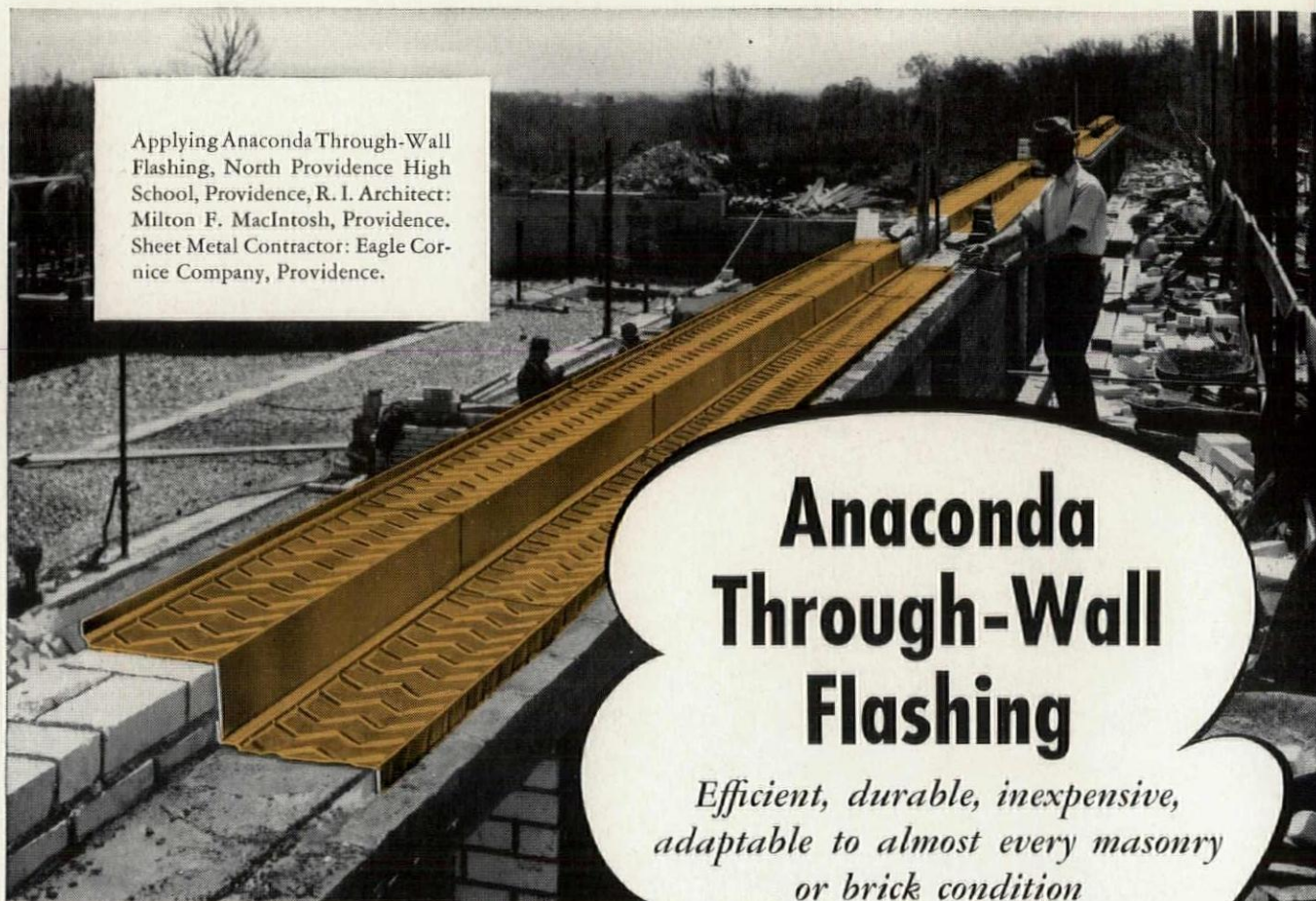


PENCIL POINTS

APRIL
1939

Applying Anaconda Through-Wall Flashing, North Providence High School, Providence, R. I. Architect: Milton F. MacIntosh, Providence. Sheet Metal Contractor: Eagle Cor-nice Company, Providence.



Anaconda Through-Wall Flashing

Efficient, durable, inexpensive, adaptable to almost every masonry or brick condition

Anaconda Through-Wall Flashing* has these worthwhile features:

1. Zig-zag corrugations, 7/32" high, provide complete mortar bond in all lateral directions.
2. An integral die-stamped dam, also 7/32" high, gives complete drainage in the desired direction. Flashing drains itself dry on a level bed, reducing possibility of wet walls and heaving by frost.
3. Flat selvage permits neat, sharp bends for counter-flashing or for locking to adjacent sheet metal.
4. Through-Wall Flashing is easily locked endwise by nesting corrugations. Such joints are water-tight, but,

if desired, are easily soldered because of adjoining flat surfaces.

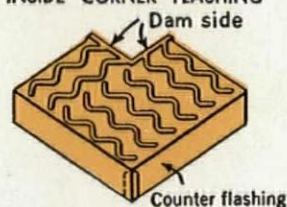
5. Tongue of dam is so designed that it may be placed within 1/4" of face of wall, protecting more of the wet portion of the wall, and still providing ample bed for efficient pointing with mortar.

Anaconda Through-Wall Flashing, readily obtainable from Anaconda wholesalers, is made of 16-oz. copper—either plain or lead-coated. It is furnished in 5' and 8' lengths, in standard and special widths with various selvages, and corner flashings for 8" and 12" walls.

Anaconda Publication C-28 contains complete description of and suggested specification for Anaconda Through-Wall Flashing.

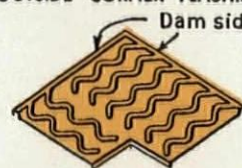
3987
*Patent No. 1,906,674

INSIDE CORNER FLASHING



Standard inside corner flashing unit. Dam on inside; drains out.

OUTSIDE CORNER FLASHING

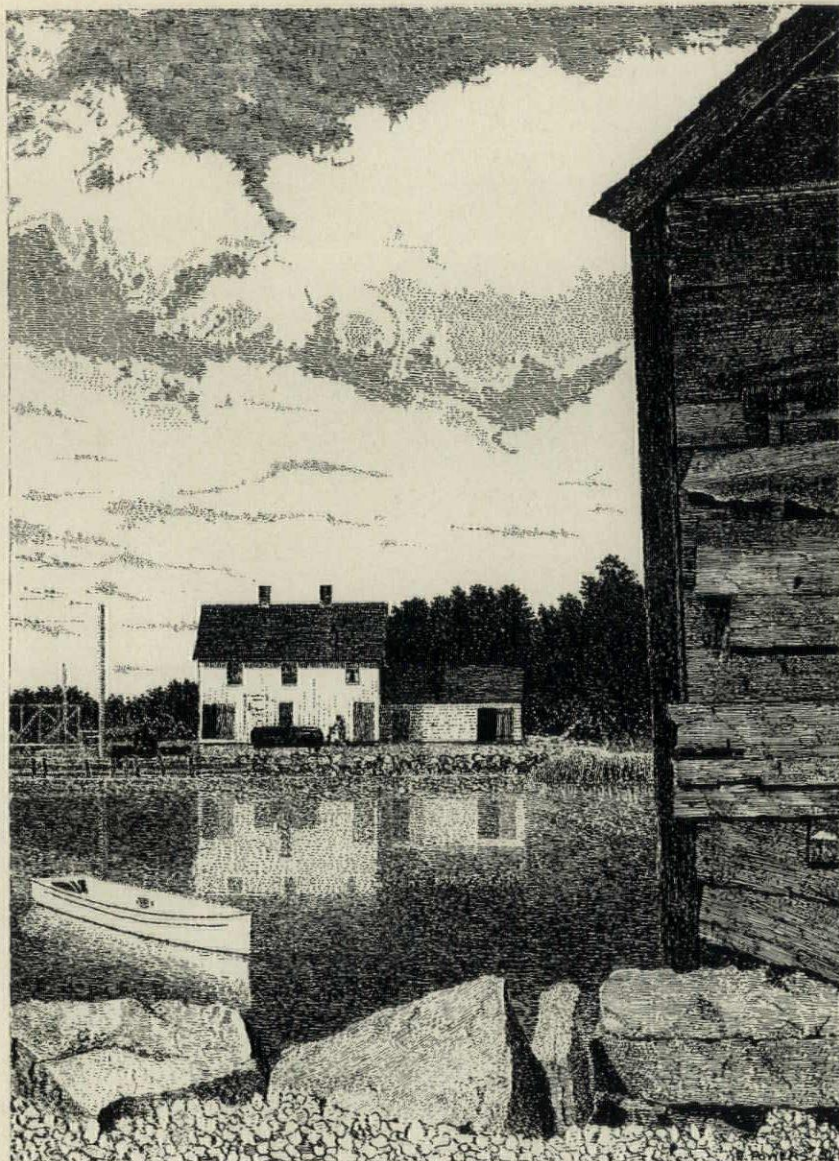


Standard outside corner flashing unit. Dam on outside; drains in.



Anaconda Copper

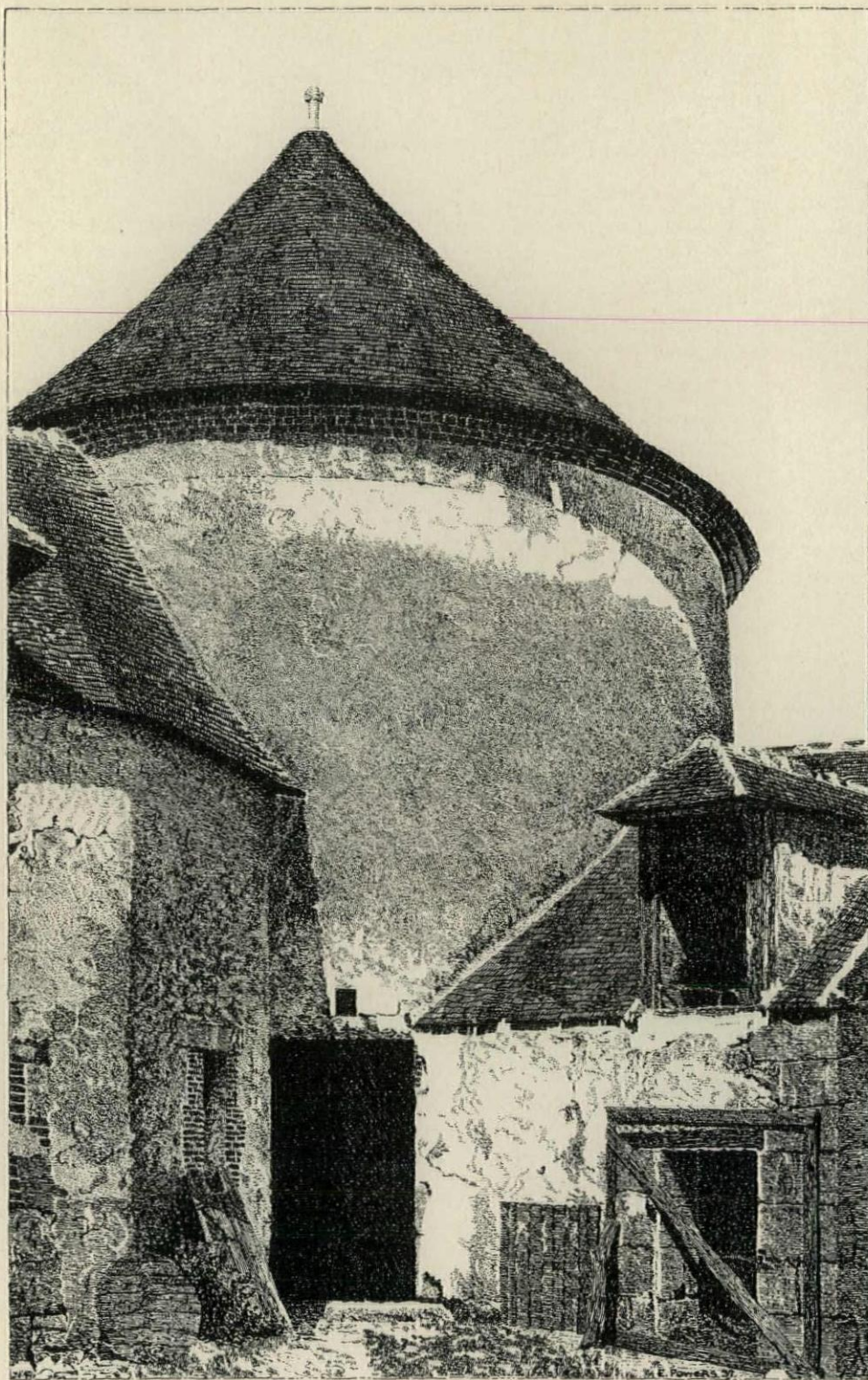
THE AMERICAN BRASS COMPANY • GENERAL OFFICES: WATERBURY, CONNECTICUT
In Canada: Anaconda American Brass Ltd., New Toronto, Ont. • Subsidiary of Anaconda Copper Mining Company



Old Lyme, Conn.

FROM A DRAWING BY ELINOR POWERS

The mastery of pen-and-ink technique that has long distinguished the drawings of Richard Powers, Architect, formerly of Boston but now of Chicago, is by way of being handed down to his daughter, Elinor, if the drawings we recently had the pleasure of examining are any indication. We have reproduced two of them, here and overleaf, at the exact size at which they were drawn



Farmyard at Benqy-Sur-Craon-Cher

FROM A DRAWING BY ELINOR POWERS

The convincing rendering of textures in pen-and-ink has challenged the ingenuity of many a young architectural draftsman. In the example above, Miss Powers, inspired perhaps by her father's memorable accomplishments in this field, has done an admirable job of expressing old wood and stone and brick and stucco, at the same time controlling the composition of the whole

THE APPROACH TO PRACTICE

WITH AN EYE TO MAKING IT BUSINESSLIKE

BY ROYAL BARRY WILLS

EDITOR'S NOTE: *This article is the opening chapter of a forthcoming book written by Royal Barry Wills, with the collaboration of Leon Keach, in which the business side of the architect's practice will be thoroughly analyzed and discussed, with particular reference to the conduct of the small and medium-sized establishment. The set-up of an office, the securing of clients, the making of contracts, dealings with clients during design and construction, correspondence, bookkeeping, analysis and interpretation of overhead, budgeting, cost accounting, and dealing with business hazards are some of the many items that will be covered in the book. Several valuable chapters will appear in PENCIL POINTS during the coming months and the completed book will be published in the fall. The author is well known as one who has from small beginnings built up a substantial practice by the application of common sense in a business way, as well as by his skill as a designer. He is now about to make the fruits of his experience available to our readers.*

THE earlier practice of architecture in this country was very frequently shaped by men whose independent wealth allowed them to indulge in a fashionable occupation, without much regard for profit. Their highly inefficient technic in office management and the production of work first engendered many of the deplorable habits that harrow the less affluent practitioners of today.

This does not need to be. Admittedly, there is a perpetual difficulty in the mutual adjustment of creative effort and profitable business, but to produce far better results than usually obtain, a miraculous panacea is wholly unnecessary. The functioning and monetary returns of your average office can be immeasurably improved by an orderly consideration of the problems confronting a modern architect, many of which we will hereafter endeavor to present and evaluate—but chiefly to solve, by the empiricism of actual practice and successful experiment.

Any person of normal intelligence, possessing the will to do so, can learn the mechanics of a business or an art. This does not assure the achievement of great financial or artistic

aptitude, or even the ability to develop anything more than a pleasant avocation in many a field of endeavor—but, strange to say, it is good for a living in Architecture.

One of the peculiarities of the profession is that its mingled practical and æsthetic composition is but vaguely understood by most clients. You would have to be something more than a freight-car painter to satisfy the purchaser of a portrait, but a man can fall rather short of being an architect, in the true sense, and produce a block of stores that will delight many an owner. The answer lies in the owner's lack of a critical faculty and in his not having any special knowledge of architectural methods, refinements, or materials. He will have an idea on plan and an eye to the prevailing mode in decoration, both of which may be poor but relatively easy of achievement to the extent of his appreciation.

It may have taken several years of experience, on the architect's part, to compass these minimum requirements of his calling, but he need never have had a flair for them, an inherent gift for design, or any other inward attribute except common-sense to a degree, and perseverance.

