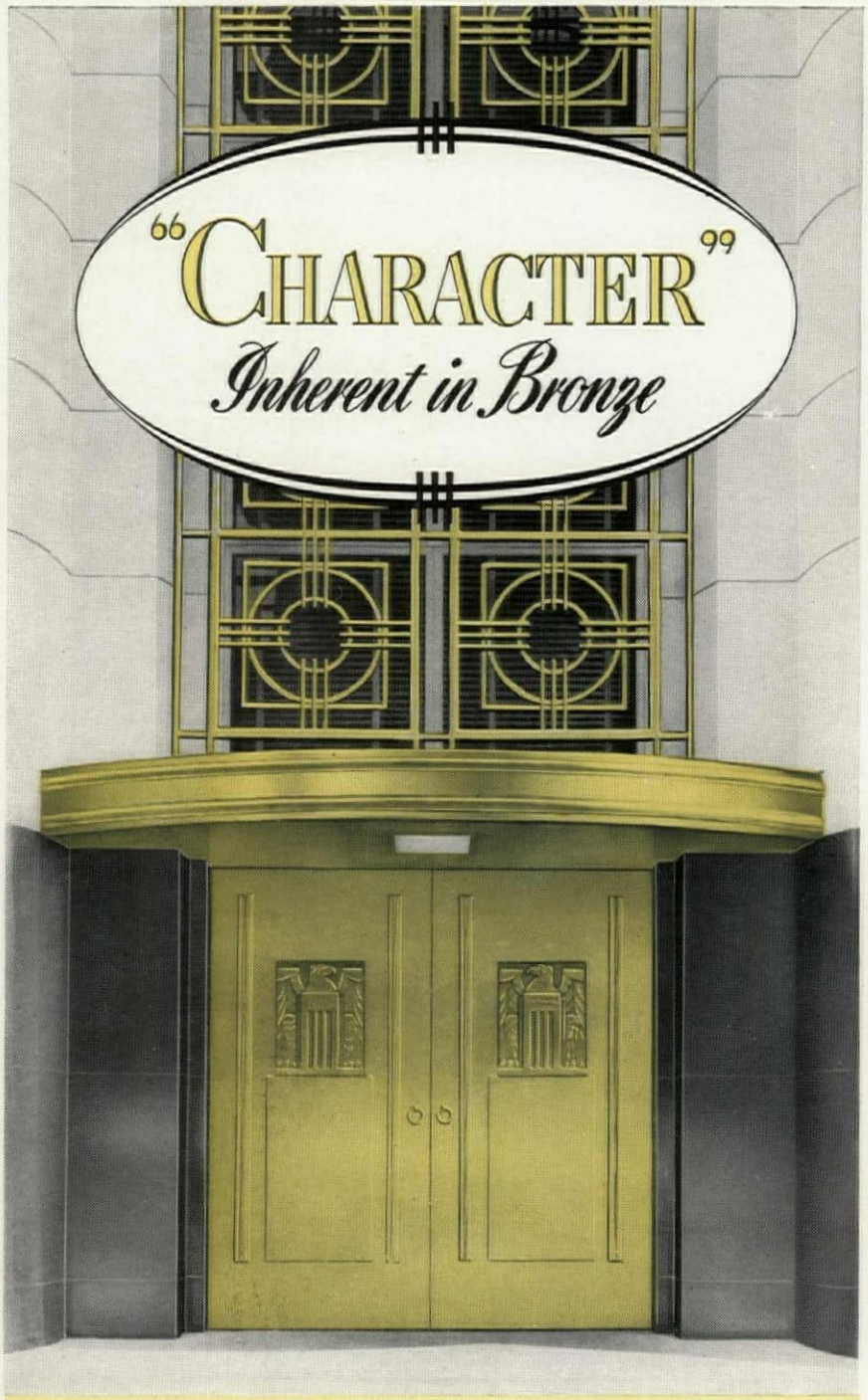
PENCIL POINTS

MARCH
1941



These photographs show the Anaconda Extruded Architectural Bronzework on the new building of the Victoria Bank and Trust Company, Victoria, Texas. The continuous bronze grille extending upward five stories above the Main Entrance is believed to be the largest single frame in the country. The Benson Manufacturing Company of Kansas City, Mo., executed the entire bronze installation . . . . . Architects—C. H. Page & Son, Austin, Texas.

A glance at the illustration reveals how the impressive "character" motif of this bank building is carried out by using Anaconda Architectural Bronze. At the same time the air of charm and distinction it lends is also apparent. But there's more to bronze than appears on the surface.

Besides its beauty and remarkable adaptability to design, bronze offers the double economy of durability and easy maintenance. The fact is only occasional cleaning is necessary to maintain its original lustre. And beyond that, its moderate cost is a further reason why so many leading architects specify this ageless metal.

• • •

The American Brass Company is the leading supplier of Architectural Bronze, Copper and Nickel Silver in all wrought forms for ornamental work of every description.

FOR ORNAMENTAL WORK *Anaconda Bronze*

ANACONDA

THE AMERICAN BRASS COMPANY *General Offices: Waterbury, Connecticut • Subsidiary of Anaconda Copper Mining Company • In Canada: ANACONDA AMERICAN BRASS LTD., New Toronto, Ont.*

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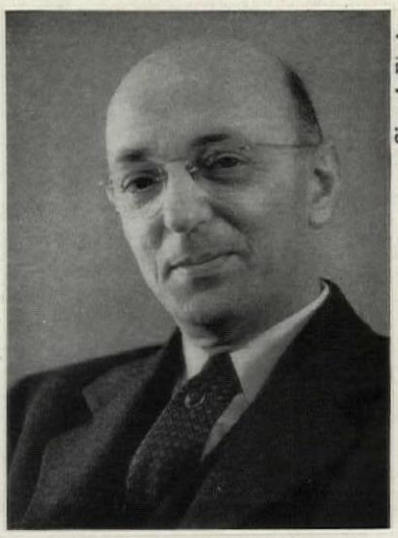


Sigurd Fischer

JOHN B. PETERKIN STARTED HIS ARCHITECTURAL CAREER, JANUARY 10, 1901, IN THE OFFICE OF GEORGE B. POST, WHERE HE WORKED UNDER HENRY P. KIRBY, DESIGNER FOR THE OFFICE AND A MAN OF RARE TALENT. MR. PETERKIN HAD RECEIVED HIS EARLY EDUCATION IN PRIVATE SCHOOLS ABROAD AND HAD COME TO THIS COUNTRY FROM ENGLAND THE PREVIOUS OCTOBER. IN THE FALL OF 1904 HE ENTERED THE UNIVERSITY OF PENNSYLVANIA, STUDYING UNDER PAUL PHILIPPE CRET. A YEAR LATER HE ENTERED THE EMPLOY OF WAID & WILLAUER, AS DESIGNER, AS A JUNIOR PARTNER. THE FIRM LATER BECAME SHAPE, BREADY & PETERKIN. FOR THE PAST 20 YEARS HE HAS PRACTICED UNDER HIS OWN NAME

THE AIRLINES TERMINAL

PROBLEM—PROVIDE FACILITIES TO COORDINATE THE VARIOUS COMPETITIVE FUNCTIONS OF THE CITY STAFFS OF FIVE MAJOR AIRLINE OFFICES, EACH HANDLING PASSENGERS AND BAGGAGE IN THE INITIAL STAGE OF AIR TRAVEL

SOLUTION—ORGANIZE AND SIMPLIFY THE ROUTINE ACTIVITIES OF THE AIRLINES TERMINAL—THE FIRST ENTERPRISE OF ITS TYPE—PROVIDING APPROPRIATE AREAS AND FACILITIES TO RECEIVE ALL OUTGOING AND INCOMING AIR TRAVELERS AND THEIR BAGGAGE, SPACE FOR OFFICE AND EXECUTIVE STAFFS OF THE FIVE AIRLINES CONCERNED, AND DE LUXE TRANSPORTATION TO THE METROPOLITAN AIRPORTS. IN ADDITION, IT WAS NECESSARY FOR THE ARCHITECT TO PROVIDE AS MUCH RENTABLE AREA AS POSSIBLE WHERE MOST DESIRABLE, I.E. ON THE 42ND STREET FRONT. SHOPS, A RESTAURANT, AND A NEWSREEL THEATRE WERE LOCATED AT THIS LEVEL. FOR THE REMAINDER OF THE SOLUTION THE ARCHITECT EMPLOYED AN UNUSUAL VARIETY OF MECHANICAL EQUIPMENT: ESCALATORS TO DIVERT TERMINAL TRAFFIC TO THE WAITING ROOM ON THE FLOOR ABOVE (AT THE 41ST STREET LEVEL), CONVEYOR BELTS TO TAKE THE PASSENGERS' BAGGAGE UP AGAIN TO A MEZZANINE OVER THE LIMOUSINE LOADING PLATFORM, AND AN ELABORATE COMMUNICATIONS SYSTEM WHICH IMPLEMENTS THE TICKET BOOTHS AND RESERVATION DEPARTMENTS OF THE WAITING ROOM. THE DIFFICULT PROBLEM OF HANDLING LIMOUSINES WAS SOLVED BY SENDING CARS COMING IN FROM 41ST STREET DOWN A RAMP TO THE UNLOADING FLOOR BELOW THE 42ND STREET GROUND LEVEL AND AGAIN TO A LOWER LEVEL FOR STORAGE, WHENCE HYDRAULIC LIFTS KNOWN AS LEVELATORS RAISE THEM UPON SIGNAL TO THE PASSENGER AND BAGGAGE LOADING PLATFORMS INSIDE THE 41ST STREET DOORS

Sigurd Fischer

WAITING ROOM

THE NEW YORK AIRLINES TERMINAL — BY JOHN B. PETERKIN

THE AIRLINES TERMINAL

BY JOHN B. PETERKIN, ARCHITECT

In the fall of 1937, the five major airlines of the United States were approached with the suggestion that they participate in the erection of a consolidated Airlines Terminal in New York on the site of the old Belmont Hotel, on the west side of Park Avenue extending from 41st Street to 42nd Street. *The response was immediate!* From this start began two and one-half years of negotiations, the preparation of endless studies, and continuous changes to keep up with the ever-expanding air transport business which showed a sudden spurt in 1938 that continued through 1940.

The $5,000,000 building presented here is the result of the most intensive study of all functions connected with the initial stage of air transportation and complete collaboration between the architect and all departments of the transport companies. In fact, the successful planning of this building would not have been possible but for the untiring efforts of the personnel and officials of the five air line companies in the solution of the many difficult and intricate problems presented.

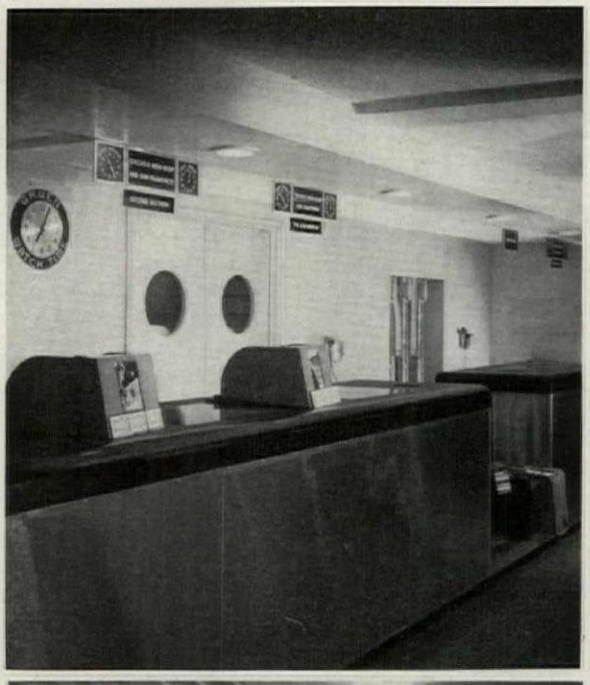
The air line companies had operated before from various individual ticket offices and hotels, all passengers and their baggage being loaded into limousines at the curb for transport to airports. This method had obvious disadvantages and had been completely outgrown by the rapid development of air travel. The method certainly suffered by contrast with the facilities for passenger comforts and conveniences provided at the major airports.

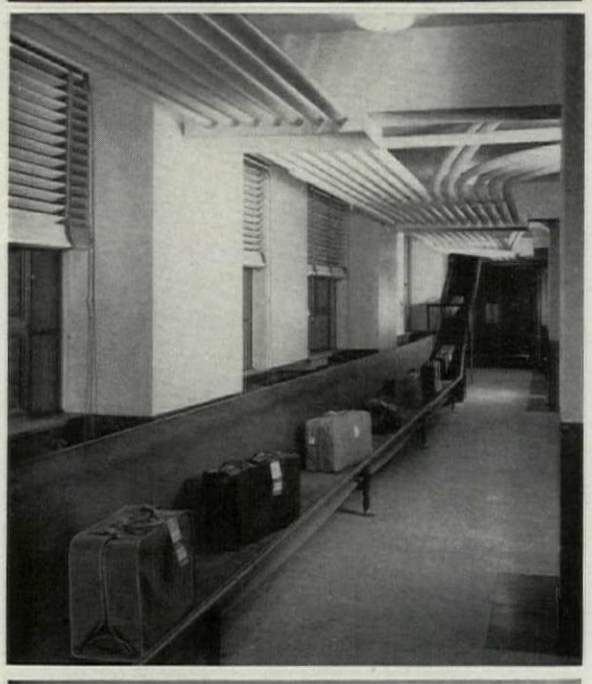
The New York Airlines Terminal is in itself a remarkable tribute to the air transportation industry in that it expresses a spirit of cooperation between the several competing companies and will undoubtedly facilitate a more uniform standard of passenger service, which has always been the pride of the transport companies. The terminal now takes its place in the general scheme of air transportation and is regarded in the industry as a traffic department problem.

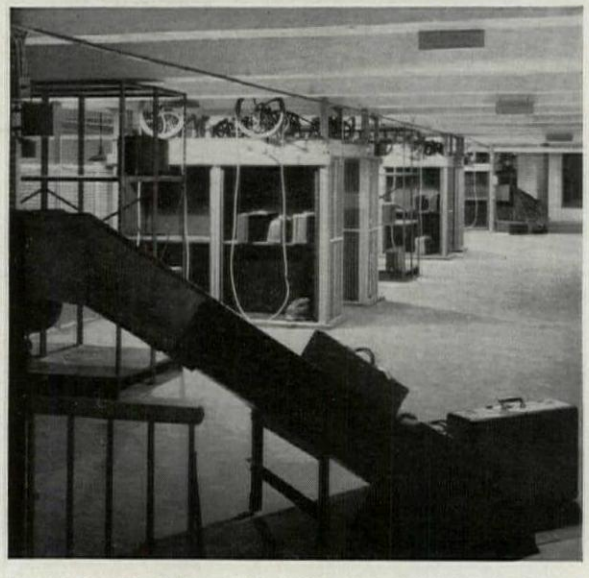
The Airlines Terminal's function is to handle all reservations, either by telephone from the individual company reservation rooms or at the ticket counters maintained by the several companies; to receive all passenger baggage, weigh, check and transport it to the air fields; to provide de luxe transportation from the terminal to the air fields; and to receive, within the terminal, all passengers from the airports who desire this as their city destination.

All passengers leaving the Terminal are first required to obtain their reservations at the ticket counter of the line on which they intend to travel. The agent weighs baggage at scales recessed in the counters and it is not seen again by the passenger until he reaches his destination. The passenger awaits the limousine departure for the airport, which is announced over a public address system, then proceeds to the limousine loading platform where an air line company agent checks him into the limousine.

The passenger baggage, after it is weighed at the counter is immediately placed on a conveyor belt which carries it to a mezzanine floor immediately over the limousine loading platform. Baggage men sort and place the baggage according to company and flight







numbers and at signal from the control tower, send each trip load on specially-constructed dumbwaiters down to the platform, where it is checked and loaded in the limousines.

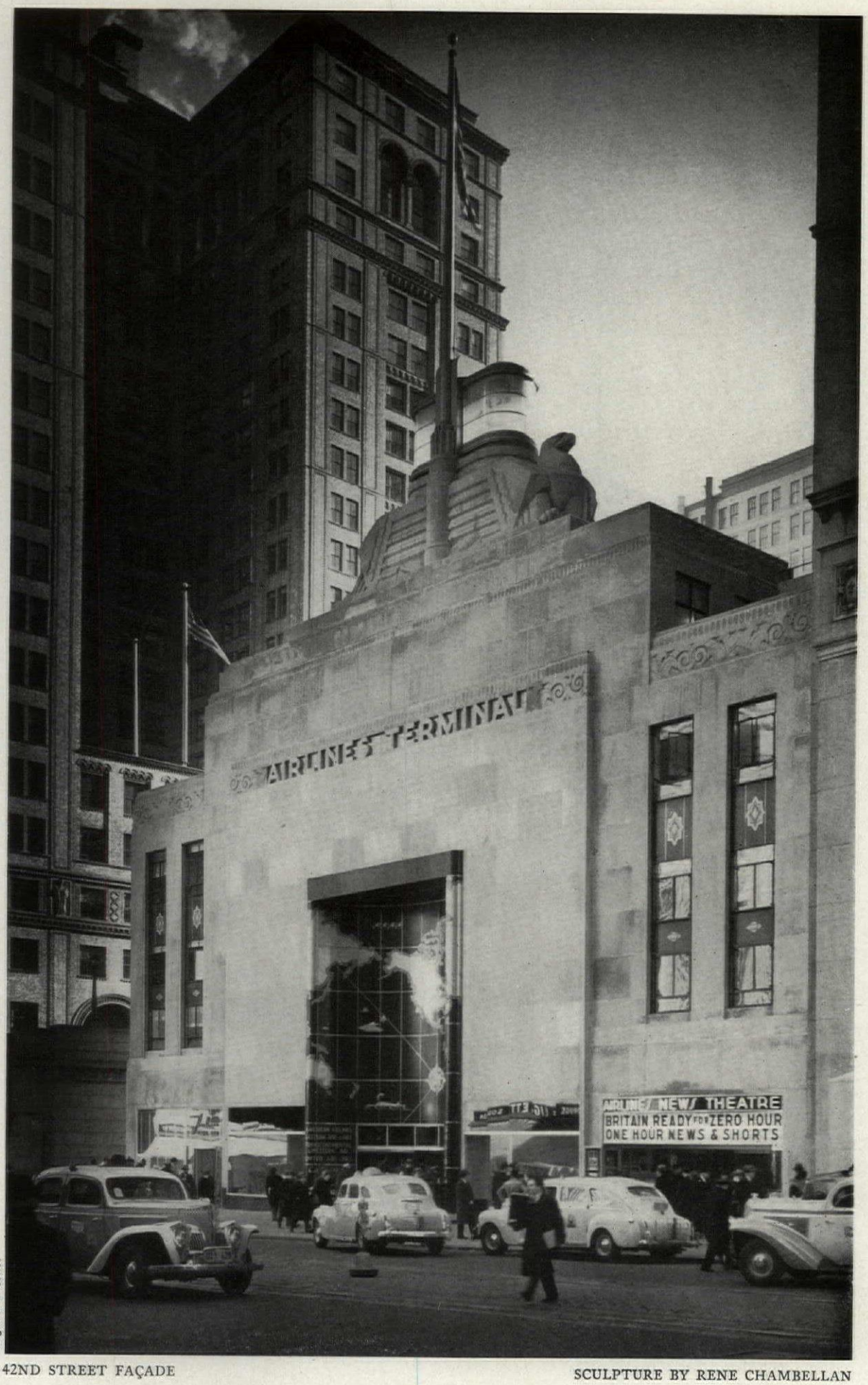
The handling of limousines was, of course, by far the most difficult problem to solve. The area of the property is small for the purpose intended and, unfortunately, the departures of limousines are not evenly spread over the day, but are heavily concentrated at three short periods during the morning and afternoon.

The first decision in the solution of this problem was to separate the incoming and outgoing limousines. The second decision was to use mechanical equipment to move limousines from storage to loading areas. The property did have certain advantages for this purpose as the street grade on 41st Street is twelve feet above that on 42nd Street, permitting the Waiting Room and Ticket Sales Areas to be placed one floor above 42nd Street (reached by escalator) or approximately at the 41st Street level. This had two advantages: it preserved the valuable frontage on 42nd Street for renting or income purposes, and brought the Waiting Room and limousines loading areas to approximately the same level.

The incoming limousine approaches the building on 41st Street, enters a ramp, and descends to the first basement below 42nd Street, which is used exclusively as a passenger and baggage unloading area. As each limousine is unloaded, the passengers ascend to 42nd Street or the Waiting Room by escalator or elevator. The limousine, now empty, descends to the next basement for storage and to be made ready for the next outgoing trip. From the second basement to the loading area on 41st Street for outgoing passengers the limousines are carried on six safe, fast oil-hydraulic lifts, upon which

BAGGAGE WEIGHED AT THE TICKET COUNTER (TOP VIEW) IS TAKEN OUT THROUGH THE SWINGING DOORS TO THE CONVEYOR BELT IN THE PRIVATE CORRIDOR. ON THIS IT IS TRANSPORTED UP TO THE BAGGAGE MEZZANINE (SEE PAGE 151)

NEW YORK AIRLINES TERMINAL, 42ND STREET AND PARK AVENUE

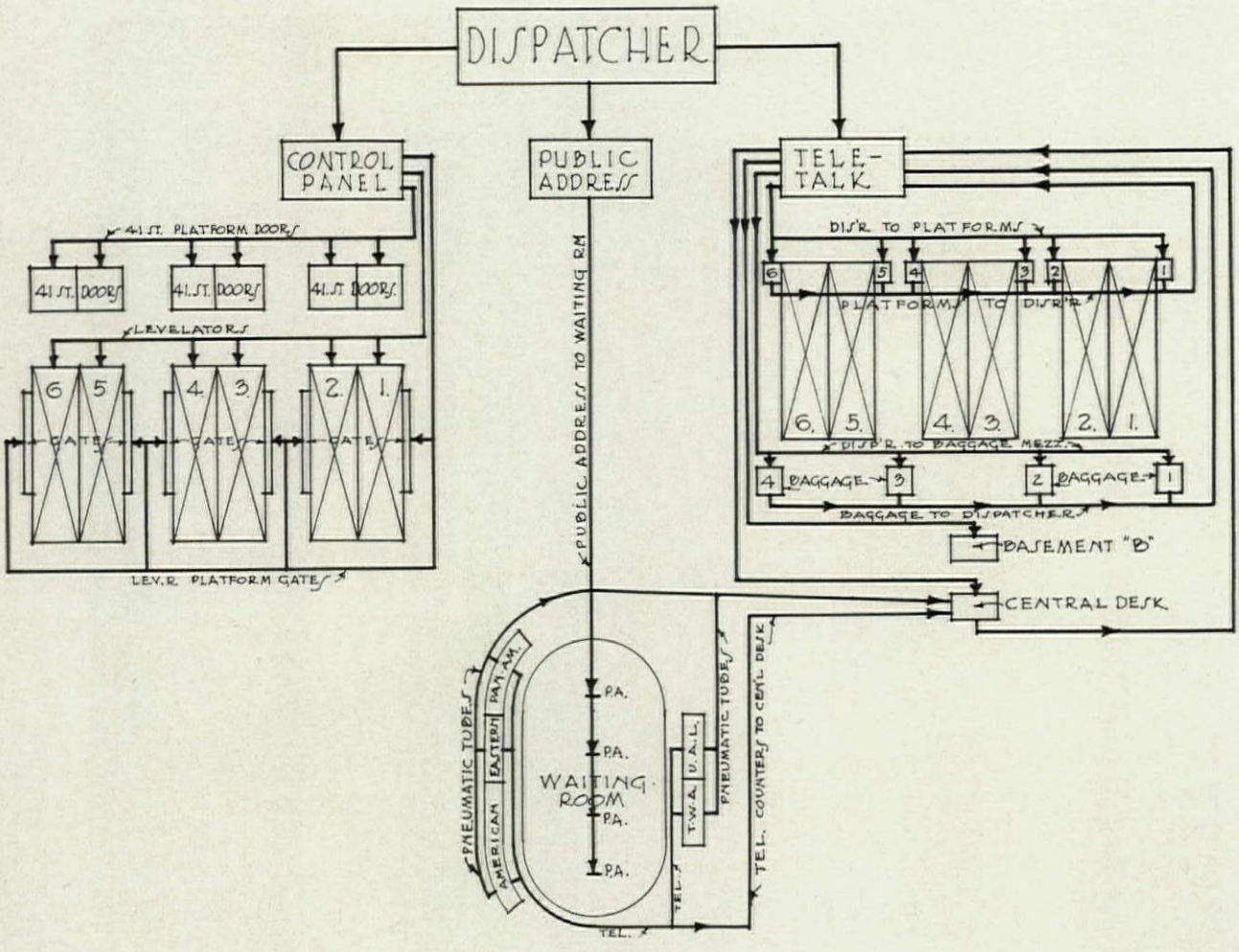


Sigurd Fischer

42ND STREET FAÇADE

SCULPTURE BY RENE CHAMBELLAN

DESIGNED BY JOHN B. PETERKIN, ARCHITECT, OF NEW YORK



COMPLETE OPERATION BETWEEN LIMOUSINE DEPARTURES

Platform to Dispatcher - (Teletalk).....Signal levelator down to Basement "B".

Dispatcher.....Operates door, gate and levelator down control.

Basement "B" Operator.....Limousine on platform, closes door and operates up levelator control button.

Dispatcher.....Opens levelator platform gate on signal that platform is locked in place.

Dispatcher to Baggage Men - (Teletalk).....Gives name of Air Line, trip and levelator number for baggage loading.

Dispatcher to Central Desk.....Gives name of Air Line, trip and platform number for departure sign changes.

Dispatcher announces trip departure and platform number over public address system in Waiting Room.

Dispatcher opens 41st Street door on signal from platform man for limousine departure.

General:

Dispatcher has complete control of limousine departures and teletalk and public address system while on duty.

Paging to be done by Dispatcher on receipt of message from control desk to which all agents have telephone communication from counters.

All announcements of departures to be made by agents from counters when Dispatcher is off duty - during late evening and night hours. All late evening and night hour arrivals and departures can be operated from locked levelator platforms on 41st Street level. Exterior doors to platforms can be easily hand operated and platform gates kept in open position.

OPERATIONS CHART

NEW YORK AIRLINES TERMINAL, 42ND STREET AND PARK AVENUE

they remain during passenger and baggage loading and from which they depart via 41st Street to airports.

This one-way traffic through the building prevents any cross traffic of incoming and outgoing passengers or baggage at any point within the building and permits the use of the same limousines arriving from the airports to be re-used immediately for outgoing trips.

A vital factor in the operation of the mechanical handling of limousines is the control room, located on the mezzanine floor of the loading area. The Dispatcher in this tower has complete push-button control of the operation of lifts, gates and doors and the ramp entrance door. He has instant communication by means of a teletalk system with the limousines, storage basement, passenger platform men, and baggage men. The Dispatcher also makes all departure announcements over a public address system to the Waiting Room. The Dispatcher and his squad of trained men are entirely responsible for the proper timing of all departures, but complete control is vested in the Dispatcher who has before him at all times the consolidated operating schedule of limousine departures for all five air lines.

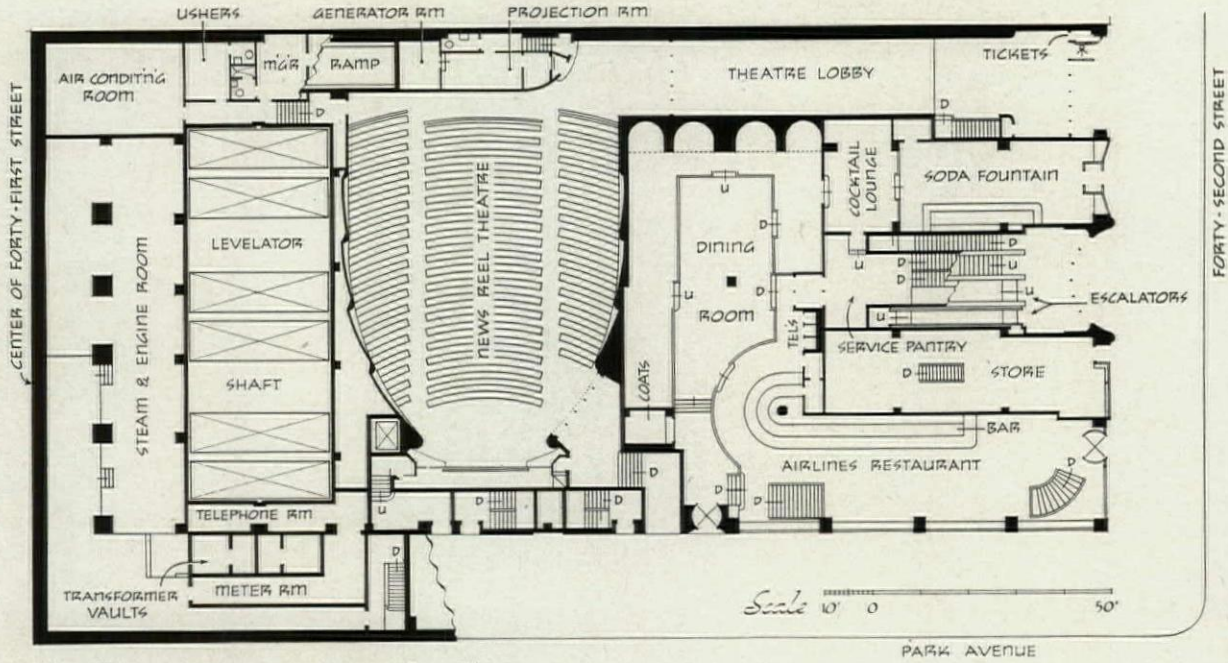
During the short period that the Airlines Terminal had been operating, it has been established that six limousines can depart, fully loaded with passengers and baggage every eight minutes. The building is equipped with a pneumatic tube system which functions between each company's ticket counter and a central desk located in the loading area for the rapid delivery of passenger manifests, which are used by the platform men to check passengers into limousines. The pneumatic tube system also connects each airline office on the upper floors with the ticket counters.

