

Science and technology in the past fifty years have not only radically altered the materials and equipment with which architects work; they have, at the same time, altered the architects' concept of the function of building in society. That is to say, the impact of the past fifty years is expressed both in terms of the changing means of building and in its changing aims. Last month a distinguished group of Massachusetts Institute of Technology faculty members surveyed the former aspect—that of means; this month they conclude their challenging analysis with a review of the latter—that of architecture's aims. Concluded, also, is the RECORD'S graphic review of recent American buildings.

AMERICAN ARCHITECTURE: 1891-1941

PART II

Architectural attitudes in flux

FOR A SUBSTANTIAL PART of the past half century, architecture was a combination of art and technics only. Unwelcome were those who speculated. Speculations themselves were largely wordy and critical. It was perhaps permissible to theorize over how some old building had actually looked—hence the popularity of the “archeologique”—but theoretical solutions for a city or even for a special building in a city were unpopular. When an architect sought a damning word for the projections of a speculative mind, the worst he could find was “*echoue*”; blasted was a thing that was not built, but remained on paper in a portfolio.

The unpopularity of such speculations grew out of good reasons. When architecture consisted primarily of the skillful application of ornament to a predetermined facade, or the skillful wrenching of a grand plan so that all the purposes of the program should at least have their names attached to some space, evidently there was little room or reason for conjecture. The man who went around drawing hypothetical buildings which differed in no essential respect from existing buildings, which proposed no new thought, no new approach to the study of a building, either was trying to get business or publicity (a quite unrespectable thing to do), or was indulging an idle hour. Such speculations were permissible only if they constituted *tours de force* such as Despradelle's great obelisk for a world's fair.

It is significant that this situation is no longer true. Even the architect steeped in this “sensible” tradition recognizes that certain kinds of speculating about architecture are fundamentally important, and that they cannot be written off just because the buildings demonstrated have not actually been constructed. Le Corbusier's proposal for *La Ville Radieuse* and Paul Nelson's para-solar solution for a hospital problem at Suez are not answered by remarks that they have not been achieved, even if the remarks are made in a tone that implies that the proponents of ideas of this sort are a little lower in the architectural scale than those who face-lift filling stations.

A SYMPOSIUM BY

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ARCHITECTS

"The architects who conceive decorative art to be the chief end of architecture are legion, and no amount of money placed in the hands of such men will ever secure good building. The larger their resources, indeed, the worse will be their achievements. . . . A thoroughly trained and meritorious architect would do more for art with one hundred thousand dollars than a bad architect would do with all the money that could be put in his possession, unless, indeed, he had the good sense to employ the good architect to take charge of his work."

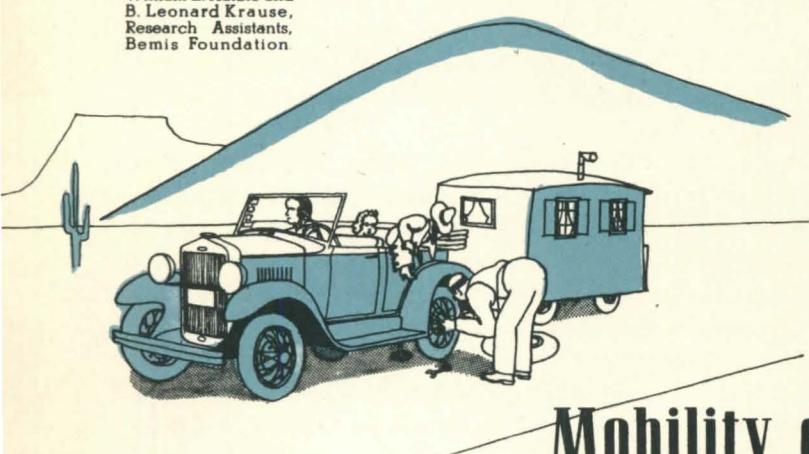
Wm. Nelson Black. 1893.

This change is significant. It cannot be called a boon which science as such has conferred on architecture. Rather, it is a symptom of the gradual infiltration of the general state of mind of science into the ways of thinking of people who are not engaged in strictly scientific pursuits. For science long ago ceased to level scorn at the theorist, and long ago recognized that the speculative mind may anticipate with purely paper ideas a concept that later achieves experimental validity; that in turn there may be a long period of apparently "useless" experimental research before applications of obvious utility to the physical man appear, and that an equally long period of engineering development is required before the application becomes purely technics.

It is hence important that the period with which we are dealing was one in which most decided changes occurred in basic science itself, in which the limits of that science have been found to be fluid, not fixed. It has been a time of change in the micro rather than the macro aspects of science—notably physics—change which by its very nature is fecund in bringing further change, in creating not merely new materials and techniques, but whole groups of activities producing new, exciting, and prolific demands and needs. The theorist in this period has attained to new eminence. Such shifting of balance should be encouraging to the architect. To the theoretical architect also may come in time the respect which is his due; architectural research may then eventuate, and experimental buildings more and more be actually erected rather than relegated to the files. Architecture then would be able to draw upon a mass of experimental data in reckoning with general trends which have made a start in the period under review, and which may well be expected to continue with increasing strength in the decades ahead.

Applied science has produced alterations in the whole culture, which architecture always presumes to reflect. Insofar as this reflection consists of a multiplication of specialized building types, architecture has on the whole stood ready. But if more nearly fundamental approaches than this are required, then architecture has made countless failures. For this the whole society must of course bear the blame with the architects themselves. It may only be said that if architecture had boasted more Burnhams the sheer weight of effort might have led to a more receptive attitude toward the forward look by the whole society. Without this receptive attitude, accomplishment is possible only in the smallest pieces. But it is scarcely the place here to argue the degree to which the architect should be expected to be the leader, and the degree to which he should be merely the instrument for interpreting the imagination and will of another. Only this much may be said: leadership is attained by leading and not by talking about it.

Drawings are by
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"— ALL THIS RAPID SHUTTING BACK AND FORTH OF PEOPLE, IDEAS, THINGS —"

Mobility generates new concepts

TO DESCRIBE THE WHOLE EFFECT of science on the whole culture would take many books, as Lewis Mumford has already thoroughly demonstrated. The key to the effect seems to lie in the philosophy and in the fruit of mass production; in its effects on the things we do to live and the things we live to do. It is not to be measured superficially by the number of objects we are able to buy at low prices. It reflects itself rather in the pattern of contemporary urban life, in the tendency of the population to be older, in a change of attitude toward the state and the church.

From the pattern of life arise such architectural problems as the great housing project (though these merely as multifamily housing are at least as old as Augsburg), the recreation center, stadium, beach. From population trends comes the overbuilding of schools, the probability that they will be increasingly large per head of student, and hence may need to serve other purposes, hence adult education, hence new programs for new school buildings. Assumption by the state of greater and greater range of responsibilities—in itself a consequence of technological complexity—has put on the public building the double task of being an impressive symbol of democratic stability and at the same time an efficient office building. The reason why Albert Kahn's factories have architectural breath while the churches of some of his equally able contemporaries are sterile reproductions of old forms becomes obvious upon reflection.

If this general effect can be kept in mind as a sort of *leitmotif* to be repeated from time to time throughout the piece, we may then select some more obvious theme for closer study. The specific effects of applied science upon architecture can be felt in two ways, one in the materials and methods by which architecture can be realized (this was treated in a previous issue of the RECORD) and the other in the demands which society makes of architecture—that is the programs which architecture is called upon to solve. It is amazing how many of these demands can be considered under the single heading of changes wrought by the internal combustion motor, changes which may be summarized in the single word "mobility."

THIS MOBILITY must be understood not only in its conventional form—mobility of persons and things (transport)—but also in the increased mobility of ideas (communication) and especially in a mobility of energy (power) beyond the wildest dreams of 1890. The effect of each of these forms of mobility is most intensely expressed in the 200 counties in which the bulk of American manufacturing is done, yet this is but a more dramatic picture of a similar result over the broad prairies. The transformation may indeed have been greater in some respects in primarily rural areas.

All this rapid shuttling back and forth of people, things, ideas, and work has caused the appearance of new groups of recreational and vocational activities, directly or indirectly a consequence of developments in science as reduced to practice by technology. If architecture be the enclosure of space to serve human needs, it cannot but have been sorely taxed as a result. It might have been too sorely taxed had not the scientific undertakings, which bred these changes to harass, also created new means to comfort.

PYICAL MOBILITY has of course attained a degree never before approached. In all likelihood, though the role of the airplane in the daily life of average people is not yet definable, this present mobility will be surpassed in years to come through means originated during the period. But it has not been attained without considerable adjustments among the present chief carriers themselves.

The two principal means of physical mobility during our 50 years have been the railway and the motor vehicle, and transportation has seen a hot contest between them, which is not at all without distinctly important implications to architecture. Railway track mileage in the United States, at 167,191 in 1890, was still building during the first half of our period, reaching its high of 253,789 miles in 1915, the midpoint of our period, from which it has steadily been falling away. It was 236,842 miles in 1938. In that climactic railway year of 1915, 969,930 motor cars and trucks were produced in this country. Five years thereafter, production was 2,227,349. It was over 5,000,000 in 1937. These figures are meaningful.

Railway rolling stock, heavy and expensive, is out of the financial range of the individual owner; the expense of trackage and facilities limits the mobility of the railway. Hence common carrier operation was forced on the railways. They are efficient only in large-scale movement, and, as far as goods are concerned, in large-scale long-distance movement. On the contrary, the automobile, whether car or truck, is within the reach of the majority of families and small businesses, and highways are cheaper, are more flexible to the terrain, support more traffic, and require fewer supplementary facilities. The wholesale salesman in direct and frequent contact with a chain of grocery stores, placing his product, distributing samples, arranging special window displays; the metropolitan babies' diaper service, bringing technology into a hundred homes daily by means

MODERN ARCHITECTURE

"While every other art is living and progressive, architecture is by common consent stationary, if it be not actually retrograde. . . . In architecture alone men look back upon the masterpieces of the past not as points of departure but as ultimate attainments, content, for their own part, if by recombining the elements and reproducing the forms of these monuments they can win from an esoteric circle of archaeologists the praise of producing some reflex of their impressiveness. This process has gone so far that architects have expected and received praise for erecting for modern purposes literal copies of ancient buildings, or, where the materials for exact reproduction were wanting, of ingenious restorations of those buildings. In architecture alone does an archaeological study pass for a work of art."

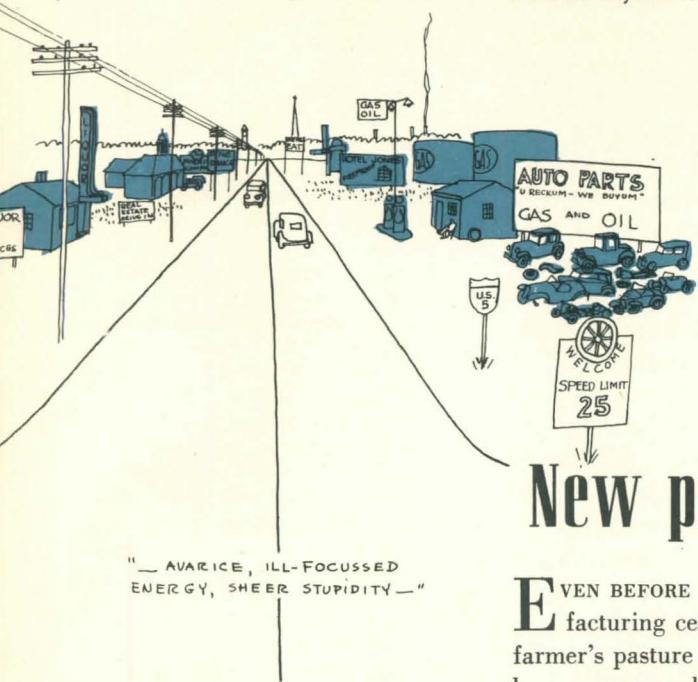
"A person sufficiently skilled in the laws of organic structure can reconstruct, from the cross-section of the pier of a Gothic cathedral, the whole structural system of which it is the nucleus and prefiguration. The design of such a building seems to me to be worthy, if any work of man is worthy, to be called a work of creative art. It is an imitation not of the *forms* of nature but of the *processes* of nature . . ."

Montgomery Schuyler.
July-September, 1894.

PERHAPS A FIRE . . .

"One thinks that an extensive conflagration would be a great cosmetic, but the thought is checked by the reflection that there is nothing to prevent the buildings reared in their stead from being as ugly and depressing as themselves."

April-June, 1895.



of one light delivery truck; the family on vacation touring through national parks and carrying a trailer home with them—all these are dependent upon the internal combustion engine. The effect of these on architectural requirements and possibilities are obvious.

The railway did open the frontier and did exploit new regions, but it ultimately became a concentrator of populations and industries, because it brought raw materials and workers together on a large scale, as in Chicago and Pittsburgh. People who depended on railway or street car or elevated or subway for their mobility had to live near the station, hence near each other.

New planning dictated by mobility

EVEN BEFORE the motorcar accelerated the shift, the peripheral fringe of the manufacturing center had begun to expand, thanks to the trolley line. Where once the farmer's pasture had lain undisturbed, grew a jumble of shacks, hovels, pre-cut bungalows, even speculative builder's manors. At the outset each lay on a lot big enough for a garden, exposed to sun and air. But it was the irony of this flight to the country that the sun and air were obtained but momentarily; that often privacy and quiet at night were obtained better in the deserted heart of the city. The original movement was possible only through the gradual extension of sewerage and other services; these in turn could not be economically made until toolshad been developed; ditching machines to lay water mains, rotary ploughs to clear snow from roads. Science did its part; it played no role, however, in restraining the avarice, the ill-focused energy, or the sheer stupidity of the real-estate operator and speculator. The potentialities of the motorcar in freeing people from the milieu in which they must live hence have in no true sense been realized except for the relatively well-to-do, and even these must fight constriction at point after point in their trek to and from the foci of occupation. Thus though the centralizing tendency of the railroad as a factor in disposition of people and things may be said to have passed, the potentialities in the motor car for the radial expanding community have been but feebly realized.

Mobility of ideas is most strikingly illustrated in transcontinental telephone lines and teletype services; in the immediate reception by an entire nation of the words of a leader cast upon the ether. But more significant perhaps as a source of architectural problems is the interoffice telephone system which makes it possible for the tycoon, once seated in his desk chair, to remain there all day and to bring to himself, electronically, orders, data, persons, from the entire country. Mobility of energy is well epitomized in the effect of the small individual electric motor which has eliminated the necessity for overhead-shaft power transmission. Indirectly, and in combination with the high-tension transmission line, this mobility of motive power releases the production center from geographic dependence on water power, coal supply, or large steam power plant. In this light, consideration must be given to Borsodi's scheme for motorized domestic production for domestic needs; or to Ford's proposal for production in the small neighborhood plant, with assembly and distribution by truck. Both may have important bearing on future housing and other architecture.

These aspects of mobility are fundamentally little more than an intensification, in

DEFINITION

"By 'Provincial Architecture' is meant all architecture that originates outside of Boston and New York in the East, and a few of the largest cities in other parts of the country."

E. C. Gardner. April, 1900.

time and flexibility, of a mobility which is old. The very intensification has, however, created new problems. They demand focal centers to which people can come and from which they can depart in concentrated volumes over short periods of time; they require rest and recreation houses scattered throughout the country of an entirely different character from that of the farm boarding house or the verandahed hotel to which one moved on June 15th and which one left come Labor Day.

Congesting people into overcrowded groups made man a slave of the machine even in his scant leisure time. The recent tendencies which we have discussed will decentralize and personalize technology, make man again independent, and restore his dignity and freedom of choice. It may be our particular fortune that technological advances have been fast enough to insure our not being frozen in a particular pattern of working and dwelling for want of economic strength to pull out of it.

THE EFFECTS OF DISPERSION go beyond those related to any one congeries of people to a natural leavening of indigenous characteristics. People who see others' solutions of problems, as for example that of the individual dwelling, and find them good, may find them better than their own. "Native materials" have become, in a large sense, a poetic and romantic concept. There is similarly a leavening of native cultures. The cinema travels into the canyons of Manhattan and the pinnacles of Tennessee on the same day. The museum is on the march with the traveling exhibition. Only that oldest of moving performances, the legitimate theater, clings sullenly to Broadway and declines the opportunity of the road, yet the plays themselves travel through the widespread growth of the little theater. It is more a symbol than a result of mobility that the monument has ceased to interest us, however much it may interest commissions of fine arts. Closer study of history shows that great men were always contemporary and would have preferred as their memorial a good solution of a current problem to an ark of the covenant raised in their honor. At the same time the monuments raised by nature have become visible to so many more people that the monuments of man are seen in their true perspective as distinctly trivial.

It may thus be argued that scientific and technological activity during the last half century has affected architecture in two ways. The materials and methods ready to the architect's hand have been altered, improved, increased greatly in number, as has been reviewed in this magazine. The purposes and aims for which buildings are built have been altered and augmented, principally to meet the demands imposed by the acceleration and increase of mobility of people, things, activities, ideas. Ideally, of course, the first of these two kinds of change should keep pace with the second, so that as fast as the ways of life are altered and architecture is forced to alter itself to meet them, so fast should new material and methods be provided. To some degree the two streams have flowed evenly; yet serious lags are to be detected here and there. The technological cycle really involves three steps.

FIRST OCCURS A RUSH to satisfy a new demand—a rush creating undesirable conditions. Cooling by recirculating air, for example, only condenses unpleasant odors. High land values make for congested housing. Second, a corrective or palliative technology is introduced; auditoriums are ventilated and supplied with voice amplifiers; water supply, waste disposal, elevators relieve some of the unpleasantnesses of congestion in housing. Finally, human values are rediscovered. The technology of multifamily planning as developed in European housing and in this country comes to the rescue of congestion. The auditorium is moved into the home itself. Inevitably, lags will occur in the availability of materials and methods. As an insurance against them, however, we must note the effectiveness of the greater and swifter mobility of ideas, and, perhaps even more important, the growing group of architects who look upon their profession primarily as a social rather than an esthetic one; who are more and more interested in achieving something that will serve humanity better, rather than in swooning with their fellows over the latest refinement a colleague has made on the egg-and-dart.

Much as the new science at first encountered difficulty in overcoming encrusted concepts, so the changes wrought by the results of science in architectural demands have been delayed, if not diverted, by the bulwark of fixed pattern which was already estab-



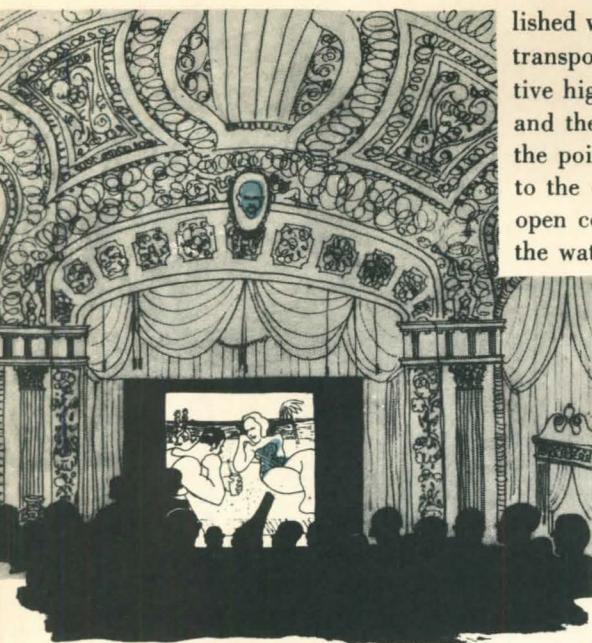
"—THE TYCOON, ONCE SEATED AT HIS DESK—"

ARCHITECT VS. ENGINEER

"Architectural forms are not invented; they are developed, as natural forms are developed, by evolution. . . . The architect represents the engineer as a barbarian; the engineer makes light of the architect as a dilettante. It is difficult to deny that each is largely in the right. The artistic insensitivity of the modern engineer is not more fatal to architectural progress than the artistic irrelevancy of the modern architect. In general, engineering is at least progressive, while architecture is at most stationary. And, indeed, it may be questioned whether, without a thought of art, and, as it were, in spite of himself, the engineer has not produced the most impressive, as certainly he has produced the most characteristic monuments of our time....

"What may we not hope from the union of modern engineering with modern architecture, when the two callings, so harshly divorced, are again united, and when the artistic constructor employs his cultivated sensibility and his artistic training, not to copying, but to producing, no longer to the compilation of the old forms, but to the solution of the new problems that press upon him; when he shall have learned the use of the studies that teach not their own use."

Montgomery Schuyler.
July-September, 1894.



"—MISTAKENLY REGARDED AS DESCENDANTS... WITH PROSCENIUM AND WINGS—"

Prototypes haunt the modern building

THUS THE EFFECT of prototypes on contemporary architecture cannot be ignored. Simplest are the problems set by buildings for which no pre-1890 prototype exists; these show most forcefully the potentialities of the new things (broadcasting studios). Buildings for which the prototype was feebly established raise questions only slightly more difficult; here such dramatic changes in needs have occurred that they are obvious to anyone (hospitals). Not much if any harder are the problems posed by buildings possessing clearer prototypes but rigorously at odds with them (garage versus stable, airport versus railway station). Difficult indeed are the problems inherent in those buildings where a well-established tradition of what is needed conflicts with a vigorous belief in another method of accomplishing the result (museum). Hardest of all are the problems presented by a building whose prototype is well established and fairly successful, and the new requirements of which are not easily assayed (house). Most discouraging demonstration of failure occurs in none of these, but in buildings which are devised to meet needs and to serve uses evolved during the last half century, but which have not been free to develop spontaneously because they have been mistakenly regarded as the descendants of prototypes existing before the period began.

The radio broadcasting station typifies the structure unique to 1940. Telling is the problem presented by such a studio, with its necessity for insulation against sound from without and for such handling of sound from within as will insure its transmission undistorted. Couple this necessity with that of accommodating audiences who shall have clear view of what goes on and yet be subject to such control that they will not spoil the show for the radio listener a thousand miles away, and matters become more difficult. The television studio will have additional special needs further to complicate the task, and in reality recapitulate in intensified form some of the peculiar needs of the movie house plus those of the broadcasting center.

GOTHIC IN WOOD

"None but a lunatic would undertake to build a Gothic building in wood, though it would not do to say that the task has not been attempted."

Wm. Nelson Black. 1893.

IRON IN ARCHITECTURE

"...for if there was ever a building constructed in all its parts of iron that was aesthetically good it was not brought to the attention of the writer, and he will hardly be expected to comment on what he has not seen."

Wm. Nelson Black. 1893.

lished when they occurred. Reverting for a moment to the conflict between methods of transportation which has been discussed, we can find in the building of early automotive highways an illustration. The lag between the need for grade-crossing protection and the evolution of clover-leaf intersections and similar devices also well illustrates the point. Not yet, indeed, have we succeeded in giving complete physical recognition to the essential differences between a trunk highway and a trunk railway line in the open country, though much has been done in Europe and not a little on this side of the water.



THE DIVERGENCE between the modern hospital and those of before 1890 is great. Before the half-century began, the difference between a hospital and a hotel was not large. But today pronounced differences are to be seen, arising principally from the added demands imposed on such buildings by new therapies evolving directly from the most abstract of pure science. Planning arrangements which facilitate the best use of expensive equipment such as X-Ray apparatus, or which aid in reducing risks of infection, or which permit economizing on valuable time of trained services such as those of diagnosis or of surgery are typical. The whole organization of a hospital is

subject to methodical control, including the reception of new patients, the handling of emergency cases, the circulation of visitors, the preparation and serving of meals. The architect now has a higher degree of responsibility for the orderly functioning of all these and many similar requirements.

Likewise the contrast between 1890's livery stable (in itself a quite specially technical problem) and 1940's metropolitan storage and service garage is obvious. Here is a building which must offer live parking for hundreds of cars; provide tear-down and repair areas for dozens; accommodate many in dead storage at any given moment; make those in live storage accessible without delay; stock spare parts, tires, tubes, batteries; furnish washing and other labor facilities; serve as a meeting place for shoppers. Such a building, it must be observed, is entirely a product of automotive developments of scarcely more than a quarter century. The development of systems of spiral ramps, the determination of floor-span construction sturdy enough to carry heavy dead weight without using such close column spacing as to obstruct circulation, the special consideration of protection against fire and gas poisoning—these are but a few of the numerous particular innovations which may be called to mind here. Naturally enough, for a long part of our period, and still true in much of the country, the practice has been that of making shift, or making old things do, of getting the garage into any sort of building. Still in the process of evolution, as is hardly surprising in the short time involved, the business of garaging for the 1940's promises much.

CHARACTERISTIC ALSO of the motor age are two specialized buildings arising squarely from the new traffic, but well-grounded in tradition as well. The wayside inn is no new thing, for it was a necessity in the days of the stagecoach; its modern counterpart more nearly resembles the caravanserai than it does the posthouse. As the railroads congested the city, so they tended to develop the idea of the terminus. The station-hotel will be well remembered by most readers—in Europe it was by no means always the least desirable hostel. Demand for higher standards moved the hotel away from the railroad station, but never got it really into a quiet part of the city, despite the fact that the modern taxicab makes it ridiculous for a traveler who wants to sleep to put up with the night-noise of a metropolis. The terminus had certain very clear contexts. One traveled from terminus to terminus. En route one enjoyed all sorts of service; one paid no personal attention to the problem of keeping the vehicle moving safely. This freedom permitted the concentration of the metropolitan hotel since in the interim periods one could sleep like a kitten on the train.

But motor travel has changed the problem. One must stop at the end of the day's stage. The costs of the urban hotel have in part engendered a demand for a different sort of resthouse. But in part this demand must also arise from the sense of the open which one who motors through the country obtains; it is no satisfaction to leave the hills and dales of the Cherry Valley at night to enter a metropolis for slumber; far better to camp or rest beside the road.

The need for such stopping places is of course well recognized. It is harder to say it is well served. Scant thought has been given, with brilliant exceptions, to what can be offered in the way of comfort, relaxation, and quiet. Too much attention has been lavished on the creation of what the owner believes to be architecturally appealing fronts to lure the traveler to Danish villages, Cape Cod cottages, log cabins made of plank, doll houses all arranged too near the road, and too near each other.

ASIMILAR PROBLEM has arisen with respect to a lesser contemporary which also serves those who have but a one day's jaunt between starting point and goal. The uncertainty of the cuisine of rural American inns led naturally to the trade-marked restaurant where food of a known standard was certain to be had; and to competitors drawn from the perpetual American idea that having failed in one pasture one may make hay in another. (There are more bankruptcies in the restaurant business than in any other American business activity.) Such a restaurant, located often fifty or a hundred miles from its nearest base, dependent on the truck for stock and the jalopy

CATHEDRAL

"... Why not admit at once and frankly that the Cathedral is a mediaeval monument, as the castle was, or the monastery; and that to go to work in cold blood at the close of the nineteenth century to build such a monument in New York, is as ridiculous as it would be to surround the city with a wall and moat.... We say on the contrary that it will be the fruit not of devotion or sacrifice, but of ambition and pride, and so far from indicating a noble feeling for art, will but indicate the painful lack of it; for the true artist will recognize and acknowledge, with whatever regret, that the Gothic Cathedral, like the Greek Temple, is a thing of the past, and that though a pale counterfeit of it may be within the reach of the swollen fortunes of Wall Street, the real thing is beyond their power forever."

July-September, 1892.

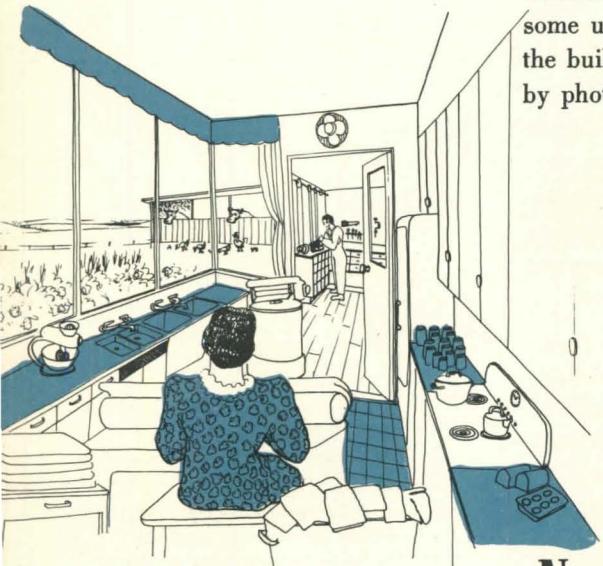
ON THE NINETEENTH CENTURY

"Engineering monopolized whatever real progress was being made in building. Metal construction was coming into general use for bridges and for structures with large roofs, such as railroad stations and exhibition buildings, the most characteristic products of the constructive skill of the time. These works were intrusted to engineers; the architects were so preoccupied with their mistaken efforts to resuscitate historic styles that they wholly failed to discover the possibilities of the new material, and scornfully abandoned it...."

A. D. F. Hamlin.
January-March, 1892.

for customers, propounds a serious architectural problem. Frequently it must be an utterly self-contained affair, capable of generating its own power, connected to its own water supply, and its own waste-disposal system. It must be geared to accommodate rush-hour loads of hungry hordes with no time to lose, yet to peg along peacefully and profitably in slack hours, in the gray dawn when truck drivers drink their coffee, at late midnight when the blades use it as a Coca Cola roadhouse. It must be cheery, yet efficient; commodious, yet compact. Misbegotten misfortunes disguised as derby hats, milk bottles, roast chickens, hot-dogs are one evidence of architecture's birth-pangs with this problem. Perhaps it is as well not to labor the point that this problem has been posed by technology. However bad the food in the house which opened its blinds to the tally-ho, it was less offensive to the passer-by.

THE LARGE MUNICIPAL MUSEUM of fine arts is, like the public library, characteristic of the early part of this half-century. These buildings followed the concept of a noble exterior housing collections which were used to ornament the interior, a concept that dated back to the days of the royal or princely palace collection, spasmodically opened to the public. The 1893 Fair offered a series of such palaces. This prototype is by no means extinct but at present the most effective museum or exhibition building does a better job of bringing the public into contact with the collection. Protecting the exhibitions, putting them in their best light and context, the building is not now seen for itself alone. Technology has played an important part in this change, through artificial lights, temperature and humidity control, scientific study of the behavior and limitations of the human spectator and his response to the exhibited material. Flexibility is often another important requirement because the temporary and the traveling exhibition are natural results of a desire to have valuable collections put to some use in a democratic society. Meanwhile in the best of recent fair architecture the building and the exhibition material actually fuse and become one, greatly aided by photography, cinematography, lighting, sound, and similar technological devices.



"— NEW REQUIREMENTS
NOT EASILY ASSAYED —"

New house patterns evolve slowly

OF ALL PROTOTYPES the private individual dwelling was most firmly entrenched at the start of the half-century. Nor can it be said that houses have been considerably changed in their large aspects as a result of scientific and technological activity. Scarcity of servants may have done something to size and this may have been a result of new industrial and commercial opportunities. The garage may no longer be remote from the house—as for good reason the stable had to be—but it is still a stumbling block in design. Changes in coverings, provision of appliances, are perhaps more appealing aesthetically, more convenient physically, but that is about all.

On the other hand, the neighborhood movie house is a clear example of wrong allocation to an established prototype. This may partly be blamed on the technologists of the cinema who did not, early in the game, demand the proper housing for their work: areas in which films could be well projected and in which there were no seats at wide angles. As a consequence movie-theater architecture has been too long dominated

by the idea that a theater is after all a theater and hence must have proscenium and wings. Better would have been the progress had the adaptation of long rectangular store space, which made the first Nicolodeon, been continued. Actually the neighborhood movie house was without a forerunner. The mere problem of parking outside it is demonstration enough. Ideally the movie theater should be housed in a multi-family dwelling, obviating need of transportation, or should be broken into thousands of smaller individual theaters, neatly packed in the closets of thousands of dwellings, available on call. Or if it is to remain a neighborhood theater, then, as is true of so many other buildings, its location must be reconstructed in relation to the automobile. Only the drive-in theater has been so developed—scarcely an over-all solution.

NOT EXACTLY ALLOCATABLE to any of these categories is the government building for which so many new purposes have arisen. Originally contrived primarily to serve the judicial function (court, jail), then expanded to take care of legislative needs (capitol, town hall), public buildings have but lately become heavily weighted on the executive side through the obvious demands for social co-operation in government made by the results of applied science. The public still demands that governmental structures to a certain extent be symbols of stability and authority, but these increasing administrative and technological requirements have led to a contradictory desire for buildings which are essentially offices. Hence the many municipal office buildings erected as annexes near obsolete classical city halls, to contain bureaus, commissions, clerks, and so on. In addition, new kinds of government buildings have been created, including such structures as public welfare centers and clinics, water-works, incinerators, testing laboratories, experiment stations, and power plants. Architecture should bear in mind that the people take pride in these too.

THE TERRIFIC RESPONSIBILITY placed on the architect not only to organize space efficiently and enclose it persuasively, but also to provide for so many mechanical activities in addition to the human ones with which he has always had to reckon, and which incidentally are easier to handle because humans are more adaptable than machines—this responsibility can nowhere be better illustrated than by the modern metropolitan newspaper plant, which must be calculated in such wise as to save perhaps three minutes in the production of the edition, which must therefore reckon with stresses and vibration loads that earlier designers for newspapers could easily enough forget. The time when any old building would do for the daily is past. The complication of present-day newspaper technique, in terms of wire services, photographic and engraving departments, storage for tons upon tons of newsprint, swift accessibility of that stored material, presses hundreds of feet in length and subject to centrifugal forces undreamed of a decade or two ago, is such that a highly specialized building is essential. The complication necessitating it is in part the result of the demand for speed in meeting competition which grows out of the concentration of urban population, and in part the result of the availability to the new paper of ancillary services which electronics has given it, and which it must perform.

All this indicates what architects have long known but have been reluctant to admit—that no longer can one man or even a group of architects alone contrive adequate solutions for all current building needs. The time has passed or soon will pass when it will be possible for architects to ignore the other implication that engineers are not men to be brought in to make a building stand up, or to provide ventilation, or to make some other mechanical requirement work (usually only through distortions of the original architecture), but rather, in the truest sense, that they are collaborators. Not so very long ago, a spokesman for contemporary architects officially left representatives of a very important engineering profession out of a consultation on just the old idea that somehow the engineer is the body servant of architecture. On the other hand, several important European projects have been published with the names of all the collaborators, artistic and scientific, given equal prominence.

HOUSING

"Every now and then we hear of some philanthropically - disposed persons, or association of persons, who have determined to build model tenement houses where quarters may be obtained at the minimum of cost, and everything shall be luxurious and perfect. But the experiments usually end with the first attempt. There are two chief causes for their want of success. First, the number of philanthropically-disposed men in the world is not relatively large, and, secondly, the number of persons who are willing to live on the charities of the philanthropically disposed is relatively still smaller. We cannot divest model tenement houses, built without any eye to profit, of their eleemosynary character, and no high-spirited man, whether rich or poor, will care to publish to the world that he is saving money by asking other men to forego their profits."

Wm. Nelson Black. 1893.

ON CIVIC ARCHITECTURE

"If one encountered this disreputable structure in Oshkosh he would say, how Oshkoshian; in Peoria, how Peorian—it is so rude and raw a travesty of the architecture of civilization. As a matter of fact, it is in one of the oldest settlements of the United States, and within a mile or less of it is a respectable dwelling erected in 1666. This is not the brutality of a blundering beginning, but the hopelessness of a completed degeneration. This building which expresses the municipal aspirations and standards of Jersey City, and which would disgrace a municipality of South Dakota by its crudity and vulgarity, serves to show how exceedingly thin is our veneer of 'art'."

July-September, 1895.



"—SWOONING WITH THEIR
FELLOWS OVER THE LATEST
REFINEMENT... ON THE
EGG-AND-DART—"

Building design faces tangled problems

ORGANIZED EFFORT of the kind mentioned here—"panel" architecture—is at first thought as much an innovation as socialized medicine. That it should be an outgrowth of the effect of scientific and technological activity on architecture is at once natural and appropriate. All or practically all of the specific reflections of that effect which we have observed are akin to it. The root cause underlying all of these matters is root cause also of the explanation of why the greatest changes, the greatest new demands, the greatest uses of new materials and techniques, are found in buildings designed to be used by people in large groups—buildings of communal rather than individual purpose. Chief consequence of scientific expansion in the United States during the past half century has been a socializing, a leveling, a unifying of the national life. Free inquiry, and the results it produces in tangible things sprung from the most intangible of research, inevitably occasion unification, pruning down of class differentials, gathering of people in larger groups, mass education, mass movement, mass preference, mass action. Most profound social influence of science has been here; that it should be so accurately reflected in architecture is logical.

The natural consequence of this is that the great architect of today like the great man of every other contemporary profession is acutely conscious of his professional responsibility to "society." This evidences itself in the matters he discusses; but it also shows itself in his buildings. The whole emphasis on light, air, space—on the opening up of the working and the living areas alike—is both a consequence of the wider spread of scientific knowledge which is a function of the growth of science, and a symptom of the leveling and democratizing which is a concomitant if not a consequence of scientific expansion. The desire to have greater candlepower by night, and to receive greater solar power by day, leading to the many-windowed and larger-windowed building is a desire for greater comfort, yes, and an intimation of a sense of greater dignity on the part of the common man, from whom such things were in large measure taken away during the period of congestion.

ANOTHER GREAT TENDENCY—logical outgrowth of the first and of the cultural complex in which architecture today functions—is for the scope of architectural activity to be widened. The architect seeks to prove his ability to make a contribution in all fields of shelter activity—farm buildings, factories, power stations, tourist cabins. To do so, he must be a good technician. He can no longer be a luxury, nor perform an exclusive service. Architecture, like the other arts, creates formal design which is of itself significant; and this is as it should be. But in the work of the best practitioners of today there is a very real science of planning, in comparison to the work of 1890. It begins in the approach to a problem and the formulation of the needs of a building, a sort of diagnosis which parallels the work of a medical technician. It continues to influence the layout of spaces, which is more than a succession of volumes well related to each other, and rather an accurate envelope about a human activity which has been carefully appraised and facilitated by the architect. The architect thus is becoming familiar with the scientific approach of his colleagues, the engineers. He measures spaces, distances, dollars, with increasing accuracy; yet shapes designs with greater regard than ever for the imponderable human values which, in the past 50 years, have won greater recognition than had been theirs for centuries.

ORIGINS

"Architecture has its origin in the material needs of mankind, and these must necessarily control its development. It has furthermore to deal with the stern laws of gravitation and of the strength of materials, to whose behests all its manifestations must be subordinated. In these aspects, then, it is purely utilitarian, and if it stops here, is not an art, but a science or a trade; it is mere building or engineering.

A. D. F. Hamlin,
July-September, 1891.

WHAT IS ARCHITECTURE?

"It is well that our buildings should be harmonious, beautiful, ornamented, that they contribute to our mental health, power and pleasure, but it is a false limitation to use these terms in telling what architecture really is. It is equally erroneous to raise the distinction between building and architecture, as Mr. Ruskin and a host of lesser lights do.... It is a most admirable way of relieving architects of the burden of unsatisfactory structures to represent them as the work of the builder, not of the architect....

"Architecture, therefore, comes to be looked upon as an artificial product, the result of the architect's imagination, a work of beauty, not as the outcome of the application of human resources to human needs and circumstances."

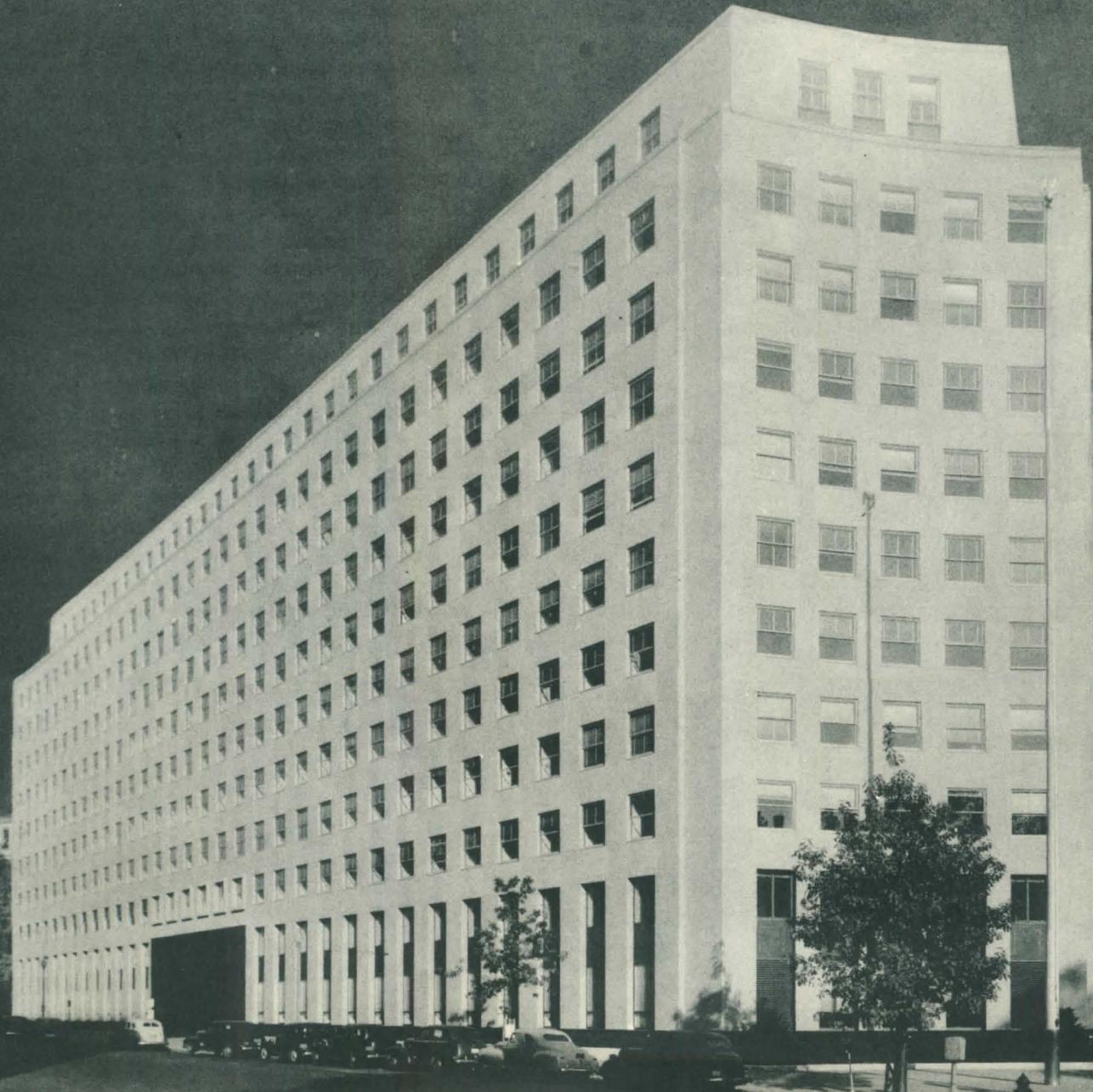
Barr Ferree.
October-December, 1891.

