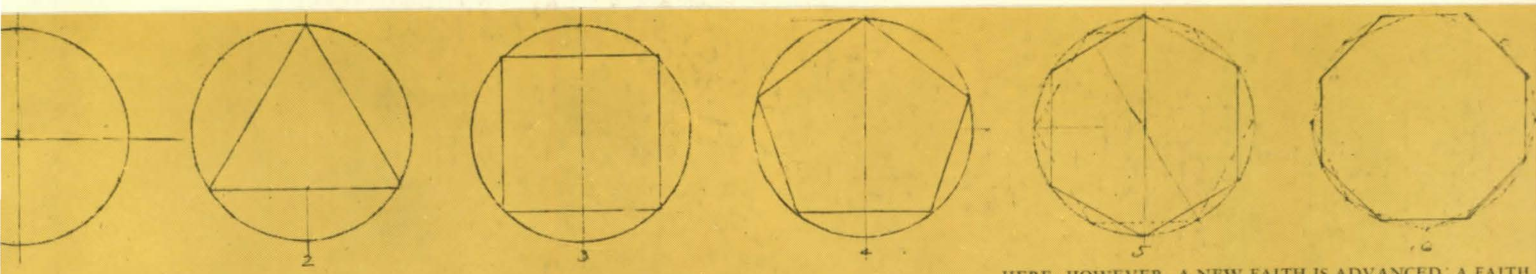
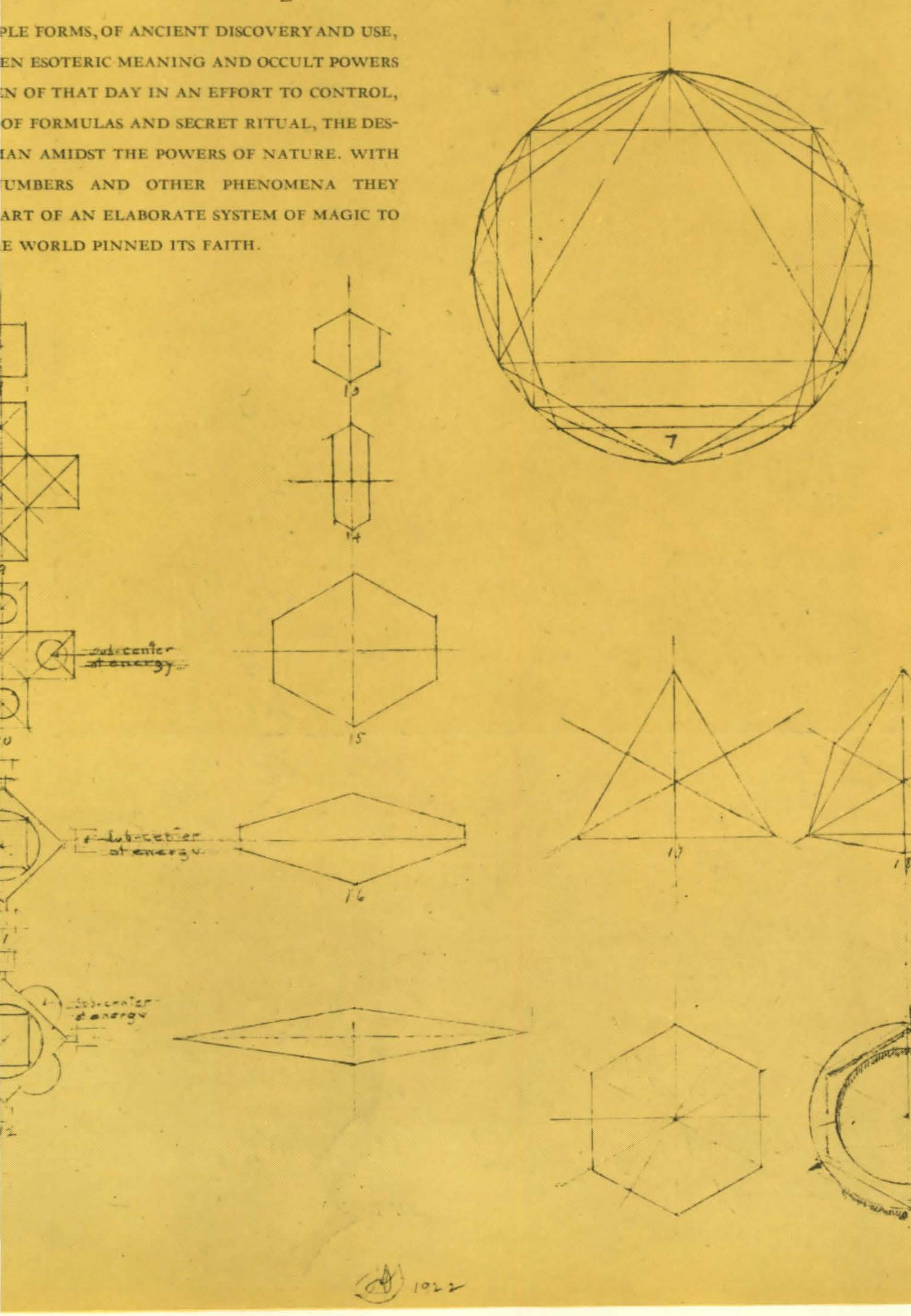
# PROGRESSIVE ARCHITECTURE

11 november 1956

world's largest architectural circulation

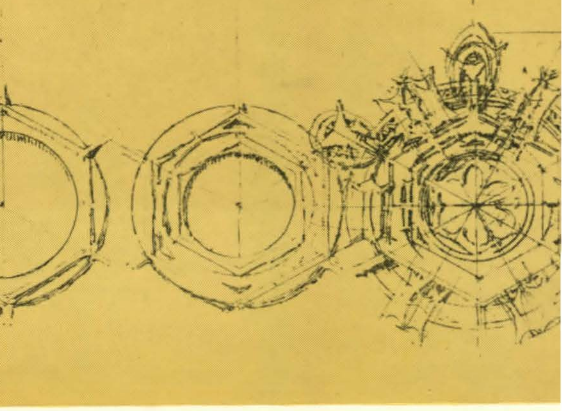



PLE FORMS, OF ANCIENT DISCOVERY AND USE,
EN ESOTERIC MEANING AND OCCULT POWERS
N OF THAT DAY IN AN EFFORT TO CONTROL,
OF FORMULAS AND SECRET RITUAL, THE DES-
IAN AMIDST THE POWERS OF NATURE. WITH
UMBERS AND OTHER PHENOMENA THEY
ART OF AN ELABORATE SYSTEM OF MAGIC TO
E WORLD PINNED ITS FAITH.



HERE, HOWEVER, A NEW FAITH IS ADVANCED: A FAITH IN MAN: AN UNWAVERING FAITH THAT MAN, WITH HIS NATURAL POWERS, DEVELOPED AND FREE, MAY AND SHALL CONTROL HIS DESTINY THROUGH THE FINER MAGIC OF HIS ENLARGED VISION, AND OF HIS WILL TO ATTAIN. MASTER OF THE INORGANIC AND THE ORGANIC, HE WILL, WHEN HE HAS FOUND HIMSELF, BECOME MASTER OF HIMSELF. (SEE THE PRELUDE TO THIS WORK.) TECHNICALLY, AS AN ITEM IN THE PROGRESS OF OUR DEMONSTRATION, THE ABOVE FORMS, RIGID IN THEIR QUALITY, ARE TO BE CONSIDERED IN OUR PHILOSOPHY AS CONTAINERS OF RADIAL ENERGY, EXTENSIVE AND INTENSIVE; THAT IS TO SAY: EXTENSION OF FORM ALONG LINES OR AXES RADIATING FROM THE CENTER AND (OR) INTENTION OF FORM ALONG THE SAME OR OTHER RADIALS FROM THE PERIPHERY TOWARD THE CENTER. HERE THEN APPEARS THE WILL OF MAN TO CAUSE THE INORGANIC AND RIGID TO BECOME FLUENT THROUGH HIS POWERS.

NOTE ALSO THAT WE ASSUME ENERGY TO BE RESIDENT IN THE PERIPHERY AND THAT ALL LINES ARE ENERGY LINES. THIS MAY BE CALLED PLASTIC GEOMETRY.



# PROGRESSIVE ARCHITECTURE

| | | |
|---|---|---|
| | cover | **A System of Ornament** (page) by Louis Henri Sullivan |




**Editorial Staff**

**Thomas H. Creighton** Editor
**Charles Magruder** Managing Editor
**George A. Sanderson** Feature Editor
**Burton H. Holmes** Technical Editor
**Ilse Meissner Reese** Associate Feature Editor
**Anne Fallucchi** Production Editor
**Valerie Butta** Assistant Feature Editor
**Rosalind Cohen** Assistant Technical Editor
**Hy Kurzner**
**Margaret Squire**
**Rose Weiss**
Assistant Editors
**Stamo Papadaki** Art Director
**Elmer A. Bennett** Drafting
**Louise Sloane** Interior Design Consultant

**Executive & Business Staff**

**Brad Wilkin** Vice-President & Publisher
**David B. Hagenbuch** Advertising Sales Manager
**Frank J. Armeit** Production Manager
**Joseph M. Scanlon** Assistant Production Manager
**John N. Carlin** Circulation Manager
**James T. Burns, Jr.** Research & Promotion Manager

Published monthly by REINHOLD PUBLISHING CORPORATION, 430 Park Avenue, New York 22, N. Y. Second-class mail privilege authorized at New York, N. Y. Additional entry at Brooklyn, New York. Professional subscription — $5. (For full data, see page 13) Volume XXXVII, No. 11

# It's the Law *by Bernard Tomson*

**P/A Office Practice *article concluding a discussion of the revision and up-dating of the Standard AIA Contract Forms, begun in September 1956 P/A.***

In discussing the proposed revisions of the AIA Office Practice Committee, to the form contract between Owner and Architect, this column has emphasized the difficulties in the use of form contracts between Client and Architect. Each such contract is too important to be relegated to a "fitted in" form. If Architects insist on using forms, these should be better rather than poorer ones. In that way, the financial loss that unquestionably follows the use of a "form" will be reduced.

There are certain provisions which are more nearly applicable to all types of contracts between Owner and Architect. On the other hand, the compensation of the Architect, the Architect's services, and the project are the chief variable factors in such contracts. The most desirable type of form would be one that aided in the standardizing of provisions which are advantageous to the Architect, but that permitted flexibility in respect to individual situations and problems.

One such form could be made up of two parts. One part would consist of a series of first sheets, each setting forth a different method of compensation, such as percentage of cost, cost-plus, fixed-fee, fixed-fee plus percentage, fixed-fee plus cost, etc. This part of the form would contain a page entitled, "The Project and the Architect's Professional Services," which would be blank. On this page a description of the project and of the services to be performed by the Architect would have to be expressly set forth for each separate contract. The second part of such form would consist of a set of General Conditions applicable to any type of Owner-Architect Agreement and would be attached to the applicable first sheet.

An example of Sheet One of the form for use where the architect's compensation is based on the percentage of cost follows:

*(It should be noted that this form is written to avoid the implication that the contract is severable and can be terminated by the Owner at the end of any particular stage.)*

THIS AGREEMENT made the .... day of .........., 19...., by and between ........................, hereinafter called the Owner, and ................................, hereinafter called the Architect.

The Owner hereby engages the Architect to perform all such professional services as are hereinafter provided and the Architect agrees to perform said services.

**Method of Payment**

The Owner agrees to pay the Architect his compensation in the following manner:

(a) A retainer fee of $......... shall be due and payable upon the signing of this Agreement and shall constitute the minimum fee payable hereunder. The said sum shall be retained by the Architect and shall be applied on account of the final payment for the Architect's fees.

(b) The Owner shall pay the Architect ..........% of the cost of the Project.

25% of the fee shall be paid during the preliminary stage and shall be billed and payable monthly in proportion to the amount of services completed therefor.

An additional 55% of the fee shall be paid during the general working drawings and specifications stage and shall be billed and payable monthly in proportion to the amount of services completed therefor.

An additional 20% of the fee shall be paid during the supervision stage and shall be billed and payable monthly in proportion to the amount of services completed therefor.

(c) In addition to the foregoing, the Architect is to be reimbursed for his expenses, as hereinafter provided.

Another example of the Sheet One of the form for use where the Architect's compensation is based on cost plus is as follows:

THIS AGREEMENT made the .... day of .........., 19...., by and between ........................, hereinafter called the Owner, and ................................, hereinafter called the Architect.

The Owner hereby engages the Architect to perform all such professional services as are hereinafter provided and the Architect agrees to perform said services.

The Owner agrees to pay the Architect the following compensation for his services:

(a) A retainer fee of $........ shall be due and payable upon the signing of this Agreement and shall constitute the minimum fee payable hereunder. The said sum shall be retained by the Architect and shall be applied on account of the final payments for the Architect's fees.

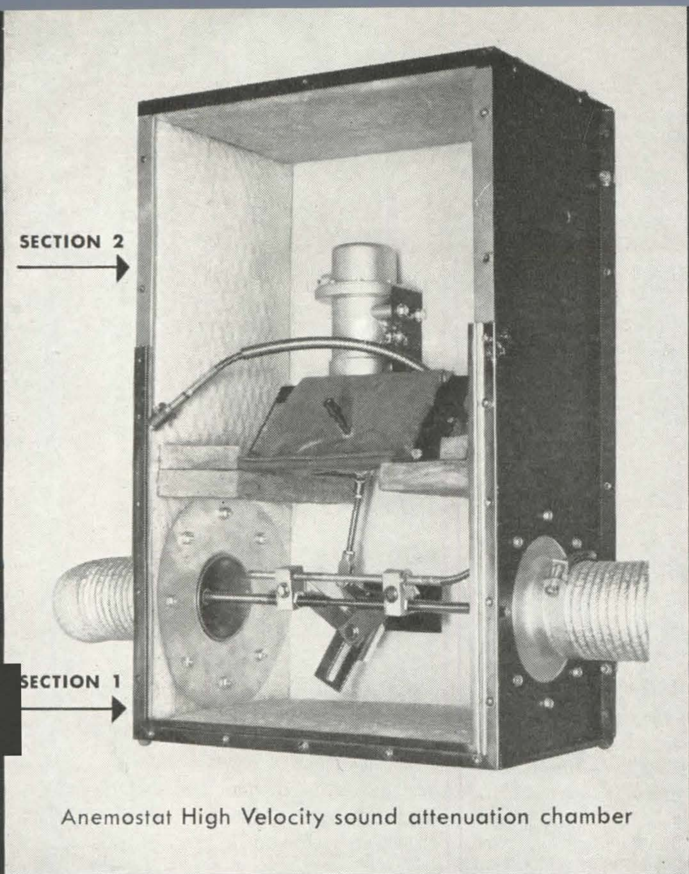
(b) The Owner shall reimburse the Architect for the cost of technical employes' salaries employed on the Project and said cost shall be billed and payable monthly.

(c) The Owner is to pay the Architect an additional sum equal to 200% of Paragraph (b) above for overhead and fee. Said sum shall be billed and payable monthy.

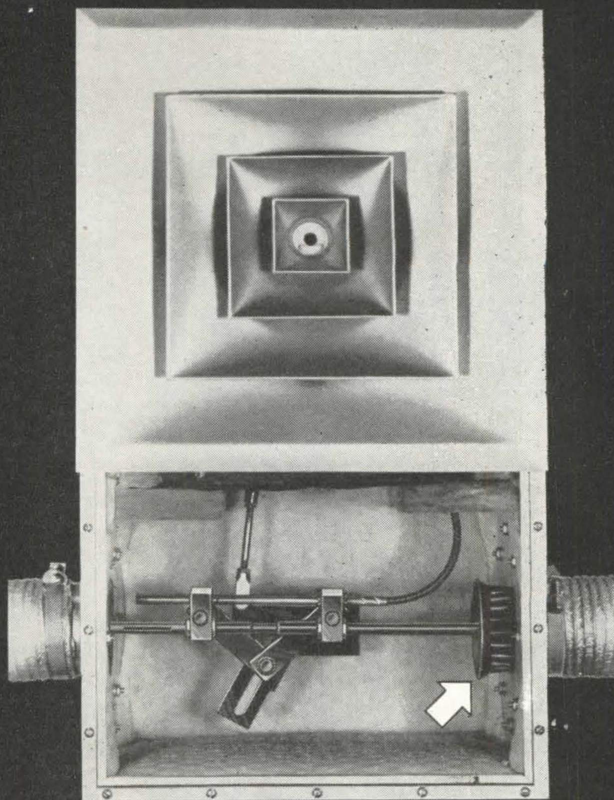
(d) In addition to the foregoing, the Architect is to be reimbursed for his expenses, as hereinafter provided.

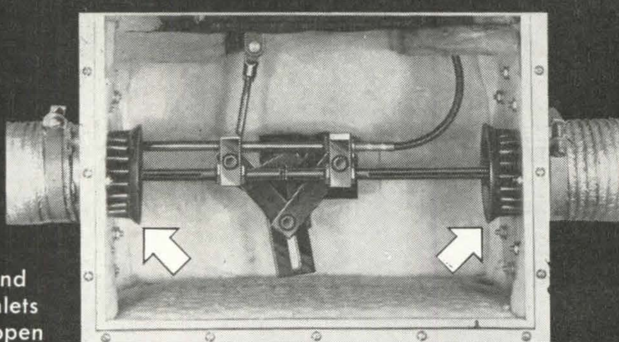
Another example, applicable where the architect's compensation is based on cost plus for preliminaries and percentage of cost for the balance of services, is as follows:

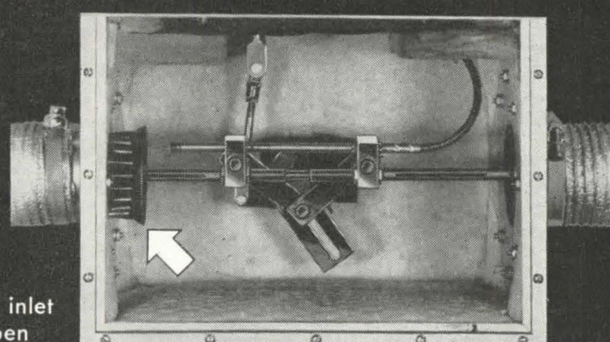
THIS AGREEMENT made the .... day of .........., 19...., by and between ........................, hereinafter called the Owner, and ................................, hereinafter called the Architect.



Anemostat High Velocity sound attenuation chamber


Hot inlet open in Section 1. Anemostat in place covers Section 2


Hot and cold inlets 50% open


Cold inlet open

# How to mix and diffuse high velocity air automatically

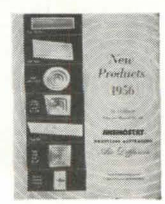
The Anemostat High Velocity sound attenuation chamber is divided into two sections. Both hot and cold air from the main risers enter Section 1, which is an acoustically lined blending chamber, in which the volumes of air are controlled by the Anemostat serrated rocket-socket valves. When the thermostat is set, the rocket-socket valves move slowly back and forth, thereby adjusting the volume of air supplied through the hot and cold inlets. The velocity of the air which enters Section 1, at from 3500 to 6000 fpm, is automatically reduced by expansion.

As the blended air meets the temperature requirements of the thermostat, it passes through a baffle arrangement into the acoustically lined Section 2 of the chamber, further reducing the db rating of the air.

The air then passes through the Anemostat Air Diffusers, where the aspiration effect causes mixing of room and supply air within the diffuser, resulting in further temperature equalization. The diffuser then delivers to the occupants of the room draft-free air at the desired temperature.

The Anemostat All-Air High Velocity distribution system offers other important advantages. It can be used with smaller than conventional ducts. It can be installed faster and at less cost. It requires no coils, thus eliminates leakage, clogging and odors. Furthermore, Anemostat round, square and straightline diffusers with high velocity units blend into a wide variety of architectural designs.

*Write for 1956 New Products Bulletin and Selection Manual 50 to Anemostat Corporation of America, 10 E. 39 Street, New York 16, N. Y.*




*Anemostat: The Pioneer of All-Air High Velocity Systems*

*It's the Law*

It is agreed between the parties as follows:

The Owner hereby engages the Architect to perform professional services, as hereinafter provided, and the Architect agrees to perform said services.

**Method of Payment**

The Owner agrees to pay the Architect the following compensation for his services:

(a) A retainer fee of $........ shall be due and payable upon the signing of this Agreement and shall constitute the minimum fee payable hereunder. The said sum shall be retained by the Architect and shall be applied on account of the final payment for the Architect's fees.

(b) During the preliminary stage of the Architect's services, the Owner shall pay the Architect as follows:

(1) The Owner shall reimburse the Architect for the cost of technical employes' salaries employed on the Project and said cost shall be billed and payable monthly.

(2) The Owner is to pay the Architect an additional sum equal to 200% of sub-paragraph (1) of this Paragraph (b) above for overhead and fee, and said cost shall be billed and payable monthly.

(c) During the balance of the services called for under "The Project and Services of the Architect," the Owner shall pay the Architect .....% of the cost of the Project. Said fee shall be billed and payable monthly in proportion to the amount of services completed therefor. .....% of this fee shall be paid during the supervision stage.

(d) In addition to the foregoing, the Architect is to be reimbursed for his expenses as hereinafter provided.

Another example of Sheet One of the form for use where the architect's compensation is based upon a fixed fee is as follows:

THIS AGREEMENT made the .... day of .........., 19...., by and between ........................., hereinafter called the Owner, and ................................, hereinafter called the Architect.

The Owner hereby engages the Architect to perform all such professional services as are hereinafter provided and the Architect agrees to perform said services.

The Owner agrees to pay the Architect as compensation for professional services rendered, the sum of $.........., to be paid as follows:

$........ shall be paid upon the signing of this contract and shall constitute the minimum fee payable hereunder;

The balance of the fee shall be paid as follows: ................

In addition to the foregoing, the Architect is to be reimbursed for his expenses, as hereinafter provided.

A further example of a form for use where the architect's compensation is based upon a fixed fee for preliminaries, plus a percentage of cost for the balance of his services, is as follows:

THIS AGREEMENT made the .... day of .........., 19...., by and between ........................., hereinafter called the Owner, and ................................, hereinafter called the Architect.

The Owner hereby engages the Architect to perform all such professional services as are hereinafter provided and the Architect agrees to perform said services.

**Method of Payment**

The Owner agrees to pay the Architect his compensation in the following manner:

(a) A retainer fee of $........ shall be due and payable upon the signing of this Agreement and shall constitute the minimum fee payable hereunder. The said sum shall be retained by the Architect and shall be applied on account of the final payment for the Architect's fees.

(b) During the preliminary stage of the Architect's services, the Owner shall pay the Architect the sum of $........; said sum shall be billed and payable monthly in proportion to the amount of services completed therefor.

(c) During the balance of services called for under "The Project and the Architect's Professional Services," the Owner shall pay the Architect ........% of the cost of the Project. Said fee shall be billed and payable monthly in proportion to the amount of services completed therefor. ........% of this fee shall be paid during the supervision stage.

(d) In addition to the foregoing, the Architect is to be reimbursed for his expenses as hereinafter provided.

An example of a set of General Conditions which can be used in conjunction with a form that sets forth the method of compensation of the Architect, a description of the project, and the Architect's services, is as follows:

*(Where the AIA clause is to be used, the same is noted.)*

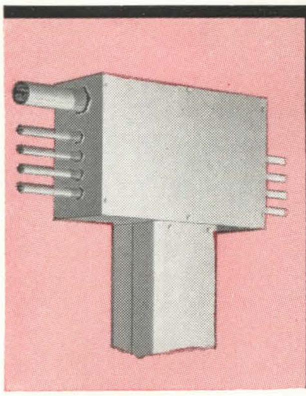
The Owner and Architect further agree as follows:

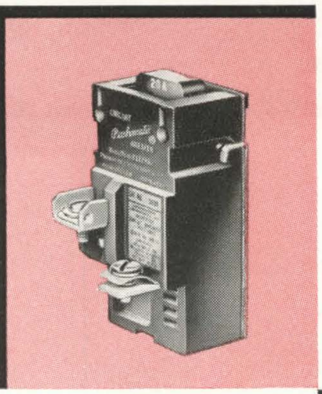
1. *Reimbursable Expenses* — The Owner shall reimburse the Architect for the following expenses:

(a) All out-of-pocket expenses for work on the project, including, but not by way of limitation, costs of blueprinting, reproducing drawings, printing or mimeographing of specifications, models, telegrams, long-distance telephone calls, expressage, and the costs of living and transportation incurred by the Architect or his employes while traveling in discharge of duties connected with the work.

(b) In addition to any other compensation, a per diem fee of $..... for each day, or part thereof, spent by a partner of the firm outside of the metropolitan area of....... ............., in connection with the Project shall be paid by the Owner to the Architect.

(c) The Architect shall maintain an efficient and accurate record as to all costs and expenses incurred by him in connection with the subject of this agreement and his accounts, at all reasonable times, shall be open to the inspection of the Owner or his authorized rep-





**PULLBOXES and WIREWAY EXTENSIONS** make a neat, speedy installation simple—*eliminate* unsightly naked conduit. DUO-GUARD PUSHMATICS protect circuits 2 ways: with thermal bi-metal and a magnetic solenoid. Just a push restores service.

## BULLDOG NARROW PANEL ELECTRI-CENTER

# Fits Pushmatic Circuit Protection in just 6¾″

## Space-saving "NP" gives up to 32 circuits double automatic protection!

Anywhere space is at a premium, BullDog's "NP" does a big job! This remarkably compact Electri-Center puts "dead" space to work protecting your circuits. So narrow that it fits *inside* a standard 8″ H-beam, the "NP" still provides all the convenience and 2-way protection that go with famous Duo-Guard Pushmatic Circuit Breakers®.

*The* "NP" can be surface-mounted on any non-structural wall where there's a space 6¾″ wide—in corners, behind doors, near the equipment it serves. Neat wireway extensions and pullboxes provide the practical way to conceal naked conduit and wires, and simplify installation. You get genuine economy, efficient circuit protection—save usable space.

Check all the advantages of a complete distribution system engineered by BullDog with your electrical contractor or BullDog field engineer, or write BullDog Electric Products Co., Detroit 32, Mich.



IF IT'S NEW . . . IF IT'S DIFFERENT . . . IF IT'S BETTER . . . IT'S **BULLDOG**

*ELECTRIC PRODUCTS COMPANY*

*A Division of I-T-E Circuit Breaker Company*

*Export Division:* 13 East 40th Street, New York 16, N.Y. • *In Canada:* BullDog Electric Products Co. (Canada) Ltd., 80 Clayson Road, Toronto 15, Ont.

## It's the Law

resentative. Reimbursable expenses shall be billed and paid monthly.

2. *Construction Contracts*—It is the Owner's intention to let the work under a single General Construction contract. If, however, the work is let under a General Construction contract, but a portion of said work is excluded therefrom and separately let, the compensation to be paid the Architect by the Owner, for that portion of the work so separately let, shall be increased in the amount of......% of the cost of construction. If there is no General Construction contract, the additional compensation of ........% of the cost of construction shall apply to the entire work.

3. *Legal and Accounting Service*—The Architect shall have no obligation to prepare contracts and forms of proposals, such preparation being the responsibility of the Owner. The Architect, however, shall furnish such information and shall attend such conferences as are necessary for the drafting of contracts and forms of proposals. Upon authorization by the Owner, the Architect shall secure legal services in connection with the Project and the Owner will pay the reasonable cost of such services.

The cost of any audit of the Contractor's books and records shall be paid by the Owner, and the Owner shall furnish appropriate personnel to conduct such audit.

4. *Consultants*—If the Owner authorizes or directs the Architect to retain consultants and/or engineers whose services are not elsewhere covered by this agreement, the Architect, in retaining such consultants and/or engineers, acts as agent for the Owner and the Owner shall reimburse the Architect for any sums advanced to such consultants or engineers. The Owner shall hold the Architect harmless against any claim by any such consultant or engineer for payment for his services or otherwise.

5. *Supervision of Project*—(AIA Form.)

6. *Preliminary Estimates*—If requested by the Owner, the Architect will furnish preliminary estimates as to the cost of the Project. However, such estimates are not to be construed in any way as a representation, warranty, or agreement on the part of the Architect of the accuracy of such estimate or that the Project can be constructed for the amount thereof. The Architect's compensation under this contract shall in no way be affected by the correctness of such estimates.

Where the Architect's fee is determined by a percentage of cost, his estimate of such cost is made for that purpose only and such estimate shall be conclusive in determining payments to the Architect until costs are finally ascertained upon completion of the Project, at which time an adjustment will be made based upon actual cost.

7. *Extra Services*—If the Architect furnishes extra or unanticipated services because of any changes or additions to the Project requested or authorized by the Owner, or because the scope or extent of the Project is changed, or because of any delay, default, or action of the Owner or of the Contractor, or as a result of fire or other casualty, or for any reason not the Architect's fault, then the Owner shall pay the Architect as compensation for such extra or unanticipated services: (a) the cost of technical employes' salaries employed on the Project and for the time expended by partners on the Project, plus (b) .......% of (a) for overhead and fee. Partner's time under (a) shall be calculated at the rate of $........ per hour.

8. *Abandonment and Suspension of the Project*—If the Owner abandons or suspends the Project, the Architect is to be compensated in proportion to the services performed under the contract. If such abandonment occurs prior to the completion of the preliminary stage of the Architect's services, the Owner shall pay to the Architect as his compensation, in addition to the minimum fee payable hereunder, (a) the Architects' cost of technical employes' salaries employed on the Project and for the time expended by partners on the Project, plus (b) ..........% of (a) for overhead and fee. Partner's time under (a) shall be calculated at the rate of $........ per hour. In the event of abandonment or suspension of the Project, the Architect is to be reimbursed by the Owner for all expenses incurred or for which he is committed, including the cost of mechanical and structural engineers and other engineers or consultants.

9. *Survey, Boring, and Tests*—(AIA Form.)

10. *Ownership of Documents*—All studies, sketches, drawings, plans, details, and specifications, being instruments of service, are and shall remain the property of the Architect whether the Project for which they are made be executed or not. Any publication of the Project shall be under the control of the Architect.

11. *Transfer of Interest*—(AIA Form.)

12. *Arbitration* — Any dispute arising between the parties to this Agreement, or involving the interpretation of the terms of this agreement, or any breach thereof, shall be submitted to and determined by arbitration before the American Arbitration Association in the City of New York, in accordance with the rules then obtaining of said association and the laws of the State of New York. All notices with respect to the demand for arbitration, the conduct of the arbitration and the enforcement of the arbitration award shall be deemed sufficient if served by registered mail addressed by one party to the other at the addresses heretofore set forth.

So much for forms! The pessimism I once felt about Architects not protecting their pocketbooks has yielded to a cautious optimism, as more and more I see Architects realizing that good practice of the profession carries with it the prior necessity of proper protection as to their compensation. An Architect with relative financial security in his contractual arrangement with his Client does better work. Architects should recognize this as a maxim.

# *Mechanical Engineering Critique* *by William J. McGuinness*

**P/A Office Practice *column on mechanical and electrical design and equipment, devoted this month to New Studies of Heat Losses and Heat Transmission Factors.***

The Minneapolis-Honeywell Regulator Company has completed an appraisal of the effects of all the common insulative measures on fuel bills in residences. This research is unique because it is comprehensive in three major interests; fuel-saving insulative methods, house types, and effects of climate in all parts of the United States. Dr. Finn J. Larsen, Honeywell Director of Research, has announced the results of a study conducted under the supervision of Dr. Preston McNall and Lorne W. Nelson. This kind of development is most valuable in providing complete national technical standards against which to measure the design of new houses.

### value of insulation

The country was divided into four zones representing, respectively, annual degree days of 1500, 4250, 6750, and 9000. Since they are integrations of time and temperature depression, degree days are a direct index of fuel consumption. The fuel-saving materials studied were: attic insulation 2-, 4-, and 6-in. thick; wall insulation 1-, 2-, and 4-in. thick; storm windows and doors; and weatherstripping on windows and doors. The three house-types considered—each containing 1200 sq ft—were: the common box-type of "Colonial" house; "Split-Level"; and "Ranch." Finally, the fuel costs and savings for each house type were corrected in the several zones, because fuel costs more where its use is less. This has a mitigating effect on the fuel savings that result from living in the south.

The researchers built a special mechanical analog to handle the obviously great number of variables already mentioned—as well as several others omitted here for simplicity. It can duplicate climatic conditions while variables inside the house are studied. The time scale of the device is 5 million to one. A 24-hour day goes by in 1/60 of a second.

Based on an average between the cost of natural gas and No. 2 oil, the cost of producing 1 million Btu in the cold zone was found to be $.92. In the warmest zone this cost was $1.32, because of the higher cost of fuel. The relative merits of heat-saving precautions can be seen by examining one case, a ranch house in the coldest zone. The hourly heat loss for this house, uninsulated, was 122,530 Btu/hr. Savings were:

| *Item* | *Thickness, in.* | *Btu/hr* |
|---|---|---|
| Attic insulation | 2 | 32,650 |
| | 4 | 38,200 |
| | 6 | 40,470 |
| Wall insulation | 1 | 13,630 |
| | 2 | 16,830 |
| | 4 | 18,800 |
| Storm windows | | 17,750 |
| Storm doors | | 3,900 |
| Weatherstrip windows | | 4,080 |
| Weatherstrip doors | | 3,250 |

*Maximum possible saving about 70 percent.*

In the coldest zone the investment for insulation in walls or ceiling may be paid back out of savings in about three years. Ten years are required to pay for weatherstripping and eight years for storm doors and windows. In the warmest zone it takes about five times as long to pay for each of these items.

A comparison in the hourly heat loss of the several house types in the 9000-degree day zone shows the rambling Ranch house to lose at a rate 30% faster than the Colonial. Rates, uninsulated houses, were:

| | |
|---|---|
| Colonial | 95,400 Btu/hr |
| Split Level | 105,960 |
| Ranch | 122,530 |

Yearly fuel bills in the same zone for uninsulated houses:

| | |
|---|---|
| Colonial | $261 |
| Split Level | 290 |
| Ranch | 336 |

These are the costs from which deductions may be made, as fuel-saving items are chosen.

The inclusion of a contemporary house would have increased the interest of this report to architects.

### thermal qualities of masonry

Research by another group gives new evidence that masonry may be more resistant to the transmission of heat than the theoretical heat transmission (U) factors would seem to indicate. This information was presented last September in a report, "Thermal Performance of Masonry Walls," at a conference sponsored by the Building Research Institute. Research for the report was directed by Clarence B. Monk of the Structural Clay Products Research Foundation. This is significant news because masonry remains a highly important building material, along with the newly developed lightweight surfacing materials.

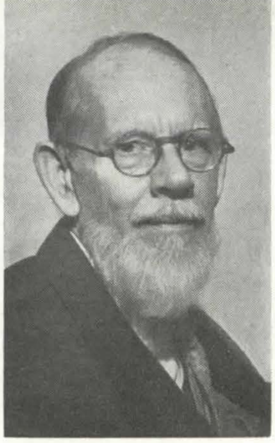
It has been assumed in the past that heat gain in summer and heat loss in winter should be computed on different bases. Summer heat gain has not been based on "steady state" transmission as set by a U-factor and a temperature differential. The influence of time lag in heavy-density materials has been recognized in summer only. This premise has not been challenged or re-evaluated by the new studies, which, so far, have been confined to winter operation. The new statement indicates that tests show the presently accepted U-factors for winter heat loss to be incorrect and that the error is caused by the density and specific heat of the materials. Effects of the sun and wind appear to be different on masonry than upon the lighter wood and metal. This seems obvious when it is considered that the time lag of brick is 5.5 hr and of 2 in. of wood, 1.3 hr.

The Foundation used thermal huts for its tests. Previously used with success at UCLA and Penn State, this method measures flow through walls only. Inside temperatures are controlled to within one degree F. Heat input is closely measured and thermocouples record temperatures.

A wall of brick veneer was compared to one of wood exterior finish. Both walls had studs, interior finish, wood sheathing, and some insulation. The veneer wall had 4 in. of brick instead of 1 in. of wood siding. U-factors (steady state): veneer wall, .112; wood wall, .110. Tests showed that the actual heat loss for the veneer wall was 10 percent less than that computed by its U-factor and in the case of the wood wall 15 percent more than its U-factor would predict.

An insulated 6-in. brick and clay wall, U-factor .175, was compared with an insulated metal-panel wall, U-factor .150. The masonry wall transmitted heat at a rate 15 percent less than expected and the metal panel passed about 50 percent more heat than was expected.

These surprising developments are now being evaluated for possible inclusion in standard data for heat losses.



## Talbot Faulkner Hamlin
**1889-1956**

Author of numerous architectural books, including his Pulitzer Prizewinning *Benjamin Henry Latrobe;* editor; educator active for 38 years at Columbia University School of Architecture as instructor, professor, Avery and Fine Arts Librarian; professor emeritus since 1954; practicing architect from 1920 to 1934.

# *A Tribute From A Colleague*

It is hard to think of Talbot Hamlin without smiling, for more than anyone I ever knew he was radiant with the joy of life and its pleasures, large and small. Even when he was at his most serious, speaking earnestly of some matter close to his heart (and there were many such matters), you knew he was enjoying the application of his mind and energies, inwardly rewarded by his own awareness of his intensity of conviction.

His was not a limited joy. He delighted in everything—from a Cambodian temple to a comic strip, from a Miro to a glass of sherry, from a Bach fugue to a radio jingle, from ballet to burlesque. Most of all, he loved people and conversation. He had the rare gift of being able to talk to everyone about everything on their own emotional and intellectual levels (about which he was uncannily perceptive), though everyone with whom he spoke had an unmistakable sense of contact with a superior person.

It was perhaps this breadth and intimacy, this sensitivity to personalities, that made him a great teacher and writer. For however loftily philosophical or deeply scholarly he might at times become, he never departed in his thinking from a profound concern for human values in art, in architecture, in life. He never ceased to remind his students (and his colleagues) that the happiness of the human being and the transcendance of the human spirit were the goals of our endeavors—and that anything else could have no more than surface validity. Most of his architectural criticism, however specific, stemmed from this root of reasoning. He was never content with imparting knowledge and skill. However necessary these might be, "know how" was never more to him than a step toward "know what, why, and for whom." If there is honesty of thinking, if there is now integrity in American architecture, Talbot Hamlin did more than his share to nurture it.

I said that his was not a limited joy; neither was his love limited. Though mankind was his own species, he loved all of nature, all of the universe, as only could the transcendant heart he strove to achieve. Sailing on his loved *Aquarelle* with his wife, Jessica, from Maine to the Florida keys, he painted innumerable sunsets, fog-laden harbors, coastal towns, and sniffed the salt air ecstatically, marvelled at each new color, form, sound, and taste. He was stricken at Beaufort, North Carolina, as he had lived, sailing to a new experience.

At Columbia, he is not gone. Avery Library, which he conducted for so many years, is here. His teachings are in the minds and hearts of his students and colleagues. His love of life is here, too, for those of us who can carry it on.

EUGENE RASKIN

**PROGRESSIVE ARCHITECTURE** published monthly by REINHOLD PUBLISHING CORPORATION, 430 Park Avenue, New York 22, N. Y. Ralph W. Reinhold, Chairman of the Board; Philip H. Hubbard, President and Treasurer; Fred P. Peters, Vice-President and Secretary; Alfred E. Fountain, H. Burton Lowe, Merald F. Lue, D. Bradford Wilkin, William P. Winsor, Vice-Presidents; Kathleen Starke, Assistant Treasurer. Executive and Editorial offices: 430 Park Avenue, New York 22, 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.  Indexed in Art Index, Architectural Index.

REINHOLD

# p/a views

**ethics or economics?**

*Dear Editor:* I have read with interest your P.S., "Can Architects and Decorators Join Hands?" *(August 1956 P/A)*. There is one paragraph which I believe was written from lack of understanding. You refer to decorator's ethics in the second paragraph in the last column.

Is this ethics or economics resulting from custom? The architect has a team to work with him—a contractor and a builder—after he has designed the house. At the present time, except in a few fields such as ships and hotels, there is no one but another decorator to select, purchase, and install the materials of decoration after the interior decorator has designed the interior. In time, evolution may make this feasible, but I question the ethics of the architectural profession calling this ethics. Decorators learn much from being responsible for the selection and installation of a product. We often see disadvantages in the way an architect works and often wonder, and, I fear, sometimes criticize. It is human. And I'm sure you'd be the first to admit that there is a range of ability even among architects.

Please study the AID definition of a decorator in the Inter-Society Color Council News Letter.* Perhaps you do no see us the way we see ourselves.

There is real need for more understanding of the problems and aspirations between the two professions. It can only be achieved if each of us have open minds.

GLADYS MILLER, AID
New York, N. Y.

*"*To us, the Interior Decorator has always been a person of glamour. Perhaps this is because the results of his art are always before us, and contribute daily to our sense of well-being. . . . Much painstaking preparation and comprehensive knowledge are needed for this type of artistic endeavor. It is important that we all know this, since the work of the Interior Decorator is no longer confined to the homes of the few but is gradually enriching the lives of more and more of us. . . . Francis H. Lenygon, in 1937, contributed the definition of a decorator adopted by the Institute: decorator is one who, by training and experience, is qualified to* plan, design and execute *interiors and their furnishings and to supervise the various arts and crafts essential to their completion.*"



**comparison valued**

*Dear Editor:* Our sincere gratitude for your publishing all perspectives of the Library Competition (NEWS SURVEY, *July 1956 P/A*). One of the

(Continued on page 16)

(Continued from page 14)

real helps to laymen and colleagues is the chance to make comparison, however superficial. It shows how many different ways the same problem can be visualized, and should be, before building one of them.

EUGENE J. MACKEY
St. Louis, Mo.

**"whoever enters . . ."**

*Dear Editor:* We are enclosing herewith a statement of principles for the design of a chapel for Hollins College, a nonsectarian college for girls near Roanoke. It was written by the college chaplain, Dr. George Gordh, and we are sending it to you with the thought that other architects who are confronted with this most difficult of architectural problems might find in it, as we have, both challenge and inspiration.