The floors above the Waiting Room and also

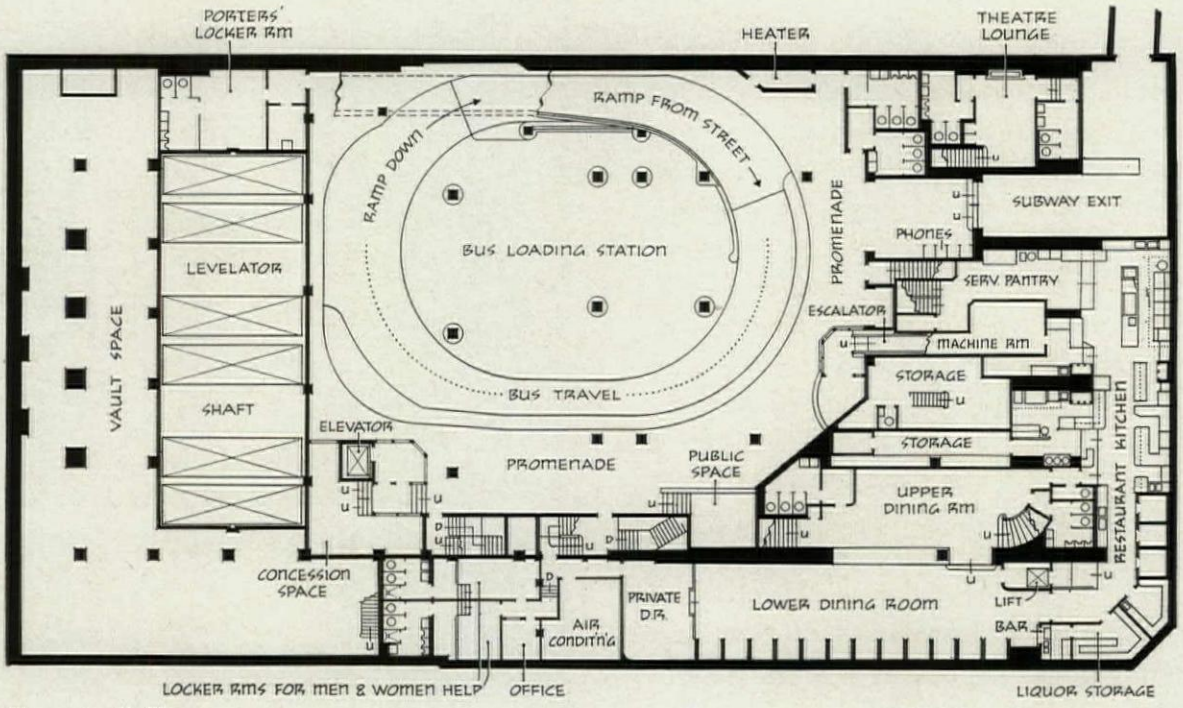
Sigurd Fischer Photos

FROM TOP TO BOTTOM, LIMOUSINES FROM AIRPORT ARRIVE AT UNLOADING LEVEL, PROCEED TO LOWER LEVEL WHERE THEY WAIT IN READINESS AT LEVELATOR DOORS, FINALLY ARE LIFTED TO PASSENGER LOADING FLOOR IN REAR OF BUILDING

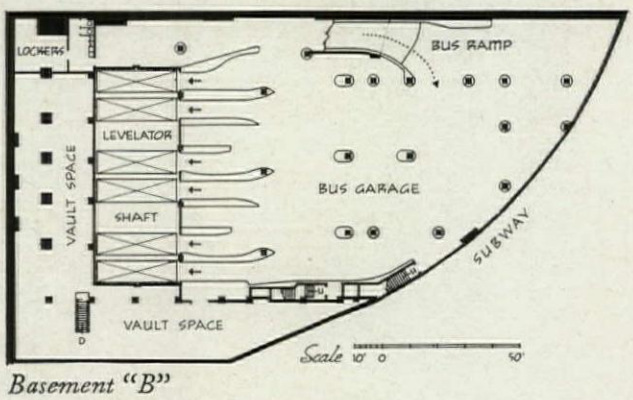
DESIGNED BY JOHN B. PETERKIN, ARCHITECT, OF NEW YORK



First Floor (Forty-second Street Level)



Basement "A"

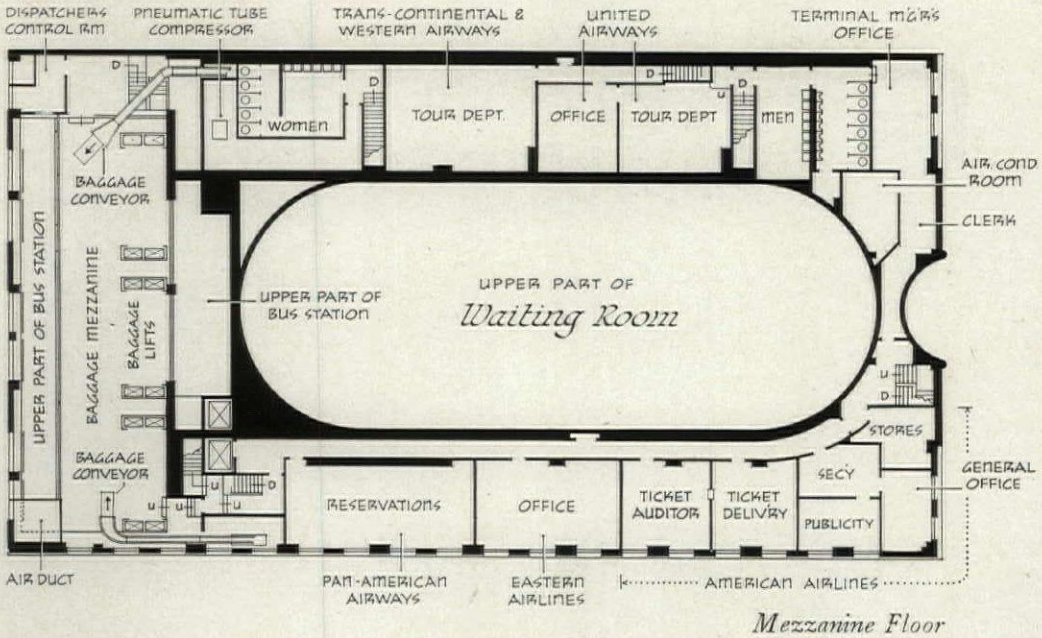


Basement "B"

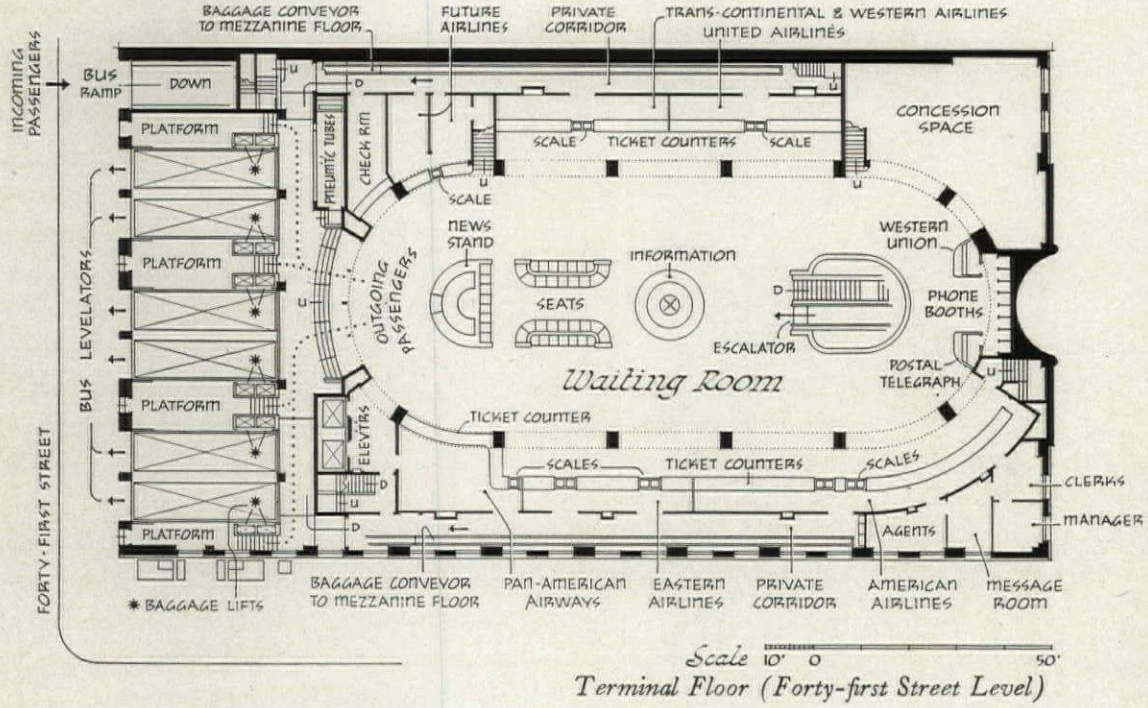
Legend for Upper Floors

1 OFFICE
2 SECRETARY
3 RECEPTION
4 CHAIRMAN
5 PRESIDENT
6 BL'D'G SUPT.
7 TEL. OPERATOR
8 STORAGE
9 FILES
10 STENOGRAPHERS

NEW YORK AIRLINES TERMINAL, 42ND STREET AND PARK AVENUE

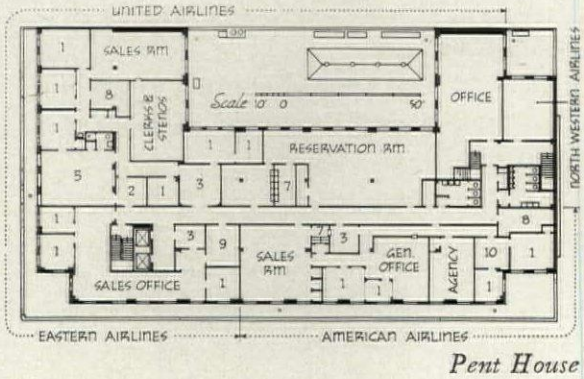


Mezzanine Floor

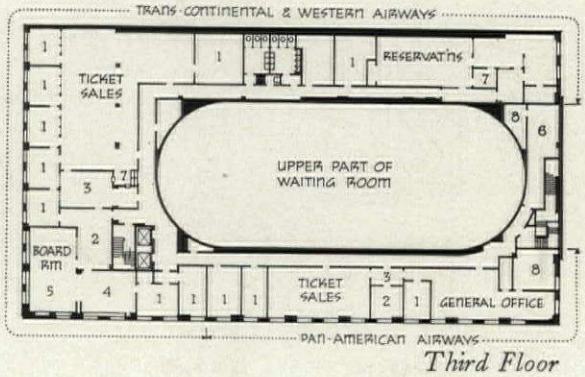


Scale 10' 0 50'

Terminal Floor (Forty-first Street Level)

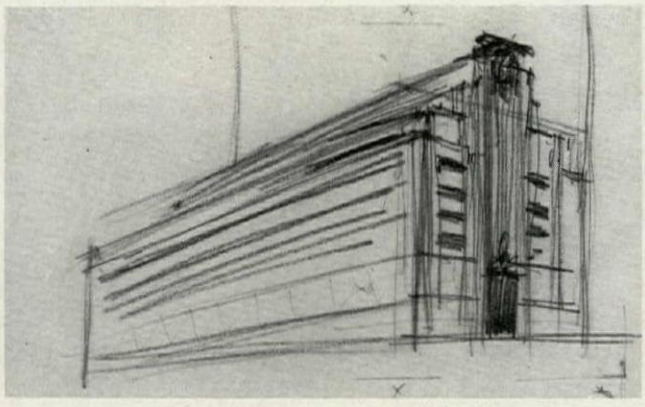


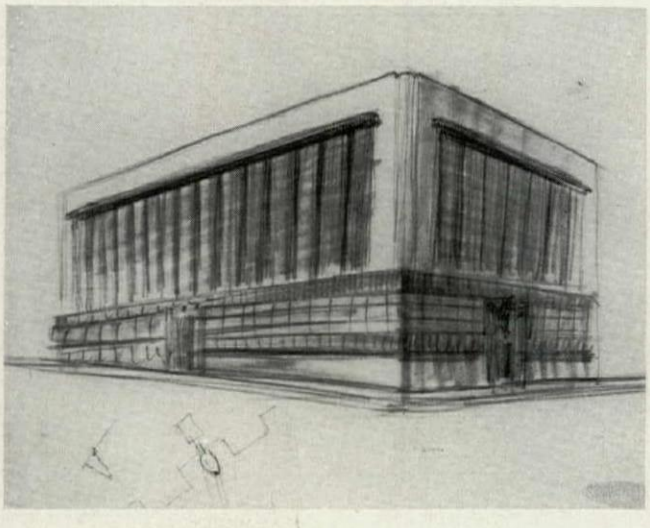
Pent House

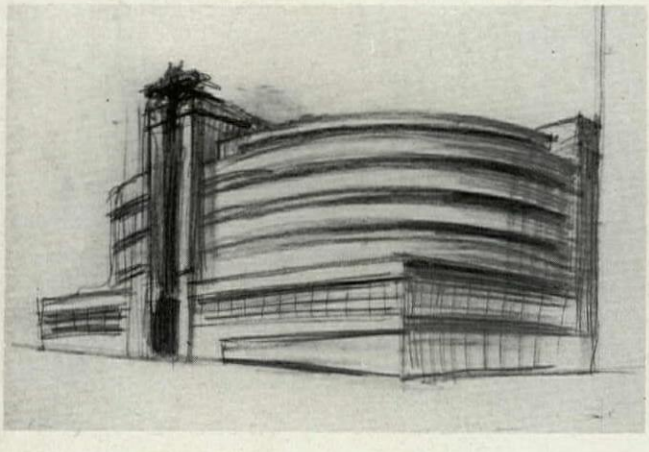


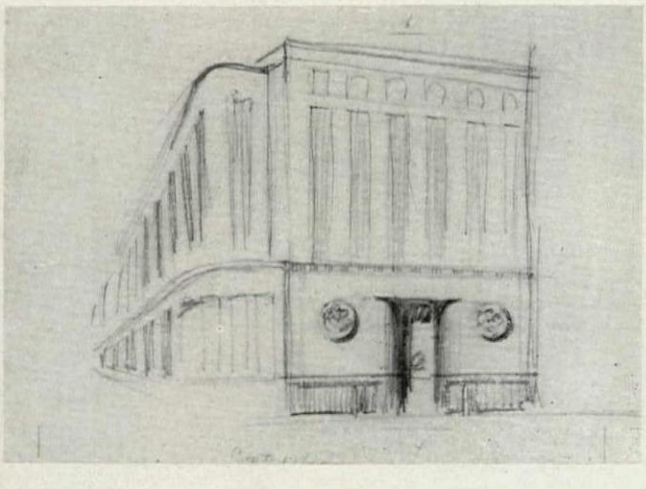
Third Floor

DESIGNED BY JOHN B. PETERKIN, ARCHITECT, OF NEW YORK







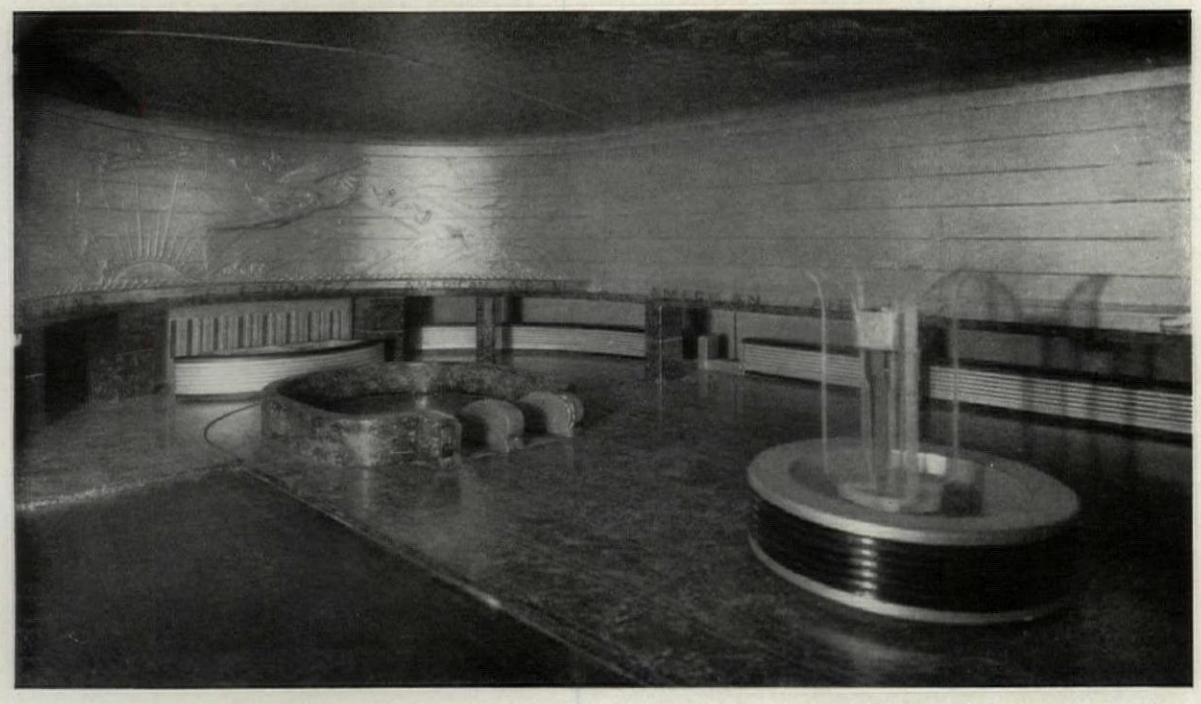


surrounding it, are entirely occupied by the five airlines as office and telephone reservation rooms; and not the least interesting and intricate units of operation are these reservation rooms. Reservation of space on any air line is done mostly by telephone, resulting in one of the most extensive telephone installations ever made for private business. It is not only possible, but quite simple, to make reservations by telephone, not only to any point in the western hemisphere but to any part of the world. These reservation rooms are connected by direct wire and direct teletype to all airports and all company offices everywhere. Special telephone equipment rooms, conduit and under-floor duct layouts, and provisions for all special equipment were planned by the architect in cooperation with airlines, telephone and telegraph company engineers. The entire building is air-conditioned.

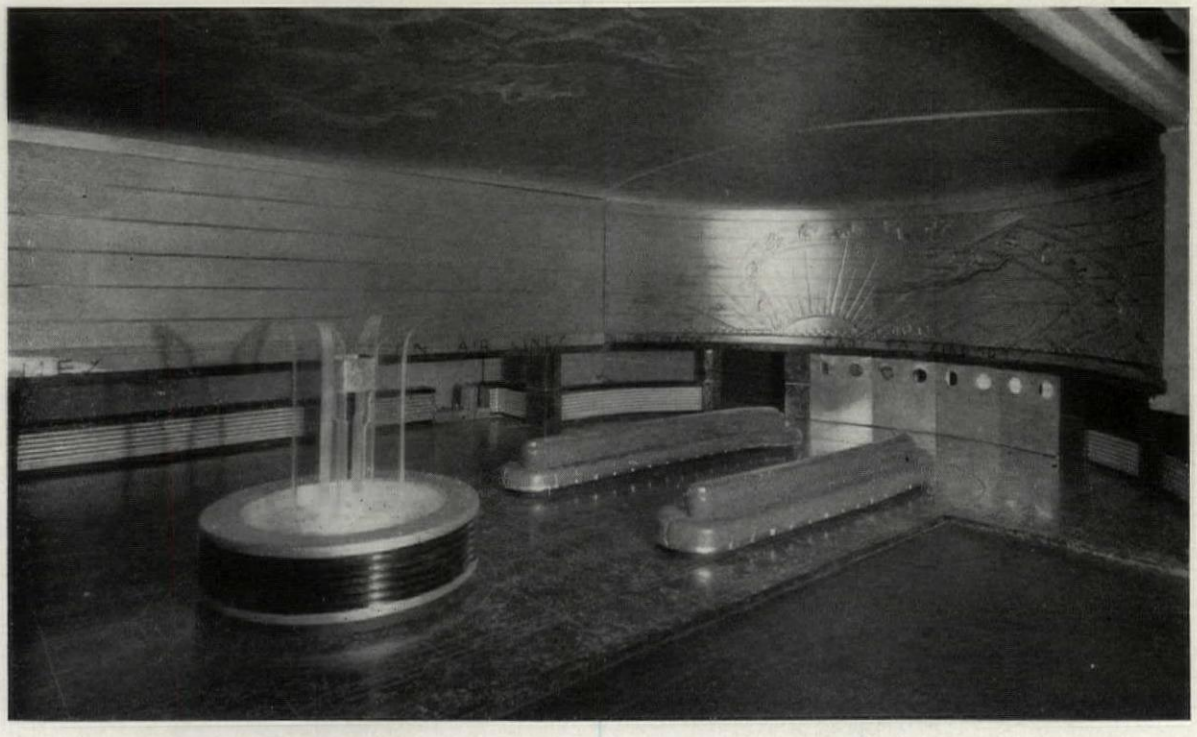
Structurally, the building differs little from the usual practice for fireproof structures, except that the steel structure, which was most intricate for a comparatively small building, was welded instead of riveted. The structural complications were largely due to the fact that the old Fourth Avenue subway runs through the property, its roof being at the approximate level of the new first basement, and its enclosure wall, starting at the center line of the Park Avenue frontage and extending in a curve to the northwest corner of the property. The column loads of the terminal above the subway structure had to be carried to the original points of support provided within the subway by transitional steel girders, beams, and columns. The original supports within the subway were naturally more than adequate to carry the new loads as they formerly supported the Hotel Belmont, which was a 24-story building.

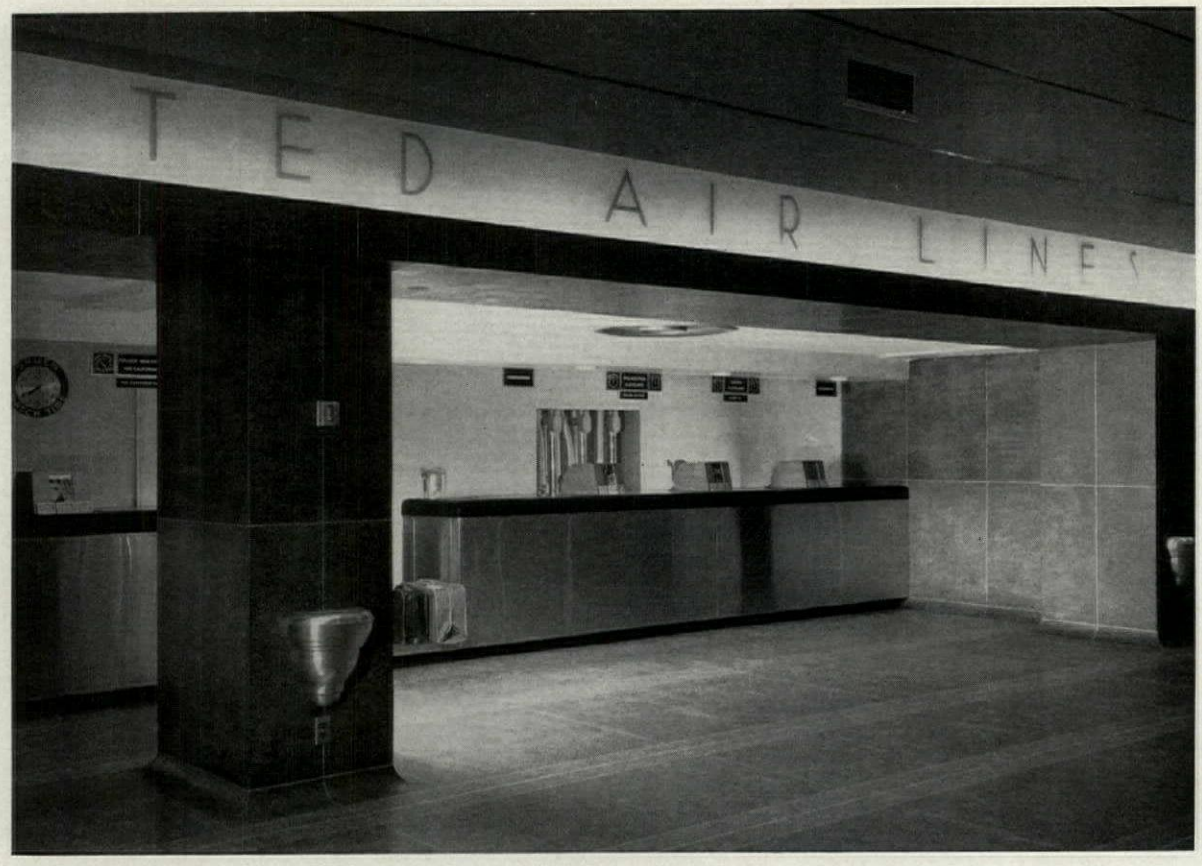
The portion of the property below grade

A FEW OF THE MANY SKETCHES MADE DURING THE EARLY STAGES OF DESIGN INDICATE SEVERAL SCHEMES THAT WERE CONSIDERED BEFORE THE FINAL VERSION WAS ARRIVED AT. A PRINCIPAL ENTRANCE ON THE PARK AVENUE SIDE WAS REJECTED IN FAVOR OF FACING GRAND CENTRAL



THREE VIEWS OF A CAREFULLY CONSTRUCTED HALF-INCH SCALE MODEL OF THE WAITING ROOM INTERIOR, MADE BY THE SCULPTOR RENE CHAMBELLAN IN COLLABORATION WITH OSCAR BACH, THE METAL-CRAFTSMAN, WHOSE COLORED STAINLESS STEEL MURAL ADORNS THE MAIN ENTRANCE OF THE BUILDING AND WHO ALSO DID THE TRANSPARENT PLASTIC ORNAMENTAL CLOCK STANDARD





Sigurd Fischer Photos

THE AIR LINES TICKET COUNTERS AT EACH SIDE OF THE WAITING ROOM ARE SET BACK SO AS TO AFFORD AMPLE PRIVACY

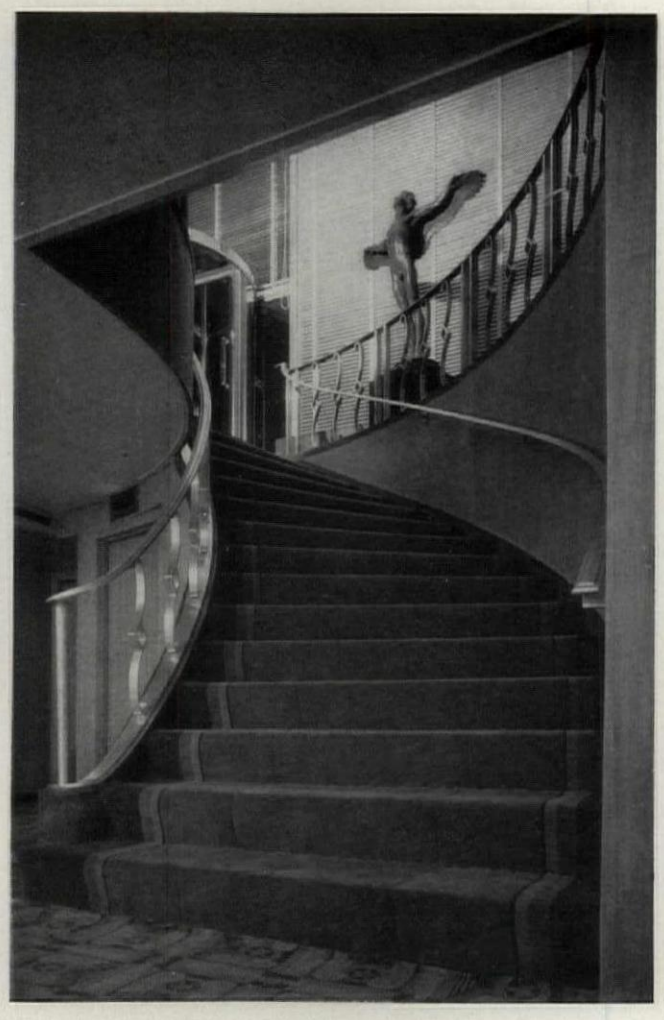
Sigurd Fischer Photos

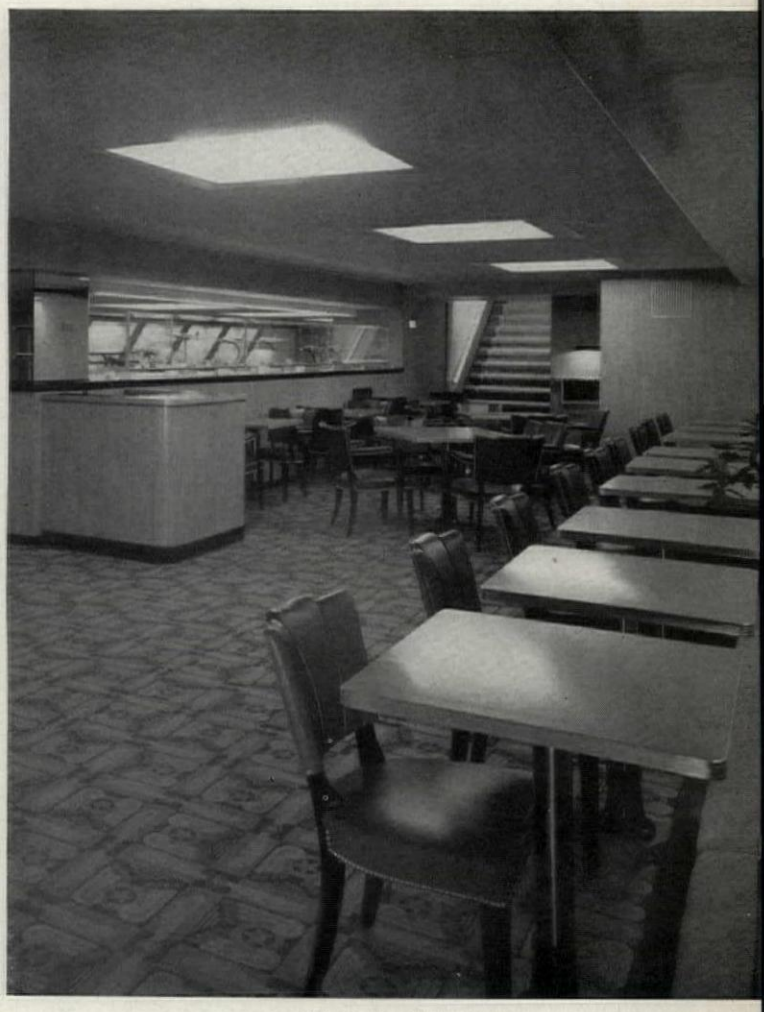
THE COLORED STAINLESS STEEL MURAL OUTSIDE AND THE ESCALATORS INSIDE THE PRINCIPAL 42ND ST. ENTRANCE INVITE INTEREST IN MODERN AIR TRAVEL

Richard Averill Smith

THE FORTY-SECOND STREET LEVEL IS FEATURED BY THE MIRROR-BACKED BAR WHOSE FRONT IS DECORATED WITH REPOUSSE SCULPTURES IN SILVER BY EMRICH NICHOLSON AND K. GEORGE KRATHINA. THE SUBJECTS ARE VARIOUS MEANS OF TRANSPORTATION. MURAL PANELS BY ARTHUR CRISP ADORN THE REAR WALL. SEE LEFT

HINES AIRLINES RESTAURANT AND BAR, IN AIRLINES TERMINAL





Richard Averill Smith

DOWN A CURVING STAIRWAY WITH METAL BALUSTERS, IN FORM SUGGESTING AIRPLANE PROPELLERS, IS FOUND THE LOWER DINING ROOM LINED WITH DECORATED BOOTHS SEPARATED BY STRUCTURAL GUSSET-LIKE PARTITIONS FACED WITH MIRRORS — A SUCCESSFUL AND NOVEL ADAPTATION OF AN EXISTING CONDITION

BY WALTER M. BALLARD CO., INTERIOR DESIGNERS, NEW YORK

and not occupied by the subway structure extended down to a level approximately seventy feet below 41st Street and included vault areas under the sidewalks to the curb lines, and on 41st Street extended to the center line of the street, with retaining walls for the full depth of the vaults. The retaining walls were braced by the original structural steel frame of the five basement floors of the hotel building. As the old steel work within the building lines, which had been left in place, was to be removed, the problem of bracing these walls was solved by erecting a series of steel trusses on end and extending back to the first row of columns, thereby providing bracing for the retaining walls independent of the old steel frame work. After the old steel within the building lines was removed, the new steel erected, and sufficient connections made to the old vault steel, the bracing trusses were removed without any apparent disturbance to the retaining walls.

