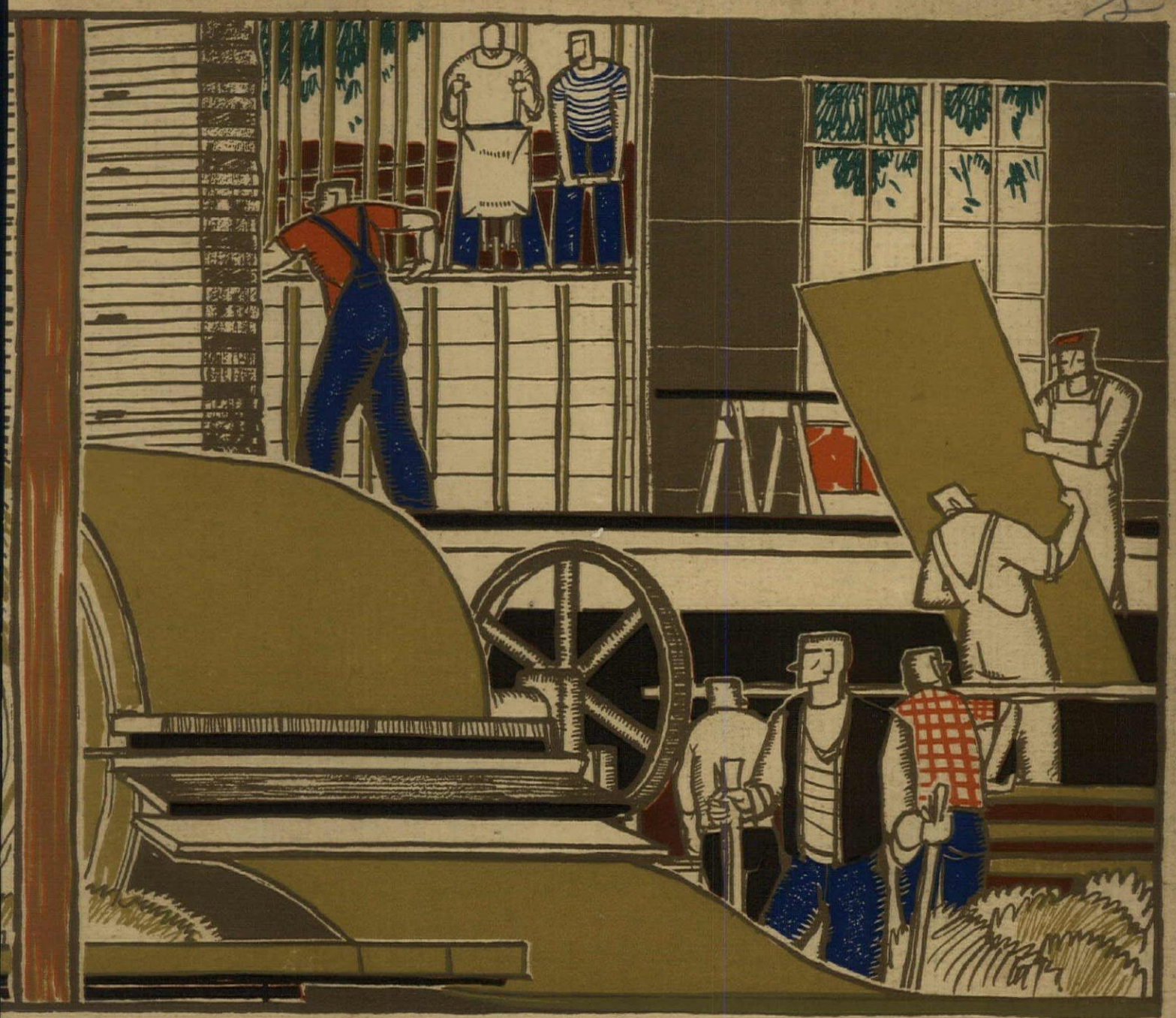
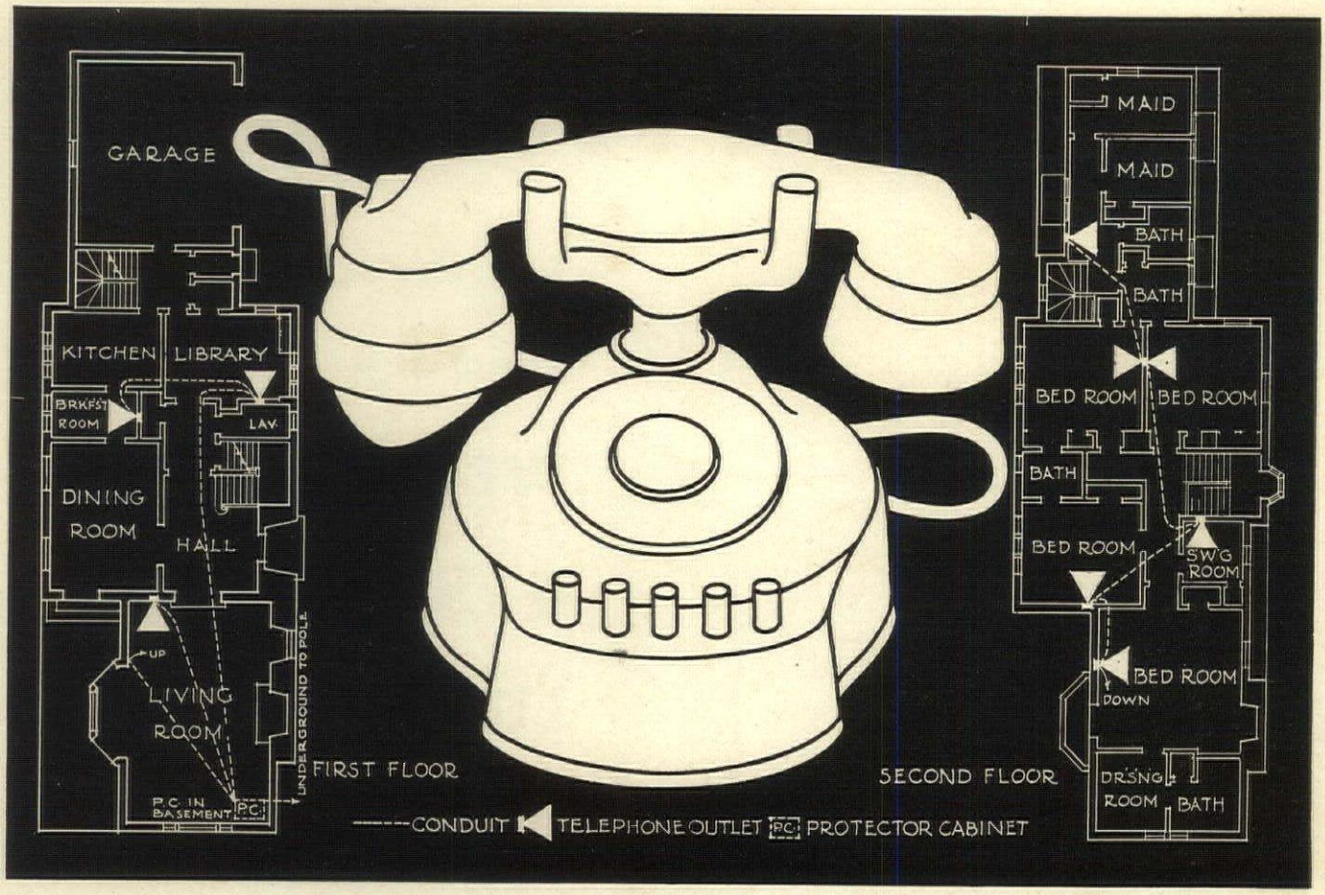


JANUARY 1935 • SMALL HOUSES • WOOD IN DESIGN

AMERICAN ARCHITECT

A BETTER YEAR FOR EVERYONE

Forecasts often are futile; and during the past year many that were based on former business and economic conditions have fallen far short of carefully set marks. The "science" of statistics has broken down under the time-tried method of trial-and-error progress. But though inaccurately foretold, progress—real progress—has been made in every department of American understanding and activity. At least one great step forward is the now general realization of the fact that America and American institutions cannot be swept into the discard of world events through the agency of economic depression. Sometimes this truth has been obscured by the black burden of costly inactivity. The building industry, for example, appeared at one time doomed to virtual extinction. And the architectural profession—one of its key units—has labored in particular under a terrific strain of unfortunately combined circumstances. American Architect is no more a business seer than leaders in Government. No more than they can it forecast times and events that will mark substantial recovery for the architectural profession and the building industry. But firm faith American Architect has in this: As always Building will be vital to American progress; and during the coming year, as always, architects will render a service that is a prerequisite to that progress. Thus American Architect looks cheerfully forward to its fifty-ninth year as an aid in maintaining the best fundamental traditions of the architectural profession. » » » » »



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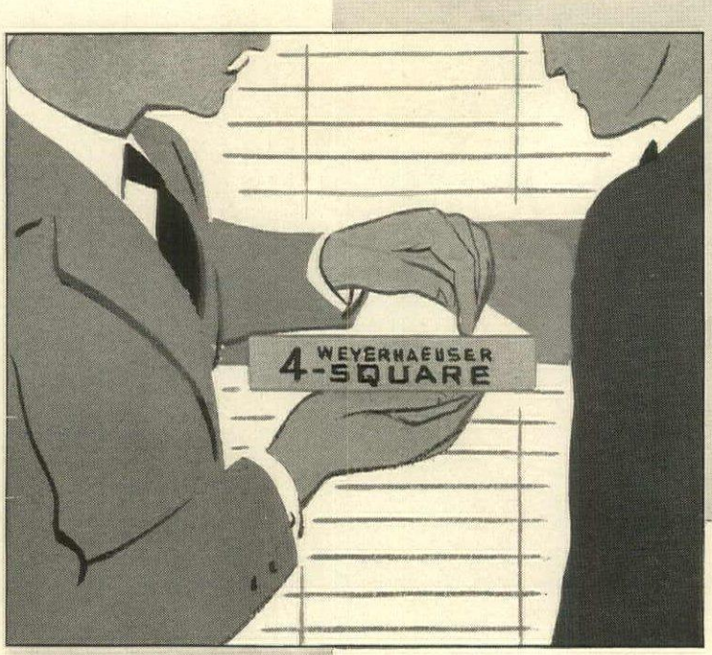

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WEYERHAEUSER WEYERHAEUSER 4-SQUARE LUMBER **SALES COMPANY**

FIRST NATIONAL BANK BUILDING — SAINT PAUL, MINNESOTA

American Architect, published monthly by International Publications, Inc., 572 Madison Avenue, New York, N. Y. $3.00 per year, Canada, $4.00; Foreign, $5.00. Entered as second class matter April 5th, 1926, at the Post Office, at New York, N. Y., under the act of March 3rd, 1879. Issue 2629, dated January, 1935.

AMERICAN ARCHITECT

Trade-Mark Reg. U. S. Patent Office

VOLUME CXLVI NUMBER 2629

Cover Design by Ernest Born

AMERICAN ARCHITECT. Published monthly by International Publications, Inc., 572 Madison Avenue, New York. Other offices, 919 N. Michigan Avenue, Chicago; General Motors Bldg., Detroit; 755 Boylston Street, Boston. William Randolph Hearst, President; Richard E. Berlin, Vice President; John Randolph Hearst, Vice President; Arthur S. Moore, Secretary.

Single copies, $1.00. Subscription: United States and Possessions, $3.00 per year; Canada, $4.00; Foreign, $5.00. Entered as second-class matter, April 5, 1926, at Post Office, New York, under Act of March 3, 1879.

Step Into This Picture

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

AN unusual and opportune time has arrived to establish the architectural profession in a public position which it has never entirely enjoyed. To do so the profession must "sell" itself to America.

Building is being publicized as never before in history. Housing is discussed everywhere. Public works today have a new meaning to the man-in-the-street. The Federal Housing Administration has undertaken a building publicity campaign on a wide front. Better Housing Campaigns and expositions are the order of the day.

A huge potential demand for private building construction exists. New houses are needed. Obsolete dwellings, commercial and factory buildings require modernizing, additions and repairs. In the opinion of many individuals the year 1935 will mark the beginning of a new building era.

The architectural profession should take advantage of a situation which is making America building conscious and step into the picture in a big way.

If it is not done architects may expect to participate to about the same degree as in the past. Many architects have indicated that a new class of clients is beginning to appear in their offices. More will do so if the profession will do *now* what needs to be done.

Many architects are convinced that institutional advertising, such as that now being carried on in the interest of the profession by AMERICAN ARCHITECT, Good Housekeeping, House Beautiful, Town & Country and others, can produce tangible results. There are other things which can and should be done. It is possible for the profession to bring into play every resource and technique needed to establish its members in their proper place in the mind of the building public.

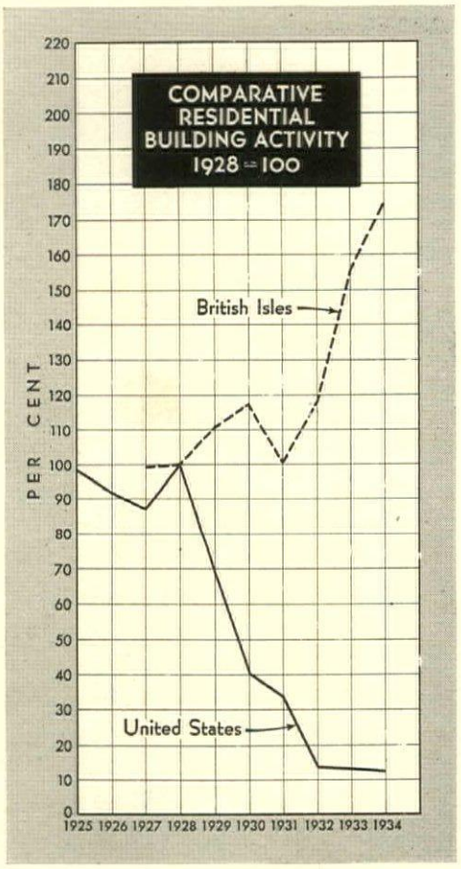
The motive will not be entirely selfish. A campaign of this nature is definitely in the public interest. The development of a more beautiful America depends upon more building construction being designed and supervised by architects. A more beautiful America means a more secure country in which to live.

The stage is set. The opportunity is here. The time to act is NOW—not tomorrow.

An Economist

BY THOMAS M. McNIECE

Market Analyst



THE optimist and the pessimist have one characteristic in common—both are inclined to disregard the facts. We hear so much of the unprecedented depression into which we have been plunged that we may come to believe we are the victims of a totally new experience. The facts are that comparable disasters have overtaken us in the past and that our experiences of today are new only to the present generation.

This will provide scant comfort for one who is worried about the source of his next meal. But it should suggest that there will, after all, be an end to the depression if history repeats as it always has. This is not undue optimism. On the other hand, one cannot safely base his program on colorful headlines covering construction news items emanating from Washington. He needs more factual information. Napoleon is said to have remarked that the way to victory is to divide the enemy and to conquer him in detail. In a like manner it may be suggested that the way to a better understanding of the construction situation is to analyze in detail the factors that chiefly influence it at this time and then to interpret these in the light of future trends. The architect who has an understanding of the nature and importance of the cross currents carrying the industry this way and that, will be better able to steer his own course to his advantage.

The first requisite to a clear understanding of the present status of the industry is a knowledge of the amount of building in the more important classes of construction. This will show not only what progress has been made in various divisions of building, but will suggest the degree of recovery ahead.

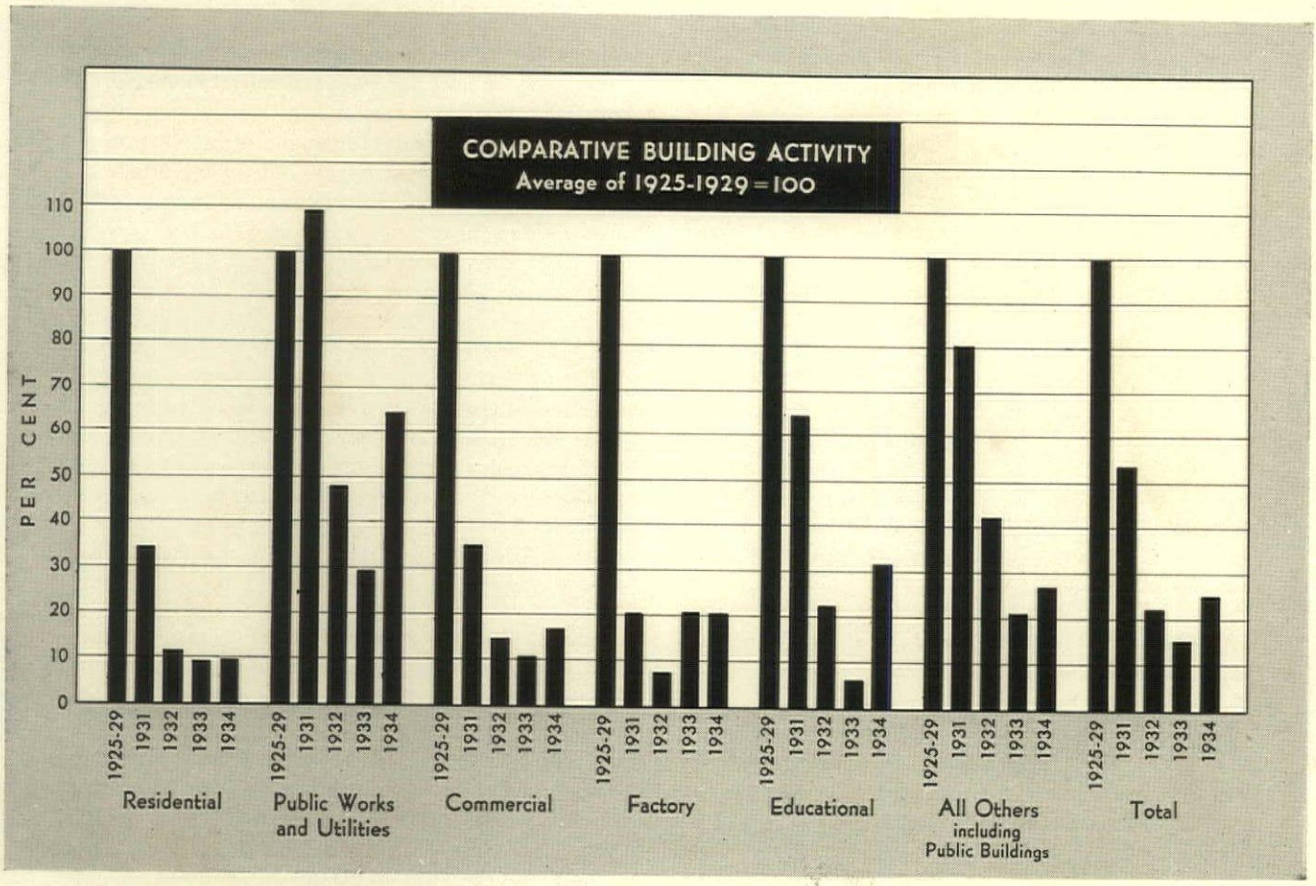
In the ensuing table data are given covering construction contracts awarded by the principal types of construction. No proper perspective of the present position can be gained by showing merely the degree of recovery that may have been attained by each type. This would mean little unless it is also known how much the various classes have been depressed. For these reasons the data presented are based on monthly averages for the five year period from 1925 to 1929 as 100 per cent. They are derived from the F. W. Dodge data on value in con-

COMPARATIVE BUILDING ACTIVITY

Based Upon Monthly Averages Using 1925-1929 as 100 Per Cent

	1925-1929 % of Total	1931	1932	1933	1934
Residential	40.9	34.3	11.6	9.3	9.7
Public Works and Utilities	18.9	109.5	48.0	29.4	64.6
Commercial	14.6	35.0	14.8	10.8	16.9
Factory	9.9	20.6	7.4	20.8	20.4
Educational	6.3	64.9	22.6	6.3	31.6
All Others	9.4	80.5	42.2	20.9	27.0
Total	100.0	53.6	22.2	15.5	25.2

Analyzes Building



Activity in various classes of construction during the last four years is compared in percentage form with the average annual volume of building during the five year period from 1925 to 1929, inclusive. This average is taken as 100 per cent

tracts awarded in thirty-seven states east of the Rocky Mountains and comprise in total about 90 per cent of all comparable construction in the United States. Records for 1934 are based on the first nine months and in order to avoid seasonal distortions, the same nine month period was used for the base period as well as for each of the years separately shown.

The first column shows the relative importance of each class of construction listed based on the five year averages. These figures understate the relative importance of residential building, because of the large number of unreported low cost jobs in the residential class and their extremely wide distribution. If all residential construction were included, this class would comprise from 55 per cent to 60 per cent of total construction with the other classes proportionately reduced. It will be noted that construction activity as a whole was at its lowest ebb in 1933, the only exception being factory building which reached its low point in 1932. A few comments on each class will be in order.

Residential: This class, even without the adjustment previously mentioned is approximately as large as the next three classes combined and is virtually at its low point of the depression. The shrinkage from the five year average is 90 per cent, which gives some idea of the ground to be recovered.

Public Works and Utilities: Due to the unparalleled efforts on the part of the Government to stimulate industry by expansion in public works expenditures, this branch of construction shows the highest degree of recovery. But it has failed miserably to stimulate industry. In 1931, the Hoover administration strongly urged continuance of all available work of this type. In that year—nearly two years after the depression was under way—contracts awarded were 9.5 per cent greater than for the five year average. Some three years later in 1934 after a tremendous increase in governmental expenditures, the level of activity was but 59 per cent of tne 1931 figure in this important branch of the industry. The Administration's present attitude toward the utilities

offers little encouragement for the resumption of private spending which is manifestly so important. In these comparative results we have an outstanding example of the futility of attempting to replace private enterprise with public spending.

Commercial and Factory: These figures are self-explanatory. It is useless to expect any great revival in these branches of construction until office and store vacancies approach a normal figure and until idle productive facilities in factories are again put to profitable use.

Educational: This non-speculative class of building in normal times shows the least fluctuation in volume of construction. The great tax burdens thrust upon communities in the present crisis have forced a major decline in educational building. The contracts awarded in 1934, while only 32 per cent of the five year average used as a base, were nevertheless five times those placed in 1933. This relative improvement is by far the greatest in any of the various classes and is no doubt greatly stimulated by Federal aid. Under average conditions, however, educational construction represents less than 7 per cent of total building.

All Others: This group embraces social and recreational, hospital and institutional, religious, memorial and public buildings. The whole class involves less than 10 per cent of the total, while public buildings—so strongly encouraged as a pump priming device—normally amount to about 1 per cent of the total. The massive construction industry cannot be re-vitalized by stimulating 1 per cent of it.

Total Construction: We now find that construction activity in 1934 was only 25 per cent of its five year average in the last half of the prior decade. These are the facts as they stand in the record. Where are we going from here and what are we going to do about it?

At the present time the Federal Government is most actively engaged in trying to find the answer to these questions. Rather belatedly a better conception of the great economic importance of building seems to be gaining ground. But it is very doubtful if its real significance is yet understood.

The United Kingdom enjoyed a far greater degree of business recovery in 1934 than did the United States. One of the controlling factors in British recovery was the great boom in residential building. Regarding this the *London Economist* of November 10th says, "There is no doubt that the revival in dwelling-house construction forms the backbone of British recovery, for the money spent on buildings and household equipment represents a fairly substantial proportion of total expenditure. Moreover, building construction usually represents more than one-half of the amount annually invested in fixed capital." Incidentally, the importance of residential building is recognized by the *London Economist,* which estimates it to include 66 per cent of total construction.

There can be no real question regarding the desire of government officials to promote building activity. But serious question may be raised regarding the effectiveness of their present efforts. It will be of assistance in the attempt to forecast future trends to make a brief resume of the principal agencies set up to aid the building industry.

Home Owners Loan Corporation: Funds allotted to this organization are now virtually exhausted and plans have been announced for transferring its activities to the Federal Housing Administration. It has been reported that many borrowers under the HOLC mortgage relief plan are making no effort to pay either interest or principal to the Government when due and that defaults are already in the neighborhood of 25 per cent to 30 per cent of the transactions negotiated. Recent press reports advised that the Government is about to institute foreclosure proceedings against recalcitrant debtors. It should be realized that HOLC offered little or no direct stimulation to renewed building activity. It was essentially a relief organization available only to those already in distress; and its effects on building were purely static. There is some discussion about securing an additional grant of funds from the new Congress to keep this work alive.

Federal Housing Administration: This organization covers a very broad field, embracing home modernization, National Mortgage Associations and Mutual Mortgage Insurance.

By late October, 1934, home modernization loans throughout the country were said to have been made in about 30,000 individual cases for a total amount of some $13,000,000. At that time loans were being extended at the rate of about $2,250,000 weekly. These advances are character loans rather than collateral loans, as no security is required. They are discounted at the maximum rate of 5 per cent annually on the whole amount borrowed. Since repayments are made in monthly installments, the actual interest rate may average nearly 10 per cent. Most loans are extended for a two year period, but may run for a longer time. Individual loans are averaging somewhat above $430. The Government insures these loans against loss up to 20 per cent of the value extended. While these loans in the aggregate may amount to a considerable sum—and to this extent afford some relief from the present situation—it should be realized that the work will be spread over such a long period that the amount in process at any one time will afford little current aid. This time element is an important point that is overlooked in many of the plans projected.

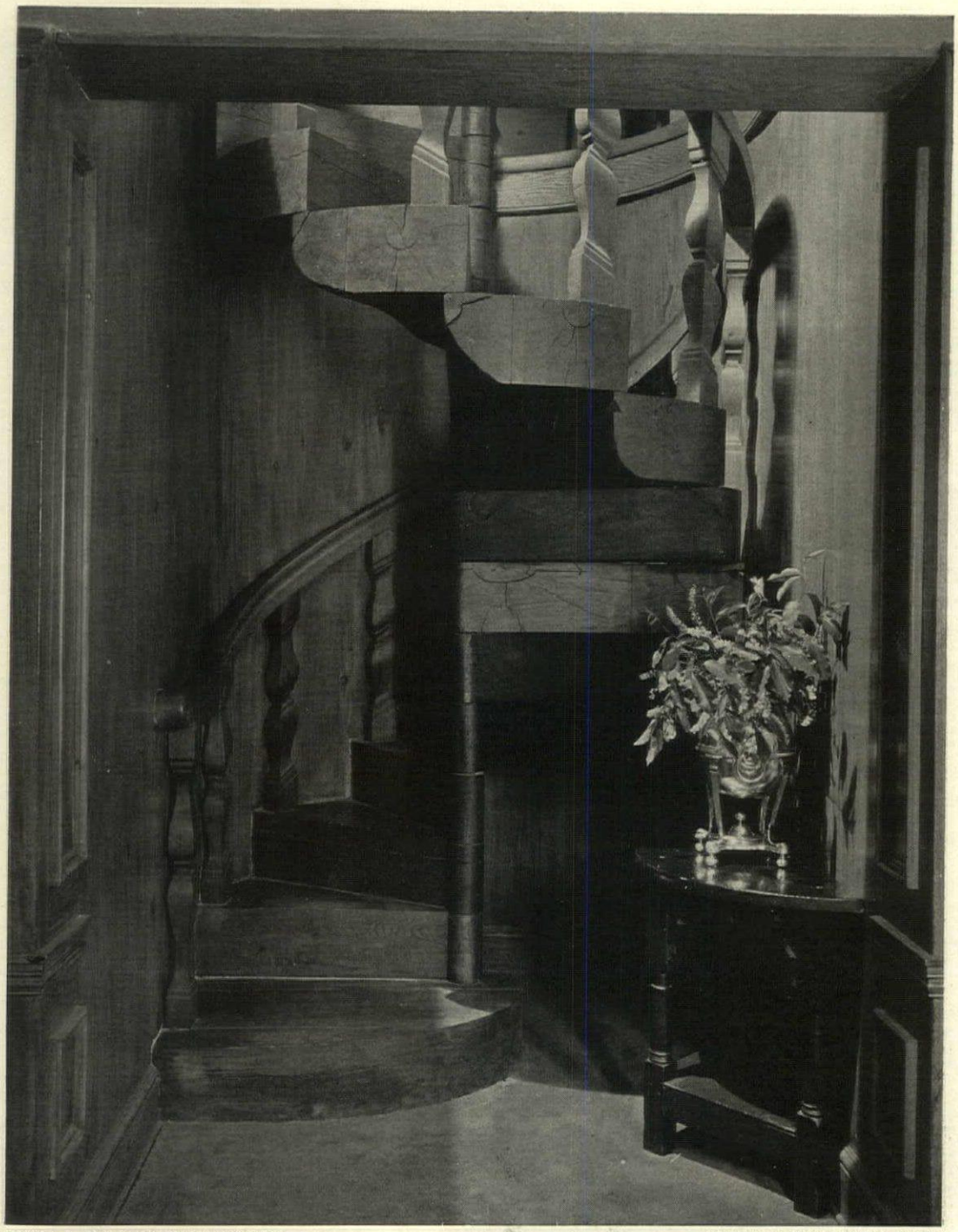
National Mortgage Associations are designed with the two-fold purpose of providing credit to encourage construction and to institute some much needed reforms in the methods of financing construction. In brief, they are designed to encourage the use of private capital in financing new construction and are to be differentiated from HOLC activities which merely extend relief in existing structures.

Private capital is encouraged to participate in this field by the fact that (*Continued on page* 85)

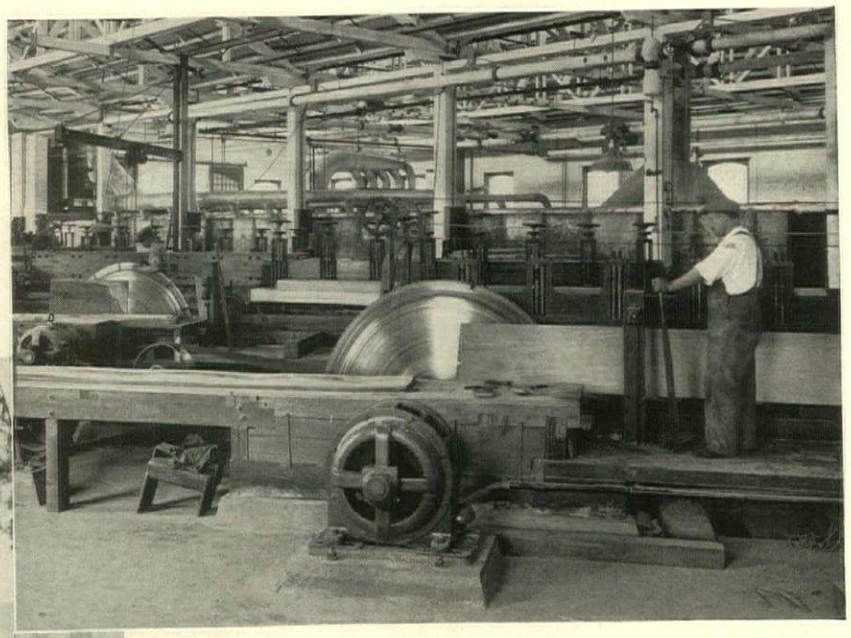
WOOD

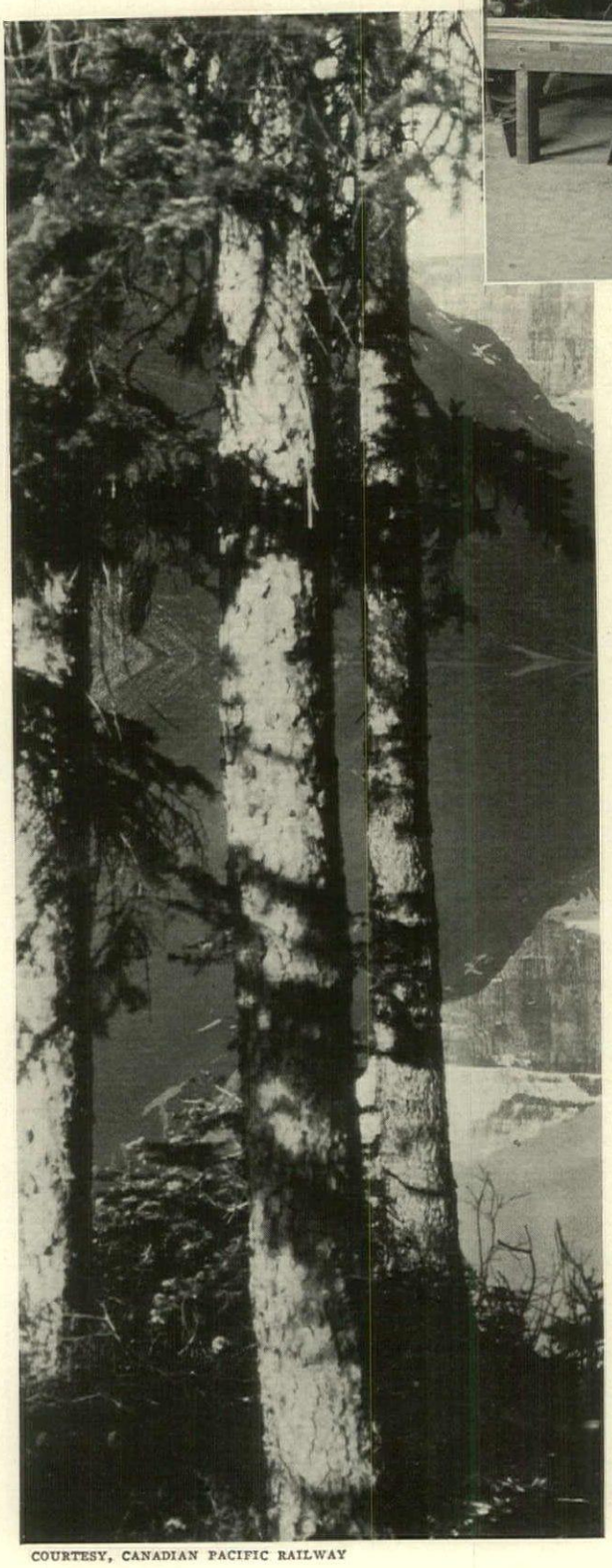
its use in architectural design

This is the first article in an important new American Architect series on "Materials in Design"



HAROLD F. MANN, INTERIOR DECORATOR. RICHARD AVERILL SMITH, PHOTO





COURTESY, CANADIAN PACIFIC RAILWAY

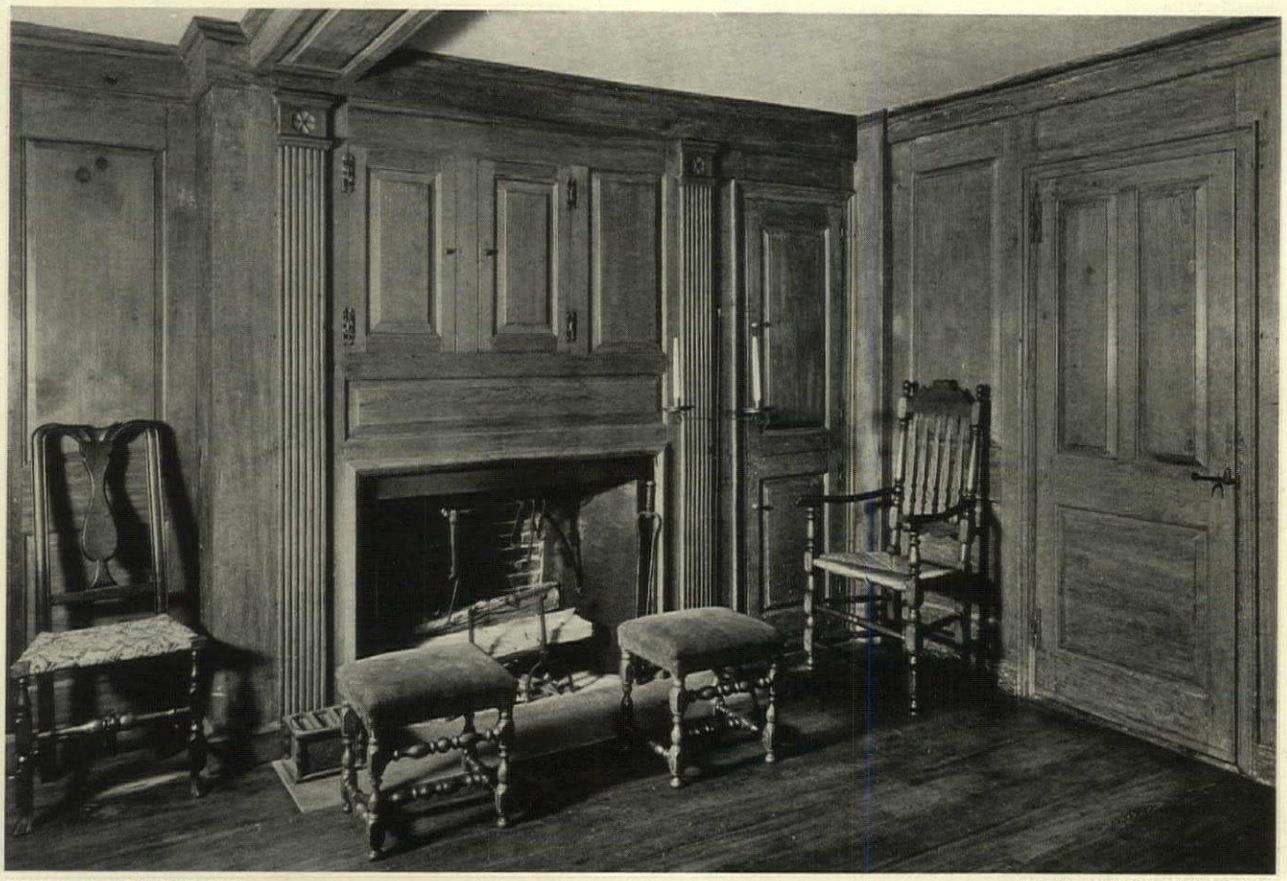
This article was written by Arthur McK. Stires from data furnished by a number of manufacturers and designers. Special acknowledgment is due Ichabod T. Williams & Sons and Burdett Green, secretary-manager, American Walnut Manufacturers Association, for much technical information

Wood . . . its

AN informed and discriminating use of materials is fundamental in good design. This statement, which is axiomatic when structural qualities are a consideration, is not less true when a material is studied in the light of its ability to be decorative as well as functional. Much has been written about the structural characteristics of wood, and detailed information is readily available in standard handbooks. Data on wood as an element in design, however, are widely scattered and difficult to find. This article, therefore, devotes itself to wood as an element in architectural interiors where its selection as a medium is largely based upon its effectiveness as a decorative, esthetic element.

