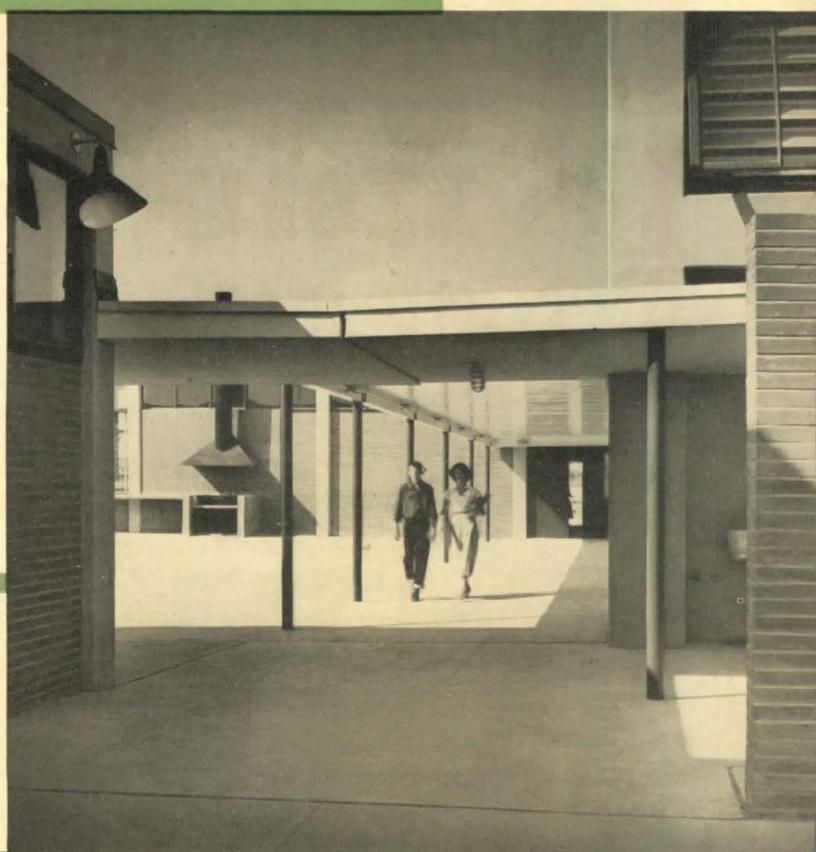
pa Progressive Architecture

changing educational goals



rld's largest architectural circulation

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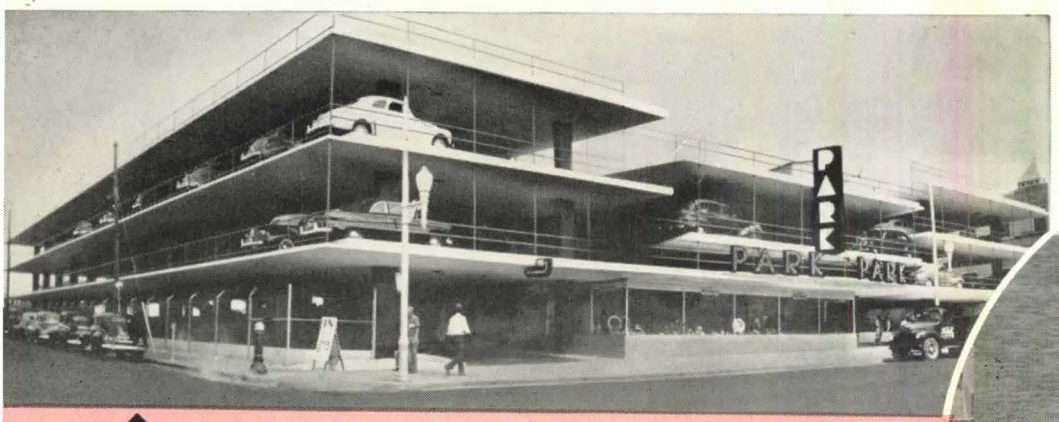
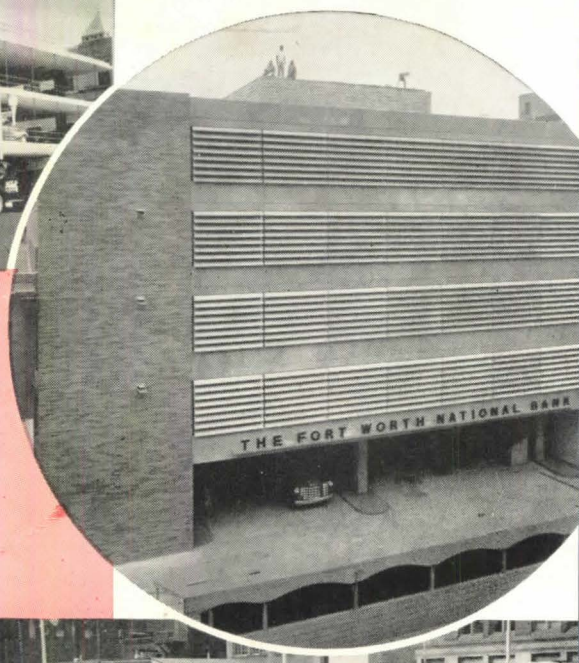
april 1954



Miami Parking Garage, Miami, Florida. Archt.—Robert Law Weed; Contr.—Gust K. Newberg—both of Miami, Fla. Pozzolith Ready-Mixed Concrete supplied by Maule Industries, Miami Beach, Fla.

Fort Worth National Bank Garage, Fort Worth, Texas. Archt.—Preston M. Geren; Contr.—Thos. S. Byrne, Inc.; Pozzolith Ready-Mixed Concrete supplied by Fort Worth Sand & Gravel Co.—all of Fort Worth, Tex.



Blaise Parking Garage, New Orleans, La. Archt.—Diboll-Kessels & Assoc.; Contr.—Gervais F. Favrot Co.; Pozzolith Ready-Mixed Concrete supplied by Jahncke Service, Inc.—all of New Orleans, La.

Eglin's Garage, Philadelphia, Pa. Archt.—W. F. Sillman; Engr.—J. E. Good; Contr.—John A. Robbins Co., Inc., Pozzolith Ready-Mixed Concrete supplied by Warner Co.—all of Philadelphia, Pa.

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pa newsletter

April 1954

architects honored: Eero Saarinen became a life member of the National Institute of Arts and Letters when he and four other Americans were added to Institute's roster in honor of their "notable achievements in art, music, and literature" . . . . Gold Medal (1954) of Royal Institute of British Architects went to Australian Architect, Arthur George Stephenson . . . . Architectural League of New York awarded its Gold Medal in Architecture to Skidmore, Owings & Merrill (Lever House). Other architectural winners: Silver Medals—Harrison & Abramovitz (Corning Glass Company Building) and Perkins & Will (Heathcote School); Honorable Mentions—Henry Hill (William Foster House) and Hellmuth, Yamasaki & Leinweber (St. Louis Housing Project).

appointments within the field: Harold D. Hauf has taken over as Director of AIA Department of Public and Professional Relations . . . . George Hutchinson, Jr., E. Todd Wheeler, Leon Hyzen, and G. Robert Johnson make up subcommittee of AIA Chicago Chapter which will assist Chicago Plan Commission in selection of site for civic center . . . . Edmund R. Purves, AIA Executive Director, has agreed to serve on FHA's advisory committee on national housing established by Commissioner Guy T. O. Hollyday last May.

news from the universities: Both Pratt Institute, Brooklyn, N. Y., and the University of Virginia have announced establishment of separate Schools of Architecture, beginning this July and September, respectively. . . . Department of Architecture at Harvard will award two $4000 Arthur W. Wheelwright Fellowships this year for foreign travel and study to graduates of its School of Design . . . . New York University has announced plan under its sponsorship for establishment of National Arts Center in New York. Preliminary estimate of $8 millions has been set for cost of site (mid-Manhattan), building, and equipment.

exhibition feature: Techbuilt "Excursion House," designed by Carl Koch & Associates, will be important highlight of "Building Your Home—1954," to be sponsored this spring by Architectural League of New York. Lewis Adams, incoming League president, has announced that the $14,000 partially-prefabricated house will be erected, furnished, and landscaped in New York's 71st Regiment Armory, where exhibition will be held. Architects, builders, and public invited.

recent elections: Concurrent with naming of new members, National Institute of Arts and Letters elected as a Vice-President James Kellum Smith of McKim, Mead & White (New York); Smith succeeds Ralph Walker . . . . Texas Builder R. G. Hughes became National Association of Home Builders' new President at NAHB 10th Annual Convention-Exposition (attended by record crowd of 20,000 persons). Hughes, First Vice-President last year, heads Hughes Development Co., Inc., in Pampa, Tex.

government awards: April 15 is deadline for application for 1955-56 lecturing or research awards (post-doctorate level) under Fulbright Act in Australia, Burma, Ceylon, India, New Zealand, Philippines, Thailand, and Union of South Africa. Forms obtainable from Conference Bd. of Assoc. Research Councils, Committee on International Exchange of Persons, 2101 Constitution Ave., Washington 25, D. C.

PROGRESSIVE ARCHITECTURE published monthly by REINHOLD PUBLISHING CORPORATION, 330 West 42nd Street, New York 36, N. Y. Ralph W. Reinhold, Chairman of the Board; Philip H. Hubbard, President and Treasurer; Fred P. Peters, Vice President and Secretary, Gilbert E. Cochran, H. Burton Lowe, Merald F. Lue, William P. Winsor, Vice Presidents; Kathleen Starke, Assistant Treasurer, Executive and Editorial offices: 330 W. 42nd St., New York 36, N. Y. Subscriptions payable in advance. Subscription prices to those who, by title, are *architects, engineers, specification writers, designers or draftsmen, or employes of architectural and engineering firms,* and to government departments, trade associations, members of the armed forces, college libraries, college students, publishers, advertisers, prospective advertisers and their employes—$5.00 for one year, $8.00 for two years, $10.00 for three years. Above prices are applicable in U. S., U. S. Possessions and Canada. Latin America and Philippine Republic—$10.00 for one year, $16.00 for two years, $20.00 for three years. All other foreign subscriptions — $15.00 for one year, $25.00 for two years, $30.00 for three years. Single copy — $1.00, special issues — $2.00 per copy. Printed by Publishers Printing Co., New York, N. Y. Re-entered as Second Class Matter September 21, 1951, at the Post Office at New York, N. Y., under the Act of March 3, 1879. Volume XXXV, No. 4, April, 1954. In Art Index, Architectural Index.

Turn page for WASHINGTON PERSPECTIVE

newsletter

Frederick Gutheim Washington Perspective

The best opinion here still holds that the economy is sound. March figures on economic activity are believed the clue to forecasting whether the winter slump will be prolonged into a longer recession. Building in all parts of the country is holding up relatively well, although prices are still dropping slowly. Depression talk is still highly colored by politics. This shows up in the jockeying to call the slump by various names, implying everything from its seriousness and duration to who's responsible for it. One quip worth passing along: a recession is when your neighbor is out of work; a depression is when you lose your job.

Not content with recommending outright repeal of the Taft-Hartley law, the annual convention of state labor officials issued here another unwelcome declaration when it urged Congress to appropriate funds for a stand-by public works program to counteract unemployment. This looks like a gone goose. The present view of the President's economic advisers is that such a measure is too cumbersome to afford prompt relief, although they do not dismiss it as a long-range measure. Unemployment insurance, and past experience with the delays involved in putting men to work, have reoriented thinking on the right way to fight a depression. As far as building is concerned, current interest is centered on remodeling, modernization, and accelerating maintenance programs—rather than on any new work. The depreciation recommendations in the President's message to Congress are the measure of such thinking. Public building is now in a fantastic situation. It can't be done in a war or defense period, because of the shortage of critical materials: in a boom it should be deferred, in order not to add inflationary pressures. It's no good in a depression, because it won't put men to work fast enough: and any other time it's opposed, on grounds of government economy and budget balancing. This might be considered by the AIA at Boston among "Forces That Shape Architecture" or—to borrow a terminal proposition from the Columbia Bicentennial theme—"The Absence Thereof."

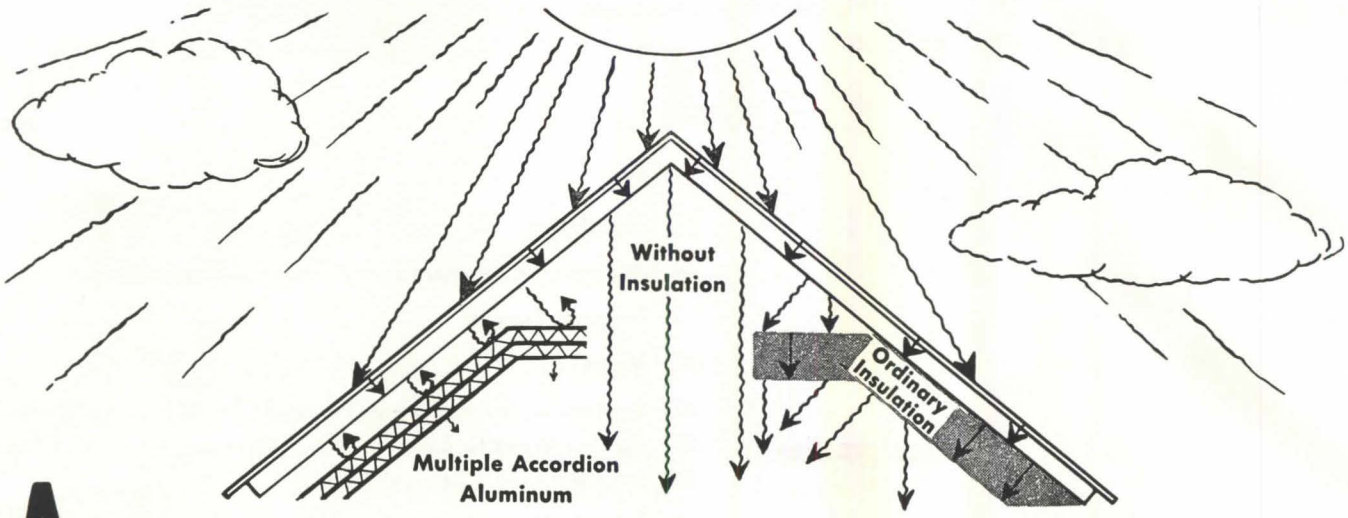
The removal of the first of Washington's 55 temporary government office buildings (some of which go back to World War I) has been roundly applauded. This structure was erected in 1942 to house a White House guard force. Despite stern warnings by GSA Administrator, Edmund F. Mansure, that none of the other tempo's are scheduled for razing, hope has been aroused that the turndown in Federal employment in Washington may result in the elimination of these eyesores and firetraps, in which some 40,000 government employes work. Those who have wrestled with the elimination of such structures from college campuses, medical centers, and other favored haunts may relish a local editorial comment. It was Franklin D. Roosevelt, when Assistant Secretary of the Navy, the "Washington Post" reminds us, who told President Wilson that the "temporary" Navy building (which still flanks the Lincoln Memorial's reflecting pool) should be erected in the Ellipse immediately adjacent to the White House. His somewhat Machiavellian argument was, only an eyesore within a stone's throw of the executive mansion would be removed short of the Day of Judgment.

The appointment of Leland W. King as an architectural co-ordinator of the Spanish bases program is an excellent step. It allows a veteran public administrator to back up the potentially good team of private architects commissioned a few months ago. As for King's former work in the State Department overseas building program, the appointment of a strongly progressive architectural advisory board argues that the gloomy fate which appeared in store for it a few months ago has been averted. Pietro Belluschi, Henry R. Shepley, and Ralph T. Walker can hardly be described as sympathetic to the rather severe design work of Rapson and van der Muelen, or the Skidmore or Harrison offices, but whatever they sponsor ought to be first rate. But the danger of an overcentralized program, described here last November, is still present.

Plans for defending our cities against thermonuclear attack have been reversed. Defense officials have coined the antiseptic term "tactical dispersal"—implying that urban populations in 193 target areas will execute a colossal sort of school fire drill and leave the cities, to return once the danger of attack is past. The plan is made feasible by new warning devices greatly increasing the time between Warning Yellow (attack probable) and Warning Red (attack imminent). "FCDA Advisory Bulletin 158" contemplates that the survey of shelter possibilities of existing buildings will be completed. It also outlines a number of new defense activities, including the preparation of dispersal areas, transportation planning, and a reorganized shelter program, that will be of interest to architects. The ramifications of the program are extensive, and will even influence, for example, such details as the design of school-bus loading facilities. All this, of course, implies that we are defending against hit-and-run attackers, not against the sustained onslaught of guided missiles that characterized the closing year of the last war. The most advanced types of Soviet planes make this a plausible current assumption. But how long will it be valid?

PROGRESSIVE ARCHITECTURE

April 1954



An Empty Roof Space Would Be The Best Insulation Against Summer Sun, *Were It Not For Radiation*

But substantially the only summer heat flow through empty roof space is RADIATION. There is slight CONDUCTION. Heat flow by CONDUCTION through any building space is about 7% of the total. CONVECTION is not a problem—there is no CONVECTION downward.

Ordinary insulation may retard heat for a time, but stores a large amount of heat as compared to empty space. More dense, it is a much better conductor of heat than just air and so more heat passes through it by conduction. Its surfaces have a heat ray absorptivity and emissivity of over 90% and radiate heat into the building through the day, and sometimes into the night.

The solution is to use a material which has little substance and whose surfaces will absorb and emit little radiation. Gold or silver foil would be excellent, but tough multiple accordion aluminum, which weighs but ¼ oz. per sq. ft., is inexpensive and almost as good, with a heat ray absorptivity and emissivity of only 3%.

The metal sheets of multiple accordion aluminum are impervious to water vapor and are continuous, 500 ft. to 750 ft. long. Infiltration under their flat stapled flanges is slight. The scientific construction of multiple layers of aluminum, fiber, and air spaces minimizes condensation formation on or within this type of insulation. Its slight mass is capable of little heat storage.

The National Bureau of Standards Booklet BMS52, "Effect of Ceiling Insulation Upon Summer Comfort" lists on Page 10 the relative effectiveness of the insulations tested in protecting ceilings against summer heat. First in effectiveness was two layers of aluminum foil (both sides of each layer reflecting). Second was full thick (3⅝-inch) ordinary insulation. (Use coupon to get the booklet FREE!)

Try this test: Tack or scotch-tape 3 sq. ft. of multiple accordion aluminum (we will send it free on request) to the underside of a hot roof or ceiling, whether uninsulated, or insulated with ordinary material. Step in and out of the protected area beneath. The difference will be so marked you will need no thermometer.

A *new multiple accordion aluminum, Infra, Types 6-Si, and 4-Si, gives **edge to edge** insulation between beams or studs, forming a "blanket" of uniform depth against heat and vapor flow, and condensation formation.

*Patent applied for.

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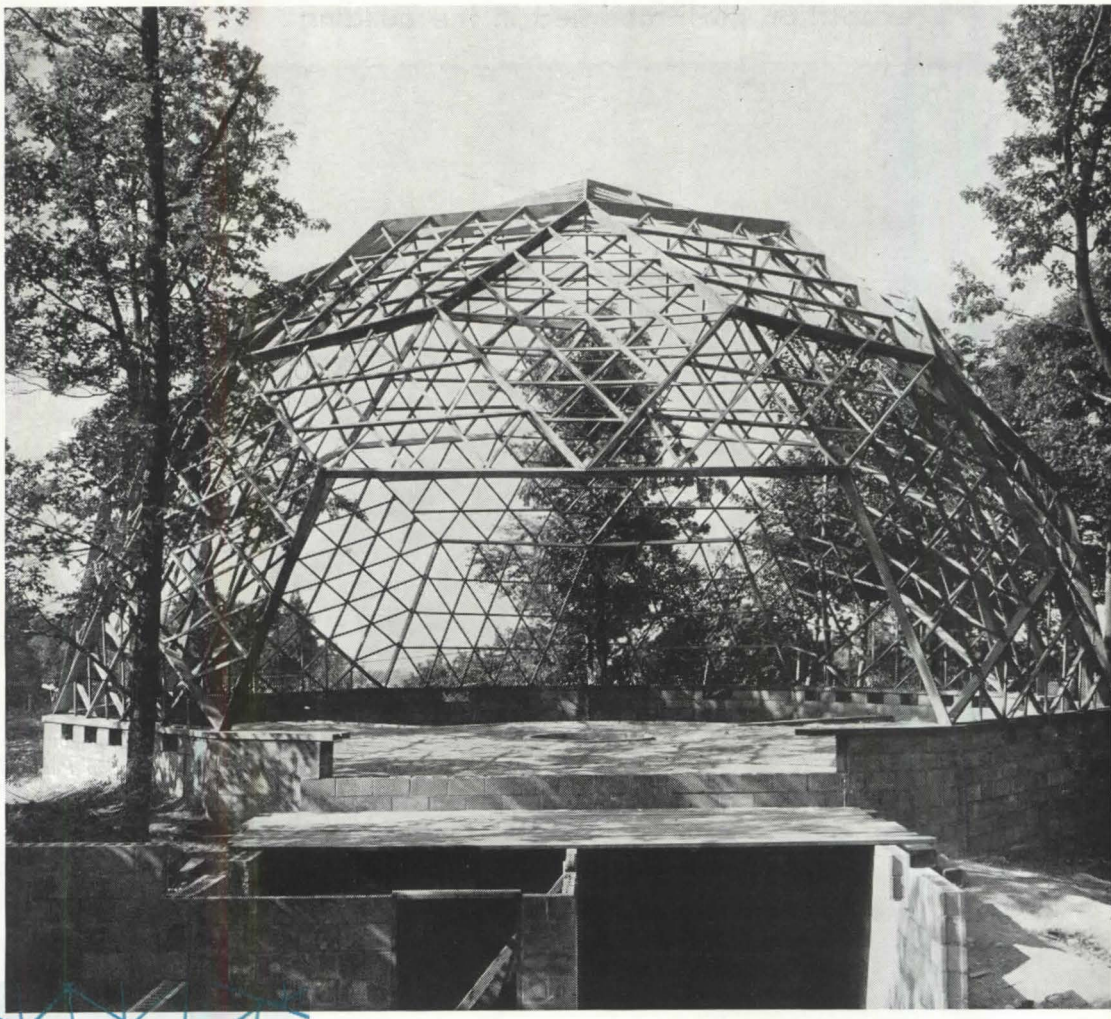
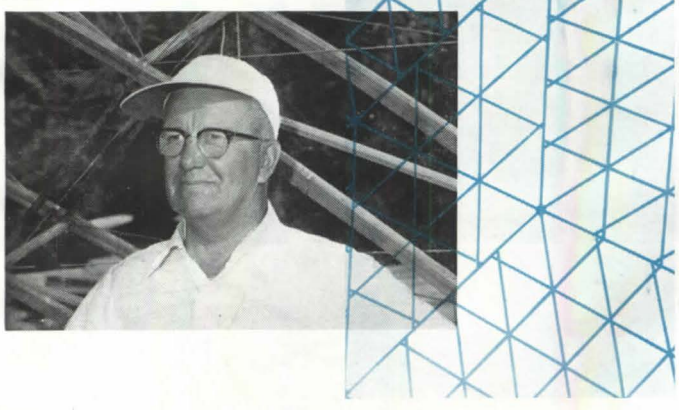




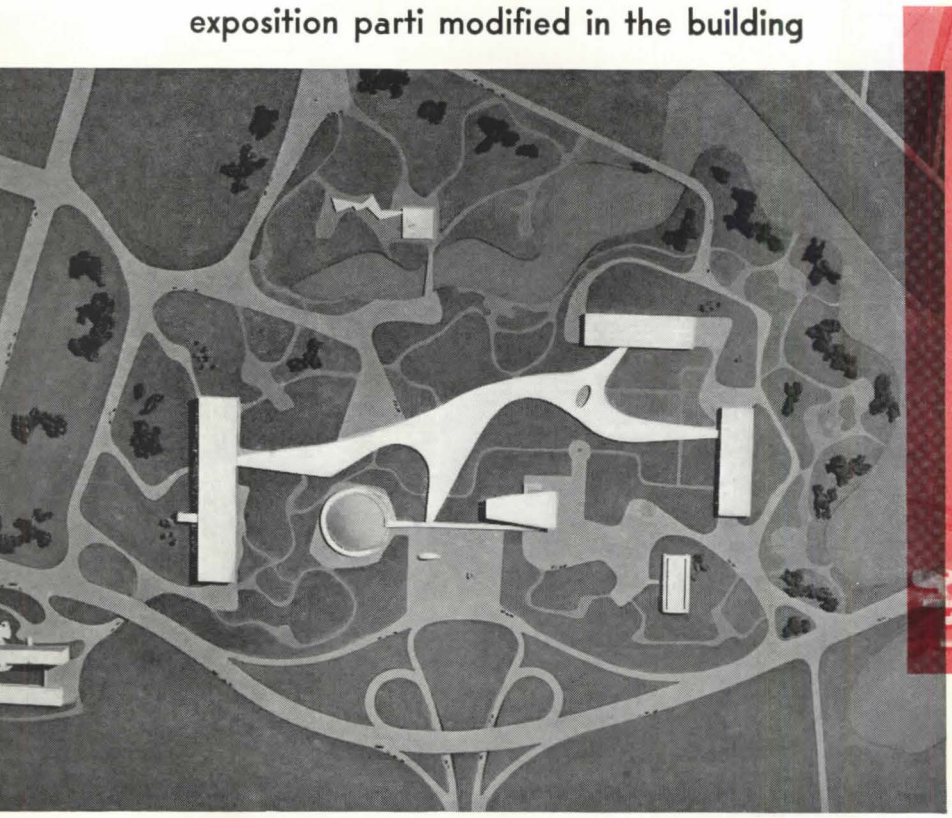
geodesic dome for motel dining room

First structural element of the new motel at Woods Hole, Massachusetts, to arise for attraction of visitors to the port and travelers embarking there for Martha's Vineyard and Nantucket, is the adroitly articulated wood frame of the geodesic dome (*above*) designed by R. Buckminster Fuller and constructed by a student team under direction of that persuasive innovator. Architect of the motel is E. Gunnar Peterson, Falmouth.

Local news reporters and sightseers gathered to "watch the show" while the frame of the dome was being built by the student helpers and this advance unit of the motel is already well known. The dome, which is 27 feet high, will be covered with transparent plastic and will serve as the dining room of the motel, which is expected to be in operation for the summer season. Fuller is confident that the 3½-ton frame is strong enough to withstand hurricanes and winter snows. As the inventor of the geodesic dome, Fuller has been active lately building several, notably the riveted aluminum dome, with translucent plastic skin, that was built to protect the center of the Ford Rotunda near the famed River Rouge plant in Michigan, described in LIFE in August, 1953. A more daring development of this structural system is the discontinuous compression sphere built by a team of Princeton students under direction of Fuller, later last year.

Photos: Falmouth Enterprise

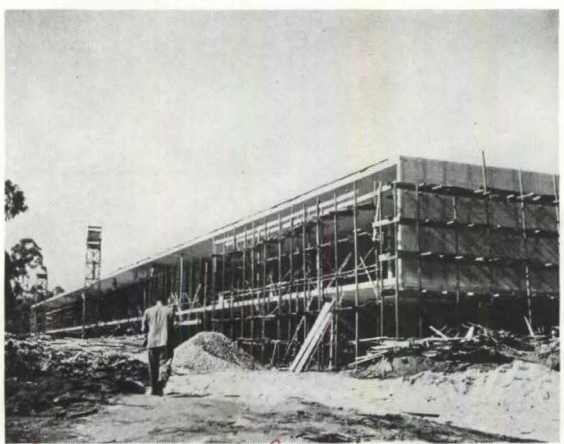
exposition parti modified in the building

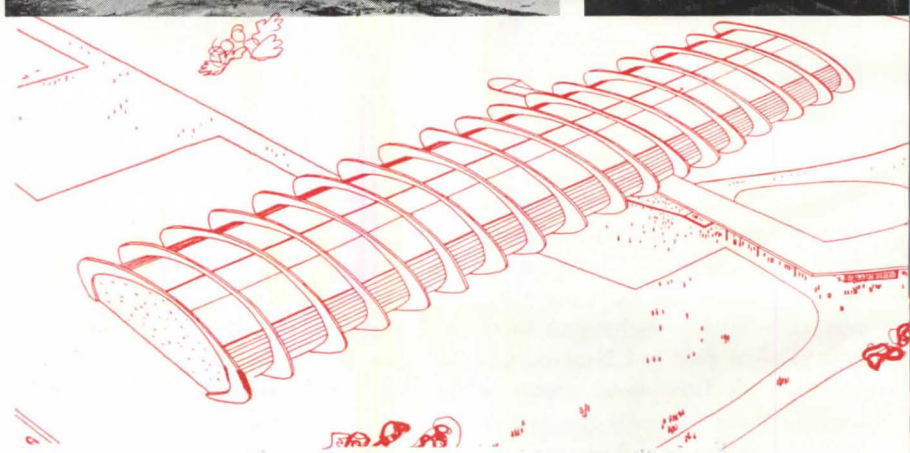


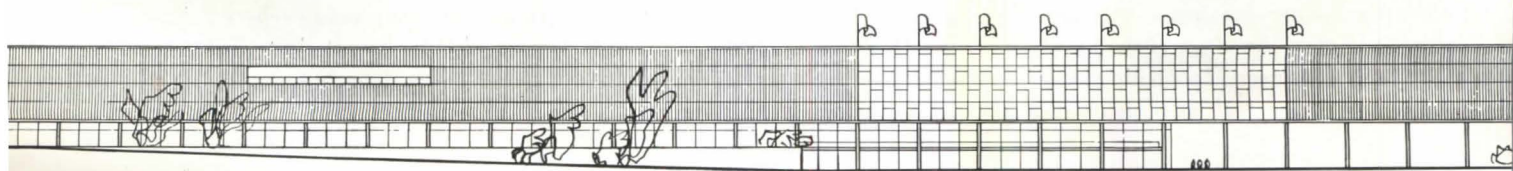
First design (above) *for the park and exhibition buildings of the Fourth Centennial of São Paulo, Brazil, has undergone some modifications* (left).

The original parti and building designs for the Fourth Centennial of São Paulo, Brazil (PROGRESS PREVIEW in April 1953 P/A), had to be simplified before conservative opposition would permit the project to proceed, we learn from Oscar Niemeyer, architect of the flat-roofed Industrial Building (*right*) now being rushed to completion in time for the opening of the exposition in July. He complains that his design for the building (*below right*) has been vulgarized by the forced changes in its structural form and expression, as well as by shrinking of the initial concept for the grounds. The site development, to remain as a public park, will accordingly be less interesting, he points out. The original designs won international acclaim, but were not accepted by a local group.

From the viewpoint of P/A Editors, this again emphasizes the value of presenting to our design audience projects in the initial stages, before committees or clients have shorn them of interesting features and daring structural innovations.







The Carnegie Endowment International Center, New York / Harrison & Abramovitz, architects
no. 95 chair / no. 96 sofa / no. 402 table, foreground

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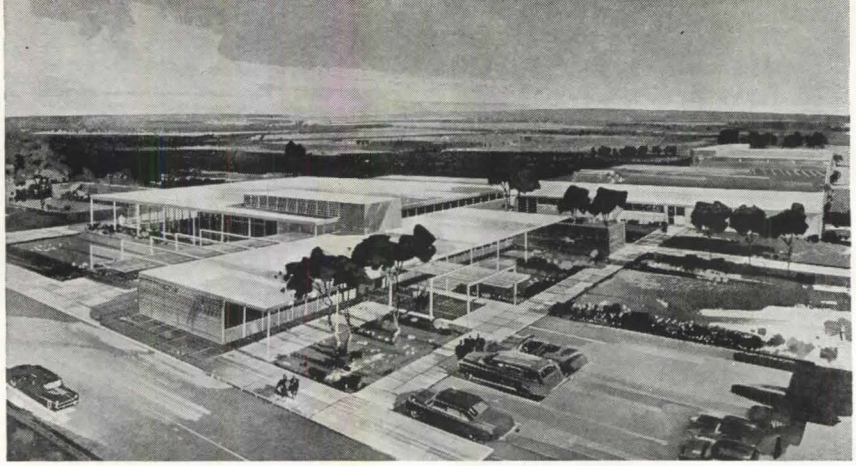
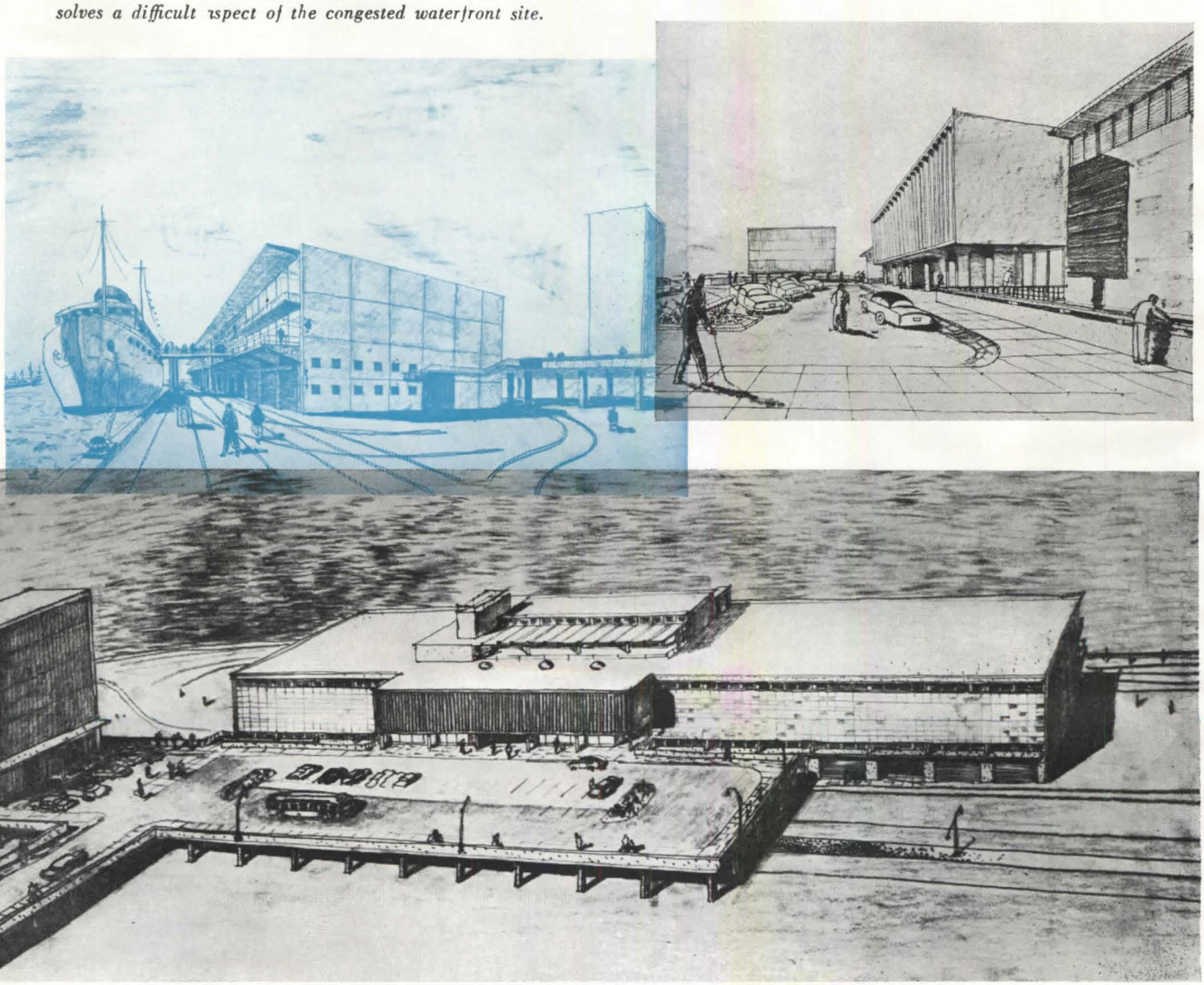


administration building. *First unit of a multi-million-dollar expansion program for City of Hope National Medical Center, Duarte, California, has been designed* (above) *by Pereira & Luckman, Los Angeles architects-engineers, for construction this year. Centralization of facilities is the keynote.*

passenger/freight terminal. *Expansion of Haifa port facilities under supervision of the Israeli Ministry of Transportation & Communication will start with this passenger and freight terminal adjacent to the Haifa railway station, designed by Knappen, Tippets, Abbott, McCarthy, New York architects-engineers. The firm also is designing additional transit sheds near this steel, concrete, and glass structure on the quays. The motor-traffic plaza over the tracks of the adjacent railroad terminal solves a difficult aspect of the congested waterfront site.*



1954 design awards prized by winners

high criteria

Dear Editor: We have just received our copy of the January issue, and want to send our congratulations. You and your Jury have done a wonderful work to collect such high quality all in the pages of one magazine.

What makes this high quality more satisfying to us here at the Museum is the realization that architectural judgment tends more and more to agree. The criteria that you and your Jury have displayed and which the architects involved have so well met, are the same that we at the Museum would like to apply in our own exhibitions.

It is going to be a great year for architecture. PHILIP C. JOHNSON, Director
Department of Architecture and Design
The Museum of Modern Art
New York, N. Y.

very fine issue

Dear Editor: January 1954 P/A has reached our office, and we are very pleased with the presentation of the Josephine Traylor Brooking Memorial Nurses' Home. You and the entire staff of PROGRESSIVE ARCHITECTURE should be congratulated on a very fine issue.

ARTHUR FEHR
Austin, Tex.

wall of honor

Dear Editor: We were very pleased with the entire presentation of the award projects. Of course, we were especially proud to have our Center Medical Building included. The Award Citation has just arrived and it will go up on our "wall of honor" alongside the other awards already received by our firm. Many thanks to all of you at P/A. ALBERT S. GOLEMON
Golemon & Rolfe
Houston, Tex.

architecture/engineering

Dear Editor: The Award Citation arrived yesterday and I appreciate receiving it, although most of the credit should go to Hugh Stubbins.

May I say, as a subscriber to your magazine, that I find it excellent in coordinating architectural and engineering design. LEROY M. HERSUM
Consulting Engineer
Boston, Mass.

favorable publicity

Dear Editor: I wish to take this opportunity to express my sincere gratitude for the honor you have bestowed upon me. Being one of the winners of the P/A Design Awards Program 1954 has brought much favorable publicity which can only be attributed to your fine presentation in January PROGRESSIVE ARCHITECTURE.

W. C. MUCHOW
Denver, Colo.

tipping the scales

Dear Editor: Just a line to congratulate you on the success of the dinner at Boston and your "Awards Program." It went off very well indeed, and I personally enjoyed the dinner very much. I met many friends of long standing but rarely seen, and I guess everybody else got a great thrill out of The Back Bay Center. I hope some way will be found to make it go ahead. I am sure your effort has tipped the scales a little further in the right direction.

WALTER H. KILHAM
New York, N. Y.

knockout!

Dear Editor: Your January P/A is a knockout! MARSHALL SHAFFER
Department of Health,
Education, and Welfare
Washington, D. C.

office practice

Dear Mr. Spiegel: I have read your article in February 1954 P/A, "What is Overhead?" with considerable interest. Our firm has kept records in strict accordance with the A.I.A. Standardized System of Accounting ever since its publication, and we find that our ratio of Indirect Expense to Direct Salary Expense averages well over 100 percent.

We have discussed this figure with several other firms and with our accountant, who does work for quite a few architectural offices in Washington and Baltimore, and find that the experience in many offices is comparable to ours—when books are kept on the same basis.

The figures quoted in your article are very different, and it may be that this difference is due to a difference in accounting method or in the manner of calculating the ratio.

Discussion of ratios has little meaning unless based on comparable data, and I would be very interested to know just

(Continued on page 16)

(Continued from page 15)

what items are included and what method of calculation is used in arriving at the figures quoted in your article.

BERLA & ABEL
Washington, D. C.

•

Dear Mr. Abel: *Thank you very much for your letter of February 17th pertaining to the article on "overhead" in the February issue of P/A. I appreciate the constructive criticism contained therein. Of course, I had not intended to talk in terms of percentage figures for overhead unless I could back them up with detailed computations. These detailed computations appeared in the March issue of* PROGRESSIVE ARCHITECTURE. *(The length of the article made its publication in two parts necessary.)*

However, I am perturbed to hear about the relatively high percentage of overhead your office and others encounter. I would like to explain briefly how we arrive at our overhead computations:

In budgeting of jobs we make allowances for all direct expenses in connection with them. This means that, in addition to estimated drafting expenses, we estimate probable direct costs for blueprinting, travel, fees, etc. As expenses are incurred, which are applicable to jobs, they are entered as a job expense. This leaves, of course, all such unattributable items as secretarial salaries, indirect drafting salaries, rent, stationery and supplies, local telephone, miscellaneous taxes, accounting, legal fees, books and subscriptions, insurance, etc. as "overhead" items. At the end of the year the total expenditures of the firm are audited and the "overhead" items are applied against the Direct Drafting Salaries, and this gives the percentage figure used.

Please note that partners' drawings are not included as overhead items. I am not certain whether your office does include them. They would of course increase the percentage of overhead considerably. However, partners' drawing accounts, representing an intermittent distribution of profits, should not enter overhead computation in any case, as they only effect each partner's capital standing in the firm.

I trust the above will somewhat clarify the points raised in your letter.

Again many thanks for your comments. You will no doubt have further comments on some of my other articles which are scheduled to appear in PROGRESSIVE ARCHITECTURE. *I would appreciate your giving me your critique of them, should they be unclear, or give misleading impressions.* SIEGMUND SPIEGEL

real logic and sense

Dear Editor: I would say that the McGuinness article on year-round air conditioning, in February 1954 P/A, is by and large the best nontechnical introduction to a complicated subject that I have ever read, and I've read lots. There was application of real logic and sense of uni-

(Continued on page 20)

production schedules—a necessity

by Siegmund Spiegel*

If an office is to remain relatively successful financially, means must be found to control the Direct Production Cost as well as Overhead. Overhead has been discussed in an earlier article (February 1954 P/A). The control of Direct Cost refers especially to drafting salaries, by far the largest item of an architect's expense. Although there is no perfect way of establishing beforehand the cost at which a drawing or a complete job can be produced, and since this varies from job to job in any case, ways must be found nevertheless to control drafting costs, without depriving the individual job and the client of the maximum amount of competent professional services. One means of accomplishing this may be through proper scheduling of jobs.

While the term "scheduling" can imply near mechanization and/or standardization which, especially in architecture, should be avoided, scheduling has proven to be of utmost help in controlling manpower and thereby costs.

advantages of scheduling

Scheduling can be important because it:

determines the number of men needed and when

determines space requirements

determines funds needed for certain periods

helps establish priorities for individual jobs

Furthermore, by scheduling strategically—and in fairness to all clients—completion of certain phases of individual jobs, involving payments to himself, the architect will assure incomes at anticipated times. This, in turn, will help greatly to maintain office operation on a sound basis.

It is to be borne in mind, however, that during the period in which programming, studies, sketches, and early preliminary drawings for a project are made, time cannot be scheduled to the extent shown below for working drawings. The period of "preliminaries" in which creative architecture in the primary sense is developed should not be held to a strict number of man hours, but rather, if at all possible, to a calendar date. (A leeway of some time and money will enable completion of this stage to the architect's own satisfaction and will give the client the professional service he has sought; furthermore, it will save money later when working drawings are made.) However, at the conclusion of this planning period, during which time the engineering and other consultants (if any) should have participated creatively to whatever extent necessary, the design should be finalized, and approved by the client. Too often, money is lost by the architect (and, in turn, his consultants) in making design changes in the costly working drawing or production stage.

scheduling individual jobs

Before an over-all Production Schedule can be worked out, taking account of all work in the office, each job should be analyzed and an individual job schedule should be worked out. In the case of most government — and some private-client contracts, the date for completion of the drawings is made part of the contract. Although this stipulated date of completion may more often than not seem hard to meet, it is actually of great assistance to the architect, insofar as it enables him to ascertain his manpower requirements pretty accurately. In the case of commissions where no definite "deadlines" are predetermined, the architect would do well to analyze the job in concert with all consultants who may be involved, and make as realistic an estimate as possible of production time required. This self-set deadline should then be adhered to as strictly as one stipulated in a contract. A job with vaguely scheduled completion dates will inevitably be more costly to produce. This is so because the calendar does not have to be watched; there are certain to be delays in completing drawings due to men being taken off and on the job, thereby causing an excessive amount of lost motion; prints are likely to be sent to structural and mechanical engineers for their part of the work at a time when they will not be able to fit it in with *their* schedule, which in turn will cause delays in the architect's office.