FRANTZ & ADDKISON
Roanoke, Va.

•

1. Whoever enters the chapel should feel a sense of awe, and, at the same time, a sense of welcome, of friendliness. The awe should not be forbidding nor the friendliness sentimental. The problem here is difficult. Indeed it is one aspect of one of the most difficult problems in religious thought: that of taking account of the holiness and the love of God at once, though from a human point of view the two are in tension. The sense of awe should bring to our total campus life a sense of reverence, the sense of friendliness should remind us of the intangibles of grace and goodness which are ever in our midst.

2. Whoever enters the chapel should feel a sense of a brooding perfection—the perfectness of the divine. The building itself—its own integrity and beauty—should be a witness to the divine perfection, by being simply itself. Here is a pointer toward that urge to perfection which haunts our pursuit of truth, our devotion to beauty, our concern for rightness in personal conduct and social relations.

3. Whoever enters the chapel should feel anew the glory of the earth which reflects its divine origination. Here is the vision which gives substance to our science—the study of the earth—and to our art—its celebration in beauty of color and form.

(Continued on page 22)

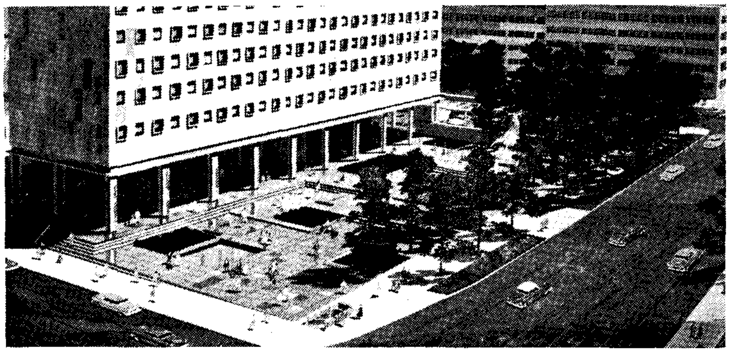


**WHEN YOU CHANGE YOUR ADDRESS**

Please report both new and old addresses directly to P/A five weeks before you move. The Post Office will not forward your magazine to the new address unless you pay extra postage. Avoid this needless expense by notifying us five weeks in advance.

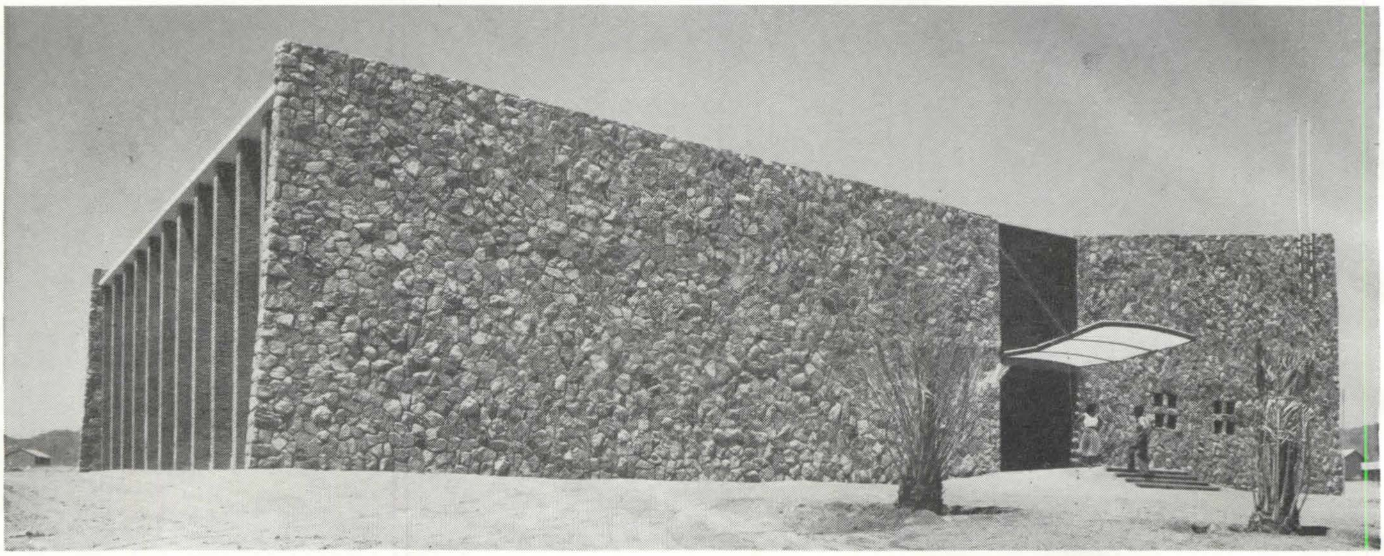
**PROGRESSIVE ARCHITECTURE**
**Circulation Department**
**430 Park Ave., New York 22, N. Y.**

# PHILADELPHIA BUILDS NEW STATE OFFICES

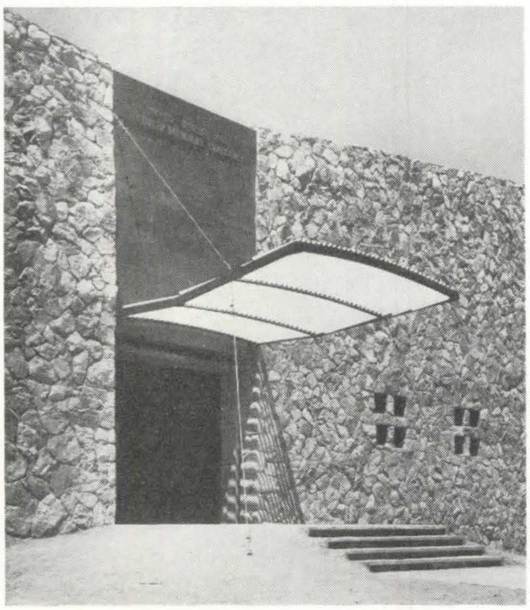


PHILADELPHIA, PA., Oct. 15—Now under construction at Broad and Spring Garden Streets, this 17-story office building will bring together under one roof all of the Commonwealth's administrative offices in the Philadelphia area. Three firms of Architects collaborated on the design—Carroll, Grisdale & Van Alen; Harbeson, Hough, Livingston & Larson; and Nolen & Swinburne. Initiating agency is Department of Property and Supplies of Commonwealth of Pennsylvania. Utilizing but a portion of the full-block site, the scheme includes a parking garage for 200 cars. The steel-framed, air-conditioned building will have white-marble exterior walls and stainless-steel sash, door frames, and column covers. Estimated cost: $10,240,000.

# ISRAEL BUILDS by Jacob Rechter

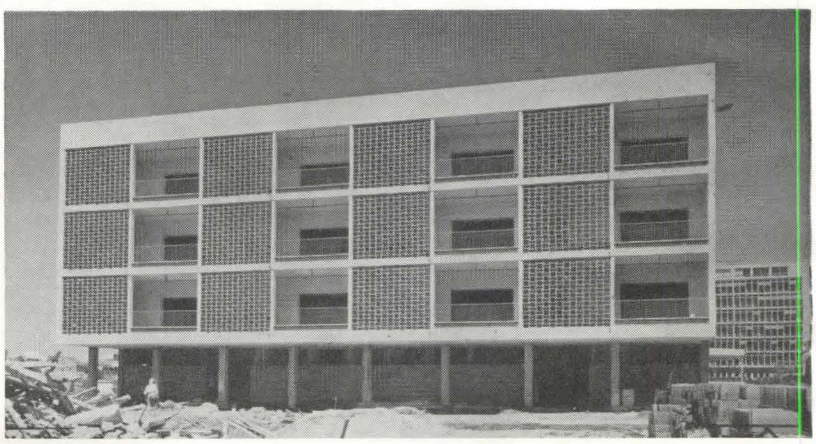


Photos: I. Kalter, Tel-Aviv



*Apartment House, Tel-Aviv* (above *and* left). *Yasky-Posner, Architects.*

*Philip Murray Cultural Center, Elath, on the Red Sea. A. Elhanani, Architect.*



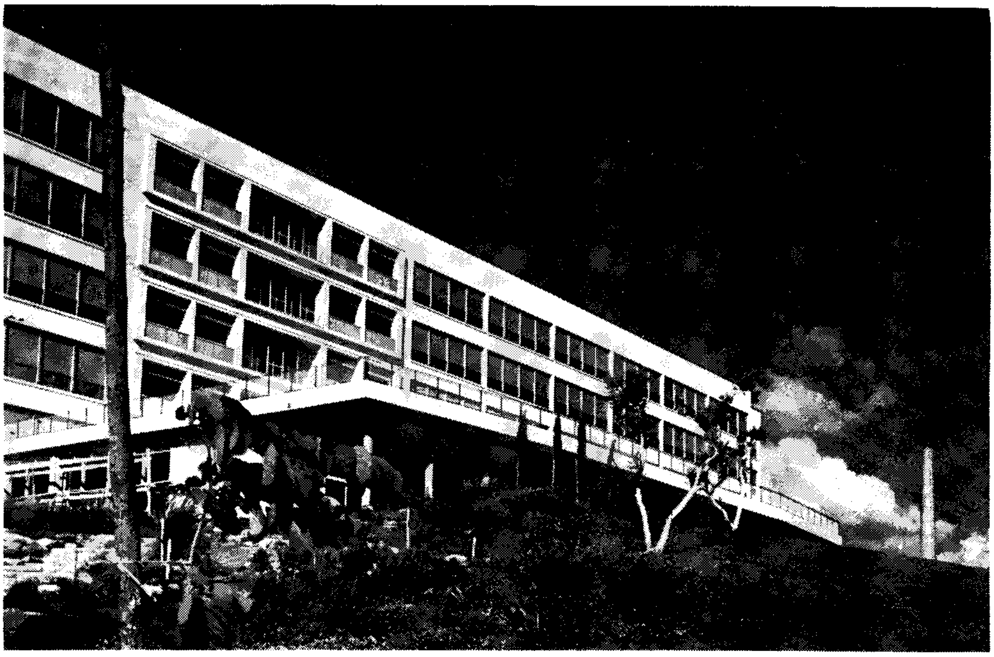
"To plan we must know what has gone in the past and feel what is coming in the future. This is not an invitation to prophecy, but a demand for a universal outlook upon the world." This short statement of Sigfried Giedion expresses some of the problems that are unique in Israeli architecture as well as its other arts—unique because of its unusual relationship with the past. In contrast to countries like France, Holland, or even the United States, where modern architecture emerged as a revolt against the eclectic past and in the course of years proceeded as a contemporary ring in a long-lived chain of cultures, the past of the land of Israel and its people is very complex, heterogeneous, and many-sided.

In order to attempt to examine the situation of architecture in Israel, a general outlook of its population and background is necessary. An easy outcome of examination would be to say that the past of this culture is only 40 years.

However, the first immigrants and the hundreds of thousands who followed them from every part of the world had old and, in many cases, rich backgrounds of culture. On the other hand, the land, its climate, its topography, and its history, became major factors in building the nation's characteristics. But neither the former ways of life nor the old indigenous examples, like the picturesque Arab mud-houses, could be used as solid ground for founding a new local architecture. While there was no past against which to revolt, neither was there a history with which to be wholeheartedly and healthily linked. This is perhaps the reason for the certain poverty of expression in the cross section of Israeli towns and villages, a lack not only of a spiritual continuity but also of a concrete juxtaposition of the new against the old. There is nothing old. And the strict requirements of a growing young country full of problems of sheer existence, the responsibility of supplying homes and services, poor and substandard as they may be, but fast and many and cheap, are the facts that dictate the general direction of Israeli architecture.

It is not a very universal outlook. It is an outlook of a man in desperate need of a home, and any discussion with him

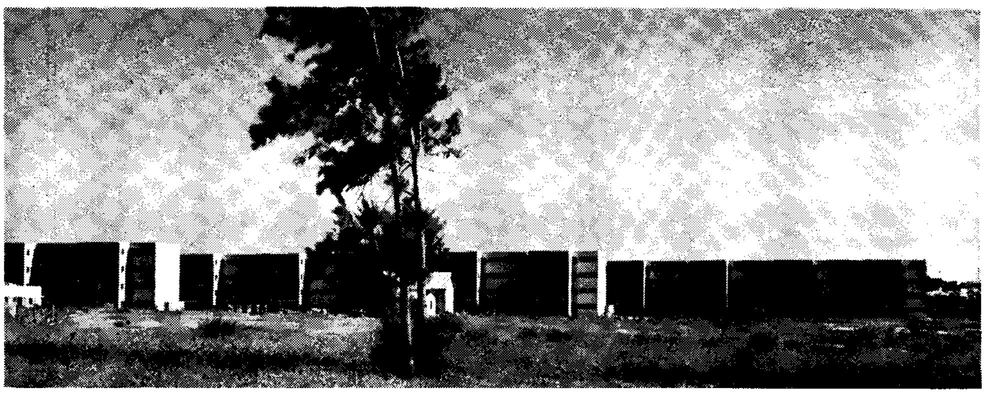
*Mayer Tuberculosis Hospital* (right). *Rechter, Zarhy, Rechter, Architects; Chary, Engineer.*



*Panoramic views* (below, left to right) *show Haif Harbor, as seen from Mount Carmel; the city of Tiberias on the Sea of Galilee; and a general view of Tel-Aviv.*

*Photos: I. Kalter, Tel-Aviv.*

*Typical Kibutz* (right), *a communal housing settlement near Tel-Aviv. Rechter, Zarhy, Rechter, Architects; Chary, Engineer.*



or landscaping would seem ridiculous and almost untactful. The existence of a mentality of this sort is the reason for an architecture that may be called functionalistic in a primitive way. The function is directly interpreted into two-dimensional planning.

Fortunately, everything in Israel is in constant movement and nothing stands still. In the past three decades, a classification into periods may be traced: first, the romantic oriental imitations and adaptations; then, during the late Twenties, a fresh *esprit nouveau* breeze that flushed the young country and was later mixed together with a clear Bauhaus influence that came with the vast central European immigration. The present situation of architecture in Israel is marked by many influences from different trends of modern architecture, and dictated by certain local characteristic ways of life, developed through the years, and by a certain limitation of building materials.

A complete change in the scale of construction occurred with the establishment of the state, eight years ago, as a result of the enormous numbers of new immigrants, the population being increased from 650,000 in 1948 to 1,500,000 today. The great number of economical and sociological problems which arose in the search for a fast solution to the housing of the newcomers as well as the aging population became the greatest challenge to Israeli architects. The urgent need, as well as the lack of administrative experience in planning and building large-scale housing projects and creating the adequate civil and cultural edifices presented many obstacles, but there is a clear move toward the acceptance and demand of a better three-dimensional planning, from large-scale regional planning down to the problems of individual housing.

Together with badly needed homes, public buildings had to be created, sometimes made possible financially by foreign participation. Hotels, hospitals, theaters, as well as schools and universities have been built and are on the way to serve the growing demands of the population and to demonstrate the vitality of a young nation, hungry for peace and prosperity, and seeking for new expressions of its ancient culture.

# GRAND HOTEL PLANNED FOR INDONESIA

DJAKARTA, INDONESIA, Oct. 5—Plans for the Hotel Indonesia, first tall building ever to be erected here, have been approved by the Bank Industri Negara, Indonesian State Bank that is financing the project. Abel R. Sorensen was commissioned to design the hotel by the National Housing Development Corporation; Edgardo Contini has served as Consulting Engineer.

The tall main wing of the hotel will consist of reinforced-concrete bearing walls in the upper 12 floors, supported on outward-flaring columns on the lower two floors. Guest rooms, to overlook the Puntjak Mountains, will have balconies approximately 6′-7″ deep that will be sun-protected by slanting, travertine sun breakers set in aluminum frames; these will also act as rain shields. The rooms are to be glazed just to door height, with open louvers above, to the ceiling. In the lower north wing, all of the suites are to be air conditioned.

## Corning To Erect Glass Tower on Fifth Avenue

NEW YORK, N. Y., Oct. 10—Plans were announced here today by Corning Glass Works for erection of a 28-story office building at the southeast corner of Fifth Avenue and 56th Street. Following the trend of several recently heralded new towers, the building will be set back from site lines, have its own landscaped plaza, and rise without setbacks. According to Wallace K. Harrison of Harrison & Abramovitz, architects for the tower, the building will carry the use of glass further than that of any commercial building in existence today. A sunken pool is included in the design of the plaza area, which will be floodlighted at night. Light will also stream up the all-glass façade of the tower.

The building will occupy an L-shaped plot that fronts on Fifth Avenue. In the *corridor* that will join the two street entrances will be displays of the history and uses of glass. Ten high-speed, electronically controlled elevators will serve the wholly air-conditioned building. While headquarters of Corning Glass Works will remain in Corning, N.Y., much of the 365,000 sq ft of floor space in the new building will house Corning's International and Steuben Divisions; balance of the space will be leased to tenants. Demolition of existing buildings will start next spring.

# HISTORIC-HOUSE KEEPING by Ada Louise Huxtable

COOPERSTOWN, N. Y., Sept. 28—Will today's landmarks be tomorrow's parking lots? What *is* being done to preserve America's architectural heritage? The problem of architectural preservation was given a lively airing at a week-long meeting here of architects and historians, professionals and amateurs, from 17 States, England, and Canada. A course of instruction and discussion, cosponsored by New York State Historical Association and The National Trust for Historic Preservation, ranged from a basic interpretation of the philosophy of preservation to details of accession, cataloging—and cleaning of antiques.

Interest in our historic architecture and concern for its preservation are undeniably on the increase. At last count, visitors to those historic sites and buildings open to the public in the United States totaled almost 50 millions. But also on the increase is the ruthless demolition that is excused by (temporary) traffic relief or pressure of new construction. The questions faced by experts attending the meeting here were: "What buildings should be preserved?" and "How do we go about preserving them?" and, finally, "What do we do with them when they have been saved?"

Answers were forthcoming, with obvious reservations. The National Trust has set up excellent criteria for evaluating historic sites and structures (historical and cultural significance, broad values or specific connection with historic personages, events, or aboriginal man; architectural or landscape values; practicability for preservation; educational worth; cost of restoration and maintenance; legal factors; availability of adequate sponsorship). Presumably, they also should be adaptable to use.

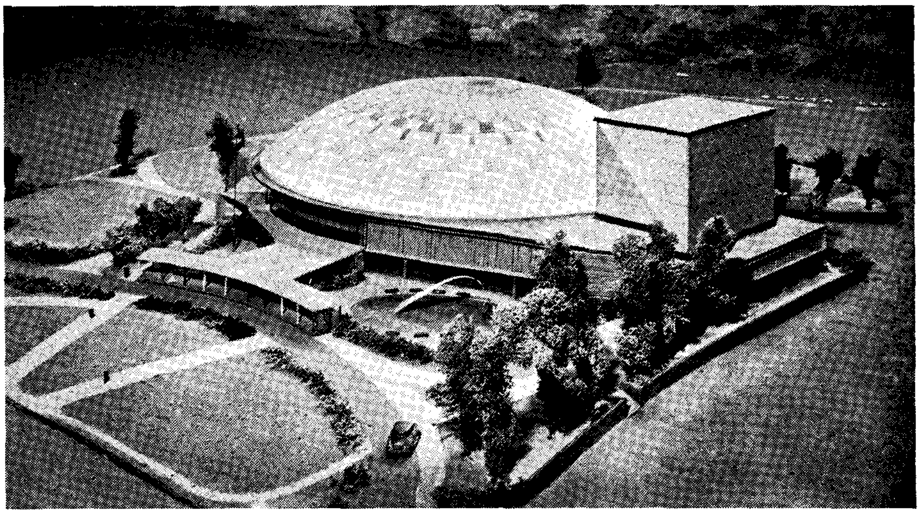
To the second question, Richard H. Howland, President of The National Trust, outlined the several financial, legal, curatorial, and educational procedures required today. Adequate funds, proper legislation, informed administrators, and *a sympathetic public* are the essentials. Examples of successful preservation efforts stressed the importance of the well informed, energetic local committee capable of guarding historic interests, enlisting aid from financial sources, obtaining tax relief, etc.

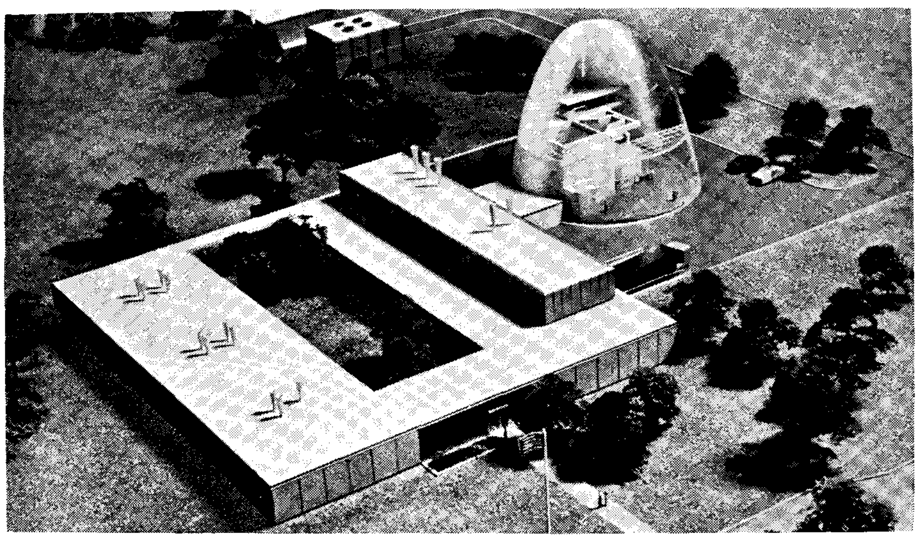
The final question was not so easily answered. To restore, furnish, and produce a house-museum is not always the solution. In even the best, there is to this observer something incongruous and sad: the yellowing newspaper on the tavern table awaiting the traveler who will never come again.

The only distressing note in the week's conference was an almost total lack of interest in any architecture beyond the accepted, genteel monuments of the Early Republic. This apathy toward (endangered) monuments of the 19th Century puzzled a conscientious group.

## Austin Constructs Municipal Auditorium

AUSTIN, TEX., Oct. 12—Now under construction, this new Convention Center and Municipal Auditorium was designed for City of Austin by Associated Architects Page, Southerland & Page and Jessen, Jessen, Millhouse & Greeven. Basically a reinforced-concrete structure, the 270-ft-diameter main area will have a structural-steel-framed, aluminum-surfaced dome. A full professional stage occurs at one side. Ramps connect the several levels of the building, and sun is screened on portions of the glass curtain wall by vertical, aluminum vanes.





## Ten Corporations To Share Reactor Lab

PLAINSBORO, N. J., Sept. 26—Announced today is organization of a new company, Industrial Reactor Laboratories, Inc., which will build and operate here a privately owned nuclear reactor for industrial research in atomic energy. Ten large corporations formed the new company: Atlas Powder Co.; AMF Atomics, Inc.; American Tobacco Co.; Continental Can Co.; Corning Glass Works; National Distillers Products Corp.; National Lead Co.; Radio Corporation of America; Socony Mobil Oil Co.; and United States Rubber Co. Architects for the building (*left*) are Skidmore, Owings & Merrill.

# News Bulletins

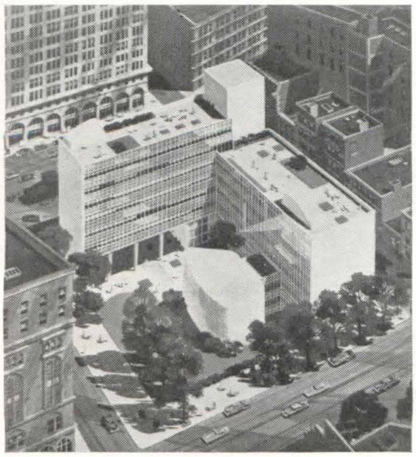
• Two-week conference devoted to discussion of buildings and layout of New York's proposed Lincoln Square Center was attended by European Architects Alvar Aalto, Finland; Sven Markelius, Sweden; Walter Unruh, Germany; and Acoustical Consultant Hope Bagenal, England. Representing U. S. were Architects Pietro Belluchi, Henry Shepley, Marcel Breuer, Philip Johnson; Acousticians Richard Newman and Richard Bolt; Stage Director Herbert Graf.

• Recently disclosed plans for redeveloping New York's Park Row area under NHA Title I includes 21-story co-operative apartment project to house 400 middle-income families with provision for shopping and office space. Site would be utilized for gardens, play areas, and underground parking. Architects are Kelly & Gruzen.

• At cornerstone ceremony for West Berlin cultural center, U. S. and German officials hailed building, designed by Architect Hugh Stubbins, Boston, as symbol of international co-operation. Hall will be circle of glass and wood, sheltered beneath wide, white, saddle-shaped roof, soaring skyward; entire structure will rest on elevated platform, surrounded by park with two reflecting pools. (see also News Survey, September 1955 P/A).

• Newly inaugurated Southdale Regional Shopping Center, Minneapolis, boasts first complete temperature-control system for building of this type. Center, designed by Victor Gruen & Associates, consists of 72 stores situated about unique, three-level garden court covered by roof with louvered skylights. Six service cores connect stores with underground truck tunnel. Works of art for project are Harry Bertoia, Louise Kruger, Joseph Young.

• Cooper Union for Advancement of Science and Art plans to erect new engineering building opposite original 97-year-old brownstone institution. Six-story steel-and-concrete structure (below), coated with glass and masonry, will be one of few free-standing buildings in New York. South wing, raised two stories above ground, will contain classrooms. East wing will house laboratories. Faculty and administration are assigned to west wing (not shown). Enclosed unit, projecting into student plaza, will hold two lecture halls. Professor Esmond Shaw, head of school's architectural department, designed new institution, in association with architectural firm of Harrison & Abramovitz.



• Olindo Grossi, Dean of Pratt Institute's School of Architecture, announces two new faculty promotions: Associate Prof. William N. Breger was appointed Chairman of Department of Architecture; P/A's William J. McGuinness (see Mechanical Engineering Critique) was appointed Chairman of Department of Structural Design. . . . New President of American Society of Industrial Designers is Jay Doblin, Director of Institute of Design at IIT.

• Richard Neutra has several international engagements. He was invited to speak at opening session of Planners Conference in Turin; elected to deliberate with jury, in Turkey, to select winners of competition for design of Ataturk University Campus near Erzerum; and asked to lecture at University of Vienna.

• Large attendance is expected at National Hotel Exposition to be held in New York's Coliseum, Nov. 12-16. Francis Keally is serving as Chairman of Attendance Promotion Committee which will mail more than 600,000 invitations throughout world. . . . National Association of Home Builders 1957 Convention-Exposition to occur Jan. 20-24, in Chicago, is expected to be biggest yet.

• Current exhibition at Metropolitan Museum of Art demonstrates evolution of N.Y.C. school buildings from earliest brick-and-wood establishment to spacious, fireproof structures—with decorative mosaics, wide plazas, student lounges—many of which include facilities for community use. Scale models, photographs, renderings, and statistical data will be on view until Nov. 12. . . . Addenda: "Met" Museum plans to eliminate grand-entrance stair as part of extensive renovation project which since 1950 has resulted in new restaurant, auditorium, administrative offices, and rehabilitation of 135 galleries. Contemplated now are Junior Museum, enlarged library, new air-conditioning system.

• Deadline date for Enrico Fermi Memorial design has been changed to March 1, 1957. . . . Catholic Institutional Design Competition, co-sponsored by National Catholic Educational Association and Church Property Administration, is open to architectural firms in U.S. or Canada. Entries must be received before Dec. 1, 1956. For entry blanks and data write to: Church Property Administration, 20 W. Putnam Ave., Greenwich, Conn.

• Grosvenor Atterbury, who 40 years ago *designed* Forest Hills Gardens—New York community notable both for relationship to existing landscape and what was then bold venture into precast-concrete construction—died Oct. 18 at Southhampton, Long Island. An inventor, he devised method, apparatus, and designs for mechanized, mass production of low-cost building units. . . . Shortridge Hardesty, partner in engineering firm of Hardesty & Hanover—structural designer of trylon and perisphere, 1939, Goethals, Marine Parkway, Captree Bridges in New York—died Oct. 16 at Larchmont, N. Y.

# Washington Report

**by Frederick Gutheim**

The doldrums preceding a Presidential election are seldom a period when much architectural news is made here. One is always mildly surprised to find so little campaign talk about what seemed important architectural and building issues. The management of General Services Administration under Edmund F. Mansure and Public Buildings Service under Peter A. Strobel were barely mentioned in the campaign. By contrast, my mail was stuffed for days with silly press releases from Rep. Frank Thompson, charging Republican "dominance" of Fine Arts Commission, and intimating that jobbery and boodling were being practiced by former Commission members. While there is certainly something to be said of the difference between the Republican and Democratic parties in their stands on school, health, housing, and other facilities, a strictly architectural distinction would be hard to draw. Would the Air Force Academy designs have been different under a Democratic Secretary of the Air Force? Can one attribute the switch in foreign buildings design to shifting party fortunes? Can the Democrats save the East Front of the Capitol—or are they the ones who have been destroying it? An assessment of credit and debit on these issues, much less any balance, strikes me as almost impossible to make.

• The appointment of Edward Stone as architect of the United States Pavilion in Brussels International Exposition assures an excellent design for this important building. Howard S. Cullman, New York, is Commissioner General in charge of U. S. participation in the exposition and building of the Pavilion. The Fair is planned on standard "international and universal" exposition lines, and like all such colossal enterprises is having its difficulties. Already it has been postponed from 1957 to 1958. Stone's sketch has yet to be made public, but is understood to house exhibition, theater, restaurant, and office facilities under a dramatic hung roof.

The selection of an architect for this important project also shows the operation of a new method worked out by Department of State and American Institute of Architects. At the invitation of the Department, AIA has established selection committees for special intermittent design projects. Typically, they have visited the site and studied the problem before recommending an architect whose qualifications appear suited to the assignment. The Brussels experience continues the practice begun more than a year ago, when an AIA committee selected Hugh Stubbins as architect of Berlin Conference Hall. It is possible that a little further development of this technique will provide a useful method of architectural selection to supplement direct appointment and competitions. There are problems to be worked out, of course. The end result—architect and architecture—will only be as good as the selection committee itself.

Stone was selected by a Committee composed of Earl T. Heitschmidt, Los Angeles (Chairman), Clair W. Ditchy, Detroit; Edgar Williams, New York; Richard Koch, New Orleans; and Roy Larson, Philadelphia. The role of the Committee is far from clear. Should it continue in being, after the selection has been made? Should it collaborate in any sense in the design? Should the architect be expected to satisfy the Committee as well as the client? Where strong architectural personalities, holding strong convictions, are found on the Committee (as they must, if its selections are to be good), it will be difficult to stop them, once interest in the project has been aroused. This is not "competition by credentials." The basis for selection is admittedly arbitrary. It must be if it is to be bold and decisive: but it should not be prejudiced or unfair.

• A comprehensive exhibition, German Architecture Today, has opened its United States tour here in the Octagon. Prepared originally for exhibition in London, two years ago, it suffers from a preponderance of early reconstruction projects where building regulations and the use of older architects showed a heavy-handed approach. Younger men are steadily coming to the top in Germany, but Eiermann, Ruf, von Branca, and their counterparts are few and their opportunities still fewer. The German architecture of this exhibition shows miles of monotonous housing unrelieved by schools or parks; pretentious and falsely luxurious banks and insurance company headquarters; and an array of community and cultural institutions that would scarcely have been different had they been designed in 1939. Certainly postwar reconstruction in Germany, impressive as an accomplishment of production, is not yet disenchanted and has still to find an architecture that will impress the world. The Smithsonian Institution's Traveling Exhibition Service is in charge of this show. (One of the exhibits is shown below.)

All Saints' Catholic Church, Frankfurt am Main. Alois Giefer and Hermann Mäckler, Associated Architects.

# Financial News

## by William Hurd Hillyer

The soaring campanile of business and consumer credit still dominates the economic sky line, but chimes a warning note. Though no structural strains mar the surface, close inspection proves them present. Unless lenders and borrowers stop adding to the tower's height, no measures (monetary or political) can avert a disastrous crash. To carry the metaphor further: the obvious remedy would be to construct a supporting scaffold of Reserve Bank funds—a frankly inflationary device which would augment the ruin, should the edifice collapse.

• Demand has created a domestic dollar shortage with resultant high interest, for which the Federal Reserve Board is commonly blamed. In reality, money is expensive because it is scarce; and "tight money," a great trust company currently reminds us, means "tight goods." Government, that institution declares, "does not control the supply of money or the level of interest rates except in a very partial and indirect way. Interest rates depend primarily upon the supply of and demand for loanable funds. The demand for such funds is determined mainly by the volume of business and the level of prices. The supply depends mostly upon the amount of current saving and is regulated to some extent by the monetary policy of the Federal Reserve System," which in turn "is an independent agency, not a tool of the Administration or the Congress." We are furthermore cautioned that an attempted solution of the problem by "easing money" would, in the opinion of this and other banks, aggravate an unbalanced situation and invite trouble. It is unreasonable, then, for architects and builders to expect a quick revival of the construction activity which touched its peak in 1955. Production of "goods" must first catch up with supply of "funds"—and that without the false stimulus of inflation.

• Home builders, faced by financing problems, says First National City Bank of New York, have curtailed their operations. Industrial leaders are giving their new projects "another look." Speculative building, the bank tells us, has been "hard hit" by a rise in non-Federal mortgage rates from around 4½% to 5%. Increase in total mortgage indebtedness during the first half of the current year amounted to $7.8 billions compared to a rise of $16.2 billions during the whole of '55.

A group of bankers interested in mortgage lending has convened from cities nationwide, at the invitation of FHA Commissioner Norman P. Mason, to explore means by which FHA "can give better service to small cities and towns."

Meanwhile "Fannie Mae" (Federal National Mortgage Association) has made another effort to create a better market for real estate loans by heavy purchases of 4½% mortgages at higher prices. Oddly enough, the lowering from 7% to 5% of FHA down payments on homes appraised at $9000 or less has had the effect of actually increasing the mortgage money demand and making the loan less attractive to the investor by reducing his equity margin.

• Higher interest rates are decried by the politically minded, in spite of the fact, as the First National City makes clear, that the chief beneficiaries of better income from mortgages are the small savers. These are already feeling the benign effect of such rates in the shape of increased dividends on savings and life insurance. At the present time, according to a study made for the National Bureau for Economic Research by Prof. Lawrence H. Seltzer of Wayne University, individuals with moderate incomes receive much the greater part of the aggregate disbursement. The political aspect of the mortgage interest rate, therefore, would seem to be misplaced.

• That reservoir of funds for schools and other public buildings known as the municipal-bond mart, is suffering what one qualified observer has termed a "downward drift." Hanging over the market are a $50-millions Philadelphia general purpose issue and a $10-millions Chicago Board of Education offering.

• Despite inflationary fears and mounting money costs, bankers look for seasonal business expansion over the remainder of 1956 and are not alarmed over the prospects for 57. This persistent optimism is bolstered by the fact that personal savings are accumulating at the rate of $18 billions a year—far better than the wiseacres expected.

• Functional indeed is the new .arnett Bank branch in suburban Jacksonville, Fla. The vault has been made the main architectural feature of the building and shines in stainless-steel impregnability as the structure's central motif. This is achieved by putting the vault directly behind the floor-to-ceiling glass front.

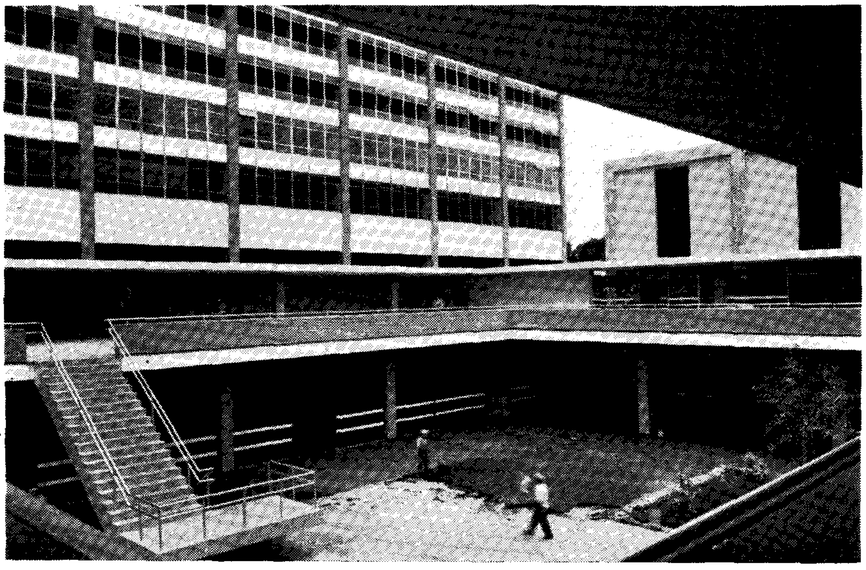
• Progressive to the point of futurity is the plastics-house model recently exhibited at New York's Coliseum. MIT and Monsanto Chemical Company developed this truly streamlined dwelling which can be built within the $14,000 to $20,000 range. Resembling a space-travel unit in exterior appearance, it is reached by "gangplank" steps. Inside it affords every luxury that plastics welded to wood and glass can offer earthbound home lovers.

France is far ahead of us respecting plastics and functionalism as applied to dwellings. A full-scale house of day-after-tomorrow, says Paris-printed *Réalitiés*, was placed on exhibition at the *Salon des Arts Ménagers* as long ago as last Spring. Round as a Camembert cheese, 100% plastics, including piping and furnishings, and cored by an all-service central axis, the house was be-dreamed by 29-year-old architect Lionel Schein, assisted by R. S. Coulon, professor of architecture at *L'Ecole des Beaux Arts*. Since the house is easily transportable and weighs only 7½ tons, mortgage bankers will give it a new look and wonder whether it is a chattel or improved realty. But—no matter how technical—the house is architectural.

Courtesy: The New York Public Library

# health facilities

**Throughout the ages, as knowledge of illness and disease has grown and techniques for care and treatment have become ever more refined, the facilities needed to minimize risks and to speed recovery have become increasingly specialized. A clear trend has been toward the pooling of resources for more efficient and precise service. In metropolitan areas, this results in the great medical centers wherein all related services are integrated (see Dr. Bluestone's discussion overpage). On the local level, one finds the doctors' clinic equipped with mechanisms and devices that no one of the doctor-members could afford by himself. On a regional basis, health services tend to be organized pyramid fashion, with the local doctors' clinic supplemented by the small, local hospital for handling routine medical and simple surgery cases; which, in turn, has a larger-city hospital to call on for the more complicated cases; and, finally, a vast medical center or base hospital equipped to conduct any medical service known. Shown below is a view into one of the most recent metropolitan health-care centers, in Lima, Peru (Architects Edward D. Stone and Alfred L. Aydelott; Supervising Architect Richard Malachowski). On subsequent pages are shown units that illustrate the range of facilities required for today's health care.**



Eduardo von Breymann

*Typical Renaissance ward* (top) *was probably in the Hôtel Dieu, Paris.*

*Court of nearly completed Central Hospital of Social Security for Employes* (left), *Lima, Peru.*

# integration: today's challenge in hospital design

The lonely course of independence for administrators, consultants, or architects in hospital planning has produced many costly and uncomfortable errors in construction over the years which could have been anticipated and prevented by a combined course of action. Where anyone looking ahead half a century ago could hope to make a reasonable prophecy over a long period of time, anyone attempting it today must impose severe time-limits on himself and seek help for his efforts. If co-operation was ever needed in the services of the sick—rich or poor—it is most needed here, where inanimate structure and function interact as thoroughly as they do in animate nature under the designations of anatomy and physiology.

The administrator who must constantly relate structure and function to each other, the consultant who has grown mature and wise in his understanding, and the architect whose imagination, artistry, and technical skill produce the final structure, must work together if the requirements of medical care are to be met over a reasonable period of time.

The time has passed when the governing board of a hospital can engage the services of an architect to build a 300-bed hospital, or a 100-bed addition to an existing hospital, and expect him to fulfill the medical requirements unaided by converging specialized assistance. The governing authorities must place in the architect's hands a detailed functional program, on the basis of which he can sketch his structural ideas. This refers to a variety of modules and their dimensions, their relation to each other and to the building as a whole, the space required for direct and indirect patient service and, above all, their use—for the best work of the architect is done when he is intelligent and well informed about the requirements. Only then can he visualize the architectural possibilities and present them graphically for consideration. The relation between structure and function is so close that help must flow in both directions, the architect being in a favored technical position to suggest labor-saving and comfort-producing space allocations. The position of consultant is reversed in such situations and in a very wholesome way. Within human limitations a combined approach is an ideal safeguard against design fallibility.

However, it is not only this opportunity for integrated effort to which I invite your attention. After architect, consultant, and administrator come together, certain other opportunities for integration will challenge their best efforts. The trends in health and medical care are clear and unmistakable.

I have selected ten illustrative tendencies under the heading of integration, omitting other minor trends for lack of space. Most, or all of them, will appear in the functional program of the hospital. Let us therefore try to relate structure to function under each heading.

1. There is some controversy as to the relative merits of integration and independence for public-health activity and medical care. There is none, however, on the advantages of proximity for the purpose of facilitating interplay and interaction in the area of overlap—and here is where you have your special opportunity. From the architectural point of view, structural duplication can be avoided where functional integration is possible. And the more integration, the less duplication. Classrooms, lecture halls, health clinics of whatever nature from pre-natal to adult levels, and laboratory services (to cite only a few examples of joint use) can be located as required between the two facilities. The outpatient department of the hospital, for instance, can house the health clinics, and a common laboratory strategically located can serve both. A health and medical library is at its best when it is not decentralized. Here, and everywhere else that the principle of integration is applied, good function is stimulated and encouraged by good structure.

