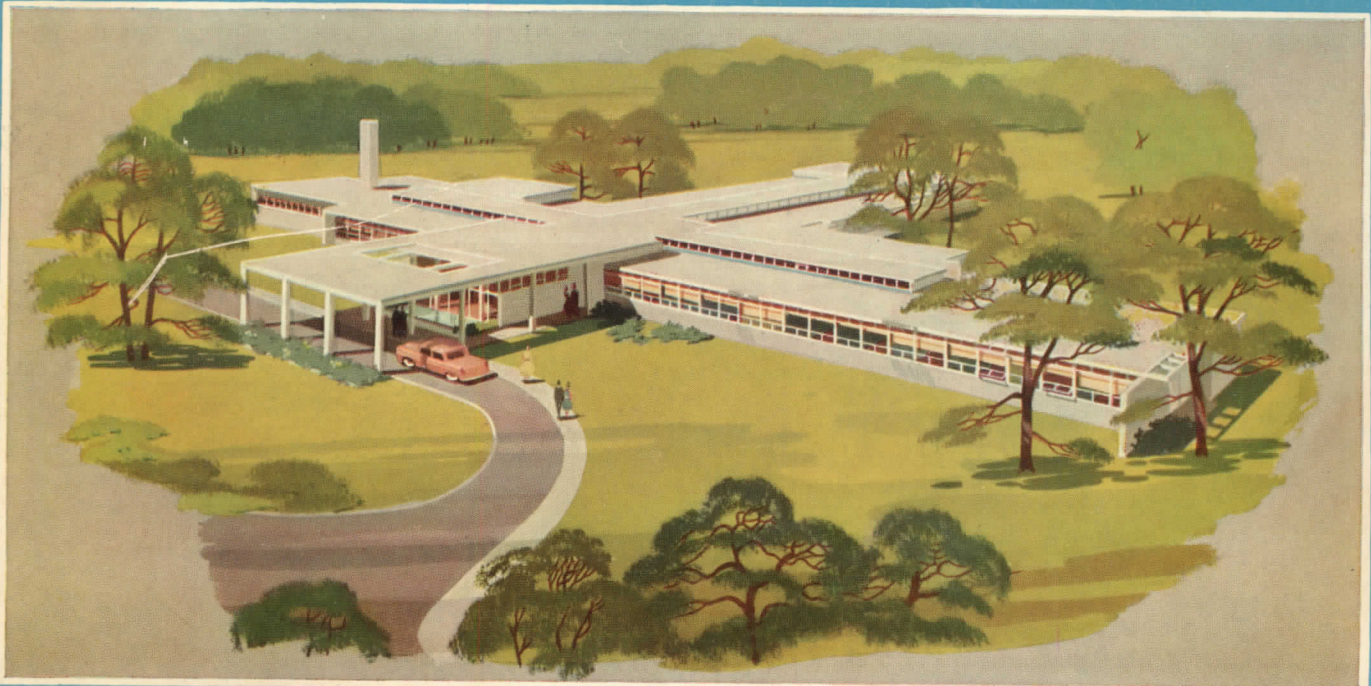
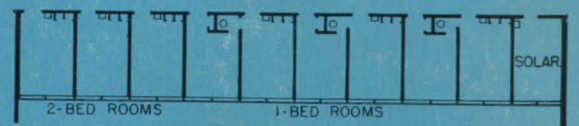
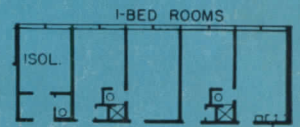
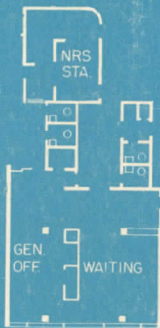
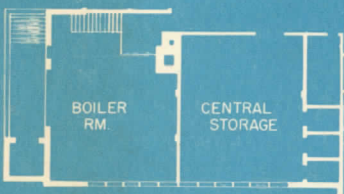
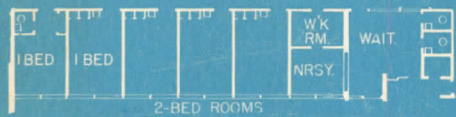
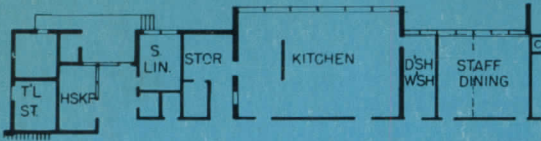
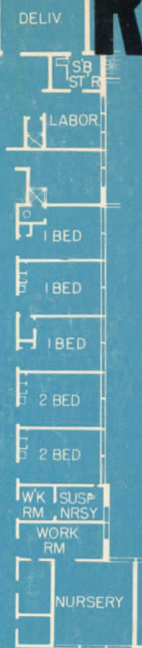
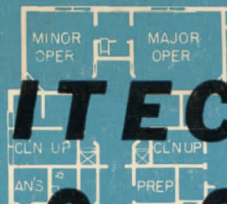
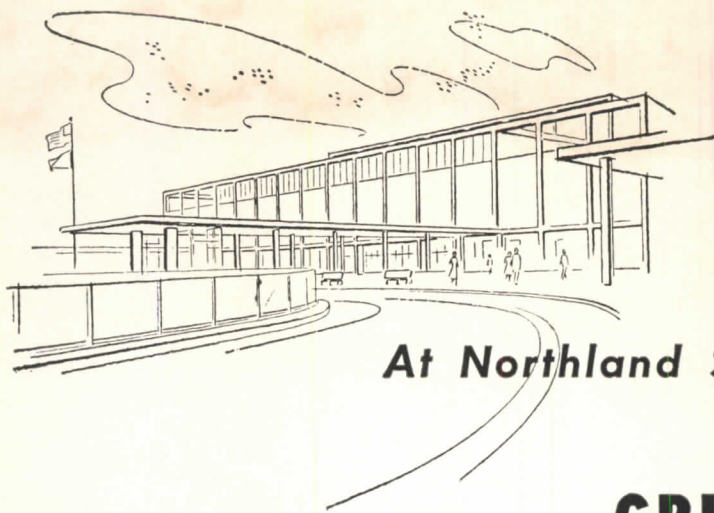


ARCHITECTURAL RECORD

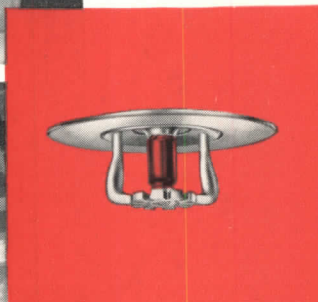




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ARCHITECTURAL RECORD (Vol. 116, No. 4, October, 1954) is published monthly by F. W. Dodge Corporation, 10 Ferry Street, Concord, N. H., with editorial and executive offices at 119 W. 40th St., New York 18, N. Y. \$5.50 per year; Foreign, \$20.00.

Entered as second-class matter at the Post Office, Concord, N. H., March 16, 1946, under the Act of March 3, 1879.

ARCHITECTURAL RECORD

October 1954 Vol. 116 No. 4

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TABLE OF CONTENTS

The Record Reports

Perspectives	9
Carson-Pirie-Scott City Planning Competition	10
Meetings and Miscellany	15
News from Canada. <i>By John Caulfield Smith</i>	26
Washington Topics. <i>By Ernest Mickel</i>	38
Construction Cost Index	42
Required Reading	46
Current Trends in Construction	378

Landscape Architecture by a Painter

Gardening in Brazil has a short history; a garden is an imported idea, but a landscape architect trained as a painter has been winning converts. He works as a painter, painting actual landscapes, not canvases, landscapes constantly changing with the seasons and the weather, and he expresses his ideas also in words. Roberto Burle-Marx: *Art and the Landscape* 141

New Buildings

Office Projects Mushroom in New Construction Boom	152
Hilton Plus Statler: A Big Client Gets Bigger	154
Clients are Industry; Education and Kids	156

Two New Buildings in Inyo County, California

Inyo County Free Branch Library and County Offices, Bishop; Inyo County Health Center, Independence. Francis Joseph McCarthy, Architect 157

Highway Restaurants

Parkmoor Drive-in, Dayton, Ohio; Rollin L. Rosser, Architect and Engineer	163
N. Y. State Thruway Restaurants and Service Stations; Eggers and Higgins, Consultants	164
Proposed Restaurant and Motel, Toledo, Ohio; Ralph W. Zimmerman, Architect	166
Oscar's Drive-In, San Diego, Calif.; Russell Forester, Designer	167
Harold's on Mercer Island, Seattle, Wash.; Decker & Christenson, Architects	168

Houses on Difficult Sites

House for Mr. and Mrs. M. G. Rosenthal, Houston, Texas; Bolton & Barnstone, Architects	170
House for Mr. and Mrs. Arthur M. Gordon, Chicago, Ill.; George, Fred and William Keck, Architects	172
House for Mr. and Mrs. H. R. Petersen, Orinda, Calif.; Kolbeck & Petersen, Architects	174

Continued on next page

Houses on Difficult Sites (Continued)

House for Mr. and Mrs. Louis H. D. McLeod, Rockport, Mass.; Carl Koch and Assoc., Architects 176

How Do Students Become Architects?

The last of three reports on problems of architectural education today based on a survey of leading educators and practitioners as summarized by John Knox Shear 178

Building Types Study Number 215 — Hospitals

"Ten Little Hospitals and What Their Architects Learned." By Richard J. Adams — Sherlock, Smith and Adams, Architects and Engineers: Kendrick Memorial Hospital, Luverne, Ala.; Perry County Hospital, Marion, Ala.; Bullock County Hospital, Union Springs, Ala.; Bryan W. Whitfield Memorial Hospital, Demopolis, Ala.; Washington County Hospital, Chatom, Ala.; Conecuh County Hospital, Evergreen, Ala.; Chilton County Hospital, Clanton, Ala.; Barbour County Hospital, Eufaula, Ala.; Geneva County Hospital, Geneva, Ala. 181

Jane G. Phillips Memorial Hospital, Bartlesville, Okla.; Neville, Sharp & Simon, Architects 192

Morris County Hospital, Council Grove, Kan.; F. O. Wolfenbarger & Associates, Architects 198

Broadus Hospital, Philippi, W. Va.; C. E. Silling & Associates, Architects 200

Margaret R. Pardee Memorial Hospital, Hendersonville, N. C.; Six Associates, Architects and Engineers 202

Calvert County Hospital, Calvert County, Md.; The Office of James R. Edmunds, Jr., Architects 204

Northville State Hospital, Northville, Mich.; O'Dell, Hewlett & Luckenbach, Architects 207

Architectural Engineering

The leading article in this section introduces a new series of Time-Saver Standard sheets on wood construction brought up to date. Modern engineering in wood not only adds new structural systems (like stressed skin plywood) but also makes more efficient the age-old systems like plank and beam. Time-Saver Standards in this issue tabulate for the first time the necessary data on stressed skin plywood for floors and roofs.

"Wood Structures for Houses." By Albert G. H. Dietz and William J. LeMessurier 213

"Basic Elements in the Planning of Electrical Systems" — Article 5: Hospitals. By Felix B. Graham 217

Roundup 221

Product Reports 222

Time Saver Standards — "Engineered Wood Construction." By William J. LeMessurier and Albert G. H. Dietz 225

Office Literature 232

Index to Advertising

380

COVER: Photo by Arnold Eagle

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Member of Audit Bureau of Circulations and Associated Business Publications. Architectural Record is indexed in Readers' Guide to Periodical Literature, Art Index, Industrial Arts Index and Engineering Index.

Every effort will be made to return material submitted for possible publication (if accompanied by stamped, addressed envelope), but the editors and the corporation will not be responsible for loss or damage.

Subscription rates in U. S., U. S. Possessions, and Canada: \$5.50 for one year, \$9.00 for two years, \$11.00 for three years. Elsewhere, subscriptions from those who by title are architects or engineers, \$6.50 for one year, \$11.50 for two years, \$15.00 for three years; subscriptions from all others outside U. S., U. S. Possessions and Canada, \$20.00 a year. Single copy price, \$2.00. Circulation Manager: Marshall T. Ginn. Change of Address: Subscribers are requested to furnish both old and new addresses, sending if possible the stencil impression from magazine wrapper. Allow four weeks for change.



THE RECORD REPORTS

P E R S P E C T I V E S

EVERY ARCHITECT loves the line of Jaunty Junior fashions" — so says an advertising spread currently running in some of the magazines. Ad Alley and the fashion world have found out about architects, by gad!

ILLUSIONS — WHERE ARE THEY? The *Architects' Journal's* Astragal, whom it is almost impossible not to quote every so often, had some comments a while ago on "the contemporary interior" for which some may find a wider application. Says Astragal: "From time to time nearly everyone must have a moment of doubt when he wonders if there isn't something missing from the contemporary interior, when he wonders if all these deep textures, primary colors, natural materials, selected antiques, aren't all a bit too *real*. Our ancestors never sentenced themselves to constant exposure to the truth, they had their fakes and their illusionistic gimmicks, but where are ours?"

SCHOOL KEEPS AGAIN this year with the problem of new facilities to meet ever-mounting enrollments still of urgent concern in communities across the nation. U.S. Commissioner of Education Samuel M. Brownell, announcing the results of the annual survey of the U. S. Office of Education on prospective school enrollments, said the present rate of school construction, though highest in U. S. history, will have to be nearly tripled to keep pace with the number of children to be educated. The Office of Education expected an enrollment of 38 million — 23 per cent of the country's total population — in schools and colleges during 1954-55. But Commissioner Brownell warned that the highest peaks are yet to come. "By 1959-60 the enrollment in elementary and secondary schools and in colleges and universities will rise to approximately

46 million. . . . To accommodate the growing number of children, to erase the estimated September 1954 shortage of 370,000 classrooms, and to take care of continued obsolescence, approximately 720,000 public elementary and secondary school classrooms and related facilities will be needed during the next five years." The Commissioner predicted that the forthcoming state conferences on education urged by President Eisenhower and financed in part by Federal funds authorized by the Congress, and to be followed by a White House Conference on Education next year, "will stimulate the greatest citizen-study and citizen-action in behalf of the education of the country's children we have ever had."

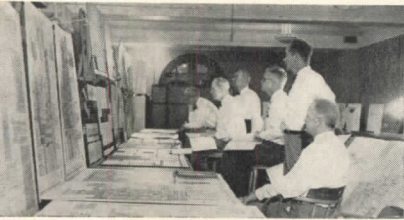
A CHALLENGE TO ARCHITECTS and the threat of a sort of architectural miscegenation are both inherent in the solution adopted by some communities to the dilemma posed by school building shortages and local financing difficulties. In towns as far apart as El Paso, Tex., Jackson, Mich., and Centereach, L. I., the one-room school is back — this time designed for conversion into a "ranch-type" house when improving finances make "real" schools possible or decreasing enrollments reduce classroom needs.

THE BEST TIME TO BUILD IS NOW, according to the U. S. Chamber of Commerce. A recent newsletter of the Chamber's Construction and Civic Development Department cites plentiful supplies of building materials, stable prices and wages, lower interest rates, tax reforms under the Administration's new law, and "much keener" competition among contractors which is shaving profits more closely, as providing a climate in which construction customers can

get more for their money than in any year since before World War II. F. W. Dodge Corporation figures on 1954 construction contracts awarded in 37 states east of the Rockies suggest that a good many customers have already come to this conclusion — in August, for the eighth straight month, dollar volume of contracts awarded reached an all-time high for the month; it looked very much as though 1954 would set a new construction record.

RESPONSIBILITIES OF THE ATOMIC AGE "must either mature or ruin us," John Jay Hopkins, president and chairman of General Dynamics Corporation, told a recent American Management Association conference. Mr. Hopkins, whose company pioneered development of the nuclear reactor for the Navy's new submarine *Nautilus*, foresees broad uses of atomic energy in the "near future" presaging an "atomic revolution" accompanied by broad changes in living habits, customs and values. Export of atomic resources, he said, could bridge the gap between the "have" and "have-not" areas; realization of the best potentialities of the atomic revolution could lead to an end of war and a new way of life that would eliminate Communism from the world.

OUR READERS WRITE: A lady from Austin, Minn., who says she became acquainted with the RECORD at the St. Paul Public Library, feels it is "unfortunate smaller cities do not subscribe to ARCHITECTURAL RECORD instead of two subscriptions to fashion magazines." And an equally perceptive gentleman, at the moment an Army private at Fort Sill, wants to know, "Now that my three-year subscription is expiring, how do I arrange a lifetime subscription?"



PRATT SENIOR THESIS WINS \$20,000 CHICAGO PRIZE

Loop Redevelopment Charted by 106 Entries in Carson-Pirie-Scott Centennial Competition

FOUR YOUNG NEW YORK ARCHITECTS whose entry also served as their graduating thesis at Pratt Institute last spring and the Pratt associate professor who was their design critic have won the \$20,000 First Award in the Carson-Pirie-Scott Centennial Competition in City Planning. The competition for a general plan for the redevelopment and improvement of Chicago's Central Commercial District drew 106 entries from 22 states and three foreign countries; there were eight cash awards totaling \$32,500 and 11 honorable mentions.

The First Award winners: Herbert A. Tessler, 23; Leon Moed, 23; Joseph A. D'Amelio, 22 (now a Fulbright Scholar in Italy); William H. Liskamm, 22 (now a Fulbright Scholar in Germany); and William N. Breger, 33.

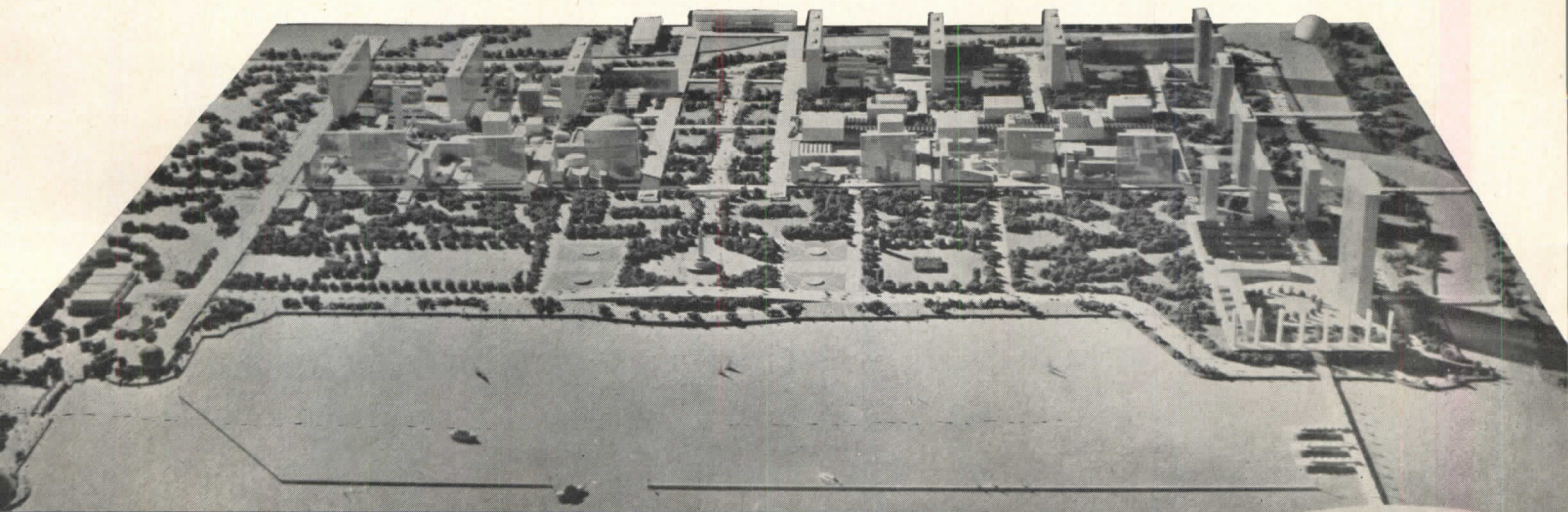
The Second Award of \$7500 was won by a team consisting of Wilhelm Viggo von Moltke, 43, architect and chief of the land planning division of the Philadelphia City Planning Commission (team leader); Hans George Egli, 29, architect, Philadelphia; and Irving Wasserman, 28, landscape architect, David Hodges Karp, 22, architect, and Robert F. Kitchen 25, and Clifford B. Slavin, 27, planning designers, all of the Philadelphia City Planning Commission.

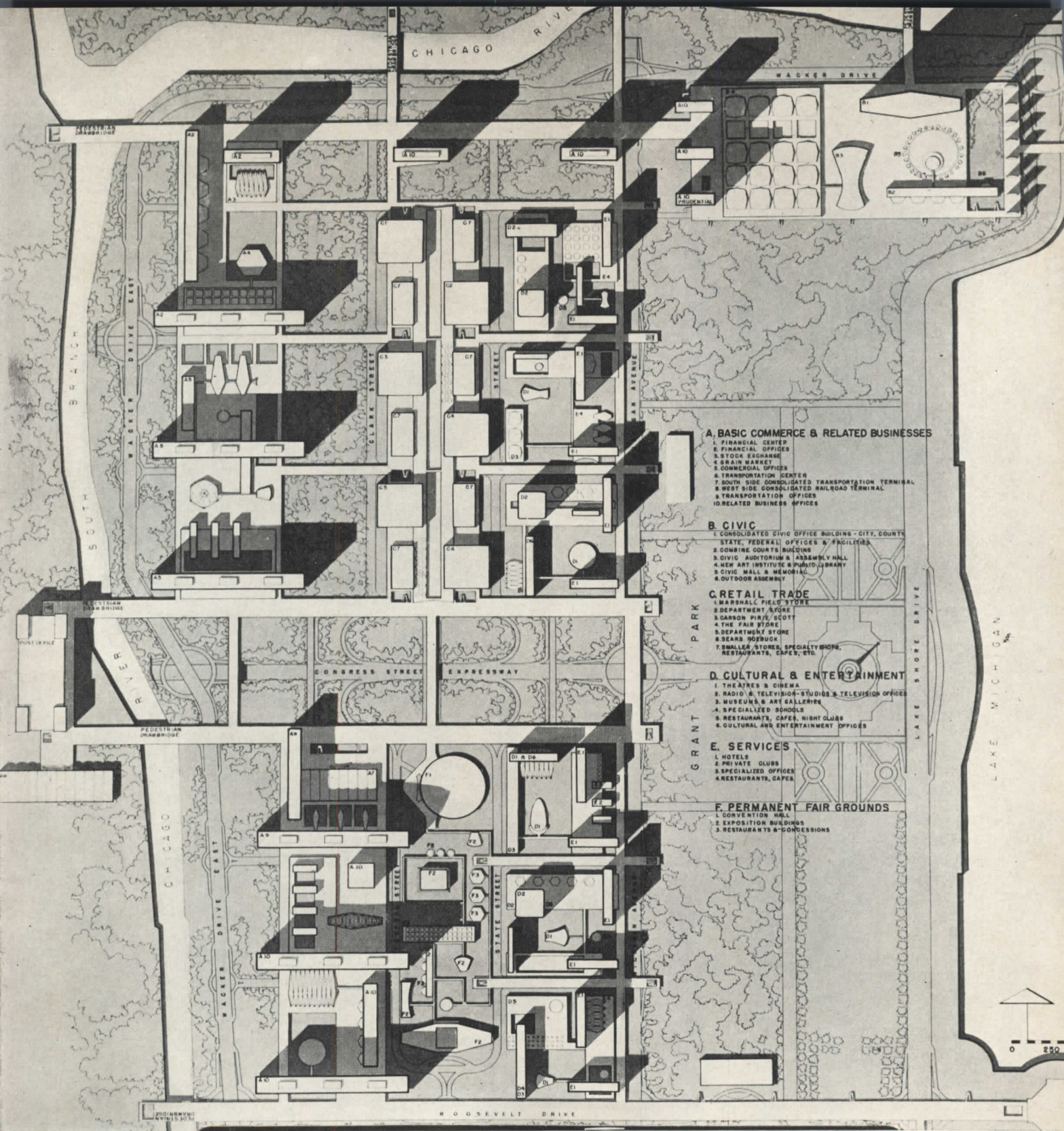
Winners of the \$2500 Third Award were "Pace Associates," an 11-man team of whom nine are members of the Chicago architectural firm of the same name — John F. Kausal, 44, architect (team leader); Charles B. Guenther, 47, architect; Albert A. Goers, 45, architect and engineer; Mace de Buy Wenniger,

30, planner; John T. Black, 37, architect; and W. H. Binford, W. B. Cobb, and K. D. Farwell. The two independent members of the team: Graham Aldis, 58, partner in the Chicago real estate firm of Aldis and Company, and Robert S. Cushman, 50, partner in the Chicago law firm of MacLeish, Spray, Price & Underwood.