Merely being aware of a due date for a job is not sufficient, of course. Unless the job production is checked at intermittent stages as to relative percentage of completion and is kept in relative proportion to the over-all time limit, offices will continue to find their staffs working the proverbial last minute "charettes." Costs, too, must be checked intermittently and effort must be made to keep them in proportion to the over-all budget.

In the case of a number of jobs which had close contractual completion dates, and involved numerous consultants, the following procedure was followed, and proved to work well. All consultants were informed of the scope of their services and the dates of submission before the contract with the client was signed. They were queried as to when they must have certain basic drawings from the architect or from the other consultants involved, in order to be able to finish their work and return it to the architect for further checking and correlation prior to the due dates. The dates so worked out with the consultants were noted on a

* *Architect, Office Manager for Mayer & Whittlesey, Architects, New York, N. Y.*

schedule which showed all dates, the number of working days for each item to be completed by architect, items to be sent and to whom, and other steps in coordination. Then it became relatively simple to schedule the architectural part of the work. The number and type of architectural men required to complete the work was determined and their names applied opposite the item of work they were to handle in that period. It was found extremely useful and fair to the draftsmen involved to inform them what was expected of them, and by what date their particular drawings had to be completed.

On jobs involving a dozen or more men, where the work of several men often hinges on the completion of a basic drawing by one man, advance scheduling frequently is a tedious job. But, if work for the entire project is analyzed and laid out well in advance, there should be only a minimum of wasted man hours. Nothing is so demoralizing in a drafting room as a condition in which the majority of men work at a steady pace, while others have to kill time for lack of enough work being prepared for them on time.

over-all production schedule

A problem frequently confronting the architect, when a job is finished and a number of men become available on a certain day, is to have sufficient *other* work prepared to utilize these men advantageously. This requires a frequent analysis of *all* work in the office.

The average office will occasionally have small jobs which may not require more than one or two men, and only for a limited number of days or even hours, possibly only for intermittent periods. Having at hand individual production schedules for major jobs, and a detailed listing of work falling in the category of minor jobs, the over-all analysis may well determine that additional manpower is required—or, on the contrary, that some men are to be given notice.

Every office may have its own way of setting up an over-all Production Schedule. However, the following examples will serve for the purpose of illustrating the points discussed.

OFFICE PRODUCTION SCHEDULE Date:_____

1. List names of all men in office.

2. List all jobs in office, as follows:

job	estimated time to completion	no. of men required	type
#301 (or job name)	6 weeks	3	1 Senior 2 Interm.
#302	From 2/8/54— 2 weeks	1	1 Interm.
#303	From 1/25/54—12 weeks	4	2 Senior 1 Interm. 1 Junior
#304	4 weeks (through week of 1/18	2	1 Senior 1 Junior

etc.

3. Combine 1 and 2 above, by listing men and work-weeks, and jobs on which the men are scheduled to work, as follows:

week of	(name)	(name)	(name)	(name)	(name)	etc.
1/18/54	#301	301	301	304	304	
1/25/54	#301	301	301	303	303	
2/1/54	#301	301	301	303	303	
2/8/54	#302	303	303	303	303	
2/15/54	#302	303	303	303	303	

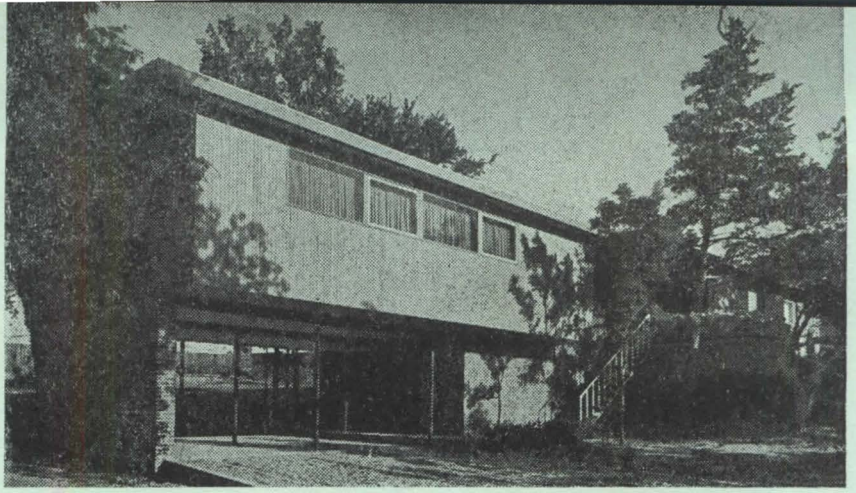
etc.

The schedule should, of course, remain flexible enough to permit variations due to sudden priorities which may arise from time to time. The over-all schedule should be reviewed frequently and should itemize work by job assignment for at least three or four weeks ahead (preferably more) for each individual employed. However, when certain jobs are nearing completion and the volume of work decreases, this schedule may have to be consulted more frequently in order that at least two weeks notice may be given a man slated for release. By checking on manpower requirements in time, payment of salaries for time which is not being used productively may be avoided. It can be poor management, as well as unfair to the men, to release them instantly when no immediate production work is available. Every office will encounter slack periods of minor duration, especially before pending jobs receive the "go ahead." If an office has prospects for work in the near future, men not needed instantly for production work can be used effectively to do work on presentation drawings for publicity brochures, etc. Providing the slack period is not too long, the latter procedure will be beneficial in two ways:

1. It will give the men a feeling of relative security and fair treatment, and

2. It will assure that the office has properly trained men available when production work is resumed.

If the volume of work in the office should require taking on additional personnel, one obviously must consider in advance the type and proportion of men needed. While nearly every office has need for men of the three categories commonly known as "Senior," "Intermediate," and "Junior," there is no formula as to the proportion of each group. Trying to do a job with a large number of lower paid men will generally require excessive supervision and checking, and may tie up one or more senior men who might otherwise be doing more productive work. The individual character of the projects at hand are the determining factor as to the ratio for each, and the needs for each job ahead can be determined only by scheduling.



so you want to build . . . (on television)

by Patricia Swank

The seal of the American Institute of Architects faded, and the camera moved into a living room set, pausing long enough to establish the figure of a woman, sitting on a sofa and flipping through a pile of magazines. She was glancing restlessly at her husband, seated opposite, reading a newspaper. When she spoke, everyone in the Dallas area who was watching his television set that April Sunday afternoon in 1952, felt at home. Her problem was universal. She wanted a house. She maintained, over her husband's objection, that they *could* afford an architect. This was the first scene of "So You Want to Build," a 13-week TV series planned by the Dallas, Texas, Chapter of AIA, and presented by Dallas Station WFAA-TV, television service of the *Dallas Morning News*.

"So You Want to Build" was the result of the Dallas AIA members' question to themselves: "How can we show people what architects can and should do for them in meeting their home needs?" The answer seemed obvious—the best way to show what an architect does is to put a camera on him while he does it. There is no profession whose work is more visual. Fortunately, the station's program director thought so too, and wanted to begin almost at once. We outlined a series of 13 half-hour shows which would cover the design of a house in detail.

Quickly, we created a family — a Dr. Morgan and his wife (and two children who were never seen) and rounded up an architect and an assistant for him (Ralph Bryan, and Louis Fuertes—both Chapter members and both theater enthusiasts). A former radio actor took the part of the doctor, and I, wife to one architect and executive secretary to the Dallas Chapter, played the role of Mrs. Morgan. We did not use a script, but the cast worked together for a total of about four hours each week, in addition to the final rehearsals. I wrote the announcer's copy and prepared a weekly outline.

The scenes included such episodes as discussion of fees, program, and site (in the architect's office); discussion of preliminary schemes, furniture arrangement, and so on (in the Morgans' home). One scene was concerned with selection of materials; one had a landscape architect as guest; another discussed heating systems. The final scene centered around a model of the house.

We knew, from the first, that a real house would have to be designed on the show, as it would be both obvious and dishonest to set up a real architectural problem and then fake a solution. Angus Wynne of the American Home Realty Company let us choose a lot in his new development, Wynnewood North, and it was there that the house designed on the program was constructed almost a year later (*photo above*). When it was exhibited as a model home, with emphasis on the value of architectural services, attendance pushed 100,000 in two weeks.

The things that were right about "So You Want to Build" were very right. Primarily it put a working architect into the living room, so to speak, of a great many people who did not even know how to pronounce the word. The things that were wrong about the program, due mainly to our inexperience, might well provide valuable lessons for others.

Our show was never sponsored, because a reorganization of the station, just after our series started, presented difficulties in selling it. Ideally, such a show is a package promotion, and should be so considered. A clear outline of the entire series will help your station sell it, and they will welcome your suggestions as to possible sponsors.

If the house is to be built, it will give your series greater impact if the two can be finished very nearly together. Be clear about a final plan before the series begins.

We feel that even at much greater cost and labor, the effort would have been worth while. The Dallas Chapter is convinced that the kind of education the profession has to do may be slow, but must be broad and constant. The series and the subsequent exhibition of the house designed in its course were a big step for us. We hope others will try it.

Discussing the house designed on the Dallas Chapter's "So You Want to Build" program are: seated left to right, Herschel Fisher, Chapter President; Norman Crittenden, Secretary; standing, left to right, Enslie O. Oglesby, Jr., co-ordinating architect; William H. Hidell, Chapter Vice-president.

Photos: Hence Griffith
Dallas Times Herald

Bernard Tomson

it's the law

The field of zoning legislation is relatively new and is understandably suffering from growing pains. A discussion of some basic applicable rules is therefore useful. In each state there has been created a body called a Board of Zoning Appeals (in some states it is referred to as either a Board of Adjustment or a Board of Review), whose primary function is to weigh and evaluate questions of fact relating to the use of property within its jurisdiction.

The powers of the Board are circumscribed and confined within the framework of the law governing zoning. Its basic consideration is in the maintenance of such a system of zoning as will best serve the interests of the community as a whole.

A New York Court, in *Van Auken* v. *Kimmey*, 141 Misc. Rep. 105, 252 N.Y.S. 329, expressed the considerations of the Board of Appeals as follows:

"Zoning Ordinances are not intended to be and cannot long continue to be mere straitjackets to be applied and held rigid by pure bureaucratic authority. The letter of the ordinance must yield, in instances of extreme hardship, and according to conditions of irrepressible growth and development. Properly administered, zoning ordinances do not destroy but add to values; arbitrarily administered or adopted, without regard to the proper limits of police power, they can become instruments of hardship and tyranny which can only be relieved by multitudinous applications to the court. The final determination of the proper application of the rules as adopted ought not to be left to the final determination of an administrative officer, but a citizen aggrieved should have opportunity to appeal to a quasi judicial body with power to view and study the situation, whose determination, in the absence of bad faith or abuse of discretion, would rarely be disturbed upon review by a court."

The function of the Board is, therefore, to provide a measure of flexibility in the application of general rules imposed for the public welfare and to interpose when the circumstances indicate that a serious injustice would be done by an exercise of the general rule and it should grant relief in those cases where justice requires it.

The Board may be called upon from time to time to interpret various provisions of an ordinance, as well as consider applications for exceptions as specifically provided for in the ordinance.

By far the greatest portion of the Board's time is in the granting of variances. The difference between a variance and an exception is that, in the former, it is necessary for the applicant to show hardship, while in the latter, it is not.

The Board, in considering whether a variance should be granted, weighs the particular hardship against the equities, that is to say, the modification or adjustment must be in harmony with the general purpose of the ordinance and must not interfere with the rights of other property owners.

Any general hardship which may develop by reason of a zoning ordinance cannot be relieved by the Board, which is an administrative agency carrying out policies within the framework of the definite standards as prescribed by the ordinance. The Board, not being a legislative body, may only remedy a special hardship upon a showing that the restriction will cause the particular individual a hardship with respect to a specific parcel of property; that it is special, peculiar, and unique.

The mere fact that an applicant will suffer financial hardship is, standing alone, insufficient grounds for the granting of a variance. A property owner's objection that his property cannot be put to its most profitable use or that the value of the land has depreciated, are not considered the proper criteria in determining "unnecessary hardship" (*Welton* v. *Hamilton*, 344 Ill. 82, 176 N.E. 333).

The hardship must not be caused by acts of the applicant. For example, in *Cohen* v. *Rosedale*, 120 Misc. 416, 199 N.Y.S.4, 206 A.D. 681, 199 N.Y.S.915, aff'd. 211 A.D. 812, 206 N.Y.S.893, the Court denied relief to a property owner who began to erect a building in violation of a restrictive covenant in the deed, even though erection had begun prior to the adoption of the zoning ordinance which prohibited the erection of such buildings.

In some instances, the variance will be denied even where there was a peculiar hardship established. If the Board ascertains that the granting of a variance will cause injury to other properties or adversely affect the essential character of the neighborhood, it will deny relief.

The authority to vary the provisions of the ordinance must, for the most part, be sparingly exercised. Any departure from the provisions must be prompted by substantial compelling reasons. Once the Board exceeds its properly delegated powers, it is, in effect, exercising legislative functions under the guise of a variance.

The Boards today are recognized as being absolutely necessary for the safe operation of a zoning plan. As the Court, in *Van Auken* v. *Kimmey, supra*, declared:

"It is the safety valve of the zoning plan. A zoning ordinance, like a steam boiler, will sooner or later blow up if there is no safety valve. Where there is a functioning Board of Appeals to which every aggrieved applicant for a permit may resort, litigation automatically assumes the form of a court review of the discretion of the board, instead of out and out attacks on the constitutionality of specific instances of regulation. . . . Where there is no Board of Appeals, instances are sure to arise which the courts must under the law declare unreasonable and arbitrary and therefore void."

CHANGING EDUCATIONAL GOALS

There have been successive "revolutions" in the design of schools since Horace Mann's theories first affected 19th-Century planning—through the work of Strayer, of Ittner, of D. H. Perkins, and others, to the freedom of expression in the early experimental schools of Lescaze and Neutra, to the now-common open and friendly buildings of Kump, of Perkins & Will, and the many other good architects producing good schools. In recent years the *program* seems to have been relatively frozen and accepted, the chief argument and controversy having centered around technical problems of light, ventilation, and the use of materials in the classroom. Now once more, changing times are producing new problems and new solutions.

The changes?

1. A fuller realization of the *total education of the individual* as a citizen—the relationship of each stage in education to those before and after.

2. A fuller realization of the *total education of the community*—belief that the hope of the world rests on an enlightened society.

As the community thus brings *more persons to the school* and the school brings *more breadth to the person,* each school's program must be studied for its place in and its relationship to the whole educational picture. For instance, this issue of PROGRESSIVE ARCHITECTURE indicates how the two changes listed above affect the designs presented:

The elementary school, which not only is now planned for close and informal teacher-student relationship but also invites the community to its doors;

The boarding school, which realizes its special opportunities for full relationship of daily living to daily learning;

The high school, which is planned either as a specialized culmination of a certain phase of formal education, or as a transition in environment as well as in subject matter between primary school and college;

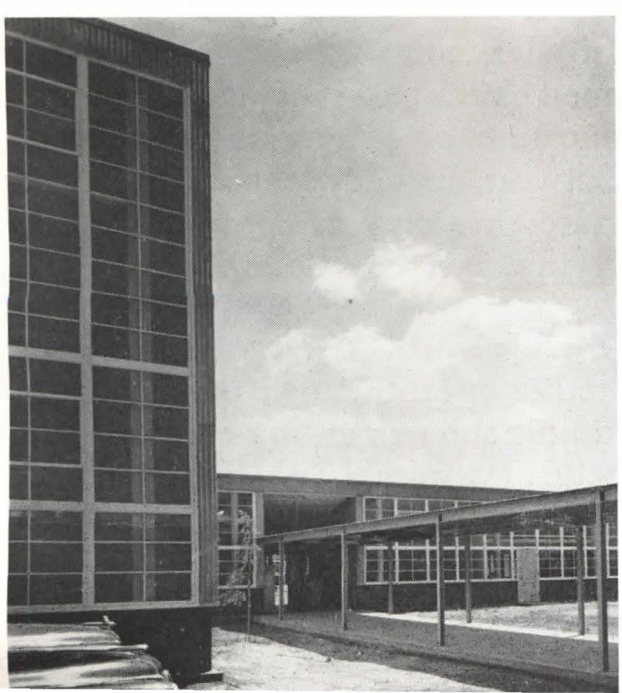
The college, where liberal-arts education can be made another transition to the specialized schools that lawyers, doctors, *architects,* and others must have; and

The adult educational facility, which proves that all learning is now a step to further learning, whether it be through the university extension course or in a specialized unit such as an *art workshop.*

Among the heartening architectural results are the individual design expressions being worked out to serve the changing and growing educational programs. These are today's schools.

for technical training

type	technical high school
location	San Jose, California
architect	Ernest J. Kump
associate architects	James D. Fessenden and Delp W. Johnson
associate engineer	Eric Moorehead
general contractor	O. E. Anderson



Along the south walls of the steel-framed buildings are up-sloping, cantilevered roofs forming protected, outdoor corridors; joining the units are covered walkways Photos: Roger Sturtevant

Though the full plot plan (*below*) shows a greatly expanded, eventual Junior College campus (detailed program for this future scheme is yet to be developed), the units indicated in black constitute the technical high school presented on these pages. The school, accommodating about 500 students in a terminal vocational education program for grades 9 to 12, is made up of three rows of workshop-instruction units and—to the northeast—a separate gymnasium-locker room building.

An important part of the design thesis was that the buildings should echo actual factory or shop conditions—if not actually look like their more mundane counterparts. "A technical high school with the gloves off," the architects call it, "dedicated to providing a real industrial slant to the training given to the potential community builders of tomorrow."

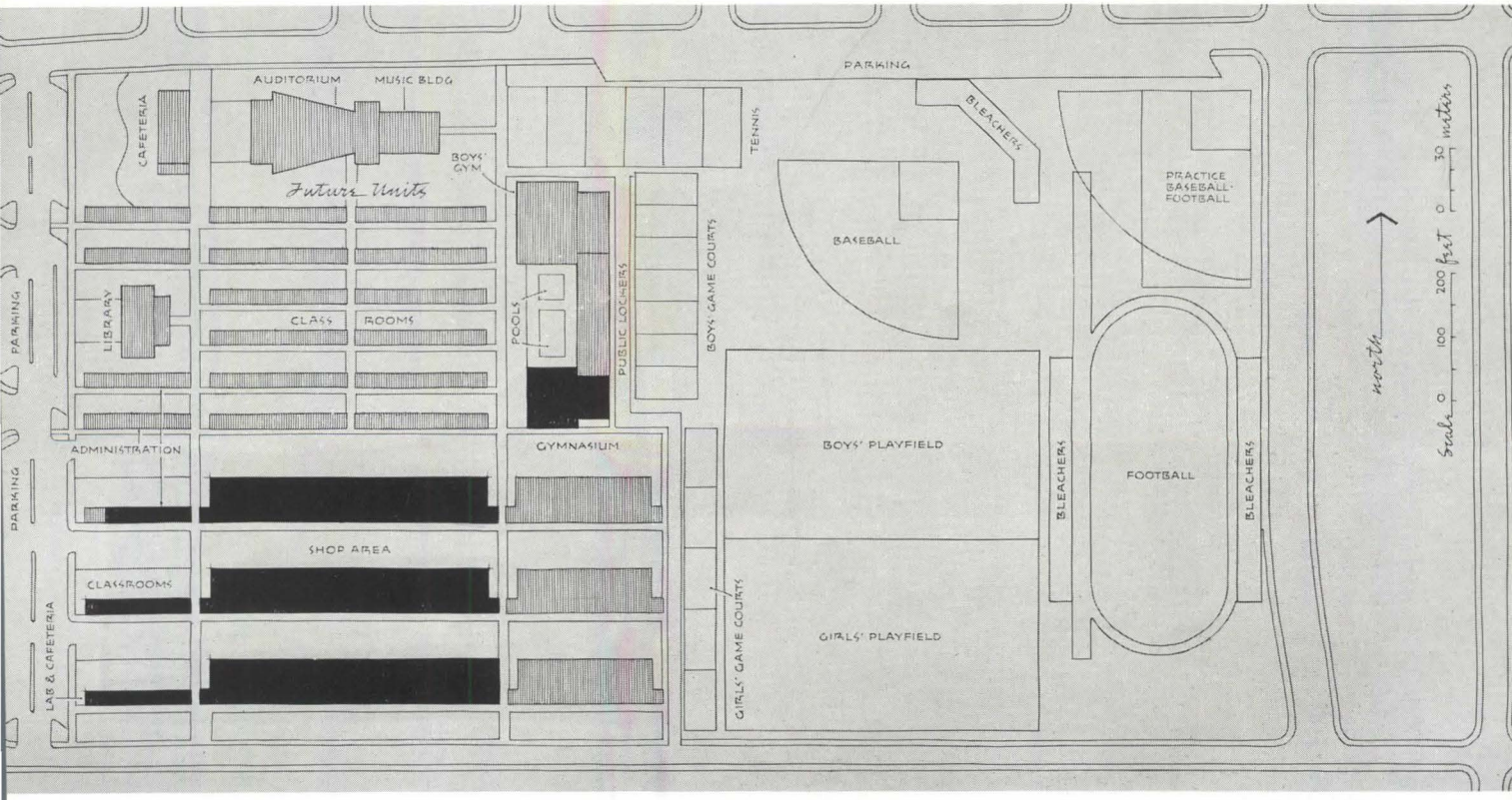
Included in the workshop-instruction buildings are 16 different types of training units, ranging from aircraft repair to paper hanging; from millwork to agriculture; each dovetailed and integrated with an over-all training program made possible by bringing all units together. In addition to its undergraduate work, the school also provides cultural and vocational education programs for adults living in the area.

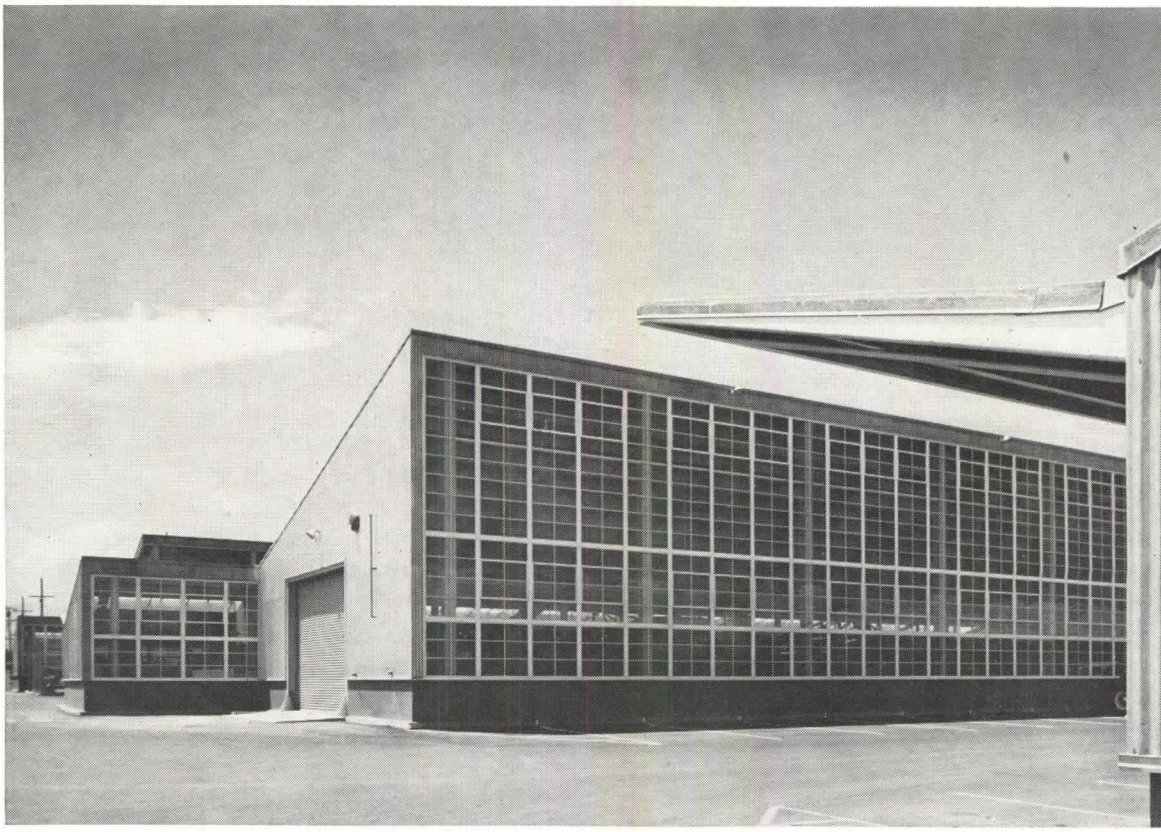
The low wings of the instruction units contain administrative offices, a lab, a conference room, the cafeteria, and classrooms for academic courses. In the vocational wings, in addition to the shops, each unit has a classroom, an instructor's office, tool-storage space, materials-storage space, and special facilities as required.

Apart from the designers' wish to give the group an industrial aspect, a stringent budget stipulated austerity of design, in order to provide the large areas required for such vocational training and the required, expensive, heavy-duty mechanical and electrical installations. In line with these considerations, the shelters were developed in a simple, shed-type section, with up-sloping, cantilevered corridor roofs where cars and small trucks can drive up and unload; high north windows that flood the shops with optimum light; and exposed framing and piping. Relieving this severe design approach, there is a lively use of color—peach for the steel frame; utility lines grouped in gay and decorative color codes—reds, blues, yellow, orange, and black. Plywood partitions and steel sash are lemon yellow.

The simple but durable structural system was worked out with ease of maintenance as a constant criterion. Foundations are reinforced concrete, as are the floor slabs at grade. The superstructure consists of a structural-steel rigid frame. Up to sill height, perimeter walls are of concrete, with corrugated iron surfacing or steel, commercial projected sash filling the areas above. For maximum flexibility, interior partitions are nonbearing —plywood on exposed, light wood frame —to permit free adaptation of spaces to changing requirements.

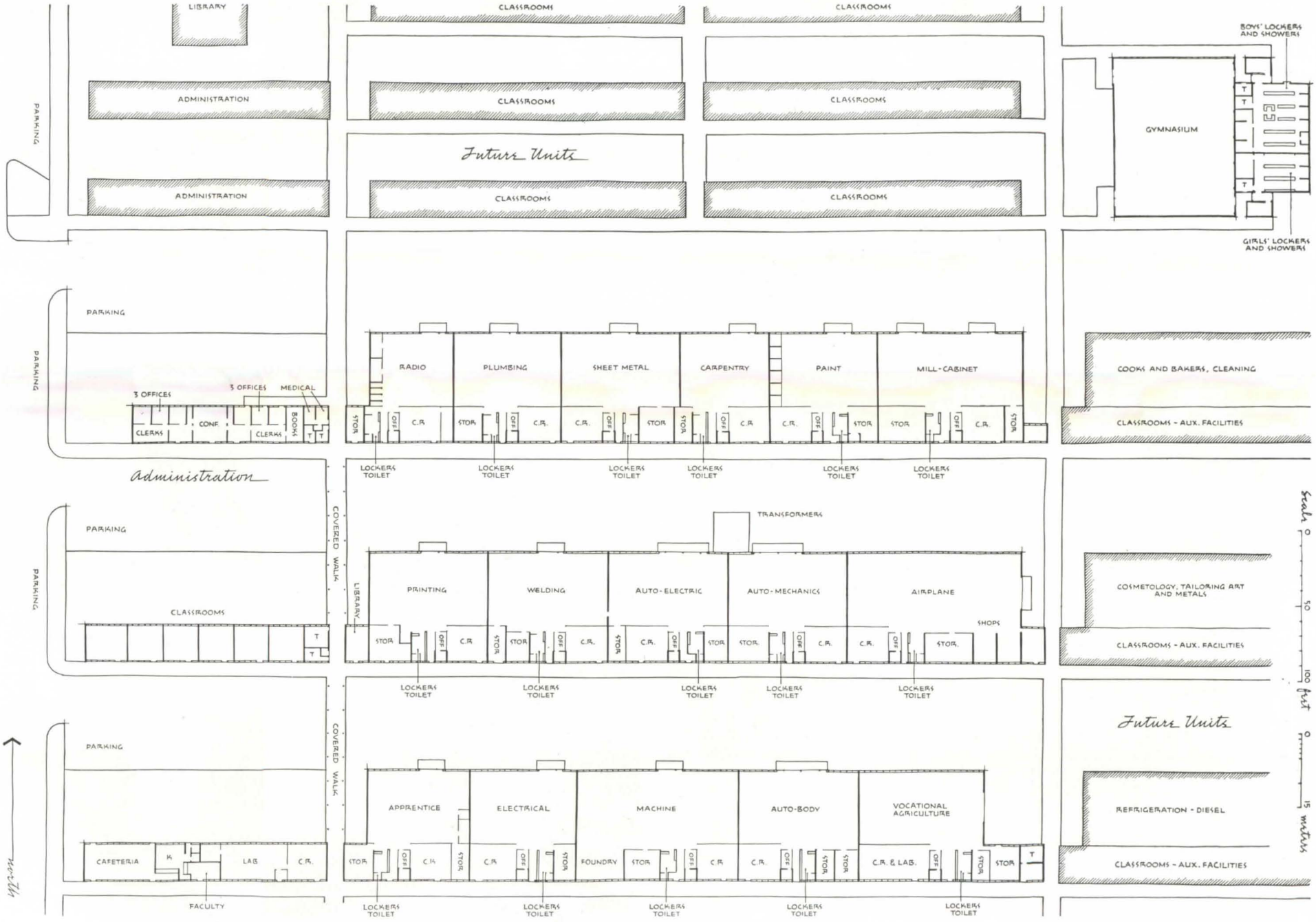
Finish floors are steel-troweled concrete, asphalt tile, or composition. Ceilings are acoustic tile, fiberboard tile, or framing left exposed. Roofs are of corrugated iron. The school is heated by gas-fired, forced-air units of various types, using natural gas as fuel, with liquid gas stand-by. In special locations, natural ventilation is supplemented by fan-powered, roof-mounted ventilators. In the mill-cabinet shop, there is an underfloor sawdust exhaust system. All gas, air, water, and sprinkler- and electrical-distribution piping is supported on exposed metal angles.





Huge window areas fill the tall north walls of shop buildings (top); *steel sash are painted yellow; the frame members, peach.*

From an outdoor corridor (above) *students deal directly with the school office* (right) *through a sliding panel. Notice the acoustic-tile ceiling and metal angles* (*above the windows*) *that support service piping.*


LIBRARY
CLASSROOMS
CLASSROOMS
BOYS' LOCKERS AND SHOWERS
ADMINISTRATION
CLASSROOMS
CLASSROOMS
GYMNASIUM
PARKING
Future Units
ADMINISTRATION
CLASSROOMS
CLASSROOMS
GIRLS' LOCKERS AND SHOWERS
PARKING
PARKING
RADIO
PLUMBING
SHEET METAL
CARPENTRY
PAINT
MILL-CABINET
COOKS AND BAKERS, CLEANING
3 OFFICES
3 OFFICES
MEDICAL
CLERKS
CONF.
CLERKS
BOOKS
CLASSROOMS - AUX. FACILITIES
LOCKERS TOILET
LOCKERS TOILET
LOCKERS TOILET
LOCKERS TOILET
LOCKERS TOILET
LOCKERS TOILET
Administration
PARKING
TRANSFORMERS
COVERED WALK
LIBRARY
PRINTING
WELDING
AUTO-ELECTRIC
AUTO-MECHANICS
AIRPLANE
SHOPS
COSMETOLOGY, TAILORING ART AND METALS
PARKING
CLASSROOMS
CLASSROOMS - AUX. FACILITIES
LOCKERS TOILET
LOCKERS TOILET
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LOCKERS TOILET
Future Units
COVERED WALK
PARKING
APPRENTICE
ELECTRICAL
MACHINE
AUTO-BODY
VOCATIONAL AGRICULTURE
REFRIGERATION - DIESEL
CAFETERIA
LAB.
CLASSROOMS - AUX. FACILITIES
FACULTY
LOCKERS TOILET
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Scale
0
50
100 feet
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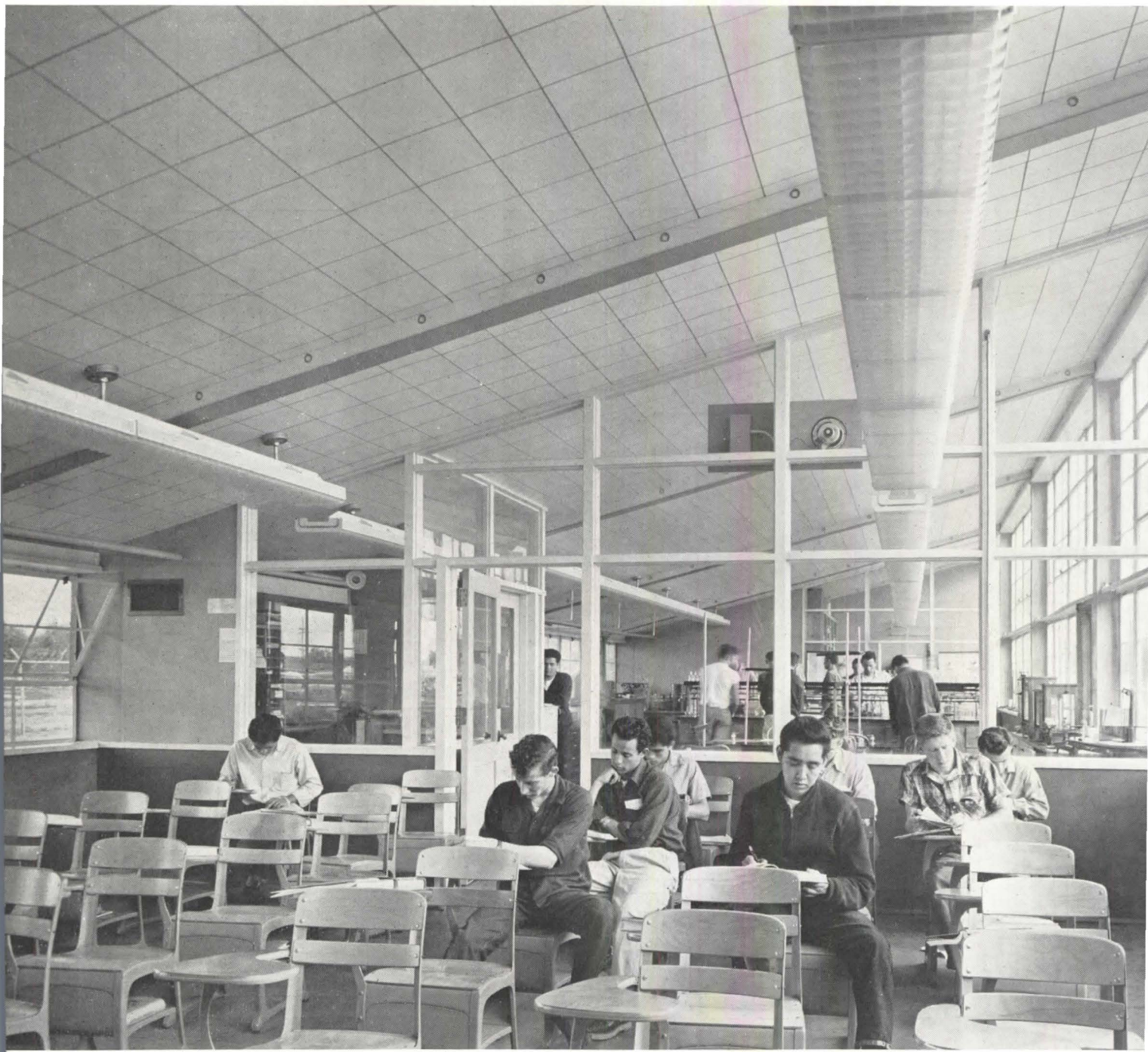
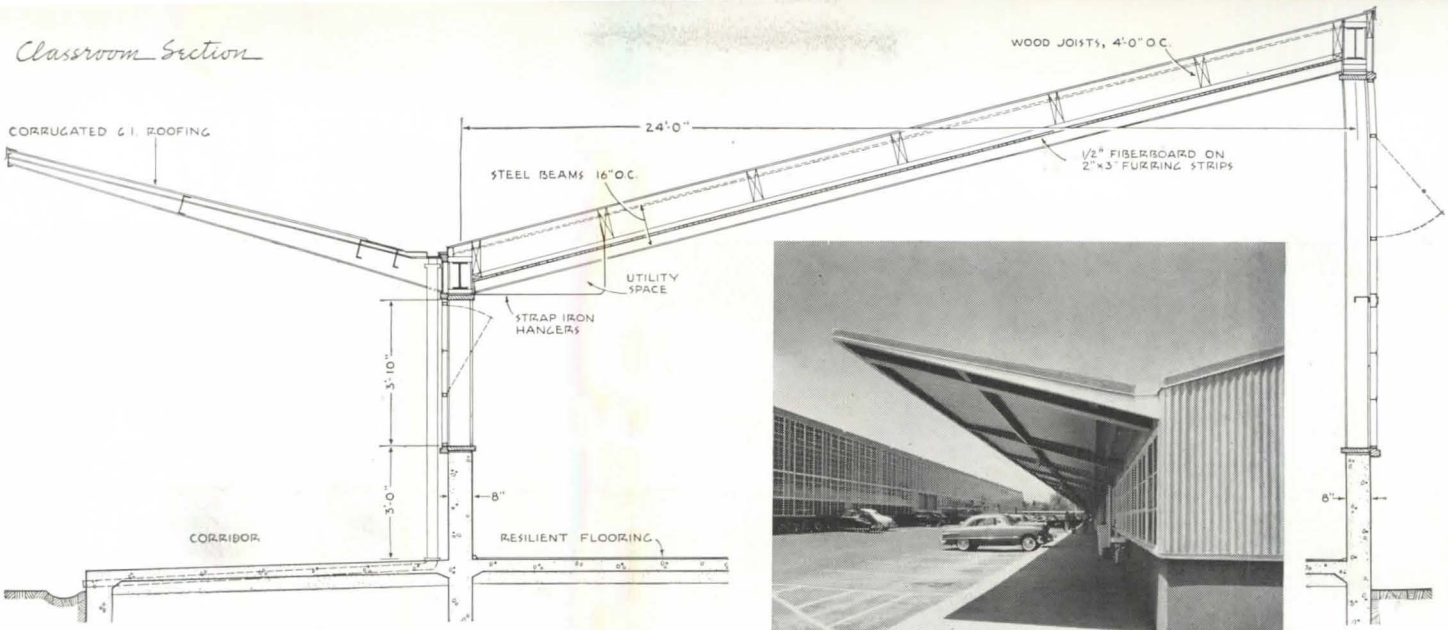
North



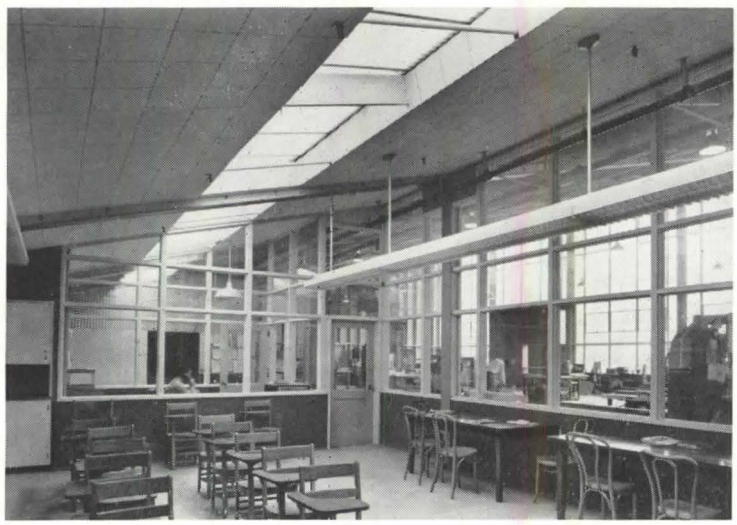
In the shallow classroom wings (above) *rooms span the whole area, with tall windows on the north: low and sun-shaded window bands, on the south.*

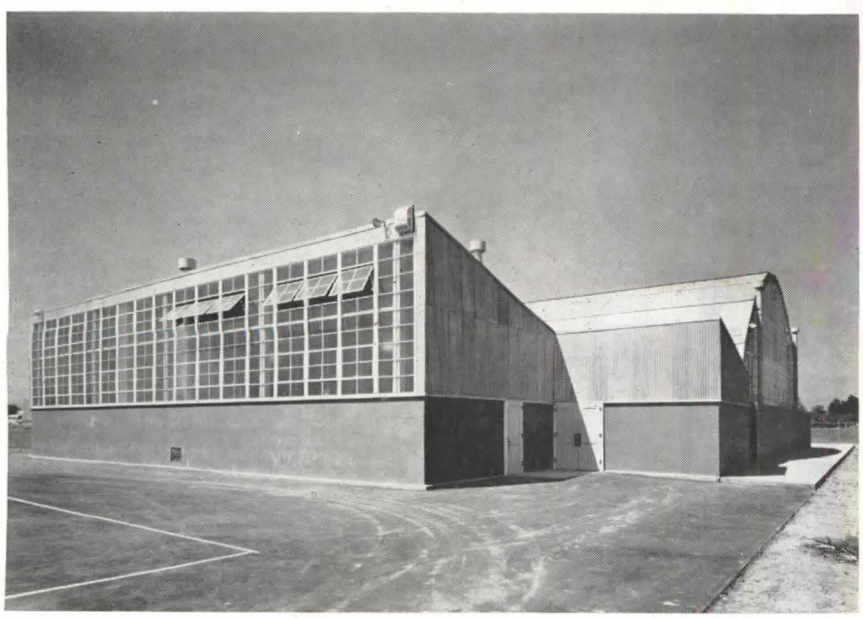
In classrooms adjoining shops (left) *the south window band is supplemented by an intermediate skylight and borrowed light from glazed partitions facing the shops.*



The bold forms of the buildings are a neat translation of familiar industrial elements. In shop areas, the roof line of the shallow wing section shown above continues on up to the 26-ft height of the tall north walls. In this latter case, an intermediate skylight brings interior light to the low portion.