2. The integration of "acute" and "chronic" in general hospitals. Here, too, and much more completely, opinion favoring integration is almost universal. Medical progress has compelled a change in our thinking and planning and no one can justify successfully the construction of independent "chronic hospitals" any longer except in those situations where a hospital of high grade can be established with all of the facilities of the acute general hospital and more, in which case the admission of the acutely sick patient need not be denied, and not alone because of his urgency. What I am saying here is, in effect, that duration of illness can no longer be considered in itself as a valid criterion for admission or retention. The true scientist does not abandon a problem because it does not yield readily to his efforts. He seldom swaps horses in midstream, unless a better horse is available to carry him across. The truth of the matter is that a general hospital which can successfully be geared to the needs of the patient who is suffering from prolonged illness must be a very good hospital indeed, if only because it must be prepared to deal with the most difficult and complicated problems confronting the medical scientist. An independent chronic hospital, so called, is an expensive duplication. As a rule, however, it is an invitation to stagnation, mediocrity, and the "dumping" process which has marred the otherwise bright record of acute general hospitals in the past.

How does all this affect structure? Integration can be complete, in which case the arhitectural effort can be directed toward the patient suffering from prolonged illness, in the knowledge that the structural product will benefit the acutely sick patient as well. Integration can also be partially complete if, for example, two separate but connected buildings are maintained, one for the acutely sick and the other for those who are suffering from prolonged illness, in an effort to satisfy tradition while granting a better position to the so-called chronic patient than he "enjoyed" in the paradoxical days of independence.

In either case, the architect will be called upon to take into consideration the structural requirements of (a) ambulatory, (b) semi-ambulatory, and (c) bedridden patients. He must not be expected to guess the proportions of each or their requirements. The flow of patient-traffic will interest him. All of these must be explicit in the basic functional program on which he proceeds. Physical separation, of which the separation or isolation room in the acute general hospital is a good example, may have to be carried out in order to approximate as completely as possible the humane requirement of individualization of care. The use of outdoor space, too, will have to be planned more extensively.

The days of the open multibedded ward (the museum piece of hospital his-

by E. M. Bluestone, M.D.

tory) are over and the problem of bed use is thus simplified. Needless to add, the architectural principle of flexibility as between "acute," "chronic," and their gradations, gives golden opportunities in such an integrated plan. One must bear in mind that integration is related somewhat to concentration—and both to the matter of relative urgency.

This problem is also related to location, site, bed capacity, and staff recruitment, but the argument applies with equal force to any general hospital. What is good for "acute" is good for the "chronic," within limitations that are easily dealt with by the architect, when he is prepared in advance by an adequate functional blueprint.

3. The integration of the special with the general and the combination of the specialties in one general hospital, rather than their distribution in separate specialty hospitals, reflect another trend. You have seen many specialty hospitals merged with general hospitals in recent years and very few built anew independently. This means that close attention will be required of the architect, and much ingenuity, in planning special facilities inside general hospitals. The problem will indeed become more difficult technically, the smaller the hospital and the corresponding smaller space allocated for the specialties. Like all other features of the functional program, this one will come to you from the governing authorities, and it will be for you to interpret their wishes in graphic form. I must add that, as a problem in hospital design, this item is not insurmountable.

Tuberculosis and mental disease make heavy demands on the architect when they are included in the program of the general hospital. Where this is the case, you have a major problem in hospital design before you. The architect who moves into this area alone is headed for trouble. It is here, perhaps more than anywhere else, that collaboration is of the ultmost importance.

4. Inpatient and outpatient departments are now more inseparable than ever, particularly because of the educational and follow-up opportunities as well as the new possibilities for multiple use. Completeness, comprehensiveness, but, above all, continuity of care, can only be maintained under an integrated plan. This means that ancillary services common to both must be located in easily accessible positions between the two structures, if they are separate, and between designated floors, if they are not. Whatever the architect can do to lighten the burdens of the staff as to distance should be done. I need not enter into the relative merits of vertical and horizontal methods of planning, which involve the principle of integration to some extent, since they are well known to you. This is another matter which brings the architect closer to the functional plan.

The various clinic groupings in the outpatient department, like the various laboratories in a medical-educational establishment, can be used interchangeably between the various kinds of service to the public which are possible here. I refer to the opportunities for integration with a diagnostic clinic, a group-practice unit, and various health clinics in such an area.

5. The integration of private and charitable services in all of their gradations, involving the assignment of bed space in small units, in accordance with clinical need rather than the ability to pay more for a service that ought to be available to all if it has curative value. Privacy and more privacy, individualization and more individualization of care, these are basic in modern planning and you have shown the initial cost not to be prohibitive. Where the objective is cure at the earliest possible date, a slight increase in maintenance costs thereafter can easily be justified to the contributing public. Under these circumstances, it should be easier to plan for both together than for each separately.

6. The integration of intra-mural and extra-mural hospital services (home care) is important from the architect's point of view, even though the acquisition of extra-mural beds does not call for his professional skill. With an increased demand on the part of the extra-mural service for laboratory and X-ray facilities, to give only two examples, there must be a corresponding increase in the intra-mural facilities under these headings. From your point of view, this involves more expansive planning in certain departments and you will do your work more pleasantly if you understand the reasons for the additional space.

7. The integration of "cure" and "rehabilitation" may or may not appear in the terms of reference included in the functional program. If it appears, special problems in hospital and in factory design are involved and your opportunities will be of a pioneering nature.

8. The integration of the practitioner with his community hospital is of some interest to the architect and particularly so when a doctors' office building is to be established on the premises. Here is an obvious architectural problem calling for the integration of a hospital with an office building which depends on the ancillary services of the hospital.

9. The integration of medical records on a unit basis draws attention to the dimensions of the record room and, in particular, its location with relation to the departments which it must serve. It will be of considerable interest to you to know, for example, the amount of storage space required which, in turn, depends upon the practice of the hospital with regard to the permanence of the record and its character—whether it is to remain in its original form or be reproduced on film.

10. The integration of the hospital with its environment and, above all, with the environment of its patients, is a matter on which the architect should be expected to express an opinion. The problem here is location, site, orientation, and all of the other factors which are involved when a hospital is located in a relatively congested area as compared with the wide open spaces on the periphery. One must always remember that it is more important for a patient to see a doctor than to look at the landscape.

I have given you here in general terms some food for architectural thought. Each of these topics can be dissected to the combined taste of the hospital designer and of the authority which sets the terms under which he works, and pays the price. In the long run it is the comfort and safety of the patient that is involved and to this end we must bend our combined efforts.

---

*An address delivered by Dr. Bluestone, Consultant, Montefiore Hospital, New York, N.Y., before the New York Chapter, AIA.*

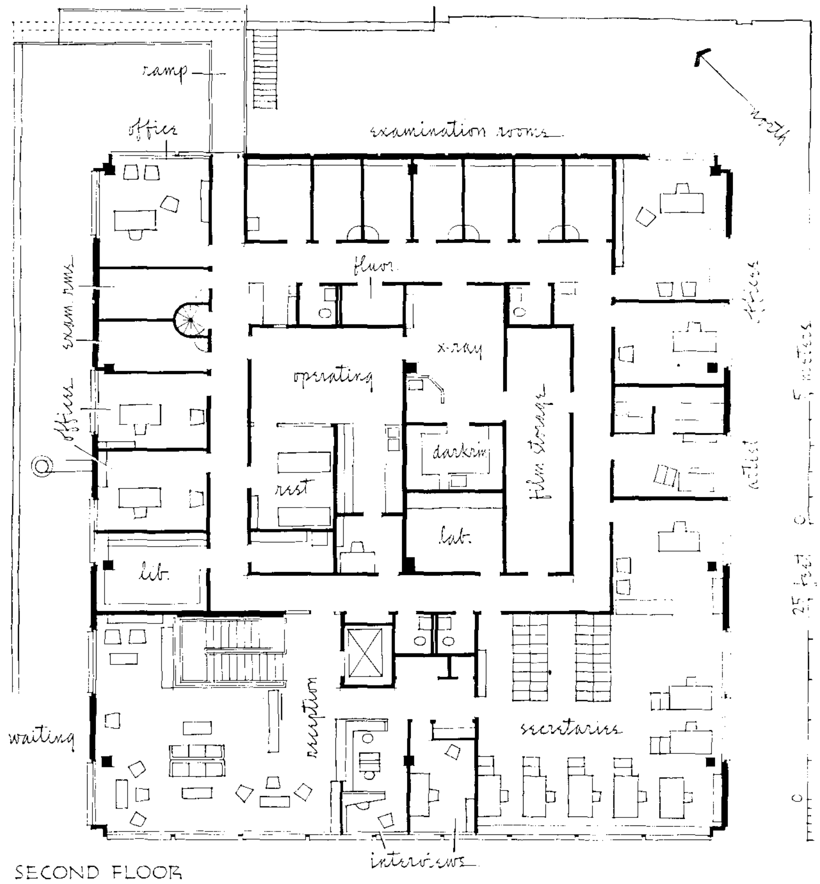
# thoracic clinic

location | Boston, Massachusetts
architects | The Architects Collaborative*

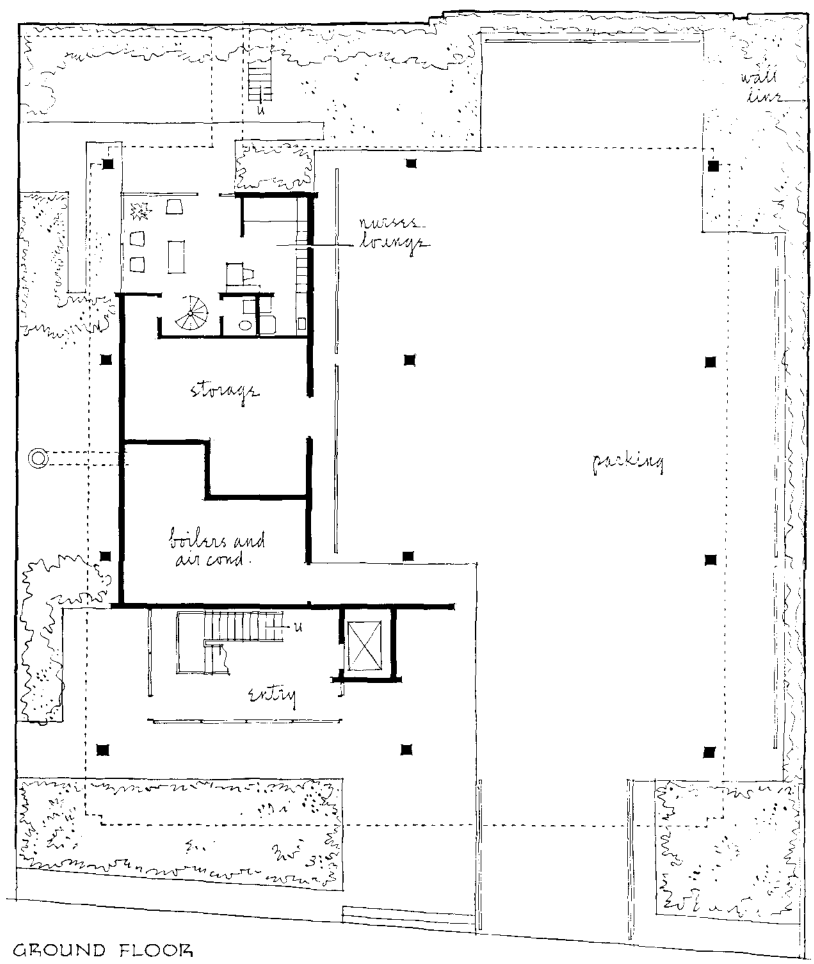
This building provides offices and diagnostic facilities for a group of doctors specializing in heart and lung diseases. A ramp connects the structure with the adjacent New England Deaconess Hospital, where major surgery facilities already exist. It was the client's primary desire to place the main portion of the clinic on the floor above the street level, making provision for parking of vehicles underneath. "Architecturally," say the architects, "this gave an opportunity to treat the ground level relatively openly and to develop the main floor above as a compact, nearly square, clear-cut volume." A grade differential of 10 feet from front to rear of the confined site was solved by the introduction of a retaining wall—now handsomely integrated with ramp and stair connections to the existing hospital. The space thus gained accommodates 17 cars as well as an entrance lobby, nurses' lounge, mechanical equipment, and storage space. Basic plan arrangement of the clinic floor is a central core of laboratory and minor operating facilities; a corridor surrounding this square center portion; and a series of doctors' and clerical offices, examination rooms, and waiting space at the perimeter.

Structurally, the building employs a fireproofed steel frame and reinforced-concrete floor slabs. Footings, columns, and roof slab are designed to take the load of an additional two floors proposed for future construction. Close co-ordination was required in the spacing of columns, in order to obtain unobstructed parking bays as well as practical interior spacing, within structural limitations. "A geometrical relationship was developed between the two levels," write the architects, "considering the space needs of the parking, the consequence in terms of structural bays, and finally a system of wall panels. The plan module of 8′-4″ became the panel width—structural bays being 25′-0″, the width of 3 panels." Since local code required a four-hour exterior-wall rating and did not permit the use of light, nonmasonry panels, the architects specified precast

* *Jean B. Fletcher, Norman Fletcher, Walter Gropius, John C. Harkness, Sarah P. Harkness, Robert S. McMillan, Louis A. McMillen, Benjamin Thompson. Associates: Chester E. Nagel, Richard Brooker, Herbert Gallagher, Witold v. Henneberg, Richard Morehouse, H. Morse Payne, Jr.*




SECOND FLOOR

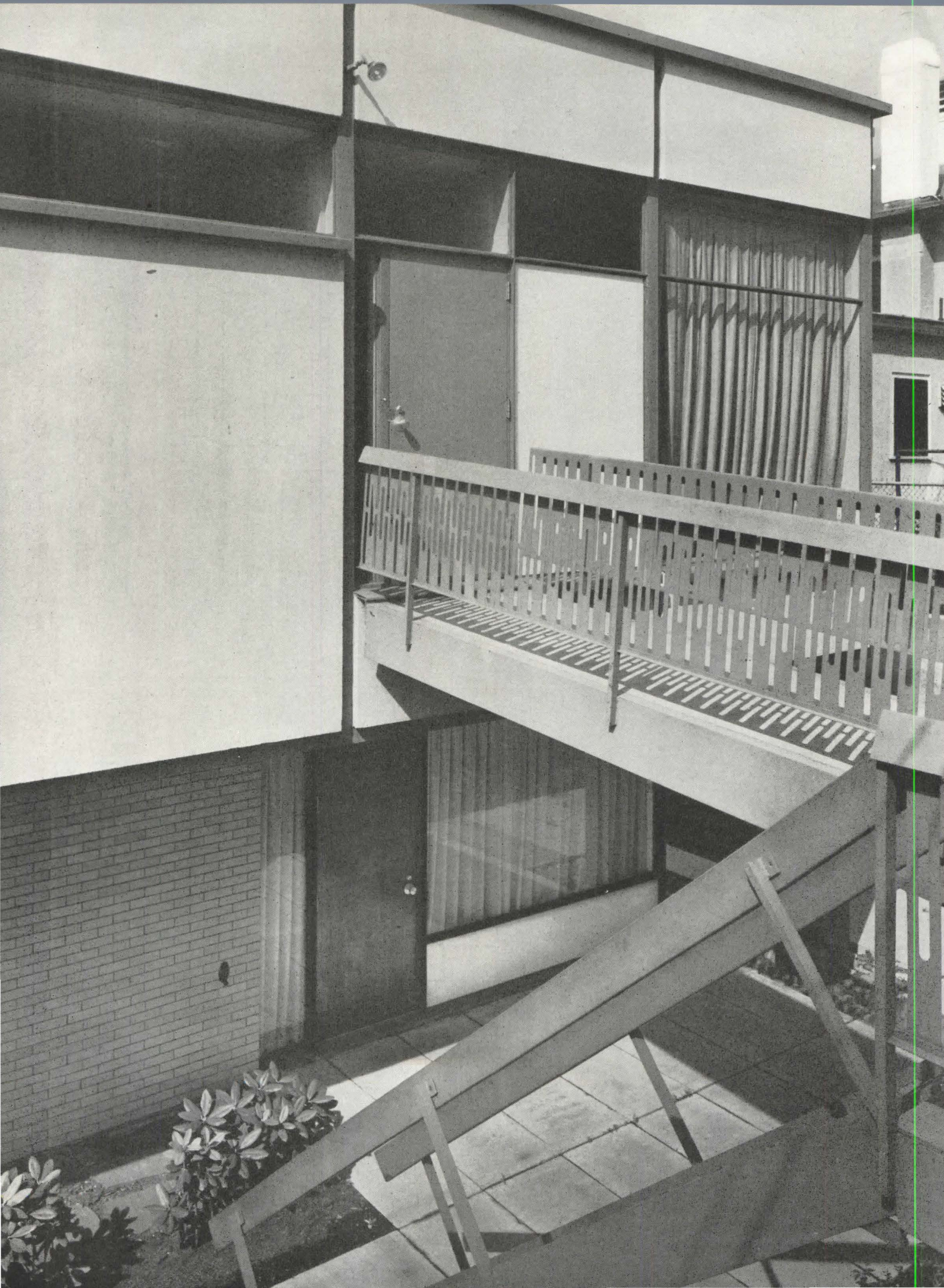



GROUND FLOOR

panels composed of white-cement marble-chip aggregate on a lightweight-concrete backing anchored to the structure.

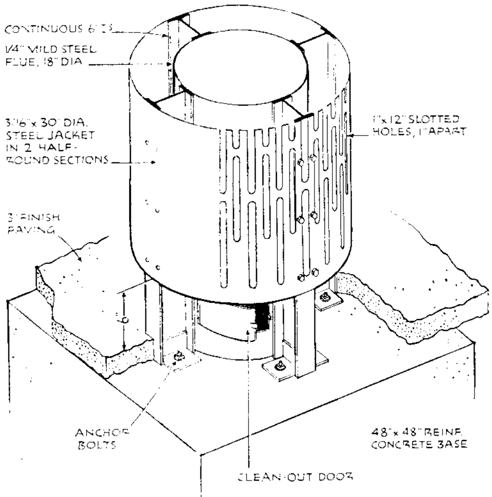
The building is heated and air conditioned by individual air-handling units. These have finned coils through which hot or chilled water is pumped. A small fan blows air, taken either from the room or outdoors, across the coils into the room. Temperature controls are fully automatic. Low-temperature water is provided by a motor-driven water chilling machine located in the boiler room; hot water is supplied by a steam boiler through a heat exchanger.

Edward K. True was Structural Engineer; Thomas Worcester, Inc., Mechanical-Electrical Engineers; and Eugene R. Eisenberg, Inc., General Contractor.

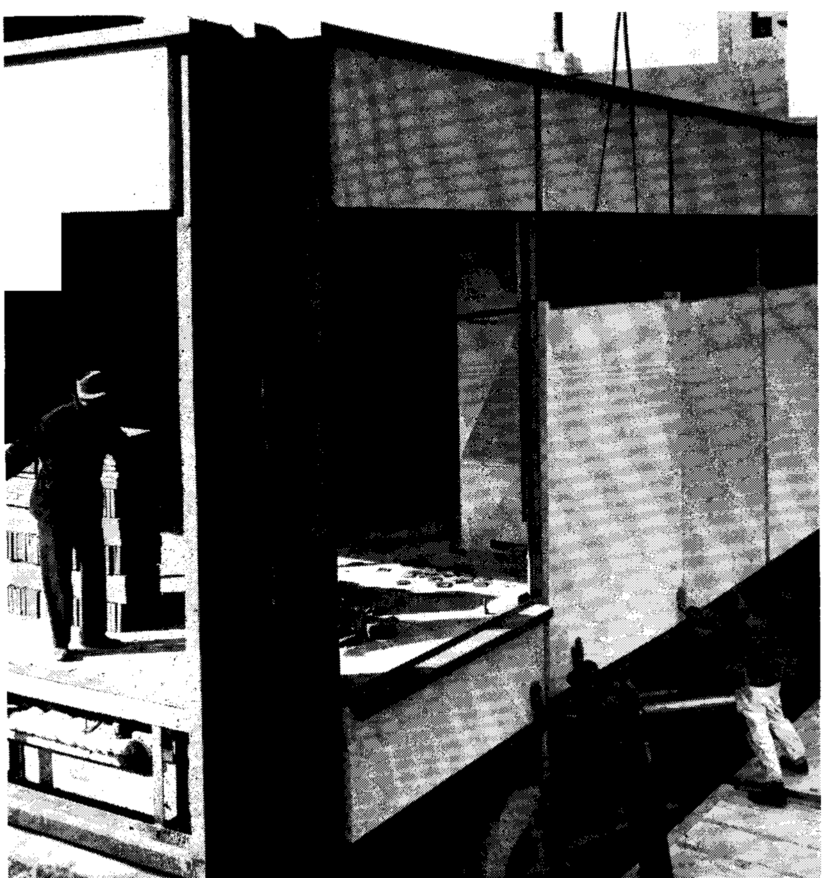


## thoracic clinic

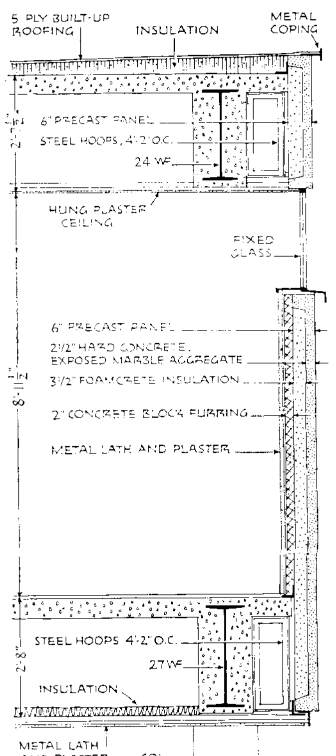
Chimney detail




*Ramp and stair at rear of property* (acrosspage) *connect with existing hospital. Design of perforated-sheet-metal railing ties in closely with the perforated-steel jacket of chimney* (above *and* top right). *Precast wall panels—all 8'-4" in width but of various heights—are being anchored to steel frame* (below). *Panels are light buff with white-marble aggregate; brick wall on the ground floor is blue; door at head of ramp a red-orange baked enamel. Columns were treated dark gray, and trim a light, warm gray.* Photos (except as noted): Joseph W. Molitor

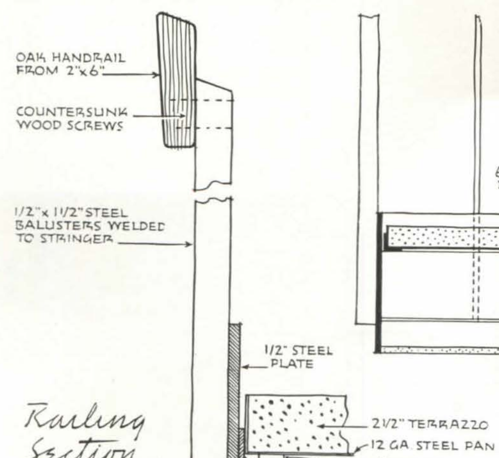


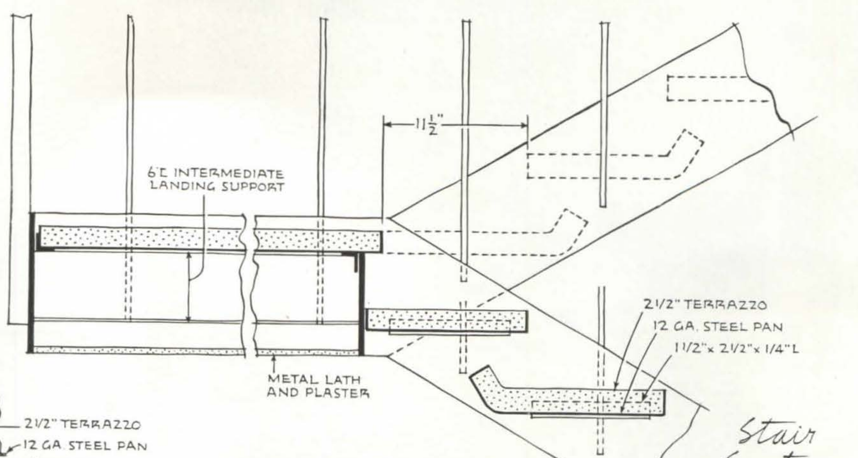
Robert D. Harvey Studio



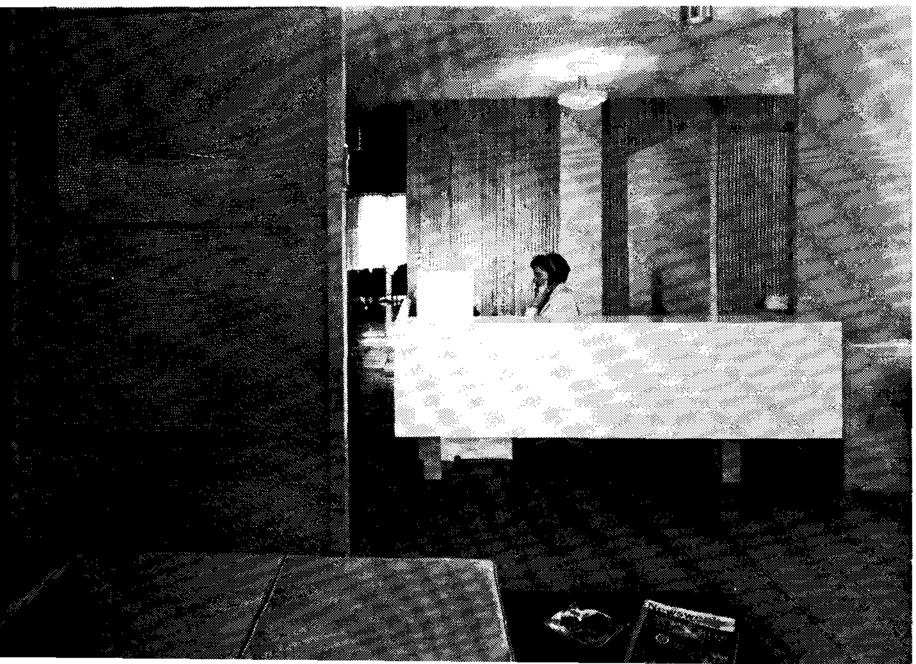

Typical wall section

# thoracic clinic



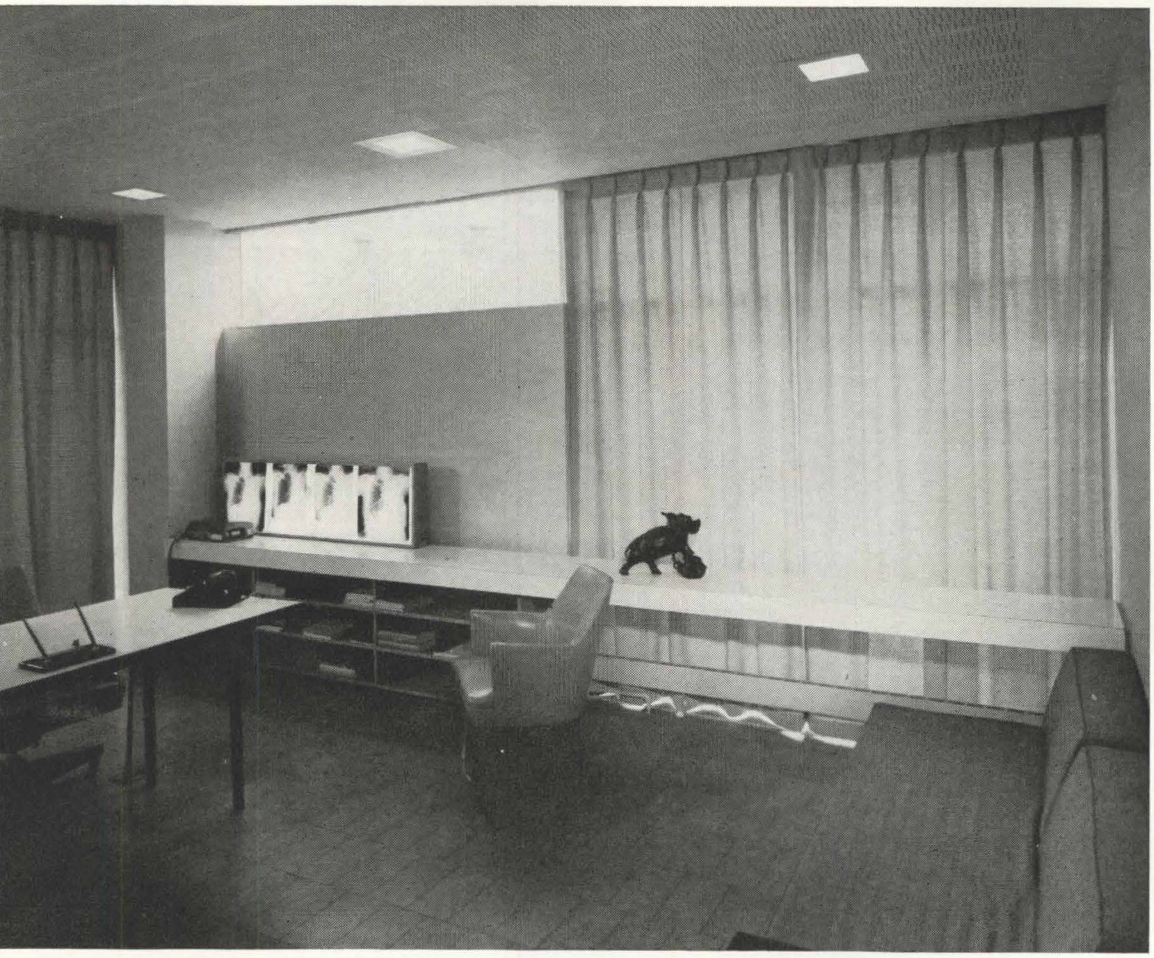



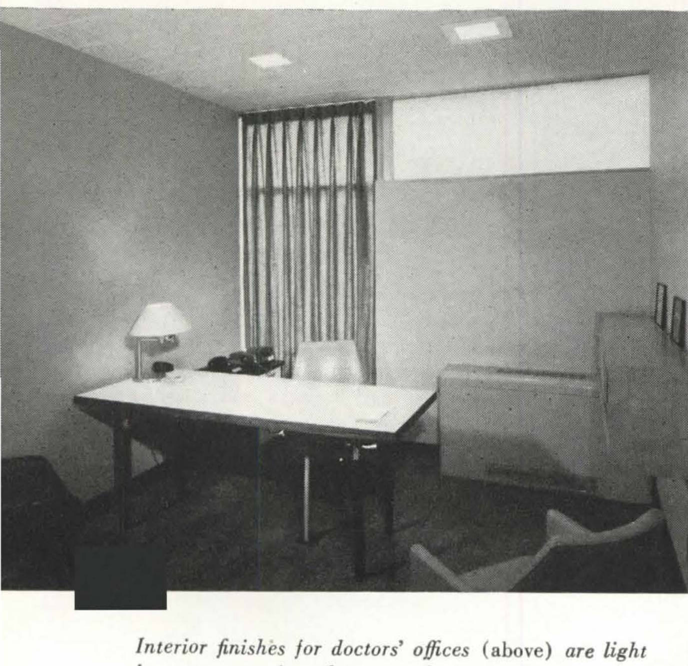
Visitors and staff use stair (acrosspage) or elevator from entrance lobby to clinic floor above. Passage to waiting room (below) and general secretarial office (right) leads past reception desk (bottom).

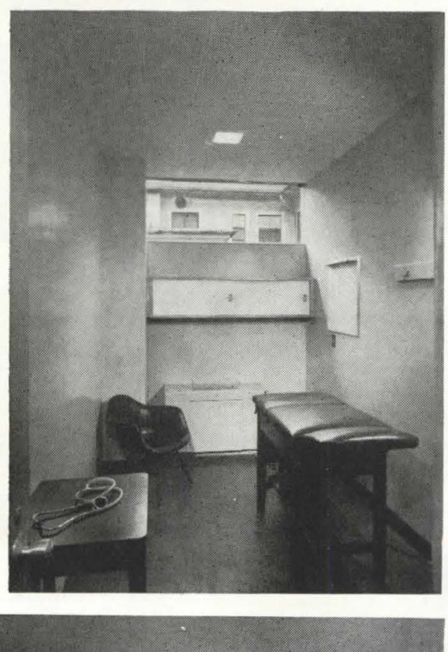


Important interior materials and colors are: blue brick wall, brick paving, precast-terrazzo stair treads in entrance lobby; natural-cork flooring, sliding wood-slat panels for control of natural light, natural-birch paneling in reception and waiting room; asphalt-tile floor and acoustical-tile ceiling in general office.

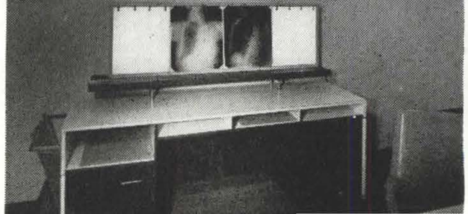
## thoracic clinic

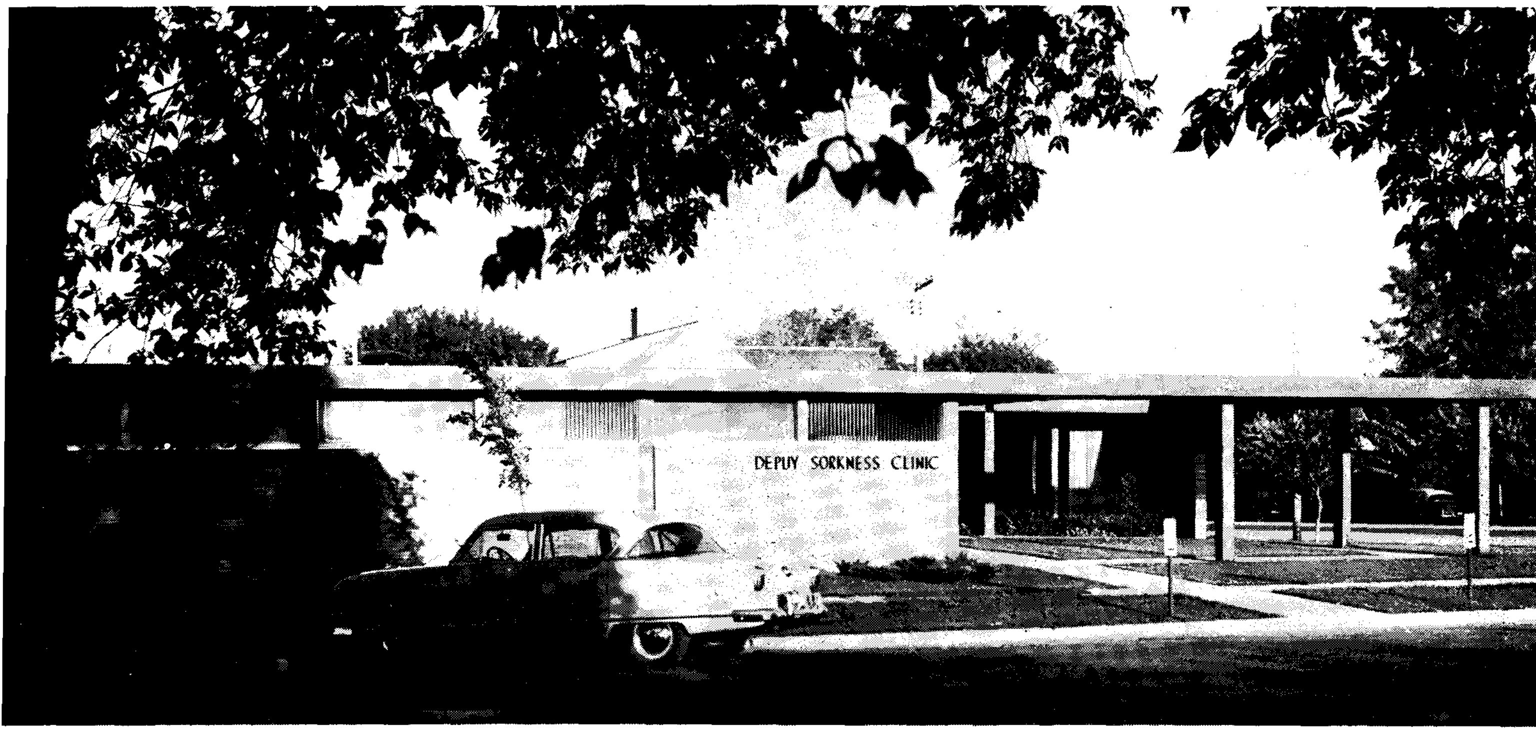






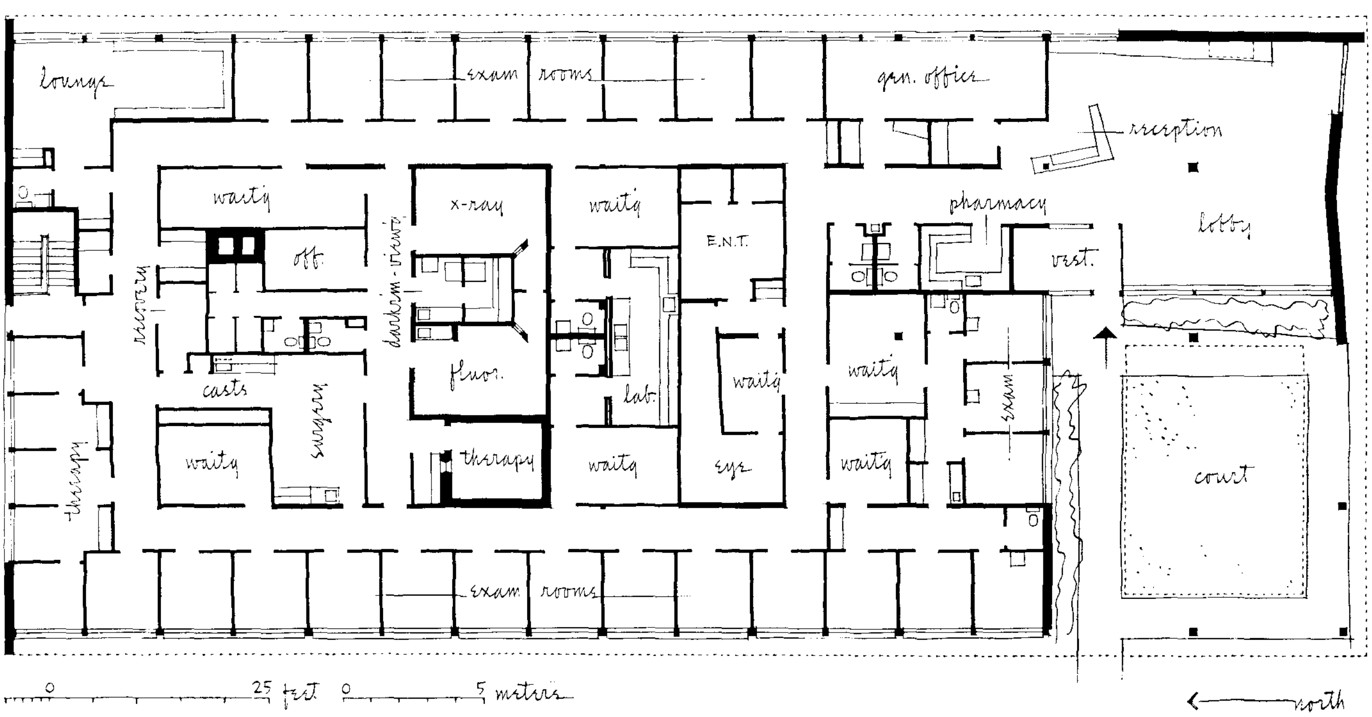
*Interior finishes for doctors' offices* (above) *are light in tone; curtain colors vary in each; flooring is of natural cork; ceilings are surfaced with acoustical tile. Examination rooms* (above right) *have linoleum floors. Furniture for specialized purposes, such as desk* (right), *is architect-designed.*