The jury, which congratulated the sponsor on making, through the competition, "the first really broad contribution [to Chicago city planning] since Daniel H. Burnham," considered the first three awards "as a unity" providing among them the three essentials of a satisfactory plan as the jury saw them: the goal, the way, and the means. "Together," said the jury report, "these three plans make a significant contribu-

(Text continued on page 328)

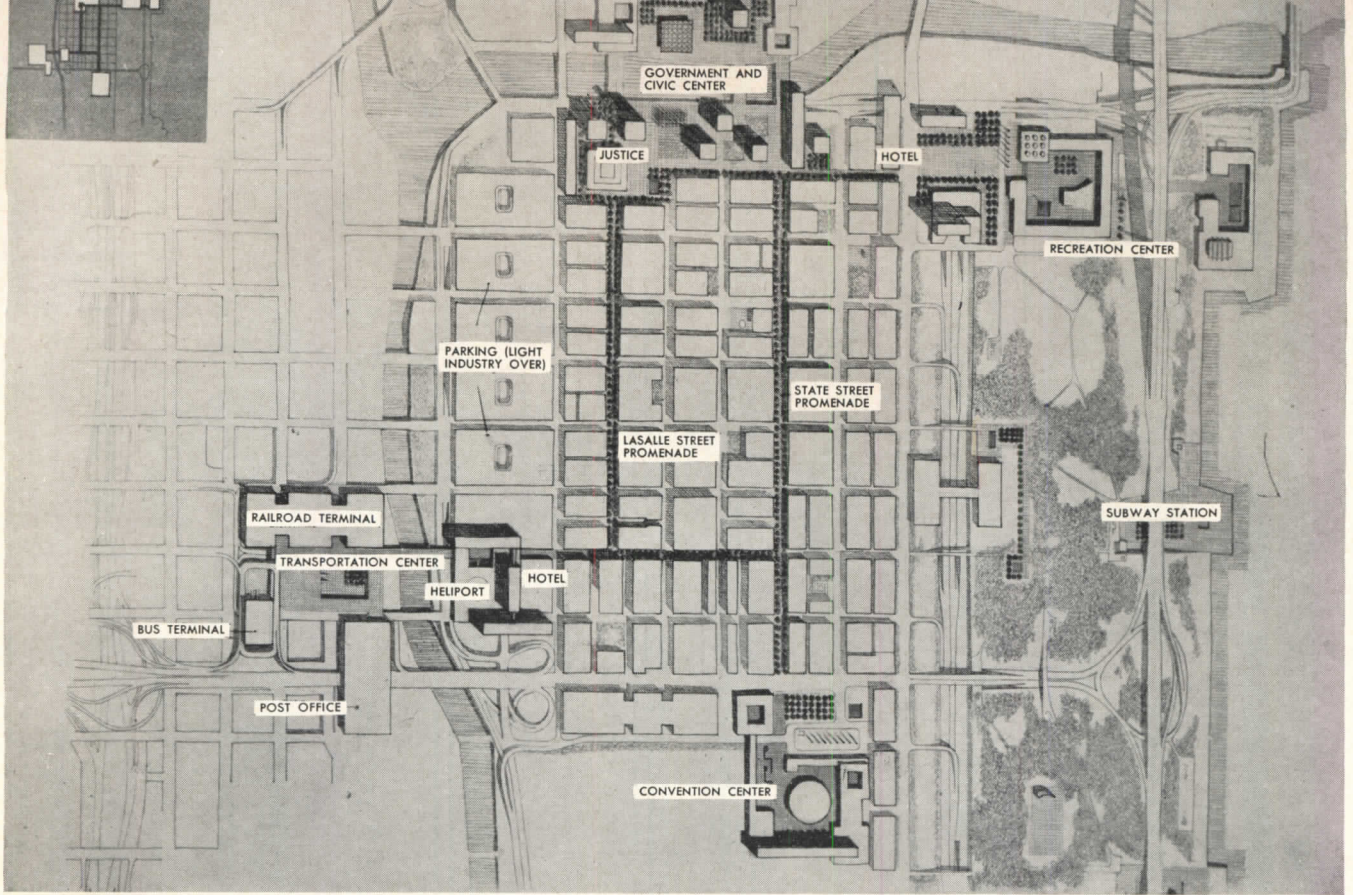




FIRST AWARD WINNER (model photo across-page, reproduction of presentation board showing scheme in final stage above) covered broader area than competition required — north to Roosevelt Road (broken white line on aerial photo across-page top). In this fourth, or completion, stage are shown locations of all essential functions of the Central Commercial District: Basic Commerce and Related Businesses, Civic Development, Retail Trade, Cultural and Entertainment, Services and Permanent Fairgrounds (see key as shown on board). The jury commented: "This plan stands out above any other

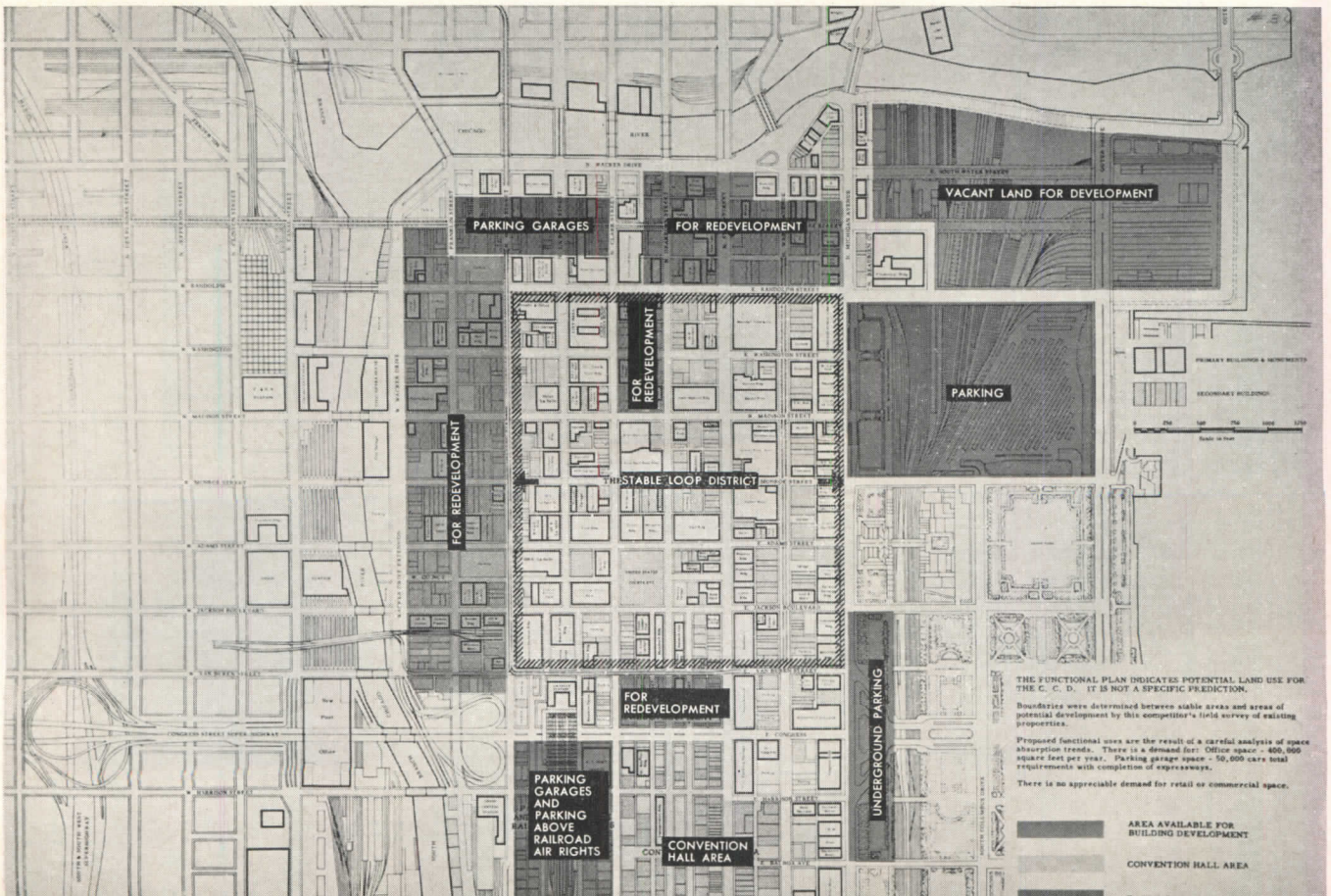
plan presented for its clear organization in having solved the essential functions of the Central Commercial District, having presented a well-ordered and clearly defined plan for the ultimate development of the District. . . . It is not necessary to accept the First Award presentation literally in all its aspects but rather as representing a scheme of organization, subject to a considerable degree of variability as the future unfolds. . . . It calls ultimately for maximum effort, resources and change, but the ultimate goal was analyzed by the Jury as being well worth the trouble"

For Second and Third Awards, see page 12



SECOND AWARD WINNER (one of the presentation boards reproduced above) proposed creation of a series of projects around the Central Commercial District as "anchors" for future redevelopment. "The Second Award presentation," said the jury, "essentially represents an intermediate step toward the attainment of the kind or type of goal envisioned in the First Award presentation. . . . It creates a physical pattern and framework within which the whole area might ultimately be recreated . . . illustrates the greatest improvement which can be made with the least effort"

THIRD AWARD WINNER (one of the boards shown below) outlined areas in the Central Commercial District which are most suitable for redevelopment, development or parking. The jury praised the entry as "a serious professional study of existing conditions and potentials of early redevelopment" and noted that in its proposal for a Central District Commission it provided a legal, financial and administrative mechanism which could "guide private development in the directions embodied in the First Award plan" but found the ultimate "goal objectives" difficult to judge



THE RECORD REPORTS

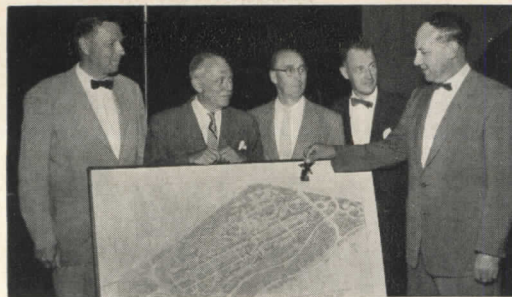
SCHOLARS ARE WANTED IN LANDSCAPE ARCHITECTURE

AN ADDRESS by Brazilian Landscape Architect Roberto Burle-Marx (see pages 145-151), another by Reginald R. Isaacs chairman of the Department of City Planning and Landscape Architecture of Harvard's Graduate School of Design, and an editors' panel discussion on publication requirements were highlights of the 1954 annual meeting of the American Society of Landscape Architects at the Hotel Somerset in Boston.

Professor Isaacs called for more scholars in landscape architecture and thus more literature for landscape architecture libraries; he urged the profession to encourage development of other Ph.D. programs in landscape architecture than Harvard's, currently the only one in the world. Also needed, said Professor Isaacs, is a full-scale public relations program for the profession.

The editors' panel included Harold S. Buttenheim, editor of *American City Magazine*; Frank G. Lopez, senior editor of *ARCHITECTURAL RECORD*; and Ogden Tanner, associate editor of *Architectural Forum*.

Awards in a nationwide competition sponsored by A.S.L.A. went to the following landscape architects: Simonds and Simonds, Pittsburgh (two awards); Clarke and Rapuano, New York; Wheelwright, Stevenson, Langran and Fanning, Philadelphia; Shurcliff and Shurcliff, Boston (three awards); Olmsted Brothers, Brookline, Mass.; Emmet



LANDSCAPE ARCHITECTS HERE AND ABROAD—Above, at annual meeting of American Society of Landscape Architects, in Boston: (left) Sidney N. Shurcliff, Boston, A.S.L.A. vice president, Leon Zach, Washington, A.S.L.A. president, Raymond H. Otto, Amherst, Mass., Lester Collins, Boston, and Arthur G. Barton, Los Angeles, competition jurors, with panel showing future plan for Franklin Park Zoo, Boston, which won award for Shurcliff & Shurcliff; (right) Independence Mall scheme (Wheelwright, Stevenson, Langran & Fanning, landscape architects; Harbeson, Hough, Livingston & Larson, Philadelphia, architects; George Howe, consultant) was another award winner—Markley Stevenson with Mr. Zach and the jurors. Below, at 4th Congress of International Federation of Landscape Architects in Vienna: (left) Gustav Amman, Switzerland, Hubert B. Owens, Athens, Ga. (American delegate) and Walter Leder, Switzerland, new I.F.L.A. president; (right) Mme. Ulla Bodorff, Sweden, new I.F.L.A. treasurer, and Herr Leder with members of the Host Committee



Layton, St. Louis (two awards); and Ethelbert Furlong, Glen Ridge, N. J.

Honorable Mentions went to Simonds and Simonds; Morrill and Sauers, Chicago; Eugene R. Martini, Atlanta (two mentions); Sam L. Huddleston, Denver; Robert L. Zion and Beatrice L. Zion, New York City; and a special mention to R. Coelho-Cardozo, and S. Osborn-Coelho.

LANDSCAPE ARCHITECTS HOLD VIENNA CONGRESS

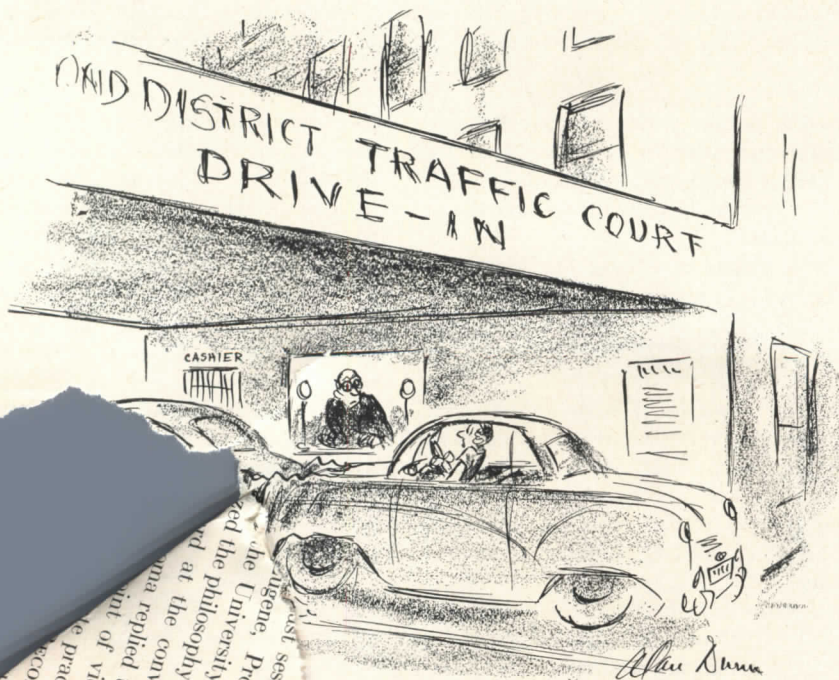
TWENTY-ONE NATIONS sent representatives to the Fourth Congress of the International Federation of Landscape Architects, held in Vienna June 7-12. Hubert B. Owens, chairman of the Division of Landscape Architecture of the University of Georgia, American delegate, represented A.S.L.A.

Tours of Vienna's numerous new parks, *strandbads*, housing projects, schools and playgrounds were an outstanding feature of the Congress, Professor Owens reports; and the Congress was followed by a six-day autobus tour of Austria.

There were two exhibits—one depicting the historical development of landscape design in each of I.F.L.A.'s member countries from prehistoric times to 1900; another presenting in plans, photographs and models examples of landscape architecture projects developed since 1945 in member countries. Especially noteworthy, according to Professor Owens, were the displays from Denmark, Germany, Switzerland, Israel and Japan.

Walter Leder of Switzerland was elected president and Sidney Shurcliff of Boston was one of three vice presidents named. The next meeting will be held in Switzerland in 1956.

(More news on page 16)



—Drawn for the RECORD by Alan Dunn

NORTHWEST ARCHITECTS MEET AT EUGENE

THE THIRD ANNUAL CONFERENCE of the Northwest Regional Council of the American Institute of Architects was held August 20-22 at the Hotel Eugene in Eugene, Ore., with 159 architects and their wives and guests in attendance.

The program, directed especially at the young architect, focused on design and the architect's responsibility to "his nation, his region, his state and his community." Speakers included Harwell Harris, director of the School of Architecture of the University of Texas; William Tugman, editor of the *Eugene Register-Guard*; Robert Anshen, San Francisco architect; Mark Sponenburg, Eugene sculptor and professor at the University of Oregon; and Sig Unander, 35-year-old Oregon State Treasurer and

in Architecture": "A national expression is the result of the accident of time and place . . . Architecture to be really great must express freedom and, above all, that love of the physical world which is a product of regionalism, and the image of the quality the people want to believe expressive of themselves and their nation. That will unite them in a great national expression."

Robert Anshen's subject was mass housing and he called for an increased use of architects' skills and an increased application of mass production techniques to improve it.

Mr. Tugman, long an outspoken supporter of long-range community planning, told the conference: "The architects must carry the greatest challenge

"Great art," he said, "is the result of the collaboration between man and his ideal universal expression of faith."

"Apprenticeship and Registration" was discussed at one of the two breakfast sessions, with President Robert L. Durham of the Washington State Chapter speaking for the employer and Donald Lutes of Eugene for the employe. "Young men in architecture," said Mr. Durham, "must be aware of certain problems in the practice of architecture or they will not get recognition for their problems. Number One is how to stay in practice at all. The responsibility of meeting the payroll is a big one." Young men will function more effectively on the office team, Mr. Lutes suggested, if their office assignments contribute to



Snapshots from the third annual conference of the Northwest Regional Council at Eugene, Ore. (left to right): Waldo Christenson of Seattle, A.I.A. Northwest regional director, with Robert Wilmsen of Eugene, general chairman of the conference; Paul Thiry of

Seattle introducing Harwell Harris, director of the School of Architecture at the University of Texas, for one of his two conference speeches; Sig Unander, Oregon State Treasurer (speaking), J. Holman Barnes, president of the Oregon Chapter, and Mrs. Barnes

member of the three-man Board of Control for the state. A popular innovation of the program was the scheduling of "group seminars," which provided time for small-group discussion of some of the major speeches, with a leader for each group — Walter Gordon of Portland, Robert Price of Tacoma and Paul Thiry and Robert Durham of Seattle.

Expression in architecture was the subject of two speeches by Harwell Harris. On "A Regional Expression in Architecture," Mr. Harris said: "Regionalism is a state of mind, not a matter of materials nor a way of building . . . free minds, imagination, a stake in the future — these make up the state of mind; and the climate, the topography and the materials of the region make up the conditions for any regionalism worth preserving." Of "A National Expression

to the people of the Northwest to rebuild our cities to meet the needs of modern living, and the coming years offer tremendous opportunities to the architect."

Sig Unander, voicing his opposition to any move to appoint a state architect in Oregon, asked the architects' aid for the state in "getting something which is both functional and beautiful for the money available." There was a quick response to this plea; at the final session of the conference it was announced that a committee of architects would be appointed to confer with the board of control on the state's architectural problems.

Architecture and the allied arts can never supplant each other, Mr. Sponenburg pointed out, and will reach their highest level only in collaboration.

their continuing development, if they receive some recognition in the office, if they are able to feel some security in their jobs. "Apprenticeship should be a positive training period," he said. The conference adopted a resolution setting up a committee in each chapter to study means of bridging the gap between school and practice for the young man in architecture.

At the other breakfast, Wallace Hayden of Eugene, A.I.A. Northwest regional director, summarized the talks heard in the talks heard. Robert Price of Tacoma, Lutes' talk from the perspective of the young architect in private practice, and Elisabeth Thompson, the Northwest editor, gave an editorial summary of the convention.

(More news on page 20)

POWERS

pneumatic systems of temperature control

to regulate heating systems
in these prominent buildings:

Armour Research Laboratory • Chemistry Building
Metallurgical and Chemical Engineering
Institute of Gas Technology
Association of American Railroads Building
Alumni Memorial Hall
Network Calculator Laboratory
Sound Laboratory • Machinery Hall
Carman Hall and two other Apartment Buildings
New Commons Building

"Illinois Institute of Technology is growing to be the best architectural expression of a technical college in the world . . . and perhaps the only really consistent one." — *From Architectural Forum, Nov. 1952.*

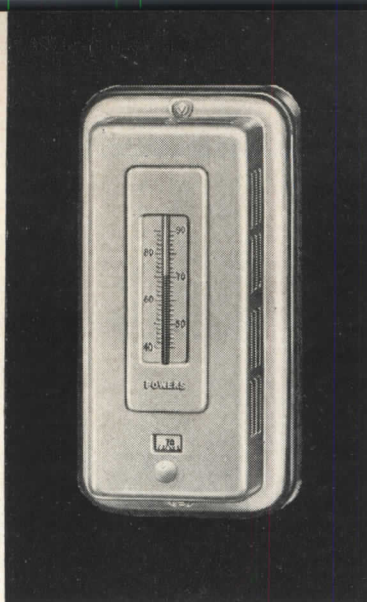
In modern buildings of many famous colleges from coast to coast, such as Massachusetts Institute of Technology, Harvard University, Carnegie Tech, U.C.L.A., and California Institute of Technology, you'll find POWERS pneumatic systems of temperature control. Since 1891 they've been outstanding for their many years of dependable service with a minimum of maintenance.

When you have problems of control for heating and air conditioning systems or industrial processes, call in a POWERS engineer. Experience we have gained in all types of prominent installations should be helpful to you.

THE POWERS REGULATOR CO.

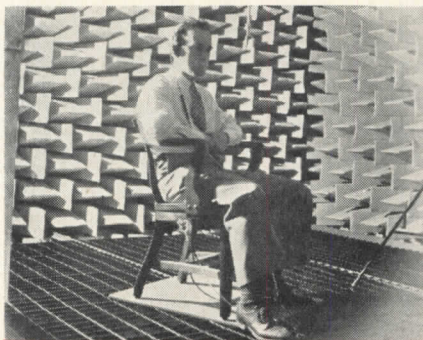
SKOKIE, ILLINOIS

Offices in 60 cities in the U. S. A., Canada and Mexico

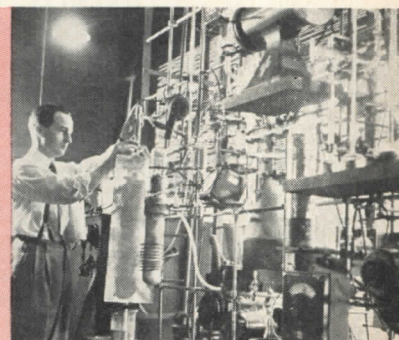


Powers Room Type Thermostat pneumatically regulates heating and air conditioning systems. Users often report over 30 years of accurate dependable service.

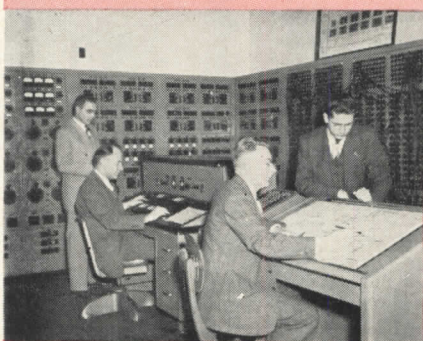
Many other types of Powers Control are used at Illinois Tech: Recording Controllers for Wet and Dry Bulb; Master-Submaster Controls; ACCRITEM Regulators; LIMITEM Thermostats; Powers FLOWRITE diaphragm Valves and Packless Valves for Convectors, Radiant Panel Control, etc.; Powers POWERSTROKE Damper Operators, etc.



Acoustical Research Chamber



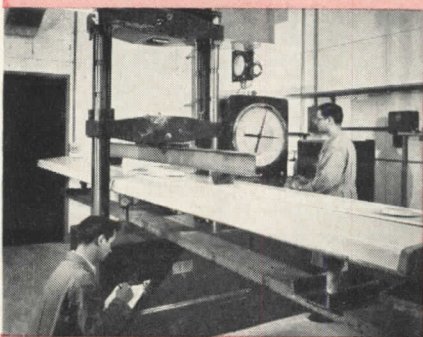
Vacuum Fusion Test Apparatus



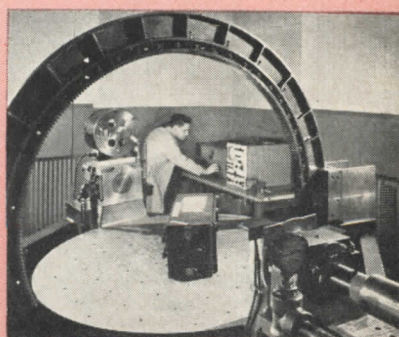
AC Network Calculator

"Research Improves Everybody's Future. It accelerates industrial progress, buttresses national security, and advances technological frontiers. It is a means of harnessing science to serve man's economic ends."
H. A. Leedy, Director of Armour Research Foundation, Illinois Tech, Chicago.

