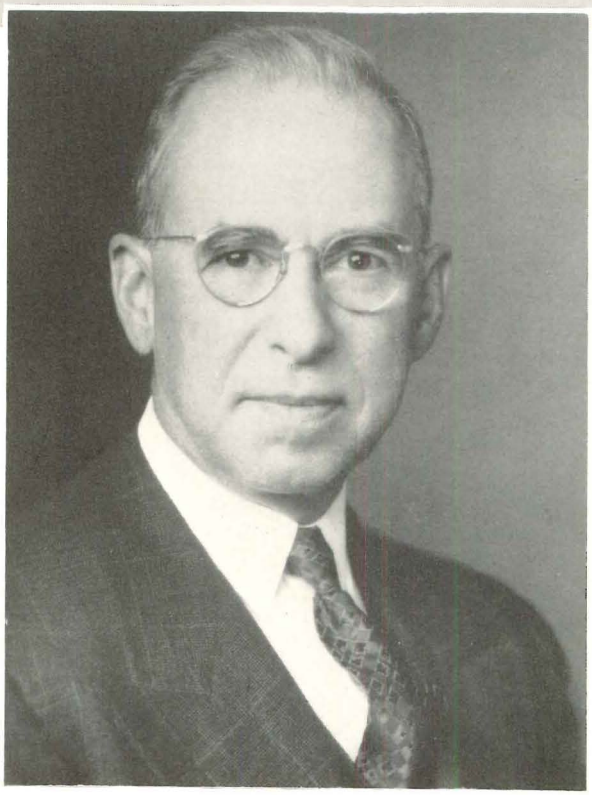


RICHMOND H. SHREVE, elected president . . .

AIA CONVENTION

YOSEMITE NATIONAL PARK and LOS ANGELES
MAY 17 to MAY 21

THE NEED for professional service which only architects can render in the national defense program, and post-war problems of the building industry chiefly concerned 400 members, delegates and guests of the American Institute of Architects at its 73rd annual convention, which opened at Yosemite National Park, Calif., May 17, and closed May 21 at Los Angeles.

A resolution of immediate significance adopted by the Institute called for the appointment by the president of the Institute of a national chairman for civilian protection, with power to co-ordinate existing agencies and to set up a nationwide organization of the profession for service to the country.

The Institute also went on record against a trend which has developed in the construction industry, wherein agencies have assumed the professional functions of architects and engineers. Creation of a national housing council was advocated, to determine the location, planning and management of all multiple-unit housing in which government has an interest.

Richmond H. Shreve of New York was elected president to succeed *Edwin Bergstrom*. Officers reelected were: *Walter MacCornack*, dean of M.I.T. School of Architecture, vice-president; *Charles T. Ingham*, Pittsburgh, secretary; and *John R. Fugard*, Chicago, treasurer.

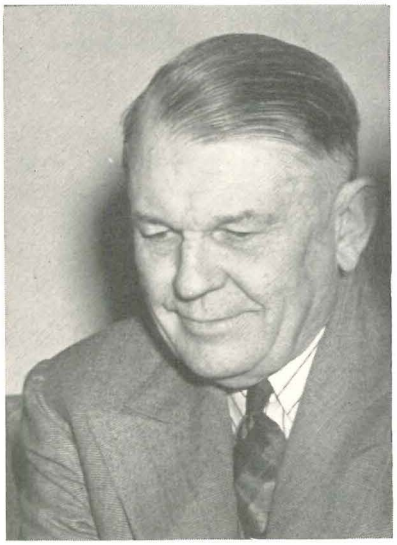
Regional directors were named as follows: *C. Julian Oberwarth*, Frankfort, Ky., Great Lakes District; *Harlan Thomas*, Seattle, Wash., Western Mountain District; and *Frederic A. Fletcher*, Baltimore, Md., Middle Atlantic District. *Matthew W. Del Gaudio* of New York was elected State Association Director.

The keynote address prepared by Mr. Bergstrom, who was unable to attend the meeting because of work on which he is engaged for the War Department, was delivered by *Clair W. Ditchy* of Detroit, who presided. Mr. Bergstrom said:

"The world continues in increasing turmoil. Nations are engaged in war for aggrandizement and for protection from aggrandizement; to establish one ideology of government and to maintain another ideology. Cities are being destroyed; men, women, and children are being harassed and killed in increasing numbers every day. Our life savings and our energies are being lavished on the production of powder and arms and the means of using them effectively.

"The architects are vitally affected by these disturbances. The normal tenor of their practices is completely upset and they are engaged almost entirely in the planning of buildings for war. They realize fully the necessity of doing the things which the defense program calls for, and it af-

(Continued on page 40)



. . . succeeding EDWIN BERGSTROM

fords them a field wherein they can, and do, render a notably patriotic service. But they find it difficult to adjust themselves to the loss of all sense of value in a program in which everything must be sacrificed to speed. They also find it difficult to adjust themselves quickly to the magnitude of a program that comprises somewhat more than 200,000 structures and wherein the simplest element of planning multiplies into an astonishing volume, and an unused area of 10 square feet in one of the army cantonment buildings causes a waste of more than $250,000 in the construction program, for instance.

Fine service of planning profession

"The architectural profession has responded freely and wholly to the demands of the defense program. Architects have given a great deal of money and personal service for the development of the questionnaires which are proving so useful in the selection of architects for the defense projects. Architects are planning the far-flung Atlantic bases which guard our continental area. They have planned many structures for the Navy and the Army. They have planned factories to produce the facilities of war, warehouses in which the facilities will be stored, shops in which they will be repaired, housing for the Army and the Navy personnel and for the workers in the defense factories and the scores of other buildings comprised in the defense program. They have moved their offices into the field and expanded their facilities to keep their performances ahead of the contractors who produced the 200,000 buildings within a period of a few months. The architects and the other planning professions have done a fine service for their country under extremely unusual and difficult circumstances.

"It has been unfortunate that there have not been enough defense jobs so that every architect might plan at least one of them. It has been equally unfortunate that all of the federal agencies have not seen eye to eye on the policy of employing architects and others of the planning professions to develop their planning programs.

"The major endeavors of the Institute and its officers during the last 18 months have been directed to solidifying the interests of the Government in the profession by making it increasingly conscious of the importance of the services that architects can render it, and to impress the profession with the necessity of rendering its services competently.

Government relying on services

"There is not the slightest question that much of this objective has been achieved, and that government is relying more and more on the services that architects can give it. The constant and untiring efforts of your representatives in Washington have achieved a result for the profession hitherto not approached in government services, an achievement worth far more than all of the time and money lavished on it.

"Early this year, your President, with the President of the American Society of Civil Engineers, the immediate Past-President of the American Society of Mechanical Engineers, and the President of the American Society of Landscape Architects, were selected by the War Department to assist in the selection and planning of the sites for new camps and plants, and in the planning of its buildings. These men were asked to do this because the department became convinced that the planning professions they represented had something to contribute to the 1941 program that had been lacking in the previous program. They have worked every day and long into the nights in the discharge of their responsibilities. They have built up competent staffs of consultants and departmental heads, calling in architects, engineers and landscape architects from private practice. All of them are there for the period of the emergency, and have agreed to remain so long as their services are useful to the government during that period. This coalition of a governmental department with the professions is a notable achievement.

Long struggle ahead

"There is no evidence that we can expect to revert soon to our normal functioning and ways of life, and the profession should prepare itself to accept the long struggle that seems ahead. It may mean a permanent rather than a temporary readjustment for us, and certainly our normal practices will continue to be disarranged for a long time and we must adjust ourselves for that eventuality. We will remain dependent mainly on government commissions and employment for our subsistence, and we must accept these commissions and perform them with complete competence."

Mr. Bergstrom sketched the recent growth of the Institute.

"Its corporate membership has held its own well," he said. "The associates of chapters have almost tripled in number. The state association members, which were five in number two years ago, now number 21, with a combined membership of more than 5,400 members, of whom at least 4,000 are non-Institute members. More than half the architects of the United States are now under the aegis of the Institute."

Plimpton speaks

Emphasis on the challenge that faces architects in undertaking the job of rebuilding America marked addresses by *F. A. Plimpton*, President of Producers' Council, and *Thomas S. Holden*, President of F. W. Dodge Corporation and Editorial Director of ARCHITECTURAL RECORD.

"Every element in the building industry has a vital stake in a comprehensive rebuilding program," Mr. Plimpton asserted. "All will now work together to formulate a program so challenging in its objectives that it will command thoughtful attention and support of all industry and business, and of those in Washington who are so greatly concerned with what may happen when the present emergency is ended.

"If this nation can provide twenty billion a year for defense it can more clearly provide twenty billion a year for rebuilding and revamping its physical plant. If it has the courage to face realities, it can forestall any precipitous slump when our productive facilities and manpower can be released from defense.

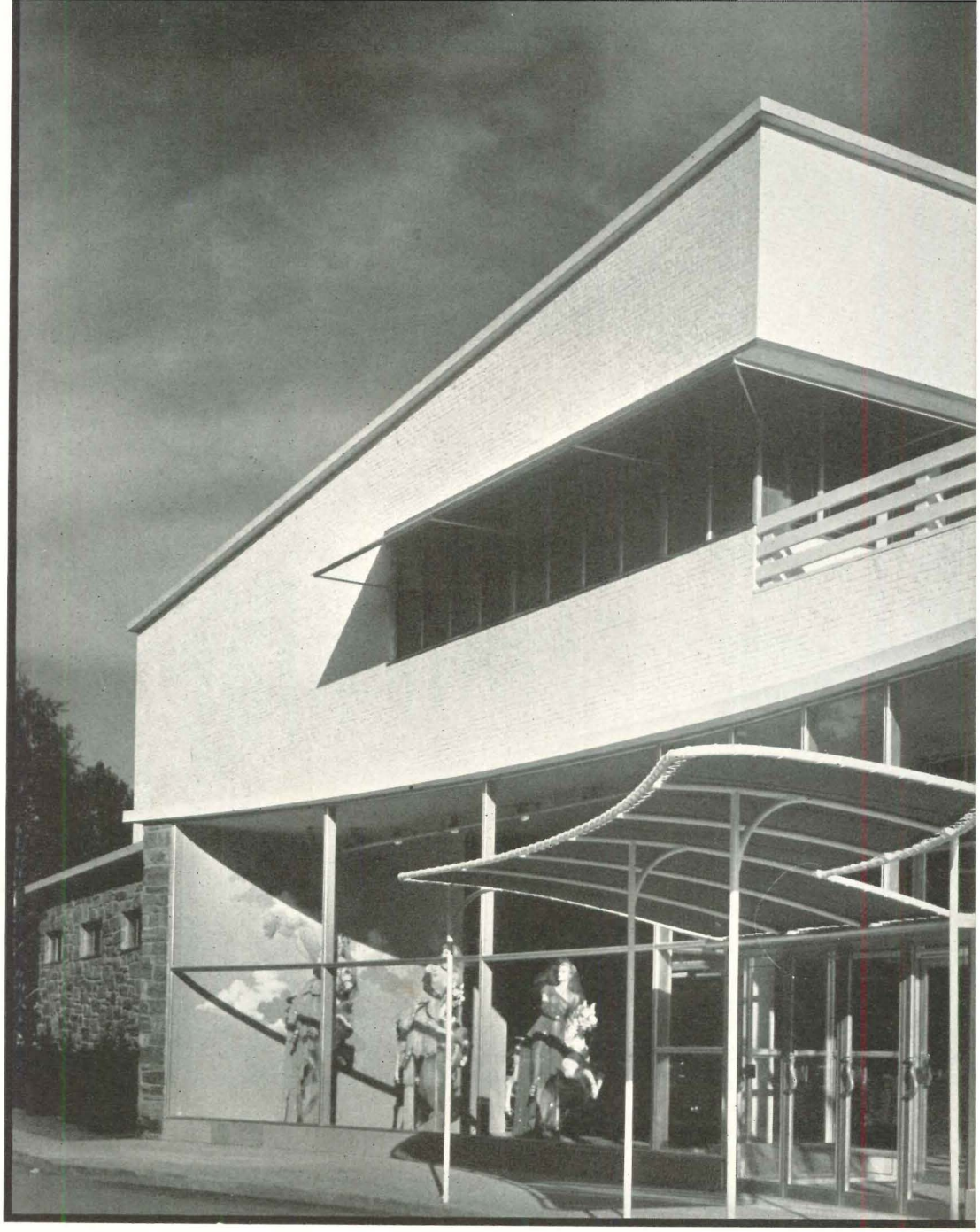
"The construction industry, which this year will probably account for one-sixth of the national income and which is increasing at a greater rate than the average of all industries, is at a point where its very existence depends upon militant action."

Holden tells statistical situation

Mr. Holden sketched the current statistical situation of the building industry and discussed important factors in emergency defense activities

(*Continued on page 114*)

RAYMOND LOEWY, Designer • STARRETT & VAN VLECK, Architects



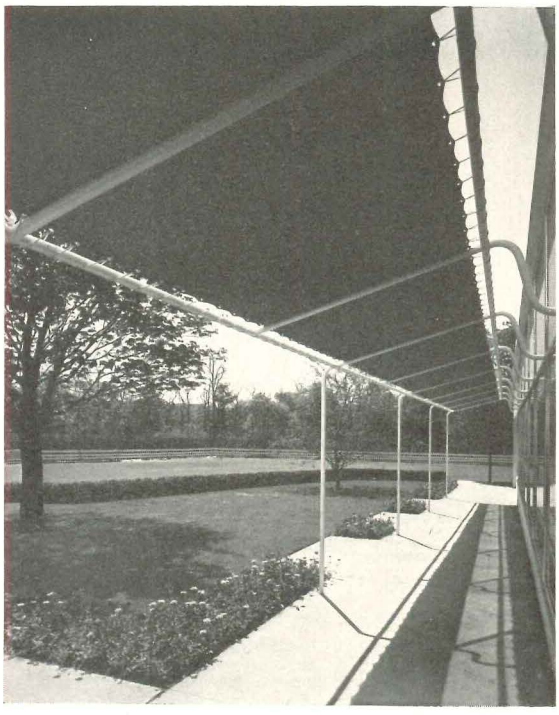
Lord & Taylor

SUBURBAN APPAREL SHOP

MANHASSET, LONG ISLAND

OUTSTANDING among the satellite units opened in recent years by large city department stores is this striking new shop for women's and children's apparel and accessories—Lord & Taylor's first suburban branch. For any architect concerned with a store, display or merchandising design problem, the shop offers fresh solutions all along the line. Located in a sizable suburban town, the store is within easy driving distance from several others. Relatively few patrons, however, will be casual passers-by; by far the greater number will arrive by car. Hence the conventional scheme of show windows to attract pedestrians has been discarded in favor of a design wherein the entire building is the eye-catching attraction; the whole selling area of the main floor may be glimpsed from the boulevard through the front window walls; and the attractive, landscaped parking area is an invitation to stop.

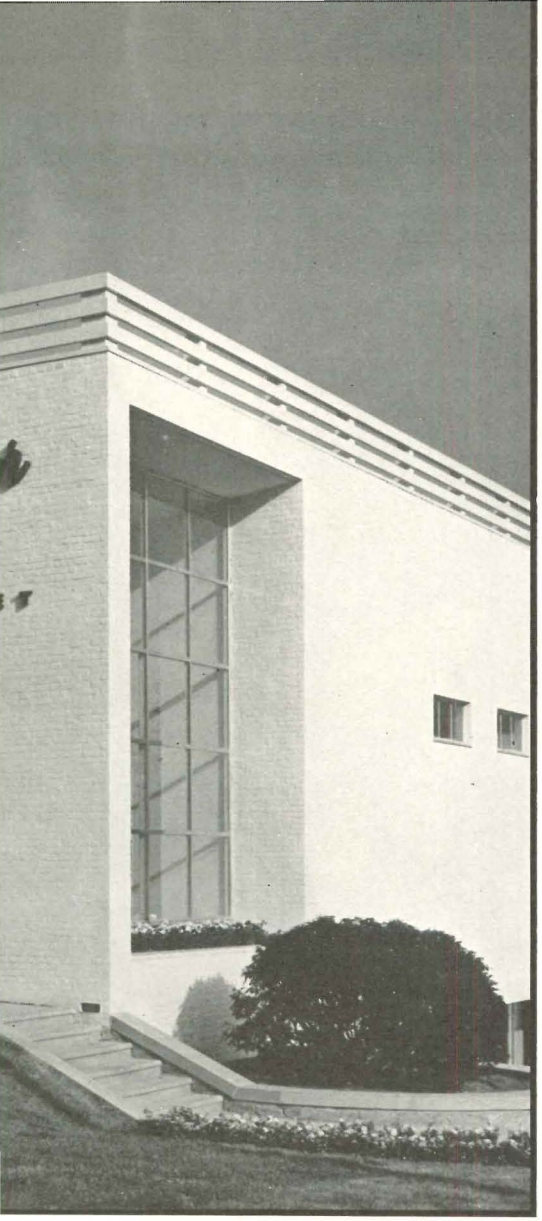
All photos of Lord & Taylor by Robert F. Damora



GARDEN AND PARKING AREA

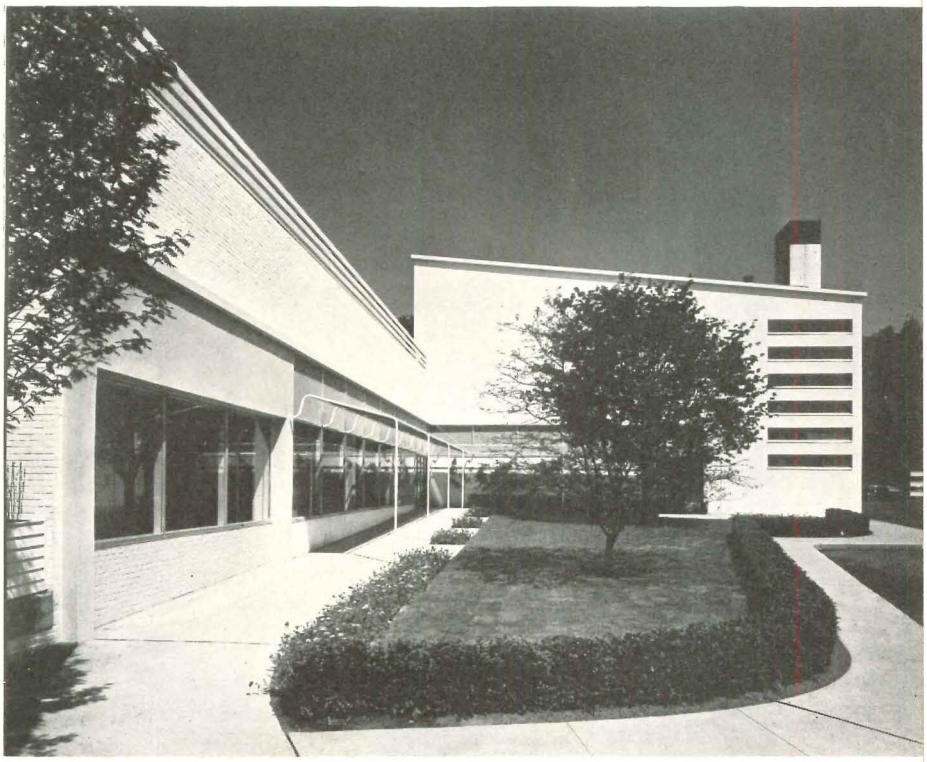
Lord & Taylor

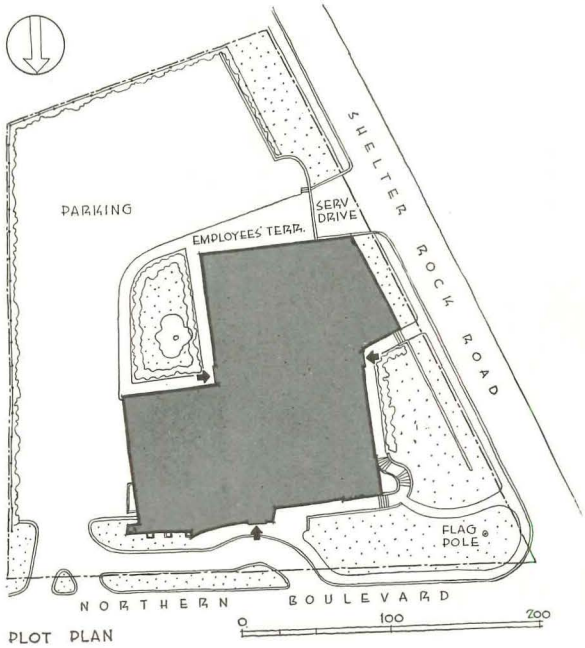
THE STORE COVERS 58,000 sq. ft. of floor area. Because of a sloping site—a change in grade of approximately 18 ft.—each of the selling arenas is, in fact, a ground floor. The lower level may be entered directly from the side street, by an outside walk and stair at the front of the building, or by an interior stairway. The penthouse—at present housing only air conditioning equipment—allows for future expansion. Lawns, gardens, terraces, flowered walks, built-in planting tubs and the handsomely landscaped parking area are an integral part of the design. The approach to the store from the boulevard front curves to a concave glass-enclosed vestibule. Huge clear windows at the left both open up the view of the store to the outside and furnish daylighting within; the vertical windows in the fieldstone portion at right accent the design and at night become spotlighted display points for manikins. Since auto traffic will account for a great many patrons, the parking area entrance is quite as important as the others. In the angle of the building at this point, large window areas overlook a pleasant lawn and garden. The building foundation rests on a sand and gravel bottom with structural supports bearing on spread footings. Superstructure consists of a reinforced concrete frame and long-span pan floor construction. Wall materials are brick and fieldstone.



WEST FRONT

PARKING AREA ENTRANCE





PLOT PLAN

NIGHT VIEW

UNE 1941

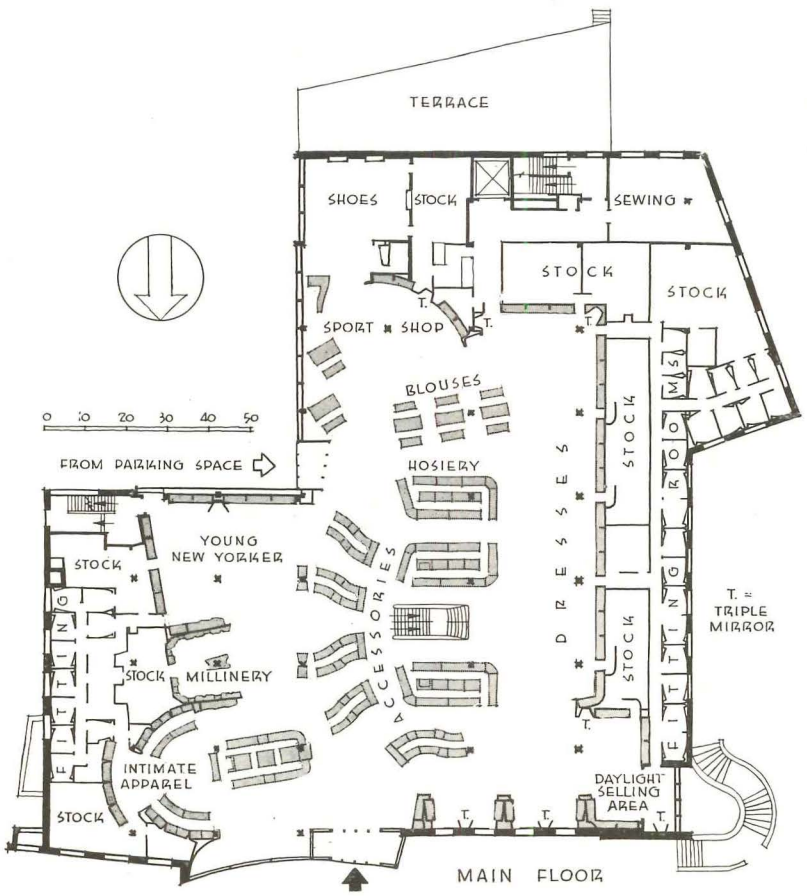
DAYLIGHT SELLING AREA

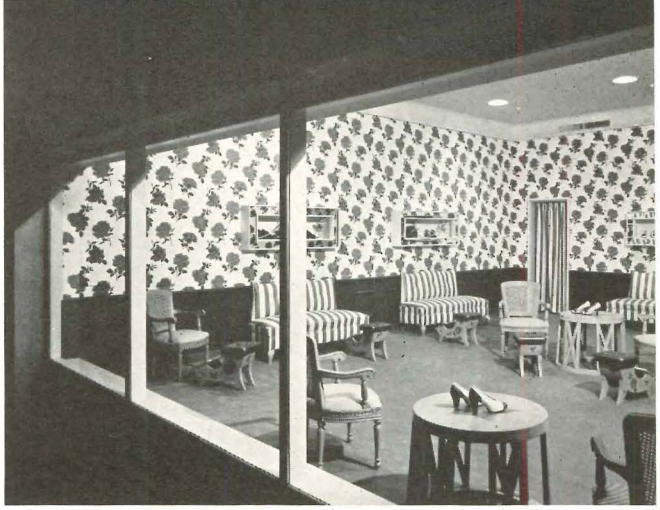
Lord & Taylor

MAIN FLOOR

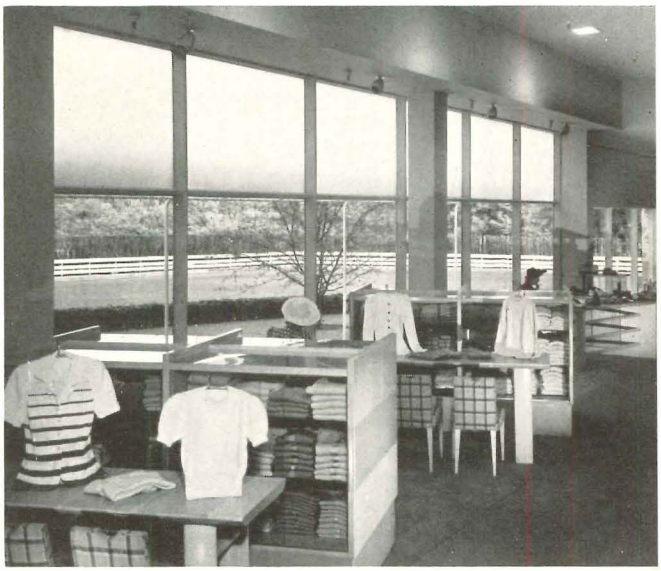
FLOOR-PLAN LAYOUTS are a noteworthy combination of two frequently opposed store-planning theories—open planning wherein all goods are grouped within a single large selling area, and the idea of independent departments in which various types of merchandise are handled separately. Individual departments exist, but they are set off—not shielded—from the main floor by low partitions of varying shapes that form separate selling alcoves and by changes in decorative treatment.

A whimsical dance-program theme distinguishes the Intimate Apparel Shop. In the Millinery Shop, red accents occur both on mirror frames and in the chair upholstery. The Young New Yorker Shop has sentimental wall decorations of doves and flowers painted in pastel tints. Walls of the Shoe Shop are surfaced in a rose-patterned wallpaper. To set off the Sports Clothes area, a trompe l'oeil mural on the concave wall transforms wall display cases into tents at a country fair; the triple mirror into a ticket booth. Wall cases for dresses line the whole west wall, except at the north end, where an enormous window forms a daylight selling area. All of these elements are harmonious, however, and are integrated by the all-over gray-taupe carpet, selling counters and cabinets of gray-finished oak, the free-standing display cases set up on molded bronze legs, and the row of plastic and bronze chandeliers. In back of each department are the necessary stock, sewing and fitting rooms. Around the stair well leading to the lower floor is a heavy glass balustrade.





SHOES



SPORT ACCESSORIES

DRESSES

INTIMATE APPAREL

YOUNGER CROWD SHOP

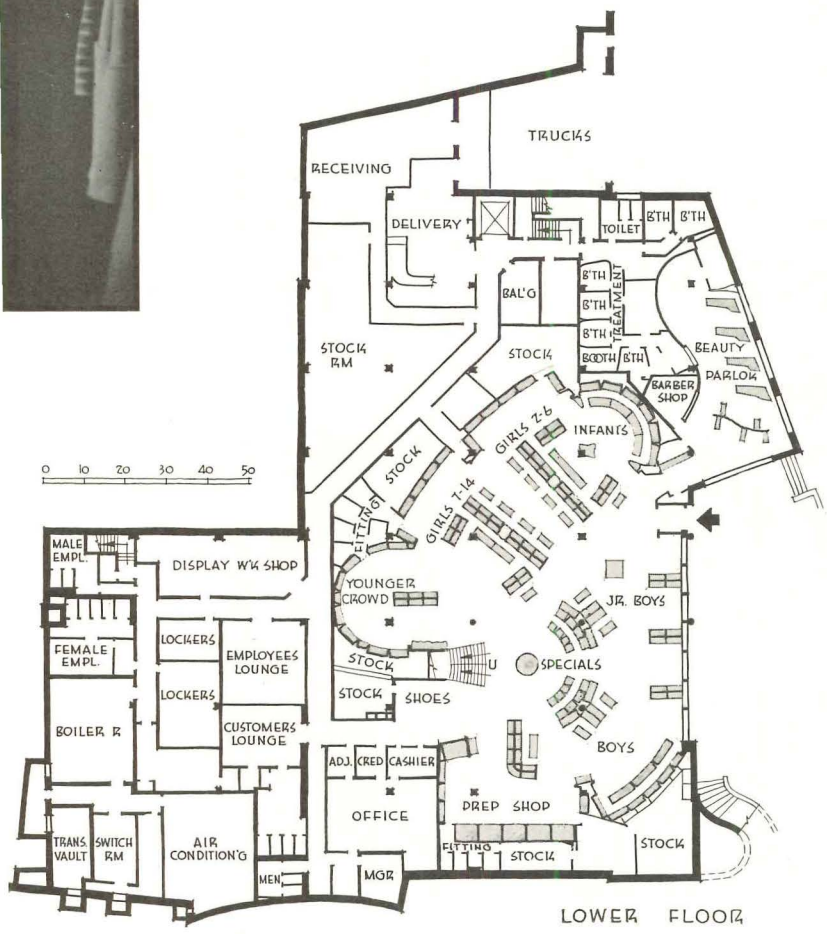
BEAUTY SALON

HAIR-DRESSING TABLES

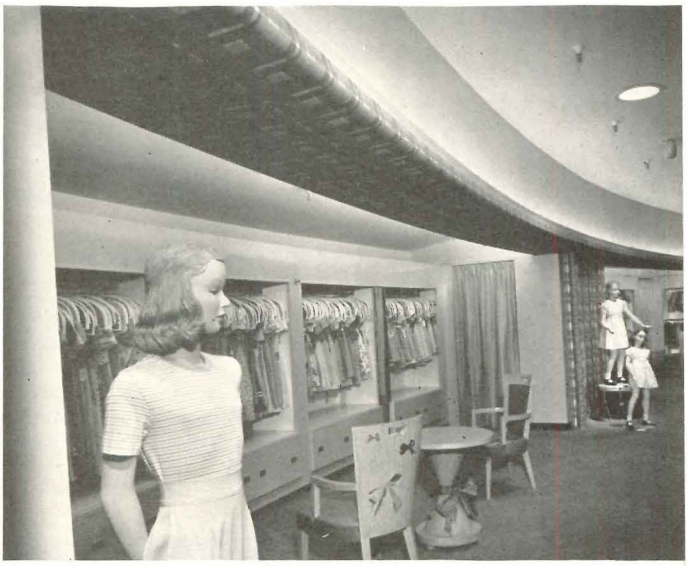
Lord & Taylor

LOWER FLOOR

Like the main floor, the lower level, devoted to children's clothes and a beauty salon, is laid out in an informal open plan, with specialty shops centering on perimeter alcoves. At the foot of the stairs is a semicircular counter unit with a pierced screen in back for display. Boys' clothes and furnishings occupy the north end of the floor. Backgrounds are of red plaster and gray-oak paneling. At the left of the stairway, along the east wall, are shops for girls of different ages. In the Younger Crowd Shop, the chair backs are decorated with painted hair ribbons. On the south wall is the Infants Shop—"a little bit of heaven" —done out in pink and blue, with a blue sky and white clouds painted both on background and side walls and up onto the ceiling. The counter is surfaced in blue rubber with white painted stars. Quite distinct from the sales floor is the exotic beauty parlor, at the south end of the area. Manicure tables are set against a curved wall which shields the hair-dressing tables from general view. In the blue-green rubber tile floor are insets of clever sayings about women by famous men. In back of this area is a series of fully equipped treatment rooms. Office space, service and employees' rooms and an inside trucking platform border the public area.



INFANTS



GIRLS

BOYS

STAIRS TO MAIN FLOOR

Lord & Taylor

LIGHTING

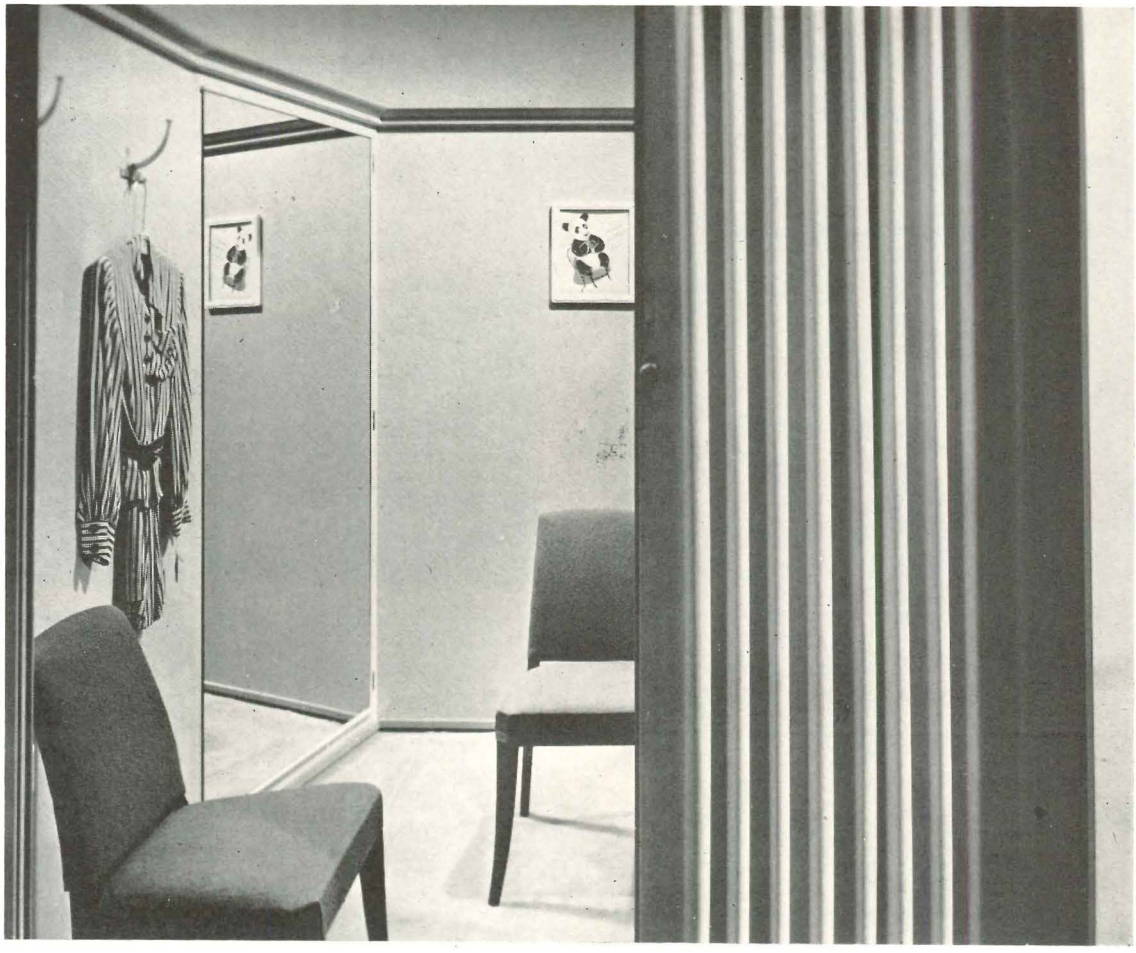
Both floors have an unusual amount of daylighting from the many windows. In addition, there is generous ceiling and indirect light at varying levels. Ceiling fixtures throughout (except for the main-floor chandeliers) are flush, recessed units. These are laid out on regular spacing with sprinker outlets and air-conditioning vents. Cove lighting in a dropped ceiling unit throws light up against plain overhead surfaces. Counter display cases and the side wall hang-rod cases contain fluorescent combinations. Key merchandising areas are spotlighted. In the Beauty Salon, circular flush ceiling fixtures distribute warm, flattering light on the manicure and hair-dressing tables.

HEATING AND AIR CONDITIONING

Air conditioning is store wide, with complete temperature and humidity control. Ceiling distributing vents are set in series to form a pattern with the lighting fixtures and structural columns. All ducts are concealed in the dropped ceiling and in the cove units. Exhaust grills in the walls above the Intimate Apparel Shop are fashioned like bird cages and serve for display as well. The air conditioning machinery is housed in the penthouse. To supplement the system for constant heat control, radiators are installed at strategic points.

CASES AND COUNTERS

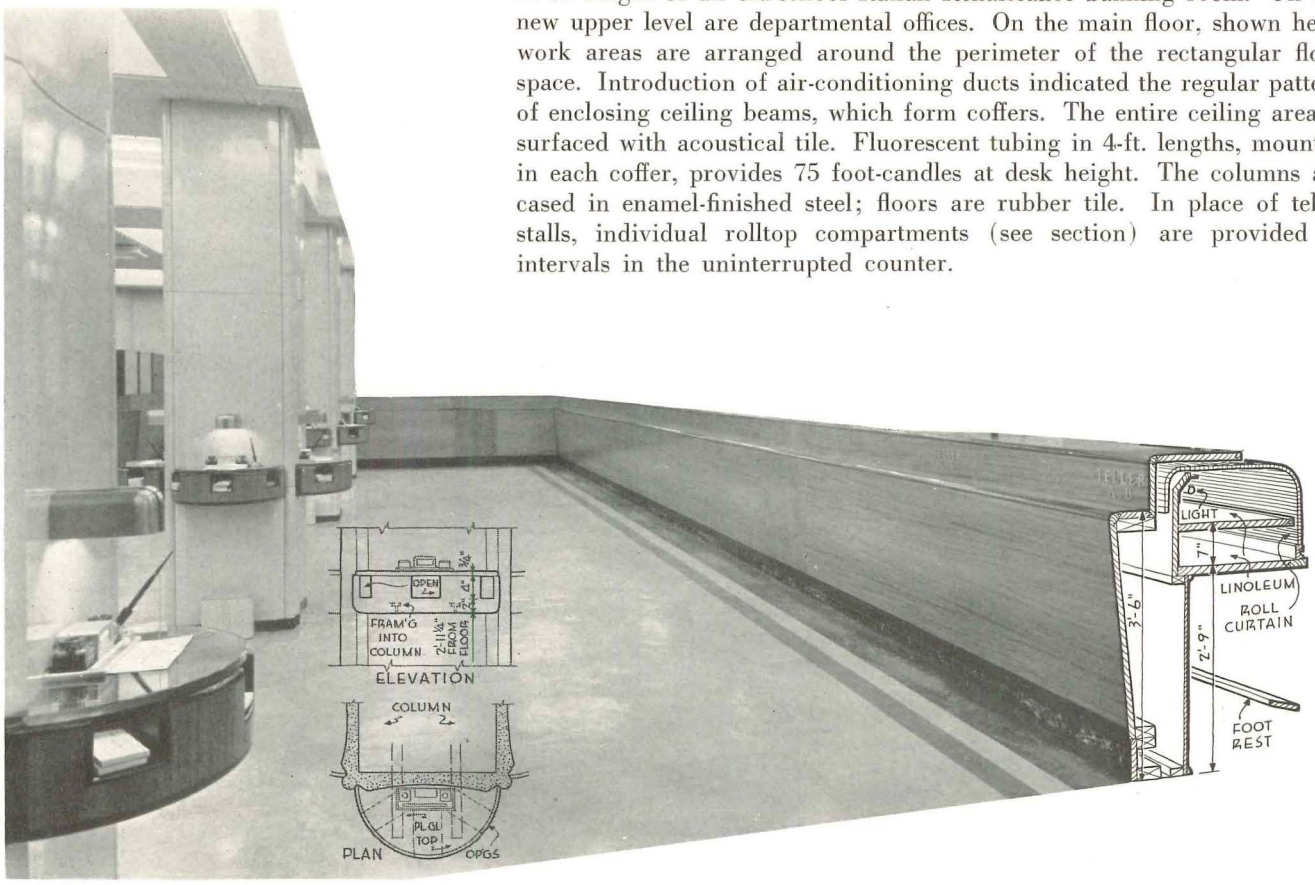
The freestanding sales and display cases are a flexible combination of units. The display cases, mounted on bronze legs, alternate with the counters, are slightly higher and are never used for selling. Sales counter tops are surfaced with rubber. Special eye-level display cases are built in the walls of both the main-floor shoe shop and the under-stair wall alongside the children's shoe shop on the lower level. Wall dress cases and the fitting rooms are finished in a high-gloss lacquer, in a series of harmonious pastel tints.