The typical shop area includes the 48-ft-deep shop itself (below and bottom left) *and lower, skylighted area* (left) *in whose 24-ft depth are classrooms, instructor's office, and storage spaces. Black-and-white photographs belie the bright atmosphere of the rooms, with framing elements, sash, and pipe lines all emphasized in color.*





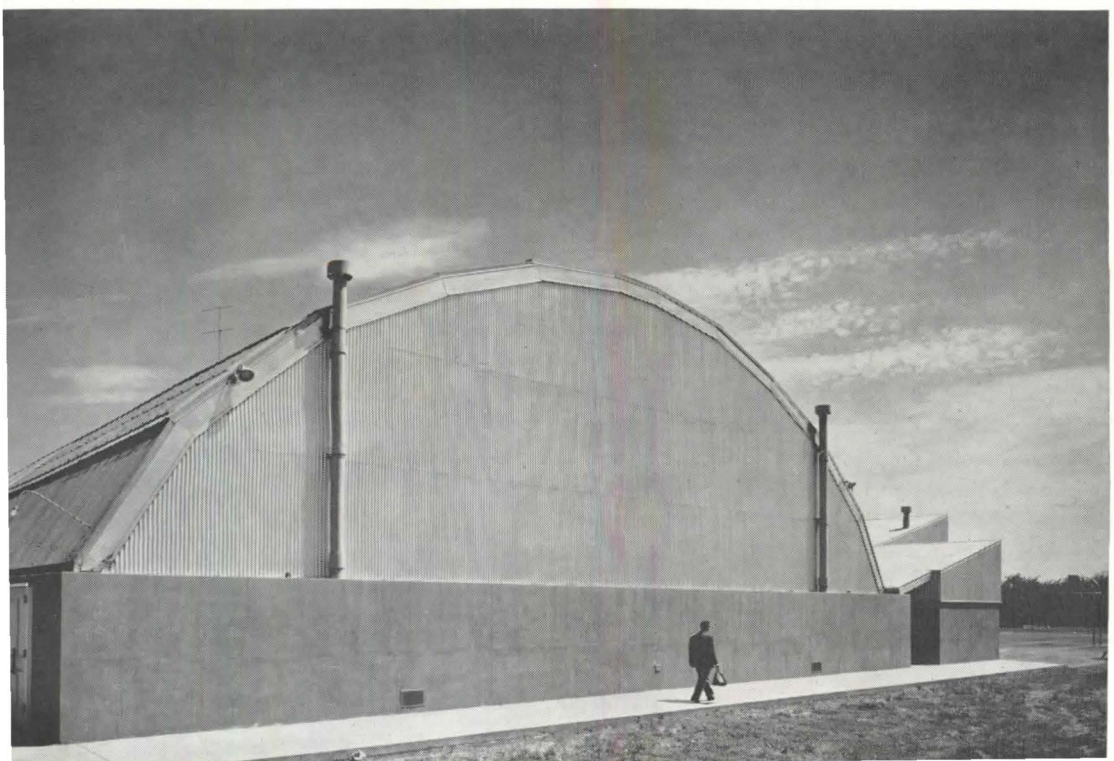
The gymnasium also has a light steel frame and base walls of concrete. For the gym space, a modified parabolic arch form is used, with daylighting provided through one windowed end and four bands of skylights. "It's like playing outdoors indoors," the architects say. The locker-room wing recalls the basic structure of the classroom-shop units.

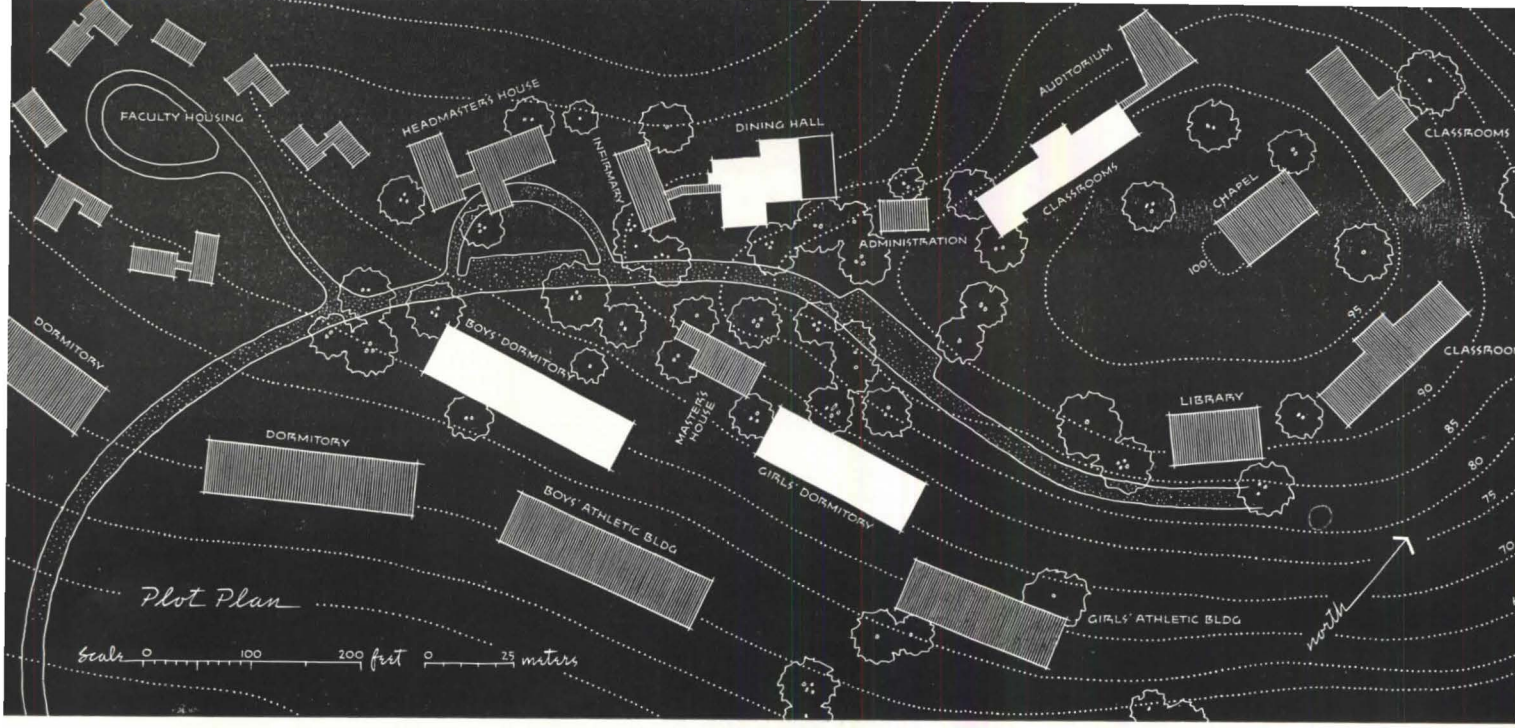
construction

Frame, walls, floors, roof: steel frame, walls, roof — Judson - Pacific - Murphy Corporation; floors: concrete slab. **Partitions:** interior: vinyl-covered, accordian-type folding—New Castle Products; metal toilet partitions—Sanymetal Products Company, Inc.; douglas fir plywood; and exposed framing. **Windows:** sash—Soule Steel Company; glass: frosted heat-absorbing—Blue Ridge Glass Company, wire glass—Mississippi Glass Company, clear heat-absorbing — Libbey-Owens-Ford Glass Company; skylights—H. H. Robertson Company. **Doors:** hollow-metal interior doors—World Steel Products Corporation; overhead doors—Pacific Rolling Door Company. **Hardware:** lock sets—Schlage Lock Company; door closers—Norton Door Closer Company; push and pull plates—Windsor. **Paint:** interior and exterior painting and trim—Pratt & Lambert, Inc.; exterior aluminum mixing varnish—Interchemical Corporation; powder—Aluminum Company of America; gymnasium floor finish—Hillyard Chemical Company.

equipment

Kitchen: General Hotel Supply Company. **Intercommunication and public address:** Stromberg-Carlson Company. **Gymnasium:** gym seating—Fred Medart Products Company; gym lockers—Worley & Company; basketball backstops—E. P. Finigan Company. **Classrooms:** tackboard—Armstrong Cork Company, Reynolds Metals Company; chalkboard trim, chalk troughs—Reynolds Metals Company. **Lighting fixtures:** classrooms —Smoot-Holman Company, Holophane Company, Inc. **Electrical distribution:** Westinghouse Electric Corporation; clocks—Standard Electric Time Company. **Plumbing and sanitation:** gang showers—Logan Company; water closets, lavatories—American Radiator & Standard Sanitary Corporation; hose racks and cabinets, fire extinguishers—The General Pacific Corporation; electric water heater—Wesix Electric Heater Company; flush valves —Sloan Valve Company; hot-water storage tank—Acme; circulator—Bell & Gossett Company; insulation—Western Asbestos Company; sprinklers—Grinnell Company, Inc.; fire hydrant—M. Greenberg's Sons; roof, shower, bucket, and floor drains—Josam Manufacturing Company; stall showers—Fiat Metal Manufacturing Company. **Heating and ventilation:** dust control, sawdust exhaust, ventilators, hopper—American Air Filter Company; air-supply registers, return-air grills—Air Factor Company; furnace, air conditioning—Surface Combustion Corporation; air filters—Farr Company; unit heaters—C. I. Hayes, Inc.; propane air gas plant, ventilators—Gasair Company; tanks, air receivers—San Jose Steel Company, Inc.; wall heaters—Holly Manufacturing Company; blowers, fan —American Blower Corporation; starter—General Electric Company. **Laboratory equipment:** Mullen Manufacturing Company.





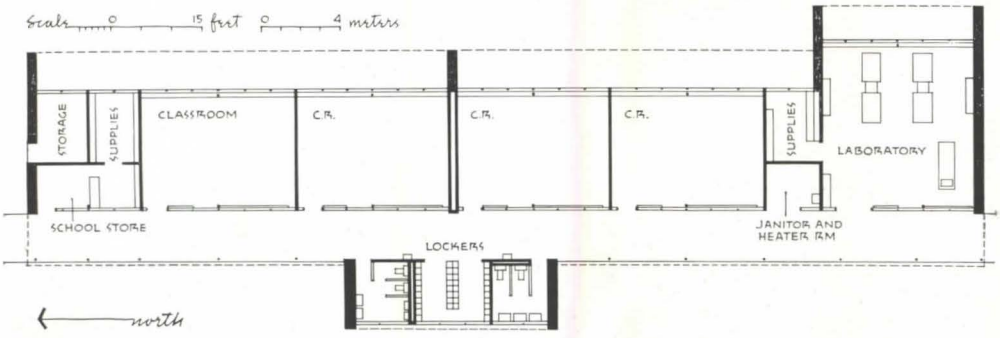
for private schooling

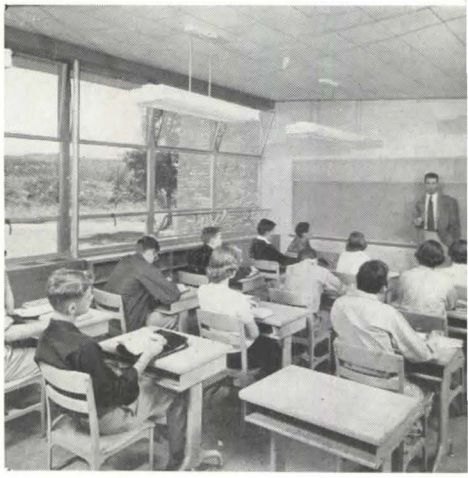
type	church boarding school
location	Austin, Texas
architects	Fehr & Granger
structural engineers	Wilson & Cottingham
mechanical engineer	George Rhine
general contractor	Leslie Crockett Construction Company

Leaders of the Episcopal Church in Texas realize how anachronistic medieval surroundings with outmoded social values are—as background for the education of children. They feel that a strong religious and moral fiber cannot be developed in young minds with make-believe educational measures: that if religion and education are to have strength and substance today, they must be founded in truth and in a contemporary framework, not only in progressive academic programs but also in modern surroundings. It is also their belief that, since we live in a mixed society as adults, we should train our children in the same kind of relationship. Texas Episcopalians have, therefore, established the first coeducational religious boarding school in America. Also, they believe that a contemporary expression of architecture in the school buildings is the only honest expression and therefore the most desirable. As a result, the students of this school have handsome buildings which are designed for the hot, semi-arid Texas climate, and which are constructed from local materials.

To achieve this remarkable goal the church fathers began by commissioning one of the most progressive firms in the state to plan and design the school for a site 250 ft above Lake Austin, eight miles from town. Spread out in campus fashion (*above*), the plan is such that buildings can be built one at a time, as money becomes available. The first drive for money netted enough to build the four buildings shown here—two dormitories, a classroom building, and a dining hall—all fully equipped. (Other buildings are now under construction, as a result of subsequent donations, and a chapel is near completion.) The boys' and girls' dormitories are the same in plan and construction, except as foundations differ with the changing contours of the rock formation of the site. The dormitories have central corridors, with double rooms on either sides. To minimize noise from the corridors, lockers which serve as closets stand between the corridors and the rooms. Clerestory windows let north light into the corridors over the lockers, and the rooms themselves are all provided with spacious windows for light and ventilation.

Similar in concept to the dormitory rooms, the classrooms (*acrosspage*) are arranged in a north and south line, with large windows opening to the east. On the west side there are only high strip windows under a wide overhang which covers the exterior corridor. Midway along the corridor, across from the classrooms, are lockers and washrooms. In south central Texas, exterior corridors are usable even in the coldest weather.



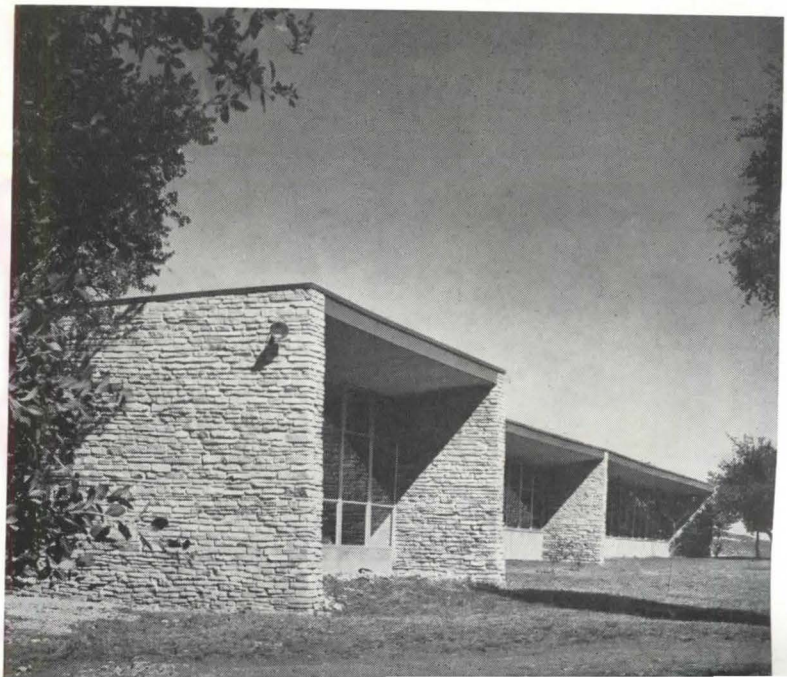


Exterior corridor of classroom building (above) *separates the locker-washroom element from the classrooms. Virtually no direct sunlight penetrates the high strip windows on the west side.*

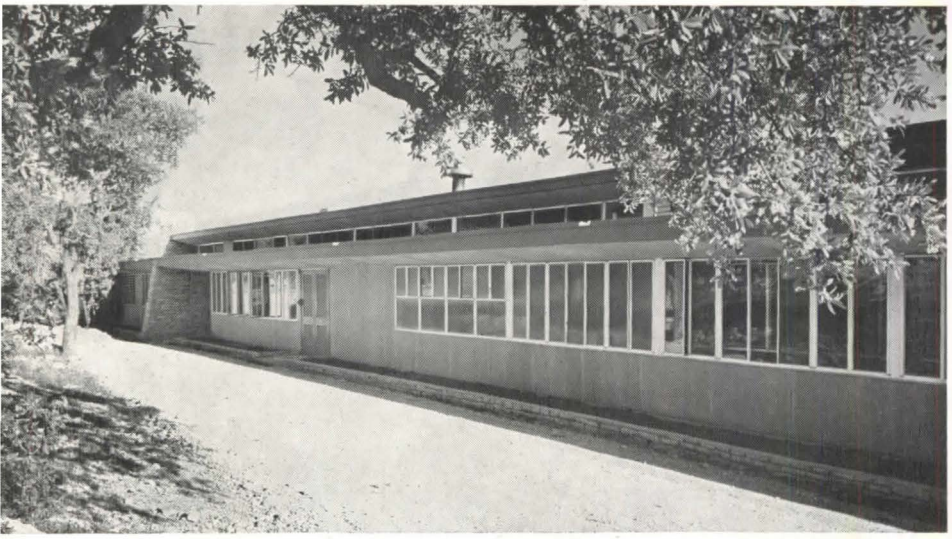
Windows on east side (right) *are protected from all but the very early sun; the rest of the day the classrooms enjoy abundant indirect light.*

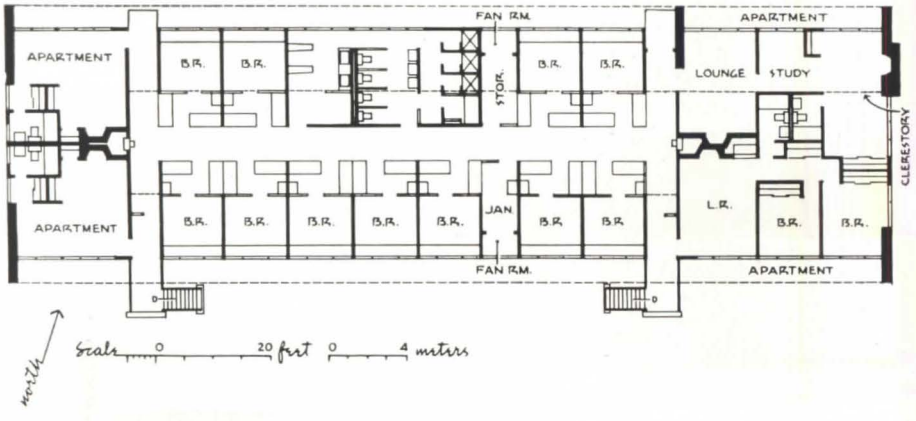
All fieldstone was collected on the site.

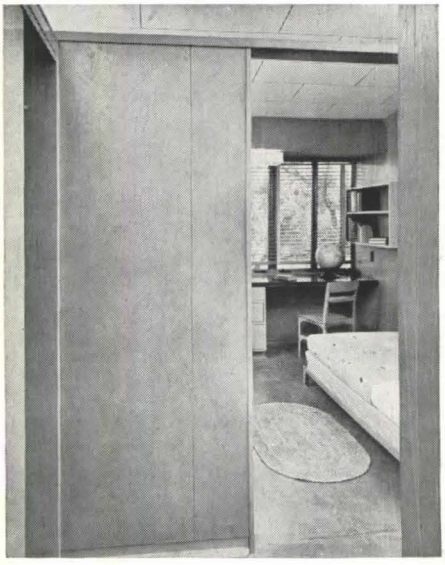
Photos: Ulric Meisel

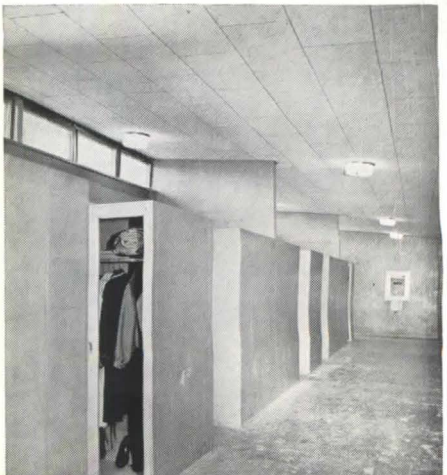


church boarding school



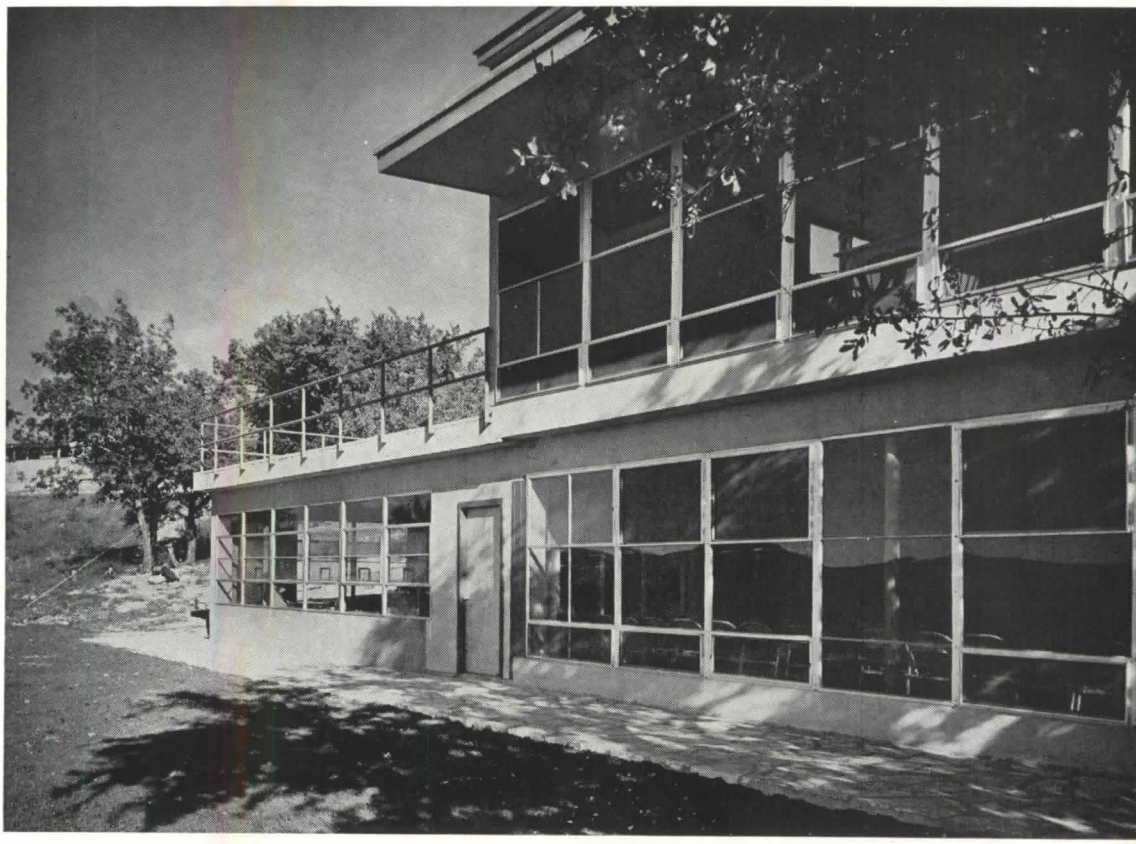




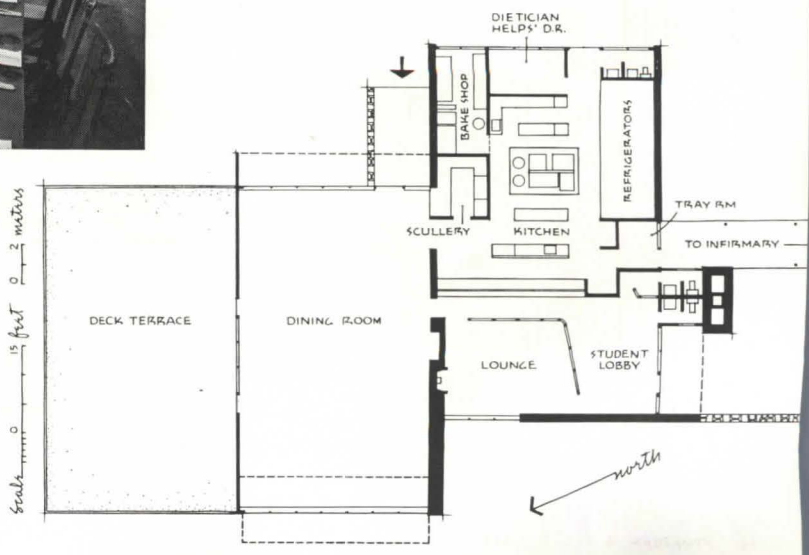


Typical dormitory (above) *is constructed of wood, stone, concrete, building tile, bar joists, plywood, and asbestos cement.*

Interior photos (right) *show lockers along the corridor and a view into one of the rooms, from the corridor. Clerestory windows make the corridor well lighted in the daytime.*

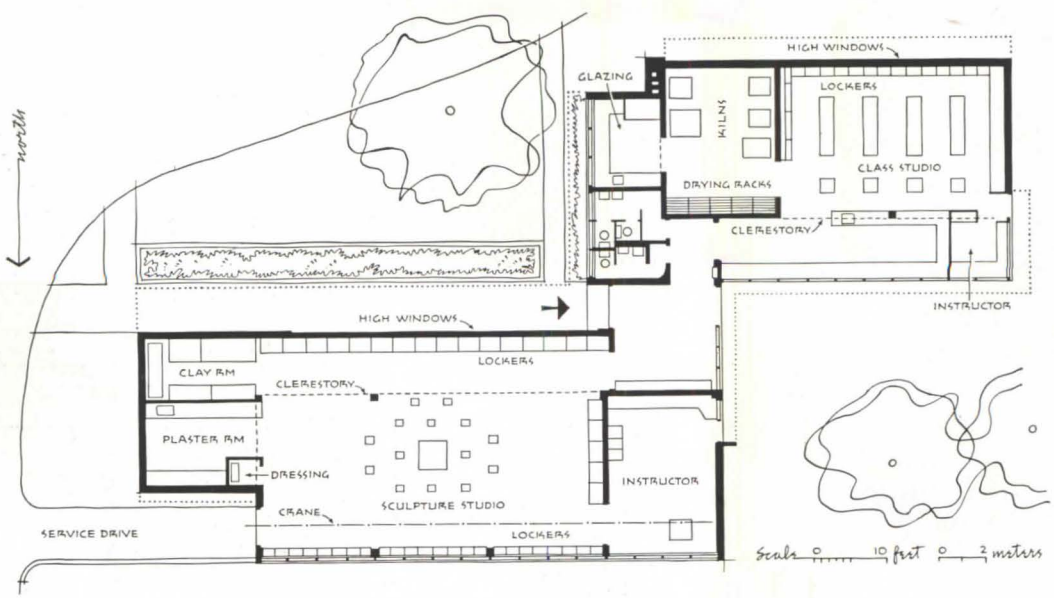


Dining room (left) *is on second floor of dining hall* (above). *Until more of the total school plan is completed, the ground floor is being used for a library, a playroom, and a maintenance shop. From the deck, Lake Austin can be seen, 250 feet below. Stone stairs and walk* (left) *lead to classroom building.*



for art instruction

type	art studio
location	Kansas City, Missouri
architects	Runnells, Clark, Waugh & Matsumoto
engineer	Carl P. Forsythe
landscape architects	Hare and Hare
general contractor	Long Construction Company

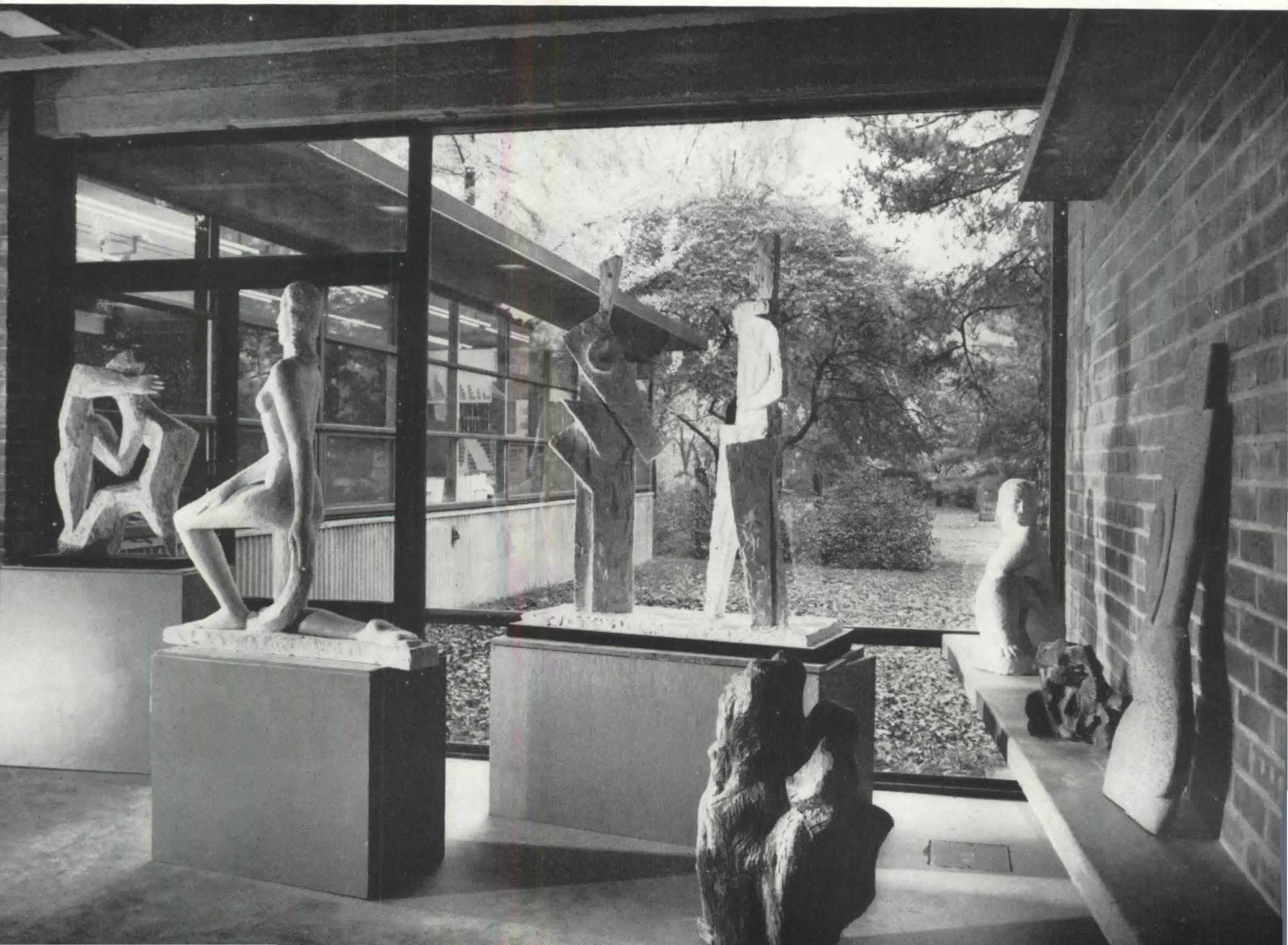


The Kansas City Art Institute is located in a section known as the Cultural Center of Greater Kansas City, a relatively small area occupied by the Nelson-Atkins Gallery of Art, four colleges, Kansas City University, and the Art Institute. Supported largely by endowments and donations from its more than two thousand members, the Institute offers undergraduate, graduate, and professional fine-arts and educational training to people of all ages and walks of life. Besides being an accredited school of higher learning in fine arts, it also serves as an art center for children and adults of the community who are not necessarily interested in pursuing academic degrees.

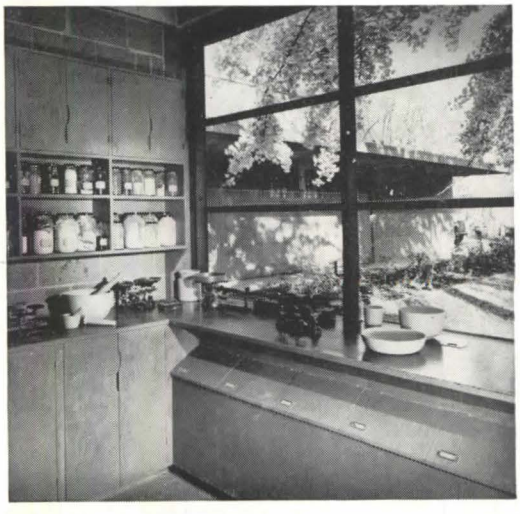
Several years ago, the Institute called upon Architects Runnells, Clark, Waugh & Matsumoto to design an art classroom building (*February 1948 P/A*). So successful was this first venture that the Institute commissioned these same architects to design another unit in its projected series of new buildings, this one for the plastic arts—sculpture and ceramics.

As in the previous building, north light was one of the main considerations of planning. Though less space was needed, more mechanical equipment had to be planned for, such as kilns and devices for handling large, heavy materials. Since the requirements of a ceramic studio are so different from those of a sculpture studio, the architects designed them as separate units, bound together by a glass-walled foyer (*below*) and a common eaves line. At night the lighted foyer becomes a public display room for passers-by.

Even in the daytime, sculpture in foyer can be seen from the outside (left). *Taller wing is sculpture studio.* Photos: Julius Shulman



art studio



Heavy sculpture materials are brought into studio on I-beam winch track (above *and* below) *through ceiling-height doors. Limestone, brick, and corrugated asbestos cement are used for facing materials over reinforced-concrete structure.*

Ceramic mixing room (right) *is finished with natural materials—wood, steel, and pumice blocks.*

for architectural training

type	architectural school
location	Auburn, Alabama
architects	Pearson, Tittle & Narrows
structural engineer	Strickland & Associates
mechanical engineer	James A. Evans
electrical engineer	Mosley & Yarbrough
contractors-engineers	A. C. Samford, Inc.

The fifth-year design students at Alabama Polytechnic Institute School of Architecture were given a program for the design of a new building for the School of Architecture and the Arts on several campus sites. Working in groups, the students did such thorough jobs that Turpin C. Bannister, then dean of the School of Architecture and Arts, and his faculty were able to use their work in drafting the building program from which Architects Pearson, Tittle & Narrows worked. The requirements included well-designed space for students and teachers of architecture, landscape architecture, building construction, interior design, art, music, and drama.

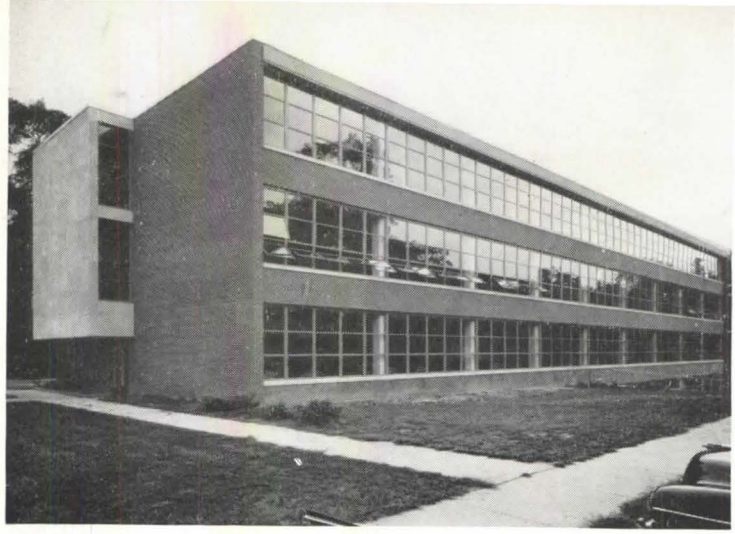
The site chosen was a corner lot next to an existing auditorium which had to be maintained because of sentiment. It was decided that the building was to be contemporary in design but must conform to the existing buildings, at least in color and possibly in materials used. However, the budget was not large enough to encompass the whole program at one time, so the new building was designed to house all of the departments except music and drama, which are to get another adjoining building, some time in the future. Meanwhile, these departments have been given temporary space in the new building.

The School of Architecture enjoys the greatest amount of space in this new structure. Both the main and second floors are designed for its use, though the exhibit room on the main floor and the library on the second are shared by all the arts. The dominant features of these two floor plans are the long open design laboratories on the north side. They have been left free of permanent partitions to make them as flexible as possible according to changing needs.

It is unusual to find an architctural school with adequate space, not only for drafting rooms but also for exhibitions and judgments. Here we find separate areas for all three operations, plus a library.

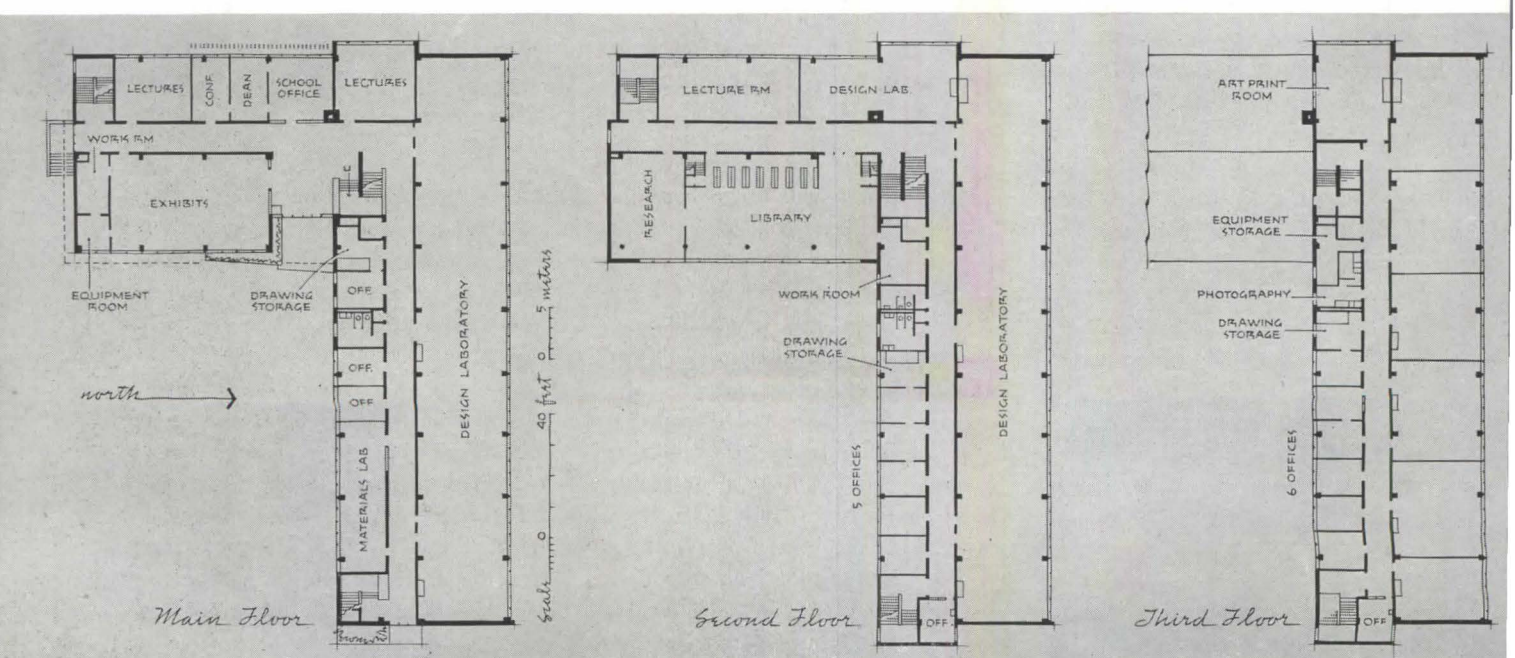
The other departments carry on their work below the main floor, and on the third floor, which is a continuation upward of the east-west wing.

For a building of these dimensions, the architects found reinforced concrete to be the most economical method of construction. The floors are pan-form rib slabs. Columns are set back from the walls, which are of glass, brick, and limestone.



Design laboratories (above) *run the entire length of north side. Limestone-veneered stairwell is cantilevered at top two stories.*

Set-back columns in library (left) *permit uninterrupted window wall, giving the desks and stacks much more light than if columns had been used as mullions. Open-stack arrangement provides more stimulus to inquiry and research on the part of students than a central check-out-desk arrangement would have.* Photos: Jack Holmes



Large, well-lighted exhibit room (above), *separated from main entrance only by a glass wall, is used by all departments in the building. Its flexibility offers students experience in space planning.*

Exhibiting work is so important here that shelves are provided even in lecture rooms (right). *Walls and ceiling are plaster; flooring is asphalt tile.*

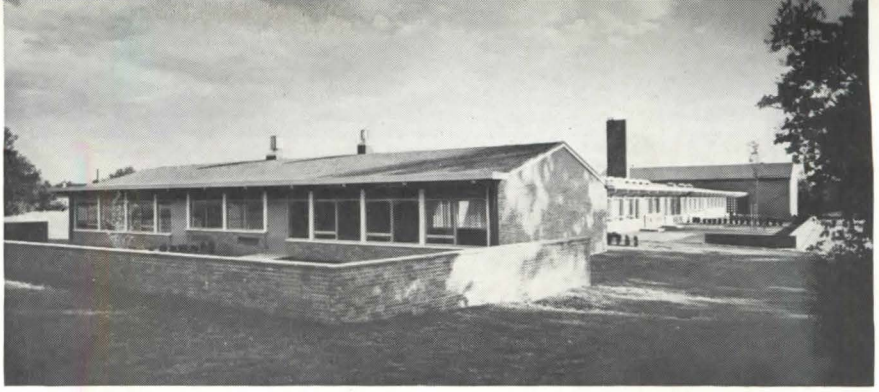
for small children

type	elementary school
location	Needham, Massachusetts
architects	Hugh Stubbins Associates
associated architects	Kilham, Hopkins, Greeley & Brodie
engineers	Cleverdon, Varney & Pike
site and landscape	Chambers & Moriece
general contractor	Vara Construction, Inc.

Inviting main entrance (above) *is indicative of reduced scale throughout the building. Laminated wood beams are supported here by steel columns and at window mullions by H-beams encased in brick and concrete.*

Doors in background (left) *open into gymnasium; stairs lead to cafeteria-assembly room below gymnasium. Blue stone is laid over reinforced concrete floor.*

Photos: Richard Garrison

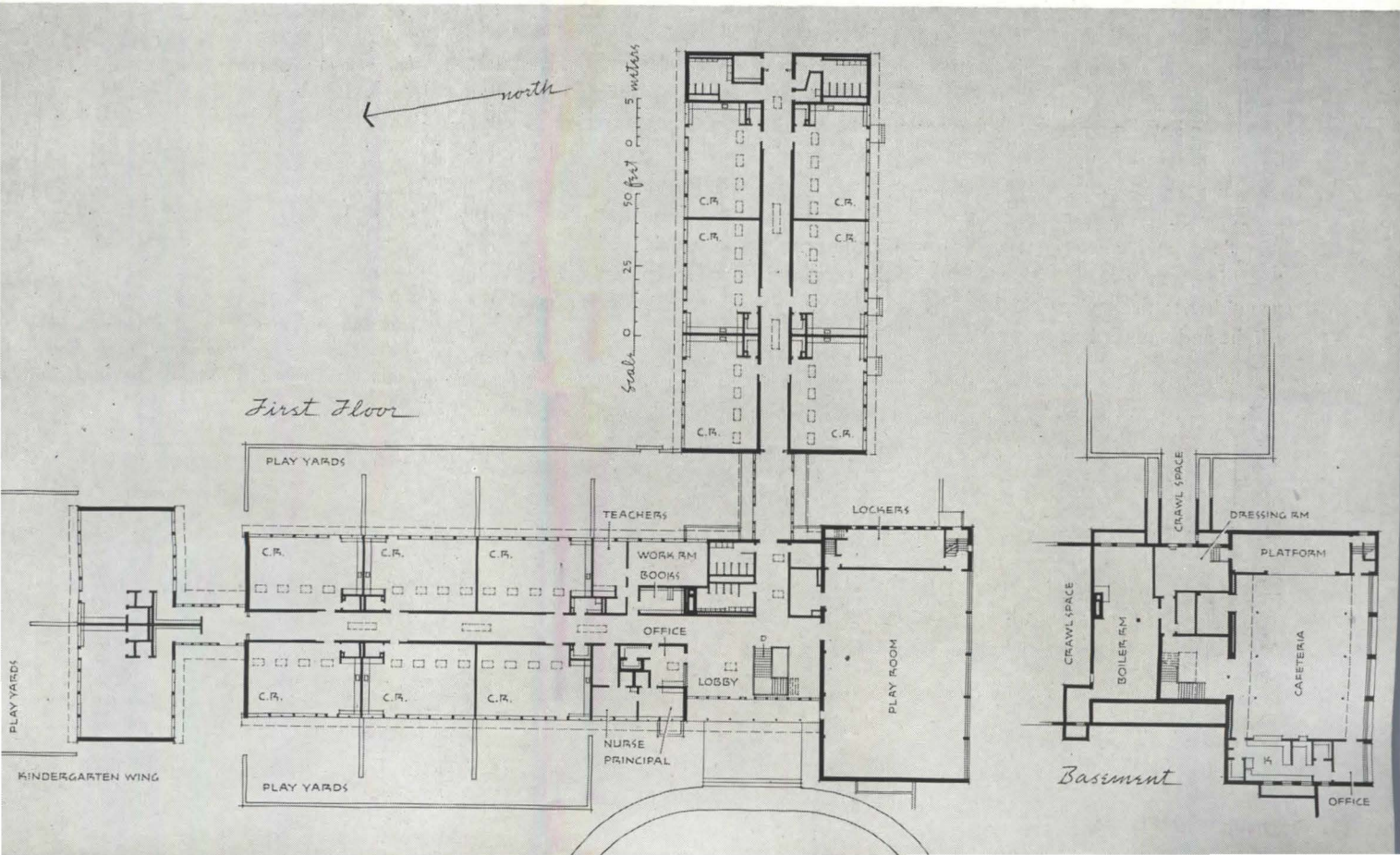


Kindergarten bay (above) *is lighted from two sides, so does not need roof bubbles. Doors open from classrooms onto small playground where children will not be disturbed by older students. This bay can be entered at corridor connecting it with main building, eliminating unnecessary traffic at main entrance.*

From the very outset, when the Needham school-building committee decided to adopt a long-range building economy program, right through occupancy by students and teachers, this project has been almost a model study in school design.