OFFICE BUILDINGS

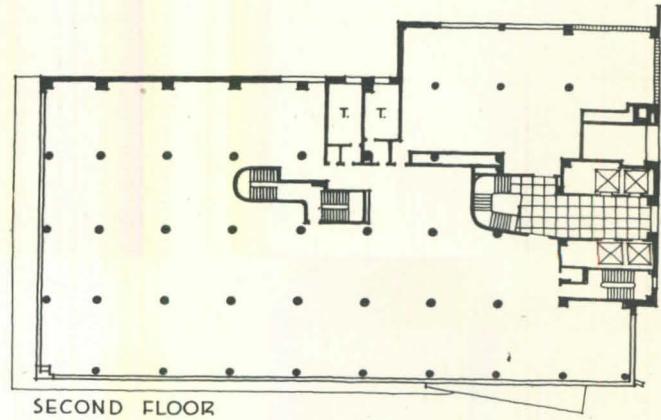
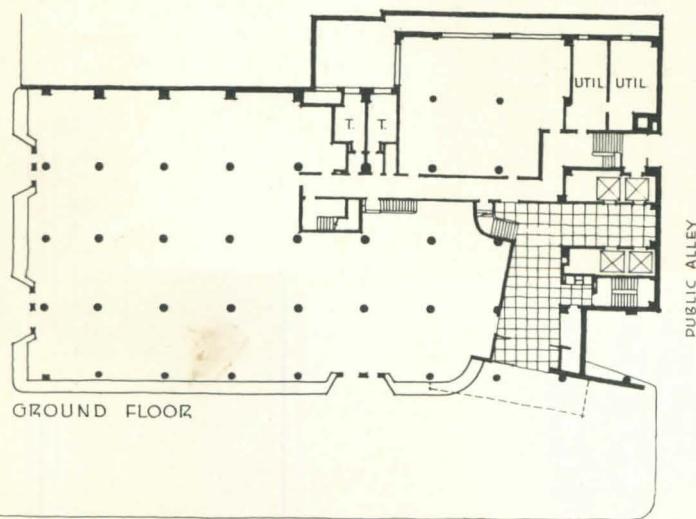
1891-1941

The full life span of the skeleton-framed structure (and its apotheosis, the skyscraper) is almost precisely encompassed in the 50 years of the RECORD'S life. As the development of structural steel and the elevator logically brought into being the tall building, architectural treatment of the shell became an aesthetic free-for-all. "Styles," from Egyptian to Gothic, and sometimes both, were laboriously hung on the sturdy frame; occasionally some bold architect went so far as to treat the skeleton with respect and surface the building simply, taking advantage of the small structural members to introduce large window areas. A most interesting instance is the Reliance Building (at left), completed in 1894. Today, the design approach to the office building—large or small—is almost invariably from the point of view of function and fitness for use. A representative recent structure is the new Federal Loan Agency Building, below, in which plan provisions were predicated on maximum usable office space with outside light for each office.

Below: A. R. Clas, Architect: Federal Loan Agency Building, Washington, D. C.



D. H. Burnham & Co.,
Charles B. Atwood,
Architect: Reliance
Building, Chicago, Ill.

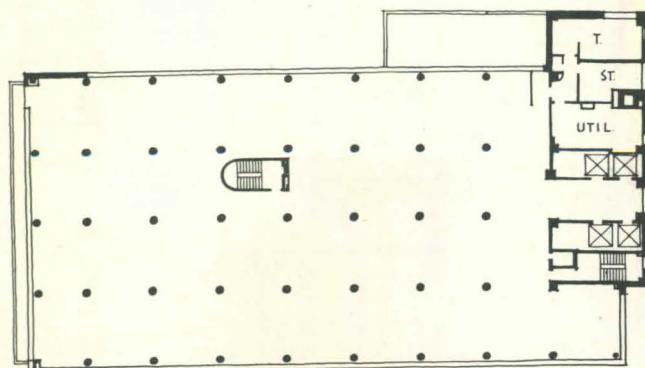
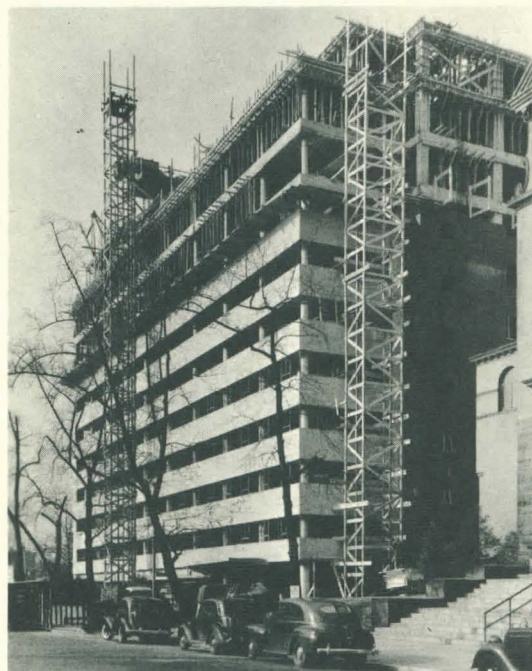


OFFICE BUILDINGS

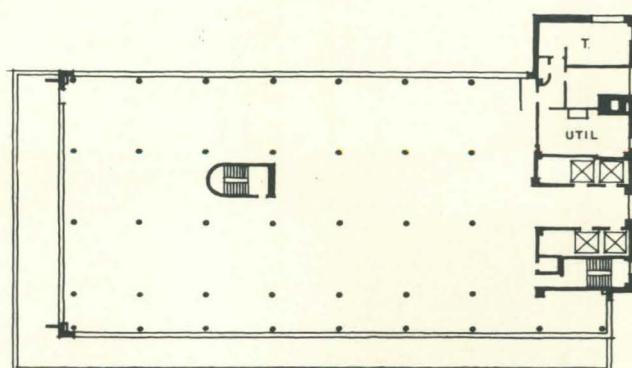
*WILLIAM LESCAZE, ARCHITECT: LONGFELLOW BUILDING, WASHINGTON, D. C.

To achieve flexibility on all floors, the rental space of the Longfellow Building, now under construction, is entirely free of interior partitions. Such flexibility is in turn made possible by careful organization of services along an interior wall, by continuous windows carried free of the columns around three sides of the building, and by two fire towers. This permits the leasing of space in a wide variety of sizes from individual offices to entire floors. Limited in height by Washington's zoning laws, the building is framed of reinforced concrete; the continuous horizontal spandrels are surfaced in a light brick; on the service block a very dark brick facing is employed. Largely through its simplicity, the building thus conforms sufficiently to the Capitol's "official architecture."

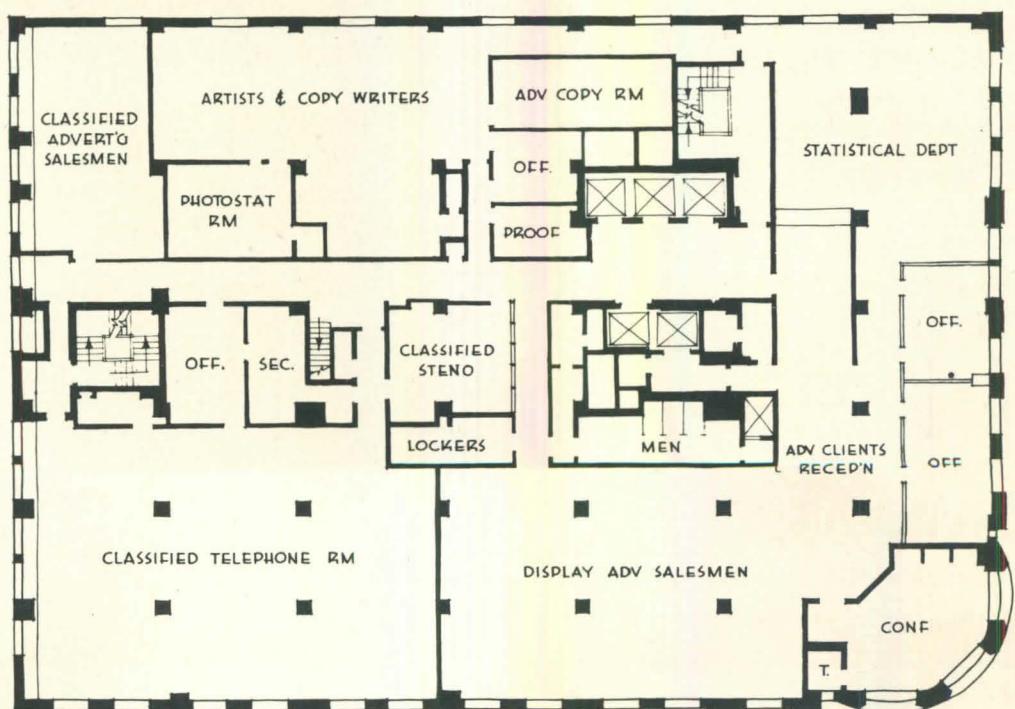
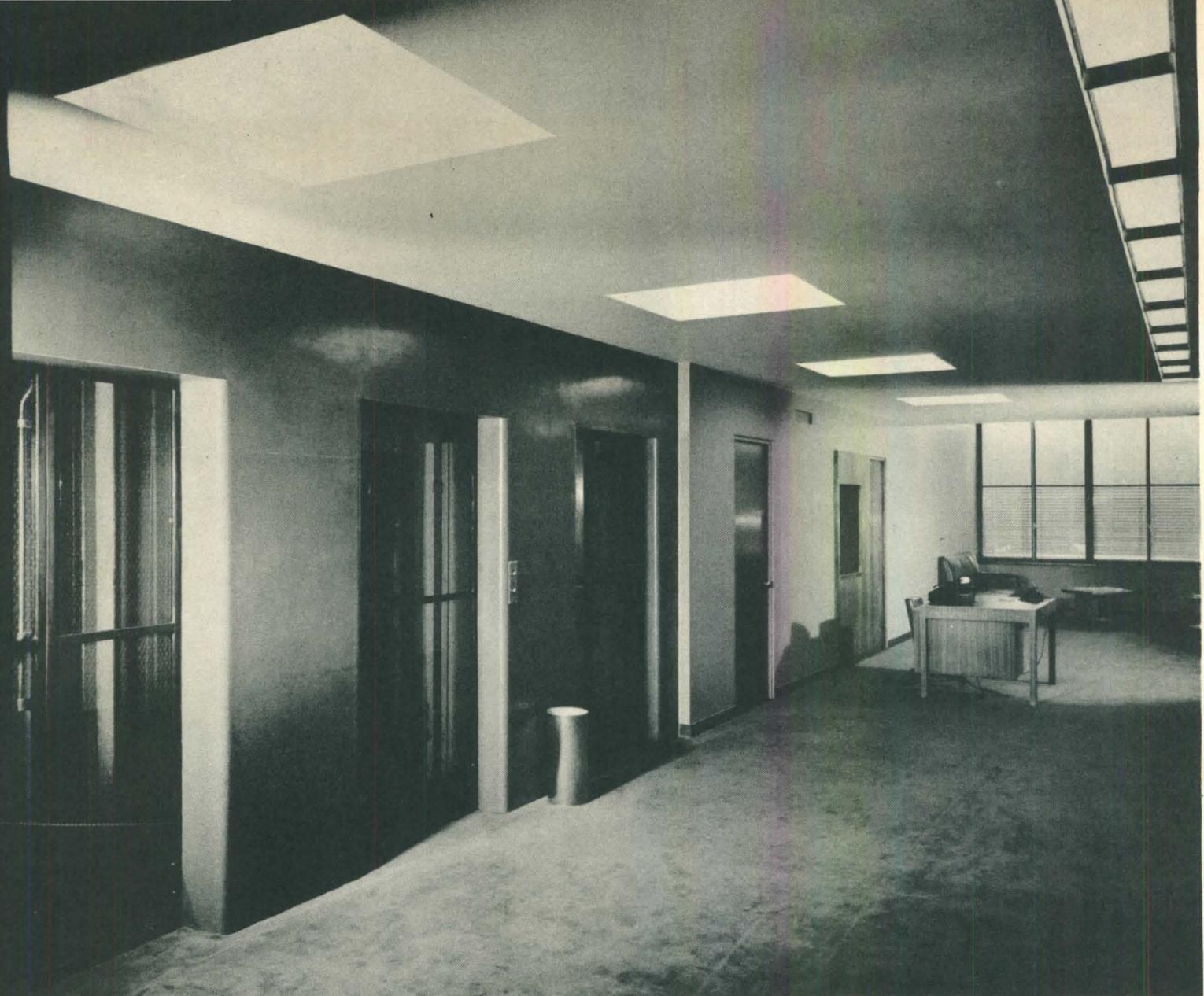
**To be treated more extensively in a later issue.*



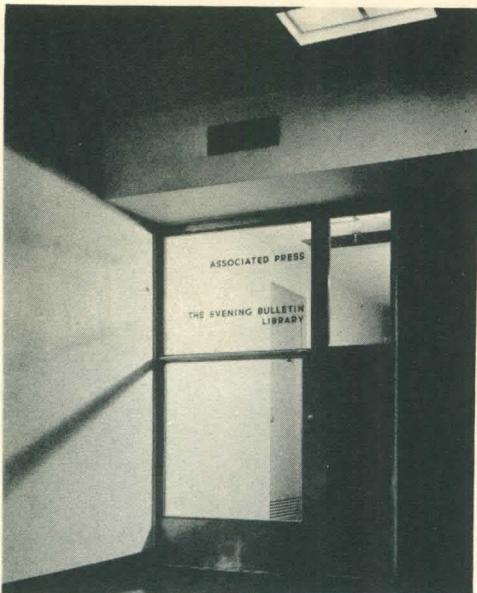
THIRD TO TENTH FLOORS



ELEVENTH & TWELFTH FLOORS

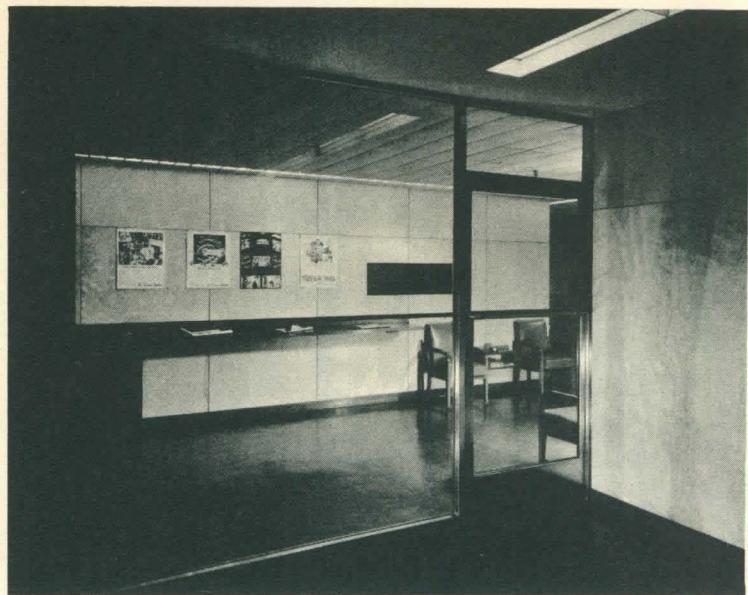


OFFICE BUILDINGS



ENTRANCE TO LIBRARY

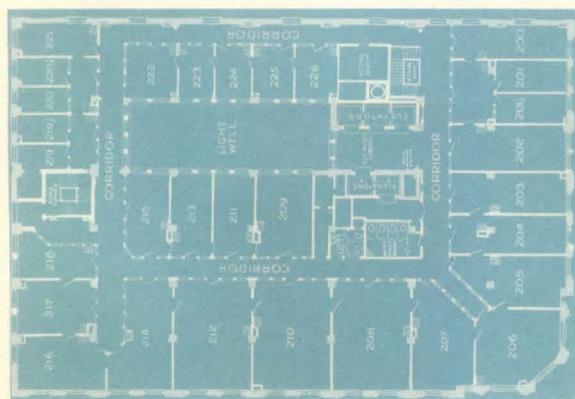
GEORGE HOWE, ARCHITECT, LOUIS E. McALLISTER, ASSOCIATE: REMODELED OFFICES FOR THE PHILADELPHIA EVENING BULLETIN, PHILADELPHIA, PA. The remodeling of the old Bulletin building, now virtually complete, was begun in 1936. Most recent departments to undergo reorganization were those for display and classified advertising. (For first reports on remodeling, see AR 11/37.) At no time during the remodeling operations were the regular functions of the newspaper disturbed. Besides actually reorganizing the office system, the architects were able to provide 12,000 additional square feet of space by extending new construction over what had been a centrally located light well. The air-conditioning system is located in this light well. All offices, acoustically treated; illumination accords with up-to-date lighting standards.



CORRIDOR AND WAITING ROOM, display advertising department



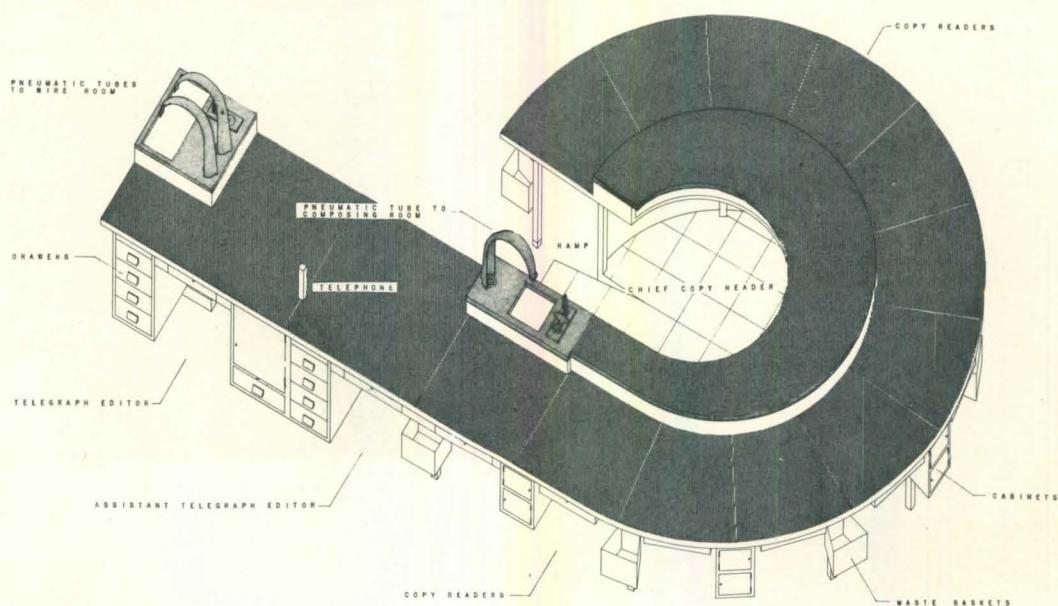
WORK SPACE, display advertising department



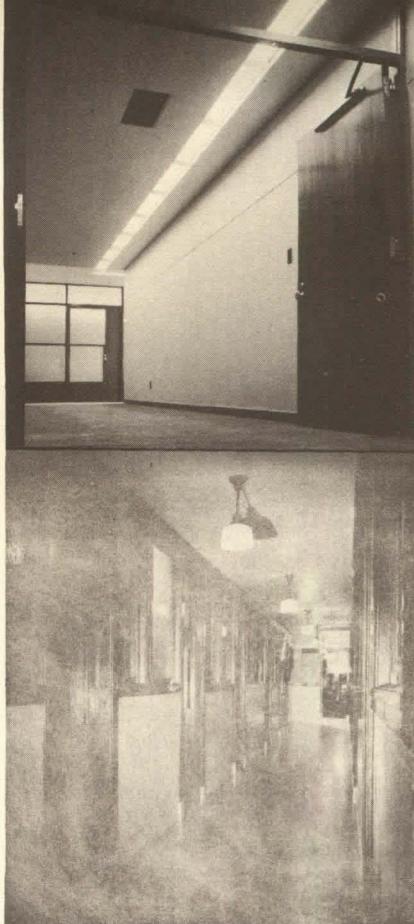
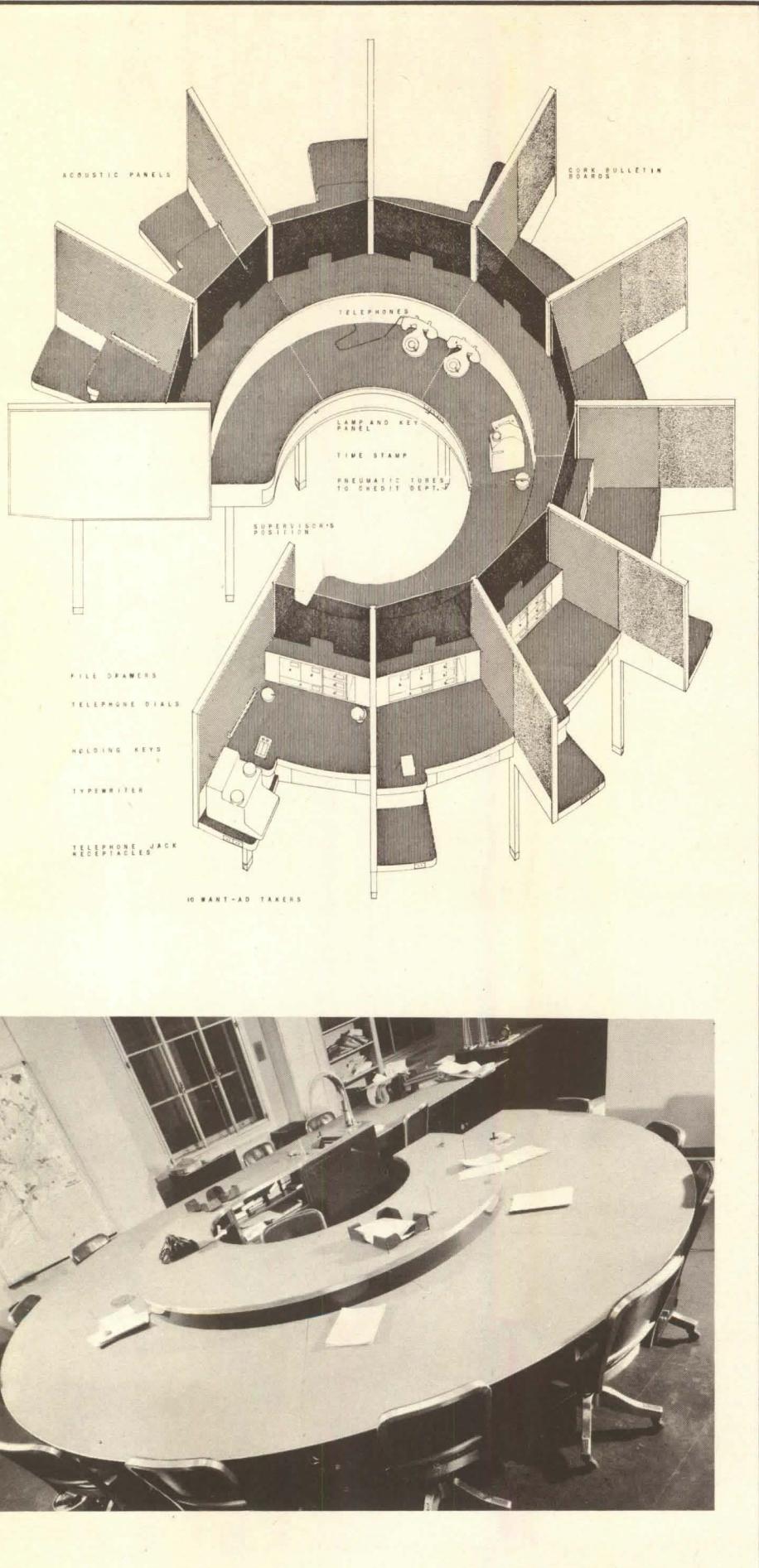
INDIVIDUAL OFFICES



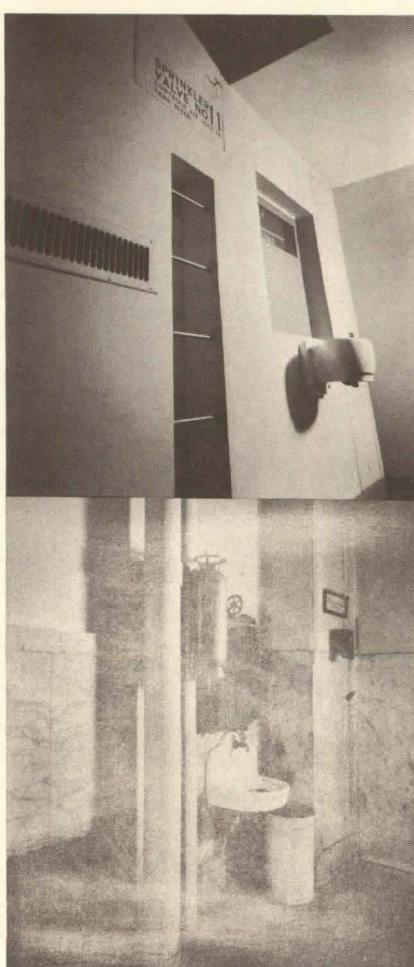
SPECIALLY DESIGNED DESK with acoustically treated booths, for classified ad takers



COPY DESK, NEWS ROOMS, with central slot for head copy reader



Above: remodeled corridor. Surfaces are simply treated; lighting is recessed. Below: view of same corridor before remodeling.



Above: detail of corridor corner showing simplification of equipment, including built-in ladder to concealed fire-fighting equipment. Below: the same corner, before remodeling.

GOVERNMENTAL



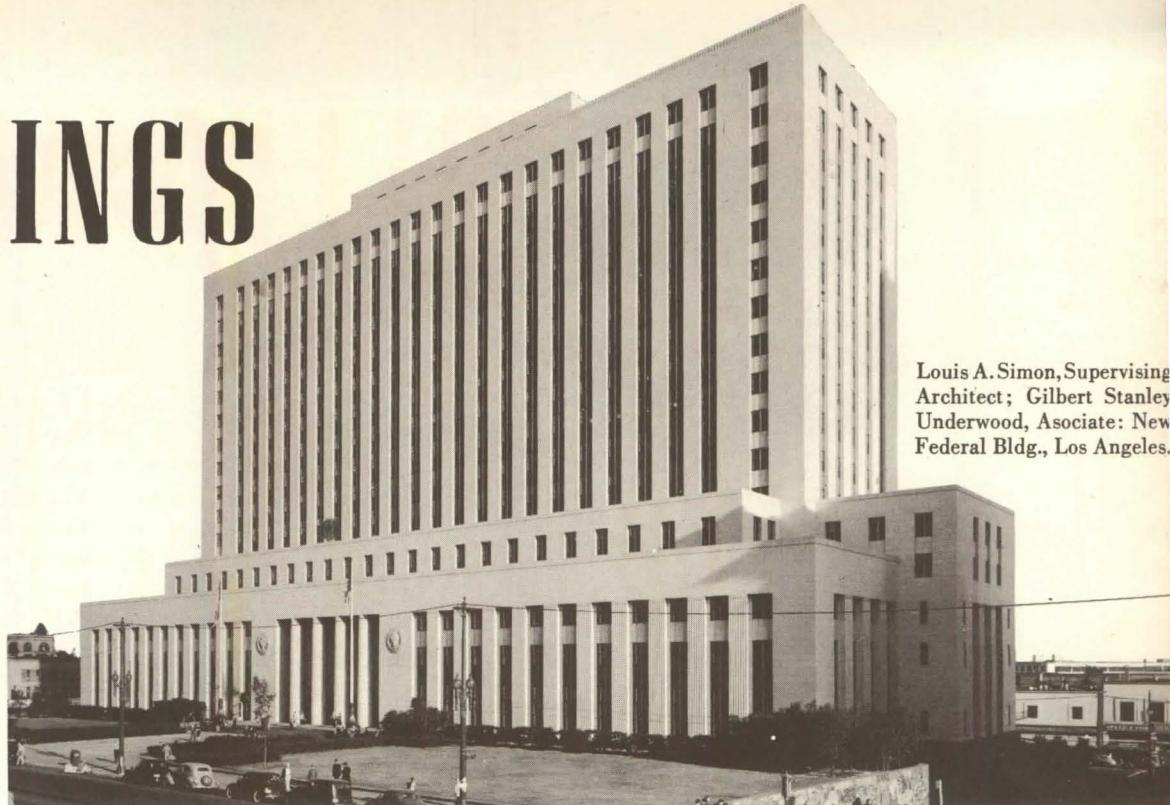
1891-1941 Nowhere was the impact of the classic revival which followed the Chicago Fair more sharply apparent, or its influence more extensive, than in the field of governmental buildings. But the lively esthetic controversies of the Nineties have more and more retreated before the pressure of growing demands. Today the problem of adequately housing the various agencies of local, county, and state governments shows the same general trends as in other building types: as the examples on these pages amply demonstrate, the health and convenience of users are paramount criteria in the design of such structures.

Thom, Wilson, and Schaarschmidt, Architects



BUILDINGS

Louis A. Simon, Supervising Architect; Gilbert Stanley Underwood, Associate: New Federal Bldg., Los Angeles.



BELOW:

* Robert Stanton, and Thomas B. Mulvin, Architects: Monterey County Courthouse, Salinas, Calif.

*To be treated more extensively in a later issue.





LAW LIBRARY



MAIN LOBBY



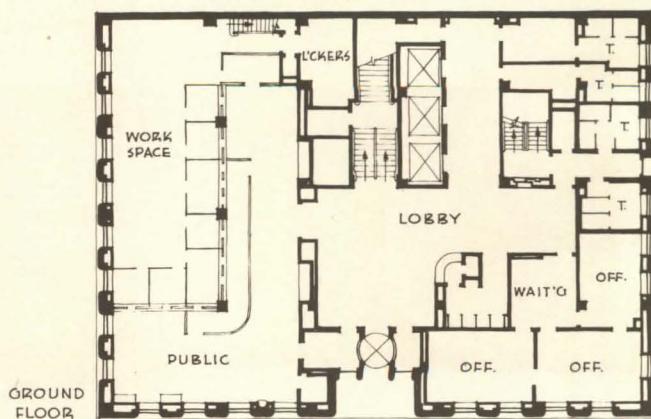
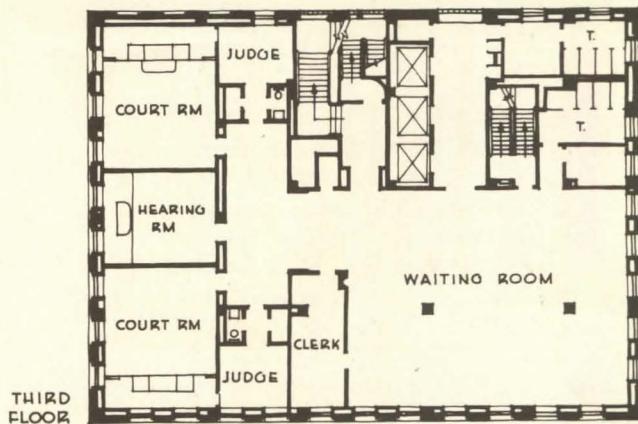
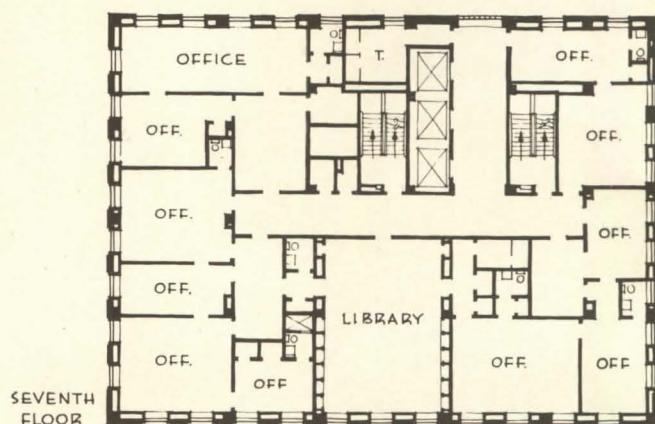
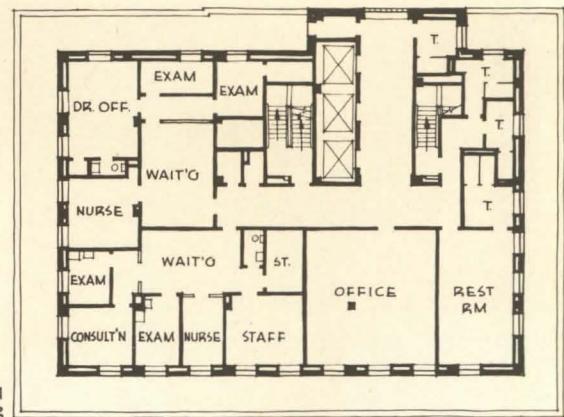
ANTEROOM

GOVERNMENTAL BUILDINGS

CHARLES B. MEYERS, ARCHITECT:
DOMESTIC RELATIONS COURT, FAMILY COURT BUILDING, NEW YORK CITY. This new 10-story court building is a good example of the design specialization which is demanded for buildings in a great metropolis. Devoted to but a single branch of jurisprudence, it includes not only the courtrooms and their appurtenances but a social investigation office, a medical clinic, a law library, and numerous clerical and record offices, with their attendant public areas. The steel-framed building is surfaced with limestone from the third floor to the penthouse. The base and incidental trim are of polished granite. Aluminum grilles shield the windows on the ground floor. Each floor is subdivided into large and small offices or special-use areas as needed.



COURTROOM

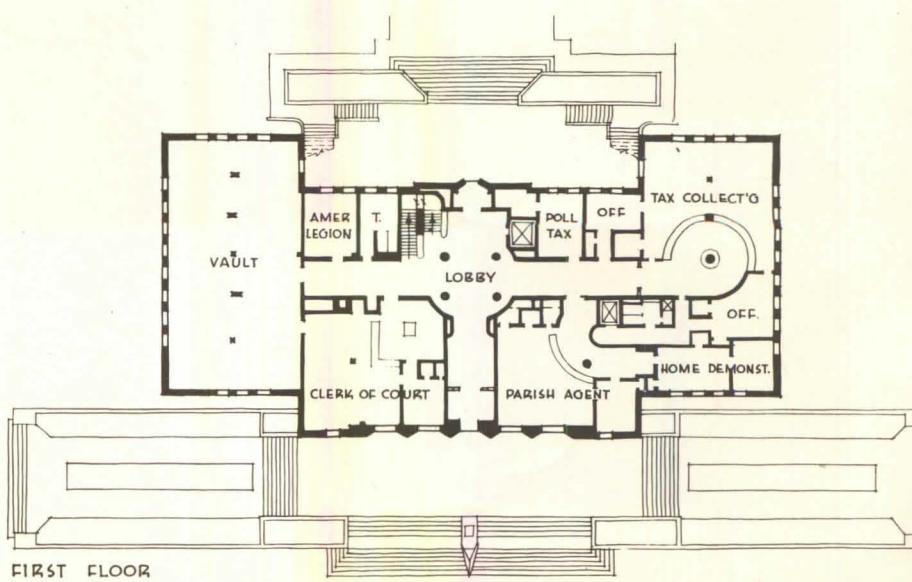


GOVERNMENTAL BUILDINGS



A. HAYS TOWN, ARCHITECT: IBERIA PARISH

COURT BUILDING, NEW IBERIA, LA. Besides court and jury rooms, the District Attorney's office, and the jail, the new court building contains offices for public health and welfare administration, the sheriff, the tax collector, assessor, and the American Legion. The social welfare and parish health units are located in the basement. The building is of monolithic reinforced concrete. Sash are of aluminum, except in the penthouse jail, where tool steel was used. Cost of the structure, including air conditioning system and equipment, was approximately \$425,000.

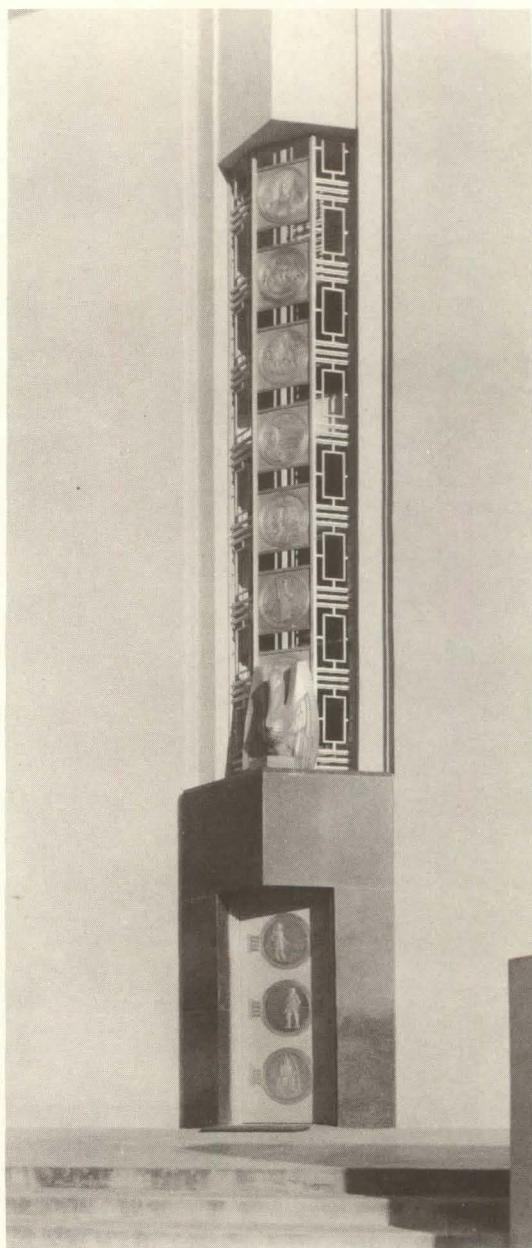
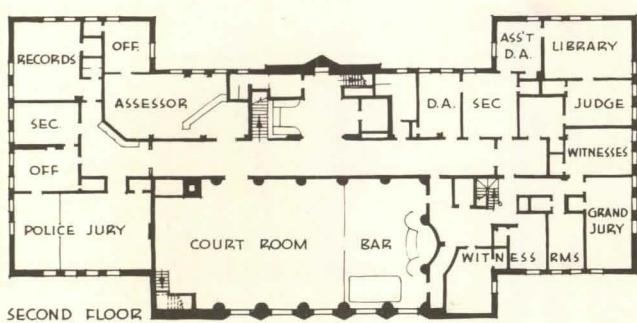
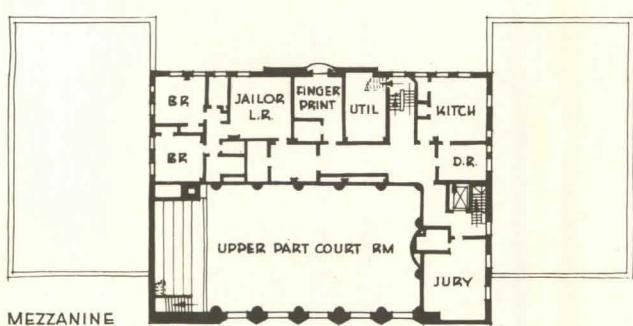
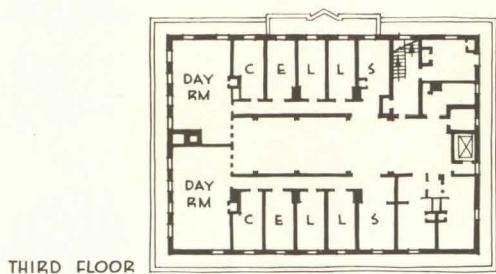




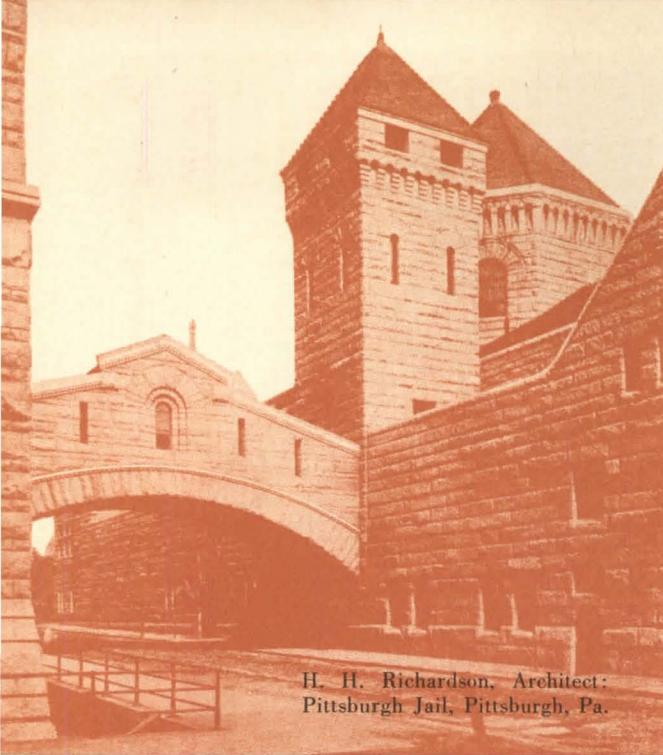
PUBLIC SPACE, SHERIFF'S OFFICE



JUDGE'S BENCH



REAR ENTRANCE

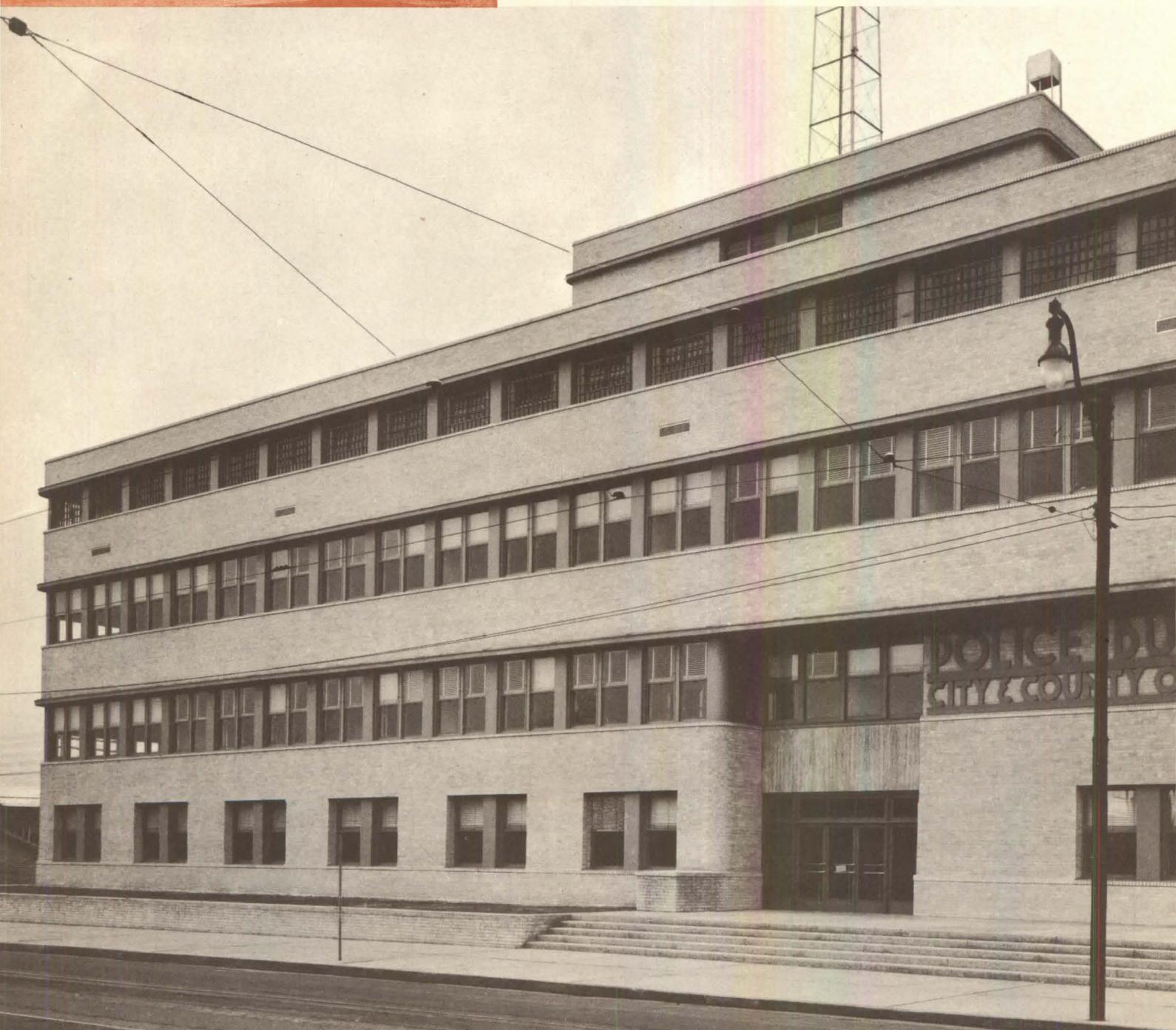


H. H. Richardson, Architect:
Pittsburgh Jail, Pittsburgh, Pa.

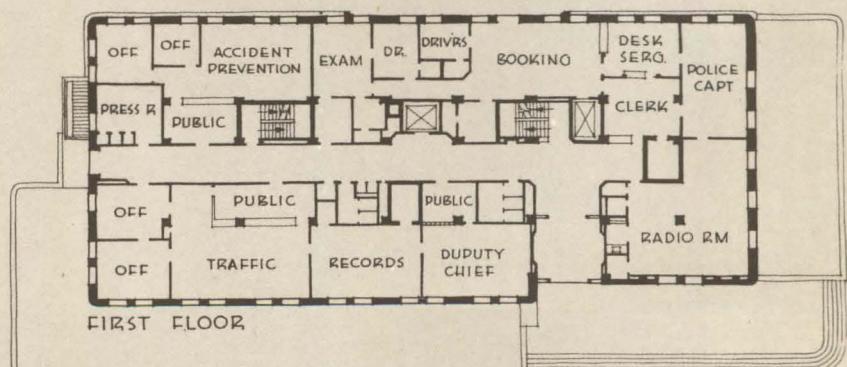
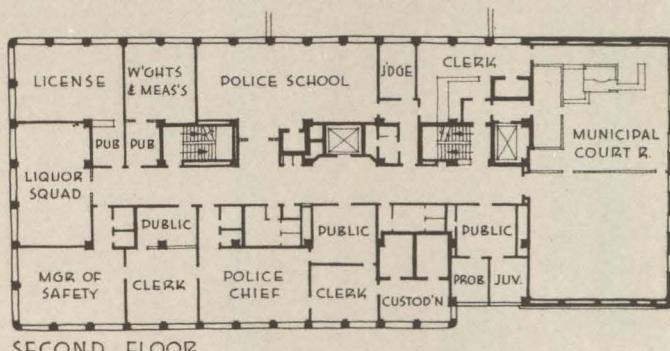
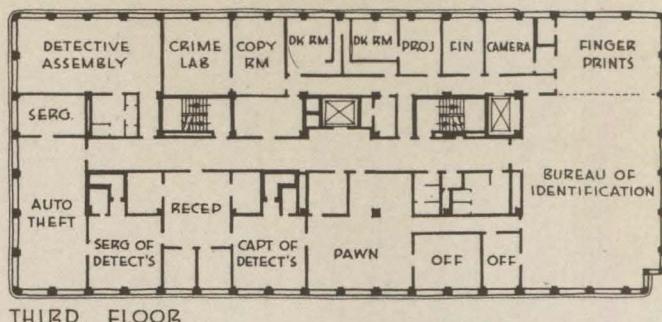
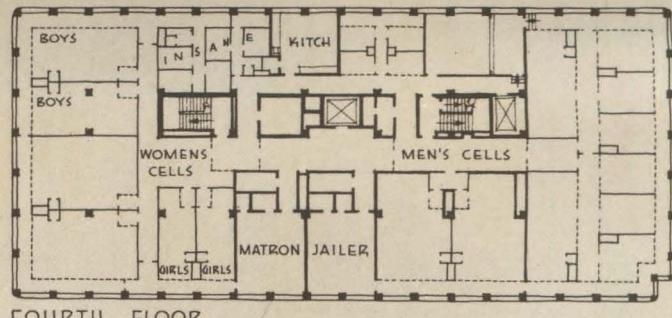
PRISONS AND

1891-1941

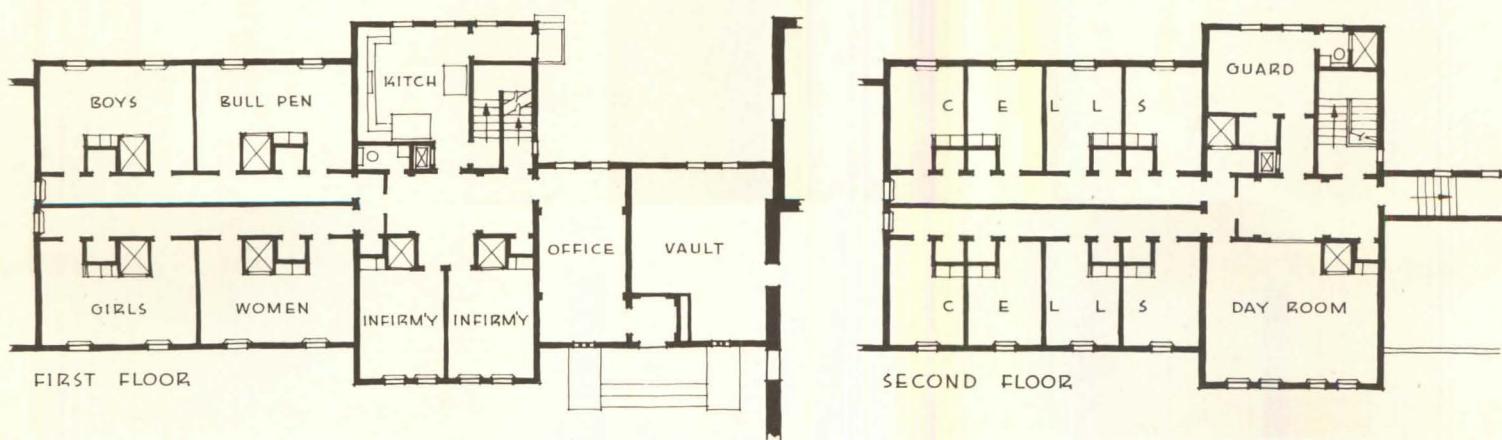
The penology of the Nineties was a pragmatic affair, architecturally relegated to the basement in all but the largest city hall or courthouse. Early RECORDS give little indication that such building types were considered to lie properly within the architect's scope. Recent advances in penology — together with the great expansion of law-enforcement agencies — have naturally forced great (though not yet sufficient general) changes in the design of penological institutions. Reflecting such changes are the buildings shown here.