FITTING ROOM (Note folding partition)

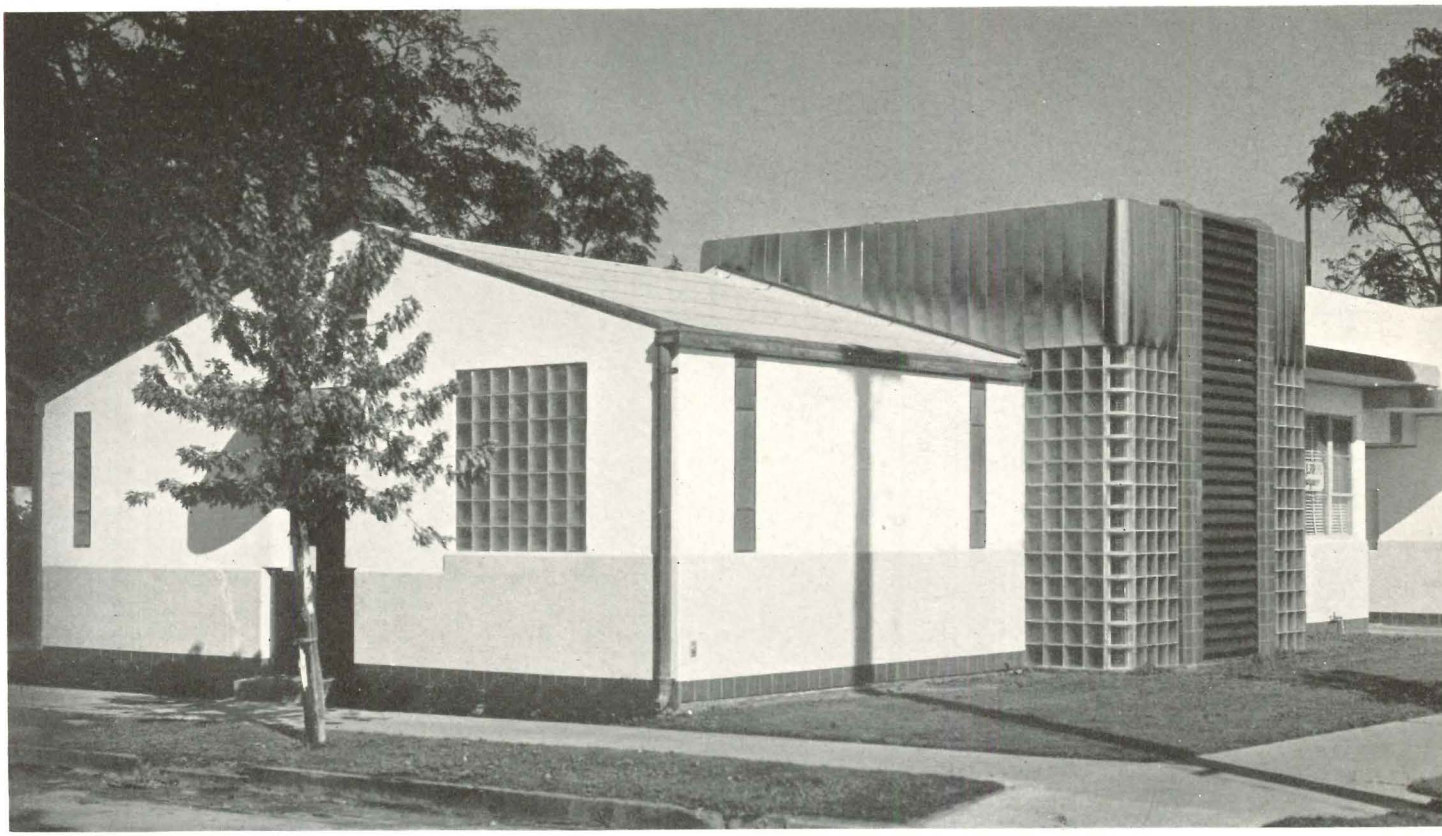
REMODELED BANK

SECURITY NATIONAL BANK, GREENSBORO, N. C. CHARLES C. HARTMANN, ARCHITECT. An entire new floor was introduced in the middle of the 27-ft. height of an old-school Italian Renaissance banking room. On the new upper level are departmental offices. On the main floor, shown here, work areas are arranged around the perimeter of the rectangular floor space. Introduction of air-conditioning ducts indicated the regular pattern of enclosing ceiling beams, which form coffers. The entire ceiling area is surfaced with acoustical tile. Fluorescent tubing in 4-ft. lengths, mounted in each coffer, provides 75 foot-candles at desk height. The columns are cased in enamel-finished steel; floors are rubber tile. In place of teller stalls, individual rolltop compartments (see section) are provided at intervals in the uninterrupted counter.

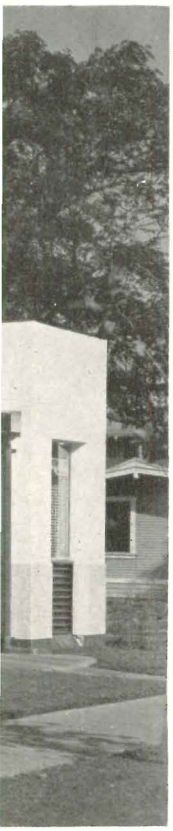


CHECK DESK built into enameled steel column casing

SECTION OF COUNTER showing teller's rolltop compartment

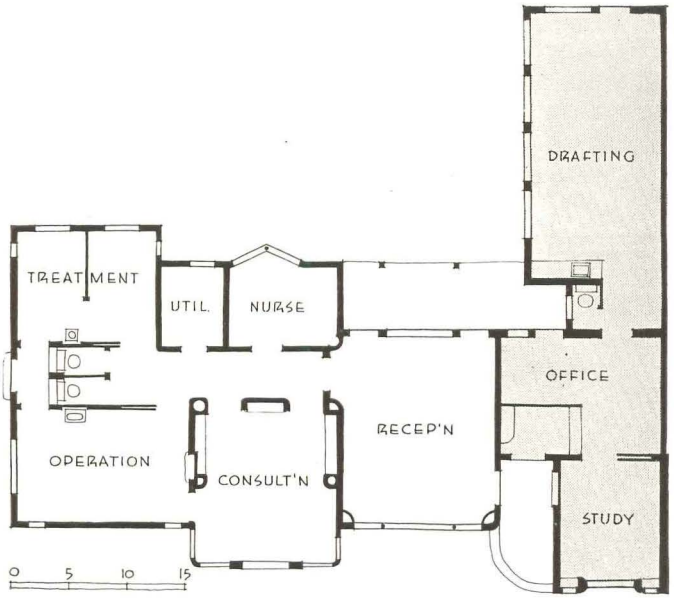


4 SMALL PROFESSIONAL



1. ARCHITECT'S AND DOCTOR'S OFFICES COMBINED

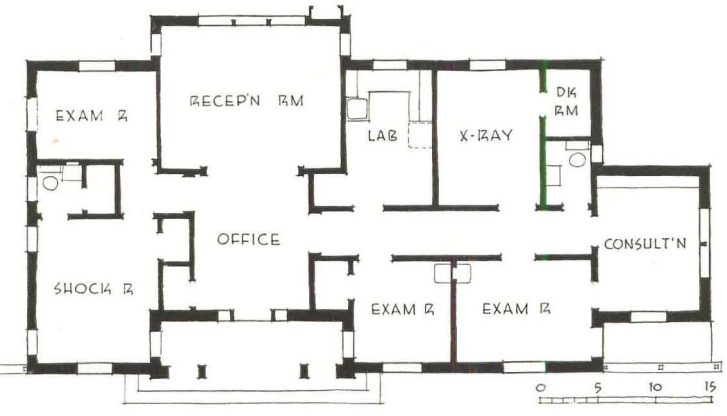
DE LAPPE BUILDING, MODESTO, CALIF. RUSSELL GUERNE DE LAPPE, ARCHITECT. Representative of an increasing trend toward construction of small professional office buildings within community areas which they directly serve is this building for the use of the architect and a physician-surgeon. The combined-use plan provides complete facilities for each of the offices; yet the areas function independently. Although essentially a frame and stucco structure, a number of finish materials have been introduced. A ferro-enamel dado surmounts a base course of faience tile; trim is of stainless steel. The block enclosing the doctor's consultation room combines stainless steel with tile and glass block panels.

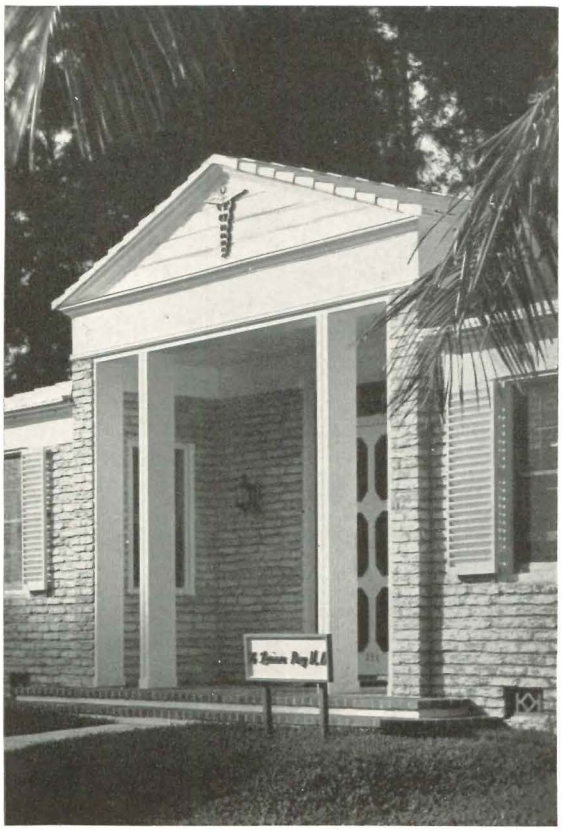


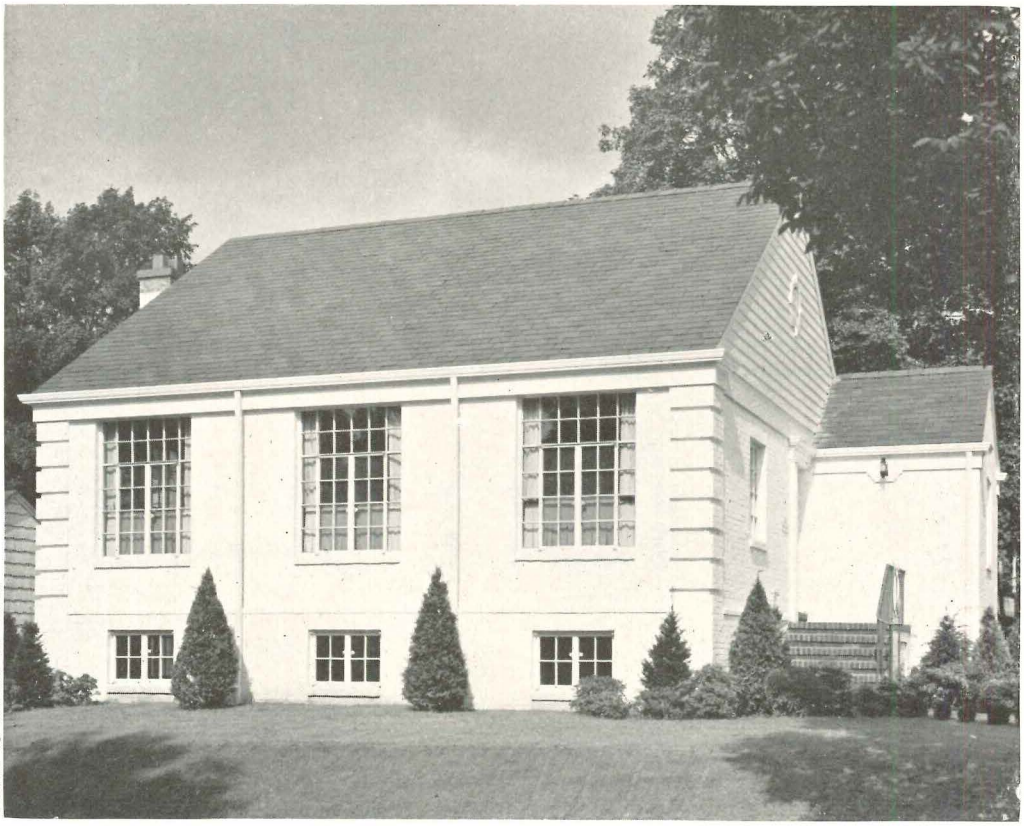
OFFICE BUILDINGS ☆

2. OFFICES FOR A PHYSICIAN-SURGEON

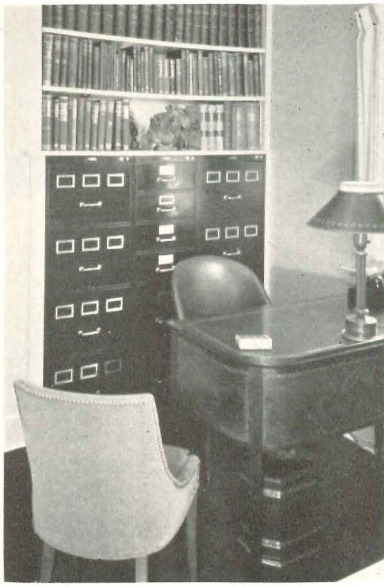
OFFICE OF DR. C. LARIMORE PERRY, MIAMI, FLORIDA. RUSSELL T. PANCOAST, ARCHITECT. Located outside the city's main business district, these offices for a physician-surgeon are readily accessible both to near-by patients and those arriving by auto from a wide surrounding residential area. Walls facing the street are of unpainted slump brick; rear walls are of stuccoed and painted concrete block. Interior partitions are of studs finished with building board, treated for sound deadening. The roof is surfaced with white shingle tile. The building is air conditioned.







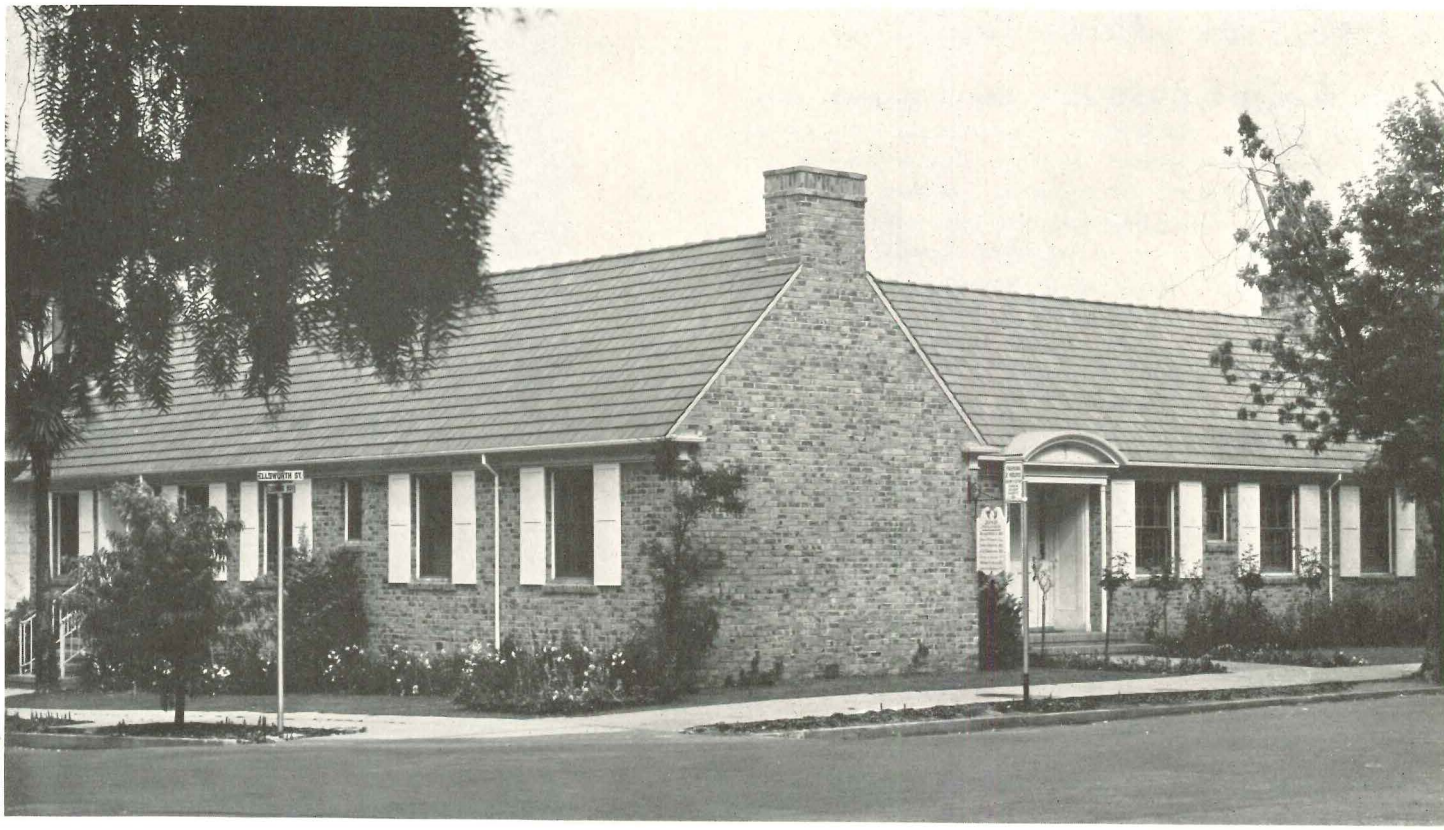
Photos by Harold A. Berla



OFFICE

The three operating-room windows indicate the building's function but do not detract from its domestic character. Scale of the furniture chosen for the public areas is such that rooms of minimum dimensions have an appearance of maximum space.

4 SMALL PROFESSIONAL

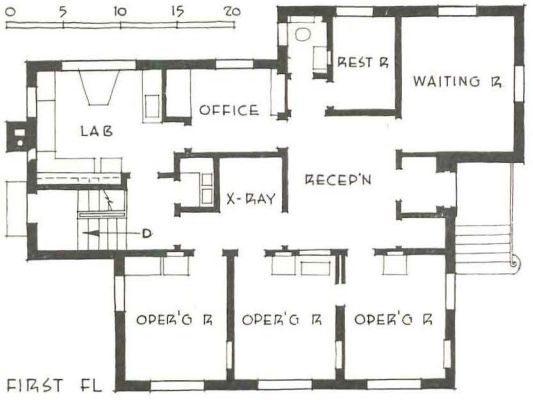


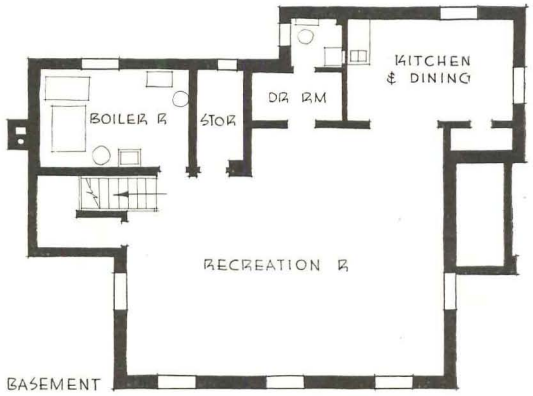
Photos by Waters & Hamlin Studios

3. DENTAL OFFICE BUILDING

OFFICES OF DR. GEORGE STRAUSSBERG, SOUTH ORANGE, N. J. ARTHUR N. STARIN, ARCHITECT. Virginia B. Starin, Interior Decorator. In this building, designed to harmonize with the residential area in which it is located, two dentists occupy the corner operating rooms, the one between being used for emergency patients. From a central location, the receptionist has control of all main rooms. In the basement kitchenette, lunches are prepared; the recreation room is for the owner's use.

LABORATORY

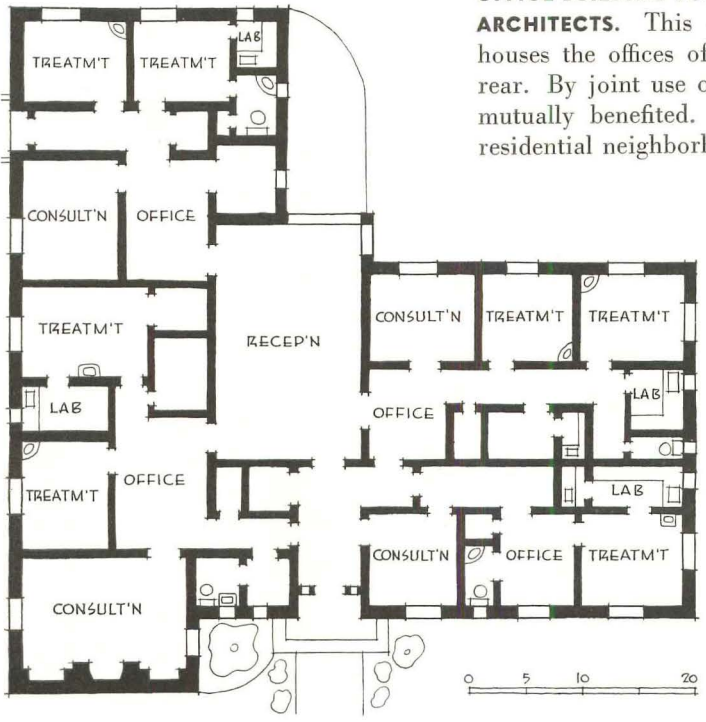




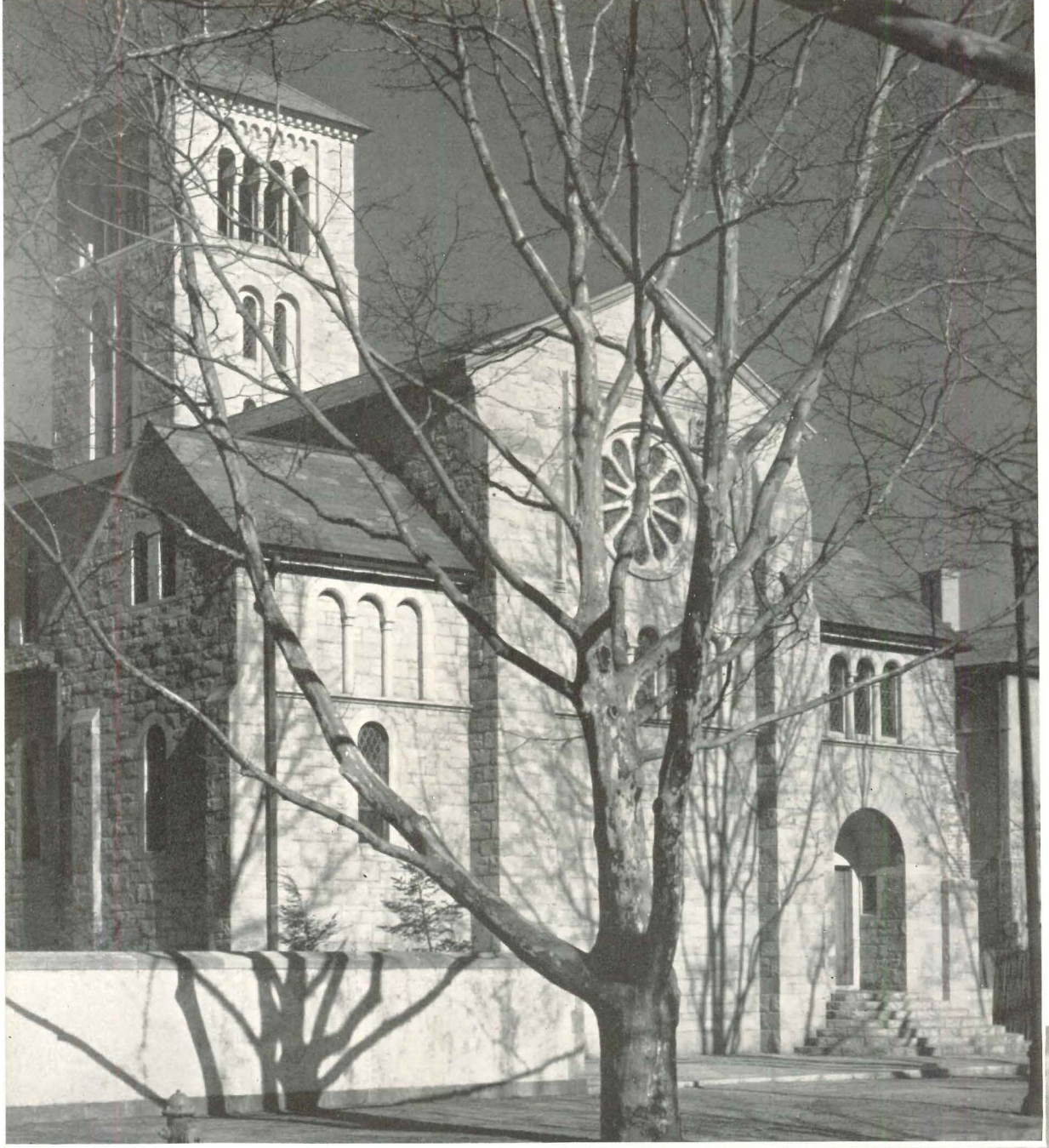
OFFICE BUILDINGS ☆

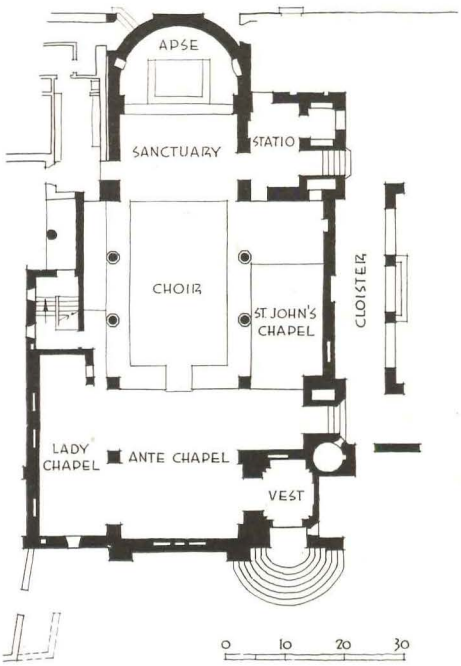
4. NEIGHBORHOOD MEDICAL BUILDING

OFFICE BUILDING FOR DR. WILLIAM W. REICH, BERKELEY, CALIF. MILLER & WARNECKE, ARCHITECTS. This compact building, planned around a central reception room, houses the offices of seven doctors. Ample off-the-street parking is provided at the rear. By joint use of certain facilities and equipment, practitioners and patients are mutually benefited. Location of the building within easy access of an extensive residential neighborhood is yet another instance of the trend toward decentralization.



CHURCH

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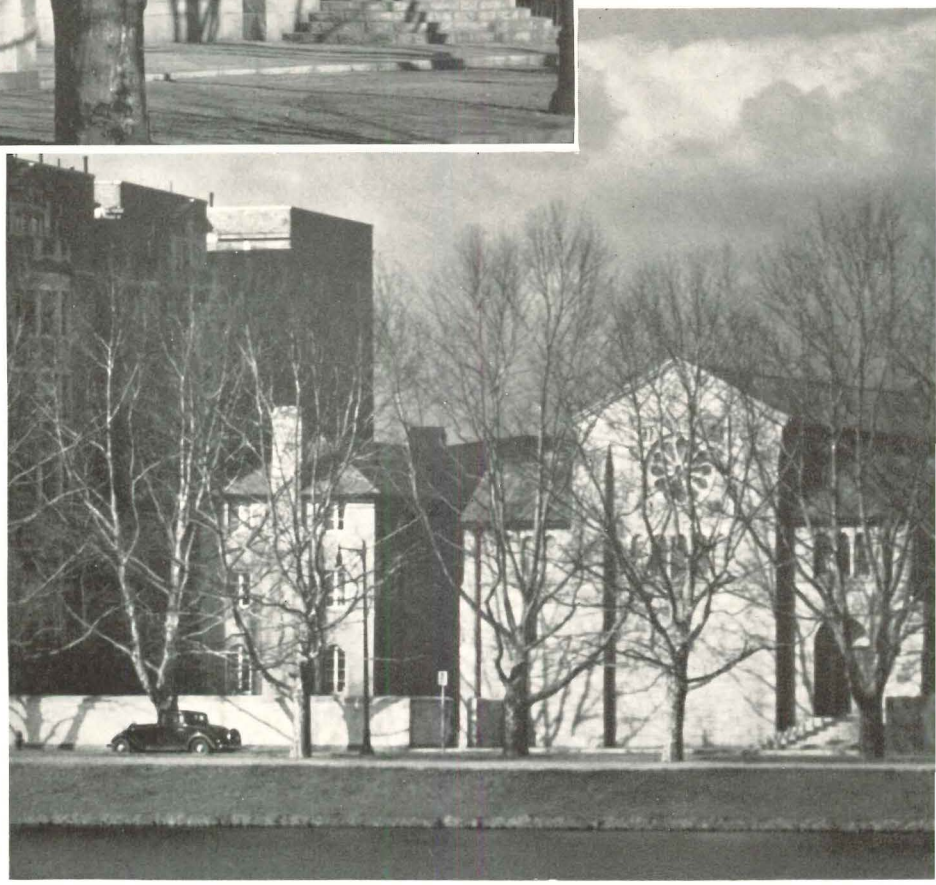
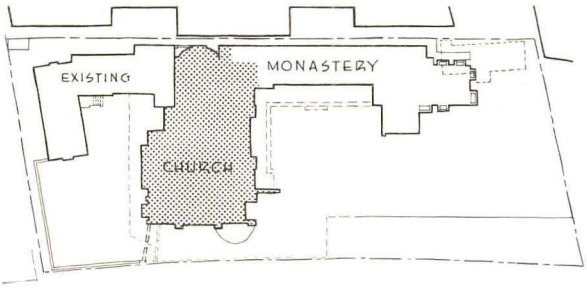
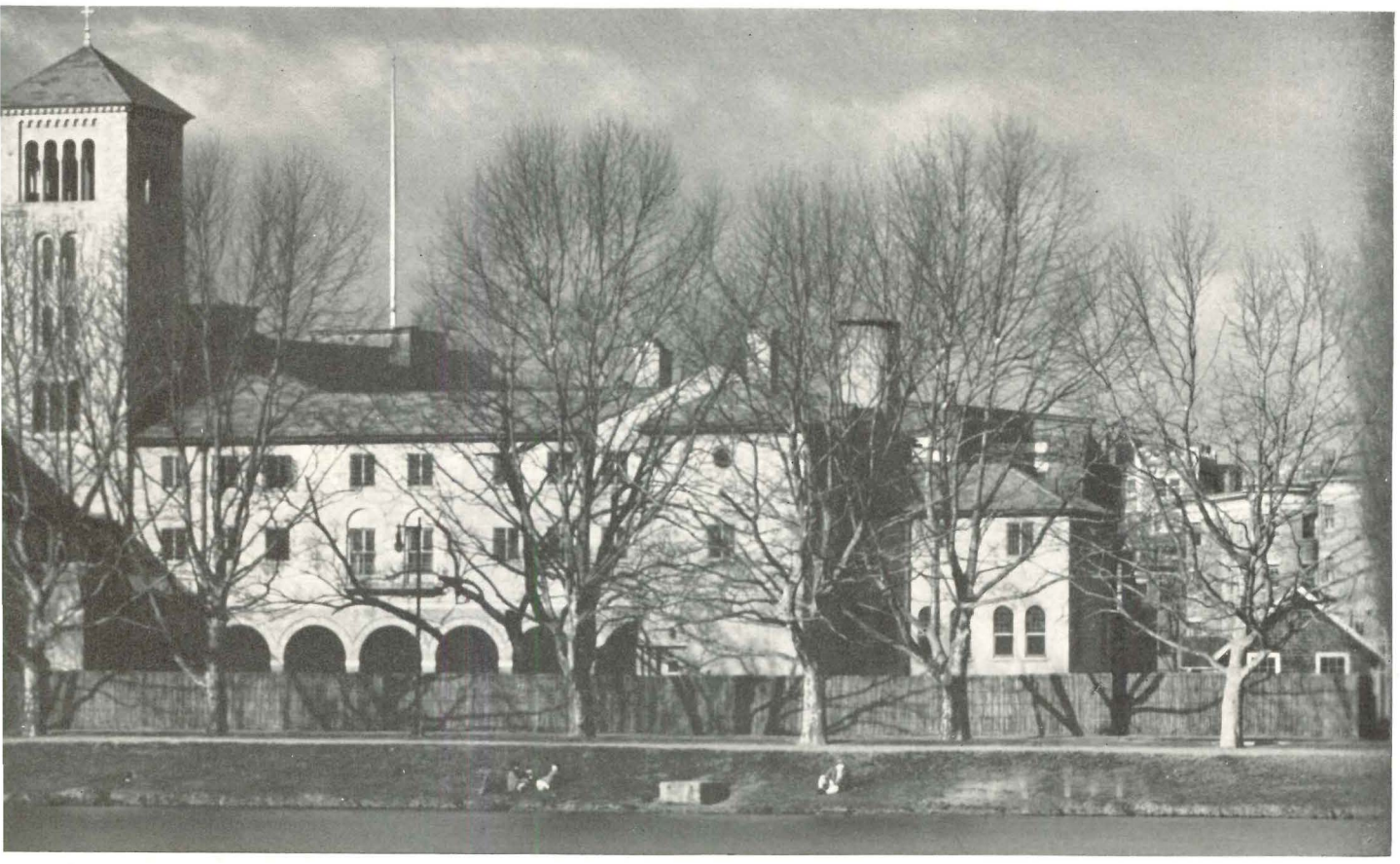
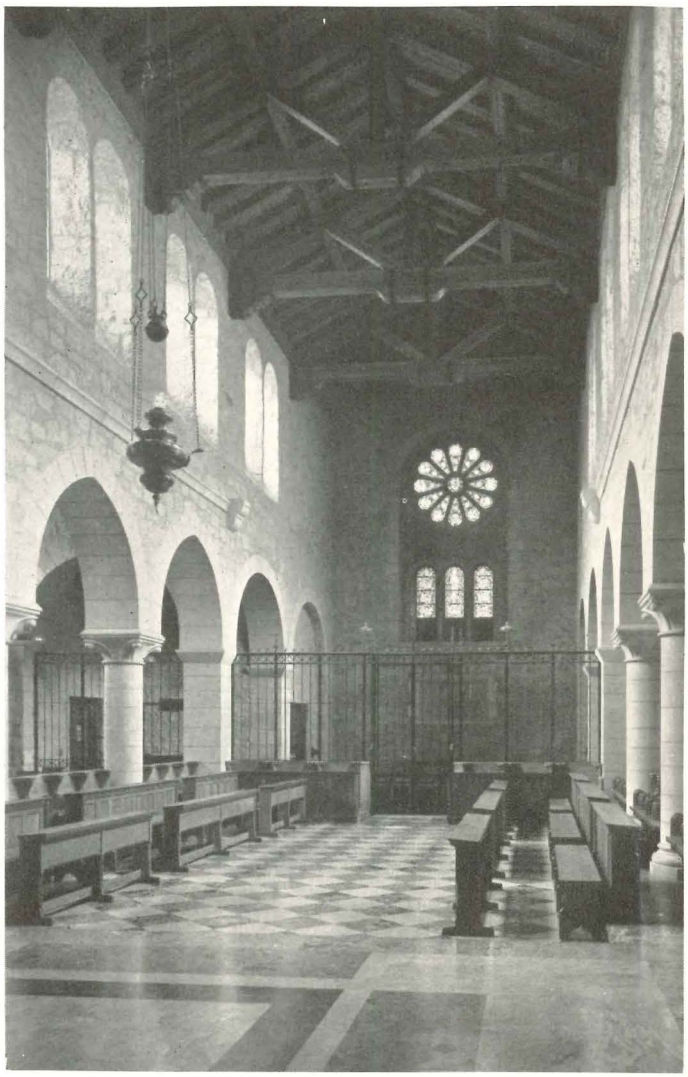


FOR A MONASTERY

THE CONVENTUAL CHURCH OF ST. MARY AND ST. JOHN, CAMBRIDGE, MASS. CRAM AND FERGUSON, ARCHITECTS. This church, attached to the mother house of the Society of Saint John the Evangelist (see plot plan) serves as the community chapel and is in no sense a parish church. Hence, the ante-chapel, available to the public, is relatively small, and the main floor space is devoted to the monastic choir and sanctuary. There is a crypt under the whole church. Exterior of the building is of warm-toned seam-face granite with buff limestone trim. Light-gray granite, left with a natural split face, is used for interior wall surfaces, window jambs, etc.; interior cut stone is of limestone. Floors throughout are paved—green slate in the ante-chapel; marble in the choir and sanctuary. All roofs are covered with slate. The high altar (see next page) is constructed of black marble with a front panel of variegated green. The baldachino over the altar is of red levanto and fleur-de-peche marble. The choir, furnished with simple stalls of English oak, is separated from the ante-chapel by a marble parapet and a wrought-iron screen (see photo at right).