To be sure, the building committee was cost-conscious; but it was not short-sighted. It well understood, for example, that true economy would not result from false "savings" in the initial building cost —savings which are often lost many times over in high maintenance costs, early obsolescence, and large insurance premiums, not to mention losses in neighborhood real-estate values. Also, the committee saw that only through a progressive approach to architecture could it hope to achieve real economy. Needham could not afford to build a first-rate elementary school and, at the same time, spend additional money for a colonial disguise. Besides, many of these New England residents are now overweary of the impoverished philosophy of false traditionalism. (One of New England's greatest figures, Ralph Waldo Emerson, said as much more than a hundred years ago.)

Having decided, then, that Needham was to have a contemporary school in every possible respect, the committee engaged Architect Hugh Stubbins, already well known for his excellent work in the contemporary field, and gave him almost complete freedom within the following program: 15 classrooms, including two for kindergarten and one for remedial work; administration and dietitian's offices; playroom-gymnasium: separate cafeteria and assembly room (if possible); physical plant; and storage space. The site—a bare, nine-acre, triangular piece of land, formerly farm land—was in the middle of a newly developed residential neighborhood and had a sharp grade drop.



View from street (above) *shows relationship of two-story element to the rest of the school. Cafeteria is tucked under gymnasium but gets full amount of light and ventilation as a result of grade slope.*

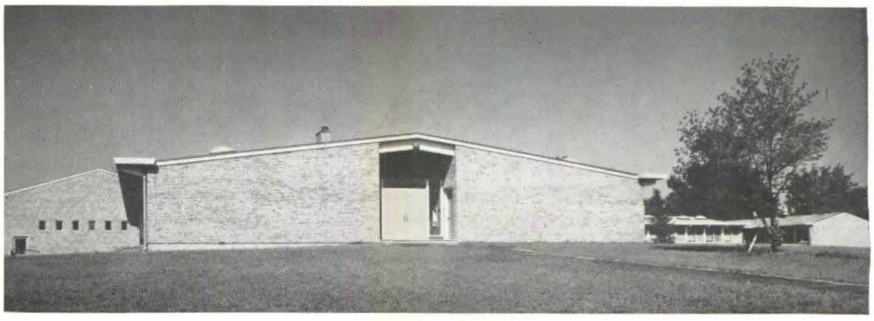
Laminated wood bents and purlins (top, acrosspage), *2½" T&G decking, rigid insulation, and tar and gravel roof. Wood floor is laid over reinforced concrete slab, supported by concrete beams.*

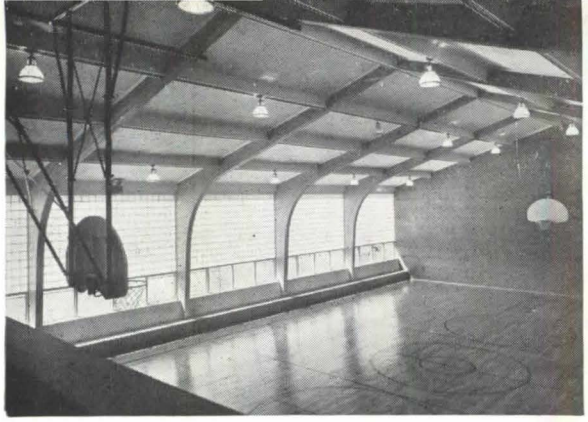
For economy, the architect used a double-loaded-corridor system of classroom bays, i.e., classrooms on both sides of an interior corridor. He achieved balanced lighting by placing translucent bubbles in the roof close to interior walls (*acrosspage*). Then, to save as much of the plot as possible for playground, he arranged the bays in a general L-shape, the two major elements intersecting at the point of greatest grade slope. Here, the two-story unit — gymnasium-playroom on main floor, and cafeteria-assembly room at grade—was placed, with no interference either to the scale of the building or to light and ventilation.

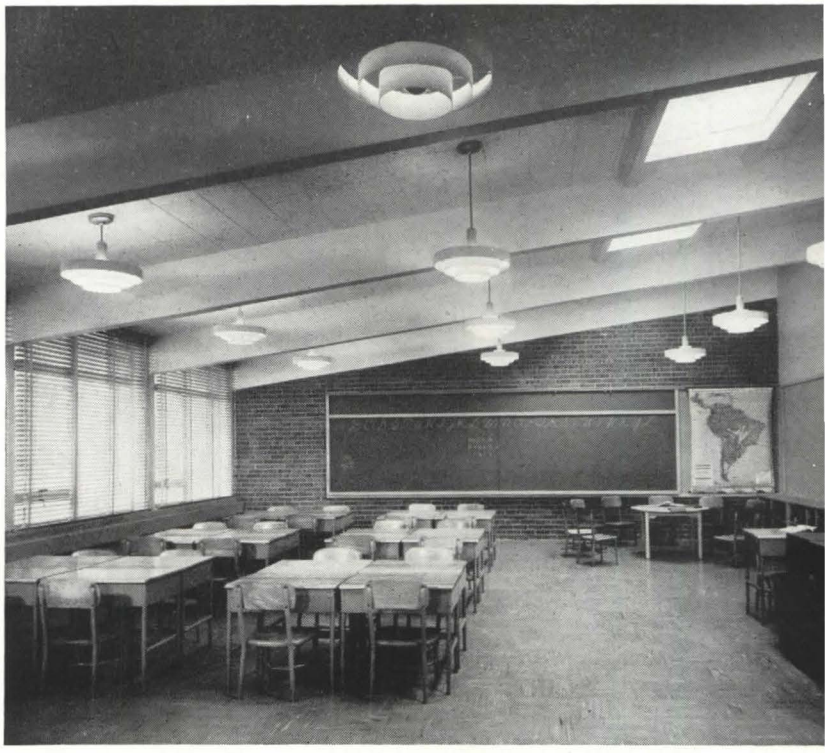
One classroom bay and the kindergarten bay are connected to the central unit by short passageways, not only to avoid the big-building aspect but also to separate areas of different noise intensities. Throughout the entire structure, however, there is the distinct feeling of scale most appropriate for small children. It was the architect's express intention of making the children feel as though they belong to the building, and it to them.

One child, when asked in class to list the people who had helped him most in everyday life, said, "Daddy, Mommy, the doctor, President Eisenhower, and the architect."

Imposing end view of east classroom bay (below) *shows gentleness of roof pitch. Doors are framed with glass to light the corridor.*

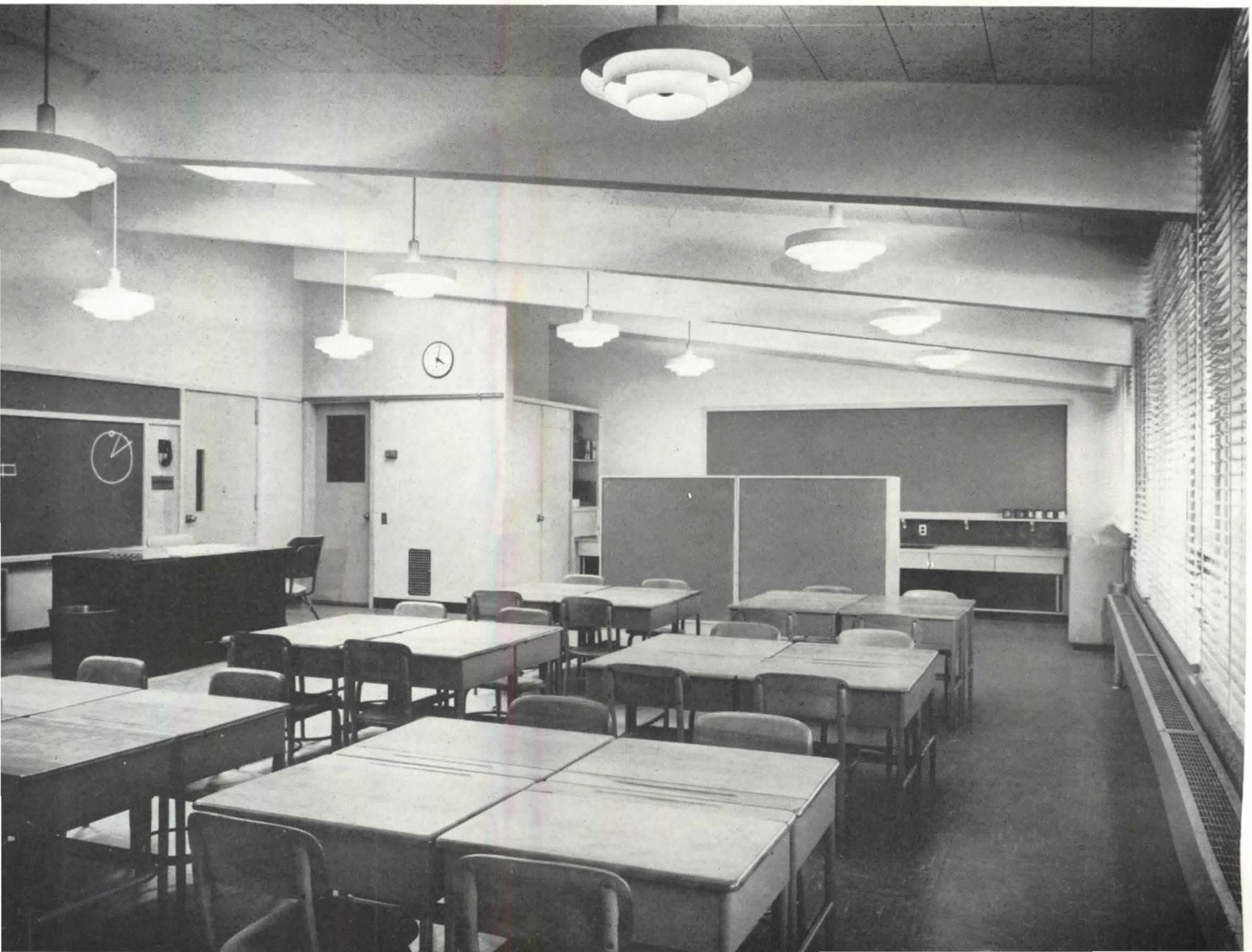






Acoustical ceiling tile between exposed roof beams handles the sound problem very well. Tinted chalkboards get strong diffused light from roof bubbles. Note how windows rise between roof beams, to the ceiling. Classroom coat rack, in front of sinks (below), *can be wheeled around and used as a screen.*

This well-equipped school cost $14.05 per sq ft, but Needham's building committee believes it was a good investment. The school will be serving the community well at least 25 years from now and probably a lot longer.

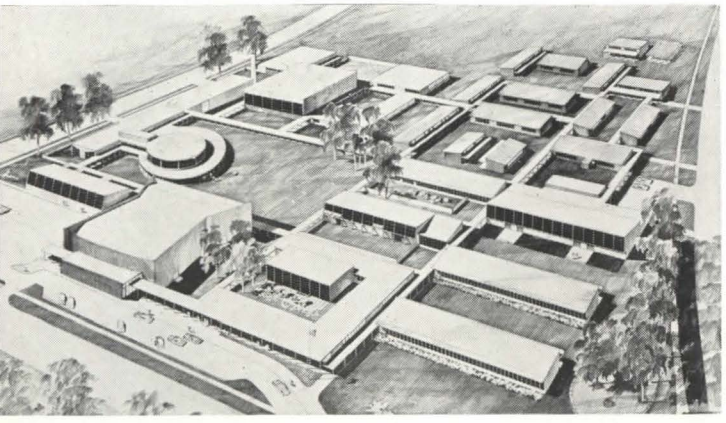


for both students and adults

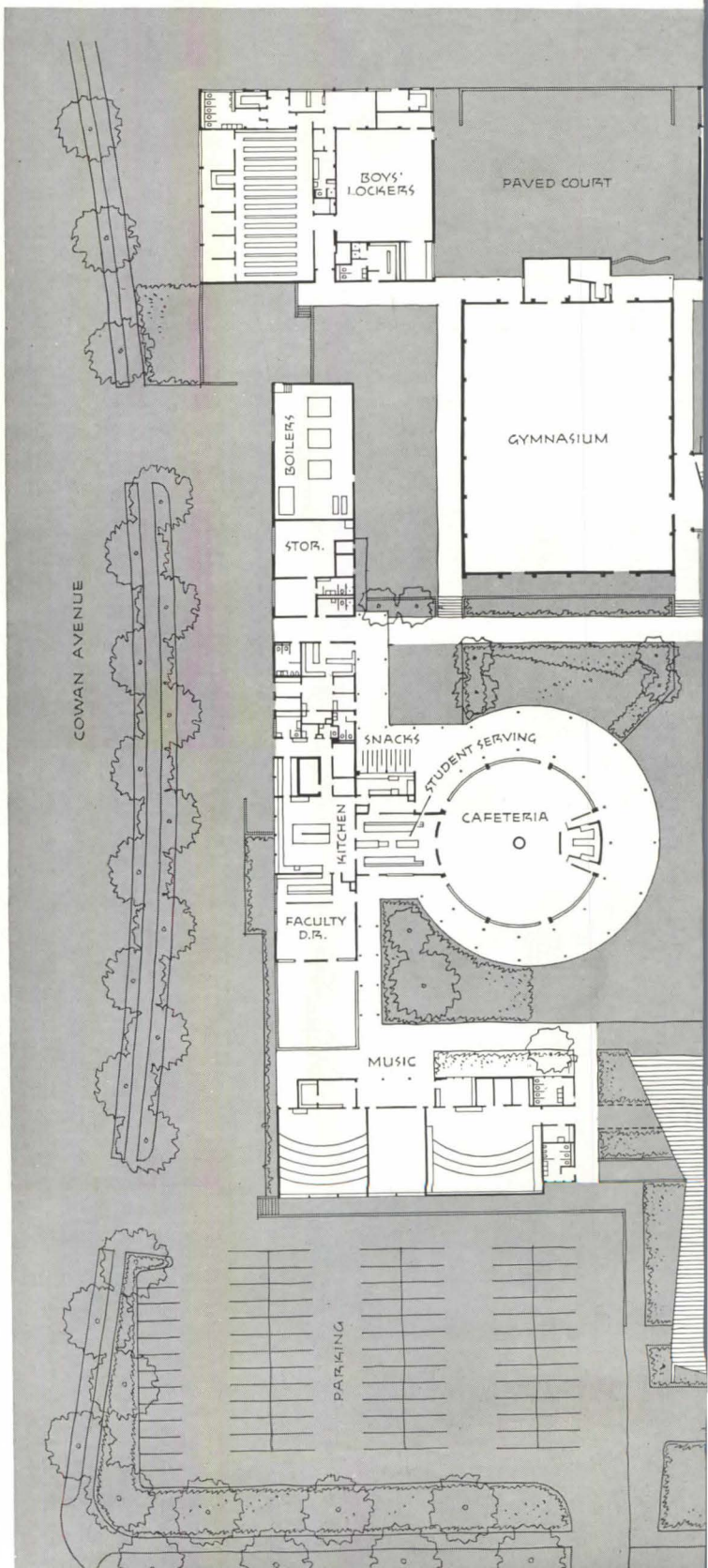
type	high school
location	Los Angeles, California
architects	Sumner Spaulding-John Rex
structural engineer	C. G. DeSwarte
mechanical engineers	Bartlett & Berky
general contractors	V. O. Brunzell and Gallinger Construction Co.

Among the more remarkable aspects of this extraordinary school-community center are the individual design of the separate buildings to serve their particular functions; the connecting covered walkways; and the grouping around a central courtyard where all sorts of school and community activities take place.

Photos: Julius Shulman

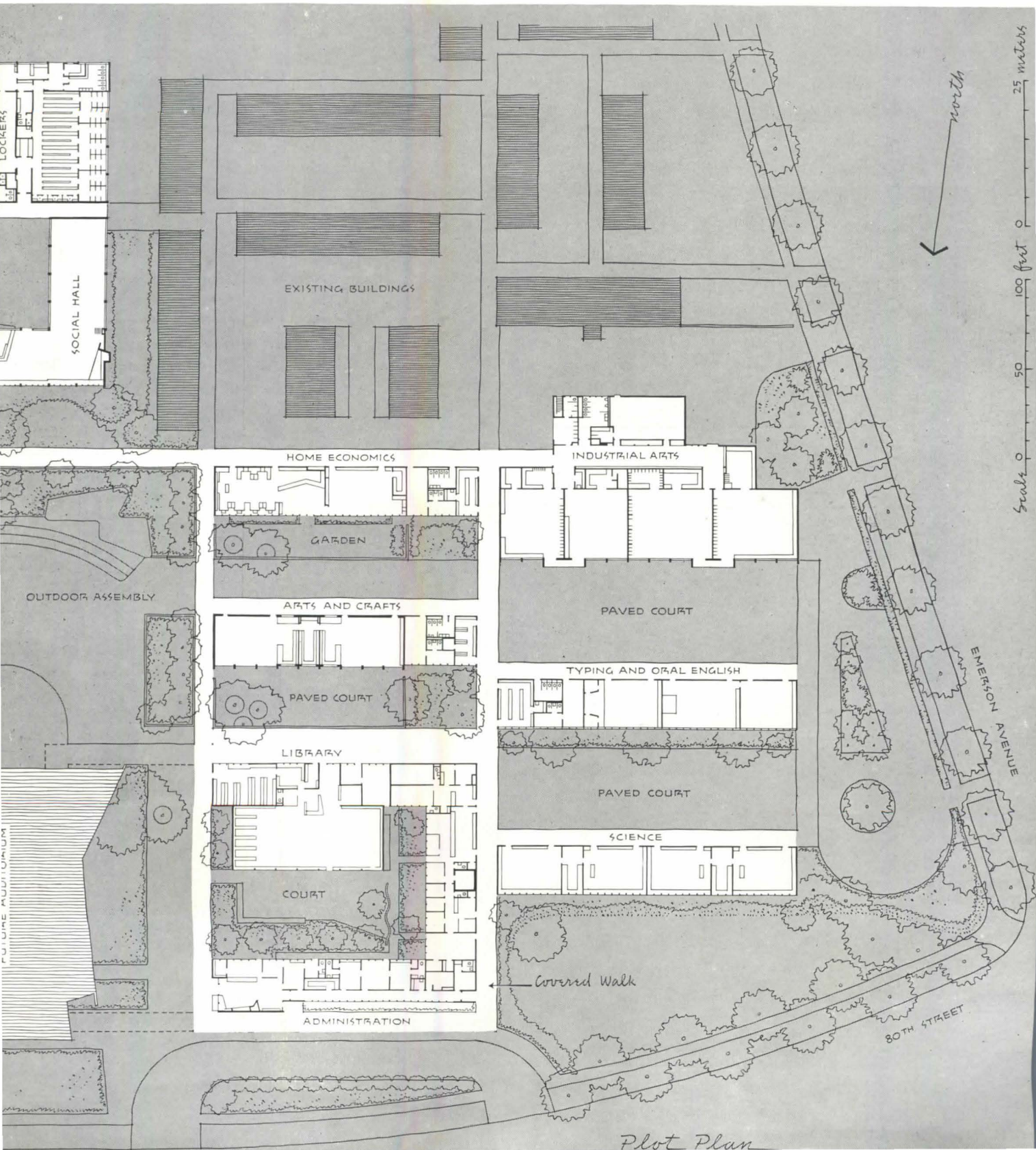


The photograph was taken from a walkway roof looking across the walled court of the arts and crafts building to the rectangular mass of the gym, on the far side of the outdoor assembly area. At left of gym is the circular cafeteria building.

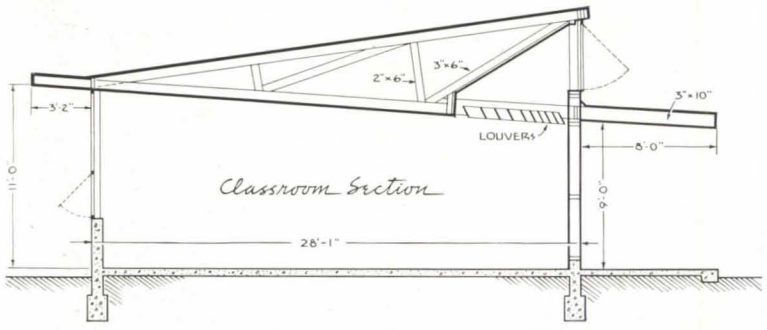


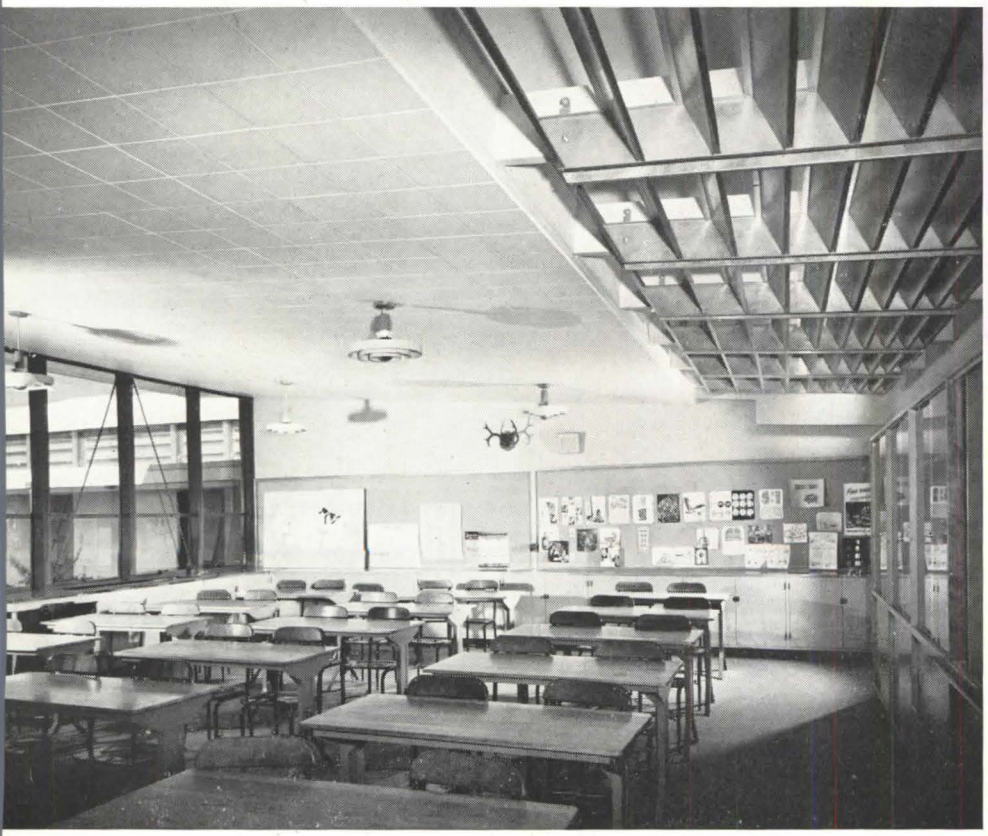
On first viewing this campus, one might think that one had wandered into a great public recreation center rather than onto the premises of a public high school. And, in many respects, the impression would be correct. For this junior-senior high school (later—when a new school is built—to become simply the junior high) is as much a community center as it is an educational facility for high-school students. An extensive adult-education program is conducted by a number of the school departments; but the place also serves as a neighborhood meeting place, for concerts, folk dancing, and as a general social center. The school is located in one of Los Angeles' fastest-growing sections, near the municipal airport and several aircraft plants, where (until the school was commissioned) no community facilities had been planned.

Heart of the design solution is the organization of the several units, joined by covered walkways, around a great, central courtyard that is used for a variety of community and student activities. All main buildings open to this central area,



Plot Plan





so that classes can readily be transferred out of doors when this is considered desirable. Apart from carrying on California's indoor-outdoor tradition, the central-campus scheme provides maximum protection from traffic and extraneous noise. In the opinion of Mrs. Margaret Horn, the principal: "This layout, with lack of interior halls and lockers, results in much quieter classrooms, and the 'western hacienda' design promotes a sense of freedom and release for pupils, without the feeling of restriction common in traditional schools. Students' activities and grades indicate that they are more receptive to education here."

Among other advantages of the plan, with each major department housed in its own building, academic portions of the school may be used independently of the cultural facilities. Or any one unit can be used separately; or, obviously, the buildings can be used in any combination, or co-ordinated as a whole. Not the least remarkable thing about the group is that, while the various buildings form an integrated design unit, the separate units are planned and designed specifically for the functions intended, and even structural systems vary—in an effort to achieve the most economical solutions possible for the needs and uses of the different building types.

For example, the administration building and typical classroom pavilions are of wood-stud, plaster-wall construction, using wood trusses and wood sheathing. Continuous windows are used from sill to ceiling on north exposures, while clerestory lighting occurs above covered access passages along the south walls; aluminum louvers in ceiling wells exclude direct sunlight. The industrial arts building, arts and crafts building, library, and music buildings are framed with welded

From a corner of the administration building (top) *a covered walk leads back to the instruction units; wing at right of photo houses science classrooms.*

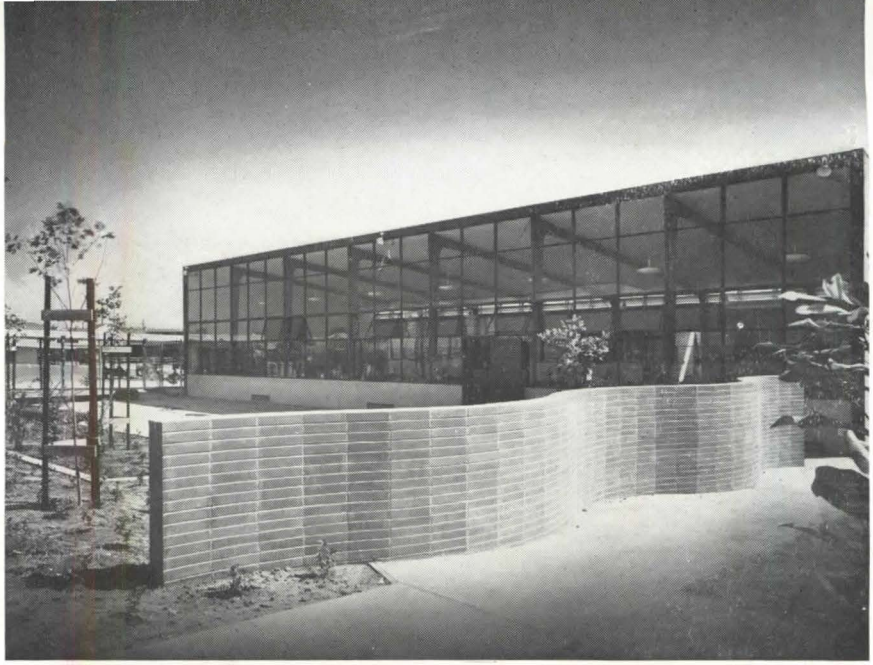
In the typical classroom (left), *an aluminum louver in a ceiling well cuts direct sunlight from the south-facing clerestories that occur above roofs of access walkways* (section).

steel-frame bents on reinforced concrete slabs. Huge doors open on the north side of the arts building to a walled courtyard, for outside art classes, while the library, with space for 10,000 volumes, is adjoined by its own paved, walled courtyard, with shaded, landscaped study areas.

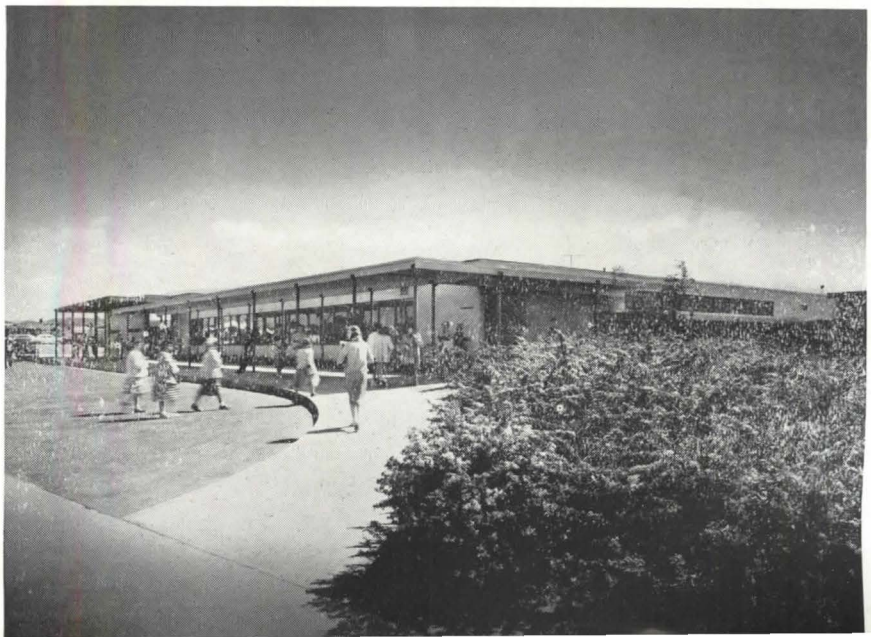
Reinforced concrete frames the gym and social hall, with steel trusses and wood sheathing, while locker buildings have brick filler walls within their reinforced concrete frames. Gym and social hall are adjoined by paved and walled patios that are used for outdoor group classes, dancing, ping pong, shuffleboard, etc. The round cafeteria building has reinforced concrete walls and a steel roof structure employing wood sheathing. The plan of the building provides a sheltered, outdoor dining terrace, as well as the indoor cafeteria. Walls between the two are mainly of glass, in an effort to bring the pupils who bring their lunches close to those who buy them at the cafeteria, thus minimizing social cliques.

In the future auditorium, the stage is planned so that it will open out to the campus courtyard, in addition to the auditorium proper. Thus, it will serve for neighborhood festivals, concerts, and the like, as readily as for routine educational functions.

The buildings are heated from a central boiler house (reinforced concrete throughout), with blower-type hot-water convectors used as the main room source. The entire systems of heat and electrical distribution are housed in a readily accessible, underground tunnel. Cost of the buildings, including paving, walls, fencing, covered walkways, and underground work—but not including landscaping or collateral school equipment — came to $11.40 per sq ft. The units shown were completed in February 1941.



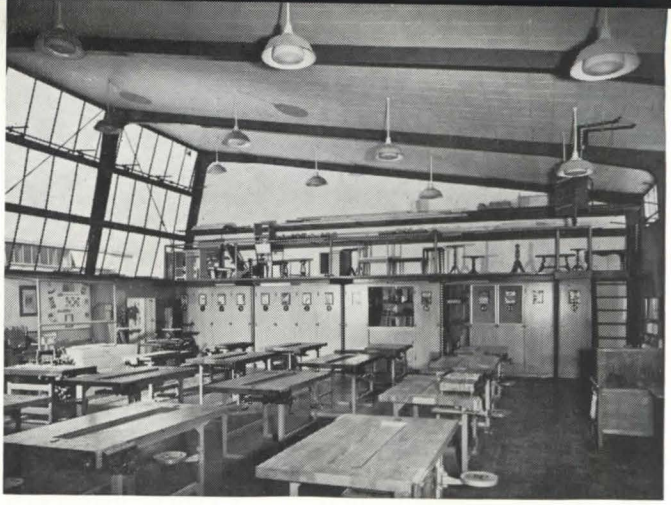
The library, with space for 10,000 volumes, is in a wing at the rear of the administration building. The bordering landscaped patio is used for outdoor reading. Framed in welded-steel bents, the building has ceiling-height windows along the north wall; a narrow, louvered window band occurs at the ceiling line on the south wall.

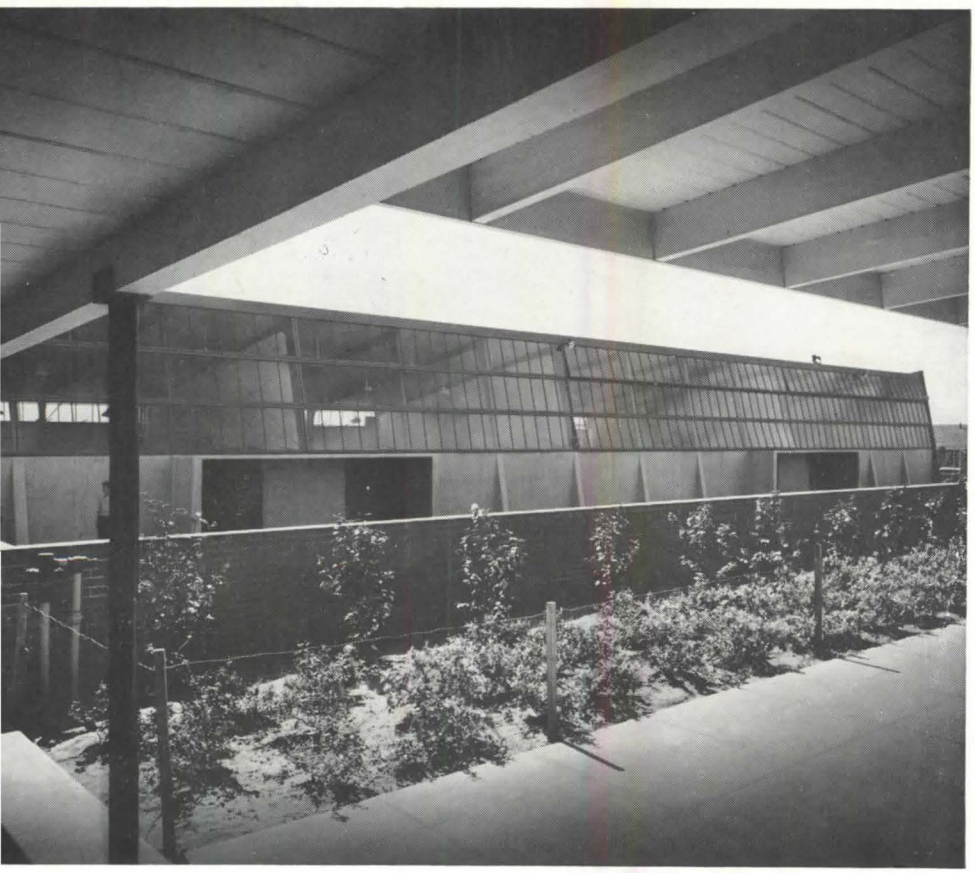


In addition to school offices, the administration building (right) *contains counselors' rooms, an attendance office, and a health unit. This building is of standard, wood-stud framing, as are the typical classroom wings.*

The upsloping, welded-steel bent frames of the arts and crafts building hold tall windows that provide ideal north lighting. Areas beneath consist of double doors that open the main rooms fully to the walled patio that also serves as an outdoor classroom. The low element in the foreground (right) contains teachers' rooms, toilets, and lockers.

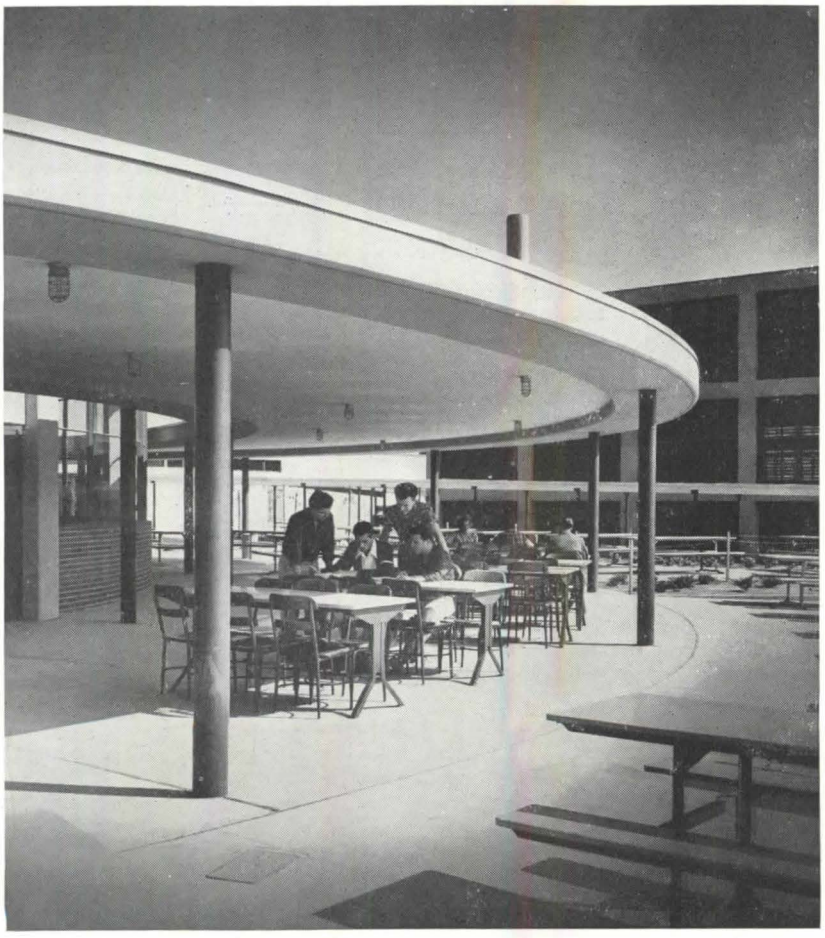
The industrial arts building (this page) *is similar in structure to the arts and crafts building* (across-page). *Electrical, printing, wood- and metal-working shops line the high north wall and open to the adjoining court. In a wing to the rear are an office, toilets, and a windowless, audio-visual classroom.*





high school

An L-shaped unit beside the gym contains the school social hall and recreation room. This structure, the gym, and the girls' locker building define a large outdoor court equipped with a barbecue fireplace (right). *Numerous social events as well as outdoor physical-education classes are held in this patio.*



The circular cafeteria building occurs on the east side of the great central courtyard, just next to the gym (background, *photo immediately above*). *The exterior canopy is considerably wider on one side than on the other, to provide shelter for the large number of students who patronize an outside snack bar.*

construction

Foundation, floor, framing, wall, roof: reinforced-concrete foundation and floors: cement—Riverside Cement Company; wood, reinforced concrete, and steel framing: cement—Riverside Cement Company, steel—Consolidated Steel Corporation; reinforced-concrete and brick walls: cement—Riverside Cement Company, brick—Los Angeles Brick Company; steel roof trusses plus steel and wood joists: steel—Consolidated Steel Corporation. **Wall surfacing:** ceramic veneer, tile—Gladding McBean & Company; plaster—Blue Diamond Corporation; plywood—United States Plywood Corporation. **Floor surfacing:** hardwood flooring—E. L. Bruce Company; asphalt tile—Mastic Tile Corporation of America. **Ceiling surfacing:** reinforced acoustical tile—United States Gypsum Company. **Roof surfacing:** composition, built-up roofing—The Flintkote Company, Building Materials Division; gravel surface. **Dampproofing:** The Flintkote Company. **Insulation:** mineral-type batting. **Roof drainage:** galvanized-iron gutters and downspouts—Armco Steel Corporation. **Partitions:** metal toilet partitions—Fiat Metal Manufacturing Company. **Windows:** steel and aluminum sash: steel—Ceco Steel Products Corporation, aluminum—Glide Windows, Inc.; glass—Mississippi Glass Company; aluminum store-front—The Kawneer Company. **Doors:** flush-wood interior doors. **Hardware:** lock sets—The American Hardware Corporation, Russell & Erwin Division; door closers—The Oscar C. Rixson Company; rolling door—Acme Central Metal Products, Inc.; panic exit—Vonnegut Hardware Company, Von Duprin Division. **Paint and stain:** exterior—Dunn-Edwards Corporation.

equipment

Intercommunication: Stromberg-Carlson Company. **Public address:** Western Electric Company, Jensen Manufacturing Company. **Lighting fixtures:** incandescent concentric-ring fixtures with silver bowl lamps in office and classroom areas—Leader Electric Company; flush fixtures in office and lobby areas—Gotham Lighting Corporation; passages—Benjamin Electric Manufacturing Company. **Electrical distribution:** panelboards—Zinsco Electrical Products; circuit breakers—Mullenbach Electrical Manufacturing Company. **Plumbing and sanitation:** water closets—American Radiator & Standard Sanitary Corporation; toilet seats—Swedish Crucible Steel Company, Olsonite Plastics Division; flush valves—Sloan Valve Company; showers: marble—Vermont Marble Company, controls—Logansport Machine Company, Inc. **Heating and ventilation:** oil- and gas-fired furnaces—The H. B. Smith Company, Inc.; convectors—Trane Company; unit heaters—American Air Filter Company, Inc., Herman Nelson Division; controls—Minneapolis-Honeywell Regulator Company; ventilators—G. C. Breidert Company.

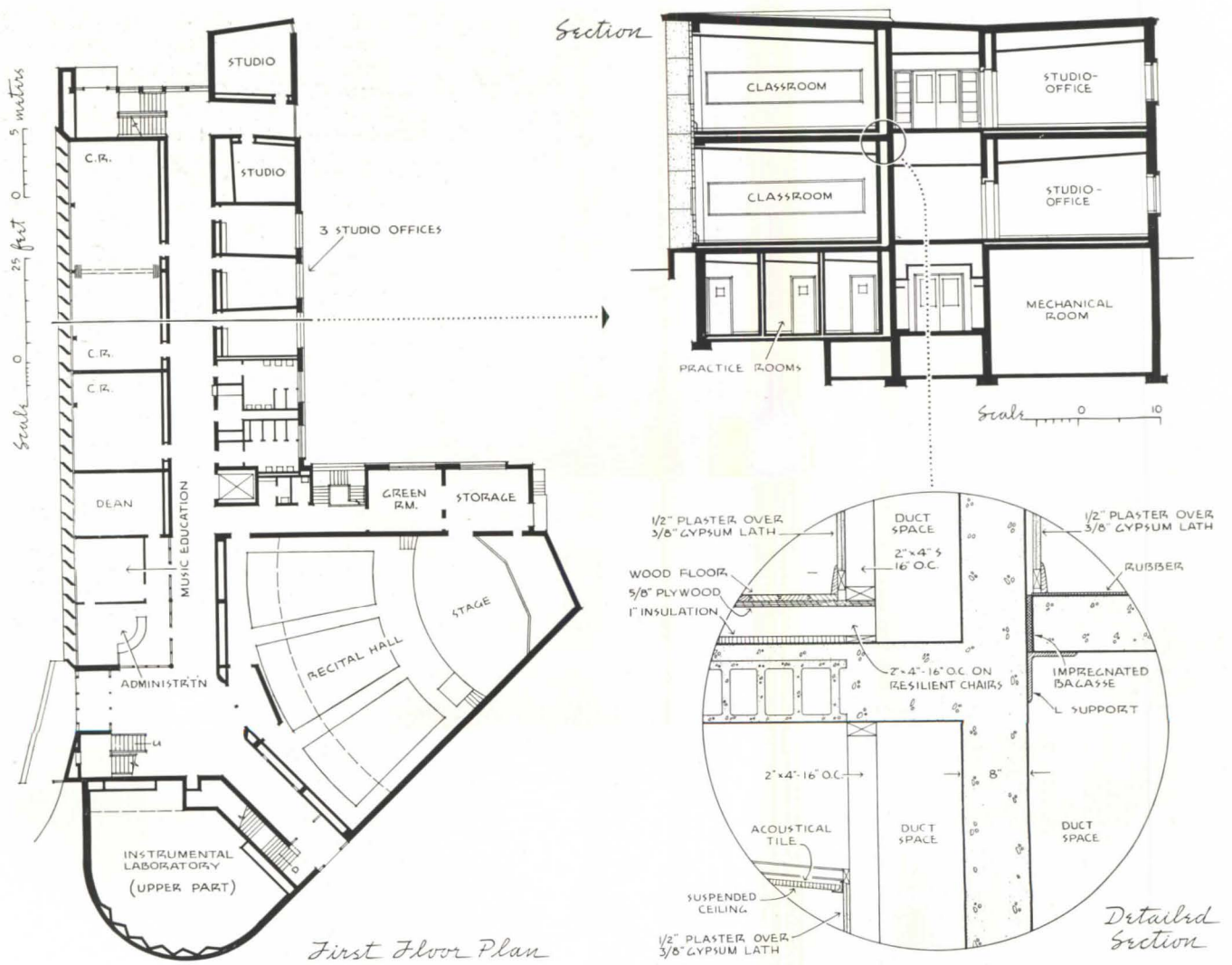
ACOUSTICAL DESIGN:

Acoustical design for the Classroom and Laboratory Building at Montana State University's School of Music (Missoula) presented two basic problems: sound transmission between rooms and sound conditioning within rooms.

