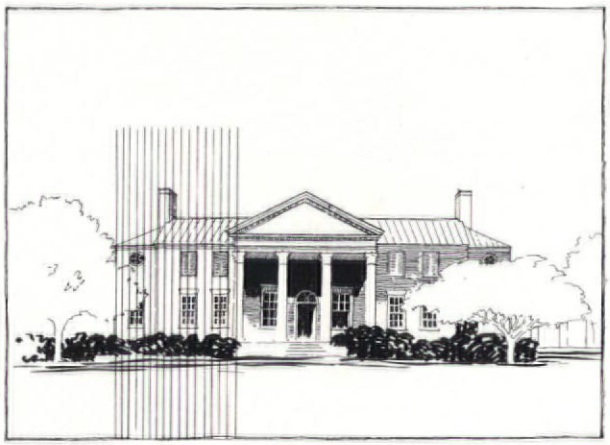
Yet no aesthetic anarchy arose with the intellectual revolt of the Renaissance—rather an age of intense rationalization, an age in which aesthetic authority for its own sake came to mean far more than creative experiment. An age of rationalization, vitalized, to be sure, by the new humanism, yet more than anything else preoccupied with analysis, with a passion for establishing rules that would make the authority of the period permanent, immortal. And this, for several centuries, seemed to have been achieved.

Certainly the discovery of the Roman manuscript of that old Augustan, Vitruvius, fired Vignola and Palladio to carry on the analysis of classic architecture and seek to set up a permanent basis of authority. Here, at last, was a codification of principles, of formulas, of a module system of design wherein certain proportions, certain relationships, were to be established for all time. Creative design was to be governed by order; architecture was to proceed, now, on a definite rationale.

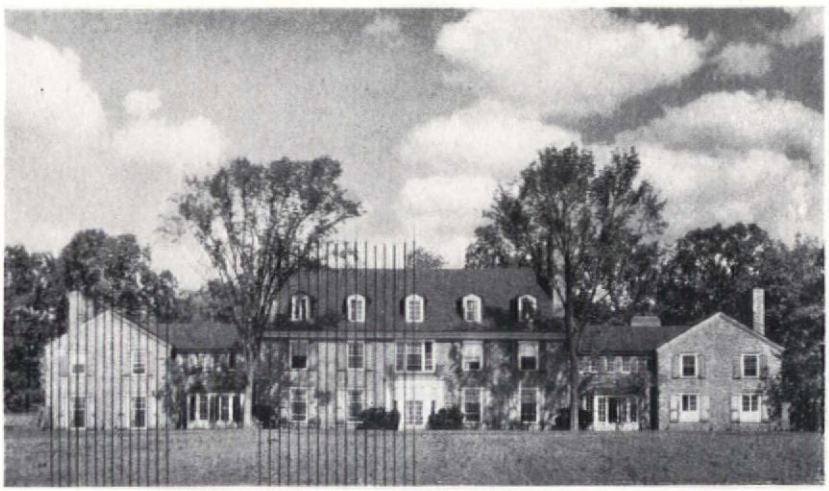
This could not be without its effect, which was, of course, first marked in Italy, while France was shedding vestigial Gothic forms under Francis I, and England, even with the Tudor importation of a few able Italian designers, was still too far from Rome, still too aesthetically nationalistic to become thoroughly Italianate. That phase was to come a little later after France had officially stamped its elegance on the manner of Renaissance Italy.

Then comes the purely, intensely Italian phase of English architecture, when Inigo Jones, after his second visit to Rome in 1619, designed the Banqueting Hall of Whitehall. Palladian architecture, then, became the fashion; instead of the Elizabethan country house, a newly sophisticated gentry built both houses and gardens in the Italian manner. And this stamp was even more deeply implanted by Sir Christopher Wren, who, for all that he had never been to Italy, seems to have found plenty to go on within the Jones precedent, and in the published works on Classical architecture of Vignola and Palladio and their followers.

Orderly, studied design seemed now to be the established thing, and it was orderly, studied design (whether he knew it or not) that inspired Carlyle to remark that Wren's Greenwich Hospital looked "as though it had been designed by a gentleman," a bit of architectural criticism, by the way, with implications of deep significance.

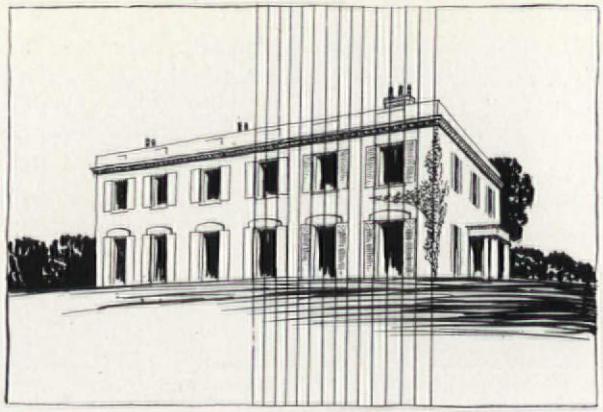


Reasoned architecture implies a balanced division of design elements and an orderly division of these elements into regularly spaced parts. A two-foot or other fixed module checks consistently through a range of architecturally fine buildings of orderly character.

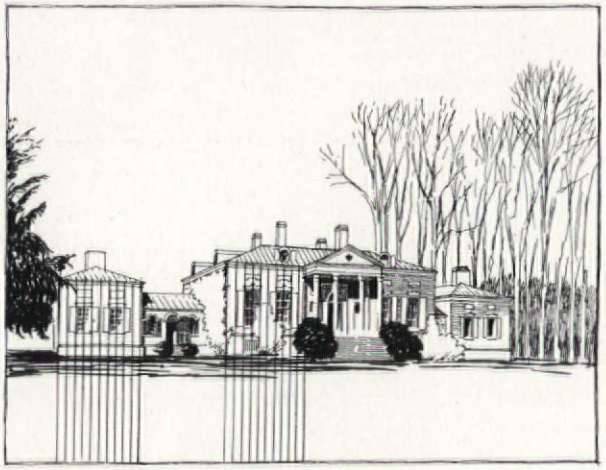


WHITEHALL, MARYLAND, SHOWN ABOVE, AND A HOUSE AT MORRISTOWN, NEW JERSEY, BY H. T. LINDEBERG

These show applications of the principle of spacing wall areas and windows according to a fixed module.



COLONEL HEBERDEN'S HOUSE
ST. DAVID'S HILL, EXETER C. 1810
ARCHITECT UNKNOWN



HOMEWOOD
BALTIMORE, MARYLAND

WESTOVER, VIRGINIA

Sir William Chambers, Gibbs, Kent, the Brothers Adam, Paine and Thornton—classicists all—saw their architecture as a thing of nice and exact proportions; and passed on the tradition, through such homely channels as Asher Benjamin's "Country Builder's Assistant," that was to spread something of the Classic Ideal up and down the Atlantic seaboard of the far-away American Colonies.

And here, such is the vitality of thoroughgoing doctrine, something more than an echo of the spirit of Vignola and Palladio came to inspire the hand of Samuel McIntyre, and certainly to make the works of Bulfinch what they were.

Not until the waning of the great American Classic Revival that had built the tall-columned mansions of ante-bellum days, and countless "Graeco-Baptist" churches, did the blight of aimless variety fall upon American architecture. It was a blight that impelled Mr. Cram to speak of the Great Philadelphia Centennial of 1876 as revealing us, architecturally, "the most savage of nations." From that time, clear through our uncertain emergence into a variety of strange, synthetic houses at the present Chicago Exposition, consistency has gone out of architectural thought and expression.

Can it be brought back? And if it can, are we to see such an objective as reactionary, as facing backward—or are we to see it as the only hope of re-establishing architectural authority, of bringing back again that quality of restfulness, of graciousness that we are ready enough to acclaim and to find beautiful in Westover or Monticello? Are we not, more than this age of gadgets and paradoxes readily lets us admit, victims of a wistful aesthetic nostalgia that would quietly but strongly impel us to turn back, if we would, to an architecture that might at least remind us of that lost quality of restfulness and graciousness?

Speaking for myself, I believe so—and it is because I believe so that my present study toward a type of house structurally new has taken for its basis of design a module system as definite as any that was set up by the architectural rationale of the Italian Renaissance. And there is another, and as of today, a highly important reason for a return to modules of design—the reason of structural economy.

And for all that a module system of design may imply to some people the defect of an arbitrary approach to design, examination of a great many established classics of traditional architecture fails to prove that such an ordered method needs to lead in fact to a sterile result.

For the consistent devotion of Inigo Jones to order in architecture you need not, necessarily, confine your admiration to such of his more formal expressions as the famous Banqueting Hall of Whitehall—it was equally apparent in such more informal instances as West Woodhay Manor, shown in one of the sketches.

The module again—orderly, reasoned architecture—appears in Shrubland Hall by James Paine, and in its perfection in "Colonel Heberden's House," St. David's Hill, Exeter, architect (unfortunately) unknown. The designer of any building with such exquisite simplicity and nicety of proportion, of mass and fenestration, deserves a special niche among architecture's immortals.

Nor is the module system of design to be seen as having to do only with highly formal or stylized architectural design. You have only to discover it in such charmingly informal instances as an old Cotswold stone house to come to believe that it must be the one lasting and valid basis of all permanently fine architectural design.

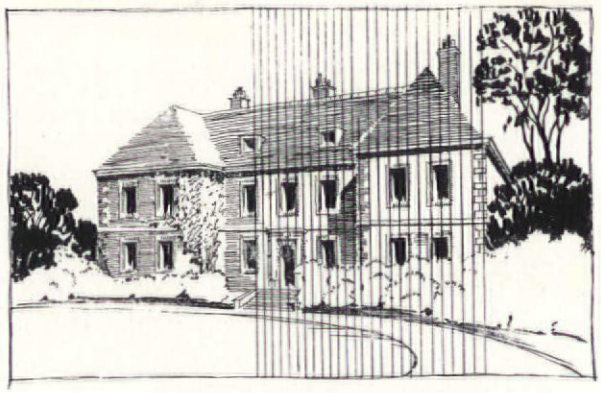
And the finest of all our traditional architecture in this country, to cite and illustrate only such well-known specimens as "Westover," "Homewood," and "Whitehall," shows, upon examination, the moduled order of its design.

Examples could be multiplied—virtually any of the buildings by Bulfinch, or famous old Federal Hall, are typically fine specimens, and whether you analyzed ten or a hundred you would come back to a renewed belief and enthusiasm in any credo that would restore and uphold the ideal of ordered design in architecture.

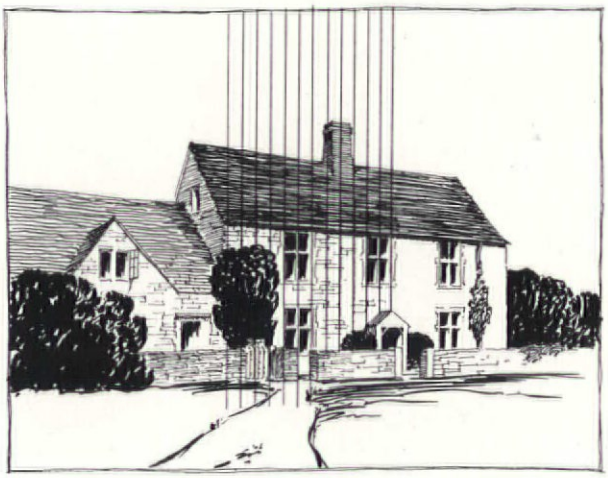
Since this two-foot module, checked against a number of buildings accepted as architecturally fine, seems to provide a workable flexibility, the construction unit is made to consist of a two-foot width. The result is an intelligent and economical coordination of basic factors of design and construction.

The conclusion to which study and examination have brought me seems both intellectually and aesthetically logical. Intellectually, a return of architectural design to a basis of order and authority; aesthetically, a two-foot module, checked through a range of architecturally fine buildings, guides the designer's hand into the way of buildings permanently sound and dignified.

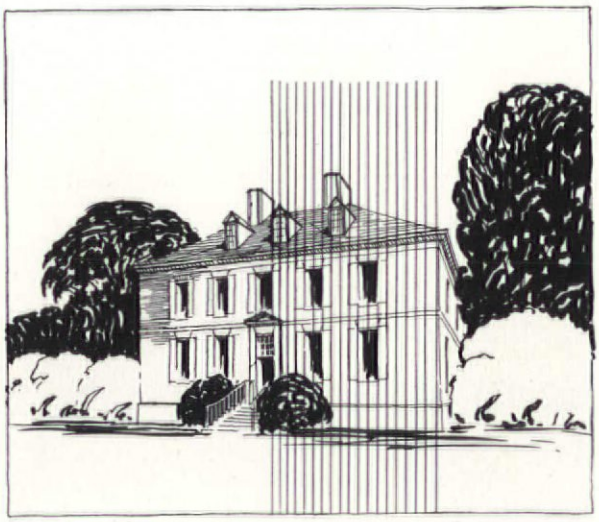
If architecture, for a long time the most admirably reasoned of all the arts, is to remain so, reason must again be integrated in its most systematic expression—and reason will long outlive the transient excitement of mere adventure.



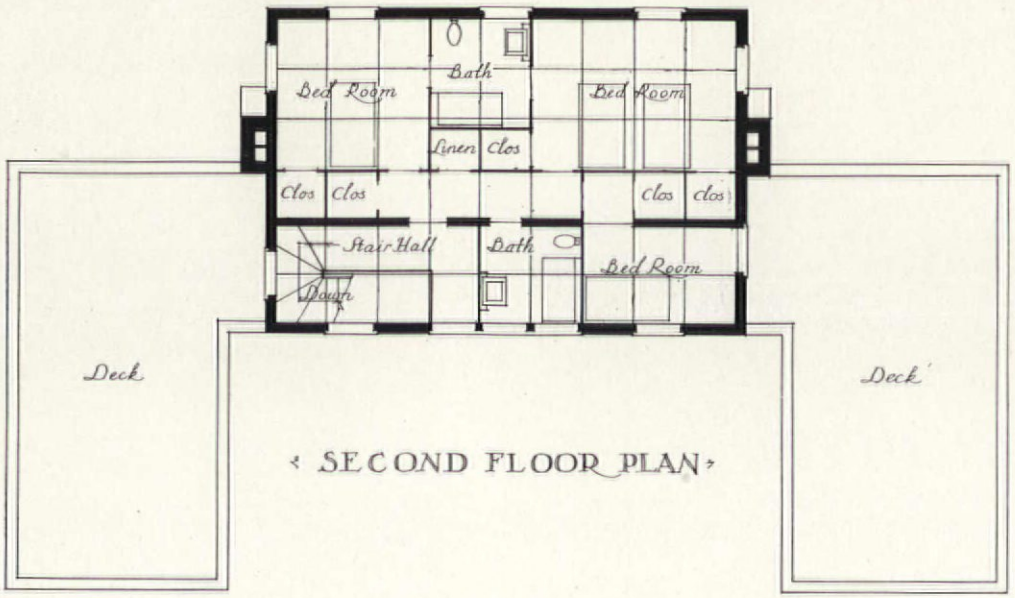
WEST WOODHAY MANOR HOUSE
INIGO JONES, ARCHITECT



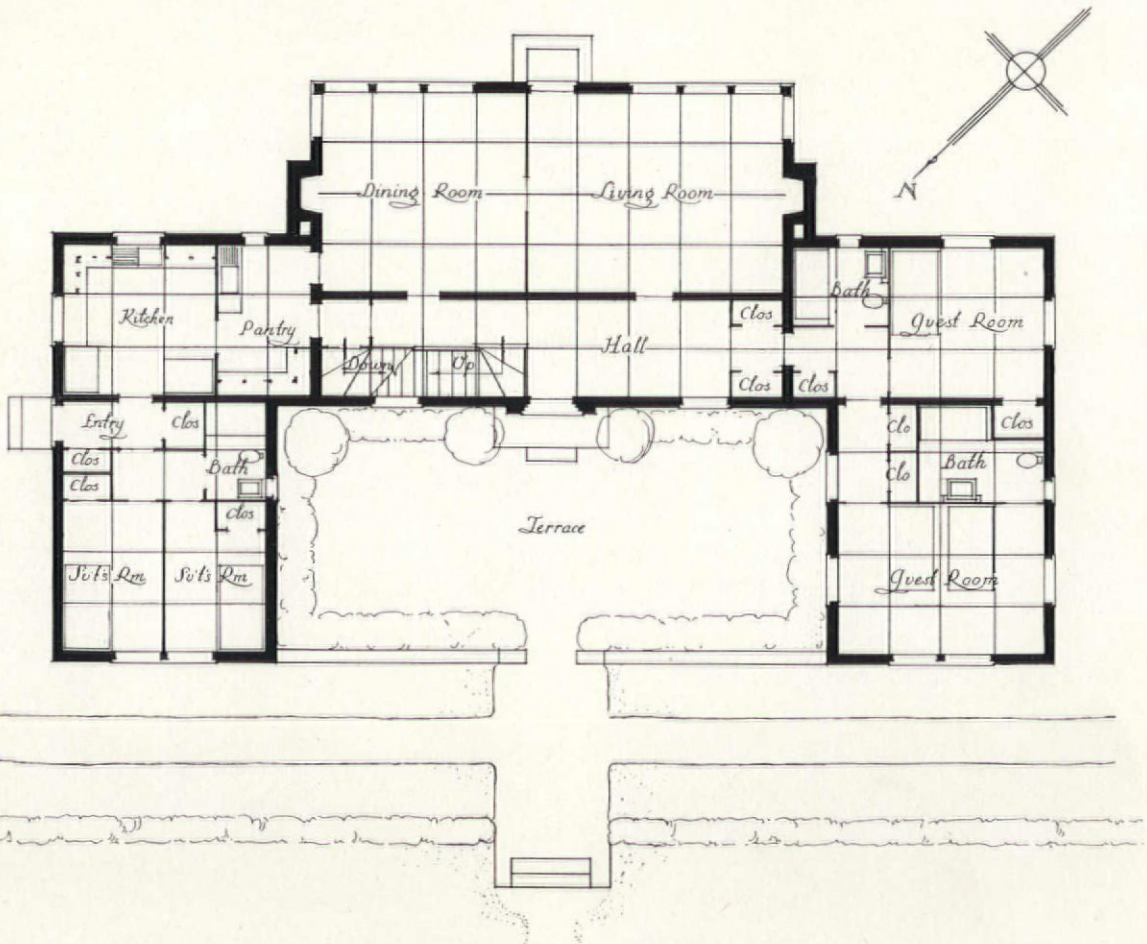
HOUSE AT BIBURY, ENGLAND



PRESIDENT'S HOUSE, WILLIAM AND MARY COLLEGE
WILLIAMSBURG, VIRGINIA



SECOND FLOOR PLAN



FIRST FLOOR PLAN

PLANS OF HOUSE WITH
CELLULAR STEEL UNIT CONSTRUCTION
See following pages.

H. T. Lindeberg - Architect

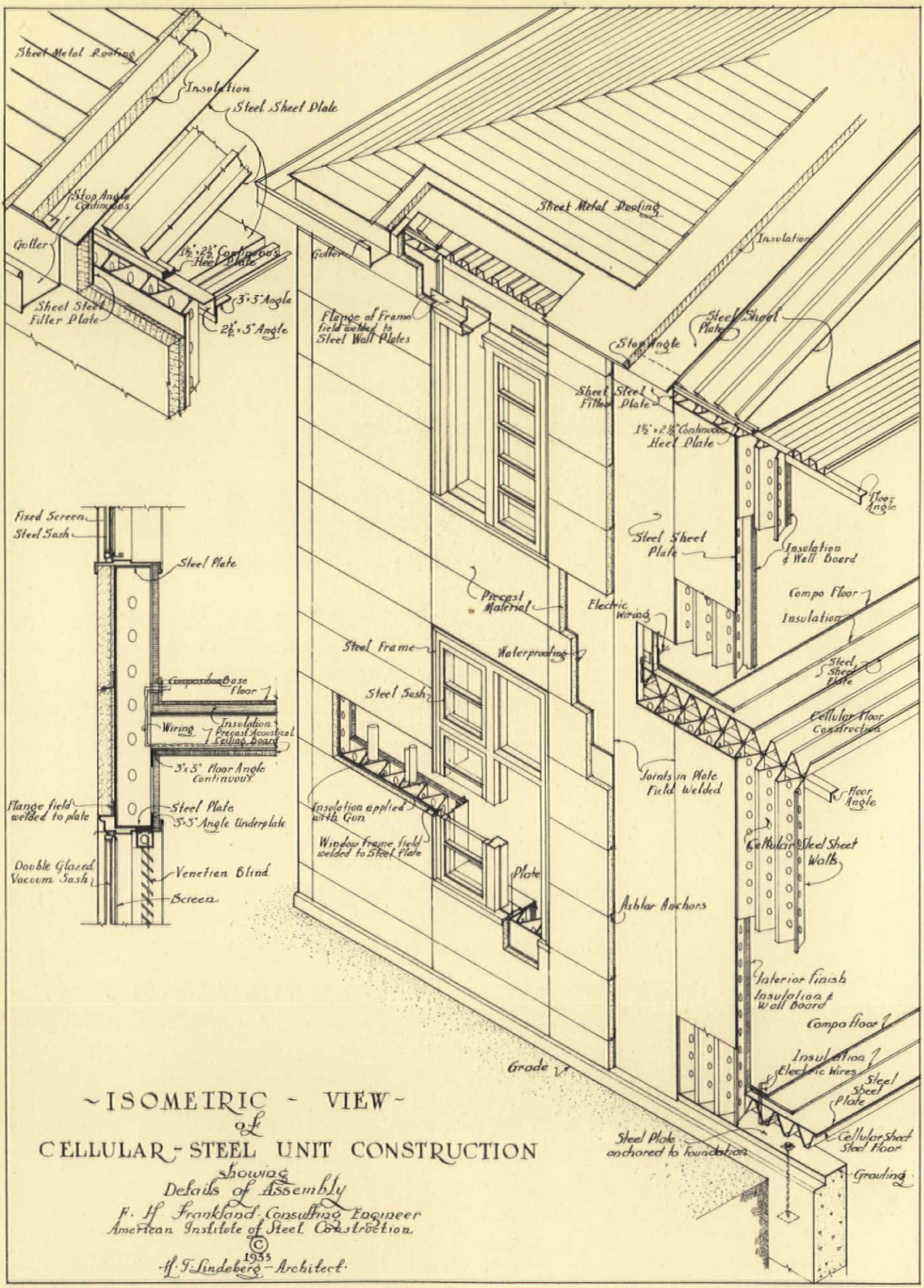
VIEW SHOWING ASSEMBLY
of
A CELLULAR-STEEL UNIT HOUSE

H. T. Lindeberg - Architect

HOUSE DESIGNS

demonstrating the flexibility of

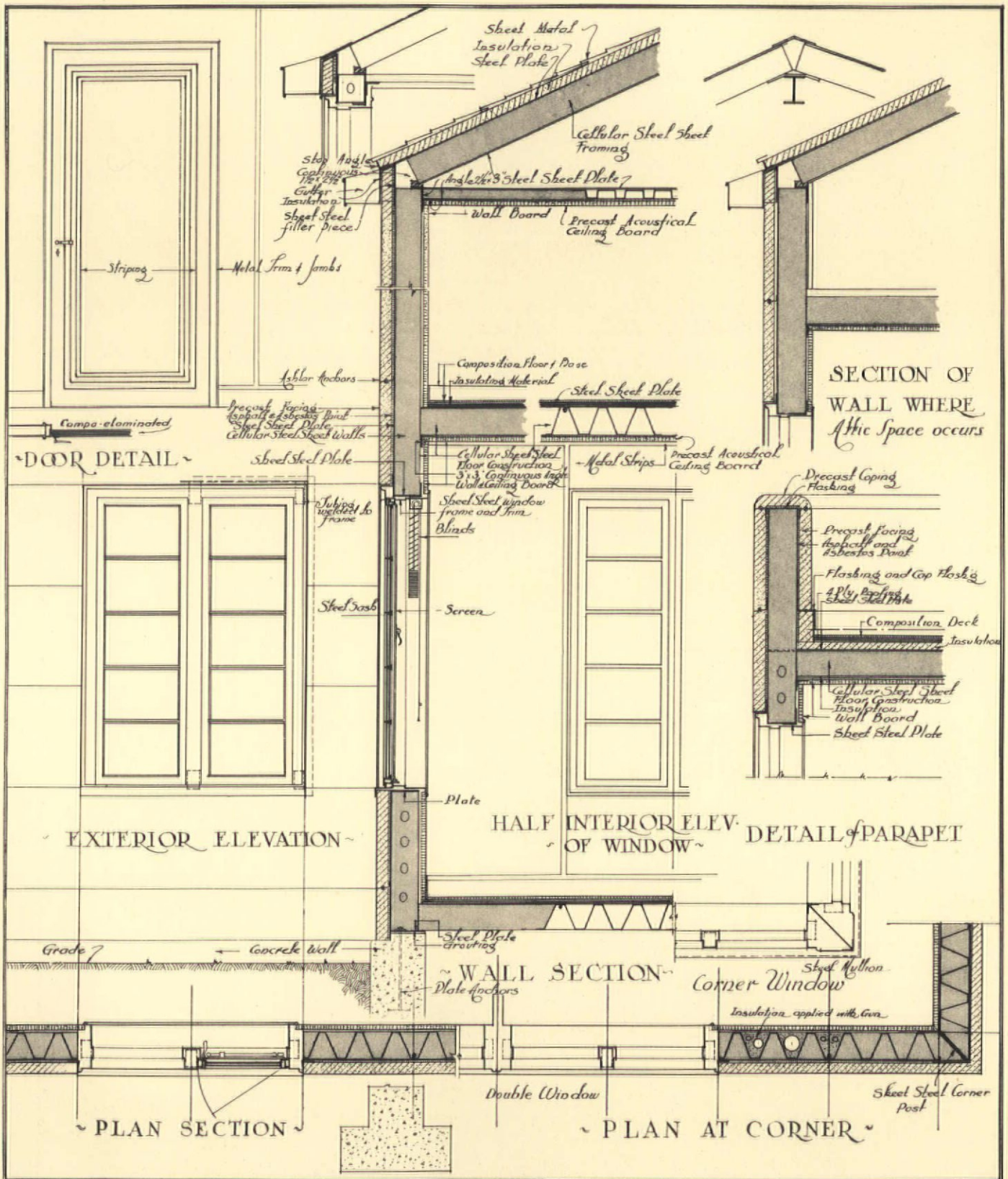
CELLULAR STEEL UNIT CONSTRUCTION



~ISOMETRIC ~ VIEW~
of
CELLULAR-STEEL UNIT CONSTRUCTION
showing
Details of Assembly

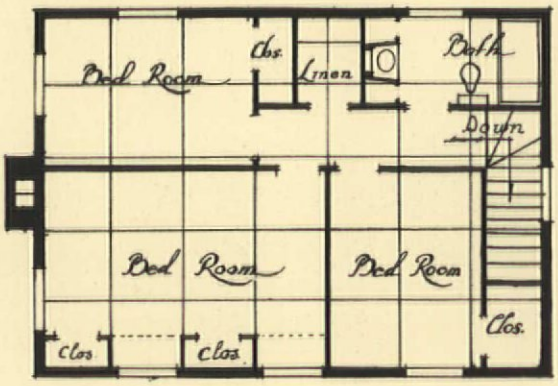
F. H. Frankland Consulting Engineer
American Institute of Steel Construction

H. T. Lindeberg - Architect

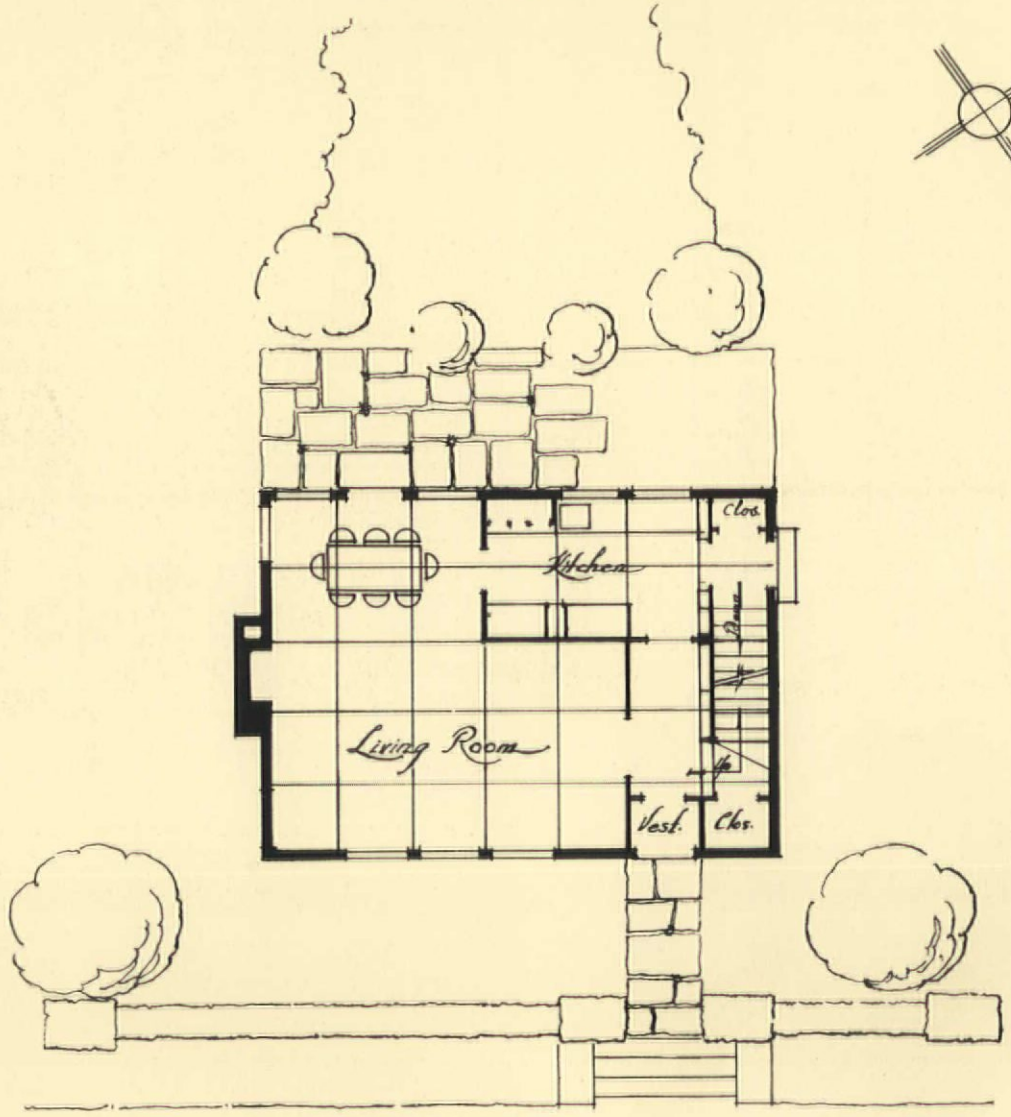


DETAILS
of
CELLULAR - STEEL UNIT CONSTRUCTION

F. H. Frankland, Consulting Engineer
American Institute of Steel Construction
19©33
H. T. Lindeberg - Architect



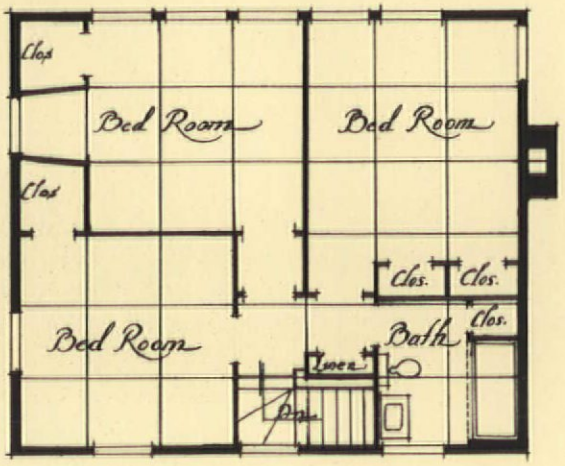
SECOND FLOOR PLAN



FIRST FLOOR PLAN

~A FIVE ROOM HOUSE~

H. J. Lindeberg Architect



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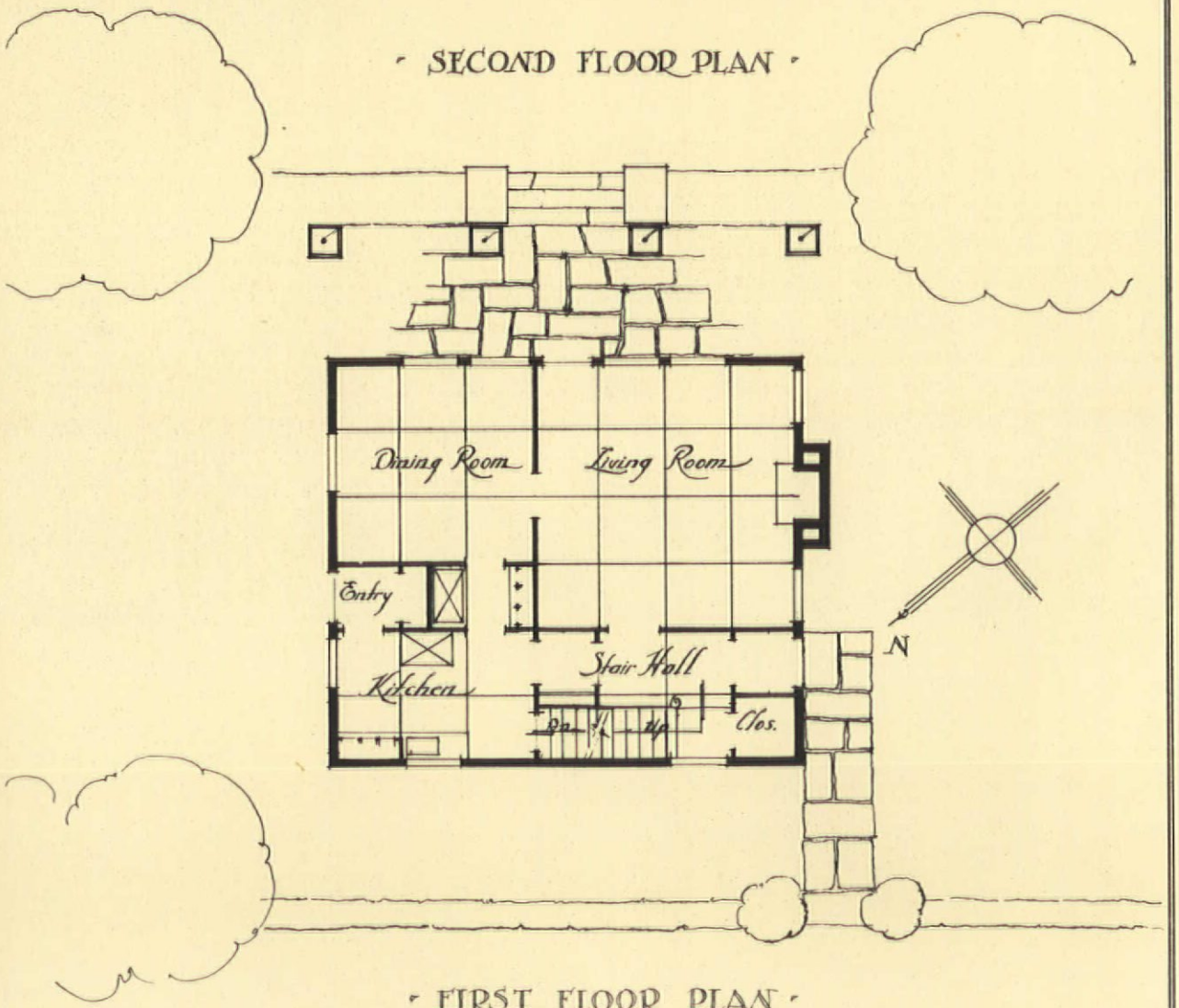


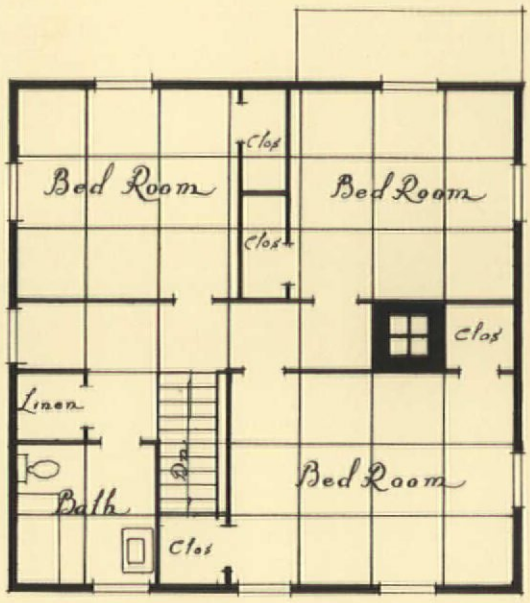
FIRST FLOOR PLAN

H. T. Lindeberg – Architect

~ A SQUARE SIX ROOM HOUSE ~

© 1933

H. T. Lindeberg Architect



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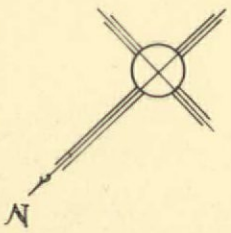
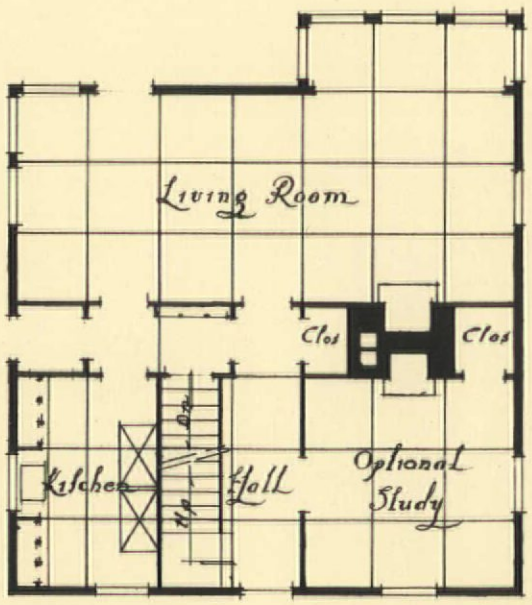