I do not subscribe to such an implied deficiency in professional equipment, regarding it as an unfortunate state of affairs to say the least, but it is none the less a fact. The inference I would draw is that you can make a living as an architect by a knowledge of its practical and business mechanics. This book endeavors to present a concise and adequate description of the all important business side.

An understanding of economical, sound, weathertight construction is the fruit of long apprenticeship; there is an army of salesmen begging to give you a comprehensive knowledge of materials; but nobody expounds the fundamentals of job-getting or efficient office maintenance. By great good luck the archaic systems prevalent are usually kept under the

architect's hat, which prevents their dissemination.

Years ago, when the practice of architecture went into its professional phase, it created the architect as an unbiased defender of his client's interests, a rôle which is still one of his more important obligations. Simultaneously it made him a priest of arty mysteries and a defender of traditional dogma, to the detriment of progressiveness and the cult of common-sense.

Now the changing world has banished iron-clad traditionalism and introduced, to the architect, a host of competitors in the realm of pure and impure business. Because of these *sacro-sanct* decades of defenseless immunity his back is more nearly to the wall than he realizes, but he has the best of arguments for his continued existence will he but galvanize himself into an intelligent aggressiveness. Architecture has become, for all practical purposes, a business which retains professional supervision as its inheritance from earlier years, and the modern client's confidence in the architect is the greater for knowing him to be a businesslike individual.

There is no early test for future architectural preeminence, though there is every reason to believe that the average youngster may be directed towards gaining an adequate and pleasant livelihood through its practice. The contributing influences are an early bent for delineation, a family tradition, or the belief that it is a genteel and not too vigorous occupation for an artistic man of means. The last mentioned status is becoming increasingly obsolete and unsafe.

Academic years were once devoted to the hoary formalities of plan and elevation, interlarded with a brief experience at practical drafting and possibly a lecture course or two on engineering phases of the building industry. In their present state of flux, the schools are more conscious of the influence of modern materials on design, and functionalism is generally rampant. Nevertheless this progressive training is so far in advance of the actual state of affairs in most offices that for some years young graduates will still be faced, when they spread their wings as draftsmen, with as difficult a transition as ever obtained.

The first year determines the general direction of a man's usefulness to an employer. A talent for design will swing him one way, or the lack of it to another and more varied fate, which leads slowly towards some of the so-called "practical" subdivisions in an office. Being green in such matters, the tag he will wear is longer delayed in the titling.

The rate of mental absorption, as it concerns office details, varies with the individual, but unless he is stepping into his father's shoes or is wholly incapable of humility, all thoughts of hanging a shingle will lie fallow a few years. Their future cultivation may not be a certainty, as we shall see.

Among the reasons we have "design." This is unquestionably the choicest of architectural subdivisions, adequate designers being less commonly found than most office specialists, excepting head-draftsmen. Their gift is the expression of an inventiveness seasoned with good taste, which may well be an end in itself, limitless in its artistic satisfactions and having no close connection with profit-making as a primary aim. A man so equipped may find himself content to be fed problems of plan and elevation, freed from the distracting work of job-getting and office management, for all of which he has no liking. Moreover, it may seem probable that he could not, on his own, revel in the larger questions of design or enjoy contact with fine work and rich materials. If he is good enough there is a place for him, when there is a place for anybody; consequently many of our best designers never open offices, unless it be that they are invited to function in their proper capacity as members of a firm.

Working drawings and detailing will be the first concern of those without the aptitude for design, and later, superintending, specification writing, or office management. Size is the usual criterion by which one may deduce an office's tendency to make specialists of its workers, and it is patent that the more rounded experience of a small establishment fits better the needs of a budding architect, because the one man office is the first step of a normal evolution and its utter simplicity throws a great variety of responsibilities on its one man.

His two absolute requirements are a rounded practical training and a specialized business capability. Design talent is less vital, for, as has been said, its better known clichés will satisfy most clients. Mind you once again, these are but stark and "minimum" realities, without much regard for ethics or æsthetics.

Thus, the mantle of this rudimentary architect is seen best to fit the office "practical-man," if he can but surmount the problem of job-getting. The fact that many such men have never blossomed forth—notably those very responsible retainers, the head-draftsmen—leads inescapably to the conclusion that they are lacking the will or the knowledge to circumvent this last barrier.

Before training our microscope on the

specific conformations of the obstacle, it might be well to take a bird's-eye view of the whole terrain, as a modern mountaineer studies his coming attack from an aeroplane.

First of all, you have the choice of setting up alone or in partnership. Remember that alliance with another is to be more carefully reasoned than your marriage, for this is not an emotional experience but a very unsentimental and selfish matter, whose end is the happy cultivation of a practice and shoes for the baby.

Next, there is the location of an office, the center of your production problems. Financial limitations may relegate you to the attic—or it may be a tasty affair, with a glass brick or two, somewhere in town; there are pros and cons in either case.

Then, when you have the mill there must be grist, and in a complex world the average man has got to obtain that grist by the unremitting application of legitimate methods for attracting business. Verily a crucial point, but with divers solutions, some of which ought to fit your particular makeup. Select them and force yourself to the test, else the millstones may never turn.

A prospect must be disentangled from the mass of your fellow men and set forth as a special entity; an individual who has somewhere in the front or the back of his head the desire and the means to build. He may come seeking your advice or you may go to him, but in either event you have a case to prove, because few people are architect-wise through contact with the profession. There is a persistent belief that men of your calling are a bit of a luxury in the smaller problems of building construction, and it all derives from the earlier aloofness and a still undeveloped public education in architectural matters. So the immediate problem is to justify your existence and get a reasonable fee for services to be rendered, which is nothing more or less than the vacuum-cleaner salesman's duty towards his inanimate machine, only he thinks of the process as breaking down sales resistance. And he does it by rote, on the basis of the company's instruction book, with a few personal flourishes added as he warms to his task. This studied spiel is obviously meant to anticipate any and all questions and extol the machine's virtues until it appears as a necessity; it mechanizes the salesman's attack and thereby reduces the chances of error in the continuous press of battle.

Now architects have their services to sell, and a part to act which may be above their normal expressiveness or loquacity; particu-

larly when the prospect says, "Why are architects?," and waits stonily for an answer. Is it not sensibly forehanded to be ready and letter-perfect with that answer? You come honestly by one, and its essence is practically unchanged in many and varied situations.

Up to this time you will have made three major decisions and won two engagements, for we may assume first that a prospect has been found, and, secondly, convinced that you are worth your salt. Sketches are undertaken, involving creative thought and time on your part. Suppose the work stops abruptly there, for some reason, perhaps because the Owner has found a ducky speculative house with a Norman tower, to be had for a song. Are you left holding the bag? Possibly, depending on the circumstances of your arrangements with this erstwhile client, but you have usually committed a tactical error if such is the case. Every architect should know how to get reasonable compensation for his efforts, whether or not the work is carried to completion, as will be developed later.

With sketches accepted you may not even yet permit yourself to light a ten-cent cigar and get hazy in blissful thoughts of plan and elevation. For right at this juncture comes the architecturally unpleasant but necessary business of pinning your client down to a positive declaration in contract form. That gentleman may be facing the major expenditure of his life, and every instinct makes him view the document with suspicion. Here, then, is a tense moment and the clear cut demand for a sales psychology which allays his fears, such as I have seen practiced by a prominent realtor of my acquaintance. Habitually, he uses the contract's many and irrevocable details as so many selling points, making them appear individually advantageous to the prospect, and in the nature of an assurance that he is getting his money's worth. This from the mouth of an architect has the added advantage of spreading an aura of business acumen, which the client too often fails to associate with men of the profession, setting them down as merely arty and temperamental. Whereas that is an overstatement for general application it is far from false as a popular belief, and contains more than a shade of truth as occasional fact. So perhaps a client who does not know his architect is warranted in employing defensive tactics of an annoying nature.

All of which brings us to the establishment of an office, with a job in hand, and introduces the manifold problems of work production, general policies and the like. There will be

tempting competitions to enter but should you? They will be of different types to be sure, but they all take time and by that token, money. Experience has taught several things about them and about other types of publicity, as it has about the letters one writes and answers, the books and records one keeps.

These details are inter-related in a measure, but behind, above and around them looms the spectre of Overhead. Every architect and draftsman whose livelihood really depends on the profession of architecture knows that an office must be run so as to make a reasonable profit, as is any sound business. Furthermore, he knows that no amount of wishful thinking or other dodging of realities will lessen the fact that any and all costs entering into the practice must be reckoned with. It is utterly impractical to conduct an office without knowing overhead, both as a running average and as a particular case. Everyone's prosperity depends on this knowledge, the draftsman's as well as the architect's, for certainly the former will not receive adequate compensation for long if his boss is not making a living. A young architect should take this seriously to heart and start right. He has got to discipline himself to the inescapable demands of a victorious encounter with this insidious profiteer, even though it seems to his youthful idealism like a partial betrayal of the art he has elected to live for, and by.

Running parallel with these considerations, as though there were not already enough trouble, you have a client to handle during the course of construction. His or her nervous stability will be somewhat out of whack, due naturally to an intense interest, a relatively large sum at stake, and an unfamiliarity that breeds instant apprehension. The house is indubitably hers and should be built to the client's liking, within contractual limitations, but your aim is to make her like the things you like as a trained professional.

Then, too, the contractor and sub-contractors come naturally by their own points of view, often at variance with everyone but themselves. You, as the client's representative, are always in the thick of it.

Assuredly there is much to be learned apart from pure architectural design; much that is pure business, or strategy or practical psychology, and all to the end that you may live and be decently prosperous in the practice of architecture, wherever you may locate.

The average draftsman lacks capital and has too many financial responsibilities to shove off blithely at the first inadequate excuse. I believe that in recent years fifty percent of those opening offices did so because they had been fired and could find no other employment. That may be an excellent way to profit by seeming misfortune, if you know and practice a system for getting jobs.

Draftsmen who have quietly pursued work on the side, with gradually increasing success, are brought to the great decision in that way. When there is enough ahead to give security the conclusion is simultaneously reached that long hours of night work wear a man down, and make him of more use to himself than to his employer. Sometimes the boss tells him just that.

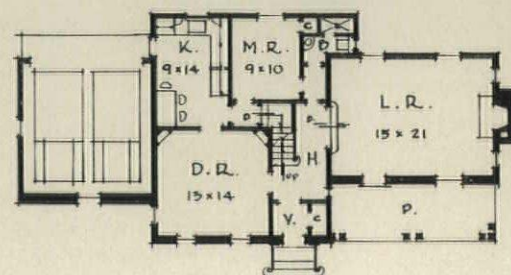
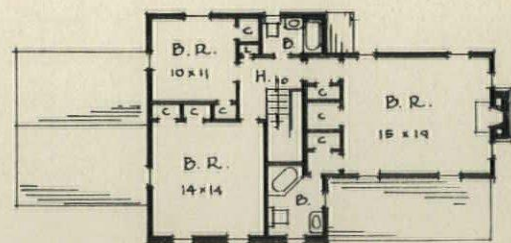
So far we have concerned ourselves with the objective of a practice as such. The elementary impetus to do anything with one's life is apportioned between economic necessity, innate desire, or social custom. A man with the opportunity for a good general or specialized education usually has the privilege of choosing a pursuit because it promises rich profits, or offers the pleasurable development of his talents and is reasonably profitable. Now, a profession is defined as a gainful occupation, not primarily concerned with profit-making. Its prerequisites are intellectual power and the superior ability to find reward, not alone in fees and commissions, but in a love for one's work; in its social dignity and importance.

No architect worthy of the name is wholly commercial in his attitude, but if such a one, dubbed "architect," is solely concerned with profits and happens to be honest as well, then he has chosen a very laborious way to wealth.

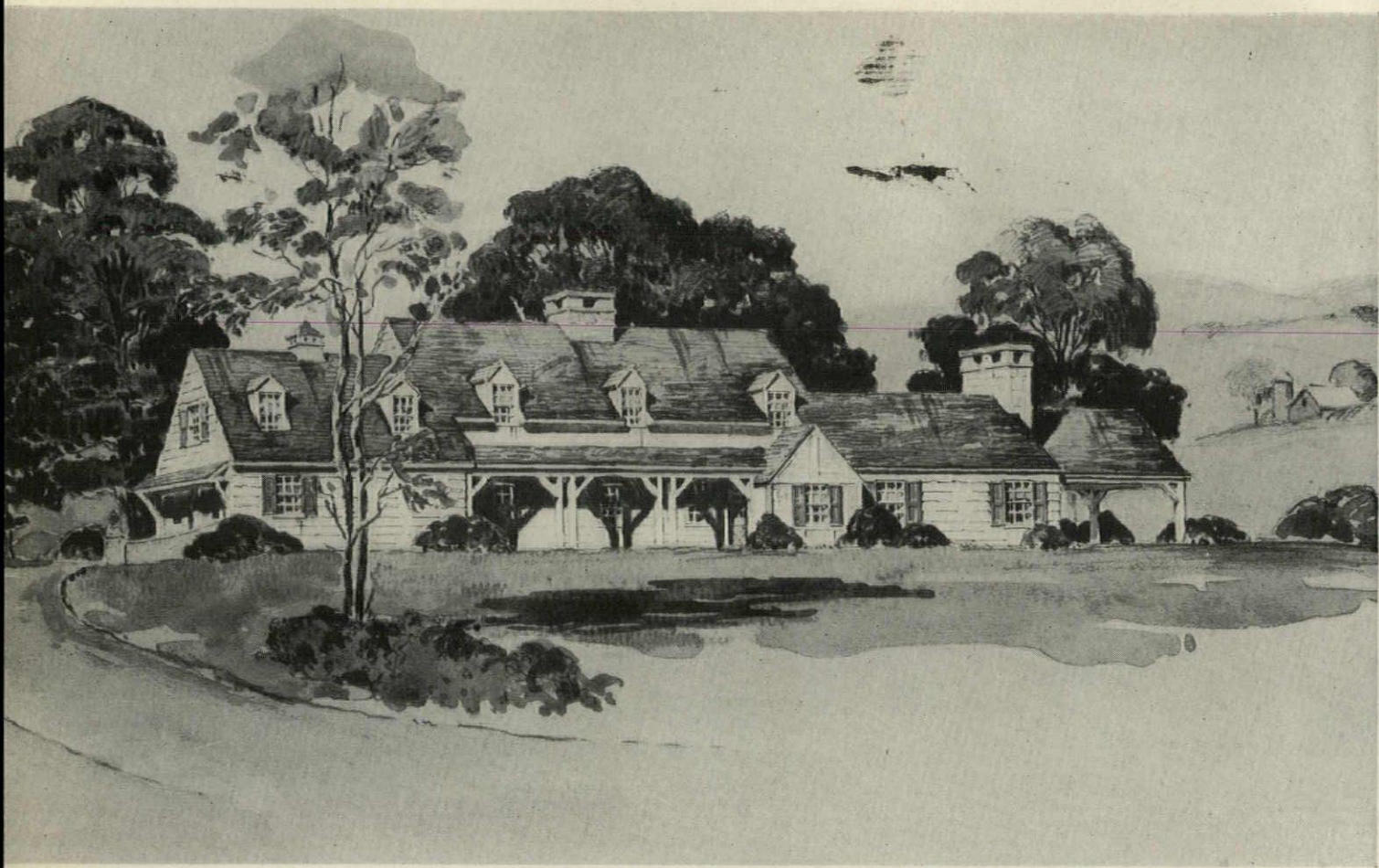
My opinion is that ninety percent of the architects who have entered the profession via a university have previously accepted the "professional" point of view; that most men who work up from office boy to boss come to accept it, although their youthful entry into the field preceded any definite opinion in that regard and may originally have been through mere chance.

The attitude of joy in work should persist throughout a lifetime's practice, to the envy of your business-men friends, but do not forget that this priceless quality is very definitely enhanced by the cultivation of the realistic and practical point of view held by your more materialistic acquaintances.