In zoning the building, Architects Fox & Ballas* considered the elimination of sound transmission to be of first importance. As a result, the primary acoustical zones of the structure are separated by corridors and, to a degree, isolated by wings. As the sound transmission of a wall is directly related to its mass, 8" concrete walls were considered necessary for the corridors. Steel angles, bolted to these walls, support the isolated concrete-floor slabs. All angles were padded with begasse fibers (bitumen-impregnated) before receiving the slabs. While acting as sound blocks between areas, the only sound absorption material in the corridors is a suspended-ceiling assembly of acoustical tiles and metal units. Sound transmission through heating and ventilating ducts has been eliminated by the provision of glass-fiber duct liners of various thicknesses. Where classrooms and teaching-practice areas are located on the central-fan system, duct work has been designed to minimize cross talk. Additional precautions include separate fan systems for the recital hall as well as the instrument and choral labs. As operable windows would have presented a serious sound leakage, light-directing glass block over clear-vision, double-glazed window strips were specified for the fenestration on the west elevation—a combination that reduces sound transmission to a minimum while assuring maximum nonglare daylight.

The three types of classroom walls are: exterior—glass block; between rooms—

Vern O. Knudsen, Acoustical Consultant.



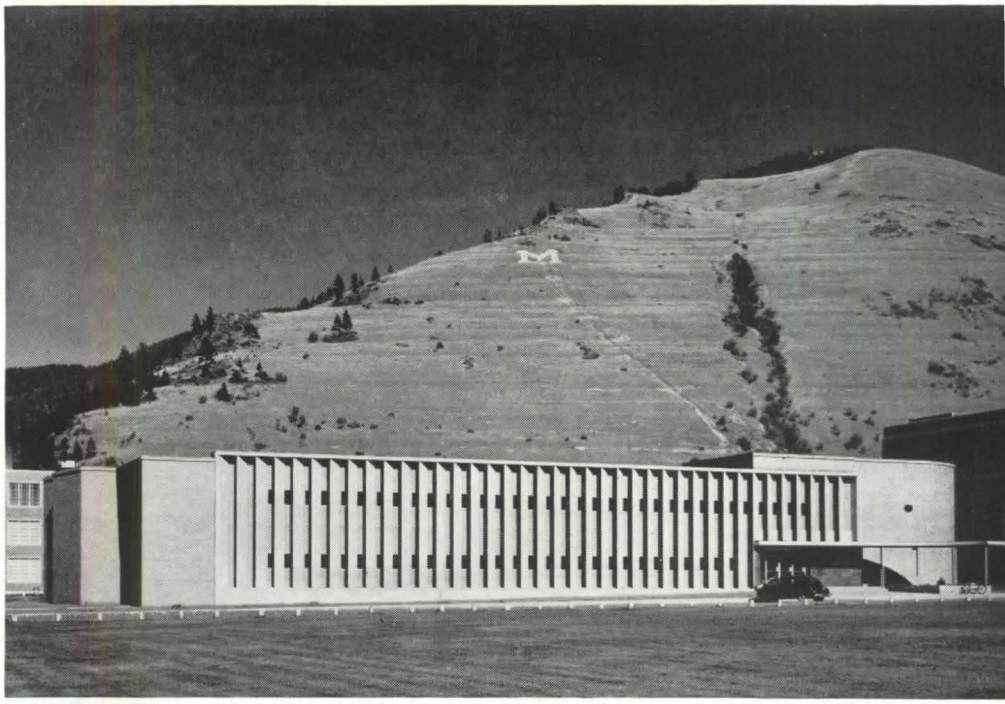
School of Music, Montana State University

10″ pumice block with contact plaster; at corridors—2″ x 4″ stud walls with gypsum lath and plaster over duct work. Wood floors are laid over sleepers mounted on metal and felt acoustical chairs. Suspended ceilings slope upwards from corridor to exterior walls and are faced with perforated acoustical tiles.

In the teaching studios and practice rooms, sloping ceilings are similar to those in classrooms; nonparallel walls reduce flutter. Depending upon exposure, windows are glass block or double-glazed. Four-inch brick walls between studios are furred with 1″ x 4″ wood strips; gypsum lath for plaster is held in place by resilient metal clips. As the framing, duct work, and corridor wall measure 2′ in depth, two solid-core doors are used for these rooms. Weather stripping on the corridor door reduces sound transmission through cracks and the surfaces between doors are perforated hardboard over blanket insulation.

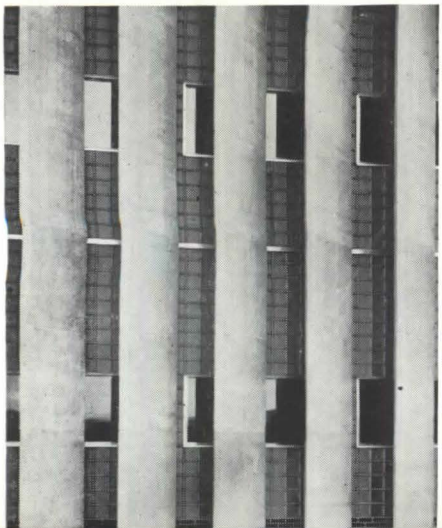
The recital hall has been designed to provide a reverberation time of 1.15 seconds for frequencies of 512 to 4096 cycles —rising to 1.40 seconds at 128 cycles. The only sound absorption is in the seating; each unit was designed to match the absorption of the occupant. Chairs have a rating of 3.54 sabine units at 500 cycles. Ceiling is suspended gypsum lath and sand-finish plaster. Behind the grill concealing the organ pipes, louvers close automatically when the organ is not in use to form a hard reflective surface.

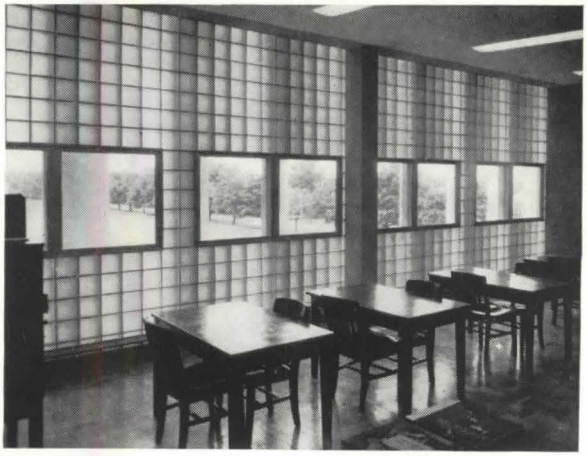
Walls of instrument (basement) and choral (second floor) labs are lath and plaster on wood furring. Design reverberation time for the instrument lab is 1.2 seconds at 512 to 4096 cycles—increasing to 1.4 seconds at 128. Reverberation time for choral lab is 1.1 seconds. Ceilings are suspended lath and plaster.

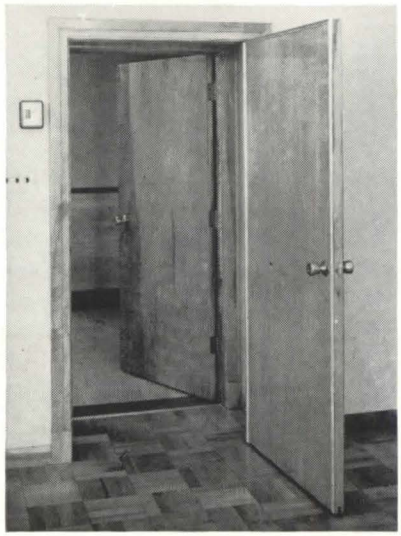


Primary components of School of Music's west elevation are glass block; double-glazed, clear-vision window strips; and limestone, vertical sun-control louvers. Interior view (below right) *was taken in library on second floor.*

Photos: Stanley Color Lab., courtesy Kimble Glass Company; Ingvard Eide.







Typical installation of two doors between classrooms and corridor (above left). *Contributing to better sound control in the administration office are fissured- and perforated-mineral acoustical tiles, air diffuser, and glass-block wall* (above).

Splays around curved wall of instrument lab (left) *prevent concentration of sound. Panels of perforated hardboard backed with 2" of insulation are scattered about the wall and ceiling to provide optimum reverberation.*

Recital hall walls (below) *are ⅜" birch plywood on two layers of 2" x 2" wood furring. First furring layer is fastened directly to masonry walls at regular intervals; second is applied to first at intervals varying from 18" to 36", permitting panels to resonate over a range of frequencies.*

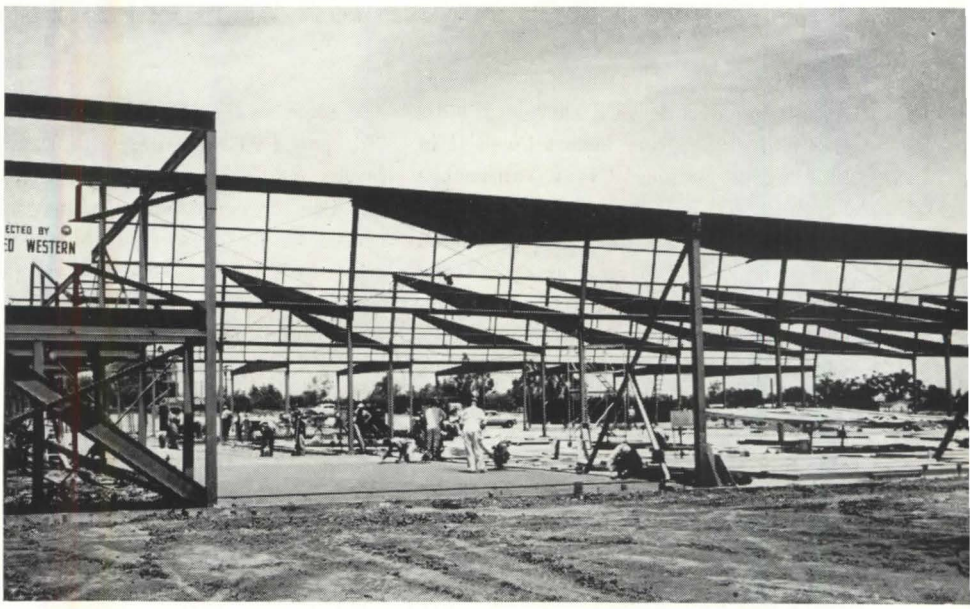
Photos: Ingvard Eide (above right); Stanley Color Lab., courtesy of Kimble Glass Company.

tapered-steel girders on 6″ columns prove least expensive for 30′ x 60′ bays

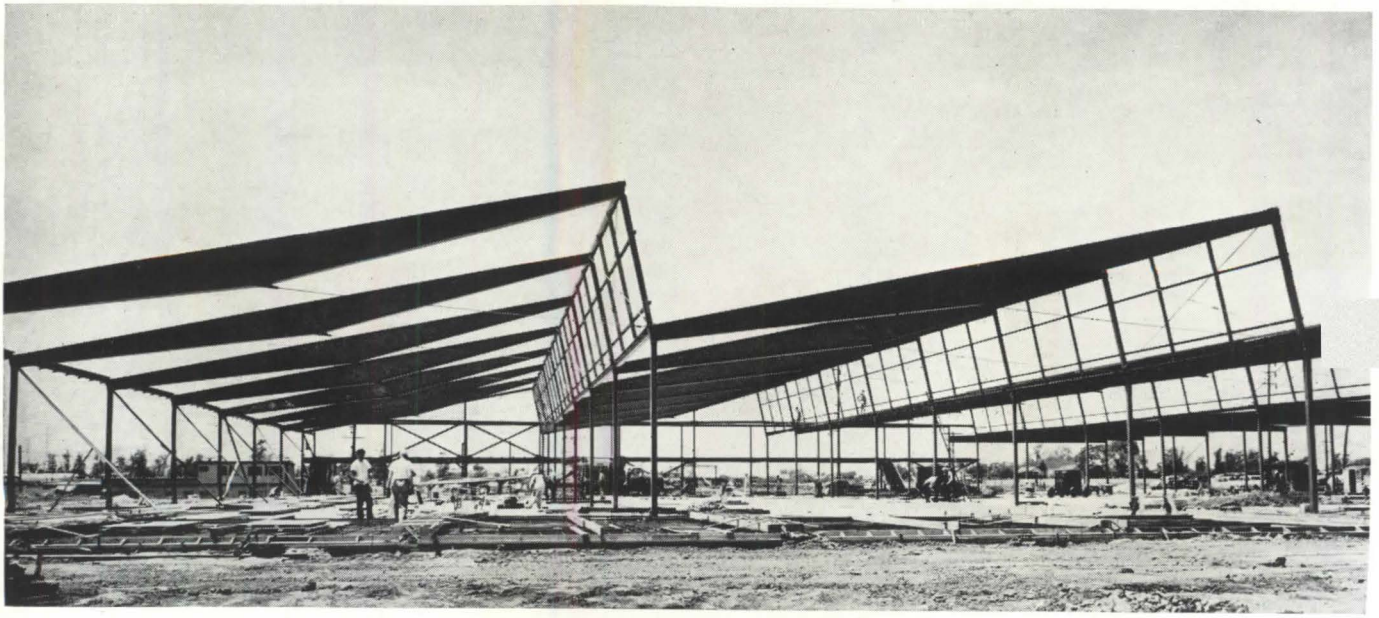
Minneapolis-Honeywell's Los Angeles plant (Appliance Controls Division) became inadequate and a new, expandable, easily maintained manufactory with plenty of natural light was needed. To be completed by increments on a "pay as you go" basis, the first element to be built was the machine shop.

The shop's most interesting structural feature is the roof framing, composed of tapered-steel girders (*right and below*) and open-web trusses. With this system, the designers were able to obtain 30′ x 60′ bays at very little more cost than alternate schemes for 20′ x 40′ bays. Compared were welded north-light rigid-frame gable bents, 60′ steel trusses, precast-concrete bents, and prestressed-concrete beams. Wood construction was not considered because of fire ratings.

Exterior walls are 5½″ precast-concrete panels that can be removed easily as the plant expands. Earthquake forces are resisted by a system of welds in the steel decking that makes the entire roof decking behave as a rigid diaphragm. The precast-concrete panels act as earthquake shear walls. Architect and structural engineer were, respectively, Kenneth H. Neptune and Richard R. Bradshaw.

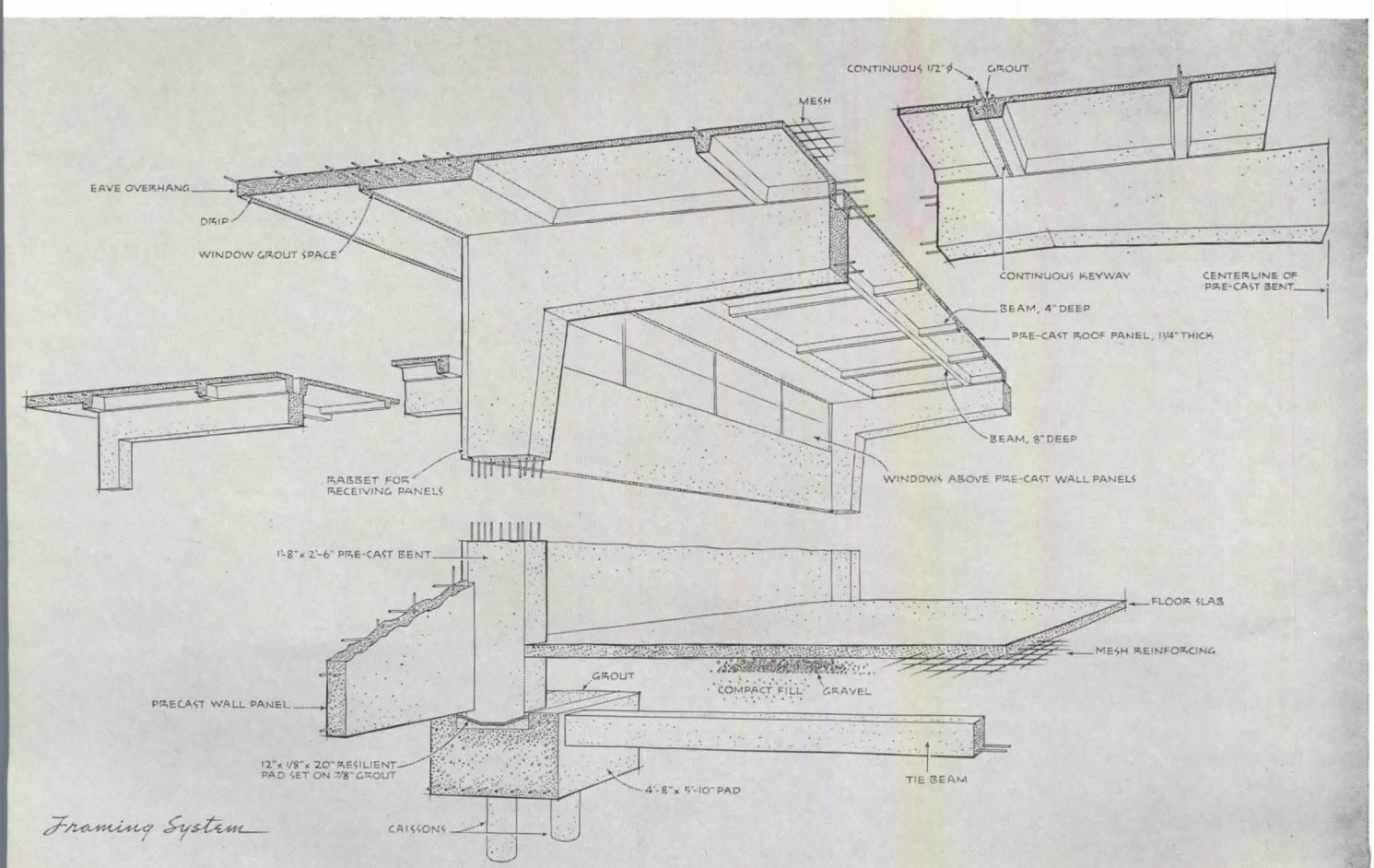


Designed to support a total load of 22 psf (12 live/10 dead), each tapered-steel girder has the following dimensions: length, 60′; mid-span depth, 42″; depth at ends, 16″; flange width, 10″; flange thickness, ⅜″; web thickness, ¼″; weight of girder, 3000 lb (1.7 psf average). All 36 tapered-steel girders required for the machine shop are supported by 6 WF 15.5 columns.



precast-concrete rigid-framed bents help reduce cost of naval structure

As a result of a detailed study of the design and engineering factors involved in building a standard Navy subsistence building, one will be constructed at the Naval Amphibious Base at Coronado, California, at 30 percent less than the usual cost. Albert C. Martin & Associates, Architects and Engineers, working with the 11th Naval District Public Works Office of Capt. A. I. Flaherty and PWO Design Chief William J. Bobisch, will be able to realize these considerable savings through such provisions as the following (*illustrations below*): (1) Both sections of the T-shaped structure will be of precast-concrete rigid-frame bents spanning 75′, spaced 20′ on center, with waffle-type precast-concrete roof panels (12′ x 20′). (2) Pan forms for the roof panels will be reused for all types of panels with a few minor exceptions. (3) Precast wall panels will be erected by the tilt-up method. (4) The 40-ton bents are designed to be picked up by their edges, utilizing the bolts in tension instead of shear, with the pickup device clamped to concrete by friction. (5) In the design of the connections between wall slabs and bents and between bent bases and foundation, there are two interesting points. To facilitate erection, a 1″ tolerance of dimension is provided at the connection of bents to wall slabs. In order to obtain a compact and uniform bearing on the footing, resilient base plates will be used in the footing pockets to receive the bent columns. After the frames are erected, the footing pockets will be grouted full. (5) Finally, all welding will be held to a minimum—only to connect two precast elements such as the lower roof to the walls, as dictated by seismic design. The final cost of the subsistence building including all galley equipment will be approximately $17.20 per square foot.

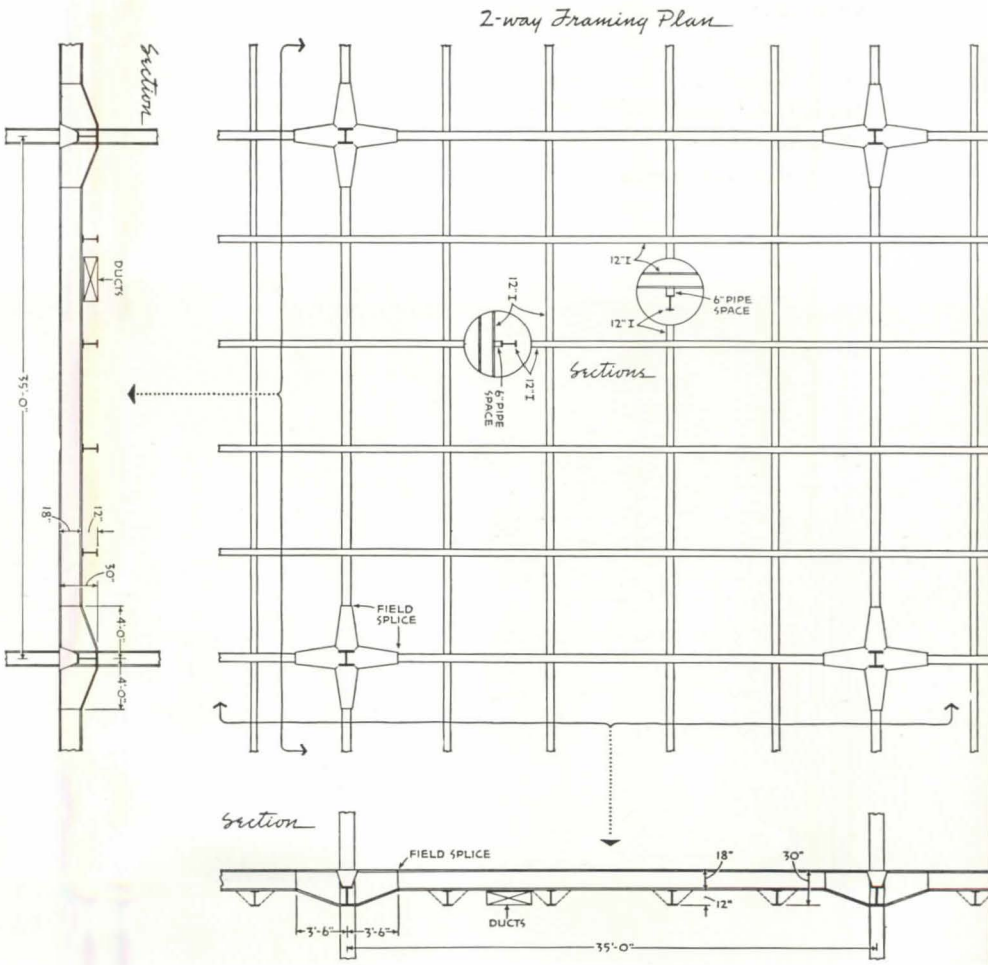


two-way steel framing proposed for multiple-story shopping center

Shopping-center department stores, as well as laboratory buildings, are frequently from two to four stories high and often their mutual requirements are large spans (30′ to 40′), flexibility for loading conditions, alterations, openings, etc.; adaptability for mechanical and electrical distribution; and sprinkler systems. Cantilevers are mandatory at perimeters of shopping-center buildings to protect window displays and pedestrians from sun and weather. Steel framing is inherently suitable for these requirements, yet girders in the usual one-way beam-and-girder system block the passage of mechanical services. This proposed framing places continuous beams and girders in two directions, as well as at different levels, and permits the installation of ducts and pipes in any direction without girder interference.

The beam grid is similar to a continuous two-way slab; column heads with two-way haunches develop continuity, stiffness, and resistance for the girders. Cantilevers at perimeters will reduce torsional restraint in the perimeter girders. Lateral bracing of beam and girder flanges is provided by the floor construction and at grid intersection. In the region of negative bending, the bottom flanges of the lower members are stayed by simple braces. Butt-welded splices for the straight continuous beams should be located approximately at the inflection points. Girder haunches, shop-welded to columns, are field-welded to the girders. The available depth, equal to the girder plus the beam depth, is ample for negative moments. About 10 percent of the steel and 4″ of floor height can be saved and the grid framing simplifies the work of all trades. Cost compares favorably with conventional construction and includes several added advantages as a bonus.

Henry H. Werner, Consulting Engineer, Long Island City, New York, has proposed this framing system.



NEW DIRECTIONS IN THERMAL INSULATION: PART V

by Groff Conklin

vapor barrier installation

During all of the preceding discussion (Part IV, March 1954 P/A), reference has been made to the problem of assuring proper installation of vapor barrier materials. The matter of obtaining good workmanship is one that can well be left up to the architect or builder. If the interest in obtaining a good job is acute, inspection will be constant and vigilant and errors such as torn membranes, batts or blankets wrong side to, and inadequate jointing at sills, plates, around windows and doors, and at ceiling openings will be eliminated.

There are a few special detailing problems concerning vapor barrier installation that are often not sufficiently recognized, however, and the sample details shown (*Figures 1 through 5*), together with their descriptive captions, will perhaps serve to call to mind some of the important areas where special care in supervision of installation is necessary.

In particular, attention is drawn to a detail on the installation of a vapor barrier over exposed areas below the flooring and above the sill (*Figure 1*). This part of the barrier (and the insulation) must, in most instances, be put in place *before* the subflooring is laid—a detail that is very rarely attended to in most

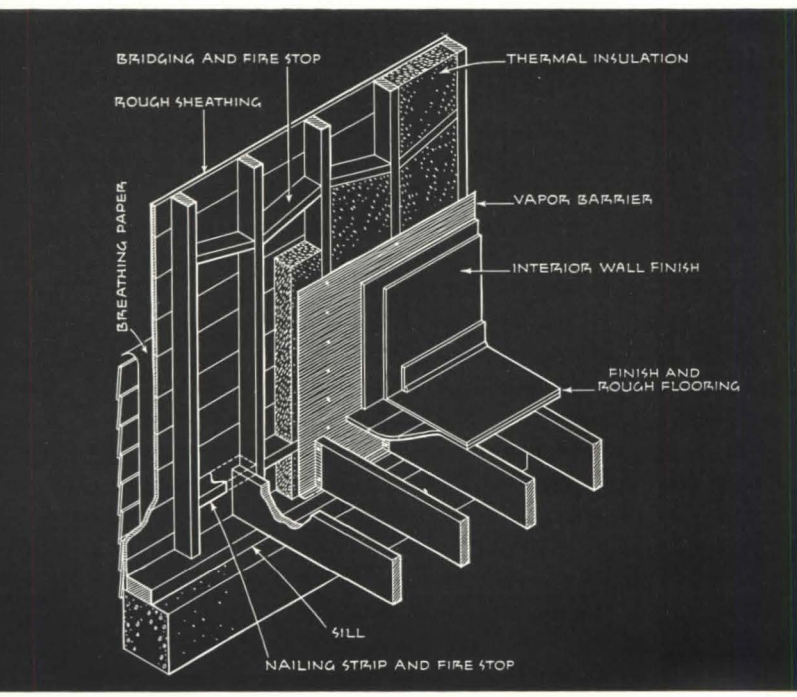


Figure 1—Vapor barrier at side wall where joists abut. The vapor barrier must always be continued down to the sill and nailed or stapled firmly so that no moisture leaks can occur at that point. Where joists abut the wall, it is necessary to reinforce the vapor barrier between the joists by nailing or stapling it to a nailing strip placed across the stud space just at the tops of the joists and then carrying it down to the sill.

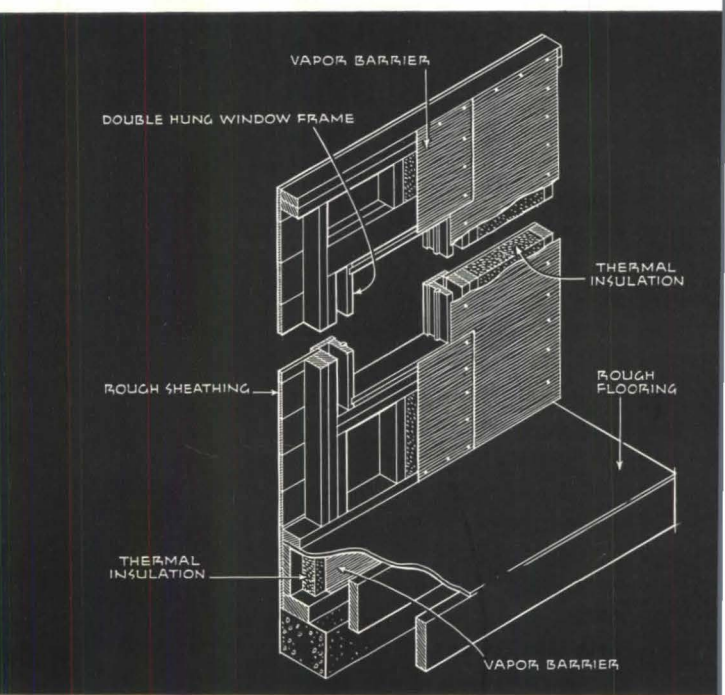


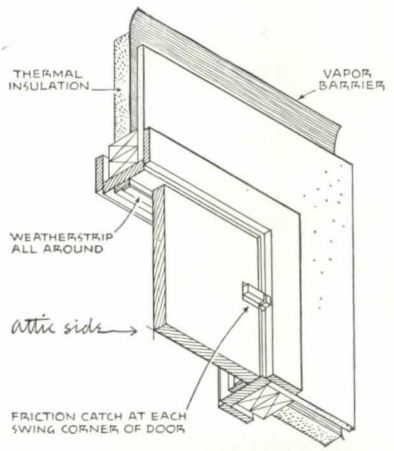
Figure 2—Insulation and vapor barrier around window. Around windows of all types, both insulation and vapor barrier should cover all parts of the frame—sides, top, and bottom. Insulation should be packed into all spaces except those in double-hung windows where the sash weights will have to operate, and all spaces without exception should be covered with a good vapor barrier material.

homes but can be extremely important in very cold and dry climates.

(A) Timing of Installation. It is of primary importance for the final effectiveness of the vapor barrier that the architect and the builder both make it a strong point that special trades, including plumbers, electricians, ductwork tinsmiths, and others who have to install special materials in the walls or ceilings

Figure 5—Protection around doorway leading up to unheated attic space. An excellent method of achieving a good vapor barrier is to weather-strip the door. The door itself should be thickly painted with a vapor-resistant gloss or semigloss paint; sides of the stairwell leading upward must be insulated and provided with a good vapor barrier.

Illustrations adapted from *Condensation Control in Buildings*, HHFA, 1949.



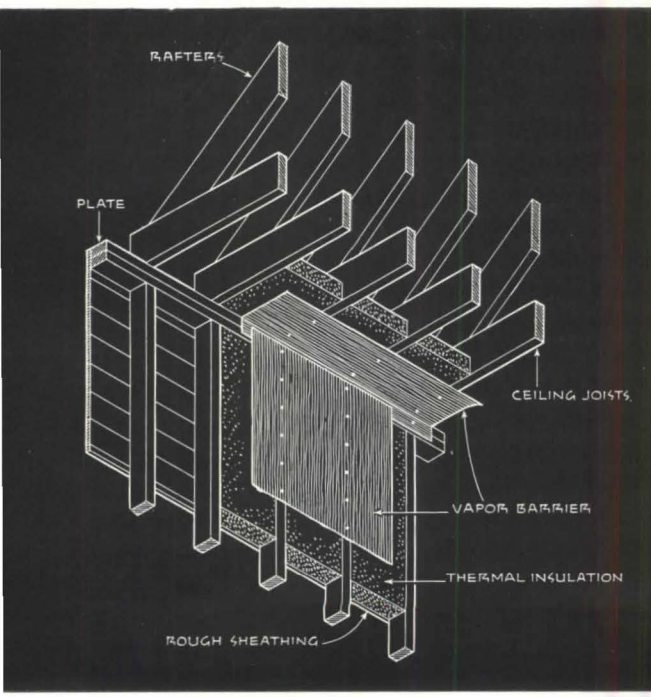


Figure 3—Vapor barrier at junction of attic floor, roof, and side wall in unfinished attic. Vapor barrier is extended from top of wall and continued along underside of attic floor before ceiling lath is applied. Note lap made on wall plate.

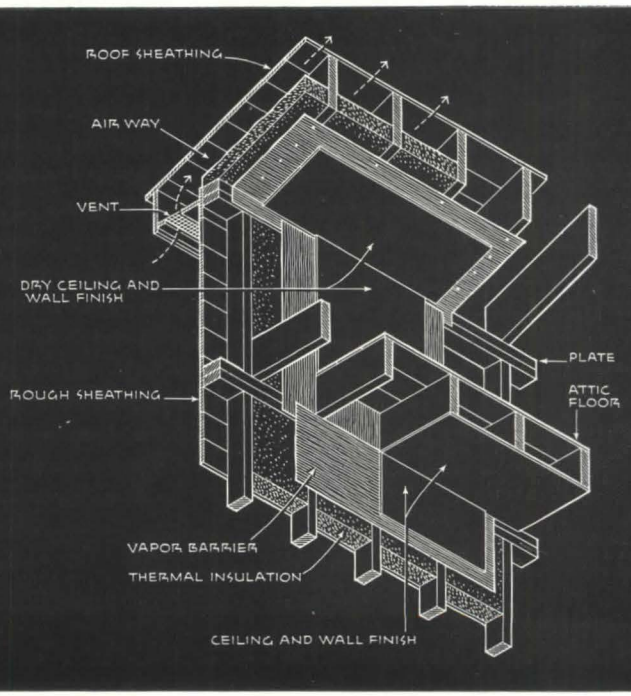
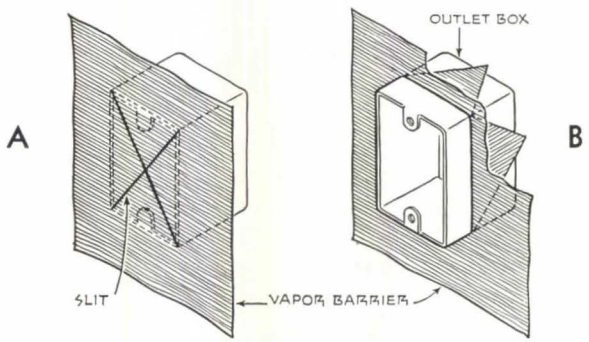


Figure 4—Vapor barrier at junction of side wall, attic floor, and attic roof where attic is to be finished for occupancy. Insulation should be installed so as to permit air circulation behind it. A good vapor barrier should cover the insulation at all points, as well as any open parts in the wall or roof. Note eave vent. HHFA recommends a dry wall finish in the attic to prevent damage to the vapor barrier.

Figure 6—Fitting vapor barrier and insulation around electric-wiring outlet box. Vapor barrier should be laid over box then stapled to the wood structure. In this position diagonal cuts can be made with a sharp knife (A) *and the remaining paper can be folded* (as at B) *and pushed tightly in around the box's sides. Blanket insulation with a vapor barrier on one side should be placed around an outlet box in a similar manner.*



finish their roughing-in before the insulation and the vapor barrier are applied. This is a basic necessity. A well-trained mechanic whose job it is to apply insulation or vapor barriers, or both, will always make sure that the materials surround or cover all pipes, ducts, and utility lines (*Figure 6*). A plumber or an electrician—and even more commonly, a tinsmith—never even thinks of repairing the cuts into a vapor barrier or an insulation-plus-vapor-barrier combination that he has to make to do his job.

Therefore, the work should be scheduled so that the insulation and the vapor barrier, whether separate or combined, are put in place *as late as possible* in the schedule. Not only will this avoid necessary damage by other trades, but it will minimize the danger of tears in the membrane resulting from materials handling or from carelessness on the part of people in the house. Ideally, the lath or wallboard should be put up immediately after the insulation and vapor barrier, since it is only by following such a schedule that a truly effective installation can be assured.

(B) Weather and Vapor Barrier Installation. There is another awkward headache that often confronts architects in connection with the installation of insulation and vapor barriers; this is the matter of *season of building*. L. V. Teesdale of the Forest Products Laboratory, who was one of the first men to analyze the whole problem of building condensation and suggest cures for it, made the following statements during the BRAB Conference on Condensation Control:

"In buildings plastered in cold weather, the vapor barrier will become wet. Some materials, particularly laminated papers, are likely to disintegrate under prolonged wetting." Also, in a more informal vein, he said: "There is nobody, I feel, who questions the value of paint as a vapor barrier. However, at the time we start to build a house we do not know when we are going to finish that house. . . . If we went into the fall and into the winter before that paint was applied, we then could have our moisture passing through the wall, our wall would be unprotected, and that would be more or less disastrous to the first coat of paint."

Putting together these two remarks, from a man who has probably had as much experience with defective vapor barriers as anyone in the country, we come up with an easy-to-say but often very hard-to-enforce rule: *build only during warm weather!* Otherwise the structure may become pretty thoroughly saturated with moisture before the vapor barrier is applied, and these barriers, whether membrane or paint, may be seriously damaged.

It is, of course, often impossible to follow this rule in large subdivisions and other low-cost housing developments, but in the individual architect-designed-and-supervised home, it can be managed by careful scheduling. Particularly in regions of very cold winters, it is a factor that very definitely should be considered.

(C) The Problem of Built-up Roofs. Tyler S. Rogers of Owens-Corning Fiberglas Corporation, in a recent article[1] on built-up roofs with no hung ceiling below, has made this point of the importance of installing vapor barriers and insulation in dry weather even more strongly when it comes to protecting these materials in flat or shed roof construction. Although his remarks specifically dealt with industrial and commercial jobs, they apply just as pertinently to built-up roofs in residences.

Rogers' point is that it is common practice to rush through the roofing work as fast as possible, despite the fact that "however the specifications are worded, the requirement that the deck be dry is almost universally used." The urgency to complete the closing-in results in the ignoring of this specification with great frequency, and the result is leaking, blistered vapor barriers and saturated insulation, rotting plaster, and ruined ceiling finishes.

His solution of the difficulty seems on all counts to be a reasonable one. Inasmuch as it often is extremely important to get the roof deck covered-in as soon as possible, he suggests doing the work in two stages. "The vapor barrier, in itself a two-ply roof, is installed and glaze-coated as one operation. It can be applied fast. If it has to be applied over a damp or wet deck, blisters that develop can be repaired before the second stage of the job is done. The vapor seal acts as a service roof until the building has been well dried by ventilation, and all other trades have completed their work above the roof level. Later the roofer applies the insulation and roofing felts without the pressure of time and adverse weather forcing him to take chances. He

[1] Architectural Forum, *August 1953, p. 148.*

Blister Resistance of Various Paints*

Paint	Average % effective blister resistance
Regular house paint, self-primed	52
House paint over zincless type primer	72
House paint over chalk-resistant rutile TiO_2/leaded ZnO/Mg. Sil. type primer at 33% P.V., (P-2)	65
House paint over same primer with 40% P.V.	71
Alkyd stain resistant paint I, self primer	99
Alkyd stain resistant paint II, self primer	100

* From paper presented by W. G. Vannoy of du Pont in the BRAB Conference Report No. 4, **Condensation Control in Buildings**, p. 46.

need anticipate no further damage by other trades. His savings in this respect will more than make up for doing the job in two steps."

In the case of smaller buildings such as moderate-priced homes, the two-step operation may not be feasible, particularly if the whole job is small enough to do in one day. In that case, the architect should require that the roofer not come on the job until there has been a spell of good weather and the roof deck really is dry enough to install vapor barrier, insulation, and roofing felts without the danger of moisture damage.

(D) The Problem of Exterior Finish. Most of the early evidences of condensation damage are seen in the exterior paint film. Certainly this is the source of most of the home owner complaints. The result is that the paint industry has become deeply interested in the whole condensation problem. Sometimes men in the industry tend to recommend practices that will protect the paint, regardless of what such practices may do to the wall or its inner surfaces.

Among the suggestions that have been made by members of the industry are (in addition to paint or membrane vapor barriers) : backpriming of siding, the development of more permeable outdoor paints, and wall ventilation. The first two are discussed below while the last is analyzed in a later section on ventilation in general.

The BRAB Conference developed a few general ideas that may serve as guides in specifying exterior paints and their application. Some are positive recommendations; others are suggestions based on fairly limited testing which, nevertheless, showed excellent results.

The first recommendation is that backpriming of siding is an unnecessary expense and a hazard to the wall cross-section, since it essentially involves placing a vapor barrier on the wrong side of the wall. It may help to keep condensed moisture out of the siding and thus reduce damage to the exterior paint but the moisture it bars will obviously have to stay in the wall, where it can cause a great deal of trouble. Edge-priming, on the other hand, is very important and should always be done, particularly around dormer checks, windows, etc.

The next suggestion is that no prime coat containing zinc oxide or leaded-zinc oxide should be used. W. G. Vannoy of E. I. du Pont de Nemours & Company (Inc.), presented a paper on exterior paints at the BRAB Conference which contained the following statement: "Zinc oxide (and) leaded-zinc oxide (are) detrimental to the adhesion characteristics of certain films as tested under adverse moisture conditions." Dr. J. S. Long of Devoe & Raynolds has stated as follows:[2] "Next to the bare wood use *an undercoat designed specifically as an undercoat.* This involves the feature that no zinc oxide may be present; hence, no zinc soaps. Zinc soaps are soluble in water, so water coming out from the inside, when it arrives at the interface between the wood and paint, dissolves the zinc soaps and the paint becomes loose."

A third rule was summarized by E. J. Dunn Jr. of National Lead Company as follows: "The moisture vapor permeability[3] of the outside wall paint should be higher than the inside wall paint. It would seem that a lesser amount of paint on the outside and more paint on the inside would aid this problem."

This leads to two separate ideas. First, exterior paints should be applied as thinly as possible. Indeed, Long, at the Conference, made some very strong statements about exterior painting. As he put it, "This business of putting on two coats of paint all around the house is silly . . . you pile it on year after year because some stupid painter told you he wanted to make more money on you, and you put on two coats of paint. We should get this on a more rational basis." He then made an interesting suggestion, which is to put two coats on the sides of the house that "get a beating" from the sun and a single coat elsewhere. Whether this is over an undercoat or not, Dr. Long did not make clear but he does mention the recent development of one-coat paint for exterior use.

The second idea about the permeability of outdoor paints is that paints with a higher inherent permeability should be used on the outside, provided that this added permeability does not also involve poor wearing qualities. In this connection, Vannoy of du Pont presented some very interesting data on the blister and stain resistance of various paints as a fac-

[2] *Private communication.*

[3] *Considerable confusion exists concerning the use of the terms "permeability" and "permeance" in describing the rate of water vapor transmission through materials. An effort is being made to introduce "permeance" whenever reference is to a material of known thickness and to reserve "permeability" to describe vapor transmission rates through a 1" thickness of a material. However, since this definition of "permeance" is not yet widely accepted, as indicated by Dunn's use of "permeability," the latter term appears generally throughout this series.*

tor of their permeability rating. When compared with certain special stain-resistant paints, regular house paint showed up rather poorly from the staining point of view. Some test results on the blister resistance of different types of paints and paint application are shown (*Table*). The alkyd stain-resistant paints are obviously superior to regular house paint, according to the table. The results are those of a controlled series of tests, of course, and do not necessarily indicate to the full the actual performance of the paints when applied to the average house. Neither do they indicate how such paints would act if applied over existing coats of paint, so that it would be unwise, until further test results are made known, to recommend such paints for repainting purposes.

