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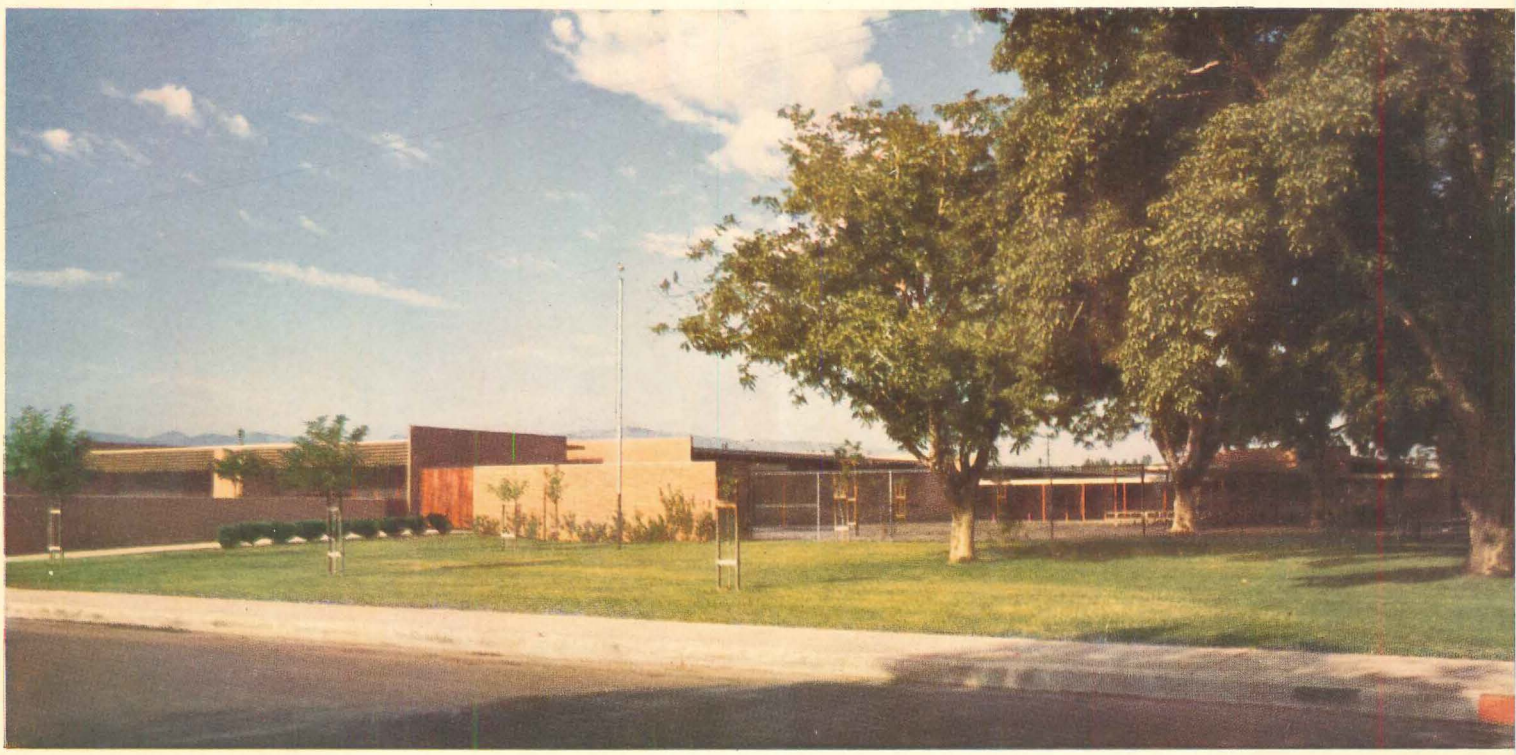

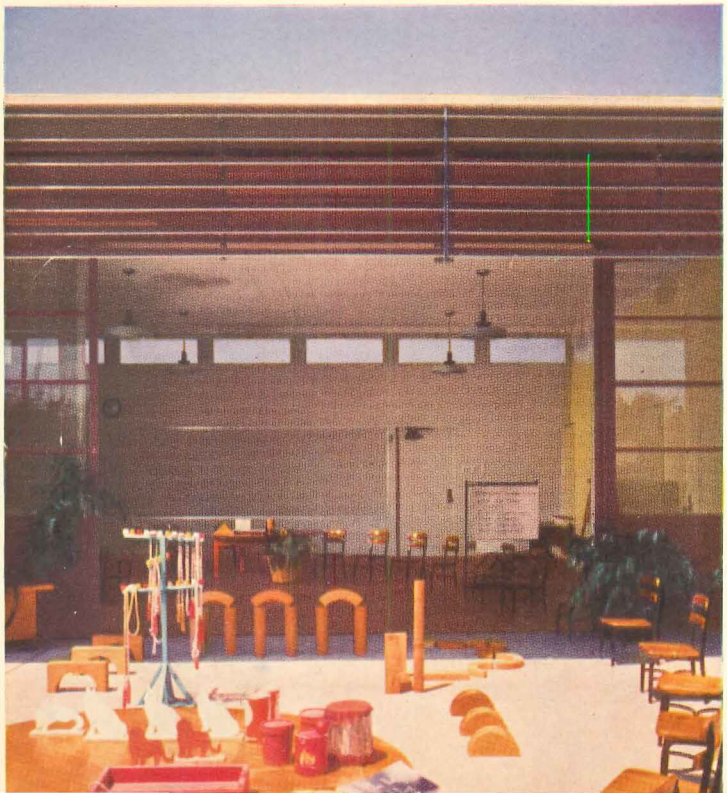

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NOVEMBER 1952

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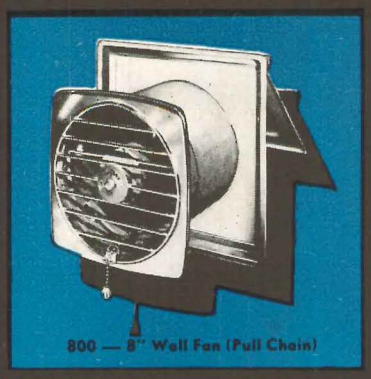
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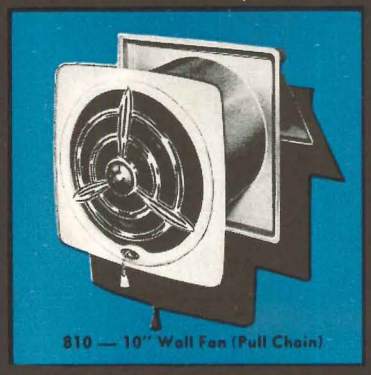
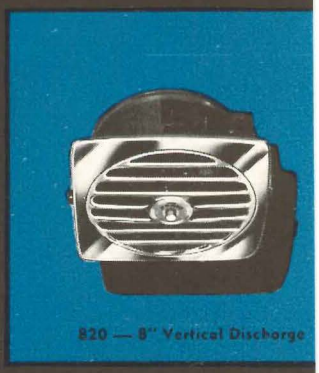

810 — 10" Wall Fan (Pull Chain)


840 — 10" Ceiling or Wall Fan


806 — 8" Automatic Wall Fan


830 — 8" Ceiling or Wall Fan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Cover: Kester Avenue Elementary School, Los Angeles, Calif. Richard J. Neutra, architect; Julius Shulman photos

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ARCHITECTS FLOCK TO A.I.A. REGIONAL CONFERENCES

New Regional Councils Formed; Functionalism Attacked and Defended — Season Opens

THE STRING OF REGIONAL CONFERENCES of the American Institute of Architects which launched the fall season with a vengeance during the last six weeks had an aggregate attendance well over 2000 and programs that ranged from discussions of such specific subjects as tilt-up construction and the problems of young architects entering the field to the esthetics of architecture. On that latter topic comment ranged from Edward Stone's characterization of purely functional architecture as "weak tea" to Charles Eames' assertion that there's too much "function is all right, but —" comment around these days. Organization of regional councils at some meetings and at least preliminary discussions at all furthered the prospects of intensified regional activity. The A.I.A. Board of Directors said in June it hoped regional councils would be organized in all districts to increase A.I.A. benefits to members and keep the Board in closer touch with architects and the problems they face.

"Schools in the Southeast" was the official theme of the first annual conference of the South Atlantic District of the A.I.A., held in late September at Atlanta with the Georgia Chapter as host. An exhibit of 115 new education building projects was a major feature of the conference; projects on view, shown in scale models, photographs and drawings, represented the work of architects in all of the states of the South Atlantic Region — Florida, North Carolina and South Carolina as well as Georgia.

Gabriel Benzur

Organization session for South Atlantic A.I.A. Regional Council: Herbert C. Millkey (second from left), president of the Georgia (host) chapter, and G. Thomas Harmon III (second from right), A.I.A. regional director, confer with region's chapter presidents

Philip A. Heine

Chapter presidents of A.I.A. Northwest District look over the exhibits: Ernest Gales, Idaho; H. Abbott Laurence, Oregon; Victor Wulff, Spokane; J. von Teylingen, Montana; and Paul Thiry, Washington State

Lane Bros.

At the South Atlantic Regional Exhibit: Mr. Harmon; Julian Harris, architect and sculptor and chairman of the conference committee; and Mr. Millkey

Citations for meritorious design went to Bush-Brown, Gailey and Heffernan, Architects, for the new library building at Georgia Institute of Technology; Stevens and Wilkinson, also of Atlanta, for the East Rivers School and Roswell High School, Atlanta; William J. Lyles, Bisset, Carlisle and Wolfe, Columbia, S. C., for the Langley-Bath-Clearwater High School, Aiken County, S. C.; G. Milton Small, Raleigh, for the Nuclear Reactor Laboratory, University of North Carolina, Raleigh; and E. Oren Smith, Columbus, for the new Negro High School, Muscogee County, Ga.

Mentions were given to four other firms: Aeck Associates, Atlanta, for the men's dormitory, Fort Valley, Ga., State College; Robert M. Little, Miami, for Ring Theater, University of Miami; Burrett H. Stephens and Robert H. Stephens, New Bern, N. C., New Bern High School; and Watson and Deutsch-

Northwest Regional Conference: A.I.A. Executive Director Edmund Purves; Regional Director Irving D. Smith; Francis Joseph McCarthy, A.I.A., San Francisco, vice chairman of A.I.A. Committee on Public Relations, a speaker; and President Stanton

Speakers in the South Atlantic Conference seminar on school building in the southeast: Thomas Cooper, North Carolina A.I.A. president; Robert Little, A.I.A., Miami; Henry Wright, A.I.A., Los Angeles; and William Henry Dietrick, North Carolina

Jim Barry

At Lake Placid, officers of the New York State Association of Architects: Harry M. Prince, New York, 3rd vice president; G. Morton Wolfe, Buffalo, 2nd vice president; Adolph Goldberg, Brooklyn, 1st vice president; Donald Q. Faragher, Rochester, president; John W. Briggs, Rochester, secretary; and Martyn Weston, Brooklyn, treasurer. At right above: the well-known philosopher Roger Allen provided the New York convention's lightest moments discussing "Philosophy for the Architect"

(*Continued from page 11*)

man, Miami, North Dade High School, Dade County, Fla.

Regional Director G. Thomas Harmon III of Columbia, S. C., was elected chairman of the South Atlantic Regional Council organized at the conference by action of all the chapter presidents of the district.

The week during which the conference was held was proclaimed by Gov. Herman Talmadge "Architects' Week" in Georgia and the cause of public knowledge of architecture was further advanced by the conference committee's action in arranging for the architectural exhibit at the Atlanta Biltmore headquarters to be open to the public.

At the seventh annual Central States Regional Conference in Kansas City October 9–11, "The Esthetic Evaluation of the Art of Architecture" held the spotlight, with seminars on "Esthetic Qualities in Architecture," "Sculpture as Related to Architecture," "Painting as Related to Architecture," and "Stained Glass in Architecture."

Edward Stone of New York bewailed the approach of architects of the last two decades as "an arid utilitarian expression, computing cubic costs long before we have had a chance to dream of anything beautiful."

"Our utilitarian formula," Mr. Stone said, "works extremely well when applied to industrial buildings, hospitals and office structures, but does not apply with equal force to churches, domestic architecture and civic buildings where monumentality is a consideration and utility is not the prime consideration."

Charles Eames, on the other hand, insisted there are still too many aspects of architecture that are too calculable but neglected. He thought it was a little soon to start "but-ing" function out of existence.

The appeal for feeling and "human quality" in architecture was voiced again by Bruce Goff, who saw much contemporary architecture as "too mechanistic and materialistic."

"There is some little danger if the trend should continue that architecture in this country might become a meaningless formula, repeated over and over without reason," Mr. Goff asserted.

As for art in architecture, Thomas Hart Benton felt painting and sculpture could not regain their place in architecture or society until artists again are interpreting public life and ideas instead

of their own lives and ideas.

Public relations and the architect was a major subject of discussion, both formal and informal, at the Northwest Regional Conference at Spokane October 3–5. Main speaker in this field was Francis Joseph McCarthy of San Francisco, vice chairman of the A.I.A.'s National Public Relations Committee, who emphasized that service to the public is the vital basis of a public relations program for architects; "publicity" as such is only a tool, however useful.

At the conference, the Northwest Regional Council, organized last year as the second in the nation, nominated Waldo B. Christenson of Seattle as its candidate for regional director to succeed Irving G. Smith of Portland, whose term expires next June.

The Sierra Nevada Regional Conference, held jointly with the annual meeting of the California Council of Architects, had an attendance of 600, including all the charter members of the Orange County, Calif., Chapter of the A.I.A., a new chapter (105th in the nation, 10th in California) instituted at the opening session.

The program included presentation to John S. Bolles of San Francisco of the Valentine Kirby Award for the California architect who has best incorporated original art into his building.

Seminars featured tilt-up construction and a special program for junior associates of the A.I.A. on "Entering the Field." Dean William Wurster of the University of California called for a more scholarly approach in the schools to develop "a core of design and expression, a core of technology, a core of humanism based on a general knowledge of the world." Clinton C. Ternstrom, A.I.A., representing the practitioner's viewpoint, also stressed that to be good architects young men must understand the architect's job in society as well as in the office.

There was a report on Polish architects' reaction to contemporary American architecture from Thomas L. Creighton, editor of *Progressive Architecture*, who spent 10 days in Poland last summer with a group of 50 architects from 20 countries who toured Poland at the invitation of the Polish Society of Architects. Mr. Creighton said the Polish architects feel contemporary U. S. architecture is so tied up with technological development that it follows preconceived esthetic concepts — the reverse of "form follows function"; that it has no relation to the needs of the people; that it has no roots in folk or historical architecture. Mr. Creighton, while taking issue with these views, suggested that a reexamination of our own architecture and methods may be indicated in the light of Soviet criticism and its influence on so many people in all phases of art.

The Great Lakes Regional Council of the A.I.A. was organized at a joint meeting with the Ohio Society of Architects in Cincinnati October 2–3. Chairman is John N. Richards, Toledo, regional director; secretary, Charles H. Marr, New Philadelphia, Ohio.

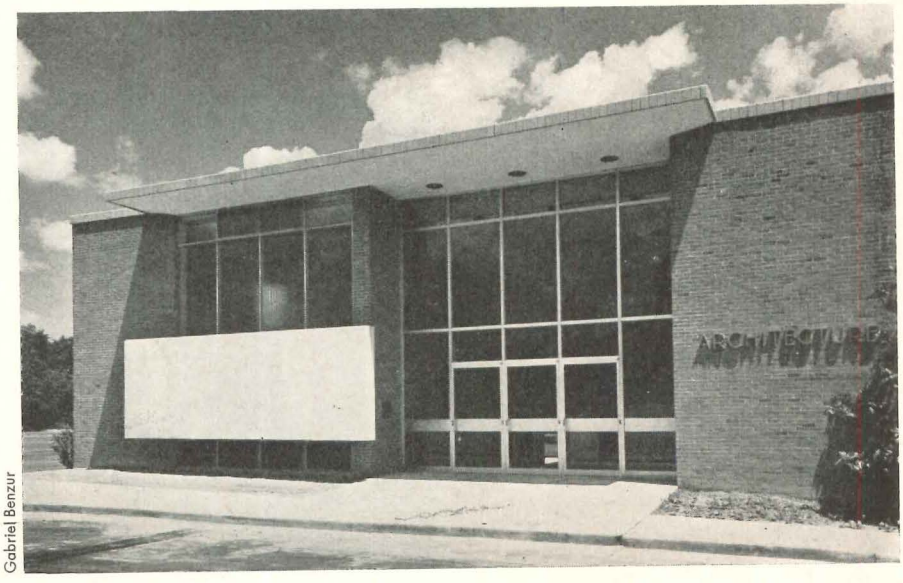
Awards of Merit were given at the annual convention of the New York State Association of Architects, held October 2–3 at Lake Placid, to Robert A. Green, Tarrytown, for the Ardsley Elementary School; Skidmore, Owings & Merrill, Sargent, Webster, Crenshaw & Folley, Associate Architects, for the Edward John Noble Hospital, Alexandria Bay, N. Y.; and to Skidmore, Owings & Merrill and Merrill Claude Hooton, Associate Architects, for the Pan-American Life Insurance Building, New Orleans.

Sierra Nevada Regional Conference Delegate Kenneth Roehling of Hawaii, A.I.A. President Glenn L. Stanton and Charles Matcham, regional director

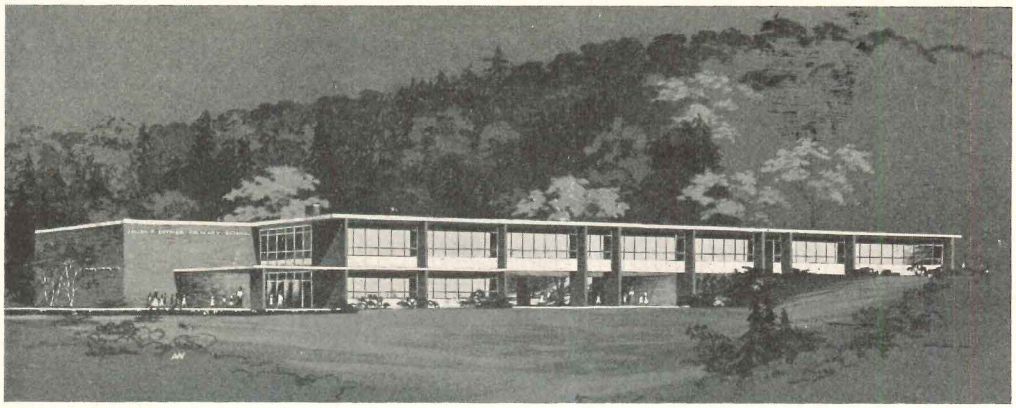
Mention awards went to King & King, Sargent, Webster, Crenshaw & Folley, for North Syracuse Central School District Junior-Senior High School; Moore & Hutchins, for the Roslyn East Hills Elementary School; Kelly & Gruzen, for Elmwood, N. J., Shopping Center; Sargent, Webster, Crenshaw & Folley, for Marsellus Residence, Dewitt, N. Y., and St. Lawrence Central School, Brasher Falls, N. Y.; and Skidmore, Owings & Merrill for Brooklyn V.A. Hospital, Greenwich, Conn., Hospital and Manhattan House, New York City.

NEW ARCHITECTURE BUILDING

The million-dollar Architecture Building of the Georgia Institute of Technology, designed and supervised by members of the architectural staff, was formally dedicated as part of the South Atlantic Regional Conference program. The building, of reinforced concrete construction with brick walls and aluminum window framing, is built on three levels; a library and gallery over an open concourse join the two main wings—a four-and-a-half story classroom wing to the north and a two-story wing to the south containing auditorium, exhibition and judgment room and offices. Architects: Bush-Brown, Gailey & Heffernan



Gabriel Benzur



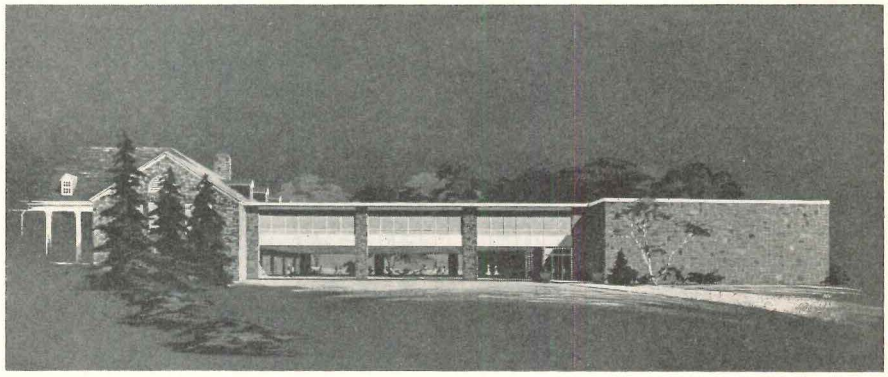
Primary school to be built in Tarrytown, N. Y.: $14 per sq ft

NEW SCHOOL PROJECTS PLANNED TO CUT COSTS

ROBERT A. GREEN, Tarrytown, N. Y., architect, thinks he has reached with these projects and a fourth at Ardsley, N. Y., (see page 145) the culmination of several years' effort to lower school costs by careful design practices. In an area where school building costs average $18–$21 per sq ft, he has two schools (Purchase and Tarrytown) out for bid with budget estimates of $12 and $14 per sq ft respectively and a third (Valhalla) under construction at $15 per sq ft actual cost. These results have been achieved by constant plugging to eliminate waste space and constant attention to design of the structure to require minimum work at the site.

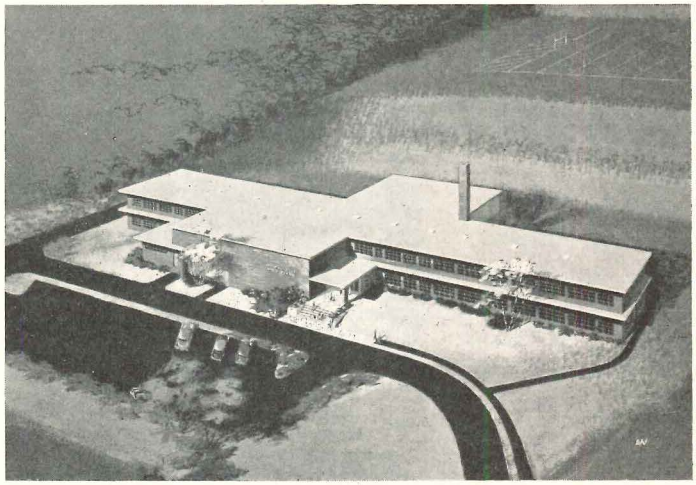
In all of these schools, corridors are kept to the essential minimum; classroom sizes are generous but units are planned so all space is utilized. The structural design and detailing is guided by an effort to reduce the number and kinds of units and finishes employed — by such devices as standard sizes for windows; stock materials and equipment: standard cabinets for all classrooms, standard plumbing, shop-fabricated steel window frames which become part of the structure so no lintels are needed; virtual elimination of woodwork and paint.

Whenever possible the contracts for these schools make the supplier responsible for installation of equipment. They are fireproof construction — masonry-bearing walls of integrally-colored block, exteriors of brick or stone, roofs dead level lightweight long-span concrete plank.



Addition to Purchase, N. Y., primary school: $12 per sq ft

Valhalla's primary school project: $15 per sq ft



Adolph Studly

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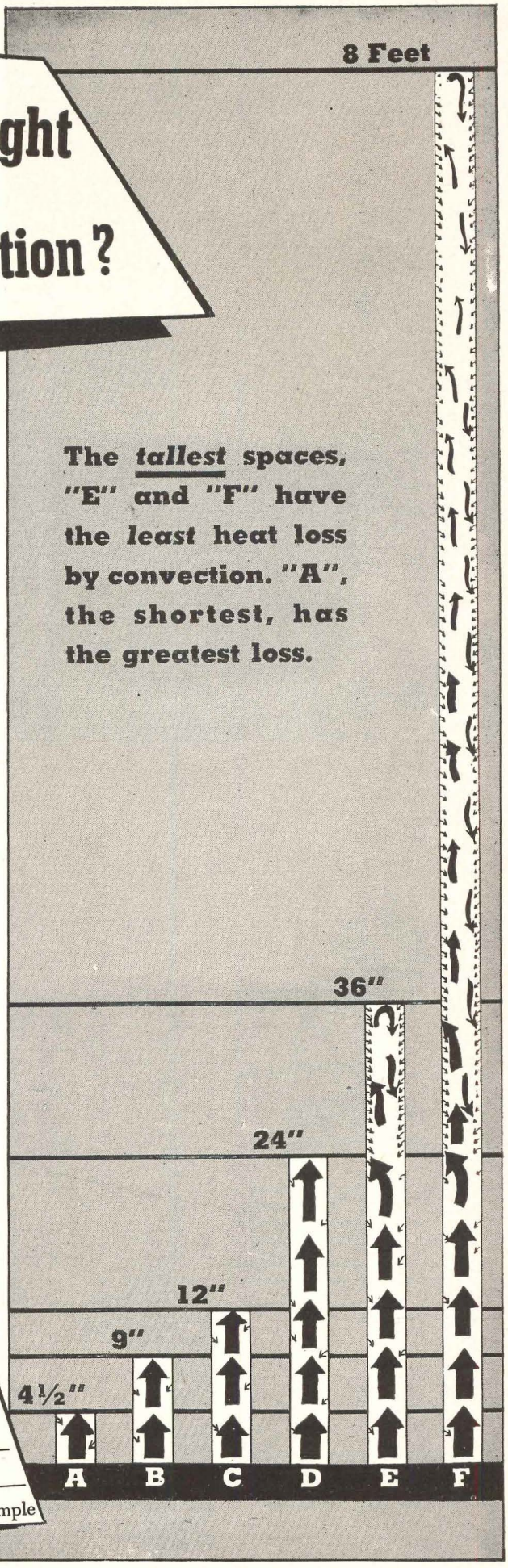
"Wall Heat Flow," a chapter in "Simplified Physics of Vapor and Thermal Insulation" describes the tests cited above. A copy of this authoritative manual may be obtained *free* by filling out the coupon below.



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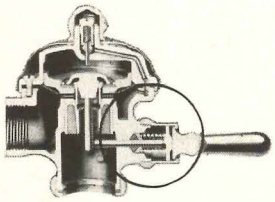

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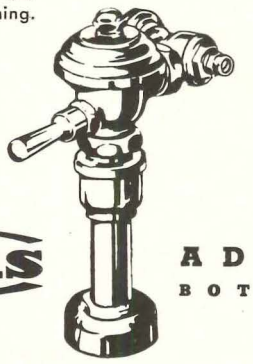

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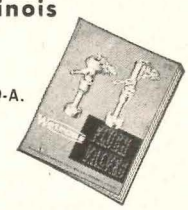

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N. E. A. SURVEY REFLECTS INCREASED SCHOOL NEEDS

THE CONTINUING AND INCREASING NEED for more school buildings is well documented in the National Education Association's October 1952 research bulletin "The Effects of Mobilization and the Defense Effort on the Public Schools."

Of 1270 school systems in American cities of 2500 population or over which responded to an N.E.A. questionnaire sent out last December, 30.5 per cent reported that if all projects under way were completed the number of classrooms urgently needed would still be larger than it was two years ago; another 56.7 per cent said in spite of new construction the number of urgently needed classrooms was the same.

The leading reason for the failure of the school building program to catch up with the need was reflected in the testimony of the school systems on increased enrollments — not only in elementary but in secondary schools as well.

Educators put overcrowded school buildings second only to the shortage of qualified teachers among "serious current problems" listed by N.E.A. Of school systems responding, 22.1 per cent reported more pupils housed in makeshift classrooms than in 1949 and 68.1 per cent reported as many; 8.1 reported a larger number of pupils on a half-day schedule (because space must be shared) and 85.4 per cent reported as many.

School building projects "which should be started soon but probably cannot be" were reported by 46.8 per cent of respondents; 41 per cent said the delays were due to financing difficulties, 34.3 per cent to materials shortages and 14.4 per cent to a combination of the two factors.

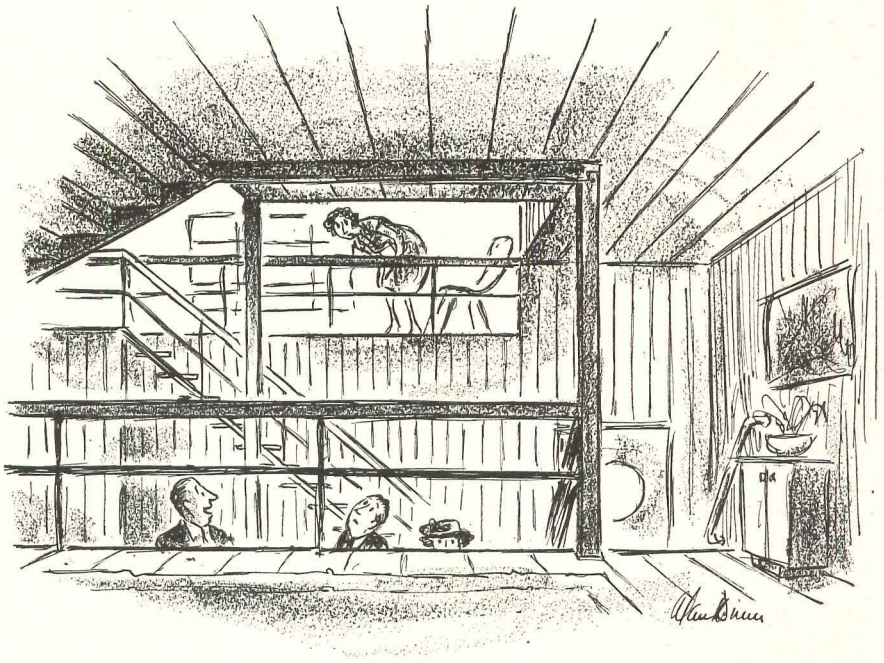
Projects under way that were halted by "current conditions" were acknowledged by 162 of the school systems, or only 13.2 per cent, largely (74.1 per cent) due to the materials shortage; but N.E.A. points out that pupil accommodations involved in the stoppages reported by only 144 of the 162 cities amounted to 115,315.

College Enrollments Rise

Sixty-five per cent of 507 institutions reporting show an increase in college freshman this fall, Dr. Raymond Walters, University of Cincinnati president, has announced. The rise in freshman enrollment has halted a downward trend of college registrations.

UPWARD TREND OF SCHOOL ENROLLMENTS REPORTED BY NEA

Type of Enrollment	Number	Per Cent
Regular elementary:		
Schools reporting enrollments larger in 1951 than in 1949	992	81.8%
Change in aggregate number of pupils from 1949 to 1951	——	+8.5%
Regular secondary:		
Schools reporting enrollments larger in 1951 than in 1949	796	65.7%
Change in aggregate number of pupils from 1949 to 1951	——	+3.8%
Adult classes:		
Schools reporting adult-education enrollments larger in 1951 than in 1949	426	37.6%
Change in the aggregate number of adult-education students from 1949 to 1951	——	+2.1%
Pupils new to the system:		
Schools reporting number of new pupils larger in 1951 than 1949	378	70.3%
Change in aggregate number of new pupils 1949 to 1951	——	18.7%

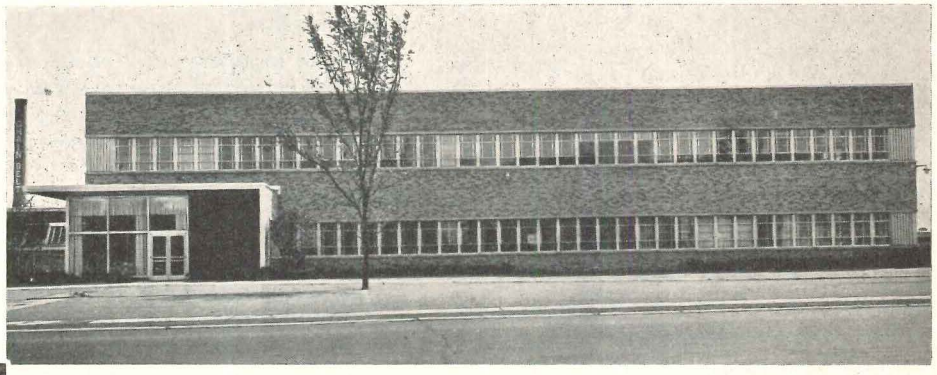


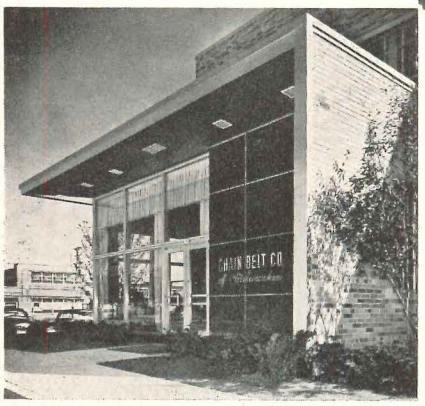
"Notice how the space flows up and down as well as sideways—"
—Drawn for the RECORD *by Alan Dunn*

NEW BUILDINGS

Grover Brinkman

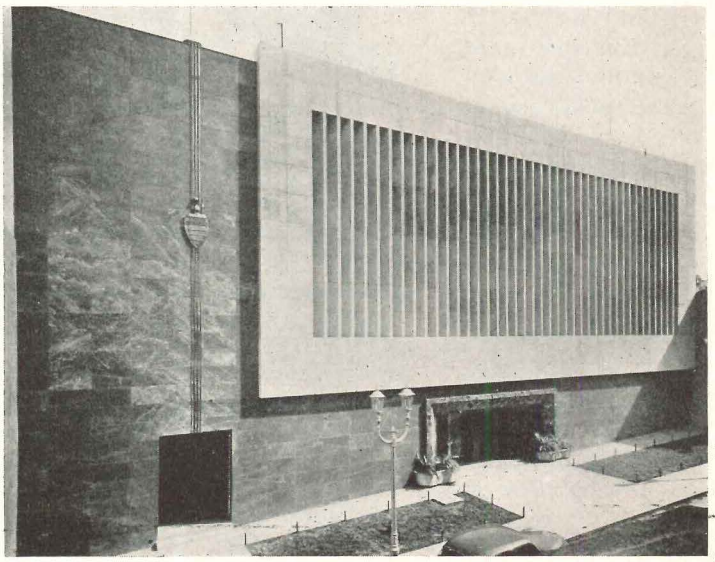
Faith Hospital in St. Louis has just been dedicated. Patients' rooms face south for maximum sun in winter, are recessed for control of heat and light in summer. The hospital, which cost $1,200,000, has 200 beds. Architect: Joseph D. Murphy





This new building for the executive offices of the Chain Belt Company of Milwaukee was designed by the architects, Eschweiler and Eschweiler, to allow addition of third and fourth floors in later expansion. Exteriors are brick, with stainless-steel facing between continuous metal windows; structural frame is reinforced concrete, with a center span of 40 ft and 13-ft cantilevers on the north and south sides. Core of the building, with the 40-ft clear span, is the general office space, with private offices, wash rooms, lounge, vault and stair wells around the perimeter. The building is air conditioned throughout

Banco Capitalizador de Monterrey, Mexico, Monterrey's newest bank building, has one huge window, set approximately 2 ft behind marble slats; the building is so oriented that when the sun is at its height the slats shield the window to reduce heat and glare. The façade is marble. The building is entirely air conditioned. Architects were Marcelo Zambrano and Guillermo Belden of Monterrey



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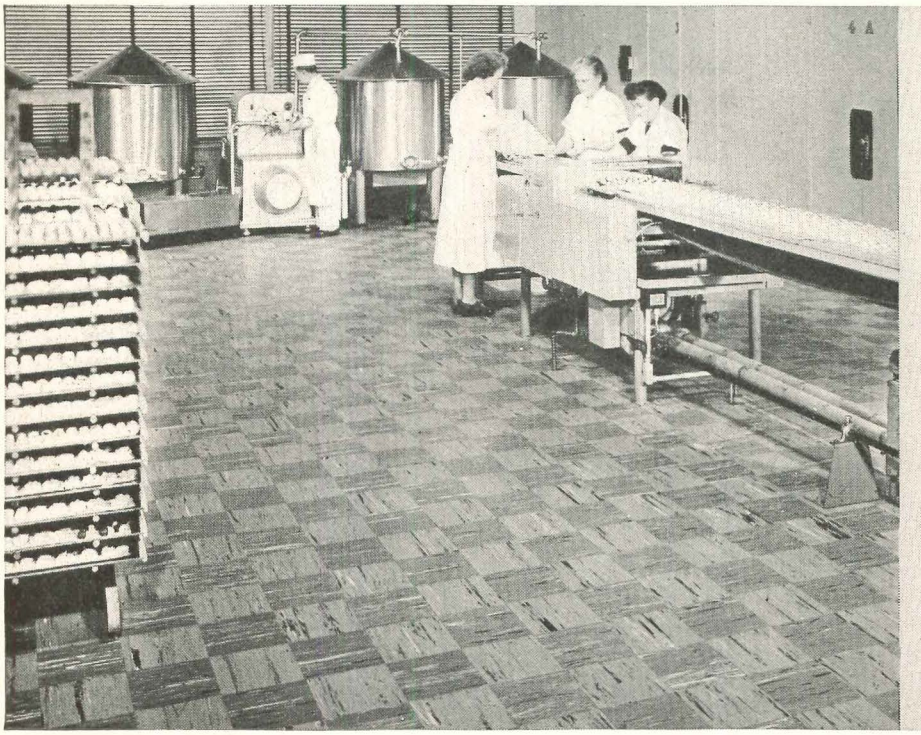
The Kentile Flooring Contractor is that expert... a technically trained and experienced man who is fully qualified to select just the right floor... the one floor that will provide the longest life at the lowest cost... as well as minimum maintenance expenses.

Whether your flooring problem is one room in a home or store... or thousands of square feet in a factory, warehouse or office, it will pay you to call in the Kentile Flooring Contractor. For his name, look under FLOORS in the classified pages of your phone book... or write Kentile, Inc., 58 Second Ave., Brooklyn 15, New York. In Canada, T. Eaton Co., Ltd.



• Where rugged, extra-heavy duty flooring is required, the first choice is SPECIAL (greaseproof) KENTILE... its colorful beauty resists the wear of constant exposure to industrial and cooking greases and oils, alkali, alcohols and most acid solutions. It is of special value in providing long-range economies in installations like the one shown here; restaurants and cafeterias; light manufacturing areas; laboratories; and garages. SPECIAL (greaseproof) KENTILE can be installed over any smooth, firm interior surface... even below grade over concrete in direct contact with the earth.

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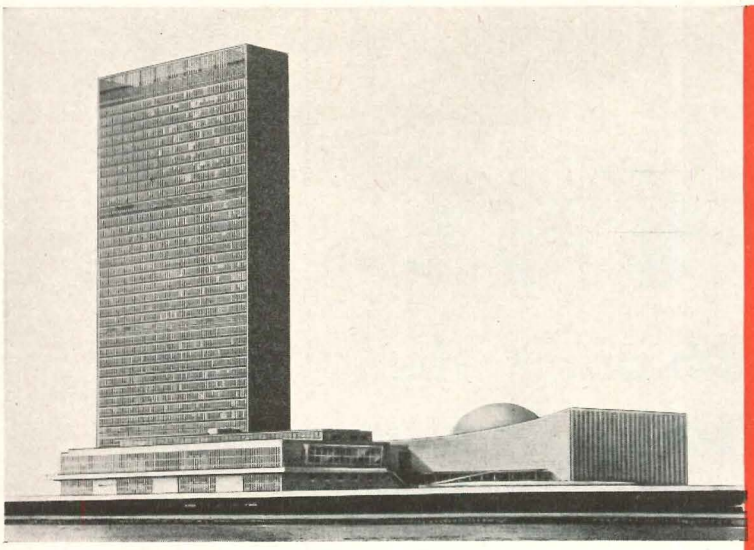
Positive Proof of

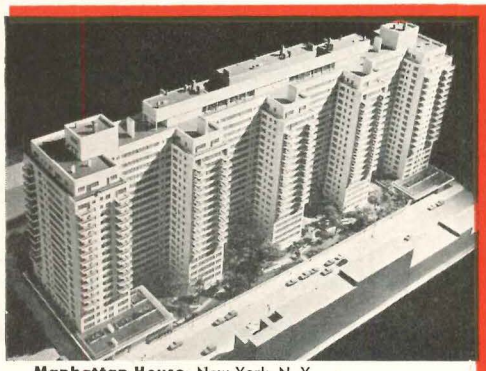


United Nations Group, New York, N. Y.
Building project of the ages, dedicated to world peace and progress.
Director of Planning: WALLACE K. HARRISON
Contractor: FULLER, TURNER, WALSH & SLATTERY, INC.

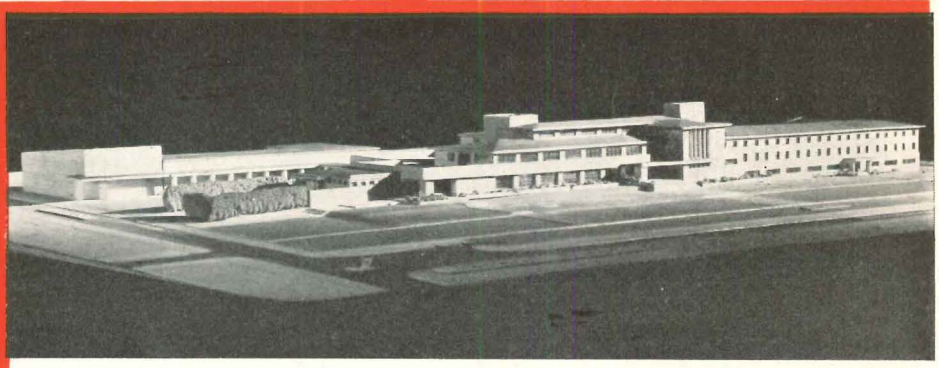
3440 Wilshire Boulevard, Los Angeles, Cal.
Monument to West Coast progress and development, this modern, efficient office building.
Architects: CLAUD, BEELMAN-HERMAN SPACKLER, ASSOCIATES
Contractor: C. L. PECK

Clinical Research Building, National Institute of Health, Bethesda, Md.
Largest combination laboratory-hospital building of its kind in the United States.
Designed by: PUBLIC BUILDING SERVICE, GENERAL SERVICE ADMINISTRATION, N.I.H.
Contractor: JOHN MCSHAIN, INC.

St. John's Church, Los Angeles, Cal.
Fine example of modern architecture applied to church work.
Architects: ROSS G. MONTGOMERY & WILLIAM MULLAY
Contractor: J. A. MCNEIL CO.



Manhattan House, New York, N. Y.
A.I.A. award winner in apartment house field.
Architects: MAYER AND WHITTLESEY; G. HARMON GURNEY, Chief Architect for the owner — New York Life Insurance Co.
Contractor: CAULDWELL-WINGATE CO.



Student Memorial Union Building, Texas A & M College, College Center, Texas
Fine addition to one of the Southwest's leading colleges.
Architect: CARLTON ADAMS
Contractor: ROBERT E. MCKEE, INC.

LOCKWOOD LEADERSHIP

again and again LOCKWOOD is the winner!

Here is dramatic evidence of the dominant position LOCKWOOD has attained in the builders' hardware field. In an ever mounting list of important projects from coast to coast, more and more architects and contractors are swinging to LOCKWOOD as a standard of quality and dependability. No other line can match LOCKWOOD'S combination of completeness, uniform quality and service.

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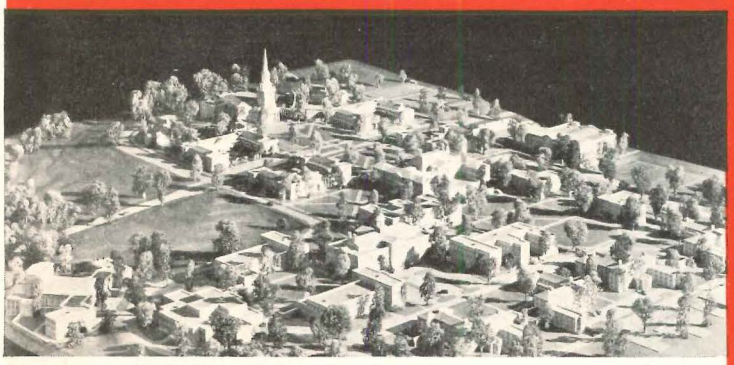
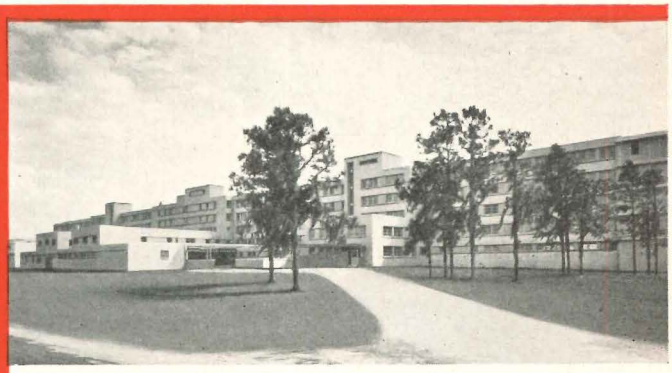
Los Angeles Statler, Los Angeles, Cal.
Largest hostelry west of the Mississippi; $21,000,000 investment in the future of the West Coast.
Architects: HOLABIRD & ROOT & BURGEE
Contractor: ROBERT E. MCKEE, INC.

Dallas Morning News, Dallas, Texas
Outstanding modern plant in the newspaper publishing field.
Architect: GEORGE L. DAHL
Contractor: BECK CO.

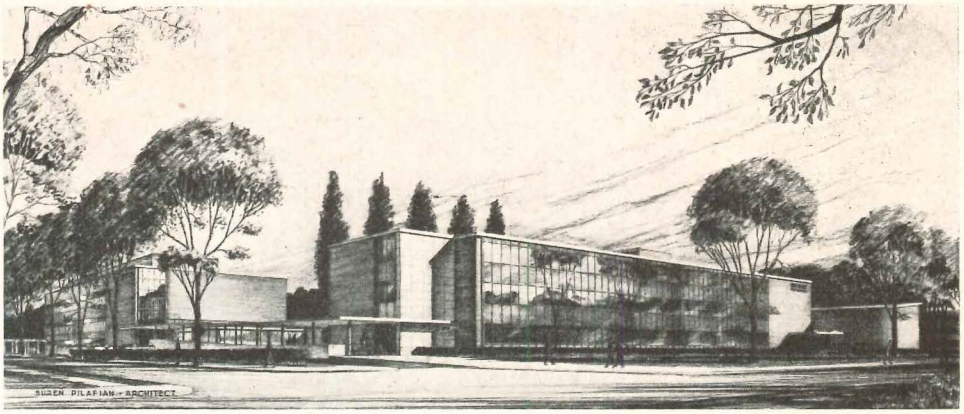


Wake Forest College, Reynolda, N. C.
Huge project to construct entire new college — 21 buildings, first group — ultimately planned 40 buildings.
Architect: JENS FREDERICK LARSON
Contractors: (to date) GEORGE W. KANE; FOWLER JONES CONSTRUCTION CO.



Southwest Tuberculosis Sanitorium, Tampa, Fla.
Modern 540 bed hospital with complete operating suite.
Architects: REYNOLDS, SMITH & HILLS
Contractor: ARNOLD CONSTRUCTION CO.

Multi-Color



Wayne University Community Arts Building; view from the southeast. Parts of the Art, Music and Speech Departments of the College of Liberal Arts and of the College of Education will be housed in the building, which will also have a 600-seat auditorium for the use of all colleges and schools of the university as well as the public

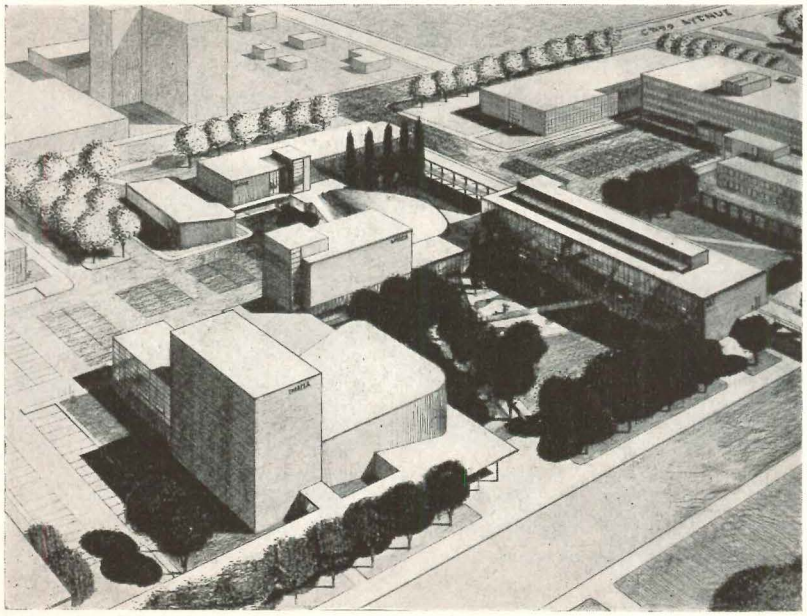
NEW FINE ARTS CENTER PLANNED FOR WAYNE UNIVERSITY

PLANS FOR a Community Arts Building for Wayne University, Detroit, Mich., have received approval from the Detroit Board of Education. Architect for the structure is Suren Pilafian.

Planned to house parts of the art, music and speech departments of the College of Liberal Arts and of the College of Education, the building is to include eventually a 600-seat auditorium for the use of all colleges and schools of the university and the general public as well. The entire building will be able to accommodate over 3000 persons at one time.

Separate multi-story wings are provided for each of the three departments. Each wing is connected at the first floor to the others and to the auditorium and an outdoor exhibition area. The architect has explained that this arrangement provides better acoustical isolation and natural illumination for each department than a more compact arrangement would afford. This is achieved at no additional cost, and provides for more efficient spatial relationships within each department, Mr. Pilafian noted. In addition, the scheme makes it economically possible to construct each division separately, if necessary, and permits flexible enlargement of each unit.

Landscaped sculpture court (right foreground) is planned for space surrounded by art wing, exhibit areas, speech wing and future theater (left foreground). Court will have sloping lawn for use as outdoor theater for simple performances. Outdoor study facilities will be provided



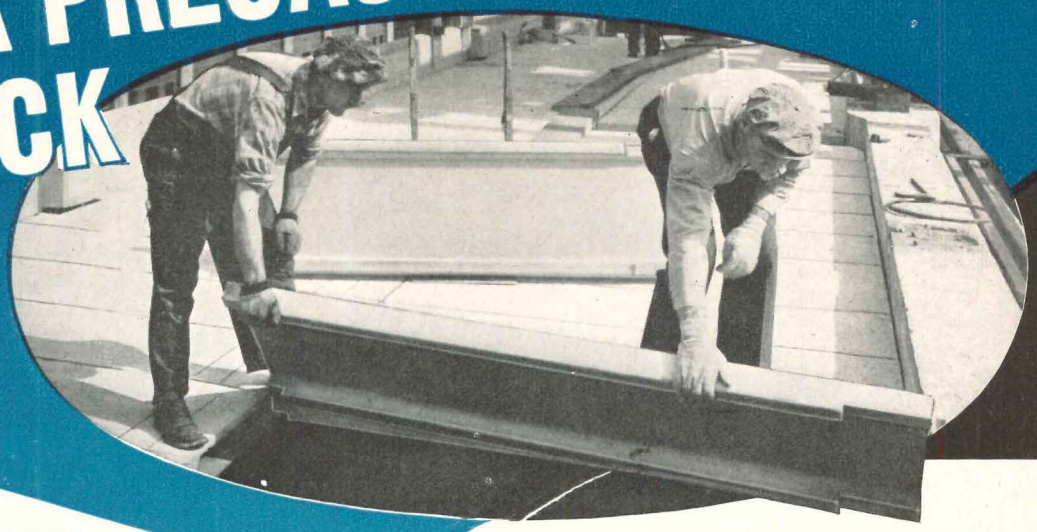
Multi-Color

The music wing is a three-story structure housing rehearsal rooms (separated from the rest of the buildings by one-story sound-lock vestibules), classrooms, practice rooms, study and listening rooms, offices and a library. The four-story art wing, including a fully-used basement, contains studios and shops for the various arts and crafts and is planned to provide good north light. The speech wing is five stories high, again including a fully used basement, and houses radio and television studios in addition to departmental offices, specialized classrooms and laboratory facilities.

Construction will be largely of concrete, with structural steel framing employed over tall spaces where fire-proofing is not required. Exterior facing will be of brick with stone and aluminum trim. Windows will be largely glass block on the south and heat-absorbing blue glass on some of the east and west exposures. Spandrel facing materials will be light weight insulated panels coated with polyester plastic or steel sheets finished with porcelain enamel.

Why It Pays . .

TO USE A PRECAST CONCRETE ROOF DECK



ROOF DECKS OF IMPERMANENT MATERIAL		FEDERAL - *Featherweight* PRECAST CONCRETE ROOF DEC
UNDULY SHORT LIFE		LASTS AS LONG AS THE BUILDING ITSELF
SUBJECT TO ROT, RUST AND DISINTEGRATION		IMPERVIOUS TO SMOKE, CINDERS, FUMES, ETC.
REQUIRE PAINTING, REPAIRS—EVENTUAL REPLACEMENT		NO MAINTENANCE, EVER— NO PAINTING, REPAIRS, REPLACEMENTS
FIRST COST IS NOT THE ONLY COST!		LOWEST OVERALL COST— FIRST COST IS THE ONLY COST
INVOLVE RUST-INVITING METAL TEES OR THIN SHEETS		STRUCTURAL CONCRETE CANNOT RUST OR DETERIORATE
INSTALLATION SLOWER AND DEPENDENT ON WEATHER CONDITIONS		GOES ON FAST IN ANY WEATHER— GOES ON FOREVER . .

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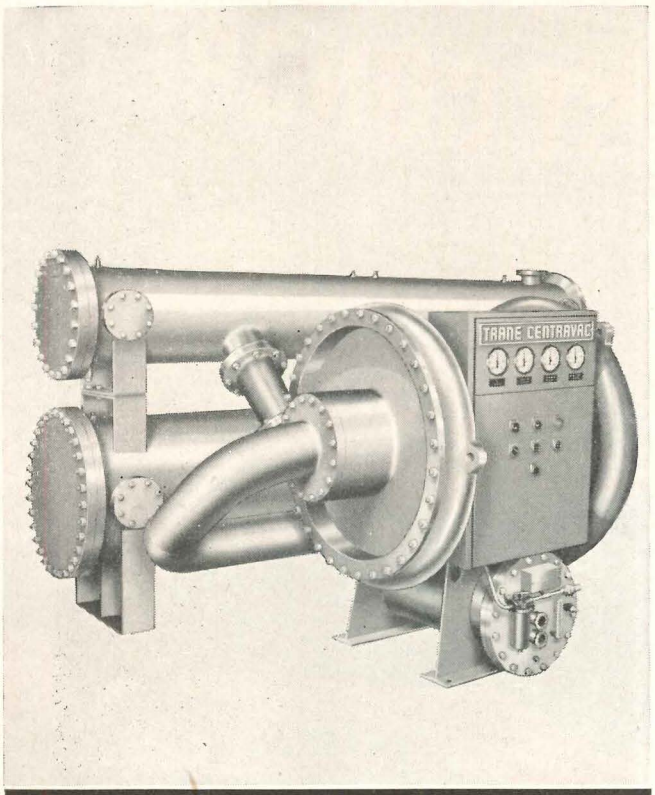
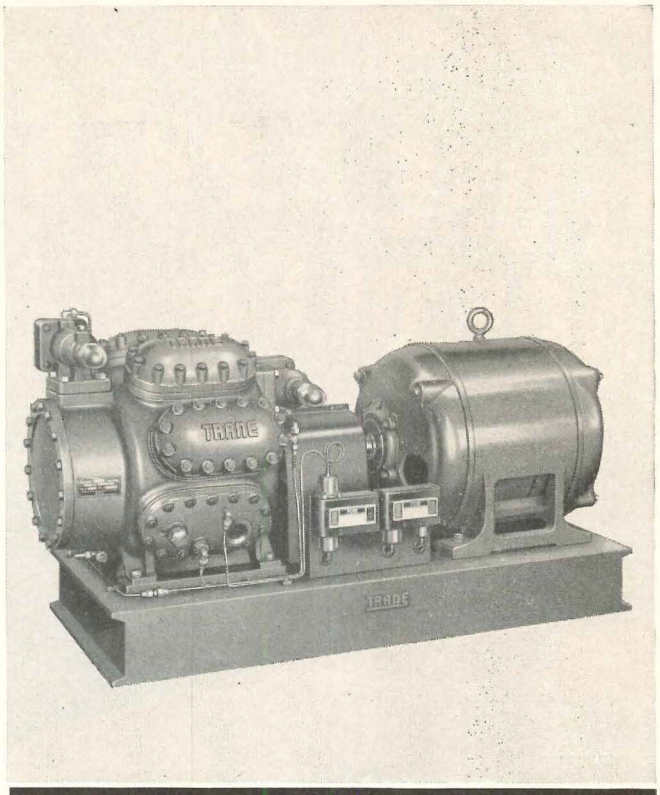


Trane CenTraVac — Hermetic Centrifugal Refrigerating Unit — Six models starting at 45 tons.



Trane Reciprocating Compressor and Condensing Units — Six models up to 50 tons in capacity.

From Equipment Room to Penthouse

Many architects, engineers and contractors are discovering new advantages in the complete Trane line of heating, cooling and air conditioning equipment.

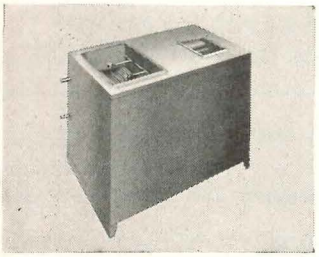
Trane manufactures equipment ranging all the way from a centrifugal compressor capable of developing more than 200 tons of refrigeration to a cooling coil small enough to carry under your arm. All the way from a tiny radiator valve to a 108" fan.

All this equipment is designed by one integrated staff of product engineers all working together. All this equipment is built in Trane plants under one all-inclusive factory staff. All Trane products are carefully tested and rated by one complete laboratory directed by a single management.

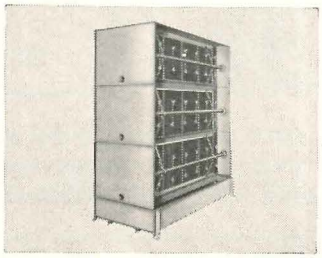
Matched Products. The result — all Trane products are designed and manufactured for use together. Each product is matched with every other Trane product for maximum service.

When Trane products are used together to provide air conditioning, heating and cooling for any type of building or for process, they offer:

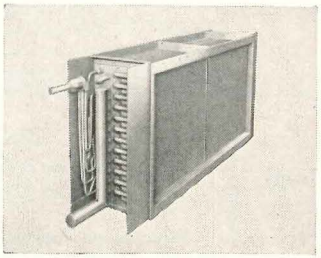
1. Undivided Responsibility—one manufacturer—Trane —assumes the complete responsibility for the correct rating and performance of all the equipment if properly installed and controlled—no blaming the maker of the evaporative condenser if the compressor won't work.



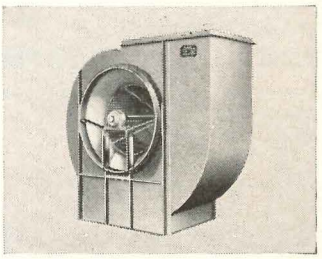
Trane Evaporative Condenser—For condensing refrigerants in the air conditioning system with the minimum use of water.



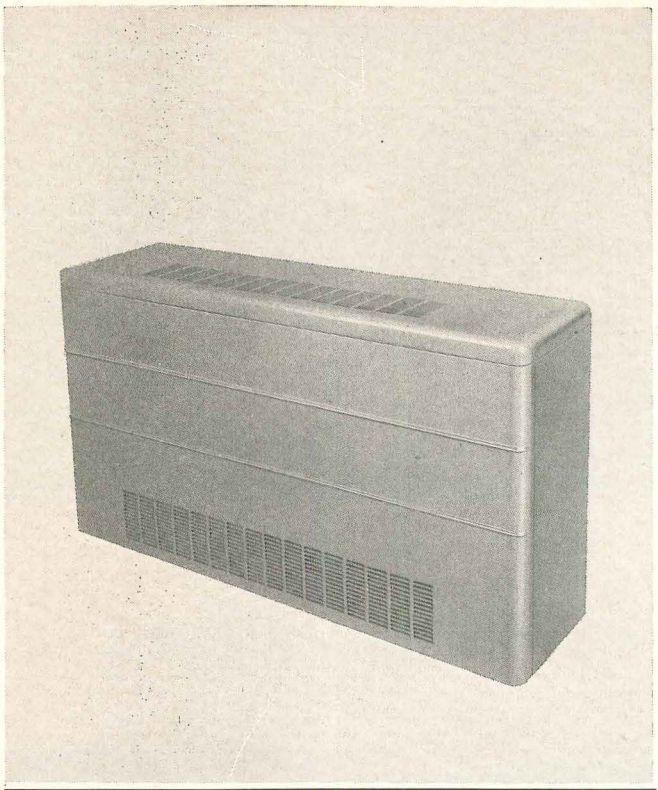
Trane Sprayed Coil Unit—For built-up systems requiring separate fan motor and drive and filters. Heats, cools and washes air.



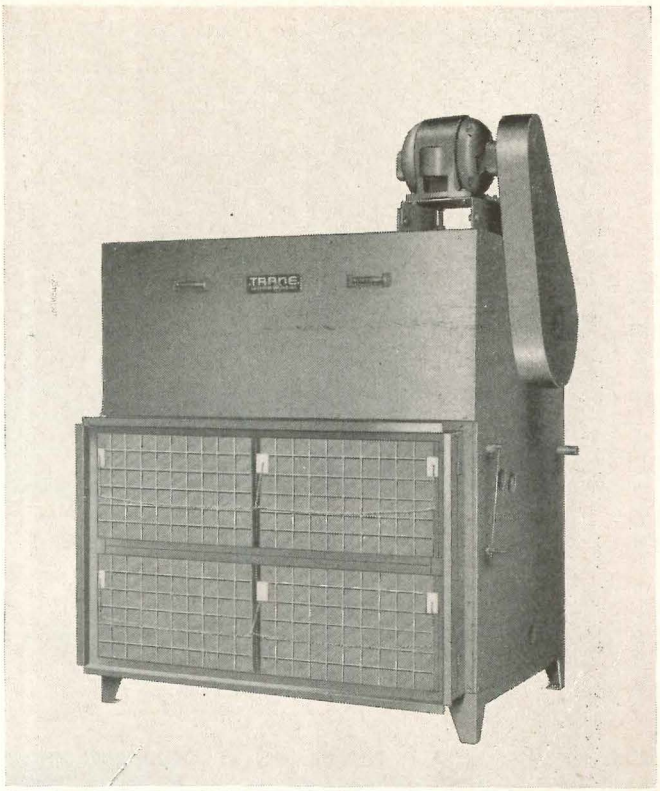
Trane Cooling Coils—For use with clean chilled water or well and municipal water or with direct expansion refrigerants.



Trane Centrifugal Fans — In Class I and II construction with backwardly inclined or forward curved wheel construction.



UniTrane Air Conditioners — Available in two styles with one, two or three fan arrangements.



Trane Climate Changers — Twenty-four standard combinations of coils, fans, humidifiers, filters, dampers, 450 to 16,250 cfm.

Trane Air Conditioning Products Serve Everywhere

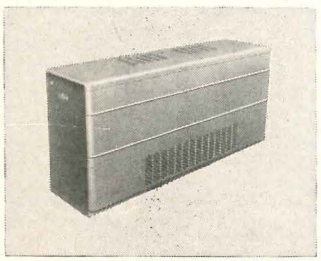
2. One Source of Supply — all products are sold by the same high-grade sales-engineers who are trained carefully as equipment consultants. They know Trane products and they know your problems of heating and air conditioning. You deal with one salesman instead of many.

3. One Set of Catalogs — you can select all the products you need for air conditioning from one catalog binder. No searching around for ratings and dimensions—no necessity for correlating ratings and sizes. Everything is contained in those big Trane binders that fit so handily at your elbow.

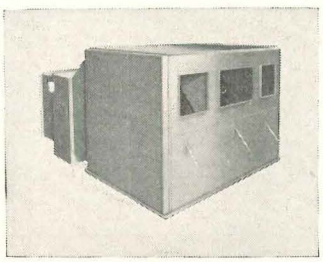
4. Complete Flexibility — all Trane products are available in a complete range of sizes and models. Regardless of your problems there is Trane equipment to fit your requirements exactly — no fitting your requirements to inflexible equipment. So flexible is the Trane line that you can create a 50-ton air conditioning system in at least 10 different ways.

More and more architects, engineers and contractors are specifying and installing Trane equipment for these reasons. Why not try the undivided responsibility of Trane Heating, Cooling and Air Conditioning Equipment on your next project?

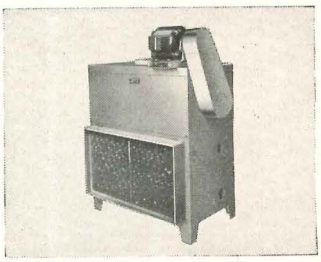
Whatever your air conditioning problem is, look for the answer in an undivided responsibility system of matched Trane products.



Trane Custom-Air—Deluxe air conditioning system for multiroom buildings. Controls temperature and humidity separately.



Trane Multi-Zone Climate Changers—A single air conditioner that handles up to six zones in the same building.



Trane AA Air Conditioner—A compact year-around unit for the small apartment, office, hotel or tourist court.

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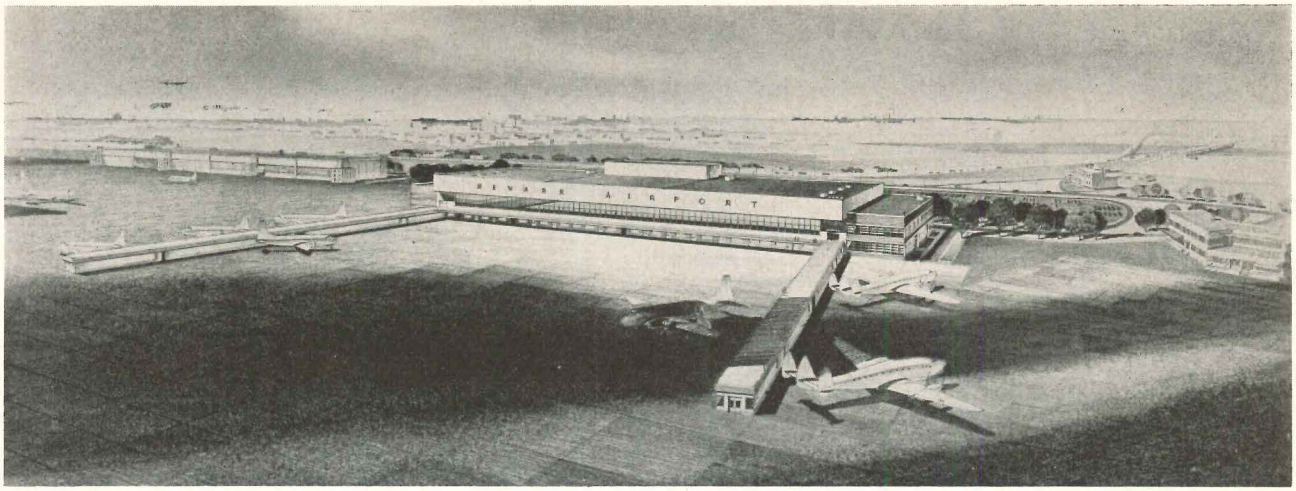


The Port of New York Authority

Above: new terminal building seen from field with loading arcades at either side

NEW TERMINAL UNDER WAY FOR NEWARK AIRPORT

CONSTRUCTION is in process for a new $8,500,000 Terminal Building for the Newark, N. J., Airport operated by the Port of New York Authority. Reopening of the airport, which has been the subject of controversy ever since a series of three disastrous air crashes in nearby Elizabeth forced it to close February 11, 1952, is now expected to take place within the next few months.

Architect of the terminal is the Port of New York Authority; A. Gordon Lorimer is consulting architect.

Steelwork for the new building has already been erected, and construction has passed the halfway mark. Completion is expected in summer 1953 for the main structure and one of the loading fingers. The other finger is scheduled for completion in December 1953.

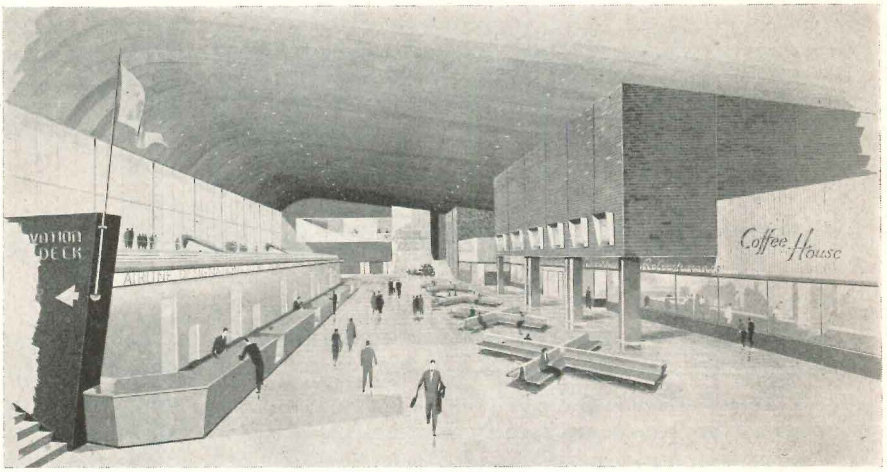
The new terminal will have five times as much floor space as the present outmoded Administration Building, which is 18 years old. The existing building is to be converted to other uses.

Hangar Construction Used

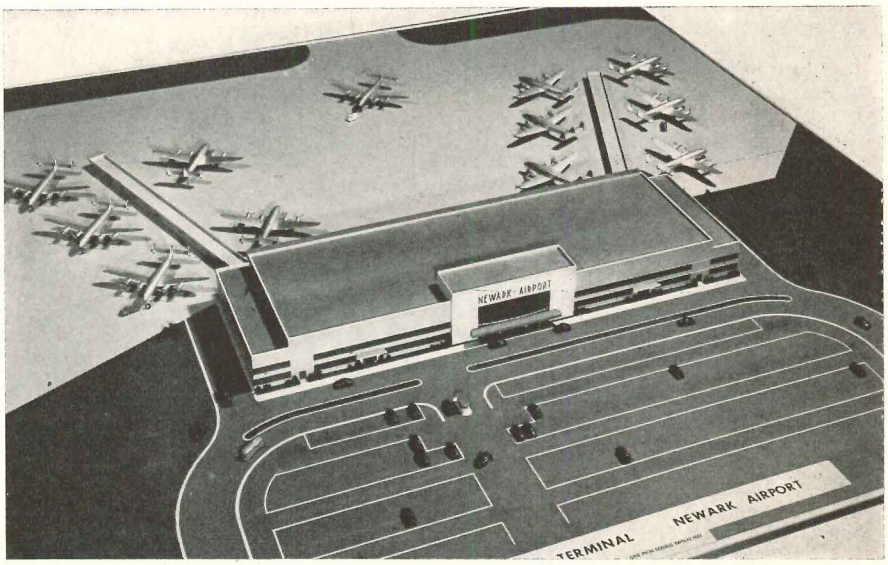
An interesting constructional feature of the new building is its adaptation of a basic structural framework usually employed in hangar construction. Purpose of this construction is to permit easy conversion and maximum flexibility for other purposes whenever the building is no longer useful in its present role.

The terminal will have a main floor of approximately 93,000 sq ft in area and a surrounding mezzanine comprising 43,000 sq ft. The main floor provides

(*Continued on page 342*)



Above: interior of terminal showing observation deck, airline counters, lobby, shops. Below: model of new building with parking facilities in foreground, aircraft loading areas in background. Finished structure will differ slightly in some details



Always A Show Place—Never A Worry

because this beautiful floor

Never needs waxing!

FOR the decorator's artistic design—for long-lasting durability—choose Goodyear VINYL·TILE, the most practical of all floor coverings—it never needs waxing. All that is required to keep it "first day" smart with ordinary use is an occasional damp mopping.

HAS A BUILT-IN FINISH

Its carefree beauty is a lasting testimonial to the good judgment of architects and decorators who specify VINYL·TILE. This new flooring material by Goodyear is pre-polished at the factory to a lifetime luster. It has a *built-in* finish that retains its luster, and this amazing new VINYL·TILE will not become slippery when wet.

CHOICE OF 24 COLORS

The rainbow range of sun-drenched colors makes flooring of VINYL·TILE as smart to behold as it is easy to maintain. There are 12 exclusive Goodyear marbleized colors and 12 solid colors to choose from for residential installations—a special group of style-right colors for commercial installations—decorator colors that will harmonize with any scheme or layout.

RESISTS "FLOOR KILLERS"

So there you have it: carefree beauty—colors that won't fade or "scrub off"—in a new *all*-vinyl flooring discovery that says "no!" to the actions of greases, fats, oils, mild acids and commercial cleansers. No wonder it is ideal for any type of commercial application as well as for the home.

You make a wise choice indeed when you specify new Goodyear VINYL·TILE—available in sheet or tile at flooring dealers' and contractors' everywhere. For specification data, simply write Goodyear, Flooring Department, Akron 16, Ohio.

Specify

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GOODYEAR

Never Needs Waxing!

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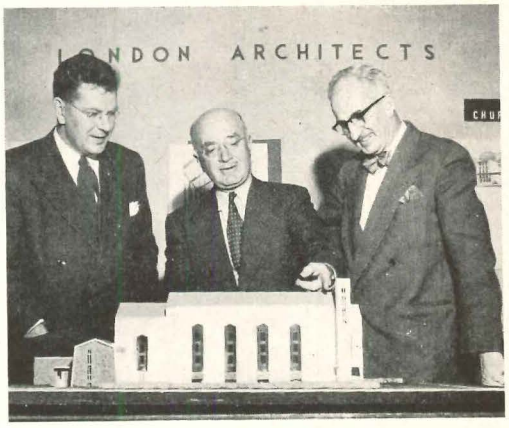
NEWS FROM CANADA *by John Caulfield Smith*

Kitchener-Waterloo Hospital, Kitchener, Ont.; Govan, Ferguson, Lindsay, Kaminker, Maw, Langley, Keenleyside of Toronto, architects

Three Ontario architects are shown at the opening of the London, Ont., architectural exhibit at the public art gallery and museum. Earl Sheppard (center), president of the Ontario Association of Architects, is pointing to a model of Knox Presbyterian Church, Goderich, Ont., designed by Philip C. Johnson (left). With them is Robert D. Schoales, London Board of Education architect and Ontario association treasurer



R.A.I.C. President Finds Building Outlook Good

THE $35.1 MILLION FALL-OFF in construction contracts awarded in September 1952 compared with September 1951, as reported by MacLean Building Reports Ltd., is not regarded with too much concern by R. S. Morris, president of the Royal Architectural Institute of Canada, who sees the slowdown as a temporary one.

Mr. Morris, pointing out that steel restrictions have dammed up certain classes of construction, suggests that the captive demand thus created has now become very great and will keep the industry in the larger centers active for many months when released.

"Considerable expansion of the means of producing building materials has taken place during the last few years," Mr. Morris says. "No serious shortage is to be expected except in steel, which will probably be under heavy demand for at least some months after the removal of restrictions."

As for construction costs, Mr. Morris' opinion is that the substantial increase that has taken place in wage rates has been compensated for by a decrease in prices. He adds: "Given stability in prices generally, we may look forward to fairly stable costs and a high, if somewhat spotty, level of activity."

Continued High Level Seen For 1953 Defense Building

R. G. JOHNSON, president of Defense Construction (1951) Ltd., says defense construction contract volume will remain high, that there would be many more tender calls for substantial projects, and a big bulk of smaller jobs, during the second half of the current fiscal year.

Mr. Johnson told the Maritime Regional Conference of the Canadian Construction Association that the dollar total of defense construction contracts awarded in 1952–53 will be "similar" in amount to that of 1951–52 when the figure was $205 million. And he reminded C.C.A. members that the size of the over-all defense construction program has risen to an estimated $500 million in contrast to the initial conception of a program approximating $200 million.

A new diversification of the crown company's activities was outlined by Mr. Johnson. In addition to handling, as hitherto, all new defense construction projects, it is now responsible for (a) rehabilitation and maintenance works in Canada, which until recently were the responsibility of another branch of the Department of Defense Production; (b) the construction aspects of the capital assistance plan and certain phases of the Colombo plan and (c) defense construction projects in France being carried out by French contractors for Canadian service personnel.

Steel Controls Relaxed, May End Before 1953

THE CANADIAN GOVERNMENT appears to have adopted a plan to ease present steel controls. With the U. S. steel strike over, and domestic steel production soaring to new heights, general contractors and builders are now getting permission to buy as much as 200 tons at a time.

The generosity of the Government's steel administration in making allocations is being applied to all types of construction with the exception of breweries, liquor stores and recreational centers such as dance halls, bowling alleys and theaters.

As pressure of demand for steel eases, the 200-ton ceiling may go even higher. Informed sources estimate that by the

(*Continued on page 32*)

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★ RESTAURANTS

★ INSTITUTIONS

and

★ PROCESS INDUSTRIES

Everywhere

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2000 pound and 5000 pound
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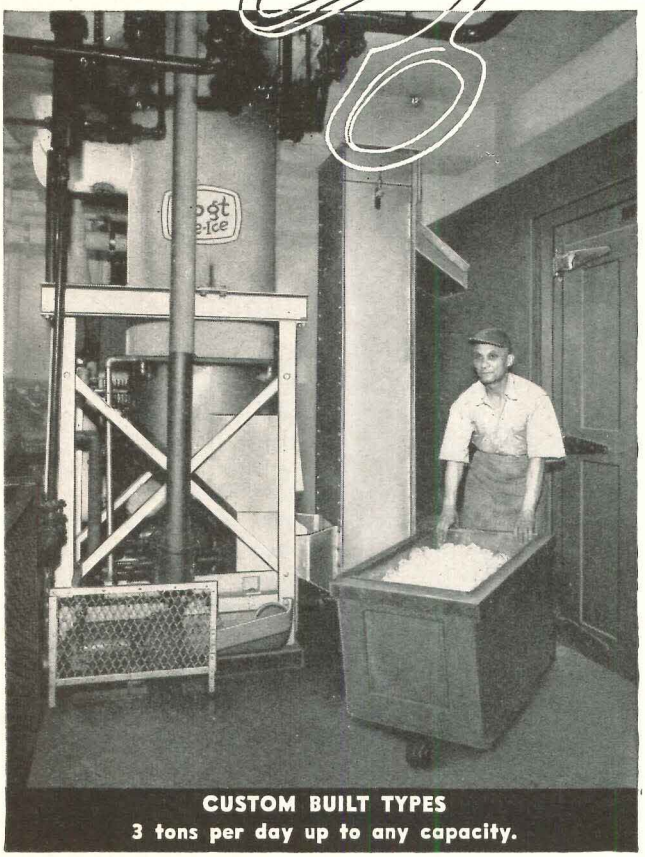
Vogt *Automatic*

TUBE-ICE MACHINE



CUSTOM BUILT TYPES
3 tons per day up to any capacity.

Patent Nos.: 2,200,424 - 2,239,234 - 2,396,308 - 2,444,514 - 2,453,140.
Other patents pending.

and here's why:

$AVES SPACE: The 2000 Pound Capacity Package Unit occupies 14½ sq. ft. of space and a 30 ton capacity custom built unit only 64 sq. ft. . . . 90 PER CENT LESS SPACE than required by tank-ice equipment of equal capacity.

$AVES FREEZING TIME: Only 13 minutes needed to freeze, thaw and evacuate "crushed" Tube-Ice and 40 minutes for "cylinder" Tube-Ice as compared to 40 to 50 hours for tank-ice.

$AVES POWER: The Tube-Ice process utilizes direct application of the refrigerant to the ice freezing surfaces thereby eliminating all power costs incidental to brine systems.

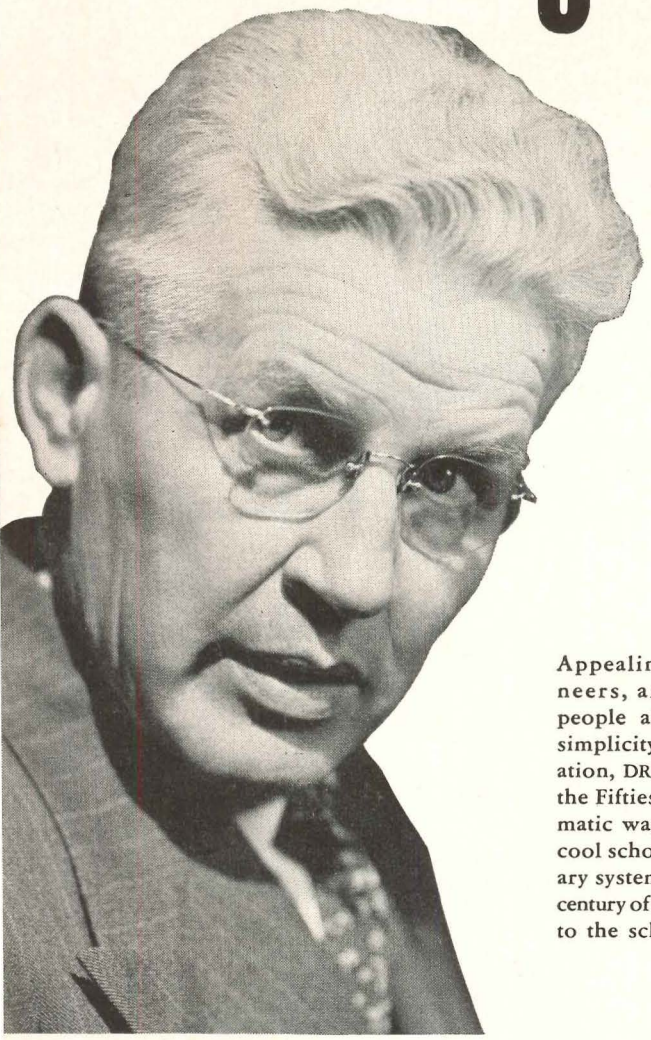
$AVES LABOR: Being wholly automatic in operation and discharging ice in its ultimate sized form, the self-contained Tube-Ice Machine unit requires no labor and only a minimum of supervision.

Write for Descriptive Literature

HENRY VOGT MACHINE CO., Louisville 10, Kentucky

BRANCH OFFICES: NEW YORK, PHILADELPHIA, CLEVELAND, CHICAGO, ST. LOUIS, DALLAS, CHARLESTON, W. VA.

Engineer Adams gives

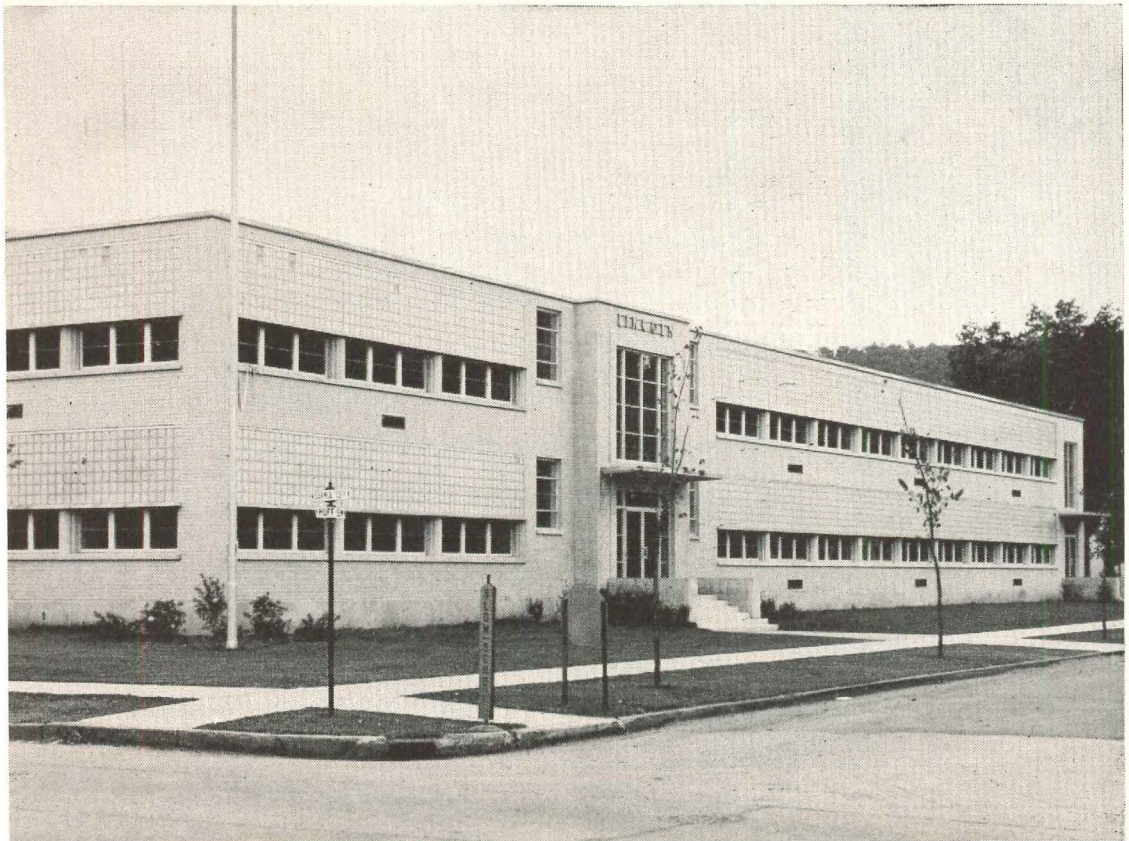


Appealing to consulting engineers, architects and school people alike, for its efficiency, simplicity and economy of operation, DRAFT|STOP is the find of the Fifties. It's the modern, automatic way to heat, ventilate and cool schoolrooms—a revolutionary system marking nearly half a century of Herman Nelson's service to the school building industry.

Here's what Consulting Engineer James Ada has to say about schoolroom heating and ve tilation!

"Technical research on thermal factors su as the sun and wind shows that most schoc need a good ventilating arrangement to reg late their central heating systems. I find ideal system in Herman Nelson DRAFT|STO

"By means of a sensitive thermostat, t DRAFT|STOP System is tuned to the individu heating, cooling and ventilating requirements each room. Classrooms are never overheated underheated. Fuel savings are surprisingly lar And at all times, regardless of the quirks of t weather, DRAFT|STOP assures a constant healt room temperature of 70°-72°. It's no surpri that schools equipped with DRAFT|STOP ha the perfect indoor climate for work and study



Designed for modern learning Lincoln Elementary School, Winon Minnesota. Here, day by day, Herm Nelson DRAFT|STOP is at work insu ing a healthful, indoor climate f busy students. Note the DRAFT|STC intake grilles below the windov Superintendent of Schools, Harv D. Jensen; Superintendent of Buil ings and Grounds, John E. Timmor Architects and Engineers, Boyu Schubert and Sorensen.

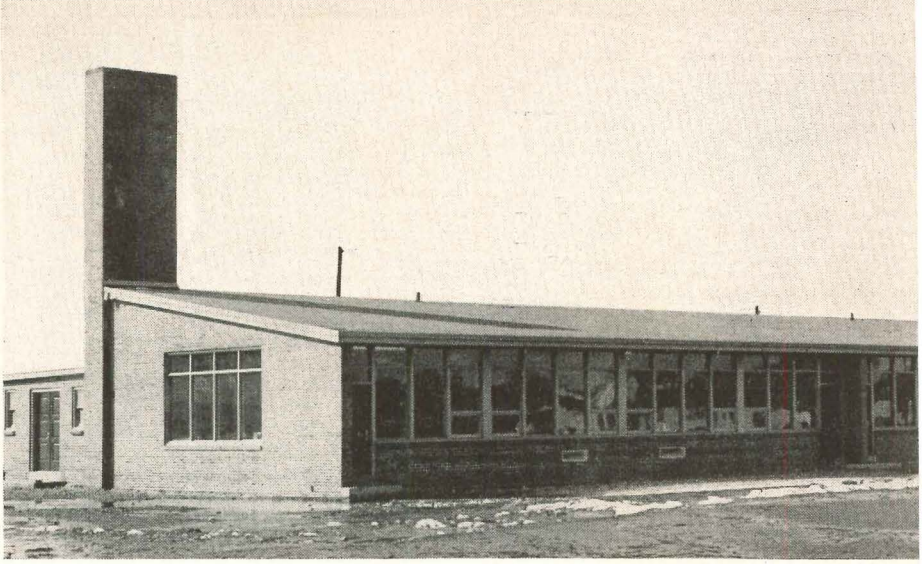
See DRAFT|STOP Demonstrate

If you haven't seen the new Herm Nelson movie, "Design for Lear ing", you'll enjoy its entertainir presentation of the planning of modern school. To arrange for showing of this picture right in yo own office, phone the local Herm Nelson representative or write t home office.

his angle...

And here's something else, Mr. Adams! RAFT|STOP traps cold air downdraft created y large window areas before the cold air can vish across the floor. Children are no longer arassed by cold ankles and shoulders. Today, s more and more schools are experiencing iis new adventure in air handling, there is ss discomfort due to drafts—not to mention better environment for learning.

If you are concerned with a new school roject or a school modernization program, llow the advice of consulting engineers, chitects, teachers and administrators everyhere—specify Herman Nelson DRAFT|STOP. ou'll be in good company! For further infor-ation, write Dept. AR-11, Herman Nelson ivision, American Air Filter Company, Inc., oline, Illinois.



Lincoln School is one of more than a hundred new schools in use this fall in which heating, ventilating and cooling are controlled by Herman Nelson DRAFT|STOP. DRAFT|STOP is the unique system which eliminates cold drafts by drawing window-chilled air down through grilles and back into the unit ventilator. Thus the draft is stopped before it starts.

Lincoln School, Menominee, Michigan. Kindergarten classroom shown above. Architect, Harry W. Gjelsteen; Consulting Engineer, Louis Resnick; Superintendent of Schools, M. W. Robinson.

MORE SCHOOLS INSTALL DRAFT|STOP

East, west, north, south—wherever new schools and school additions are built, there you'll find the Herman Nelson DRAFT|STOP System, providing efficient heating, ventilating, and cooling of classrooms. Here are a few recent installations:

Junior High School
Rantoul, Illinois

Engineers Building
Valparaiso University
Valparaiso, Indiana

St. Mary's School
Ottumwa, Iowa

Stevens Ave. Elementary School
Portland, Maine

Beltsville Elementary School
Beltsville, Maryland

Henry Grew School
Hyde Park, Mass.

Eden Park School
Cranston, Rhode Island

Lincoln School
Pierre, South Dakota

Whittier School
Bay City, Michigan

Appleton School
Appleton, Minnesota

Frazier Elementary School
Brentwood, Missouri

George Washington School
Morristown, New Jersey

New Elementary School 18th
Snyder, New York

Pleasant View School
Canton, Ohio

St. John's Parochial School
Bellefonte, Penna.

Cherrydale Elementary School
Arlington County, Va.

McKinley School
Wauwatosa, Wisconsin

DRAFT STOP **HERMAN NELSON**

SYSTEM OF CLASSROOM
HEATING AND VENTILATING

CANADA

(*Continued from page 28*)

end of the year the Government may lift all bans on the use of steel for any type of construction and on the amount of steel that may be stockpiled by any company.

The Government's steel administration is issuing permission freely to companies which want to get as much as 500 tons of ingot steel from American sources, but it still is keeping a tight hold on steel obtained on allocation through the U. S. Government's Controlled Materials Plan. It probably will continue to do so for months.

Reason for this is that CMP was devised to coordinate channeling of steel first to defense projects and then to essential industry. Canada's allocation — roughly about one third of her domestic production — was granted to help Canadian defense and defense-supporting industries fight steel scarcities in Canada.

The Government distributes this steel, roughly equivalent to about one million ingot tons a year in various fabricated states, strictly on the basis of essentiality and need. Once Washington eliminates CMP, of course, Canadian industry will be free to scramble for U. S. steel as it did before Korea.

Canadian steel production is rapidly expanding. Steel mills currently are producing about 3.2 million tons a year, and by mid-1952 this is expected to jump to almost four million tons annually.

A. Bruce Etherington of Oakville, Ont., was architect for this laundry building at Oakville

Tax Brake on Building Expected to Ease Soon

Another easing of anti-inflation brakes is expected shortly. Ottawa indicates that deferred depreciation regulations imposed early in 1951 are to be either wiped out or modified considerably. At present, business firms cannot claim for income tax purposes depreciation on certain classes of capital assets acquired or on certain types of new construction

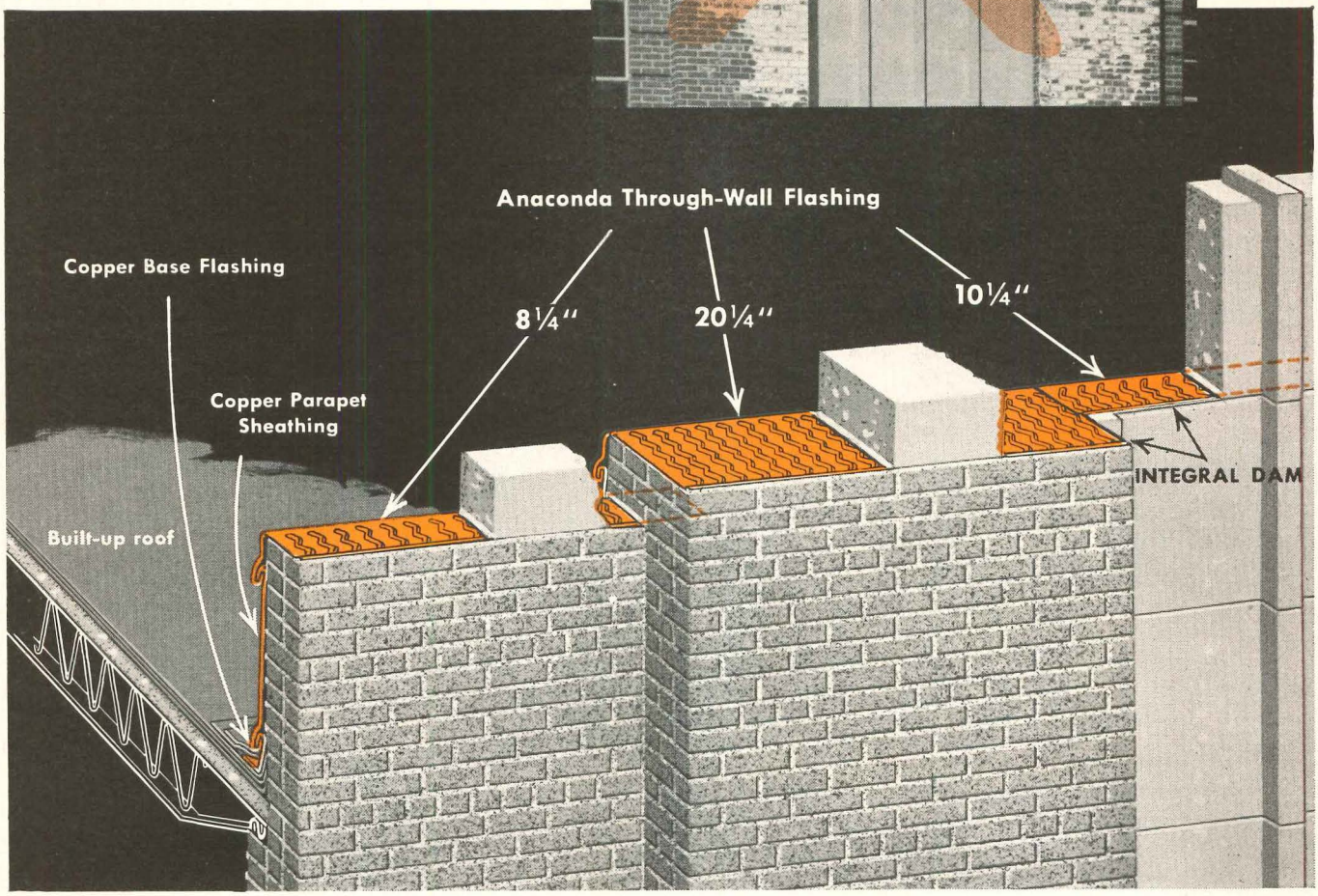
(*Continued on page 34*)

Use copper wisely

How to prevent "white stain" due to coping seepage

UGLY? Yes, and it may also be a sign of more trouble to come. Mineral salt deposits on the surface often indicate moisture *within* the walls. Water entering through shrinkage cracks in the vertical joints of the coping, plus that absorbed by the parapet, seeps downward. One result is shown. Another of more serious consequence is the damage to interior walls and ceilings.

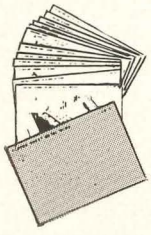
A REMEDY: Through-wall flashing installed as detailed below.



ANACONDA Through-Wall Flashing does a better job. Its zigzag corrugations and preformed dam assure drainage in the right direction—toward the roof. The corrugations embedded in the mortar prevent lateral movement in any direction. The flat selvage bends without distortion to form a neat counter flashing.

Standard types for 8″ and 12″ walls are available. Special sizes may be ordered with variable widths of corrugations and selvages up to an over-all width of 47″. One-piece corners for 8″ and 12″ walls are also standard. For complete information and suggested specifications—write for ANACONDA Publication C-28.

5242



DETAILED DRAWINGS, such as this, of new or improved ways to apply sheet metal are yours absolutely FREE. Write for Portfolio S. The American Brass Company, Waterbury 20, Connecticut.

for better through-wall flashing—
use ANACONDA® copper

CANADA

(*Continued from page 32*)

begun after April 10, 1951, until four years later.

Intention of the order was to slow down the demand for building materials by non-essential enterprises. The supply of steel in particular has now improved enough to permit either removal or modification of the regulations.

Kalen

Grant Baptist Memorial Church, Winnipeg, Man.; Green, Blankstein, Russell & Associates, Architects

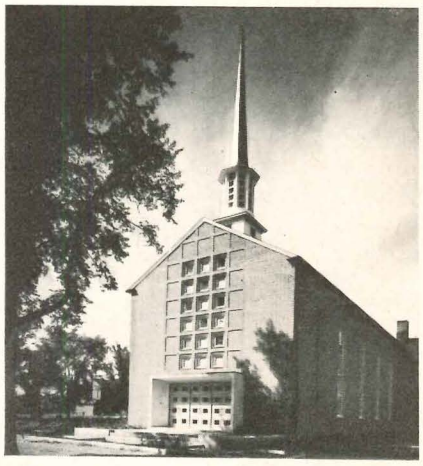
More Money, Fewer Units: Housing Loans Show Gain

Loans approved for new housing during the first seven months of 1952 in Canada by insurance, loan and trust companies totaled $157 million, the Dominion Mortgage & Investment Association reports. For the same period in 1951 the total was $146 million.

The higher cost of new housing and the larger loan available is noted by the fact that the number of housing units financed during this period this year was 23,200 as compared with 23,300 last year. The average for this year for each unit was $6767 as compared with $6267

(*Continued on page 36*)

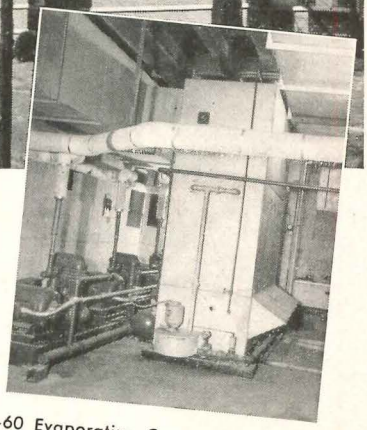
Panda



This building for the Lawrence Park Community Church in a Toronto suburb was recently opened. Architect: Gordon S. Adamson of Toronto

VERSATILE *Acme*
EVAPORATIVE CONDENSERS
fit wide range of applications

The First Church of Christ Scientist in Birmingham, Alabama.



FP-60 Evaporative Condenser installation at the First Church of Christ Scientist.

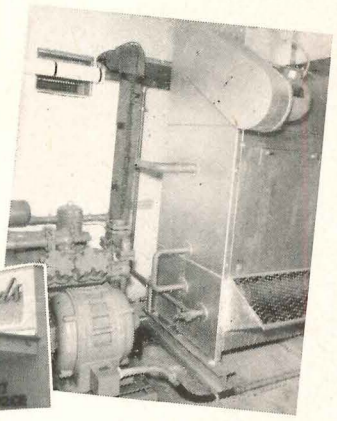
Two recent installations of Acme Evaporative Condensers show the wide range of applications for which they are ideally suited. The ability to conserve water makes the operation very economical, while the functional design assures complete hot weather comfort.

One installation was made in the First Church of Christ Scientist in Birmingham, Alabama, by the Hardy Corporation. The main auditorium seated 650 persons and a Sunday School room accommodated 148 more. Despite the variable load and Birmingham's hot climate the FP-60 Acme Evaporative Condenser has been highly efficient and completely satisfactory.

A completely different installation was made by the Krauss Heating and Ventilating Company, at the Gulf Winds Restaurant in St. Petersburg, Florida. An FP-30 evaporative condenser serving as an important component of the air conditioning system, was installed.

The air conditioning added much to the comfort of the patrons of this beautiful restaurant. Despite the unusual hardness of the water, the equipment is satisfactory in every respect, saving over 95% of the water used.

Write for more complete details on the advantages of Acme Evaporative Condensers



FP-30 Evaporative Condenser installed at the Gulf Winds Restaurant.

The Gulf Winds, popular St. Petersburg, Florida restaurant.

ACME INDUSTRIES, INC. JACKSON, MICHIGAN, U. S. A.

Air Conditioning and Refrigeration Division

CONTINUOUSLY SERVING THE AIR CONDITIONING AND REFRIGERATION INDUSTRIES SINCE 1919

THE RECORD REPORTS

CANADA

(*Continued from page 34*)

in 1951. For new single dwellings the average loan was $7801 as compared with $6797 last year.

Permafrost Building Problems Studied by Research Council

Field study of some building problems created by permafrost has been started by the Division of Building Research of the National Research Council. A small experimental permafrost research station is now being established at Norman Wells, N.W.T., with the cooperation of Imperial Oil Ltd., which operates a small oil field and refinery at this far northern outpost on the Mackenzie River just south of the Arctic Circle.

Permafrost is the name given to ground which is always frozen to great depths; it presents many problems in the northern half of Canada. If the ground consists of soil, the soil will thaw out during the heat of summer to a depth of a few inches. Usually such soil is covered with muskeg and this acts as an insulating blanket, preventing summer heat from penetrating very far. If this surface cover is removed, as it must be for many building operations, conditions are immediately changed. The permafrost will be thawed to much greater depths and so may release a lot of water which often causes trouble in road construction and in the foundations of buildings.

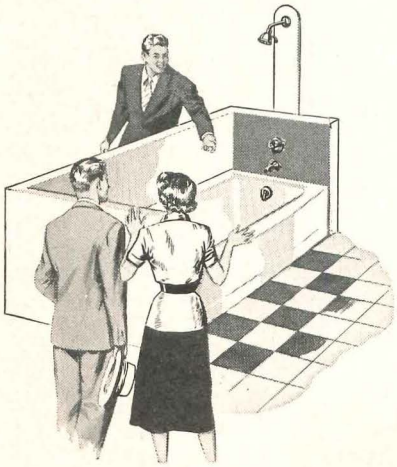
Such problems constitute one of the main groups of peculiarly Canadian building problems which the N.R.C. Division of Building Research has been studying. Present activity in the Canadian North lends urgency to the solution of permafrost building problems. For two summers, the Division has participated in field studies of permafrost in the Mackenzie River Valley. On the basis of these investigations, Norman Wells was selected as the most suitable location for the start of actual field research. J. A. Pihlainen, a graduate civil engineer, is in charge.

It will be some time before the first results of the experiments will be available, since the research is completely dependent upon the climate. A start has been made, however, and Canada now has one of the most northerly building research stations in the world.

KOHLER COSMOPOLITAN BATH

combines fresh beauty, convenience, safety

Cosmopolitan enameled iron recess bath, K-535-F



The clean-cut design that gives the new Cosmopolitan grace of form and proportion also contributes to ease of cleaning, convenience and safety. A wide rim forms a useful bench, the end slopes for comfort, and the bottom is flat and wide. Kohler lavatories and other fixtures for bath and washroom match in style and quality.

The lustrous, glass-hard Kohler enamel is fused to non-flexing iron, cast for strength and rigidity.

The Cosmopolitan is available in the standard 5-foot length, and also 4½ and 5½ -foot lengths. Width is 33 inches at center; height is 16 inches from floor to rim.

Chromium plated fittings include the Niedecken mixer, serving both bath and shower, for simplified control of water temperature.

Kohler Co., Kohler, Wisconsin. Established 1873

KOHLER OF KOHLER

PLUMBING FIXTURES • HEATING EQUIPMENT • ELECTRIC PLANTS • AIR-COOLED ENGINES • PRECISION CONTROLS

By Ernest Mickel

INDUSTRIAL EXPANSION: ODM LOOKS AHEAD

Non-Defense Building Needs Are Also Recognized

WILL THIS COUNTRY continue to expand its industrial base extensively in the months ahead?

With many of the initial expansion programs in the Korean emergency situation now being realized, and with courses for others charted well into the future, this question will have to be answered soon. And the decisions will have strong import for the architect and engineer whose work includes heavy commercial and industrial work.

Much of the seventh quarterly report of the Office of Defense Mobilization has been devoted to discussing this topic.

The report referred to studies now in progress to determine the "wartime need" for antifriction bearings, turbines for naval vessels, hydraulic presses, heavy steel and aluminum castings, heavy forgings, heavy steel plate, various forms of aluminum needed for aircraft and specialized refinery equipment for making aviation gasoline. These are fields in which it might be decided further expansion of production facilities is needed.

Goals already have been set for the specialized facilities required for production of military-type power cranes and shovels, crawler-type tractors, tapered aluminum sheet, electrical connectors, specialized electric motors, specialized copper wire products and precision optical equipment.

Shun Government Building

ODM explained that as studies of specialized industries are completed, findings will be referred to the industries concerned.

Construction of facilities for producing highly specialized equipment presents the problem of attracting investment capital. ODM realizes that such facilities would not be fully used, and therefore not be as profitable, before and

(*Continued on page 294*)

Rufe B. Newman, former head of National Production Authority's Construction Controls Division, who has been appointed chief of the Facilities and Construction Bureau of NPA. Stephen W. Burns, who has been deputy director, has been named director of the Construction Controls Division to succeed Mr. Newman

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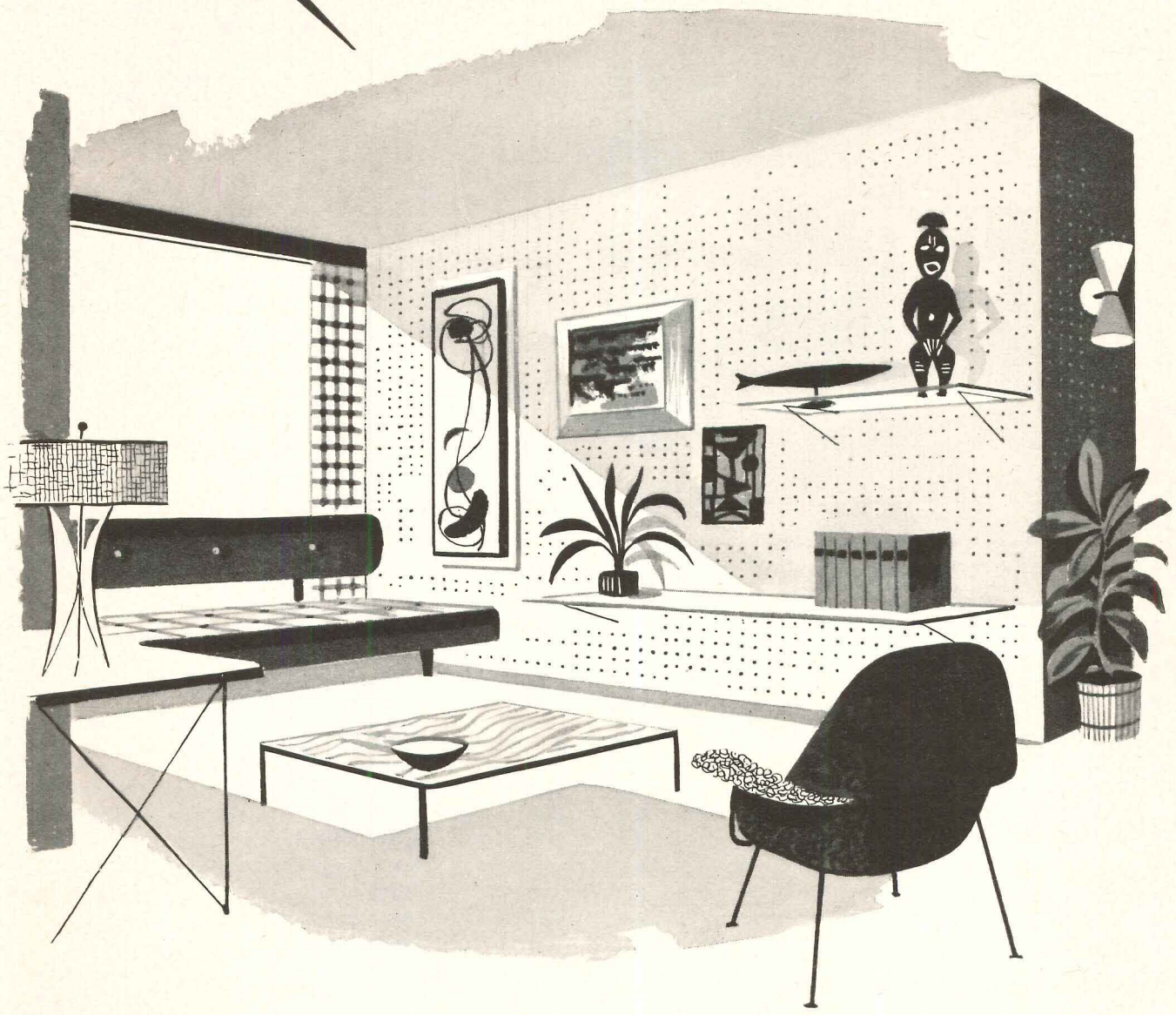
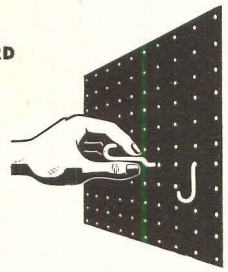


only genuine **PEG-BOARD** combines the **DECORATIVE** value of perforated board with the **UTILITY** of over **60** different hanging fixtures.