Students, Research Scientists and Engineers do their best work in the comfortable thermal environment provided by a Powers pneumatic system of Temperature Control.



Strength Testing Fluorescent Lighting Unit in Engineering Mechanics Lab.



Roll Test Model for Developing Airplane and Rocket Flight Control Devices

Over 60 years of Automatic Temperature Control

Architecture for Industry

GM UNDERTAKES BUILDING OF 30 TRAINING CENTERS

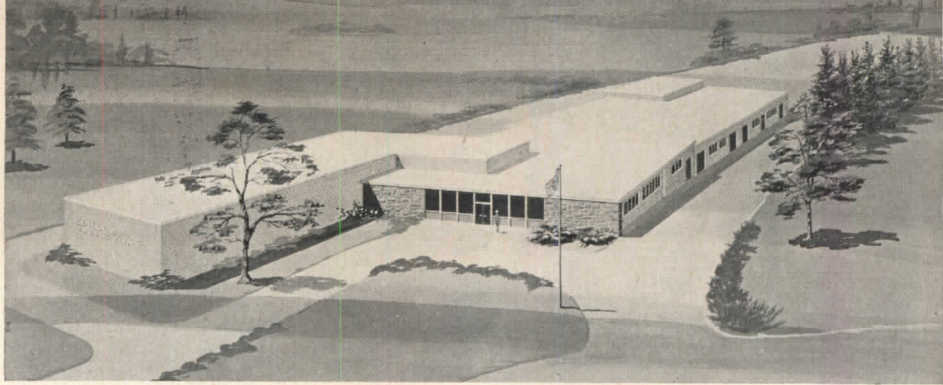
A TRAINING PROGRAM calling for the erection of 30 training centers throughout the country has been initiated by General Motors Corporation. The centers will be used to train dealers' mechanics; in the event of war, they will be converted for instruction in the production of war products.

The schools will vary in size, containing from four to nine classrooms. A typical center might include classrooms for each of the GM divisions (Chevrolet, Buick, Fisher Body et al.); the rooms will be equipped with special tools for the instruction of automotive mechanics, and all are to be acoustically treated. Each of the schools will have an assembly room, a meeting room and a cafeteria.

GM commissioned five architectural firms for the project, each of them to design a group of centers; others were designed by the company's Argonaut Realty Division.

Six of the training centers have already been opened, and 12 more are expected to be completed by the end of the year.

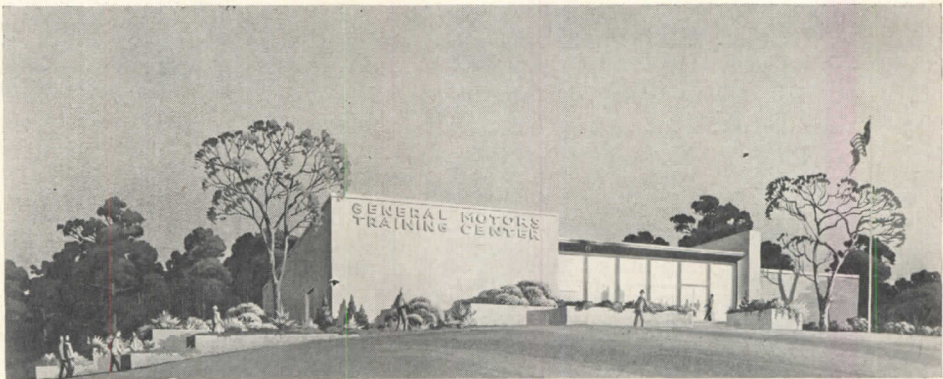
1. Tarrytown, N. Y.; Allen and Kelley, architects. 2. Burbank, Cal.; Earl Heitschmidt, architect. 3. Atlanta, Ga.; George L. Dahl, architects and engineers. 4. Clarence, N. Y.; Smith Hinchman & Grylls, Inc., architects and engineers. 5. Houston, Tex.; Wyatt C. Hedrick, architect and engineer



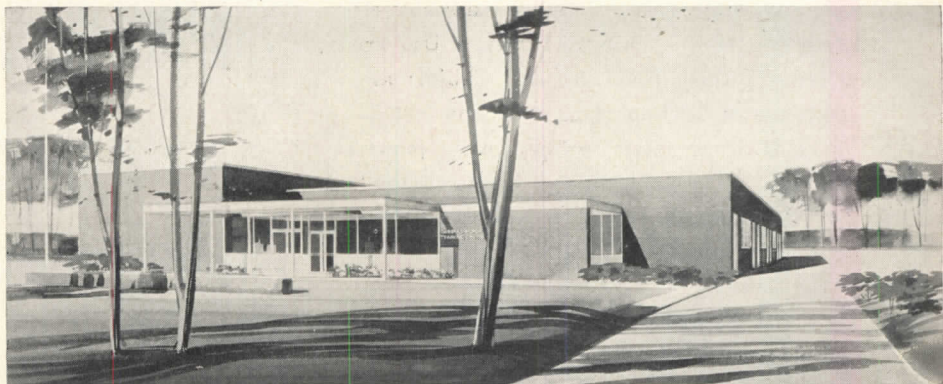
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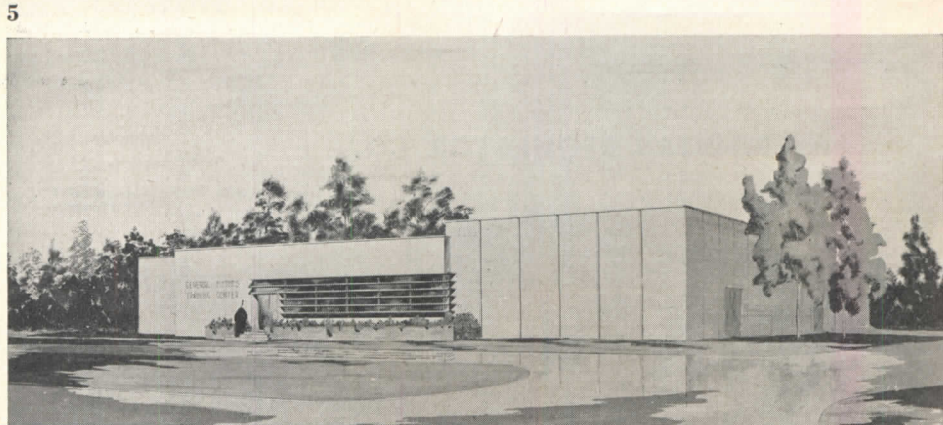
2



3



4



5

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DESIGN LEADERSHIP FEATURES

Increased Safety because bus bars are fully enclosed, rigidly supported and have ample cross section...circuits isolated by individually enclosed plug-in units...disconnect handle designed for maximum operator protection.

Flexibility. Individual plug-in units or complete sections can easily be added, removed or exchanged. Push-buttons, pilot lights, and selector switches can readily be added to unit doors.

Installation Economy. All wiring channels are large and accessible from front without removing units...no "wire fishing."

Space economy, too. Up to six combination starters fit in a 20"x20"x90" section. Plug-in unit heights are designed in space-saving increments of 3 inches.



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STANFORD STUDY OF WOOD PRODUCTS CONSUMPTION
PROJECTS EXPANDING CONSTRUCTION BOOM TO 1975

A \$51.7 BILLION CONSTRUCTION INDUSTRY in a nation with a population of 212 million, a total work force of 90.7 million, a gross national product of \$586 billion and disposable (after taxes) personal incomes totaling \$367 billions — more than the gross national product of 1953 — is forecast for 1975 in Stanford Research Institute's report on a year of research for the Weyerhaeuser Timber Company on "America's Demand for Wood 1929-1975."

The report anticipates major increases in the domestic production and consumption of pulp, paper and paperboard products, plywood and veneer and hardboard and insulating board; only moderate changes from their 1952 levels are foreseen for domestic consumption and production of other forest products, although prices are expected to continue to rise more rapidly than those of competing materials.

Building and Lumber

Construction will continue to account for some 73 per cent of U. S. lumber con-

1975 Construction Outlook

The expected increase in lumber consumption is based on the estimate of a 1975 construction volume of \$51.7 billions — residential construction of \$19.5 billions (compared with \$11.8 billions in 1953) and nonresidential of \$32.2 billions (\$20.5 billions in 1953), including industrial, commercial and public utility construction of \$5.1 billions (\$2.7 billions in 1953); and military and naval construction of \$.5 billions (\$.14 billions in 1953).

Consumption of lumber *per dwelling unit* declined 44 per cent from 1920 to 1953, and continuation of the decline is expected to bring 1975 lumber consumption per dwelling unit 17 per cent below 1953 levels. In non-residential construction, the expected decline, figured in bd ft of lumber consumed per dollar of nonresidential construction expenditure, is "about 45 per cent."

The Impact of Architecture

The impact of architectural change on lumber consumption in residential

market" came in the three years 1950-1953 and is attributed by the report to the growing popularity of slab-type construction, which cut into lumber's markets for foundations, floor framing, sub-flooring and finished flooring. Not only could slabs be installed at a lower cost than conventional foundations, Stanford notes, but "additional savings by using low-cost composition tile in place of hardwood flooring result in an even wider cost spread between the two types of construction." According to the report, "large-scale builders are installing about 80 per cent slab floors now. Since about 75 per cent of all residential floor space in new construction is on the ground floor, it is possible that about 60 per cent of all new residential floor space might be in slabs by 1975." While assuming that the trend to slabs will continue, the report notes also that "some limit must be recognized" — e.g., disadvantages of slab construction on sloping terrain and cost disadvantages of cement in some sections of the country.

More Plywood Expected

Plywood consumption is expected to continue its rapid expansion. In residential construction, the Stanford projections anticipate these increases in millions of sq ft consumed from 1953 to 1975: foundations, 5.6 to 7.2; floors, 184.1 to 254.2; ceilings and interior walls, 52.0 to 211. 2; roofs, 398.9 to 779.1; exterior walls, 244.6 to 308.3.

Consumption of building boards has increased more than tenfold since 1929 and continuing increases, in the case of hardboards more than doubling present consumption, are forecast.

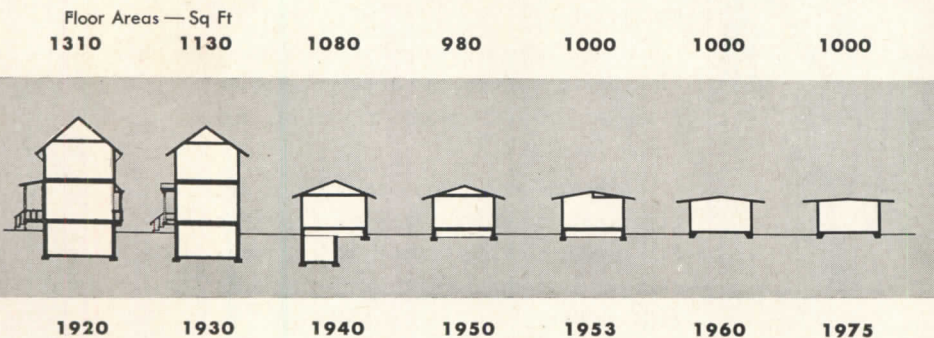
The report states all dollar amounts in terms of 1952 price levels and bases its projections on three general assumptions: no all-out war but continuation of a high level of military preparedness; no radical advances in technology affecting the rate of production; more stability in business cycles in future years than in the past 25, accompanied by high, but not full, employment.

Copies of the report are available from the Weyerhaeuser Timber Company, Tacoma Building, Tacoma 1, Wash.

(More news on page 26)

THE CHANGING CHARACTERISTICS OF THE DWELLING UNIT

(U. S. Composite Average)



sumption, according to the Stanford projections; but construction use is expected to be centered increasingly in new residential building, with a smaller share going into nonresidential construction: despite the expected increase of more than four million bd ft in annual residential building use by 1975, total lumber used in construction is expected to increase by only 1.7 million bd ft.

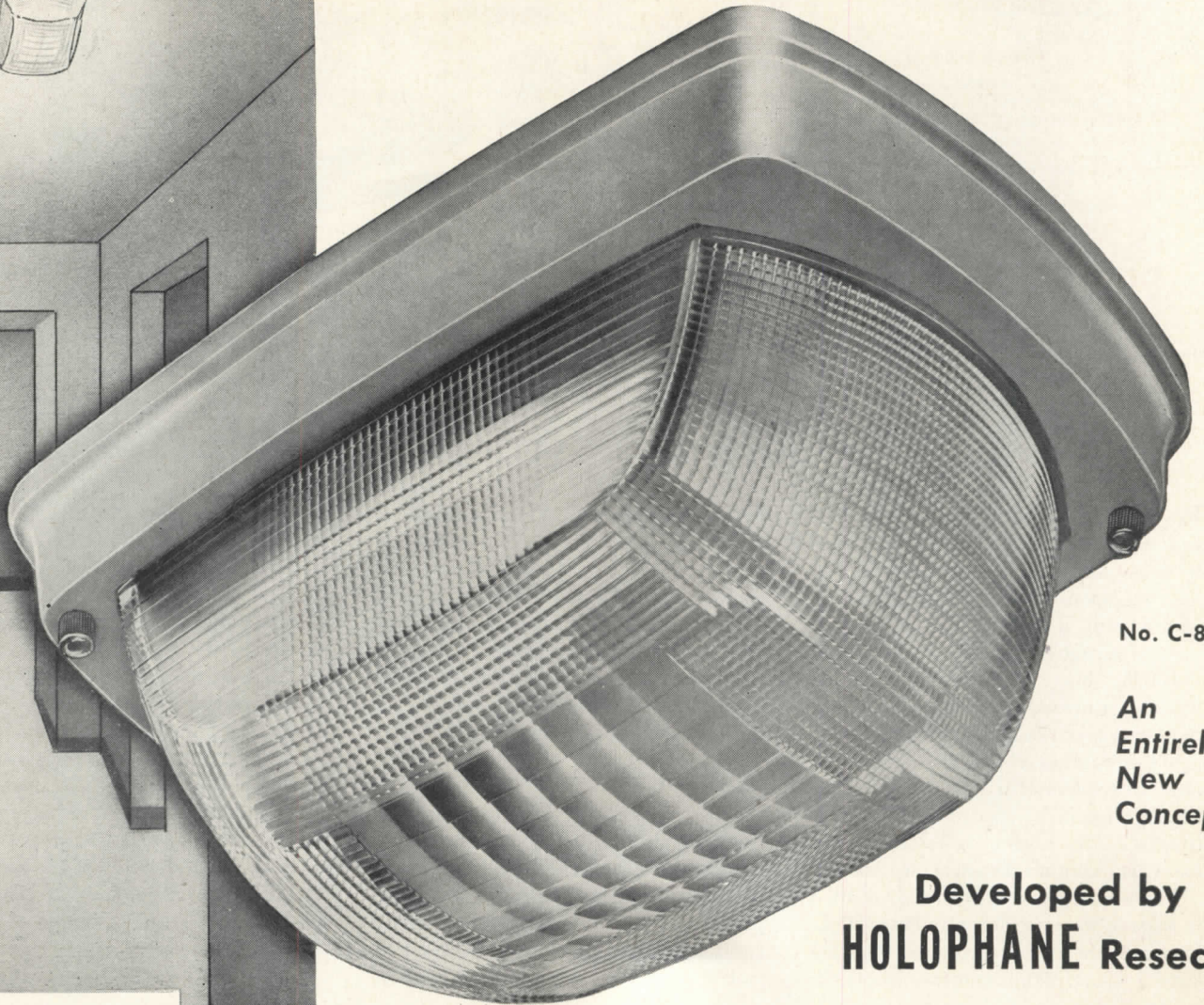
construction is reflected in the statistics. About half the decline in lumber use from 1920 to 1953 was due to changes in size and architecture of dwelling. Lower roof pitch, the trend to single-story dwellings, the drop in average ceiling height all have contributed to market losses for lumber.

But the most rapid decline in lumber's percentage of the "maximum possible

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For maximum comfort and safety in hospital corridors, Holophane engineers introduce an altogether new lighting unit, No. C-824. It's "three-dimensional" control sends *useful* light in *all* directions—up to the ceiling—across to the walls—as well as down to the floor. Reflections from these surfaces produce balanced lighting of high efficiency and low brightness. The redirection of the light, avoiding the glare area, provides the best level of visual comfort for those in the corridor. Moreover, No. C-824 may be economically installed and economically maintained.

Architects, engineers and hospital authorities are invited to inquire for complete data, without obligation.

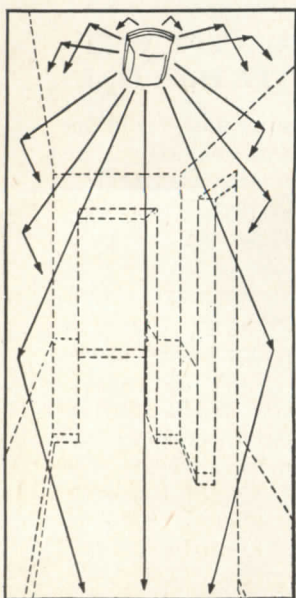
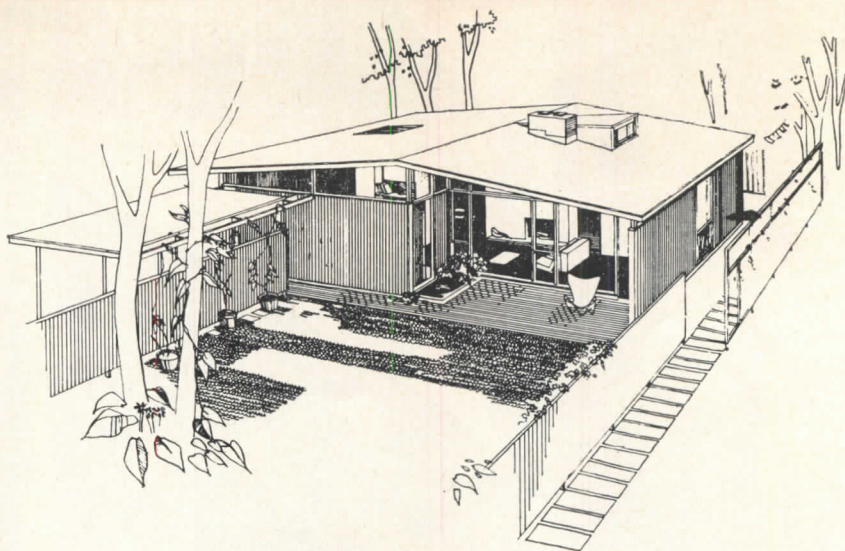
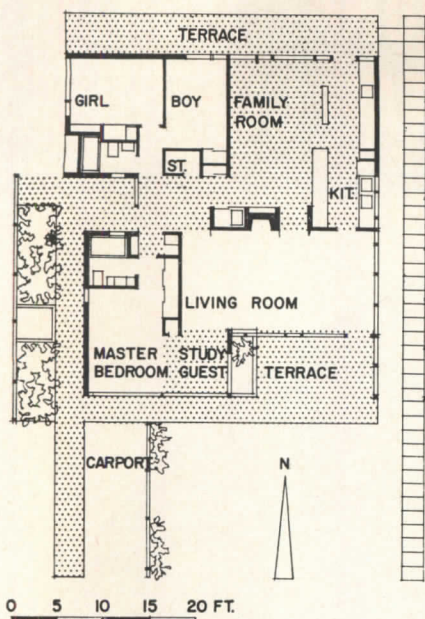


Diagram of Control Features

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THE HOLOPHANE COMPANY, LTD., THE QUEENSWAY, TORONTO 14, ONTARIO



"HOME '54" SELECTED IN NATIONWIDE COMPETITION

FIRST PRIZE in the Home '54 Competition went to George S. Abram, it has been announced by *Canadian Home Journal*, sponsors of the annual contest. Mr. Abram, a member of the Toronto firm of Craig & Madill, was awarded \$1100 for his design and \$750 for his working drawings, as well as feature publication in the magazine. The magazine's promotion scheme also includes its offer to readers of a Building Kit containing detailed plans and full specifications for the house, available for a \$10 fee. (Mr. Abram's design shown above.)

The second prize, of \$850, was awarded to Page & Steele of Toronto; Peter Dickinson, also of Toronto, received the \$250 third prize. Honorable mentions, worth

\$100, went to John Ma and to Gibson & Pokorny, both of Toronto, and to Leo O. Lund, of Victoria, B. C. The annual competition, initiated last year, is open only to registered architects and this year attracted entries from eight of the 10 provinces. The sponsor's intention is to encourage house design suitable to the Canadian climate and family.

Designed for Conversion

The program for this year's competition required a design for a family of four: parents, son and daughter of secondary school age. The house was to be planned to permit rapid conversion for two-family use after the children had married and the parents were living on

reduced retirement income. Floor area was limited to 1500 sq ft.

Mr. Abram's design will be built in the Don Mills community near Toronto, and was opened for public inspection in September.

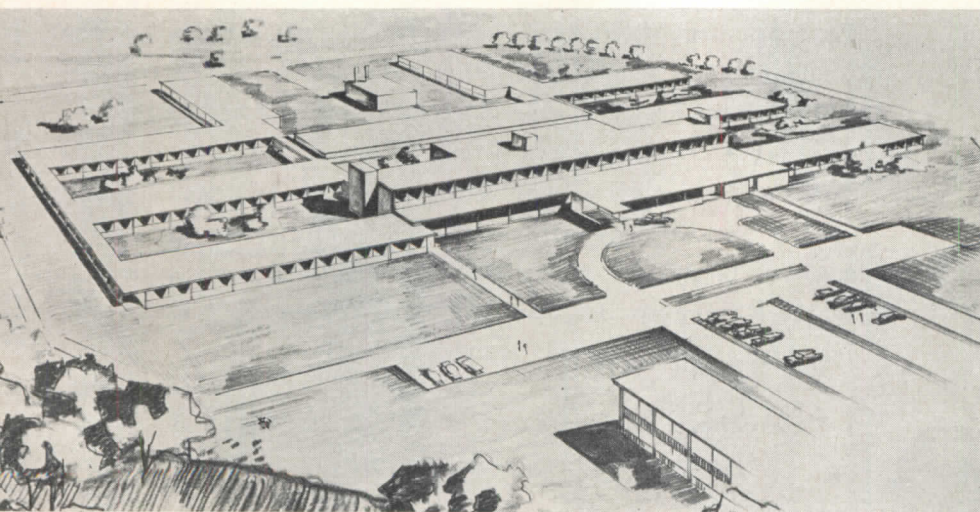
Judges in the Home '54 Competition were: Gordon S. Adamson, past president of the Ontario Association of Architects; W. Gerald Raymore, associate professor of architecture, University of Toronto; Mary-Etta Macpherson, editor, *Canadian Home Journal*. Douglas G. W. McRae, director of the School of Architectural Technology at the Ryerson Institute, Toronto, served as professional advisor.

(Continued on page 30)

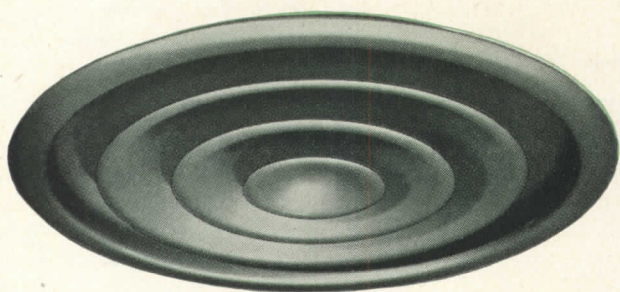
NEW PLAN CONCEPT USED FOR PROTOTYPE HOSPITAL

PLANS FOR QUEENSWAY HOSPITAL in Ontario separate patients requiring active treatment from those convalescing. The design, which is expected to reduce building costs by 25 per cent, will place active treatment cases in the two-story main building and recovery rooms in the single story wings. A heliport located on the roof will be used for rapid ambulance service.

Architect Auguste Martineau, of Kingston and Ottawa, designed the building for the Ontario Department of Health. A similar hospital is planned for Niagara Falls.