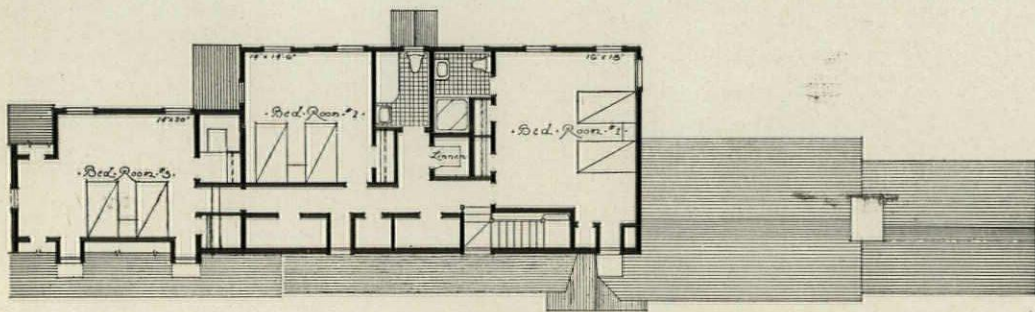
Another chapter of Mr. Wills' book will be presented in the June issue. It will deal with direct means of persuading the prospective client to become an actual one



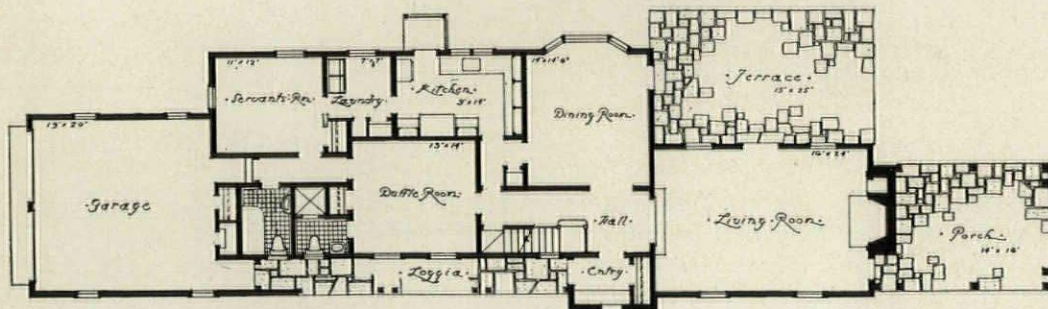
This residence for a suburban development at Scarsdale, New York, was designed by Francis Kapp, Architect, of Yonkers, who included among the features two closets for each bedroom, in addition to storage space for linens and other supplies on the second floor. The rendering is by Theodore Kautzky, Delineator



Phillips Brooks Nichols, Architect, of White Plains, New York, designed the residence above and the similar house on the opposite page, emphasizing spacious rooms and informality in arrangement suitable to the pleasant rural setting

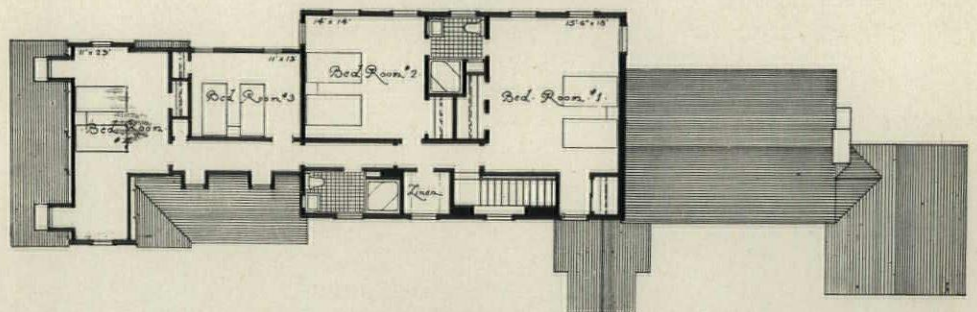


Second Floor Plan

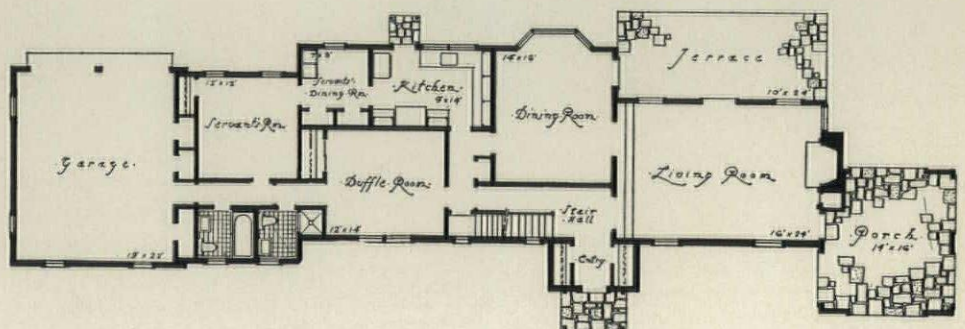


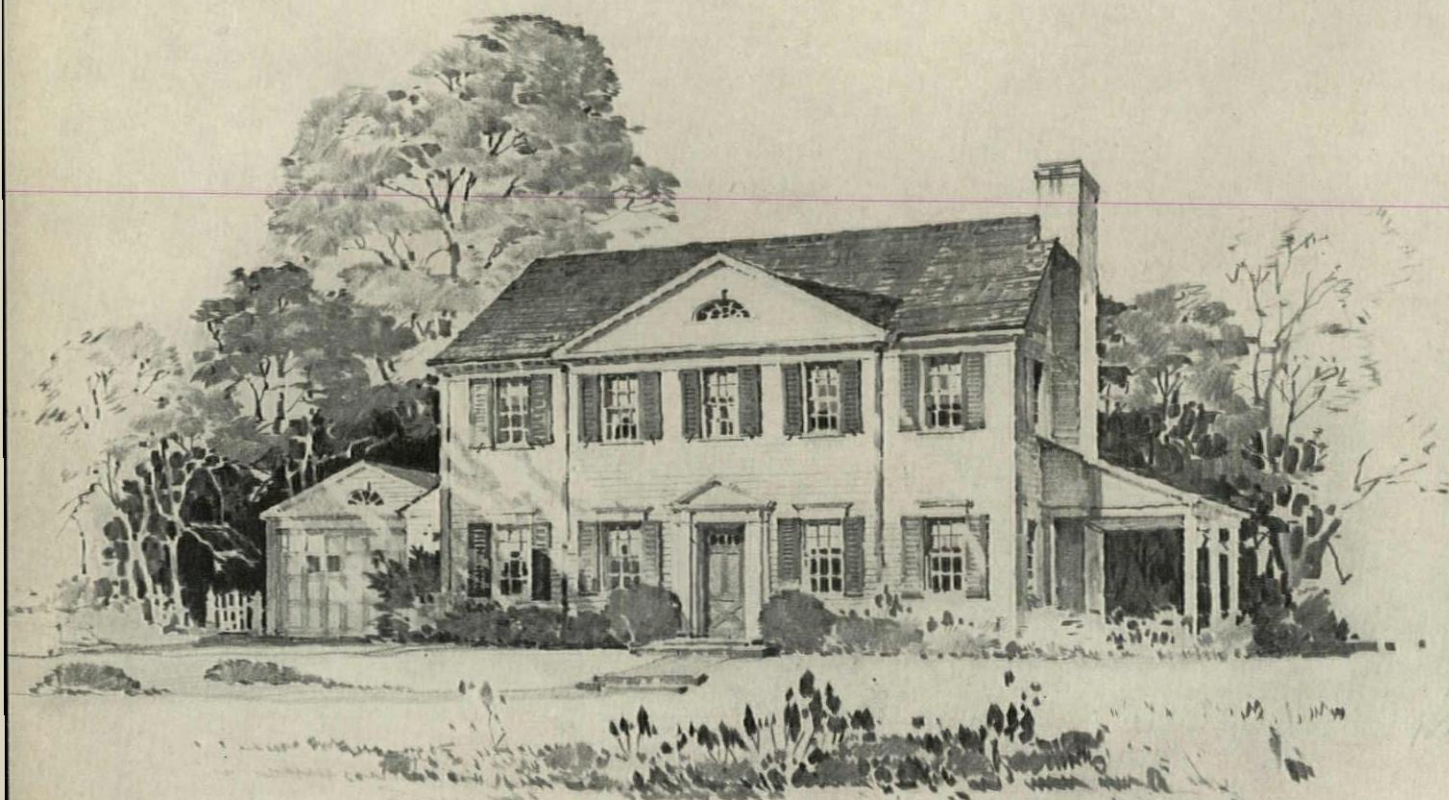


Both these country residences are now under construction at Quaker Lake, Pawling, New York, for Lowell Thomas. The renderings are by J. Gaydosb, of the office of the Architect, Phillips Brooks Nichols and show the character of the site

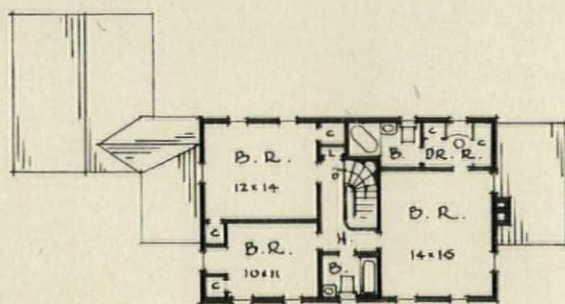
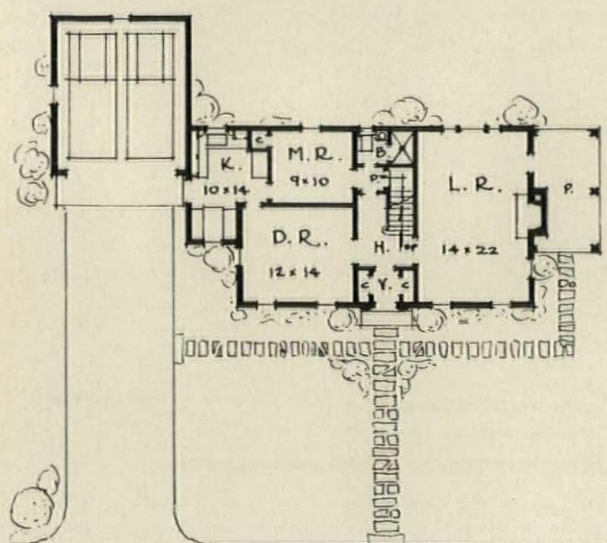


Second floor plan.





FRANCIS KAPP
ARCHITECT



Francis Kapp, Architect, of Yonkers, New York, designed the residence shown above in a rendering by Theodore Kautzky. It is for a development at Scarsdale, New York. It is of the symmetrical, semi-formal character popular in many suburbs

CHALLENGE TO THE ARCHITECT

BY TALBOT F. HAMLIN

FROM one year's end to the other I see a lot of architecture. I see it on the streets, at the Fair grounds, photographed in books and magazines, displayed in exhibitions, diagrammed in plans and elevations . . . Or maybe I see a lot of what might be architecture. I don't know. Maybe I see too much. But this I know, this I have to admit—that at so little of our contemporary work does my heart really rise; that so rarely does it get past my topmost mind and hit home to the emotions. How can we blame the public for being listless about architecture when so very little that we do gives even us architects a valid thrill?

Why, in other words, is there so little of compelling beauty in the contemporary architecture of America? Why does it seem sometimes as if the architects themselves were afraid of even the word "beauty"?

Yet I know there is beauty to be created in buildings. I know that beauty has been created, because I have felt it. I have felt it in the presence of buildings of all sorts and styles and dates. I have been in the Pantheon at dusk, when the magic light, pale blue, poured down from the oculus like something solid, bathing the perfect circle of the interior, picking out the details, showing how each had a part in the whole—and suddenly it was almost as if my heart stood still and I was for the moment in a timeless world . . . That is architecture.

I have seen the colored light from the south rose of Notre Dame dye the piers of the nave, and the floor, with blue and red, and seen the great round columns, as it were floating on shadow, with the vaulting shafts above them running up so surely to the dusky vault, and I have felt the shiver of deep physiological feeling run crisping through my nerves at the sight . . . That is architecture.

I have seen the pure white of Dudok's Hilversum Hall lifting itself so gaily above its broad reflecting pool, with its sharp horizontal and vertical accents woven so subtly and so surely together into one serene pattern, with its long horizontal walk leading so invitingly to the broad, welcoming door, and the tower

rising above like a masonry fountain gleaming in the sun; and at the sight the perfection of the pattern, the humanity and the more than humanity of it, the gaiety of color, the loveliness of shape have made me feel suddenly humble, and yet suddenly proud to be a man . . . And that is architecture.

I have seen the glittering glass-banded walls and suave surfaces of the Van Nelle Factory in Rotterdam—and felt a new dignity in industry, a new promise of a fair, bright world of machines. I have watched the penguins with their absurd dignity waddling like tiny dress-suited politicians up and down the flying spiral ramps of Tecton's pool at the London Zoo, and in that perfect blending of form and purpose felt the deep satisfaction of real wit, the purging of true humor. And I have felt in the marble hall of the Naples Post Office, with its vital curves, its lavish materials so schooled and disciplined, with its red marble tables for you or me to write our postcards on, a new vision of a people's building—a public building—for all the world. And these, too, are architecture.

And, in this sense, I find architecture disturbingly and discouragingly rare in America in 1939, and I wonder why.

The lack is all the more remarkable, because we have such a wealth of material to work with. Nowhere is building technique more highly developed; a French architect, after his recent first visit to America, said that in technique we were twenty-five years ahead of Europe, and that in our handling of metal and glass and plastics we easily led the world. Nowhere are the problems of building economics and building economies more thoroughly understood. And nowhere have the practical planning problems of those complex buildings our century demands been more deftly and efficiently solved than in the best of our hospitals, our schools, our hotels, and office buildings. Yet so few of these, efficiently planned and perfectly built and lavishly detailed as they may be, transcend the purely practical and efficient, to become the aesthetic experi-

ences great works of architecture are. So much is merely adequate, entirely pedestrian. Why?

Others have been conscious of this strange dilemma of skill and dullness, efficiency and boredom, and have sought answers to it. Adolf Loos, that dynamic and revolutionary ex-stone mason and ex-carpenter who became one of the great forces for renewal in European architecture, had his own answer, which one of my students called to my attention. Loos said that the reason for the failure of contemporary architecture was not too little art, but too much; that art and architecture had nothing to do with each other, for all art was timeless and architecture was the creature of today's need, and that the architect's task was to fill that need logically and forget art altogether. He places architecture and tailoring on the same plane . . . But what, then, of the Pantheon and its magic circle? What of Notre Dame? What of these other buildings which reveal so much more than mere tailoring, which become timeless, which become experiences to the beholder, experiences that lift and expand the soul? Are they not, rather, what architecture is?

Others say that the reason for the comparative dearth of architectural masterpieces of today is because the architects have lost touch with "life," and that thus our architecture becomes bloodless, pale, dull. But, personally, it is difficult for me to see (judging from my own experience, as well as that of others) how an architect *can* lose touch with life so completely as this. After he has wangled a job, fought a design through an unsympathetic committee, struggled to bring together the client's soaring demands and pinched appropriations, coordinated all sorts of expert advice, let contracts, examined contractors' qualifications, made details, arranged for extras or credits as the client changed his mind, striven to avoid or perhaps even helped to settle jurisdictional strikes, had his experiences with grafting contractors or union boycotts, perhaps been in trouble with crooked building departments—after he has done all this, and approved the final certificates, he has learned an awful lot about life today, its economics, its labor problems, its politics, its desirable or undesirable qualities, or else he is deaf, dumb, and blind, and hopeless anyway. No architect can help being in touch with the society he serves. So that criticism can't be the answer.

Then there is the contrary criticism that the usual dullness of architecture is not the fault of the architect, but of "society," of the system, whatever that may mean. The architect is so entangled in modern life that he is

hampered in his creation, in his ideals and his accomplishments, by the whole of present civilization. Under another system, say these critics—and they are legion, both on the right and on the left—architecture would blossom like daisy fields in June. This is an especially common accusation, because it affords such an admirable excuse for the architect and saves such a lot of thought. Especially, it saves the need for present-day creative effort, which, if these critics are right, is today fundamentally futile and bound to fail. Well . . . and then I look at the architecture of Germany today, and of Russia today, to see what creation under the complete victory of the right and of the left is like . . . No, this criticism does not seem valid. We can't make this our apology.