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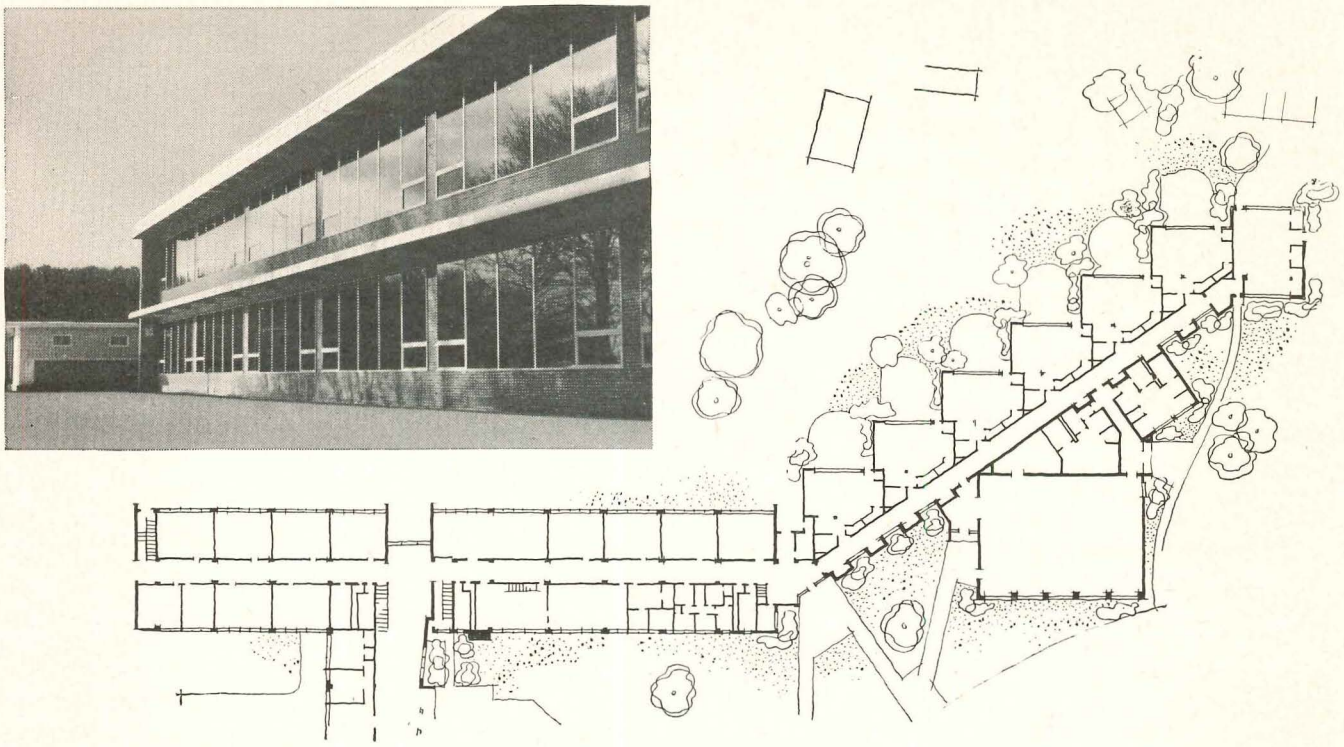
Manufactured by

B. B. BUTLER MFG. CO. INC., 3150 Randolph St., Bellwood, Illinois

How do modern schools in Ohio, Oklahoma, Maine and Arkansas enjoy uniform comfort regardless of weather variations? This is your

school progress report from Honeywell

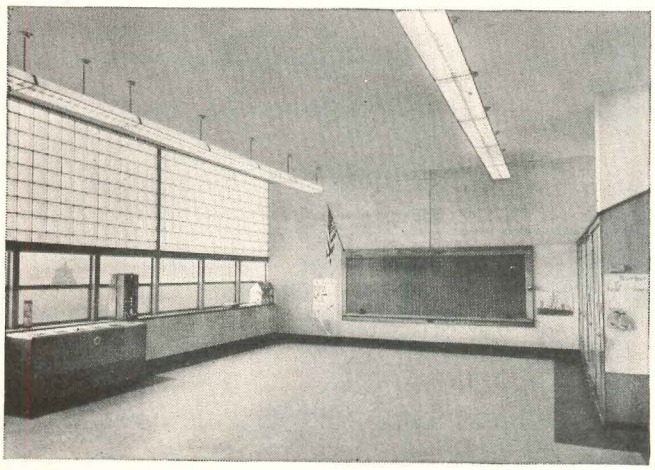


New principle of "coordinated classroom" feature of modern Ohio school

The Indian Hill school, outside of Cincinnati, is receiving wide attention as a fine example of today's modern school. And in this combination primary-high school, the new principle of the "coordinated classroom"—where seating, lighting, noise level, heating and ventilating are all properly controlled—is an outstanding feature. Tests prove that students of all IQ levels make improved progress in such rooms.

At Indian Hill, heating and ventilating are *individually* and *automatically* controlled throughout the school by a complete Honeywell system. For example, every room has its own automatic Honeywell controls. This assures correct temperatures, adequate fresh air and proper humidity for *each classroom*, regardless of number of students, room exposure, outside temperatures or other variations.

Architect: Taylor & Porter, Cincinnati; Engineer: O. W. Motz, Cincinnati; Contractor: Dawson-Evans Construction Co., Cincinnati; Mech. Contractor: B. A. Walterman Co., Cincinnati



Outside weather never affects classroom comfort in new Maine school

Parents in Cape Elizabeth whose youngsters go to the new Pond Cove school never worry about their comfort during Maine's harsh winters. Every classroom has its own Honeywell Grad-U-Stat to individually control temperatures in the room. Heat and fresh air are supplied in direct relation to the exact needs of the students in the room.

School officials are highly satisfied with the performance of their automatic Honeywell control system, and feel it has also made important fuel savings possible.

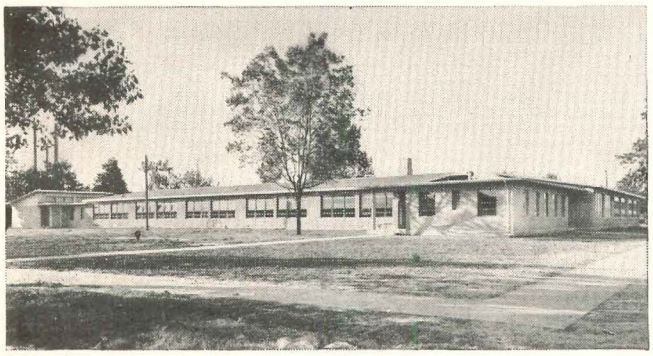
Architect: John Howard Stevens, A. I. A., & John Calvin Stevens II, A. I. A., Portland; Engineer: Fels Company, Inc., Portland; General Contractor: Samuel Aceto & Co., Portland: Mechanical Contractor: E. N. Cunningham Co., Portland.

New Oklahoma A & M Student Union rivals swankiest city club in comfort and facilities

Students, college officials and the whole state of Oklahoma are tremendously proud of their magnificent Student Union in Stillwater. Its size, facilities and decor compare favorably with the finest city clubs across the nation.

Matching these features is the Union's "indoor climate." It's completely automatic – winter and summer! Air conditioning, ventilating and heating are all closely coordinated by zones, with modern Honeywell controls. Thus – no matter where guests or students may be in the building – their comfort is assured, regardless of weather conditions.

Architect: Sorey, Hill & Sorey, Oklahoma City; Associate Architect: Phillip A. Wilbur and Associates, Stillwater; Contractor: Manhattan Construction Co., Muskogee; Mechanical Contractor: Oller Heating Co., Oklahoma City



Arkansas school has temperature control system as modern as its building

Carver school in Little Rock can boast of the inside of their splendidly designed building as well as the outside. Its sixteen modern classrooms have individually controlled unit ventilators to assure a healthful, comfortable atmosphere for youngsters every month of the school year.

Dependable Honeywell controls play an important role in this *automatic temperature control* system, metering heat and fresh air to the *exact needs* of each class room.

Architect: McAninch & Mahnker, Little Rock; Mechanical Contractor: E. W. Daniel Plumbing and Heating Company, Inc., North Little Rock, Arkansas

For additional information on Honeywell Controls for schools or for free school literature, call one of the 96 Honeywell offices, located in key cities from coast to coast. Or, if you prefer, fill in the coupon below and mail to us today.

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Dept AR-11-199, Minneapolis 8, Minn.

Gentlemen: Please send me the school booklets checked below:

☐ *"Honeywell Control Systems for the Modern School"* . . . gives specific data for architects and engineers.

☐ *"Automatic Controls for the Modern School"* . . . gives information for school administrators.

Name _____

Title _____ *School* _____

Address _____

City _____ *Zone* _____ *State* _____

CONSTRUCTION COST INDEXES

Labor and Materials

United States average 1926–1929 = 100

Presented by Clyde Shute, manager, Statistical and Research Division, F. W. Dodge Corp., from data compiled by E. H. Boeckh & Assocs., Inc.

NEW YORK

Period	Residential		Apts., Hotels Office Bldgs.	Commercial and Factory Bldgs.	
	Brick	Frame	Brick and Concr.	Brick and Concr.	Brick and Steel
1925	121.5	122.8	111.4	113.3	110.3
1930	127.0	126.7	124.1	128.0	123.6
1935	93.8	91.3	104.7	108.5	105.5
1939	123.5	122.4	130.7	133.4	130.1
1940	126.3	125.1	132.2	135.1	131.4
1946	181.8	182.4	177.2	179.0	174.8
1947	219.3	222.0	207.6	207.5	203.8
1948	250.1	251.6	239.4	242.2	235.6
1949	243.7	240.8	242.8	246.4	240.0
1950	256.2	254.5	249.5	251.5	248.0
1951	273.2	271.3	263.7	265.2	262.2
June 1952	277.5	274.0	270.1	273.5	270.0
July 1952	278.1	275.0	270.9	273.8	271.4
Aug. 1952	279.7	276.6	274.4	276.5	274.3
	% increase over 1939				
Aug. 1952	**126.5**	**126.0**	**109.9**	**107.3**	**110.8**

ATLANTA

Period	Residential		Apts., Hotels Office Bldgs.	Commercial and Factory Bldgs.	
	Brick	Frame	Brick and Concr.	Brick and Concr.	Brick and Steel
1925	86.4	85.0	88.6	92.5	83.4
1930	82.1	80.9	84.5	86.1	83.6
1935	72.3	67.9	84.0	87.1	85.1
1939	86.3	83.1	95.1	97.4	94.7
1940	91.0	89.0	96.9	98.5	97.5
1946	148.1	149.2	136.8	136.4	135.1
1947	180.4	184.0	158.1	157.1	158.0
1948	199.2	202.5	178.8	178.8	178.8
1949	189.3	189.9	180.6	180.8	177.5
1950	194.3	196.2	185.4	183.7	185.0
1951	212.8	214.6	204.2	202.8	205.0
June 1952	217.7	219.9	210.8	208.2	212.1
July 1952	219.1	220.7	213.5	211.5	215.5
Aug. 1952	219.1	220.7	214.2	211.9	216.8
	% increase over 1939				
Aug. 1952	**153.9**	**165.6**	**125.2**	**117.6**	**128.9**

ST. LOUIS

1925	118.6	118.4	116.3	118.1	114.4
1930	108.9	108.3	112.4	115.3	111.3
1935	95.1	90.1	104.1	108.3	105.4
1939	110.2	107.0	118.7	119.8	119.0
1940	112.6	110.1	119.3	120.3	119.4
1946	167.1	167.4	159.1	161.1	158.1
1947	202.4	203.8	183.9	184.2	184.0
1948	227.9	231.2	207.7	210.0	208.1
1949	221.4	220.7	212.8	215.7	213.6
1950	232.8	230.7	221.9	225.3	222.8
1951	252.0	248.3	238.5	240.9	239.0
June 1952	260.7	254.0	252.2	258.6	251.5
July 1952	260.9	254.2	252.8	259.0	252.9
Aug. 1952	260.7	254.0	253.0	259.1	253.7
	% increase over 1939				
Aug. 1952	**136.6**	**137.4**	**114.4**	**116.3**	**113.2**

SAN FRANCISCO

1925	91.0	86.5	99.5	102.1	98.0
1930	90.8	86.8	100.4	104.9	100.4
1935	89.5	84.5	96.4	103.7	99.7
1939	105.6	99.3	117.4	121.9	116.5
1940	106.4	101.2	116.3	120.1	115.5
1946	159.7	157.5	157.9	159.3	160.0
1947	193.1	191.6	183.7	186.8	186.9
1948	218.9	216.6	208.3	214.7	211.1
1949	213.0	207.1	214.0	219.8	216.1
1950	227.0	223.1	222.4	224.5	222.6
1951	245.2	240.4	239.6	243.1	243.1
June 1952	252.9	247.8	247.2	251.0	251.0
July 1952	253.1	248.0	247.8	251.4	252.4
Aug. 1952	253.1	248.0	248.2	251.6	253.1
	% increase over 1939				
Aug. 1952	**139.7**	**149.7**	**111.4**	**106.4**	**117.3**

The index numbers shown are for combined material and labor costs. The indexes for each separate type of construction relate to the United States average for 1926–29 for that particular type — considered 100.

Cost comparisons, as percentage differences for any particular type of construction, are possible between localities, or periods of time within the same city, by dividing the difference between the two index numbers by one of them; i.e.:

index for city A = 110
index for city B = 95

(both indexes must be for the same type of construction).

Then: costs in A are approximately 16 per cent higher than in B.

$$\frac{110-95}{95} = 0.158$$

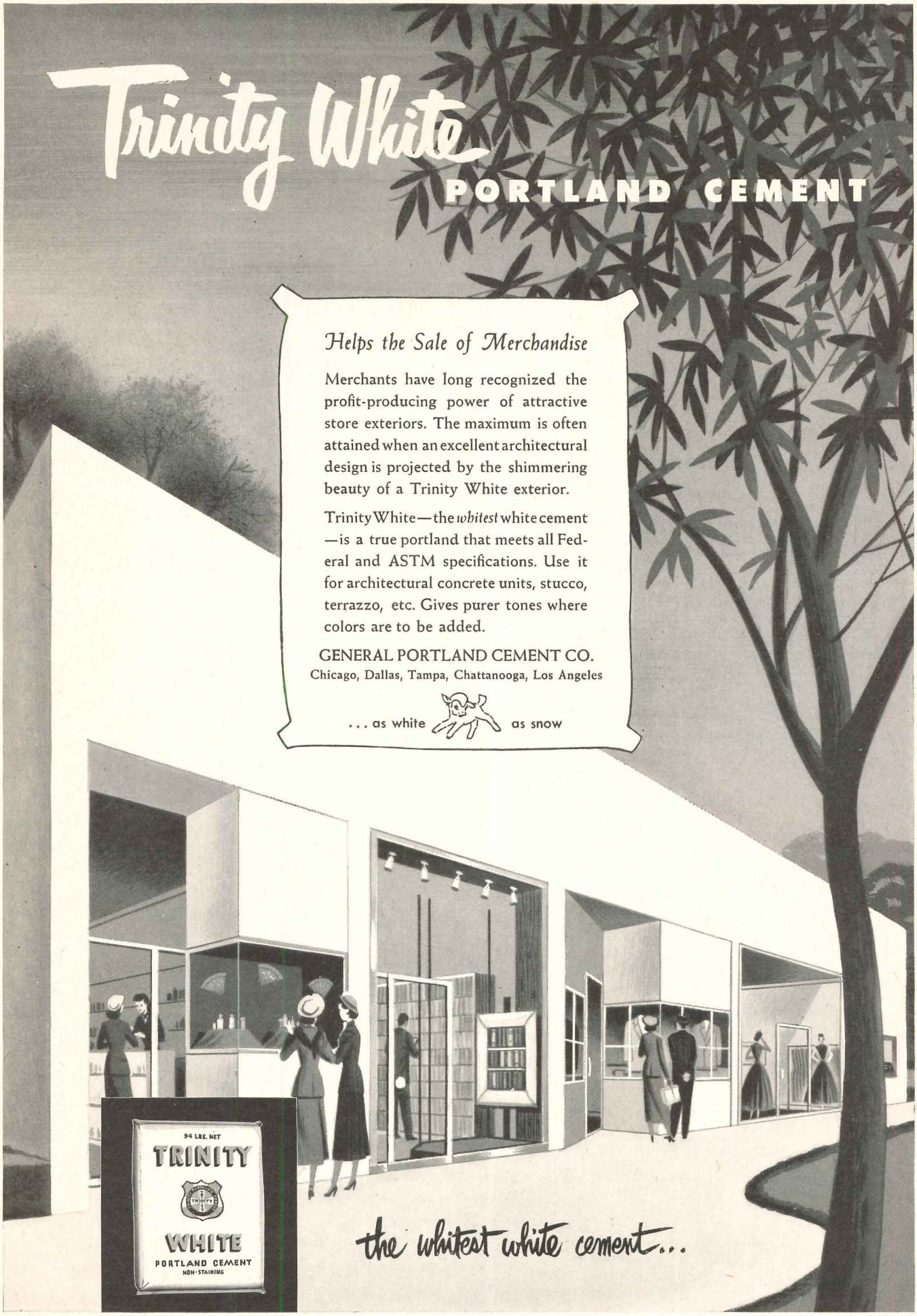
Conversely: costs in B are approximately 14 per cent lower than in A.

$$\frac{110-95}{110} = 0.136$$

Cost comparisons cannot be made between different types of construction because the index numbers for each type relate to a different U. S. average for 1926–29.

Material prices and wage rates used in the current indexes make no allowance for payments in excess of published list prices, thus indexes reflect minimum costs and not necessarily actual costs.

These index numbers will appear regularly on this page.


Trinity White
PORTLAND CEMENT
Helps the Sale of Merchandise
Merchants have long recognized the profit-producing power of attractive store exteriors. The maximum is often attained when an excellent architectural design is projected by the shimmering beauty of a Trinity White exterior.
Trinity White—the *whitest* white cement—is a true portland that meets all Federal and ASTM specifications. Use it for architectural concrete units, stucco, terrazzo, etc. Gives purer tones where colors are to be added.
GENERAL PORTLAND CEMENT CO.
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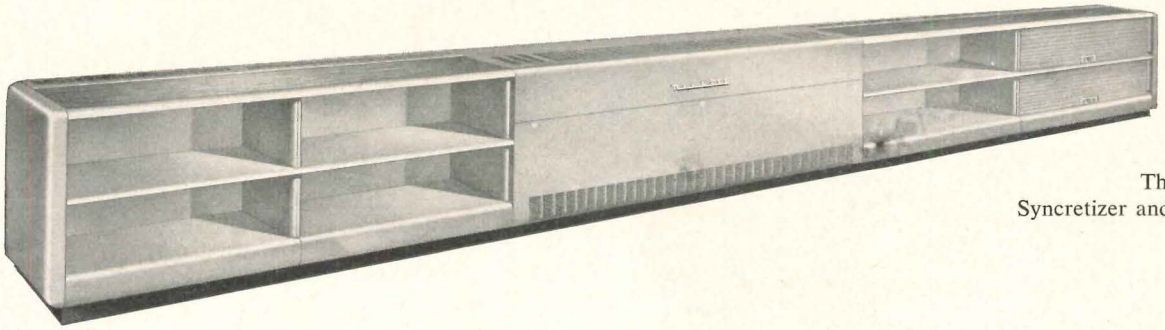
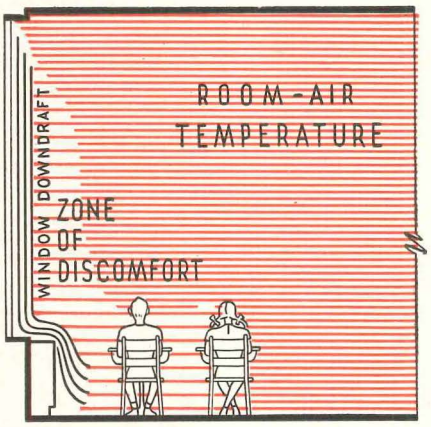
... as white as snow
94 LBS. NET
TRINITY
WHITE
PORTLAND CEMENT
NON-STAINING
the whitest white cement...

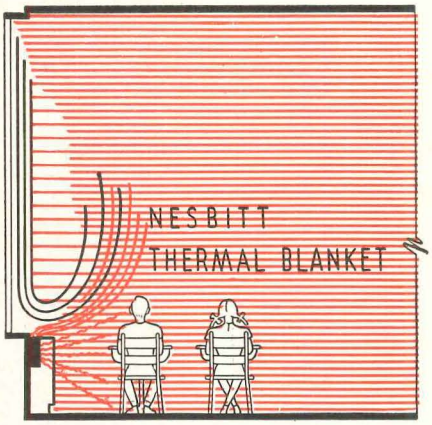


The Nesbitt Package
Syncretizer and Storage Cabinets

The Story of THERMAL



With room-air temperature evenly maintained, downdraft from large cold windows may remain the robber of comfort.



Nesbitt Syncretizer and Wind-o-line temper the downdraft, raise it out of impression range, and improve thermal balance.

THE POSITIVE ANSWER
TO WINDOW DOWNDRAFT

Nesbitt
SYNCRETIZER with WIND-O-LINE

THE STORY of classroom heating and ventilating began many years ago with the need for artificial heat in a one-room schoolhouse. A potbellied stove provided the heat.

With multi-room schools came central heat and hot-air, then steam-radiator distribution. Schoolrooms soon became so hot that the need for regular ventilation was recognized.

NESBITT became a character in the story in 1917 with a schoolroom unit that introduced outdoor air and heated air on the bypass principle.

The story progressed as knowledge increased. The *heating* effect of room occupants, electric lights, and the sun's rays became better known. The need for *cooling* during a large part of the classroom day hastened the development of heating and ventilating units.

Room-air temperature was the recognized index of comfort. But the widely divergent temperatures of the unit ventilator's air stream created conflict—*drafts*. NESBITT brought the air stream under separate control—syncretized, or harmonized, its temperature within draftless limits to that of the room air. Syncretized Air, a new standard of thermal comfort, was created—but air temperature remained its popular index.

Comfort Can Now Be "Seen"

Today thermal comfort has another dimension. Besides *air temperature,* we consider the *radiant temperature differential* of the surrounding walls and surfaces of the classroom. The temperature especially of large windows in cold weather is so far below the room-air temperature that it soaks up the body heat of pupils sitting near it and, to a degree, of all others whose bodies can "see" it (are exposed to it). This explains why the comfort *impression* of some pupils is poor even when the air temperature is good—according to the room thermostat.

The Nesbitt Comfort Control

Within the Nesbitt Syncretizer heating and ventilating unit is the Comfort Control which "sees" and "feels" the outdoor air temperature at all times. This control automatically adjusts the temperature of the unit's continuous air stream so as to impose a protective thermal blanket — warm enough to shield room occupants from the chilling effect of cold windows, and cool enough to prevent overheating of the room air.

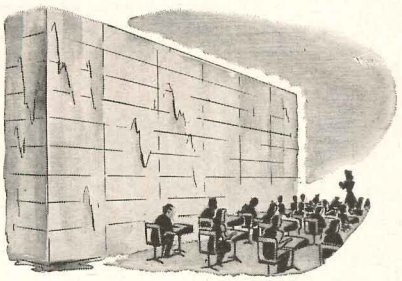
Wind-o-line Radiation

For conditions of large glass area and extremely cold outdoor air—which accelerate the problem of window downdraft, Nesbitt provides Wind-o-line Radiation for integration with the Syncretizer. Wind-o-line consists of fin-and-tube radiation in a grilled wall-hung casing to extend from both ends of the ventilating unit for the full length of the windows, at the sill line—and continued, if required, along cold outside walls. (Or it may be had as a component of the storage cabinets in installations of The Nesbitt Package.)

Unlike the attempts to draw off window downdraft as recirculated air—which are easily proved to be ineffective

Like all good stories
this one has *conflict . . . solution . . .*
and a *happy ending*

(READING TIME: Four minutes—and worth it.)



In very cold weather large window areas become a "wall-of-ice" in the classroom.

COMFORT in the Schoolroom

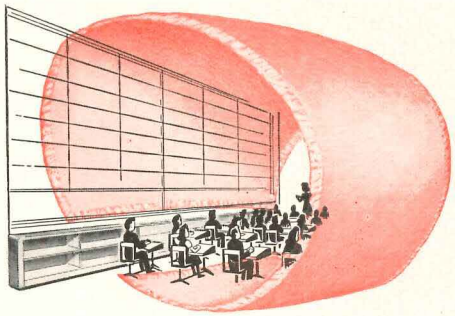
—Nesbitt Wind-o-line solves the problem of *heat loss* logically with a *heat gain* where and when needed. Convected currents of warm air from the grille temper the cold downdraft and divert its flow upward and above the heads of the room occupants. Radiation from the casing or cabinet helps to balance the radiant temperature differential.

"Happily ever after"

For school officials, architects and engineers who have a personal interest in Thermal Comfort the story turns out well: NESBITT SYNCRETIZED AIR—with Wind-o-line Radiation where desired—a *symmetrical* environment in which room-air and surface temperatures are better related to bodily heat exchange for a classroom comfort unequalled by any other system.

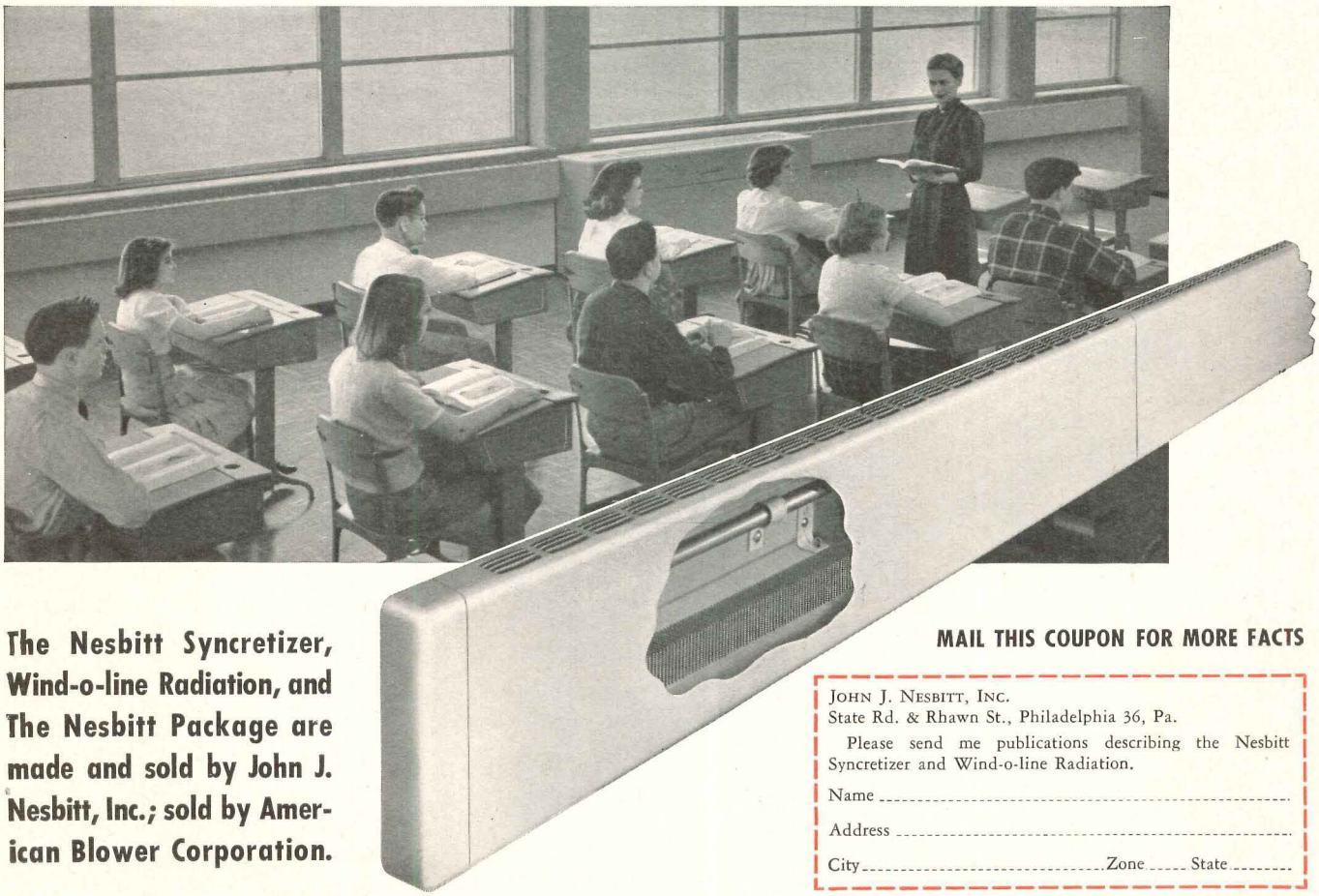
This is the story up to now. If it is ever to have a sequel, NESBITT expects to write it!

JOHN J. NESBITT, INC., STATE ROAD & RHAWN STREET, PHILADELPHIA 36, PA.



The Nesbitt "thermal blanket" protects pupils from the cold window downdraft.

A cut-away view of Wind-o-line Radiation, and photograph of a typical installation.



The Nesbitt Syncretizer, Wind-o-line Radiation, and The Nesbitt Package are made and sold by John J. Nesbitt, Inc.; sold by American Blower Corporation.

MAIL THIS COUPON FOR MORE FACTS

JOHN J. NESBITT, INC.
State Rd. & Rhawn St., Philadelphia 36, Pa.

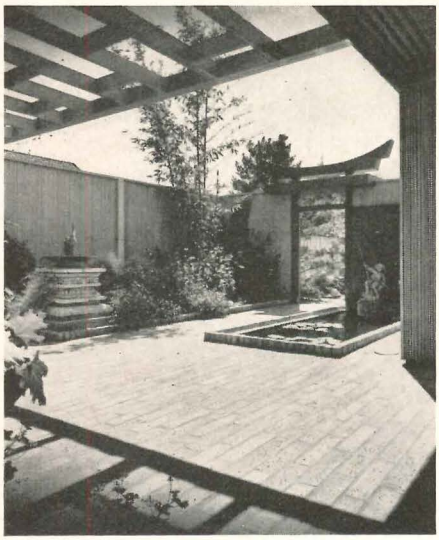
Please send me publications describing the Nesbitt Syncretizer and Wind-o-line Radiation.

Name _____

Address _____

City _____ Zone _____ State _____

REQUIRED READING



Three illustrations from the Cleveland book on photography. Left: Burton Schutt, architect; right: A. Q. Jones, architect; below: Thomas Threurkauf, designer

Robert C. Cleveland

PHOTOGRAPHING HOUSES

Architectural Photography of Houses: How to Take Good Pictures of Exteriors and Interiors. By Robert C. Cleveland — An Architectural Record Book. F. W. Dodge Corporation (New York, N. Y.) 1952. 8¾ by 11⅝ in. 170 pp., illus., $7.50.

REVIEWED BY JAMES S. HORNBECK, A.I.A.

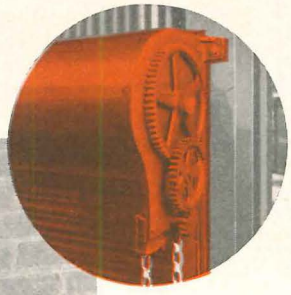
HERE, for the first time, is a book for architects, photographers and decorators that explains in detail how to take interior and exterior pictures of a house. Since the literature of photography is heavily overbalanced towards technical information on equipment, materials, processing and techniques, this writer avoids the all too common *what-film-and-developer-do-you-use* approach to the subject. Instead, he offers a clear exposition on what to photograph and why — how to do it most effectively by judicious camera location and lighting — shows by actual comparative examples how a shift in viewpoint can improve a picture. There is also an interesting explanation of how a series of photographs of a house can be brought into visual unity by a method of landmark keying which the author calls *room orientation.*

The first section of the book consists of chapters on procedure, camera angles, height of camera, orientation, lighting, indoor-outdoor views, dressing the scene, and taking architectural photographs with a small camera. Next is a seven-chapter section called *A Portfolio of Rooms*, which devotes an entire illustrated chapter to each of the typical rooms in a house and explains how to cope with the special photographic problems each area presents. The book's concluding chapter deals with making a set of photographs of the entire house and discusses a method of planning the sequence of shots in order to produce a series of views logically chosen and visually effective.

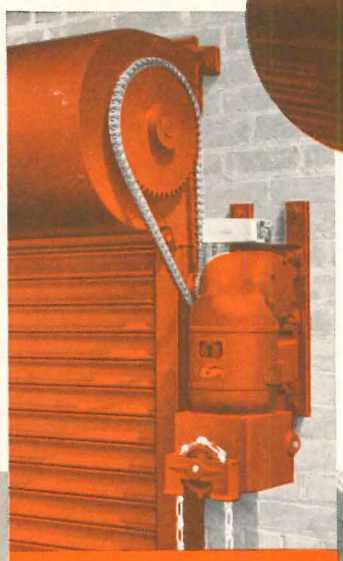
Each chapter starts with a short text which continues in caption form to point up the lessons in the illustrations. The volume contains some 325 sparkling examples of residential photography, all made by the author. The pictorial quality of the book should appeal to prospective home owners, who will find many ideas for interior decoration con-

(*Continued on page 48*)

Rolling Steel DOORS



MAHON CHAIN-GEAR OPERATOR



MAHON STANDARD POWER OPERATOR 920-P

Manually, Mechanically, or Power Operated

The vertical, roll-up action of a rolling steel door makes it ideally suitable for use where, in many cases, no other type of door would adequately meet the requirements. Quick opening, quick closing Rolling Steel Doors occupy no usable space either inside or outside the opening . . . they create no overhead obstructions above the floor—cranes may be employed to handle materials adjacent to the door opening. All-metal construction of Rolling Steel Doors provides permanence, greater protection against intrusion and fire, and assures you a lifetime of trouble-free service. When you select a rolling steel door, it will pay you to compare the manufacturer's specifications as well as the price tags . . . you will find that the hot-dipped galvanized curtain slat material that goes into Mahon Rolling Steel Doors is chemically cleaned, phosphated, and treated with a chromic acid solution to provide paint bond, and that the protective coating of synthetic enamel is baked on at 350° F. prior to roll-forming. This is just one of the extra value features of Mahon Rolling Steel Doors. See Sweet's Files for complete information including Specifications, or write for Catalog G-53.

THE R. C. MAHON COMPANY

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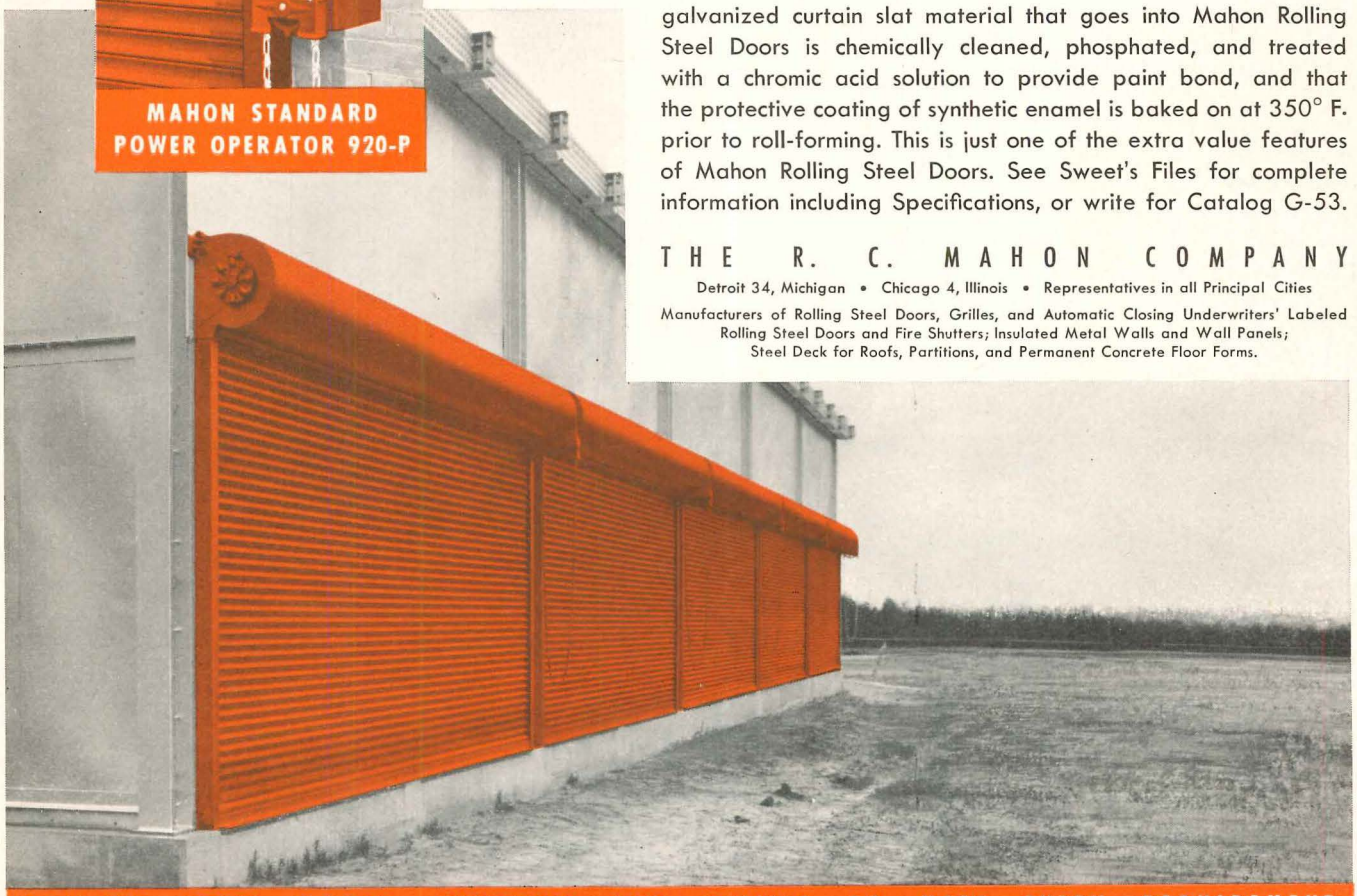
Manufacturers of Rolling Steel Doors, Grilles, and Automatic Closing Underwriters' Labeled Rolling Steel Doors and Fire Shutters; Insulated Metal Walls and Wall Panels; Steel Deck for Roofs, Partitions, and Permanent Concrete Floor Forms.



ROLLING STEEL DOORS, SHUTTERS AND GRILLES TO MEET EVERY REQUIREMENT

MAHON

REQUIRED READING

(*Continued from page 46*)

tained in its illustrations and explained by the captions.

The author, Robert C. Cleveland, is a well-known West Coast photographer of architecture whose work is regularly published in both architectural and consumer periodicals.

HUMANITY VS. INDUSTRIALISM

Creating an Industrial Civilization: A Report of the Corning Conference. Edited by Eugene Staley. Harper & Brothers (49 E. 33rd St., New York 16, N. Y.) 1952. 5½ by 7¾ in. 368 pp.

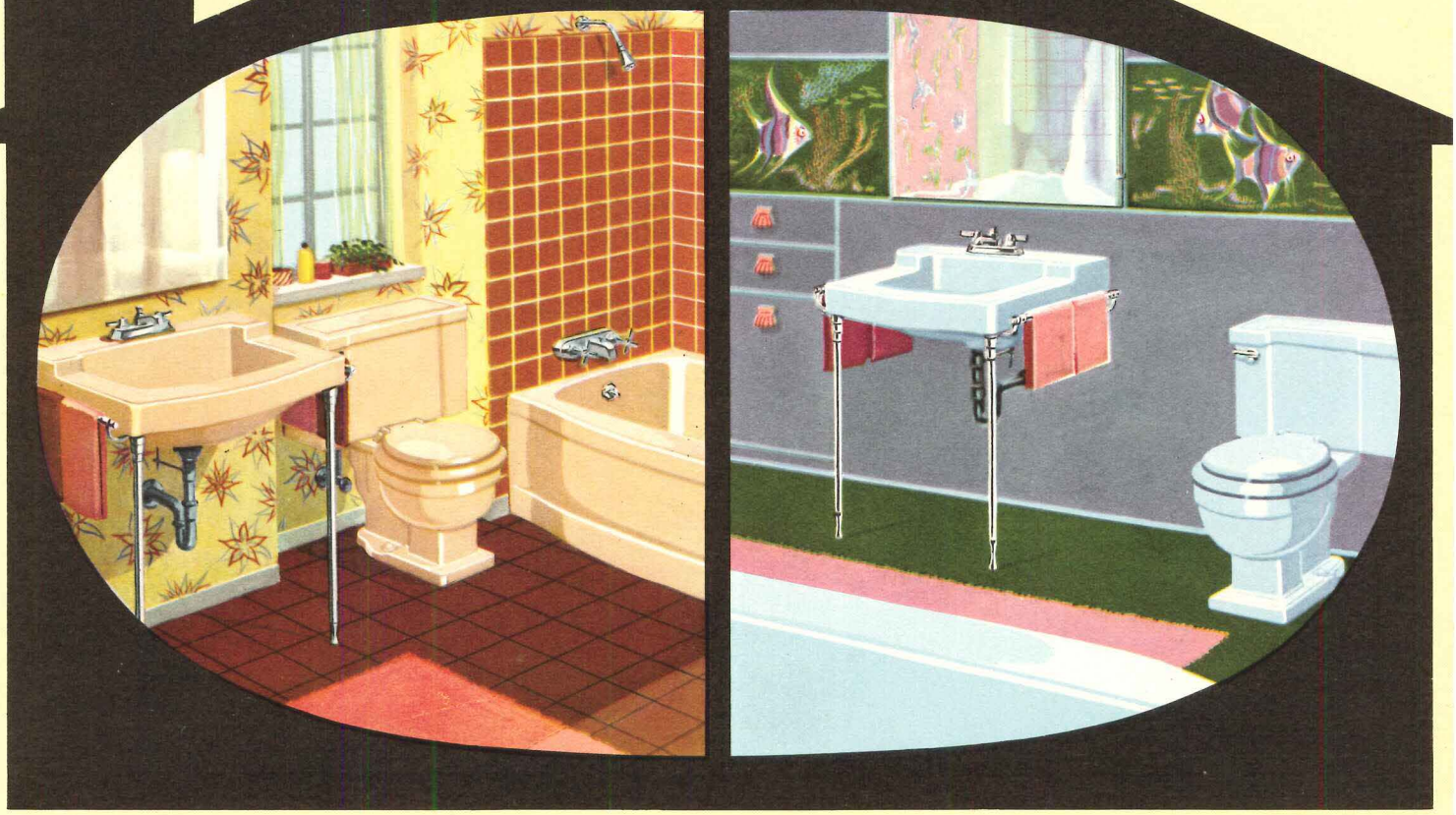
These provocative discussions of the effects of industrialism on human beings — the product of the opinions of some 100 distinguished participants with widely varying viewpoints — were held at Corning, New York, in May 1951, under the auspices of the American Council of Learned Societies and the Corning Glass Works. The conference was only two days long and resulted in no dramatic action or resolutions, but thanks to an intelligent job of editing the ideas developed or incepted have been preserved in a form that may make them the basis of other discussions and future conferences.

In individual round table meetings delegates from such diverse fields as art, architecture, business management, education, government, organized labor and the press — to mention only the most obvious — considered the various aspects of human values in relation to industrial civilization. Some typical questions were: What values determine satisfactions of work? Must leisure be used for self-improvement? What advantages can the American type of industrial civilization offer other countries? What has happened to our sense of community? Has modern man lost confidence in himself and the universe? Perhaps the outstanding characteristic of these meetings was the conscientious effort of the participants to abandon clichés and stereotypes and to achieve objectivity. Margaret Mead, the anthropologist, was "amused with the effort to prove that business and the academic world don't understand each other." "I've never," she declared, "seen fewer signs of people not understanding each other."

The conclusion of the conference, however, was that the need was not for

(*Continued on page 358*)

two bathrooms—a must in every modern home!



It takes two bathrooms of BRIGGS Beautyware to make a new home truly modern!

Give any home the truly modern touch! Economical and easy to install, the distinctive Briggs Beautyware flat-rim lavatory provides the extra luxury of a custom-built bathroom. It looks expensive—but it's not!

Prospective home buyers all over America read national ads like this one. They've learned that the quality of Briggs Beautyware is backed by a company of high reputation. They're buying Briggs Beautyware in color!

More and more architects are specifying two bathrooms of Briggs Beautyware in color wherever possible these days—even in medium and low priced homes. They know that the most desirable extra feature in any new home is the *second* Briggs Beautyware bathroom.

Recently redesigned and restyled, Briggs Beautyware fixtures make an excellent first impression. Their striking beauty and gorgeous pastel colors have a powerful appeal for the buyer at the very first glance. And that impression doesn't fade! Acid-resistant, Briggs Beautyware fixtures retain their brilliant luster through the years.

Durable Briggs lavatories and bathtubs of rigid formed steel are built to give long years of dependable service. There's lasting value, too, in the handsome vitreous china lavatories and water closets.

Be sure your specifications call for *two bathrooms* of Briggs Beautyware in color. Design *modern* homes—and build your reputation as a forward-looking architect.

BRIGGS MANUFACTURING CO. • 3001 MILLER AVENUE • DETROIT 11, MICHIGAN

For Fashion and Guest Appeal

...the upholstery pattern is *Perennial*

the upholstery covering is *Masland Duran**

PLASTIC WITH FABRIC-BACK

Perennial . . . a superb deep-embossed design on Masland Duran in the loveliest colors in plastic upholstery . . . a practical, fashion-right idea to make *your* establishment singled out for smartness . . . and patronized for its pleasing atmosphere.

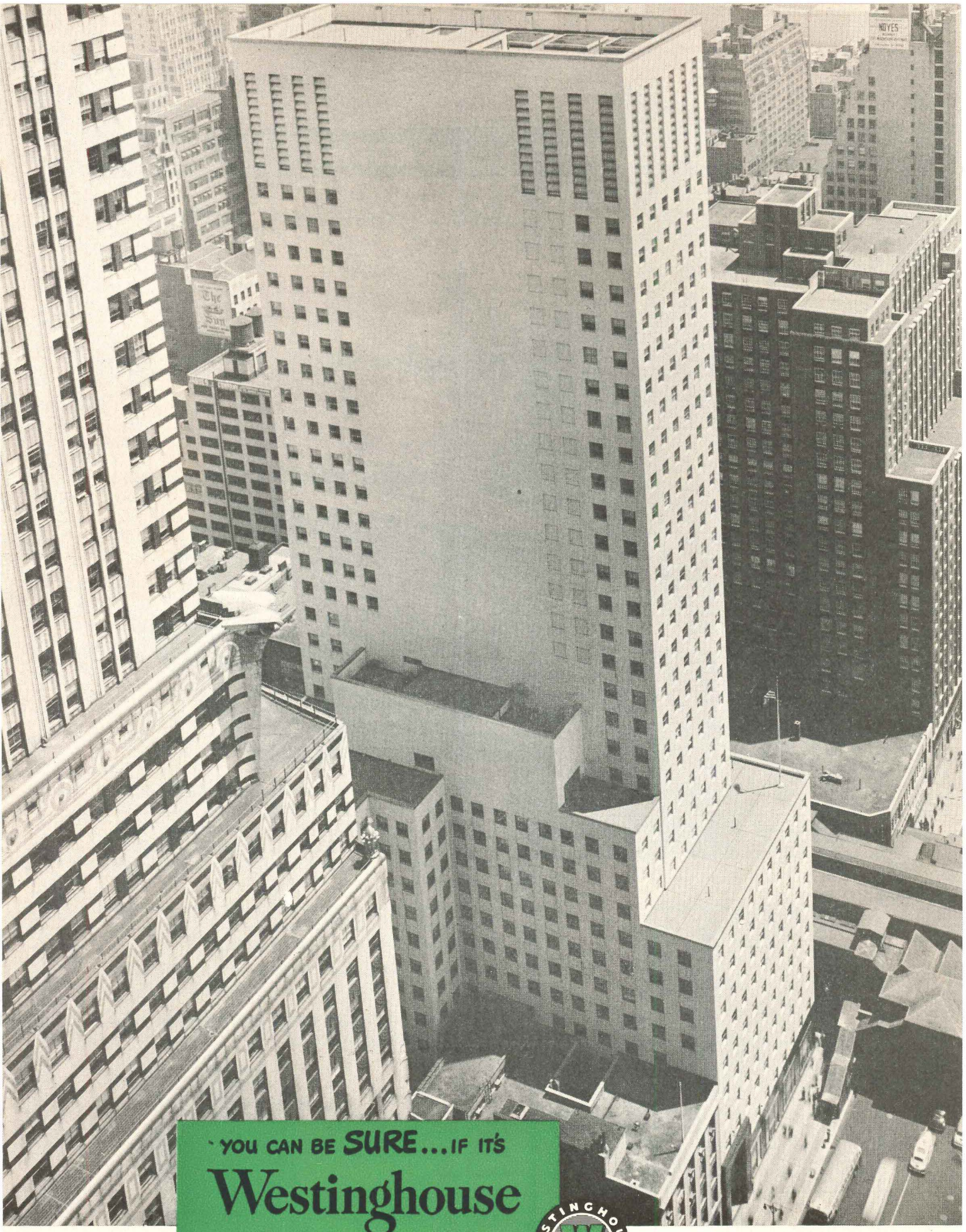
For re-upholstering, re-decorating or new installations, specify Masland Duran Perennial on stools, booths, seats and panelling.

Specify this fashion sensation with fabric back —ask for Masland Duran Perennial 3085.

THE MASLAND DURALEATHER CO.
Dept. 36, Philadelphia 34, Pa.

The "Driftwood," Hollywood, California Installation, R. S. Franke Mfg. Co. Van Nuys, California

*Trade Mark Reg. U.S. Pat. Off.



YOU CAN BE SURE...IF IT'S

Westinghouse

SYSTEM PLANNING

Chrysler Building East, center above, reflects modern trend in building design.

Reinhard, Hofmeister & Walquist, Architects; Guy B. Panero, Consulting Engineer; Turner Construction Co., General Contractor; Fishbach & Moore Inc., Electrical Contractor.

PLANNED POWER PAYS

Chrysler again matches modern power with modern architectural design

When the original Chrysler Building was constructed, Westinghouse helped engineer the most modern electrical system available at that time. Since then, it has given 15 years of outstanding service—a vital requirement for this massive, 77-story structure.

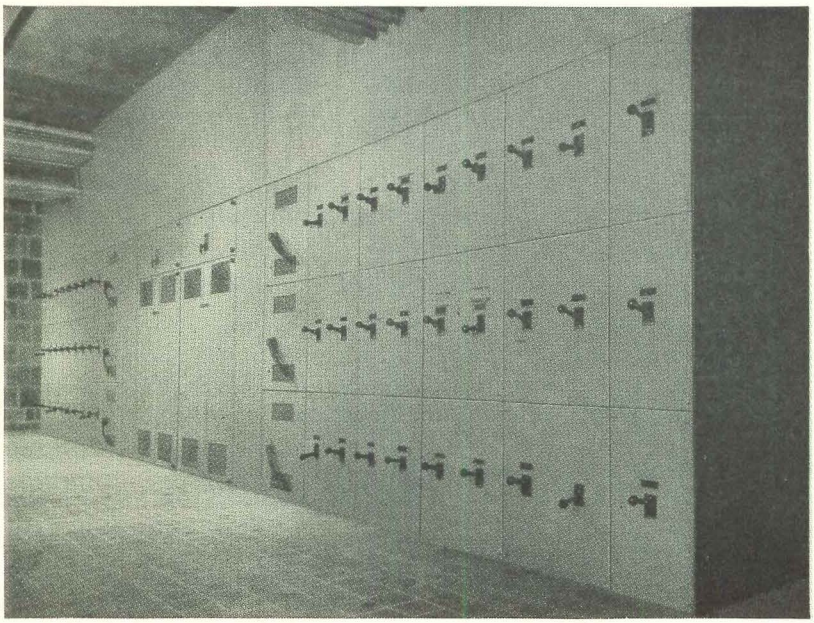
When Chrysler Building East was built, Westinghouse *again* assisted the owners, architects, engineers and contractors to plan a modern distribution system—served by the utility network. Its main feeders are protected by a Westinghouse Standard Building-Type Distribution Switchboard, and the power and lighting circuits are protected by Westinghouse Circuit Breaker Panelboards. Special lighting panelboards provide tenant submetering.

This system assures maximum safety and low-cost maintenance, since there are no live parts exposed to personnel . . . no fuses to replace. It can be laid out and installed easily.

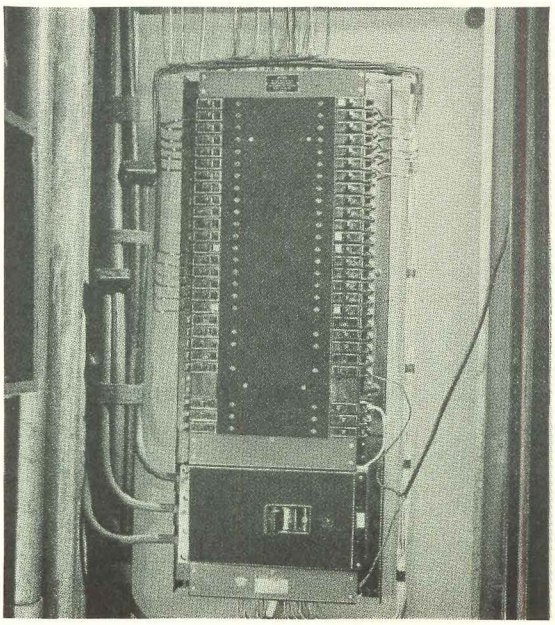
CONSIDER THIS: A building's distribution system is a vital design consideration. It must be treated as an integral part of the over-all design . . . and be *coupled* with distribution equipment of the highest caliber.

Westinghouse offers you assistance on both of these requirements—and backs it with years of experience. You benefit by getting more freedom in design techniques . . . by providing your customer with the best possible system for *his* building.

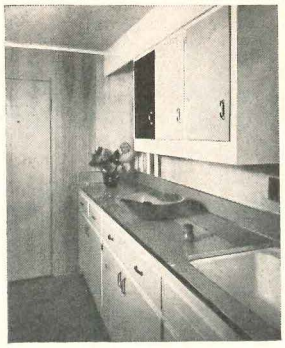
There is one best system of distributing electrical power for *every* building. Let Westinghouse help you select it on your next job. Westinghouse Electric Corporation, P. O. Box 868, Pittsburgh 30, Pennsylvania. J-94958-A



Westinghouse Standard Building-Type, Metal-Enclosed, Dead-Front Switchboard has full-length pull box at top. This permits neat arrangement of the many large conduits.



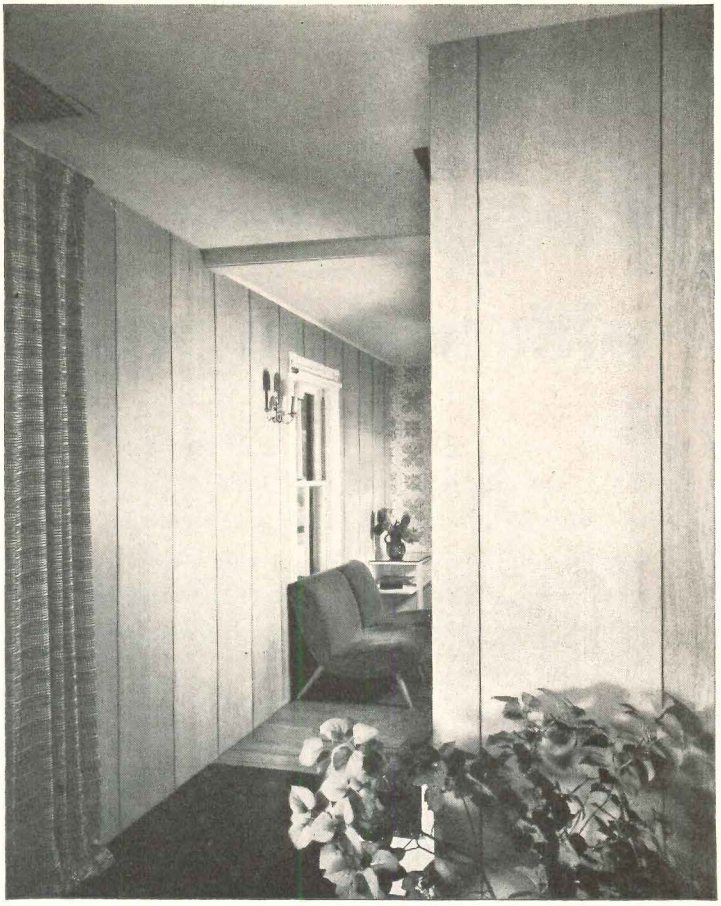
Westinghouse Lighting Panelboards are NLAB type with Quicklag® circuit breakers. They are specially designed so that part, or all, of a floor can be metered separately.



Kitchen of Mr. Schladermundt's home. Oak Plankweld is used for one wall. Weldwood Plywood, painted, is used for other walls. Cabinets are also of Weldwood Plywood.

Prominent Architect Follows his own advice

. . . Specifies Weldwood® Plywood for his own home!



Beautiful, easy-to-install Oak Plankweld®, in the Shelter Island home of Peter Schladermundt, architect.

Peter Schladermundt *means* what he says to his clients about the enduring beauty and economy of Weldwood Plywood!

He means it *so much* that he specified Weldwood Plywood throughout his *own* home on Shelter Island, New York.

He's typical of architects all over the country who are thoroughly sold on Weldwood Plywood.

Weldwood Plywood reflects dignity, charm and good taste . . . yet it is so tough and strong that it stands up beautifully.

And when it comes to durability, remember *this:* Interior grade Weldwood Plywood is *guaranteed* for the life of the building in which it is installed!

In redecorating, Weldwood panels go up fast and easily right over existing walls . . . even over unsightly plaster.

In new construction, Weldwood Plywood saves time and money because it is quickly applied over the studding.

Consider Weldwood Plywood for all of *your* clients. This wonderful material comes in a wide variety of fine woods . . . domestic and imported: genuine Walnut, Knotty Pine, Oak, Korina®, Maple, Birch, Gum, Mahogany.

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NOW — Famous HAR-VEY QUALITY in LOW-COST Hardware!

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New **CHALLENGER** Series

SCORES ON EVERY COUNT

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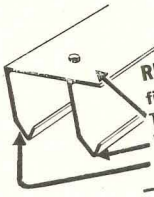
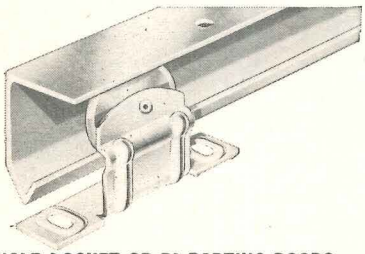
- Self-lubricating Oilite bearings ...no maintenance, ever!
- Durable NYLON Rollers
- Sturdy ribbed-steel hangers, cadmium plated
- ADJUSTABLE, for quick, accurate hanging



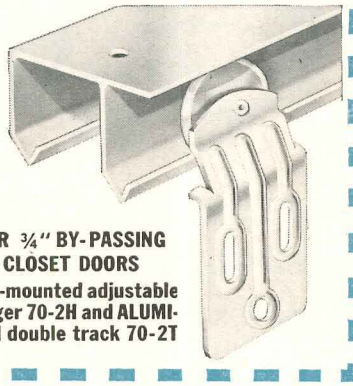
RUSTPROOF ALUMINUM TRACK

- finest quality extruded ALUMINUM
- Top-mounted for easy installation—no mortising!
- V-groove design prevents "chattering" of roller
- track serves as trim—no painting necessary!
- engineered to prevent roller jumping track
- low headroom, 1"—1¼"

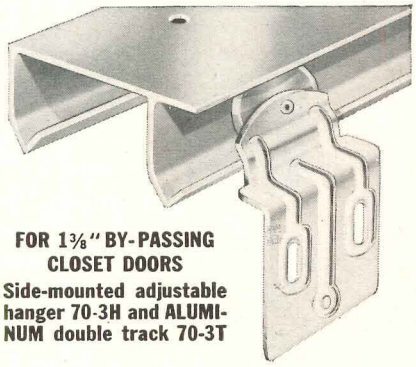
3 Models meet *all* your needs, for doors up to 70 lbs.



FOR SINGLE POCKET OR BI-PARTING DOORS
¾"—1⅜"
Top-mounted hanger 70-1H and ALUMINUM single track 70-1T



FOR ¾" BY-PASSING CLOSET DOORS
Side-mounted adjustable hanger 70-2H and ALUMINUM double track 70-2T



FOR 1⅜" BY-PASSING CLOSET DOORS
Side-mounted adjustable hanger 70-3H and ALUMINUM double track 70-3T

PACKAGED for convenient handling and quick selection in the small, rectangular, easy-to-store Har-Vey Handy-Pak...contains everything for a complete installation, for 2', 2'-6" & 3' doors.

Attractive new Plastic Flush DOOR PULL included in every package without extra cost!

New HAR-VEY HEAVYWEIGHT available for Doors up to 200 Lbs. — Get the facts today!

Tested and *proven* — In exhaustive performance tests with loads way beyond rated capacities, this new series has excelled in every respect!

NOW you can achieve low *cost* without resorting to low *grade* hardware! Skillful engineering and production know-how have created a dependable, durable hardware series that you can count on *always* for smooth, silent rolling. Just COMPARE the new Challenger series with any other — and see for yourself!

Available about Dec. 1st. See your supplier NOW, or write Dept. T

METAL PRODUCTS CORPORATION
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SINCE 1892
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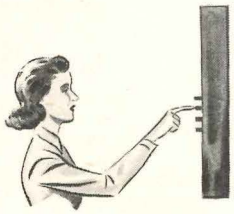
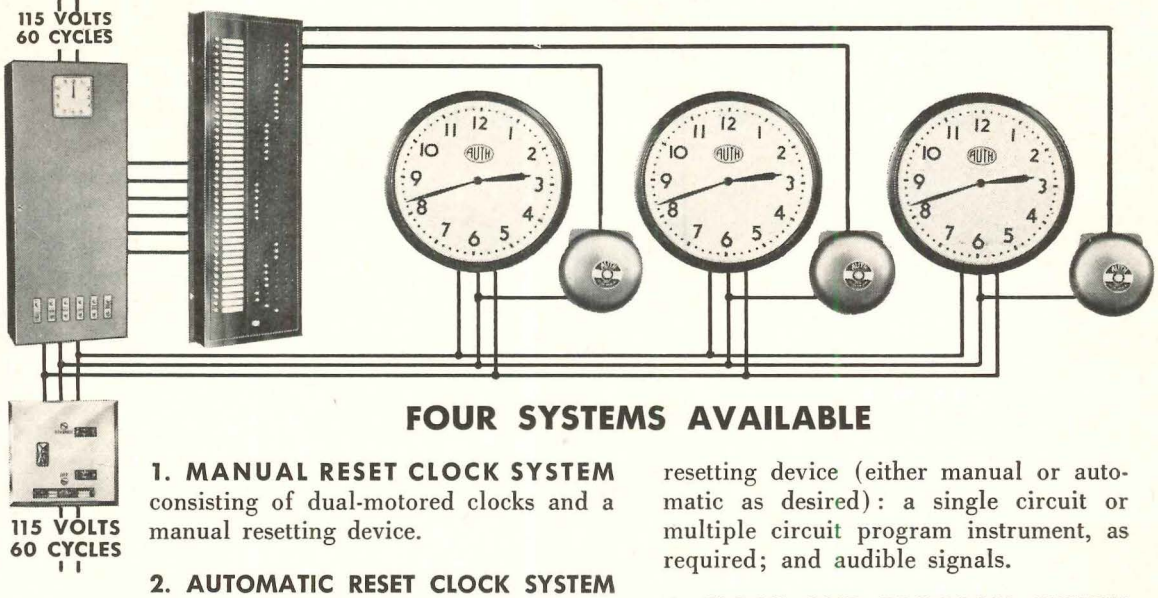
Complete Systems Simplify Specifications

CLOCK AND PROGRAM SYSTEMS

FOR SCHOOLS, COLLEGES, INDUSTRIALS, INSTITUTIONS, PUBLIC BUILDINGS



Auth Clock and Program Systems feature the famous Telechron self-starting synchronous movements, requiring no master clocks, relays, rectifiers or other auxiliary devices. They keep the right time ***all*** the time, operating directly from a 115 volt 60 cycle regulated frequency power supply. Designed for perfect performance with even the most advanced methods of time signaling, they ***are*** economical.



FOUR SYSTEMS AVAILABLE

1. MANUAL RESET CLOCK SYSTEM consisting of dual-motored clocks and a manual resetting device.

2. AUTOMATIC RESET CLOCK SYSTEM consisting of dual-motored clocks and an automatic resetting device with uninterrupted time on from one to three clocks.

3. CLOCK AND PROGRAM SYSTEM consisting of dual-motored clocks; a resetting device (either manual or automatic as desired): a single circuit or multiple circuit program instrument, as required; and audible signals.

4. CLOCK AND PROGRAM SYSTEM WITH SIGNAL CONTROL BOARD consisting of the same equipment as the Clock and Program System with the addition of a manually operated Signal Control Board.

For complete details and specifications, write for Bulletin No. 150 to
AUTH ELECTRIC COMPANY, INC., 34-20 45th Street, Long Island City 1, New York

Also available: Intercommunicating Telephone Systems and Fire Alarm Systems

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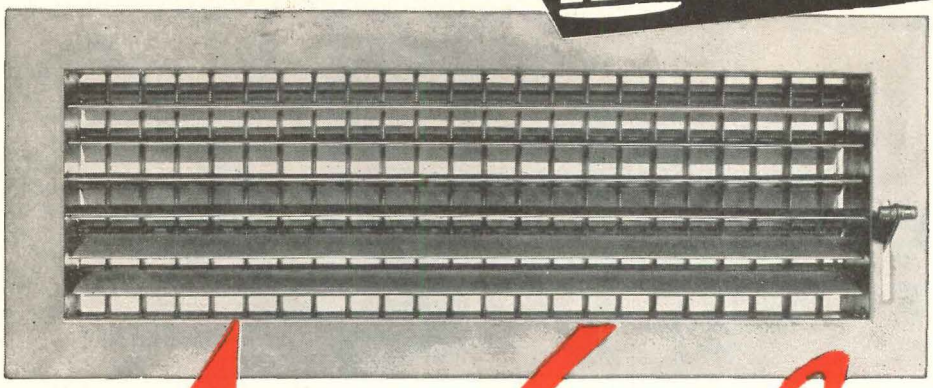
FOREMOST IN THE DESIGN AND MANUFACTURE OF ELECTRICAL SIGNALING, COMMUNICATION AND PROTECTIVE EQUIPMENT

MAKES ANY AIR CONDITIONING SYSTEM A BETTER AIR CONDITIONING SYSTEM

Yet it COSTS LESS.....

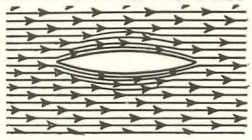
● *Illustrated below—* #276 4-way multi-shutter register . . . features front louvers and rear damper blades parallel to long dimension . . . second row louvers parallel to short dimension.



Air Foil

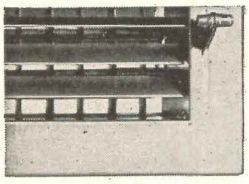
4-WAY MULTI-SHUTTER REGISTER

SOLID-SECTION AIRFOIL LOUVER



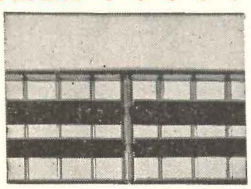
● Louver knifes air in wind tunnel tests. Turbulence has been almost eliminated giving noiseless control of air.

LEVER CONTROL



● Inconspicuous lever in face of frame controls dampers for complete shut-off.

EXTRA-STRENGTH FRAME . . . . .



● New, exclusive Titus *concealed support* eliminates unsightly mullions and butted construction.

The smartly designed #276 combines *4-way #270 grille* with the *multi-shutter damper* to assure maximum directional control with positive volume control and shut-off. Damper blades interlock for complete shut-off.

The two front sets of louvers are individually adjustable with blades on ¾ inch centers.

Dampers are controlled from face of grille by inconspicuous lever. Removable lever furnished at no extra cost.

EXTRA STRENGTH—LONGER LIFE

Sound, inspired know-how engineering gives the #276 superb simplicity of design with no unnecessary parts—no clumsy bulk. A special patented, *concealed support* eliminates unsightly mullions and butted construction permitting superior strength with no added weight.

EASY TO INSTALL

#276 grilles are light in weight—easy to carry—easy to fit—easy to put in place. *Save much costly time and labor.*

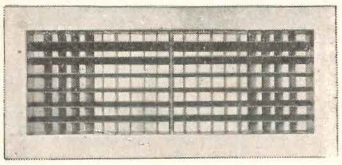
EXTRA VALUE AT LOWER COST

AIRFOIL grilles are priced down to give you more value—more performance—more efficiency—at less cost.

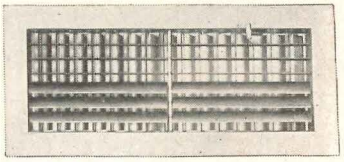
NOTE THESE OUTSTANDING AIRFOIL FEATURES . . .

- Smooth-as-glass AIRFOIL louvers.
- Extra-heavy frames.
- Airtight rubber gasket.
- Positive shut-off.
- Individual louver adjustment.
- Removable lever.

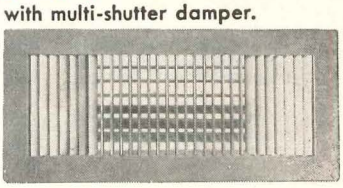
LOOK TO AIRFOIL FOR THE FINEST



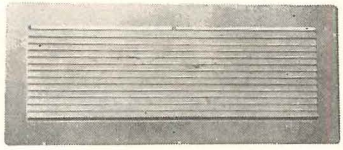
L-270 4-way directional grille for complete control of air stream.



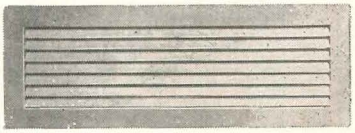
L-274 Double directional grille with multi-shutter damper.



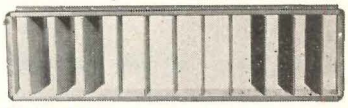
S-8 4-way grille with louvers on ½" spaced front.



RL-21 Return air grille of fixed deflection type with closely spaced louvers.



RL-230 Return air grille incorporates rugged construction and smart design.



AG-25 Volume controller designed to fit behind grille.

CHECK TYPE OF GRILLE ON WHICH INFORMATION IS DESIRED

- ☐ Air conditioning outlets
- ☐ Return air grilles and registers
- ☐ Volume controllers
- ☐ Perforated metal and ornamental grilles
- ☐ Door ventilators
- ☐ Special made-to-order grilles

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____Rush Information on 276.
____Send complete catalog.
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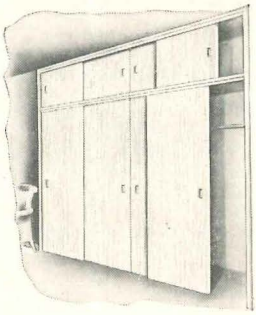
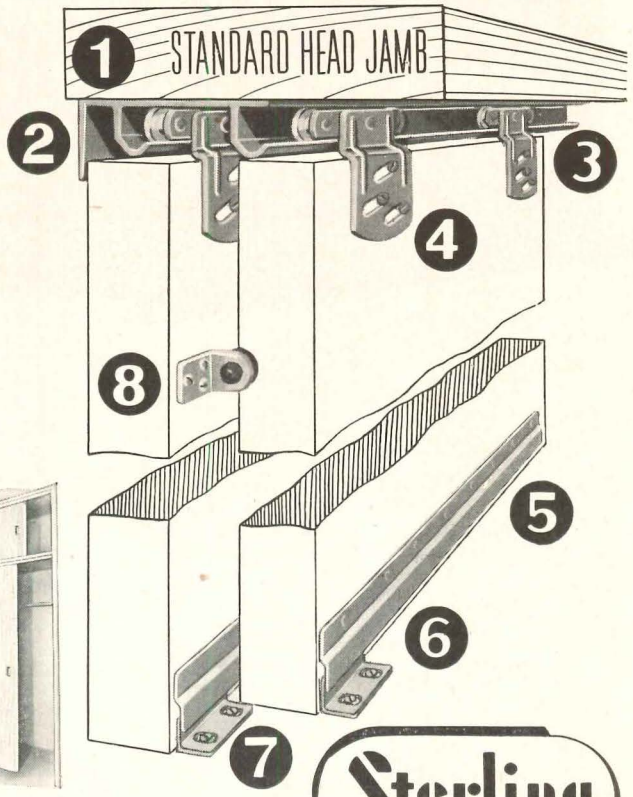
Here's Why

LEADING ARCHITECTS AND BUILDERS USE AND RECOMMEND

Sterling 600 SERIES SLIDING DOOR HARDWARE





Sterling HARDWARE

Saves Time! Saves Money! Easy to Install and Adjust!

1. **USE STANDARD DOOR FRAME.** No special header construction needed. No grooving!
2. **APRON CONCEALS HANGERS AND TRACK.** May be painted if desired. No extra trim necessary.
3. **ONLY ONE INCH HEADROOM REQUIRED.** No need for extra headroom for hardware.
4. **ADJUSTABLE HANGERS.** Slotted screw holes make it easy to plumb door with jamb.
5. **GUIDE STRIPS** eliminate troublesome grooving of doors. Not visible from the outside.
6. **DOOR GUIDES** can be installed after doors are hung. Slotted screw holes permit easy adjustment.
7. **NO TRACK ON THE FLOOR** to catch dust and dirt . . . floor is clear and clean at all times.
8. **DOOR STOP** keeps flush pull on rear door always accessible. Fingers can't get pinched.

Write for Catalog on Sterling line of Sliding Door Hardware for wardrobes, pocket doors, side doors in home garages and other Sterling products.

Sterling HARDWARE *Nationally Advertised*

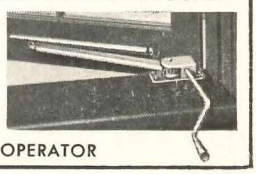
IN ALL LEADING MAGAZINES

Read by ARCHITECTS, BUILDERS and HOME BUYERS

STERLING CASEMENT WINDOW HARDWARE

No. 190 EXTENSION HINGES

No. 165 PULL-TITE CLOSER



No. 61 CASEMENT WINDOW OPERATOR

★ See our Catalog in SWEET'S Architectural File 18d/ST and Builders File 4e/ST

★ See our display at THE ARCHITECTS SAMPLES CORPORATION New York, New York

STERLING HARDWARE MANUFACTURING CO.

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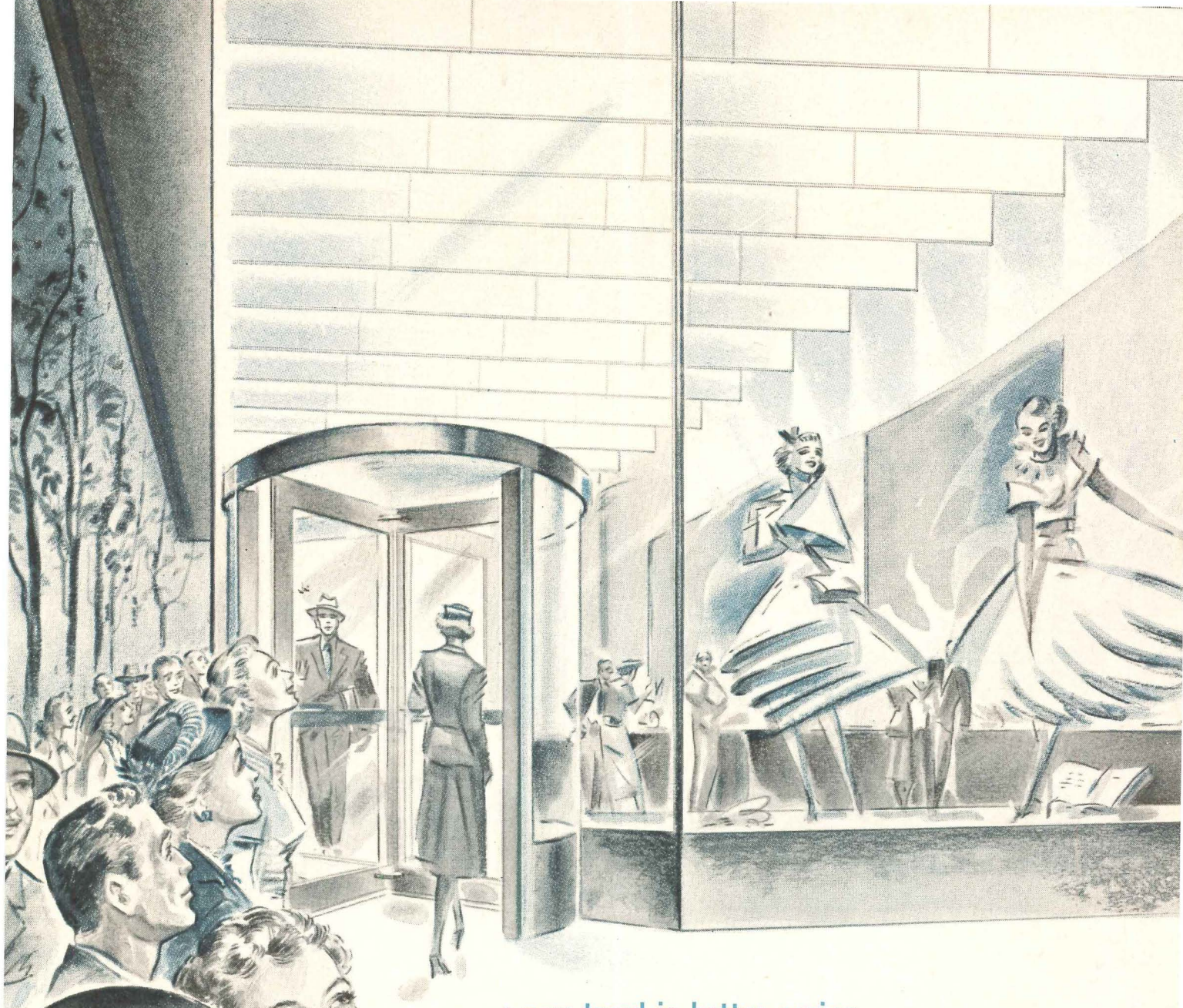


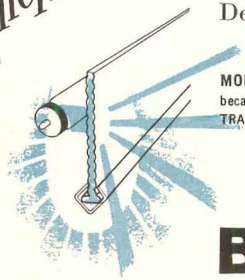
a new trend in better seeing
. . . through better comfort-brightness balance

More comfortable seeing means better living for Americans in all walks of life. It means quicker, easier, right-the-first-time selections for millions of shoppers. It means effortless learning to America's school kids. It means a new freedom from eye fatigue to the legions of office workers across the nation.

Benjamin "Grid-Lite" provides this much wanted, much needed seeing comfort by achieving a new high in comfort-brightness balance. Translucent diffuser shields are the secret! These make possible high light levels without awareness of the fact . . . more footcandles on the working surface without annoying brightness.

Benjamin "Grid-Lite", because of its variety of channel sizes and lamp lengths, adapts to practically any size room and location. Write for a free copy of Bulletin AD 5880. Benjamin Electric Mfg. Co., Dept. Q-1, Des Plaines, Illinois.

Improved Seeing Comfort means better Living for millions of Americans



MORE LIGHT but LESS BRIGHT
because of these
TRANSLUCENT DIFFUSER-SHIELDS!

BENJAMIN "Grid-Lite" SYSTEMS

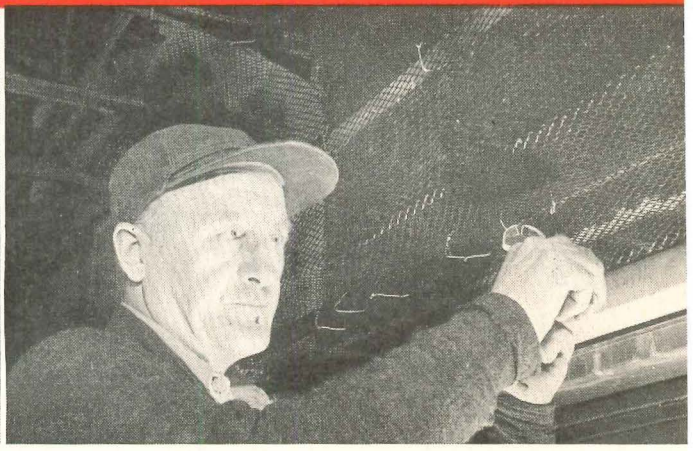
Sold Exclusively Through Electrical Distributors

FOR PITTSBURGH'S *Airport*

General Contractor, Dick Construction Company, Pittsburgh
Plastering Contractor, George P. Smith, Pittsburgh
Architect, Joseph Hoover, Pittsburgh

Extra rigid Wheeling Metal Lath goes up faster.

Lath lies flat, ties easily.



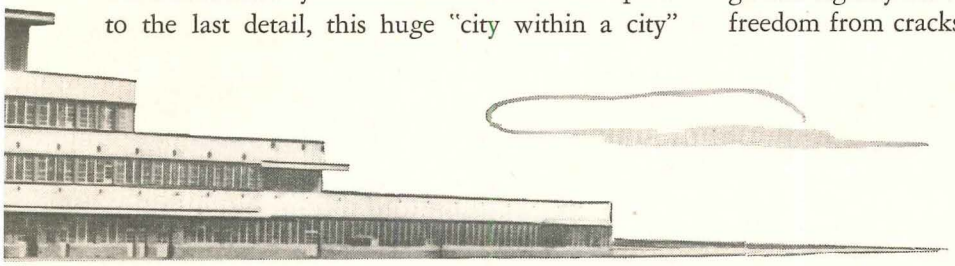
of the Future

...IT'S WHEELING METAL LATH!

Transportation standards reach new heights as the vast 33-million dollar Greater Pittsburgh Airport starts full-scale operations. The 1,600-acre airdrome, with runways and approaches ranging up to 6,200 feet long, with the largest terminal building in the world... and plans to grow *still larger!*

Nerve-center for this giant installation is its modern, 7-story terminal building, offering the ultimate in Twentieth Century travel accommodation. Complete to the last detail, this huge "city within a city" includes a fully-equipped 62-room hotel, garage, dining space for 4,200 people, drug store, post office, bank, recreational center and facilities to comfortably handle 2½-million passengers a year.

To give firm foundation to 90% of all plastered surfaces, Wheeling Metal Lath and Lath Accessories were the builders' choice. Reasons: Quicker, easier Lath erection; a more uniformly flat surface of greater rigidity for smoother plastering and lasting freedom from cracks.



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BUILDING MATERIAL DIVISION

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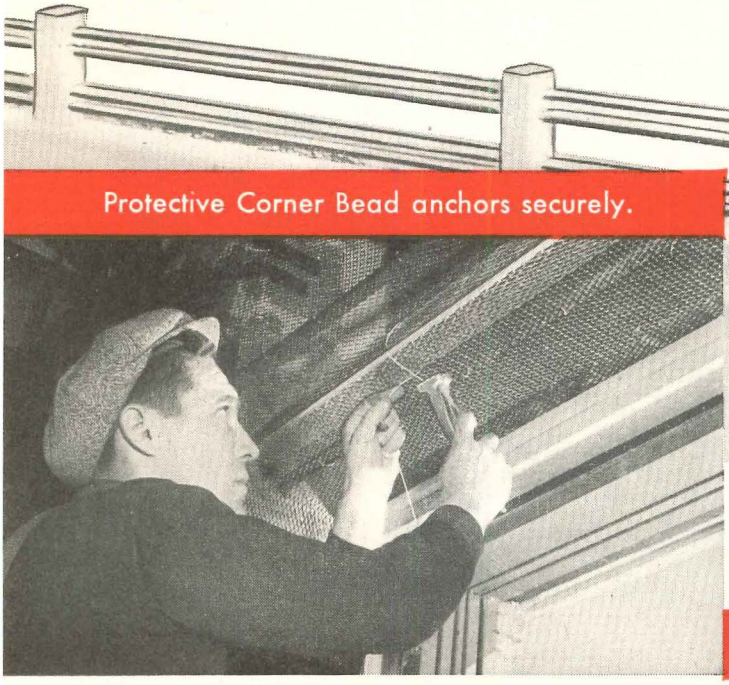
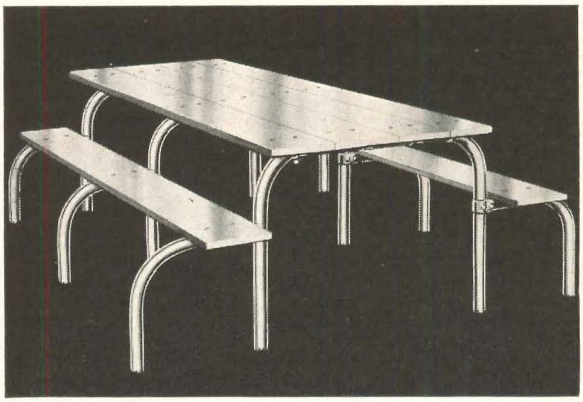


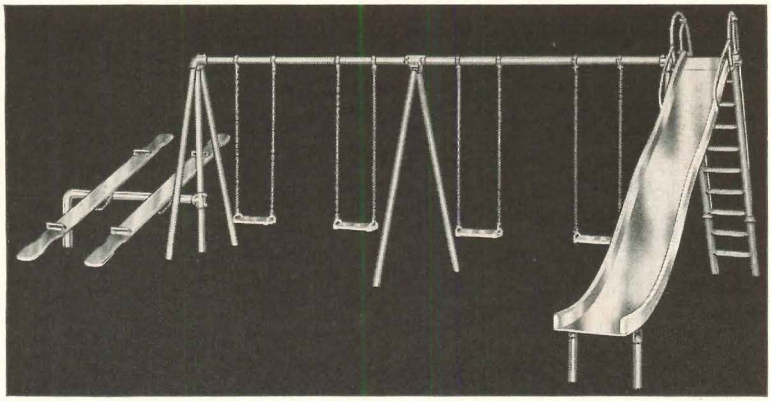
Protective Corner Bead anchors securely.

Wheeling
CORRUGATING COMPANY

The Wheeling line of building materials includes: Steelcrete Reinforcing Mesh, Expanded Metal, Metal Lath and Metal Lath Accessories, Tri-Rib Steel Roof Deck, ExM Angle Frame Partitions, Steelcrete Vault Reinforcing.



American Streamlined Heavy Duty Picnic Table

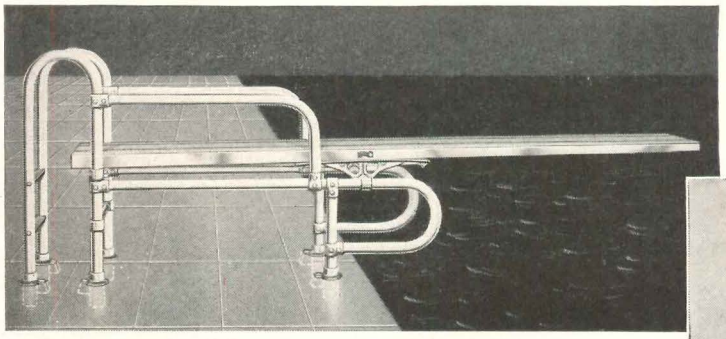


An American De Luxe Slide Combination Unit

Unsurpassed ...in Design, Performance and Safety

It's the *plus* factor that makes American the most respected name in Playground Equipment. First, plus in *design*. Never content to copy, American engineers have pioneered scores of design improvements and innovations. Next, plus in *performance*. Employing superior materials, master craftsmanship and improved production methods, American Approved Equipment is built to endure. Finally, plus in *safety*. American craftsmen are aware of their responsibility for the safety of your children. Thus, with American you receive a combination of far superior design, unexcelled performance, and unmatched safety.

The *plus* factor extends to our dealings with customers. You will find AMERICAN pleasant to do business with, prompt and equitable in adjustments, eager to protect an enviable reputation nearly half a century old.



Above—New All-American Picnic Grill

Below—An American Official Regulation One-Meter Diving Unit

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PLAYGROUND DEVICE CO.
ANDERSON, INDIANA

World's Largest Manufacturers of Fine Playground & Swimming Pool Equipment

Write Today FOR CATALOGS AND SPECIAL LITERATURE FEATURING AMERICAN APPROVED

PLAYGROUND EQUIPMENT . . . SWIMMING POOL EQUIPMENT . . . ALL-AMERICAN PICNIC GRILLS
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STEEL BASKET RACKS . . . AMERICAN REPAIR EQUIPMENT . . . AMERICAN HOME PLAY EQUIPMENT

Internationally Specified . . . . . Internationally Approved

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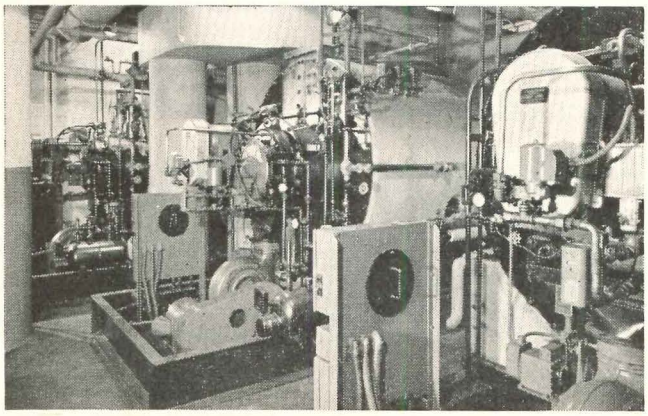
WASHINGTON POST BUILDING, Washington, D. C. Albert Kahn Associated Architects and Engineers, Inc. John McShain, Inc. — General Contractor. Standard Engineering Company, Engineers and Contractors.

THE WASHINGTON POST'S new 7-story building is heated by a combination of a hot blast ventilating system for the inside areas and convector radiation along the outside walls. The steam distribution system is divided into two sections, one supplying the fan blast coils at 3 lbs. to 5 lbs. pressure and one supplying the radiation at 3 lbs. to 5 lbs. pressure.



Three Cleaver-Brooks 150 hp., oil-fired, self-contained boilers were easily and quickly installed in low headroom, basement space.

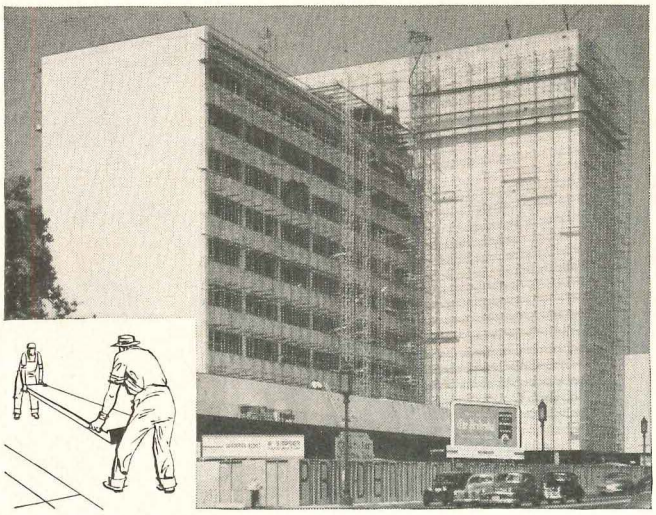
Three Cleaver-Brooks 150 hp. oil-fired, self-contained boilers, installed in the basement location, supply steam for the entire heating system.

Modern Cleaver-Brooks boilers are increasingly specified for heating service. Completely self-contained and compact in design, requiring minimum headroom and floor area, Cleaver-Brooks boilers offer many installation and operating advantages — oil, gas, or combination oil and gas firing — fully automatic — clean — dependable performance — operate at a guaranteed efficiency of 80%. Available in sizes from 15 to 500 hp., 15 to 250 psi.

Write for the latest, fully illustrated Steam Boiler Catalog — Cleaver-Brooks Company, Dept. M-334 East Keefe Avenue, Milwaukee 12, Wisconsin, U.S.A. *Cable address*: CLEBRO-Milwaukeewis.

Cleaver-Brooks
Originators of Self-Contained
STEAM BOILERS

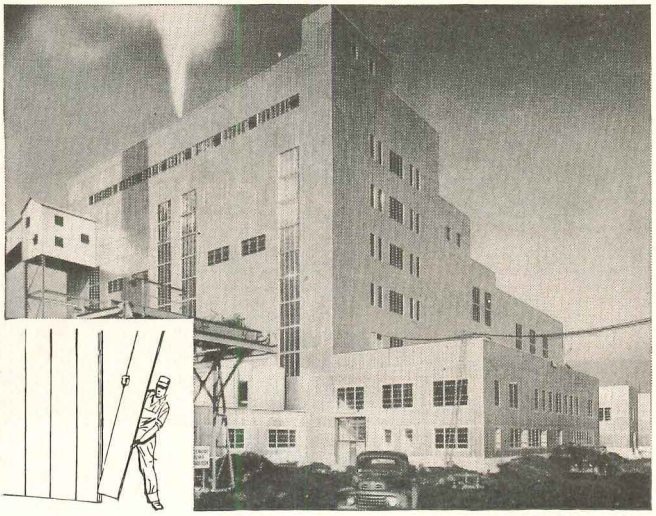
Oil and Bitumen Tank-Car Heaters • Distillation Equipment • Oil and Gas-Fired Conversion Burners



YOUR FLOORS—Fenestra "D" or "AD" Panels lock together to form a combination subfloor and beautiful prime-painted ceiling. For built-in acoustical treatment, use Acoustical "D" or "AD" Panels. Shown here is the Prudential Insurance Company building in Los Angeles.

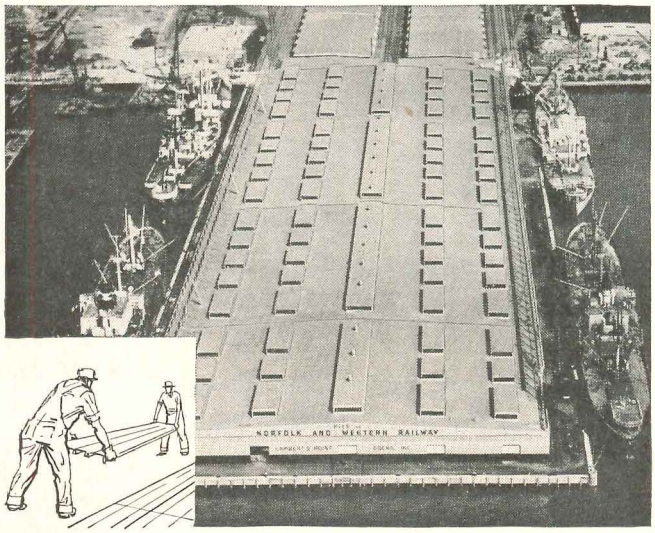
ARCHITECT: Wurdeman & Becket, L. A.

CONTRACTOR: Wm. Simpson Construction Co., L. A.



YOUR WALLS—Fenestra "C" Panels lock together to form combination inside-outside, insulated, prime-painted, firesafe, finished walls! And they can be disassembled and put together again easily and quickly to expand your plant. Titus Station of Metropolitan Edison Co., Reading, Pa.

ARCHITECT-CONTRACTOR: Gilbert Associates, Inc., Reading.



YOUR ROOF—With Fenestra Acoustical Holorib you get a combination roof deck, ceiling, and built-in acoustical treatment, all for as little as 75¢ per square foot *installed!* Regular Holorib costs even less. Here you're looking down at the roof of the giant warehouse of the Norfolk & Western Railway Co., Norfolk, Va.

ARCHITECT: Owner's Engineering Dept.

CONTRACTOR: McLean Contracting Co., Baltimore, Md.

LOOK HOW THESE FENESTRA BUILDING PANELS SAVE YOU MONEY

Fenestra* Metal Building Panels are one of the most exciting—and really important—developments in building materials in many years . . .

They are long-span and steel-strong, so that you can build area by area instead of inch by agonizing inch.

They are lightweight and save structural steel.

Each Panel is a multi-purpose package!

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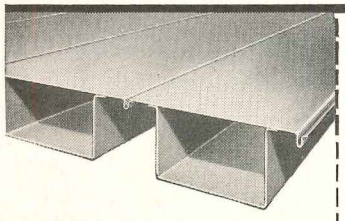
*Trade Mark

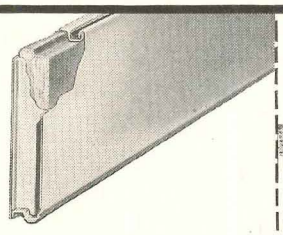
Fenestra

METAL BUILDING PANELS

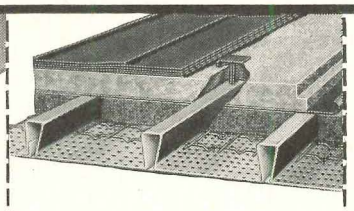
. . . engineered to cut the waste out of building



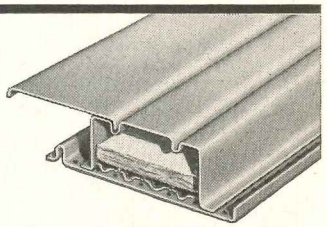
"D" Panels for floors, roofs, ceilings. Standard width 16″. Depth 1½″ to 7½″.



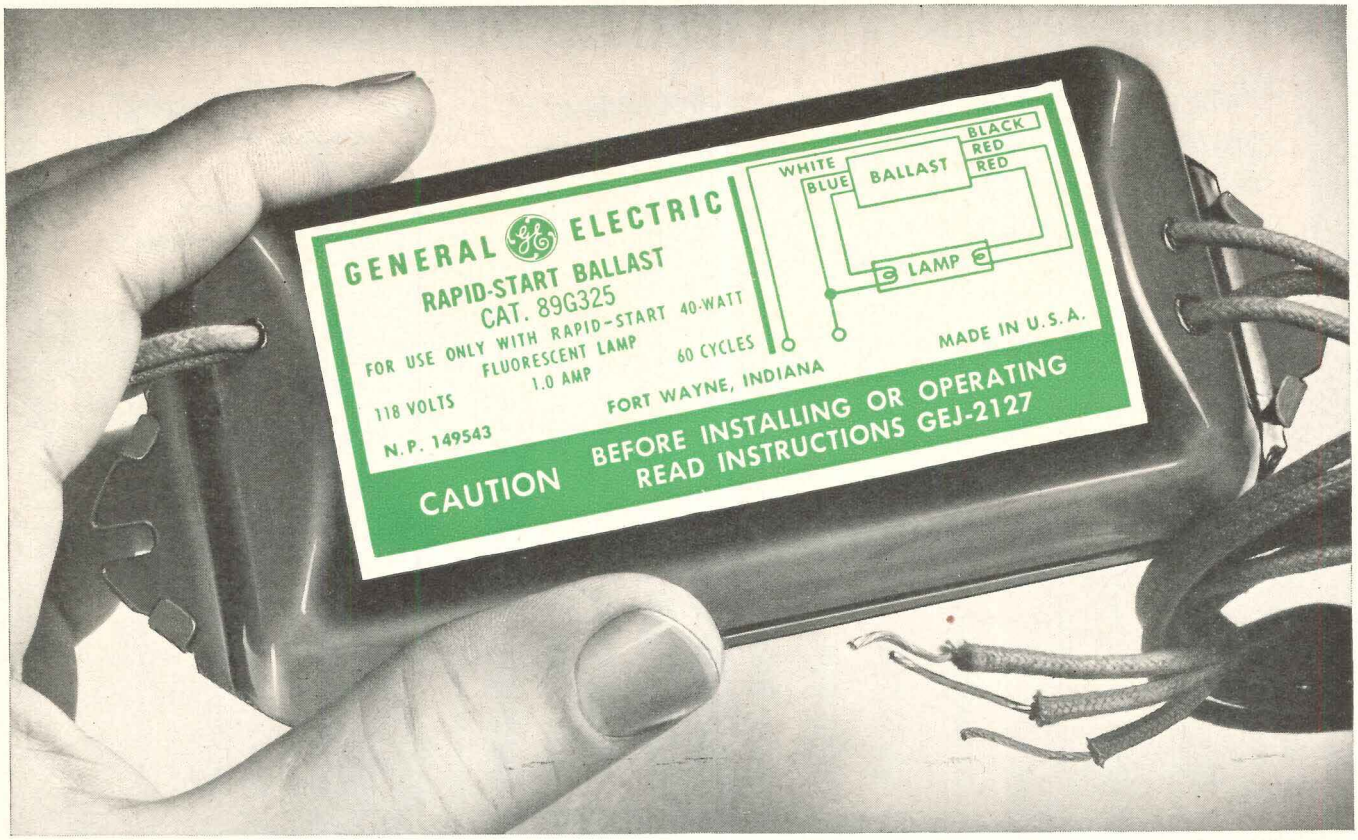
"C" Insulated Wall Panels. Width 16″. Depth is 3″. Steel or aluminum.



Acoustical Holorib for acoustical-structural roof. Width 18″. Depth 1½″.



Acoustical "AD" Panels for ceiling-silencer-roof. Width 16″. Depth up to 7½″.



THE GREEN LABEL DISTINGUISHES NEW G-E 40-WATT RAPID-START BALLAST FROM OTHER G-E BALLASTS—NOTE SIMPLIFIED CIRCUIT

New G-E Lighting Development

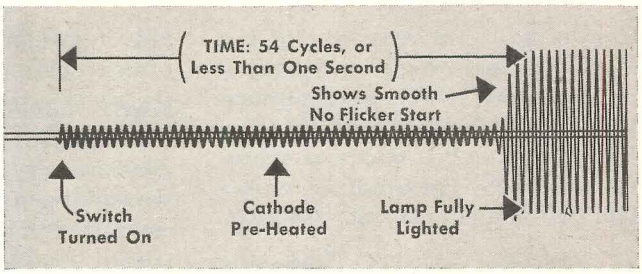
40-watt RAPID-START system eliminates starters

General Electric—first to introduce fluorescent lighting in 1938—now brings you a starterless system giving full, rated lamp life. New, electrically matched 40-watt RAPID-START lamps and ballasts do away with bothersome blinking at end of lamp life, give you eye-easy, no-flicker starts at a touch of the switch!

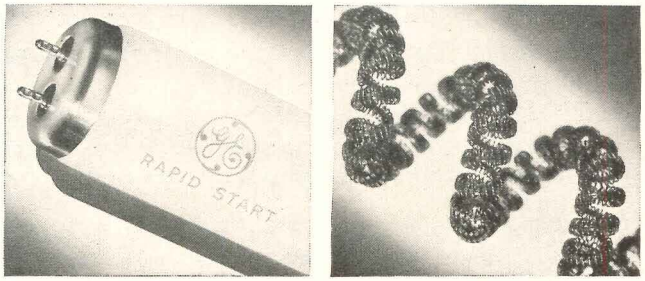
Present "instant-start" 40-watt fluorescent is costly, uses a heavier ballast—present "switch-start" is complicated by auxiliary starters and wiring—new RAPID-START system features smaller, lighter ballasts at a lighting cost comparable to 40-watt switch-start lighting.

General Electric lamp and ballast engineers have again combined their efforts to bring you a revolutionary development in 40-watt fluorescent lighting—the volume market. For new installations or to modernize old installations—a sales plus your customers will want! Act today. Contact your nearest G-E Apparatus Sales Office, or write Section 412-102, for complete information. General Electric Co., Schenectady 5, N. Y.

GENERAL ELECTRIC



ENGINEER'S ANALYSIS of oscillograph readings shows fast, no-flicker pre-heated cathode action of new G-E Rapid-Start.



Greatly magnified.

NEW G-E BIPIN LAMP, especially developed for fast, pre-heat starting, employs complex, triple-coiled cathode, right.

"The appearance of the exterior of our building is greatly enhanced and the load on the air-conditioning system is greatly lightened when (Goodall Casement) curtains are drawn tight against the sun."

George D Estes

Assistant Secretary,
New Hampshire Fire Insurance Co.

New Hampshire Fire Insurance Company Uses Goodall Casement Curtains Exclusively

The beauty and efficiency of the New Hampshire office building in Manchester, N. H., is supplemented with Goodall Casement Curtains. Like modern office buildings everywhere, New Hampshire chose Goodall for these superior features:

APPEARANCE—Goodall Casements come in a rich variety of weaves, colors, and textures . . . give the soft appearance of draperies.

TEMPERATURE CONTROL—Goodall Casements are highly reflective . . . bounce back the sun's hot visible and infra-red rays. This eases the load on air-conditioning systems . . . aids in keeping non air-conditioned offices cooler, more comfortable.

LIGHT CONTROL—Goodall Casements diffuse sunlight into soft, glareless light that helps provide better working conditions at maximum distance from windows.

NOISE CONTROL—Goodall Casements absorb noise. The sound of office machines, ringing telephones, voices, all are perceptibly muffled.

LONGER WEAR—Because Goodall is not married to any one fiber, Goodall Casement Curtains are *Blended-to-Perform*. That means they are composed of a variable blend of fibers...Angora Mohair, rayon, acetate, cotton and nylon . . . fibers chosen for their greater durability and lasting luxury.

EASIER MAINTENANCE—Dust virtually slides off the smooth surface of Goodall Casements. They resist wrinkling, stay fresh longer. They can be washed or dry cleaned thanks to multiple processes that minimize shrinking, sagging, stretching.

For full information write: Goodall Fabrics, Inc., Casement Division, 525 Madison Avenue, New York 22, New York

Goodall Fabrics INC.
THE FINEST NAME IN FABRICS

U. N.

. . . A REFLECTION OF MODERN DESIGN

When the United Nations Secretariat building was in the drawing board stage, the specification writers were not shackled in their thinking. Materials from far corners of the earth were considered . . . some ultimately were used. Matching the modern spirit and lofty purpose of the structure, the search narrowed down to the best and most modern building materials.

CLAY TILE

. . . THE CHOICE OF MODERN DESIGNERS

Genuine Clay Tile was used to help create an atmosphere of lasting beauty and cheerful cleanliness in three key U. N. areas. Clay tile installations in these "high-traffic" spots assured the absolute minimum in upkeep and maintenance costs.

Genuine Clay Tile beautifies the walls of the U. N. cafeteria serving area. At the same time it helps provide the high sanitation standards so necessary in any food service area.

Wall-to-wall installation of quarry tile makes cleaning the beautiful U. N. kitchen floor a cinch. Heavy traffic won't mar this virtually indestructible surface!

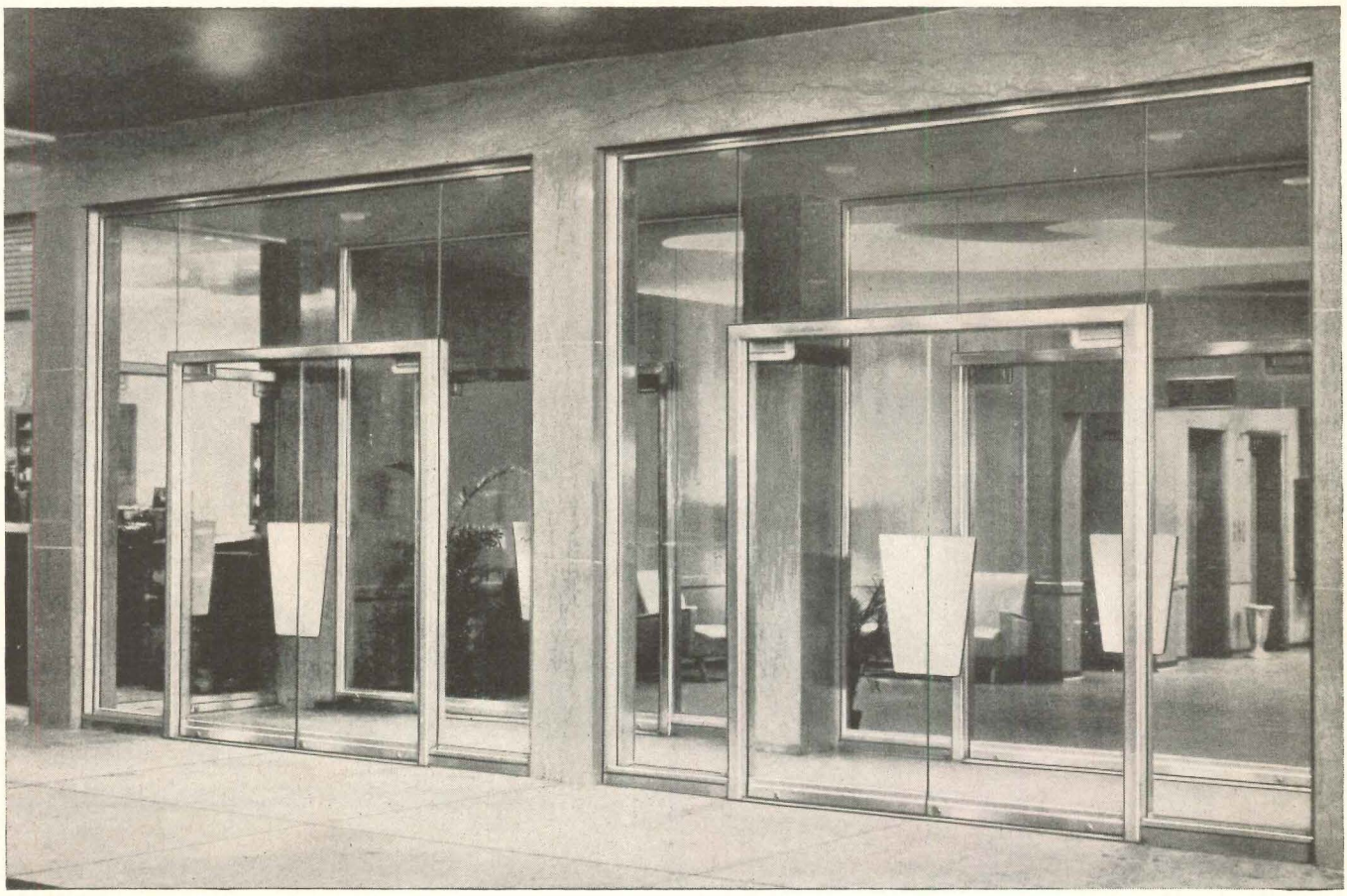
Clay tile walls and floor in a typical U. N. washroom provide a hygienic, morale-building decorative treatment. Clay Tile is the surest way to permanently attractive washrooms—and lower maintenance costs.