Advantages in both time and money were created by the use of welding in connection with the steel work below grade. All the original steelwork of the hotel building within the vault areas, including the lot line columns, were left in place and all new girder connections for the new basement floors were welded to the old columns. The saving can easily be imagined when it is realized that the original columns were of the old box type. The difficult and expense of field labor to make such connections was greatly reduced by the comparatively simple method of welding.

The land upon which the Airlines Terminal is built is valued at four million dollars. Because of this great land value, every effort had to be made to take advantage of every inch of space which could be converted into income, particularly, the 42nd Street level which commanded the greatest value per square foot. This area was utilized to its utmost by the introduction, not only of an excellently-planned restaurant and two small stores, but most particularly the use of practically dead area between major levels for a 528-seat newsreel theatre. The Airlines Terminal Building owes its existence to the income created by the intensive study given to utilization and efficient use of space. The land and building value created a required income return and the completed building is a tribute to the solution of space utilization.

Louis Dreyer

AIRLINES NEWS THEATRE BY JOHN B. PETERKIN, ARCHITECT

Sigurd Fischer Photos

MR. PETERKIN'S SCHEME FOR THE TREATMENT OF THE LONG NARROW THEATRE LOBBY WAS, AS SHOWN OPPOSITE, TO DOUBLE THE APPARENT WIDTH BY MIRRORS. A MURAL BY ANDRE DURENCEAU ON THE FACING WALL WAS TO PROVIDE COLOR INTEREST. THE EXECUTED DESIGN (ABOVE) WAS DONE BY THE WALTER M. BALLARD COMPANY. DOWN ONE FLIGHT IS A COMFORTABLE LOUNGE ROOM (SHOWN AT RIGHT) IN WHICH MR. PETERKIN'S DESIGN WAS CARRIED OUT

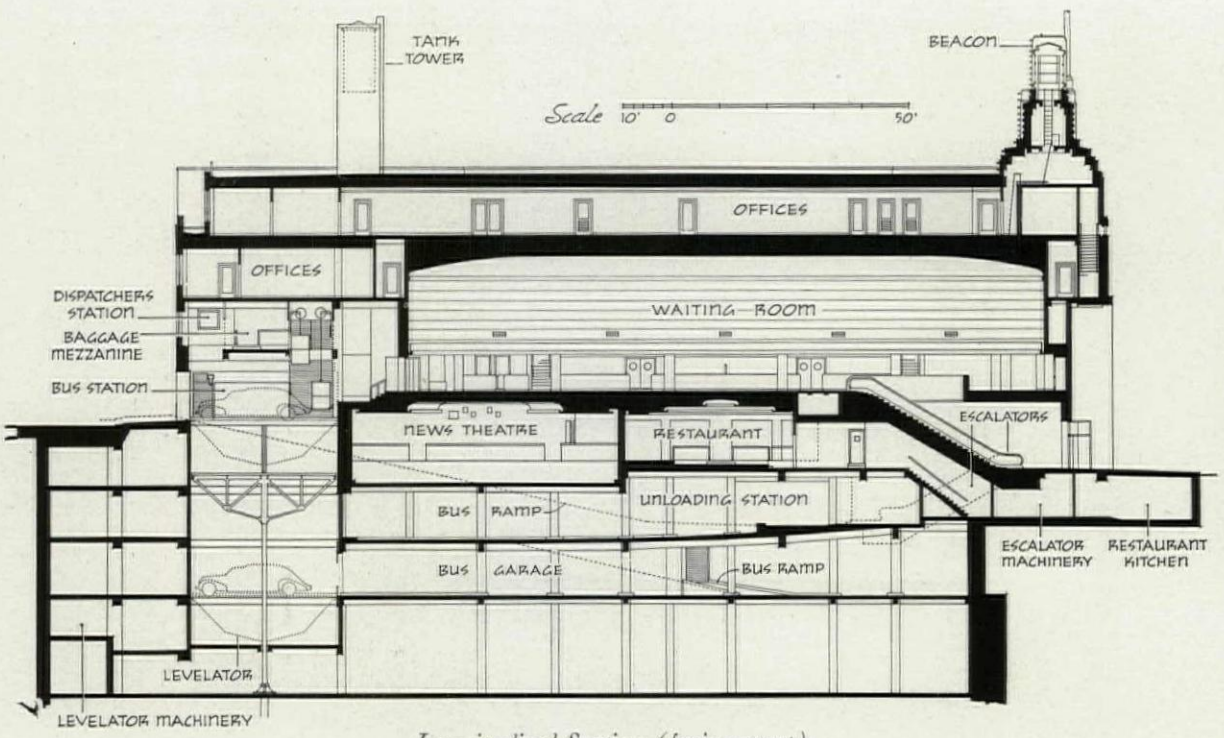
AND WALTER M. BALLARD CO., INTERIOR DESIGNERS, NEW YORK

Sigurd Fischer

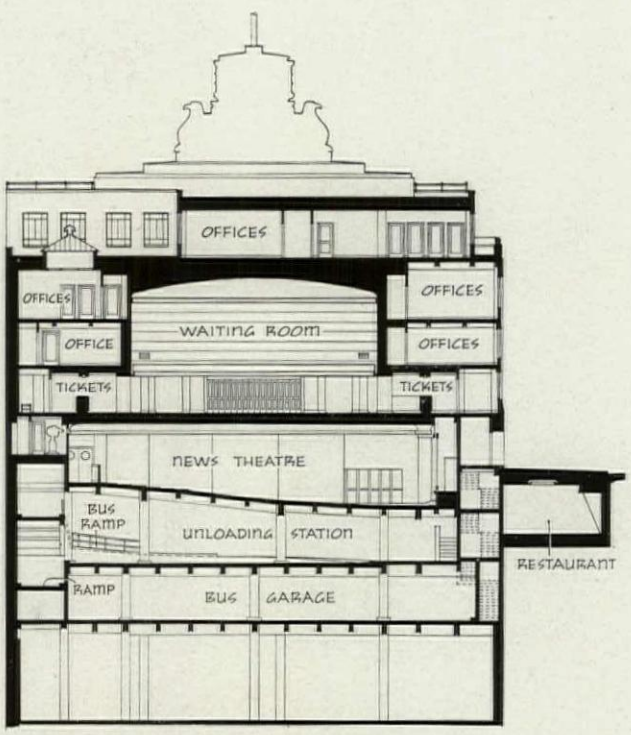
AIRLINES NEWS THEATRE BY JOHN B. PETERKIN, ARCHITECT

Sigurd Fischer

AIRLINES NEWS THEATRE BY JOHN B. PETERKIN, ARCHITECT



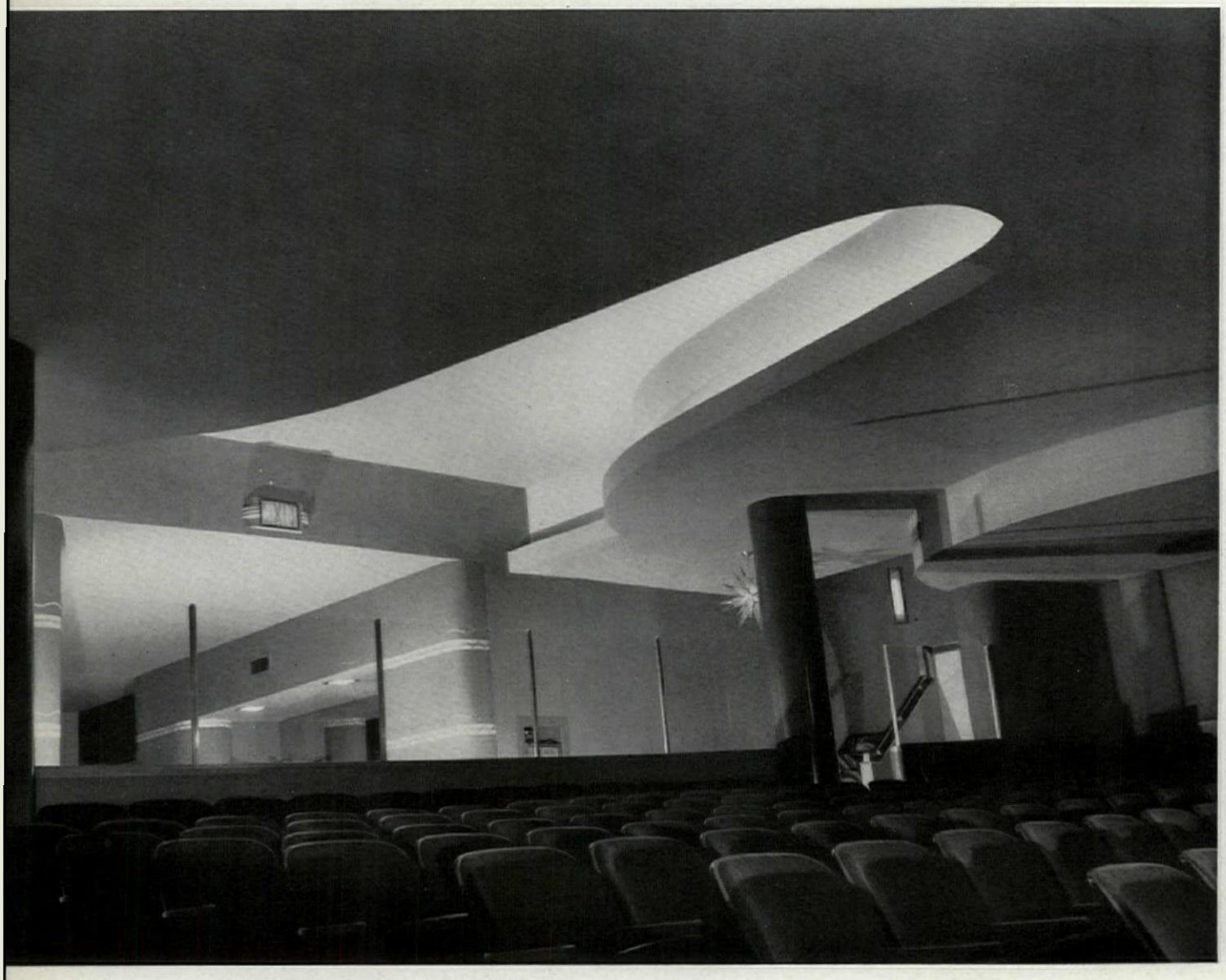
Longitudinal Section (facing west)

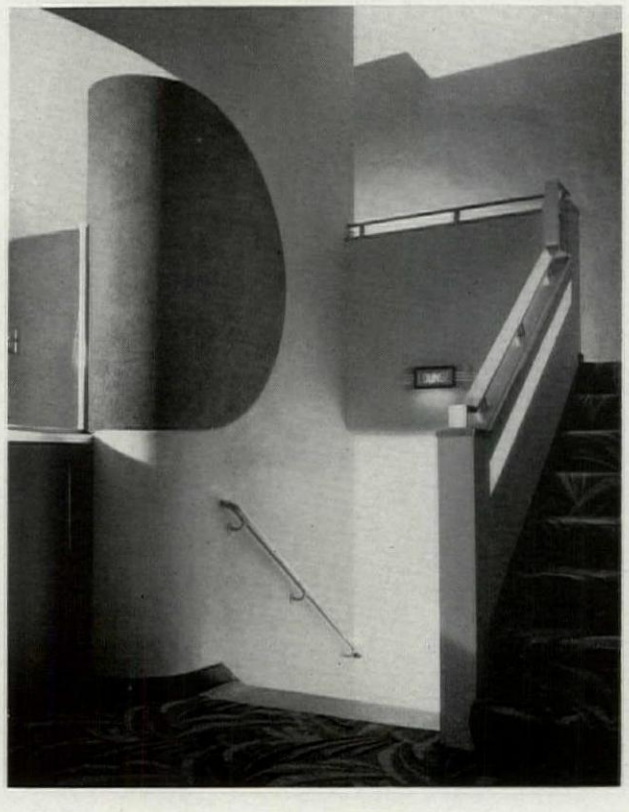


Transverse Section

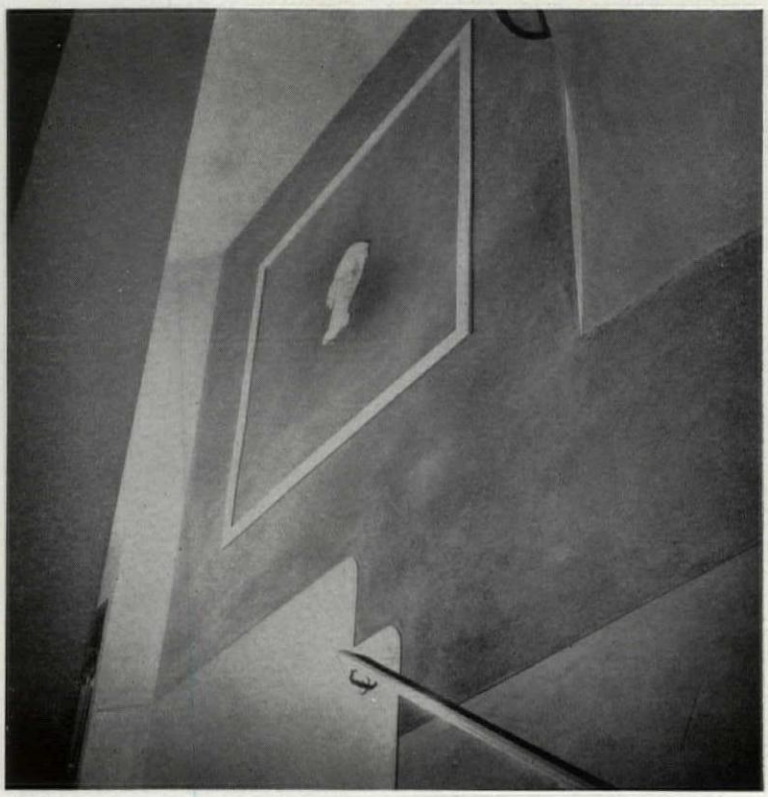
THE NEW YORK AIRLINES TERMINAL — BY JOHN B. PETERKIN

PIX THEATRE — BY ELY JACQUES KAHN, ARCHITECT, OF NEW YORK



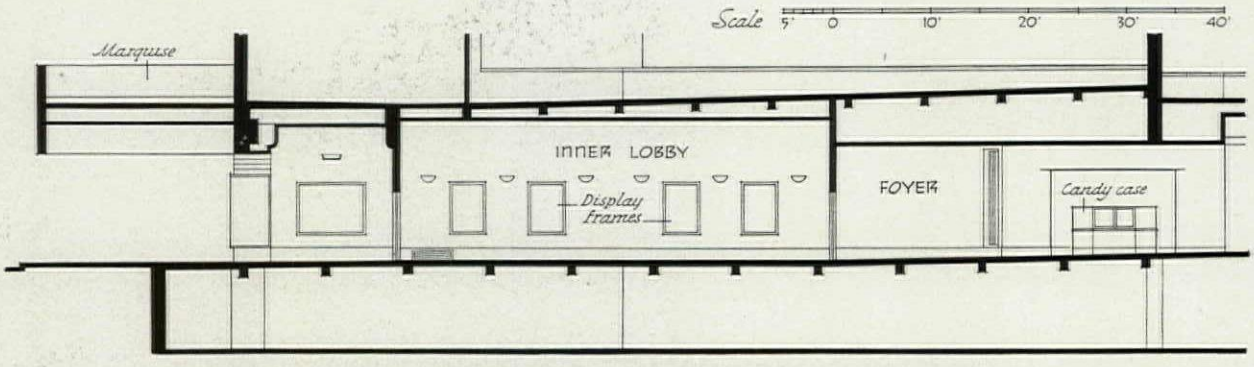


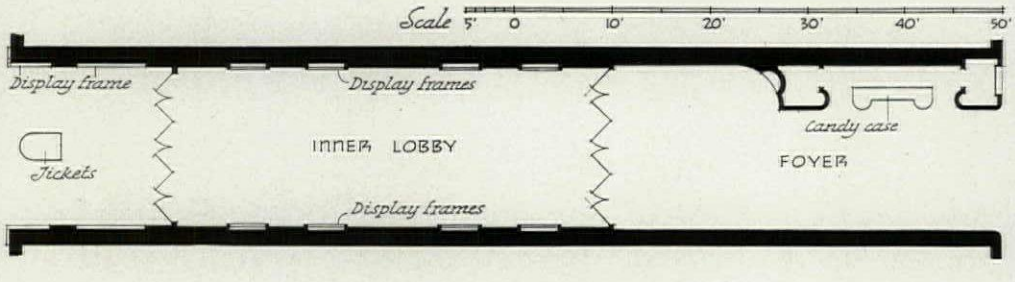
FOR THE PIX THEATRE ON WEST 42ND STREET, NEW YORK, ELY JACQUES KAHN, ARCHITECT, REBUILT THE INTERIOR OF A BUILDING EXTENDING THROUGH THE BLOCK TO 43RD STREET THAT WAS FORMERLY THE LOCATION OF A POPULAR RESTAURANT. THE AUDITORIUM IS AT THE END OF THE LOT AND IS APPROACHED THROUGH A LONG LOBBY AND FOYER (SEE PLANS ON PAGES 166-167). THE VIEW UNDERNEATH THE BALCONY IS TOWARD THE FOYER, WHILE THE VIEW AT THE LEFT SHOWS THE STAIRS UP TO THE BALCONY OR DOWN TO THE BASEMENT LOUNGE AND TOILET ROOMS. ALL THE PHOTOGRAPHS OF THE THEATRE WERE MADE BY WILLIAM WARD, ARCHITECTURAL PHOTOGRAPHER, NEW YORK



THE WALLS OF THE THEATRE ARE A RICH RED, DECORATED WITH WHITE PLASTER MASKS AND FLAT STRIPS OF WARM GRAY. THE AUDITORIUM CEILING AND BALCONY SOFFIT ARE CLAY BUFF ACOUSTIC PLASTER, WITH AN ACCENT OF WHITE AROUND THE LIGHT DOMES. SIDE WALLS UNDER THE BALCONY (ACROSS-PAGE) ARE PAINTED WARM BURGUNDY AND DEEP BLUE — THE LATTER ECHOED BY THE ENAMELED COLUMNS AT THE AISLE RAIL. SEATS ARE RUST MOHAIR, WITH GOLD-STRIPED UNDERTONE

THE FOYER BETWEEN THE SILVER AND SALMON ENTRANCE LOBBY AND THE STANDEE'S SPACE BACK OF THE AISLE RAIL OF THE THEATRE SETS THE INTERIOR COLOR KEY WITH WALLS OF WARM BURGUNDY, STRIPED WITH WHITE, SILVER LEAF, AND GOLD LEAF. THE CEILING IS CLAY BUFF MATCHING THE ADJOINING BALCONY SOFFIT. THE CARPET IS PATTERNED IN BUFF-GRAY AND BLACK ON DARK BURGUNDY

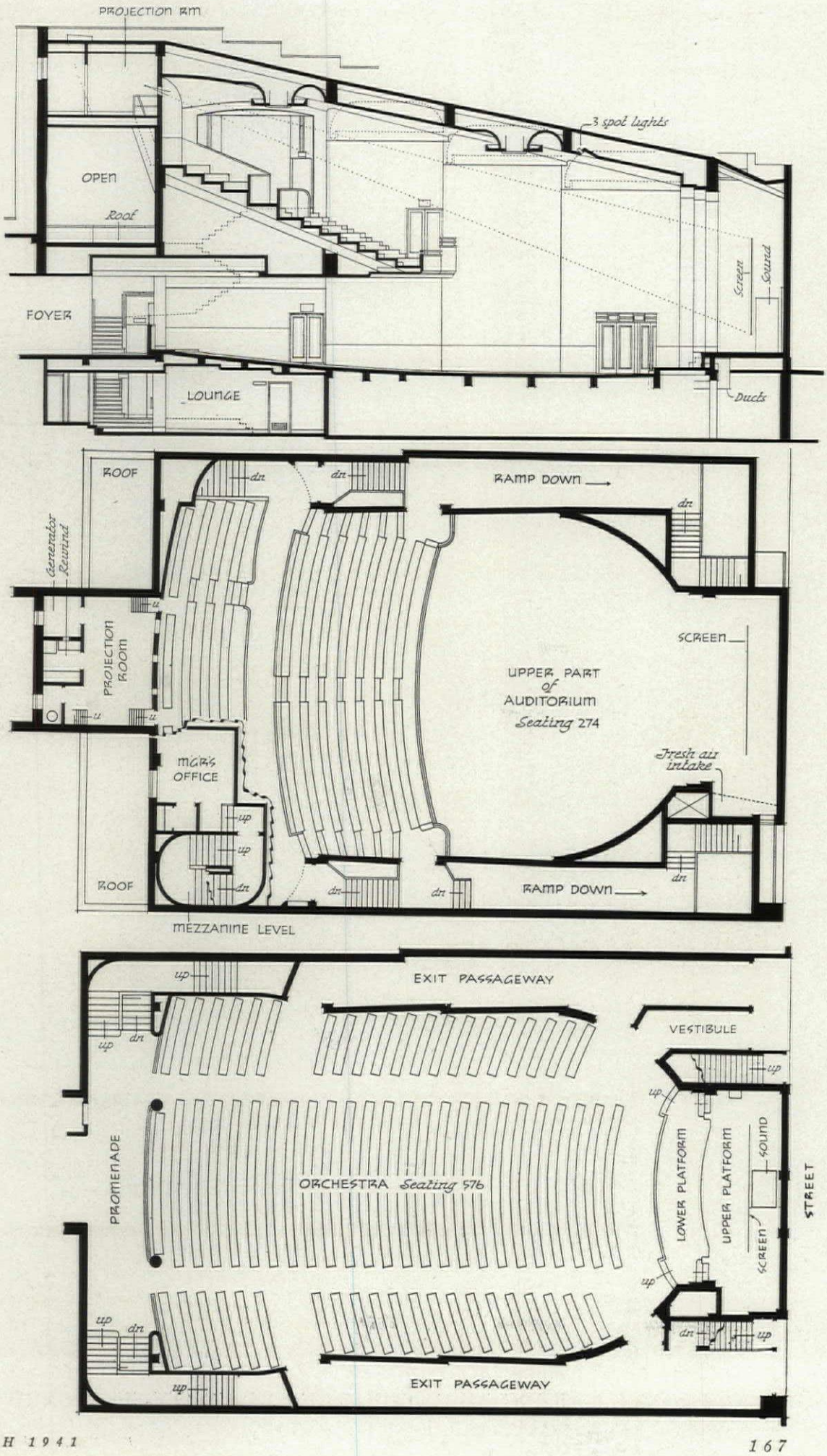




PROMENADE

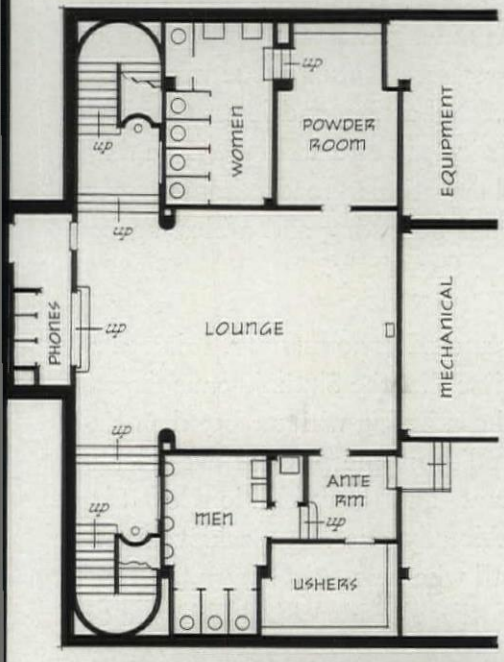
THE CANDY CASE ILLUSTRATED ABOVE IS OF BLOND MAPLE AND PLATE GLASS AND IT IS SET IN A RECESS IN THE FOYER. THE BACK OF THE RECESS IS LINED WITH FLESH-COLORED MIRRORS AND THE DISPLAY IS DRAMATIZED BY DOWN-LIGHTS IN THE SOFFIT. STORAGE SPACE FOR THE CANDY STOCK IS PROVIDED

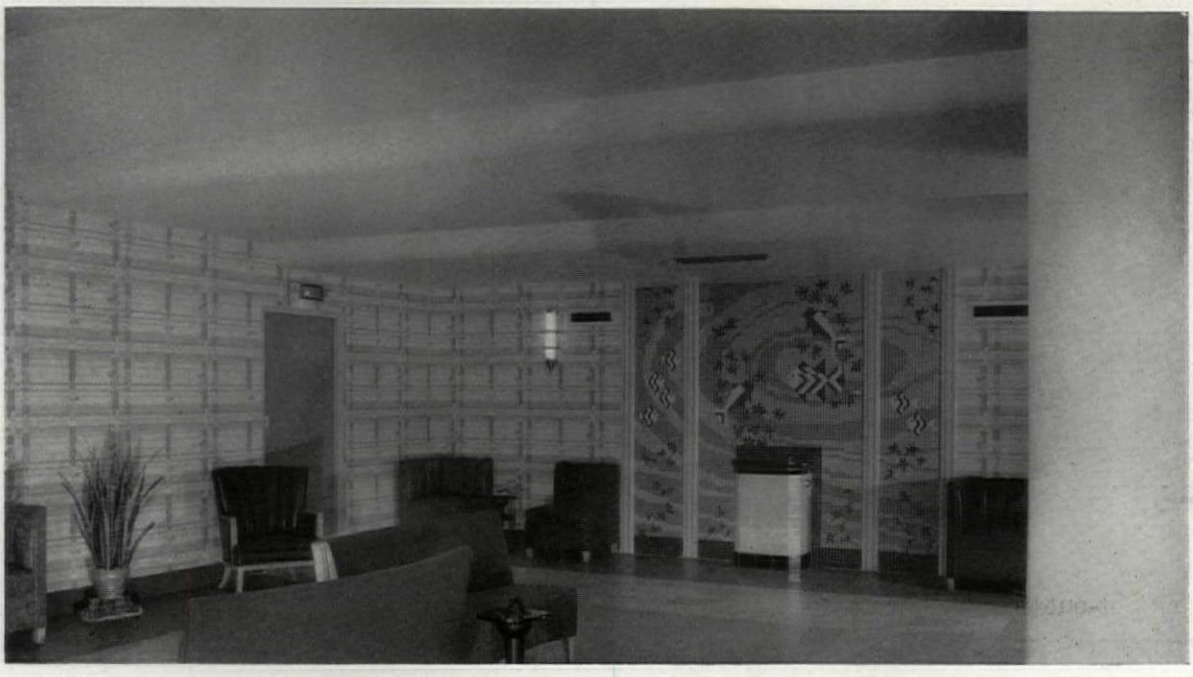
PIX THEATRE — BY ELY JACQUES KAHN, ARCHITECT, OF NEW YORK


PROJECTION RM
3 spot lights
OPEN
Roof
FOYER
LOUNGE
Screen
Sound
Ducts
ROOF
dn
RAMP DOWN
Generator
Rewind
PROJECTION ROOM
u
SCREEN
UPPER PART of AUDITORIUM Seating 274
MGR'S OFFICE
Fresh air intake
up
ROOF
RAMP DOWN
MEZZANINE LEVEL
EXIT PASSAGEWAY
VESTIBULE
PROMENADE
ORCHESTRA Seating 576
LOWER PLATFORM
UPPER PLATFORM
SOUND
SCREEN
STREET
EXIT PASSAGEWAY

A SMALL MOTION PICTURE THEATRE ON FORTY-SECOND STREET

WARM TONES OF CANARY YELLOW WERE PICKED UP AT STAIRWAYS ON EITHER SIDE LEADING DOWN TO THE BASEMENT LOUNGE (VIEW AT RIGHT) WHICH IS LIVENED BY A TERRAZZO FLOOR IN FOUR COLORS — ORANGE, DEEP BLUE-GREEN, RED, AND GRAY-GREEN. THE WALL FOUNTAIN IN THE LOUNGE (SEE PHOTO BELOW) IS DECORATED WITH TILE CAMETTES— BLUE-GREEN REPRESENTING WATER AND THE GOLD AND RED FISH ECHOING THE TONES OF THE WALLPAPER USED IN THE ROOM. PHOTOS BY WARD





DESIGNED BY ELY JACQUES KAHN, ARCHITECT, OF NEW YORK

COMMUNITIES AND ARCHITECTS IN A POST-WAR WORLD

BY TALBOT F. HAMLIN

If American cities and towns are ever to be more than a meaningless congeries of buildings with here and there an acceptable and even beautiful structure—a kind of half-cooked plum pudding, with the plums occurring but spasmodically — certainly the ideal of city harmony will have to be given a new place of honor. It will necessarily be something understood alike by the architects, the real estate investors, the city legislators, and the public, for only by the combination of all of these forces can pleasantly harmonious effect be produced.