Obviously, the whole subject cannot be treated here. Only that which seems especially pertinent to contemporary work and which promises to be most useful is included, with a view to offering architects a larger "wood vocabulary," and to acquaint them with important characteristics and differences in woods, and perhaps to stimulate their appreciation of the inherent possibilities of this medium.

In order to use wood as an element in design the



RICHARD H. DANA, ARCHITECT — RICHARD AVERILL SMITH, PHOTO

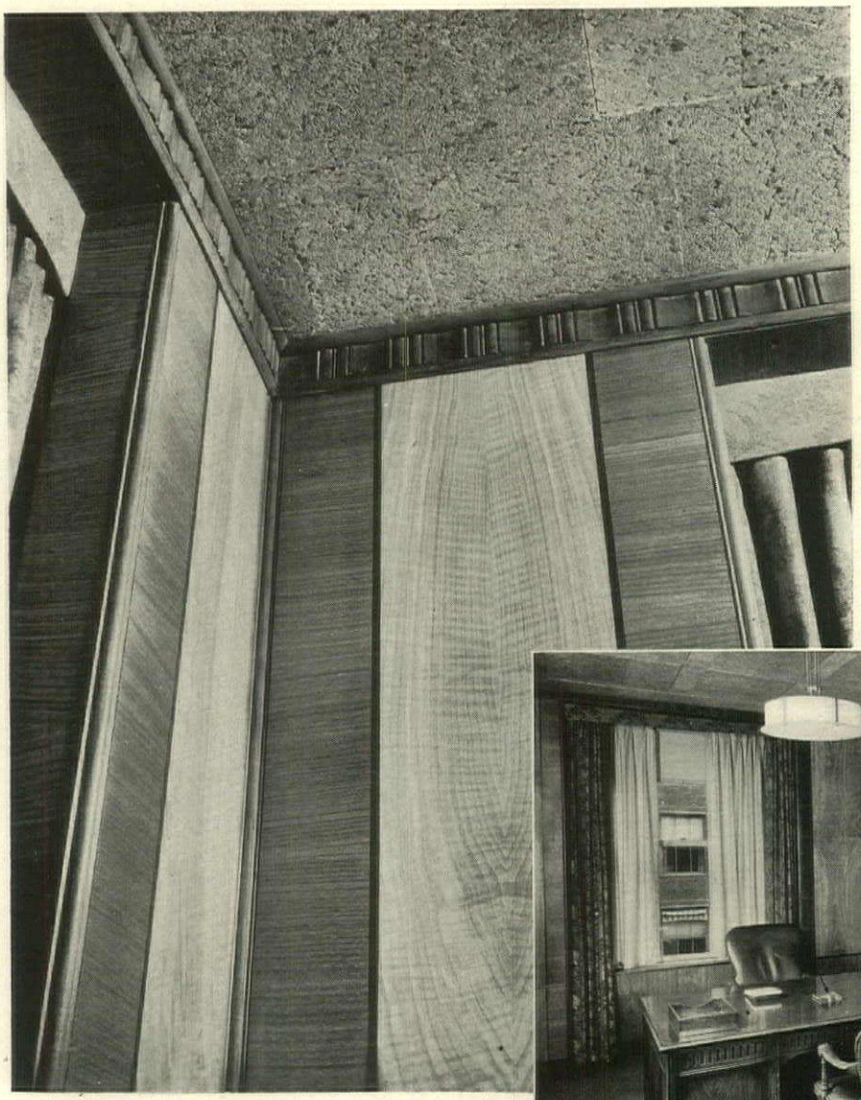
use in Architectural Design

architect must possess some knowledge of six different factors which govern selection. These are: (1) color and "figure" or character of grain of the natural wood (assuming for the moment that wood is being chosen for its inherent qualities and not merely as a base for applying artificial surface color treatments); (2) cost range; (3) working characteristics, embracing such things as strength, density, "ability to stay put" and ability to glue or join well; (4) adaptability to architectural use in flooring, trim, panels or carved and turned work; (5) commercial availability in lumber or veneer forms, or both; and (6) the limitations upon size of units which are imposed either by the growth of the wood itself or by the manufacturing processes employed in preparing it for use.

This information has been assembled for the first time, in the table on pages 24 and 25. Necessarily, the data are comparative rather than explicit, since fluctuation is inevitable under some headings, but the table will furnish the architect with authentic clues as to the essential character, adaptability and limitations of all the species listed.

Here are common woods and rare woods; woods familiar to every architect, and not a few that are quite unfamiliar; some with a very delicate figure, almost white in color; others vigorous, robust and decidedly masculine. Many of these woods seem by their very definiteness of character to suggest the sort of room in which their use would be most happy. Others have so wide a range of color and figure, are so beautifully subtle in texture, that they lend themselves to an almost endless variety of uses. These woods are to the creative architect what the palette is to the artist. Used with a nice discrimination, there is no end to the compositions and effects which they will enable him to produce.

To appreciate the significance of these various characteristics and to understand their importance under different conditions of use, it is extremely helpful to consider first the basic characteristics of all woods; then the manufacturing processes in so far as they influence the architect's designs and specifications, and finally to note special features of several kinds of wood commonly used in interior work, including appropriate methods of finishing.



F. S. LINCOLN

F. S. LINCOLN

The sympathetic use of wood requires little decoration beyond its own inherent qualities of color and figure. Above: Simple moulding used with contrasting panels of French walnut field and striped American walnut ribbon border. Center: Book- and end-matched panels of French walnut, crotch figure. Both of these illustrations from offices of Johns-Manville, New York; Shreve, Lamb & Harmon, architects. Below: Appalachian comb grain white oak paneling used in the Lumber Industry's house at A Century of Progress, Chicago. Ernest A. Grunsfeld, Jr., architect

DEFINITIONS PERTAINING TO WOOD

BIRD PECK: A small hole or patch of distorted grain resulting from birds pecking through growing cells in the tree. In shape bird peck usually resembles a carpet tack with the point toward the bark and it is usually accompanied by discoloration extending for a considerable distance along the grain, causing what is commonly known as *mineral streak*.

BRASHNESS: A condition in wood characterized by a more or less abrupt failure across the grain, instead of a tendency to splintering, when broken.

CROSSBAND: In the construction of plywood, to place the grain of alternate layers (usually) at right angles to the grain of the faces in order to more nearly equalize the strength in the two principal directions, and to minimize shrinking and swelling: In plywood, layers of veneer at right angles to the face plies.

CROSS GRAIN: Cross-grained wood is that in which fibers are not parallel to the axis of a piece. In U. S. Department of Agriculture Circular 296, "Standard Grading Specifications for Yard Lumber," slight cross grain is a slope of grain not over 1 inch in a length of 15 inches; medium cross grain is a slope of grain over 1 inch in a length of 15 inches; heavy cross grain is a slope of grain over 1 inch in a length of 10 inches.

DRY ROT: A term loosely applied to any dry crumbly decay but correctly only to decay produced by such fungi as *Merulius lacrymans* and *Poria incrassata*. Wood in an advanced stage of disintegration due to the attack of these fungi can easily be crushed to a dry powder. But "dry rot" is actually a misnomer for any decay, inasmuch as all fungi require considerable moisture.

EDGE-GRAIN: Vertical-grain (EDGE-GRAIN, rift-grain, comb-grain, or quarter-sawed) lumber is that which has been sawed so that the wide surfaces extend approximately at right angles to the annual layers or rings of growth. Material is considered vertical-grain when the rings (so-called grain) form an angle of 45 to 90 degrees with the wide surface of the piece. Compare FLAT-GRAIN.

FIREPROOFING: Wood cannot be treated chemically so that it will not char or decompose at 280 degrees Centigrade. What fireproofing does is to make wood difficult to ignite and keep it from supporting its own combustion.

FLAT-GRAIN: Flat-grain lumber is that which has been sawed in a plane approximately perpendicular to a radius of the log. Synonymous terms: slash-grain, bastard grain, plain-sawed, tangential cut. Lumber is considered flat-grain when the wide surface makes an angle of less than 45 degrees with annular growth layers. See EDGE-GRAIN.

FLITCH: A thick piece of lumber with wane (bark) on one or more edges; also a log or section of a log from which veneer is made.

HEARTWOOD: Wood in the interior of the tree, extending from pith to sapwood, in which cells no longer participate in the life processes of the tree. Heartwood serves chiefly the mechanical function of support. Heartwood may be infiltrated with gums, resins, and other materials which usually make it darker and more decay resistant than sapwood. Compare SAPWOOD.

INTERNAL SAPWOOD: A zone of wood within the heartwood that retains the light color of sapwood.

INTERLOCKING GRAIN: Wood in which fibers are inclined in one direction in a number of rings of annual growth, then gradually reverse and incline in an opposite direction in succeeding growth rings, then reverse again, etc.

MOISTURE-PROOFING: As referring to wood, moisture-proofing is a relative rather than absolute term. No practicable coating or treatment for wood is known that will completely prevent moisture changes.

PECK: An advanced stage of decay involving formation of pockets or areas of disintegrated wood. Usually associated with cypress and incense cedar. Peck corresponds to what is technically termed "medium pocket rot," in which the holes or pockets range from 1/16 to 1/2 inch in width and from 1/4 to 2 inches in length. Compare BIRD PECK.

PLYWOOD: Wood made up of three or more layers of veneer joined by glue, the grain of adjacent plies usually being at right angles. Almost always an odd number of plies are used to secure balanced construction.

ROTARY-CUT VENEER: Veneer cut in a continuous strip by rotating a log against the edge of a knife in a special type of lathe. Compare SLICED VENEER and VENEER.

SAPWOOD: The (usually) light-colored zone of wood next to the bark, 1 to 3 or more inches wide, which is actively involved in the life processes of the tree (water and sap movement, food storage). Under most conditions sapwood is more susceptible to decay than heartwood; as a rule it is more permeable to liquids than heartwood. Sapwood is not essentially weaker or stronger than heartwood of the same species.

SECOND-GROWTH: Denotes timber that has grown after removal of all or a large portion of the previous stand. Second-growth material is frequently of rapid growth during its early life.

SLICED VENEER: Veneer which is literally sliced off the log or bolt by moving the log or flitch against a large knife. Compare ROTARY-CUT VENEER and VENEER.

SPIRAL GRAIN: A type of growth in which fibers take a spiral course about the bole of the tree instead of the normal vertical course. The spiral may extend right handed or left handed around the tree trunk.

SPRINGWOOD: The inner, earlier-grown, frequently thinner walled and larger lumened portion of the annual ring.

SUMMERWOOD: The outer, later-formed, usually denser portion of the annual ring.

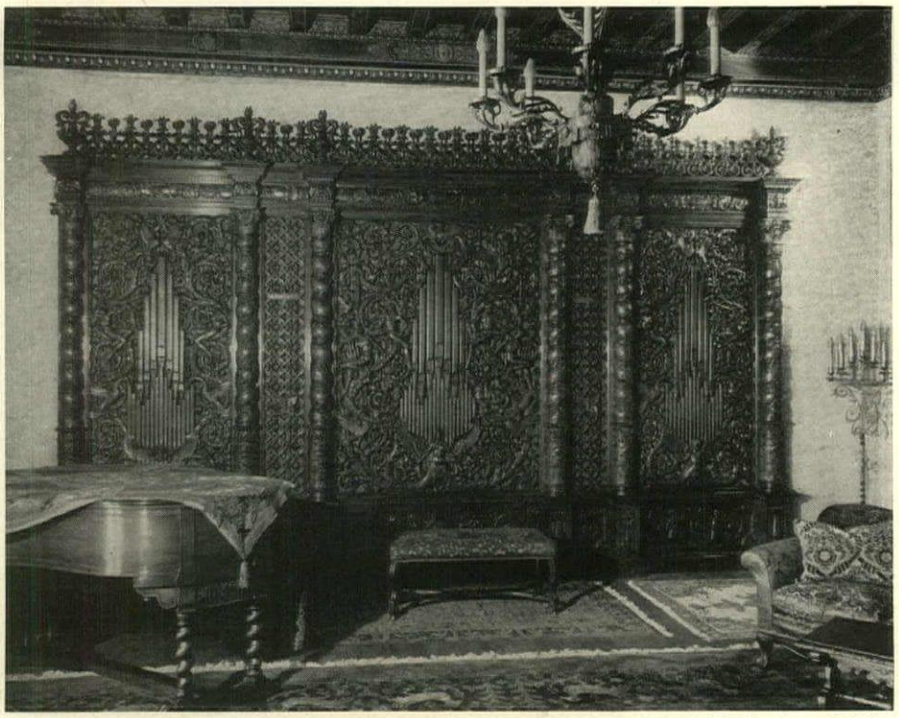
VENEER: Thin sheets of wood produced by rotary cutting, sawing or slicing. Veneer thicknesses to some extent overlap thicknesses of resawn lumber.

BASIC PROPERTIES

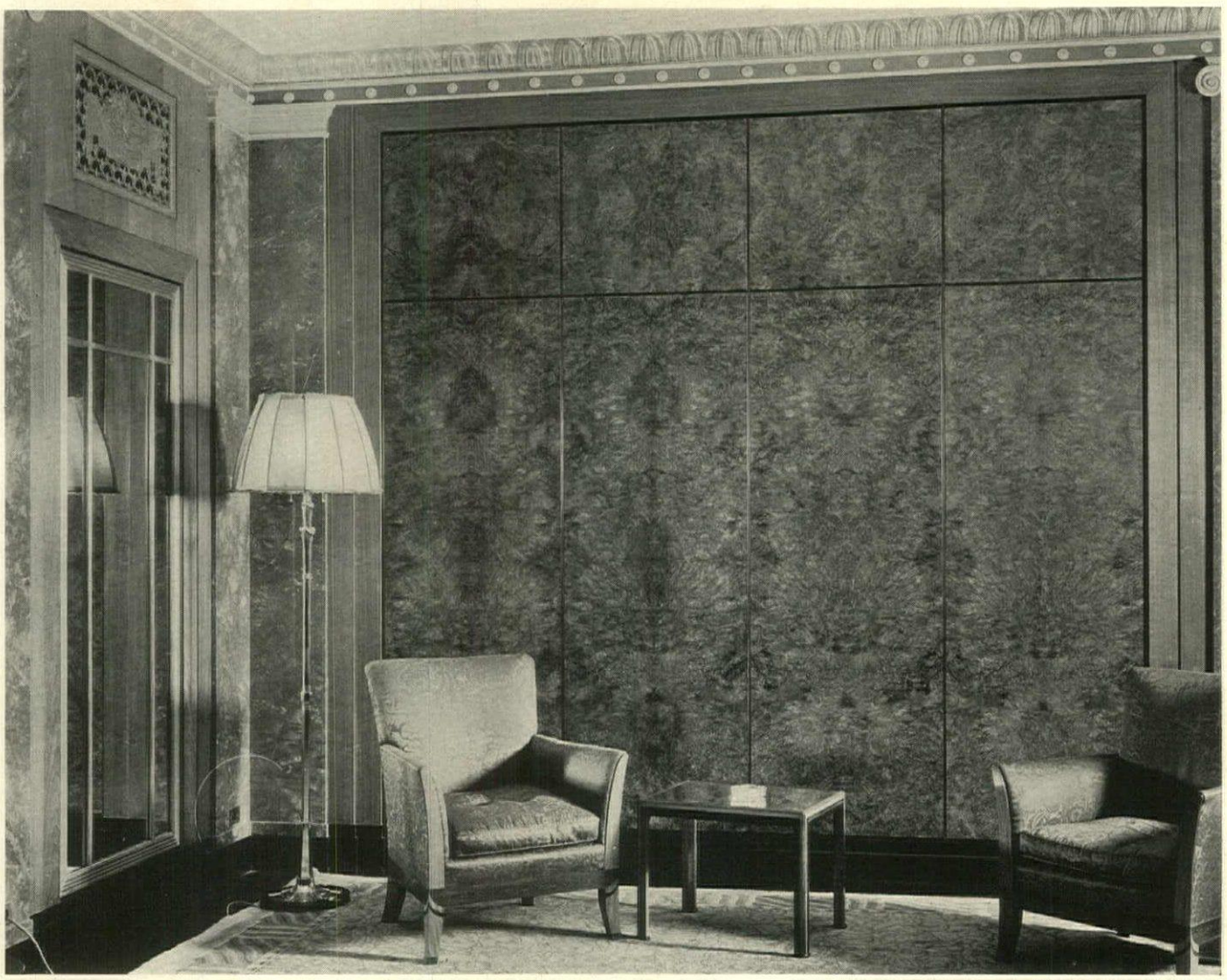
THE cellular structure of wood is largely responsible for its usefulness as architectural material. This structure makes most woods, when dry, quite light for a given volume, comparatively easy to work, and especially suited for building purposes. The microscopic cell-cavities grow together to form a tightknit but porous mass into which nails and

Two ways of developing the design possibilities of wood are shown on this page. At the right: an intricately carved walnut screen in the music room, residence of William S. Barstow; Greville Rickard, architect. Below: wood is used without carving for the inherent beauty of its own figure and color. The woods shown are French walnut burl panels with American walnut straight-grain border. Lobby, Waldorf-Astoria Hotel, Schultze & Weaver, architects

On the facing page. Left: veneer panels of California walnut, book- and end-matched with the grain running diagonally. Racine County Court House, Racine, Wisconsin; Holabird & Root, architects. Right: walls finished in thin veneers used as wallpaper (Flexwood), by Marlborough Galleries, New York

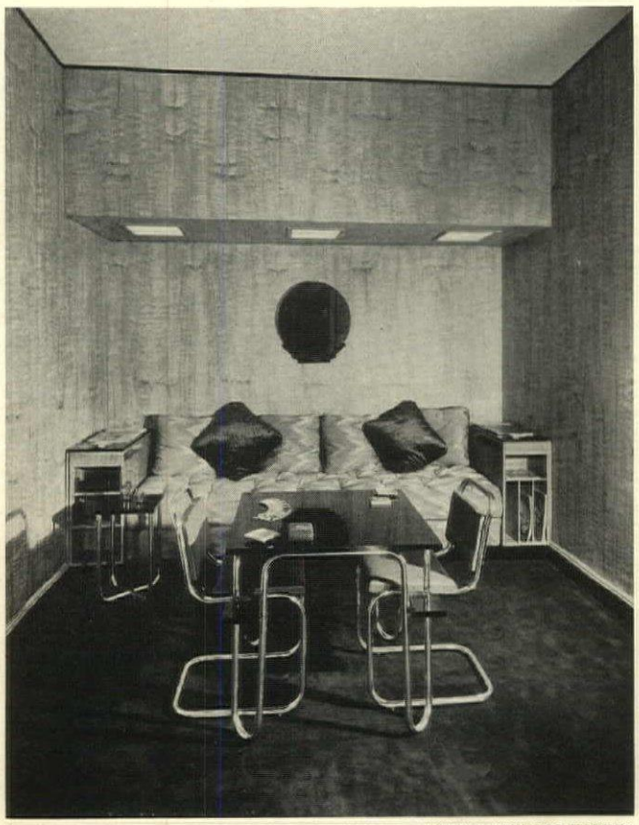


GOTTSCHO



RICHARD AVERILL SMITH

HEDRICH-BLESSING



MATTIE EDWARDS HEWITT

screws can be driven. Paint or glue penetrates these pores and thus obtains a better grip than on non-porous surfaces. Durability of lumber is increased by introducing preservatives into the cells. In a similar manner wood can be made fire-resisting.

The variety of size and arrangement of these fibrous cells is responsible for the "figure" in wood, the patterns of grain which makes it such an unusual and important element from an esthetic standpoint. The master craftsman selects wood from a figure exactly suited to his purpose and gives his work a finish which will bring out the inherent beauty of that figure. As the art of woodworking has progressed there has been an increasing tendency to allow the beauty of the wood to dominate, and to subordinate carving and intricate manipulation, however superb, to the rich and inimitable effects locked in the fibers of the wood itself.

Incidentally, the difference in cellular structure is the most reliable means of differentiating between softwoods and hardwoods. The softwoods are composed of a comparatively uniform mass of small cells or fibers, while the hardwoods develop large specialized cells for the purpose of elevating the sap from the roots to the leaves. This difference is distinguishable in the end sections of the wood.

The "workability" of wood, on the other hand, its adaptability to carving, etc., is better measured by specific gravity than by softness or hardness, although this rule is a generality which is subject to conspicuous error. For example, light woods are unsuitable for carving; but soft pine is a notable exception. Heavy woods are almost all workable except the heaviest, which are simply too hard to carve advantageously.

Other aspects of "workability" which are more or less intricately related to the cellular structure of wood are its strength, its tendency to shrink or swell or warp under changes in moisture content, and its other qualities which may be collectively embraced in the term "ability to stay put." These vary with every specie and are of great importance in the selection of woods for certain purposes.

MANUFACTURING

A KNOWLEDGE of manufacturing methods is important to the architect because he must specify woods or veneers in proper conformity with trade practices.

The processes employed in the production of lumber for trim, floors, window sash, etc., are well understood. The architect's principal concern is to specify the grade of lumber which has the characteristics necessary for his purpose. Obviously, this does not always imply the use of the highest grades, as the lower grades of some woods yield decorative effects not obtainable in higher grades of the same wood. The tabulation of data (page 21) on the variation in grading terms of different woods, though incomplete, will illustrate this point. The architect should inquire from reliable contractors or lumber dealers, or from standard grading rules, the grading terminology of the kind of wood he is using.

About the only other important specification detail in the case of lumber is whether plain sawed or quarter sawed wood is desired. See definitions.

While grading, rather than methods of manufacture, is the point to be stressed in the case of lumber, the reverse is true in the case of veneers. Here the variation in grade is comparatively immaterial. In writing veneer specifications, the architect must cover these three cardinal points: first, method of manufacture; second, part of tree from which produced; third, how the veneers are to be matched. In addition, on all important work the architect should personally select and designate from samples the flitch from which his veneers are to be supplied.

VENEER CUTTING

DECISION as to whether a cabinet wood log shall be made into lumber or into veneer is made almost as soon as the log enters the mill. After being cross-cut to produce sound sections with minimum of waste, the log is usually opened up lengthwise, through or near the heart, by a band saw. This operation reveals for the first time the qualities of the log. If it is large and beautifully figured, or especially clean and sound, the choicest part, thereafter known as a "flitch," is removed and reserved to be made into veneers.

There are two kinds of flitches. The first is a quarter of a log and produces quartered veneers; the other is a slab, also cut lengthwise, taken from the heart of the log and yielding veneers "cut across the heart" which show the heart or leaf figure throughout their length.

Wood is made into veneer by one of three methods which produce, respectively, sliced, sawed, and rotary-cut veneers. Flitches destined for slicing are first placed in large tanks and subjected to a boiling or steaming process lasting as much as 48 hours. The moist heat completely permeates the wood during this period and renders it soft enough for slicing.

The softening process completed, the flitches are taken to cutting machines and fixed horizontally in a heavy movable frame. The frame brings the flitch down against the cutting edge of a long stationary knife which shaves off veneers of the desired thickness. These machines can be gauged to produce veneers ranging in thickness from 1/16 to 1/120 of an inch. The standard thickness of American cut face veneers is 1/28 of an inch.

After slicing, veneers are first dried and then stacked, a separate pile for each flitch and each sheet being placed in the pile in the same relative position it occupied in the flitch. At least three sample sheets are taken from every flitch, one near the top, another near the center, and a third near the bottom, to serve as key exhibits from which the figure and quality of the entire flitch may be judged.

Flitches intended for the saw are not subjected to the softening process. The veneer saw is circular in shape, being very thin at its edge and becoming gradually thicker toward the center in order to gain strength and rigidity. The side facing the flitch is a flat surface, while the reverse side is convex in shape and springs the veneer as it is being cut. Sawed veneers cannot be made as thin as sliced veneers, from ¼ to about 1/20 of an inch being the range, but for some purposes in architecture and shipbuilding the sawed product is considered superior. Sawed veneers are used largely where thicknesses greater than 1/18 to 1/28 of an inch are needed; for example, for stiles and rails of doors. The saw is used almost exclusively for such woods as Cuban and Santo Domingan mahogany and oak which have too close a texture to lend themselves to satisfactory slicing except where the greatest care and skill is used.

Production of rotary-cut veneers is prefaced, as in the case of sliced veneers, by softening the wood. In this case the wood is not a flitch but a whole section of the log, which is put in a large lathe and revolved against a knife, thereby peeling off a continuous strip of veneer corresponding in width to the length of the log section. This method, though widely used, normally produces only flat-grained surfaces and is consequently not employed when complexity of figure is a consideration. However, if the wood itself has an inherently complex grain, a rotary-cut veneer may show a figure of marked interest.

A variation of the rotary-cut method which produces figured veneers in certain woods is the half-rotary cut in which a half round flitch is mounted off the true heart center so that the cut is slightly across the annular rings.

Seasoning of lumber is accomplished either by stacking it in the yard and leaving it exposed to the air for at least three months, and as much as several years, or by kiln drying. This latter process enables the seasoning period to be shortened very materially. The wood is placed in a special chamber and treated first with live steam, next with hot moist air, and finally with hot dry air. Lumber may be satisfactorily seasoned by this process in from a few days to one month, according to the thickness of the lumber and the degree of heat used. Its moisture will then have been reduced from between 25 to 50 per cent to between 5 and 7 per cent. All lumber used for interior work must be kiln dried.

The drying process is of utmost importance. Some cabinet-makers even go to the extent of doing their own artificial drying. Especially in the case of stubborn veneers, such as crotches, it is imperative that all superfluous moisture be expelled from the wood, if danger of splitting is to be avoided.

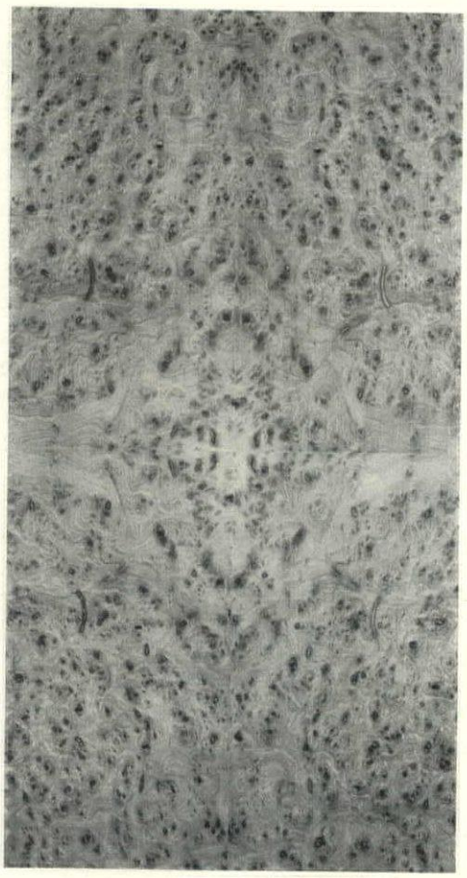
PART OF TREE

THE second point to be considered in relation to writing clear specifications is the part of the tree from which the veneer is cut. This involves four types as follows: (*Continued on page* 23)

WOOD

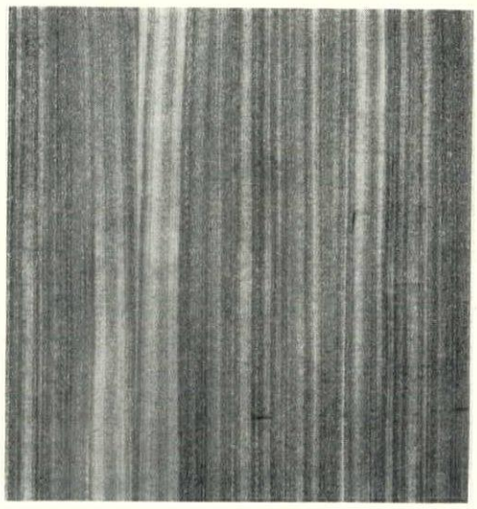
IN ARCHITECTURAL DESIGN

Panels illustrated on this and three following pages are of veneers selected from the collection of Ichabod T. Williams & Sons. They were chosen to indicate the range of color (unfinished), grain and figure obtainable in veneer woods, rather than to indicate woods most frequently used in architectural work. See text and tabular data for more complete information. Photographs by Lazarnick

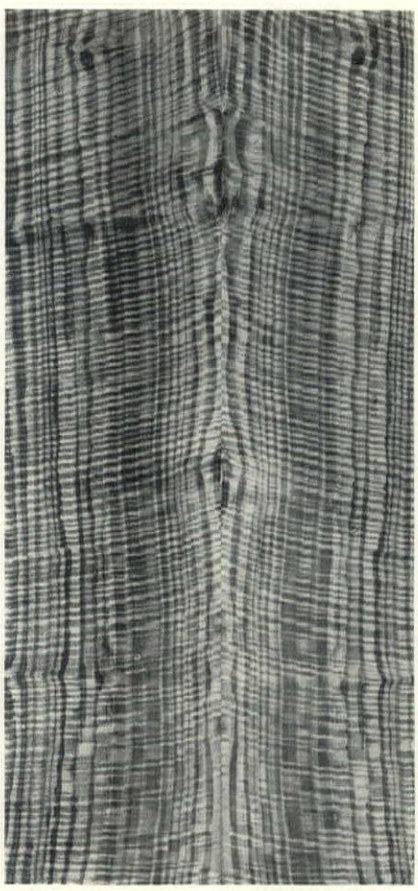


CARPATHIAN ELM burl. Color: medium pinkish brown. This panel is book and end matched (four pieces)

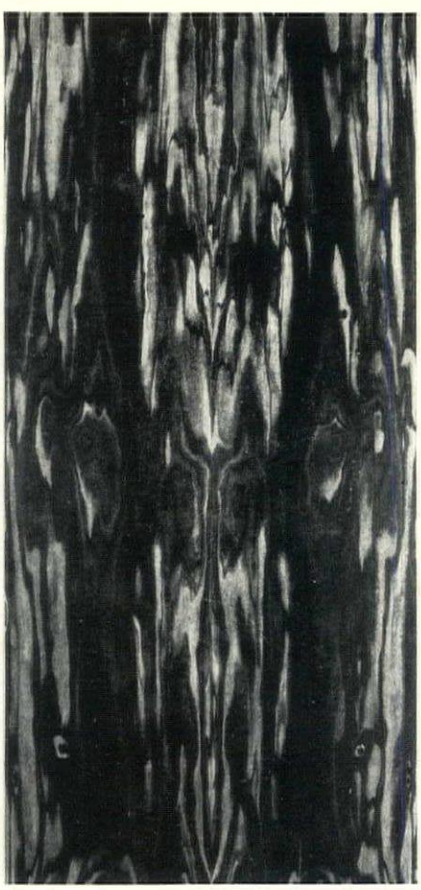
BRAZILIAN ROSEWOOD. Color: deep red-brown ranging to rich tan in the lighter areas. Panel: book matched



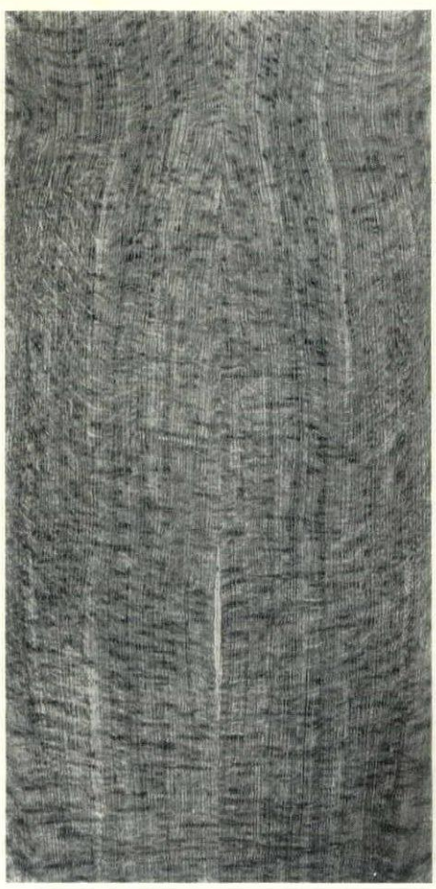
TIGERWOOD. Color: brown-yellow in a medium range of tones. Panel: balanced matched, three pieces.



CLARO (California) WALNUT. Color: medium brown with lighter and darker markings. Panel: book matched.