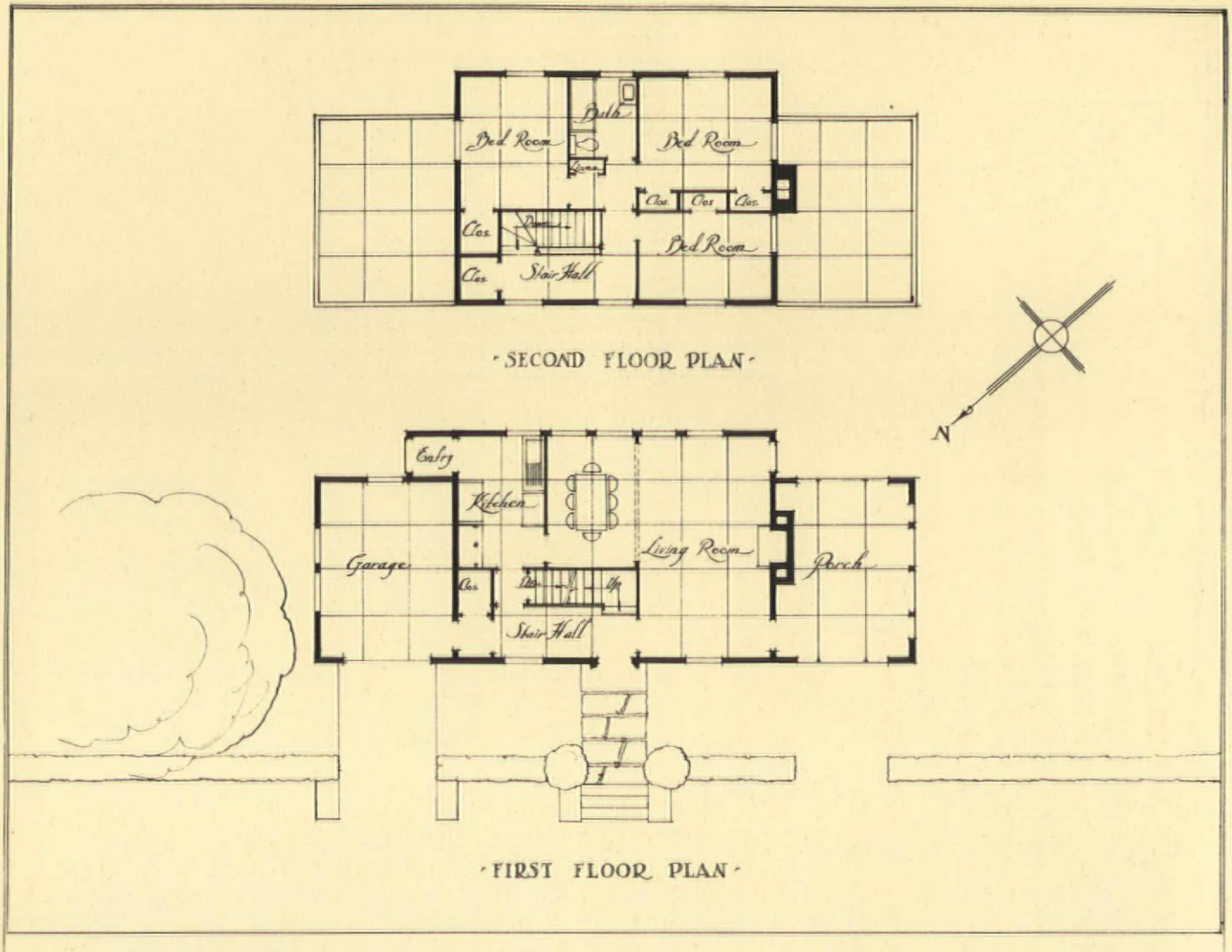


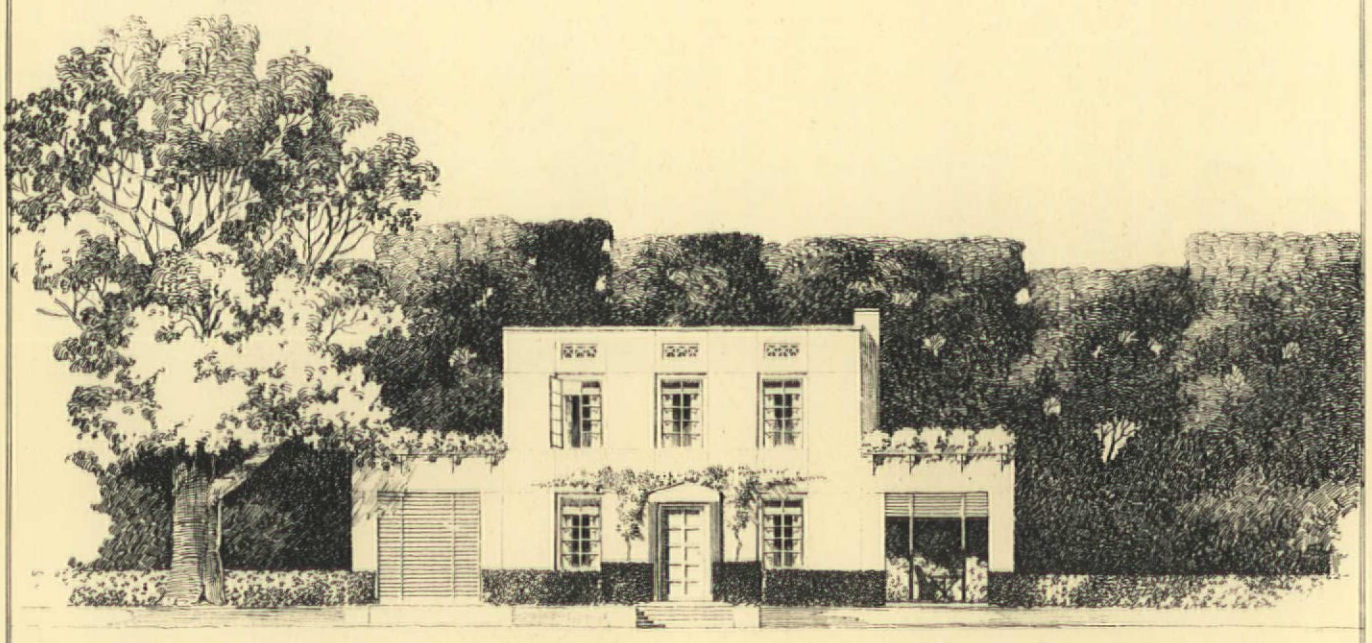
FIRST FLOOR PLAN

H. T. Lindeberg Architect

~ A SIX ROOM HOUSE ~

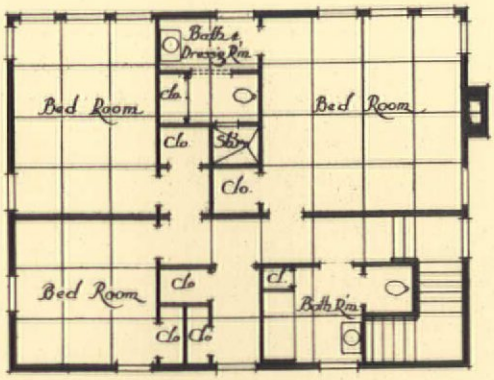
H. T. Lindeberg · Architect ·



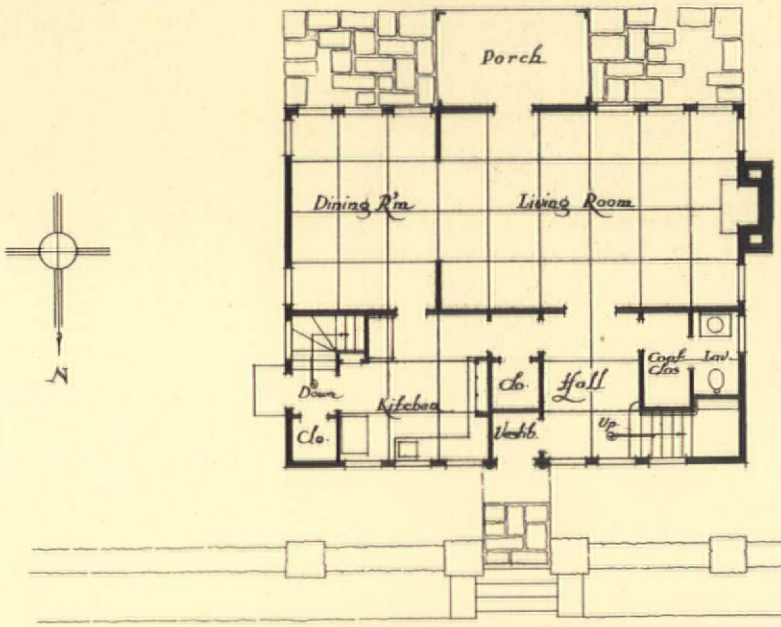


A HOUSE WITH GARAGE ATTACHED

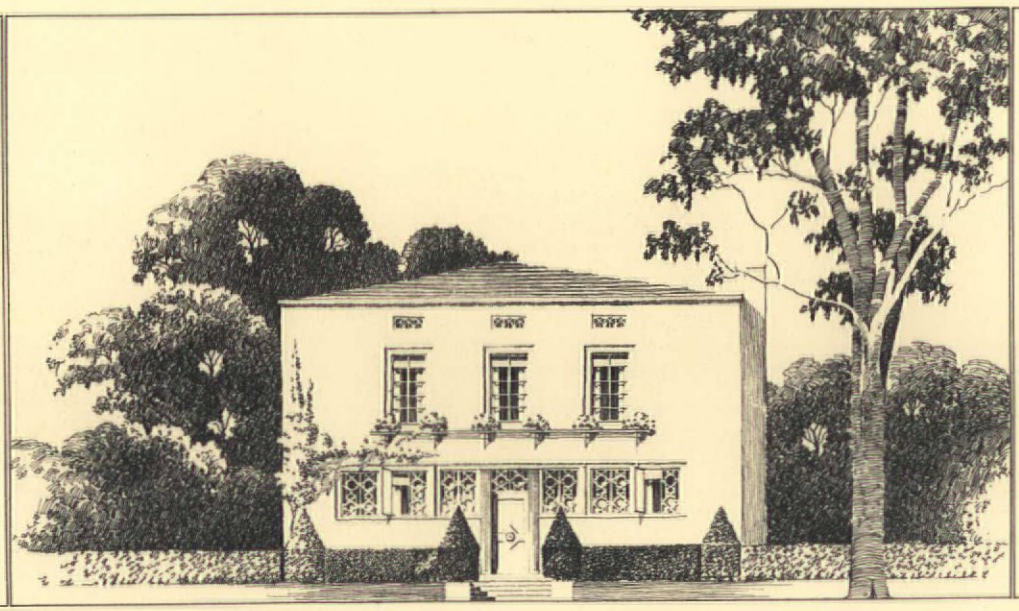
H. T. Lindeberg - Architect



~ SECOND FLOOR PLAN ~



~ FIRST FLOOR PLAN ~



~ A SIX ROOM-TWO BATH HOUSE ~

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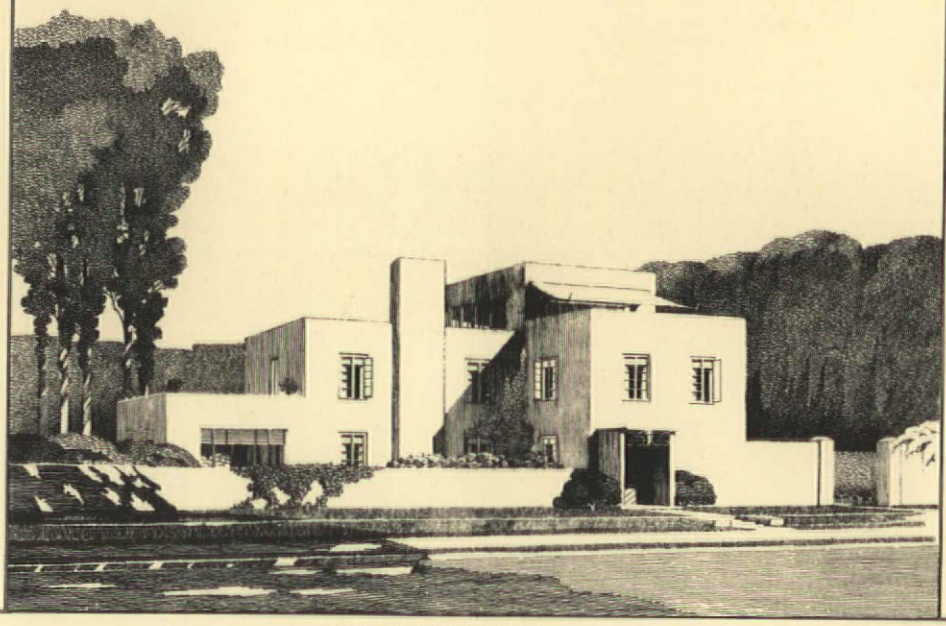
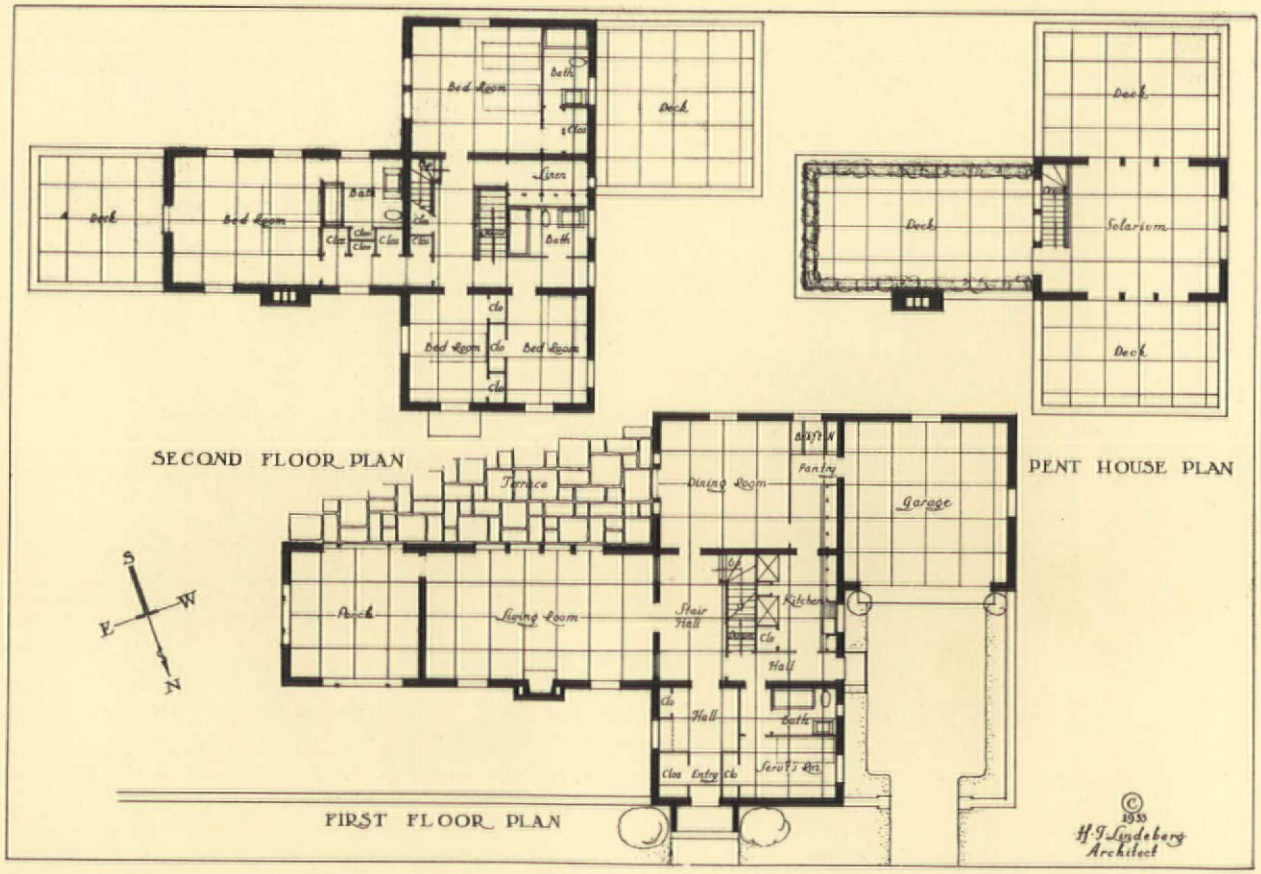
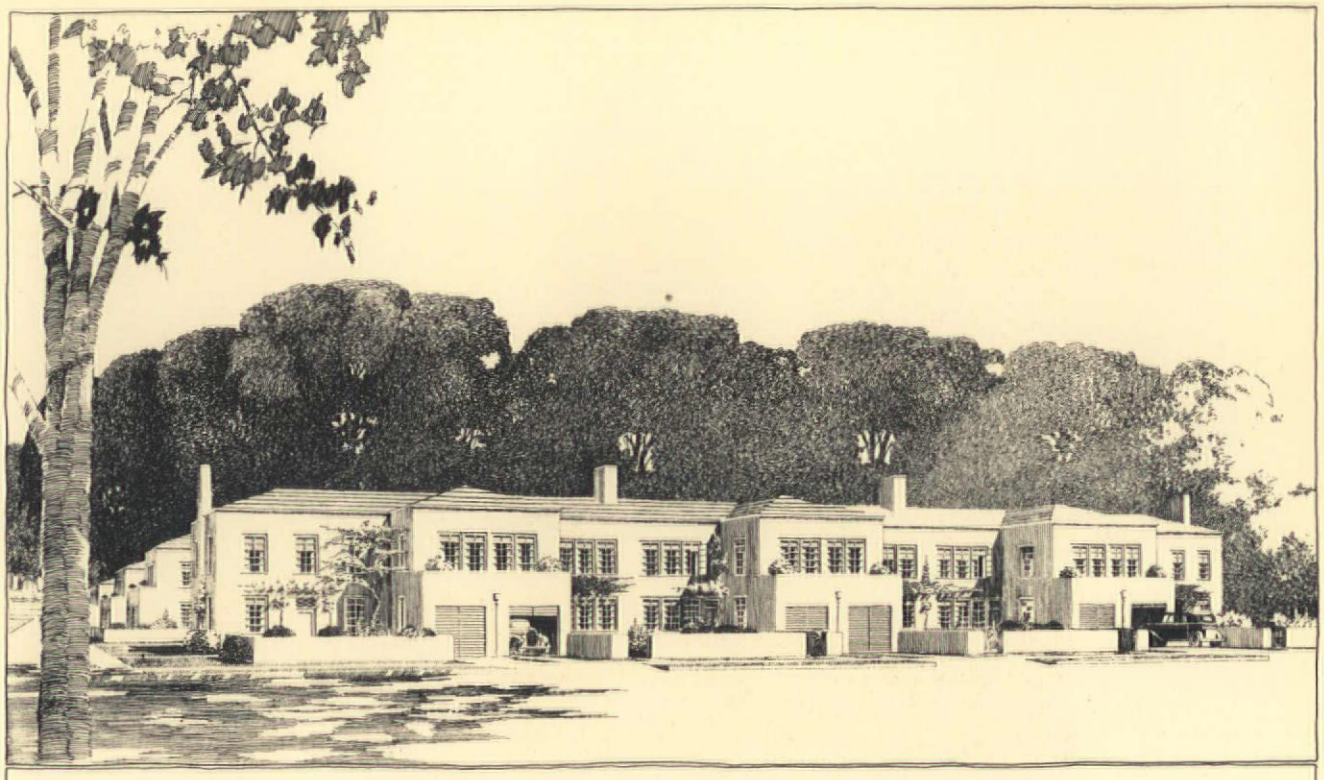
H. T. Lindeberg - Architect



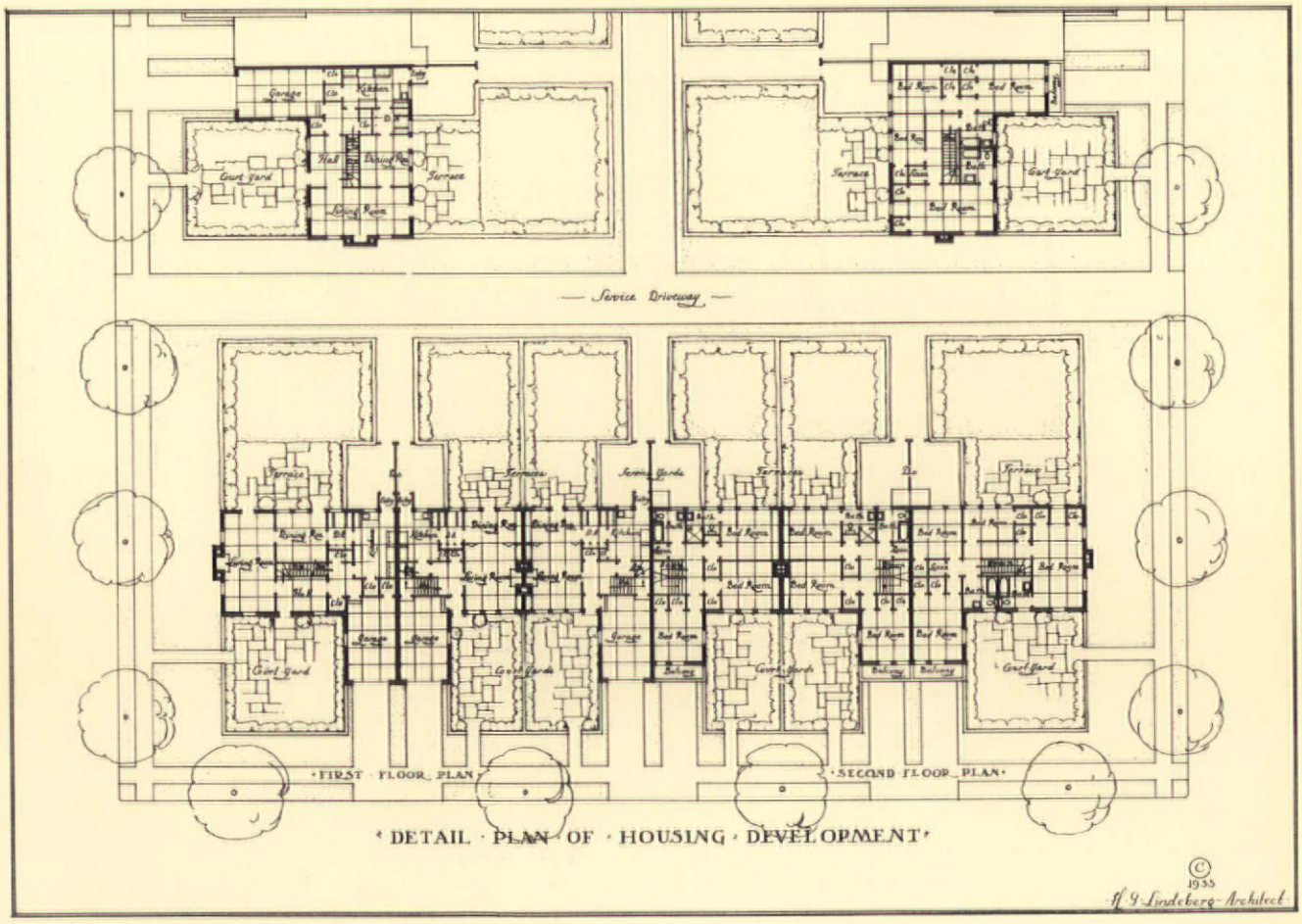
AN EIGHT ROOM HOUSE
with Solarium & Sea Porches
© 1933
H. T. Lindeberg—Architect