It is seldom that architects have a chance to work for this kind of city harmony over a large area at once; yet the tearing down of Elevated structures in New York City at once opens the way to some kind of organized development behind the building improvements which are almost certain to follow. As each new piece of the Elevated comes down one wonders anew at the blindness of the city fathers in ever permitting these structures in the first place. Streets so shadowed and darkened, so belabored by inexorable roar, necessarily disintegrate and become places to avoid. Now that the blight has gone on both Sixth and Ninth Avenues, one feels again and again a new lift in the clear long vistas, in the light and air, of these unexpectedly wide streets. Such city improvements naturally can give rise to all kinds of developments. Flashy and ill-thought-out improvements to stimulate a temporary real estate boom would only serve to yield again to further blight, but if the problem of such an improvement can be seen as a whole—if only the myriad property owners along the way could be taught that the greatest eventual value would come from concerted action, and learn to think in large units instead of small—then we might expect along these roads improvements which would be lasting and a blessing both socially and financially.

SIXTH AVENUE IMPROVEMENT. It is a pleasure to realize that the Sixth Avenue Association is still continuing with unabated enthusiasm its studies of the possible architectural development and beautification of Sixth Avenue. Already one large achievement is visible to all who pass—the return to Herald Square of the old Herald Building clock, with its bronze bell ringers recomposed with the Herald Minerva, in an architectural setting that is simple and dignified and of excellent monumental scale. The figures themselves set the spirit of the composition, and the delicate Renaissance detail of the architectural part of the monument seems to harmonize well with the character and line of the bronzes. The connection between the clock faces at the top and the lower part of the monument is, to my mind, hardly solved; but the impression of the whole is quite delightful, and it is a pleasure to see monumental scale and a real attempt at serious beautification of one of our all too rare public places coming into execution.

The latest scheme of the Sixth Avenue Association is a resurrection of the idea of a great music and art center at the north end of the avenue, with an opera house in Central Park.

This will undoubtedly arouse the old controversy about using any of the Central Park area for buildings, and I for one feel it would be most unwise to break a rule of such long standing as that which preserves the park area inviolate. Yet the basic concept of such a use for the upper two or three blocks of Sixth Avenue is an excellent one. This, it seems to me, is a marvelous opportunity for a superb open architectural competition. A most inspiring program could be written, defining the desired requirements, but allowing the freest possible study of land use. Such a program, if adequately carried on, with plenty of time allowed for study and with a number of prizes compatible with the size and dignity of the project, might produce architectural and planning conceptions as brilliant and as revolutionary as the results which came from the Smithsonian Art Gallery competition, and might lead to a great municipal improvement of which New York might be proud for generations.

In a recent *New Yorker* Lewis Mumford has pointed out, with his customary acumen when dealing with city matters, that the Sixth Avenue problem is not merely one of decorating building fronts or devising clever methods for arcaded sidewalks and so on, but is rather a problem which might be solved in accordance with the most advanced ideas of city form. His chief suggestion is that special parking blocks be reserved on either side of the avenue at intervals, and that between them store groups should be built on a sort of pedestrian cul-de-sac basis, so that shoppers both on foot and by car could approach the desired shop with ease and comfort. The result might make a town pattern of a radically new type, and the opportunities for imaginative architectural treatment in such a bold approach to the problem are enormous. Let us hope the Sixth Avenue Association will give the deepest consideration to this suggestion as well as to others of similar boldness.

Changing City Form. One very interesting and perhaps significant occurrence of the last few years in most American cities is the widespread erection of two-story "taxpayers," often on land of extremely high value, and frequently replacing older tall buildings. Now the taxpayer is no newcomer, of course, in the building field, but its placing today in the heart of expensive and prosperous districts is. Formerly the taxpayer was an obviously temporary structure built on land often on the outskirts of the city during the period when it was being held for a speculative rise in sale value. Today the function of these new low buildings seems quite a different one. It is almost as though some hidden and as yet unstudied law were at work, which required a certain proportion of low buildings in any portion of the city, no matter how high the land values had climbed or how tall were other buildings in the immediate neighborhood. It is clearly apparent that the heights-of-buildings laws of most of our zoned communities create a supposed envelope of possible structures many times in excess of any possible need. The vision of Manhattan Island, for instance, built up to the limit of what the law will allow is terrifying; it would mean a population so much greater than could be handled by all our transit facilities and our streets, so much more dense than ever could be supported by our present food-handling facilities, as to be an actual nightmare.

It is as if the framers of our zoning ordinances, not only in questions of building height and bulk but also in questions of building use, had been entirely controlled by the most optimistic and unthinking dreams of real estate speculators or stupidly hopeful landowners. There is not a city in the country which is not overzoned for business and industry, and overzoned to an amazing degree; some of the relative instability of land values in many localities comes from this very fact.

These new low buildings I mentioned are in a sense unconscious and often rather grudging acknowledgment of this fact. The low building pays, of course, lower taxes on a much smaller assessment than does a higher one, its maintenance costs are lower, it is easier to rent, and therefore despite its small size it stands a chance of returning a better net income on the combined cost of building

and land than does an unneeded skyscraper. The result architecturally as well as from the civic point of view is almost always excellent. Obsolescent high buildings come down, let sun into the city; little by little the pedestrian through city streets can really here and there see the sky and become aware of clouds and blue by day, of rosy light at sunset, and even perhaps of stars at night. And the buildings themselves are of a type which it is easy to make human in scale. Their comparatively small exterior surfaces allow the use of rich or expensive materials. They can be as simple as one pleases, but, given a frank acceptance of the conditions of the problem, with a careful study of proportion the long horizontals of window, spandrel, and parapet can hardly help having a pleasing quality. How restful, for example, are the rich blue surfaces and the horizontal patterns and the curved corner of the building on the southeast corner of 43rd Street and Broadway; how interesting, how different, and yet how pleasing the gray marble and the polished bronze of the new building now going up on the northeast corner of the same streets! And these are but two examples in a movement which is taking place all over the country — a movement which reveals the fact that in the long run human needs and wants will work out some kind of a solution for themselves no matter what the artificial scales of land value or assessment may be.

It is unfortunate that often the effect of these new and pleasant low buildings is defeated after their erection by the construction of enormous advertising signs on their roofs and the frequent use of the party walls of adjacent higher buildings for painted signs as well. Some method should be found of controlling the appearance and use of exposed party walls where buildings are of different heights.

How wonderful it could be if somehow the advantages of the low building and the high building could be combined as part of the real city composition! It is good to have more of these low horizontal buildings interrupting the sharp verticals of taller structures, but how much better it would be if these two necessary elements in a developed American city could exist, not at random and by accident, but purposefully, where each was really best placed both practically and æsthetically. Is this an ideal impossibly utopian?

THE ARCHITECT AND POST-WAR PROBLEMS. It is well for architects to think a great deal about problems like this, for I feel that after the war the reconstruction period, here as abroad, is going to be one of considerable constructive change, and that among the changes which are likely to come is a new vision of the tremendous importance of the physical form of the community. It is too early to state just how this is likely to come about. It is possible that overstuffed land values, through mortgage foreclosure, may lead to such large land holdings on the part of banks and other lending institutions as to make a united attack upon the problem imperative as a matter of protection. It may be that city ownership of vast tracts of tax-delinquent lands, for which there may be no ready speculative market, may lead to municipal initiative in city development. It is possible that the mere education of landowners as a class in the actual versus the speculative questions of land value may bring with it a completely new attitude toward land value and land use.

Who knows today what land value really is? Is the value of a given lot the amount for which someone sold a similar lot a few years ago when conditions were very different? Is it the amount you hope to be able to sell it for, in ten years, say, *if* the new subway is built as planned, *if* the city continues to grow at its present rate, and *if* there are no profound changes in social structure? Is it the amount for which the city assesses the land as a basis for obtaining its tax income? Is it the amount the plot would bring today, here and now, at a forced sale? Or is it possibly a mere capitalization of the present income possibilities, given current rental levels and current land usage? All of these are, or have been called, "land value." They are all different from each other in most cases. Now this, of course, would be a futile economic

speculation were it not true that the type of usage which an owner is going to make of that piece of land, the type of design he is going to require of an architect if he builds upon it, is going to be modified if not completely controlled by which of these varying definitions he accepts. Land value and land use are inextricably tied together. Even speculative land value is based on possibilities of *future* use. And little by little we are learning a great deal about land use, in both rural and urban communities, which must eventually give us a sounder basis both for design and for judging land potentialities.

Moreover, one thing we do know, and that is that intelligent zoning and planning can affect, stabilize, and control land values themselves; and, since as we have seen the question of land value and the owner's concept of it is going to dictate the kind of building which he wishes an architect to build upon any given piece of land, surely, then, the architect should, more than any other person, be profoundly interested in zoning and planning questions, even if he take no definite professional part in the actual city- or land-planning world. Recently I heard that, of several hundred members of city planning commissions in the state of New Jersey, only five, I believe, were architects! Traditionally the architects and architectural organizations have been in the forefront in matters of civic improvement, and certainly their interest should extend far enough to make architects eager to serve on city plan commissions and similar bodies. And their influence on city plan commissions is vitally needed. If the commission is made up only of businessmen and lawyers, it will tend to think too much in merely economic and regulatory terms; its technical staff, however brilliant, will be hampered by a lack of understanding on the commission's part of the whole psychology of design as an integral part of its function. The presence of an idealistic and well-trained architect on such a body will go far toward making its achievements creative as well as regulatory, and thus toward guaranteeing a community that will develop in the direction of a given ideal of beauty instead of one in which only the worst abuses of unregulated speculation are avoided.

Whatever may be the changes which the after-war period will bring, one, I think, is sure: the greater and greater importance of community subdivision and site planning in the architect's field. If, for example, prefabrication and standardization of residential units should become common — a not unlikely technical development — the æsthetic effect and the usefulness of the new community are bound to result much more from the relationships between the units than from the units themselves. One can see this fact very clearly in certain rare suburbs of today where careful handling of site composition makes an attractive residential center even out of commonplace houses; one may see the reverse as well in places where quite lovely buildings have their effect lost and destroyed by monotonous or uncomposed groupings.

The late Sir Raymond Unwin recognized the permanent importance of this kind of mass or site composition to a high degree, both in his book, *Town Planning in Practice*, and in his executed work with Barry Parker in Hampstead and elsewhere in England. Hampstead I know well. Its little cottages, its row houses and semi-detached villas are not in themselves exciting architectural achievements; yet, because of their arrangement, the pleasant courts, the preservation of old trees, the careful study of road widths, and the design of road intersections so that vistas shall always be interesting, Hampstead Garden Suburb is one of the most continuously attractive, inviting, and beautiful suburban communities in the world. It is not formal, but it is all definitely composed. It is not a grand plan in the Beaux-Arts tradition, but it is very definitely a grand plan in the most human way, in which every part exists because of its relation to the other parts. The whole design is conceived in three dimensions; and the relationships between the central square, with its two churches, and the roads, curving and straight, which lead out of it, with the building sizes and placing along the roads, are all one integrated and subtle conception. Much

the same is true of large portions of the garden city Welwyn. It is true also of the best German site planning, such as Ernst May's beautiful Frankfurt suburb, Römerstadt, which so charmingly swings around the curving hillside on which it is placed.

There is hardly a suburb or town of recent design in the United States which shows these qualities. Even the best of the American site plans still seem full of loose ends; they tend either to monotonous regularity or to a kind of straggling lack of integration. Only here and there, as in the Buhl Foundation groups in Pittsburgh, or in a select few of the government housing groups, do these qualities of integrated composition and individual interest of view occur.

To achieve this new community approach to design should be, then, one of the main tasks of the American architect of the present day, in order that he may prepare himself for the new community work which is bound to be built when the war crisis is over. He must, more and more, cease to think so completely of the individual building and learn to apply his creative imagination to the handling of topography, the use of slopes or trees, brooks or rocks, which may exist on a given site; he must think of the changing views which present themselves to one walking along a proposed circulation; he must learn how to achieve community integration, with a sense of community center, and at the same time to preserve variety. Let him study the principles so clearly set forth in Unwin's book; let him visit the best groups built during the war-time emergency of 1917-19, such as Yorkship or Bridgeport; let him study and absorb the simple beauty of the commons and greens of the old villages of New England and Ohio; and then let him apply the lessons he has learned to the present-day problems of a civilization as dependent on the automobile as ours. Architects are sometimes afraid of standardization in house design.

One other matter, I think, in addition to the development of this community feeling in design, demands the architect's most careful consideration; that is the application of scientific and industrial techniques to his profession. The picture of the situation today in this respect is chaotic and meaningless. We have, on the one hand, industrial organizations doing extremely valuable research and producing a flood of new building materials of all kinds, good, bad, and indifferent. For a single architect to try to absorb and evaluate the entire content of this industrial effort is manifestly impossible. Which of these products is of real social usefulness? Which of them can be, as it were, domesticated for constructive use? How best may the advantages of mass production and industrial perfection of dimension and finish be applied to the buildings we need? These are questions of paramount importance, the answers to which are going to control much of architectural design in the future. How may the demands of employment by conservative trades unions be coordinated and, so to speak, integrated with the possibilities of economy in new techniques?

I think it is most significant that in the Royal Institute of British Architects, in London, today, two large research groups are at work. One is devoted to the problem of the application of science to architecture in the broadest possible way; the other is devoting itself to the basic principles of land planning. Here is an indication of what the most original and significant younger thinkers among English architects feel are the two most important of post-war architectural problems. And, as I think over the field, I can see no other problems of greater importance here in the United States. To bring into architecture the manifest economies of industrial production; to learn how scientific discoveries and advances in biology and physiology, as well as in the mechanical sciences, can help us make buildings better homes and work places for mankind; then to learn how land, the great basic wealth, may best be used for designed communities that shall be sources of human betterment, through their efficiency and their beauty—what more important subjects are there than these? Would it not be well if we American architects, in local groups, with perhaps some central clearinghouse for results of study, could attack the same types of problem?

LICENSE EXAMINATIONS IN ARCHITECTURE

AS REGISTRATION WORKS IN CALIFORNIA

BY PAUL R. HUNTER

For many years in America the practice of architecture has been regarded as a profession. Generations have gone by since it was looked upon as a pastime for gentlemen amateurs, nor is it now generally confused with the craft exercised by carpenter foremen. The architectural profession took a forward step with the establishment of The American Institute of Architects in 1857—an action which, while following by ten years the founding of The American Medical Association, still preceded by twenty the organizing of The American Bar Association in 1878. The professions have always attracted men who respected their callings and who have consistently sought ways of raising the standards of their work by improving the educational facilities, by exchanging information, and by establishing sound business relationships. Architects, in common with other professional men, have taken a keen interest in the development and continuous progress of their profession.

One of the earliest actions of The American Institute of Architects was the establishment of a Board of Examiners, which took upon itself the task of examining all who wished to become members of the organization. Through the intervening years The Institute has fostered the activities that eventually led to legislation, in most of the states, defining the practice of architecture and providing for the issuance of licenses by examination. The majority of architects feel that although the necessity of passing a rigidly fixed examination may work an unjust hardship in a few cases, that in the main examinations offer the only tangible means of determining an individual's familiarity with the many fields in which an architect must participate. It is further generally agreed that every candidate should have, in addition to certain minimum qualifications in education, a reasonable amount of practical experience.

The schools of architecture have a close interest in license examinations. While it is the object of our professional education to provide a student with a well-rounded background of history, design, and engineering, it is also necessary for this education to establish a foundation upon which a student can build for his license examinations. As a board of examiners changes in its point of view regarding the profession, the character of its questions changes. It behooves the schools to keep informed of these changes and to acquaint the student with what the leaders in active practice regard as contemporary standards of professional equipment. The ideal position for the schools, of course, is one far in advance of contemporary standards and one which will serve as a guiding force in anticipating the requirements of the future. The schools also have another function in helping to weed out students whose abilities and temperament are not suited for architecture. In this, the all-night design charrettes and the uncompromising engineering professors have their place.

The examinations, however, are of paramount interest to the men who are about to take them. To many prospective candidates the examinations loom up like bugbears, to some they are hurdles which seem to rise higher every year, and to others they appear as a device for the lucky few who are in to keep out as many others as possible. If after long years of schooling and routine office work, and in spite of the present-day uncertainties of employment, that inner

urge still continues unabated, a man deserves every possible help and encouragement in reaching his goal, and to him this article may be of value.

California, while four years behind Illinois in the enactment of the first state law, has nevertheless had thirty-six years of experience in qualifying men for practice. These years have led to the development of certain rules of procedure and methods of examination that may be of general interest. Because of earthquake conditions and the existence of large urban centers, the California examination has come to be one of the most rigorous of all the state examinations. On the adjoining page is printed a portion of the Circular of Information issued to all applicants, which sets forth the pre-requisites in education and experience and the subjects in which candidates may expect to be examined.

Even a casual and hurried reading of this Circular of Information cannot but impress one with the broad scope of the examinations in California. In addition to the circular, the California Board offers to all who are interested the opportunity of studying previous examination questions, to learn something of their character. By careful and adequate preparation it is possible to pass all three groups of these examinations the first time, without having to repeat one or more of the parts. A knowledge of the methods of study used by some of the men who have successfully passed these examinations may be of help to those who are planning to take them.

Considering the groups in order, the design problem and the architectural history and theory are first. The design problem is usually a small building such as a chapel, an inn, or a small city hall. Twelve hours are allowed for establishing a scheme and developing the finished plans, sections, and elevations required by the program. What the Examiners are looking for is a simple, straight-forward solution of the problem, with indication of design ability and a reasonable knowledge of the laws or ordinances that might affect the scheme, such as the number of stairs or the placing of exits. Drawings with an elaborate entourage and renderings are perhaps a disadvantage to the candidate, since many men find that twelve hours is hardly enough time to finish even line drawings.

A recent candidate described his handling of the design problem as follows. From eight-thirty until noon he familiarized himself with the program and tried various schemes, developing the one that seemed best with free hand sketches until all the conditions of plan, section, and elevation were solved. After lunch he converted these sketches into line drawings on tracing paper, then at three o'clock he went on the "final," a white board, 20 x 30 inches. From there on, no major or minor changes in scheme, due to lack of study, were necessary, and the matter resolved itself into fast drafting in order to complete the required number of drawings by eight-thirty—stopping long enough, though, for a sandwich and a cup of coffee.

The best preparation for design is the background of atelier work with training in the *esquisse* and the *esquisse-esquisse*, together with design experience in an office, where imagination is tempered by practical details and budgets. A candidate should be familiar with the current solutions to various types of small buildings, which are published in the magazines, and a little brushing up with Harbeson's *The Study of Architectural Design* and Curtis' *Architectural Composition* doesn't hurt.

The examination in the History of Architecture is not difficult for those who will sit down and read or re-read one of the standard textbooks on history, particularly one that treats of contemporary work. The answers to such questions as "Discuss Egyptian Architecture," and "Show by sketches the typical plans of French, English, and German cathedrals," should be well in hand. As for Theory, an expectant architect should be able to express himself intelligently on such varying subjects as "The influences of new materials upon architectural design" and "The objectives of slum clearance and housing projects."

The second group, concerned with Architectural Engineering and the problems of Structural Design, has in the past wrought such havoc in the ranks of the candidates that now few venture into this field without a thorough and intensive training. For Section A, usually given in the morning, in which the candidate is examined in the computation of loads and stresses and the selection of members for wood, steel, and concrete construction, it has become the rather general practice to tutor with a structural engineer,

GROUP 1—ARCHITECTURAL DESIGN, HISTORY AND THEORY

(First day)

(a) DESIGN PROBLEM—
12 hours—8.30 a.m.-8.30 p.m.

(Second day)

(b) HISTORY AND THEORY OF ARCHITECTURE—
4 hours—8.30 a.m.-12.30 p.m.
AFTERNOON FREE

GROUP 2—ARCHITECTURAL ENGINEERING

(Third day)

(a) STRUCTURAL DESIGN—
4 hours—8.30 a.m.-12.30 p.m.

(b) MECHANICS OF MATERIALS—
4 hours—1.30 p.m.-5.30 p.m.

GROUP 3—ARCHITECTURAL PRACTICE AND MECHANICAL ENGINEERING

(Fourth day)

(a) MATERIALS & SPECIFICATIONS—
4 hours—8.30 a.m.-12.30 p.m.

(b) ARCHITECTURAL PRACTICE AND SUPERVISION—
2 hours—1.30 p.m.-3.30 p.m.

(c) DESIGN AND SUPERVISION OF MECHANICAL EQUIPMENT—
2 hours—3.30 p.m.-5.30 p.m.

GROUP I—ARCHITECTURAL DESIGN, HISTORY AND THEORY

A—Design Problem

(No reference books permitted)

A problem of simple elements will be presented to the candidate for solution at small scale in plan, section and elevation. The problem will be graded on the basis of selection of scheme; logical and orderly planning; appreciation of practical requirements; proper coordination of plan, section and elevations; composition of parts in plan, section and elevation; knowledge of detail; appropriateness of design to purpose of building; and draftsmanship.

B—History and Theory of Architecture

(No reference books permitted)

Questions of theory and general discussion on design will be included in this examination.

A well prepared examinee should be conversant with the history of civilization and the cultural development of the world. He should be able to trace the influence upon architecture of physical and social conditions and historical events and to show a reasonable knowledge of important names and dates. The architecture of the United States and contemporary architecture in general should be included.

GROUP II—ARCHITECTURAL ENGINEERING

A—Structural Design

(The use of reference books and slide rules will be permitted)

Structural Drawing: Knowledge of conventions; structural drawings and details; column and beam schedules; methods of detailing; shop practice.

Design: Theory of structural design; determination and character of stresses; analysis of computation of live, dead, impacted, wind and other loads; design of foundations, columns, girders, beams, joists, slabs, walls and trusses in steel, reinforced concrete, masonry and wood; various methods of framing and bracing to resist load, wind and earthquake stresses; methods of strengthening existing structural members.

Choice of Materials: Availability, adaptability, characteristics and economy of structural materials.

Soil Mechanics: Bearing capacities of soils, methods of testing soil resistance, proportioning of loads, occurrence and effect of water, substructures, surface variation.

Underpinning and Shoring: Prevention of movement of structures, practicability of methods and materials, sequence of operations.

Details of Construction: Structural connections, welding, bracing, bridging, bonding, anchoring, rivets, bolts, nails, fireproofing.

Law and Ordinances: Requirements of governing bodies affecting structural design.

B—Mechanics of Materials

(No reference books permitted)

Characteristics of Building Materials: Steel, concrete, brick, tile, stone, terra cotta, timber and other materials.

Stresses in Building Materials: Allowable unit stresses in tension, compression, shear. Bending and combined stresses, ratio of elastic limit to working stress, ultimate strength, special allowances for wind and earthquake stresses, reduction of allowable stresses due to slenderness.

Grades of Concrete: Methods of obtaining concrete of different strengths, relation of different aggregates and methods of mixing to strength of concrete, water-cement ratio as an element of concrete strength, effect of impurities on strength of concrete, methods and duration of curing processes.

Testing: Methods of testing in laboratory and field, test requirements for different materials, value of tests.

Standard Specifications: Findings of American Society for Testing Materials, American Institute of Steel Construction, American Concrete Institute.

GROUP III—ARCHITECTURAL PRACTICE AND MECHANICAL ENGINEERING

A—Materials, Specifications, and Working Drawings

(No reference books permitted)

Materials: The examinee will be expected to have a general knowledge of the various materials in common use for building construction, their properties, grades and qualities, availability, relative costs, uses; durability, protective treatment, aesthetic values and sufficient knowledge of their manufacture to assist in their intelligent use.

Specifications: The examinee should be sufficiently familiar with the building trades to write specifications. He should understand the make-up of a specification document, the purpose and content of the general conditions and the complementary relation between specifications and working drawings.

Working Drawings: Questions may be asked covering any phase of this subject, since the examinee should be a thoroughly competent draftsman capable of preparing complete drawings for buildings.

B—Architectural Practice and Supervision

(No reference books permitted)

Administration: Questions may be asked concerning the conduct of an architect's office, touching such points as contracts between architect and client, between client and contractor; laws relating to contracts, accounting systems, office records, building accounts, legal notices, change orders, and the like.

Economics: The examinee will be expected to have a practical knowledge of finance as applied to building design and operations. He should be able to develop the necessary data and to figure probable returns for any building. He should understand the relation of proper planning, income, and return on his clients' investment.

Field Supervision: Questions may be asked to determine the examinee's ability to appreciate and evaluate a contractor's performance under the contract documents; to determine his ability to distinguish grades of material, quality and methods of construction; and to establish his aptitude to supervise in a manner that properly reflects his responsibility to the client and fairness to the contractor.

Laws, Ordinances and Rules: The examinee should have a comprehensive knowledge of the California State Housing Act, Rules of the State Industrial Accident Commission, the Building Ordinances of the community in which he proposes to practice, and of other laws, ordinances and rules governing building.

Architect's Relation to Others: Questions may be asked to ascertain the examinee's conception of his business and professional responsibilities and relations with clients, contractors, other architects, material dealers, and with other factors of the building industry.

C—Design and Supervision of Mechanical Equipment

(No reference books permitted)

NOTE.—The examinee will be expected to have a general practical knowledge of the various subjects listed below.

Mechanical Equipment of Buildings: Design; functions; installation.

Heating: Steam; water; air; gas; electric.

Refrigeration: Principles and application of different methods.

Ventilation: Natural, mechanical.

Air Conditioning: Principles and application.

Plumbing: Sanitation; disposal of sewage and storm water; fire protection and sprinkler systems; tanks; water pressure; water heating; circulation, filtration and softening; vacuum cleaning.

Electrical Work: Wiring and equipment, light, power, signal, telephone, radio.