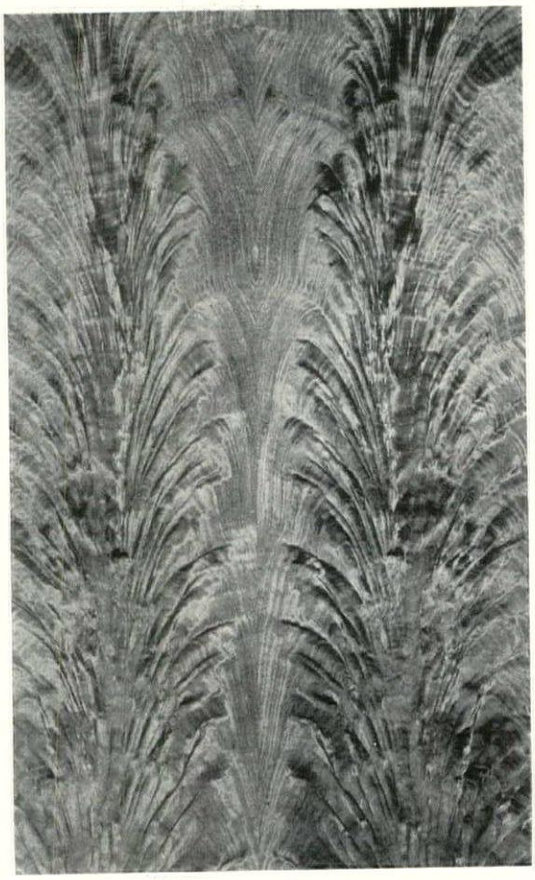


MACASSAR EBONY. Color: very rich black-brown, medium tan markings. Panel: book matched

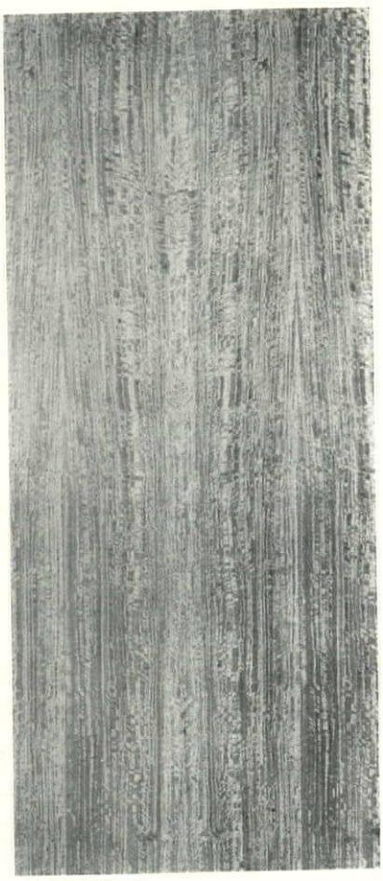


BROWN ENGLISH OAK, or **POLLARD.** Color: medium golden brown. Panel: book matched

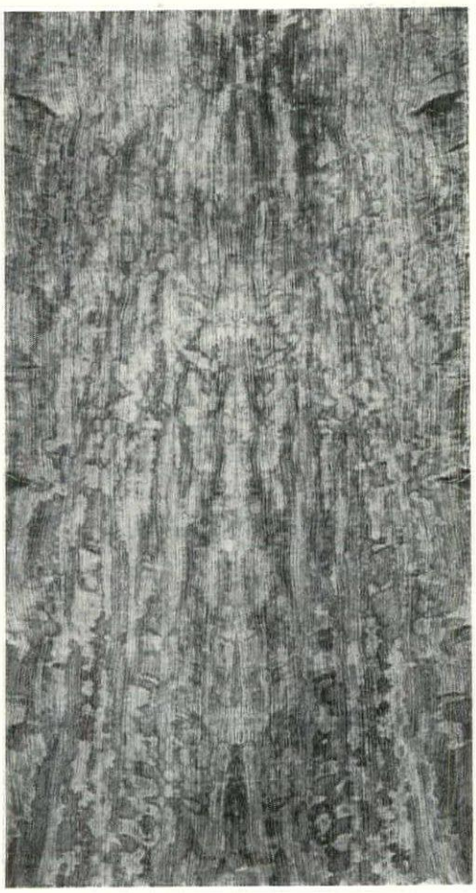
TAKU. Color: medium to deep lavender-grey brown. Panel: one piece



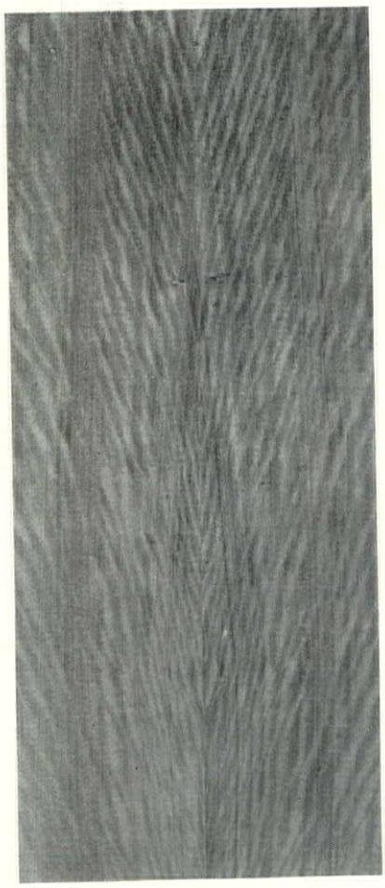
AVODIRE CROTCH. Color: pale creamy brown. Panel: book matched; complete figure not shown



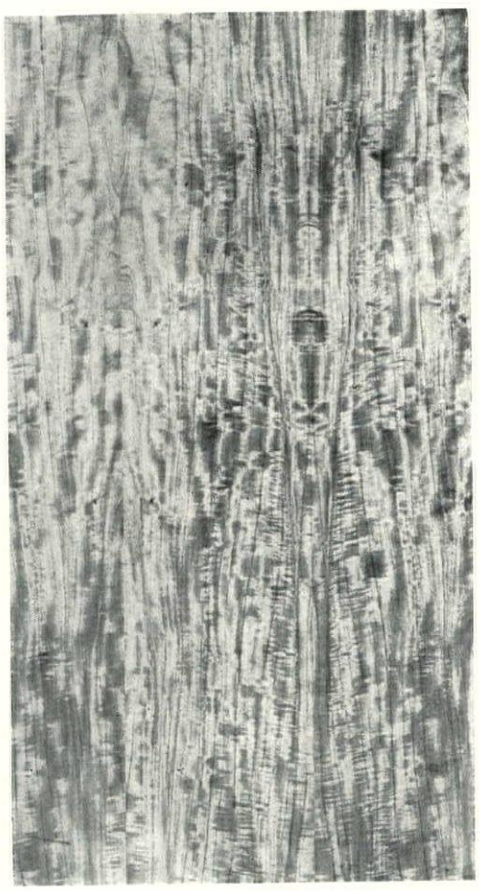
CEYLON SATINWOOD. Color: lustrous golden white. Panel: book matched; four pieces



BUBINGO. Color: red, ranging from pinkish to brownish red. Panel: book matched



AVODIRE. See crotch figure above. Color: pale creamy white to very pale brown. Panel: book matched

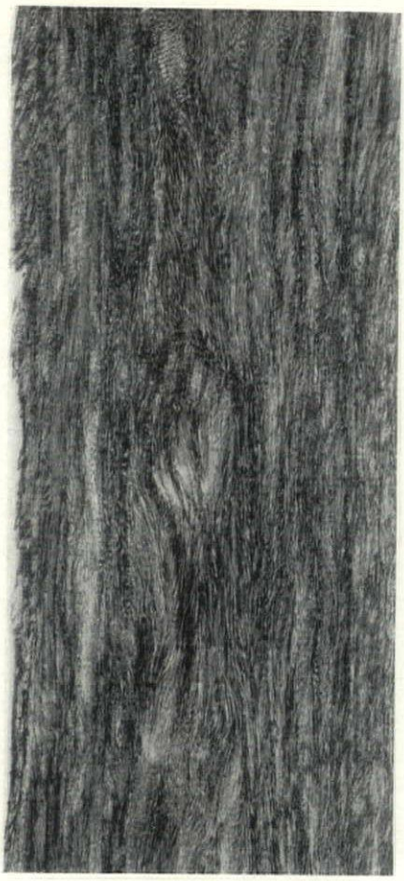


PRIMA VERA. Color: pale creamy yellow. Panel: balanced matched; three pieces

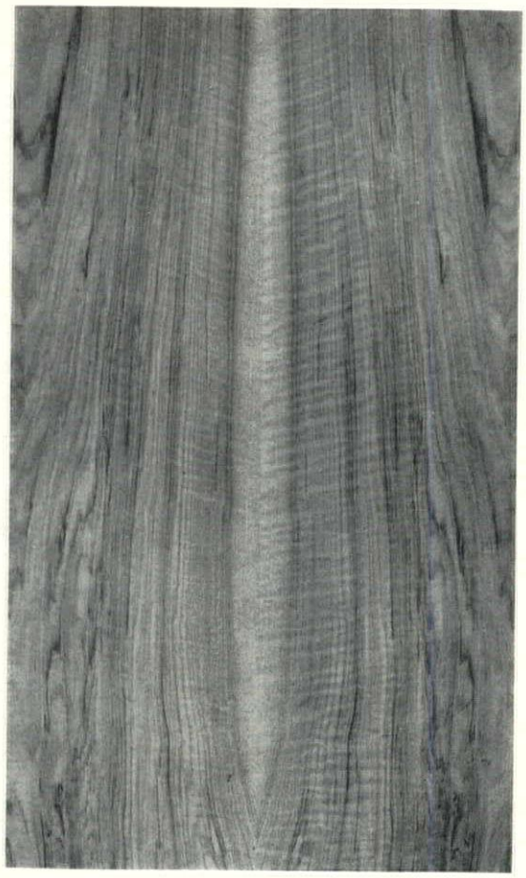
AMERICAN ARCHITECT "MATERIALS IN DESIGN" SERIES - NUMBER 1

WOOD

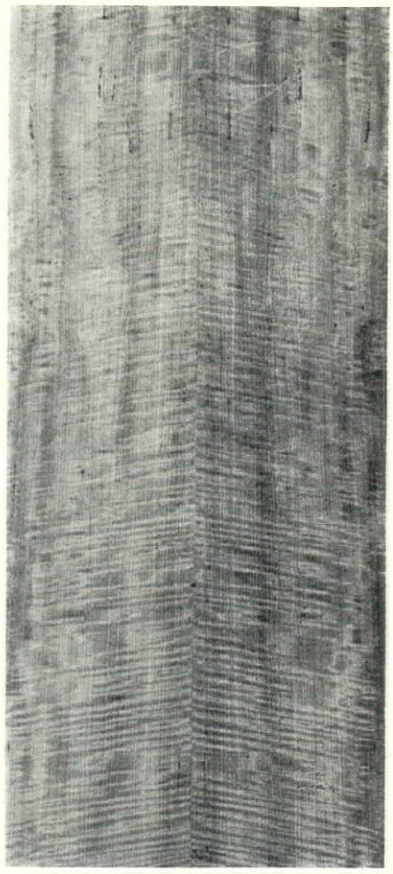
SCALE 0 3 6 9 12 $1\frac{1}{2}$" = 1 FT.



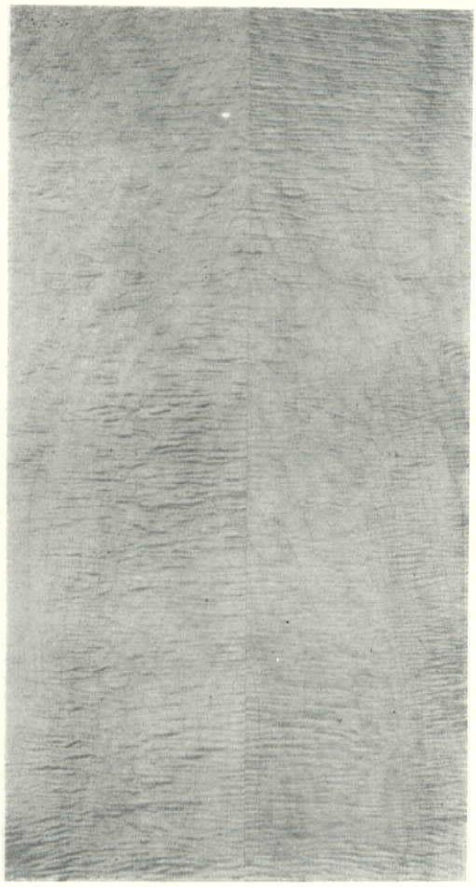
KOKO. Color: medium to dark brown, very pale brown sapwood (showing at left). Panel: one piece



FRENCH WALNUT. Color: medium brown; pink to grey-browns in markings. Panel: book matched



FIGURED TEAK. Color: medium golden brown. Panel: book matched



CURLY MAPLE. Color: creamy white; an extremely light toned wood. Panel: book matched

KOA. Color: light golden brown, striped darker red-brown. Panel: one piece

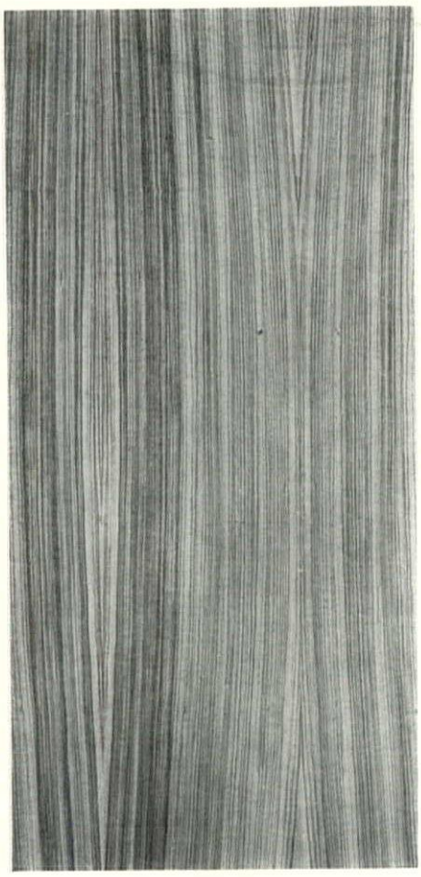
GREY HAREWOOD. Color: silver-grey, produced by stain commonly used on this wood. Panel: book matched

AMERICAN ARCHITECT "MATERIALS IN DESIGN" SERIES - NUMBER 1

SCALE 0 3 6 9 12 $1\frac{1}{2}$" = 1 FT.

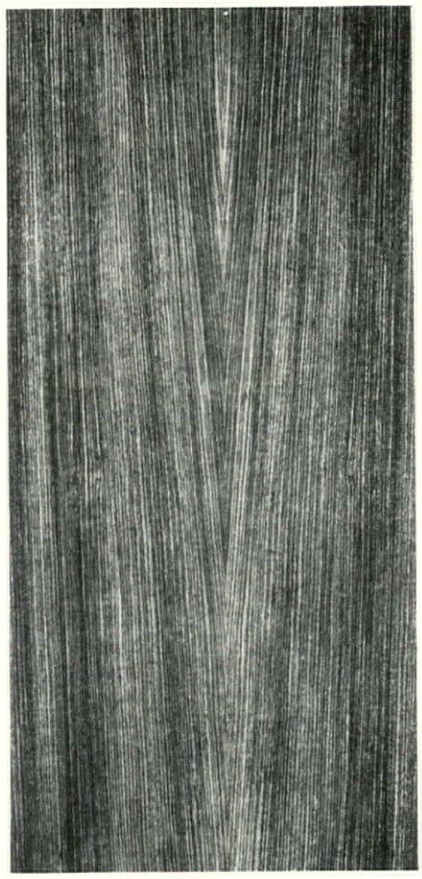
FOR JANUARY 1935

WOOD

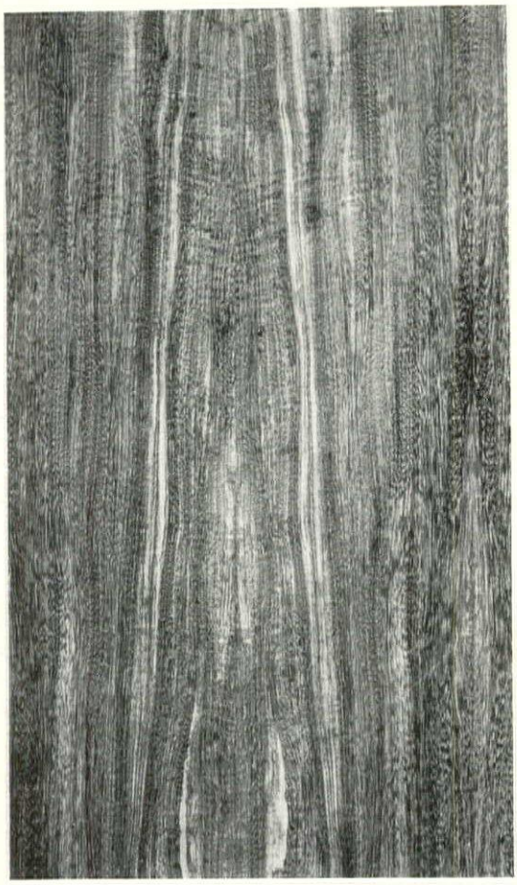


ZEBRA. Color: deep brown stripes on light yellow-brown. Panel: balanced matched

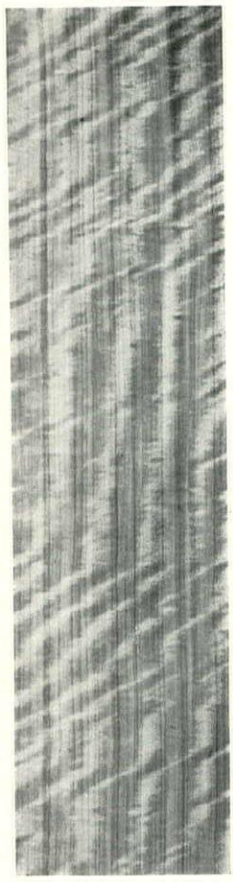
JAPANESE ASH or **TAMO.** Color: pale greyish tan. Panel: one piece



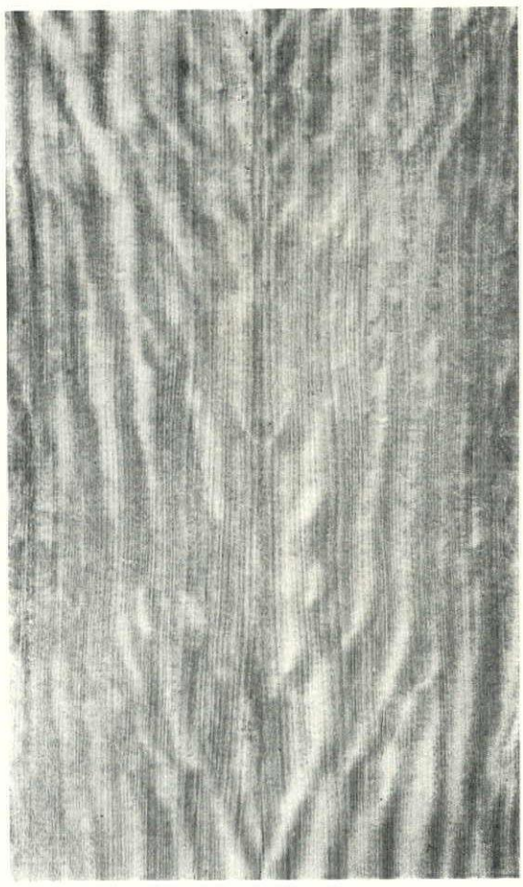
EAST INDIA ROSEWOOD. Color: very deep purple-red with wine-brown general cast. Panel: book matched



BLACK BEAN. Color: deep golden brown, gold markings. Panel: balanced matched



ORIENTAL WOOD. Color: brown, lavender cast; grey-brown in light areas. Panel: one piece



GABOON. Color: golden to red-brown. Panel: book matched

AMERICAN ARCHITECT "MATERIALS IN DESIGN" SERIES - NUMBER 1

WOOD

SCALE 0 3 6 9 12 $1\frac{1}{2}$" = 1 FT.

HOW GRADING TERMS VARY FOR DIFFERENT KINDS OF WOODS

NAMES OF SPECIES OF WOODS	NAMES OF GRADES (1)									
	1st Grade	2nd Grade	3rd Grade	4th Grade	5th Grade	6th Grade	7th Grade	8th Grade	9th Grade	10th Grade
HARDWOODS . . . Grade names adopted by the National Hardwood Association										
Ash, Beech, Birch, Hard (sugar) maple, Hackberry, Red Alder	"Firsts and seconds"		Selects	No. 1 Common	No. 2 Common	Sound Wormy	No. 3A Common	No. 3B Common		
Cherry	"Firsts and seconds"		Selects	No. 1 Common	No. 2 Common	No. 3A Common	No. 3B Common			
Chestnut	"Firsts and seconds"		Selects	No. 1 Common	Sound Wormy	No. 2 Common	No. 3A Common	No. 3B Common		
Cottonwood, Aspen, Black Gum, Tupelo, Willow	"Firsts and seconds"		Selects	No. 1 Common	No. 2 Common	No. 3A Common	No. 3B Common			
Elm, Rock (Cork); Hickory; Pecan	"Firsts and seconds"		No. 1 Common	No. 2 Common	No. 3A Common	No. 3B Common				
Mahogany	"Firsts and seconds"		Selects	No. 1 Common	No. 2 Common	No. 3 Common	Log run	"Firsts and seconds" shorts		Wormy
Oak, red and white; Locust; Quartered Sycamore	"Firsts and seconds"		Selects	No. 1 Common	No. 2 Common	Sound Wormy	No. 3A Common	No. 3B Common		
Poplar	"Firsts and seconds"		Saps	Selects	Stained Saps	No. 1 Common	No. 2A Common	No. 2B Common	No. 3A Common	No. 3B Common
Poplar, quartered	"Firsts and seconds"		No. 1 Common	No. 2A Common	No. 2B Common	No. 3 Common				
Red Cedar, aromatic	"Firsts and seconds"		No. 1 Common	No. 1 Common and Better	No. 2 Common					
Walnut, Butternut	"Firsts and seconds"		Selects	No. 1 Common	No. 2 Common	No. 3 Common				
FLOORING . . . Representative woods in common use										
Beech (2)	Red clear (special)	First	Second	Third						
Birch (2)	Red clear (special)	First	Second	Third						
Maple (2)	White clear (special)	First	Second	Third						
Oak Plain sawed Quarter sawed	Clear Clear	Select Sap Clear	No. 1 Common Select	No. 2 Common						
SOFTWOODS . . . Selected kinds of lumber (3)										
Boards	A Select	B Select	C Select	D Select	No. 1 Common	No. 2 Common	No. 3 Common	No. 4 Common	No. 5 Common	
Dimension material Planks, Scantling, Heavy joists	No. 1 Common	No. 2 Common	No. 3 Common							
Bevel siding	A	B	C							
Ceiling	B and Better	C	D							
SITKA SPRUCE . . . An example of regional or trade association grades for certain woods (4)										
Ceiling	B and Better									
Finish	B and Better	C								
Lath	No. 1	No. 2								
Plank	Selected Common	No. 1 Common	No. 2 Common	No. 3 Common						
Siding, bevel	A	B	C							

NOTES:

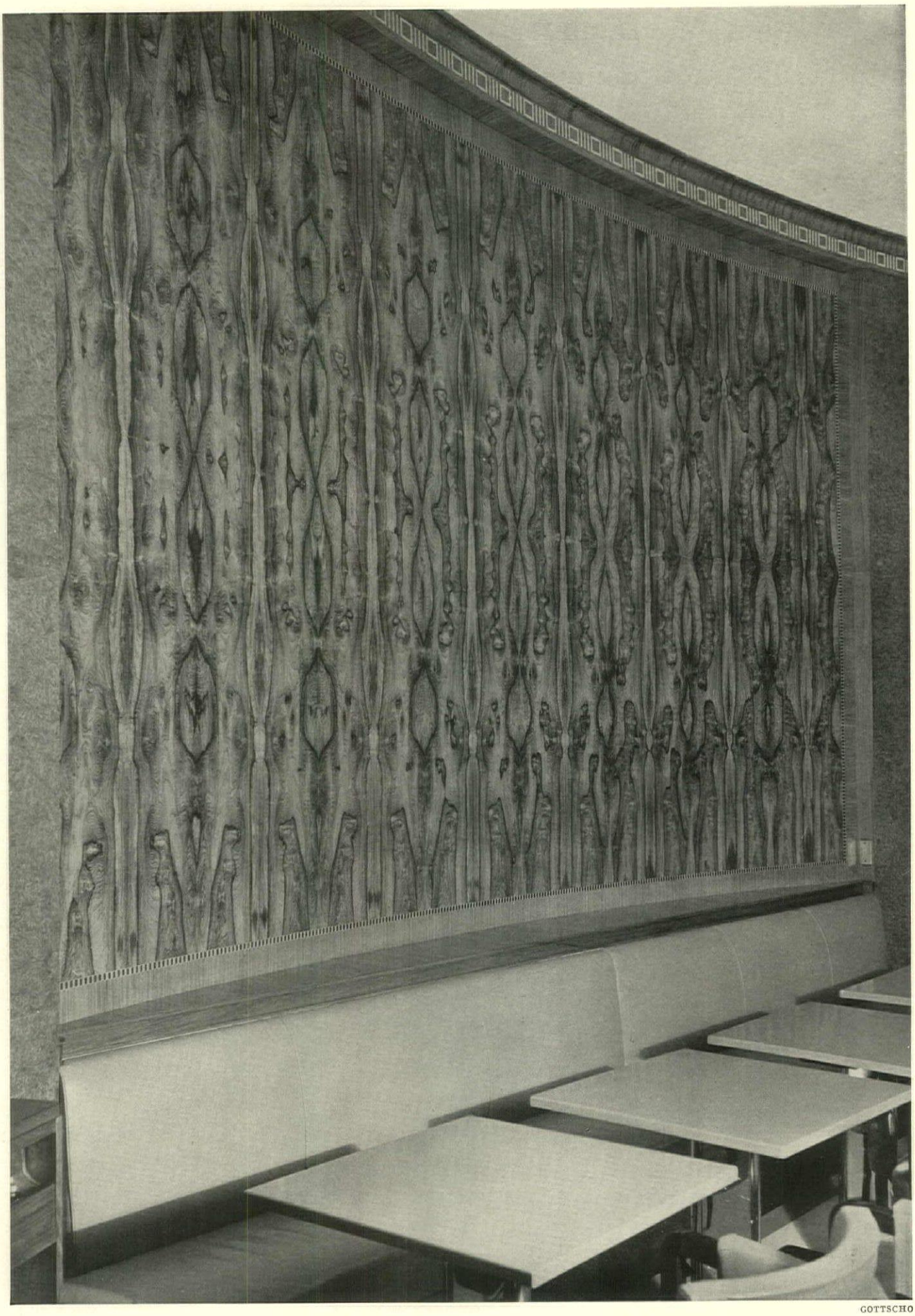
(1) Grade names in columns in this table are not comparable because grading rules identified by various grade names admit inherent defects in different degrees within the same or comparable grade for different species of lumber. Therefore this table should be used only with full knowledge of the grading rules. Sequence of column headings does not necessarily indicate a like regression in quality. For example, "stained saps" shown as fifth grade Poplar might be worth as much as "selects" for a specific purpose.

(2) In this table first and second grades differ only in uniformity of color.

(3) Grade names for softwood lumber differ from hardwood. They were developed by the National Bureau of Standards, the U. S. Department of Agriculture and the Central Committee on Lumber Standards.

Softwood lumber has been standardized with respect to the use to which it is to be put, and structural material is graded for strength on the basis of weight and density. The entire grade nomenclature of softwood lumber is too voluminous to reproduce and only representative samples have been tabulated.

(4) Grade names for special geographical areas have been set up by the trade association in each area. For example, the Northern Pine Manufacturers Association has established grading rules for structural lumber of northern pine, spruce and tamarack; the Southern Pine Association has done likewise for southern pine; and the California Redwood Association for redwood lumber. Excerpts from grading nomenclature adopted by the West Coast Lumbermen's Association for sitka spruce illustrate this practice.



GOTTSCHO

GOTTSCHO

The decorative qualities of a richly woven tapestry are developed in strongly figured Brazilian rosewood on some of the paneled walls in the Men's Bar, Waldorf-Astoria Hotel. See facing page. Elsewhere in this room the more delicate pattern of Carpathian elm burl with straight American walnut ribbon borders is used for contrast. Above: General view of the Brazilian rosewood bar, paneled and inlaid in various woods. Schultze & Weaver, architects

Longwood, or trunkwood, is usually sliced and is suitable for all general use, especially where long lengths are desired. It can be supplied plain or, in the case of certain woods or logs, highly figured.

Stumpwood, or butts, is available in wood, such as walnut, where an attractive figure develops in the tree just above the ground line. It is usually half-round, produced both off-center and on-center, and is especially suited to four-piece matching. It is available in lengths from 24 inches to 42 inches, and in widths from 12 inches to 32 inches.

Crotches are cut from the tree at a point just below the first large branches. The characteristic and beautiful figure is caused by the twisting of the fibers in their effort to determine whether they will go into the branches or up the trunk. Crotch veneers are manufactured sliced or half-round, and are not available in large sizes. Modern methods of laying have largely overcome a former tendency to checking. Most crotch figures are derived from mahogany, walnut, and avodire.

Burls are usually cut half-round. They are comparatively small in size, highly figured throughout, and customarily used in combination with plainer types of veneer. Species producing most burls are redwood, Carpathian elm, walnut, thuya, maple, myrtle and English oak. Available in irregular cuttings from 6″ x 6″ to 4 square feet.

MATCHING

WHERE more than one piece of veneer is used to produce a panel face, matching offers a choice of four principal technics, each producing panels characteristically different in effect. The designer should indicate in his specifications his choice of these methods, as follows:

Book-matched: So called because it involves the use of two adjacent sheets of veneer from the same flitch, the sheets being opened like a book. The figure of the upper surface of one sheet is repeated in reverse on the back surface of the other sheet. The fibers of the wood, slanting in opposite directions in the two sheets, create a characteristic "light and dark" effect when the panel is seen from an angle.

End-matched: Here the sheets are opened up using the ends of the sheets, rather than the edges, as a

WOOD

Reference Data on Principal Finishing Woods for Interiors

AMERICAN ARCHITECT SERIES "MATERIALS IN DESIGN" NUMBER 1 JANUARY 1935

COMMERCIAL NAME	COLOR RANGE	PRICE RANGE (1)	WORKING CHARACTERISTICS				ARCHITECTURAL USES				APPROX. MAX. VENEER SIZES (6)	
			Hardness (2)	Stability (3)	Gluing (4)	Strength (5)	Veneers	Solid Trim	Floor-ing	Carved Work, etc.	Width	Length
Amaranth	Purple	High	Hard	Good	II	A	✓	rarely			18"	12ft
Ash (Native), quartered	White to light brown	Medium	Medium	Excel	III	B	✓	✓			18"	16ft
Ash, Japanese, or Tamo	White to brown	High	Medium	Excel	II-III	B	✓				36"	6ft
Avodire - plain	White	Medium	Soft	Good	I	C	✓				15"	16ft
- crotch	White	High	Medium	Excel	I		✓				20"	6ft
Basswood	White	Low	Soft	Good	I	C	✓	✓			18"	16ft
Bean, Black	Deep golden brown, light markings	Medium	Hard	Good	I	B	✓	✓			14"	16ft
Beech	Pink	Low	Medium	Fair	IV-V	B	✓	✓	✓		18"	16ft
Birch	White to pink	Low	Medium	Good	III	A	✓	✓	✓	✓	18"	16ft
Bubingo	Pale to deep flesh red	Medium	Medium	Good	II	B	✓				18"	16ft
Butternut (White Walnut)	Pale amber	Medium	Soft	Excel	II	C	✓			✓	16"	12ft
Cherry	Pink	Low	Medium	Good	II	B	✓	✓	✓	✓	15"	12ft
Chestnut	Yellow to brown	Low	Soft	Excel	I	C	✓	✓		✓	18"	16ft
Ebony, Gaboon	Black	High	Hard	Fair	II-III	A	✓				8"	4ft
- Macassar	Rich black brown, medium tan markings	High	Hard	Good	I		✓				15"	12ft
Elm, Carpathian (Burls)	Light reddish brown	High	Medium	Good	I-II	B	✓				24"	4ft
Faux Satine (Cypress Crotch)	Amber to golden	Med-High	Soft	Good	II		✓				12"	10ft
Gaboon	Golden to pink brown	Low	Medium	Excel	I	B	✓				22"	16ft
Gum - Red	Red	Low	Soft	Fair	I-II	B	✓	✓		✓	20"	16ft
- Sap	White to grey	Low	Soft	Poor	I-II	B	✓	✓			27"	16ft
Harewood (Treated English Sycamore)	Silver grey	High	Medium	Fair	II	B	✓				14"	10ft
Koa	Brown to reddish brown	Medium	Med-Soft	Good	II	C	✓				14"	12ft
Koko	Chocolate brown	Med-High	Medium	Good	I	B	✓	✓	✓		23"	18ft
Lacewood (Ceylano or Silky Oak)	Flesh pink to nght leather brown	Low-Med	Med-Soft	Good	II-V	C	✓				18"	16ft
Mahogany Cuban and San Domingan	Sherry brown to red brown	Med-High	Hard-Med	Excel	I	B	✓	✓	✓	✓	31"	16ft
Central & So. American	" " " " "	Low-Med	Medium	Excel	I	B	✓	✓	✓	✓	31"	24ft
African	" " " " "	Low-Med	Medium	Excel	I	B	✓	✓	✓	✓	31"	24ft
Crotches (All Varieties)	" " " " "	High	Hard-Med	Good	I		✓				30"	14ft

NOTES

(1) Price Range Low indicates cheap, readily available woods. Medium indicates economical, moderately priced woods. High indicates rare, expensive woods. Classifications are approximate.

(2) Hardness: Hard = very hard. Medium = moderately hard. Soft = soft in a relative sense, not necessarily a botanically "soft" wood. Data for items noted by (2), (3), (4) and (5) largely from Forest Products Laboratory, with some additions.

(3) Stability: connotes "ability to stay put" after fabrication; that is, relative freedom from warping, shrinking, swelling, cracking etc. Order of quality from most stable to least stable = Excellent, Good, Fair, Poor.

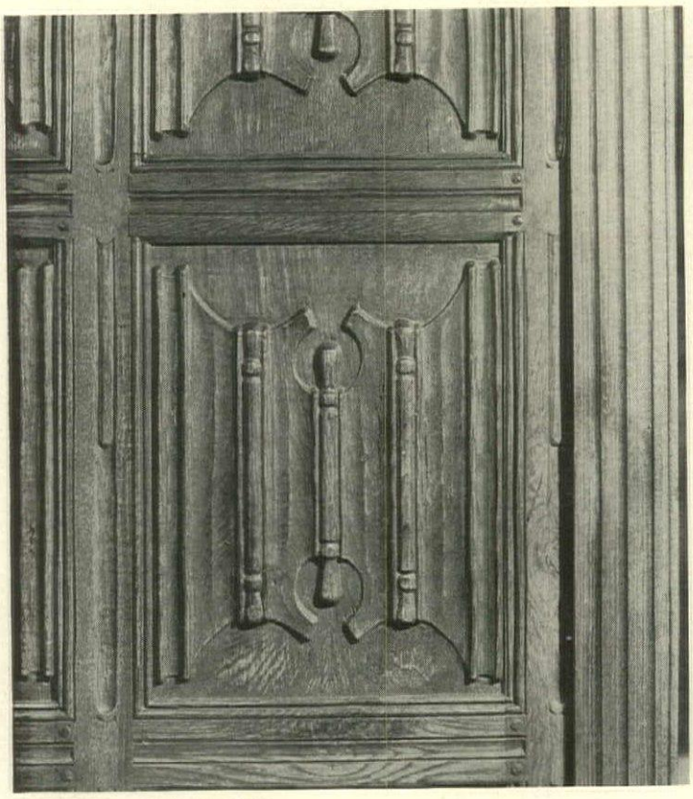
(4) Gluing: indicates ability to hold glue well. I = Excellent. II = Good. III = Comparatively poor. IV = Poor. V = Very poor.

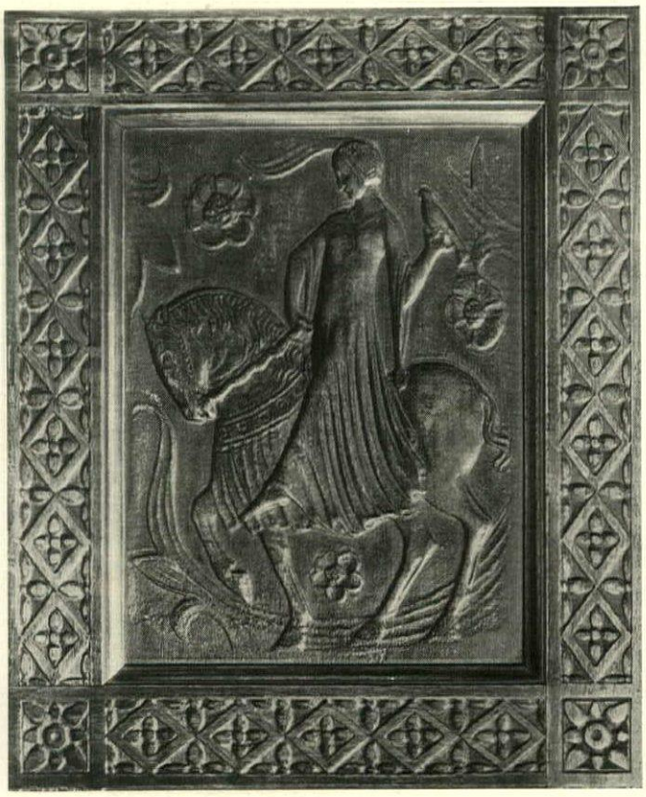
(5) Strength: A = Strong to very strong (Forest Products Lab. "Composite Values - Strength as Beam or Post" 11,453, with modulus of rupture 13,330 or stronger) B = Fairly strong to strong (less than A and 7,845 with modulus of rupture 9,685 or better). C = Weak to fairly strong (all woods below B)

(6) Veneer Sizes should be used with caution. These are maximum sizes commercially available but not necessarily always obtainable. Standard thickness of American cut sliced veneers $\frac{1}{28}$ inch. See text.

Data largely from Burdett Green, American Walnut Mfr. Assoc. with supplementary additions from Ichabod T. Williams & Sons.