JAILS



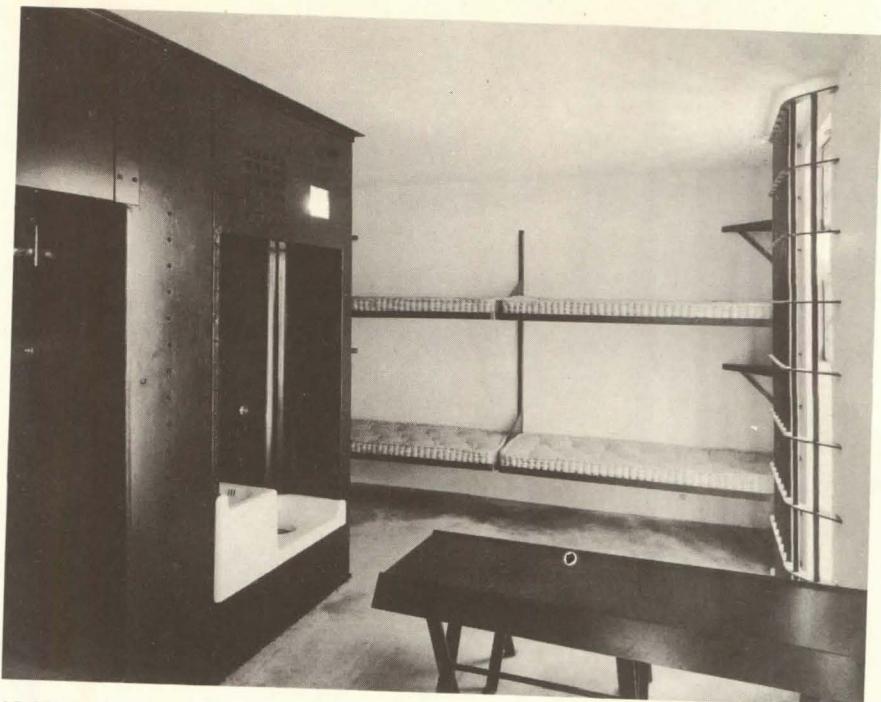
C. FRANCIS PILLSBURY, C. MEREDITH MUSICK, EARL C. MORRIS, ARCHITECTS: POLICE BUILDING FOR CITY AND COUNTY OF DENVER, COLO. Characteristic of changing standards in metropolitan police buildings is this new structure in Denver, center of a network of substations and cruising cars, all linked by the department's two-way 24-hour radio system. As in other cities, the automobile and radio have greatly increased the tasks of the Denver department but at the same time increased the range of the force. The entire structure, including the top-floor jail, incorporates current advances in equipment and materials.



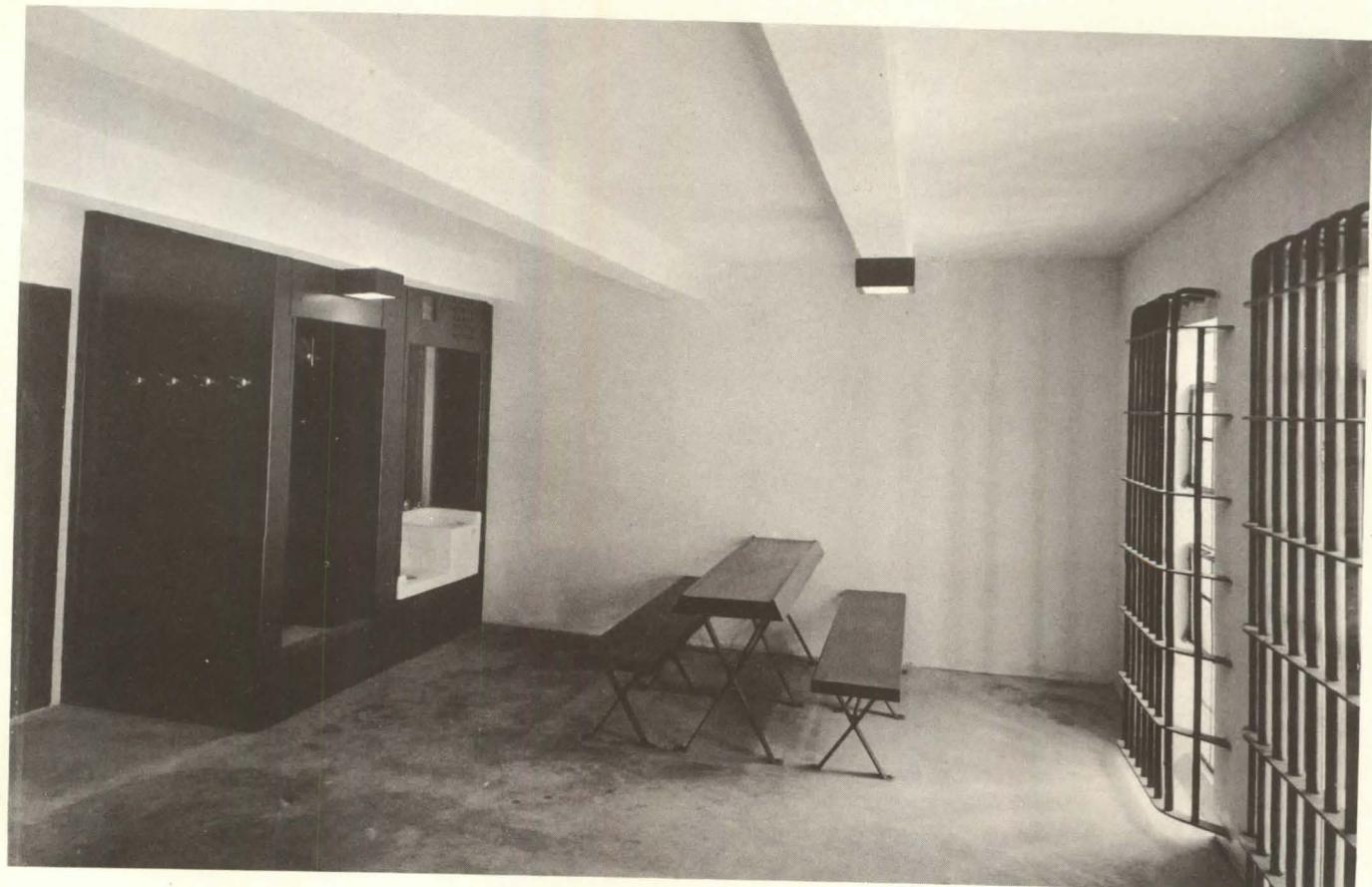
PRISONS AND JAILS

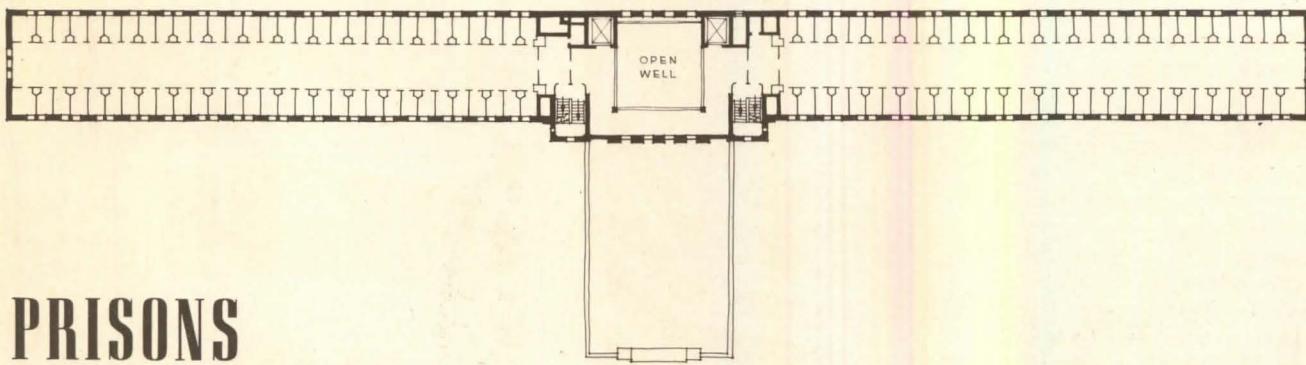
EDWARD J. WOOD & SON, ASSOCIATES, ARCHITECTS: LEWIS COUNTY

JAIL, WESTON, W. VA. This new, two-story all-concrete jail replaces a stone and brick structure built in the 80's. All jail equipment, such as door bucks, window guards, and cell facilities, were built into the concrete as construction progressed. The usual barred-window look of a jail is missing, as restraining devices are mounted on inside walls. The jail is winter air-conditioned.



ABOVE AND BELOW: TYPICAL CELLS





PRISONS AND JAILS

ALBERT F. ROLLER & DODGE A. REIDY, ASSOCIATED ARCHITECTS: JAIL FOR THE CITY AND COUNTY OF SAN FRANCISCO, SAN FRANCISCO, CALIF.

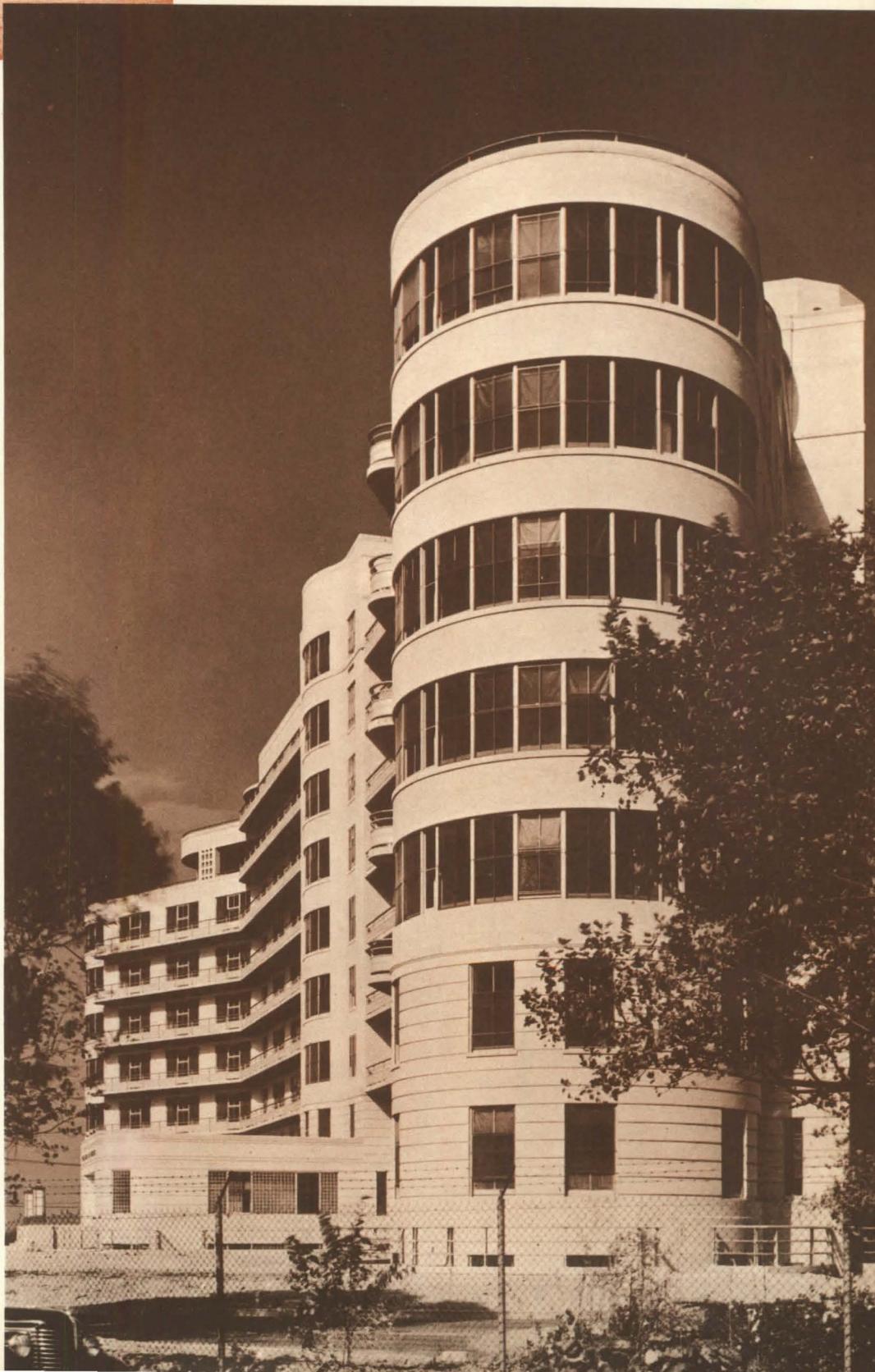
In line with modern theories of penology, this huge new jail is located on a large open tract that includes the prison farm. A long and narrow plan provides ample light and air in the six-story block. Administration offices are in a low extension at front of main block. The building is of concrete.

HOSPITALS AND CLINICS



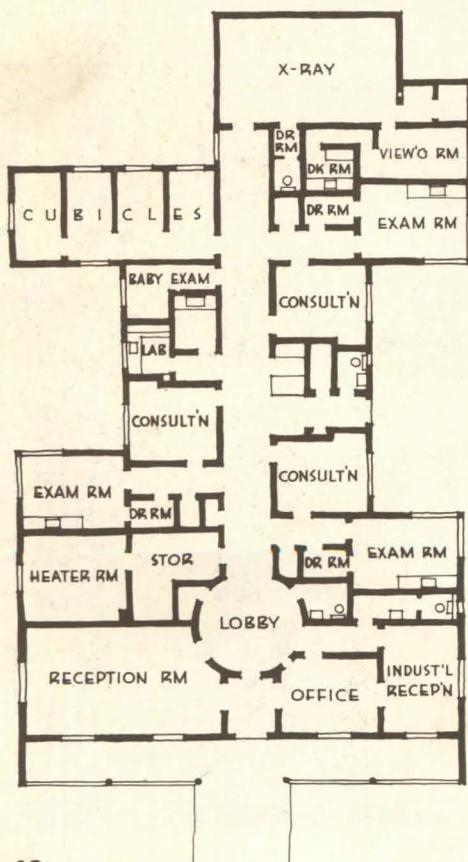
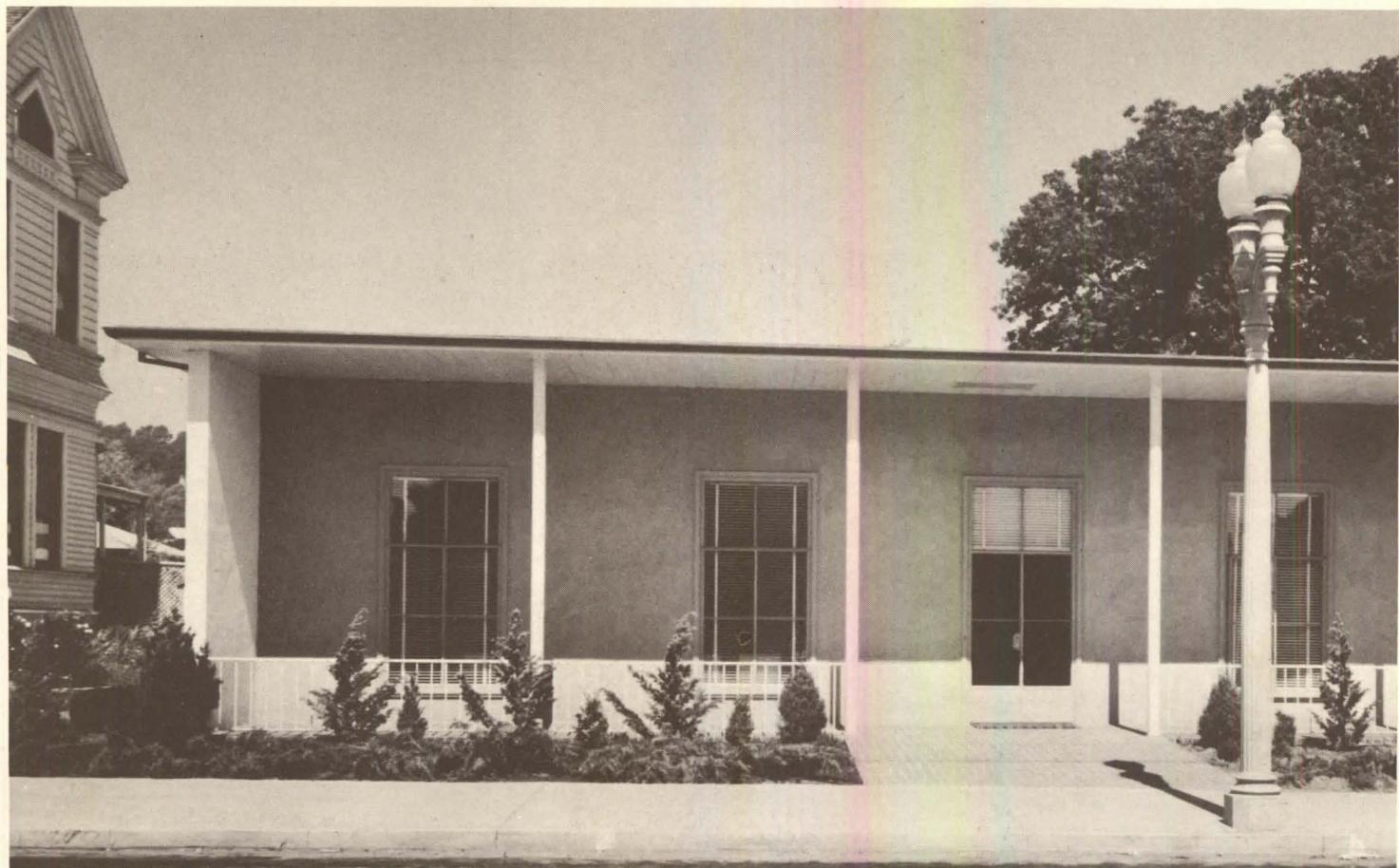
Cancer Hospital, New York City
Charles Coolidge Haight, Architect

1891-1941 "The fact that the hospital (above) was projected as a cancer hospital is responsible for much of the peculiarity of its design," comments the RECORD during its first decade of existence. Architecture, then as now, was keeping abreast of contemporary scientific progress, for the critic points out, in connection with the curved towers, that "corners, according to the experts, are the harbors of germs, and to abolish corners is the readiest way of making sure that walls can be made and kept 'surgically clean'." That the RECORD was aware of the danger of preoccupation with form is reflected in the same paragraph: "The resemblance to a French chateau . . . is by no means the selection of an ideally attractive architectural form. The practical problem simply works out so. The architect . . . seems to have taken pains to repel the suggestion that he was doing a chateau when he was really doing a modern hospital." As medical knowledge has increased, the need has grown for a wide variety of types of buildings to meet specialized requirements. These range all the way from a small neighborhood clinic to vast metropolitan medical centers.



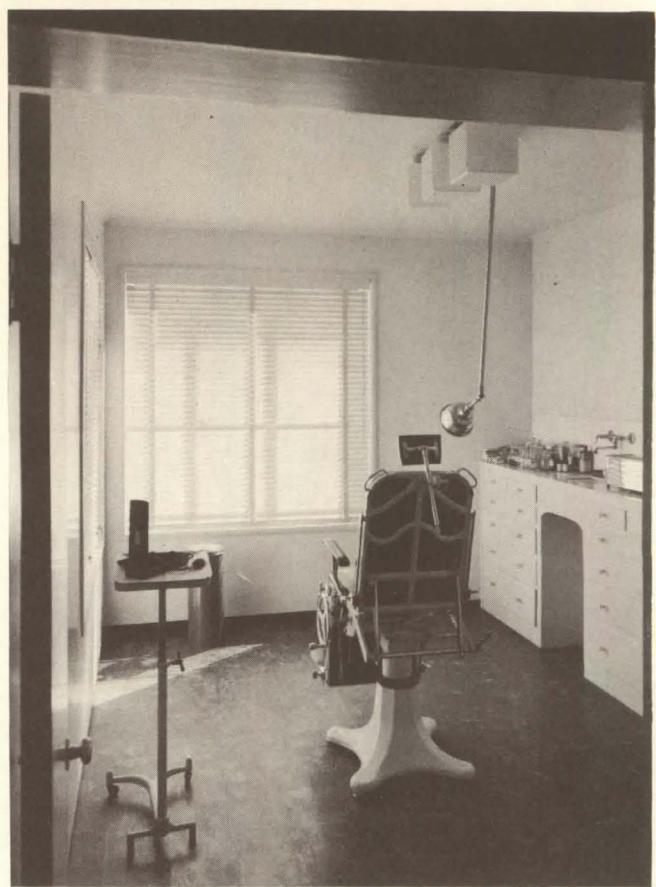
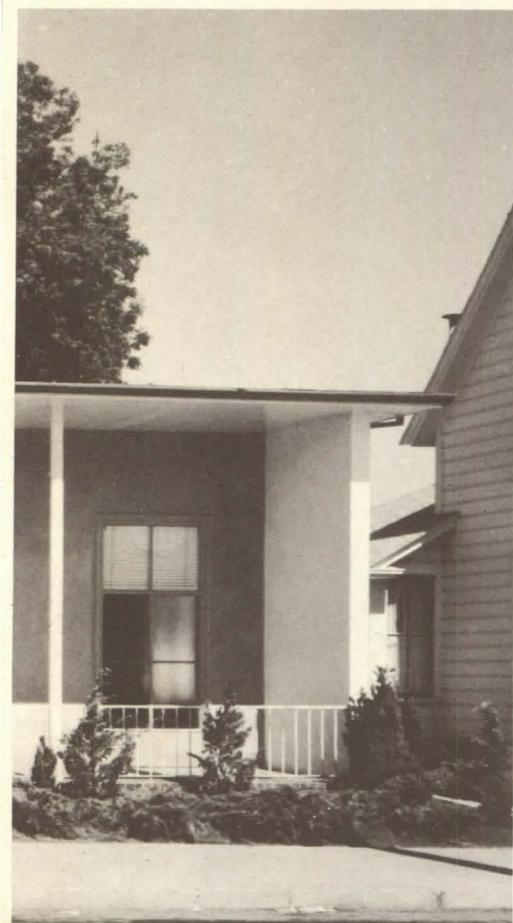
Eggers & Higgins, Architects:
Triboro Tuberculosis Hospital,
Jamaica, N. Y.

HOSPITALS AND CLINICS

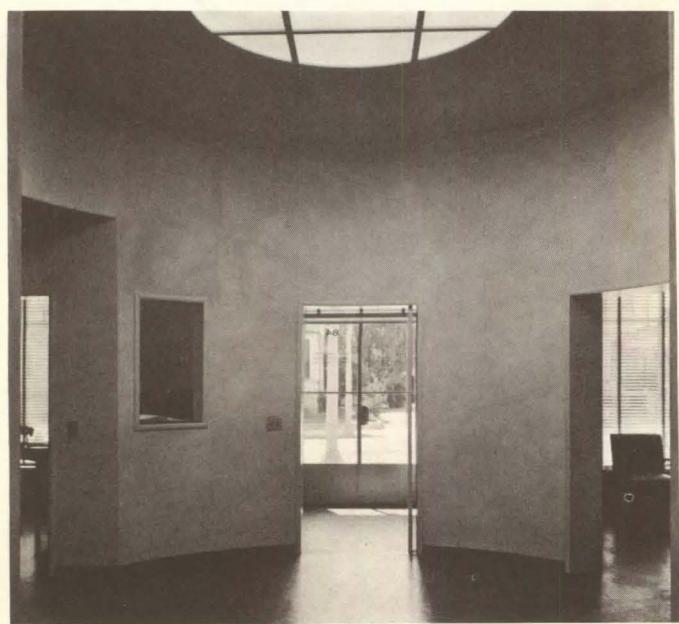


CLINIC

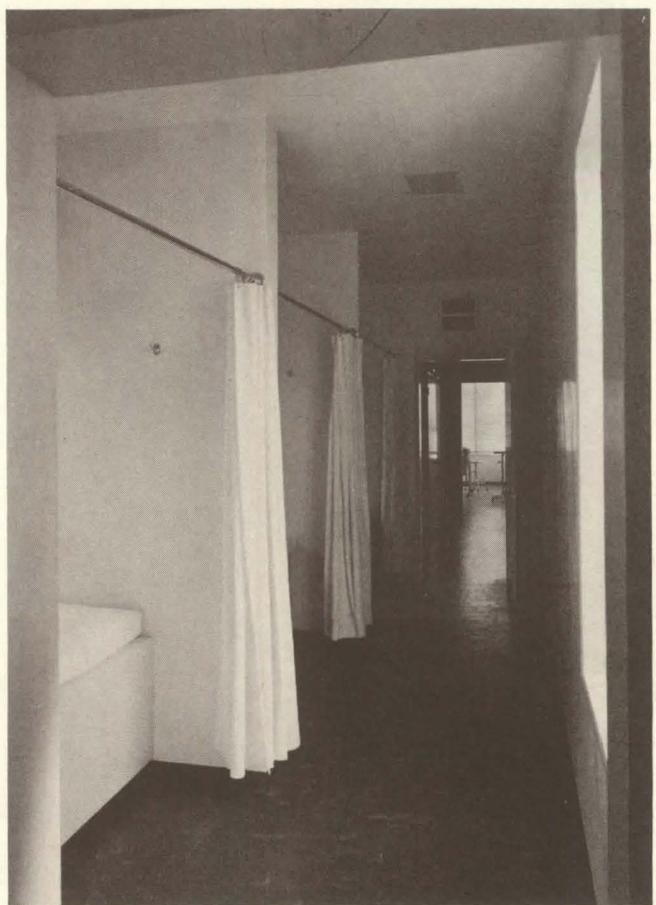
WILLIAM WILSON WURSTER, ARCHITECT: DOCTORS' OFFICE BUILDING, SANTA CRUZ, CALIF. Located in a built-up residential district, this professional building contains complete facilities for general medical practice. Examination and consultation rooms are ranged along the central corridor, with X-ray rooms located at the rear. From the circular lobby, complete control is exercised. Patients who must wait are directed to the generous reception room at the left; with the door between reception room and lobby closed, other patients may leave without observation. The modified H-plan of the building provides excellent light in all rooms. Both the main entrance and the direct entrance to the office area at the side are approached by brick ramps.



TYPICAL EXAMINATION ROOM



LOBBY



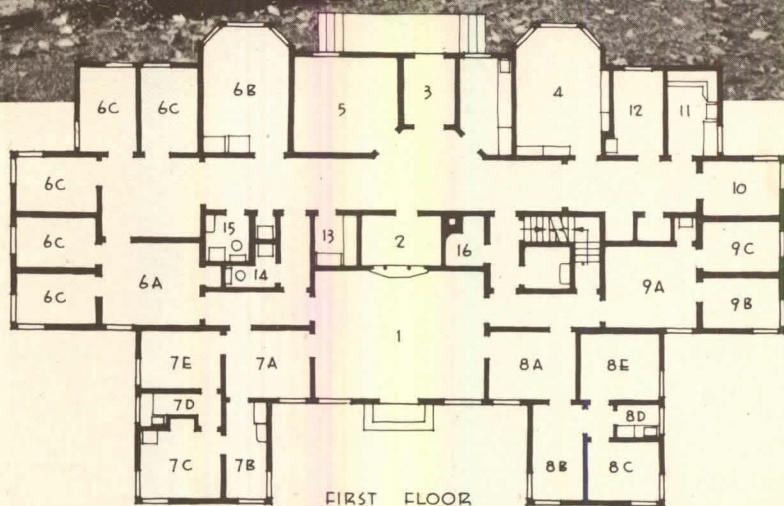
CUBICLE ROOM

CLINICS

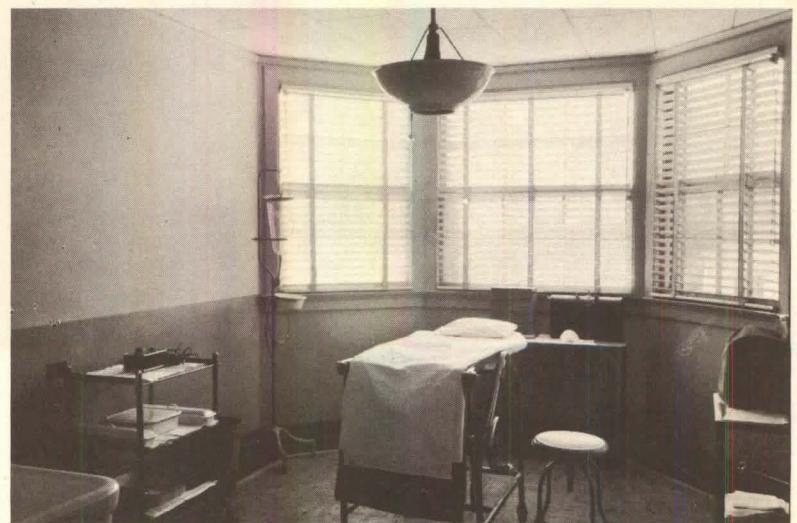


MAIN ENTRANCE

(1) General reception. (2) Clinic office. (3) Ambulance entrance. (4) Library. (5) X-ray. (6A) Surgeon's office. (6B) Operating. (6C) Surgical recovery. (7A) Dentist's waiting room. (7B) Office. (7C) Operating. (7D) Laboratory. (7E) Operating. (8A) Pediatrician's waiting room. (8B) Office. (8C) Treatment. (8D) Laboratory. (8E) Treatment. (9A) Eye, ear, nose specialist. (9B, 9C) Treatment. (10) Basal Metabolism. (11) Clinic laboratory. (12) Utility room. (13) Darkroom. (14) Men's toilet. (15) Staff toilet. (16) Women's toilet



LIBRARY



OPERATING ROOM



AMBULANCE ENTRANCE

WARFIELD & KEEBLE, ARCHITECTS: CLINIC FOR DR. C. M.

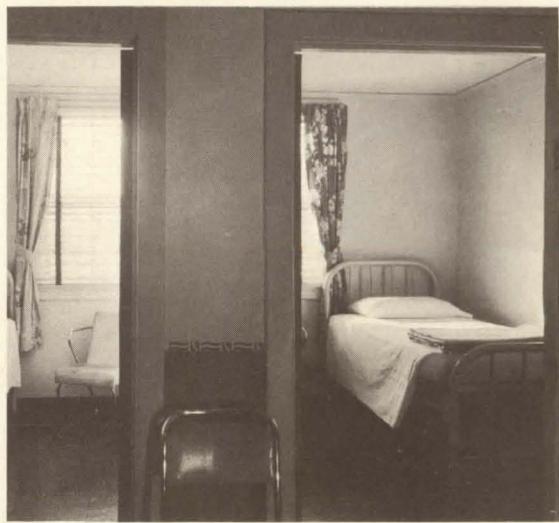
MILLER, NASHVILLE, TENN. This successful surgeon, finding that the number of his patients taxed his office space, analyzed their hospital and general treatment needs. He then presented his architects with a complete program of his requirements, describing the equipment for each room and outlining the requirements of operation of the building. The scheme called for a complete community medical center—in fact, for all services except extended hospitalization.

Isolated in four sections of the plan, but inter-communicating for consultation purposes, are the offices of: (1) surgeon; (2) dentist; (3) pediatrician; (4) eye, ear, nose, and throat specialist.

The office and general waiting room are so located as to serve all of these. There is a laboratory for general use and a library. Good light and ventilation and simplified circulation characterize the plan. Every effort has been made to accomplish the following: (1) convenience to patients, in having near at hand in their community all of the services generally needed for medical attention; (2) an efficient and economical layout eliminating duplication of effort as regards operating personnel; (3) pleasant surroundings for patients, their friends, and for the doctors; (4) provision of facilities for attending the greatest possible number of patients quietly, efficiently, and without strain.



X-RAY ROOM

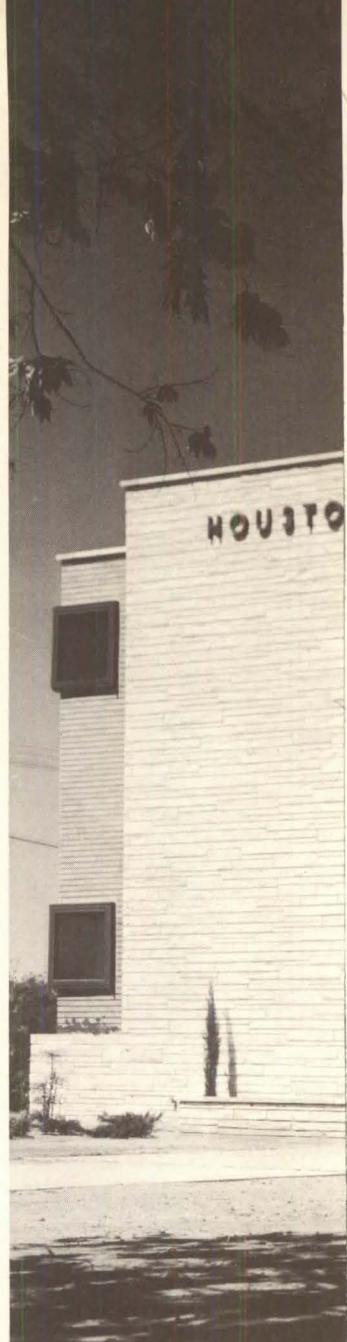
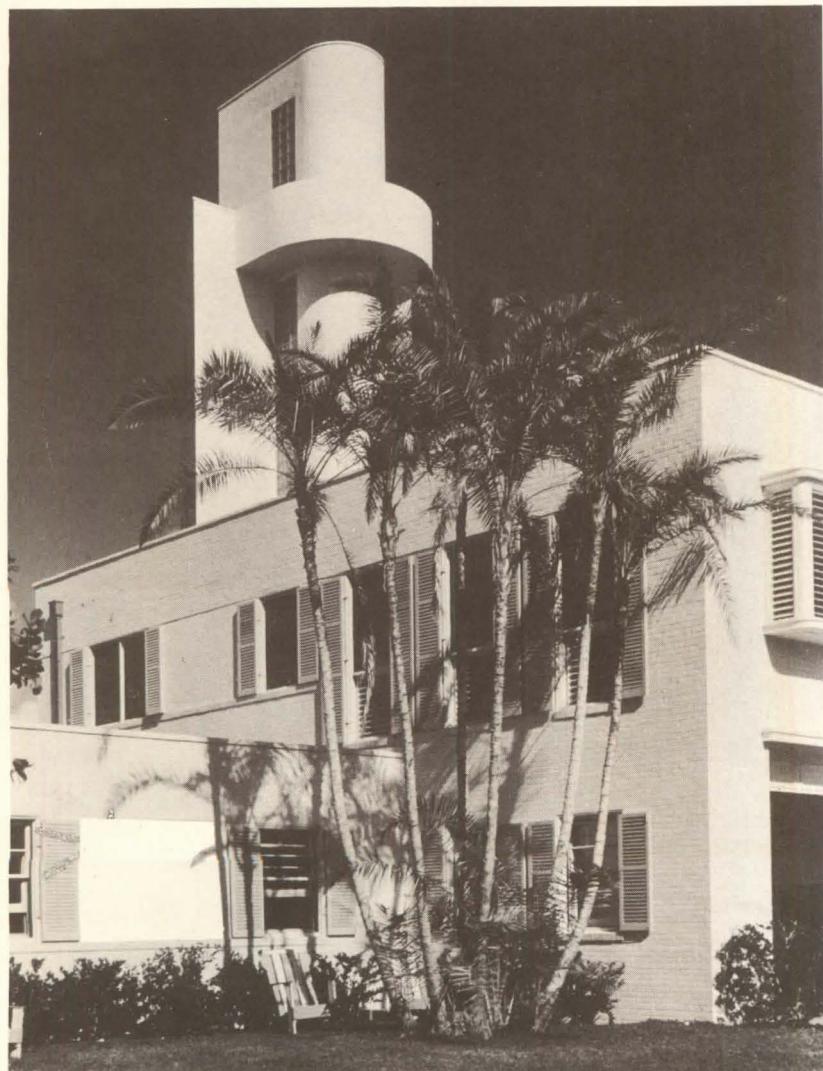


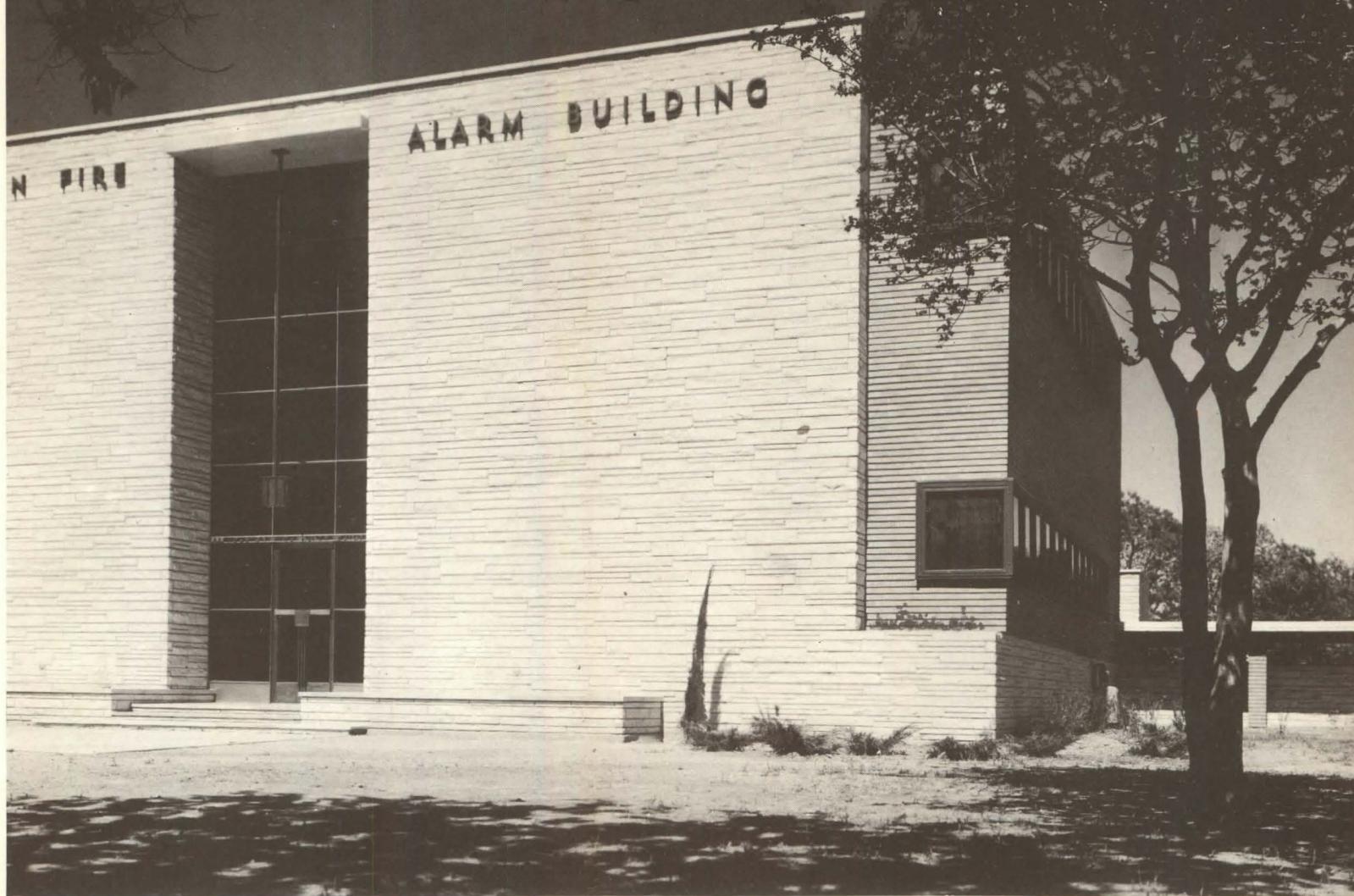
RECOVERY ROOMS

THE FIRE DEPARTMENT

1891-1941 Fire-fighting equipment has always been an important aspect of any American town or city. But the problem of housing it was either considered too simple, or the solution too poor, to merit more than a passing glance from the early RECORD. ("For the encouragement of taxpayers" was the cryptic caption on the structure shown below.) The typical fire station of the day bore a hose tower topped by bell or siren; and these elements were usually composed for architectural effect. But the desperate urgency of protecting civilian populations against fire has led to highly specialized fire-fighting techniques, employing the most advanced equipment, alarm systems, etc. This has made the task of designing fire-department buildings both more difficult and more dignified. Contemporary examples are shown herewith.