However, the tests made thus far do indicate that the self-primed alkyd stain-resistant exterior house paints are superior to other types, and therefore it would seem reasonable for architects to specify these paints for outdoor finishes and to require that they be self-primed.

It is true that the actual functioning of these paints from the aspect of durability is not yet clearly established. There is some feeling that their very permeability may possibly shorten their life under actual service conditions. This, coupled with the fact that these alkyd-resin outdoor paints may not be widely available as yet, since they are in more or less an experimental state, may make it necessary for the time being to continue to specify high-quality lead-free finish paints over zincless primers, as the best combination now on the market.[4]

[4] *E. M. Fisher, Technical Editor of* National Painters Magazine, *has this to say about lead-free, outside white house paints in his valuable little book* What You Should Know About Paint: *"Perhaps the major performance difference between lead-free paints and those containing lead is that in industrial areas, or in areas near rivers, waters, or swampland, the lead-free paints will not become discolored and darkened by the presence of hydrogen sulphide fumes in the atmosphere. They will stay as clean and bright in an industrial atmosphere as a lead-containing paint will in the segregation of pure mountain air."*

In connection with the discussion of high-permeable paints and paint applications, the point was made at the Conference that high permeability may increase the danger of damage to the nails and other metal parts of the wall by causing them to rust. It is felt, however, that the problem will not be particularly important if the architect makes certain that all nails are set and the holes are well-puttied, and that other metal parts are made of nonrusting materials, as in the case of window and door flashing, etc. Of course, too, aluminum nails could be used to put up siding or shingles, thus eliminating the rust problem at the start.

Other suggestions about the application of exterior paints brought out during the BRAB Conference were: never to use siding that has not been thoroughly dried before nailing up; and never to paint it while it is damp after a rain or snow storm. The moisture that will be sealed in if the siding is painted while damp may force its way out through the new paint coat, causing stains and blisters if the situation is really serious.

It may be that these suggestions sound somewhat picayune in some instances, and overly troublesome in all. This is often the case with any method of construction that is performed with full attention to the many long-range problems of maintenance and depreciation that often deteriorate a structure. For good performance over a long period of years such precautions are obviously important. If they are taken, the results of condensation as they affect the exterior paint surfaces will be greatly minimized.

Masonry wall finishes do not present a serious problem in controlling wall condensation since most masonry materials are more or less vapor permeable and the finishes commonly applied to them (except when oil paints are used over brick) are believed to be permeable to vapor though highly resistant to water penetration. Furthermore, condensation occurring on the cold side of insulation in a masonry wall cannot, in most cases, do serious damage since the masonry materials are not ordinarily subject to decay. Instances have been known when wood furring strips have been damaged by such condensation, however, as well as joists butted or countersunk into a masonry wall, so that it will pay to make sure that the exterior finish of the masonry is properly vapor permeable so as to permit the escape of condensed moisture from the wall during cold weather.

Brick walls, either 8″ solid or face brick with an 8″ concrete masonry backup, are excellent for protection against water penetration and for vapor permeability, provided the brick, the mortar, and the workmanship are of Class A quality. However, for protection against efflorescence due to the varying quality of many bricks, as well as for assuring moisture proofness together with vapor permeability, the use of one of the clear silicone water repellents now on the market may be advisable. These materials, which are invisible after application (they are *not* glossy), provide an extremely durable coating that keeps wind-driven rains, melting ice, and other forms of water

from entering the brick, yet at the same time freely permit the passage outward of any moisture vapor that may originate within the house. Though relatively new on the market, these materials have already proven a boon in areas where efflorescence is a serious problem. They will not, of course, prevent a poor-quality brick from deteriorating under adverse weather conditions, but they will keep water out, even with such bricks, for upwards of ten years without the necessity of renewing the coating.[5]

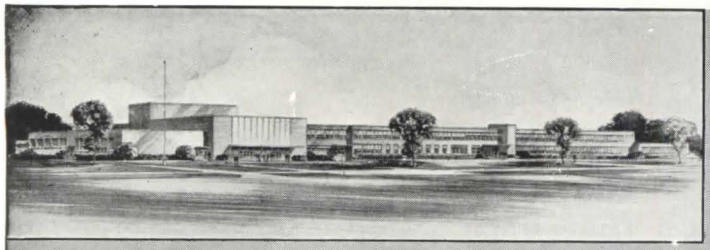
More porous masonry walls, such as those made out of cinder or concrete blocks, obviously need exterior surfacing treatments to keep them from absorbing water. As is generally known, a portland cement paint formulated according to Federal Specification TT-P-21, Type 2, which contains no less than 80 percent of portland cement, will provide a satisfactory seal against the entrance of water in any form into the exterior surface of a masonry wall from the outdoors. The vapor permeability of this paint, from vapor originating inside the structure, is not given in any of the technical reports available to the author but it can be assumed that it is moderately satisfactory. The most useful reference for data on exterior finishes of porous masonry is the National Bureau of Standards' BMS Report 110, *Paints for Exterior Masonry Walls*, 1947. The American Concrete Institute also has some valuable reports of test data, in particular the paper by Copeland and Carlson, *Tests of the Resistance to Rain Penetration of Walls Built of Masonry and Concrete.*[6]

[5] *See paper by F. O. Anderegg,* Progressive Architecture, *May 1951, for details.*

[6] *Available from The American Concrete Institute, 18263 W. McNichols Rd., Detroit 19, Mich.*

(E) The Problem of Wall Sheathing Paper. One frequent recommendation heard these days is that when a sheathing paper is to be used over ordinary wood siding, it should be of the "breather" type, i.e., water-repellent but with a fairly high vapor permeability. The only trouble with such papers, according to good authority, is that they deteriorate faster than others since by "breathing" they permit moisture to get in and through them. This moisture may cause the paper to fail in the long run, with the result that the sheathing itself will become saturated with moisture, thus leading to decay of the wood and possible damage to the insulation and the interior finish of the wall. Provided the vapor barrier of the dwelling is effective, the use of a breather paper is not considered advisable by many authorities since it not only lets inside moisture out but also permits outside moisture to get in. However, a vapor barrier type of paper should *not* be used. A standard water-resistant sheathing paper, preferably an asphalt-saturated felt, running to about 70 lb per 500 sq ft, should be used. Glossy-coated asphalt felts are not recommended since they are too vapor-resistant for this purpose.

On batt or blanket insulation, of course, the paper covering the outer or "cold" side (if any) should be a breather paper permitting at least five grains of moisture to pass through per sq ft per hr per in. of mercury. The reason is that if any vapor does get into the insulation through holes in the vapor barrier, it should be permitted to escape so that it will not saturate the insulating material and cause it to deteriorate. Certain types of insulation have capillarity, though the mineral types have none.



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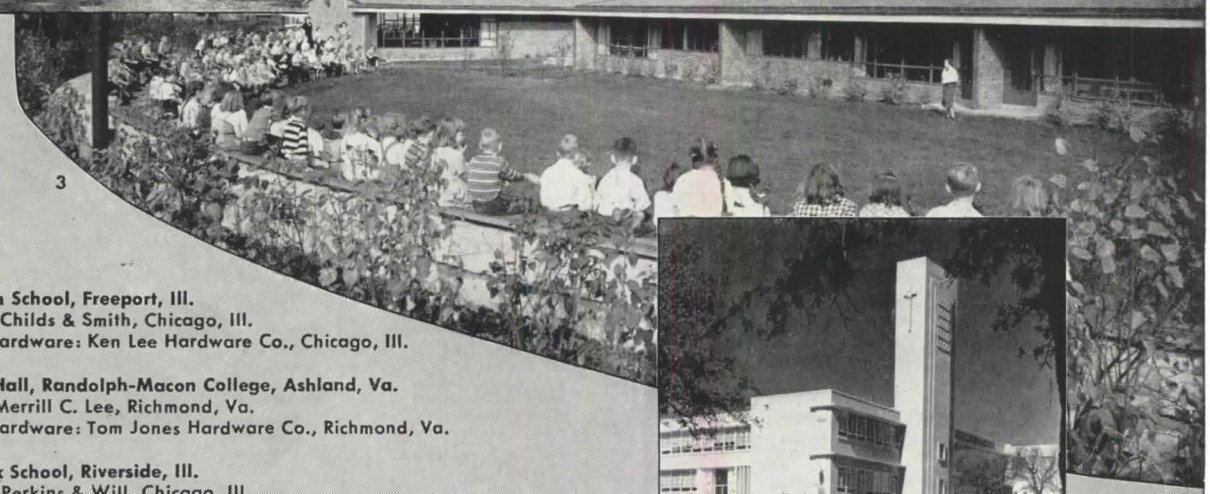

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4

1
Junior High School, Freeport, Ill.
Architects: Childs & Smith, Chicago, Ill.
Builders' Hardware: Ken Lee Hardware Co., Chicago, Ill.

2
Blackwell Hall, Randolph-Macon College, Ashland, Va.
Architect: Merrill C. Lee, Richmond, Va.
Builders' Hardware: Tom Jones Hardware Co., Richmond, Va.

3
Blythe Park School, Riverside, Ill.
Architects: Perkins & Will, Chicago, Ill.
Builders' Hardware: Clark-Barlow Hardware Co., Chicago, Ill.

4
Incarnate Word High School, San Antonio, Texas
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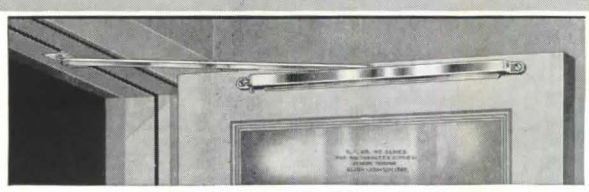

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by Ben John Small

spec small talk

par-infiltration

Let's talk weatherstripping, shall we? The Weatherstrip Research Institute (how does he unearth these institutes?) has adopted the term par-infiltration as a substitute for reference air infiltration for the purpose of establishing an equality in value or common value for the evaluation and comparison of results. The University of Minnesota Institute of Technology tells us that:

1. The use of par-infiltration provides a clear and simplified method for the comparison of the variable factors affecting the air infiltration through windows.
2. For nonweatherstripped windows, the air infiltration through well-fitted windows is approximately one-half the air infiltration through average fitted windows, whereas the air leakage through a poorly fitted window is 50 percent greater than through an average fitted window.
3. The optimum groove clearance which will permit reasonable ease of sash movement was found to be 0.025 inch and therefore was selected as the recommended groove clearance for rib-type metal weatherstrips.
4. The installation of rib-type metal weatherstrips on windows reduces the difference in air infiltration for the different fitted windows. The air infiltration through nonweatherstripped windows is approximately six times that of the air infiltration through weatherstripped windows.
5. Locking of nonweatherstripped windows had a considerable effect in reducing air infiltration; however, for weatherstripped windows this difference is very small.
6. The difference between air infiltration and exfiltration is negligible for weatherstripped windows, whether locked or unlocked. However, for nonweatherstripped windows the exfiltration is considerably higher than the infiltration with a greater difference occurring for the unlocked than for the locked windows.
7. Packing strips should be installed in back of weatherstrips when weatherstripping poorly fitted windows. For well- or average-fitted windows, the use of packing strips is unnecessary.
8. The shrinkage of a window has very little effect on the infiltration rates for weatherstripped windows as compared with nonweatherstripped windows.
9. The air infiltration rate for weatherstripped windows is only slightly reduced by the addition of either poorly fitted or well-fitted storm sash. However, for the nonweatherstripped window there is a considerable effect, with the greatest effect being obtained from the installation of a well-fitted storm sash on an ill-fitted window.

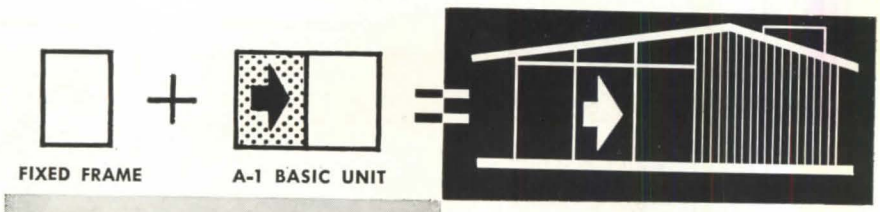
In specifications, I might add that it is well not to use the term, "interlocking spring bronze." Use the terms, "zinc," "bronze interlocking" or "spring bronze." Spring bronze as a rule is not an interlocking strip, but creates weatherseal by contact. The efficiency and durability of zinc and bronze interlocking weatherstrips are equal but bronze is more costly. Bronze should not be used, since most weatherstrips are concealed anyway.

nidger widget

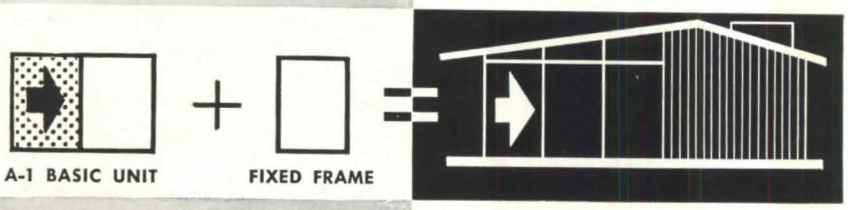
My 32-year 6-month 8-day home is getting a mite weary. The joints in the stonework forming the cellar walls carry on like my garden hose which at the moment is suffering from a severe case of multiple hernias. The stone itself is exfoliating at a shameful rate leaving an architectural effect not unlike acne vulgaris. After much scraping and chipping, I carefully selected the proper tools for applying a heavy coat of my special brew of Trinidad Lake Asphalt and Asphaltic Bitumen. In case you are wondering what I mean by proper tools, step in closer and note the floats for flat work, the small spatulas, the plain and special nidgers, and of course the filleters. I used mastic asphalt because I am inherently conservative having learned that it was used as a waterproofing medium as far back as 3000 B.C. in Babylon. This tale has no smashing punch line because the walls still look like hell and I am compelled to call in professionals for the walls and for my sons' asphaltic clothing and shoes and hands and face and hair.

floor talk

Being in a particularly helpful frame of mind at this moment, perhaps I can clarify a small matter of who makes what resilient flooring as of ten minutes ago. You see it is like this. *Koroseal* is a form of plastic developed by B. F. Goodrich Co. who in turn had Sloane-Blabon do experimenting and sales promotion on this type of vinyl. *Koroseal* originally, as made by Sloane-Blabon, was a costly, flexible material, containing little or no asbestos. Over a year ago, B. F. Goodrich Co., for reasons of its own, decided to name their vinyl plastic asbestos tile *Koroseal* despite their agreement with Sloane-Blabon. Sloane-Blabon didn't fight because Congoleum-Nairn Inc. took them over. *Koroseal*, as made today, is a vinyl plastic asbestos, semiflexible tile. Now then, H. A. Hachmeister is president of the Mastic Tile Corporation of America which owns and operates three plants making, among other things, *Matico*, *Moultile*, and *Hako*, all asphalt tiles. (Don't get caught saying that you prefer *Moultile* better than *Hako* or *Matico* because you are talking about stuff which comes from the same pot.) Thos. Moulding Floor Mfg. Co. which made *Moultile*, doesn't any more. Still with me? Hachmeister-Inc. no longer manufacture their own tile and do not have a tile plant in Pittsburgh despite the statement in Sweets which says "Hako Asphalt Tile and Base as manufactured by Hachmeister Inc., Pittsburgh, Pa." They do have other businesses in that city, such as baking, shortenings, and various chemicals. Hachmeister-Inc. is owned by H. A. Hachmeister. The Mastic Tile Corporation owns no part of Hachmeister-Inc. Congoleum-Nairn Inc. purchased Delaware Floor Products Company as well as Sloane-Blabon. Delaware Floor Products Company and Sloane-Blabon were merged into Sloane-Delaware which does not make a product similar to the original *Koroseal*. Sloane-Delaware does make a vinyl-plastic asbestos tile as well as a vinyl-plastic tile with a felt backing. The original *Koroseal* did not resemble either of these two products. Are there any questions? Before you get the notion that SPEC SMALL TALK is getting smaller, it may be well to point out that Kentile, Inc. has labored and brought forth a fine chart of recommended and not recommended uses of their resilient flooring products. When product manufacturers lay equal stress on where *not* to use their products as well as where to use them, then I am apt to listen with an attentive ear. Kentile, Inc. tells us you can use asphalt tile and vinyl-plastic asbestos tile most anywhere, that cork tile should not be used in residential kitchens, foyers, and basement rooms nor in stores, restaurants, and factories. Rubber tile should be avoided in residential basement rooms, factories, and in or near commercial kitchen areas. There is also, in the same document, some meaty comparative price data and a light reflectance chart. Good resilient stuff. Of course you know that Armstrong Cork Company makes the most complete line of resilient flooring in the industry and their recommendations are realistic with respect to applicability of their products. By the way, I think Armstrong deserves a nod of approval for their excellent technical presentations. Don't you? In a piece of this sort it would be appropriate to talk about carpeting but who can spell *Karagheusian?*



it's all a matter of addition!



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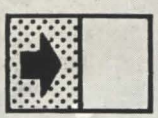

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A-2 BASIC UNIT
Right vent sliding in three stock widths. Use singly or with other Basic Units

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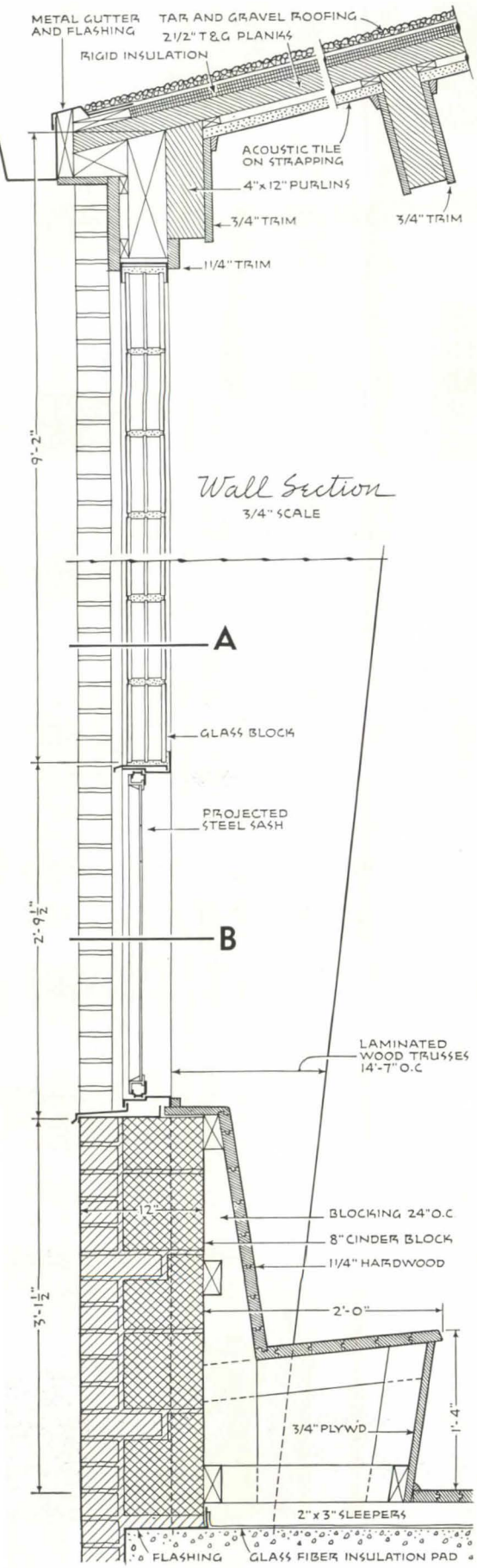
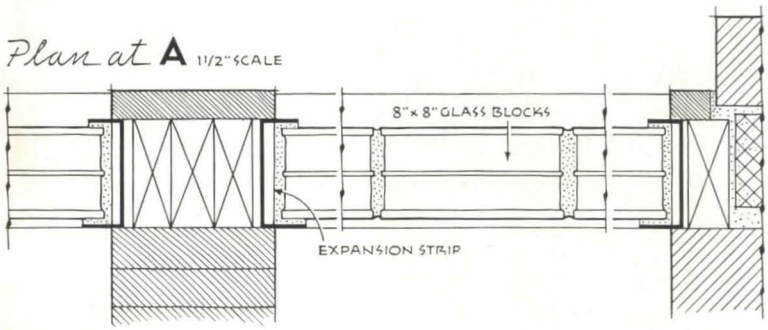
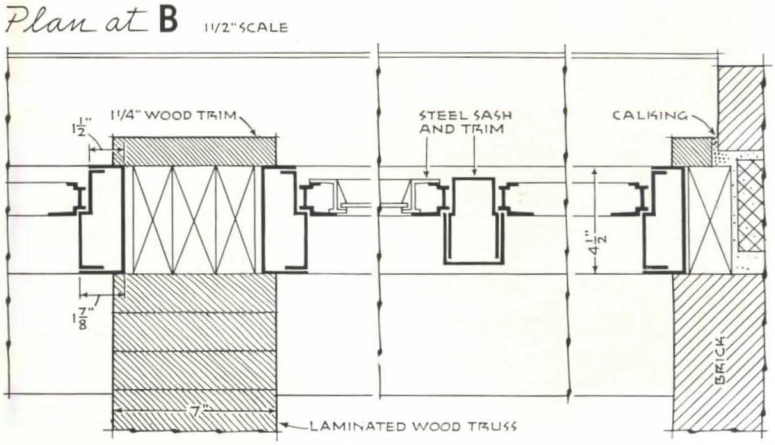


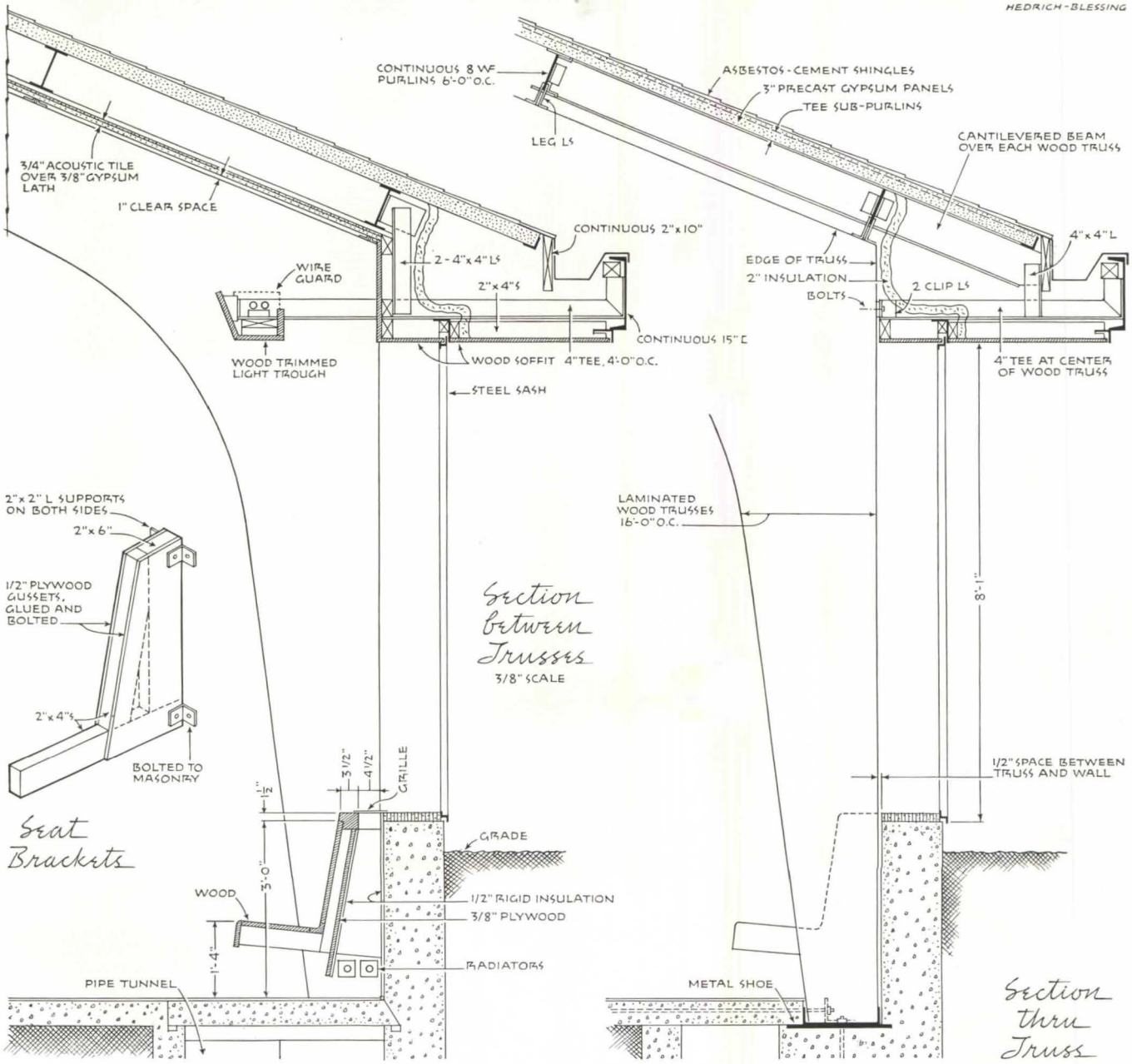




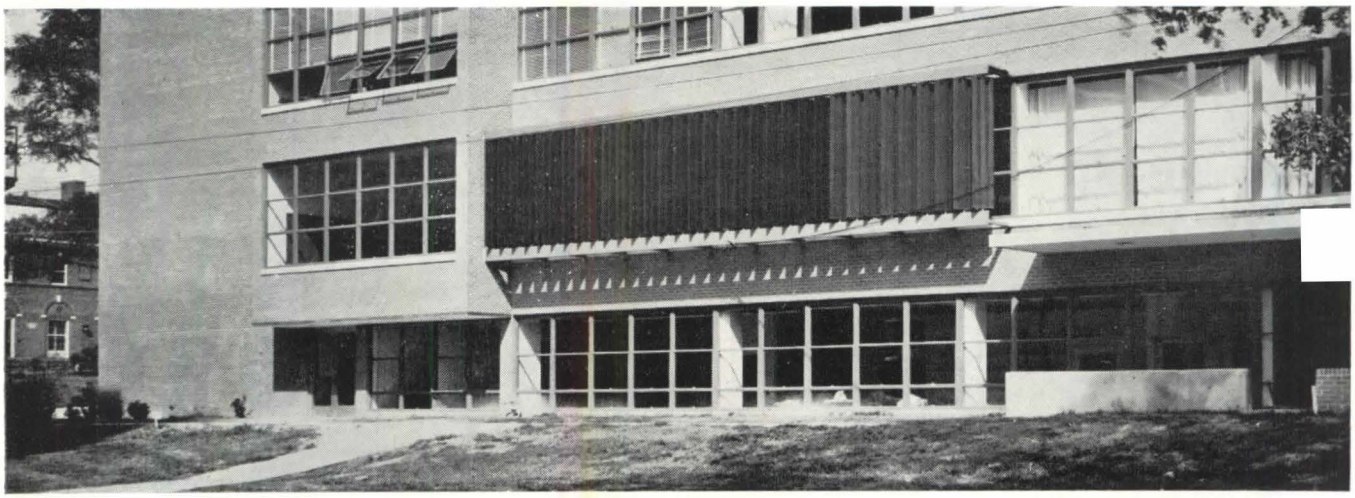
BROAD MEADOW SCHOOL, Needham, Mass.
Hugh Stubbins Associates, Architects

community building: window seat

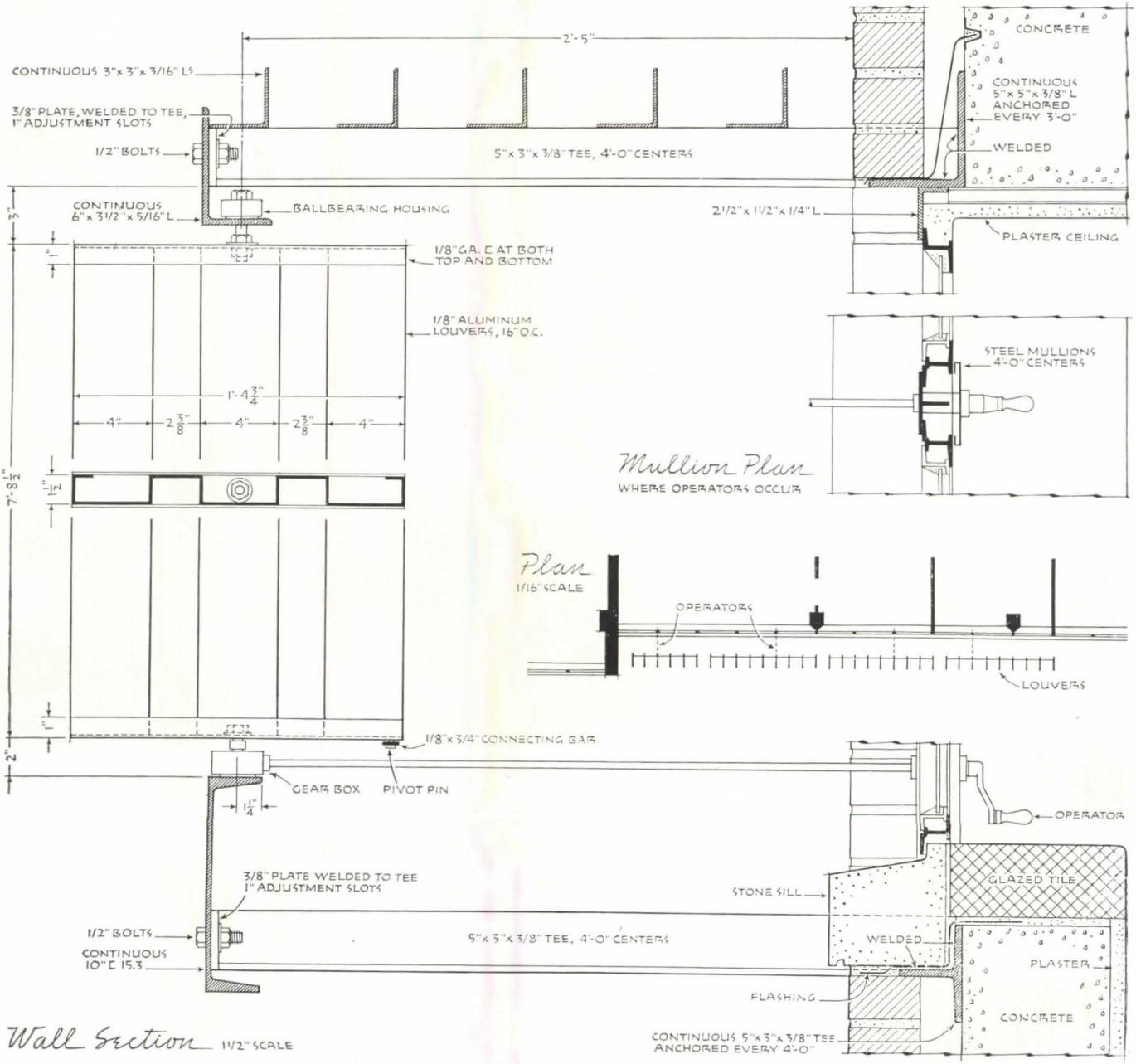
HEDRICH-BLESSING



BEDFORD PARK COMMUNITY CENTER, Bedford Park, Ill.
Perkins & Will, Architects-Engineers



JACK HOLMES



SCHOOL OF ARCHITECTURE AND THE ARTS, ALABAMA POLYTECHNIC INSTITUTE, Auburn, Ala.
Pearson, Tittle & Narrows, Architects

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through

a closed door

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Designer—Richard B. Pollman, Detroit
Architects—Palmquist & Wright, Detroit

BRIEF DATA

Glass—⅜″ thick. Muralex patterned on both surfaces.

Tempered—three to five times stronger than untempered glass of same thickness.

Reversible—can be used right or left hand.

Standard Sizes—

2′6″ x 6′8″	2′5 11⁄16″ x 6′7 1⁄16″
2′8″ x 6′8″	2′7 11⁄16″ x 6′7 1⁄16″
3′0″ x 6′8″	2′11 11⁄16″ x 6′7 1⁄16″
3′0″ x 7′0″	2′11 11⁄16″ x 6′11 1⁄16″

Closers—when specified, the door can be shipped with a Sargent closer or prepared for use with an LCN concealed closer.

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Page Beauchamp

college group living areas

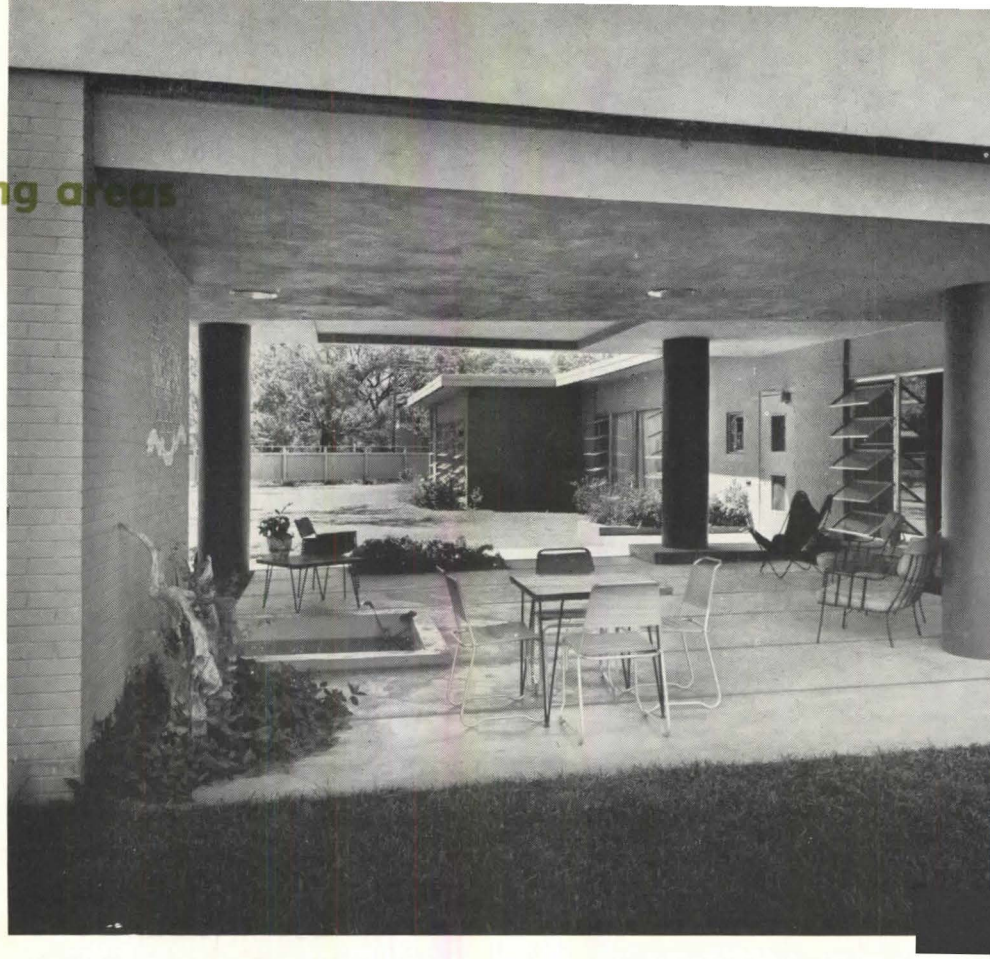
Choices this month of living, dining, and recreation areas in sorority and fraternity houses all come from Austin, Texas. Usually we try to choose examples from all parts of the country, but it seemed that these from Texas were by far the best in this category. There are freedom and openness, and a truly contemporary approach to the design. Climate, of course, permits a freer concept, but the complexion of the surroundings and the wide-awake approach to design generally found in Texas contribute to these successful designs.

In some cases, furnishings already owned by the groups had to be used, but not to the extent that they prevented a fresh, new appearance. Color has been used skilfully in all cases, and a straightforward approach to interior design has succeeded in making each of the examples good in its own right, although all have had slightly different emphases in design approach.

Similarity may be noted in the informal, comfortable, homelike appearance of the rooms. One of the interesting details is the handling of trophy displays. In one case, a bookshelf wall incorporates books, phonograph records, and trophies, resulting in an important and interesting focal point of the room. In another, a case was designed to hold all of the prizes, allowing the shapes of the cups to create the design. In the third, K and V brackets hold light birch shelves, creating a decoration for the wall which is adjustable to any necessary height.

Consideration of variety of activities has resulted, in all cases, in planned flexibility. Social areas may be large or small—determined by furniture arrangement and adjustable space division. Over-all sympathetic color in adjoining areas permits transfer of furnishings, with complete harmony.

college group living areas



data

doors and windows

Doors: gum plywood slab.

Windows: aluminum awning sash/ plate glass settings/ Miami Window Corp., 5200 N. W. 37 St., Miami, Fla.

furnishings and fabrics

Wrought-Iron Seating: Pacific Iron Products, Inc., 1150 E. Pico Blvd., Los Angeles 21, Calif.

Tubular-Steel Chairs: #130, stacking/ designed by Andre Dupre/ Knoll Associates, Inc., 575 Madison Ave., New York, N. Y.

Tables: wrought-iron legs/ Ficks Reed, 424 Findlay, Cincinnati 14, Ohio.

Sofas, Upholstered Sidechairs: designed by Alver Aalto/ Finsven Inc., 870 Madison Ave., New York, N. Y./ Glabman & Associates, Chicago, Ill.

Wooden Armchairs: #65A/ J. G. Furniture Co., Inc., 543 Madison Ave., New York 22, N. Y.

Wooden Sidechairs: #939/ J. G. Furniture Co., Inc.

Webbed-Back Wooden Armless Chair: #92/ Designed by Pierre Jeanneret/ Knoll Associates, Inc., 575 Madison Ave., New York, N. Y.

Tripod Table: #103/ Knoll Associates.

Curtains: "Detour"/ theatrical gauze/ Schiffer Prints, 79 Madison Ave., New York, N. Y./ "Yang & Yin"/ Konwiser, 1 E. 53 St., New York 22, N. Y.

lighting

Lamps: Lightolier, Inc., 11 E. 36 St., New York, N. Y./ Kurt Versen, 4 Slocum Ave., Englewood, N. J.

walls, ceiling, flooring

Walls: gum plywood/ painted brick.

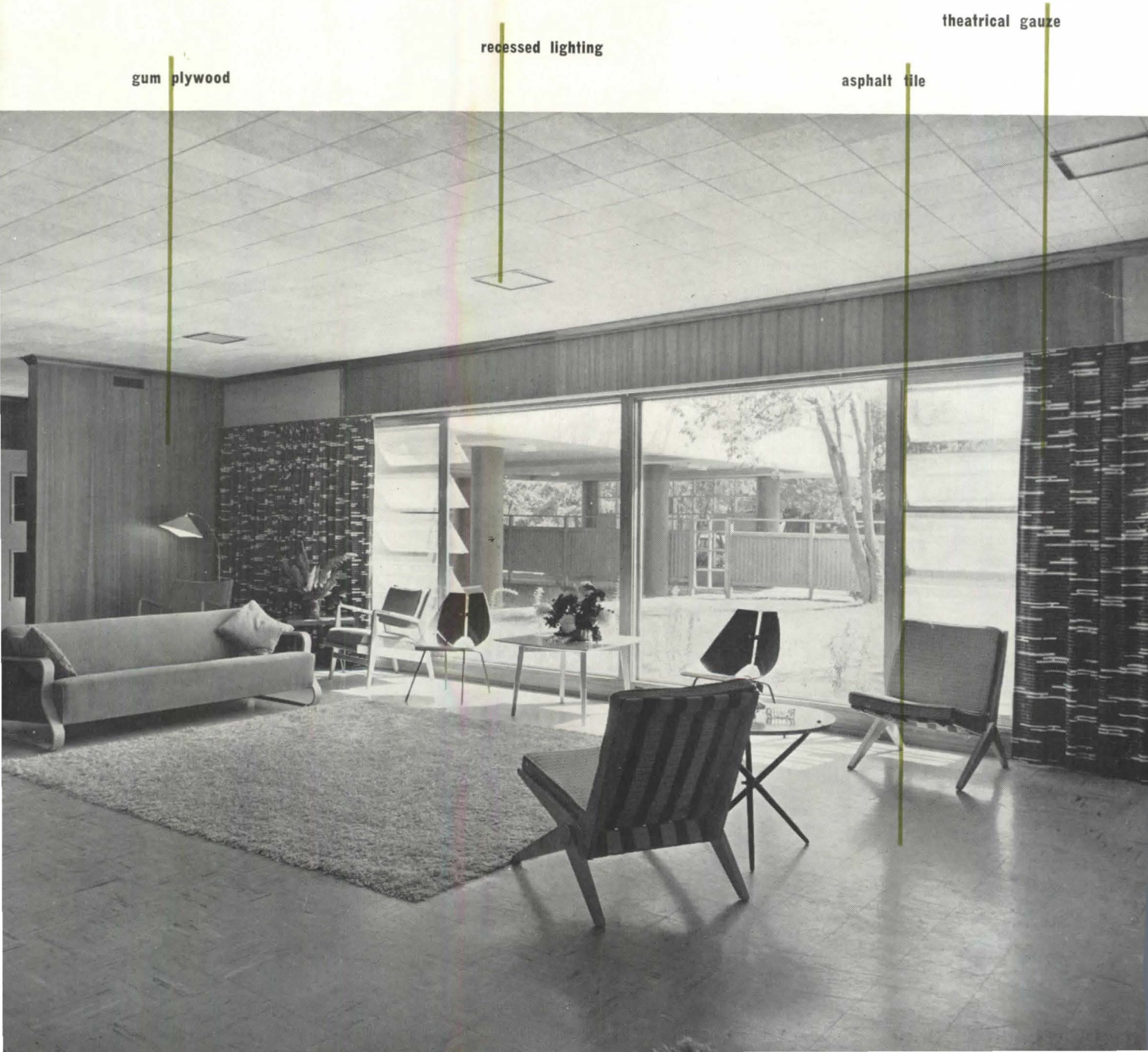
Ceiling: acoustical tile.

Flooring: asphalt tile.

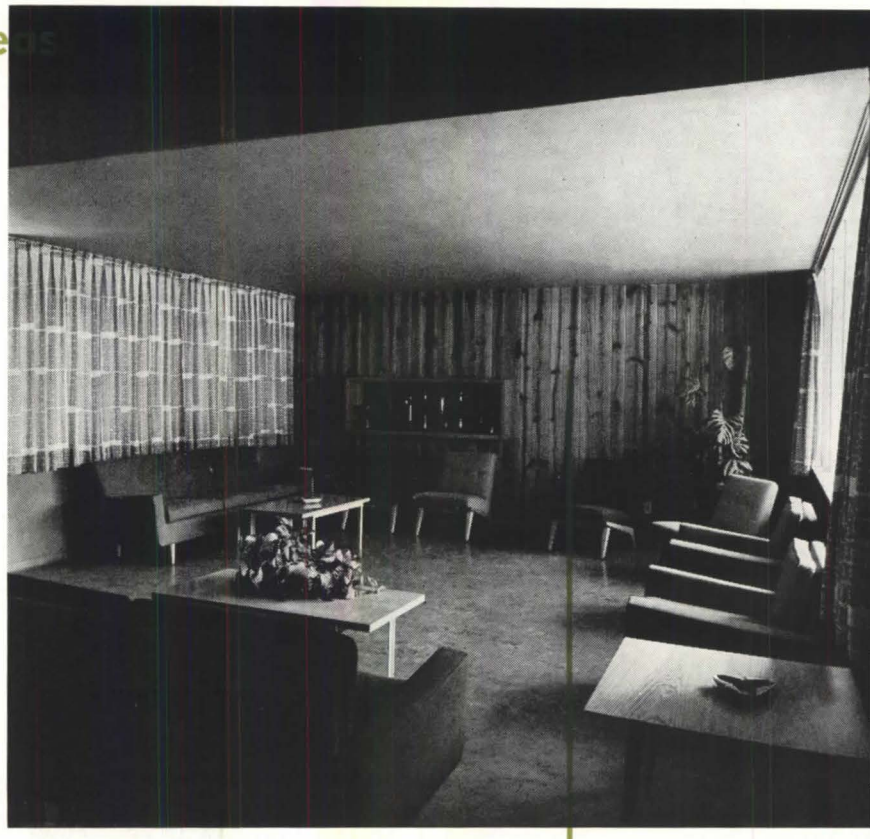
location	Phi-Mu Sorority, Austin, Texas
architects	Page, Southerland & Page
interior designers	New Interiors

A co-ordinated color scheme was used throughout the entire lower floor, and selection of upholstery fabrics was given considerable care. The living room, game room, and patio flow into one another and furnishings are frequently moved from one area to another. Color scheme comprises beige, chocolate brown, pale blue, and bright navy, with accents of flame. A combination of light and dark woods was chosen for the tables, to complement the dark paneled walls. Furniture in the game and dining rooms was carefully selected for flexibility of use, since functions change with the occasion.