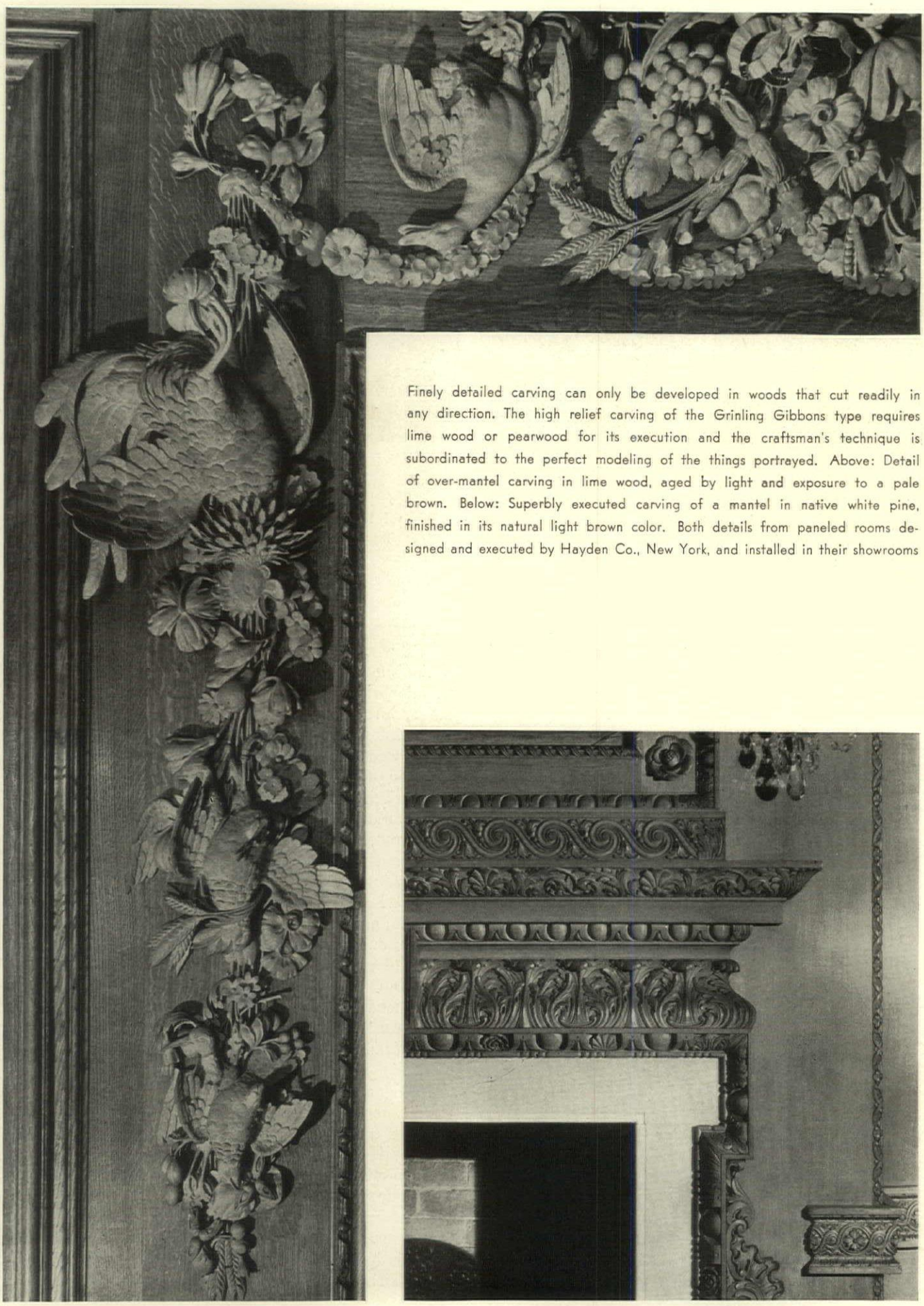
COMMERCIAL NAME	COLOR RANGE	PRICE RANGE (1)	WORKING CHARACTERISTICS				ARCHITECTURAL USES				APPROX. MAX. VENEER SIZES (6)	
			Hardness (2)	Stability (3)	Gluing (4)	Strength (5)	Veneers	Solid Trim	Flooring	Carved Work, etc.	Width	Length
Maple	White to pink	Low-Med	Hard	Good	III-V	B	✓	✓	✓	✓	24"	16ft
Myrtle (Burls)	Light cream	High	Medium	Good	II		✓				30"	30"
Oak, Native - Plain	White	Low	Hard-Med	Fair-Good	II-III	B	✓	✓	✓	✓	24"	16ft
- Quartered	White	Low	Hard-Med	Fair-Good	II-III	B	✓	✓	✓	✓	15"	16ft
Oak, English Brown or Pollard	Brown	Med-High	Medium	Fair-Good	II•	A-B	✓	✓		✓	20"	16ft
Oriental Wood	Brown with lavender grey cast	Low-Med	Hard	Fair-Good	II-III	B	✓	✓		✓	20"	16ft
Pearwood	Pale amber	High	Med-Soft	Good-Exc	I-II	B	✓			✓	12"	8ft
Pine	White to yellow	Low	Soft	Good	I-II	C		✓		✓		
Poplar	White to yellow	Low	Soft	Good	I	C	✓	✓		✓	27"	16ft
Prima Vera	Cream	Medium	Soft	Good	II	C	✓				12"	12ft
Redwood (Burls)	Red	Medium	Soft	Good	I	C	✓				30"	4ft
Rosewood - Brazilian	Red brown	Med-High	Hard	Excel	I	A	✓	✓		✓	20"	14ft
- East Indian	Purple to straw	Medium	Hard	Fair-Good	III-IV	B	✓	✓			14"	16ft
Satinwood	Golden white	Medium	Hard	Good	III	B	✓				12"	10ft
Sycamore (Native)	White to pink	Low	Soft	Poor	II	B	✓				18"	16ft
Taku	Rich brown	Med-High	Hard	Excel	I	A	✓	✓			22"	16ft
Tamo - see Ash, Jap.												
Teak	Golden brown	High	Medium	Good-Exc	II	A	✓	✓	✓	✓	24"	24ft
Thuya (Burls)	Reddish brown	High	Soft	Good	II		✓				24"	18"
Tigerwood or **Lovea**	Golden brown	Low	Soft	Fair	III	C	✓				18"	16ft
Walnut, American - Plain	Grey to rich brown	Low	Medium	Excel	I	A	✓	✓	✓	✓	24"	18ft
Figured Longwood	" " " "	Med-High	Medium	Excel	I	A	✓	rare			24"	16ft
Butts or Stumpwood	" " " "	Med-High	Medium	Excel	I	A	✓				32"	44"
Crotches	" " " "	Med-High	Medium	Excel	I	A	✓				18"	44"
Burls	" " " "	High	Medium	Excel	I	A	✓				30"	30"
Swirls	Grey to brown	Medium	Medium	Excel	I	A	✓				18"	44"
Walnut, Claro (Californian)	Light to rich brown, striped	High	Medium	Excel	I	A	✓				27"	16ft
Walnut, French	Grey to pale brown	Med-High	Medium	Excel	I	A-B	✓	✓		✓	20"	10ft
Zebra	Yellow brown, dark brown stripe	Medium	Medium	Excel	I	B	✓	✓			15"	16ft



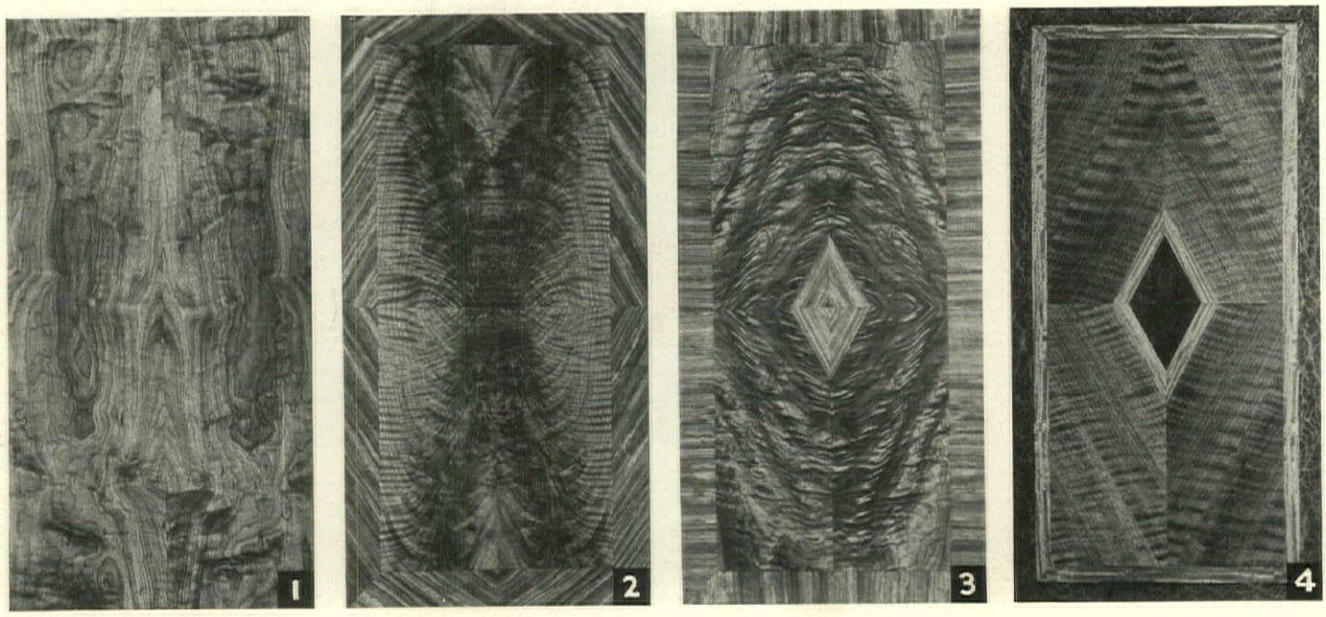


PHOTOS BY GEORGE VAN ANDA

The selection of woods for carved decoration and the character of carving to be employed should be related. While the master craftsman can overcome the stubborn characteristics of certain woods, the happiest results follow the employment of a carving technique which reveals rather than conceals the properties of the medium. Above, left: Reproduction of Old English oak paneling showing characteristic tool marks, giving bold, virile effect. Above, right: Detail of American walnut screen showing the softer modeling permissible with the more amenable wood. Below: Detail of elaborate panel and marquetry in English pollard oak, a close-grained wood demanding fine workmanship. All panels on this page from the work of Irving & Casson - A. H. Davenport Co., New York



Finely detailed carving can only be developed in woods that cut readily in any direction. The high relief carving of the Grinling Gibbons type requires lime wood or pearwood for its execution and the craftsman's technique is subordinated to the perfect modeling of the things portrayed. Above: Detail of over-mantel carving in lime wood, aged by light and exposure to a pale brown. Below: Superbly executed carving of a mantel in native white pine, finished in its natural light brown color. Both details from paneled rooms designed and executed by Hayden Co., New York, and installed in their showrooms



Common terms used to designate the matching of veneers are illustrated by these panels of walnut. **(1)** Rotary-cut walnut, book-matched. **(2)** Field, American crotch walnut, book- and end-matched (4 pieces) with bubingo border laid diagonally. **(3)** Field, American stump walnut, book- and end-matched; ribbon border of bubingo. Diamond center also bubingo diagonally cut and matched. **(4)** Field, figured sliced quartered American walnut cut diagonally, book- and end-matched using several widths. Diamond center, redwood burl, book- and end-matched; diamond and inner borders, satinwood; outer border, redwood burl

hinge. Better known as "butt matched," this method is often used in conjunction with book-matching in a four-piece panel.

Slide-matched: As the name indicates, the top sheet is simply slid into juxtaposition with the sheet beneath it. In this case both sheets show the same surface, the light and dark effect being avoided. It is most effectively used with sliced longwood.

Miscellaneous: Under this heading there is a wide variety of possible effects ranging from simple to very elaborate combinations. Some examples are: Two-way and four-way matched butts, diamond, reverse diamond, V, Λ, herringbone, and basket-weave. Typical matched panels are shown above.

It is likewise essential to specify "where matched," as follows:

Center matched: Two pieces of equal size, with joint coming in the center of the panel.

Random matched: Using unequal sized pieces.

Balanced matched: Where more than two pieces, although of uniform size, are laid as a panel face.

Mismatched: Where figure of adjacent pieces do not properly match.

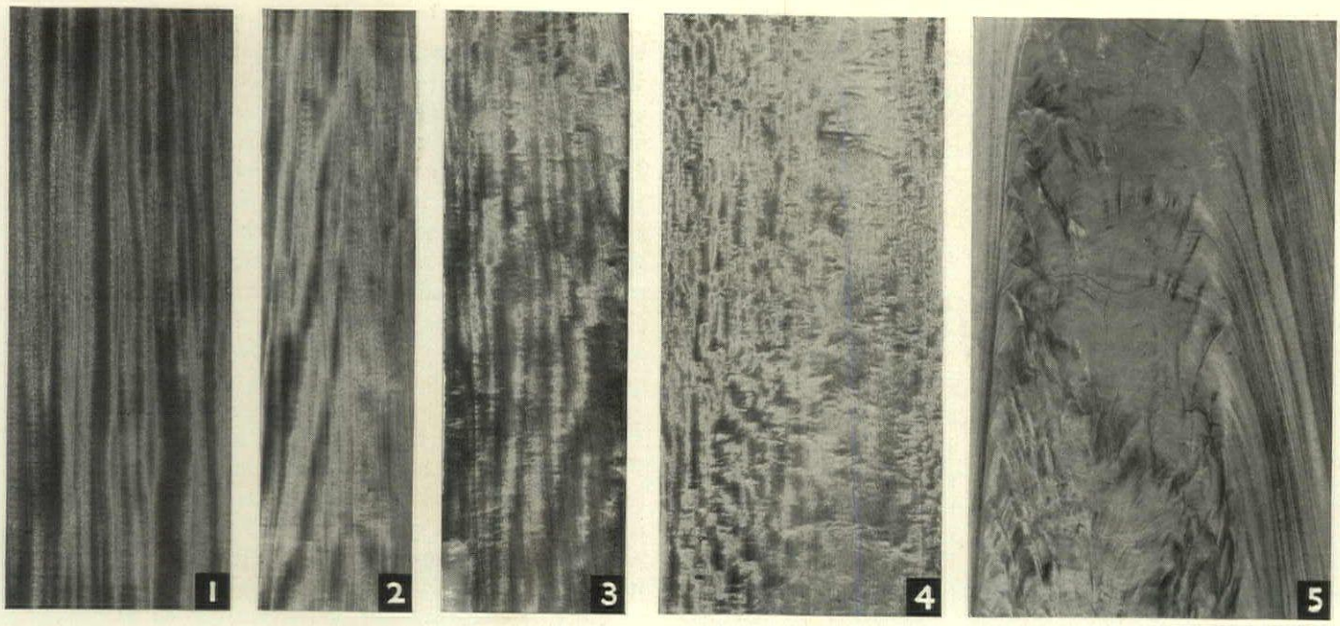
NATIVE WOODS

WHILE the tabular data supply basic information needed by architects in selecting and specifying most of the woods adaptable to architectural purposes, there are a number that warrant more detailed consideration. The native woods, which in variety and quality are among the Nation's most valued possessions, deserve the widest attention of architects in the development of American architecture. They have not been profusely illustrated in this article for the reason that the exotic woods are less familiar and therefore are shown in preference to the better known species.

American walnut stands preëminent among the fine domestic woods. None is better known, nor in some respects less understood by designers. It is considered by authorities the ideal native material for furniture and other fine woodwork. Its chief characteristics are: moderate weight with maximum strength; good seasoning properties; excellent workability; durability under usage; and, of course, beauty of grain and color.

It provides great variety of figure and type. Manufacturers recognize these veneer classifications as standard: Plain longwood and semi-figured longwood (and figured longwood) (both graded and certified) in the following figures: Fiddle back, roped figure, cross figure, mottle. Butts or stumpwood from almost plain to 80 per cent figured. Crotches with figures classified as feather or moon. Burls. Heart and sap character where both the heartwood and sapwood show in the veneer. Plain and figured quartered veneers.

These veneers are variously cut as sliced, half-round, rotary and sawed veneers. Other classifications include swirls and freaks, and there is a recognized type called Claro (California) walnut



Some of the terms used to designate figure in cabinet woods are illustrated by these examples of mahogany. **(1)** Quartered veneer, striped figure. **(2)** The same type of figure is obtainable in quarter sawn lumber. **(3)** Broken stripe with mottle. **(4)** Veneer cut across the heart, showing a marked mottle figure. **(5)** A swirl crotch. Many other characteristic figures are recognized by the trade not only in mahogany but also in walnut and a large number of other cabinet woods as indicated in the text. Scale of mahogany photographs is approximately 1 inch equals 1 foot. Walnut illustrations on opposite page are reduced to a smaller scale

giving somewhat the effect of Circassian walnut.

Native oak has gained a high place as the standard flooring wood and at various periods in American architecture has been the outstanding wood for trim, carved work and panels. Though not in favor for the latter purposes at present to the degree it formerly enjoyed, oak has inherent qualities and decorative values when properly finished that place it among the important architectural woods. Recently its popularity has shown marked increase.

White pine has been brought into vogue as a medium for expressing early American interiors. Native eastern pine (Pinus strobus) is the wood which was used by early settlers. It has characteristic knots which take the place of figure in other finishing woods. Western pines in a variety of species, are available in larger and clearer cuttings than Eastern pine, but the wood is not generally regarded as being so fine in quality.

IMPORTED WOODS

AMONG the imported finishing woods mahogany is of primary importance. It has great durability, fine lustre and can be easily carved and worked. It is free from the tendency to warping and shrinking.

The principal commercial sources are the West Indies, Central America, South America and the west coast of Africa. No genuine mahogany grows naturally in the Philippines, or any part of the Far East. The hardwood from the Philippines, commercially known as Philippine Mahogany, tanguile and red lauaan, ranges from pale to deep red-brown in color and is somewhat prone to fade under bright light, but may be stained to avoid change in color.

Mahogany from the West Indies is the heaviest and hardest of all varieties, and has a closer and silkier texture than the others. The tree, however, is relatively small with the result that this wood is not available in as large sizes as other varieties.

Mahogany from Central and South America, although not quite as hard and heavy as the West Indies variety has a firm texture and fine color, and is available in larger sizes and clearer cuttings than the West Indies.

Mahogany from the west coast of Africa is milder in texture and lighter in weight, and somewhat more open grained than West Indian and Central American mahogany, but owing to the very large size of the trees and freedom of the wood from defects, African mahogany lumber is available in exceptional widths and lengths. Also a larger proportion of the African wood is figured; hence it yields the largest proportion of mahogany veneers.

Contrary to an impression prevailing among some architects, none of the fine mahoganies is extinct. The natural color of mahogany is not red, but more of a golden brown. This wood can be used to obtain a wide variety of decorative effects because any of its natural tones can be emphasized in staining and finishing to give either a soft brown or the beautiful sherry color so much used by Sheraton.

Mahogany exhibits a wide range of figures, the following types being commercially available: mottle, narrow and broad broken stripe, straight stripe,

mottle and stripe, fiddle back, plum pudding, leaf figure, crotch, swirl, burl, blister and rope.

Teak is worthy of special notice for its ability to "stay put" as well as for its golden brown color and frequent beauty of figure. It is one of the cabinet woods least subject to shrinking, swelling and warping under changes of atmospheric conditions. These features, together with its resistance to termites or white ants, its great durability as a high quality flooring wood, and its workability, indicate its utility in architectural interiors. Recently arrangements have been made to conserve the waste from the production of teakwood lumber by converting it into pieces suitable for the production of window frames and window sash. This is expected to result in the production of very durable wood windows that are not subject to warping, shrinking or binding, at a cost considerably lower than has heretofore been possible.

Other exotic woods not illustrated or included in tabular data in this article but which are occasionally used for furniture or for limited areas in special panels include the following: Amboyna burls, light reddish brown to orange in color; very hard; used mainly for inlays. Padauk or vermilion, sometimes called East Indian mahogany, ranges in color from deep crimson to cherry red and reddish brown. Snakewood or letterwood, reddish brown with dark patches resembling snake's skin. Tulipwood, so scarce as to be used chiefly for inlays; hard and heavy and has reddish yellow or purple stripes.

Any serious student of woods would appreciate at a glance that the data and the illustrated wood samples accompanying this article by no means cover the entire field. Those selected for specific mention or for illustrations were chosen primarily to indicate the range of decorative possibilities in figure and color among woods suitable for architectural purposes. The following list, though incomplete, includes other native and imported woods for cabinet work and architectural purposes:

Amarillo
Aspen Crotch
Ash, English
Blackwood
Bodi
Bosse
Cocobolo
Framire
Goncalo Alves
Guanacosta
Iroko
Laurel, East Indian
Laurel, Rose
Mai Dou Burl
Oak, Austrian
Padu Burl
Sabicu
Sapeli, Mottle
Sipo
Tiama
Walnut, Circassian
Walnut, English
Warri
Yubawood

FINISHING

THE finish applied to woodwork is as important, from an esthetic point of view, as any process in its manufacture; and especially so to the architect, inasmuch as responsibility for this operation rests on his shoulders. Finish cannot add beauty to wood, but it can do wonders in emphasizing the beauty which already exists. It can also completely obliterate the character of the wood, if poorly done. Every operation in the manufacture of fine veneers and lumber has for its ultimate objective the production of a sound and beautiful piece of wood.

In the work of leading contemporary architects, as illustrated in these pages, there is evidenced a keen appreciation of these factors, for in nearly every case this medium is used with extreme simplicity. Wood has been selected for its inherent ability to produce or enhance a desired decorative effect. The finish has been such as to bring out this quality in the wood, and to preserve it.

There are three legitimate uses for wood stains. First, to enrich or to modify the natural color; second, to give to wood something of the mellow quality it would otherwise acquire only after years of exposure to light; third, to obtain uniformity of color in different pieces of the same kind of wood used together. Stains are not infrequently used to produce in a certain wood a color characteristic of another—usually more expensive—wood. It rests with the individual architect to decide whether to treat a wood in accordance with its merits and inherent character or to attempt to give it synthetic qualities which must necessarily be superficially applied, usually to the serious detriment of whatever natural beauty it possessed.

Water stains are best for hardwoods. They penetrate the pores of the wood better than oil stains and keep the tone of the grain clearer. Oil stains have a tendency to blur and obscure the light in a fine wood. In soft woods, however, oil stains are safer, since water has the disadvantage of raising the grain of the wood.

Aniline stains are often used because they produce results quickly. On the other hand, they are notoriously unstable and subject to serious fading and change of color. Most good craftsmen avoid synthetic dyes and use reliable vegetable dyes, which have a long record for dependability.

Finishing serves to protect wood against the atmosphere and surface dirt. Simplicity of treatment yields the best results. It is no dishonor to even the finest of wood to finish it with plain boiled linseed oil and shellac, rubbed down with a little wax. Wood finished in this manner retains all its individuality and beauty. No built-up surface intervenes between the wood itself and the eye or hand. The result is a smooth flat finish, unobtrusive yet sufficient, giving maximum effectiveness to the texture, figure and color of the wood. Some woods, such as mahogany, are slightly darkened by the oil and their colors are enriched. Where the minimum possible change in natural color is desired, white shellac or clear lacquer and wax may be used. But the subject of finishing is a field for study in itself. The architect's best guide in all details of fine woodworking is to entrust the work to only the most reliable contractors and craftsmen.

DWIGHT JAMES BAUM, ARCHITECT

OFFICE OF JOHN RUSSELL POPE, CONSULTANT

LIBRARY MANTEL OF AN ITALIAN VILLA, RIVERDALE, N. Y.

Photographs by Samuel H. Gottscho

The mantel face, illustrating Boccacio telling one of his famous tales, was carved in Italy from Pietra Serena. This stone, warm gray in color and fine in texture, is comparatively soft when quarried but hardens after exposure to the air, thus making it particularly suitable as a medium for delicately carved detail. The entire mantel is 6 ft. high and 5 ft. wide

LIBRARY MANTEL, ITALIAN VILLA, RIVERDALE, N. Y., DWIGHT JAMES BAUM, ARCHITECT

Better Building Values From

FHA Property Standards

BY F. LEO SMITH, A.I.A.

Chief Architect, Technical Department, Federal Housing Administration

THE safety of many billions of dollars invested in mortgages on homes is dependent upon the value of the property which represents security for loans. The Federal Housing Administration has taken steps adequately to analyze property values to the end that real estate offered as security for insurable mortgage loans may provide sufficient protection for the investment at all times during the life of the loan. Losses may be reduced to a minimum by proper classification of risks and by eliminating those properties which do not offer assurance of adequate continuing value for the period of amortization. Properties which are eligible for mortgage insurance must be appropriate to their environment, well suited for the intended purpose of use for residential occupancy, and sufficiently durable to assure that degree of permanence which is essential to prevent excessive depreciation.

Too often in the past little effort has been made to determine the possible effect of design and construction characteristics upon the security of the investment. One fundamental defect in the field of home finance has been this failure to recognize the importance of those factors which contribute in a large degree to early obsolescence and depreciation. Architectural character and the quality of the materials and workmanship have a distinct bearing upon property values. Any rational system of appraisal must include due consideration of these features.

The Federal Housing Administration has recognized the need for a definite basis for the elimination of those risks which do not offer adequate security for mortgage loans under the provision of the National Housing Act. Accordingly it has set up Property Standards for the insurance of mortgages. These standards will help to determine the eligibility of properties for mortgage insurance and will guide the judgment of lenders and others in considering applications for loans to be insured. Both lenders and borrowers are thus informed as to the policies of the Administration with respect to properties eligible for mortgage insurance.

The Act definitely places upon the Federal Housing Administration an obligation to encourage improvement in housing standards and conditions. This indicates that property standards may be considered not only from the standpoint of the security of the investment, but also in relation to the social aspects of housing. Those qualities in a home which affect the well-being of its occupants also tend to assure economic soundness, which is one of the express stipulations of the Act with respect to projects eligible for mortgage insurance.

Poorly planned and constructed dwellings and those located in neighborhoods which are decadent or which lack a definite control over influences tending to destroy property values cannot be considered as suitable risks for long-term mortgages. Their acceptance as security for insured loans would most certainly imperil a program dedicated to improvement of housing standards and conditions. It is the purpose of the Administration, through its power to insure mortgages, to increase public consciousness of the need for higher housing standards than have heretofore been generally accepted in urban communities.

THE Act provides for insurance of first mortgages on real estate "upon which there is located a dwelling for not more than four families which is used in whole or in part for residential purposes, irrespective of whether such dwelling has a party wall or is otherwise physically connected with another dwelling. . . ."

These limitations clearly define the general character of property which may be considered for mortgage insurance. Automatically eliminated are many properties which have a rear dwelling, a practice which has produced many "alley-dwellings." Garages and other outbuildings are permitted.

The Act further provides that "no mortgage shall be accepted for insurance under this section unless the Administrator finds that the project with respect to which mortgage is executed is economically sound."

The Property Standards for insurance of mortgages are designed to establish a basis for elimination of properties as security for insured mortgages when they do not have those qualities which are essential to economic soundness. The Standards are also intended to serve as a guide to owners, architects and builders, so that proposed new dwellings may be

FHA STANDARDS of neighborhood, planning, design and construction were developed to assure future stability of property values. As a basis for mortgage insurance rating, FHA PROPERTY STANDARDS specify that:

1. **NEIGHBORHOODS** must be residential, free from objectionable land uses, near schools, shop-centers and adequate transportation.
2. **LAND AND BUILDINGS** must conform to all laws and regulations.
3. **LAND COVERAGE** of 30 per cent for interior lots and 40 per cent for corner lots is acceptable. Recommended maximum coverage is 20 per cent.
4. **DWELLINGS,** limited in size to four-family houses, must provide at least three rooms, a bath and a private entrance per family. At least one room must have a minimum area of 160 square feet. Ceiling heights must give minimum clearance of 7 feet, 4 inches. A minimum window area of one square foot of glass to 10 square feet of floor area is required in all rooms.
5. **ARCHITECTURAL CHARACTER** must conform to design types common to locality. Artificially picturesque effects and over-elaboration will be discouraged.
6. **CONSTRUCTION, SERVICES, EQUIPMENT** must meet current standards of good practice.
7. **REAR-YARD DWELLINGS** and direct passages between dwellings are prohibited.

designed and constructed to receive the most favorable ratings for mortgage insurance purposes.

In defining the term "dwellings," Property Standards require that not less than three rooms shall be provided for each family unit, and that complete living facilities shall be provided for each family. Each dwelling must be separated from every other building or structure by an unpierced wall so that there will be no direct passage from one dwelling to another. A dwelling may be used for home occupations as distinguished from industrial, commercial, or professional activities, or not more than twenty-five per cent of the floor area of the building may be used for other than residential purposes. This definitely limits the extent to which mixed occupancies may be acceptable.

In general, land, buildings and appurtenances thereto must conform to all applicable laws, codes, ordinances and regulations. Where such local control is lacking, regulations established by the Administration shall apply in relation to all properties on which insured mortgages are to be placed.

The character of the community and neighborhood in which a property is located, and the fitness of that property to the neighborhood, are factors which influence the value of property either favorably or unfavorably, and must be considered along with characteristics of the property itself. Most favorable consideration will be given to properties which are located in satisfactory neighborhoods and which conform to the general standards of such neighborhoods. It is recognized that factors which prolong the useful and economic life of a residential neighborhood are also essential to the stability of individual properties. Minimum neighborhood requirements stipulate that properties which are subject to special risks such as floods and similar hazards may be declared ineligible for mortgage insurance unless insured against such special risks.

Neighborhoods must be homogeneous in character and offer a reasonable degree of security against possible decline in desirability through encroachment of objectionable land uses. A definite tendency toward loss of population in the neighborhood will be considered sufficient cause for rejection of an application. Additional factors which will be considered in determining eligibility are accessibility to suitable employment areas and availability, cost and convenience of transportation to such areas and to schools and market centers.

Single detached dwellings located in neighborhoods in which apartment buildings or other types of structures exist or are permitted, are obviously not good risks for long-term loans. While either low or high cost residential properties may be eligible within the limitations of the Act, Property Standards require that the replacement cost of a dwelling should not greatly exceed that of other neighborhood buildings. Quality of construction and equipment and the general character of design should be in keeping with established neighborhood standards.

One of the most important considerations in determining rating and eligibility of property for mortgage insurance purposes relates to land utilization. The general trend in modern real estate development is toward less land coverage. Property Standards

provide for a smaller maximum coverage than is ordinarily permitted by local ordinances.

The size of a dwelling in relation to the lot and the location of the buildings on that lot with reference to property lines and adjacent buildings affect materially the adequacy of natural light and air which are so essential to the health and comfort of the occupants. While a lot coverage of thirty per cent for interior lots and forty per cent for corner lots is acceptable, the Property Standards recommend a maximum lot coverage of twenty per cent, exclusive of areas given to streets, alleys or easements. It must be demonstrated in each instance that all habitable rooms have adequate provision for light and air.

Access to a public street, road or permanent easement is an essential. A distance of sixty feet between building lines is required for the street side of the dwelling and at least fifteen feet must be provided from the building to the lot line in the rear except where proper light and air is otherwise available.

The architectural character of a dwelling must be in keeping with conventional types common to the locality for non-conforming types are subject to more rapid obsolescence. Features of design will be considered from the standpoint of their ability to retain popular acceptance. Simple and direct designs will be given preferential consideration over elaboration; and the use of an unnecessary variety of materials to obtain picturesque effects is not desirable and will be discouraged.

With reference to service and equipment, general standards of the neighborhood will be considered as establishing the minimum, except that certain features are specifically required under Property Standards. Each dwelling must have a pure and adequate water supply and each family unit must have at least one water closet and water supply to a kitchen sink. Where a public sewerage system is available, plumbing must be connected to it. Otherwise, septic tanks or cesspools properly installed will be acceptable. In every case local regulations will govern such installations and where there is no local control, "Recommended Minimum Requirements for Plumbing" of the National Bureau of Standards may be used as a guide.

Electrical wiring and apparatus is not a prerequisite for eligibility except where such equipment is the general standard for the neighborhood. Where installed, it is required to be in accordance with local code or public service requirements. The "National Electrical Code" governs where there is no local regulation, except as modified by rulings of the Administrator. Heating systems are required only in those localities where climatic conditions make such equipment desirable or necessary.

Single dwellings must contain not less than three rooms and a bathroom. At least one room must be not less than one hundred and sixty square feet in area, one not less than one hundred square feet in area with an additional room not less than seventy square feet in area. Kitchens may be in a separate room with an area of at least fifty square feet, or kitchen facilities may be a part of one of the required rooms provided they do not encroach upon the required floor area of that room. The ceiling height shall be at least seven feet, four inches in the clear for all rooms. Each family unit in a multi-family dwelling is required to have a separate means of access without passing through any other unit.

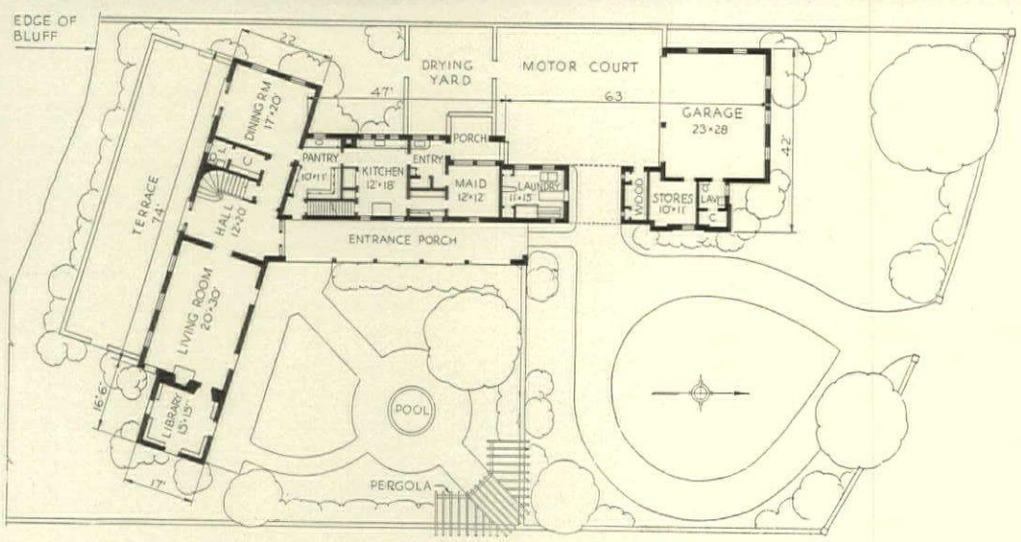
Row-houses which are three rooms deep front to rear are not desirable, as the inner room always lacks proper light and air. For this reason, Property Standards limit row-house developments to a depth of two rooms for interior houses in the row. This should encourage better planning.

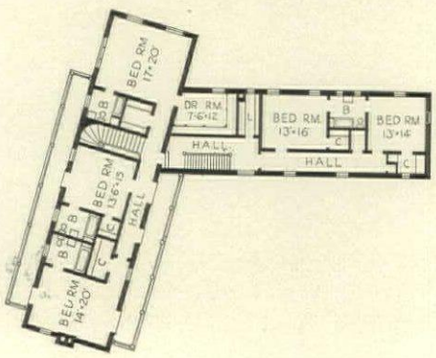
In each room at least one square foot of glass area is required for each ten square feet of floor area. Windows must be constructed so that not less than forty-five per cent of the glass area can be opened for ventilation. Definite restrictions have been placed upon the location of required windows with reference to lot lines and adjacent obstructions to light and air.

In setting up minimum standards for construction, an effort has been made to confine these requirements to those considerations which are generally recognized as good construction practice. Materials, equipment and methods in common use in a locality will be generally acceptable provided their durability and suitability have been demonstrated through actual use. New materials and methods will not be penalized merely because they are new; but it will be necessary to submit satisfactory evidence of their qualities to the Technical Department of the Federal Housing Administration for approval before they may be accepted for mortgage insurance purposes.

Dwellings are required to be designed safely to meet the conditions of loading and use to which they may be subjected. In general, footings and foundations must be of concrete or masonry properly designed to support the superstructure without excessive or unequal settlement. Spaces beneath wood or metal floor construction, where no basement is provided, are required to be adequately ventilated. This will serve to eliminate properties which might be subject to the danger of decay or rust in spaces not properly aired. The possibility of damage from termites is also recognized and requirements provide that where there is any evidence of damage from this source property may be declared ineligible for mortgage insurance until defective construction has been remedied and steps taken to prevent further damage.

The Federal Housing Administration has recognized that local conditions, needs, and customs will be varied and intends that Property Standards be interpreted in the light of such local conditions. As factual data are obtained through actual experience in the application of these standards, revisions and modifications will be made from time to time as conditions warrant.