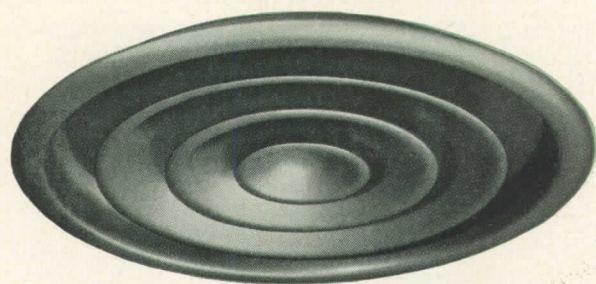


A wide selection of diffuser types and sizes, styled and engineered to meet the most rigid requirements of appearance and performance at the point of air delivery



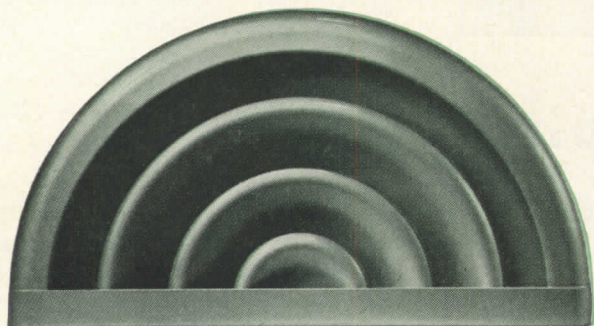
TYPE PS

Stepped-down type, fixed pattern diffuser



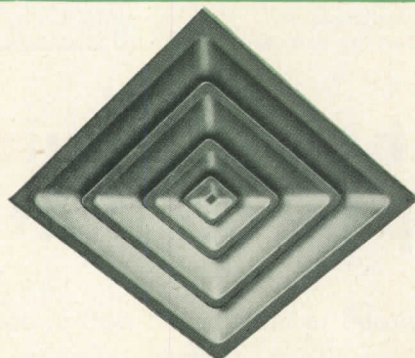
TYPE PF

Flush type, fixed pattern diffuser



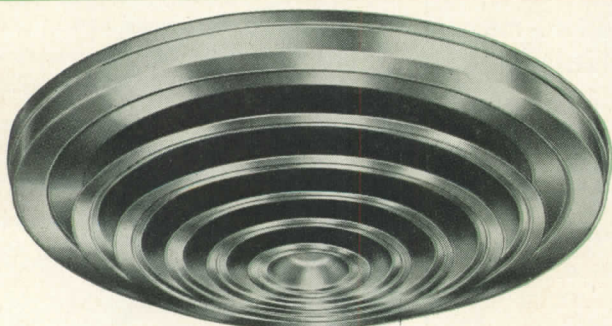
TYPE PH

Flush type, fixed pattern, half round diffuser



TYPE D

Flush type, fixed pattern square diffuser



TYPE ES

Stepped-down type, fixed pattern diffuser

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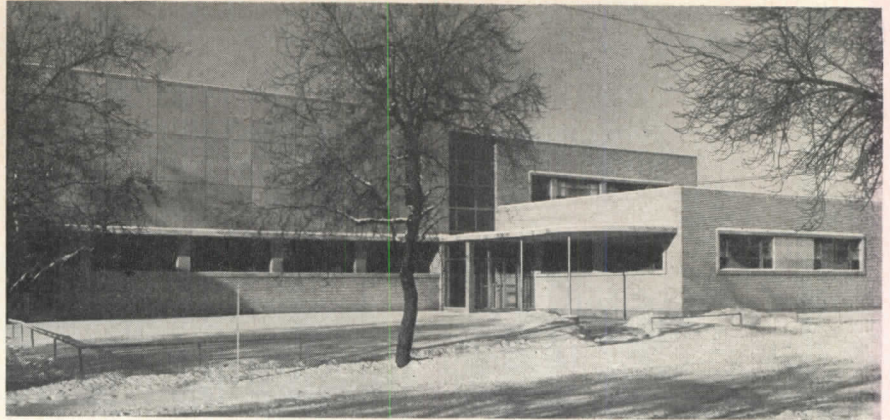
THE RECORD REPORTS

CANADA

(Continued from page 26)

EXHIBITS ORGANIZED BY PROVINCIAL ARCHITECTS

In a spirit of enlightened self-interest, the Ontario Association of Architects has assembled four photographic exhibitions covering various building types — schools, civic buildings, hospitals and



The Civic Health Center, in Regina, Sask., was designed to consolidate all the municipal health services under one roof. Architects were the Regina firm Portnell & Stock



DIET KITCHEN
MEMORIAL UNIT
GRACE-NEW HAVEN
COMMUNITY HOSPITAL
NEW HAVEN, CONN.

DIRECTOR: DR. ALBERT W. SNOKE
ARCHITECT: DOUGLAS ORR, NEW HAVEN



Van helped equip hospital co-operating with Yale

★ Van is proud to have had a part in equipping for food service the Grace-New Haven Community Hospital . . . 671 patient beds and 97 bassinets . . . unit of the important medical center at New Haven.

★ Besides the diet kitchens on the five patient floors of the Memorial Unit, one of which is illustrated above, Van equipped the main kitchen which provides food for the entire hospital and all cafeterias. One of the design features is the kitchen elevator . . . running up from the main kitchen . . . serving all diet kitchens . . . ideal transportation as it is exclusively for dietary use.

★ If you have food service equipment needs . . . new or modernization . . . it will pay you to use Van's century of experience.

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EQUIPMENT FOR THE PREPARATION AND SERVING OF FOOD

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Robert R. Moffat, chairman of the Advisory Committee on Civic Design, Toronto Chapter, O.A.A., holds new street sign designed by committee

one general exhibit, which includes industrial, commercial and residential design. The exhibits are available to all interested groups, and each of the collections has been shown at at least one convention this year.

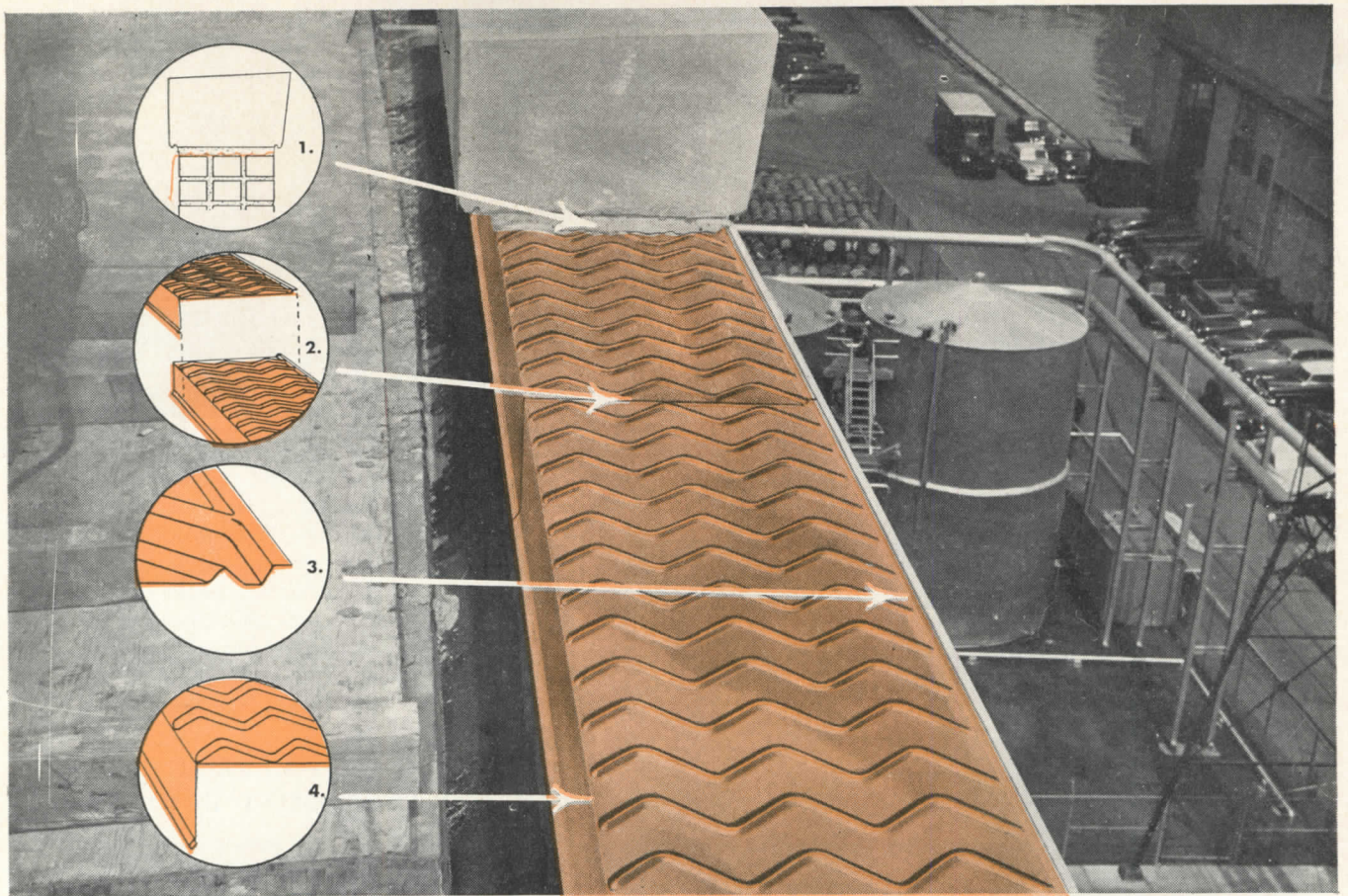
The Alberta Association of Architects entered a display in the Edmonton Better Homes Exposition, held September 24 to October 2. Arthur Henderson, the chapter's public relations chairman, was in charge of the exhibit.

TORONTO ARCHITECTS AID CIVIC DESIGN PROGRAM

Another step in Toronto's civic improvement program was completed with the recent installation of new traffic light standards and street signs designed by the Advisory Committee on Civic Design of the Toronto Chapter, Ontario Association of Architects.

The committee is a quasi-legal body, having been recognized in 1951 when the city council passed a by-law establishing it as the group to be consulted in matters pertaining to civic design. The com-

(Continued on page 32)



ANACONDA THROUGH-WALL FLASHING is readily adapted to practically every brick or masonry construction. Note that the smooth selvage (4) forms a counter-flashing free of buckles or distortion at the bend.

Anaconda Through-Wall Flashing protects new Colgate-Palmolive Building

The Colgate-Palmolive Company's new Industrial Service Building, Jersey City, N. J., is four stories high and contains nearly nine acres of floor space. It represents a big investment. Naturally, special precautions were taken to assure sound and lasting construction.

Adequate through-wall flashing of efficient design was essential. Otherwise, water would penetrate the brick and mortar joints . . . cause damage by deterioration and freezing . . . eventually reach interior surfaces.

The solution? Jacob Ringle & Sons, Sheet Metal Contractors, Jersey City, N. J., installed 1,552 feet of ANACONDA Through-Wall Flashing.

In the picture above you see four reasons why Mr. Ringle selected ANACONDA Through-Wall Flashing to do the job. They are:

1. NO LATERAL MOVEMENT

The $\frac{7}{32}$ " high zigzag corrugations provide complete bond in the mortar in all lateral directions.

2. WATER-TIGHT LAP JOINT

ANACONDA Through-Wall Flashing is easily locked endwise to provide a tight joint by simply nesting one or two corrugations. If desired, the joints can be easily soldered because of the flat surfaces between the corrugations.

3. INTEGRAL DAM

The integral dam throughout its length is the full height of the corrugations. The accurately stamped dam and corrugations of the ANACONDA Flashing assures complete drainage in the desired direction when installed on a level mortar bed.

4. SMOOTH SELVAGE FOR COUNTER-FLASHING

Flat selvage permits neat, sharp bends for counter-flashing or locking to adjacent sheet metal without distorting the flashing or inhibiting free drainage.

The standard ANACONDA Through-Wall Flashing is made of 16-oz. copper, but lighter or heavier gage metal

can be furnished to order. Stock sizes are for 8" and 12" walls. Special sizes to meet unusual requirements are available up to 47" wide over-all. One-piece corner flashings for 8" and 12" walls are also standard stock items.

The American Brass Company is always glad to discuss and offer suggestions on any problem involving sheet copper in building construction. Just send details to our Technical Department. 5456



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good construction demands

ANACONDA[®]

THROUGH-WALL FLASHING

CANADA

(Continued from page 30)

mittee is charged with the responsibilities of siting and designing all public buildings; planning and landscaping parks, boulevards and playgrounds; siting and designing statuary, drinking fountains, ornamental fences, etc.; and designing lighting standards, waste receptacles, traffic and other signs.



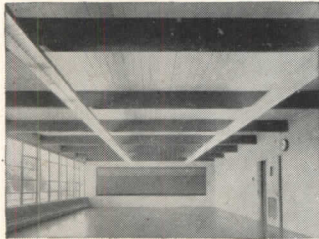
New defense factory for Lucas Rotax Ltd., Scarborough Township, Ont., is composed of four blocks: the factory itself, cafeteria block, office block and small entrance lobby. Completely air conditioned, building has minimum of exterior glass, though for psychological reasons small square windows were provided in working areas; Howard Chapman, architect

Beauty UP

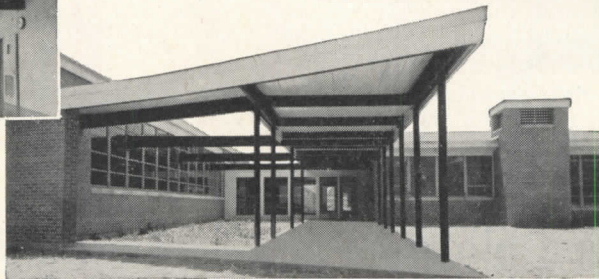
Costs DOWN 33 1/3%

with RILCO Beams

Reelsville, Indiana School
Built for \$9.55 per sq. ft.



Classroom, Reelsville School



Exterior view, Reelsville School, Reelsville, Indiana

Architects — Wayne M. Weber & John A. Curry, Terre Haute, Indiana
Contractor — M. E. Rilenge Construction Co., Terre Haute, Indiana

With costs, appearance and safety as major considerations, the architect, thoroughly familiar with all types of roof framing, chose laminated wood beams and wood deck for this unusually attractive and practical structure.

SAVINGS—resulted as planned. The architect reports the 25,300 sq. ft. school cost \$241,714.00 or \$9.55 per sq. ft.—low for the area. Accurately fabricated beams, delivered when needed, helped to keep erection costs one third less than structures using other materials.

ENGINEERING—in accordance with the best industry practice, was made available to the architect. Structurally dependable beams were designed and complete shop drawings were furnished by Rilco. Beams were delivered, cut and drilled to exact specifications, ready for erection.

BEAUTY—which only warmth of selected wood can give, made this structure outstanding. The deck, painted white, contrasts with the darker color of the beams.

Rilco dependability is consistently proving itself to contractors and architects. Rilco glued laminated wood members are reducing costs, improving appearance and stimulating a latitude of design in a variety of structures. Rilco engineers will gladly work with you, furnishing complete information on your requirements—Just write:



RILCO LAMINATED PRODUCTS, INC.
2518 First National Bank Bldg., St. Paul, Minn.

BOOM TO LAST UNTIL '75,
ECONOMIST FORECASTS

Dr. O. J. Firestone, economic advisor to the Federal Department of Trade and Commerce, has predicted a duplication of Canada's economic growth of the last 25 years, and forecast a house building and urban development boom starting in the late 1960's, when a large number of postwar babies will have reached marriageable age.

Speaking at a public affairs conference in Geneva Park, Ont., Dr. Firestone predicted: (1) by 1960, a \$6 billion increase in the gross national product, raising it to a total of \$30 billion annually; (2) by 1975, a total population of 22 1/2 million; (3) by the same time, a 60 per cent increase in the working force to a total of 8 1/2 million; and (4) also by 1975, a grand gross national production of \$50 billion.

ALBERTA CABINET MEETS
ARCHITECTS' COMMITTEE

A delegation from the Alberta Association of Architects recently met members of the provincial cabinet to discuss a brief submitted by the A.A.A. protesting the government policy offering to design and build municipal hospitals at a fee of two per cent of the contract price. There had also been some question of the government's offering similar services for other types of construction

The department of Public Works assured the architects that the policy will

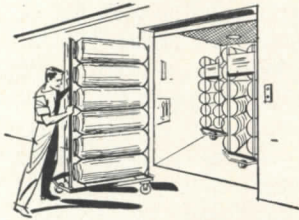
(Continued on page 36)

"INSURANCE"

HAVE THREE EXTRA FACTORS OF SAFETY

Whenever you need a freight elevator, it should be on duty. It's like a watch. If it isn't running it's useless. And costly. Especially when lack of elevator service holds up a production or materials handling line, or warehouse delivery trucks, or automobile parking, or mining, etc.

You can save money in the long run with Otis general duty freight elevators. They're standardized. They have lifting capacities of 2,500 up to 10,000 lbs. or more. And full safety features, power doors, self-service or attendant operation.

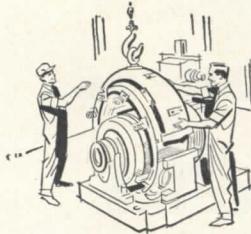


Only Otis freight elevators can offer you always-on-duty "insurance." It's based upon these 3 extra factors of safety.

1 Specialized ENGINEERING

Otis hoisting machines, which are the heart of the installation, are not adaptations of standard commercial equipment. Like every other part of

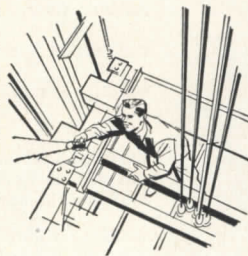
an Otis installation, they're specifically designed to meet the unique requirements of elevator service. And



every part is built in Otis plants under rigid quality control. All with a basic knowledge of elevating that can't be matched.

2 Preventive MAINTENANCE

Otis maintenance keeps Otis freight elevators performing like new—year after year! Otis service is engineered-service by the maker that prevents slowdowns and breakdowns; extends elevator life by 50%; eliminates expensive, unexpected repair bills; keeps replacement parts available over 60 years; supplies field-trained men having an aggregate of 21,500 years' elevator experience; provides 24-hour-a-day service on a nationwide basis through 268 offices. All, because we never lose interest in the performance of an Otis installation.



3 Progressive MODERNIZATION

An Otis freight elevator need never become obsolete. New developments are made applicable to existing installations. We strongly recommend planned, progressive modernization as always-on-duty "insurance."

AUTOMATION

You can have freight elevators where you want them, when you want them. The same advanced electronic skill that developed AUTOTRONIC® completely automatic operatorless elevators for busy office buildings is ready to make completely automatic freight elevators an integral part of your production line.

* * *

Our broad experience in the field of industrial elevating qualifies us to advise on standard or special adaptations of Otis elevators for unusual freight handling requirements. This experience is available for any size installation, however large—or small. Call any of our 268 offices for details.

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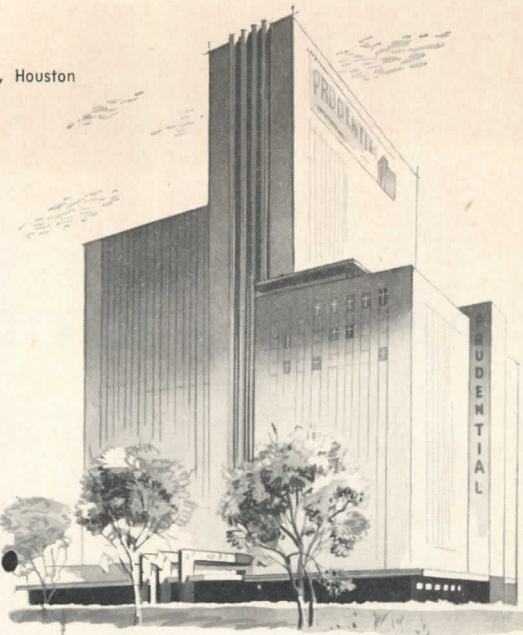


FREIGHT ELEVATORS

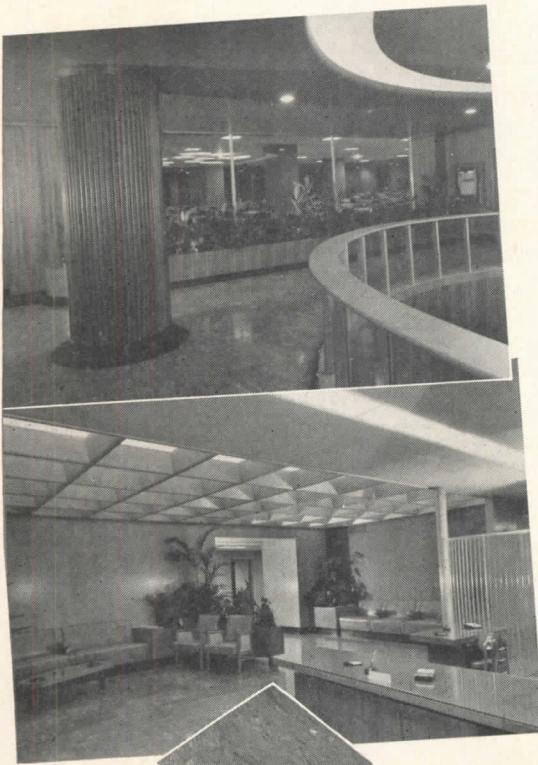
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Kenneth Franzheim, Architect

Rugged
Beauty...



why architects specify... **Wright Rubber Tile**

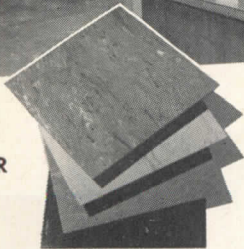


Wright answers MORE of the architect's problems. It is the only rubber tile in the world in two degrees of hardness—soft WRIGHTEX is especially quiet and resilient—hard WRIGHTFLOR is especially dense and durable. Both products—for nearly 35 years—have been characterized by long wear, brilliant colors and easy maintenance... good reason why leading architects the world over continue to specify Wright Rubber Tile.

EASY-TO-MAINTAIN Wright Rubber Tile was used in heavy-traffic areas at Prudential in Houston.

QUIET, COMFORTABLE Wright Rubber Tile was used in executive offices and board rooms.

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**ARCHITECTURAL
FILE**
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4794

THE RECORD REPORTS

CANADA

(Continued from page 32)



New Municipal Offices were recently opened by the Township of Toronto; Gordon S. Adamson, architect

apply only to municipal hospitals, and not to schools or other municipal buildings.

Following the meeting, K. C. Stanley, president of the A.A.A., reported, "The minister said the policy had been adopted after requests had been received from hospital boards for aid and assistance." He added, "Since the policy has been adopted and hospital boards notified, no requests have been received for this new government service."

Other delegates included H. L. Bouey, secretary of the A.A.A.; George Wynn; George Lloyd and T. Gordon Abramson.

JULY HOUSING CONTRACTS SET NEW MONTHLY RECORD

Residential construction contract awards of \$96,600,000 during July established a monthly record, according to MacLean Building Reports. Heavy residential construction has been the major factor behind the substantial increases in value of all construction contracts awards for the last three months. All categories, however, showed gains, with industrial building contracts increasing 200 per cent.

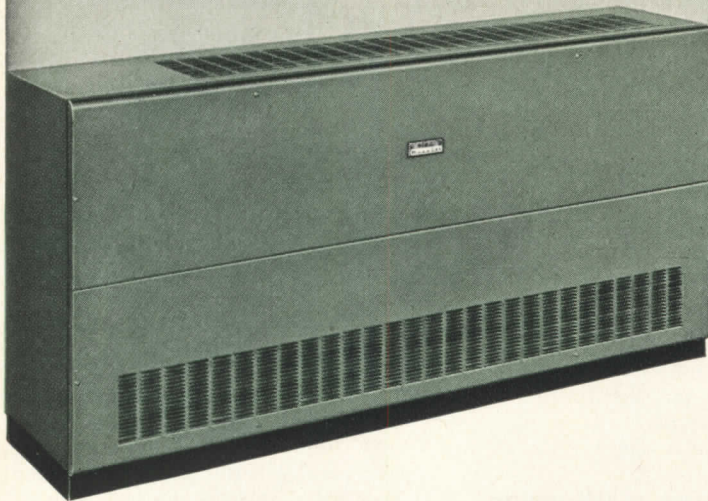
**Contracts Awarded: Comparative Figures
Compiled by MacLean Building Reports
(in \$ Million)**

	July 1954	July 1953	Change
Residential	96.6	72.7	+ 23.9
Business	72.0	51.5	+ 20.5
Industrial	25.7	8.5	+ 17.1
Engineering	52.2	19.3	+ 32.8
Total	246.7	152.1	+ 94.5

(More news on page 38)

WARREN WEBSTER & CO.

Announces a New **WEBSTER-NESBITT**
Series C Unit Heater
that has everything!



A deluxe line of cabinet heaters in five basic sizes, with steam or hot water heating element and two or more centrifugal fans . . . offering attractive styling, high capacity, and extreme flexibility of application.