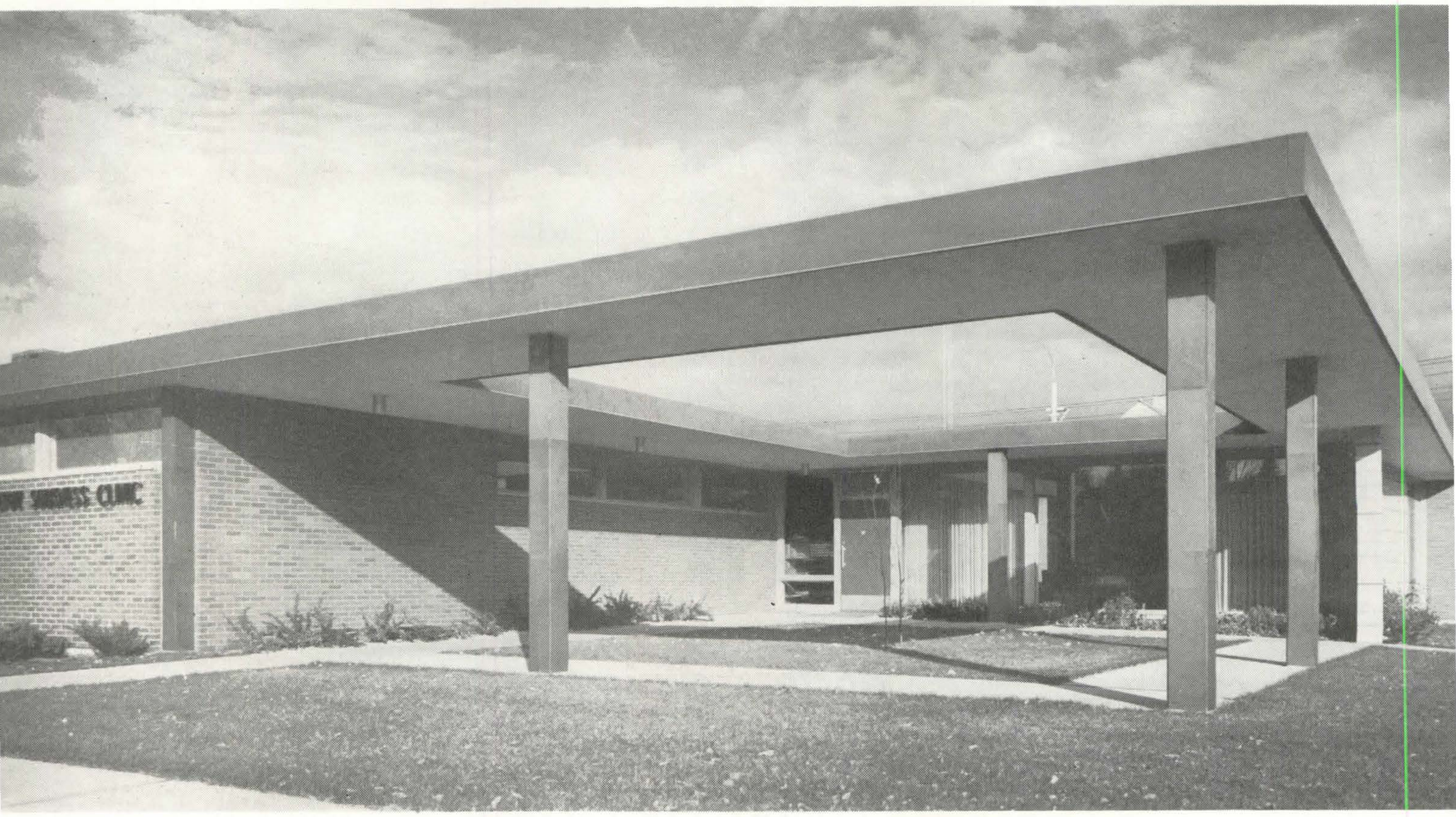



# doctors' clinic

| | |
|---|---|
| location | Jamestown, North Dakota |
| architects | Thorshov & Cerny, Inc. |
| job captain | William J. Miller |
| interiors and colors | Newton E. Griffith |



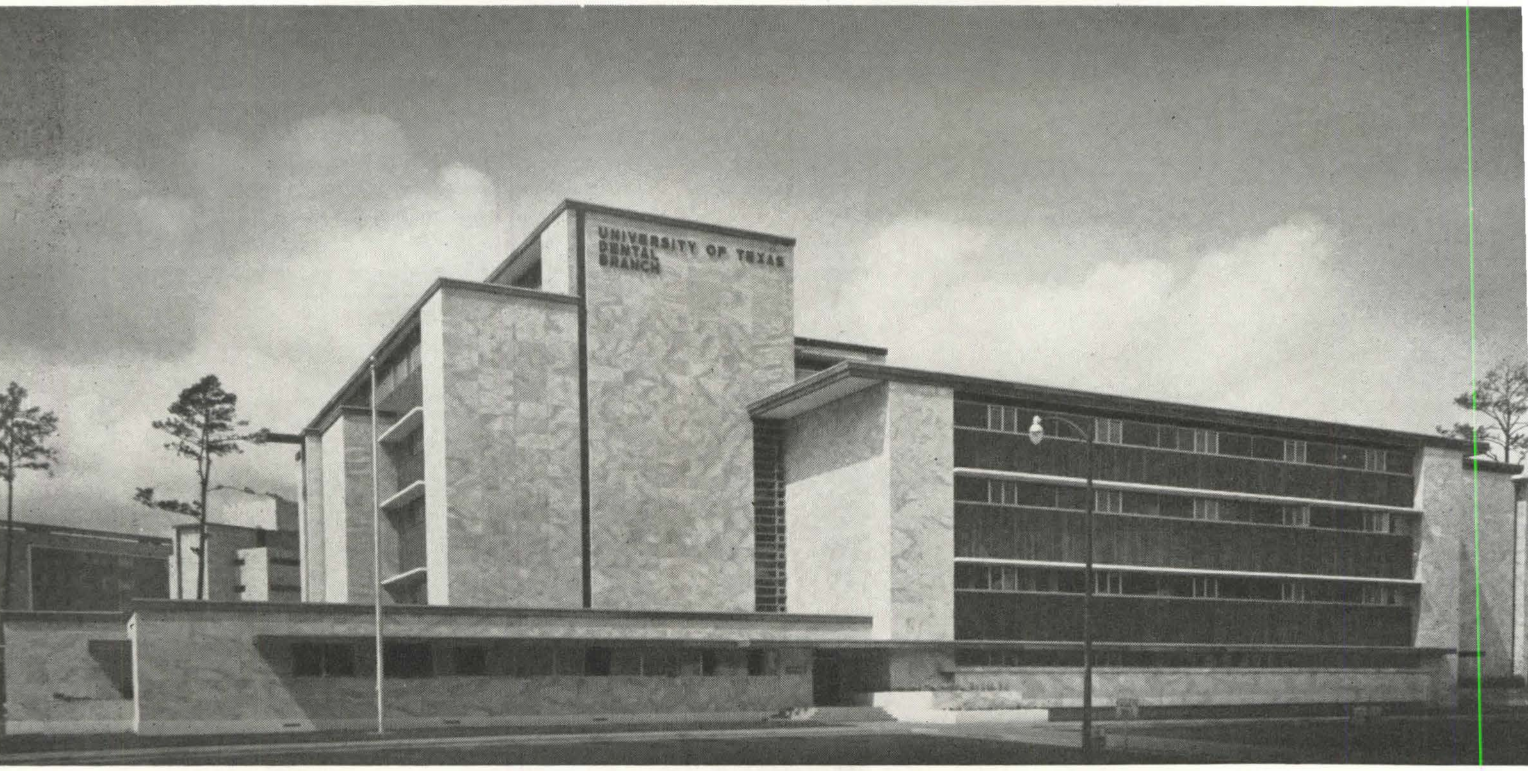
## doctors' clinic



This clinic serves the needs of 11 doctors—all specialists—and their staff of 19 technicians and office workers. The site was a level corner lot in a non-commercial section of the town. Parking space for 34 cars has been provided on an adjoining property. In order to maintain the character of the neighborhood, a one-story structure has been designed —its supports strong enough, however, to support a future second story. The basic plan of the clinic forms a rectangle in which the common facilities for the use of all participating doctors are grouped together in a central core; examination rooms line the perimeter of the building. The general waiting room, accommodating 30 to 40 persons, is attached to the rectangle of the clinic on the side near the street intersection. A pleasant patio, partially roofed, provides shelter for patients going to and from the waiting room. The structural frame of the clinic is steel; roof and floor are flat-slab systems. Columns are equally spaced and clearly expressed on the exterior of the building by a facing of slate, which contrasts with the filler panels of brick. Slate surfacing has also been repeated on the free-standing columns at the entrance patio. The slightly curved south wall of the waiting room is surfaced on the outside with 1"x1" ceramic-mosaic tiles laid in alternating stripes of white, yellow, blue, and bright red on a medium-gray background. Interior wall surfaces are primarily plaster, brick, and concrete. Ceilings have been treated with vermiculite; floors are of rubber or asphalt tiles. Windows are architect-designed, using double-thickness glass, sun-controlled by vertical blinds. R. D. Thomas & Associates, Inc. were Consulting Engineers; E. A. Moline, General Contractor.

*Examination rooms* (left) *and doctors' lounge* (below) *are located at the perimeter of the building. Natural light in these areas may be controlled by adjustable vertical blinds.* **Photos: George Miles Ryan Studios**

*Reception desk* (above) *faces vestibule and patio and overlooks main waiting room as well as clinic corridor. Color and pattern of ceramic-mosaic tile is repeated on the interior of the waiting room.*




# dental school: University of Texas

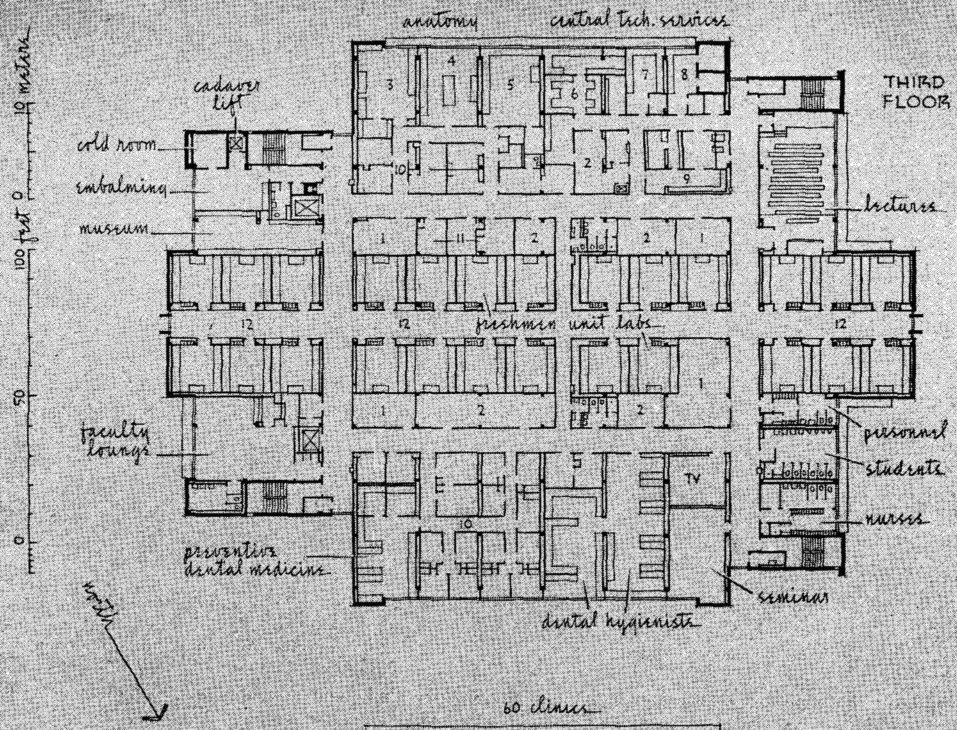
| | |
|---|---|
| site | Texas Medical Center |
| location | Houston, Texas |
| architects | MacKie & Kamrath |
| associate | Lloyd G. Borget |

Here is a truly remarkable building; a building whose radical plan may well herald a major departure in design of buildings for advanced instruction. Quite apart from its distinctive architectural design, this dental school—the University of Texas Dental Branch, in Houston—is designed around a forward-looking teaching concept that, for its realization, depends largely upon relatively recent developments in the fields of communications and electronics. Credit for devising the teaching system goes to Dr. Frederick C. Elliott, Vice-President of the University of Texas and Dean of the Dental Branch.

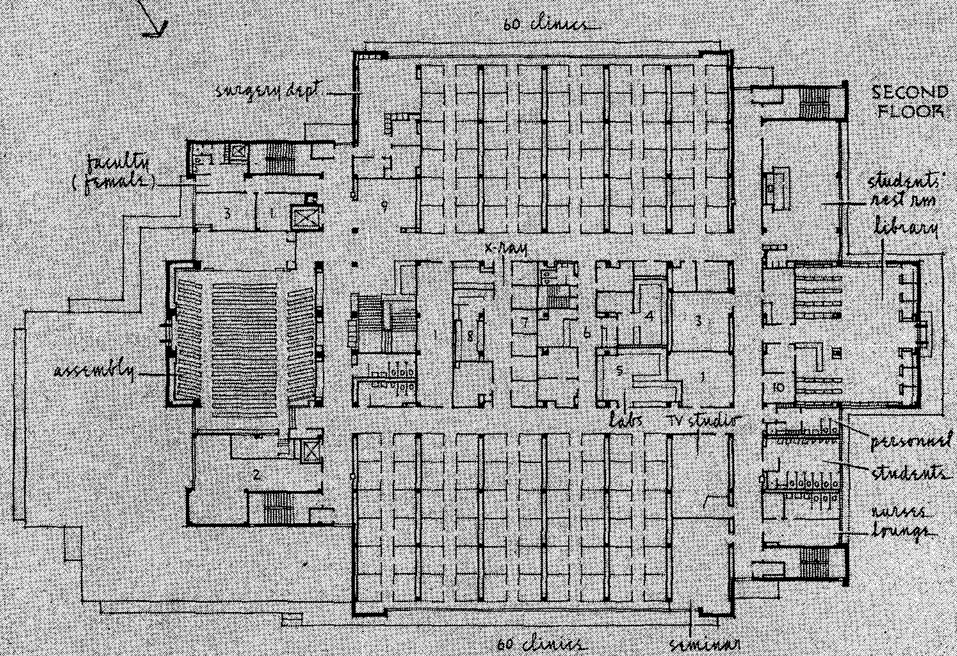
At this professional training school, *basic communication* between teacher and student is by means of audio-sound system or closed-circuit TV. Since the instructor talks or demonstrates from a TV studio, there is no need for huge mass-instruction laboratories—laboratories, incidentally, that in traditional schemes are unused for large periods each day. Instead (*see third-floor plan*), first- and second-year students are grouped in small (4-man) unit labs, each equipped with a TV receiving set. Students come to these labs daily (as a man goes to his office) and remain there throughout the teaching day. During lab periods, instructors make the rounds of the unit labs. And if a student wishes to contact an instructor during lab periods, he may do so over an audio-sound system. Thus, a high degree of personal instruction is possible; every student has a front-row seat in class; instructional areas are in constant use; and, the architects report, this new type of plan saved about 25,000 sq ft of building area over what would have been required for housing the traditional mass-teaching method, with an estimated net economy of $625,000. Third- and fourth-year students work on patients in the clinical treatment rooms on the first and second floors. The fourth floor is similar to the third in general scheme and contains the 4-man unit labs for sophomore students. On the fifth floor are the animal cages and specialized laboratories.

Designed to graduate 100 dentists each year, the school is the second unit of the University's evolving Houston campus, the first being the M. D. Anderson Hospital and Tumor Institute. Future buildings will include a Post Graduate School and School of Public Health. Associated with the Architects in the design of the Dental Branch were Walter P. Moore, Structural Engineer; and Raymond L. Jenkins, Consulting Mechanical Engineer. The Manhattan Construction Co. of Texas was General Contractor.

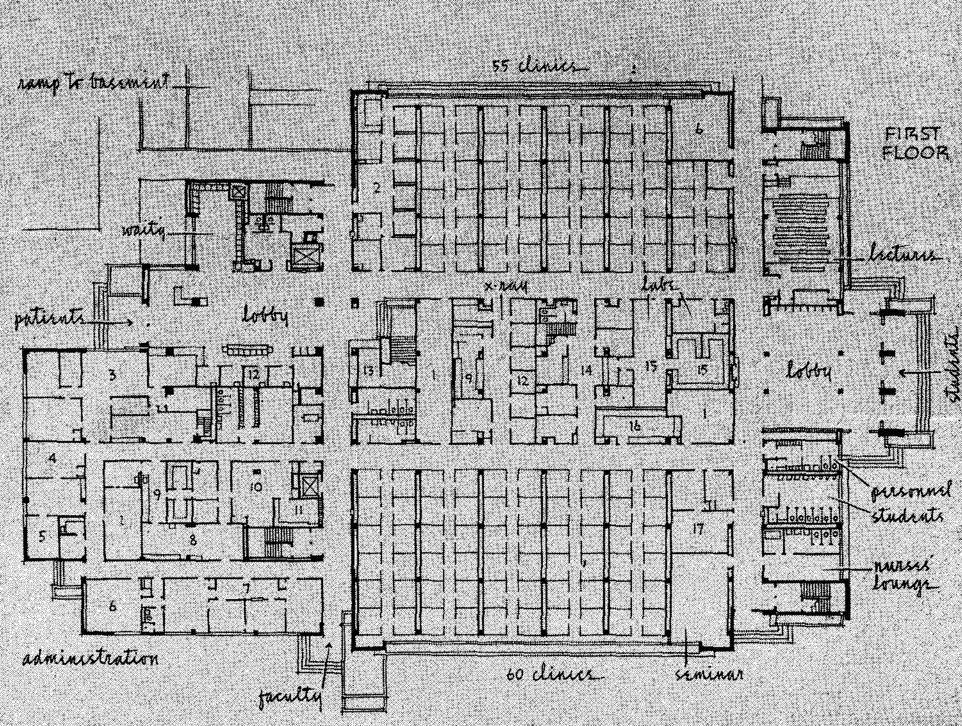
1 mechanical
2 storage
3 gross anatomy
4 histology
5 neuro
6 tissue
7 solution
8 bacteria prep.
9 glasswash-storage
10 instructors
11 graduates
12 anatomy museum



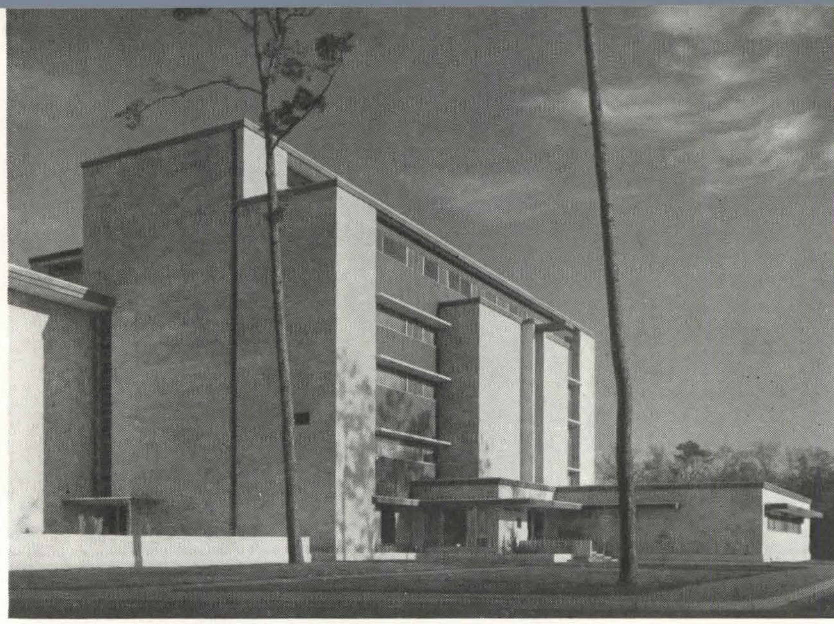

1 mechanical
2 storage
3 conferences
4 clinical lab
5 jun or lab
6 dispensing
7 exam rooms
8 darkroom
9 waiting
10 librarian




1 mechanical
2 augmentation clinic
3 accounting
4 registrar
5 records
6 conferences
7 vice-president
8 studio
9 darkroom
10 mimeo-printing
11 mail clerk
12 exam rooms
13 appointments
14 dispensing
15 clinical tech. lab
16 senior lab
17 post graduates



## dental school

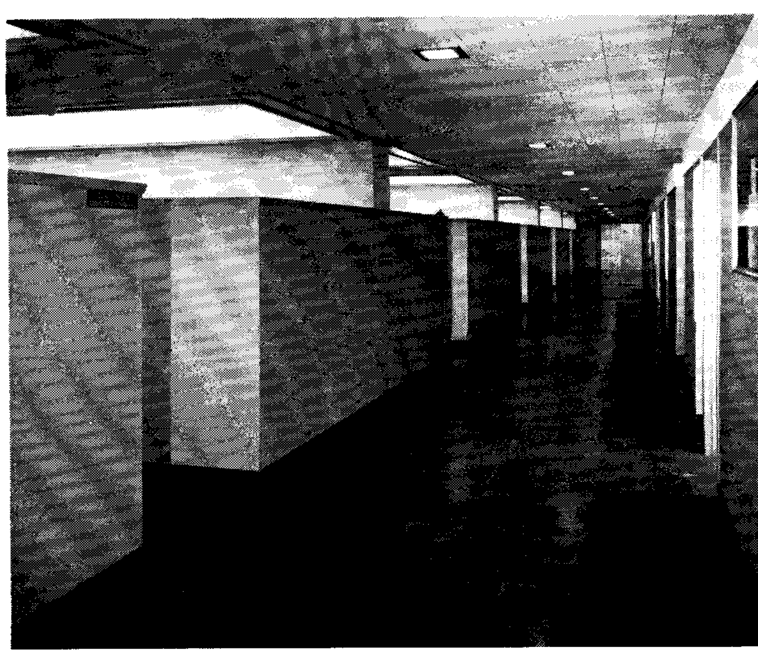


*Entrance for patients is located at the southeast end of the building, with appointment desks and waiting rooms on both first and second floors. Exterior color includes the pink of the marble veneer; gray spandrel areas; white concrete base; and white concrete canopies.*

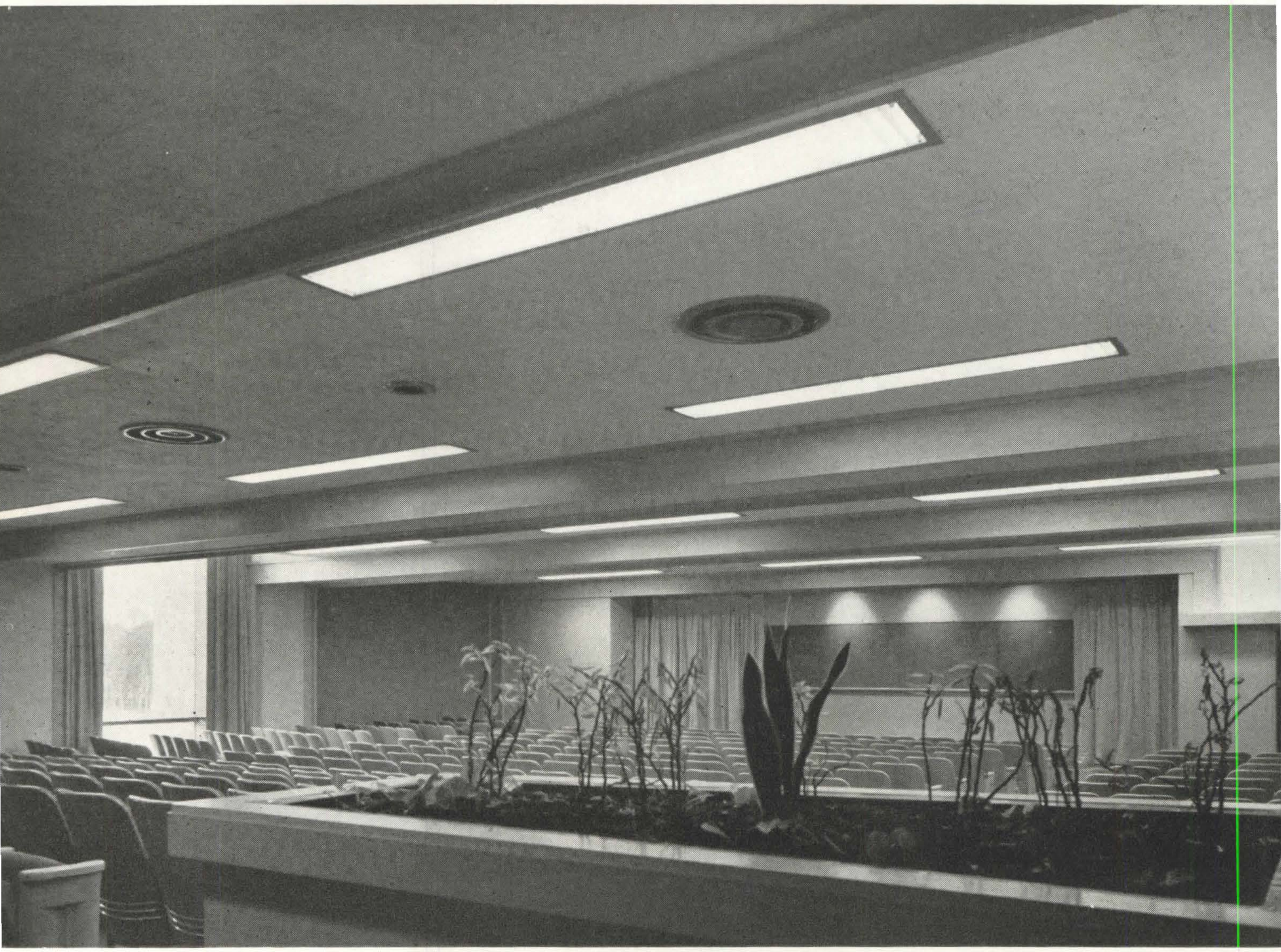
Photos: F. W. Seiders


*Clinical treatment rooms, where advanced students gain actual experience in working on teaching subjects, are organized in cubicles lining corridors on both first and second floors.*

*Each cubicle has the full equipment of an up-to-date dentist's office.*



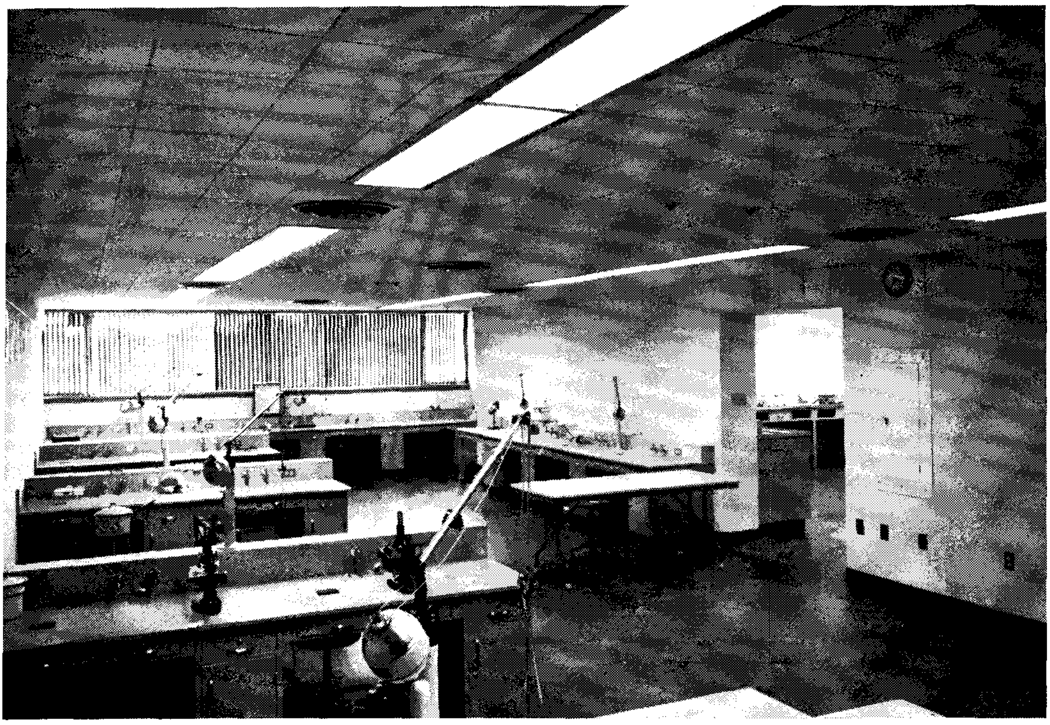
## dental school



### Materials & Methods

**construction**

**Foundation:** concrete spread footings reinforcing steel—Alamo Iron Works. **Structure:** frame: reinforced concrete; walls: perlite block, structural clay tile—Cordell Brick Company; floors and roof: reinforced-concrete slab. **Wall Surfacing:** brick—Garfield Refractories Company; aluminum—Flour City Ornamental Iron Company; marble veneer—Georgia Marble Company; plasterer; plastic sheeting and wood veneer—United States Plywood Corporation; ceramic tile—American-Olean Tile Company. **Floor Surfacing:** cork—Kentile, Inc.; rubber base—Goodyear Tire & Rubber Company, Inc.; terrazzo; quarry tile—Mosaic Tile Company. **Ceiling Surfacing:** sprayed asbestos; glass-fiber acoustical tile—Owens-Corning Fiberglass Corporation; fissured mineral tile and suspension system—United States Gypsum Company. **Roof Surfacing:** built-up roofing with gravel surface—Koppers Company, Inc. **Waterproofing & dampproofing:** metallic waterproofing—Master Builders Company; plastic cement—Koppers Company, Inc. **Insulation:** thermal: glass-fiber on roof deck—Owens-Corning Fiberglass Corporation; cotton batt—Taylor Bedding Company. **Roof drainage:** drains—Josam Manufacturing Company. **Partitions:** metal lath & plaster; glazed structural tile—Arktex Ceramic Corporation; plaster on clay tile; metal toilet partitions—Sanymetal Products Company, Inc. **Windows:** aluminum sash—Flour City Ornamental Iron Company; plate glass and aluminum store-front sections — Pittsburgh Plate Glass Company. **Doors:** hollow-metal interior frames—Superior Fireproof Door & Sash Company, Inc.; overhead rolling steel doors—Kinnear Manufacturing Company; enameled-steel elevator doors—Art Metal Company; tempered-glass entrance door—Pittsburgh Plate Glass Company. **Hardware:** aluminum lock sets—Sargent & Company; door closers—Norton Door Closer Company



*From TV studios, instructors broadcast lectures and demonstrations. The programs may be received in seminar rooms, conference rooms, lecture rooms, and classrooms, as well as unit laboratories.*

*On the third floor is a laboratory for dental hygienists* (top left).

*The typical 4-man unit lab* (below left) *has its TV receiving screen above the coat lockers in background. As in most areas of the school, ceilings are glass-fiber acoustical tile, with a 1-ft turn down on the walls.*

*The second-floor auditorium* (across-page) *is used primarily for visiting lecturers, occasionally as a classroom.*

and Glynn-Johnson Corporation; hinges—McKinney Manufacturing Company; aluminum panic exit—Von Duprin Division, Vonnegut Hardware Company. **Paint & Stain:** paint and varnish—Kuhn Paint Company.

## equipment

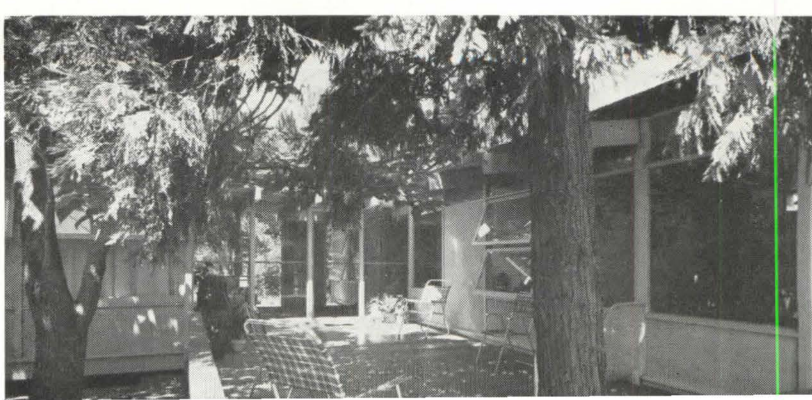
**Specialized equipment:** hand dryers—Electric Aire Engineering Corporation; clock—Simplex Time Recorder Company; bell sound systems—Western Electric Company; auditorium seating—Ideal Seating Company; laboratory casework and dental cubicles—Hamilton Metal Products Corporation. **Elevators:** hoisting equipment—The Hunter-Hayes Company; cabs—Globe-Van Doorn Corporation. **Lighting Fixtures:** Devine, Inc.; Albert Sechrist Manufacturing Company. **Electric Distribution:** circuit breakers—Powell Electrical Manufacturing Company; low-impedance duct system and steel conduit—National Electric Products Company; copper wire—United States Rubber Company; wiring devices—The Arrow-Hart & Hegeman Electric Company. **Plumbing & Sanitary:** water closets—American Radiator & Standard Sanitary Corporation; toilet seats—C. F. Church Manufacturing Company; flush valves—Sloan Valve Company; cast-iron pipe—Tylac Pipe & Foundry Company; shower controls—Logan Manufacturing Company; wrought-iron water supply system—A. M. Byers Company. **Heating:** type: steam; boiler—Wickes Corporation; fuel: natural gas; air-handling units—The Trane Company. **Air Conditioning:** type: centralized system; refrigerant—E. I. duPont de Nemours & Company; centrifugal compressor and condenser—Worthington Corporation; induced-draft cooling tower—J. F. Pritchard Company; grills and diffusers—Barber-Colman Company; air-handling units and cooling coils—The Trane Company; high-velocity filters—Farr Company; pneumatic controls—Johnson Service Company.

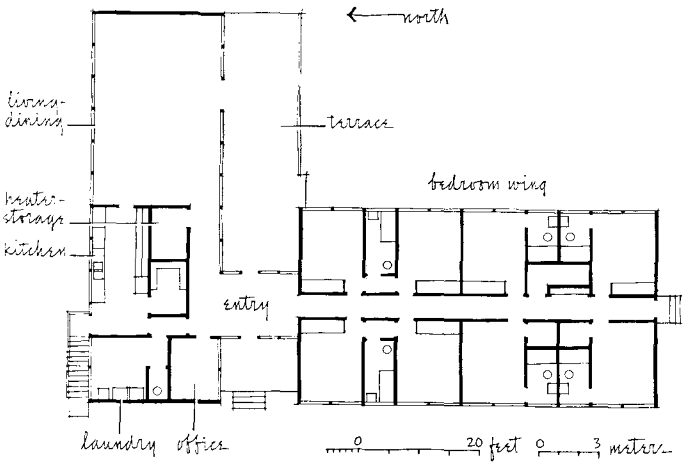
# home for the aged

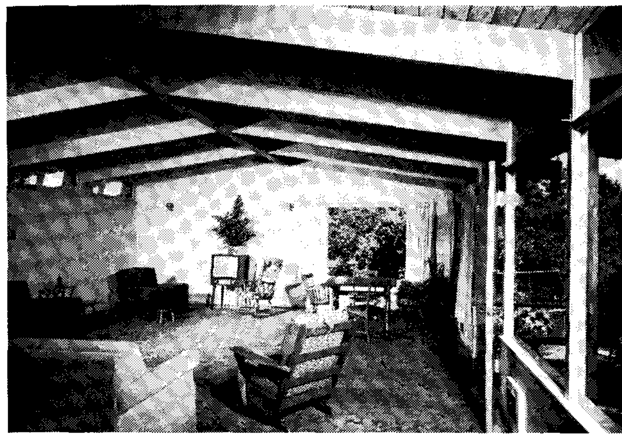
location | Lafayette, California
architect | Walter H. Costa

The Pinebrook Home for the Aged, maintained by the owner, his wife (a registered nurse), and one maid, provides residence for eight to ten ambulatory patients. Located on the east side of a north-south street, the L-shaped building is organized in two wings—one for the bedrooms and baths; the other, for living, dining, and work projects—joined by a glazed entry. For maximum quiet in the sleeping rooms, the living room, with its TV and radio, is placed at the far end of the other wing. Though the bedrooms are all the same size, two of them, each with its own bath, will accommodate two persons; four of the rooms each accommodate one person and have a connecting bath shared by one other resident; and the two remaining rooms are for one person each and have private baths.

Of wood post-and-beam construction, the structure is developed on a 5′-4″ module, using 3″x4″ posts and 3″x10″ beams or rafters. The exposed roof planking is 2″x6″ tongue-and-groove. Cement plaster, applied in panels between the structural posts, is the exterior finish; interior wall surfaces are of plaster; flooring is either oak or cork. The building is heated by hot-air furnaces, with registers located around the perimeter. John E. Brown was Consulting Engineer; the owner contracted the work himself.



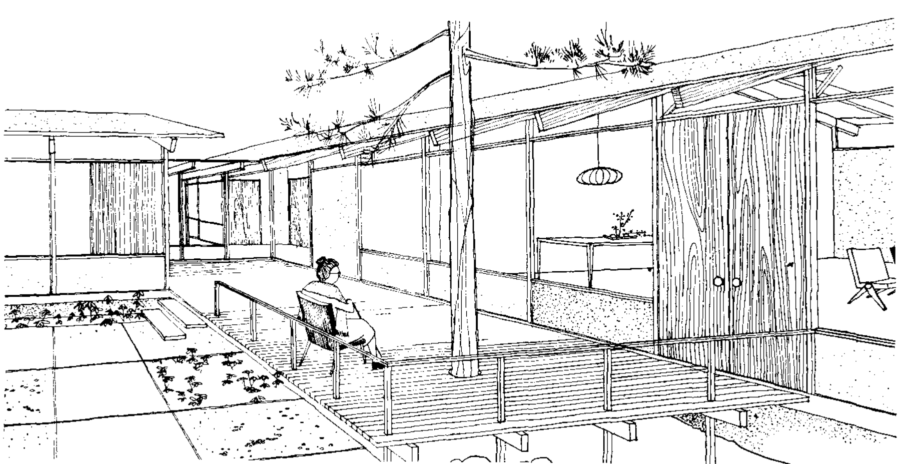


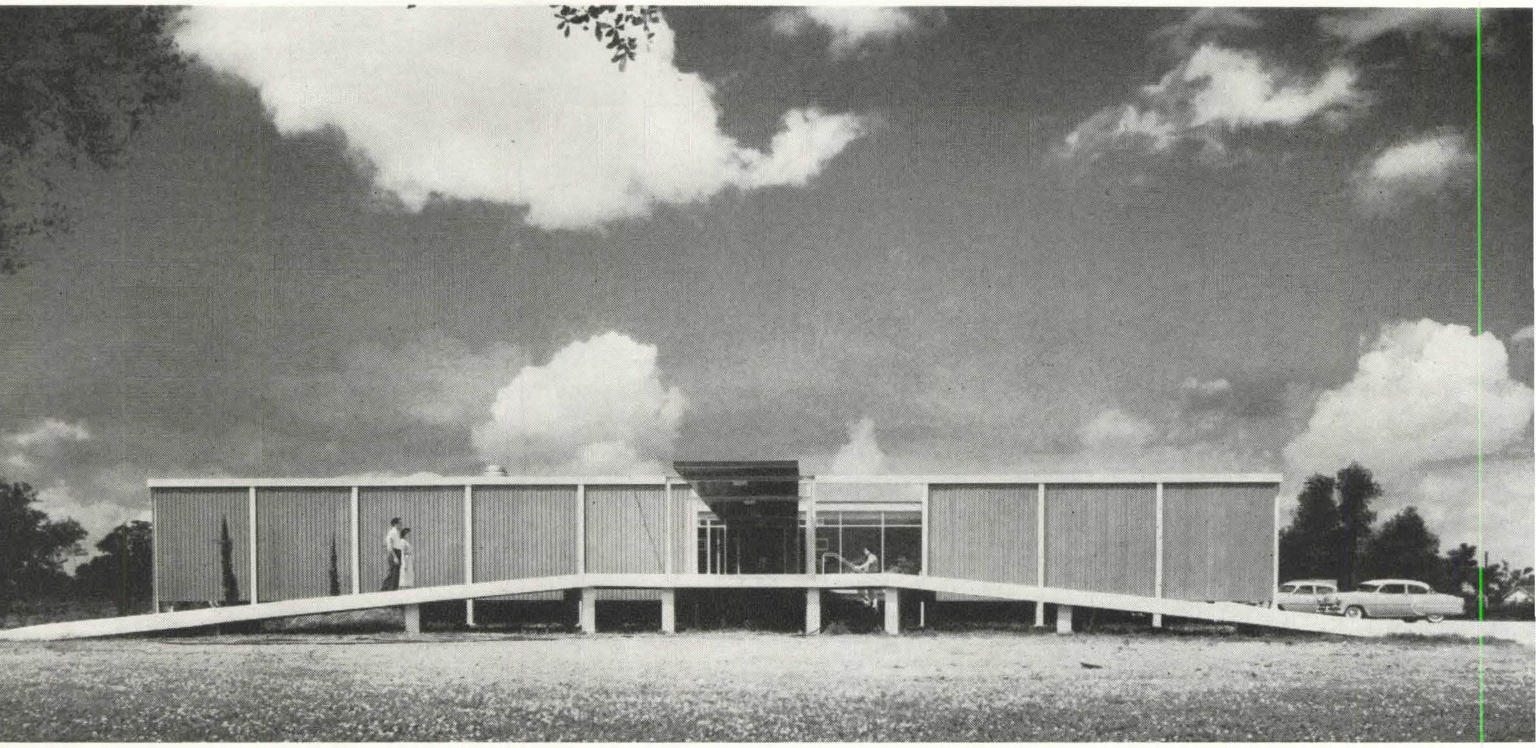



*In the residents' bedrooms, a fixed panel of wire glass occurs above the out-swinging clear-glass sash units.*

*Large windows on the south wall of the living room adjoin the protected sitting terrace.*

Photos: Morley Baer





# parish hospital

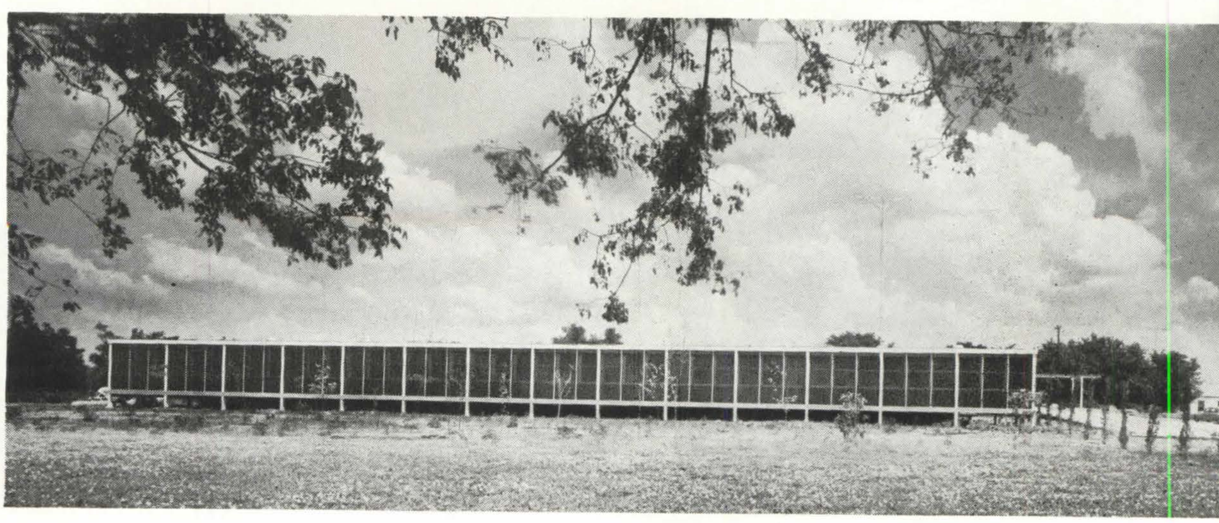
location | Golden Meadow—Galliano, Louisiana
architects | Curtis & Davis & Associated Architects & Engineers