Louis Sullivan correlated architecture and democracy. Pugin correlated architecture and Catholicism. Cram seeks a return to the Middle Ages; then our architecture will be great. But I have a sneaking suspicion that the broad expanse of utter dullness in a cheap suburb may be as true an expression of our imperfect democracy as is Sullivan's magnificent Guaranty Building in Buffalo. And I see the slave labor of turbulent Athens producing the Parthenon, the serf-agriculture and Albigensian massacres producing the Gothic cathedral, the Borgias and their contemporary Italian tyrants filling Italy with beauty, and Fascism building the Naples Post Office . . . No, that theory will not hold. Society, of course, does influence architecture. Society may hamper the architect. But beauty has a strange way of thrusting itself up out of the mire, and no disgust or disgruntlement which we architects may feel as citizens at the political and economic system under which we live is or can be an excuse for our failure as artists to create beauty. As citizens we can, and must, strive to improve the social whole; as artists we must take the materials we can get, and mould them into transcendent experiences.

There is another criticism of today's architecture current—the theory that the architect cannot produce beauty today because he is no longer the "master-builder." Antonin Raymond, who has produced so much distinguished and lovely work in Japan, upholds this idea strongly. The architect, he claims, must be engineer and builder, too. He must calculate his own beams, direct his own works, hire his own labor. Only so, he thinks, can that honesty which is the parent of true beauty be cultivated; only so can the curse of paper architecture—picture-painting—be avoided.

Now of course paper architecture is stupid, and the architects who think in terms of two-

dimensional projections—the only ones* to whom the term picture-painters can apply—are fooling themselves and us. But to require the architect to be engineer (except in that broad intuitive way which we call having a structural sense) or to worry himself with the last details of dollars and cents as a contractor must, that is another thing entirely. I can only look at these things realistically. A building is distinguished from sculpture by having its special anatomy of weight and support, of things and spaces arranged to perform the function for which the building exists, which is different from the anatomy of a human figure or an animal or a sculptor's abstract conception. And, just as the anatomy of the sculptor's figure will control the basic form, so the anatomy of the building will control the basic form; in either, falsification is fatal.

Yet the piece of sculpture, as a work of art, does not exist merely to display anatomy; abstract formal relations designed to produce patterned form give it an emotional significance. All kinds of "distortions" of anatomy are sometimes the result, and we do not like the sculpture less for them, but more. The statue exists, a series of visual and tactile impressions.

And the building, too, for the greater number of people who see and use it, exists also simply as a series of visual and tactile impressions. If it is to have any effect upon these people, it must do it through these visual and tactile images; it may often make no difference at all to them whether a beam is eight inches or ten inches deep—except as a change in visual proportions. And the same is true of all the minutiae of engineering calculation. There are visual and static effects to be gained, which will produce emotional responses—lightness, laciness, power, strength, gaiety, solemnity, or what you will. It is of course true that buildings must stand up, and be workable, functioning machines. And it is probably economically wise that they shall not be wasteful of material. But as works of art it is the totality of impression, the symphonic quality of emotion-producing form, which is important. The sense of structure, the sense of materials, and the sense of function effortlessly efficient are part of this symphony, but the details of engineering calculation and of financial administration are not. They may help to bring it into being, that is all. The Parthenon is immensely wasteful of material, and it is great architecture; its column proportions are determined by quite other elements than the bearing strength of Pentelic marble. The Gothic architects—and architects, not masons

or contractors, they were—knew little save intuitively, and what they had learned in the hard school of trial and error, of the mathematical analysis of thrusts and weight. Much beautiful building is, in fact, mathematically indeterminate, even today.

No, the secret of beauty does not lie in engineering; and when engineering structures are beautiful architecture, as they frequently are, it is simply because, either by pure accident or because of some intuitive creative sense in their designer, they have transcended the plane of mechanics and calculation, and entered the plane of pure form.

Robert L. Anderson gives us still another criticism of the attitude of architects today, and another explanation of the dullness of so much contemporary work. This is that the architects have been so taken in by the good old romantic idea of architecture as an expression of culture that they have devoted their talents to seeking for expression rather than to the search for visual beauty; they have become, he claims, sociologists rather than designers, and in the change the art of architecture has suffered.

Now this is an interesting idea. But, to me, it is too limited. Architecture, whether we like it or not, is an expressive art, and the building each age produces cannot help being the product of its age. To ask the architect of today to forget that he belongs to the Twentieth Century is as silly as asking a farmer to produce grain by forgetting the soil in which it grows. For good or bad, we architects are necessarily contemporary; even our swiftly dying and decadent eclecticism is contemporary. We build for Twentieth Century clients, with materials furnished by Twentieth Century commerce, and we construct in accordance with the methods of Twentieth Century industry. To some, "being modern" is the only requirement of design. This is, of course, not enough; to that extent Anderson is right. Women's crazy hats are modern now; they certainly are not beautiful. National sadism and racial persecution and two-ton heavy explosive bombs are modern, and they are utterly horrible and ugly. Exploitation is modern; unemployment is modern; slums are modern. Does that make them works of art?

No; obviously to be modern in architecture will not necessarily produce beauty. To be modern or to be un-modern are terms that have nothing to do with beauty. They are expressive of differentiations on entirely different planes. If we search for the roots of true architecture—the kind of architecture which makes one a better and a happier individual

because of its aesthetic impact—we must go deeper; we must seek for some definitions of beauty itself.

What is beauty in architecture, and how may we know when it has been produced? We have seen various things which beauty is not. It is more difficult to know what beauty is. The question leads into ordinary psychology, into psycho-analysis, into the problems of "meaning" and "value"; finally, inevitably, into the realm of metaphysics and the pure subjective. There is neither the time here, nor have I the background, to follow this elusive and fascinating trail. We may not be able to state exactly what beauty is, but common sense and our own experience will tell us when it is present; for beauty in art is, above everything else, a special kind of pleasurable and healthy experience, produced by objects designed to arouse it. If our buildings do not arouse this experience—this lift, this thrill, this awareness of universal pattern, this sense of fuller, richer life, this expansion of consciousness—then they are not beautiful.

To produce beauty in architecture is no easy task. The architect deals in pure visual abstractions; he has not the painter's, the sculptor's, nor the poet's obvious representation as an assistance. And the architect is limited by his materials in a much more constrained way than the painter or the poet. Nevertheless, his task is essentially similar; basically, it is the task of actual imaginative creation.

And does it not follow that very probably it is lack of imaginative creation which is behind the current dullness? Sometimes it seems as if we had almost forgotten the role of imagination in architectural design. We struggle with plan. We develop structure. We elaborate techniques. We choose materials. But, at the end, all too often what we have is merely a sum of various details, confused, hackneyed, or just plain dumb.

Nor is this imagination in architecture, which today seems so rare, required only in general design conception; it is equally necessary in details. Here is one of the great dangers for contemporary architecture. With the flood of new materials and mechanical contrivances, the temptation is to substitute mere clever ingenuity for creative imagination. We treat building materials like pieces in a picture-puzzle, not like opportunities for the artist. I remember the loving care with which details were sometimes treated by the elder generation of architects, like Richard Dana or Charles Platt; how the relations of convex and concave and flat elements were studied,

with regard to the exact quality of light and shadow each unit would receive; how differences in profiling were made to take care of differences in illumination. Necessarily, the final result was no mere exhibition of ingenuity, but a designed modulation of values.

Now, of course, styles have changed, and methods of production have changed. But light has not changed, nor has human delight in beautifully modulated light and shade disappeared. The sun still picks out sharp shadows under projections. Convex and concave surfaces still have their own characteristic shade variations; reflected lights from ground and pavement still light the under sides of things with changing, soft luminosity. Yet how seldom in the modern drafting room are these factors given the importance they should receive! Buildings exist in light, and owe their entire visual effect to light; every change in surface or plane, every projection, every difference in materials, every change from a reflecting to a non-reflecting, from a transparent to an opaque, element shows because of what they do to light, and what light does to them. Without light, these cease to exist.

We all know this; yet how often do our buildings look as if they had been thought of merely as wire outlines, with no filling—as if they were mere black-and-white two-dimensional drawings. Even "good" buildings of today—that is, sensible, logically-planned, economically constructed buildings, buildings that are in so many ways admirable—too often have this diagrammatic quality. In them the architect's mind has functioned satisfactorily, but his imagination—not at all. In them there is only the thin, half-real, ghostly life that Virgil gives to the shades below; they look, somehow, only half-formed, strange premature births. They are diagrams only; of all the rich symphony of color and light and shadow which great architecture may be, there is no trace. No wonder the public is listless. They asked for bread, and we gave them a stone. They needed music, and we gave them bad Euclid.

"But," the architect answers, "it is not our fault. We have no time to study; we are rushed and pressed . . ." Nonsense. If there is real creative genius in us, it will out. We have allowed ourselves to be jockeyed into a position of subservience. We have allowed real estate advisers and equipment technicians and government bodies of various kinds to take over our prerogatives and do our designing for us. We have sold our birthright for a mess of big jobs. Just as soon as we reassert our creative power, just as soon as we again become

designers, creators of *beauty*, then we shall find our true place in life, and architecture will be re-born. Just so long as we turn our backs on beauty, remain afraid of the very idea, sacrifice it to economics and temporary expediency, just so long shall we continue in our present state. Perhaps the whole world is afraid of beauty today; is in one of those neurotic, ugliness-seeking, masochistic states which have in the past been first signs of the madness given to those whom the gods wish to destroy. Yet even this is no excuse for the artist's failure; it is, on the contrary, only another, stronger challenge to the artist, for every additional lovely thing for people to look at and love and enjoy is just that much more help to sanity and growth—as ugliness

is only one form of certain self-destruction.

Lubetkin once said to me that the trouble with a lot of the younger architects was that, the moment they had achieved a diagram which functioned and could be built, they felt that their problem was solved, and that they seemed to have almost no conception of the fact that architecture was a high, serious, difficult, and noble art—perhaps potentially the noblest of all the creative arts. There, perhaps, is the crux of the whole matter. Should we not all, at once, remember again this nobility of the creation of beauty in buildings? Should we not remember that our greatest function, above all questions of sociology and engineering and economics, is to bring a new beauty into the lives of present-day populations?

This pleasing etching of a North Italian rural scene was made by Maximilian Seibold, near Florence, in 1930. It is entitled "Via di Leonardo" and is representative of the artist's work





Berné Mergé Studio

CONCRETE VIRTUES

AN ARCHITECT DISCUSSES A PLASTIC MATERIAL

BY ROBERT DENNIS MURRAY

EDITOR'S NOTE: In last May's PENCIL POINTS, Aymar Embury, of New York, contributed a thoughtful discussion of the aesthetics of architectural concrete. Most of the points he brought out were generally agreed to by architects all over the country, but there were some things with which certain architects were not in entire accord. Robert Dennis Murray of Los Angeles, one of the dissenters, has essayed here to speak on behalf of a material which he has tried and tested in a number of buildings on the Pacific Coast and in whose merits he has acquired faith through experience. He gives here a number of bits of technical advice based on that experience. The photograph opposite shows a portion of a school done by Mr. Murray and his partner, Henry Carlton Newton, in which they successfully employed exposed concrete textured by ten-inch form boards

ARCHITECTS are perpetually endeavoring to achieve some worthwhile contribution to our national architecture which, though national, is a mixture of many styles, philosophies, and ideals. It is only logical that among all this diversity there should be some failures because there are so many elements that tend to frustrate our efforts. We should be allowed a certain percentage of failures.

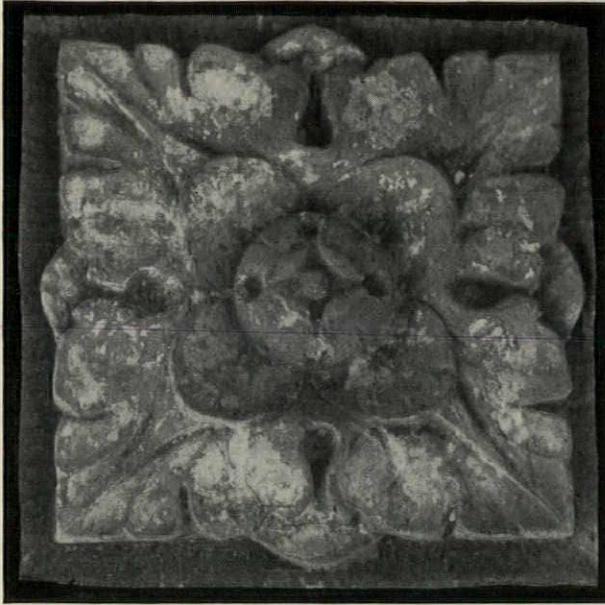
One controlling factor underlying all our efforts is economy. In building construction, economy is the root of all virtue. Hence, without too much preliminary tub-thumping about "making the most of our materials" and attempting to astound you with staggering statistics and righteous reasoning, let me come quickly to my point: Concrete is, in my opinion, a satisfactory, economical building material—and by "building material" I also mean a material for finished surfaces.

A feeling seems to prevail among some architects and builders in various sections of the country that concrete is much more limited in its scope than is actually the case. Much of this is due, doubtless, to the fact that these same persons have had neither the opportunity nor the desire to use concrete as an architectural finish material. Without some intelligent experimentation of their own, or

careful attention to others' experience, it is difficult for them to learn of the results that may be obtained with this plastic material. Such shying away from facts is hardly consistent with the spirit of this restless age whose axiom is: Never resist temptation; prove all things and, if possible, retain something worth while in the scuffle. However, men are wise, perhaps not in proportion to their experience, but to their capacity for experience. It has been said that "the man who listens to reason is lost." We have to listen to something, and if concrete is a material that will save money and time, and produce satisfactory results, it is worth while trying, particularly since we have fairly well passed the experimental stages regarding pleasing finishes for this material.

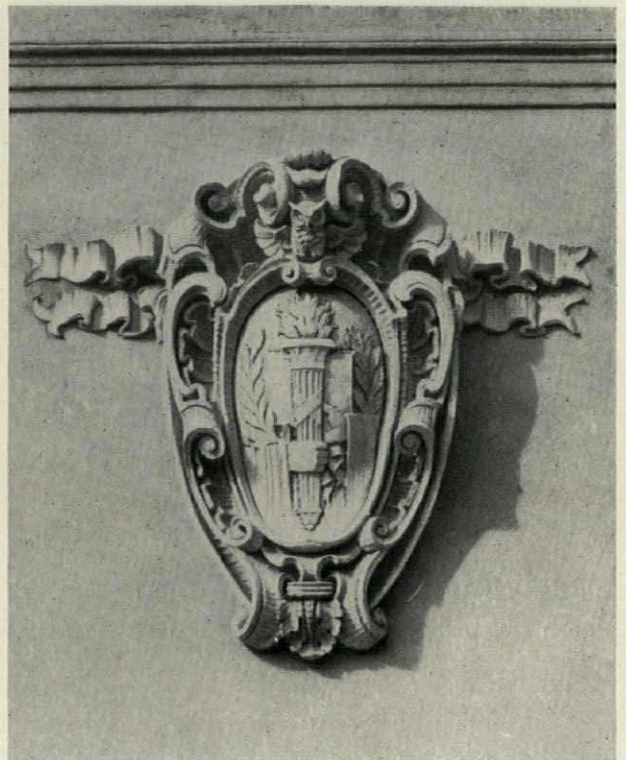
The use of concrete is by no means new. The Romans used it before the time of Christ, and rather extensively. What interests us, however, is not the antiquity of the material but its future possibilities—its plasticity, the new beauty of exposed concrete, its strength, enduring qualities and, of course, the saving in cost which can frequently be made over other materials.

The glories of the past are indeed interesting, but the glories of the immediate future are of much greater importance to us. Stone has endured through countless centuries, whereas buildings of clay and wood and metal have crumbled and corroded away. Stone in a concrete form has been perhaps the most useful of all building materials through the ages. It was carved, colored and tooled in various ways as long ago as history records. Gothic architecture consisted essentially of stone upon stone skilfully cemented together to form a concrete mass. It was not a veneer hung upon a skeleton. Cast-in-place architectural concrete in pleasing forms suitable to this plastic material, is a true expression of the material. But immediately when veneers are hung upon it and we dowel things into it, the strength



A bit of ornamental detail from the Central Junior High School, Los Angeles, for which A. C. Zimmerman was architect. The view at the left shows the appearance of the rosette as cast integral with the wall. At the right the rosette appears after machine tooling. Note that the crisp result was accomplished with an average depth of tooling of about one thirty-second of an inch, though much deeper cutting was done around the edges. Cost averaged about fifteen cents a square foot

A cast-in-place concrete cartouche from the Central Junior High School, Los Angeles, as it appeared just after stripping the forms and molds and again after wall surface was sprayed with Gunitite and ornament tooled. The picture at the left shows how rough the forming may be when the surface is to be plastered or to be sprayed with Gunitite



and beauty of concrete are no longer apparent. Furthermore, in localities where earthquakes are frequent and violent, veneering materials are often shaken loose or damaged beyond repair. Where soil conditions are not good and weight becomes an item of importance, hollow wall construction and lightweight aggregates can be used effectively and the job can be accomplished more quickly by using exposed concrete than by going back again to hang a veneer over the exterior.