Weed & Reeder, Architects; Fire Station in Miami Beach, Fla.





Mackie & Kamrath, Architects:
Central Fire Alarm Building
(above) and repair shop (right)
for Houston, Texas.

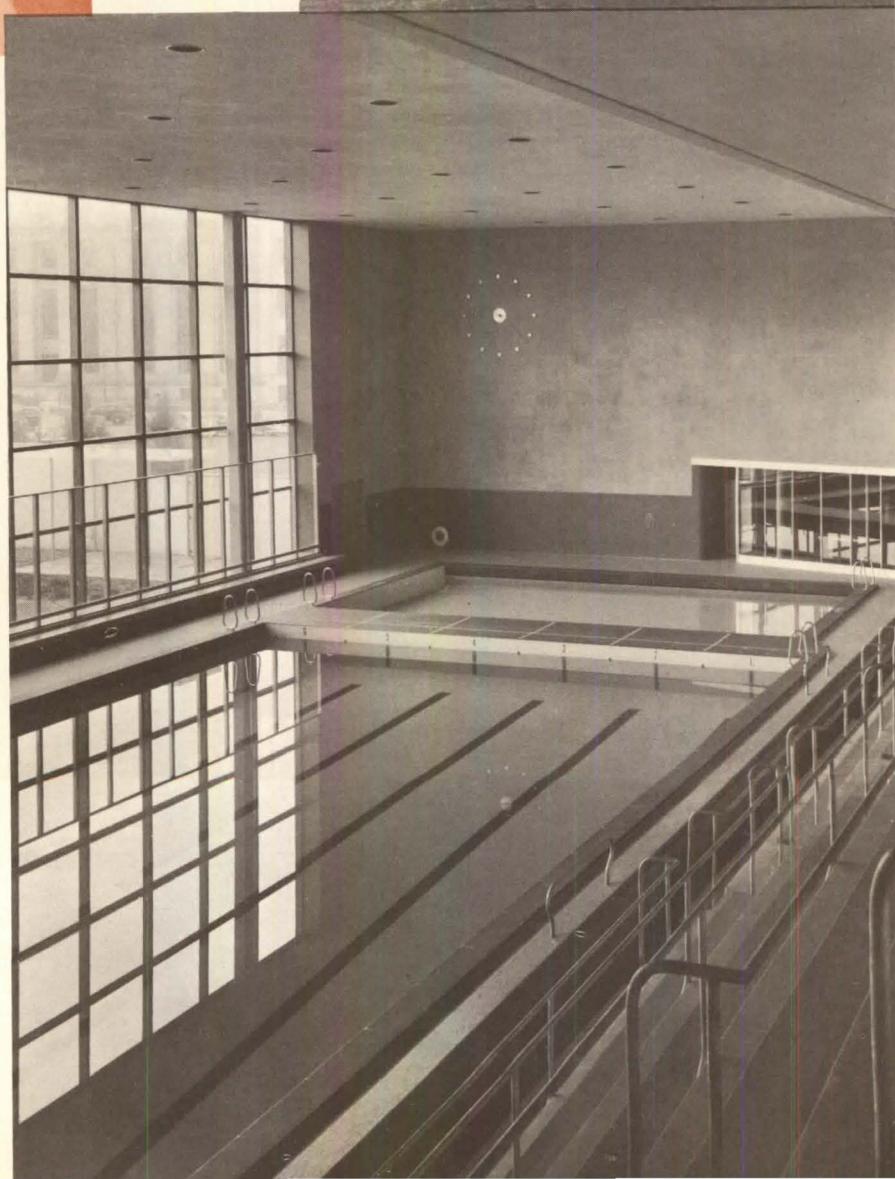


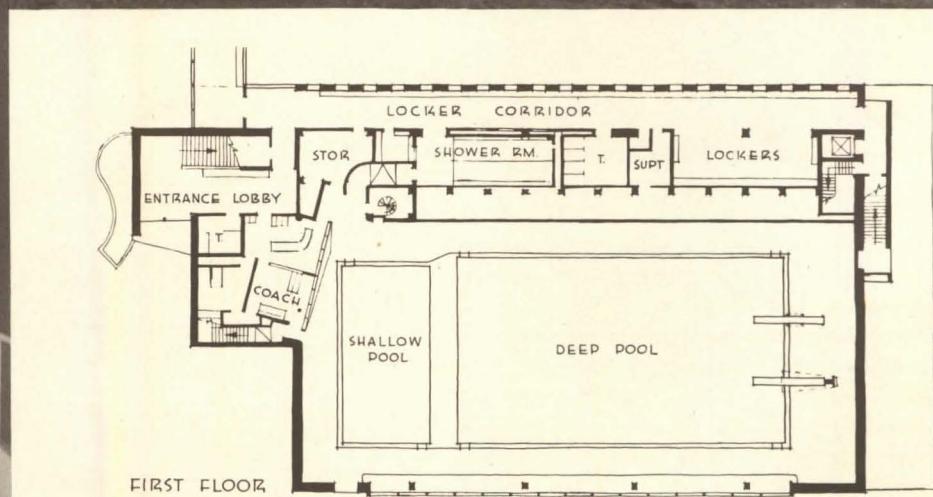
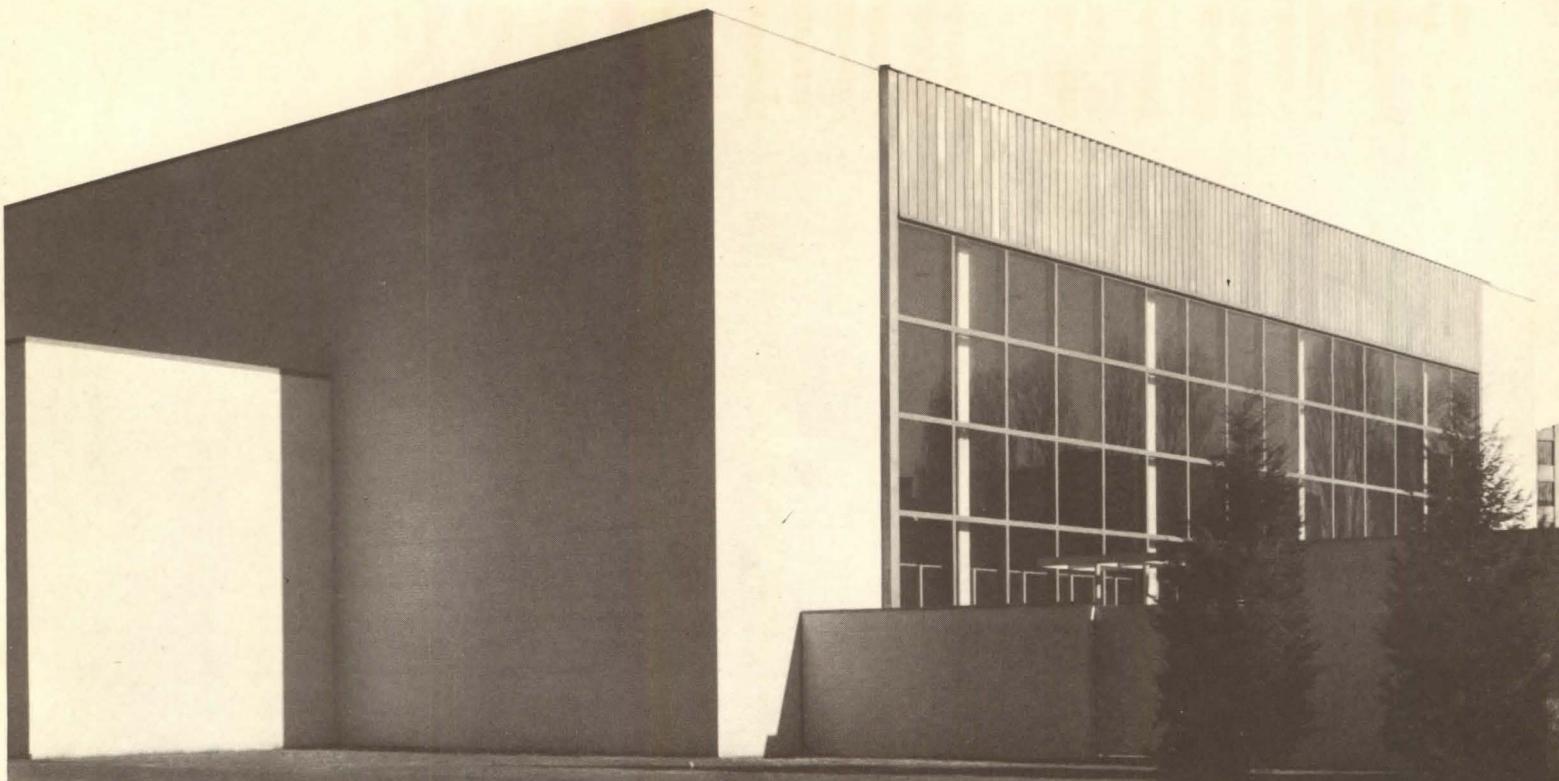
SPORTS BUILDINGS



Francis H. Kimball, Architect

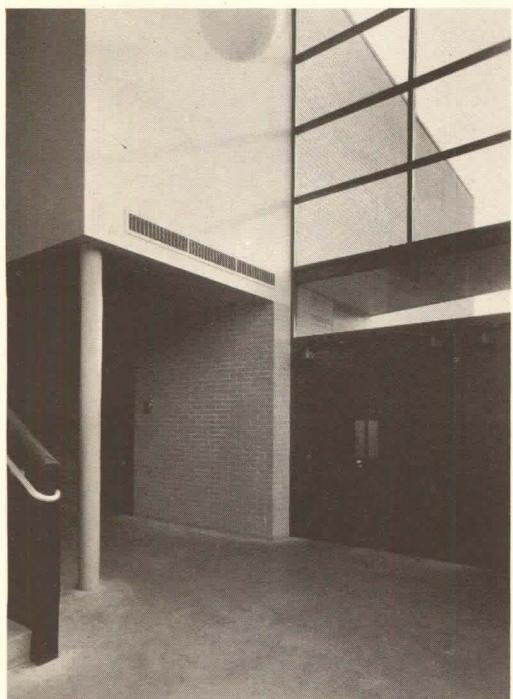
1891-1941 Criticizing the Manhattan Beach, N. Y., Amphitheatre (shown above), an early RECORD says: "Here is a building of no style which yet has style ... If one looks closely he may detect Gothicism in the decorative detail in wood with which as a fes-tal place it is properly provided... a piece of free architecture in which the picturesqueness of the result is not only appropriate and unforced, but proceeds from the special conditions of the prob-lem." Although elements of "picturesqueness" frequently cling to the design of present-day build-ings planned to house sport and recreational facilities, emphasis today is increasingly laid on specific planning for the functions of the building.



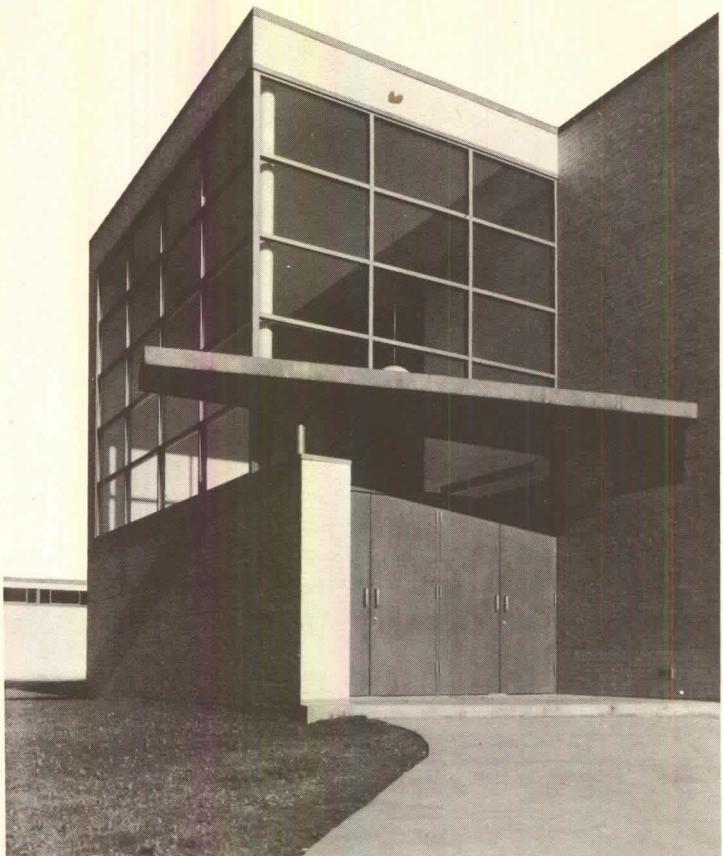


SWIMMING POOL

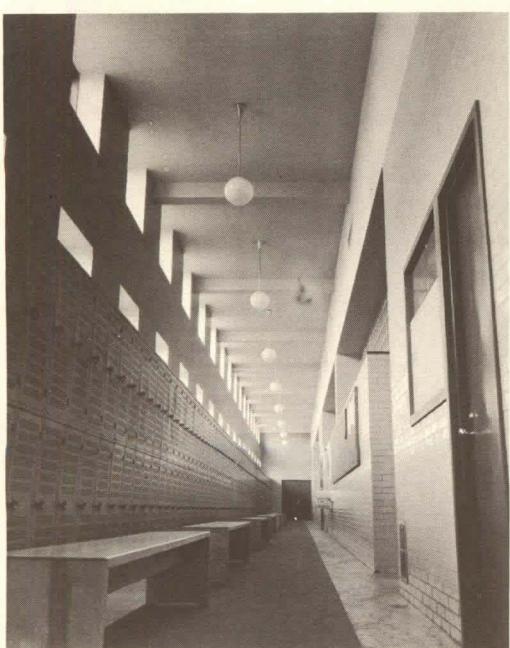
LAWRENCE B. ANDERSON & HERBERT L. BECKWITH, ARCHITECTS: ALUMNI SWIMMING POOL, MASSACHUSETTS INSTITUTE OF TECHNOLOGY, CAMBRIDGE, MASS. This new structure consists mainly of a 125-ft.-long room, in which are two pools—a standard intercollegiate six-lane pool 42 by 75 ft.; a shallow practice pool, 20 by 40 ft.—and a gallery seating 340. Shower and locker rooms and coaches' offices are also on this floor. On the second floor are dressing and shower rooms for women students. The building is so oriented and the huge window on the south so placed that, in winter, the entire pool surface is sunlit; in summer, sun strikes only the south deck. Sun-bath garden adjoins.



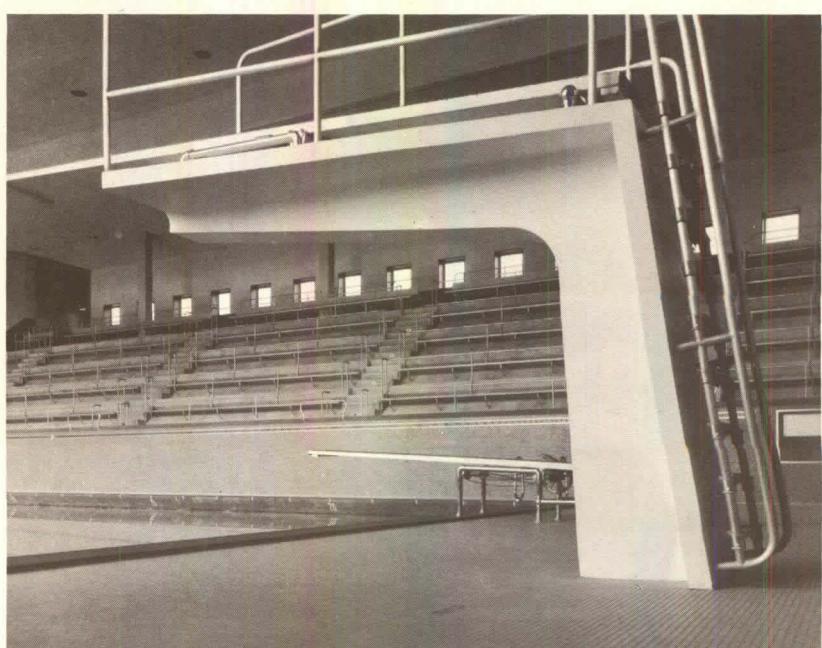
LOBBY: stairs to spectators' gallery at left.



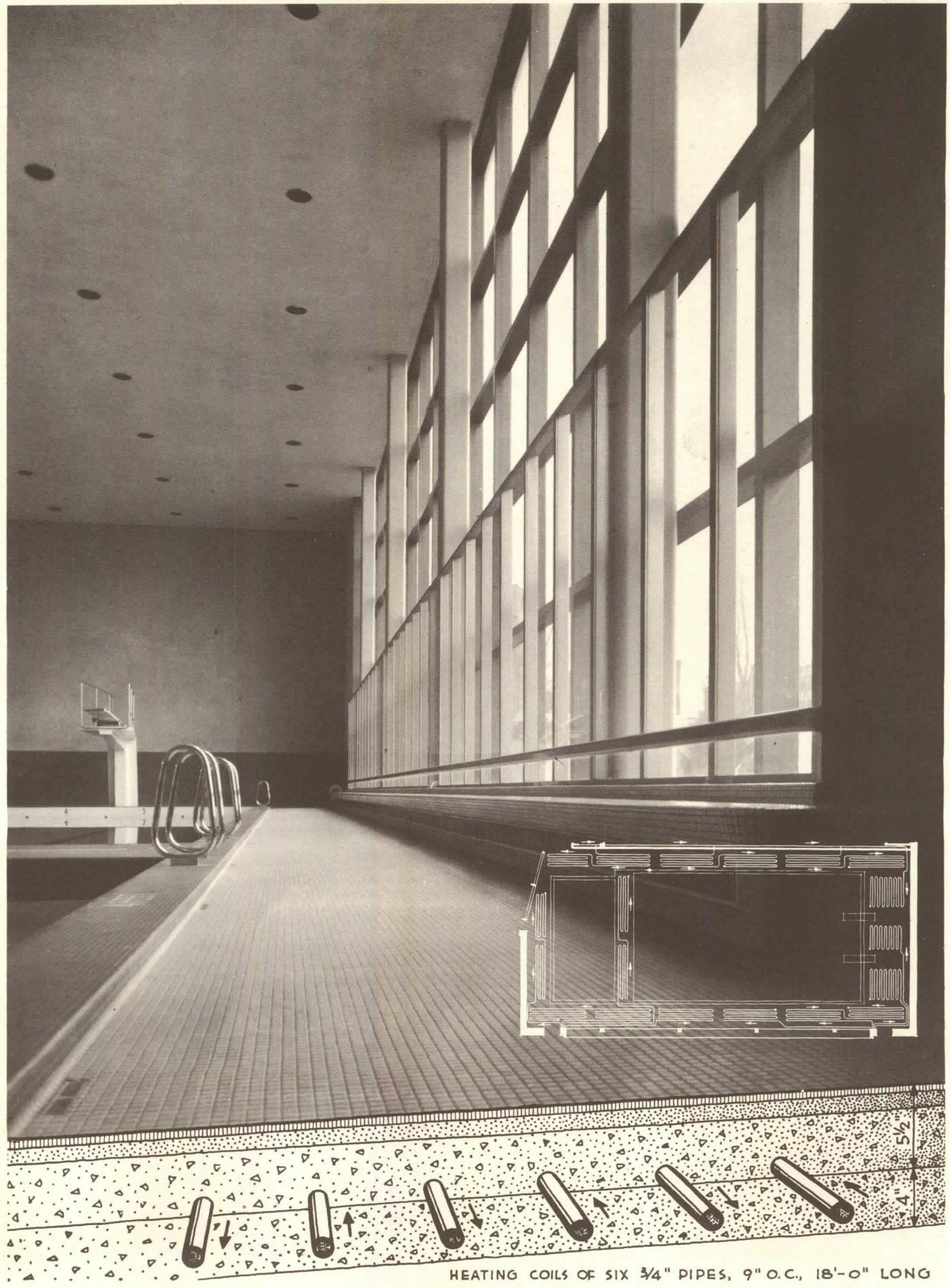
MAIN ENTRANCE



LOCKER-ROOM CORRIDOR



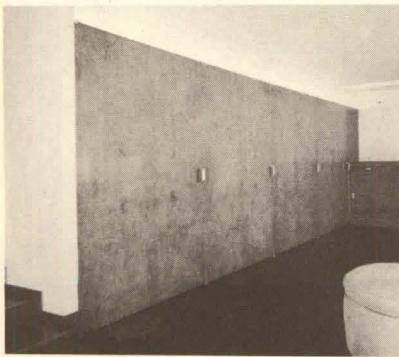
DIVING TOWER, 3 meters high; board, 1 meter high



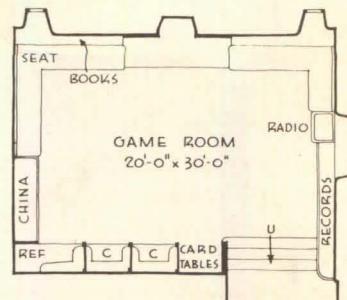


G. A. DAILEY, ARCHITECT: LINCOLN PARK GOLF CLUBHOUSE, SAN FRANCISCO, CALIF. A PWA project built in 1938 from plans that were prepared in 1933; building serves as municipal golf clubhouse during day and as community clubhouse at night.

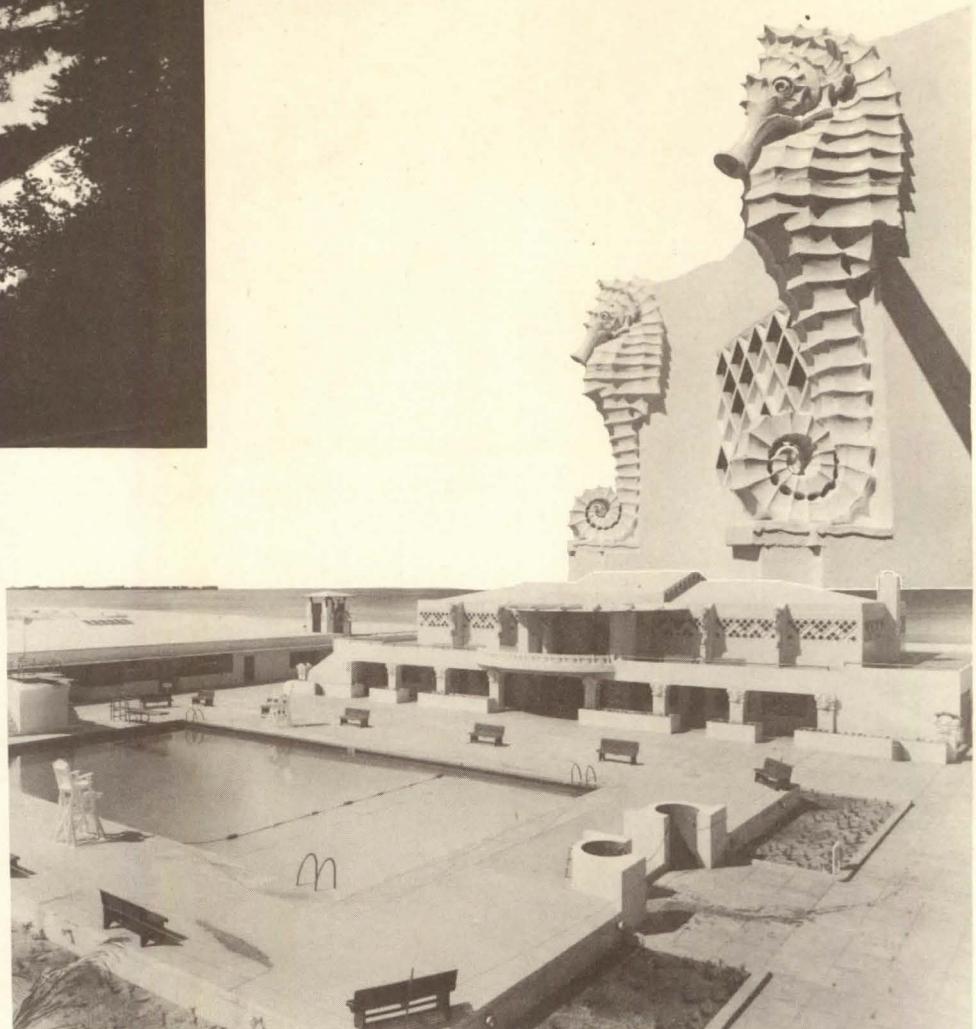
WILLIAM MOOSER, ARCHITECT: AQUATIC PARK, SAN FRANCISCO, CALIF. Situated on the shore of San Francisco Bay, the building provides facilities for entertaining, dancing, and eating as well as lockers and showers.



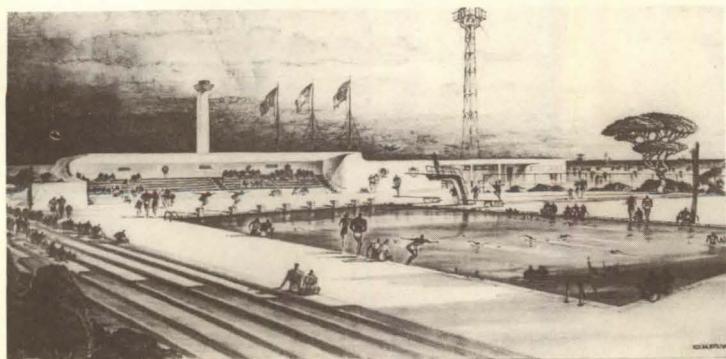
KENNETH DAY, ARCHITECT: BASEMENT GAME ROOM IN RESIDENCE OF MR. & MRS. CHARLES BERWIND, LEOPARD, PA. Instead of the formal parlor of the 1890's, today's house frequently has a recreation or game room, usually located in the basement. The remodeled basement shown here has built-in seats, and plenty of closets for storage of game equipment. Cabinet work is burl redwood. Ceiling is acoustically treated.



SPORTS BUILDINGS



RALPH S. TWITCHELL, ARCHITECT, GEORGE FULTON, JR., ASSOCIATE: SARASOTA LIDO, SARASOTA, FLA. This municipal beach development includes a swimming pool; restaurant with several dining rooms; lounge and dance floor; cabanas, locker rooms, and shower-bath facilities.

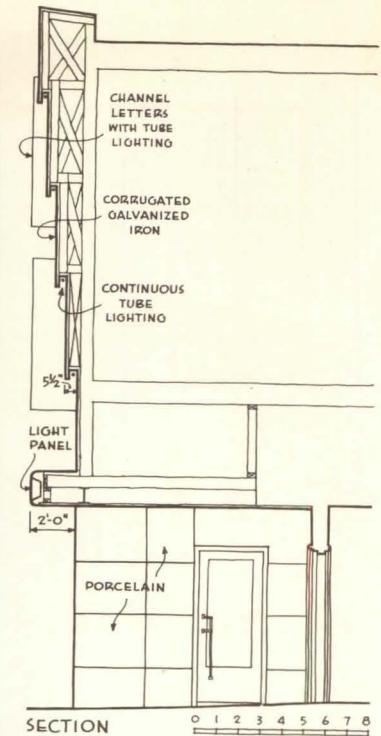


PAYNE & KEEFE, ARCHITECTS AND ENGINEERS: OCEAN BEACH PARK, NEW LONDON, CONN. Replacing the beach development which was destroyed in the 1938 hurricane, Ocean Beach Park is a municipally financed, municipally operated project.





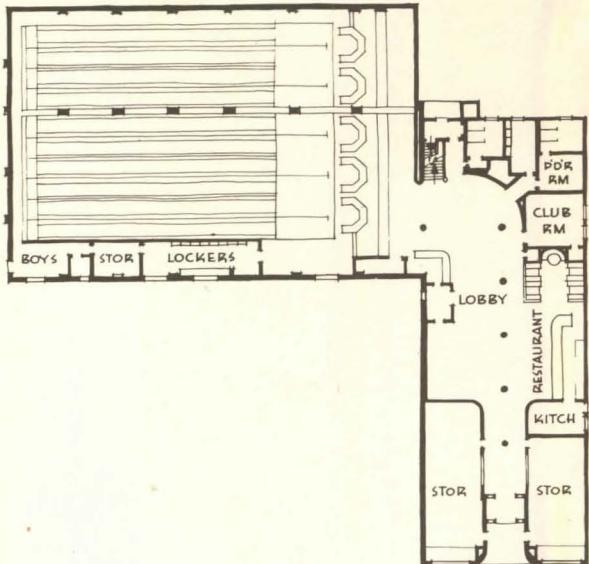
AFTER REMODELING



BEFORE MODERNIZATION



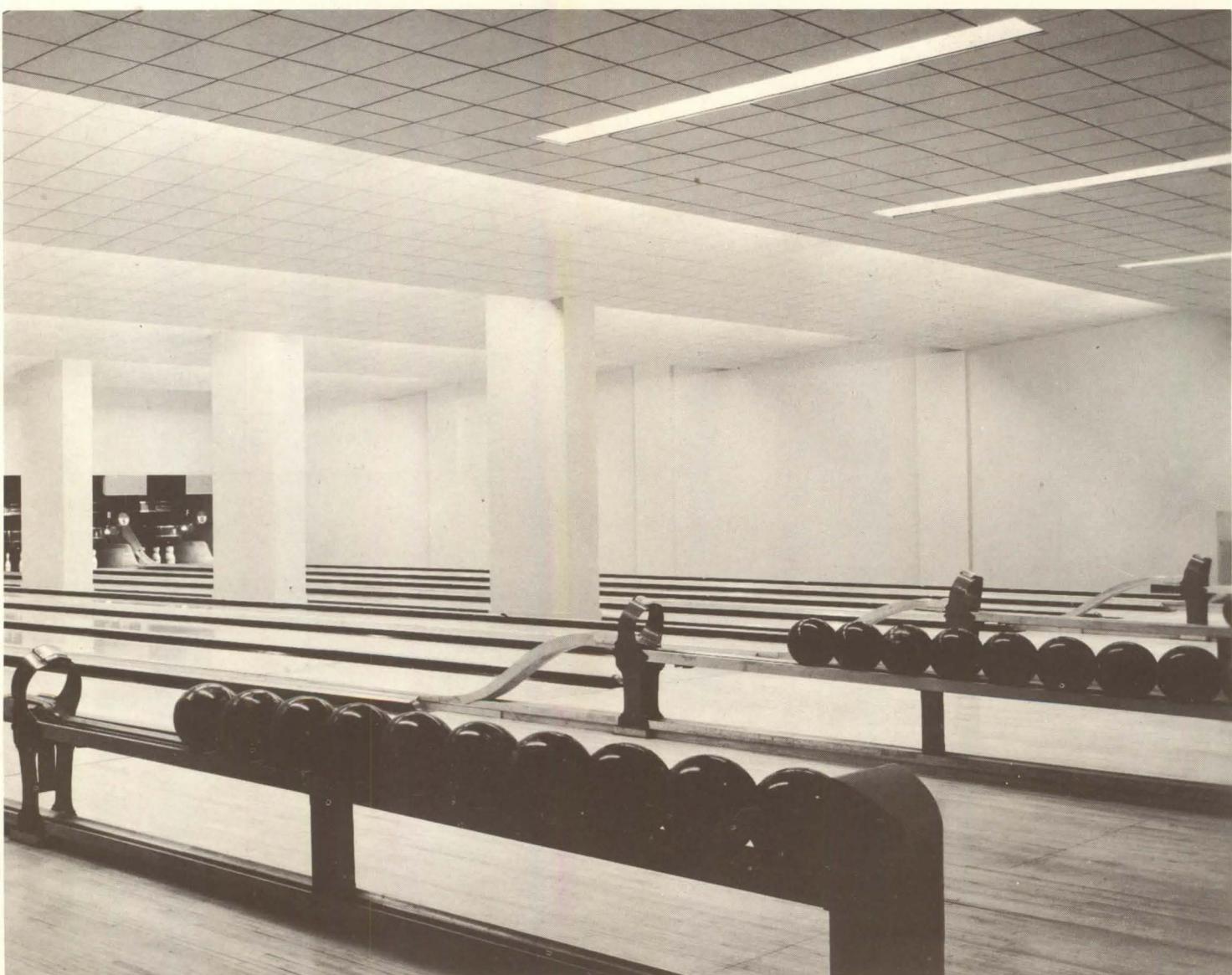
SPORTS BUILDINGS



BOWLING ALLEYS (photographed without floods or flashes)

BOWLING ALLEY

HAROLD SPITZNAGEL, ARCHITECT: REMODELED RECREATION CENTER, SIOUX FALLS, S. D. Conversion of two decrepit old structures into this modern bowling alley at minimum cost has "doubled and, in some cases, tripled" the estimated revenue of the owners. The remodeled street front — with two small shops flanking the entrance — serves as a huge sign and uses porcelain-enamaled and corrugated sheet iron in a novel and economic fashion (left). A saw-tooth acoustical ceiling floodlights the alleys while concealing light source from players and spectators (below). Seating for teams is grouped and separated from spectators' gallery (see next page). A small restaurant and toilet facilities complete the layout. Interior colors are yellows, blues, terra cotta, and chocolate. Walls are plaster; ceilings, acoustic tile; floors, asphalt tile on reinforced magnesite fill, laid over wood.



HAROLD SPITZNAGEL, ARCHITECT (continued)



RESTAURANT (walls in natural finish fir)



PLAYERS' BENCHES AND SPECTATORS' GALLERY

CHURCHES



St. Agnes Chapel, New York City
William A. Potter, Architect

1891-1941 Whether or not the church was, in the early years of the RECORD'S existence, statistically and architecturally one of the most important building types, the magazine gave it more than adequate attention. Writing on the general preference for stylistic revival, Montgomery Schuyler in 1891 commented: ". . . there is less than no reason why the modern architect should revert to the solecisms which his predecessors removed, or even to those which some of his predecessors retained." It is interesting to observe how contemporary this commentary appears today.



Henry Carlton Newton, Architect;
J. Earl Trudeau, Associate: All
Souls Church, Alhambra, Calif.



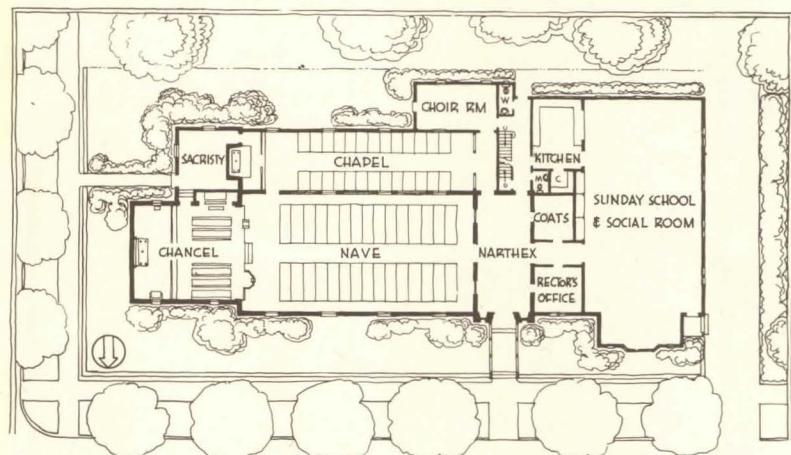
*CRAM AND FERGUSON, ARCHITECTS: THE CONVENTUAL CHURCH OF ST. MARY AND ST. JOHN, CAMBRIDGE, MASS. A new chapel attached to the mother house of the Society of Saint John the Evangelist, for convent use only. It is in no sense a parish church.

**To be treated more extensively in a later issue.*

CHURCHES

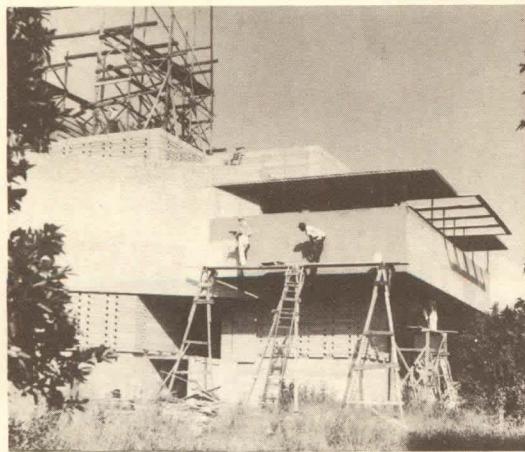
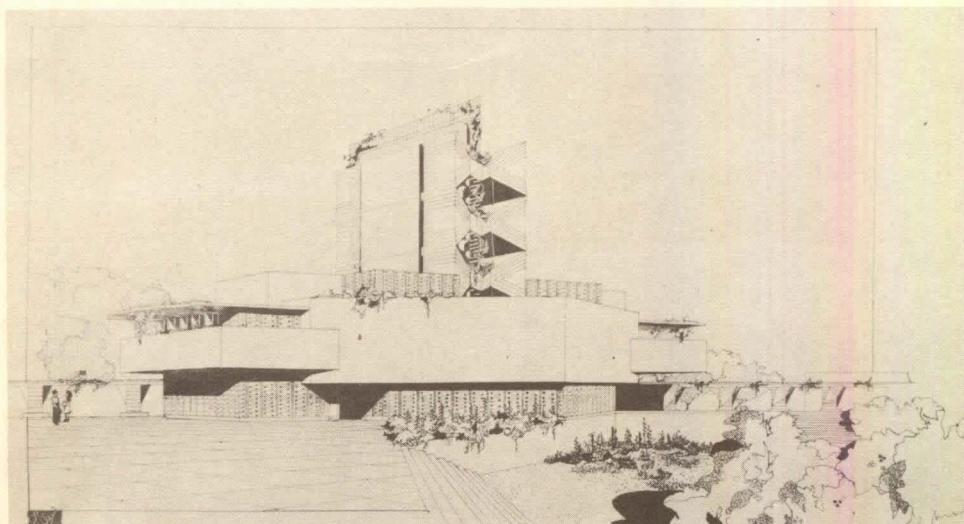
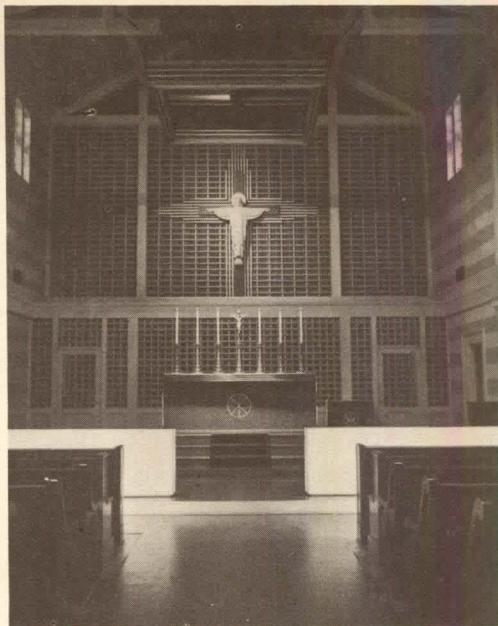


SUTTON, WHITNEY & AANDAHL, ARCHITECTS: ST. MARY'S EPISCOPAL CHURCH, EUGENE, ORE. This church is planned to accommodate a small congregation in the main auditorium, or a large one (300 persons) on special occasions by lowering the wood panels between auditorium and the chapel and narthex. Exploded mica in the plaster on ceiling and walls provides the necessary acoustical treatment. In addition glass-block windows admit light but minimize the amount of outside noise which enters the auditorium. The glass block was also used in the lantern.



CHURCHES

FRANCIS B. JACOBBERGER, ARCHITECT: CHURCH OF ST. FRANCIS OF ASSISI, PORTLAND, ORE. An alteration job in which extensive use was made of local woods. Choir and organ, according to the new plan, are directly behind the main altar. The choir screen is of Douglas fir, treated with wiped lead and oil stain. The altar and sanctuary furniture are of walnut; pews are of oak.



FRANK LLOYD WRIGHT, ARCHITECT: CHAPEL FOR FLORIDA SOUTHERN COLLEGE, LAKELAND, FLA. This chapel—the first example of Mr. Wright's work in the state of Florida—is the nucleus of a group of buildings for the college which are to be built from plans and designs by Mr. Wright. The design is characteristically individual. Unusual is the exterior wall texture which derives from repetition of specially designed precast units.