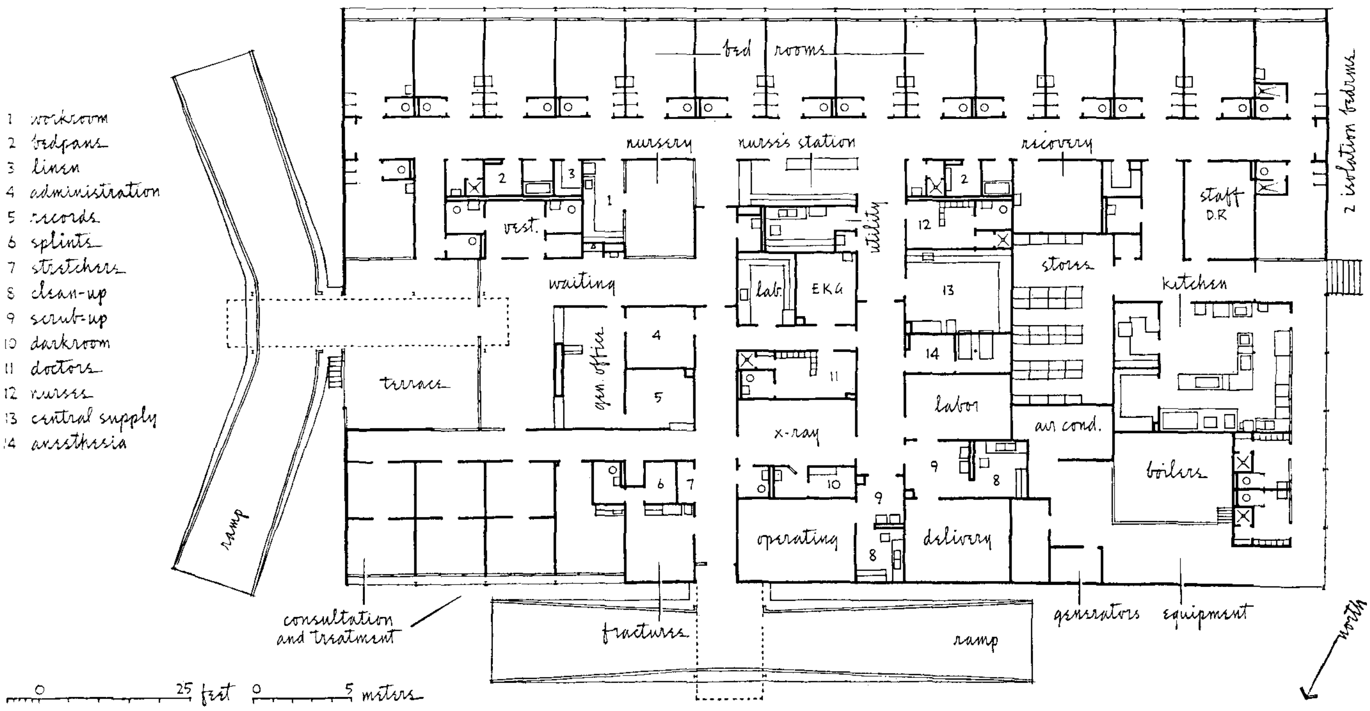
*Twin ramps on the east front* (above) *bring visitors and outpatients to the entrance terrace and main lobby.*

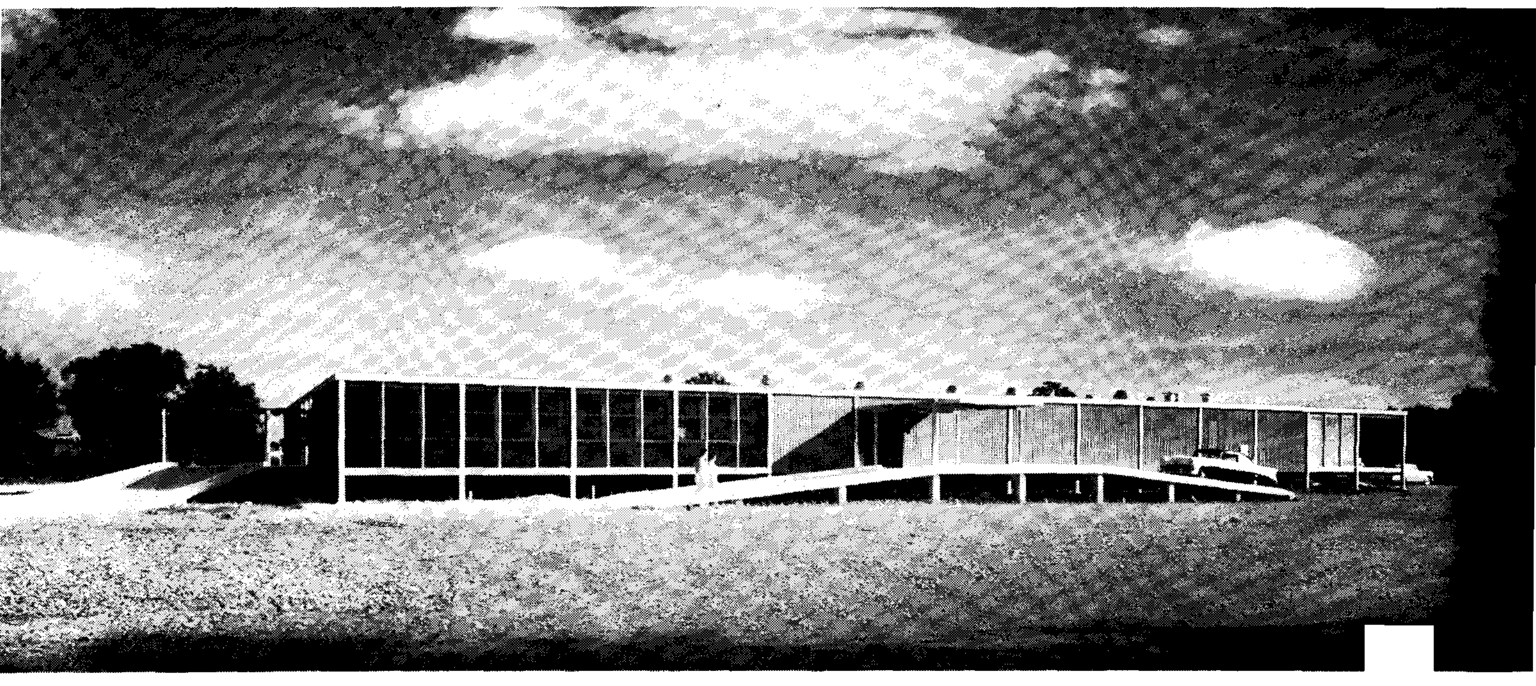
*Pattern along the south (patients' bedroom) wall* (below) *is made up of full-height, louvered, metal screening, set 1'-3" outside the windows.*

*On the north side* (acrosspage), *doctors' offices and treatment rooms occur at left; ambulance entrance, center; and operating, delivery, and service rooms, right.*

Photos: Frank Lotz Miller





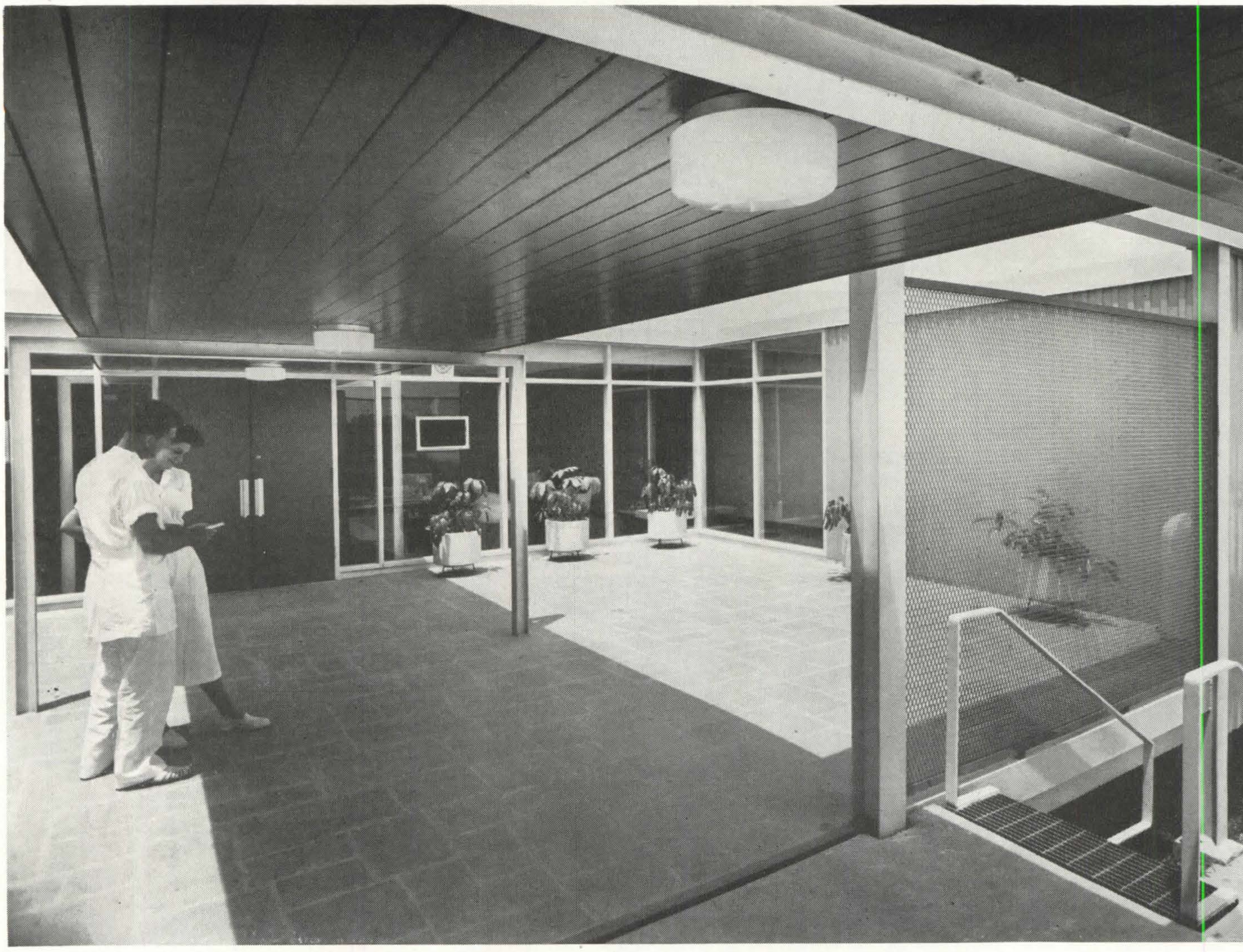
A 25-bed facility, Lady of the Sea General Hospital is designed to handle routine medical and obstetrical cases, simple surgery, and extensive diagnostic procedures. The more complex and specialized cases will go to larger hospitals in major centers.

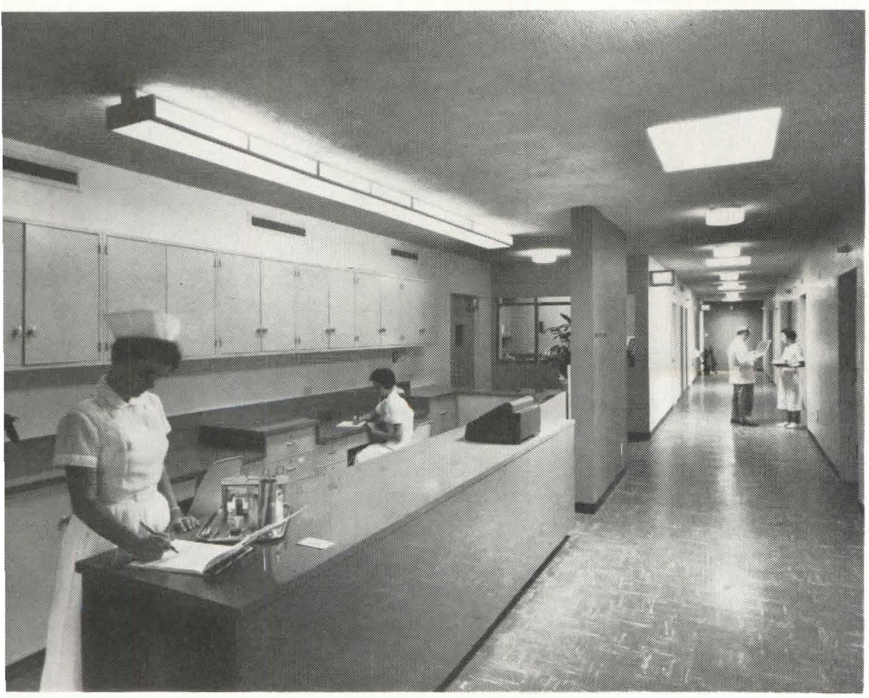
Undoubtedly the most notable elements of the compact, single-floor scheme are the complete separation of the various essential lanes of traffic within the hospital and the efficient organization of attendant services along these lanes. Patients' rooms are aligned along the south wall, and daylight is controlled by both draperies and exterior, fixed, louvered, metal screening.

Structure consists of steel columns and beams supporting precast, pre-stressed-concrete floor and roof units. Use of the latter allowed erection of the roof before elaborate piping and wiring were installed, and simplified raising of the main floor off the ground to overcome danger of flooding.

Solid exterior walls are blue, porcelain-enameled steel panels and white-painted, exposed steel frame. Acoustical plaster is applied directly to the underside of the precast slabs. Sash are aluminum, and plastic-dome skylights are used for interior, daylighted rooms. The entire hospital is air conditioned, with individual controls in each room.

Mechanical-Electrical-Air-Conditioning Consultants: deLaureal & Moses; General Contractor: Lionel F. Favret Co., Inc. Members of Lafourche Parish Hospital Service District No. 1 (10th Ward): Alexis J. Plaisance (Chairman); Richard D. Guidry; Mrs. Joseph Leonard, Jr.; Ashton Collins; Lloyd Theroit.



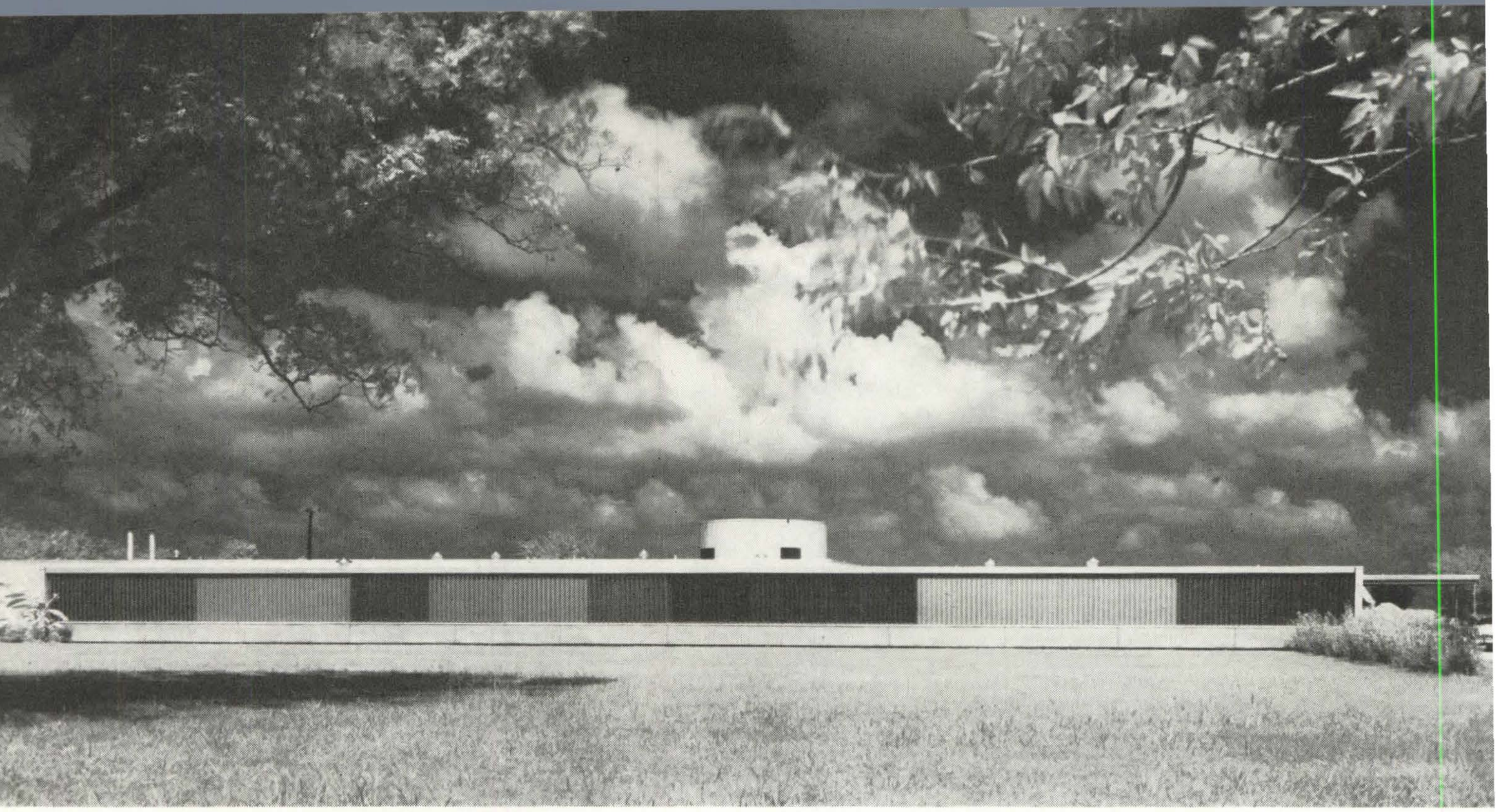


*Slate paving on the entrance terrace* (above) *is continued inside as the waiting-room floor* (acrosspage).

*The nurses' station* (left) *is centrally located on the north wall of the nursing-unit corridor. Windowed room beyond is the nursery.*

*At either side of the end of the central north-south corridor of the hospital are the air-conditioned operating and delivery rooms.*

*Fixed, louvered, metal screening tempers the light in the south-facing patients' bedrooms; asphalt-tile flooring.*

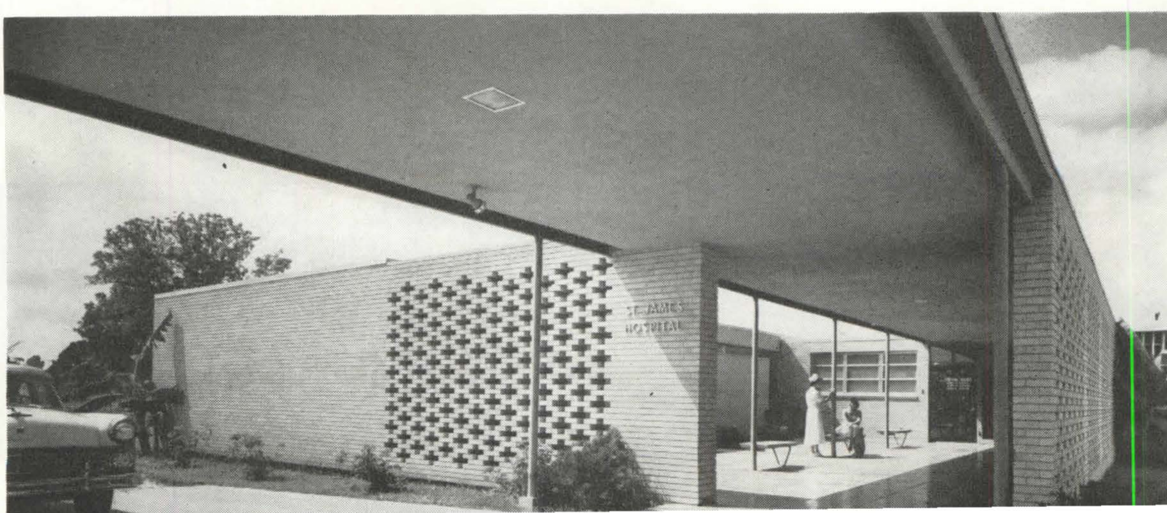


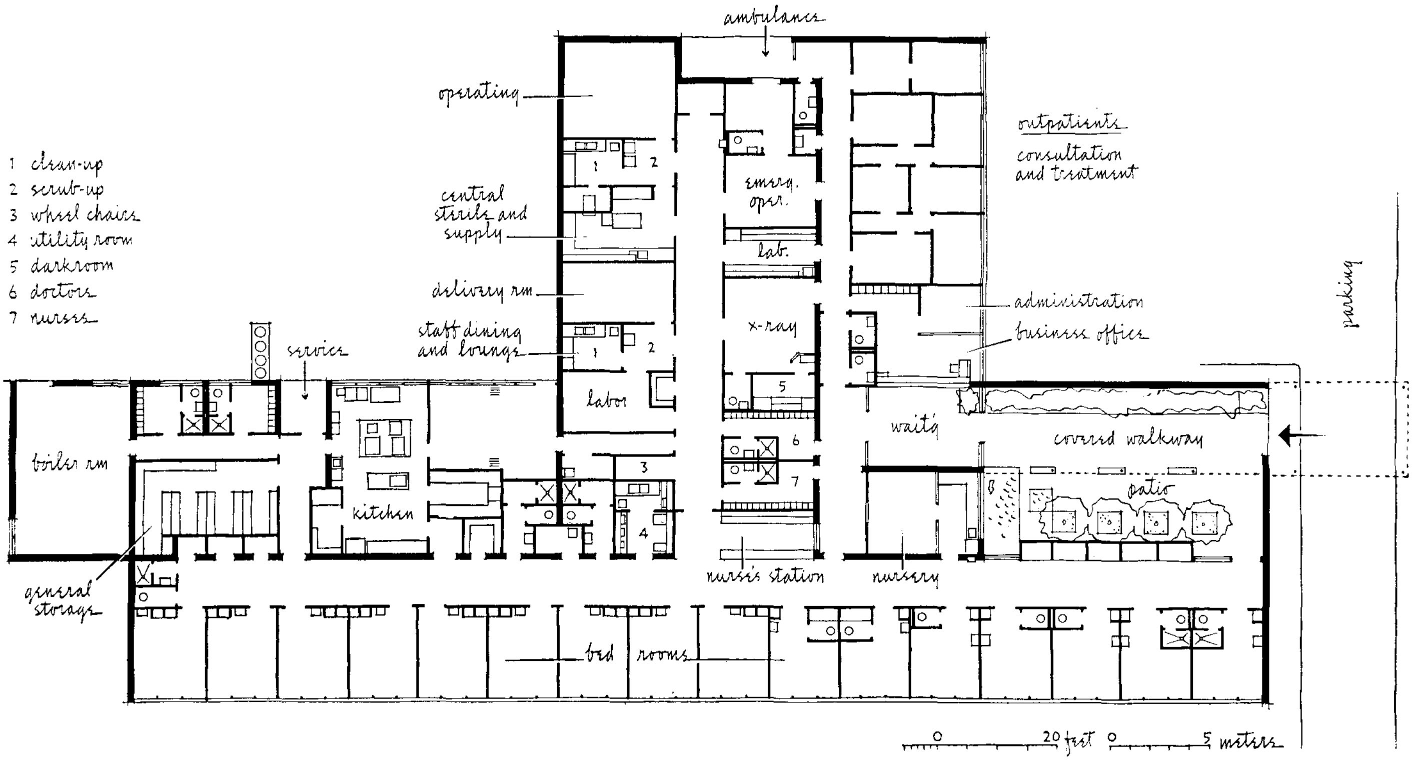
# parish hospital

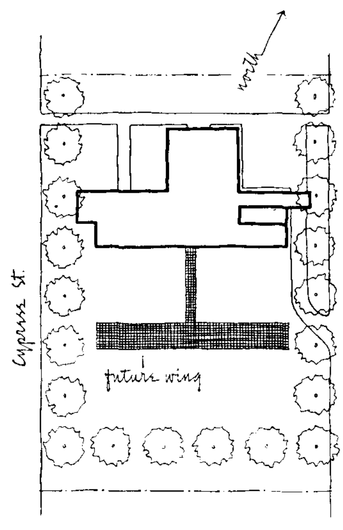
location | Lutcher, Louisiana
architects | Curtis & Davis & Associated Architects & Engineers

*Along the south face of the hospital* (top), *the vertical, enameled-metal louvers form a bold pattern.*

*A canopy spans the visitors' entrance driveway and continues across the walled patio to the main lobby of the hospital* (acrosspage). Photos: Frank Lotz Miller





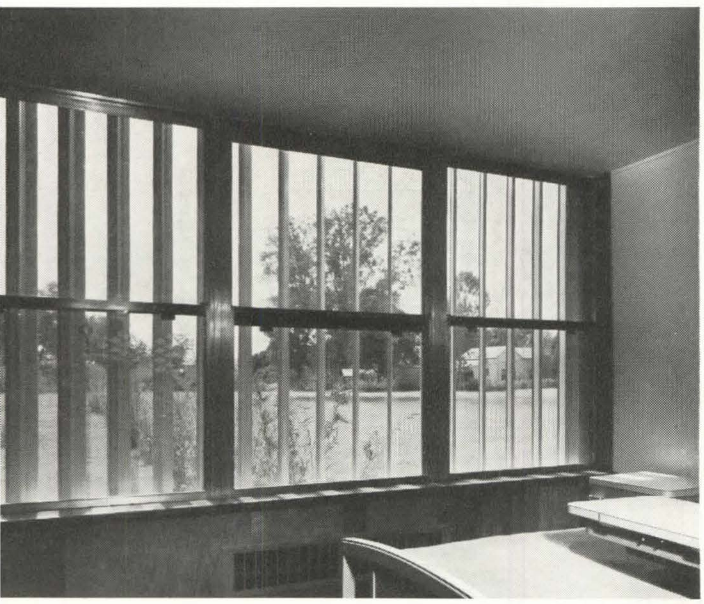

The program for St. James Hospital was very similar to that of the hospital shown on preceding pages—a 25-bed facility for handling routine medical and obstetrical cases, simple surgery, and diagnostic and outpatient services. In this case, however, the scheme is developed with the thought of a possible later addition of a second nursing wing, doubling the hospital's capacity. Separation of the various lines of traffic—visitors, service, ambulance—was a basic consideration in the plan development. The main waiting room is preceded by a landscaped patio—a "psychological preparation" area. For colored patients, separate but unequal waiting space is provided at the rear of the building, alongside the ambulance entrance.

The structural system consists of a reinforced-concrete slab on piling poured over fill; steel columns and beams; bar joists; corrugated-steel forming, and lightweight-concrete roof deck. The vertical, metal sun-control fins bordering patients' rooms are finished in light-blue baked enamel. Only the operating room, delivery room, and nursery are air conditioned, though all other rooms are roughed in for future installation. Sash are aluminum, and interior, daylighted rooms have plastic-dome skylights. Doors are flush wood, solid core, throughout. Lock sets and hinges are dull chrome.

Mechanical-Electrical-Air-Conditioning Consultants: deLaureal & Moses; equipment selected by Jesse Bankston, Hospital Consultant; John C. Corbin, General Contractor. Members of the St. James Hospital Board: David Reynaud (Chairman); Sidney Oubre; James I. Hymel; F. A. Graugnard; and Harry Brazon.

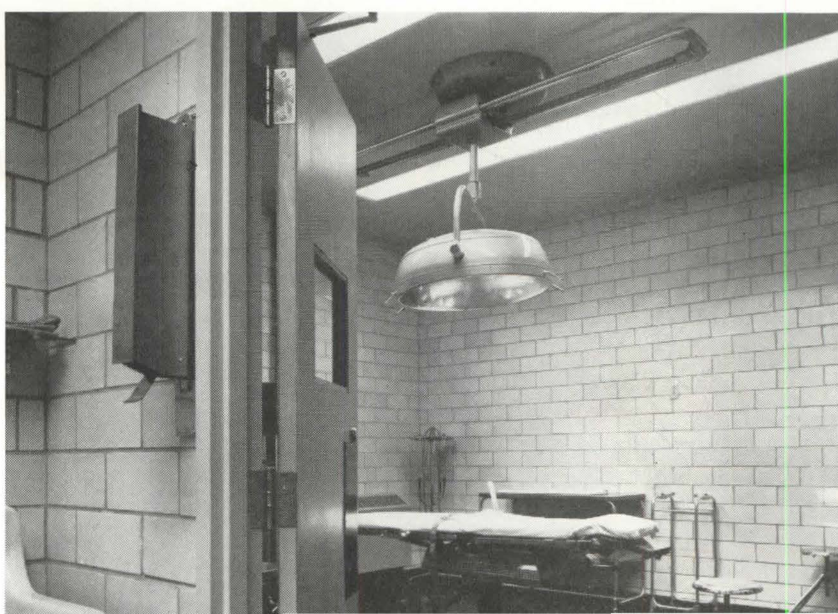
## parish hospital


*A window at the end of the nurses' station* (right) *provides a clear view into the nursery, across the intervening corridor.*



*In the south-facing patients' bedrooms, exterior, vertical, enameled-metal fins deflect unwanted sunlight and reduce glare.*

*Structural glazed tile surfaces the walls of the scrub-up alcove and main operating room* (right).



# hospital air conditioning — why and how?

by William O. Huebner*

During the week of July 3-9, 1955, at the height of a heat wave, the New York City Health Department reported the mortality rate was nearly 40 percent higher than during the corresponding (and much cooler) period of 1954. Older persons were most affected.

A mortality increase of 10 percent, or even 20 percent, might not have been significant, but a jump of almost 40 percent leaves little doubt that heat and humidity can kill when they attack an already weakened body. How many might have had their lives prolonged if an air-conditioned hospital room had stood between them and the worst effects of the heat? Officials are asking this question more and more urgently as the evidence mounts. Their concern accounts for the great increase in hospital air conditioning that has taken place over the past decade. Air conditioning in hospitals began nearly 30 years ago with the construction of an air-conditioned chamber for the control and observation of allergic disorders. This pioneer installation, at the University of Frankfurt, Germany, was the forerunner of many similar units throughout the world.

As more information was uncovered and the heat-regulating mechanism of the body became better understood, air conditioning gained further ground in hospitals. It was learned that a patient was most comfortable, and suffered the least possible loss of his vital energy, when the transmission of heat from the body to the atmosphere was balanced closely with the production of heat within the body. It was learned further that even individuals in normal health may suffer a considerable strain in adjusting to hot, humid conditions because the ability to lose heat by radiation and perspiration is sharply reduced under such conditions. Individuals whose energy is low and who suffer from certain injuries or illnesses may suffer even greater strain at a time when they are least fit to undergo it. Cardiac patients, for example, may be unable to maintain the circulation necessary to insure normal heat loss. Individuals with head injuries, those subjected to brain operations, and others, may have "hyperthermia," especially in a hot environment. Obviously, it is essential to the welfare of such patients that their environment be such that they may lose heat readily by evaporation and radiation. This of course means a cool room with dehumidified air.

Air conditioning is of unchallenged value in operating rooms, nurseries, recovery and delivery rooms, and maternity wards. In the operating room, winter humidification helps reduce the danger of anesthetic explosions; summer cooling and dehumidification reduce the fatigue and nervous strain of the operating staff; filtering of the air removes most of the allergens from it.

There is fixed optimum condition for operating rooms. Many surgeons prefer temperatures between 72F and 75F but, for the sake of the patient, may accept temperatures as high as 82F. Generally, systems are designed to maintain a temperature of 80F with a relative humidity of 55 percent throughout the entire year.

Either central-station air-conditioning plants or unit air conditioners with ductwork may be used, but the units should never be located inside the operating room. Introduction of 100 percent outside air with no recirculation of operating-room air is common practice. A separate exhaust-fan system is used to exhaust the air to outdoors. Double windows are always desirable and may often be indispensable to prevent condensation and frosting on the glass in cold weather, and to minimize drafts.

Ventilation rates in operating rooms should be from eight to twelve air changes per hr. This will reduce the concentration of anesthetic below the physiologic threshold and dissipate the great heat load generated by lights, sterilizing equipment, and solar radiation.

Recovery rooms are frequently air conditioned to stabilize peripheral circulation of the patient during the immediate postoperative period. It is important to reduce excessive loss of fluids on hot humid days. In some hospitals, the temperature of the recovery room is gradually lowered to between 85F and 70F, depending upon the needs of the patient.

In the hospital nursery, air conditioning is used widely, particularly in the care of premature infants. To stabilize the body temperature of these infants, a relative humidity of from 55 to 65 percent should be maintained, with the requirements for temperature varying from 75F to 100F, according to the general constitution and weight of the infant. For normal babies, temperature conditions of 85F and 60 percent RH are recommended.

### case histories

The following case histories have been selected to illustrate typical situations likely to be encountered by the architect and engineer. We will consider first a single-duct, high-velocity system in a new, medium-sized hospital: the Fayette County Hospital, Vandalia, Ill.; Architects, Pace Associates. Next, a single-duct, high-velocity system in an existing hospital: the Canonsburg General Hospital, Canonsburg, Pa.; Architects, Ingham, Boyd & Pratt. Finally, a dual-duct, high-velocity system in a clinic housed in an existing structure: Western Psychiatric Institute and Clinic, Pittsburgh, Pa.; Architects, Hunting, Larsen & Dunnells.

* *Anemostat Corporation of America, New York, N.Y.*

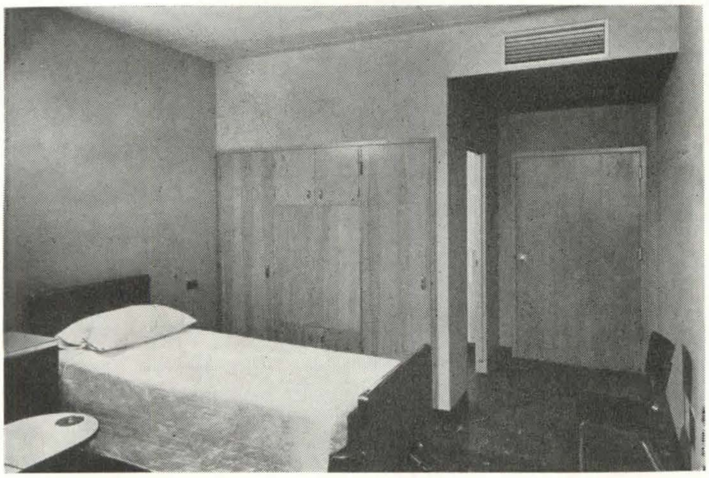


*Figure 1—patient's room with all-air induction diffuser installed above entrance. Diffuser is of 100-percent-induction type and discharges a mixture of equal quantities of room air and supply air.*

*Figure 2—air-conditioned scrub-up room adjoining operating room* (acrosspage).

### single-duct, high-velocity new hospital

The Fayette County Hospital is a T-shaped structure of flat-slab concrete with aluminum spandrels. Emergency department, surgery, X-ray department, and laboratory are located on the first floor of the central wing and are completely isolated from the rest of the hospital. This arrangement results in reducing operating cost by relating similar functions. Lobby, waiting, and examination rooms, and administrative offices are located in the right wing; kitchen, cafeteria, and dining room are located in the left wing.

The second floor of the central wing houses the delivery suite, the obstetrics suite, and the nursery; the left and right wings of the T accommodate the patients' rooms. Boiler and other equipment rooms, laundry, shops, and storage rooms are located in the finished space under the central wing.

The building is completely air conditioned by means of a single-duct, high-velocity system designed for year-round operation.

Vandalia has a winter outdoor design temperature of 10F, and the summer outdoor design temperatures are 98F dry bulb and 77F wet bulb. Adequate heating and cooling facilities are therefore required. Conventional design would have called for winter heating, by hot-water or steam radiation, and for adequate ventilation, a combination which is ordinarily less expensive than year-round air conditioning. However, use of all-air units permits special economies, such as the space savings achieved by the use of fixed sash, elimination of screens, and saved radiator space. By keeping all ducts and utilities within the corridor bays, hung ceilings in two-thirds of the hospital are eliminated. Ceilings are actually the underside of the floor above, surfaced with acoustical tile. The toilet rooms, placed back to back, contain the air-exhaust system. Plumbing is located at columns within the toilet rooms, and this arrangement has resulted in a minimum of piping—45 ft less per plumbing fixture than in comparable structures.

A patient's room, with an all-air unit installed above the entrance and discharging conditioned air toward the window, is shown *(Figure 1)*. The unit is of 100-percent induction type—that is to say, for each 100 cu ft of primary air brought to the unit, up to 100 cu ft of room air is drawn into the diffuser of the unit. Although high-temperature differentials may exist between supply and room air, high induction provides proper air diffusion by decreasing the air density and doubling the air mass, thus compensating for the low rate of air flow usually associated with high-temperature-differential distribution systems.

Where outside design temperatures are above 20F, the unit can be used for heating without supplementation, but when outside design temperatures are below 20F, supplementary heating or double-glazed windows are necessary to prevent down-drafts. Because of the cold winters in Vandalia, double-glazed windows are used throughout the hospital.

The air-conditioning system is zoned to take care of the varying loads of the outside exposures. The double-glazed windows reduce the effect of high solar-heat gains and, in addition, projecting floor slabs serve as sunshades. Light-diffusing casement drapes, plus heavier overdrapes, control the light. Each room is thermostatically controlled.

Scrub-up facilities adjoining operating room are shown *(Figure 2)*. The scrub-up is located in the corridor and serves two operating rooms at the end of the center wing. This arrangement permits the installation of the all-air high-velocity unit in the ceiling; attached is a square diffuser. These units are used extensively for air conditioning interior and exterior zones, and can be equipped with either round or square air diffusers.

The construction cost of this hospital was $1,294,000, or $20.59 per sq ft (with unfinished basement and third-floor space adjusted to value of finished space). The normal capacity of the hospital is 84 beds, the maximum capacity 108 beds. Further expenditure of $75,000 will provide 17 additional bedrooms on the unfinished third floor.

### single-duct, high-velocity existing hospital

The Canonsburg General Hospital is a good example of the way savings may be effected in modernization by altering the function of the existing structure and adding an extension.

By building a new wing on the north side of this hospital, and altering the original facilities, the hospital now pro-

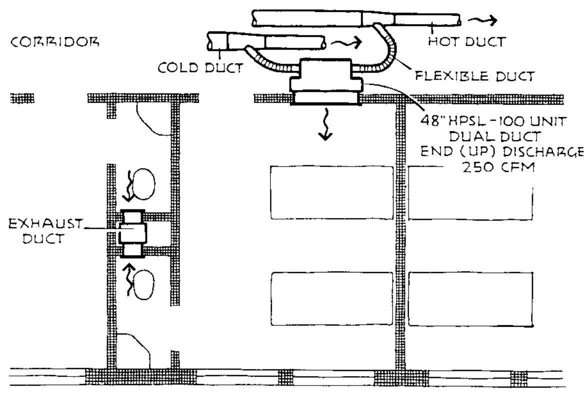



*Figure 3—dual-duct system layout with diffuser installed as sidewall unit. Attenuator-diffuser unit taps onto both hot and cold units, regulating proportions of each in accordance with individual room requirements.*

vides 112 beds instead of 58 beds. The new wing accommodates two operating rooms and cystoscopic room with related facilities, one recovery room, one emergency room, and one drug room. Also, two delivery rooms, one labor room, and related facilities; six 4-bed wards and four semi-private rooms; kitchen with walk-in refrigerators and storage, dishwashing room, cafeteria service area; and two dining rooms.

By transferring inadequate operating and delivery rooms, kitchen, and dining rooms to the new wing, seven additional bedrooms and related utility rooms, one nurses' station, and one nursery were added to the existing building. Furthermore, the existing administrative offices and laboratories were considerably enlarged.

The new wing has a structural-steel frame, open-web joists, and concrete-slab floors; walls are of brick and curtain-wall construction; the foundation is concrete. The interior has plaster walls, but glazed structural tiles are used for the walls of operating and delivery rooms and in the kitchen. Floors are asphalt and rubber tile.

Operating and delivery rooms are air conditioned, using a single-duct high-velocity system with all-air units, and exhaust systems have been installed in the kitchen and interior toilets.

Since the completition of the new wing and the remodeling of the fourth floor of the present building, the Board of Directors of the hospital has approved the installation of toilets and lavatories in every bedroom of the existing building. This will add to the comfort and convenience of patients and the nursing staff. The cost of the addition and renovation of existing facilities was about $775,000; further improvements will cost approximately $80,000.

A labor room on the first floor and an operating room on the ground floor of the new wing have 100-percent-induction, all-air units attached to the pressure-reducing, mixing, and sound attenuation box. The two units in the delivery room and in the operating room have a capacity of 400 cfm with a diffuser length of 48 in.; the unit in the labor room has a capacity of 150 cfm with a diffuser length of 24 in. The units are thermostatically controlled for adjusting the air-flow rate; pneumatic dampers are used throughout.

Addition of the new wing and renovation of the existing facilities provide the Canonsburg district with one of the most modern hospitals in Pennsylvania.