Tile Council of America, Room 3401, 10 East 40th St., New York 16, N. Y. or Room 433, 727 W. Seventh St., Los Angeles, Calif.

The Modern Style is

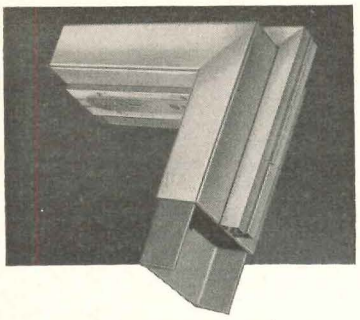
GENUINE CLAY **tile**

PARTICIPATING COMPANIES: American Encaustic Tiling Co. • Architectural Tiling Co., Inc. • Atlantic Tile Mfg. Co. • B. Mifflin Hood Co. • Cambridge Tile Mfg. Co. • Carlyle Tile Co. • General Tile Corp. • Gladding, McBean & Co. • Mosaic Tile Co. • Murray Tile Co., Inc. • National Tile & Mfg. Co. • Olean Tile Co. • Pacific Tile and Porcelain Co. • Pomona Tile Mfg. Co. • Robertson Mfg. Co. • Summitville Tiles, Inc. • United States Quarry Tile Co. • Winburn Tile Mfg. Co.



Architects: Cletus W. and W. P. Bergen, Savannah, Ga.

Any way you look at it, Pittsburgh Doorways are the answer



HERE'S A SECTIONAL VIEW of the free-standing Pittsburgh Doorway, such as used in the installation at top. This cut-away shows the 6"—10.5-lb. steel channel which is continuous through the massive extruded aluminum frame. The rugged beauty of the frame is enhanced by perfectly mitered corners.

LOOK AT IT from the standpoint of quality and precision manufacture? Every detail of fabrication of Pittsburgh Doorways is distinguished by high quality and precision workmanship. Here are machine-made miters, massive, classical lines, substantial silhouettes, sturdy steel construction reinforcing the heavy extruded aluminum frames.

Look at it from the standpoint of ease of installation and reduction of on-the-job costs? Pittsburgh Doorways assure the absolute accuracy of all dimensions, because experienced craftsmen use special checking gauges. This eliminates time-consuming calculations and costly fitting, locating and fabricating at the site. There is nothing to assemble; no holes to drill. Pittsburgh Doorways come complete—in one "package." It is simply necessary to unpack the frame, bolt it into the rough opening and hang the sturdy Herculite Doors, for whose strength the frames have been especially engineered.

Look at it from all these standpoints and your choice will be Pittsburgh Doorways. Remember, list price is only the start. It is the *total installed* cost that is the true criterion. Pittsburgh Doorways give more . . . save more. Why not ask for complete details? Write today to Pittsburgh Plate Glass Company, Room 2133, 632 Duquesne Way, Pittsburgh 22, Pa.

Pittsburgh **DOORWAYS**

PAINTS · GLASS · CHEMICALS · BRUSHES · PLASTICS

PITTSBURGH PLATE GLASS COMPANY

TRI-FLEX and AEROVANE REGISTERS

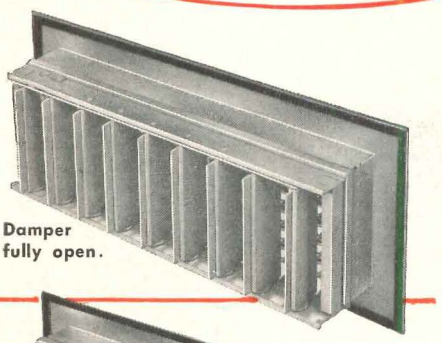
now equipped with

Opposed Blade Dampers

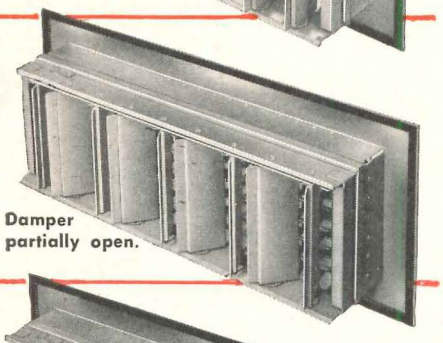
Showing TRI-FLEX T-647 Double Deflection Register with Opposed Blade Damper

KEY OPERATOR FOR OPPOSED BLADE DAMPER

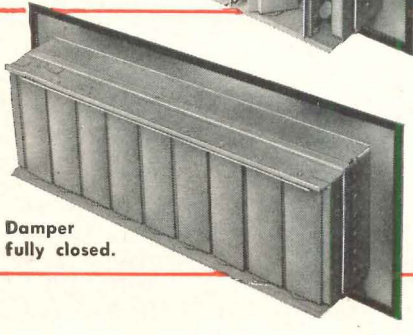
Blades are regulated by key operator which may be removed or tapped permanently into place.



Damper fully open.



Damper partially open.



Damper fully closed.

TRI-FLEX Supply Air Registers and AEROVANE Return Air Registers — specified and installed on important air-conditioning jobs — are now constructed with opposed blade dampers.

This improved damper unit insures uniform distribution of air over the entire face of the register . . . and provides positive damper setting in any position from fully open to fully closed regardless of system pressure. Set in a rigid steel frame, blades are formed for extra strength and stiffness, and overlap when closed, eliminating any possibility of air leakage. Blades are regulated through the face of the register by means of a key operator which may be removed or tapped permanently into place.

For complete information and size selection-data for TRI-FLEX and AEROVANE Registers and Grilles, write for a copy of Catalog No. 200.

TUTTLE & BAILEY inc

NEW BRITAIN, CONNECTICUT

THE ANSWER IS

BRYANT WIRING DEVICES

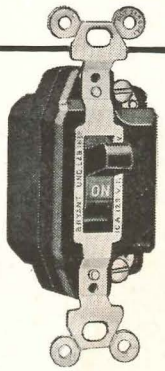
in

U. S. Steel Building, Pittsburgh

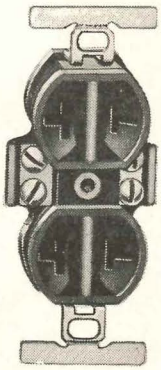
QUALITY — of materials was the keynote when specifications for U. S. Steel's big new Pittsburgh home were written. Why? Because quality means long life — dependable service, and operating economy over the long haul.

BUILT TO LAST — Bryant Wiring devices were the choice — devices like the 4961 heavy duty 10-ampere switch and the Bryant 4812 Duplex Convenience Outlet. And throughout the building, durable, attractive Bryant stainless steel wall plates add beauty to interiors.

BRYANT'S FULL LINE — Choose from the full line of Bryant quality wiring devices made for home, office and industry. All Bryant devices must pass rigid tests and inspections before they leave the plant.



4961 Switch



4812 Outlet

Architects — Harrison & Abramowitz, N. Y.
Associate Architect — W. Y. Cocken, Pittsburgh.
Mechanical and Electrical Engineer — Meyer Strong & Jones, N. Y.
General Contractor — Turner Construction Company, N. Y.
Electrical Contractor — The Howard P. Foley Company, Washington, D. C.
Financing & Construction — John W. Galbreath & Co., Pitts., Pa.

THE BRYANT ELECTRIC COMPANY

Bridgeport 2, Connecticut

Chicago • **Los Angeles**

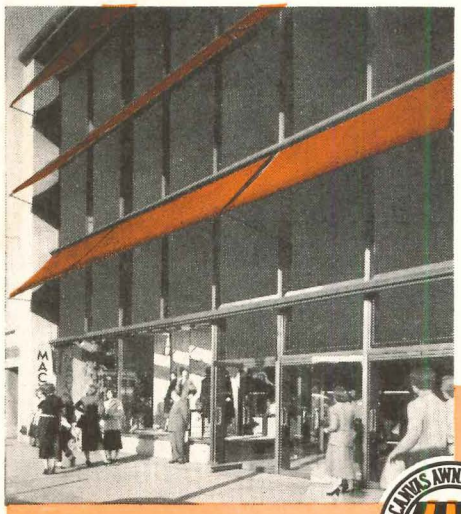
BRYANT
SUPERIOR WIRING DEVICES

J-99876

Listed as Standard by Underwriters' Laboratories, Inc.

Macy's Flatbush Store
Brooklyn, New York

Architects and Engineers:
Voorhees Walker Foley & Smith



modern design and Canvas

Among the materials which help contemporary architecture combine function and beauty, none can match CANVAS in providing maximum design flexibility. Awning fabrics lend color and texture, permit greater freedom in the use of glass by economically solving problems of solar heat control.

Voorhees Walker Foley & Smith chose Canvas as a colorful companion to glass . . . for transparency tempered with shade. These materials, gracefully blended, have played important roles in meeting Macy's specifications for an outstanding modern store design.

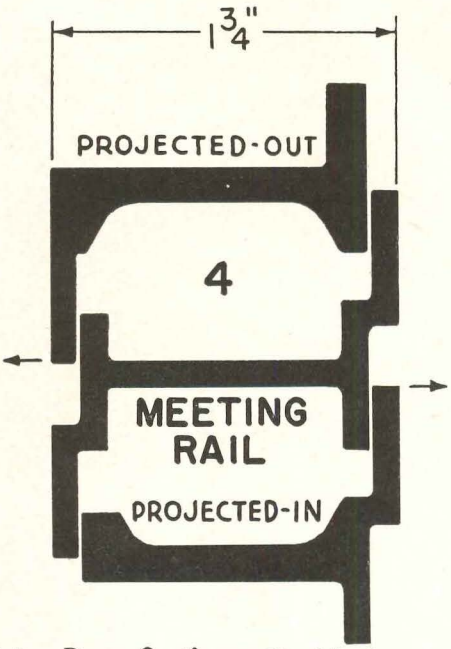
FREE: Write today for our new brochure on Canvas applications. Contains original and practical ideas, plus helpful instructions for specifying Canvas.

THE CANVAS AWNING INSTITUTE INC.

CANVAS AWNING INSTITUTE
and NATIONAL COTTON COUNCIL
P. O. BOX 18 **MEMPHIS, TENN.**

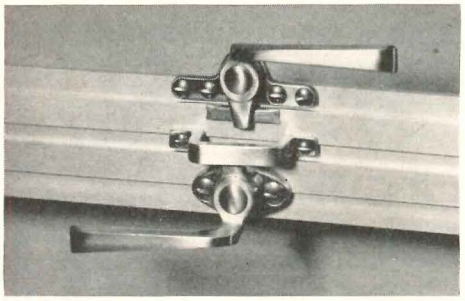
Where the *other* services also count – it's always BAYLEY WINDOWS

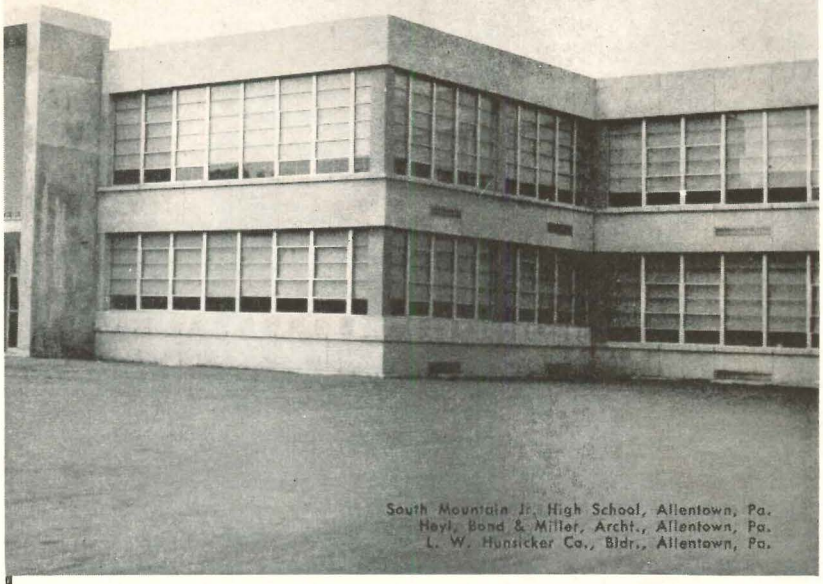
Two of the many important features of BAYLEY design



Extra Deep Sections: This full size section of the combined meeting rail and ventilator section (full 1¾″ horizontally and 2¾″ vertically) show how "Thermopane" or "Twindow" glazing can be accommodated. Also, ample room between ventilators and frame members is provided for substantial built-in hardware, such as ventilator shoes and limit arms.

Rugged White Bronze Hardware
Sturdy, positive-acting handles fit neatly to the flat surface of the window and are securely mounted with grommets embedded in the section. No mechanical parts to become loose or require maintenance!




South Mountain Jr. High School, Allentown, Pa.
Heyl, Bond & Miller, Archt., Allentown, Pa.
L. W. Hunsicker Co., Bldr., Allentown, Pa.

Bayley Aluminum Projected Windows

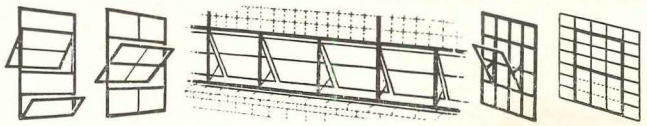
Add Efficiency and Economy to Modern School Design

Bayley's ceaseless endeavor to better serve through all the building stages — from a school's inception to its occupancy — is further exemplified in the Bayley Aluminum Projected Window. In addition to carrying Bayley's "hallmark" of quality construction, it provides the design features that School Authorities have requested to be incorporated in a window for most efficient school use. A few of these features are:

Modern appearance • Economy — painting unnecessary • Permanence — long carefree life • Simplicity — no complicated mechanism • Adaptable to all types of construction • Glazing outside — flat surface inside • Easily washed from inside • Prepared for screens • Permits use of accessories, such as draperies, shades, curtains, venetian blinds or awnings.

These features — and still others — reflect Bayley's years of specialized window experience and recommend your discussing your needs, regardless of the requirement, with Bayley. Write or phone.

See Bayley in Sweet's. Complete catalogs on aluminum windows, 17a/BA; steel windows, 17b/BAL; Saf-T-Gard Hospital Detention Window, 17b/BAY.


PROJECTED PIVOTED VueLINE GUARD SAF-T-GARD

73 Years of RELIABILITY

QUALITY APPROVED P-A2

THE WILLIAM BAYLEY COMPANY

Springfield, Ohio

District Sales Offices:

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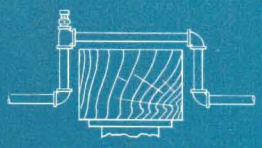
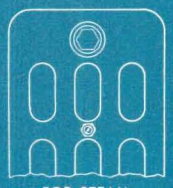
HOFFMAN HOT WATER VALVES

A TYPE FOR EVERY VENTING REQUIREMENT

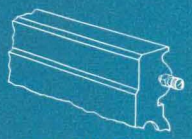
ANNOUNCING No. 500 UNIVERSAL AIR VENT



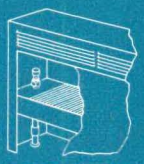
FOR HIGH POINTS



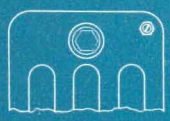
FOR STEAM RADIATORS



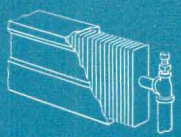
FOR BASEBOARD RADIATION



FOR CONVECTOR RADIATORS

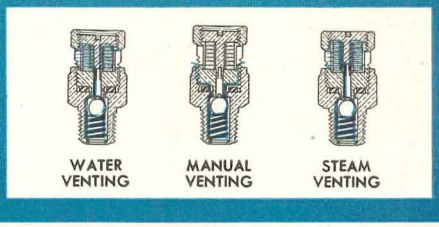


FOR HOT WATER RADIATORS



FOR BASEBOARD RADIATION

Now, one Hoffman Radiator Valve will vent *all* systems—automatically! Only one Valve to stock—one twist to adjust for Manual, Steam or Hot Water venting. Nothing to get out of order. Valve can be cleaned of leak-sealing compounds or minerals without draining water system. Hygroscopic fibre discs *automatically* open to allow air to vent, *automatically* close against steam or water. Selector Screw controls the rate of venting. Operates at maximum steam pressure of 15 lbs., and maximum water pressure of 50 lbs.

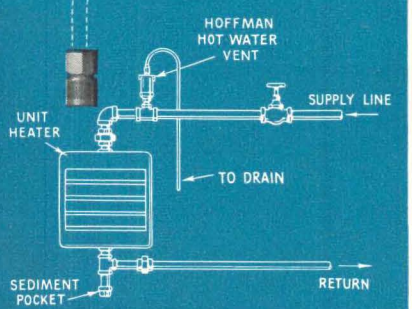


WATER VENTING | MANUAL VENTING | STEAM VENTING

NO. 791 LOW PRESSURE HOT WATER VENT

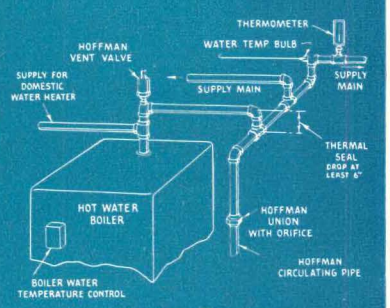
Another Hoffman star-seller for low pressure water systems. All brass construction. When water is encountered float rises to seal pin in seat and prevent water leakage. Can be taken apart for cleaning. Typical applications include Unit Heaters, Hot Water Heating Systems, any installation where the pressure does not exceed 35 lbs. Size conn.: ¼".

Valve is threaded for a drain, furnished on order at extra cost. Drain pipe guides moisture from vented air to convenient location.



NO. 79 HOT WATER VENT

A typically fine quality Hoffman Vent Valve developed for positively removing air from the piping of any hot water system. This valve will give continuous venting under all conditions. Drawn brass body, nickel trim. Tapped at top for ¼" pipe connection to conduct away moist air, where needed. Size conn.: ¾" male, ½" female. Max. operating press. 75 lbs.



HOFFMAN SPECIALTY MFG. CORP. • 1001 York Street, Indianapolis 7, Indiana

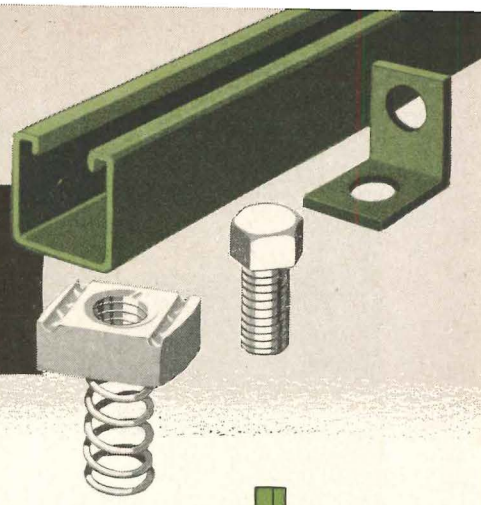
Makers of Valves, Traps, Hot Water Heating Systems, Vacuum and Condensation Pumps . . . Sold by Leading Wholesalers of Heating and Plumbing Equipment

typical UNISTRUT® framing applications

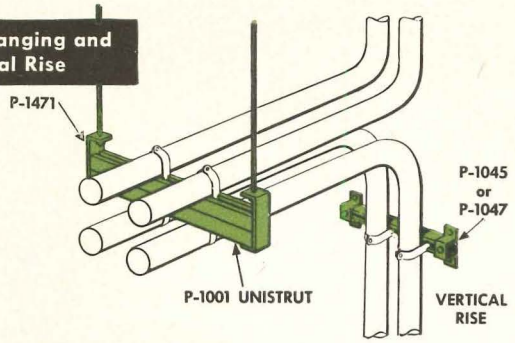
TO SUPPORT, SUSPEND AND MOUNT ALL KINDS OF MECHANICAL PIPING

No drilling, no welding, no special tools or equipment—adjustable UNISTRUT framing assures exact slope or pitch!

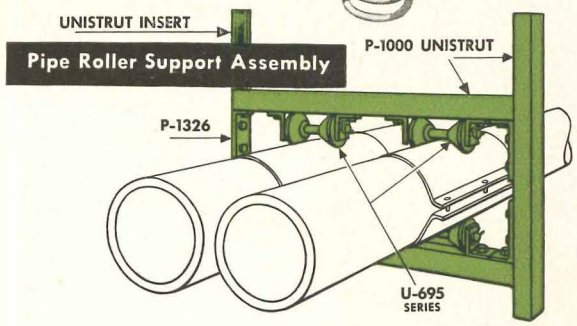
The UNISTRUT method conserves steel, reduces manpower hours, cuts overall costs.



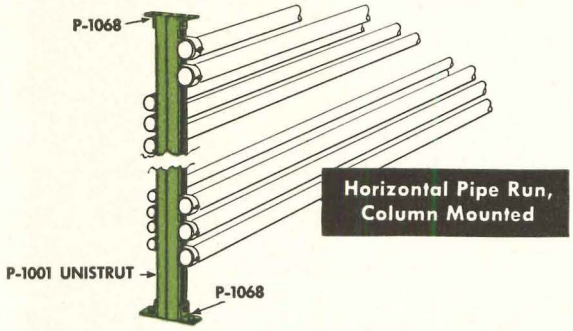
Trapeze Hanging and Vertical Rise



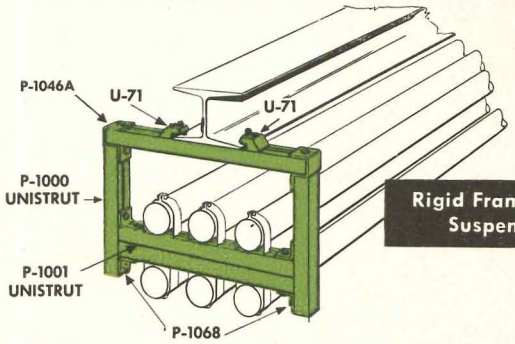
Pipe Roller Support Assembly



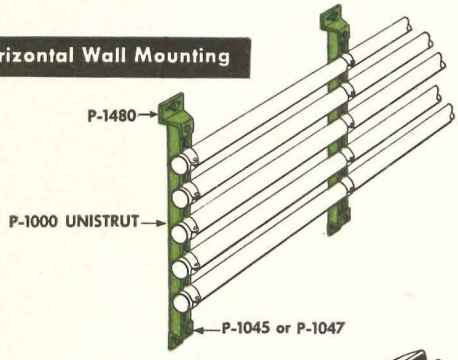
Horizontal Pipe Run, Column Mounted



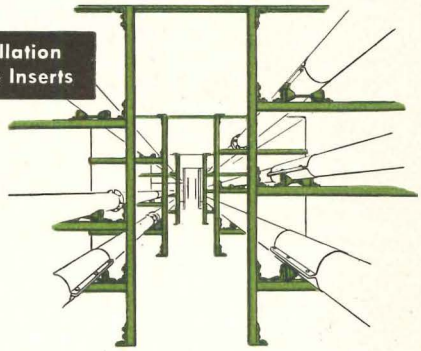
Rigid Frame Beam Suspension



Horizontal Wall Mounting



Tunnel Installation with Concrete Inserts



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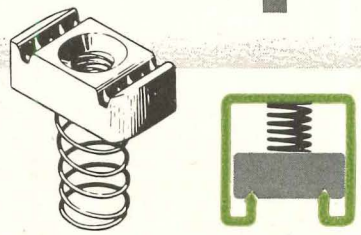
offers this Spring-Held Clamping Nut which ties together both sides of the slotted channel and forms a *Box Section* at points of connection for greater load strength.



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of New 78-page Catalog No. 700! Includes above drawings and countless other examples of how to mount, rack, frame, suspend and support all kinds of mechanical and electrical equipment.

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difficult oval dome replacement roof crafted by Overly

The famed Mormon Tabernacle now has a roof considered good forever. This Salt Lake City, Utah, edifice previously had two heavy roofs in succession; first wood shingle, then metal shingle. The final and much lighter roof shown is aluminum—of the Overly-Goodwin Batten type. • Overly replacement work required accurate measuring, precise shop fabrication of 188 sections, skilled erection—resulting in perfect fit and permanent water tightness. Designer: Latter Day Saints Church Building Committee. • Send for Catalog 7-B.

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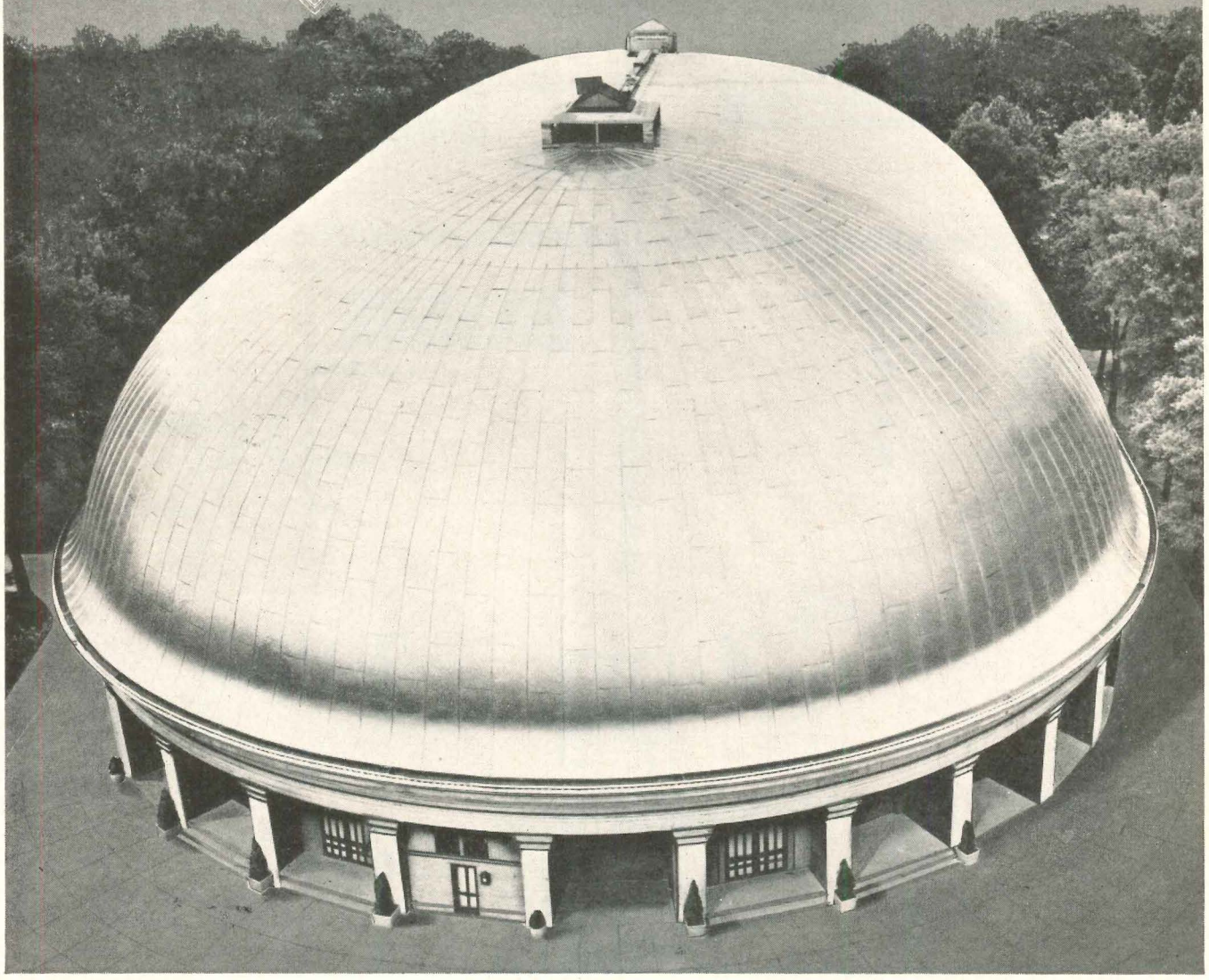

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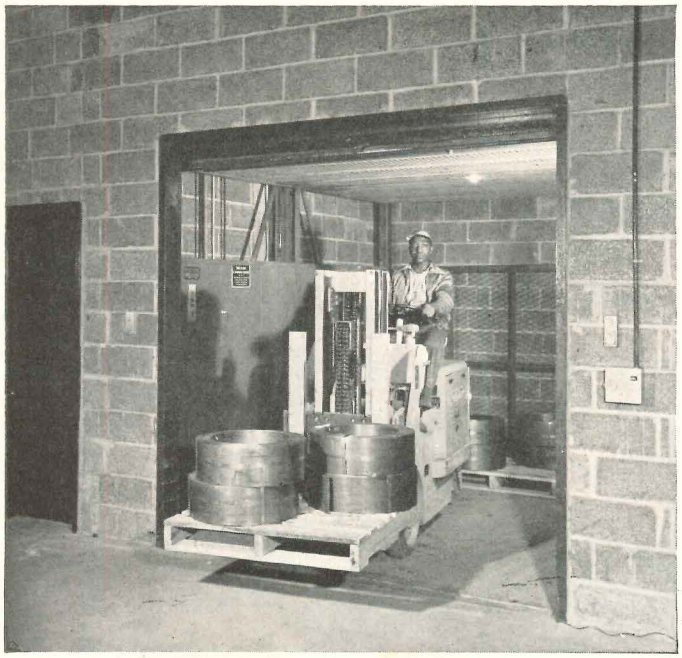

ROTARY OILDRAULIC FREIGHT ELEVATOR
SPEED PRODUCTS CO.
Long Island City, New York
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General Contractors: Caristo Construction Co., Brooklyn, N. Y.
Elevator Contractor: Burwak Elevator Co., New York City

ROTARY OILDRAULIC PASSENGER ELEVATOR
SANTA MONICA MEDICAL ARTS BUILDING
Santa Monica, California
Architect: Weldon J. Fulton, Santa Monica
General Contractors: Pozzo Construction Company, Los Angeles
Elevator Contractor: Elevator Maintenance Co., Los Angeles

No penthouse or heavy supporting sidewalls

The Rotary Oildraulic Elevator is moved and controlled by oil under pressure, the most powerful and practical method of lifting heavy loads.

The elevator car and its load are supported by the hydraulic system — not by the building structure. This eliminates the costly, unsightly penthouse that interferes with modern architectural design. It also makes possible a substantial lightening of the shaftway structure by eliminating heavy sidewalls. Rotary's compact power unit can be located on any landing, on any side of the hatchway. Thus it can be placed in an area with other mechanical equipment for convenience in servicing and to save space.

Smooth starts, gentle stops, accurate landings

The revolutionary Rota-Flow oil hydraulic power system gives velvet-smooth fluid operation. You can depend on smooth starts and cushioned stops. Oildraulic automatic floor leveling positions the car to each landing with exactness—¼″ is guaranteed!

Over 65,000 Rotary Oildraulic elevators and lifts are serving leading companies from coast to coast. They are manufactured in sizes and capacities as specified, with any desired types of cabs, doors and controls. Our Engineering Department will be glad to assist you on plans and specifications. Write for catalog and complete architectural data.

ROTARY LIFT CO., 1108 KENTUCKY, MEMPHIS 2, TENN.

World's oldest and largest builders of hydraulic elevating equipment

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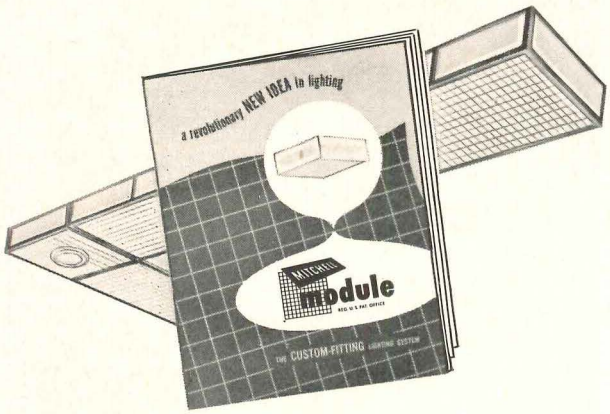
Oildraulic® Elevators

PASSENGER AND FREIGHT

easiest to specify, easiest to install, easiest to sell

America's most **complete** Quality Lighting Line



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MITCHELL offers 70 superb Commercial Luminaires to meet the requirements of every conceivable installation: stores, offices, schools, institutions. You can specify MITCHELL Luminaires with confidence—they're tops for quality, time-saving installation, low-cost maintenance and lighting efficiency. **Ask for Catalog No. 433.**

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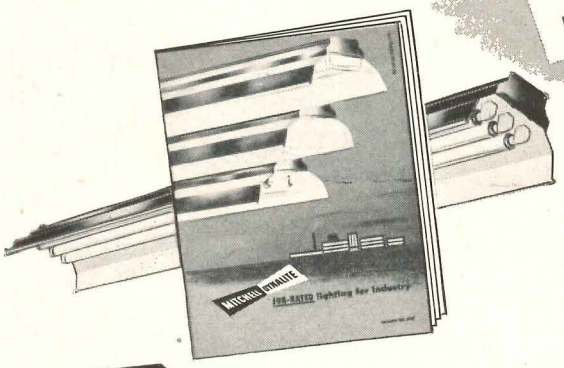
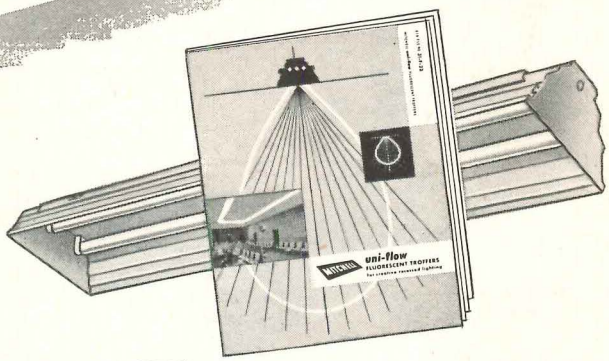


MITCHELL **DYNALITE**
Job-rated Lighting for Industry

You'll find it easy to specify for any industrial application when you choose from the complete line of 82 DYNALITE units. Available in all lengths and lamp types, with choice of reflectors and shielding. There's a DYNALITE that's PRODUCTION-RIGHT for every job. Full details in **Catalog No. 438.**



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Fluorescent Recessed Lighting

Here's the latest and finest achievement in recessed lighting: 6 different troffer lengths (shallow or deep); 12 types of shielding; 7 types of lamps; choice of reflectors—PLUS exclusive ONE-MAN installation feature that cuts installing time by 50%! The complete facts are in **Catalog No. 605.**

It's easy to specify, easy to sell from MITCHELL'S "tell-all" Catalogs covering Everything in Lighting. Write for them today.

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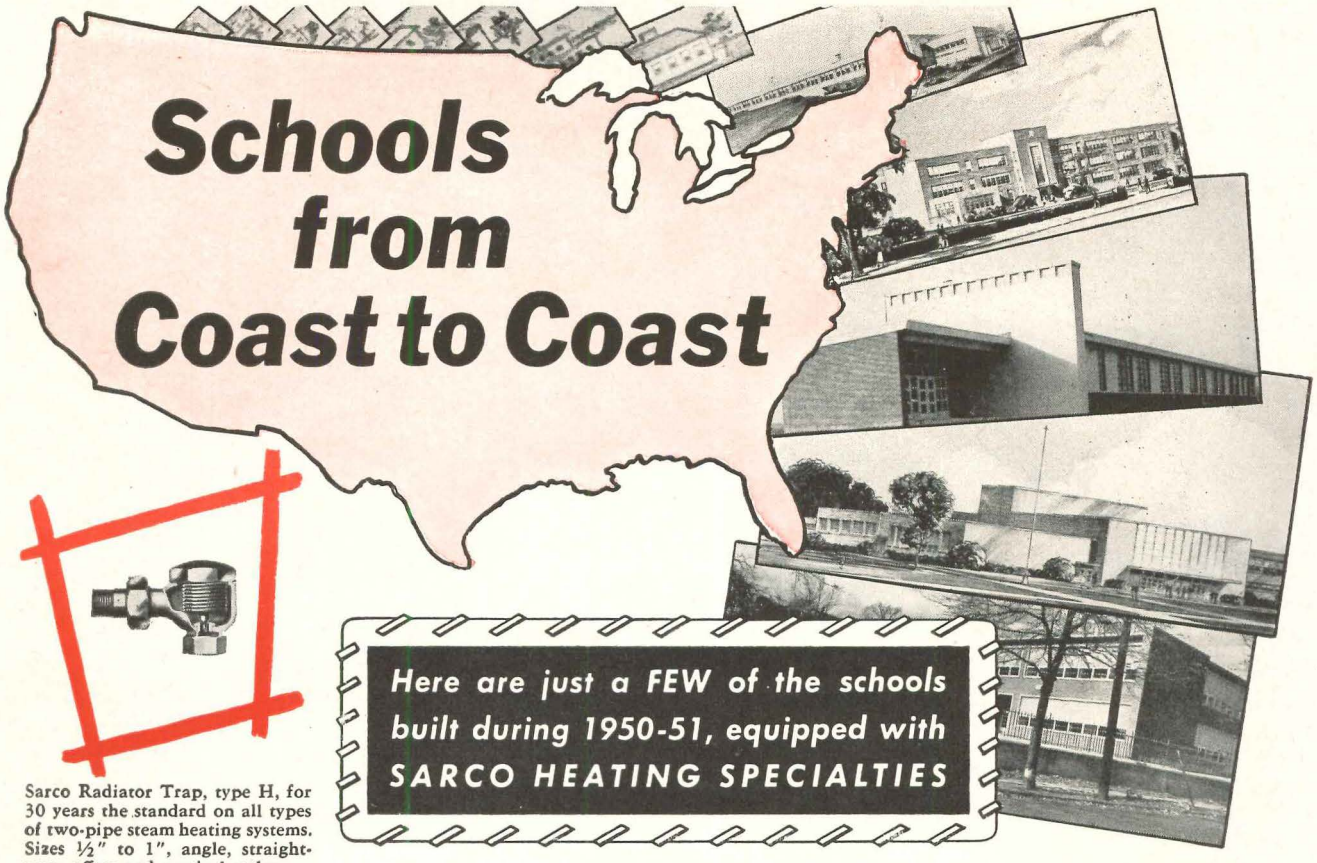
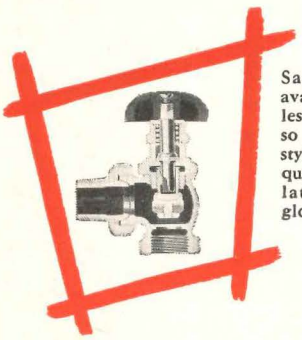
Schools from Coast to Coast

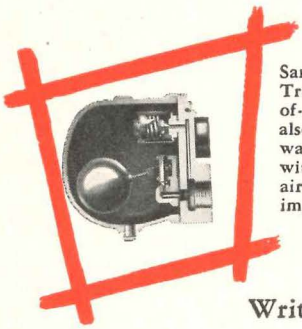


Here are just a FEW of the schools built during 1950-51, equipped with SARCO HEATING SPECIALTIES

Sarco Radiator Trap, type H, for 30 years the standard on all types of two-pipe steam heating systems. Sizes ½" to 1", angle, straightway, offset and vertical styles.



Sarco Radiator Valve, available in spring-packless style as illustrated; also in the bellows-packless style. Sizes ½" to 1½", quick opening and modulating types; angle or globe.



Sarco Float-Thermostatic Trap, type FTL for end-of-main and riser drips; also unit heaters and hot water generators. Fitted with Sarco thermostatic air vent. Air binding is impossible.

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State	*City*	*School*
California	Westwood	U.C.L.A.—Geology and Chem. Bldg.
Connecticut	Danbury	Park Avenue School
Connecticut	New Haven	Winchester Elementary School
Connecticut	Wilton	Wilton Junior High School
Florida	Haines City	Junior-Senior High School
Idaho	Coeur D'Alene	Coeur D'Alene School
Illinois	Freeport	Junior High School
Illinois	Lincolnwood	Lincolnwood Elementary School
Illinois	Wauconda	Wauconda Township High School
Indiana	Mishawaka	Bremen School
Iowa	Cedar Rapids	Buchanan Elementary School
Louisiana	Bogalusa	Bogalusa High School
Maryland	Baltimore	Edison-Barton-Mergenthaler High School
Massachusetts	Taunton	New School for Feeble Minded
Michigan	Galesburg	Galesburg School
Mississippi	Gulfport	Northeast Ward Elementary School
New Hampshire	Lebanon	Canaan Elementary School
New Jersey	Lakewood	Public School No. 5
New Jersey	Newark	Dayton Street School
New Jersey	Passaic	Grant School No. 7
New York	Bronx	Junior High School No. 125
New York	Brooklyn	Junior High School No. 14
New York	New York	Public School No. 192
New York	Roslyn	East Hills Elementary School
New York	Stony Brook	Stony Brook Elementary School
North Carolina	Lumberton	Pembroke-Rowland School
Ohio	Cleveland	Case Institute of Technology
Ohio	Lyndhurst	Anderson Road School
Oregon	Eugene	Eugene High School
Pennsylvania	Annville	Lebanon Valley College
Pennsylvania	Franklin County	Mainsville Elementary School
Pennsylvania	Williamsport	Williamsport Jr. High School
Pennsylvania	York	York Township Elementary School
Tennessee	Nashville	Gallatin High School
Texas	Austin	Casis School
Texas	Waco	Waco High School
Utah	Salt Lake City	West High School (Gymnasium)
Washington	Richland	Chief Joseph High School

and many, many other schools

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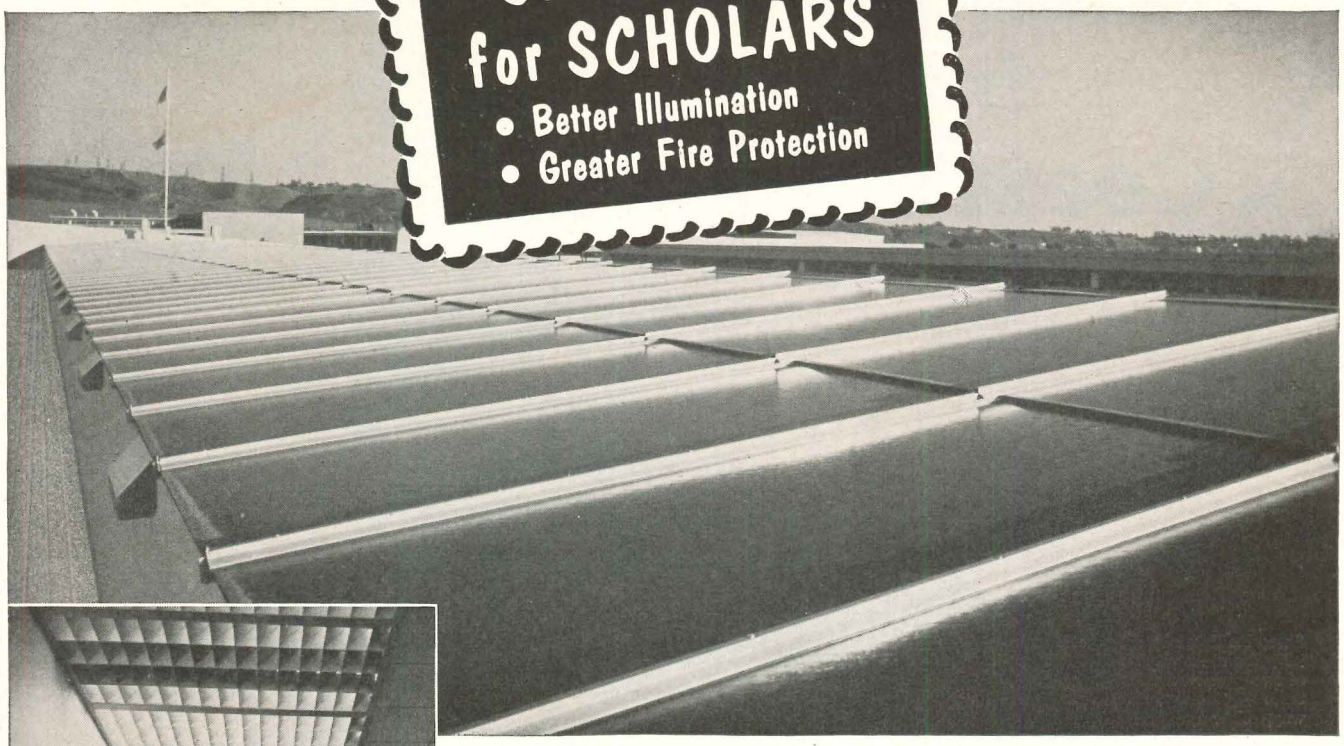
ALWAYS SPECIFY SARCO 354

SKYLIGHTS for SCHOLARS

- Better Illumination
- Greater Fire Protection



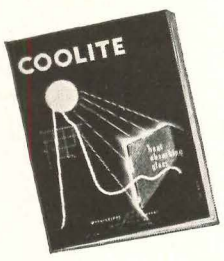
Skylights of new Culver City High School provide daylight illumination in large building.

COOLITE GLASS HELPS GUARD YOUNG EYES

Eye fatigue is an enemy of education. School children must be provided with high levels of quality illumination. In the modern Culver City High School, approximately 30,000 square feet of Hammered Coolite Wire Glass by Mississippi was installed in skylights which flood the entire interior with glare-free, controlled daylight for easier seeing. The texture and delicate blue-green tint of Coolite transmute raw sunlight into softly diffused and conditioned illumination. The innate strength of this famous wire glass by Mississippi adds structural endurance, reduces danger from breakage. Hammered Coolite Wire Glass helps retard effects of dangerous fires, provides increased safety for occupants. It tends to "bottle up" and smother small conflagrations before they can spread to tragic proportions.*

Study the use of Coolite for school buildings. Its superior qualities suggest its use in modern school architecture. Mississippi Glass Company conducts continuous experiments in daylighting research in its model schoolhouse. Specify Mississippi Glass and make daylight a part of your plan.

*Approved Fire Retardant No. 32



Translucent figured and wired glass by Mississippi for better daylight illumination is available in a wide variety of patterns and surface finishes all scientifically designed to distribute light to best advantage. Send today for free literature and samples.

MISSISSIPPI Glass COMPANY

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NEW YORK • CHICAGO • FULLERTON, CALIF.

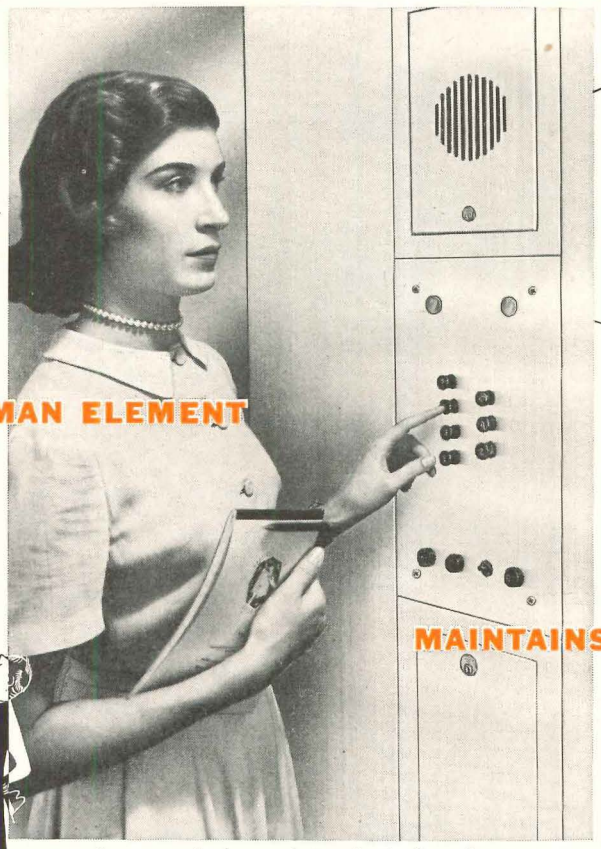
WORLD'S LARGEST MANUFACTURER OF ROLLED, FIGURED AND WIRED GLASS

AUTOTRONIC®

Without Attendant

ELEVATORING

MINIMIZES THE HUMAN ELEMENT



Passengers simply press buttons for the floors they want

MAINTAINS HIGH SPEED OPERATION

Autotronic—WITHOUT ATTENDANT—Elevatoring maintains a predetermined time schedule to insure minimum round-trip time, and consequently, a shorter wait.

Automatic "This Car Up" signals keep passengers moving toward the next available car.

As passengers step into a car, they press buttons for the floors they want. A signal sounds as the doors close, the elevator accelerates, "thinks ahead" to its next stop, lights a directional hall signal in advance of its landing stop, decelerates and starts to open its doors while leveling smoothly into the landing—all automatically!

Autotronic—WITHOUT ATTENDANT—Elevatoring has been handling heavy traffic for more than two years in new and modernized buildings. It offers the only substantial saving in building operation that is available today. It saves up to $5,500 a car, each year. Ask any of our 266 offices for details.

Otis Elevator Company, 260 11th Avenue, New York 1, N. Y.

BETTER ELEVATORING IS THE BUSINESS OF OTIS

INSTALLATION: State Savings Bank, Hartford, Conn.
ARCHITECT: R. B. O'Connor & W. H. Kilham, Jr., New York City, N. Y.
LIGHTING ENGINEERING BY: R. Cooper, Baldwin Stewart Electric Co., Hartford, Conn.
ENGINEER: Kaiser, Muller & Davies, New York City, N. Y.
NEW BANKING AREA: 36'-3" x 48'.
CEILING HEIGHT: 12'.
FIXTURES: Litecontrol No. 9034 3-lamp recessed fixtures, using Holophane No. 9030 and No. 9031 lenses.
LAMPS: Each fixture has two standard cool white, and one de luxe warm white lamp.
SPACING: 6' x 9'.
OVER-ALL INTENSITY: 42 footcandles average in service. On tellers' deal plates, 46 footcandles average in service.
Submitted in contest by: Edward Cole, Hartford Electric Light Co.

1st PRIZE

Prize Lighting Job PAYS DIVIDENDS

. . . at Hartford State Savings Bank

FIVE hundred new depositors selected this light, attractive lobby the *smart* place to do their banking . . . since it was relighted with ingeniously modified *standard* LITECONTROL fixtures. And so did the Connecticut section of the Illuminating Engineering Society, for they awarded it first prize in a recent lighting contest.

Problem here was to illuminate the new banking area (rear with low ceiling) in a modern distinctive manner . . . yet preserve the architectural tone of the old area (front with 24-foot ceiling).

Planned Lighting by Litecontrol provides standard fixtures that balance light intensity in both areas. Cool white and warm white fluorescent lamps blend to match the incandescent light from chandeliers. Note color quality of walls appears uniform throughout. While even illumination eliminates need for local light sources at tellers' cages.

You, too, can plan a better lighting installation at *standard fixture costs* — with your local LITECONTROL man.

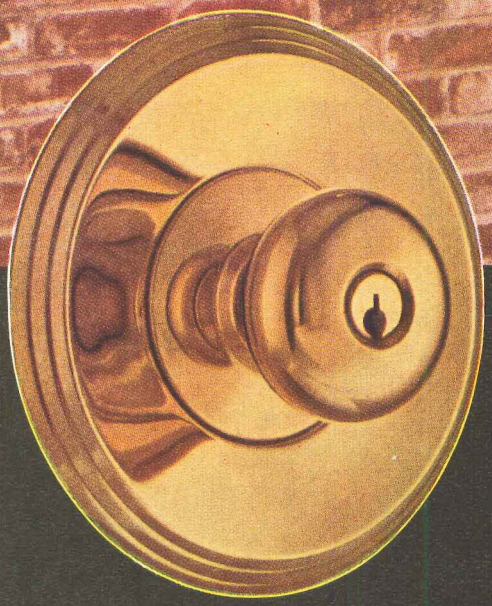
LITECONTROL *Fixtures*

KEEP UPKEEP DOWN

LITECONTROL CORPORATION, 36 Pleasant Street, Watertown 72, Massachusetts

DESIGNERS, ENGINEERS AND MANUFACTURERS OF FLUORESCENT LIGHTING EQUIPMENT DISTRIBUTED ONLY THROUGH ACCREDITED WHOLESALERS

SCHLAGE LOCKS DISTINCTIVE appearance TIME-PROVEN performance



SCHLAGE PLYMOUTH DESIGN
with Riviera escutcheon

Write for full-color brochure showing distinctive and economical entrance locks.

The quality of Schlage cylindrical locks is clearly evident ...in their beauty and in their trouble-free operation... time-proven for more than a quarter of a century.

SCHLAGE®

THE Time-Proven CYLINDRICAL LOCK

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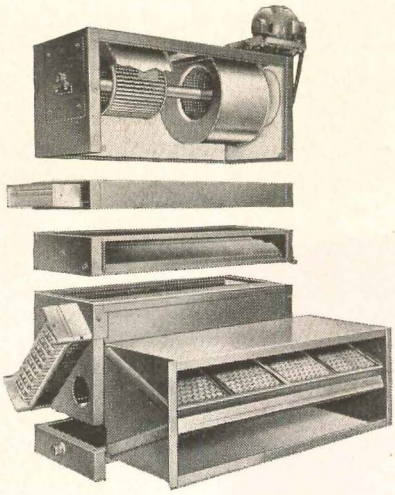
SCHLAGE LOCK COMPANY OF CANADA, LTD. · VANCOUVER, B. C.



Carrier System Weathermaker, showing sectionalized construction. Note accessibility of each functional component. Piping connections can be made from either side.

What goes into good air conditioning?

Good equipment, naturally. But we think that's only half the story. The other half is good dealer service.

For example, take our System Weathermaker. Its unique sectionalized construction (demonstrated below) permits a wide variety of unit combinations to meet individual job or space requirements.

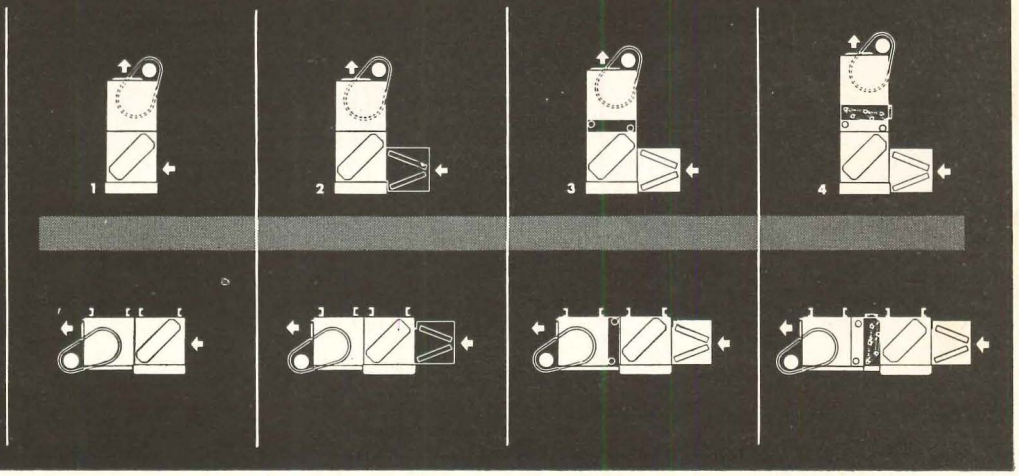
Good? There's nothing else like it for industrial air conditioning applications.

And here's where the Carrier dealer comes into the picture. He *knows* air conditioning. He knows how to use this sectionalized construction in terms of your needs. His experience plus our product give *you* the kind of air conditioning that's easily serviced and technically suited to the job.

Remember, there's a full line of Carrier products, all matched in size and performance to work together. So whenever your plans include air conditioning, call your Carrier dealer. He's listed in the Classified Telephone Directory. Or write Carrier Corporation, Syracuse, New York.

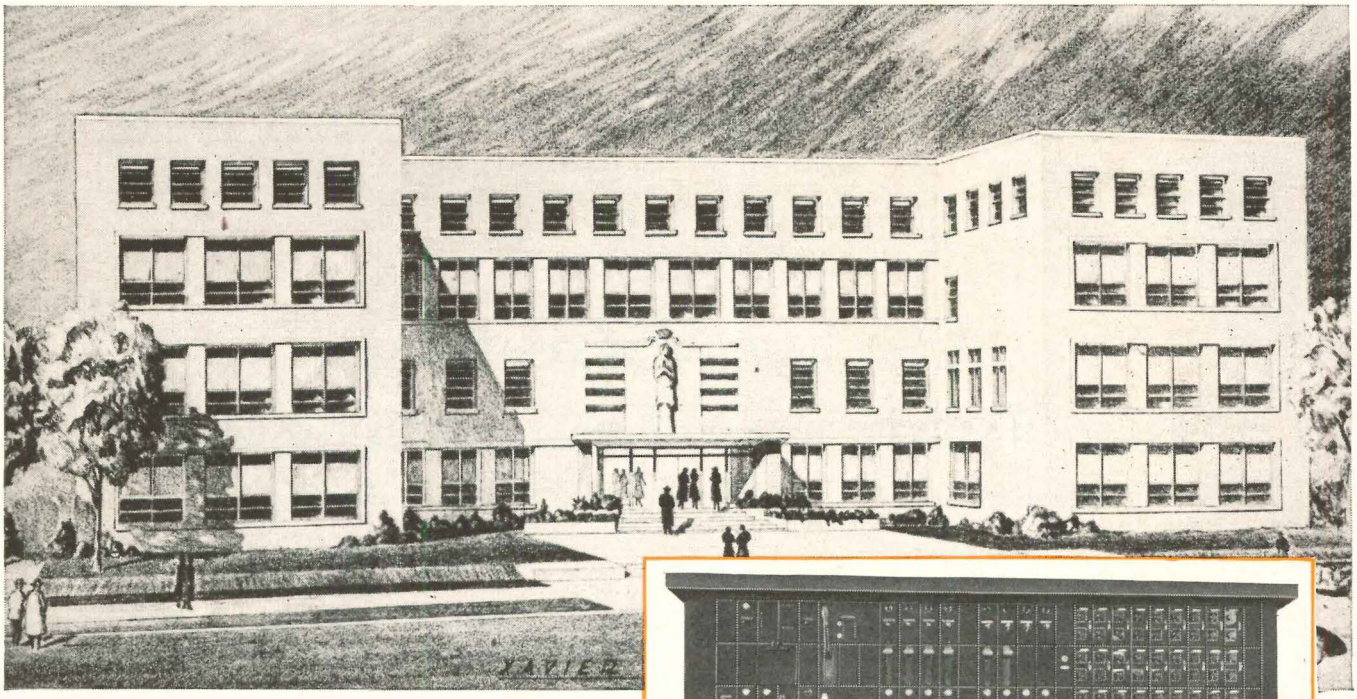
Carrier

AIR CONDITIONING
REFRIGERATION
INDUSTRIAL HEATING

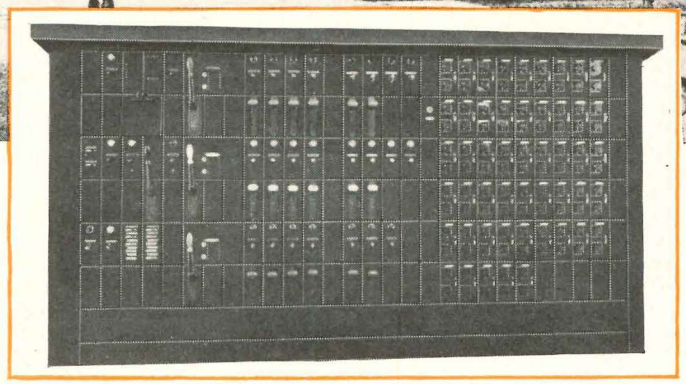


1. Arrangement includes fan section, cooling coil section, base pan section.
2. All sections from No. 1 with addition of filter section.
3. All sections from No. 2 with addition of heating coil section.
4. All sections from No. 3 with addition of a by-pass section.

FOR SCHOOLS AND OTHER BUILDINGS



Another outstanding (FA) installation . . . the new Xavier High School in St. Louis. Carroll & Dean, Architects. John D. Falvey, Engineer.



ELECTRICAL PRODUCTS...

are the choice of Architects and Engineers

And for good and sufficient reason. These men know from long practical experience, that (FA) products are safe, dependable, economical and will provide long-lasting and trouble-free service.

For more than 61 years (FA) has been manufacturing electrical products for industrial, commercial, institutional and residential use that measure up fully to the highest standards of the industry — products that provide all the electrical capacity needed for today and allow for future expansion.

The next time you design a school or other building, do as the architects and engineers for the new Xavier High School and hundreds of other structures have done — specify (FA) for all power and light distribution requirements.

Illustrated above is the Type 865-CI (FA) Dimmer Control Board for Stage and Auditorium Control installed in the new Xavier High School.

Following the trend of colleges, universities and high schools specializing in dramatics and stage lighting, no fixed lighting equipment is used. Instead, a series of outlets for connection of portable equipment is provided. And for maximum flexibility, the Stageboard has 50 multi-contact rotary switches to permit connection of an outlet or combination of outlets, to any selected dimming control. This group of rotary selector switches is at right end of Stageboard.

Your nearest (FA) representative, listed in Sweets, will be glad to provide complete information on all (FA) products.

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FA TRADE MARK

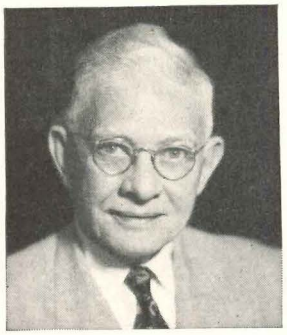
One of a series of papers prepared by leading authorities on air conditioning. The opinions and methods presented are those of the author and are not necessarily endorsed by the Du Pont Company. Reprints of this, and other articles in the series, may be had free upon request.

AIR CONDITIONING FOR HYGROSCOPIC SUBSTANCES IN MASS PRODUCTION

(Among the many hygroscopic products in mass production—natural and synthetic textile fibers, chemical salts, biological and drug substances, and food products—tobacco manufacturers early learned that progress depended upon positive control of humidity and temperature. Today, designers for all plants where hygroscopic substances are important rank air conditioning high in initial planning.)

Air Conditioning for Tobacco Manufacturing

By A. C. BUENSOD, *Mechanical Engineer, New York, N. Y.*



A. C. BUENSOD, *M.E., P.E., President of Buensod-Stacey, Inc., New York, has been identified since 1909 with the pioneering work of applying air conditioning to the tobacco industry, and has continued to specialize in this field. His company engages in many types of both industrial and comfort air conditioning and has completed many noteworthy installations in all phases of air conditioning.*

Tobacco is one of the most hygroscopic materials in mass production. If it gets too wet, it mildews and spoils. If allowed to get too dry, the leaf crumbles and is useless. These reasons, together with the rapid development of the industry after the turn of the century, provided the incentives for the early application of air conditioning. Today, the modern tobacco plant is planned with built-in air conditioning from the start. Exact engineering is essential to assure safe operation and uniform moisture standards.

PIONEER DEVELOPMENT

The late Dr. Willis H. Carrier first applied principles of air conditioning to control the regain of leaf tobacco in the leaf-handling plant of Hodges in Paducah, Ky., in 1909. (Regain is the amount of water absorbed hygroscopically in the leaf.) Dr. Carrier even used a hand of tobacco as the hygroscopic element in the regulating and controlling system for producing humidity in the air.

From 1909 to 1915 intensive studies were made of the regain of different kinds of tobacco at varying humidities and temperatures. (Regain, to be constant, requires slightly higher humidities at higher temperatures.) During this period the cooling of spaces was achieved by evaporative cooling, but it was soon apparent that a mechanical method was required for summer weather.

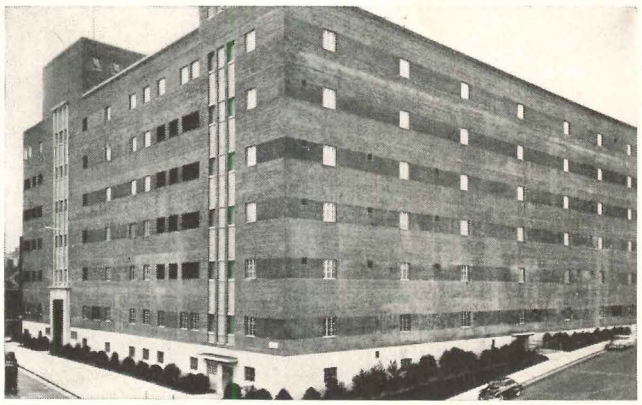
As early as 1912, many cigar and cigarette factories found that the central-station spray-type equipment for humidifying was desirable. In those early days the Baudelot coolers were used, with ammonia . . . the only practicable refrigerant available. The lack of suitable water-chilling equipment and of suitable refrigerants delayed the use of mechanical cooling until the advent of the centrifugal-type water-chiller and the invention of "Freon" refrigerants.

In 1930, the first centrifugal-type water-chillers for mechanical cooling were installed in a cigarette factory in North Carolina, and in a cigar factory in Pennsylvania. These plants were completely air conditioned, designed to average out the peaks of hot summer weather and assist in maintaining uniform conditions of humidity.

Today, as a general practice, new plants and additions to old plants are fully air conditioned from the start.

DESIGN DATA

The modern air conditioned building for tobacco manufacturing can be designed without windows. Fluorescent lighting has eliminated the need for natural daylight for color sorting. If windows are used, they should be double sash with artificial heat between. All wall surfaces should be insulated to prevent condensation in cold weather. Heating for the air conditioned spaces is done in conjunction with the air conditioning system.



Modern, completely air conditioned cigarette factory of Liggett & Myers Tobacco Company in Durham, N. C.

For cigarette-making and packing areas, 3¼ to 3¾ cu. ft. of air per minute per sq. ft. of floor area are re-

quired. Refrigeration tonnage will vary from 6 to 7½ tons per 100 sq. ft. of floor area. Provision must be made to absorb lighting and machinery heat, especially where machinery is concentrated.

For cigar-machine areas, 3 to 3¼ cfm are required per sq. ft. of floor area. Refrigeration tonnage will vary from 5½ to 6 tons per 100 sq. ft. of floor area. Modern cigar manufacturing also requires an exhaust system with a capacity of 300 cfm of air exhausted from each machine, which has to be cleansed and returned to the air conditioning system in order to economize in both summer refrigeration and winter steam heating.

Modern practice in the industry is to use individual central-station types of equipment to serve departments and floors having the same manufacturing facilities. This gives greater facility in maintaining proper conditions for each production and storage function.

MASS PRODUCTION OF TOBACCO PRODUCTS

With the improvements on tobacco machinery, as well as in the control established over humidity and temperature, the industry quickly became a leader in mass production, the smaller factories merging into larger facilities. Cigarettes are now produced at the rate of 1500 per minute per machine; cigars at 13 per minute per machine. Dependable uniformity of product (and cigarette paper, another hygroscopic product) is vital in processing, storing and manufacturing in order to maintain the productive pace—and it means positive regulation of air in all spaces where the tobacco is used, twenty-four hours a day, seven days a week.

AIR CONDITIONING RANGE FOR TOBACCO

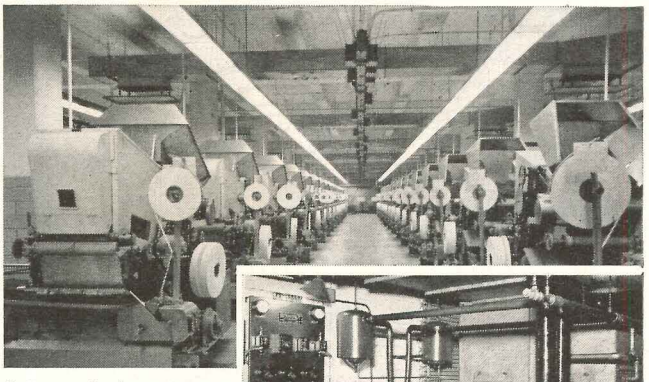
PRODUCT	TEMPERATURE	HUMIDITY
CIGARETTES	75°—78° F.	54%—60%
CIGARS		
Havana & Puerto Rico	75°—78° F.	66%—68%
Domestic blend	75°—78° F.	70%—72%
LEAF TOBACCO		
Cigar wrappers	(not a factor)	75%—80%
Cigar fillers	(not a factor)	70%—72%
Cigar leaf stripping	(not a factor)	75%—80%
Bright leaf	(not a factor)	65%—70%
Burley leaf	(not a factor)	70%—75%

The range shown in the table above is comprehensive—each individual tobacco process needs its particular humidity condition and, perhaps, temperature range.

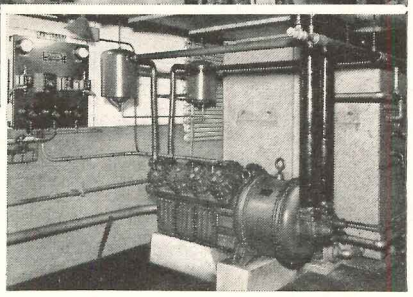
MODERN AIR CONDITIONING FOR TOBACCO

Maintaining the proper range of temperature and humidity required for the proper moisture content and production in the manufacture of tobacco requires the most sensitive and positive regulating devices. This is so in order to maintain the proper differential of vapor pressure between the leafing process and the actual machine production of the finished product. For example: cut cigarette tobacco must be kept in the storage rooms at a dew-point temperature slightly higher than the dew-point temperature used in the manufacturing areas where the same tobacco will go through the cigarette-making machines.

In addition to the efficiency achieved in production,



Battery of cigarette machines in Liggett & Myers plant. Note air distribution ductwork for control of temperature and humidity.



100-hp Westinghouse Reciprocating "Freon-12" Compressor and Evaporative Condenser in Richmond, Va., plant of Philip Morris & Co. Ltd.

through high-speed machinery and correct air conditioning, modern tobacco management has found that it is desirable to maintain lower dry-bulb temperature in areas where production machines are supervised by operators during the hot summer weather. Management has found that this pays in improved employee morale and sustained production, although it means an increase in the capacity requirements of the air conditioning equipment, especially the tonnage of refrigeration installed for mechanical cooling.

* * *

Air conditioning and refrigeration are no longer new or novel in industry. In fact, many industries are wholly dependent upon both. There is a wide variety of "Freon" refrigerating equipment now on the market. These units are designed to meet specific requirements of various manufacturing operations, including mass production where hygroscopic substances are used.

Dependability, economy and safety are, of course, factors of prime importance in any industrial air conditioning or refrigerating installation. For this reason, prominent consulting engineers and architects agree that "Freon"-operated systems are most desirable. They fully appreciate that "Freon" refrigerants *are* safe . . . nonflammable, nonexplosive, virtually nontoxic. In addition, the chemical purity of "Freon" safe refrigerants further insures the economical, trouble-free operation of the system over long periods. That is why you can render an appreciated service by recommending use of "Freon"-charged equipment for air conditioning and refrigerating systems of any type. E. I. du Pont de Nemours & Co. (Inc.), "Kinetic" Chemicals Division, Wilmington 98, Delaware.

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MURPHY & MACKEY, Architects
FRED N. SEVERUD, Consulting Engineer
NEAL J. CAMPBELL, Structural Engineer
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with CONCRETE JOIST FLOOR CONSTRUCTION

Bids were obtained on solid slab and concrete joist floor construction for this $3,000,000 high school. Concrete joist construction, using a 20″ removable metal form, was selected because it showed a saving of 35¢ a square foot.

Concrete joist floor construction makes use of easy-to-erect, ready-made, reusable forms. Costs are lower because less concrete and lumber are required. Labor and construction time are also reduced. Furthermore, by eliminating dead weight, concrete joist construction makes possible lighter, lower-cost frames. Write for free booklet —"Reinforced Concrete—A Manual of Standard Practice."

STRUCTURE	*COST ESTIMATE*
Solid Slab	**$1.45 per sq ft**
Concrete Joist Construction . . . . (Using 20″ removable metal forms)	**$1.10 per sq ft**

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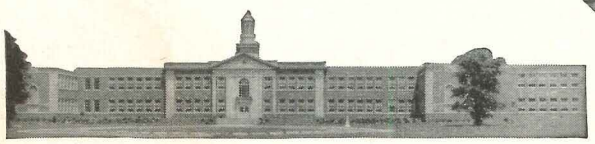
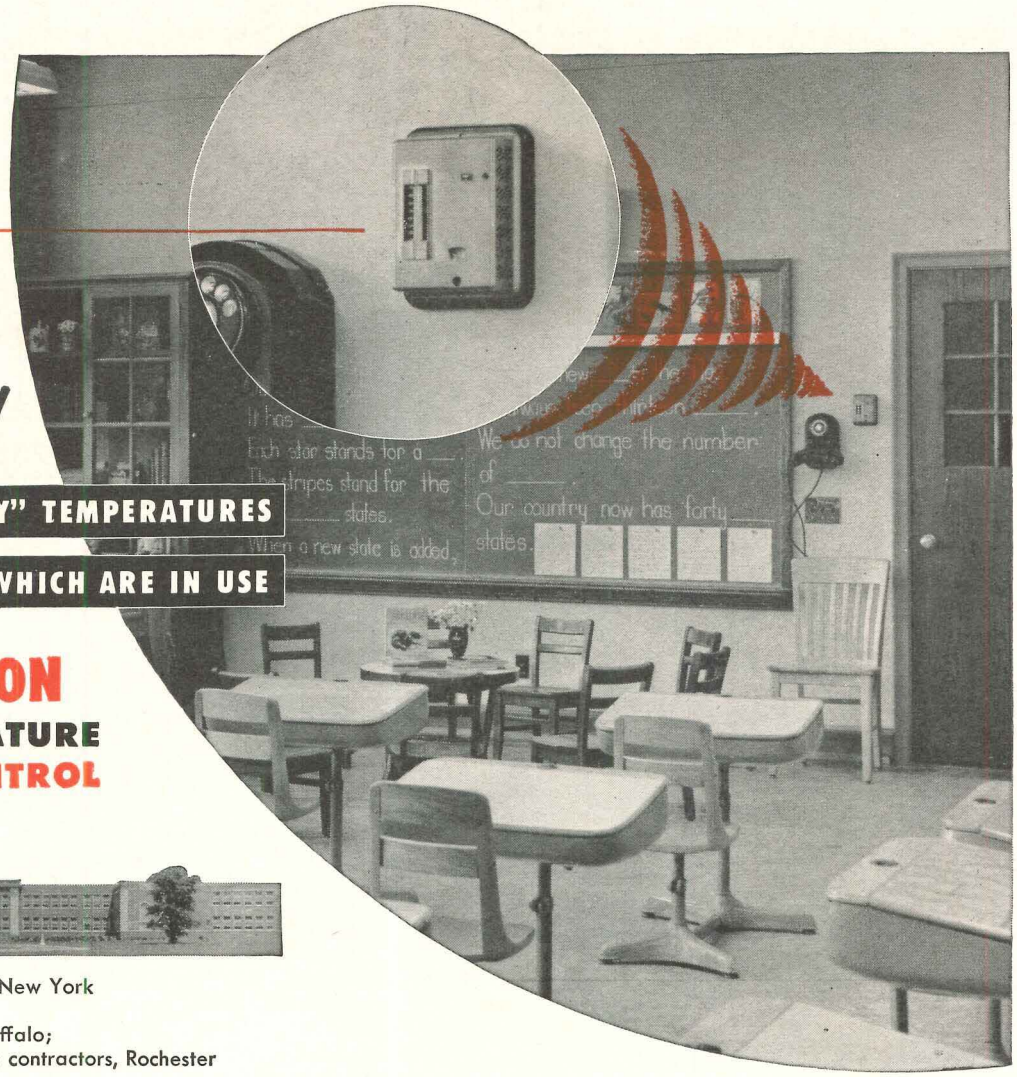
ONLY THOSE ROOMS WHICH ARE IN USE

WITH JOHNSON *DUAL* TEMPERATURE CONTROL





Grade School, Canandaigua, New York
Duane Lyman & Associates,
architects and engineers, Buffalo;
H. J. Bareham & Sons, heating contractors, Rochester

Yes! A Johnson *Dual* System of automatic temperature control serving each individual room saves thousands of "fuel dollars" in thousands of school buildings. When various rooms in the building are used during out-of-school hours—and that situation is encountered in most school buildings, today—Jonhson *Dual* Control makes it possible to heat only the occupied rooms! Think of the saving—and the convenience!

In the Grade School at Canandaigua, there are 49 Johnson *Dual* Thermostats, one in each classroom and a suitable number in larger areas such as the auditorium, gymnasium and cafeteria. They operate, automatically and efficiently, the Johnson valves and damper operators which control the heating and ventilating effect of 103 convectors and 41 unit ventilators. Johnson automatic control apparatus also commands the 4 large "auditorium type" units which serve the gymnasium and auditorium.

Ask a Johnson engineer from a nearby branch office to explain how, by operating a switch at a central point or simply pushing a button on a few *Dual* thermostats, the rooms to be used at "odd hours"—and only those rooms—can be heated without the expensive installation of separate heating mains. Send for a copy of a new booklet, "Comfort and Economy in Modern Schools." JOHNSON SERVICE COMPANY, Milwaukee 2, Wisconsin. Direct Branch Offices in Principal Cities.

JOHNSON *Automatic Temperature and Air Conditioning* **CONTROL**

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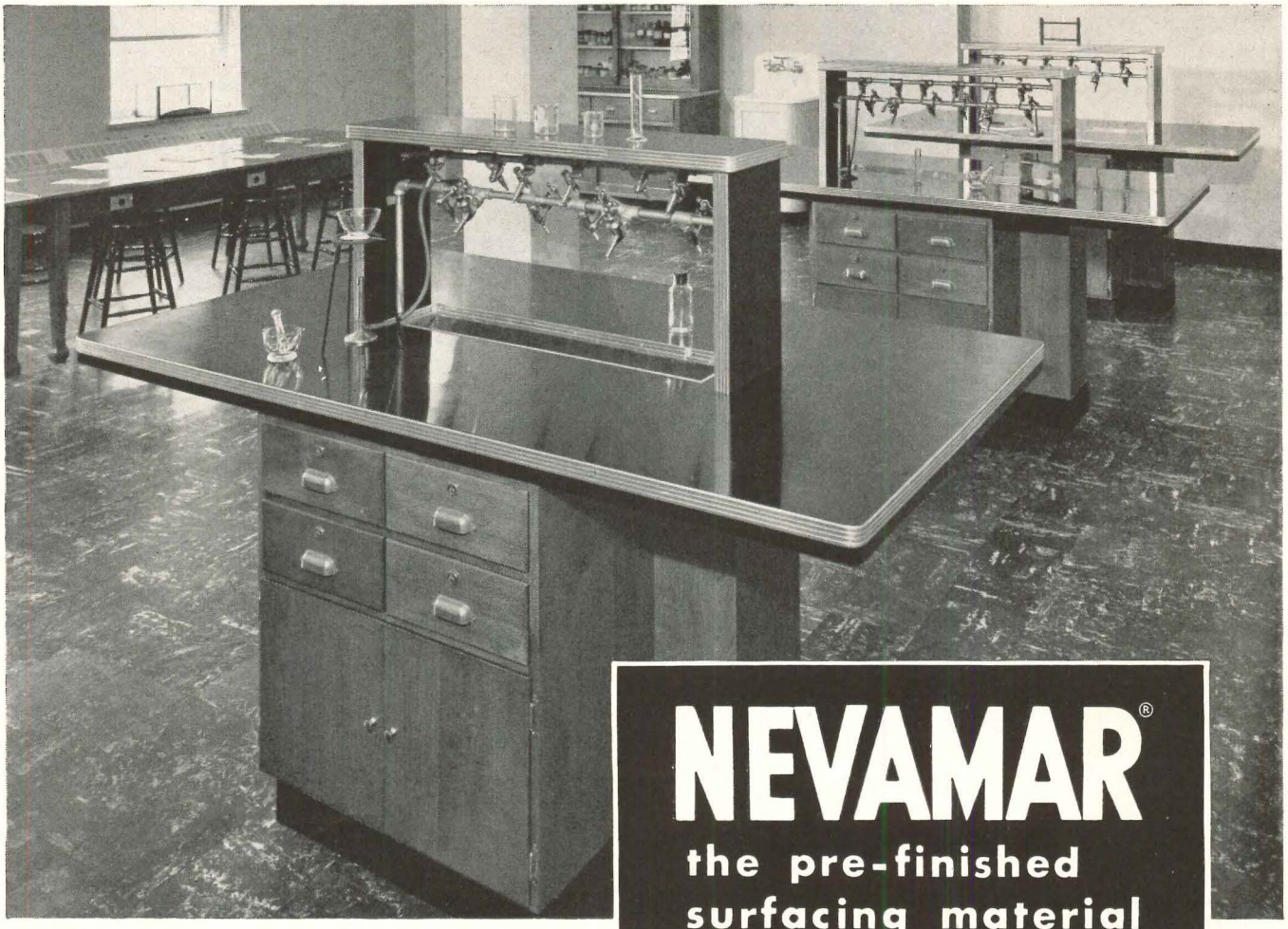
TOPS *for any Surface!*



builds beauty, durability and easy care into any installation

This is
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. . . a high-pressure laminate surface, designed for long life and lasting beauty. Nevamar is not affected by grease, alcohol, fruit acids, ammonia, bleach, ink or similar substances. It will not craze, crack or peel. Nevamar is resistant to cigarette burns and withstands boiling water. Nevamar may be cleaned with soap and water.

● *To keep your Nevamar surface beautiful* . . . Don't use abrasive cleansers. A protective pad should be used beneath hot vessels, electric toasters and similar appliances. Don't use your Nevamar surface as a cutting or chopping board.

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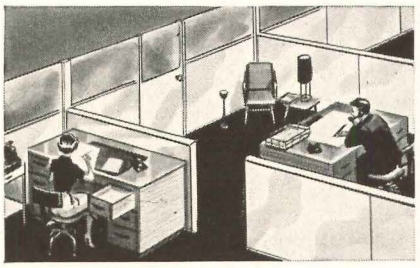
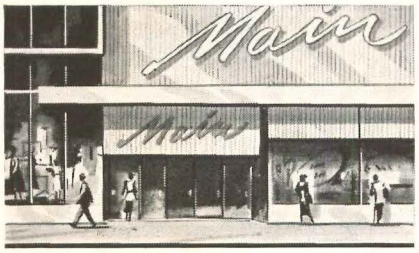
Architectural Service

Practical Partitions



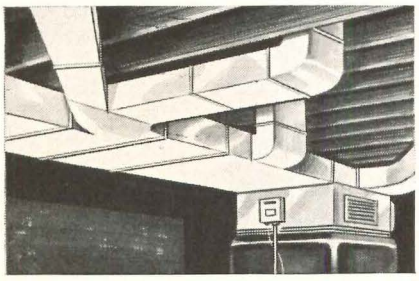
Aluminum, the modern metal, fits in perfectly when it comes to partitioning new offices or modernizing older office space. Rectangular aluminum tube framing minimizes floor load —also serves as wiring conduit. Reynolds embossed or plain aluminum paneling can be perforated for acoustical benefits and painted to harmonize with any color scheme. Extruded aluminum shapes may be used for railing caps, glass retainers, corners, seam covers, base mouldings, etc. Obviously, many design variations are possible.

Modern Store Fronts



Here are just a few of the many reasons why Reynolds Aluminum is so often used in the design of modern store fronts. Aluminum offers greater design flexibility than any other metal and blends well with other materials. It does not streak or stain other surfaces. And with a single lifetime finish, aluminum stays bright indefinitely. Standard extruded and roll-formed aluminum shapes are stocked by most store front fabricators as a part of their complete installation service. Special shapes are easily and inexpensively extruded.

Better Ductwork



It's smart to specify aluminum for ductwork because, at one-third the weight of other metals, aluminum cuts tons from added weight to reduce structural loads in commercial buildings. Aluminum will not rust from condensation in cooling systems. And it is a natural insulator. Non-sparking aluminum also is ideally suited to the removal of inflammable and explosive dust and fumes in industrial installations. Aluminum ductwork installation is easier —usually costs less, particularly when larger sections are involved.

This simple 3-step method helps

good laboratory plans produce outstanding results

1 Contact a Professional manufacturer of laboratory equipment while plans are still at the preliminary stage. Let an experienced representative of this firm contribute to the solution of your problem knowledge gained through years of laboratory planning.

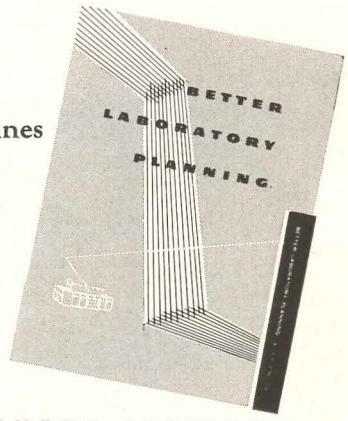
2 Prepare separate specifications covering laboratory equipment, or have these made a separate section of the general construction specifications. This permits Professional manufacturers to consider those portions of the job they are especially equipped to produce.

3 Secure direct bids from Professional manufacturers to the owners, or, when indicated, to the general contractor. In this way you receive the full benefits of specialized manufacturing facilities, volume production of standard components and thoroughly trained installation personnel. 1, 2, 3—that's all there is to it!

Most planning problems are solved by bringing background, talent and specialized technique to bear. Certainly this is a good solution to laboratory planning problems, for the simple 3-step method shown here has helped produce the finest school, hospital and industrial laboratories in the world. Next time you undertake a project involving laboratory facilities use this better planning method to secure highest value and permanent satisfaction for your clients.

Do you have your copy of Better Laboratory Planning?

Generously illustrated and attractive, this free book examines some basic considerations in planning modern laboratories. If you do not have a copy for your reference library, send your request to—



LABORATORY EQUIPMENT SECTION

Scientific Apparatus Makers Association

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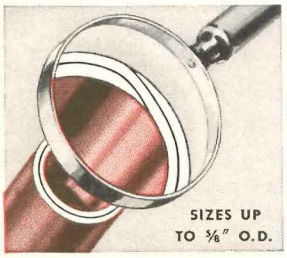
Extra-strong, lightweight coils of Bundyweld Tubing are easily mounted onto ceilings. Lying flat and straight, coils are quickly plastered over, with small chance of damage from rough handling or accidental hammer blows.

Add a new sales clincher to your houses—

Bundyweld Ceiling Radiant Heating



Key to Low Cost

Bundyweld is the only tubing double-walled from a single strip, copper-brazed through 360° of wall contact. It's leakproof, thinner walled, yet stronger. It transmits heat quickly, has high bursting strength. It saves on material costs and installation time.

Standard 20′ or 24′ lengths of Bundyweld are easily formed into coils in shop or on job site. Expanded ends (furnished when specified) are quickly soldered into leakproof union. Joined, lightweight coils are easily mounted onto ceiling, quickly plastered over.

Nowadays, every modern house features an eye-catching tiled bathroom and streamlined kitchen.

But there's a *new* sales clincher that will really put your houses in top demand right now and keep them in front during coming years—Bundyweld Ceiling Radiant Heating.

Here's a system that's already a big hit with thousands of enthusiastic users. They've gone on record with praise for this clean, economical and convenient way to heat homes. Just imagine telling your prospect that he can have walls without dirt streaks, even warmth, freedom from drafts, lower fuel bills.

That same prospect of yours could well be one of the millions who have already seen Bundy ads in *Better Homes & Gardens* and *American Home*. Those readers have sent in an avalanche of coupons requesting literature—and the names of builders and architects handling Bundyweld Ceiling Radiant Heating in their communities. For more details, mail coupon below.

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BUNDY TUBING COMPANY
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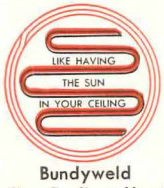

Bundyweld
Ceiling Radiant Heating

Radiant Heating Division, Dept. AR 1152
Bundy Tubing Company, Detroit 14, Mich.

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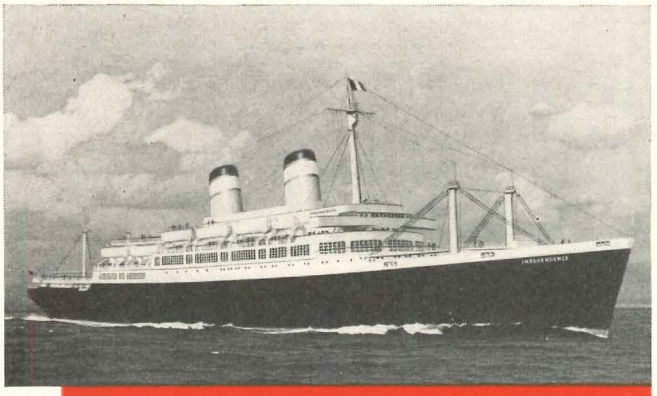
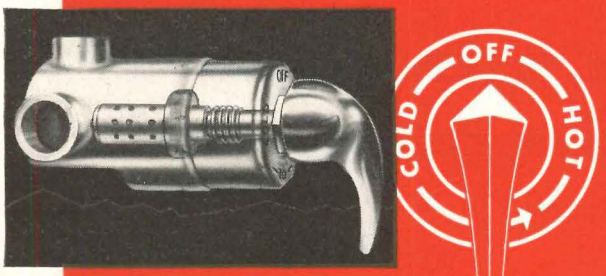
S.S. Independence SPECIFIED
SYMMONS SAFETYMIX because



...nothing prevents sudden shower scalds like
SAFETYMIX

SYMMONS MEANS SAFETY IN THE SHOWER

Symmons SAFETYMIX shower valves keep shower temperature constant, even with pressure fluctuations up to 85%. With SAFETYMIX there are no sudden scalds . . . or chills. When either hot or cold water fails, flow automatically shuts down.



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Only SAFETYMIX has the patented Flow Control Spindle with but one moving part to control all valve functions. Actually it is the most rugged shower control valve made. Self-cleaning action helps prevent clogging and it is as easy to fix as a faucet.

PERFORMANCE PROVED — OVER 100,000 INSTALLATIONS

SAFETYMIX costs no more than ordinary shower valves and is guaranteed to be entirely as represented. SAFETYMIX is standard equipment in tens of thousands of schools, colleges, hotels, industrials, institutions, railroads, steamships, airports, government establishments and better homes the world over. See SWEET'S Architectural File or your DOMESTIC ENGINEERING Catalog.

Write for catalog and prices

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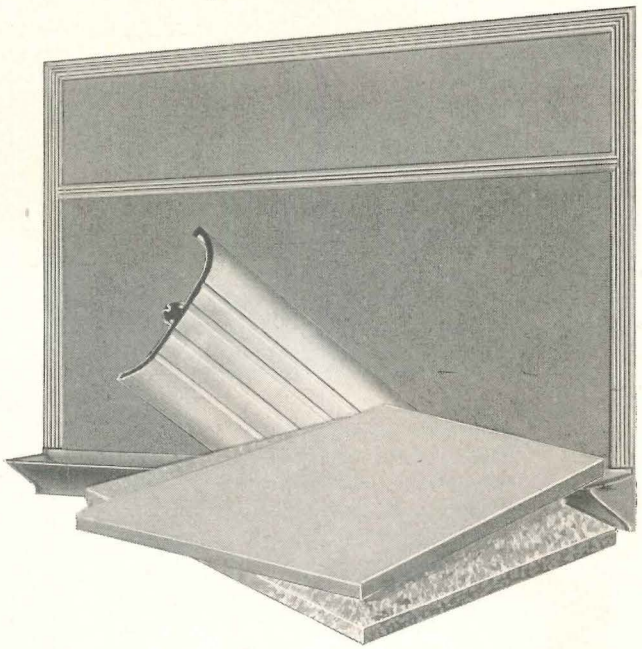
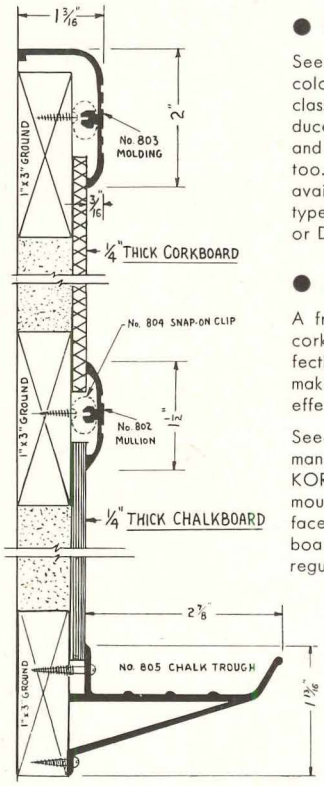
CLASSROOM CHALKBOARDS
CORK BULLETIN BOARDS AND ALUMINUM TRIM
by Rowles





● *See-GREEN* CHALKBOARDS

See-GREEN is a soft, pleasing light green color for chalkboards that brightens any classroom. Its cool restful color helps reduce sharp contrast between chalkboard and walls. Makes room lighter and brighter, too. Glarefree, writes perfectly and is available in your choice of three different types of chalkboards—Enduraroc, Permasite or Duroplate.

● *See-GREEN* CORKBOARDS

A fresh inviting new light green color for cork bulletin boards that harmonizes perfectly with See-GREEN Chalkboards. Helps make classrooms brighter and increases effectiveness of classroom illumination.

See-GREEN Cork Bulletin Boards for permanent installation are available in PERMA KORK, ¼" unmounted, or ½" thick mounted. Also, in DURATEX, a tacking surface of ⅛" cork mounted on ⅜" fibreboard backing. Both are also available in regular tan.

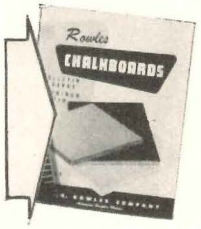
● ALUMINUM TRIM

Adds the finishing touch to a See-GREEN installation. Bright satin-finished moldings and chalktrough easy to install, modern, durable and sanitary. A selection of moldings for every type of installation.

COMPLETE SPECIFICATIONS AND DETAILS

Full details on Rowles Chalkboards, Cork Bulletin Boards and Aluminum Trim may be found in Sweet's Architectural Catalog, or may be obtained by writing for this complete file of data direct to

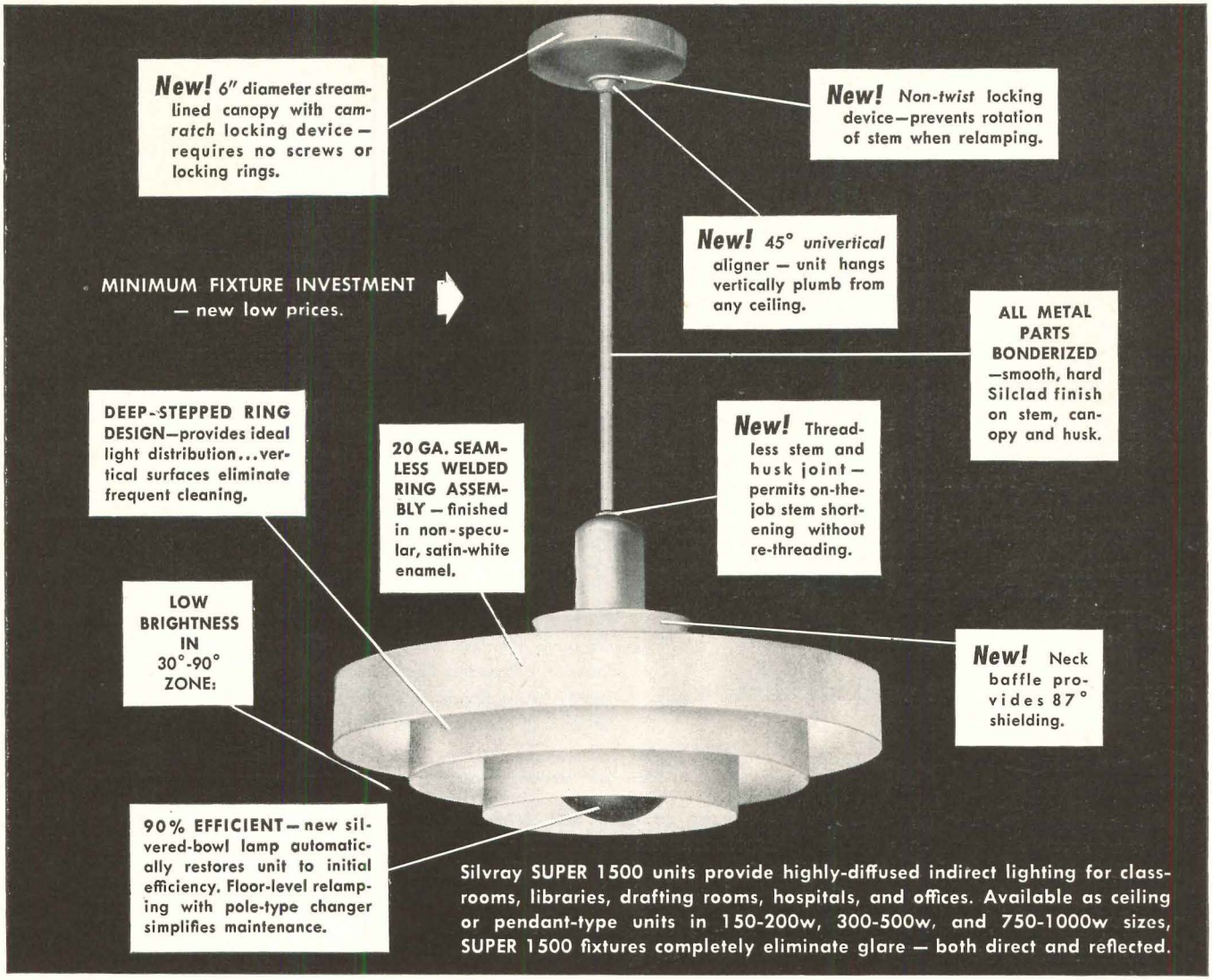
E. W. A. ROWLES COMPANY
Arlington Heights, Illinois



COMPARE!

No other indirect, incandescent fixture offers ALL these features . . .

SILVRAY'S improved SUPER 1500 UNIT



Silvray SUPER 1500 units provide highly-diffused indirect lighting for classrooms, libraries, drafting rooms, hospitals, and offices. Available as ceiling or pendant-type units in 150-200w, 300-500w, and 750-1000w sizes, SUPER 1500 fixtures completely eliminate glare — both direct and reflected.

1927 1952 OUR 25TH YEAR **Silvray** *ALWAYS... the best in lighting*

Smoot-Holman, Inc. of Inglewood, Cal. — west coast licensee.

Get complete details, mail this coupon today!

SILVRAY Lighting, Inc., 102 West Main St., Bound Brook, N. J.

Gentlemen:

Please send me further information on the Silvray SUPER 1500 unit.

Name_____

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All concentric-ring fixtures for use with silvered-bowl lamps are covered by U.S. Pat. #2,303,747 owned by Silvray Lighting, Inc.

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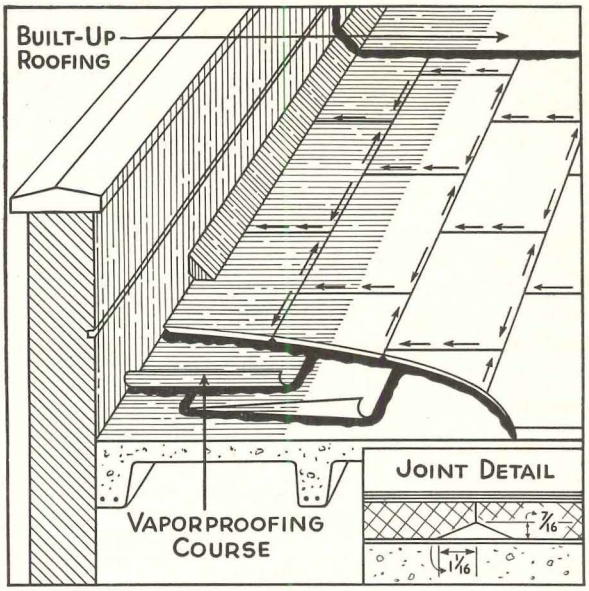
an important roof insulation development...

NEW CELOTEX

Channel-Seal

TRADE MARK

The roof insulation that gives an EXTRA MARGIN OF SAFETY against costly blisters or separation of felt and insulation!



As the diagram shows, high-pressure air "pockets" cannot build up when you use new Celotex Channel-Seal Roof Insulation. Pressures due to temperature differences are constantly being equalized by the movement of air through the network of channels over the roof area.

Here is new safety, new "insurance" against the hazard of roof damage due to the building up of high-pressure air "pockets" where insulation meets felt.

Celotex Channel-Seal Roof Insulation boards have bevels 7/16" high by 1 1/16" wide on all bottom edges. When units are laid on the deck, these bevels form a network of broad, V-shaped, interconnecting channels extending over the roof area.

As higher pressures build up in some areas of the roof because of rising surface temperatures, they are relieved by air movement through the channels—thus equalizing pressure and providing an EXTRA MARGIN OF SAFETY against blistering or separation of felt and insulation! (See diagram.)

New Celotex Channel-Seal Roof Insulation is made of an efficient low-density board with 0.33 conductance for nominal 1" thick material before coating and channeling. Asphalt coated on both sides and all edges, for complete moisture protection in storage and on the job. Comes in a range of thicknesses to meet the specific insulation requirements of each job.

Low in both initial and applied cost, Celotex Channel-Seal Roof Insulation is light yet exceptionally strong, rigid, and tough. Resists damage from job handling. Quick, easy to apply. Smooth, coated surface assures positive bond to both roof deck and roofing felt.

What's more, it is the *only* roof insulation made of tough, strong, long Louisiana cane fibres—and protected by the patented Ferox® Process from dry rot and termite attack. Write today for complete technical data. The Celotex Corporation, Dept. AR-112, 120 South LaSalle Street, Chicago 3, Illinois.

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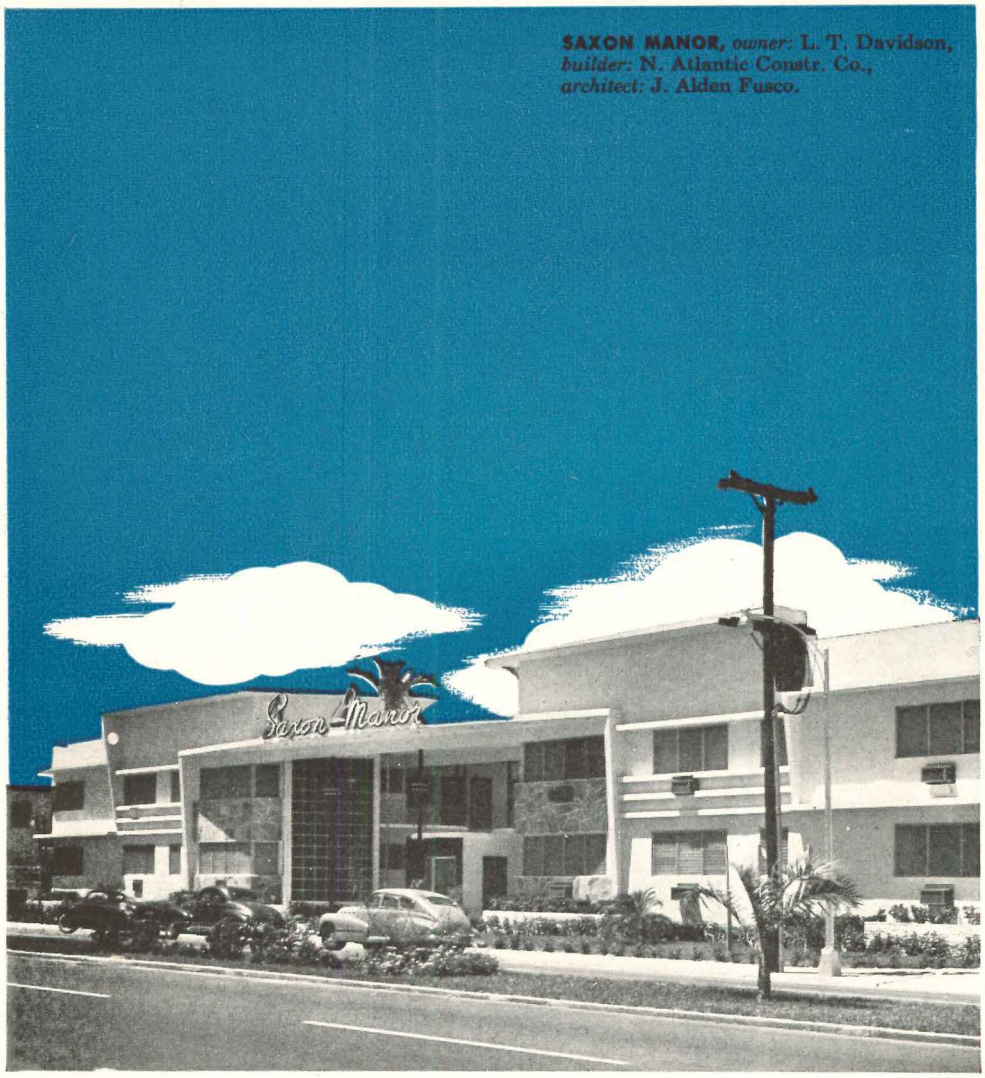
ROOF INSULATION

THE CELOTEX CORPORATION, 120 S. LA SALLE STREET • CHICAGO 3, ILLINOIS



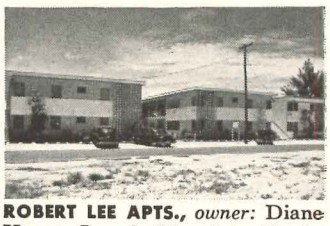
SAXON MANOR, *owner:* L. T. Davidson, *builder:* N. Atlantic Constr. Co., *architect:* J. Alden Fusco.

Modern Motels Require *RICHMOND*

These 7 very latest Miami Beach motels (comprising 208 units) installed Richmond quality vitreous china water closets, enameled cast-iron and vitreous china lavatories, in smart pastel shades.

Why do so many Florida motels entrust their plumbing requirements to Richmond fixtures? Because Richmond's complete line of plumbing fixtures meet every requirement of smart design, economical cost and efficient operation.

For motels, custom homes or multiple dwellings when you want the finest in plumbing fixtures, always remember you can rely upon Richmond to fit your exact requirements.



ROBERT LEE APTS., *owner:* Diane Homes, Inc., *builder:* Jules Block, *architect:* August Swarz.

RIVIERA, *owner:* Al Lewis, *builder:* Al Lewis, *architect:* L. H. Glasser.

OXFORD APTS., *owner:* Jordan Davidson, *builder:* Jules Block, *architect:* Don Reiff.

DIANE APTS., *owner:* Diane Homes, Inc., *builder:* Jules Block, *architect:* August Swarz.

CHAMPION APTS., *owner:* Ciampi, *builder:* Clarciam Realty Corp., *architect:* Pamorrow Turner.

FOUNTAINHEAD MOTEL, *owner:* J. Davidson, *builder:* Shinn Const. Co., *architect:* Norman Giller.

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Please send me more information and literature on the Richmond Plumbing Fixtures. No obligation, of course.

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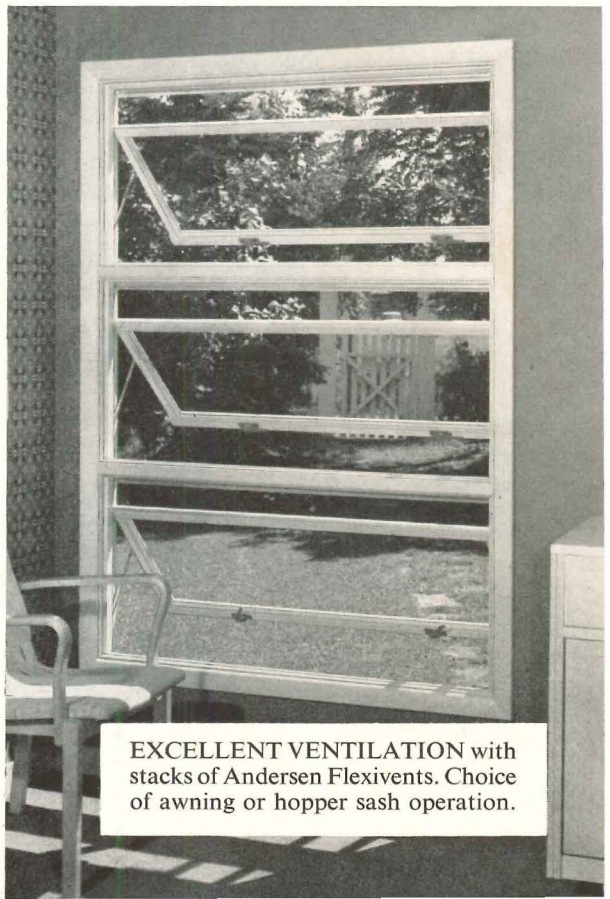
We are ☐ plumbing wholesalers ☐ plumbing contractors ☐ building contractors.

BIG WINDOWALLS of Andersen Flexivent Windows are beautiful! No limit to combinations of fixed or ventilating openings. Low in cost!

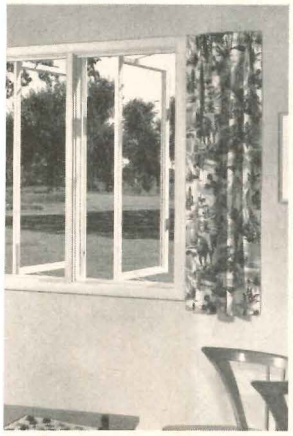
NEW! most flexible window ever made..

FOR SCHOOLS, FACTORIES, specify big window areas of Andersen Flexivents. Highly weathertight. Ventilation to fit the building's needs.

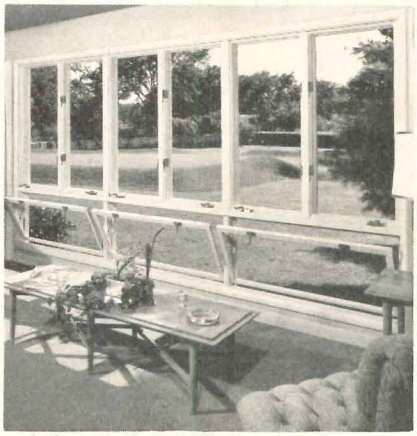


EXCELLENT VENTILATION with stacks of Andersen Flexivents. Choice of awning or hopper sash operation.