There is no Golden Rule that we can follow for guaranteed, perfect results with any finish material. The best rule is that there are no Golden Rules. But with a fair amount of care and common sense and honest intentions, we can accomplish great things.

Too often there is fear that any ornament in concrete except the simplest of geometrical forms, will be unsuccessful. Usually when details are not as sharp as desired or are missing altogether, there is resort to panic-stricken pointing which leaves a rather messy, lumpy appearance to the done-over detail. This is quite unnecessary. It is so much more simple and effective to fill-in and build up surfaces with the Cement Gun, and then bring the detail back to the desired form and texture by tooling.

To commence a discussion of the virtues of a material by explaining how to patch it may seem an unusual procedure. But patching, in case something does go wrong, seems to bother a great many architects and builders and is about the only stumbling block—or imagined one—detracting them from using concrete as a finish material.

Gunite (concrete placed pneumatically with a Cement Gun) is tough enough so that, when the patches are tooled over, the material will not break down and the spots thus tooled are very difficult to detect. In the Central Junior High School at Los Angeles, the cartouche above the entrance shown in an accompanying illustration was handled with such care that it stripped almost perfectly. The simple molded strip above it, however, was missing altogether in some places. These surfaces were easily built up with gunite of the same color as the rest of the ornament and then machine tooled. It would take almost microscopic examination to discover that patching had occurred.

In molding this cartouche, allowance was made for escape of air from all intricate pockets through air-holes. That is one reason why it stripped perfectly from the mold. Piece-molds or sectional molds may be used for forming such ornament with excellent re-



Side aisle of the Church of St. Peter and St. Paul, Wilmington, California. Henry Carlton Newton and Robert Dennis Murray, Architects. Columns, caps, and arches were all cast in one piece. The bases were recessed to receive the tile that shows in the picture. Piece-molds were used for the caps and none of the surfaces of caps, columns, or walls was tooled after being cast in place

sults. The illustration of the side-aisle of the Church of St. Peter and St. Paul, Wilmington, California, shows intricate caps which were cast in piece molds. Air-holes in the molds are advisable for all such work. The protruding knobs formed by these holes are easily tooled away.

The main portal of the Church of St. Peter and St. Paul is an interesting example of tooled concrete. The entire area surrounding the entrance was to be veneered with cast stone. However, one of those embarrassing incidents occurred wherein a large concrete beam was placed out to the finished surface of the wall by mistake so that no room was allowed for setting the veneer at that point. After much argument with my patient friend Ventura, I decided to let him tool the rough concrete beam in an attempt to give it the same appearance as the tooled cast stone. The result was highly satisfactory. (See next page.)

Because a concrete surface is cast in place (and, as I said before, there is no reason why we should veneer a surface which can be made otherwise interesting) it does not mean that we can not texture or treat the surface as



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The Main Portal of the Church of St. Peter and St. Paul, Wilmington, California, affords an interesting example of a tooled concrete texture. All of the ornamental detail was cast and then tooled to match the surface of the cast-stone veneer immediately surrounding the doors. The remainder of the wall was formed with ten-inch boards and it was left rough. Henry Carlton Newton and Robert Dennis Murray were the architects

much as our desire and our budget permit. Or, is there some game we are playing whereby we are not allowed to touch surface imperfections once a job is placed? We are not attempting to imitate stone, nor iron nor any other material. We are simply making the surface interesting and presentable. Practically any treatment is effective and proper except rubbing. Rubbing serves only to make a mess appear messier. In other words, it is always well to remember the old saying: "It will never get well if you rub it."

Those who strongly profess a desire to "make concrete look like concrete" remind me of a client, a person of some intelligence in many matters, who had burned the midnight oil (and I think tipped some of it over) reading Ruskin. "Iron," he always said, "should be black if it is to look like iron, and I won't have it painted gray." And for some strange reason

leather had to have a raw beef cast, otherwise it just didn't look like leather to him. Such ideas about imitation are stubborn, but not very practical, and they have little bearing on the ultimate æsthetics of a project. For instance, in the Narthex of the Church of the Precious Blood, in Los Angeles, certain difficulties made it necessary to use cement plaster in imitation of concrete for the cloistered groined ceiling. It is so well done that even the keenest concrete expert can not tell you that it is an imitation. When the plaster had set sufficiently, thin watersoaked boards of the same graining as the side walls were pressed against the curved surface. The graining is perfect.

So I say: tool concrete, sandblast it, do almost anything to it except rub smooth spots onto a textured surface. The brush coat you may paint or spray over these shiny spots will show a variation in texture, and there is nothing left to do but plaster the wrecked area or dig the spots out and retexture the surface in the manner just described for imitating concrete. If very smooth forms have been used, rubbing is less objectionable.

Some architects object to concrete cast in board forms which have strong grain marks. I have even heard the complaint made that it

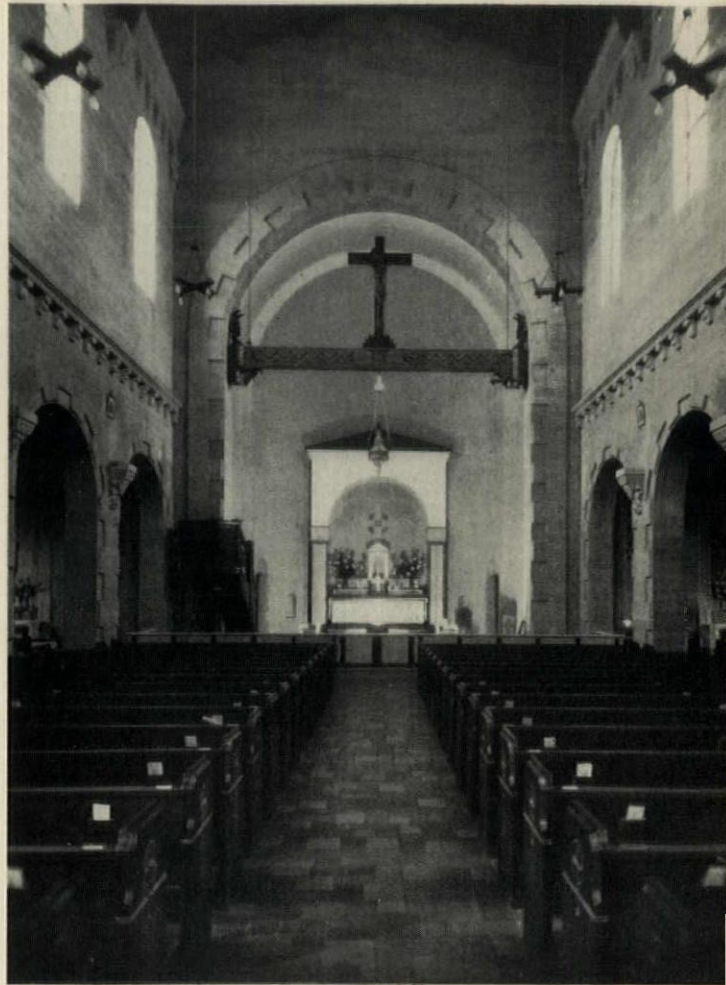
seemed an imitation of wood. I can't see the point. It looks like concrete cast in wood forms to me, and when well executed it has a very pleasing texture on close examination. Possibly we have worried a little too much over the matter of whether the exposed concrete surface looks like concrete to John Jones on the street. Probably stone-work to this same John Jones isn't really stone-work unless it has a haphazard, peanut-brittle, cobblestone surface. Who knows?

We have pretty well solved our texture problems. If we wish a very finished, smooth surface for certain purposes, we can clean the concrete thoroughly and put a thin dash-coat of cement plaster over the plain surfaces with brush or gunite process, then a brown coat, a finish coat and finally a stucco coat. If gunite is used exclusively, only two coats are necessary and it insures a better plaster job. The ornament should be protected and preferably tooled. If tooling is not possible, the brush coat should go over the ornament. This, however, tends to destroy the character of formed detail.

At present we are going through a very interesting phase of finding out the many finish textures we can achieve with concrete. The next important step is to explore the great possibilities of using color in concrete. John J. Earley of Washington, D. C., has made some very interesting strides in this direction. A tour of Mr. Earley's plant on the Potomac is a rare treat and a revelation to most of us. When something of the sort is done with cast-in-place concrete for a reasonable cost, we will indeed have arrived with color for this material.

Production of sharp, clean cast-in-place ornament requires careful attention to preparation and use of the forms. Wood forms are generally used for running moldings, and plaster waste molds and piece molds for more complicated work. Plaster waste molds are first shellacked and then greased with stearic acid which is heated in a pan and thinned with kerosene. Thereafter the surface of the mold is dusted with soap-stone and brushed in order to distribute the soap-stone and remove excess grease. Unless care is taken the stripping may become a costly and difficult job. A colored splash coat is frequently used as the inside surface of plaster molds. This provides a danger signal where chipping of the plaster is necessary.

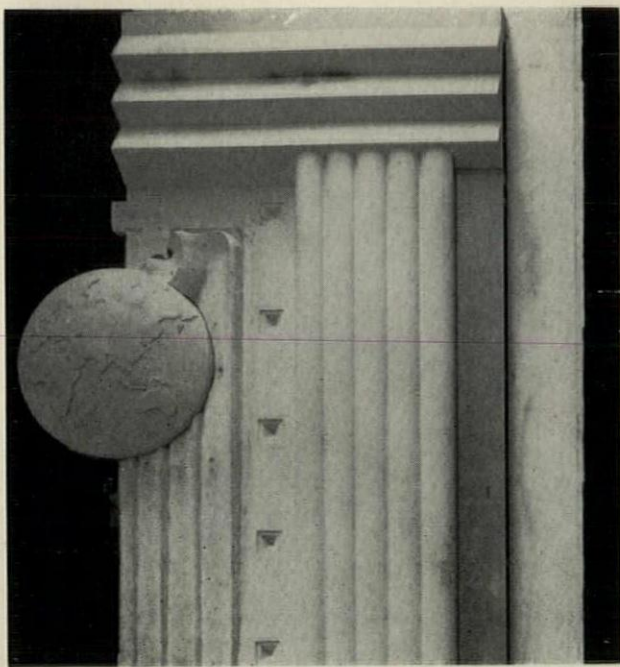
With piece molds, the mold maker must prepare an individual piece for each section so that it will draw independently of the others, and then make a case to cover the en-



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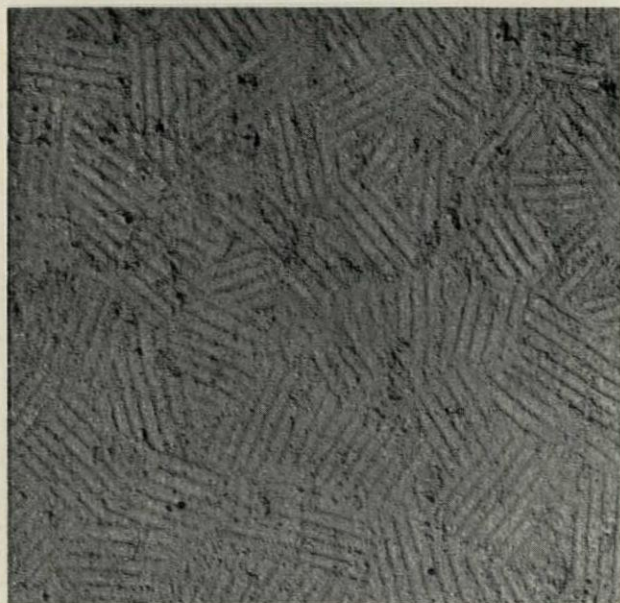
Interior and exterior views of the Church of the Precious Blood, Los Angeles. All ornament was cast in place as part of the walls. The Stations of the Cross and the light fixtures shown are temporary and mosaics were later added around the arches. Ten-inch boards were used for forms. Newton and Murray, Architects





Model for detail for Santa Monica Post Office. Louis A. Simon, Supervising Architect of the Treasury, and Robert Dennis Murray, Consulting Architect. Half-model, as shown here, was about three and one-half feet wide

At the left, below, is a close-up of the tooled texture of the jamb of the entrance of the Central Junior High School, Los Angeles, for which A. C. Zimmerman was the architect. At the right is shown an entirely different surface finish for concrete, produced by sand-blasting, on the William Wrigley, Jr., Memorial on Santa Catalina Island. William E. Parsons, Chicago, Architect

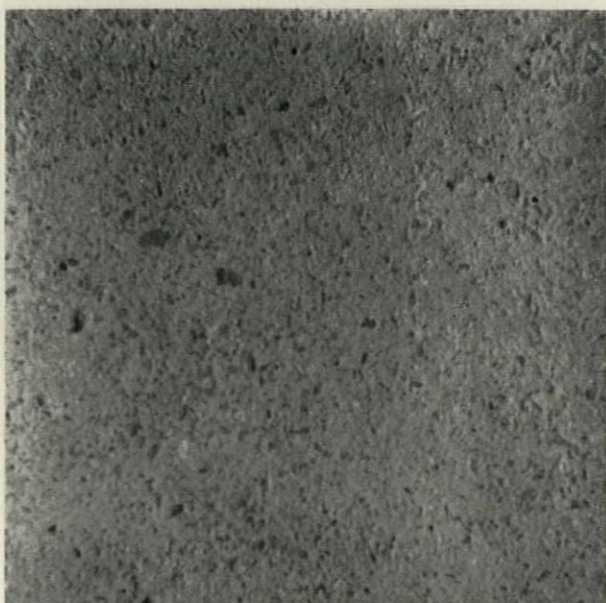


tire model. The trick is to get the pieces flush on the inside. When all pieces are in place, the mold is cleaned and all joints are painted and patched. After the plaster is thoroughly dry, it is sprayed with heavy lacquer and greased before concrete is placed. With this procedure the most intricate undercuts can be pulled, which is often impossible with ordinary waste mold work because the plaster sticks in the undercuts.

I have witnessed the tragic spectacle of finish-carpenters cutting waste molds away with wood chisels (this was in the early days before we knew much about such things) because cheap unskilled labor could not be entrusted to cut just to the right point without chiseling off a few saints' noses. That was necessary because the molds had not been greased properly and because waste molds were used where the work properly called for piece molds.

A Corinthian cap or any other complicated detail of the sort, may require a piece mold made up of 20 to 30 different pieces. Where budget limitations preclude such procedure and the style permits, a simple type of ornament as shown in the United States Post Office at Santa Monica, California, can be used.

Construction and expansion joints must be carefully considered if good textures are to be achieved. The forms, where possible, should be regulated by the size of the surfaces and designed to coincide with the joints, that is, unless the surfaces are to be later plastered over and these lines can be disregarded. On one particular job I designed, we were able to place one side of the building in a day, from water table to cornice. This was a simple, rectangular building and the pilasters were arranged





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as vertical separations for the different lifts of concrete.

An excellent example of the use of ornament at construction joints over a fairly large surface is found on the new warehouse of the Government Printing Office in Washington. This building, which I had an opportunity to observe under construction, has been ably described by Aymar Embury in his article in last May's PENCIL POINTS.

Discoloration or streaking of the walls can be reduced if dust catching projections are kept to a minimum. Generally it is quite difficult to control streaking, that is, by designing projections so that they will cause streaks to form a pattern. The wind has a way of playing strange tricks with the streaks. Certain buildings designed in a particular style in which a rugged, aged, weather-beaten quality is inherent in the style, look well when

Ten-inch saw-sized form boards gave a pleasing texture to the walls of the concrete residence of John Wagner in Los Angeles. Newton and Murray, Architects

streaked. However, modern buildings dependent upon a neat, clean appearance, look particularly bad when muddy discoloration forms rakish patterns over the surfaces. These blemishes are almost as objectionable as rock pockets and should be avoided.

In Southern California, where our rains occur usually during one season and for the rest of the year much dust settles on every sort of ledge, special care should be taken. Even small ledges can be sloped back to the wall and drained to concealed pipes. I have tried it with success. Where a bit of practical thought is given to the problem, the weathering of concrete can be very beautiful.