Photos: Dewey G. Mears



college group living areas



sand-blasted paneling

data

cabinetwork

Trophy Case: designed by architect/ birchwood frame/ 1/4" plate-glass sliding doors/ **Hardware:** #992 ball-bearing track assembly/ Knape & Vogt Mfg. Co., 658 Richmond St. N.W., Grand Rapids 4, Mich.

doors and windows

Entrance Doors: 1¾" solid-core walnut-veneer/ "Roddiscraft"/ Roddis Plywood Corporation, Marshfield, Wis.

Accordion Door: "Modernfold"/ #4808, oyster white vinyl covering/ NewCastle Products, P.O. Box 988, New Castle, Ind.

Glass Sliding Doors: metal-framed/ #1/ Steelbilt, Inc., 18001 South Figueroa, Gardenia, Calif.

furnishings and fabrics

Square Table: #NK-8/ European elm top, birch legs/ 30" x 30" x 19¾" h./ Knoll Associates, Inc., 575 Madison Ave., New York, N. Y.

Chairs: #25 with arms, #21 armless/ birch legs/ Knoll Associates.

Sofas: #26/ birch legs/ Knoll Associates.

Coffee Tables: #115-R/ birch Realwood top/ white enamel T-iron base/ Knoll Associates.

Dining Chairs: #666U/ red Naugahyde upholstery/ Knoll Associates.

Curtains: #K290/14 "Mosaic"/ yellow on white/ #K170/7 "Buster"/ cocoa, black, and white/ #K11/44 "Sequence"/ black on yellow cotton/ Fabric Division, Knoll Associates.

Hardware: curtain tracks/ #9070/ Kirsch Company, 309 Prospect, Sturgis, Mich.

lighting

Opal Glass Units: #1015-6615/ Prescolite Mfg. Corp., 229 Fourth St., Berkeley, Calif.

walls, ceiling, flooring

Sand-blasted Wood: #1 Amerwood/ Southwood Corporation, P.O. Box 391, Fort Worth, Tex.

Sheetrock Walls: finished with three coats rubber-base paint.

Asphalt Tile: #C-346, pearl gray marble/ Armstrong Cork Co., Lancaster, Pa.

accordion door

trophy case

location | Pi Kappa Alpha Fraternity, Austin Texas

architects | Landgren & Maurer

Interior design is chiefly an expression of architectural forms—all walls and surfaces have a functional purpose. For example, the ledgestone wall panel in the recreation room serves as a horizontal stiffening element to support two load-bearing pipe columns. A low budget figure of $8.70 per square foot, including air conditioning, necessarily required austere simplicity. A very close co-ordination between interior design and the architecture has been the result.

Photos: Dewey G. Mears

asphalt tile

college group living areas

The designers treated this house as a large residence—a home away from home—with the consideration that rooms also will be used for large social groups. To avoid the atmosphere of a hotel lobby, small conversational and social areas were created to accommodate smaller groups; and native stone and redwood were used to create a feeling of informality.

Photos: Dewey G. Mears

location | Alpha Gamma Delta Sorority, Austin, Texas

architects | Fehr & Granger

data

cabinetwork

Birch Shelves: designed by architect/ K & V brackets.

doors and windows

Doors: flush-panel hollow-core/ Roddis Plywood Corp., Marshfield, Wis.

Architectural Projected Windows: R. H. Folmar Company, Austin, Tex.

furnishings

Wooden Armchairs: #61U/ designed by Eero Saarinen/ Knoll Associates, Inc., 575 Madison Ave., New York 22, N. Y.

Armless Chairs: #92/ designed by Pierre Jeanneret/ Knoll Associates.

Coffee Table: #110/ designed by Florence Knoll/ Knoll Associates.

Settee: #22/ Knoll Associates.

Armless Settee: #23/ Knoll Associates.

Wooden Slat Bench: Herman Miller Furniture Company, Zeeland, Mich.

lighting

Ceiling Lights: Gotham Lighting Corp., 37-01 31 St., Long Island City, N. Y.

Wall Lights: General Lighting Co., Inc., 1527 Charlotte St., New York, N. Y.

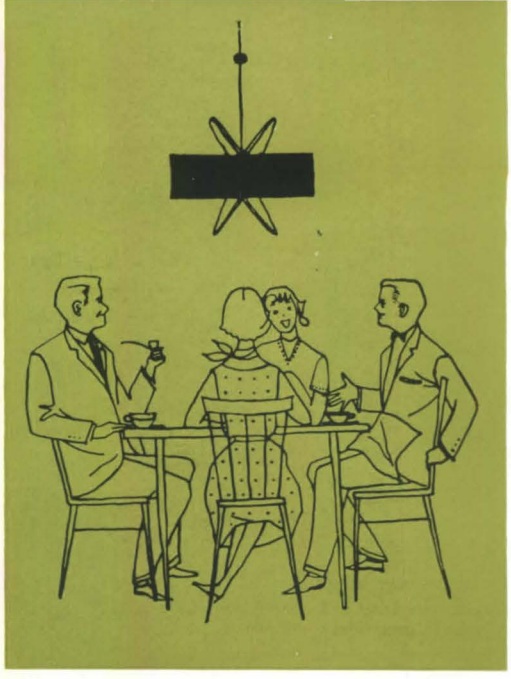
walls, ceiling, flooring

Walls: stone and wood studs/ "Sheetrock" and "Textone"/ U. S. Gypsum, 300 W. Adams St., Chicago, Ill.

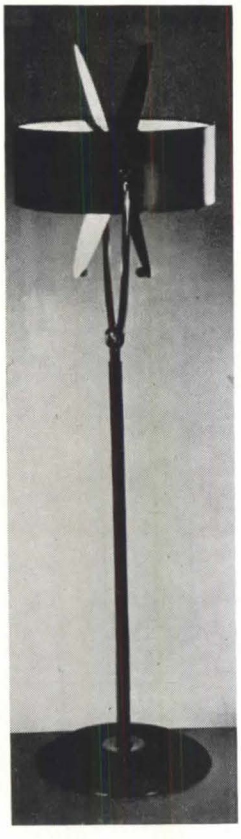
Ceiling: Fiberboard/ Celotex Corp., 120 S. LaSalle St., Chicago 3, Ill.

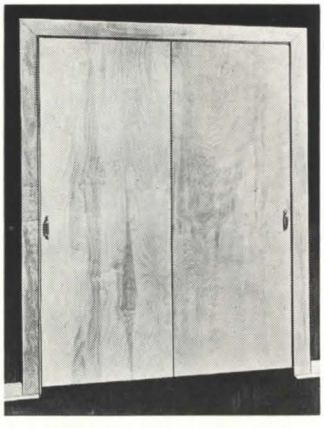
Flooring: asphalt tile.

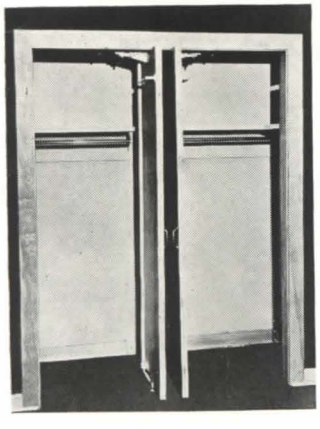
display shelves



Lighting Fixture: "Newman-Lite"/ drum-shaped metal shade with 16" diameter, 6" depth, contains two light bulbs/ half-circles on both top and bottom of shade form "light wings"/ permits direct, indirect, and accent light/ **Newman-Lite, 147 W. 55 St., New York, N. Y.**

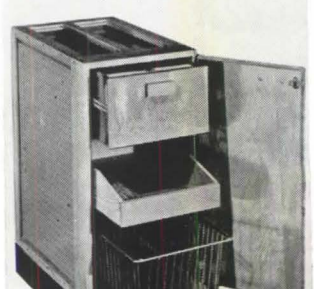


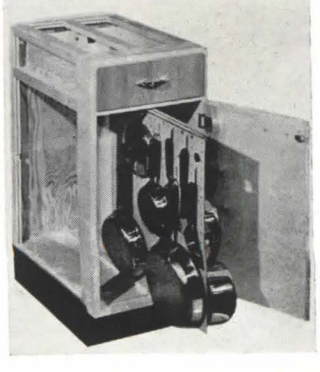




Hospital Wardrobe Closet: #402, "Emco Spacemaster Twin"/ for double rooms and wards/ doors recede to center to serve as divider for closets/ any width door possible/ equipped with chrome hanger rod and fir or yellow-pine storage shelf/ **Equipment Manufacturing Co., Inc., 1210 E. Ninth St., Kansas City 6, Mo.**

Kitchen Cabinet Fittings: peg-board construction/ may be fitted with any combination of drawers, trays, wire baskets, or sealed bread trays/ pan rack slides out for convenient selection; food cart may be wheeled to other areas as needed/ **Brammer Mfg. Co., Davenport, Iowa.**





"The time for education is short. It lasts only from the cradle to the grave. What man does with his education after that is his own business." The Old Professor

the structure of architectural education

The composite structure of the education of architects and city planners is complex, although perhaps no more so than that of the other professions. However, the complexity of the structure may obscure both its strong and its weak points. In the several years in which we have been exploring the subject in these pages, I have discussed a wide variety of problems directly or indirectly related to the education of architects and planners. Some of these have been detailed at length. However, I have only rarely mentioned the complete structure itself, the range of levels within it, and the related organizations which support and influence it. It is very important that every student, every teacher, every candidate for professional licensing, and every practicing architect knows just where he stands in his educational career at any moment of time. Above all, he should keep abreast of changes taking place within the fabric of the structure of education and avail himself of new opportunities to educate himself and his associates. It should always be remembered that education is a continuing, cooperative device whereby each and every one of us not only furthers his own self interest but also the general welfare of man. The education of architects and planners is of particular significance to the general welfare. Each of us, in the pursuit of our calling, creates the communities of man within which life in all its aspects is housed.

In the arduous earning of a livelihood we sometimes forget the social significance of each one of our undertakings. The building of great architecture, whether the smallest of houses or the largest of cities, is both a responsibility and a cause. Our united devotion to such a responsibility and such a cause should place the continuity and the soundness of our training in the performance of our duties ahead of all other of our interests. And no matter how advanced we like to consider ourselves in our individual careers, we must never lose sight of two facts, first that there is always more to learn and second, that those who follow us must be instructed by us to carry on where, sooner rather than later, we leave off. Immortality justly comes only to those who have built well and who have trained the next generation to build even better.

One further word of suggestion here on an approach to the structure of architectural education. By the obvious nature of the individual in each one of us, edu-

(Continued on page 168)

out of school

(Continued from page 167)

cation is a highly personal process. Aldous Huxley was right, several years ago. when he described in his *Brave New World* the possibility of mass education through mechanical "conditioning" systems. We have seen this in our own time in Hitler's Germany and Stalin's Russia. But I prefer what de Tocqueville[1] said 114 years ago:

"The most democratic country is that in which men have carried to the highest perfection the art of pursuing in common the object of their common desires, and have applied this science to the greatest number of purposes." He goes on to say: "In democratic countries the science of association is the mother of science; the progress of all the rest depends upon the progress it has made. If men are to remain civilized, or to become so, the art of associating together must grow and improve in the same ratio in which the equality of conditions is increased." These considerations are still important. For some of us there is a stigma in participating actively in the democratic necessities of our common interests. But can we be superior to these interests? There may be a warranted suspicion that our valuation of our own ego in such circumstances is greater than would justify an isolationist stand. It is certainly clear that in the history of our profession there are many who have remained aloof either in the hope (or belief) that leadership is achieved through a stand alone on a mountain peak, with each imitator wigwagging his admiration from lesser peaks.

No one of us can issue a clarion call to the educators and students and practitioners to participate actively in common organizational purpose for self-education, although the pragmatics of the situation should be self-evident. As we climb to each level in the educational structure we must pass through certain controlled doorways. These doorways are closed or opened by master mechanisms directed by certain group-controlled concepts. These are so basic that we may forget their relationships and the fact that society has developed these controls by experience and custom. These doorways to educational levels, in the United States and for our professions, in the following well-established order are: (1) graduation from public or private high school; (2) entrance into a public or private institution of higher education (college, university, technical institute); (3) graduation from any of these institutions of higher education with an architectural degree or degrees (undergraduate, graduate); (4) entering the candidate for licensing period, or first full-time employment period; (5) by examination obtaining license to practice; (6) through work experience, self education, professional association, and other means, developing and establishing a career.

There are of course variants to the sequence, but you all recognize its axiomatic nature. During the next several issues (with some interruptions and an oc-

(Continued on page 170)

[1] Democracy in America, *Alexis de Tocqueville.*

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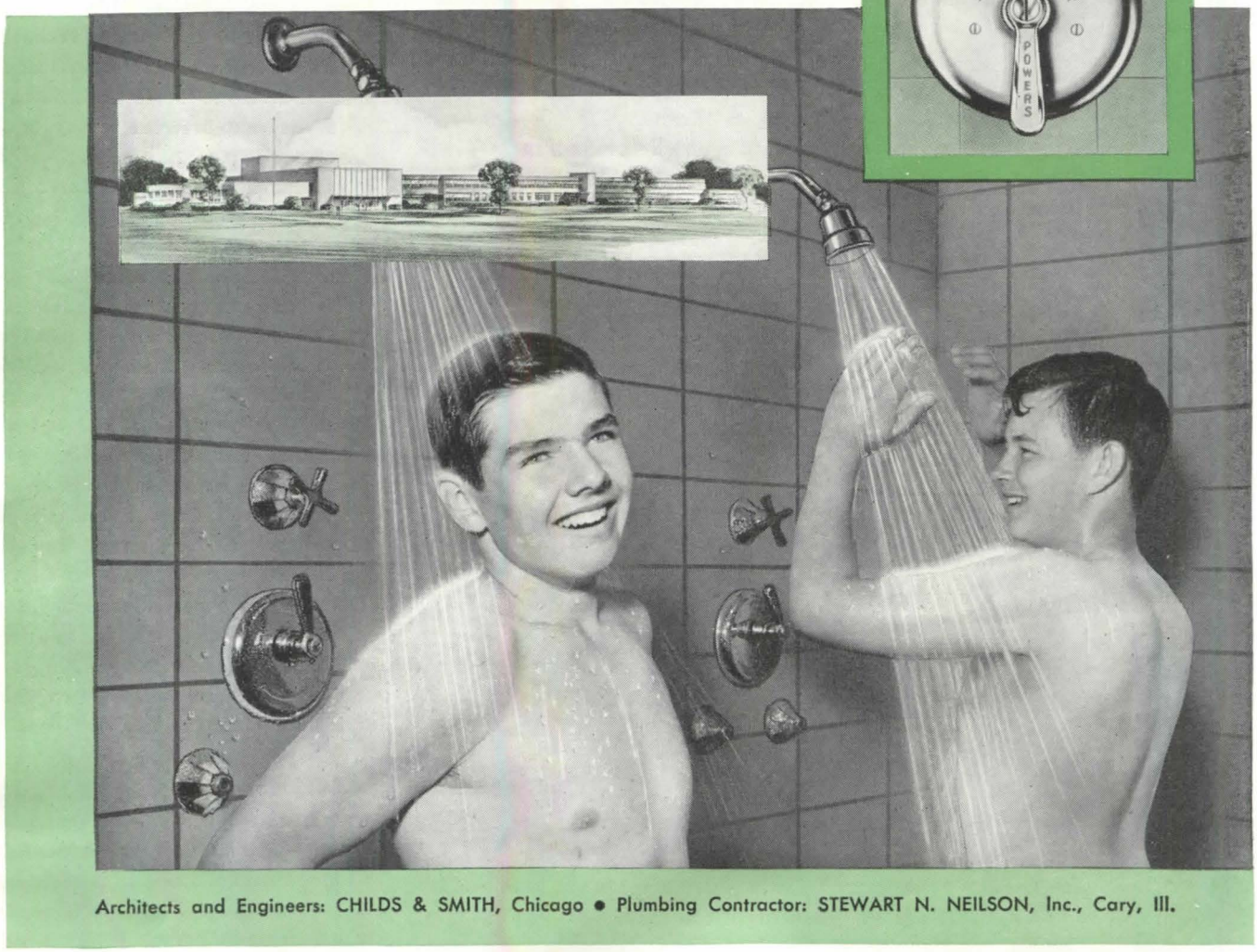

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out of school

(Continued from page 168)

casional visit to Theleme, we will climb up this ladder.

•

In January 1954 P/A, Walter Taylor's excellent article on "Architectural Education" in the October issue of *Higher Education*[2] was recommended to your attention. At that time I mentioned that there would be further detailing of the Taylor article, and it forms a part of our discussion this month. Taylor in his capacity as Director of the Department of Education and Research of the AIA, and Secretary of the AIA Committee on Education, has had access to a wide variety of surveys and studies in the field of architectural education. He has served also as a staff member of the 1950 Commission to Survey Architectural Education and Registration (*that long-awaited study due any minute, now*). From this advantageous position Taylor has had exceptional access to the facts and figures, and he has also traveled widely in his line of duty, talking education to the schoolmen and professionals. This article I am quoting from, then, represents an authoritative knowledge. Architects should read it, although it was addressed to nonarchitectural educators. I am being very generous, of course, since OUT OF SCHOOL is not mentioned in Taylor's "Selected References."

Walter Taylor did not use the sequence I have used here, but I am going to excerpt certain sections of his report and, in subsequent issues, each of various topics and subtopics will be discussed in detail by specialists on these topics—and I will attempt to correlate and add as many ideas as I can. We will start with Taylor's comments on high school training and the admission requirements to architectural education at the university level.

admission requirements

"The great majority of the collegiate schools of architecture admit students who have been graduated from secondary schools, but the entrance requirements are far from uniform. Privately controlled institutions generally limit enrolment, and they are selective in terms of rank of the applicant in his secondary school and other qualifications. Publicly supported institutions, with few exceptions, can be selective only in terms of required secondary school credit in certain subjects." . . . (*I omit here the table of required subjects.*)

"Additional entrance requirements such as aptitude tests, interviews, and entrance examinations are reported in many institutions. Some publicly supported schools state that, although they are not permitted to be selective, they can effect desirable voluntary screening by these means.

"Preprofessional education in a college of liberal arts is a prerequisite for admission in 14 schools of architecture, as fol-

(Continued on page 172)

[2] "*Architectural Education,*" *Walter A. Taylor,* Higher Education *October 1953, Office of Education, Higher Education Division, U. S. Dept. of Health, Education, and Welfare, Washington, D.C.*

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out of school

(Continued from page 170)

lows: (a) 1 year—Universities of Minnesota, Utah, and Virginia, and State College of Washington; (b) 2 years—Universities of California, Florida, Detroit, and Washington, and Columbia, Stanford, Princeton, and Yale Universities; (c) 4 years (degree)—Harvard University and Cranbrook Academy of Art. . . .

"For the good of the profession and the elevation of professional education in architecture there should be greater selectivity in admitting new students. To admit large numbers of students without screening them carefully lowers the achievement of the professional school, wastes its energies on the incapable, and often does much damage to students who are cast out as failures.

"A few schools of architecture employ ways and means beyond the general tests in the university admission procedure to evaluate their applicants. The group as a whole needs to take steps in that direction. Several other forms of professional education have had considerable success with aptitude tests and psychological examinations. Some arrangement with the Educational Testing Service or some other testing agency to develop screening techniques for architecture might well be made.

"A 2-3 curriculum plan possesses an advantage over the 5-year integrated curriculum in that the preprofessional years, devoted to education in the liberal arts and sciences, can be used both to provide general education and to screen out the students who do not possess the capacities required to learn the profession of architecture and to succeed in practice. The obvious disadvantage in the arrangement is that it differentiates too sharply between liberal and specialized education.

"Second, a problem arises in architectural education because only a limited number of secondary school graduates who apply for admission present a sufficient mastery of such disciplines as mathematics and English and adequate intellectual maturity to undertake professional study. This situation is owing in part to the instruction provided in the high schools". . . .

(Continued on page 174)

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out of school

(Continued from page 172)

Four years ago, in this column, we discussed tes.ing for admission to the collegiate schools of architecture and there is an encouraging rumor, since Taylor's article, that the Educational Testing Service at Princeton may begin soon on experiments in this field. I will report progress as it is made.

Missing in Taylor's statement is reference to career guidance and career bulletins for high school students.

career guidance for high school students

While career guidance is a relatively new field at any level of education, it is of the utmost importance to prospective or hopeful architectural students. Scientific career guidance methods are being developed in the normal and educational schools throughout the country and many progressive high school leaders are developing career guidance clinics for use of faculty and students in the junior and senior years. Since many high school and prep school students are technically minded but are unable to distinguish between the handicrafts, the business of building, engineering, architecture, and a wide variety of job possibilities, theirs is a hopeful but undirected and unscientific approach to a livelihood, a career, a lifetime of satisfaction or defeat. This first chance at a choice can be of the utmost importance. The career counselor of the high or prep school senior becomes a pivotal man in the student's future and a first important contact point in the development of each new generation of architects, year in and year out. And yet I doubt if many local AIA chapters have ever invited career counselors to an indoctrination course in the whys and whats of architecture.

Curiously enough, there is at present no adequate, illustrated, career bulletin on architecture, city planning, or the allied arts of landscape architecture and interior design. The catch-as-catch can method of moving students into careers with the hope that a fair percentage will survive is one of the most curious laissez-faire concepts in our whole educational credo. While the Committee on Education of the AIA (which I chair for the moment) has been talking in a hopeful way of doing a real career bulletin on architecture for some time, no one has gotten around to it. I, for one, feel that a career bulletin must be accompanied by specifications and advisory material to career counselors as to how it might best be used. In any case it would be foolish to dump large quantities of booklets on the open market with the hope that they would land effectively. The choice of a career can never be soundly made by an adolescent's reading in a desultory fashion a batch of "come ons" from the professions and the business world.

One of the profession's first real jobs is to advise high and prep school principals, career counselors, and parents of young hopefuls, as to the advantages and

(Continued on page 178)

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out of school

(Continued from page 174)

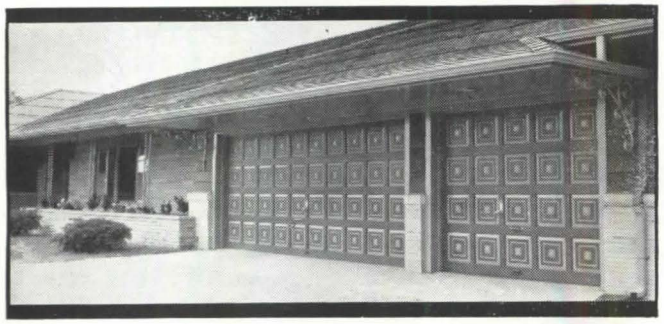
perils of architecture and planning as a career or as careers. The constant regeneration and advancement of architecture will depend on those bright-eyed, pimply youths, all bebop and blue jeans, whose breaking voices and slattern jalopies hardly presage the dignified gent who, glass and cigar in hand, will one day preside at a Producer's Council meeting of the Local Chapter of the AIA, or who may one day sit in one of the august seats of the mighty Board of Directors of the Institute itself. Or perhaps these are the future prima donnas of the profession—the coming avant-garde. Or maybe they will be no more vaunted than those cherished and invaluable draftsmen, architectural engineers, office managers, and specification writers who build no buildings in their own name, but without whom no buildings of consequence get built.

Besides career counseling and the counseling of career officers by the architect, besides the preparation of career bulletins, there are several other important elements in the advising of prospective or inquiring architectural aspirants which do not seem to have been discussed adequately anywhere. They will be talked about in this column as opportunity affords but can only be mentioned briefly this issue. Taylor referred to the pretesting of aspirants. We hope to go into detail on that with possibly a guest expert to talk on this important matter. But there are still a whole series of devices needing improvement and problems to be corrected. For instance, what advisory service can be provided to high school counselors, students, parents, and collegiate admissions officers to help match students with certain interests and qualifications to schools with similar interests and qualifications? What will be the point of testing a high school boy for aptitudes, competencies, and everything else if he can not be sent to a collegiate school where his deficiencies may be corrected and his abilities developed? We recognize the need for a wide variety in the character of our architectural schools. How do we make an asset of this variety?

Another need of the counselors, students, parents, and collegiate admissions officers—better college catalogs. I have mentioned this frequently in these columns. What are available to the applicant are dull, inexpressive documents crammed with unilluminating course titles, misleading generalities about the curriculum, confusing details of dates, hours, credits, and other schoolmen's jargon. These drab, usually unillustrated, out-of-date, and quite inhuman documents are the career bulletins (willy-nilly) which the freshmen, standing in long queues, study on registration day. No wonder there are so many misfits! No wonder the mortality rate is high!

In summation of what you have just read, perhaps the most important point is that the structure of architectural education can be no stronger than its lowest level. We find, at the end of adolescence and the beginning of adulthood, an inadequate program of advice and guidance,

(Continued on page 180)



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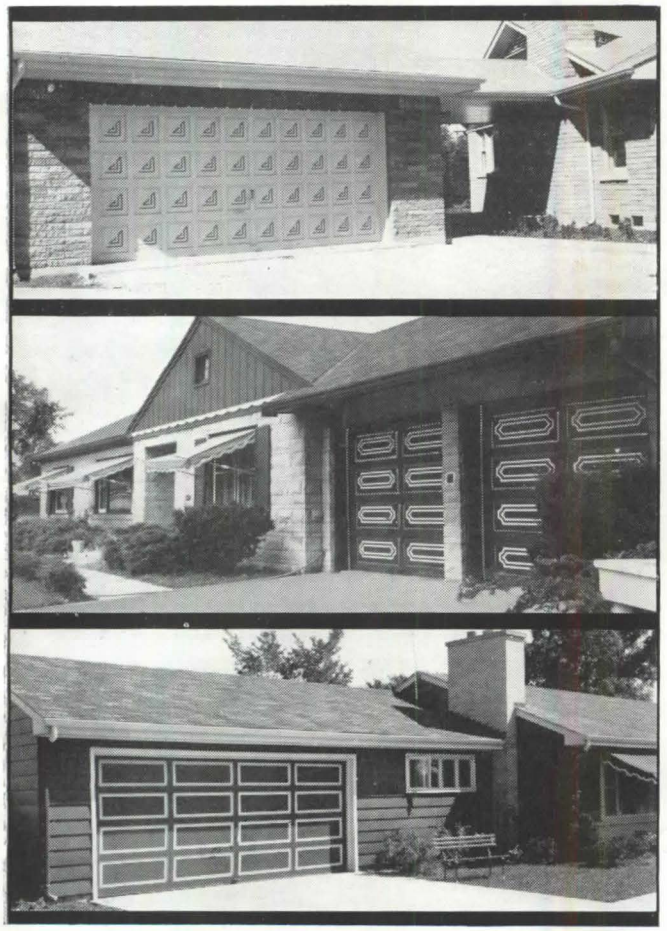

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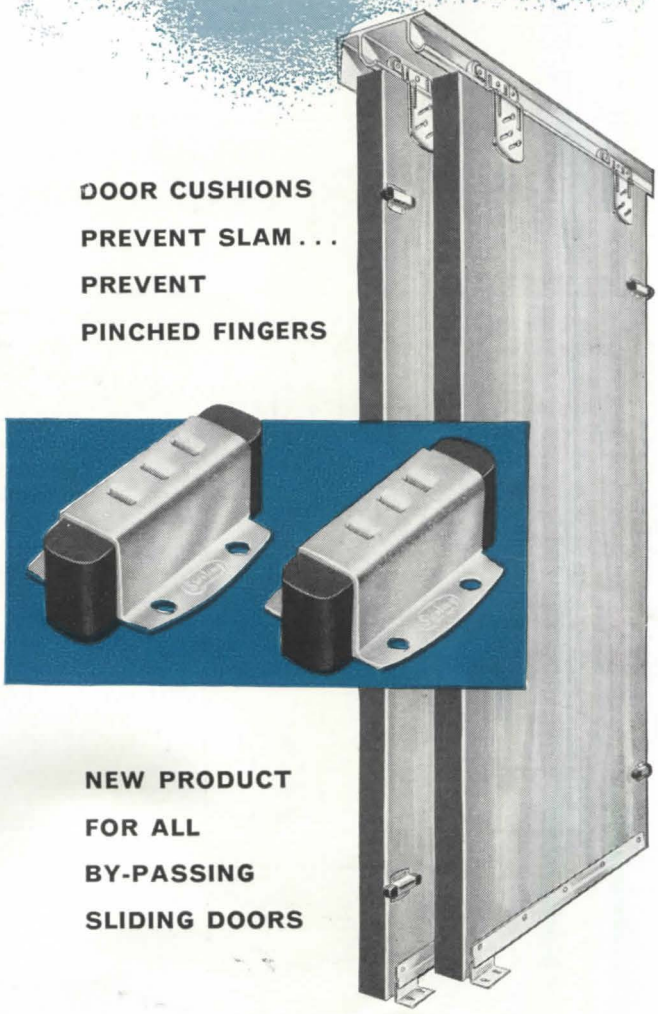

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out of school

(Continued from page 178)

no over-all standards or organized approach—no evidence of the "science of association." I see no reason for being complacent about such a situation.

letter to the schoolmaster

Dear Carl: I often think back to your visit to Vancouver, and I have a very personal interest in those excellent articles which you write in PROGRESSIVE ARCHITECTURE.

There is a possibility that I may go on an extended tour through the United States and Europe, to visit schools of architecture. My prime aim would be to acquaint myself with what is being done, to try to bring the teaching of architects up to date in relation to the changing nature of the architectural profession (ever increasing reliance upon consultants as a part of the design team), and in relation to an increased integration with the construction industry.

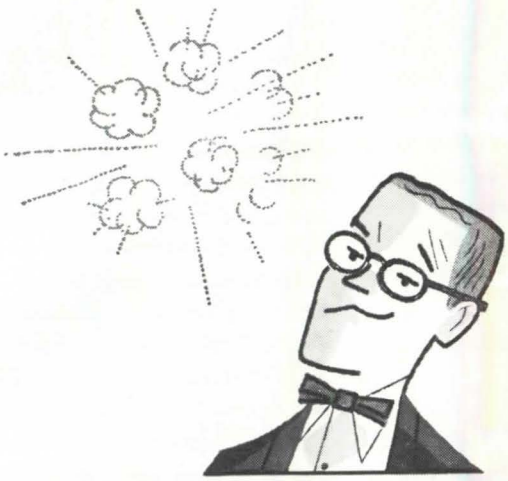
I am not satisfied that the old type of curriculum, which is now prevalent in most schools in the North American Continent and is certainly uniform across Canada, is the one most suited to the new position in which the architect is finding himself, more and more, in the process of building construction.

I am sorry to bother you about this, but I feel that there is no person better equipped to give me the names of schools in North America and Europe which I should visit, because of their experiments along the lines mentioned above. Your guidance would be greatly appreciated.

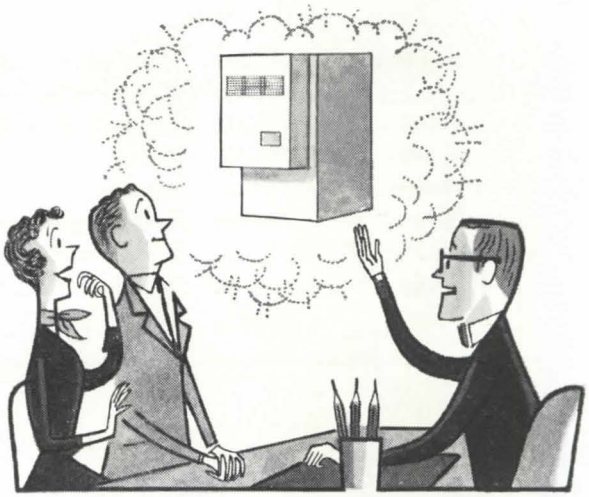
FRED LASSERRE, Director
School of Architecture
The University of British Columbia
Vancouver, Canada

To readers of OUT OF SCHOOL *and* LETTERS TO THE SCHOOLMASTER: *this letter from Professor Lasserre calls for a reply not only from me but from those of you who have something to offer to him. May I suggest to the schoolmen who may read this letter of Professor Lasserre's that you write him directly if you feel you have something to offer him.* C. F.

FERENCE

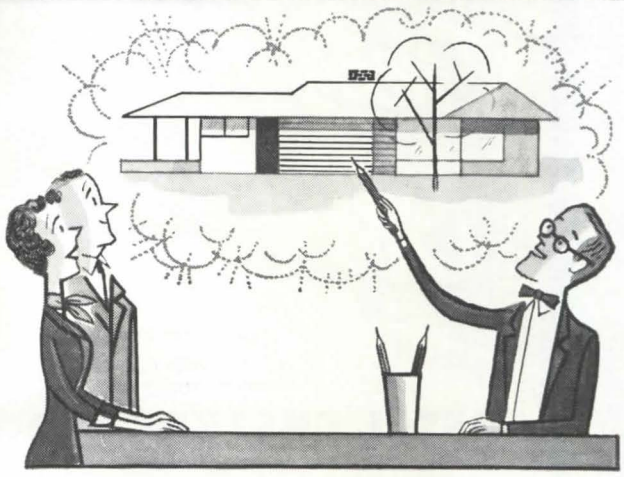


3 Then they tell you they've got a 70′ x 100′ lot and finances to match. You decide on linoleum instead of marble for the bathroom. You fire the draftsman. And decide to have your receptionist bring you in coffee and a sandwich.



4 But, you resolve, the Carrier air conditioning stays—and you tell them why. You explain that in a house planned around air conditioning, the cost of the air conditioning is small. Because it substitutes for many "necessities."

7 But, they ask, doesn't air conditioning cost a lot to operate? Not at all, you tell them, the refrigeration unit runs for a full day on small change. And an air-cooled condenser eliminates the expense of water.



8 More than that, you'll design the house so it lets less heat in, saves them the cost of taking it out. You'll use, you say, a light-colored roof, overhangs to shade the windows, small windows or none on the west.

11 They've heard something about these ideas before? Yes, you say, it's the Carrier Weathermaker Home idea . . . the idea of a home planned around its air conditioning. Well, they ask, can they still have four bedrooms?

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refrigeration
industrial heating

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Please send me your Weathermaker Home idea books. I've got a conference coming on.

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(Continued from page 184)

and work crews—fascinating reading and penetrating thinking, but to this reviewer somewhat an interruption in the theme of the book. The argument then picks up with the effect of design on "outer life as well as inner balances," with a strong plea for research into "the designer's professional task in terms of valid requirements of the human organism." A long chapter at the end discusses community planning as an art, and contends that a large planning advisory board is needed, "chaired by an expert in biology." A final summary points to the proud position of the art of design ("it cannot be replaced by science or technology") and repeats that the designer "must learn to respect science as a base and corrective, but . . . not use it in cold blood."

This is a tremendous field to range over, and the sum total is a powerful argument for more thoughtful and less vague, haphazard, or preconceived design approaches. Two aspects of the book strike one as most important contributions: its calmness and "scientific" approach in the best sense (lack of dogmatic, hurried conclusions; presentation of evidence, with suggestions as to application); and the encouragement it should give to further study in many scientific fields, relating design to stimuli. behavior, and purposeful action.

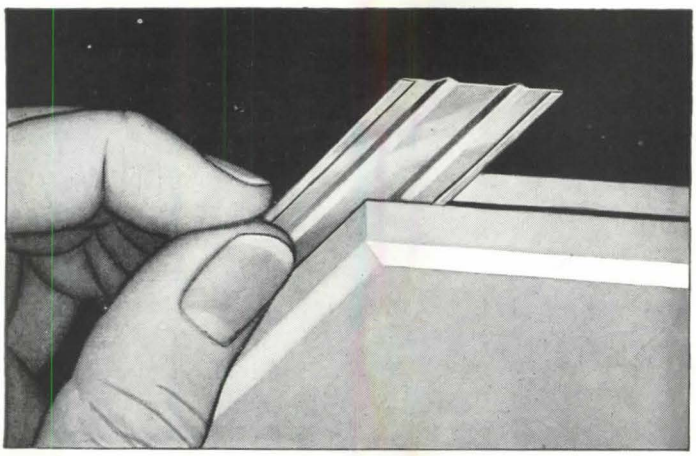
The nondogmatic manner in which the book is written may be sensed through two examples. Tradition, "the pleasure of recognition of the familiar," is not discarded, but is studied carefully and objectively, in relation to the psychological understanding of *habituation* and *canalization*—and also in reference to its antithesis, shock. And then beauty, that abstract which usually stops all such discussions, is by no means discarded in Neutra's thesis, nor is the act of intuitive creative design on the part of the individual: "He sometimes accomplishes his most important work in the fraction of a second." But this also is studied objectively, in relation to physical as well as emotional factors. As he says, "Any doctrinaire division of the total concept into the esthetic and the nonesthetic would be artificial and would cloud rather than clear the insight. . . ."

It would require someone who had read with as catholic interest as Neutra's own to evaluate his choice of sources from which to illustrate his points. Actually I doubt whether this is too important in an appraisal of the book. We know of certain studies to which he points, already familiar to the design professions: Harmon's physiological experiments in Texas classrooms; Ames's experiments at the Dartmouth Eye Institute. Some of the behavior studies he relates to design are well known to the layman; others are not. The point is that study *of this sort* is considered, not as isolated activity, but in relation to other experiments in other disciplines, and in relation to design problems. No one realizes more than Neutra the preliminary nature of his outline; his

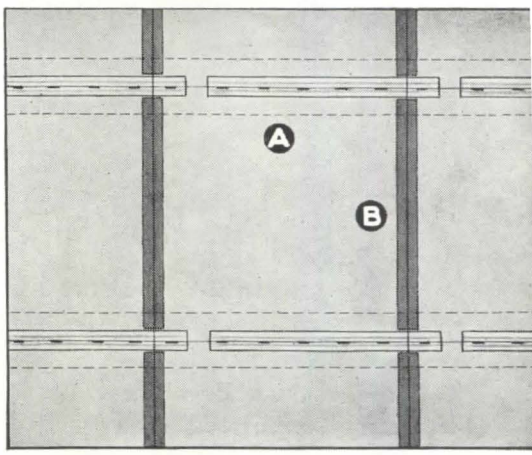
(Continued on page 194)

EW FIBERGLAS* INSTALLATION METHOD

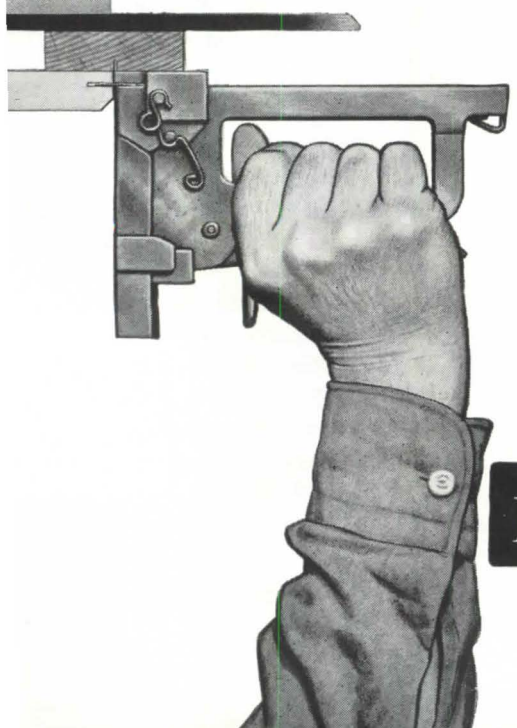
gives non-combustible acoustical ceilings at the low cost of ordinary tile nailed or screwed to wood furring



❶ Aluminum spline is inserted in kerfed edge of Fiberglas Acoustical Tile, 24" x 24" x ¾".



❸ Supporting splines (A) are parallel to furring and continue through tile joints. Fiber cross splines (B) are used for leveling. They are not stapled, making installation still more economical.



❷ Modified hand or air tacker with special attachment holds spline away from furring strip, drives 9/16" staples flush with face of spline, and into furring strip. Staples do not pierce tile!

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(Continued from page 188)

chapter on the need for "manifold experimentation" points out in thoughtful detail the direction that further co-ordinated studies should take.

Easiest and most interesting reading to the architect will probably be the section on the understanding of architecture through many senses in addition to the visual. (A version of these chapters was published in November 1949 P/A, under the title *The Sound and Smell of Architecture.*) But I suspect that anyone picking up the book and browsing through sections that seem most pertinent and interesting, will find himself reading all of it, eventually. It is a book that will provide food for thought and inspiration to the thoughtful designer for a long time to come.

T.H.C.

design for religion

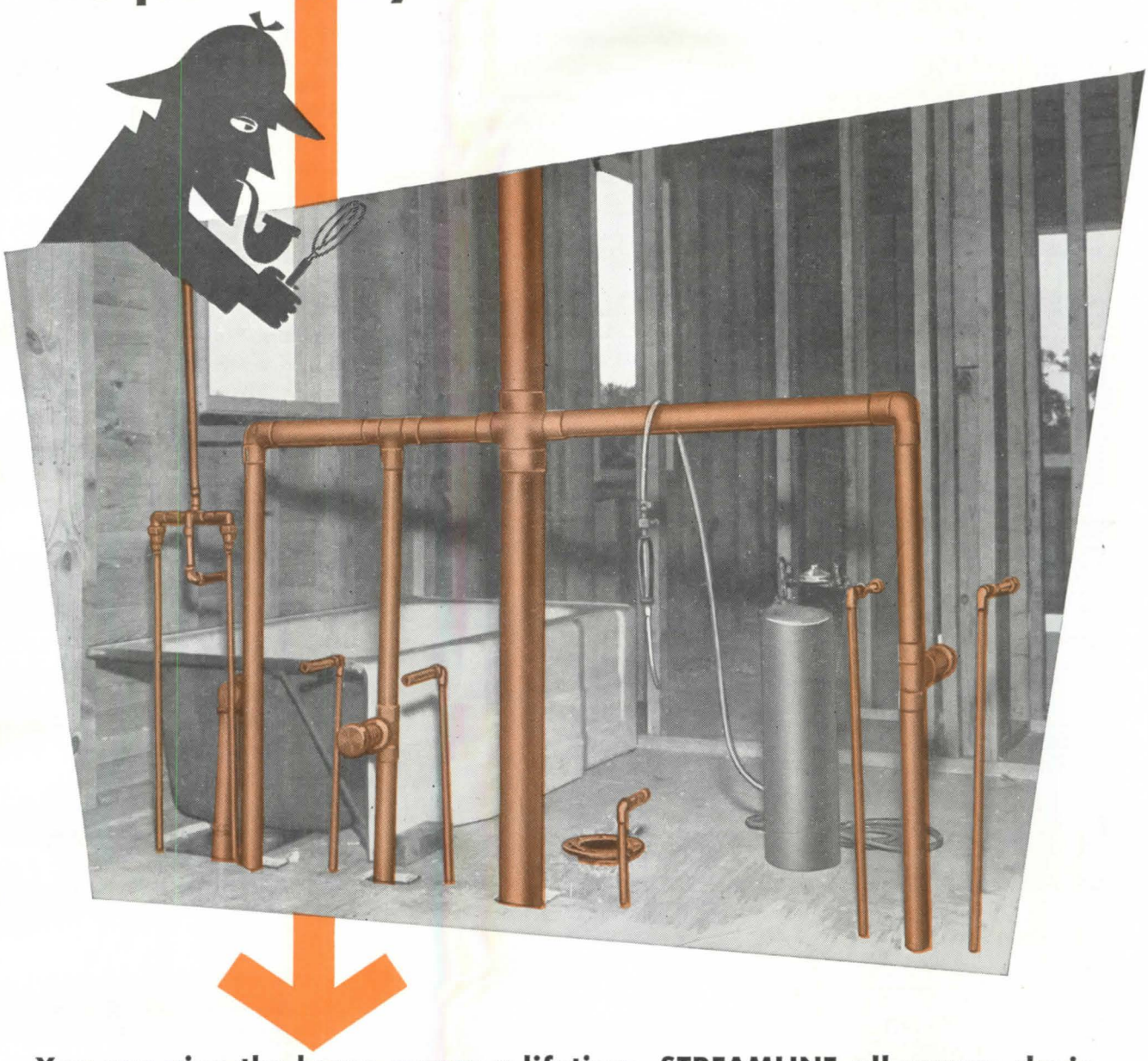
Churches & Temples. *Paul Thiry, Richard M. Bennett and Henry L. Kamphoefner. Reinhold Publishing Corp., 330 W. 42 St., New York 36, N. Y., 1954. 71 pp., illus., $18*

In *Churches and Temples,* I believe there has emerged a reference work that may be placed in the hands of architects and the Church's clerical and lay leadership as a true guide for those who seek to express religion's spirit and function in contemporary forms. It might even be said that we can look for the conversion of many who opposed this accelerating tendency from a lack of understanding rather than from blind prejudice. The dedication, the skill, the experience, and the learning of the authors of this book will assure its place as a landmark in the annals of Architecture in the service of the Church.