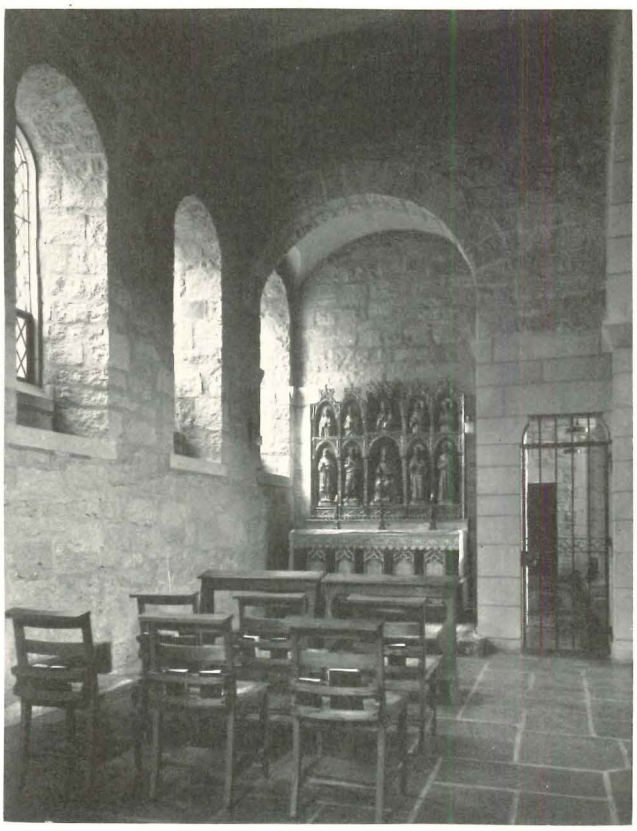






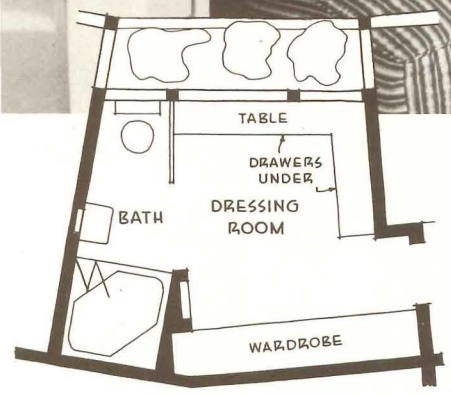
THE CHOIR

ALTAR AND BALDACHINO



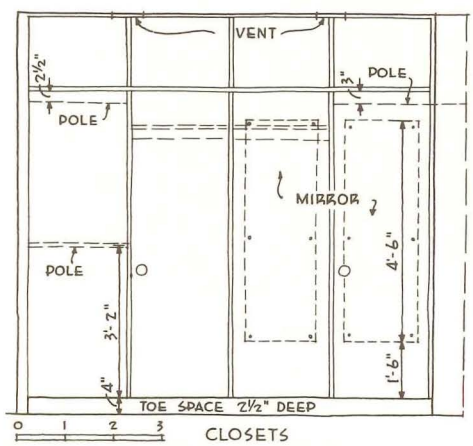
LADY CHAPEL

RESIDENTIAL DETAILS • BUILT-IN FURNITURE

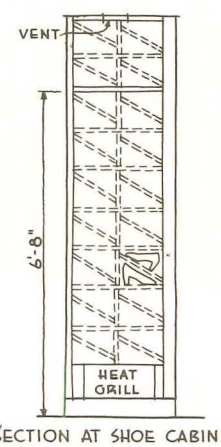


1. J. R. DAVIDSON, Designer

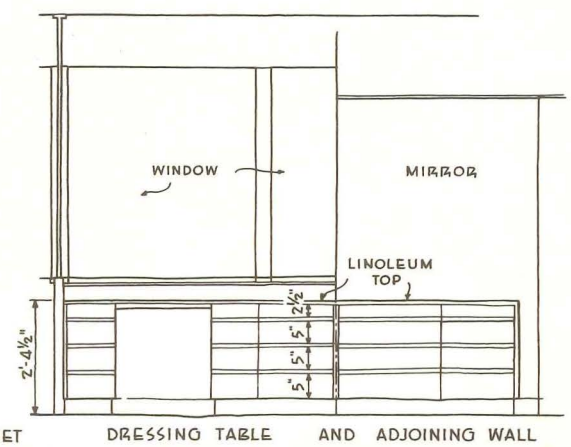
THIS COMBINED DRESSING ROOM AND BATH is completely furnished with built-in equipment. Since the function of a dressing room is to provide not only space for dressing but space for storage, the furnishings consist almost entirely of cupboards, drawers and wardrobes. The combined dressing table and chest of drawers is of wood, painted eggshell color, topped with Chinese red polished plastic material. Walls are finished in synthetic-surfaced composition board, with polished aluminum trim.



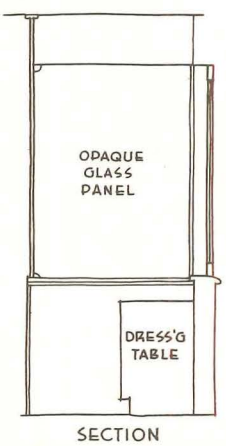
CLOSETS



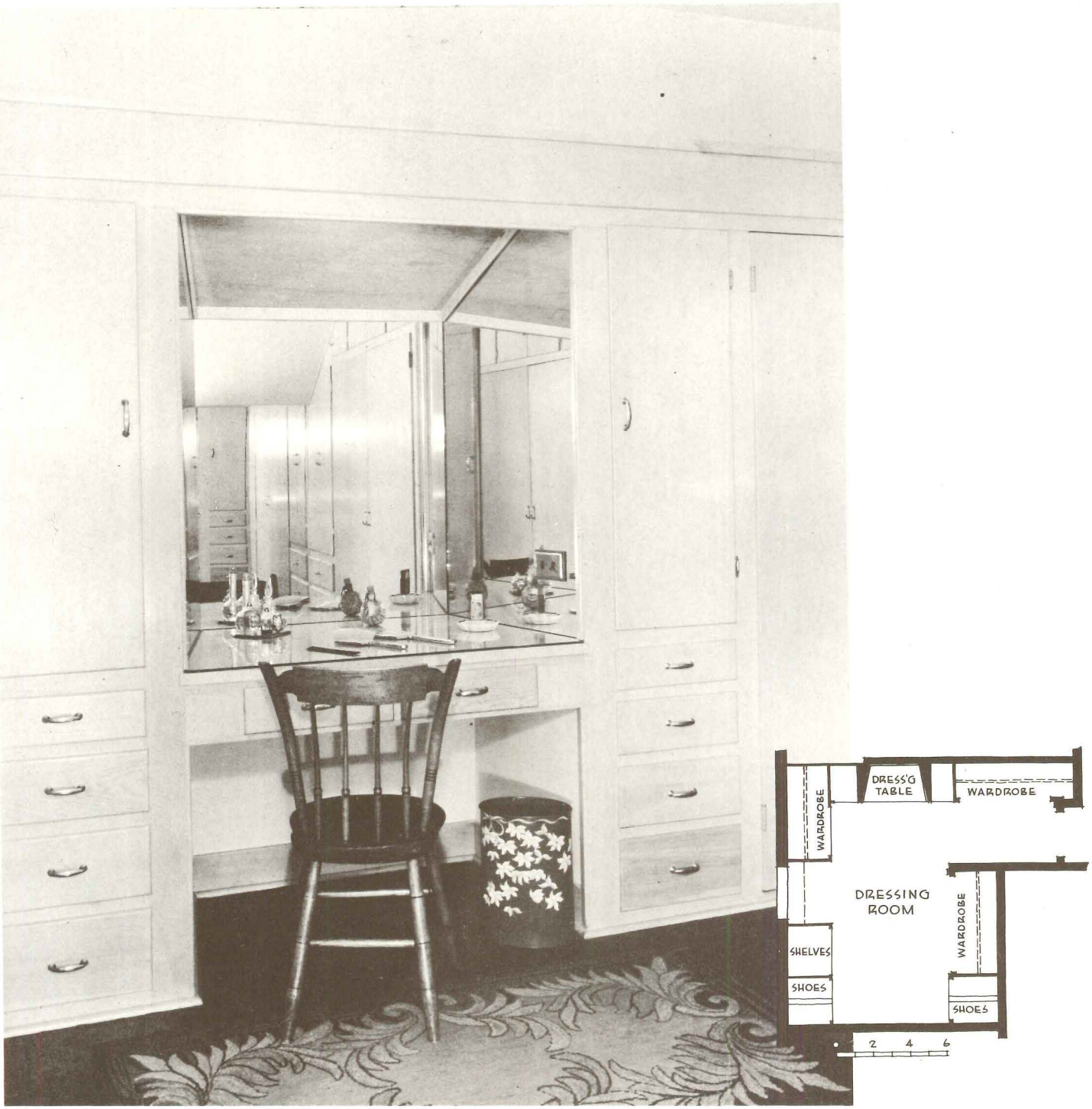
SECTION AT SHOE CABINET



DRESSING TABLE AND ADJOINING WALL

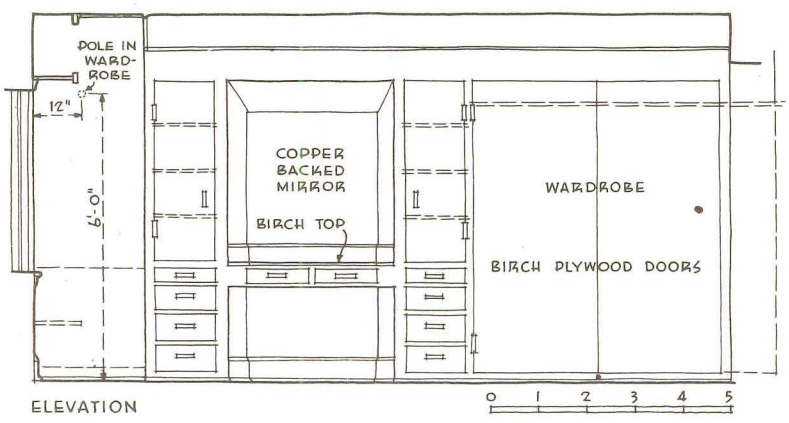


SECTION

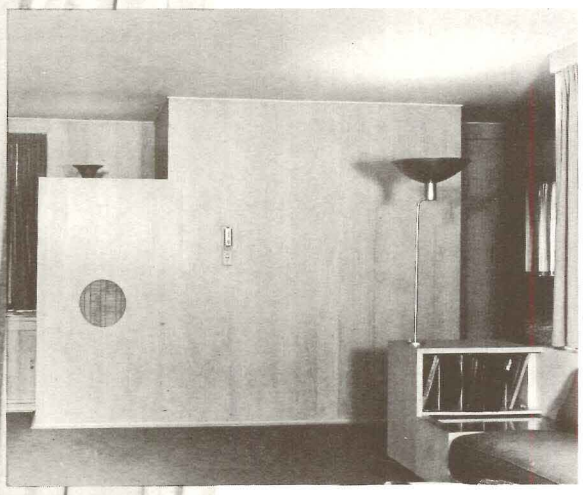


2. HOOTON and TIMPSON, Architects

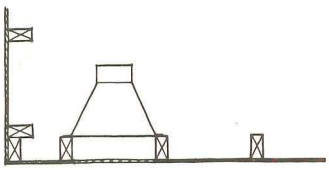
A BUILT-IN DRESSING TABLE flanked on either side by storage units of various types. The table consists merely of a row of drawers surfaced in birch, with a copper-backed mirror set in the recess formed by the wardrobes on either side. Construction is simple; all woodwork is birch. Drawer fronts are stained and finished with flat varnish.

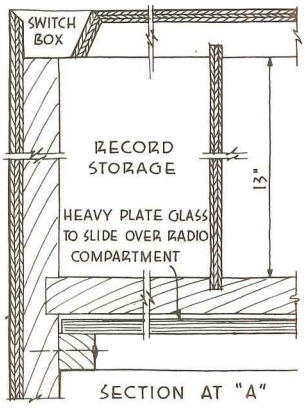


ELEVATION



LOUDSPEAKER UNIT

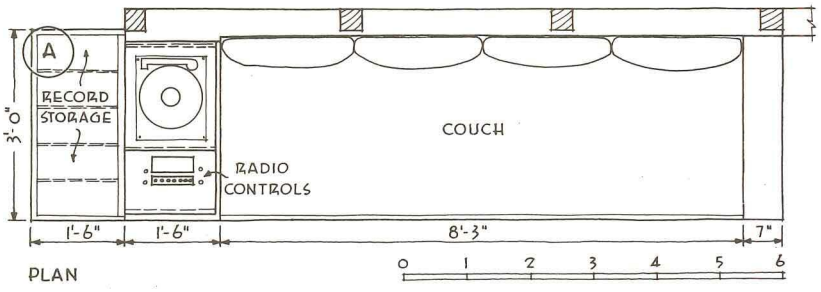




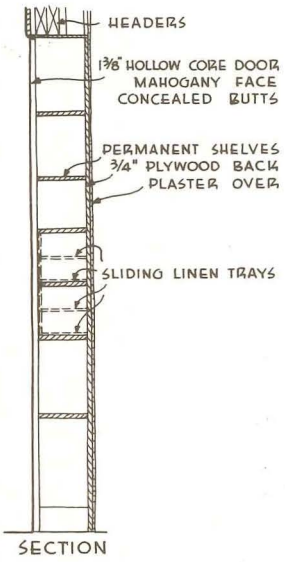
SECTION AT "A"

3. RAPHAEL S. SORIANO, Designer

THIS RADIO AND PHONOGRAPH UNIT is integrated with a storage shelf for records, a lamp, and a couch. The loud speaker for the radio and phonograph is nearby (see inset). The heavy glass panel which covers the radio and phonograph slides back in a groove under the record storage shelf. Controls for electric switches are built into the top of the shelf. All wood is magnolia wood. The couch is upholstered in olive green; carpet is solid sand color, draperies light lemon yellow desert cloth.



PLAN



4. QUIN HILL, Designer

THIS COMPACT CLOSET provides storage for china, glassware and linen. The closet is recessed into the wall and hinges are concealed, so that the doors, when closed, form a flush surface with the wall. This repeats the treatment of the living room, off which the dining alcove opens. The mahogany woodwork has a natural finish, plaster walls are sandfinished and painted rose beige; ceiling is the same color as walls, but lighter.

ARCHITECTURAL DEVELOPMENT OF THE NORTHEASTERN STATES

Credits for all illustrations, pps. 61-80, appear on p. 118

by TURPIN C. BANNISTER*

IT IS a strange yet understandable paradox that American men and women, increasingly confronted by catastrophic world events, have experienced a resurgent interest in the origin, development, and present character of their own cultural tradition. In the field of architecture this new interest is evidenced both by a marked expansion in historical studies which are slowly disclosing the immensely significant American contributions to modern design and technique, and by a strong reaffirmation of those local preferences in materials, functional solutions, and aesthetic forms which express so vividly the rich variety of American regionalism.

In the past, extravagant enthusiasm for great historic buildings, newly revealed by archaeologist or art historian, has too often led architects to repeat superficial stylistic details in order to recapture antique vitality. Today, the modern architect, concerned with archaeological correctness chiefly when restoring some worthy historic monument, asks that architectural history perform the greatly expanded function of enriching his understanding of the many urgent contemporary problems facing him. He wants to know something of the evolution of various building types. He seeks acquaintance with the structural and aesthetic qualities of the several building materials and structural systems. He desires to investigate different methods of spatial organization and decorative media. He asks how outstanding architectural personalities of the past have approached the eternal problems of creative design and of practical construction.

It is, therefore, appropriate that the ARCHITECTURAL RECORD should signalize its half-century of chronicling American architecture by emphasizing again the absorbing story of growth and invention which carries us from conservative colonial craftsman to modern professional technician. Inaugurating a series which will ultimately focus on each region of the United States, the present survey of Northeastern states deals chiefly with the three great metropolitan centers, Boston, New York, and Philadelphia. Space permits citation of only those structures which symbolize outstanding architectural trends; but this should not be taken to indicate any lack of appreciation for many important architects and buildings, whether "fashionable" or "vernacular." Nor need momentary concentration in this region blind us to important contributions made in other areas.

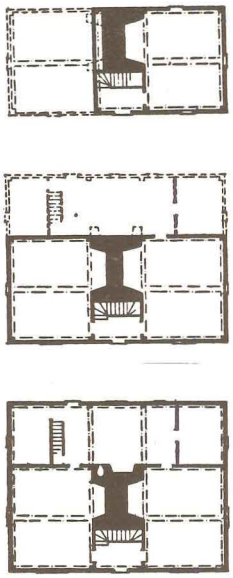
Nevertheless, the remarkable role of the Northeastern States in the development of modern American architecture can hardly be over-emphasized. Here were established those theocratic colonists whose austere meetinghouses and spacious village greens still command our admiration. Here grew those teeming seaports whose merchant shippers filled their ample mansions with trophies of London and Hongkong. Here arose those busy mills to nurture Yankee ingenuity and impose an industrial economy over generations to come. Here, on the threshold of Europe, revolutionary ideas and ideals impinged, were experimented with, and were often translated into new and more practical forms. Here, a dense and varied population, a stimulating climate, rich resources, and youthful elan combined to produce that active, pragmatic, and restless individualism which so often typifies America.

To summarize but a few contributions, New England can cite her system of timber framing, her public schools, her meetinghouses, her factories and their structural refinements to prevent loss by fire. New York pioneered in metal skeleton construction, in commercial structures, and in both urban and suburban housing. Philadelphia points with pride to her precocious leadership in civic and institutional building, to her imposing financial structures, and to a remarkable series of public works.

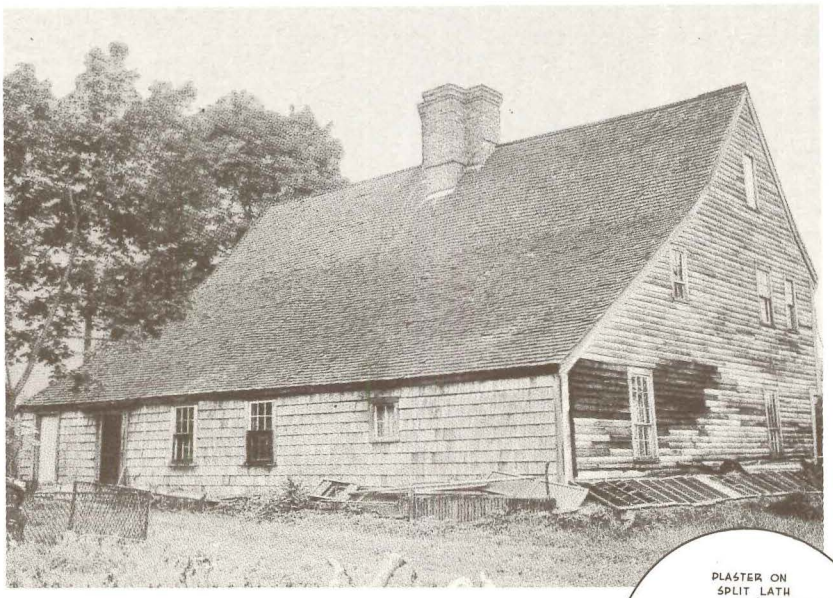
Thus the long record of architectural progress which our subsequent pages reveal can be evaluated only partially in terms of aesthetic style. Its most potent inspiration for the modern architect lies in a long record of energetic development of new structural materials, the solution of new functional types, and an amazing revolution in the construction process itself. Here it can claim a leadership second to none.

* In addition to being Associate Professor of Architecture at Rensselaer Polytechnic Institute, Mr. Bannister is editor of the new *Journal* of the American Institute of Architectural Historians

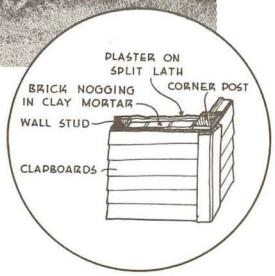
1620-1700 NEW ENGLAND. . . .



(1) Plans show more comfort: one-room cottage; two-story, four-room house, then lean-to added

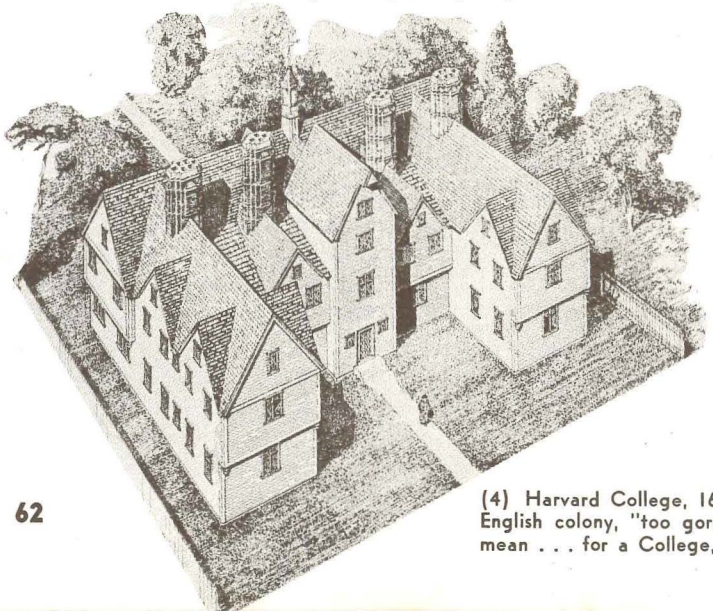


(5) "Scotch" House, Saugus, Mass. Two-story front block built in 1651 for Cromwell's prisoners sent to work bog iron. Typical heavy-timber frame (6), brick-filled and clapboarded; framed overhang; pilastered chimney. Lean-to added later



(2) "English wigwam," Salem, Mass. 1630 type reconstructed. Rush mats and bark-covered sapling skeleton

(3) Downing House, Salem, Mass. 1640. A unique survival of medieval England's picturesque carpentry



(4) Harvard College, 1638-42; reconstruction. First in an English colony, "too gorgeous for a Wilderness, yet too mean . . . for a College," its green timber soon decayed

PURITAN PRIMITIVE

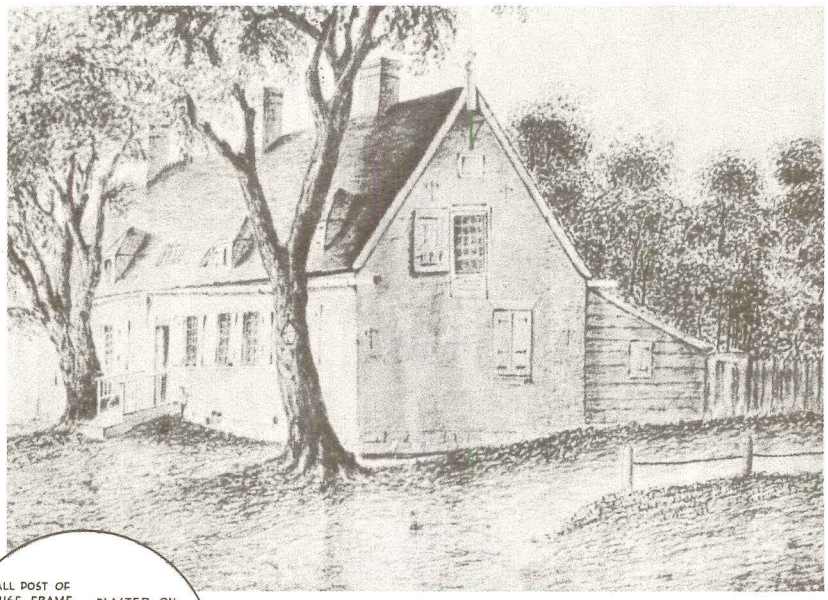
DESPITE inhospitable soil and climate, Pilgrim and Puritan soon demonstrated that relentless toil and perseverance could establish self-supporting communities in the new world. By 1640 the "great migration" of east-county dissenters, fleeing the onerous repressions of Charles I, contributed 16,000 to New England alone. By 1650 this region had over half of all American colonists, and out from the mother-towns of Plymouth, Salem, Boston spread compact villages, clearing new fields and erecting new democratic theocracies.

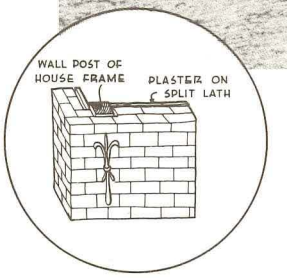
Soon small-scale agriculture was outranked by ship building, fishing, shipping, and trading. England, preoccupied with her own internal problems, exercised only nominal control until the independent temper of the colony, its flagrant disregard of maritime trade restrictions, and its persecution of Quakers and Anglicans, coupled with royal desire for administrative reorganization, led to resistance against the crown.

With forests everywhere at hand, it was to be expected that the first permanent dwellings, replacing the temporary "English wigwams," should be timber-framed following the late medieval tradition of East Anglia. Even east-county clapboards survived to shield soft-burned brick nogging from bitter winter frosts. Enormous fireplace-chimneys radiated warmth and served as anchors when Nor'easters blew.

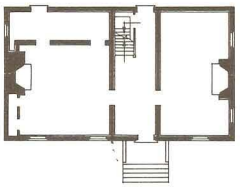
Dominating village and green, a simple austere meetinghouse accommodated community activities until resources permitted the erection of church, town-hall, and school.

NEW NETHERLANDS

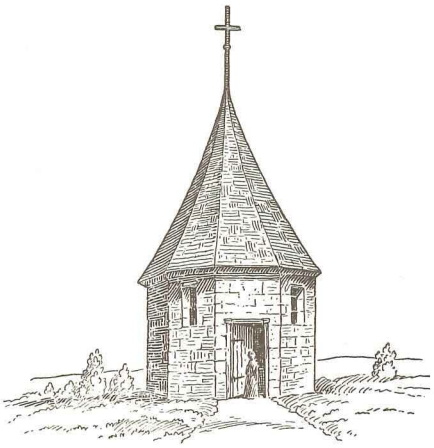




(7) "Watervliet," Van Rensselaer Manor House, Albany, N. Y., 1668. Typical Albany farmhouse — brick veneer held to timber frame by wrought-iron anchors (8), steep gable (dormers later), divided door, stoop, shutters, grain door to garret



(9) Typical four-bay farmhouse built 1723 by Jan Bries, SE of Albany. Original lean-to gone



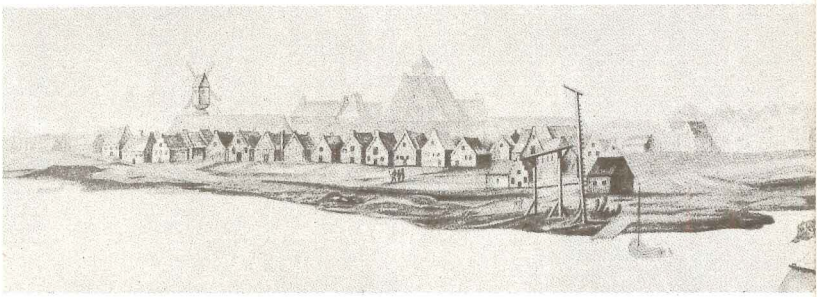
(10) Dutch Reformed Church, Bergen, N. J., 1680. Windmill reduction of Renaissance central plans

BURGERS AND PATROONS

In 1624 and 1625, the Dutch West India Company established Fort Orange (Albany) and New Amsterdam to tap the lucrative western fur trade. In contrast to New England settlements, these Dutch communities were slow to advance beyond the status of trading posts whose chief function was to supply directors with dividends. More enlightened was the policy of Kiliaen Van Rensselaer who in 1630 opened his enormous manor to colonists from many lands. Not until 1653 was a third settlement made at Wiltwyck (Kingston), followed in 1662 by Schenectady.

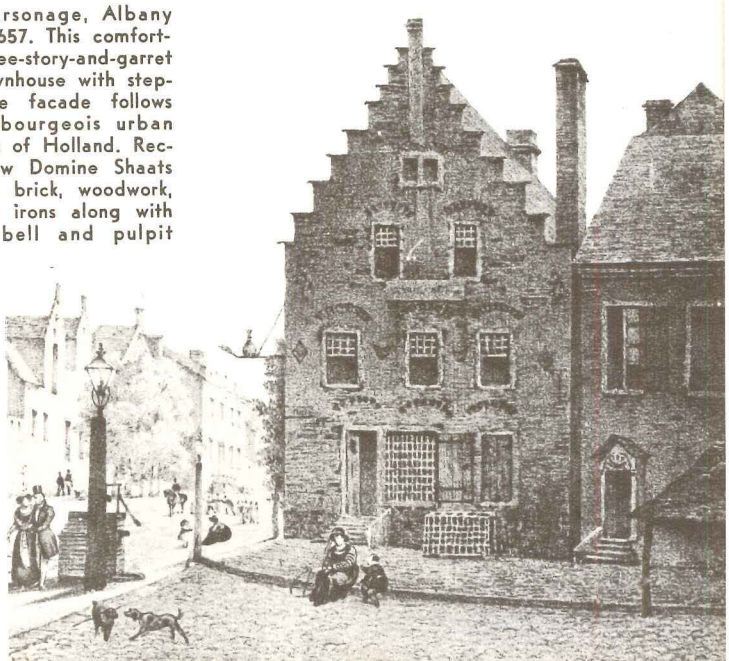
The inept administration of the West India Company, insisting on almost feudal tenure, imposing heavy taxes, and shirking all social responsibilities, alienated tenants, clergy and Van Rensselaers alike. When the British fleet appeared off New Amsterdam in 1664, Governor Stuyvesant could rally no resistance to oppose them. Wisely the English governors of New York won Dutch support by such respect for Dutch institutions, language and customs that these survived for generations.

As in New England, Dutch builders used much hewn and sawed timber, framing their houses in a similar medieval manner. In early structures rough clapboards enclosed the wall; but soon kilns were opened, and the frames of town houses were covered with a type of brick veneer. Stepped gables, thatched roofs, wrought-iron beam anchors, and the inevitable entrance stoop completed their medieval flavor. Hardly any change followed British domination, and, indeed, the introduction of octagonal Reformed churches proved continuing Netherlandish influences.

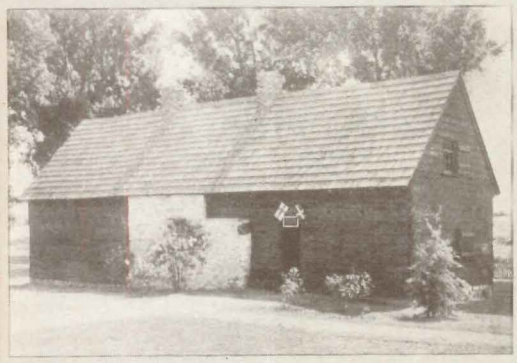


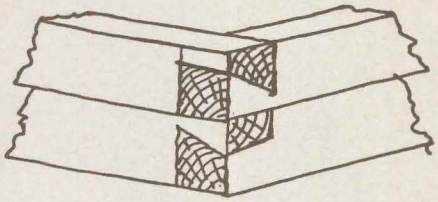
(11) New Amsterdam, 1650. Within fort were stone church (1642), Governor's house, barracks, and jail. Modest brick houses face Strand with its wooden wharf and crane

(12) Parsonage, Albany N. Y., 1657. This comfortable three-story-and-garret brick townhouse with stepped-gable facade follows closely bourgeois urban dwellings of Holland. Records show Domine Shaats imported brick, woodwork, tile, and irons along with church bell and pulpit



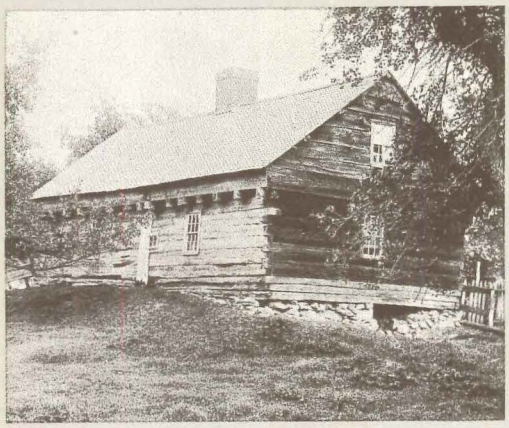
LOG CONSTRUCTION

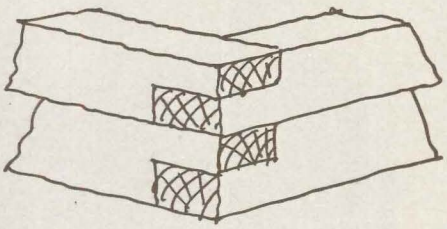




IN NEW SWEDEN

(13, 14) Dominating the Delaware for 17 years (1638-55), Swedes built warm houses in their native log construction, which, spread along the forested frontier by Germans and Scotch-Irish, eventually became the log-cabin symbol of the American pioneer's self-reliance. To the 1654 one-room Mortonson House, Prospect Park (SW Philadelphia), a second was added in 1698 across an open "dog-run" (enclosed 1806). Fine-hewn four-inch planks needed no chinking



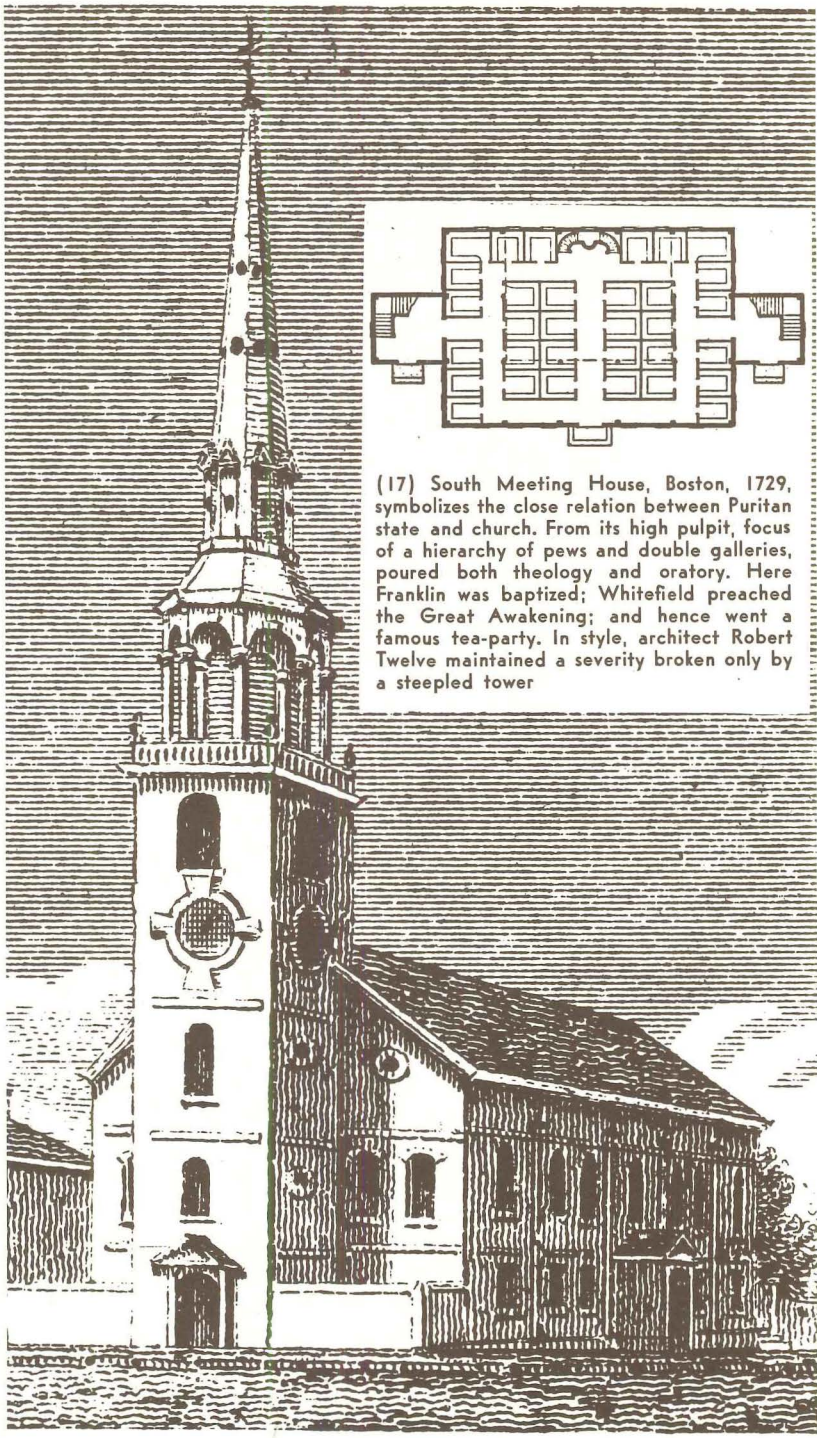


IN NEW ENGLAND

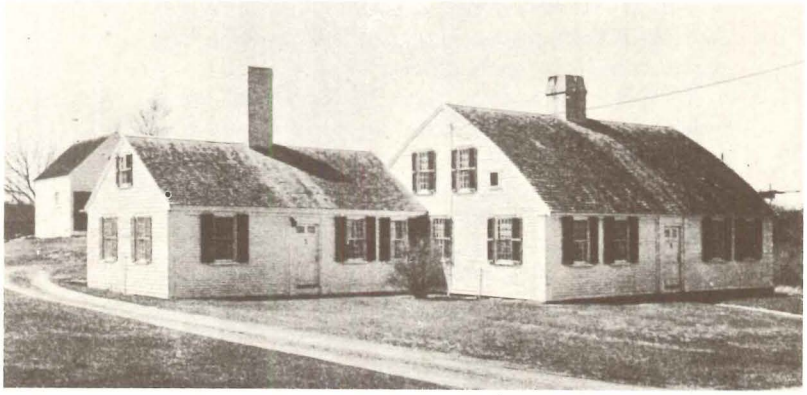
(15, 16) Throughout the colonies, and in New England especially during King Philip's War, stockaded blockhouses and garrison houses served as defense against attack, but only incidentally as dwellings. The William Damme Garrison House, Dover, N. H., built c. 1675, reveals typical massive walls of squared logs, halved at the corners, still unmasked by later shingles or clapboard. After 1690 in Maine and New Hampshire, log houses became common, and log jails appeared

ARCHITECTURAL DEVELOPMENT OF THE NORTHEASTERN STATES

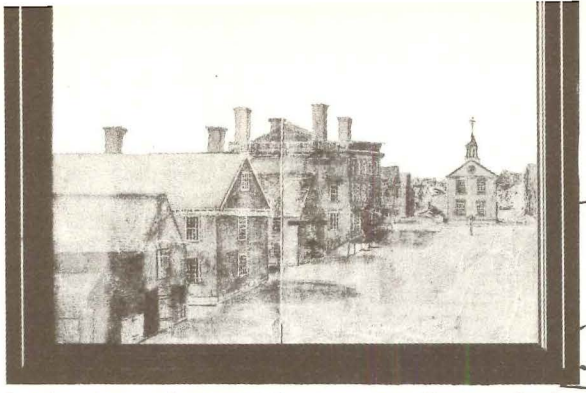
1700-1780



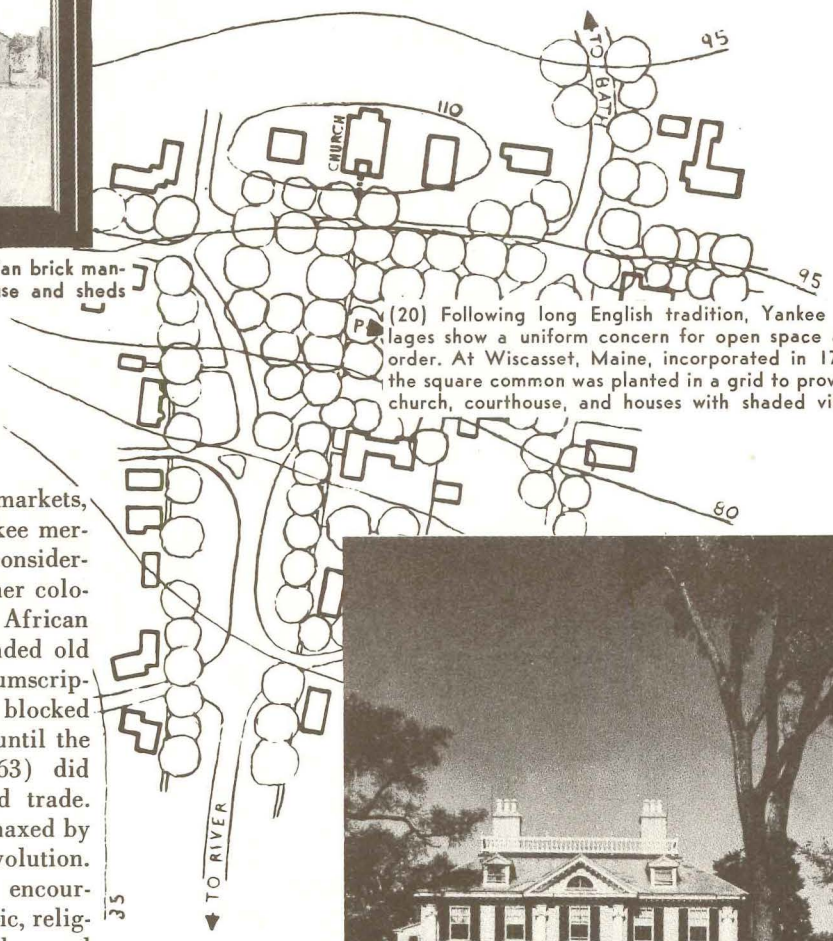
(17) South Meeting House, Boston, 1729, symbolizes the close relation between Puritan state and church. From its high pulpit, focus of a hierarchy of pews and double galleries, poured both theology and oratory. Here Franklin was baptized; Whitefield preached the Great Awakening; and hence went a famous tea-party. In style, architect Robert Twelve maintained a severity broken only by a steepled tower



(18) Jabez Wilder House, Hingham, Mass. Main block, 1690. Modest story-and-a-half type found in all colonies. Gable, gambrel, or nautical "rainbow" give roof interest



(19) Salem, Mass., about 1765. Prosperous new Georgian brick mansion beside early 18th century clapboarded courthouse and sheds



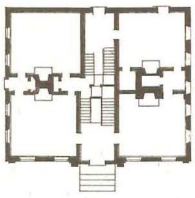
(20) Following long English tradition, Yankee villages show a uniform concern for open space and order. At Wiscasset, Maine, incorporated in 1760, the square common was planted in a grid to provide church, courthouse, and houses with shaded vistas

GEORGIAN YANKEES

FORCED by the lack of fertile soil, accessible markets, and staple produce to turn to the sea, Yankee merchants defied British restrictions to gain considerable profit transporting the products of other colonies, and developing the West Indian and African trade. Mercantile interests slowly transcended old religious isolationism. Jealous of any circumscription of their independence, the colonists blocked the royal governor at every turn; but not until the Franco-British Seven Years' War (1756-63) did England effectively restrain New England trade. This irreconcilable conflict of interests, climaxed by the Sugar and Stamp Acts, led directly to revolution.