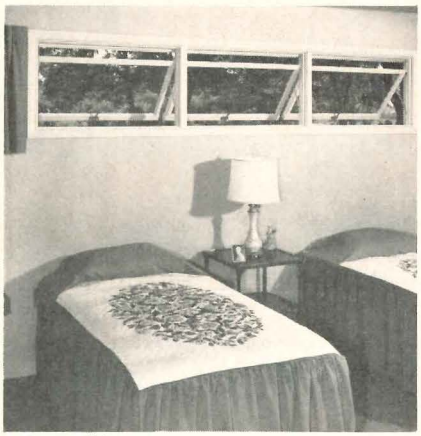
Flexible! use *FLEXIVENT* in ribbons, stacks, groups



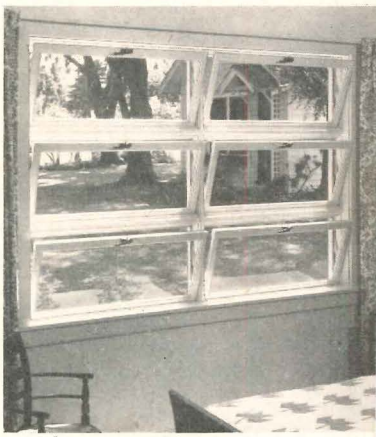
nent
above Andersen Gliders



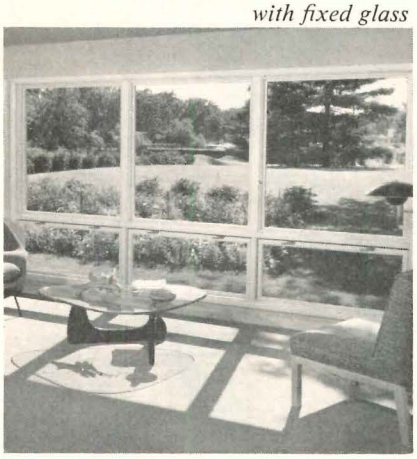
below Andersen Casements
with fixed glass

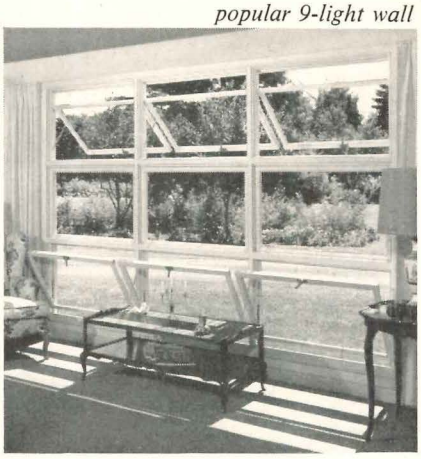


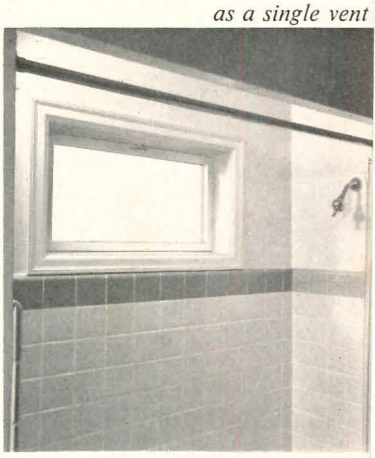
in a ribbon
popular 9-light wall



in hopper position
as a single vent







Andersen *FLEXIVENT* window unit!

VERSATILE—Most versatile utility window you've ever seen! Choice of awning, hopper or casement sash operation. Choice of 9 sizes, including *large* openings. Use Flexivent singly. Combine them in ribbons, stacks, groups or with other windows!

HIGHLY WEATHERTIGHT—Famed Andersen quality has been engineered and built into the Andersen Flexivent Windows. Sash swing on friction hardware, close tightly against frame and weatherstrip on all four sides. Optional screen and double glazing panel. Wood parts preservative treated.

LOW IN COST! Simplicity of design, operation and hardware have kept cost of Andersen Flexivents low.

WANT MORE INFORMATION? Then contact your millwork dealer, or write Andersen Corporation for specifications and Flexivent detail tracing file.

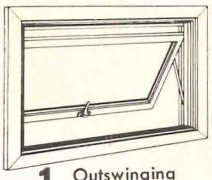
ANDERSEN *FLEXIVENT* WINDOW UNIT IS ONE OF THE—

ANDERSEN *Windowalls*
TRADEMARK OF ANDERSEN CORPORATION

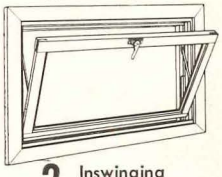
JUST THINK!

3

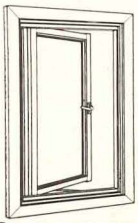
sash operations from just one unit!



1. Outswinging awning sash



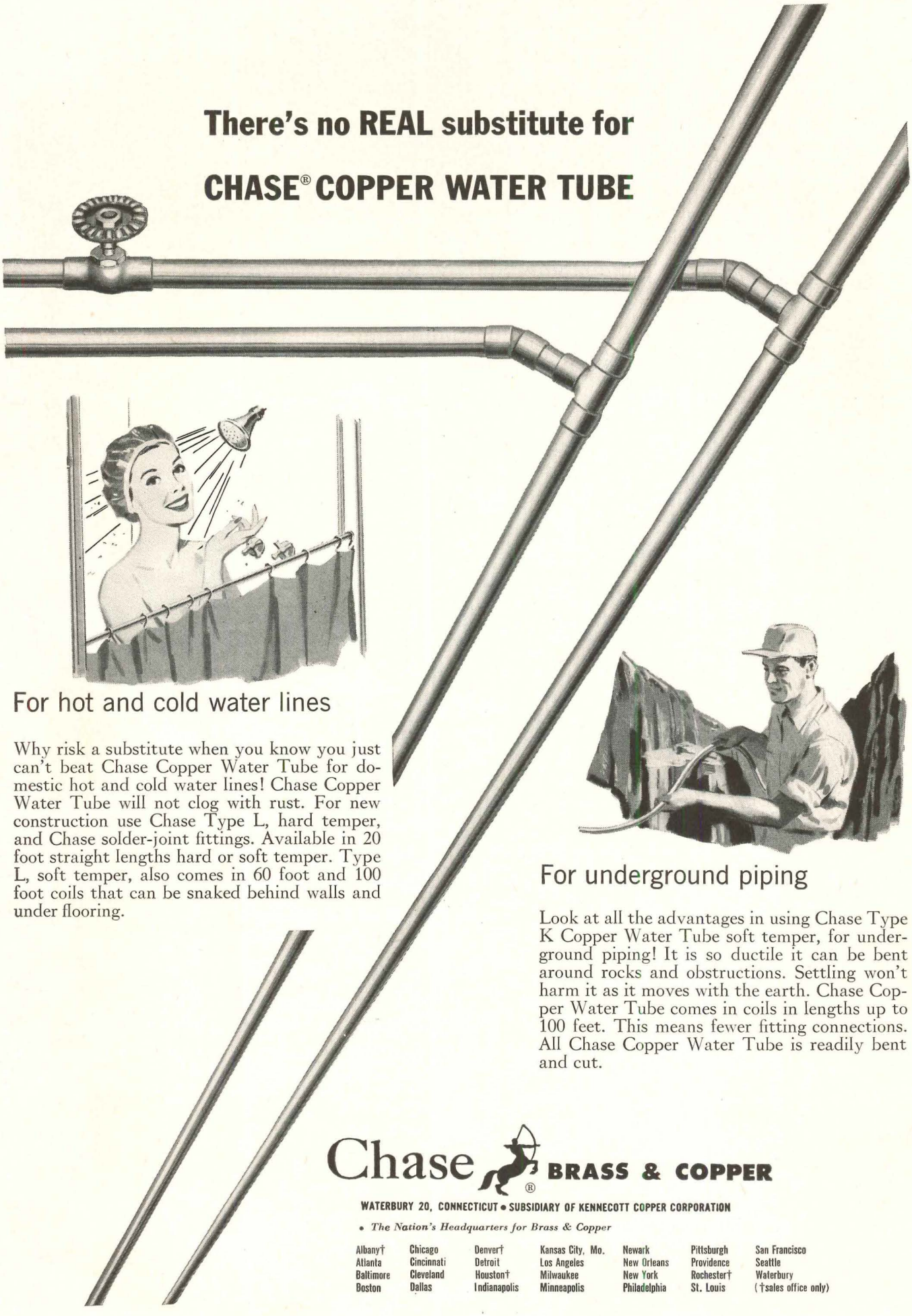
2. Inswinging hopper sash



3. Outswinging casement sash

MANUFACTURED BY *Andersen Corporation* BAYPORT • MINNESOTA

There's no REAL substitute for CHASE® COPPER WATER TUBE



For hot and cold water lines

Why risk a substitute when you know you just can't beat Chase Copper Water Tube for domestic hot and cold water lines! Chase Copper Water Tube will not clog with rust. For new construction use Chase Type L, hard temper, and Chase solder-joint fittings. Available in 20 foot straight lengths hard or soft temper. Type L, soft temper, also comes in 60 foot and 100 foot coils that can be snaked behind walls and under flooring.

For underground piping

Look at all the advantages in using Chase Type K Copper Water Tube soft temper, for underground piping! It is so ductile it can be bent around rocks and obstructions. Settling won't harm it as it moves with the earth. Chase Copper Water Tube comes in coils in lengths up to 100 feet. This means fewer fitting connections. All Chase Copper Water Tube is readily bent and cut.

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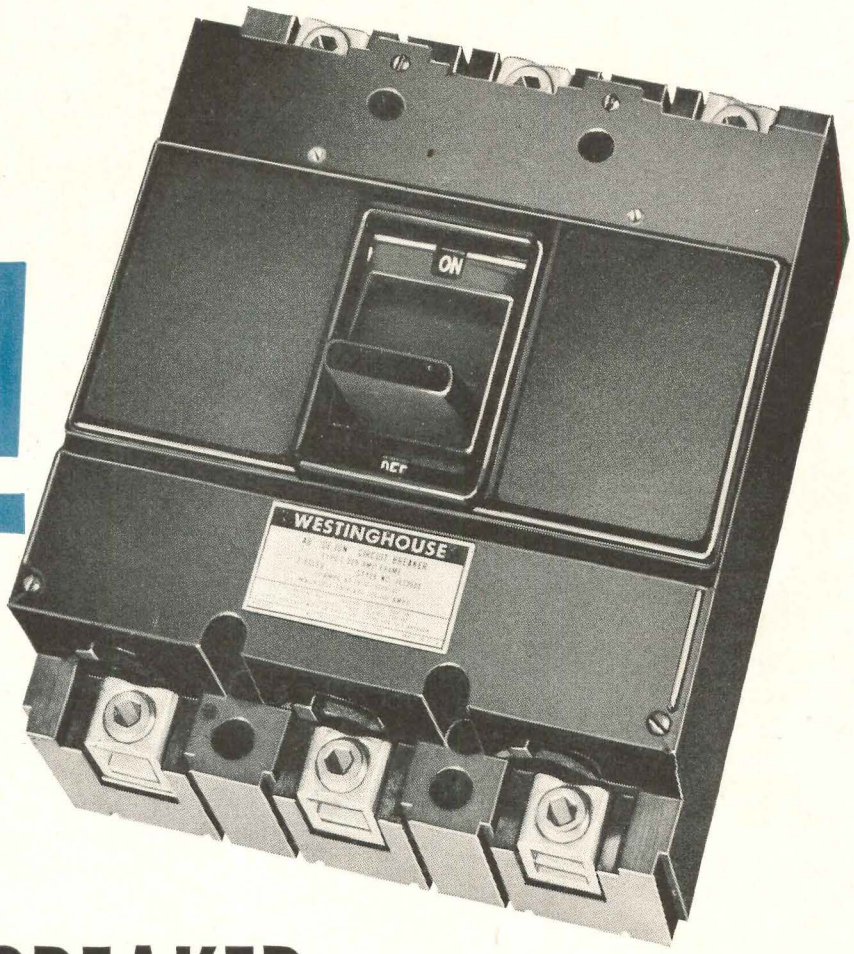
Boston	Dallas	Indianapolis	Minneapolis	Philadelphia	St. Louis	(†sales office only)

NEW!



225 Ampere "J" CIRCUIT BREAKER

. . . saves you 34% in space

Specially engineered for compactness, the new Westinghouse "J" Circuit Breaker saves critical mounting space—*at least* 34%—in switchboards, panelboards, and other types of enclosures. The new "J" Breaker is only 10⅛ inches high as compared with the 15-inch height of conventional 225 amp breakers. Rated up to 225 amperes, the "J" Circuit Breaker gives far more capacity in the same enclosure area.

For instance, two 225 ampere "J" Breakers now fit where only one would before in convertible panelboards.

And this special, compact design retains the famous, time-proved Westinghouse AB Breaker features.

Long the leader in better-engineered circuit protective devices, Westinghouse is your guide to a *sure* Circuit Breaker buy.

Call your Westinghouse Representative or write for Circuit Breaker Book B-5407, Westinghouse Electric Corporation, Box 868, Pittsburgh 30, Pa.

J-30123

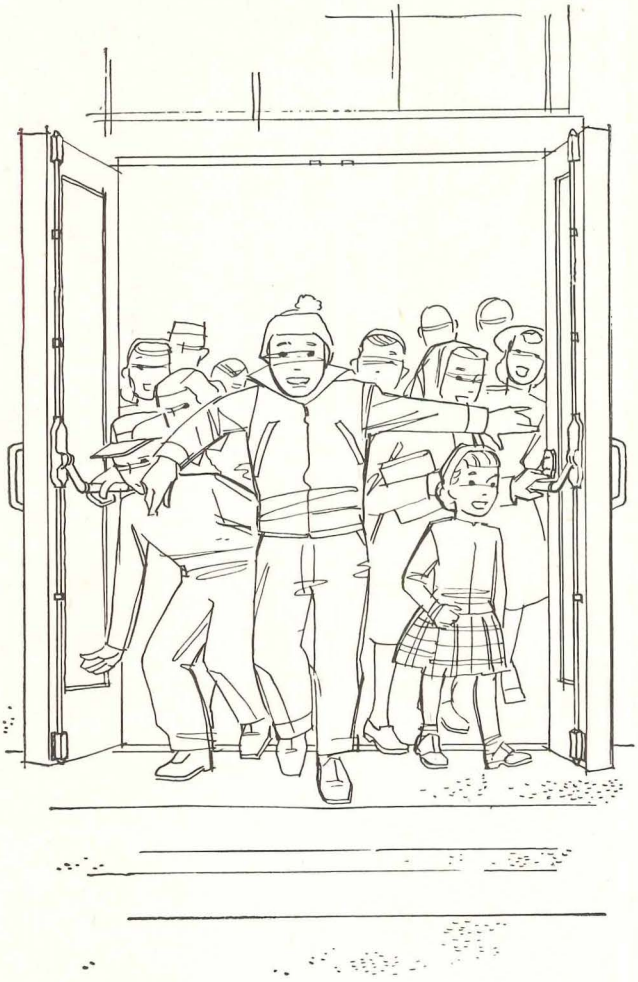
DESIGN TESTED AND VERIFIED in the Westinghouse HIGH-POWER LABORATORY

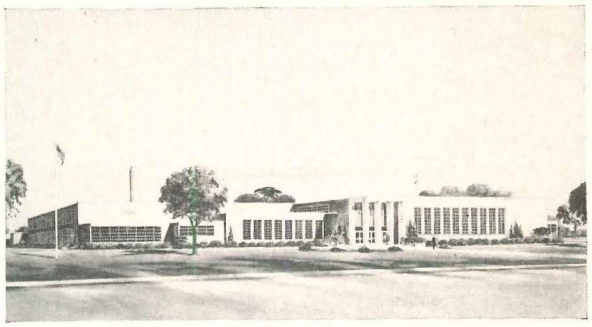
YOU CAN BE SURE... IF IT'S Westinghouse

AB CIRCUIT BREAKERS
THE COMPLETE LINE

WESTINGHOUSE

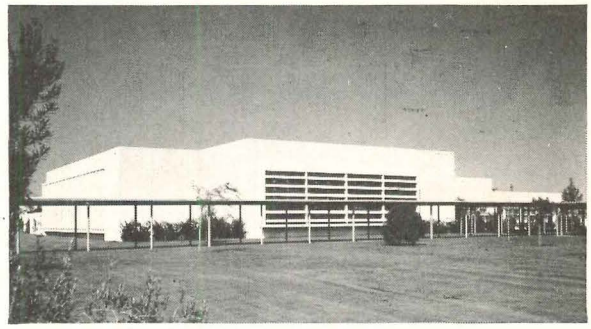
Every day millions of children depend on Von Duprin





Bayview Avenue School, Freeport, L.I., N. Y.
Frederic P. Wiedersum • Architect

Blythe Park School, Riverside, Ill.
Perkins & Will, Architects—Engineers, Chicago, Ill. & White Plains, N.Y.



Los Angeles Harbor Jr. College Library
A. C. Zimmerman, James R. Friends • Associated Architects

In schools across America, Von Duprin stands guard at the exits—with fire and panic exit devices that are dependable, day in and day out.

Through proved performance and continuous improvement—ever since Von Duprin marketed the original exit device in 1908—these products have earned the confidence and trust of all safety-minded people. Today, officials and parents alike realize that Von Duprin devices insure "safe exit" not only for the daily traffic but also for once-in-a-lifetime emergencies. Think how important it is to have 24 hour protection!

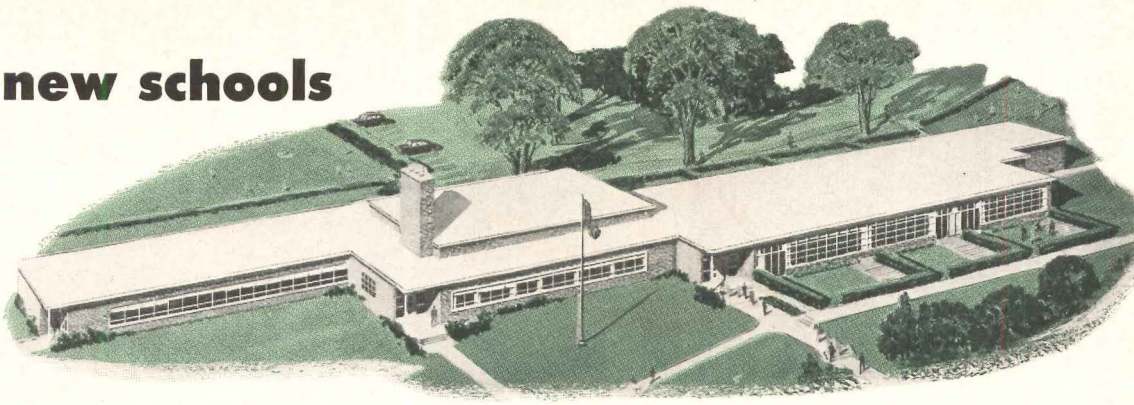
Be sure . . . specify Von Duprin devices—"the *safe* way out!"

Von Duprin PANIC DEVICES ASSURE SAFE EXIT ®

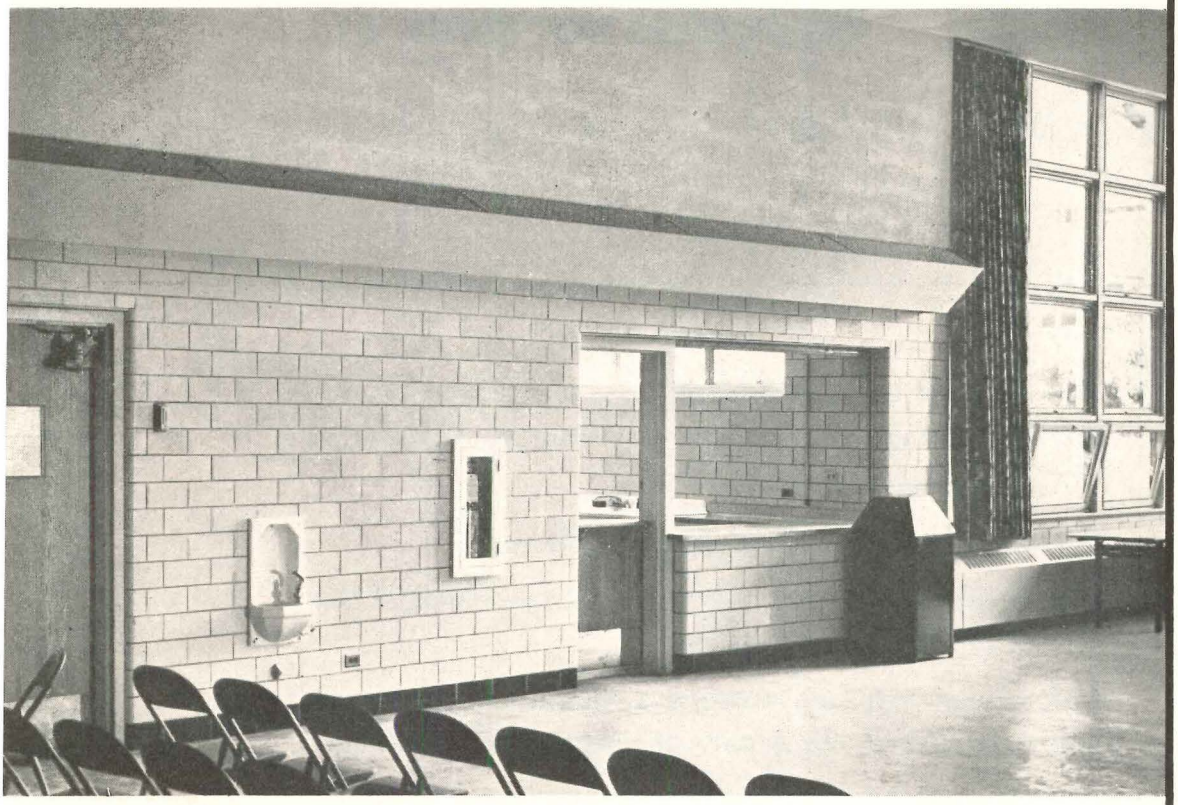
VONNEGUT HARDWARE CO. • VON DUPRIN DIVISION • INDIANAPOLIS 9, INDIANA

How to make new schools

Stay new



One of the five prize-winners in a nationwide design competition sponsored by School Executive Magazine, this Yonkers, N. Y. elementary school has walls of Facing Tile wherever the hardest usage can be expected. Architect: Edward Fleagle.



Build interiors of Facing Tile

Facing Tile interiors will keep a new school just as you designed it—bright and cheerful for years to come.

With "color-engineered" Facing Tile you can build-in colors that will be *right*—for the life of the building. Facing Tile colors are scientifically designed to help you aid pupils' vision, cut lighting costs, improve efficiency and morale. These colors never fade, never require any type of refinishing.

Facing Tile means lasting beauty at minimum maintenance cost. It lets your school clients spend more for education, less for housekeeping. They'll also like the speed of building with Facing Tile. Made in large modular-sized units, it provides a wall and a finish in one economical operation.

FOR ALL THE FACTS ABOUT FACING TILE

glazed or unglazed, send for free booklets, "Catalog 52-C," "The Scientific Approach to Color Specification" and "Facing Tile Construction Details." Just address your request to any Institute Member or Dept. AR-11 of our Washington or New York offices.

LOOK FOR THIS SEAL

QUALITY FACING TILE — FTI — Member of FACING TILE INSTITUTE

It is your assurance of highest quality Facing Tile. This seal is used only by members of the Facing Tile Institute...these "Good Names to Know."

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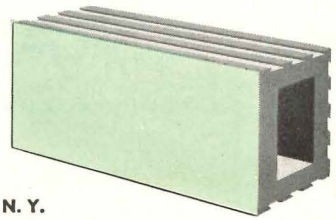

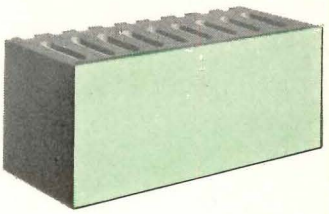

FACING TILE INSTITUTE

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ARCHITECTURAL COMPETITION

Dedicated to ideas for bathrooms, kitchens and utility rooms

Four Awards of $3,000 each. Four Awards of $1,500 each. Four Awards of $750 each and 20 Awards of $100 each. Total $23,000

Sponsored by Crane Co., Chicago, Illinois

Approved by the Committee on Competitions of the American Institute of Architects

Professional Adviser, Howard L. Cheney of Chicago, Illinois, Fellow of the American Institute of Architects

Competition closes 5 P.M. Monday, Dec. 15, 1952

Because bathrooms, kitchens and utility rooms are functional centers around which family life revolves, each of these rooms involves common human problems.

Ideas are needed that will help solve these problems in ways that will make each of these rooms more useful, more practical, more convenient and more attractive.

These ideas may be suited for new construction or for remodeling existing homes.

Competition is open to architects, designers, draftsmen and college students of architecture who are residents of the continental United States, except that the following are not eligible: Contest Jury members and families, employees and families of the Crane Co., its subsidiaries and its advertising agencies.

All awards will be made on the basis of the originality and practicability of the ideas submitted.

Winning entries will be decided by a Jury which will consist of three architects, a homebuilder and an industrial designer, whose names will be announced after the Jury has met and selected the winning solutions.

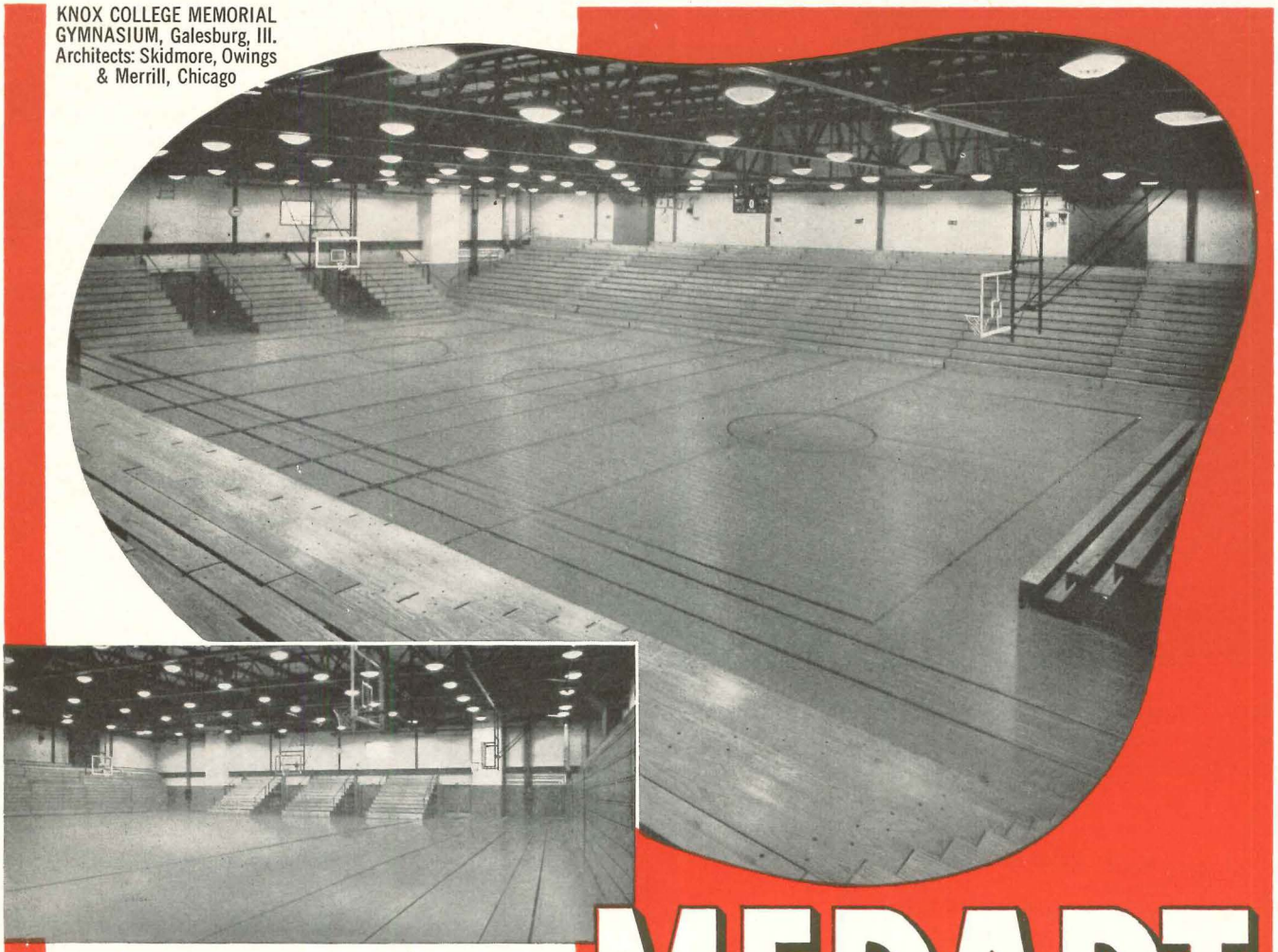
Information given here is to be considered as an announcement only. Mandatory requirements and detailed information as to the procedure to be followed are fully covered in a program now ready for mailing.

Your copy of the program will be mailed promptly upon request to:

CRANE CO.

836 South Michigan Avenue, Chicago 5, Illinois

KNOX COLLEGE MEMORIAL GYMNASIUM, Galesburg, Ill.
Architects: Skidmore, Owings & Merrill, Chicago



5,948 Extra Square Feet Of Usable Floor Space With

*MEDART

TELESCOPIC* GYM SEATS

Take a close look at the pictures above. At the top, all the Medart Seats are in open position ready to comfortably and safely accommodate a packed-to-the-rafters *audience of 3,200!* The inset shows side seats closed, and seats at one end still open.

These two pictures explain why this gym, with seating capacity for 3,200 persons, requires a *building virtually no larger than one without seats for spectators!* Imagine what the size of this building would be, and the startling extra cost, if 3200 expensive fixed seats had been intalled!

Here is an example proving how Medart Telescopic Gym Seats actually regain the use of *5,948 square feet of extra floor space* for daily class activity—evidence of the tremendous savings in building costs made possible by better utilization of space.

Convenience and Ease-of-handling are important factors too. Because of Medart's exclusive "Floating Motion" design, it takes little effort and only a few moments to completely open or close Medart Seats. If all the seats are not needed, only one row, or as many rows as required, can be provided and remaining rows left closed.

Safety is assured, even under loads of 400 Lbs. per lineal foot. Medart's steel understructure is a complete free-standing assembly. Solid, one-piece wood seats, risers and footboards add *extra* strength and are not used to tie together the steel understructure members. Each row of seats is supported from the floor by four vertical steel members.

Many Other Exclusive Features make Medart Telescopic Gym Seats a "best buy". If you have a seating problem, write Medart.

Send for The NEW Medart Catalog

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*Medart Telescopic Gym Seats are fully protected by U. S. Patents

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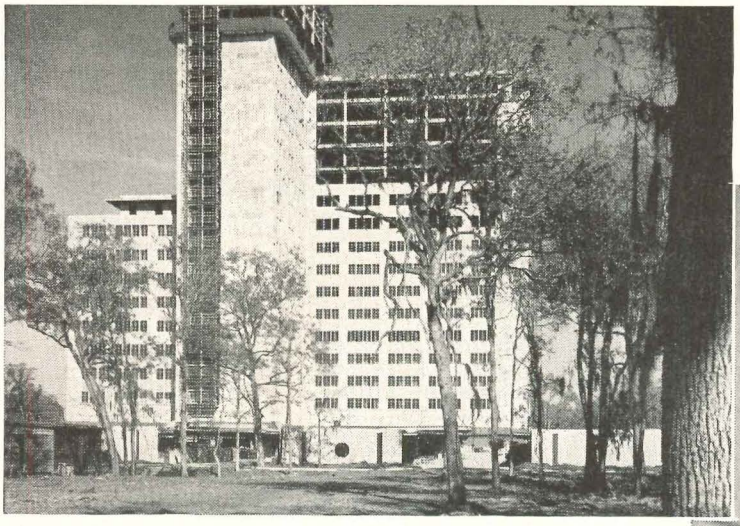
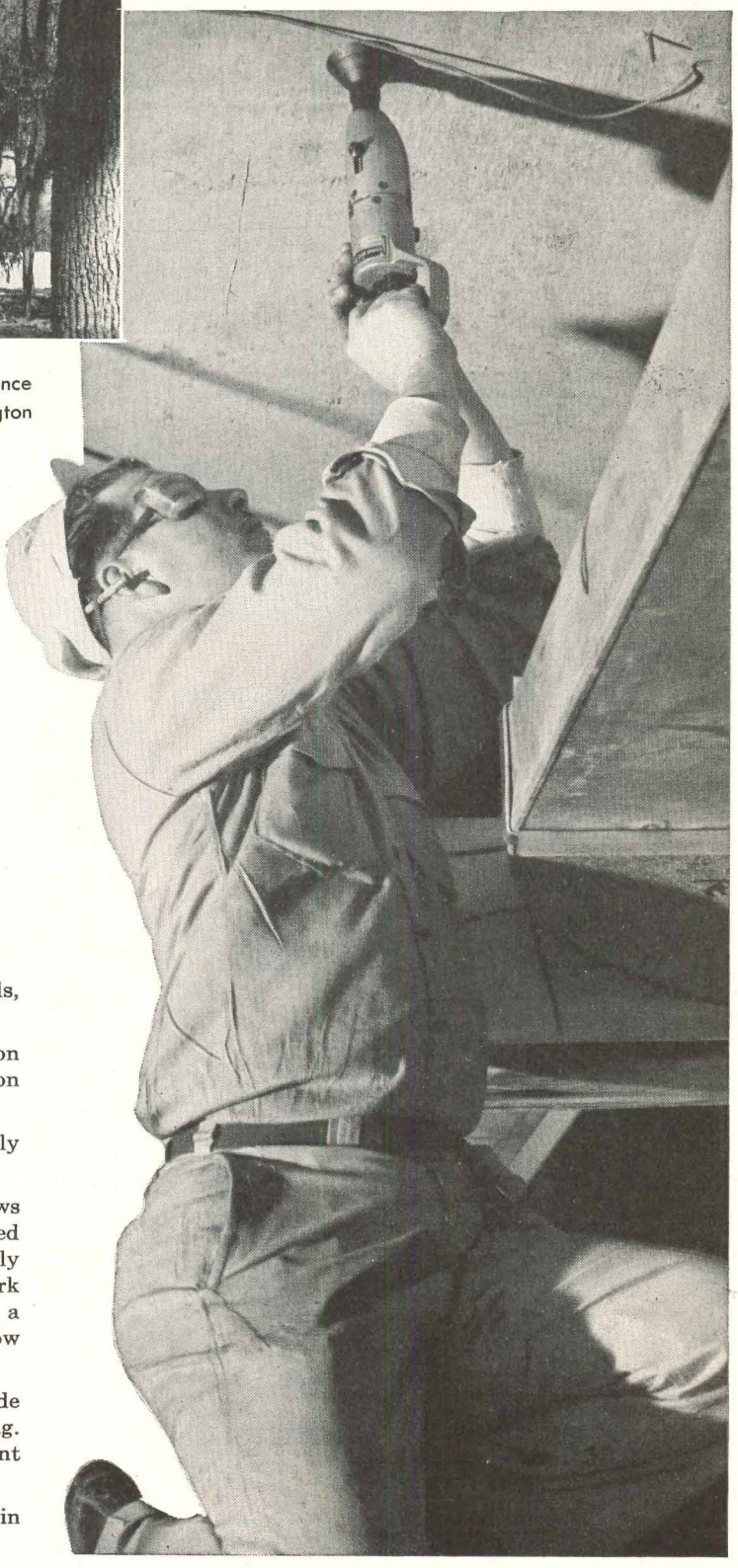
Texas construction firm by setting

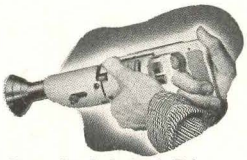




New 18-story office building for the Prudential Insurance Company of America, where Straus-Frank Co. used Remington Stud Drivers for fastening air ducts to concrete ceilings.

It's fast, easy and safe to operate the Remington Stud Driver

Simply hand-assemble stud and power cartridge, load as a unit in easy-to-open Remington Stud Driver, and close.



Press loaded Stud Driver firmly against surface, depress safety lever and pull trigger. Explosive charge imbeds stud solidly.

LOOK AT ALL THESE FEATURES

COMPACT AND PORTABLE — Weighs only 5½ pounds, ideal for overhead work in inaccessible places.

SPEED — One man can set as high as 5 studs per minute on repetitive work at depths up to 2¾ inches, depending on material.

ELIMINATES INVESTMENT in outside power — completely self-powered.

FOUR WAYS SAFE — Plainly visible red dot indicator shows when Stud Driver is cocked; safety lever must be depressed before and during squeezing of main trigger; permanently attached safety shield must be compressed against work before Stud Driver will operate. If tilted at more than a slight angle, Stud Driver will not fire. Slight recoil. Low noise level.

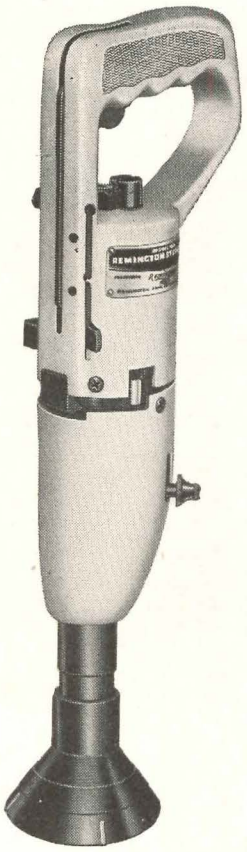
RUGGED — All working parts of the Stud Driver are made of selected steels, cased in a strong aluminum-alloy housing. Lining of safety shield is a solid block of tough, resilient Du Pont neoprene.

PRICE for Model 450 Remington Stud Driver, complete in rugged steel carrying case — only $119.50.

saves over $8,000 fastening studs with

NEW Cartridge-Powered Model 450

REMINGTON STUD DRIVER



Revolutionary new tool sets studs in seconds . . . and does it safely!

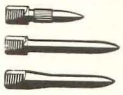
Construction job speeded at a substantial reduction in labor costs! That's the report from Straus-Frank Co., Houston, Texas, whose contract division used Remington Stud Drivers on a recent building project. In setting fastening studs for overhead air ducts, the Stud Drivers outproduced older methods eight to one . . . averaged 50 studs per hour, *including down time!*

Completely self-powered, the Remington Stud Driver needs no outside power source or extra equipment. The hinged construction of this lightweight fastening tool permits easy one-step loading—without the time loss of handling separate parts. Workmen like the Stud Driver's simple operation and safety features . . . Contractors like its lightning speed in firmly fastening steel or wood sections to concrete or steel.

The Model 450 Remington Stud Driver is made by Remington Arms Company, Inc., *America's oldest and foremost sporting arms manufacturer.*

Read the facts on the amazing pull-out resistances of Remington studs in tests conducted by the United States Testing Co. Send in the coupon below for your free copy of this informative report.

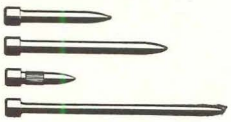
INTERNAL THREAD



Only Remington studs are identified by this target trademark on the head.

BREAK-OFF HEAD

STANDARD HEAD



EXTERNAL THREAD

Listed and approved by Underwriters' Laboratories

"If It's Remington—It's Right!"

Remington

DUPONT

Remington Arms Company, Inc.
Industrial Sales Division, Dept. AR-11
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I am interested in obtaining detailed information on the Model 450 Remington Stud Driver.

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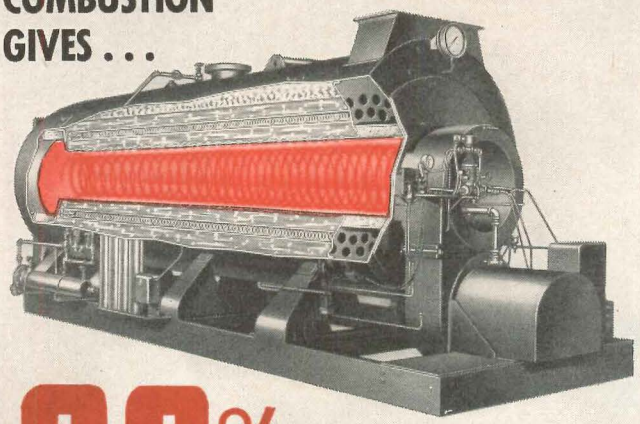
*Firm*_____

*Position*_____

*Address*_____

*City*_____ *State*_____

ONLY CYCLONIC COMBUSTION GIVES . . .



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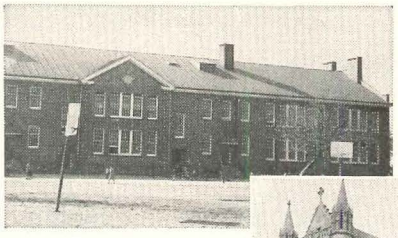
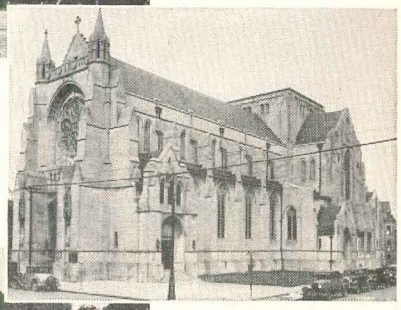
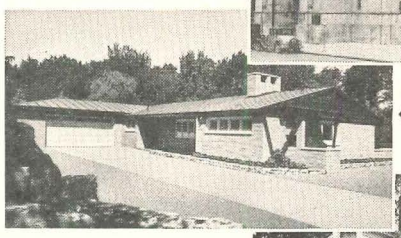


ON SCHOOLS and institutions

ON CHURCHES





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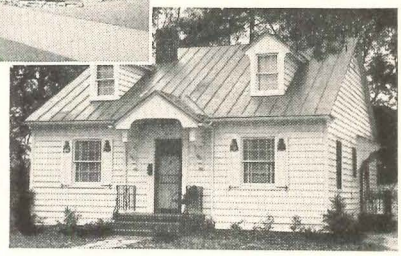

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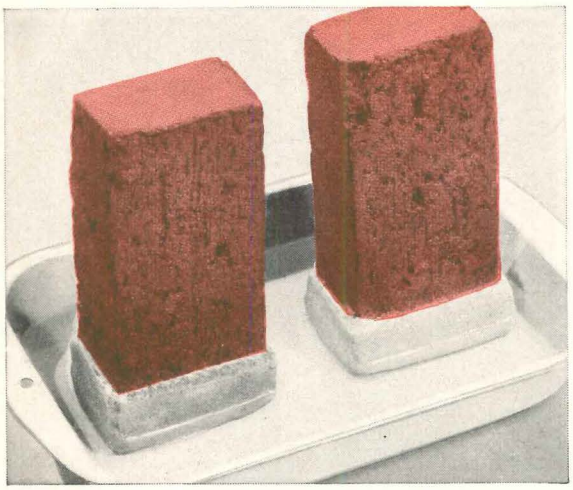
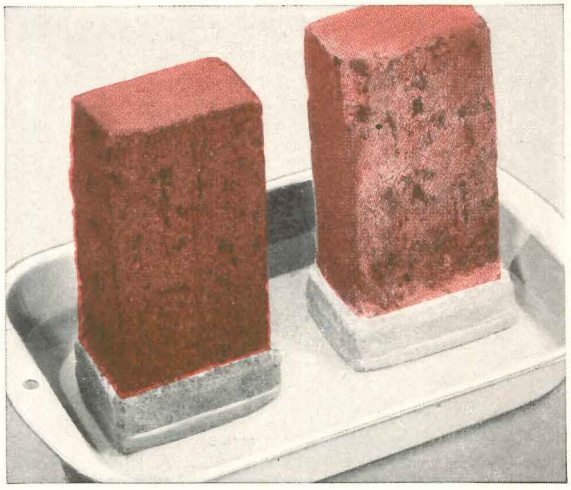
BRIXMENT MORTAR

Helps Prevent Efflorescence



To test two mortars for resistance to efflorescence, "cap" two brick heavily with the mortars — let harden, and keep both brick for a few weeks in a shallow pan of water, as shown. Try this with Brixment mortar!



HERE'S WHAT CAUSES EFFLORESCENCE—AND WHY BRIXMENT MORTAR HELPS CONTROL IT

Efflorescence is an outcropping of minute white crystals on brickwork. When these crystals occur on colored mortar joints, the condition is sometimes mistaken for *fading.*

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Bricklayers who have used Brixment mortar for years say they have far less efflorescence with Brixment than with any other mortar.

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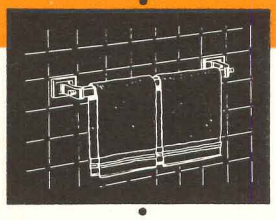

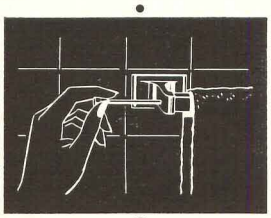

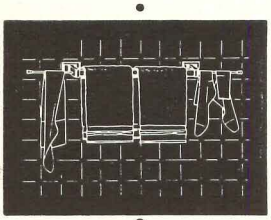

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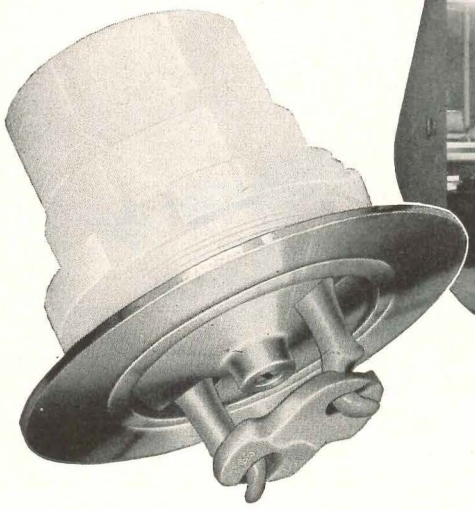

It's the same room in both cases protected by a Viking Sprinkler system . . . the general offices of the Chicago Merchandise Mart . . . Nothing is changed . . . except the sprinkler heads. Note the added attractiveness and unmarred symmetry of this room after the change to *Viking Flush Type Sprinklers.* Viking Flush Type Sprinklers blend quietly with any room design or motif. They are unexcelled from the standpoint of design . . . unexcelled from the standpoint of water distribution.

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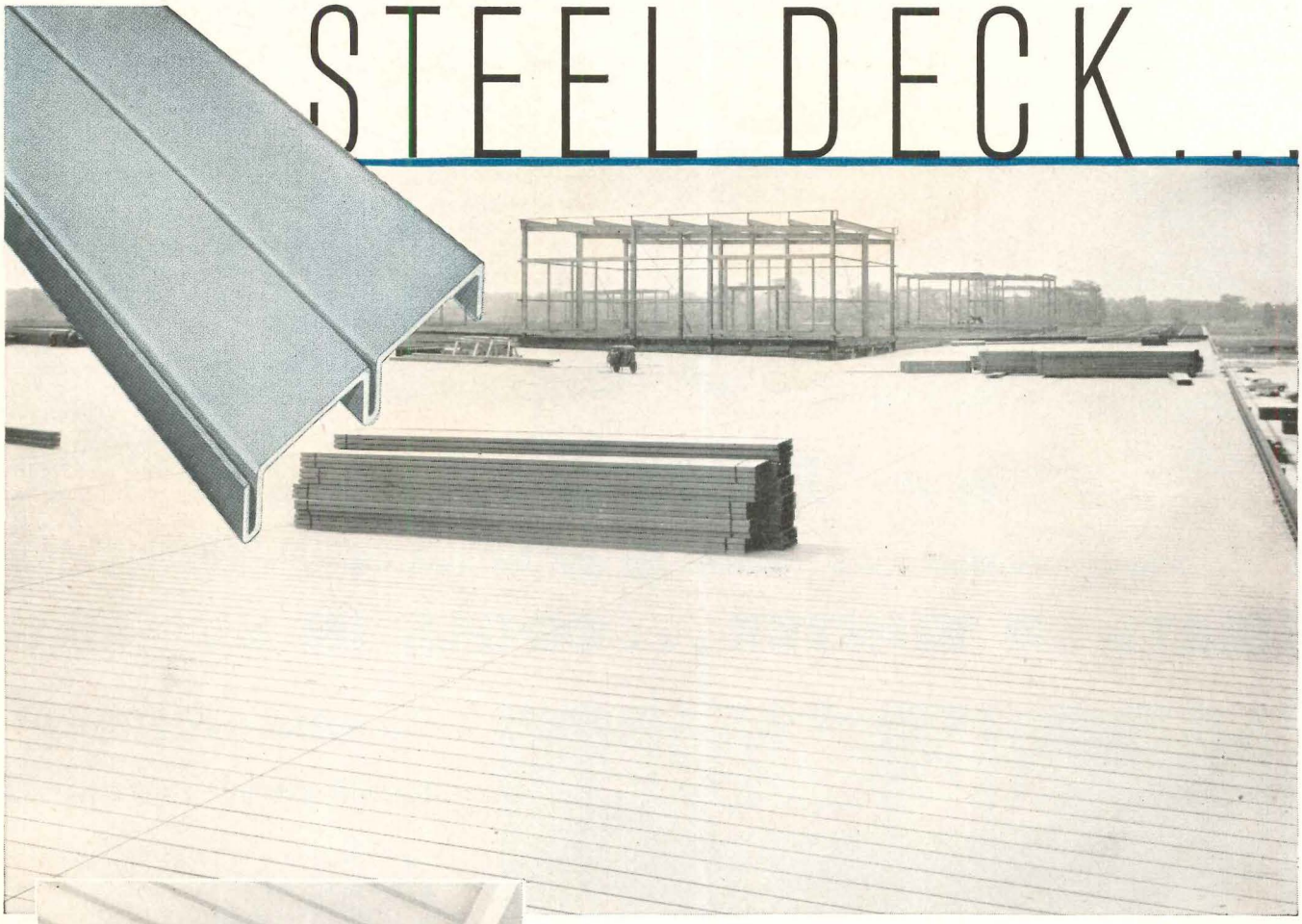

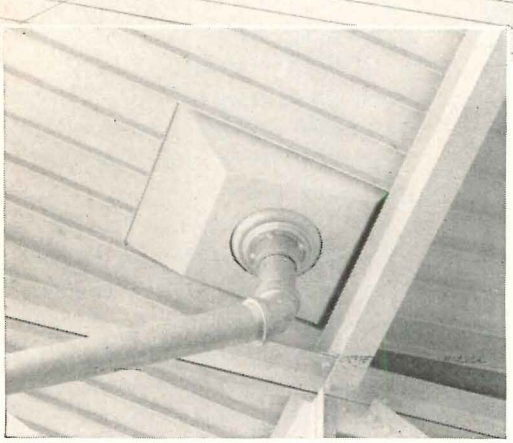

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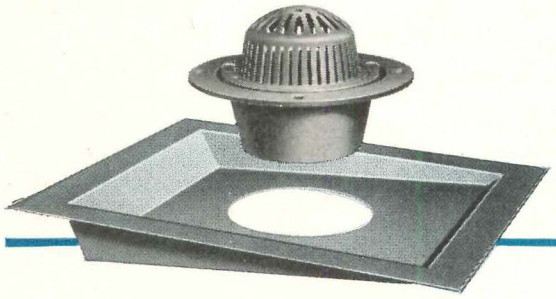
Built-up saddles are eliminated in Steel Deck Roofs. Purlins can be set to create valleys at sump locations in the drainage area. Steel Deck can be warped to conform. No additional deck plates are required—no cutting, fitting or bending necessary.



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Mahon Roof Sump Recesses for use with Mahon Steel Deck can be furnished to fit any roof pitch. Mahon Cast Iron Sumps can also be furnished for 4", 5", and 6" conductors.

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A Steel Deck Roof costs less per square foot than any other type of permanent, firesafe construction with comparable "U" Factor. This statement is substantiated by the following facts: Steel Deck can be insulated to the exact degree to provide the thermal properties required in any given locality. Steel Deck's light weight permits savings in the supporting structure—total dead load, including insulation and waterproofing material, is less than any other type of permanent roof construction. Mahon Steel Deck is available in Galvanized or Enamel Coated Steel. Stiffening ribs are vertical—no angular or horizontal surfaces where troublesome dust may accumulate. In the enameling process, the metal is chemically cleaned, phosphated, and treated with a chromic acid solution to provide paint bond, and the protective coating of synthetic enamel is baked on at 350° F. prior to roll-forming. These are features worthy of consideration. See Mahon's Insert in Sweet's Files for complete information, or write for Catalogs B-53-A and B.

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THE REMOTAIRE room conditioner fits any setting — as in this guest room of the Concord Hotel, Kiamesha Lake, N. Y. Designed for location under windows, the Remotaire units can be free standing or recessed into wall 4 inches. Architect: Sydne Schleman, Middletown, New York.

The REMOTAIRE

a new, individual room, remote-type unit for multi-room installations

HEATS IN WINTER . . . COOLS IN SUMMER

INDIVIDUAL CONTROL of each unit allows the occupant to choose the room temperature that suits him best without affecting adjoining spaces. The Remotaire is enclosed in an attractive cabinet of sturdy, reinforced furniture steel—plus a reinforced air grille—which adds to permanence and long-lasting beauty of unit.

. . . with individual room comfort control

ASSURE all-weather comfort conditioning for the multi-room installations you plan. The Remotaire by American-Standard provides individual room comfort control in apartments, hotels, tourist courts, schools, hospitals, office buildings and large residences.

The Remotaire uses chilled water from a central water chiller for cooling and warm water from a central heating plant for heating. Ventilation air may be supplied through a wall aperture or several other methods if desired. Remotaire units in unoccupied rooms can be shut off, thus reducing operating expenses.

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See and inspect the Remotaire for yourself. For a *free demonstration*, contact your nearest American-Standard sales office. Or write to address below, and we will gladly arrange a demonstration.

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SCHOOLS

Until recently we have emphasized elementary school buildings. We have only begun to satisfy needs, and we must continue to hunt ways to hold down construction costs. That is the subject of Part II of this study. Part I, below, deals with the emerging philosophy of secondary education and the buildings required

ARCHITECTURAL RECORD'S BUILDING TYPES STUDY NO. 192

I: THE NEED FOR NEW SECONDARY SCHOOLS

THE EDUCATIONAL PROGRAM IN 1963

By Archibald B. Shaw, Superintendent of Schools, Scarsdale, N. Y.

NOBODY knows for sure what the high school's program will be in 1963, to say nothing of the twenty years beyond for which today's secondary school plants must be designed. But every competent observer will testify that it will be different — and will get more and more different — from what's going on now in the overcrowded, out-moded high schools which must be replaced.

To become a competent observer is no great trick. It is required only that one think back to the high school program he knew twenty-five or so years ago, probably in a building even then obsolescent. Try to look farther back, even, than graduation time; back to the much larger class that entered high school out of a still larger group that had finished grammar school. Then rush off to the nearest secondary school and compare.

Changes? Yes. The relative numbers entering and graduating, the size and constitution of the population segments attending, the curriculum, the organization, the guidance program, and the very atmosphere are all different. And the odds are heavy that further change is visibly in process.

There are signs all over the country that support this view. Dissatisfaction with yesterday's program, designed for the few and modified seemingly at random, has led to "Life Adjustment," "Core Curriculum," "Common Learnings," and "General Education" programs, evolved principally by educators in an earnest effort to meet the needs of today's youth and today's America.

It is no longer only the educators, perhaps not even primarily the educators, who foresee and are working for change. The concatenation of circumstances is arousing parents and citizens generally to a concern for and a critical re-appraisal of our secondary school program. Linked with the staggering growth in high school enrollments so soon to be upon us are continued inflation, enormous tax burdens, and the resurgence of widespread concern for our moral and spiritual values, and for the strengthening and preservation of our American heritage and ideals in a troubled world. Each of these circumstances must have an impact on the secondary school program, an impact that goes beyond the mere adding of a "subject." There simply is not room for another subject — the curricular seams are already bursting. The school day isn't nor can it be long enough to include everything that every group would have taught. Value judgments have to be made, willy-nilly, and concerned communities are at last finding ways, are being invited, to participate in those judgments.

But it is not enough to predict change, valuable though that is for a starting point. Plants must be built on more specific programs and trends. Educational progress over the nation being slow and very uneven, it is possible to find in a survey of today's schools not only the practices of the last half-century, but invaluable clues to what may lie

ahead. The literature of secondary education gives further clues — presenting what amounts to a consensus in many important areas of the program and organization.

What All Should Learn

In the matter of curriculum there is pretty general agreement that there are certain common needs both of all youth and of our free American society which must be taken into account in the secondary school program. For convenience the program provisions for these needs will be referred to as *common learnings*. Perhaps a full half of the individual's program in his secondary schooling will be allotted to these common learnings.

One of the major portions of the common learning program is the development of language and communication skills. Writing and reading, speaking and listening are important to all. The clear thinking and lucid expression so essential in our interdependent society demand skill in the use of written and oral language. Also included will be skills in the many kinds of reading, in type- and handwriting, in spelling and language construction, in vocabulary selection, in effective speaking and in intelligent listening.

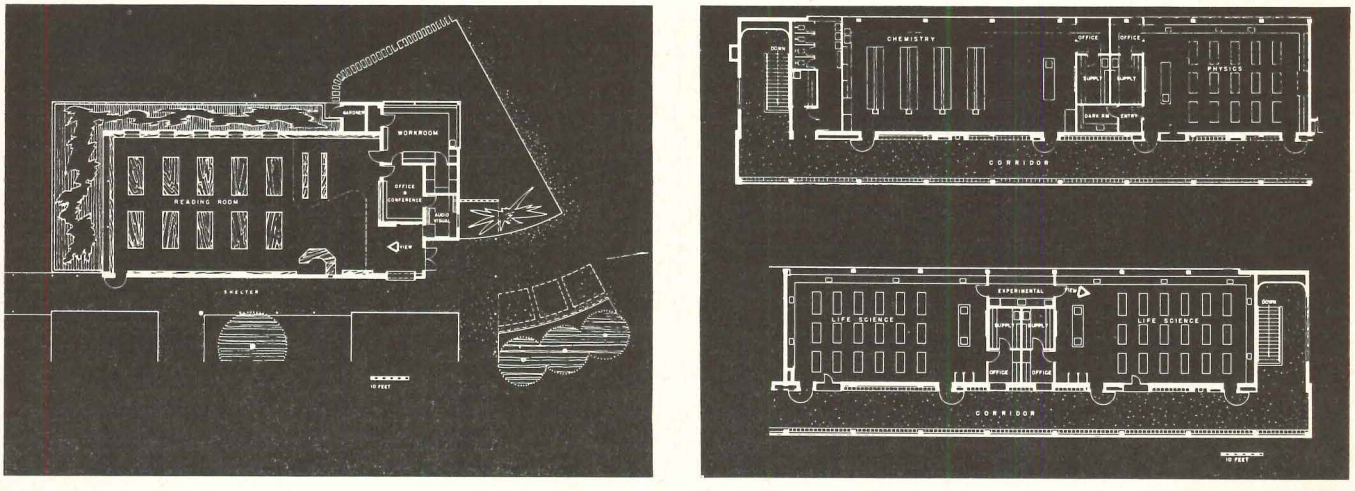
A second large portion of the common learning program is the development of understandings and appreciation of our common heritages. This is history, expanded to include the cultural, economic and social heritages. Attention is given not only to man's deeds, his organizations and institutions, but also to his aspirations, the whole complex of his developing relations with his fellows, his world and his God.

The third part of youth's common needs is his equipment for and understanding of the current scene, the world of today and the so-imminent tomorrow. In this portion of the common learnings program he develops those skills and understandings in mathematics and the sciences which are essential to the voting, producing and consuming citizen. He learns the machinery of government, the responsibilities and opportunities of political citizenship, the obligations of a good citizen in his community and in his non-governmental associations, some basic economic principles and something of family and home responsibilities. He must develop a decent respect for the other fellow's and his own rights, safety, and convenience.

There are other areas of knowledge, other skills and attitudes which are common needs of all youth and society and which are appropriate to the public secondary school. But these above are quite generally agreed upon — and are meant here to be suggestive rather than definitive.

Specialized Training

Individualization of program comes in prevocational and vocational education which takes the second major place in the school program. Here the wide range of aptitudes, interests and abilities of youth and of the vocational opportunities and needs of society are served. For some, more advanced mathematics, the sciences, modern and ancient languages, and some or all of the many facets of what is loosely called "English" in today's schools will be appropriate as pre-vocational or pre-professional learning. For others the food laboratories, the shops, the farm, or



Willow Glen High School, San Jose, Calif.; Marsh, Smith & Powell, architects. Above are plans showing typical small units of which this extremely large secondary school is composed

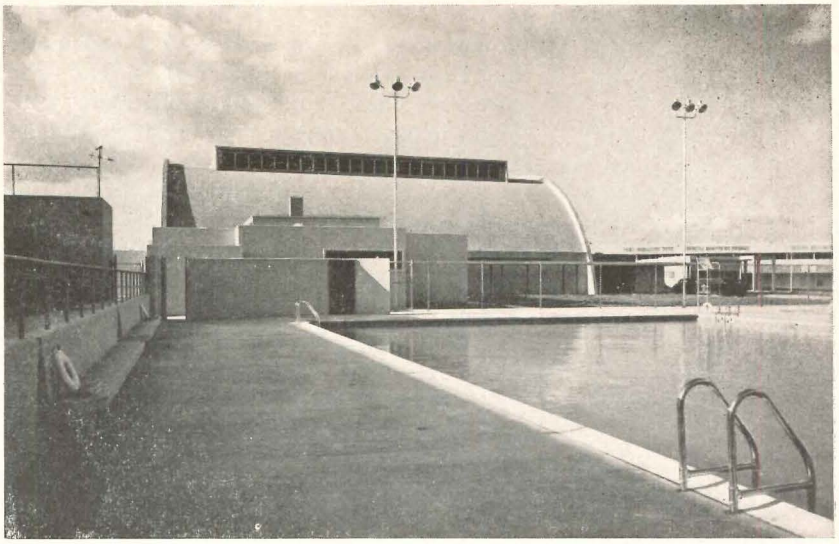
the business training will serve. Advanced musical, art or dramatic training will meet other needs. So will millinery, tailoring, design, or beauty culture. The list is long and will vary from community to community and as technology, commerce, and industry themselves change. But all these activities have in common the fact that they meet the differing educational and vocational needs of youth and society.

Individual Development

The third aspect of the educational program is developmental. Under this heading are found all those learnings that have been associated with the best programs of physical education and what have been called co-curricular activities. Spectator sports will continue to have a role — perhaps even a prevocational role for some. Healthy team and individual competition will continue, but the emphasis is shifting steadily to participation by all. Highly organized sports will still appeal to the particular social, psychological and physical needs of many adolescents, but they will co-exist with informal sports requiring little organization which can remain valuable recreational activities throughout the later years.

Inspiration and student "community" are so important as to merit a special word although, like guidance, they are largely implicit in other situations. Class and school assemblies, in and out of doors, which rise out of other program activities are very valuable for these ends.

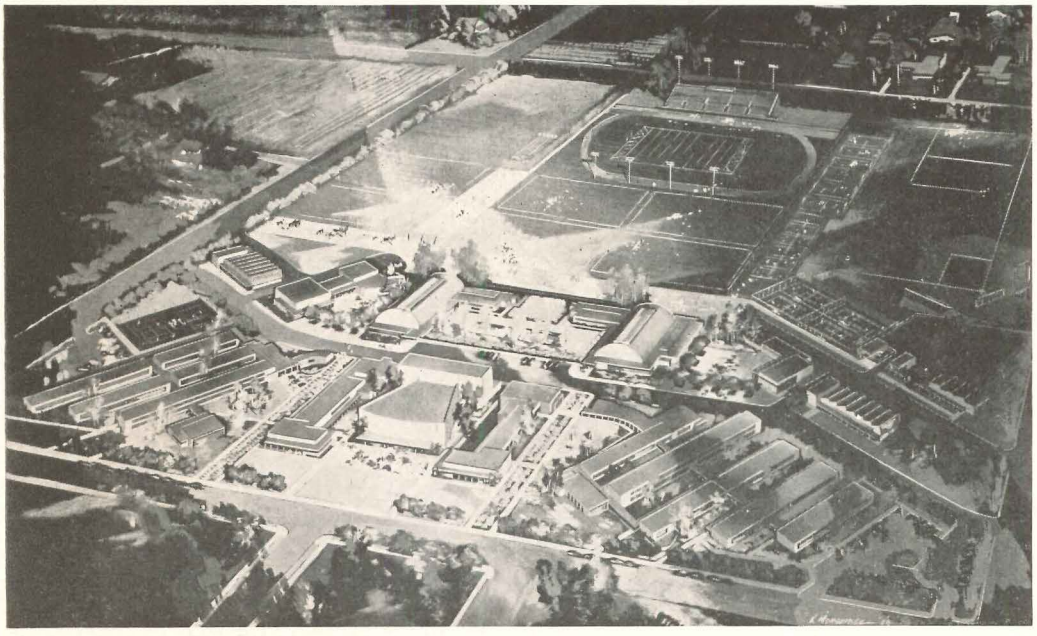
Guidance, too, needs but a few specific program provisions. It rests on personal ac-



Fred R. Dapprich

INFORMAL SPORTS NEEDING LITTLE ORGANIZATION

Fishing, recreational swimming and boating are examples. So are skiing and skating. Golf, tennis, paddle-tennis and badminton for out-of-doors; bowling, handball, and table tennis indoors. Hiking, outdoor cookery, camping and gardening are valuable learnings. Dancing—folk, creative, square, and round. Music—individual and group, vocal, instrumental, and just listening. Dramatics—traditional and elaborate, in-the-round, extemporaneous, stage and studio. Clubs. Publications. Broadcasts and telecasts. And on through a list as long and varied as the plant, site, neighborhood and community resources will permit. But always including centrally a program of student self-government adjusted to the needs and readiness of the students, as vital to the school's program for building participating citizenship.



At left, air view; top of page, swimming pool, both of Willow Glen High School. Economy of construction and the demand for a tremendous variety of subjects have forced us, many times, to "consolidate" districts and buildings. Willow Glen is an excellent example of the trend away from the too impersonal, monumental structure which has sometimes resulted, toward the human scale of what is called the campus plan.

quaintance, on availability of adequate diagnosis and counselling resources for the physical, emotional, and educational well-being of each youth. It is in large part an individual function.

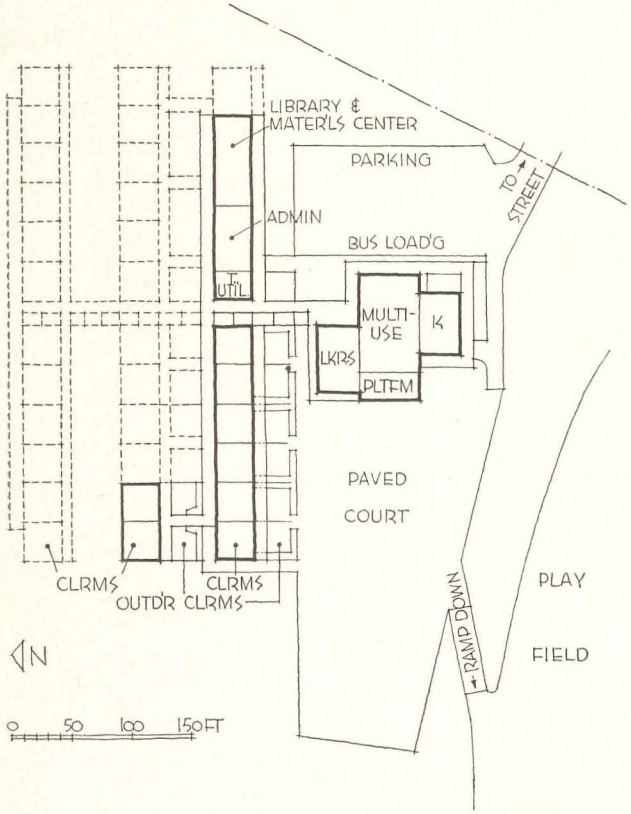
There are service functions such as lunch with nearly inseparable educational implications. Educational considerations and growing awareness of the needs of adolescence lead to the canteen, snack-bar, smallish dining-room approach.

Left for last, since like plant design they exist only to serve the needs of the students and their program, are organization and administration. Both are highly important to the success of the educational program and of crucial concern in good plant design. The common dilemma is easily recognized. On the one hand, the very wide range in pre-vocational and vocational needs of the increasingly broad segment of school-age youth seems to demand not only for economy but for effectiveness either the bringing together of extremely large numbers of students, or some artificial segregations, according to probable vocational goals or other criteria. On the other hand, many have come to decry the de-personalized institutionalism that is so real a danger in schools of a thousand or more students, or the dangers to democracy in any such youth segregations as are implied in Vocational School, Classical High School, etc. Similarly the large school seems capable of providing a richer diversity of social and recreational opportunities; yet guidance, inspiration, and even teaching seem inevitably to suffer and individuals become more easily lost in the mammoth institution. And the very nature of the common learnings program demands close association of students with fellow-students with teachers in groups small enough and with continuity prolonged enough for exploration of needs and abilities and of individualization of instruction.

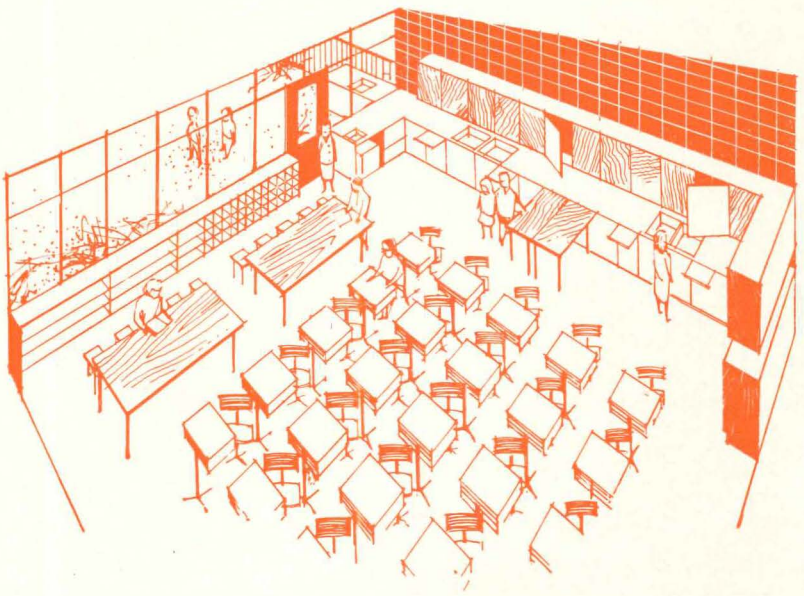
As we have gradually come to know something more about adolescents we have discovered added complications. The adolescent is a solitary, a buddy, a "gang" member and a loyal member of a larger community — not all at once, to be sure, but in rapid and nearly unpredictable succession.

These seemingly incompatible demands on organization are being met in some schools, somewhat inadequately still, through a modified "house" plan for the common learnings and guidance functions. This plan calls for students and faculty to work together in smaller sub-divisions of the school for most or all the years in secondary school. Students from all "houses" mingle and redivide for the varied pre-vocational and vocational programs. The social developmental program is accessible to all and is organized for the smaller or larger groups as the activity demands. Finally, the very necessities of cross-accessibility are skillfully exploited to provide the opportunity for solitude, for buddying, and for small group association.

Enough has been done here and there by program and plant planners (or by inad-



SEVENTH AND EIGHTH GRADE



vertence!) to justify optimism. The problems are not insoluble. They are, however, challenges to the boldness and inventiveness of educational planners and architects.

Nobody knows what the high school's program will be in 1963. Some clues, some trends are discernible. Competent observers aren't enough. Neither are educated guesses. But the people of a community, enlisting wise leadership and professional skill and vision, will face the problems and shape answers. There is no formula nor blueprint. The secondary school program of 1963 will be what the concerned and effective community wants it to be, and knows and cares enough about youth and society to make it.

IMPROVING SECONDARY SCHOOLS

By John Lyon Reid, A.I.A.,
San Francisco, California

THE ARCHITECT evaluates schools with reference to two criteria: how well do they solve the plant problems of the educational program, and are they good architecture.

I am first interested in criterion number one. In few other building types are program and solution so interdependent. A school plant, i.e. building, site and equipment, is planned by the architect to function as an instrument of education. The educational program, then, requires first consideration by any architect who is concerned in the form and purpose of future school buildings. Although a poorly conceived program can be effectively solved in architectural terms (or the reverse) the ultimate result falls short of its potential contribution. It can do so only when a soundly conceived educational program is housed in a plant which powerfully assists in attaining the educational objectives. School planning at its best is the result of a cooperative effort between educator and architect which has been conducted with sympathy, understanding and skill; it can't be otherwise.

The role of the architect is to place his professional skill and experience at the service of the educator; it is not the prerogative of the architect to question or dispute the educational program, but to plan for it, right or wrong. It is with some hesitation that I, an alleged architect, comment on educational policy.

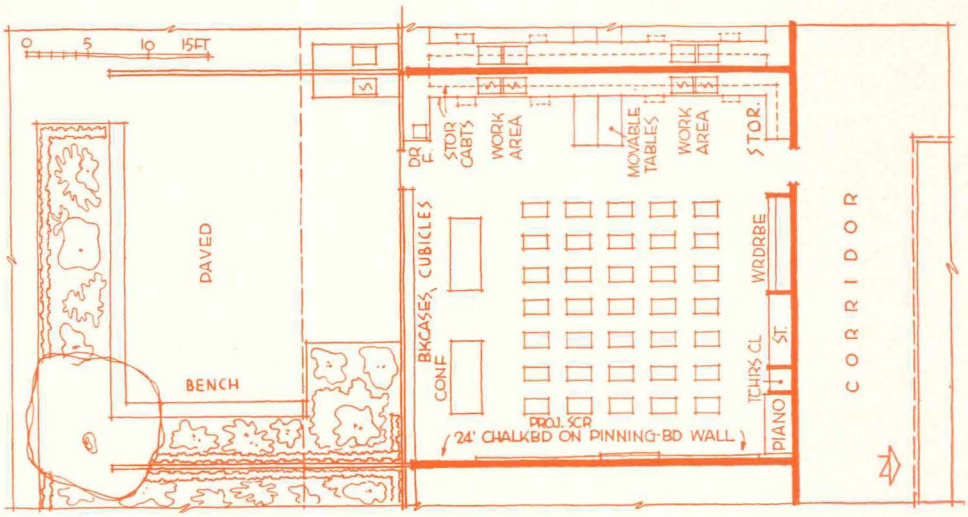
One of the most successful teaching programs in the educational field today operates at the kindergarten level. There, the developmental needs of the child are met directly; subject matter is from day to day adapted to the learning experiences of the child. The child is more important than the teacher.

At the other end of the line, in the secondary school (disregarding problems of the university), we do not find the learning needs of the student solved with the same directness and simplicity. Problems are infinitely more complex, and subject matter becomes more specialized. The growing maturity of

SCHOOL DESIGNED FOR THE NEW PHILOSOPHY

JOHN LYON REID, Architect

BURTON L. ROCKWELL, Associate



Not strikingly different outwardly, Tierra Linda School represents a distinctly changed concept. All subjects except music and physical education are taught within the home room: home making, science, light shop, arts and crafts, plus more academic subjects. This necessitated large classrooms (32 by 32 ft), much cabinet and work equipment, some of it in the outdoor classroom adjoining, all designed for utmost flexibility in arrangement to accommodate varying groups of students. Very important was provision of maximum possible tack space, achieved by covering end walls clear to ceiling with cork tile, for maps, murals, etc., made by students. Note also the "materials center" (see next page)

Now under construction, Tierra Linda School, San Carlos, Calif., was specifically designed for one development of the type of program presented in Mr. Shaw's article. Its curriculum, transitional between elementary and four-year high school, resulted from more than a year of teacher-educator conferences. Construction cost: $14.84 per sq ft, not including site work

Below, model made to demonstrate principles evolved during design of Tierra Linda School; materials center at left contains, stored on movable carts, all special materials and equipment, such as audio-visual, food preparation, tools, science materials and kits. These are taken to classroom by teacher as needed. In center, library for student use, for special books, reference material not in classrooms. Workroom between is shared by library and materials center. Classroom at right was not built in this location; all rooms, exterior walks, etc., are on one level or connected by ramps for ease in moving carts

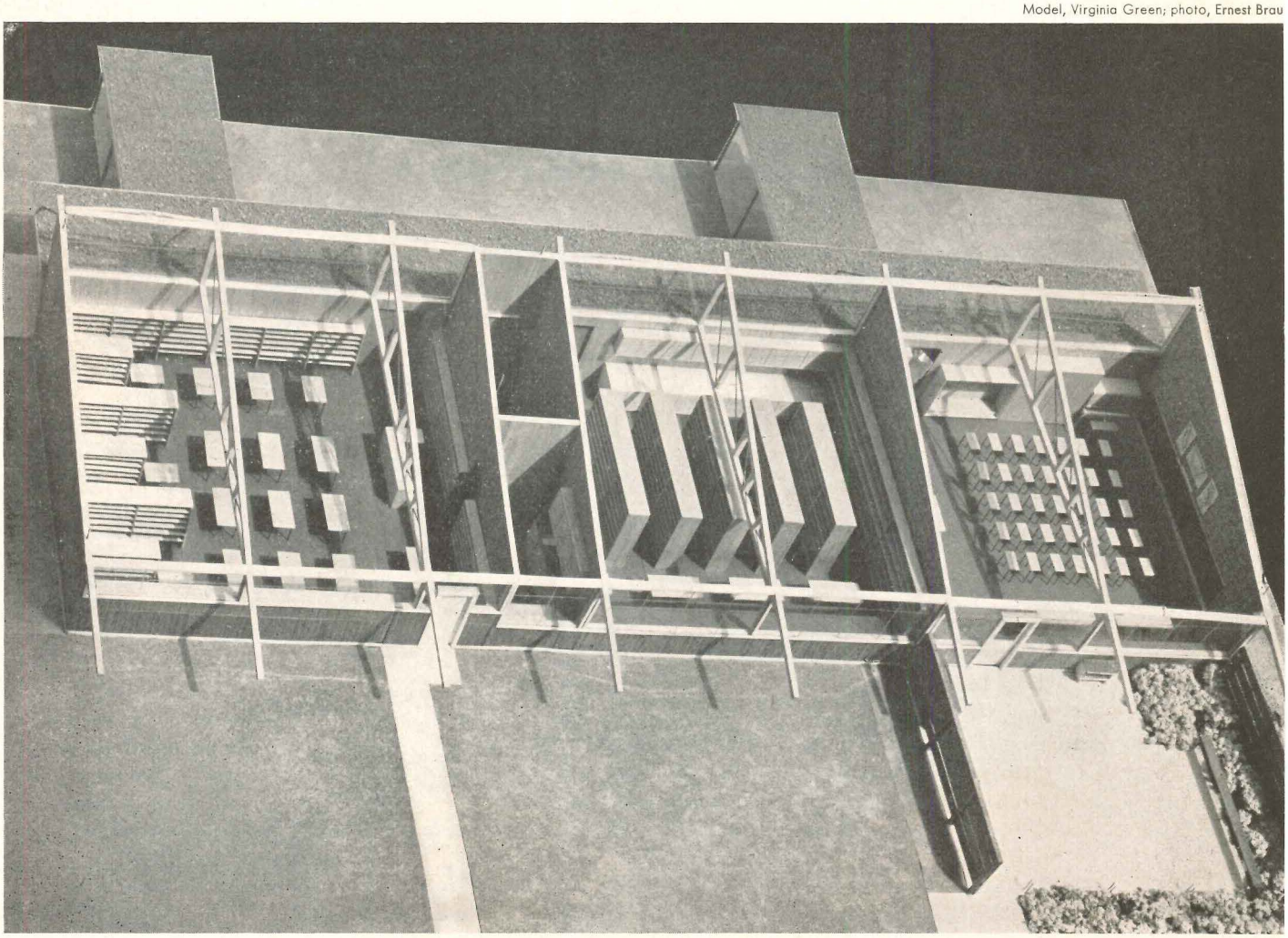
the student brings with it an ability to choose and pursue interests educational, social and recreational. Highly competitive sports, with their important school plant implications, have not always served the athletic needs of the majority of students.

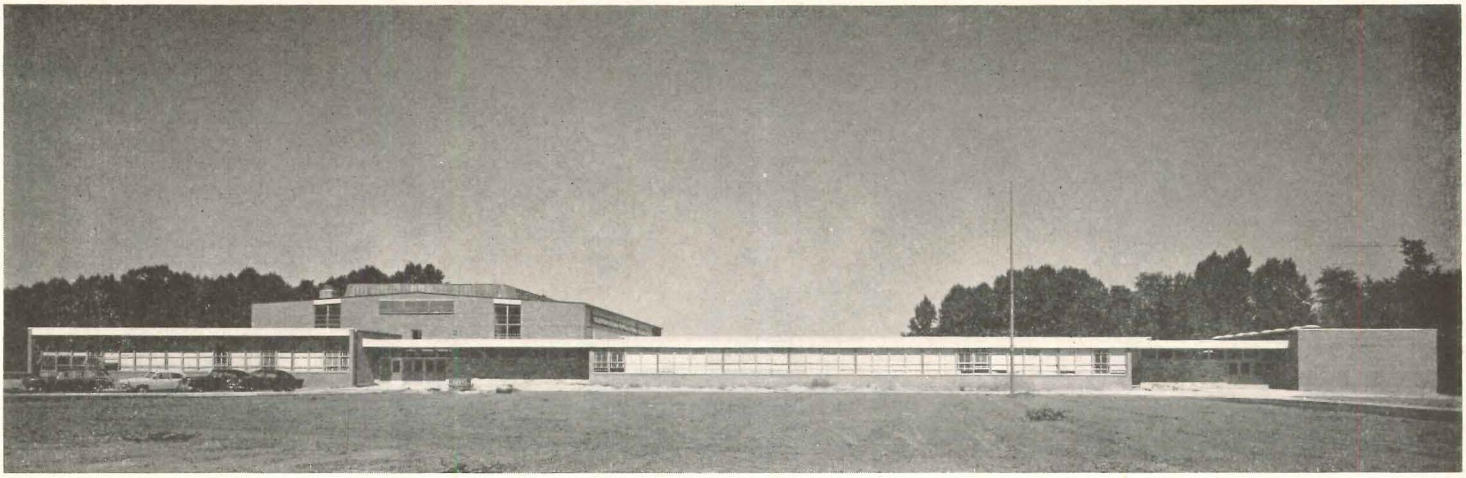
The problem in secondary education is to provide a framework in which all learning experiences can be synthesized in a meaningful whole. And just how is it to be done? This is a convenient time for architects to withdraw and let educators answer the question. For years they have been thoughtfully probing the secondary program. The design and construction of elementary schools have claimed the interest and attention of both professions since the war. But our increasing numbers of children will soon enter the secondary schools and the program pronouncements of educators will have great meaning, I think, for architects. A tremendous building program for secondary schools is in prospect; our success with it will depend on how well educators get their ideas across to architects, and on how well architects can give form to these ideas.

Construction costs are the highest in our history. Some educators still blame architects for high building costs, and in some cases this blame may be deserved. With educators requiring more in space and equipment, with financial resources becoming depleted, and with a big building program yet ahead, architects have a job to do. The job is both one of public relations and one of design; public relations, to explain costs and to warn clients of unnecessarily extravagant and meaningless requirements; design, to find better and cheaper ways to design and build buildings that will come within the clients' budgets. Remember too, that art thrives on economy.

Educators and communities are showing a reassuring awareness of the value of good design. Human values in architecture are often a stated program requirement. Good architecture springs from a direct and uncompromising solution to the clients' problems; the interest and understanding of the client should be cultivated throughout the entire development of the design and he, the client, should feel that he has shared in all design decisions. Architecture of quality, however, cannot be created by democratic vote of the building committee, or by teacher committees. Here the architect comes into his own; he should be of such professional stature and skill that he creates what no other planning participant can, a work of architecture.

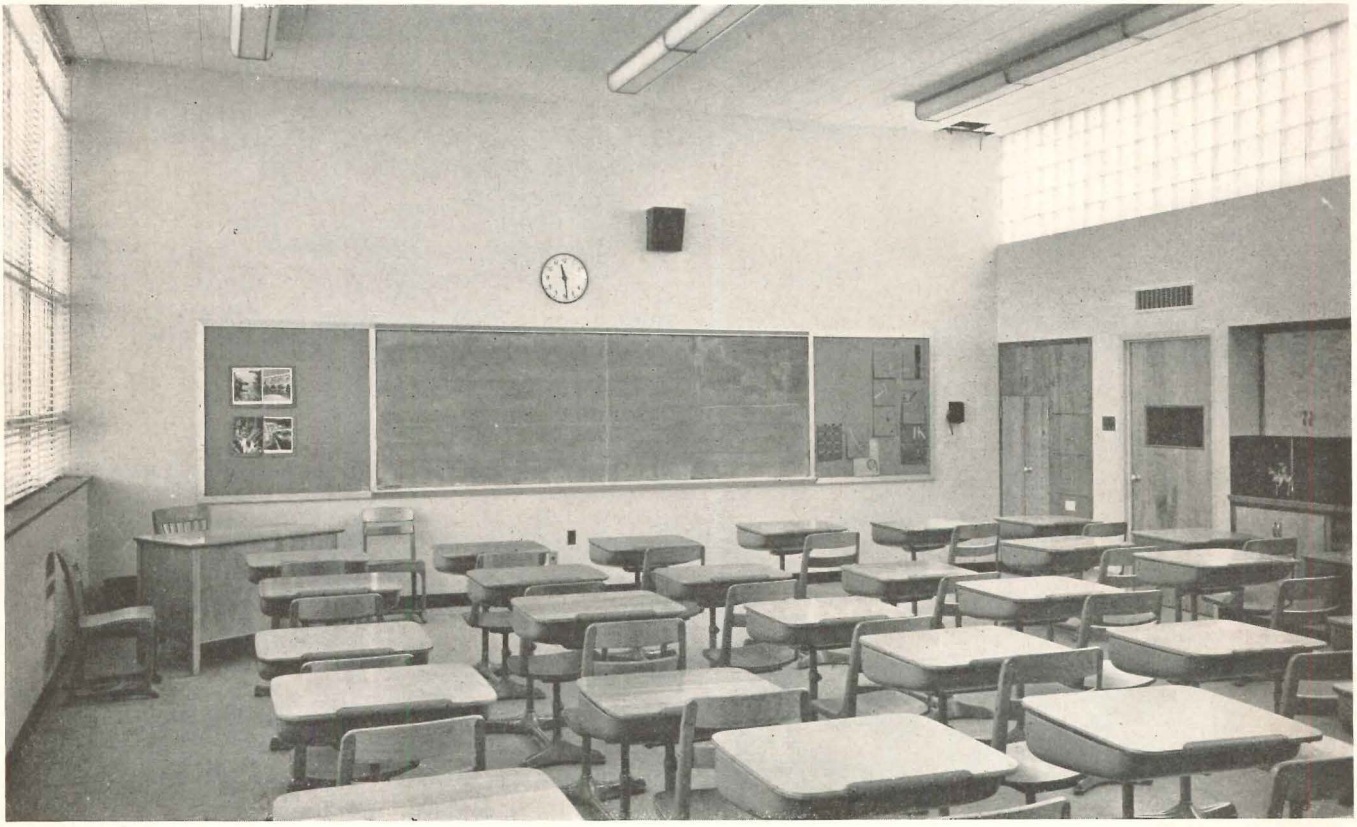
Model, Virginia Green; photo, Ernest Brau





GEORGE MASON JUNIOR-SENIOR HIGH SCHOOL, FALLS CHURCH, VA.

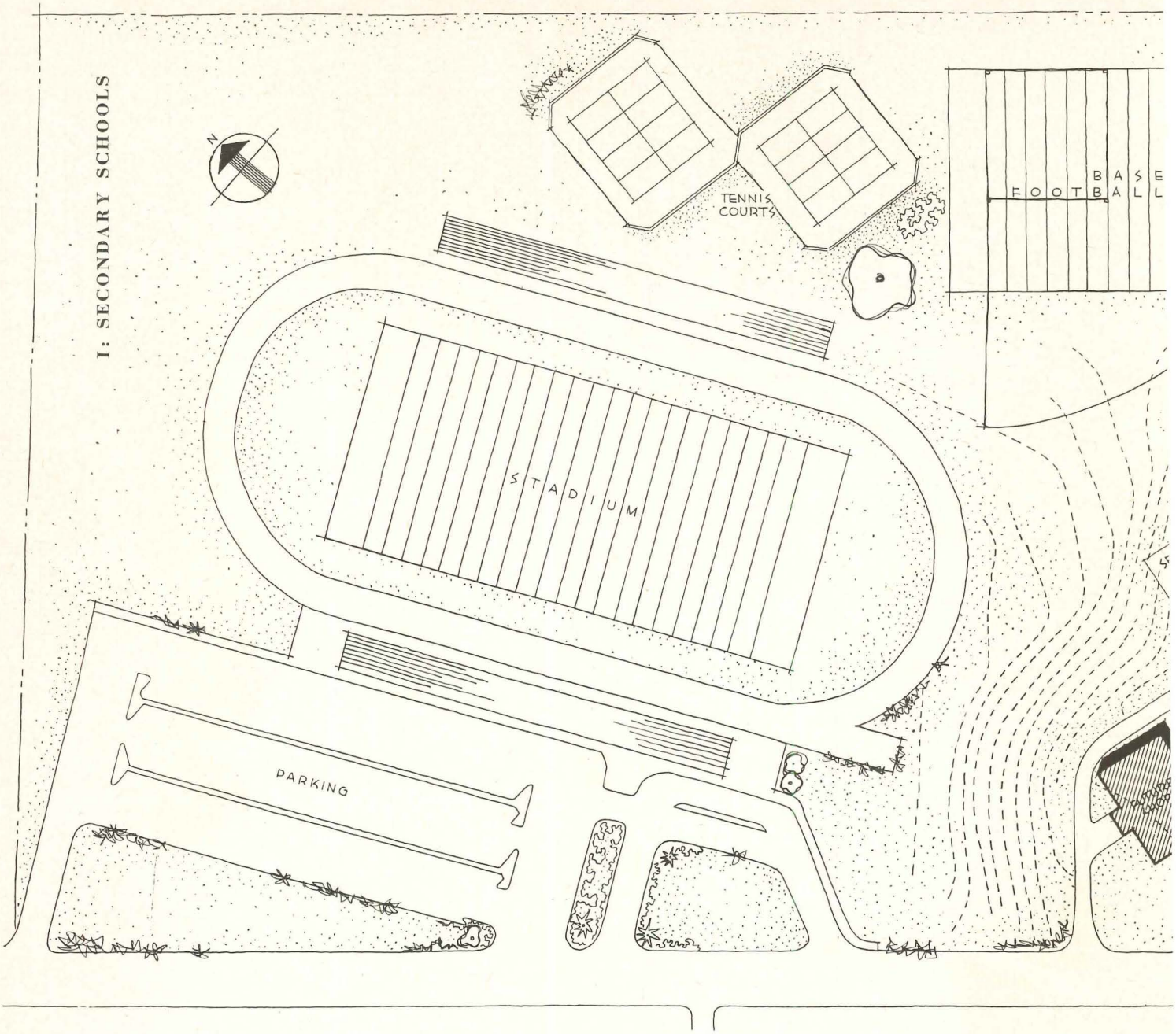
McLEOD AND FERRARA, Architects



Lee Salsbery Studios

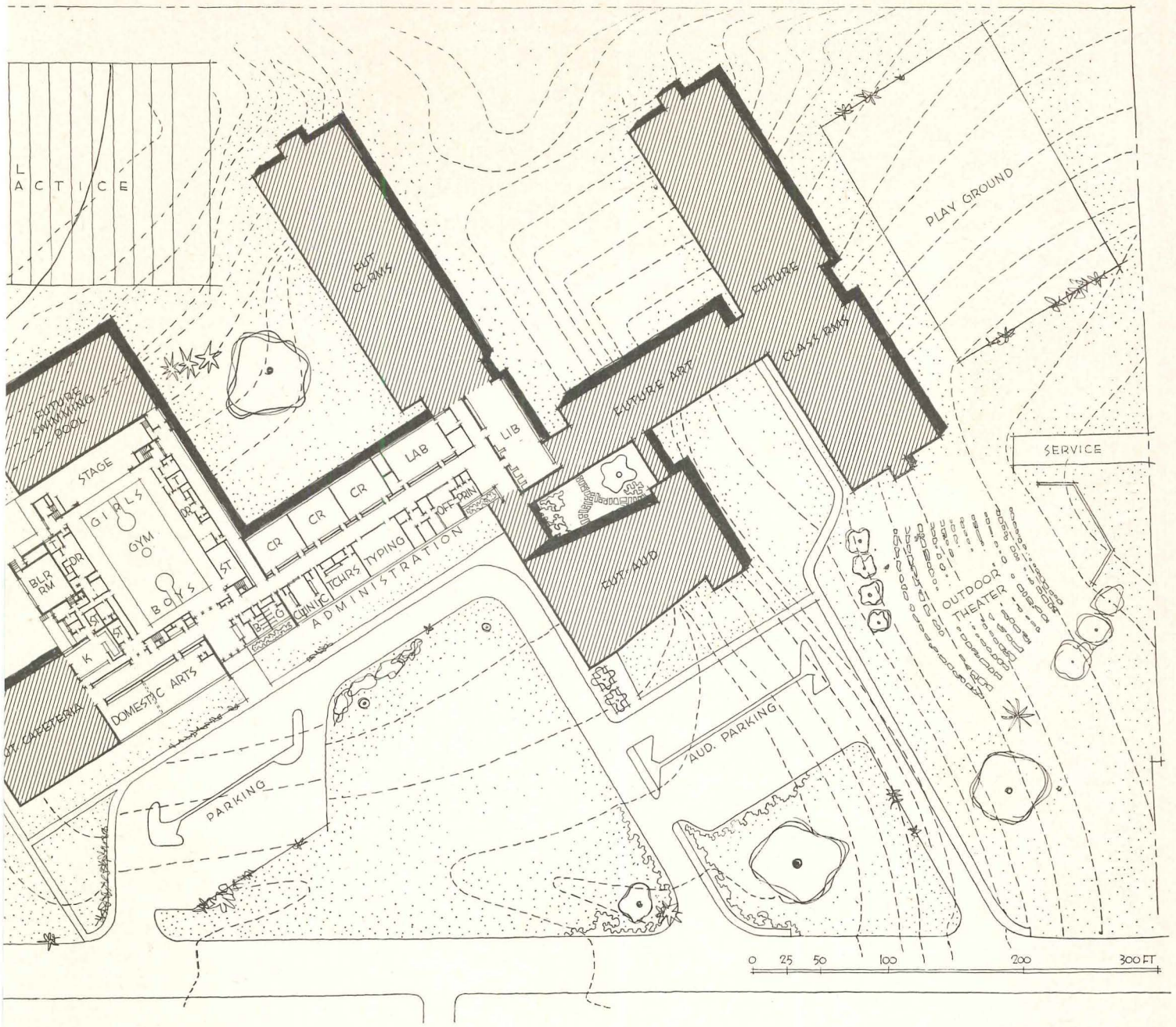
WINNER OF A TOP HONOR AWARD at the 1951 school exhibition of the American Association of School Administrators, and of an honorable mention in the 1952 competition conducted by the magazine, *School Executive*, the George Mason Junior-Senior High School is also displayed in model form at the headquarters of the International Bureau of Education in Geneva, Switzerland.

After serious delays in obtaining structural steel, the first portion of the school has just been completed at a cost of $680,952. The nearly 760,000 cu ft now built are likely to constitute only a first step; one of the main governing factors was the need for unlimited flexibility to permit future additions. While the building was being designed, annexation of portions of Fairfax County was under consideration. This would have increased student enrollment considerably. Therefore, the architects had to provide for a present school population of 300 to 400, with the expectation that this might be increased to 1000 or 1200 students. As conceived, the building can be enlarged without costly and extensive remodeling of the original building, or changes in use of site.



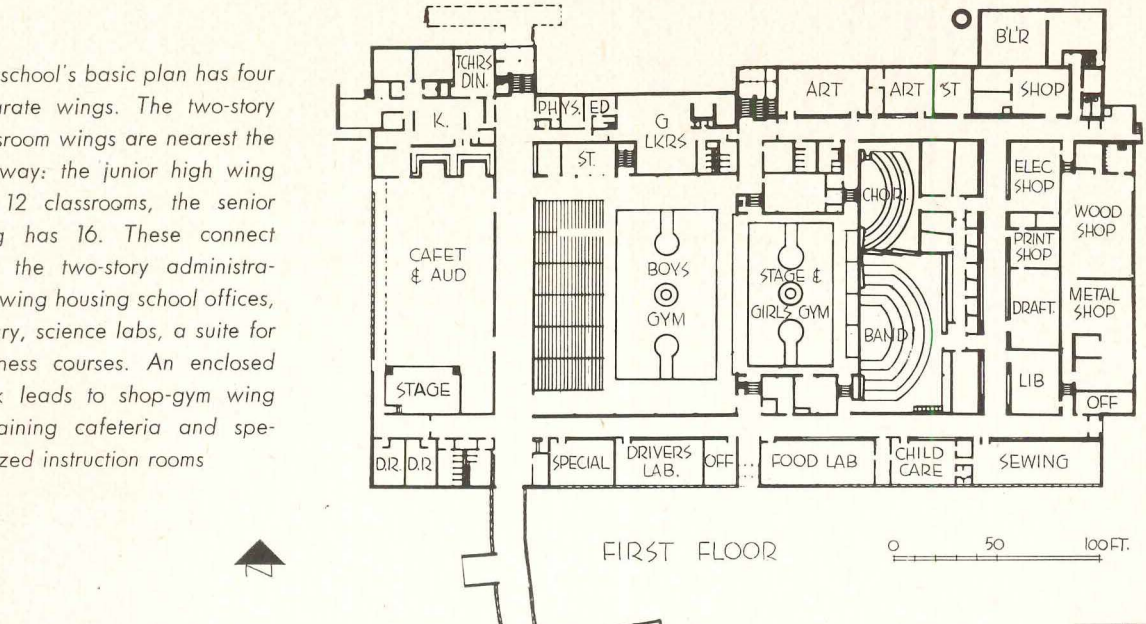
In George Mason Junior-Senior High School, full utilization of the site (taking advantage of changing levels and providing much parking space) and a one-story plan laid out so future additions can be assimilated, not merely appended to the initial structure, are particularly noteworthy. While the curriculum is obviously not as unified as it is in the Tierra Linda School (see preceding pages), and classrooms are not as large, this school could well accommodate one of the many variations of the "common learnings" secondary program. Its scale and proportion follow naturally from its logical plan and careful detailing.

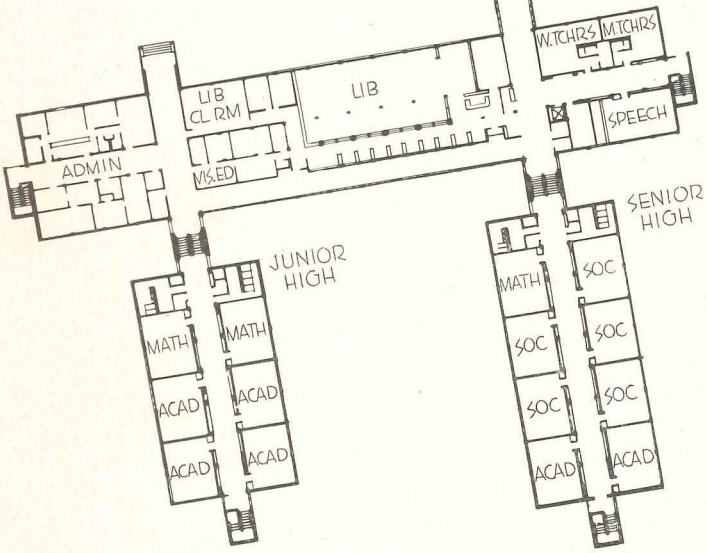
Photos: left, the pleasant library; right, rigid-framed gymnasium, divisible by a folding partition into boys' and girls' areas, and with a large stage

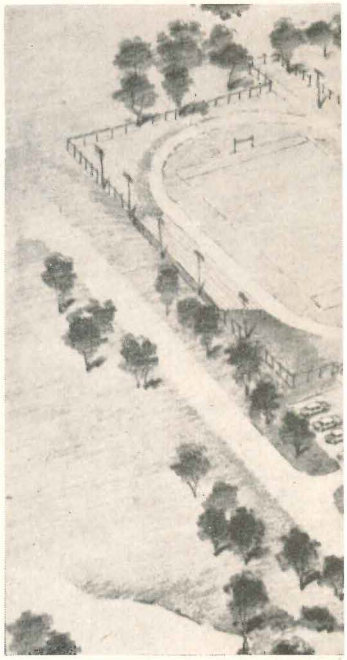


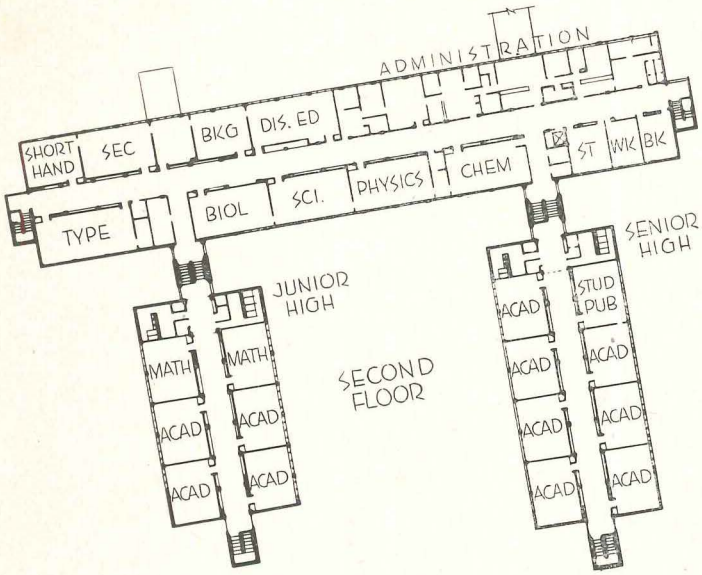
Lee Salsbery Studios

The school's basic plan has four separate wings. The two-story classroom wings are nearest the highway: the junior high wing has 12 classrooms, the senior wing has 16. These connect with the two-story administration wing housing school offices, library, science labs, a suite for business courses. An enclosed walk leads to shop-gym wing containing cafeteria and specialized instruction rooms

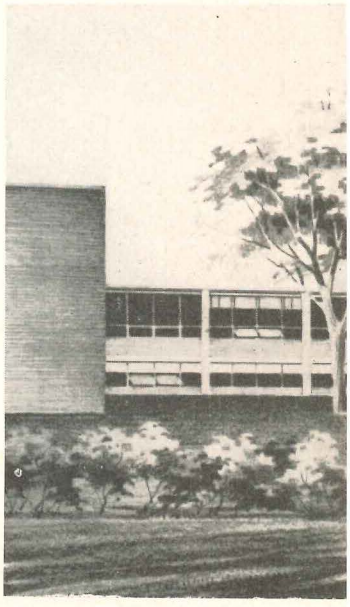








The aerial perspective (top right) indicates arrangement of outdoor athletic and parking facilities on the 40-acre plot. The sketch at bottom right shows the simple, straightforward design of classroom and administration wings. Exterior walls are brick and tile; interiors are plastered



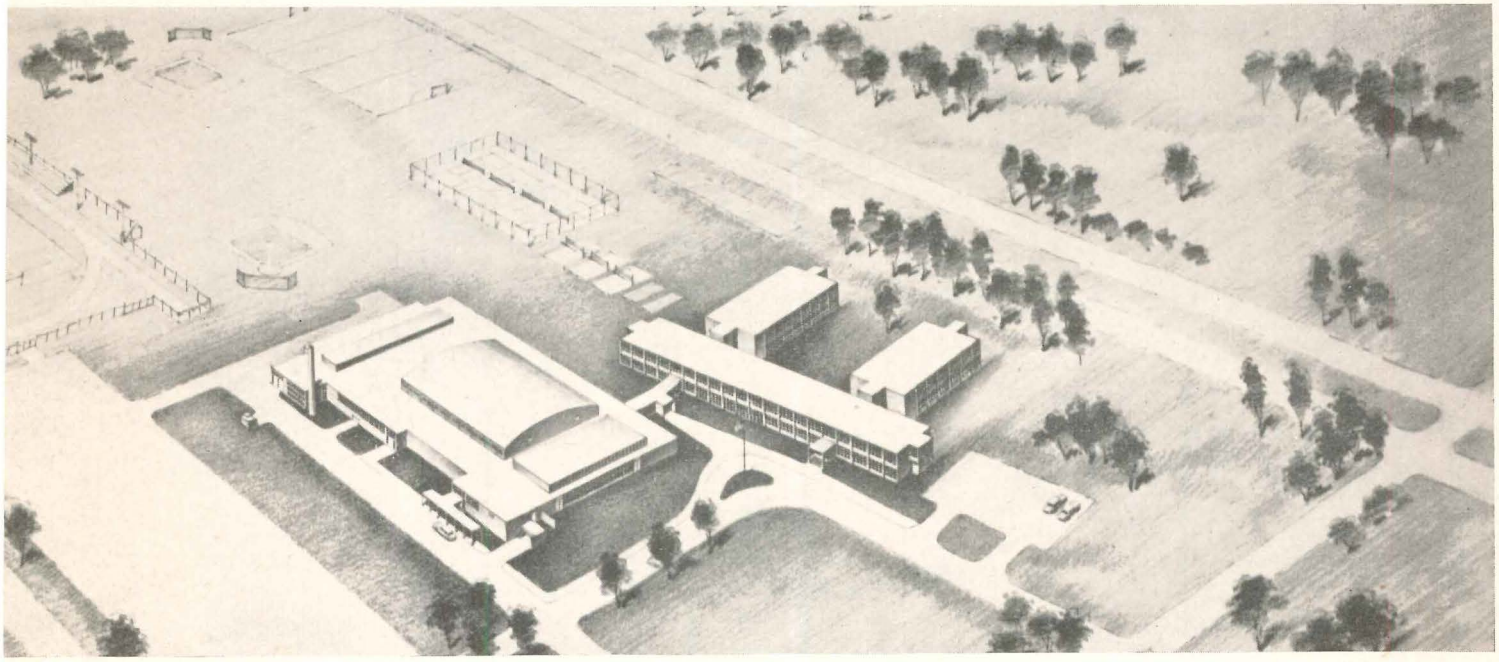
ALEXANDER RAMSEY JUNIOR-SENIOR HIGH SCHOOL

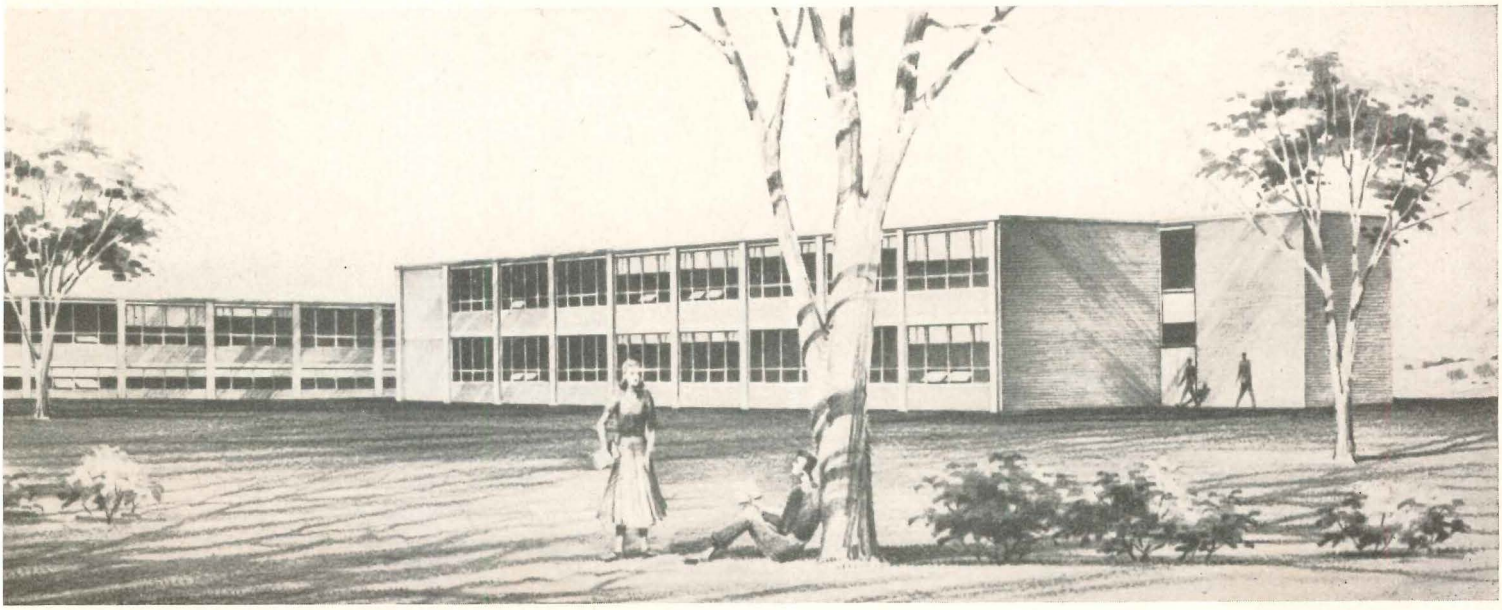
St. Paul, Minnesota

Mangney, Tusler and Setter, Architects and Engineers

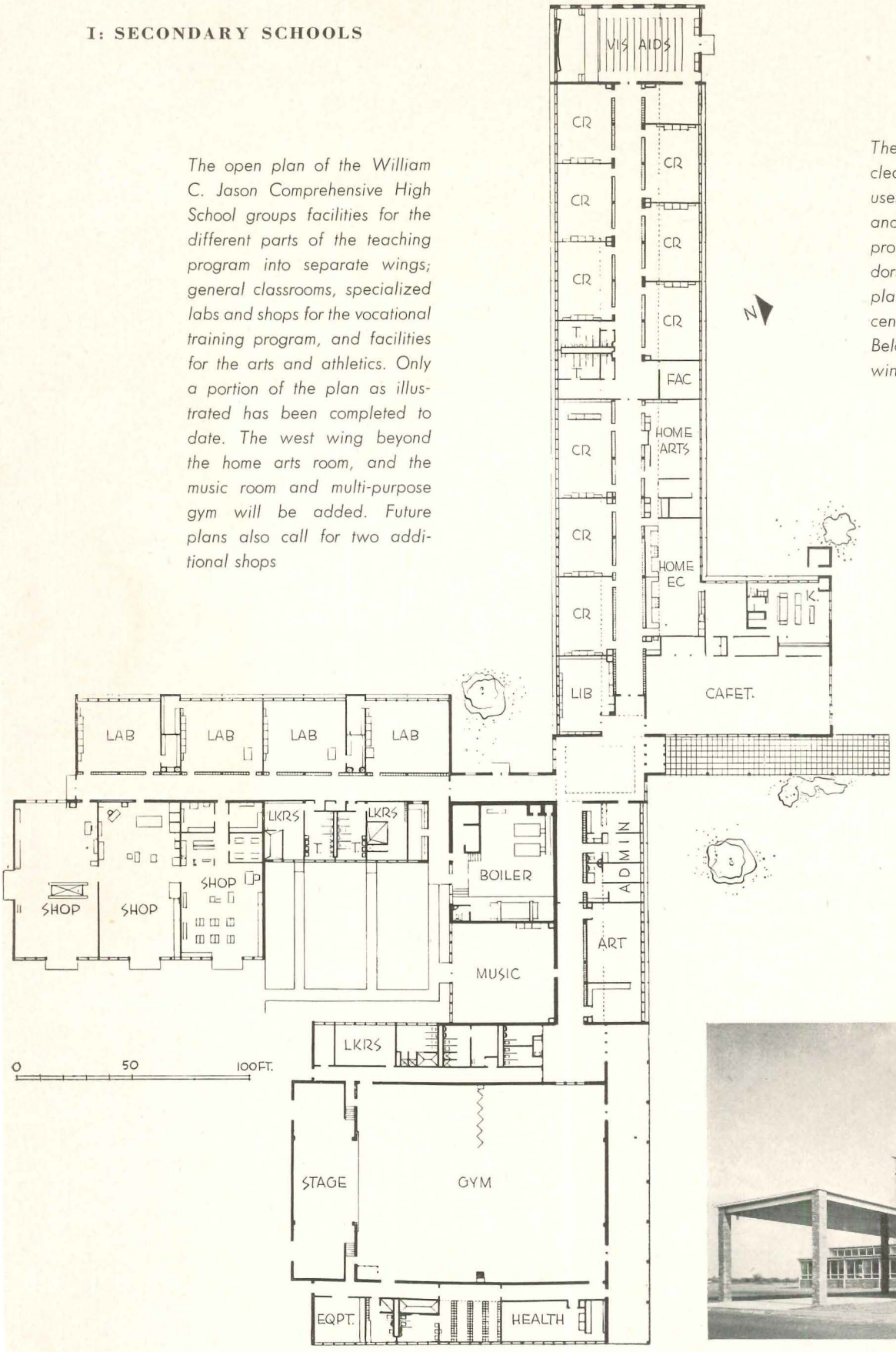
A VARIANT OF THE CAMPUS TYPE PLAN has been devised for this combined junior-senior high school for a large suburban district on the outskirts of St. Paul. The basic scheme is divided into four separate wings placed so that future expansion will be possible. In a general sense, the plan arrangement recalls that of the preceding schools: academic classrooms, facilities for specialized instruction and administration quarters are each separate entities; and provision is made for three types of educational programs — the junior high, a pre-college program and a vocational program. In addition there are complete athletic facilities and a separate sewage disposal plant. The teaching program itself is probably closer to the current norm, than to the new theories previously presented.