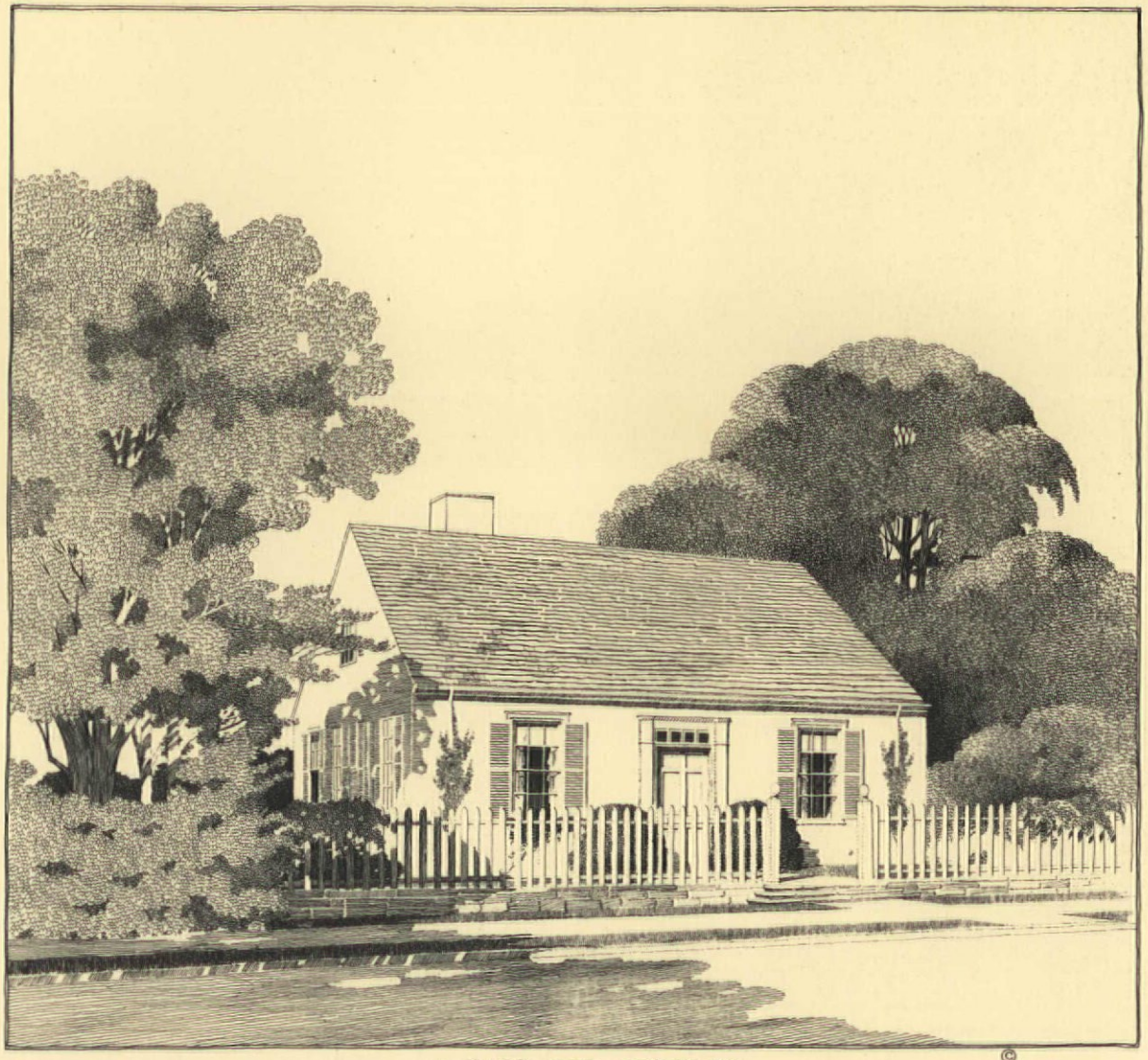
ATTACHED HOUSES

© 1933 H. G. Lindeberg, Architect



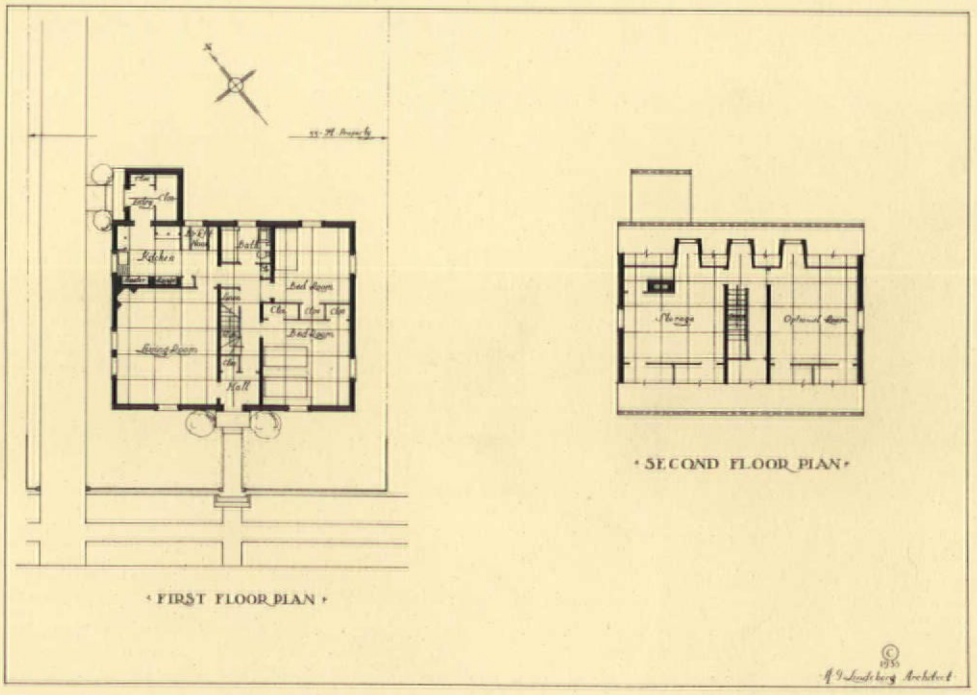
DETAIL PLAN OF HOUSING DEVELOPMENT

© 1933 H. G. Lindeberg, Architect



A CAPE COD COTTAGE

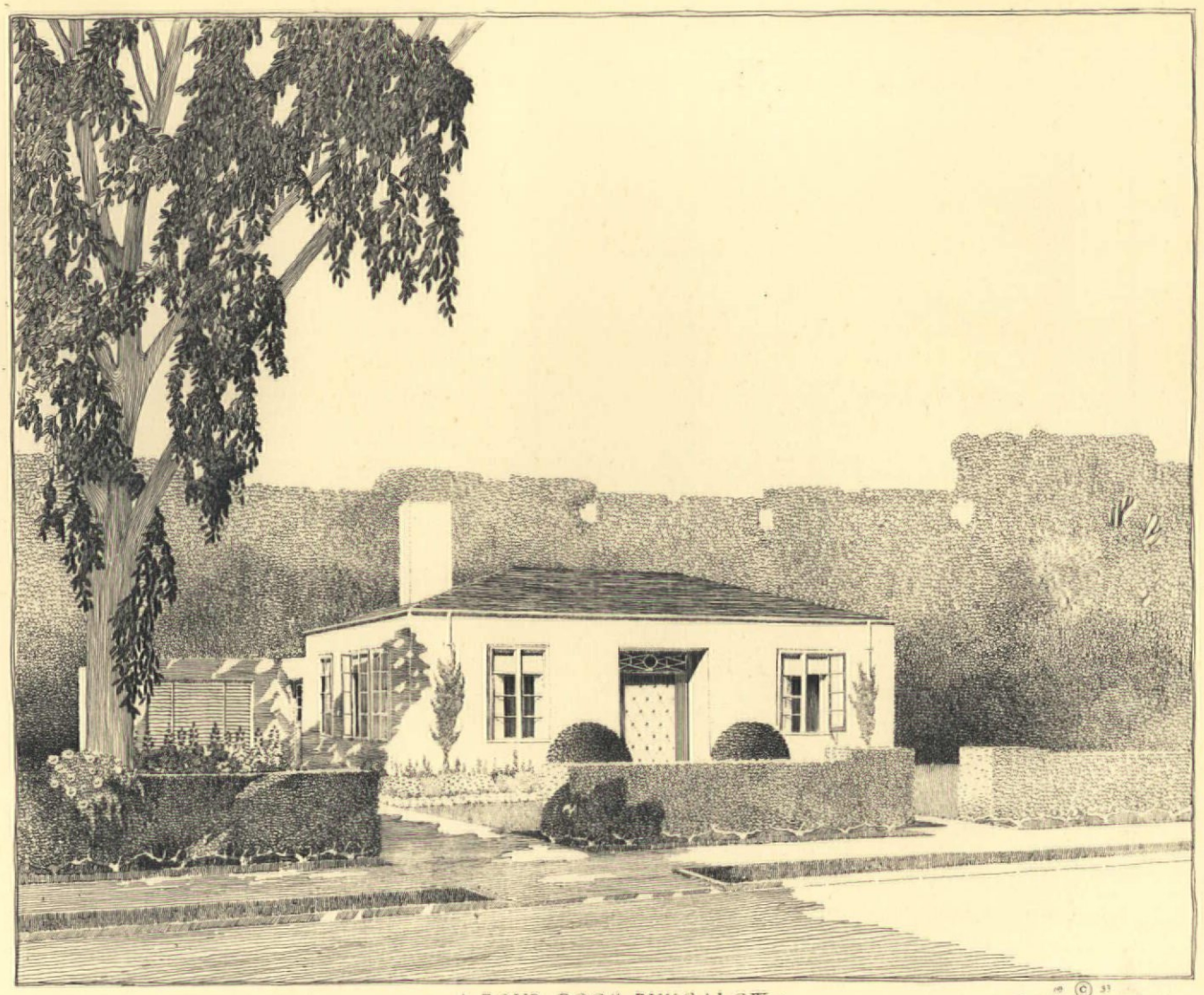
© 1933 H. T. Lindeberg Architect



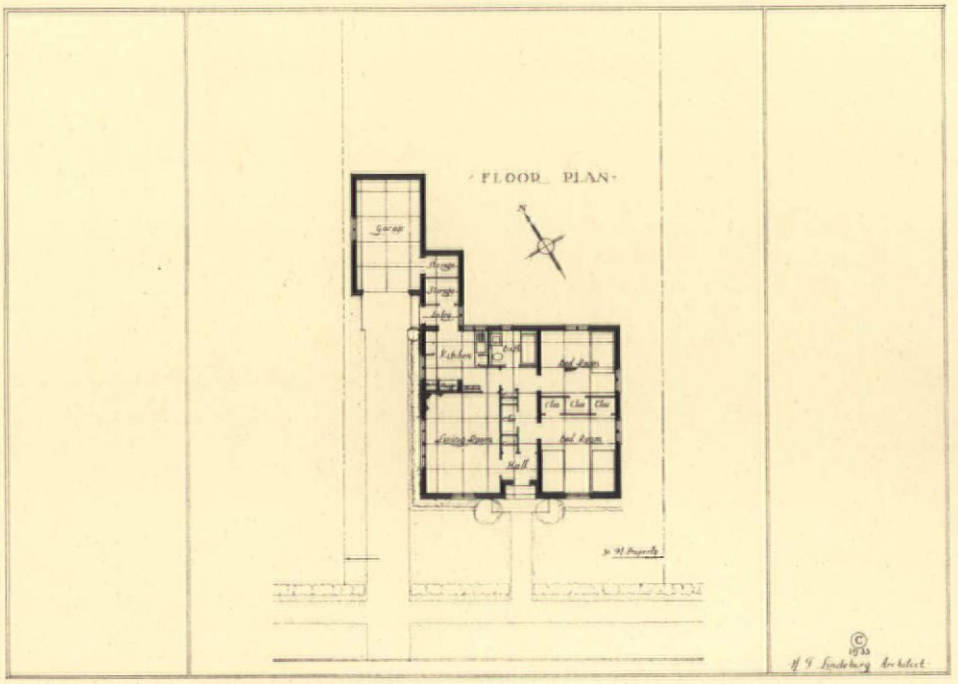
FIRST FLOOR PLAN

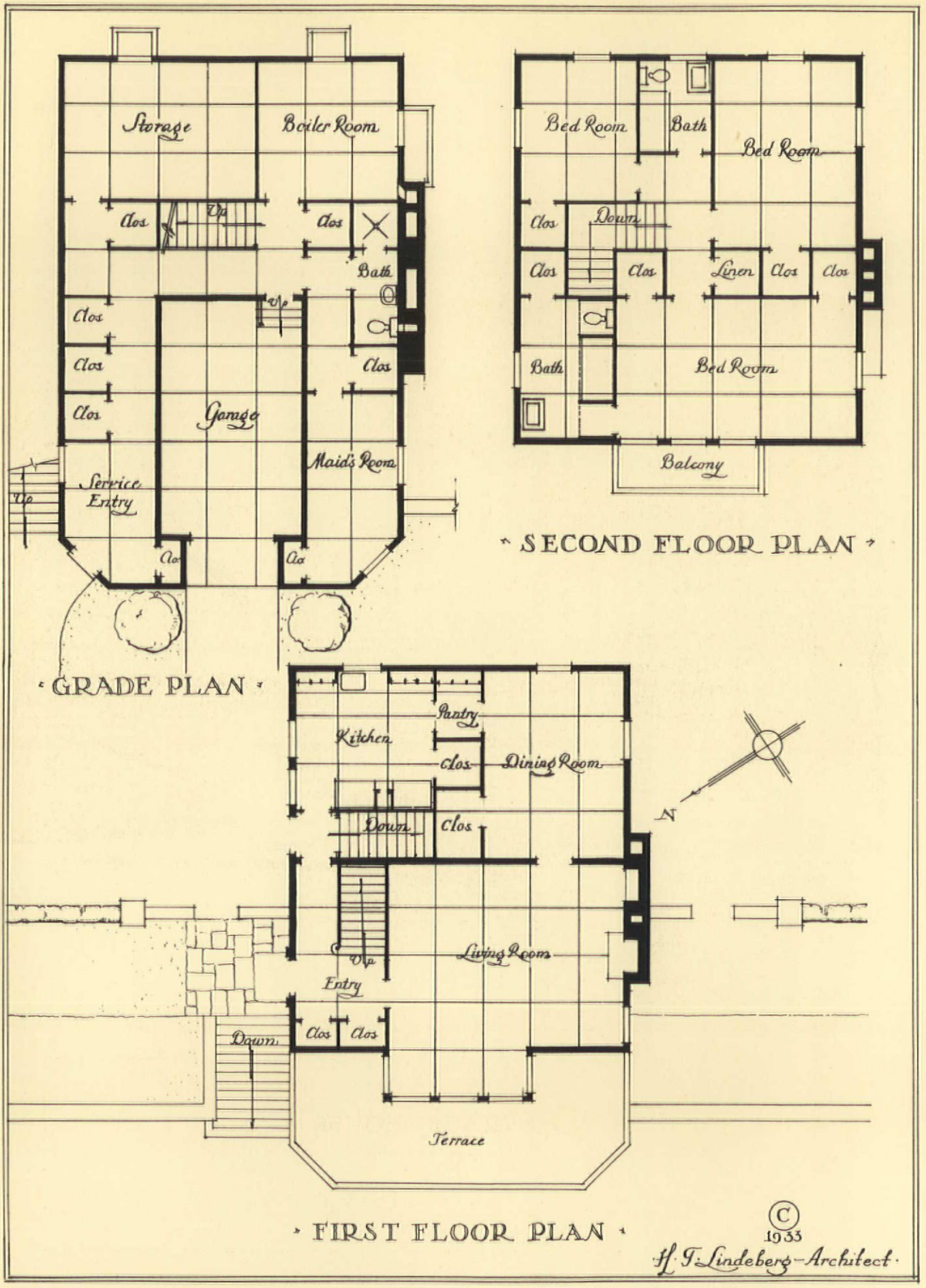
SECOND FLOOR PLAN

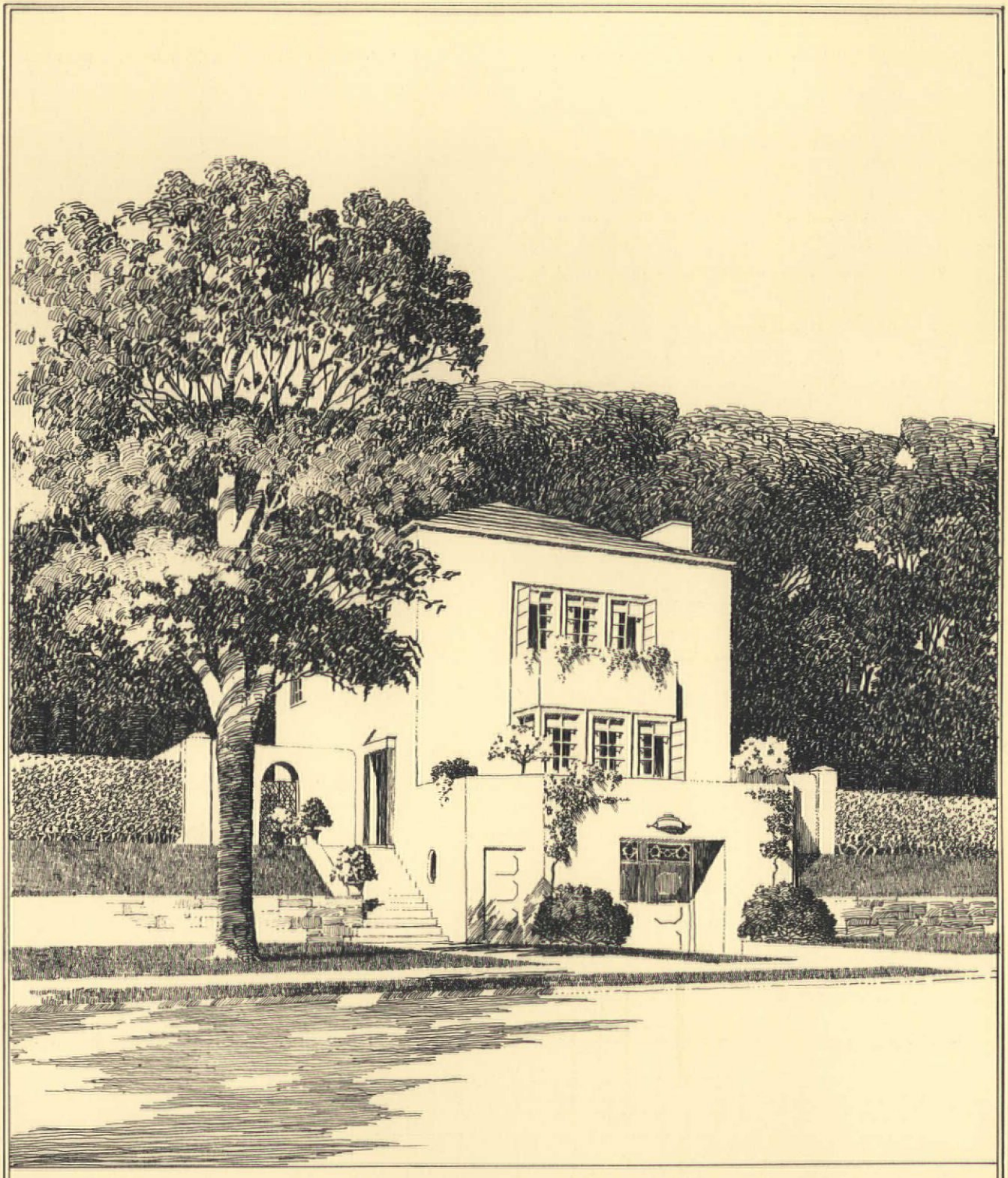
© 1933 H. T. Lindeberg Architect



A FOUR ROOM BUNGALOW

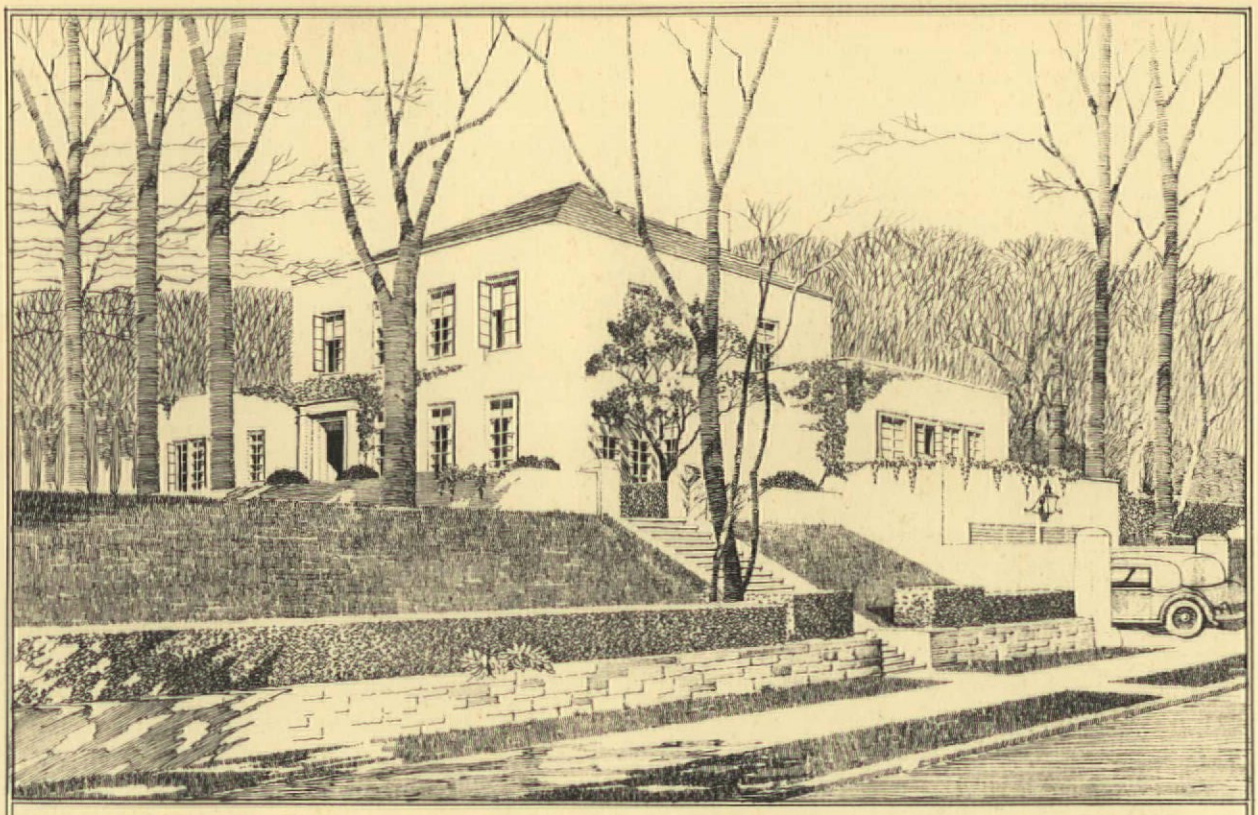



Storage
Boiler Room
Clos
Up
Clos
Bath
Clos
Clos
Clos
Clos
Garage
Maid's Room
Service Entry
Up
Clo
Clo
GRADE PLAN
Bed Room
Bath
Bed Room
Clos
Down
Clos
Clos
Linen
Clos
Clos
Bath
Bed Room
Balcony
SECOND FLOOR PLAN
Pantry
Kitchen
Clos
Dining Room
Down
Clos
N
Up
Living Room
Entry
Down
Clos
Clos
Terrace
FIRST FLOOR PLAN
C
1933
H. T. Lindeberg—Architect

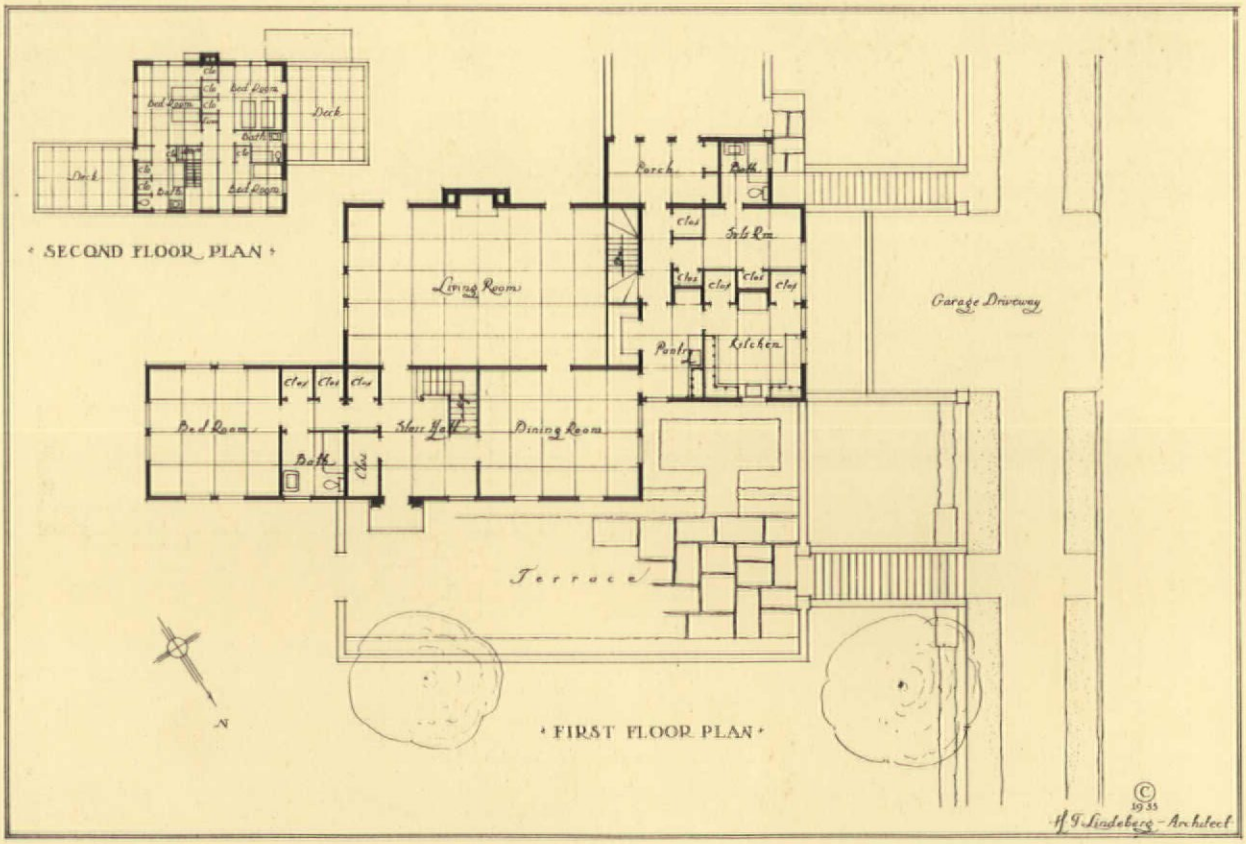


A TERRACE HOUSE

H. T. Lindeberg – Architect

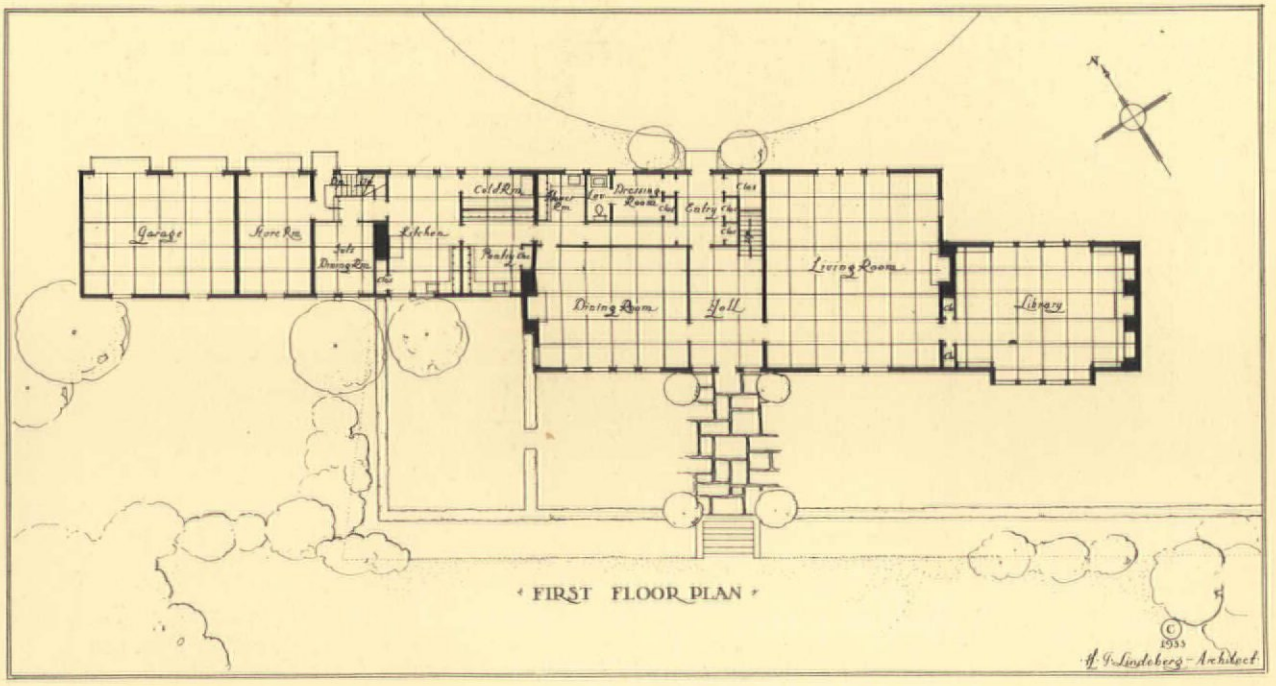


A HILLSIDE HOUSE



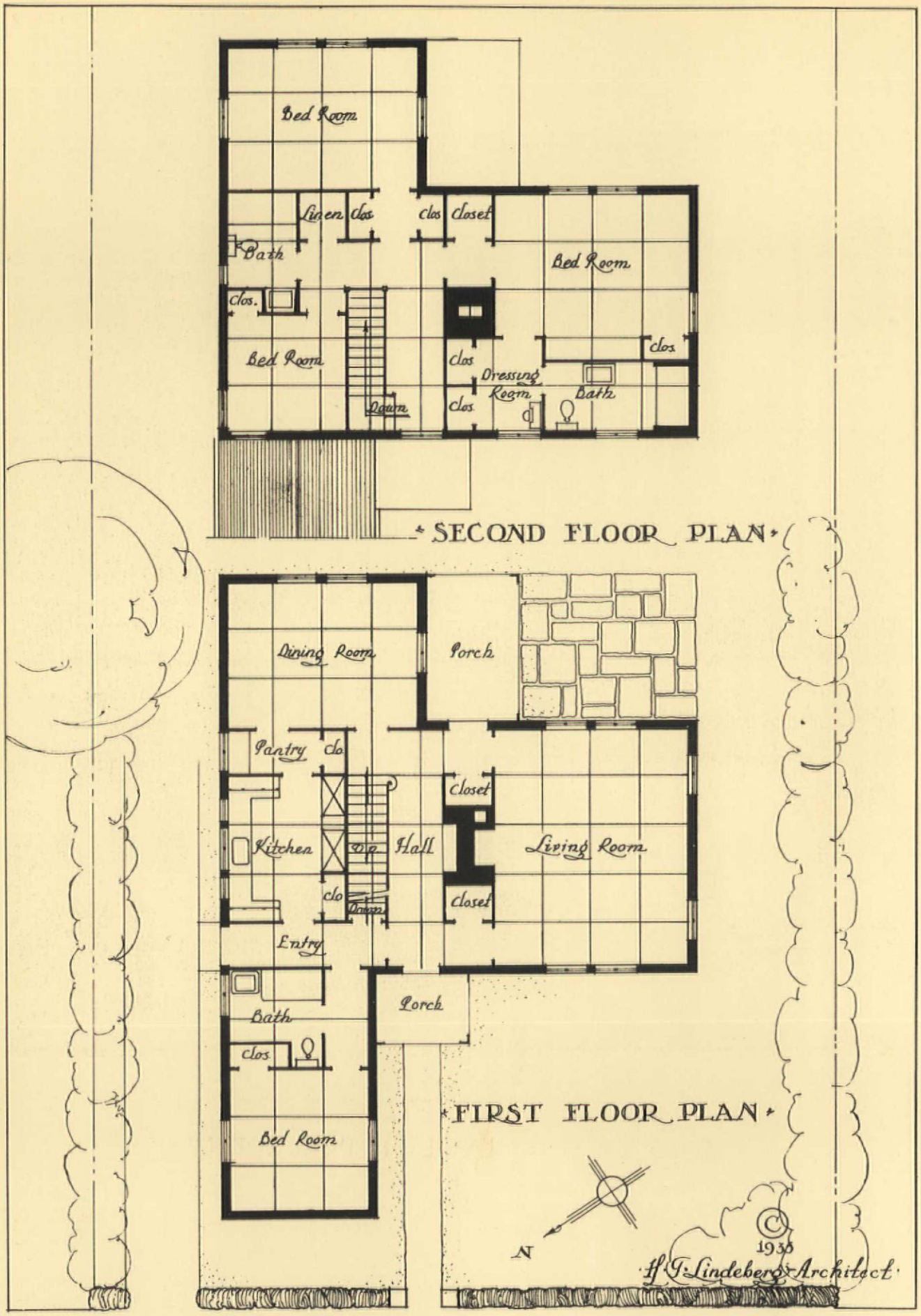
A MODULE INTERPRETATION
OF A SEVENTEENTH CENTURY HOUSE

19©33
H. F. Lindeberg - Architect



FIRST FLOOR PLAN

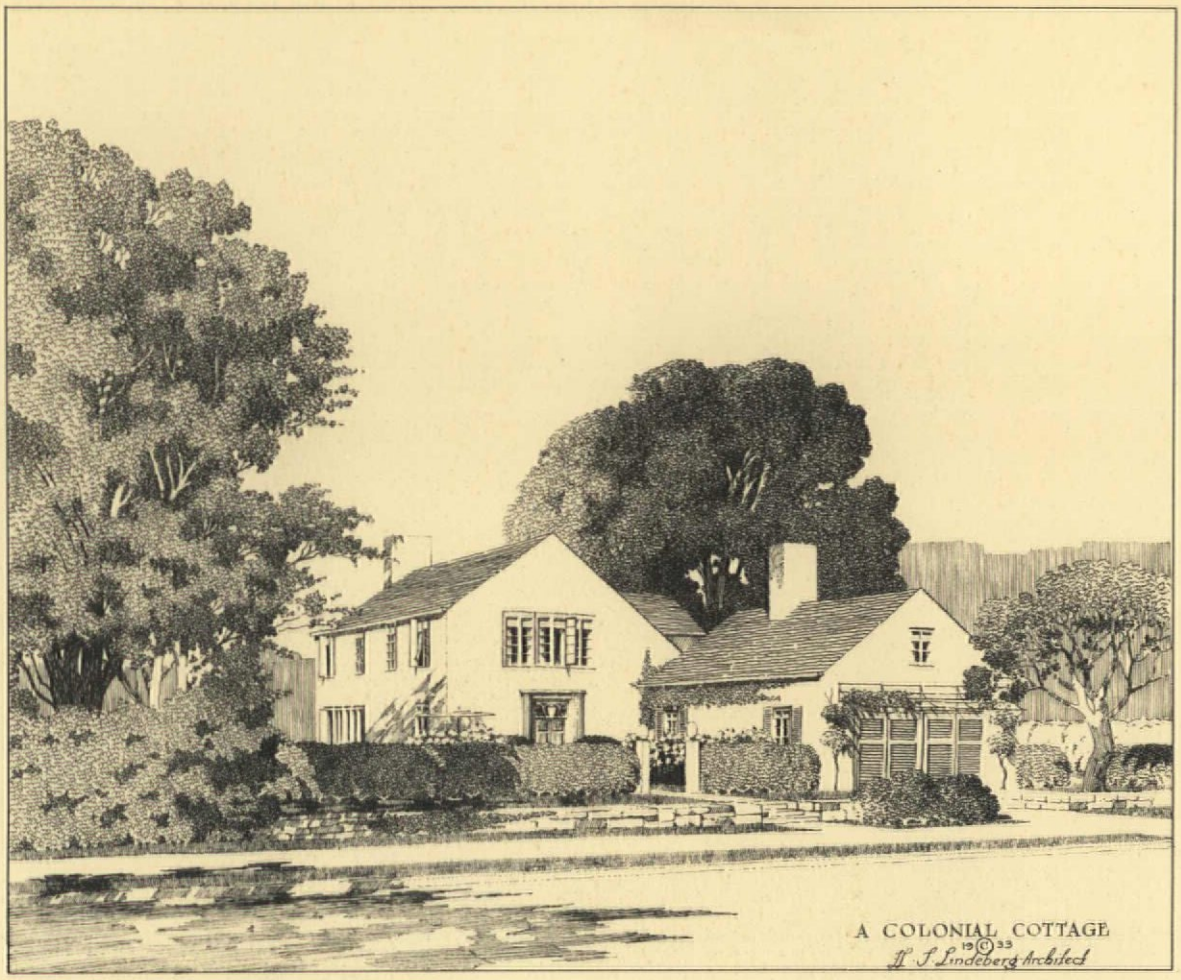
©
1933
H. F. Lindeberg - Architect


Bed Room
Linen clos
clos
Closet
Bath
Bed Room
clos.
Bed Room
clos
clos
Dressing Room
Bath
Room
clos
SECOND FLOOR PLAN
Dining Room
Porch
Pantry
clo
Closet
Kitchen
Hall
Living Room
clo
Closet
Room
Entry
Porch
Bath
clos
Bed Room
FIRST FLOOR PLAN
N
© 1933
H. T. Lindeberg Architect