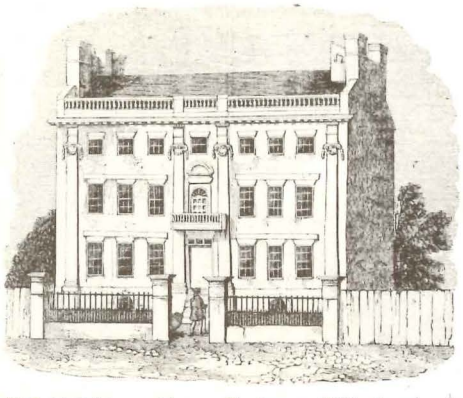
Architecturally, commercial prosperity encouraged the construction of more ample domestic, religious and public buildings. Although timber and clapboard continued to be the dominant material, brick occurred more and more frequently. Immigrant craftsmen trained abroad and local mechanics using illustrated builders' handbooks dressed these structures in the elegant costumes of Georgian London. When professional talent was wholly lacking, amateur designers applied the academic formulæ. At first, forms basically seventeenth century were simply overlaid with the new ornament; but gradually the whole structure was organized according to classical principles of geometric order, symmetry, gracious scale and dignified repose. Interior trim, stairs, and paneling were richly detailed and imported furnishings evidenced the rising standard of comfort.

(21) Major John Vassall House, Cambridge, Mass., 1759. Though structurally conservative, this spacious dwelling uses a full academic repertoire, shown in its pedimented projecting pavilion, rich cornice, Ionic pilasters, and hip-roof with balustraded deck



(22) Winslow House, Marshfield, Mass., 1699. Unpainted 17th century stylified by hip-roof, quoins and cornice

(23) Facade, Royall House, Medford, Mass., applied c. 1735 to Usher salt-box



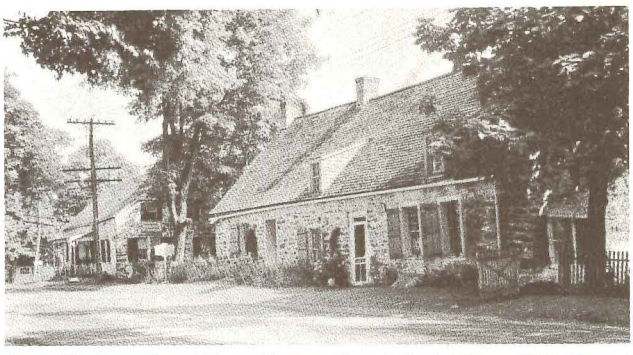
(24) Hutchinson House, Boston, c. 1690. Academic brick facade with stone pilasters (added 1748?)

NEW YORK....

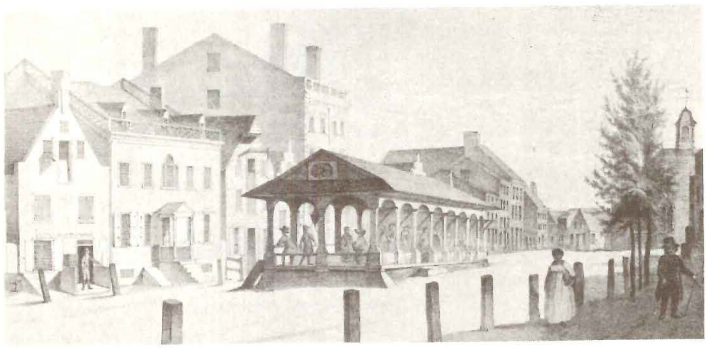
(25) St. Paul's Chapel, New York, 1764, James McBean, architect. Inspired by Gibbs' Georgian St. Martin's

(26) Johnson Hall, Johnstown, N. Y., 1761. Georgian home and stone blockhouse of Sir Wm. Johnson, a Royal Commissioner

(27) Abraham DePeyster House, Beacon, N. Y., c. 1750. Typical Dutch story-and-a-half in brick on stone basement. Georgian detail



(28) Hasbrouck and Frere Houses, New Paltz, N. Y., c. 1700. Two of the six typical Ulster County stone houses along Huguenot Street



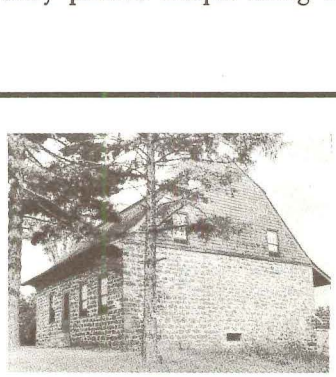
(29) Market Street (Broadway), Albany, N. Y., in 1805. Half-Gothic Dutch shops and church (1714) elbow half-Georgian houses and market (1704)

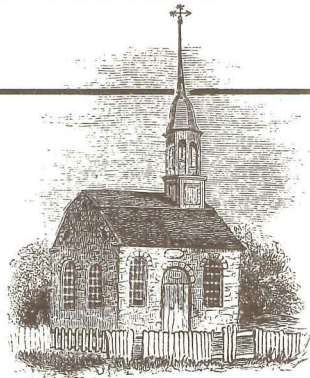
MERCHANTS AND MANOR LORDS

UNDER British administration, New York Dutchmen accomplished the agricultural conquest of the rich Hudson valley; but, in contrast to prosperous New England and Pennsylvania, progress was slower. The manorial system of leasing land did not attract new immigrants, nor did it foster independent industry. Iroquois resistance to encroachment, and threats of French attacks blocked northern and western expansion.

Dutch buildings up the Hudson were usually modest story-and-a-half cottages, a few of timber, some around Albany of brick, but most, in the middle reaches, of split stone. Prosperous farmers afforded larger quarters, two rooms deep, and in time adopted the English gambrel to reduce the resultant roof height. Some of their heavy-timbered barns with wagon doors in the gable end are still in use.

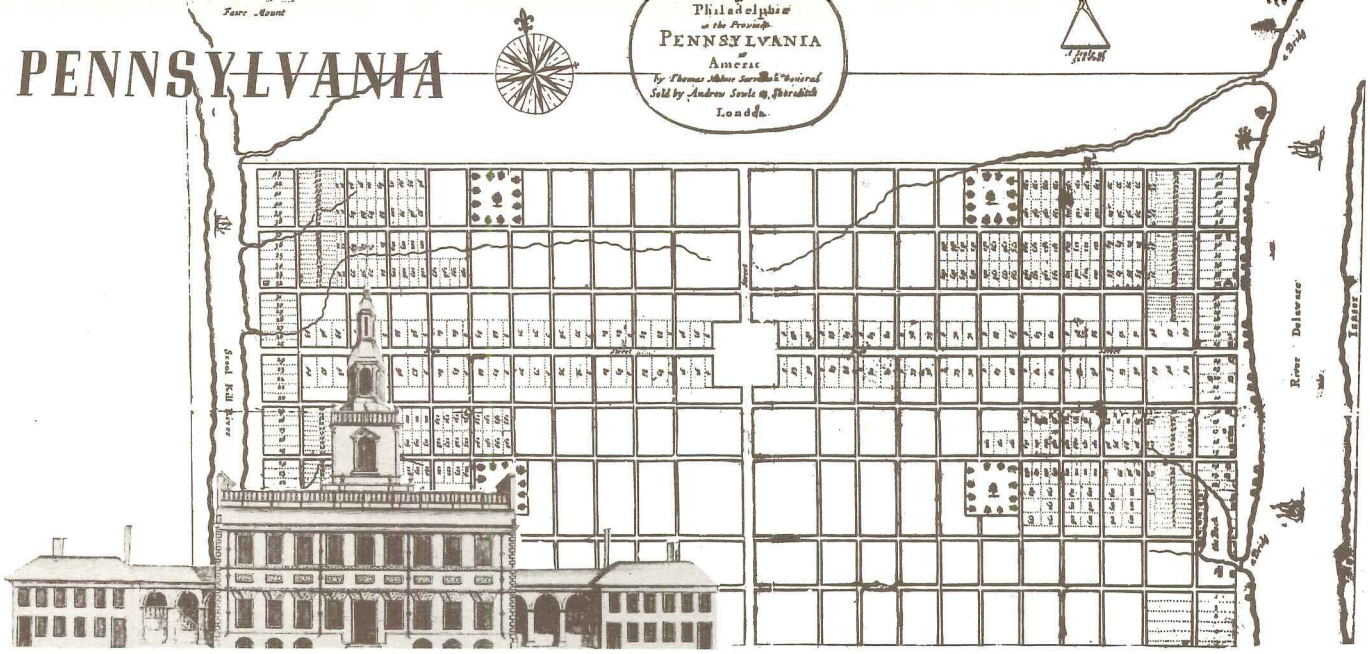
Georgian spaciousness and order arrived without delay in New York City; but in the valley they penetrated slowly and were largely confined to the few great manor houses of the landed proprietors. Paneling, hardware, and furnishings in some instances were direct importations. In turn, these stylistic pace makers occasionally inspired refinements of the common Dutch idiom with charming results both in domestic and religious structures. Palladianism, however, was almost wholly absent even in city churches, with the Jumel Mansion's two-story portico unique along the Atlantic seaboard.





(30, 31) Just after 1700, war, oppression, and bad harvests sent many continental immigrants to New York. Major John Schmidt's House, Germonds, 1735, with its Flemish "flying gutter," and the Palatine Lutheran Church, Caughnawaga (Fonda), 1763, form architectural evidence

PENNSYLVANIA



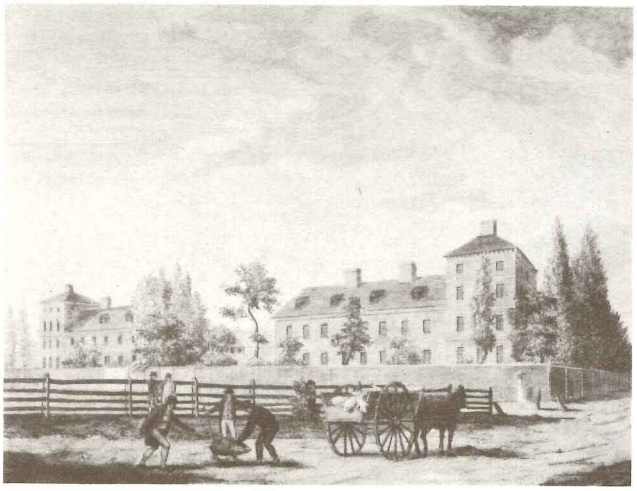
(32) State House, Philadelphia, 1732-35. Edmund Woolley, chief carpenter and probable designer. An expanded palace inspired by Gibbs

(33) Penn's Plan, Philadelphia, 1682, Thomas Holme, surveyor. A very early comprehensive plan. Grid with five squares. Later modified

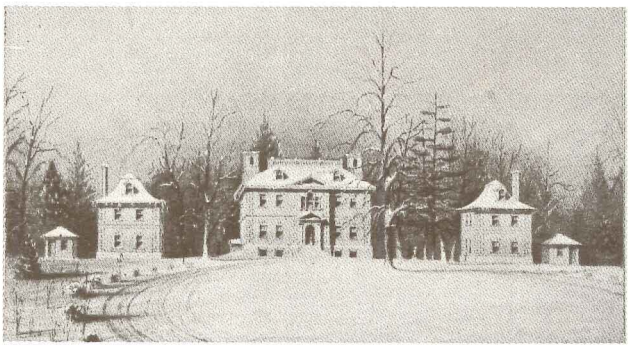
GOOD WORKS AMONG THE QUAKERS

In 1664 the tiny Dutch and Swedish settlements along the Delaware surrendered, as had New Netherlands, to the deputy of James, Duke of York, brother of Charles II. Active colonization, however, awaited the transfer of the grant in 1681 to William Penn whose Frame of Government, guaranteeing religious and civil liberty, attracted many Quakers, Mennonites, Dunkards, Moravians, Scotch-Irish, and Huguenots. Security and tolerance fostered commerce and production, and Philadelphia soon became the largest and richest community in the colonies. The strong religious and humanitarian character of its population gave the city outstanding leadership in institutional and philanthropic activities.

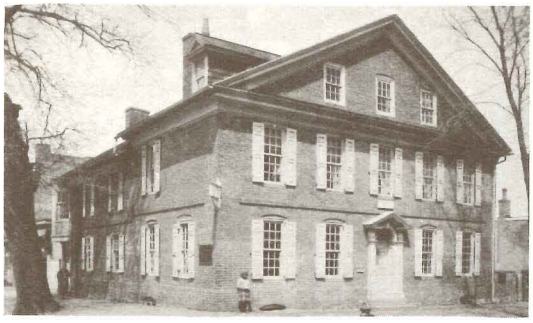
Pennsylvania's early buildings reflect its late start. No Tudor element survived. Queen Anne's sturdy simplicity dominated their brick exteriors, relieved by painted trim and shutters. In Germantown, German fondness for stone masonry and window hoods is noticeable. In the twenties, the Georges' greater elegance appeared promptly to inspire State House, municipal and institutional structures, churches, and the expansive mansions of Quaker merchants and Philadelphia lawyers. Nowhere were Palladian precepts more thoroughly applied than in these stately central blocks flanked by secondary projecting wings.



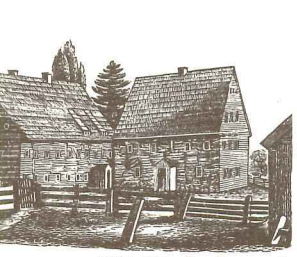
(34) City Almshouse and Hospital, Philadelphia, 1760-67. Here, humanitarian institutions cared for old, poor, sick, orphans, insane

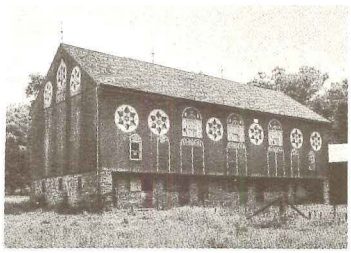


(35) Mt. Pleasant, Philadelphia, 1762. John Adams called Privateer MacPherson's home "the most elegant seat in Pennsylvania"



(36) "Amstel" House, Newcastle, Del., c. 1728. Quaker Georgian, with pedimented gable and robust doorway



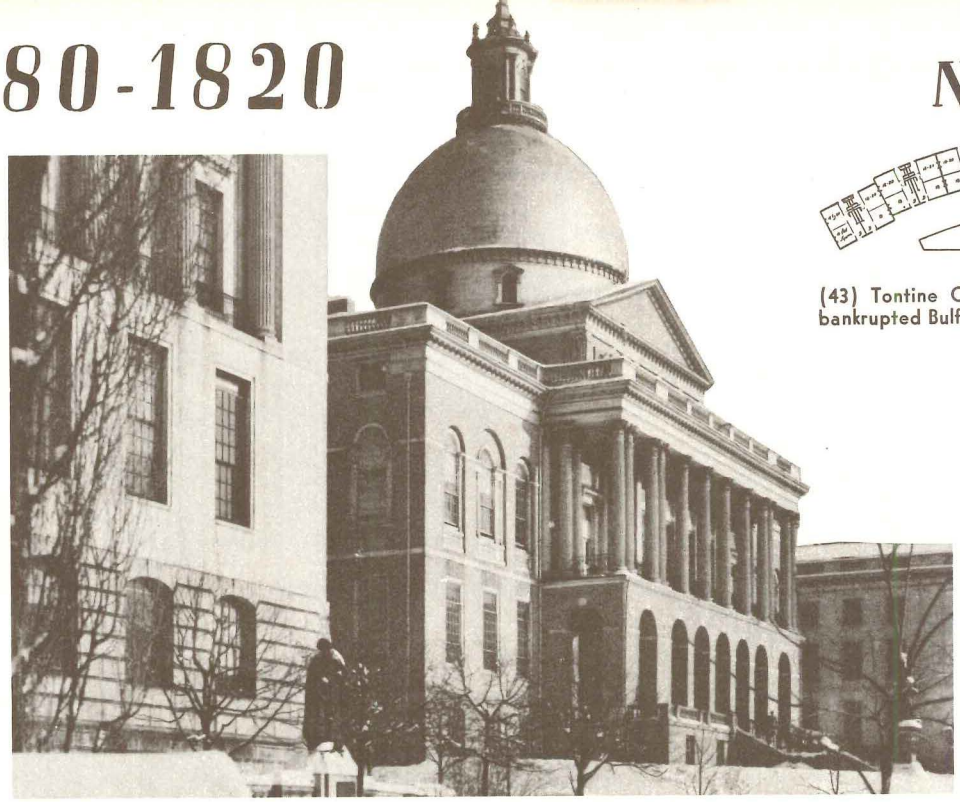


(37, 38) Seekers of religious and political liberty, Dutch Mennonites built massive barns with decorative "hexenfoos," and German Seventh-day Baptists housed their ascetic Society of the Solitary in Ephrata's wooden cloisters — the 1741 Saal (House of Prayer) and 1743 Sharon (Sister House)

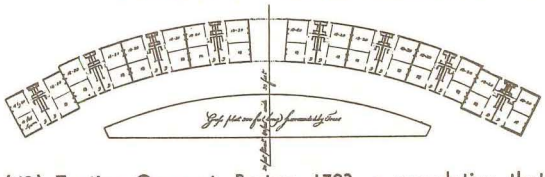
1780-1820

NEW ENGLAND

ARCHITECTURAL DEVELOPMENT OF THE NORTHEASTERN STATES



(39) State House, Boston, 1795-1802. Inspired by Chambers and Gabriel, Bulfinch adapted "late Colonial" to a broader scale suitable for public work

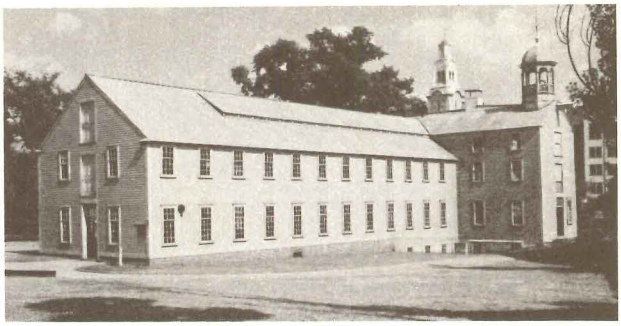


(43) Tontine Crescent, Boston, 1793, a speculation that bankrupted Bulfinch and turned him to professional practice

(44) Gore Place, Waltham, Mass., 1804. Lucid, orderly, neo-classic geometry

(45) Capital, from Asher Benjamin's "Country Builder's Assistant," 1796

(40) John Gardner House, Salem, Mass., 1805. Here, McIntire solved a townhouse problem with comfort, convenience, and elegant restraint



(41) Samuel Slater's Spinning Mill, Pawtucket, R. I.; center portion, 1793. Here water-powered machines began American mass-production

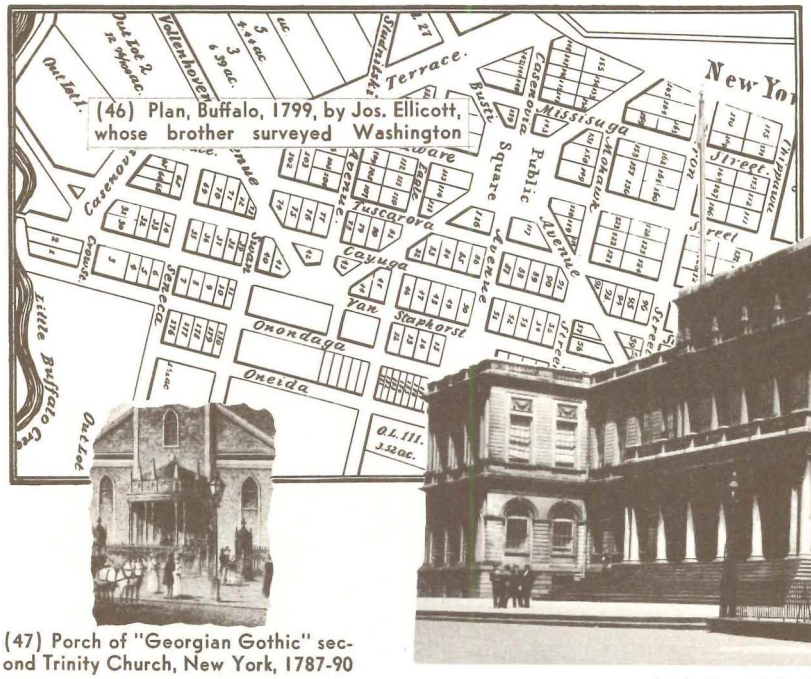
(42) Neat rows of modest cottages attracted operatives to early spinning mills along Rhode Island streams. These were at Fiskeville

POST-COLONIAL CLIPPERS

ALTHOUGH YANKEE SHIPPING suffered severely during the Revolution, the British blockade encouraged the establishment of numerous small industries and, for a time, revivified local agriculture. With cessation of hostilities, New England sloops, denied British-controlled ports, sailed to the Orient to win fabulous profits. Fishing revived; systematic whaling was begun. But in 1807, Jefferson's embargo interrupted this prosperity. Yankee ingenuity and capital again turned to industry. In 1814 Francis Cabot Lowell revolutionized the textile industry by introducing his power loom and by organizing, for the first time, all cloth-making processes within one mill. Fostered by tariff protection after 1816, new mills sprang up wherever water power could be developed, Rural New Englanders, dissatisfied with meager agricultural returns, more and more sought steady wages in bustling seaport or orderly mill town, or escaped to the newly opened promised lands of the Genesee and Western Reserve.

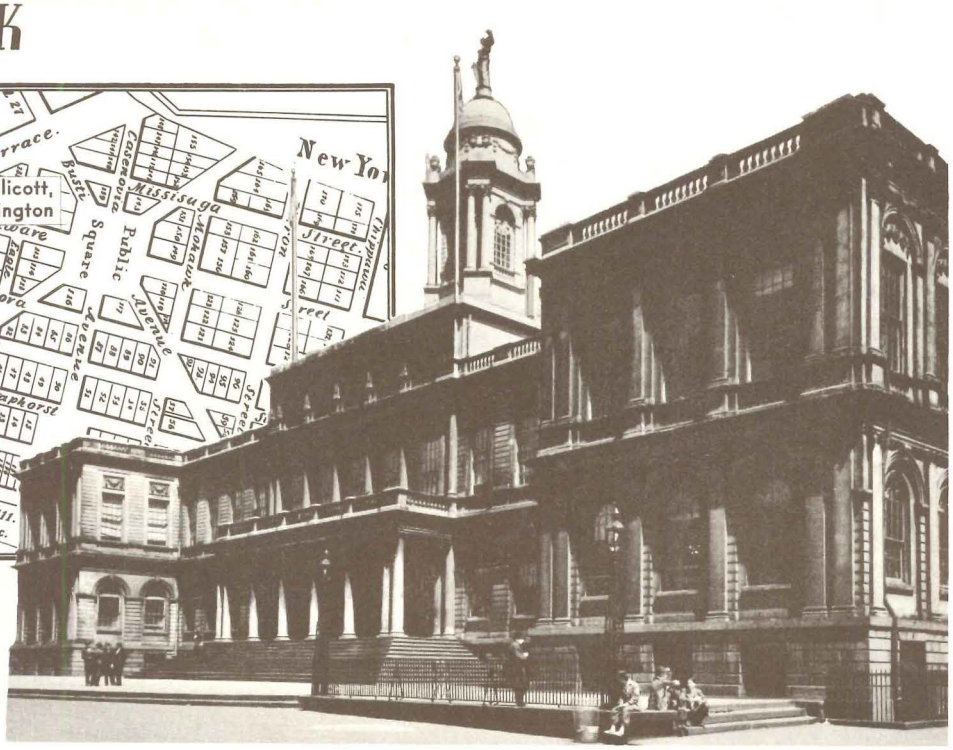
In architectural style, post-revolutionary New England at first continued to follow colonial Georgian tradition. Prosperous merchants, however, soon demanded more spacious town houses, larger and more dignified churches, and more monumental civic buildings. These conformed in detail to the latest Adam delicacies or Soane abstractions, which were ably interpreted by MacIntire, Salem's carver-architect, or that amateur-professional, Bulfinch of Beacon Hill. The new paradigms, publicized by Asher Benjamin's numerous editions, reappeared in many charming provincial variations along the Connecticut, in the Berkshires, and wherever Yankee builders emigrated.

. . . NEW YORK



(46) Plan, Buffalo, 1799, by Jos. Ellicott, whose brother surveyed Washington

(47) Porch of "Georgian Gothic" second Trinity Church, New York, 1787-90



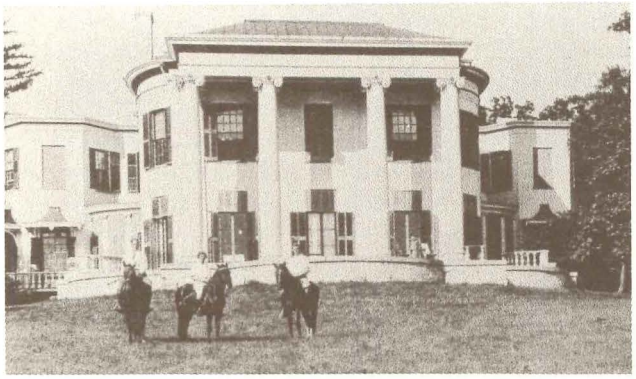
(48) City Hall, New York, 1803-11, owes its Louis XVI grace to emigré-architect Joseph Mangin, despite claims of McComb, who supervised construction

THE HARBOR AWAKENED

THE SUCCESSFUL CONCLUSION of the Revolution opened up-state New York to land-speculators and the great migration of New Englanders. Bustling Yankee villages startled Hudson River Dutchmen or served as mileposts along western turnpikes. At Hudson, Rensselaerville, Skaneateles, and Canandaigua, Yankee craftsmen re-created their accustomed late-Georgian forms, and under Philip Hooker even solid Dutch Albany received a transformation worthy of its new status as state capital.

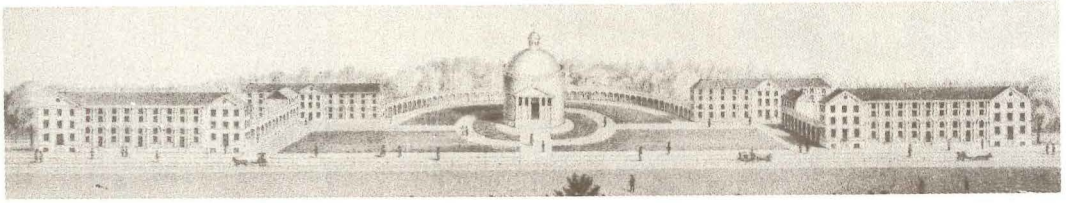
New York City, largest city of the republic and for a time its capital, continued its commercial expansion interrupted only by the War of 1812. Economic prosperity revitalized both public and private building which gradually modified the colonial tradition by reflecting English neo-classicism. Cordial relations with France and the subsequent arrival of emigré architects introduced a strong continental influence.

Prompted by manorial aspirations and yellow-fever epidemics, many wealthy New York merchants acquired lordly summer villas along the middle Hudson. To maintain prestige and share new standards of comfort, the great proprietors felt obliged to remodel or replace outmoded manor houses. That prosperity penetrated even more modest homes was revealed both in town and country, by more commodious quarters, higher ceilings, stylish trim, and the increasing use of brick.



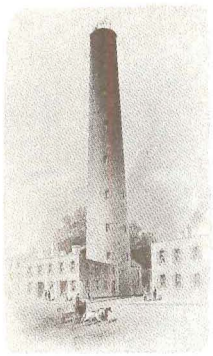
(49) The Hill, near Hudson, N. Y., c. 1796. The stately portico of this Livingston home masks a pair of juxtaposed elliptical salons

(50) Nathan Roberts House, Canastota, N. Y., 1820. An Adamesque arcade marks this post-Colonial home of a canal engineer

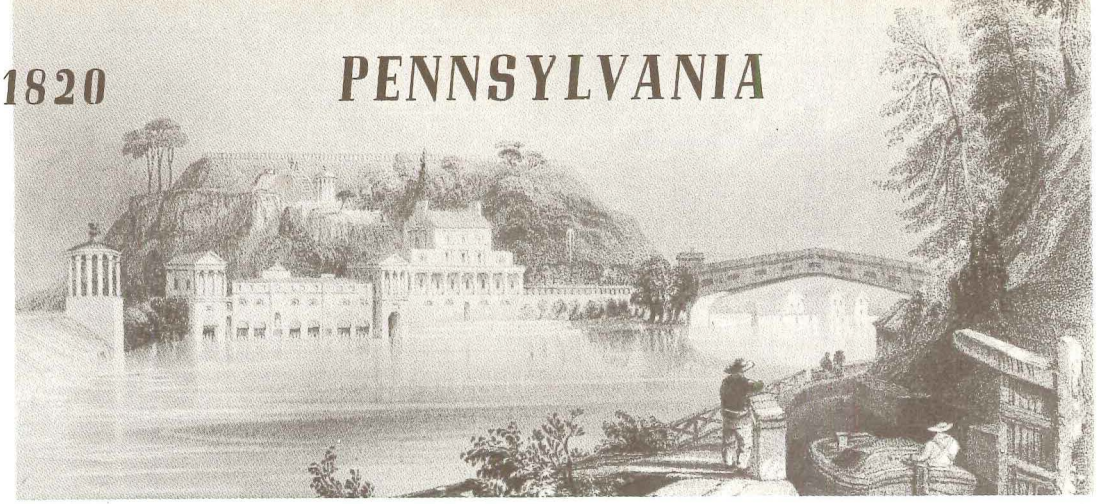


(51) Union College, Schenectady, N. Y., 1813. French "grand plan" with academic enframement of neo-classic Pantheon, designed by emigré Joseph Jacques Ramee

1780-1820 PENNSYLVANIA



(52) 142-foot brick shot tower, 1807—first in U. S.

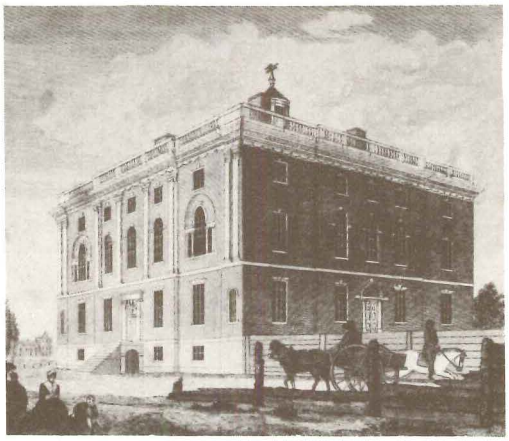


(53) Wernwag's 340-foot Schuylkill Bridge (1812), Graff's Fairmount Waterworks (1819-22), and the Canal (1825)

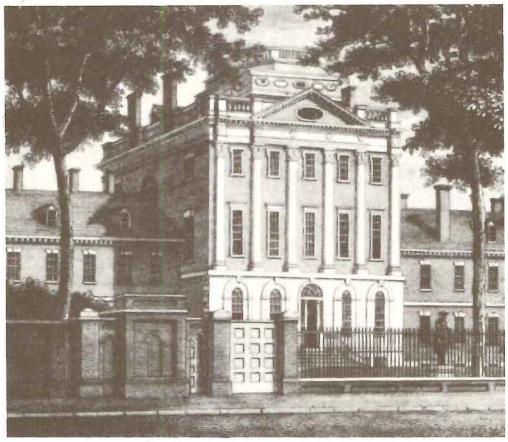
BANKING AND POLITICS

THE SOLID BASIS of commerce, industry, and finance which had given Philadelphia such an outstanding role in the revolution, continued to sustain its leadership during the early republic. Although New York was now the metropolis, and although Washington became the political capital in 1800, Philadelphia long remained the national banking capital. Economic political and cultural attractions, symbolized in the career of Stephen Girard, doubled state population by 1820. Settlement of central and western Pennsylvania began in earnest, focusing attention on river and turnpike development, and encouraging exploitation of the vast deposits of coal and iron.

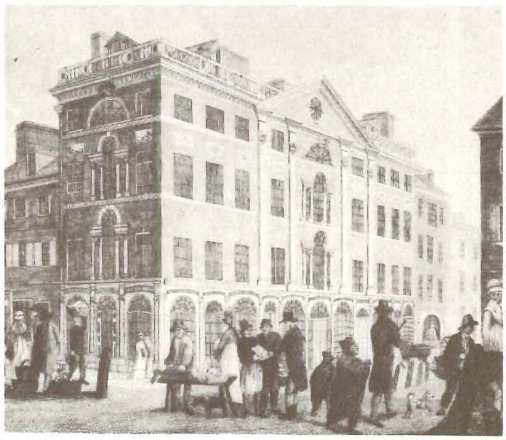
It is not surprising that Philadelphia, the wealthiest city of the new nation, carried out a series of unprecedented public works, including bridges, water works, hospitals, almshouses, and asylums. A new elegance replaced colonial Quaker severity. L'Enfant's marble facade brought Robert Morris to bankruptcy; but this rich material before long decorated the stoops and strings of even middle-class row houses. Opportunity for commissions drew to the metropolis accomplished architects like Latrobe, who introduced the latest stylistic fashions of Europe —Neo-Classic, Greek, and Gothic. Under him developed the apprentices, Strickland and Graff, the first of Philadelphia's famous line of professional architects and engineers.



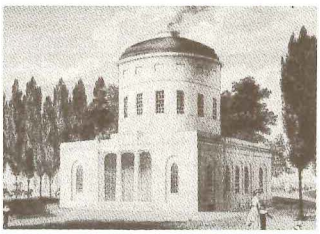
(54) President's House, Philadelphia, 1792-97. Pennsylvanian architectural bait to obtain the Federal capital



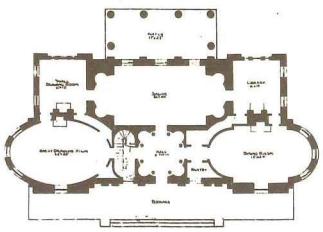
(55) Central block, Pennsylvania Hospital, Philadelphia, added 1800-05. Samuel Rhoads was the architect



(56) Cooke's Folly, Philadelphia, 1796. This ostentatious pile of shops and dwellings broke its promoter

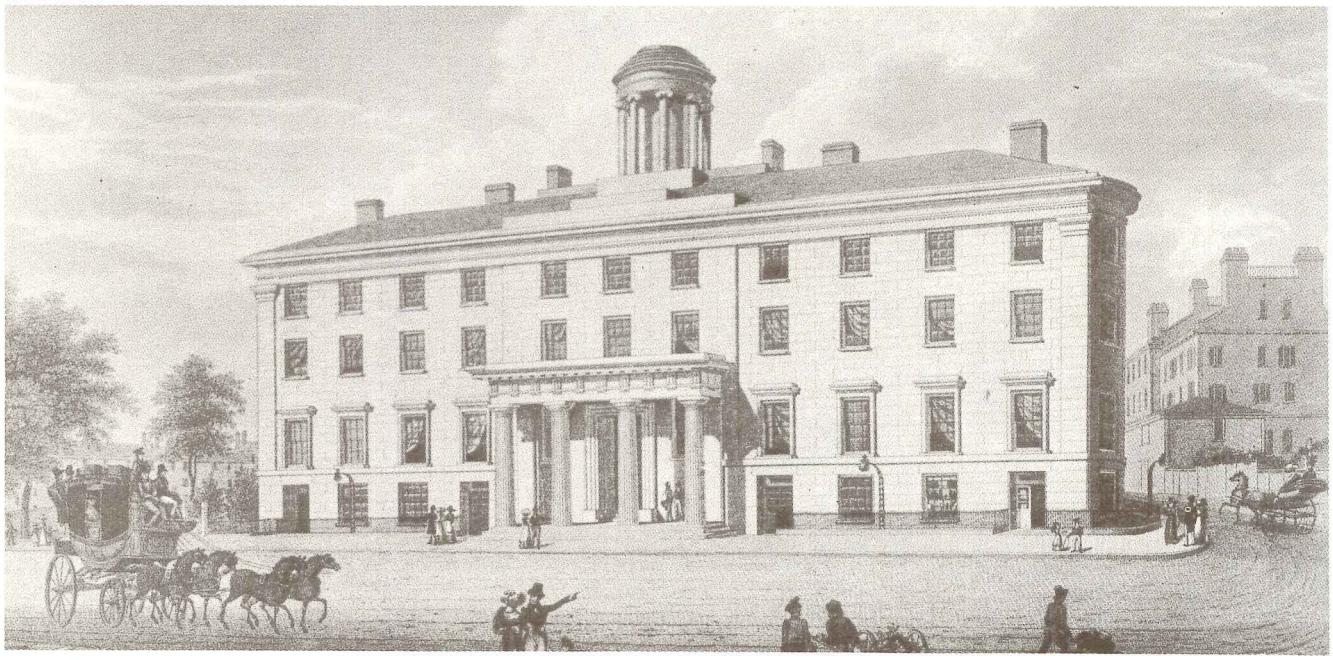


(58) Latrobe's Waterworks, Philadelphia, 1799. Frail wooden boilers and pipes distributed Schuylkill germs

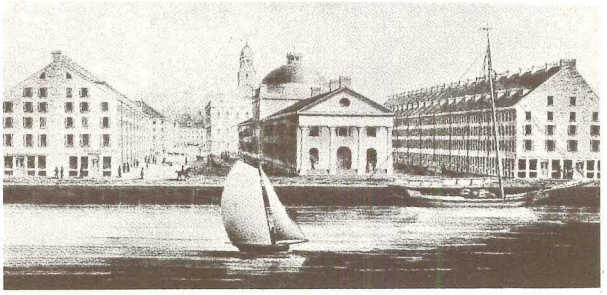


(57) William Hamilton's Woodlands, Philadelphia, neo-classized in 1788 by ovals, niches and a portico

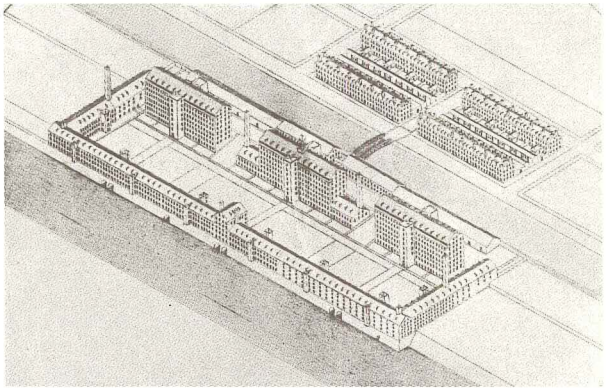
1820-1860 NEW ENGLAND



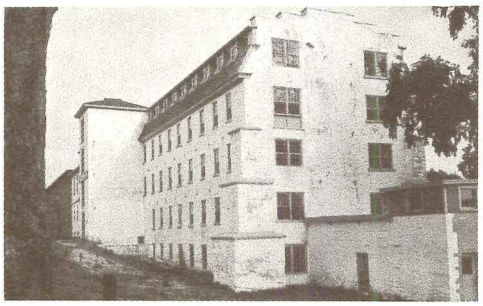
(59) Tremont House, Boston, 1828, Isaiah Rogers, architect. First great modern luxury hotel to introduce rough Americans to lavish public rooms, ingratiating service, room-suites, and elaborate mechanical equipment. Renown led to one of first nation-wide architectural practices



(60) Quincy Market, Boston, 1825, by Parris. Stalls below, exhibit hall above. Granite Greek revival. Part of $1,000,000 job



(61) Bay State Mills, Lawrence, Mass., mid 1840's. Mill, counting house, and paternalistic housing in momentary equilibrium



(62) Woolen Mill, Allendale, R. I., 1822, by Zachariah Allen, U. S. pioneer in industrial fire prevention

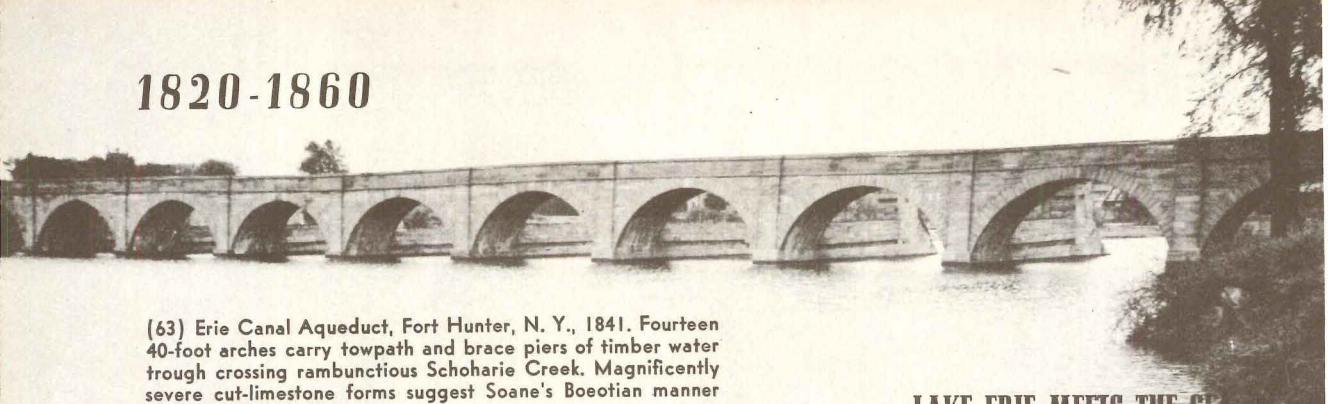
CULTURE AND COTTON MILLS

ALTHOUGH THE TURNPIKE and canal mania passed New England by, the arrival of cheap western wheat on the eastern seaboard spelled the abandonment of many submarginal New England farms. Commerce and industry henceforth dominated Yankee economy. Nantucket and New Bedford whalers hunted two oceans to light the nation's lamps. Sleek Yankee clippers outsailed all rivals on the seven seas. Factories continued to multiply and diversify.