Steel frame construction is being used for the shop-gymnasium wing, reinforced concrete for the other three wings. A special feature of the school is a peripheral heating and ventilating system; warm air enters through window stools, exhausts through lockers.



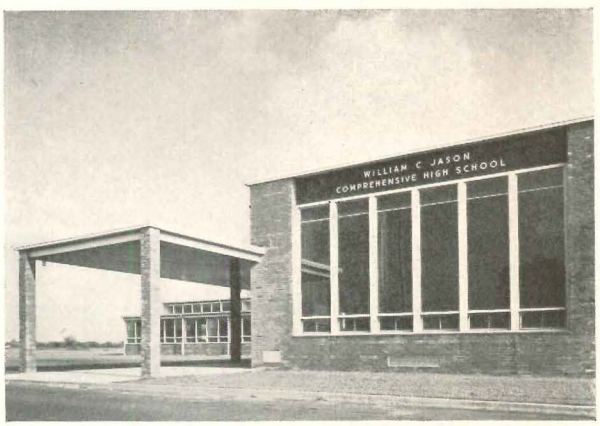


The open plan of the William C. Jason Comprehensive High School groups facilities for the different parts of the teaching program into separate wings; general classrooms, specialized labs and shops for the vocational training program, and facilities for the arts and athletics. Only a portion of the plan as illustrated has been completed to date. The west wing beyond the home arts room, and the music room and multi-purpose gym will be added. Future plans also call for two additional shops

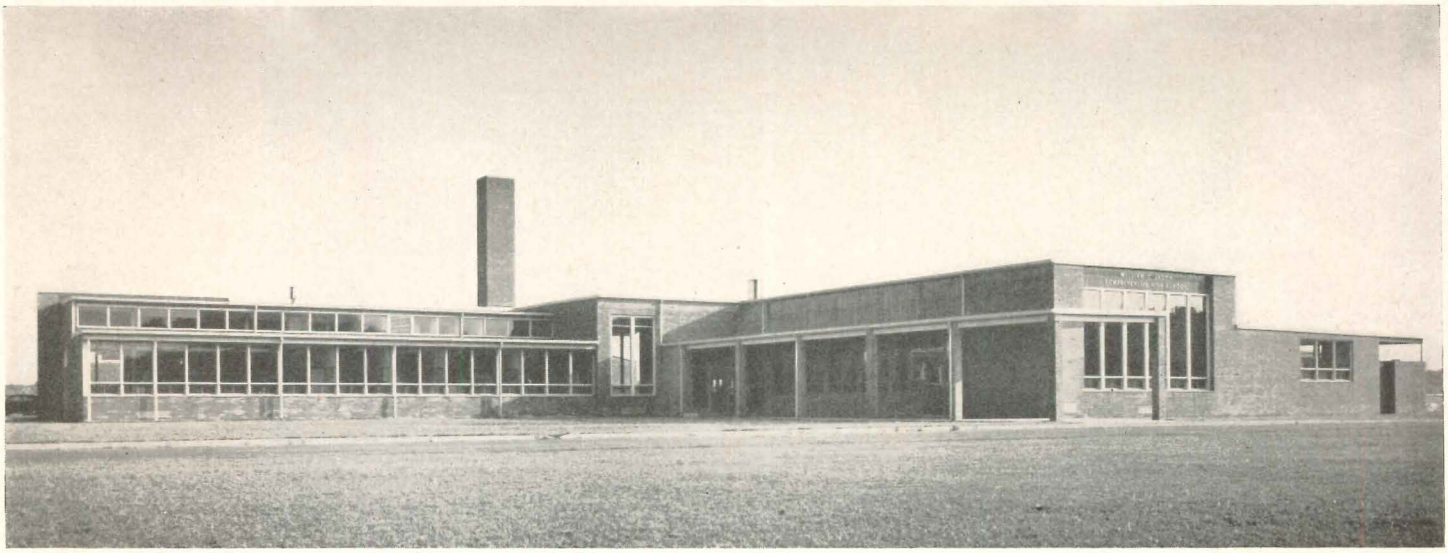


The design of the school is clean cut and straightforward, uses a 4-ft module for structure and fenestration. Clerestories provide daylighting for corridors. The school was also planned for use as a community center. Right: front elevation. Below, right: classroom and lab wings, rear view

Cortlandt V. D. Hubbard



Above: cafeteria and covered walkway leading to entrance lobby



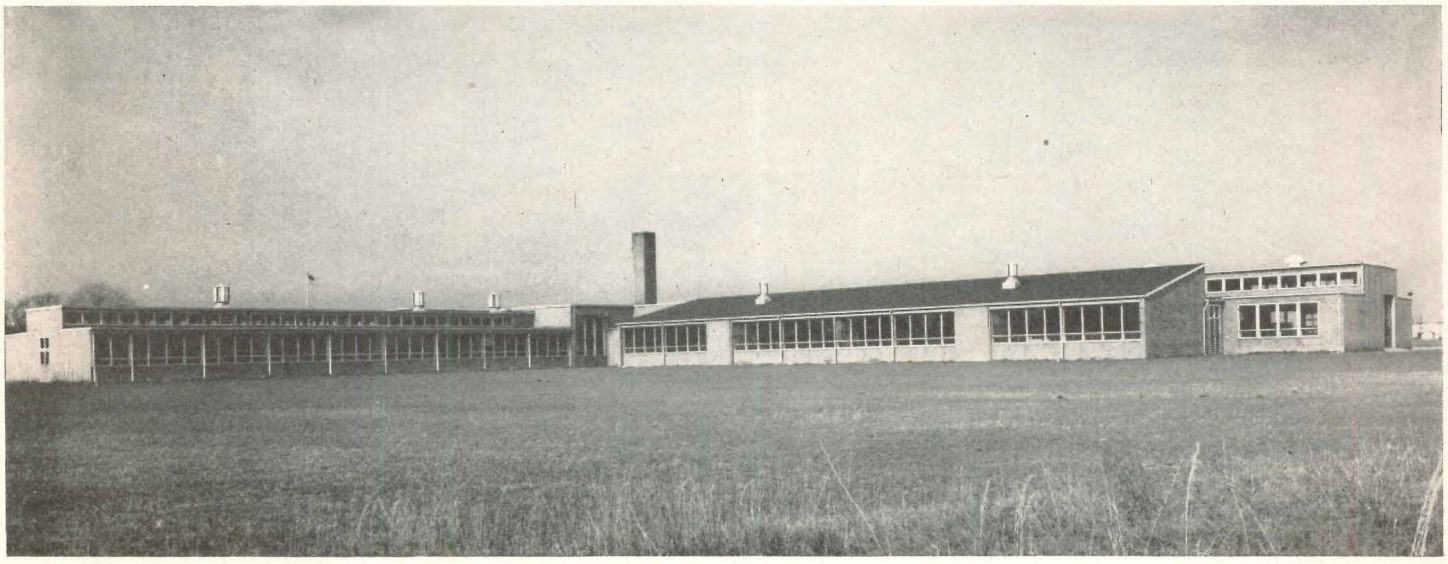
WILLIAM C. JASON COMPREHENSIVE HIGH SCHOOL

Georgetown, Delaware

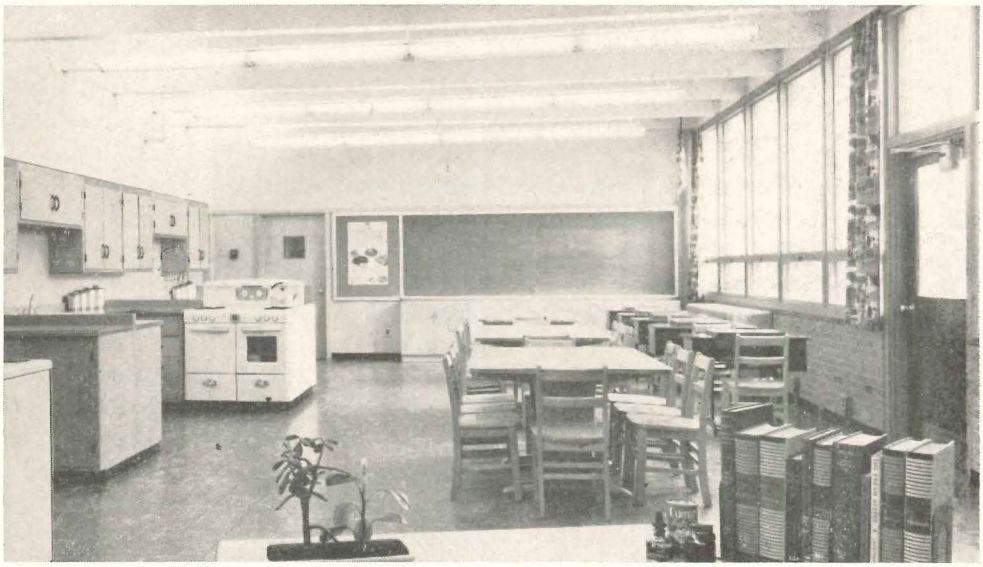
Victorine & Samuel Homsey, Architects

A MORE SPECIALIZED TYPE of educational program has been provided for in the flexible, expandable plan of this school. Special emphasis is placed on vocational training in the agricultural, automotive and building trades, combined with a regular high school program. The school is for Negro pupils and serves an area of about a 20 mile radius.

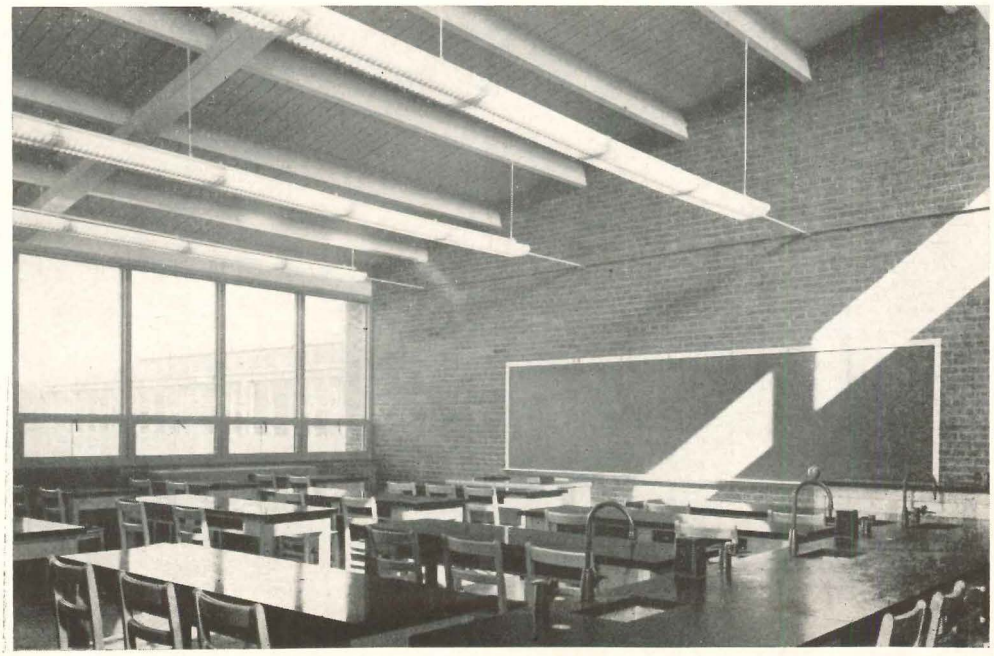
The plan, arranged in three wings, was developed to permit changes in curriculum without requiring structural changes, and to allow easy expansion as the need arises. The building as shown in the photographs represents the first stage of construction; more classrooms and a visual aids room will be added to the west beyond the home arts room, and an auditorium-gymnasium and a music room will be added to the east to complete the plan illustrated on the opposite page. In general, frame walls have been used at the ends of all wings to permit the expansion. The structure was planned on a 4-ft module, expressed by exposed wood beams on the interior, the fenestration and the room sizes. Classroom partitions are plywood on both sides, and are designed for easy removal or relocation. Extra space is provided in the boiler room for additional heating equipment, and all piping is sized for the future growth. A full athletic layout, including a football field, a baseball diamond and a quarter mile track, is to be developed on the flat 25-acre plot. Two more shops will also be added at a later date.



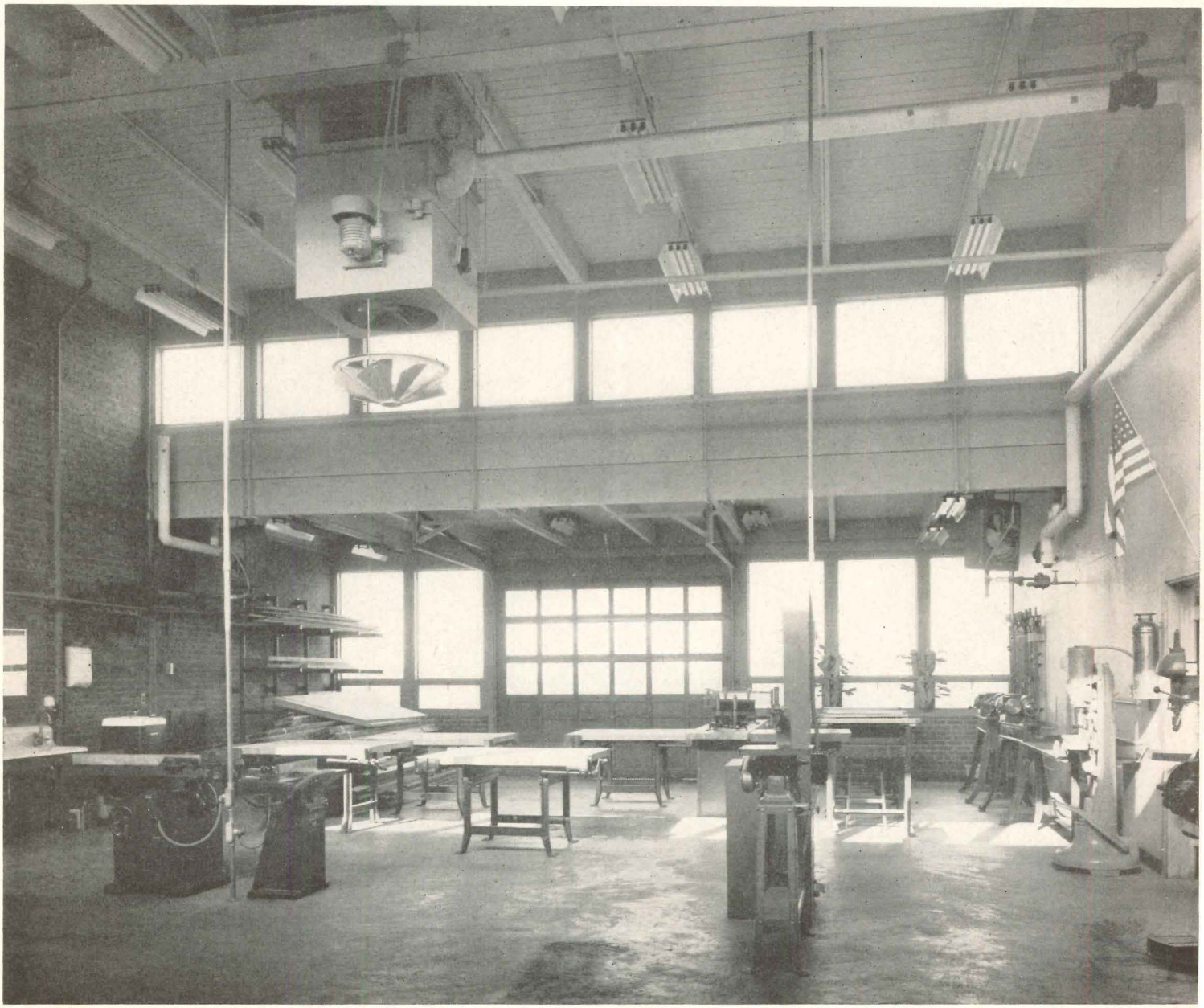
Above: library off main lobby. Below: home economics room adjoins main kitchen and cafeteria

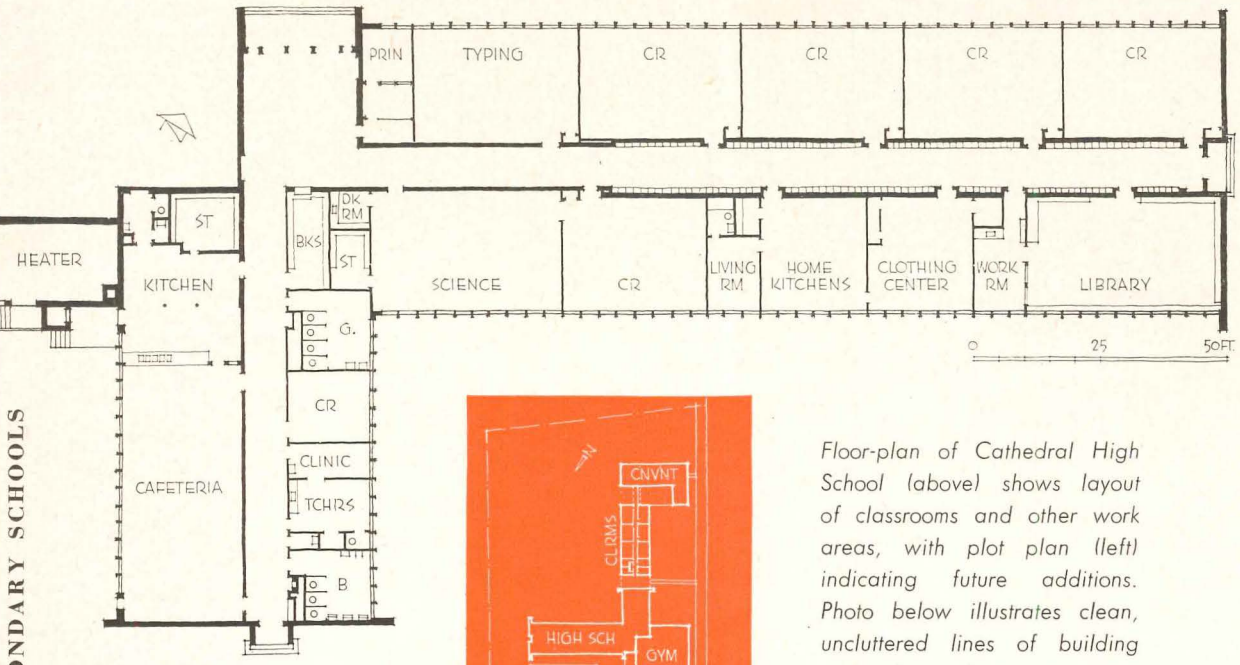


Below: typical lab shed roof permits clerestory lighting. Opposite page: typical vocational training shop



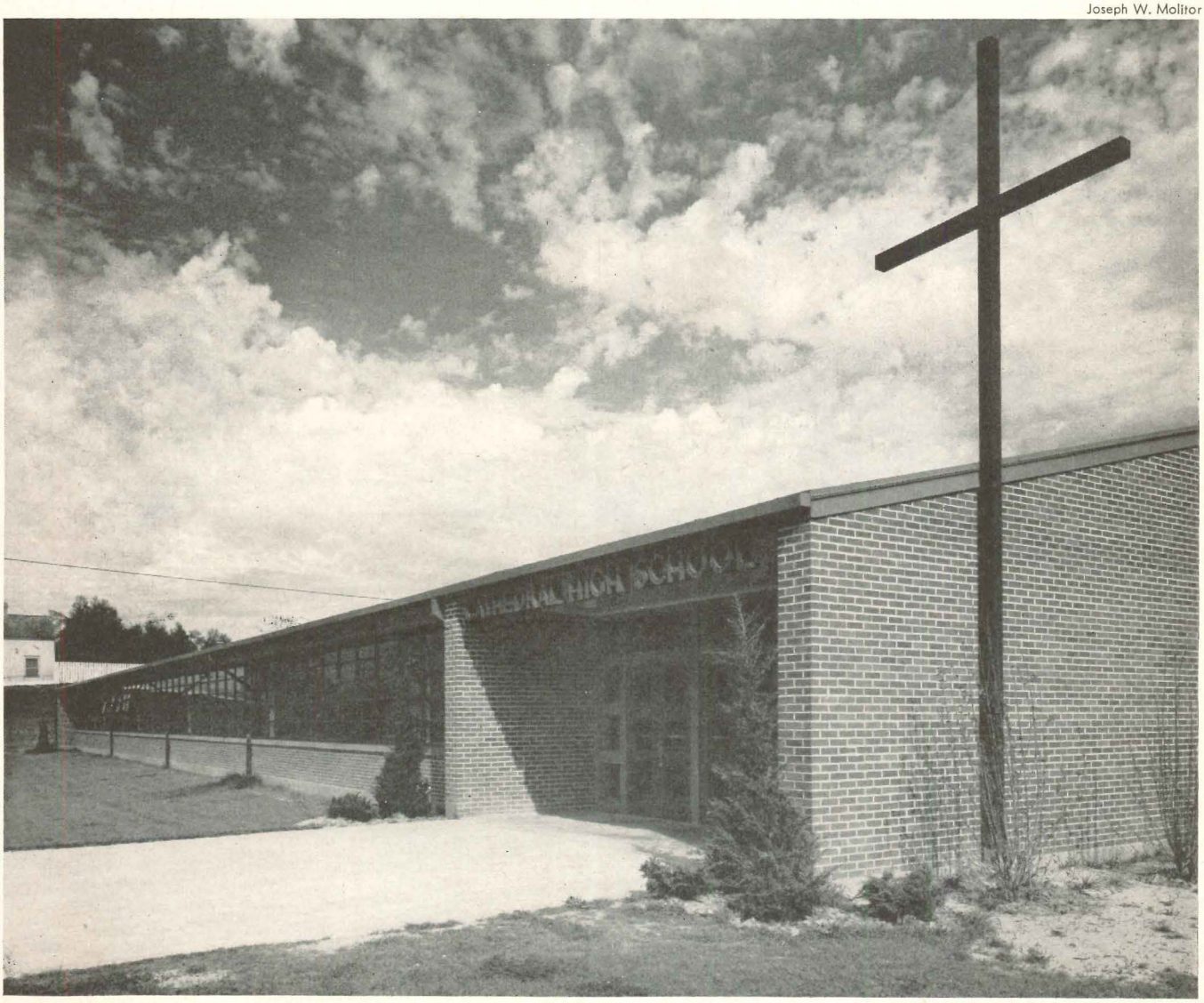
The Jason School is constructed with 10-in. cavity brick exterior walls, left exposed on both sides. Framing is of steel and heavy mill-type timber. Interior partitions are finished with plywood and wallboard. Floors throughout are asphalt or ceramic tile. Acoustical panels are used on the ceilings of the kitchen, cafeteria and corridors; ceiling beams are left exposed in all other areas. Natural ventilation is supplemented by centrifugal fans and gravity ventilators. Heating is by a steam system using oil burners. All materials were selected for their ability to stand up under hard usage. Erwin Faller was Consulting Engineer for the project, Louis H. Doane was Structural Engineer, Rupert Construction Co. was General Contractor.





Floor-plan of Cathedral High School (above) shows layout of classrooms and other work areas, with plot plan (left) indicating future additions. Photo below illustrates clean, uncluttered lines of building and glare-reducing overhang

Joseph W. Molitor



CATHEDRAL HIGH SCHOOL

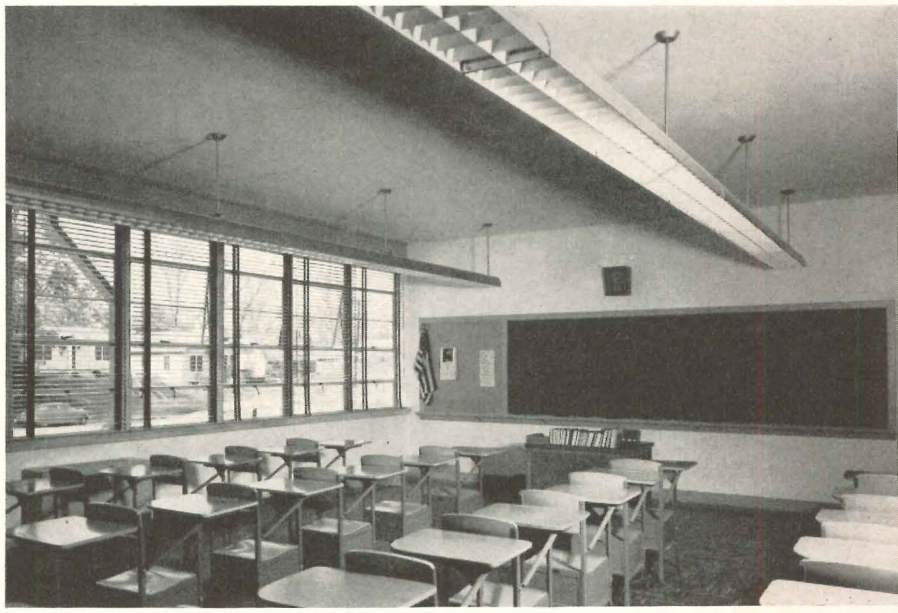
James T. Canizaro, Architect-Engineer

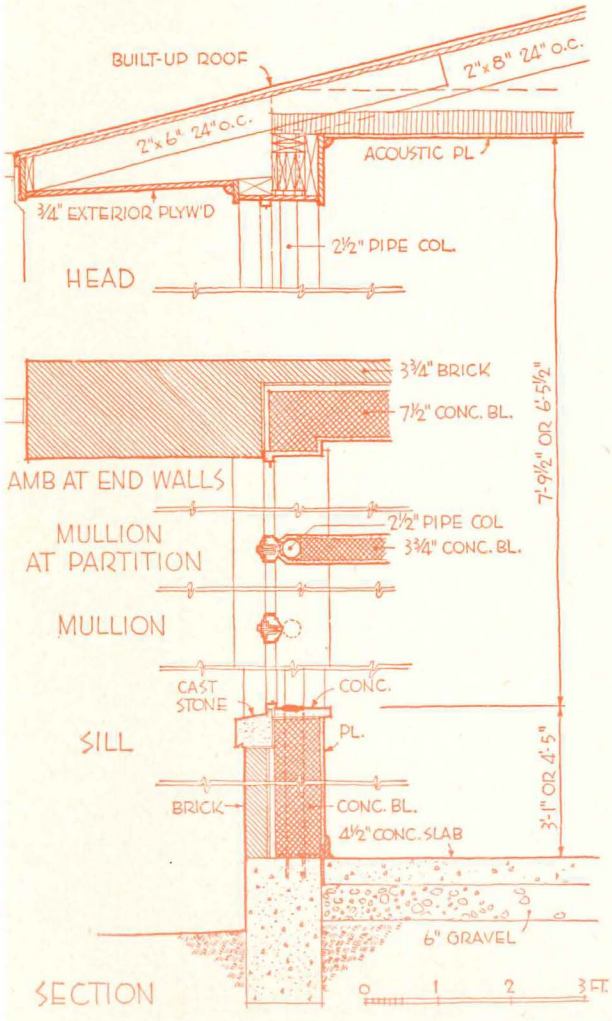
Natchez, Mississippi

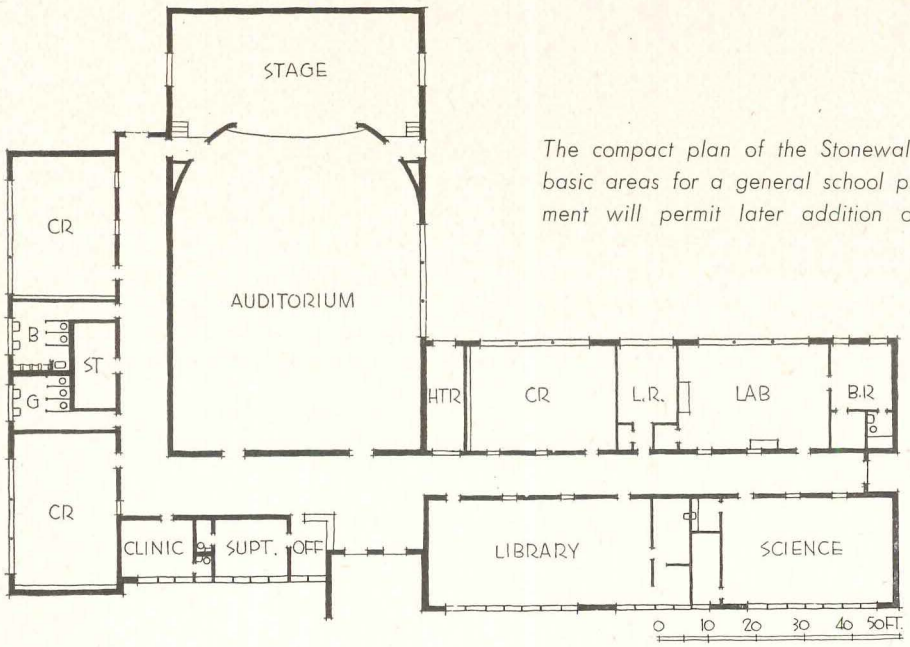
ECONOMY WAS A BASIC FACTOR in planning this parochial school, so designed as to house a future auditorium-gymnasium and yet provide adequate facilities for present use. The cafeteria serves multi-purpose use until the time when future additions are made, and classrooms have movable desk-chairs which permit various changes to be made for different functions. Future plans include a convent, chapel and a junior high.

Although not primarily a vocational school, there is a complete home economics department, containing a working kitchen and a clothing center. Maintenance has been reduced to a minimum by the use of terrazzo floors in all corridors, cafeteria and lobby, with quarry tile floors in kitchen and walls of glazed facing tile. The exterior, constructed of brick backed by tile, has a clean, straightforward appearance. The roof of the building is insulated with 1-in. glass wool, and has a wide overhang to eliminate as much sun and glare as possible. Continuous windows permit maximum light and ventilation and all windows are steel sash. The present building occupies 16,193 sq ft and construction costs for the school averaged around $11.16 per sq ft.

Typical classroom at right is well lighted, both naturally and artificially. Cafeteria, lower right, is cheerful and inexpensive to maintain







The compact plan of the Stonewall School includes basic areas for a general school program. Arrangement will permit later addition of other facilities

The exterior of the buildings is kept simple and neat, relies on massing of units, contrast of painted commercial sash and brick

STONEWALL CONSOLIDATED HIGH SCHOOL

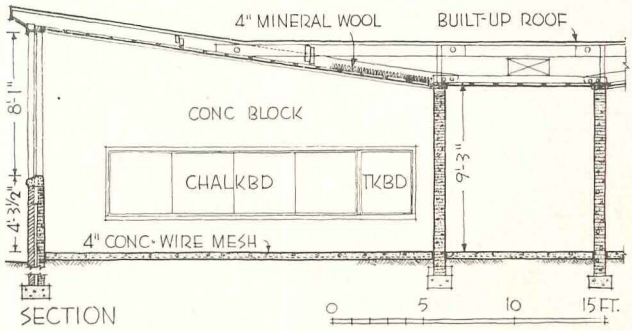
Stonewall, Mississippi

Bill Archer, Architect-Engineer

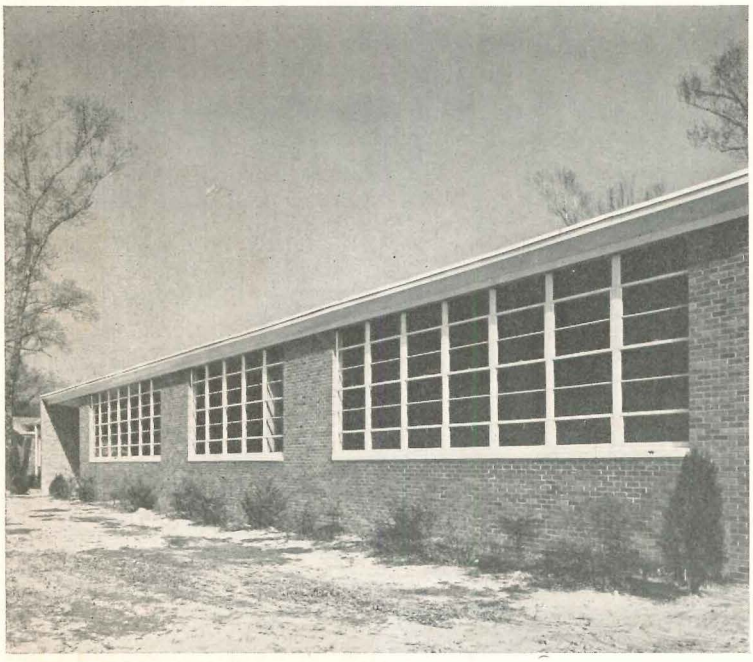
THE PRESSING NEED for more school facilities, coupled with a shortage of funds available for the purpose has become a serious problem in many localities. This school in Stonewall, Miss., offers one answer. As space for teaching was the most vital necessity the project was designed to obtain the maximum amount of shelter at the lowest possible cost, with the thought that as funds become available other necessary facilities and equipment could be added. Only the minimum of equipment was provided initially.

The major cost-saving was accomplished by trying in every possible instance to make the materials serve a twofold purpose, and to take advantage of local site conditions. After a study of the soil and drainage conditions, it was decided to eliminate the use of a gravel bed under the concrete floors on grade. The result has been quite satisfactory. The structural walls are lightweight aggregate concrete blocks, faced with brick on the exterior, and the interior surface spray-painted with resin emulsion paint. The blocks were particularly selected for their noise reduction value, eliminating the need for other acoustical insulation. The roof system was built of dense southern yellow pine using metal connectors. Deck, insulation and ceiling were applied directly to the roof structure. Most of the roof eaves slope towards the corridors, with drains at the end of the classroom wings to reduce the amount of gutters.

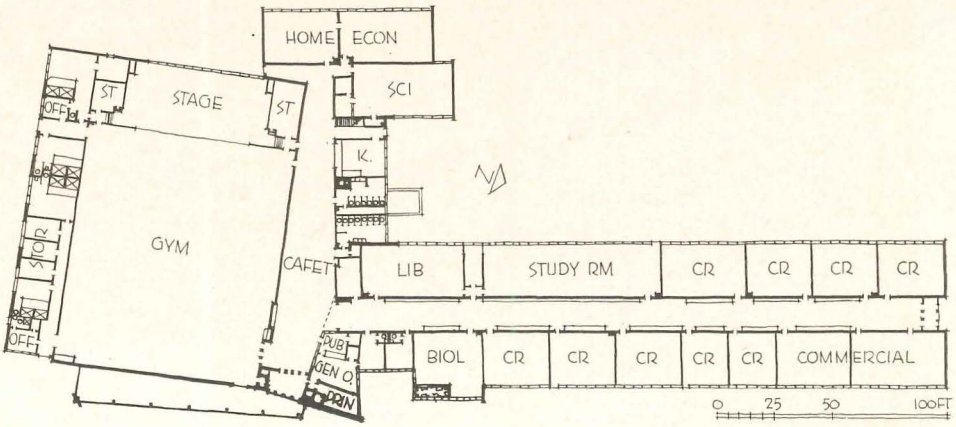
The complete building, which deftly avoids a minimum cost appearance, contains 15,175 sq ft of floor space, and was built for $4.15 per sq ft. This includes a central gas-fired warm air heating system, plumbing facilities including sewage disposal and a minimum lighting system.



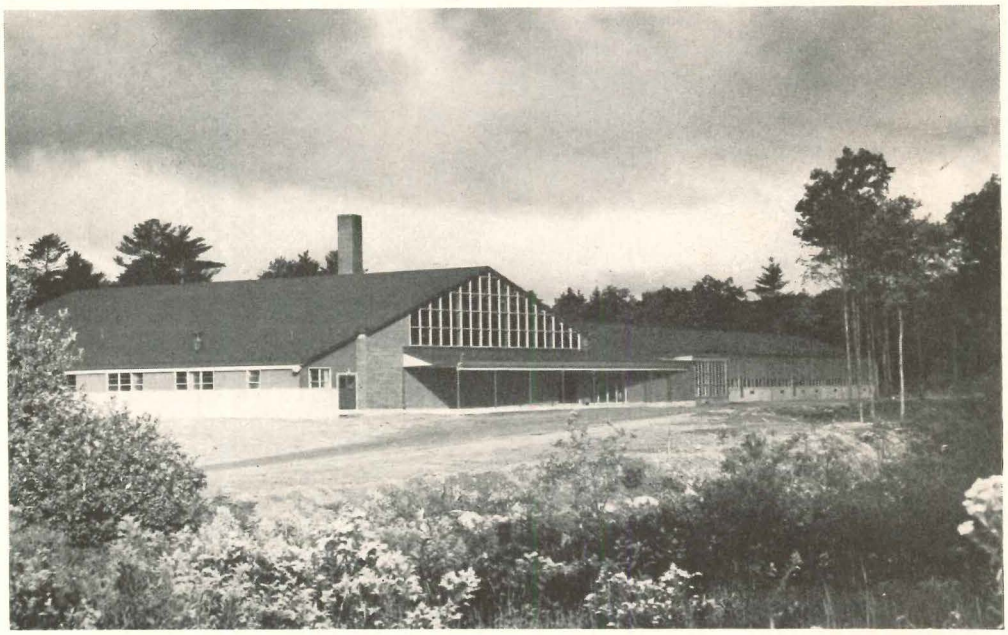
Joseph W. Molitor



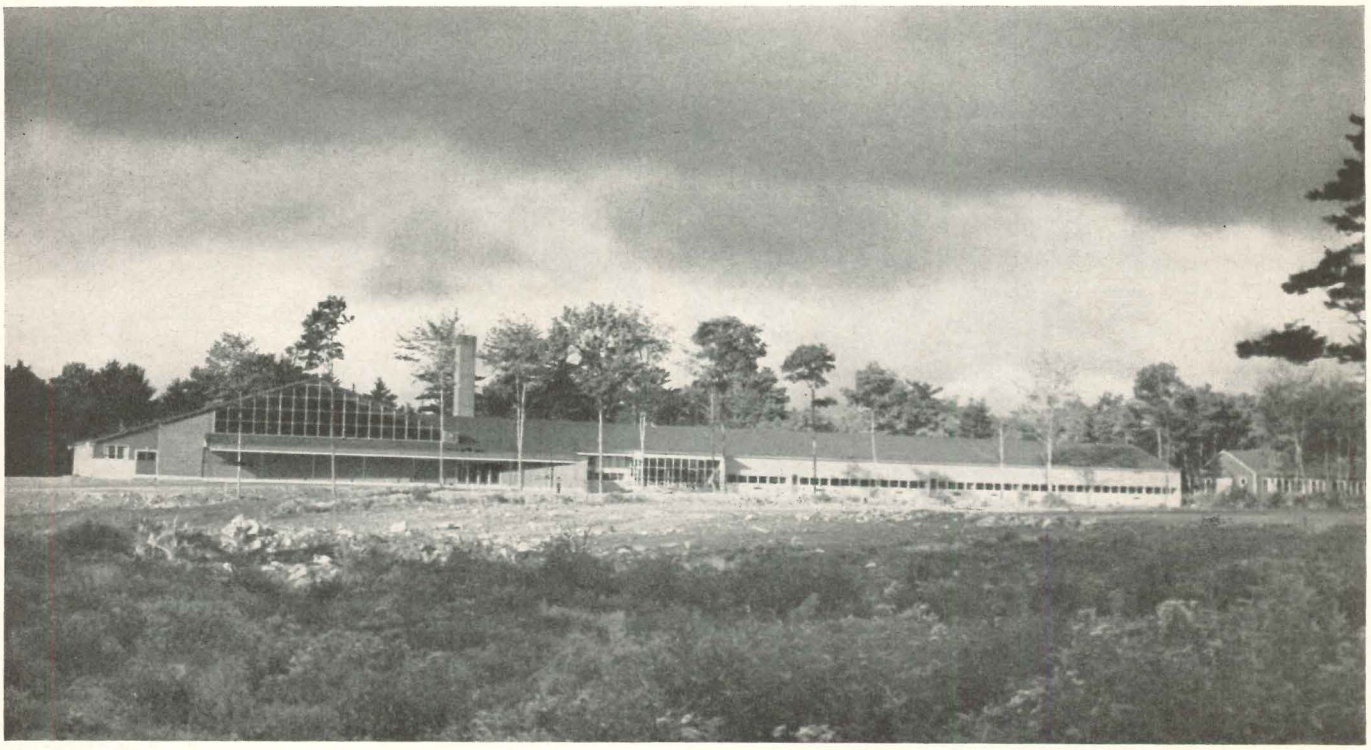
Above: classrooms have tile board ceilings, floors of concrete with surface treated, painted concrete block walls

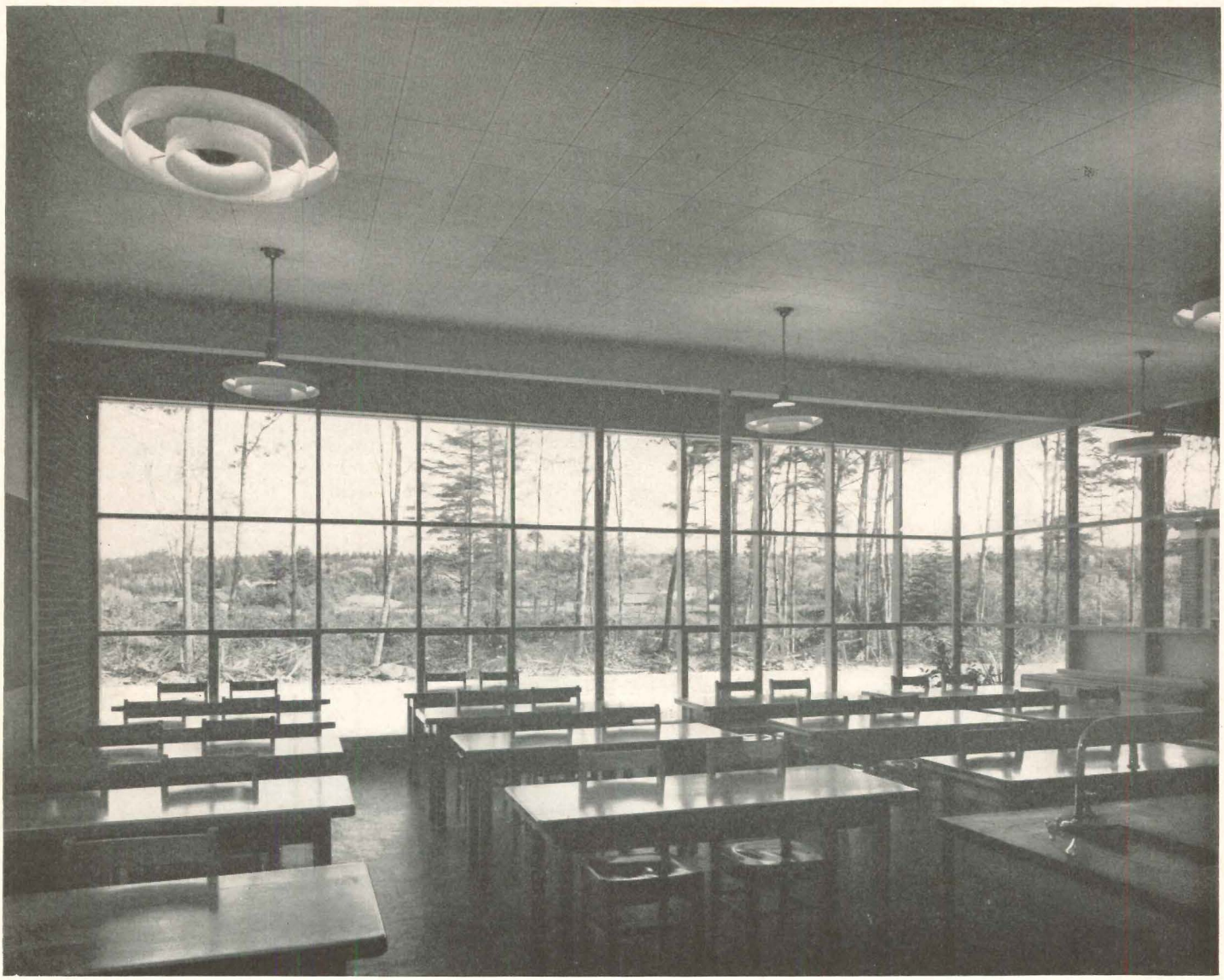


Floor plan of Ellsworth High shows convenient location of classrooms in relation to the other work areas. Glass window walls in classroom wing are clearly visible in both plan and photos at right and below, as is the glazed portion of gymnasium wall. Biology lab is illustrated on opposite page, with testing area shown at far right of photo. Open feeling created by glass and acoustical treatment of ceiling are both attractive and beneficial to students



Paul Wheeler





Joseph W. Molitor

ELLSWORTH HIGH SCHOOL

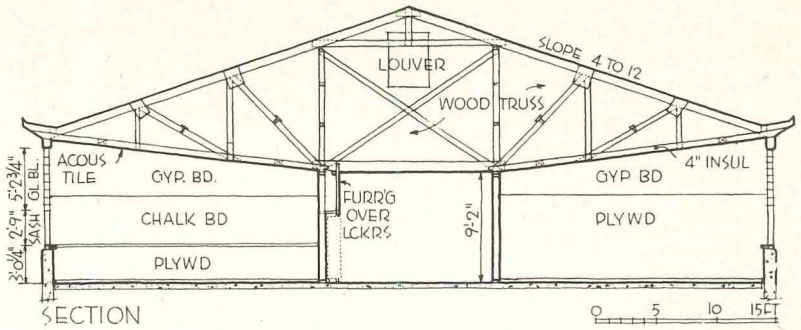
Ellsworth, Maine

Alonzo J. Harriman Inc., Architects-Engineers

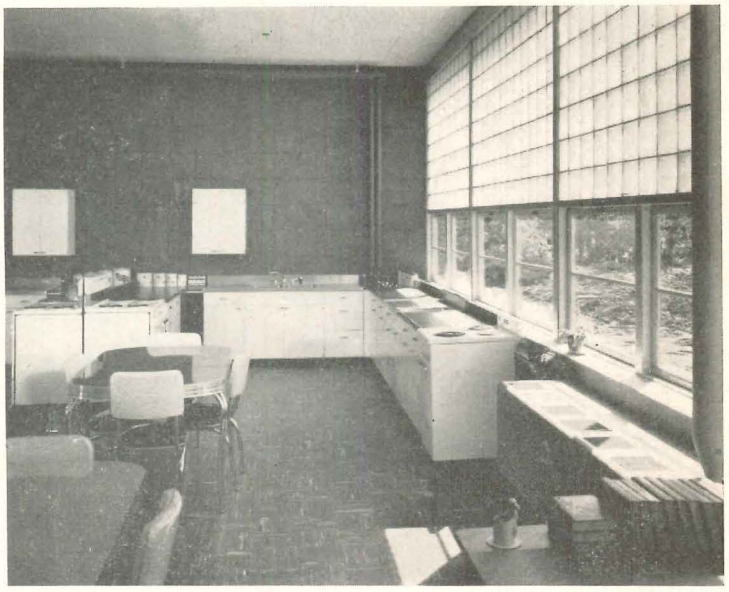
ECONOMY AND EXPANSIBILITY were the major considerations in planning this school, originally planned to accommodate 450 pupils. Located in a heavily wooded area of a northeast sea-coast city, extensive landscaping was necessary, ledge and drainage problems were present and an athletic field layout had to be integrated with the land and the building. An example of economy was the conversion of the contractor's construction warehouse into a woodworking and agriculture shop.

Wood, concrete and glass block with steel sash are the materials used in the classroom wing, with the end wall of wood to allow for future expansion. The roof is supported by wood trusses with load-bearing walls. Interior classroom walls are gypsum board with a birch plywood dado 7 ft high. The gymnasium is of brick and terra cotta tile, with the latter also forming the partitions. Gymnasium has showers, locker rooms and a stage and is connected to the school proper by a wide, tapering corridor, which serves as the school cafeteria. Acoustical tile is used throughout on ceilings and the floor is asphalt tile over a concrete slab on fill. Heating is provided by a low pressure steam system using oil burners. School construction costs were $9.01 per sq ft and cost per pupil was about $820.

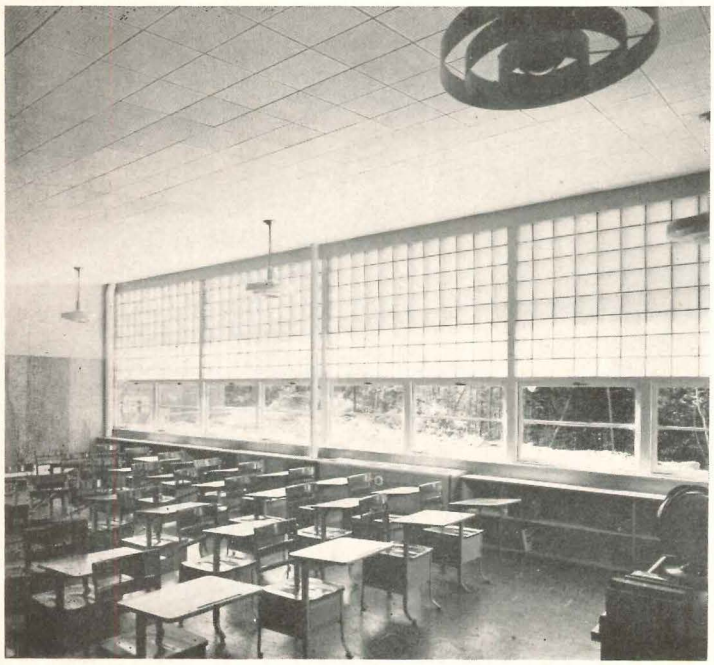
Details of wall section indicate wood truss construction on roof, showing upward pitch of classroom ceiling from corridor to exterior wall. Drainage from roof is at junction where overhang slopes upward. Rigid frame truss construction is used in the gym, bottom right

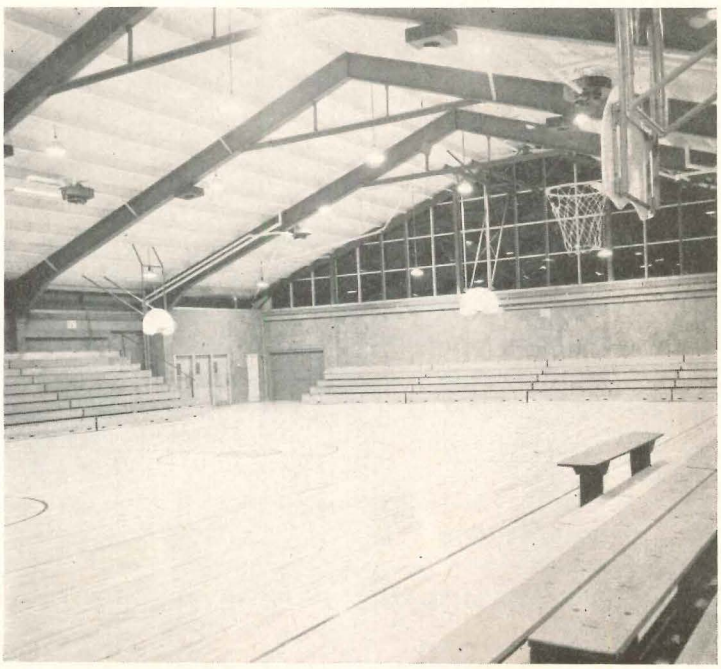


Commercial department (above) is completely equipped and well lighted. Typical classroom is shown below



Home ec department (above) has large work areas. Gymnasium below has concentric-ring lights

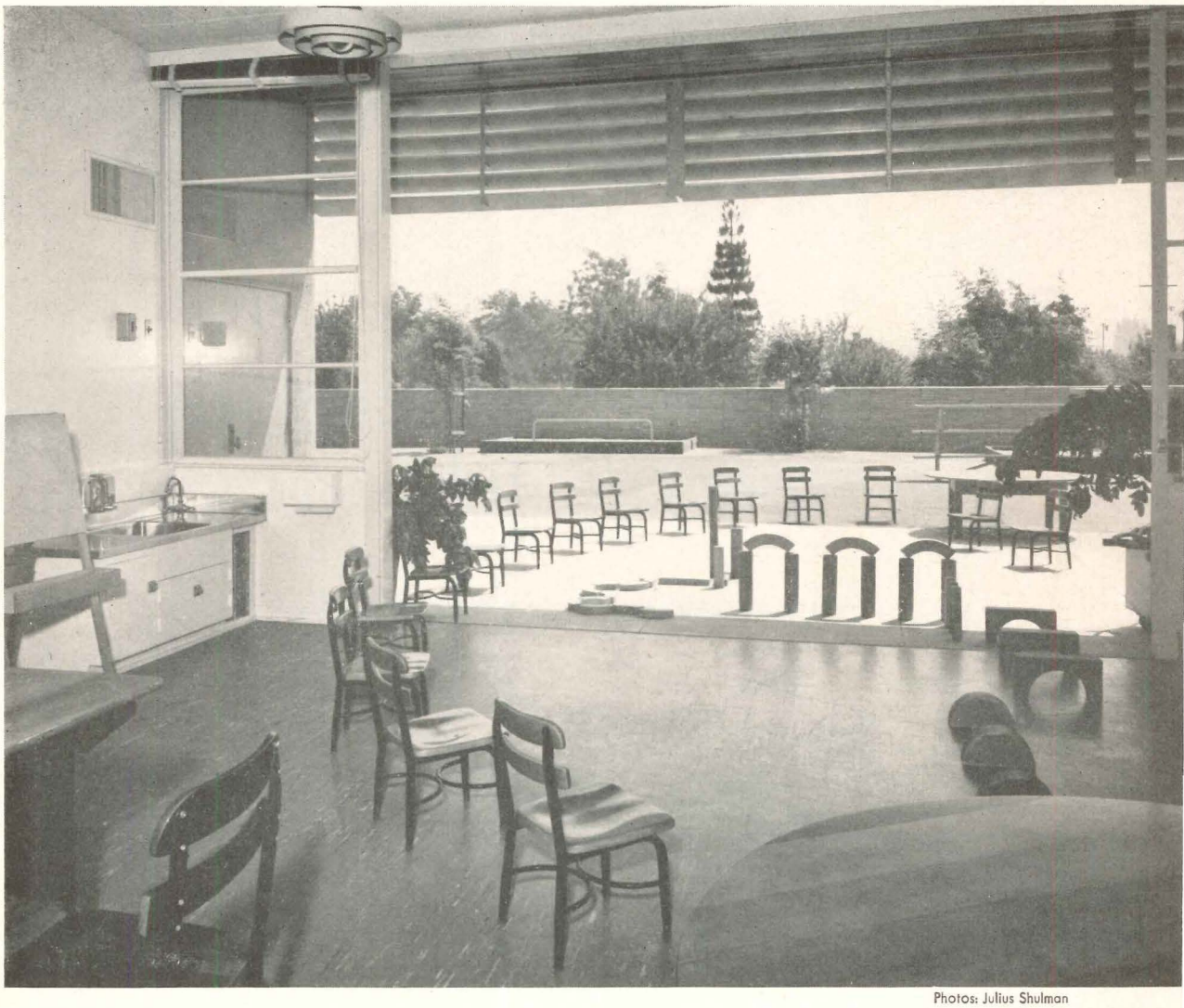




KESTER AVENUE ELEMENTARY SCHOOL

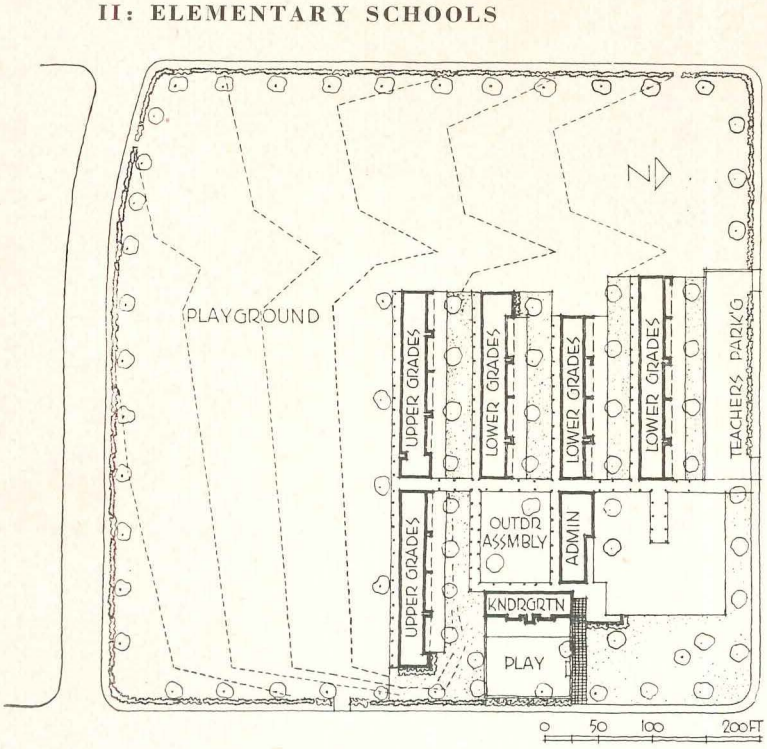
Los Angeles, California

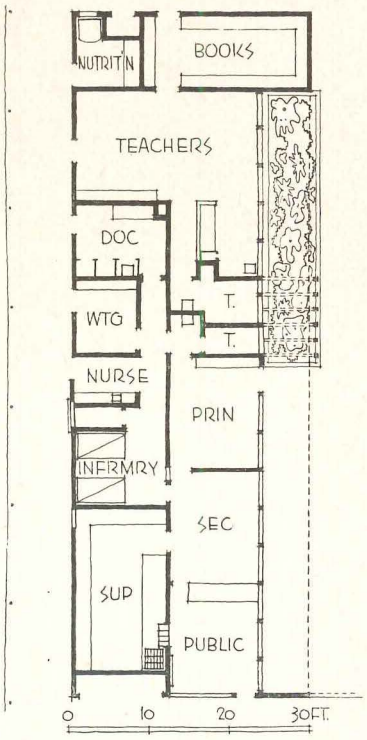
Richard J. Neutra, Architect and Consultant

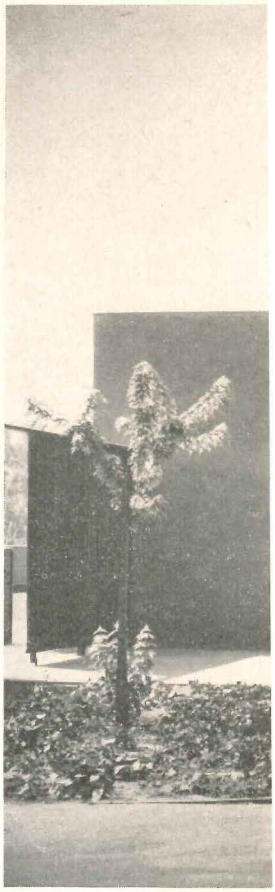


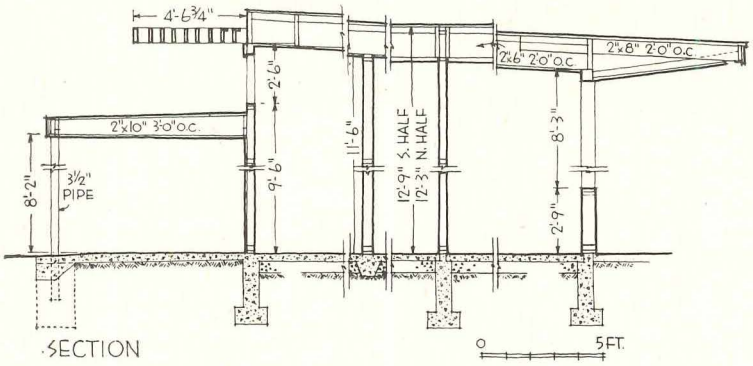
Photos: Julius Shulman

IN CONTRAST with secondary schools, educational philosophy at elementary levels is pretty well set; learning has become much more active, less passive. Most of today's elementary schools are one-story, even where the pavilion or finger plan is not suitable, because of their lighter, more human scale, flexibility for changing needs and cheaper construction. Buildings need not be fireproof and require little or no excavation. Another quality, of which Mr. Neutra has long been an exponent, is the possibility of extending classroom areas into the outdoors, and developing a more intimate relation with the surroundings.

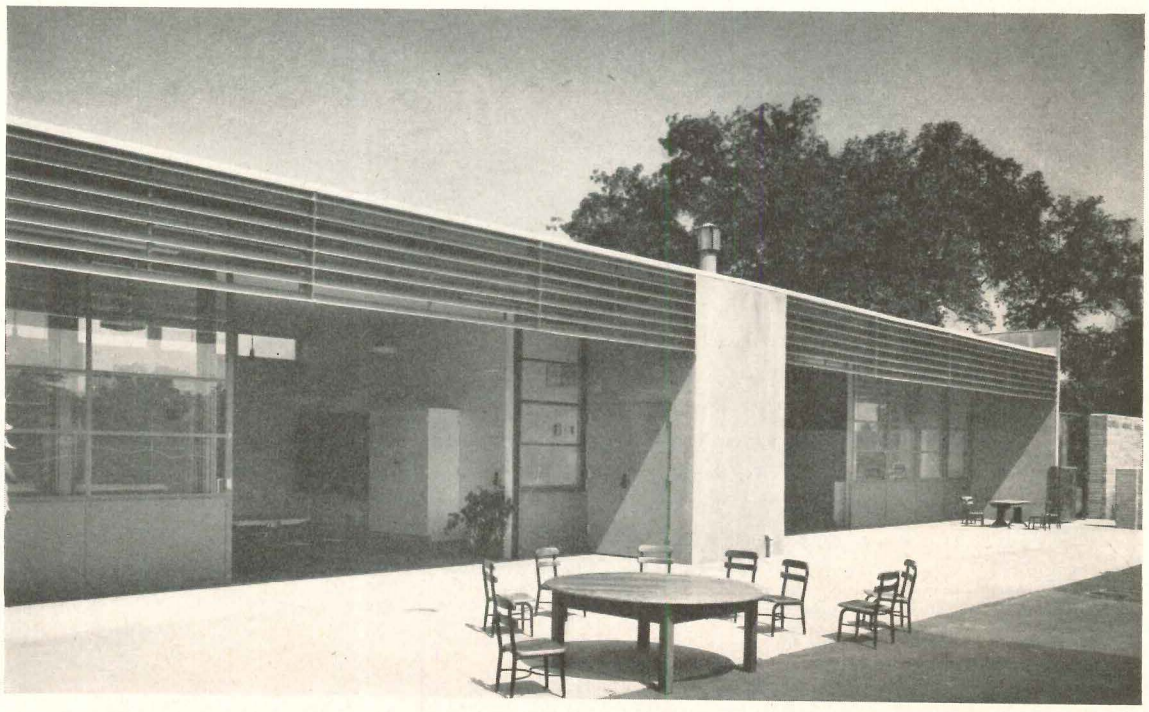


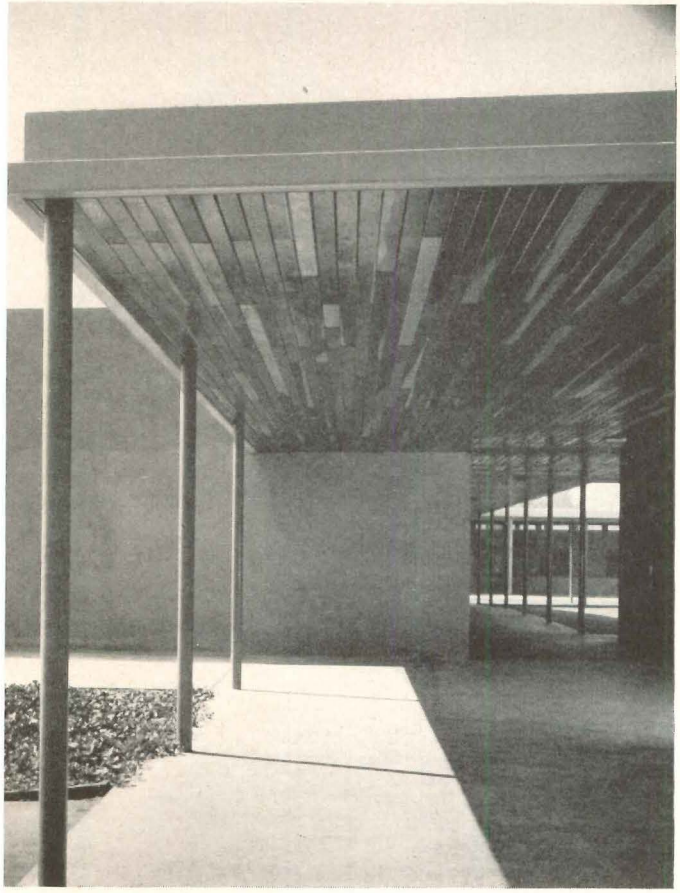


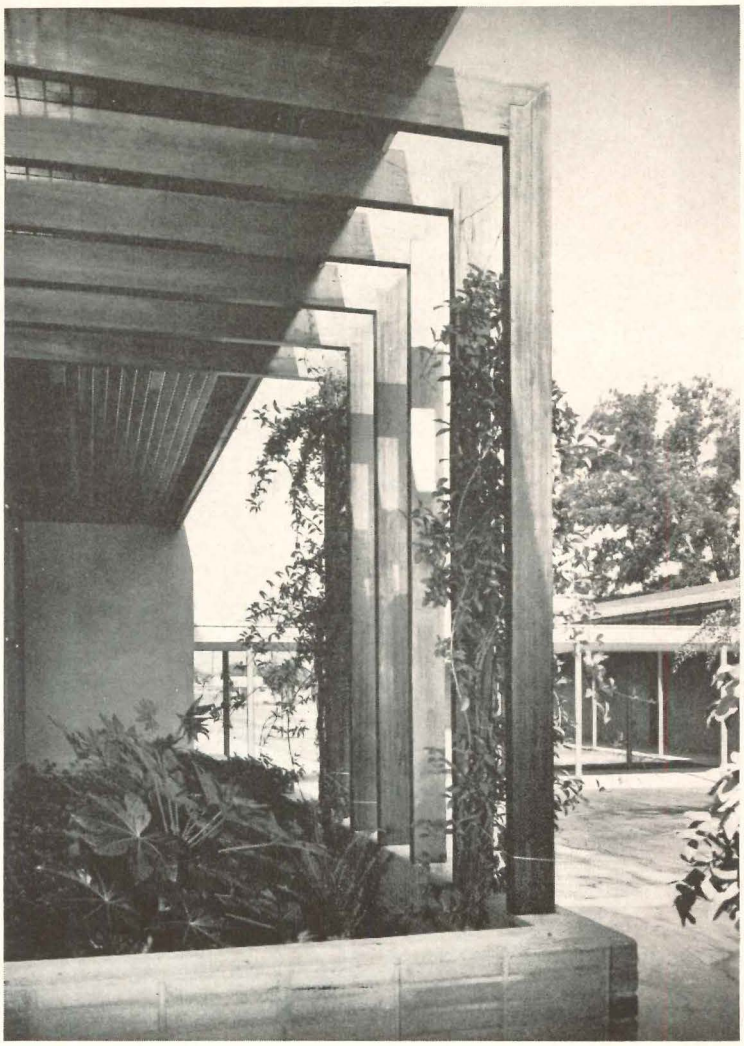




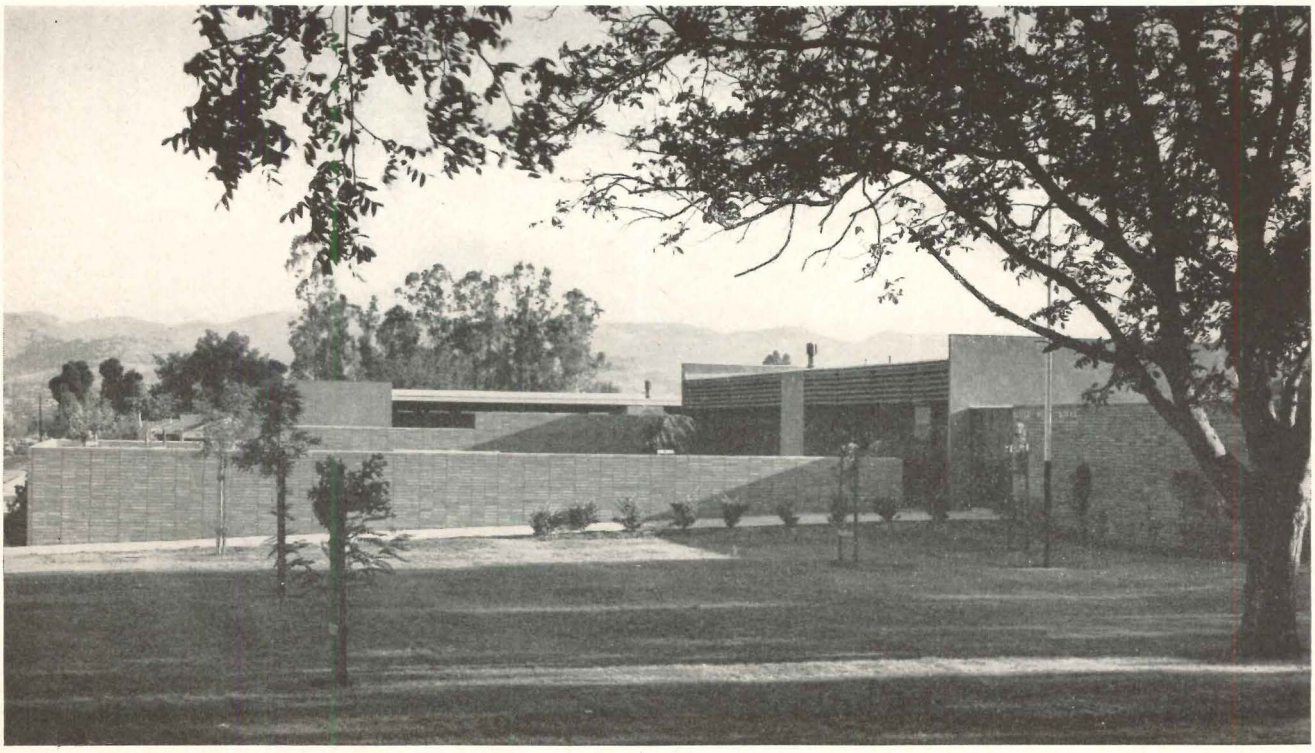
The Kester Avenue Elementary School consists of seven separate buildings, linked by covered walks. The site occupies an entire square block. (See plan at top left.) The buildings include an administration building (plan top center), two kindergarten classrooms (photos at right and opposite page), eight upper grade classrooms and 13 lower grade rooms. There is also an outdoor roofed-over lunch room and an outdoor assembly area. Space is provided for a future cafeteria and auditorium. Typical classroom section (above center) includes sun baffles to the south

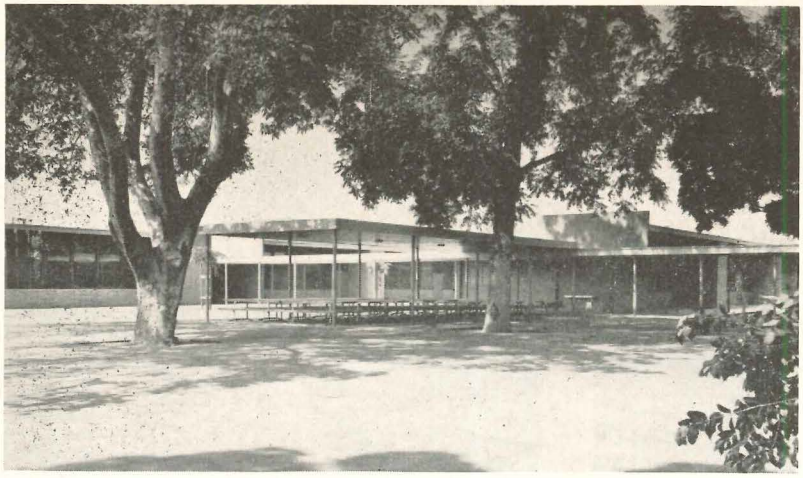




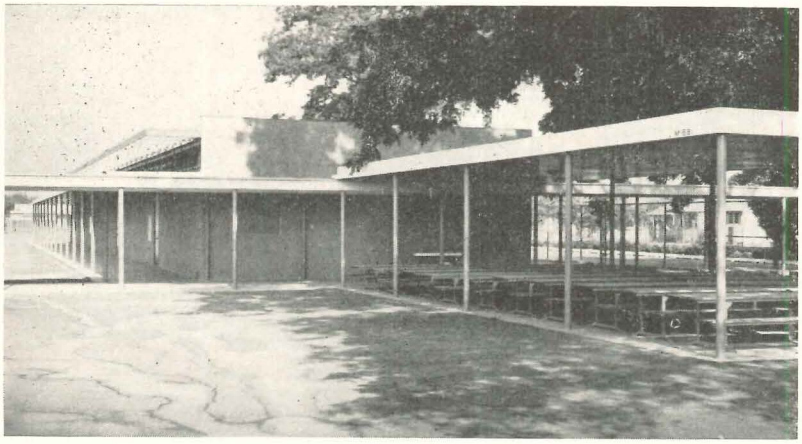


The buildings are constructed with concrete floors covered with asphalt tile. Walls are wood stud, finished with plaster or plywood. Roofs are light gravelled composition over wood rafters, ceilings are surfaced with acoustical tile. Canopies over walks (above) are supported by steel columns painted bright coral

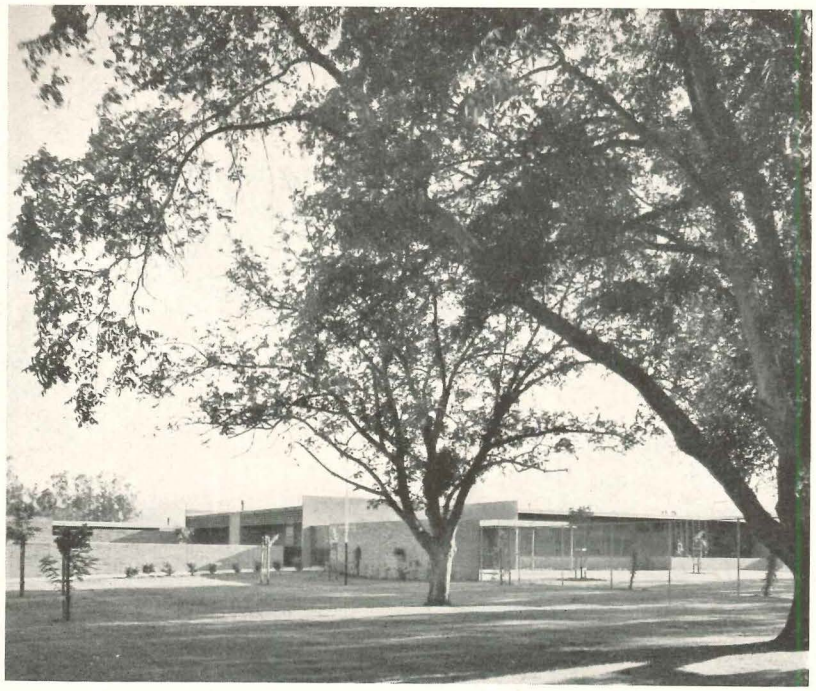


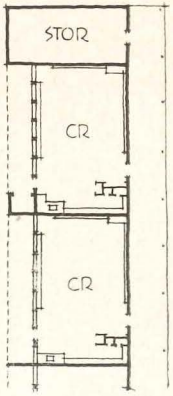


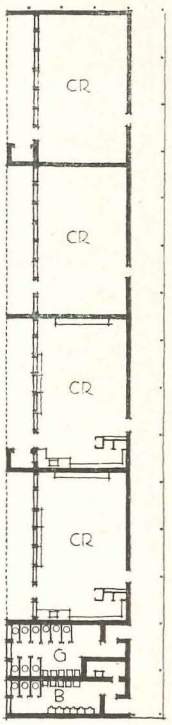
Above and below: outdoor lunch room adjoining lower grade classroom building is used most of year

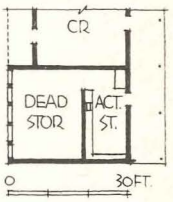


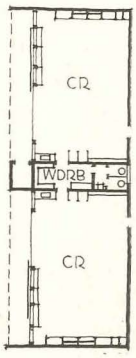
Below: kindergarten and administration buildings. The latter is set apart by planting box (page 143)



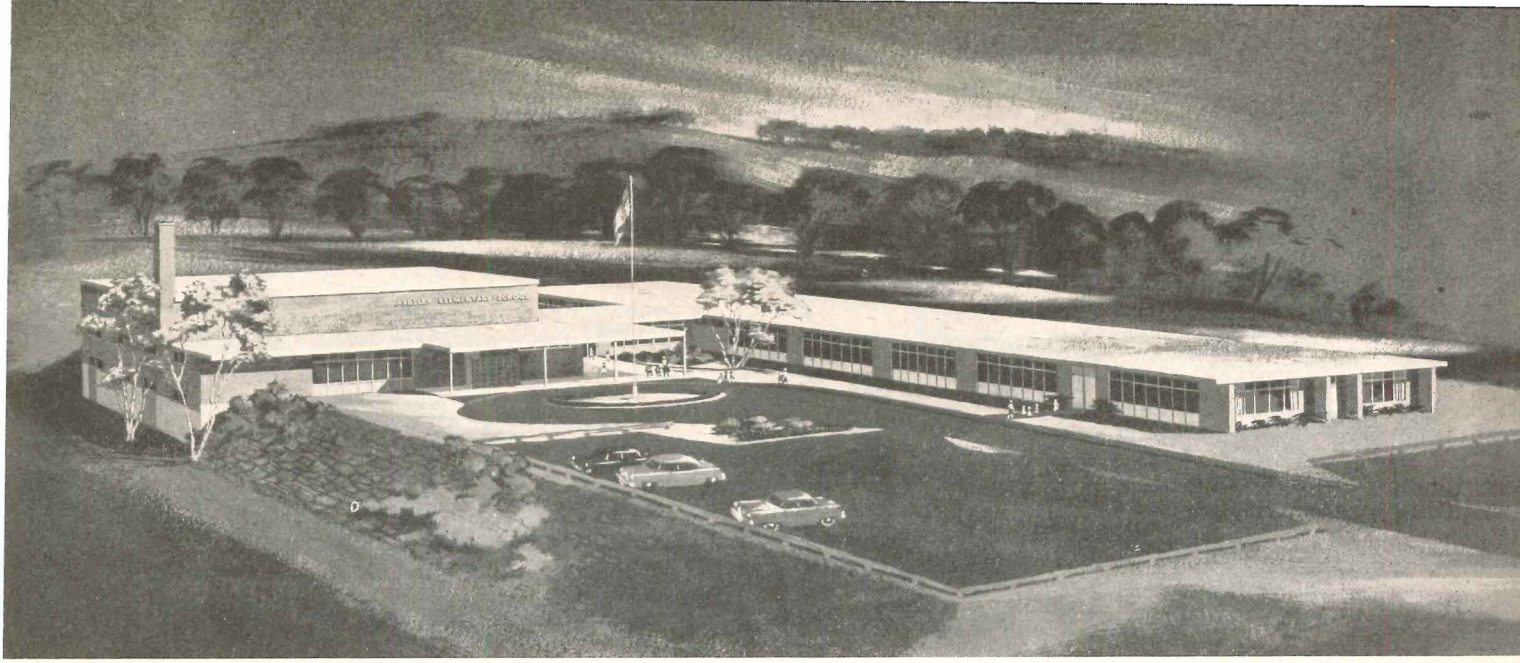






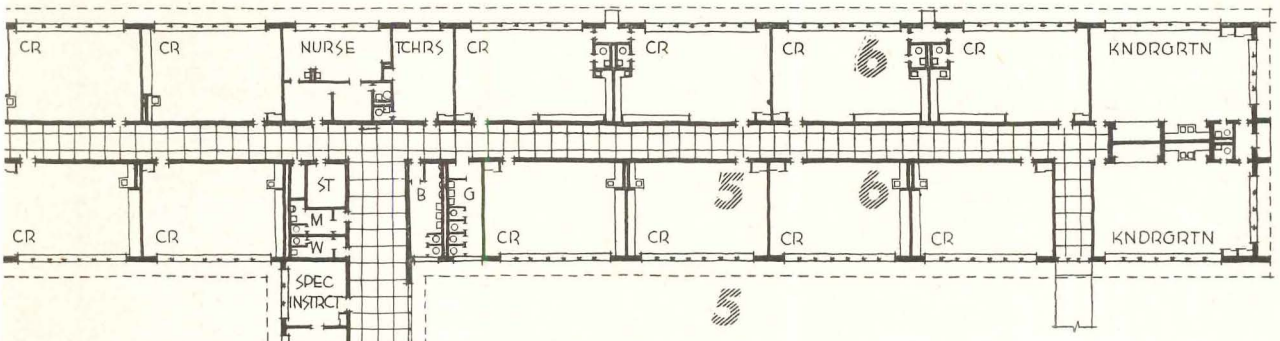


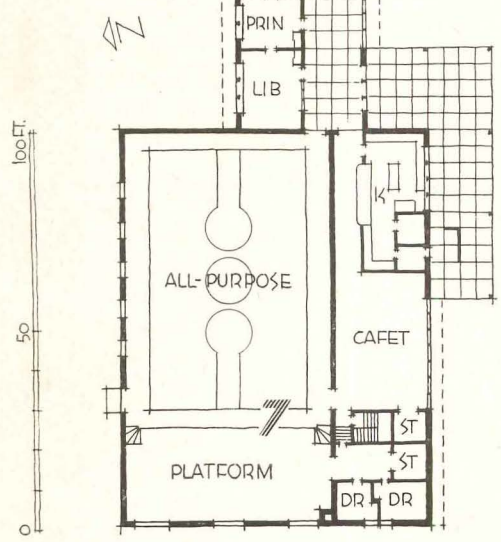
Typical classroom building plan (top right) is varied by two alternate endings. Bottom plan is of kindergarten unit. A furnace is between every other pair of classrooms



ELEMENTARY SCHOOL, ARDSLEY, N. Y.

ROBERT A. GREEN
Architect

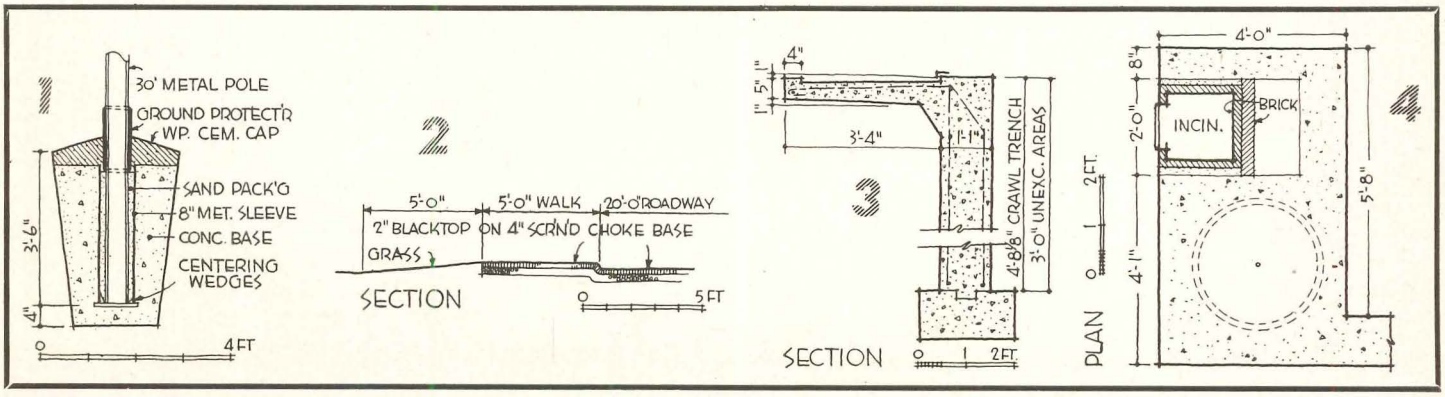




ARDSLEY'S prizewinning elementary school (see "Record Reports"), now under construction, contains not a square inch of useless floor area. Sections and details on following pages show that no cubic inch is wasted. Such economical design, though it results in low over-all or per-pupil cost, may cause paradoxically high unit costs since there is no wastage to distort the figures. This school, however, built in an area where

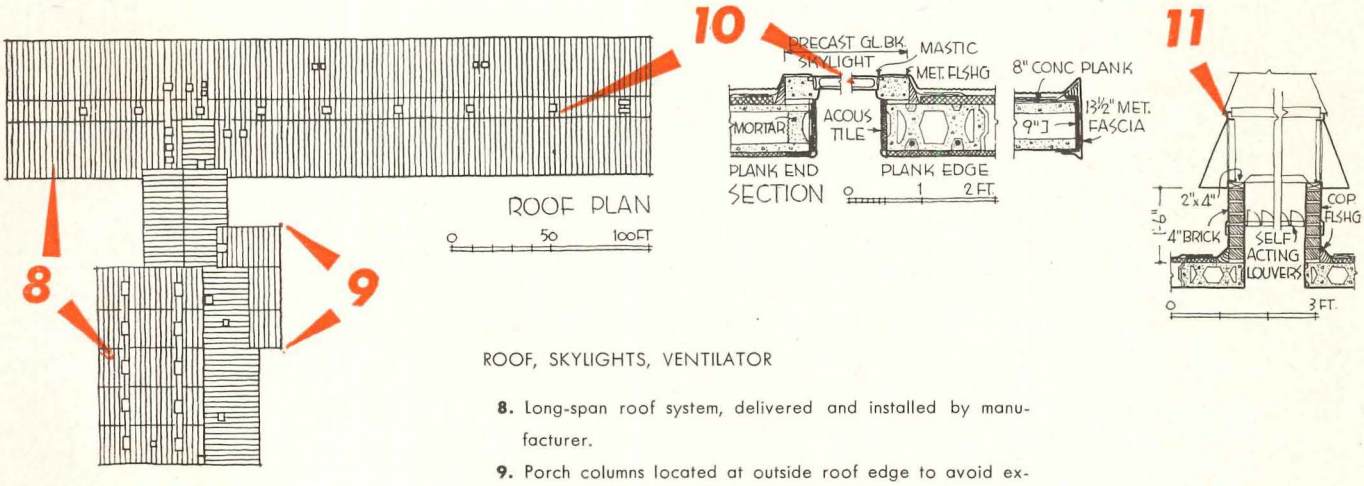
SITE, FOUNDATION, FIRST FLOOR

1. Stock tapered steel flagpole, delivered and installed by manufacturer.
2. No curb between walks and road.
3. Cantilevered entrance platforms, no footings and foundations necessary.
4. Prefabricated incinerator, set in place before concrete is poured.
5. Door and window frames are structural, extend from foundation to roof, serve as control points for masonry.
6. Plumbing backed up wherever possible.
7. Expanded metal panels serve as exhaust grills for ventilating system.



schools not uncommonly run $20 or more per sq ft, is costing only $13 per sq ft or 95¢ per cu ft (both approximate), while total construction cost, including much site work, is being held under $400,000. The entire plant, taking in land cost, fees, equipment, furniture, etc., is coming well within the budget of $492,000.

The 14-classroom building, designed so seven more classrooms can be added, has a cafeteria independent of, but adjacent to, an all-purpose room. It is a wall-bearing structure, stripped of non-essentials, carefully sited amid trees and judiciously studied in plan and detail for economy, not for poverty. Color is used liberally (although paint is almost eliminated) by means of integrally colored exposed masonry; in linoleum, asphalt tile and in terrazzo-floored corridors; in drapes, shades, blinds, chalk- and tackboards and counter tops. Wherever possible, site labor is also eliminated. The dead-level roof, of long-span, light-weight, precast concrete plank, is delivered and installed by the manufacturer. The steel fabricator makes up the standardized frames for window units, complete even to glass molds for non-venting lights, on jigs in his own shop; he delivers and installs them on the finished slab where they become guides against which masons lay up the cavity walls of block and brick. Stock items, not custom-made, are used throughout; virtually the only sizable exception to this principle is the radiant-heated floor slab on grade.



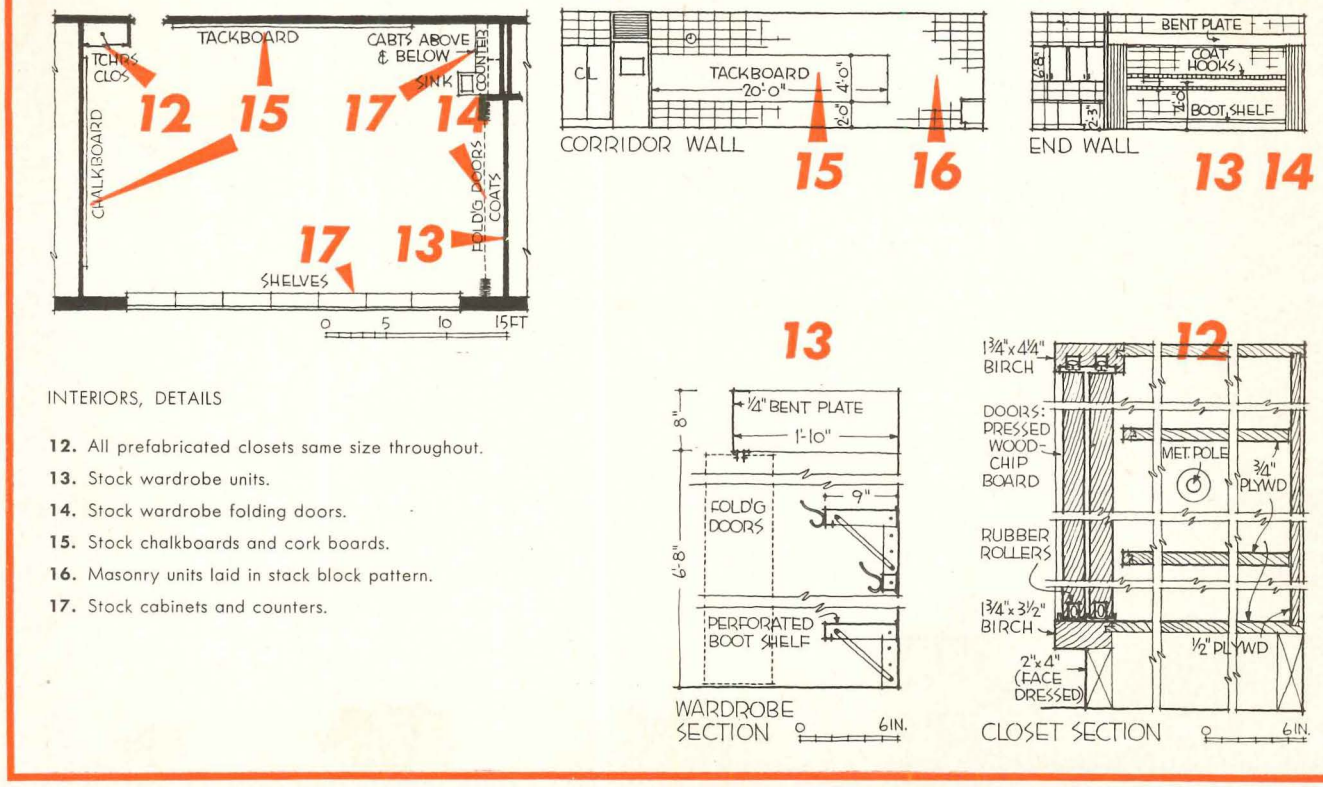
ROOF, SKYLIGHTS, VENTILATOR

8. Long-span roof system, delivered and installed by manufacturer.

9. Porch columns located at outside roof edge to avoid expensive framing.

10. Precast skylights, delivered and installed by the manufacturer.

11. Stock, motorized roof ventilator.



INTERIORS, DETAILS

12. All prefabricated closets same size throughout.

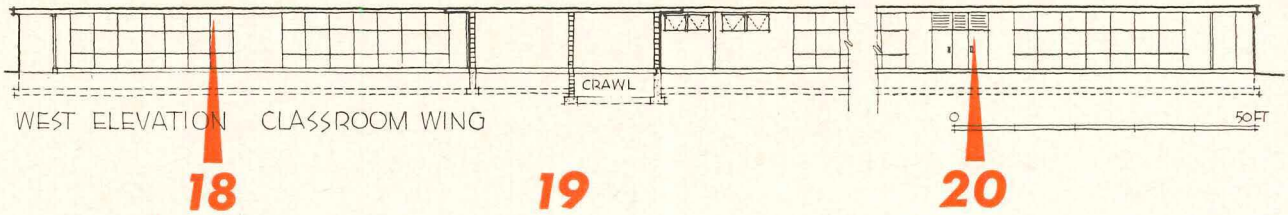
13. Stock wardrobe units.

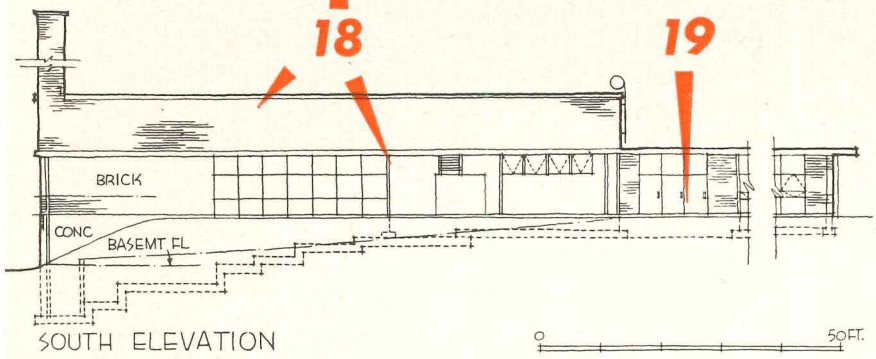
14. Stock wardrobe folding doors.

15. Stock chalkboards and cork boards.

16. Masonry units laid in stack block pattern.

17. Stock cabinets and counters.





EXTERIOR ELEVATIONS

18. Flat roof, no excess cubage.

19. Stock aluminum entrance doors complete with hardware.

20. Direct exhaust fans located in transom over exterior corridor doors, no ductwork.

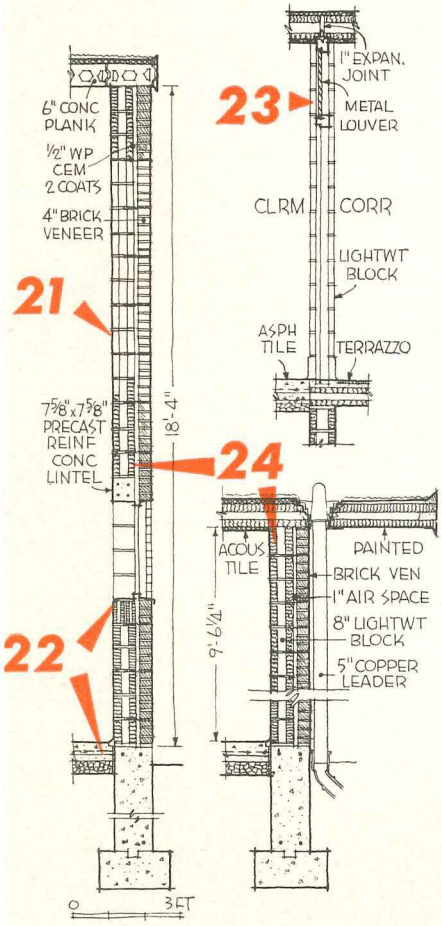
WALL SECTIONS

21. Exposed lightweight masonry units, integral color, no painting.

22. Glazed concrete block cove base and wainscot.

23. Louvered transom, no louvered doors.

24. Cavity wall construction, additional waterproofing at all-purpose room.



WINDOWS, DOORS

25. Electric switches located in door bucks wherever possible.

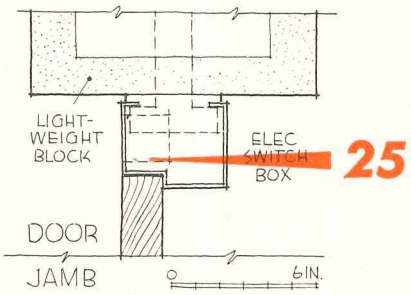
26. Interior doors stock solid core natural finish.

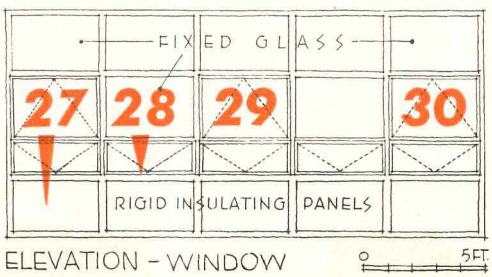
27. Insulating panel below windows.

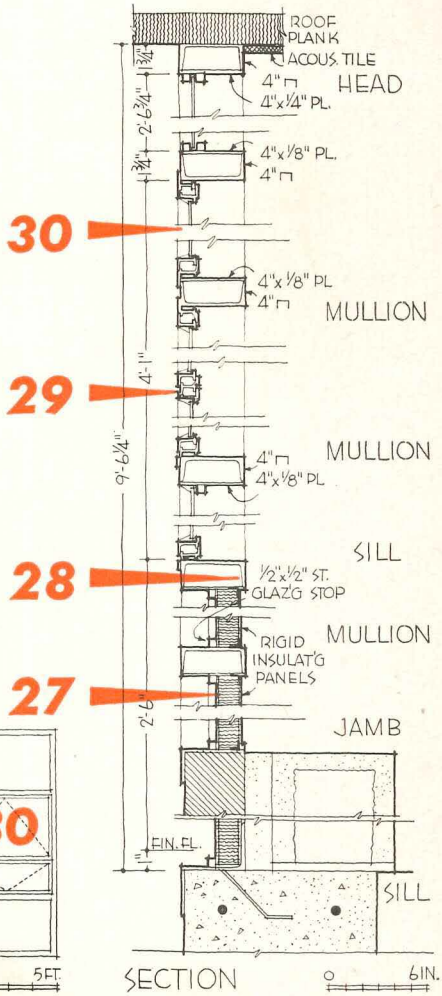
28. No stools or sills required.

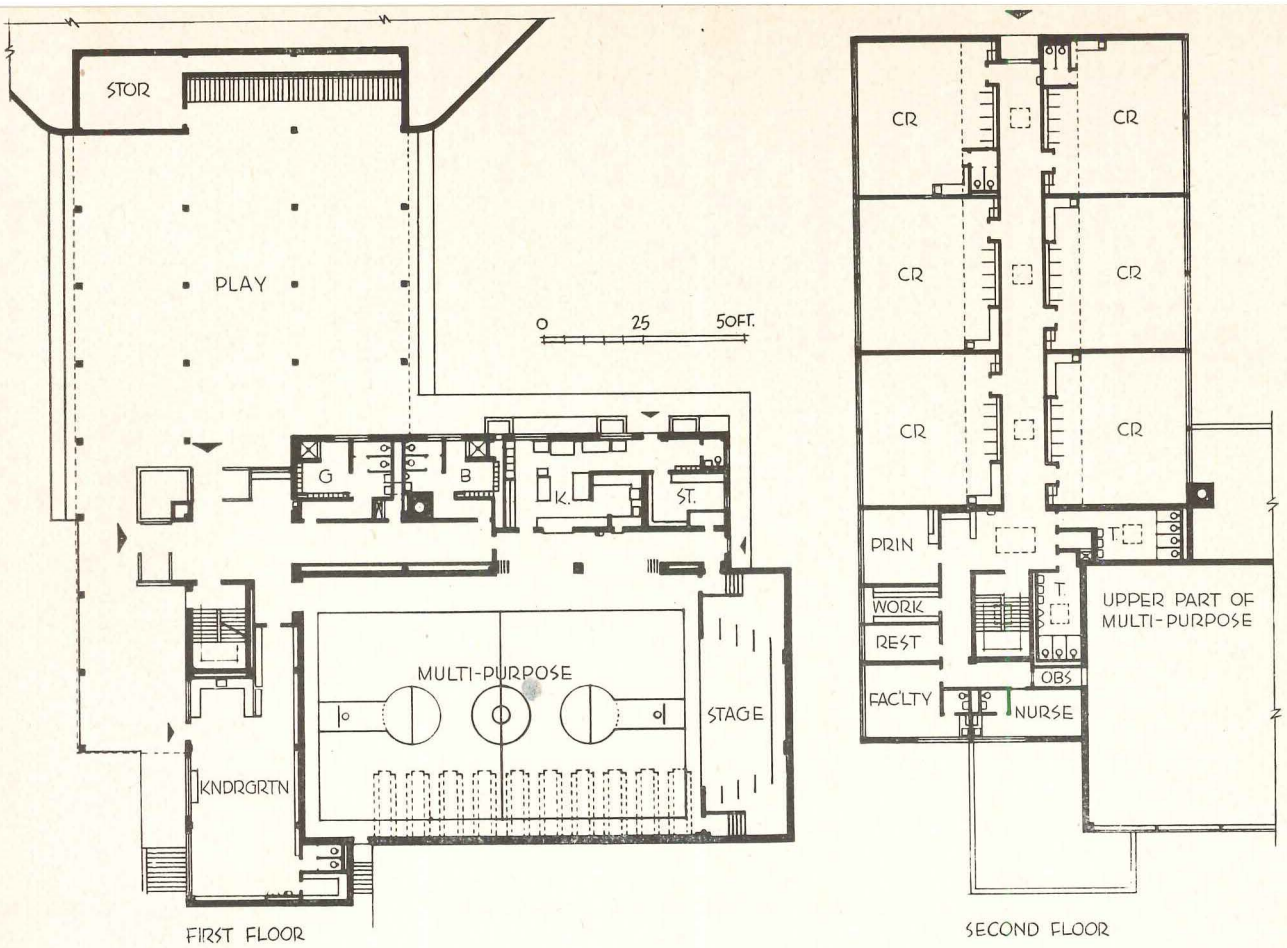
29. Only venting windows are purchased from window manufacturer.

30. Stock projected windows.







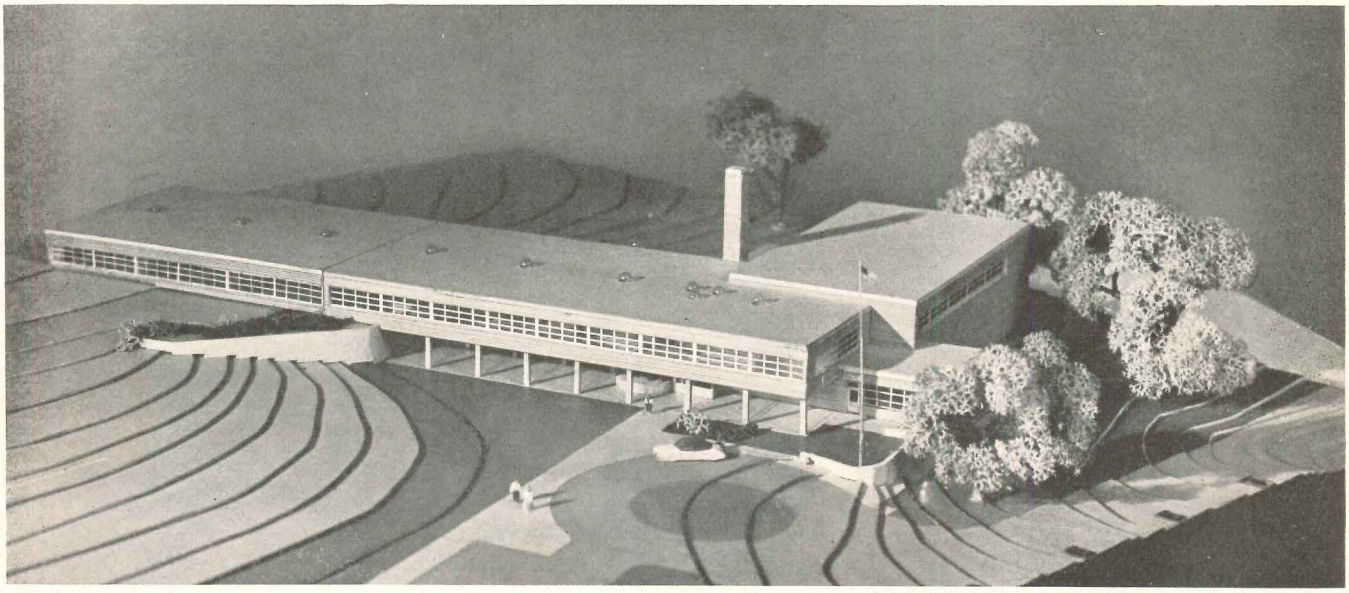


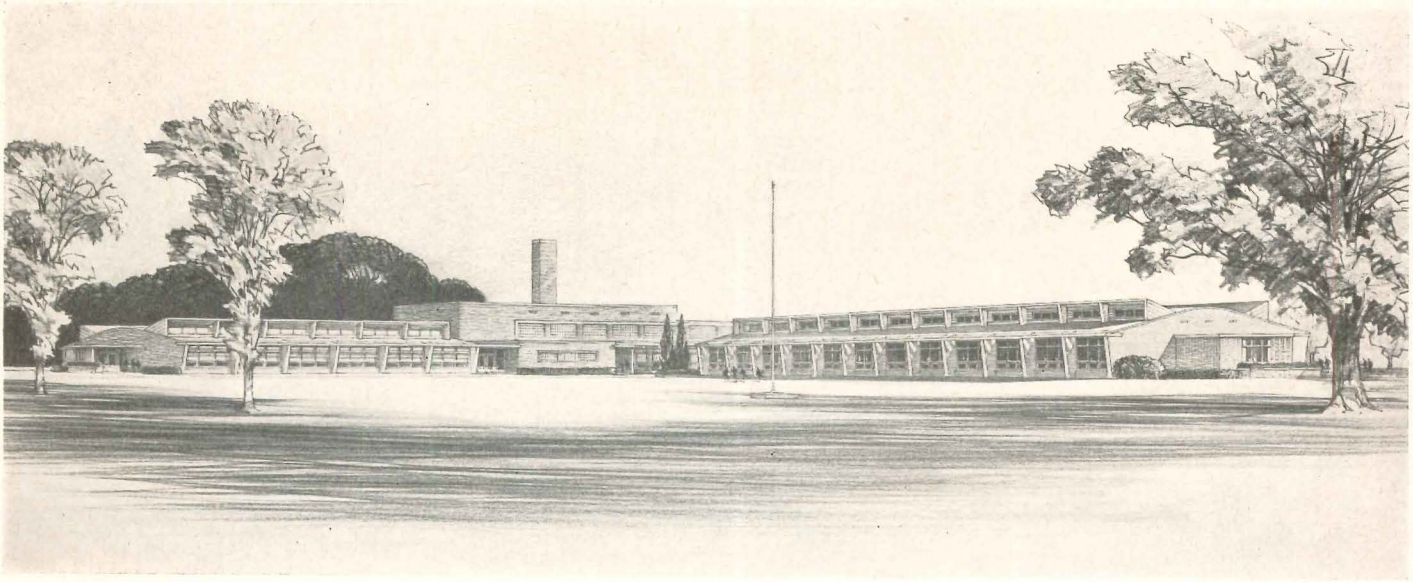
LEE ELEMENTARY SCHOOL

Manhattan, Kansas — *F. O. Wolfenbarger & Associates, Architects*

CONTRARY to usual practice, the longitudinal axis of the classroom wing of this elementary school has been placed at right angles to the slope of the hillside plot to provide direct ground level entry to both levels, a variety of outdoor and covered play areas for the various grades, good orientation for natural lighting and views, and protection from traffic and noise. The arrangement of the plan also provides easy access to the multi-purpose room and kitchen for community and recreational uses.