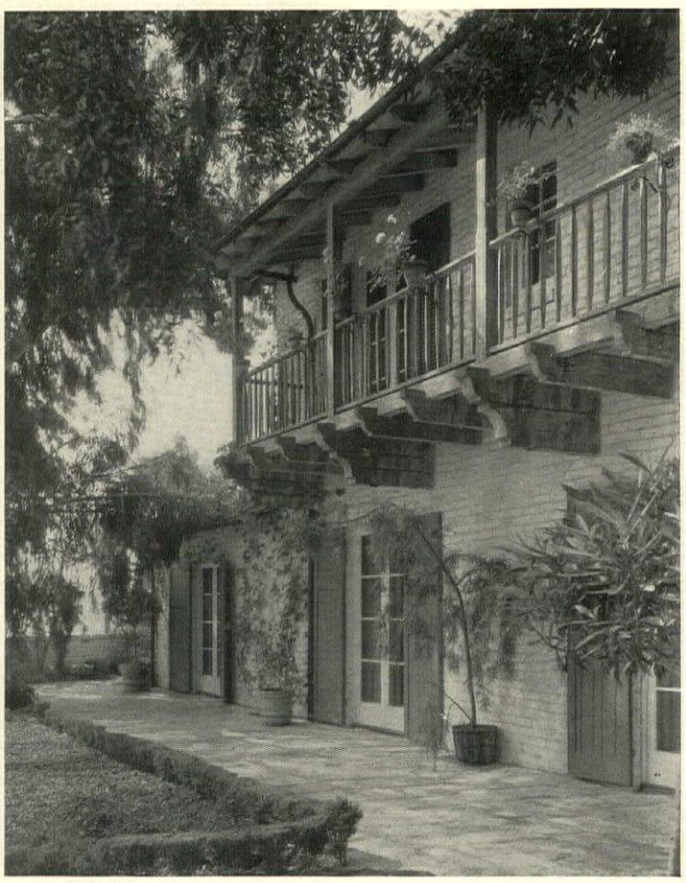




ELMER GREY, ARCHITECT

HOUSE AT HUNTINGTON PALISADES
LOS ANGELES, CALIFORNIA

Photographs by the Hiller Studio



Construction: frame, veneered with light tan common brick. Roof: hand-made shingle tile, made to simulate effect of age. Terraces and porch floors: flagstone. Cubic contents: approximately 75,588 cubic feet. Cost, in 1932, $35,984. This includes surrounding garden walls, but not architectural fees

HOUSE AT HUNTINGTON PALISADES
LOS ANGELES, CALIFORNIA

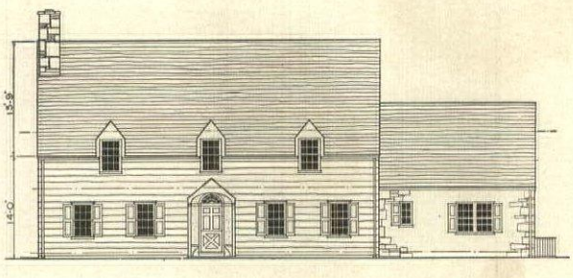
ELMER GREY, ARCHITECT

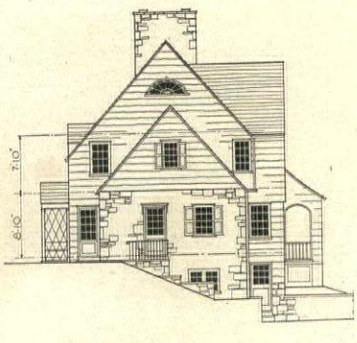
VERNA COOK SALOMONSKY, ARCHITECT

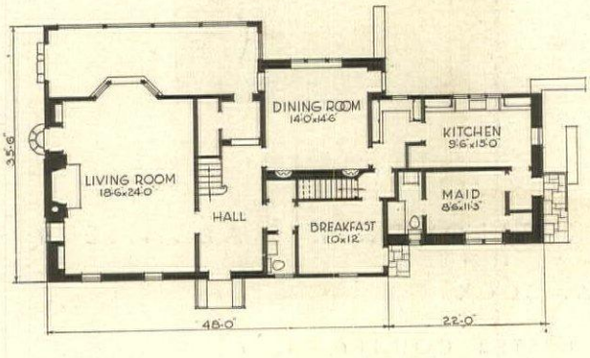
HOUSE OF P. A. COOK

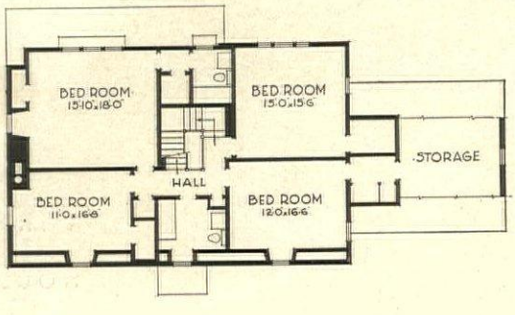
STONE RIDGE, ULSTER COUNTY, N. Y.

Photographs by Robert McLean Glasgow

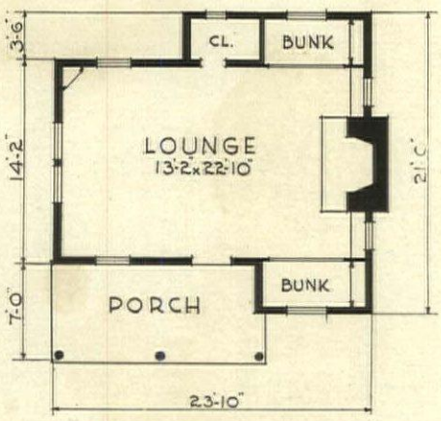








HOUSE OF P. A. COOK, STONE RIDGE, ULSTER COUNTY, N. Y., VERNA COOK SALOMONSKY, ARCHITECT



ROBERT C. KILBORN, ARCHITECT

GUEST HOUSE OF AN ESTATE IN

OSSINING, NEW YORK

Photographs by George Van Anda

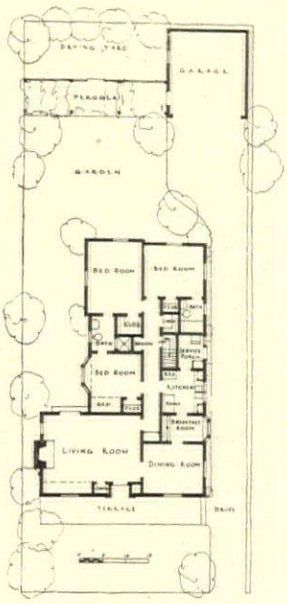
GUEST HOUSE ON AN ESTATE IN OSSINING, N. Y., ROBERT C. KILBORN, ARCHITECT

H. ROY KELLEY, ARCHITECT

HOUSE OF MR. AND MRS. H. H. McGOWAN

LOS ANGELES, CALIFORNIA

Photographs by Associated Photographers

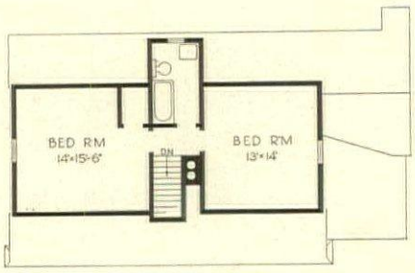


Walls, white painted cement stucco over frame construction. Roof, red cedar shingles, stained brown. Porch floor and steps, brick

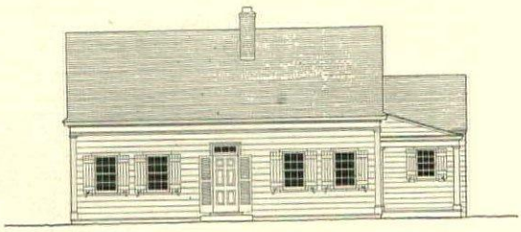
KENNETH W. DALZELL, ARCHITECT

HOUSE OF MATTHEW J. CALLAHAN, SHORT HILLS, NEW JERSEY

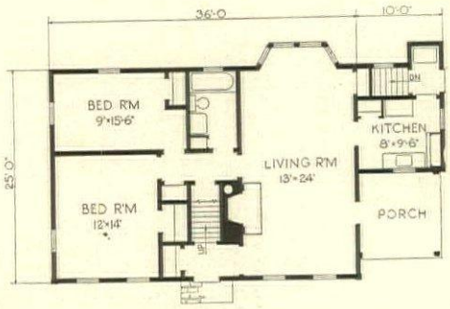
Photographs by Samuel H. Gottscho



SECOND FLOOR PLAN



FRONT ELEVATION



FIRST FLOOR PLAN

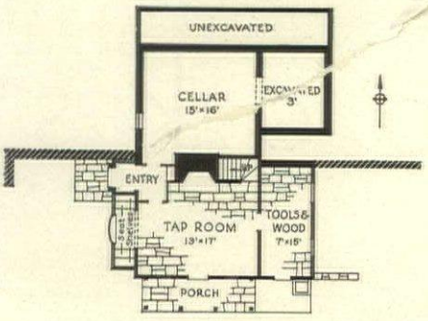
SIDE ELEVATION

ALLAN McDOWELL, DESIGNER

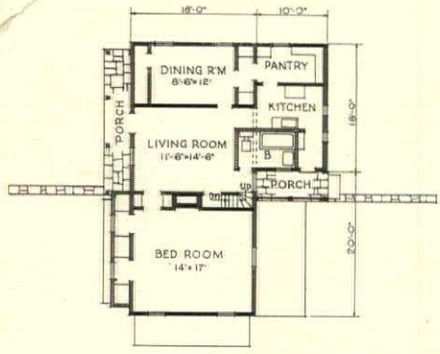
HOUSE OF EDWARD C. WARD, KENT, CONNECTICUT

Photographs by George Van Anda

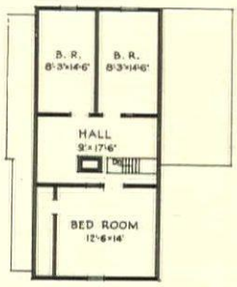
Alterations to the old house above consisted mostly in refinishing and installing modern mechanical equipment. Porches were replaced, a small addition built on the west side (shown hatched in the plans), floors, timbers and plaster repaired. The present Tap Room, shown on the facing page, was originally the kitchen. Cost, including grading, stonework, landscaping, was $3,000



FIRST FLOOR PLAN



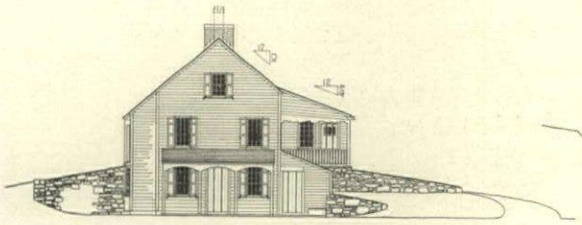
SECOND FLOOR PLAN



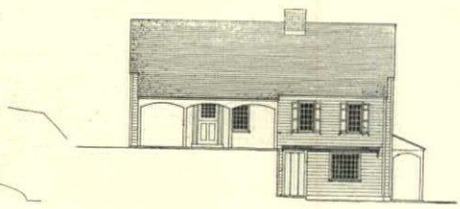
THIRD FLOOR PLAN

HOUSE OF EDWARD C. WARD, KENT, CONNECTICUT

ALLAN McDOWELL, DESIGNER



SOUTH ELEVATION



WEST ELEVATION

As It Looks

A COMMENT ON PUMP-PRIMING

THOMAS M. McNIECE, in an article published elsewhere in this issue, states some conclusions regarding progress in the construction industry that should be seriously considered by every architect. To sum up "An Economist Analyzes Building," the industry can expect little in the way of normal activity until the policies of the Government with respect to matters financial shall have been stabilized. Artificial pump priming methods are—and will be—of no avail. Our building needs are multiplying daily, but as Mr. McNiece so forcefully says, they cannot be supplied until the confidence of general business has been definitely re-established.

Mr. McNiece writes from a broad base of economic experience. As a former executive of the National Carbon Co. of New York he has done intensive market analysis and research in the securities field. This led to research in the field of general economics particularly with reference to the basic characteristics of demand and their resulting effects on prices and finance.

TANGIBLE RESULTS

FOR some months AMERICAN ARCHITECT as a member of the Stuyvesant Building Group has been sponsoring a series of advertisements appearing in House Beautiful and Town & Country. These advertisements as well as the booklet "When You Build" are prepared and published in the interest of the architectural profession. This campaign has attracted much attention. One tangible evidence of its value to the profession is shown by the following letter, which among others has recently been received. It was written to the Editor by an insurance agent. He wrote, "Recently I received a copy of 'When You Build' as published by the Stuyvesant Building Group of New York, and note that you comprise part of the same group. I hope to make alterations and additions to my residence next year and believe that I should employ an architect but do not know of a good architect who would be convenient. Can you furnish me with the name or names of several good architects."

SECRETS OF SUCCESS

IN discussing the question of architectural practice with Atlee B. Ayres of San Antonio, he said, "The secret of success in practice is largely a matter of good management. The secret of making jobs pay is cutting corners and eliminating office waste." Both of these are just good sound business fundamentals that every good business man knows. The time spent by any architect in mastering the principles of good management and the elimination of office waste will be time used to good advantage. Study of the question, however, will be of little avail if the findings are not intelligently applied.

A REALLY PRACTICAL COMPETITION

A FORWARD-LOOKING architectural competition, sponsored by General Electric Company, is announced in this issue. Its purpose is to stimulate designers to develop the possibilities for comfort, convenience and health in homes which modern electrical and mechanical advances have brought about. It is thus one of the first major competitions in which studies of plan and equipment transcend mere esthetic design and as such, should go a long way toward showing the public that architects are not only artists but they contribute greatly to the practical aspects of modern home living. It is significant that AMERICAN ARCHITECT for more than two years has been giving its readers Reference Data articles of great value in the very fields covered by this competition. Those entering the competition will find it helpful to review the following articles of this series: "Household Kitchen Planning" (July, 1933), "Bathroom Planning" (January, 1934), "Heating, Cooling and Air Conditioning" (July, 1934), "Distribution Equipment," (September, 1934), "Modern Interior Lighting" (November and December, 1934).

A TRAGIC LESSON

FOR some reason the human race is prone to learn its lessons from the most costly of experiences—experiences which are too often accompanied by a large loss of life. These disasters are in many cases the more pathetic because they could have been prevented. The most recent one is that of the hotel fire in Lansing, Michigan, where some thirty people were killed. No building intended to house a large number of persons—and particularly those containing sleeping rooms—should be permitted to be erected or occupied which is not as nearly fireproof as building practice allows. To remove existing firetraps in the United States would in itself constitute a large volume of construction and afford a new measure of safety to those who use them.

to the Editor

POINTER TO BUILDING PROGRESS

COOLING a well to warm a house is one of the latest paradoxes of science. At Salem, N. J., a "heat pump" or reversed refrigeration machine has been experimentally installed by General Electric Company and American Gas & Electric Company to heat a two-story and basement brick and steel reinforced concrete structure, by means of heat drawn from well water which remains at a constant temperature of about 65°F. throughout the winter. The same apparatus reversed in operation serves to cool the building in summer. If any pessimist feels that the building industry has passed the peak of its accomplishment, such novel experiments should serve to indicate future changes that will make our present progress seem comparatively minor.

KEEP THE CLIENT SOLD

EQUALLY important to "selling" a prospective client on the value of architectural service, is that of keeping the client sold all through the job. This fact is too often overlooked or too much is taken for granted. Many occasions arise in which an opportunity is afforded to make a client feel that he has been justified in retaining an architect. This can be done tactfully and need not be a bare, blatant statement. But when a client has been saved from an apparent pitfall, extravagant extra, or some annoying situation, there is no harm done in calling his attention to the fact. When the job is completed he should feel that the service rendered has been worth far more than he paid for it. If he feels that way he will tell his friends so. There can be no surer way to build a future clientele.

WHY NOT STOCKS INSTEAD OF MORTGAGES?

LONG term mortgages are not attractive to investors in times of financial uncertainty. Stocks are, for they can be easily bought and sold. That may be one reason why capital today shies away from investment in the building industry. One solution of the quandary might be the formation of a national building corporation with many local units. This corporation could be financed by the general sale of marketable stock. Its product—housing of all types—might be erected by local units throughout the country and paid for under a financing scheme somewhat similar to the insured mortgage features of the NHA. If the Government plans to enter the building field—as was recently announced by the Secretary of the Interior—the scheme of public participation in capital stock might be applied to the existing Federal Emergency Housing Corporation.

YEARS OF BUILDING

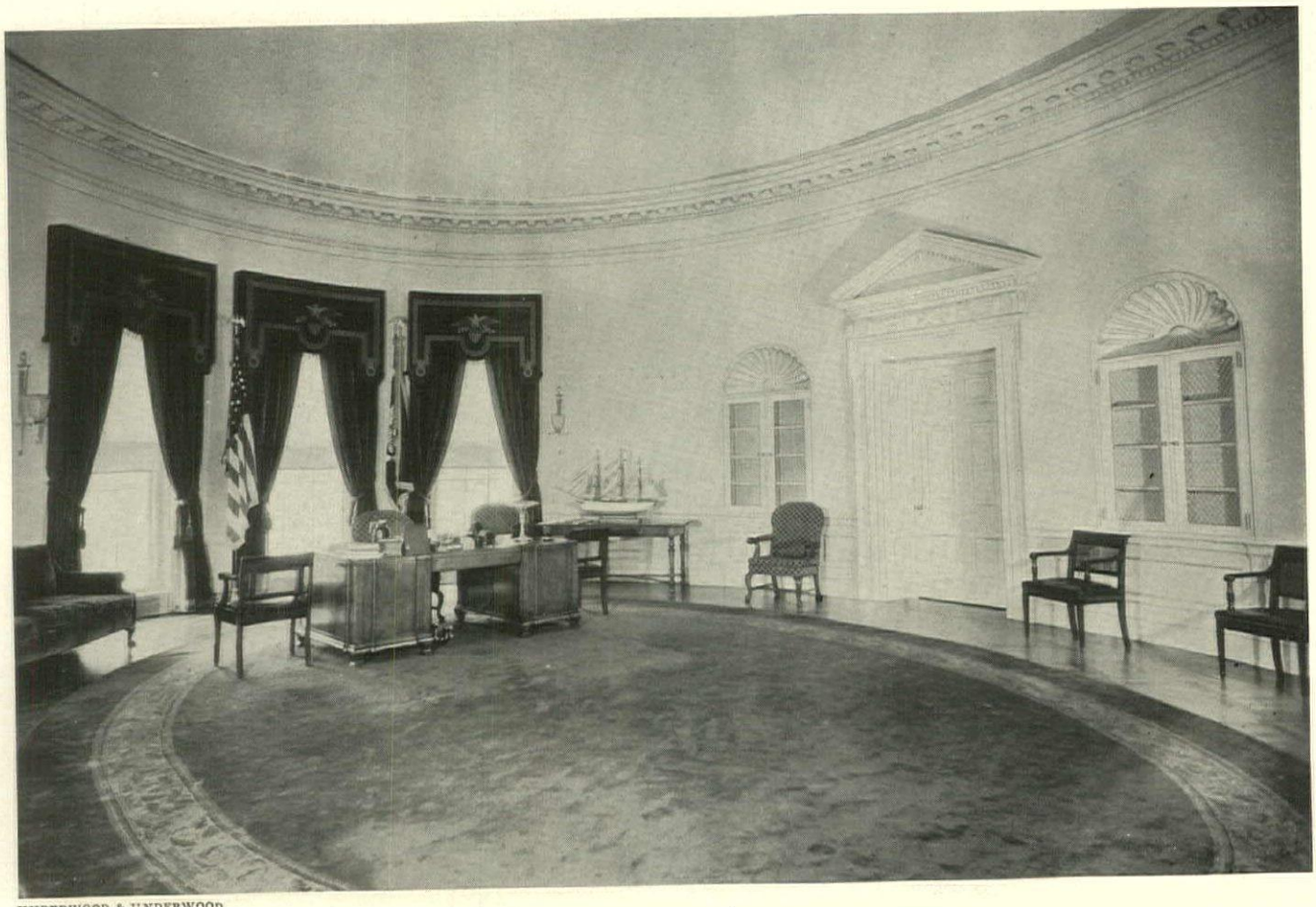
IF a comprehensive program for a more beautiful America could be formulated and its execution directed, we would not have to worry about the volume of new building and the development of new areas for years to come. In some instances new building would be needed, but often it is more a matter of cleaning up and securing an orderly organization of city streets. Visualize the streets of your town as they look today and as they might look under proper control or co-operative effort born of civic pride. Then estimate what this would mean in terms of work correcting obtrusive and inharmonious signs, facades, street stands, lighting standards and the many other items which make or mar the beauty of our streets and highways.

CLOSE THE EYES

ACCORDING to W. Duncan Lee, architectural problems should be studied with one's eyes closed. Drawings can never do more than carry a line picture in two dimensions. By closing the eyes—shutting out distracting surroundings—one can better visualize a problem in the round. After a little practice it is surprising how much one can see and visualize with the eyes closed. It's worth trying.

LET'S HAVE SOME LIGHT

GOVERNMENT'S activities sometimes are beyond understanding. A year or two ago the design of a number of Federal buildings was awarded to architects in private practice. All were told that their fee would be 4.8 per cent—take it or leave it! Several months ago the plans of such buildings as were not under construction or contract were reviewed by a "Design Committee." The committee decided that the buildings were too costly. In most cases the architects of these buildings were paid for the work completed to date and then offered a new contract at 4 per cent. In some cases they were informed that revision of the plans must be done under the terms of their original contract. Why all were not treated upon the same basis is not clear. It would be illuminating to bring all the facts out into the light.



UNDERWOOD & UNDERWOOD

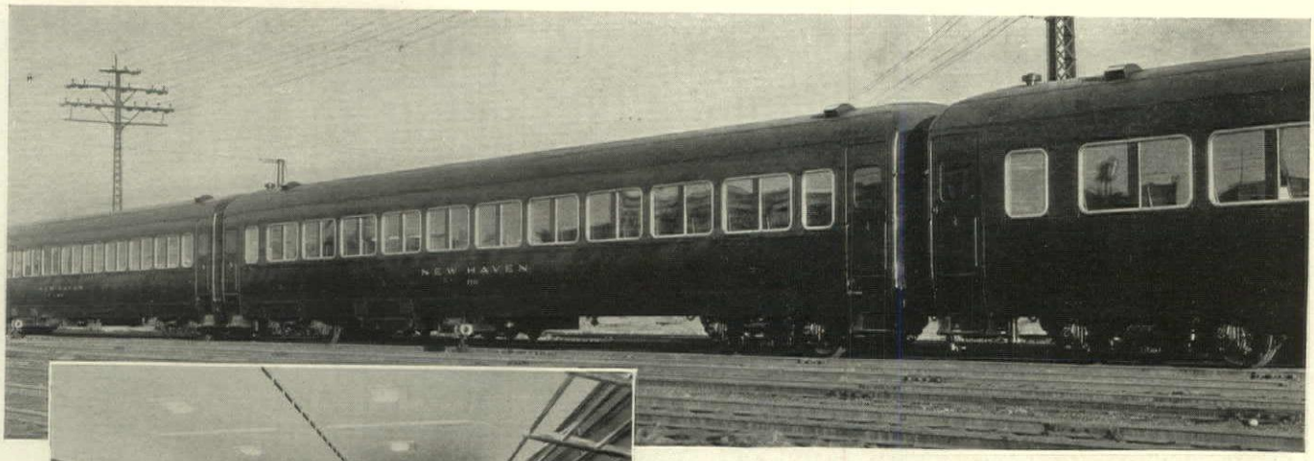
President Roosevelt's private office in the newly enlarged White House Executive Offices for which Eric Gugler was architect

• Albert L. Deane, in charge of the FHA Better Housing Campaign estimates that $171,000,000 worth of repair jobs have been created as a result of Campaign activities. Sixty-three per cent of the jobs were done for cash. Mr. Deane forecasts an expenditure of a billion dollars for modernization in 1935.

• In its present form the Construction Code is unsatisfactory to the majority of contractors according to results of a survey recently conducted by the *Engineering News-Record*. Sixty-seven per cent of those replying to questions regarding the Code believed it was not accomplishing its purpose. A large majority did not think the Code beneficial to construction labor; and 73 per cent considered it a detriment to their business. Fifty-six per cent thought that the Code should be retained in principle, but amended as to specific provisions. Chief among these last were included present policies regarding day labor, wage scales, enforcement complexities of organization and administrative methods.

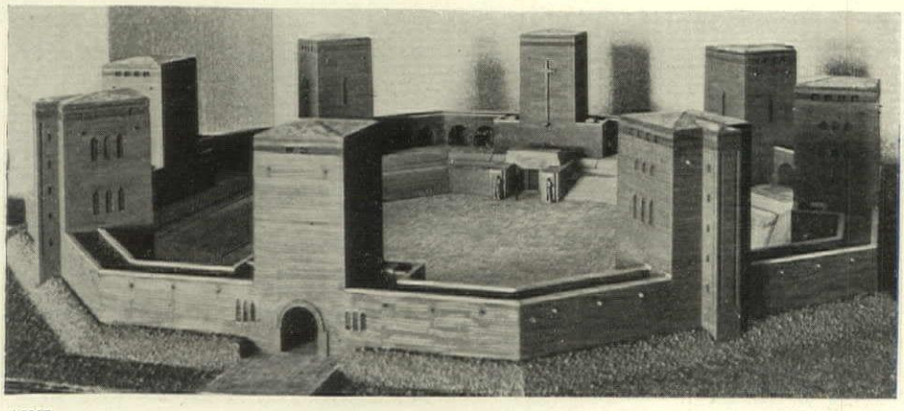
• A modernization plan of broad scope is suggested by Charles Cressey, architect of Los Angeles, in a recent issue of the *Southwest Builder and Contractor*. In substance, Mr. Cressey proposes unification of city buildings by means of street bridges or interblock connections. He calls his proposal the "Concourse Plan" and advocates grouping elevators in huge banks to function as a sort of vertical street and to serve a greater amount of space than is now possible. According to the author, the Concourse Plan would relieve traffic congestion, reduce building costs if projects were modernized on the basis of a block at a time, offer re-employment possibilities of impressive proportions and increase profit possibilities to all building owners.

• The Housing Advisory Council, recently announced by FHA Administrator James A. Moffett may prove the spearhead of the various and many efforts to integrate separate elements of the building industry. The Council numbers twenty-five authorities in the fields of architecture, construction, materials, labor, city planning, housing and finance. James D. Dusenberry, director of the FHA Division of Construction and Real Estate, is Chairman of the Council. Architectural members include Frederick L. Ackerman, New York; Joseph W. Holman, Nashville, Tenn.; Sullivan W. Jones. Washington, and Stephen F. Voorhees, New York.



Above: New streamlined and air conditioned day coaches designed by Walter Dorwin Teague for the New Haven Railroad. Windows are fixed vacuum glass. Right: Col. Horatio B. Hackett hands to PWA Administrator Ickes bids for the first low cost housing project for which Atlanta, Ga., was allotted $150,000,000

UNDERWOOD & UNDERWOOD



ACME

Memorial to Field Marshal von Hindenburg at Tannenberg, Germany. Built in the shape of an Iron Cross, the structure will be a tomb for German war heroes. Walter and Johannes Kruger were the architects

New York University won this for the best work in 1931 and again in 1934

Trends and Topics of the Times . .

Reception Room of International Silver Company's Sales Service Institute that was developed by K. N. Whatmore from a Meriden, Conn., factory building, right. Two floors include a foyer, several display rooms, a hospitality room and an auditorium decorated in coral, black and silver

• With Federal recognition of the architect's importance in determining values of real estate, appraisal business should develop as an attractive new field for the profession. Speaking of FHA appraisal systems, J. Howard Ardrey, FHA Deputy Administrator, says, "Our system sends two men to each property—one an architect, the other a valuator. This is essential to secure a sufficient examination of the security behind the mortgages we insure."

• Dean Joseph Hudnut of the Columbia University School of Architecture sees the future architect as an engineer as well as a designer. He thinks that science will play an increasingly important part in building design and has successfully revised the teaching methods of his School to meet the needs of future builders. Studio groups have largely replaced classes. More consideration is being given to new materials and building processes; and a practical laboratory course gives students direct experience with basic materials of structure as part of a survey of contemporary architecture.

• The day labor system that Government officials have adopted to execute construction work may spread relief employment to some extent, but is uneconomical from the building point of view. Evidence gathered by the Associated General Contractors shows that in one Government building project at Beltsville, Md., $450,000 additional funds were required under the plan which the A.G.C. brands as inefficient since it emphasizes unemployment relief rather than quality of construction through use of experienced men. (*Continued on page* 84)

Contemporary Problems of The Architectural World

BY FRANCIS LORNE, F.R.I.B.A., A.I.A.

Sir John Burnet, Tait & Lorne, Architects, London, England

IN the ordinary course of events each generation as it follows that of its fathers creates a continual change in the manner of living and means of expression. A new point of view gives rise to new ideas which tend to new ways of doing things and new ways of arranging them.

When we add to this normal influence for change through parentage, man's urge to inventiveness evidenced by scientific discoveries, new means of transportation, and new materials, we tend to intensify the margin of difference between generations and make their changes more swift and complete. When we superimpose upon this the crisis of a great world war with its attendant loss of life, money and frontiers, a set of conditions arise which force not only a change in the point of view but an entirely new direction in the movement of the race. Many of the things our fathers did, we find we cannot afford. We find new things in which we become intensely interested and by which our fathers set no store. And so the process goes on, always progressing in the eyes of the younger, always "going to the dogs" in the eyes of the older.

These changes concern us particularly as they relate to Architecture. Since Architecture is the art of housing humanity we can readily imagine that radical changes in humanity's way of living will make radical changes in Architecture, giving rise to new problems and difficulties in the solution of them.

During the last thirty years we have seen the telephone grow until everyone is united on a speaking basis, in a few minutes. Wireless has grown amazingly—likewise newspapers. From a novelty the motor car has assumed the dimensions of a national problem. The aeroplane has become an unexcelled means of transportation. We see the growth, too, of electric light and power, the elevator and escalator, the electric refrigerator and vacuum cleaner, central heating and air conditioning. Development of steel and concrete frame give rise to higher buildings and we can foresee the future city as a collection of high towers each housing thousands of people, each tower well apart from the others with grass, trees, flowers and wide boulevards between. We see the growth of the department store which retails goods at prices which stagger our fathers. We see the decline in great part of the spirit of selfish individualism and the growth of the spirit of collectivism in our life. Growth of the trades union and a greater distribution of wealth give rise to greater purchasing power and traveling facility for every citizen, thereby breaking up our provincialism. We see the establishment throughout the world of mass production and the ruthless competition which this engenders.

We see all countries drop from the position of national affluence to that of the serious problem of balancing budgets. We see the growth of taxation reduce the strongest firms and individuals to a new form of life, forcing them from the uneconomic life of the country to the life of the mechanized city, developing in the younger a fear of possessions which can be taxed and a fear of contracts and obligations which possibly cannot be honored. We see the steady dissolving of the servant class and the so-called upper class leading to the permanent establishment of one class in society consisting of those who work either with their hands or their heads; the breaking up, too, in large part of sex distinctions and the old home idea that men should work and women weave, to a new order where in increasing numbers both men and women bear the equal burden of doing the world's work and earning the daily bread. But these are perhaps enough to indicate a few of the influences likely to affect our lives and our architecture in the next generation. Let us endeavor to select from these new points of view a few, say five, of the more pressing problems we shall have to solve architecturally.

First—As we have now been forced into an age where mass production and mass control govern our ways and our working, to an age in other words where we find, as manufacturers have already found, that mass desires and mass buying are more important than those of a more selective clientele, we must make some effort to understand this new demand and draw architecture and building, to which it is related, closer together. We shall have to encourage a more intimate understanding of and a more cooperative sympathy with those who build, if we would retain the little control we have of the building problem.

Second—As it will be necessary for us to recreate our wealth and redistribute it more universally, we shall have to find how we can most efficiently house those who will recreate it. The money we

shall have to spend as architects will not be more but it will have to travel much further in supplying the many amenities of living for a greater number. Consequently it will have to be much more judiciously dispensed.

Third—As we are being forced to a more scientific solution of our present problems by other foreign and more scientific races than our fathers —who were amazingly haphazard—we must develop a sense of fitness in the use of our materials, and as we must think not only of the immediate present but project our thinking a little into the future; we must endeavor to gain a deeper knowledge of the social and economic conditions which govern our time and are likely to affect our future.

Fourth—As no longer does any one of our cities live for itself alone but for the race of which it is a part and in turn for that race influence throughout the world, we shall have to develop a greater civic and national sense. Our cities in the past have been unnecessarily ugly and slavishly bound to the worship of tradition. We must somehow develop the attitude of planning for the future instead of just letting things happen.

Fifth—As architecture has changed from being a pleasant occupation for the more artistic among us, protected by a Patron, to the serious problem of housing a hard-working humanity determined on the equal rights of every individual to live like a gentleman, we must develop a new professional sense.

LET us take the first problem, that of uniting architecture more closely to building.

The history of every people, like the history of every man, seems to be divided roughly into three periods. The first a steady rise overcoming opposition, gaining experience and developing facility in work. The second of maturity when experience combined with facility finds its best expression, and lastly, that of dissipating interests, slackening pace and tendency to excess which lead to decline and decadence. The art and the craft, the science and practice, the economics and industry which combined so co-operatively together to bring success in the first two periods, tend to divert in different directions in the last, until we find that the Architect knows less about building, the artist less and less about the craft and the economist less about the difficulties of banking and business. In other words, the theory and practice of life become so detached that they have little or no connection with each other.

This condition existed in architecture during the last quarter of last century and the first quarter of this. We went through a period of applying false mannered façades to false mannered plans in keeping with the false mannered life of the people of the time, with the result that we had fifty years of what our children will look back upon as almost meaningless architecture. This false condition can only last, of course, as long as the wealth created in the second period of maturity lasts so that when a crisis arises, it goes down like a pricked bubble. Our architectural bubble was pricked by the recent financial crash.

THOSE of us who realize the width of the gap between Architecture and the building which those years developed, the entire utility outlook of the one, the utter idealistic outlook of the other combined with the mass of tradition, pride and prejudice which grew up between them, realize with what a problem we are faced in order to weld the two together again. We must somehow get back to the ideal that architecture at its best is the perfect solution of the practical building problems of our own age, our own people, climate and mode of life. Our failure to do this is, perhaps, the principal reason why we do so little of the total volume of building. We have fallen behind the advances of recent years in the social and building worlds; our attitude of idealistic superiority has cut us off and has bereft many of us of our existence. In addition to this, we find the growth going on apace of enormous Government architectural departments. Yet when we consider our past heavy dealing in abstract estheticism, it should cause little wonder that the Government should set up its own architectural departments and so have its architects under some sense of control to produce some reasonable solution of its problems.

If we are unsuccessful, the fault does not lie with our time or our client, but with ourselves that we neither understand our age nor its requirements. This it would seem is the real reason why we do so little of the building work. It is largely being taken away from us by Government and Company employees, engineers and ghosts. Much of our wrong thinking has been developed in the schools and institutes in which we grew up, which developed within us the Book habit of copying traditional work, and applying Classic, Gothic and Renaissance treatments like paint to the exterior and interior surfaces of our buildings.

SO deeply was this Book habit implanted that when the so-called modern style came along, we set ourselves to copying the work of progressive German, Dutch and Swedish artists, no matter how little their work suited our problem. It was never considered by us that these Architects had found a new manner of expression true to the new materials, steel and concrete, and true to the economic conditions which developed a new social life in their people. We simply used the old forms, and applied to them new ornamental features to be in line with the new mode, because our training had not taught us to think of Architecture as building, it had taught us to think of Architecture as "ornament." So our work in the new mode consisted of "face lifting" and many of us confidently hoped to get away with it.

We had not realized that the invention of the steel or concrete frame would prove to be as revolutionary in its effect upon design as the discoveries of the

vault and the dome were upon the Classic architecture which preceded them. Most of us failed to understand this new technique because we were so securely bound by the traditional attitude of the schools and so we find that although most buildings to-day are erected upon either a steel or concrete frame which carries the entire load of the building, we have the unfailing tendency to clothe this frame with stone or brick traditional forms which belong to the older wall-bearing structure; and when we have applied some modern ornament to it we have the audacity to call it modern.

EVERY age makes new technical advances which should lead to new art expression, thereby adding variety and new interest to our experiences and saving us from the boredom of the repetition of styles. If we follow the excellent precept that the greater a work of art the less there is about it that is useless, we realize that the meaningless application of old wall-bearing forms with small windows, massive masonry and heavy monumental corners to the light steel or concrete frame is bad art expression and no matter whether it is ornamented with traditional or modern gadgets, it is bad.

What we really require in our day is the right approach to Architecture through building. Let us start out with the design of our frame which covers our site, encompasses the volume of our building and carries it. Let us space it out at the most convenient spans for its own values as a material and realize that there is such a thing as the economic and the uneconomic use of it. When we have solved this let us plan within it the life that is to be lived therein, and finally let us clothe it and subdivide it with walls open enough to admit as much light as conditions render possible, thin enough to lighten the load on the frame and strong enough, but no more, to protect us from the elements without and prevent people pushing furniture into the street.

When we have done this we shall only be doing what all the designers in the past have done when they designed the dagger, the sword, the coat of mail or the gun, in other words, utility first and decoration afterwards. We shall only be doing what the motor car, aeroplane and streamline train designers are doing to-day—utility first and line afterwards. Any other approach, no matter how conscientious, will lead us to produce an inferior building and through devious ways to plagiarism.

THIS leads us to the second problem which is concerned with the efficient planning of our buildings of the future.

It is a sign of how completely we have got out of touch with the realities of our work when one sees the strange and fearful look which pervades the face of the average Architect when one speaks of efficiency, system and method in art. There is a strange fear existing that system and method destroy art. This attitude has taken much of the virility from our work. Where fear and an inferiority feeling exist our art suffers. Great art grows methodically, surely and systematically. The greatness of an artist consists in the perfect assembly and grouping of all his problems for all great art is the result of thinking methodically and beautifully.