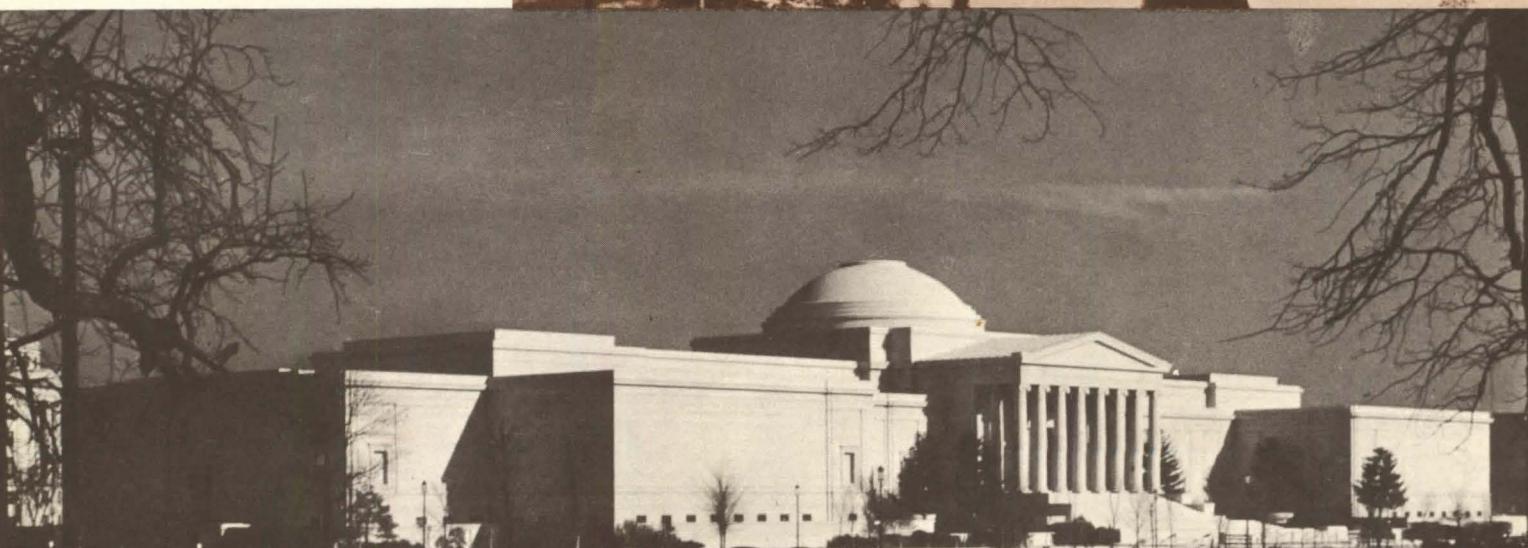
MUSEUMS

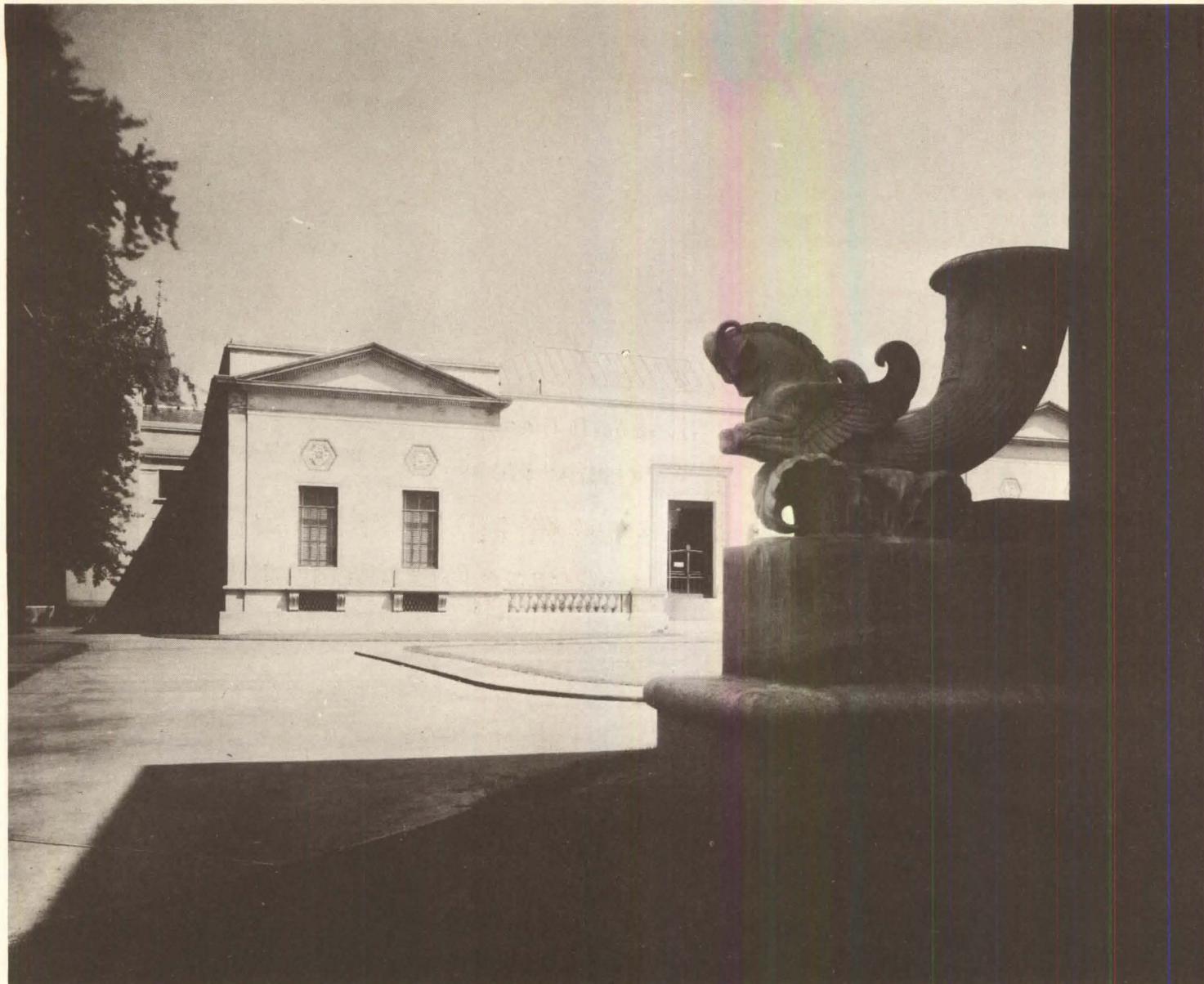
Philip L. Goodwin and Edward D. Stone, Architects: Museum of Modern Art, New York City.

1891-1941 Of the Museum of Natural History

(above), whose central portion was a new building at about the turn of the century, a RECORD critic said: "It will be, when completed, probably the longest front on Manhattan Island, and an important requisite of the design was to get the full benefit of this lateral extension. Such an extent is so valuable in itself that it behooves a designer to be especially careful, lest in variegating and decorating it to avoid monotony he dissipate some part of its inherent effect." Today's criticism of a new museum would undoubtably focus less on the "variegating and decorating" of the exterior, or its "extent" than on its performance of the specific functions for which it was designed.

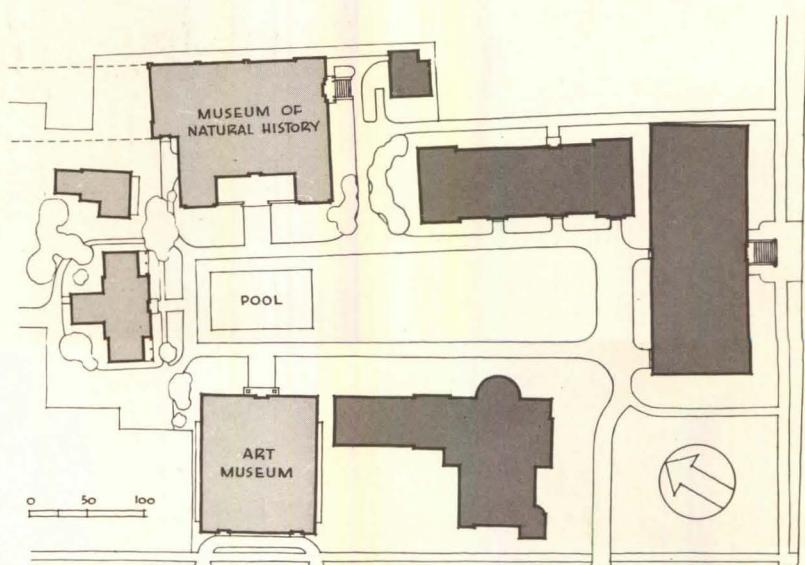
John Russell Pope, Otto R. Eggers, Daniel Paul Higgins, Architects: The National Gallery of Art, Washington, D. C.





MUSEUM OF NATURAL HISTORY

MUSEUMS



EDWARD L. TILTON & ALFRED MORTON GITHENS, ARCHITECTS: SPRINGFIELD MUSEUM OF FINE ARTS AND ADDITION TO THE MUSEUM OF NATURAL HISTORY, SPRINGFIELD, MASS. These two museums, planned as a unit, face each other across a landscaped area of an inner block. The rear half of the natural history museum already existed; the new construction consisted of the U-shape portion fronting on the pool. On the ground floor are a large entrance gallery for habitat groups and mounted specimens, two other galleries, a workroom, and office. Three large galleries make up the second floor of the addition. The Arts Museum has three working floors. In the basement, besides service and storage rooms, vaults, and a carpenter shop, there is a lecture hall, a photograph library, and a workroom. On the ground floor are offices, workrooms, galleries for etchings and engravings, and the museum library. Rimming the second floor are eight small galleries; a painting storage room is located at the rear.



MUSEUM OF FINE ARTS



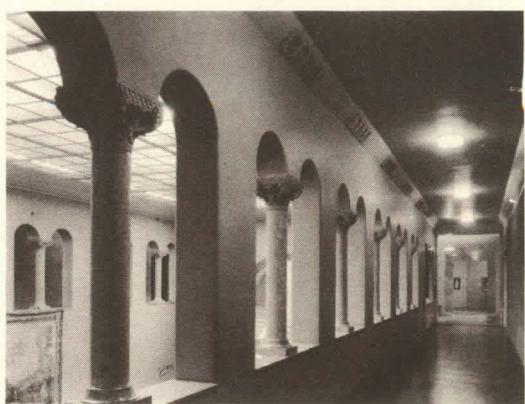
HABITAT GROUPS, NATURAL HISTORY MUSEUM



LIBRARY ART MUSEUM

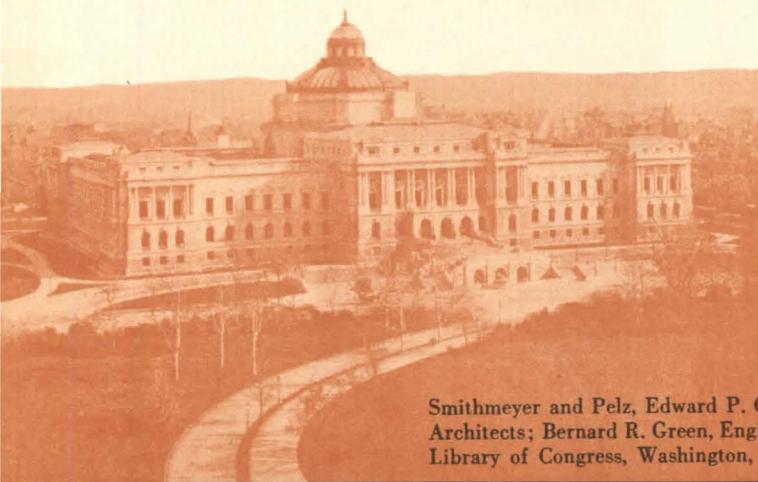


SOUTH EXHIBIT GALLERY, ART MUSEUM

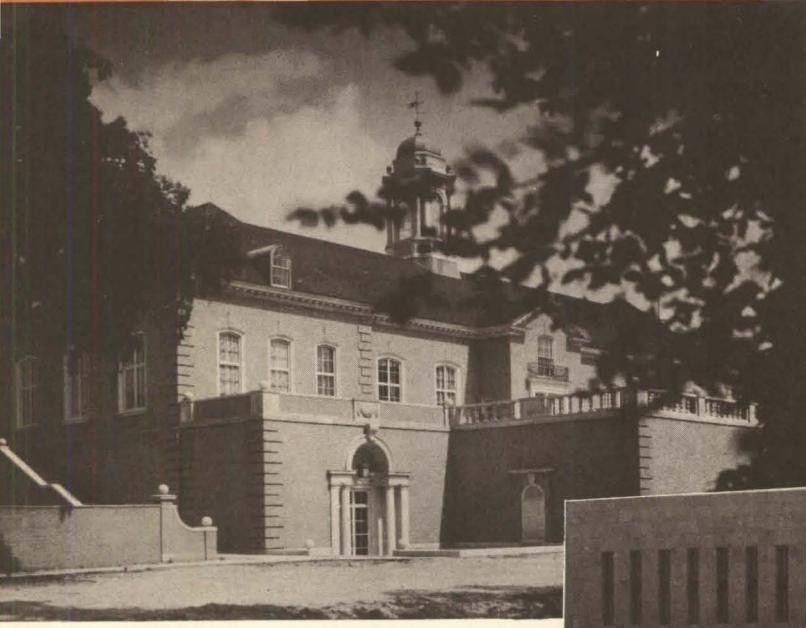


SECOND FLOOR CORRIDOR, ART MUSEUM

LIBRARIES



Smithmeyer and Pelz, Edward P. Casey, Architects; Bernard R. Green, Engineer: Library of Congress, Washington, D. C.

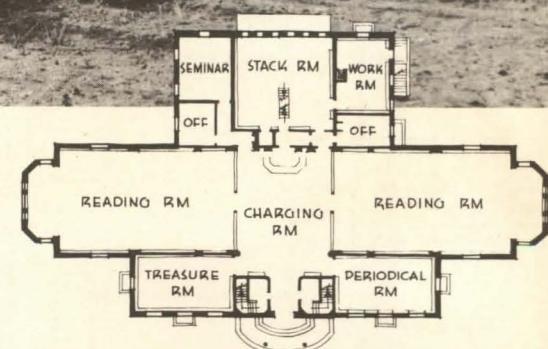


Carl C. Ade, Architect: David A. Howe
Public Library, Wellsville, New York.

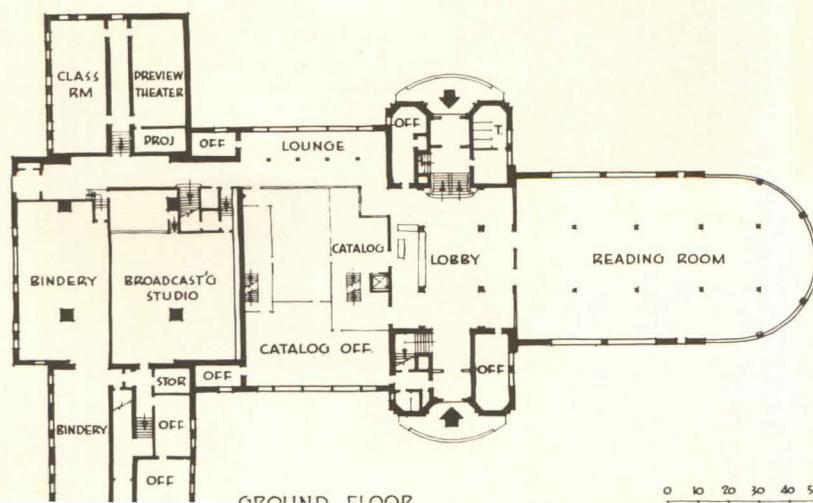
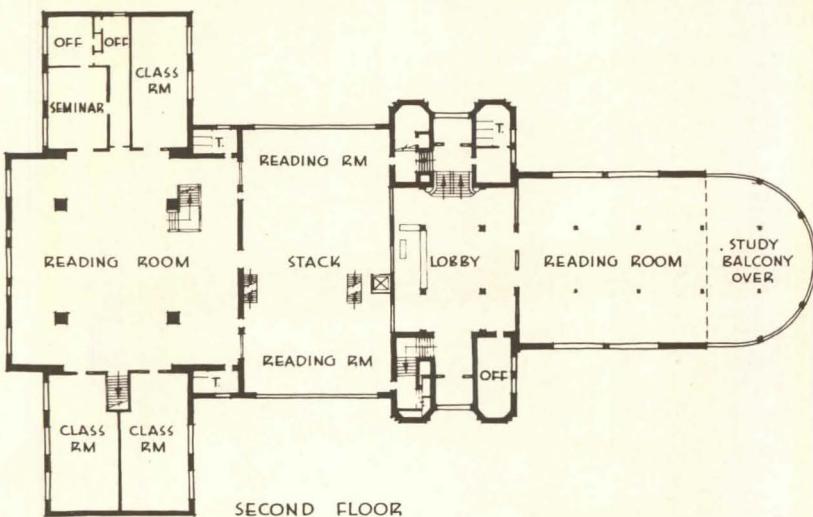


David Lynn, Architect for the Capitol; Pierson & Wilson, Architects; Alexander G. Trowbridge, Consulting Architect: Annex of the Library of Congress, Washington, D. C.

1891-1941 "Month after month," said the RECORD in 1897 of the just completed Congressional Library, "this absolutely naked building, without even a seat in it, except in the rotunda, and without a table, a bookcase, a single book, or portable work of art on exhibition, has drawn visitors in crowds . . . The interest which these crowds take in the decoration, their long study of the details and the evident enjoyment . . . is inspiring to any person who hopes for the growth of a living interest in fine art." Of the plan this same writer, in a too optimistic prediction, says: "It is evident that there is vastly more room in these halls than is likely to be required." Less than 40 years later, it was evident that more space was required; from this need resulted the new annex (shown below).



A. E. Doyle & Associate, Architects: Willamette University Library, Salem, Ore.



F. W. IRELAND, JR., ARCHITECT: LIBRARY FOR COLORADO STATE COLLEGE OF EDUCATION, GREELEY, COLO. One of the basic needs of a library building is ample light. In this new library the problem has been solved by using large areas of plate glass and glass block in all reading rooms. These glazed areas admit enough daylight to reach the centrally located stacks. The stacks are reached from five floor levels. Stack shelves, of steel, hang from the ceiling, and do not touch the floor. The roof is constructed so as to carry 2 ft. of water as insulation against intense summer heat; in addition the building has a ventilation system.

LIBRARIES



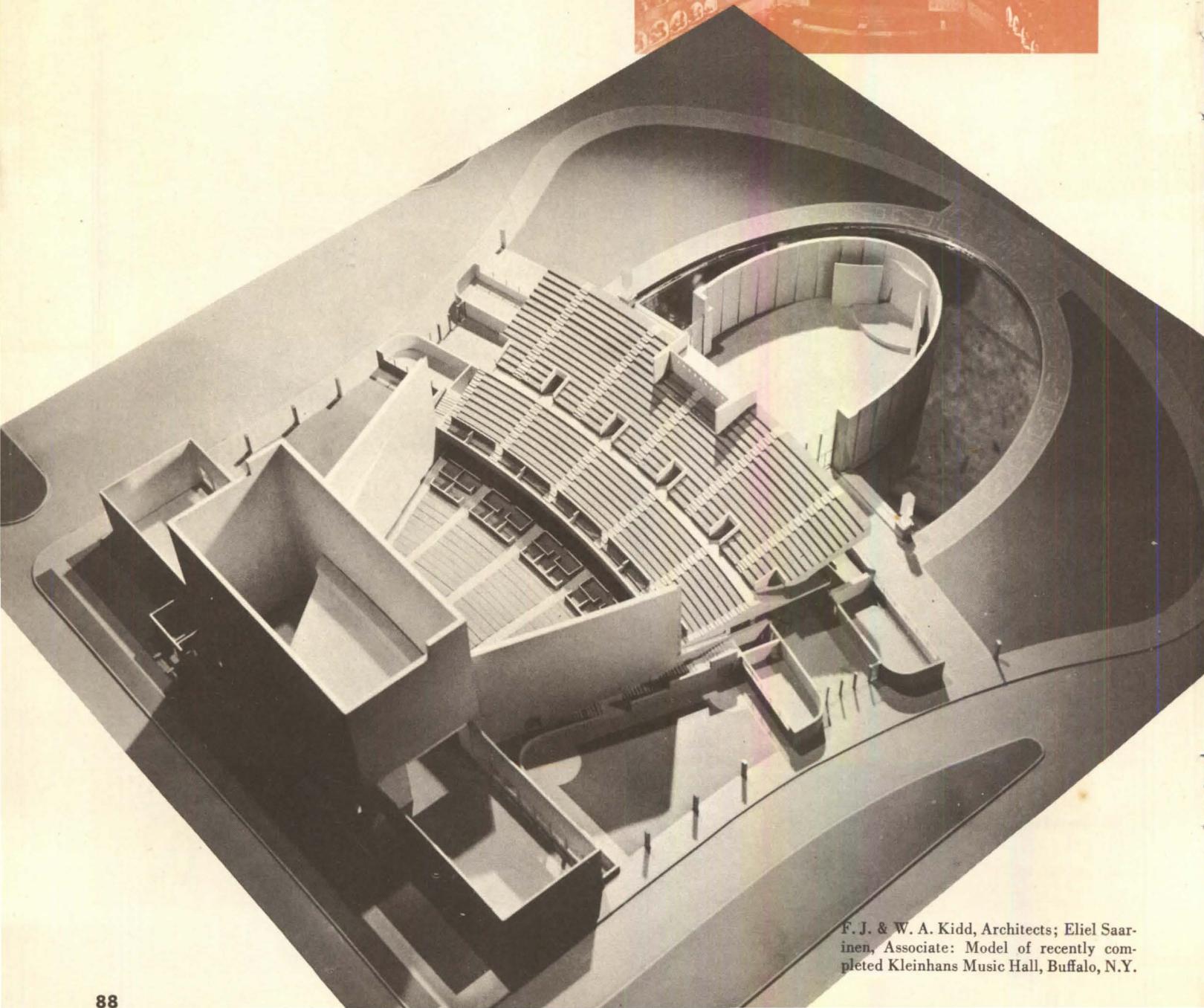
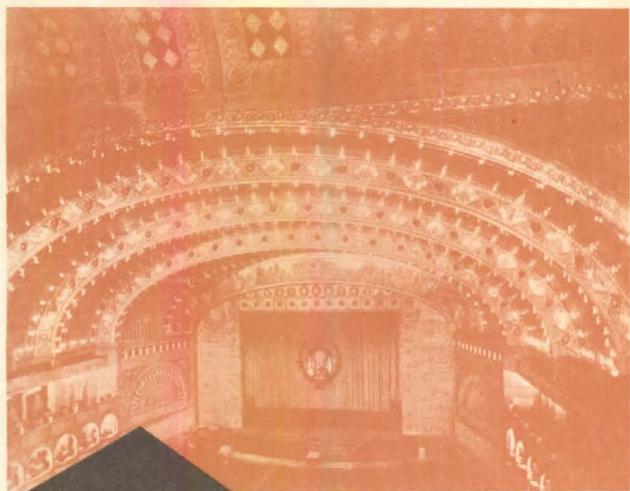
MAIN READING ROOM



READING ROOM OFF STACK AREA

AUDITORIUMS AND

1891-1941 The RECORD appeared almost simultaneously with the completion of Louis Sullivan's famous Auditorium Theater and Hotel (→) which was to serve as prototype to an entire line of American auditoriums. Structurally the problems had been solved; only recently have the problems of ventilation, lighting, and acoustics been similarly studied and solved. On this and the following pages appear some characteristic contemporary solutions to various auditorium and theater problems.

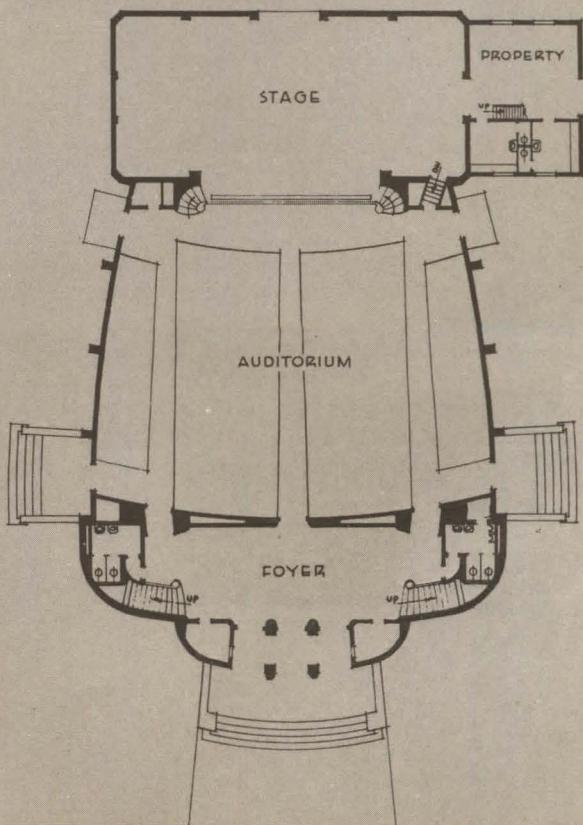


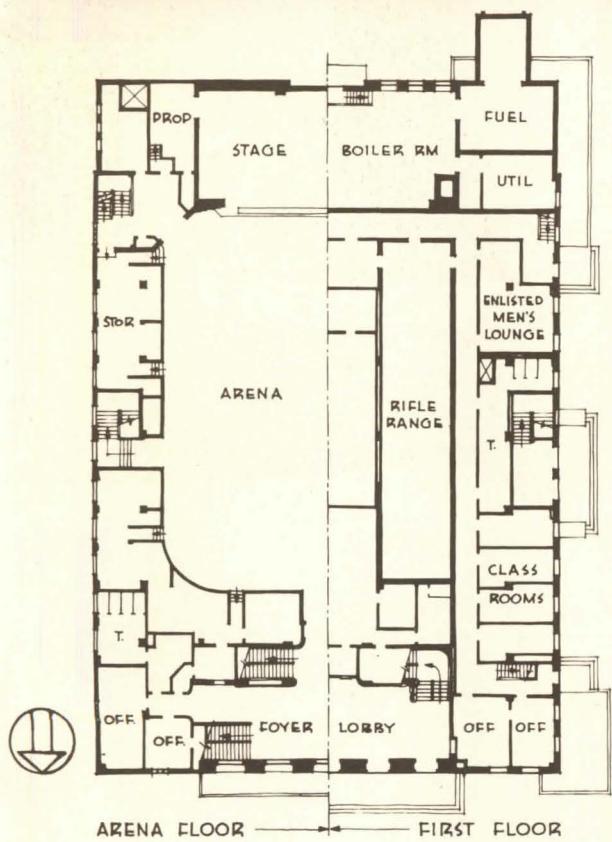
F. J. & W. A. Kidd, Architects; Eliel Saarinen, Associate: Model of recently completed Kleinhans Music Hall, Buffalo, N.Y.

THEATERS

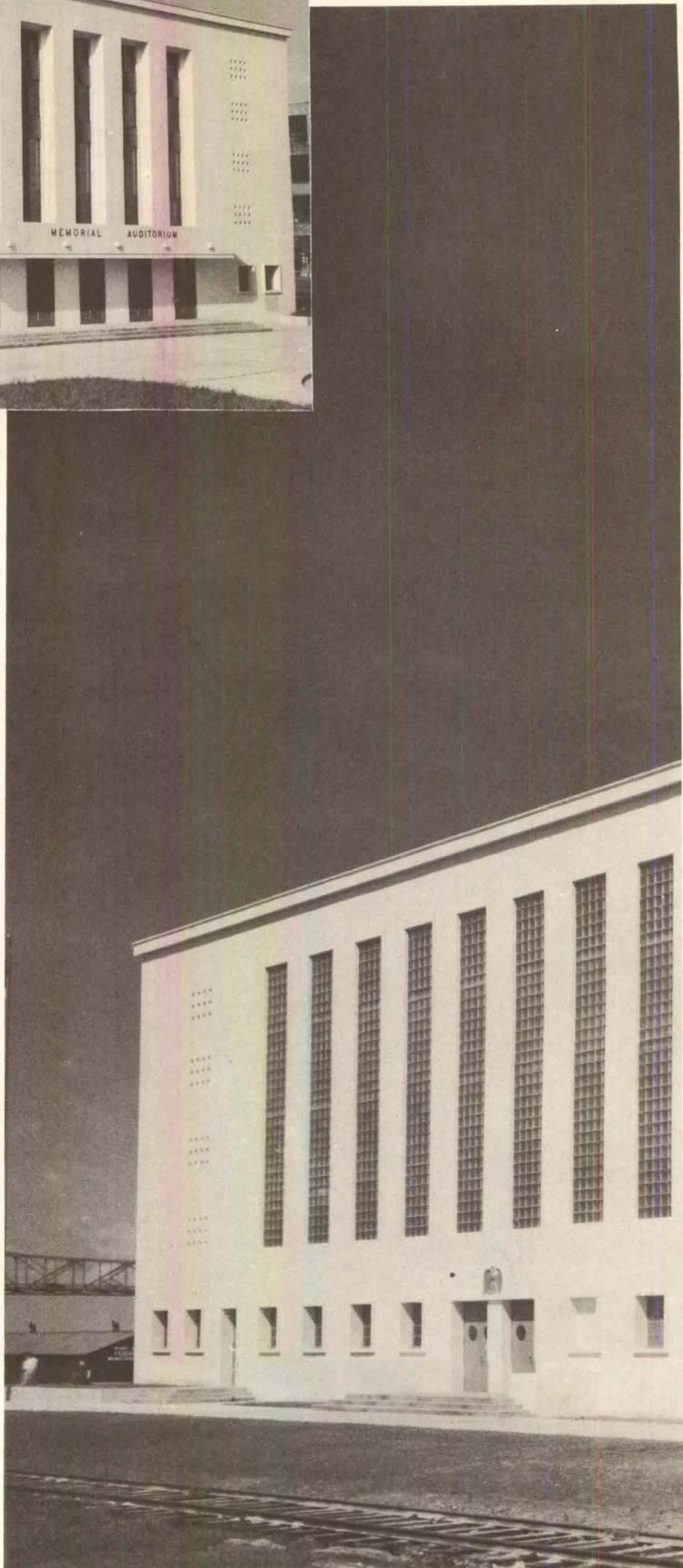


ROBERT STANTON & THOMAS B. MULVIN, ARCHITECTS: KING CITY UNION HIGH SCHOOL AUDITORIUM, KING CITY, CALIF. This building was designed as a part of the district high school, but actually serves the community as well. Since finances were limited, only the essential elements—foyer, auditorium, and stage—were incorporated in the building. Its design was largely determined by structural needs, with exterior ornamentation confined to the main facade. The only complication in designing the building was the construction problem involved in obtaining even texture and sound monolithic quality for the exposed curved concrete surfaces. These curved walls were used to reduce cubic area costs. The shape of the auditorium is the result of direct planning for acoustical corrections. The building is of reinforced concrete, supplemented by steel framing, and the structure is designed to withstand lateral forces, in accordance with earthquake-resistance laws.

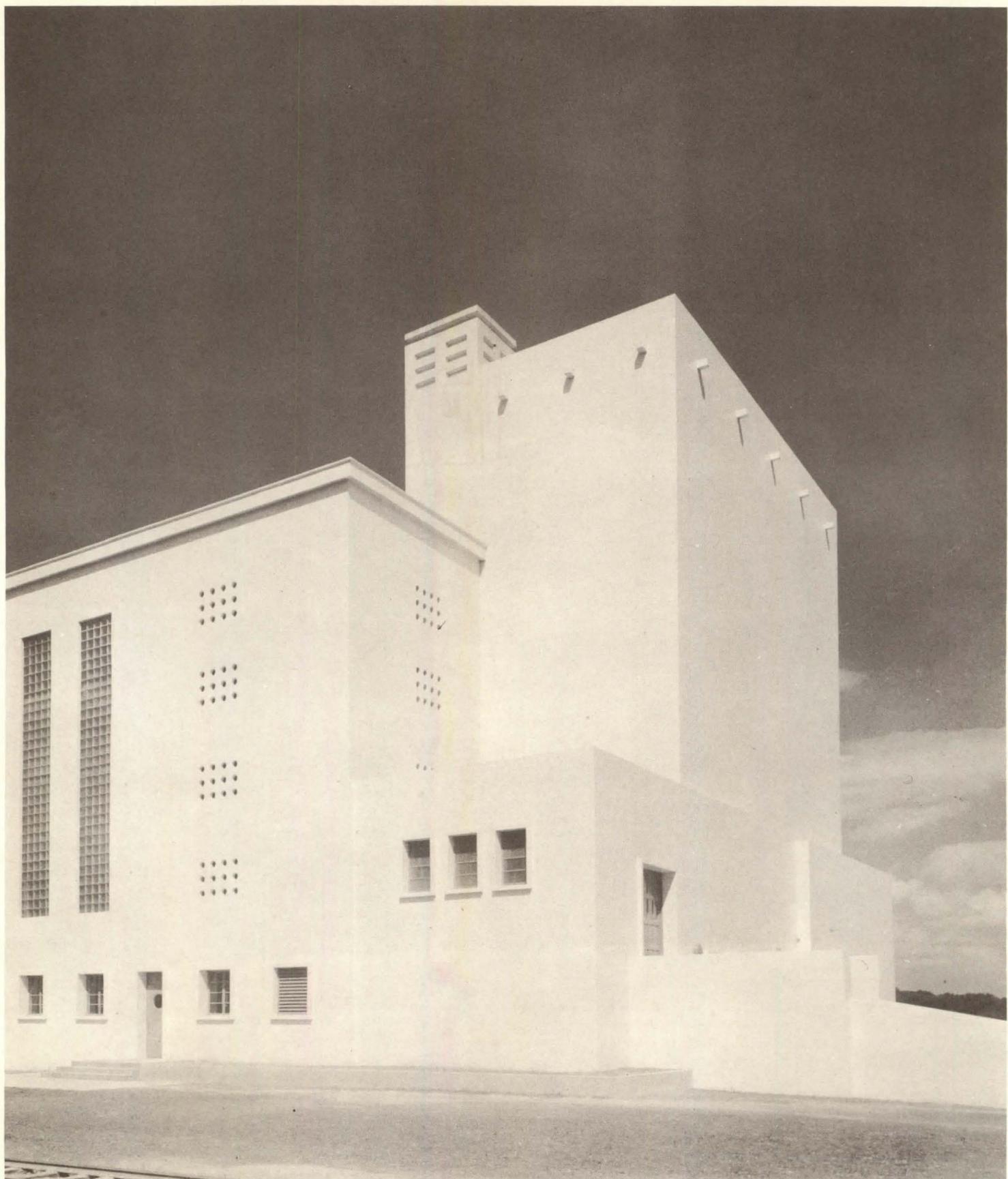




ROBIN B. CARSWELL, ARCHITECT, IN COLLABORATION WITH THE BUILDING BRANCH, PROCUREMENT DIVISION, TREASURY DEPARTMENT, WASHINGTON, D. C.: MEMORIAL AUDITORIUM, BURLINGTON, IOWA. The all-concrete structure houses four units or groups, whose activities require use of some of the same areas at schedules convenient to each: (1) the War Memorial Auditorium, seating 2500—for stage attractions, conventions, athletic events, dances, banquets, industrial exhibits, etc.; (2) Naval Reserve Officers' quarters, classrooms, workshops, lounges, reading rooms, and a rifle range; (3) seven rooms on the fourth floor, occupied by Service No. 136, Medical Regiment, Iowa National Guard; (4) headquarters for the American Legion, which occupies the east half of the ground floor.



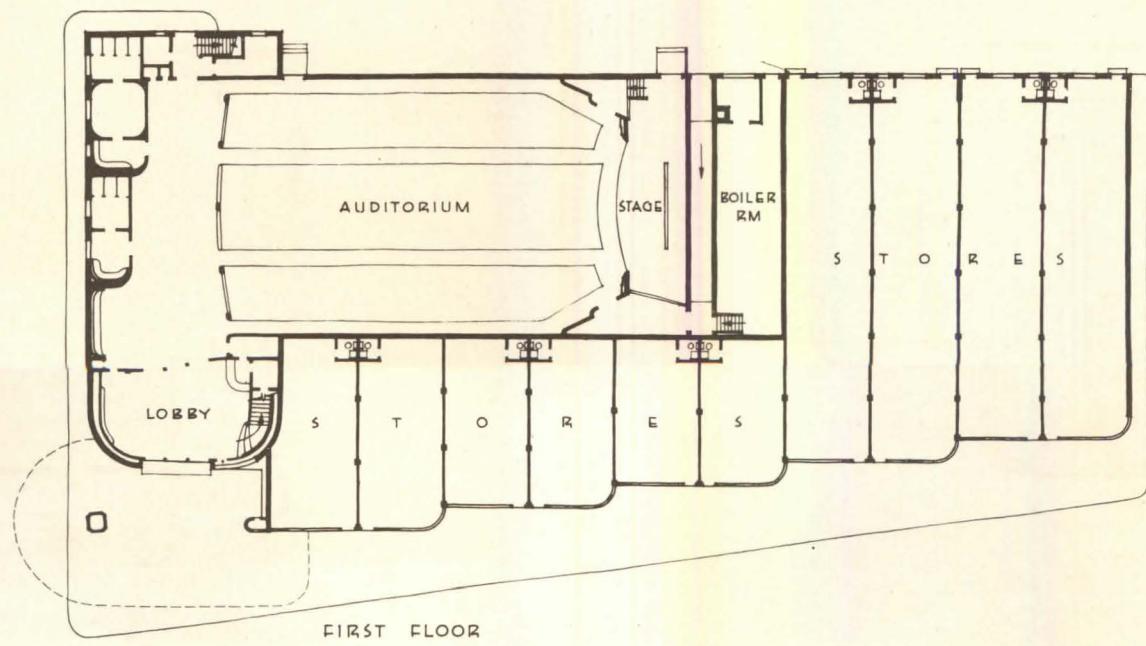
AUDITORIUMS AND THEATERS

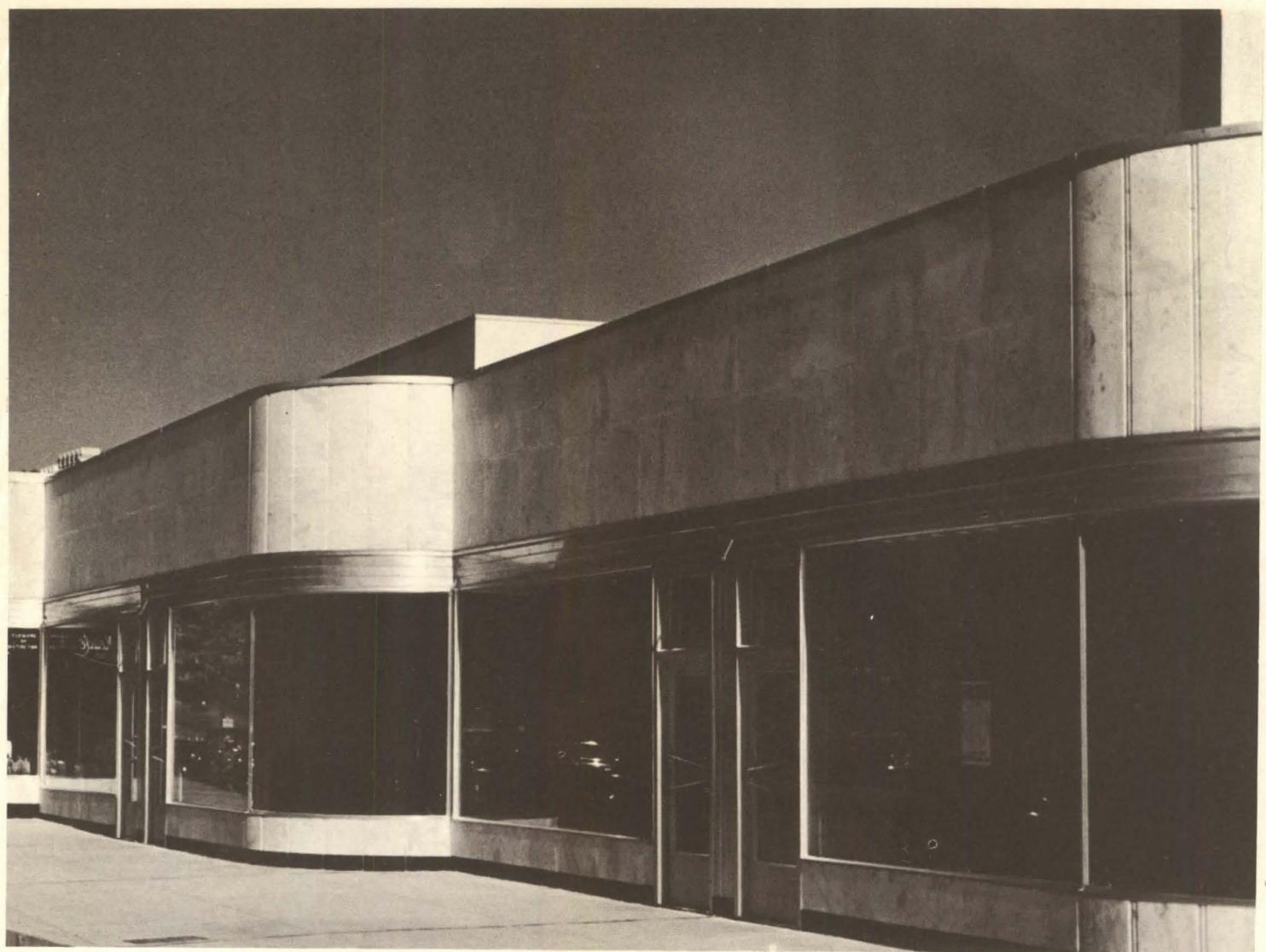


THEATERS

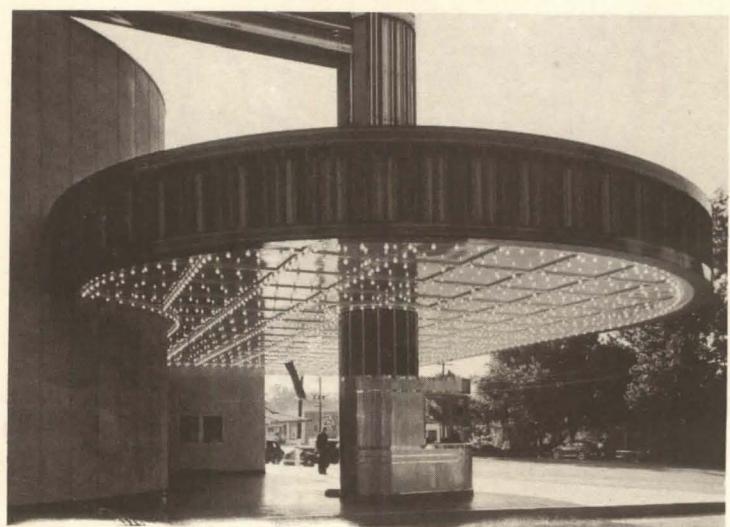
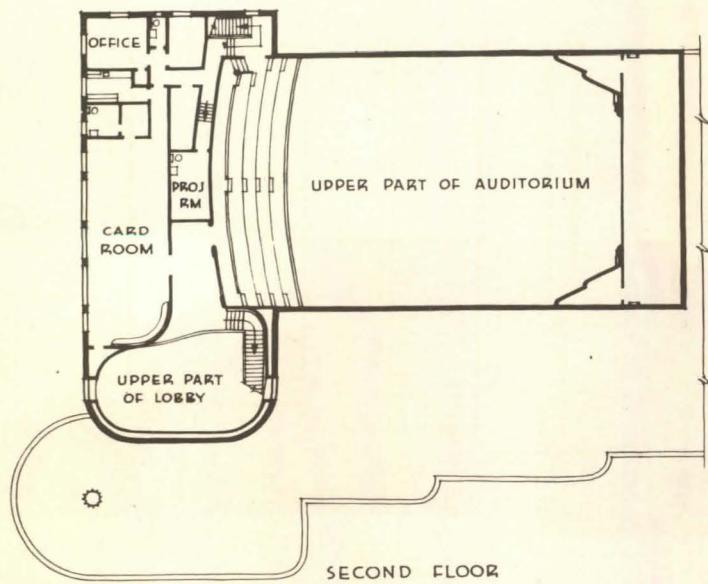


MARR & HOLMAN, ARCHITECTS: BELLE MEADE THEATER, NASHVILLE, TENN. Designed to serve a fashionable suburban district, this new structure includes 10 shops and an unusually elaborate neighborhood theater. Most notable exterior features are the staggered shop fronts (which exploit the diagonal street line) and the porcelain enamel pylon and marquee. The building is surfaced with thin sheets of white marble; exterior trim is in stainless steel. A landscaped parking area for theater patrons is provided in the rear. Especial attention has been given to the public rooms of the theater proper, decoration of which was completely handled by the architects. The auditorium seating is unusually spacious with 24-in. seats spaced 36-in. back-to-back, and seating in center section staggered to increase visibility. The entire theater is air conditioned for year-round comfort.