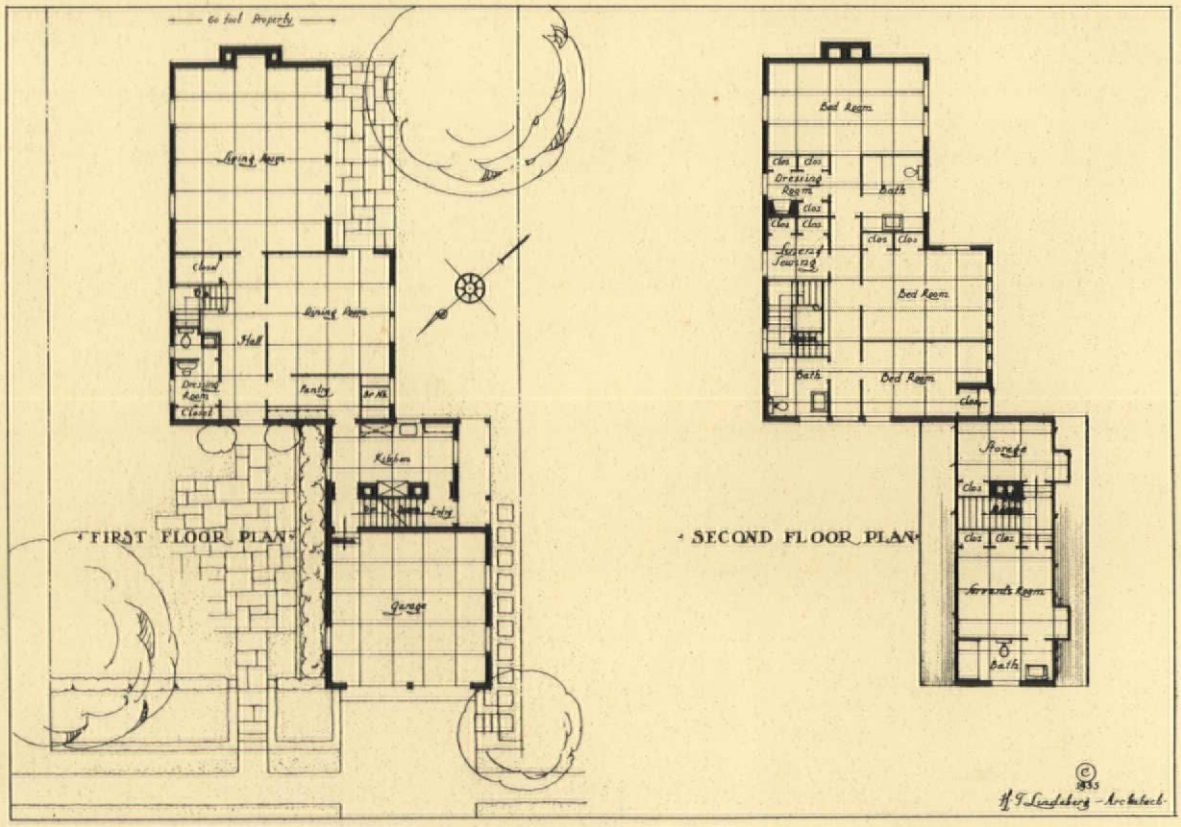
A COTTAGE of ENGLISH PRECEDENT

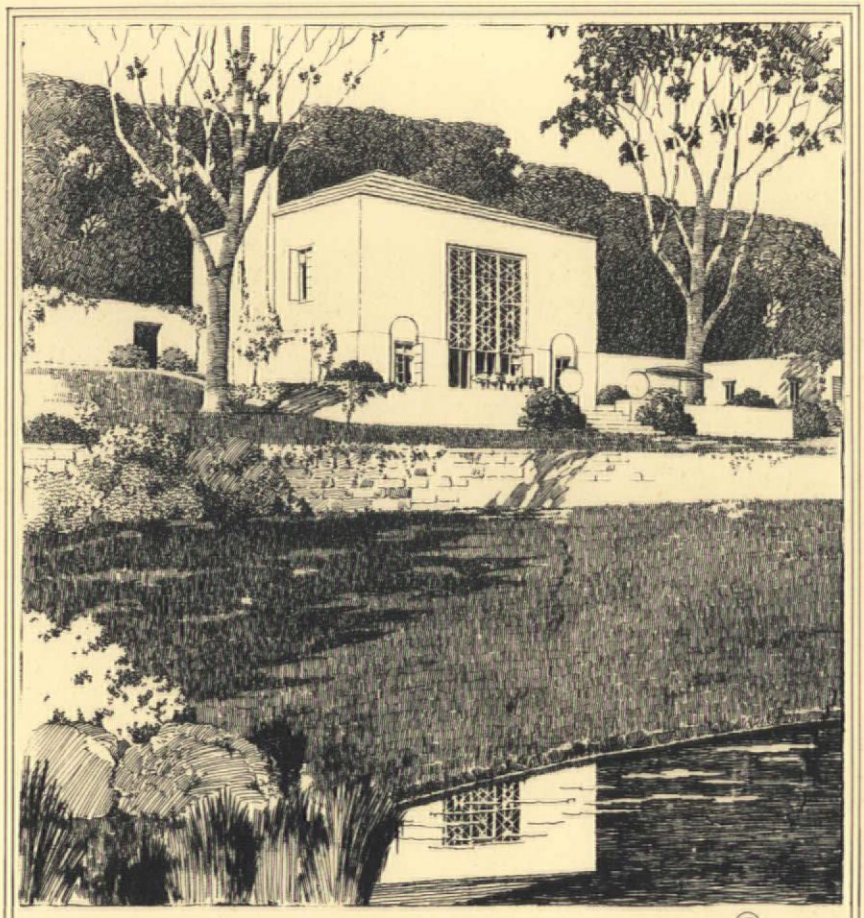
© 1933

H. G. Lindeberg – Architect

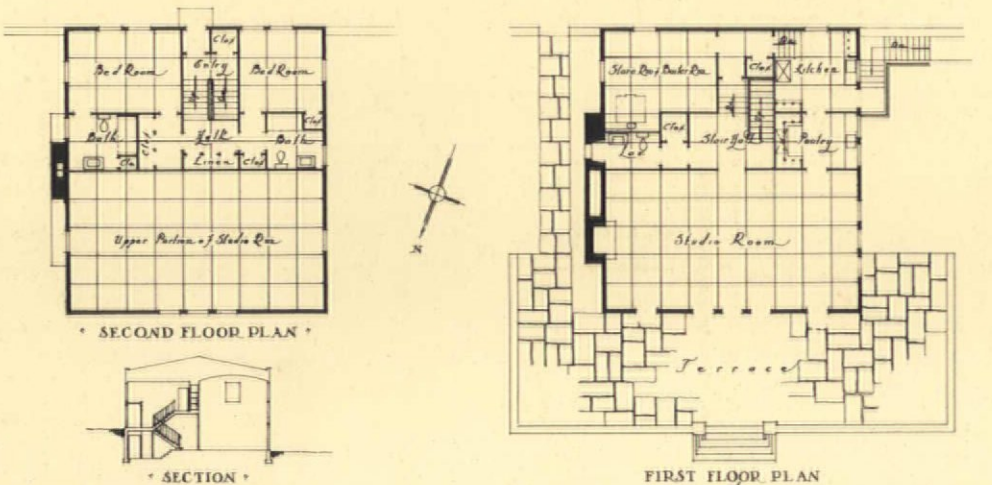


A COLONIAL COTTAGE
1933
H. T. Lindeberg Architect





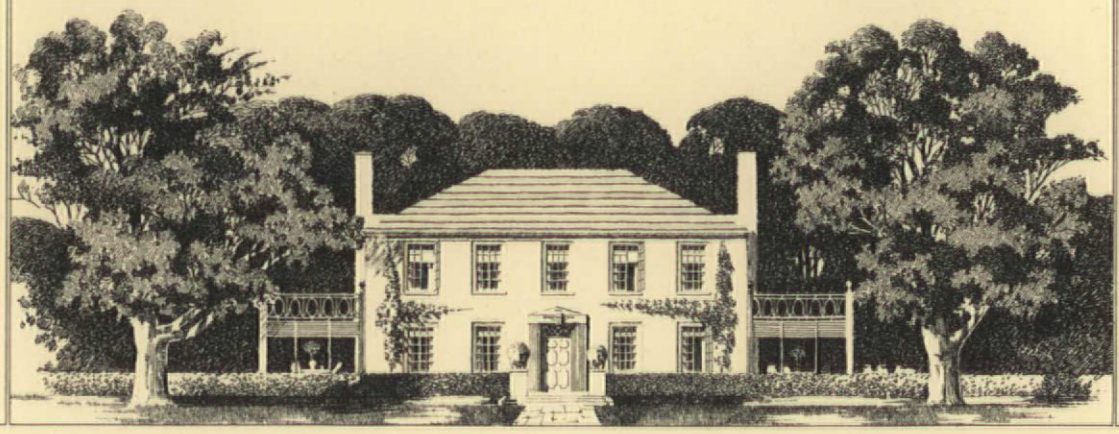
A HILLSIDE STUDIO



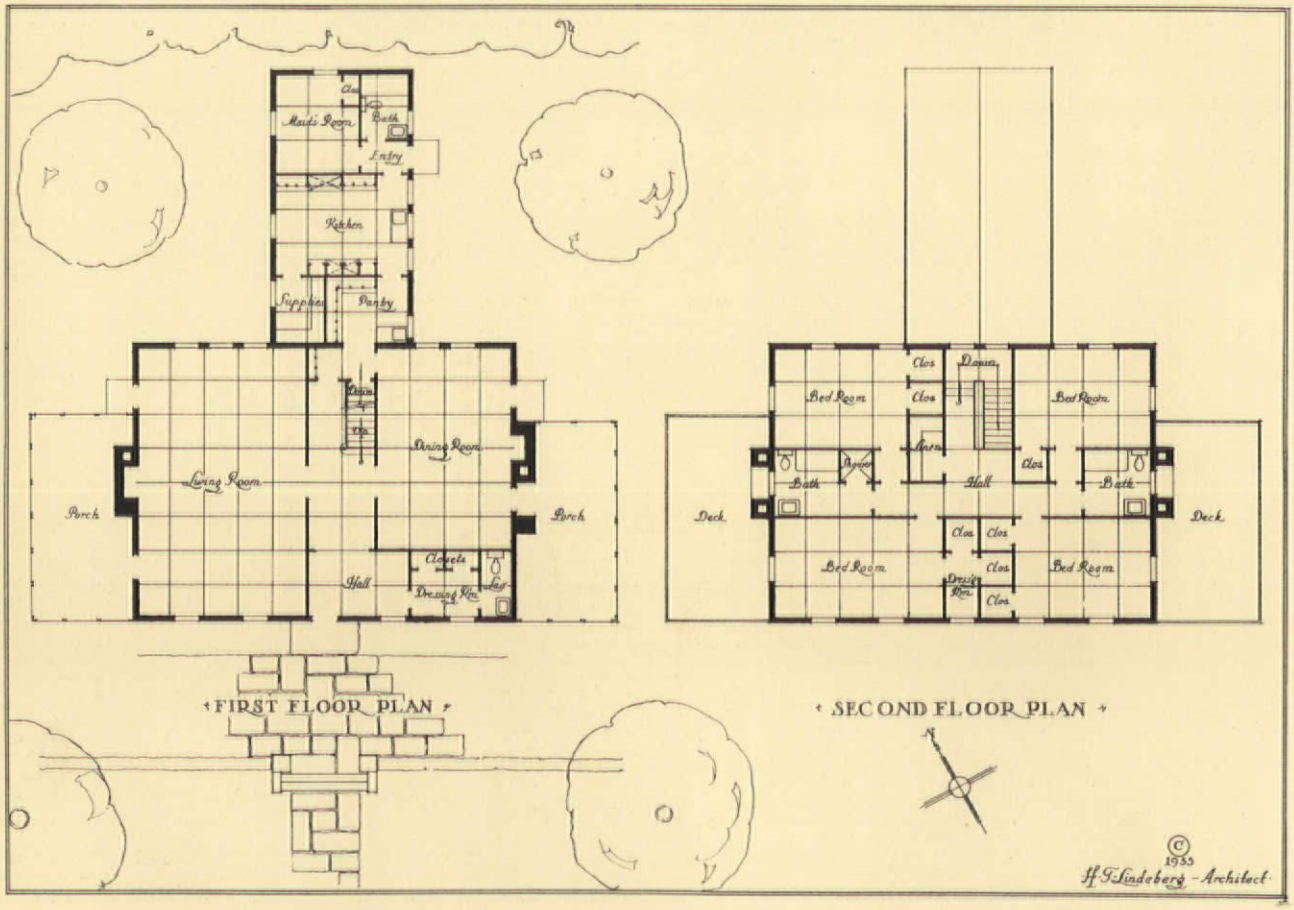
SECOND FLOOR PLAN

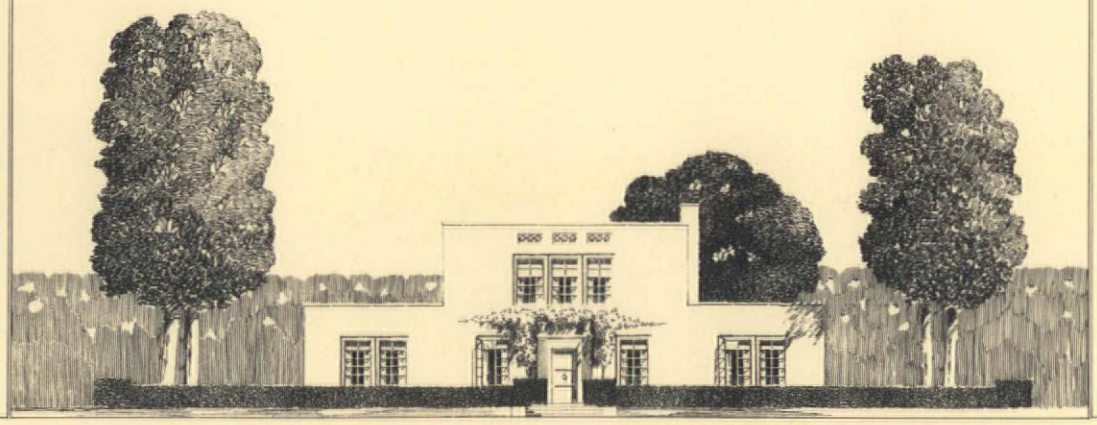
SECTION

FIRST FLOOR PLAN
OF
A HILLSIDE STUDIO

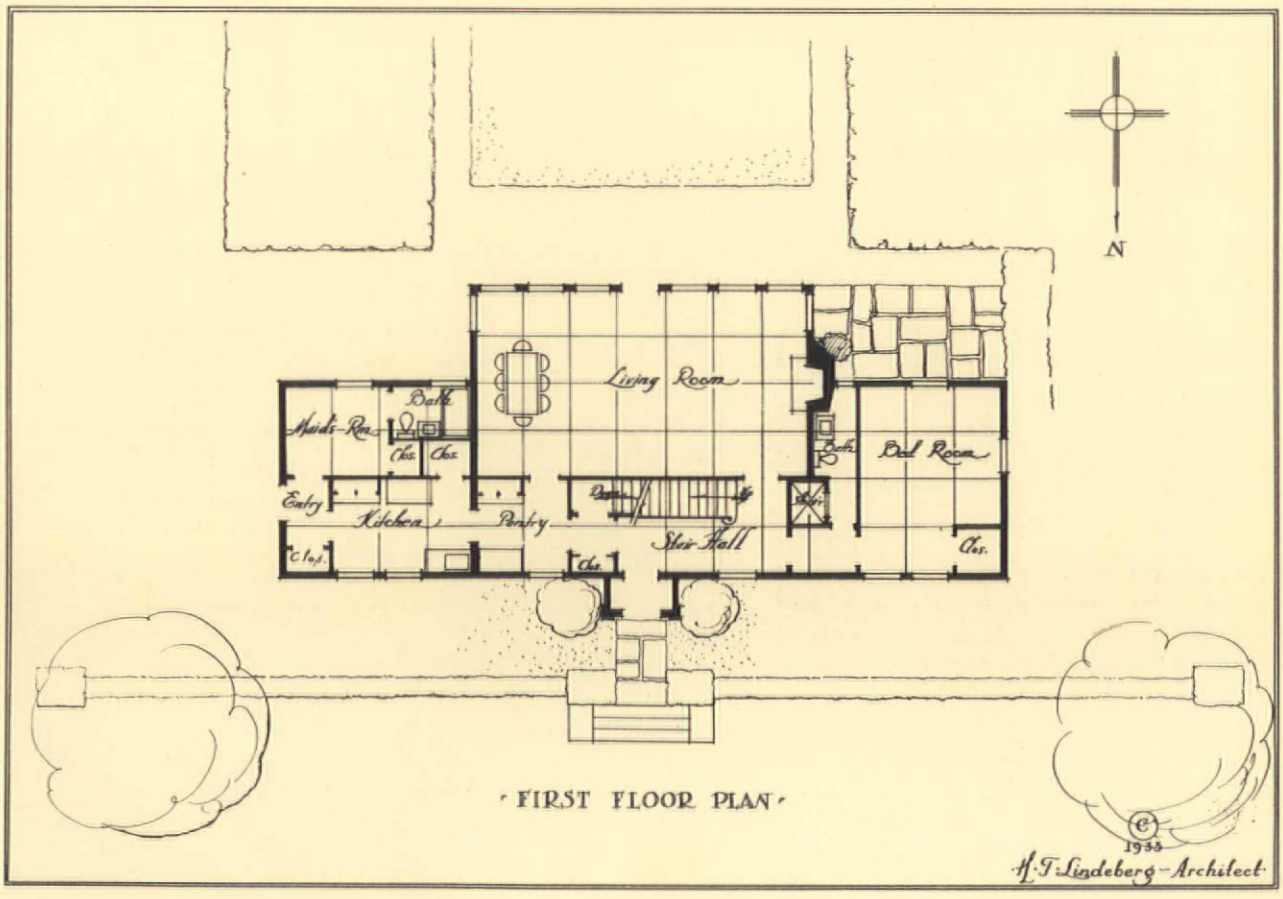


AN EIGHT ROOM HOUSE
with a one Story Service Wing
© 1933
H. T. Lindeberg Architect



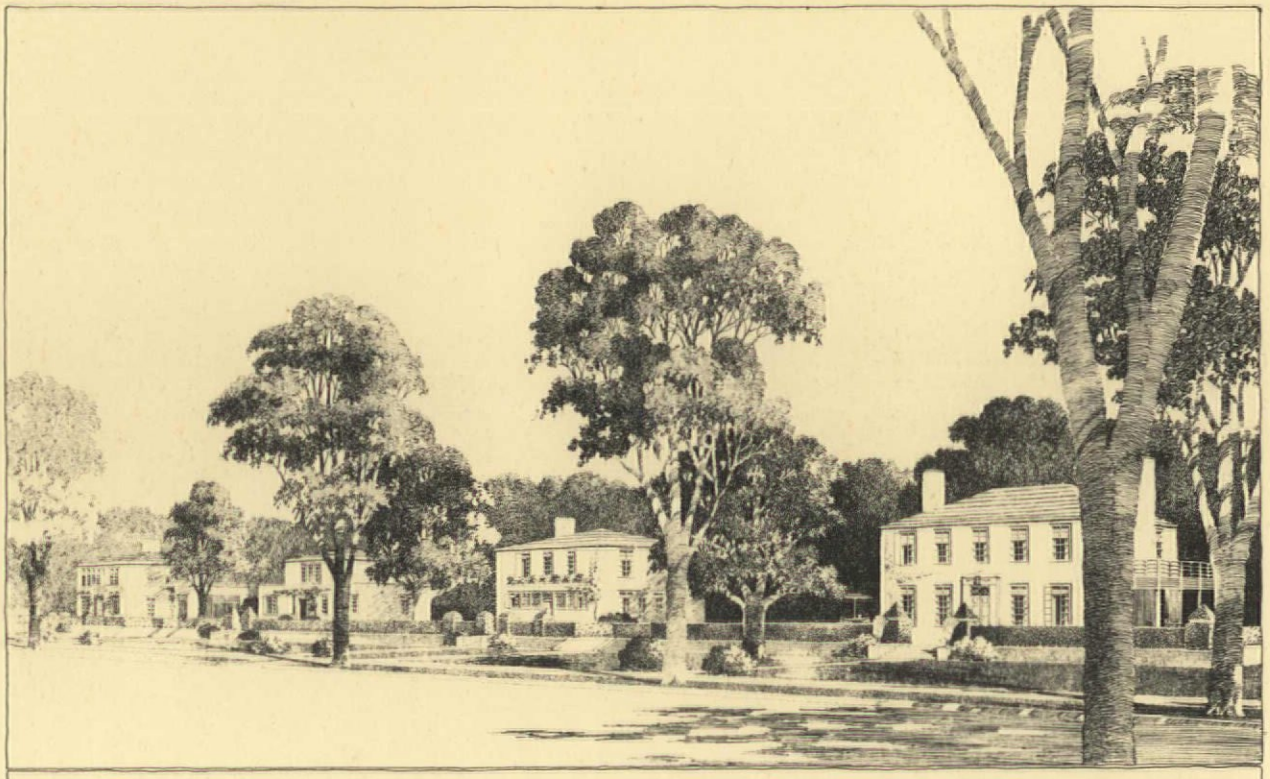


A SEVEN ROOM HOUSE
with Sun Porches
© 1933
H. T. Lindeberg - Architect

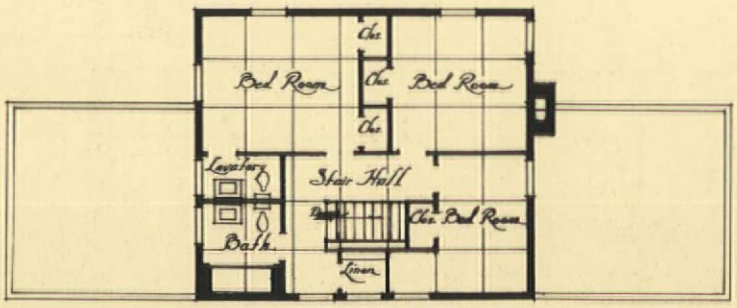


FIRST FLOOR PLAN

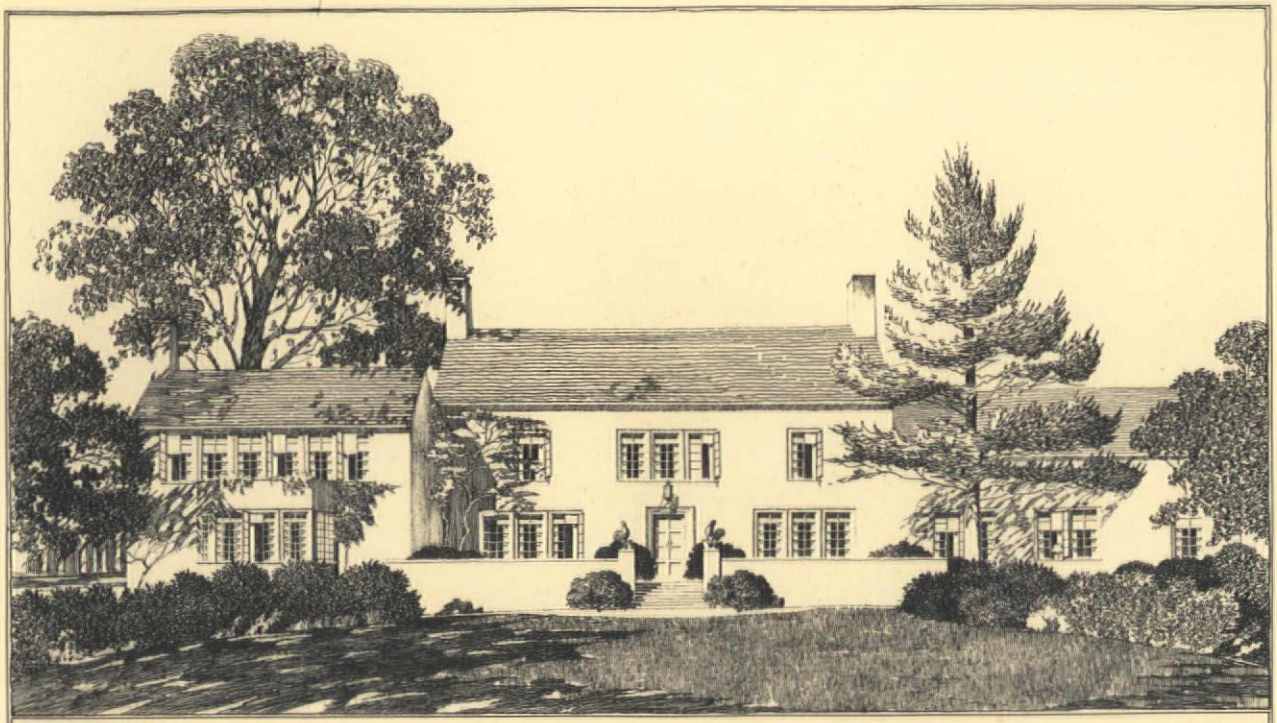
© 1933
H. T. Lindeberg - Architect



A STREET SCENE



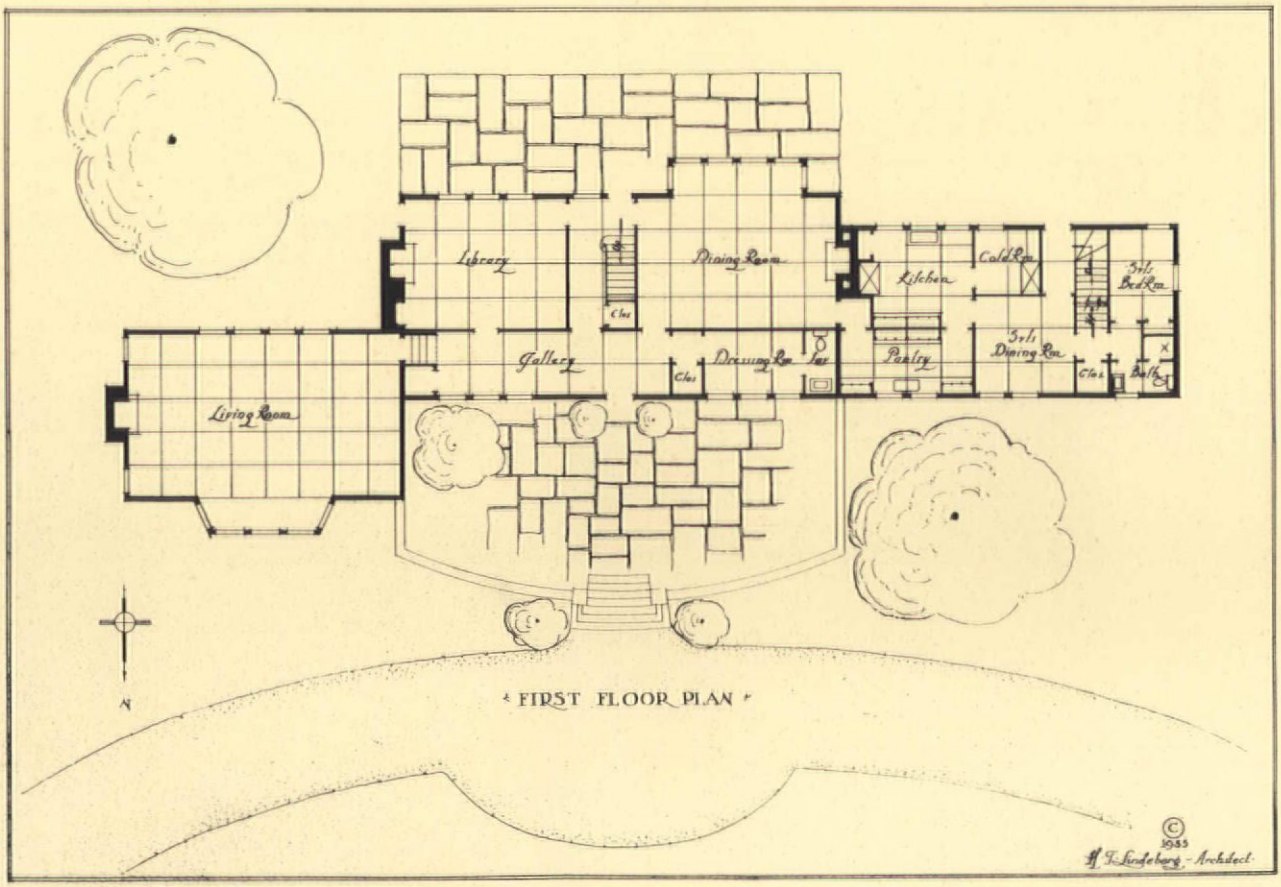
SECOND FLOOR PLAN



A HOUSE at MILL NECK

© 1933

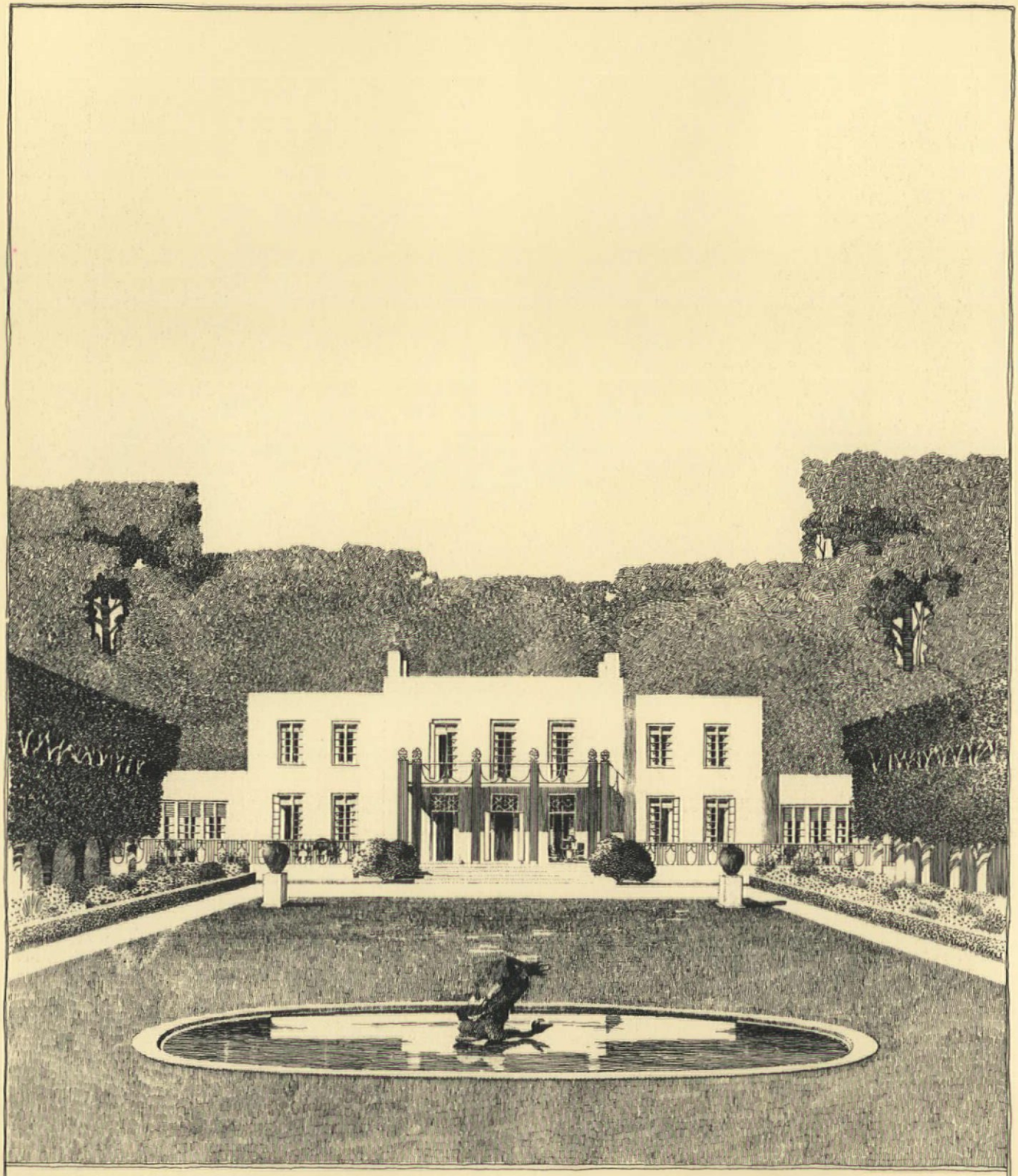
H. T. Lindeberg Architect



FIRST FLOOR PLAN

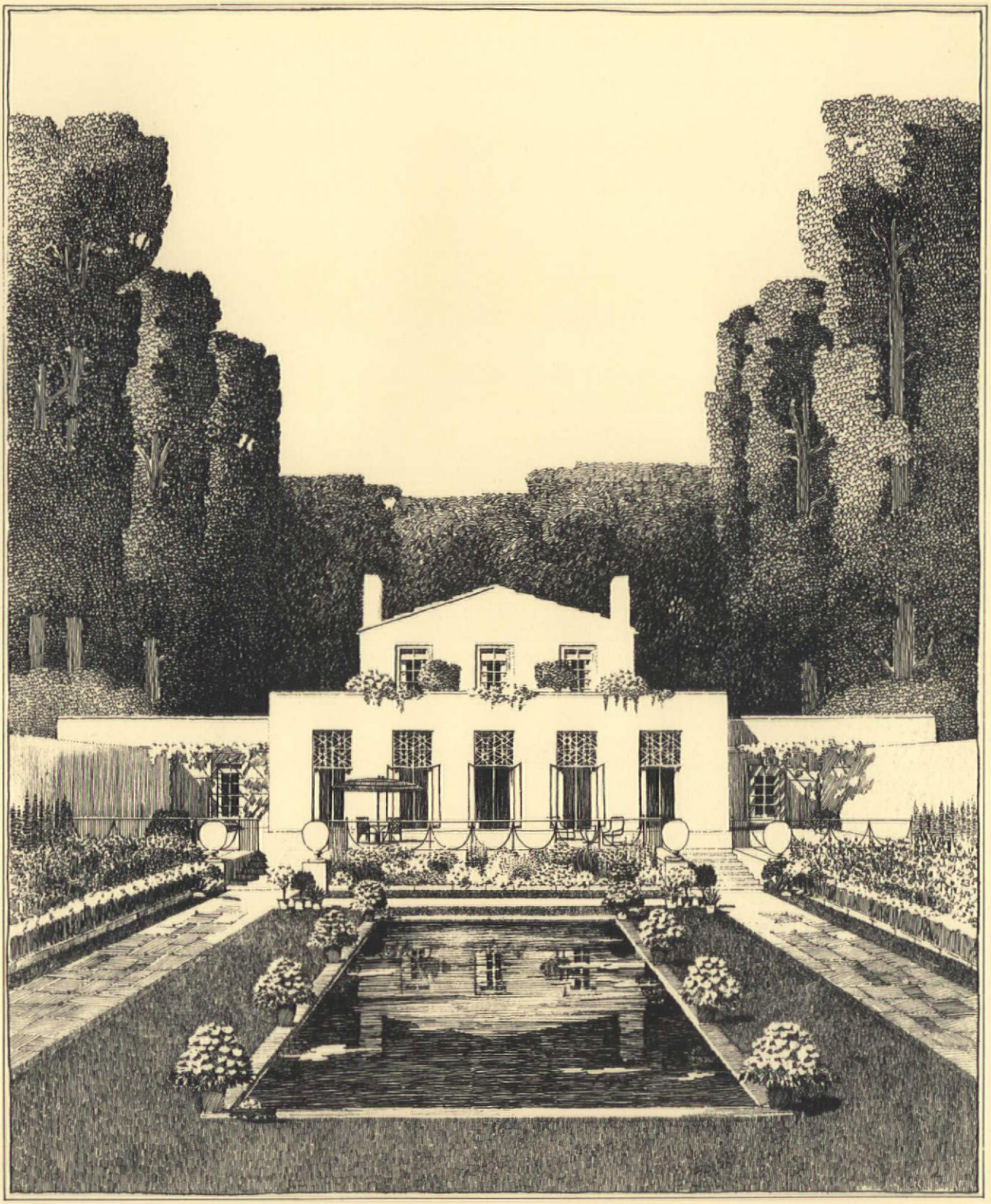
© 1933

H. T. Lindeberg - Architect



A PRELIMINARY SKETCH FOR A HOUSE
AT GLEN COVE L.I.

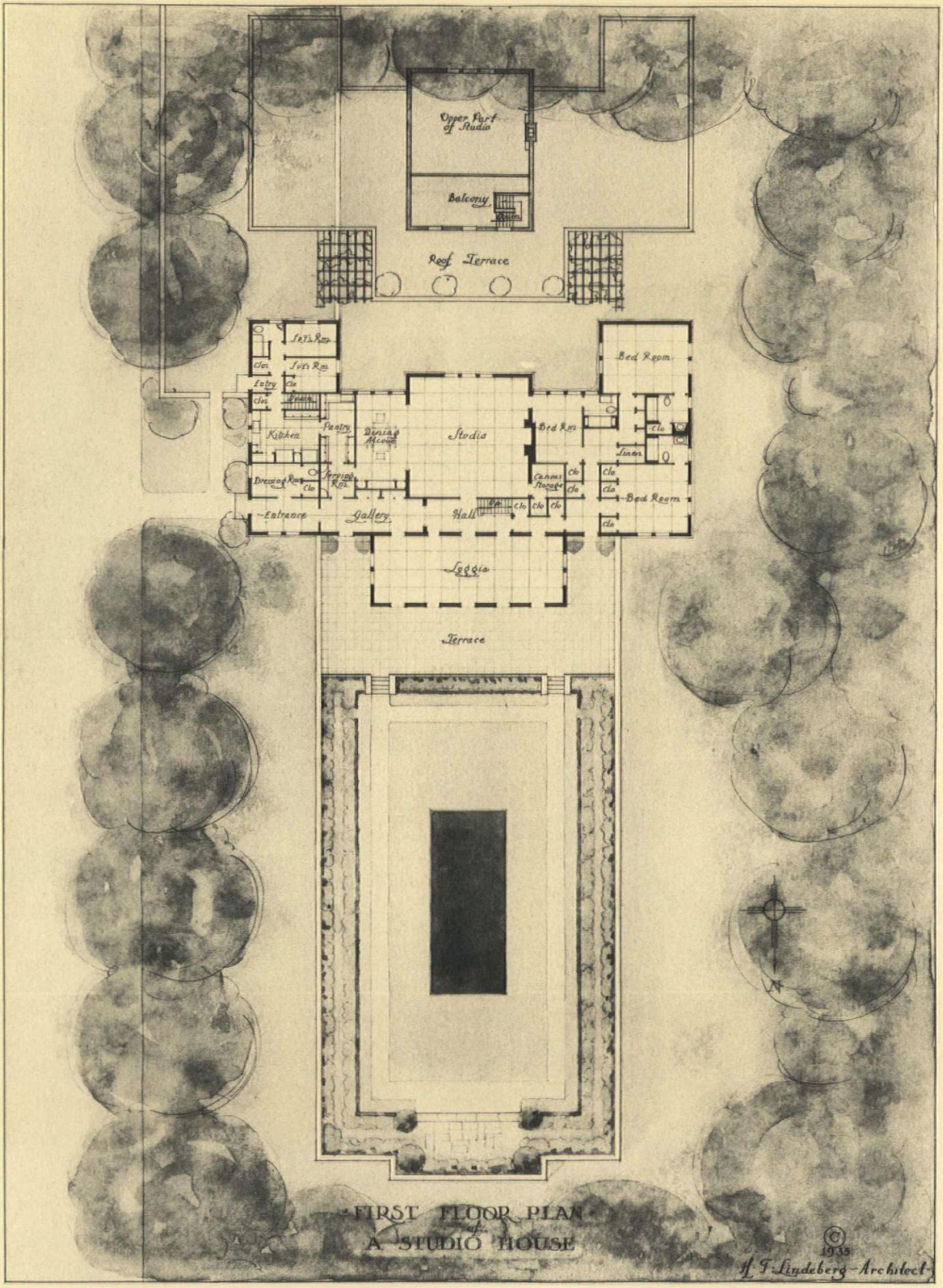
H. T. Lindeberg–Architect



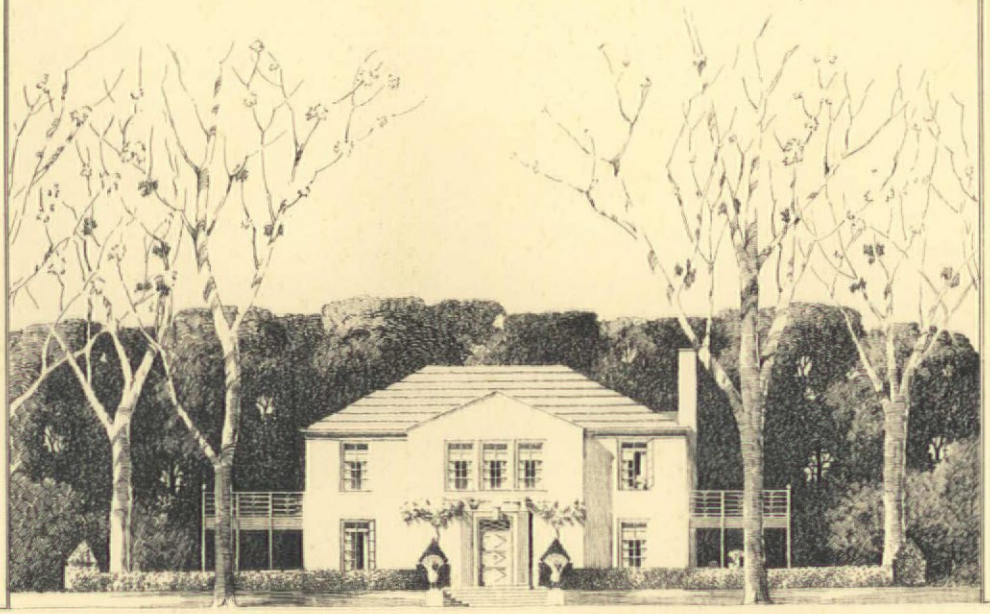
A STUDIO HOUSE

© 1933

H. T. Lindeberg – Architect



FIRST FLOOR PLAN
of
A STUDIO HOUSE



AN EIGHT ROOM HOUSE

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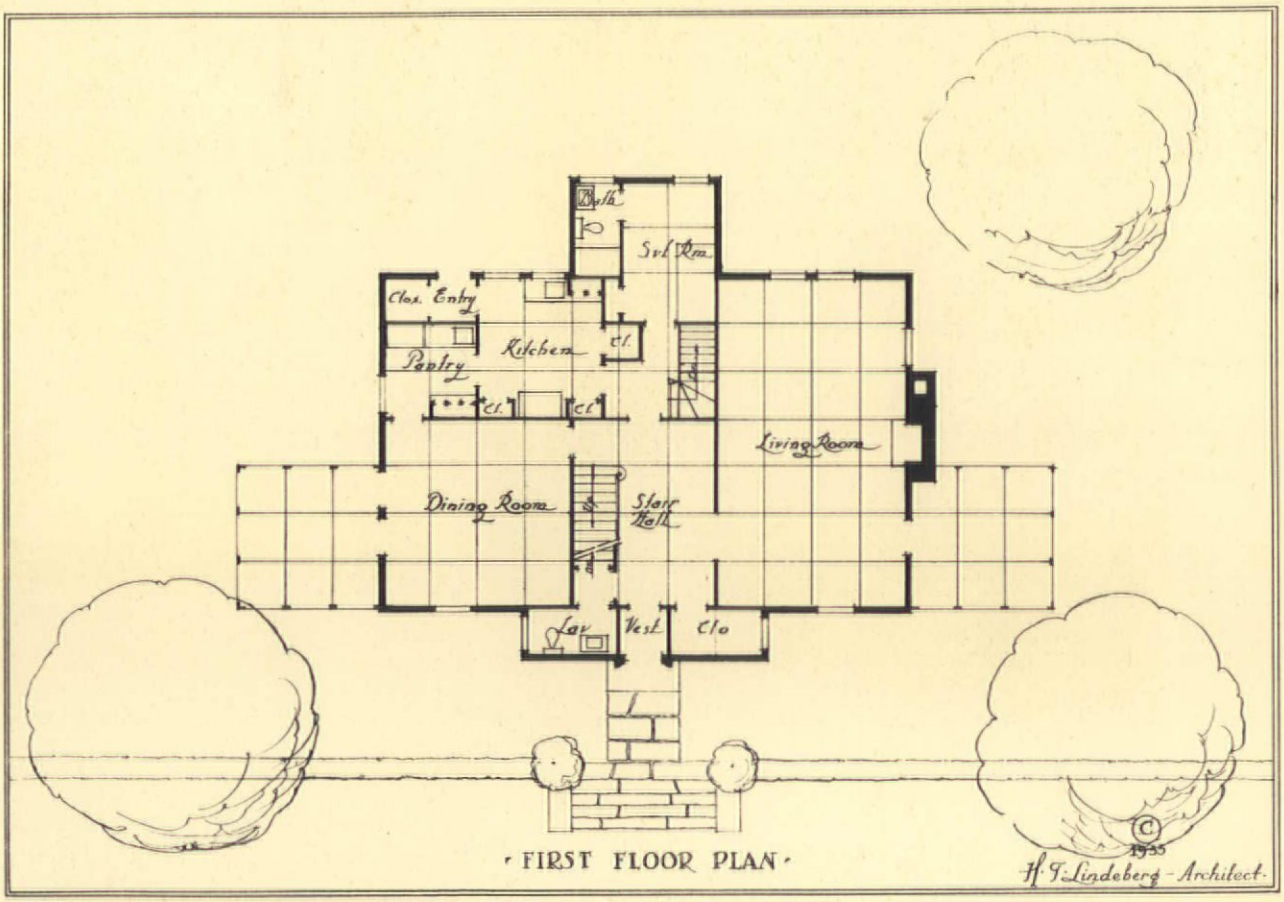

FIRST FLOOR PLAN

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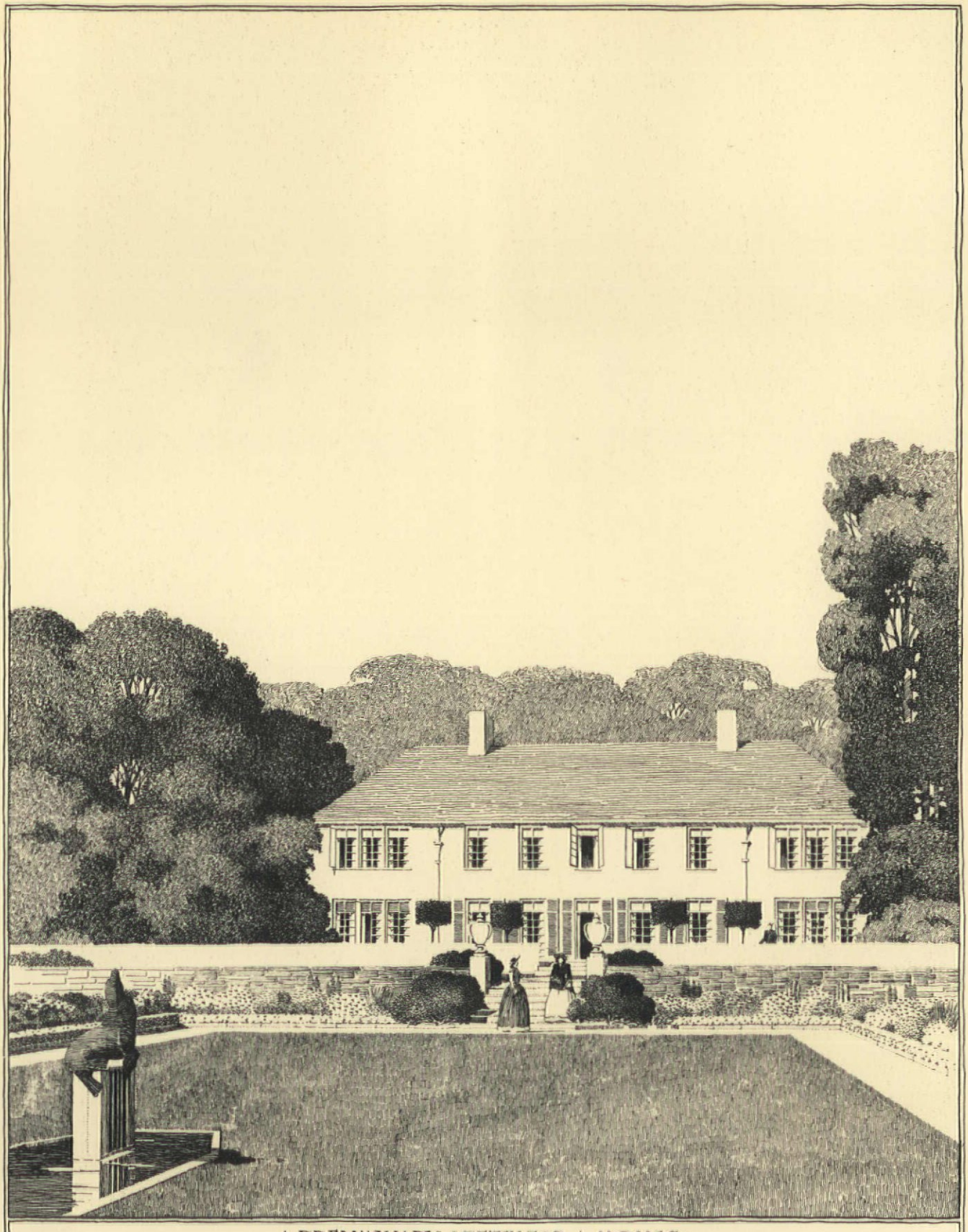