The impact of this industrial revolution reverberated in every phase of life. To stem the alarming exodus to western lands, sweeping political and religious reforms were enacted. Labor legislation sought to minimize industrial exploitation. In the social ferment of the thirties, arose the Humanitarian movement, the crusade for temperance and abolitionism, transcendentalism, utopian communism, and universal education. In the forties and fifties, the Irish invasion added another element of confusion.

These economic and cultural transformations inevitably posed many architectural problems. The increased fire hazards of mill and warehouse provoked the first steps toward a comprehensive program of fire-loss prevention. The promotion of large industrial enterprises compelled attention to employee housing. Growing metropolises demanded more adequate architectural equipment.

Although New England employed the fashionable stylistic revivals of the day — Greek, Gothic, and Renaissance — as effectively as elsewhere, an incipient architectural rationalism was voiced by Thoreau and Emerson.



(63) Erie Canal Aqueduct, Fort Hunter, N. Y., 1841. Fourteen 40-foot arches carry towpath and brace piers of timber water trough crossing rambunctious Schoharie Creek. Magnificently severe cut-limestone forms suggest Soane's Boeotian manner

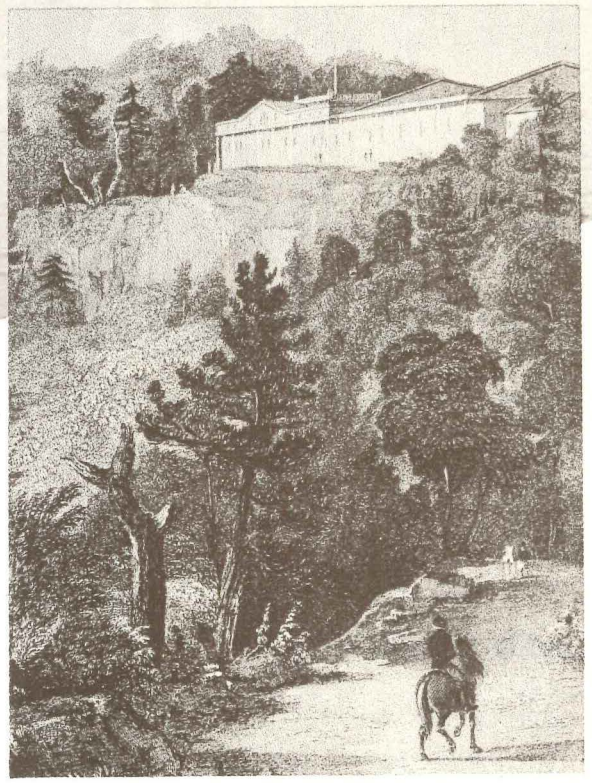
LAKE ERIE MEETS THE SEA

WITH THE COMPLETION of the Erie Canal in 1825, the Empire State became the high road and New York City the seaboard outlet of western trade which permanently assured their pre-eminent position in the national economy. To equip the agricultural frontier, eastern market towns turned more and more to heavy industry and soon rivaled the mills of New England and Pennsylvania.

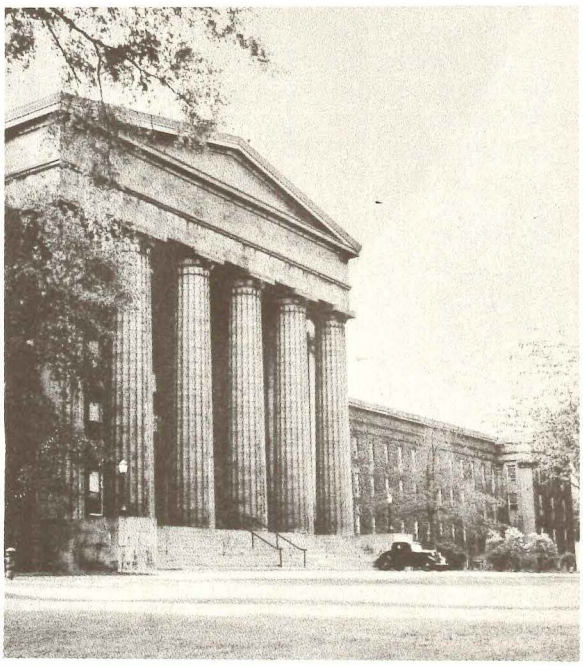
In the excitement of the new era, New Yorkers adopted without reservation both the crisp perfections of the Greek revival and the sentimental picturesqueness of the Gothic. Whether of Sing-Sing marble, Trenton limestone, stucco, brick, or Adirondack timber, the full panoply of these rich historic vocabularies was applied in greater or less degree and with increasing archaeological accuracy to every building type.

The booming forties saw great canal extension and enlargement despite incipient railroad competition. Disastrous New York conflagrations provoked magnificent engineering achievements: the Croton aqueduct, High Bridge, and Bogardus' early experiments with cast-iron building construction. The exuberant enrichment which this facile plastic material encouraged dispelled the growing boredom felt for pure, but monotonous, neoclassic surfaces.

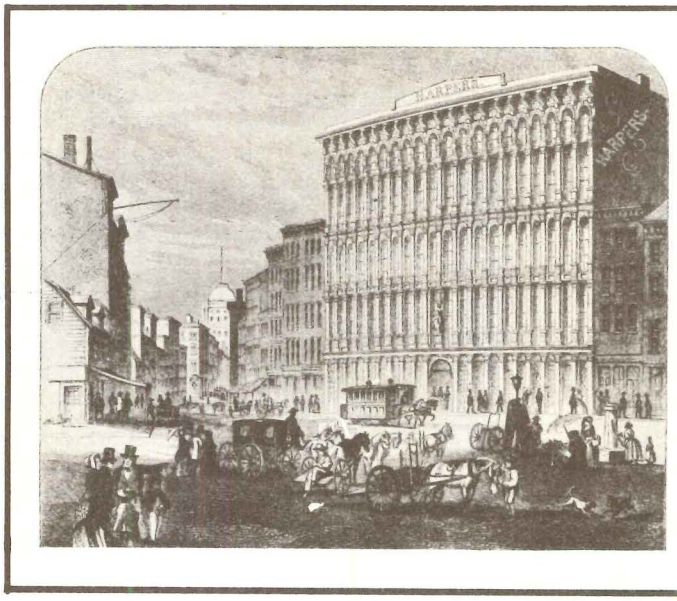
No less important for modern architecture were mechanical developments — central heating, water supply, plumbing, gas lighting, ventilation, and elevators. In the field of city planning, the problem of low-cost housing was accentuated by the influx of Irish and German immigrants, creating congestion which led to the public park movement and the escape of upper-class commuters to suburban havens.



(64) Catskill Mountain House, 1823, marked emerging interest of Americans in recreation and romantic landscapes

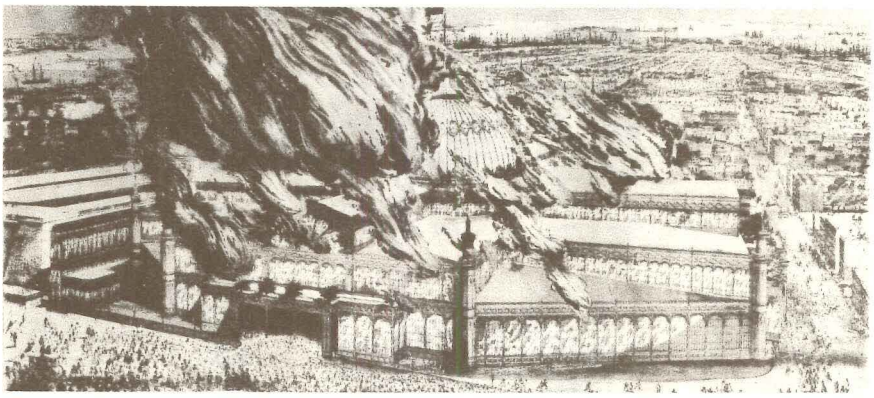


(65) New York State Lunatic Asylum, Utica, N. Y., 1839-42. Superb 48-foot-high Greek Doric portico accents severe 550-ft. facade. Provided for patient classification, therapeutic work

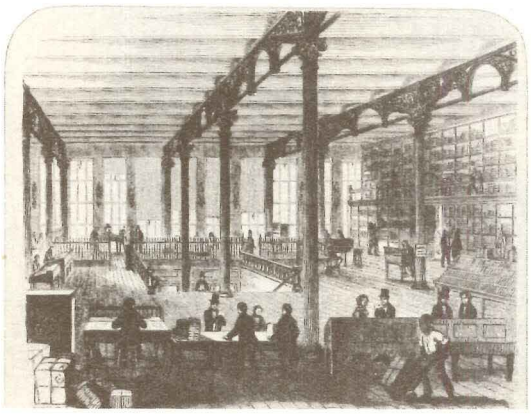


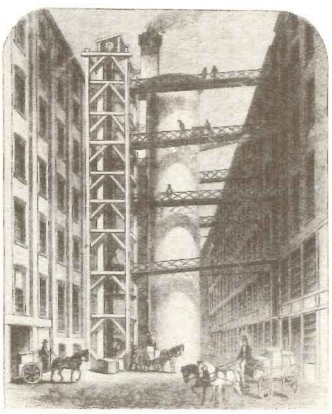
NEW YORK

(67) Central Park, New York. Gourlay proposed parks, 1844, backed by Bryant and Irving; A. J. Downing urged this site, 1850; designed and built, 1858-76, by Olmstead and Vaux, influenced by Haussmann's Parisian promenade parks. Success inaugurated American park movement and led to modern city planning

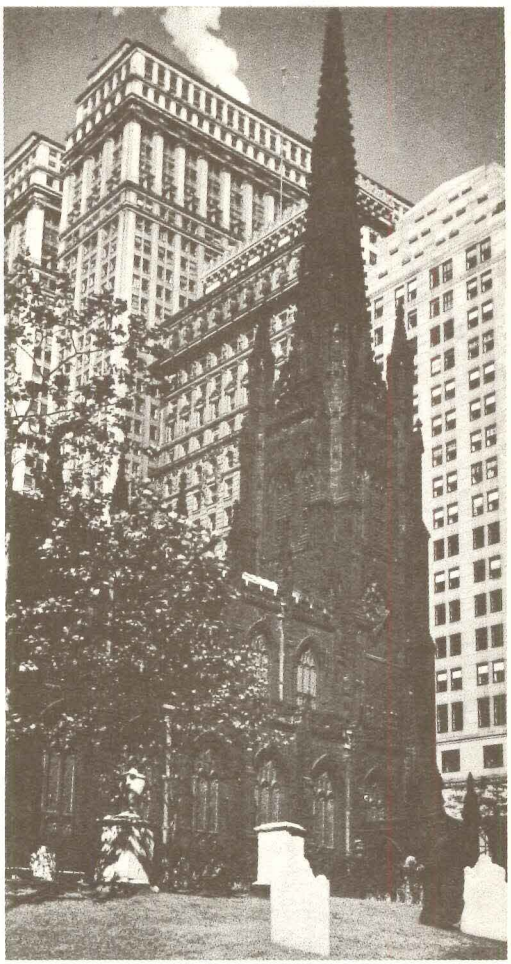


(68) Crystal Palace, New York, 1853, spawned by London's famous structure. Five years later, fire proved in 20 minutes that unprotected iron and glass alone could not prevent destruction





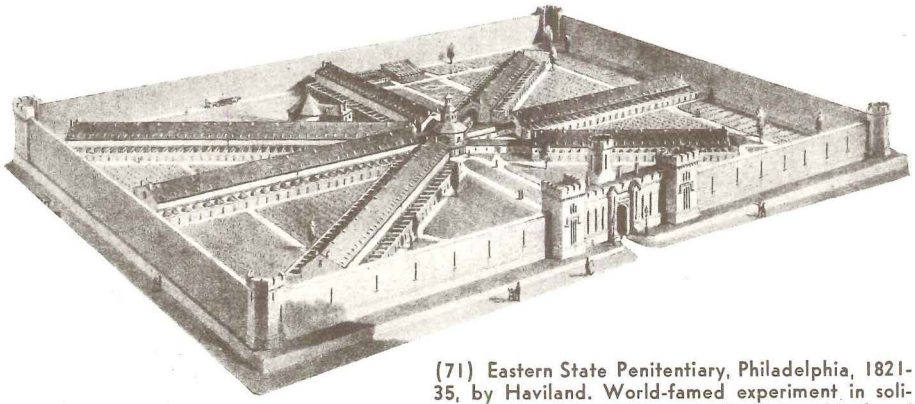
(66) Harper Bros. Plant, New York, 1854, Corlies, architect. After costly fire, Harpers, largest U. S. publishers, demanded maximum fire resistance — incombustible structure of cast-iron columns and girders, rolled wrought-iron beams (first in U. S.), brick floor arches, and a Bogardus iron front; interiors subdivided by fire walls; stair, hoist, and boilers in court



(69) A more authentic Gothic spirit emerged in Richard Upjohn's third Trinity Church, New York, 1838-46. Soon the "Christian style" replaced pagan Greek

PENNSYLVANIA

(70) Third Street Hall, 1833, hotel and first Pennsylvania R. R. terminus



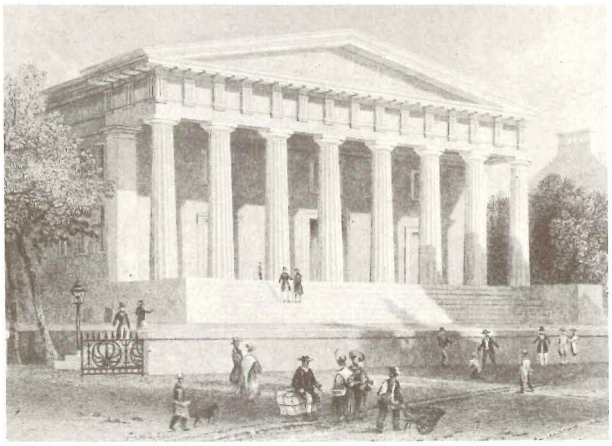
(71) Eastern State Penitentiary, Philadelphia, 1821-35, by Haviland. World-famed experiment in solitary penitential confinement. Radiating blocks of 8 x 12 ft. barrel-vaulted cells behind a Castellated Gothic wall, "impressive, solemn, and instructive"

CROSSING THE ALLEGEHENIES

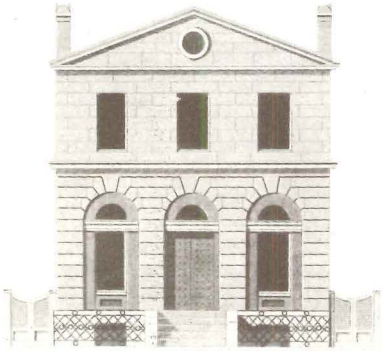
WHEN TURNPIKES proved an inadequate link with central and western Pennsylvania, Philadelphia's capitalists and engineers began the construction of canals up Schuylkill, Susquehanna, and Juniata. Soon this growing network, fed by tiny gravity railways, carried the state's enormous mineral wealth to eastern markets. Steam locomotion encouraged the addition of longer tracks, until Erie Canal competition finally forced an ingenious co-ordination of railroad, canal, river, and inclined plane reaching clear to Pittsburgh. By 1852, through rails connected east and west.

The growth of industry was no less dramatic. Cast iron production expanded at Pittsburgh and Danville; in 1854 rolled wrought iron beams came from Trenton; in 1855, steel rails were rolled at Johnstown's Cambria Works. Typical of the development of heavy industry was the Baldwin Locomotive Works, established in 1831.

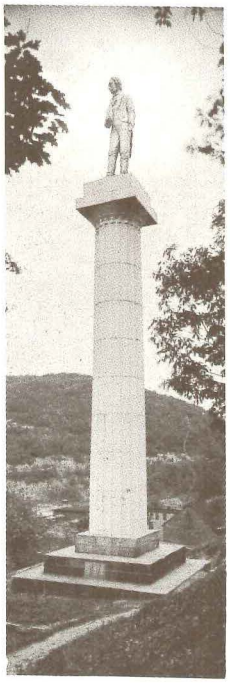
In architecture, liberal resources and enlightened patronage provided the opportunity for Strickland, Haviland and Walter to set a standard in excellence of construction and style which made Philadelphia the nation's architectural capital. In prison design, Haviland was world-renowned. Latrobe and Strickland propagated the Greek Revival. Prophetic, too, was the establishment in 1831 of the first United States building-and-loan association, an idea now phenomenally represented in Philadelphia by more than 7,000 units, and accounting in large part for the unusually high proportion of home ownership.



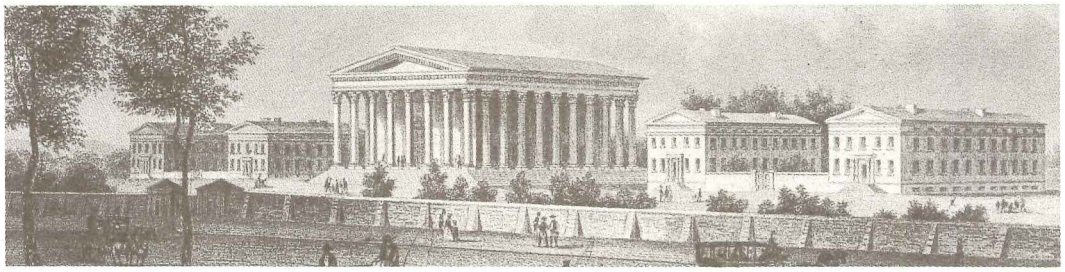
(72) Bank of the U. S., Philadelphia, 1817-24, Latrobe and Strickland. Federal finance and Greek portico sanction one another



(73) First U. S. cast iron facade. Bank, Pottsville, 1830, Haviland



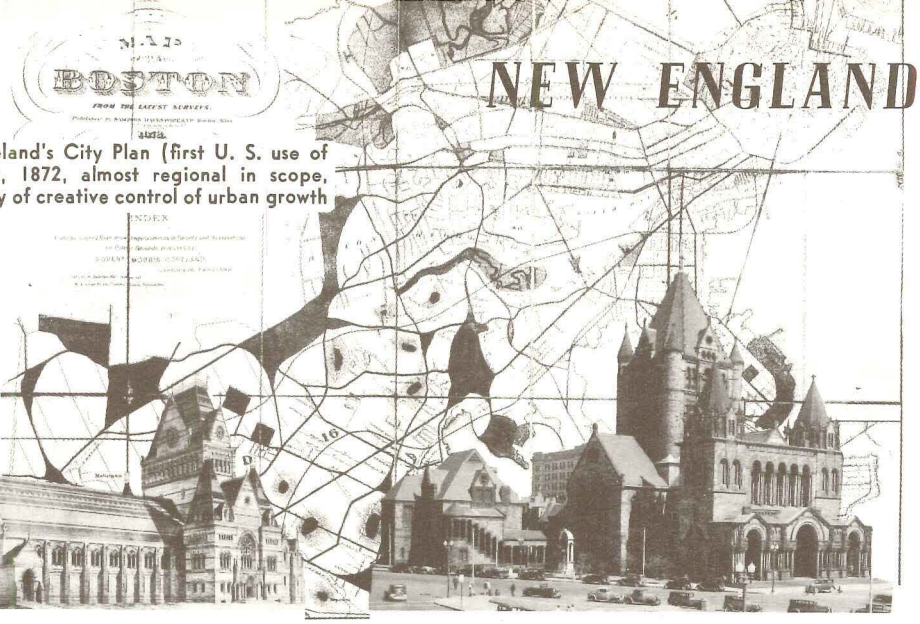
(75) Pottsville's cast iron column (1855) to Henry Clay who won tariff protection for local coal



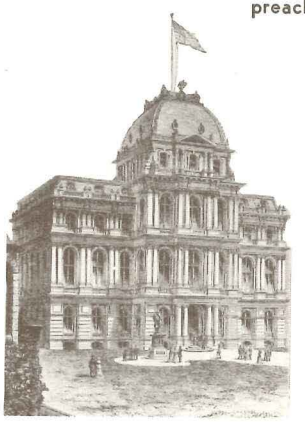
(74) Founder's Hall, Girard College, Philadelphia, 1833-47, by Thos. U. Walter. Superb Greek Corinthian colonnade

1860-1920

NEW ENGLAND



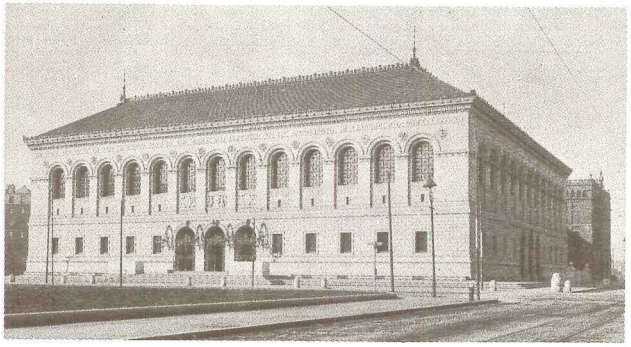
(79) R. M. Copeland's City Plan (first U. S. use of term) for Boston, 1872, almost regional in scope, preached necessity of creative control of urban growth



(76) City Hall, Boston, 1862-65, Bryant and Gilman. Yankee Louvre

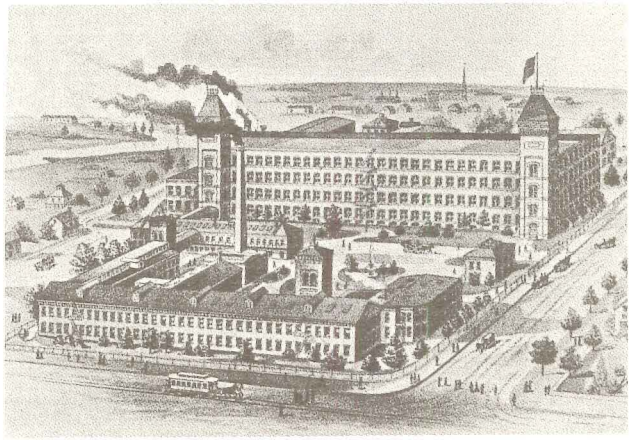
(77) Harvard's Memorial Hall, 1871-74, Ware and Van Brunt. Victorian "civic" Gothic

(78) Trinity Episcopal Church, Boston, 1872-77. It established "Richardsonian" as the style of two decades



(80) Boston Public Library, 1888-95, McKim, Mead, and White. Palace to Yankee faith in knowledge inspired second classic era

(81) English-High and Latin School, Boston, 1877, G. A. Clough, architect. World's largest free public school used a "German" plan



(82) Steam Cotton Mill, Pawtucket, 1881. Heavy-timber "mill construction," flat roof, electric light, humidified and sprinklered

EMPIRE STATE COMES OF AGE

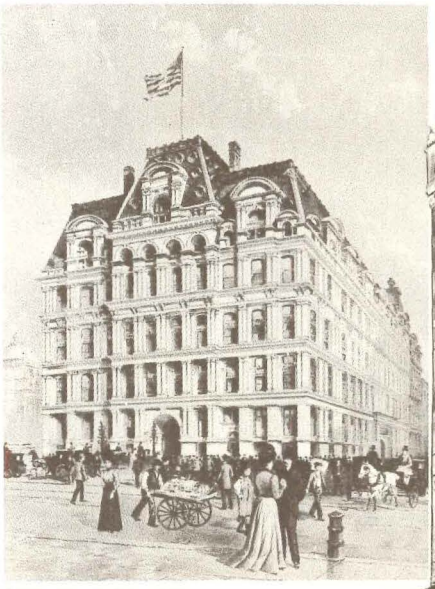
In the aftermath of Civil War, New England underwent further industrialization. Driven from the seas by the inexorable iron steamers of the British fleet, and robbed of their whale oil market by the discovery of petroleum, maritime capital turned again to industry and transportation. Steam-powered railroads hauled Pennsylvania coal to the new steam-powered urban mills. Wholesale immigration solved the problem of cheap labor, but accentuated already increasing urban congestion.

Widespread factory construction focused further attention on planning for productive efficiency and prevention of fire loss. Extraordinary success in the latter led, especially after the Boston fire of 1872, to similar precautions in every type of modern building.

Urbanization evoked many instructive projects. Boston's reclamation of the Back Bay swamps which blocked southward expansion, her establishment of a comprehensive system of metropolitan parks, and her magnificent Charles River development were symptomatic. The achievement of Copley Square and its legal protection were landmarks in American city planning.

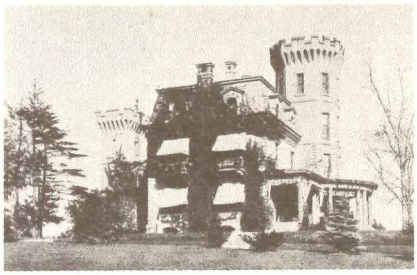
In stylistic matters, Boston continued her leadership. Mansarded French Renaissance, polychromatic Ruskinian Gothic, massive Richardsonian Romanesque, and Crammian medievalism were Boston's contribution to national eclecticism. In 1866, William R. Ware established at M.I.T. the Ecole-inspired curriculum of America's first architectural school, a filiation further signalized in the translation by Henry Van Brunt, Ware's partner, of Viollet-le-Duc's prophetic "Discourses on Architecture."

1860-1920 NEW YORK ....



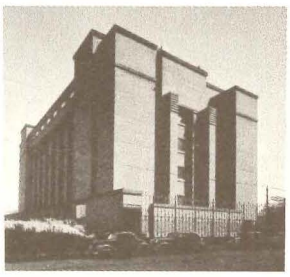
(83) Equitable Life Offices, New York, 1870, Gilman and Kendall. First office elevators

(88) St. Thomas', New York, 1906-13. Goodhue Gothic at its best



(89) Concrete Ward House, Portchester, N. Y., 1875, used 4,000 bbl. of English cement

(90) State Education Building, Albany, 1912, Palmer, Hornbostel and Jones



(91) Wright's trail-blazing Larkin Co. Offices, Buffalo, 1904

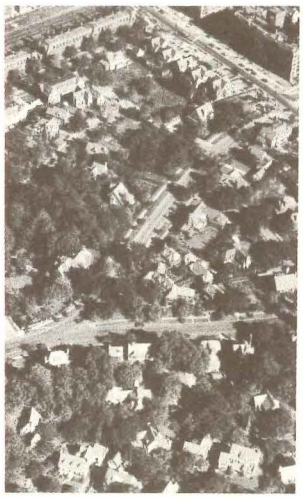
(84) Singer Building, New York, 1908, by Ernest Flagg. "Beaux-Arts Baroque" hid this skyscraper's technical progressiveness

EMPIRE STATE COMES OF AGE

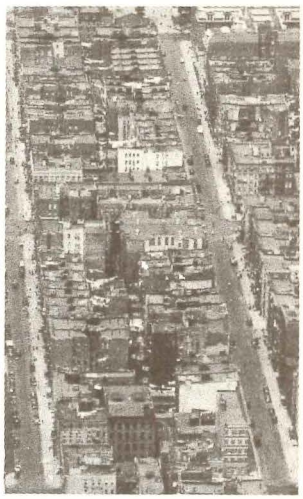
NEW YORK, stimulated to extraordinary effort to supply the needs of northern armies, emerged from hostilities with all the paraphernalia of modern mass production — power machinery, wage, labor, and corporate management. Captains of industry, impatient with mule-paced barges on state-owned canals, shifted their patronage to newly integrated railroad systems, symbols of dizzy speed, ruthless power, and clever finance. The tumultuous metropolis now became hemispheric capital of finance and commerce.

As the century waned, heavy industry moved west to develop Lake Superior ore and follow agricultural and railroad markets. Exhaustion of Adirondack forests closed Albany's 4,000 sawmills. In consequence, New York State enterprise turned to dairying, orchards, and such specialized industrial products as electrical wares, clothing, and photographic apparatus.

From 1865 to 1914, it is amusing to note how closely stylistic fashions correlated with building booms and Wall Street peaks. Despite the risk of oversimplification, the cast-iron Folk-Baroque and the Victorianated Gothic of General Grant, the brownstone and granite Romanesque accompanying Gold Resumption, and the imperial New-Classicism of Corporation Prosperity seem more than casual coincidents. Of serious import, however, was the refinement of fire-resistant structural systems, the perfecting of mechanical and electrical equipment, and steady improvement in craftsmanship and constructional organization.



(85) Forest Hills, Long Island, 1911, Olmstead and Atterbury



(86) New York's old law fire-traps blight tenant and owner

(87) Alfred T. White's Home Buildings, Brooklyn, 1876-79, Field and Son, architects. First block of "model tenements" in greater New York

PENNSYLVANIA

(92) "Main-line" villa, 1869, of Penn R. R. Vice-Pres. Alex. J. Cassatt, at Bryn Mawr

(93) Pennsylvania's Broad St. Station, 1880-94, Furness & Evans; head office and world's largest terminal

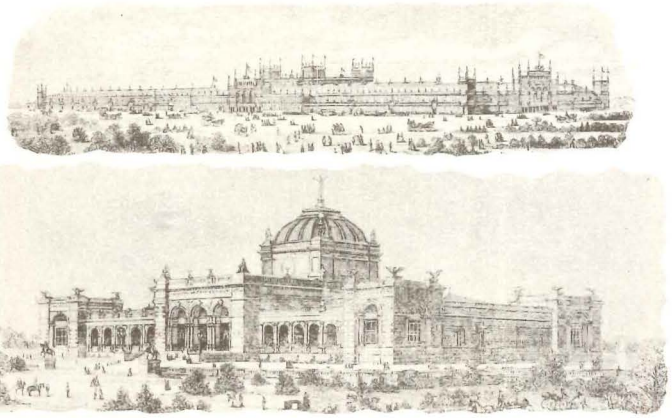
(94) City Hall, Philadelphia, 1874-87, by John MacArthur. Civic ambition overwhelmed Penn's Square

COAL, STEEL, AND TRANSPORTATION

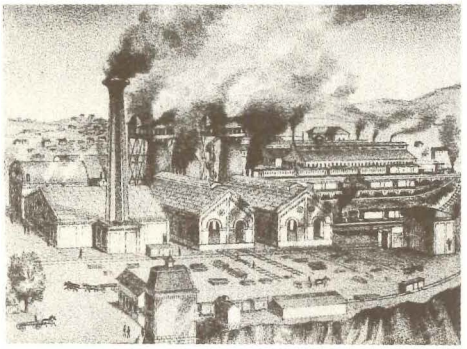
IN SPITE of the loss of southern markets, Pennsylvanian industry emerged from the Civil War greatly stimulated. Using experience obtained as chief of transportation for the Union army, Thomas Scott integrated various independent railroads into a unified Pennsylvania system. A. J. Cassatt, his assistant and successor, carried through tremendous physical improvements in trackage, terminals, and equipment. Another assistant, Andrew Carnegie, began by rebuilding timber railroad bridges in steel and ended by controlling a vast industrial empire.

With continued growth due to consolidation, immigration, and increasing trade, Philadelphia entered the lush seventies. Symbolically, July 4, 1874 saw the beginning of both an ostentatious City Hall and the 180 overripe extravaganzas of the Centennial Exposition. Sprawling, middle class residential expansion to south and west followed the introduction of rapid transit, and paralleled upper class flight to suburban estates along the Main-Line.

Although the appearance, in 1868, of America's first architectural magazine indicated a sustained professional vitality, Pennsylvania architects did not escape the current eclecticism. Attested by Louis Sullivan's youthful enthusiasm, a few, like Frank Furness, achieved, within a fashionable vocabulary, powerful and individual building. Symptomatic of the century's turn, many major commissions went to nationally known firms outside the boundaries of the state, for example, Richardson's Allegheny County Courthouse, McKim's Girard Trust, Hornbostle's Carnegie Institute, and Brunner's Harrisburg group. The nation-wide distribution and architectural use of Pittsburgh steel and Lehigh cement created a similar trend in the structural field.



(95) Centennial, Philadelphia, 1876. Above, 21-acre Industrial Hall by Pettit and Wilson; below, Gallery of Fine Arts, by Schwarzmann

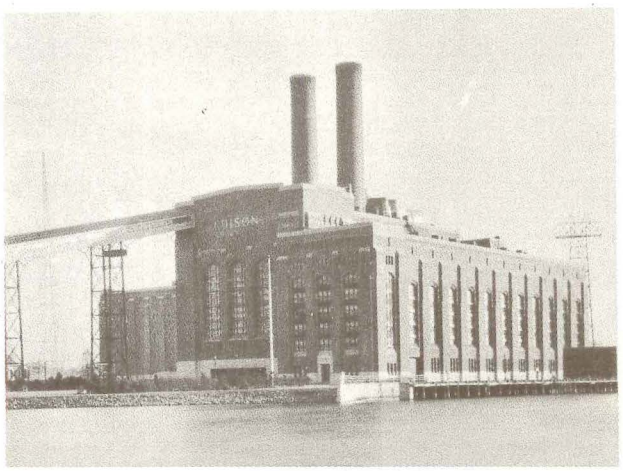


(96) Lucy Furnace, 1872, marks Carnegie's and Pittsburgh's growing domination in iron and steel

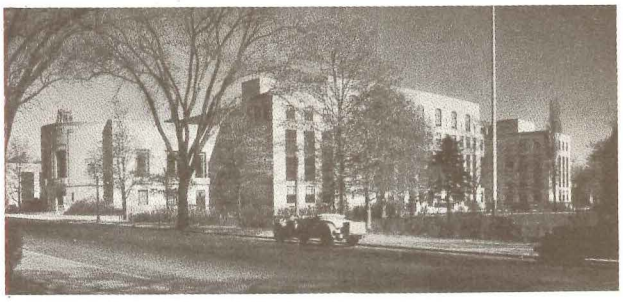
(97) Yorkship Village, near Camden, N. J., Electus D. Litchfield, architect. War industry town planned for U. S. Shipping Board

NEW ENGLAND

(98) W. K. Hoyt Ski Lodge, Stowe, Vt., 1940, by Royal Barry Wills. Vernacular materials acclimate modern forms to New England

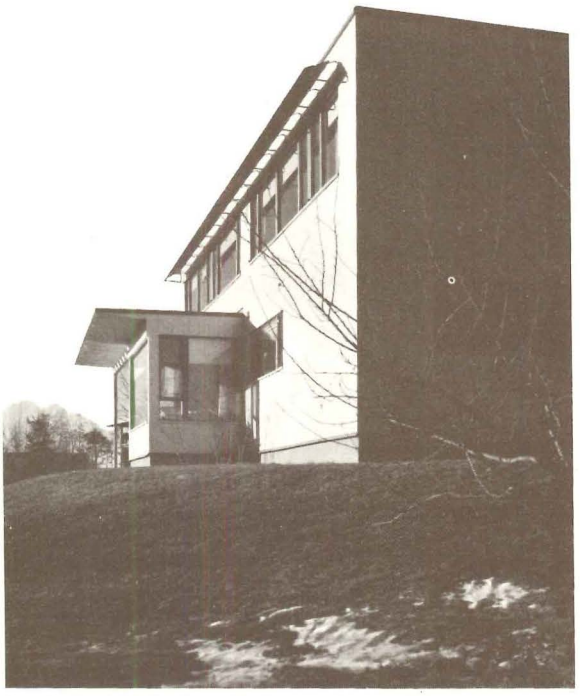


(99) Power Plant, Edison Electric Illuminating Co., Weymouth, Mass., 1921, Stone and Webster. First high-pressure central station



(100) Rindge Technical High School, Cambridge, Mass., 1932, Ralph Doane. Continues Yankee leadership in technical education

(101) Factory, Simonds Saw and Steel Co., Fitchburg, 1930, by Austin Co. Pioneer: windowless, super-span controlled-conditions



(102) Ford House, Lincoln, Mass., 1939, Walter Gropius. Imported constructivism, in theory strangely akin to Yankee technical tradition

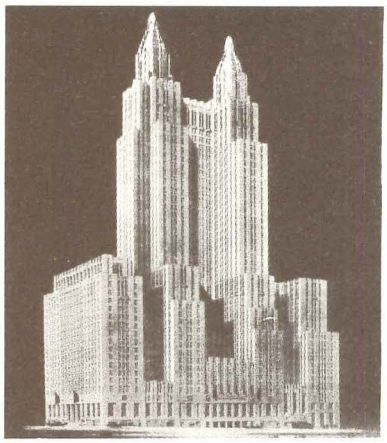
YANKEES DIVERSIFY

ALTHOUGH NEW ENGLAND'S textile mills had met increasing competition throughout the early twentieth century, it was only after World War I that her production of cotton goods dropped below southern yardage. Similar situations faced other Yankee factories. In general, industry met the challenge by diversification, specialization, and ingenuity. In industrial architecture, this trend is seen in the development of windowless, super-span, controlled-condition factories planned to provide uniformly high efficiency through optimum layout and environment.

Industrial depression encouraged New England to take stock of her resources and plan her future on a regional scope. The establishment of year-around recreational facilities is part of the rehabilitation thus developed, and has resulted in many interesting architectural projects. The national status which many New England educational institutions have achieved has produced unprecedented programs of university, college, and preparatory school expansion.

In general, New England remains faithful to the stylistic forms her builders long ago adapted from European precedents. Significantly, New England leads all other regions in the preservation of historic buildings; and a Boston architectural firm restored Virginia's Williamsburg. Despite this apparent conservatism, it is interesting to speculate on what compromise will manifest itself from the fusion of forthright Yankee reticence and austere Lutheran rationalism now being prepared within John Harvard's august yard.