MAIN STREET FRONT



DETAIL, THEATER ENTRANCE

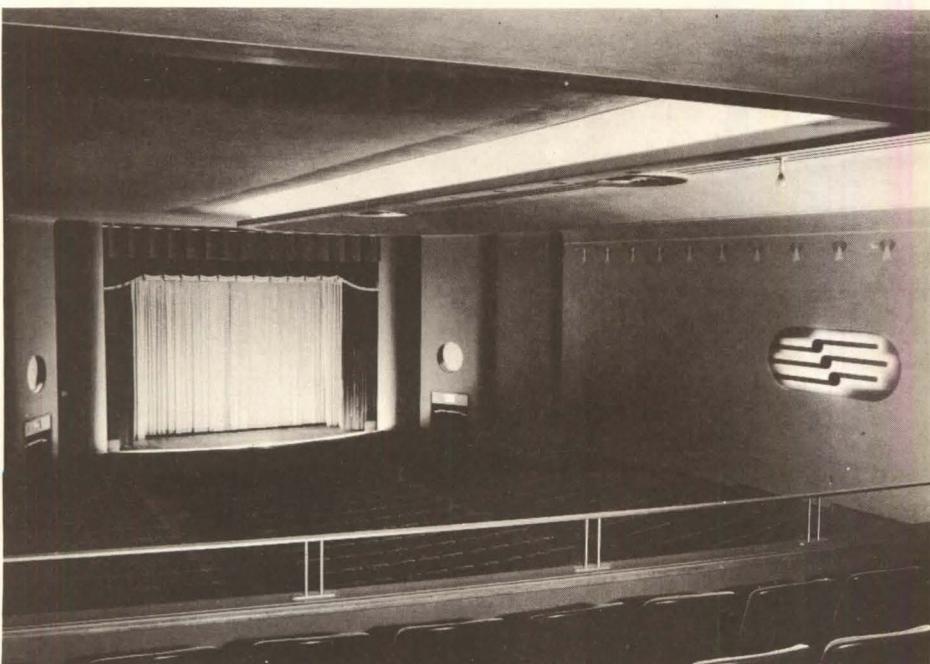
MARR & HOLMAN, ARCHITECTS (continued)



UPPER LOBBY

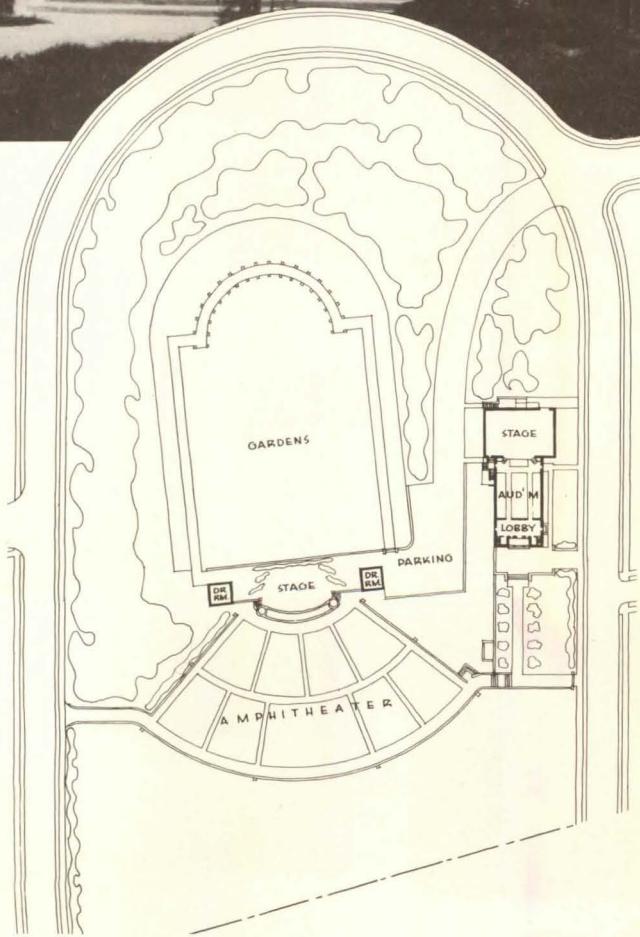


MAIN LOBBY



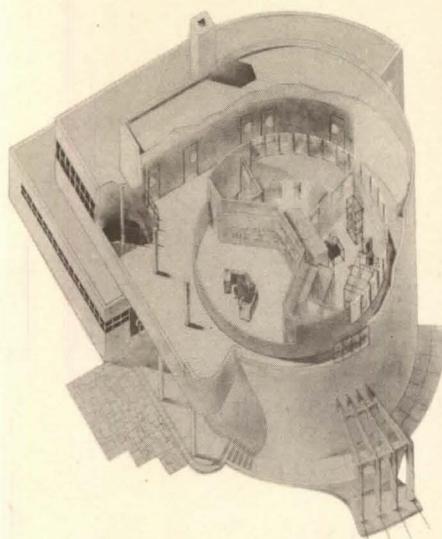
AUDITORIUM

AUDITORIUMS

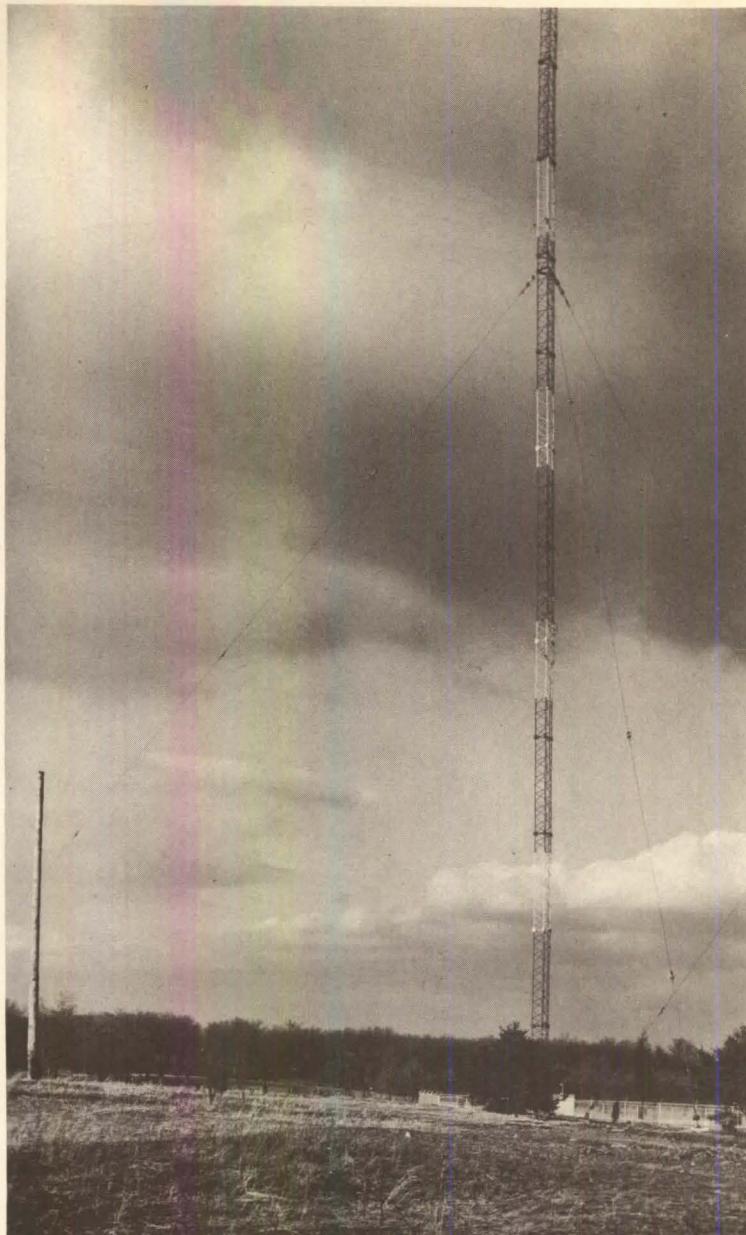


THADDEUS B. HURD, ARCHITECT: RALEIGH LITTLE THEATER, RALEIGH, N. C. A straightforward design for a theater—with adjoining amphitheater (designed by R. J. Pearse) for outdoor performances—with a simple plan. The main feature of the building is the stage whose dimensions—40 by 60 ft.—offer unusual width and depth, permitting great flexibility in productions. At the left of the ticket room are stairs leading to a mezzanine floor on which is located a lounge or green room. This is actually a small open balcony, but can be closed off with curtains. The auditorium can be completely closed off from the lobby so that toilets, located above the lobby on the mezzanine, are available when only the amphitheatre is in use. Below the stage is a workshop, reached through trap doors in the stage floor. Also on this level are dressing rooms, offices, costume storage, and make-up rooms. The building is of brick, painted white. Auditorium walls are of plaster up to the mezzanine level, and from there on to the ceiling, acoustical wallboard is applied.

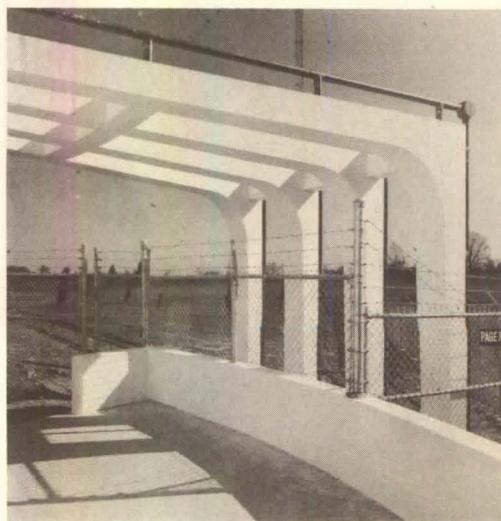
RADIO STATION



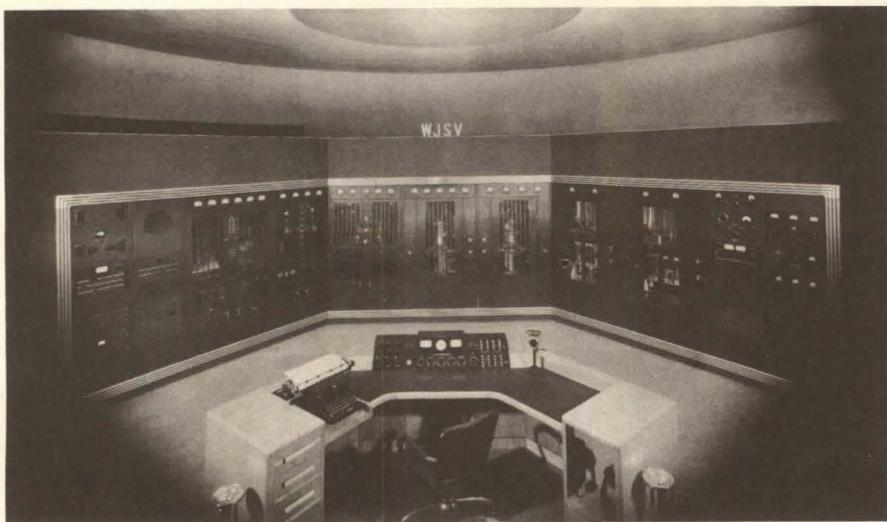
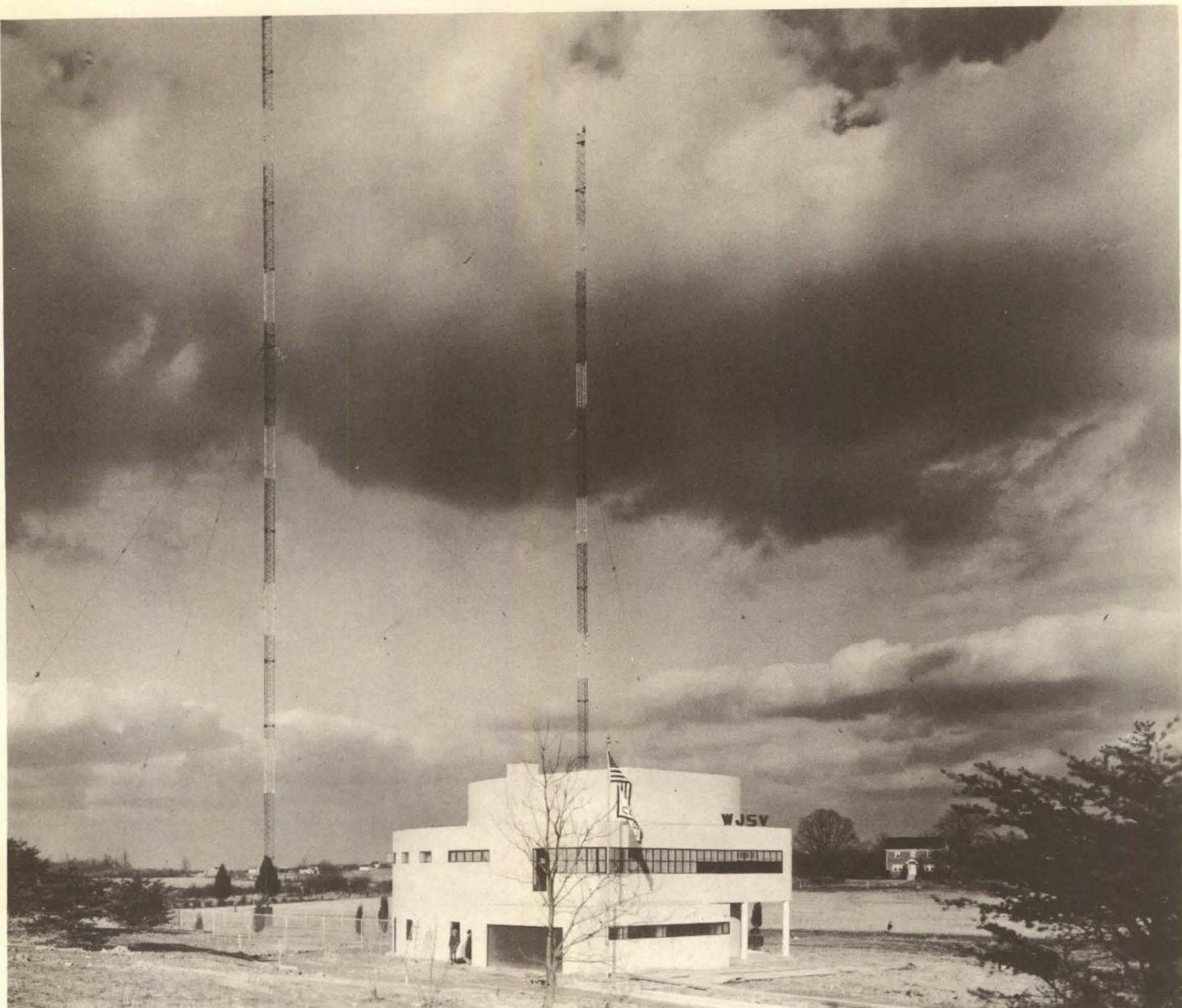
E. BURTON CORNING, ARCHITECT: STATION WJSV, WHEATON, MD. Principal plan feature of Columbia Broadcasting System's new Washington, D. C., outlet is the 50-ft. circular transmitter room on the second floor. From the ground floor entrance, a circular stairway leads up to a spectators' gallery surrounding the transmitter. Equipment, including control desk, below the gallery level, is viewed through plate-glass windows. Building construction is reinforced concrete.



ENTRANCE DOOR



COAXIAL CABLE SUPPORTS



TRANSMITTER EQUIPMENT

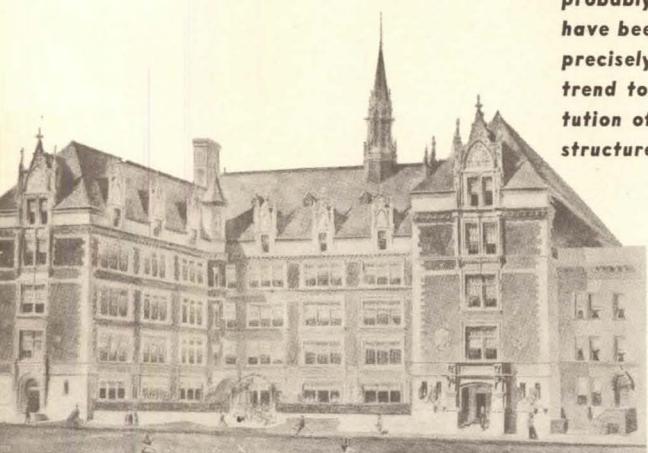


CIRCULAR STAIRWAY

SCHOOLS AND COLLEGES

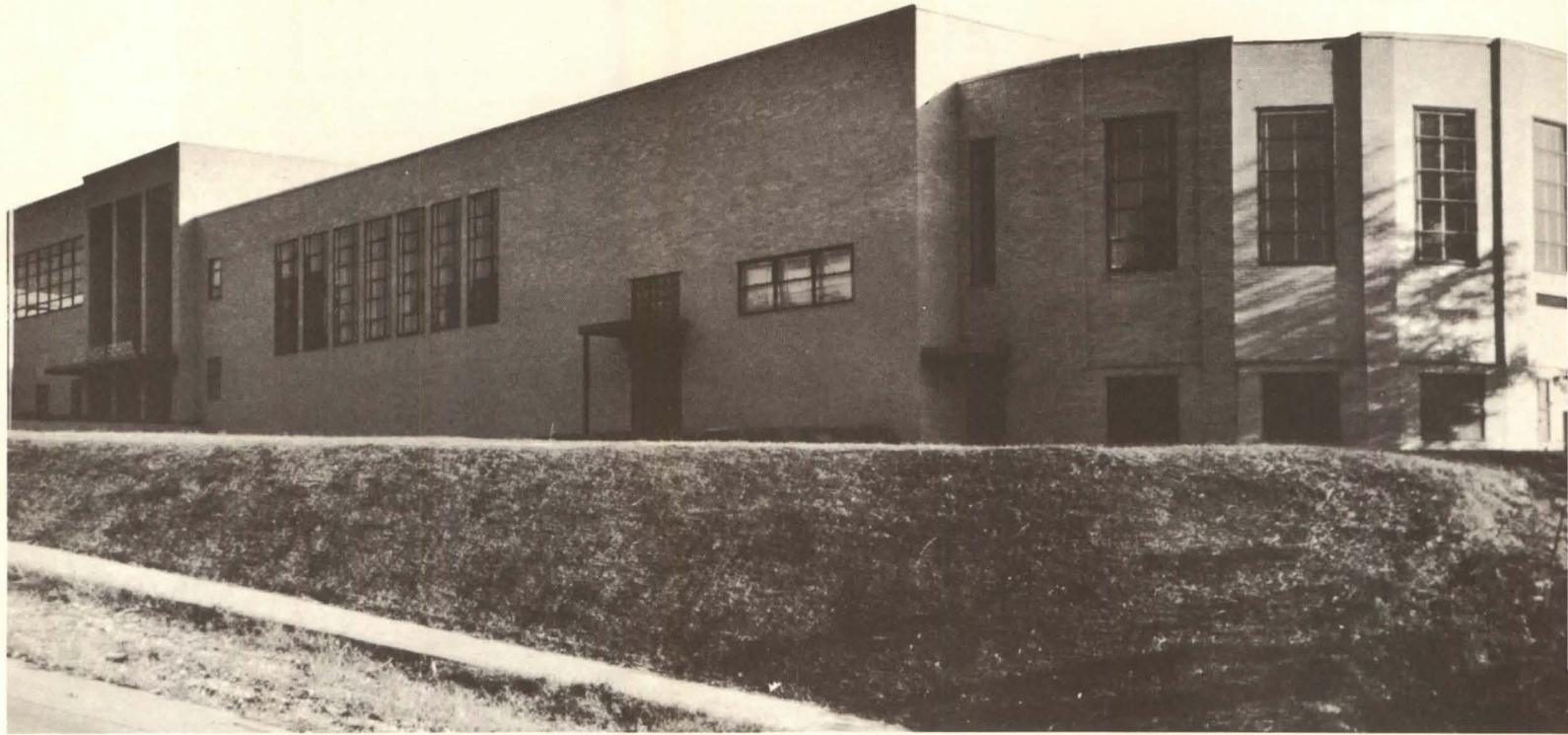
1891-1941

It is not accidental that educational buildings of all types have always occupied the attention of the RECORD: for America is the home of universal education and has always spent a sizeable portion of its national income on educational structures of all sorts. If early RECORDS devoted more space to university than to grammar-school design, it was perhaps due to the fact that the universities (which were then entering the period of their greatest expansion) seemed to offer the architect of that period the more exciting possibilities. But as early as 1897 a lengthy study on school design—while praising a new school building program for New York City—cannily foresaw that "judged by the light of the future, we ourselves are probably still doing the most inadequate things." Developments in education since then have been rapid and far-reaching, until today some of America's best architecture lies precisely in the field of kindergarten, grammar, and high-school design. Moreover, the trend towards consolidation of several small schools into one centrally located institution often makes today's school one of the community's largest and most attractive structures. Solutions to such contemporary problems are shown on following pages.

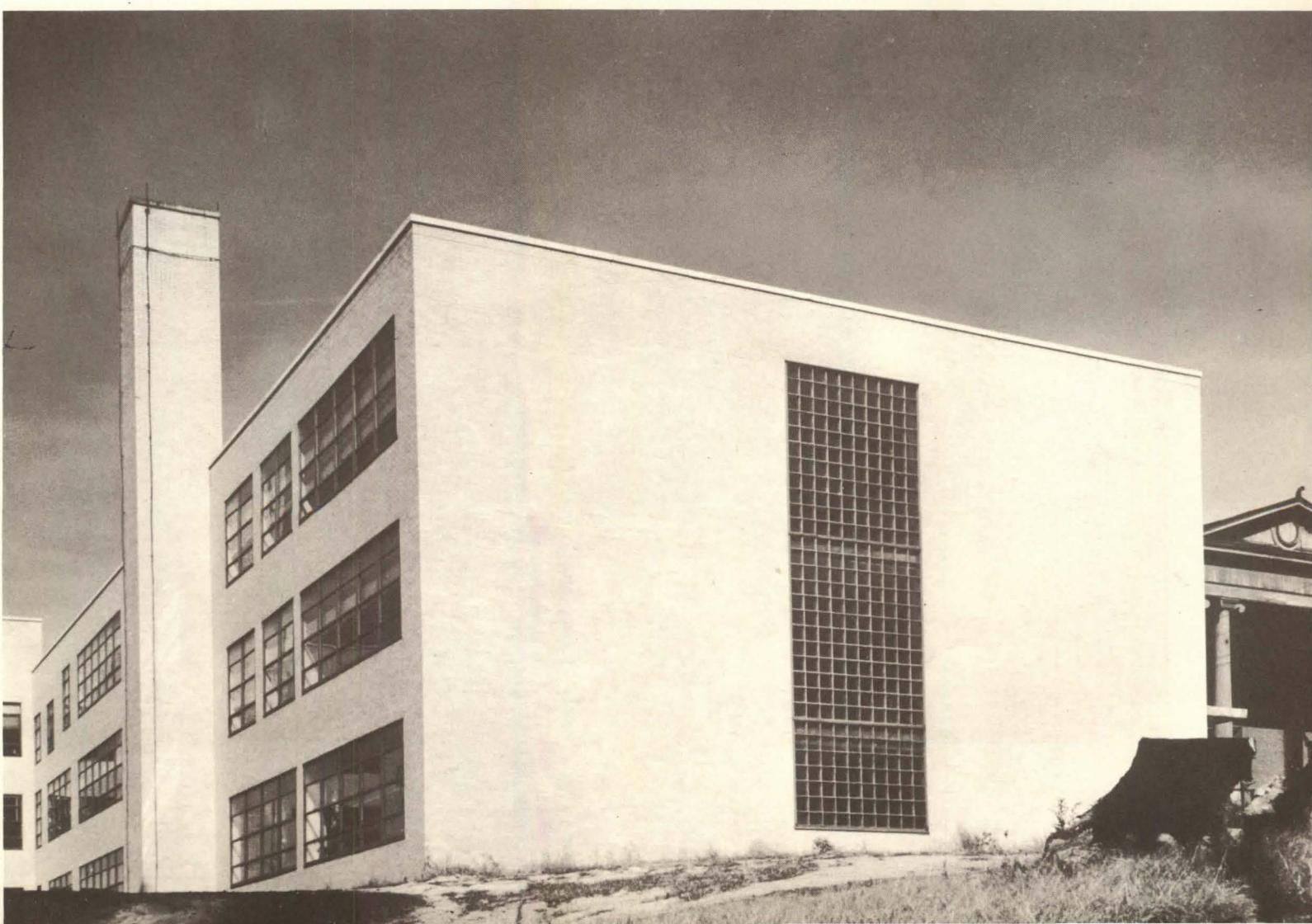


"Profoundly astonished would they have been could they have seen what was to come . . . the latest and biggest schoolhouse."

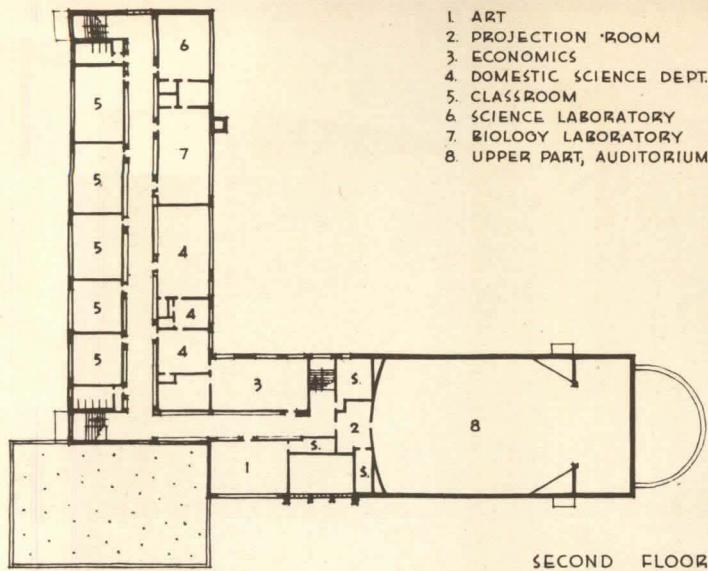




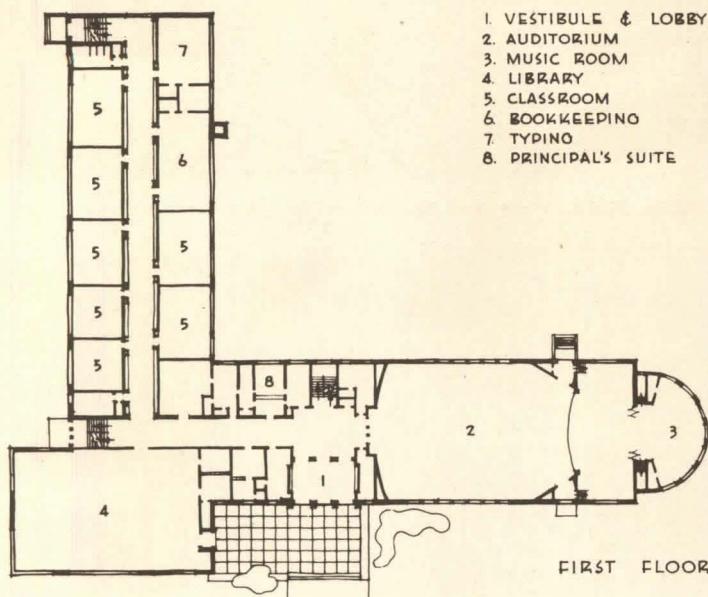
NEW SCHOOL BY HART & RUSSELL, ARCHITECTS AT DYERSBURG, TENN., street and playfield views (above and below).



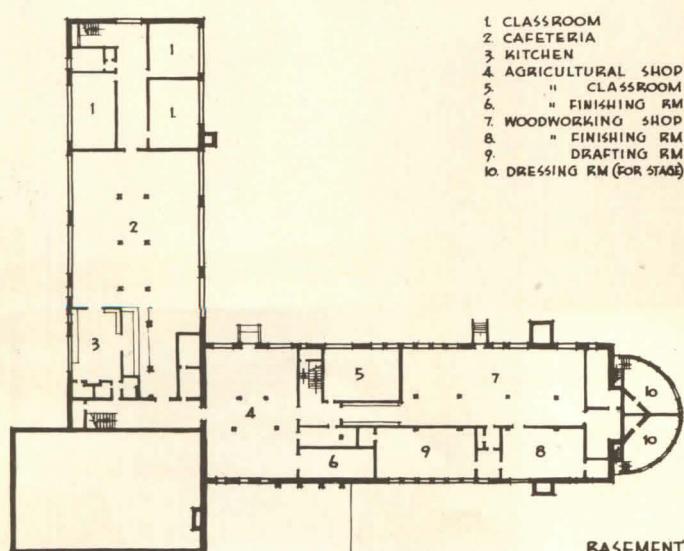
HART AND RUSSELL, ARCHITECTS (continued)



AUDITORIUM



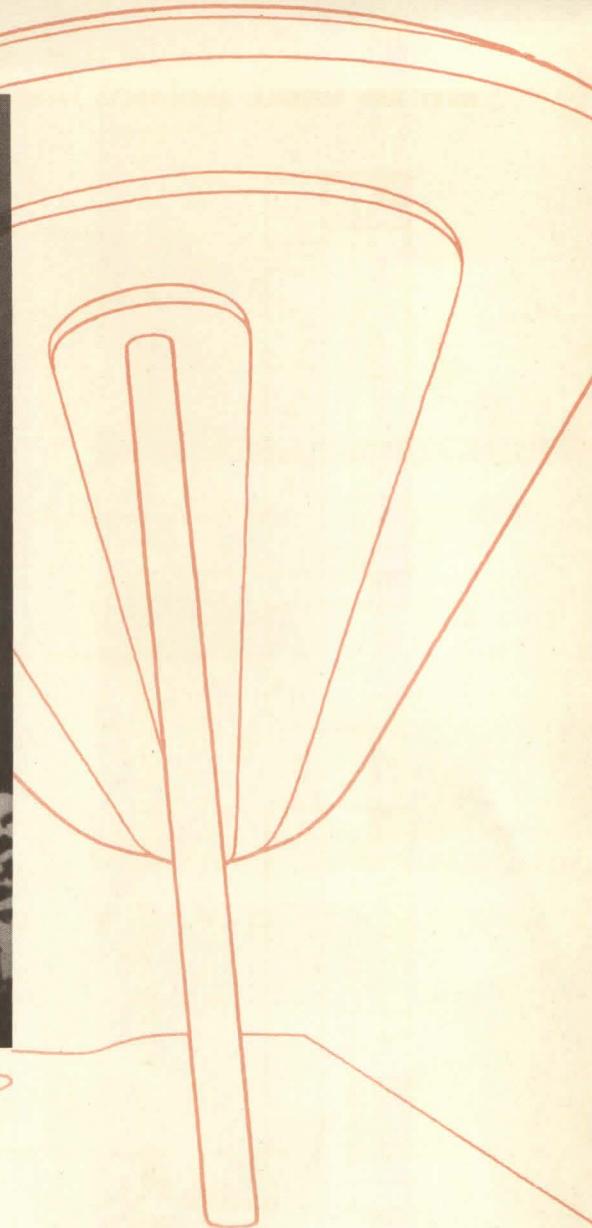
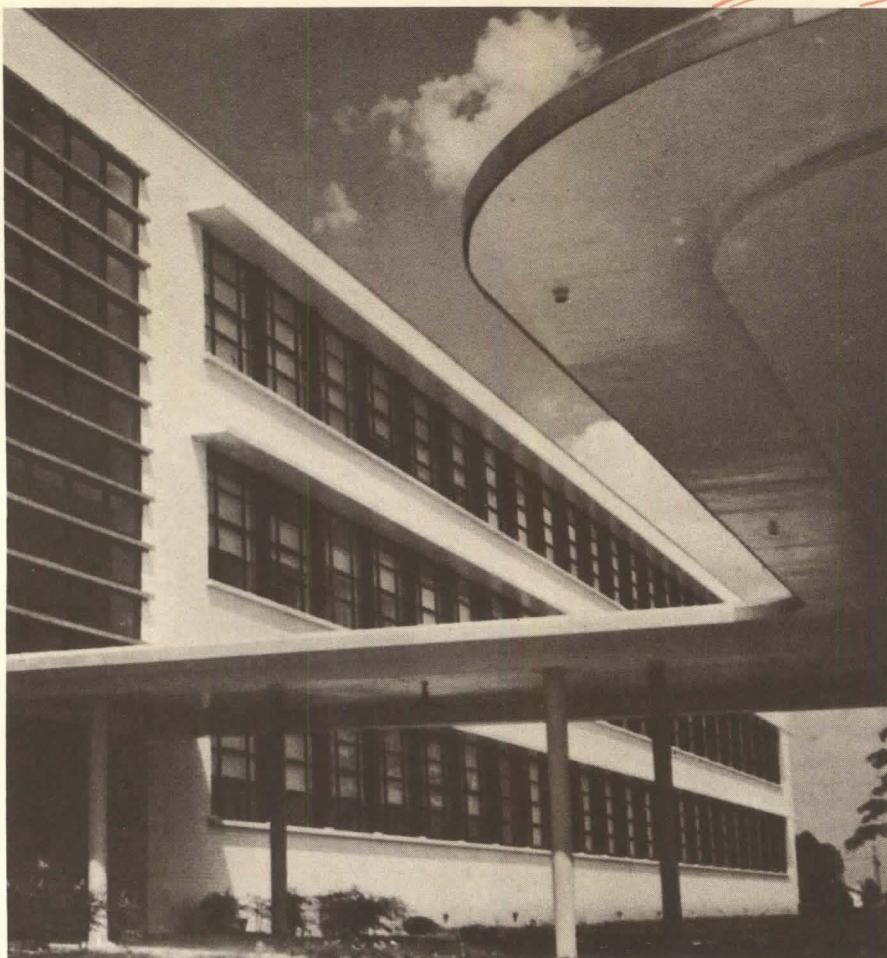
DOMESTIC SCIENCE



WOODWORKING

SERVING A SMALL city in the heart of an important agricultural area, the new Dyersburg High School necessarily provides for a wider range of study than the typical city school. Thus, vocational and agricultural classrooms are concentrated on the ground floor (with access at grade to the playing field), while academic and science classrooms are on main and second floors. Since the school is located near the center of town, both library and auditorium are designed for community use. Altogether, an unusually wide range of facilities has been logically organized into a structure that is both economical and pleasing.

SCHOOLS

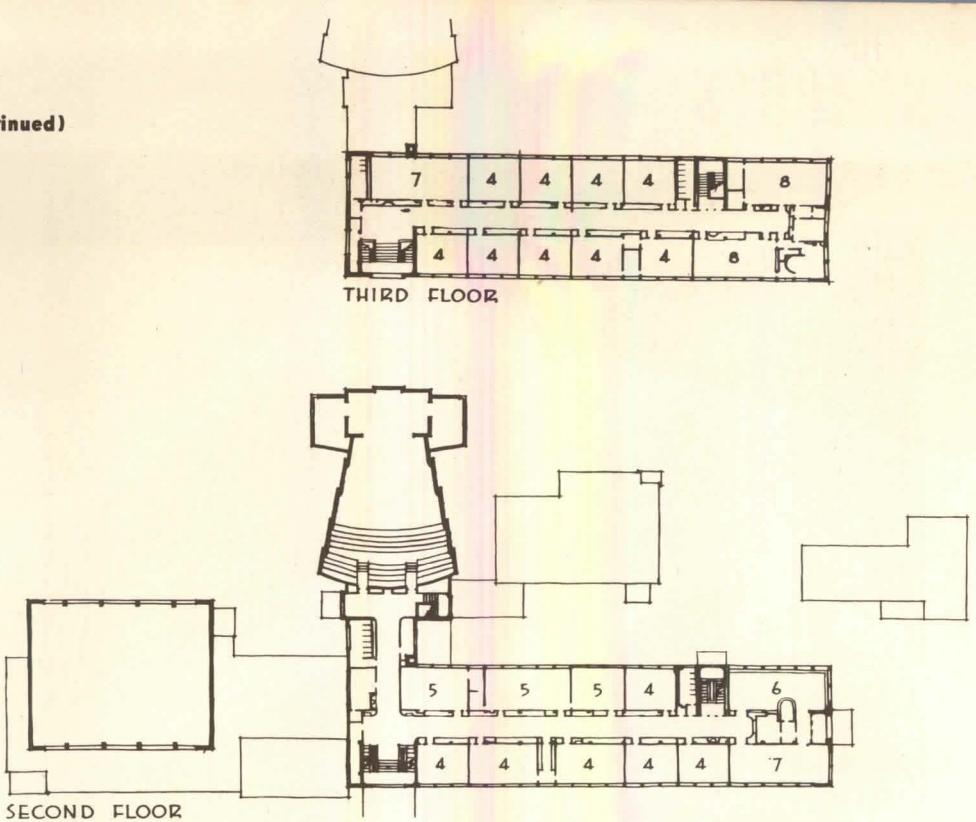
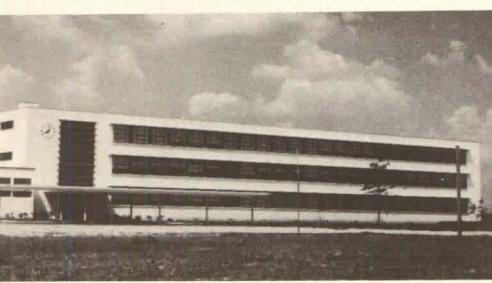
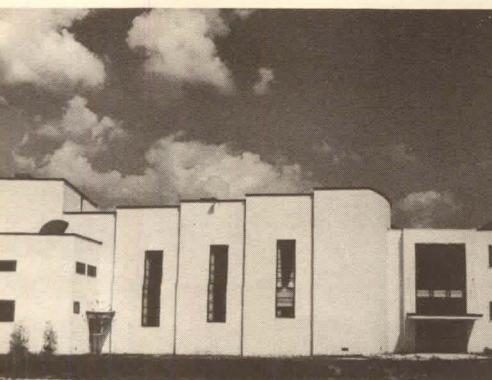


SAMUEL G. WIENER, ARCHITECT: BOSSIER HIGH SCHOOL, BOSSIER, LA.

Freed from conventional school building codes, the architect worked out a functional plan to meet the particular teaching and administrative needs. Plans (over page) show the organization into five distinct, but related units—classroom building, gymnasium, auditorium, cafeteria, and manual-training building. The 104-ft.-long exposed reinforced concrete entrance canopy (see drawing above) serves as a shelter for school buses and as a protection for the children in inclement weather.

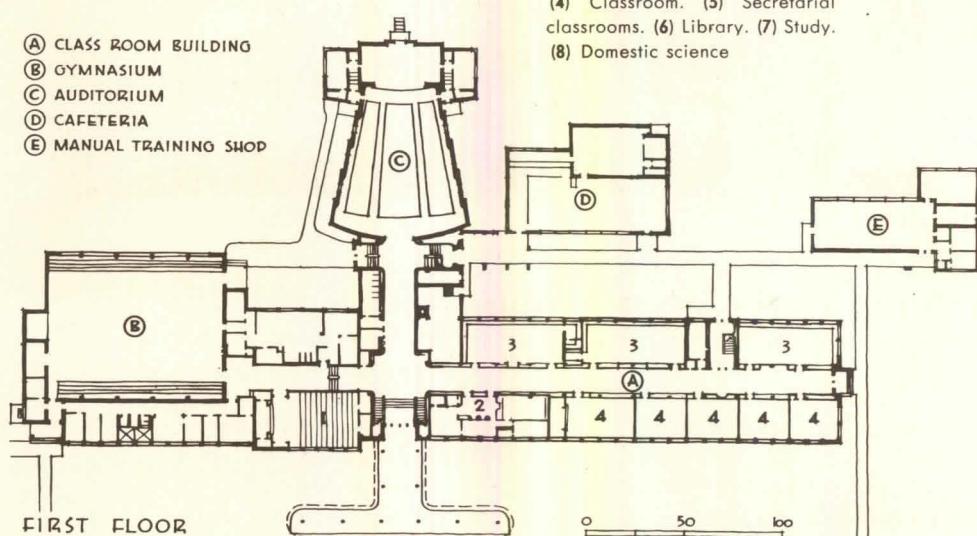


SAMUEL G. WIENER, ARCHITECT (continued)



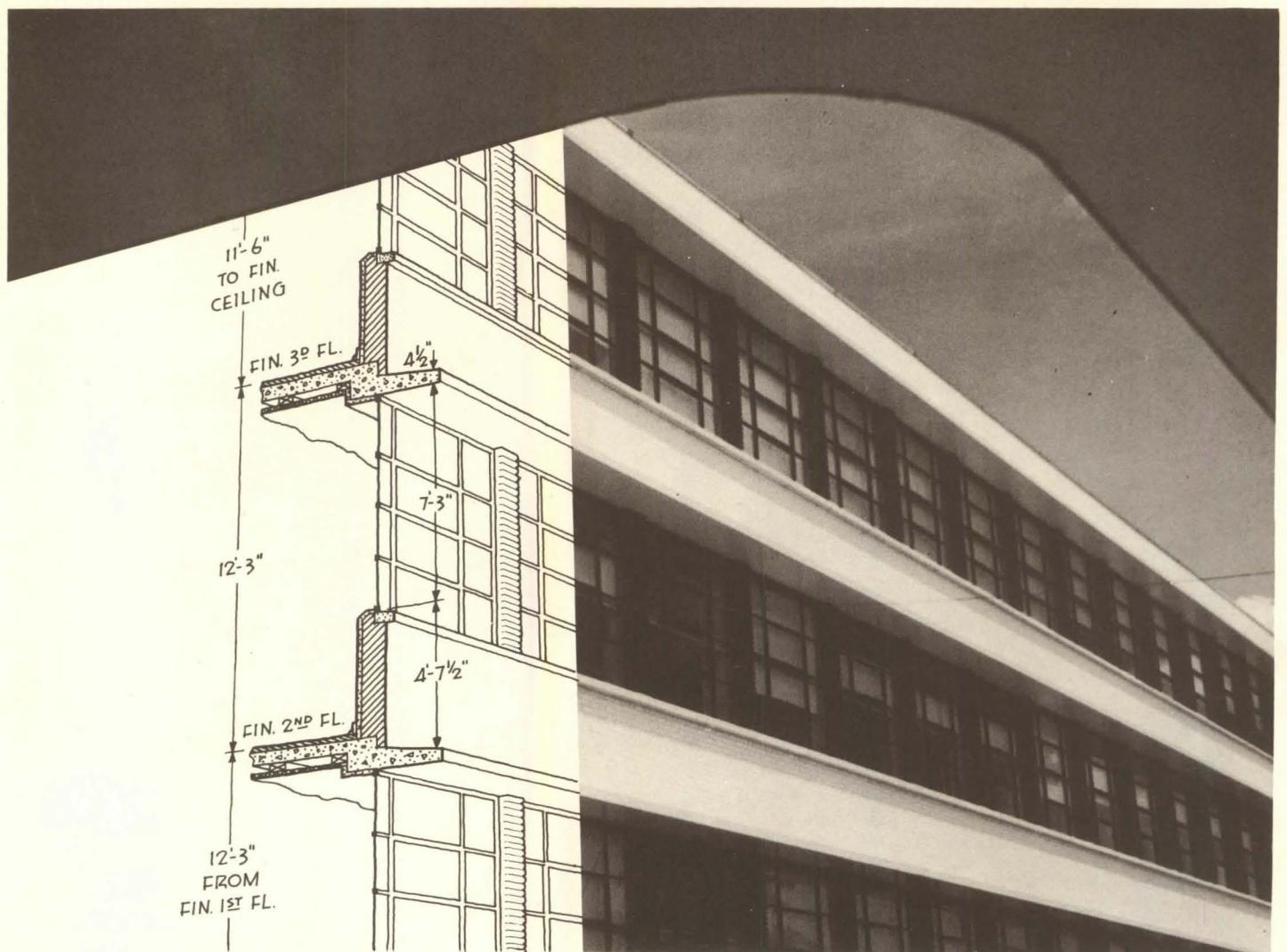
- (A) CLASS ROOM BUILDING
- (B) GYMNASIUM
- (C) AUDITORIUM
- (D) CAFETERIA
- (E) MANUAL TRAINING SHOP

(1) Band room. (2) Administrative offices. (3) Science laboratories. (4) Classroom. (5) Secretarial classrooms. (6) Library. (7) Study. (8) Domestic science



DOMESTIC SCIENCE





STRUCTURE is of reinforced concrete, designed in units 9 ft. in width. Concrete columns serve as window mullions, giving full-width fenestration. The concrete floor beams occur at each column. On the south side of the classroom building (see above) a 2-ft. projecting canopy, which is monolithic with the floor system, both shield the steel sash and provides diffused light in the row of classrooms.