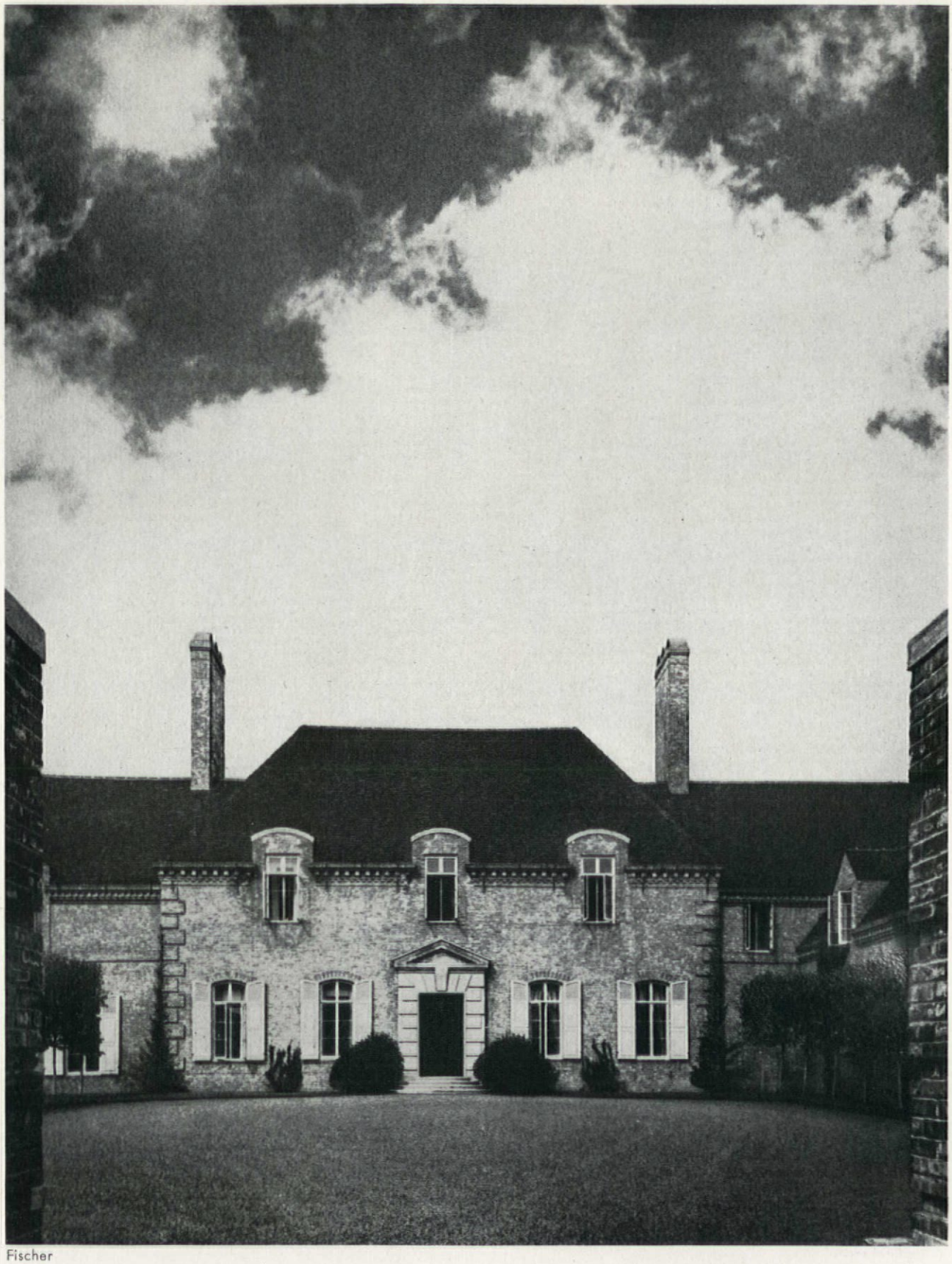
A PRELIMINARY SKETCH FOR A HOUSE
~ IN WESTCHESTER COUNTY ~

H. T. Lindeberg – Architect

Fischer

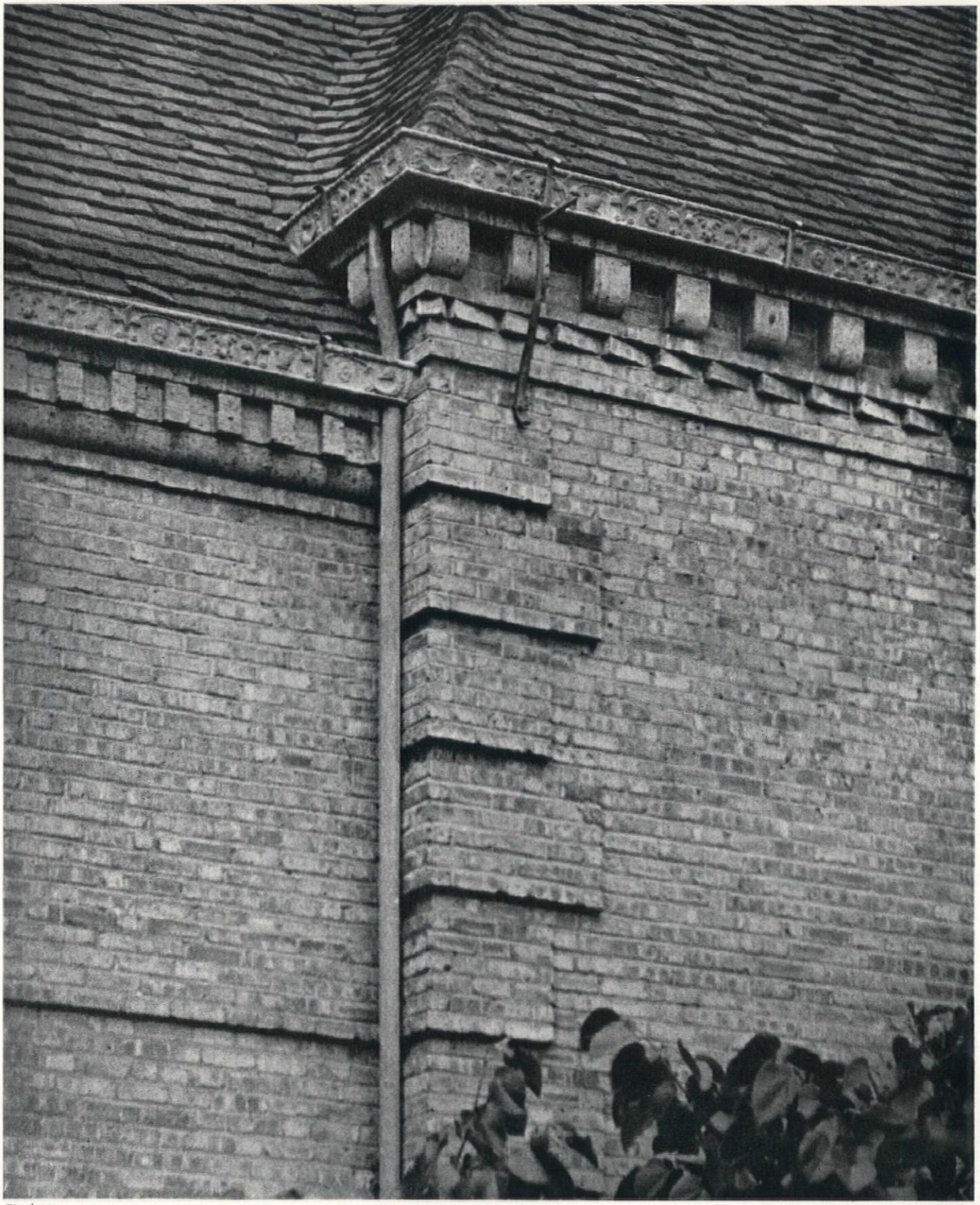
ENTRANCE, HOUSE AT LAKE FOREST, ILLINOIS
H. T. LINDEBERG, ARCHITECT

COUNTRY HOUSES BY H. T. LINDEBERG



Fischer

HOUSE AT LAKE FOREST, ILLINOIS
H. T. LINDEBERG, ARCHITECT



Fischer

CORNICE DETAIL, HOUSE AT LAKE FOREST, ILLINOIS
H. T. LINDEBERG, ARCHITECT

Gottscho

ENTRANCE, HOUSE AT PROVIDENCE, RHODE ISLAND
H. T. LINDEBERG, ARCHITECT

ENTRANCE SIDE, HOUSE AT PROVIDENCE, RHODE ISLAND
H. T. LINDEBERG, ARCHITECT

Gottscho

STREET FACADE, HOUSE AT PROVIDENCE, RHODE ISLAND
H. T. LINDEBERG, ARCHITECT

CARTER HALL, MILLWOOD, VIRGINIA
RENOVATED BY H. T. LINDEBERG, ARCHITECT

Gottscho

ENTRANCE HALL, CARTER HALL, MILLWOOD, VIRGINIA
H. T. LINDEBERG, ARCHITECT

Gottscho

HOUSE AT LAKE FOREST, ILLINOIS
H. T. LINDEBERG, ARCHITECT

Gottscho

HOUSE AT LOCUST VALLEY, LONG ISLAND
H. T. LINDEBERG, ARCHITECT

Fischer

ENTRANCE, HOUSE AT ST. LOUIS, MISSOURI
H. T. LINDEBERG, ARCHITECT

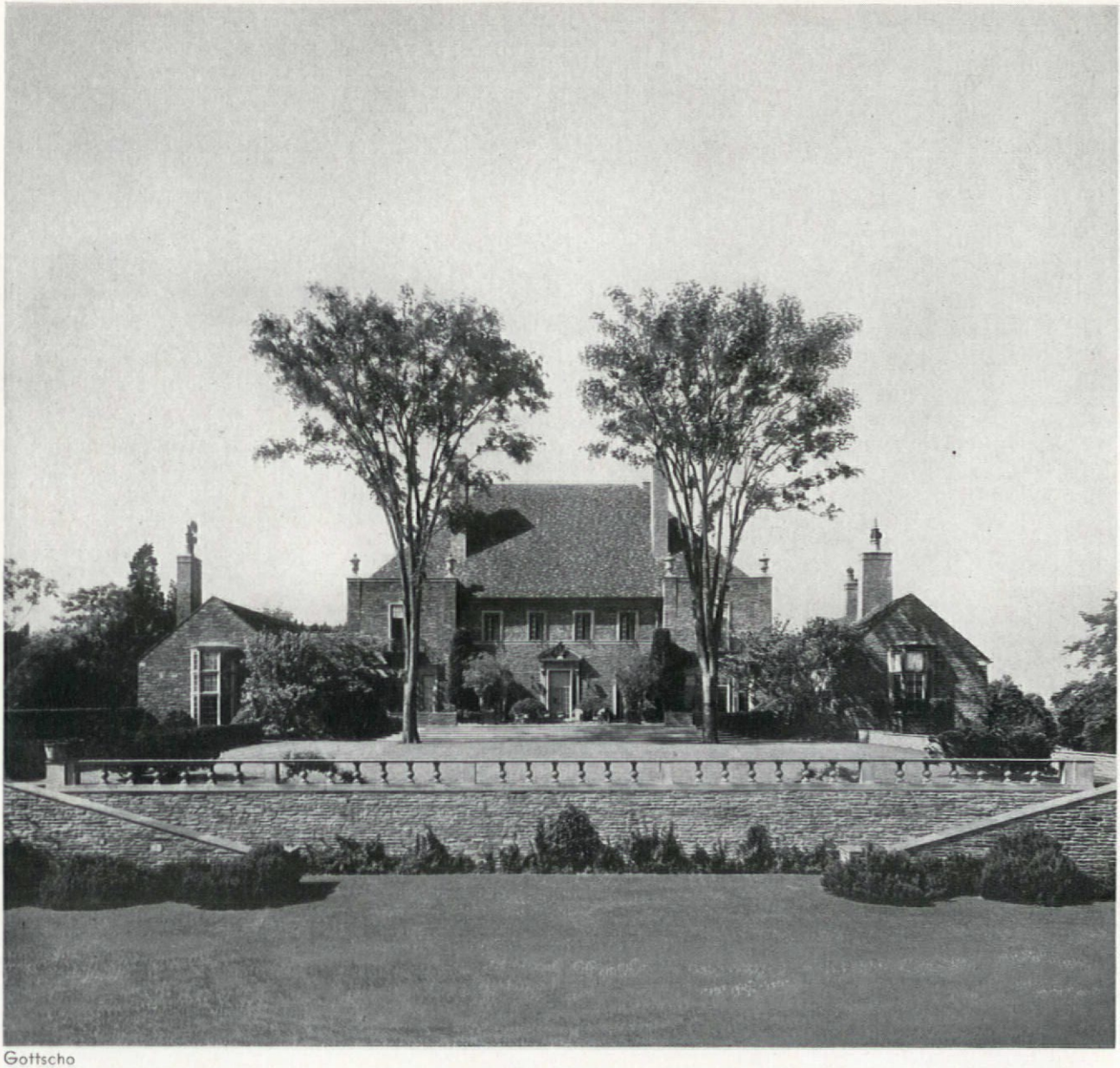
Fischer

HOUSE AT ST. LOUIS, MISSOURI
H. T. LINDEBERG, ARCHITECT

HOUSE AT GREENWICH, CONNECTICUT
H. T. LINDEBERG, ARCHITECT

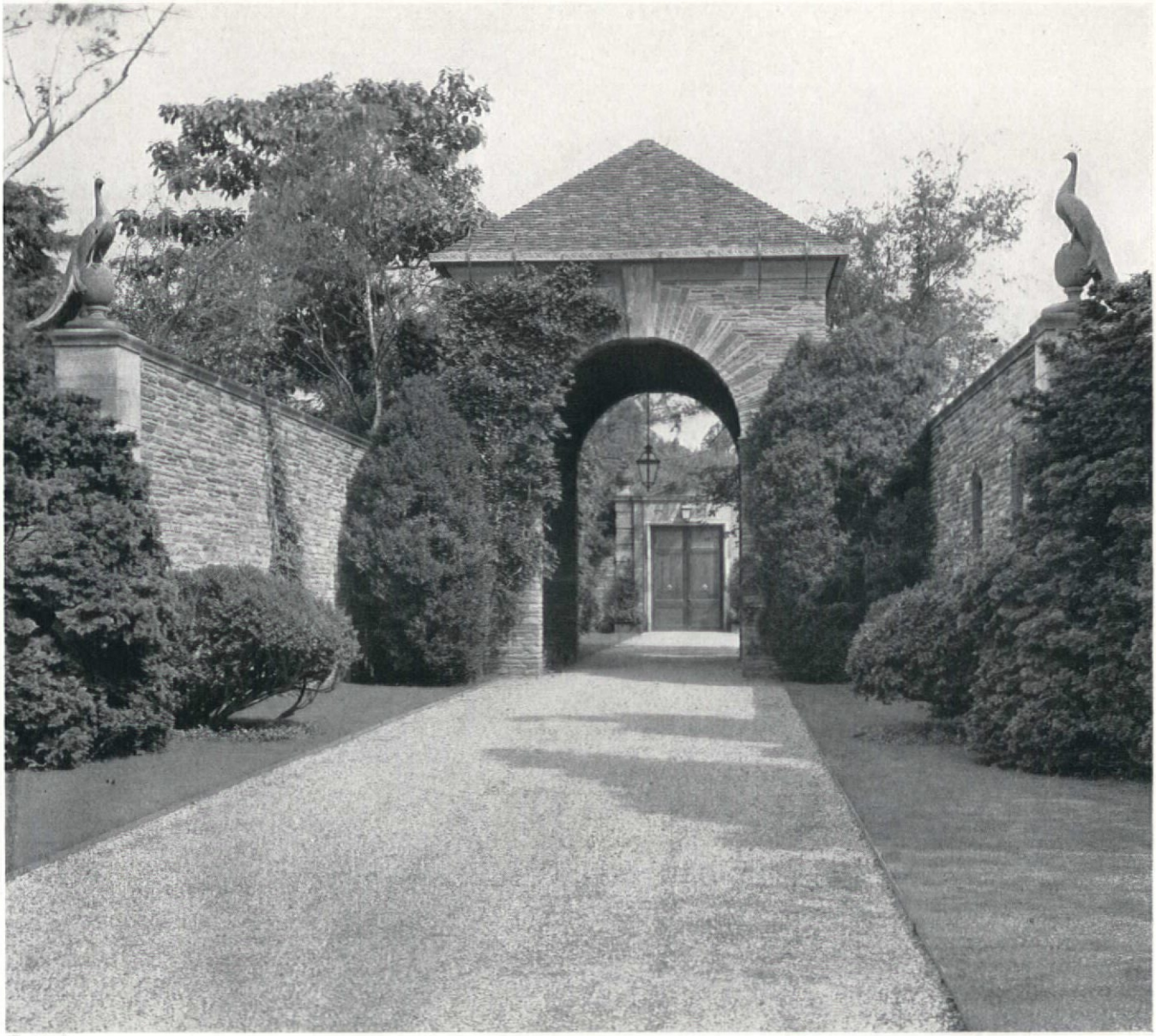
Gottscho

"PENGUIN HALL," BEVERLY, MASSACHUSETTS
H. T. LINDEBERG, ARCHITECT



Gottscho

"GRAY CRAIG" AT NEWPORT, RHODE ISLAND
H. T. LINDEBERG, ARCHITECT

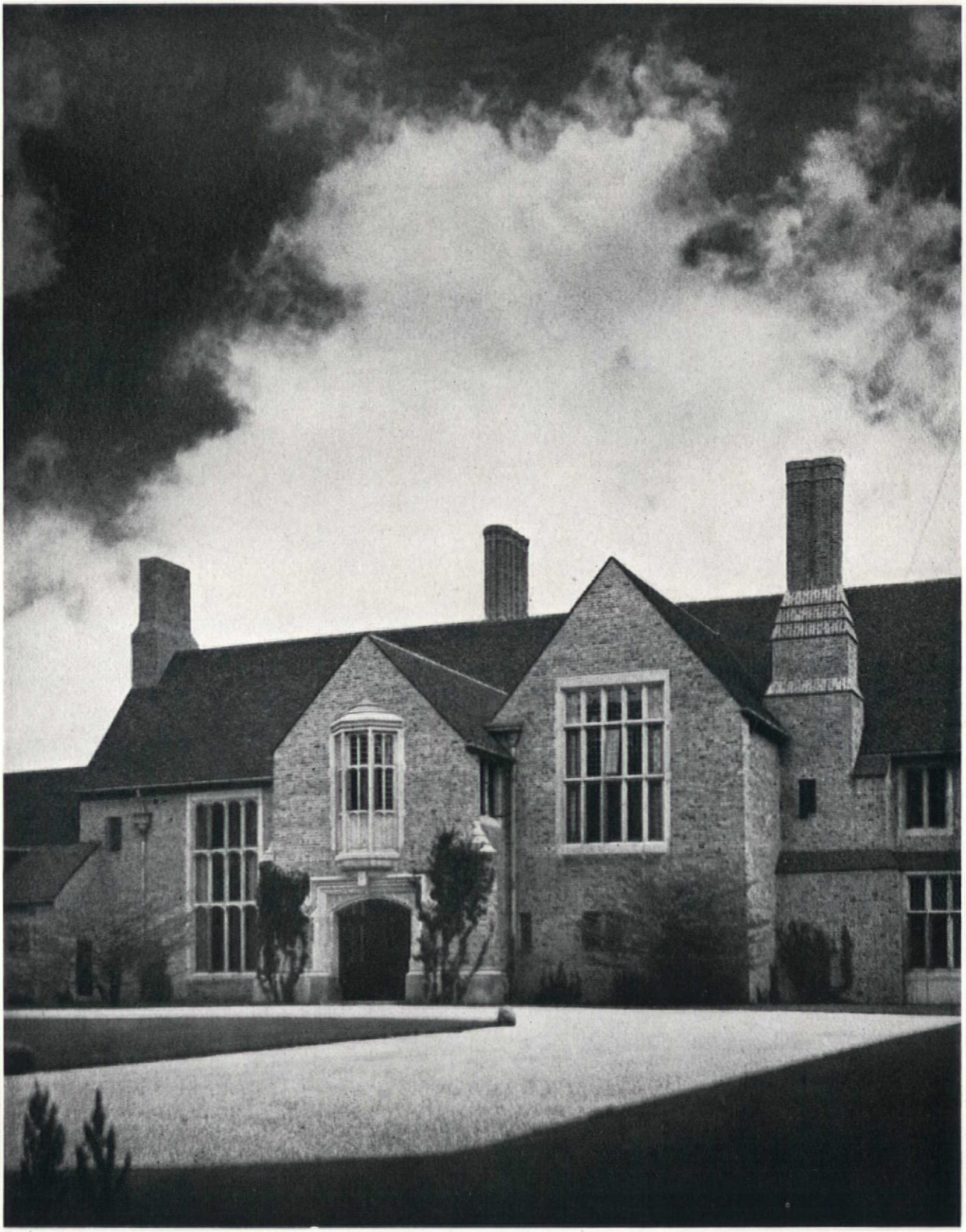


Gottscho

"GRAY CRAIG" AT NEWPORT, RHODE ISLAND
H. T. LINDEBERG, ARCHITECT

Fischer

HOUSE AT GLEN HEAD, LONG ISLAND
H. T. LINDEBERG, ARCHITECT



Fischer

HOUSE AT LAKE FOREST, ILLINOIS
H. T. LINDEBERG, ARCHITECT

Gottscho

HOUSE AT DAYTON, OHIO
H. T. LINDEBERG, ARCHITECT

Gottscho

ONWENTSIA CLUB, LAKE FOREST, ILLINOIS
H. T. LINDEBERG, ARCHITECT

Fischer

ENTRANCE, HOUSE AT SANDS POINT, LONG ISLAND
H. T. LINDEBERG, ARCHITECT

Fischer

GARDEN SIDE, HOUSE AT SANDS POINT, LONG ISLAND
H. T. LINDEBERG, ARCHITECT

Gottscho

LIVING ROOM OF HOUSE AT 133 EAST 62ND STREET, NEW YORK CITY
H. T. LINDEBERG, ARCHITECT

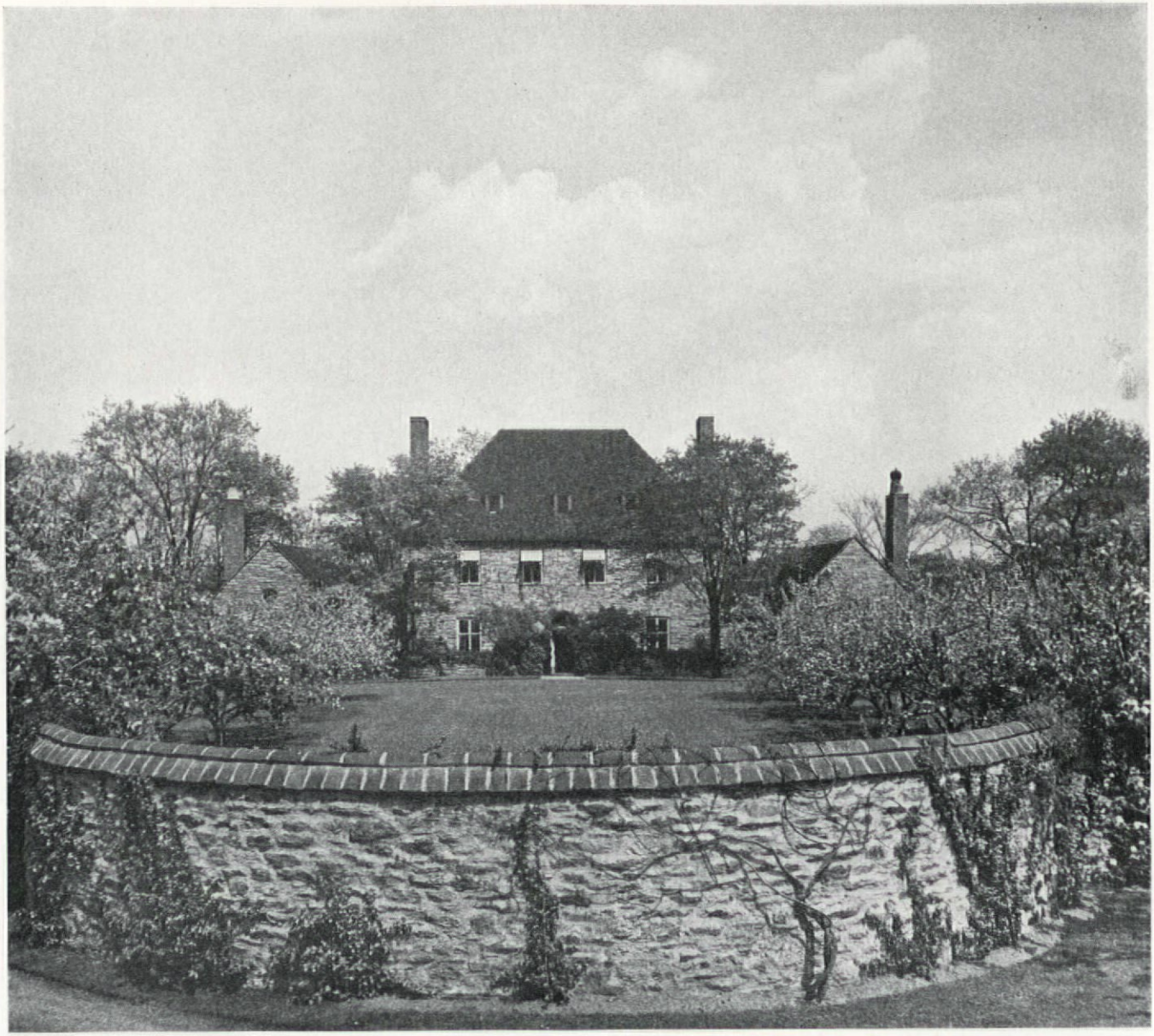
Gottscho

INTERIOR, HOUSE AT DAYTON, OHIO
H. T. LINDEBERG, ARCHITECT

Gottscho

STAIR HALL AT 33 BEEKMAN PLACE, NEW YORK CITY
H. T. LINDEBERG, ARCHITECT

SERVICE HOUSE AT LAKE FOREST, ILLINOIS
H. T. LINDEBERG, ARCHITECT



HOUSE OF H. T. LINDEBERG AT LOCUST VALLEY, LONG ISLAND

(Continued from page 251)

done), a house self-insulated from heat and cold, weatherproof, fireproof, vermin-proof, and so firmly anchored to its concrete foundation as to be earthquake and hurricane-proof.

This is a house, too, that has been built with the utmost economy of mass-production units of material, labor in construction and time elapsed—altogether an extraordinary building achievement. It is the more significant as a solution of the present challenge to architecture in that it presupposes no particular location or kind of site and asks no departures from the living habits of its prospective owner. Unless it be intimated to him, as a departure, that he will have far more comfort, with lower maintenance and lower depreciation than ever experienced before, even on a much higher investment.

Given, then, this house that has met the essential requirements of mass production in its units; that has effected radical economies in labor; that has shortened the entire building operation; that produces a house more efficient and more comfortable than the house of standard construction; that has done all this at a cost for a permanent dwelling appreciably less than the cost of an impermanent one—it is a fair and natural question to ask what this house may be in terms of appearance.

And here, from the traditionalist viewpoint, it seems to me that Mr. Lindeberg has scored his greatest triumph, greater even than the virtuosity of his architectural performance in the best and greatest of his country houses built in former years. I mean that he has accepted all the limitations, all the premises of the new school of architects, has added to these the demands for mass production, with all its dangerous implications of inflexible standardization, and has developed a number of houses on a module of design, the module, obviously based on the unit of construction which is, in width, two feet.

So far as the external appearance of his cellular steel-unit house is concerned, its normal outer finish is a composition similar in texture to stucco, and possessing insulating qualities greater than those of a three-foot wall—as well as being waterproof, fireproof and vermin-proof. Nor is too great a concession to tradition made when Mr. Lindeberg's method of construction allows, for the more expensive house, a brick or stone veneer over the insulating material, and anchored the insulating and surface fabric into the cellular steel wall.

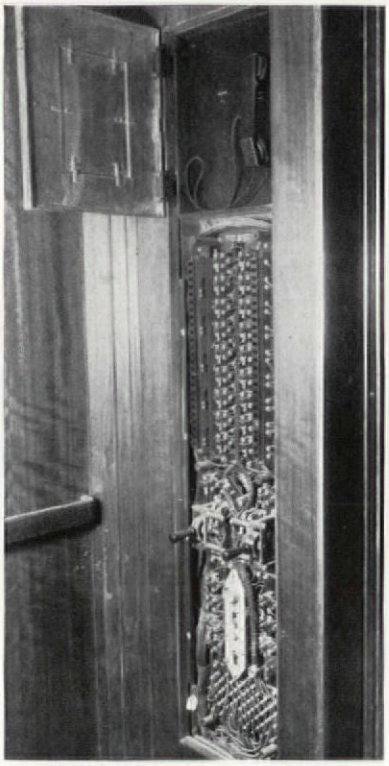
The designs here published must largely speak for themselves—broadly in terms of taste and graciousness of manner, specifically as simple, direct, sincere solutions of a practical construction problem in terms of design. Any one examining the various houses shown needs little imagination to see the wide range of possibilities that are suggested, particularly when he realizes that Mr. Lindeberg deliberately set himself to achieve pleasing houses on a standardization module of design, and without recourse to picturesque roofs, or to ornamental detail. Any amount of detail might be added—detail in any suitable style—but it was Mr. Lindeberg's intention to develop a demonstration that the Internationalists' ruling against "ornamental detail" could be observed in the design of a good-looking house. He would ask no odds on this score, or on the matter of a distinctive roofline, although any type of roof may be easily and inexpensively constructed with his cellular steel units.

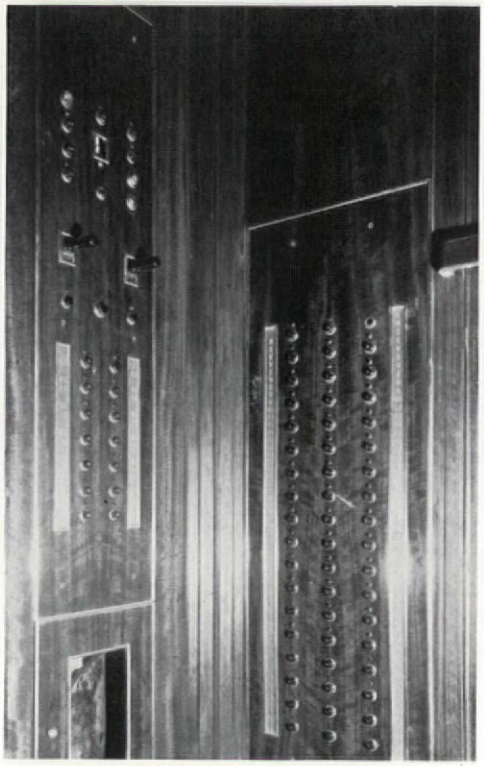
Sound architectural convictions, governed by good taste and directed by intelligence show, in these designs, that no compromise need be made with pleasing and gracious appearance—even when the design is directly conditioned by standardized units, and motivated by definite, practical economies unequalled by the most bleak and barren-looking of the Internationalist designs.

Successful in the detached house, designs with the new cellular steel-unit module seem to hold equally happy province for group housing.

The central defect of much experimentalism has always seemed to me to be poor thinking even more than poor performance—just as the remarkable qualities of this new study in the solution of the modern house problem seem to result from first-rate thinking. Neither the engineer-minded architect nor the art-theory-minded architect, each working on a personal bias, and with ideas not thoroughly rationalized, seems to have come very near the mark. Neither has seen the problem as a whole, or even solved the half he has chosen to pursue. Certainly no scheme of modern construction has so fully taken into account purely architectural values as to offer the individual his unrestricted choice as between a kind of house as modern as the year 1950, or as romantic as an Italian villa, either to be built on an identical scheme of construction and with identical structural units and materials.

ELEVATOR FEATURES IN THE ROCKEFELLER CENTER INSTALLATION IN NEW YORK CITY





Frank F. Evans

Starters' call-back systems and cab telephone systems supplement the usual elevator equipment and signal devices.

By A. WILSON KNECHT, of the Office of Clyde R. Place, Consulting Engineers

Modern competition in office building construction and management creates a demand for high-speed, efficient elevator service. Particularly does this hold true for older structures which have to be modernized to meet the standards of service offered by new buildings: The elevators are of primary importance.

Scheduling the Elevators

Assuming an optimum elevator speed, the service may be measured by the time interval between cars leaving the ground floor or top landing. It is easily seen that under given conditions of speed and travel, the round trip time of one elevator may be estimated, and the interval may be approximated by obtaining the ratio between the round trip time of one car and the number of cars to be used.

The obvious conclusion to be reached is that the greater the number of cars, the smaller will be the interval and the better will be the service. The economic disadvantage of using a large number of cars, with resulting loss in rentable space due to additional hatchways, machine rooms and the like, makes it incumbent upon the consulting engineer to select the least number of cars that will give the required service. In so doing, it is imperative that advantage be taken of the highest economical elevator speed and that elevators be under the control of an experienced starter.

In order that the maximum service be obtained with any bank of elevators, it is necessary for the time intervals between cars leaving the upper and lower landings to be as nearly equal as possible. In this way, "bunching" of cars is eliminated with consequent improvement of service.

Many experienced starters are able to maintain equal intervals without the use of any automatic auxiliary mechanical equipment. Very often, however, the starters are forced to act as information clerks, and such interruptions make it difficult to keep the elevators equally spaced. Another possible source of confusion is that caused by taking one or more elevators of a bank of cars out of service for inspection or repairs, such as is often done between the morning, noon and evening rush periods. In the case of the office buildings of Rockefeller Center in New York City it was deemed advisable to install a supplementary mechanical device in connection with the elevators to assist the starters and operators in maintaining efficient service.

Timing Devices

There are a number of devices on the market at the present time designed to maintain good elevator service by scheduling the departure of cars. Some of them also include such additional features as indications to the operators as to whether the

car is ahead or behind the scheduled running time. In the buildings under discussion, however, it was decided to install a scheduling device only, leaving the operation of the cars while running to the discretion of experienced operators, subject, of course, to telephoned instructions or buzzer signals from the starter.

The equipment desired for each bank of elevators consisted of two electrically-operated timing devices, each operating a tap-bell. One tap-bell is located at the ground floor, the other at the upper terminal. Both timing devices, however, are located at the ground floor.

Each timing device is provided with an indicating dial graduated in seconds, a pointer, and a handle, so that the interval between cars may be adjusted at will as called for by traffic conditions. It is to be noted that separate timing devices and bells are installed for both terminal landings thereby securing greater flexibility of control.

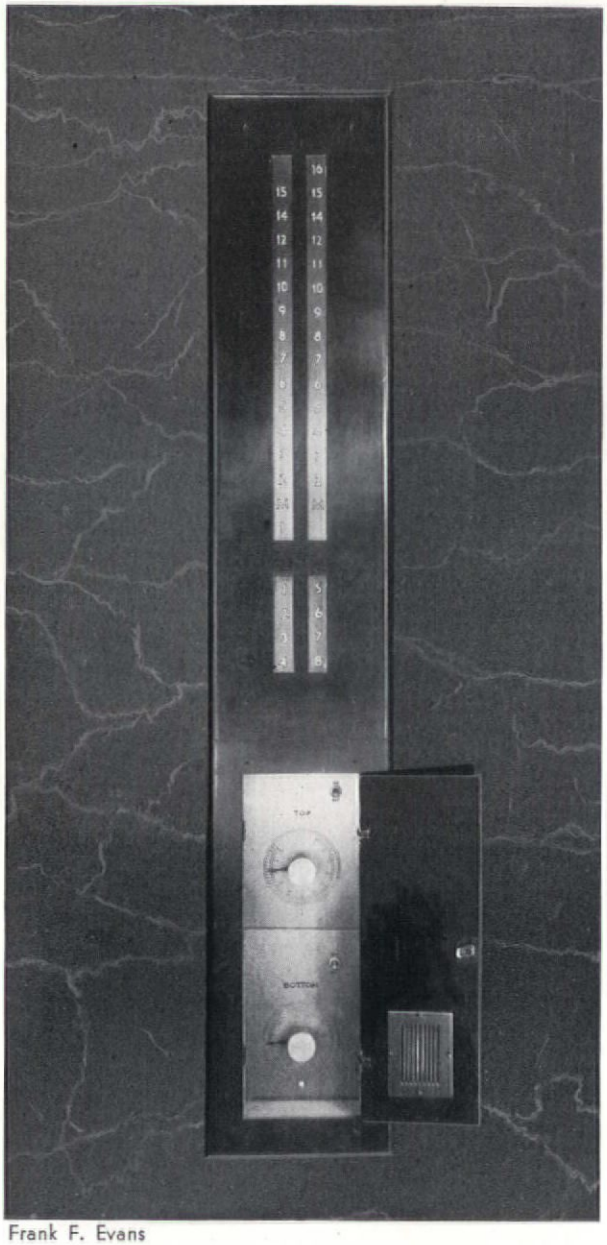
All scheduling apparatus is designed to match other corridor equipment. For example: the timing devices and lower terminal bells in the R C A Building are flush-mounted on the wall directly below the starters' panels. The inclosing box in this case is finished in black to match the corridor finish. The upper terminal bells are also flush-mounted on the walls, but in this case are designed to match the corridor lanterns in design, size and finish.