As stated by the publisher on the book jacket, "The book is somewhat arbitrarily divided into four sections: Historical Preface, The Catholic Church, The Synagogue, The Protestant Church. The first section explains the *raison d'etre* for the book and provides a background for the sections that follow. The three sections on buildings for the major western religious expressions are arranged in somewhat parallel fashion. The first chapters discuss history and ritualistic and liturgical requirements involved. Intervening chapters discuss the architecture of buildings for worship—from the style, plan, and elevation to such details as altar and ark design, decoration and embellishment, bell towers, baptistries, etc. The final chapter in each of the three sections summarizes the previous chapters with large numbers of the finest examples of modern church and synagogue design and a look into the future by means of projects by architectural students. Many of our most famous architects—Frank Lloyd Wright, Eric Mendelsohn, Pietro Belluschi, Percival Goodman, Paul Thiry, Bruce Goff, Paul

(Continued on page 196)

we just want you to GET THE FACTS!



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(Continued from page 194)

Schweikher (to name but a few)—have designed buildings for worship. All of them are represented in this book."

If there is one factor that is more impressive than any other, it is the consistent conviction that plans should follow function and function be the expression of the theological and liturgical cornerstones of the communion or sect by which the structure is commissioned. One of the most discouraging shackles that has bound contemporary church planning has been the reluctance on the part of architects and church leaders alike to break away from the traditional longitudinal plan, regardless of the Liturgical Movement's emphasis upon corporate worship. Although we have no assurance that there has evolved a plan of comparable universal acceptance, we can find in the pages of this book sincere efforts, fulfilling all the liturgical requirements, and deserving our honest study as we seek to build edifices in which man can meet God in the 20th Century.

As is only right in a study of the physical requirements of the church and synagogue, considerable space is given to the allied arts and their proper use in the buildings discussed. There is no doubt that architects will be delighted to find so careful a study and description of the "furnishings" of the church set in the midst of a survey of her rites and ceremonies. My only regret is that the sections on the synagogues and the Protestant churches are not as thoroughly delineated in this respect as are those on the Roman Catholic churches, but we can hardly blame the authors for this.

The series of illustrations by Duncan R. Stuart in the Historical Preface and the Protestant Church sections add much to the text; while in the chapter on the architecture of the Catholic Church, the plans and elevations of famous churches drawn to the same scale provide an important lesson for those who feel that "bigness" is a necessity.

There are only two adverse criticisms that this reviewer feels required to make, both of which are motivated no doubt by personal relationships, but which may have value.

In the first instance, I am in hearty agreement with the criticisms in the Protestant section of Colonial eclecticisms and pseudo-Gothic churches and cathedrals built in America. However, it must be remembered that the Gothic revival was a true contemporary architectural expression even though an unhealthy one. City halls, railroad stations, domestic dwellings, and even outhouses can be found in neo-Gothic, employing wood, stone, and cast iron. As it is pointed out, to continue this trend after the (19th Century) contemporary architects began to be more creative, is all the more to be regretted, particularly in the cases of such outstanding structures as Riverside Church, the Washington Cathedral, and the Cathedral of St. John the Divine. However, is it not fair to distinguish be-

(Continued on page 198)

reviews

(Continued from page 196)

tween Gothic construction as we find it in the two cathedrals and the complete improbability demonstrated by Riverside Church, which like so many universities and commercial buildings, is a steel structure with curtain walls and fake arches doomed to collapse if engineered as it appears.

Second, this reviewer feels that it should be pointed out that the Bureau which furnishes advice to church architects, and which is severely criticized in the book, has undergone a considerable change in outlook in the last year or so. Under its former director all that Dean Kamphoefner charges was true, but today the contemporary style is recognized and is no longer held up to unjustified ridicule and prejudiced attack. This reviewer's presence on the Bureau's Board of Directors may explain his protective attitude, but also should give evidence of a change of heart in the Bureau's thinking. Let us rejoice together that so useful an instrument in church building has been won over to a recognition of the rightful place of contemporary architecture in the service of the church.

Having made these two criticisms let it be repeated that this book is a *must* for the reference shelf of every architect who hopes to build a church, for the libraries of every theological seminary, every architectural school, and every clergyman who is involved in a building program or is a student of the subject. We are grateful that this book has appeared.

The Rev. DARBY WOOD BETTS *

* *Canon Precentor of the Cathedral of St. John the Divine; Member of the General Convention's Commission on Architecture and the Allied Arts of the Protestant Episcopal Church; Member of the Architectural Commission and Bureau of Church Building of the National Council of Churches.*

slower is easier

Renewing Our Cities. *Miles L. Colean. The Twentieth Century Fund, 330 W. 42 St., New York 36, N. Y., 1953, 191 pp., illus., $2.50*

To add to the growing list of books on the problem of urban redevelopment,

(Continued on page 203)

reviews

(Continued from page 198)

Miles L. Colean has written a brief but thorough survey of nearly all the ramifications of city improvement. He points out the fact that wholesale demolition and reconstruction, while working in a few places like Baltimore, is not always the best antidote to a city's disintegration. Colean suggests that more often a program of gradual improvement over a wider area, while not as dramatic, is less explosive and controversial, and thus more likely to receive wide co-operation in the community. Slow as the latter process may seem, the author finds it to be effective enough to predict, or rather to be optimistic about, a brighter future for our cities. J.K.

the general hospital

Design and Construction of the General Hospital. *U. S. Public Health Service. F. W. Dodge Corp., in collaboration with* Modern Hospital *magazine, 119 W. 40 St., New York 18, N. Y., 1953. 214 pp., illus., $12*

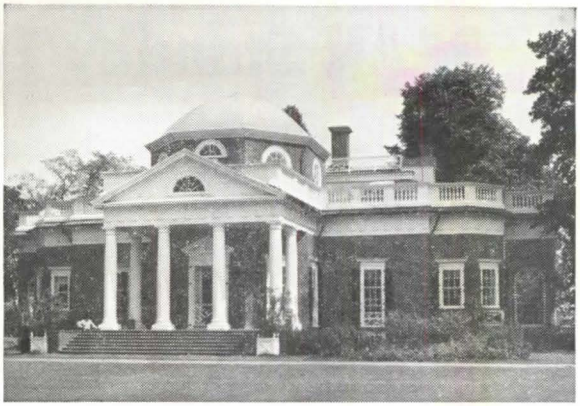
The graphic material contained in this book had been published in the architectural press as well as in the hospital press. This material has been and, so far as we know, is still available from the USPHS in Washington. The printed matter also has been published at least in the hospital magazines and has been and is now available by writing for it to the government in Washington.

These facts, nevertheless, need not detract an iota from the value of the book. It will be news to those who had not seen the material before and to those who had, the same material will be easier to handle within covers rather than as a series of pamphlets and reprints.

The book addresses itself strictly to the general hospital and even so, only to general hospitals up to 200-beds in capacity. It does deal with provisions for the care of the tuberculous, the emotionally sick, and the contagious, but

(Continued on page 206)

old



Milton L. Grigg, FAIA, Architect
R. E. Lee & Son, Inc. General Contractors

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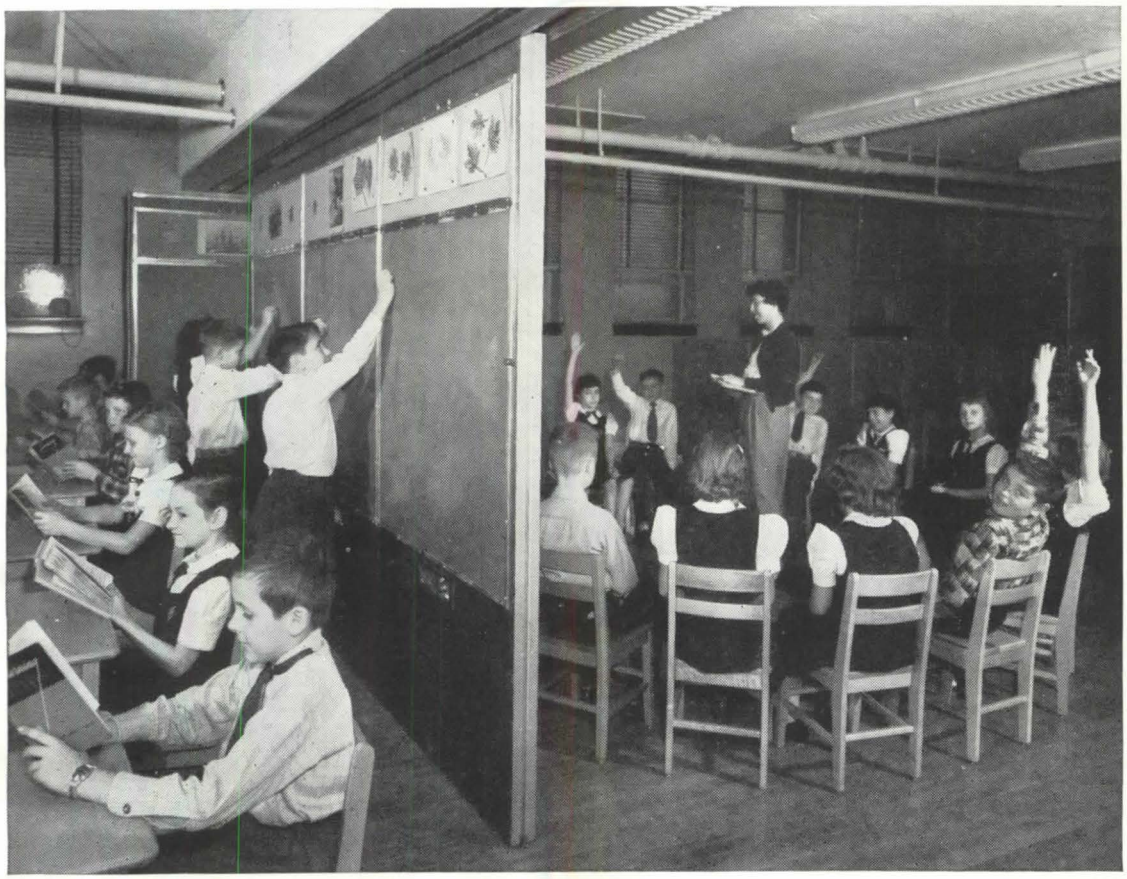

● An R-W 40-Decibel Folding Partition installation in partially closed position. Note 3-inch thickness and absence of floor track, or guides. Partitions available with cork tack boards, chalk boards and chalk troughs.

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reviews

(Continued from page 203)

only as integral parts of the general hospital up to 200 beds.

The first part of the book presents prototypes of general hospitals of 8, 10, 25, 30, 40, 50, 75, 100, 150, and 200 beds. It also presents a prototype "school of nursing and residence" but again for the relatively small hospital. The second part, entitled "Design and Construction," is a discourse on the workings and organization of the several departments in the general hospital. Under the same heading are described and discussed the various mechanical, electrical, and structural systems; materials and finishes, fire safety, cost, programming, and the planning process. The third part of the book is occupied by the familiar "Elements of the General Hospitals." The last part deals with the planning of the equipment for a general hospital and it includes actual lists of equipment and supplies for general hospitals of 50, 100, and 200 beds.

What are its limitations? It is implicit that the book deals with the general hospital only and at that only up to 200 beds. However, such hospitals comprise over two thirds of our general hospitals and for that reason alone are very important. Like other good books on hospital planning it is a boom to the U.S. and the world at large. Even the most experienced hospital architects make frequent use of the material which is in this book; certainly, his staff does, which amounts to the same thing.

Another criticism which is frequently leveled against the material of this book by architects, particularly against the "Elements," is that having the authority of Uncle Sam behind them, they tend to be treated as inflexible standards thus stifling the imagination. The answer to this is that in the hands of the initiate and the imaginative these standards are what all standards ought to be: points of departure. In the hands of the novice and the unimaginative they are preventatives against committing worse crimes than copying good examples. I, for one,

(Continued on page 210)

Architect calls for YOUNGSTOWN PIPE

ABOUT THE PIPE FOR THIS JOB, GEORGE. YOUNGSTOWN IS WHAT I WANT. IT SAVES TIME AND LABOR, BECAUSE IT IS SO EASY TO BEND AND CUT.

GLAD TO HEAR IT, ED. THAT'S WHAT ALL MY CUSTOMERS SAY. THEY LIKE YOUNGSTOWN PIPE BECAUSE IT'S CONTROLLED IN MANUFACTURE BY ONE STEELMAKER FROM START TO FINISH. AND EVERYBODY KNOWS TOP NOTCH STEEL IS EASIER TO WORK WITH.

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- uniform roundness and straightness

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reviews

(Continued from page 206)

hold that some knowledge is better than none.

There is not a better reference book on the general hospital up to 200 beds and it should continue to be so as long as it is periodically edited to keep it up to date, as hospital administration and, consequently, planning are currently in a very fluid state.

It would be, in a sense, redundant for me to shower well-deserved praise on this book, because if its material had not been so praiseworthy, I would not have included so much of it in my own book on hospital planning.

Much praise is due for the material in this book to Marshall Shaffer, his staff, and his medical collaborators.

ISADORE ROSENFIELD
Architect-Hospital Consultant

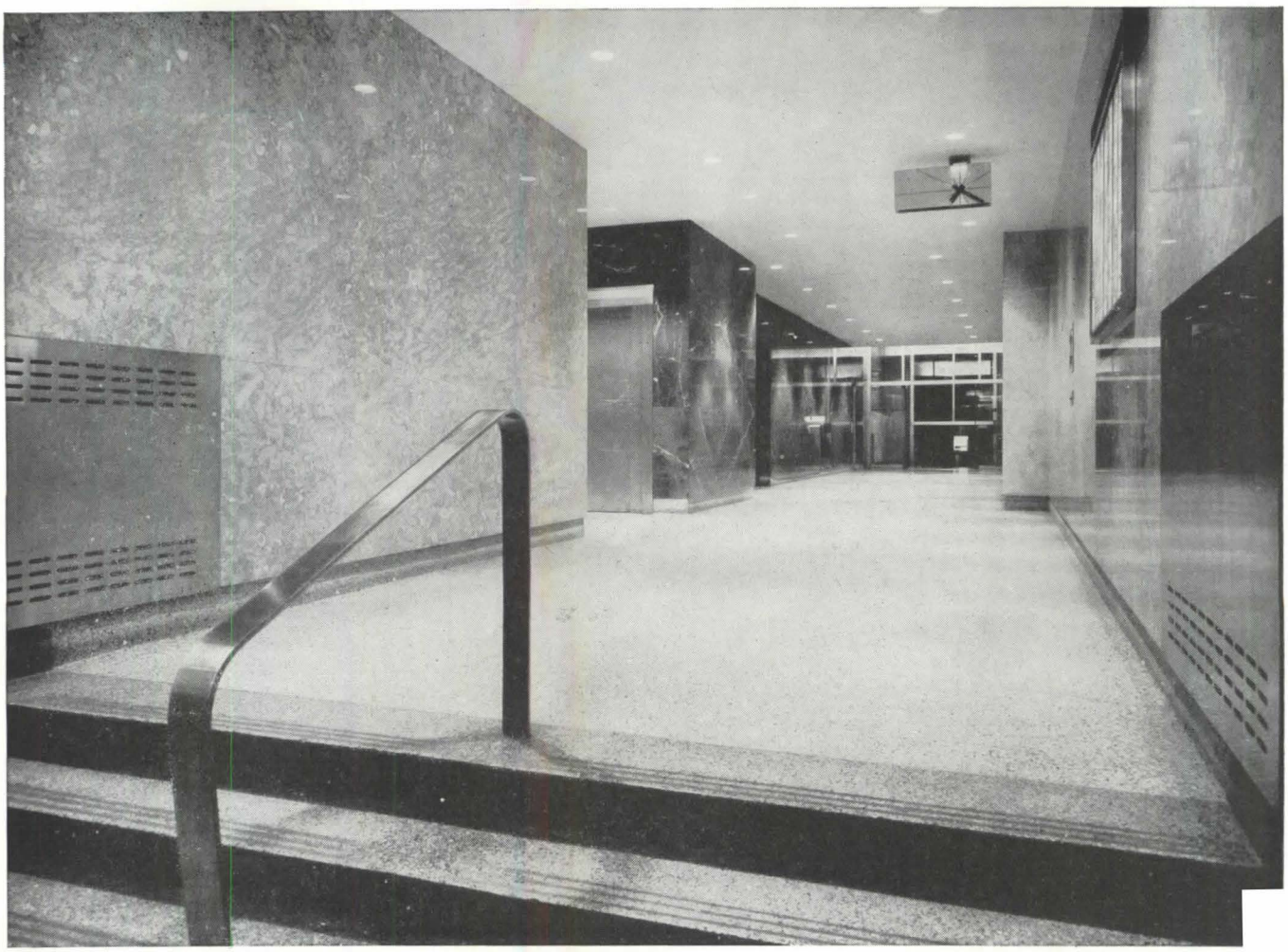
good design—for profits

Motels, Hotels, Restaurants and Bars. *Architectural Record* Staff. *Architectural Record, F. W. Dodge Corp., 119 W. 40 St., New York 18, N. Y., 1953. 216 pp. illus., $6.95*

An organization or individual contemplating the construction of, or the remodeling of a motel, hotel, bar, or restaurant, as well as any architect or interior designer entrusted with such an undertaking, would do well to examine this volume.

Although the text and the illustrations have been published over a period of years in *Architectural Record*, in making this book available for the general public and members of the design profession, the editors hope it will achieve these objectives: "First, that owners of motels, hotels, restaurants, and bars who read these pages will be persuaded that a high level of design pays. Second, that prospective investors in such projects will realize the (business) wisdom of engaging professional architectural talent early in the game and, finally, that architects will find this book a handy guide to contemporary examples of considerable merit." Those aims are eminently fulfilled.

(Continued on page 212)



92 Liberty Street, N.Y.C. *Arnold A. Arbeit, A.I.A., Architect*

marble gave this owner a $60,000 bonus!

Have you ever heard of getting $100,000 worth of remodeling for $40,000? Owner Aaron Levin says this was accomplished in his 21 story, 92 Liberty Street, New York, office building — *and he did it through the use of Marble**.

Here's what he says: "The competition of new construction was getting tough for our 50 year old building, so I decided to meet the competition on its own level. Our architect, Arnold A. Arbeit, A.I.A. used the most beautiful materials he could find, yet gave us one of the soundest investments we've ever made. Marble made the difference — and a whopping big difference it was." Here is the cost breakdown:

Demolition	$ 700	Doors	$ 1,200
Misc. metal	1,000	MARBLE	17,500
Terrazzo	1,750	Clock	500
Electric	2,100	Mailbox	750
Radiators	100	Stainless steel	4,000
Directory & misc.	4,000	Architect's fee	3,600
Lath & plaster	3,000	**Total**	**$40,200**

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* *As told in the Magazine of Building, Nov., 1953, Page 118*

MARBLE MIA INSTITUTE OF AMERICA, INC.

108 FORSTER AVENUE, MOUNT VERNON, NEW YORK

reviews

(Continued from page 210)

Each of the case studies is profusely illustrated with interior and exterior photographs and many detailed floor plans and structural diagrams. Thus, anyone interested in this particular type of building will find the book a worth-while source of sound and useful ideas, depicting the talents—to say nothing of the services—of the country's leading architects and designers. There is the most comprehensive sort of coverage, ranging, for example, from a small snack bar at La Guardia Airport, New York, to the enormous Statler Center in Los Angeles, with its multiple facilities for the public.

It hardly needs to be said that only architects and interior designers have the expert training, the technical background, and the artistic imagination required to make such public buildings satisfying to both the management and the clientele that frequents them. And it is likewise axiomatic that for a business structure efficient, well-planned design in the best of taste will pay off in increased profits. One need only analyze the more than 500 illustrations to see, graphically, how the relationship between good design and good business can be achieved. On this point alone, if for no other reason, the book is especially valuable. There is an ever-increasing volume of travel and also an increasing volume of building, but at present the need for the kind of buildings under discussion here, to accommodate the public, is far from adequately met. This volume pleads the case for competent design in a telling manner.

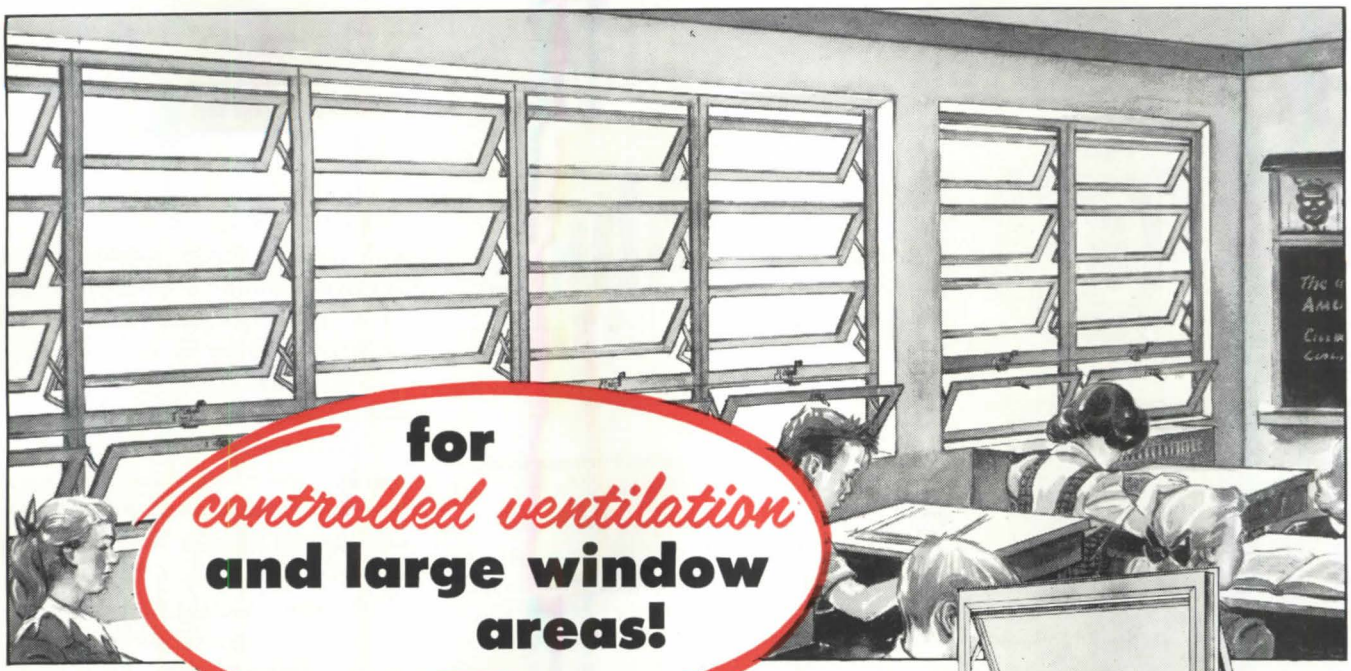
FRANK A. WRENSCH

book as teacher

Oil Painting. Methods and Demonstrations. *Henry Gasser. Reinhold Publishing Corp., 330 W. 42 St., New York 36, N.Y., 1953. 128 pp., illus., $10*

Gasser's book on oil painting represents, in my opinion, an outstanding value as an aid and guide to the art student or amateur painter who is striving to solve a complex problem of landscape painting outdoors, as well as in the studio.

(Continued on page 214)



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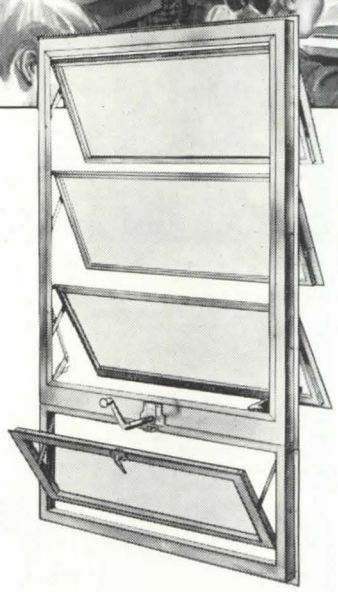

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reviews

(Continued from page 212)

Many artists and art teachers object to the student's attempt at learning how to paint from books as a substitute for the person-to-person exchange and give-and-take between the teacher and the student. Even though I generally profess this opinion, I feel this book, as a guide, comes particularly close to representing such a substitute, in the best sense. It serves as a thoroughly well-planned, highly organized course on painting the landscape in oils.

The amazing accumulation of technical advice and the invaluable shortcuts or tricks all incorporate the crystallization of a long period of sincere searching and struggle by a highly specialized artist and teacher. I feel not only the students, but art teachers, too, will welcome Gasser's abundant advice and his generous passing on of "studio secrets" and personal painting experiences.

Especially interesting, I think, is the chapter on "Working Methods from Field Notes." The advice given in this chapter will be of considerable value to the student and amateur painter, as well, who so often become bewildered and finally completely discouraged, when facing the multiple problems of painting outdoors. Gasser's "voice of experience" is heard after many years of painting outdoors, when he often composed the same motive over and over again, rearranging the various compositions as for spring, summer, fall, and winter in the changing light of morning, noon, dusk, and eve.

His advice, coupled with ingeniously chosen illustrations, demonstrates all the different steps used in solving the problem technically. This will instruct the student how to equip and prepare himself in order to cope with and capture the ever-changing moods of his model, Mother Nature, herself. While I feel that his chapter on color and light could have been handled in a more basic and also more scientific way, especially as this book should be of such an immense help to the beginner, I admire the thoroughly practical down-to-earth approach to color in outdoor painting. In addition to all this

(Continued on page 216)

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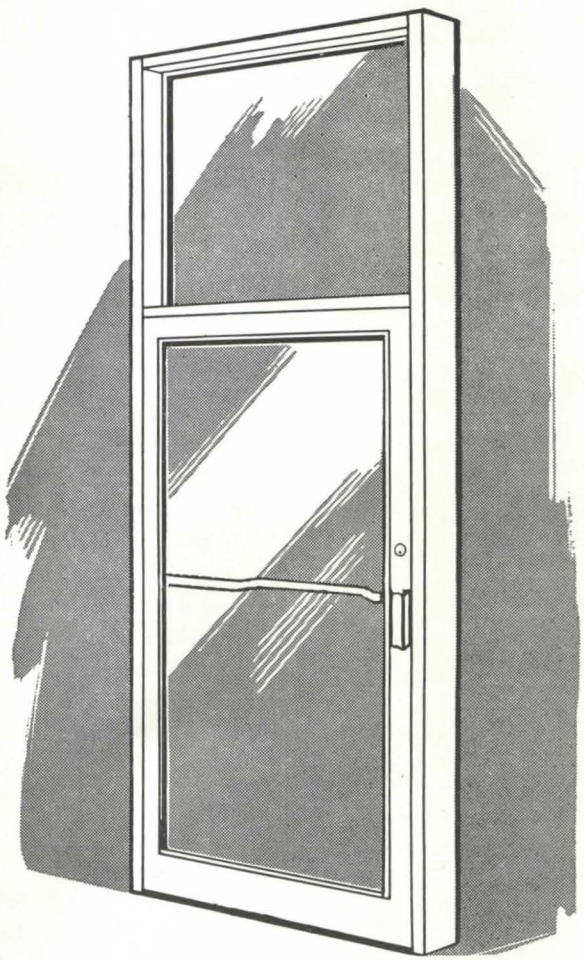

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reviews

(Continued from page 214)

there is last, but by no means least, an amazing wealth of experience, covering the technical possibilities of the ever so many roads that lead to ROME.

Gasser has used an inspired and at the same time direct approach to the basic technical developments of an oil painting, from sketch to finish. The large collection of demonstration plates reproduced in color and black-and-white will be of real value to students. I fully agree with his remarks in the introduction to this book: "Actual demonstrations are the most direct way to clarify the manifold confusions in a student's mind concerning that complex medium, oil painting, whose possibilities — once you know its basic laws — are almost unlimited."

HEIDI LENSSEN

attractive and instructive

What is Modern Interior Design? *Edgar Kaufmann, Jr. The Modern Museum of Art, New York. Available from Simon & Schuster, 630 Fifth Ave., New York, N.Y., 1953. 32 pp., illus., $1.25*

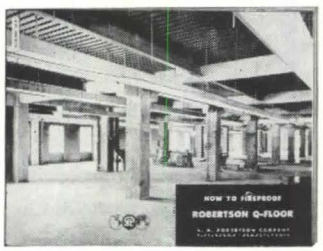
Intended as a companion and a supplement to the author's booklet issued earlier by The Museum of Modern Art, *What is Modern Design?* this work emanates from a small exhibition held at the Museum seven years ago, an exhibition of modern rooms of the last 50 years. The author's aim is twofold: to show the art of arranging furniture and decorative accessories for agreeable and civilized living, as this art developed in the first century of modern design (1850 to 1950) and to point out from this period a few dominant traits which are markedly evident in the good interiors of today.

As director of the Museum's *Good Design* exhibition of home furnishings, Edgar Kaufmann, Jr., is well versed in his field. In his earlier publication, he stated that "modern interior design is planning and making rooms suited to our way of life, our abilities, our ideals. It began a century ago when creative, per-

(Continued on page 218)

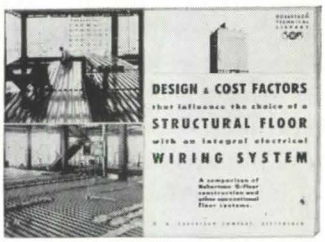
Write for these technical data books from H. H. Robertson's Q-Floor library

How to fireproof Robertson Q-Floor and Structural Steel



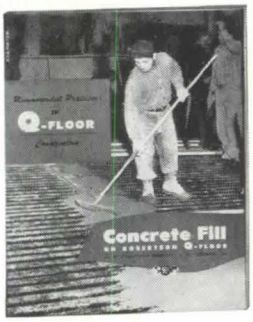
This booklet is an exposition of fireproofing methods employed when Q-Floor is used in conjunction with structural steel framing in a multi-story building and must meet local building code requirements. It covers most problems likely to be encountered by the designer and contains charts of typical code requirements, fire resistance ratings, and framing and ceiling details, both basic and with all combinations of extras.

Design and cost factors



With the use of this book you will find you can readily compute the cost of all types of structural floors with integral electrical wiring systems and compare them with Q-Floor. The study is based upon a typical multi-story building and is replete with charts and cost studies of all components to enable you to accurately estimate for your own vicinity. A critical analysis of this nature should be included in every architectural and engineering library.

Concrete fill on Robertson Q-Floor



This is the first of a series of booklets giving recommended practices for sub-contractors working on Robertson Q-Floor jobs. It contains detailed specifications for formulation, placement and curing of the fill, together with well-documented treatises on the nature and reactions of concrete. You will find a section on shrinkage cracking and how to control it, well illustrated with authoritative graphs and charts.

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PR

reviews

(Continued from page 216)

ceptive people reacted to vast problems posed by technological change, especially mass production." Kaufmann realizes that in the steady development since the "movement" started, modern interior design has assumed a variety of outward forms. In this present and particularly rewarding analysis of it, he describes four dominant characteristics found in present-day interiors—comfort, quality, lightness, and harmony. The rooms he has chosen—most of them by the leading interior designers of the time—are typical and revealing. Each emphasizes each special trait in a highly informative manner. Quite understandably, most of the examples selected show living rooms, since that is the key interior in any home and the principles of design applied there are reflected in the other rooms.

Although this concise study is intended to deepen one's appreciation of modern interior design, rather than to instruct one in the practice of it, Kaufmann's selection of photographs, the authoritativeness of his viewpoints and observations, as well as the fine descriptive captions, cannot fail to be highly instructive for anyone engaged in interior design.

There are brief but telling chapters showing how the industrial revolution and the continuing interest in nature are influencing the development of modern design; while a portion of the booklet is devoted to regional expressions in the United States, where the dominant traits of comfort, quality, lightness, and harmony are again noted in different climates and environments. For those who wish to investigate more thoroughly and from other viewpoints the problems and tendencies of modern design raised here, Kaufmann has provided a well-rounded reading list. FRANK A. WRENSCH

biography in brief

Sir Christopher Wren. *John Summerson. The Macmillan Company, 60 Fifth Ave., New York 11, N. Y., 1953.* Brief Lives *Series. 160 pp., illus., $1.75*

Ninth in Macmillan's series of *Brief Lives*

of famous men and women who have in some way contributed to the growth of Western Civilization, this little biographical study of Wren and his architecture is exactly what it purports to be—brief. One would expect a condensed biography of a man like Wren, about whom so much has been written, discussed, researched, and known, to be at least lively, since it cannot be comprehensive. Unfortunately, this book fails to take advantage of its necessary foreshortening and falls exceedingly flat. Just to recount the historically documented facts and probabilities of Wren's career is hardly an excuse for another book, even at this low price. Its only justification, then, results from its position in the *Brief Lives* series; hence, it is of little value to architects, who should already know as much about Wren as this book reveals. J.K.

valuable "refresher"

Simplified Problems in Strength of Materials and Structural Design. *Ephraim Viertels. Edward W. Sweetman, One Broadway, New York, N. Y., 1953. 636 pp., illus., $10*

This book by Viertels is intended to provide a comprehensive review and a refresher for elementary structural design, strength of materials, and mechanics. It is not a text but could well be used for self-study. It is a problem book which is arranged in question and answer form. Each chapter is followed by numerous test questions with their answers. Most of the subjects required for the structural parts of the State Board Examinations in Architecture and Engineering are covered.

Unfortunately, the phraseology is awkward at some points in the book and many of the problems could have been simplified by use of foot-kip instead of inch-pound units. The design of structural steel members is not based on the latest AISC specifications. A number of tables are provided in an appendix, but most users will prefer to use tables provided in the more standard handbooks.

(Continued on page 220)

reviews

(Continued from page 219)

The book is logically arranged and quite well indexed. It will have definite value to one studying for his professional examinations and for those needing simple and explicit problems to aid in clarifying the theory found in other texts.

DONALD G. RADWAY

notices

free to architects

The new quarterly, *Protestant Church Administration and Equipment*, published by The Pulpit Digest Publishing Company, 159 Northern Blvd., Great Neck, N. Y., will be sent free to architects and contractors who request it. Edited by John R. Scotford, pastor, author, and editor, the quarterly will deal with the rebuilding, renovation, and maintenance of church properties—reporting improvements noted as well as the reaction of congregations to the changes made.

exhibition

THIRD ANNUAL BOSTON ARCHITECTURAL CENTER EXHIBITION—April 22-30. HUGH STUBBINS and CARL KOCH, Architecture and Design. Sponsored by the Atelier of the Boston Architectural Center.

honors, awards

JUNE WOOD WICKER, Architect, Georgia Chapter, AIA has been named "American Businesswoman of the Year" by the American Business Women's Association.

Top honor award in TEXAS ARCHITECTURE —1953 went to MILTON A. RYAN of San Antonio for his design of the First Christ Church of Christ Scientist at Victoria. Annual statewide competition was held by Dallas Chapter of AIA.

Hugh Ferriss, President, New York Chapter, AIA, announces award of the 1954 ARNOLD W. BRUNNER SCHOLARSHIP in the amount of $2400 to RALPH E. MYERS, AIA, Kansas City, Mo. Myers will edit a series of 30 minute lectures in the form of colored slides with tape-recorded com-

(Continued on page 222)

Katherine and Tom Creighton's New Book Builds Good Will for Architects

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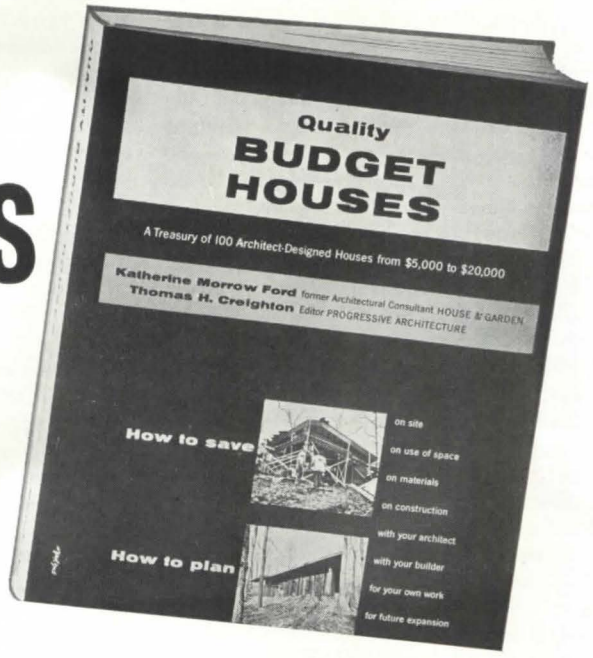

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by KATHERINE MORROW FORD, *Architectural Consultant*, and THOMAS H. CREIGHTON, Editor, *Progressive Architecture*

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— buy quality within his budget
— save by building with others

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P.S.

I remember that when I wrote my first book, back in the days before writing was a career for me, the bright young editor who was assigned to my opus by the publisher said to me one day, "We could really sell this book a lot better if you'd only invent some word for the architecture of the future—you know, some catchy slogan that we could pin a sales campaign on." I wasn't very imaginative in those days, and I didn't invent the word, and the book didn't sell too well. I've been reading some of the current crop of architectural literature, and I realize how shortsighted I was; the young editor was absolutely right.

I've been giving this a lot of serious thought, because goodness knows I don't want to lose out in this race for critical authority just because I have a weak vocabulary.

In the first place, it's obviously time to drop the outworn Modernist v. Traditionalist division. There are categories within each group that are hard to place, and there are overlaps which are confusing. Then I think that the Romanticist v. Functionalist alignment has served its time. It never did mean much and, anyway, it was too easy to understand to justify writing a book about. I have already spoken my piece about the subdividing of design which places one half in the American Way of Life category, and the other half in the Internationalist Bauhaus camp.

Bob Kennedy is more on the track in his book, *The House* (a Reinhold publication, of course). He lists The Traditionalists, The Internationalists, The Empiricists, and then goes on to predict The Directivists. He even has charts and diagrams subdividing these categories into Left Wing Futurists and Right Wing Archaicists. This is more what my young editor friend and mentor had in mind—a good, snappy slogan that we can roll around and toss off at cocktail parties to indicate that we not only know what's coming, but have a word of our own for it. I think Bob's brave attempt is weak in several respects, though. In the first place he continues to use the old shopworn term Traditionalist. Then he falls into the chauvinistic error of recognizing something indefinable called Internationalism. And finally he borrows from our English colleagues on *The Architectural Review* their own proprietary catchwords, The New Empiricism. Only the final projection—Directivism ("a new resolution of Style, Environment, Tradition, and of Form, Function, and Expression in an esthetically directed manner"); really, you couldn't ask for one word to mean more than that, could you?—is his own addition to the thesaurus of architecture.

Well, then, what is a way of classifying all architectural design that is really clear and logical, but that sounds complicated and esoteric? I think I have an answer. Here is Creighton's Classification of Culture, subdivision Architecture. All architecture, past, present, and future, falls into one of the following Style Classifications:

Predeterminism is that branch of architecture in which the result is established from accepted forms before the program is even defined. It is not to be confused with Traditionalism or Electicism (outdated terms!) because many Modern, International, and Contemporary buildings are Predeterminist. The Predeterminism may be established because of an architect's known biases—in which case the client goes to him because of them—or by the client's dogged determination to have a building that looks exactly like the one he has pictured all along in his mind's eye.

If we wanted to, we could subcategorize Predeterminist buildings. There might be a distinction between, say, *Precessive* structures (an *idea* which causes the Predeterminism) and *Sequential* structures (Predeterminism through past association). Now we're really getting hot; let's go on.

Indeterminism is the category of architecture including buildings which result from (a) a firm resolve on the architect's part to "give the client what he wants," and (b) a complete lack of interest on the part of the client as to what he gets. Here would go a New England house in Colorado, designed that way because *House & Garden* happened to publish such a one as the time for detailing approached, as well as a strip-window office building on Park Avenue which came out the way it did because, *at that moment* a strip-windowed building on Fifth Avenue was receiving publicity. Thus the subcategories are obvious — *Introversion* (Indeterminism because of a desire to conform and be anonymous) and *Extroversion* (Indeterminism because of a desire to conform and receive adulation).

Determinism, the third category, is closely akin to previous listings under Functionalism and Constructivism. It is the architectural result of a firm belief that there is only one answer to any given design problem. Determinism can result only from a firm interlocking of architect and client, both with the same Predeterministic philosophy, or from the action of a strong-minded architect (a fountainhead) with a client who is merely the source of funds (a figurehead). Subcategories here could be endless, but I suggest for consideration just two: *Planometric Determinism* (the function of creatures operating in two dimensions is the Determinant); and *Isometric Determinism* (the function of isolated structure, in three, four, or even five dimensions is the Determinant).

Postdeterminism, our last, forward-looking category, is obviously (if it isn't all obvious by now, I'm sorry I ever started the discussion) that group of buildings where a form is derived through playing with toothpicks (how that industry must have picked up!) and a pot of glue, of bending pieces of paper into various folds to see what they will support, of doodles, abstract calculations, and dreams jotted down on the moment of awakening. The form, which is then given a name (a variant of space-frame or stressed-skin usually) is applied to an existing program, rationalized through a series of lectures at one of the leading architectural schools, and published—either as a small brochure (the sloppy way) or as an expanded History of Architecture as Plasmic Form (the scholarly way). Subcategories? Let's at this point, go no further than defining *Aberrant Postdeterminism* (until the last piece is in place no one *really* knows what the form is going to be) and *Cataleptic Postdeterminism* (a sort of muscular rigidity in the form, apparent from the first).

•

I think it would not be too difficult to reclassify all structures in these new categories. It seems obvious that no previous documentation is correct—I can think of so-called Romantic buildings that were really Predeterminist in concept, and some that were Postdeterminist. Some things that have been considered Determinist, as a functional expression, seem on re-examination, to belong in the Indeterminist camp (purely accidental). And so on. I offer this analysis, free of charge, to the new BRAB committee exploring Documentation.

Thomas H. Creighton