WEBSTER-NESBITT SERIES C UNIT HEATERS remove practically every obstacle to your freedom of design and application in heating offices, showrooms, corridors, etc.

The family of five matched casings ranges in length from 34" to 74½". Heights are 22¾" (for the small unit, Type B) and 29" (for the four Type D units). For floor mounting, a 2" base is provided. Three types of front are offered: *universal*, for fully exposed application; *semi-recessed*, for two depths of partial recess; and *fully-recessed*. The recess fronts extend beyond and conceal the rough wall opening.

Hence, Series C units may be installed in a variety of ways: floor-mounted, horizontal, wall, or inverted, and non-recessed, partially-recessed (two depths), or fully-recessed. Additional latitude comes of the fact that, with the universal front, the intake and the discharge can be through the face, the bottom, or the top of unit. Rear intake is available in floor mounting.

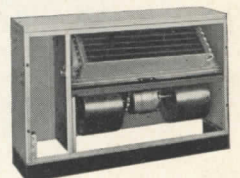
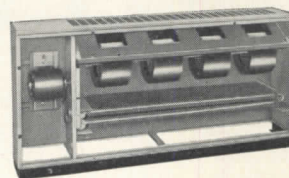
Once again the engineering, manufacturing and distributing facilities of the two great leaders in the heating field bring you equipment unsurpassed for beauty and construction, ease of application, and quiet, dependable performance.

Ask for Publication WN-136.

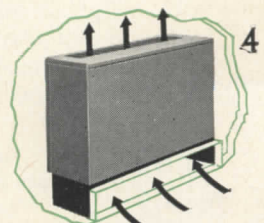
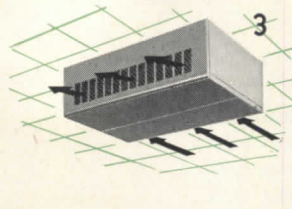
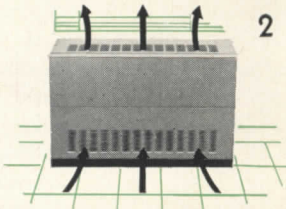
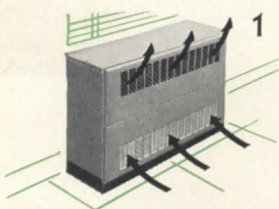
Heating elements are serpentine type, with round seamless copper tubing expanded to plate type aluminum fins. Elements are of two capacities for use with steam; one capacity for use with hot water.

Fans are forward-curved, double-inlet type, designed with their housings for large air volume at low tip speeds. The small unit, Type B, has two fans; the four larger units, Type D, have two, three, four, five fans.

Motors are resilient-mounted and constant speed (standard). Type B motors are 1725 rpm with a variable-pitch motor sheave (two-speed motors, optional). Type B are direct drive; Type D are belt drive.



Above: *left*, Type D, draw-through; *right*, Type B, blow through.
 Below: (1) face intake, discharge; (2) face intake, top discharge; (3) bottom intake, top discharge; (4) rear intake, top discharge.



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and Sold by Warren Webster & Co., Camden 5, N.J. with

SERIES C UNIT HEATERS



offices in principal cities

BOSTON ARCHITECT NAMED AS FHA STANDARDS HEAD

The Federal Housing Administration, under the reorganization now being effected, hopes to break through barriers that long have beset its architectural standards and underwriting operations and achieve the fundamental goals set out in the housing law—more and better housing at less cost.

Playing a key role in the effort to reach this objective will be the new head of the architectural standards division, Neil A. Connor, 47, of the Boston architectural firm of Bourne, Connor, Nichols & Whiting. FHA Commissioner Norman P. Mason has promised that a revision of the agency's minimum property requirements, now underway, will bring about "a more livable house that in the long run will cost less money."

Mr. Connor thus begins with a hopeful promissory note from his boss; and his own views are optimistic. He believes in quality appraising. He stands for accurate evaluation of work. If the quality of a house exceeds the minimum property requirements, he feels this fact should be taken into consideration.

Better Planning Ahead?

The additional value resulting will extend first to more and better arranged space, Mr. Connor is convinced. He says more storage space and better planning in general is in prospect for future buyers of FHA-insured homes. The relaxation on exterior bathroom specifications, announced earlier this year, was cited as a major penetration of the traditional FHA barriers in design. Mr. Connor thinks this was a major step toward making better planning possible and he says architects can be sure that more will follow.

What does FHA plan to do about the acceptance of new materials and techniques? Mr. Connor says he is already working on the long-time problem of delays, but specifics on dealing with new product applications have not yet been worked out. Mr. Connor is of the opinion that documented proof is needed before new materials and processes can be considered. Where the methods vary, laboratory tests are not always sufficient. An adequate volume of field experimentation is required.

Less Money, Less Action

Implementation of the new goals will be limited to some extent by limited funds. Commissioner Mason asked for \$1,350,000 in additional money which he hoped to use principally for tightening up central office control—a means of arresting the now-famed irregularities that have occurred in the agency's functions. But after shuffling the budget request on Capitol Hill, Congress voted only \$350,000. This means a considerable revision of FHA's earlier plans, and it strikes at the architectural standards division along with the rest. Mr. Connor will not be able to go as far as he had hoped in addition of personnel to forward the study of the planning problem. He will strive for better compliance, in a strong effort to see to it that the compliance men in the field do what

(Continued on page 332)

T-CHORD LONG SPAN STEEL JOISTS

give greater plan freedom

Wherever you must create clear, column-free areas . . . from 25' to 125', or larger multiples . . . you plan better, freer and for lower cost per square foot with T-Chord long span steel joists. Framing is simpler, stronger,



GRAND HAVEN SENIOR HIGH SCHOOL, GRAND HAVEN, MICH. ARCHITECT: WARREN S. HOLMES

faster . . . with lighter columns and footings. Enclosed joist areas permit wide latitude for lighting, ducting, ventilating, insulating or sound-proofing. And when exposed, T-Chords afford a pleasing textural-web perspective. Our extensive engineering service may be of great value to you. Write, wire or phone us for whatever information you may wish.

See *Sweet's Architectural File*, *Sweet's Industrial File*, No. 2CHA.



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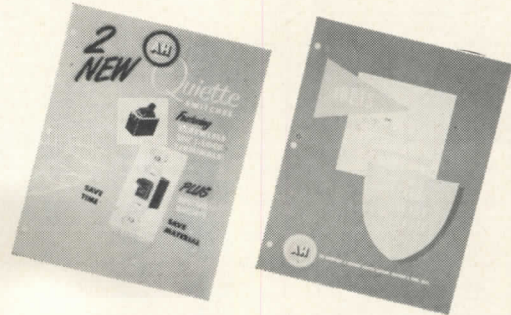
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CONSTRUCTION COST INDEXES

Labor and Materials

U. S. average 1926-1929 = 100

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

NEW YORK

ATLANTA

Period	Residential		Apts., Hotels Office Bldgs. Brick and Concr.	Commercial and Factory Bldgs. Brick and Concr.		Brick and Steel	Residential		Apts., Hotels Office Bldgs. Brick and Concr.	Commercial and Factory Bldgs. Brick and Concr.		Brick and Steel
	Brick	Frame		Brick	Frame		Brick	Frame				
1930	127.0	126.7	124.1	128.0	123.6		82.1	80.9	84.5	86.1	83.6	
1935	93.8	91.3	104.7	108.5	105.5		72.3	67.9	84.0	87.1	85.1	
1939	123.5	122.4	130.7	133.4	130.1		86.3	83.1	95.1	97.4	94.7	
1940	126.3	125.1	132.2	135.1	131.4		91.0	89.0	96.9	98.5	97.5	
1946	181.8	182.4	177.2	179.0	174.8		148.1	149.2	136.8	136.4	135.1	
1947	219.3	222.0	207.6	207.5	203.8		180.4	184.0	158.1	157.1	158.0	
1948	250.1	251.6	239.4	242.2	235.6		199.2	202.5	178.8	178.8	178.8	
1949	243.7	240.8	242.8	246.4	240.0		189.3	189.9	180.6	180.8	177.5	
1950	256.2	254.5	249.5	251.5	248.0		194.3	196.2	185.4	183.7	185.0	
1951	273.2	271.3	263.7	265.2	262.2		212.8	214.6	204.2	202.8	205.0	
1952	278.2	274.8	271.9	274.9	271.8		218.8	221.0	212.8	210.1	214.3	
1953	281.3	277.2	281.0	286.0	282.0		223.3	224.6	221.3	221.8	223.0	
May 1954	285.0	277.9	293.3	301.6	295.2		218.7	218.2	222.5	224.3	224.4	
June 1954	285.2	278.1	293.6	301.8	295.4		217.2	216.5	221.4	223.4	223.4	
July 1954	285.6	278.3	293.9	302.1	296.6		217.9	217.4	221.5	223.5	223.6	
			% increase over 1939						% increase over 1939			
July 1954	131.3	127.4	124.9	126.5	128.0		152.5	161.6	132.9	129.5	136.1	

ST. LOUIS

SAN FRANCISCO

1930	108.9	108.3	112.4	115.3	111.3	90.8	86.8	100.4	104.9	100.4	
1935	95.1	90.1	104.1	108.3	105.4	89.5	84.5	96.4	103.7	99.7	
1939	110.2	107.0	118.7	119.8	119.0	105.6	99.3	117.4	121.9	116.5	
1940	112.6	110.1	119.3	120.3	119.4	106.4	101.2	116.3	120.1	115.5	
1946	167.1	167.4	159.1	161.1	158.1	159.7	157.5	157.9	159.3	160.0	
1947	202.4	203.8	183.9	184.2	184.0	193.1	191.6	183.7	186.8	186.9	
1948	227.9	231.2	207.7	210.0	208.1	218.9	216.6	208.3	214.7	211.1	
1949	221.4	220.7	212.8	215.7	213.6	213.0	207.1	214.0	219.8	216.1	
1950	232.8	230.7	221.9	225.3	222.8	227.0	223.1	222.4	224.5	222.6	
1951	252.0	248.3	238.5	240.9	239.0	245.2	240.4	239.6	243.1	243.1	
1952	259.1	253.2	249.7	255.0	249.6	250.2	245.0	245.6	248.7	249.6	
1953	263.4	256.4	259.0	267.6	259.2	255.2	257.2	256.6	261.6	259.7	
May 1954	263.5	256.3	263.3	272.9	265.0	254.3	245.5	262.3	270.5	265.0	
June 1954	265.2	258.3	264.3	273.6	265.9	257.2	249.5	263.3	270.8	265.8	
July 1954	265.9	259.3	265.2	274.9	268.3	258.5	250.9	264.0	271.9	267.8	
			% increase over 1939						% increase over 1939		
July 1954	141.3	142.3	123.4	129.5	125.5	144.8	152.7	124.9	123.1	129.9	

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

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

index for city A = 110
 index for city B = 95
 (both indexes must be for the same type of construction).
 Then: costs in A are approximately 16 per cent higher than in B.

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

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

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

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

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

These index numbers will appear regularly on this page.



insurance rates for this School



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ART UNDER A DICTATORSHIP

Art Under A Dictatorship. By Hellmut Lehmann-Haupt. Oxford University Press (New York, N. Y.) 1954. 6 by 9¼ in., 227 pp., illus. \$5.50.

BY FELIX AUGENFELD, A.I.A.

Mr. Augenfeld was born in Vienna where he maintained his own architectural practice until 1938. He came to this country in 1939 and set up his practice in New York City.

TWENTY YEARS after the birth of the word "Gleichschaltung" the English language, significantly and fortunately, still lacks an adequate translation of this sinister term. It is perhaps permissible to conclude that the concept of the total, ruthless, all-pervading interference of the state with the manifestations of all conceivable kinds of artistic creation has never fully become part of the thinking of the English-speaking world. Although it is by now well known that no dictator can ignore the arts and that art is an indispensable medium of political indoctrination in a totalitarian system, few people in the democratic countries are probably aware that what happened in Germany in the years between 1933 and 1945 is something that has never happened in the history of our society. It is true that art in pre-Hitler Germany had traditionally been subjected to government patronage and directive to a much higher degree than in the United States. But the Nazi

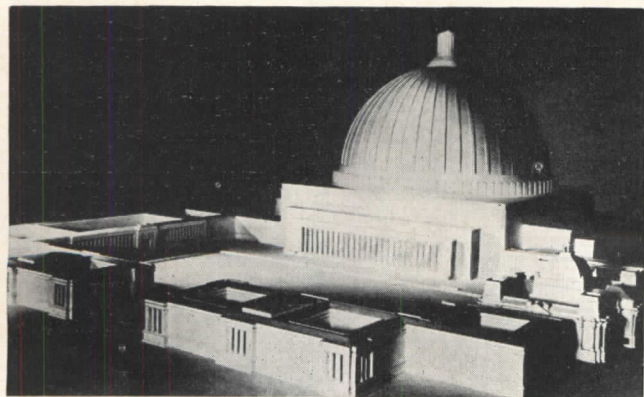


Photo above: model for the New Assembly Hall in Berlin by Albert Speer. Photo, top of page: Soviet Monument in Trepow Park, Berlin, 1949

system was the first one to make its art doctrines an inseparable part of its innermost structure. Art in the Nazi state — as well as later in the Soviet state — had to be corrupted to fit the political ideology of the regime.

The analysis of this process, the description of its mechanism and the existing challenge to the democracies — these are the subjects of Mr. Lehmann-Haupt's well written and well documented book. It is predominantly concerned with Nazi-Germany but it also includes a study of conditions in East-Germany and Soviet Russia. Through a happy combination of personal qualifications and fortunate circumstances Mr. Lehmann-Haupt seems ideally equipped for the job. In addition to being thoroughly familiar with German art life in pre-Hitler days, he has been given unusual opportunities for research and firsthand information since the war. Part of his material is based on personal reports by surviving ex-inmates of the spiritual concentration camp in which the progressive, non-conformist artist was languishing during the Nazi regime.

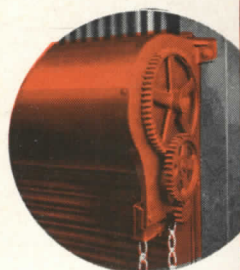
After discussing the history of previous attempts to coordinate art policies with political developments, the author examines the situation under the Weimar republic, in which several experiments to integrate art with democratic reforms were undertaken. This was a period of bold pioneering and of great freedom of expression in all the arts. Its remarkable achievements in painting, sculpture and architecture were to furnish Hitler with the slogan of "degenerate" art, to be destroyed together with the parliamentary system, with which it was identified, and to be replaced by the new Nazi art idols.

What gave the Nazi art policies such peculiar, irrational violence was the fact that they were linked with savage racial persecution and based on an obsession with the myth of the "Nordic Aryan" genius and the superiority of its cultural heritage. Another unique feature of the Nazi art dictatorship is the well known circumstance that Hitler, as a consequence of his own personal experiences as an adolescent, was afflicted with a morbid preoccupation with art during all his life. The man who in his youth had been refused admittance to the Vienna Art Academy for lack of talent had to prove to himself and to the world that he was a great artist and in particular a talented architect. Thus he became the driving force behind the gigantic Nazi building program and it was

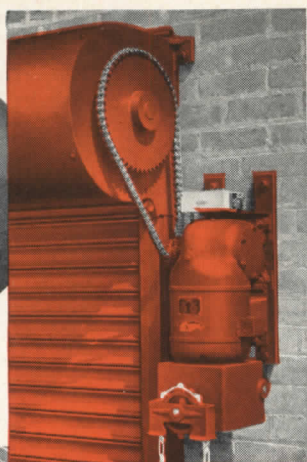
(Continued on page 48)

Rolling Steel Doors

Manually, Mechanically, or Electrically Operated



MAHON
CHAIN-GEAR
OPERATOR



MAHON STANDARD
POWER OPERATOR 920-P

In the Diesel locomotive service shop, illustrated below, all track entrance openings are fitted with Mahon Power Operated Rolling Steel Doors. In this particular type of opening, and in thousands of other openings where door operating space is a critical factor, no other type of door so fully meets the requirements—because, Rolling Steel Doors in operation occupy no usable space inside or outside the opening . . . their vertical roll-up action permits use of floor space to within a few inches of the door curtain on both sides. And, there are no overhead tracks or other obstructions to interfere with crane handling adjacent to door openings. A Mahon electrically operated, quick-opening, quick-closing Rolling Steel Door will save valuable space and valuable time in any type of opening. In addition, Mahon Rolling Steel Doors are permanent—their all-metal construction assures a lifetime of trouble-free service and maximum protection against intrusion and fire. When you select a Rolling Steel Door, check specifications carefully . . . you will find extra-value features in Mahon doors—for instance, the galvanized steel material, from which the interlocking curtain slats are rolled, is chemically cleaned, phosphated, and treated with a chromic acid solution to provide paint bond, and the protective coating of synthetic enamel is baked on at 350° F. prior to roll-forming. You will find other quality materials and design features in Mahon doors that add up to a greater over-all dollar value. See Sweet's Files for complete information including Specifications, or write for Catalog G-55.

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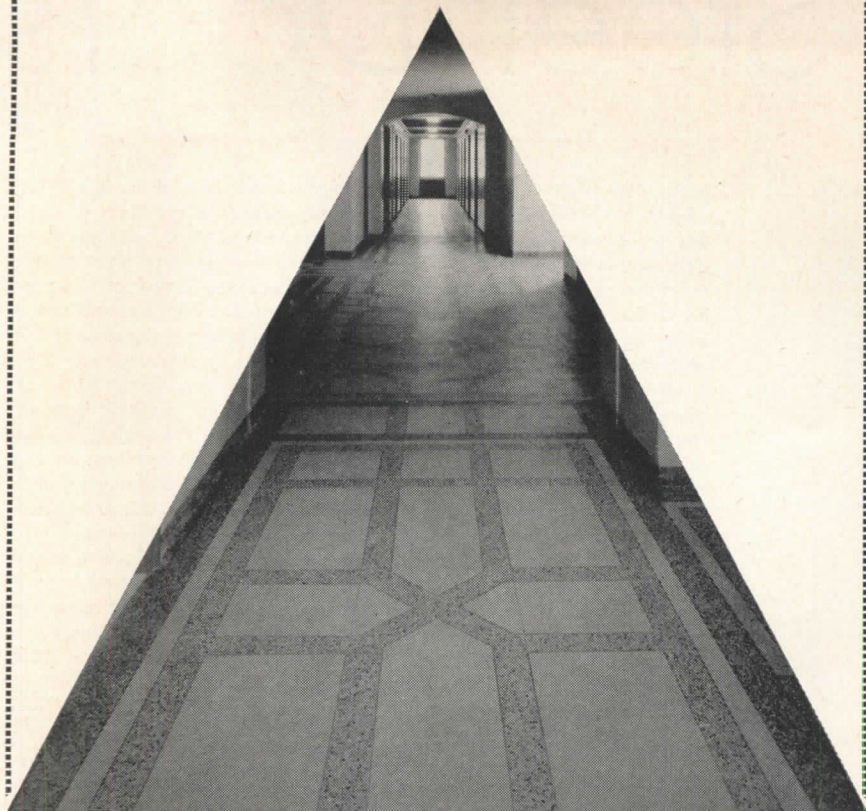
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Manufacturers of Rolling Steel Doors, Grilles, and Automatic Closing Underwriters' Labeled Rolling Steel Fire Doors and Fire Shutters; Insulated Metal Walls and Wall Panels; Steel Deck for Roofs, Partitions, and Permanent Concrete Floor Forms.



Seven of eight Mahon Power Operated Rolling Steel Doors installed in track openings of a Diesel locomotive service shop. In addition to these, five Mahon Automatic Underwriters' Labeled Rolling Steel Fire Doors are installed in openings of interior walls. Rock Island Lines, Archts. & Engrs., S. N. Nielsen Co., Gen. Contr

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REQUIRED READING

(Continued from page 46)

his personal taste that had to be expressed. The architectural idiom used by the master builders he selected (first Troost and later Speer) was that of a cold, inhuman, imitative classicism, with special emphasis on façades, conceived as vast perspectives to be seen from rapidly passing motorcades. Modern architecture was for the Nazis the "betrayal" of German culture by international Jewry. The flat roof in particular was attacked as "oriental," was eradicated from practically all buildings and replaced with the high German gable.

Was there any good architecture? The author, with understandable reluctance, admits that some of the official structures were effective expressions of the Nazi ideology. And that certain industrial and military buildings, since they were quite unaffected by party influence, were "first rate architecture." Their artistic merit is directly proportional to the degree in which the building served a practical purpose and in which it therefore escaped ideological contamination. It is an interesting observation that "architecture as a whole seems to be somewhat less vulnerable to totalitarian corruption than are painting and sculpture. Painting, it would seem, lends itself to complete, sculpture to almost complete corruption." The arts and crafts resisted corruption to a remarkable degree. It appears that this medium, due to its very nature, did not respond favorably to ideological treatment. And this in spite of the fact that it was given a lot of official attention and was subjected to the same strict regimentation as the other arts.

The mechanism of the regimentation is described in the chapter on "Total Control." It is a guided tour through the gas chambers in which non-conformist art was slowly suffocated. It makes gruesome reading. The precision and thoroughness with which political doctrine was translated into practice were only occasionally confused by personal rivalry between party bosses. Otherwise the control by the "Kunstammer" was airtight. "The so-called racially inferior and the politically unreliable were excluded. Some of them were sent the dreaded 'Arbeitsverbot,' explicit orders to stop working altogether in their art, even in the privacy of their homes."

The chapter on the "Challenge to Democracy" is an attempt to clear up

(Continued on page 370)

WHERE DIRT
AND RUST

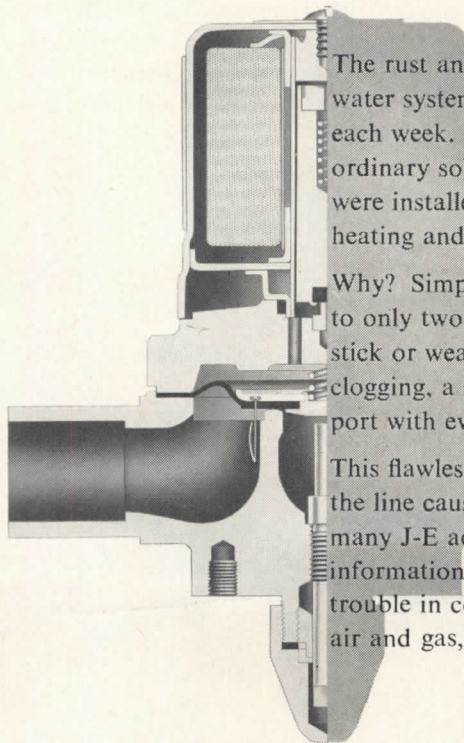


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STAY CLEAN AND SMOOTH-OPERATING



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This flawless, dependable operation where foreign matter in the line causes trouble with other valves, is just one of the many J-E advanced design solenoid features. For complete information on the many ways they can save you time and trouble in controlling Freon, brine, ammonia, steam, water, air and gas, write us today, now!

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SOLENOIDS THAT **SURPASS** THEIR SPECIFICATIONS

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

Air Conditioning for Motels

by L. J. GUARINO



L. J. GUARINO is director of mechanical engineering with Pan Engineering Company of New York City. He has designed heating, ventilating and air conditioning equipment for commercial buildings and industrial plants. The medical profession knows him as co-inventor of a new chemical dialyzer, used as an artificial kidney.

There was a time when a tourist court advertised hot and cold showers to attract business. Today, however, the magic phrase is "Air Conditioned." Weary motorists expect comfort and relaxation from an air conditioned motel. As a result, motel operators are turning to air conditioning rapidly. A national survey showed recently that 10% of America's motels are already air conditioned, and the completion of planned installations will add greatly to that number before the year's end.

WIDE CHOICE OF METHODS

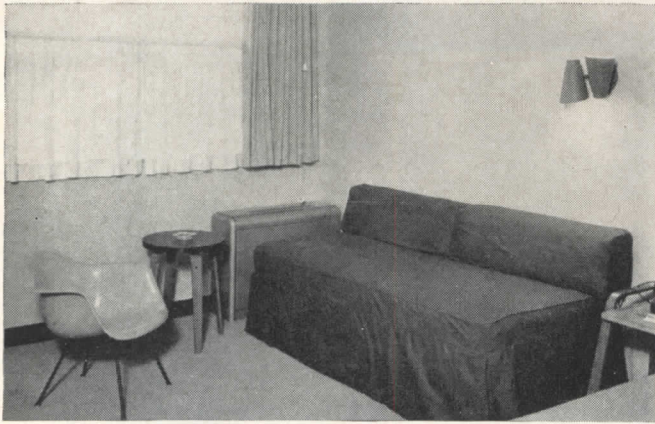
Whether an owner wants to install air conditioning in an existing motel, or is planning a new one, he has several types of equipment to choose from. His selection will depend on several factors besides cost. He should consider the arrangement of his court and its rooms, the intensity of summer heat and humidity in the area, whether he wants a year-round air conditioning-heating system combined, and whether there are special facilities to be air conditioned, such as lobbies, a restaurant or lounges.