Cross-Over Floors

As further insurance of good elevator service, multiple "cross-over" floors are provided in the R C A Building. It is obvious that all calculations of elevator speeds and service must be based on a given occupancy of the building, together with an assumed distribution of the occupants. Should one or more floors of a building be leased to a company requiring a large number of clerks in a limited space, the bank of elevators serving those floors would be compelled to carry a greater number of passengers than was originally contemplated. Under such conditions, the local run of the overloaded bank of elevators may be decreased by one or more floors, and the local run of the bank serving the next higher (or lower) group of floors may be increased to distribute the heavy traffic. It is to be noted, however, that only one cross-over floor is used under ordinary conditions, the corridor signal equipment for the unused floors being disconnected.

Elevator Telephones

Supplementing the car scheduling equipment are the starters' call-back systems and telephone systems. The latter is of interest in that it is installed in connection with the building system and is connected through the main telephone switchboard. The starter and cab operator may communicate without intervention of the telephone operator by means of a buzzer call system. Should the cab



Frank F. Evans

Timing device for scheduling the departure of elevators.

operator or starter wish to talk to the building manager or to a mechanic in the machine room, this call must be transferred through the main switchboard. If, on the other hand, the cab is operating at night when neither the starter nor telephone operator is on duty, the call automatically rings the bell in the manager's office.

In addition to the system described, all cars in the R C A Building are provided with a supplementary system consisting of a telephone jack receptacle in the controller panel of each car connecting directly to a similar receptacle in the controller panel in the machine room. These will be used in connection with telephone head-sets for maintenance work and adjustments.

All telephones are concealed from view, behind doors in the starters' panels, and behind the certifi-

cate frames in the elevator cabs. The telephones and boxes for same were especially designed to require minimum space.

Photo-Electric Cell Safety Appliances

With the use of high-speed electrically-operated car and shaftway doors, it is imperative that every possible precaution be taken to prevent accidents to passengers. To accomplish this end, safety-ray devices were installed on nearly all cars. Such a device consists of two electric light sources and two photo-electric or light-sensitive cells. The light sources are mounted on the cabs, one above the other, the lower one 5 inches, the upper one 40 inches above the floor. They are located on the hatchway side of the cars, out of sight, and direct the light to the photo-electric cells mounted on the same horizontal lines on the opposite side of the door. These devices are connected through suitable relays into the electric circuit operating the doors and are so arranged that the doors may close when the light rays are uninterrupted, but the instant one or both rays are interrupted by a passenger entering the car, the door movement is stopped automatically. A key type switch is mounted in each car to short-circuit the light-ray devices and permit operation of the doors when required by emergency or light failure.

Ventilation of Elevator Cabs

In addition to passenger safety, passenger comfort was also considered in design of the cabs. Special types of louvers in cab walls were installed to provide natural ventilation due to car movement. Fans were also installed to insure positive ventilation at all times. The fans are incorporated in the lighting fixtures and draw air into the cabs from the hatchway. They are of the two-speed type, controlled from switches on the controller panel.

Miscellaneous Devices

The economical operation of elevators requires, among others, records of the use of each elevator and the current consumed by each. To obtain such records, a recording watt-hour meter and car mileage recorder were installed for each elevator. Economy of operation and maintenance will also be obtained in increased length of rope life because of the use of cable equalizers.

The equipment installed in the cabs includes such standard items as annunciator, nonstop button, emergency stop button, light switch, slow-speed button and operating switch, emergency interlock cut-out (under glass), floor and re-set buttons.

Auxiliary equipment installed for starters' use are: annunciator, motor-generator switches (key type) and pilot lights, nonstop switches, call-back buttons, and telephones.

The corridor signal equipment generally consists of "up" and "down" lanterns with tap-bell on intermediate floors and horizontal electric position indicators at the ground floor. Mechanical type position indicators are installed in connection with certain service cars in place of the electrically-operated equipment.

MATERIAL PRICE MEASURING ROD*

The prices in this tabulation enable one to visualize at a glance the main trend of the material market. Their significance does not extend beyond that point, and the explanation below should be read carefully.

F. W. Dodge Corporation Composite Prices as Indicated in Explanation—

Material	This Month	Month Ago	Year Ago
Portland Cement..	$2.14	$2.10	$2.00
Common Brick....	12.25	11.85	11.75
Structural Steel...	1.60	1.60	1.60
Lumber.....	16.30	15.65	15.55

Prices given in this comparison are composite and do not in all cases refer to one item. For instance, the price of structural steel is the composite of prices of shapes and plates f.o.b. Pittsburgh; the price of lumber is a composite of five items of Southern pine and five items of Douglas fir f.o.b. mill; the price of cement is a composite of prices in fourteen different cities per barrel, carload lots, to contractors; price of brick is composite in fourteen cities per M, delivered on the job.

*As previously published in *General Building Contractor*.

WHO'S WHO IN THE PUBLIC WORKS ADMINISTRATION

Since he became Public Works Administrator, Secretary Harold L. Ickes has gathered in Washington a group of men, outstanding in their professions, who are advising and assisting him in the administration of the Public Works Act. The list appointed thus far reads like a who's who in engineering, law, architecture and public administration. The appointments have been made on a basis of merit and accomplishment, the Administrator's only desire being to get the best men obtainable for the important key posts in the central organization in Washington.

The same care was exercised in the selection of men of the highest technical training and administrative ability as State Engineers for the Public Works Administration. The State Engineers occupy an important place in the administration's decentralized organization. They are the Administrator's technical representatives in the field who in the first instance pass on applications for public works loans. They also serve as executive officers of the State Advisory Boards.

The Administrator's chief assistant is Colonel Henry Matson Waite, of Cincinnati, Ohio, who is Deputy Administrator and a member of the Special Board of Public Works. Colonel Waite has a long record of achievement in municipal administration, engineering, transportation and business. He was City Manager of Dayton, Ohio, and Chief Engineer of Cincinnati. He built the $40,000,000 Cincinnati Union Terminal. Colonel Waite has held a number of important construction and operating posts with railroads and in 1905 was superintendent of the Seaboard Airline. During the war he served as Deputy General Director of Transportation and after the armistice as deputy for transportation with the Third Army at Coblenz and also as assistant to the officer in charge of civil affairs at advance general headquarters at Treves, Germany. After the war Colonel Waite engaged in business and private engineering practice.

Colonel Waite is past president of the International Association of City Managers and a past vice president of the American Society of Civil Engineers. He is a member of the American Institute of Mining Engineers, the American Society of Military Engineers and the Engineers Club. He is a graduate of the Massachusetts Institute of Technology.

Major Philip B. Fleming is Executive Officer of the Public Works Administration and Major Robert W. Crawford and Colonel E. W. Clark are Executive Assistants to the Deputy Administrator.

Major Fleming is a regular officer of the Corps of Engineers. Appointed to the Military Academy from Iowa he was graduated in 1911. Major Fleming served at a number of army posts and district engineer offices, including commanding engineer troops at Fort Leavenworth, Kansas, in 1918.

Since the war Major Fleming has been stationed at Camp Humphreys, Va., as director of drawing, United States Engineer School, 1918-19; New York City, District Engineer Office, First District and Recorder, Board of Engineers, 1919-21; Fort Humphreys, commanding enlisted specialist and vocational schools, member of the Board on Training Regulations and of the Board on Engineer Equipment, 1921-24; Chief of the Finance Division, Office of Chief of Engineers, member of the War Department Board on Contracts and Adjustments, and of the Board on Standardization of War Time Contracts, 1924-26; United States Military Academy, commanding detachment of engineers, post engineer and water supply officer, and senior instructor in military engineering, 1926-27, and at Kansas City, Mo., as assistant to the sector engineer.

Major Crawford was appointed to the Military Academy from New York. He is a graduate from the Engineer School, the Command and General Staff School and Cornell University. He was made a captain in May, 1917, and in August of the same year went to France in command of Company D. Later he was appointed chief gas officer, Line of Communication, A.E.F., and still later served with the 30th Engineers (First Gas Regiment). While in France with the Chemical Warfare Service, he was promoted to a lieutenant colonelcy.

Since the war Major Crawford has served at various army engineer posts, as District Engineer, Second New York District; District Engineer, Duluth, Minnesota; District Engineer and Department Engineer at Honolulu, Hawaii; instructor in the Engineer School at Fort Humphreys, and duty in the office of Chief of Engineers in Washington. During this latter assignment Major Crawford was chief of the construction section, military division, and from August, 1932, assumed additional duties as chief of the railway section until July, 1933, when he was assigned to duty with the Administrator of Public Works.

E. W. Clark brings to the Public Works Ad-

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GENERAL CONTRACTORS' CODE COMMITTEE

Reading from left to right: (standing) Secretary, Herbert E. Foreman, Washington, D. C.; Legal Counsel, William E. Hayes, Washington, D. C.; Burt L. Knowles, Worcester, Mass.; James B. Kenney, Denver, Colo.; Edward J. Harding, Managing Director, Associated General Contractors; (seated) A. E. Horst, Past President, Associated General Contractors, Philadelphia, Pa.; Chairman, A. C. Tozzer, President, Associated General Contractors, New York City; A. P. Greensfelder, Past President, Associated General Contractors, St. Louis, Mo.; Col. George B. Walbridge, Past President, Associated General Contractors, Detroit, Mich.

ministration 37 years of experience in engineering construction and designing. He has been closely associated with Colonel Waite for many years, having served as his executive assistant on the Cincinnati Union Terminal and with him in France during the war.

Colonel Clark has had wide experience in the contracting business and with the Pennsylvania and Monongahela railroads. During the war he served in the Transportation Corps as major and lieutenant colonel. His home is in Altoona, Pa.

The legal division of the Public Works Administration is headed by Henry T. Hunt as general counsel. Mr. Hunt is a former Mayor of Cincinnati. He served two terms as prosecutor in Hamilton County, Ohio.

President Wilson appointed Mr. Hunt a member of the Railroad Labor Board which was created to determine just wages for railroad employees. President Harding did not reappoint Mr. Hunt who returned to the practice of law in New York City. He is a graduate of Yale University and the Cincinnati Law School. His home is at Peekskill, New York.

Fred E. Schnepfe is Director of Federal Projects for the Public Works Administration. Mr. Schnepfe is especially qualified for this post in view of the fact that for the past two years he has been the chief engineer for the Federal Employment Stabilization Board. The nature of this work has kept him in close contact with all construction agencies of the Federal Government.

Mr. Schnepfe's record includes service as assistant engineer of the Maryland State Roads Commission, county engineer of Queen Anne County, Maryland; county engineer of Durham County, North Carolina; District Engineer of the North Carolina State Highway Commission; County Manager of Sarasota County, Florida, and Vice-President and Manager of the Highway Engineering Bureau, of Washington, D. C. During the war Mr. Schnepfe served as first lieutenant, Construction Division, Quartermaster Corps, and was assistant to the construction quartermaster at Camp Polk, Raleigh, N. C.

Robert D. Kohn, nationally known architect and housing authority of New York City, is Director of Housing of the Public Works Administration.

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ARCHITECTS' CODE COMMITTEE

Reading from left to right: (standing) Edward C. Kemper, Executive Secretary, American Institute of Architects, Washington, D. C.; M. H. Furbringer, Past Director, American Institute of Architects, Memphis, Tenn.; (seated) W. G. Nolting, President, Baltimore Chapter, American Institute of Architects, Baltimore, Md.; Frederick Mathesius, Jr., New York City; Chairman, William Stanley Parker, Boston, Mass.; Ernest John Russell, President, American Institute of Architects, St. Louis, Mo.; Francis P. Sullivan, Washington, D. C.

Born in New York, Mr. Kohn was educated at the City College of New York, Columbia University and the Ecole des Beaux Arts, Paris. He is the architect of a number of modern buildings in New York and Cleveland and is a former president of the American Institute of Architects. He also is a member of the Beaux Arts Society.

Lloyd H. Landau, of St. Louis, Mo., is general solicitor of the Public Works Administration. Born in Milwaukee, Mr. Landau is a graduate of the University of Wisconsin and the Harvard Law School. Soon after his admission to the bar Mr. Landau became legal secretary to Mr. Justice Oliver Wendell Holmes. He was general counsel of the St. Louis Public Service Company.

Clarence McDonough, of New York City, Director of Engineering for the Public Works Administration, has roamed far and wide building bridges, power plants, reclamation and irrigation and marine and harbor work—in short, engineering work of all types. He has been engaged on nearly 100 engineering jobs in all parts of the United States, Canada, South America, Great Britain, France, Italy, Belgium, Spain and Greece.

Mr. McDonough was born in Gloversville, N. Y. He is a graduate of the Massachusetts Institute of Technology and is a member of the American Society of Civil Engineers.

Lewis P. Mansfield, the Finance Director of the Public Works Administration, is an expert on municipal bonds and municipal finance. He has been the associate manager of the bond department of one of the largest insurance companies. Prior to that he was engaged in the investment business in New York City.

Mr. Mansfield is a graduate of Harvard. He served in the naval aviation during the World War. He was born in Portland, Me., and his present residence is at Morristown, N. J.

George H. Parker, of Chevy Chase, Md., is Chief Accountant for the Public Works Administration. He is known as an authority on railroad financing and related problems.

During the war Mr. Parker was assistant to the Director General of Railroads and in 1920 was appointed Comptroller of the Railroad Administration. He is widely known in New England where several years ago he made a study of the railroad

situation in that region. He also has served as associate counsel for the City of Boston and the Boston Port Authority in rate cases. Mr. Parker recently concluded a study of the Canadian transportation system and of Dominion finances for a governmental commission.

STATE ENGINEERS FOR THE PUBLIC WORKS ADMINISTRATION

Following are the State Engineers and their official addresses:

State — *Engineer and Headquarters*

Alabama—
Arizona—Howard S. Reed, Phoenix.
Arkansas—Alex Allaire, New P. O. Bldg., Little Rock.
California—Frank E. Trask, State Bldg., Los Angeles.
Colorado—George M. Bull, 229 Custom House, Denver.
Connecticut and Rhode Island—Leslie A. Hoffman, Hotel Stratfield, Bridgeport.
Delaware—Chas. H. Fleming, State House, Dover.
Florida—James E. Cotton, Tallahassee.
Georgia—J. Houston Johnston, 722 Citizens and Southern Bk. Bldg., Atlanta.
Idaho—Ivan C. Crawford, State House, Boise.
Illinois—Joshua D'Esposito, U. S. Court House, Chicago.
Indiana—Albert H. Hinkle, 401-D Fed. Bldg., Indianapolis.
Iowa—P. Frank Hopkins, State House, Des Moines.
Kansas—Robert J. Paulette, Topeka.
Kentucky—Robert V. L. Wright, 267 Fed. Bldg., Louisville.
Louisiana—Orloff Henry, 714 Masonic Temple, New Orleans.
Maine—Geo. M. Williamson, Portland.
Maryland—Abel Wolman, 1245 Balt. Trust Co. Bldg., Baltimore.
Massachusetts—Charles R. Gow, 307 State House, Boston.
Michigan—Mortimer E. Cooley, 10 Fisher Bldg., Detroit.
Minnesota—William N. Carey, 1246 Univ. Ave., St. Paul.
Mississippi—Geo. H. Wells, 241 Edwards Hotel, Jackson.
Missouri—Hugh Miller, Buder Bldg., 7th and Market Sts., St. Louis.
Montana—D. A. McKinnon, 219 Fed. Bldg., Helena.
Nebraska—Albert C. Arend, 420 Fed. Bldg., Omaha.
Nevada—With Utah
New Hampshire-Vt.—Harold J. Lockwood, State House, Concord.
New Jersey—Cornelius C. Vermuele, Jr., Indus. Bldg., 1060 Broad St., Newark.
New Mexico—With Arizona.
New York—Arthur Tuttle, Capitol, Albany.
North Carolina—Herman G. Baity, Chapel Hill.
North Dakota-S. D.—Harry C. Knudson, Fed. Bldg., Devils Lake.
Ohio—L. A. Boulay, Wyandotte Bldg., 6th Floor, Columbus.
Oklahoma—Philip S. Donnell, Fed. Bldg., Oklahoma City.
Oregon—Claude C. Hockley, Fed. Bldg., Portland.
Pennsylvania—Wm. H. Gravell, Cap. Bldg., Harrisburg.
Rhode Island—With Connecticut.
South Carolina—J. L. M. Irby, Columbia.
South Dakota—With N. Dakota.
Tennessee—Harry S. Berry, Nashville.
Texas—Robt. A. Thompson, Fair Bldg., Fort Worth.
Utah-Nevada—Richard Ambrose Hart, Fed. Bldg., Salt Lake.
Vermont—With New Hampshire.
Virginia—James A. Anderson, 337 P. O. Bldg., Richmond.
Washington—Gene Hoffman, Olympia.
W. Virginia—M. Lindsay O'Neale, Charleston.
Wisconsin—James L. Ferebee, Madison.
Wyoming—Francis C. Williams, Cheyenne.
Hawaii—Stanley L. Scott, Honolulu.
Alaska—Dr. Philip S. Smith, Alaskan Div. Geological Survey.
Puerto Rico—Col. Francis J. Behr, C.A.C., San Juan.

STATE ADVISORY BOARDS

Following are members of the State Advisory Boards and their headquarters:

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Wm. Walter Lane, Chairman Leslie C. Hardy Moses B. Hazeltine	Phoenix
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Leroy E. Laird	
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REGIONAL ADVISERS

Following are the Regional Advisers for the Public Works Administration:

Region	*Regional Adviser*	*Headquarters*
No. 1		
Maine Vermont New Hampshire Massachusetts Rhode Island Connecticut	George W. Lane, Lewiston, Maine	Boston
No. 2		
New York New Jersey Pennsylvania	Edward J. Flynn, Federal Bldg., 641 Washington St., New York City	New York City
No. 3		
Ohio Illinois Indiana Michigan Wisconsin	Charles M. Moderwell, 332 So. Michigan Ave., Chicago	Chicago

No. 4		
North Dakota South Dakota Nebraska Minnesota Iowa Wyoming	Frank W. Murphy, 402 Post Office Bldg., St. Paul, Minn.	Omaha
No. 5		
Washington Oregon Montana Idaho	Marshall N. Dana, c/o Oregon Journal, Portland, Ore.	Portland, Ore.
No. 6		
California Nevada Utah Arizona	Justus S. Wardell, Russ Bldg., San Francisco, Calif.	San Francisco, Calif.
No. 7		
New Mexico Texas Louisiana	Clifford B. Jones, Spur, Texas.	Fort Worth, Fair Bldg.
No. 8		
Colorado Kansas Missouri Oklahoma Arkansas	Vincent M. Miles, Fort Smith, Ark.	Kansas City, Mo.
No. 9		
Mississippi Alabama Georgia South Carolina Florida	Henry T. McIntosh, Albany, Ga.	Atlanta, Ga.
No. 10		
West Virginia Maryland Delaware Virginia Kentucky Tennessee North Carolina	George L. Radcliffe, Fidelity & Deposit Co. of Md., Baltimore, Md.	Baltimore, Md.

NATIONAL PLANNING BOARD

The National Planning Board of the Public Works Administration is composed of Frederic A. Delano, of Washington, D. C., Chairman, Dr. Wesley Mitchell, of Columbia University, and Prof. Charles E. Merriam, of the University of Chicago. Charles W. Eliot, 2nd, of Cambridge, Mass., is executive officer.

SPECIAL BOARD OF PUBLIC WORKS

Assisting the Administrator is the Special Board of Public Works appointed by the President. The members of the Board are:

Secretary of the Interior Harold L. Ickes, Chairman.

Secretary of War George H. Dern.

Attorney General Homer S. Cummings.

Secretary of Agriculture Henry Wallace.

Secretary of Commerce Daniel C. Roper.

Secretary of Labor Frances Perkins.

Director of the Budget Lewis Douglas.

Assistant Secretary of the Treasury L. W. Robert, Jr.

Col. H. M. Waite, Deputy Administrator of Public Works.

TECHNICAL BOARD OF REVIEW

This group of 12 outstanding engineers and technicians will consider the qualifications of particularly difficult or controversial projects which are referred to it by the Administration for review. It will also serve in a quasi-judicial capacity and hold open hearings on projects when public opposition develops and such hearings are required.

The Technical Board of Review will also fulfill the functions of a court of appeal on request of the Administration when proponents of some project feel that it has not received full consideration or that supplementary facts have been obtained which may shed new light on the qualifications of a project.

Subcommittees from the board membership may be designated to conduct reviews of projects according to the expert qualifications of the members. The Technical Board of Review or its subcommittees will usually meet in Washington but can hold hearings elsewhere in the country when advisable. In accordance with the low-overhead policy of the Administration the members will be paid on a per diem basis for time actually devoted to the work.

When a project is referred to the Technical Board of Review it will receive a fresh and impartial study of the fundamentals as presented in writing by the Public Works staff and the applicant or protestant. After such study due notice will be given when an open hearing is to be held for full verbal presentation of facts and opinions of all concerned. Such hearings will not be too legally technical but reasonably informal so that all pertinent facts are obtained. The Board will transmit its opinion to the Deputy Administrator without making public the opinion.

Types of projects referred to the Board include:

Projects which have been adversely reported on by State Boards or by the staff at Washington, which in the opinion of the Deputy Administrator warrant review.

Projects which are protested against by outside parties, groups or other organizations, which protests are, in the opinion of the Deputy Administrator, serious enough to warrant review.

Projects approved in principle by the Deputy Administrator but of such an unusual size or character and involving such difficult questions of engineering, finance or law, that in his opinion warrant review.

The Board will consider projects which qualify under the yardstick of policies previously announced by the Administration.

PERSONNEL

Colonel Carey H. Brown will serve as acting chairman of the Technical Board of Review. He has been with the Public Works Administration since its inception and is an outstanding engineer. Colonel Brown graduated from the United States

Military Academy in 1910 and served as a Major in the United States Army Corps of Engineers and as a Colonel in the Reserve Corps of Engineers. He served as assistant engineer for the District of Columbia from 1919 to 1922 and as the engineer of the National Capital Park & Planning Commission from 1925 to 1929. He was executive Director of the Civic Improvement Association, Rochester, N. Y., from 1930 until he joined the Public Works Administration.

Members of the Board are as follows:

David Cushman Coyle, 101 Park Avenue, New York City. Mr. Coyle is a construction engineer and a graduate of Princeton University and Rensselaer Polytechnical Institute. He is an authority on structural design and has drawn plans for many famous buildings while in private practice.

Merton L. Emerson, 110 State Street, Boston, Mass. Mr. Emerson is a graduate of Dartmouth College and Massachusetts Institute of Technology. He has been employed by some of the largest industrial concerns and has been active in emergency relief work in Baltimore and Washington.

Harrison Prescott Eddy, 1300 Statler Building, Boston, Mass. Mr. Eddy is an authority on civil and sanitary engineering. He served as Superintendent of the sewage treatment plant at Worcester, Mass., and as a member of a large practicing engineering firm and an author, having written several books, treatises and text books on sewage disposal.

Walter Philip Henry, 75 West St., New York City. Mr. Henry is a consulting engineer, having done engineering and construction work in various foreign countries. He has been employed by several of the largest industrial concerns and is an author, having written various papers on allied subjects.

Malcolm Pirnie, 25 West 43rd Street, New York City. Mr. Pirnie is a civil engineer, having served as Assistant Sanitary Engineer, with the American Red Cross Commission to Russia in 1927. He designed several water purification works and is a member of the American Society of Civil Engineers.

Frederick Hall Fowler, 1300 Crocker First Nat'l Bank, San Francisco, Calif. Mr. Fowler is a Consulting Civil Engineer. He was the Engineer in charge of construction of the California Section of the Laguna Dam, Colorado River, from 1905 to 1906. He was an instructor in civil engineering at Stanford University from 1907 to 1908, as well as being associated as an engineer with other large engineering concerns. He has been consulting engineer for San Francisco from 1922 to date and has written various papers on power development.

Wesley Winans Horner, 300 City Hall, St. Louis, Mo. Mr. Horner has acted as Chief Engineer for the City of St. Louis. He was the designing engineer on the St. Louis municipal sewerage work in 1908, and served as assistant engineer in the Sewer Department in 1912. He was general consultant for the sewerage system plan for St. Louis County, Mo., and is a member of the American Society of Civil Engineers.

Richard Sutton Buck, Crozet, Albemarle Co., Va. Mr. Buck is a consulting civil engineer. He was a civilian employee in the Engineering and Quartermaster Corps of the U. S. Army River and Harbor work from 1887 to 1890. He has been Chief Engineer in designing and construction on several large bridges, one of them being the Manhattan Queensboro Bridge. He has been engaged in general civil and consulting engineering practice in New York City to date.

Samuel Arnold Greeley, 6 North Michigan Avenue, Chicago, Ill. Mr. Greeley is a consulting engineer. He was resident engineer in charge of construction and operation on the Milwaukee Refuse Disposal Plant from 1909 to 1911 and has been a member of a large Chicago firm of engineers from 1918 to date.

Clarence Addison Dykstra. Mr. Dykstra was an instructor in history and government at the Ohio State University from 1907 to 1909. He was Professor of Science and head of the Department at the University of Kansas from 1909 to 1918. He is a member of the American Political Science Association and has written a number of papers on municipal affairs.

Irving B. Crosby, 6 Beacon Street, Boston, Mass. Mr. Crosby is a graduate of the Massachusetts Institute of Technology, having a B.S. degree. He also has an A. B. degree from Harvard University. He has been engaged in private practice of Consulting Geologist, specializing in investigations and collaborating with engineering work from 1926 to date. He is an author, having written numerous scientific papers relating to geology.

TENNESSEE VALLEY DEVELOPMENT

The Knoxville firm of Barber and McMurry will assist the Tennessee Valley Authority in the building of the village for workers at Norris Dam, it was announced by Earle S. Draper, director of land planning and housing for the Authority. In addition, Henry V. Hubbard, consultant in town planning; Eliel Saarinen, architectural consultant, and Tracy B. Augur, special consultant in community planning, have been added to Mr. Draper's staff as consultants.

Mr. Hubbard has for years been Norton Professor of Regional Planning at Harvard University. He also has been chairman of the Council of the School of City Planning at Harvard since 1929. He has had years of practical experience as a member of various firms both before and after the war, and as consultant for several departments of the Government housing service during the World War.

Mr. Saarinen came to America from Finland in 1925, after achieving fame throughout Europe

Schutz

Public Hearing in Washington, D. C., on master code for the Construction Industry, held September 6, 1933.

as a designer of public buildings. Today he is known as the man who designed the magnificent station of Helsingfors, and made plans for the Royal Palace at Sofia, the League of Nations Palace, and the Parliamentary Buildings of Finland.

Another member of the Land Planning and Housing staff will be Tracy B. Augur of Detroit, Michigan. Though a much younger man than his associates, Mr. Augur has behind him a fine record of experience in Detroit, Dearborn, Ann Arbor, and other cities in Michigan. He is held to be one of the most promising of the younger members of his profession in the Middle West.

ARCHITECTS' CODE CONSIDERED BY NRA

The architects' code was presented on September 6 by William Stanley Parker, who is Chairman of the Code Committee of the American Institute of Architects. He proposed several changes in the code as originally submitted to the National Recovery Administration on August 25th. These changes include a new definition of the term "architect" as follows:

The term "architect" as used herein is defined to mean any person who holds himself out as able to perform or who does perform any professional service such as consultation, investigation, evaluation, planning, design, including aesthetic and structural design, or responsible supervision of construction, in connection with any private or public buildings, structures, or projects, or the equipment or utilities thereof, or the accessories thereto, wherein the safeguarding of life, health or property is concerned or involved, when such professional service requires the application of the art and science of construction based upon the principles of mathematics, aesthetics and the physical sciences. It is recognized that the function of an engineer includes elements of a like nature to the elements included in the architect's functions. Such normal functions as practiced by engineers shall not be deemed to be included in the foregoing statement of the functions of an architect. Such normal functions of an engineer being excluded, any one performing any of the above defined services or undertaking to provide and to be responsible for such services shall be deemed an architect for the purposes of this code and he shall be qualified by education, experience and organization to perform properly the services which his employment demands.

HOUSING PROJECTS DURING SEPTEMBER

Since the last issue of THE RECORD the followlowing housing and slum-clearance projects received Federal aid:

$168,000 was allotted to Raleigh, N. C., to supplement $39,000 raised by citizens in Raleigh for construction of three-story buildings on an acre plot between the city and the state university. The development will be used by teachers, students of the university and state employees.

The community plan committee of the Chamber of Commerce of Indianapolis has planned a limited dividend corporation to administer the expenditure of a $4,460,000 loan granted by the Public Works Administration to clear two slum districts and to build single-family homes, row houses and apartments. This project is designed for occupancy by negroes.

The Hillside Housing Corporation of New York City was granted a loan of $5,184,000 for the development of housing in the Bronx to cover a site of 14½ acres.

Hallets Cove Garden Homes, Inc., received $2,965,000 as a loan to build thirty-one six-story apartments on an eight-acre tract in Queens fronting the East River and in the neighborhood of the new Triborough Bridge.

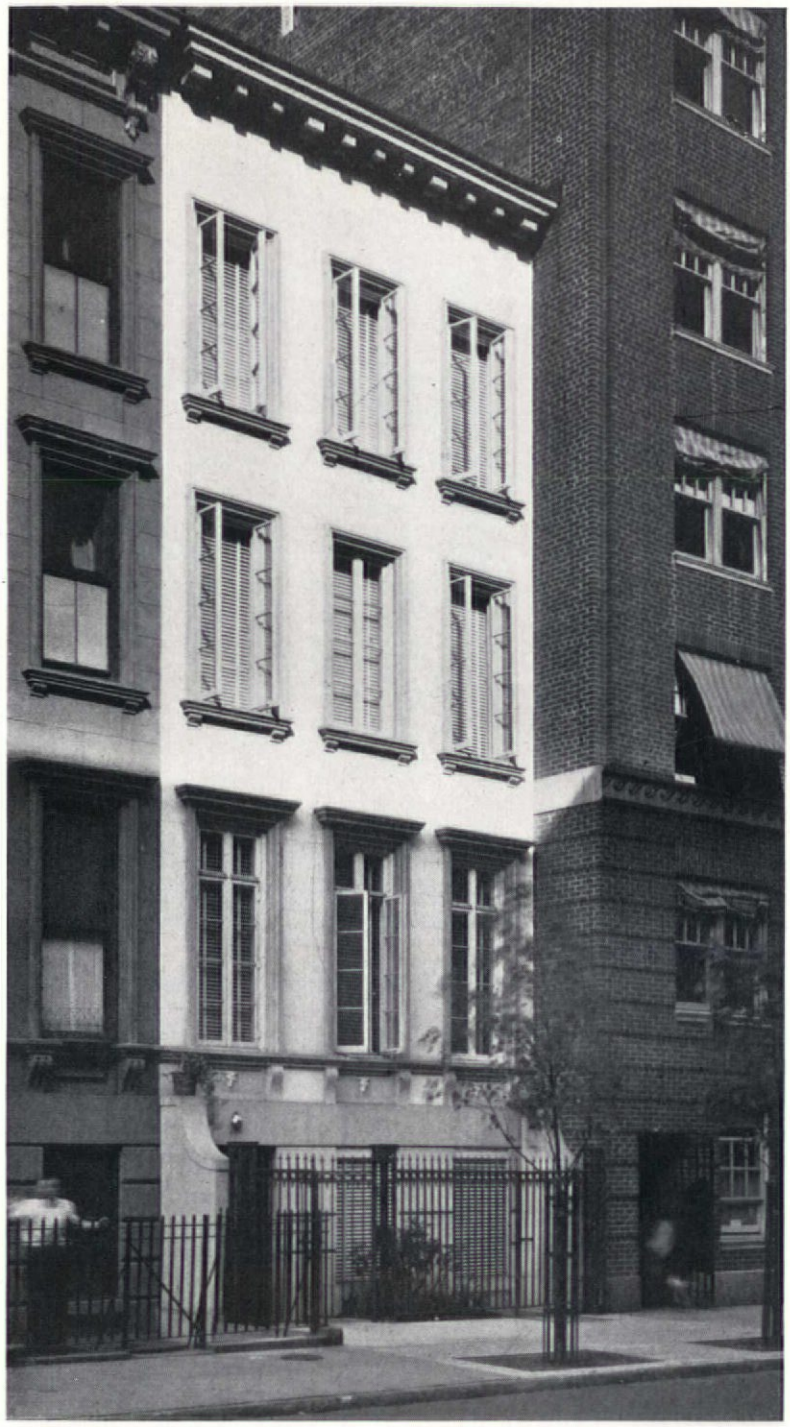
Euclid Housing Corporation of Euclid, Ohio, received a loan of $1,000,000 for housing. Part of the loan will be applied to payment of back mortgages on property within the housing area. No local money was raised for the project since the lots served as equity. There will be twenty-five or more houses built as groups by responsible builders.

The city of Detroit is seeking a Federal loan for a ten-block slum-clearance housing project to cost approximately $3,000,000.

The Public Works Administration has approved a housing loan to date aggregating $35,977,000 for projects in twelve cities. There are now thirteen housing projects that have received Federal aid.

THE RECORD published in September, 1933, five of the housing projects. There will be others published in November, together with information on the projects including policy governing loans.

MODERNIZATION AND ALTERATION



REMODELING A CITY HOUSE NEW YORK CITY

HENRY OOTHOUT MILLIKEN AND NEWTON P. BEVIN ASSOCIATED ARCHITECTS

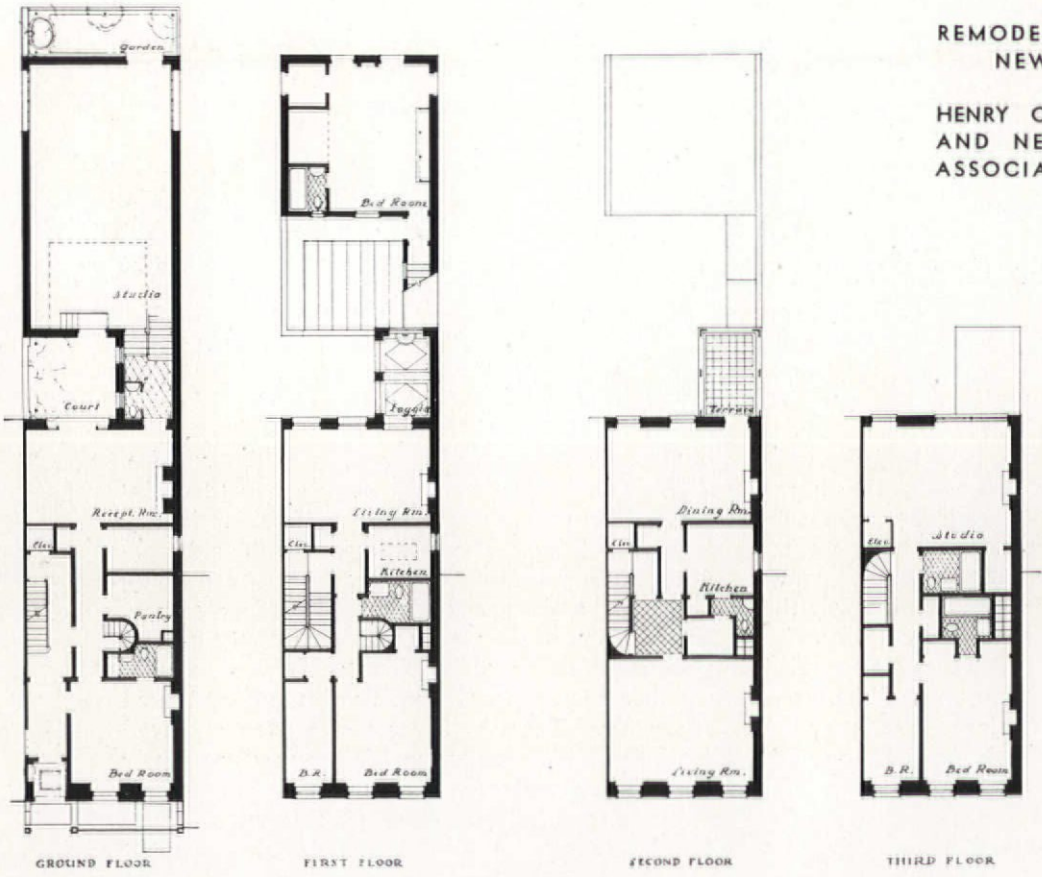
Rehabilitation of the street front involved paring off irrelevant projections; removing the heavy paneled frieze and brackets beneath the eaves; substituting casements in place of double-hung sashes; patching and smoothing the wall surface and painting it gray; making the old basement doorway the main entrance; and adding an iron area-grille.