Our buildings are not the work of one individual but are mostly the work of a vast assembly of individuals, and unless the Architect can think methodically, plan methodically and set this assembly of men to working methodically, he will merely accentuate his difficulties, jeopardize his own position, and become what is only too often the case, the joke of the building world, instead of its creative center. The dreamy lack of efficiency in the Architect's office will not hold water any longer. It will not do that our system is so bad we can't find a letter or a drawing when required. It will not do that the building has cost more than it should and will take two months more to finish.

It will not do that certain things were not thought of and therefore are not on the plan. We must so absorb the business or social life of our client that we can solve his problem much better than he can himself. We must plan the things he will require just as he will want them and so well in fact that he will be surprised when he finds them. And then we have only started our real problem for we must do it all with distinction and artistry.

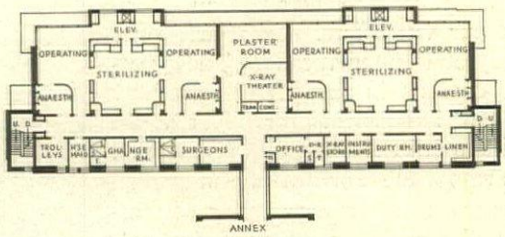
EVERYTHING in a building is important architecturally and nothing is unimportant enough to be sacrificed to the arrangement of a Renaissance plan. Whatever we plan will be for 20th-Century requirements, not for 16th-Century requirements, no matter how good these may have been in their day.

To meet these new requirements Architects will have to be informed in many sciences, mechanical, social and economic. This brings us to our third problem of the growing necessity for more scientific knowledge in the curriculum of the Architect.

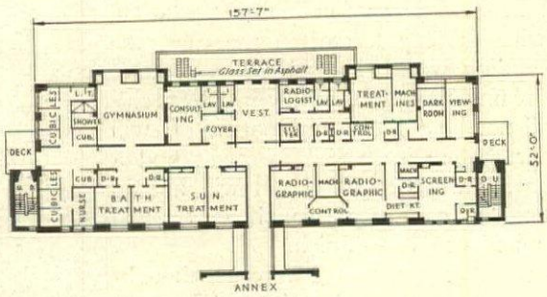
Perhaps because most of us have considered that science has little relationship with art there has been among us little knowledge of the sciences relating to Architecture, the sciences of frame structure, of acoustics, heating, ventilation, air conditioning, lighting and sanitation. Surely if an intimate knowledge of bone structure and anatomy is not beneath the dignity of a painter, steel and concrete structure should not be beneath the dignity of an Architect, and as the painter of the figure starts with the bone frame and builds up his figure on that, it is also the logical way for us to work. The painter who started with the flesh and worked back to the bone would be looked upon as a bit of an idiot, and this is precisely what most of us do in Architecture to-day.

As the public for whom we build in the future is likely to demand a greater supply of the amenities of living it is not difficult to realize that the money which goes into these things will come out of and

(*Continued on page* 88)



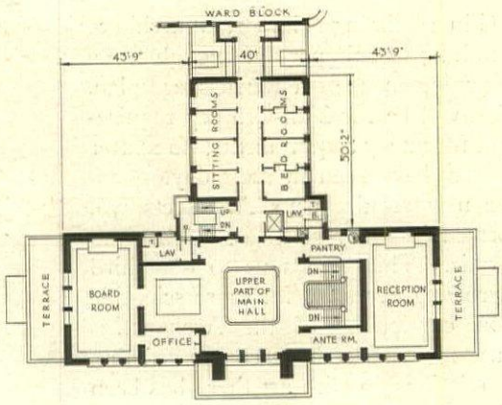
ELECTRICAL AND SURGICAL BUILDING
SECOND FLOOR PLAN



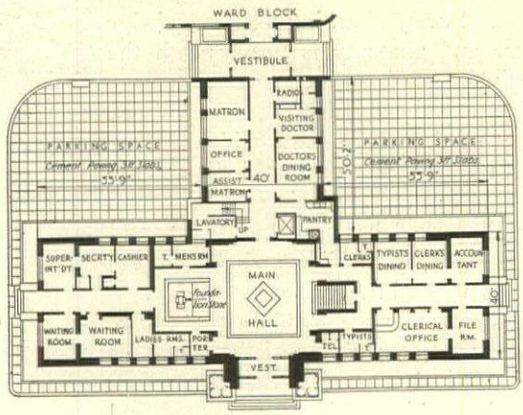
ELECTRICAL AND SURGICAL BUILDING
FIRST FLOOR PLAN

THE ROYAL MASONIC HOSPITAL,

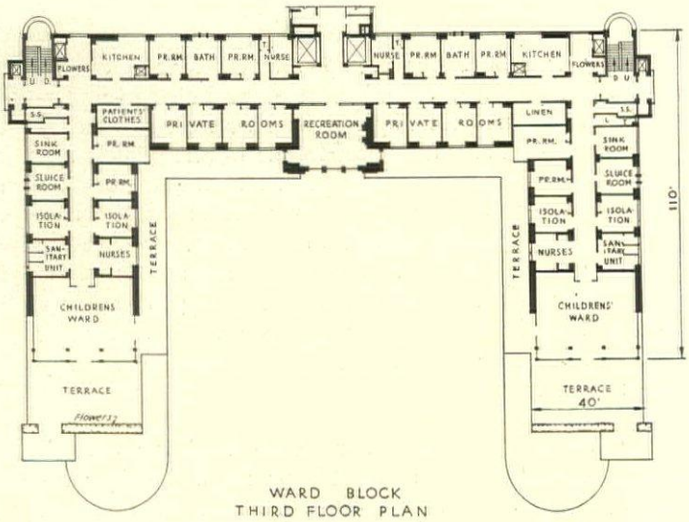
LONDON, ENGLAND



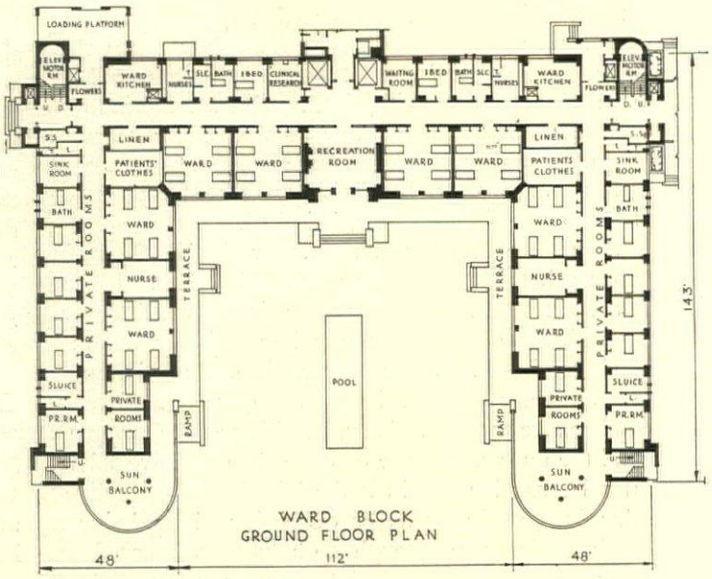
ADMINISTRATION BUILDING FIRST FLOOR PLAN



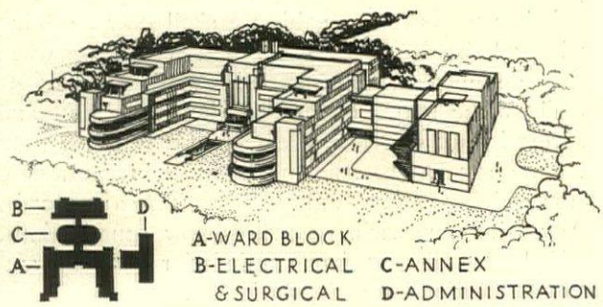
ADMINISTRATION BUILDING GROUND FLOOR PLAN



WARD BLOCK
THIRD FLOOR PLAN



WARD BLOCK
GROUND FLOOR PLAN

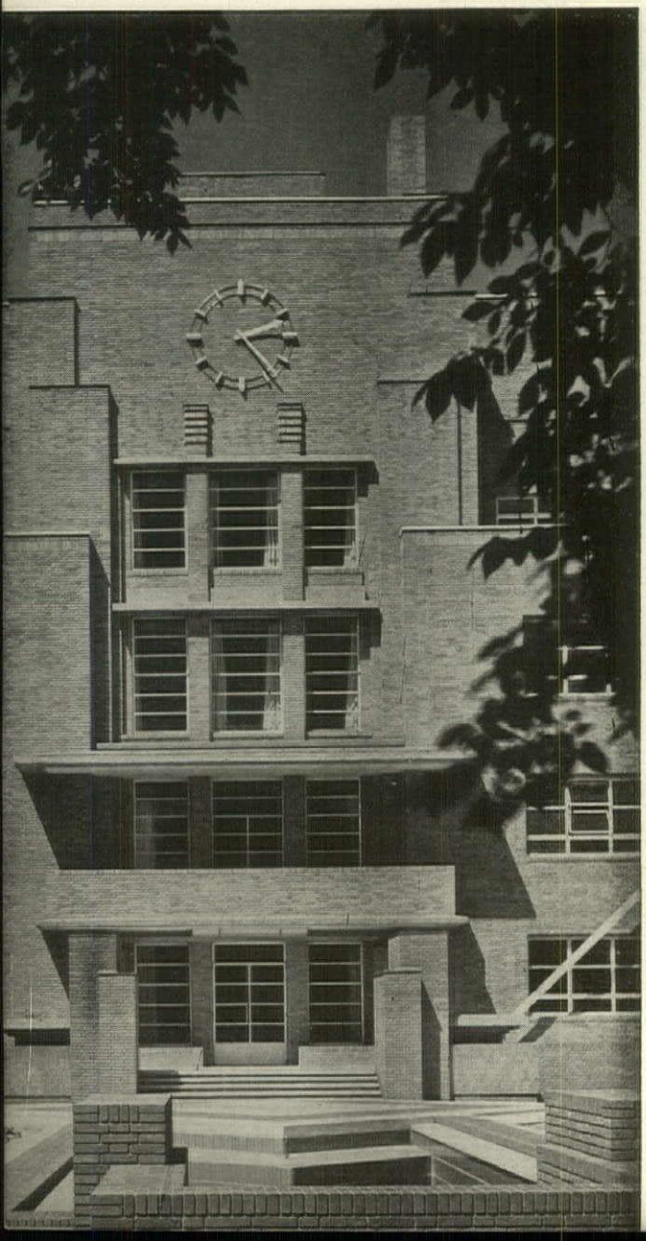


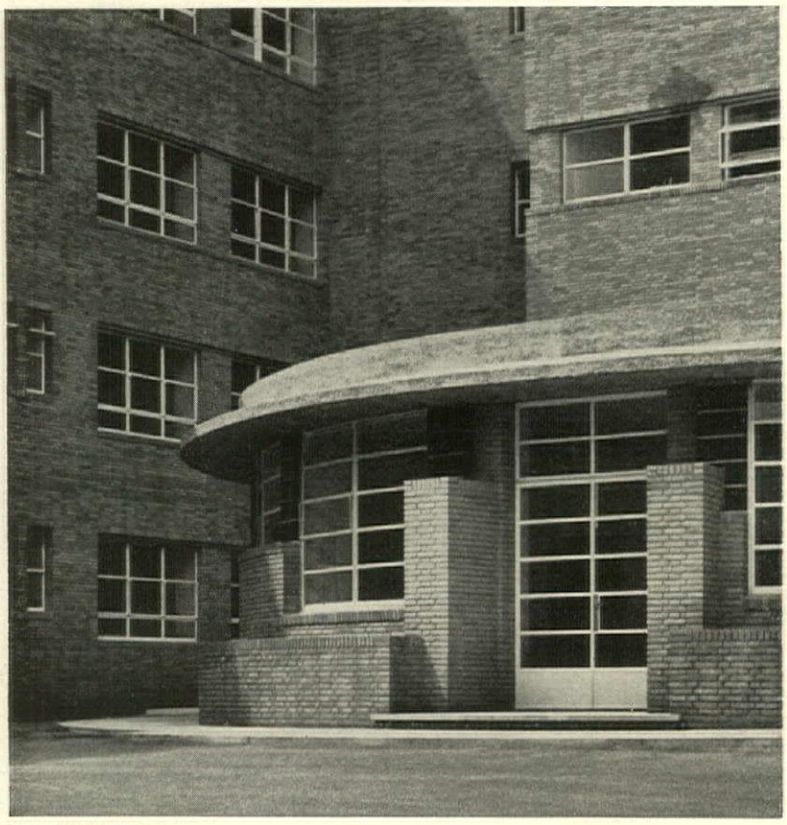
SIR JOHN BURNET, TAIT AND LORNE, ARCHITECTS

THE ROYAL MASONIC HOSPITAL, LONDON, ENGLAND

Photographs by Dell and Wainwright,

Courtesy of The Architectural Review

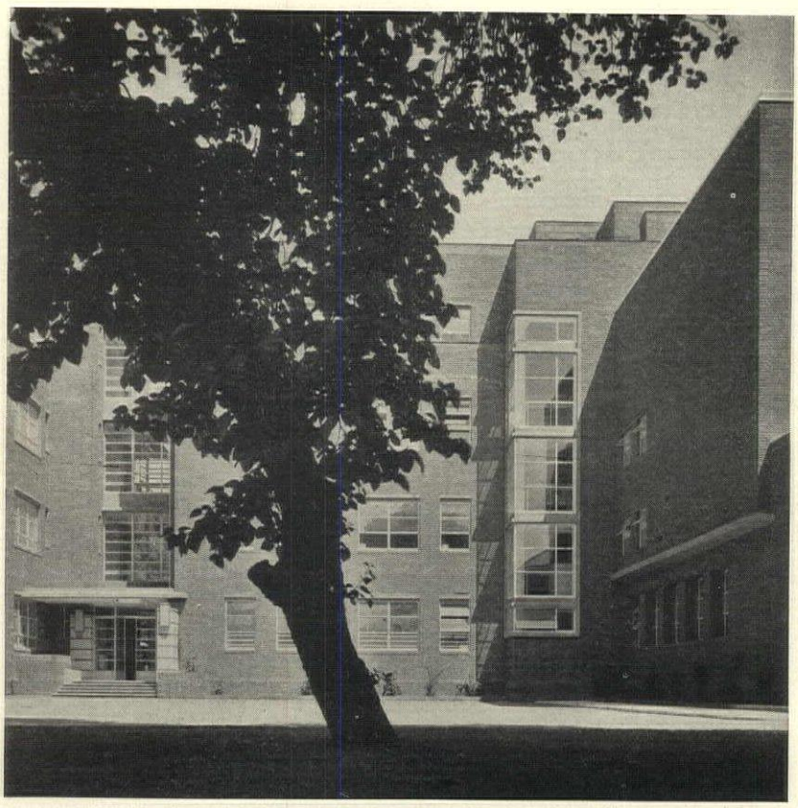




Top of page: side entrance to Administration Building. Walls are 2-inch, flint-faced red brick with wide, raked-out joints. Above: entrance for ambulance patients, north side of Ward Block. Left: central windows of Ward Block. Pool lined with green and gold tiles

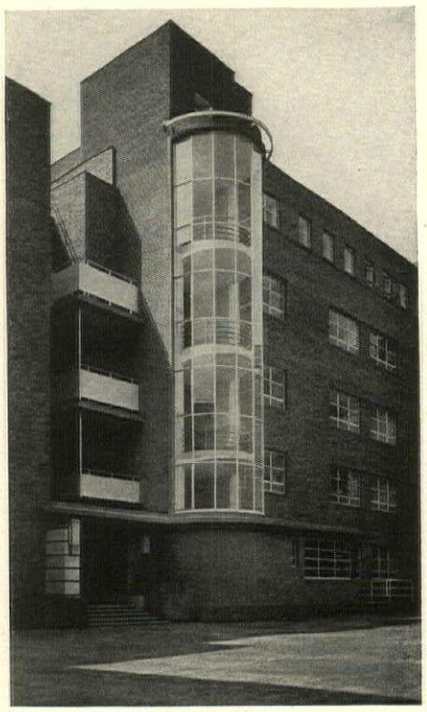
THE ROYAL MASONIC HOSPITAL
LONDON, ENGLAND
SIR JOHN BURNET, TAIT AND LORNE
ARCHITECTS

Right: rear of Administration Building and the link that connects it with the Ward Block. Doctors' entrance in the lower left corner is lined with terrazzo and bands of green glass tile. Below: main entrance to Administration Building. Canopies are in concrete with exposed aggregate finish

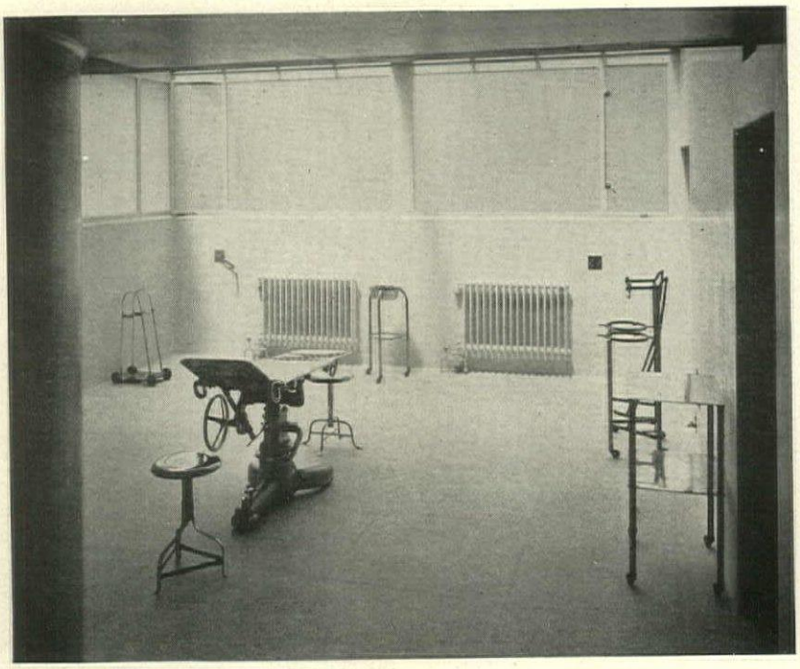


THE ROYAL MASONIC HOSPITAL, LONDON, ENGLAND

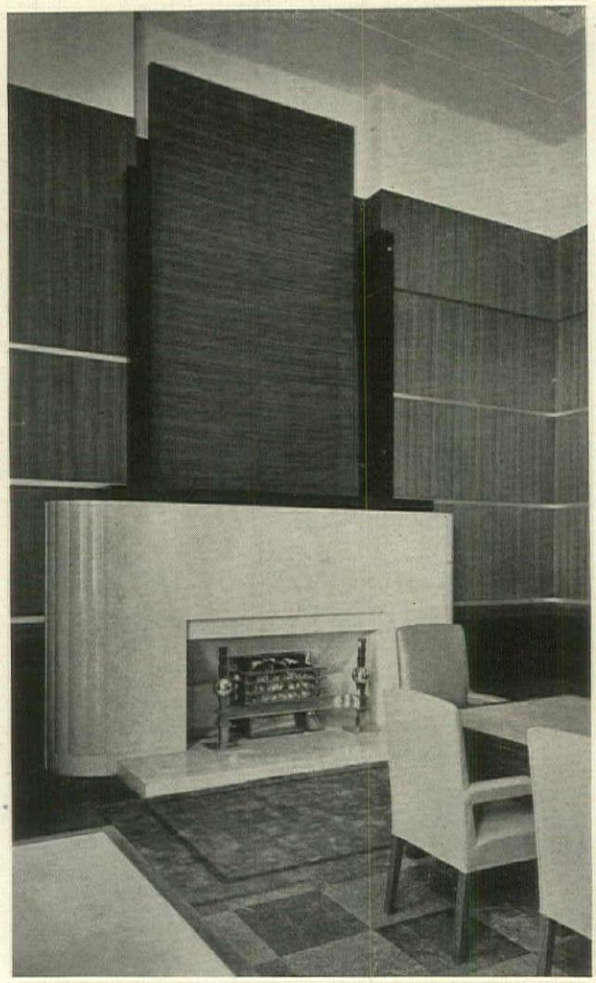
SIR JOHN BURNET, TAIT AND LORNE, ARCHITECTS

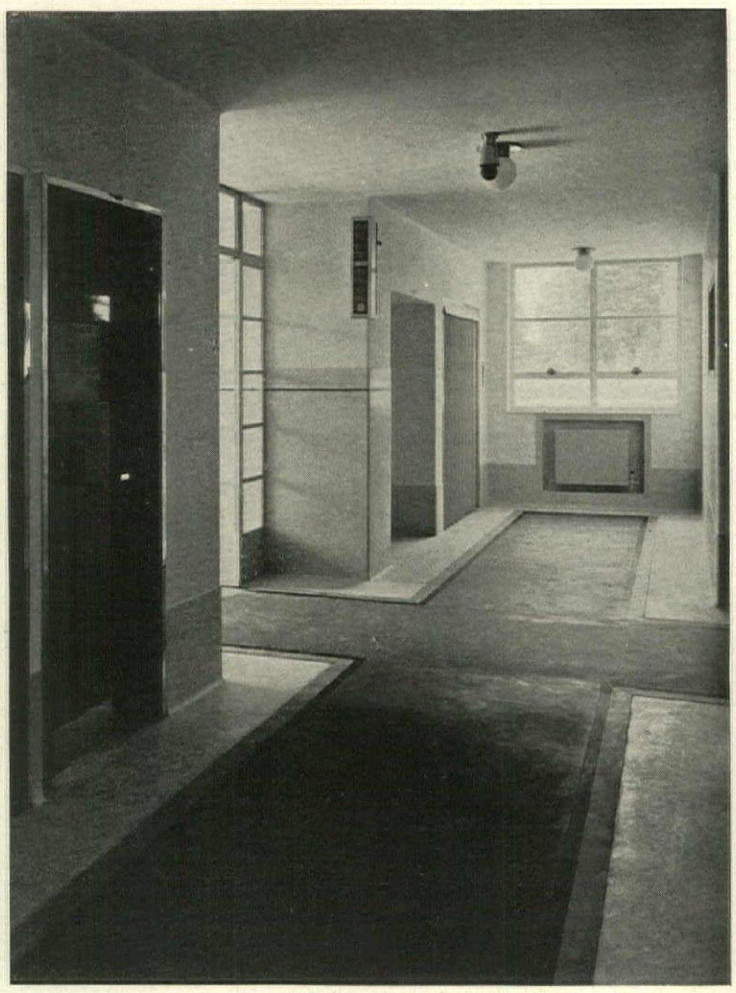


Construction: fire resisting throughout. Steel frame carried on concrete foundations; concrete floors and roofs; brick walls; terra cotta partitions. Each room in the Ward Block is sound-proofed. The Annex houses storerooms and the necessary mechanical services. Illustrated on this page; below, one of the ward balconies. Welding was necessary in their construction because of shallow floor depths. Columns are solid steel, encased in green terrazzo with gold mosaic bands. Right: doctors' entrance and staircase tower of Ward Block. The metal cornice forms a hanger for window cleaning cradles. On facing page: interior of stair tower in Ward Block



Right: An operating theatre, floors and walls, light green terrazzo. Ceiling, hard plaster painted light green. Metal fittings, stainless steel. Below, left: Board Room in Administration Building. Walls are lined with Australian walnut with a coromandel finish and horizontal gold bands. Floor, cork tile. Fireplace, Botticino marble. Illumination is concealed and indirect. Below, right: a typical corridor in the Ward Block



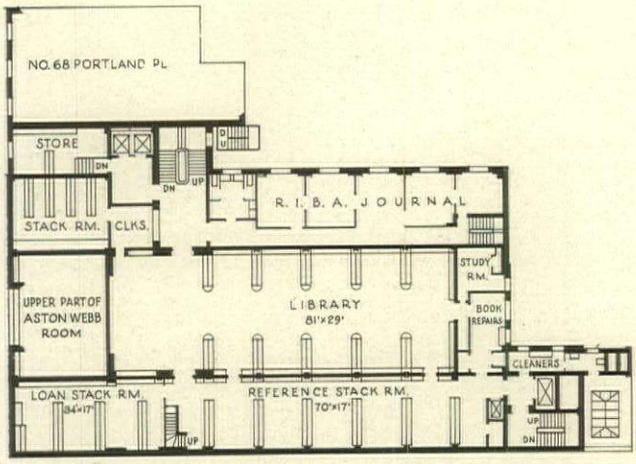


ROYAL MASONIC HOSPITAL, LONDON, ENGLAND, SIR JOHN BURNET, TAIT AND LORNE, ARCHITECTS

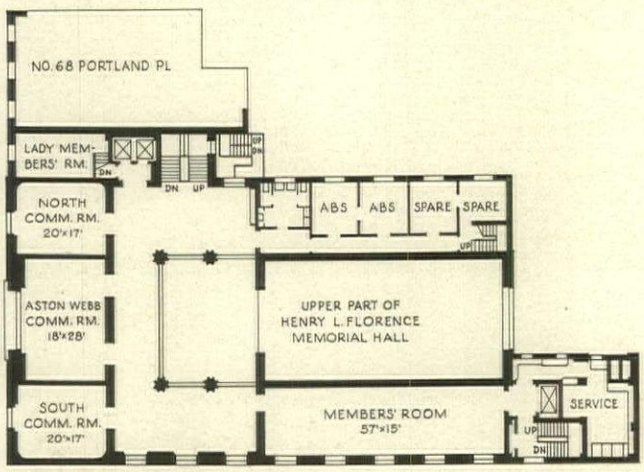
G. GREY WORNUM, ARCHITECT

THE R. I. B. A. BUILDING, LONDON, ENGLAND

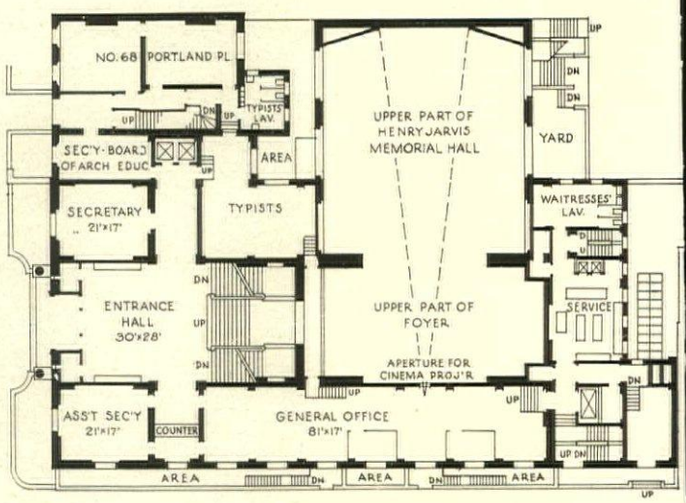
Photographs, Courtesy of The American Architects' Journal and Design and Construction



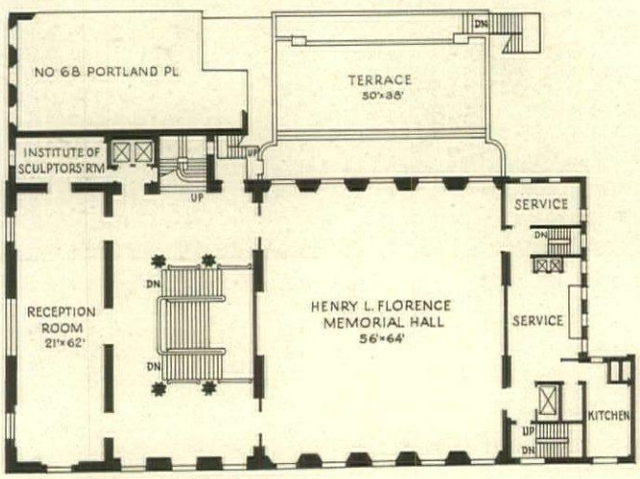
THIRD FLOOR PLAN



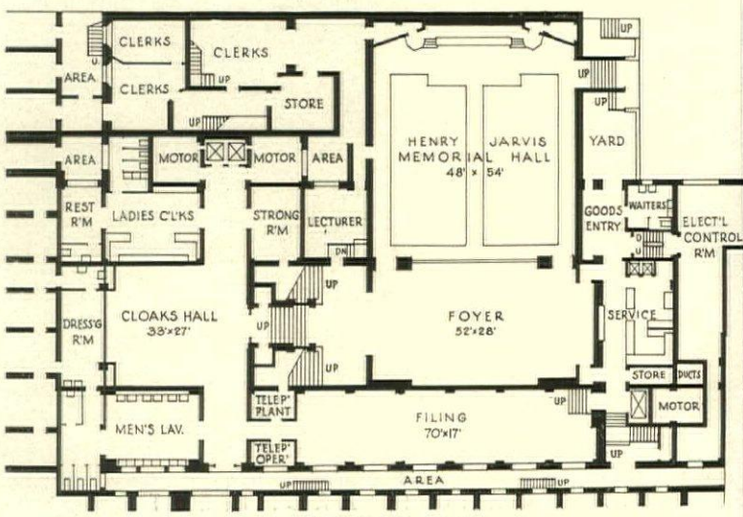
SECOND FLOOR PLAN



GROUND FLOOR PLAN

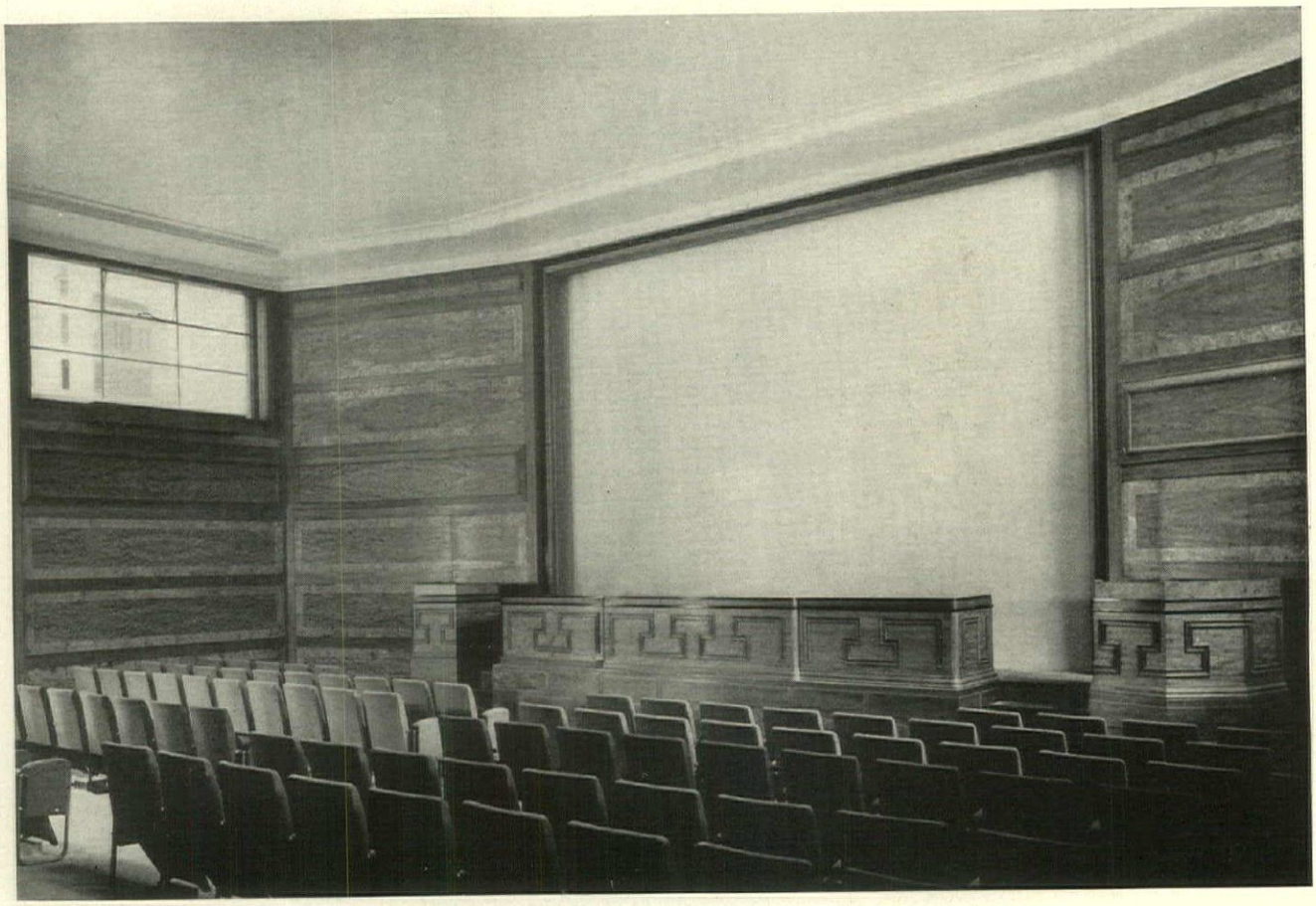


FIRST FLOOR PLAN

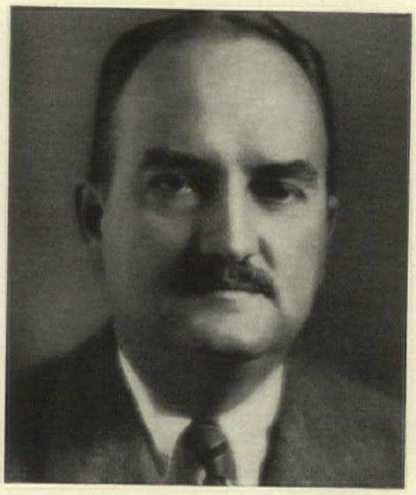


BASEMENT PLAN

THE R. I. B. A. BUILDING, LONDON ENGLAND, G. GREY WORNUM, ARCHITECT



Above: Henry Jarvis Memorial Hall, the meeting room of the Royal Institute of British Architects. Walls are paneled in figured teak, olive, ash and black bean. Ceiling is white plaster; the floor, Rhodesian teak. Right: Henry Florence Memorial Hall, the principal room of the Reception Suite. Walls are polished Perrycot stone, carved in low relief from designs by Bainbridge Copnall. Plaster ceiling reliefs represent the various building trades and were modeled by James Woodford. On the preceding page: a view from the stair landing toward the main entrance hall. Balustrades are of silver bronze and etched glass with concealed lights in the balustrade base. Treads, risers and columns are of marble



Architects... Wake Up!

BY STANLEY WORTH HAHN, A.I.A.

AN indictment of the architectural profession is implied in the heading of these paragraphs. Architects have lost business because of indifference and lack of confidence on the part of the public. They have lost professional standing because many of their activities have been assumed by others. They have been forced into positions of defense for want of strong organization and aggressive leadership. They have been isolated by their failure to make the most of changing conditions.

For their present situation—and the inevitable elimination of the profession if it is not changed—no one can be blamed but the architect himself, individually and collectively.

Aversion to public criticism, an attitude of aloof superiority, inadequate training in colleges and ateliers, a stubborn reluctance to face real facts and to take things as they are, an apparent inability to change a point of view in tune with changing conditions, a hide-bound disinclination to understand the attitude of practical business—all these have combined to shunt the architect away from the current of affairs and to exploit his once-free talents to the utter detriment of his professional standing.

These failings are serious and need correction. But the present predicament of the architectural profession demands immediate attention. Traditional forms of practice are being lost chiefly because we have made no real effort to keep them. By neglecting requirements of business organization architects are losing for themselves the right to independent practice. And, if business proves to its own various satisfactions that work can more efficiently be done within its own organization, the practice will continue—unless by better service, architects can justify their professional employment.

Government activity in the architectural field may not be pleasant to contemplate. But the condition exists. Time may prove the Government method wrong. But the work is within our sphere of activity. It promises to continue; and if our services are to be used at all we must meet the requirements that we cannot make ourselves. Let us adapt ourselves to the situation as we find it. Let us work in the fields that require us. Then let us organize our forces, clean our mental house of hindering notions. Not until then can we be in a position to extend these fields or develop new ones.

An agency is at hand to accomplish all of our objectives, but it is one that has failed thus far to recognize the forces that have been operating against architects. Consequently this agency—the American Institute of Architects—has failed to counteract it.

By self-imposed barriers and a dwindling membership the Institute, in its present form has been weakened to the point of impotence. It can no longer serve the profession in fact or implication as a representative body. Indeed, it can never do so unless it undergoes a drastic reorganization, a thing which should be the responsibility of every architect to help effect at once.

How can such a reorganization best be accomplished? Following are some suggestions that will serve, at least, as a basis for the necessary drastic actions.

First: Call a special meeting without delay, financed, if necessary, by a head tax imposed on every interested individual. The money might even be obtained from the Government as a self-liquidating loan. From the Carnegie Foundation $50,000, was proffered the American Bar Association to aid its activity. To accomplish its objective the Institute also needs aid which might be forthcoming from a similar source.