ROOM WINDOW UNITS—In some cases—especially with an existing motel—the least expensive way is to provide each room with a window unit. But this is not always the most efficient way. Where the situation does call for this approach, there's plenty of variety to choose from to suit the needs of each room. The four basic standard sizes are the $\frac{1}{3}$, $\frac{1}{2}$, $\frac{3}{4}$ and 1-ton units. Some of these units have a reverse-cycle feature or an electric heating element that keeps rooms comfortable on chilly spring and fall nights.

FLOOR-MOUNTED UNITS—Another type of self-contained unit is floor-mounted, and used to cool larger public areas, such as lobbies, restaurants, and lounges.



Spacious public areas—like this lobby and lounge at the Red Horse Motor Inn, Dayton, Ohio—are often best served by more than one room unit. There's one under the window at the far end of the room. It's unobtrusive, and occupies negligible floor space. There's another in the ceiling foreground.



Where's the air conditioner? That neat, out-of-the-way unit in the corner circulates chilled water during the summer, hot water in winter. All room units are served from central plant shown in photograph at right.

Ductwork may lead from the unit to give more even air distribution. This type of unit, being larger than a window unit, needs plumbing connections for water.

CENTRAL PLANT SYSTEM—From the standpoint of the motel's appearance, room comfort and general over-all efficiency, a central plant system is usually most desirable. There are two chief types of central plant systems.

One is the chilled air system, which passes air brought in from outdoors over cooling and dehumidifying coils and distributes it by means of ducts. The same ductwork can carry warm, moistened air in winter. Blower size and duct dimension are factors to calculate for length of ducts. Also, adjoining new buildings may be served by installing underground ducts.

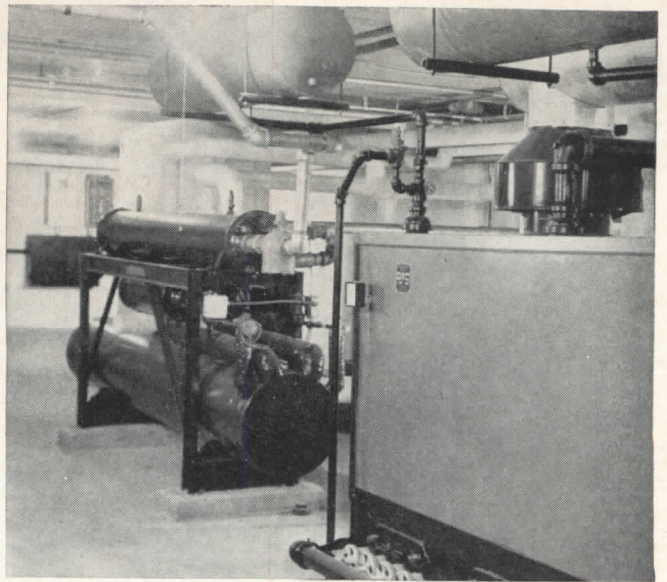
In the other type of central plant system, water is chilled and pumped through pipes to the area to be cooled. Individual rooms have room units through which the chilled water flows. Here, room air is mixed with outside air drawn in through filters, and the mixture is blown around the chilled coils of the unit. The same pipes can be used to circulate hot water during winter.

Whichever system the motel owner decides upon, he must remember the needs of his business, which depends completely on satisfied customers. He'll find that his customers will insist on two things at least: quiet operation and individual room temperature control.

CAREFUL PLANNING SAVES MONEY

Installing an air conditioning system involves an important capital expenditure. So the motel operator will be wise to plan carefully, considering these vital factors: initial cost, operating cost, sound architectural and engineering advice, and a realistic estimate of the amortization rate. For guidance on this point, note that many owners feel that repeat business alone will pay for their air conditioning installation within two to five years.

Perhaps an owner, planning a new motel, does not want to install air conditioning immediately. In any event, he would be wise to make provision for the future installation of a system. The cost of an installation will depend on the layout of his motel, for one thing. Because of the long low construction of so many motels, good wall and roof insulation helps keep down operation expense. And landscaping and orientation of the building with respect to prevailing winds and the sun are important factors. Thus, it's far more economical to provide in the beginning for the possibility of air conditioning than it is to make extensive alterations later on.



This central plant chilled-water system is in the Red Horse Motor Inn's main building. Water-chilling equipment is to left, behind boiler on right for winter's hot water. System uses an Apex chiller and Brunner compressor.

"FREON"* REFRIGERANTS HELP KEEP SYSTEM WORKING SMOOTHLY

When a motel operator gets long life and trouble-free service from his air conditioning equipment, it helps him keep customers happy and hold costs down. That alone would be good enough reason for specifying Du Pont "Freon" fluorinated hydrocarbon refrigerants in the air conditioning equipment you recommend. Because Du Pont manufactures "Freon" refrigerants to precise standards of purity and uniformity, with constant and rigorous laboratory controls, the result is a non-acid, non-corrosive product that helps keep equipment on the job through a long, efficient service life.

"FREON" REFRIGERANTS ARE SAFE

Your clients will be pleased to know that "Freon" refrigerants are safe—nonflammable, nonexplosive, virtually nontoxic. They comply with building-code specifications everywhere.

There's a wide variety of equipment available charged with Du Pont "Freon" refrigerants. You'll be serving your clients' best interests by recommending equipment designed to operate with "Freon" refrigerants.

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SAFE REFRIGERANTS

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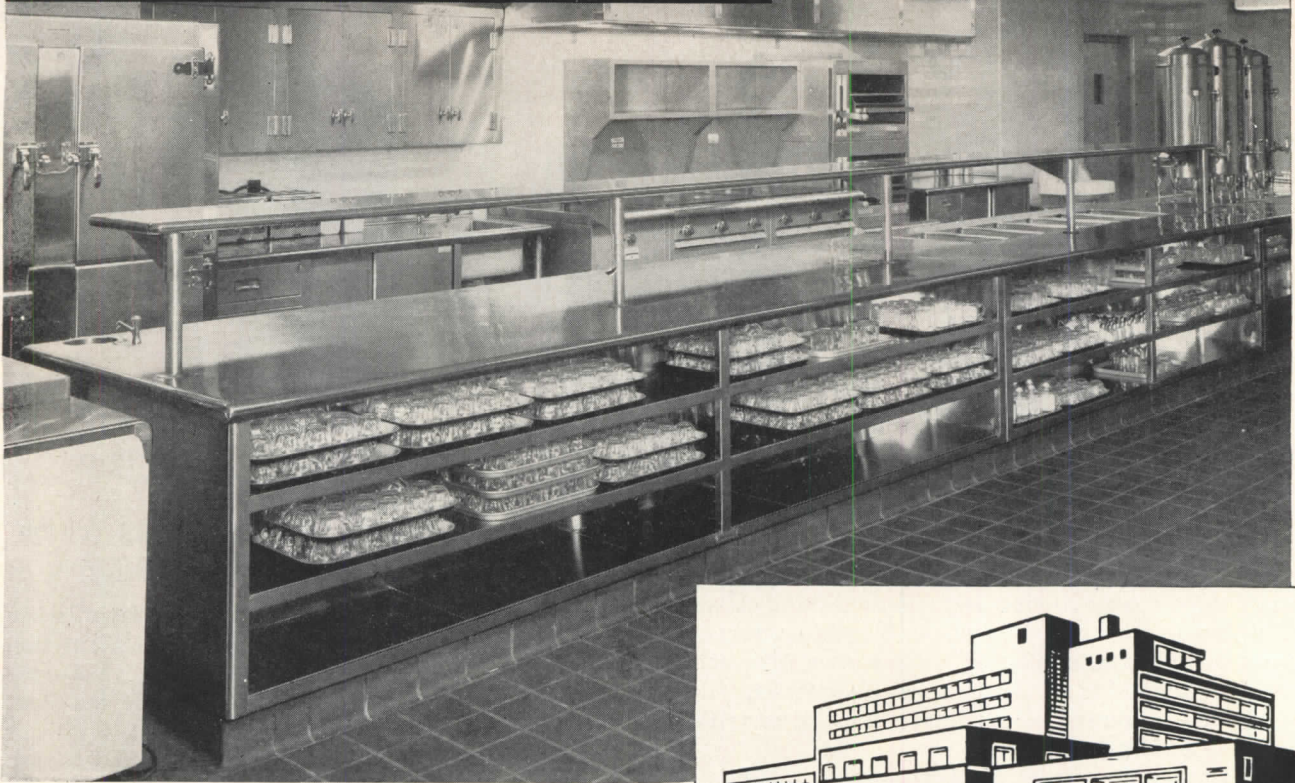


REG. U. S. PAT. OFF.

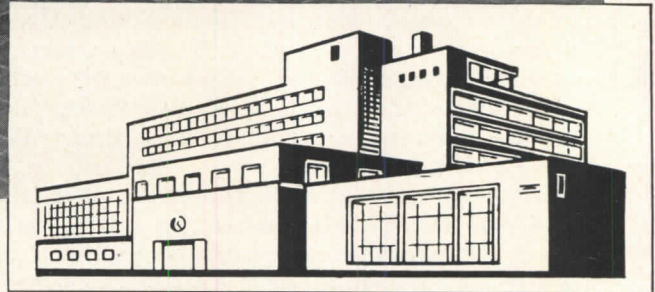
BETTER THINGS FOR BETTER LIVING . . . THROUGH CHEMISTRY

**INDIANA UNIVERSITY MEDICAL CENTER
Student Union and Food Service Building**

Eggers and Higgins, Architects Edw. D. James, Architect



Entire food operation—including this completely equipped banquet kitchen on the mezzanine—accommodates a maximum of 917 persons at one time.

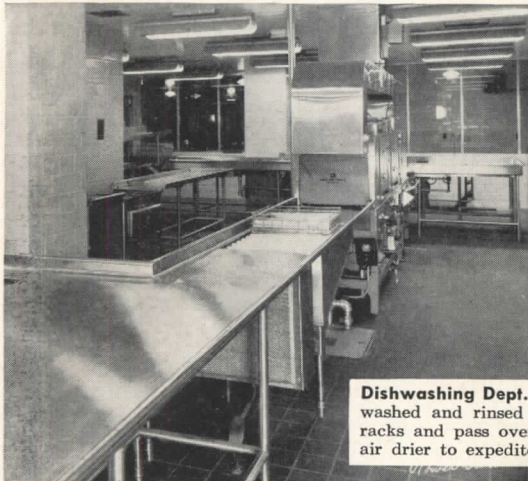


**SOUTHERN DEALER PLANS and
INSTALLS PRIZE-WINNING KITCHEN**

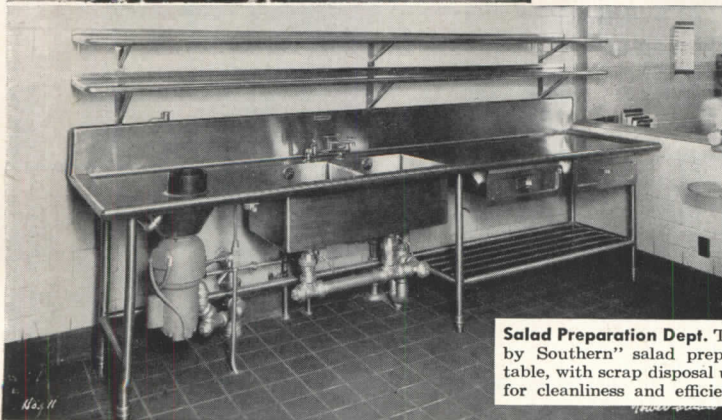
Starting with a detailed analysis of the contemplated menu and the purchasing procedure, National China & Equipment Corporation, Marion, Indiana, achieved a precise allocation of space for storage, preparation and service at the Student Union & Food Service Building in Indianapolis. Three separate operations—cafeteria, snack bar and banquet service—are served from a central kitchen. This modern, efficient installation won a First Award in the 1954 Institutions Food Service Contest.

Get expert help with your next kitchen equipment problem or layout—call your "Custom-Bilt by Southern" dealer or write Southern Equipment Company, 5017 So. 38th Street, St. Louis 16, Mo.

S
SOUTHERN
EQUIPMENT COMPANY



Dishwashing Dept. Mechanically washed and rinsed dishes remain in racks and pass over a forced heated air drier to expedite drying.



Salad Preparation Dept. This "Custom-Bilt by Southern" salad preparation sink and table, with scrap disposal unit, was designed for cleanliness and efficiency.



Daylight Walls of L-O-F Window Glass make the rooms at Twin Falls (Ida.) High School comfortable, light and cheerful. Frank H. Paradise, Jr., Arch.; Paul K. Evans, AIA, Arch.; Holmes G. Lash, Associate Arch.

“We think every school should have windows like these!”

If you want the real “low down” on school design, talk to the students or the teachers. They’ll tell you that daylight walls—clear glass stretching from sill to ceiling—give a feeling of freedom to a school.

School boards and taxpayers also like daylight walls. They mean lower electric bills, because lights are needed less often. Lower maintenance, because there’s less wall area to paint and glass is easy to clean. Lower construction cost, because daylight walls are so economical.



Free Book on School Daylighting

If you have anything to do with school construction, you should have this authoritative book on the different ways of daylighting school-rooms. For a free copy of *How to Get Nature-Quality Light for School Children*, write Dept. 41104, Libbey-Owens-Ford Glass Co., 608 Madison Ave., Toledo 3, Ohio.



In climates where heat saving is essential, you can glaze daylight walls with *Thermopane** insulating glass. It cuts heat loss by 44% to 50%, compared to single glazing, so areas near windows stay comfortable. Rooms are quieter, too, because *Thermopane* muffles outdoor noise.

If you want more information about daylight walls or *Thermopane*, write for book described below, or call your nearest Libbey-Owens-Ford Glass Distributor or Dealer. [®]

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... THAT LET YOU SEE

OTHER L-O-F GLASS PRODUCTS: Vitrolite* • Tuf-flex* Tempered Plate Glass
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LIBBEY-OWENS-FORD GLASS CO., TOLEDO, OHIO

**NORTHLAND REGIONAL
SHOPPING CENTER,
Detroit, Michigan**

Architect:

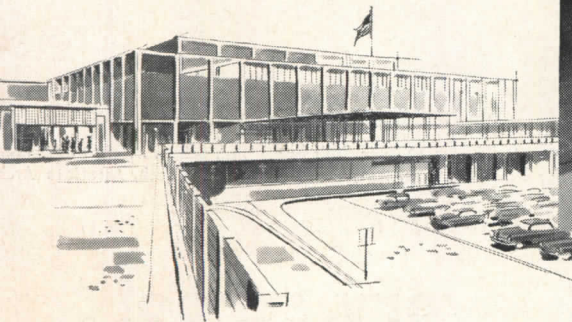
Victor Gruen Associates, Inc.

General Contractor:

Bryant & Detwiler Co.

Acoustical Contractor:

Detroit Acoustical Contracting Co.



Over the stairway in the Robinson Furniture store, a noise-muffling ceiling of Full Random Cushiontone helps keep disturbing noise from traveling through the open stair well. With perforations spaced at random over the face of each Cushiontone tile, the finished ceiling effect is truly non-directional.

Modern shopping center solves noise problem



The dignified décor of the Wright-Kay Jewelry Co., is further carried out by the naturally textured surface of the Travertone ceiling. Travertone's white paint finish and irregular fissures give it the distinctive appearance of travertine marble.



Perishable merchandise in the Fintex Clothing Company store needs the extra fire protection afforded by this travertone ceiling. Completely incombustible, noise-absorbing Travertone fully meets all fire-safety codes.

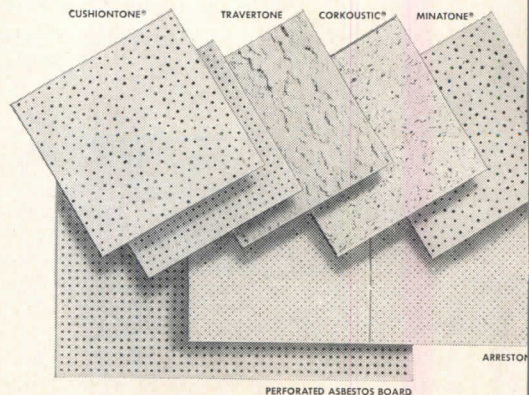
Completely geared to modern suburban living needs and trends, Detroit's Northland Regional Shopping Center solves many of the troublesome problems shoppers face today.

Space for 7500 cars eliminates the usual parking difficulties, while Northland's compact layout puts all of the 80-100 stores within easy walking distance. Artfully decorated malls and gardens provide relaxing surroundings for weary shoppers. Nor is there any of the annoying hubbub so often found in busy stores. In a large portion of the Center, sound-absorbing ceilings of Armstrong's acoustical materials have been installed to help keep noise levels down at all times.

Wherever economy was the deciding factor, Armstrong's Cushiontone, in the smart, new Full Random pattern, was used. A perforated wood fiber material, Cushiontone is surprisingly low in cost. To provide the quiet, beauty, and extra fire safety required in other areas, Arm-

strong's Travertone, a handsomely figured noise-absorbing mineral wool tile, was installed.

Get full details on Travertone, Cushiontone, and Armstrong's entire line of sound-conditioning products from your Armstrong acoustical contractor. For the free booklet, "How to Install an Acoustical Material," write Armstrong Cork Company, 4210 Rock Street, Lancaster, Pennsylvania.



ARMSTRONG'S ACOUSTICAL MATERIALS

ROBERTO BURLE-MARX: ART AND THE LANDSCAPE

Last June the renowned Brazilian landscape architect toured the U. S. A., lecturing on his theories of design and showing his work



We talked to Roberto Burle-Marx several times during his visit. His appearance and his likable manner stick in the memory; even more durably impressive were his simple affirmations of principles, expressed in English for which he apologized although he need not

have. His tenets apply to all the arts, a fact which eased his public and private discussions with architects, musicians, landscape architects, painters and sculptors — including a long evening with Alexander Calder which would have been fun to witness but which a witness could have spoiled. Below are excerpts from Burle-Marx's speech before the American Society of Landscape Architects' convention in Boston.

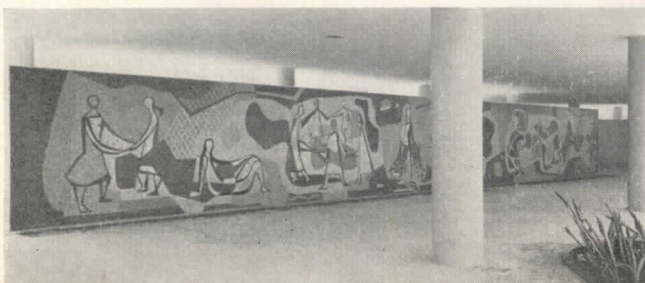
IT SEEMS TO ME THAT THE PRINCIPLES on which I base the structure and arrangement of my gardens are in many points identical with those at the root of any other artistic expression, whether the idiom be music, painting, sculpture, or the written or spoken word. In all, the creative impulse comes first and is essential; but the *expression* of this impulse is consciously controlled and measured. A garden is a complex of esthetic and plastic intentions; the plant is, to a landscape artist, not only a plant — rare, unusual, ordinary or doomed to disappearance — but also a color, a shape, a volume, or an arabesque in itself. It is the paint for the two-dimensional picture I make of a garden on a drawing board in my atelier; it is the sculpture of arabesque in a garden.

It is not only as a botanist and a working gardener that I think of gardens. I was trained as a painter. Color contrast and harmony, structure and form, are important to me as a two-dimensional painter as well as in the three-dimensional or four-dimensional garden. A work of art cannot be, I think, the result of a haphazard solution. The development of the creative impulse is carried out by means of rhythms which will produce what the artist knows to be the desired result. In any

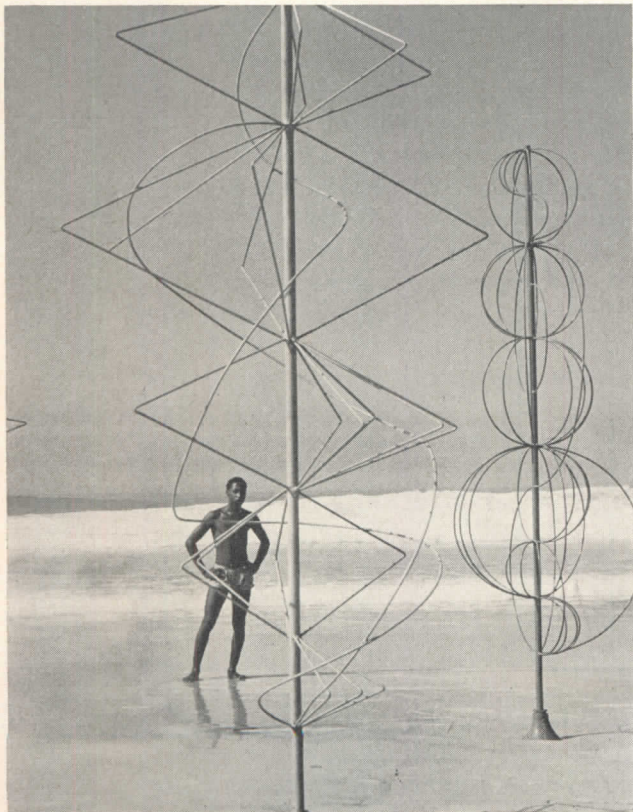
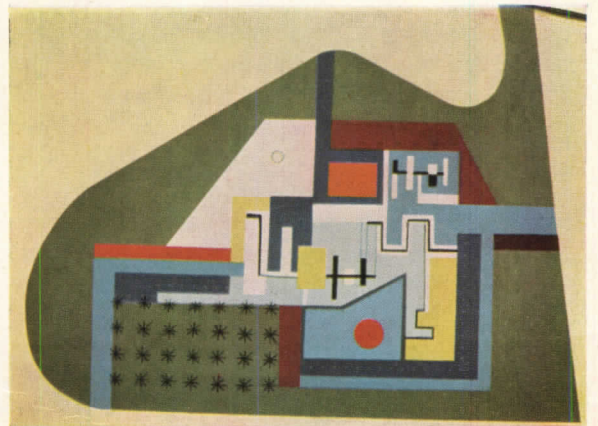
art, the artist learns how to stress a sound, a word, a color, a line, a shape, a volume, by means of contrast, comparison, repetition, tension and relaxation, slowing down speed for suspense, racing for climax. The great difference, of course, between the two-dimensional painter and the three-dimensional landscape designer, is that the plant — the raw material — *is not static*. It has its own cycle of bud, flower, seed, and withering; and again, a gust of wind, a cloud, a shower, or a storm alters its color and structure.

To give you an idea of how my work has been planned, of how I developed the style for a modern Brazilian garden, and of why it has taken its present form: true Brazilian gardens have a short history. Colonial Brazil had plantations and some flowers, but very few gardens. The flowers were brought from Europe by the Dutch, to Olinda and Recife, in the north; and a few, indigenous, were cultivated by the Portuguese, but very few. The vast estates or *latifundios*, the size of an English county, were successively planted with sugar cane, cotton, rubber (in the north) coffee, and orange groves. Early paintings and pictures on blue-glaze tiles (*azulejos*) show that there were no parks, no landscape gardens. On the other hand, there were cloister patios planted by Franciscan monks, and cool patio gardens in the large family houses or *solares* — gardens inspired by those of the Near East, as cultivated in Portugal. As for public gardens, there were none at all, except the *Passeio Publico* that Viceroy Vasconcellos created at the end of the eighteenth century in Rio de Janeiro.

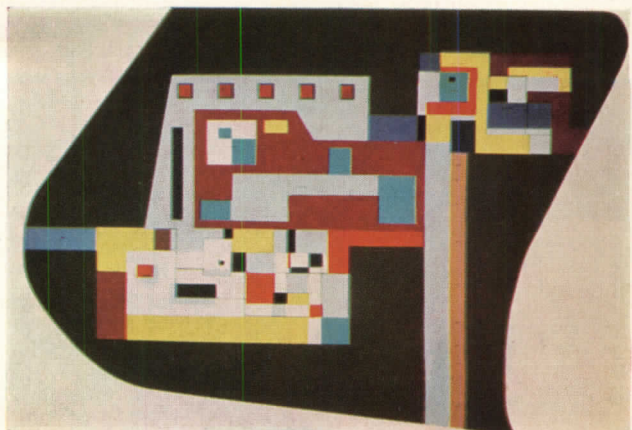
As the cities spread, private gardens began to go the way of gardens all over the world; but in 1860, Glaziou, the Breton engineer, still found space for large private gardens in Larangeiras for nobles of Emperor Don Pedro II's court. After remodeling the *Passeio Publico* on the lines of the English landscape garden, but using Brazilian trees and plants or those in a similar climate, he went on to lay out the Emperor's park.