AUDITORIUM



ADOLPH H. KNAPPE, ARCHITECT: PIERRE VAN CORTLANDT

ELEMENTARY SCHOOL, CROTON, N. Y. This interesting elementary school is situated on high ground overlooking the Hudson River. The main entrance to the building is reached from the raised terrace; the kindergarten, which is located in the low wing, is entered separately. Classes range from kindergarten through the sixth grade. The building houses, in addition to classrooms and library, shop rooms, general purpose rooms (which serve as cafeteria), complete kitchen and adjoining domestic science department, and a combination gymnasium and auditorium. Exterior: brick; trim: stone.



KINDERGARTEN

COOLIDGE, SHEPLEY, BULFINCH & ABBOTT, ARCHITECTS:

GRADE SCHOOL, SOUTH NATICK, MASS. Reminiscent in stylistic treatment of an early New England academy, this grade school is a notable solution to the problem of providing an up-to-date school plant for a tradition-conscious community. At the rear of the building, long bands of windows provide excellent lighting for the various classrooms. The building is of brick, with white-painted wood trim. Entirely in keeping with the spirit of the project is the boundary fence, made up of stone piers with heavy chains suspended between them.



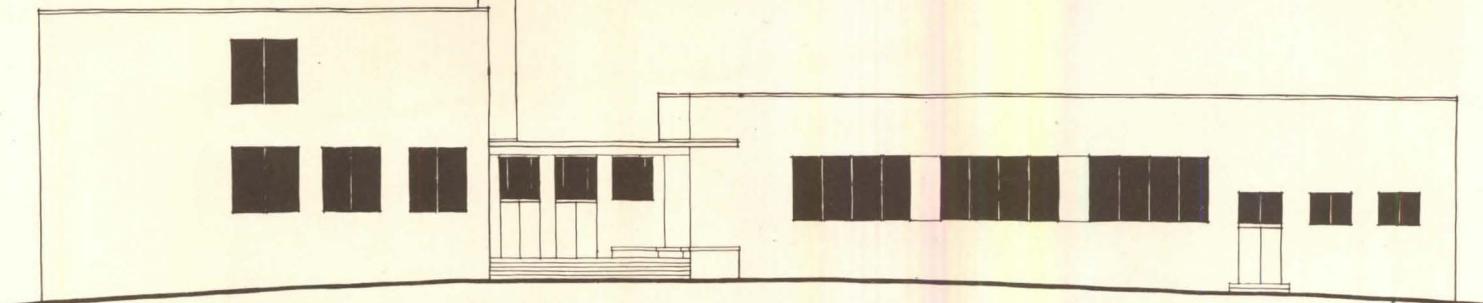
SCHOOLS



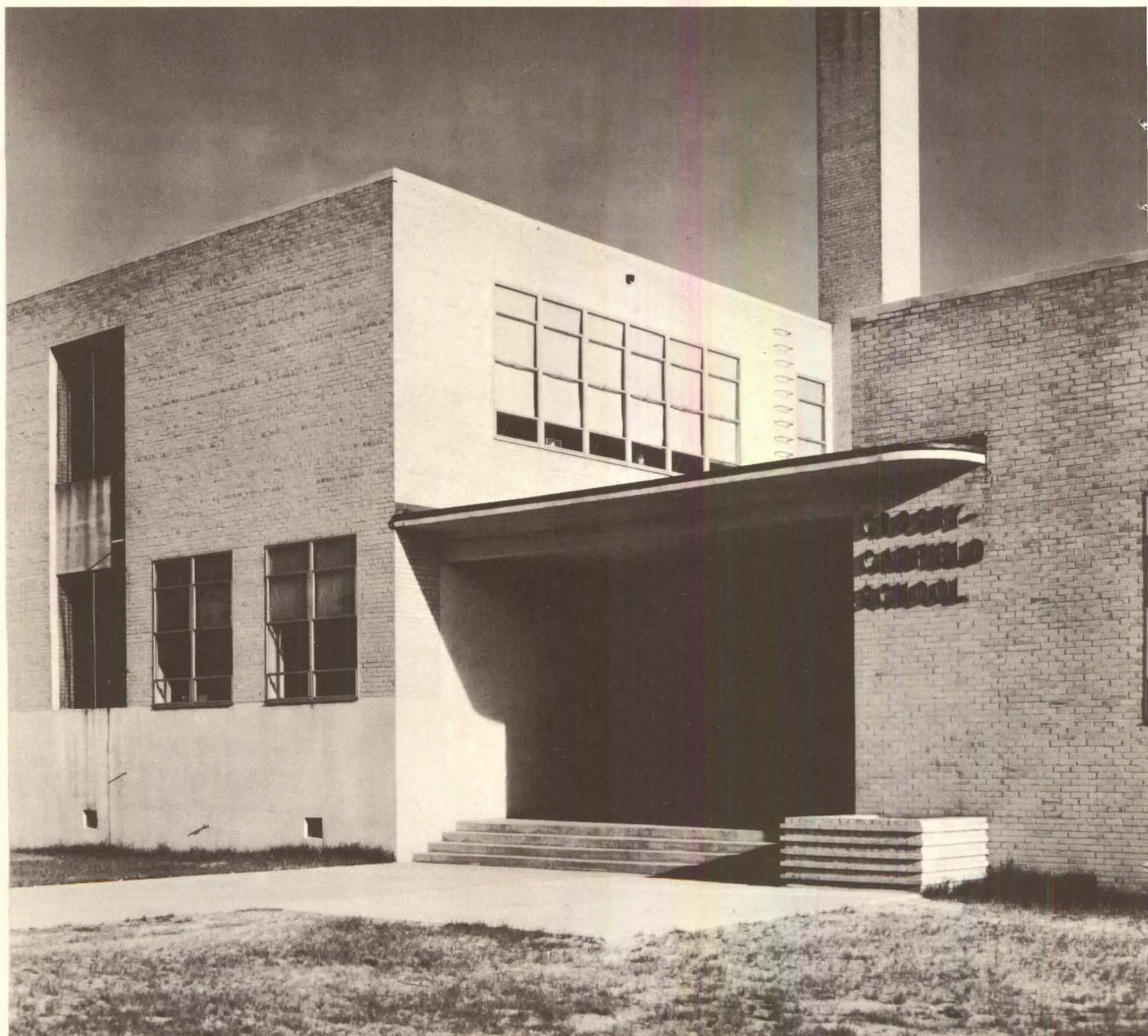
CLASS ROOM



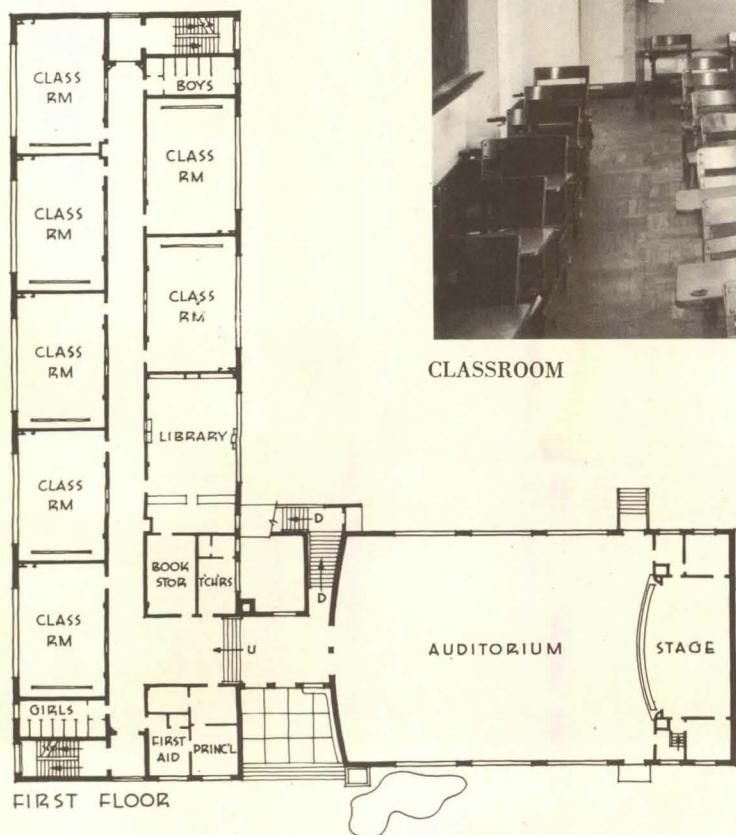
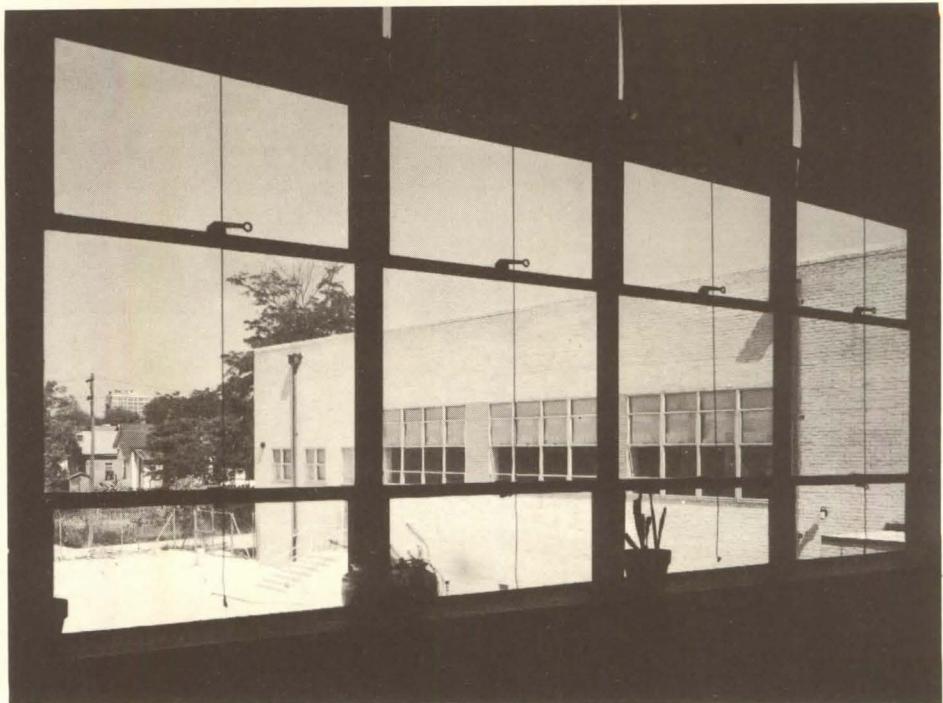
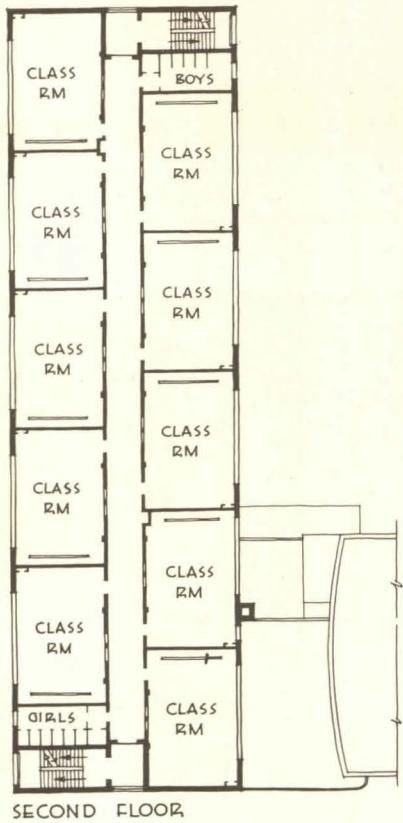
SCHOOLS



MAIN ELEVATION



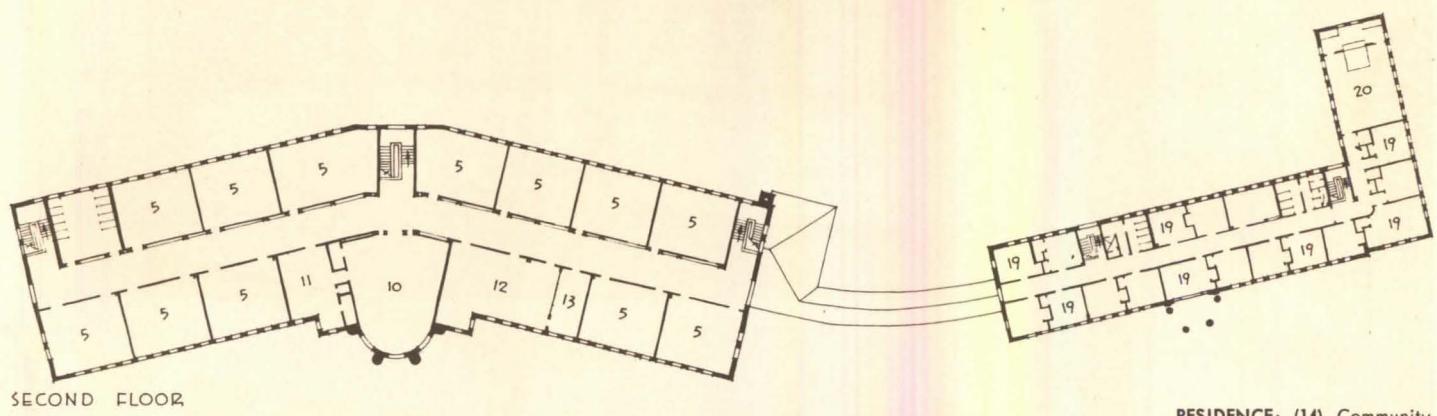
MAIN ENTRANCE



WILLIAM HENLEY DEITRICK, ARCHITECT: CROSBY-GARFIELD SCHOOL, RALEIGH, N. C. Designed to serve a new USHA project, this grammar school is typical of a trend throughout the country, where minimum costs dictate utmost simplicity in plan and construction. In this case, the 17 classrooms, library, and toilets are organized so that the auditorium may be used by either school or community. Construction: walls of load-bearing brick with steel joists; floors, asphalt tile and wood block; interior walls are plaster; ceilings, insulation board.

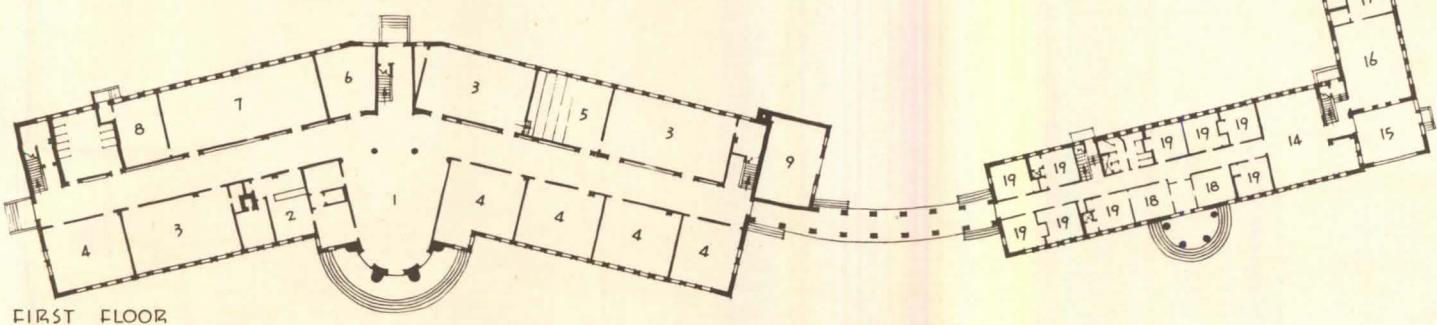
SCHOOLS

MAURICE J. SULLIVAN, ARCHITECT: ST. THOMAS HIGH SCHOOL, HOUSTON, TEX. Located on a 30-acre wooded plot, the new St. Thomas High School and Monastery provides for 600 male day students and 25 priests in two connected buildings. Buildings are wall bearing, with rib concrete floor and roof construction and exterior facing of limestone. Interior walls are plaster; ceilings, acoustical tile; floors, asphalt and rubber tile, except for corridors which are terrazzo. The school has a complete two-channel public address and program clock system.

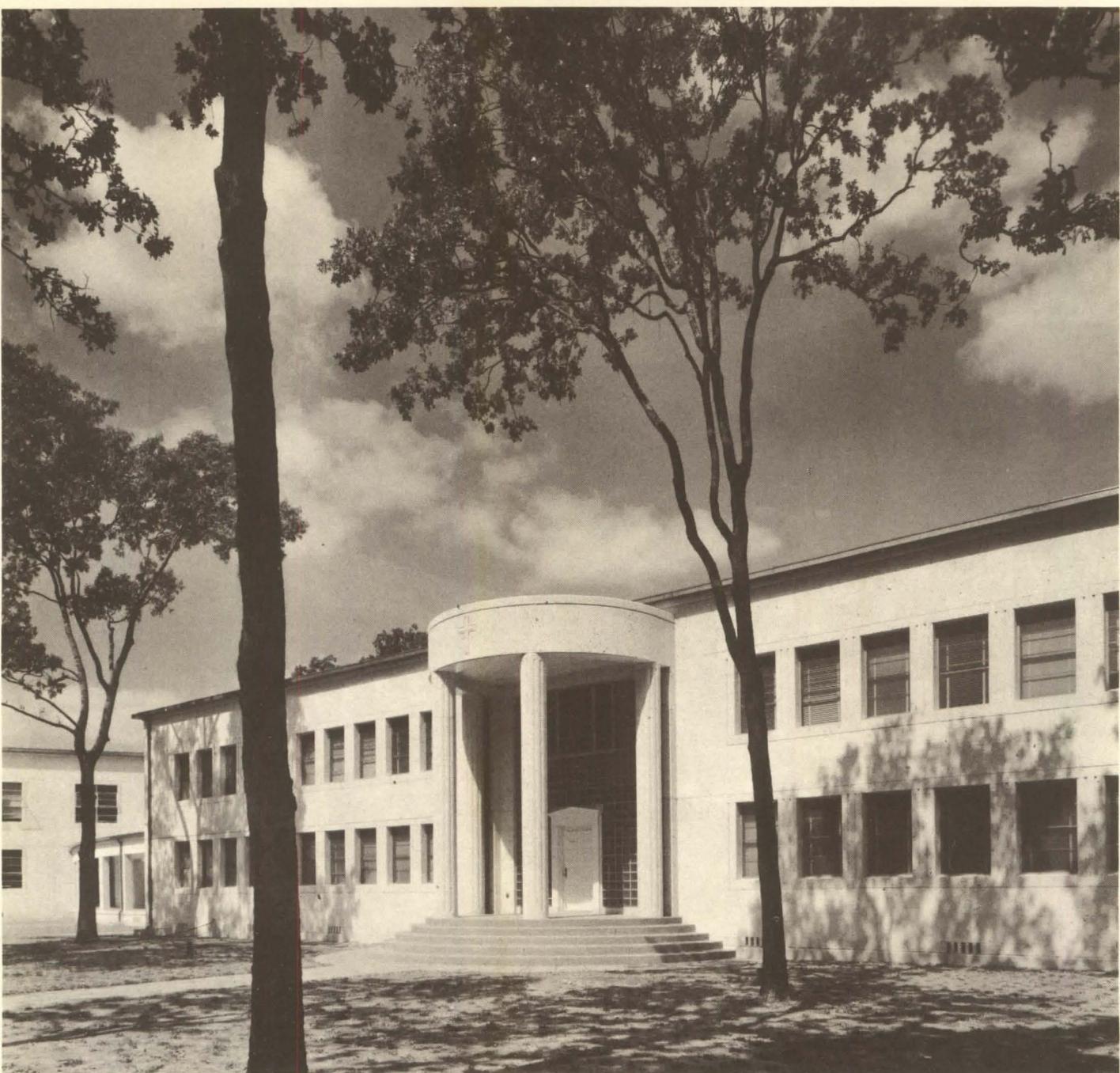


RESIDENCE: (14) Community room. (15) Porch. (16) Dining room. (17) Kitchen. (18) Parlor. (19) Bedroom. (20) Chapel

SCHOOL: (1) Lobby. (2) Offices. (3) Laboratory. (4) Classroom. (5) Lecture room. (6) Chapel. (7) Cafeteria. (8) Kitchen. (9) Boiler room. (10) Library. (11) Activity. (12) Commercial. (13) Typing



GENERAL VIEW



LIBRARY

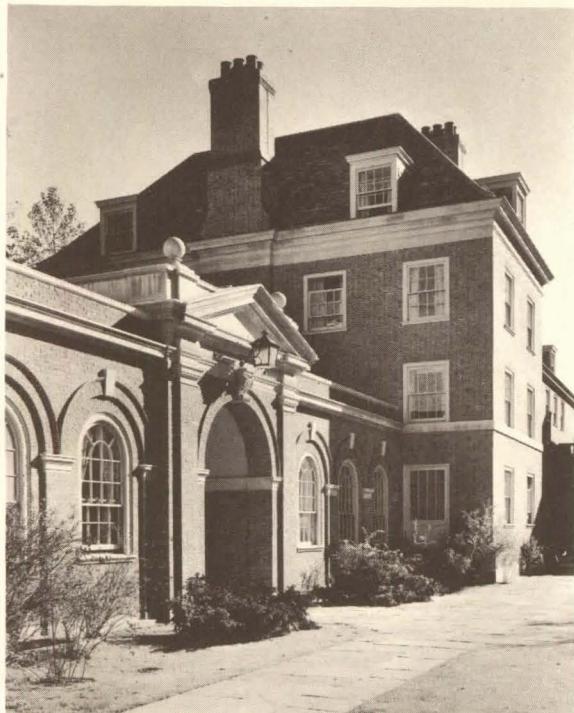


CHAPEL

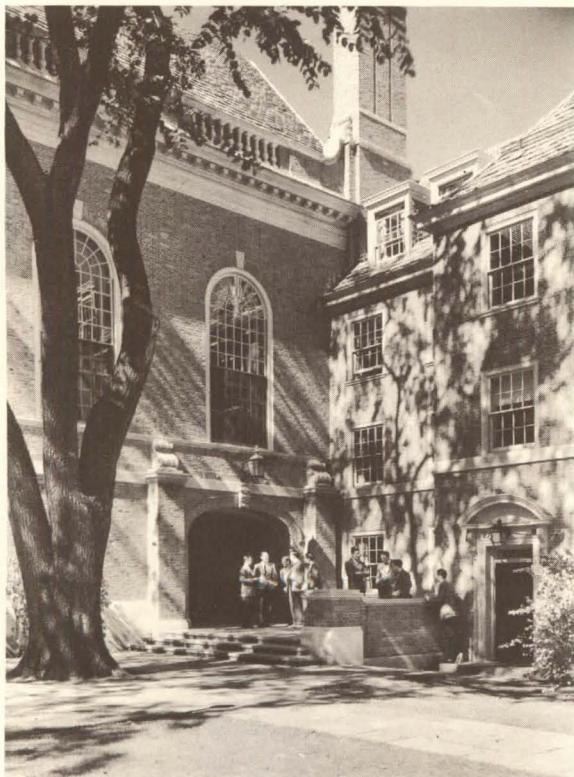


PUBLIC ADDRESS SYSTEM

COLLEGES



2. SOUTHEAST WALL



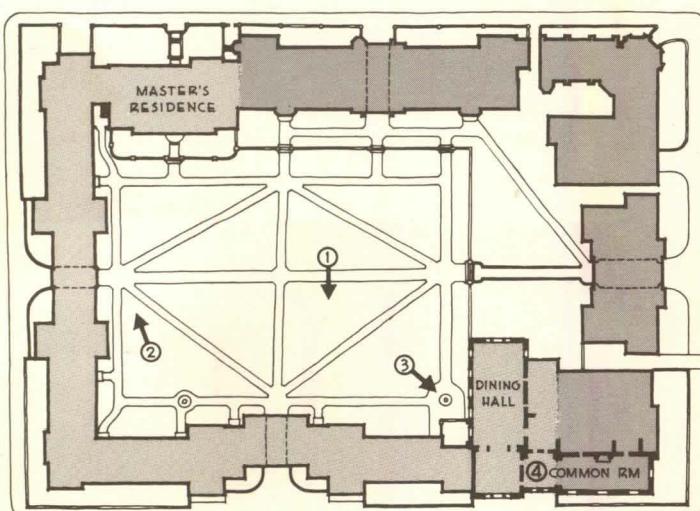
3. NORTH CORNER. Dining Hall at left



1. GENERAL VIEW

EGGERS & HIGGINS, ARCHITECTS: SILLIMAN COLLEGE, YALE UNIVERSITY, NEW HAVEN, CONN.

Latest in Yale University's series of new colleges, Silliman, like the others, is built around an inner quadrangle, entered by means of tunnels through the building at important points. In this case, several club and dormitory buildings existed on the perimeter of the block. Three of these were unaffected by the new building. The fourth was completely remodeled and made a part of the new group. Besides dormitory suites and club rooms, the college contains, among other things, a large dining hall and its appurtenances, memorial common room, squash courts, and a master's residence. Closely following the Colonial idiom, the new group carries on a still-vigorous tradition.



4. MEMORIAL COMMON ROOM

COLLEGES



***OFFICE OF C. H. JOHNSTON, ARCHITECTS-ENGINEERS: THE COFFMAN MEMORIAL UNION, UNIVERSITY OF MINNESOTA, MINNEAPOLIS, MINN.** Planned to provide for social, cultural, recreational, and other extra-curricular needs of the University, the Coffman Memorial Union also includes numerous dining facilities, a faculty club, alumni offices, the University post office, and a 250-car underground garage. Cost of the structure, including furnishings and equipment, was about \$2,000,000, of which 45% was furnished under a WPA grant.

**To be treated more extensively in a later issue.*

Credits for all photographs
in preceding pages (43-
112) appear on page 14.



STORE DESIGN

A merchandising problem

The shopping avenue of the average American town—Main Street—puts principles of merchandising to the ultimate test. In New York, Los Angeles, Sheboygan, or Albuquerque, its pavements are filled with Mr. and Mrs. Americas and their children, looking in store windows, comparing merchandise, buying.

How has the Main Street of Sinclair Lewis' "Gopher Prairie" changed? Superficially, its stores have a different aspect; materials and methods of construction have tremendously improved. The farmer and his family eat food, wear clothes, furnish homes, indulge luxuries strikingly like the Chicagoan's. Gone are the general stores full of calico, Congress gaiters and peppermint sticks. But critical examination reveals few fundamental store changes designed for fully exploiting the principles of selling mass-produced, mass-bought merchandise. Our way of life and the things we buy have improved. Store design has not kept up with the bandwagon.

If the problem of selling the same products to the same people is the same everywhere—and we believe it is—ergo, here is a chance for truly national architectural expression! And reliable sources predict amazing increases in retail buying for 1941. What more could the architect want?

A BUILDING TYPES STUDY

By MORRIS LAPIDUS, Architect, in collaboration with the Editors

THE STORE



EARLY MAN made his own implements. As special skills developed, skilled ones—the artisans—devoted more and more time to manufacturing. These early craftsmen made battle axes and pottery, perfumes and oils, and other articles ranging from wearing apparel to utensils. Eventually artisans found themselves without time to produce their own necessities of life. So the exchange of commodities for produce evolved, at first by barter, eventually through the medium of money. The sale of man-made products began merchandising.

In early history—Biblical, Greek and Roman—we find mention of early shops and stores. In medieval times, we find that craftsmen, now members of guilds, concentrated their establishments on “shopping avenues.” In this concentration lay the beginnings of our modern shopping centers. The individual shop, usually in the craftsman’s home—a large bay window, an adjoining shop entrance door, and a sign—was the prototype of the modern storefront. The interior contained all the elements which were to develop into the modern store interior: shelving, cupboards, chests and tables.

Increasing demands for the craftsman’s merchandise forced a separation in the heretofore simple process of satisfying wants: *making* and *selling* products became distinct functions. The tradesman, forerunner of our modern retail store merchant, furthered the separation by actually buying from the maker and selling to the public. It is during this Medieval and later Renaissance period that the true retail store emerges as a place where manufactured merchandise is sold to the ultimate consumer.

EVOLVES FROM CRAFT SHOP TO MASS OUTLET

It is a striking coincidence that the year 1891, in which ARCHITECTURAL RECORD first emerged, is approximately the date when modern mass production methods, and mass buying, began to be recognized, perhaps unwittingly, as forces in store architecture



Top photograph, from the Bettman Archive, illustrates sale of cushions in a Roman draper's shop. The Medieval shopping avenue, also from the Bettman Archive, with optician, bootmaker and notary side by side, is a reproduction of a copper engraving by Phillip Galle, after Stradanus. The butcher shop at left is from "Small Houses of the Late Georgian Period," by Stanley C. Ramsey, F.R.I.B.A. Kay's, below; MORRIS LAPIDUS, Architect for ROSS FRANKEL, INC.; photo by Gottscho

KAY Jewelers



A PARADOX UNDERLIES THE PROBLEM



DEPARTMENT STORES, such as Saks-Fifth Avenue in Beverly Hills, Calif., have problems which have to be treated differently than those of retail stores. Photo courtesy Carbondale Div., Worthington Pump & Machine Corp.

INCREASED PRODUCTION MEANS
MORE GOODS TO BE DISPLAYED

GREATER PURCHASING POWER
MEANS INCREASING DEMANDS

THE INDUSTRIAL REVOLUTION, with its introduction of power and machine-made articles, had a profound effect on the retail store. In the first place, it completed the separation between the tradesman and the craftsman. The store now became a retail selling establishment completely divorced from any process of manufacture. Also, we find a great change during this era in the type of merchandise sold. Whereas, in the past, *fabrics* were sold for home manufacture of wearing apparel, we now find *ready-to-wear* garments. Instead of boots and shoes specially made for the customers' individual requirements, we now find factory-made footwear. Formerly only a comparatively few home-furnishing items were sold; we now find a great profusion. Cheap power and the machine transferred the making of apparel, furnishings, and even foodstuffs, not only from the individual shop to the factory, but from the home to the factory.

In spite of such tremendous changes in retailing methods, and the increased amount of merchandise for sale, little or no change took place in the architectural aspect of the store; it was still basically a window, a door, and a sign, with shelves and counters inside.

FORCES IN OPPOSITION

The changing methods of producing and retailing brought about a peculiar paradox. On the one hand, increasing manufacture meant increasing urban population which, in turn, meant a greater number of shoppers who could purchase a greater amount of merchandise. This meant a greater number of stores, all trying to stay on the same restricted shopping avenue. With more demand for

OF DESIGNING MODERN STORES

stores in an unchanging space, real-estate values increased tremendously—which, in turn, forced a decrease in the amount of front footage that the retailer could afford. While the front footage available per store was decreasing, the amount and diversity of merchandise created by consumer demand was increasing—in other words, more things have now to be shown in less space. This paradox becomes even more pronounced when we consider that, whereas customers formerly bought primarily on a merchant's reputation, they now do their buying by "shopping around" for values in several merchants' windows. Here is a problem indeed—one which is with us to this very day—the problem of trying to show shoppers, effectively, as much merchandise as possible, on the street, within the confines of a very narrow street frontage.

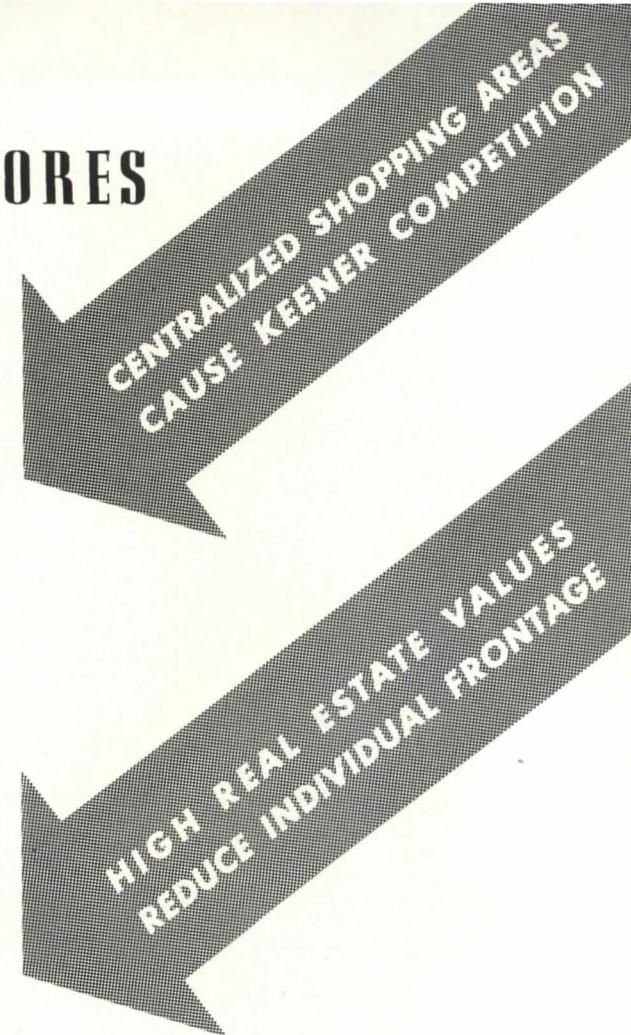
DEPARTMENT STORES

The department store was then and is today untroubled by this problem. For, in the department store, we find not one street floor for selling merchandise, but many floors. This multi-storied operation allows for greater street frontage; and, although each individual floor (which would of course correspond to a single store unit) does not have more than that individual unit would normally have, the aggregate frontage for all of the floors allows sufficient width on the street for adequate display.

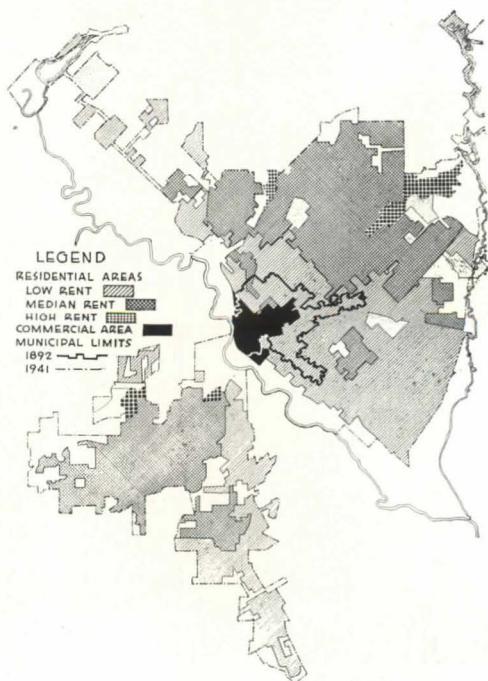
ARCADE FRONTS FOR RETAIL SHOPS

The retail store is forced into the only expedient left—that of turning the display, or the show windows which house the display, into the interior area, creating the arcade type of store front. At first, and even today, the retailer tried to get as much display frontage on the street as he could; this in spite of the fact that he had additional display going back inside the arcade. To overcome this obviously unpleasant arrangement, store designers have tried in the past fifteen or twenty years to induce interest by breaking up the line of the show window as displays retreat toward the entrance door. This, however, is superficial design treatment. The result is seldom satisfactory.

The importance of display on the building line has proven negligible. Traffic counts show that most shoppers avoid front lights of glass because there they are jostled by street traffic. The greatest concentration of window shoppers is in the vestibule or arcade. The trend today calls for simplified show window lines, arranged not for an unusual plan, but rather for an effective grouping of the merchandise displayed behind the glass. As much spaciousness as possible is sought in the vestibule for proper circulation. On the interior, we find the change less marked. The basic principles of selling merchandise from a bin, shelf or cupboard, across a counter, still prevail. The newer retail stores, however, are striving for greater merchandise-appeal (and, incidentally, better architectural setting) by means of interesting planning, display and decorative treatment. Selling—that is, merchandising—is being made more direct by bringing the merchandise closer to the customer.



MAP shows small, relatively stable shopping area of Dallas, Texas, which has multiplied in size many times since 1892. Source: "Structure and Growth of American Cities," FHA



1

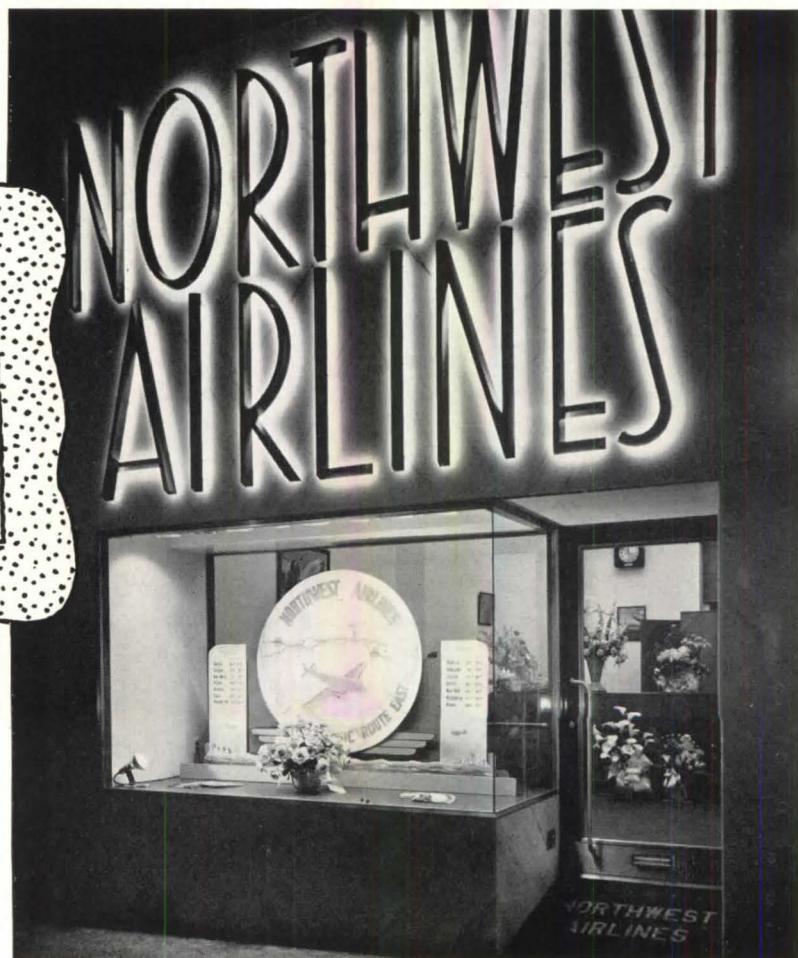


DISPLAY of merchandise;
Horowitz Fur Shop, New
York City; FELIX AUG-
ENFELD, Architect



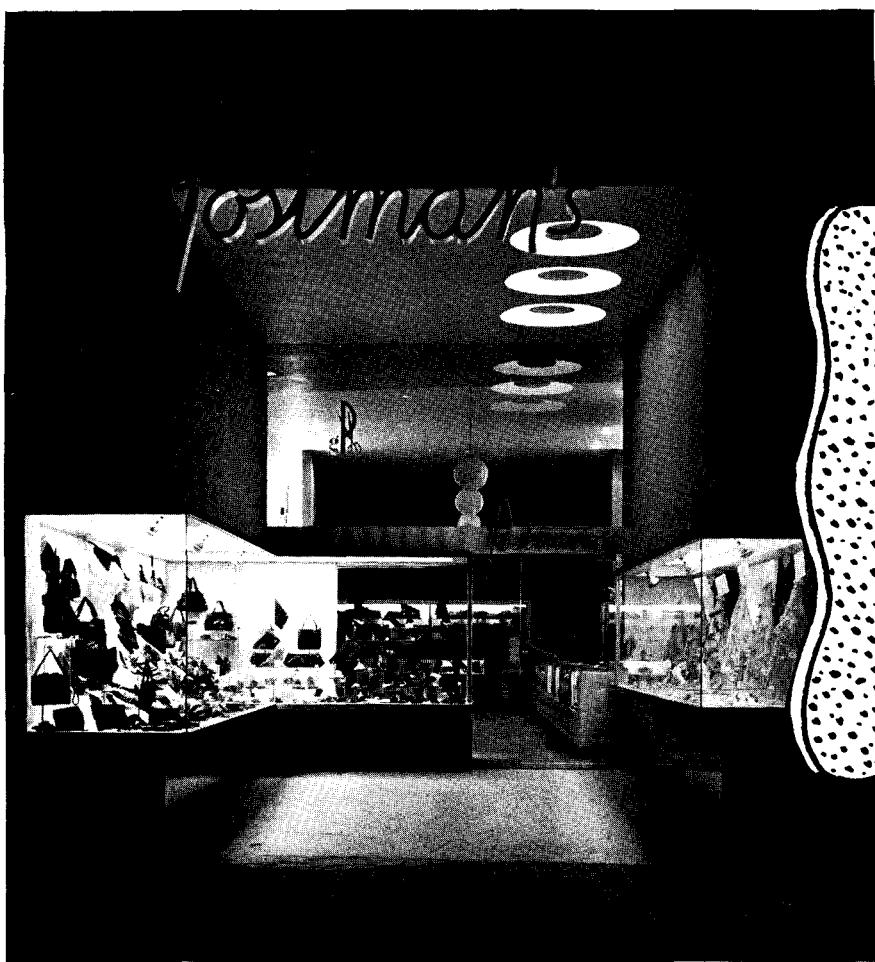
2

BALLYHOO — or, more conservatively, use of identity as an advertising medium — illustrated by Northwest Airlines exterior, Portland, Ore.; A. E. DOYLE & ASSOC., Archts.



STORE FRONTS HAVE 3 FUNCTIONS

THE STOREFRONT is more than just the part of a store which abuts on the street. It has several definite, vital functions to perform. It is a medium for displaying merchandise; it is a means of identifying the store, the identity serving as an advertising medium; and, lastly, it serves as an entrance to the store interior. A successful storefront must perform all three functions. As a medium for displaying merchandise, it serves as a pedestal, a frame, and a background not only for showing the merchandise, but also for dramatizing it, for creating "eye appeal." As an identifying symbol, it acts as a combined ballyhoo artist, billboard and silent salesman, at work twenty-four hours a day. As an entrance to the store interior, it is more than just a doorway. It sets a mood and creates a desire to buy. In effect, it says: "Please come in. We have something that will interest you." All these are highly important to the retail merchant as a means of attracting more business. A basic understanding of the three functional requirements of a storefront will help the architect create a good storefront for the merchant; and it is a means of achieving the unusual, striking effect that makes a project outstanding.

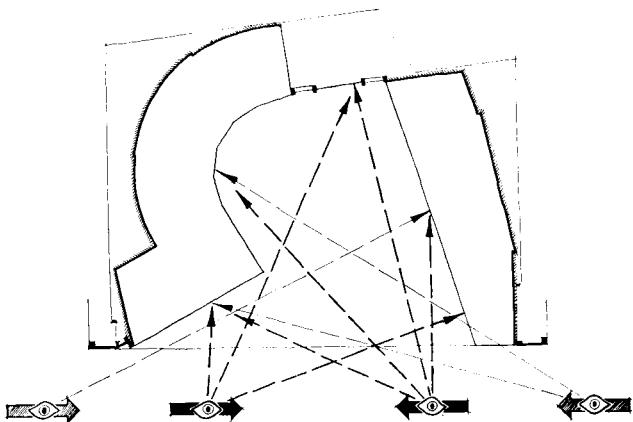


3

ENTRANCE to the store;
arcade front of Postman's,
New York City; MORRIS
LAPIDUS, Architect for
ROSS FRANKEL, INC.