#### dual-duct, high-velocity existing structure

The Western Psychiatric Institute and Clinic, which is part of the Medical Department of the University of Pittsburgh, is a multistory building. To modernize the building, and at the same time improve the comfort of the staff, it was decided as a first step to air condition the 13th, 14th, and 15th floors of the building, on which the administrative offices, examination, treatment, and test rooms, laboratories, instrument rooms, and shops are located. A careful investigation of the air-conditioning, zoning, and space requirements resulted in the selection of a dual-duct high-velocity system with all-air units.

The great advantage of the dual-duct system is that it is extremely flexible, giving individual-room control rather than zone control at all seasons of the year, regardless of variations or shifts in thermal loads in any part of the building. Flexibility is at a maximum and shifts in demand are met with an automatic response. There is no need for cycle changeover, as in systems using warm or cold air or water alternately in a single-duct or waterpipe distributing network.

The ducts of the dual-duct system are small and require a minimum of space. They can be furred above corridors as readily as single-duct systems or installed as risers at the perimeter of the building. All-air units can be mounted either in the ceiling, under the side wall, or under the window. These units have been especially developed for all-air, high-velocity, year-round air conditioning. They provide excellent air diffusion and coverage of the occupied area on both heating and cooling cycles, supply sufficient ventilation air at all times, and can be used without the refrigeration cycle. This is particularly important when outdoor wet-bulb temperatures are lower than interior wet-bulb temperatures. It is then possible to make use of the available outdoor air to reduce the cooling load and to reduce the required hours of operation of the refrigeration equipment.

Part of the library and the mechanical shop in the Western Psychiatric Institute, have all-air units installed in the ceiling, which discharge air through square and straight-line diffusers. Forty-two units are installed—27 units with square diffusers on the 13th floor, and 7 and 8 straight-line diffusers on the 14th and 15th floors, respectively. It is of interest to note that the two diffusers shown in two of the illustrations are connected to *one* all-air unit—a practical arrangement that is also highly economical. In addition, units are available with a discharge opening in the end of the units for duct connection to one or more diffusers (so-called "end-discharge" units), or with up to four round discharge openings for flexible duct connection to so-called "Octopus" units.

#### the role of high velocity

As the advantages of high-velocity systems have become better known, they have become overwhelmingly popular in the hospital field. Space requirements, ease of installation, and maintenance and servicing problems are of the utmost importance in air conditioning hospitals, as in other multiroom buildings. The use of conventional low-velocity, large-duct systems is rarely advisable or even possible, since they consume valuable space and, if not properly concealed, are unsightly. More important in an existing hospital, the installation of a conventional low-velocity system may seriously interfere with essential activities.

Furthermore, multistory and multiroom buildings have a large percentage of outside rooms and the solar-heat gain therefore constitutes a considerable part of the total, sensible, heat load, which shifts throughout the day and necessitates zoning of the building according to exposure. This frequently requires temperature control in individual rooms.

The modern all-air, high-velocity, high-temperature-differential, air-distribution system with all-air high-velocity units satisfies all requirements of multistory and multiroom buildings. It is a central system but uses high velocities so that the size of the ducts can be reduced. This requires special outlets which reduce velocity and pressure and attenuate the sound to predetermined values at the point of discharge of the air.

A brief presentation of the advantages of the all-air high-velocity system over conventional and mixed-cycle (air and water) systems follows:

1. It reduces the cost of utility services, such as wiring, chilled- or condenser-water piping, insulation, and drainage.

2. It reduces the number and sizes of outside-air intakes, of filters, and of accessory equipment.

3. It considerably reduces the size of ducts and therefore the amount of duct insulation.

4. It uses a minimum of floor space for risers and other equipment; it permits locating the central equipment for ease of operation and maintenance.

5. It reduces the complex operating and maintenance problems characteristic low-velocity air distribution.
of central and unitary equipment with

6. It reduces the amount of cutting, patching, and redecorating necessary for installing air conditioning in existing buildings. The small ducts reduce installation time and cost of labor.

7. It provides flexible zoning and air distribution in new as well as in existing buildings. High-velocity air distribution is adaptable to changes in lighting and occupational loads without physical changes in the distribution layout.

8. All-air high-velocity units have no coils and there is, therefore, no danger of condensation. Damp coils collect lint and emit dank odors; the drains and all fittings of mixed-cycle (air and water) and fan-coil systems must therefore be carefully insulated and sealed to prevent condensation.

9. All-air high-velocity units have no fans, filters, or electric motors. They operate entirely with air which is processed in the main equipment room.

10. All-air high-velocity units are installed by the sheet-metal trade only: consequently, there is no conflict of trades.

11. More primary air is delivered to all-air high-velocity units than to induction-coil units. This allows operation in spring and fall with only outside air, with resultant savings in the cost of refrigeration.

12. All-air high-velocity units provide scientific air distribution. Each high-velocity unit is equipped with an aspirating or high-induction diffuser which is designed to diffuse air without drafts. Each unit is balanced by an easy-to-operate balancing device and a calibrated orifice. The all-air high-velocity system can be balanced in less than half the time required to balance a low-velocity system.

13. All-air high-velocity units require practically no maintenance after installation.

The high-velocity system may be used for both heating and cooling in localities with winter outdoor design temperatures of 20F and higher. If used for both heating and cooling in localities with winter outdoor design temperatures of less than 20F, supplementary radiation under windows is required or the building must have double-glazed windows and insulated walls.

The system is also equipped with 100-percent-induction all-air units. Each unit has remote manual control which enables the occupant to control the rate of air flow but is engineered to supply a sufficient amount of ventilation air at all times.

The fan is provided with static-pressure regulator and inlet vane control, which operates automatically if some of the units are closed.

#### typical application high-velocity units

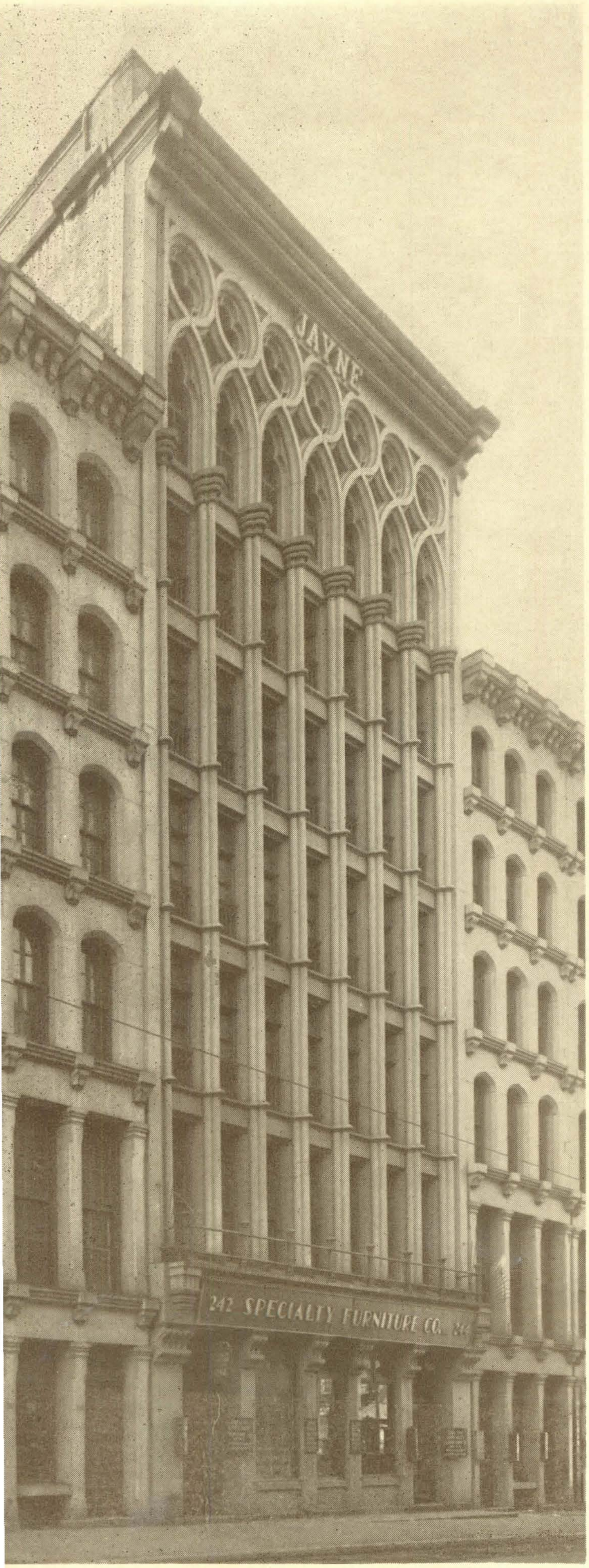
Under-the-window induction units are ideally suited for hospitals which generally have many outside rooms. This application permits minimum floor-to-floor heights since overhead ducts are generally eliminated. The units may be used with single-duct or dual-duct systems, and with thermostatic or manual control. Dual-duct induction units permit individual-room control throughout the year with constant volume of supply and ventilation air.

Another use of the dual-duct system is illustrated (*Figure 3*). Units are installed in the wall separating the room from the corridor. Air is then discharged toward the window of the room. This arrangement has all the advantages of dual-duct design, but can be installed at lower cost than the under-the-window system.

# PROGRESSIVE ARCHITECTURE IN AMERICA

*JAYNE BUILDING—1849-50*
*Philadelphia, Pennsylvania*
*William J. Johnston, Thomas U. Walter, Architects*


National Park Service




*Cortlandt V. D. Hubbard*

The idea of the skyscraper is as much a reflection of man's desire to immortalize his ambitions and accomplishments in permanent architectural form, as it is a result of rising land costs and the invention of the skeleton frame that ultimately made full realization possible. It was this psychological motivation that produced America's earliest tall buildings, long before the restrictions of masonry construction were overcome. The Jayne Building is one of the first and best of these proto-skyscrapers. Within the limitations of conventional structural techniques, this trend-setting building was remarkable on three counts: its unique height, the extreme and novel verticality of its design, and its character as a commercial monument.

In the Philadelphia of over a hundred years ago—a city of three- and four-story buildings predominantly of classic horizontality—the Jayne Building rose to a striking ten stories (totaling more than 130 feet), including its two-story "Castellated Gothic" observation tower. The dramatic emphasis given this height by the bold ascent of the uninterrupted piers of its Venetian Gothic façade must have made it seem a soaring colossus, particularly without the flanking wings, which were not added until a few years later. Although it foreshadowed much that was to come in commercial building, its direct link to the future was through the eyes of the young Louis Sullivan, who began his architectural career in an office directly across the street. Sullivan's early resolution of the skyscraper form, in terms of strong patterns of organized, vertical piers and windows and terminating, horizontal cornices, bears a striking resemblance to the Jayne Building's revolutionary design.

Built at a cost of over half a million dollars for Dr. David Jayne, patent-medicine magnate and architectural entrepreneur, the work was begun by William J. Johnston and finished by Thomas U. Walter, later architect of the wings and the iron dome of the United States Capitol. In addition to the eight stories and tower, there are at least two more stories below the street level. The unusual height required a front foundation wall eight feet thick, with some stones as large as two or three tons. The 42-foot façade is of Quincy granite, huge blocks of full-story height measuring as much as 20 feet long and weighing up to 16 tons, which were lifted into place with steamhoisting machinery by the contractor, Solomon K. Hoxie, before fascinated crowds of sidewalk spectators. Iron was used only for a central line of interior columns and for one girder below ground; all other interior framing was of wood. There were two built-in merchandise hoists, possibly steam-operated, forerunners of the modern elevator.

"Dr. Jayne's Granite Building" was not only spectacular architecture, but spectacular advertising as well—one of the first of those impressive edifices that were to become a characteristic American expression of business success. It was the most elaborate and unusual example of a pronounced trend in Philadelphia's commercial architecture at that date: the development of a new kind of functional building with a marked emphasis on vertical structure, in contrast to New York's conventionally ornate "palaces of trade." The novelty of the building served its owner well. In addition to providing his professional headquarters, it was used to illustrate and identify his widely circulated catalogs and almanacs, "printed in all the modern languages of Europe and Asia, including some of the minor dialects of India." The tower and part of the façade were destroyed in a fire of 1872. The building was immediately reconstructed to the cornice line, as it still stands today, a prophetic symbol of the city that surrounds it.

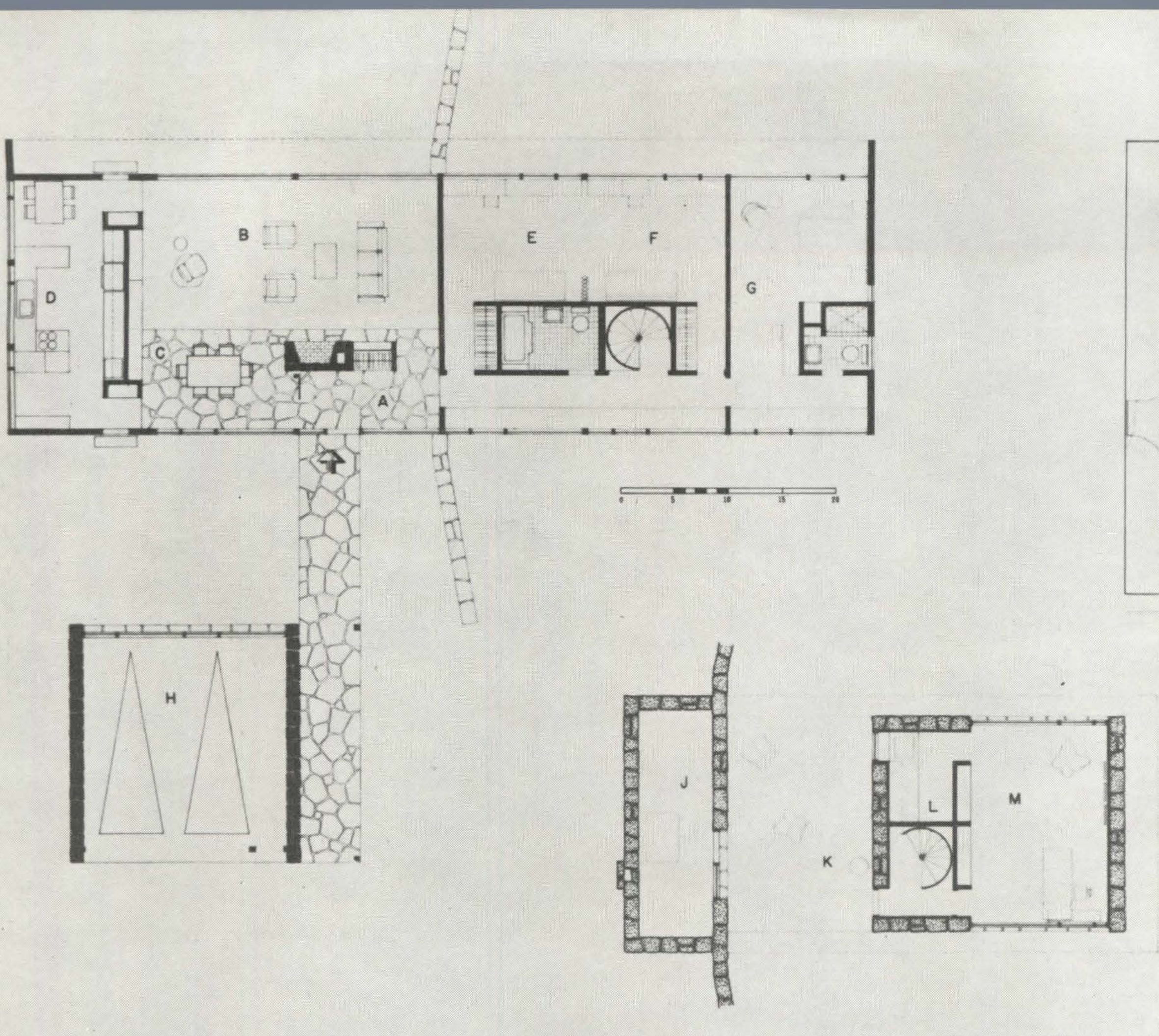
ADA LOUISE HUXTABLE

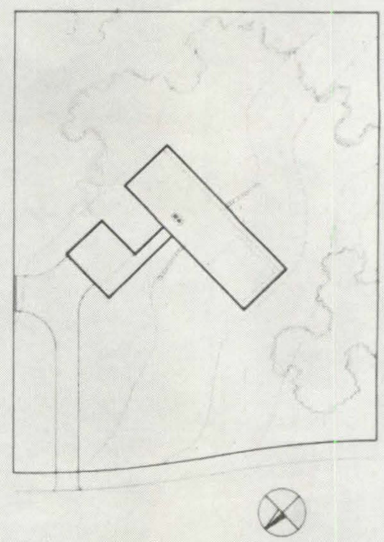
---

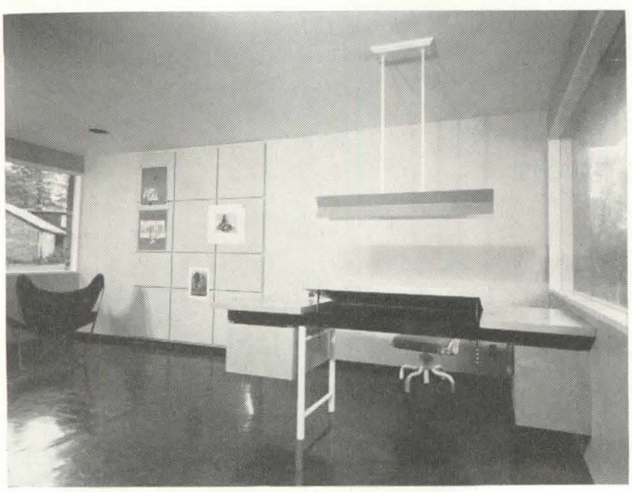
*Assistance for this article and early illustration contributed by Charles E. Peterson; special information on 19th Century Philadelphia's commercial architecture from Winston Weisman.*

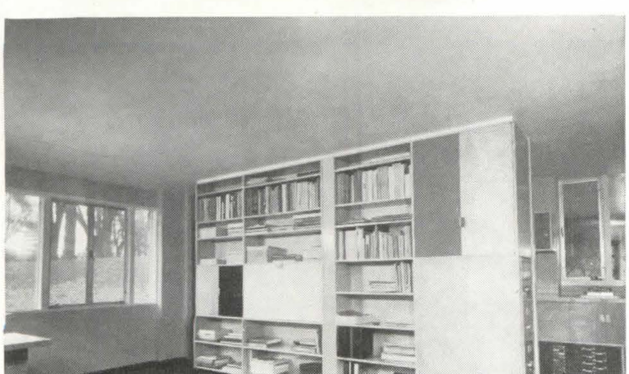
# house/studio

location | Rydal, Pennsylvania
architect | Arthur B. White



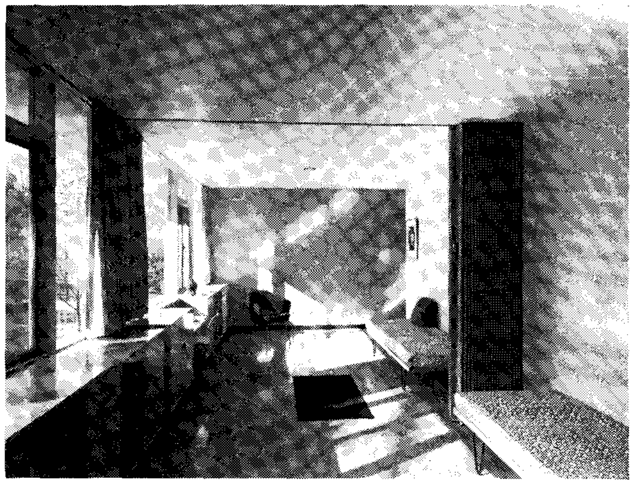


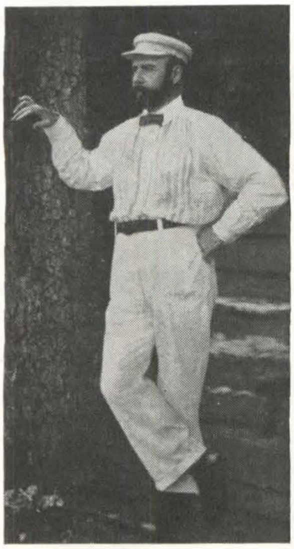


## house/studio

*The site for this house/studio, the last available in the vicinity and in little demand because of its slope, proved particularly adaptable to the special requirements of the client. A two-story scheme places living quarters on the upper floor and the owner's studio (left) on the floor below. A spiral stair connecting living quarters and studio "is pleasant esthetically," according to the architect, "yet sufficiently hazardous to reduce casual use—a great contribution to privacy." The structural frame of six equal bays is primarily of wood, using steel at the living area only. Garage and base of the house are of masonry (50 percent of exterior walls were required to be of masonry by deed restrictions). Exterior walls above are gray siding with white trim. Bright-colored spandrel panels at the bedrooms are of flat porcelain-enamel sheets cemented to the wood frame. The house is heated by hot water through copper pipes embedded in the plaster ceilings of both levels, and through supplementary coils in the studio floor slab. All furniture is built-in and architect-designed. T.J.&J.J. Regan, Inc. was General Contractor.*

Photos: Robert Opfer, Berry & Homer

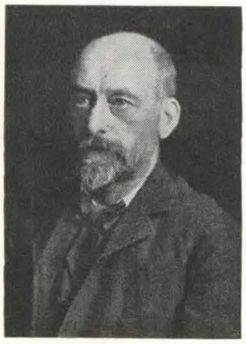




Sullivan (1856-1924)

# *Louis Sullivan and Hendrik Berlage:*

*by Leonard K. Eaton**



Berlage (1856-1934)

In July, 1906, William Gray Purcell, a young American architect who had worked in the office of Louis H. Sullivan and long admired what Sullivan stood for, called at the architectural office of Dr. Hendrik P. Berlage in Amsterdam. At that time, the famous Amsterdam stock exchange had just been finished, and it is not surprising that Purcell should have wanted to meet its designer, who was clearly recognized as one of the most influential and controversial architects in Europe. Purcell found him to be a little man, formally dressed in a Prince Albert coat with a square cut skirt, stiff collar, and black tie. He had a serious face, penetrating eyes, a pointed gray beard, and altogether looked much like a conventional European college professor. Notwithstanding this formality of bearing, he was lively and imaginative, full of enthusiasm, and spent the better part of two days showing Purcell and George Feick, his traveling companion, his works in Amsterdam and The Hague. He spoke English well enough to carry on a comfortable conversation.

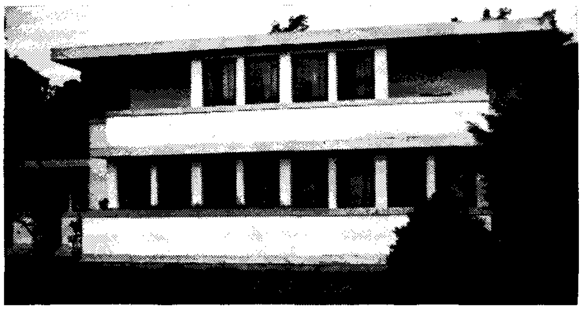
Berlage's first questions to his young American visitors were, somewhat surprisingly, not about architecture, but about Theodore Roosevelt. The inimitable "Teddy," the greatest American international figure of his day, had captured the imaginations of people everywhere; Europeans naturally wanted to know if he was really as fabulous as the newspaper stories led them to believe. In addition, Berlage who was a convinced socialist all his life, was interested in Roosevelt's efforts to "bust the trusts." Next, the conversation turned to the new American architecture of Louis Sullivan and Frank Lloyd Wright. Purcell recalls that Berlage was well informed about both these men, had studied their work thoroughly, and was conversant with their architectural philosophy. As they went about from place to place, a considerable part of the discussion revolved about the work of the two great Midwestern pioneers. Like Eliel Saarinen, who tacked a picture of it above his drafting board, Berlage had been much impressed by Sullivan's Transportation Building at the Chicago World's Fair of 1893. He was also familiar with the excellent publication of Wright's work in *Architectural Review* (Boston) in 1900, and had seen some of Sullivan's writings. In the light of this information, speculation as to whether Berlage had seen the German publications of Wright's work by Wasmuth Press, when he came to the United States in 1911, is probably irrelevant. The fact is that at the time of his visit he had been interested in American architecture for many years. He told Purcell that he had great hopes of coming to America and seeing the work of these two men for himself, but that he had no idea when he would be able to make such an expensive journey. Purcell replied that insofar as his business permitted he would be glad to go about with Dr. Berlage, introduce him to the men he wanted to see, and show him their work. This promise had important consequences a few years later.

In the spring of 1911, Berlage's affairs were in such condition that he could contemplate an extensive trip, and he proceeded to get in touch with William B. Feakins, the manager of a New York lecture bureau which represented such notables as Sylvia Pankhurst, the prominent English suffragette; the actress, Beatrice Forbes Robertson; and Fola LaFollette. He proposed to give a series of lectures in the United States which would, "treat of architecture; more especially in connection with the other arts and the entire social evolution." After some correspondence with Purcell, Feakins undertook the management of Berlage's American tour, and the Dutch architect set sail from Rotterdam on October 28, 1911, to make his long-desired journey. He arrived in New York about ten days later; the first evidence of his presence in the United States is a revealing interview in *The New York Herald* of November 12, 1911. Following the arresting caption, "Criticized Dutch Architect Criticizes New York Architecture," the writer stated that Dr. H. P. Berlage, designer of the much-criticized Bourse in Amsterdam, was in the United States to study the architecture of New York, Washington, Boston, Philadelphia, Chicago, Pittsburgh, and as many other cities as he had time to visit. The article contains some perceptive strictures on the New York architecture of that day. Berlage found the Public Library "spacious and dignified but beautiful only as a copy"; he had hoped, he said, to see "an architecture less traditional in detail, more symbolic of America." *The New York Herald* building, he observed, was a copy of the Verona Town Hall, which did not really make much sense as the headquarters of a great modern newspaper. The rest of the article was in the same

---

** Assistant Professor of Architectural History, College of Architecture and Design, University of Michigan.*

# a centennial tribute to two pioneers



*Country House at Huis Ter Heide* (above), *by Robert Van't Hoff (1914). This generation of Dutch architects clearly received from Dr. Berlage a graphic impression of the vitality inherent in the new American Architecture.*

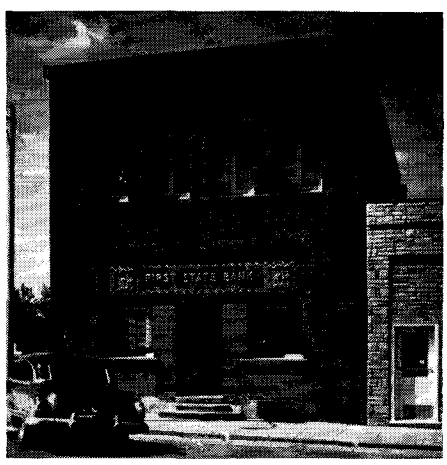
vein, and was in fact so vigorous that it provoked a counter-blast from four advocates of Beaux Arts eclecticism in the next Sunday's *Herald*: Thomas Hastings of Carrère & Hastings, Benjamin W. Morris of LaFarge & Morris, and J. O. Post and W. S. Post of George Post & Sons. Typical of their remarks was the irate comment of Hastings, "No one, I believe, could accuse the library of being a direct copy from any building which has ever existed. If I understand his point of view, however, he believes that we should have a new style of our own. This, in my opinion, is unphilosophical." Berlage's American journey had had a lively beginning.

Berlage lectured on "Art and the Community" at the League for Political Education on November 16, and then, in company with Purcell, who had come East on business, set out for Chicago. On arrival in that city the two men called on Louis Sullivan. When Sullivan learned that Berlage was going to Owatonna, Minnesota, to see the famous bank there and would return to Chicago in about a week, he invited him to call later when there would be more time available for discussion of their mutual interests. Sullivan, of course, knew about the Amsterdam Bourse and viewed it as a landmark of the new architecture. Purcell and Berlage spent the next two or three days sight-seeing in Chicago and Oak Park, taking in, among other buildings, Richardson's wholesale store for Marshall Field, the Auditorium Hotel, and the Garrick Theatre, Gage, and Carson-Pirie-Scott buildings. Berlage was particularly interested in the last named, and Purcell recalls, "It was plain that Dr. Berlage was a scholar and that no aspect

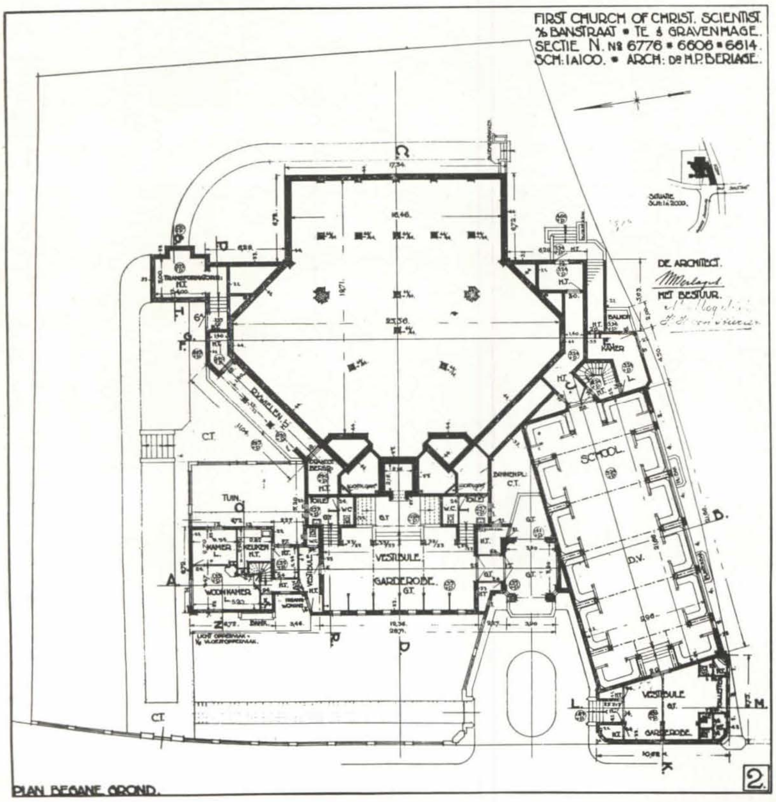
*Detail of Sullivan's Guaranty Building (1895) in Buffalo* (right). *Berlage greatly admired Sullivan's treatment of the skyscraper; however, one could hardly expect a Dutchman like Berlage, brought up to appreciate the unadorned brick wall, to be enthusiastic about the profusion of decoration with which Sullivan covered his surfaces.*

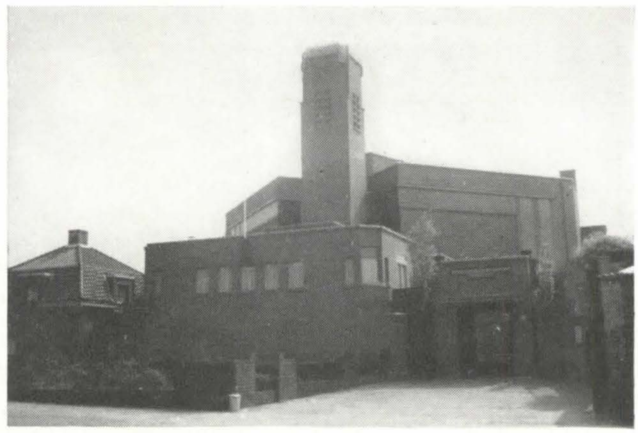
*Photo: Authenticated News*

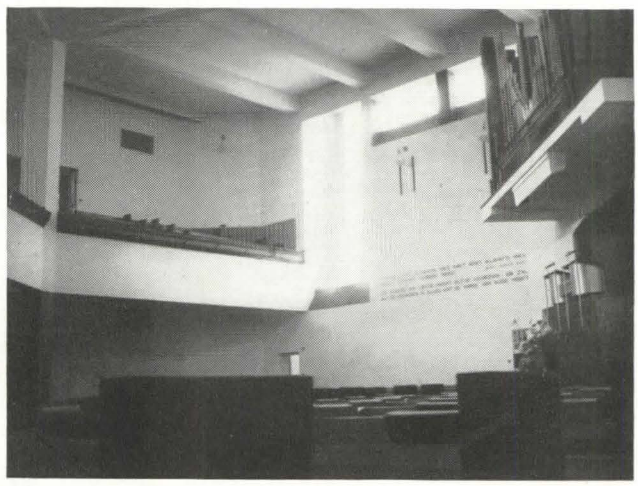

*The effect of Berlage's activity in behalf of the Chicago School can be seen in a series of buildings scattered in the Netherlands. An example is the retail store* (below right) *at The Hague, for P. Van Den Rul. The newspaper offices of "DeGooi en Eemlander" of Hilversum* (left) *by J. Van Laren (1927) reveal a close resemblance to the First State Bank, Grand Meadow, Minn.* (below left), *done in 1910 by Purcell & Elmslie—in both cases the key to the building is the use of tapestry brick and the handling of the lintel.*



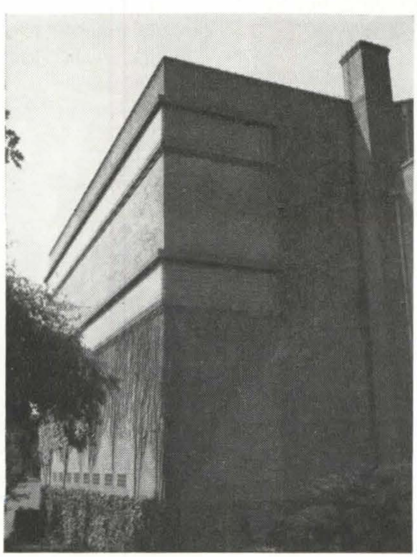

*About his "Holland House" (1914), London* (far left), *H. P. Berlage wrote that since the municipality required a steel frame he had solved the problem by covering it with glazed terra cotta, "in accordance with the later construction of some of the American skyscrapers." The precedent for this design can be found in a number of Sullivan's multistoried office buildings. A good example is the Guaranty Building (1895) in Buffalo* (left *and* detail *preceding* page), *also sheathed in terra cotta.* Photo: The Chicago Art Institute



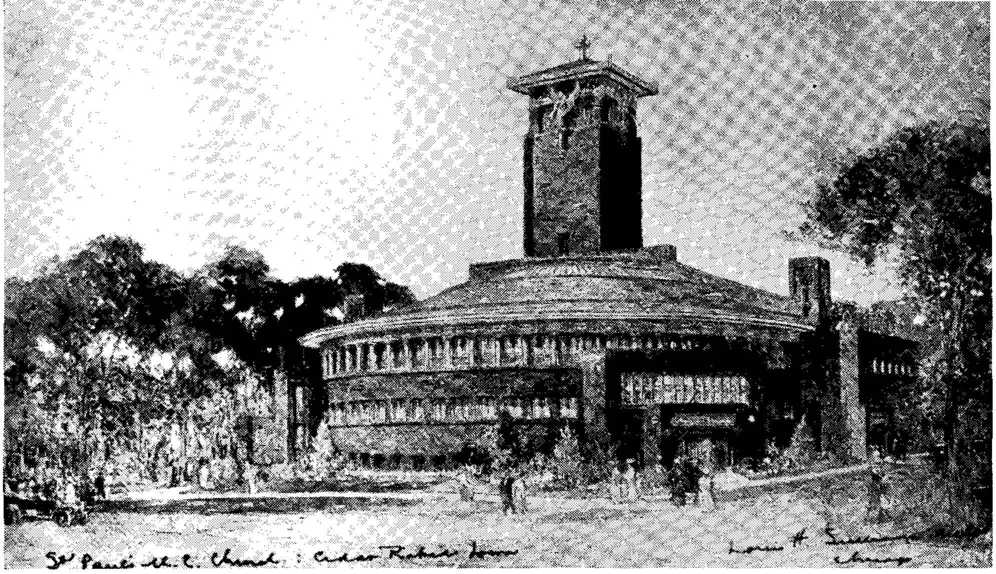



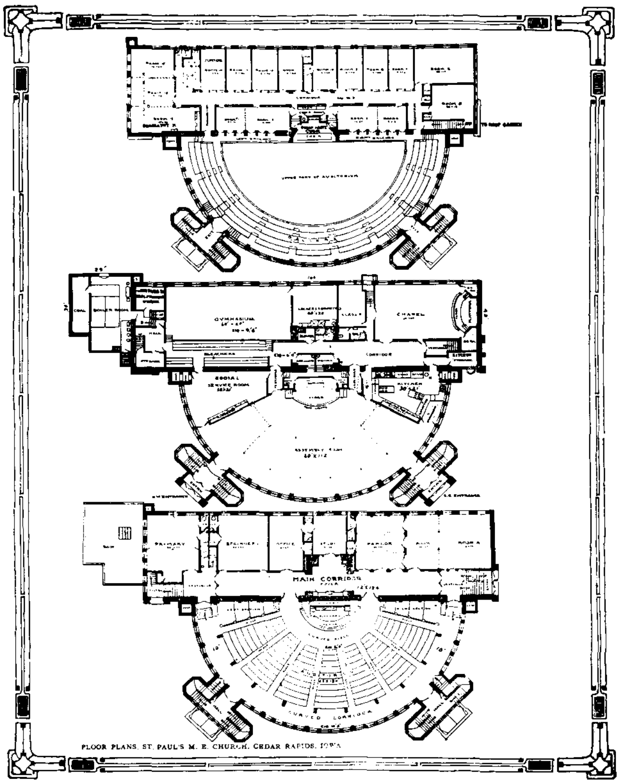


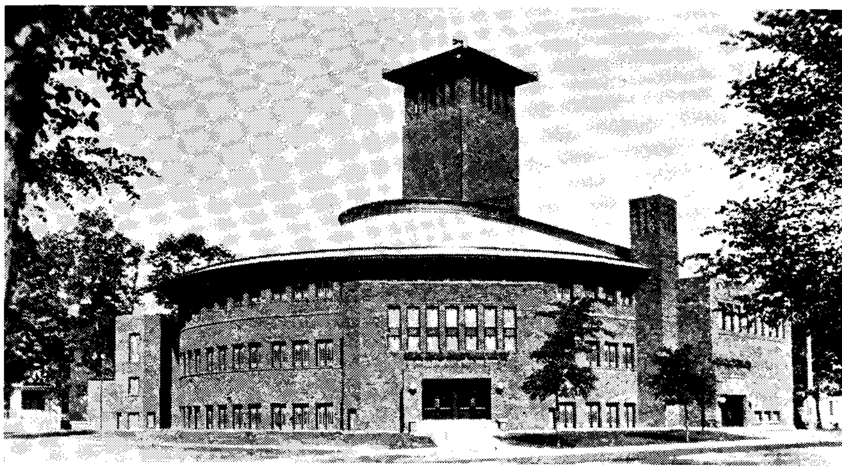
*The most striking evidence of Sullivan's influence on Berlage occurs in the First Church of Christ Scientist* (above *and* right) *designed at The Hague in 1925.*



or relation of what he was examining was allowed to pass unnoticed. His questions were very penetrating and concerned every aspect of the building—its plan, engineering, economic relations, relation to the community, what people thought about it, how the designs were produced, what was the background of the people who worked on it, the relation of Sullivan to his engineer—nothing escaped the man's examination, all done with scholarly seriousness and yet with a light touch and pleasant conversation with occasionally some little humor creeping into the exchanges. A most agreeable companion in every way." The two men also called on Walter Burley Griffin,





*On his visit to the United States, Berlage had greatly admired Sullivan's design for St. Paul's Methodist Episcopal Church in Cedar Rapids, Iowa (1911). Sullivan's original elevation (top) was later revised to conform with available funds.*

who was just starting his competition design for the new Australian city of Canberra: Berlage later wrote most approvingly of this plan in the book which he published on his return to Holland. The better part of a day was spent in Oak Park, where Frank Lloyd Wright's studio was the major point of interest together with his houses in the surrounding suburbs and the famous Unity Temple. Since Wright was then sojourning in Italy, he could not greet his distinguished visitor. It was probably Isabel Roberts who showed him through the Oak Park studio.

From Chicago, the pair went north to Owatonna, inspected Sullivan's bank there, and proceeded to Minneapolis where Berlage stayed in the Purcell home. There he visited the offices of Purcell and his partner, George Elmslie, who were carrying on the Sullivan tradition in the Northwest; saw some of their buildings; and lectured before an audience of about two hundred people, at the Handicraft Guild Hall. It is a sad commentary on the state of American architecture at the time that despite special invitations and the sponsorship of the Minneapolis Society of Architects, only a few architects other than members of the firm of Purcell & Elmslie were in the house. The speech was, it should be added, well reported in the local press and was later published in *The Western Architect.*

At the conclusion of his stay in Minneapolis, Berlage returned to Chicago to deliver another lecture and to spend a memorable evening with Sullivan listening to him read his poetry until a late hour. Berlage, for whom writing was always a chore, greatly admired Sullivan's literary facility, and completely understood his conception of the poetic qualities inherent in fine architecture. From Chicago, Berlage made his way eastward by way of Cleveland and Buffalo, stopping in the latter city to see Wright's Larkin Building, which made a vast impression on him. He also visited

**(Continued on page 202)**

# remote environmental check and control

Operation of an air-conditioning system in a modern hospital can be a complex and costly undertaking. Normally, it requires a trained crew continually inspecting equipment, measuring temperatures, and adjusting controls for optimum performance. Manpower is also needed for prompt investigation of complaints, as well as to perform preventative maintenance and make repairs. Minneapolis Honeywell has recently announced a planned method—using a Supervisory DataCenter—for the operation of a hospital air-conditioning system (and for other occupancies as well), whereby one engineer can supervise the entire system from his control center. To accomplish this, full information concerning the operation of the system is displayed before him and means also are provided for remote control of starting and stopping equipment and for adjusting as required.

Temperature and humidity of zones or individual rooms throughout the hospital are displayed graphically on the panel (*lower left*). Continuous readings of outside air temperature are provided. Coils, fans, valves, motors, and other pieces of operating equipment are also represented on the panel. Dials give essential information on temperature, flow, pressure, and other facts about the operation of the heating-ventilating-refrigeration equipment. Switches and indicating gages provide instantaneous readings of temperatures and simultaneous recordings of conditions from several locations. Pilot lights tell when equipment starts and stops in any part of the building.