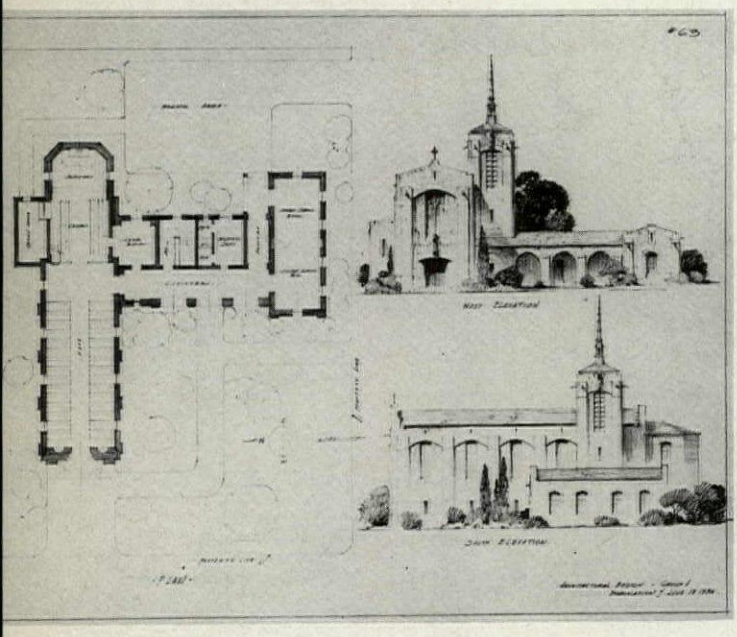
Elevators, Dumbwaiters, Hoists, Conveyors, Escalators: Electric, hydraulic and hand power.

Acoustics: Principles and method of application, governing shape of rooms, sound absorption and deadening.

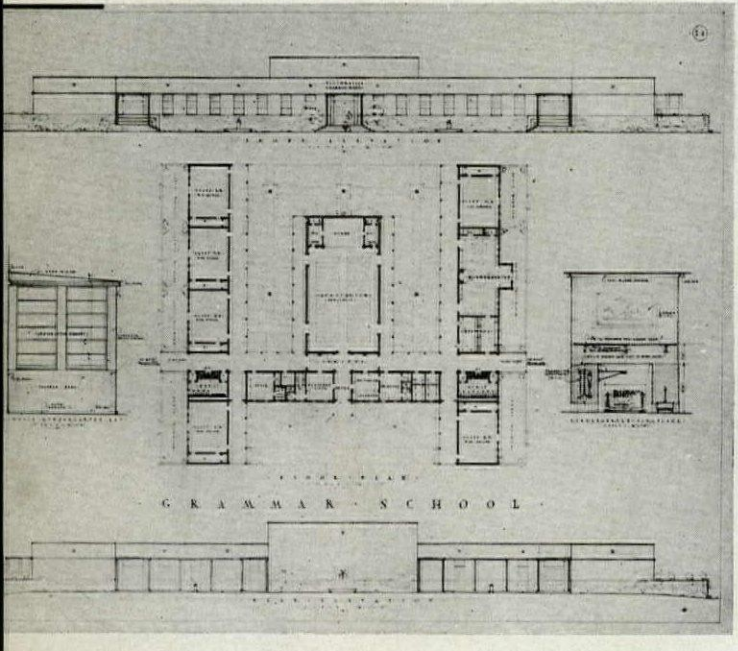
Illumination: Natural and artificial.

Law and Ordinances: Requirements of governing bodies affecting mechanical and electrical equipment.

EXCERPTS FROM THE CIRCULAR OF INFORMATION ISSUED BY THE CALIFORNIA STATE BOARD OF ARCHITECTURAL EXAMINERS INDICATING THE REASONABLY EXACTING REQUIREMENTS OF THAT STATE FOR LICENSING PRACTITIONERS. WITH THIS CIRCULAR, WHICH IS SENT TO ASPIRING CANDIDATES UPON REQUEST, IS INCLUDED A LIST OF BOOKS SUGGESTED FOR STUDY IN PREPARING FOR EXAMS. PREVIOUS QUESTIONS ARE MADE AVAILABLE TOO



TYPICAL OF THE DESIGN PROBLEMS GIVEN BY THE CALIFORNIA STATE BOARD OF ARCHITECTURAL EXAMINERS ARE THOSE REPRESENTED BY THE SOLUTIONS SHOWN HERE. SOMETIMES THE APPLICANTS ARE GIVEN THE OPTION OF SELECTING ONE OF SEVERAL TYPES OF BUILDINGS. THE CHURCH, ABOVE, AND THE GRAMMAR SCHOOL, BELOW, WERE GIVEN OUT ONE YEAR ALONG WITH A BANK, A LIBRARY, AND A RESIDENCE—ALL TO BE CONSIDERED AS PART OF A VILLAGE OF FOUR THOUSAND POPULATION BEING REBUILT AFTER EARTHQUAKE DAMAGE. CANDIDATES COULD SELECT ANY ONE OF THE PROBLEMS, FOR EACH OF WHICH THE REQUIREMENTS WERE STATED IN THE COMBINATION PROGRAM



either alone or in a small class. One or two nights a week for several months will usually serve to refresh one's acquaintanceship with methods and details, and renew an old agility with the slide-rule and the tables in the handbooks.

In studying for Section B, I outlined the chapter on Mechanics of Materials in *Materials and Methods of Architectural Construction* by Gay and Parker, and memorized all the definitions of terms and the derivation and application of the formulas. My memory not failing me during these four hours of stress, I didn't have much trouble with this section. In California, a candidate is examined on the theory of horizontal forces—which as yet has not been worked into the textbooks—and one falls back again upon the knowledge and experience of his tutor in engineering.

The background for group three, Architectural Practice and Mechanical Engineering, is acquired for the most part after one leaves school, and is best learned through observation and experience in offices and in the field. The details of working drawings, specifications, and materials are usually picked up as one goes along, and to these must be added research in those branches in which there may have been little opportunity for learning through doing. As for supervision, well, one simply has to get out in the field and learn it first hand. If one is fortunate enough to have a supervision job involving responsibility, it is amazing how alert one can become and how soon one learns that details overlooked always come home to roost. Frequent conversations with superintendents and specification writers are a great help in getting the right start. Goldwin Goldsmith's *Architects' Specifications* is a fine exposition of the theory of specification writing. Gay and Parker's *Materials and Methods of Architectural Construction* has a concise explanation of the manufacture and use of building materials. W. W. Beach in his *Supervision of Construction Operations* has adopted the story form—the construction of a million-dollar high school in a city remote from the architect's office, so that the superintendent has great responsibility. It is a book which makes not only valuable but interesting reading.

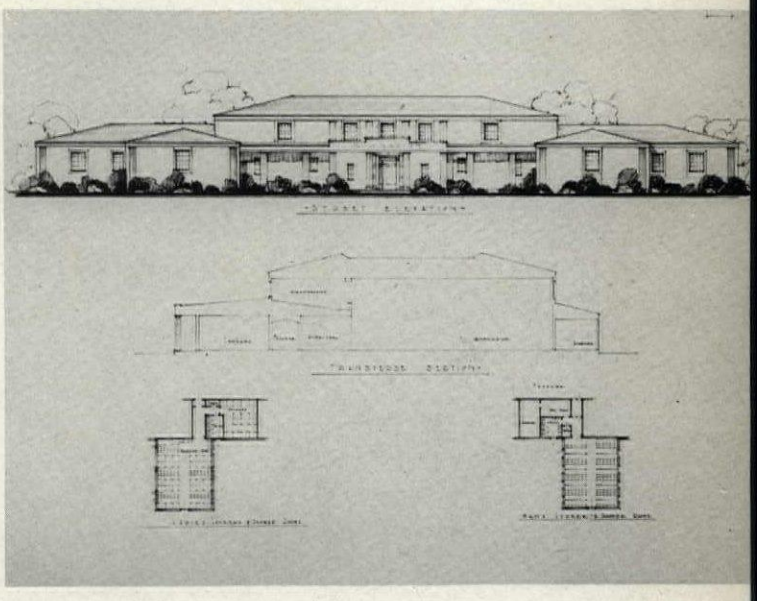
Details of administration, law, and the professional responsibilities of the architect to clients,

contractors, and others are more a matter of hearsay than actual experience for most younger men. Much can be learned about these from the Institute's *Handbook of Architectural Practice* and from conversations with older practitioners. *The Architect's Law Manual*, by Clinton Blake, is very good reading. The mechanical equipment of modern buildings is too complex a subject in which to expect a candidate to have more than a general knowledge of the fundamentals involved. The foundation for this field, begun in school, should be supplemented by reading and observation of new developments and by discussions with mechanical engineers. An excellent text used by many colleges is *The Mechanical and Electrical Equipment of Buildings*, by Gay and Fawcett.

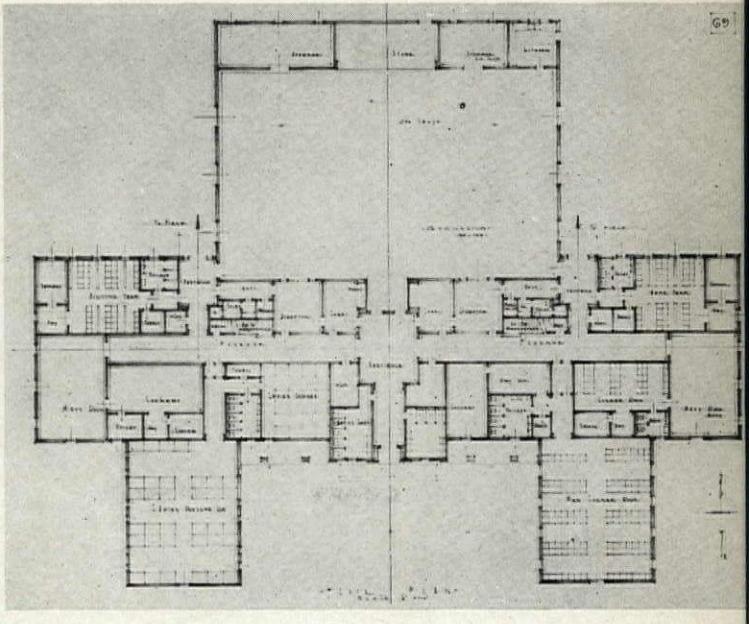
To insure complete anonymity in the written examinations, each candidate is assigned a number which is known only to the clerk, and the members of the Board in studying the design problem and the examination grades are working with numbers only. After passing the three groups of written examinations, a candidate is requested to appear before the Board for an interview.

The candidate finds himself with a friendly group of men who are interested in knowing how he happened to come into architecture and what his experiences have been, and from these to surmise the character service he may render to clients. A license entitles one to prepare drawings for any kind of work, so that a candidate must give evidence of a well-rounded background. It is not difficult for the Board to approve candidates such as one that appeared before them not long ago, who in addition to experience in most types of work had also designed one of New York's tallest skyscrapers; but to approve individuals who have been in offices doing only residences or only schools is not easy. A candidate with obvious deficiencies and gaps in his background is usually asked to do research in these particulars and to prepare either a paper or drawings and to come before the Board again. At the completion of a satisfactory oral examination, the candidate is granted a certificate, and the time has now arrived for that well-deserved celebration.

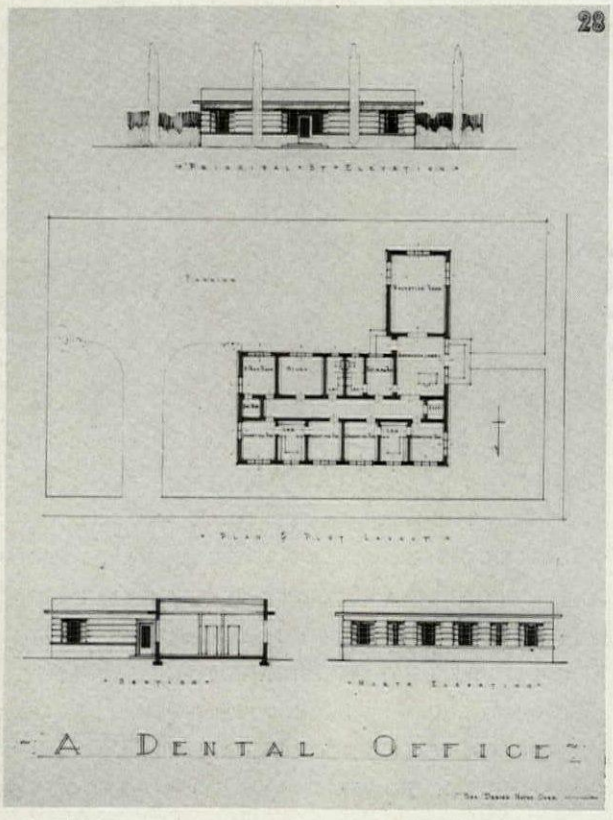
In California the Board of Examiners issues licenses to architects coming from other states



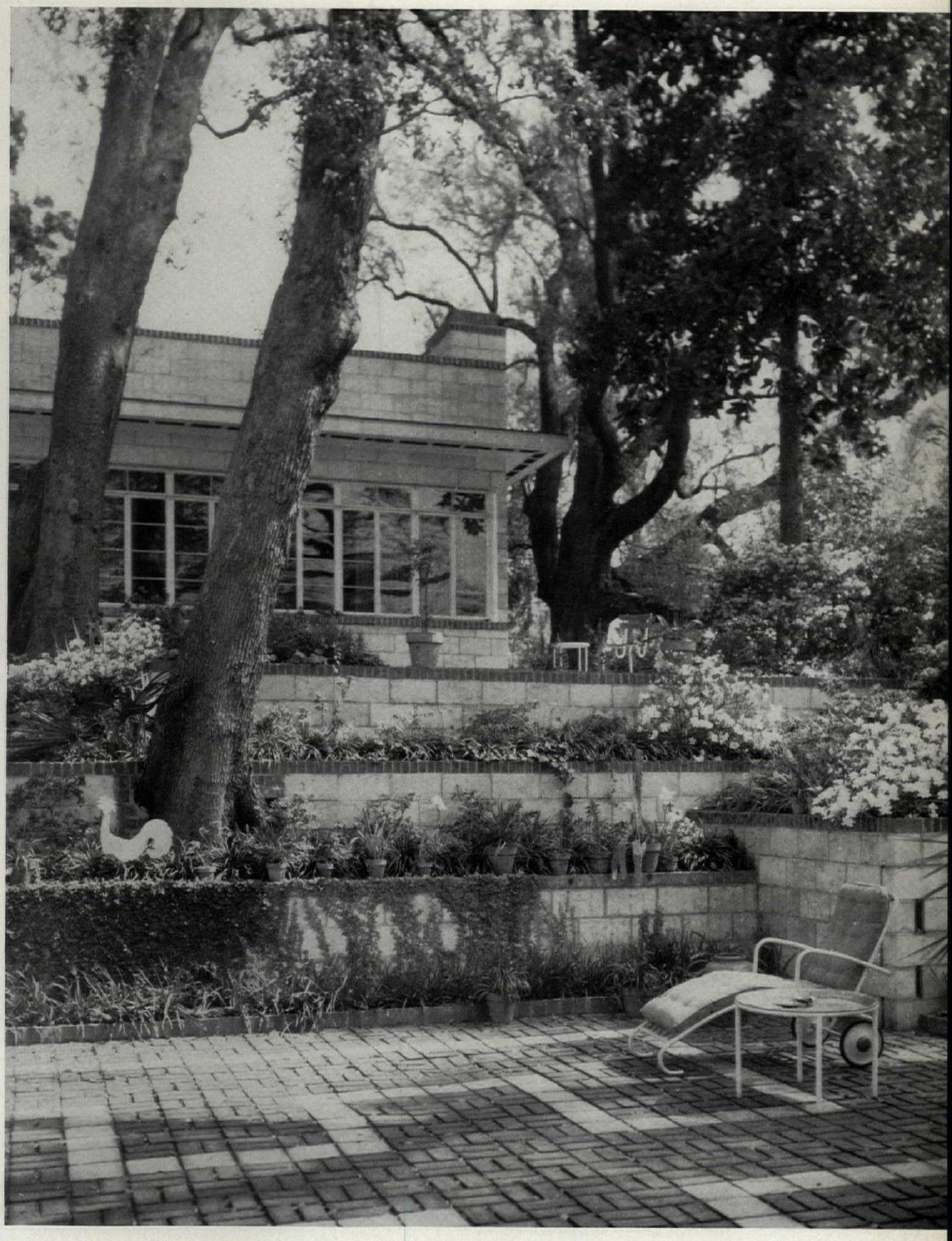
TWELVE HOURS ARE USUALLY ALLOWED FOR THE DESIGN TO BE COMPLETED. THE EXAMPLE ON THIS PAGE SHOWS THE APPLICANT'S SOLUTION FOR A FIELD HOUSE TO TAKE CARE OF THE COMMUNITY ATHLETIC ACTIVITIES OF A SUBURBAN RESETTLEMENT PROJECT. THE PROGRAM CALLED FOR A GYMNASIUM WHICH COULD BE USED AS AN AUDITORIUM TO SEAT 450 PEOPLE; LOCKER AND SHOWER ROOMS FOR HOME AND VISITING TEAMS; ROOMS FOR WRESTLING OR MAT WORK WITH SHOWER AND LOCKER ROOMS FOR THESE; ATHLETIC DIRECTOR'S OFFICES; LARGE LOCKER ROOMS, SHOWERS, AND TOILETS FOR BOTH MEN AND WOMEN GYMNASIUM USERS; ENTRANCE LOBBY; KITCHEN, ETC.



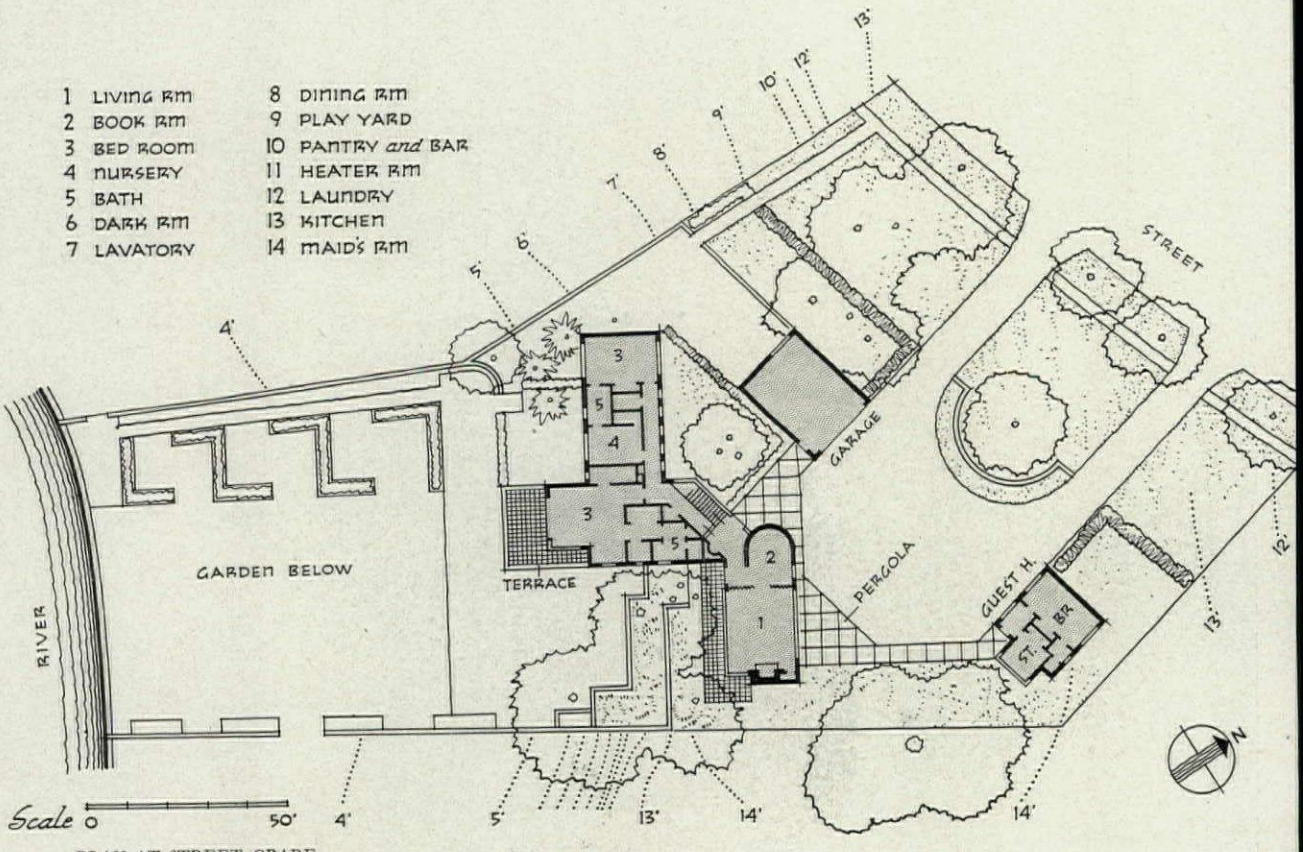
which have similar standards, but most of the younger men now in practice and those who are about to enter practice have passed the written examinations described in the foregoing paragraphs. The effect has been beneficial to both the profession and the public. The men are proud of their accomplishment, and gradually the public is becoming aware that the architectural examinations compare favorably with those given in law, medicine, and engineering. There is every indication that standards for architectural practice in California are steadily rising.



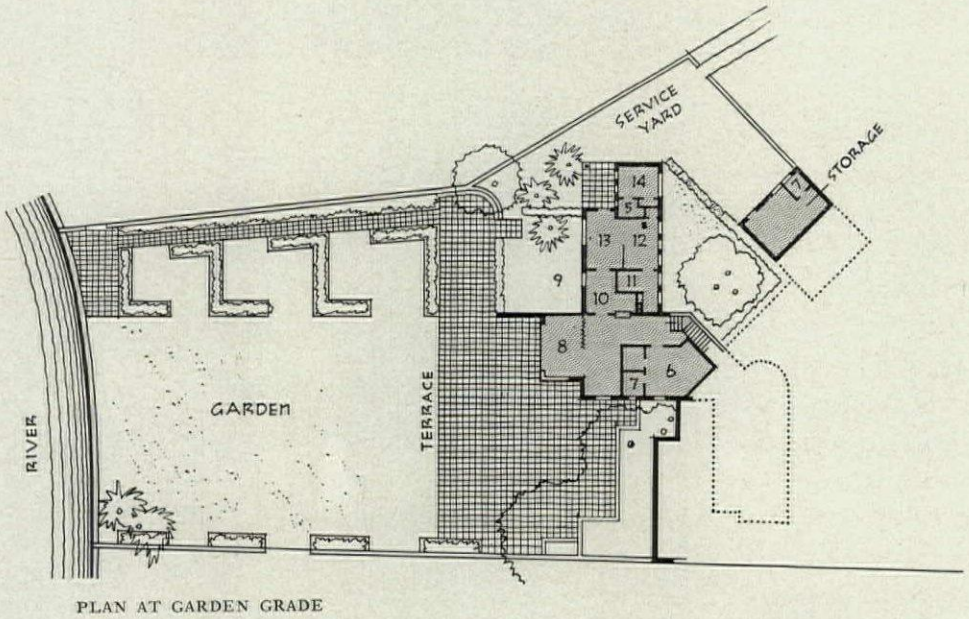
CANDIDATES PRESENTING THEMSELVES IN DECEMBER, 1937, WERE ASKED TO DESIGN A SMALL DENTAL OFFICE BUILDING TO BE OCCUPIED BY TWO DENTISTS USING CERTAIN FACILITIES IN COMMON. A CORNER LOT, IN A RESIDENTIAL NEIGHBORHOOD BUT ADJOINING A SMALL BUSINESS CENTER, WAS SPECIFIED AS THE SITE. ITS FRONTAGE WAS 70 FEET ON THE MAIN STREET TO THE WEST AND 125 FEET ON THE SECONDARY STREET TO THE NORTH. PROPER ORIENTATION AND SEGREGATION OF PUBLIC AND WORKING SPACES, AND DESIGN OF EXTERIOR IN CHARACTER WITH SURROUNDINGS KEYED THE DESIGNER'S ABILITY. IN ALL OF THESE PROGRAMS, PENCIL DRAWINGS ON ILLUSTRATION BOARD ARE CALLED FOR AND RENDERING (IN PENCIL) IS OPTIONAL. THE PRECIOUS TIME IS SPENT ON DESIGN, NOT ON SHOWY DRAFTSMANSHIP WHICH FOOLS NO ONE



AN ARCHITECT'S HOME — BY W. W. CUMMER, JACKSONVILLE, FLORIDA



PLAN AT STREET GRADE

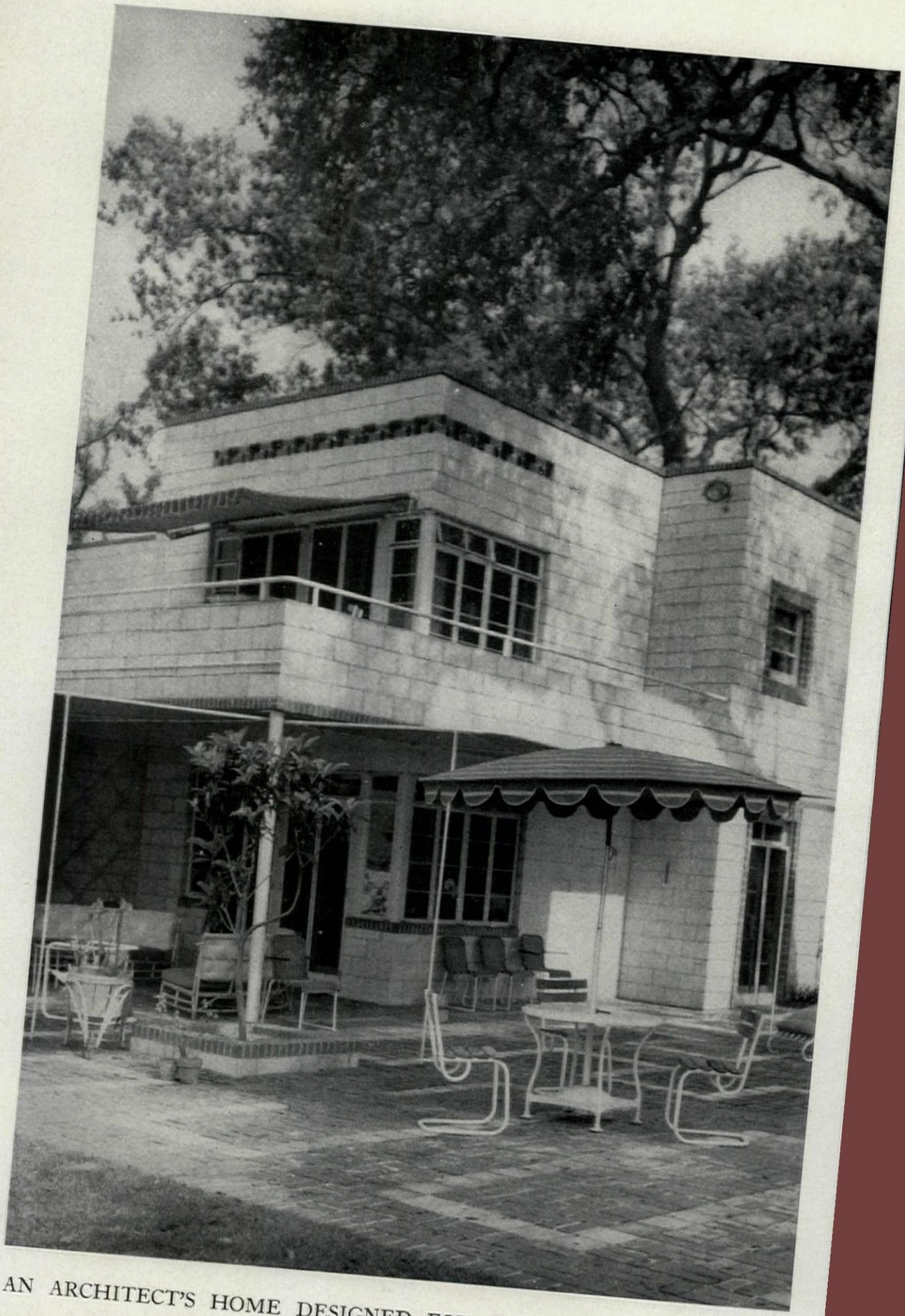


PLAN AT GARDEN GRADE

AN ARCHITECT'S HOME DESIGNED FOR A SUB-TROPICAL SETTING

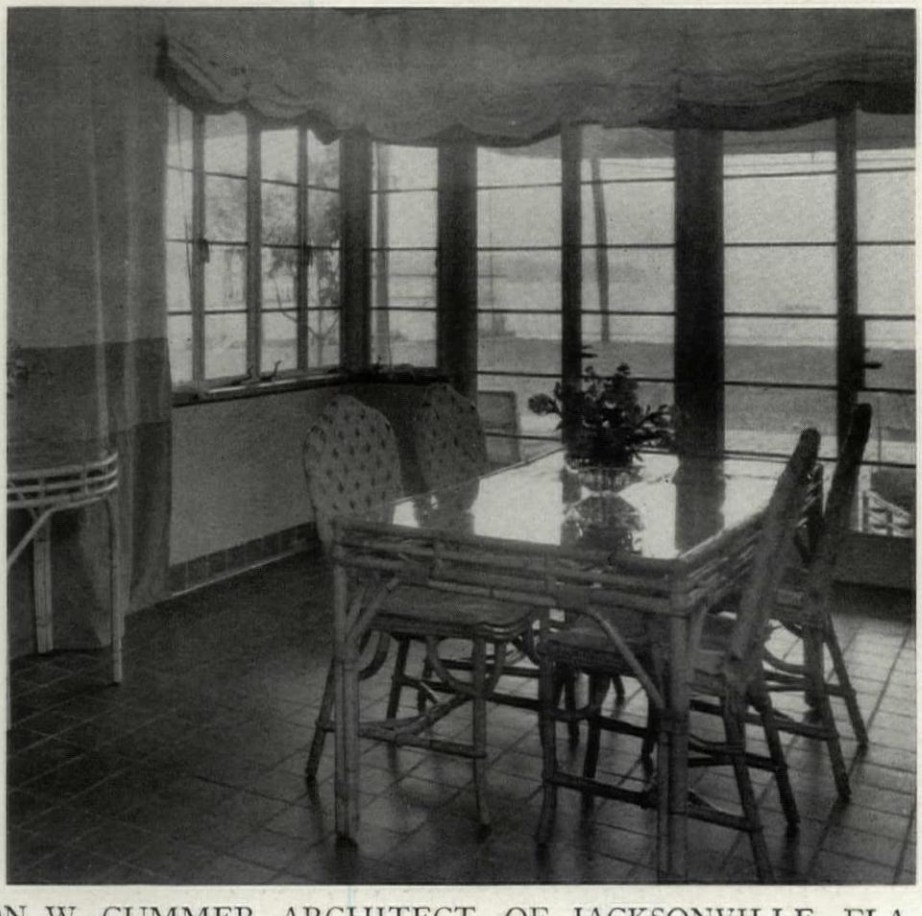
FULL ADVANTAGE WAS TAKEN OF AN UNUSUAL RIVERFRONT SITE WHEN WELLINGTON W. CUMMER, FLORIDA ARCHITECT, BUILT HIS HOME SHOWN HERE IN PHOTOGRAPHS BY R. W. TEBBS, ARCHITECTURAL PHOTOGRAPHER, NEW YORK. THE PROPERTY DROPS TEN FEET FROM THE STREET TO THE BANK OF THE INDIAN RIVER AND BOASTS A NUMBER OF FINE OLD TREES. THE ODD SHAPE OF THE LOT AND CAREFUL CONSIDERATION OF THE SITE LARGELY DICTATED THE SOLUTION, WHICH WAS TO SPREAD THE MAIN HOUSE AND THE GUEST HOUSE (ALSO USED BY THE ARCHITECT AS A STUDIO AND WORKSHOP) ACROSS THE WIDEST POINT OF THE PROPERTY — SEPARATING THE ENTRANCE DRIVE AND SERVICE AREAS FROM THE PLEASANT TERRACES AND GARDEN AT THE LOWER LEVEL. WINDOWS WERE OMITTED ON THE NORTHWEST AND PLANTING WAS MASSED ON THAT SIDE OF THE PROPERTY, TO DIMINISH THE AFTERNOON GLARE FROM THE BROAD SWEEP OF THE RIVER. CROSS-VENTILATION WAS PROVIDED FOR IN EVERY ROOM

BY WELLINGTON W. CUMMER, ARCHITECT, OF JACKSONVILLE, FLA.