PLANNED to attract pedestrians: Hanover Shoe Store, Baltimore, Md.; MORRIS LAPIDUS, Architect for ROSS FRANKEL, INC. Sketch at right demonstrates that passers-by from both directions have progressively more interesting displays to see in this type of arcade than in the usual flat front. A similar diagram sold this job to the client.



This apparel shop front in Chicago, by HOGAN AND FARWELL, INC., makes the most of a narrow frontage, and provides a large window for dresses, a small one for accessories. See also page 122

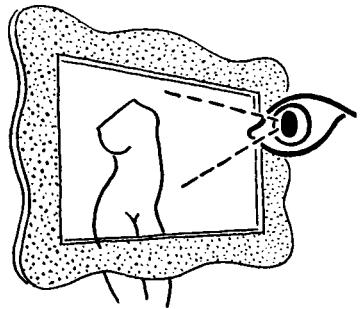
PLAN THE FRONT FOR DISPLAY

THE PLAN IS MOST IMPORTANT to the first function of the storefront. A storefront is planned for motion. The pedestrian on the shopping avenue is never at rest. He is approaching the store in either one direction or the other. The plan of the windows and entrance must be so related that the sequence unfolds properly; once the shopper has approached the store, the plan must invite him to enter, to follow the line of show windows to the entrance door.

The show windows, themselves, must be planned not only for the shopper, but must also be planned to display properly the merchandise for which they are intended. The show window should be regarded as a platform or plateau on which merchandise is displayed for the passer-by. Plate glass merely protects the merchandise.

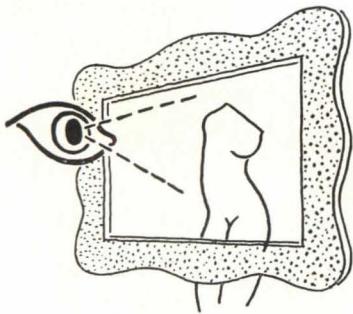
The form of the show window is entirely dependent upon the *type* of merchandise displayed, plus the *manner* in which it is displayed. Small group displays call for an entirely different plan than continuous mass displays. The plan of the window should be arrived at only after display problems have been solved.

The vestibule, that is, the public area, of a storefront should be arranged for the convenience of the shopper, not only the shopper who is looking in the show windows, but also the shopper who is going into the store and the shopper leaving the store. Circulation is every bit as important as in any other type of planning.



DISPLAY provided by entire interior of store: Barton's candy shop, New York City; GRUENBAUM AND KRUMMECK, Designers. Glass is merely a protection against weather; interior surfacing materials and colors carry through glass to building line





DESIGN FOR THE MERCHANDISE

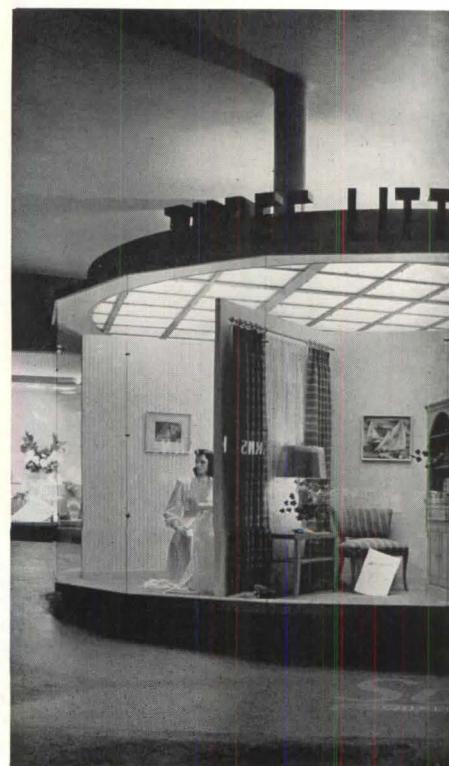
THE DESIGN OF THE SHOW WINDOW, itself—that is, its height, its depth and its physical arrangement—is the means of successfully displaying merchandise. It is almost impossible to promulgate a set of rules governing dimensions of show windows, but it is quite simple to explain the underlying principles. The individual architect can, after a study of the problem, be his own authority on show windows. Depth and height of the platform or bulkhead are determined directly by the type of merchandise to be displayed. Size of the merchandise determines at what horizontal distance from the observer's eye the merchandise may be set, and what the limit of that distance should be. The type of merchandise determines the level at which it is displayed to the best advantage. The general character of the merchandise determines the amount of area required around the merchandise to enhance its display.

A few examples should clarify what otherwise might seem a complicated situation. Let us take, as an example, jewelry. This, being small merchandise which needs close scrutiny, should be displayed as near the eye level and as close to the observer as possible. That means that the platform should be comparatively high, the window shallow. Women's dresses and apparel are usually displayed on manikins. These should be seen under approximately the same conditions as would obtain if a living model were wearing them. The window platform should be raised only slightly, to emphasize the display. The window can be rather deep because a garment can be seen at a fairly good distance. There should be plenty of height in the window, itself, because a gown appears more attractive in a monumental setting than in a low-ceilinged room. The dress window then, we can say, should be quite tall and fairly deep, with its platform rather close to the ground. Men's suits, usually displayed on stands or torso forms, are not in a realistic position. The platform, therefore, should be raised so the garment can be seen comfortably, without stooping. The window should be neither too shallow nor too deep, because men's clothing bears close scrutiny but is not too small to be seen at some distance; due to the manner in which it is displayed, it does not need much space above it. The window here should be of medium height and medium depth. Shoes should be displayed below eye level, to approximate their position when worn; yet high enough for close scrutiny; the window is preferably not too deep.

Most women's shoes are displayed against a dramatic setting which requires height. Men's shoe and better-grade women's shoe displays concentrate attention on merchandise itself, and therefore require very little height above the shoes. A furniture display must duplicate as closely as possible the average room, with only a slight elevation to give importance to the display. The display of foodstuffs should begin at approximately table height and, since they do not require too close a scrutiny, may recede for a good distance; but food may not be carried too high above the eye level. This list might go on indefinitely. However, if the same line of reasoning is applied to any type of merchandise, a satisfactory solution is sure to be the result.

In some stores, we find more than one type of merchandise on display. Here, what might become a difficult problem (arrangement of show windows each designed for its own particular type of merchandise) can produce an interesting and effective design. Such a store is illustrated here.

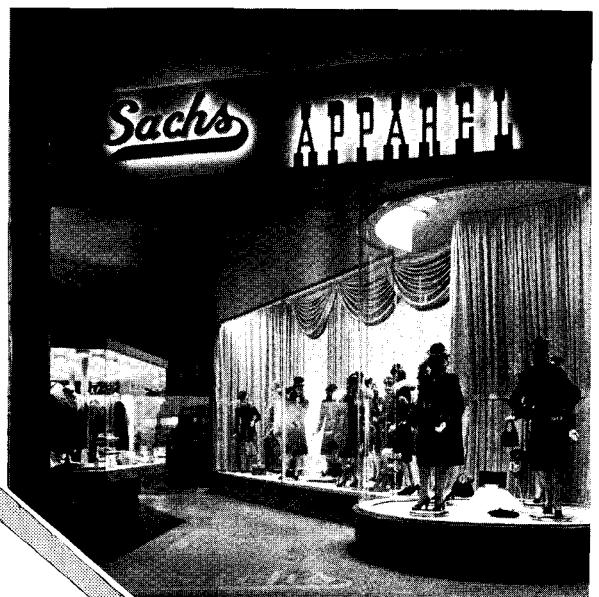
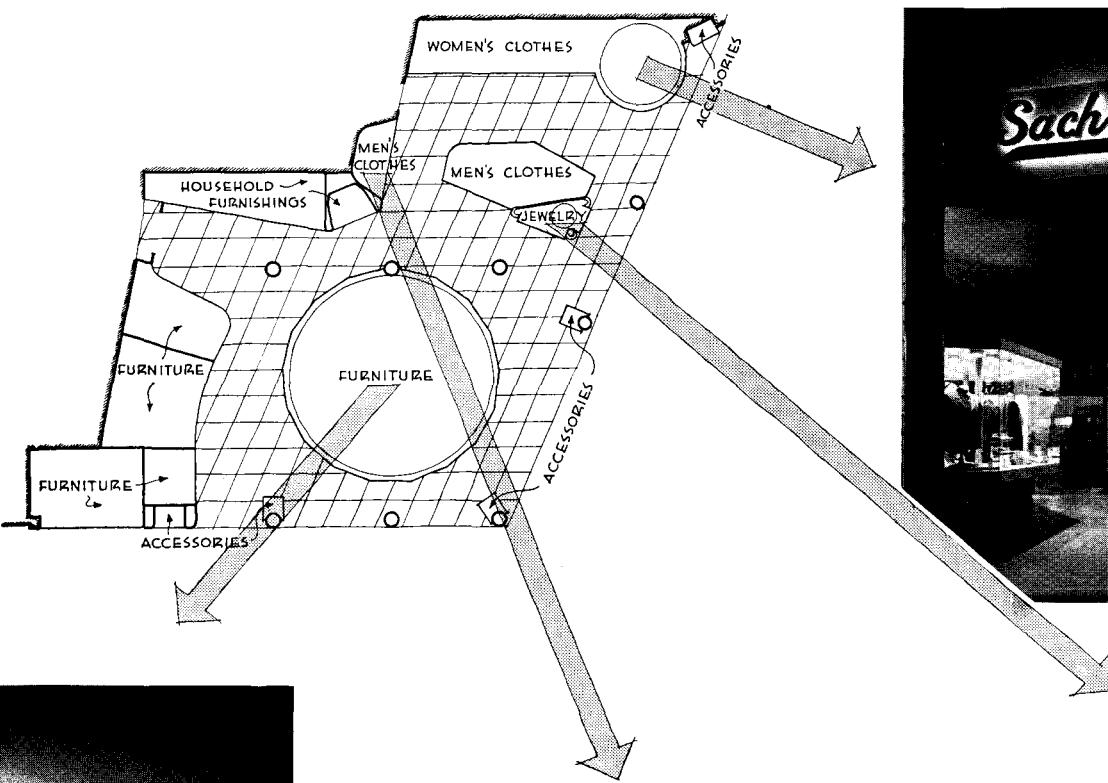
FURNITURE TURNTABLE





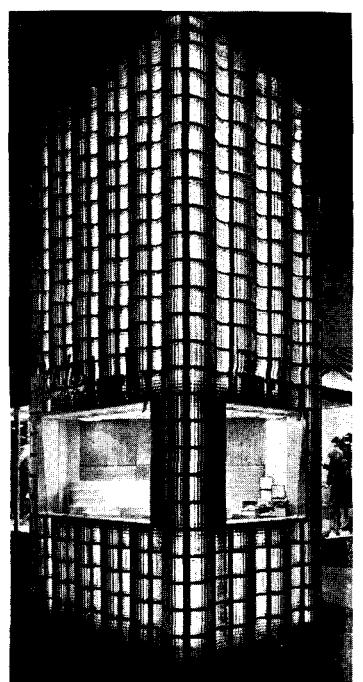
SACH'S small department store, New York City; MORRIS LAPIDUS, Architect, FRANK S. PARKER, Associate Architect. Many kinds of merchandise, each in a specially designed window, had to be displayed in a single front

WOMEN'S WEAR

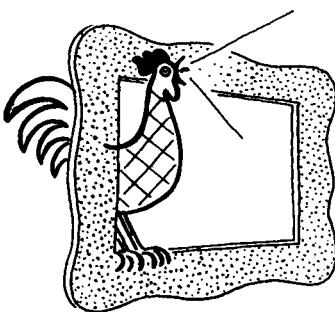


JEWELRY

HOUSE FURNISHINGS, MEN'S WEAR



Photos by Gottscho

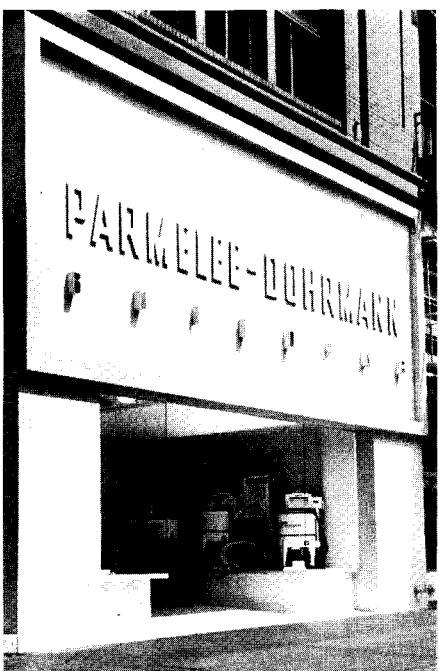


ADVERTISING FUNCTION OF STORE

THE IDENTITY, OR ADVERTISING VALUE, of a storefront—second of its important functions—is at once the most difficult to achieve and the most easily recognized. The unusual storefront consciously creates favorable business-getting comment. The bizarre front does not. The most obvious advertising medium is the sign. Other factors include the manner of framing merchandise, and the general way in which all elements of design hang together to furnish "eye appeal." The sign, often a flat member on top of the store with the owner's name as big as life, can be much more subtly used; it should be an integral part of the storefront. Good designs use lettering for its decorative effect as well as to convey information. Increased emphasis on the arcade permits lettering to be set inside the vestibule with great effectiveness.

In working out signs or lettering, the technique of the poster artist applies. After all, the storefront is really a billboard, designed on the same principles as a poster. Merchandise forms the pictorial areas, lettering corresponds to poster wording. And, as in a poster, lettering and merchandise can tell a unified story.

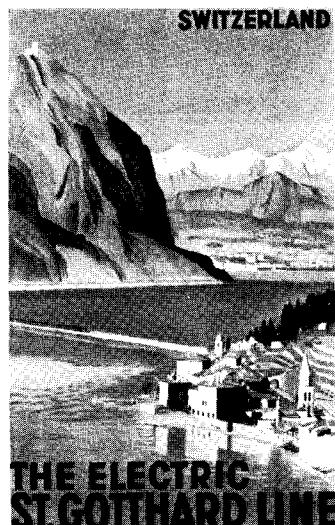
If merchandise forms the picture, then the storefront can be considered the frame. The simplest frame is four-sided; but unfortunately this type usually can be used only in a department store window which parallels the street. Application of the "framing" principle becomes a little more difficult when applied to arcade storefronts. Heavy masses above and below merchandise can be as effective as four-sided frames, perhaps more so in the arcade front. Here merchandise display begins on the street and has no terminus; it carries right into the store. If displays are individually grouped, the front may be an arrangement of individual frames. If the storefront is for general mass merchandising, the frame encompasses the entire display. In all cases, the frame should enhance the merchandise.



Hedrich-Blessing

PARMALEE'S, in Pasadena, Calif., HARBIN F. HUNTER, Architect; and MANGEL'S, Chicago, Ill., MORRIS LAPIDUS, Architect for ROSS FRANKEL, INC.; both use poster technique

FRONT DEMANDS POSTER TECHNIQUE

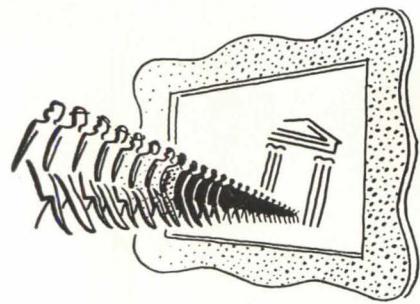


GRAYSONS



Baskerville

GRAYSON'S, Santa Monica, Calif.; GRUENBAUM AND KRUMMECK, Designers. Poster courtesy Swiss Federal Railroads.



THE FRONT IS AN ENTRANCE

PULL
CUSTOMERS ACROSS
THE ARBITRARY
BUILDING LINE

FINALLY, THE STOREFRONT IS THE ENTRANCE to the store proper. A question arises immediately: At which point does the *storefront* terminate and the *store interior* begin? Actually, there is no clean-cut demarcation; *the storefront and the interior are both component parts of a whole*. The shopper should have a feeling of being in the store once he has passed the building line.

Walls and doors which separate storefront from interior should be designed, not as a "separating" device, but as a means of protecting the interior of the store from the weather; and, incidentally, of closing the establishment after business hours. Although the storefront and the interior are parts of a unit, they have distinct functions. The front is the display portion of a store; the interior is the selling portion. These two portions have to be designed together, to be related as two integrated parts of a complete design. There may be danger in carrying too far this elimination of an artificial demarcation, if the designer sets up an arbitrary entrance which does not conform to the line of joining of the two components. Although the result might be interesting, improper placement of a door may produce confusion. Here, the architect can solve the problem in his individual manner without striving for too bizarre an effect.

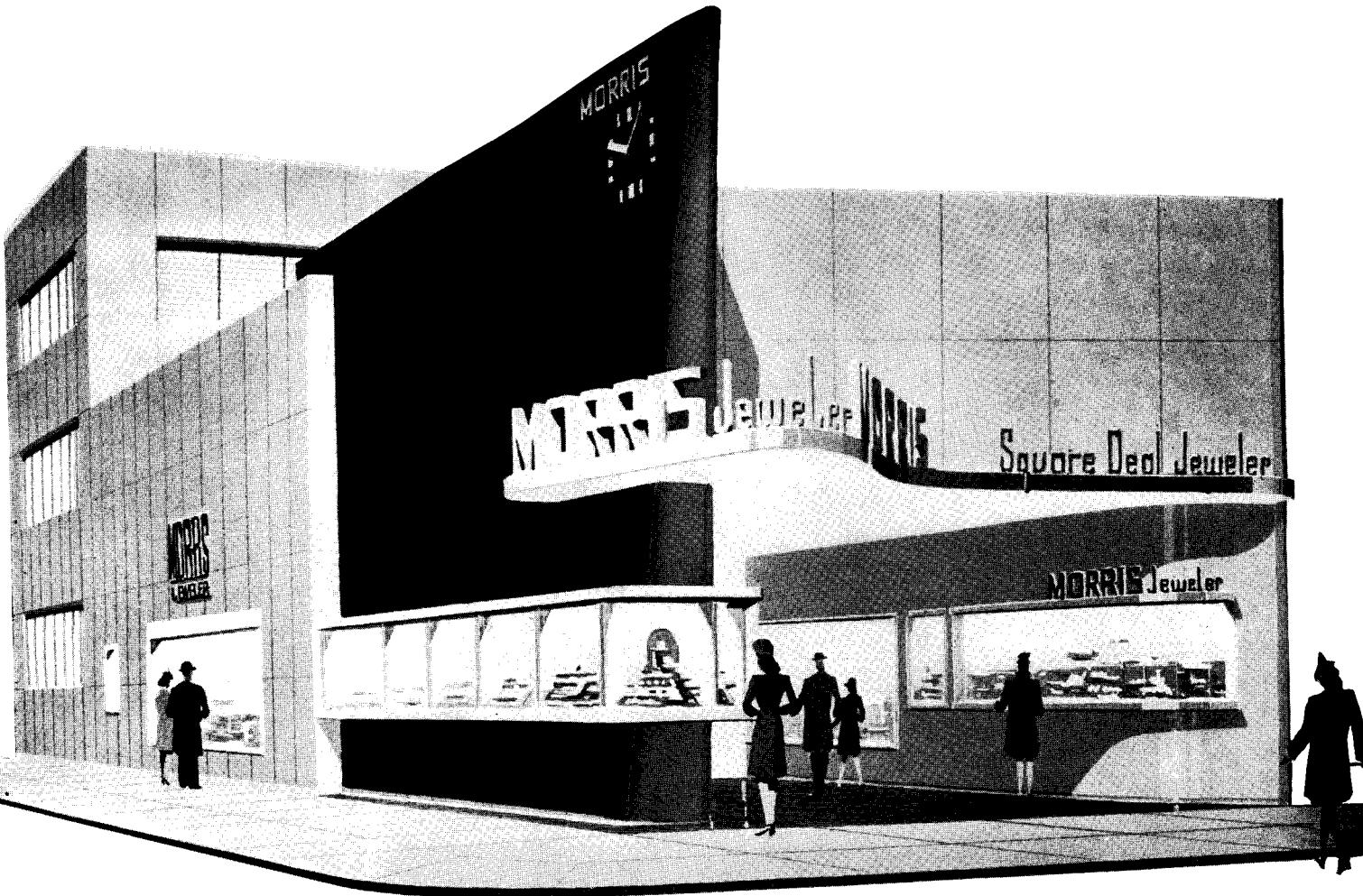
In speaking of the store as starting at the "building line," it might be assumed that the storefront must start on a given plane. This is not the case. The architect may, to achieve interest and effectiveness, set back the lines of his building, or he may project surfaces—within the scope of the building laws, of course. Projecting signs or marquees are often effective. By locating the building surface *behind* the building line and projecting the show windows *to* the building line, the actual line loses its restrictive powers. Then truly is the store right on the street.



LARGE LOBBY, Paris Decorators, New York City; MORRIS KETCHUM, JR., Architect; GRUENBAUM AND KRUMMECK, Associates

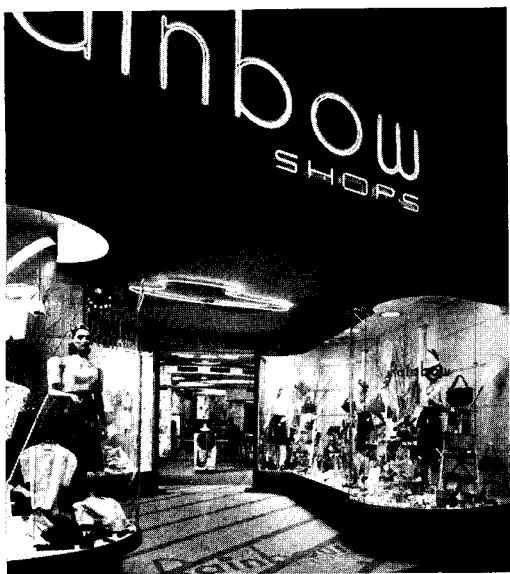


ARCADE for narrow frontage; Kay's, Knoxville, Tenn.; MORRIS LAPIDUS, Architect for ROSS FRANKEL, INC.



WHERE IS the building line? Morris Jeweler, Wilkes-Barre, Penna.; MORRIS LAPIDUS, Architect for ROSS FRANKEL, INC. Store now being built

ENTRANCE to Grayson's, Santa Monica, Calif.; GRUEN BAUM AND KRUM-MECK, Designers. Surfacing materials and storefront are carried through door into store interior



RAINBOW SHOP, New York City; MORRIS LAPIDUS, Architect for ROSS FRANKEL, INC.



Baskerville



1: STORED merchandise, plus lighting, decorates this interior

STORE

1, Rainbow Shop, New York City; Morris Lapidus-Ross Frankel, Inc. 2, Saks Fifth Avenue, Beverly Hills, Calif. 3, Postman's, New York City; Morris Lapidus-Ross Frankel, Inc. 4, Dennison's, Chicago; Dawson and Oliver. 5, Kloppenstein's, Seattle, Wash.; McLellan and Jones. 6, Kay's, Knoxville, Tenn.; Morris Lapidus-Ross Frankel, Inc. 7, Rabson's, New York City; Joseph Douglas Weiss. 8, Hanover's, Baltimore, Md.; Morris Lapidus-Ross Frankel, Inc. 9, Barton's, New York City; Gruenbaum and Krummeck



2: SALON interior, with special fittings for accessories



3: VARIED wall-case heights composed into a unified picture



5: HATS gain emphasis



6: PROJECTED counter displays



7: SPORTING goods need special fixtures

INTERIORS MUST FUNCTION IN TWO WAYS

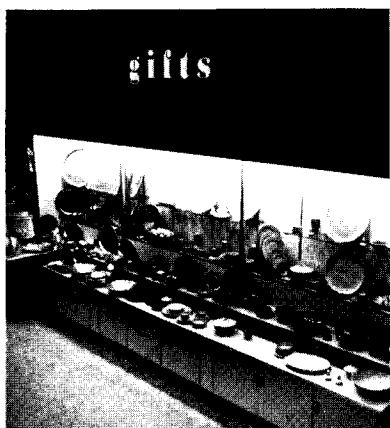
1 AS A MECHANISM FOR STORAGE AND DISPLAY

TODAY'S STORE INTERIOR serves (1), as a mechanism for storing and displaying merchandise and (2), as a background for selling it. As a mechanism, it requires units in which the merchandise can be stored adequately, seen easily, and reached easily. Each unit has to be designed to suit its particular type of merchandise. The architect needs no specialized knowledge. A survey of a particular type of store will quickly reveal to him any intricate storage problems which may exist. Gloves can be measured to determine glove-drawer sizes, etc. Too often, the architect relies upon artificial standards of required dimensions. In order to keep standard cornice heights and widths between pilasters, arbitrary elements such as top displays and side displays, good when properly used, have been introduced merely to create uniformity.

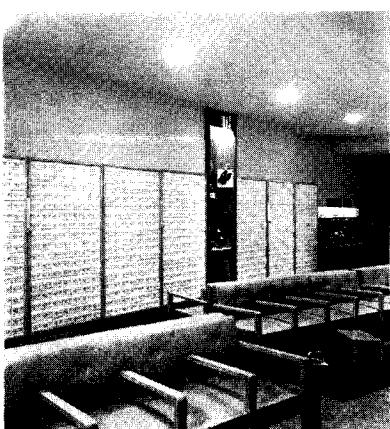
If there happens to be a group of merchandise which occupies thirty feet of wall space, then a unit thirty feet long should be designed. Nor is there need to attempt to create uniform height. If drawers can be used efficiently to a height of four feet only, then the height of a drawer section should terminate at four feet. Dress cases need not be higher than six or seven feet. We should not expect a salesgirl to reach merchandise on too high a shelf, nor should we ask her to stoop for merchandise which should be easily accessible.

The principles of "framing" merchandise, discussed in connection with the storefront, apply equally well to merchandise within the store.

If a customer is to sit at a counter, arrange for knee-space and drop the counter-top accordingly. If it is a "stand-up" counter, arrange toe-space. The use to which the fixture is put should dictate its design.



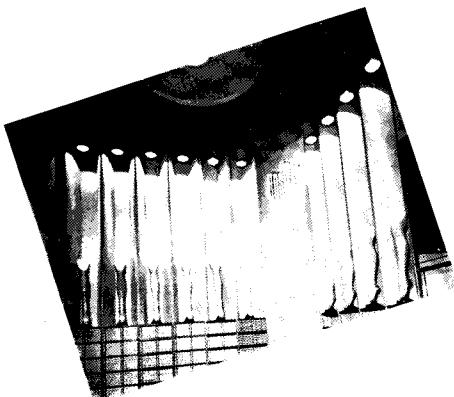
4: MERCHANTISE as decoration



8: SHOES are hard to handle



9: CANDY in hanging cases, recesses, counter displays makes use of massed small objects



SET THE STAGE FOR SALES

STORE INTERIORS

THE STORE'S INTERIOR has also to act as a stage, or background for sales. Light and color here play a tremendously important part. However, the merchandise is the best decorative motif the architect can use.

In most stores, nearly all available wall area is covered with "store fixtures." Too often, the architect supinely accepts the decision to do nothing with walls, and concentrates on floors and ceilings. Of course this helps; but walls remain the most visible part of the structure. It is the architect's problem to arrange and proportion fixtures, not only so they serve adequately, but to increase their decorative value and that of the merchandise. Interesting arrangement and framing can make even shoe boxes take their place. Well illuminated, cleverly placed displays can be as effective as fine murals. Certain types of merchandise, as in the hosiery display above, can become pure ornament.

Lighting should be used not only to illuminate the store, but also to dramatize and focus attention on merchandise. Properly placed spots and floods will enhance what the merchant has to sell. There are available specially developed fixtures, such as those in which, by means of special lenses and adjustable concealed fittings, general store lighting and accent lighting units are combined in a single fixture. Fluorescent and incandescent lighting are employed, often in interesting combinations. Lighting can also be used as a means of decorating walls and ceilings.

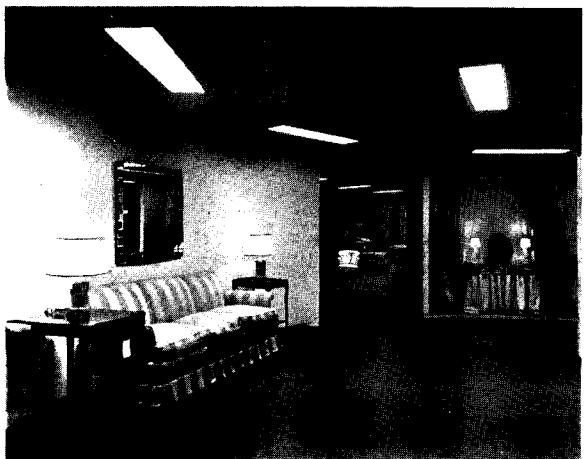
Furniture and floor coverings are perhaps more important to the store than to the residence. Furniture should be designed for store use, with a character quite distinct from furniture intended for homes.



Courtesy Hudephane

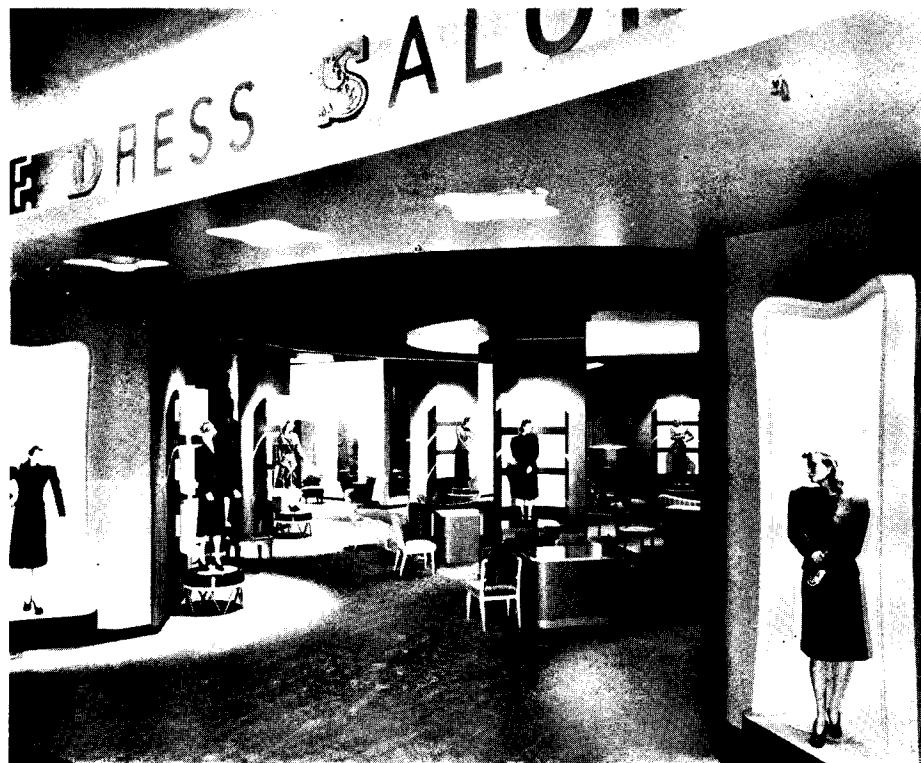
Photos by Baskerville, Hedrich-Blessing, Gotscho, Ezra Stoller, Robert M. Damora, Taylor, and E. Kroeger

1: LIGHTING -Men's clothing highlighted by spots concealed in general lighting fixtures



3: HOUSE FURNISHINGS exhibited as they appear in homes

1., Bond Clothing Store, New York City; Elias and Rothchild. **2.**, Bamberger's, Newark, N. J.; Raymond Loewy. **3.**, Paris Decorators, New York City; Morris Ketchum, Jr. and Gruenbaum and Krummeck. **4.**, Davison-Paxson Co., Atlanta, Ga.; Dale Stetson. **5.**, Grayson's, Santa Monica, Calif.; Gruenbaum and Krummeck. **6.**, Russek's, Chicago; Lichtman and Bach. **7.**, Barton's, New York City; Gruenbaum and Krummeck. **8.**, Cole's Dept. Store, Brookings, S. D.; Harold Spitznagel. (Hosiery display, Morris Lapidus-Ross Frankel)



2: WOMEN'S CLOTHES glamorously displayed in a salon



4: STAGE-SET for women's clothes



5: DECORATION focussed on displays



6: FURS and clothes used as decoration



7: CANDY displays become wall ornament



8: SIMPLE treatment enhances merchandise



COORDINATION of exterior and interior displays: Hanscom Bake Shop, New York City; MORRIS LAPIDUS, Architect for ROSS FRANKEL, INC.

IS STORE DESIGN VITAL?

THE STORE OF THE FUTURE will have to be architect-designed. It has often been stated that the store field, of all branches of architecture, has indicated the most possibilities for vital design. Yet the potentialities of this field have hardly been recognized by architects. As one result of the lack of scientific analysis, today's average store closely follows the early medieval shop—bay window, door, sign, bins, and counter. Too often, the architect merely puts on paper, verbatim, the merchant's design. Perhaps this results from inherent distrust of problems with which the architect is not thoroughly familiar.

This study attempts to dispel the mysteries of design for merchandising—to point out how simple it is, let us say, to measure a stock of gloves to ascertain glove-drawer sizes. Let the architect determine for himself how to "merchandise" a store! He too is a shopper. A capacity for intelligent study of clients' requirements is all the special equipment he needs. From that point on, design should be dictated by function and form. As more well-designed stores appear on our shopping avenues, more merchants will inevitably demand architects' services.

MAIN STREET, we said, was the same in Sheboygan or Albuquerque. To prove it, here are shoppers photographed on Congress Street, Portland, Maine, superimposed on a shot of Dauphin Street, Mobile, Alabama.



SHOW-WINDOW DESIGN PRINCIPLES

Information on this sheet was prepared by Ronald Allwork from data furnished by Morris Lapidus, Architect.

The table below indicates the common types of retail stores, together with remarks pertinent to show-window design for each type. On this sheet (and overleaf) specific recommendations as to window heights and depths have been omitted in order to avoid hard-and-fast design limitations. Such factors as the design of adjacent storefronts, slope of sidewalk, locale, etc., have an important bearing on show-window design, and it is therefore inadvisable to offer dimensions which might impede the process of good design.

Diagrams overleaf are schematic and are not drawn to scale.

STORE TYPE	REMARKS	STORE TYPE	REMARKS
Automobiles, bicycles, pianos	No back to show window, entire showroom forms background	Pets	Medium window depth, open back
Floor coverings, furniture, drapes	Show window follows normal room proportions. In some instances show window has no back, the entire showroom forming the display	Haberdashery	Medium depth window for mass display
Radios	Window of medium depth to permit display of large floor models	Men's shoes	Display fairly high to permit close scrutiny
Washing machines, stoves and refrigerators	Fairly deep window required	Artists' materials, office supplies, gift shops, cutlery	Deep window to permit display of complete line
Women's apparel	Generally displayed on manikins. Fairly deep window preferred with background to suggest grand scale	Confectionery	Back of window usually glass or open to store interior. Consider the heat output of lights and its effect on merchandise
Hosiery	Shallow window preferred with merchandise displayed close to observer	Pipe and tobacco shop, books, china and glass, silverware, cameras	Windows of medium depth for mass display and to permit close scrutiny by observer. Window backs should generally permit easy access to merchandise
Lingerie	Medium window depth to permit arrangement of full range of merchandise from lingerie to underthings	Bakeshop	Merchandise is sold from window and therefore must be readily accessible from back, which is usually glass. Consider heat output of lights and its effect on the merchandise
Dry goods	Medium window depth for built up mass display	Jewelry, optical goods	Shallow depth window with merchandise readily accessible from interior of store
Women's shoes	Lower priced shoes require large window and background suggesting grand scale to dramatize the display. Higher priced shoes are more simply displayed in smaller window	Works of art, paintings	Fairly deep window to permit a satisfactory view of large objects or paintings and ample floor area for prints, or smaller objects
Groceries, delicatessen, dairy, liquor	Medium depth window for mass display with merchandise not too far from observer	Millinery, gloves and bags, men's hats	Merchandise to be displayed at level approximately that of actual use, and near enough to observer to permit close scrutiny
Hardware, luggage, paints, toys	Medium window depth for built up mass display		

SHOW-WINDOW DESIGN PRINCIPLES

NOTE:
DRAWINGS ON THIS SHEET
ARE NOT TO SCALE AND
ARE INTENDED TO INDICATE
ONLY APPROXIMATELY THE
DISPLAY LEVELS FOR VARIOUS
TYPES OF MERCHANDISE.

VERY LARGE OBJECTS

RADIOS
WASHING MACHINES
STOVES AND
REFRIGERATORS
BICYCLES
FLORIST

FURNITURE
PIANOS
AUTOMOBILES
WOMEN'S APPAREL
DRAPERIES
FLOOR COVERINGS

LARGE OBJECTS

HOSIERY
PETS
LUGGAGE
PAINTS

MEN'S CLOTHES
LINGERIE
DAIRY
DELICATESSEN
HARDWARE

WOMEN'S SHOES
DRY GOODS
GROCERIES
WORKS OF ART
PAINTINGS
TOYS

MEDIUM-SIZED OBJECTS

WOMEN'S SHOES
MILLINERY
GLOVES & BAGS
LIQUOR

MEN'S SHOES
MEN'S HATS
HABERDASHERY
DRUGS
CONFECTIONERY

ARTIST MATERIALS
OFFICE SUPPLIES
CUTLERY
GIFT SHOPS

SMALL OBJECTS

SILVERWARE
PIPE AND
TOBACCO SHOP

BAKESHOP
BOOKS
CHINA AND
GLASSWARE

CAMERAS
SPORTING GOODS
STATIONERY

VERY SMALL OBJECTS

JEWELRY

OPTICAL GOODS

USUALLY THE SMALLER
THE MERCHANDISE, THE
THE HIGHER THE LEVEL
OF THE BULKHEAD, AND
THE LOWER THE HEIGHT
OF THE WINDOW.

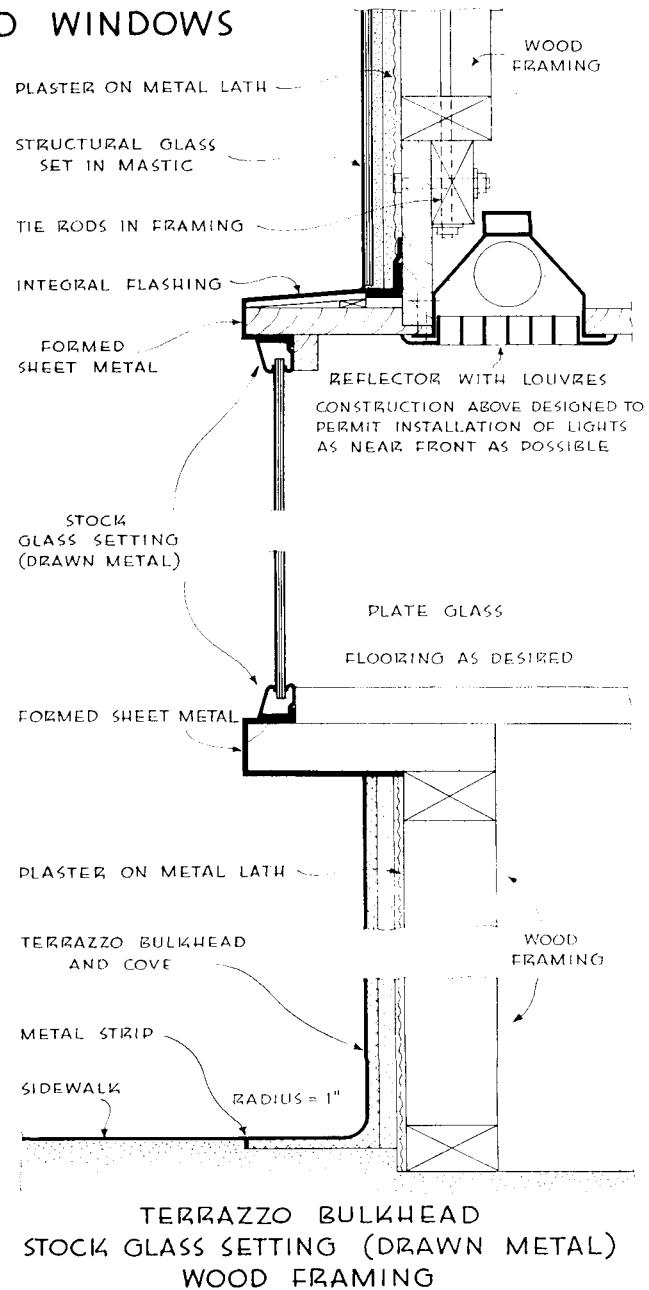
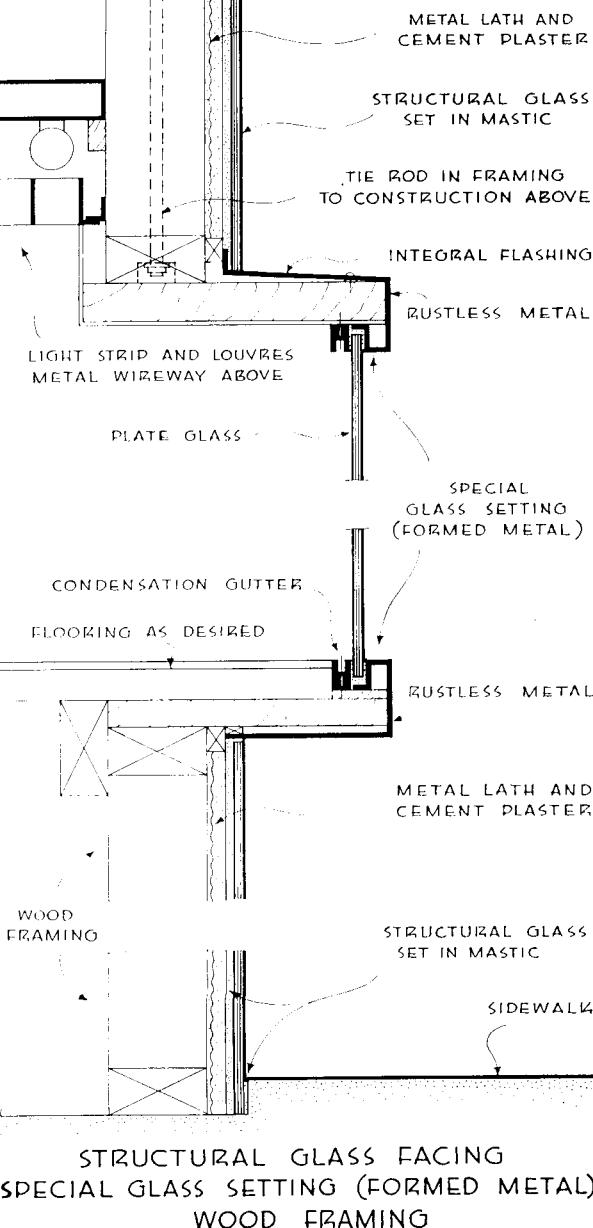
SHOW-WINDOW CONSTRUCTION METHODS

Information on this sheet was prepared by Ronald Allwork from data furnished by Morris Lapidus, Architect.

Sections shown below and overleaf are intended to illustrate typical construction methods only, and must not be construed as recommendations for the use of any particular material or equipment.

For details of such equipment as awning bars or stock glass settings, refer to the various manufacturers' catalogs.

CANTILEVERED WINDOWS



SHOW-WINDOW CONSTRUCTION METHODS

FLUSH WINDOWS