Care must always be taken with exposed concrete to form all corners to prevent leakage of the freshly placed concrete. Window reveals should be given particular attention. Such places should be mitered so the thin ends of boards or vertical boards which change the direction of the texture, are avoided. Arches, especially the soffits must be handled to avoid ugly, haphazard forming. Where plaster molds are used in conjunction with wood forming, care must be taken that the boarding be cut to the profile of the ornament to prevent a wide, smooth streak all around the detail. Such careful forming, of course, is not necessary where a coat of plaster is to be applied as the finish texture.

It is usually better to project ornament from the wall surface than to cut into it. Deformation of the steel to clear the ornament, which may become very costly, is thus avoided. Deeply incised ornament may weaken the concrete structure.

At all times it is important that forms be kept tight. This will prevent water from leaching out of the concrete, causing sand streaks and rock pockets. Thorough placement of the concrete, a first requirement in an architectural concrete job, is facilitated by mechanical vibration combined with spading. A more dense concrete results and there is greater assurance that rock pockets will be eliminated. When the sand used is deficient in fines, it is frequently found that the use of certain admixtures will improve workability and produce smoother surfaces.

It is advisable to provide access holes in the inside form adjacent to complicated pieces of ornament so that a certain amount of rodding and hand work can be done to fill all the detail.

The surface that concrete presents to the elements is harder than most stone surfaces and slightly less hard than the hardest. It wears well and under certain conditions it colors well. It is easily tooled, but tooling and sand blasting have to be handled with a fair amount of caution for sloppy workmanship with *any* material is apt to lead to disaster. Sand blasting, on the average, costs approximately 3 cents a square foot. Tooling will run more nearly to 15 cents a square foot.

In addition to the virtues of concrete that

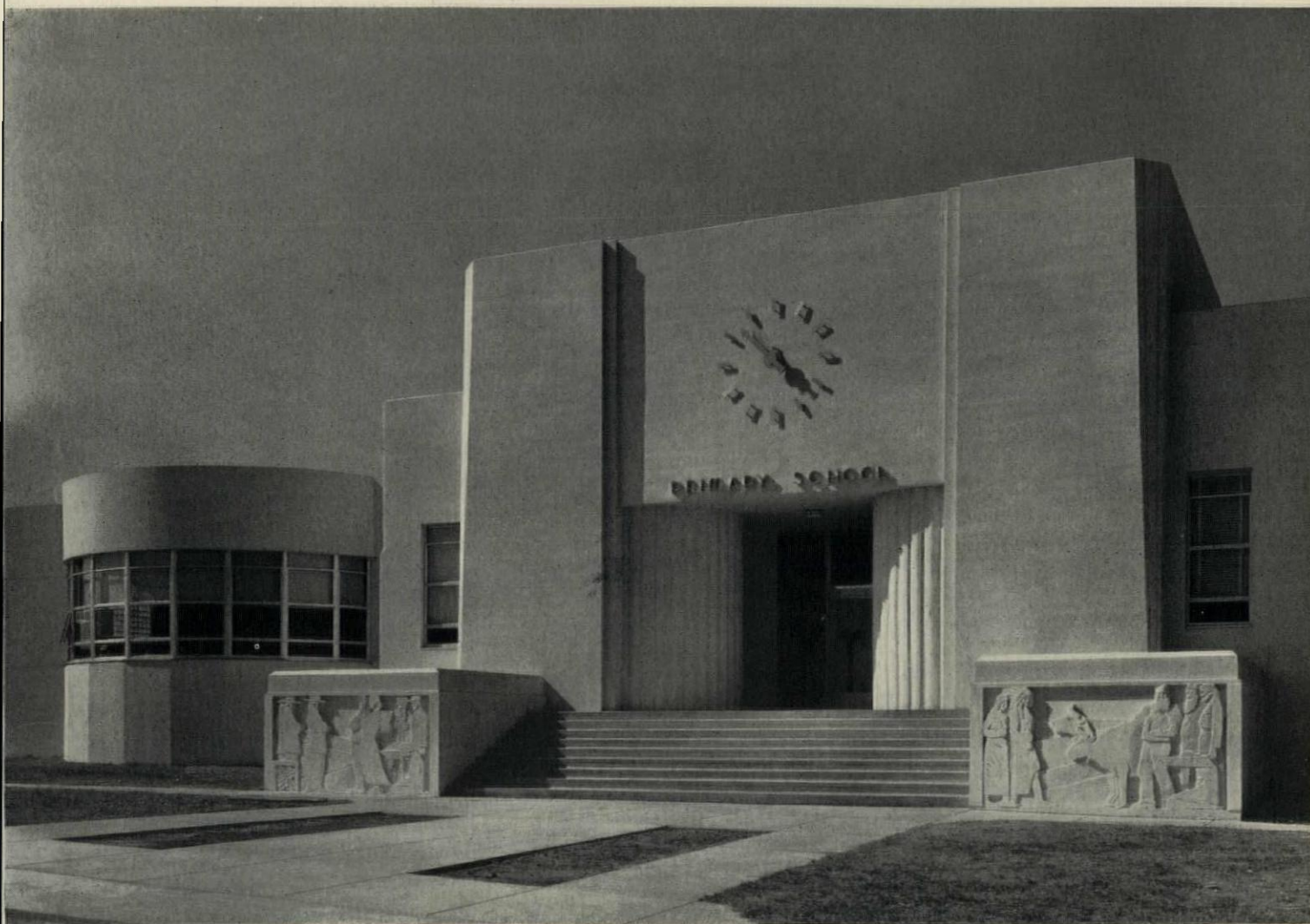
have been mentioned, there are other more obvious advantages: concrete is one of the most firesafe materials known to man, and where it is skilfully handled by engineers as an almost elastic material, as it has been by such men as C. J. Derrick and others on the Pacific Coast, it is ideal for earthquake resistance.

Concrete is a plastic that lends itself well to many styles. Simple, modern designs have unlimited possibilities in it. Romanesque, or modernized Romanesque—in fact most styles—appear well suited to the material. Although I feel that the Gothic is not too successful in concrete, some interesting attempts have been made.

There is no reason why architecture should not have a sane, well-balanced, consistent look, whether it be designed in an ancient or a modern style. It need not have that "forced-functional" appearance that seems to scream, "Unfettered Genius in full flight," from even above the roof-tops.

One thing, I believe, our earthquakes have impressed upon us on the Pacific Coast, and that is: we need the full cooperation of engineers of "imagination" to aid us in our "flights"—and right from the take-off. For some reason, architects are inclined to feel that imagination is something beyond the mechanical realm of engineering; a path that architects of genius may tread unhampered by such annoying considerations as gravity, lateral forces, and the like. Most of us are not engineers and can not accomplish our "poems" alone. In other words, why should we "hog the whole show"? We can't play Uncle Tom, Little Eva, and the hounds as well. Architects, from time to time, have accomplished things that breathe the spirit of the "cooperation" of many minds working logically together—not the "priggish poem" of a single, self-appointed genius.

Perchance my somewhat Hibernian outbursts remind one of a machine mixing concrete. It is almost symbolic, for our national architecture and our architects are also a mixture—an aggregate of many styles, ideas, and ideals, from fine to coarse, fortunately following no one dogmatic philosophy or style. The result of the mixture forms one interesting mass, not the product of one or two of especial genius, but of many minds.



The new concrete school building for the city of Tupelo, Mississippi, designed by N. W. Overstreet and A. H. Town, Architects, is a splendid example of appropriate design expression of material. The ornamental forms are simple and well placed in relation to the whole composition. The building replaced one destroyed by a tornado and the massive character of the replacement may well be reassuring to the citizens who send children there



The Borden Creamery at San Antonio, Texas, designed by Atlee B. and Robert M. Ayres, Architects, remains a most satisfactory example of intelligently designed concrete detail. Forms for this type of ornament are economical to construct and easy to handle. The results obtained in this building are appropriate to the material

*The Edmond Meany Hotel in Seattle, Washington—
R. C. Reamer, Architect—shows concrete used in a
striking yet wholly proper way. The fluting was pro-
duced by lining the forms with black corrugated iron
sheets—a simple and economical method of producing
a breath-taking effect. Only the upper part is shown*





Laval Co.

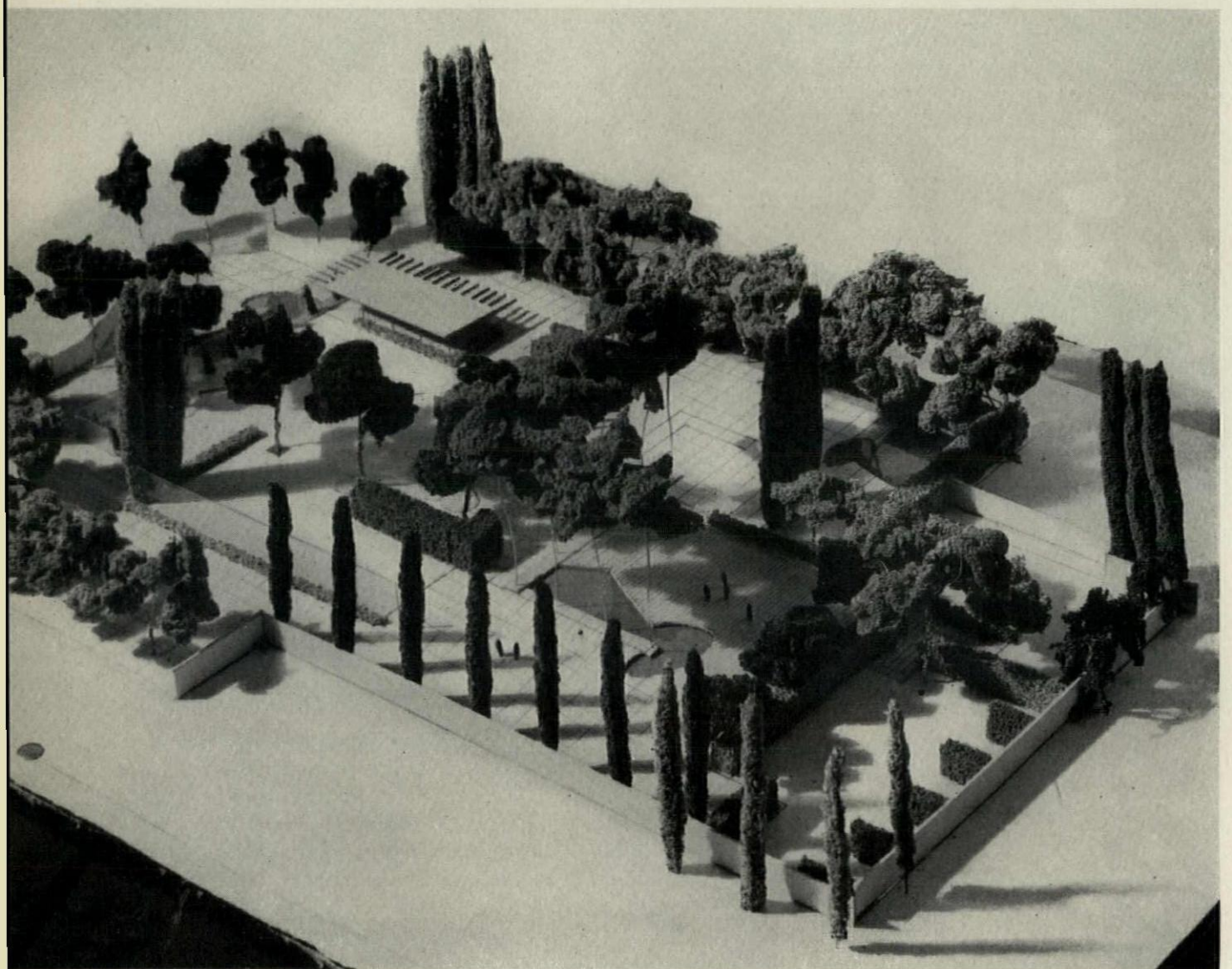
Entrance to the Scottish Rite Temple at Fresno, California. Fred L. Swartz, Architect; W. D. Coates, Jr., Associated Architect; Carl Werner, Consultant. Plaster waste molds set in the forms before the concrete was poured took care of the effective ornament



Charles Krutch

The power house at Norris Dam, for which Roland A. Wank was Principal Architect, furnishes one of the most arresting examples available of the well-considered surface treatment of massive concrete structures. Rough-sawn, six-inch boards were used for forms, placed horizontally and vertically in alternate panels, the panels being separated by V-joints. The result is at once in good scale with the immensity of the adjacent dam and with the humans who move about its base

Choosing plants to fulfil design requirements through their inherent qualities as materials, the author shows in this working model how a space composition in plant form types is achieved through definition of space, without restricting circulation. He refers to it as "sculpture in plant materials; not in the ordinary sense of an object to be looked at, but the constructivist type of sculpture which is large enough and perforated to permit circulation." Transparent glass brick, plant forms below the eye level, and tree branches above the eye level give a sense of division without obscuring the view, resulting in a three-dimensional composition. The detail opposite shows the architectural division of space



Photos by John E. Dawson

PLANT FORMS AND SPACE

MATERIALS CREATE VOLUME BY DEFINITION OF SPACE

BY JAMES C. ROSE

SPACE is the constant in all three-dimensional design, but a realization of space is not possible until it is defined by materials. In both architecture and landscape, material plus space create a volume through which human beings circulate and carry on the functions of living. Two material elements placed in close relationship, but not joined, create immaterial form out of the intervening space, and we derive a relation of void to solid wherein materials create volume out of infinite space. Individuals circulating within this volume of space interrupted and defined by material, perceive what is known as the interspatial vista which is apparent from any point within the volume, and in any direction one chooses to look. It replaces the arbitrary axial vista which is apparent from only one line of sight.

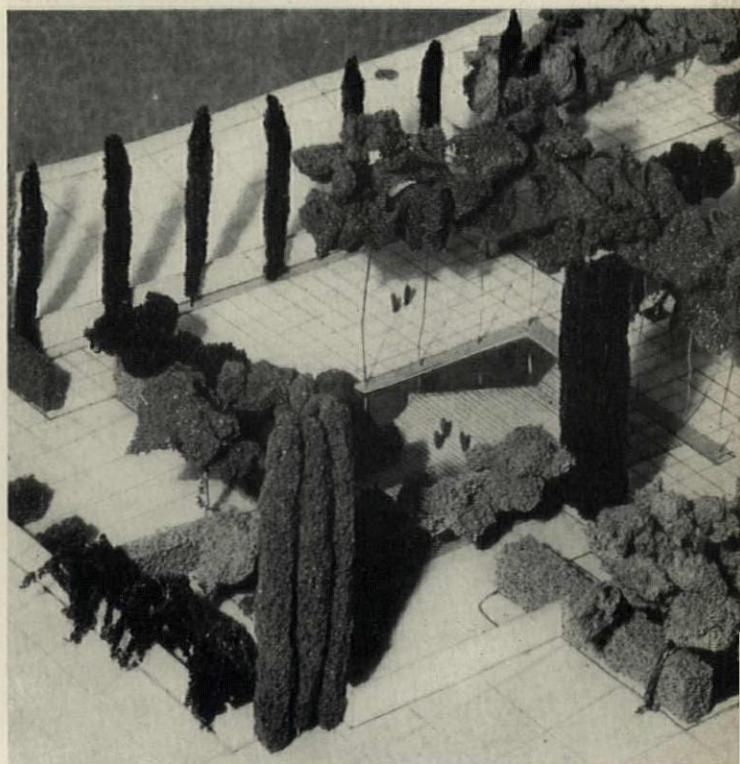
In buildings, we define space mainly with structural material to provide for the functions of living which require shelter. This structural outer shell articulates the form of interior volumes, which are broken into smaller volumes or partial volumes for use and circulation requirements and the best possible relation of void to solid, by which is created a knowledge and feeling of space.