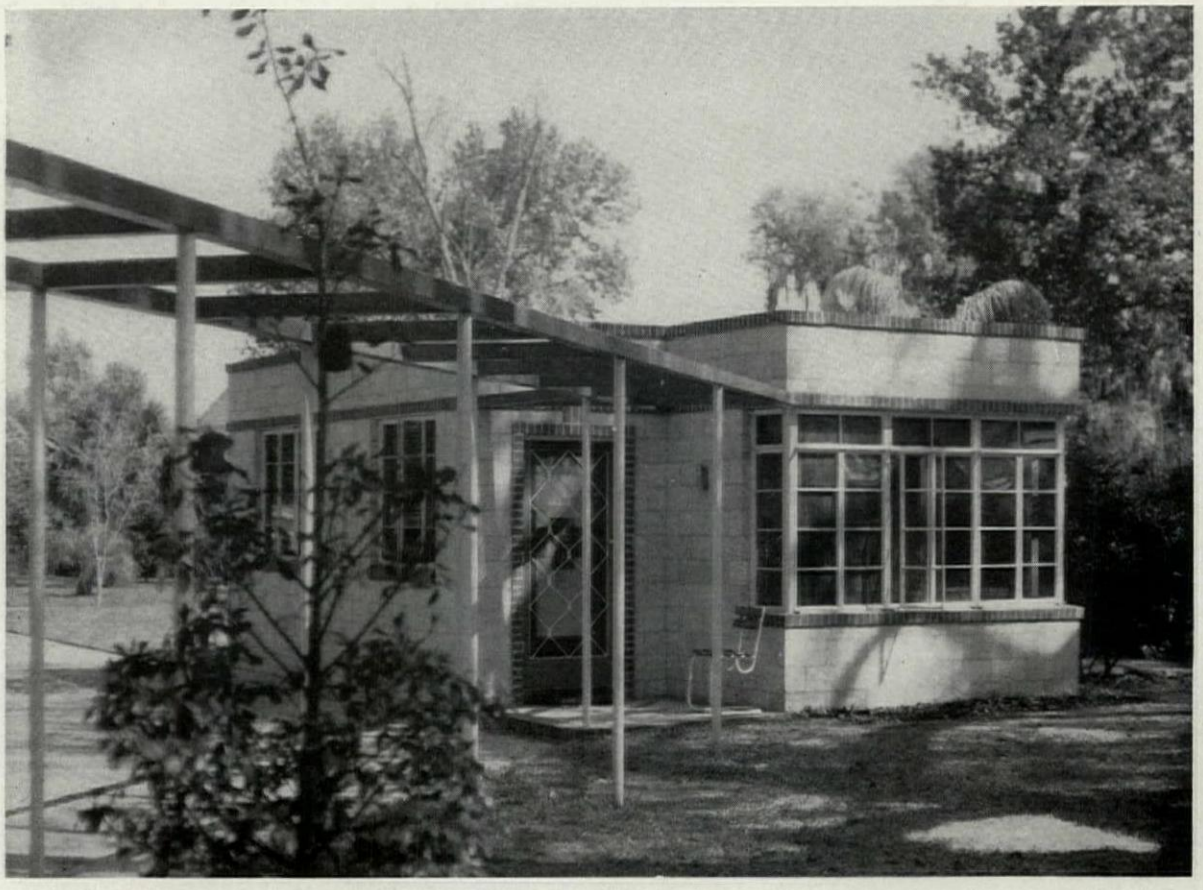


AN ARCHITECT'S HOME DESIGNED FOR A SUB-TROPICAL SETTING

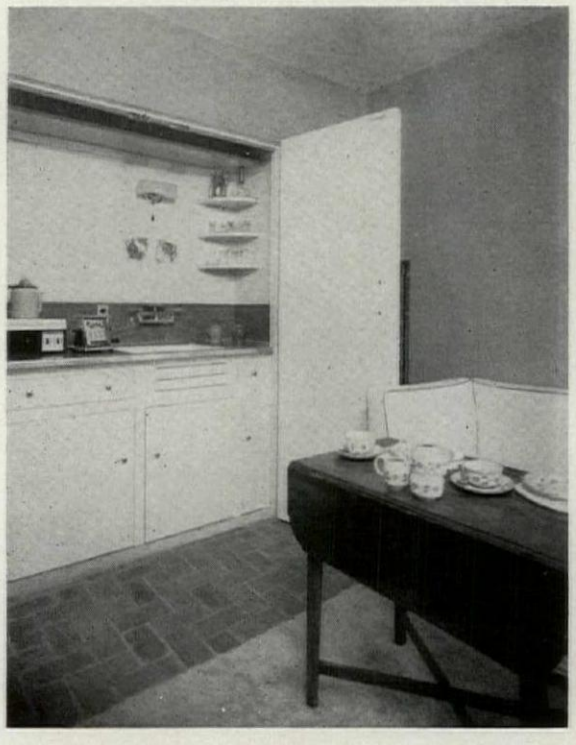
THE LIVING ROOM (ABOVE) HAS A COLOR SCHEME OF GRAY, DUSKY SALMON PINK, AND YELLOW, WITH THE PINK MARBLE OF THE FIREPLACE AS A RICH ACCENT. THE DINING ROOM (BELOW) IS HUNG WITH CANVAS CURTAINS OF WHITE, TAN, AND TERRA COTTA. THE FLOOR IS RED TILE WITH A BLACK BASE

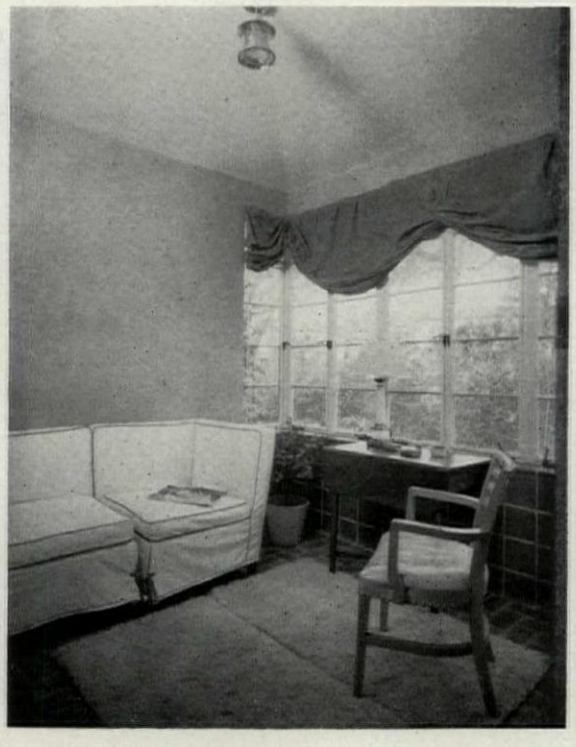


BY WELLINGTON W. CUMMER, ARCHITECT, OF JACKSONVILLE, FLA.



THE GUEST HOUSE WAS PLANNED TO SERVE ALSO AS AN OFFICE, A WORKSHOP, A DARK-ROOM, A GREEN-HOUSE, A "RETREAT FOR THE ARCHITECT," AND AN APARTMENT FOR THE SUMMER CARETAKER. THE BLUE CANVAS CURTAINS WERE PROVIDED TO CONTROL THE ALL-IMPORTANT SOUTH LIGHT; THE SERVICE BAR CAN ALSO BE USED AS A DEVELOPING BENCH AND WASHING SINK; AND THE DOWN-LIGHTS IN THE BED-ROOM CEILING ARE USEFUL WHEN IT BECOMES A DRAFTING ROOM. THE CONSTRUCTION OF THE BUILDINGS ON THE CUMMER PROPERTY IS FLORIDA CEMENT AND OCALA LIME ROCK, CAST IN STANDARD THREE-CORE BLOCKS; INTERIOR FRAMING IS CYPRESS; EXTERIOR FRAMING IS STEEL AND CONCRETE. STEEL LINTELS





AN ARCHITECT'S HOME — BY W. W. CUMMER, JACKSONVILLE, FLORIDA

MONTHLY WASHINGTON REPORT

COMPILED BY A. D. TAYLOR OF CLEVELAND

EDITOR'S NOTE: The following information is prepared each month as a result of information available for publication from the different Government agencies, and from observations concerning activities within the Government agencies concerned with National Defense, considered to be of interest to the members of the technical planning professions and to the building industry. The editors welcome comments and suggestions from readers, as to the kind and extent of information which is of most interest to them, in order that these reports may be of maximum value to the greatest number of readers of this magazine.

PROGRESS IN GENERAL. Rapid progress is being made in completing the construction work for which contracts were awarded in the initial construction program. The lend-lease bill and other bills now before Congress carry with them the necessary appropriations for further expansion of the defense construction program. The magnitude of the construction program through the different Government agencies, charged with the responsibility of completing this work, is evidenced by the size of the appropriations now being considered (and probably made available before this article appears in print).

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PLANNERS COOPERATE. Conferences continue among officially designated representatives of the planning professions of Architecture, Engineering, and Landscape Architecture relative to forms of contracts, and schedules of fees for the services of these professions on defense housing projects. A proposed form of contract for services on a Cost-Plus-A-Fixed-Fee basis has been submitted to the *United States Housing Authority* in connection with regular low-rent housing projects and defense housing projects. Proposed schedules of fees have also been submitted on behalf of these professions. Further negotiations are being conducted in an effort to arrive at a mutually acceptable form of contract and schedules of fees.

In the meantime, and pending an agreement between the professions and the United States Housing Authority, the USHA is requesting the professions to accept (especially on USHA defense housing projects) schedules of fees which are below the schedules recommended by the representatives of these professions and based upon the experience of these professions with housing work during the past two or three years.

The statement as to "Division of Responsibility and Work" among the planning professions, on defense housing projects, has been officially adopted by the boards of directors of each of the national organizations of architects, engineers, and landscape architects.

★

THE HOUSING AGENCIES. The Government agencies now engaged in defense housing include (1) *Public Buildings Administration;* (2) *United States Housing Authority;* (3) *Federal Housing Administration;* (4) *Construction Division, Quartermaster General's Office;* (5) *Bureau of Yards and Docks (Navy Department);* (6) *Maritime Commission;* (7) *Defense Housing Corporation;* (8) *Corps of Engineers (War Department);* (9) *Farm Security Administration;* (10) *Air Corps (War Department).*

There have been approximately 17,000 housing units for enlisted and civilian personnel under contract to date in the *Navy Department.* Approximately 1,400 units were constructed through the USHA for the *Navy Department* and approximately 1,000 units were constructed for the Navy under the Lanham Act by the *Public Buildings Administration.* The remaining projects for the Navy have been designed in the Bureau of Yards and Docks.

★

MAJOR "Y & D" PROJECTS. Defense projects in the Bureau of Yards and Docks are handled through the Public Works Officer for each Naval District. All inquiries concerning specific projects should be addressed to the Officer in Charge, indicating clearly the contract number for the project, the name of the base or station where the project is located, and the city in which it is located.

Maps or charts of Naval Districts, which are comparable to Corps Areas in *War Department,* are procurable from the Hydrographic Office, Room 1402, Navy Building (price 50c).

★

LEGISLATION RE HOUSING. Bill No. H.R. 3162 has been introduced into Congress concerning "Defense Housing Insurance." Copies of this Bill are available to those who are interested in the investment of private capital in defense housing. Under this Bill the Federal Housing Administrator will have available an

immediate fund of $5,000,000 from which he is authorized, upon application of any mortgagee, to insure mortgages which are eligible for insurance under this fund. Through this procedure, additional funds will be made available for defense housing which otherwise might not be possible with private capital.

★

MORE DEFENSE HOUSING. Approximately $49,862,000 has been allocated to the USHA to be used for the construction of approximately 77 new low-rent housing projects similar to those projects which have been constructed prior to the defense housing program in many cities throughout the United States.

This housing will be done in the same way that other low-rent housing has been done with funds allocated by the USHA through local housing authorities for this work. The list of projects on which these funds are to be expended is available in the releases from the National Defense Council and in the publication entitled "Defense" to which reference is made in the February issue of PENCIL POINTS.

Latest list of regular Low-Rent Housing allocations is as follows:

Locality	*Amount*
ALABAMA	
Anniston	$ 350,000
Birmingham	325,000
Fairfield	350,000
Fort Payne	175,000
Jasper	250,000
Montgomery	750,000
Tarrant	200,000
Alabama—Rural Housing	1,000,000
ARKANSAS	
Blytheville	300,000
Conway	200,000
Fort Smith	400,000
North Little Rock	350,000
Pine Bluff	400,000
Arkansas—Rural	1,500,000
CONNECTICUT	
Hartford	895,000
DELAWARE	
Wilmington	1,000,000
FLORIDA	
Daytona Beach	250,000
Lakeland	210,000
Orlando	350,000
GEORGIA	
Albany	400,000
Augusta	350,000
Cedartown	200,000
La Grange	400,000
Thomasville	350,000
Valdosta	350,000
Waycross	350,000
Georgia—Rural	2,000,000

MAJOR PROJECTS UNDER BUREAU OF YARDS AND DOCKS (NAVY DEPARTMENT)

Name of Project	*Location*	*Contractor*	*Estimated Cost*
Housing Facilities	St. Juliens Creek, Va.	*A. J. Saville* Richmond, Va.	$ 713,000
Housing Facilities	Key West, Fla.	*S. E. Construction Co.* Miami, Fla.	128,700
Housing Facilities	Charleston, S. C.	*S. E. Construction Co.* Charlotte, N. C.	525,000
Lowcost Housing and Additional Ammunition Facilities	Indian Head, Md.	*Harwood Nebel Co.* Washington, D. C.	1,945,000
Housing Facilities	Great Lakes Training Station, Great Lakes, Ill.	*Leonard Construction Co.* Chicago, Ill.	574,000
Housing Facilities	Mare Island, Calif.	*Cahill Bros.* *Ben C. Gerwick*	858,000
Housing Facilities	New London, Conn.	*Wadhams, May, and Carey* Hartford, Conn.	277,000
Barracks, etc.	Navy Yard Brooklyn, N. Y.	*White Construction Co.* New York, N. Y.	1,300,000
Housing Facilities	Jacksonville, Fla.	*Hillier and Lovan* Jacksonville, Fla.	555,000
Housing Facilities	Lakehurst, N. J.	*Matthews Construction Co.* Princeton, N. J.	128,700
Housing Facilities	Miami, Fla.	*The Mackle Co.* Miami, Fla.	555,000
Housing Facilities	Pascagoula, Miss.	*W. J. McGee & Son* Laurel, Miss.	2,000,000
Shore Facilities	Mare Island, Calif.	*Kaiser Co.* Oakland, Calif.	3,300,000
Ammunition Depot	Furns City, Ind.	*Maxon Construction Co.* Dayton, Ohio	2,500,000
Housing Facilities	Alexandria, Va.	*Hyman Construction Co.* Washington, D. C.	850,000
Housing Facilities	Coco Solo and Balboa, C. Z.	*Leonard Construction Co.* Chicago, Ill.	4,224,000
Aviation Facilities	Naval Base Oakland, Calif.	*Dinwiddie Construction Co.* San Francisco, Calif.	700,000
Naval Air Station	Trinidad and British Guiana	*James Stewart Co.* *H. J. Deutschbein Co.* *Peter F. Connolly Co.* New York	11,487,000
Naval Air Station	Argentia, Newfoundland	*George A. Fuller Co.* *Merritt Chapman Scott Corporation* New York City	9,425,000

(From release on "Negotiated Contracts"—revised February 18, 1941)

Also see Bill H.R. 3325 (now before Congress) for important list of proposed projects. Releases containing this information with the addresses of the "Officer-in-Charge" are procurable through the Bureau of Yards and Docks, *Navy Department*, Washington, D. C.

Locality	*Amount*
ILLINOIS	
Champaign County	$ 600,000
Chicago	1,500,000
LaSalle County	500,000
Madison County	600,000
Morgan County	300,000
Winnebago County	880,000
KENTUCKY	
Corbin	200,000
Owensboro	700,000
Somerset	140,000
LOUISIANA	
Lafayette	400,000
Lake Charles	282,000
Monroe	500,000
Shreveport	800,000
Louisiana—Rural	2,000,000
MARYLAND	
Annapolis	225,000
MASSACHUSETTS	
Chicopee	1,000,000

Locality	*Amount*
MICHIGAN	
Hamtramck	$ 175,000
MISSISSIPPI	
Greenwood	350,000
Tupelo	250,000
Mississippi—Rural	1,500,000
MISSOURI	
St. Louis	3,500,000
NEW JERSEY	
Asbury Park	300,000
Atlantic City	800,000
NEW MEXICO	
Clovis	300,000
NEW YORK	
Tuckahoe	333,000
NORTH CAROLINA	
Asheville	700,000
Concord	350,000
Fayetteville	400,000

Locality	*Amount*
OHIO	
Hamilton	$ 700,000
Lorain	645,000
Steubenville	675,000
PENNSYLVANIA	
Allentown	500,000
Bethlehem	1,100,000
Fayette County	1,600,000
Greene County	400,000
Johnstown	500,000
Washington County	800,000
Westmoreland County	1,400,000
PUERTO RICO	
P. R. Housing Authority	750,000
RHODE ISLAND	
Central Falls	500,000
SOUTH CAROLINA	
South Carolina—Rural	1,000,000
TEXAS	
Brownwood	350,000
Bryan	350,000
Eagle Pass	200,000
Galveston	852,000
Lubbock	500,000
Temple	350,000
VIRGINIA	
Halifax County	150,000
Martinsville	200,000
Norfolk	2,000,000
Richmond	750,000
WEST VIRGINIA	
Martinsburg	100,000
Wheeling	250,000
TOTAL	$49,862,000

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FSA DOES HOUSING.

There are a limited number of defense housing projects which for special reasons are being administered direct from the Office of the Federal Works Administrator, on which projects offices in the technical planning professions in private practice are employed.

The *Farm Security Administration* has received funds and will be responsible for the preparation of plans, specifications, and awarding of contracts covering 1,000 units as an addition to the project completed approximately two years ago at Greenbelt (near Beltsville, Md.). The FSA has received funds also for two hundred units at Radford, Virginia. These funds are made available under the Lanham Act.

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ANOTHER LANHAM BILL.

In the October issue of this magazine reference was made to the Lanham Bill (H.R. 10412) providing an appropriation of $150,000,000 for defense housing. Under date of February 19, Mr. Lanham introduced the

(Continued on page 196)

MAJOR DEFENSE PROJECTS UNDER THE CONSTRUCTION DIVISION OF THE QUARTERMASTER GENERAL'S OFFICE.

In the release dated February 17, 1941, there is available a complete list of the camps, cantonments, hospitals, airports, and major ordnance and chemical warfare projects for which plans are being prepared and contracts awarded through the Construction Division of the Quartermaster General's Office (Engineering Branch). This list of projects revised frequently has been referred to in recent issues of this magazine. The following is the additional list of projects not included in the lists heretofore published in connection with the Construction Division of the Quartermaster General's Office:

Name of Project	*Location*	*Architect or Contractor*	*Estimated Cost* (to nearest $100,000)
Camp Callan (San Diego)	Torrey Pines, California	*Myron Hunt and H. C. Chambers* Los Angeles, Calif.	$ 3,600,000
Camp Croft	Spartanburg, S. C.	*The Harwood Beebe Co.* Spartanburg, S. C.	9,700,000
Camp Davis	Wilmington, N. C.	*W. S. Lee Engineering Corp.* Charlotte, N. C.	13,100,000
Camp Haan (March Field)	March Field, Calif.	*O. G. Bowen and J. B. Lippincot* Los Angeles, Calif.	6,100,000
Camp Polk	Leesville, La.	*Benham Engineering Co.* Oklahoma City, Okla.	17,400,000
Camp Roberts	San Miguel, Calif. (Nacimiento)	*Holmes and Narver* Los Angeles, Calif.	10,700,000
Springfield General Hospital	Springfield, Mo.		
Camp Wheeler	Macon, Ga.	*Hentz, Adler, and Shutze* Atlanta, Ga.	8,500,000
Fort Leonard Wood	Newburg, Mo.	*Alvord, Burdick and Houseman* Chicago, Ill.	25,200,000
Alabama Ordnance Works	Childersburg, Ala	*Dupont deNemours and Co.* Wilmington, Del.	38,000,000
Coosa Ordnance Plant	Childersburg, Ala.	*Wiedeman and Singleton* Atlanta, Ga.	14,250,000
Iowa Ordnance Plant	Middletown, Iowa		21,500,000

USHA HAS ADDITIONAL DEFENSE HOUSING PROJECTS

The United States Housing Authority is now engaged in the selection of architects, landscape architects, civil engineers, and mechanical engineers to work upon a collaborative basis in preparing plans and specifications for the following list of *Defense Housing** projects which are in addition to the projects listed in the January issue of this magazine. The list of projects is as follows:

Location	*Number of Units*	*Location*	*Number of Units*
Kodiak, Alaska	25	Paterson, N. J.	500
Rantoul, Ill.	100	Pedricktown, N. J.	100
Birmingham, Ala.	300	Akron, Ohio	300
Gadsden, Ala.	150	Canton, Ohio	300
Mobile, Ala.	500	Cincinnati, Ohio	350
Muscle Shoals, Ala.	250	Revena, Ohio	200
Bridgeport, Conn.	600	Allentown, Pa.	500
New Britain, Conn.	300	Beaver Co., Pa.	500
Waterbury, Conn.	300	Titusville, Pa.	200
District of Columbia	1000	Williamsport, Pa.	250
Alton, Ill.	150	Nashville, Tenn.	300
Charlestown, Ind.	400	Dallas, Texas	300
South Bend, Ind.	500	Dumas, Texas	50
Wichita, Kans.	400	Ogden, Utah	150
Baltimore, Md.	2000	Manitowoc, Wis.	400
Buffalo, N. Y.	1000	Philadelphia, Pa.	500
Elmira, N. Y.	200	Erie, Pa.	500
Kearny, N. J.	1000		

* *The USHA selects Architects on Defense Housing. The Local Housing Authorities select Architects on Regular Low-Rent Housing Projects.*

following bill to authorize an appropriation of an additional $150,000,000 for defense housing, a part of which reads as follows:

> "An Act to expedite the provision of housing in connection with National defense and for other purposes: Approved October 14, 1940, is amended by striking '$150,000,000' and inserting in lieu thereof '$300,000,000.'"

It is thus clear that when this bill is passed the program of housing under the original Lanham Act referred to in the October issue of PENCIL POINTS will be doubled. It is quite likely that additional moneys will be made available through other bills so that under the *Federal Housing Administration* an increased program of defense housing making use of Government funds loaned to private individuals and corporations will develop.

Defense housing continues to be done on a large scale through the *Public Buildings Administration* in which program practically all of the design (engineering, architectural, and landscape architectural) is concentrated in the Office of the Supervising Architect. The branch of Site Planning in this Office makes use of the services of an advisory committee consisting of Mr. Frederick Bigger, Mr. Seward Mott, Mr. Alfred Geiffert, and Mr. Henry V. Hubbard to advise upon policies and procedures in the program of Site Planning. Releases containing information on projects now authorized, and for which the program of planning and construction is administered in this agency may be procured as mentioned in recent issues of this magazine.

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QMG PLANNING SERVICES. Civilians, each recognized as outstanding in his specialized technical field of professional work, have been appointed in the Construction Division of the Quartermaster General's Office, to assist the Chief of the branch of engineering in the problems concerning plans and specifications for defense projects (including cantonments and other major projects such as chemical warfare, ammunition plants, depots and powder plants).

Groups have been created under the Design and Engineering Section (Major Casey), being one of the four (4) sections in the Engineering Branch.

These groups are as follows, with the appointments which have been made to date:

(1) Architectural Group (Edwin Bergstrom, *Chief*)
  (a) Chief Draftsman (Mr. Stimson)
  (b) Chief Architect (Mr. Leisenring)
  (c) Chief of Structural Design (Mr. Frick)
  (d) Electrical Section
  (e) Chief of Heating and Ventilating Unit (Mr. Simpson)

(2) Civil Engineering Group (Frederick Fowler, *Chief*)
  (a) Site Planning Unit (A. D. Taylor, *Chief*)
  (b) Water Supply Unit (Mr. Black, *Chief*)
  (c) Sewage and Incineration (Mr. Greeley, *Chief*)
  (d) Highways, Railways and Drainage (Mr. Poorman, *Chief*)
  (e) Fire Protection (C. L. Goldsmith, *Chief*)

(3) Mechanical Engineering Group (Mr. McBryde, *Chief*)
  (a) Specification Unit (Mr. Warner, *Chief*)
  (b) Power and General Distribution Unit
  (c) Oil, Gas and Gasoline Unit
  (d) Cold Storage and Refrigeration Unit
  (e) Special Mechanical Equipment Unit

(4) Research Engineering Group (Mr. Starret, *Chief*)
  (a) Advance Planning Unit (Mr. Yager, *Chief*)
  (b) Technical Research

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RELEASES OF INFORMATION. Again the reader's attention is called to the important and current value of information published in the Official Bulletin of the National Defense Advisory Commission titled "Defense," and published weekly (subscription per year seventy-five (75) cents). This is an invaluable publication to those who are interested in defense matters.

A number of current releases have been published as follows:

(1) RELEASE dated February 6, 1941 from Public Relations Branch of the War Department, concerning appointments in technical planning groups.

(2) RELEASE dated February 10, 1941 from Public Relations Branch of the War Department (further information concerning appointments to staffs of the zone Construction Quartermasters).

(3) RELEASE from Office of Emergency Management, covering the address on defense housing given by Mr. Palmer in Los Angeles, California, on February 7, 1941.

(4) RELEASE from Public Relations Branch of the War Department covering address given by Brigadier General Somervell as of February 20, 1941 at Houston, Texas.

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DEFENSE CONSTRUCTION. The Government agencies most active in administering the defense construction work are the following:

Federal Works Agency, through the Public Buildings Administration and the United States Housing Authority.
  (Responsible for the design and construction of defense housing)
  (United States Housing Authority also has appropriations for continued program of low-rent housing)

Construction Division of Quartermaster General's Office (War Department).
  (Responsible for design and construction of cantonments, and ordnance projects, including chemical warfare plants, powder plants, ammunition loading and storage plants, and other ordnance plants)

Air Corps (War Department).
  (Responsible for design and construction of army air fields)

U. S. Engineer Corps (War Department).
  (Responsible for design and construction of airports under Civil Aeronautics Authority)

Bureau of Yards and Docks (Navy Department).
  (Responsible for design and construction of defense projects, Naval Air Stations, housing facilities for Navy, Naval Torpedo Stations, proving grounds, Navy Yards, and housing facilities, necessary in the Naval defense program)

Other Federal agencies not so much engaged in design and construction as in the administration of these programs for defense housing are the *Federal Housing Administration* and the *Farm Security Administration*, both of which are taking a very important part in the defense housing activities.