. . . NEW YORK



(103) Waldorf-Astoria, 1931, Schultz & Weaver. Grand Hotel straddles railroad

(104) Rockefeller Center, 1931-40, Reinhard & Hofmeister; Hood & Fouilhoux; Corbett, Harrison & MacMurray. Grouped skyscrapers dramatize economics

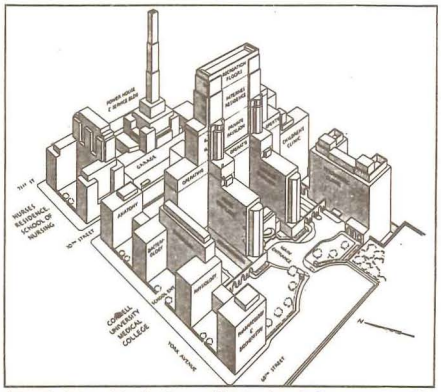
(105) Museum of Modern Art, New York, 1939, Goodwin and Stone. Dramatic abstract style

BOOM AND AFTERMATH

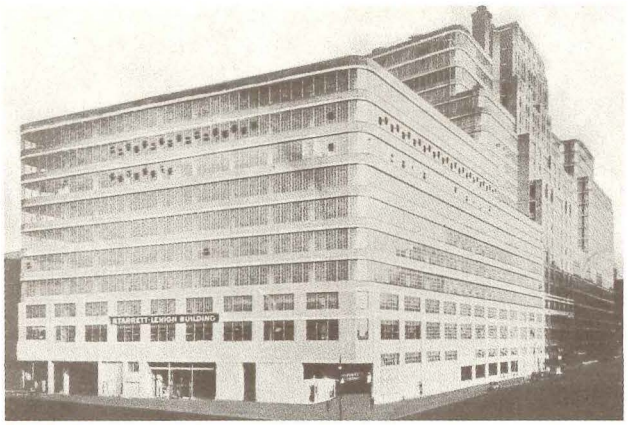
For a frenzied decade following World War I, the rise and fall of Wall Street's brokers' boom obscured the basic trends of New York development. In both metropolis and up-state village, mounting dissatisfaction pressed for amelioration of industrial environment, for expanded social services, and more worthy communal equipment. The utopian suggestions of pre-War reformers gave way to discussions of practical procedures or even to tentative experiments. Significant parallels appear in the flood of social legislation, in the comprehensive improvement of public health facilities — recreational, remedial, or prophylactic, — in the progress of low-cost housing, in the initiation of comprehensive programs for municipal and regional betterment, and in the rise of governmental architectural bureaus.

The application to architectural design of the technique and findings of modern science has increased enormously the functional and structural efficiency of all types of modern buildings. Introduction of the principles of industrial management to construction operations has made possible incredible records in speed and size. In all these fields the tremendous resources and demands of New York — state and city — have made its contributions fundamental.

Cosmopolitan in population, culture, and architecture, New York has been tardy in formulating stylistic synthesis. Every eddy of fashion has deposited its ornamental flotsam. In recent years, however, an observing eye discovers more and more buildings that express their basic soundness of layout and structure in a fresh, exciting vocabulary.



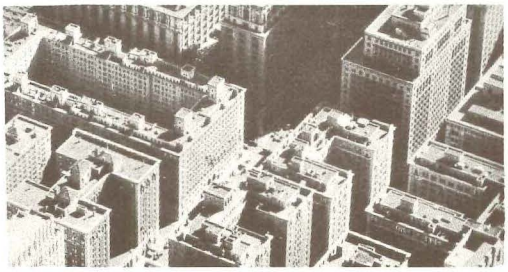
(106) New York-Cornell Medical Center, 1932, Coolidge, Shepley, Bulfinch, & Abbott. Significant complex of hospital, clinic, and school



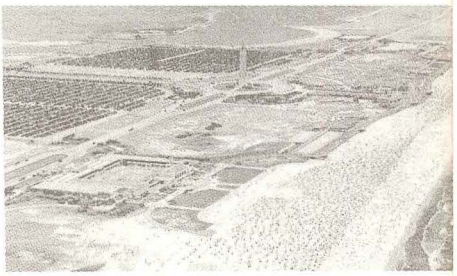
(107) Starrett-Lehigh Building, New York, 1931. Cory, Cory, & Matsui. Cantilever slab allows continuous windows for factory lofts

(108) New York housing and slum clearance experience was a laboratory for national program, with Williamsburg, 1935, a landmark

(109) Radburn, N. J., 1928, C. Stein, and H. Wright. First to approximate the "neighborhood unit"



(110) In light, air, and open space, Henry Wright dubbed these Park Ave. cliff-dwellings as "super slums"



(111) Jones Beach, L. I., 1928. Superb unit in unrivalled system of regional parks and parkways

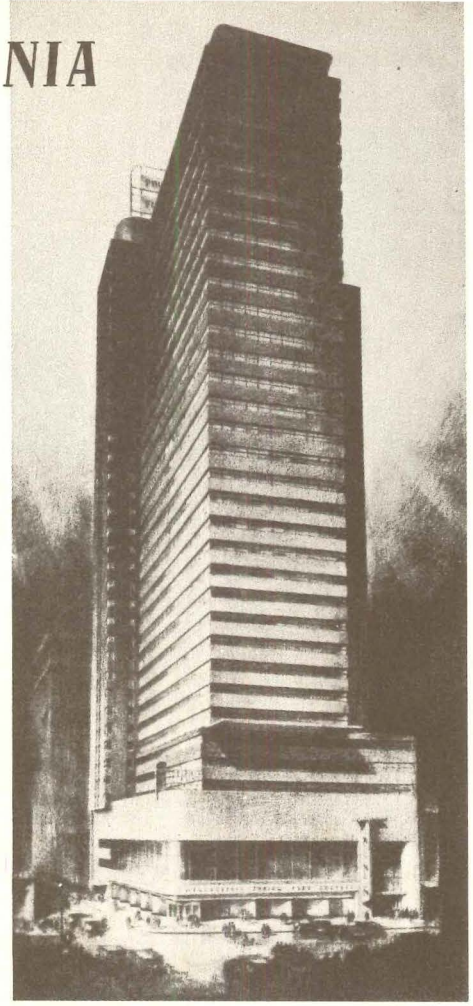
(112) Wright's Falling Water, Bear Run, Pa., 1938. Romantic site provokes romantic exploitation of structure

KEYSTONE WORKSHOPS

POST-WAR Philadelphia has been chiefly occupied with problems created by metropolitan congestion. Penn's ancient grid of narrow streets, hopelessly inadequate for modern motor traffic, has been supplemented by a noble Parkway, a bypassing ring, and Roosevelt Boulevard. The relocation of the Pennsylvania station and the post office, already accomplished, the elimination of Broad Street Station and its "Chinese Wall" of track, and other ameliorative projects will furnish further relief.

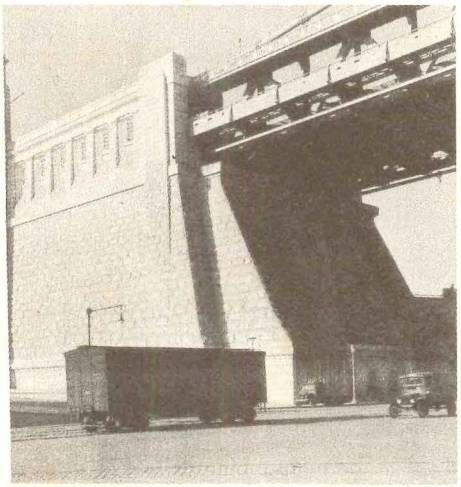
Most Philadelphia buildings of the past two decades have aimed to conserve traditional architectural values. The Art Museum's monumental classicism, the super-medievalism of Bryn Athyn's church of the New Jerusalem, the picturesque romanticism of Pittsburgh's Cathedral of Learning are typical in revealing catholic taste and high technical proficiency. A more vital re-interpretation of the classical tradition is manifest in Paul P. Cret's anchorages of the Camden bridge, his Rodin Museum, and his Federal Reserve Bank.

Pennsylvanians have on occasion experimented with more radical expression. Howe and Lescaze, in the Philadelphia Savings Fund Society building, created interiors of startling freshness. It remained, however, for F. L. Wright in "Falling Water" to achieve the ultimate apotheosis of Pittsburgh glass and steel, Allegheny ledgestone, and Lehigh cement.

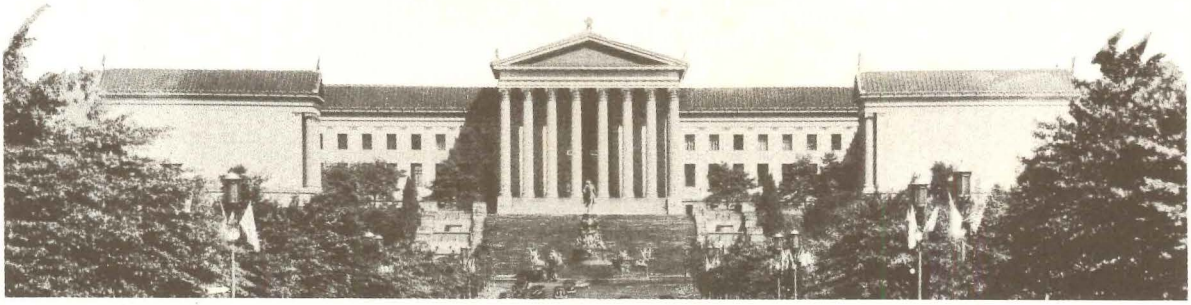


Credits for all illustrations, pps. 61-80, appear on p. 118

(113) Streamlined bank and office building, Philadelphia Savings Fund Society, 1932, by Howe and Lescaze



(114) Philadelphia-Camden Bridge, 1926, Modjeski & Cret. Pioneer in effective architect-engineer teamwork

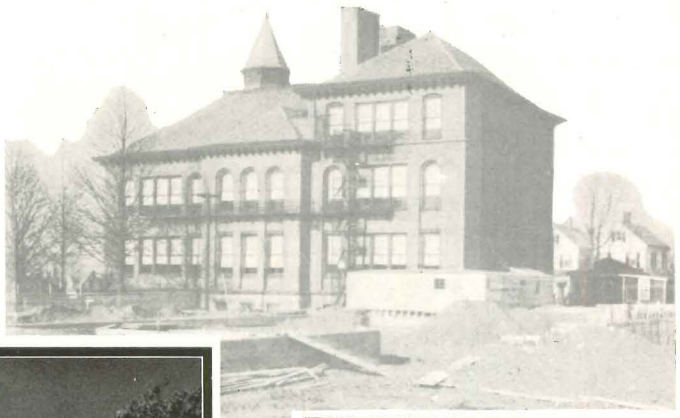


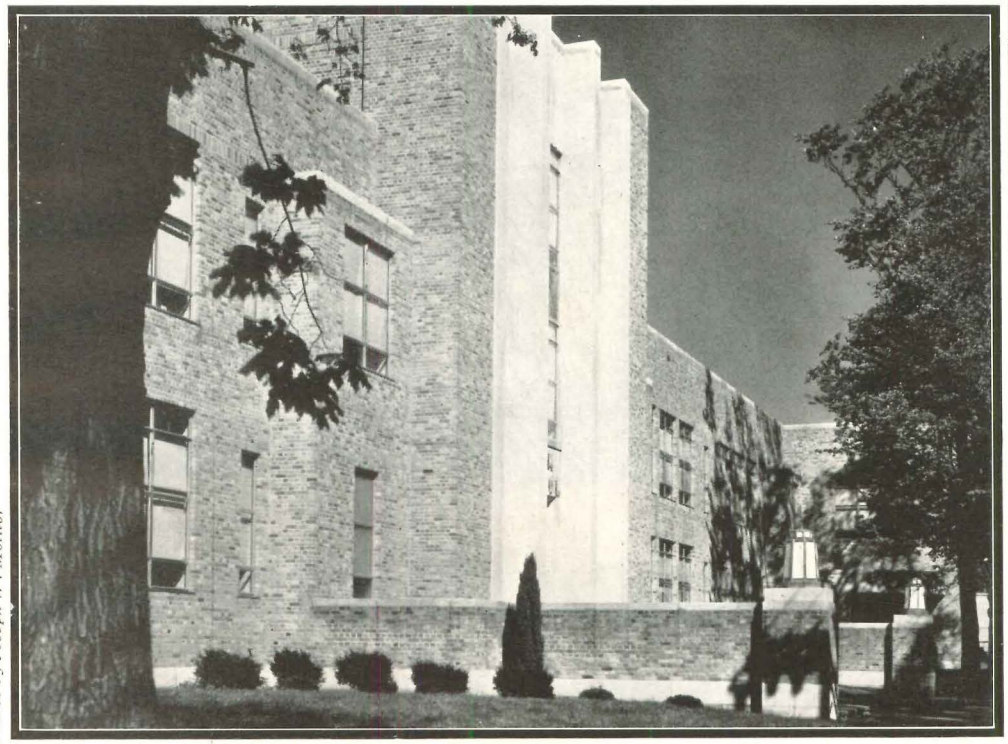
(115) Pennsylvania Museum of Art, opened 1928, Zantzinger & Borie, and Trumbauer. Soaring Olympianly above the Parkway's mundane buzz, Mt. Morris' neo-Hellenistic temple, prefaced by superb polychromy, enshrines a catholic cultural treasure-trove

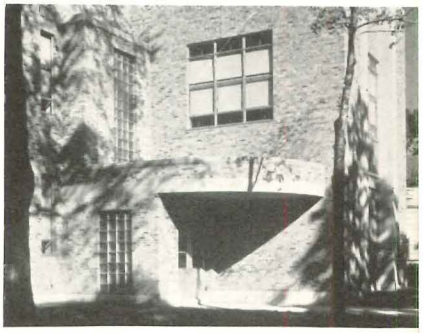
NEW SCHOOLS FOR OLD

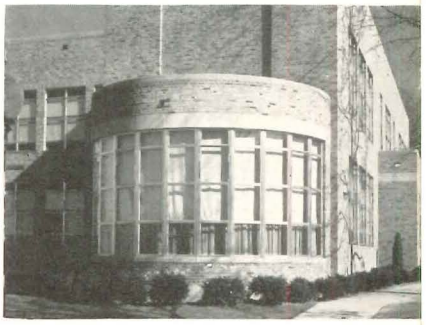
A BUILDING TYPES STUDY

In the past two years ARCHITECTURAL RECORD has presented four studies on school design. In 1939 advanced standards for elementary and secondary schools were surveyed. In 1940, specialized phases—the vocational school and consolidated schools—were discussed. These years also saw intense school building activity, partly because Federal money was made available; in any event, many of the outmoded schools of the country sadly needed replacing.





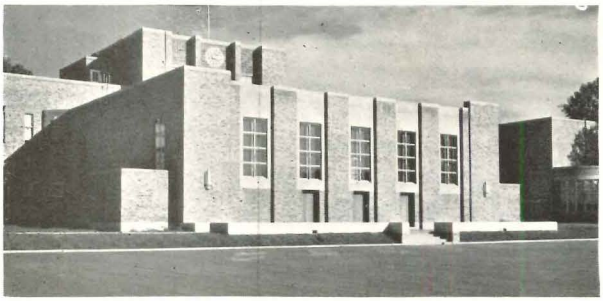


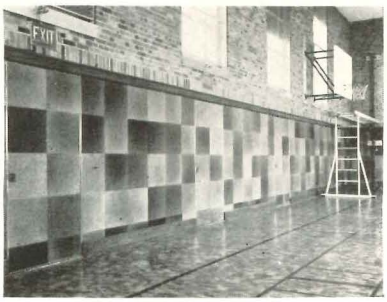


Photos by Joseph W. Molitor

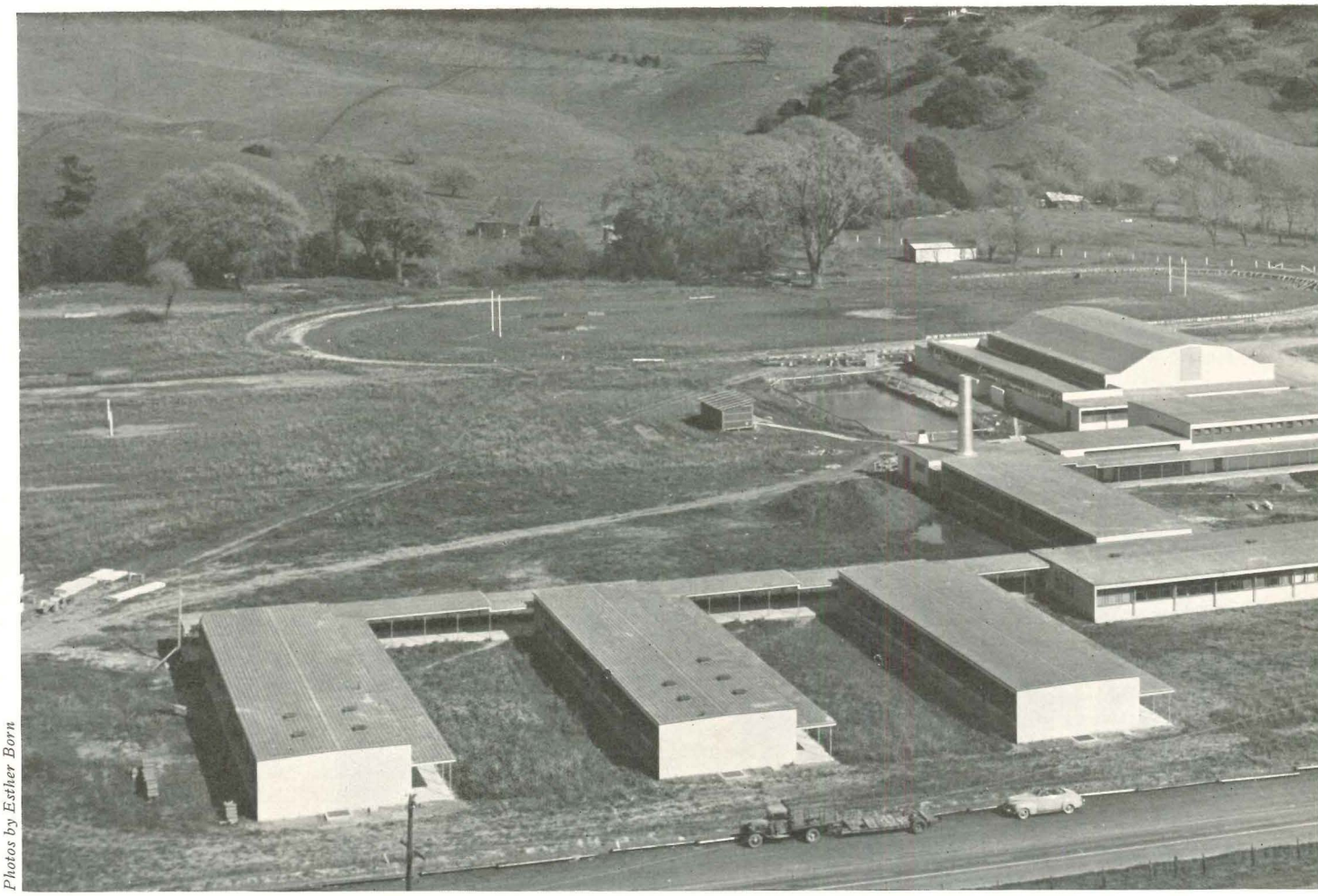
PARK SCHOOL, OSSINING, N. Y., FREDERICK MATHESIUS, ARCHITECT, replaces the edifice phantomed above . . . . . .

Elementary activity programs; separate rooms for music, community use, etc.; provisions for applied arts and sciences typify new facilities . . . . .





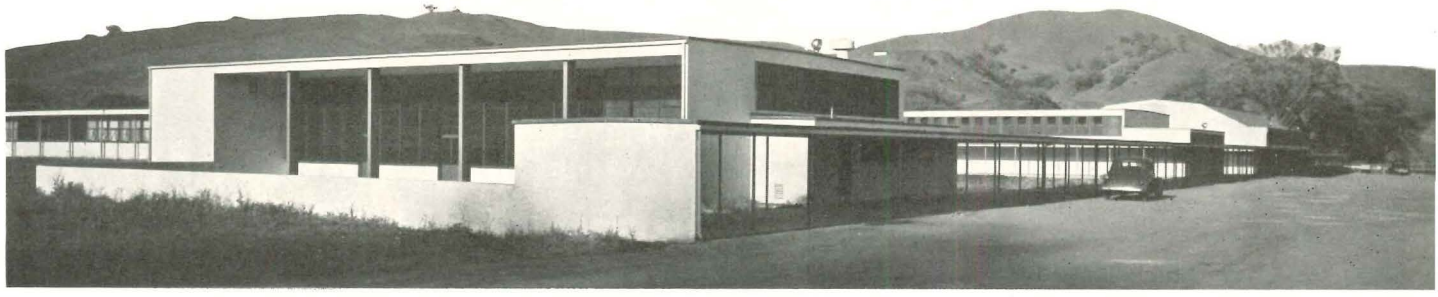
Segregated entrance for community facilities, gymnasium with cork wainscot, complete stage, help integrate school and community . . . . . .

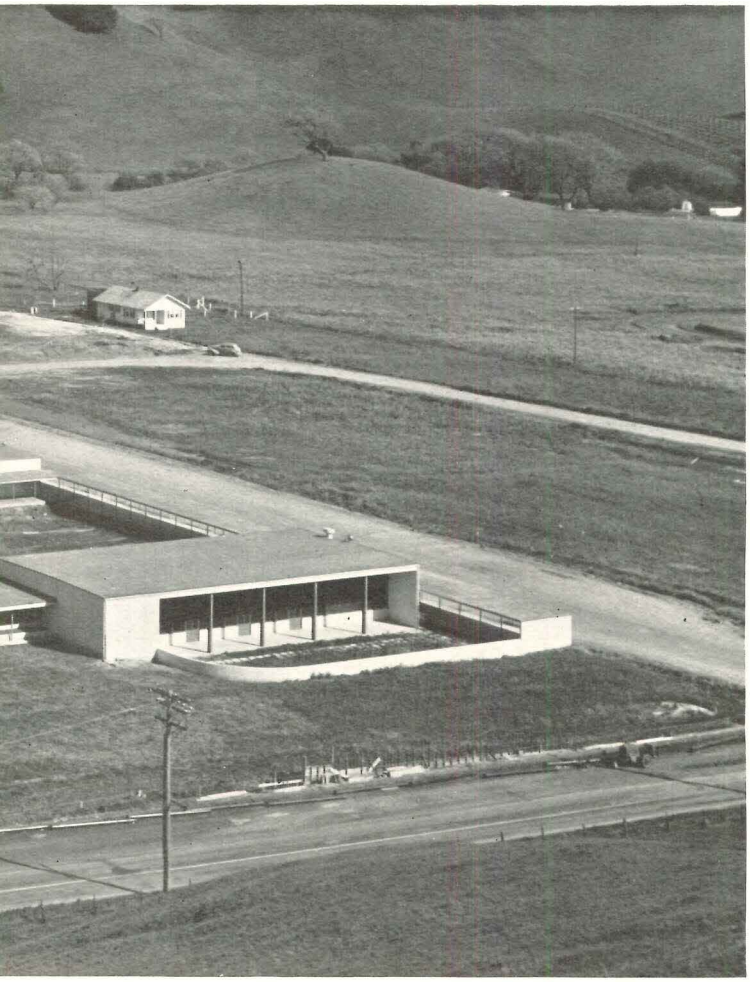


Photos by Esther Born

ADVANCED CALIFORNIA SCHOOL MEETS LIMITED BUDGET

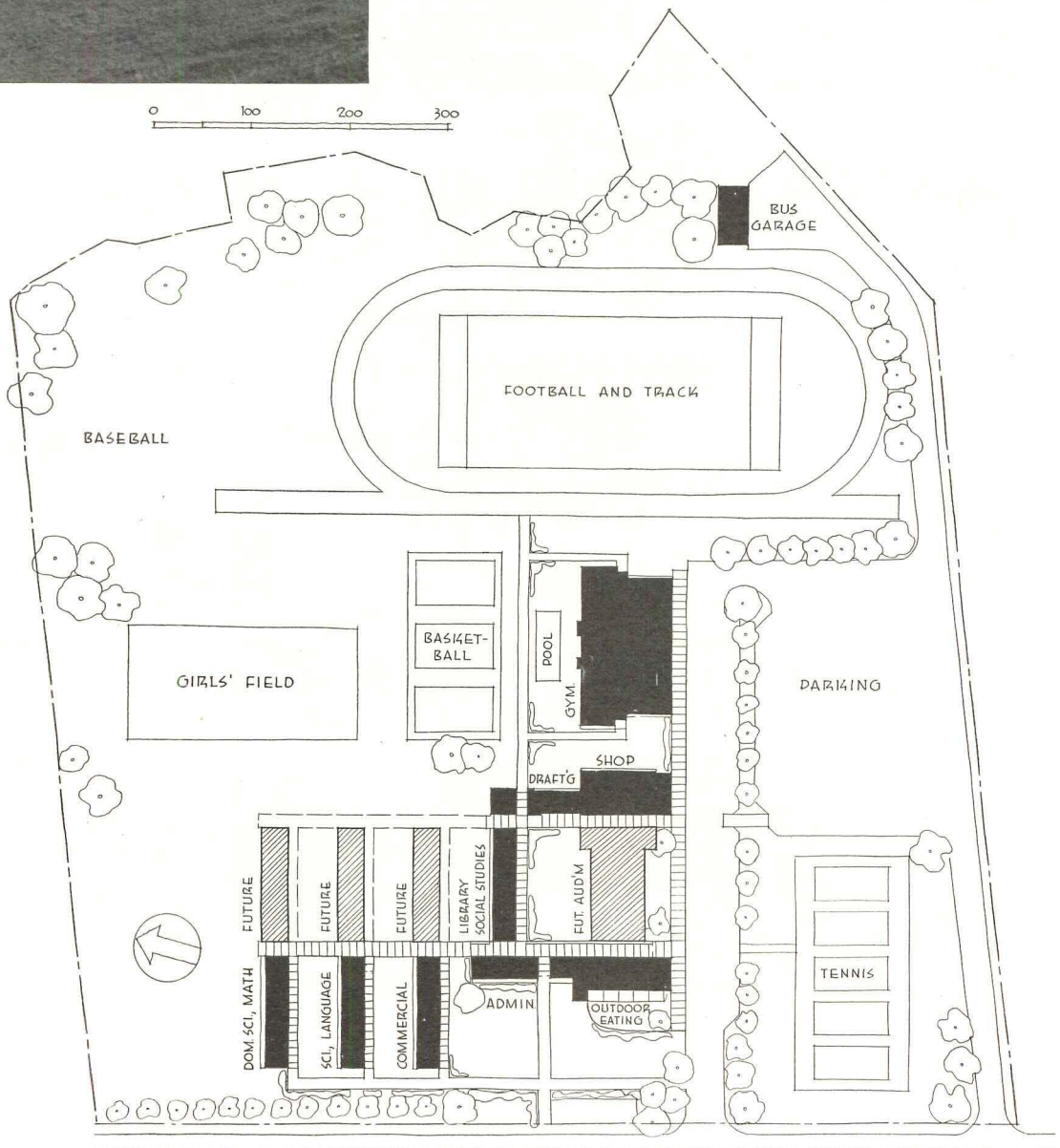
ACALANES UNION HIGH SCHOOL, LAFAYETTE, CALIFORNIA. FRANKLIN & KUMP, ARCHITECTS. In the Acalanes School most of the advanced principles of school design have been successfully applied. The problem presented was difficult. First, access to the school is entirely vehicular. Second, the budget was extremely limited yet the school district wanted completely modern, even advanced, design and equipment. Third, California curricula are never static. Classrooms, activity spaces, administrative offices, etc., must be highly flexible or they suffer early obsolescence. There had to be space for additional classroom units and a future auditorium. Fourth, there had to be provision for intensive adult use of classrooms, assembly spaces and athletic facilities. Elements most likely to be used by adults during school sessions had to be segregated. Large parking areas had to be convenient to all athletic facilities. Fifth, in addition to high State standards, the building had to be made earthquake-resistant. Sixth, soil conditions offered structural difficulties.



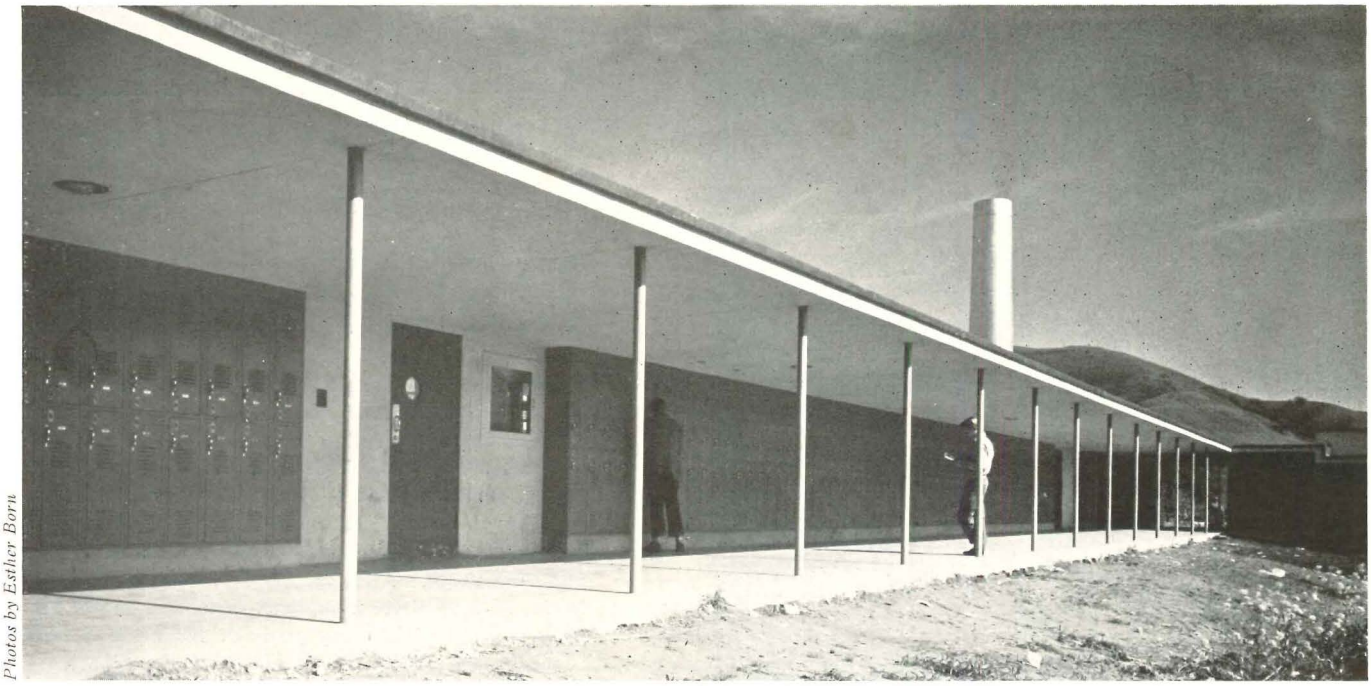


CONSOLIDATED SCHOOLS AND HIGH SCHOOLS

IN 1939 and 1940 ARCHITECTURAL RECORD'S Building Types studies on schools reported numerous changes in school design principles which educators advocated. In teaching practice there has come to be an increasing emphasis upon laboratory methods, in even the most static subjects; and the pupil's school life is being integrated with the community—and vice versa. Also, the past few years have introduced a need for structural economy, and it has been recognized in many parts of the country that requirements change so rapidly that the plan must be flexible, the entire plant dynamically useful.

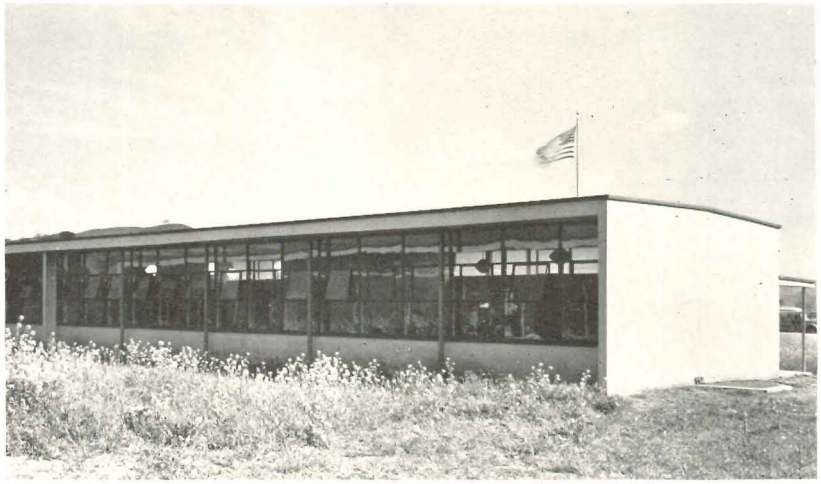


PLOT PLAN: There is no monumental main entrance; instead, a 500-ft. open corridor on the south gives access to classroom wings, cafeteria, shop and gymnasium. More than 9 school buses (present requirements) discharge pupils at loading dock. Areas cross-hatched indicate future expansion. Open plan permits proper orientation and functional relationships for study, work and play, and minimizes the noise nuisance.

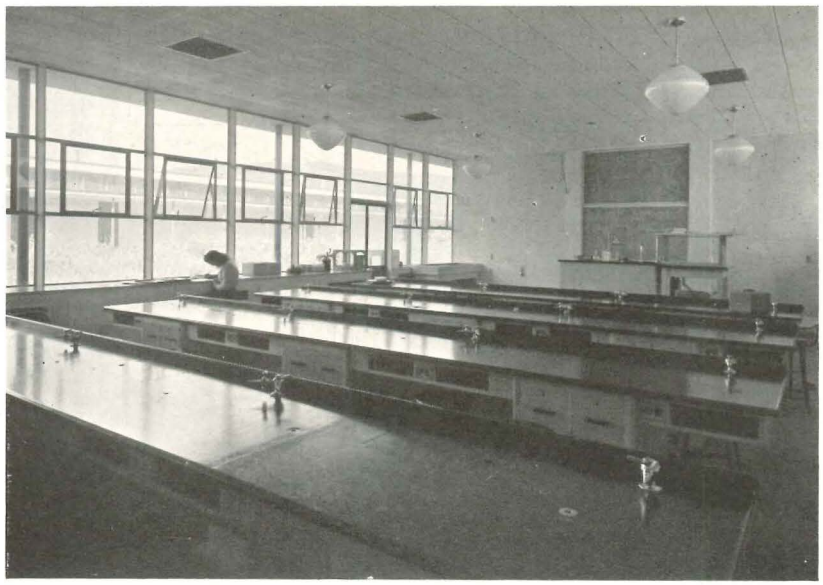


Photos by Esther Born

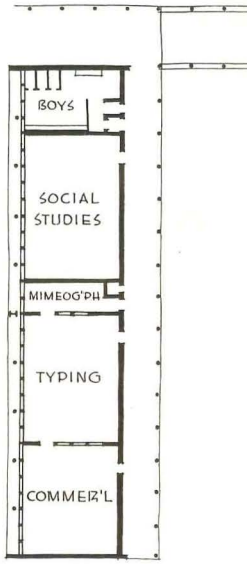
OUTSIDE CORRIDOR leads to classroom units; sub-corridors to each wing



EXTERIOR of class unit: At left is a vertical I-beam, part of earthquake bracing



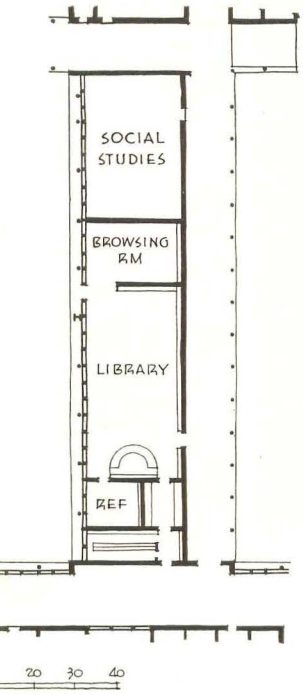
CLASSROOM INTERIOR is bilaterally lighted, has acoustic ceilings

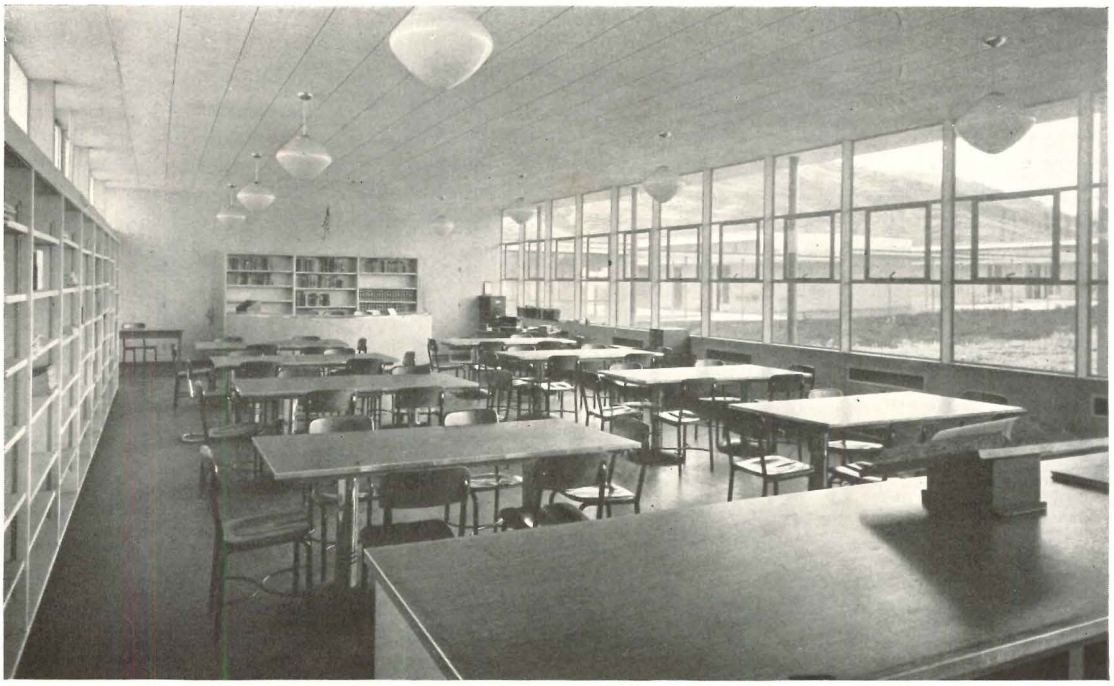


CLASSROOM WING

PARTLY BECAUSE the method of seismic bracing demanded, and partly because greater flexibility of plan was thereby achieved, each classroom wing is an open loft space. Dividing partitions of plywood were added later and can be relocated. Both removable acoustic ceiling tile and linoleum floor are continuous over and under partitions. Copper convector radiators have individual thermostatic controls to permit any possible arrangement of partitions without unbalancing system. Mechanical lines under floors are readily accessible for changes or repairs. With bilateral lighting satisfactory workrooms and offices can be located on the corridor wall, an even high intensity of light covers the entire classroom, and the resulting low ceilings in turn lower the plane of artificial light in relation to working planes.