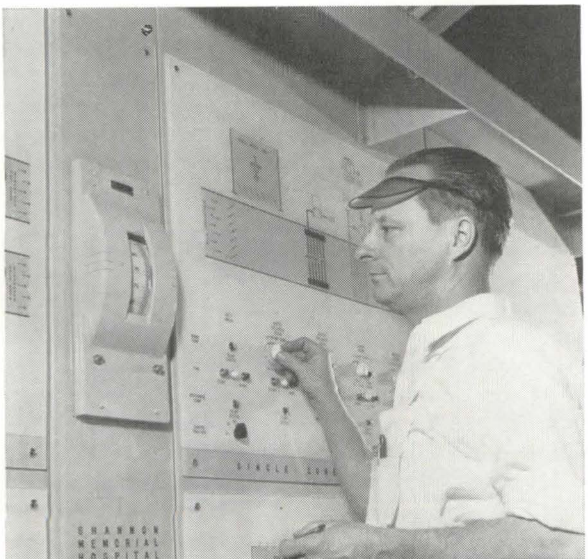
From this data, the trained engineer can determine whether the equipment is functioning at peak efficiency. Usually he can locate and correct troubles in the system without leaving his desk; or he can dispatch a man to the spot where adjustment is needed.

Normally, the vital control functions are performed automatically in a properly designed system. The engineer, however, can make changes from his panel as necessary to meet individual comfort needs, solve special problems, or increase the efficiency of the operating equipment.

The Center costs between two and five percent of the total cost of the heating-cooling system.

*Engineer resets temperature of an individual room during testing of Supervisory DataCenter built for the Shannon Memorial Hospital, San Angelo, Tex.* (below left). *Unit was designed to control present equipment and take care of proposed 100-room addition.*

*Temperature checking section of panel designed for the Mountainside Hospital, Montclair, N. J., provides instantaneous push-button reading of temperatures in nurseries, kitchen freezers, and the hospital's bone bank* (below right).




# machine-room noise abatement

by Edgar A. Burt*

The countless auditory manifestations of life at mid-20th Century—the whirr of motors, honking of horns, clatter of air hammers, etc.—take a lot out of all of us. Doctors, psychiatrists, and other medical experts have long endorsed a determined drive to lower as much as possible the general noise level of our daily life. In certain structures—especially hospitals, schools, and churches, where quiet is absolutely necessary—it is especially important that architects and engineers provide good hearing conditions. Reduction of noise in machine rooms and related equipment rooms, a part of this broad campaign to diminish the nerve-wracking clamor of modern life, calls for the designer's most careful consideration.

The writer's company, which manufactures packaged automatic boilers, has just completed a comprehensive study of machine-room-equipment noises which has led to many findings of value to the architect. The study was carried out in co-operation with Armour Research Foundation of Illinois Institute of Technology and included 17 machine-room installations, many of them in hospitals, schools, and hotels.

This machine-room-noise study resolved itself in two main divisions: one, largely the concern of the equipment manufacturer and the engineer; the other, mostly the responsibility of the architect and builder. There is really no sharp line of demarcation, however, between the two sectors. The architect is concerned with some phases of the engineer's work; the engineer must deal with matters of design and construction.

In an ideal situation, the machine room would be housed in a structure set apart from the building it serves, thus letting distance cushion the sound of motors, pumps, and stacks—all essential to the modern combustion process. However, few machine rooms can be built in such a manner. The initial cost is greater and there is seldom space for a separate structure, particularly in cities where land prices are astronomical or additional space is unobtainable. Architects must therefore specify equipment that is as noise-free as possible and still capable of meeting power demands; locate it where the noise will cause the least annoyance; see that it is installed properly; and confine the noise by proper construction.

Equipment manufacturers wholeheartedly support the battle against machine-room noise, and progressive manufacturers are working round the clock to eliminate noise that is unnecessary and to muffle inherent sound in the efficient operation of a boiler plant. These manufacturers have developed equipment, such as the packaged, automatic boilers suitable for use in small spaces; and have painstakingly worked out installation methods and procedures aimed at reducing the noise at its source. The architect, however, must design the machine room to cushion equipment sounds within the room and to prevent transmission of noises to other parts of the building.

Let us first consider sound transmission, as it concerns the structure itself, and how one can design for reduced noise. Although distance is one of the *best* means of reducing both airborne and structure-borne noises, its use is unfortunately restricted in most cases. When it is impossible to house machine-room equipment in a separate structure, designers must attempt to locate the machine room as far as possible from hospital rooms, classrooms, auditoriums, and other areas where quiet is absolutely essential.

Where possible, the noise-producing area should be separated from rooms where extreme quiet is needed, by halls, rooms, closets, or other space units in which an intermediate degree of noise is tolerable and which, in themselves, produce no noise that will be transmitted to the quiet areas.

For example, machine-room equipment should not be located below an auditorium, a hospital ward, or even a classroom where outside noises tend to distract students or interfere with the teacher's work. A concrete floor is not necessarily a foolproof noise barrier. It will tend to reduce high-frequency sounds to an acceptable level, but low-frequency sounds—generally resulting from machinery vibration—may be transmitted to the upper room by means of pipes, walls, piers, etc., and other means. Even high-frequency sounds may find their way into the upper rooms by means of ventilation ducts and grills

Another point to consider is that mechanical-draft firing sometimes results in chimney, stack, or flue vibration. The fan-driven air column may vibrate enough to shake the chimney itself, obviously a most serious problem if the chimney is incorporated in the wall. Selection of the type of furnace-gas outlet and its location in relation to the quiet areas is, therefore, of major importance.

In planning a machine room, the architect should base his specifications on the expected equipment-sound levels (*Figure 1*). All building materials and assemblies have the common property of retarding high-frequency sounds more than those in the low frequencies, but sound-transmission loss varies with the type of wall and ceiling and the kind of material used.

In most instances, the architect can assume that the sound level on the wall

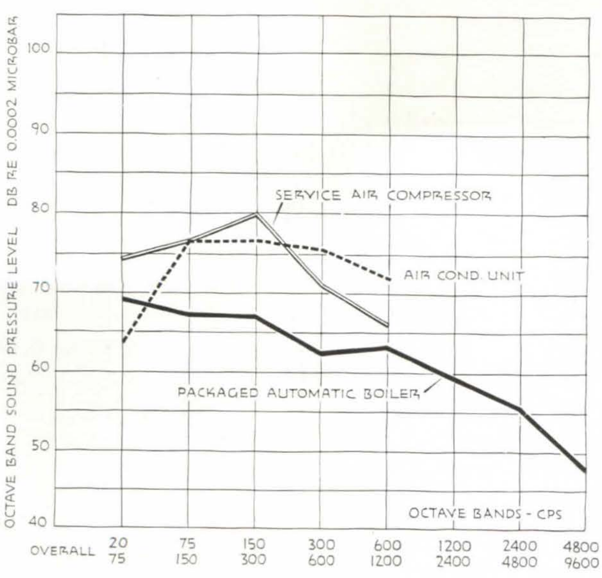
*Chief Engineer, Orr & Sembower, Inc., Reading, Pa.

**TABLE I: Sound-Transmission Loss Values, db***

| Material | 125 | 175 | 250 | 350 | 500 | 700 | 1000 | 2000 | 4000 | Avg |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | cycles per second | | | | | |
| 1. Glass, 1/8" double strength, 40"x20" | 15 | — | 26 | — | 27 | — | 31 | 33 | 29 | 25 |
| 2. Glass, 1/4" plate, 40"x20" | 25 | — | 33 | — | 31 | — | 34 | 34 | 32 | 32 |
| 3. Door, flush hollow core | 14 | 21 | 27 | 24 | 25 | 25 | 26 | 29 | 31 | 25 |
| 4. Door, 2 1/2" solid wood | 36 | 37 | 40 | 38 | 38 | 37 | 39 | 39 | 37 | 38 |
| 5. Door, steel clad | 42 | 47 | 51 | 48 | 48 | 45 | 46 | 48 | 45 | 46 |
| 6. Wall, hollow clay tile, 4"x8"x16" | 32 | 32 | 34 | 34 | 36 | 36 | 39 | 42 | 52 | 37 |
| 7. Wall, hollow cinder block, 3 1/2"x8"x16" | 27 | 28 | 31 | 34 | 38 | 42 | 44 | 47 | 48 | 37 |
| 8. Wall, hollow cinder block, 3 1/2"x8"x16", cement-base paint on both sides | 37 | 39 | 43 | 45 | 46 | 49 | 54 | 56 | 54 | 46 |
| 9. Wall, 4" reinforced concrete | 37 | 33 | 36 | 44 | 45 | 50 | 52 | 60 | 67 | 47 |
| 10. Wall, 8" reinforced concrete | 42 | 38 | 41 | 49 | 50 | 55 | 57 | 65 | 72 | 52 |

**Sources:* Sound Insulation of Wall and Floor Constructions, *National Bureau of Standards, Building Materials and Structures Report 144, United States Department of Commerce;* Acoustical Design in Architecture, *V. O. Knudsen and C. M. Harris, John Wiley & Sons, Inc., 1950; National Concrete Masonry Association, Chicago 3, Ill.*

TYPICAL SOUND PRESSURE LEVELS OF MAJOR MACHINE ROOM EQUIPMENT.




side away from the machine room is equal to the decibel level in the noisy room, less the sound-transmission loss of the wall in decibels (*Table I*).

When using Table I, the architect should remember that if the noise level in the projected machine room is predominantly in the low frequencies, the figure for the low frequencies should be used, rather than the average. In the event that greater sound reduction is called for than the assemblies in Table I provide, a double wall can be employed or some equipment—pumps and compressors, for example—can be located in a separate room.

Sound transmission also can be reduced by painting or plastering walls on one or both sides. This is particularly true in the case of cinder block, porous tile, or other materials in which the pores serve as conduits for the sound.

Doors, windows, and other openings generally reduce the sound-transmission loss. Door manufacturers have done a great deal of research on sound-transmission properties of their products and are willing to provide the architect with the information on the subject that he requires in machine-room planning. Noise attenuation at low frequencies, however, is the figure that the machine-room designer should be most concerned with. A lightweight hollow-core flush door, for example, may have an average attenuation of 25 db, but it may fall to 12 db in the low frequencies.

Another thing to remember is that the attenuation figures apply only when a door is hung so that it closes tightly. Cracks around the edges or a large opening at the bottom might cut the attenuation figure by five db.**

** *See "Sound-Reducing Doors," April 1955 P/A.*

Window glass $\frac{1}{8}$ in. thick has an average noise attenuation of about 25 db. ranging from 15 in the low frequencies to 32 in the high. Poorly fitted windows, as in the case of doors, may result in major sound leaks. The best rule is to keep window areas small, and sashes tight. When a large window is required for light or inspection purposes but not needed for ventilation, a double-light construction should be used with as wide a separation as possible. Little increase in attenuation results from a separation of $\frac{1}{4}$ in., but an 8-in. separation may produce as much as 10 db of added sound-transmission loss.

Air-supply ducts or plenum feeds to both the machine room and the room adjoining are responsible for further sound leaks as are openings for pipes, vents, and air inlets. Openings amounting to but one percent of a wall surface can reduce noise attenuation greatly. For instance, a one sq-ft hole in a wall that ordinarily would produce a 50-db loss may actually reduce the noise-transmission loss as much as 30 db.

Sound-absorbing material, of course, is being used increasingly for all types of installations in which noise suppression is desirable. In an equipment room in which height is low compared with other dimensions, use of a good acoustical ceiling will reduce the noise five db on the average. However, acoustical materials result in little sound absorption in the low frequencies and the rumble of boilers, furnaces, and similar equipment all fall into the latter category.

The best remedy for noise in an adjacent room is a more effective wall. However, selection of equipment and its proper installation can go a long way toward reducing noises at the point of origin. Most manufacturers can advise how much noise their equipment will produce under normal conditions, and several trade associations have specified limiting noise conditions for equipment such as fans, pumps, and blowers.

Manufacturers' noise measurements are usually made with a machine bolted to the floor, and the sound-measurement microphone set up in the same room. The limitation of this method is that few measurements have been made of noise in adjacent rooms—to the side, above, or below.

As a general rule, high-speed small machines, water pumps, oil pumps, and small air compressors not attached to air tanks, do not set up vibration that is transmitted to adjacent areas to produce secondary noises. Large air compressors, blowers, and vacuum pumps, especially if their parts are imbalanced and if they are customarily operated at low speeds, frequently vibrate walls or floors which then relay frequency noises.

The architect or engineer need not become an acoustical expert to understand the principles of design for reduced noise. They are fairly simple, as the following paragraphs will show.

Let us assume that the manufacturer has done the best job possible in reducing the sound given off by his equipment. From there on in it is the job of the architect, engineer, and builder.

Methods of sound reduction open to the designer include mufflers for air- and gas-discharge systems and treatment of air ducts with sound-absorbing material, an important step nowadays since there is a trend toward high-velocity ventilation systems.

The architect should know also that noise is not always generated directly by the equipment, though it is still the noise-energy source. Vibration from motors often is mechanically conducted along the frame or housing of a machine to a wall or ceiling which, in turn, becomes a noise radiator. The easiest way to eliminate this type of noise is to install motors, compressor, pumps, and other similar equipment on steel springs, rubber, cork, felt, or other resilient-type mountings. In cases where vibration energy is very great, the machine may be mounted on vibration eliminators.

A word of caution is in order here. A machine may be mounted on a resilient base and still prove a source of vibration energy if auxiliary components are not similarly protected. A water pipe connected to a pump mounted on a suitable resilient base should not be bolted directly to the floor or it will act as a vibration conductor itself. In other words, it will "short circuit" the sound barrier. Flexible hose or tubing should be used for a connection of this sort.

If the architect specifies a sheet of sound-absorbing material as the base of a machine, he should specify also that the hold-down bolts be soundproof. Use of isolation materials for electrical-control equipment bolted directly to a wall will also help reduce noise in adjoining areas.

This article outlines the broad problem of machine-room-equipment noise control, as determined from a recent study and previous research of a similar nature. A good deal of more-detailed information can be obtained from equipment manufacturers and their associations –and also, much remains to be discovered.

The task of reducing machine-room noises to a tolerable level can usually be resolved by the architect and engineer. Now and then, however, a sound specialist must be summoned to remedy a particularly difficult condition.

# correct sight-line for gymnasium seating

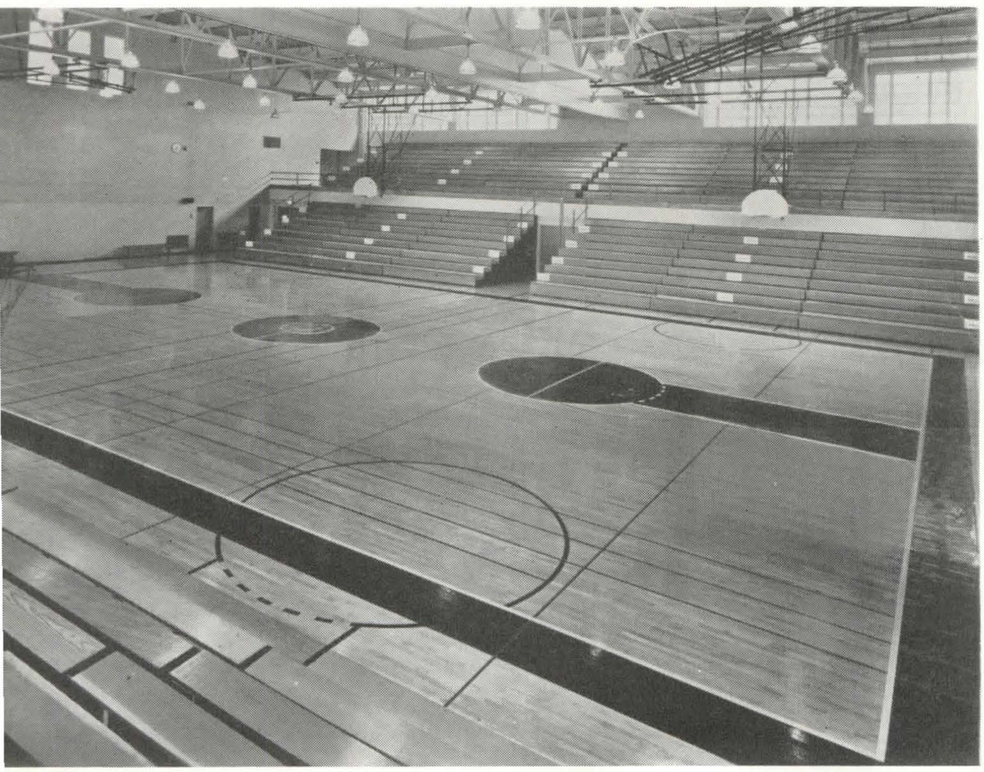
by C. H. Wetzel*

Oddly enough, the principal objective for gymnasium seating is not to provide the spectator with a place to sit but to give him a clear view of the players and action on the gym floor. This seems like a statement of the obvious, yet the factor of *good visibility* is often overlooked in the selection of seating equipment—particularly for installations which require balcony seating. This factor must be considered in the initial selection stage, along with such other basic factors as: seating capacity, safe construction, materials and finish, and roll-back design to permit use of additional floor space.

The principle involved in providing good visibility is quite simple (*Figure 1*). In this example, the eraser on the floor can be compared to the edge of the gym court and the desk to the person in front of the viewer. Obviously, the steeper angle of the man's sight-line improves visibility.

In an actual gymstand installation (*Figure 2*), the rise per row (vertical dimension between successive seat boards) determines visibility. Fixed points for the line of sight are: (1) the eye level of a

**President, Wayne Iron Works, Wayne, Pa.*



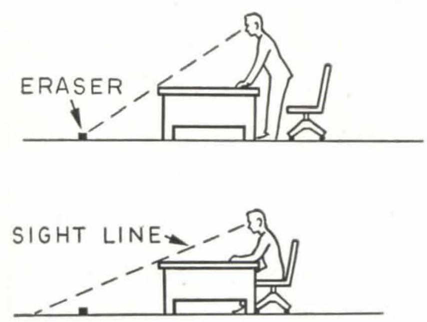



*Figure 1—the meaning of visibility. Man seated at desk cannot find eraser in front. When he stands up, however, he can.*

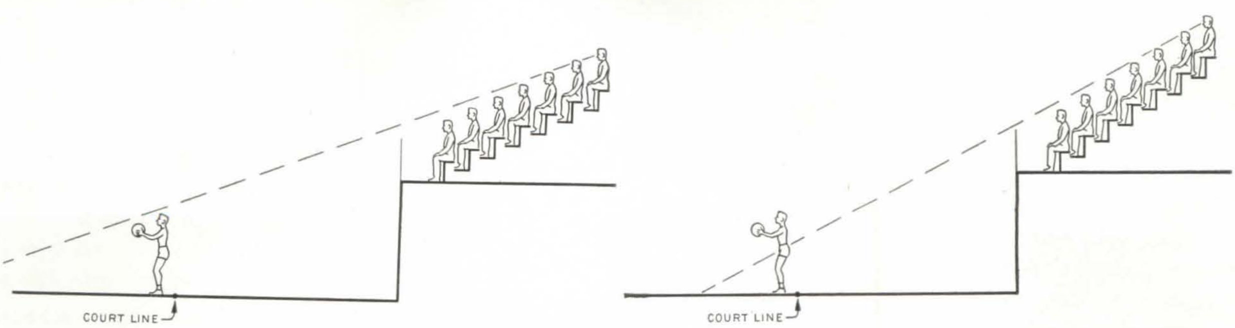



*Figure 2—poor visibility. Man on top row of balcony stand with too short a rise per row cannot see much of the court and therefore misses part of the game.*

*Figure 3—good visibility. Man on balcony stand with proper rise per row can see all of the game.*

spectator in one row and (2) the top of a spectator's head two rows in front. These heights above the seats are averaged from statistical data.

A standard rise in balcony seating (approximately 10 in.) carries the sight-line too far beyond the court line (*Figure 2*). The result: spectators miss part of the action on the playing floor. In contrast, note how a steeper rise per row provides a steeper sight-line—giving a good view of the whole playing floor (*Figure 3*).

### theory of visibility

Visibility is generally a relative term, but can be expressed mathematically with reference to gymnasium seating. This aids in the proper selection of required rise per row and other dimensions to insure good visibility. A more precise expression of what is termed the *angle of clear view* is demonstrated (*Figure 4*).

How this theory can be applied in the calculation of required dimensions is presented (*Figure 5*). The important sight-line factor is thus brought into the seating specifications and good visibility is assured.

### Known dimensions

**A** = From court line to balcony
**B** = Height of balcony
**D** = Depth per row (manufacturer's specs., usually 22", sometimes 24")
**N** = Number of rows in balcony
**C** = (**N** — 1) **D**
**F** = Height of front seat (manufacturer's specs., usually about 17")
**R** = Rise per row (manufacturer's specs.)
**G** = (**N** — 1) **R**
**S** = From front of balcony to front of stand (usually about 36")

### Unknown dimensions

**H** = Height of eye of spectator on top row above playing floor
**I** = Horizontal distance from eye of spectator on top row to the point where sight-line reaches the floor
**J** = Distance from court line to the point wheer sight-line reaches the floor
**K** = Height of sight-line above the court line

### Computations of unknown dimensions

$$\mathbf{H} = \mathbf{B} + \mathbf{F} + \mathbf{G} + 30''$$
$$\mathbf{I} = \frac{3\mathbf{D}}{3\mathbf{R} - 6''} \times \mathbf{H}$$
$$\mathbf{J} = \mathbf{I} - (\mathbf{A} + \mathbf{S} + \mathbf{C})$$
$$\mathbf{K} = \frac{3\mathbf{R} - 6''}{3\mathbf{D}} \times \mathbf{J}$$

### Limits

**H** should be at least 30" less than height of ceiling above playing floor —for headroom.
**J** should be as small as possible— and preferably not less than 144" (12 ft).
**K** should be as small as possible— 36" is satisfactory, 48" is fair.

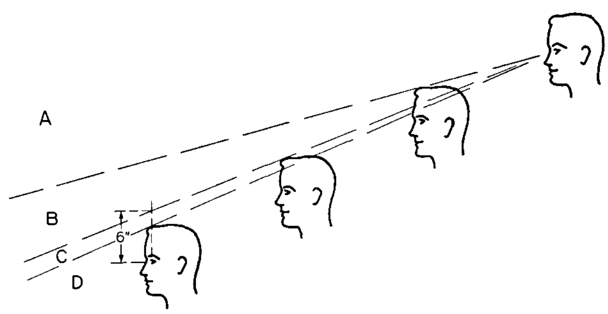



*Figure 4—principle of visibility.* **A**—*angle of perfect visibility, looking over all heads.* **B**—*angle of good visibility, shifting position to look between heads on row immediately in front of spectator, and over all other heads.* **C**—*angle of fair visibility, shifting position to look between heads of two rows immediately in front of spectator, and over all other heads.* **D**—*angle of practically no visibility.*

*Lower limit of angle* **B** *is about 6 in. above eye of man on third row in front of spectator. Angle* **A** *plus Angle* **B**, *extending from spectator's eye level down to 6 in. above eye of man on third row in front of spectator, is called* angle of clear view. *Tangent of angle of clear view* $= \frac{3\mathbf{R} - 6}{3\mathbf{D}}$, *where* **R** *is the rise per row and* **D** *is the depth per row of grandstand, in inches. When* **R** $= 10\frac{1}{4}$ *and* **D** $= 22$, *the tangent of the angle of clear view is* $\frac{3 \times 10\frac{1}{4} - 6}{3 \times 22}$ *or* $\frac{24.75}{66}$ *or .375, and the angle of clear view is 20°33′.*

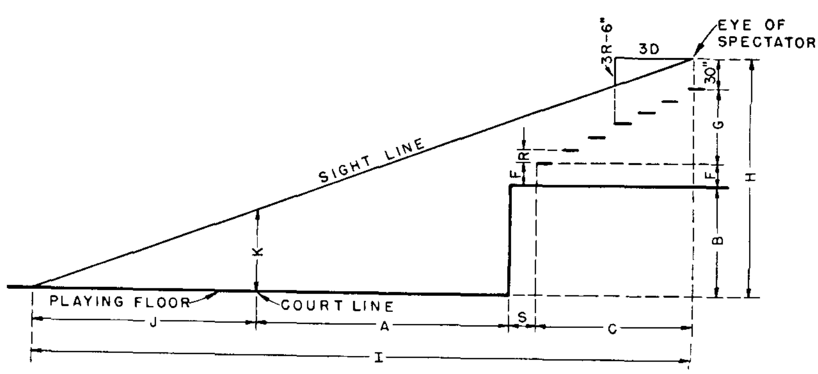
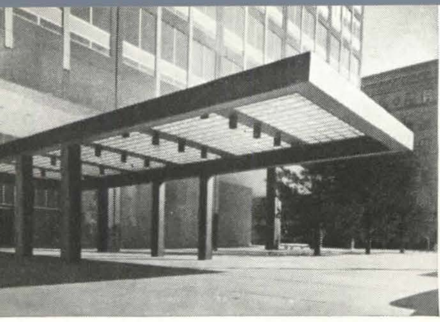
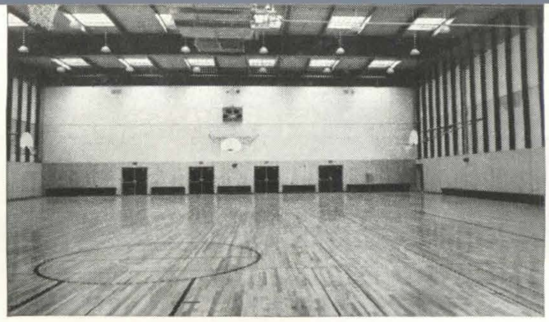



*Figure 5—application of principle to calculate correct sight line and other unknown stand dimensions. (All dimensions in inches.)*



**IN OFFICE BUILDINGS**

Mile High Center, Denver, Colorado. I. M. Pei, architect. Toplite Roof Panels contribute smart, distinctive styling to the canopy for this modern office building.



**IN SCHOOLS**

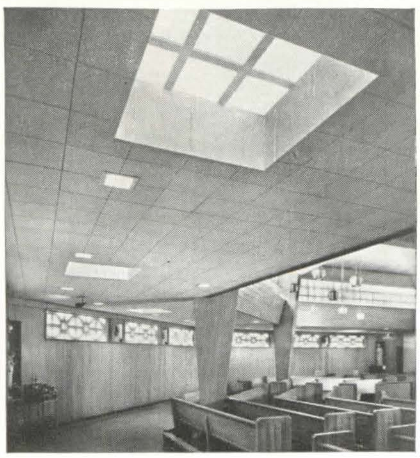
Hillsdale High School, San Mateo, California. John Lyon Reid and Partners, architect-engineers. Toplite panels evenly distribute daylight throughout the gymnasium.

**IN HOMES**

The activities room in this residence is well-lighted all day long because O-I Toplite Roof Panels permit daylighting without "hot spots" or glare.

**IN COMMERCIAL BUILDINGS**

T. A. Schutz Company, Morton Grove, Illinois. Seymour S. Goldstein, architect. Toplite panels may be installed in continuous strip, multiple or individual panels. Use a Toplite Panel as you would a lighting strip.



**IN CHURCHES**

*Marian College, Poughkeepsie, New York.* Ashton, Huntress and Pratt Associates, Lawrence, Massachusetts, architects. Toplite floods this handsome chapel with shadowless, well-distributed, diffused daylight. Glare of old-fashioned skylights is eliminated.

# OWENS-ILLINOIS TOPLITE ROOF PANELS...

*for better daylighting everywhere!*

Here are five dramatic case histories of Owens-Illinois Toplite Roof Panels in action . . . five diverse examples of how this great advance in daylighting is solving lighting problems all over the country.

Toplite Roof Panels supplement light from sidewalls in deep areas or completely daylight windowless areas. Glare and heat of old-fashioned skylights are eliminated because prismatic glass units built into Toplite "think" before they transmit the sun's rays. Needed North light and the soft, low rays from the South are readily accepted while high summer sun rays are rejected.

The complete story of this important new improvement in efficient utilization of free daylight is available in a new booklet on Toplite Roof Panels. For your free copy, write Kimble Glass Company, subsidiary of Owens-Illinois, Dept. PA-11, Toledo 1, Ohio.

# spec small talk

### "A" and "B"

So I ask this guy "tell me what an architect should know in selecting carpeting." So he does. So I say "put it in writing." So he does. Then he loads it with his company's name. So what can I do? So I play coy and substitute "A" for "V'Soske" and "B" for "Lord & Adams" and hope you won't mind. Here's what "C" said:

I PRICE: The square-yard price is not always the best measure of value. Handmades, such as those made by "A" for over 30 years, are made to your requested dimensions. Hence, there is no waste yardage, as in the case of stock commercial carpeting where the waste can run as high as 30 percent. Handmades are available for as little as approximately $20 per square yard, at *retail* level. Since handmades are made seamless, costlier installation charges are avoided and a more attractive and durable installation is possible.

II TOUGHNESS AND WEARABILITY: These qualities are achieved by the proper blend of *virgin fleece* wools from various parts of the world where *tough* wools are produced. Carpets using inferior wools generally mat down and show wear after very short periods of time in use.

III TEXTURE: Many manufacturers have limited equipment, and in the case of machine-made carpets, the cost of change or variation is prohibitive; hence these manufacturers can vary their textures only slightly for different decorative effects. However, the area where a carpet is to be used, and the kind of wear it will receive demands special textures for the best purpose. Handmades offer the architect a great advantage at no extra cost and regardless of yardage involved, since there is no machinery to set up for variations. The right texture in carpeting is a combination of the proper yarn spinning, ply of yarn, and proportion of selected wool fibers to achieve the texture for each purpose. "A" is the only manufacturer in the field of handmades who, in 30 years as the leader in the field, has developed the techniques for the entire gamut of textures known to interior design.

IV SERVICE: Such firms as "B," exclusive representatives in New York and neighboring states, maintain a competent staff familiar with the special problems of the architect. Samples are made up for special problems or special designs as part of "B" normal service. A wide range of color tufts, backed by thousands of color formulae make virtually any color or combination of colors a simple reality for the architect. Special designs incorporating architectural features are equally available, at no extra cost. Quality installations are made anywhere throughout the United States as a special service. Accurate deliveries are the policy of "B." Since "A" has its own dye facilities (important) there is no waiting on line at commercial dye houses, as is often the case with other manufacturers without complete facilities.

V SYNTHETICS: Although "A" has performed many services for manufacturers of synthetic yarns and done considerable experimental work, we are convinced that wool is still nature's "miracle fiber." Synthetics have not yet matched wool for carpets insofar as cleanability—not just surface but thorough cleaning; its manner of taking dye uniformly; and the unlimited variation of weave and texture that is essential to the best carpeting for each purpose.

### interior finish schedule

Here are some notes worthy of inclusion in specifications under a separate section entitled, "Interior Finish Schedule." Oh, yes, naturally, in this section you would include the actual schedule since it is more economical and convenient for everyone this way rather than have it lettered in the drawings:

GENERAL NOTES: (A) Materials and finishes listed in "Interior Finish Schedule" are for general information and convenience of contractor. In addition to materials and finishes enumerated, provide other materials, accessories, finishes, indicated or specified.

(B) Unless otherwise indicated or directed, closets, vestibules, entries, projections or recesses in or from rooms or spaces, including partitioned-off portions shall have surfaces finished with same materials specified for respective room or space in which they occur, adjoin, or open into.

(C) Referencing of drawings is for convenience only and does not limit application of any drawing.

(D) Unless otherwise indicated, heights noted in Schedule are heights above line of finished floor.

(E) Provide suspended ceilings, furred out surfaces in rooms, spaces where indicated or noted. Height given for suspended ceilings is estimated height subject to increase or decrease as may be necessitated by structural, mechanical conditions, or requirements, it being intent to maintain ceiling heights noted. Should conditions necessitate decrease in ceiling heights indicated, obtain approval before installing furring.

(F) Except as otherwise indicated, door saddles or dividing strips are required at interior door openings where different kinds of floor finishes occur in immediately adjoining rooms, spaces. Where adjoining rooms, spaces have same kind, color of floor covering material or same kind of floor covering material but of different color, in such cases extend floor covering material through door opening and finish at transition point positioned on line of center of door when door is in closed position.

(G) Where items of equipment require masonry or concrete bases, finish exposed face of such bases with same material as base in room or space in which they occur, except as otherwise indicated.

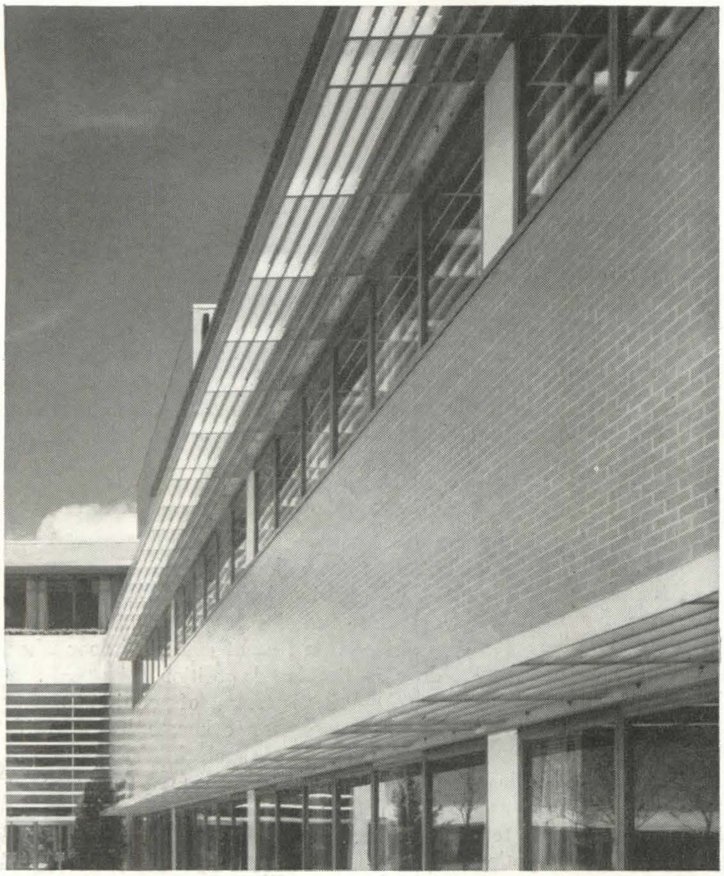
### femmes filers

If you are nearly as lazy as I am, you will appreciate the courtesy service offered to architects and engineers by the Architects & Engineers Service organization; that is, if you practice in New York, Los Angeles, San Francisco, Seattle, Portland, Oregon, or Houston, Texas.

The representatives (girls who are recent college graduates trained especially for this work) make routine calls once a month on the offices of subscribing architects and engineers to distribute and discuss literature and samples and to keep the AIA files, or other system preferred, up to date. (The filing system is installed if the architect does not already have one.) Upon request, the representatives call in the early stages of each project to collect and co-ordinate the building material data for that particular project. In each area, a central office maintains complete information files with data on the availability of various materials and information on the manufacturers or representatives, both local and national, who handle materials and equipment of interest to architects and engineers. The service is financed by the manufacturers of building materials and is given without charge to licensed architects and engineers. The work in the architect and engineer's office, however, is not limited to information on the materials of subscribing manufacturers alone but includes any products in which he is interested.

# p/a selected detail

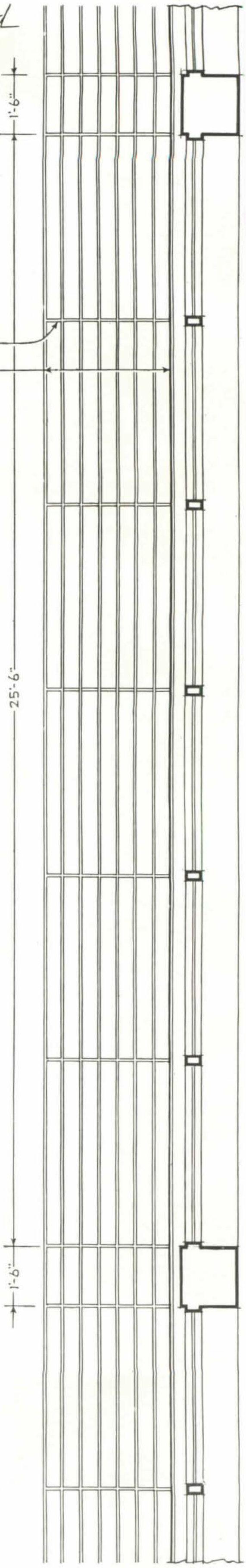
## sun shade



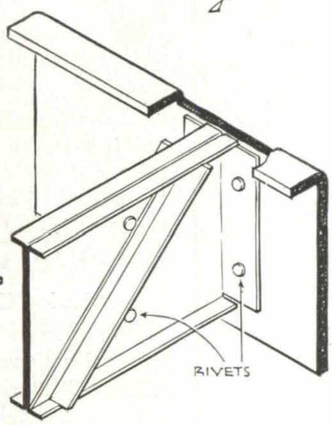
EZRA STOLLER

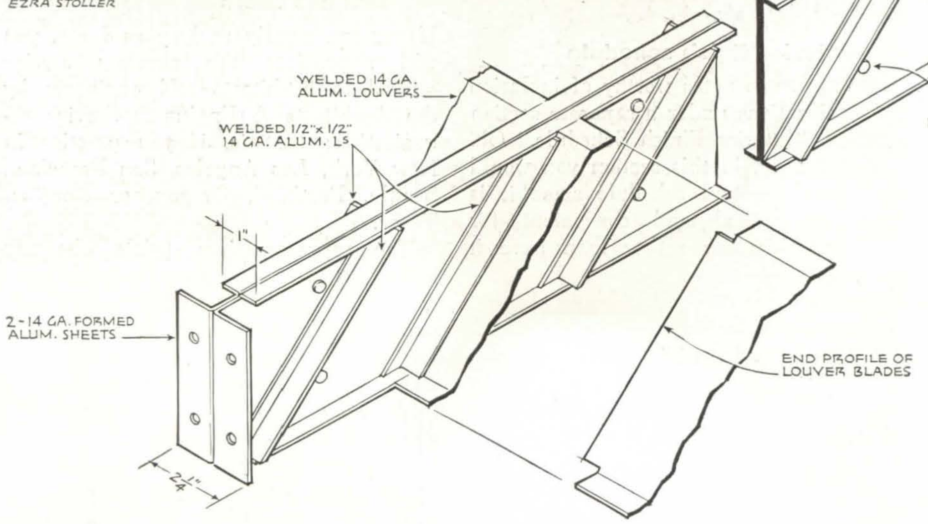
Reflected Plan

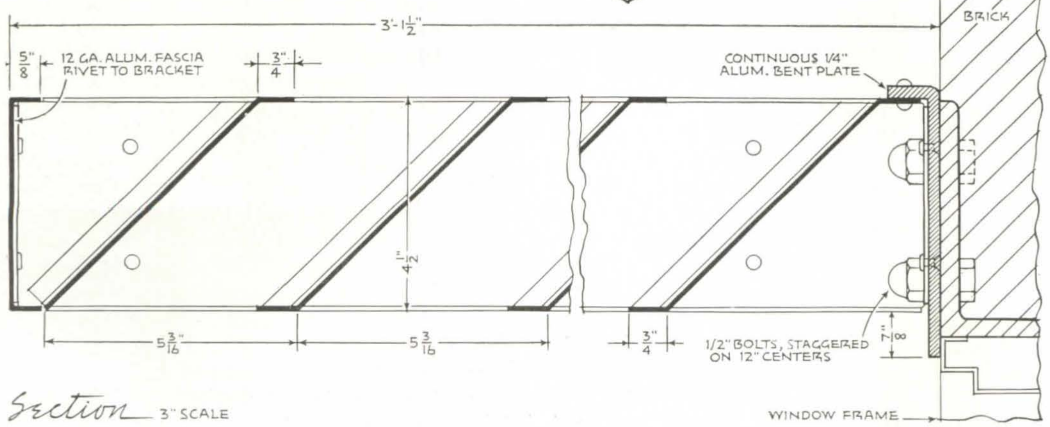
1/4" SCALE




Bracket Assembly




Section 3" SCALE

**OFFICE BUILDING,** Greenville, S. C.

Carson & Lundin, Architects

Light flows into this reception room through the decorative Blue Ridge Patterned Glass panels and matching SECURIT® Interior Glass Door. Translucent glass is so versatile . . . blends so well with other materials. Beautiful yet practical! The door is tempered glass . . . for hard use. "At home" in new construction . . . perfect for modernizing. So many design problems work out so well with patterned glass.

*Hughes Building, Pampa, Texas*
*Designed by Price Smith, Pampa*

*Partitions and Doors of*
E RIDGE PATTERNED GLASS

*Made by* BLUE RIDGE GLASS CORP.

® LIBBEY·OWENS·FORD GLASS DISTRIBUTORS

LOF GLASS ®

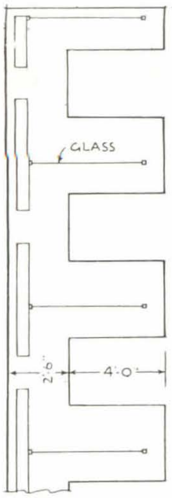
LIBBEY·OWENS·FORD GLASS CO.
*608 Madison Avenue, Toledo 3, Ohio*

Please send me your folder "Blue Ridge SECURIT Interior Glass Doors." I would also like a booklet of ideas for using Blue Ridge *Patterned Glass* in ☐ homes . . . ☐ other buildings. (Check one or both.)