February 24, 1941

DIVISION OF RESPONSIBILITIES AND WORK

AMONG

THE PLANNING PROFESSIONS OF ARCHITECTURE, CIVIL ENGINEERING, LANDSCAPE ARCHITECTURE AND MECHANICAL ENGINEERING ON NATIONAL DEFENSE HOUSING PROJECTS

Every housing project built under the National Defense Program should be functionally, if not physically, related to its neighboring communities and should promote the ultimate welfare of those communities. It should be properly integrated with them as to site and permanence of structure and as to transportation, educational, recreational, sanitary, and other facilities. The study of this integration is the normal function of the City Planner.

Each project should provide adequate and appropriate shelters for those who are to occupy its dwellings and adequate and appropriate spaces and facilities to ensure their normal health and well being. The planning of such sites, facilities, and shelters and the supervision of their construction have long been the responsibilities of architects, engineers and landscape architects in private practice, each performing his respective services on the project.

It is the opinion of the planning professions represented by their national societies, *The American Institute of Architects*, the *American Society of Civil Engineers*, the *American Society of Landscape Architects*, and the *American Society of Mechanical Engineers* that their combined services are essential in respect to Defense Housing and that by the employment of their professions in collaboration, the greatest advantage will accrue to the Government.

This statement sets forth, to the extent practicable, the respective responsibilities of these four professions on any collaborative undertaking on National Defense Housing Projects.

It is not the intention to preclude any collaborator from performing any of the services of the other collaborators if he is qualified or competent to do so or if he normally performs such services by means of qualified and competent employees. Nor is it the intention that the divisions of responsibility and work as set out shall be inflexible; they should be used as guides for determining the proper divisions of work for a particular project, because the work to be done by each collaborator may differ in detail in the various projects.

The collaborative services may be performed under a single contract, or a joint contract, or under separate contracts with each of the collaborators. All such contracts shall recite and include this full statement of "Division of Responsibilities and Work," and state which of the collaborators is to be the Coordinating Authority and the extent of his authority. In housing projects, the architect normally should be the Coordinating Authority.

JOINT RESPONSIBILITY OF THE COLLABORATORS

The site having been determined, it shall be the joint responsibility of the collaborators to prepare and present to the employing governmental agency a report containing their preliminary estimates of costs and recommendations for the project, for its approval and acceptance.

The collaborative work and responsibility should cover the following fundamental features with respect to the site and the development of the project:

(a) Determination of traffic circulation; arrangement, width, and controlling grades of streets and alleys; railway trackage location.

(b) Determination of amount of land coverage, general locations of buildings, and general use of open areas.

(c) Determination of controlling grades on the open areas and the general elevations of proposed first and basement floors of buildings.

(d) Determination of general character of proposed landscape developments.

(e) Determination of general locations and types of utility and building services, street signs, fire hydrants and project lighting (poles, light standards and conduits).

(f) Determination of general character and list of drawings and specifications, to eliminate duplication and to produce efficiency and economy of design and construction.

INDIVIDUAL RESPONSIBILITIES AND DUTIES OF EACH COLLABORATOR

1. *The Architect*

(a) shall design, prepare drawings and specifications for and supervise construction of all housing units and buildings to be used for community purposes.

(b) shall plan the architectural treatment of all other structures or parts thereof, except those specifically excluded by mutual agreement in advance among the collaborators.

(c) shall direct the services of mechanical engineers engaged on the mechanical work in buildings.

(d) shall direct the services of civil engineers where such services are required on structural and foundation problems of buildings and walls incident thereto.

2. *The Civil Engineer*

(a) shall make surveys for, and prepare all property, topographic and public utility maps.

(b) shall prepare plans for general grading and excavations for engineering developments unless otherwise mutually agreed upon among the collaborators.

(c) shall design, prepare drawings and specifications for, and supervise the construction of domestic water supply systems, sewerage systems, storm drainage systems, yard lighting facilities, heating mains, gas mains, and electrical transmission lines outside of the buildings.

(d) shall design, prepare drawings and specifications for, and supervise the construction of public streets and alleys and such private drives as are included by mutual agreement among the collaborators, including paving, sidewalks, curbs, culverts, retaining walls and bridges incident thereto.

(e) shall design, prepare drawings and specifications for, and supervise construction of such foundations and structural parts of buildings and other structures as are, by reason of unusual conditions, not customarily designed by the architect.

(f) shall set lines and grades for control of all work of the project other than for buildings.

3. *The Landscape Architect*

(a) shall determine specific use and arrangement of land areas within the project based upon the general plan adopted for the project.

(b) shall design, prepare drawings and specifications for, and supervise construction of lawns, interior walks and terraces, service areas, parking areas, fences, lawn irrigation and drainage, planting, pools, such other site surface improvements and such private drives as are included by mutual agreement among the collaborators.

(c) shall prepare grading plans and specifications for, and supervise construction on all areas under landscape development unless otherwise mutually agreed upon among the collaborators.

(d) shall design, prepare drawings and specifications for, and supervise construction of outdoor recreation areas, facilities and structures incident thereto, and all walls incident to the landscape development.

4. *The Mechanical Engineer*

(a) shall design, prepare drawings and specifications for, and supervise the construction of central heating and steam power plants, service utilities in the buildings, such as mechanical, electrical, heating, ventilating, air conditioning, refrigerating, plumbing, gas and other services, and all facilities and equipment therefor.

Signed by the President of each of the professional societies concerned.

Although the foregoing document has been printed in the Octagon and in journals of several professional societies, it is reprinted here at Mr. Taylor's request as representing an important step toward a better understanding of the cooperative and collaborative procedure which should exist among the professions. For the first time in the history of these professions, officially appointed national representatives of Architecture, Civil Engineering, Landscape Architecture, and Mechanical Engineering have sat in conference around the table and discussed problems of common interest. This desire to have a better understanding of their common problems as evidenced by these conferences called by the *Chairman*, Mr. Edwin Bergstrom, *President of the A.I.A.*, is an omen of real progress which it is hoped will continue and expand, to the benefit of all parties and the public.

AMERICAN ARCHITECTURE VIEWED OBJECTIVELY

NEW POSSIBILITIES CARRY NEW RESPONSIBILITIES

BY KONRAD WITTMAN

In a search for typical qualities of American cities, admiration and disappointment are found side by side. Nobody would deny the magnificent achievements, but it is impossible not to notice contradictions which disturb their effect. Fine structures are spoilt by an ugly neighborhood, big and ornate buildings are topsy turvy with plain looking taxpayers, and representative streets, like Fifth Avenue in New York, are in a constant state of molting. The skyline, however impressive it may be, is more the result of a happy chance than of creative conception. Not unjustly has somebody compared the skyline of many American cities with "a comb which has lost some of its teeth."

The job of the architect is filled with disappointment and resignation. Immense work done by excellent architects is stringed along the streets, without gaining due importance. Buildings which in Europe would dominate the town—and attract admiring attention—are crammed together with unworthy neighbors which profane their beauty. Beautiful churches at the corners of city-blocks, or cramped between ultra-modern business buildings, lavish their beauty unnoticed. Even such a wonder of the world as the Empire State building is huddled together with unimportant buildings in an ordinary city-block. Talent and decorations are wasted and the architect is deprived of proper acknowledgment of his work. Nobody would dare to hang the pictures of an art collection in such an inconsistent order as that in which houses are rowed together on a street.

How much richer in scenic values are small old European cities, with proper zoning and a careful distribution of architectural highlights. The European architect finds a better frame for his creation, and can plan it for a long-lasting effect. The checkerboard scheme of city blocks which is favored in most American cities is one of the reasons which makes American cities poor in architectural beauty. It gives little inspiration for architectural ideas. It is bad even as a traffic system, and all the parkways and highways which are built now at enormous expense within and around cities are an admission of its inadequacy for modern traffic. Future plans will have to consider a more flexible arrangement of large and small streets to gain the enhancement of American architecture.

The utmost use of every space for houses makes open plazas within the city very rare. But plazas, with or without trees, are the

Emptiness and confusion are developed by overlong streets

Even small plazas at the side of streets help to enhance the architecture

high-spots within a city, where great architecture can be adequately developed. They become focal points of public life and give attractive views. The American city, in most cases, has not enough open places.

European towns, European countries have preserved distinctively their indigenous character. Topographical situation and national background have formed this character, and no sensitive architect could neglect its stimulating influence. Consciously or unconsciously, these cities have been formed and developed almost as an artistic organism. The American town was not so fortunate to have this determining nucleus. American towns were growing wildly and are still now growing wildly, without proper consideration of architectural values. Specialization, carried too far and developed in separate ways, has often proven harmful in dividing things which should be regarded as a unity. Specialization has proven disadvantageous, too, for the architect's profession. It took away from his hands what he should dominate and keep together for the benefit of unity and the serenity of artistic expression. The barren interpretation of city planning as a layout of streets and sewer systems has strangled the rights and the possibilities of architectural design.

A conglomerate of houses, even well-designed houses, will not turn out satisfactorily if each house is built without regard to its neighbor, or even is trying to overtrump it. Harmony in architecture is the result of order and subordination as a sign of artistic discipline. The American town reflects truly the American eagerness for civil liberties.

Democracy has been defined as liberty regulated by law, and liberty has apparently been the main motive also in the presentation of architecture. If we want to reach a higher standard of architecture and a more pleasant picture of the city as a whole, we have to accept the necessity of common duties as a counterpart and regulation of liberty. This means city planning done by the architect, visualized as a spiritual order, as a realization of the finest efforts of our social culture. City planning is a political and a cultural task, not only a matter of technical usefulness. This interpretation of city planning opens an enormous field for the activities of the architect and provides him with a theme of real magnitude.

One solution in urgent times seems to be easily at hand: Standardization. But standardization which in the long run stifles invention and makes workmen unemployed is a doubtful measure. All richness of life lies in the multitude of variations and creations, like the beauty of medieval cathedrals, which is based on a lively variety of forms, not on their exact repetition.

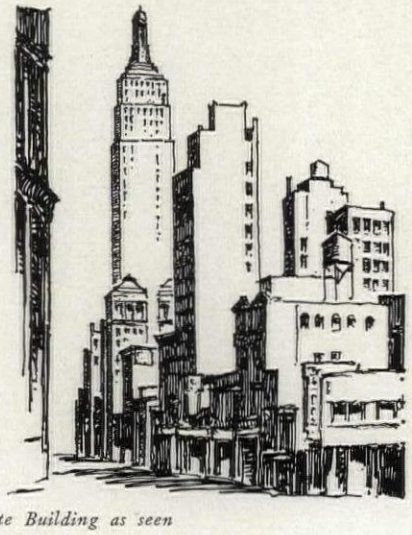
Standardization and mass production are all right for gadgets and tools, for washing machines and vehicles, but standardization of houses is something different. Useful in small quantities, standardization is annoying and tiresome in mass production on a scale

A picturesque interpretation of a group of buildings diverse in size, scale, and style

of which speculative builders dream. It is not in the interest of the architect, and not to the benefit of architectural culture. The prefabricated and normalized house is the first step on a slope which finally makes the architect superfluous. We have already standardization of apartment houses, of stores and gasoline stations. Schools, railway stations, army camps, churches would be the next. Where such an enormous reservoir of creative ability is at hand, it would be wrong not to use it. The expenses for individual plans by architects are negligible compared with the economic advantages of a more even countrywide distribution of work.

The discovery of the individual aspects characterizing the towns and villages is one thing that makes every trip in Europe so fascinating. The attentive observer finds differences even between neighboring villages. American cities are not so rich in these individual values, and the enormous flood of manufactured "architecture" has done very much to efface the outlines of originality which existed perhaps a century ago.

The European architect has had at all times a double responsibility—towards his client and towards the public. If he tries to bring a new worthy stone into the living mosaic of a city, he is standard-bearer of a tradition as well as the engineer of modern ideas and practical needs. He can readily submit to some limitations of individual liberty for he has the compensation of knowing that his work will be respected by future buildings.



The Empire State Building as seen along Thirty-fourth Street — a huddle of unimportant structures

One-story buildings on corners open the view on rear elevations and party-walls

More than heretofore, should regional standards and regional types of architecture be cultivated. The uniformity of mass production threatens the vitality of expression, but every effort should be made to establish and preserve regional characteristics with a farsighted conception of the future.

These observations are not mere theoretical talks and dreams for the future. America is on the beginning of an enormous development—technical, political, and economical. The spending of countless millions of dollars for defense, extension or resettlement of factories, construction of military highways, the carrying out of the new principles of aerial defense, present problems of which alterations of whole cities and a new orientation of city-planning are the natural consequences. Spending so many millions of dollars of the national fortune for defense preparations may be called a necessary evil. But it is in the hands of the architect, and very definitely one of his duties, to turn the evil into the building of cultural values.

If ever there was a time to draw up programs and to envisage with imagination the future aspects of this country, it is now.

Architects in Europe are now already busy with such programs, divided as they may be in interpretation of their ideals. Social security for all in pursuit of our democratic ways of life emerges from programs of sociologists and economists to realities of town-planning. Town-planners and architects have to give body and expression to these social

The bold example of big cities has influenced, perhaps overmuch, the business streets of smaller towns

ideals, if it is to be true that architecture represents the spirit of the time. Titles of possession or obsolete laws can have no weight against the right of every individual for a brighter and healthier place to live or for an optimum of sun, air, recreation.

In many discussions by architects and in "Letters to the Editor" in magazines I discovered in the past few years many admissions of resignation, or even hopelessness, concerning the furtherance of the architectural profession. And the news about collaboration of the architect with the defense program did not, until now, sound very positive. But it is absolutely necessary that the architect should claim and take the artistic responsibility for all new structures. The task of architecture is to give form to our visible world.

The centripetal trend of accumulation in cities will be relieved by a contrary wave of expansion, in the form of satellite cities or ribbon-type cities which meander through the open country. The development of motor traffic makes possible and the menace of aerial warfare speeds up what sociologists and hygienists have been urging for a long time. The architect has reason to be glad if stronger necessities remove many hindrances of real estate omnipotence or speculative thinking which have troubled his plans. Considerations of beauty alone would not have the appeal to change the public's attitude.

The expansion of American cities having been so rapid, there was perhaps not always time to consider æsthetic problems. This may be an excuse for many failures, but today we are much better prepared to take over new responsibilities. We have a much clearer stand towards the principles of architecture than we did one or two decades ago. The profession has a better vision of function and economy of design—and, let us hope, will rest no longer in the "ivory tower" of borrowed beauty.

However, the danger that we get new medieval castles for armories and colonial niceties for factories is not yet completely averted. More Gothic buildings have been built in this country in the last ten years than

Speculation and free enterprise have often been stronger than the canons of architecture

perhaps in the whole 15th century in Europe. More columns of wood, concrete, or cast iron have been used in Greek and Colonial patterns in the last 20 years than in the flourishing periods of classic times. The antithesis between modern life and cherished conceptions of cultural values still rules over many a part of American life, especially American architecture.

We should take these necessary changes as a welcome opportunity to abandon old paths and to establish the wider horizon of modern design. Such fine opportunities will not come back perhaps in decades, and the problem concerns not only airports and factories, but many small buildings, scattered over the whole land — buildings on highways, bridges, wayside restaurants, and even such details as equipment and furniture for barracks and canteens. Whether private or government architects do the job, the goal is architecture as a national manifestation.

LIGHTING FIXTURE DESIGN MATERIALS

BY C. T. MASTERSON AND R. F. CISSELL

To make lighting fixtures an integral and permanent part of interior design is a definite trend. It is in line with the desire for greater integration of building elements. This trend is logical because as buildings become more functional in plan they also become more unified in the design of their details. Lighting fixture design ranges from elements conceived solely to permit seeing on the one hand, to those using lighting solely as a decorative medium on the other. Many fixtures fall halfway between the two extremes—they must be attractive in appearance both lighted and unlighted, and at the same time must produce and distribute the proper illumination for visual tasks.

In factories, schools and other types of buildings the appearance of the lighting fixture may be of secondary importance or of no importance whatever. Supplying sufficient light where it is needed is not altogether as simple a problem as it might sound. Scientifically designed fixtures for this purpose are the result of highly complicated and specialized research combined with mass production. Even here the trend toward a more architectural design treatment is becoming evident. It is impractical for the architect to attempt design control of this type of lighting fixture, both from economic and scientific angles, since standard fixtures are available to meet every lighting need where proper seeing is the controlling factor.

When we leave the subject of light for exacting visual tasks, we approach a field where the architect frequently wishes to exert his design influence. It is with this wholly or partly decorative aspect of lighting that the following subject matter will deal. The keyboard with which the decorative lighting fixture designer works has only three notes:

1. Materials for reflectors
2. Translucent materials for concealment
3. Lamps

The following discussion by C. T. Masterson and R. F. Cissell briefly summarizes the products available in each class and touches upon their characteristics.

DON GRAF

MATERIALS FOR REFLECTORS

In choosing materials the designer must know where he wants the light to go and whether he wants it to be diffused or directional. As far as light control with reflecting surfaces is concerned, the designer can assume that he is using mirrors and blotters. With a mirrored (specular or polished) surface light can be accurately redirected without being scattered. Any one in the path of the reflected beam will see an image of the source, and if the source is too bright its reflection will also be objectionable. With a white paper blotter (diffuse) surface the light is scattered and there is no directional control. Between these extremes are many surfaces variously called etched, semi-mat and dull finished that provide varying degrees of control and diffusion. Knowing these basic facts, choice of materials is largely common sense. *See Figure 1.*

TRANSLUCENT MATERIALS

One of the most widely used materials is diffusing glass—of many types and degrees of diffusion. The most commonly used glass is white or opal glass which completely scatters the light. Other materials in this class are the thicker sheets of plastics, marble slabs, and enameled and fired glasses. Put lamps in back of such materials and, if they are spaced not more than 1½ times their distance back of the materials, the surface will appear uniformly bright. *Figure 2.*

A common design error is the selection of a glass of too low diffusion for chandeliers and ceiling panels, particularly when a design is etched or sand-blasted into the glass. The glaring spot of light wipes out the design and makes the unit glaring. One solution is to have the design in clear plate glass and then place between it and the lamps a sheet of opal glass. *See Figure 3.*

One of the most interesting decorative treatments of glass results when designs are sand-blasted in clear plate glass and illuminated by light from concealed sources placed at the edge of the glass (edgelighting). These designs appear as sharply defined bright areas from all angles of view. By using different colors of glass additional variations are readily obtained. *See Figure 4.*

There are now available a wide variety of molded and cast glasses which can be used in many architectural designs and fixtures. These can be had in many standard forms or the architect can have designs specially cast. In any case, the diffusing qualities should be specified as carefully as the design.

ILLUMINATED GLASS BLOCKS. The appearance of illuminated glass blocks is largely dependent on the background. With a diffusing white background the appearance may be plain and uninteresting because the patterns of light are minimized. A corrugated or crinkled metal background produces interesting sparkle and patterns. Low-wattage colored lamps and the new colored fluorescent lamps can be used to add color to brightness variations. *See Figure 5.*

If the wall is free standing, spotlights or projector lamps, with or without color filters, placed several feet from the wall create intriguing effects with refracted light. Sometimes a lattice work of wiring strips or other electrical construction material can be used to support small lamps a few inches from the wall. A decorative pattern of thin aluminum or other material between the lamps

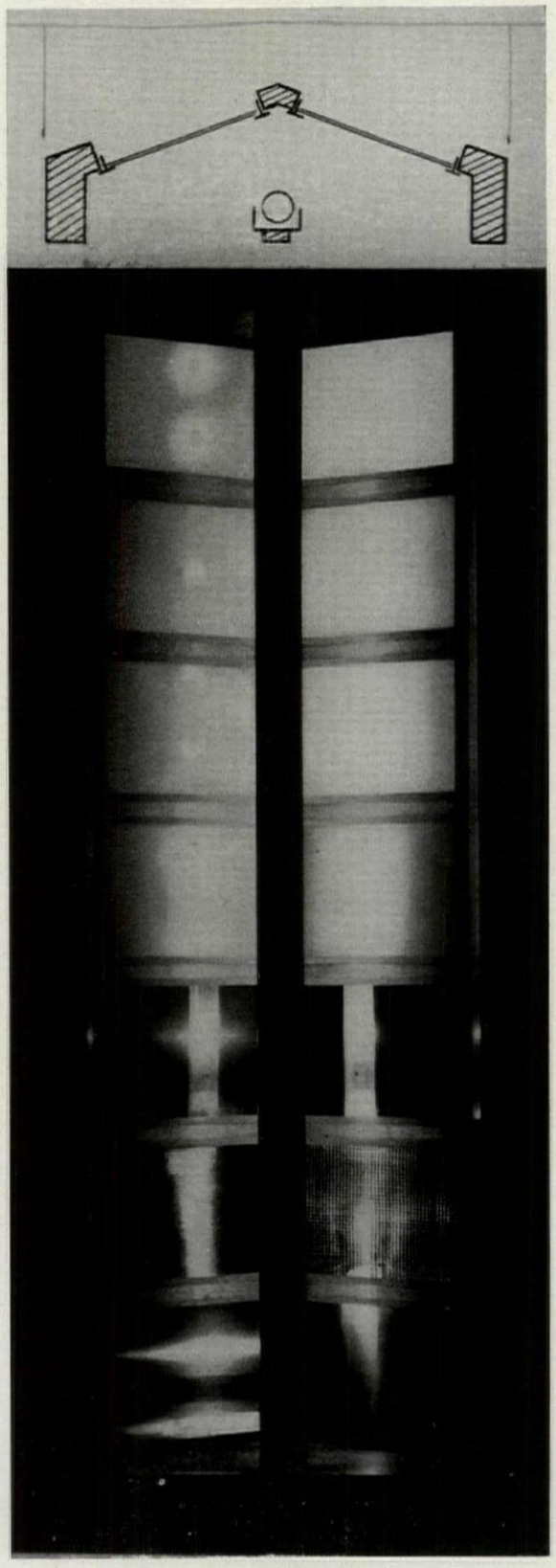


FIGURE 1

ILLUSTRATION SHOWS RANGE OF EFFECTS POSSIBLE WITH REFLECTING MATERIALS. ALL ARE LIGHTED BY LAMPS BEHIND CENTER STRIP. LIGHTED APPEARANCE SHOULD ALWAYS BE DETERMINING FACTOR IN SELECTING MATERIALS

Left Side	*Right Side*
WHITE GLOSS PAINT	WHITE MAT PAINT
POLISHED MARBLE, GLASS	ETCHED GLASS, HONED MARBLE
PORCELAIN ENAMEL (GLOSS)	ETCHED PORCELAIN ENAMEL (MAT)
OXIDIZED ALUMINUM	ALUMINUM PAINT
POLISHED ALUMINUM	MIRRORED GLASS
CORRUGATED METAL (POLISHED)	PEBBLED GLASS OR METAL
VERTICALLY BRUSHED POLISHED METALS	HORIZONTALLY BRUSHED POLISHED METALS

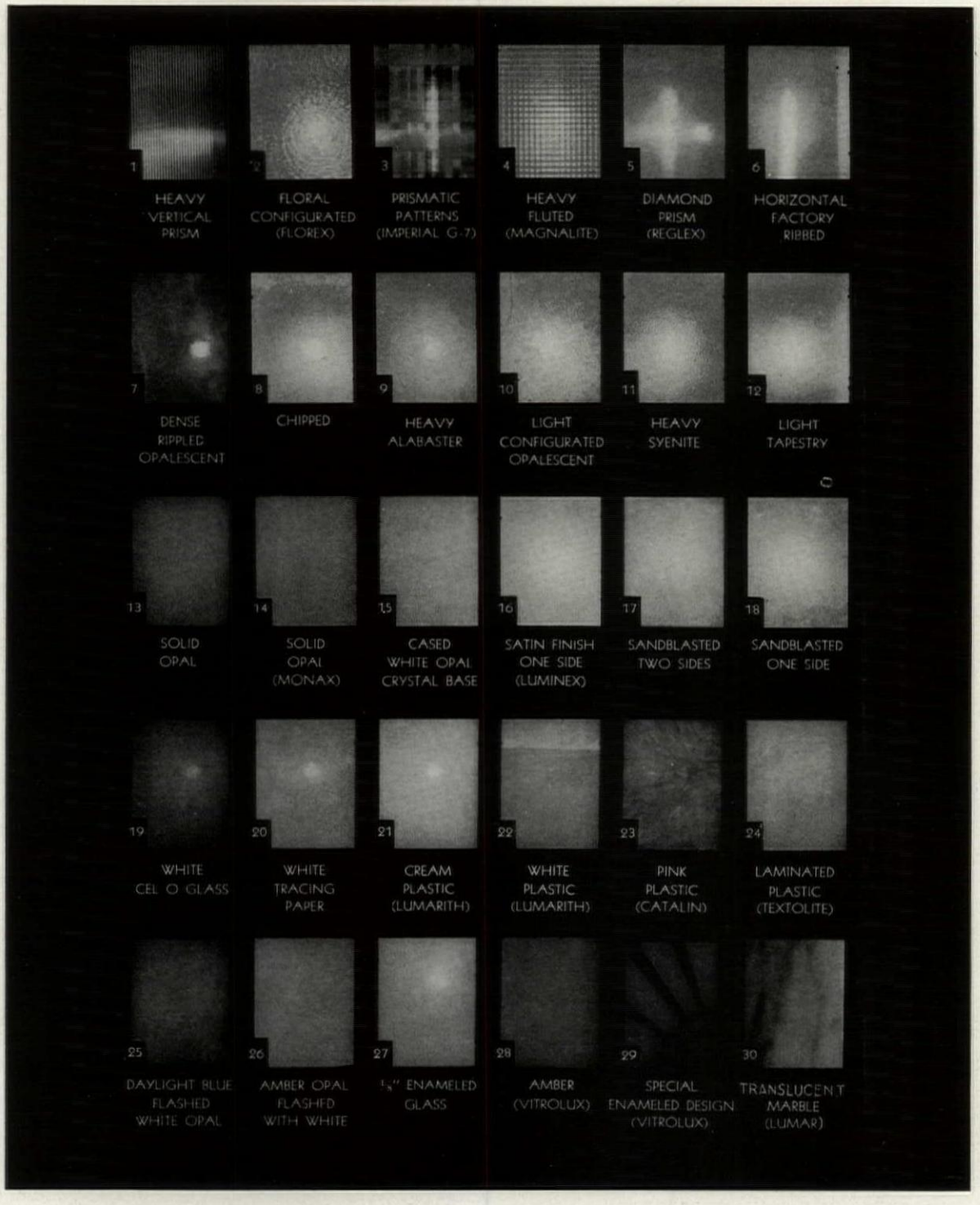


FIGURE 2

SHOWN HERE ARE A FEW OF THE MANY AVAILABLE GLASSES, PLASTICS, SYNTHETIC MATERIALS, AND MARBLES. EACH SAMPLE IS ILLUMINATED FROM BEHIND BY A SINGLE LAMP. THE PRISMATIC AND RIBBED GLASSES PRODUCE BANDS AND PATTERNS OF LIGHT. THE OTHER MATERIALS EITHER PARTIALLY DIFFUSE THE LIGHT IN WHICH CASE THE LAMP SHOWS THROUGH AS A BRIGHT SPOT, OR COMPLETELY DIFFUSE IT TO PRODUCE A UNIFORMLY BRIGHT PANEL. FIXTURE DESIGNERS SHOULD KNOW ALL THESE MATERIALS

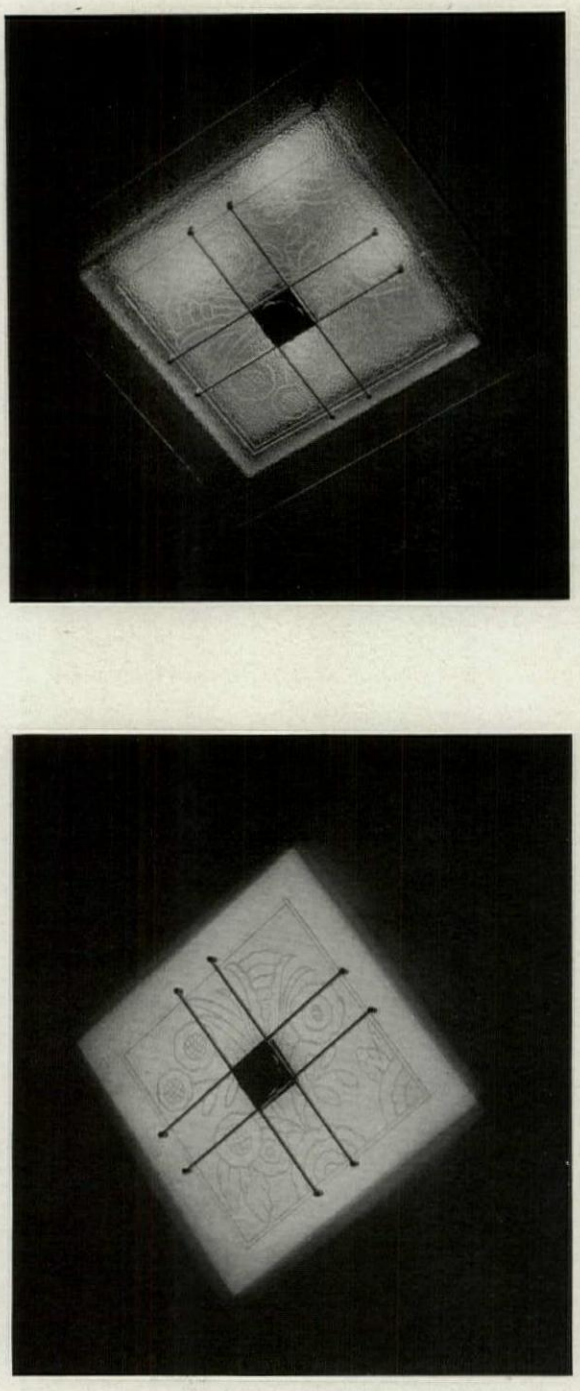


FIGURE 3

ONE OF THE MOST COMMON ERRORS IN FIXTURE CONSTRUCTION IS THE SPOILING OF DESIGNS BY FAILING TO INSURE ADEQUATE DIFFUSION OF LIGHT. AT TOP, A PIECE OF CONFIGURATED GLASS IS PLACED BETWEEN THE LAMPS AND THE SMALLER SHEET OF PLATE GLASS ON WHICH THE DESIGN IS ETCHED OR SANDBLASTED. THE RESULT IS A SERIES OF BRIGHT SPOTS THAT WASH OUT THE DESIGN. WHEN A PIECE OF OPAL OR OTHER HIGHLY DIFFUSING GLASS IS PLACED BETWEEN THE LAMPS AND THE PLATE GLASS, AS BELOW, THE DESIGN ON THE PLATE GLASS STANDS OUT CLEARLY AGAINST ITS LUMINOUS BACKGROUND

and blocks may be used. The size and configuration of the block texture have a definite effect in producing sparkle. The specification of glass block lighting should, if possible, be based on experiments. In this way the designer can be most certain of getting the results he wants.