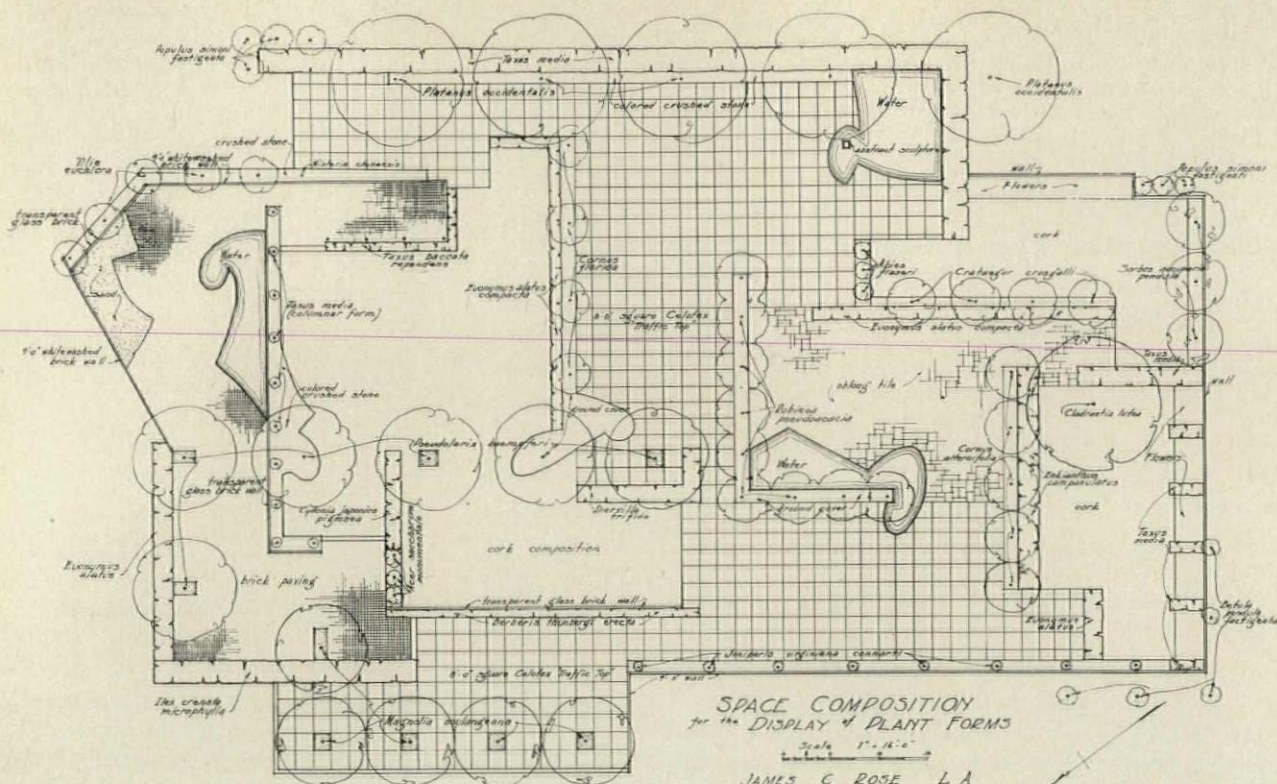
In pure landscape, we drop the structural shell and the volume is defined by earth, paving, water, and ground cover; foliage, walls, structures, and other vertical elements on the sides; and sky, branching, and roofing above. When we move outdoors, the change is mainly one of materials to provide for a different phase of man's activities. Some of the conditions now are largely beyond control of the designer: existing topography, the scale and nature of surrounding country, and the human need for expansion and freedom due to the larger scale of less confined space; but the spatial conception of design remains the same.

II

PRACTICALLY all the weather-resistant materials of architecture have a landscape use, but plants are the great connecting link between

man, highly-refined materials, and the uncontrollables of the outdoors. Plants enter into the domain of that which is not man-made but man-controlled, and because of their ever-changing qualities, require deeper knowledge and experience in their use than any other material. For example, to use plants intelligently, a landscaper must first know his territory: soil, climate, and indigenous growth. Then he must understand plant forms: not as he would like to have them (or as he might draw them) but as they grow, and to what extent they can be found in variations from the type, or altered and directed by constructive pruning. He must understand the potentialities of each plant: rate of growth, maximum height and breadth, and characteristic effect at maturity. He must know them not as separate forms alone, but also the immaterial form which will result in combination with other





living and architectural materials. He must consider marked contrast in value and color. He must visualize the constant change due to growth and season, and arrange for combinations which, as they change, will create an evolving space effect analogous to recent experiments in sculpture which preserve plastic and interspatial effects while in motion.

It might also be called visual music in which we have form stops of the more constant evergreen and architectural materials, and space and surface variations played in terms of deciduousness, bloom, texture, fall and spring coloring, and bark and branching characteristics. The greatest discipline is required to get spatial combinations of these effects because location, exposure, and soil conditions will alter the normal characteristics, but through the skilful use of plant materials it is possible to add the fourth dimension of motion to landscape design. It is easy! One meets very few architects who do not admit that they can do their own landscaping.

III

FREEDOM is the catch-word in landscape design. "Ah, wilderness!" murmurs the architect, as he looks at the panoramic view of "billowy foliage" through a thirty-foot expanse of glass with steel supports. "Complete wilderness," he echoes, and the stillness is broken only by the radio and the shrill train whistle at the town station . . .

Despite the extreme discipline and knowl-

The plan of the garden discussed in this article, drawn only as a record, illustrates the direction of circulation by placing of the plant, water, and architectural barriers. Interest is gained through the natural heights and forms of plants at maturity; with utilization of some of the newer paving materials for their exceptional value in outdoor design, providing direction as well as pattern

edge in the arts and sciences which have brought the only freedom we have in our lives, the architect still nourishes the illusion that freedom and wilderness are synonymous in nature. He forgets that every product he uses in his buildings is completely "natural," but refined by industrial processes. If wilderness is such a beautiful thing, and offers such freedom, why not leave it undisturbed, and retreat to a perfectly "natural" cave?

His architectural mind, preoccupied with that which occurs within the shell of a building, can see no justification for design which has no compulsion of shelter. He forgets that the real purpose of design is to facilitate the activity of men. He forgets that although shelter has compulsion, there is no compulsion whatever about having architects to provide it. Shelter would occur with or without architects just as the landscape is humanized wherever man goes—with or without advice from the landscaper—but if skill and knowledge rather than primitive wilderness contribute to the freedom of men, both professions have ample justification in service.

MAJOR PLANT FORMS IN VALUES FROM LIGHT TO DARK

AUTHOR'S NOTE: The following is a simplified form palette of plant materials which can be used in the northeastern United States. It is not intended as a list from which plants can be ordered without verification. The spelling of Rehder's "Manual of Cultivated Trees and Shrubs" has been followed and this table—prepared with the cooperation of Homer K. Dodge, of Wyman's Framingham Nursery, and Harlan P. Kelsey, of Kelsey's Highland Nursery—has been checked by Professor Ralph W. Curtis, of Cornell University.

The forms are not necessarily the only ones which the

particular plants assume, but they are sufficiently common as listed to render the classification useful.

The height is that of maturity or where it will serve a landscape purpose from ten to twenty years.

The values are those which are sufficiently common to be worth while listing, but individual selections must be made. These values are considered much as pigments in watercolors, which change when used in relation to light, distance, and other pigments.

No obscure plants are used, all of them can be moved, and tender plants are marked with asterisk.

COLUMNAR (ratio approximately 8:1 except where otherwise noted)

HEIGHT	LIGHT	MEDIUM	DARK
50' plus	<i>Populus simoni fastigiata</i> <i>Populus nigra italica</i> <i>Quercus robur fastigiata</i>	<i>Acer saccharum monumentale</i>	<i>Abies fraseri</i> <i>Cryptomeria japonica lobbi*</i>
40-50'	<i>Betula pendula fastigiata</i>		<i>Fagus sylvatica fastigiata</i> <i>Juniperus virginiana cannarti</i>
20-40'		<i>Thuja occidentalis</i>	<i>Thuja occidentalis douglasi</i> <i>pyramidalis</i>
12-20'	<i>Juniperus communis suecica</i> <i>Thuja occidentalis pyramidalis</i>	<i>Crataegus oxyacantha splendens</i> (6-1) <i>Ligustrum vulgare pyramidale</i>	<i>Juniperus virginiana schottii</i> <i>Chamaecyparis lawsoniana</i> <i>Taxus media (columnar form)</i>
6-12'			<i>Taxus cuspidata nana (upright form trimmed)</i>
3-6'	<i>Juniperus communis bibernica nana</i> <i>Ligustrum ibolium</i>		

HORIZONTAL (effect of right angle opposition to vertical form)

HEIGHT	LIGHT	MEDIUM	DARK
50' plus		<i>Quercus palustris</i>	<i>Pinus strobus</i>
40-50'	<i>Nyssa sylvatica</i> <i>Pseudolarix kaempferi</i>	<i>Quercus palustris</i>	<i>Pinus strobus</i>
20-40'	<i>Crataegus mollis</i>		
12-20'	<i>Styrax japonica*</i> <i>Viburnum prunifolium</i>	<i>Crataegus crus-galli</i> <i>Cornus florida and alternifolia</i>	
6-12'	<i>Evonymus alata</i>	<i>Ligustrum ibota regelianum</i> <i>Viburnum tomentosum</i>	
3-6'	<i>Juniperus chinensis pfitzeriana</i> <i>Lonicera morrowi prostrata</i>	<i>Diervilla trifida</i>	<i>Taxus cuspidata nana</i> <i>Juniperus sabina tamariscifolia</i>
1-3'	<i>Juniperus chinensis sargentii</i>	<i>Cydonia japonica pigmaea</i> <i>Juniperus horizontalis</i>	<i>Cornus horizontalis</i> <i>Taxus canadensis</i>

PENDULOUS (as opposed to vertical and contrasted with horizontal)

HEIGHT	LIGHT	MEDIUM	DARK
50' plus	<i>Acer saccharinum wieri</i> <i>Salix elegantissima</i>		
40-50'	<i>Betula pendula dalecarlica</i> <i>Salix babylonica</i>		<i>Fagus sylvatica pendula</i>
20-40'	<i>Salix niobe</i> <i>Juniperus communis oblonga pendula</i>	<i>Morus alba pendula</i>	
12-20'	<i>Prunus subhirtella pendula</i>	<i>Cornus florida pendula</i>	
6-12'	<i>Forsythia suspensa</i>	<i>Rosa multiflora</i> <i>Rosa setigera</i>	<i>Tsuga canadensis pendula</i> <i>Tsuga canadensis Kelsey</i>
3-6'	<i>Cotoneaster salicifolia floccosa*</i>	<i>Abelia grandiflora*</i> <i>Berberis triacanthophora</i>	<i>Taxus baccata repandens*</i> <i>Tsuga canadensis pendula</i>

BROAD AND SPREADING (with trunks exposed through foliage)

HEIGHT	LIGHT	MEDIUM	DARK
50' plus	<i>Platanus occidentalis</i> <i>Gleditsia triacanthos</i> <i>Populus alba</i>	<i>Quercus alba</i> <i>Quercus macrocarpa</i>	<i>Gymnocladus dioica</i> <i>Quercus rubra</i>
40-50'	<i>Cladrastis lutea</i> <i>Salix alba</i>	<i>Pbellodendron sachalinense</i> <i>Celtis occidentalis</i>	<i>Pinus thunbergi</i> <i>Pinus strobus</i>
20-40'	<i>Malus</i> (common apple) <i>Magnolia soulangeana</i> <i>Sorbus decora</i> <i>Halesia tetraptera</i>	<i>Pbellodendron chinense</i> <i>Chionanthus virginica</i> <i>Prunus avium</i>	
12-20'	<i>Caragana arborescens</i> <i>Amelanchier laevis</i> <i>Laburnum alpinum</i> * <i>Albizia julibrissin</i> *	<i>Cornus florida</i> <i>Magnolia glauca</i>	<i>Pinus montana</i> <i>Cercis canadensis</i> <i>Viburnum sieboldi</i>
6-12'	<i>Enkianthus campanulata</i> <i>Myrica carolinensis</i> <i>Euonymus yedoensis</i>		<i>Pinus mugo mughus</i> <i>Rhododendron hybrids</i>
3-6'		<i>Cotoneaster divaricata</i> <i>Paeonia suffruticosa</i>	<i>Kalmia latifolia</i>

ROUND OR OVAL (more solid with regular outline)

HEIGHT	LIGHT	MEDIUM	DARK
50' plus	<i>Acer saccharum</i> <i>Acer pseudo-platanus</i> <i>Catalpa speciosa</i>	<i>Aesculus bipocastanum</i> <i>Prunus sargentii</i> <i>Fagus americana</i>	<i>Acer platanoides</i> <i>Tilia vulgaris</i> <i>Fagus sylvatica riversi</i>
40-50'	<i>Acer rubrum</i> <i>Betula alba</i>	<i>Tilia cordata</i> <i>Fraxinus lanceolata</i>	<i>Tilia euclora</i> <i>Magnolia acuminata</i> <i>Carpinus betulus</i>
20-40'	<i>Sorbus aucuparia</i>	<i>Aesculus carnea</i> <i>Cercidiphyllum japonicum</i> <i>Crataegus mollis</i>	<i>Pinus montana</i>
12-20'	<i>Crataegus pruinosa</i> <i>Malus arnoldiana</i> <i>Malus floribunda</i> <i>Sorbus decora</i>	<i>Acer tataricum</i> <i>Cornus florida</i> <i>Syringa japonica</i>	<i>Evonymus europaea</i> <i>Cornus mas</i> <i>Ilex opaca</i> *
6-12'	<i>Hibiscus syriacus</i> <i>Berberis verna</i> <i>Lonicera fragrantissima</i> *	<i>Magnolia stellata</i> <i>Berberis dielsiana</i>	<i>Calycanthus floridus</i> <i>Vaccinium corymbosum</i>
3-6'	<i>Thuja occidentalis globosum</i>	<i>Azalea poukanensis</i> <i>Evonymus alata compacta</i>	<i>Pinus mugus</i> <i>Ilex crenata microphylla</i>
1-3'	<i>Viburnum opulus nana</i>	<i>Berberis thunbergi minor</i>	<i>Taxus canadensis stricta</i>

IRREGULAR AND PICTURESQUE

HEIGHT	LIGHT	MEDIUM	DARK
50' plus	<i>Gleditsia triacanthos</i> <i>Quercus montana</i> <i>Gymnocladus dioica</i>	<i>Robinea pseudoacacia</i> <i>Acer rubrum</i>	<i>Pinus strobus</i> <i>Pinus nigra</i> <i>Fagus sylvatica pendula</i>
40-50'	<i>Ginkgo biloba</i> <i>Juglans regia</i> <i>Ailanthus glandulosa</i>	<i>Sassafras albidum</i> <i>Betula nigra</i>	<i>Pinus densiflora</i> <i>Pinus sylvestris</i>
20-40'	<i>Aralia spinosa</i>	<i>Malus tbeifera</i>	<i>Pinus thunbergi</i>
12-20'	<i>Halesia carolina</i> <i>Acer ginnala</i>	<i>Cydonia</i> (common quince) <i>Prunus americana</i>	<i>Oxydendrum arboreum</i> <i>Cercis canadensis</i>
6-12'	<i>Malus sargentii</i> <i>Rosa hugonis</i>	<i>Ilex verticillata</i> <i>Hamamelis vernalis</i>	<i>Taxus cuspidata</i> (with pruning)
3-6'	<i>Juniperus chinensis pfitzeriana</i>	<i>Cotoneaster dielsiana</i> <i>Berberis julianae</i> *	<i>Cotoneaster divaricata</i> <i>Juniperis sabina</i>
1-3'	<i>Juniperus chinensis sargentii</i>	<i>Juniperus communis depressa</i> <i>plumosa</i>	<i>Thuja occidentalis</i> "little gem"

IS ARCHITECTURE GOING TO THE BAUHAUS

THE GREAT ARCHITECT BARKS BITINGLY

BY EUGENE RASKIN

LOOKING over my shoulder at the neatly-typed title above, the Great Architect sneered audibly.

"My young friend," he said, "your talent for making bad puns is going to get you into trouble, if you're not careful. Have you no self-control? No restraint? The Bauhaus, for instance, is not a fitting subject for your disrespectful nonsense. Write about it seriously, or not at all."

"You're right," I admitted, contritely. "It's not fair to poke fun at a great creative idea, which, whatever its faults, has penetrated to the realities . . ."

"Poppycock!" His face began to take on that familiar purplish tinge. "The Bauhaus business, and all it stands for, is a menace to architecture. A menace to the profession! That's why it shouldn't be joked about . . . it's not funny, it's downright dangerous!"