NAME (PLEASE PRINT)__________

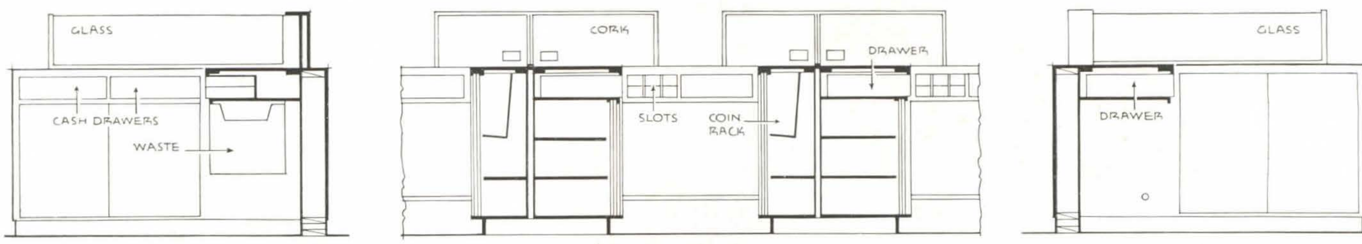
ADDRESS__________

CITY__________ ZONE_____ STATE__________

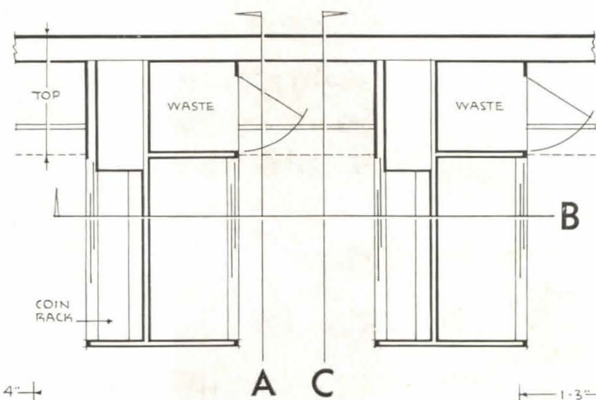



*Plan* 1/8" SCALE

DEARBORN-MASSAR

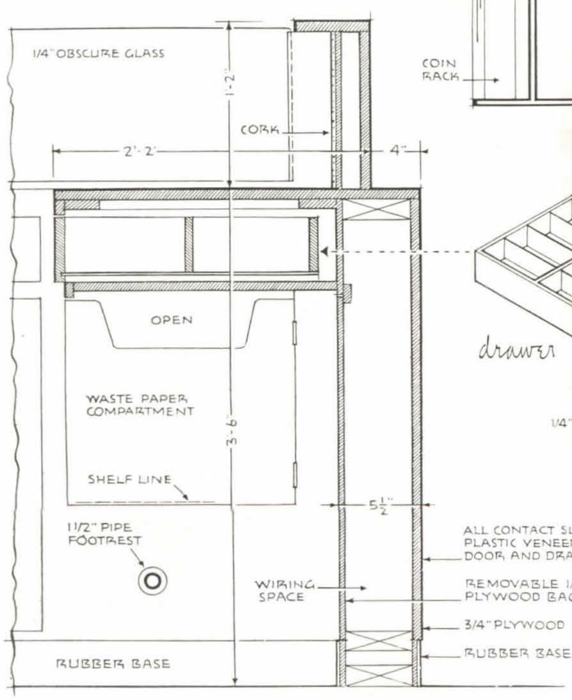


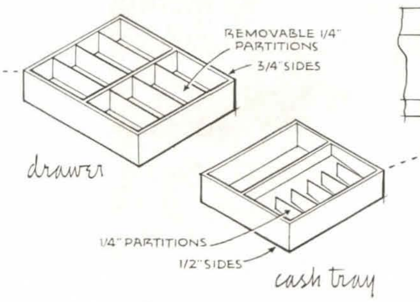

*Sections* 1/4" SCALE A B C



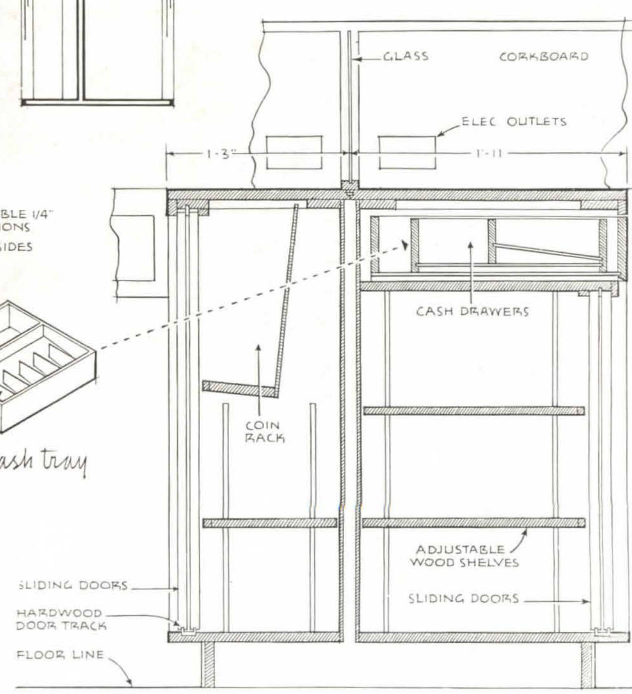

*Plan of Undercounter* 1/4" SCALE

*Section at* **A** 3/4" SCALE



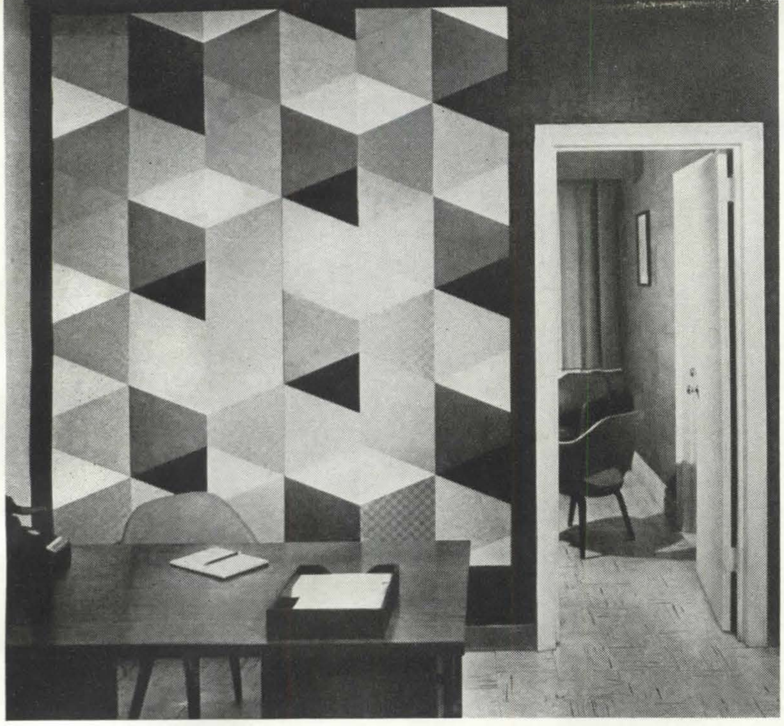




*Section at* **B** 3/4 SCALE




INDUSTRIAL BANK, Tacoma, Wash.

Robert Billsbrough Price, Architect





*Reception room of new offices of Vinyl Fabrics Institute, New York, designed by Joanne Seybold, of E. I. duPont de Nemours & Co., Inc. The Institute offices are decorated throughout with fabrics made by member companies—all wall coverings, upholstery, window shades, doors, and draperies made of vinyl. Skilful juxtaposition of colors gives three-dimensional effect to the wall panel in the reception room, employing graduated shades of turquoise, bronze-green, sand-and-white, and navy.*

Louise Sloane

# insurance and association offices

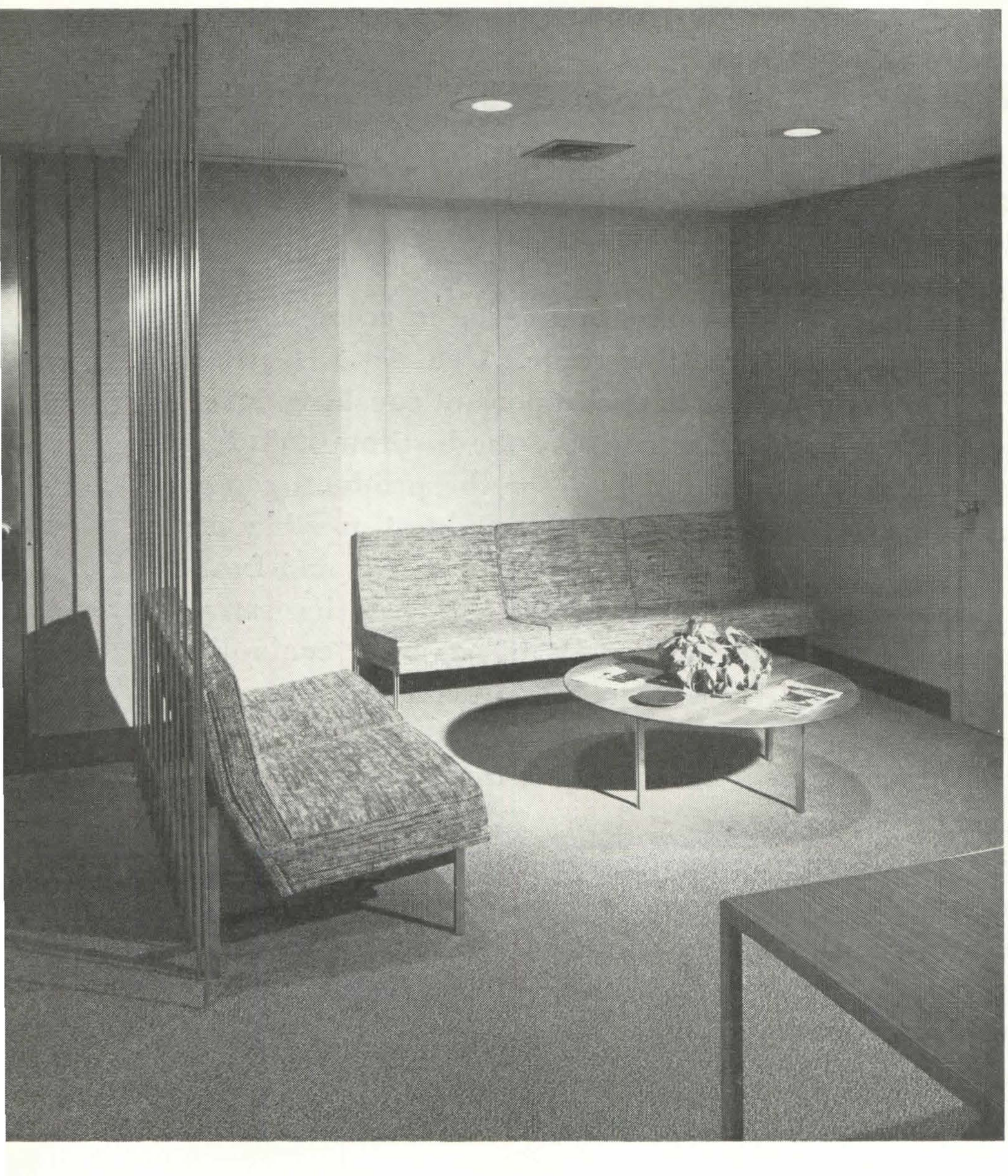
**Because so much interesting and creative work is being done just now in this particular interior design area, we continue this month to show further examples of office suites *(see also September 1956 P/A).***

**In designing the more than 20,000-square-foot space to accommodate the central offices of American Iron & Steel Institute, Architect J. Gordon Carr and Associate Leigh Allen were faced with two important considerations: not only must the offices serve the multiple activities of the Institute staff, but they must also perform a public-relations function for the products represented by AISI. The architects have, therefore, made the widest possible use throughout of metals. They devised inventive blends of decorative and functional uses of steel, and employed a diversity of finishes to provide decorative contrast while displaying the metal's versatility. To offset any "coolness" which might result from such an extensive use of metal, soft colors–blue, gray, grayed chartreuse, aqua, beige–were selected and strong-textured upholstery fabrics and deep-piled carpeting were chosen to emphasize the sleekness and sheen of the metals.**

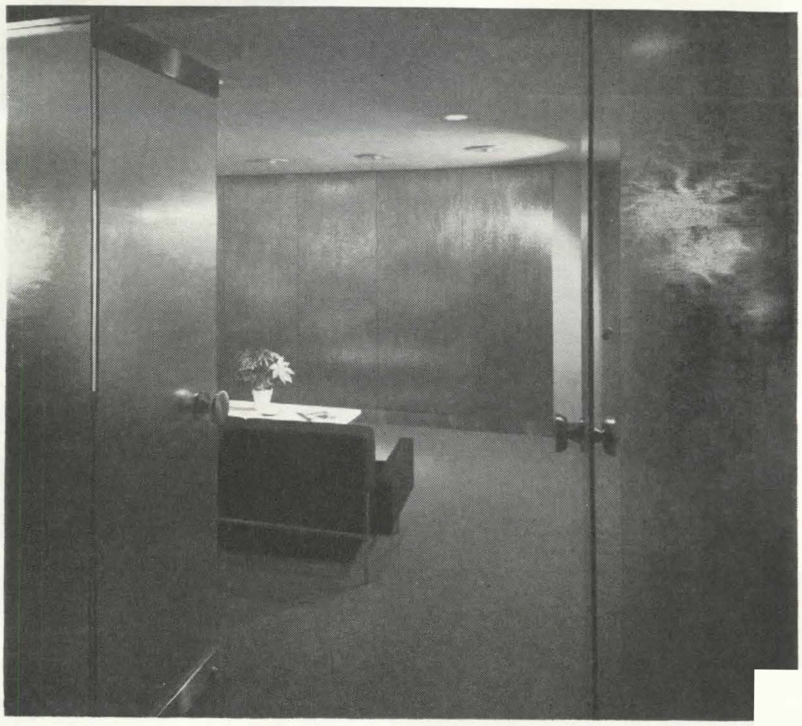
**An unusually progressive viewpoint, in an ordinarily conservative quarter, gave Designer Wanda Norstrom and Associate Eve Peri the challenging assignment to "create a cheerful and stimulating decor" for the new offices of the Pennsylvania Lumbermens Mutual Insurance Company. Designers Norstrom and Peri created a color layout that includes 38 colors brilliantly applied throughout the 25,500 square feet of office area, planned to provide relaxing contrast to the statistical work performed.**

# office suites


*Flanking the elevator corridor are two reception rooms, a public one* (right) *and a private one* (acrosspage). *Transparent-glass doors lead to this quietly color-schemed area in which steel is discreetly displayed in a number of actual uses. The decorative panel behind the receptionist's desk is of expanded steel with a dramatic textural effect.* Photos: Scott Hyde



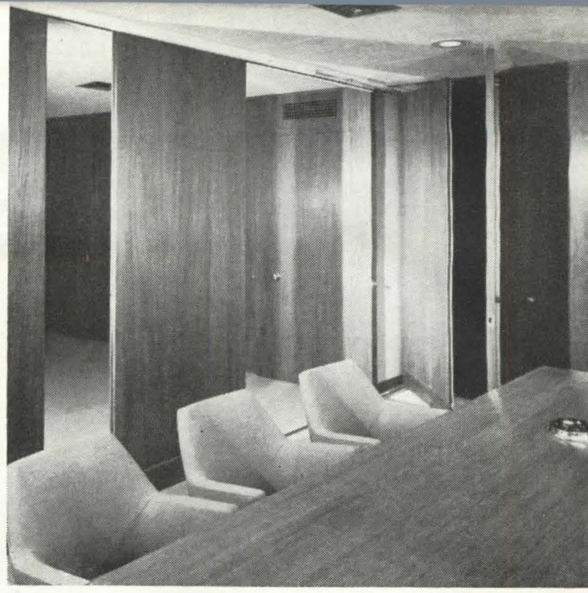
*Corner of reception room, showing gleaming stainless-steel divider, doors, and furniture legs contrasting with soft-textured carpeting and upholstery fabrics. Painted walls are both pressed and flat metal.*



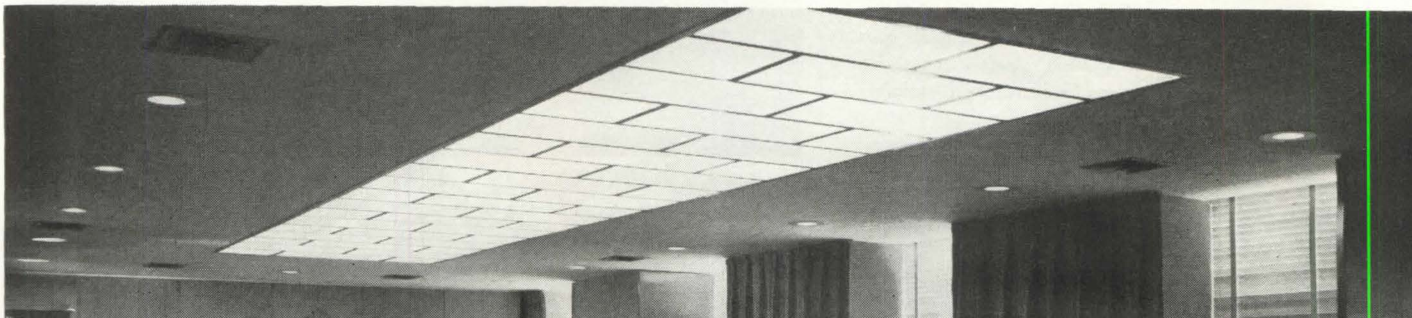
*Private reception room is adjacent to Board Room. Entrance doors are of textured glass. Focal point is the wall of striated-stainless steel, dramatically lighted to display its surface interest. Note stainless-steel-clad column, decorative handling of a structural member.*

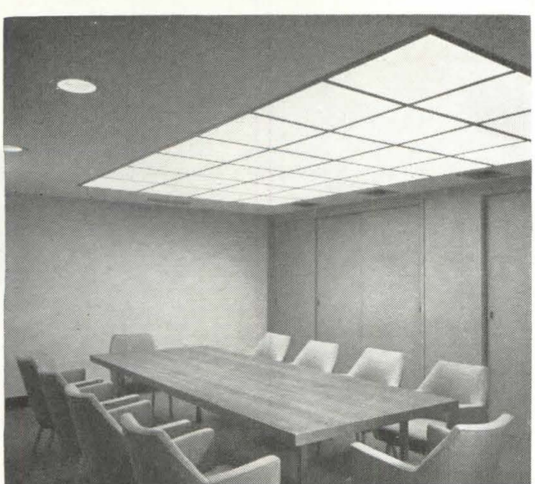
| | |
|---|---|
| client | American Iron & Steel Institute |
| location | New York, New York |
| architect-interior space planner-decorator | J. Gordon Carr |
| associated decorator | Leigh Allen |
| project manager | Rene de Blonay |

# office suites



## American Iron & Steel Institute (continued)





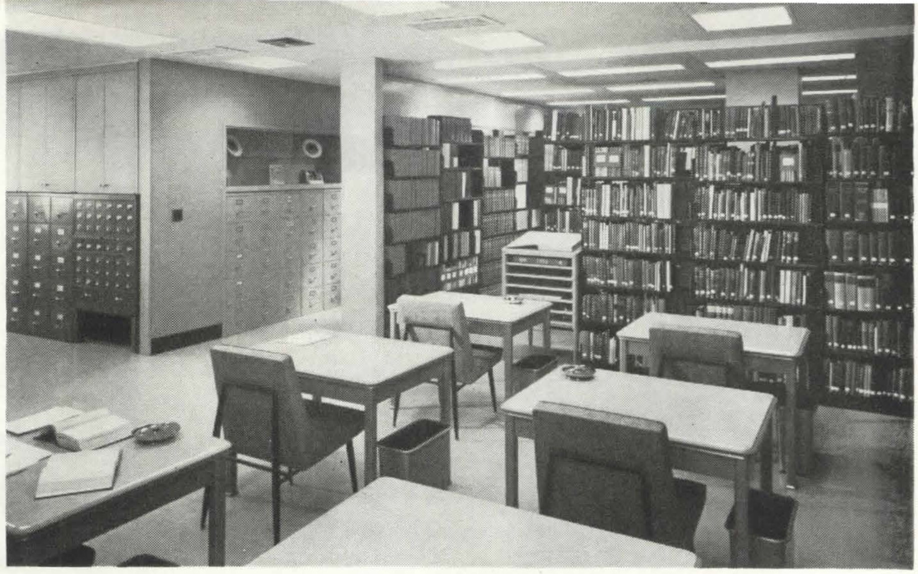
*The Board of Directors' commodious room has a U-shaped seating arrangement accommodating up to 40 persons. Wall facing the windows* (not shown) *is fully equipped for visual-aid demonstrations. Note wall panel of painted, pressed steel, with random accents of stainless steel in contrast to the painted finish.*

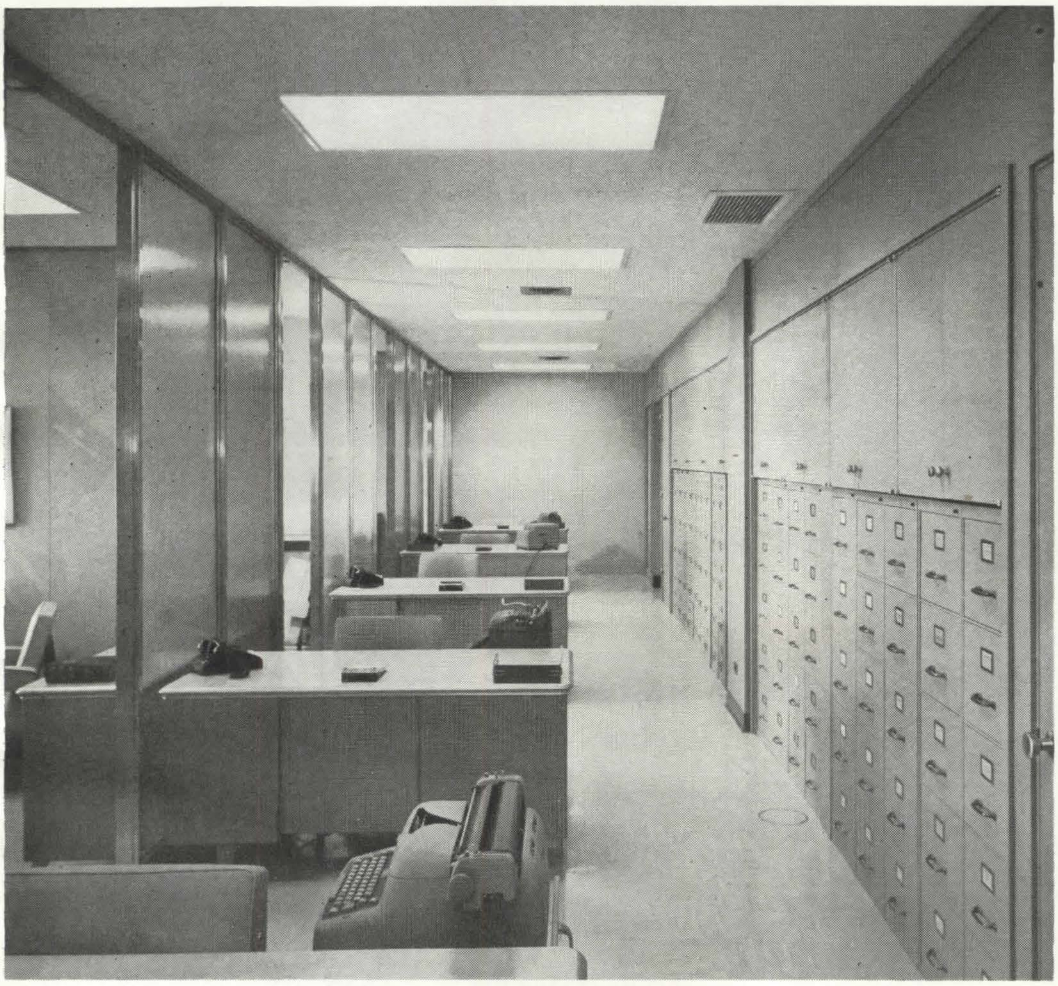
*Detail* (top) *shows folding wood partition that opens into an extension of the Board Room, an informal dining area with kitchenet alcove.*

*Photo* (left) *is one of several smaller conference/meeting rooms, with closet and storage space behind sliding, painted steel doors.*

*Service feature of the Institute is a comprehensive reference library* (right).

*One of the efficiently designed office areas* (below) *has secretarial and filing corridor adjacent to offices of the department heads. Flush storage wall is painted metal; colors are neutral and grayed values.*





## data

### cabinetwork

**Supply and Storage Cabinets:** hollow metal over filing cabinets/ storage and book walls in executive offices/ Superior Steel Door & Trim Co., 15-03 126 St., College Point, Long Island, N. Y.

### doors, partitions

**Doors:** hollow metal/ some stainless-steel clad.

**Partitions:** hollow metal/ Superior Steel Door & Trim Co.; masonry faced with hollow metal or rigidized stainless steel/ hollow metal/ "Metalwal"/ The Prosperity Co., P. O. Box 671, Syracuse 1, N. Y.

### furniture, fabrics

**Furniture:** Do/More Chair Co., 225 Fifth Ave., New York, N. Y.; Knoll Associates, 575 Madison Ave., New York, N. Y.; Edgewood Furniture Co., 334 E. 75 St., New York, N. Y.; Jens Risom Design, 49 E. 53 St., New York, N. Y.

**Fabrics:** Rancocas Fabrics, Burlington, N. J.; Knoll Textiles, 575 Madison Ave., New York, N. Y.; Schumacher Fabrics, 60 W. 40 St., New York, N. Y.; Dorothy Liebes Textiles, 305 E. 63 St., New York, N. Y.

### lighting

**Fixtures:** 2'x4' recessed fixtures/ accent lighting in incandescent or luminous ceilings/ Gotham Lighting Corp., 37-01 31 St., Long Island City, N. Y.

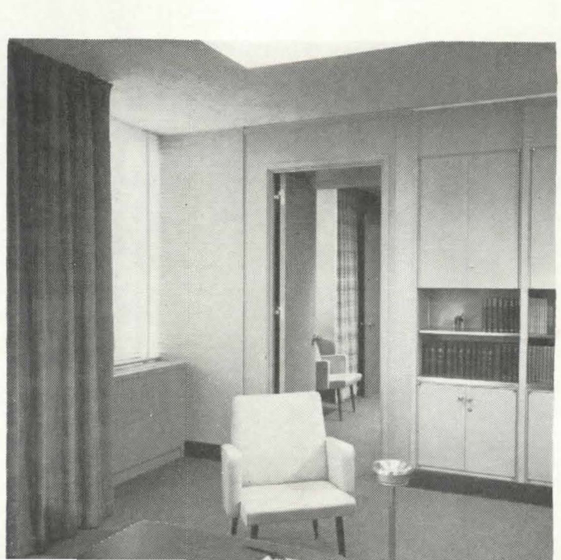
### ceiling, flooring

**Ceiling:** "Travertone"/ Armstrong Cork Co., Lancaster, Pa.

**Hard Surface Flooring:** Robbins Floor Products, Inc., 535 Fifth Ave., New York, N. Y.

**Carpets:** Magee Carpet Co., 295 Fifth Ave., New York, N. Y.; Lord & Adams (V'Soske), 4 E. 53 St., New York, N. Y.

*Executive office* (right) *is one of several, each custom-planned. A richly colored drapery fabric introduces warm contrast to metal surfaces. Built-in storage cabinet is of same aqua-painted metal as walls.*

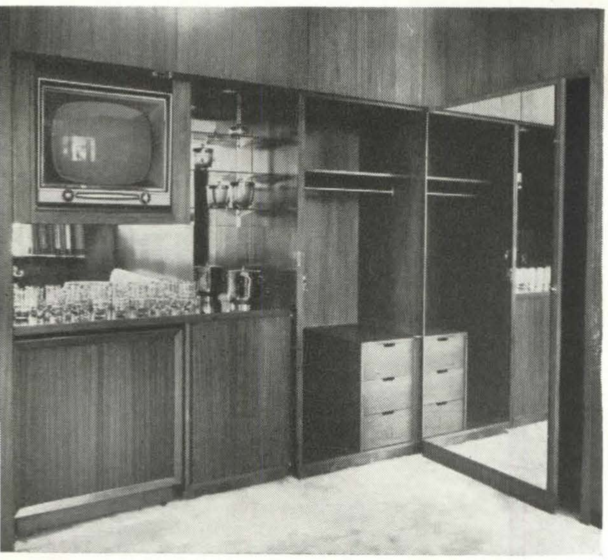


# office suites

*In the office of the President* (right), *walls are mahogany paneled, carpeting is antique gold, draperies custom-woven in gold. Slimline fixtures, recessed in curtain pockets, illuminate the semisheer draperies.*

*Detail photograph* (below) *shows built-in TV, refreshment, and wardrobe cabinets.*

Photos: Cal & Don Young



| | |
|---|---|
| client | Pennsylvania Lumbermens Mutual Insurance Co. |
| location | Philadelphia, Pennsylvania |
| architects | Thalheimer & Weitz |
| architectural designer | Wanda Norstrom |
| designer | Eve Peri |

*Board of Directors' room* (right) *has walnut-paneled walls, a 22-foot-long walnut conference table. Saddle-leather chair upholstery blends with gold carpeting and draperies. Lighting, rheostat-controlled, is from recessed ceiling fixtures which spotlight special presentations.*

## data

#### cabinetwork, doors, partitions

**All:** designed by Wanda Norstrom/ A. Raymond Raff Co., 1635 W. Thompson St., Philadelphia, Pa.

#### equipment

**Clothes Lockers:** Vogel-Peterson Co., Chicago, Ill.

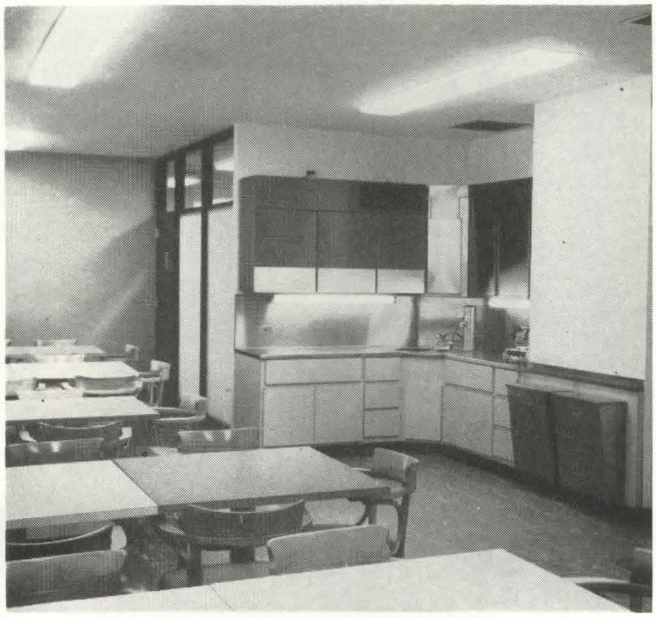
**Cafeteria:** Equipment Sales Co., 525 Arch St., Philadelphia, Pa.

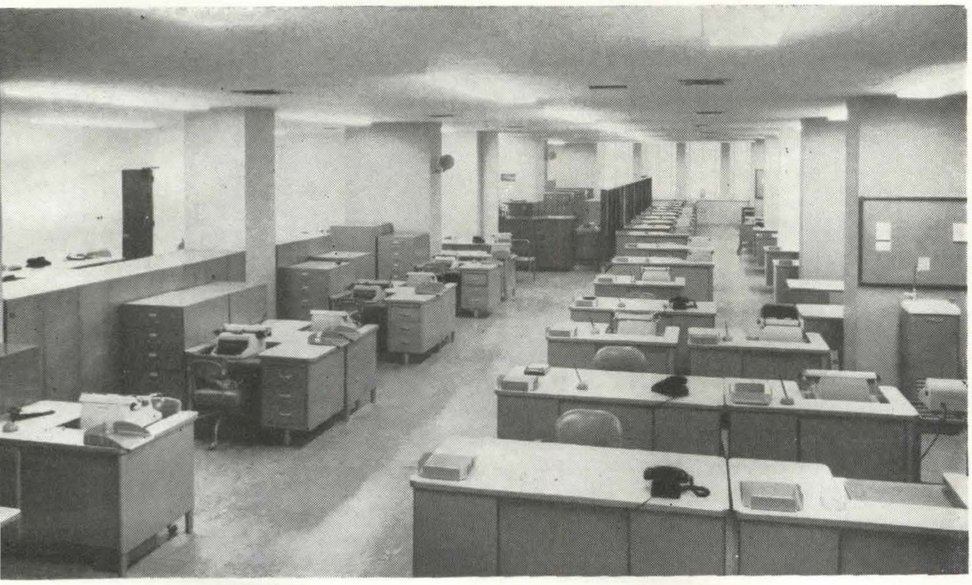
**Wall Refrigerator:** General Electric Co., 310 W. Liberty, Louisville, Ky.

#### furniture, fabrics

**Draperies:** designed by Ellen Siegal/ Rancocas Fabrics, Penn at Dilwin St., Burlington, N. J.

**Upholstery:** Knoll Associates. Inc., 575 Madison Ave., New York, N. Y.; Gilford Leather Co., Inc., 515 Madison Ave., New York, N. Y.; Cheney, Greeff & Co., Inc., 4 E. 53 St., New York, N. Y.; Konwiser, Inc., 1 E. 53 St., New York, N. Y.





*Employes lunchroom* (above) *has colorful red, yellow, blue, gray scheme, and such special conveniences as wall-hung refrigerator, waste-disposal bins, loud-speaker for music and company announcements, garbage-disposal unit, electric coffee-maker.*

*General business area* (left), *set up for ease of work flow, continues colorful theme, with each column painted in a vivid shade —lime, persimmon, orange, yellow, blue. Neutral ceiling, floor, and desks unify scheme.*

*Executive corridor* (below), *five feet wide and eighty-five feet long, achieves design interest through use of silver grasscloth wallpaper facing a golden-squash painted wall; carpeting in alternating blocks of four colors; horizontally suspended hourglass ceiling fixtures that create light patterns to break up the length of the area.*

**Furniture:** Jens Risom Design, Inc., 49 E. 53 St., New York, N. Y.; Thonet Industries, Inc., 1 Park Ave., New York, N. Y.; Steelcase, Inc., Grand Rapids, Mich.; Kittinger Co., Inc., 1893 Elmwood Ave., Buffalo, N. Y.; Stow & Davis Furniture Co., Grand Rapids, Mich.; W. H. Gunlocke Chair Co., Wayland, N. Y.

#### lighting

**Fixtures:** Devoe Lighting Corp., 715 74 St., North Bergen, N. J.; Stamford Lighting Corp., 429 W. Broadway, New York, N. Y.

#### walls, flooring

**Paint for Walls:** The Martin-Senour Co., 2520 S. Senour St., Chicago 8, Ill.

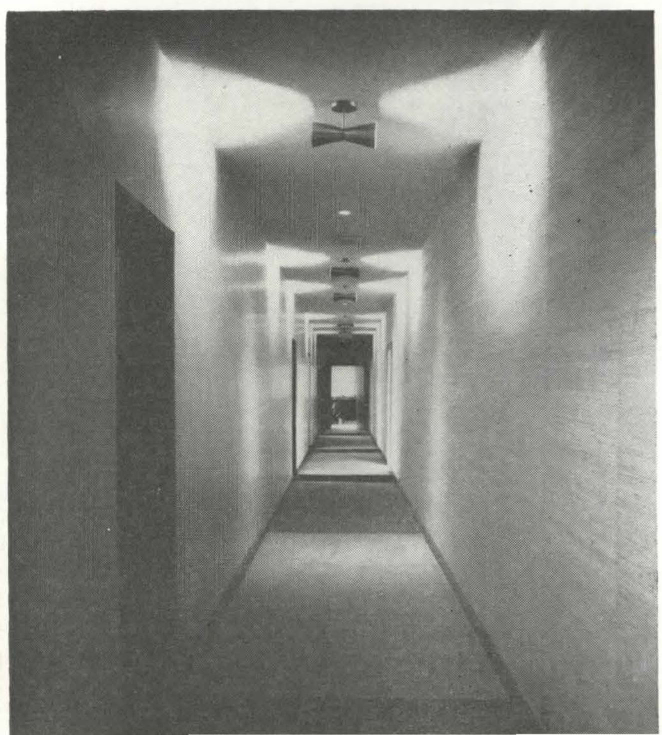
**Ceramic Tile Walls:** Mosaic Tile Co., Zanesville, Ohio.

**Grass-Cloth Paper:** Fine Art Wallpaper Co., 575 Madison Ave., New York, N. Y.

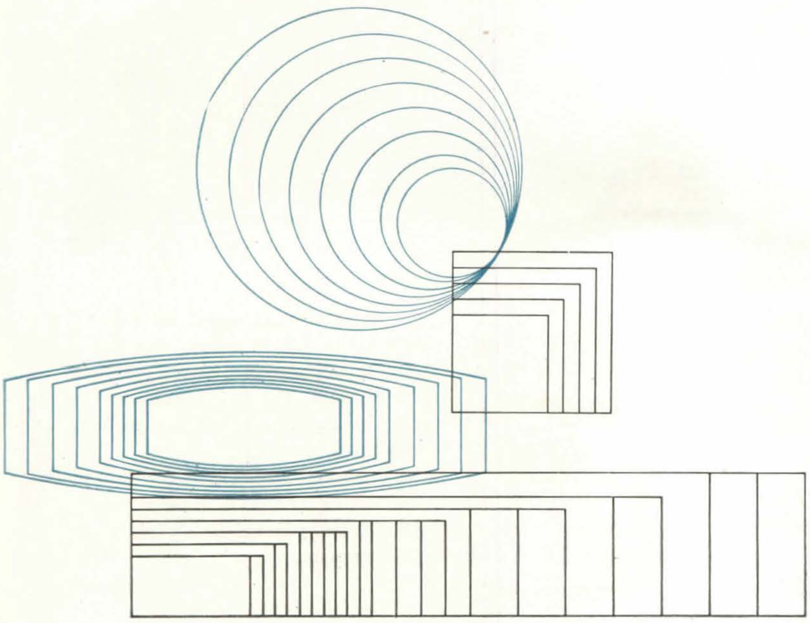
**Carpeting:** designed by Eve Peri/ James Lees & Sons Co., Bridgeport, Pa.

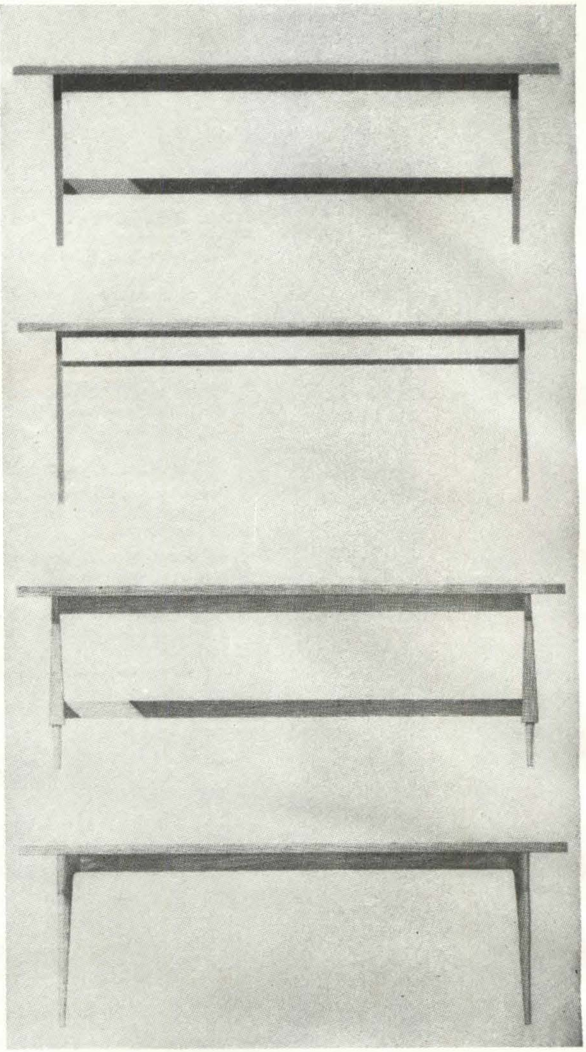
**Vinyl Tile:** American Biltrite Rubber Co., Trenton, N. J.

**Asphalt Tile:** Mastic Tile Corp. of America, Newburgh, N. Y.



# p/a interior design products





**Conference Tables:** custom-designed series built around four standard bases, four standard tops/ bases in black-finish square tubular steel or in wood/ tops are round, square, rectangular, or boat-shaped/ available in wood, Formica, or linoleum/ catalog chart relates table sizes to room dimensions, lists approximate seating capacity/ round tops range from 3'6" to 10' diameter; squares from 3' to 5' square; rectangles from 2'6" x 5' to 6' x 28'; boat shapes from 3'5" x 8' to 6' x 20'/ **Lehigh Furniture Corporation, 16 E. 53 St., New York 22, N.Y.**

**Stacking Captain's Chair:** flex-spring contour-shaped back and seat/ upholstered arm rests/ 13/16" square tubular steel frame, satin-chrome finish/ plastic fabric upholstery available in 37 colors/ over-all dimensions 17¾" wide x 20¾" deep/ **Royal Metal Mfg. Co., 175 N. Michigan Ave., Chicago 1, Ill.**

**Fixed-Height Chair:** adaptable to "use requirements" of various industry seating needs/ in any given fixed height from 15" to 31"/ nonswivel design/ posture-formed wood seat, self-conforming backrest/ optional types of feet available include "Pussyfoot" steel-faced glides or all-rubber tips/ metal parts finished in beige, brown, gray, or green baked enamel/ plywood seats and backs natural or stained to