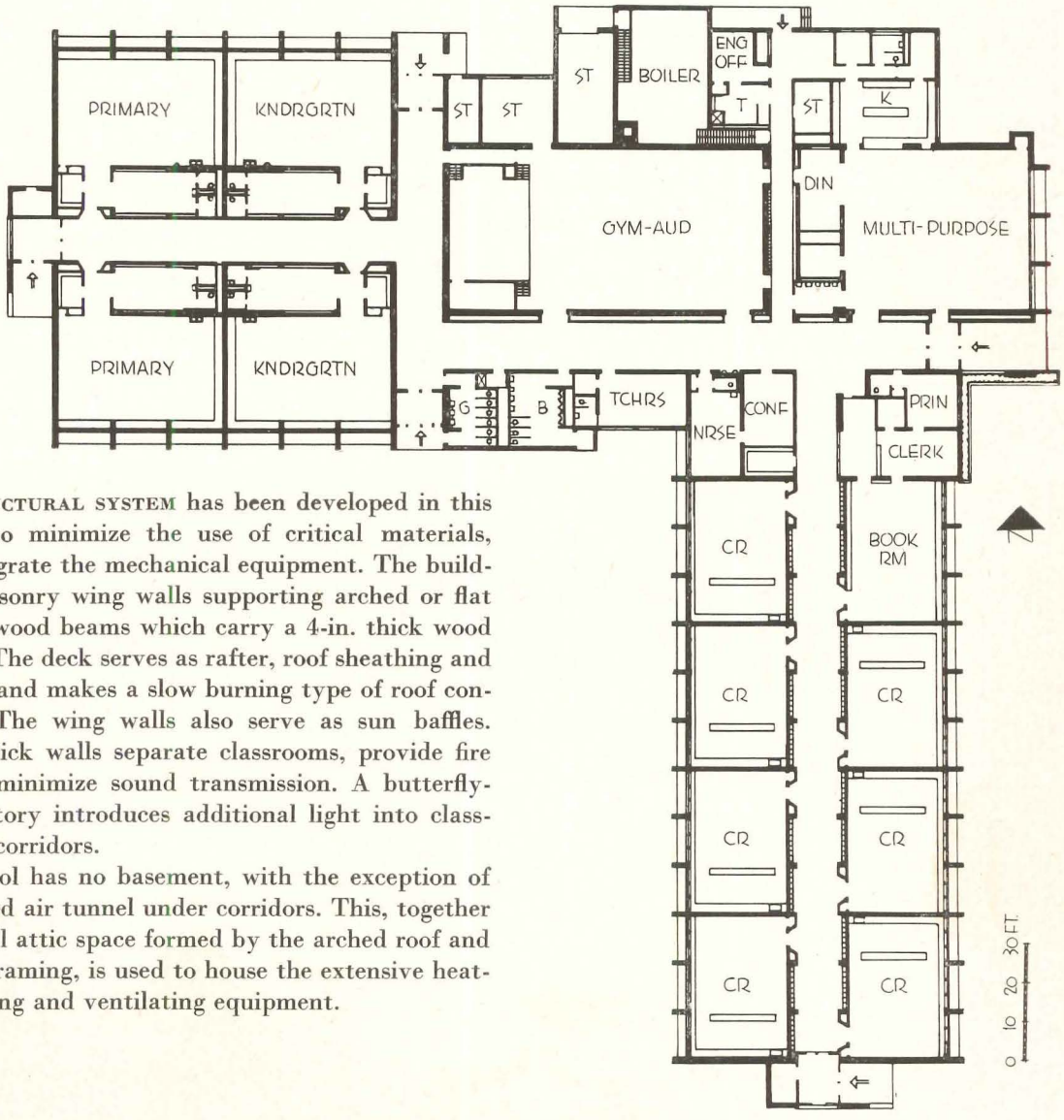
The building is being constructed of reinforced concrete frame and formed joists for the lower floor, concrete floors for the second level. The roof is designed with bar joists and gypsum plank, supported by a steel frame. Walls are faced with brick, backed with lightweight concrete block. Interior partitions are of masonry with glazed tile and brick dadoes; ceilings are of acoustical plaster. Floors are of vinyl plastic in lobby, kitchen and corridors, asphalt tile in classrooms and multi-purpose room. Heating is by a low pressure vacuum steam system to unit ventilators in classrooms, to a duct system in multi-purpose room.





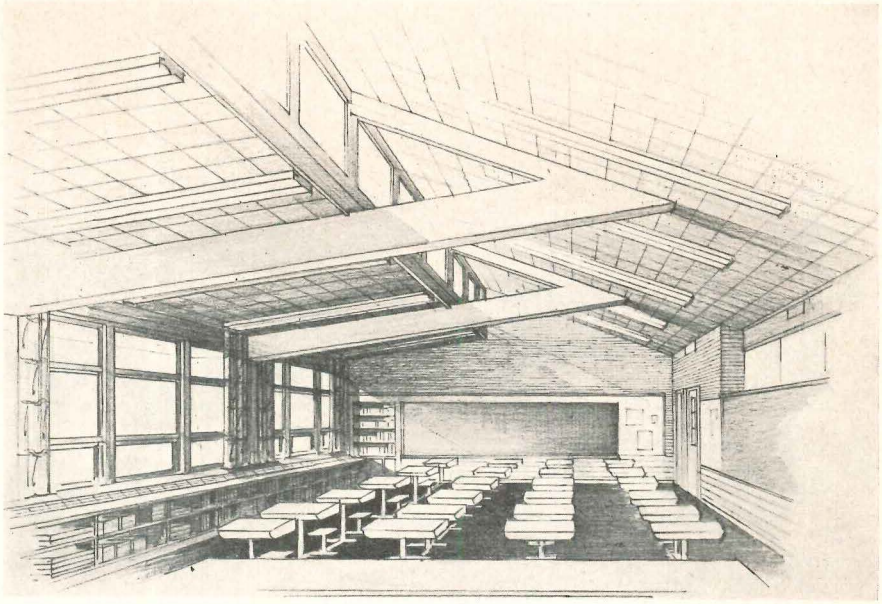
95TH STREET ELEMENTARY SCHOOL

Milwaukee, Wisconsin — *Darby, Bogner and Associates, Architects and Engineers*

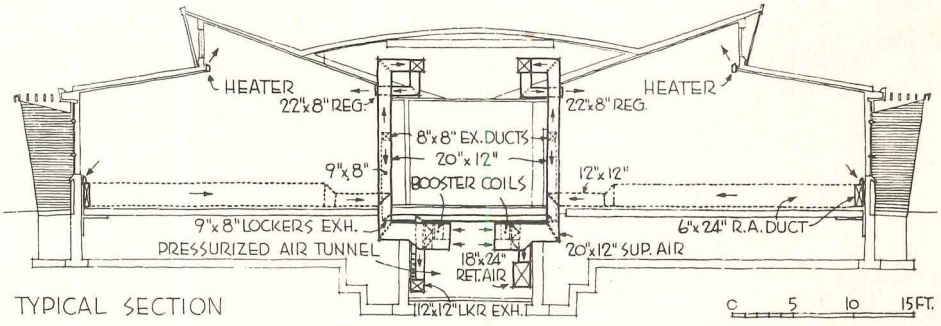


THE STRUCTURAL SYSTEM has been developed in this school to minimize the use of critical materials, and to integrate the mechanical equipment. The building has masonry wing walls supporting arched or flat laminated wood beams which carry a 4-in. thick wood unit deck. The deck serves as rafter, roof sheathing and insulation, and makes a slow burning type of roof construction. The wing walls also serve as sun baffles. Exposed brick walls separate classrooms, provide fire stops and minimize sound transmission. A butterfly-type clerestory introduces additional light into classrooms and corridors.

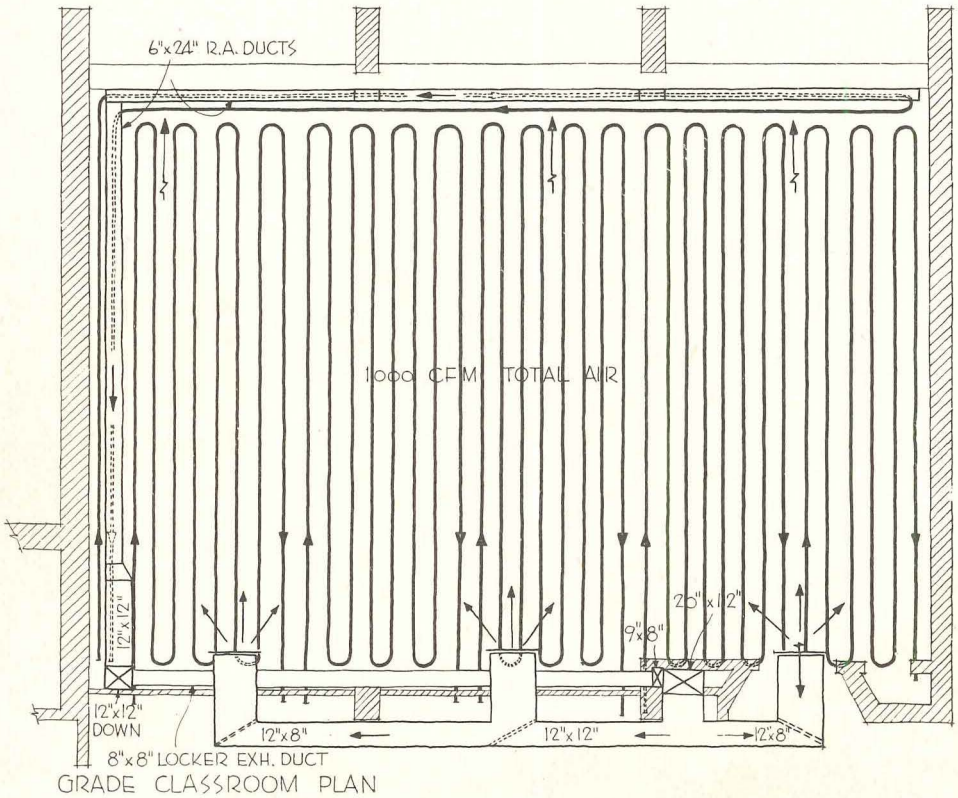
The school has no basement, with the exception of a pressurized air tunnel under corridors. This, together with a small attic space formed by the arched roof and clerestory framing, is used to house the extensive heating, plumbing and ventilating equipment.



The structure of the 95th Street School provides unusually close integration of the mechanical equipment with the building. (See section at right center.) Pressurized air tunnels below corridors supply tempered, filtered air to all rooms. Recirculated air is taken at the full length of the window stool grills to prevent a down draft of cold air from windows. Exhaust air is vented through lockers, corridors and toilets to the outside. Heating is by forced circulation hot water radiant coils located in the floor, and by convectors at the sill of the clerestory windows. This is supplemented by introduction of heat in the supply air stream of the ventilating system. All piping for water supply is also installed in the attic space and tunnel for convenient maintenance



TYPICAL SECTION



GRADE CLASSROOM PLAN

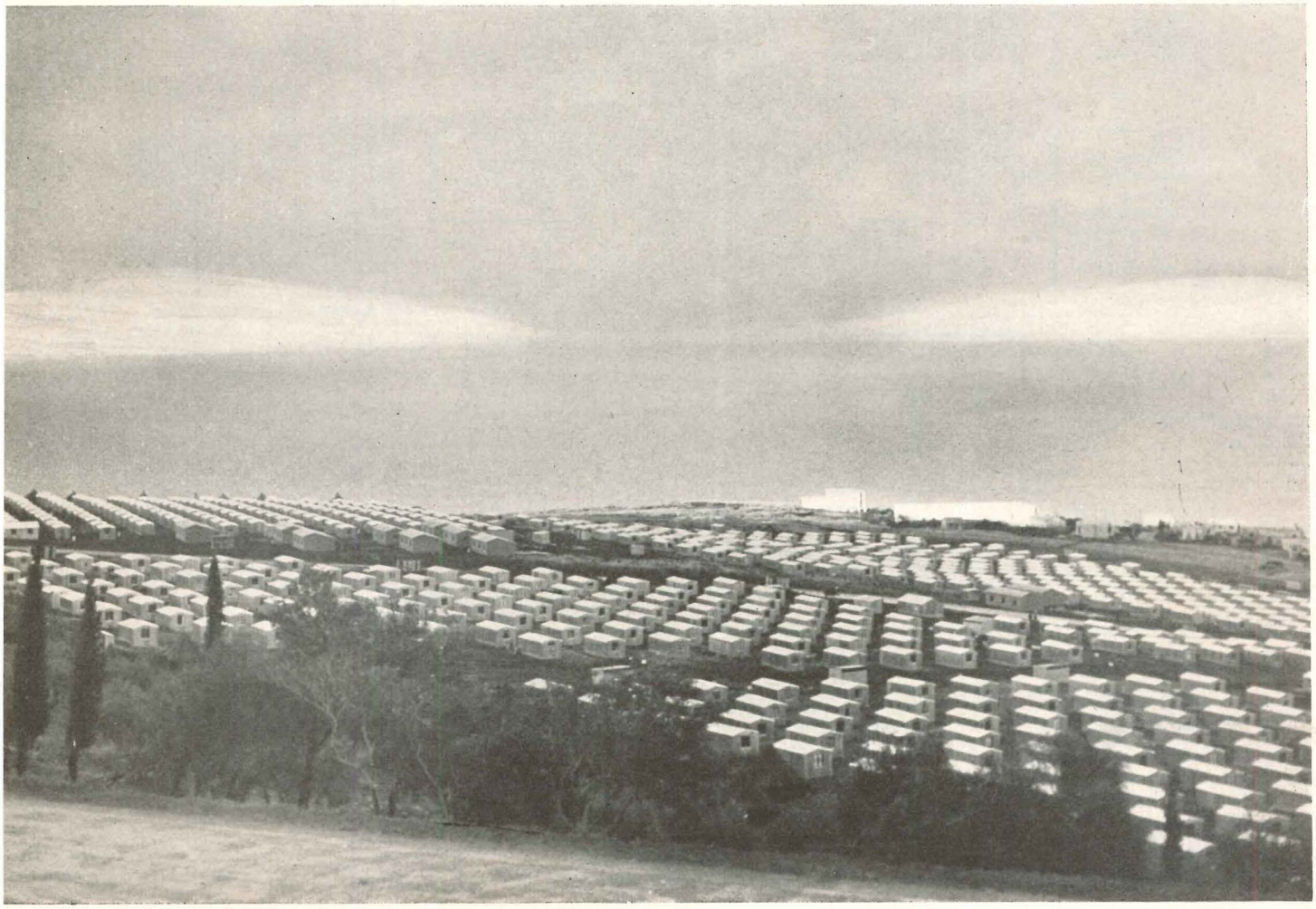
General view of Jerusalem. Below: the maabarah (immigrants' camp) in Tiberias, overlooking Sea of Galilee; huts are thin aluminum

CONTEMPORARY DESIGN IN ISRAEL

PLANNING AND ARCHITECTURE

By Samuel R. Mozes
Member of Staff
Department of City Planning, New York City

Photos courtesy Israel Office of Information



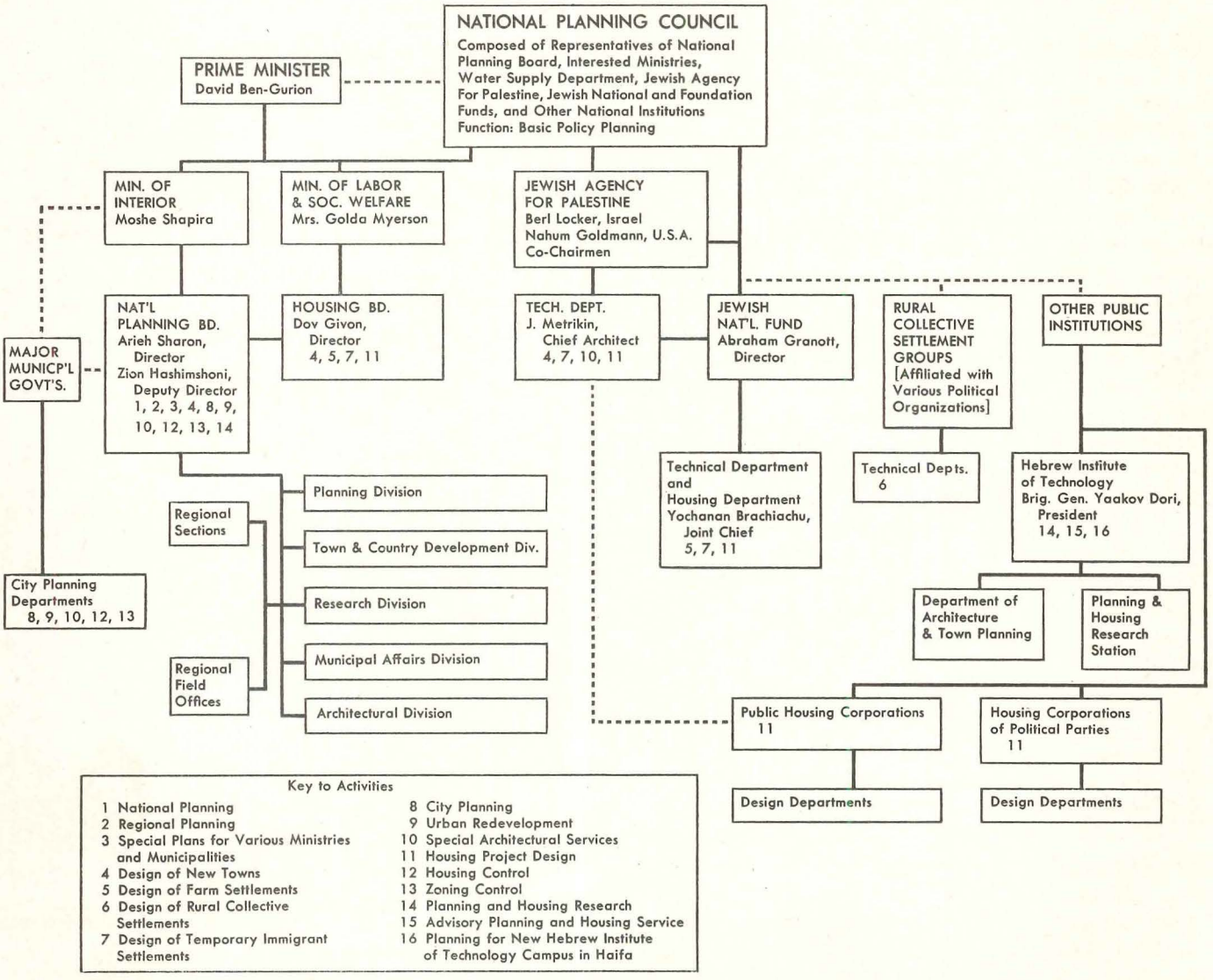
IN MODERN ISRAEL, building design and general physical planning are probably more closely integrated than anywhere else except England, and serious discussion of the one cannot very well be undertaken without attention also being paid to the other. Hardly any of the traditionally recognizable world styles in architecture exist in the land now called Israel. The great periods of building — Egyptian, Greek, Roman, Byzantine, Romanesque, Gothic, Renaissance, etc. — can be seen almost only in books and in some of the ancient ruins, of which not all have yet been dug out by archaeologists. Just as in other Near Eastern countries, the visible monuments of antiquity are of emotional and educational importance but not directly attached to the current creative life of the people.

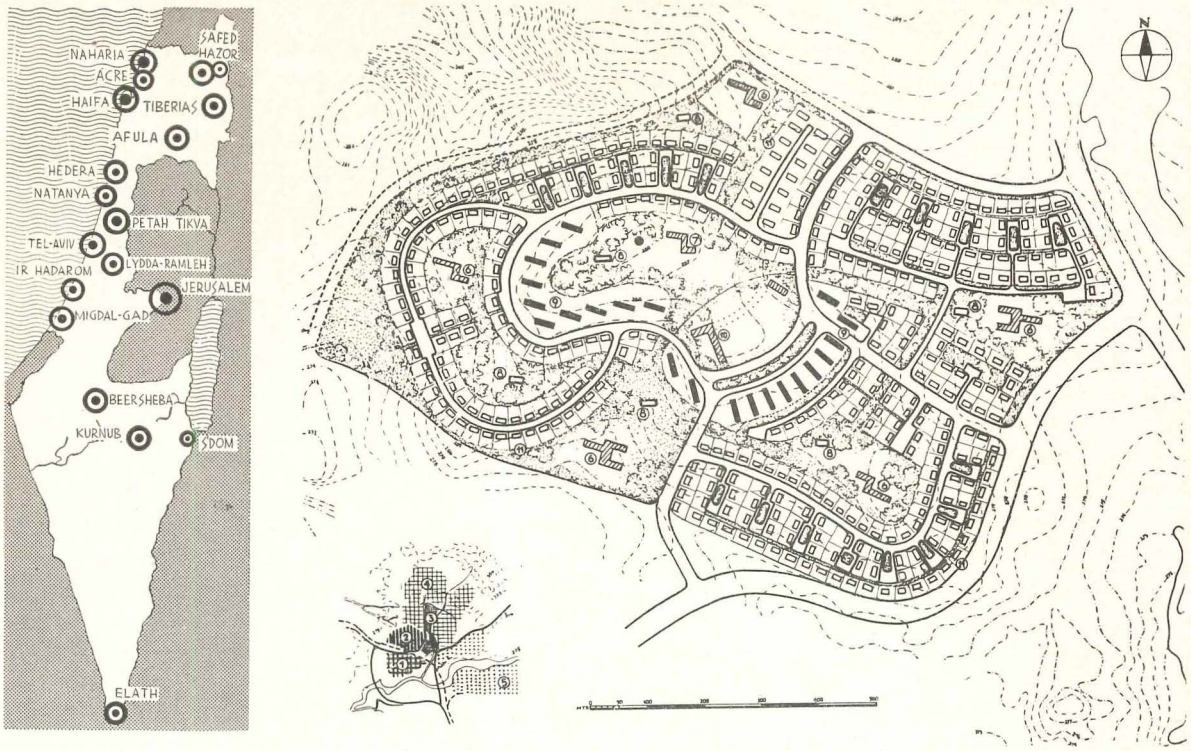
In the field of planning, however, new methods are applied to ancient sites and cities, and thus the old and the new co-exist and merge into an exciting unity. From the point of view of modern planning, Israel may be considered either the planner's nightmare — or his dream. The difficulties arise from the unusual economic situation, diversity of topography, population, resources, climate, etc. The benefits are due to the fact — not always true in the United States — that most, if not all, good planning schemes have an excellent chance of being actually carried out.

Planning work is done by several different organizations, with a varying degree of cooperation among them. The first and foremost is the National Planning Board (which I shall call the NPB), a recent creation which is the result of a merger of two governmental units, the former Government Planning Department responsible directly to the Prime Minister and the former Town and Country Development Department. The new NPB is now a unit of the Ministry of Interior, though there is always talk and wishful thinking about an independent ministry for planning and housing.

I have drawn up an approximate chart of planning functions in Israel, shown below. It is by no means official or complete; its purpose is only to explain the complicated set-up of Israel's planning and housing activities.

I spent some time on study in the NPB offices in Tel Aviv and had the opportunity to interview its head, Arieh Sharon, a distinguished architect who has continued private practice independently of his governmental service. Mr. Sharon explained that the NPB had three broad objectives: (1) general planning for the





Neighborhood unit planned as part of development of Beersheba into main center of Negev

whole country, including national transportation, location of new towns, national parks, etc.; (2) regional planning, including advisory services for larger cities and full planning services for smaller localities; (3) design of new towns and various specialized work for different departments of the government including architectural design, as may be required.

All public housing construction is planned and administrated by the Housing Board, which is under the Ministry of Labor. The Technical Department of the Jewish Agency for Palestine, the chief organ of the world Zionist movement, works primarily within the limited sphere of design of new settlements and temporary living quarters for immigrants. Other important work in this field is done by the Jewish National Fund, various public and private housing corporations, planning staffs of different cities, private consultants and the Hebrew Institute of Technology in Haifa.

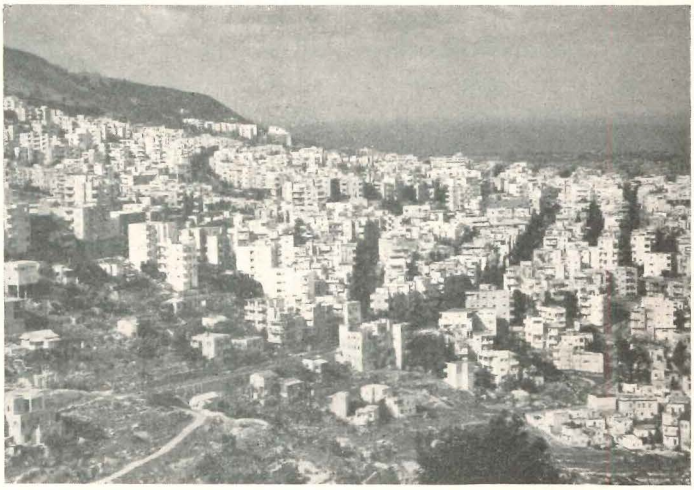
Cooperation and coordination among these different units for a long time has been considered unsatisfactory, and it can be readily seen on the chart that certain links are missing between the governmental offices on the left-hand side and the non-governmental organizations on the right-hand side. As a partial remedy the National Planning Council has been set up recently, with representatives appointed from all governmental and non-governmental planning bodies. It will act in an advisory capacity on fundamental questions of policy.

Israel's planning policy is based on certain basic considerations: (1) military defense; (2) rapid settlement of new immigrants arriving at a rate unprecedented in modern history; (3) development of irrigation and water resources; (4) general industrialization and development of specialized industry; (5) tourism.

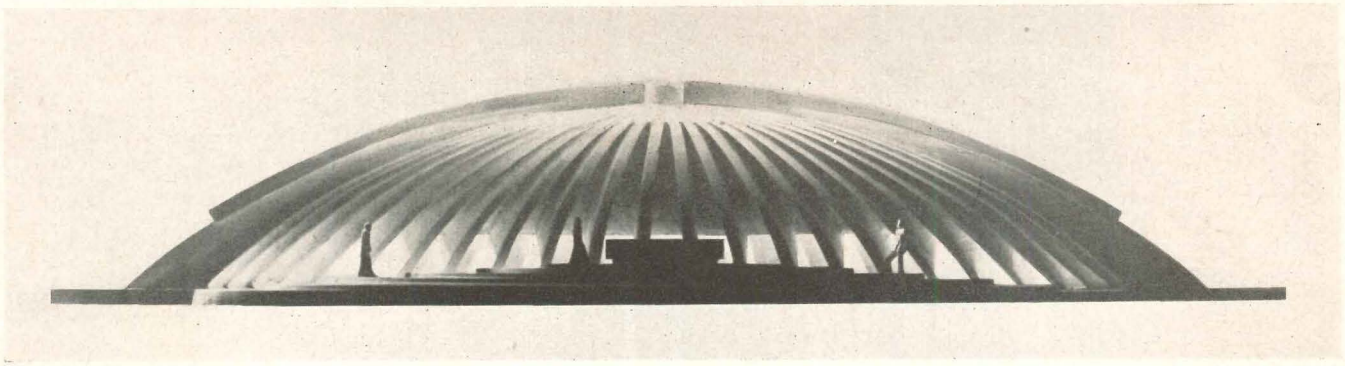
The NPB has tried first of all to encourage a decentralization of population and to achieve self-contained planning regions in all parts of the country. It will try also to create regional urban centers, where they do not now exist, for development of regional economy, administration, cultural life, etc. As far as new towns are concerned, the emphasis is on the neighborhood theory, combined with topographical considerations which in many places are strongly reminiscent of San Francisco.

The population of Israel on January 1, 1952 was 1,562,000, including 162,000 non-Jewish minorities; the NPB estimates that within the next ten years the population will have increased to about 2,500,000, roughly half the four-to-five million supposed to be the country's capacity at full development. Probably 35

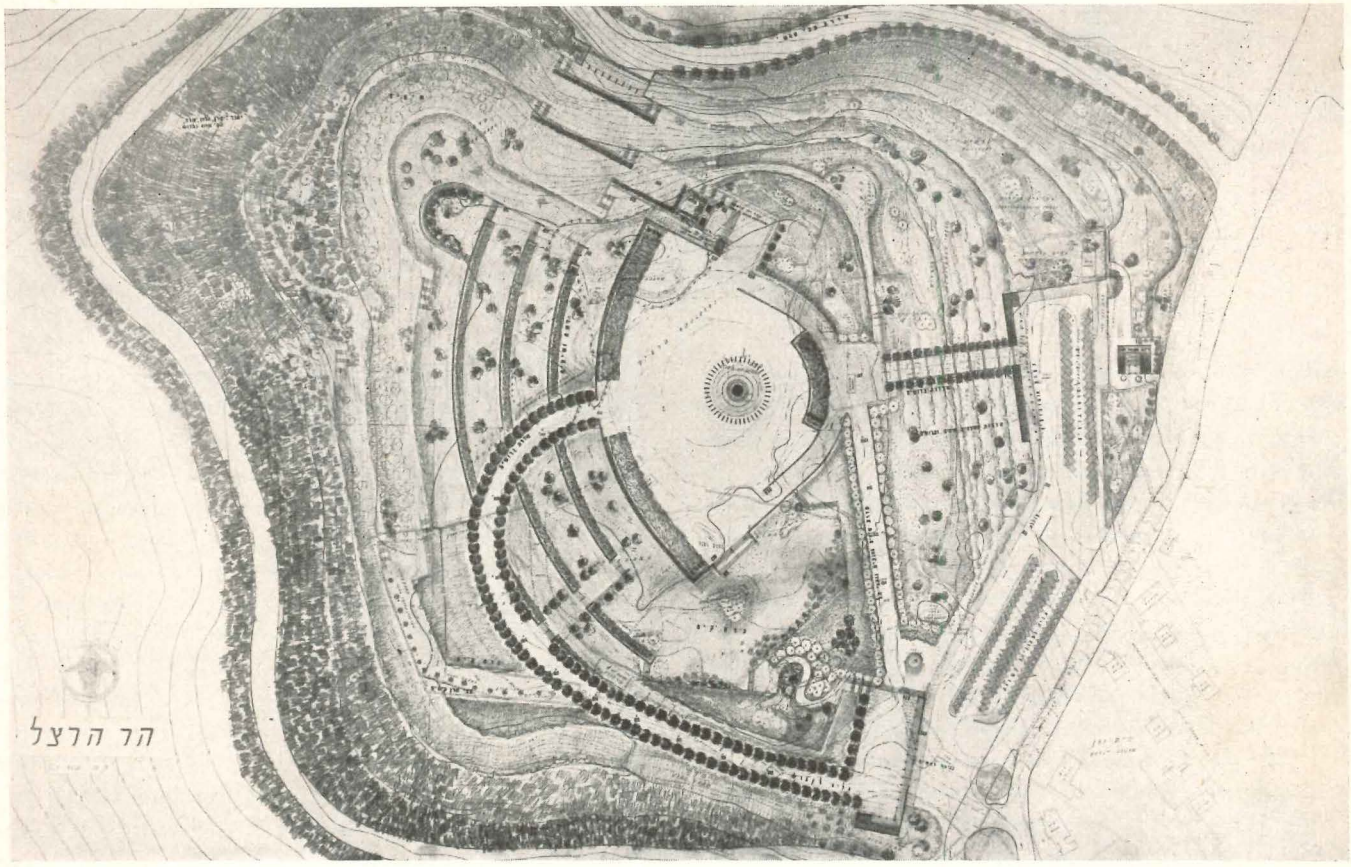
Courtesy Israel Office of Information



Port city of Haifa, where competition for a redevelopment plan for the Lower Town (business district) has been announced



Winning design for Theodore Herzl National Memorial Tomb, Jerusalem; Joseph Klarwein, architect. Below: site plan for Mt. Herzl, with Memorial Tomb in center (at summit)



per cent of the inhabitants will be engaged in light and heavy industry, 20 per cent in agriculture, and the remainder in trade, the tourist industry, etc.

The NPB anticipates that 40 per cent of the expected 2.5 million population will live in the three chief metropolitan areas of Jerusalem, Tel Aviv and Haifa, while the rest will be distributed in mixed agricultural and industrial regions. The country as a whole is to be divided into 24 regions of varying size, with each designed, as far as possible, to support an average of from 75,000 to 100,000 inhabitants. The gross neighborhood density proposed for urban centers is 40–50 persons per acre, and an estimated maximum of 50,000 has been set for new towns in regions which at present have no urban centers.

Israel's industrial and irrigational planning is so complex that it can be covered only briefly here. It involves NPB-proposed "industrial estates," intersea canals, desert water-storage dams, lake drainage, agricultural water pipes, etc. The country's growth has been so rapid that it has far outrun the growth of transport facilities, and transportation by rail, sea and road is extremely difficult in most areas. In this field alone the government proposes (1) the construction of new roads to create a continuous chain of communication; (2) the improvement of existing roads through resurfacing, widening, and easier crossings, to adapt them to the increasing volume of traffic; (3) the realignment of routes in the vicinity of urban centers. (There are at present very few by-passes.)

The National Development Plan is concerned also with provision for national parks and forests, landscape

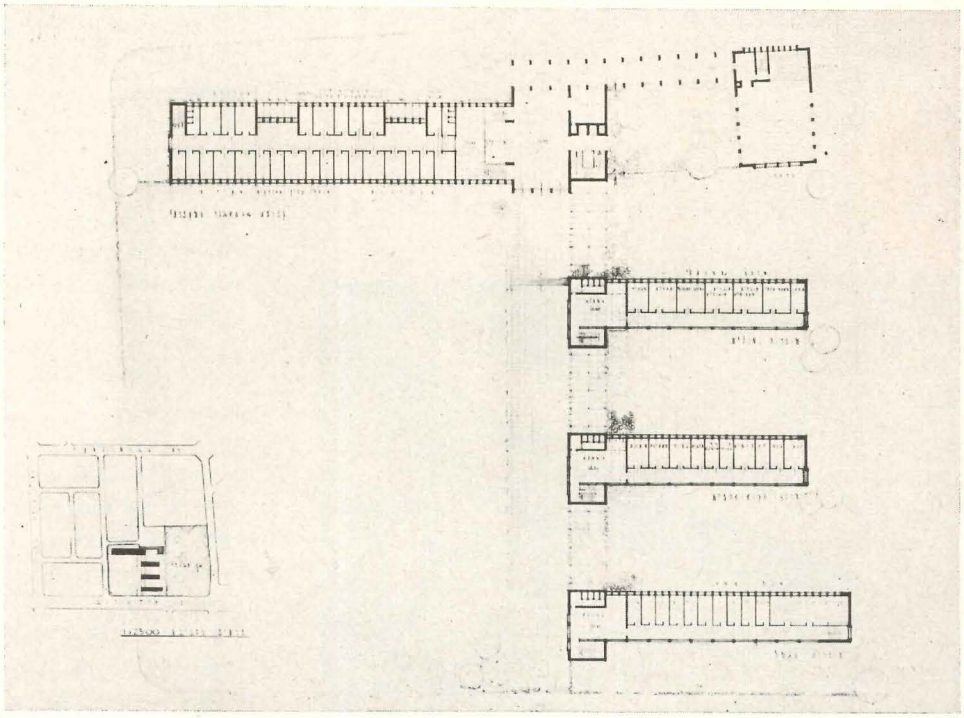
preservation, and protection of historic and archaeological areas. Natural assets, including Israel's many historic landmarks, are admittedly important to the country's development of its tourist trade; for this reason certain parts of the state will be set aside as "protected areas" — but in most cases such areas are suited only to afforestation.

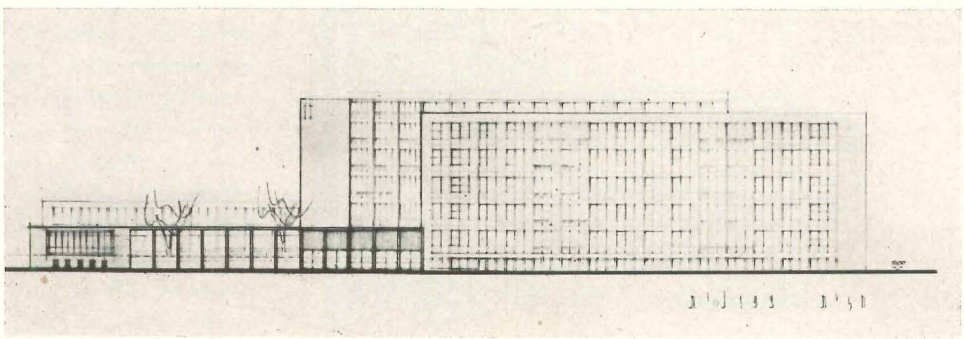
For existing cities and towns, some of which date back to Biblical times, a more orderly growth is planned. In the port city of Haifa, for instance, the mayor, Abba Khoushy, has announced a competition for a redevelopment plan for the Lower Town (the downtown business district, partly destroyed during the 1948 Arab war). An important "private" planning project in the same city is the proposed removal of the Hebrew Institute of Technology from the business center: present plans call for an entirely new 250-acre teaching and research center outside the city limits, complete with a new town planning department with American teachers in charge; the architectural-engineering firm of Kelly and Gruzen of New York, New Jersey and Boston has opened branch offices in Israel for the design of the $20 million project.

One of the most interesting of the city development programs is that outlined for Jerusalem. Jerusalem, in the Hills of Judaea, the geographical as well as the political and spiritual center of the country, is very much like Washington, D. C. — a "specialized" city. Now as before, it is the center of government, of institutions of higher learning and various religious headquarters, and, incidentally, a health resort. (The Old City, containing the famous holy places of the three world religions, is now cut off and under the administration of the Jordan Kingdom.)

The NPB contemplates utilizing the hills and ridges of Jerusalem for residential purposes, while the lower lands are to be converted into functional green belts, parks and recreation areas. The green *wadis*, continued as far as outlying mountain ridges, are to serve also to emphasize the topographical location and landscape values of the city. There is furthermore a provision for slum clearance, particularly acute in the neighborhoods of the extreme orthodox population, and for creation of new traffic arteries which will pass along the green belts.

The NPB has prepared plans for a dozen other cities in Israel. There is, for instance, an excellent plan for almost doubling the city of Tiberias, including a lake front resort development and a modern commercial and





Right: the Vaad Hapoel House, Tel Aviv, headquarters of the Central Council of Trade Unions. Designed by Dov Karmi, one of Israel's best-known architects, the reinforced concrete building is now under construction; it features an assembly garden on roof. Tel Aviv, once called by Sir Patrick Geddes a "perfect small city," now badly needs redevelopment and replanning, having been allowed to "just grow"

industrial quarter, with the city's population expected to increase from 9000 to 50,000.

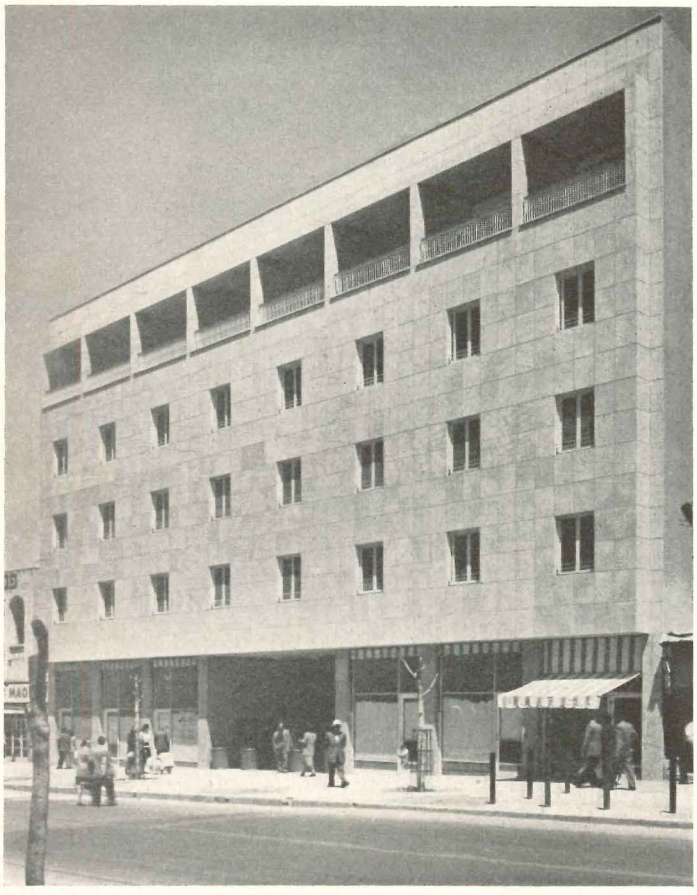
Generally, the tendency of the NPB technical staff is to correct certain excesses in modern planning as experienced in Israel in recent years. The enthusiastic desire to follow what had been considered modern road design in western countries, especially in the layout of new towns, had caused Israeli planners to introduce perhaps too many complicated road curves and loops. Now they try to propose simpler housing group schemes, straighter roads and less involved intersections.

The same tendency toward simplicity has manifested itself in Israeli architecture generally, but strange as it may appear, the population of Israel is apologetic about the "modern" appearance of their buildings. They do not feel certain that the "shoe box design" (and sometimes it is really such), which they have rarely been taught to understand, is either "decorative" enough or actually expresses their own life and aspirations. On the other hand, the architects and planners themselves represent one of the most progressive groups of professionals to be found anywhere. If they do not always succeed in producing the best in contemporary design it is not because they lack understanding and technical ability, but because they are hampered by the ever-present problems of economics and material shortages.

The largest structure in Israel and, as I was told, in all the Middle East, will be the Convention Center now under construction in Jerusalem, called the "Houses of the People." Designed by the office of one of Israel's foremost architects, Zeev Rechter, at the instance of the Jewish Agency, the Center is conceived as a sort of "representational" national palace. The main structure will be the Congress and Exhibition Building, 94 ft in height with a floor space on all levels of 232,000 sq ft, situated on one of Jerusalem's highest hills, 2500 ft above sea level, commanding a magnificent panorama of the entire region, and bordering the site of the new government office district (though not harmoniously coordinated with it). This is the site occupied by the famous Tenth Roman Legion garrisoned at the city at the time of the destruction of the Second Temple; Roman relics found during the excavations — including mosaic flooring, a well and a brick kiln — will be preserved for future exhibit.

I visited the Center during its late construction stages and was impressed by the imagination of its designers in satisfying all conceivable requirements of modern mass assemblies, in surroundings of a virtual desert and technical backwardness. When the buildings are finished they probably will approach the design, in terms of techniques, modern materials and usability, of London's Royal Festival Hall. But I noticed that there was something strangely familiar about the overall appearance of the Convention Center, which was foreign to the place and perhaps to the purposes intended. I finally realized that, in plan and in mass, its main structure follows the design of the United Nations Assembly Hall in New York — a design which may or

S. R. Mozes



Above: the Histadruth Building, Haifa, headquarters of the Israel General Labor Federation; Al Mansfeld, architect. Bridge joins second floor to higher-level street. Below: the Solel Boneh Building, branch headquarters of largest trade union construction organization; Dov Karmi and Arieh Sharon (NPB head), architects

may not be suitable to a city like Jerusalem, thousands of miles away, and to the use of the newly "ingathered" people of Israel.

The open-air amphitheater adjoining the Congress building was designed by L. Krakauer, an architect in Haifa. It is expected to play a spectacular role in the formal opening of the Center, scheduled for 1953.

A near-by hill, now called Mt. Herzl, is the site selected for a memorial to Theodor Herzl, founder of modern Zionism. An international competition for the design of a memorial tomb was held, and judged by an international jury which included Prof. Percival Goodman of Columbia University's School of Architecture. From the 63 plans submitted by architects and sculptors from 11 countries, the design of Joseph Klarwein of Jerusalem (a professor in the Haifa Institute of Technology and now executive architect for the planning office of a new governmental compound in Jerusalem) was awarded first prize. Secondary prizes went to two Americans: Sumner B. Gruzen and Associates, mentioned above, and O. Nitschke, of New York.

Mt. Herzl is one of the principal attractions for visitors to Israel. The ascent to Herzl's grave from the city proper has been designed as an easy and comfortable incline overlooking the suburb of Ein Karem. Vast parking facilities will be provided at the foot of the mountain. There will be no tree planting above the plateau on which the Herzl monument is to be placed. Adjoining the monument area is an impressive new national military cemetery where Israeli soldiers who fell during the war of 1948 are buried.

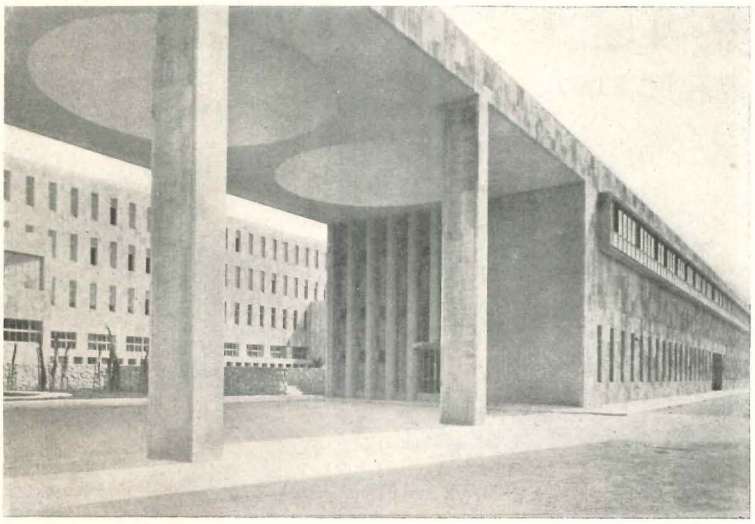
Another important public structure, just opened, is the imposing Zionist Organization of America House, designed by architects Ibn Gabirol, Rosenblum and Dubnow. Situated near Tel Aviv's Civic Center, and covering 1½ acres, it is a spacious combination tourist center, club, restaurant, and public meeting and educational area for the use of Zionist workers from the United States and their Israeli associates.

In the field of medical buildings, considerable distinction has been won in recent years by Zeev Rechter, already mentioned in connection with Jerusalem's Convention Center. Mr. Rechter has planned two basic systems for hospitals. One is the so-called "concentrated plan" which he applied in the tuberculosis hospital in Kfar Saba, the regional public clinic in Petach Tikva, and the Elisha Hospital on Mt. Carmel in Haifa; the other is the "spread plan" of the Kupat Holim (Health Insurance) General Hospital at Rehovoth, expected to be finished within a few months.

The Rehovoth hospital seemed to me to be a most imaginative and advanced medical establishment. It consists of free-standing independent one-story buildings, each designed for a different hospital function, and connected with its own parallel surgery section — from administration quarters and research center through maternity and pediatrics, to general kitchen and service facilities. All buildings are joined by two-leveled covered walks permitting direct access without cross-traffic.

Another medical building which particularly impressed me was the nursing unit planned for the new University-Hadassah Medical Center hospital in Jerusalem. Designed by Joseph Neufeld, this unit is based on the idea that the entire nursing core of the hospital will be on the average not more than 50 ft from the farthest patient's bed.* The Center, now still in the planning stage, is to be composed of three major units: new quarters for the Henrietta Szold School of Nursing; the 430-bed Rothschild-Hadassah University Hospital; and the University-Hadassah School of Medicine, which only recently began partial operations in temporary facilities. *(Text continued on page 370)*

Courtesy Israel Office of Information

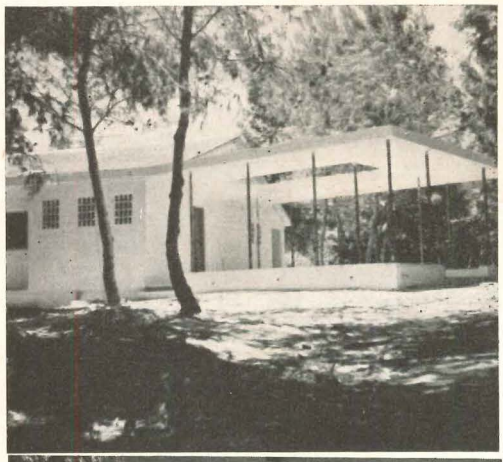


S. R. Mozes

Above, left: Hadassah Medical Center, Jerusalem, by Joseph Neufeld, is surrounded by Arab sections, hence closed to Israeli use. Above, right: 700-bed main building of Belinson Hospital, Petach Tikva; Arieh Sharon and Benyamin Yidelson, architects

* *See ARCHITECTURAL RECORD, Aug. 1951, p. 14.*

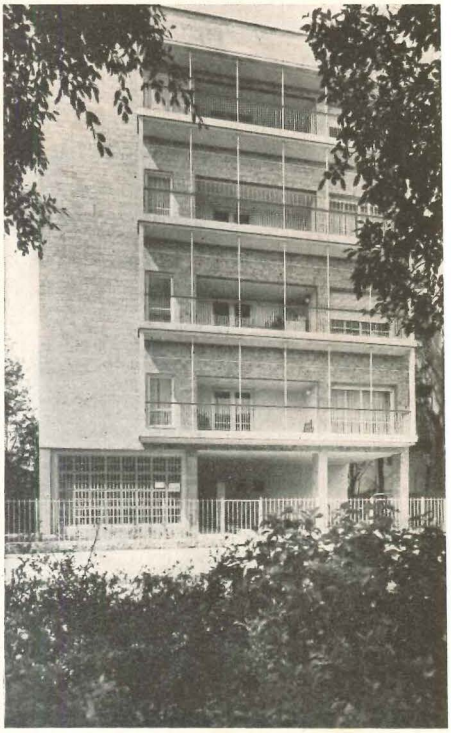
Nursery in En Shemer, designed by architects of Rural Collective



High school and military fort, Mishmar Haemek; Joseph Neufeld, architect

S. R. Mozes

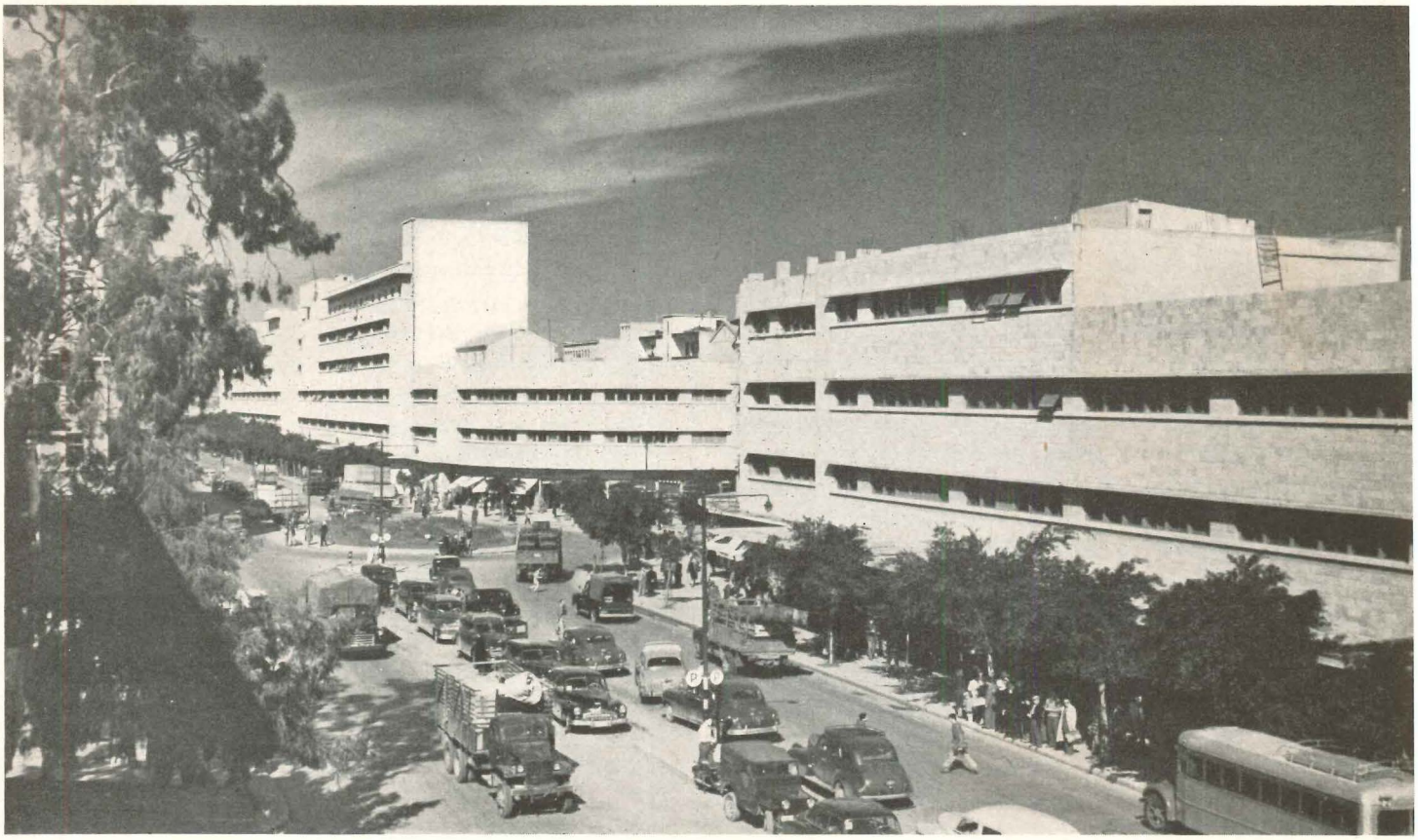
I. Kalter

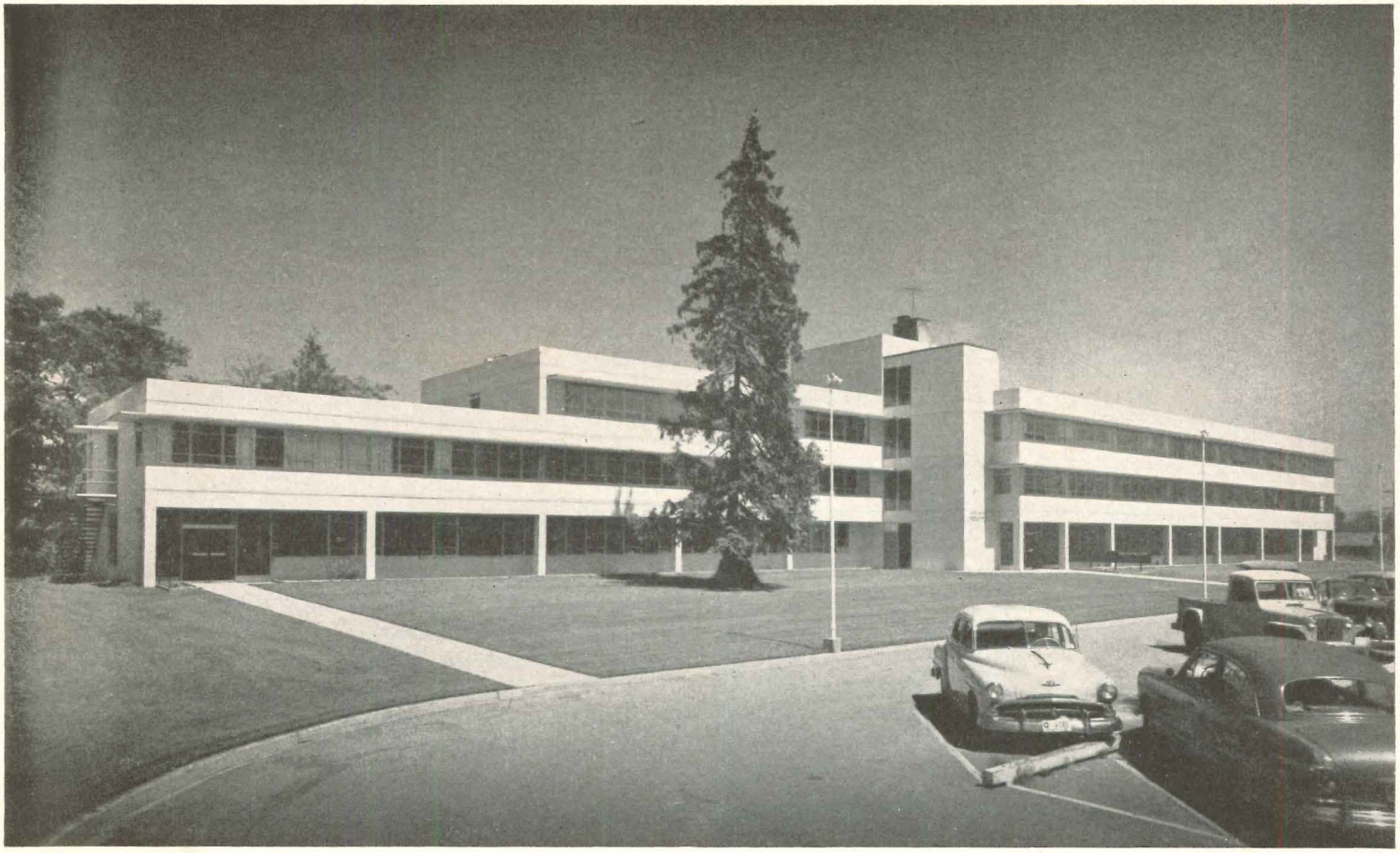


Above: another Tel Aviv apartment house by Dov Karmi; balconies are another typical feature of Israeli apartments. Below: business center in Haifa

Open corridor of boys' dormitory in En Shemer, by same Rural Collective

Apartment house, Tel Aviv; Dov Karmi, architect. Open ground floor is typical





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100-BED GENERAL HOSPITAL ON 150-BED CHASSIS

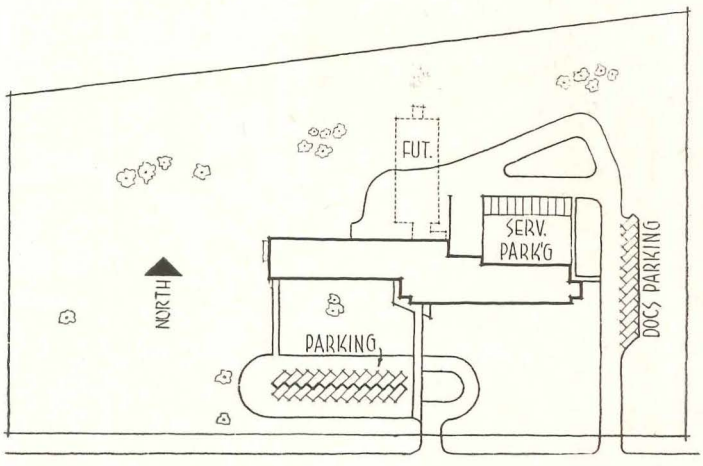
Olympic Memorial Hospital, Port Angeles, Wash.

Gerald C. Field, Architect

THIS HOSPITAL was a long time in the building; it was in 1862 that the site was reserved for hospital purposes, when the federal town site of Port Angeles was established by act of Congress, signed by President Lincoln. If delayed in realization the original foresight was good: the hospital was badly needed, and the site proved an excellent one. Each patient room gets some sunshine during the day, and each has an inspiring view of the Olympic mountains or the Straits of Juan de Fuca.

The building follows what almost amounts to standard practice these days, in that it anticipates the addition of an additional 50 beds (it has 100 now) without enlargement of its basic facilities.

The scheme uses double-loaded corridors — patient rooms on both sides — to a certain extent. The offset wing disposition was to maintain the required separation of medical and surgical nursing wings on the second floor, the maternity and operating suites on the third floor, and the adjunct facilities, administration and



Majority of patient rooms are on south side, have protection of 4-ft concrete sunshade; first floor is recessed 5 ft

Building is of reinforced concrete throughout, with slab floors and walls. Color in pastel shades has been used within and without. Draw curtains, behind the continuous aluminum windows, were chosen to give color accents

dining rooms and other services on the ground floor.

In this hospital there is perhaps more separation of adjunct facilities than in many others, for the reason that the out-patient department is operated by the county and has its own examining and treatment rooms and laboratory, but has joint use of the hospital X-ray, E.K.G. and B.M.R. facilities. Health clinic has its separate entrance at the end of the first floor.

The building is of reinforced concrete throughout, including flat slab floors and walls. The ceilings in the patients' rooms are unplastered and are treated with textured casein paint. In other areas plastered or false ceilings are provided. Structural provisions were made for the addition of a wing at the center rear of the building, and the structure was designed for a fourth floor covering the entire area of the third floor.

The principal structural feature of the hospital is the flat-plate framing system. A 6-in. slab was used on the main floor, without drops or beams, to give a completely smooth ceiling, with obvious advantages to architectural, mechanical and electrical work. Steel installation was simplified by laying a mat of ½ in. round bars 12 in. on center each way in the bottom of the slab, with additional straight bars in the longer column strips. Top bars were all straight and placed to suit the bending moments. The moments were determined by frame analysis. A distinctive feature is the shearhead shown on the accompanying photograph. This was used at the columns with longer adjacent spans. It proved much more satisfactory than the crossed structural steel members formerly used by structural engineers and allowed the use of a thinner slab.

The cost of the hospital, including general, electrical and mechanical work which were let in three separate contracts, together with the architect's fees, amounted to $904,000, giving a cost per sq ft of $19.73; cost per cu ft, of $1.88. This includes driveways, parking areas, landscaping and all Group I equipment. Group II and III equipment cost $106,000.

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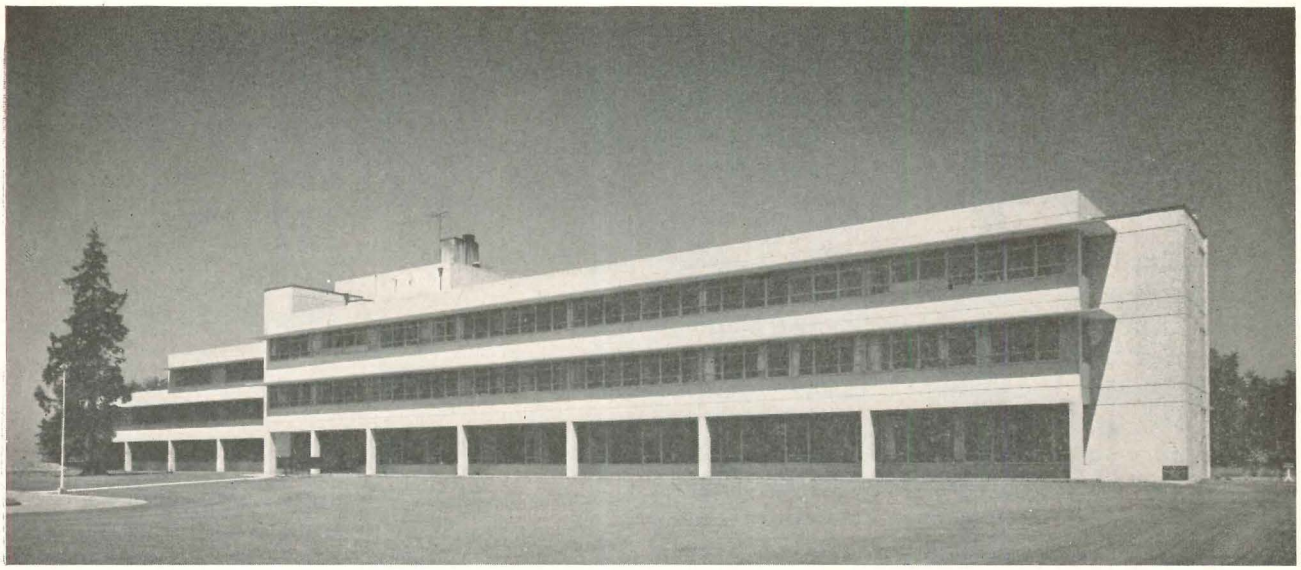

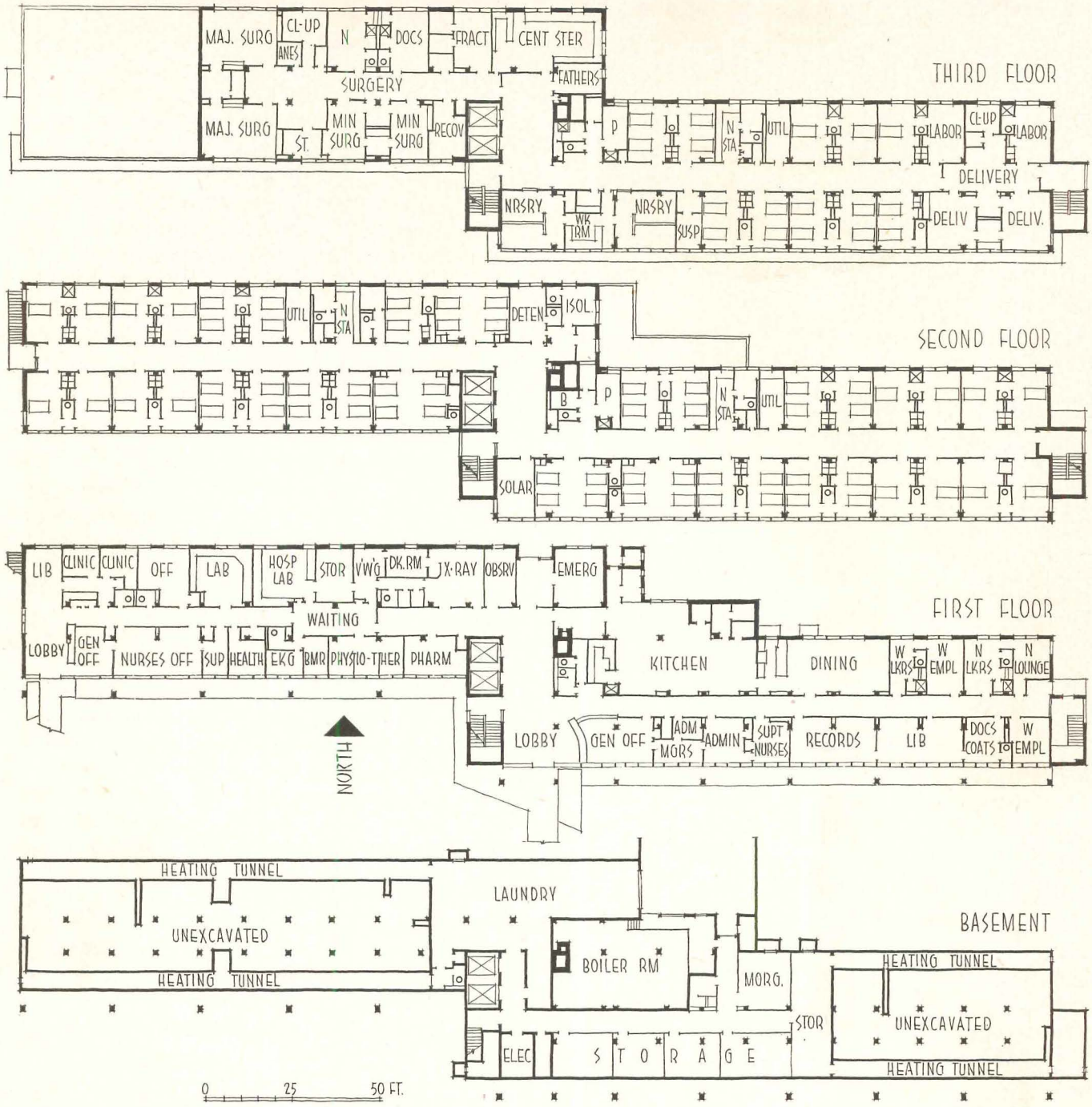
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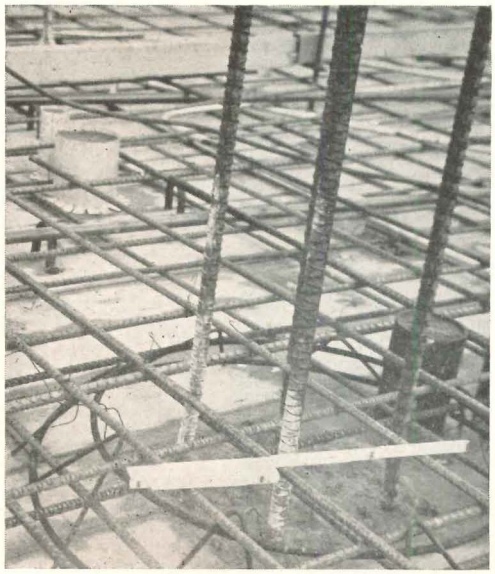
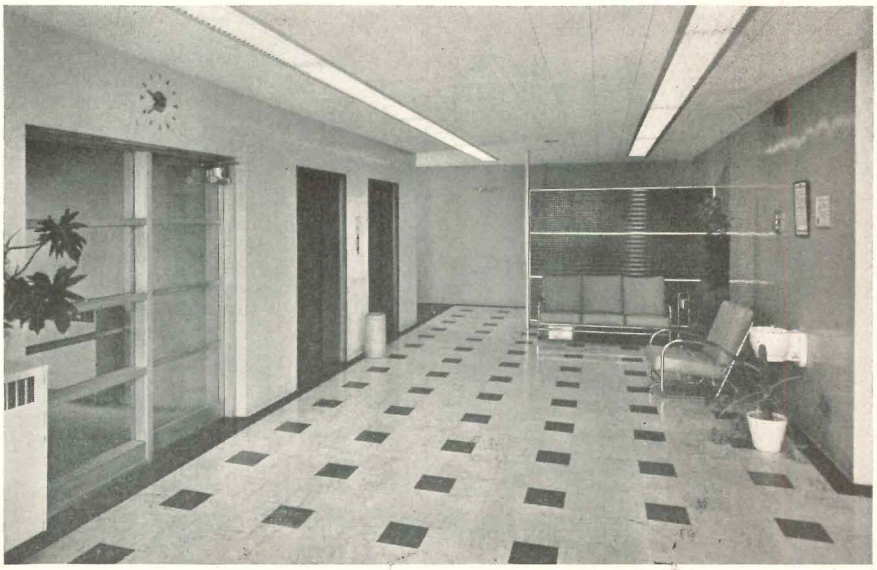
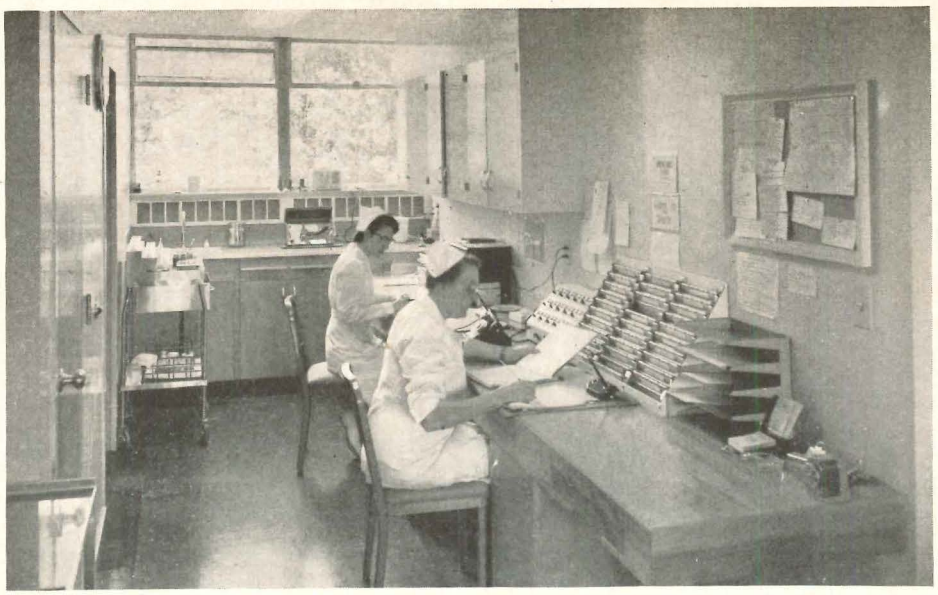




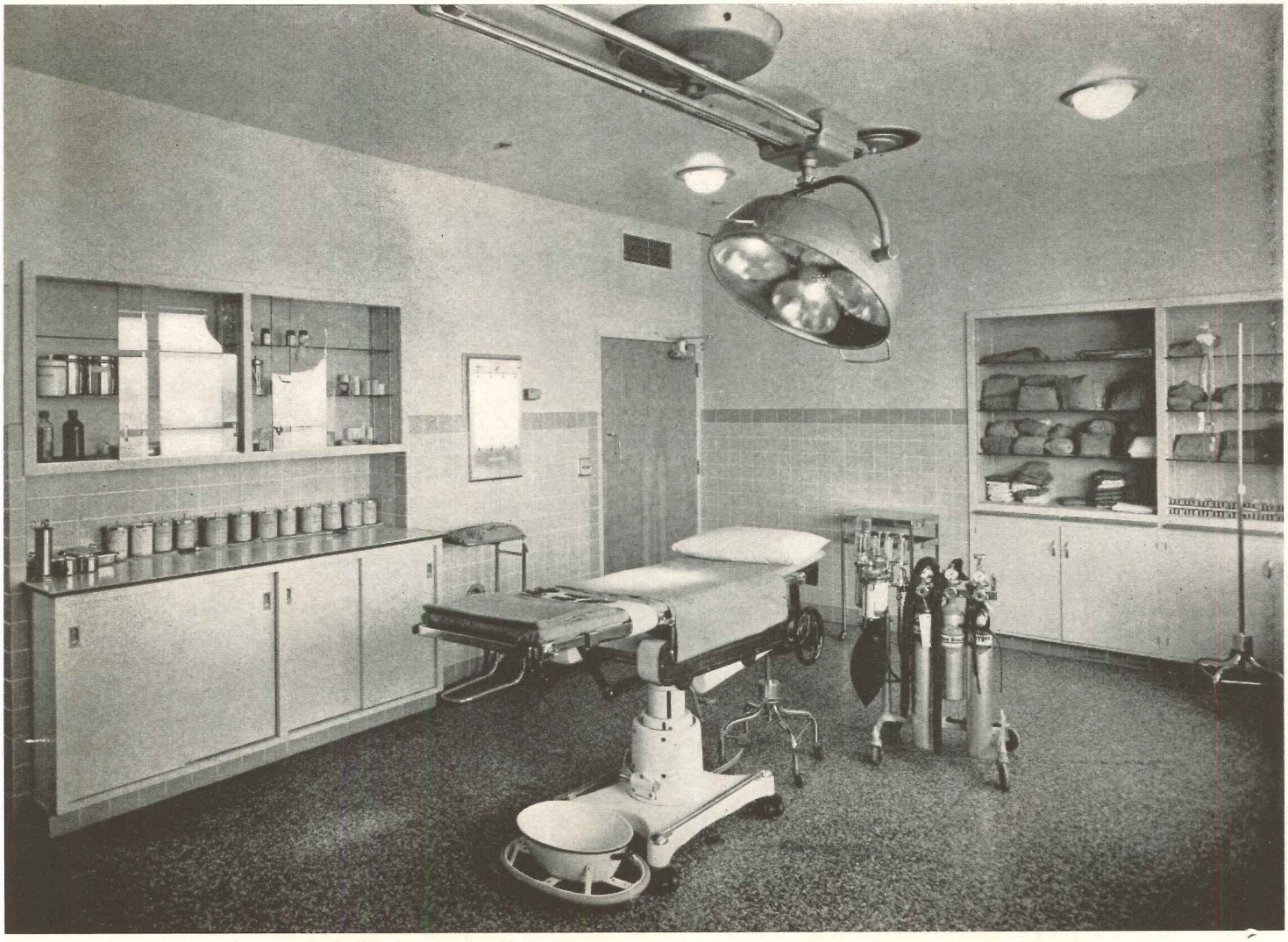


Nurses' station is near center of nursing wing

Patients' rooms are bright and colorful.
Nursery is entered only through work room

Kenneth S. Brown

Above, left: lobby and library of the health center, at west end of first floor, separately operated by the county. Above, right: one of the two laboratories, first floor. Below: one of major operating rooms



SHOWROOM AND OFFICES FOR STANDARD RUG COMPANY

Fort Wayne, Indiana

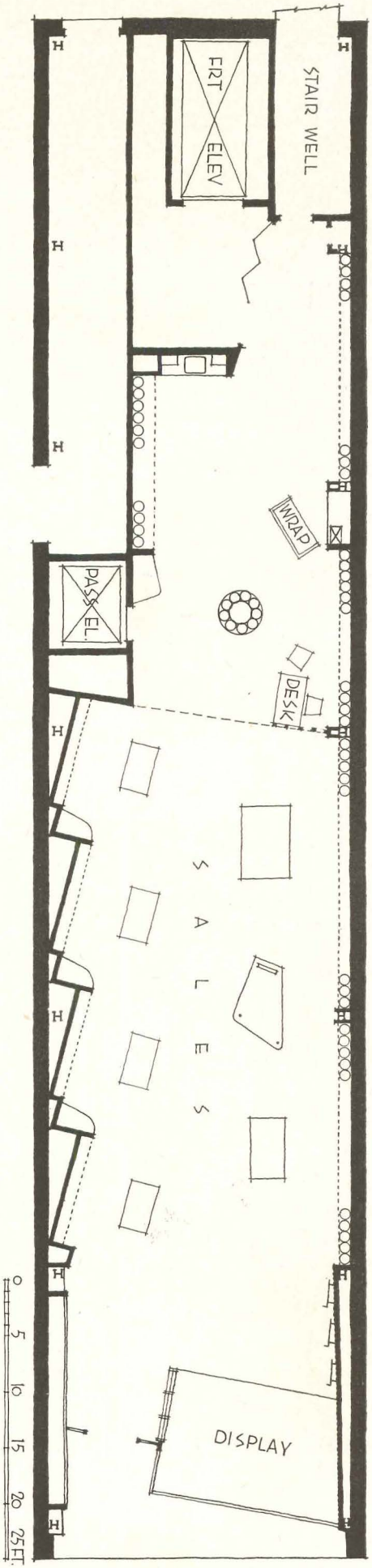
Sidney H. Morris & Associates, Architects
A. M. Strauss, Associate Architect

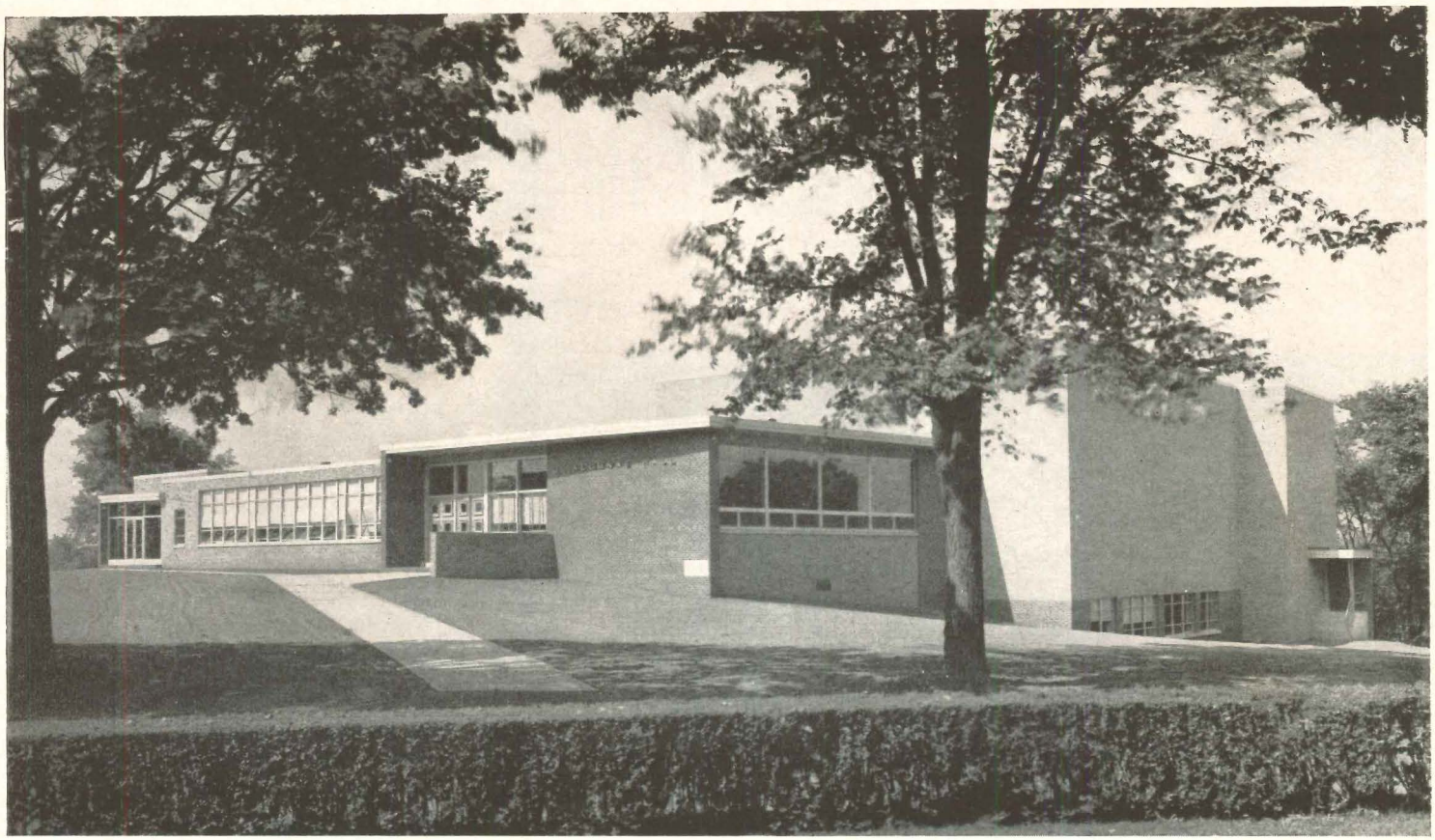
A REMODELED THREE-STORY BUILDING in a midwestern town is the new home of this company's showrooms and offices. The interiors have been designed to present merchandise in surroundings similar to those which will ultimately be used — even to installing a model kitchen on the mezzanine. The front of the building consists of a recessed glass window wall, and the area above the window display is fitted with a louvered ceiling, from which hanging elements may be suspended. One of the side walls has been coolly treated with Roman brick, a pleasant contrast to the warmth of the coverings. Trick lighting provides "drama spots" for highlighting those displays demanding special attention. Walls have been left unadorned to create a neutral background for the various displays — an important feature considering the variety of patterned materials to be found throughout the merchandise. Linoleum, asphalt and rubber tile and scatter rugs are on the main level, which has linoleum flooring for serviceability and also to illustrate its overall appearance. The second floor contains carpet displays, with furniture groups forming suitable backgrounds. Wash rooms are also located on this floor. The contract department on the mezzanine is convenient to showrooms above and below. The entire basement has been given over to storage space, and that part of the third floor not occupied by offices provides additional storage facilities.

First-floor plan, right, indicates extremely long and narrow floor space and how otherwise monotonous wall lengths have been broken by angular placement of display tables and cases

Hedrich-Blessing Studio

Top photo shows second-floor carpet showroom, with displays in furniture settings as well as on rollers. Lower illustration is of mezzanine, which has railing of linoleum plaques to provide sales appeal and decorative effect





MULTI-PURPOSE HALL MEETS COLLEGE NEEDS

Alumnae Hall, Cedar Crest College

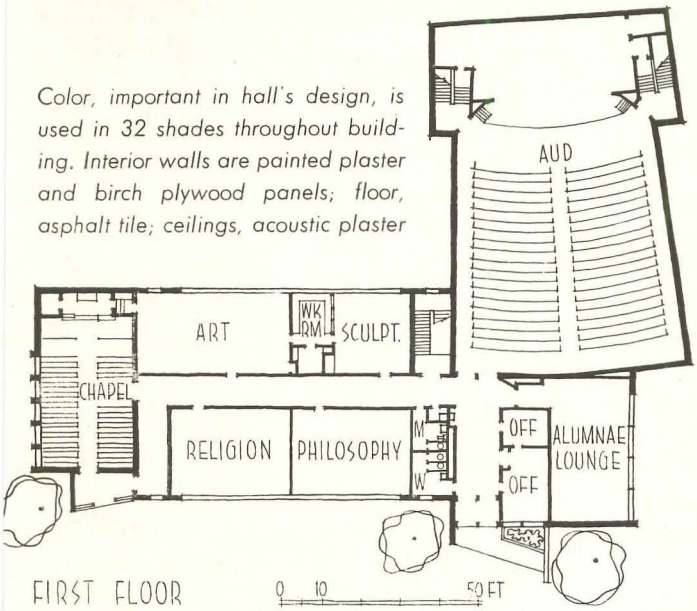
H. F. Everett and Associates, Architects

Although new hall broke with Cedar Crest's traditional architecture, exterior walls of buff brick were chosen to match brick of existing campus buildings. Doors and window sash are aluminum. Above: little theater

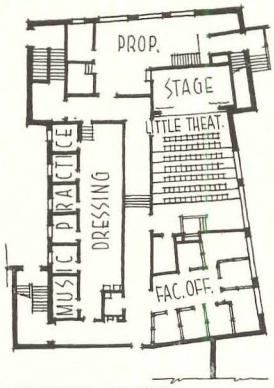
BY 1949 Cedar Crest, a small college for women founded in 1867 and located in the gently rolling country of Allentown, Pa., had outgrown its classrooms and dining-assembly-hall — and had only a limited budget with which to solve its problem. The solution — Alumnae Hall — is a story of the success with which a multi-purpose design not only met the need for both auditorium and increased classroom space, but also provided overdue student, faculty and alumnae facilities. A sloping site on the 104-acre campus was utilized for a two-level building combining auditorium, religion and philosophy classrooms, the art department, alumnae offices and lounge and chapel on the first floor. The ground floor, beneath the auditorium, houses a little theater, music-dressing rooms and faculty offices. Economy called for the low, utilitarian design of structural steel framing and steel joists with reinforced concrete slabs — a distinct departure from the traditional Spanish Colonial Architecture of the existing campus; harmony was achieved through exterior walls of buff brick matched with the buff of the earlier buildings. Cost of the 375,000-cu ft structure in 1950 came to approximately one dollar per cu ft. With the present enrollment of 364 students expected to increase to 500, the new flat-topped hall was constructed to support another story above the entire first floor.

gar T. Clewell

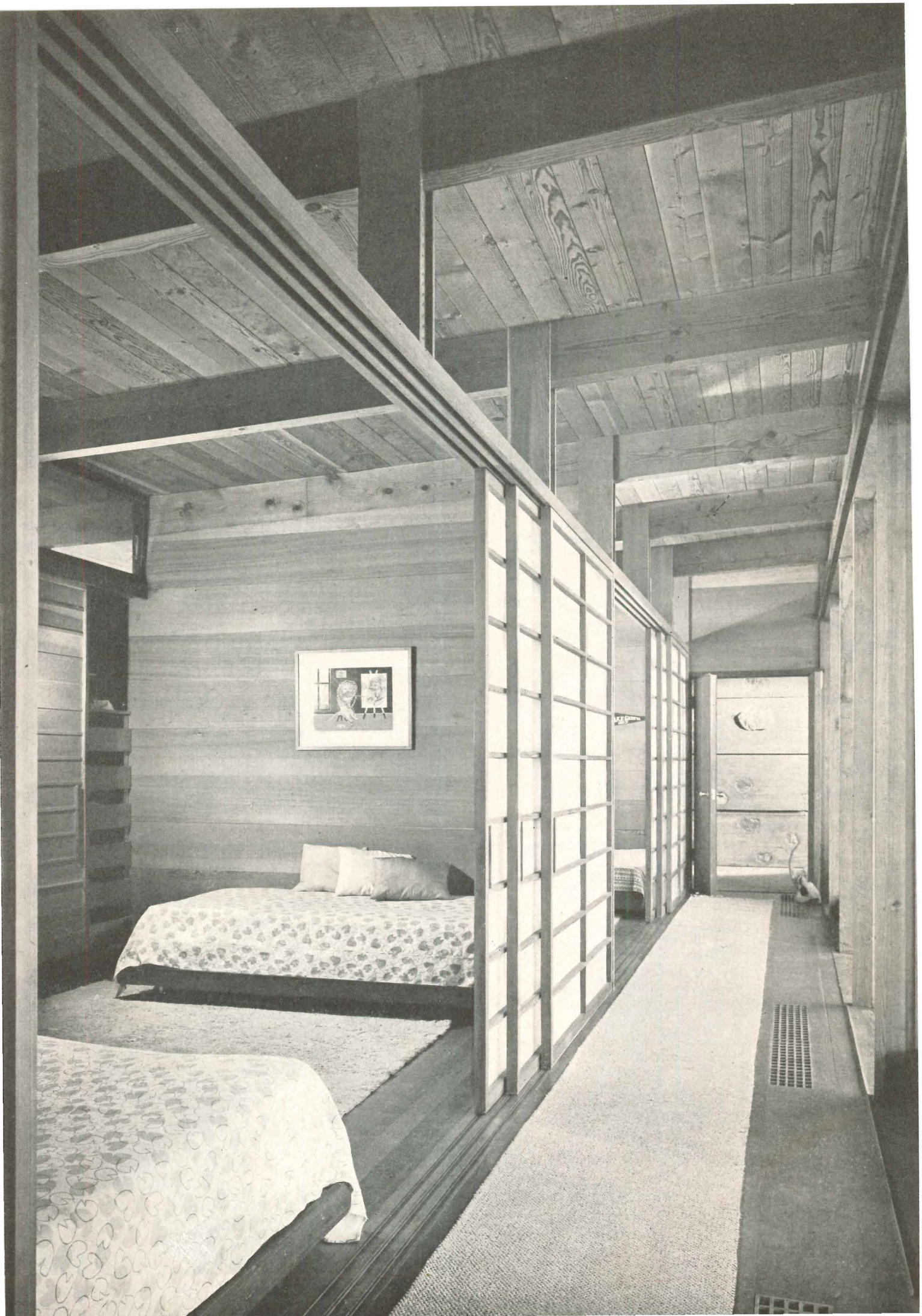
Color, important in hall's design, is used in 32 shades throughout building. Interior walls are painted plaster and birch plywood panels; floor, asphalt tile; ceilings, acoustic plaster

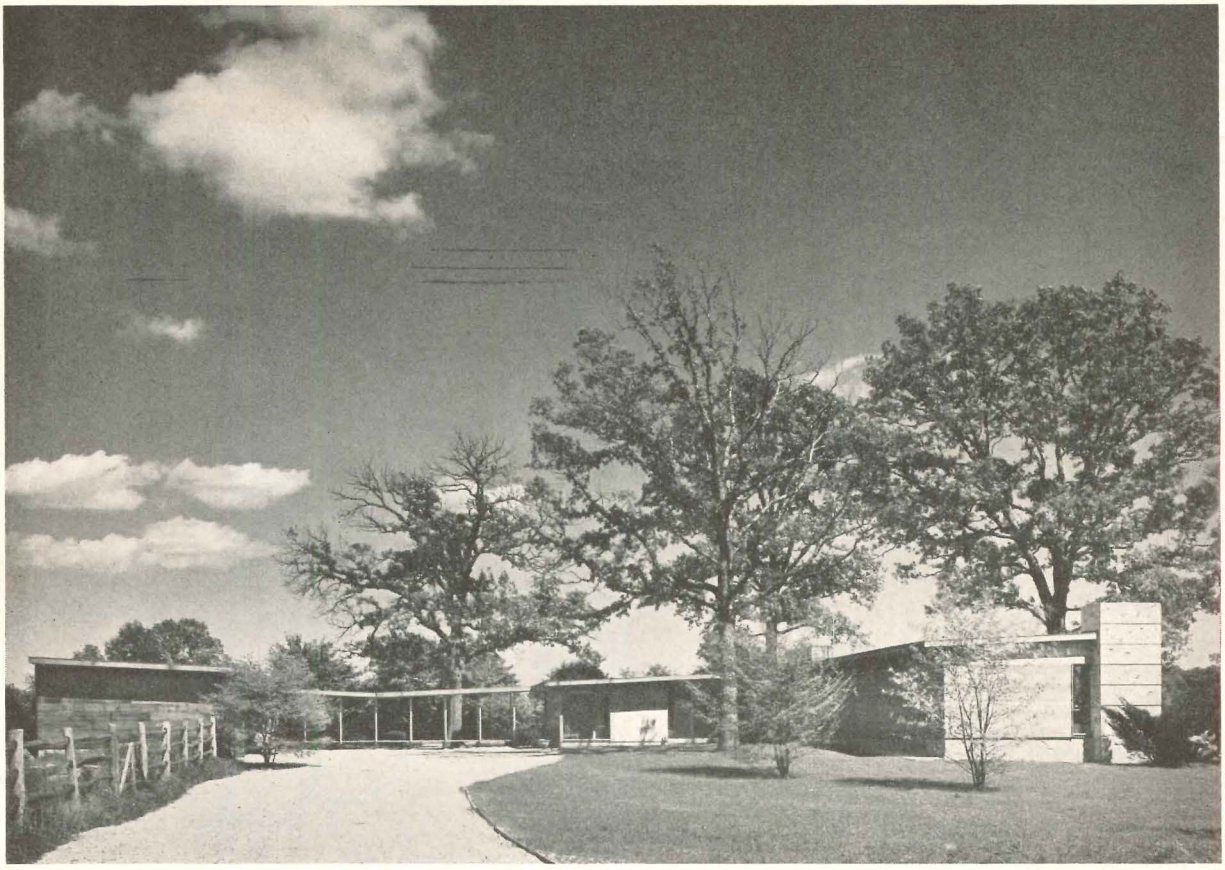


Auditorium (above) with 502 fixed seats and space for 100 or more movable chairs also serves Allentown's population



Rectangular Lees Memorial Chapel (right), seating 114, is furnished with walnut pews; tinted glass windows later will be replaced with stained glass





Bill Hedrich, Hedrich-Blessing

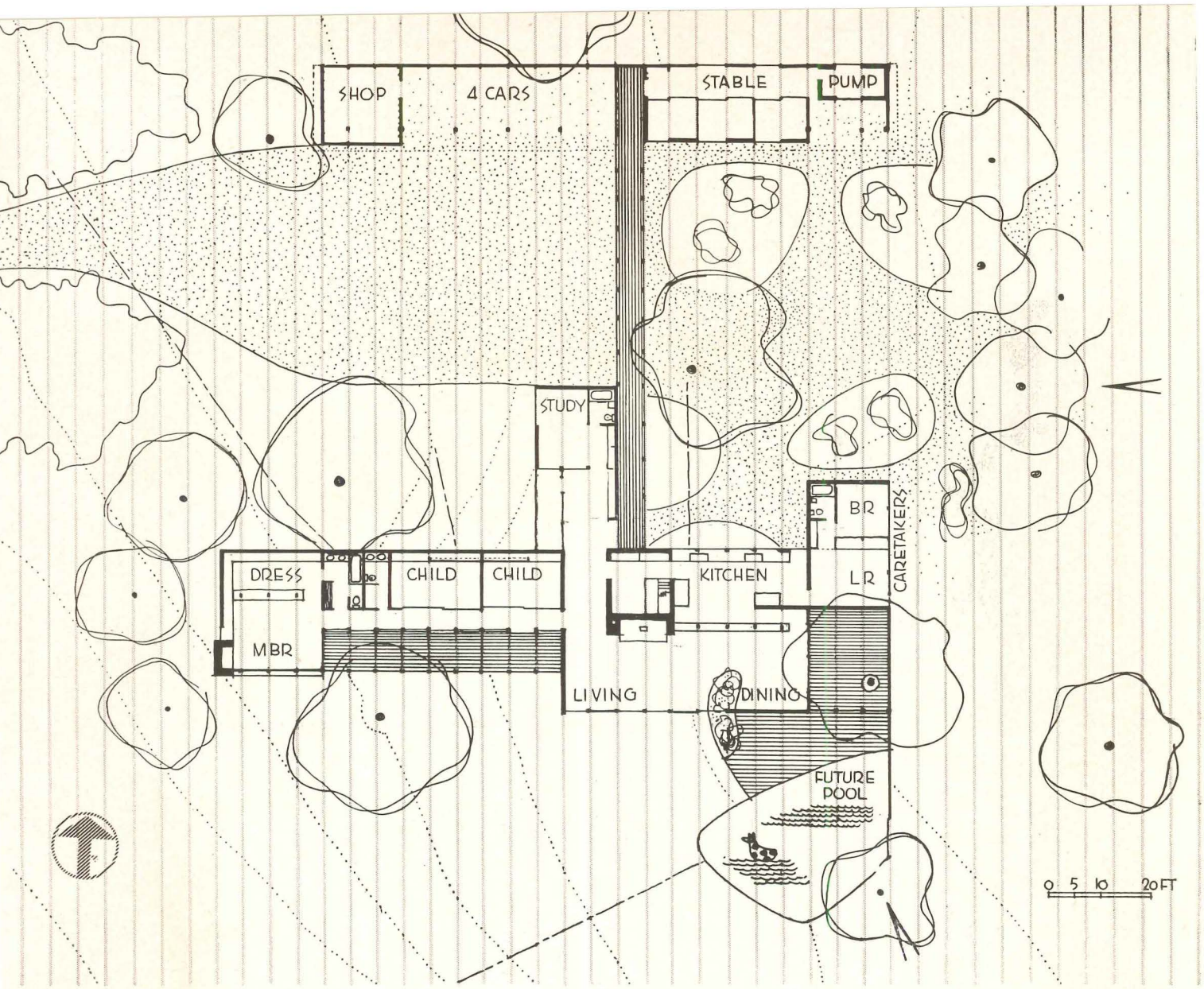
AN ARCHITECT'S HOUSE IN THE COUNTRY

The Winston Elting House, Libertyville, Ill.
Schweiker and Elting, Architects
Franz Lipp, Landscape Architect
S. R. Lewis & Associates, Heating Engineers

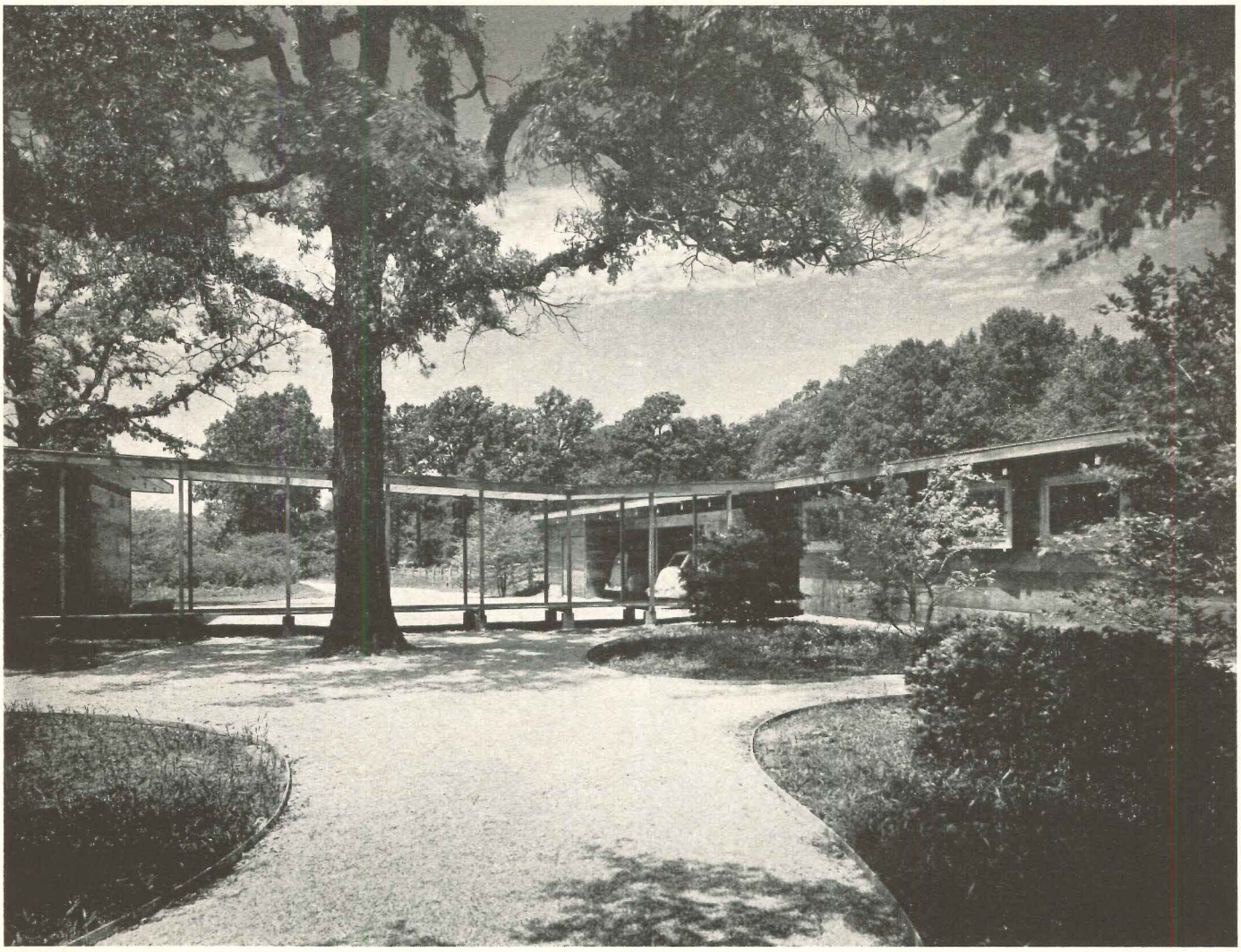
SEVERAL DECADES AGO we can imagine the design for a country house on a scale as large as this spending most of its resources in creating an impressive façade. Today, as evidence that the new architecture has begun to assert its philosophy, we see this big house quietly spreading out in an open, informal arrangement rather than rearing up to impress its neighbors and insult the landscape. Here we find a concern for a more sincere approach to planning, orientation, expression of structures and materials, with the emphasis on pleasantly informal country living and quietly expansive entertaining. The result is a house that skillfully identifies its owner with the rusticity of the countryside by way of a sophisticated contemporary design.

The owner says, "The decision to move from the suburbs and build in the country was made . . . not only because of a wish to participate in country life as much as a farm of 21 acres would permit, but also because of the opportunity for planning freedom and experimentation that an architect-owner combination permits."

The site was obvious to the owner from the beginning; a slight rise in the fields boasting four fine old oak trees. The approach from the west (above) reveals a gracious one-story house that reaches a lean finger out between



Bill Hedrich, Hedrich-Blessing



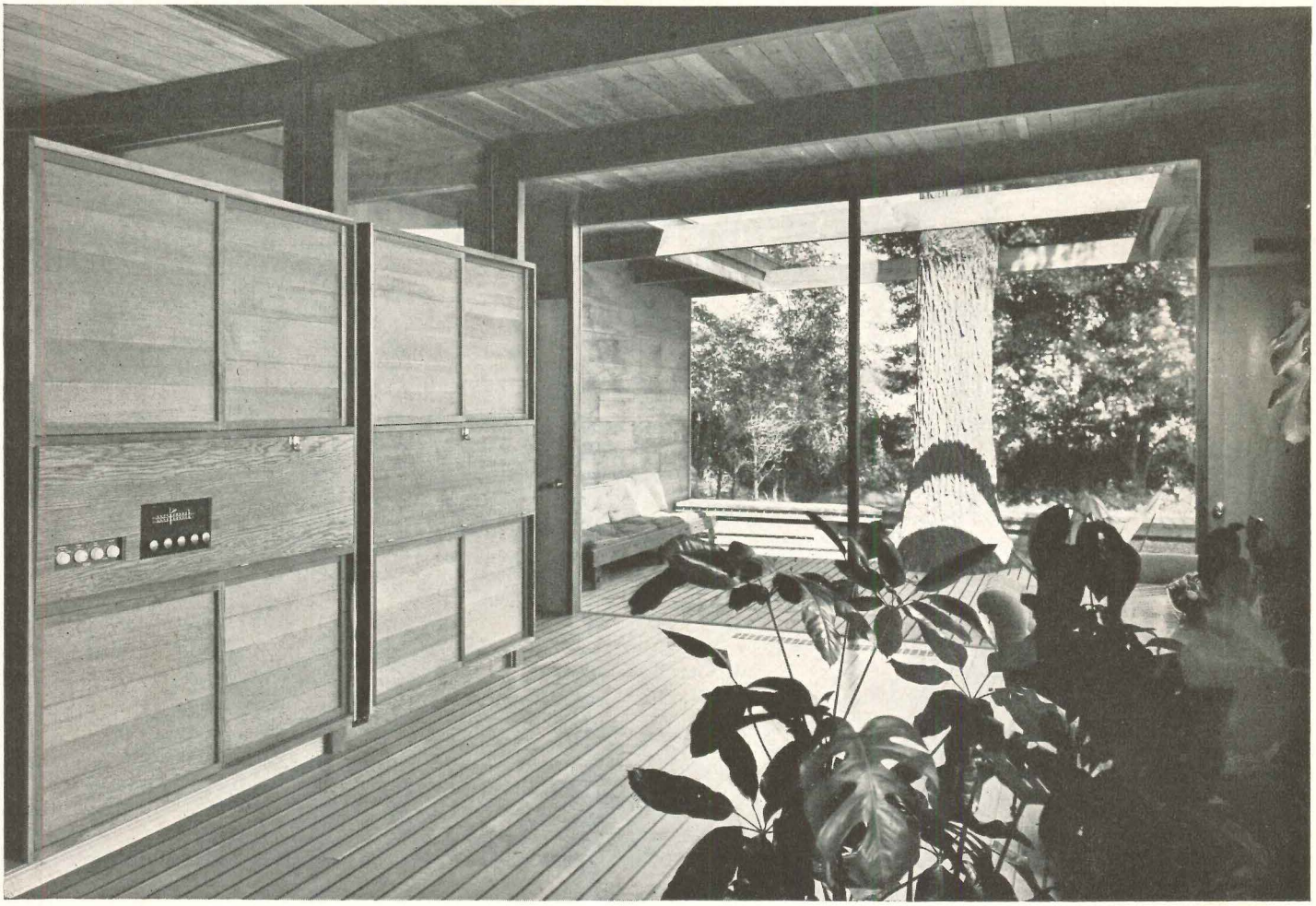
Left page: house from southeast looking towards terrace.
Above: covered walkway to the stable building at right

the trees to link itself with the low-lying stable to the north. This horizontality gives the structure a feeling of serenity and relates it subtly to the softly rolling meadowlands about.

The large photo on page 168 more or less synthesizes the interior character achieved; the open feeling, the exposed structure within its modular discipline, the natural wood ceilings, walls and floors. This theme is consistently repeated throughout, the wide use of wood being a personal choice of the owner which dictated the structure and to a lesser extent the plan.

The plan is organized about a structural system of beams and columns spaced 5 ft 4 in. on centers; is open and elongated in character, representing the culmination of the architects' development of the "outward-looking" plan, which includes the outdoors by open exposure rather than by making it an inherent part of the building itself. The main house is essentially a long east-west rectangle with south exposure, entered near its center. It features a 48-ft long area subdivided by an indoor-outdoor planting box into living and dining spaces which expand into a tree-shaded terrace which in turn will be flanked by a future pool. The bedroom wing, semi-closed on three sides, has large sliding glass panels opening to a covered gallery looking out over the meadows beyond. The servant couple's apartment faces east to a view and adds the bonus of pleasing orientation and privacy to its occupants' salaries. A study-guest

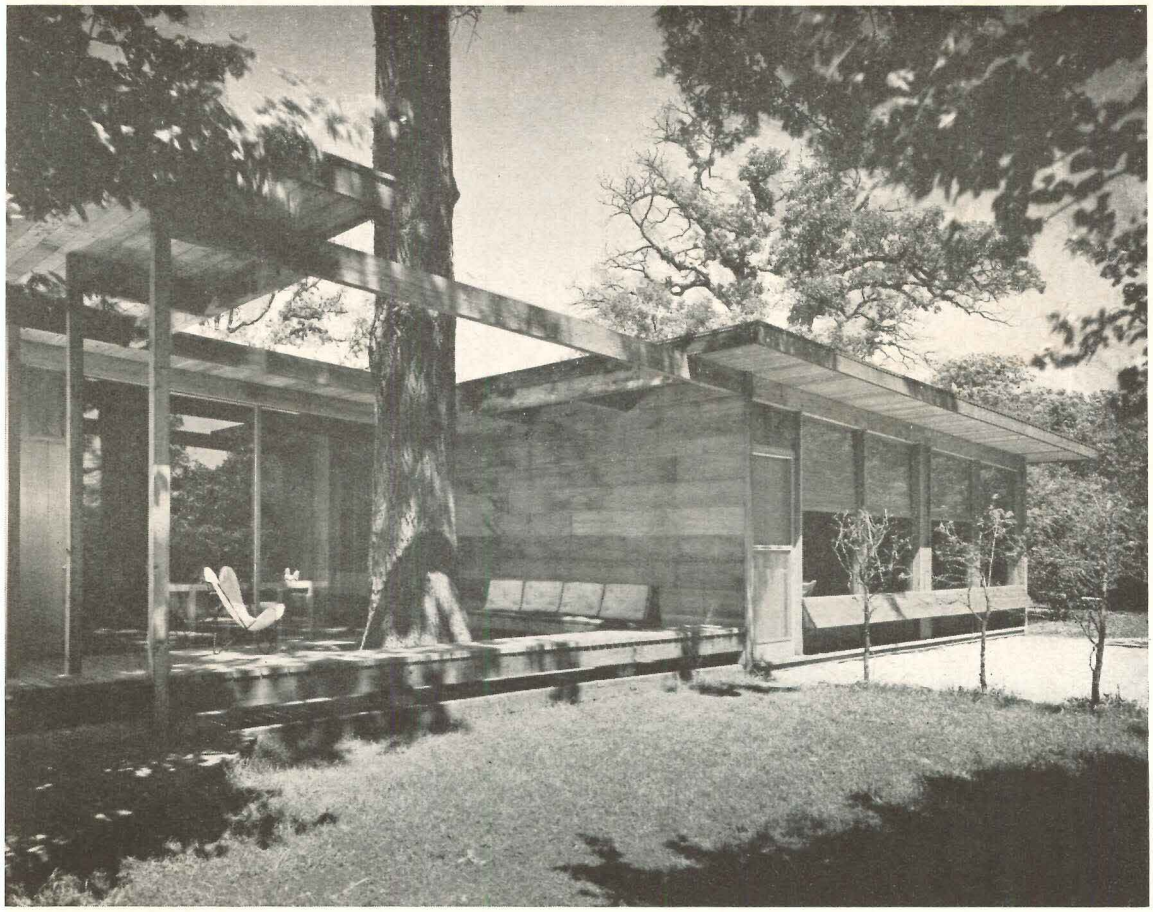
Living-dining room floor is 2 by 4 fir planks in natural finish separated by 3/8 in. fir strips stained dark. East terrace beyond and at same level has a floor of similar planks with open 3/8 in. joints. Resulting effect is the apparent continuation of floor pattern indoors and out



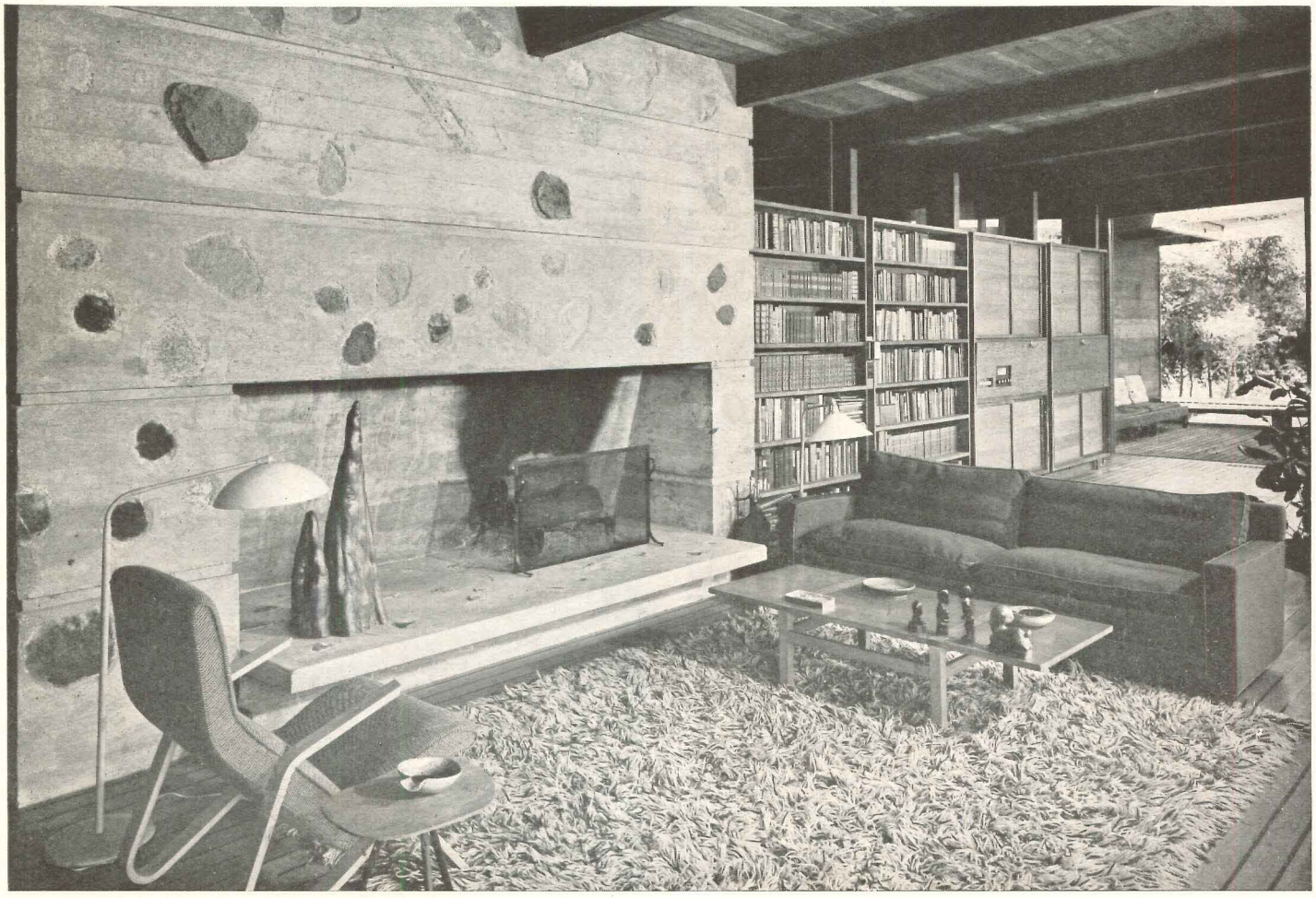
room and bath is located north of the entrance for privacy near the point where the 46-ft covered walk to the stable begins. The stable building houses stalls for three horses, a garage, car shelter, feed room, hay storage and pump house.