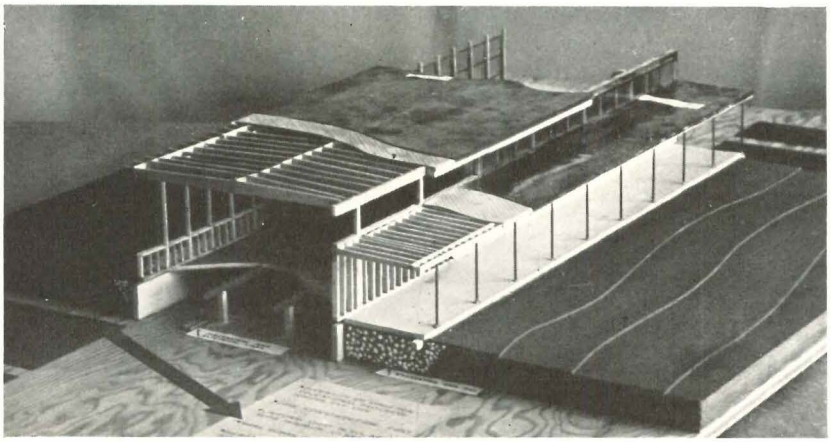
LIBRARY WING



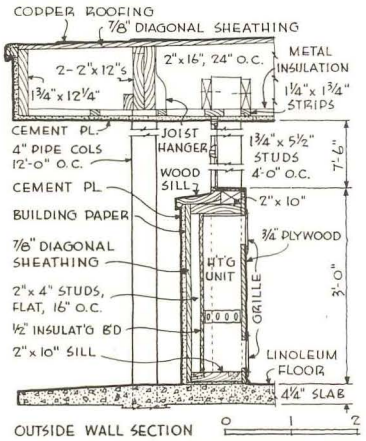


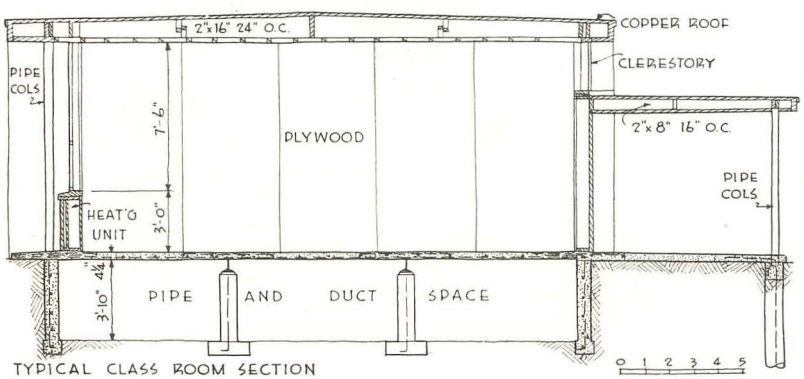
IN THE LIBRARY, as in other units, low ceilings and a close relation between outdoors and indoors make the scale of the building intimate and human. The use of natural materials and warm colors increases this effect. All ceilings are insulated and heat-reducing glass is used to keep room temperatures comfortable in hot weather

CONSTRUCTION is standardized on a 4-ft module, used throughout the plant. This simplifies sash sizes, permits use of standard 4-ft. plywood panels and 16-in. ceiling tiles, also construction economies. Along north walls of class and study units are continuous windows 7 ft. 6 in. high. Over the unit corridors are clerestories with glare-reducing, heat-reducing glass. 10 ft. 6 in. ceilings reduce building volume and heating expense. In excavating, an objectionable adobe stratum was removed and the space beneath units was left open for supply lines. Framing for concrete floor forms was reused for wall studding. Roof is copper; exterior wall, wood frame and stucco; interior finish, natural plywood. Total cost including site, fees, furnishings —$330,000; cost per sq. ft., $3.67. These low figures reduce interest on school bonds and lower insurance costs.



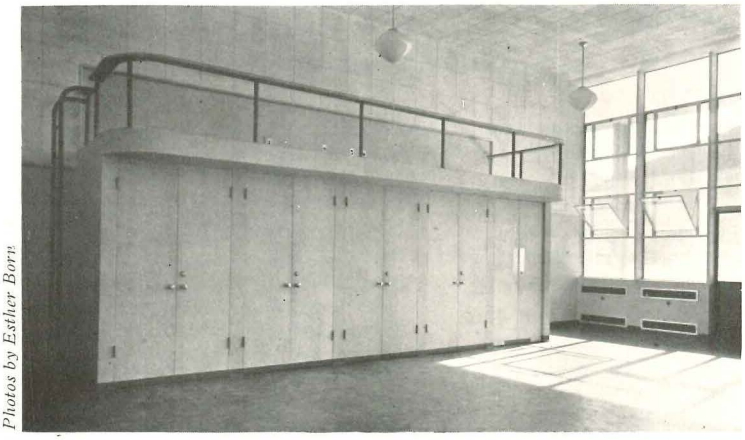
MODEL was built for study and for client's information





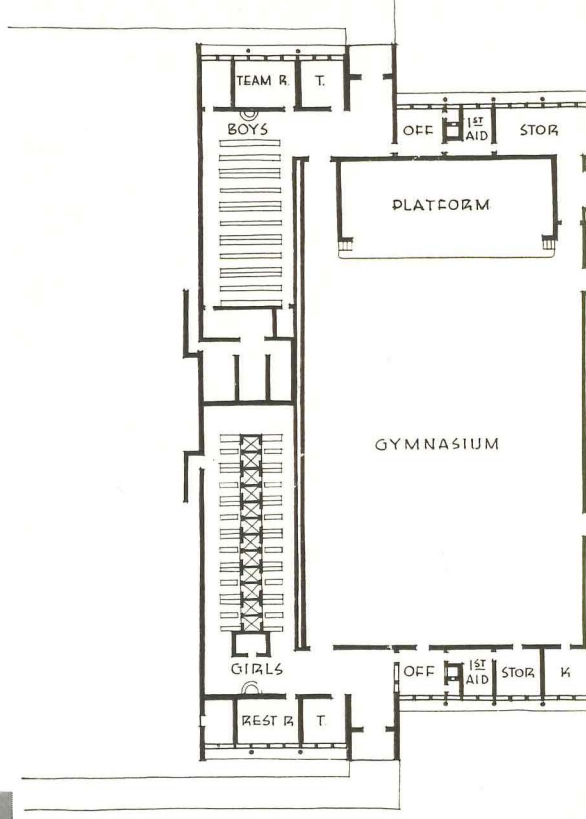
CAFETERIA is also used for assembly purposes. Plan at right shows the outdoor dining spaces provided and area remaining for construction of a future assembly hall. This latter space, enclosed on four sides, is now available for outdoor gatherings. The cafeteria will seat 300 persons and has a completely equipped stage. It is located conveniently to the parking area. Both cafeteria and shop have flat rigid steel framing.

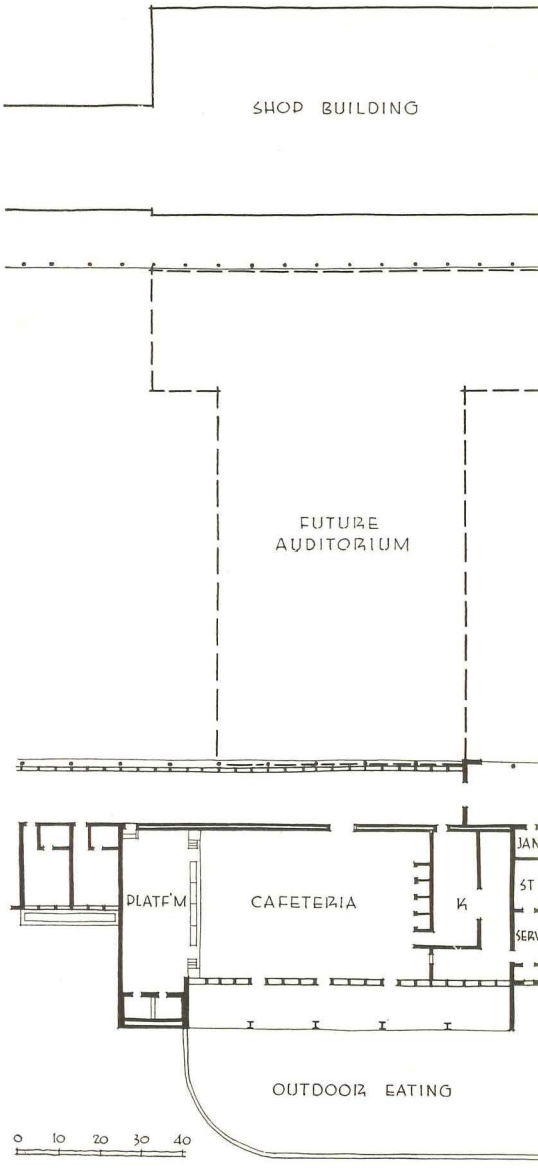
GYMNASIUM (opposite page) has novel construction. It is the only unit in the plant built of reinforced concrete and has a ribbed arch construction. The interior is surfaced with ¾ in. plywood. Boys' and girls' locker rooms are situated between the gymnasium and outdoor facilities, which include a swimming pool and basketball courts.



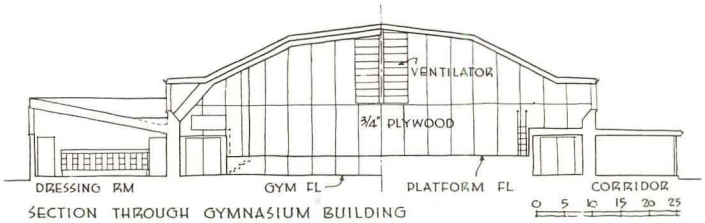
Photos by Esther Born

Above, cafeteria set up as assembly hall; below, balcony for stage lights, etc., beneath which are storage lockers

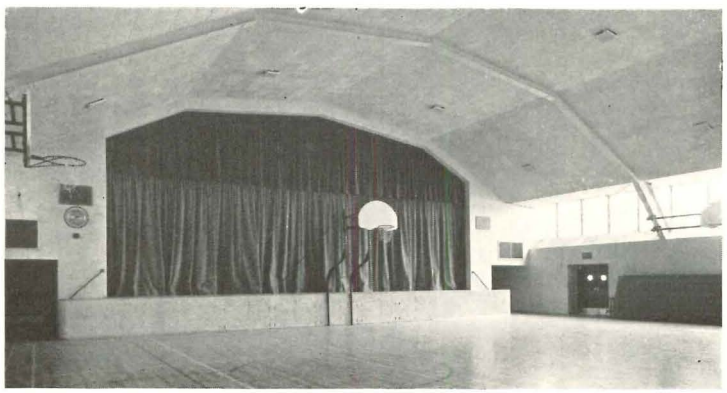




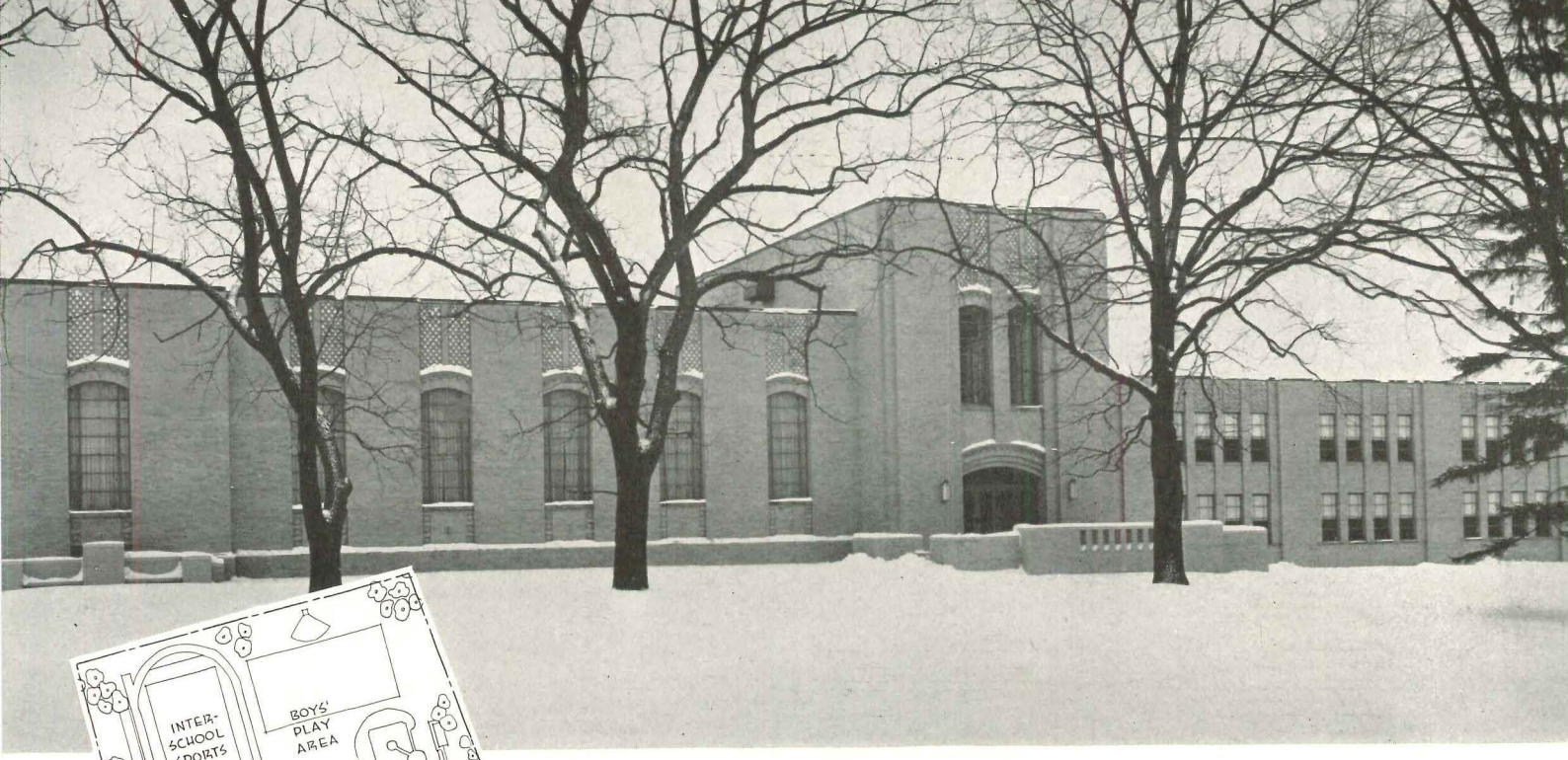
EXTERIOR of gymnasium showing girls' entrance at left. Behind windows at right are a series of offices. Note use of canopies

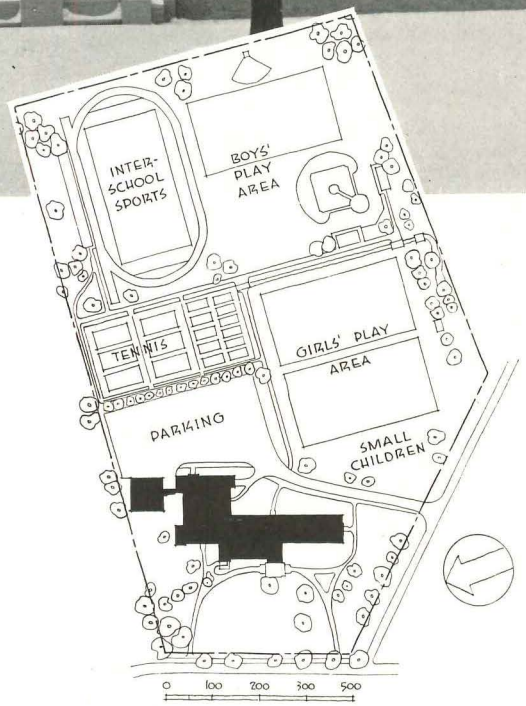


SECTION THROUGH GYMNASIUM BUILDING

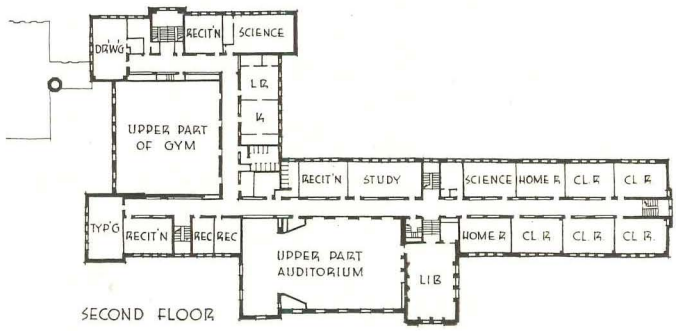

GYMNASIUM is planned for sports requiring large area and has stage

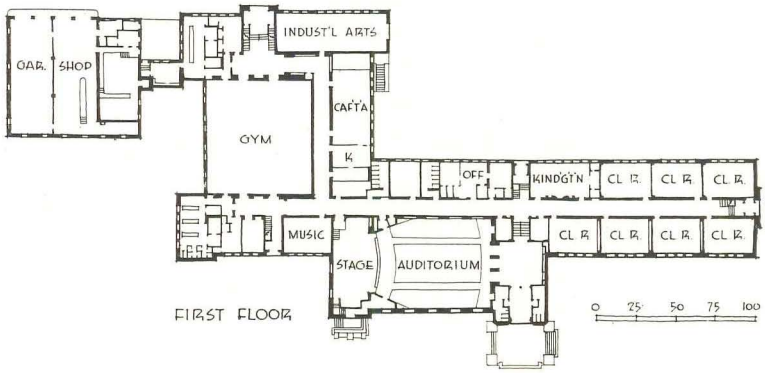

CHOIR REHEARSAL backstage in gymnasium





CONSOLIDATED SCHOOL IN





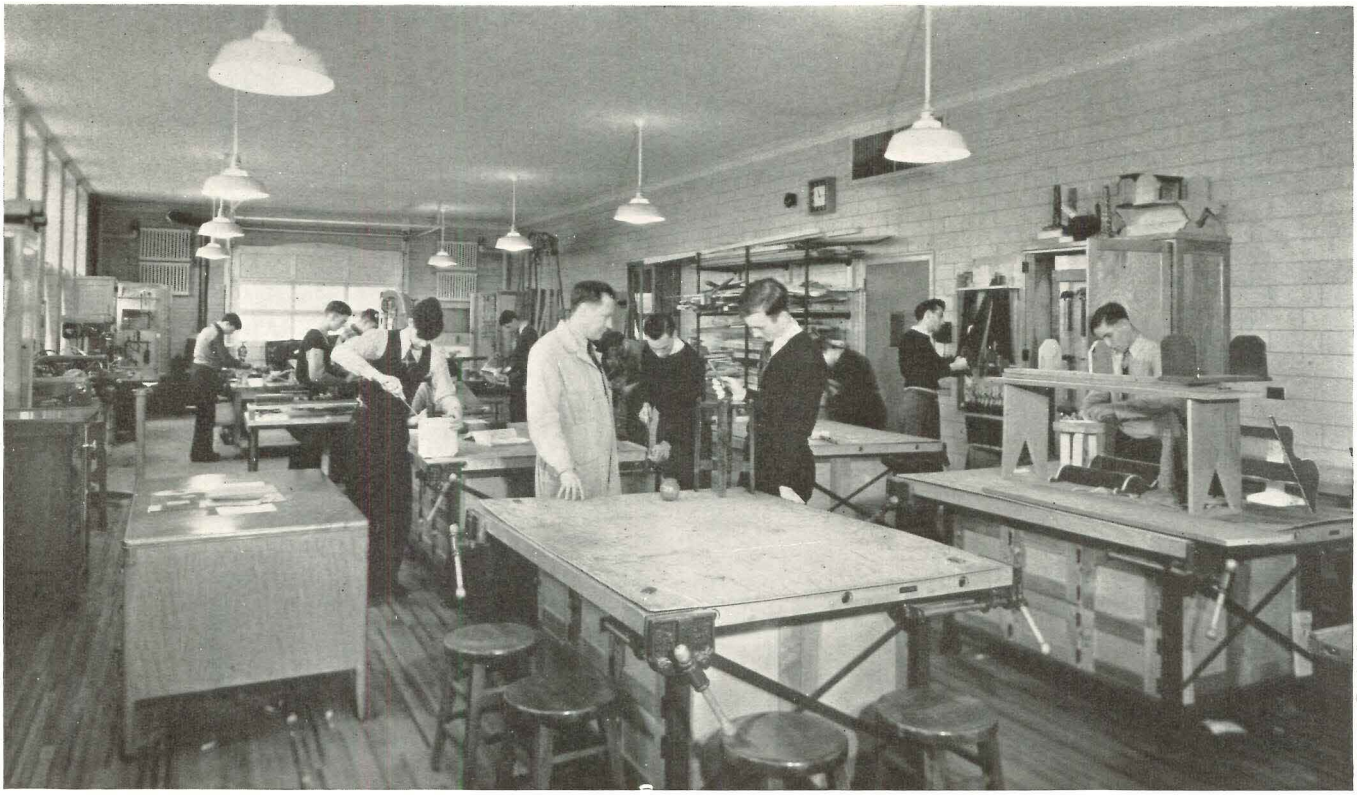
CLYDE CENTRAL SCHOOL, CLYDE, NEW YORK. CARL C. ADE, ARCHITECT AND ENGINEER, THOMAS LYON WHITE, LANDSCAPE ARCHITECT. The school campus has a total area of 49 acres. The details of plan and design are the result of close collaboration with the New York State Department of Education. Noteworthy are the inclusion of a music room, an industrial arts department, and health and dental clinics.

The school is the result of 20 years of increasing flexibility to make it possible for any child to follow the studies for which he is best suited. Many of the facilities provide for exploratory subjects; while 20 years ago the program concentrated on preparation for college, it now trains students for the practical business of living. Thus, as illustrated in the photograph of the shop on the opposite page, the practical arts which are necessary to life in a rural community are studied.

The school cost approximately $600,000 including equipment and has a capacity of 850 students who range from kindergarten through high school.

NEW YORK

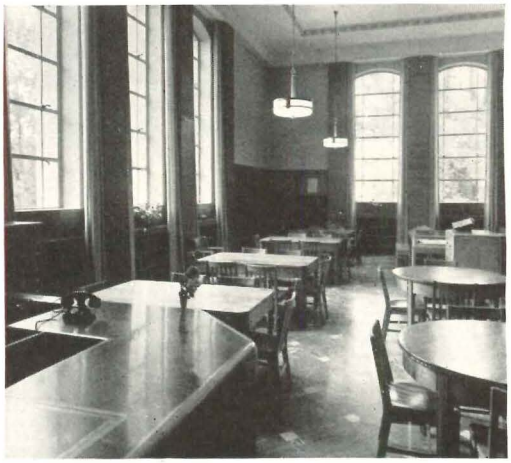
DETAIL of main entrance



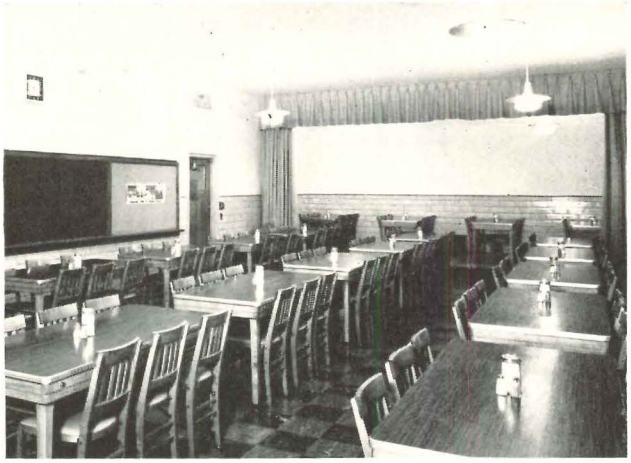
Photos by Blair Studio

INDUSTRIAL ARTS DEPARTMENT includes woodworking, metalworking, auto mechanics, ceramics, electrical and other shops

AUDITORIUM AND LITTLE THEATER provides for community and extra-curricular needs



ACADEMIC LIBRARY is one of three in the school; others are children's and English libraries



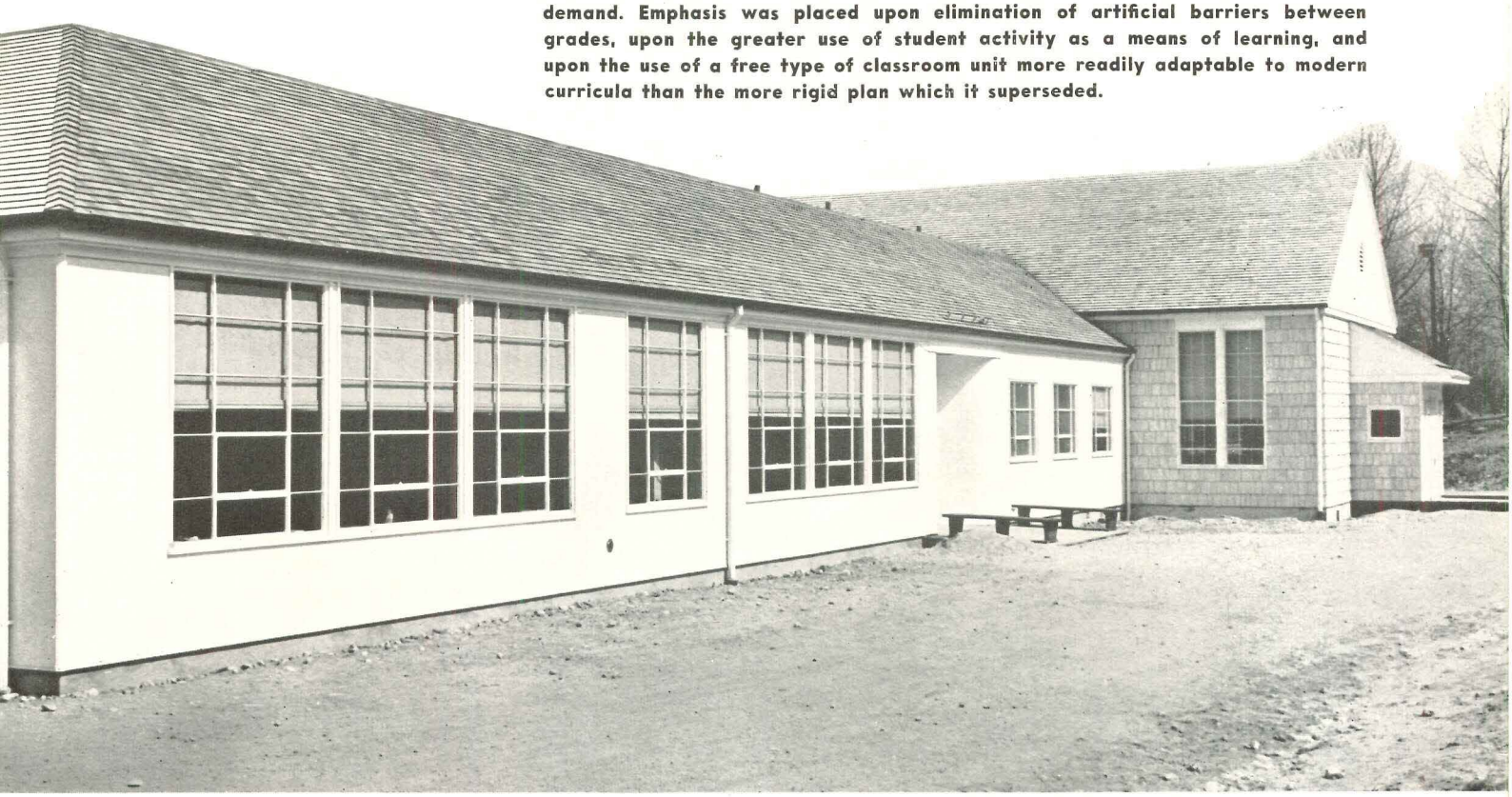
CAFETERIA serves also as a community room, has stage, seats 150 for public speaking, drama, extra-curricular activities

Photos by Blair Studio

GYMNASIUM is convertible into two full gymnasia, one for boys, one for girls, by means of folding partitions

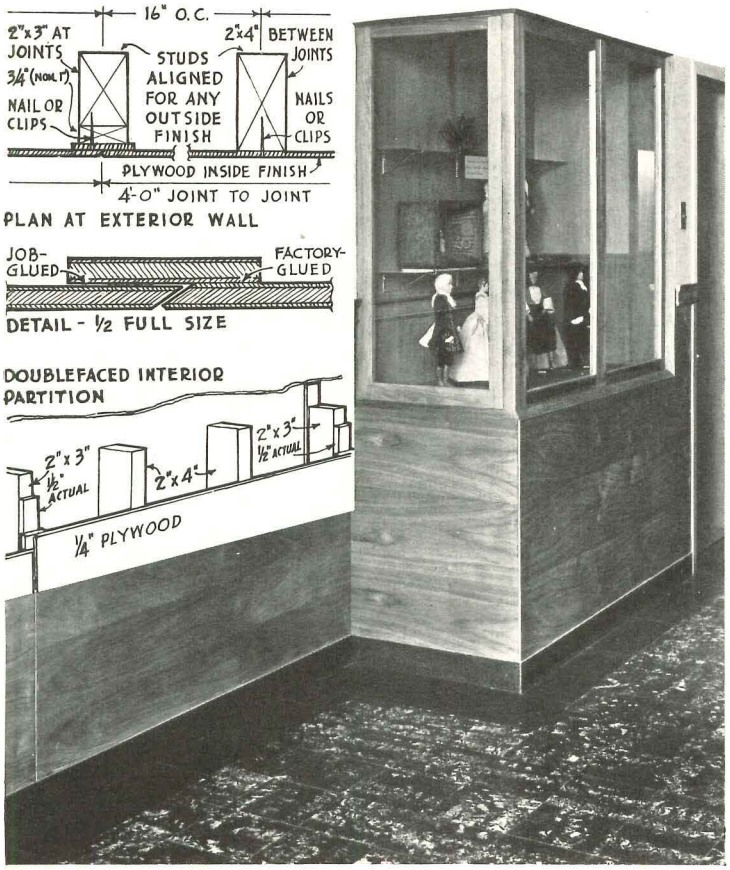
ELEMENTARY SCHOOLS

In February 1939, the RECORD presented a study on schools which was in great demand. Emphasis was placed upon elimination of artificial barriers between grades, upon the greater use of student activity as a means of learning, and upon the use of a free type of classroom unit more readily adaptable to modern curricula than the more rigid plan which it superseded.



USE OF PLYWOOD FOR SCHOOLS INVADES NEW ENGLAND

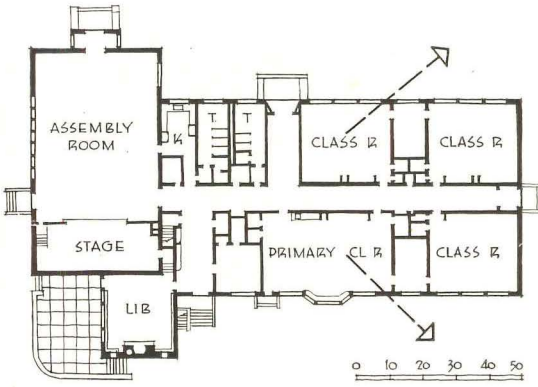
NEW FAIRFIELD ELEMENTARY SCHOOL, NEW FAIRFIELD, CONN. SEARS & FOOTE, ARCHITECTS. In determining type of construction the architects found State school authorities more concerned with circulation and exit facilities for one-story schools than with "fireproof" construction. Hence, plywood was selected. Upon being assured that plywood could be conventionally overcoated, local authorities accepted the architects' recommendations—on trial. Reports now indicate great local satsifaction. In this school was used a patented plywood joint, invented by Oscar Fisher, which makes erection of plywood interior finish fool-proof. Cost 20.5 cents cu. ft.

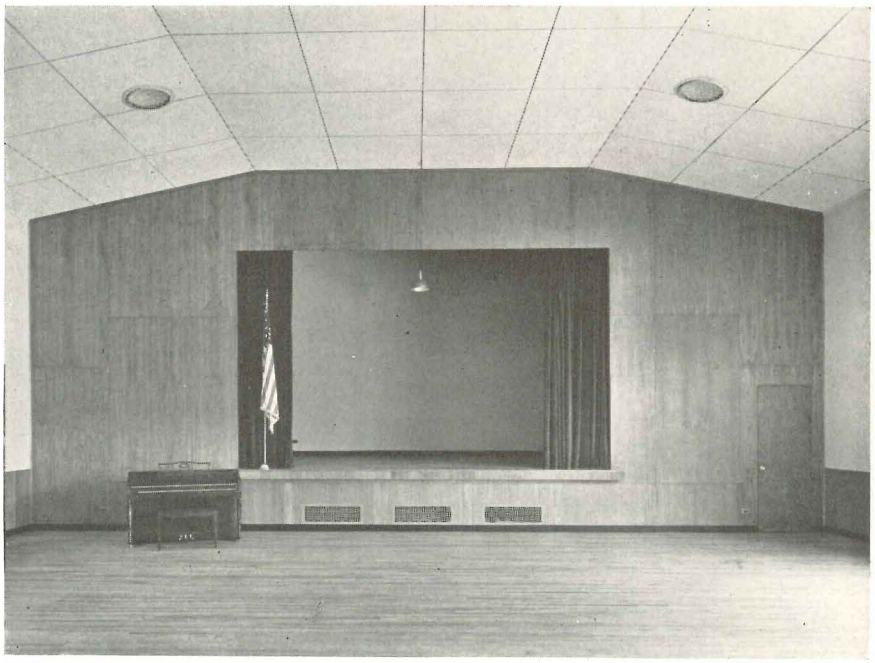


Photos by Gottscho, Rodney McCay Morgan

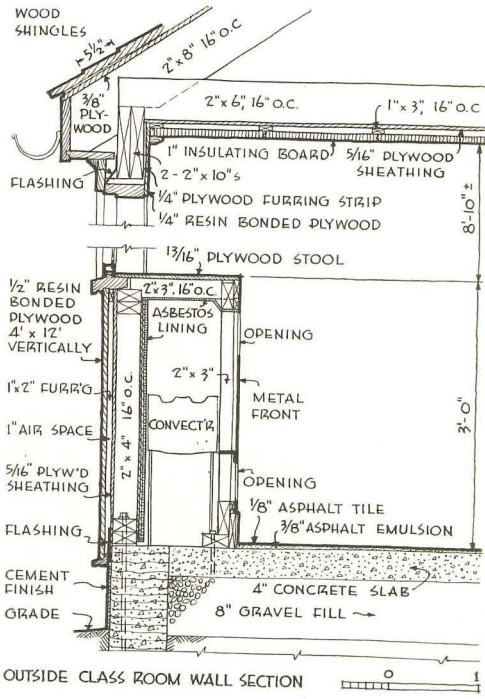
LIBRARY has, like other spaces, acoustically treated ceiling

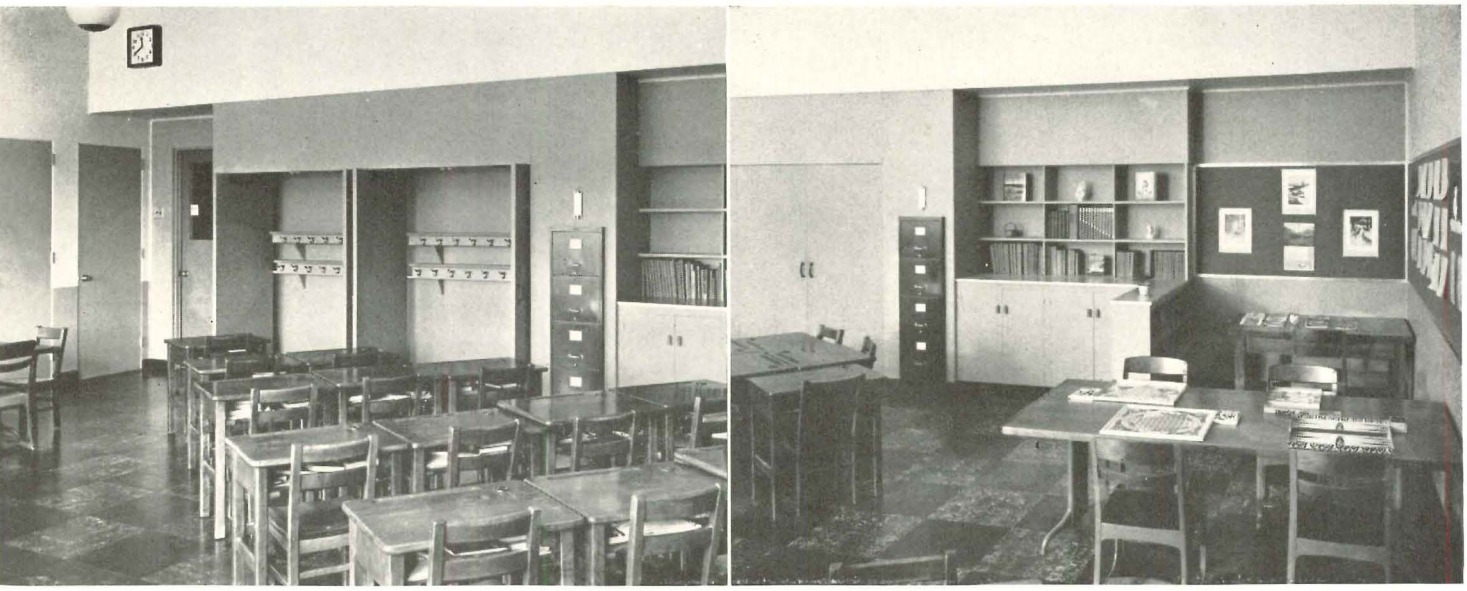
IN DESIGN, both architectural and educational, the school is well advanced. The basic unit, shown on the facing page, is a flexible classroom in which are included study alcoves, small libraries, storage closets, work counters with sinks and flexible seating arrangements which permit the children to organize under their own leadership while the teacher supervises the class without bossing it. Interiors of all classrooms are plywood, floors are asphalt tile applied directly to a concrete slab. Through ventilation is assured by the use of projected casements and an exhaust system which takes used air through the coat lockers and out to the roof.