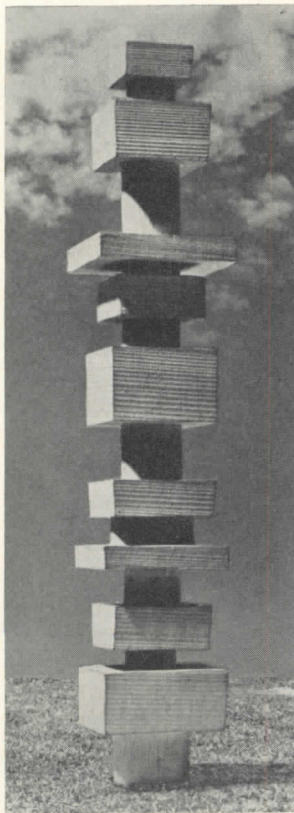
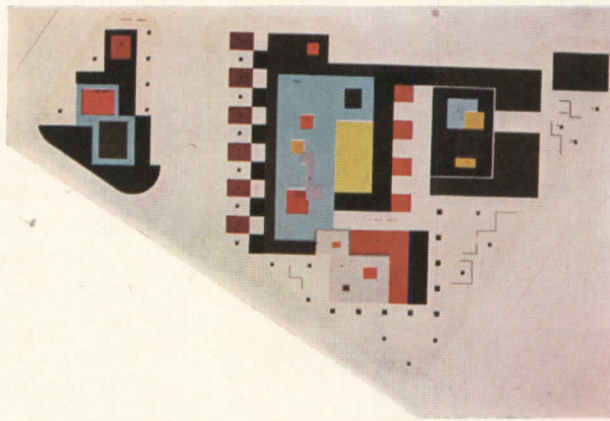
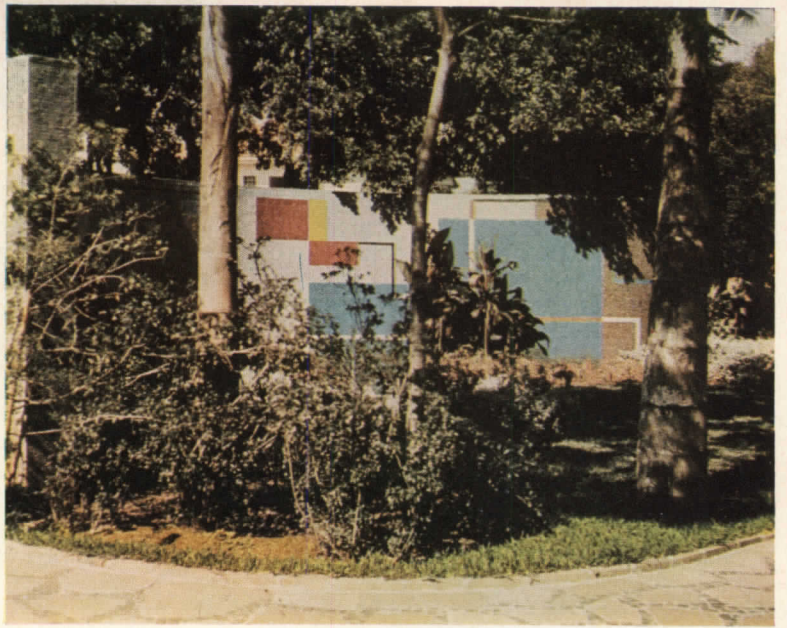
Some raw materials and their uses: Lotus, philodendron, mangrove roots, tile mosaic for walks and murals



**ROBERTO BURLE-MARX:
ART AND THE LANDSCAPE**



Landscape materials natural and artificial are both pigments on his design board (Burle-Marx was trained as a painter) and three-dimensional, changing elements of the completed work. Color paintings in color on the facing page are designs, unfortunately not executed, for São Paulo's IV Centennial in Ibirapuera Park, a series of intimate gardens rather than monumental landscaping. This was to have been a chef d'oeuvre, with polychrome building materials played off against rich Brazilian plant colors and textures, asymmetrically yet geometrically, somewhat in the manner of the Alcazar in Spain. In one garden a walk like a switch-back railroad was to have given exhibition visitors an unusual chance to see the composition from above. At right, plants contrasted with a mural panel, Olavo Fontoura garden, São Paulo; plan, garden at Belo Horizonte Airport. Black-and-white photos show Burle-Marx's sculptural techniques: in wire, in massive granite (designed for the IV Centennial), and in plant forms against a wall of the American Embassy at Rio de Janeiro



Unfortunately, some of the worst of his work as well as the best was copied, and invaded the private gardens; and since these are often small, the mannerism has become more important than the style. Passing fashions, usually foreign, have left their mark, from Victorian flowers, to International Municipal flower beds, to bungalow gardens with over-tall, sickly conifers. Something survived, however, as it always will, if the principles of composition are good at the outset, and if the landscape architect knows how to group his plant material in such a way that, even if the plants themselves assert their characteristics differently from the intention of the designer, their forms will still fit into the original composition. And when, in 1934, I started to lay out

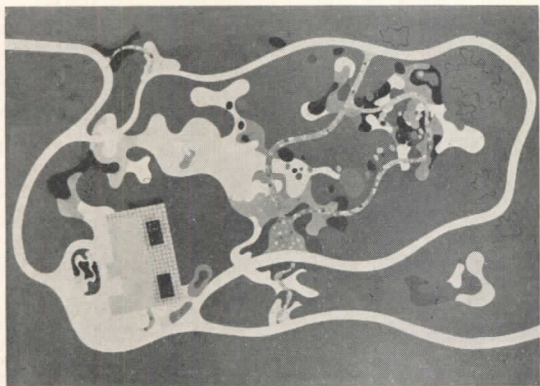
gardens, it was still possible in a few Glaziou gardens to find traces of the master, of a man who knew plants and how they could be made into a landscape.

In 1934 I was practically alone in seeking to express the fact that the native plant does best in Brazilian gardens. And as space began to disappear, as the buildings which were the contractors' delight began to spring up selfishly, tightly packed around Copacabana Bay, what scope was there for a landscape gardener in Brazil? Not much, even in a country with such immense unplanted regions. The small private garden; decorative stone or concrete-rimmed beds or boxes — indoors, on a verandah, or at street level; the roof and *pilotis* garden; sometimes a square; once a parkway — and every ten years or so, a public park! Even so, I began to experiment.

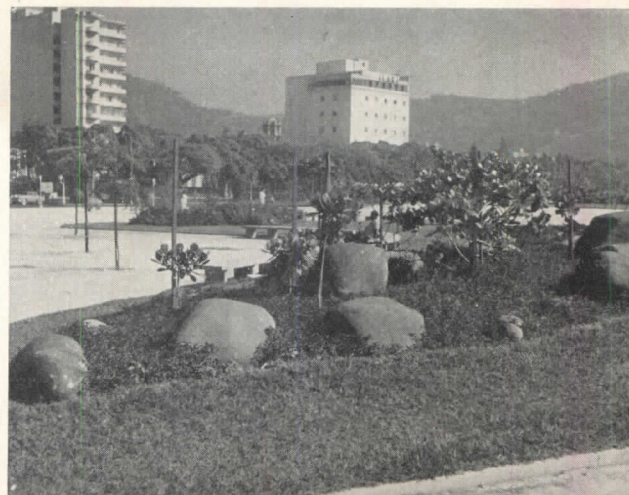
When Le Corbusier came as consultant to the architects planning the Ministry of Education and Health, he spoke of the recovery of space at all costs so that man might regain his communion with nature; of the roof garden; of the space over an extended wing; of the hollows under the building at *pilotis* level. At that time, I was laying out my first roof garden; it was as formal, in its way, as the water garden inspired by Kew that a year earlier I had finished in Recife, the capital of Pernambuco. But this ribbon series of flower boxes was complemented by massed tropical plants contrasting with the larger mass of the Ministry building — a first step in the use of plants as volume in motion against the fixed volume of the architecture.

In the next two roof gardens, on the Reseguros Institute and on the Ministry itself, I experimented with free forms in an interplay of plant and building materials used as textures. I further developed the place devoted to the Brazilian plant, with a view to maintenance costs and because of its variety of color and shape. The Minister's garden at second-floor level, seen from above, is as defined as an abstract painting on my drawing board; yet when you actually walk in it, the raised foliage beds and the groups of *Strelitzia reginae* (bird-of-paradise-flower) are volumes in movement against the flowing

(Continued on page 320)



Top, plan, garden of Mrs. Odette Monteiro, Correias, Petropolis; Wladimir A. de Sousa, architect. Above, glazed tile mural, Instituto Oswaldo Cruz, Rio de Janeiro; Jorge Ferreira, architect. Below, two views of the Praia, Botafogo



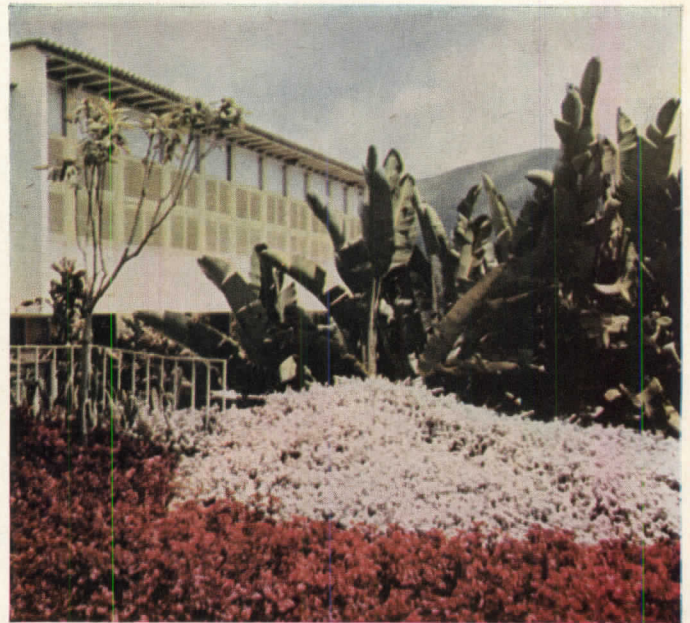


Above, left to right, Olavo Fontoura, garden; roof garden, Rosegueros Building (M.M.M. Roberto, architects); Monteiro landscape (plan on facing page). Below, contrasting foliage, paving, water; garden for Carlos Somlo





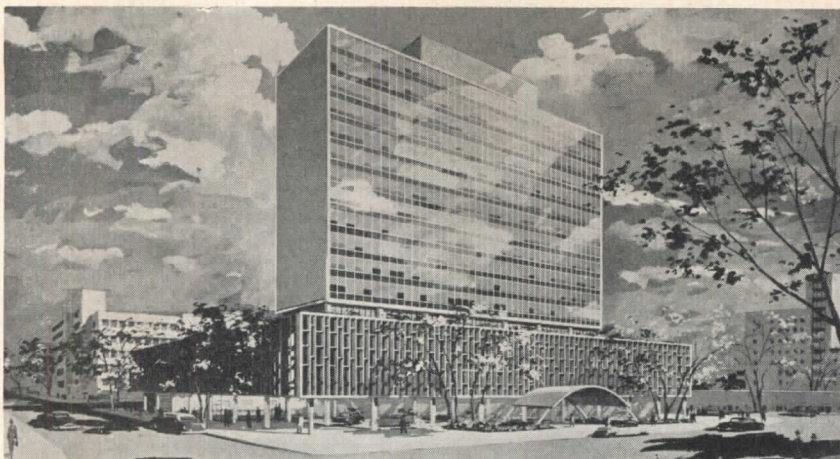
**ROBERTO BURLE-MARX:
ART AND THE LANDSCAPE**





Another view of the Somlo garden (top, facing page) shows the importance of massed color. Below it are a garden for a house designed by Henrique Mindlin, which won an award at São Paulo's I Bienal; and (bottom) a garden for Almeida Braga in which planting two varieties of grass introduces pattern into the lawn itself. On this page are three kinds of landscaped terrain: a flat garden for the City Hall at Petropolis (destroyed because officials did not like it!); tree shadows emphasizing a slope at the Casino, Pampulha (Oscar Niemayer, Architect); and a closer view of the Monteiro garden, with a bold plant form repeating the distant mountain's shape. This garden won a prize at the II Bienal. Space does not permit showing Burle-Marx's easel paintings, his silkscreened textiles, his tapestry designs or (to return to landscape architecture) his nostalgic use, recalling Baroque churches, of pebble and shell mosaics in a Plaza in Bahia





1

2

OFFICE PROJECTS MUSHROOM IN NEW CONSTRUCTION BOOM

1. Medical Center Towers, Houston—Golemon & Rolfe, architects; Skidmore, Owings & Merrill, consulting architects. Advisory boards in various specialties were consulted on layout of 175 suites for doctors. Estimated cost: \$4 million. Completion: 1955. Builder: Martin Nadelman

2. Mile High Center, Denver—I. M. Pei of Webb & Knapp Inc., architect; Kahn & Jacobs and G. Meredith Musick, associated architects. Construction is under way on second (foreground in model photo) of four units—airline ticket offices and restaurant; tower is already occupied. Estimated cost: \$15 million. Joint owners: Webb & Knapp Inc. and George A. Fuller Company. Builder: Fuller

3. National Headquarters Building for National Education Association, Washington, D. C.—Joseph H. Saunders, architect; Reisner & Urbahn, consulting architects. New eight-story unit, to be built in two stages, will connect with remodeled existing building; a separate service building will complete project. Estimated cost: \$5 million. Builder: Joseph F. Nebell



4



5, 6



4. "House of Seagram," 375 Park Avenue, New York City—Pereira & Luckman, architects for preliminary model of projected national headquarters building for Seagram-Distillers Corporation indicating four-story marble and bronze base with 30-story tower above. Estimated cost: over \$15 million. Completion was scheduled for 1957, Seagram's 100th anniversary



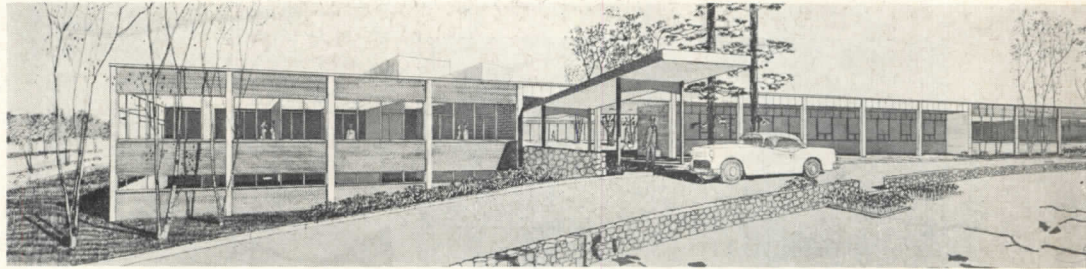
Louis Checkman

3

5. No. 20 Broad Street, New York City—Kahn & Jacobs and Sidney Goldstone, architects. General Realty & Utilities Corporation and the New York Stock Exchange plan 27-story building adjoining the Exchange's present buildings at 18 Broad and 11 Wall. One-story-high steel trusses will permit removal of lower floors for three-story-high column-free extension of Exchange trading floor at some future date; initially Exchange will use, for public exhibition rooms and expansion of members' lounge, only 20,000 of 400,000 sq ft of rentable space. Builder: George A. Fuller Company

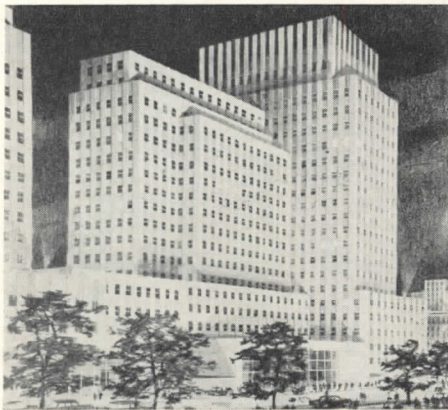
6. Davies Building, 460 Park Avenue, New York City—Emery Roth & Sons, architects. Tishman Realty & Construction Company's second metal wall building on Park Avenue got headlines for 10-hr enclosure of two main façades with prefabricated two-story-high aluminum wall and window panels—a job loudly decried in the masonry field as a "publicity stunt" and no true economy of time or money

7. United States Rubber Company Building East, Rockefeller Center, New York City—Harrison & Abramovitz, architects. The Center Theater, on Avenue of the Americas between 48th and 49th streets, is being demolished to make way for new 19-story structure adjoining U. S. Rubber Company Building. Limestone exterior and aluminum trim will harmonize with the 14 other Rockefeller Center buildings. Builder: George A. Fuller Company



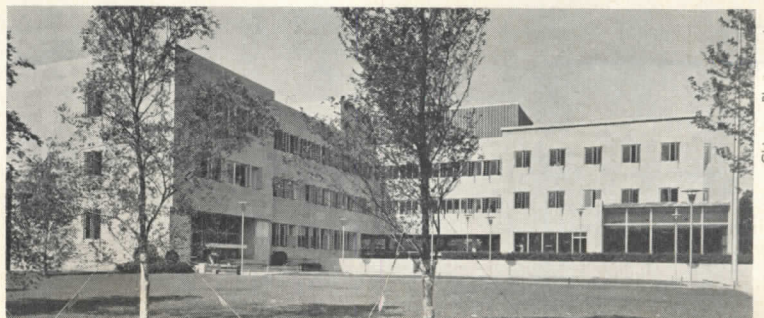
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8. Home Office Building for Boston Manufacturers Mutual Fire Insurance Company and Mutual Boiler & Machinery Insurance Company, Waltham, Mass.—Anderson and Beckwith, architects. Two-level building on 70-acre site will provide 88,000 sq ft for (initially) 325 employes at estimated cost of \$1.5 million. Facilities include employe "penthouse" cafeteria and recreation area. Completion: 1955. Builder: Turner Construction Company



7

9. American Bar Center, Chicago—Holabird & Root & Burgee, architects. American lawyers raised more than \$2 million, largely in one fund-raising drive, to build the American Bar Foundation's new headquarters—an administration building for the American Bar Association and a connecting research center and library. Builder: Turner Construction Company



9

Chicago Photographers

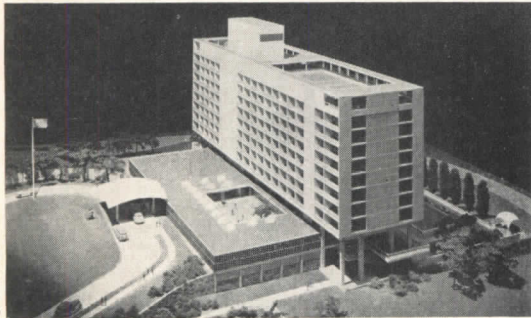
HILTON PLUS STATLER: A BIG



1



2



© Ezra Stoller

3

THE LARGEST TRANSACTION in the history of the hotel industry has given Hilton Hotels Corporation, along with its controlling interest in Hotels Statler Company Inc., an even more commanding lead over its nearest competitor as the giant of the "quality" hotel field. According to Hilton sources, the lead over Sheraton is now something like 150 per cent — figured in terms of investment, earnings, number of rooms, number of employes or almost any way you like except number of hotels. On that basis, the score was evened by Hilton acquisition of eight operating Statler hotels, which brought to 26 (the Sheraton figure) the number of hotels owned, leased or operated under management contracts by Hilton Hotels Corporation. One more Statler — the Hartford — was added last month; Houston's Shamrock enters the fold this month; still another Statler and six more Hiltons already scheduled to be opened within the next two years, and two more Hiltons just under contract (for London and Rome), would bring the total to 37.

The photographs on these pages show all of the post-World War II Hilton and Statler building projects — including seven of the nine hotels to come. The "client," as personified in Conrad Hilton, founder and president of Hilton Hotels Corporation, got his start helping his father run a five-room "hotel" in their large adobe house in San Antonio, New Mexico; he is by now, obviously, no stranger to balance sheets; but he expresses more than a business interest in the architecture of his hotels: "I love beautiful buildings," he says; "I've always loved beautiful buildings."



4



5

HOTEL CLIENT GETS BIGGER



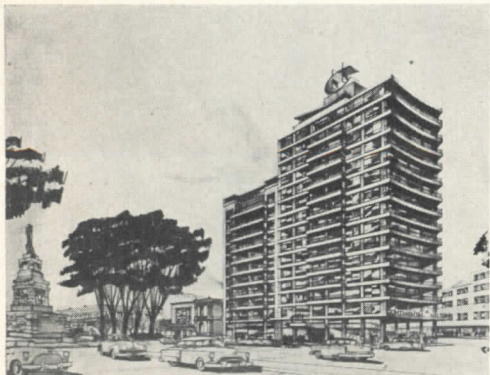
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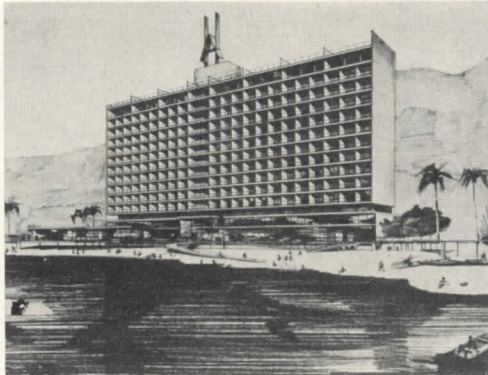
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8



9



10



11

1. *Castellana Hilton, Madrid*—opened July 1953; 338 rooms; cost \$3 million. Architect: Louis Feduchi

2. *Caribe Hilton, San Juan*—opened December 1949; 355 rooms; cost \$7.3 million. Architects: Toro, Ferrar & Torregrossa

3. *Istanbul Hilton, Istanbul*—opening early 1955; 330 rooms; cost \$5.5 million. Architects: Skidmore, Owings & Merrill and Sedad Eldem

4. *The Beverly Hilton, Beverly Hills, Cal.*—opening 1955; 450 rooms; cost \$14 million. Architect: Welton Becket & Associates

5. *Nile Hilton, Cairo*—opening 1956; 400 rooms; cost \$6 million. Architect: Welton Becket & Associates

6. *Los Angeles Statler, Los Angeles*—opened October 1952; 1275 rooms; cost \$19 million. Architects: Holabird & Root & Burgee; associate, William B. Tabler

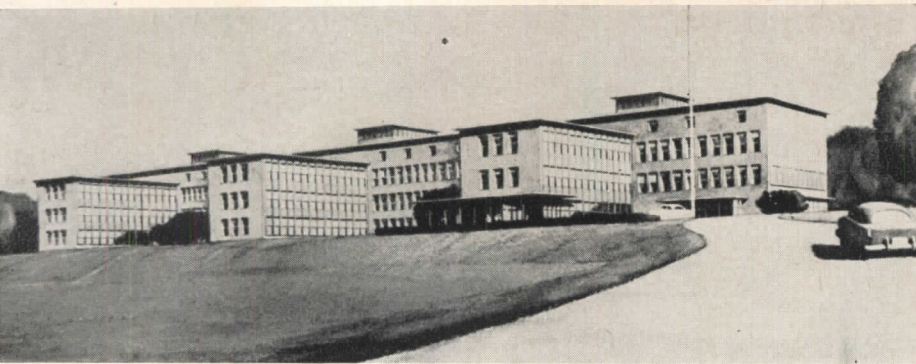
7. *Hartford Statler, Hartford, Conn.*—opened September 1954; 455 rooms; cost \$5.5 million. Architect: William B. Tabler

8. *Dallas Statler, Dallas, Tex.*—opening 1955; 1001 rooms; cost \$9.5 million. Architect: William B. Tabler

9. *Continental Hilton, Mexico City*—opening May 1955; 360 rooms; cost \$3 million. Architect: Fernando Parra

10. *Acapulco Hilton, Acapulco, Mexico*—opening May 1955; 250 rooms; cost \$3 million. Architect: Fernando Parra

11. *Havana Hilton, Havana, Cuba*—opening early 1956; 650 rooms; cost \$13 million. Architects: Welton Becket & Associates and Arroyo y Menendez