Second: Canvass every architect,—registered or non-registered whether a member of the A. I. A. or not—and every architectural organization for expressions of opinion on the present situation, the present organization of the A. I. A. and practical schemes for enlarging its scope and increasing its strength. Such a canvass could easily be accom-

plished by intensive regional drives directed by the existing force of the Institute.

Third: Consider the fact that the A. I. A. was founded in 1857. Then, in the A. I. A. Document, "Objects and Program" analyze each heading. Here are some points that might be considered toward the end of A. I. A. future virility.

Organization and Government: Instead of the present system of regional chapter divisions, why not establish a Chapter wherever there exists a group large enough to warrant it? Limit the size of Chapters. Form them into Districts. Join these into large Sectional Divisions defined by similar conditions of practice rather than purely geographical boundaries. Give these Sectional Divisions real power and more responsibility.

Objects: Properly interpreted the present general statement of lofty ideals needs no change. But its application should not be limited to a membership of Registered Architects only as has been suggested by many.

Functions: The A.I.A. Journal is an instrument to help accomplish the objectives of the body. Until recently it has been little more than a table ornament. Develop its unlimited possibilities as a valuable medium for distributing news and information.

Education: Let the organization establish a standard for rating colleges and aid in reorganizing college requirements. Let the Institute educate the public generally by greater concentration upon effective publicity.

The Allied Arts: Why should not the Landscape Architects, Painters, Sculptors and Craftsmen form their own Chapters as part of the A. I. A.? Much of their work is closely related to that of an architect or comes directly under his supervision.

The Structural Service Department: An urgent need exists for such a department which could be made one of the most valuable services of the organization. Much valuable information beyond that of how to develop a good filing system could be assembled and distributed. Its widespread dissemination would aid greatly in raising technical standards.

Registration Laws: Sponsor a uniform state registration law developed with competent legal help. Aid State groups to put it on the statute books. Many existing registration laws are easily evaded and consequently nearly worthless. Develop uniform and higher standards for registration as well as a better method for registration examination.

Committees: Too many of them exist, many completely inactive. Discharge those that do not function and make new ones only when required.

Public Information: Favorable publicity is one of the profession's greatest needs. Part of this can be developed by an experienced publicity representative, the cost of whose services would not be too great. Part can be accomplished through advertising by those architects who can afford it. The A. I. A. might well sponsor institutional advertising campaigns organized and directed by an experienced advertising man. In each case our need is to let the public know in its own non-technical language who we are, what our job is, and how we can help it to solve its various building problems. A long range program of education in the lower schools can be made a valuable part of a scheme for distributing public information.

The Schedule of Charges: Consideration must be given to all existing types of professional charges. Let each of the large Divisions of the Institute establish a schedule of minimum charges, in various forms, based on an accurate knowledge of costs and services rendered. Then let every man charge as little or as much as he desires, by the hour, on a salary, percentage, cost-plus or fixed fee basis. All these types now exist and cannot be eliminated.

Membership in the A.I.A.: Today out of 10,000 practicing architects in the United States—not to mention their employees—hardly more than 3200 are members of the A. I. A. This condition must be changed if the organization is to continue, much less thrive. Let us make the Institute truly representative of all those who contribute directly to the profession of architecture. Let all types of workers have their own Chapters. Accept their support and give them support in return. Only thus can the body become in truth representative of the profession and only thus can it gain the strength that is today so vitally essential. An inner circle with small membership builds barriers that in time will strangle it.

All these suggestions might result, perhaps, in an architectural organization which would be so far removed from the A. I. A. as we know it today that even a change in name might be necessary. There can be no harm even in this if the main objectives are accomplished. It would also be a sane procedure to eliminate the A. I. A. and the F. A. I. A. symbols. They are unnecessary. Let the public determine and grant such awards as architects deserve.

I am not under the illusion that all these changes can be brought about immediately. Naturally it will take some time to work out many of the details. But this should not prevent our taking the initial step *now* while the need is greatest. Sentiment among many of the younger architects of my acquaintance leads me to believe that many of these suggestions would constitute a welcome change from existing details of A. I. A. organization. I believe that they are needed. Architects have been a long time asleep. The longer they lie dormant the weaker they become. They must wake up!

The Legal Side of Architecture

BY CLINTON H. BLAKE

Blake & Voorhees, Counsellors-at-Law

Architect's Fees Can Be Protected by a Definite Clause In Contract

THE amount of the architect's commission and his protection with respect thereto in a case where the proposed building does not go ahead after plans and specifications have been prepared are matters which call for careful handling. What the architect is to receive and whether, indeed, he is to receive anything, will depend almost entirely upon the terms of the agreement between him and his client. Any such contract, in the ordinary course, will be recognized as proper by the courts and enforced by them. The important thing is to see that the contract is in proper form, so that, in case of an abandonment of the work, the compensation of the architect is provided for in clear and understandable language.

In a recent case in California, the contract called for the erection of a building "at a cost of $4,600,000." It further provided that the commission of the architect should be based upon the "actual, final, total cost of said apartment building." While the architect was preparing the plans, but before any work on the building had been commenced, the defendant gave directions to the effect that the proposed cost of the building should be increased from $4,600,000 to $6,000,000. The building was never constructed.

The architect sued for his agreed commission of three per cent., computed upon the $6,000,000. The defendant opposed, claiming that, with the exception of the direction which had been given to increase the proposed cost, there was no evidence to show that the parties had ever so changed their agreement with respect to the cost of the building as to entitle the architect to recover his percentage upon the larger amount. The court held:

"Since the apartment building was never constructed, manifestly it is impossible to determine its 'final cost.' Although it may be true that the corporation gave 'directions to and did increase the proposed cost' to a specified sum, it does not follow that either before the construction of the apartment building would have been commenced, or at any practicable time before its completion, the corporation might not have given 'directions' either to return to the original 'proposed' cost of the apartment building, or even to decrease in amount its 'proposed' cost. As far as the allegations of the complaint disclose, no agreement was entered into between plaintiff and the corporation concerning any increase in the cost of the building. According to the provisions of the contract between the parties, the corporation became liable to plaintiff only for 'three per cent of the actual final cost of said apartment building.' But since theretofore it had been definitely agreed by the respective parties to the contract that the apartment building would be erected 'at a cost of $4,600,000,' in such circumstances it becomes plain that that amount, rather than any other amount thereafter possibly contemplated by the corporation, should form the basis for the computation of the amount of the commission which would become due to plaintiff."

It is clear that the court proceeded upon the assumption that the direction to increase the proposed cost did not modify the contract between the parties with respect to the architect's fee. Had the parties, however, agreed that the contract should be amended by changing the cost figure, there would then have existed a valid contract, giving an agreed amount for the cost of the building.

The case illustrates the importance of inserting in the contract a clause which will properly protect the architect in case the work is abandoned. It has always seemed to me that the best way of obtaining this result is to have the contract provide that the proposed cost of the work is a stated amount and that, if the work is abandoned or suspended, the agreed percentage for the fee of the architect shall be figured upon such estimated sum.

Such a provision effectually removes any doubt as to the intention of the parties. It provides a specific measuring rod for the determination of the architect's commission in case of such abandonment. It does not prevent the architect from securing a larger commission if the cost of the work be increased in excess of the estimate, because of

deals merely with the contingency of abandonment.

The contract should contain, of course, the usual provisions under which, if the work be carried to completion, the percentage will be figured upon the actual total cost. There can then be no question that the architect will be entitled to base his commission upon the actual cost, whatever the contract provisions may be with respect to the amount of his compensation in case the work does not proceed.

THE furnishing of a cost estimate by an architect carries with it a goodly supply of dynamite. It is a matter with respect to which probably more than any other the architect should exercise special care and caution. Failure to do this may not only affect the amount of his fee, but also may prevent his receiving any compensation and may even subject him to damages. The problem can not be answered by a suggestion that the architect refrain from giving any cost estimates. In almost every case the client will wish to have some estimate of cost from his architect and will expect the architect to be able to furnish it.

The solution lies in making it clear—in the contract preferably, or if there be no contract, then by a letter or written memorandum—that the architect does not guarantee the estimate in any way and that, if the cost of the building exceeds the cost of the estimate, his compensation is not to be affected thereby. Even a direct statement that the estimate is not guaranteed may not be sufficient to protect the architect. This will hold if the circumstances make it appear on the whole record that the architect has given the client reason to rely upon his cost estimate and that the client has proceeded with the work in reliance thereon.

A case was decided on this point a few years ago in New York. Architects sued to recover their fees for the preparation of plans and specifications for certain school buildings. It appeared that, in seeking the work, the architects had represented their ability to produce buildings within the contemplated cost figures. In submitting plans and specifications, they gave an estimated cost figure. The architects stated that they could not guarantee the cost. But the court held that they were bound to know the erection of the buildings and their right to recovery were conditioned upon the cost being within the amount appropriated.

When bids were received, the lowest was 47 per cent higher than the architects' estimate. The school district thereupon abandoned the plans and specifications and refused to proceed with the work under them.

The court said:

"Defendant was about to submit the proposition to the district, and took the precaution to ask the plaintiffs to again give 'their close estimate of the prospective cost of the building' and asked if plaintiffs would give any 'assurance' or 'guarantee' that their estimates 'would cover the cost.' Plaintiffs answered that no one but a contractor could give a 'guarantee' as to costs, but gave further assurance of the reliability of their estimates by stating 'we have never yet failed to produce a building within the cost of the appropriation, when we have known the amount in advance.' In this case they knew the total amount of the appropriation submitted to the district and of that total that the sum of $95,000 was to cover the cost of the buildings.

"These facts clearly show that plaintiffs represented and assured the defendant of the correctness of the estimated costs, or at least that the cost would reasonably approximate the estimated cost, and that defendant accepted the plans, etc., upon the condition that the buildings could be erected for the cost as estimated, or at least for a sum that would reasonably approximate the estimate. The defendant and its members were warranted in relying upon these representations and assurances that the plaintiffs were capable of accurately estimating the costs of the building portion of the project and that the estimate given was correct or reasonably so when they accepted the plans. . . ."

"The employment of the plaintiffs was on the condition that they performed their contract, which included the giving of an accurate or substantially an accurate estimate of the cost of the building. Plaintiffs failed in this respect and thereby failed to perform their contract, and defendant was within its legal right in abandoning the plans and specifications and in refusing to proceed."

THE court also quoted Section 314 of the New York Education Law, which provides that

"No board of education shall incur a district liability in excess of the amount appropriated by a district meeting, unless such board is specially authorized by law to incur such liability."

and said:

"The limitation contained in the resolution as to costs was binding on both the plaintiffs and the defendant, and I am of the opinion that all of the limitations upon the authority of the defendant to deal with the plaintiffs must be read into and made a part of the contract. If these conclusions are correct, the plaintiffs cannot recover for their services of 1916 because of a failure on their part to perform the contract."

The court found that the architects had been employed, however, to prepare preliminary studies and had done so and that for these, as distinguished from the working drawings and specifications, they were entitled to recover.

The moral of the foregoing case obviously is that a mere disclaimer of a guarantee of cost cannot save the architect, if by his other statements and actions he has in effect represented that his estimates of cost are accurate and may be relied upon, and that in dealing with municipalities, school districts and the like he is chargeable with a knowledge of their legal limitations.

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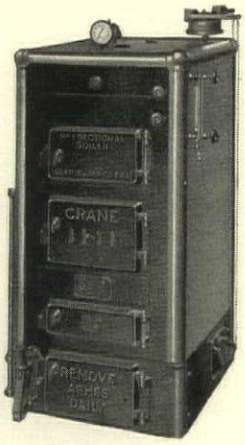

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The Readers Have a Word to Say

• SEES THE TURNING POINT

Editor, AMERICAN ARCHITECT:

IN your editorial of December, "Away With Pussy-Footing," you speak of the articles on "The Architect's problems, and how to solve them." I would probably agree with the authors on most of the things that ought to be done eventually, but perhaps from the following will be gathered what I think should be done now.

A good deal is being said about the sad estate into which the architect has fallen; suggestions, even, that he is a supernumerary, a parasite, that in this mechanized age he has become just a cog in the gear.

This somehow has a very familiar sound to me. I remember that when I started practice, back in the late nineties, I was planning how, along with the rest of the profession, I could best fit into the builder's organization.

That same bogey has raised its head at well measured intervals many times since, but nothing fearsome has happened and I question that it ever will.

Nor do I believe that the architect is becoming a "parasite" or a mere "supernumerary," for when I look back at the architect of the nineties and compare his position with that of today's architect, I just know that the profession occupies a position today. about one hundred fold more important

And further, I am quite sure, that with the amazing number of new materials, new methods, new requirements, and new styles, now at hand, the importance of the architect in the years immediately to come will be incomparably greater than in the decades just past, when the imitator, the copyist and the traditionalist could *"get by."*

Moreover, the profession never before numbered so many men who have the confidence and respect of the public, men who have been honored with positions of highest trust; and if we do not discourage the good men coming into architecture by what we say about it during the depression, we may look forward to even greater recognition.

Of course the quickest way to arrive at the parasitic state is to say loudly and publicly that we are going to the dogs; so even if I thought that the dogs would get us, which I don't, I would just now keep rather quiet about such a disaster, and instead would point out to the depressionists that in my experience, faith not wailing, courage not fears, counting of successes not failures,—these have been the starting point of anything I have ever done that has been successful.

And here are a few of the reasons why I am glad that I am an architect even in 1935.

1. Because, though the going has been heart-breaking, I can see the turn in the road.

2. Because there is great opportunity ahead; obsolescence, depreciation, new requirements and a country-wide underbuilt condition must soon be met with unprecedented building activity.

3. Because the architect will be more needed than ever before; he, alone, can express new materials and a new art conception in terms of building.

4. Because I like the company of the kind of fellows that can be hit the hardest and complain the least.

5. Because architecture has turned from tradition and started on a wonderful adventure. I want to go with it.

6. Because my profession is like my child, I love it because it is mine, I have given many of the hours of my life for it. It has hurt me, it has made me happy; we shall go on together to the end of the road.—*William Orr Ludlow.*

• THINKS OVERHEAD AN EXPENSE

Editor, AMERICAN ARCHITECT:

I NOTICE in the November issue of AMERICAN ARCHITECT a letter from Mr. J. T. Gillig bringing up the question of whether "overhead" can be charged as part of the cost in an Association into which he has entered. It is impossible to give a definite answer to him in this specific case without seeing the actual wording of his Agreement of Association. However, in general "overhead" is most certainly an expense. Those of us who have made a study of Architects' Bookkeeping Methods know that our expenses are of about four kinds,—

1—Drafting or actual services which can be apportioned directly to a job.

2—Incidental expenses such as blueprinting, travelling expenses, telegrams, etc., which can be apportioned directly to a job.

3—Time spent by office employees in general activities or on vacations for which they are paid, but which cannot be directly apportioned to any job, and—

4—General expenses such as rent, light, etc., which have to be paid for but have no direct connection with any one job.

The third and fourth items constitute "overhead." They have to be paid and they form an expense regardless of whether there is a job in the office or not. This is what causes a good deal of the difficulty. If there are jobs going on steadily in an office, it is more or less simple to determine how much overhead can be charged against each job. When, however, we have no job today, and a job tomorrow, our overhead expenses still go on, but it becomes more difficult to determine what is a fair amount to be charged against the job. I suspect that the difficulty in Mr. G's case is due to failure on the part of the three Associates to come to an agreement on what constitutes a fair amount of overhead. Consequently "B" feels that the overhead which he can charge is too small compared with that which "C" and "G" are charging.

In many offices in the past, an overhead of one hundred per cent of the cost of drafting was considered normal. I should suggest that the way out in this case is for the three associates to get together and agree on a uniform percentage for their overhead. If they do not do this and if the matter goes to court, it is my suspicion that the overhead will be considered part of the expenses by the court, but that the percentage charged for overhead would be determined by the jury.—*Denison B. Hull, Architect, Chicago, Illinois.*

• PATHWAYS OF THE SUN

Editor, AMERICAN ARCHITECT:

HEARTY congratulations on the very excellent article, "Pathways of the Sun" by Ernest Irving Freese, starting on page 46 of your November, 1934 issue of AMERICAN ARCHITECT!

The method of determination and the way in which it is presented are indeed most ingenious and should be of great interest and value to your readers.

After studying the article and the charts in some detail, I should like to suggest that the article might be improved if it included some data or some indication of the degree of accuracy of the results. For many architectural and engineering purposes, the results obtainable directly from the charts should be quite accurate enough, but not I think for all, and in any case the true technical man cannot feel comfortable in relying only on general assertions of

For the latest developments in linoleum decorative treatments, see the Congoleum-Nairn catalog in Sweet's for 1935. Illustrated in actual colors are the newest design effects in Sealex Linoleum and Wall-Covering . . . appropriate for every type of interior . . . ideal for new construction or remodeling work.

Information includes complete specifications . . . table of new linoleum gauges as established by U. S. Government standards . . . everything the architect and builder will want to know about linoleum floorings and linoleum-type wall-coverings. Architectural Service Department, Congoleum-Nairn Inc., Kearny, New Jersey.

acuracy, or on such general phrases as "without appreciable error." The sound scientific approach demands specific knowledge of the degree of accuracy of any data which are used.

Although all the charts are based on sundial time this is not mentioned anywhere in the text, and the average man, even the average technical man, has no clear idea of the differences and variations between clock and sundial time.

I hope you will understand that the great delight which the article has given me and my wish that it might be made even more useful lead me to suggest that the article would be greatly strengthened if it included information which would enable the readers to judge the accuracy of the results, and enable them to avoid the errors in the direct readings in any important case.

It is, I think, impossible for anyone to predict the purpose for which it might be desirable to use the charts or to foretell the degree of accuracy which might be required. Only the other day I ran across a news item which indicated a problem which must have required unusual accuracy of calculation. This item referred to the design of Australia's new War Memorial, the "Shrine of Remembrance," dedicated last Armistice Day. According to the description the wall of the inner crypt of the shrine has in it a "crevice so placed as to permit a ray of sunlight to enter for only four minutes at 11 o'clock on the morning of every Armistice Day" (from 10:58 to 11:02) and fall "upon the 'rock of remembrance' sunk in the centre of the crypt." The location and design of this "crevice" must have been a very pretty problem indeed.

To show you something of what I mean with regard to accuracy I can give you the results of some calculations which have been made to see whether the values directly obtainable from the charts could be used in my own work. As I think you know, astronomical work in my office is concerned principally with the orientation of fields of play for games and for this purpose it is important to *know* the direction of the sun at specific places during definitely limited hours of the day (by the clock), and during definitely limited seasons of the year.

As a sample calculation I have determined the position of the sun at Detroit, Mich. on June 21st, first for 9:00 A.M. Sun Dial Time from Chart No. 5 and then for 9:00 A.M. Central Standard Time by accurate calculations involving the longitude, the equation of time, etc. Detroit was chosen offhand because it shows up reasonably well the errors which the charts cause from variations in both latitude and longitude. If certain localities in western Texas were chosen as examples the errors would be greatly increased.

The results are as follows:

Time	*Method*	*Bearing*	*Altitude*
9:00 A.M. Sun Dial..	Chart #5	80°-12′	48°-50′
9:00 A.M.C.S.T.	Calculation	71°-34′	53°-05′
Difference		8°-38′	4°-15′

Or, putting the matter the other way, in Detroit, on June 21st, the sun will reach the bearing and altitude measured on the chart for 9:00 A.M. Sun Dial Time at the following hours:

Bearing: 80°-12′ at 8:19 A.M. C. S. T.; difference 41 min.

Altitude: 48°-50′ at 8:36 A.M. C. S. T.; difference 24 min.

The above calculated angle values are correct within about 4′ of arc and the above calculated time values are correct within about 1 min. of time. These slight inaccuracies are due to the annual variations of the equation of time and it is impossible to avoid them unless the values are desired for specific years only and not for the future.

The angle differences given above are actually greater than the differences in the values given on successive charts for corresponding points. As the article now reads, therefore, I think it may be justly said that the charts give an impression of greater accuracy than they really have.

To make my comment as constructive as possible, may I suggest that the article should include the following:

1. A clear explanation in the text that the charts are all based on sun dial time; and a measure of the accuracy of the results, by examples or otherwise, showing how far the charted sun dial time values may depart from the true standard time values.

2. Instructions to the users of the charts that if in any specific cases the errors are so great that they must avoid them, they must convert standard time (or daylight saving time) to sun dial time at the site under consideration before using the charts: also, instructions for making this conversion.

I feel sure you will understand the spirit in which I make these suggestions. The article is so very good that it deserves every possible improvement.—*Gavin Hadden, Civil Engineer, N. Y. C.*

The editors always welcome constructive criticism from readers. Thank you Mr. Hadden. You letter was referred to Mr. Freese, author of "Pathways of the Sun." His answer follows.—Ed.

Editor, AMERICAN ARCHITECT:

MY Charts in "Pathways of the Sun" are based on the following data:

1. Refraction and hourly change in declination of the sun were neglected; factors which, I am sure, are utterly negligible for the purposes to which an architect would resort to the charts—that is, "for the purpose of planning and orienting buildings." In fact, Gavin Hadden himself makes no mention of these factors, no doubt because, to him, the neglect of them is clearly evident by the fact that the apparent paths of the sun are shown as portions of true ellipses, though actually they are irregular spherical helices whose pitch would be the ever variable total daily declination of the sun. To state this to the average architect would be absolutely meaningless and cause confusion.

2. Each chart, without exception, is clearly marked "Sun Dial Time." This is true solar time. Hence, barring neglect of refraction and hourly change in declination, the charts are *graphically* correct for the specific latitude for which each is marked. By using solar time rather than the ever differing local clock time, the simplification which Mr. Hadden admires so much, was accomplished. To convert solar time to local clock time is a simple matter; look at a clock, or *vice versa.* Or, if some stickler for astronomical calculation insists on a mathematical conversion, a five-cent bulletin from the Bureau of Standards will yield the information required, including the necessary correction for longitude. This Bulletin is entitled "Sundials" (Circular 402) and is for sale by the Superintendent of Documents, Washington, D. C.

3. Obviously, the charts become approximate for any locality not exactly on the designated parallel of latitude—Detroit, for instance. The marvel is that they are as exact as Mr. Hadden has shown in his calculations, for, in effect, he has used the data for 40-degrees north latitude as applying to Detroit, that is all. And I maintain that even this, for the purposes to which an architect would put the charts is "without appreciable error." In fact, heretofore we have been content to take this particular parallel of latitude as representative of the entire United States, the average.

4. Chart 8 was worked out for the precise purpose of satisfying the "sticklers" for a greater degree of accuracy when the given locality departed greatly from the specific latitudes for which the other charts were worked out. It is to be regretted that editor of AMERICAN ARCHITECT saw fit to omit the qualifying last sentence of my original manuscript. This is it: "However, to make this data complete, Chart 8 shows an original and exceedingly accurate, but purely graphical method of determining the position of the sun at *any* hour of *any* day in *any* latitude. Hence, you may plot your own pathways of the sun, if such a degree of exactitude appeals to you."—*Ernest Irving Freese, Los Angeles, Cal.*

BRIEF REVIEWS OF MANUFACTURERS ANNOUNCEMENTS TO KEEP THE ARCHITECT INFORMED OF NEW PRODUCTS

New Materials and Equipment

Above: bedroom, designed by Ralph T. Walker, Architect, as part of the Metropolitan Museum's Exhibition of Contemporary Industrial Art. Walls are of Asbestos Flexwood. Right: New cabinet-type enameled iron sink designed by Crane Company for use in small homes and apartments

Asbestos Flexboard

388M A low-cost wall surfacing material made of asbestos and Portland cement, called "Flexboard," has recently been developed by Johns-Manville, New York. There are two styles of the new material, decorative Flexboard and standard Flexboard. Both types are available in plain sheets or scored with gray lines, forming 4-inch squares, to simulate tile. Decorative Flexboard is furnished with a lustrous wax finish in four pastel shades—green, buff, rose or slate. Standard Flexboard comes unpolished in buff-colored sheets and may be painted to give special tile effects. It is said that the new board is fireproof, does not rot or disintegrate, is flexible enough to be applied to curved surfaces, can be sawed and nailed like wood, and may be applied over existing surfaces.

Sunnyside Cabinet Sink

389M A new kitchen sink, designed for installation in small homes and apartments, has been developed by Crane Company, Chicago. This cabinet-type sink is made of cast iron with all exposed surfaces porcelain enameled, regular or acid-resisting, of the double drainboard type, 60 inches long and 25¼ inches wide, with 8-inch back. The basin is 22x 18x8 inches and is furnished with utility waste having removable cup strainer. Back, drainboards and basin are of one piece. The new sink can be furnished in white or in color and for either right or left corner installation, as a unit by itself, or as a part of a continuous table top cabinet layout.

Robertson Protected Metal

390M The H. H. Robertson Company, Pittsburgh, announces an improvement in roofing and siding materials by the development of Copper Covered Robertson Protected Metal. The exterior surfaces consist of Anaconda "Electro-Sheet" copper firmly bonded to asbestos felt which, in turn, is applied to the steel core sheet with asphalt. On exposure the copper surface gradually darkens to a deep brown and in some localities acquires a green patina.

Outlet and Switch Boxes

391M Outlet and switch boxes manufactured by National Electric Products Corporation, Pittsburgh, now have a new knockout, called the "Centr-pri," to facilitate removal of knockouts and to eliminate use of more than one tool in the operation. The "Centr-pri" consists of a slotted opening in the center of the knockout, so placed that the insertion of a screw driver and an upward and downward prying movement will remove the knockout in one operation.

Stainless Steel Wall Trim

392M A new type of metal trim made from stainless steel, designed for use with all kinds of flexible or rigid wall coverings such as linoleum, Bakelite laminated panels, rubber, asbestos tile, plywoods, hardwoods, glass, etc., has been developed by Wooster Products, Inc., Wooster, Ohio. It consists of a spring clip base and a tongued moulding section. The spring clip base is first attached to the wall in positions predetermined by size of material or design to be worked out. The wall covering material is then applied, the moulding being attached last by forcing the tongue into the spring clip base. The standard finish is "Woosterlite," which is similar to chromium.

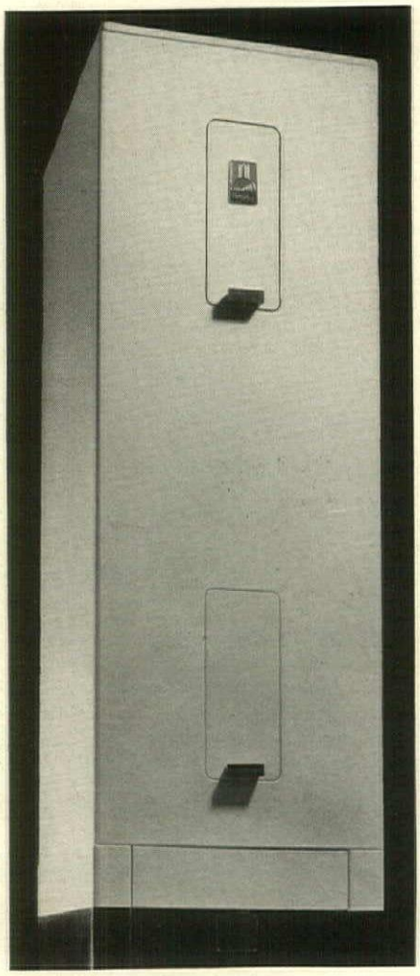
Westinghouse Light-O-Graph

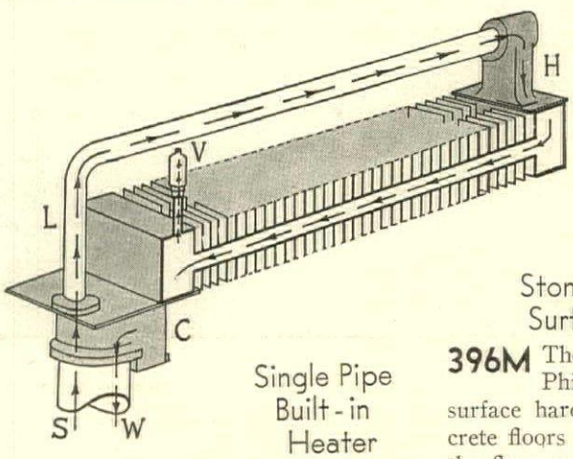
393M A simple device for determining lighting intensities, known as the Westinghouse "Light-O-Graph," has recently been devel-

oped by Westinghouse Lamp Company, New York. It consists of a piece of extremely sensitive photographic paper enclosed in a colored, light-proof envelope which has apertures through which the paper is exposed to the light. The sensitive paper, before exposure, is of light yellow color. As it is exposed to light it turns darker. In 2½ minutes, under the proper lighting intensity, the paper will become as dark, or darker, than the color printed on the protecting envelope; it will become lighter if the lighting is adequate.

Hotpoint Electric Water Heater

394M Styled in the modern manner with square corners and straight lines, the new "Vogue" model Hotpoint Electric Water Heater designed by Edison General Electric Appliance Company, Inc., Chicago, is ideally adapted for placement in the electric kitchen, the laundry or the modern home basement recreation room. It is finished in white baked enamel with an enclosed, black enameled base set back to provide toe space, and is of 40-gallon capacity. Features include heavy insulation, Calrod heating units with flange fittings that can be removed through side of tank, Thermosnap automatic temperature control switches, etc.





Above: Hotpoint Electric Water Heater finished in white and black baked enamel. Left: A diagram of the uniflow operating cycle of the new Simplex Convectofin built-in heater.

Single Pipe Built-in Heater

395M A new type of built-in heater designed for single pipe connection is announced by Commodore Heaters Corporation, New York. This unit, known as the "Simplex Convectofin," operates on the uniflow principle, with series-parallel circulation, and compensates for pressure loss. As steam enters, it travels up a loop over to a header and enters the heater proper. Air and water, if any, are pushed ahead, all flowing in one path but in the same direction. Air is eliminated by an air valve, while the water of condensation passes on through a compensator and flows from the heater out of the single pipe connection.

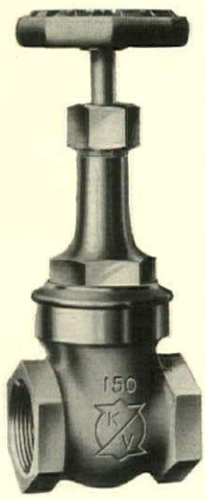
Stonhard Concrete Surface Treatment

396M The Stonhard Company, of Philadelphia, has perfected a surface hardening treatment for concrete floors which not only penetrates the floor surfaces to weld the cement and aggregate into a solid mass, but which also acts as a vehicle for a solid that fills and seals the surface pores, eliminating pockets that hold disintegration agents. The cost of treating a floor in this manner is said to be low.

Rubber Base Floor Finish

397M A rubber-base colored finish, known as "Super-Colorseal," has been developed by the Master Builders Company, Cleveland, for painting basement floors in residences, stores, churches, power houses and other concrete floor areas lying directly on the ground. A moisture-proof seal coat is first applied to the floor, then Super-Colorseal is applied with a brush 24 hours later. The new finish is said to stop moisture penetration from below, is tough and especially resistant to scuffing. It is available in eight colors, including tile red, brown, terra cotta, gray, dust, nile green and mahogany.

Gate Valves With Rising Stem



398M A new line of rising stem heavy standard bronze gate valves for 150 lbs. working steam pressure and 250 lbs. working water, oil or gas pressure is announced by Kennedy Valve Mfg. Company, Elmira, N. Y. The operating mechanism employs solid wedge discs, and a flexible connection is provided between the disc and the stem which prevents the stem from binding or springing when valve is closed. The stem is made of bronze composition with high tensile and torsional strength, and has a number of contact threads in the bonnet. This unit (known as Fig. 25) is a companion unit to Fig. 23 with stationary stem.

Utica Convector

399M The Utica Radiator Corporation, Utica, New York, announces development of a new cast iron convector designed for installation within enclosures. This convector is an assembly of cast iron sections (made in four lengths: 18, 23, 28 and 33 inches) with fins integrally cast. The standard assembly is four sections high but can be made more or less according to needs. It has the same operating characteristics of a direct radiator and both may be used on the same system with balanced results.

G-E Range Timer and Clock

400M The Range Division of the General Electric Company, Cleveland, has announced a new low-priced timer and clock for ranges, to be known as T20. The unit is fully automatic, with dials to control current to oven or appliances, and is Telechron motored.

SPECIFY G-E WIRING MATERIALS TO ASSURE FHA ACCEPTANCE

Neither in its program for new building nor its modernization operation will FHA tolerate poor-quality materials. The *wiring system* is one of the first items that local FHA offices sharply scrutinize. Play safe—specify G-E Wiring Materials and *know* that they will be approved.

BETTER HOUSING PROGRAM
FEDERAL HOUSING ADMINISTRATION

G-E White Explosion-proof Conduit, galvanized under the "Hot-dipped" process and then Glyptal-coated, resists corrosion, and is economical to install because it bends, cuts and threads easily. G-E Tumbler Switches, Convenience Outlets and Plates are durable and easy to install. Textolite used in the Outlets and for the Plates and Switch handles, assures durability and provides neat, lustrous appearance. G-E Safecote Building Wire is available in three easily identified grades which satisfy varying building requirements. Assures safe, economical, lasting service.

General Electric has prepared special literature to aid architects in selecting the right wiring systems and materials. Write immediately to Section CDW-241, Merchandise Dept., General Electric Company, Bridgeport, Conn.

Enter the General Electric Competition for design of the G-E House of Magic. See announcement, on pages 82 and 83.

GENERAL ELECTRIC

WIRING MATERIALS

MERCHANDISE DEPARTMENT, GENERAL ELECTRIC COMPANY, BRIDGEPORT, CONNECTICUT

GENERAL ELECTRIC

HOME ELECTRIC

$21,000

IN PRIZES

The purpose of this competition is to stimulate interest in home building and to encourage better designed homes from the standpoint of health, convenience, comfort and entertainment, utilizing the latest mechanical and electrical advances.

THE General Electric Company is naturally interested in making the American home more livable, through better planning and improved design.

In offering prizes of $21,000 for more livable home designs, it is General Electric's hope to stimulate the skill and ingenuity of designers to bring about better health, increased comfort, greater convenience and improved facilities for the home entertainment of the entire family.

There have been many architectural competitions that emphasized exterior design. But so far as is known, this Competition is the first that places major emphasis on the utilization of modern interior equipment. Exterior design will of course be a factor in awarding prizes, but the judges will give greater weight to the skill and ingenuity with which the architect has provided for the maximum health, comfort, convenience and entertainment of the family for which the house is planned. This family is described in detail in the Competition program.

The G-E Architectural Competition is divided into four classifications, as follows:

Class A—*Small home—Northern climate*
Class B—*Small home—Southern climate*
Class C—*Medium Size home—Northern climate*
Class D—*Medium Size home—Southern climate*

Equal prizes are offered in each class, as noted elsewhere. Each competitor may submit as many designs as he wishes—in any or all classes; and each design is eligible for a prize. In addition to winning one or more of the $1500 prizes, a competitor may also win one or both of the two $1000 grand prizes.

Any architect, engineer, draftsman or designer, ex-

ANNOUNCES A
COMPETITION

54 PRIZES IN ALL

GRAND PRIZE for Best Small Home (Best Home in Classes A and B)		$2500.
GRAND PRIZE for Best Medium Size Home (Best Home in Classes C and D)		2500.
FIRST PRIZE for Best Small Home in Class not receiving Grand Prize		1500.
FIRST PRIZE for Best Medium Size Home in Class not receiving Grand Prize		1500.
SECOND PRIZE, in each of the four classifications	$1250.	5000.
THIRD PRIZE, in each of the four classifications	1000.	4000.
HONORABLE MENTION, ten in each of the four classifications	100.	4000.
	Total	$21,000

cept G-E employees, is eligible to compete. The Competition will begin on January 2, 1935, and close at midnight, March 12, 1935. The judging by the Jury of Award will take place on March 19, 20, 21, 22 and 23; and announcement of prize winners will be made on March 23. The Jury of Award will consist of eleven members—seven architects representing different sections of the United States, one expert in child training, one home economics expert, one general contractor and one realtor. Names of jurors will be announced on March 19, the first day of the judging.

All entries will be judged anonymously—with only a nom de plume or other identifying device appearing on the drawings.

Prize-winning designs will be published together with the report of the Jury of Award.

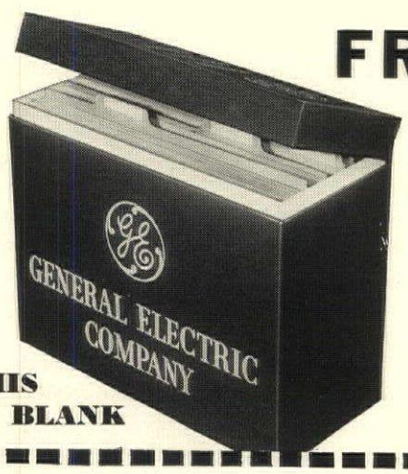
Competition Program and Handy G-E Reference File... Free to each Competitor

The coupon below is your entry blank. It brings you the complete Competition program and the G-E reference file. Fill it out and mail today.