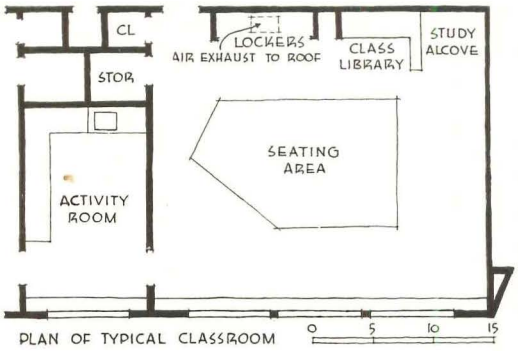


ASSEMBLY ROOM is entirely of plywood with walnut wainscoat and areas above painted

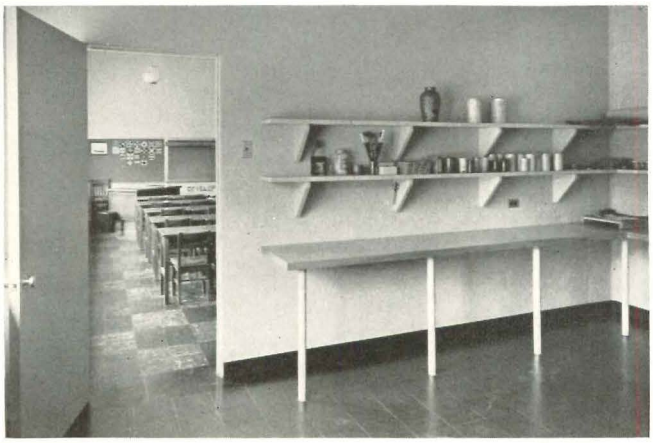




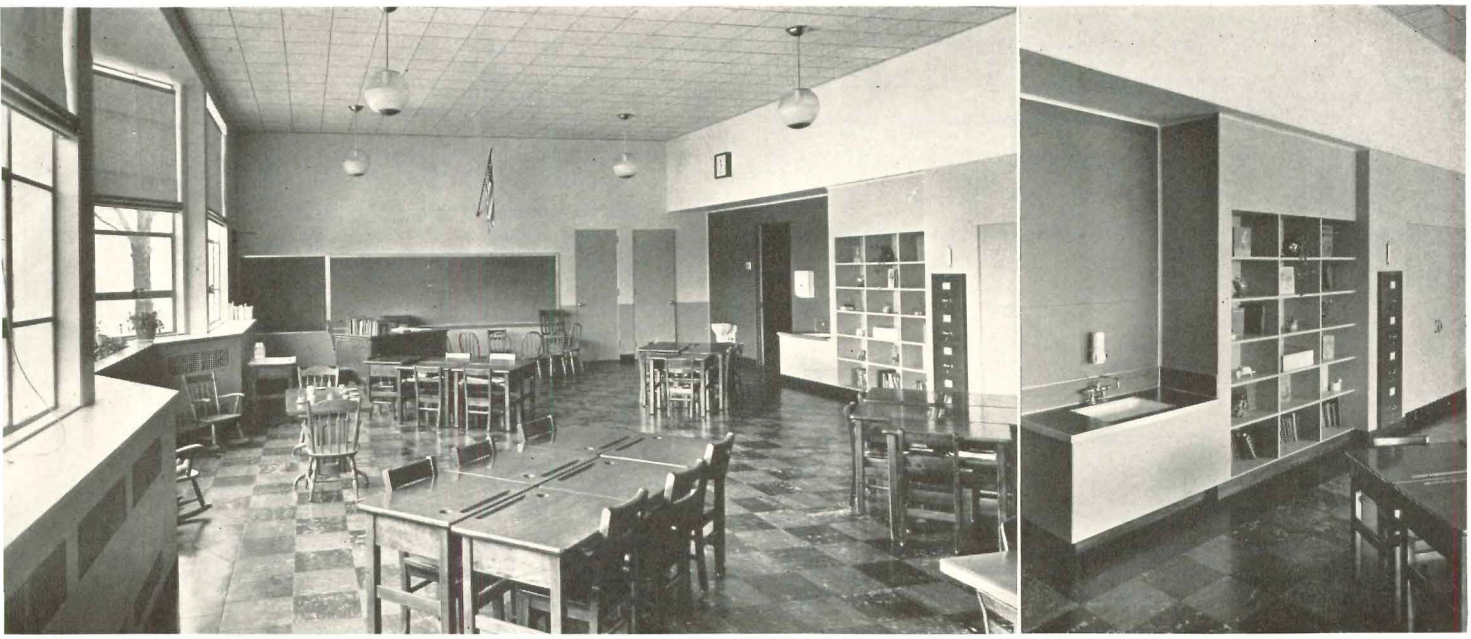
TYPICAL CLASSROOM. At right are shown reading alcove and teacher's files



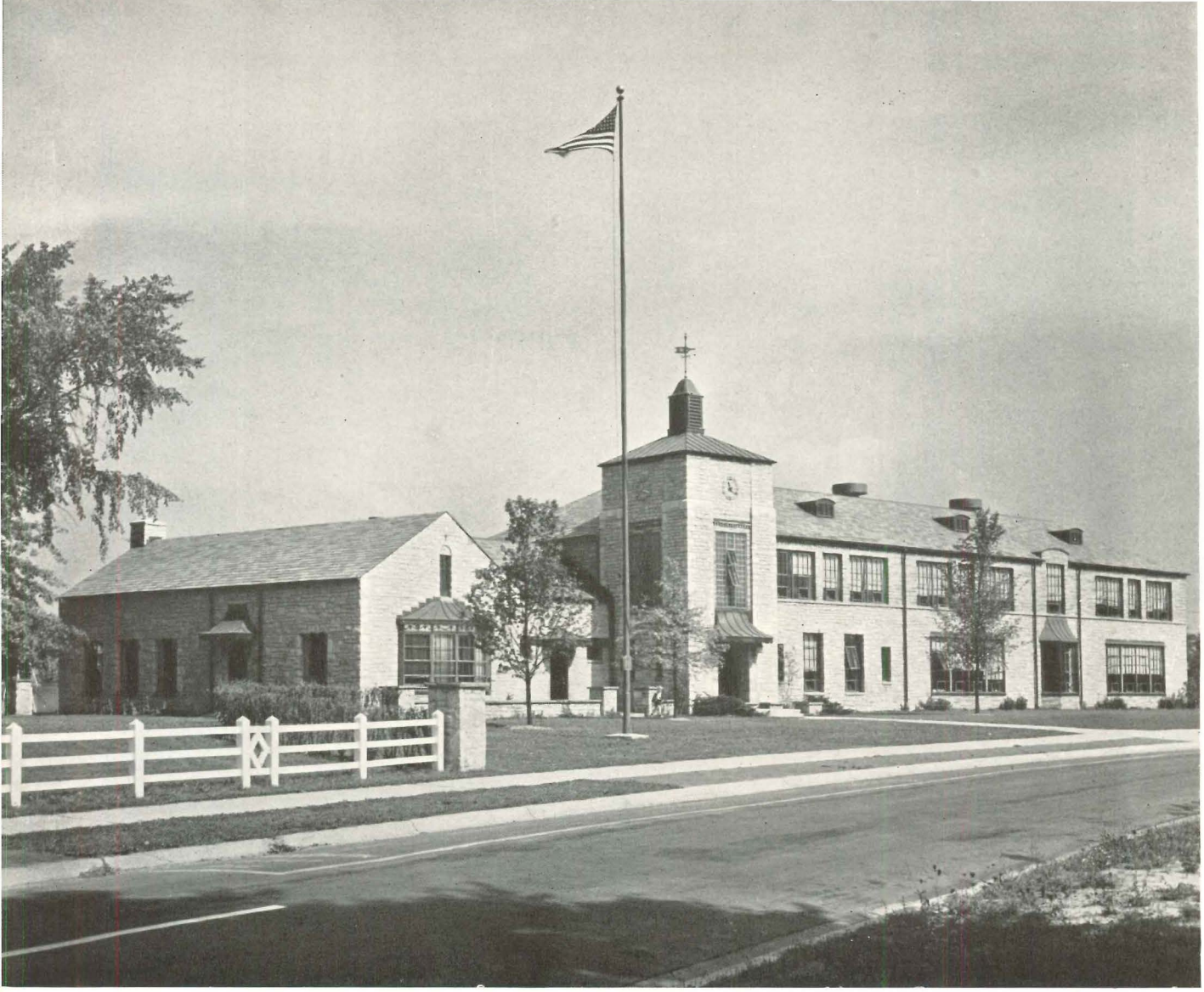
PLAN OF TYPICAL CLASSROOM



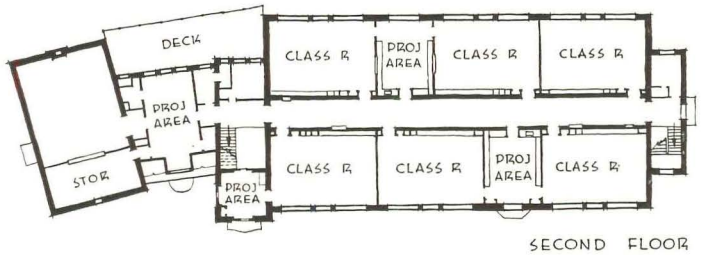
WORKROOM adjoins each classroom



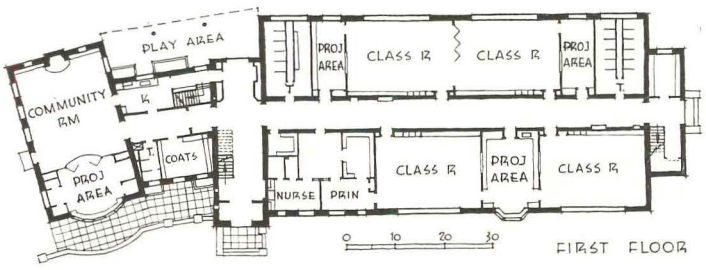
PRIMARY ROOM has bay window for plant space. Sink and drinking fountain are set at child height



OHIO SCHOOL WINS ARCHITECTS' SOCIETY GOLD MEDAL



SECOND FLOOR



FIRST FLOOR

ARLINGTON ELEMENTARY SCHOOL, COLUMBUS, OHIO. HOWARD DWIGHT SMITH, ARCHITECT; KYLE W. ARMSTRONG, ASSOCIATE. This school won the 1940 gold medal of the Architects' Society of Ohio. It is located in a growing suburban community which has a liberal attitude toward progressive educational methods and yet is conservative in building tastes. Thus the school represents, to an extent, a compromise between modern "workshop" planning and the traditional 20 x 30 ft., fixed-seat classroom. In combining these two points of view the architect has provided facilities for flexible educational programs within a conservative building budget. Except for one, all classrooms have project areas for use either separately or in conjunction with the room. Windows between class and project area can be blocked by swinging blackboards.

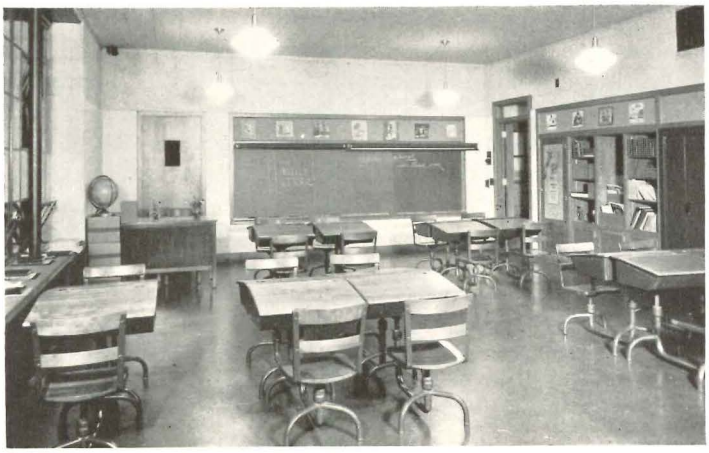
KINDERGARTEN has rostrum at south end which is also used as project area. Over the project room is balcony for extracurricular activities. Window in ceiling at left permits unobtrusive observation of kindergarten activities

CLASSROOM AND PROJECT AREA are separated by windows

The segregated kindergarten wing not only isolates its pupils from those in upper elementary grades, but also serves as a community activity room. When so used, it can be shut off from the rest of the school by corridor gates.

Classrooms are uniform in size and detail. Traditional cloakrooms are eliminated; instead, individual lockers open into the classroom. Central heating is obtained from the adjoining high school plant. Stairs were located and corridors designed to permit expansion on the east and north.

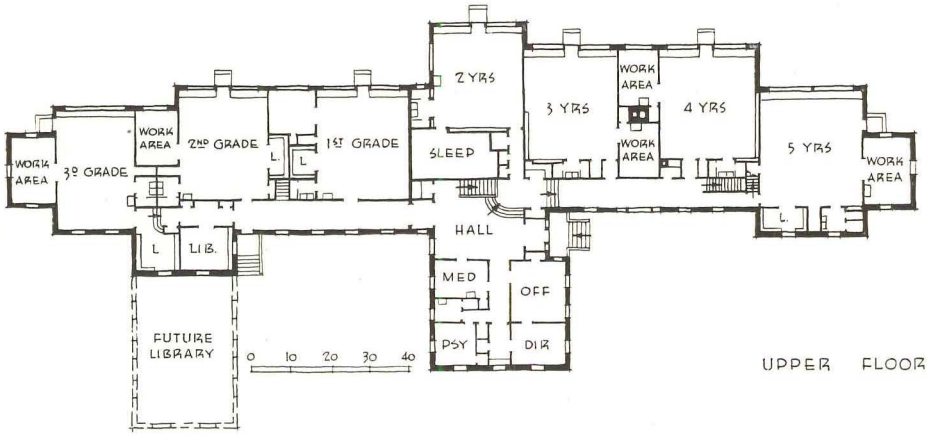
Local stone was used in most exterior walls. Interiors are exposed brick and cinder block with a minimum of plaster and paint. Trim is of yellow pine. The building was designed for a nominal capacity of 326 pupils at a construction cost of $335 per pupil or $.41 per cu. ft.



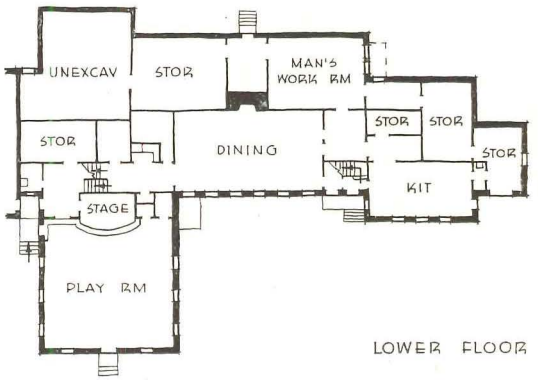
PRINCIPAL'S CLASS ROOM, like all others, has acoustic ceiling

Photos by Gottscho

PRIVATE NEW JERSEY NURSERY SCHOOL SERVES AS MODEL



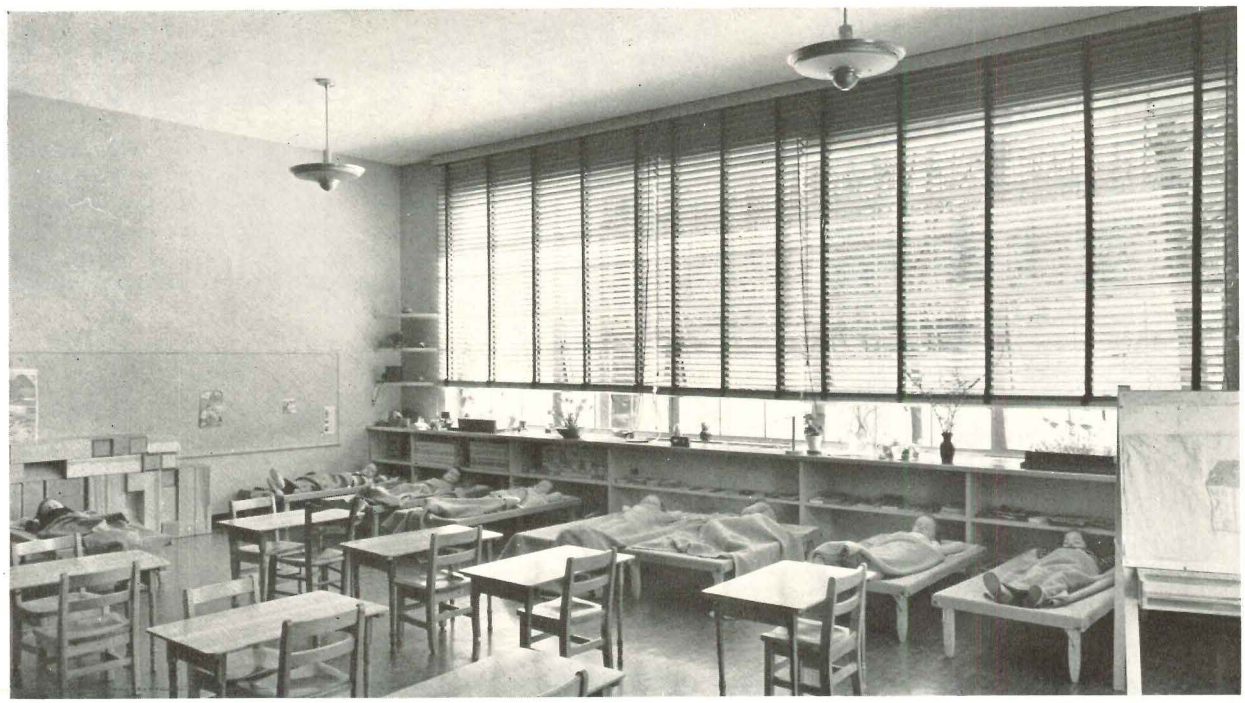
THE LITTLE SCHOOL, ENGLEWOOD, NEW JERSEY. HARDY AND GOUBERT, ARCHITECTS. The Little School was founded in 1930 as a private nursery school to incorporate the most modern educational practices. At the same time, the educational program was designed to retain the best features of traditional practice. Within 5 years the school had expanded to include first, second, and third grades. In 1939 the present building was erected. Throughout the curriculum intensive use is made of natural outdoor facilities which include lawns, trees and a brook. All classrooms open directly on playgrounds. Large windows on the south end take advantage of a maximum amount of sunshine. Each class is provided with a complete unit consisting of one large room, an auxiliary room, a coat room and a toilet. Corridors are equipped with exhibition cases where children's nature collections are shown. The small library has furniture to accommodate several ages of children. The music room, on a lower level than the classrooms, takes advantage of natural grades to open directly on ground level.



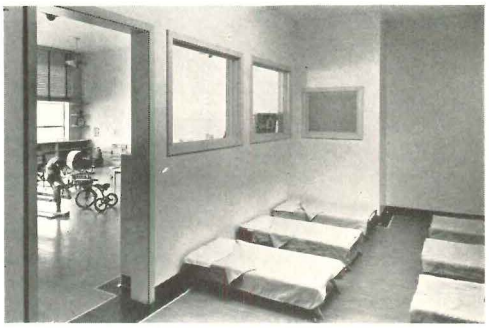
NURSERY SCHOOLS

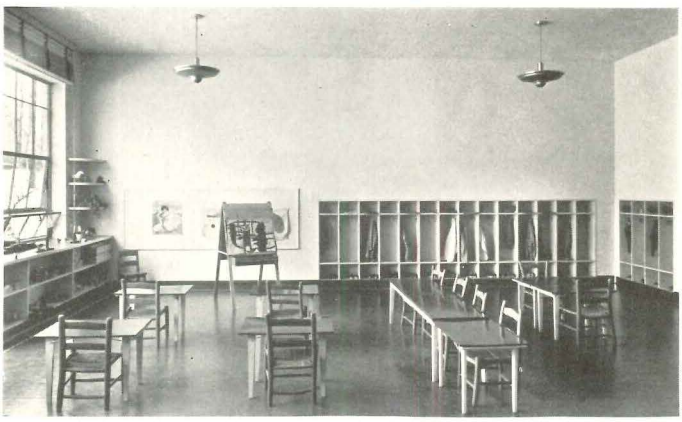
In February 1939 the RECORD reported advanced nursery-school planning principles. At almost the same time, the school shown on these pages was being erected. Principles enunciated included a close integration of outdoor and indoor areas, inclusion of toilets in classroom area for smallest children; provision of sleeping facilities; and provision of workrooms or alcoves, and cost cubicles.

Plan at left illustrates progressing classroom needs: 2-year-olds have separate toilet, sleeping room, sink and coat cubicles in classroom; 3- and 4-year-olds need no sleeping room, gain a workroom; 5-year-olds have a coat alcove. Photos: above, workroom; right, exterior and interior of classrooms



Above and at right: Older nursery-school children rest on cots in classrooms or on terraces; 2-year olds have a separate sleeping room. Below, right: kindergartners (4-year olds) still require aid in learning to dress, so coat cubicles open into classroom. All rooms have open storage bins under windows; stool is extended to form a work counter. Lower right: music room (playroom)





NURSERY AND PRIMARY grades are in separate parts of the building. In first, second and third grades, the basic skills of reading, spelling, writing and arithmetic are taught. Subject matter is appropriate to children's ages. In addition to classroom study, where work projects are an important part of the curriculum, field trips show the children the general setting, transportation, business, etc., of the city; and interest in nature is stimulated to the advantage of studies in the natural sciences.

Creative work in singing and rhythms is emphasized in all groups, and carpentry is an important part of project work throughout the school.

Children eat, work on projects and study in groups to learn how to get on together; in primary grades, study in pairs is also encouraged. Medical attention is provided by the public health department of the local hospital and an advising physician.

STADIA: SEATING and EXIT DESIGN—2

Aisles. Stadia are generally divided into sections by transverse aisles. The width of these sections, in terms of number of seats, varies from 24 to 32 seats per row. Most common are sections 26 or 28 seats wide.

Aisles adjacent to end walls of grandstand are advantageous if connected directly to an entrance, but they are not essential. By placing one half section against the wall at each end of the stand, one less aisle will be required.

Aisle widths vary, but 3 ft. is most widely accepted. This width permits a single file in one direction and an usher going in the opposite direction. Aisle 4 ft. wide will permit two lanes of traffic in the same or in opposite directions. If there are aisles on both sides of an entranceway they need be only 2 ft. wide. This width is the minimum advisable to insure sufficient clearance against the hazards of clothing catching in the seats or disturbing the occupants of the end seats.

Seat risers more than 9 in. high will require an extra step in the aisle. In this case make each step riser one-half the height of the seat riser, and the step tread one-half the width of the seat tread. Steps should be full width of the aisle.

Longitudinal aisles, either in front of the first row of seats or part way up the stand should be avoided since their use obstructs the view of spectators seated in back of them. However, where seats are not reserved, an aisle at the entrance level is a considerable convenience to spectators in choosing their seats, although it does interfere with the view of those already seated. When such an aisle is employed part way up the stand, sight lines for several rows above it should be checked to determine the effect of the extra tread width.

Entrances and Exits. In the small stands which do not have entrance through vomitories, it is preferable to have entrances from the field level at each transverse aisle rather than provide entrances at each end only and a longitudinal aisle leading to the transverse aisles. When the small grandstand is built on an embankment, entrance to the transverse aisles can be made from the rear, either directly, or by means of a longitudinal aisle connected with them.

In larger stadia, entrance is usually through vomitories whose widths may vary from 4 to 8 feet. A 6-ft. width is most common. Standard requirements for exits are based on traffic lanes of 22-in. width. Widths of vomitories and passageways should therefore be determined with this minimum in mind. Handrails extending not more than 3½ in. from the walls are not considered as reducing the effective width.

Width of exits is specified by most building codes in terms of number of seats to be handled. For example, if 8 in. is required for each 100 seats, a single vomitory or exit serving a section of 800 seats would require a width of 64 in. This should be increased to 66 in. to provide for three 22-in. traffic lanes, the rule being to increase the width rather than reduce it.

When seats are not provided with back rests, many spectators approach the exits by walking over the seats rather than in the aisles. In such cases, therefore, it is not necessary to have the width of the aisles equal to the width of the exits, and some codes take this into consideration. The code which required the width of exits to be 8 in. per 100 seats, for instance, permits the aisles to be 6 in. per 100 seats.

The location of vomitories will depend upon the contour of the site and the size of the particular section to be served. Where the section is relatively small, the vomitory can be at the same level as the entrance, thus avoiding ramps or stairs. For larger sections it is advisable to place the vomitory part way up the stand so that it will be served by an aisle below as well as the aisle above. In large stadia, a second row of vomitories is often provided.

Stairways and Ramps. The rate of egress from stairways and ramps is not constant, but some authorities consider 30 persons per minute per 22-in. traffic lane about average for stairways, and 37 persons per minute per 22-in. lane in ramps. Other authorities give higher rates, in some cases assuming a rate of egress of 45 persons per minute per traffic lane for both stairways and ramps. On this basis, if it were desired to exit an entire audience of 10,000 persons in 5 minutes, a total of 45 lane widths would be required for ramps, vomitories, stairways or gates. This total width should be maintained to the outside of stadium and enclosure.

In designing grandstand stairways, common rules are widely used. These require that the sum of riser heights and tread width, in inches, shall not be less than 17½ nor more than 18; that the sum of 2 risers and 1 tread, in inches, shall not be less than 24 nor more than 25; that the product of riser and tread, in inches, shall fall between 70 and 75. Risers of 6½ to 7½ in. with treads of 11 to 10 in. are most commonly used. See also American Architect T-SS B16.1.1.

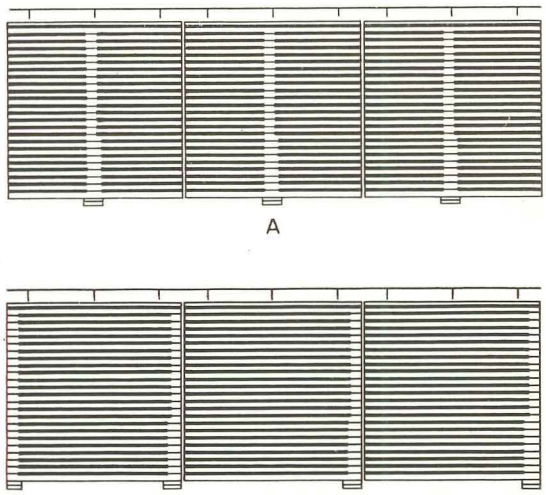
The capacity of ramps may be considered as being between that of stairways and level passageways. They are recommended primarily for greater safety rather than for greater capacity. Requirements for building exits often limit ramp slopes to not more than 1 in 10 because of the danger of possible panic from fire or other cause, but since this danger is less in grandstands than in buildings, somewhat steeper slopes are permissible. Ramps with an incline of 1 in 4 have been used, but slopes of 1 in 6 to 8 are safer and more often used. Ramps are longer than stairways of the same height. They are particularly suitable for grandstands where it is not necessary to make maximum use of the space under the deck, and in large stadia.

Walls and Railings. Passage-ways, entrances, back and sides of grandstand must have walls or railings for protection of spectators. These may consist of concrete walls or of pipe sections anchored to concrete or steel, etc., as the case may be. Solid walls in front of the first row should not be more than 3 ft. high above the lower tread. Handrails on enclosed stairways are often placed 32 in. above the lip of the step. Rails and walls at ends of stand and around entrances are usually 3 to 3½ ft. above the front edge of the tread. Solid back walls give spectators protection against strong winds and are frequently made higher for this reason.

Gates and Fences. Entrance gates should be so arranged that a single file of persons entering passes each ticket collector, but should also provide quick, unobstructed passage for exit of the crowd. Swinging gates are commonly employed; sliding gates are also used. Size of gate is determined by same method employed for determining sizes of vomitories, stairs and passages.

If admission is charged, a fence must enclose the entire field. Wire fences are used in a number of instances, but they do not shut off view to people on the outside; hence solid walls of concrete or other material are often employed.

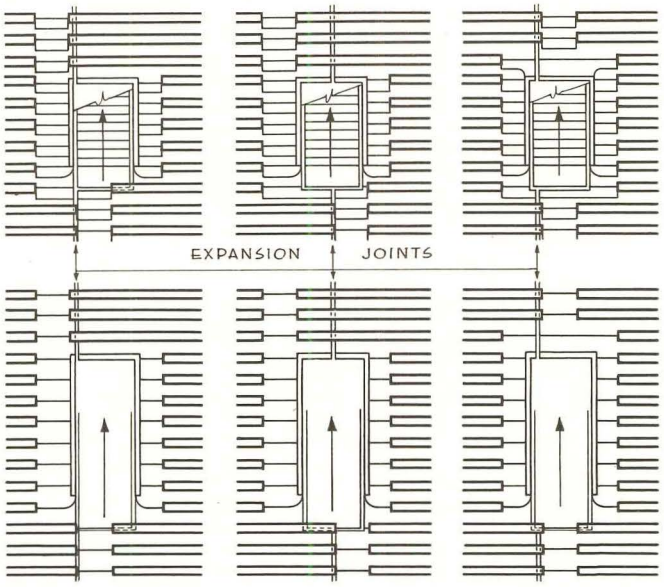
STADIA—SEATING AND EXIT DESIGN—2



ALTERNATE AISLE ARRANGEMENT FOR SMALL GRANDSTAND

(NOT TO SCALE)

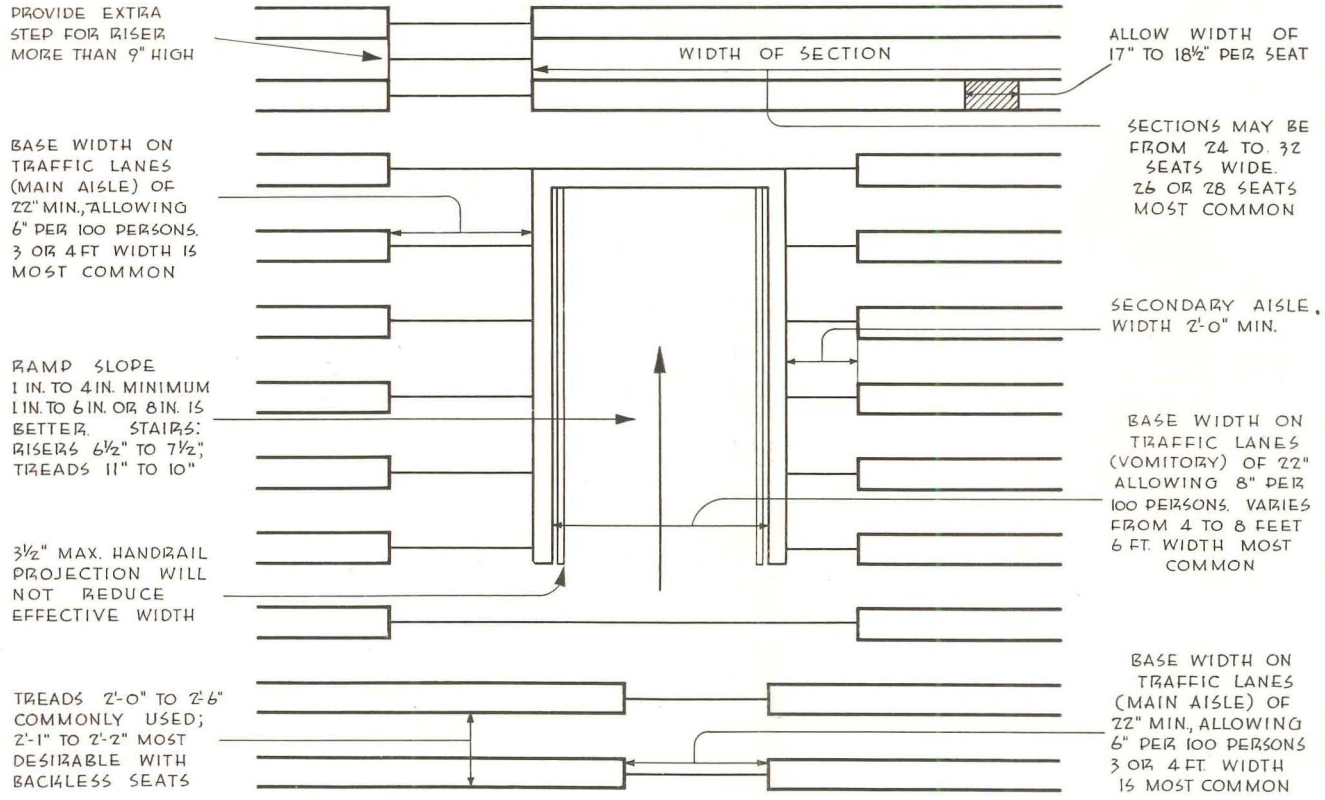
HALF SECTIONS AT EACH END IN SCHEME A REQUIRE ONE LESS AISLE THAN SCHEME B. BOTH ARRANGEMENTS PERMIT CONSTRUCTION OF ADDITIONAL SECTIONS



ALTERNATE ARRANGEMENT OF AISLES AT VOMITORIES AND STAIRS

(NOT TO SCALE)

NOTE THE LOCATION OF EXPANSION JOINTS. THIS PERMITS THE WALLS AROUND THE VOMITORIES TO BE CARRIED ON THE DECK WHILE RAMPS AND STAIRS ARE SELF-SUPPORTING AND FREE FROM THE REMAINDER OF THE STRUCTURE



DIAGRAMMATIC SKETCH SHOWING MOST COMMON DIMENSIONS

SCALE 3/16" = 1'-0"

ACTIVITY CLASSROOM PLANNING

Information on this sheet was collected by Ronald Allwork. Sources include The American School Board Journal; and published work of N. L. Engelhardt, Jr., and T. C. Holy, Professor of Education, Ohio State University.

General. Current educational practice trends away from pure memory and recitation work toward programs which show pupils the use of facts available to them. Thus the traditional classroom is becoming, in a sense, a laboratory in which theory is related to practice. To accommodate changing practice, classroom planning has become enlarged in scope, and classrooms are in some cases of greater area. Indeed, with introduction of field trips into academic curricula—trips to the grocer's to apply arithmetic, to municipal offices to observe "civics" in action—the entire community may be taken into the classroom.

In the strict sense, however, the classroom exists, though changed and sometimes called an "activity classroom," "workroom," even a "general education laboratory."

Activity classrooms, under varying designations and with modified requirements, are used in all grades, from nursery school through kindergarten, lower and upper elementary, and secondary grades.

Nursery school programs consist primarily of supervised play, rest, and diet. Pupils are also trained in control of their bodies, in dressing themselves, in independent and inter-dependent activities.

The nursery unit, generally self-contained, includes area and facilities for indoor and outdoor play, rest, sleeping, isolation, bathing, eating, medical care. Toilets and storage space are required; kitchen facilities may be provided centrally for a group of nursery (and higher) units. The playroom is the center of activity. Supervision is highly important. Private entrance and direct connection to segregated outdoor play space are essential. Glass area which admits a maximum of the "outdoors," yet admits no glare, is most desirable. This may entail consideration of blinds, awnings or canopies, and treatment of adjoining grounds to reduce light reflectivity. Furniture, pupils' cupboards, etc., are child-sized. It is often necessary to install a concealed window, "one-way" glazing, or some other device to enable parents and others to observe pupils without being seen.

Kindergarten program extends the nursery program; there is less need for rest and diet control; play becomes organized into games, music, and simple projects.

Sleeping and bathing provisions are usually eliminated; but quarters for resting and project space may be added. Beyond this, requirements are roughly similar to those of nurseries, though slightly larger in scale. The atmosphere should be homelike; a fireplace is considered desirable. Cloak-storage space is usually an open alcove; individual open-fronted cubicles, with separate compartments for hats, coats and rubbers, are provided.

Lower elementary curricula add to the kindergarten program a certain amount of formal instruction—in the "three R's" and other subjects—and a more ambitious type of project; these replace, to some extent, parts of the kindergarten "play" program.

The play-class area is somewhat reduced in extent, and a definite project area is added. Depending on local requirements, the project area may be a separate workroom or an open alcove, or a combination of both. A bench with juvenile facilities for handicrafts, sink, and storage shelves are desirable. Direct access to segregated outdoor play space is often considered essential. A cloak alcove like that used in kindergartens is sometimes provided for lower grades; coat lockers sometimes line one wall; occasionally overclothing is stored in individual corridor lockers. Separate toilet rooms are required for boys and girls; these are sometimes provided within the unit, more often are centrally located to serve a group of units.

Upper elementary programs involve more searching inquiries and broader investigation. Experimentation, construction, general science, home arts, dramatization, folk-dancing, craftsmanship, industrial arts, and artistic expression have more definite places in curricula; close supervision over diet, rest, play, dressing, etc., ceases.

Definite workspace and equipment, recitation and study areas become essential. Direct access to outdoors, though sometimes desirable, is not essential. A platform which can serve as a stage may be required. Overclothing is stored in classroom wardrobes or individual corridor lockers.

High school curricula, though more formal than elementary programs, are constantly being expanded to permit laboratory methods of teaching. French is learned by games and dramatizations as well as by rote; English classics are related to mathematics by means of producing—actually editing and printing—a school paper. Industrial arts are often emphasized in order to relate modern civilization to traditional learning. Social, professional and vocational interests are stimulated; the individual student begins to specialize, or at least learns how to choose his life pursuit.

Here the "activity" classroom becomes several things as classes are specialized. It may be the recognized science suite (lecture room plus laboratory) or it may be a laboratory for general education, with class seating area, laboratory tables, small stage, and library-study space, all in one room. Occasionally this type of classroom is divisible into two or more spaces by folding partitions. Also, it is sometimes L-shaped in plan, to provide for segregating activities. Some authorities* suggest three different types of high school educational laboratories: *Recitation-discussion* (seating space, storage space, reading alcove); *Discussion-activity* (seating space, workroom, stage, study and reading alcove; *Experience program* (seating space, stage, exhibition and storage space, and separate though adjoining work centers with their own storage space).

*N. L. Engelhardt, Jr., and others

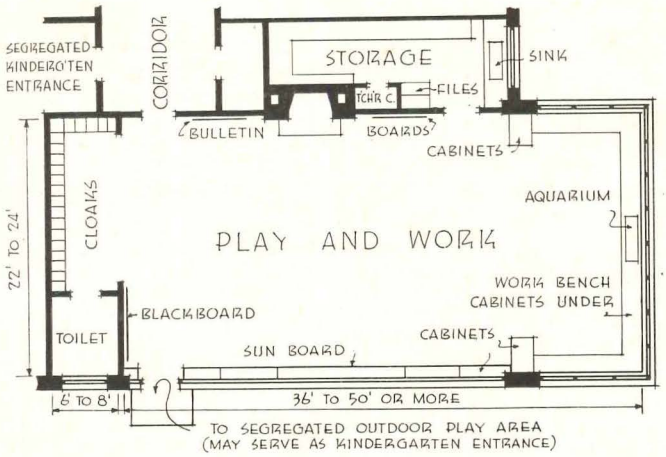
INDOOR SPACE REQUIREMENTS for ACTIVITY CLASSROOMS

(in square feet)

TYPE OF SPACE	KIND'G'T'N (20-25 pupils)			LOWER ELEM. (25-30 pupils)			UPPER ELEM. (35-40 pupils)			HIGH SCHOOL (35-40 pupils)		
	Min.*	Avg.	Max.†	Min.*	Avg.	Max.†	Min.*	Avg.	Max.†	Min.*	Avg.	Max.†
STUDY AND RECITATION	...	...	...	...	...	...	625	780	960	704	828	1200
Reading	...	...	...	...	...	...	64	100	176	64	100	176
Stage	...	...	...	...	...	...	140	252	352	140	252	352
Work	...	...	...	250	400	400	138	184	240	176	230	360
Play-Work	...	...	...	625	1200	1200	...	...	...	...	...	...
Play	625	1500	1500	...	...	...	...	...	...	...	...	...
REST AND ISOLATION	200	300	300	...	200**	...	...	...	...	...	...	...
CLOAKS	...	150	250	...	150	250	...	...	...	...	...	...
TOILET AND LAVATORY	80	108	160	...	80	...	...	...	...	...	...	...
STORAGE	...	48°	...	...	48°	...	200	320	400	200	320	400

*Desirable. †Usual. **See text. °For supplies and teacher's use; add 1.5 cu. ft. per pupil in play space, same amount in work space (average).

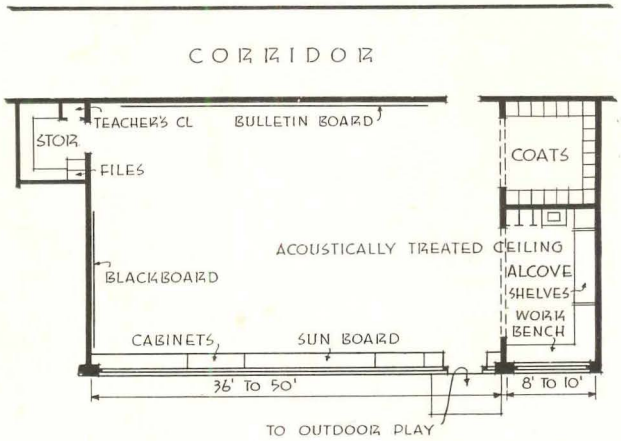
ACTIVITY CLASSROOM PLANNING



KINDERGARTEN

Design of playroom should permit activities to be segregated (bay windows, alcoves, etc.). Space for individual activity, with some privacy, may also be added. Furniture should be movable. Individual storage cabinets and overclothing cubicles, child height, are desirable.

Equipment includes: swings, slides, sand box, pool, box for toys, aquarium, work benches and juvenile tool sets, sink, easels, tables, chairs, piano.

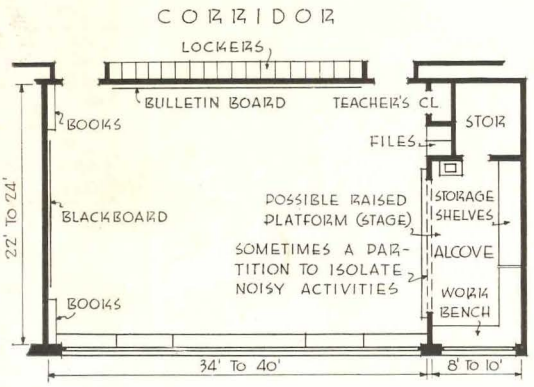


LOWER ELEMENTARY

Furniture should be movable. Alcove permits segregating noisy activities. Storage cabinet desirable for each child. Overclothing cubicles occasionally outside classroom.

Equipment includes: chairs, tables, work benches and tools, material cabinets, aquarium, easels, sink, piano.

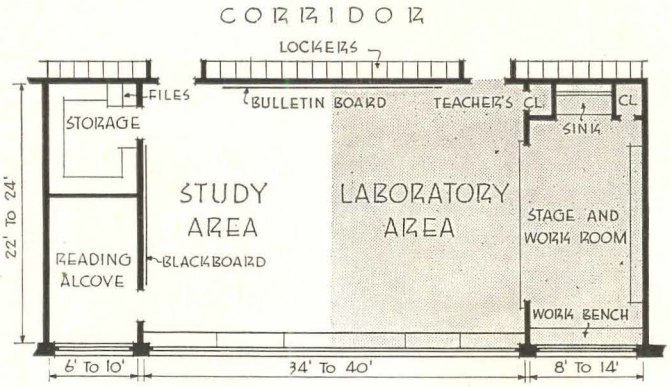
Plans are composites of numerous examples; all are restricted in dimensions by state educational building regulations. More advantageous shapes are occasionally possible. Drawings are not to scale.



UPPER ELEMENTARY

Furniture should be movable. Alcove is for experiments, is sometimes used as stage. One alcove often serves two classrooms. Clothing lockers sometimes open into room.

Equipment includes: chair-and-desk units (or chairs and tables), experiment table with acid-proof top, work bench, book shelves, sink, chart and map rack, motion-picture or lantern-slide projector.



HIGH SCHOOL

Shown is a "general education laboratory." Chair-and-desk units (movable) are used in study area; laboratory tables (4 seats each) in laboratory area. Room is sometimes L-shaped, sometimes subdivided by bookshelves, etc.

Other equipment includes: work benches, chart and map rack, motion-picture or lantern-slide projector, sink, storage cabinets.