LAMPS

PROJECTOR AND REFLECTOR LAMPS. One of the most significant advances in lamp construction is used in the projector lamps. *See Figure 6.* A bowl-shaped section of parabolic or other suitable contour on which a highly efficient reflecting film of aluminum has been vaporized, serves as the reflector. This section contains the base and filament. A molded glass cover plate, either clear or configurated by any desirable lens pattern, is then fused to the reflector section. At present this type of lamp is available in 150-watt spot (concentrating) and 150-watt flood (distributing) types. Made of hard glass, projector lamps can be used out-of-doors without danger of thermal cracks. Also color filters and shielding rings may be fastened directly to the bulb.

Reflector lamps, which control light in a similar manner, employ blown bulbs. They are, therefore, not recommended for outdoor use, and they may not give satisfactory performance if any accessory equipment is attached to or touches the bulb. Reflector lamps are available in 150- and 300-watt spot and flood types.

These types of lamps greatly simplify getting controlled beams of light (and color control with the projector lamps). With the simple supporting units available for them, they are ideal for temporary installations such as the lighting of displays.

SILVERED BOWL LAMPS. These are regular Mazda lamps which have a permanent finish of pure silver deposited on the lower part of the bulb. Since the silvered bowl lamp is in itself a highly efficient indirect reflector, it is necessary only to shield the neck to prevent glare. This means that the silvered bowl lamp may be a very useful tool in obtaining temporary and decorative fixtures for many seasonal or special occasions. It

permits ingenious departure from conventional designs with respect to both contours and materials.

FLUORESCENT LAMPS. Such lamps are particularly interesting to the designer because of their shape. Fixtures using this lamp may be assembled into continuous straight rows or arranged in hollow squares or other geometric shapes. The shape of the lamp simplifies treating the lighting as part of the design and makes possible a more finished appearance than can be obtained by locating the units over the ceiling as individual fixtures.

The basic principles of planning a general lighting fluorescent installation are no different than those followed in designing a filament job. Lumens must be provided at the source to make up for those absorbed by fixture, walls, and ceiling. Allowance must be made for depreciation. Hence a coefficient of utilization and a maintenance factor are used just as in planning filament lighting.

One thing that is not available with fluorescent lamps that can be had with filament lamps is the wide range in lumen outputs. The 48-inch lamp, which is the one nearly always used for general lighting, has a rated lumen output of 1800 in daylight and 2100 in white. This means that even with a 6-lamp fixture the total lumens would be 10,800 or 12,600, not much more than from one 500-watt filament lamp. Nor can the wattage in a fluorescent fixture be increased as it can in many filament units.

Maintenance has always been a serious and often neglected problem in getting efficient results from a lighting system. A solution of the maintenance problem that has been used in train lighting is a shielding of the light source with metal or plastic louvers under the lamp, thus permitting the dirt to fall through. Many fluorescent fixtures are being designed on the same principle using "egg-crate" or "ice-cube-tray" louvers to keep the eyes from seeing the lamps at normal viewing angles. This solution is possible with these lamps because the low brightness of the tubes causes no specular reflection

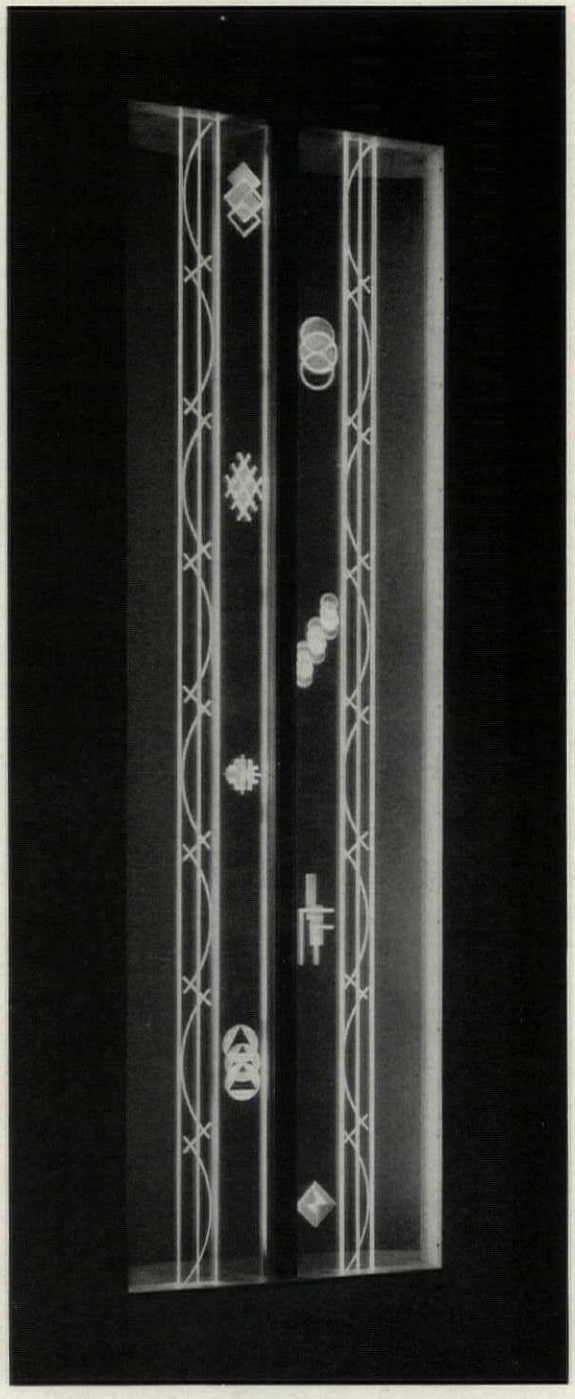
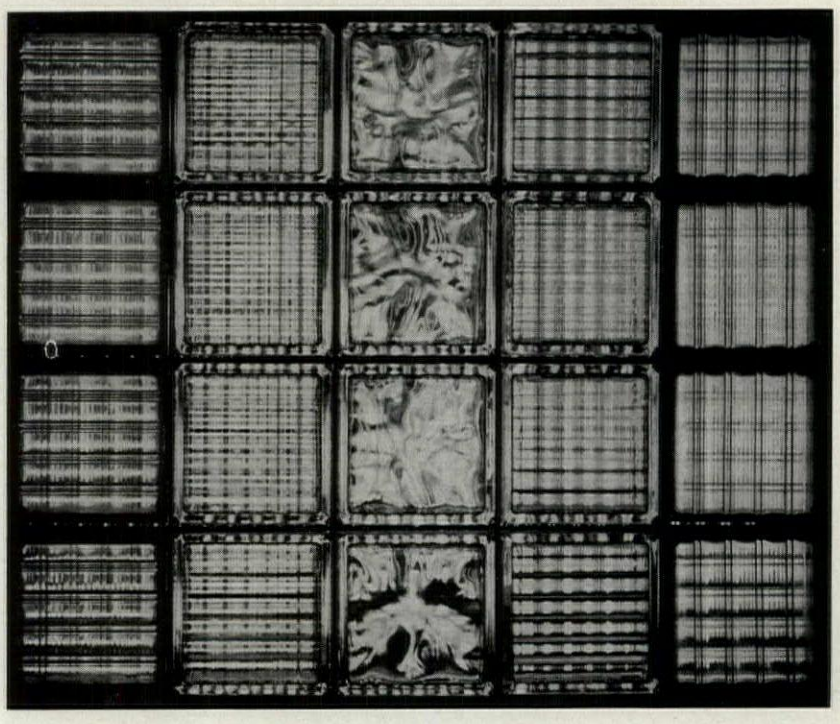


FIGURE 4

UNUSUALLY BEAUTIFUL DECORATIVE EFFECTS CAN BE OBTAINED BY EDGE-LIGHTING SANDBLASTED DESIGNS IN PLATE GLASS. THIS INSTALLATION HAS THREE COLORS OF GLASS—CLEAR, FLESH, AND WATER-WHITE. THE OUTER EDGES OF THE THREE PLATES ARE GROUND FINISHED TO MAKE THEM LUMINOUS AND A PART OF THE DESIGN. THE EDGES NEXT TO THE LUMILINE LAMPS (WHICH ARE CONCEALED BEHIND THE CENTER METAL CHANNEL) ARE POLISHED SURFACES, PERMITTING THE LIGHT TO ENTER WITHOUT BEING DIFFUSED DESIGNERS HAVE FOUND THIS TYPE OF FIXTURE SUSCEPTIBLE OF MANY INGENIOUS VARIATIONS



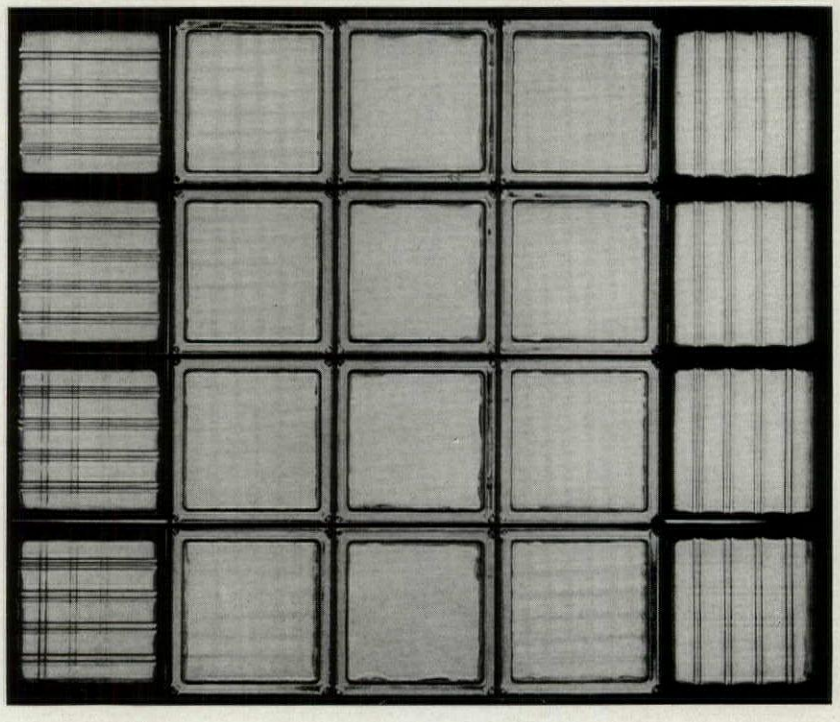
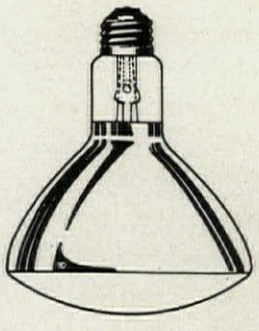


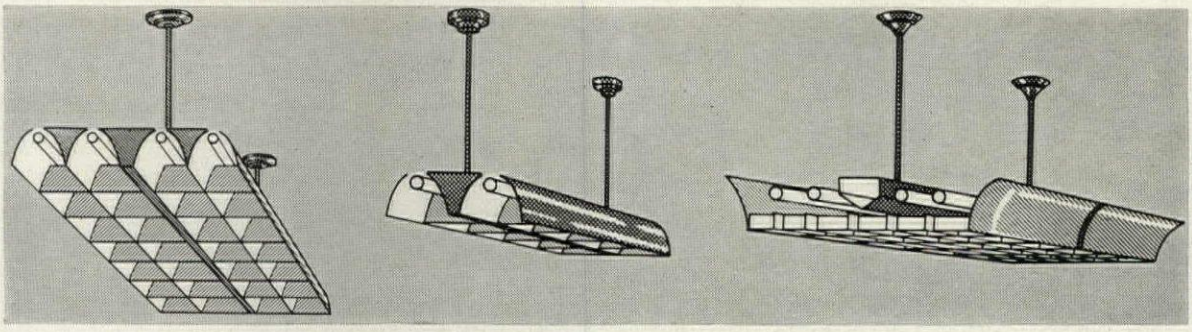
FIGURE 5

THE UPPER ILLUSTRATION SHOWS THE EFFECT OBTAINED BY USING CORRUGATED METAL FOR A GLASS BLOCK BACKGROUND. THE CAVITY IS 15 INCHES DEEP WITH THE LAMPS AND REFLECTORS CONCEALED IN SHALLOW RECESSES ABOVE AND BELOW THE BLOCKS. IN THE LOWER ILLUSTRATION THE CORRUGATED METAL BEHIND THE BLOCKS HAS BEEN REPLACED BY A PLAIN DIFFUSING BACKGROUND THAT SUBDUES THE CONFIGURATIONS AND PATTERNS

FIGURE 6

SPOT AND FLOOD LAMPS, PROJECTOR TYPE AT LEFT, REFLECTOR TYPE AT RIGHT, DIRECT BEAMS





problems with ordinary office work. *See Figure 7.*

In planning a fluorescent installation the new high power factor ballasts will give the customer better and cheaper service than low power factor auxiliaries. They permit practically doubling the load that the customer can put on his wiring and at the same time reduce flicker or stroboscopic effect to a value comparable to that from low-wattage filament lamps.

FLUORESCENT LAMPS AND COLORED LIGHTING. Myrtle Fahsbender and Richard G. Slauer, in a paper presented before the annual convention of the Illuminating Engineering Society, have inquired into the aspects of fluorescent lighting in the home. Their inquiries apply with equal force to many other types of buildings. A six months' test led these authors to the following general conclusions:

1. Within a few weeks the average adult will overlook the relatively minor color differences associated with fluorescent lighting.
2. Children are almost indifferent to such factors.
3. Yellow foods are sufferers under fluorescent illumination since the yellow is accentuated and such foods become greenish in cast. Since yellow-green ranks low in the color preferences of the average person, the color distortions would be objectionable if it were not that the average menu seldom contains more than one or two items where the distortion is serious.
4. Incandescent lamps produce certain distortions of color which have gradually become commonplace and, therefore, acceptable. It is logical to assume colors as they appear under fluorescent lamps will, in time, also be acceptable.

Today there are encouraging indications of a change in our attitude toward color. We are using more and more color in our clothes, homes and automobiles. Modern architecture will bring with it a revival of

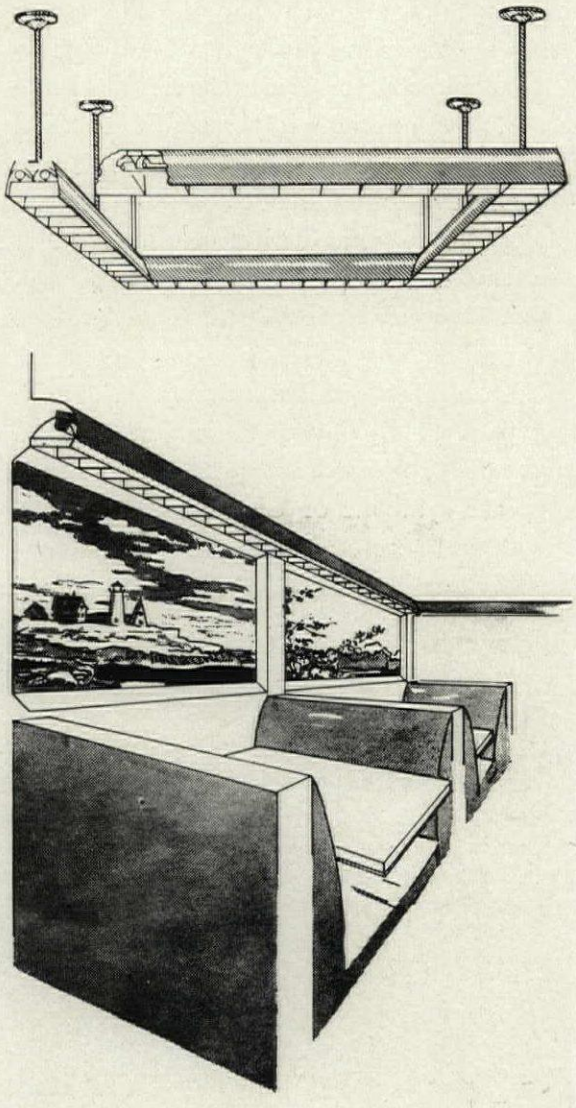


FIGURE 7

BECAUSE OF ITS SHAPE, THE FLUORESCENT LAMP CAN BE USED IN SUSPENDED FIXTURES IN A VARIETY OF INTERESTING PATTERNS WITH VARYING PROPORTIONS OF THE LIGHT DIRECTED UPWARD OR DOWNWARD. NOTE THE OPEN TOP UNITS WITH EGG-CRATE LOUVERS TO SIMPLIFY MAINTENANCE. SUGGESTED USE WITH MURAL PANELS

the use of color in buildings. It has been said that color is the only non-functional element in functional design. But it seems that if color is used to create definite esthetic and psychological effects, it too is functional.

It is fortunate that the introduction of fluorescent lamps comes at a time when color is being more generally demanded, for never before have we had sources of colored light that even approached the fluorescent lamp in efficiency. Now that colored light is available in abundance all that remains is the completion of enough pioneering installations to gain general acceptance.

It is worth noting that colored fluorescent lamps may provide decorative effects and at the same time contribute to general lighting. As an example, a request was recently made for a pattern of Christmas colors amid the fluorescent daylight lamps in an overall ceiling pattern. Obviously the green and red fluorescent colors were preferred because they are symbolic of Christmas. However, the green fluorescent lamp produces twice as much light as the daylight lamps, and it is an unsatisfactory color for illuminating merchandise and shoppers. In order to balance each green lamp three pink lamps of the same size were suggested rather than red because pink produces six times as much light. This mixture produced a synthetic white light which approached the color of the original general illumination.

Other combinations which can produce interesting patterns and still approach an acceptable color quality are:

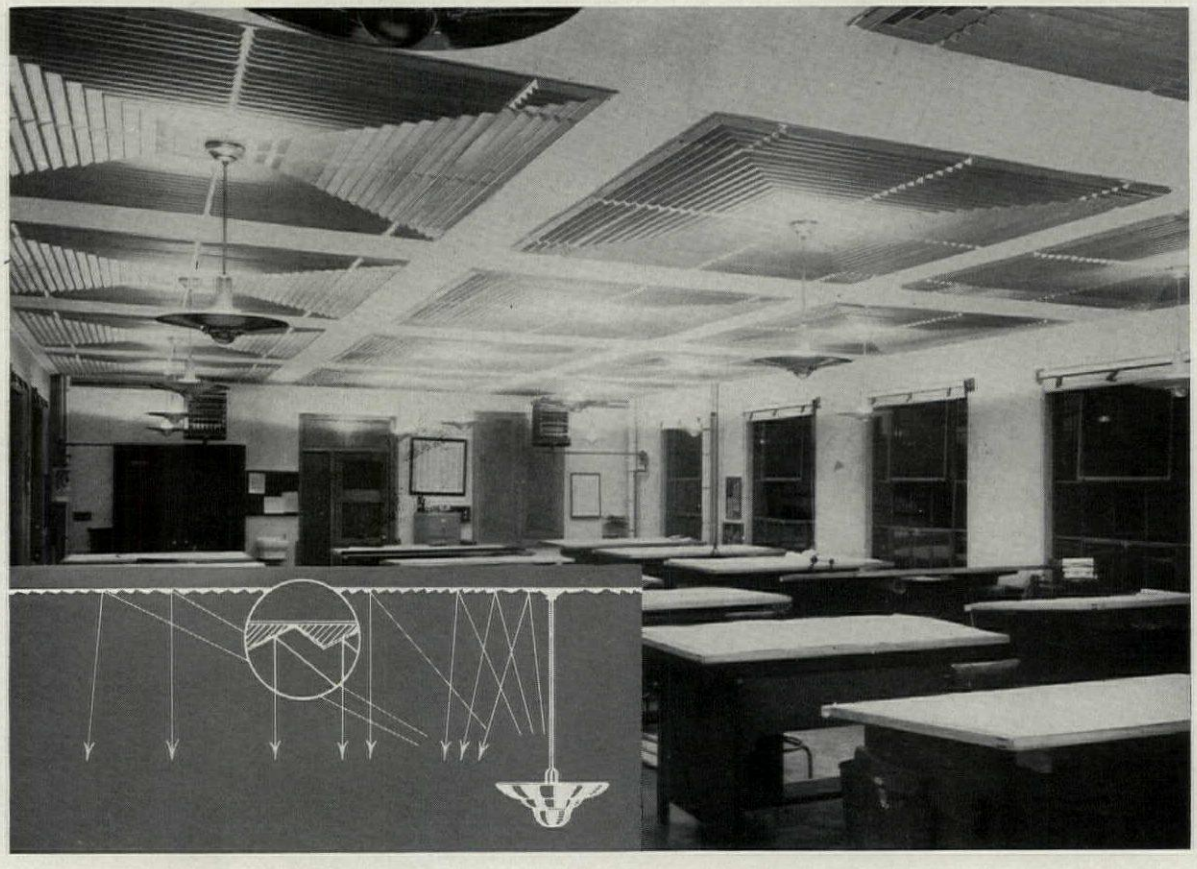
One gold, two daylights, two pinks: approaches a white light cooler than filament lamps.

Two gold, two daylights, one pink: approaches a white light similar to filament lamp lighting.

Two pinks, two gold, one daylight: approaches a white light warmer than filament lighting.

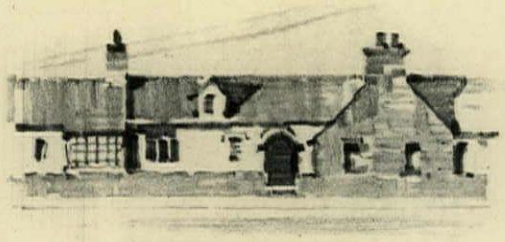
One gold, one blue: approaches daylight.

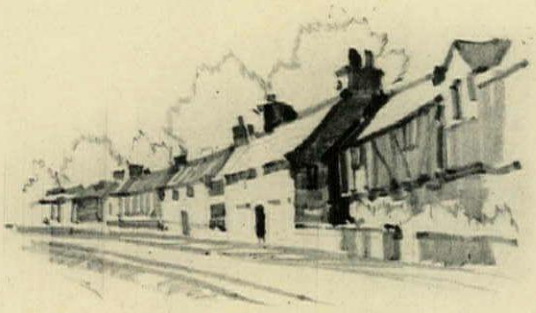
The complete palette of colored light provided by fluorescent lamps and their tubular shape, so valuable in many decorative treatments, make it possible for the imaginative designer to achieve with ease lighting effects never before possible with artificial light.

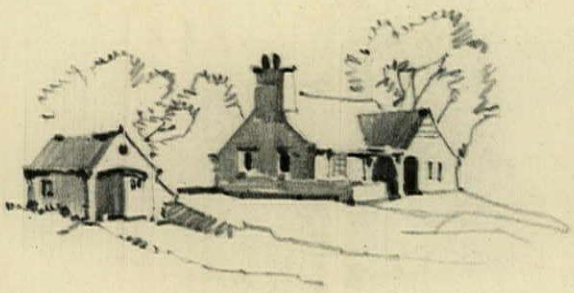


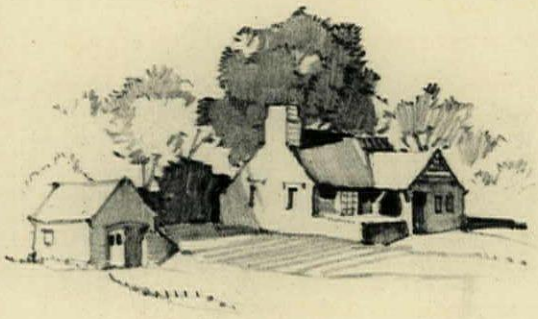
A PATENTED CEILING TREATMENT, DESIGNED TO MINIMIZE THE REFLECTION OF LIGHT OUT AT ANGLES NEAR THE HORIZONTAL AND TO INCREASE THE PERCENTAGE REDIRECTED INTO ANGLES BETWEEN 0 AND 60 DEGREES. ANY TYPE OF CONVENTIONAL INDIRECT LUMINAIRE MAY BE USED AS A SOURCE. IN SMALL AREAS IT MAY RUN 20 PER CENT MORE EFFICIENT THAN FLAT CEILING, WASTING LESS LIGHT ON WALLS

FISH MARKET ON A WHARF IN BRITTANY









PENCIL BROADSIDES—12

BY THEODORE KAUTZKY

We now come to what is perhaps the most difficult thing for the young artist to grasp—the baffling subject of Composition. It is not a matter of rules, though there are certain guiding principles that are generally taught and which are helpful. They are to be found in many books. In the end, however, the quality of the results obtained springs from some inborn artistic sense which you either have or do not have. The real artist must have it. With it, he frequently defies the rules or laws or whatever you may call them, and produces masterpieces of arrangement that could never have been arrived at by conformation to any established standards. Yet it is not for beginners to set out to break precedent and for that reason they had best acknowledge certain principles that experience has found generally reliable. A few of these are illustrated by the little pairs of sketches shown opposite. Since I omitted to number these on the drawing, let us agree to refer to them in discussion as 1, 2, 3, 4, and 5, reading from the top down. Faults occur in the left-hand column and are to be seen corrected, in a simplified way, in the right-hand column.

Sketch number 1, in its initial form, is too strongly dominated by horizontals and also lacks a definite center of interest. It needs some vertical accents to break up the monotonous horizontal movement and also will benefit by increasing the contrasts near the doorway and tapering off their strength to the right and left. By introducing a tree or two rising from behind the building we can achieve the required vertical contrast, carefully avoiding stiff symmetry by balancing foliage masses of different size around our chosen axis rather than centering one upon it. The horizontality is further reduced by changing the direction of the shadow strokes across the foreground. The rearrangement of contrasts in value is obvious; its effect undeniably beneficial.

Number 2 shows a view down a road with all the perspective lines converging to a point far at the left. The result is unsatisfying because the eye is constantly being pulled out of the picture. We must insert some elements to stop this wandering of attention and hold it near the center of the picture where it belongs. So we strike in a telegraph pole which furnishes a strong barrier across the eye-compelling convergencies, placing it where it will define the left-hand limit of the central area of interest. Because a vertical pole alone would be stiff and uninteresting, we tilt it a little, give it some supports, and let some poison ivy soften its otherwise hard profile. We also put in a background tree behind the row of houses. Its position keeps the pole from jutting too prominently into the sky and it also helps to direct the eye back to the center of interest which we now emphasize with increased detail and contrasting values. A suggestion of grass and weeds along the edge of the road, accented with a shadow from the pole, join with a few strokes laid across the road to keep the attention from wandering out at the lower right.

The third sketch suffers from too strong contrasts at the left side, the relatively un-

important tree getting all the attention. The house, after all, is the most interesting element here. By rearranging the values as shown, better balance around the center is achieved and the house now stands out clearly. The dark tree compensates for the dark gable end. The tree at the left is still there but is well grayed down and the dark shrubbery has been wisely eliminated.

In sketch number 4 a garage has been added to the same general group used in 3. The first try resulted in giving this garage as much attention as the house. As revised, attention has been brought back to the house by changing the direction of light, redistributing the values, introducing some dark foliage at strategic points, and using the direction of shadow lines to carry the eye where it is wanted. See if you cannot follow the process through and discover the reason behind each change. Then recompose the whole group in a different way. The last pair of sketches merely calls attention to the improvement that may be made in a "two value" composition by adding a middle tone. The grays give the forms more solidity and hold the whole thing together. This would be even more evident at larger scale.