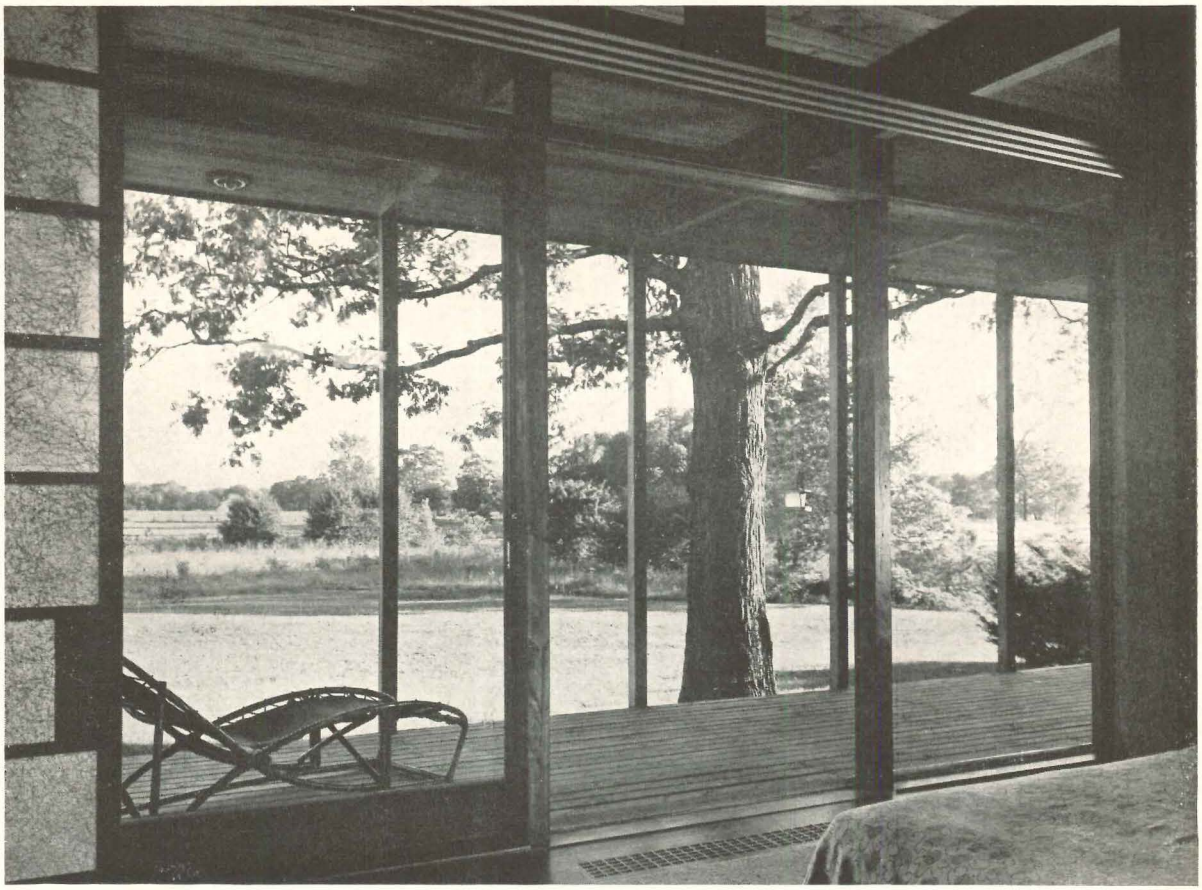
The exposed structural post and beam system is of Douglas fir timber with a 2-in. plank roof and finish floor, also of fir. Non-load bearing interior and exterior walls are of 1 by 12 rough-sawn redwood. All doors, millwork and built-in cabinets are of redwood. The terraces and covered walk have open plank floors. The built-up roof on plank insulation is topped by the same red gravel that is used for the entrance court and paths of the garden court separating house and stable. Split granite boulders were carefully selected and placed in the forms for the concrete fireplaces and chimneys to create a pattern furthering the relation of the house to the land. Fixed glass panels are double glazed; movable panels are plate glass.

Natural ventilation is achieved by sliding glass doors on the south exposure, bottom-hinged glazed sash to the north, and by hinged wood panels behind louvers in the master bedroom and servants' apartment. Heating is by low velocity forced warm air split into four zones, each thermostatically controlled, with individual outlets also manually regulated.

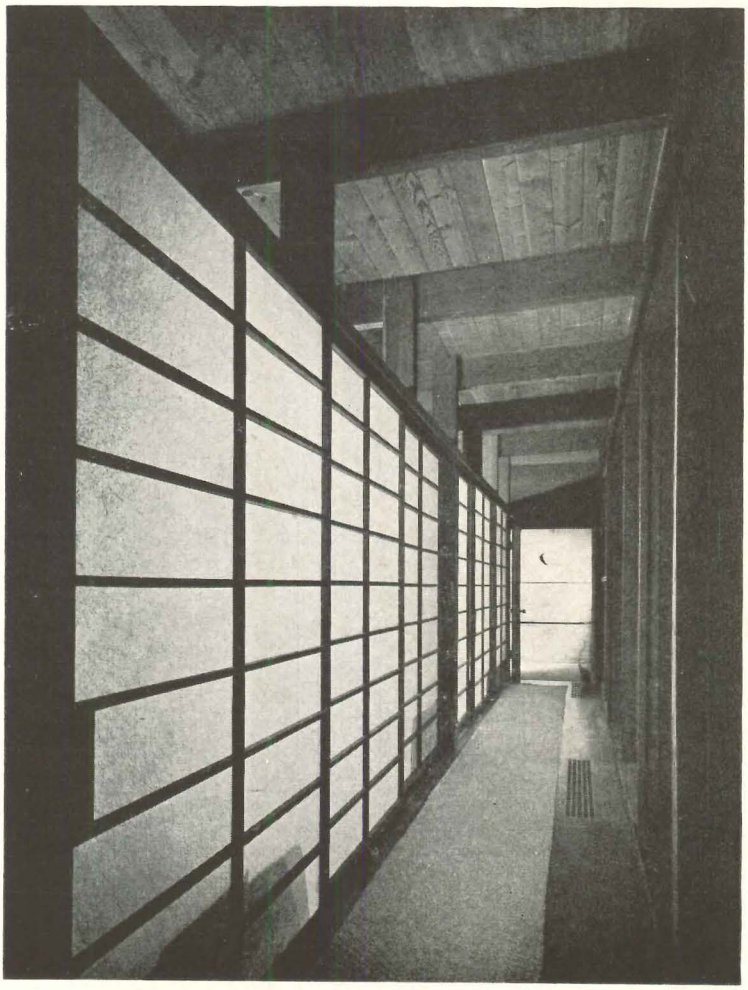


Bill Hedrich, Hedrich-Blessing





ARCHITECT'S COUNTRY HOUSE

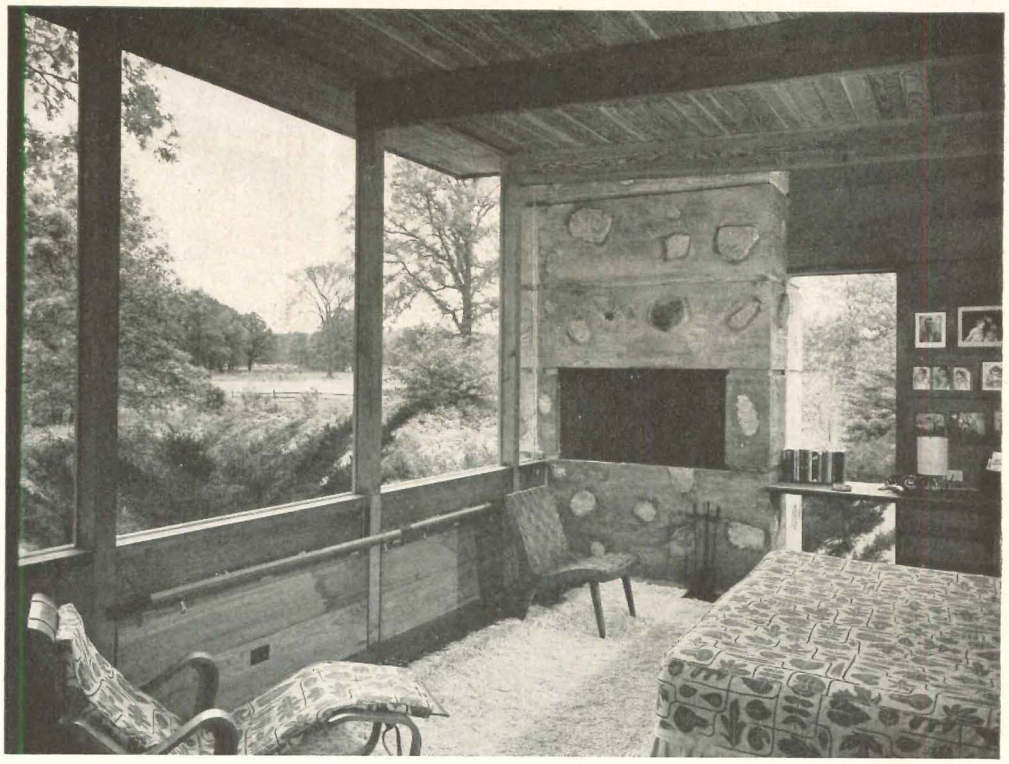


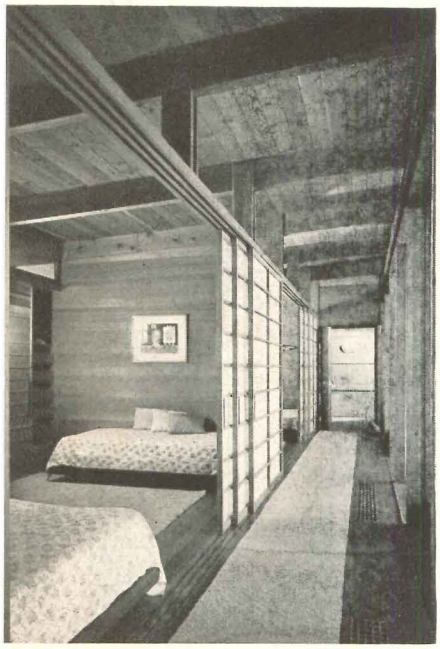
Above: view from a child's bedroom looking across gallery to the view

Right: large sliding translucent panels create the effect of two rooms which are separated from but still remain a part of the bedroom gallery

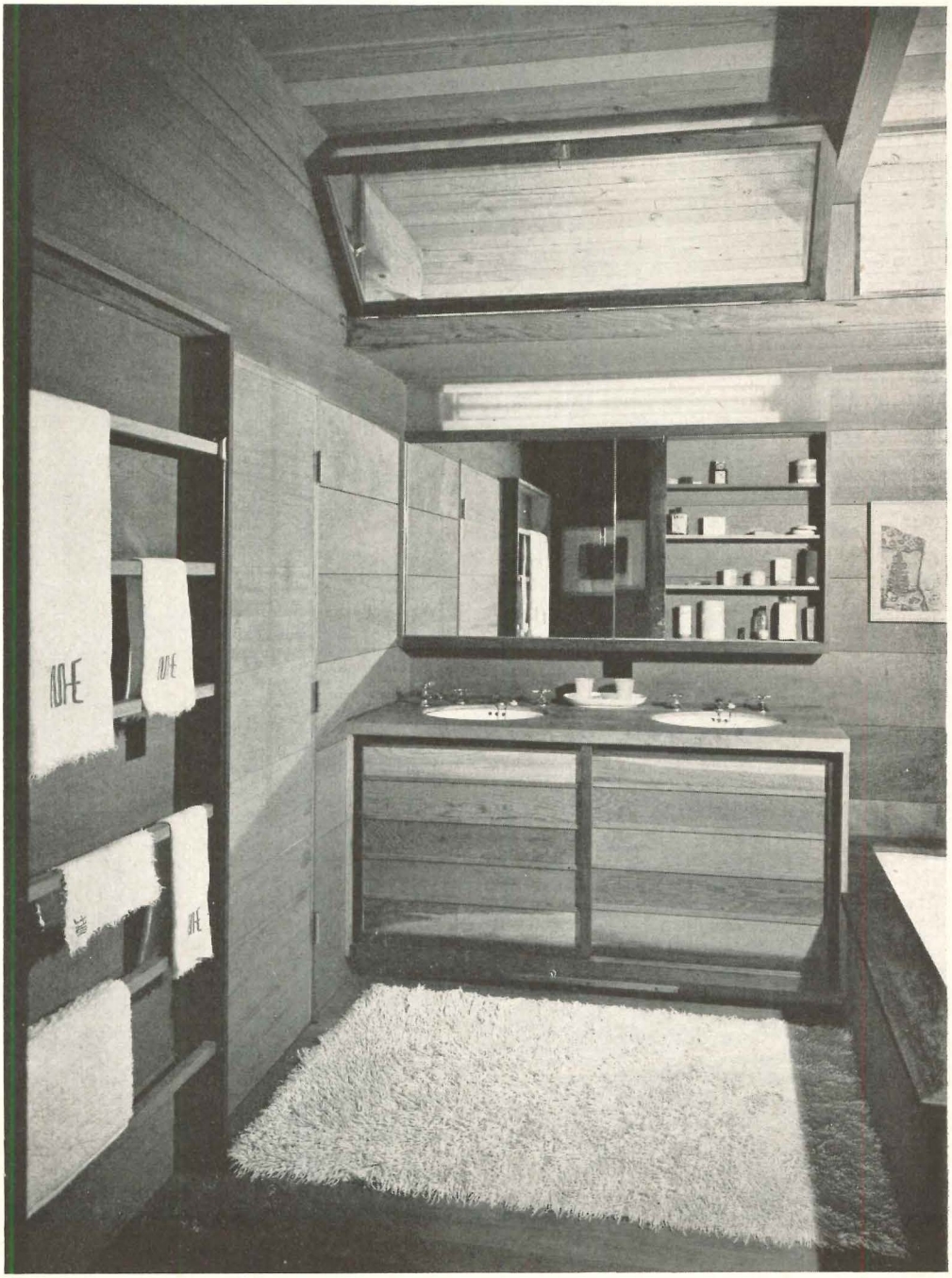
Right page, top: the master bedroom is ventilated by hinged panels below the fixed glass — contains its own fireplace and desk-dressing counter

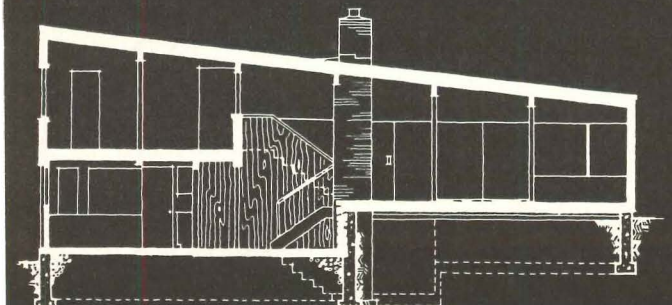
Right page, bottom: bathrooms feature redwood in natural finish. Thick slab containing recessed lavatories is moisture-resistant laminated maple





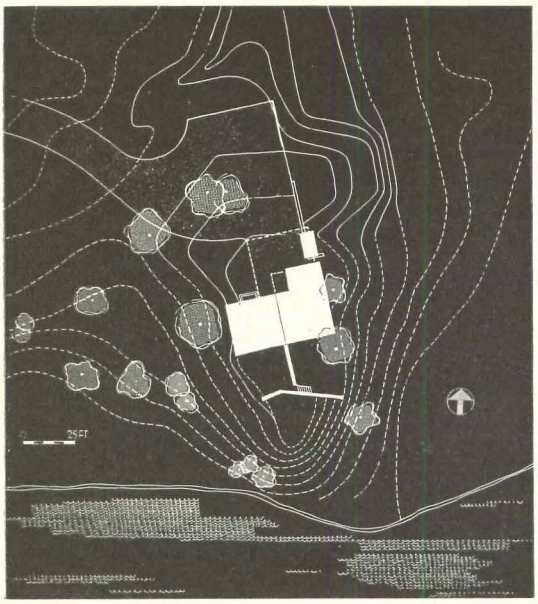
Bill Hedrich, Hedrich-Blessing





The natural slope dictated a split-level scheme, which creates pleasantly varied spaces under the simple roof pitch. From the middle level living room one can walk up seven risers to the bedroom gallery or down seven risers to the dining area

Tom Ballenger



Richard Garrison

A THREE-LEVEL HOUSE IN MASSACHUSETTS

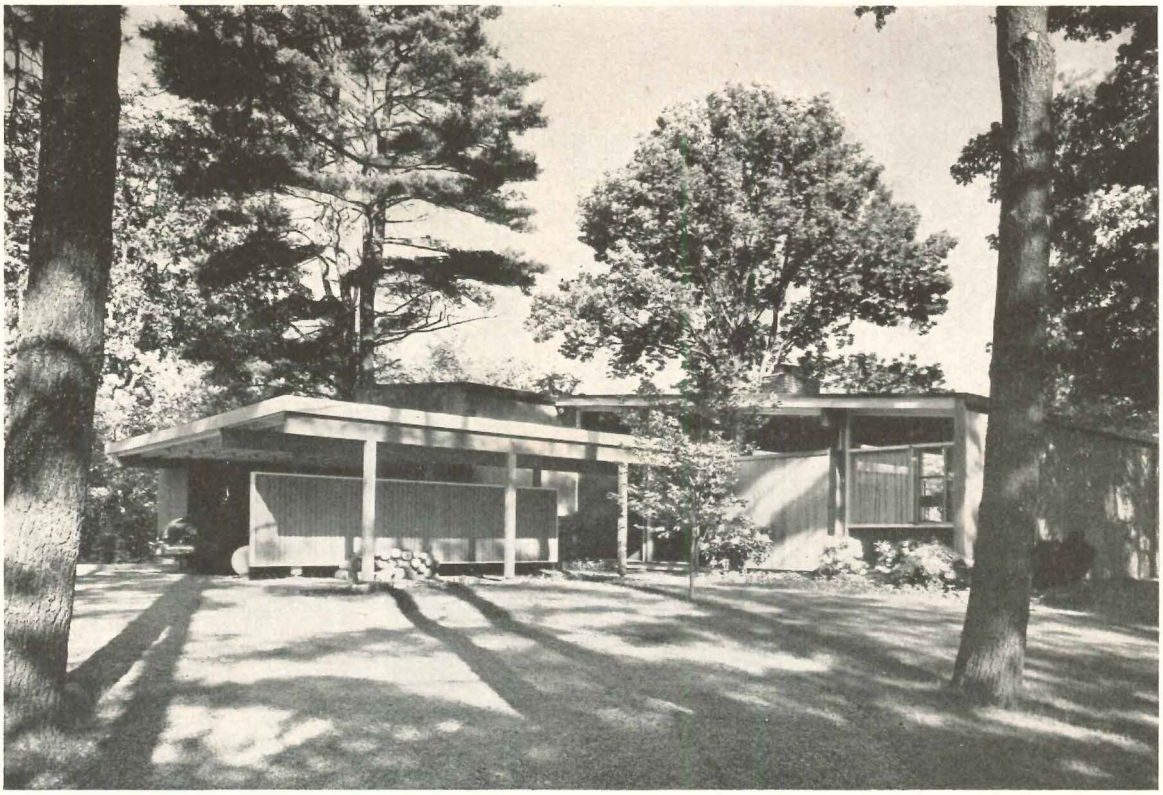
Hugh Stubbins, Jr., Architect

THREE NATURAL ELEMENTS — slope, woods and view — jointly influenced the shaping of this house in section. The site, dotted with tall white pine trees, is a small knoll falling gently off to the south towards a pleasant pond. Nearing the house from the west one sees the large flat roof over the carport and entrance approach. This dominant horizontal relates the house to the flatness of the pond and creates a strong contrast to the verticality of the pines as well as the trapezoidal shape of the main element of the house.

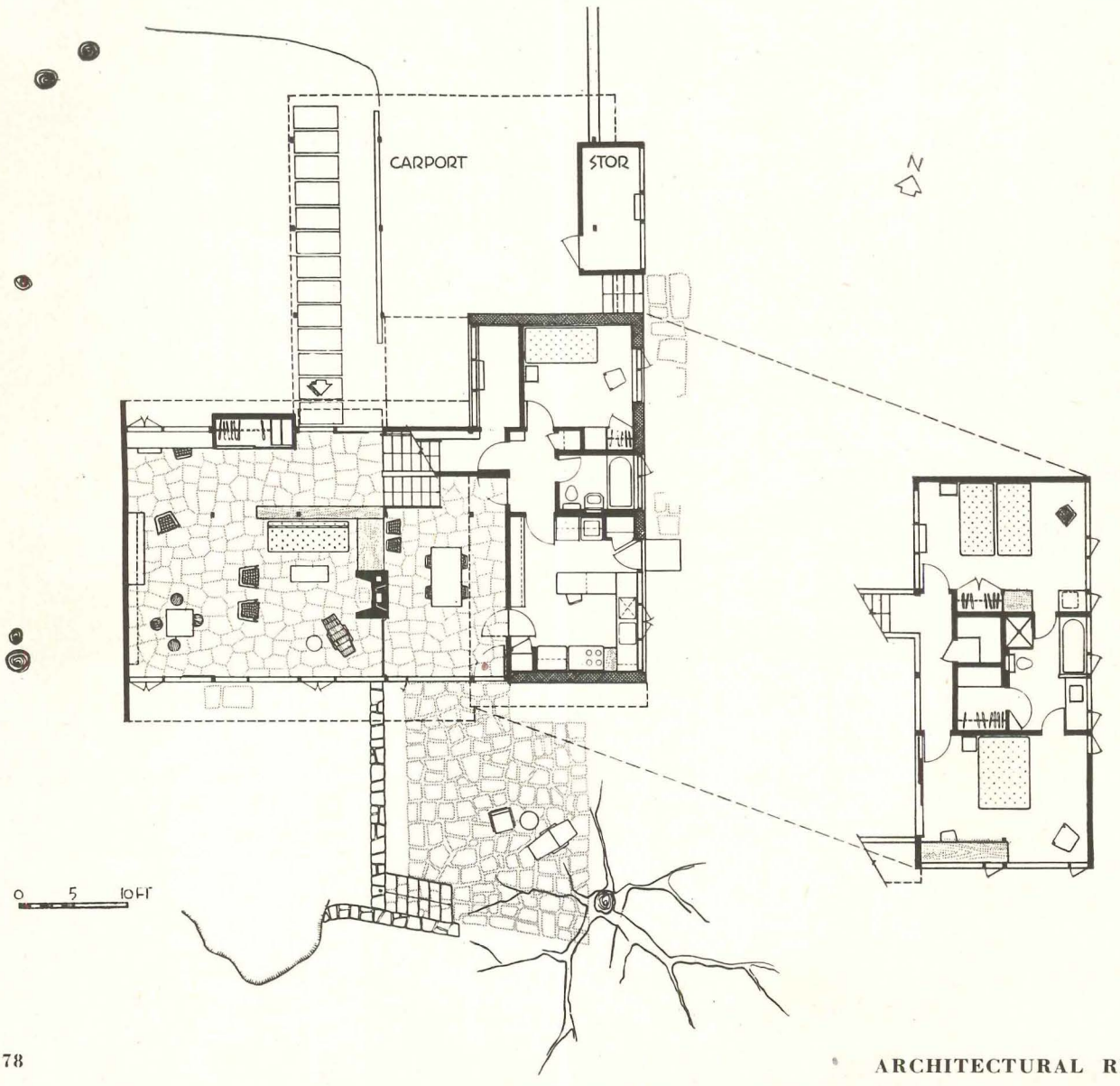
The land slope from west to east dictated the split-level arrangement of the principal rooms, which are disposed in an essentially rectangular plan sheltered by a roof that pitches to oppose the incline of the ground. Entrance is at living room level, which looks down on the view over the higher terrace. From this middle level one can walk either up seven risers to the bedrooms or down seven risers to the dining-kitchen area, which opens in turn to a lower terrace.

The resulting interior provides a sensation of great spaciousness together with visual change from one area to another; the whole pulled into unity by the canted plane of the roof above.

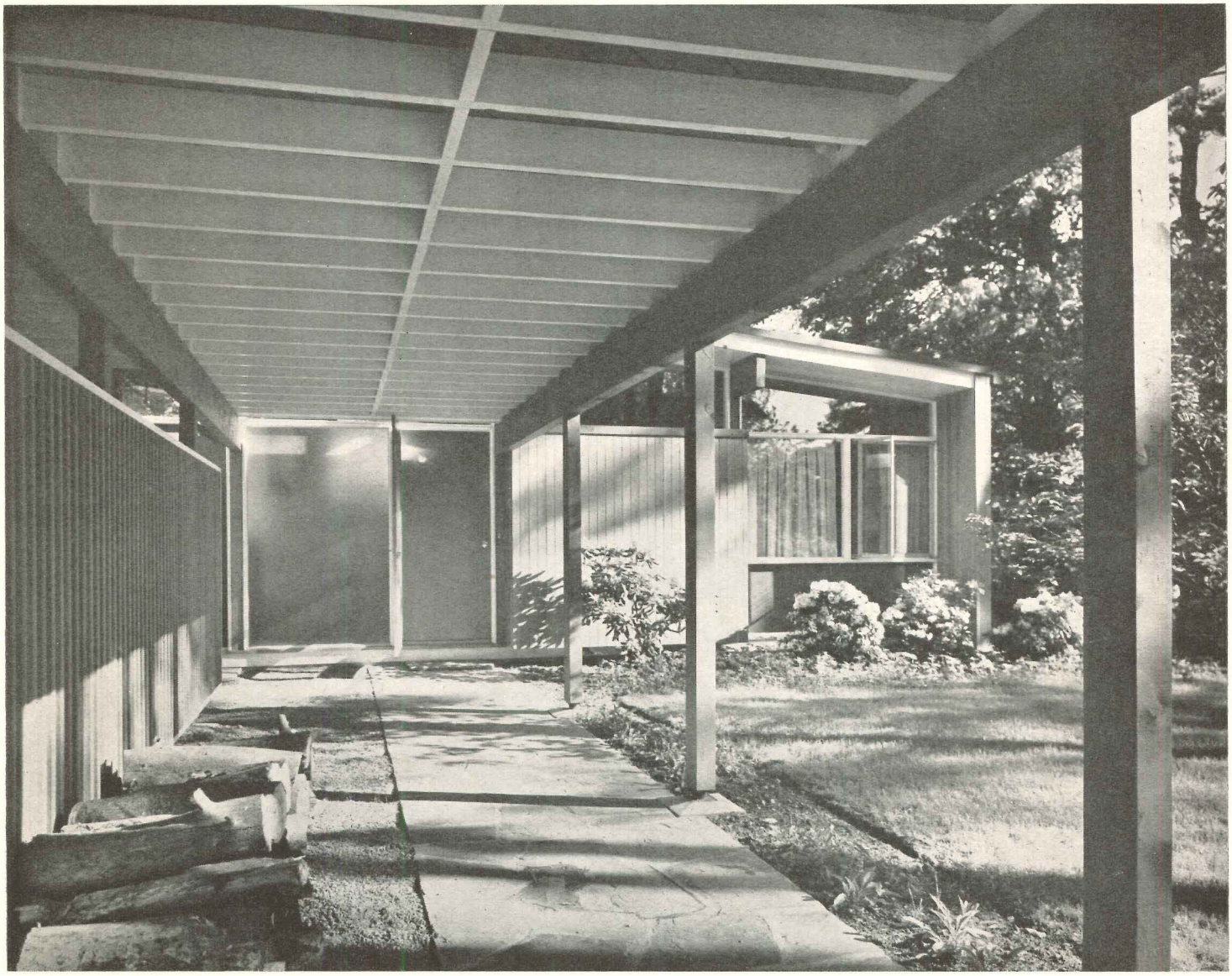
An eight-foot structural module is maintained throughout; north and south beams are 4 by 14s supported on 4 by 6 posts. The disciplined structural system is everywhere apparent, both indoors and out; its expression serves to make the concept more valid.



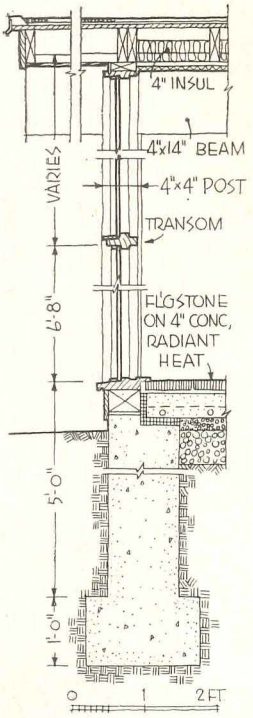
Richard Garrison



Under the carport and entrance shelter at the north side of the house, both the structure and its disciplined modular organization are expressed. Exterior walls are vertical redwood siding stained with creosote; fascias and frames for doors and windows are painted white. The entrance door is located at the middle or split-level and leads to the living area

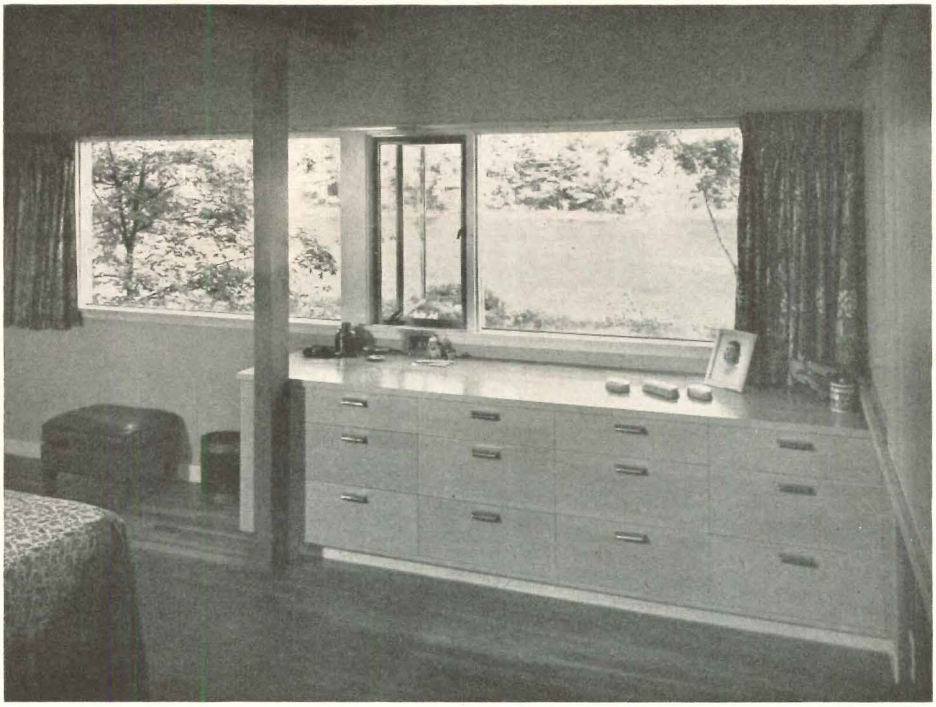


The architect's plan, left page, points up the open character of the interior of the house. Separations are achieved by visual blocks or by low elements with either glass or voids above. This results in a series of spaces that seem to interflow and expand, both vertically and horizontally

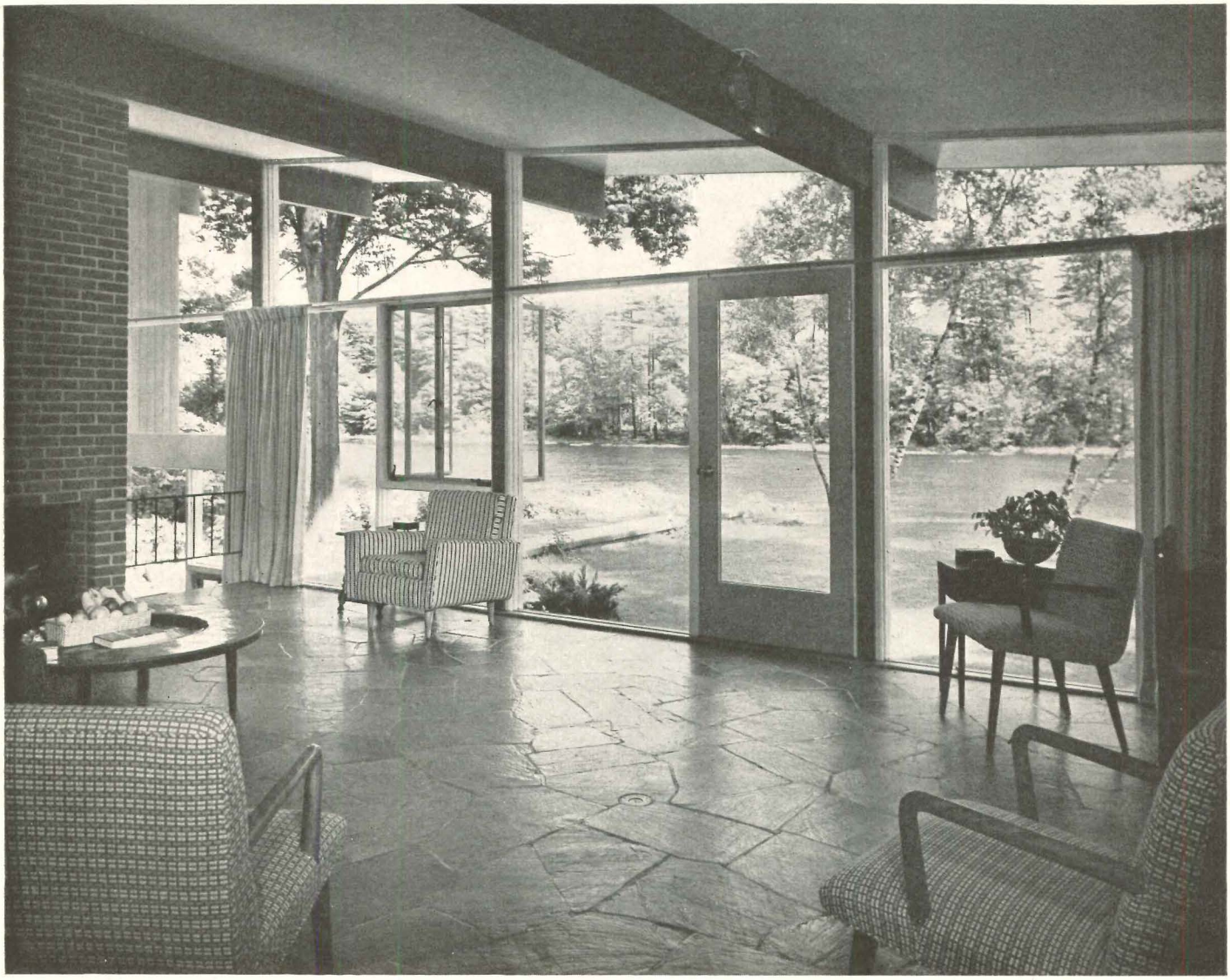


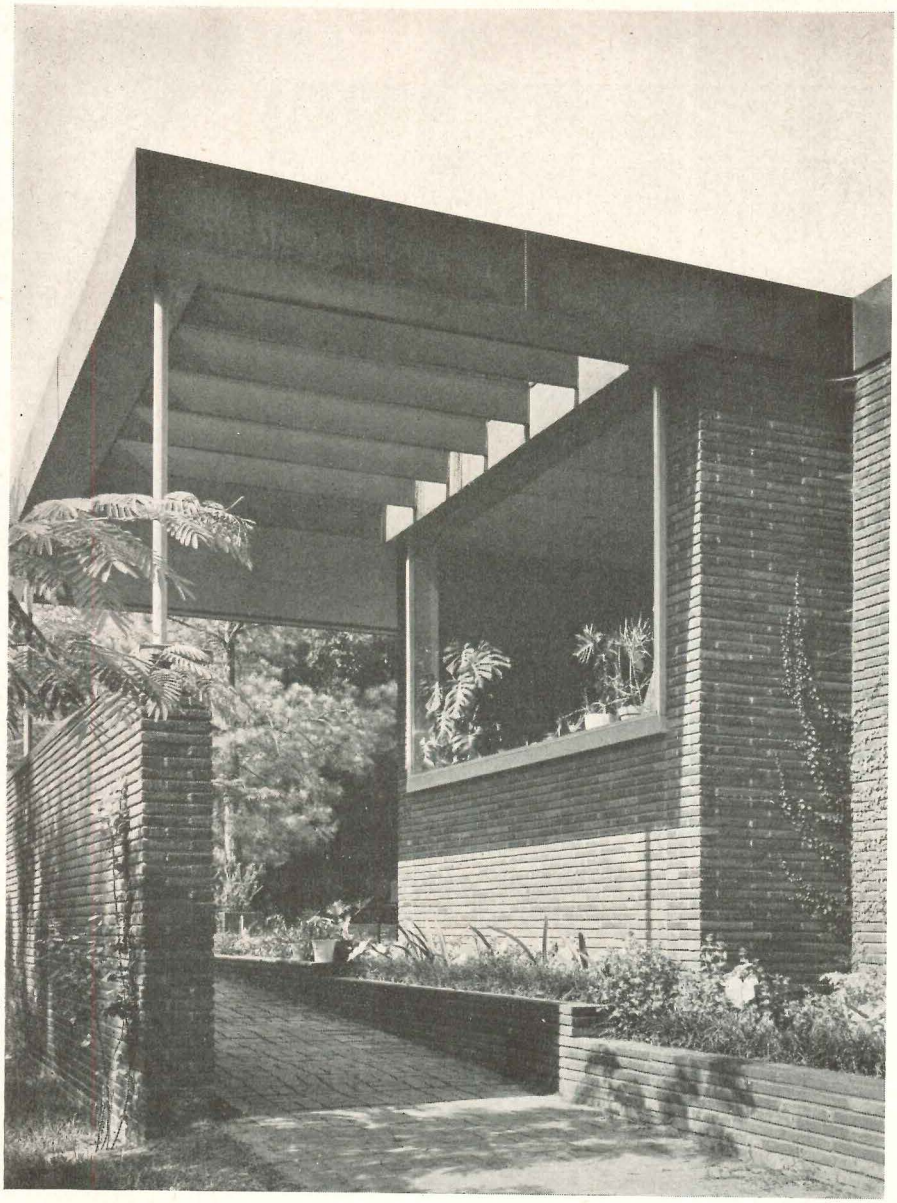
Richard Garrison

Entry, above, is separated from the main living area by a low cabinet and connected to the remainder of the house by the stairway



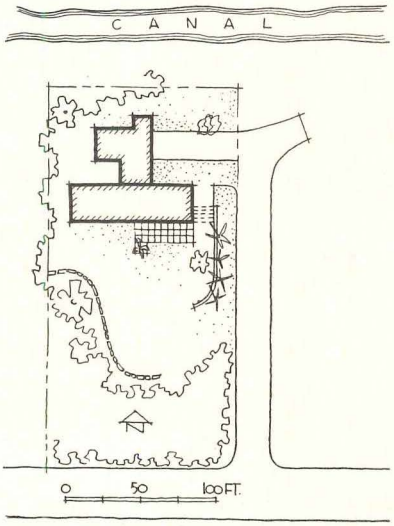
Bedroom, above, and living room, below, look out to the south and afford a view of the pond, while the dining area (p. 176) opens to the same view from a still different elevation. This constant tying together of house and site from different station points provides both variety and a means of orienting oneself with the plot



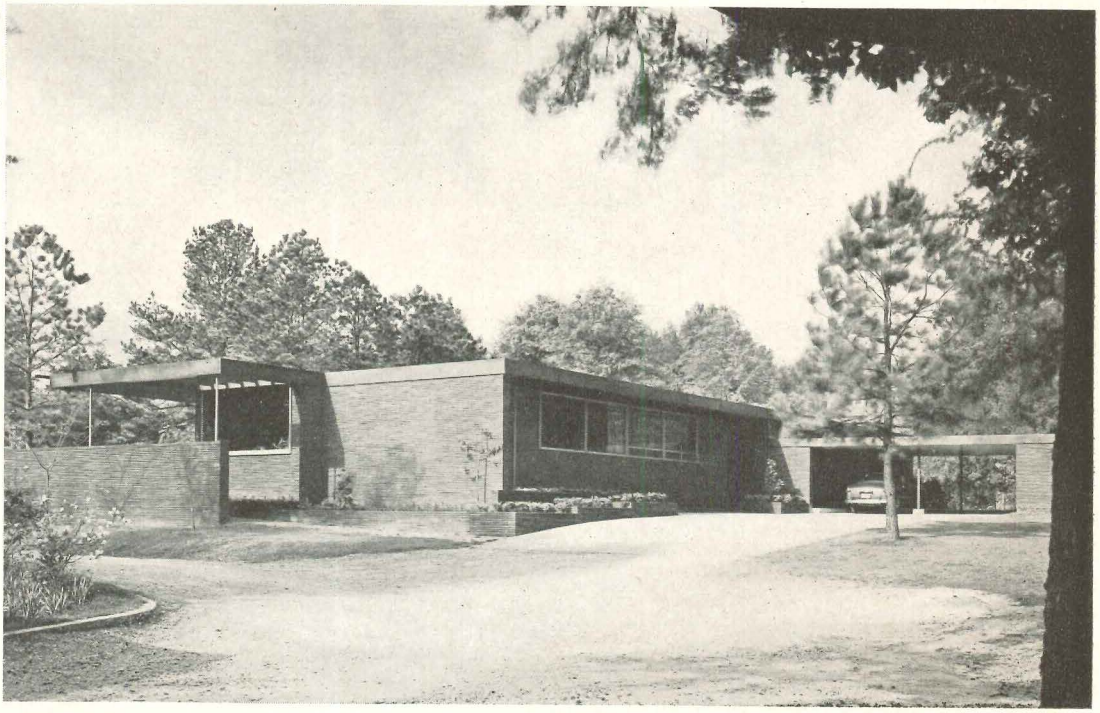


H. O. Wiseman

Entrance to house (below) is from cul-de-sac on east side of property. Brick walk leads past planting box window in living room to south terrace. Opposite page: brick wall and planting box divide south terrace into "public" and "private" areas



Joseph W. Molitor

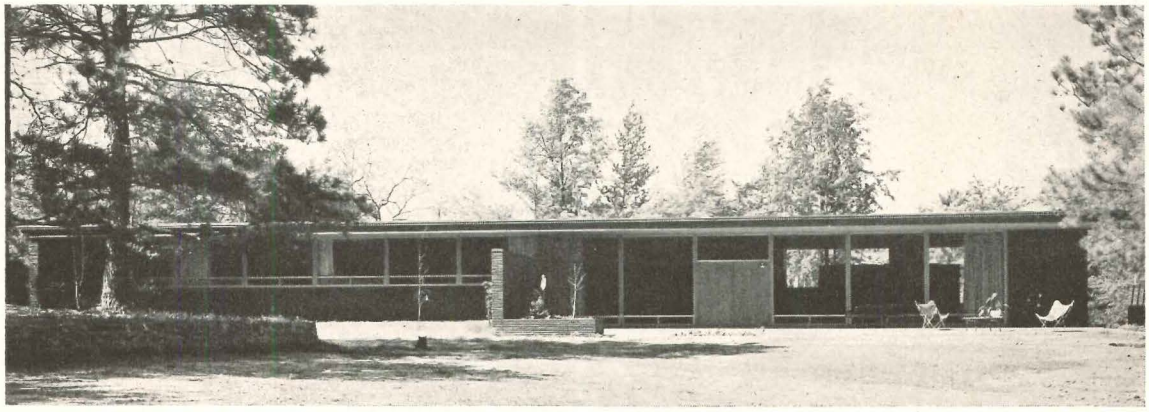


RESIDENCE OF MR. AND MRS. WILLIAM B. WIENER

Shreveport, Louisiana — *William B. Wiener, Architect*

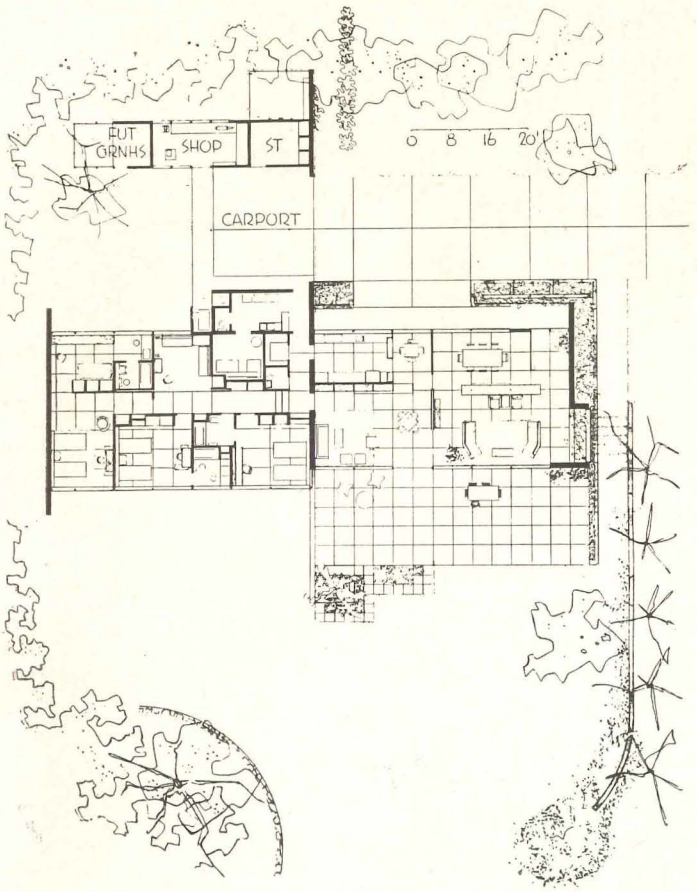
A CORNER LOT, sloping gently from west to east, determined both the placing of this house and the use of two levels. A family consisting of the architect, his wife, and teen-aged son and daughter — all interested in outdoor and indoor entertaining, gardening, hunting and fishing — determined the plan, location of the patio and close relationship between carport and "private" entrance.

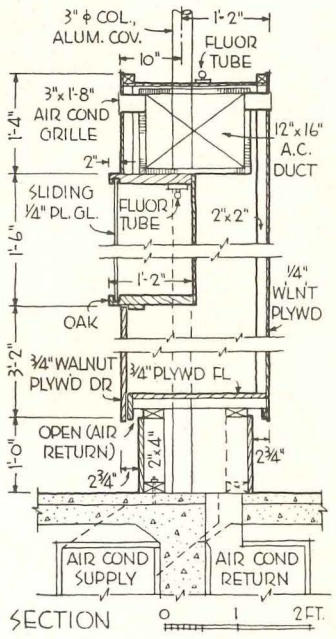
This is a real family house, as the plan (next page) shows. Its living and sleeping areas are almost two distinct houses, separated not only by level but also by a 12-in. fire wall. Each wing has its own heating, ventilating and air conditioning units. Living, dining and game rooms can be used either individually or together, depending on the family's entertainment program; a party given by one person in no way interferes with activities of another, or with the early-to-bed ideas of someone else.



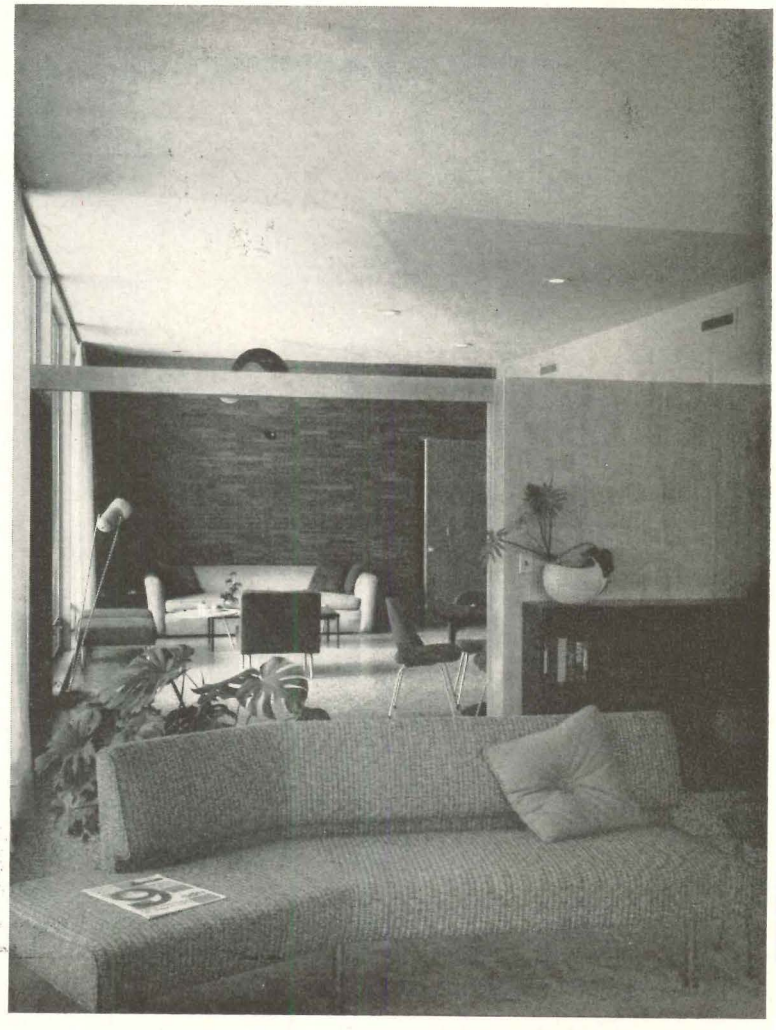
Joseph W. Molitor

H. O. Wiseman

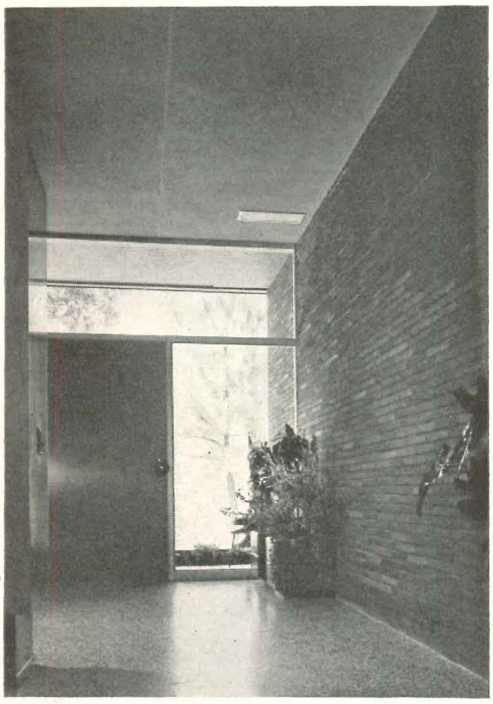




H. O. Wiseman

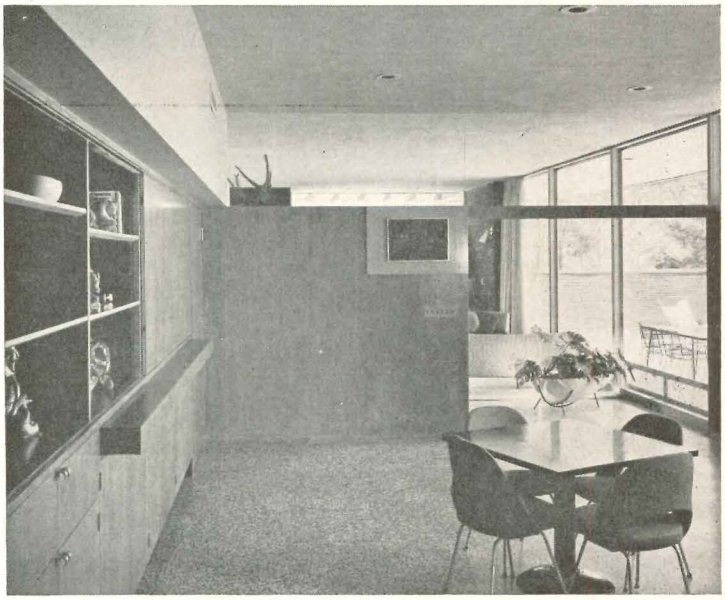


Joseph W. Molitor

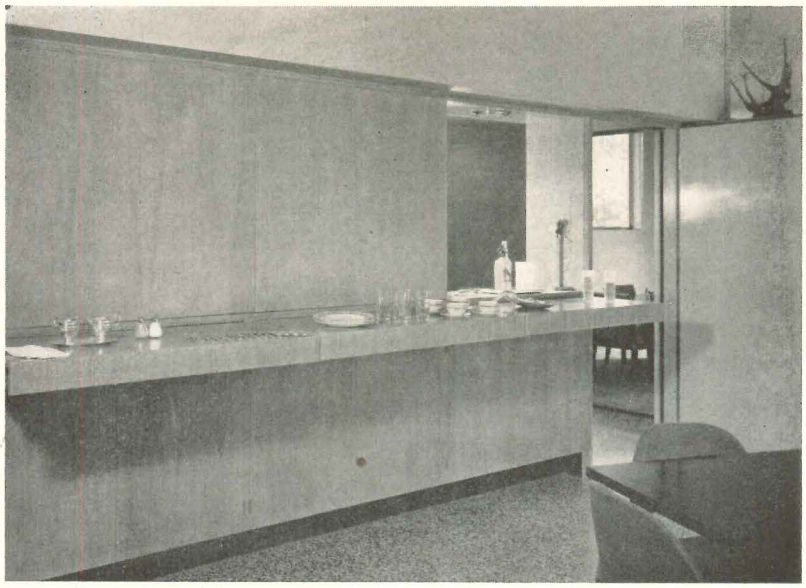


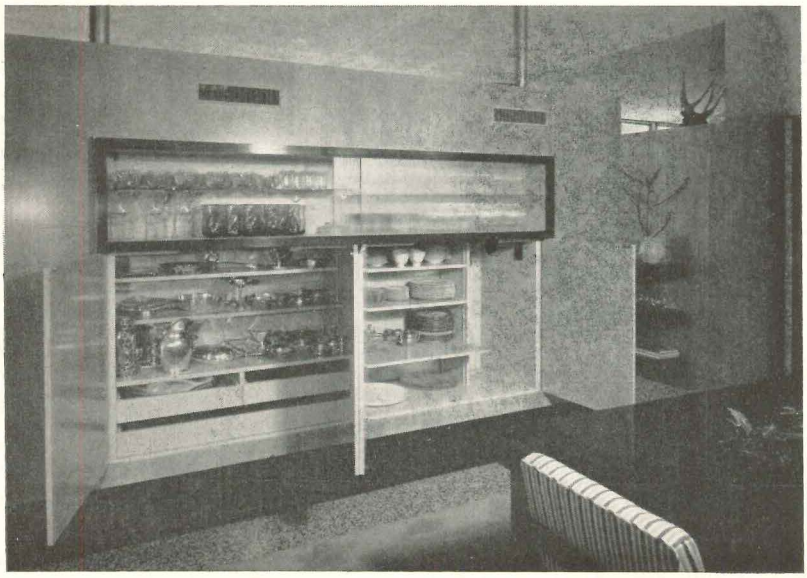
Main entrance (above) is at north corner of house; short hall leads past dining room to living room. Family has private entrance adjacent to carport. Right: game room

Arrangement and height of partitions in living room wing are adroitly worked out to provide for family's varying entertainment needs. Living room (above) and game room (below) can be used separately or together; ceilings are acoustically treated. Game room has door (left below) opening directly to bedroom corridor. Air conditioning ducts for this wing are in door-height cabinet (left in photo above; detail opposite)



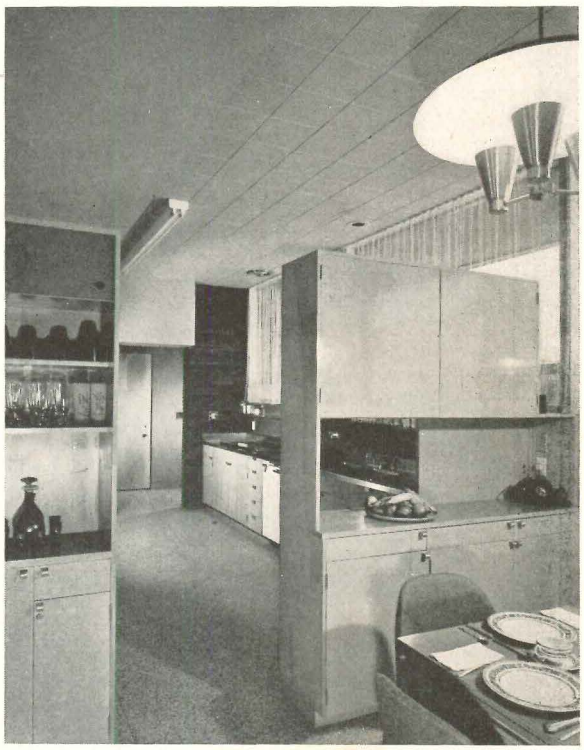
Joseph W. Molitor



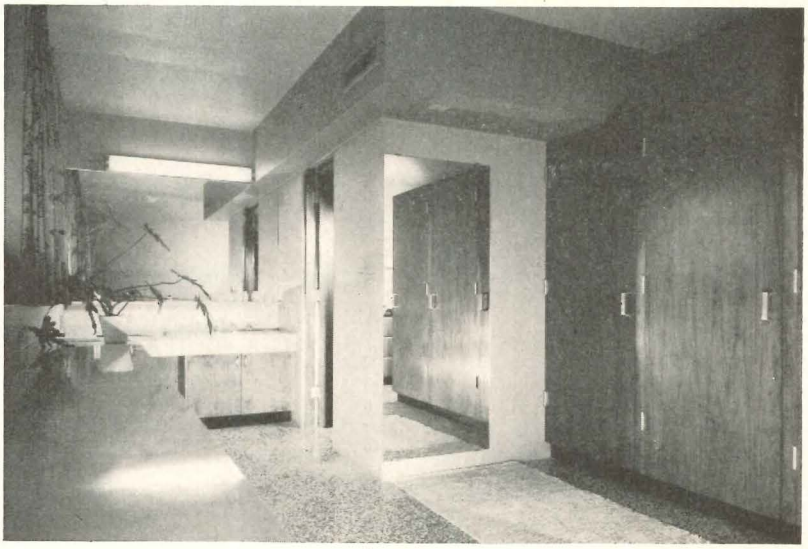


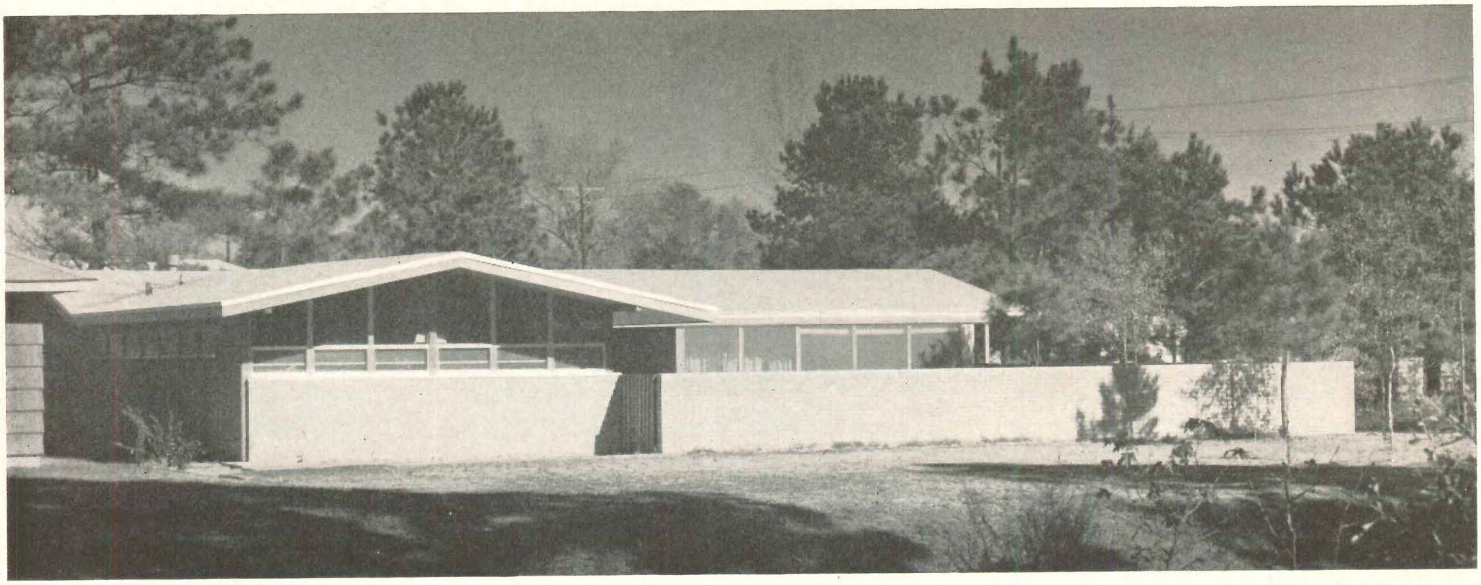
All interior and exterior walls and partitions (except east, west and center) are non-load bearing, which permitted completion of roof and pouring of terrazzo floors before partitions were in place. Most partitions contain storage or service facilities. Game room (previous page and top left) has built-in service counter at one end of cabinet wall, as useful for large buffet suppers involving entire living-dining wing as for informal entertaining in game room alone. Cabinets frequently combine display space with enclosed storage, as in dining room (left, below) and in kitchen-breakfast room area (below). Interior walls are plywood, brick and plaster, used in combination in "public" areas to emphasize flow of room into room

Joseph W. Molitor



Although entire house was planned around the varying needs and habits of a four-member family, bedroom wing especially reflects family and individual requirements. Entire wing is on higher level than living area for maximum privacy, has separate heating and air conditioning systems and a private entrance. Each bedroom has its own bath and specially designed storage units; master bedroom (right) also has large dressing room. All three bedrooms have direct access to rest of house and to carport. Family interest in hunting and fishing resulted in gun and tackle closet at end of private entrance hall, conveniently close to carport. Guest room (below) can be left open for family use or closed off by sliding panel for guests





HOUSE WITHOUT A LIVING ROOM

Residence for Dr. and Mrs. Lee E. Hartman — *Beaumont, Texas*

Howard Barnstone, Architect

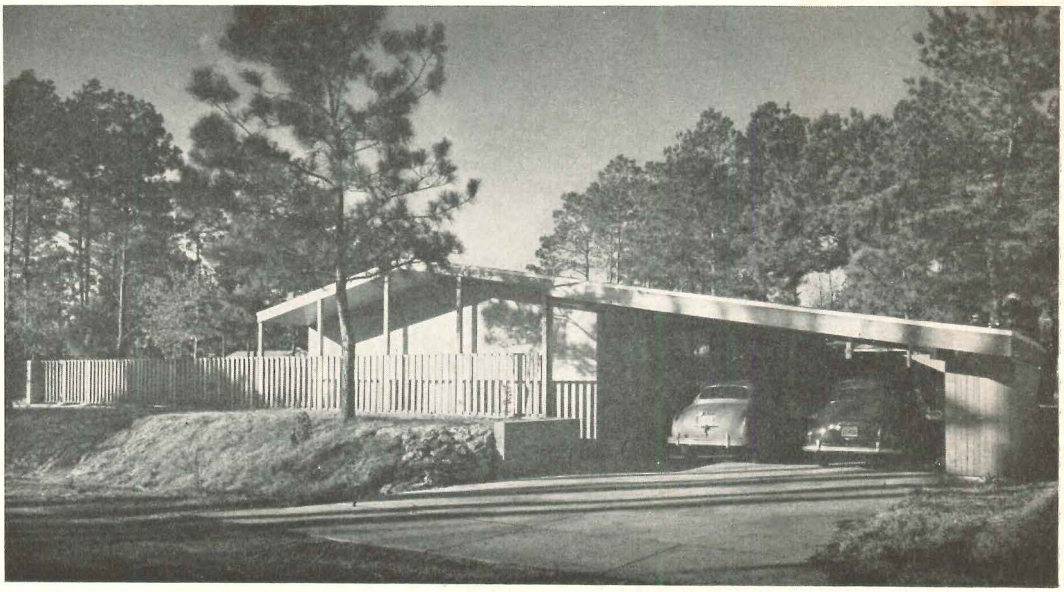
HERE A SURPRISINGLY LARGE HOUSE was built on a small lot by erecting walls on lot lines and designing a series of living spaces suitable for contemporary family life. There is no living room; instead, the playroom is an integral part of the children's wing as is the sitting room of the adult's wing. The dining-kitchen area and two courts complete the plan.

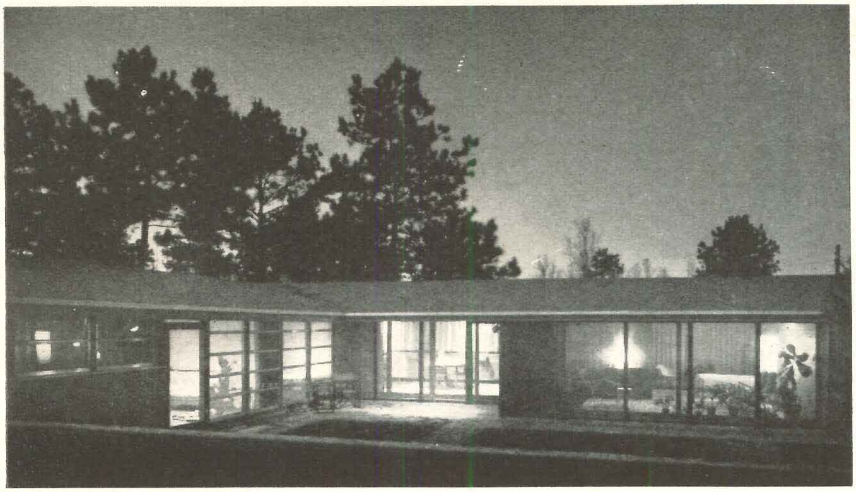
Since the site is some 4 ft above street level, an excavation with concrete retaining walls was necessary for easy access into the carport. The lower-level carport and storage area made possible the same roof pitch over carport and central wing.

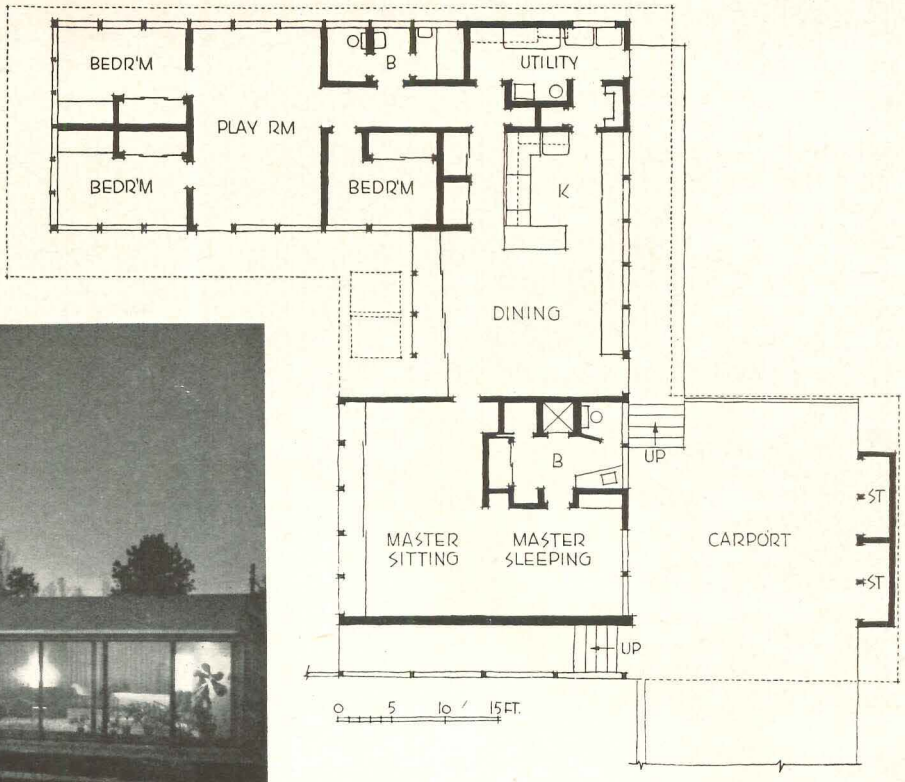
Most rooms face the south court, which is oriented to the prevailing southeast breeze yet shielded from the two streets on the south and east. A 6-ft redwood vertical fence forms the north court, which follows property lines to create a drying yard.

The architect attempted to give the house an intimate quality by keeping ceilings low (7 ft-4 in.) and through extensive interior use of natural woods, brick walls and burlap ceiling-to-floor curtains. Floors are black asphalt tile, and all painted surfaces are off-white, except for a few vivid-color surfaces in the children's area. Foundation is reinforced concrete slab; structure is fir frame with redwood and brick exterior walls; roof is 5-ply built-up asphalt.

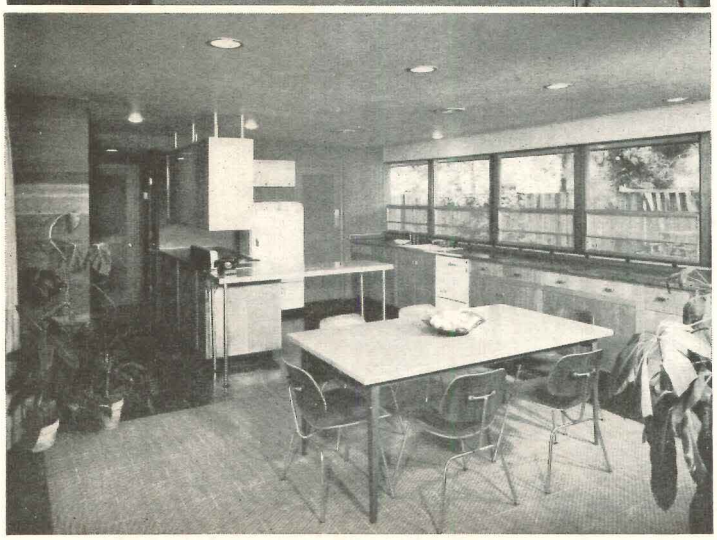
F. W. Seiders

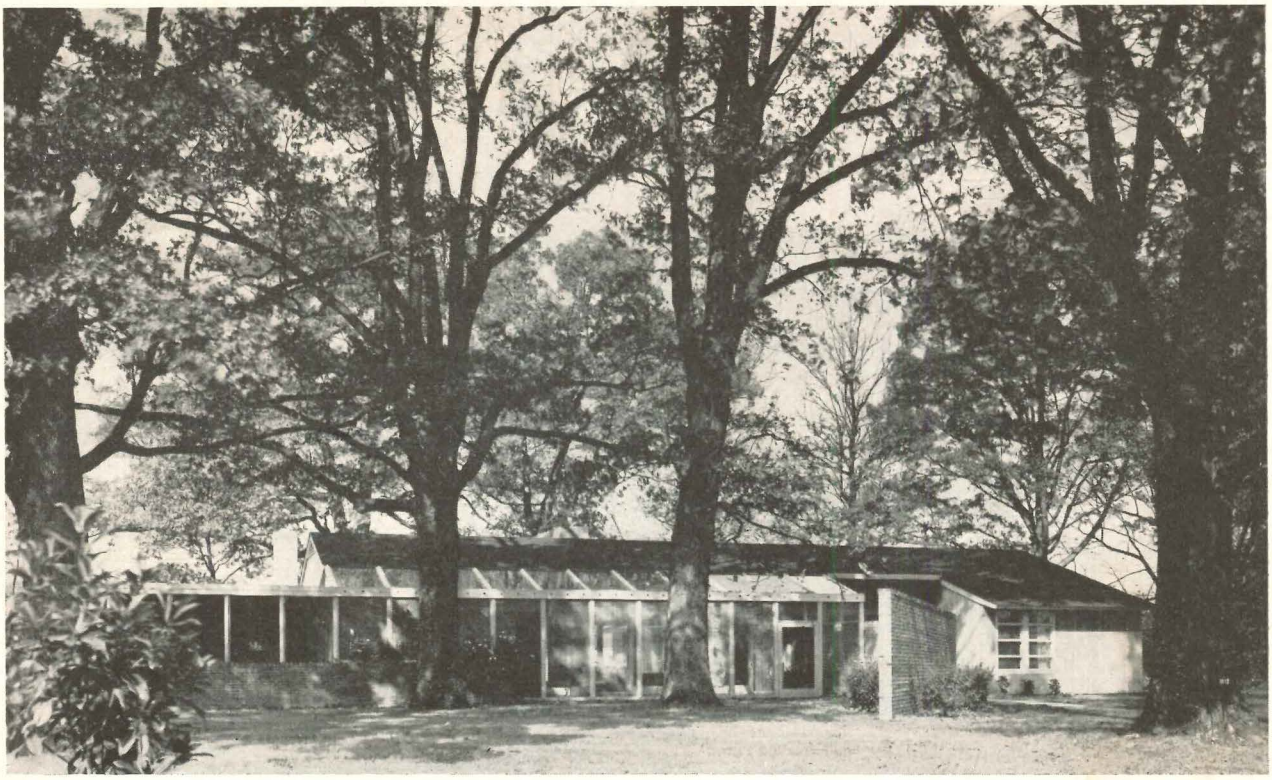






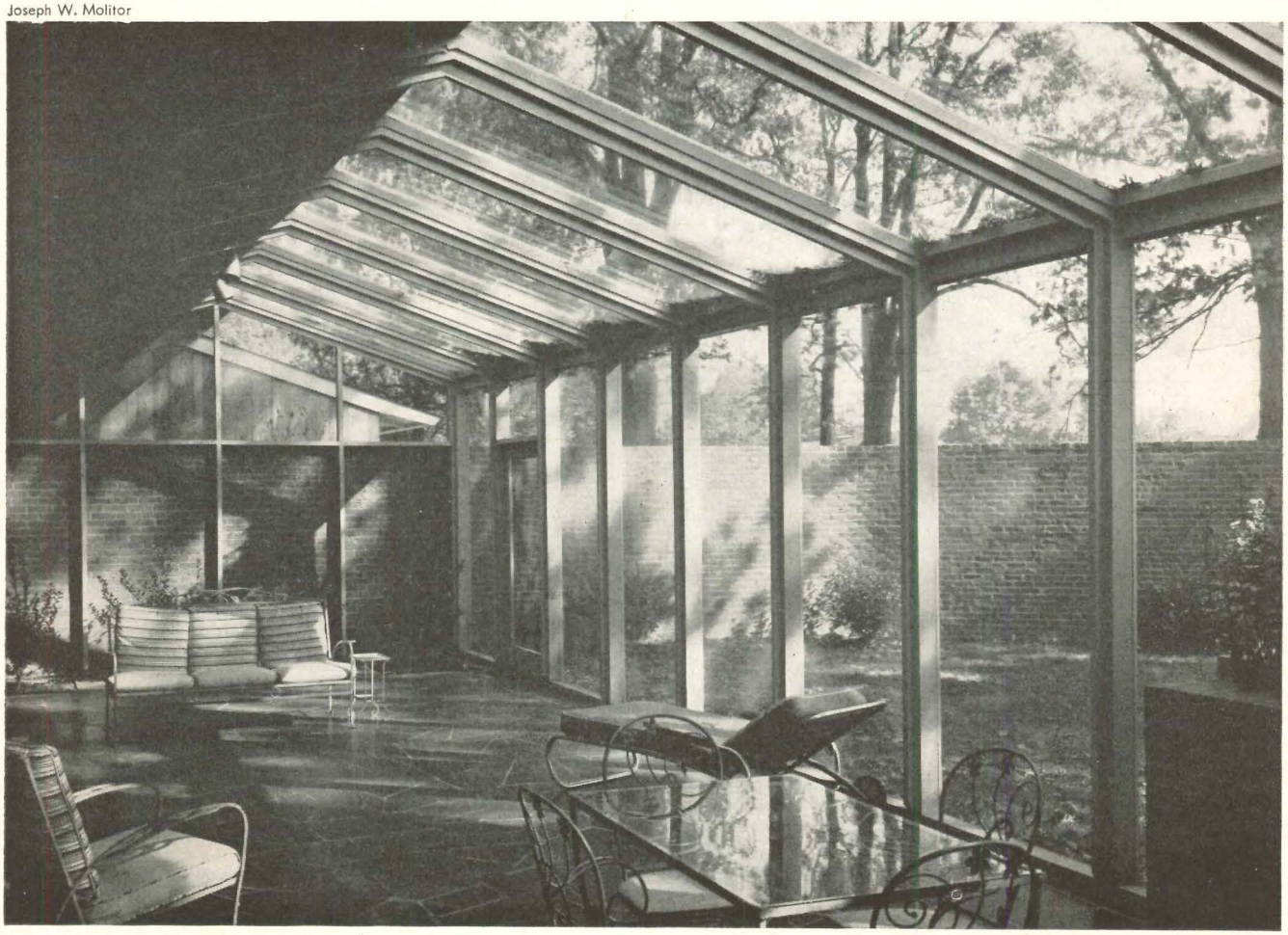
Above, left: large window areas, sliding doors open on south court.
Below, left: dining-kitchen area forms central core between courts.
Below, right: north court and steps up from lower-level carport

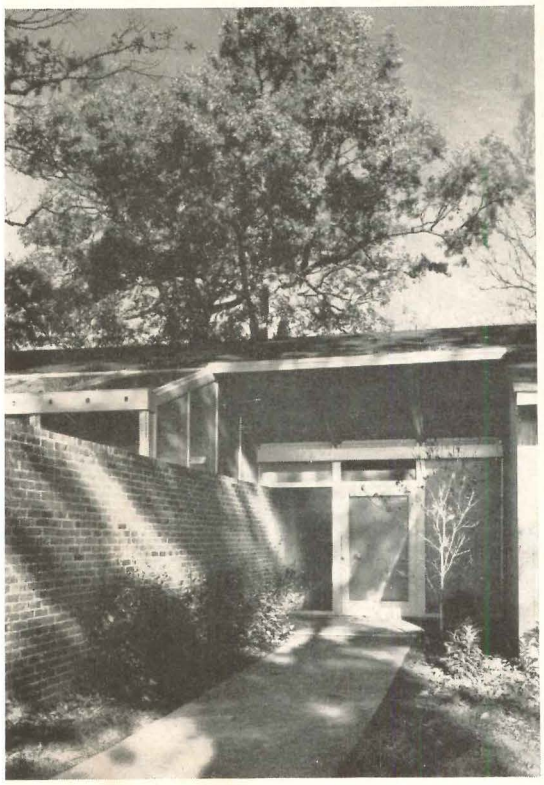




RESIDENCE FOR MR. AND MRS. WILBUR

Joseph W. Molitor





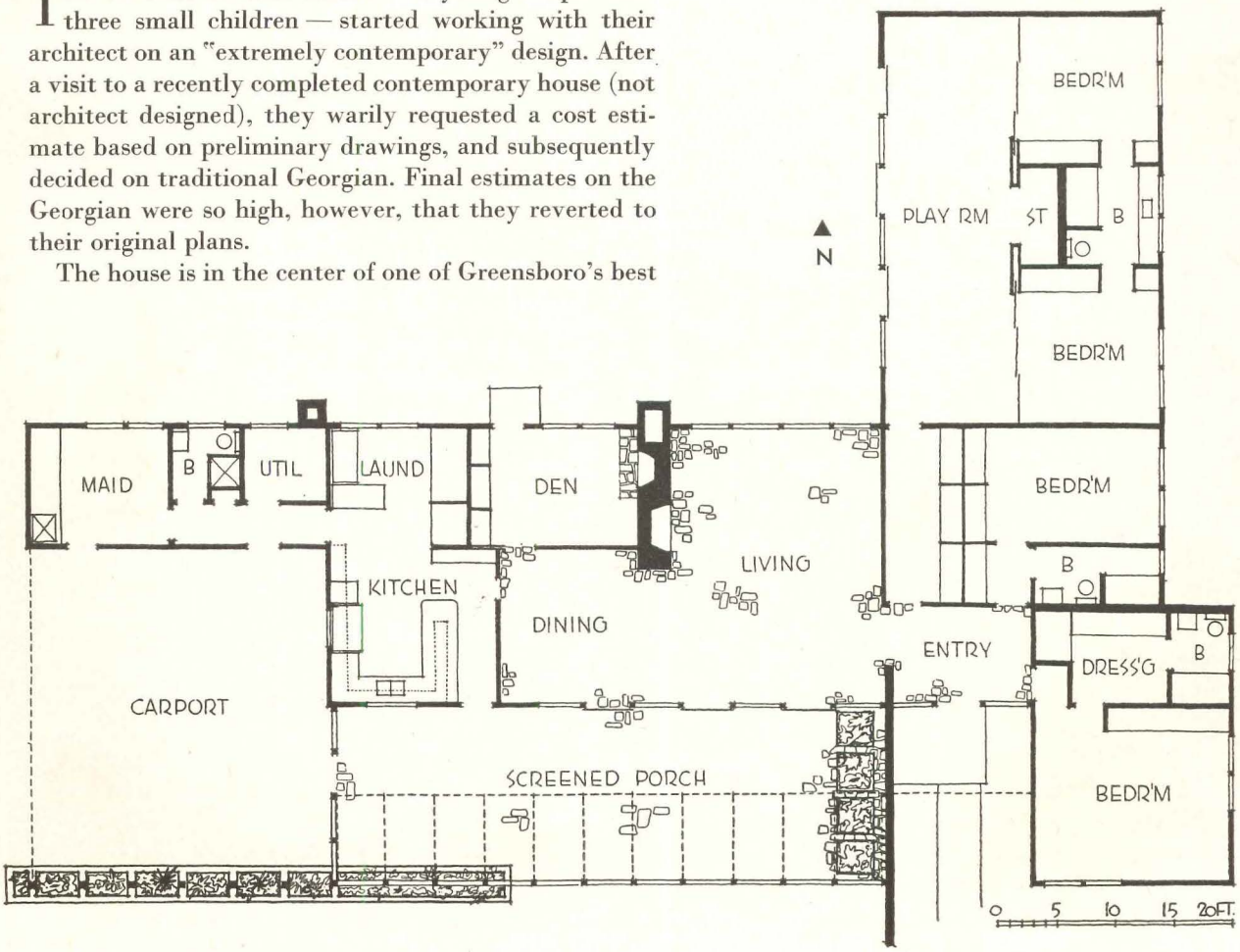
L. CARTER, JR., GREENSBORO, N. C.

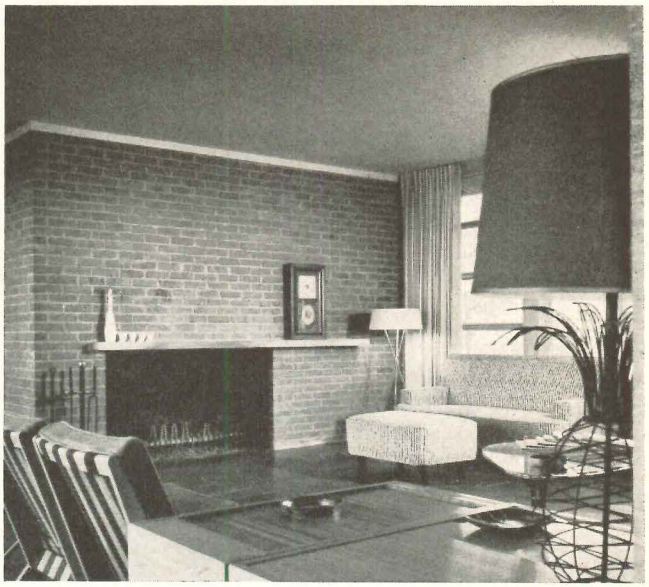
Edward Loewenstein, Architect

THE OWNERS OF THIS HOUSE — a young couple with three small children — started working with their architect on an "extremely contemporary" design. After a visit to a recently completed contemporary house (not architect designed), they warily requested a cost estimate based on preliminary drawings, and subsequently decided on traditional Georgian. Final estimates on the Georgian were so high, however, that they reverted to their original plans.

The house is in the center of one of Greensboro's best

Since prevailing breeze is from southeast, screened porch is on that side of house despite busy street along south of lot. Angled brick wall provides privacy

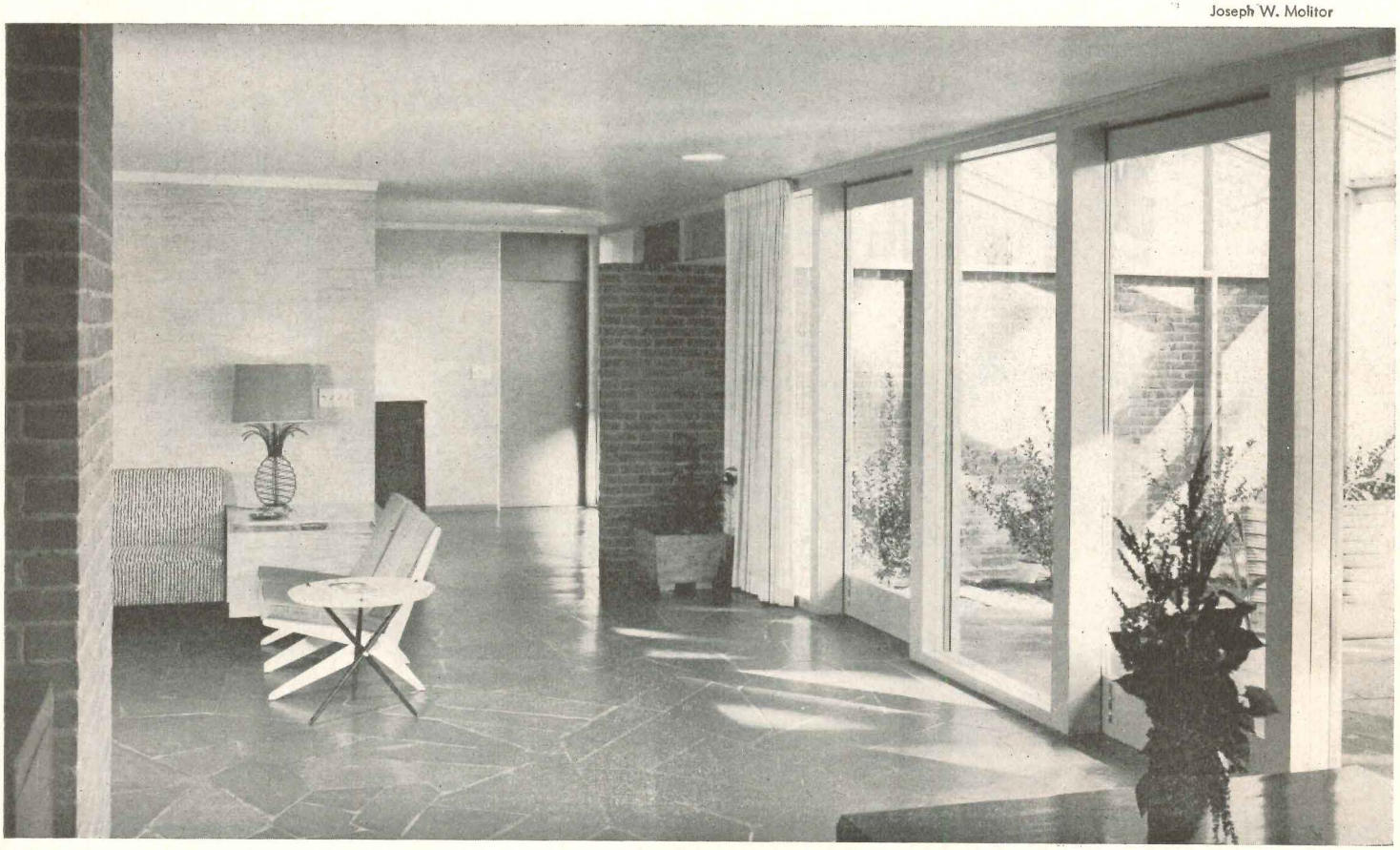




residential districts, on the town's highest elevation. It was designed to fit among huge old oak trees, none of which was to be removed. Since both Mr. and Mrs. Carter are active in civic affairs, entertainment requirements were greater than average; hence the huge screened porch and adjoining terrace. The children were given a completely separate wing at the rear, with an out-size playroom opening to a secluded outdoor play space. A high brick wall shuts off family traffic from formal reception areas.

Living room floor is flagstone, easy to maintain despite heavy traffic; fireplace wall is brick. Below: entrance walk brick wall carries into house for short way to separate bedroom corridor from living area

Joseph W. Molitor



SEVEN HOUSES PLANNED FOR SPECIAL NEEDS

*Preview of a Book *Prepared for the Future Home Owner and His Architect*

THE HOUSES SHOWN IN BRIEF on this and the next three pages are but seven of the forty included in a book prepared by Jean and Don Graf especially for the layman and the architect who must work with him. The book is intended to show (and *does* show) that the contemporary house can be at least as personal in its approach as is the traditional.

Lowell Hess

** Practical Houses for Contemporary Living. By Jean and Don Graf. F. W. Dodge Corporation (119 W. 40th St., New York 18, N. Y.) 8¾ by 11¼ in. 186 pp., illus. Publication date, Dec. 17, 1952.*

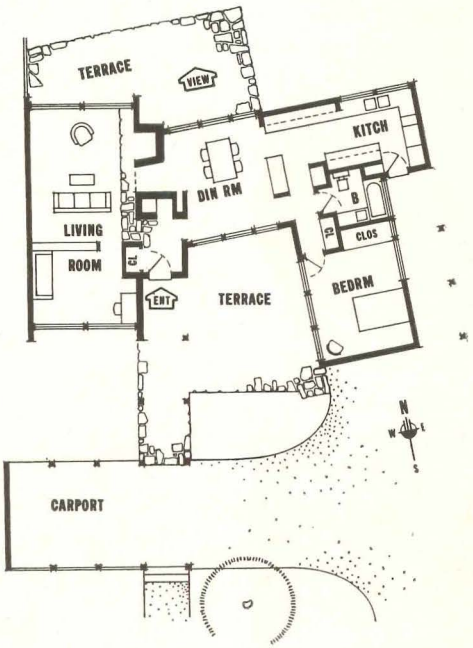
The Grafs present their forty houses in six chapters entitled: (1) Houses for One; (2) Good Small Houses; (3) Planned for Children and Adults; (4) Limited Lot Lines; (5) Houses for Irregular Land; (6) They Knew What They Wanted. Each of the chapter titles speaks for itself and quite accurately describes the houses in its group.

The book as a whole is carefully worked out to give the future home owner the answers to many of his questions about the contemporary house. Plans are reproduced at the same scale throughout, and photos are arranged to further facilitate the layman's comparison of one house with another.

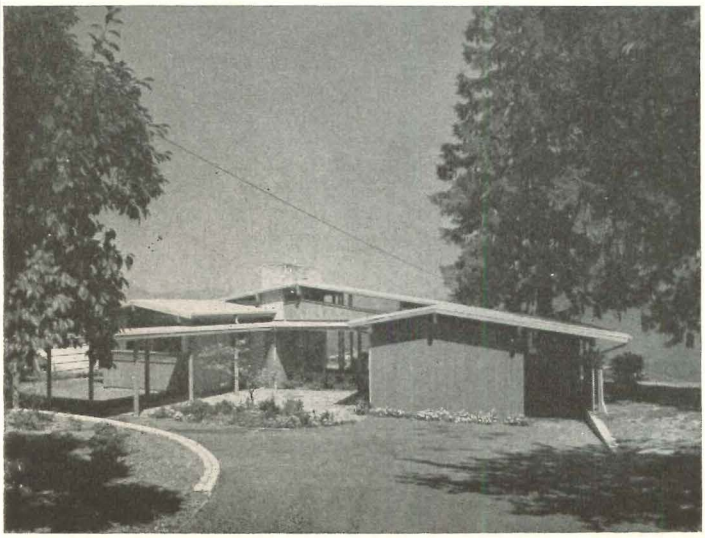
"HOUSES FOR ONE"

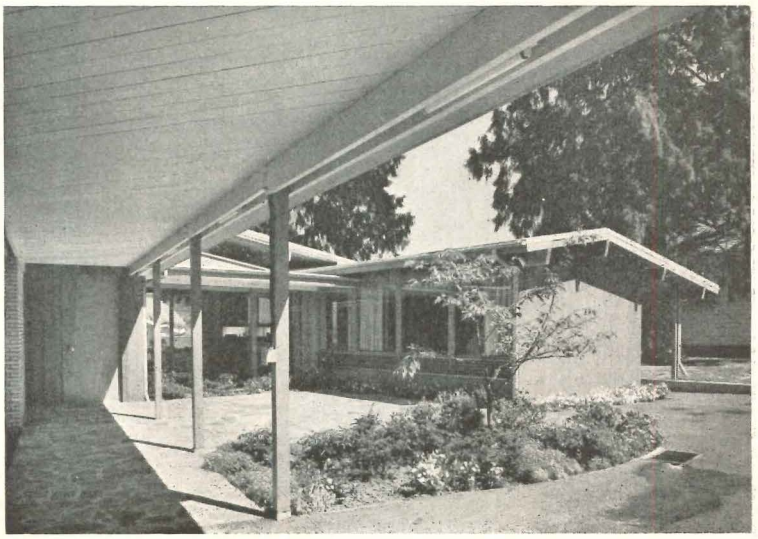
Vacation House for Mrs. G. J. Armbruster
Lake Stevens, Washington
Bassetti & Morse, Architects

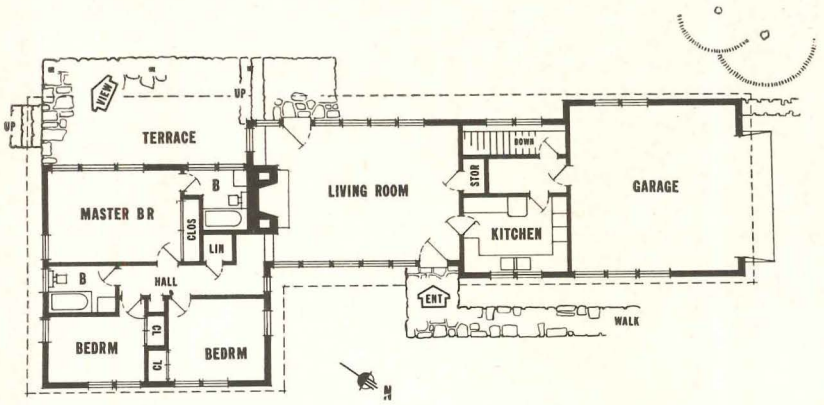
Lakeside year-round vacation house, planned for widow with grown children who visit on weekends. Single bedroom is supplemented by sleeping alcove off living room. North and south terraces permit outdoor living through most of the year.



Dearborn-Massar





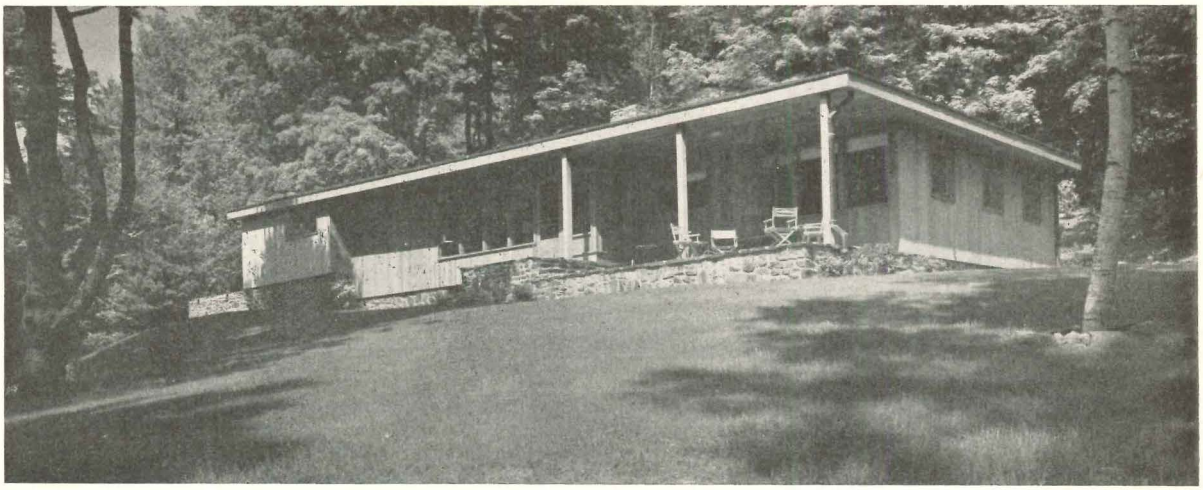


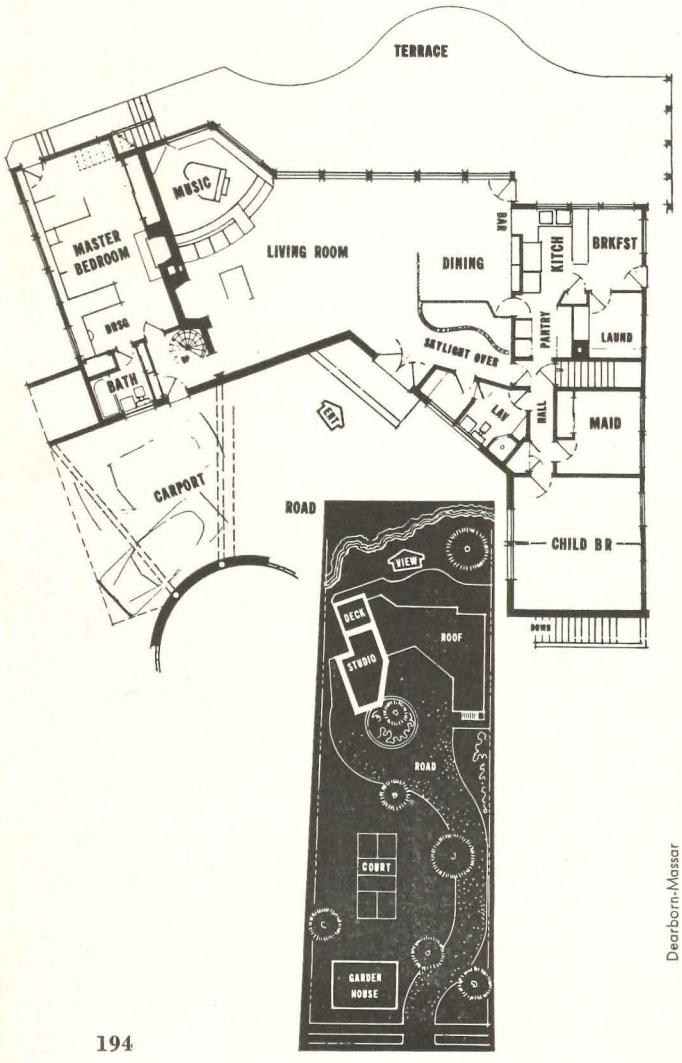
"GOOD SMALL HOUSES"

House for Mr. and Mrs. Sydney M. Kayes
Cornwall Bridge, Connecticut
William Lescaze, Architect

Built for summer use, but perfectly adaptable to year-round occupancy. Has three bedrooms, small swimming pool, good exploitation of view — all in minimum space.

Joseph W. Molitor



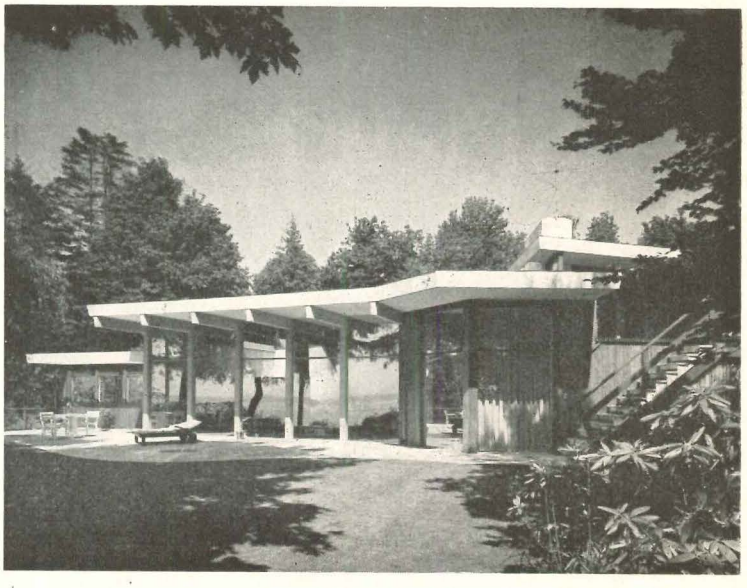


"HOUSES FOR LIMITED LOT LINES"

House for Dr. and Mrs. John Lehmann
Seattle, Washington
Roger Gotteland, Architect

Narrow lot with magnificent view of Puget Sound. Carport adjacent to master bedroom for convenience of doctor-owner. Wife is an artist, hence second-floor studio.

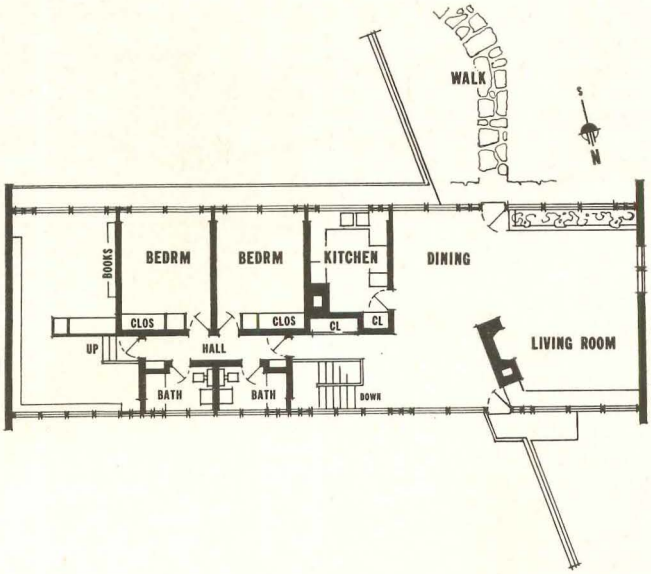
Dearborn-Massar



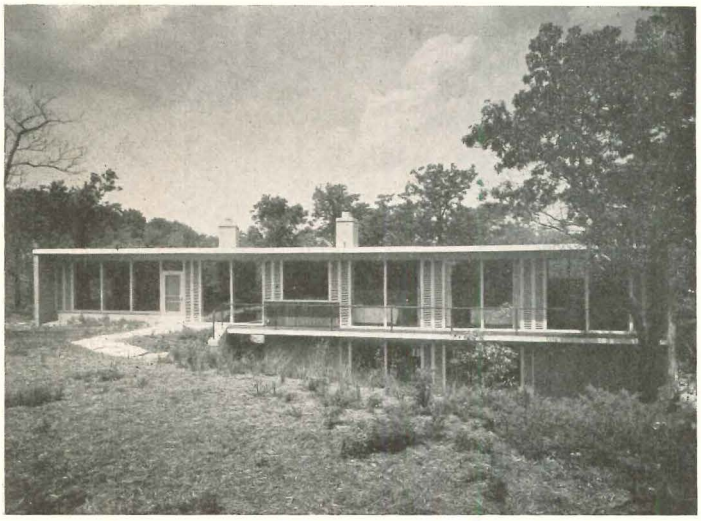
"HOUSES FOR IRREGULAR LAND"

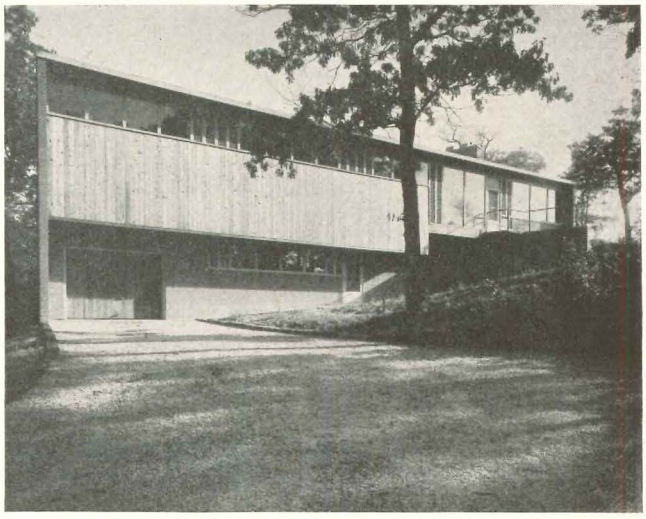
1 *House for Professor and Mrs. Avery Craven*
Dunes Acres, Indiana
George Fred & William Keck, Architects

Two-story house with living level upstairs, garage, studio and utility room below. Front and back of house are completely different in character.



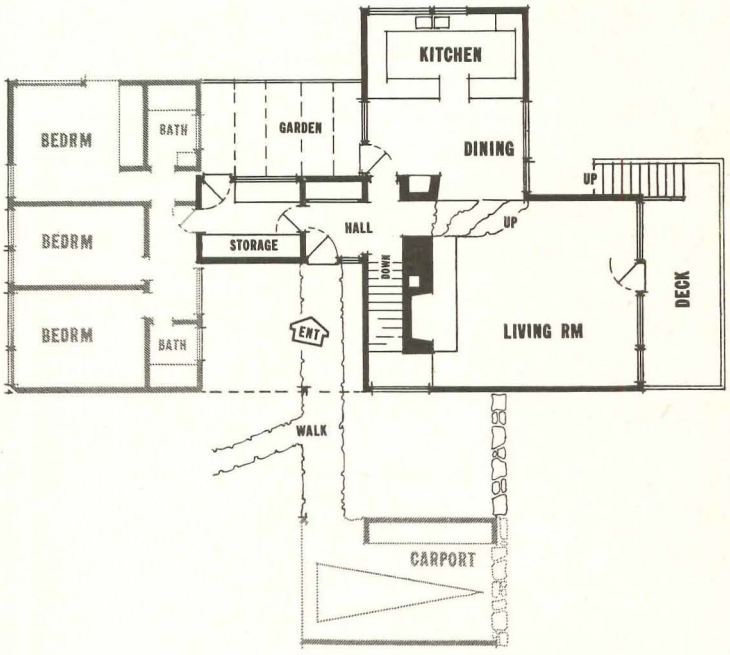
Arthur Siegel

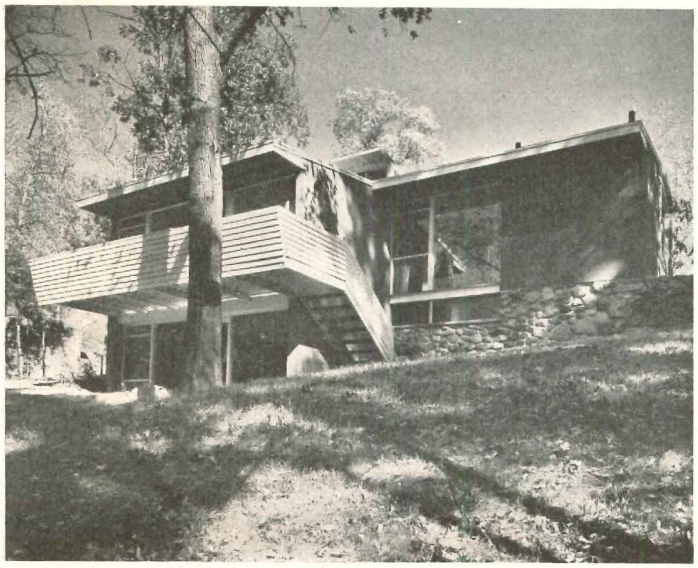




2 *House for Mr. and Mrs. William J. McCune, Jr.*
Lincoln, Massachusetts
Hugh Stubbins, Jr., Architect

Two-level house, only half completed to date (grayed portion of plan shows future expansion). Upper floor meets ground level at rear.