For the convenience and assistance of competitors, we have prepared a handy reference file containing architectural data on all General Electric products used in home construction or equipment.

This file will be sent free to each competitor, along with complete information regarding the rules of the competition and requirements governing plans and drawings.

FREE



USE THIS ENTRY BLANK

Professional Advisor,
G-E Architectural Competition,
General Electric Co., Room 1208
570 Lexington Ave., New York, N. Y.

A.A.-1

GENTLEMEN: I desire to enter the G-E Architectural Competition for "Home Electric." Please send me full information and the handy G-E Reference File.

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Business Connection.....

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Address.....

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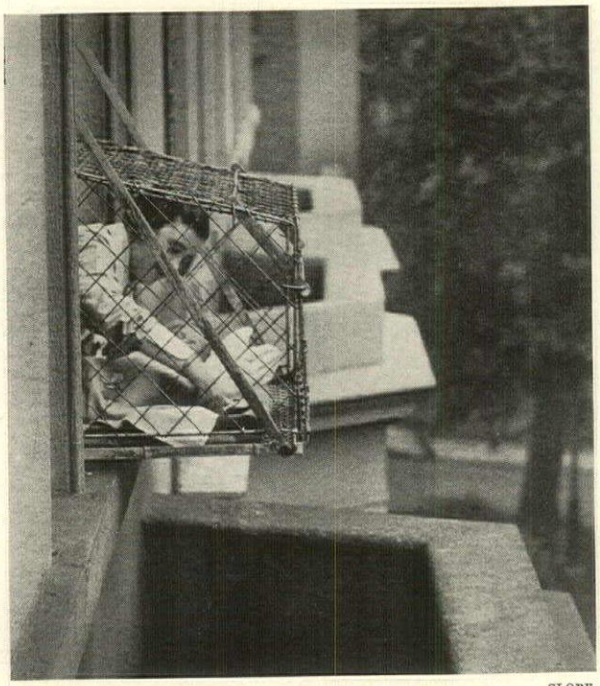
Trends and Topics (*Continued from page* 54)



GLOBE

Private "baby balconies" have been proposed by the Royal Institute of British Architects as a necessary part of every middle-class housing development. Wire cages such as this one are already in use by members of the Chelsea Babies' Club

• A solution to the difficulty of estimating the capacity of a library is offered in the November 15th *Library Journal* by Robert W. Henderson, of the New York Public Library. Mr. Henderson proposes the use of a standard unit for bookstack measurement called a "cubook," the volume of space required to shelve the average book in a typical library. Experiments have determined that a standard 3-foot shelf section 7½ feet high contains 100 cubooks.

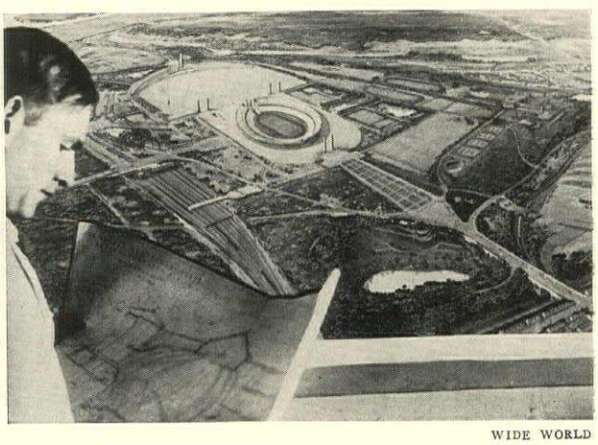
• According to *Construction,* official bulletin of the Construction League of the United States, the FHA is finding it difficult to put immediately into operation the provisions of NHA Titles II and III. In several states existing laws prohibit many institutions from lending over 40 to 60 per cent of the value of the property. These laws must be amended before agencies can lend up to 80 per cent as authorized by the National Housing Act.

• A novel method of building was employed in constructing the dome of the Hayden Planetarium in New York. Slabs of rock cork, 1½ inches thick, were applied to an ingenious system of self-supporting centering. Over the coke, Gunite was applied to a thickness of only 3 inches from 9 feet above the spring line. The Gunite is reinforced with three layers of ¼- and ⅜-inch rods. Exterior insulation consists of a 1½-inch layer of Nailcrete sheathed with 16-ounce copper. The dome is hemispherical and has a span of 80 feet. It is the largest planetarium dome in the country. The projection surface inside the structural shell will be of stainless steel perforated so that sound will be absorbed by the cork. Architects for the Hayden Planetarium were Trowbridge and Livingston.

• Reference data that appeared in 1934 issues of AMERICAN ARCHITECT have proved valuable and interesting to architects even beyond the dreams of the editors. More articles of the same type will be published during 1935. The February issue will contain reference data on Roofing Materials. It will deal with factors affecting choice of all types of roofings for both flat and pitched roofs and will include information on roof insulation and ventilation.

• "When You Build," the booklet issued by AMERICAN ARCHITECT to help architects promote business, seems to be exactly what the profession needs right now. Thousands of them are being distributed by individuals and under sponsorship of architectural organizations. The St. Louis Chapter of the A.I.A. is planning a widely publicised Modern Home Exposition to be held in the new Municipal Auditorium at St. Louis from January 5th to 19th. Frank Cann of the Exposition committee has made a digest of "When You Build" in the form of a poster 36 by 82 inches. This is a showmanship idea that might work well with similar expositions sponsored by other chapters of the A.I.A.

• Twelve billion dollars must be spent yearly for construction before prosperity can be returned to the building industry, according to a statement recently issued by V. G. Iden of the American Institute of Steel Construction. Mr. Iden said volume was necessary to rehire the 5,000,000 unemployed men, who once found work in the industry.



WIDE WORLD

Model of the reconstructed and enlarged Stadium in Berlin, Germany, where the 1936 Olympic Games will be held. Werner March is the architect of the project

An Economist Analyzes Building

(*Continued from page* 8)

that through the RFC the Government will extend up to half the capital required by mortgage trust companies or national mortgage loan companies as the case requires. Advances will be gradually amortized over a period of years. Mortgages made under this plan will be insured, reserves for this purpose being accumulated through a premium of one half of 1 per cent annually added to the interest charge. The initial insurance reserves will be supplied by the RFC.

It is expected that this method of financing will gradually eliminate the second mortgage and will obviate or reduce many of the high secondary financing charges and fees usually prevailing in the field. Under this plan the Government aims to encourage the use of private capital rather than to compete with it in the building industry. Of major importance in retarding the active operation of this plan at the present time is the great uncertainty about the monetary policy of the Government. This will be discussed later.

The slow progress made along these lines is now causing a revival of interest in the idea of an outright subsidy by the Government to those who will undertake building operations. This idea was first advanced about two years ago as an essential part of the so-called "Rorty Plan" and was conceived as a lure to tempt an otherwise hesitant prospect to proceed with his building. Under present conditions this could be interpreted as an actual subsidy to the building trades inasmuch as the prevailing high costs of material and labor are an actual deterrent to new operations.

Public Works Administration: Much of the discord now prevailing among the construction groups in the Federal Government exists in the disagreements between the Federal Housing and the Public Works Administrations. The former is committed to the recovery of building activity through the use of private capital. The latter is busy devising plans for greatly increased expenditures not only in public works where private capital is not directly involved, but also on a large scale in the field of slum clearance and low cost housing. This would not only commit the Government to a greatly increased public debt, but would afford direct competition in the natural field for private capital. So many wild and conflicting statements have appeared regarding the amounts of money to be expended under these plans that it is useless to hazard a guess as to what the intentions are. The great disagreement and conflict in objectives between these two groups are all the evidence required to show an almost complete lack of understanding of the problem and of co-ordination necessary to meet it. Both cannot prevail and ultimately there must be a show-down.

From a survey of actual conditions and a study of the principal efforts of the Government to effect improvement in building activity, what conclusions can be drawn concerning the immediate future trend of the construction industry? In brief, we are not warranted in assuming an immediate upturn of any major importance under existing conditions. The Government's efforts will probably continue to be non-productive, although the effort is great and expenditures heavy. In explaining the reasons for the conclusions, attention should be called to the building classes chosen for stimulation by the Government, the financial and monetary conditions prevailing and the present levels of building costs.

FROM the very beginning of the depression the Government has emphasized an increase in public works and public building as a means of decreasing unemployment and inducing recovery. This has been and will continue to be non-productive of the desired results for two reasons: First, any amount of public building which the country can support will still be such an extremely small proportion of normal building that its leverage in promoting an upturn will be entirely inadequate. Second, the great increase in public debt caused by abnormally high expenditures by the Government is a great deterrent to the investment of private capital.

Tremendous emphasis has been placed on public works in past months and the debt thus created will require years for payment. Nevertheless, public works activity in 1934 had attained only 59 per cent of its 1931 level, when private investment was more nearly in its normal proportion. As suggested previously, the Government's whole attitude toward the utilities—whether justified or not—must prevent the investment of capital necessary for recovery. The constant threat of great housing expenditures by the PWA must, of necessity, act as a brake on the investment of private capital which never can afford to compete with public capital in the same field.

Furthermore, each increase in public debt must reduce the living standard of the citizens. An increase in public expenditures substituted for private investment does not increase the income of the average citizen. It does, however, increase the proportion of his income required to meet the public debt and thereby decreases the amount he has to spend for himself and family. Therefore his standard of living is reduced. Private capital must flow freely into building construction before it can rise from the depths. This seems to be realized by the FHA, but not by the PWA.

ATTENTION has been called to the residential building boom in England as contrasted with the poverty levels reached in this country. The contrast is striking, especially when it is realized that there has been very little governmental stimulus furnished in England. The lesson should be driven home.

It is significant that construction costs in England declined appreciably between 1929 and 1932, thereby encouraging the resumption of building.

If the effort of the FHA, is directed to encouragement of private capital in building and if the need for additional housing exists, why has such slow progress been made? The answer lies in a large measure in the failure to sense the real source of residential building as well as in discouraging cost and monetary policies.

Almost the entire effort of the FHA is directed toward the encouragement of the "owner-builder" as distinguished from the "contractor-builder" who builds to sell. While no real statistics are available on the question, estimates from various sources indicate that normally 70 per cent to 75 per cent of the homes built in this country are built by the latter class of builder. Thus it seems that the Government is again concentrating its recovery efforts on the small end of the market. *Capital must be given the opportunity to make a profit if the industry is to revive.* At the present time, most of the attention is being given to the 25 per cent and but little to the 75 per cent.

ACCORDING to an average of building cost indices, the cost of building in the latter part of 1934 was about 92 per cent of its 1926 average. As compared with this, farm products were at 71 per cent, raw materials at 72 per cent and finished products at 79 per cent. The higher the cost of a product, the fewer people there are who can afford to buy it. The continuing high point at which building costs are pegged will result in further postponement of construction activity. It has been rumored that some government agencies, realizing this situation, have urged a reduction in material costs and labor rates only to encounter firm resistance to such revisions. *Costs must come down.*

A most important point that apparently receives little consideration is that building construction requires long-term credit; and long-term credit is hazardous when the dollar is in danger of further amputation. Losses through devaluation are gone beyond recall on money tied up in long-term loans. Owners and custodians of funds subject to demand would be exceedingly foolish to lock them up in long term loans so long as there is serious question about the future value of the dollar. Rather should such funds be kept in liquid condition, ready for conversion into stocks, commodities or other channels offering protection against loss in purchasing power. There is nothing academic about this point of view. On the contrary, it is intensely practical as is well realized by mortgage holders in Germany and France where money tinkering left such securities almost worthless.

IF present conditions are so unfavorable to the extension of credit, the point may be properly made that they should be favorable to the borrower. If this be true, there should be a more active demand for building funds. The high costs previously mentioned discourage such action. Moreover, in times of such uncertainty as the present the prudent man hesitates to commit himself to any more long term obligations. The same conditions that make extensions of credit of doubtful wisdom make future income increasingly precarious. Confidence of both buyer and seller are necessary to close the deal.

Reasons advanced for the virtual stalemate that now exists are fundamental and strike to the heart of the problem. What is necessary to bring activity out of stagnation? These points may be stressed:

1—*Public Works expenditures must be reduced to normal proportions and confined to the natural channels for public effort.* This will eliminate competition with private financing and permit the balancing of the budget at an earlier date, thereby encouraging the flow of funds to building construction and other heavy industries.

2—*Inducements offered to private construction should include the 75 per cent of house builders who build to sell.* They must be given an opportunity to make a reasonable profit which is not possible under present conditions.

3—*Cost of construction must be reduced.* While exerting much effort to bring dormant demand to life, the Government is at the same time discouraging such revival by its aid in pegging costs at levels out of proportion to income and to other product costs. Minor decreases in interest charges do not compensate for these inflated costs of construction.

4—*The dollar must be stabilized and placed beyond the risks of political trading.* The Government offers insurance against reduction in collateral value of mortgage loans, but offers none whatever against a declining value of its own currency. The intelligent owner of funds will not place them beyond his reach in long-term loans when he has *no knowledge of or control over* what he may get in return.

IN general, the Government must cease firing shotgun blasts at all points of the compass. It must direct a few rifle shots at well defined targets on its own range. If, and when, this is done, building construction will come back into its own by thoroughly natural processes and architects will once more have work. Large projects move slowly. What we need is a lot of widely distributed little ones that can get under way in a hurry. The inability to do this is only one of the weaknesses in the Government's plans.

It is generally held that any improvement in construction, arising either in a more elaborate spending program by the PWA or in the operations of the FHA, cannot get under real headway before the middle of 1935 at the earliest. Unless plans are revised they will still be subject to the criticisms previously made. Small and moderate priced housing will show the first favorable reaction. Progress will come rapidly if the artificial obstacles are removed from the path, but it does not seem probable that normal volume can be attained in construction as a whole before 1937. There is so much room for improvement between the present level and a normal one that reasonable progress in this direction will provide much real encouragement. *Business will come back.* In the meantime, those architects that study their markets wisely will be the best fortified and the least disappointed.

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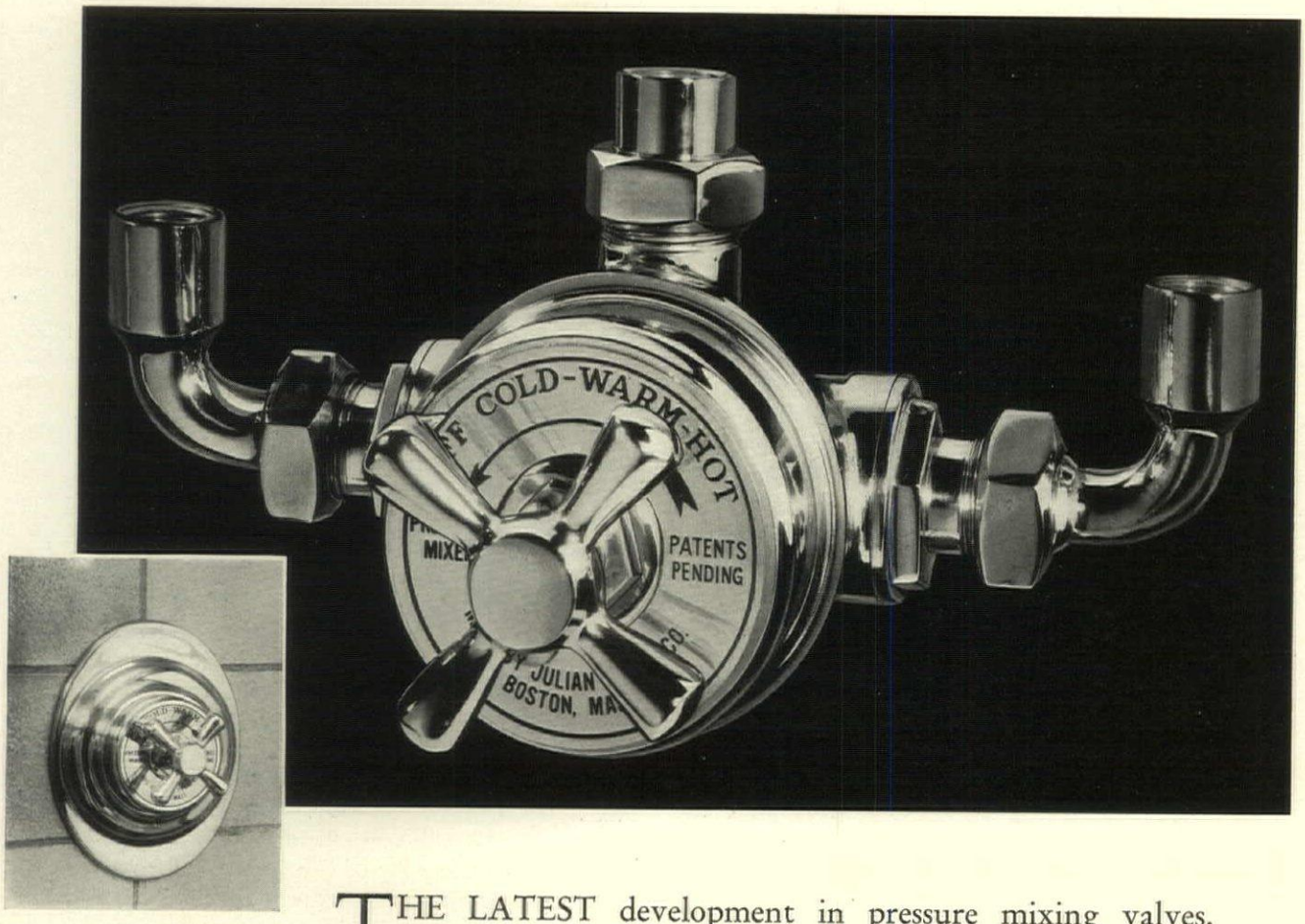

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Contemporary Problems of the Architectural Field—(*Continued from page 57*)

can only come out of, what has hitherto been put into architectural treatment. This will force us willingly or unwillingly to adopt much simpler terms in Architecture. It will force us, too, well over into the field of standardization and mass production in building and an entire revaluation of the materials entering into construction. It will force us to the consideration of many of the synthetic materials on the market eminently appropriate for their purpose, but until now sedulously cold-shouldered by the profession as not genuine stone, brick or wood. I suppose we think because brick goes back to the Pharaohs, it is not in a sense a synthetic material. I hope, however, in the increasing use of synthetic materials we shall drop the tendency to make them look like stone, marble, glass or wood but be honest about them and treat them on their own merits.

We must not forget that we are entering an entirely new age of building when our work will date almost as quickly as a woman's gown; an age where suitability for purpose will become increasingly important and where flexibility will be important too. It will be essential that buildings be assembled with a view to change and their lifetime will be much shorter than in the past. The conditions of life are changing so rapidly that it is well nigh impossible for us to build beyond our own generation and more difficult for us to dream of what our children will require. The nonsense of building for hundreds of years must be exploded. It must be apparent to most people that buildings today are scrapped not because they are decayed but because they are out of date.

IN order to grasp the principles which underlie this new movement and be able to plan for it, the architect must have a knowledge of the social conditions in which he lives and of the economic laws which govern his living. He will tend as years go by to be less concerned with abstract theories of esthetics and more concerned with the growing demands to improve the living conditions of his race. Conditions will demand of him a much wider knowledge and use of the scientific inventions of his day and it will be incumbent upon him to use these for the creation of a new type of building providing greater amenities of living. He will tend, therefore, to use less and less the materials which have been handed down to him by his fathers and more and more the materials of his own more scientific invention. He will have to approach his problem with the attitude of the scientist and be guided in his work by fact more than by romantic sentimentalism. He will tend less and less to be just a perspective and elevational monger or dealer in ornament and more and more an intelligent well-informed planner for humanity.

This leads us to our fourth problem of how we can develop a greater national and civic sense.

Being active physically and lazy mentally has led us so often to act before we plan, trusting to our instinct to lead us out, and what has been true of the nation has been equally true of the architect. How often we rush to do a little piece of planning here, a little piece of demolition there, and a little piece of building in the other place. How often have we heard the words to a builder, "Just get in an make a stir to show that we are really doing something." We all know exactly what it means. It means literally nothing at all, and is usually a complete waste of time. It is perhaps our worst trait. How much better it would be to sit down and think the whole problem out, draw it out and when we have decided, first, what we want, and second, the best and easiest way to achieve it, then to act methodically. We shall get much more and get it much more easily and pleasantly.

I THINK this generation has gained something from the organized experience of the later years of the World War. I feel the next generation will plan its life as the modern manufacturer plans his factory and his business, that is, an organized sequence of events from the reception of the raw material to the marketing of the finished product. To do this we must bring some order into our thinking, our drawings, our buildings, our streets and our cities. We must plan them scientifically and we must plan them artistically. If we do we shall probably be able in another generation to bury gracefully and quietly our national shame of just letting things happen.

Our schools of architecture hold the key to the situation wherein the youth of the profession can be trained not in academic theories, but to a sense of its responsibilities in planning and designing for the present day to meet its practical, economic and esthetic requirements, to develop homes, buildings and cities wherein can be fostered a sense of freedom and a joy in work and play. We must remember that modern Architecture is the expression of an entirely new philosophy of life. It is concerned with simplicity, directness, the fitness of things, and a profound conviction that the amenities of life which existed formerly only for the few shall be extended to all. It is not much concerned with exclusiveness, insincerities, shams, decorations and sentimentalities. It will work out its own life and make its own set of values. It is not for us to worry about the sphere through which they will come, but come they will, if they are not in a large part already here. It is our job as Architects to plan for them and not live in a dream world of architecture as an idealized conception surrounded by the glamour, motives and symbols of tradition.

BEFORE we can do this we must clarify the thinking of our profession. This leads us to the fifth problem of how to develop a new professional sense.

(*Continued on page 90*)

GOTTSCHO

DETAIL of wall treatment in Men's Bar, Waldorf-Astoria Hotel, New York, more fully illustrated elsewhere in this issue. Field, figured Brazilian Rosewood, book matched; dark and light border, ebony and holly; ribbon border, quartered French Walnut. Most of the fine woods used throughout the Waldorf-Astoria Hotel were supplied by Ichabod T. Williams & Sons. Schultze & Weaver, architects.

Before we can encourage the people of the country to think civically and nationally about Architecture, it will be necessary for us to think this way ourselves. At the present time most of us are like a radio which has a limited dial and can tune into only one or two stations. What we want as a profession is an enlarged architectural dial so that we can tune into a variety of ideas and experiences. To explain this more clearly let us take a very simple household article like the telephone. Most of us can remember the introduction of the first telephone and what people did with it. They hid it in odd corners or they installed it in boxes because its form was unusual to them, and because it was unusual, it was to a certain extent repulsive. Through the years, however, the value of the telephone impressed itself upon people's reason and their reason has so affected their esthetic sense that they have grown to accept the telephone in a perfectly normal way.

IN other words, they have been able to tune into another station in their experience. This is true of most people in life, and it is this capacity which we want to create in our profession if we are to be capable of guiding the public which we serve. Most of us think individually and not collectively. We think of our one job and not of its relation to the street in which it stands. We think of our one street and not of its relation to the city of which it is a part. Our professional training has led us to think archaeologically rather than architecturally, with the result that we are repeaters of thought rather than creators of new ways of living. We are obsessed with protecting, isolating and improving our professional standing as professional men. We think of fees and the ethics of behaviour much more than the service of Society.

This is why we have not yet developed the idea of devoting our professional knowledge to the raising of the standard of the living of the race, and even the few of us who have caught this new point of view have not yet been able to extend it beyond the standards of today to embrace the standards of tomorrow. Very few of us realize that in putting up a building it will stand for at least a generation and how incumbent it is upon us to do more than put it up merely to present-day standards. We have not done this because we have not enough knowledge of the social and economic sciences and the directions toward which present-day Society is tending.

MANY of the difficulties we experience in the practice of our profession are attributable to our wrong thinking. In our difficulties, like everybody else, we attribute them to the wrong thinking and behaviour of the rest of Society and not to the wrong thinking and behaviour of ourselves. We tend too much to withdraw behind the screen of professional etiquette and professional standing instead of openly entering the field of experience of our race, understanding it and striving for its solution.

To sum the matter up, we find we have two conditions of life and expression, arising out of two points of view. We still have the remnants of the Tennysonian age of Romance of our Victorian forefathers coloring the lives of many of our fellow-countrymen and women. Many of our young women still think in a diluted form of the fair knight on the white horse who will carry them into the realm of their dreams and very little of idealizing the actualities of ordinary marital existence. Many of our young men still dream of Cathedrals, Palaces and Castles in Spain and very little of idealizing the humble homes of their fathers or bringing order and pleasantness into the doings of this work-a-day world.

BETWEEN these two points of view there is a great gulf and into it most of our heroes and heroines fall. This gulf will never be bridged by simply putting up with life as a bad job and dreaming wearily of another sublimer world. It will only be, and can only be bridged by taking the conditions of life we have and turning them into as much of the sublime as we can. It is a difference in ideals only, but what a difference, for the former is negative and unreal, while the latter is positive and very real. This difference of ideals runs through our profession as it does all professions and between them a great war still rages. It is a war between idealized thinking "per se" and the idealized treatment of the actual verities of existence through idealized practical experiment. Until this difference is ironed out we shall never be able to produce for ourselves or for our children an idealized world. This is, the real Architectural problem of the 20th Century.

FINALLY, above everything else, we must always strive for excellence in our work, irrespective of the profit to be made out of it. This striving for excellence, or, in other words, the "ideal motive" must permeate everything we do, as it will eventually permeate all art and all business. The wild scramble for profits, which is so common around us, cripples art, professions, and nearly all business. Anything done for profit alone, or with the idea of bringing notoriety is false, for profit disappears and notoriety is short-lived, but the ideal solution of a building problem, for its own sake, has a lasting quality.

The power and splendor of older civilizations have passed, but many of their buildings still inspire us, and we are able, through them, to catch something of the spirit of those who worked, not for profit or glory, but for those qualities which we call the ideals of the human race. We must build in the spirit of these men, not necessarily in their style, for if they were to build to-day they would express this age in its own way, as they did their own. We must approach our work with this ideal and strive always to raise the standard of environment of our people for living, working and recreation, not only for the few, but for all, and arrange the requirements of this generation with as much beauty as we can capture from that store of beauty which is around us as the heritage of all peoples.

PERSONALS

• If you change your address, please report the change direct to American Architect five weeks before the change is to take effect, sending both old and new addresses. The Post Office will not forward copies to your new address unless extra postage is provided by you. Our request is made to save you this expense and to assure the receipt of your American Architect promptly.

• M. H. Furbringer has withdrawn from the firm of Jones, Furbringer and Jones of which he has been a member for nearly thirty years. Although Mr. Furbringer will continue his practice of architecture at his present address, 101 Porter Building, Memphis, Tenn., his time is largely occupied by his duties as State Architect Advisor for the HOLC, Deputy Administrator for the Lumber Code and Chairman of the Memphis Housing Commission.

• T. P. Barnett Company, architects, of 1571 Arcade Building, St. Louis, Mo., announces that Sylvester G. Schmidt has been admitted to partnership in the firm.

• Richard E. Schmidt, of Schmidt, Garden and Erikson, Chicago architects, has been appointed Commissioner of Buildings for the City of Chicago.

• J. Lawrence Hopp, architect of 508 Third Avenue, Pittsburg, Pa., would like to receive manufacturers' samples and literature to complete his files.

• M. G. Holmes, Superintendent of Buildings and Grounds, Pillsbury Academy, Owatonna, Minnesota, requests that manufacturers send him catalogs concerning building materials and devices.

DEATHS

• Edmond J. Eckel, dean of American architects, died December 12th at his home in St. Joseph, Mo. He was 89 years old. Mr. Eckel was born in Strasbourg, Alsace, studied in L'Ecole de Beaux Arts in Paris, and came to the United States to practice architecture in 1869. In 1880 he formed the firm of Eckel & Mann, later changed to Eckel & Aldrich. Mr. Eckel had long been recognized as one of the most successful architects in the Middle West and a leader in civic and professional affairs. He designed most of the outstanding buildings in St. Joseph and many others throughout the Missouri and Mississippi valleys. Associated with him in later years were his son, George R. Eckel and Will S. Aldrich, both members of the American Institute of Architects of which Mr. Eckel had been a Fellow since 1889.

• Joseph Cutler, President of the Cutler Mail Chute Co., died December 30th at Rochester, N. Y., at the age of 87. Mr. Cutler was born at Albany and started to practice architecture in Rochester with his brother, James Gould Cutler, in 1880. It was during the design of an office building that the Cutler Mail Chute was developed. This became so suc-

cessful that in 1884 Mr. Cutler abandoned architecture for manufacturing. Mr. Cutler was active in civic affairs. He was a member of numerous clubs, including the Architectural League of New York.

• Richard Hooker died in Boston, October 24th, 1934. He graduated from the Massachusetts Institute of Technology in 1889. For many years before his retirement in 1927 he had been associated with the firm of Longfellow, Alden and Harlow of Pittsburgh. He was a member of the American Institute of Architects and had held a succession of offices in the Pittsburgh Chapter, being also an active member of several Institute Committees.

ANNOUNCEMENTS

• Dean Joseph Hudnut of the Columbia University School of Architecture has announced a Seminar on the plan of New York to be given by Dr. Werner Hegeman, now a visiting professor at the New School for Social Research. Dr. Hegeman is a city planner of note, a landscape architect and a former editor of two planning and architectural journals in Germany. The seminar, which will include an analysis of the regional plan of New York, will begin in February.

• The program for the Le Brun Scholarship Competition for 1935 will be issued about January 21st. Drawings are due at the office of the Scholarship Committee, Room 732, 522 Fifth Avenue, New York City, about March 25th.

• The Governing Committee of the James Harrison Stedman Memorial Fellowship in Architecture announces the ninth competition for the Fellowship, to be held in the spring of 1935. The Fellowship, which carries an award of $1,500 for travel in Europe, is open to all graduates of recognized architectural schools in the United States who are between twenty-one and thirty-one years of age who have had at least a year's practical experience and who have resided in St. Louis, Mo., for at least a year. Information and applications can be obtained from the acting head of the School of Architecture of Washington University, St. Louis, Mo.

• Fifty-eight architects have been appointed by the FHA as architectural supervisors. They will help administer provisions of Title II of the National Housing Act in various sections of the country. Following is a list of the appointees.

A. H. Alberston, Seattle, Washington.
Edward O. Anderson, Salt Lake City, Utah.
Arthur M. Atkinson, Tulsa, Oklahoma.
Louis H. Asbury, Charlotte, North Carolina.
William Gordon Beecher, Baltimore, Maryland.
Sigvald L. Berg, Helena, Montana.
Charles Louis Borie, 3rd, Philadelphia, Pennsylvania.
Ben H. Byrnes, Salina, Kansas.
James Bruce Cheek, Dallas, Texas.
Wiley G. Clarkson, Fort Worth, Texas.
Neil J. Convery, Newark, New Jersey.
W. M. Dubois, Cheyenne, Wyoming.
Albert J. Evers, San Francisco, California.
George Ashmead Ferris, Reno, Nevada.
Alfred Finn, Houston, Texas.
Frank Fort, Meridian, Mississippi.
Clarence H. Gardinier, Rensselaer, New York.
Albert Harkness, Providence, Rhode Island.
George R. Harris, Cleveland, Ohio.
Hal Fitzgerald Hentz, Atlanta, Georgia.
Edwin H. Hewitt, Minneapolis, Minnesota.
William G. Holford, Portland, Oregon.
Frederick C. Hummel, Boise, Idaho.
A. Leicester Hyde, Santa Fe, New Mexico.
Roger C. Kirchhoff, Milwaukee, Wisconsin.
Merrill C. Lee, Richmond, Virginia.
Leslie J. Mahoney, Phoenix, Arizona.
Raymond M. Marlier, Pittsburgh, Pennsylvania.
Frederick Mathesius, New York City.
Alan McDonald, Omaha, Nebraska.
John O. Merrill, Chicago, Illinois.
Carl E. Peterson, Manchester, New Hampshire.
Walter E. Pettit, Columbus, Ohio.
Raymond Phelps, San Antonio, Texas.
Jefferson D. Powell, Jacksonville, Florida.
Ira L. Rush, Minot, North Dakota.
William H. Sayler, Kansas City, Missouri.
Solis Seiferth, New Orleans, Louisiana.
Albert Simons, Charleston, South Carolina.
Thomas L. Sorey, Oklahoma City, Oklahoma.
H. J. Spitznagle, Sioux Falls, South Dakota.
Lancelot Sukert, Detroit, Michigan.
Philip N. Sunderland, Danbury, Connecticut.
Wilbur T. Trueblood, St. Louis, Missouri.
Ralph W. Varney, Champaign, Illinois.
John J. Wade, Buffalo, New York.
Philip S. Wadsworth, Portland, Maine.
Joe T. Wallace, Memphis, Tennessee.
Ossian P. Ward, Louisville, Kentucky.
H. Rus Warne, Parkersburg, West Virginia.
William T. Warren, Birmingham, Alabama.
Charles A. Watrous, Des Moines, Iowa.
G. M. Whiteside, Wilmington, Delaware.
John T. Whitmore, Boston, Massachusetts.
George H. Williamson, Denver, Colorado.
David J. Witmar, Los Angeles, California.
George H. Wittenberg, Little Rock, Arizona.
George Caleb Wright, Indianapolis, Indiana.

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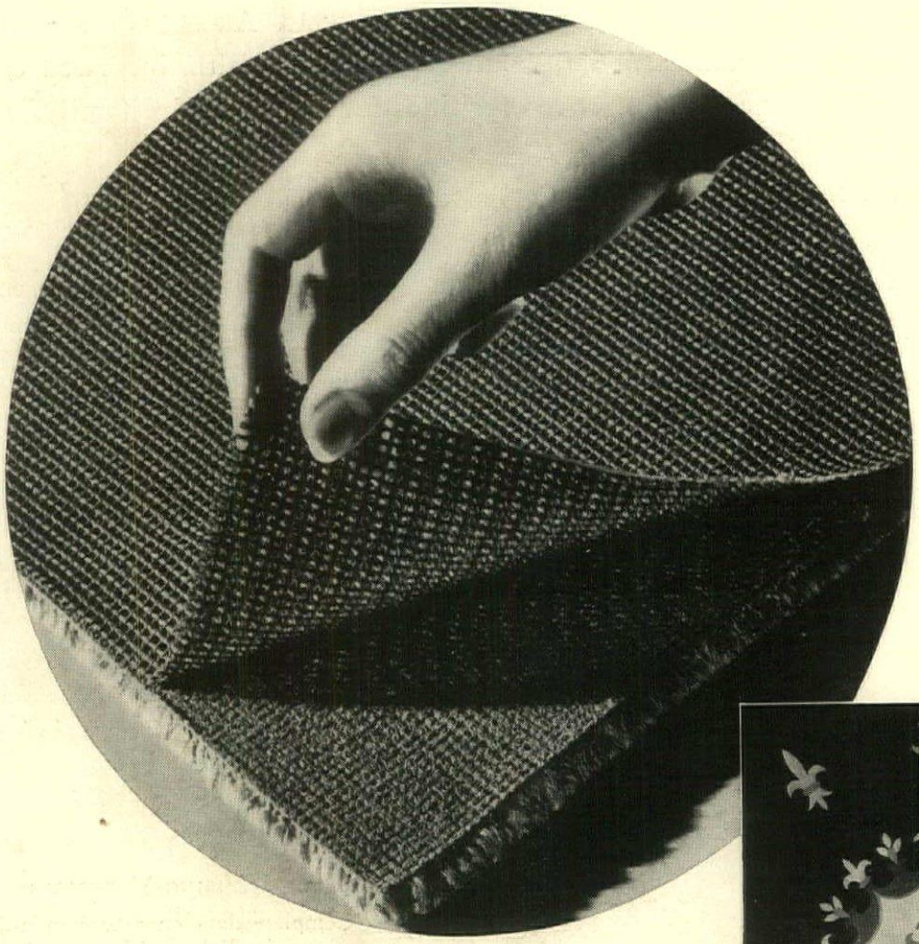

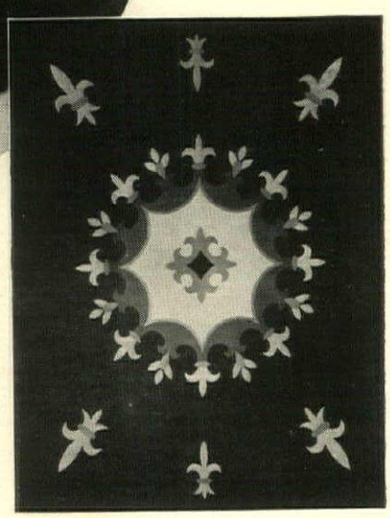

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