On the ground floor an extension was carried back to within 6 feet of the rear line of the property. This accommodates a large studio and a passage and stair leading to a large bedroom with small dressing-room and bath above the studio, and quite separate from the rest of the house. At the rear of the old parlor floor, and to one side, was built a brick loggia, over the studio passage.

The rest of the transformation consisted of internal rearrangement of the plan familiar in this type of dwelling. The greater part of the old basement kitchen became the drawing-room, opening out on a little paved courtyard 9 feet square. Examination of the plans will show that the ground floor and former parlor floor can either be used together as one apartment, or shut off and used separately. The two floors above were arranged for independent occupancy. What was previously a moderate-sized house for a single family became a dwelling capable of sheltering either three or four tenants or small families.

Loggia at rear of old parlor floor.

Courtyard and studio from drawing room.

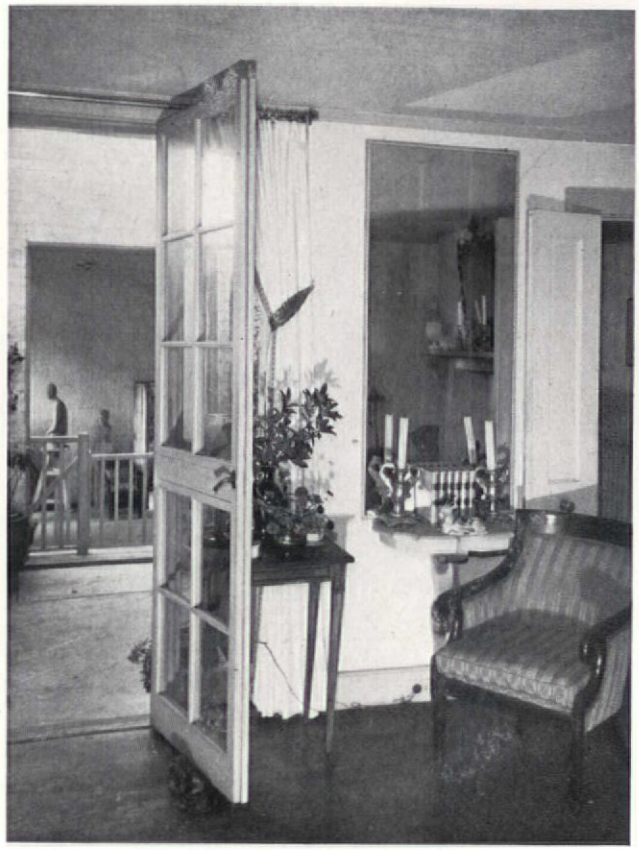


GROUND FLOOR FIRST FLOOR SECOND FLOOR THIRD FLOOR

REMODELED CITY HOUSE
NEW YORK CITY

HENRY OOTHOUT MILLIKEN
AND NEWTON P. BEVIN
ASSOCIATED ARCHITECTS

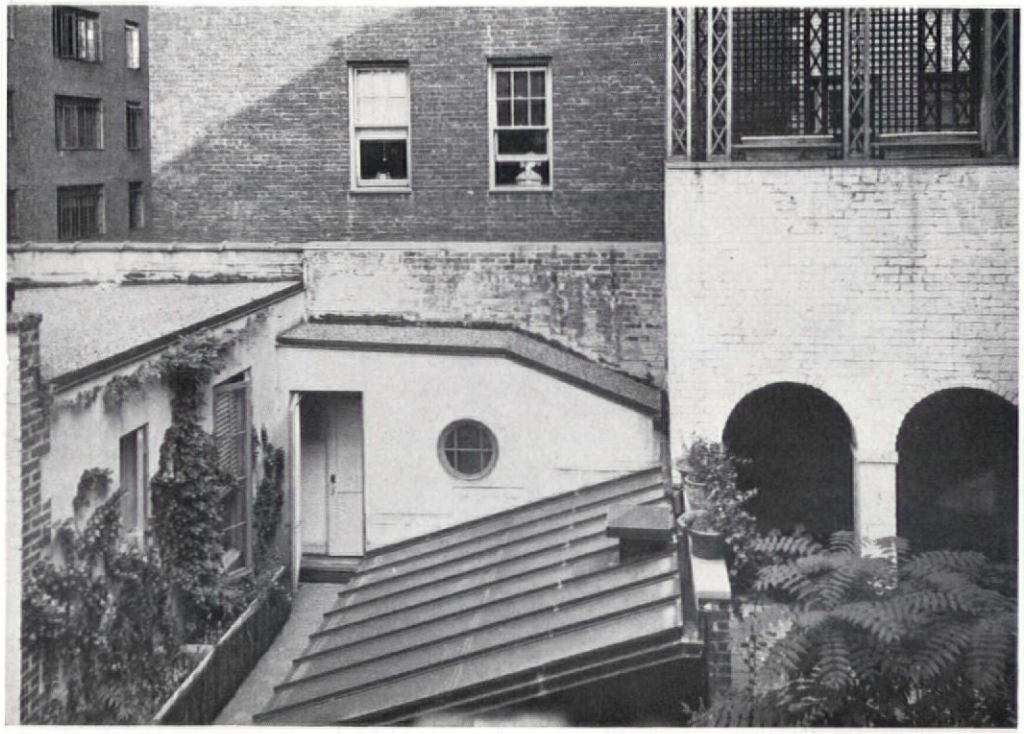
Bedroom over studio.



Drawing room after remodeling.

REMODELED HOUSE
NEW YORK CITY

H. O. MILLIKEN
NEWTON P. BEVIN
ASSOCIATED
ARCHITECTS

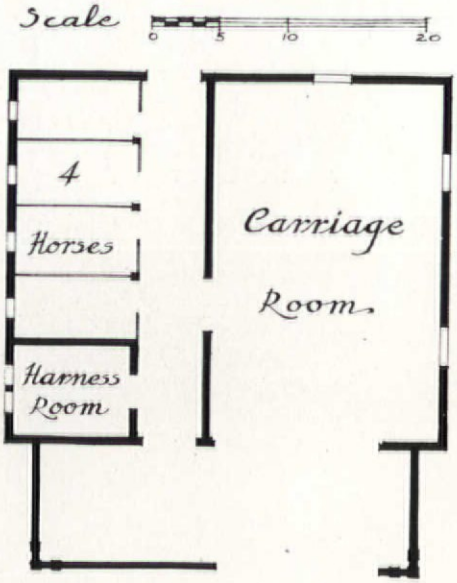


View of loggia, stair passage
and bedroom over studio.

A CONVERTED STABLE AND CARRIAGE-HOUSE

W. POPE BARNEY, ARCHITECT ROY W. BANWELL, ASSOCIATE

A garage and dwelling after remodeling.



A stable and carriage-house before remodeling.

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YOU'VE probably had some experience with Carrara Structural Glass, in large buildings, in the mansions of the wealthy. And you may have wished more than once that Carrara were available for use in the bathrooms of average, modest homes.

Today, Carrara Structural Glass *is* available for use in modest homes. . . in new color tones, in suitable thicknesses, and at a price which compares favorably with that of inferior wall materials. And Carrara opens up an entirely new field of possibilities in bathroom design. Here you have a wall material of unequalled beauty. Highly polished, so reflective that it gives a bathroom the appearance of far greater spaciousness, possessed of a unique depth of beauty, Carrara lends itself to an amazing versatility of treatment.

In addition to its beauty, Carrara Structural Glass has other advantages equally important from an architectural standpoint. Carrara will not lose its charm with age, will not crack, check, craze or stain. It will not absorb odors. And it can be kept clean merely by a periodic wiping with a damp cloth.

Carrara permits you to do many things in bathroom design which you may have wanted to do before but which have been impossible with other wall materials. We suggest that you write for our booklet containing illustrations of typical installations of Carrara Structural Glass. We believe you will find it interesting. Pittsburgh Plate Glass Company, Grant Building, Pittsburgh, Pa.

CARRARA

The modern structural glass

New.. Beautiful.. Practical..

CARRARA WALLS FOR KITCHENS

THE manufacturing improvements which have brought Carrara Structural Glass within easy reach of the modest pocketbook, have made it possible for you to design a new kind of kitchen at a very reasonable price. For Carrara is so versatile, so adaptable to unusual kinds of treatments, that you can obtain effects with it which no other wall material can produce.

The kitchen done in Carrara has a charm and loveliness all its own. It seems to have greater spaciousness, an atmosphere of light and airiness. Smooth, reflective Carrara Walls make it not only a kitchen . . . but a pleasant room in which to work.

Moreover, the beauty of walls of Carrara Structural Glass is lasting . . . the years have no appreciable effect upon it. Carrara will not crack, craze, check or lose its reflectivity. And it is easily cleaned by merely wiping it with a damp cloth. Especially important in the kitchen is the fact that Carrara Walls will not absorb cooking odors, and will always be impervious to the soot and grease which collect on walls that are papered, plastered or painted.

If you are looking for a wall material with unusual beauty, permanence, sanitation and ease of cleaning, we suggest that you investigate Carrara Structural Glass . . . in the new thicknesses and color tones made especially for residential use.

CARRARA

The modern structural glass

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in laying out and writing specifications for

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Similar data and cooperation in connection with the well-known lines of Sturtevant Ventilating, Heating and Vacuum Cleaning Equipment also are available and gladly will be supplied.

Note: Several of the Sturtevant Data Bulletins on air conditioning equipment are now on the press or under preparation. These will be sent to architects requesting them as soon as ready.

Air Conditioning Equipment

☐ 1. Central Systems

Functions

(All or any combination of these functions can be provided).

☐ Cleaning
☐ Heating
☐ Cooling
☐ Humidification
☐ Dehumidification
☐ Circulation

Purposes

☐ For Comfort
☐ For Industrial Processing

Applications

☐ *Domestic:* homes, apartments
☐ *Commercial:* offices, banks, theatres, stores, restaurants, barber shops, beauty parlors, etc.
☐ *Institutional:* public buildings, hospitals, hotels, schools, clubs, libraries, etc.
☐ *Industrial:* manufacturing plants, warehouses, railroads, steamships, etc.

☐ 2. Unit Conditioners

Types

☐ Floor
☐ Suspended

Functions

(All or any combination of these functions can be provided in a single unit).

☐ Cleaning
☐ Heating
☐ Cooling
☐ Humidification
☐ Dehumidification
☐ Circulation

Purposes

☐ For Comfort
☐ For Industrial Processing

Applications

☐ *Domestic:* homes, apartments
☐ *Commercial:* offices, banks, theatres, stores, restaurants, barber shops, beauty parlors, etc.
☐ *Institutional:* public buildings, hospitals, hotels, schools, clubs, libraries, etc.
☐ *Industrial:* manufacturing plants, warehouses, railroads, steamships, etc.

Ventilating Equipment

☐ Centrifugal Type Blowers and Exhausters
☐ Propeller Fans
☐ Unit Ventilators
☐ Ventilating Sets (for toilets, laboratories, and small and medium sized rooms, in general up to 7500 cubic feet contents).
☐ Kitchen Ventilating Fans
☐ Air Washers

Heating Equipment

☐ Unit Heaters; Suspended Type
☐ Unit Heaters; Floor Type
☐ Unit Heaters; Cabinet Type

Vacuum Cleaners

☐ Stationary Type
☐ Portable Type

B. F. STURTEVANT COMPANY

Main Offices: Hyde Park, Boston, Mass. Chicago, Ill., 400 North Michigan Avenue San Francisco, Cal., 681 Market Street

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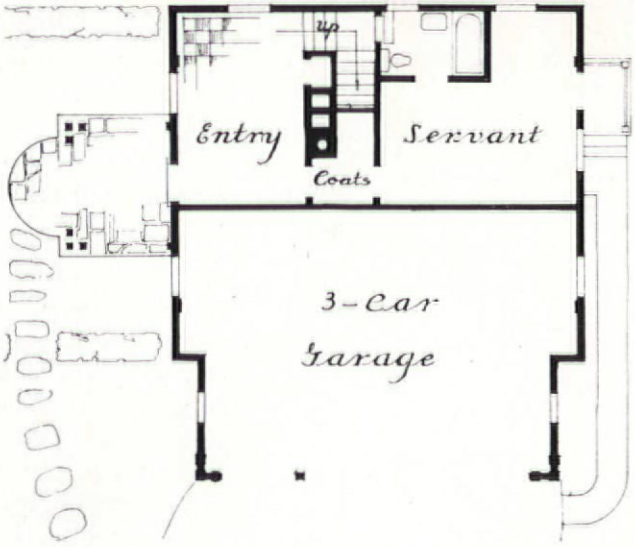
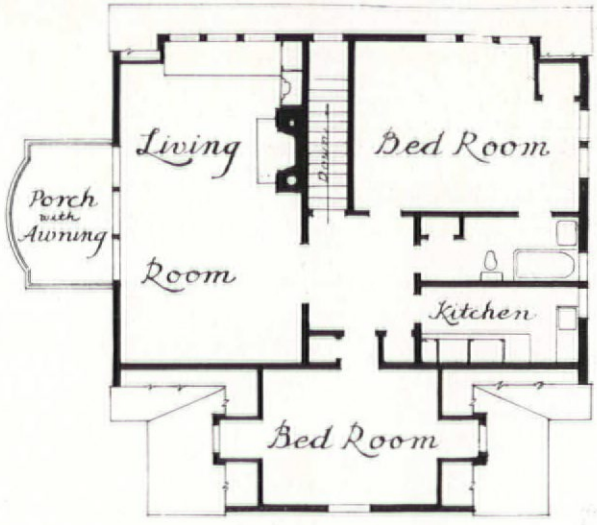
Atlanta, Ga., Baltimore, Md., Berkeley, Cal., Boston, Mass., Camden, N.J., Chicago, Ill., Cincinnati, O., Cleveland, O., Dallas, Texas, Denver, Colo., Detroit, Mich., Greensboro, N.C., Hartford, Conn., Indianapolis, Ind., Kansas City, Mo., Los Angeles, Cal., Milwaukee, Wis., Newark, N.J., New York, N.Y., Pittsburgh, Pa., Portland, Oregon, Rochester, N.Y., St. Louis, Mo., San Francisco, Cal., Seattle, Wash., St. Paul, Minn., Washington, D.C., Montreal, Canada, Toronto, Canada

STURTEVANT COOLING AND AIR CONDITIONING CORP., A DIVISION OF B. F. STURTEVANT CO., IS ORGANIZED FOR ENGINEERING AND INSTALLING COMPLETE SYSTEMS IN BOTH THE COMFORT AND INDUSTRIAL FIELDS

View of the remodeled garage at Wayne, Pennsylvania. Plans below show the revised layout. W. Pope Barney, architect; Roy W. Banwell, associate.



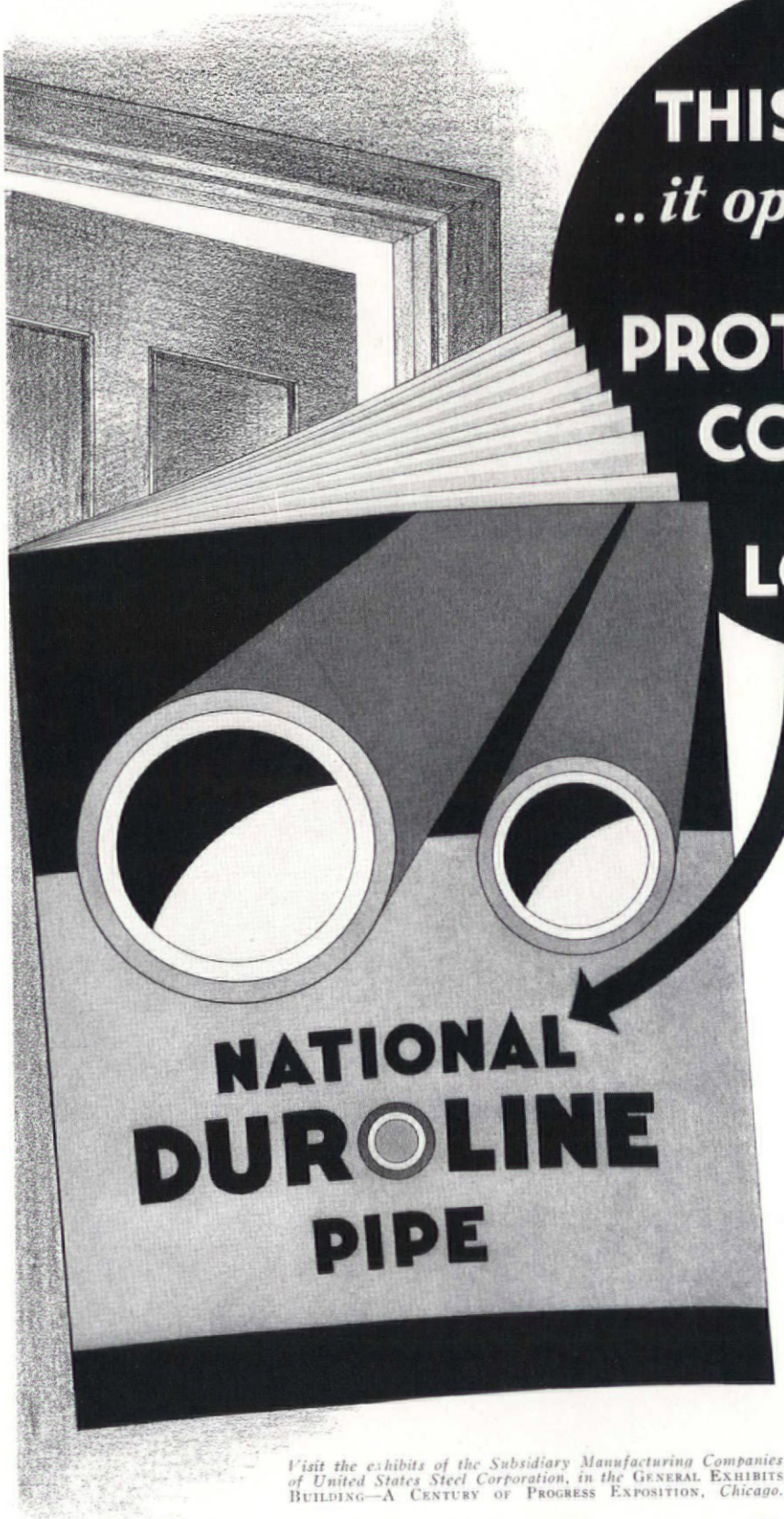


To understand why this suburban stable-carriage house was converted into a combined small dwelling and three-car garage, it is necessary to explain that the owner no longer had any use for a stable; that he required garage accommodation for two or three cars; and that he desired a small house for a relative who, while she wished to live nearby or on the place, nevertheless chose to maintain her own independent housekeeping establishment.

In the reorganized arrangement of the ground floor, there is a three-car garage, with fold-up doors across its full width, on the side where the carriage-house doors formerly opened on the drive; an entrance hall-sitting room, with doorway and portico on the south front, altogether apart from any garage suggestion; and a bedroom with bath that can either be used as a guest room or can be entirely cut off from access to the stair and upper floor and used as a chauffeur's quarters, since there is a private outside entrance.

Upstairs, it was a simple matter to divide the hay-loft space by partitions and contrive a light, cheerful living-room whose French windows on the south open on a little verandah above the portico; two fair-sized, well-lighted bedrooms; a bathroom; a compactly arranged but adequately appointed kitchen; and a square central hall into which all the rooms open.

Apart from constructing and plastering partitions, the task involved building a chimney and fireplace, installing a heating plant and plumbing, introducing electricity, letting into the roof several dormers, changing the openings of the south side, and building a portico.



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2. The development, the methods of manufacture, and the service record of DUROLINE Pipe.
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4. What has been done about the "joint problem".
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6. Why this product has fields of usefulness not open to ordinary cement lined pipe.

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NATIONAL TUBE COMPANY

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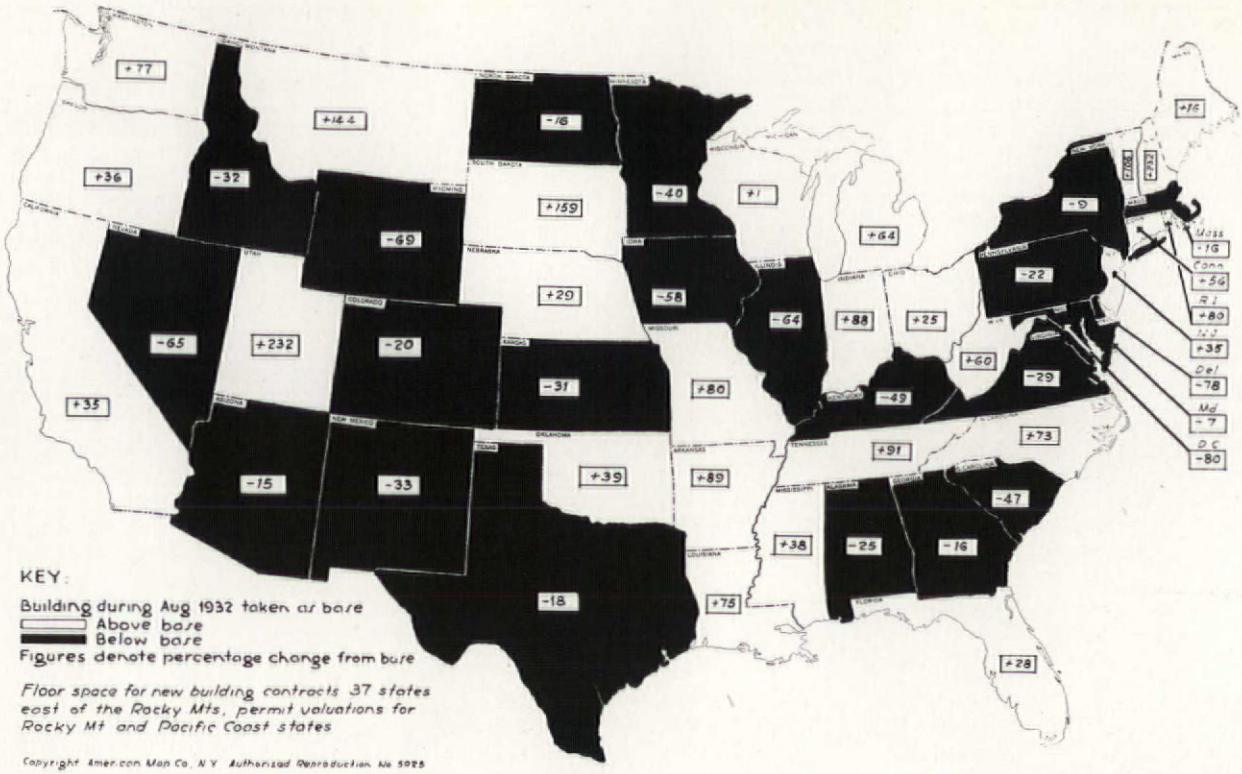


BUILDING TRENDS AND OUTLOOK

By L. SETH SCHNITMAN, Chief Statistician, F. W. Dodge Corporation

August construction contracts totaled $106,131,100; this was a gain of about 28 per cent over July and was the largest monthly total thus far reported for 1933.

The gain in contracts over July was entirely due to increased activity in public works and public utilities. For the former the August total was somewhat more than twice as large as the July figure; for the latter August awards were almost five times as large as in July.

Residential awards in August showed a total of $21,937,000 as against $23,630,400 for July and $20,766,800 for August, 1932. For the year to date residential contracts totaled $158,725,600 as against $203,205,600 in the corresponding eight months of 1932.

Publicly-financed construction contracts of all types let during August showed a good gain over July but were still measurably lower in volume than in August of last year. Privately-financed construction awards of all descriptions let during August showed a decline from July but were still above a year ago.

The wage question in the building trades is proving a real problem, according to the report of the Committee on Working Conditions of the Construction League of the United States as recently filed with the NRA. Says this report: "While the desirability of establishing wage scales as high as may be economically justifiable is recognized, any attempt to set construction industry wages, by code provision or otherwise, at levels very much above scales warranted by current market conditions is due to produce one or both of the following results:

1. Scales so established will in many cases not be adhered to, thus causing the effort to fail.

2. Private construction operations will be seriously discouraged and recovery of the construction industry will be hampered."

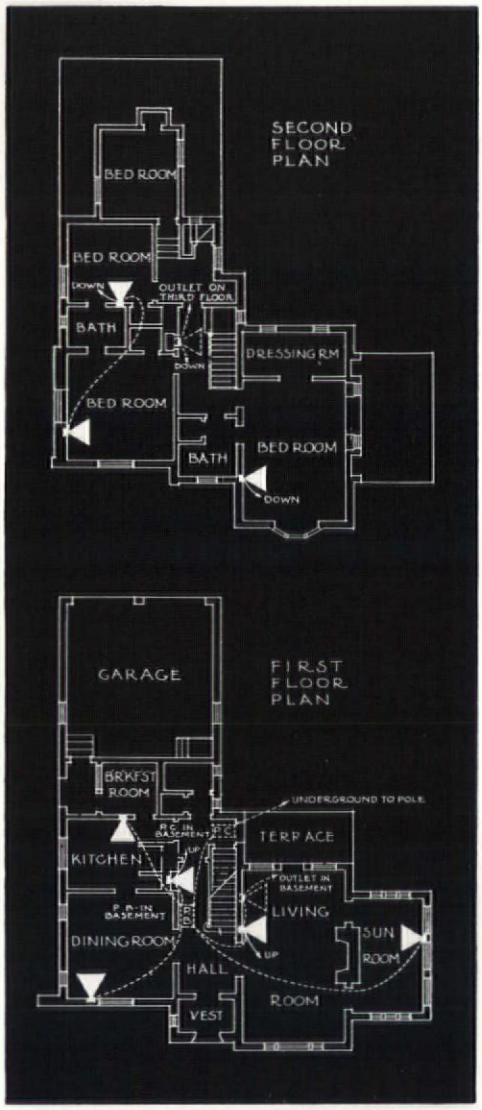
In the light of these conclusions which are supported by voluminous statistical data it is imperative that speedy solution of the wage problem be effected in order that the recently improved conditions in private construction work may not be upset.

Contracts of all descriptions during the final four months of 1933 will probably range between 400 and 450 millions of dollars for the thirty-seven eastern states. Of this indicated total more than 60 per cent appears as the probable volume of publicly-financed work.

The full year's construction contract total now appears to range between $1,000,000,000 and $1,100,000,000 for the thirty-seven states. During the year 1932 a contract total of $1,351,158,700 was reported for the thirty-seven eastern states.

This house, built for Mr. Charles Montague on Bradford Boulevard, Syracuse, N. Y., contains 10 telephone outlets at convenient locations, including one on the third floor and one in the basement game room. Paul Hueber, Architect, Syracuse.

TIME PROVES THE WORTH OF TELEPHONE CONVENIENCE



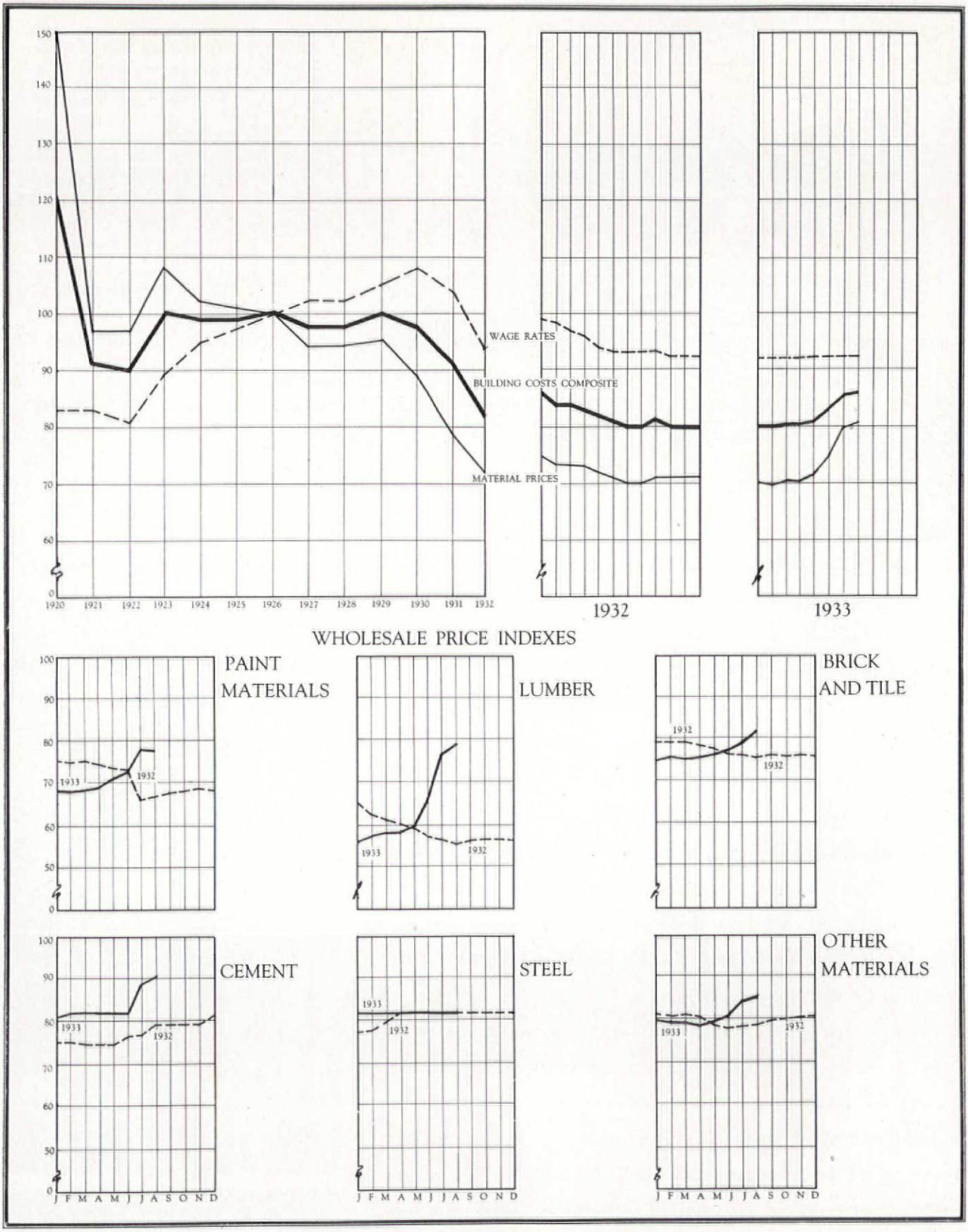
BLUE-PRINTS show your clients the more obvious advantages of built-in telephone arrangements. Only months and years of actual living bring a full appreciation of what well placed telephones can mean in steps and minutes saved — in flexible, trouble-free service.

Time proves your planning in another way. Telephone conduit and outlets built-in during construction — or remodeling — not only meet immediate needs but provide for changing conditions in the future. Other telephones can be installed at new locations, simply, inexpensively. Walls and floors need not be torn up. Wiring is not exposed.

The most efficient telephone arrangements are often a product of close co-operation between architect and telephone engineer. Your local company maintains a trained technical staff to help you at any time with any phase of telephone equipment or installation. No charge, of course. Just call the Business Office and ask for "Architects' and Builders' Service."

MATERIAL PRICES, BUILDING WAGE RATES AND BUILDING COSTS COMPARED

1926 Monthly Average = 100



Whether it's a shower, a special type shower head, or a flush valve . . .

If it's Speakman, it's quality

K-3395 — SPEAKMAN Anystream Self-Cleaning Shower Head. For residences and general installation. ½" I. P. female inlet. (Pat. Jan. 2, 1923 and Nov. 3, 1931).

IT is because we know the responsibility an architect assumes when he specifies any device which is mechanical or must be operated day in and day out that we mention particularly the quality of Speakman Showers and Fixtures.

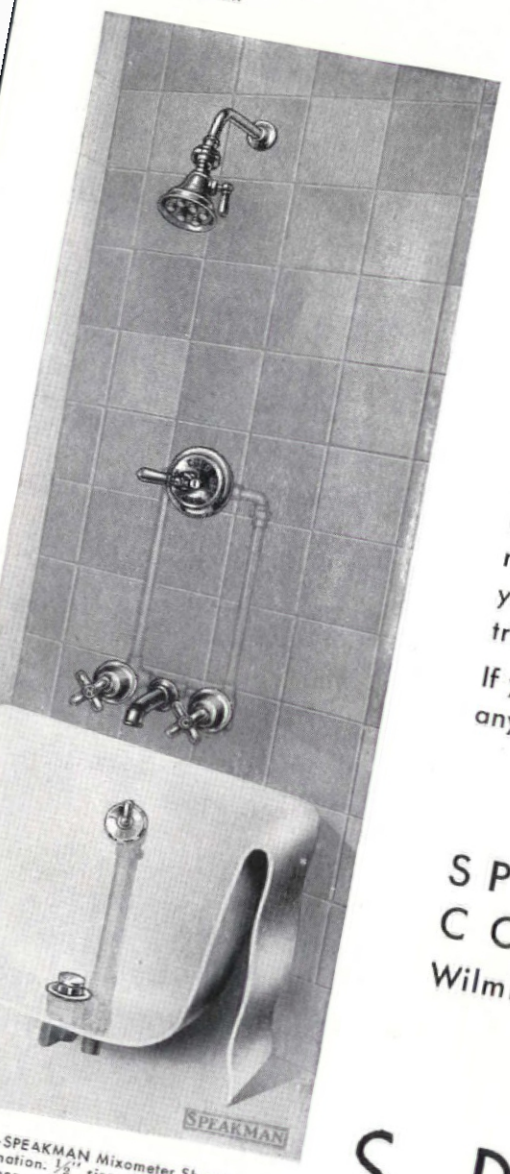
Look at any Speakman valve, and note, among other things, the weight of the casting, the deep, cleanly-cut threads—the large water-way, the easily-renewable seat, and the encased washer, on a swivel disc.

Then there is the plating, which is done in a plant designed for us by the Chromium Corporation of America. Under the chromium plate is nickel plate, applied to a highly polished flawless piece of metal.

And what you see in that valve is true of every plumbing fixture bearing the name Speakman—it's a strictly quality line, and when you use it in any building, residence, hotel, apartment, hospital, or country club, you will know beforehand that your clients will be assured of years of dependable, trouble-proof service.

If you do not have our catalog we'll send it promptly, also any requested literature.

Refer to Sweet's Architectural Catalogs, pages D-4338-39-40



K-4039-M—SPEAKMAN Mixometer Shower and Tub Combination. ½" size. All metal handles and escutcheons. Has Speakman Anystream Self-Cleaning Shower Head and Act-Easy Pop-Up Waste. Valves connected by brass pipe and tested.

SPEAKMAN COMPANY
Wilmington, Delaware

Silent

K-1001 — SPEAKMAN Chromium Plated Si-Flo Closet Flush Valve with 1" capped angle stop for right or left inlet, wall flange, metal oscillating handle, flush connection, spud coupling nut, and flange for 1½" top supply.