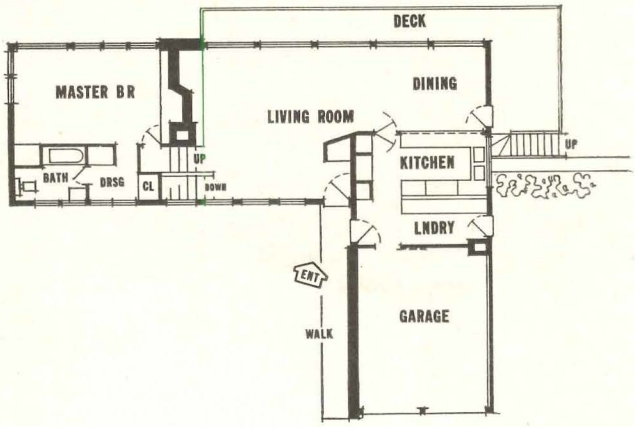
Richard Garrison

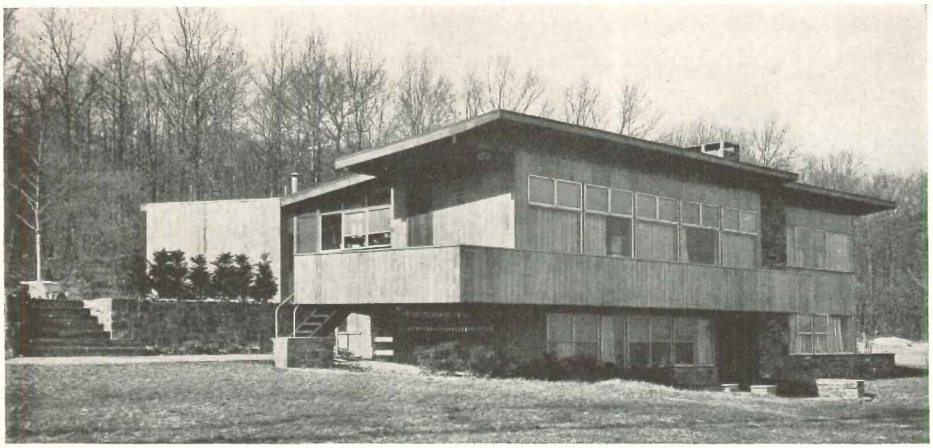
"HOUSES FOR IRREGULAR LAND"

House for Dr. and Mrs. I. S. Ravdin
Bucks County, Pennsylvania
George Daub, Architect

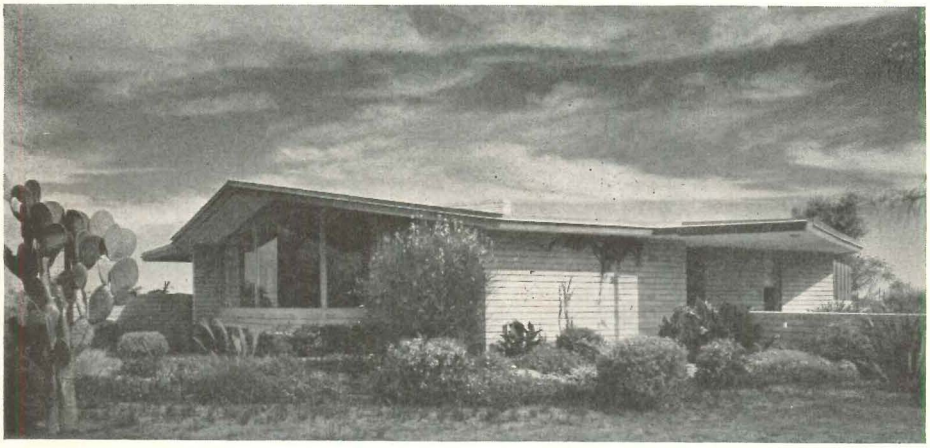
3

Split-level house overlooking typical rolling fields of Bucks County. Here again upper level is main living area; lower houses bedrooms, workroom.





Mike Pearlman

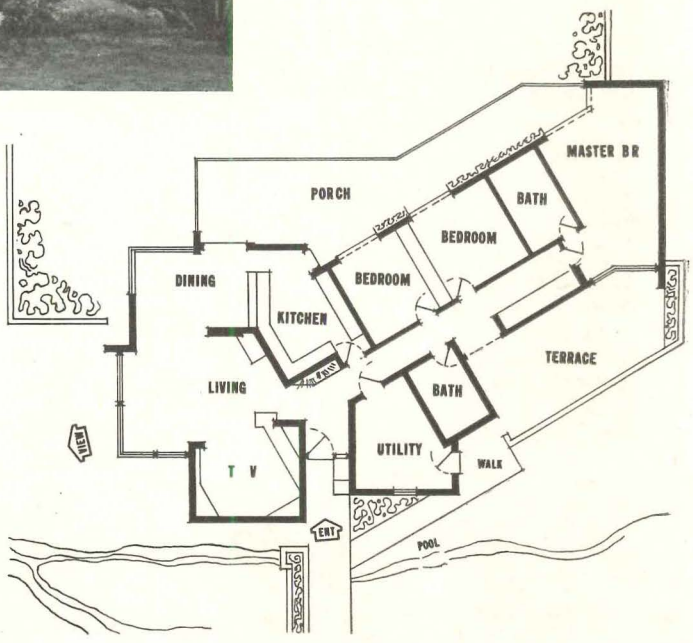


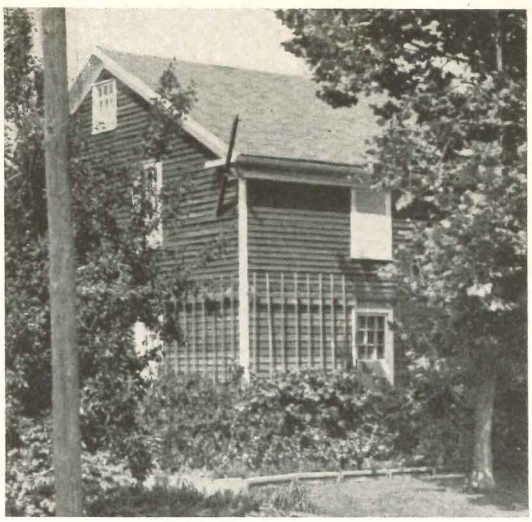
Stuart A. Weiner

"THEY KNEW WHAT THEY WANTED"

House for Mr. and Mrs. Fred Eldean
Scottsdale, Arizona
Blaine Drake, Architect

Designed for a former New York City executive and his wife, who had pulled up stakes and moved to Arizona. Plan is highly individual, making most of sun, view and built-ins.





One of the houses of the Amana Society at Amana, Iowa, as it appeared in 1946 with ponderosa pine siding that had never been painted except for windows, doors and trim. The house was at least 40 years old, but probably was much older than that

WOOD SIDING LEFT TO WEATHER NATURALLY

By F. L. Browne, Chemist

Forest Products Laboratory,* Forest Service

U. S. Department of Agriculture

SINCE PUBLICATION of the article on "Natural Finishes for Exterior Wood" in ARCHITECTURAL RECORD (February 1952, page 196) a number of inquiries have been received about the possibility of leaving exterior wood entirely unfinished, to weather naturally. If suitable precautions are taken it is practicable to do so, but whether this is desirable is a question the architect and owner must decide. Painting, though, is likely to remain the customary treatment for exterior surfaces of smoothly planed wood, and staining for rough wood.

Nevertheless, the practicality of weathered wood is adequately demonstrated by much past experience. For the first century or so of the American Colonies, particularly in New England, wood was the predominant building material and the exterior surfaces were left unpainted to weather naturally.

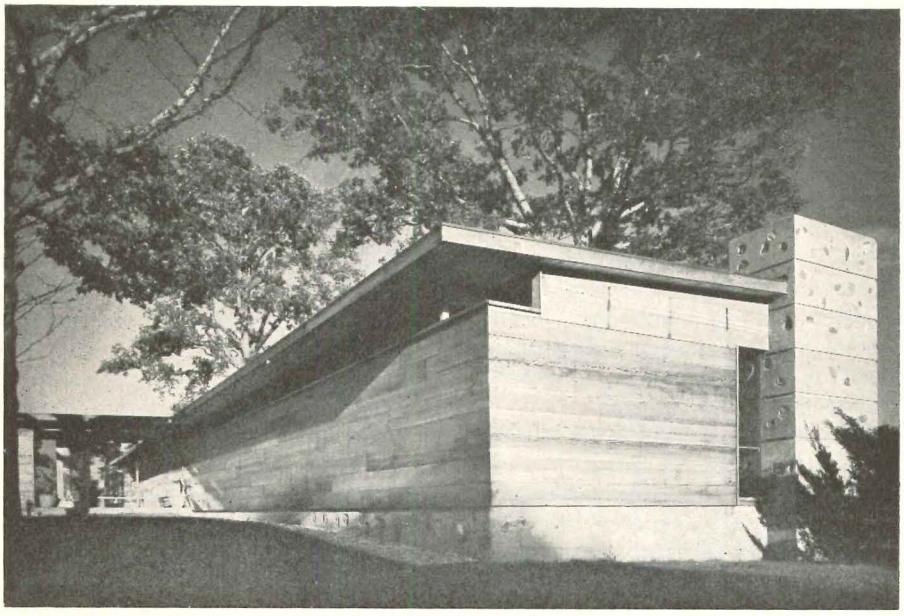
It was not merely that paint was an imported luxury. To the puritan mind of the time painting was an ungodly arrogance for anyone but a high crown official or a very wealthy merchant. There is record of the expulsion of a barber from the Massachusetts Bay Colony for aspiring beyond his station in life when he spent part of a small inheritance for painting his house.

Many of the wood buildings of the early colonial period still stand. Most of them, of course, were painted when it became socially acceptable to do so, and they have been kept painted since. But some, including two of the oldest houses that remain, have never been painted. New Englanders claim that they have the oldest wood house in the United States, now known as the Old Fairbanks House at Dedham, Mass.

The first part of the house was built in 1636. Most of the clapboard siding, however, was replaced in 1903 but has now stood nearly 50 years without paint. The oldest portion of Hartwell Farms at Arlington, Mass., also built in 1636, is still covered with the remnants of the original clapboards.

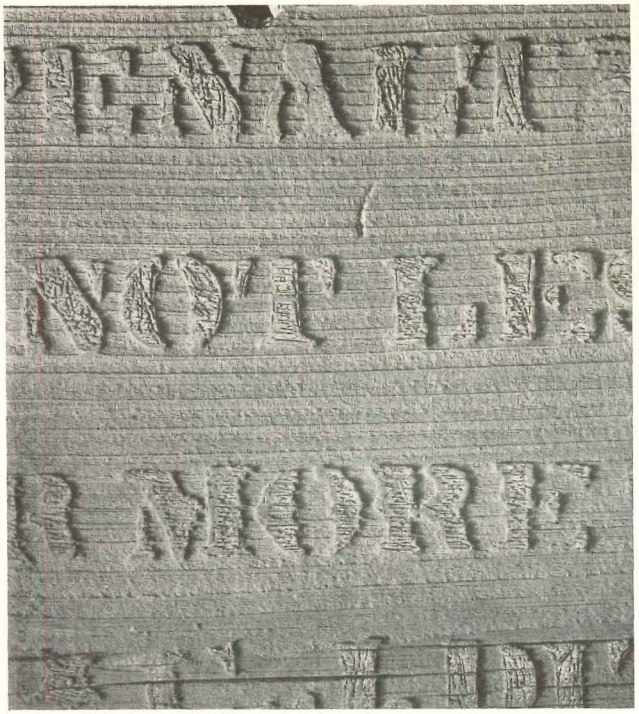
From 1858 to 1932 the Amana Society owned communally seven villages in Iowa County, Iowa. The houses were of wood and were left unpainted except for window sash and doors, which were painted. When I saw them for the first time in 1927 the houses were well main-

* *Maintained at Madison, Wis., in cooperation with the University of Wisconsin.*



Bill Hedrich, Hedrich-Blessing

The new house of architect Winston Elting has unfinished rough sawn redwood siding. A water-repellent preservative was applied to millwork, exterior beams and columns



Part of a 25-year-old signboard made by stenciling letters on an unpainted background. Eroding of the unprotected wood background by weathering left the letters embossed $^1/_{16}$ in. From this and other suitable evidence, it can be predicted that wood wastes away about ¼ in. a century due to weathering

tained. The chief carpenter told me that the ½ by 6 in. bevel siding lasted from 30 to 50 years before they found it advisable to begin making replacements.

In 1946, fourteen years after the residences passed into private ownership, I again visited two of the villages. By far the most attractive and neatly kept houses were those that remained loyal to the old custom, with the siding unpainted but with corner boards, facia boards, and window and door casings, as well as sash and doors, decorated with paint.

The houses mentioned so far were all very modest dwellings, left unpainted for economy or to conform to local custom of the time. But there are at least a few examples in recent years of more pretentious buildings for which weathered wood was chosen strictly for its appearance. Two of those I know are hotels that must attract patrons to remain in business. Pilot Butte Inn at Bend, Ore., and the Redwood Inn at Scotia, Calif., are the leading hotels in their communities. Both have been in operation for several decades.

The Process of Wood Weathering

Wood such as siding and trim on buildings, if left freely exposed to the weather without protective painting or treatment, changes materially in appearance for a few months or years, after which it stays nearly unaltered for a long time. The color of the wood is affected very soon. Woods like redwood and red cedar, that owe their color largely to substances soluble in water, may first become bleached. Woods of lighter color, such as pine and spruce, may first become somewhat brown from the action of sunlight. Later all of the woods turn gray unless the building is high in the mountains, where the brown color associated with the Swiss chalet develops.

Smoothly planed wood soon begins to acquire a rough surface. First the grain becomes raised, that is, the hard bands of summerwood rise above the softer springwood between them. Then minute checks or cracks begin to appear in the surface and steadily increase in number until the surface becomes decidedly rough as the fibrous structure of the exposed wood is greatly loosened. Finally the wood substance erodes away very slowly and the boards gradually become thinner. Wood wastes away by such weathering at the rate of approximately ¼ in. a century.

Besides the many minute checks in the surface, most woods soon develop some larger and deeper checks or cracks that are easily visible and may become conspicuous. As a rule, the woods of moderate to low density acquire fewer of the conspicuous checks than do the woods of high density. Edge-grain boards check less than flat-grain boards of the same variety of wood.

As a result of the weathering process there is a tendency for boards to cup, warp and pull at their fastenings. Firmer nailing may therefore be necessary when wood is left to weather than would be required if it were kept well painted. The cupping tendency varies with width and thickness of the boards. The greater the width in proportion to the thickness, the greater is the tendency to cup and pull at the fastenings.

Although ½ by 6 in. bevel siding was considered satisfactory by the Amana Society, ¾ by 6 in. siding would serve much better. For best results the width of the boards should not exceed 8 times their thickness.

Cypress, hemlock, white pine, ponderosa pine and spruce usually weather to a light-gray color that often has a silvery sheen. A darker gray with little or no sheen is developed by red cedar, Douglas-fir, fir, southern yellow pine and redwood. Red cedar, cypress and redwood commonly acquire fewer conspicuous checks or cracks than other woods do. Similarly, cypress, red cedar and redwood generally have the least tendency to cup and pull at fastenings; whereas pine, fir, hemlock, spruce, Douglas-fir and southern yellow pine require firmer nailing to hold them in position.

Development of Weathered Appearance Takes Time

Although the appearance of weathered wood is attractive for suitable architectural effects, there is a difficulty in making use of it for new construction, in that much time is required for the change from new to weathered lumber. Moreover, the change seldom takes place evenly over the different parts of a side wall. Those boards that receive most rain and sunshine become weathered first. Usually the lowest courses of siding on the south wall become fully grayed and roughened sooner than the top courses of siding under the eaves and much sooner than courses of siding

under a porch roof. Wide overhang at the eaves delays the weathering of more courses of siding than a narrow overhang does. Thus for a number of months, or even for a year or two, there is a mottled appearance varying from nearly bright lumber to gray weathered wood.

The unequal delay in attaining the weathered appearance can be avoided by using rough sawed rather than the smoothly surfaced lumber to begin with and applying a gray oil stain. Such a stain can be made, for example, from raw umber in oil, white lead in oil, boiled linseed oil and mineral spirits or other paint thinner. The stain need be applied only once when the house is built; by the time the stain has worn out the wood will have developed its natural weathered gray color.

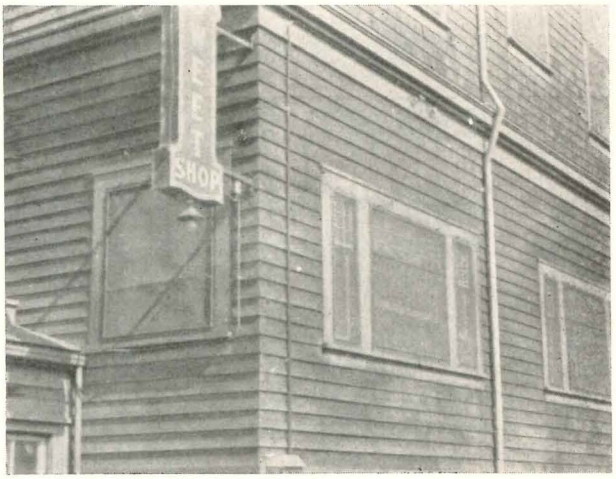
Some houses recently have used bevel siding with the planed side out and have then been given the color without the roughness of weathered wood by applying a product known as bleaching oil or sometimes as redwood bleaching oil. A number of paint manufacturers supply such products. They may be described as natural finishes of the sealer type in which there are some pigments to give the gray color. When bleaching oil is used, the wood may be kept smooth indefinitely by renewing the finish as often as proves necessary, or the first application may be allowed to wear off and leave the wood in its naturally weathered condition.

Need for Rust-Resistant Nails

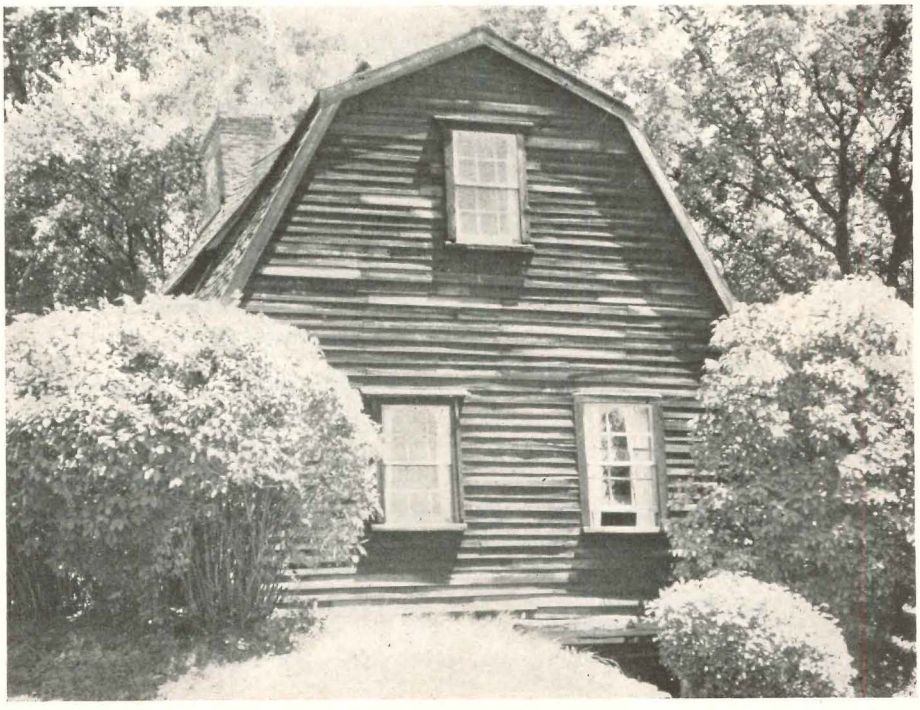
When exterior wood is to be allowed to weather naturally or is to receive a natural finish, it is particularly important to see that all nails used to fasten it and all hardware that may be placed in contact with it are highly resistant to rusting. The heads of ordinary iron nails rust rapidly, and the iron rust promptly penetrates into the wood for some distance from the nail heads. In some woods such rust makes reddish brown stains, but in woods that contain tannins, such as cedar and redwood, the stains are bluish black and very unsightly. Corrosion-resistant nails, such as galvanized nails, cadmium-coated nails or aluminum nails avoid such difficulties.

Although the weathered wood appearance may dispense with periodic renewal of paint or finish, it should not be used as an excuse for neglecting periodic inspection and careful maintenance of the building. Even when care is taken to provide firmer nailing than usual, some nails gradually become loosened and partly withdrawn by the operation of the forces of wood weathering. Every four or five years such loosened nails need to be driven in tightly again. Likewise, the same care about keeping joints tight, repairing gutters, and making other minor repairs that would be taken with a painted house, is needed when the wood is allowed to weather.

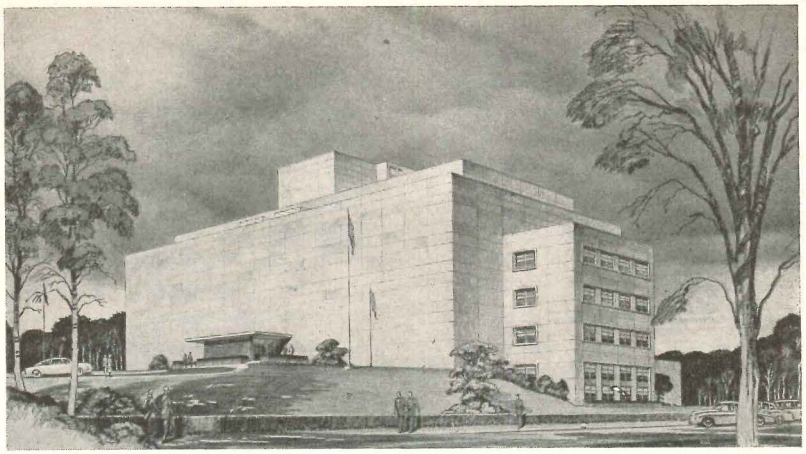
Exterior wood, then, may properly be allowed to weather naturally without protection by paint or other finish whenever it proves desirable to obtain an architectural effect in that way. For weathered wood it is wise to select the kind of wood carefully to obtain the intended result; and it is particularly wise to use lumber that is thick enough in proportion to its width, to see that it is very firmly fastened with rust-resistant nails, and to provide the same care in maintenance that would be given to a painted building.



Above: Redwood Inn at Scotia, Calif., with redwood siding and trim on first floor, redwood shingles on the second. It was 20 years old here and had never been painted. Below: the Old Fairbanks House, Dedham, Mass., built in 1636 and never painted. White pine siding was replaced in 1903. Window frame, facia wood may be the original



1. Laboratory service core and modular layout permit easy alterations
2. Main portion of building is windowless for blast resistance
3. Lighting was tested in a pilot laboratory
4. Heat loads from equipment complicated the air conditioning design



Exterior walls will be concrete with an integral textured finish

LABORATORY ARRANGEMENT SUITS BLAST RESISTANT BUILDING

Armed Forces Institute of Pathology Building, Washington, D. C.

Faulkner, Kingsbury & Stenhouse, Architects

COMBINED IN THIS ONE BUILDING, now under construction at the Walter Reed Army Medical Center, will be activities usually found separately in research laboratories, office buildings, hospitals, printing plants, educational centers, and even in television studios. Further complicating the design was the requirement that the main portion of the building be blast resistant.

The architects solved blast resistance to a great extent by making most of the structure windowless. To give flexibility in the laboratories, to save on costs, and at the same time to assist in blast resistance, they placed the laboratories back-to-back in the center of the building, divided by a service core and bounded by corridors. Offices and other functional areas are adjacent to exterior walls. This two-corridor plan (see across page) furnished a building of considerable depth — highly desirable for resisting bomb blasts.

1. Service Core and Laboratory Modules

Laboratories are arranged in 11 by 22 ft modules on either side of the core. All piping is run horizontally and above the floor so that services can be brought in at any partition.

Changes can be made at any time without disturbance, except in the laboratory being altered. Lighting fixtures and air supply outlets are also on a modular basis, so they need not be changed except in special cases. Even these changes would not be difficult since ceilings are removable.

2. Blast Resistance

The structural frame and the reinforced concrete blast walls enclosing the main portion of the building were designed to withstand a possible positive pressure of 27.2 psi and a negative pressure of 13.6 psi on the south side, together with a positive pressure of 13.6 psi and a negative pressure of 6.8 psi on all other sides and the roof.

In certain places in the interior of the building, reinforced concrete walls are included to help resist the pressures. Openings in the blast walls in all cases but one are taken care of by specially designed blast doors. These are of two types: a guillotine door generally being used for duct openings and a side-hinged door for all others. It was not believed practical to provide a blast door for the flue from the incinerator, but instead, the chimney and the incinerator room are enclosed in reinforced concrete to withstand a possible blast.

3. Lighting Tested in Pilot Laboratory

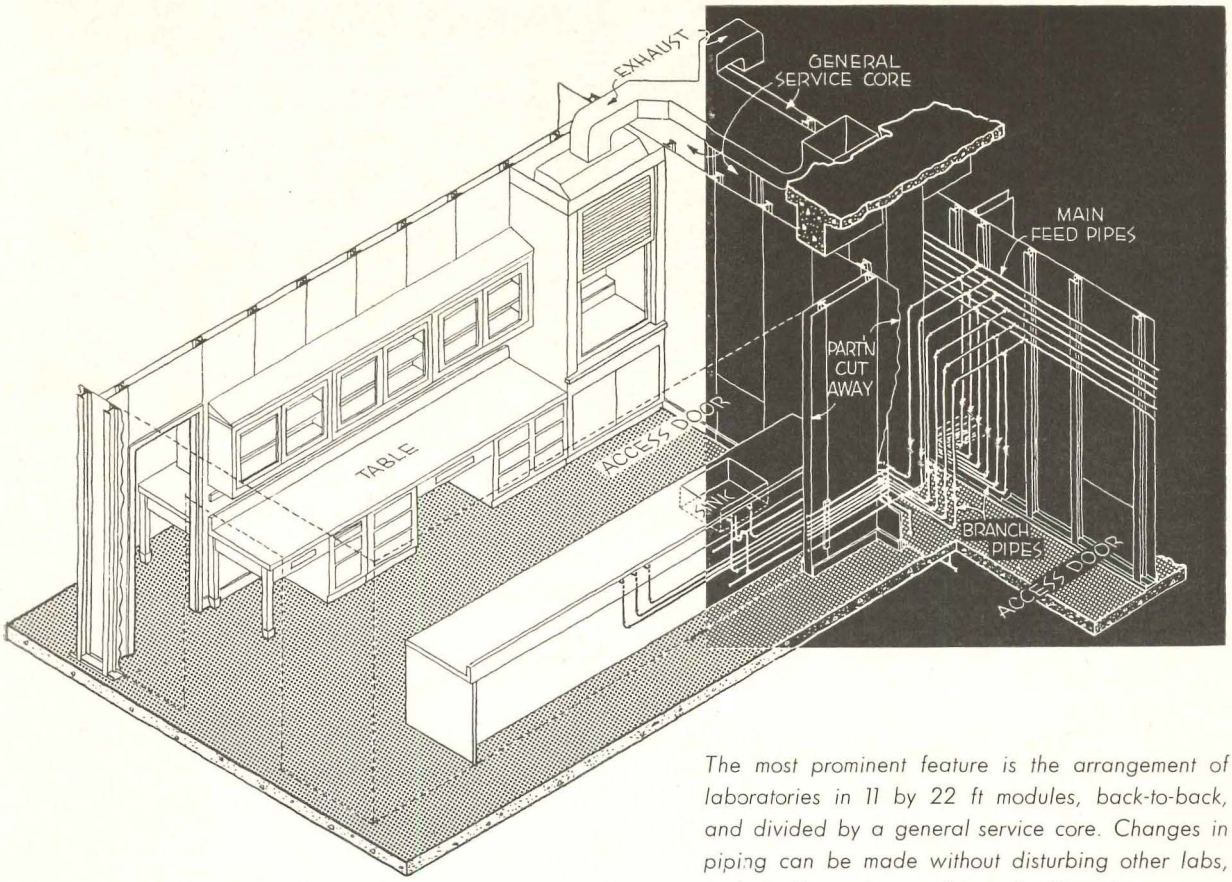
Seeing tasks required a lighting source that would produce the maximum intensity of illumination without imposing an excessive load on the air conditioning. Important also were good color discrimination, reduction of specular reflections, elimination of annoying shadows and other factors that would affect the comfort of personnel who would be required to work in a small windowless room for relatively long periods.

Since adequate quantity of light accompanied by minimum heat load and good color discrimination were the most important variables, initial experiments were made with a combination of fluorescent and incandescent light sources. Fixtures consisted of two 4-ft fluorescent sections in tandem with a 12-in. square incandescent unit at each end. Reduced illumination at the extreme ends of the laboratory benches, and marked color contrast between the two types of lamps, ruled this method out.

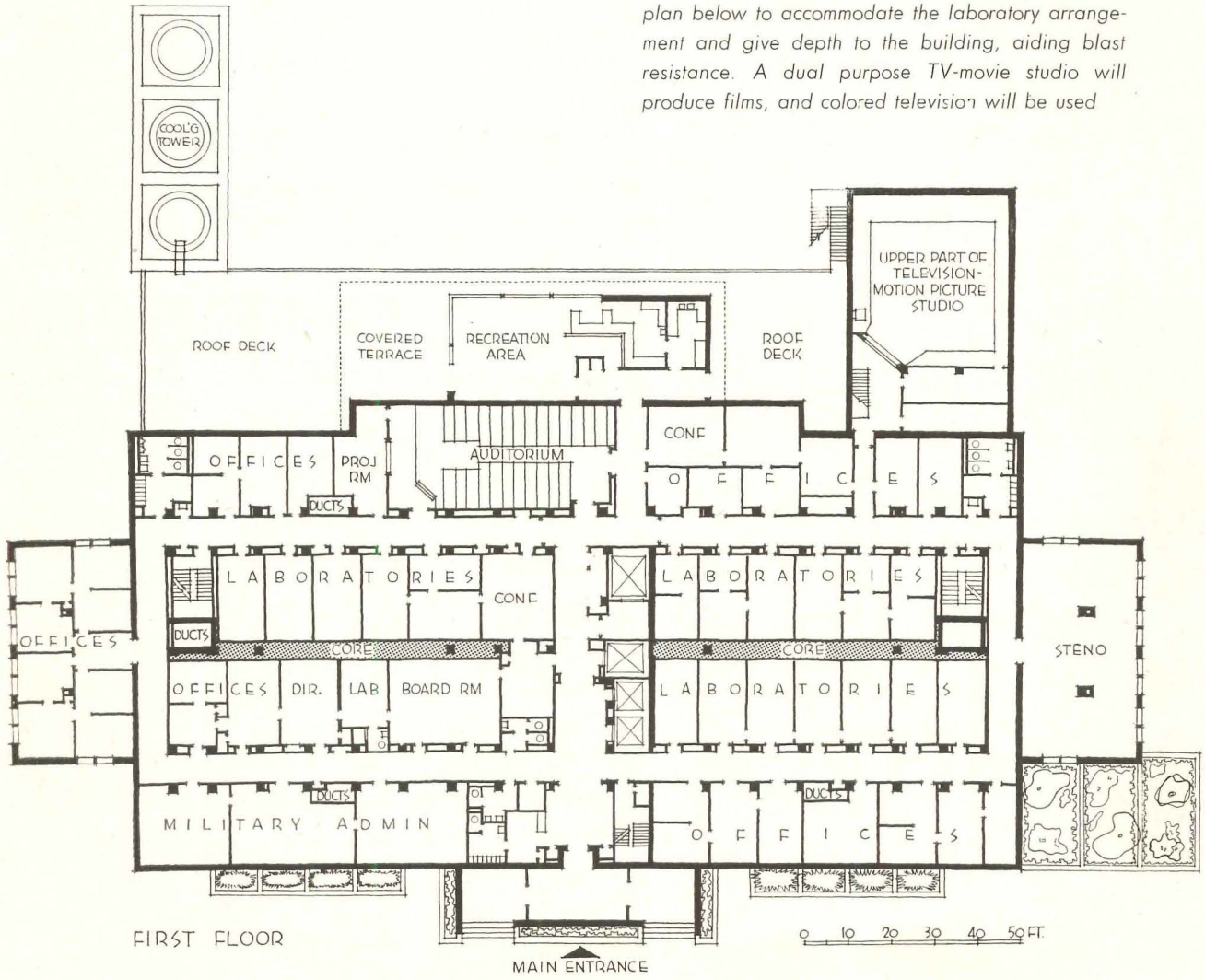
The most acceptable results were attained with four 4-ft long, surface-mounted fixtures each equipped with four 40 watt, 4500 deg cool white, fluorescent tubes. Fixtures were symmetrically mounted in the room which was decorated with white ceiling, buff-colored walls and a gray-green floor covering.

4. Air Conditioning

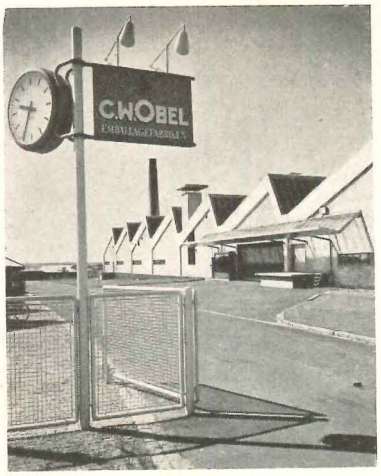
Because of the variation in occupancy and equipment heat loads, it was not possible to provide optimum comfort at all times in the laboratory modules with a central system. To alleviate extreme summer conditions prevailing temporarily in a few modules where equipment loads might approach or exceed 4000 watts for extended periods, chilled water risers have been provided to permit the temporary installation of individual unit coolers.



The most prominent feature is the arrangement of laboratories in 11 by 22 ft modules, back-to-back, and divided by a general service core. Changes in piping can be made without disturbing other labs, and partitions are movable to facilitate future modifications. The architects developed the two-corridor plan below to accommodate the laboratory arrangement and give depth to the building, aiding blast resistance. A dual purpose TV-movie studio will produce films, and colored television will be used



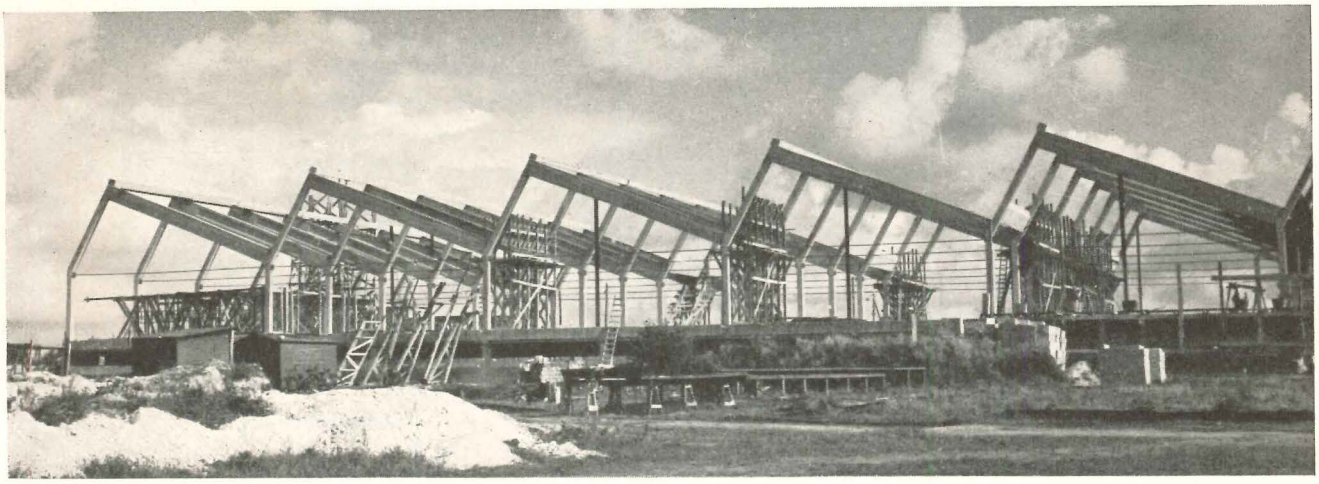
THREE CONCRETE STRUCTURES IN DENMARK

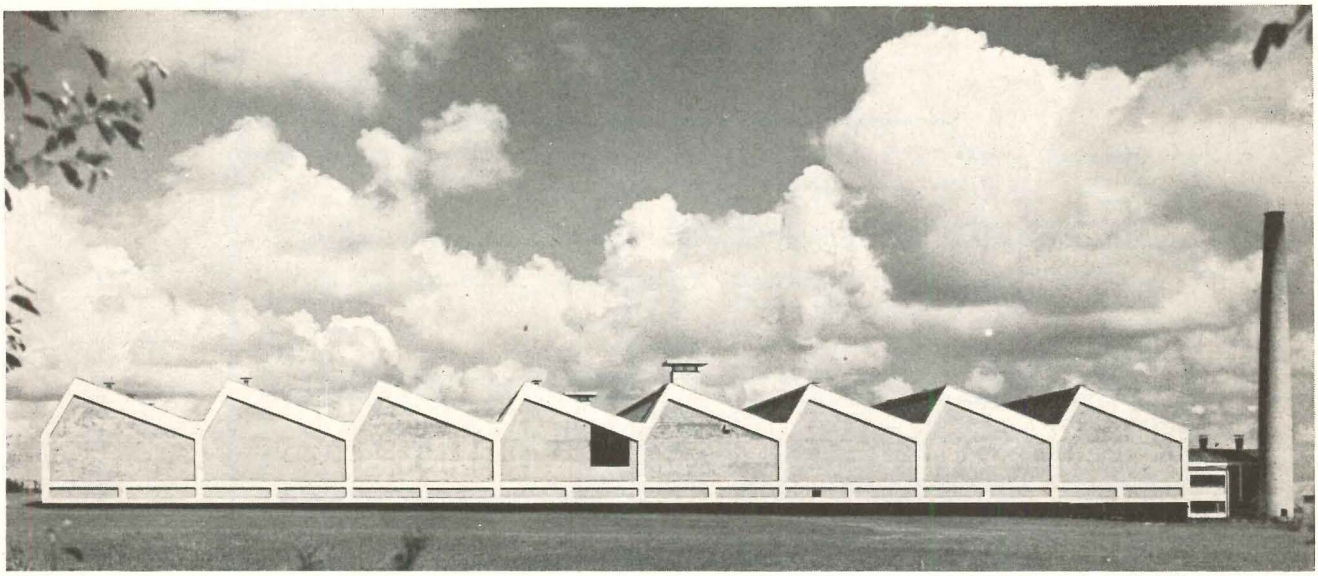


Sign, clock, fence and marquee at the Obel packaging plant are typical of the neat design seen at some new Danish factories

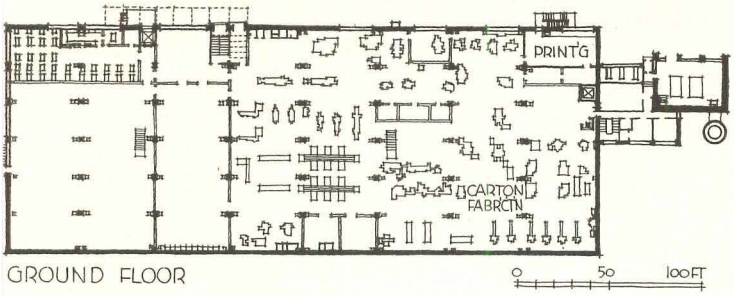
Examples showing application of precast concrete and some prestressing give an idea of the trim lines possible and point up the contrast between European and U. S. construction methods

Preben Hansen, Architect





Concrete framing of the Obel plant expresses itself in the exterior design. The narrow strip along the bottom indicates the service space for water and air pipes and electrical lines. Column bents and rafters (heaviest pieces) are precast, but gutter section was poured in place. Bents are not stable by themselves, and tie rods hold framing together



Mullions of the skylight are thin strips of prestressed concrete. Natural light is supplemented by fluorescent lamps mounted on the ceiling. Note how the air conditioning ducts rise up on either side of the column bents and then run horizontally between them

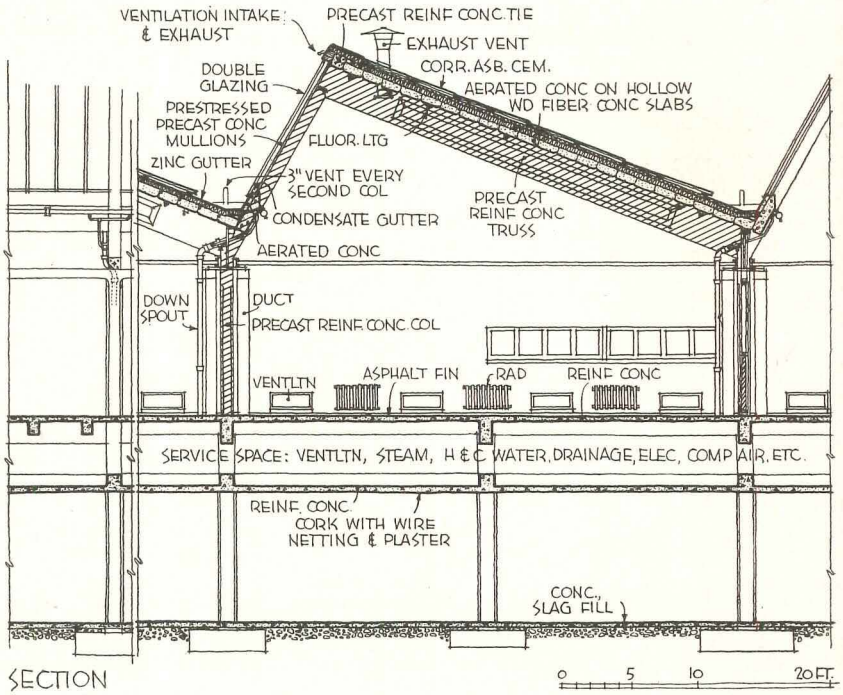
Concrete has long been a favorite building material in European countries, and for some years now, efforts have been directed toward the development of precast building units — in many cases prestressed to lighten them — in order to speed up construction time and to permit work to start as soon as plans are finished. This avoids unnecessary stoppage or delay of work and also reduces the loss of return on the capital invested in site and buildings.

The three buildings here show some recent work of this nature in Denmark and demonstrate what openness of space and light feeling can be accomplished with precast and prestressed concrete.

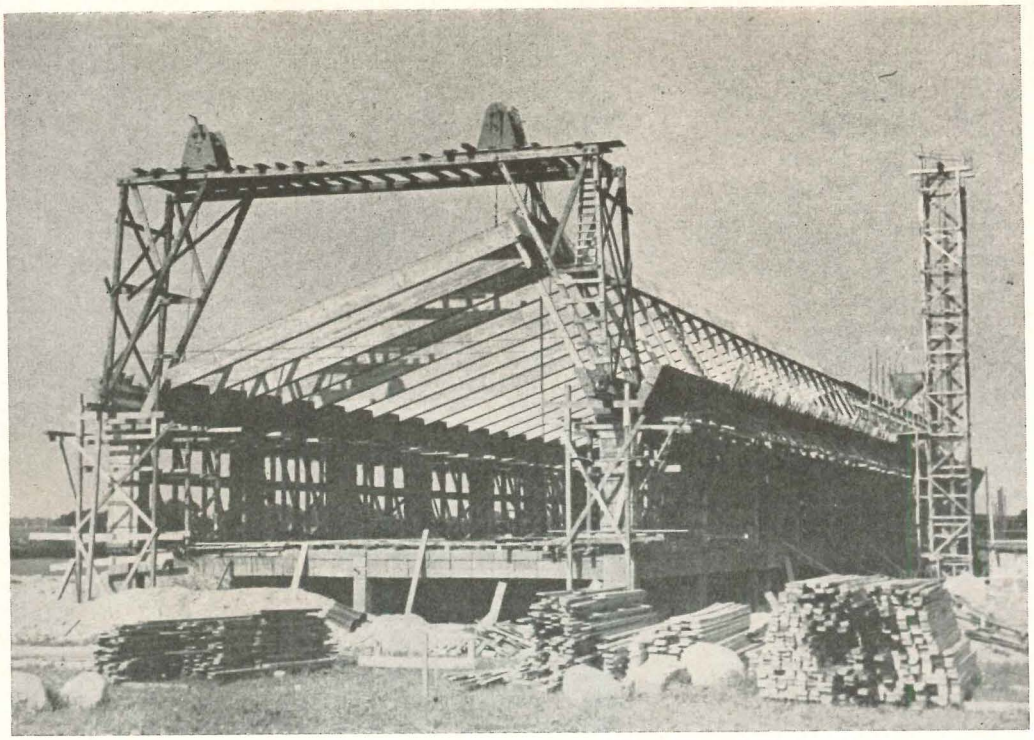
Perhaps more significantly, though, these examples point up graphically the differences between the more mechanized construction methods of the United States as contrasted with those abroad and the consequent effect on the design of the structural system.

For example, instead of being able to bring in huge movable cranes, capable of hoisting heavy rigid frames of concrete as is common practice here, it was necessary in one of these Danish buildings to construct a total of seven erection towers of wood, taller than the building itself, to hoist up the precast rafters for eight bays. And in another, a movable erection bridge (a sort of traveling crane) was built to span between the cast-in-place gutters and columns, with rails in the gutters for the bridge to travel on.

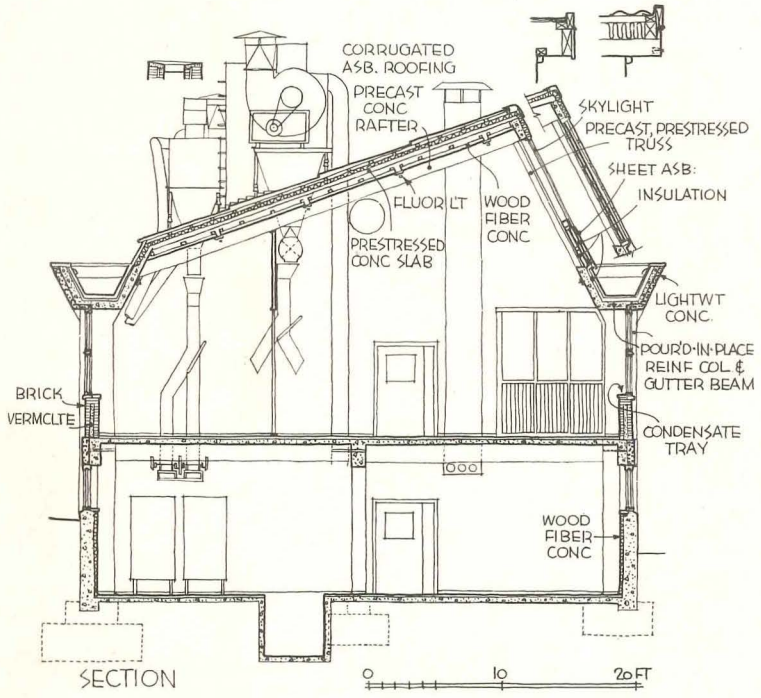
These limitations, of course, determined the size of precast members that could be handled and must have had a great deal to do with the actual structural design.



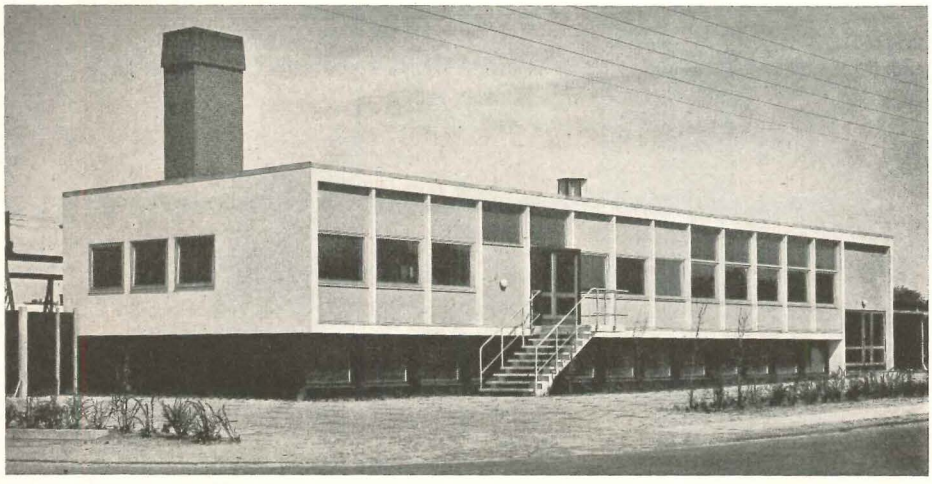
Shading covers the two main precast elements of the frame. Heavy gutter unit was cast in place



In building the cigarette factory, the columns and the gutters which carry the load of the rafters to the columns were cast in place. The rafters and skylight posts were hoisted into position by this traveling crane which ran on tracks in the gutters. Hoist worked by hand



Below: thin structural mullions are prestressed concrete, and give this office and canteen building a delicate appearance



Carton Manufacturing Plant

This saw-tooth skylight factory of 12,000 sq ft, with column spacing 20 by 40 ft, employed three types of precast units: a column bent, 1 ft sq and weighing 3750 lb; a rafter 34 ft long, 12 by 29 in., weighing 12,000 lb; and a ridge beam 20 ft long, 12 by 14 in., weighing 3740 lb. As mentioned before, seven erection towers, mounted on the finished floor slab, with the operating platform above the structure, hoisted up the cured units which had been cast on the floor slab under the spot where they were to be used. Columns, the I-shaped rafters and ridge beams were raised in that order. Then the gutter, because of its size and weight, was cast in place.

The whole skeleton construction is held together by tie rods, anchored by bolts to the columns. The later expansion of the tie rods was accommodated during assembly by placing the columns slightly out of plumb, so that when the roof slabs were laid, the rods became tensioned and the columns plumb.

Cigarette Factory

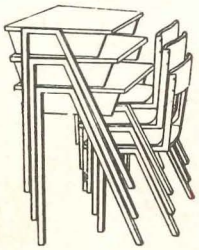
Here again skylight design was used, but the columns and gutters both were cast in place, the gutters being designed to carry the load of the rafters to the columns and down to the foundation.

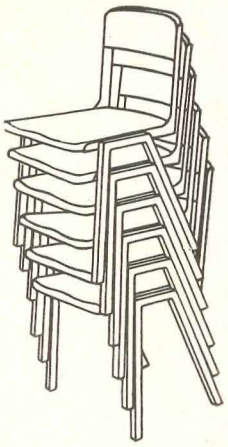
The concrete rafters (7½ by 20 in.) were precast on the floor slab, and both prestressed and precast mullions were employed in the skylight. The superstructure was assembled by the means of the erection bridge which had a hand winch for lifting the concrete members.

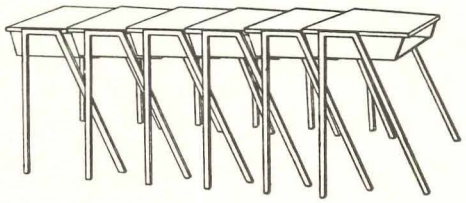
Equipment for Schools

A number of new products of special interest to architects engaged in school design have recently been marketed. Among the many varied pieces of equipment are the following items:

• The *Space-Master*, a desk and chair unit described as a new idea in classroom seating, features a modular design which permits both the desks and the chairs to be stacked or nested to save space when it is desired to use the classroom for special activities. Desks and chairs can be stacked atop each other and stored in a corner or against a wall. The desks can also be nested together in rows. The units are reported to be sturdy in construction and easy to maintain. The desk has a large sloping writing surface and a roomy book box. A scratch-proof plastic writing surface is available if desired. Legs of both desk and chair are made of one-piece hollow metal tubing. E. W. A. Rowles Co., Arlington Heights, Ill.







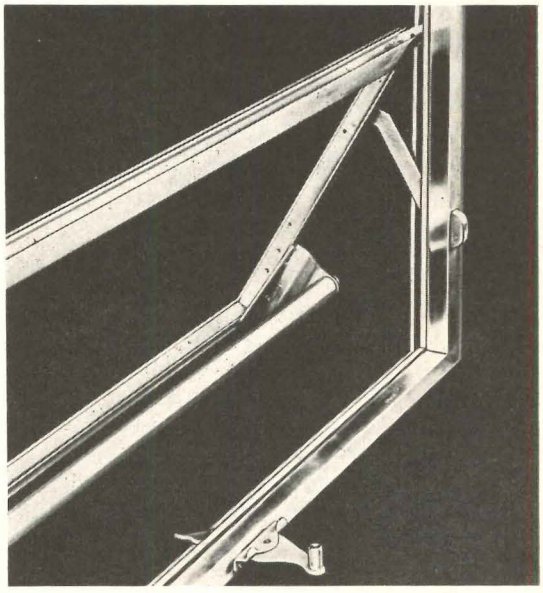
Desk and chair unit, above, may be stacked or nested as illustrated in sketches below and right

• *Nu-Rite* glass crayon boards are especially designed for use with the manufacturer's *Ezy-rase* water-soluble wax crayons. Together, the products are reported to solve the problems of stain and dust commonly associated with the employment of colored chalks. The crayons are said to be dust-free and stain-proof and can be easily erased with a moist cloth, sponge or tissue, since the wax base dissolves instantly in contact with water. At present, they are available in six colors — red, blue, violet, green, brown and black. Their hexagonal shape reportedly suits them for marking in fine and broad lines, as well as for shading.

The boards are made of plate glass with a vitreous enamel surface and are available in light green, buff or ivory. Light reflectivity factors, as determined by laboratory tests, are 53 for ivory, 39 for green and 38 for buff. The flat surface of the boards is said to minimize glare, despite the high reflectivity of the colors. New York Silicate Book Slate Co., 541 Lexington Ave., New York 22, N. Y.

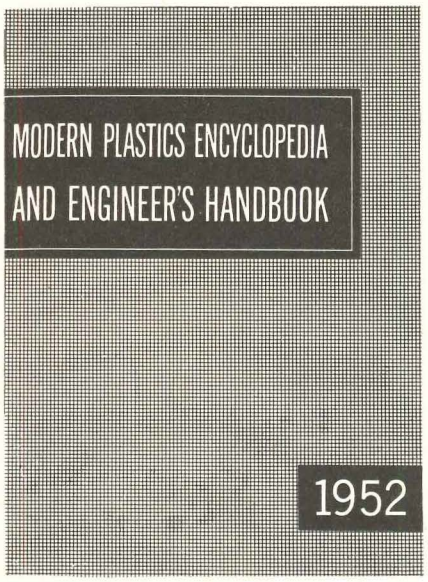
• A new window introduced by *Ludman* is reported to be the first ever designed specifically for schools. Similar in all

(*Continued on page 218*)



Awning window especially designed for schools has push-out vent operation

LITERATURE FOR THE OFFICE



Book includes material on processing methods for commonly used plastics

Plastics Encyclopedia

Modern Plastics Encyclopedia and Engineers' Handbook. 16th Edition. This large and comprehensive volume contains information on every practical method of processing all commonly used plastic materials. General sections include Engineering and Methods, Fabricating and Finishing, Machinery and Equipment, Resins and Moulding Compounds, Chemicals for Plastics, Fillers and Reinforcements, and a technical section. Each of these is subdivided into more specific categories. An extensive directory of manufacturers and suppliers, listed according to categories of products and services, is included. 848 pp., illus. Price $2.00. Plastics Catalogue Corp., 575 Madison Ave., New York 22, N. Y.

Rubber Flooring

Facts About Rubber Floors. Booklet describes simply and briefly features of rubber flooring, with information on manufacture and installation, and recommendations for proper maintenance. 16 pp., illus., Rubber Manufacturers Association, Rubber Flooring Div., 444 Madison Ave., New York 22, N. Y.

* *Other product information in Sweet's File, 1952.*

Industrial Heaters

Thermobloc, the Finest Industrial Heaters for Your Plant. Catalogue NGC-10-52. General catalog of the manufacturer's line of industrial heaters lists features and depicts various models and typical installations. Specifications and dimensions are listed, and a full-color cutaway drawing illustrates the operation of the units. 8 pp., illus. Thermobloc Div., Prat-Daniel Corp., South Norwalk, Conn.

Aluminum Products Glossary

Nomenclature; A Glossary of Terms for Aluminum Sheet and Plate and Aluminum Extruded and Tubular Products. Designed to promote better understanding between producers and consumers of aluminum products, this little booklet contains definitions of sheet and plate products, miscellaneous terms applicable to sheet and plate products, definitions of extruded and tubular products and miscellaneous terms applicable to these. 20 pp. The Aluminum Association, 420 Lexington Ave., New York 17, N. Y.

New Design For Automatic Sprinklers

New Developments in Upright Sprinklers, by Norman J. Thompson. Pamphlet describes a change in design of automatic sprinklers, said to be particularly useful for locations where the water supply is scant or where the fire hazard approaches the limit of ordinary sprinkler capacity. 19 pp., illus. National Fire Protection Association, 60 Batterymarch St., Boston, Mass.

Steel Cabinets

Penco Steel Cabinets, Catalogue No. C-200. Brochure illustrates the manufacturer's complete line of storage wardrobe and combination cabinets in both single-door and double-door types, and including desk-high, counter-high and tool cabinets. Construction details and specifications are included. 8 pp., illus. Penn Metal Corp. of Pa., 50 Oregon Ave., Philadelphia 48, Pa.*

Concrete Masonry Construction

Suggested Details of Concrete Masonry Construction. Booklet consists of drawings which illustrate various recommended details for construction and design with concrete masonry. All the drawings were prepared in accordance with modular design coordination, based on a 4-in. module. Drawings of some typical patterns used in concrete masonry construction are included. 16 pp., illus. Portland Cement Association, 33 W. Grand Ave., Chicago 10, Ill.*

Corrosion-Proof Cements

Atlas Corrosion-Proof Cements. Bulletin describes four basic types of cements with charts showing the temperature range of each cement and its resistance to broad classes of corrosives. Each cement is also rated specifically in relation to 176 common chemical materials. Three principal methods of acid-proof brick and cement construction are shown, and estimating tables are furnished for each. 12 pp., illus. Atlas Mineral Products Co., 8 Walnut St., Mertztown, Pa.

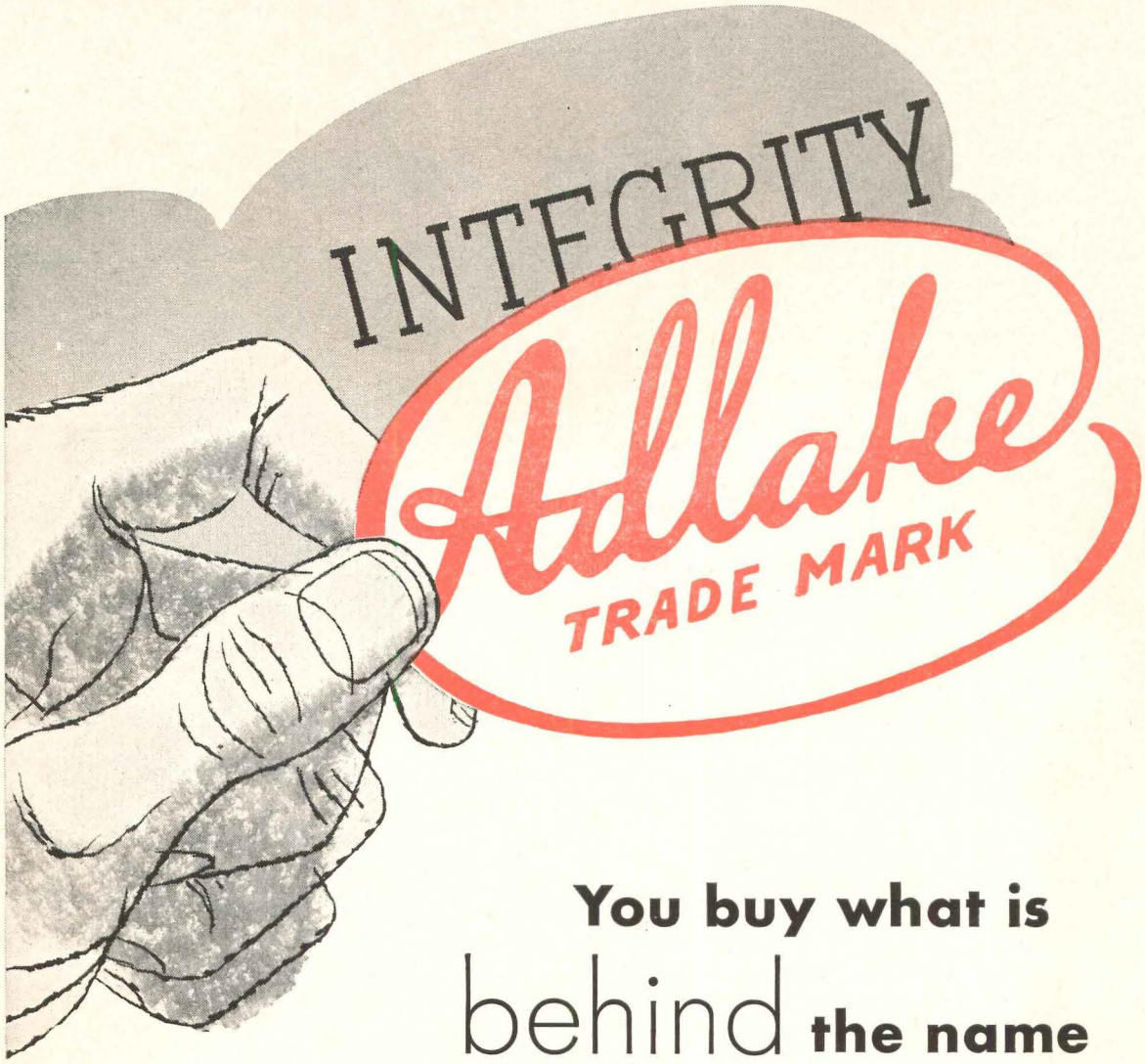
Folding Wood Doors

Ra-Tox Folding Doors. Brochure of manufacturer's folding doors illustrates suggested applications, lists technical and functional advantages. Specifications and details are included. 4 pp., illus. Hough Shade Corp., Ra-Tox Div., Janesville, Wis.*

Industrial Insulations

Baldwin-Hill Industrial Insulations. Catalog describes the manufacturer's industrial insulation products for a temperature range from 150 to 1800 deg F. Among products illustrated are insulating cement, block, blanket, felt and pipe covering. Products are described briefly, together with information on typical uses, sizes, densities and packaging. Thermal-conductivity graphs and heat loss charts are included. 20 pp., illus. Baldwin-Hill Co., 1056 Breuning Ave., Trenton, N. J.

(*Continued on page 272*)



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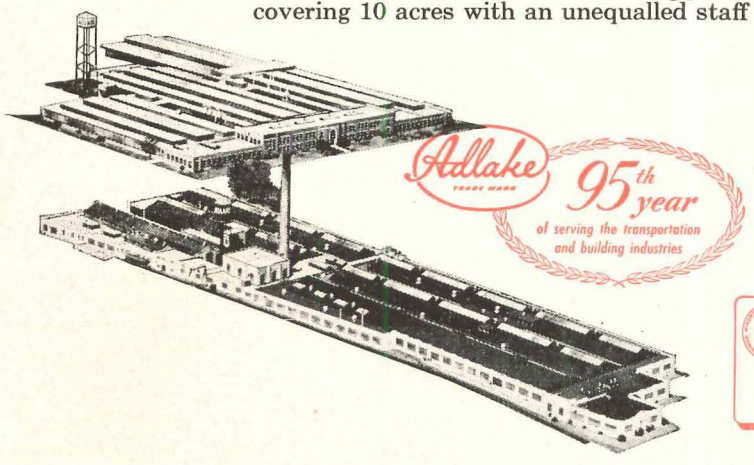

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Clyde L. Lyon School, Glenview, Illinois. Walvector in special enclosures along entire walls of windows assures comfort regardless of outside temperatures. Photo by Hedrich-Blessing.

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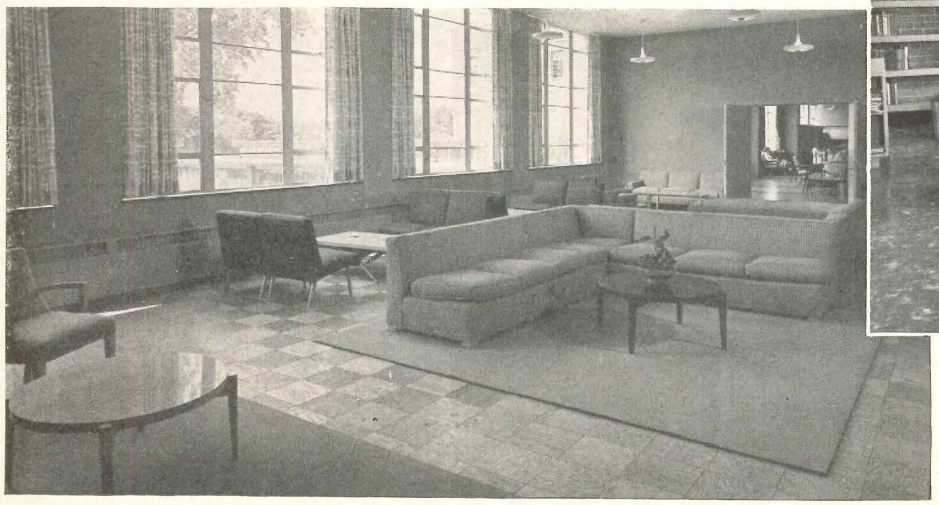
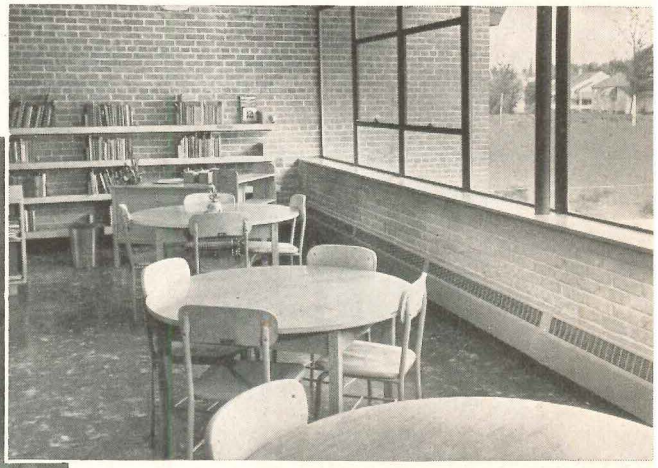
Left below: Teacher's lounge in Technical Building, Evanston Township High School, Evanston, Illinois. The exposed walls are heated with Webster Walvector painted to match wall color. Photo by Hedrich-Blessing.

Right: Library in Cascades Elementary School, Jackson, Michigan. Auditorium and gymnasium, in separate wings, are available for community use without opening the school proper.



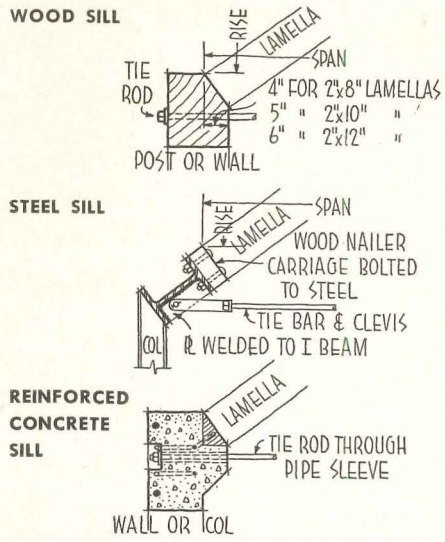


STRUCTURAL FORMS—12: Long Spans in Wood

By Seymour Howard, Architect, Instructor at Pratt Institute

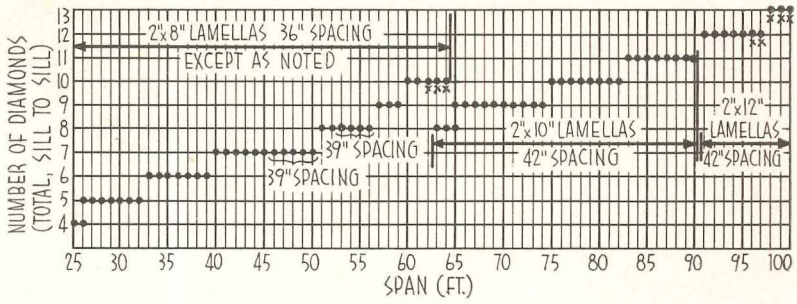
STANDARD LAMELLA ROOF CONSTRUCTION DATA (Continued)

TYPICAL SILL DETAILS



Note: Sills must be designed for both vertical & horizontal (thrust) components of reaction

"STANDARD" LAMELLA ROOF CONSTRUCTION DATA



Rise = 1/6 span
Radius = 1/6 span
} Except spans marked x, for which see table

Thrust = approx (21.6 x span'—30) lbs per lin ft. Based on 20 lbs/sq ft live load

SPAN	RISE	RADIUS	SPAN	RISE	RADIUS
62 ft	10 ft– 8 in.	50 ft– 4 in.	97 ft	17 ft– 8 in.	75 ft– 5 in.
63 ft	10 ft–10 in.	51 ft– 3 in.	98 ft	17 ft–10 in.	76 ft– 3 in.
64 ft	11 ft– 8 in.	49 ft– 9 in.	99 ft	18 ft– 0 in.	77 ft– 1 in.
96 ft	16 ft–10 in.	76 ft–10 in.	100 ft	18 ft– 2 in.	77 ft–11 in.

Note: Information based on data furnished by Summerbell Roof Structures, Los Angeles 11, Calif.

ADDENDA FOR TIME-SAVER STANDARDS ON WOOD STRUCTURAL FORMS.

Sheet 5 (T.S.S., Sept. 1952): Characteristics under "General Considerations of Wood as a Structural Material" refer, in order, to listing of consequences in opposite column.

Sheet 6 (T.S.S., Sept. 1952): Table of bending radii is based on the straight line formula of the "National Design Specification." Smaller minimum radii can be used. The Forest Products Laboratory (paper *Laminating Structural Wood by Gluing*, D 1635) and Timber Structures Inc. recommend radii in table, right.

Sheet 6, Under *Kinds of Wood*, Paragraph 2: "Gluing of treated wood is very difficult, almost impossible with creosoted wood. Techniques are being developed, but it is best to treat wood after gluing."

Sheet 7, Methods of arranging plies: "Method 1 shown for arranging laminations is used more than 90 per cent of the time. The lower face, since it is usually visible from below, is the one to which all other laminations are made parallel. The diagrams showing methods 1 and 2 are upside down for usual conditions."

"Note also that the slope of grain in any lamination must be measured with respect to the neutral axis of the frame or arch."

Sheet 7, Typical fastening details: "A 1-in. air space should be provided around all wood built into masonry."

Bibliography:

Rigid frames (3-hinged) based on information furnished by Timber Structures, Inc., Portland 8, Ore.

Arches (2-hinged) based on curves and tables by Summerbell Roof Structures, Los Angeles 11, Calif.

Rigid frames and arches checked against information furnished by:

Unit Structures, Inc., Peshtigo, Wis.;
Rilco Laminated Products, Inc., St. Paul, Minn.;
McKeown Bros. Co., Chicago 32, Ill.

General information based on:

Fabrication and Design of Glued Laminated Wood Structural Members, preview copy, Forest Products Lab., Madison 5, Wis.

National Design Specification, Nat'l Lumber Manufacturers Association, Washington 6, D. C., revised 1951.

Engineering Laminates, by A. G. H. Dietz, John Wiley & Sons, Inc., 440 Fourth Ave., New York 16, N. Y., 1949.

Thickness	Douglas Fir; S.Y.P. (F.P.L.)	Douglas Fir (T.S.)	Oak (F.P.L.)
1/4	2–7	2–1	1 ft–6 in.
5/16	3–5	3–1	2–0
3/8	4–3	4–0	2–6
7/16	5–3	—	3–0
1/2	6–2	6–0	3–7
5/8	8–2	7–8	4–10
3/4	10–5	9–4	6–1
13/16	11–5	—	6–7
1	14–5	—	8–9
1 3/16	—	15–10	—
1 1/4	18–11	—	11 ft–8 in.
1 1/2	23–7	20–10	14–8
1 5/8	—	23–0	—
1 3/4	26–11	—	18–1
2	33–4	—	21–4

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Metal Lath Membrane Fireproofing

In many conventionally fireproofed multi-story steel-framed buildings, at least 15 per cent of the structural steel is devoted to supporting its own fireproofing. Much of this steel can be saved by eliminating heavy individual encasement of beams and girders and replacing it with a thin lightweight fire-resistive ceiling stretching from wall to wall beneath the structural members.

To fully realize the savings in this type of construction, the membrane fireproofing must be incorporated in the original design. Lightweight floors — such as thin concrete decks over cellular steel panels, junior beams and steel joists, which are often difficult to fire protect by individually encasing each element — may be made eligible for use in fireproof buildings by a metal lath fire-resistive ceiling.

By employing lighter fireproofing, lighter floors, lighter structural members and chasing these reduced loads right down to smaller footings, a designer can often total considerable weight saving, with consequent reduction in costs.

Other economies can be added to the savings made in the structural frame. Concrete forms are eliminated. Construction time is reduced because plumbers, electricians, sheet metal workers and other trades can go to work sooner when supporting shores for concrete form work are not required.

Metal lath and plaster fireproofing can also serve as a durable and attractive interior finish.

The American Society for Testing Materials and the American Standards Association have established standard procedures for fire testing building materials and constructions, and rating them in terms of time.

Such nationally-recognized building codes as the BOCA Basic Code, the Southern Standard Building Code, the National Board of Fire Underwriters Code and the Pacific Coast Uniform Building Code recognize performance standards and specify fire resistance in terms of hours. The use of tested membrane fireproofing permits the design of the degree of fire resistance desired.

Materials Used in Metal Lath Membrane Fireproofing

METAL LATH

Metal lath serves as both plaster base and steel reinforcing. Resilient steel embedded in the plaster helps keep fireproofing in place when it may be needed most — such as after an earthquake; expanded metal lath, with its thousands of small uniquely-shaped openings, also helps prevent fireproofing membranes from spalling under intense heat.

Since metal lath acts as a structural "backbone" for fireproofing construction, the weight and type of lath is determined by span between supports. To resist corrosion, metal lath is generally made from copper alloy steel and painted after fabrication with a rust inhibitive paint. Tests prove that standard lathing procedures are entirely adequate for membrane fireproofing. These procedures are outlined in "Specifications for Metal Lathings and Furring," available on request from the Metal Lath Manufacturers' Assn.

GYPSUM PLASTER

Gypsum rock is crystalline calcium sulphate. When ground into powder, then heated or cooked, gypsum releases a great part of its water of crystallization. By adding water to this calcined gypsum plaster, a plastic material is created that is easily applied to walls and ceilings. Gradually the gypsum recombines with the water to form crystals and reverts to its original rock-like state.

This ability of gypsum to release water when heated to high temperatures makes it an outstanding fireproofing material. In slowly going from "dry" water to steam, water of crystallization actually absorbs heat from the flames. The opposite side of the gypsum remains relatively cool until all the water is gone.

The more gypsum in plaster, the better the "sprinkler system" that is available to combat a fire. It is important in all membrane fire-proofing to specify plaster mix and thickness.

When sand aggregate is used, plaster is proportioned by weight. The accepted practice when lightweight aggregates are used is to specify the amount of gypsum by weight and the aggregate by volume. A mix of 100:2 means that 100 lbs of gypsum, or one sack, is mixed with 2 cu ft of aggregate. Lightweight aggregates usually are packed 4 cu ft to a sack.

Neat wood-fibered gypsum plaster is a mill prepared base coat plaster containing a wood fiber aggregate and requiring the addition of water only on the job. It is from 50 to 100 per cent more effective as a fire-proofing material than standard mixes of gypsum-sanded plaster.

Fire Resistance Rating of Beam, Girder or Truss	Metal Lath Membrane Fireproofing
4-hours	1″ gypsum-vermiculite or perlite plaster 100:2, 100:3
4-hours	⅝″ gypsum-vermiculite base plaster 100:2, 100:3 plus ½″ vermiculite acoustic plastic
3-hours	¾″ gypsum-vermiculite plaster 100:2, 100:3
3-hours	1″ neat wood-fibered gypsum plaster
2-hours	1″ gypsum-sanded plaster 1:2, 1:3
2-hours	1″ sprayed fiber
1½-hour	¾″ Portland cement or gypsum-sanded plaster 1:2, 1:3

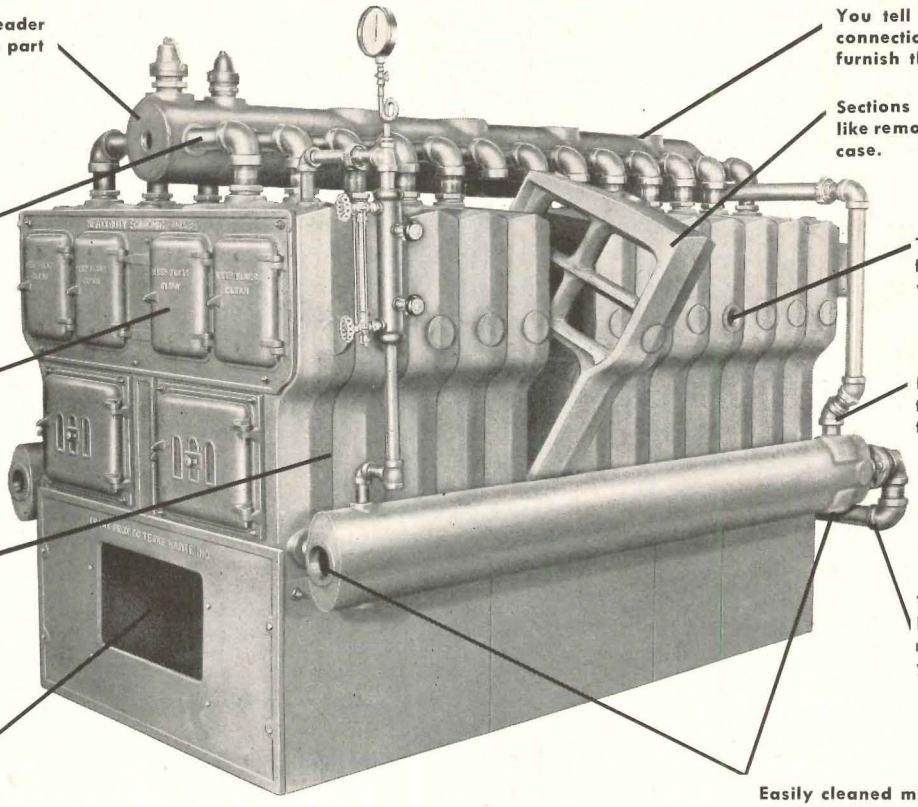
PROX

ON THE BANKS OF THE WABASH — SINCE 1875

HEAVY DUTY–HEADER TYPE

SECTIONAL BOILERS

for Schools, Hotels, Hospitals, Apartments, Churches, Theaters



No additional steam header required! We furnish it as part of the boiler.

You tell us the steam header connections you want, we will furnish them at no extra cost.

Sections easily replaced — tilt like removing book from bookcase.

Swinging connections! No vibration! No pulsation!

Tapped per your specification for indirect water heater.

Ample flue clean-out doors!

Dry steam! All entrained water returned to the boiler!

No iron to iron joints! Expansion and contraction troubles eliminated!

The return header · Hartford loop or other return requirements are yours on request.

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Easily cleaned mud drums!

Made of

DURABLE CAST IRON

Flexible – Absorbs Vibration, Resists Corrosion

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For catalog and specifications . . . write

Compare with any Boiler

1. CONTINUOUS SERVICE—Any heating plant will break if carelessly operated. Broken sections in Prox Boilers can be plugged off and heat maintained, avoiding dismissal of school or closing of building.
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3. LONG SERVICE, SAFETY—Prox cast sectional Boilers represent maximum permanence as compared to steel construction, and there is no danger if carelessly operated.
4. QUICK, DRY-STEAMING—Low water line, small waterways, quick circulation, dry steam assured by steam-separating header over Prox Boilers.
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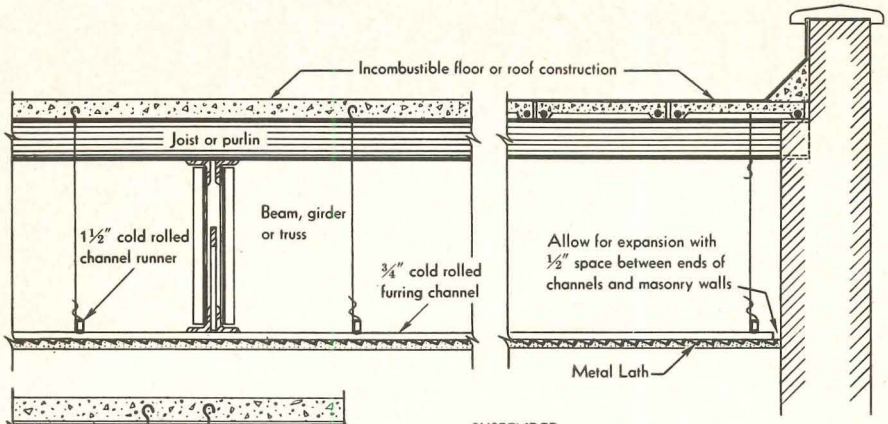
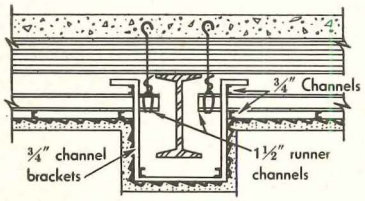
METAL LATH MEMBRANE FIREPROOFING—2

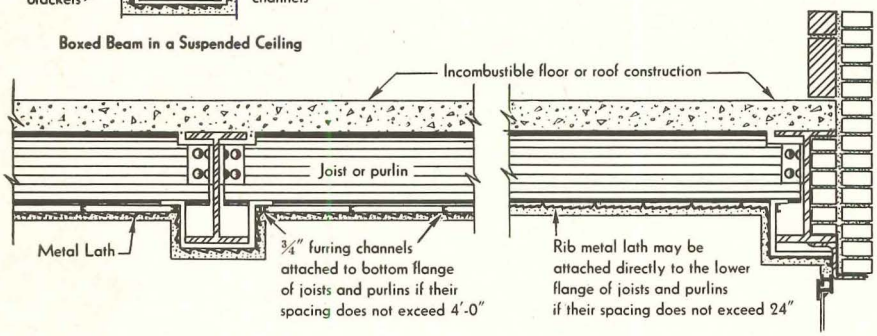
Presented through the cooperation of Metal Lath Manufacturers' Association



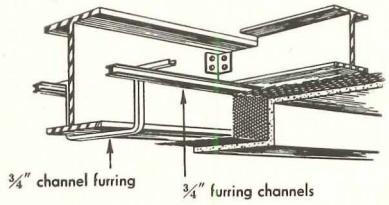
SUSPENDED MEMBRANE FIREPROOFING



Boxed Beam in a Suspended Ceiling



FURRED OR CONTACT MEMBRANE FIREPROOFING



Furred Beam in a Contact or Furred Ceiling

WEIGHTS OF METAL LATH AND PLASTER FIREPROOFING

	Weight In Pounds Per Square Foot
Contact Ceilings	
¾" gypsum-sanded plaster	9.5 psf
¾" gypsum-lightweight aggregate plaster	4.5 psf
1" gypsum-sanded plaster	11.5 psf
1" gypsum-lightweight aggregate plaster	5.5 psf
Furred or Suspended Ceilings	
¾" gypsum-sanded plaster	10 psf
¾" gypsum-lightweight aggregate plaster	5 psf
1" gypsum-sanded plaster	12 psf
1" gypsum-lightweight aggregate plaster	6 psf
Columns	
Gypsum-lightweight aggregate plaster on self-furring metal lath	
1¾" thick	9 psf
1⅜" thick	7.5 psf
1" thick	5.5 psf

SPRAYED FIBER

Asbestos and mineral wool fabrics sprayed on metal lath make a ceiling with good acoustical absorption, excellent thermal insulation and is an efficient fireproofing construction.

The fibers are factory-mixed with a dry binder, and come to the job ready to apply. It is blown from a special "gun," which mixes dry fibers in mid-air with a thin spray of water to dampen the binder and produce a light fluffy blanket on the metal lath. Tamping with a cork float gives an even finish, and tests conducted at the National Bureau of Standards indicate that it may be spray painted repeatedly without destroying acoustical properties.

Sprayed fiber mixtures may vary among manufacturers; many recognized brands may be found under the Reexamination Service of the Underwriters' Laboratories, Inc.

LIGHTWEIGHT AGGREGATES

Perlite and vermiculite are two lightweight aggregates used in metal lath and plaster fireproofing. They weigh about 1/10 as much as sand, and their use results in substantial dead load savings, especially in multi-story structures. For strong plaster, lightweight aggregates should weigh no less than 7½ lbs per cu ft.

Perlite is "popped" from a volcanic ore to many times its original size by quick heating to 1800 F. The resulting material resembles small glass-like bubbles. Vermiculite is a laminated mica-mineral, which expands when heated to around 2000 F.

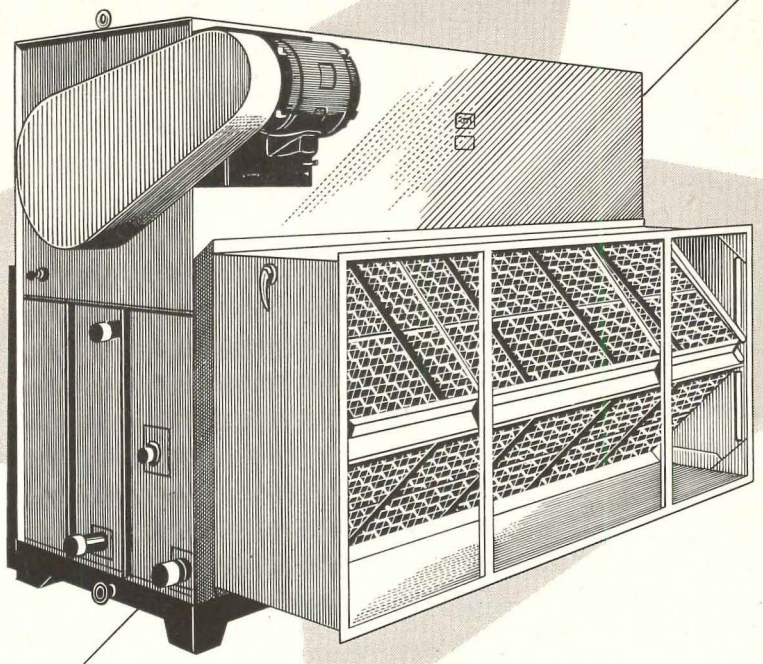
These products in gypsum plaster provide greater fire protection than sanded plaster for two reasons. Lightweight aggregates are excellent insulators, and gypsum plaster made with them releases its chemically-combined water more slowly when exposed to flames. There is less distortion of ceilings and partitions under extreme temperatures because lightweight aggregates have a low coefficient of expansion compared to sand.

Fireproofing for Beams, Girders, Trusses

In addition to protecting metal decks, steel joists and purlins, a fire-resistive ceiling will fireproof the

MODERN AIR HANDLING UNITS FOR THE MODERN ARCHITECT

by bush



Flexibility is of prime importance in modern air handling units. The Bush line offers this essential flexibility.

Provision is made in all units for both heating and cooling coils. Accessories such as humidifiers, filters, face and by-pass dampers and mixing boxes are adaptable to all models.

Bush air handling units come in a wide range of sizes. Eleven models are available: from 800 to 22,000 CFM, and from 1.5 to 90 tons.

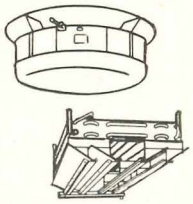
Units are available for either vertical or horizontal installation. Larger units are constructed in two sections.

Get acquainted with the Bush Sales Engineer in your area — he'll be a big help in planning and specifying refrigeration, air conditioning and heating.

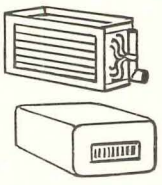
ARCHITECT'S FILE

Complete file especially prepared for architects and engineers contains valuable engineering data, specifications, etc. on refrigeration, air conditioning and heating. Write for copy on your letterhead.

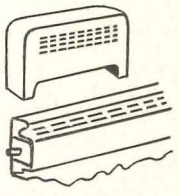
REFRIGERATION
Unit coolers
Plasti-coolers
Product coolers
Thermo-cycle low temperature units
Electric and Water defrost units



AIR CONDITIONING
Air Handling Units
Steam Coils
Water Coils
Direct Expansion Coils
Evaporative Condensers
Cooling Towers
Comfort Conditioners



HEATING
Finned Pipe Radiation
Baseboard Radiation
Convector Radiation
Steam Coils
Hot Water Coils
Booster Coils
Blast Heaters



BUSH MANUFACTURING COMPANY

WEST HARTFORD 10, CONNECTICUT

Since 1907

METAL LATH MEMBRANE FIREPROOFING—3

Presented through the cooperation of Metal Lath Manufacturers' Association

primary members such as beams, girders and trusses, and thus give considerable savings.

As hot gases and flames rush upward in a burning building, a good solution to fireproofing is to place an insulating membrane between the structural steel and the fire below.

The table of fire ratings on page 211 is a conservative evaluation of many fire tests, conducted for the most part at the National Bureau of Standards. Usually these structural members have been tested as part of lightweight floor assemblies with a 2 or 2½ in. concrete floor slab.

These tests are reported in the Bureau's BMS-92 from which this following pertinent quotation is taken:

> "It is noted that fire-resistance ratings are based on the performance of members near the lower range in size. For larger size members used in all but the upper stories of such high buildings, there would be considerable increase in fire resistance above the nominal ratings for the same kind and thickness of protecting materials."

Metal lath ceilings may be furred with ¾ in. channels or suspended below the structural steel as the condition may require. Rib metal lath may be attached directly to the bottom flange of joists, purlins and other secondary members if their spacing does not exceed 24 in.

The ratings listed are for non-combustible construction sealed between a ceiling and a non-combustible floor. Combustible floor or ceiling finishes are permissible if they are separated from the structural steel by a concrete floor or a fire-protective ceiling.

Where the required fire rating for the primary structural members supporting a floor system is greater than is required for the floor, the membrane fireproofing should be designed for the greatest rating required by any one member, and the remaining structural steel will enjoy an added fire-resistive factor of safety.

A few building codes require that the space above membrane fireproofing be firestopped into more or less arbitrary areas. In non-combustible construction, it is a costly and unnecessary requirement.

If firestopping is required, it can be accomplished by placing non-combustible materials, such as sheet steel or metal lath and plaster, between the ceiling and the bottom flange of a solid-web beam. Fire-stopping is automatically provided by solid-web structural members which extend from ceiling to floor slab.

However, the American Iron and Steel Institute has this to say about firestopping:

> "Where only non-combustible materials are used in the construction, fire-stopping is not essential to prevent the spread of fire within the floor and roof construction. In fact, fire stops within non-combustible floor construction, by confining within a smaller space the heat transmitted from a fire, may prevent dissipation of the heat, intensifying the effects, and do more harm than good."

Air Conditioning and Electrical Outlets

Tests indicate that the function of a fire-protective ceiling is not materially affected by openings for air conditioning and electrical outlets if their total area is not more than 100 sq in. per 100 sq ft of ceiling.

Ceilings of both gypsum-perlite and gypsum-vermiculite plaster on metal lath have been tested *with* and *without* openings. Temperature measurements on the floor surfaces and the structural steel members show that properly-protected openings make little difference in the fire protection afforded by these ceilings.*

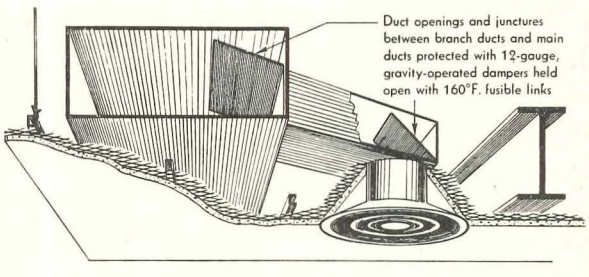
Although these tests were conducted on lightweight cellular steel floor constructions, the results are logically applicable to all membrane fireproofing regardless of the type of floor being protected.

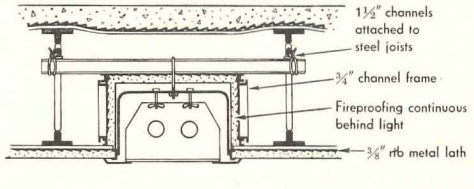
All duct openings and junctures between branch ducts and main ducts must be protected with 12 ga. gravity-operated dampers held open with 160 F fusible links. These are the same type dampers required by building codes to prevent the spread of smoke and gases through duct systems.

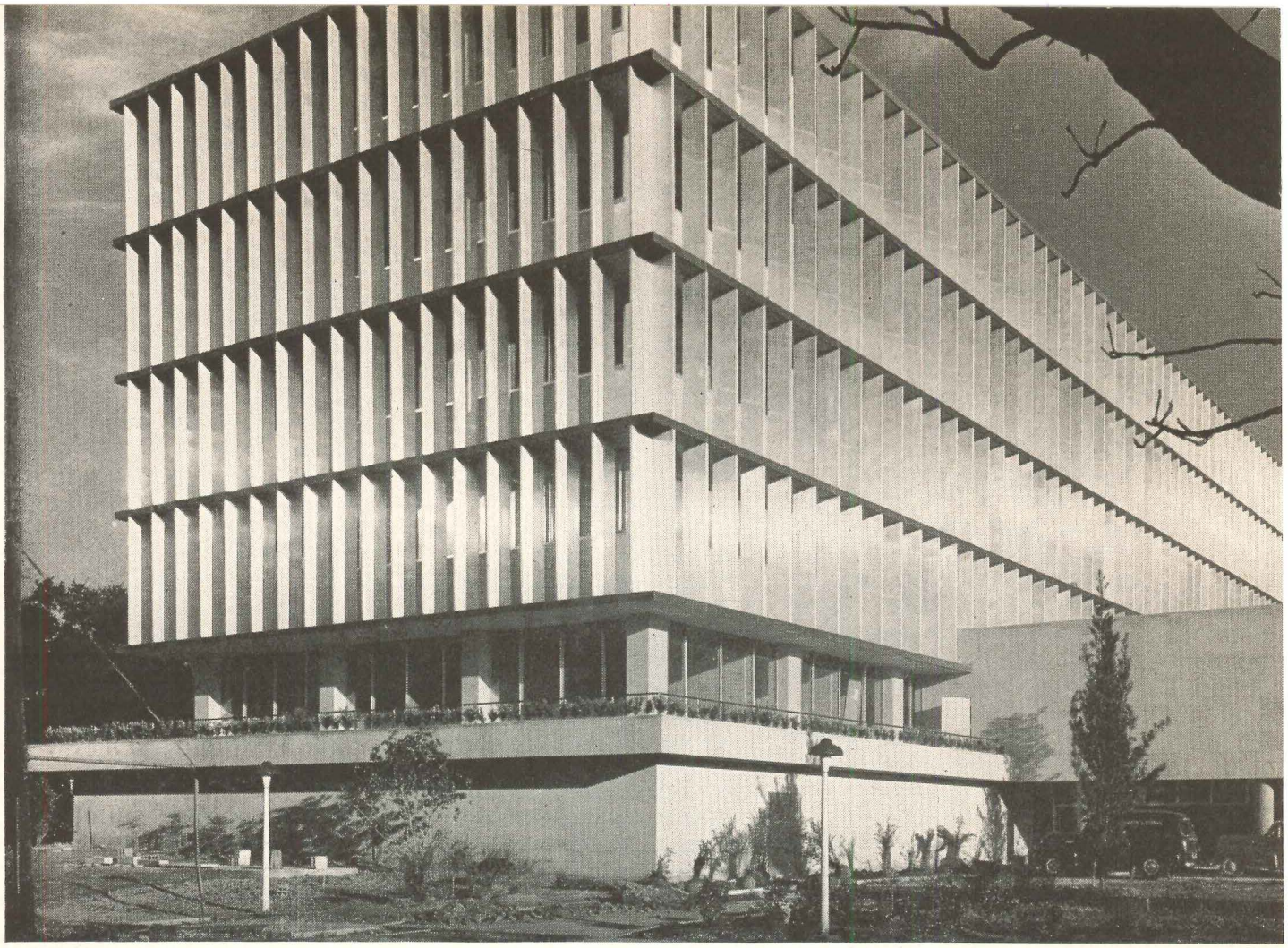
The damper at the duct opening should be covered on the exposed side with two layers of asbestos paper 1/32 in. thick. The membrane fireproofing must extend behind air diffusers to meet the duct opening at the section where it is protected by this damper.

When flush-type troffer lights are used, an opening in the fireproofing can be avoided by keeping the protective membrane continuous behind the fixture as shown in the accompanying detail.

* *Tests were conducted at the Underwriters' Laboratories and reported in Retardants 2689, dated 12/18/39 and 12/13/49; Retardant 2993, dated 12/9/48; and Retardant 3355, dated 4/30/51.*

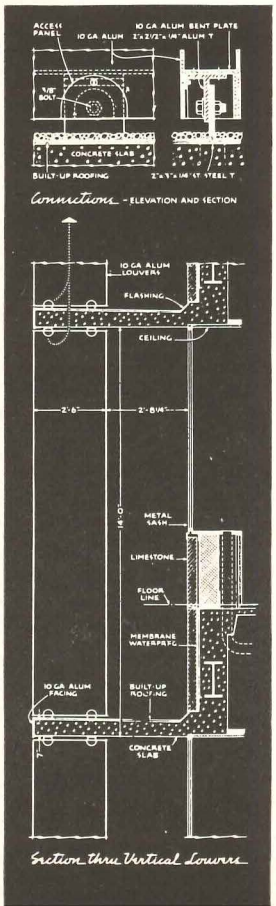






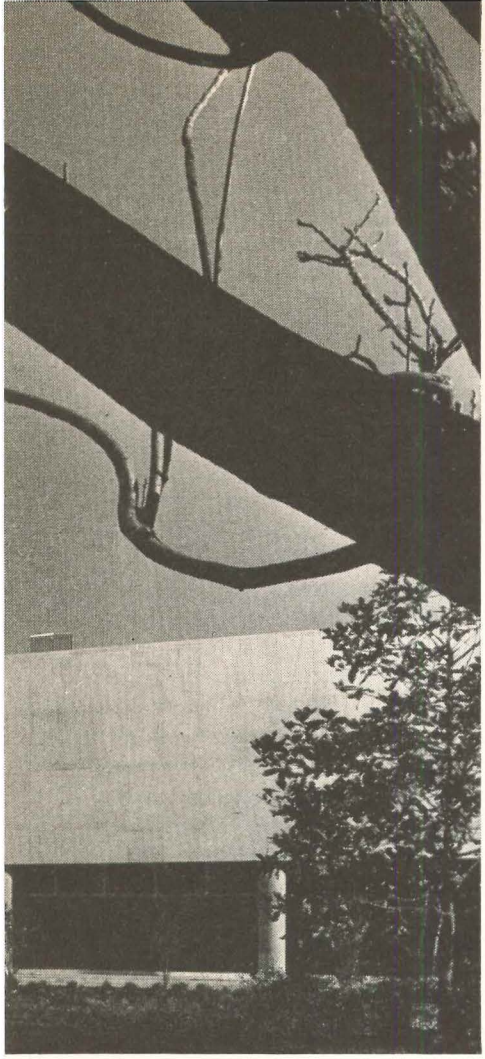
"ONLY ALUMINUM COULD LESSEN THI

...MINIMIZI



Fixed solar shading of cantilevered canopies and aluminum vertical louvers creates a striking pattern when illuminated at night. ▶

◀ Detail of aluminum louvers.



Pan American Life Insurance Building, New Orleans, La.
Architects: Skidmore, Owings & Merrill and Claude E. Hooton. General Contractor: George J. Glover, Inc.

VEIGHT

MAINTENANCE"

Handsome aluminum louvers and windows emphasize the modern thinking and design incorporated in this striking addition to New Orleans tradition of fine architecture.

According to Vice-President F. W. Gleason of Pan American Life Insurance Co., aluminum was used because, "we were interested in two things . . . lessening the weight and minimizing maintenance. This, in our judgment, can only be accomplished by the use of aluminum."

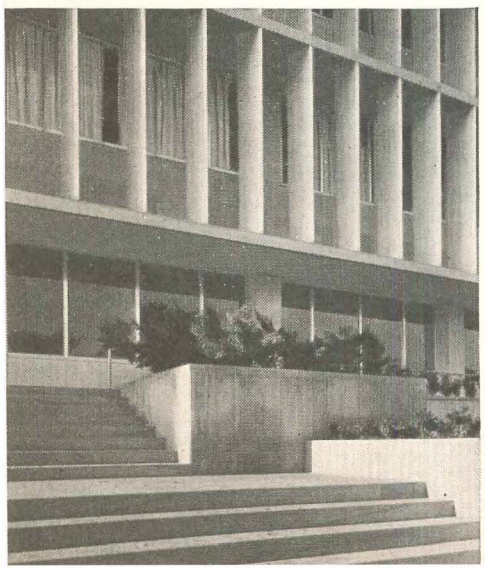
Today, aluminum is the preferred material for hundreds of architectural applications. No other material so well combines economy, workability, corrosion resistance, lightness and lasting good looks.

Alcoa engineers have worked with the designers of nearly every pioneering use of aluminum in the architectural field. They will be glad to work with you. Their assistance with design and alloy selection can help you to get full benefit of all of aluminum's many advantages.

Call your nearby Alcoa sales office or write:

ALUMINUM COMPANY OF AMERICA
1888-L Gulf Building • Pittsburgh 19, Pennsylvania

ouvers and windows were fabricated of Alcoa Aluminum by General Bronze Corp., Garden City, ong Island, N. Y.



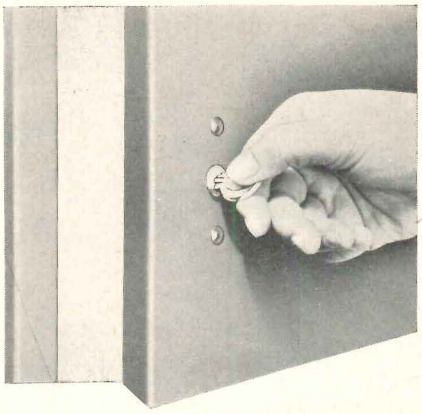
ALCOA

FIRST IN ALUMINUM

PRODUCTS (*Continued from page 205*)

respects to the manufacturer's Auto-Lok awning window, the new window features a push-out vent operation which is said to make it particularly practical for institutions. A rigid bar is used to open the window, with operation patterned after the bar-door or fire-door principle. It can be opened to any position up to almost 90 deg. Sliding shoes engaged on the frame reportedly eliminate the possibility of the window slamming closed unexpectedly. The shoe-grip also eliminates projection bars or arm supports, so that such protruding hardware does not detract from building design. All vents are controlled by the bottom vent, so that no poles are needed to open top vents. When the window is closed all vents are automatically locked and the bottom vent is secured by a patented center locking latch. Features cited by the manufacturer as most important include fully controlled ventilation even when it is raining, ease of operation and simple maintenance. Ludman Corp., P. O. Box 4541, Miami, Fla.

• Improved appearance in school corridors and gyms where long lines of lockers must be accommodated is said to be provided by a new *Key Control* locker. Since the key itself doubles as a handle, the



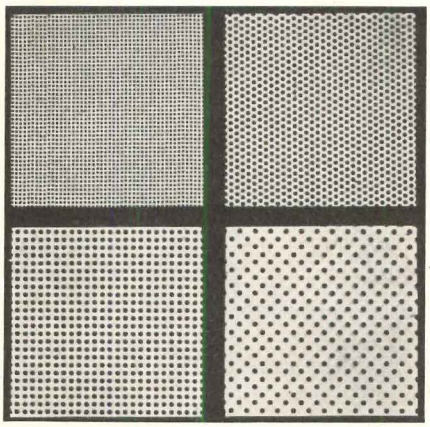
Key control locker eliminates handles, provides projection-free appearance for school corridor installations

front of the locker is kept free of projections. The door pre-locks when the key is removed and locks automatically when the door is closed. A full length three-point latching bar reportedly insures positive locking and resistance to prying. Each locker is equipped with a 14 tumbler duo-lock and two keys. A master key is provided, which fits all locks in an installation. Berger Manufacturing Division, Republic Steel Corp., 1038 Belden Ave., N.E., Canton 5, Ohio.

Non-Metallic Perforated Material

Perforated Fiberok, a non-metallic material, can be used in place of perforated metals and possesses acoustical properties. Its characteristics are said to be comparable to laminated plastics or vulcanized fiber. The material may be stapled, nailed, glued, screwed, cut with shears, knife or scissors.

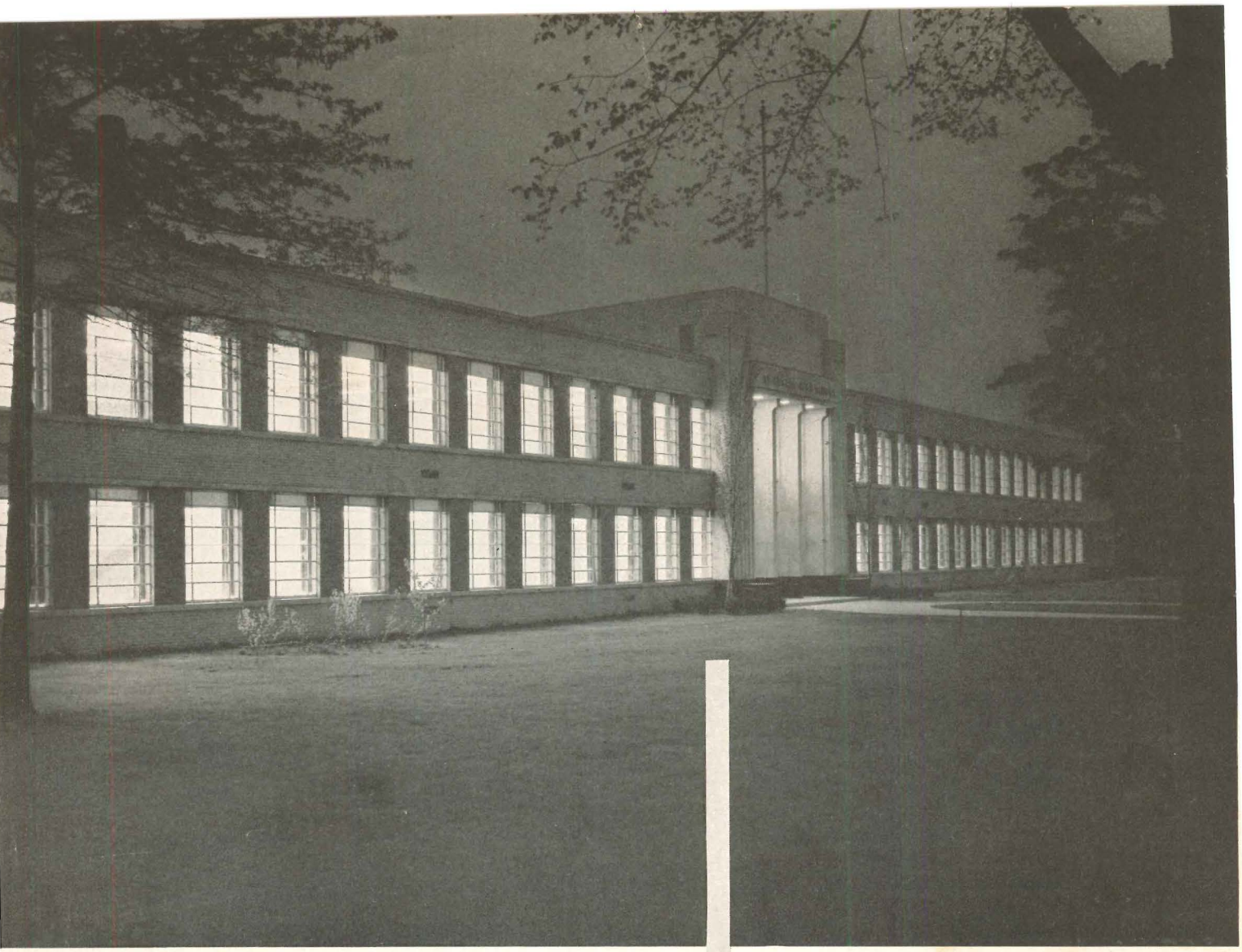
Available in an unlimited range of colors, the product may be obtained in a



Material may be used in place of perforated metals in many applications, can be cut, nailed or glued

wide variety of perforating patterns, both on square and staggered centers. Gages run from .010 to .125 in., in steps of .010 in., and standard sheet sizes are 40 by 21 in., 40 by 28 in., 40 by 42 in., 40 by

(*Continued on page 222*)

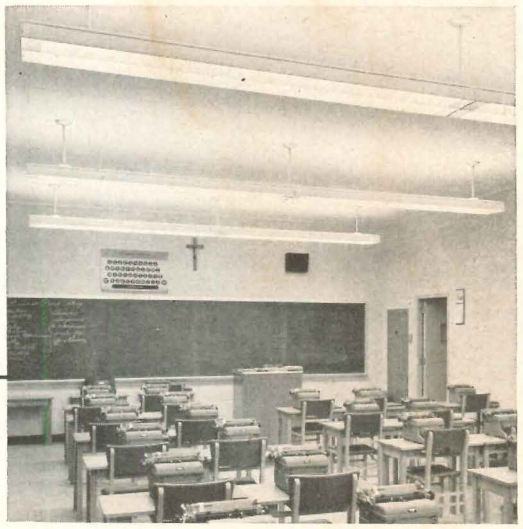


ST. EDWARD HIGH SCHOOL
LAKEWOOD, OHIO

Geo. S. Rider Co., Engineers

Cleveland, Ohio

Founded in 1949, St. Edward High School for boys is conducted by the Brothers of Holy Cross. This new $2 million school building was dedicated April 26, 1952. It boasts the most advanced educational aids and athletic facilities.



IN THE TYPING ROOM—Here, where young eyes must concentrate on close, exacting work, "LUVEX" pours an even flood of glareless illumination into all parts of the room. No danger of squinting, eyestrain-hampered students in this classroom.