I swung away from my typewriter resignedly, and settled back to endure the inevitable oration. There would be no peace, I knew, until it was off his chest. Besides, there was an almost-full decanter near his elbow.

"The Bauhaus idea," he began, striking a pose, "is nothing much more than a clever device by means of which certain gentlemen, who are better at blarney than building, assure themselves of lucrative and dignified careers."

"Just a minute!" I was shocked. "Whom do you mean?"

"Never mind. You know. These men . . ."

"But surely," I cried, "you don't include . . ."

"Stop interrupting me!" The Great Architect roared. "These men, I say, establish classes, to which students flock enthusiastically. Why? Because humans never really grow up. Deep down, we'd all like to play with pieces of paper, sticks, wire, glass—paste things together. But the responsibilities of adulthood prevent us from admitting the desire, even to ourselves. However, if you give

people a chance to play, and at the same time feel they are Accomplishing Something—and what's more, you fill them full of high-sounding phrases and allow them the privilege of paying tuition fees—it's no wonder they come running!"

"See here," I remonstrated quietly. "Aren't you being a bit too sweeping? How about . . ."

"Look!" he thundered. Lifting a sheet of paper from my desk, he folded it deftly, slit it once or twice with a penknife, and set it down with a thump. It stood.

"There," the Great Architect waved dramatically, narrowly missing the decanter. "Self-supporting study in abstract form. Cut without waste. See what I mean? They take such fiddle-daddle, dress it up in brilliant wordage, publish it skilfully, exhibit it masterfully, and it goes over like bubble dancers at an engineers' convention."

"You know," I remarked, squinting at his creation. "That's not half bad. See how the texture takes the light."

"Eh? Oh, of course. Of course, there's much to be learned about the uses of materials this way." He shrugged. "But why surround it with hokum? Just so someone can be well paid for spouting it?"

"Are you referring to . . ."

"Now then," the Great Architect sailed on. "I could forgive this foolishness, as I forgive other human failings, if it weren't for its vicious effects. It threatens the future, the very existence of the art and profession I love." A corny quaver crept into his voice.

"Hear, hear," I murmured. He glanced at me suspiciously, then cleared his throat and poured himself a glass of the crimson wine. I followed his example with alacrity. Almost instantly, I began to feel better about the whole thing.

"While we architects," he continued, "lose ourselves in complex theorizing and the cutting up of paper dolls, industrial designers are

taking our work out from under our noses. They realize, just as we do, that people use not only buildings, but furniture, autos, ships, trains, planes, clothes, canned foods, fountain pens—and so on through the whole list of material goods. And instead of sitting around discussing it, they are out designing all these things, pioneering ahead of us, and making us rapidly obsolete.”

“Oh, come now,” I said, still warm from the wine. “It isn’t as bad as all that.”

“No?” He smiled, grimly. “Just count up to yourself how many big jobs you know of, right now, that are being done by industrial

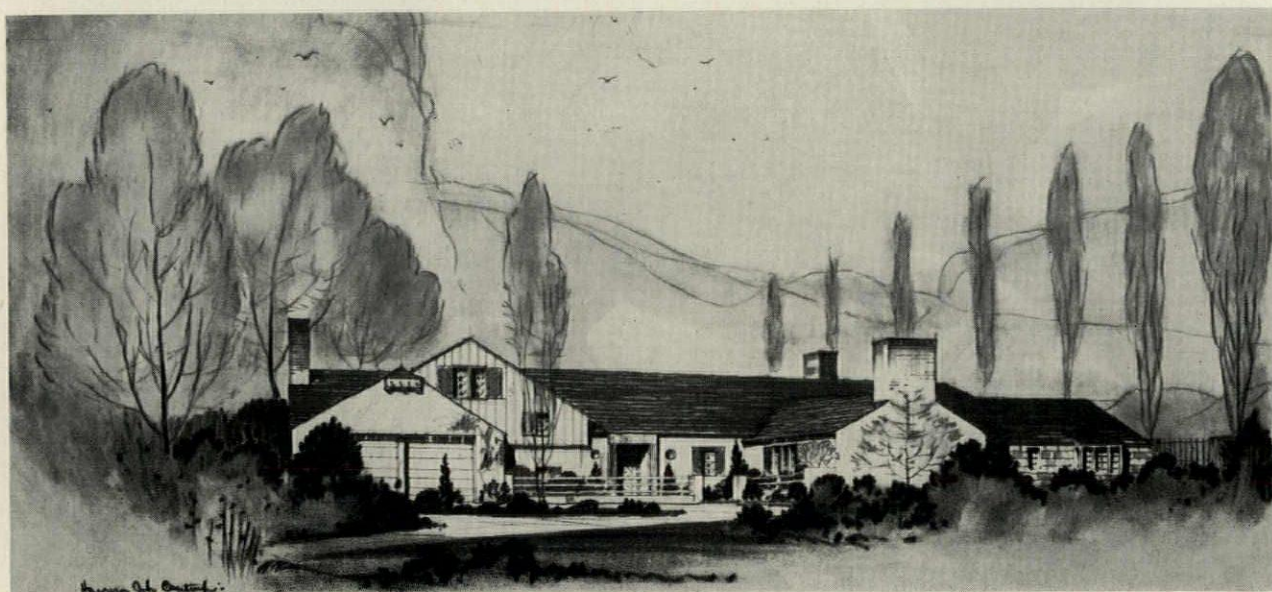
designers, and that should have been landed by architects.”

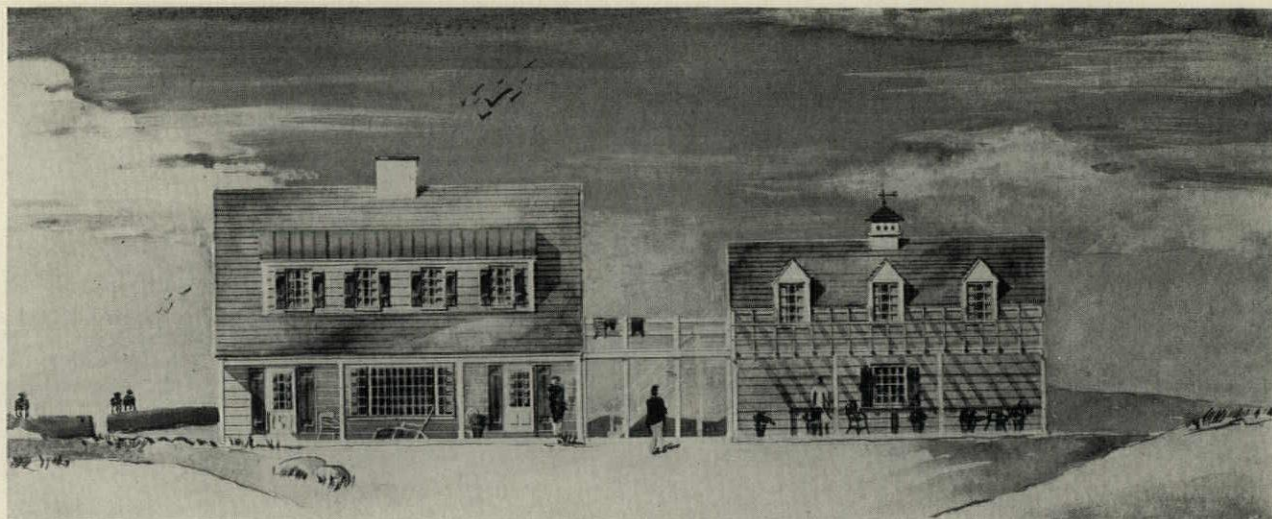
“Well,” I said, at length. “The total is certainly impressive. But it hardly supports what you say about the Bauhaus idea. After all, some of our best industrial designers . . .”

But the Great Architect wasn’t listening. He had made a frame of his fingers, and was peering through the opening at his Study.

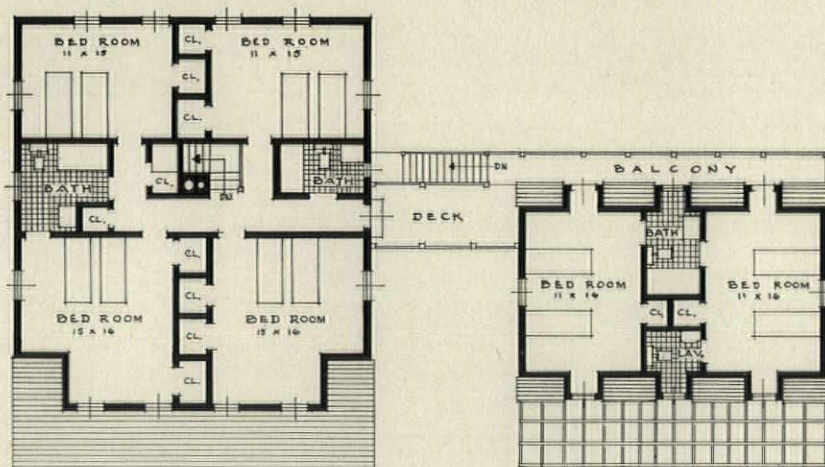
“By the way,” he said, dreamily. “Have I told you about the design group I am planning? Perhaps you’d like to join. Experiments in pure form . . . open your eyes to a lot of things . . .”

Hospitality and comfort are expressed by the home of George Wellington Stoddard, A. I. A., of Seattle, as rendered here by his Associate, Harrison John Overturf. Plans of this "architect's house" were not available to accompany the rendering, which is characteristic of Overturf's work

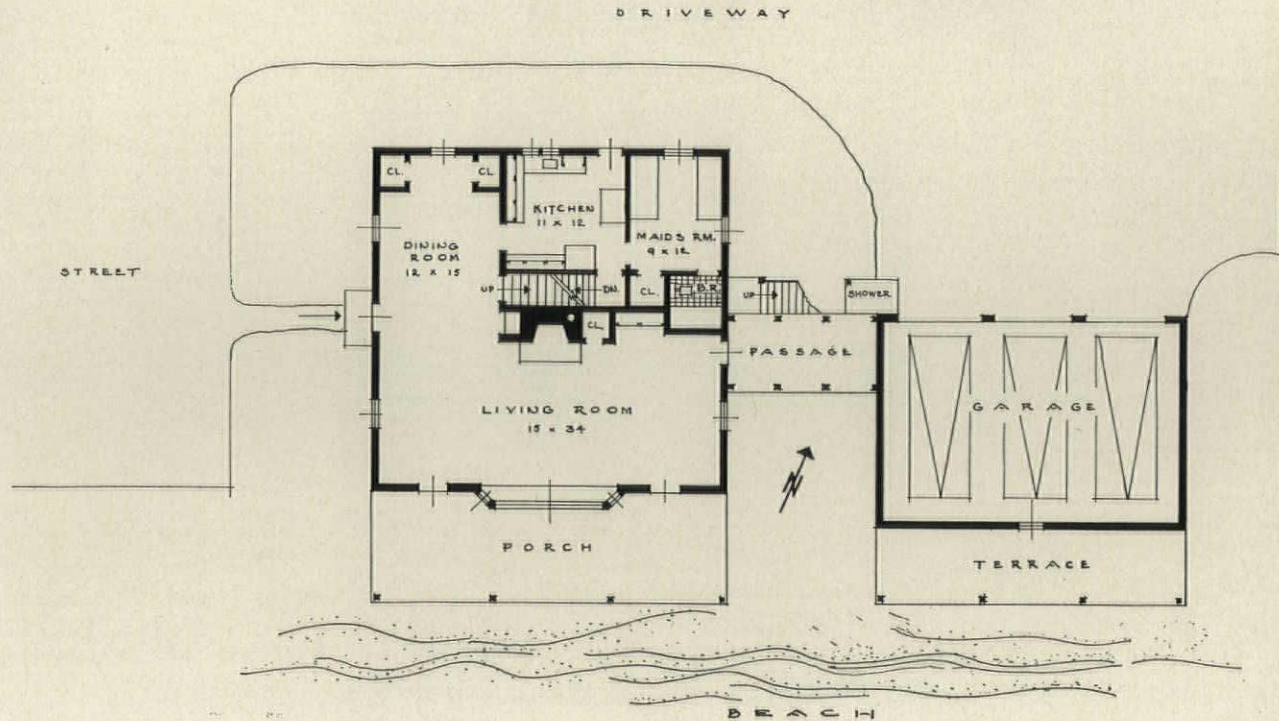


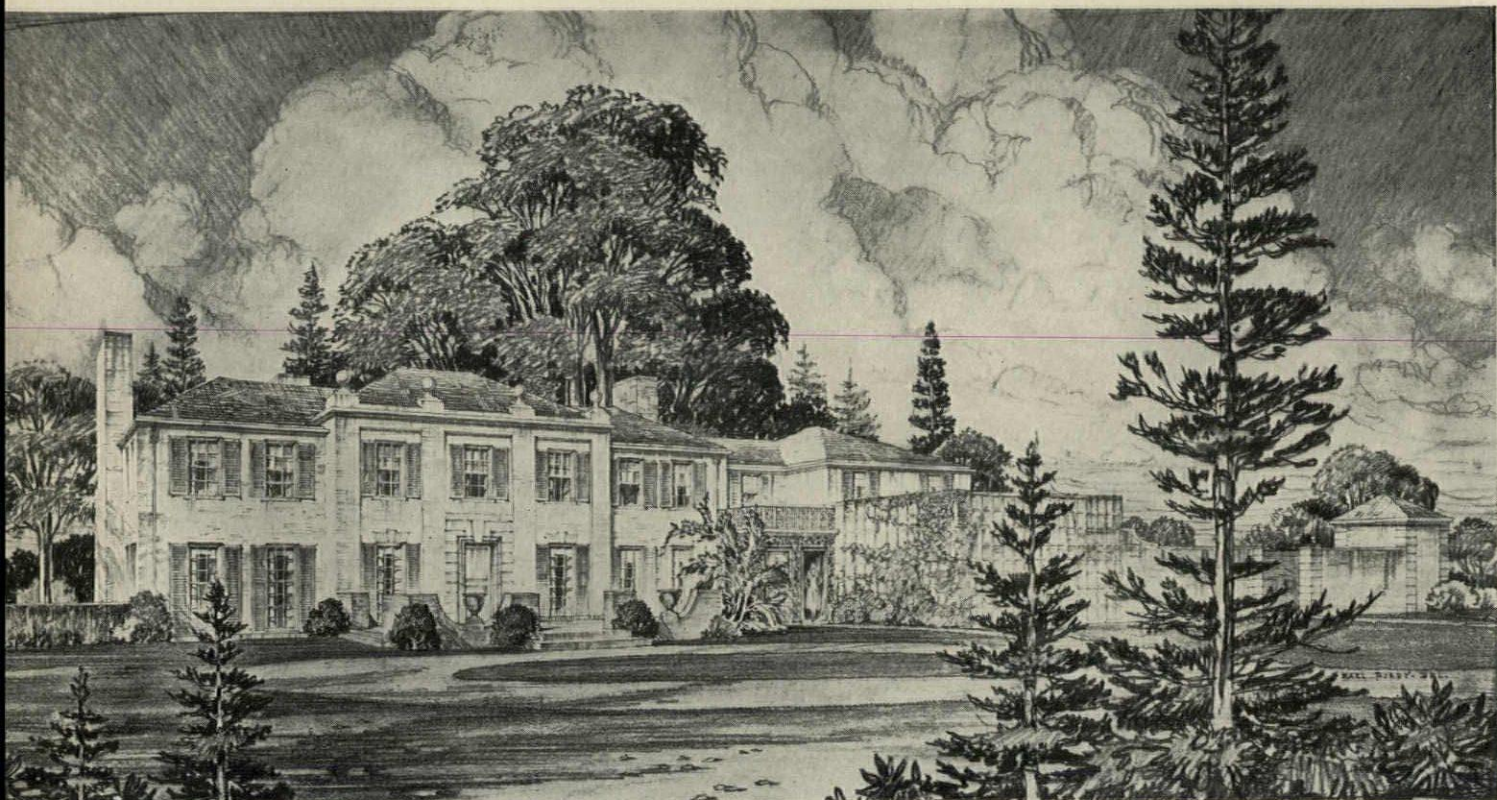


This compact and economical "House by the Sea" was designed by Savery, Scheetz & Gilmour, Architects, of Philadelphia, for summer use at Beach Haven, N. J.



DRIVEWAY





Spacious principal rooms, a special entrance for children of the house, and ample service areas are features of this house by George S. Steele, Architect, N. Y.