SPEAKMAN
Showers & Fixtures

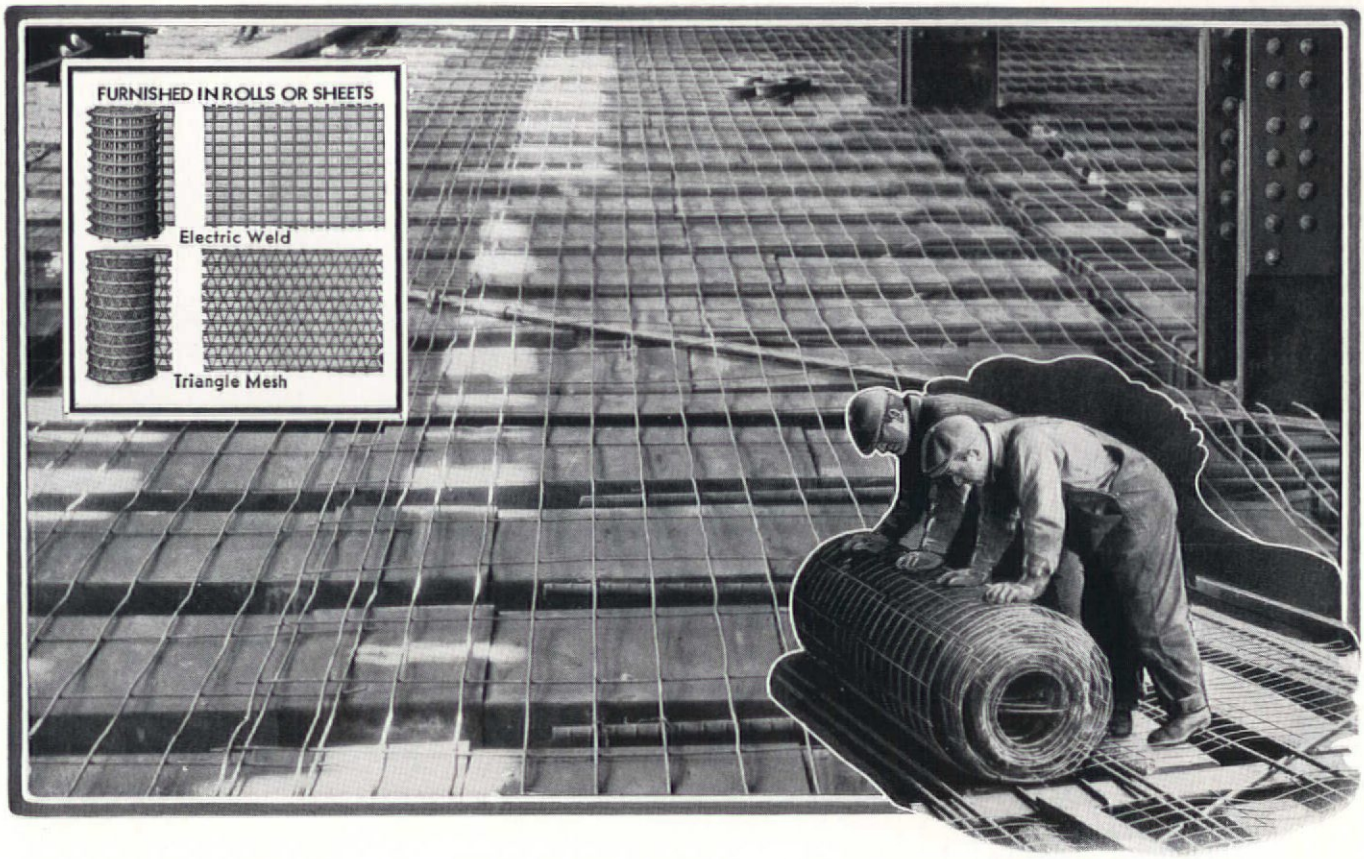
WAGE SCALES IN THE BUILDING TRADES

Information Furnished by National Association of Builders Exchanges and Compiled by Division of Statistics and Research, F. W. Dodge Corporation, as of September 15, 1933

	Asbestos Workers	Bricklayers	Bricklayers Tenders	Carpenters	Cement Finishers	Electricians	Hoisting Engineers	Iron Workers—Ornamental	Iron Workers—Structural	Laborers	Lathers	Painters	Plasterers	Plasterers' Tenders	Plumbers	Roofers—Composition	Roofers—Slate & Tile	Sheet Metal Workers	Steamfitters	Stone Masons	Tile Setters	Tile Setters' Helpers
Akron	$1.00	$1.25	$0.45	$0.70	$0.70	$0.75	$0.70	$0.60	$0.60	$0.40	*$0.87½	$0.65	*$1.00	$0.62½	$0.85	$0.80	$0.80	$0.80	$0.85	*$1.25	*$1.25	*$0.50
Atlanta	1.00	1.25 1.40	‡.30 .45	.70	1.25	.90 1.10	.60 1.00	.35 1.85	1.25	.25 .35	1.00 1.25	.75	1.25	.30 .45	1.25	.80	.80	.90 1.00	1.25	1.00 1.25	1.25	.40
Baltimore	1.00	*1.00	1.00	.65	*1.00	*1 00	*1.25	*1.37½	*1.37½	.20 .30	*1.25	80 *.90	*1 25	1.00	*1.00	.75	.75	*1.12½	*1.00	1.00	1.25	.72
Boston	1.25	*1.30	.70	*1.17½	1.17½	*1.25	1.17½	*1.20	*1.20	.70	*1.25	*1.12½	*1.37½	*.95	*1.25	*1.17½	*1.05	1.17½	*1.25	*1.30	*1.30	*.95
Buffalo	1.00	*1.12½		*1.00	1.00	*1.00	1.00	1.12½	1.12½	40 .50	1.00	*1.00	1.00		1.00	.60	1.00	1.00	*1.00	*1.12½	*1 18¾	
Chicago	1.37½	*1.37½		*1.31¼	1.31¼		1.31¼			.82½	*1.37½		*1.37½		1.37½	1.37½	1 40	1.37½	1.37½	1.37¼	1.37½	1.00
Cincinnati*	1.15	1.25	.70	1.20	1.02½	1.25	.80 1.25	1.25	1.25	.45	1.31¼	1.15	1.37½	.70	1.25	.92½	1.07½	1.07½	1.12½	1.00	1.00	
Cleveland*	.80 1.17½	1.25		.90 1.12½	90 1.12½	1.00 1.37½	1.12½	1.00 1.25	1.00 1.25	.57½ 72	1.25	1.00	1.25		1.25	66 1.15	1 00 1.37½	.90 1.12½	.90 1.25		1.25	81¼
Columbus	1.00	1.30	.62½	.80	80	1.00	1.15	1.25	1.25	.40	1.00	.80	1.00	.62½	1 00	.80	1.00	.80	1.00	.75	1.25	.50
Dallas††	10.50	10.00	.50	8.00	10.00	*11.00	10.00	10.00	10.00	.35	10.00	*9.00	*10.00	*.50	12.00	8.00	9.00	*10.00	12.00	10.00	*12.00	†*.75
Dayton*	1.25	1.30	.80	1.00	1.15	1.55	1.25	1.35	1.35	.35	1.10	1.00	1.25	.80	1.15½	.85	1.00	1.00	1.15½	1.30	1.50	.60
Denver††	9.00	12.00 *13.00	6.50 7.00	10.00	10.00 11.00	10.00 11.00	10.00	10.00 11.00	10.00 11.00	4.00 5.00	11.00	*10.00	12.00	7.00	11.00	7.00 8.00	7.00 8.00	9.00	9.50	12.00 13.00	10.50	†.62½
Des Moines	1.00	1.25	.65	1.00	1.00	1.00	1.00	1.00	1.00	.55	1.00	1.00	1.25	.75	1.25	1.12½	1.12½	1.12½	1.25	1.50	1.25	.80
Detroit	1.37½	1.25 max.	.55 .60	.80 1.00	.70 .90	1.25 1.40	.60 1.00	1.00 1.20	1.00 1.25	.50 55	1.37½	.80 1.00	1.00 1.25	.70 .80	1.00 1.50	.70 .90	.80 1.00	.80 1.00	1.25 1.50	1.25 1.50	1.00 1.25	.80
Duluth	1 00	1.00	.50	80	.80	1.00	.80		1.00	.50	.80	.80	1.00	.70	1.00	.70	1.00	.85	1.00	1.00	1.00	1.00
Erie		1.00	45 .50	.80	80	.90 *1.00	.90	.60 .80	.90	.35	.90	.60 .70	1.00	.40 .50	1.00	.50 .60	.80 .90	.80 .90	*1.00	1.00	.80	.40 .50
Grand Rapids	.65 .80	1.25	.40	.60	.65	.90	.75	.80	1.00	.35	.80	.60	.80	.40	.90	.50	.70	.70	.90	1.25	1.25	.50
Houston		1.00	.35	.75	.75	1.00	.75	1.00	1.00	35		.62½	1.00	.35	1.00	.75	1.00		1.00	1.00	1.00	
Indianapolis	1.32½	1.62½	.90	1.22½	1.17½	1 50	1.37½	1.45	1.45	.40 .45	1.37½	1.25	1.57½	1.00	1.00	.60 .90	1.27½	1.22½	1.50	1.62½	1.50	.60
Kansas City	.90	1.32½	.80	1.00	1.00	1.00	1.00	1.00	1.00	.60	1.00	1.00	1.06¼	.80	1.00	.92½	.92½	1.00	1.00	1.12½	1.25	.62½
Los Angeles††	10.00	8.00	6.00	7.00	8.00	7.00	8.00	9.00	10.00	4.00	10.00	7.00	9.00	6.00	9.00	7.00	7.00	8.00	10.00	8.00	6.00	†.75
Louisville	1.12½	1.00	.50	.80	1.00	1.00	1.00	1.00	1.00	.25 .35	1.12½	.90	1.00	.50	1.12½	.30 .50	.85	.85	1.12½	1.25	1.00	.50
Memphis	1.00	1.37½	.50	.50	.50	1.00	.75	.75	.75	.20	1.00	.75	1.25	.50	1.25	.25 .40	1.12½	1.12½	*1.25	1.37½	1.25	.50
Milwaukee	1.00	1.00	.75	.92½	1.00	1.25	1 00	1.05	1.05	.60	1.00	1.00	1.00	.75	1.00	1.00	1.00	.92½	1.00	1.00	1.00	.75
Minneapolis	1.00	1.00		.80	80	1 00	80	.90	1.00	.45	.75 .85	.80	1.00	.70	1.00	.70	.70	.80	1.00	1.10	1.00	.65
Nashville	1.00	1.00		.65		1.00				.30	1.00	.80	1.00	.30	1.00	.65	65	.65	1.00	.90	1.25	
New Haven*		1.20	.50 .60	.80 1.06¼	1.20	.80 1.00	1.16¾ 1.27½	1.37½	1.37½	.45 .55	1.27½	.80 1.00	1.20	.50 .60	1.06¼		1.50	1.06¼	1.06¼	1.20	1.20	
New Orleans	.65 .80	1.25	.85	.55 .75	1.00	1.25	1.25	1.25	1.25	.35 .50	1.25	.75 .90	1.25	.75	1.00 1.25	.40	.90 1.15	.90	1.05 1.25	1.50	1.25	.35
New York City††	11.20	13 20	8.00	11.20	c11.20	11.20	13.20	11.20	13.20	6.60	11.20	11.20	12.00	8.50	c12.00	10.28	12.62	11.20	11.20	13.20	11.50	8.50
Oakland††	6.40	9.00	5 60	7.20	7 20	8.00	9 00	7.20	9.60	5.00	8.00	7.00	8.80	6.00	8.00	6.40	6.40	7.50	9.00	9.00	8.00	5.00
Oklahoma City††	8.00	8.00	4.00	6.00 8 00	8.00	6.00 8.00	8.00	8.00	8.00	3.50	.80	7.00 8.00	.80	4.00	.80	6.00	6.00	8.00			11.00	†.62½
Omaha	1.32	1 00	.45	.80	.90	1.00	1.00	.90	.90	.35	1.00	.80	1.00	.45	1.00	.72½	.87½	.87½	1.00	.90	1.00	.50 .60
Philadelphia	1.00	1.50		1.00	1.05	1.25	1.18½	1.25 1.37½	1.00 1.37½	.40	1.37½	.62½	*1.37½	.90	1.04	1.00	1.25	1.25	1.04	1.00 1.25	1.25	
Pittsburgh	*1.50	*1.50		*1.25		*1.56¼	1.37½ 1.43¾	*1.37½	1.37½	70	*1.50	*1.18¾	*1.50		1.50	*1.25	*1.50	*1.31¼	*1.50	*1.40	1.33¾	88.
Portland, Ore.††	8.00	*9.60	7.20	7.20	*7.20	*8.00	6.40 9.60	8.80	8.80	7.20	*8.80	7.04	*9.60	*7.20	*8.80	7.20	7.20	*8.00	*8.80	*9.60	8.00	6.40
Reading	.70 .80	.90	.75	.75	.85	.75				.35	.75	.70	.85	.75	.90		.80	.80	.90	.75	.90	.50
Richmond	.60 .65	1.25		.40 .60	.35 .50	.80		.20 .70	.70	.20	1.00	60	.60		1.00	.25 .60	.25 .60	1.00	.90	.75	1.25	
Rochester	.91	1.12½	.55	*.90	*1.12½	*1.15½	.90	.70-*1.00	.70-1.00	.55	.90	*.90	*1.12½	.55	*1.06¾	*.80	*.80	.90	*1.06¾	*1.12½	1.12½	.47½
Salt Lake††		9.00	5.00	7.20	8.00	8.00	8.00	8.00	8.00	4.00	8.00	7.20	9.00	6.50	8.00	7.20	8.00	8.00	8.00	9.00	8.00	4.00
San Antonio††	6.00 10.00	6.00 10.00	2.00 3.00	2 00 7.00	3.00 8.00	3.00 7.00	4.00 7.00	1.75 4.50	5.00 10.00	1.50 2.50	4.00 7.00	3.00 7.00	4.00 8.00	2.00 3.00	5.00 8.00	5.00 6.00	4.00 6.00	3.00 7.00	5.00 8.00	3.50 8.00	4.00 10.00	2.00 3.00
San Francisco	6.40	9.00	7.00	7.20	7.20	9.00	9.00		9.60	5.00	8.00	7.00	8.80	7.50	8.00	8.00	8.00	7.20	8.00		8.00	5.00
Seattle††	8.00	9.60	5.28	7.20	7.20	*8.80	8.00	8.00	8.80	4.75	*8.80	*4.50	*9.60	*6.40	*8.80	7.20	7.20	8.00	*8.80	9.60	8.00	
Sioux City	.90	1.00		.75	.75	1.00		1.00	1.00	.35	.90	.60 .90	1.00		1.00	.60 1.00	.60 1.00	.90		1.25	.60 1.00	
St. Louis	1.25	1.25	1.00	1.25	1.31¼	1.50	1.35- 1.47	1.47	1.47	.37½		1.25	1.50	1.06¼	1.43¾	1.17½	1.25	1.25	1.43¾	1.25	1.25	.76½
St. Paul	1.18	1.00		.80	.80	1.00	.80	1.00	1.00	.50	.90	.80	1 00	.70	1.00	.70	.70	.85	1.00	1.00	1.00	
Washington, D.C.	*1.50	1.75	.50 .75	*1.37½	1.25	*1.65	*1.37½	*1.65	*1.65	.75	*1.62½	*1.37	*1.75	*.75	*1.50	*1.37½	*1.37½	*1.50	*1.50	*1.25	*1.50	.75
Wichita	.60	.75 1.25	.25 .40	.40 .75	.40 1.00	.50 .87½	.30 .75	.40 1.00	.40 1.00	.20 .40	.50 1.25	.50 .87½	.60 1.25	.25 .50	1.00	50 1.00	.50 1.00	.50 1.00	.75 1.12½	.75 1.25	.50 1.00	.25 .40
Youngstown††	*1.37½	12.00	6.80	10.00	9.00	11.00	10.00	12.00	12.00		12.00	10.00	12.00	6.80	11.00	10.20		10.00			10.00	.70

NOTE.—Where two figures are shown they are the minimum and maximum. All figures are for hour rates except as indicated. ††8-hour day. †Rate per hour. *On 5-day week basis. c Correction. Asterisk after city indicates all trades on five-day week basis.

ABOVE DATA ARE WAGE SCALES AND DO NOT NECESSARILY INDICATE ACTUAL WAGE RATES BEING PAID IN THE RESPECTIVE TRADES.



EXCEPTIONAL STRENGTH *plus* LOW INSTALLATION COSTS

BUILDING for quality is one thing—doing it at a reasonable cost is another. In Concrete Floor Arch Reinforcement—either cinder or stone—American Steel & Wire Company Wire Fabric offers exceptional economy and service advantages. First—it is made of Cold Drawn Wire—and this means exceptional strength through the close distribution of high yield point steel. Second—it is easy to handle, which results in low installation costs. Third—its superior quality is the result of over 100 years of wire making experience. Constantly uniform, and offering many other advantages that you will wish to know about in detail. Interesting information is available—and will be forwarded on request.

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1831 

1933

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Pacific Coast Distributors: Columbia Steel Company, Russ Building, San Francisco

Export Distributors: United States Steel Products Company, New York

MANUFACTURERS' ANNOUNCEMENTS

Architects are invited to use the coupon on this page as a convenient means of obtaining manufacturers' publications describing in detail the products and materials mentioned.

101
NEW HOFFMAN COMPRESSORS AND VACUUM SWEEPING SYSTEMS

United States Hoffman Machinery Corporation announces a new line of centrifugal compressors. This announcement marks the entrance of the Hoffman Corporation into the air appliance field. The new compressors, designed for use with heavy duty vacuum sweeping systems as well as for industrial purposes, are manufactured in a wide capacity range. Among advantages claimed for the new compressor, consisting of a multi-stage centrifugal blower and a drive unit (usually a direct connected electric motor), are (1) an even delivery of air at uniform pressure regardless of variations in volume, (2) continuous operation for years without need of adjustment or replacement of parts, (3) operation without mechanical noise or vibration.

Hoffman Heavy Duty Vacuum Sweeping Systems are designed for hotels, schools, theaters, industrial plants, and institutions. The centrifugal exhauster or vacuum producer employed in these installations maintains a constant degree of vacuum regardless of the number of hose lines in use. When fewer lines are in service than the rated capacity of the machine, the horse power is automatically reduced. Exhausters can be furnished for direct motor or steam turbine drive.

102
ALUNDUM AGGREGATE

The values of Alundum Aggregate, which consists of particles of ceramically bonded aluminum oxide abrasive, are described in the new Catalogue C of the Norton Company, Worcester, Mass. Incorporated in the proper proportion in monolithic terrazzo floors or stairs and in precast art marble and terrazo tile and treads, Alundum Aggregate is said to provide a surface that is durable and permanently nonslip.

To Obtain Further Information

about any products mentioned, indicate the number or name of product and send to THE ARCHITECTURAL RECORD, 119 West 40th Street, New York, N. Y.

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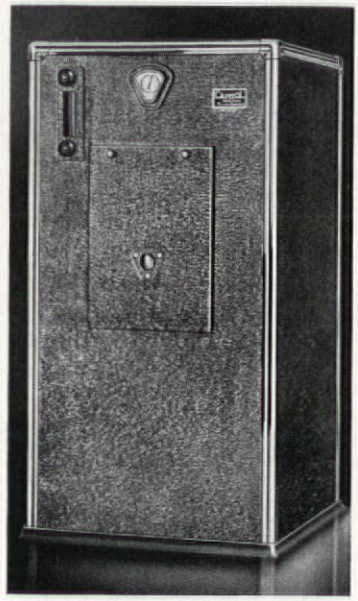
103
OIL-BURNING BOILER ANNOUNCED

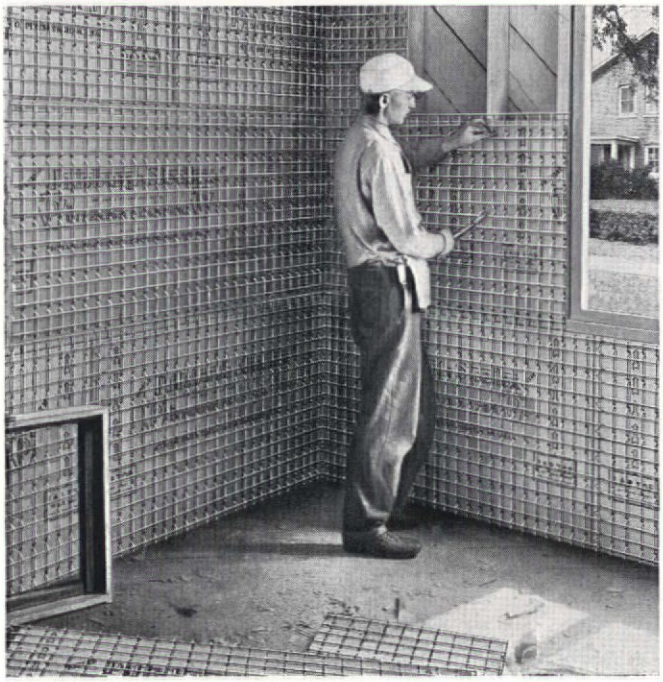


The Capitol Oil-Burning Boiler, a new product of United States Radiator Corporation, is furnished in two sizes, with steam capacities of 500 and 700 square feet of direct cast-iron radiator load and water capacities of 800 and 1,200 square feet of direct cast-iron radiator load. The steam boiler is equipped with a low water cut-off, a built-in Taco Domestic Hot-Water Heater, and is designed for use with standard oil-burning controls of recognized merit. Boiler efficiency is obtained by relationship between the flue areas, the heating surfaces and the controlled direction of the flow of the gases. The smokehood temperatures are extremely low. The gases change direction of flow seven times in going through the boiler, thus removing the possibility of stratification of gases. The boiler has large reserve capacity, and the ratings provide for sufficient reserve capacity to raise the temperature of the domestic hot water from 50° to 150°F. in three hours. It is insulated with a thick blanket of rock wool and incased in a jacket of finest workmanship.

104
JENKINS BROS. DATA BOOK ON VALVES

A source of complete information on valves and valve layout is the new Catalogue No. 23 just published by Jenkins Bros., 80 White Street, New York. All features of design and construction of 400 Jenkins Valves are clearly and fully described. The wide range of types and patterns available afford a selection exactly suited to specific requirements. As an aid in selection and specification, the services, pressures, temperatures and fluids for which individual valves are recommended are stated. The last section of this 264-page book contains engineering data constantly needed where valves are used.

STRENGTH
where strength is needed



A plastering job is no better than its base. A **good** plastering job deserves a **good** base. Build for greater permanence by using Pittsburgh Steeltex Plaster Lath: It adds **strength** where **strength** is needed.

Pittsburgh Steeltex Plaster Lath helps brace the framework, minimizes cracking, prevents lath marks from showing on the finished plaster and aids curing of plaster. The wet plaster flows around the net work of steel wires, and adheres firmly to the tough fibrous backing, resulting in a solid plaster slab thoroughly reinforced against strains at all points. For a thoroughly modern job specify Pittsburgh Steeltex Plaster Lath.

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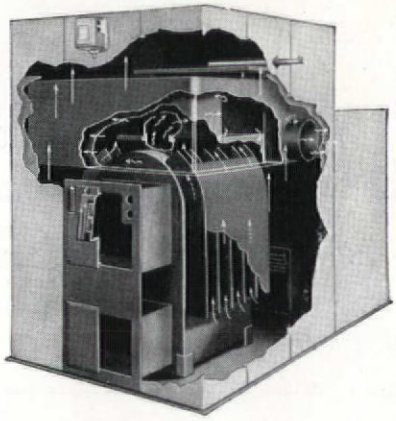
105
HART REMOTE CONTROL EQUIPMENT

"Diamond H" remote control switches, products of the Hart Manufacturing Company of Hartford, enable the architect and engineer to plan wire ways from service entrance to distribution channels without considering the switch outlets, so that the entire building may be supplied by an unbroken feed and the remote control switch placed at the most natural and feasible distribution points. By simplifying and providing control at various points from a distance without the necessity of bringing service wires to those points, remote control switches are said to effect a saving both in installation cost and current consumption. A new catalogue of the "Diamond H" switches describes a wide variety of applications in such buildings as schools, hotels, theaters, hospitals, fire department stations, auditoriums and others.

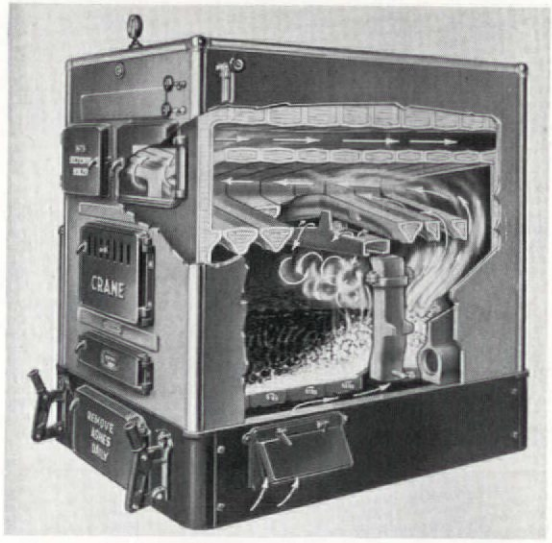


106
ANNOUNCEMENT OF PREMIER AUTOMATIK FURNACE

A furnace designed especially for oil burners and stokers, named Premier Automatik Furnace, is announced by the Premier Warm Air Heater Co., of Dowagiac, Mich. An extra large combustion chamber in this new unit provides ample space for complete fuel burning under all conditions. The round "tunnel top" is said to increase the heat conduction speed and efficiency. Round baffle plates provide for air circulation directly against these surfaces. Finned extended surface radiation is used for increased efficiency. Combustion gases pass through the heat exchanger which provides large surface areas for heat transfer to the casing air. The flue gases travel in a general horizontal spiral toward the stack, providing for ideal combustion conditions. A thin film of casing air surrounds the heat exchanger surfaces providing a quick temperature rise in the bonnet. The required bonnet air temperature is quickly generated and maintained after the burner is started. Detachable service front is convenient in making installation. The interior is entirely accessible with provision for any type of refractory chamber required.

107
KRAMER FLUSH VALVES

The simplicity of Kramer Flush Valves is demonstrated in a recent catalogue issued by the Dalmo Sales Company. By eliminating leather cup-washer, diaphragm and by-pass port the Kramer valve is said to dispense with parts causing 90 per cent of all flush valve trouble. Its manufacturers contend that due to its simplified design and to materials used in its construction the Kramer valve is exceptionally quiet, durable, equally efficient in high and low pressure, unaffected by sandy or dirty water and especially suited, by unusual immunity to corrosion, for salt water service.

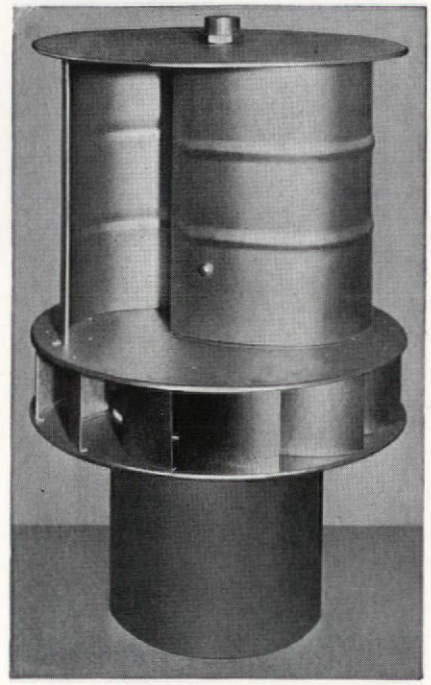


108
CRANE SMOKELESS BOILER

A new application of the cast-iron smokeless boiler principle for the combustion of bituminous coals has recently been placed on the market by the Crane Co. of Chicago. The device consists of two hollow risers and a hollow distributing arch, cast in a special chrome iron highly resistant to temperature and corrosion. The risers fit securely into the grate sockets, and lugs cast on the arch hold it in position. A special short grate is mounted on sockets cast on the risers. Secondary air conducted from the ashpit is preheated in passing through the risers to the distributing arch. As the hot air leaves the arch, it combines with the black volatile products distilled from soft coals, and the mixture burns at a high temperature over the hot coals at the back of the firebox. This completes combustion and utilizes all the available heat value of the fuel, increasing over-all boiler efficiency and minimizing smoke nuisance. An outstanding feature of the attachment is that installation in a heating plant already in service does not necessitate removal of boiler sections or piping. Boilers ranging from outputs of 96,000 B.t.u. to 1,250,000 B.t.u. may be supplied with this smokeless unit.

109
"S" ROTOR VENTILATORS

A rotor ventilator and a smoke-cowl of efficient design are being produced by the United States Ventilator and Power Corporation. Driven by wind or an air draft, the ventilator is continuous



and silent in operation, is moderately priced and has no running costs. Both ventilator and smoke-cowl are equipped with S.F.K. ball bearings so lubricated, according to the manufacturer, that uninterrupted operation, without servicing, is assured for years.

110
COCOANUT SHELL CARBON USED AS ODOR FILTER

Complete elimination of odors from recirculated or intaken air is claimed for the Consolidated Odor Filter, product of Consolidated Air Conditioning Company of New York. The principle by which the filter operates consists of passing the air through a bed of granular activated coconut shell carbon, said to be more serviceable in point of porosity, resistance to crushing and abrasion, capacity for absorption and retention of gases than any other known material. The carbon surface is activated by a process which enables the filter to function efficiently for approximately one year, depending upon characteristics and density of odor-creating matter in the air. When carbon has reached the limit of its absorptive capacity it can be reactivated. In construction the odor filter consists of unit cells, varied in number, mounted in an iron cabinet. In addition to obvious industrial applications the filter is used in conjunction with air conditioning systems in restaurants, office buildings, schools, churches, residences, and other types of buildings.

Hannan Memorial Branch, Y. M. C. A., Detroit. Robert O. Derrick, Inc., Architect.

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For more than forty years it has been the business of Dodge Reports and Dodge reporters to further the interests of architects. The testimony, on the facing page, from Robert O. Derrick, Inc., Detroit Architects, that we are contributing to the efficiency of architectural firms, is acknowledged with appreciation. The firm of Robert O. Derrick, Inc., is composed of Robert O. Derrick and Branson V. Gamber. This firm has designed many notable buildings, included among them the Industrial Museum in Dearborn for Mr. Henry Ford, The Hannan Memorial Branch of the Y. M. C. A., The Detroit University School, The Grosse Pointe Club, The New Federal Building in Detroit, many Units of the National Garages, Inc., in Detroit and elsewhere, The Gabriel Richard School in Grosse Pointe, The Jennings Memorial Hospital in Detroit, The Pepper Pike Club near Cleveland, The Punch and Judy Theatre, Grosse Pointe.

Robert O. Derrick is a member of the American Institute of Architects and the Michigan Society of Architects. Graduate of Yale University 1913. Certificate of Proficiency in Architecture — Columbia University 1916. Practice since 1919.

Branson V. Gamber is a member of the American Institute of Architects and the Michigan Society of Architects. Graduate—Drexel Institute of Art and Science—Philadelphia—1913. President of the Detroit Chapter of the American Institute of Architects. Practice since 1923.

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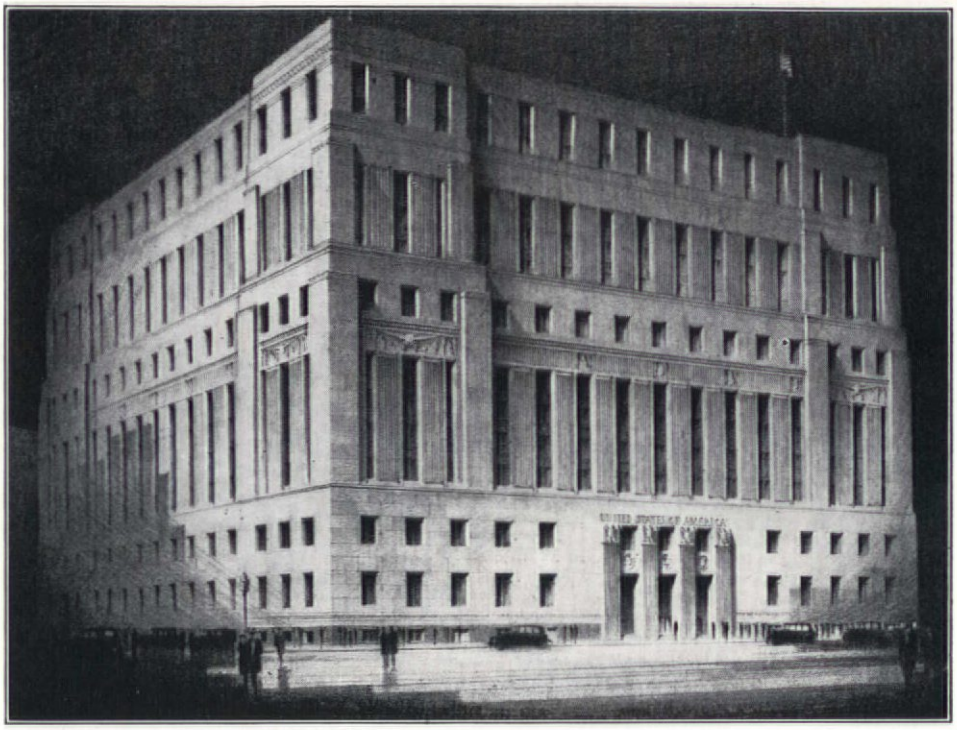

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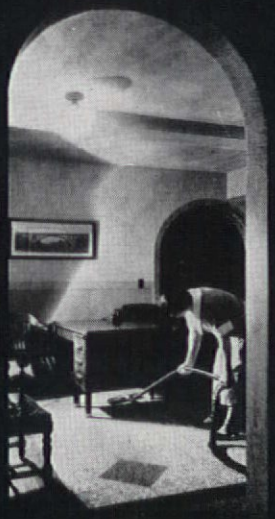

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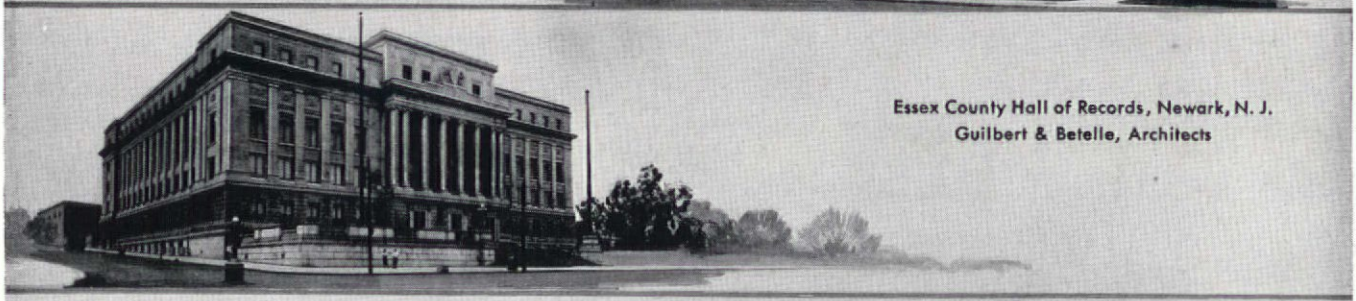

Essex County Hall of Records, Newark, N. J.
Guilbert & Betelle, Architects

Connecticut State Office Building.
Smith & Bassette, Architects

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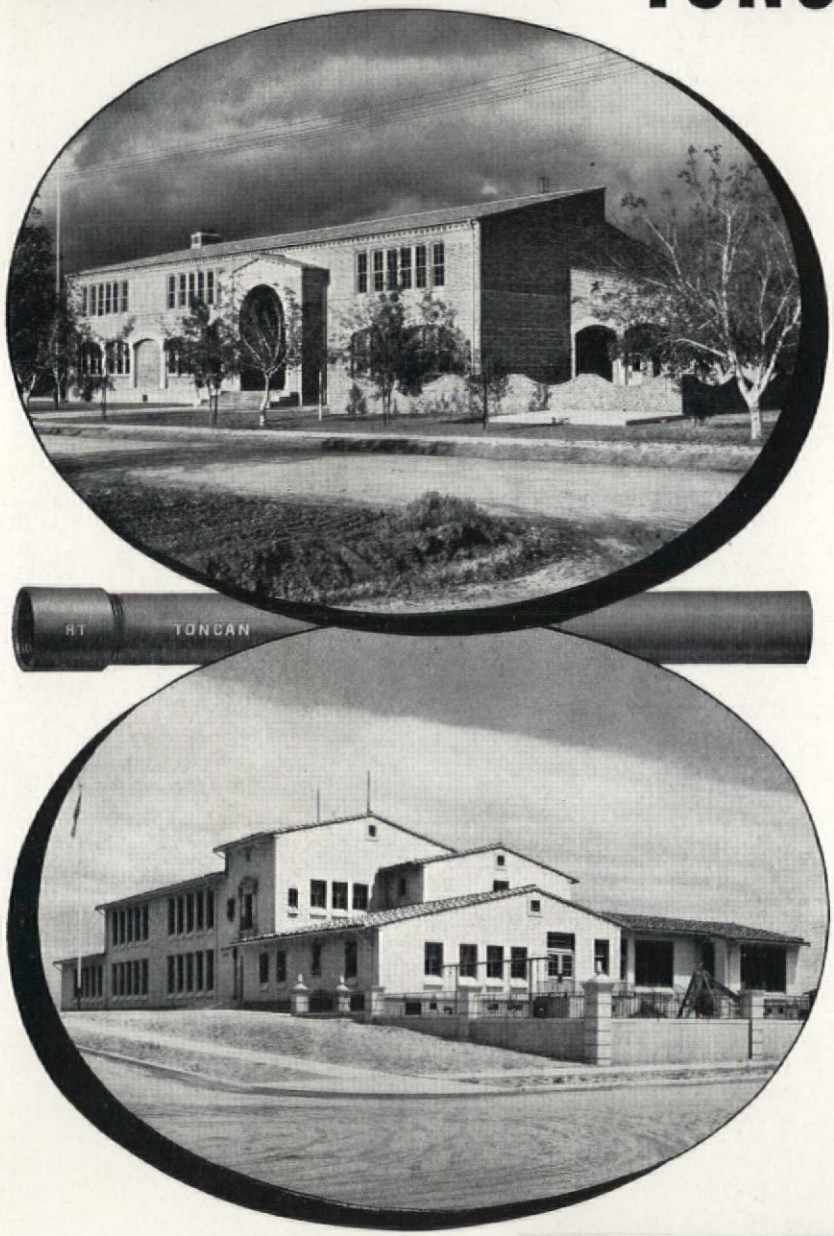
1128

SCHOOLS IN THE LAND OF SUNSHINE USE TONCAN IRON PIPE



All of the schools and university buildings in which Toncan Iron Pipe has been installed are not listed in the latest edition of "Pipe for Permanence." Only about a dozen installations are described and illustrated—enough to prove that architects everywhere doing school work appreciate the qualities of this modern alloy pipe material. The two California schools illustrated, both Toncan Iron equipped, are tributes to the foresight of the designers.

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The third edition of "Pipe for Permanence" is just off the press. It tells everything the architect and engineer will wish to know about this modern money-saving pipe. Write for a copy.

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Fern Avenue School, Torrance, Calif. C. A. Sanborn & Co., Engineers, Los Angeles.

Buildings erected by Los Angeles School Board, Mr. Niebecker, Architect. Toncan Iron Pipe used for hot and cold water lines.

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James A. Wetmore
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U. S. Government,
Architect

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