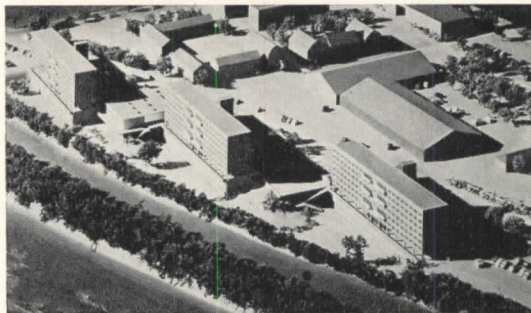


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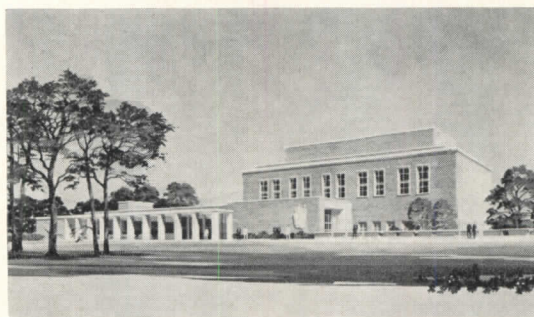


2

**CLIENTS ARE INDUSTRY,
EDUCATION—AND KIDS**



3



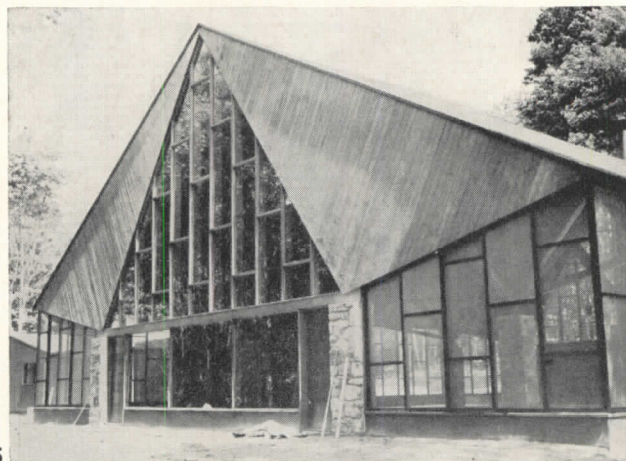
4

F. J. Higgins

1. Westinghouse Electric Corporation is building a new research center on a 70-acre site 10 miles east of Pittsburgh's Golden Triangle. Architects: Voorhees, Walker, Foley & Smith

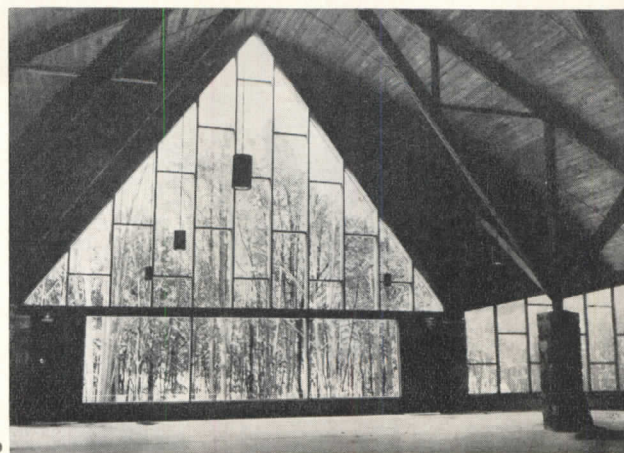
2. Newest branch factory of Hallmark Cards, located in prosperous residential suburb of Kansas City, provides 52,000 sq ft of floor space, cost \$250,000. Architects: Welton Becket & Associates

3 and 4. Two new projects for Rutgers University, New Brunswick, N. J. **3.** Dormitory and classroom project uses a river-bank site to develop residence hall and classroom sections as separate units within common buildings. Architects: Kelley & Gruzen. **4.** York & Sawyer are architects for \$4 million library now under construction across the street from the projected dormitory site



5

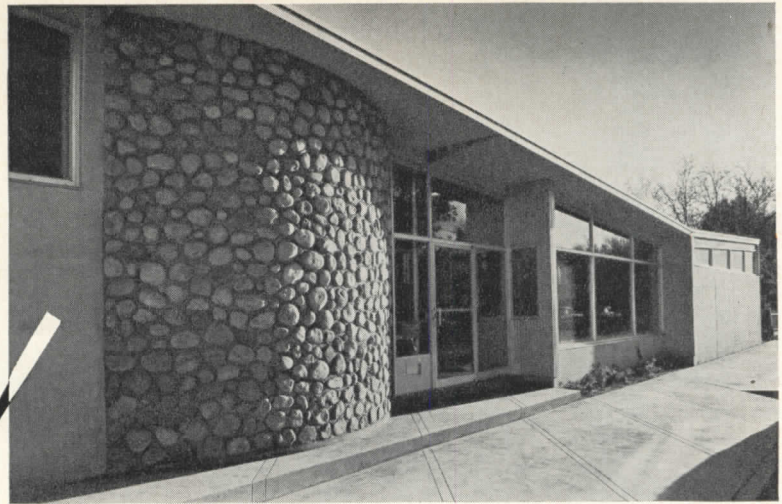
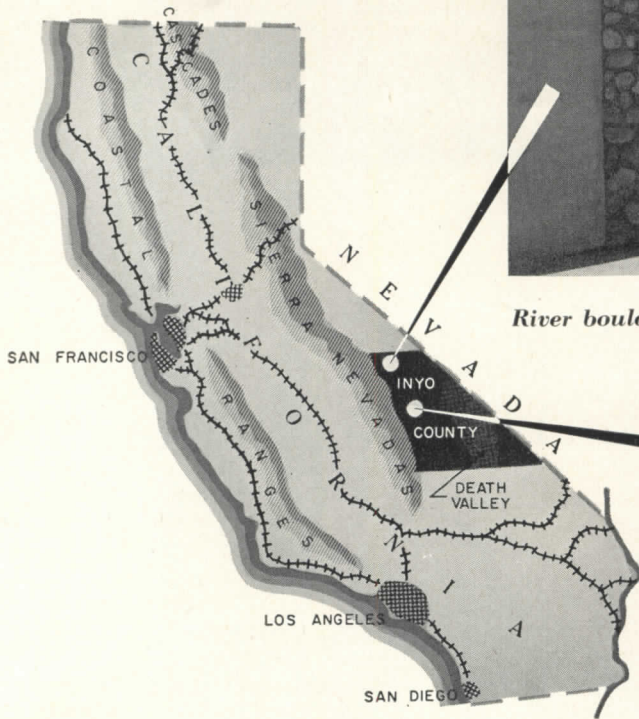
5 and 6. "Fresh Air" girls from low-income New York families were the real clients for Camp Bliss, newest Herald Tribune Fresh Air Fund camp, near East Fishkill, N. Y. Two views of the dining hall, focal point of the 40-acre lakeside campsite, are shown here. Other buildings at the camp, planned to meet requirements of a "group-centered" or decentralized program, include three "village halls" and four administration buildings. Campers—144 at a time—will live in tents erected on permanent bases. Estimated cost: \$250,000. Architect: Edward L. Barnes



6

Ira Rosenberg—New York Herald Tribune

TWO NEW BUILDINGS FOR INYO COUNTY, CALIFORNIA



River boulders and precast wall panels on library at Bishop . . .

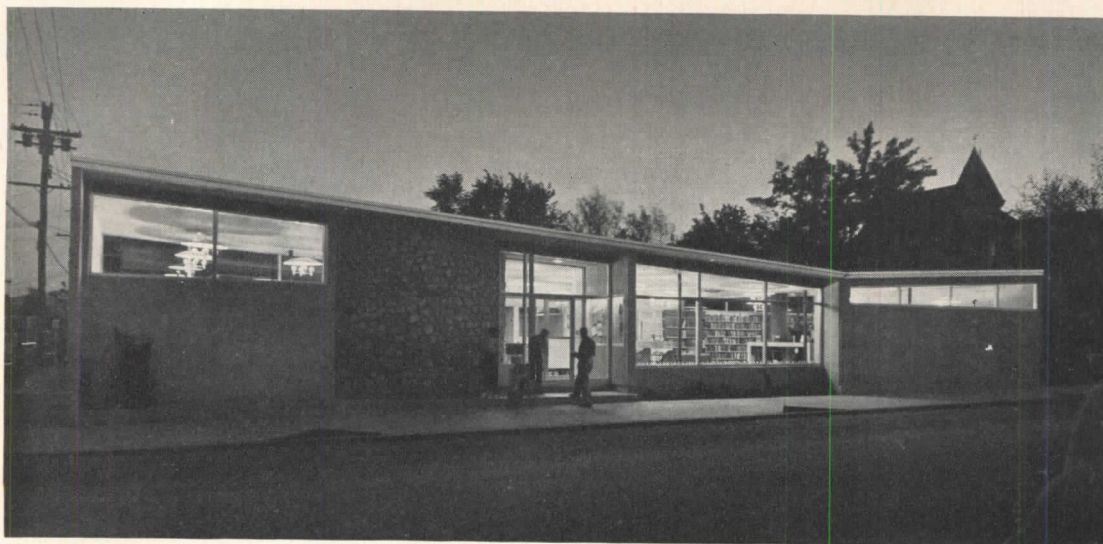


. . . are repeated on Health Center at Independence

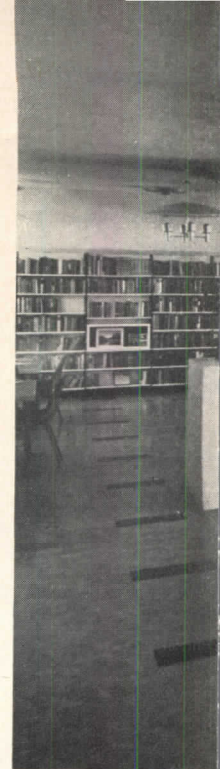
Isolated by the high Sierra Nevada, INYO COUNTY, remote and sparsely settled, retains much of the flavor of the West's early days and architecturally is still a frontier. Yet in aspiration and determination, it is more than a match for much larger, wealthier and more populous districts

ONLY OCCASIONALLY does an architect have this kind of chance to contribute to the cultural development of a community; more often, as Percival Goodman observed at the Boston convention, he is "forced by those who hire him to build buildings for profits rather than for social or community profit." In these two new buildings for Inyo County, Calif., however, the opportunity was implicit in the commission and, after initial conferences, full confidence and freedom of action in interpreting the county's needs were given to the architect. The buildings which resulted are a combination of contemporary thinking in design and of indigenous tradition expressed in local materials. The facilities they provide are but initial profit to the communities in which they are situated; as cultural incentives this profit will continue to accrue.

Photos by Roger Sturtevant

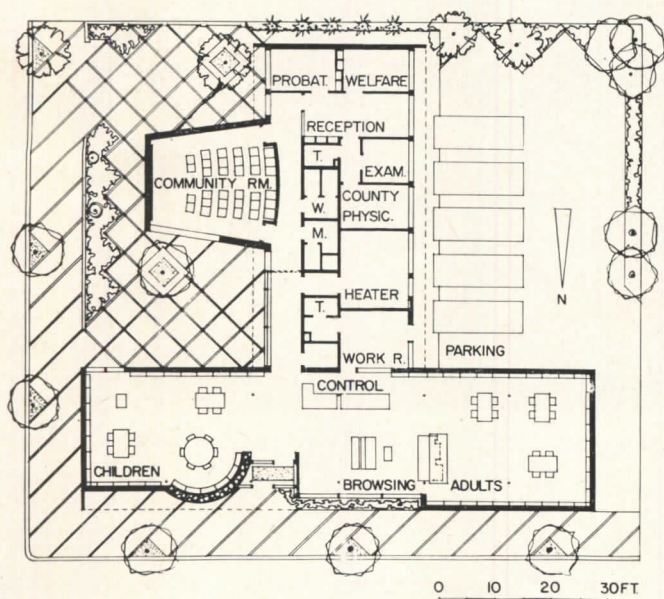


Open, inviting character of building reflects informality of small Western town



Browsing area's

INYO COUNTY FREE BRANCH LIBRARY AND



Francis Joseph McCarthy, Architect

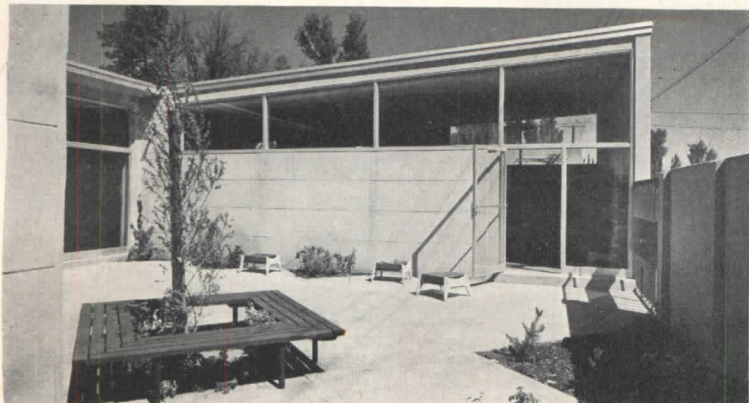
A. V. Saph, Jr., Structural Engineer

G. M. Simonson, Mechanical and Electrical Engineer

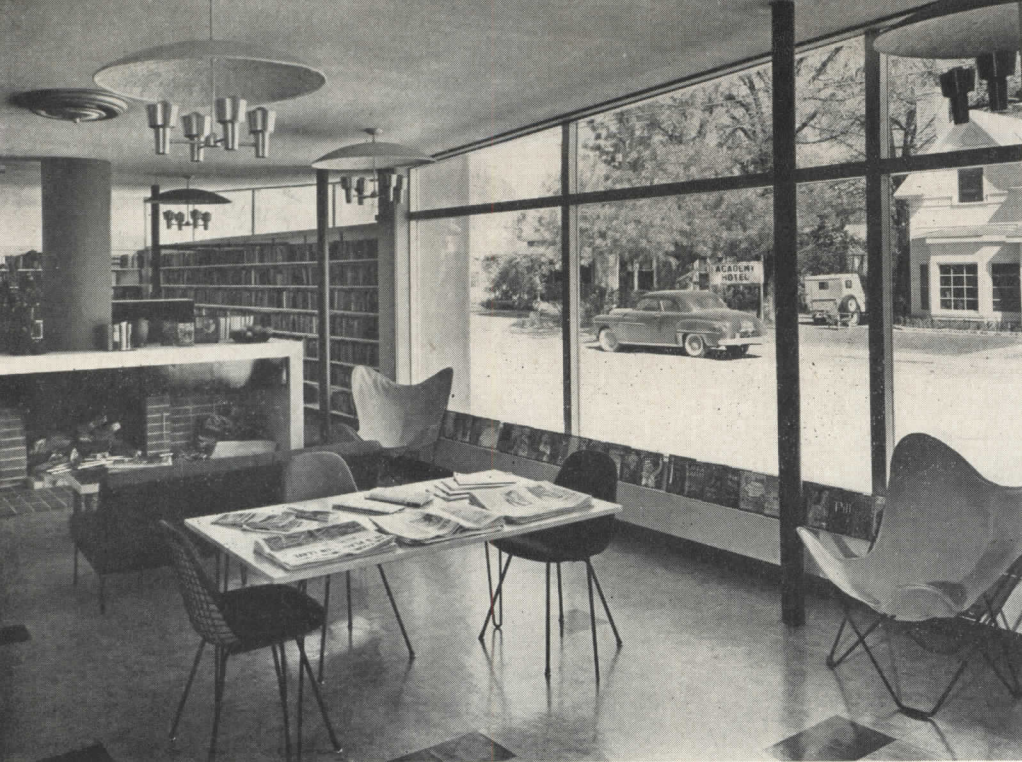
Douglas Bayliss, Landscape Architect

Joseph A. Schlapp, General Contractor

Court off children's room is for outdoor reading, story hours



IN THE 40 YEARS since Inyo County established its free library, Bishop had had no proper building for its branch. This new building was opened in 1953; since then circulation has increased 59 per cent in children's books, 30 per cent in adult books and magazines for Bishop, 17 per cent for the county. Part of the increase is due to the location of the building — within sight of the shopping district and the intersection of the town's two principal streets; two blocks from high and elementary schools, within walking distance of parking areas. An analytical survey by the architect of the town's land use pattern indicated that this location would serve, within a smaller radius, a larger number of potential readers than would the site originally selected. The architect's recom-



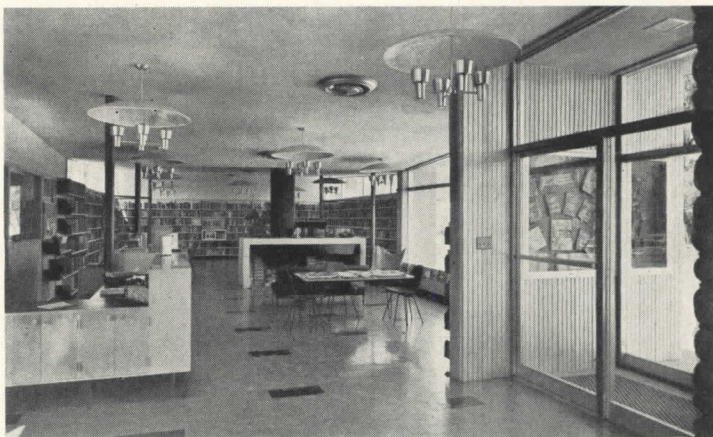
big window, fireplace, lounge chairs are essence of library's aim to avoid institutional look



Flexible displays for children's room

COUNTY OFFICES

Bishop, California

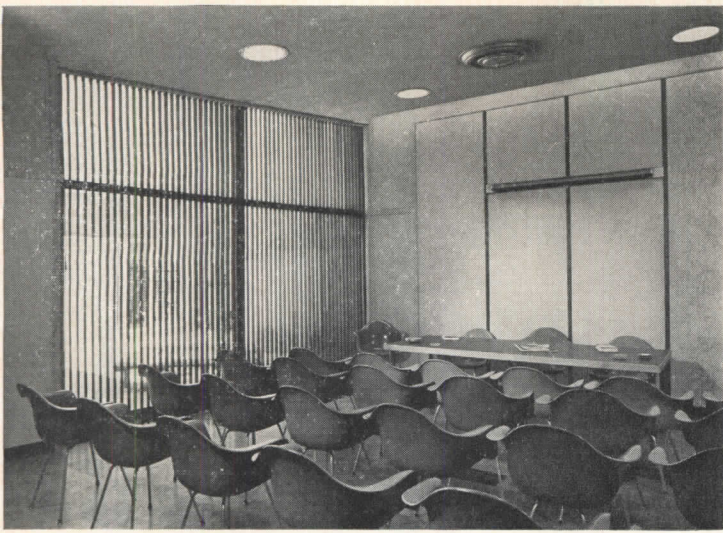


Furniture throughout is scaled to size of users and type of use. One librarian oversees adult and children's rooms. All books are on open shelves. Display cases, racks, are interchangeable with shelves. Center and bottom right: semi-circular browsing area and children's reading room



**INYO COUNTY
FREE BRANCH LIBRARY
AND COUNTY OFFICES**

Bishop, California



Community room (above, top) seats 40, is in constant use for meetings. Gallery (above) gives indoor access to county offices (at left, below) from library

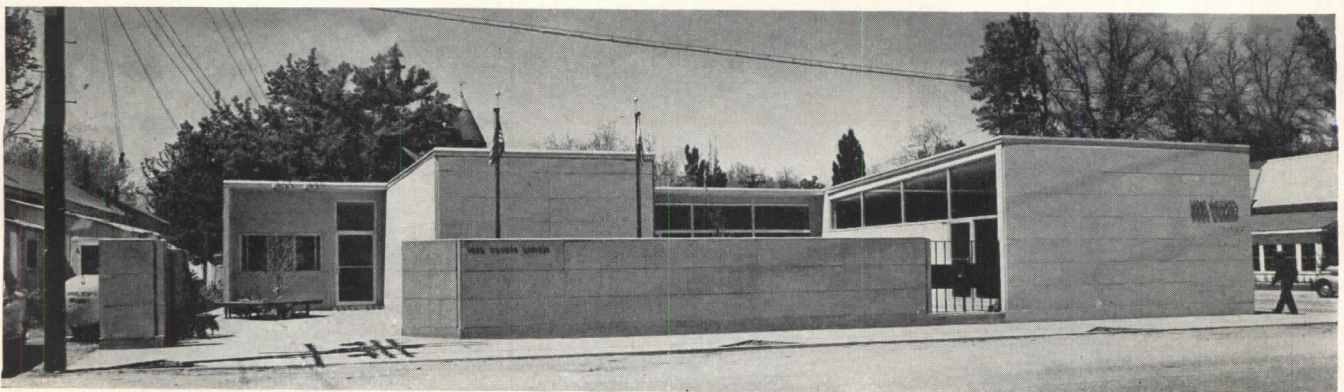
mentation was accepted without reservation by the board.

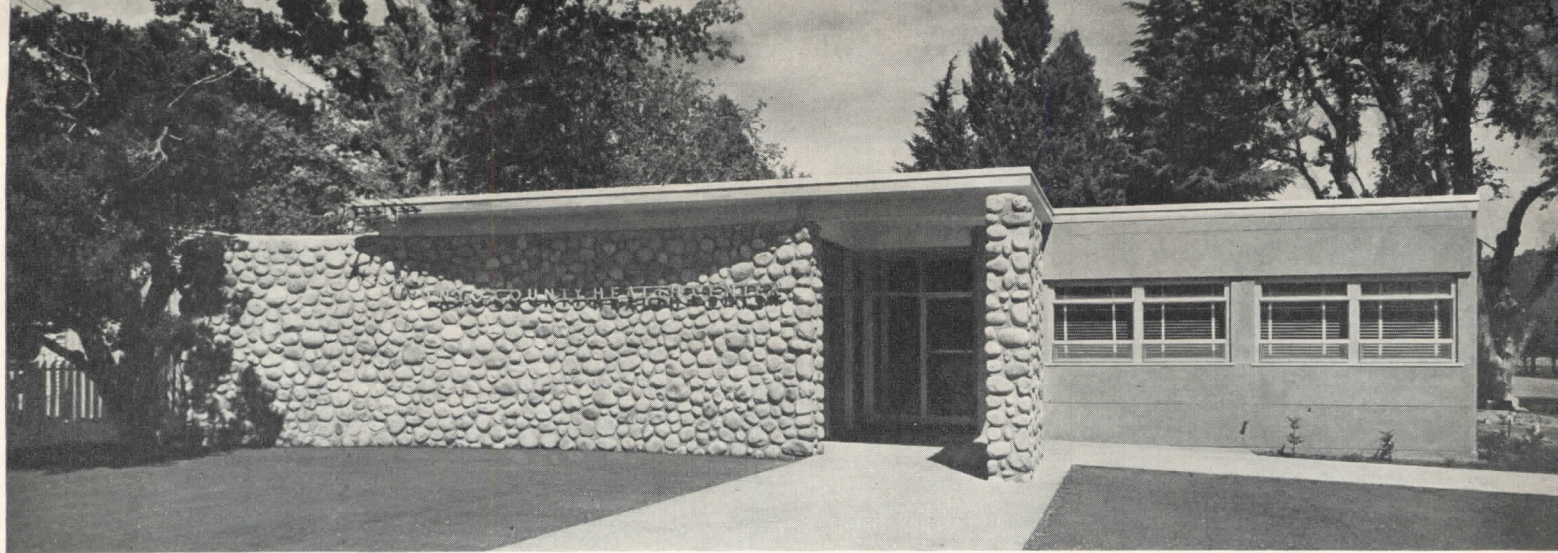
Undoubtedly, part of the increased circulation is due to better facilities, to use of display techniques to encourage book use and to storing of books on open shelves (there are no stacks). But, if comments by local patrons are indicative, the most important factor is the character of the building itself. One little boy, hugging a borrowed book, exclaimed to the librarian, "Oh, aren't books *good*"; a teen-ager explained her frequent visits to the building with the remark, "I love to come in here and look around. It makes me feel good"; and a former inveterate tavern haunter now frequents the library saying, "I like this place better than the tavern."

A subtle understanding of one of the less obvious social needs of small town life is the plan's recognition of the embarrassment which can come when everyone knows everyone else's business. A gallery connects the library with the county office wing of the building and permits applicants for county help to visit county offices after an ostensible visit to the library.

Materials used in both library and health center (p. 161) reflect local custom and usage as much as possible. The precast lightweight concrete wall panels, hung from a light steel frame horizontally (instead of vertically as in typical local construction), are manufactured in Bishop, and the river boulders which are so strong a feature of the buildings' design, come from the nearby Buttermilk country.

Cost, including site work, landscaping, fixtures (most of them architect-designed) and equipment was \$93,860, or \$19.60 per sq ft (\$17.10 per sq ft for the building alone).





INYO COUNTY HEALTH CENTER, *Independence, California*

Francis Joseph McCarthy, Architect

A. V. Saph, Jr., Structural Engineer

G. M. Simonson, Mechanical and Electrical Engineer

Douglas Bayliss, Landscape Architect

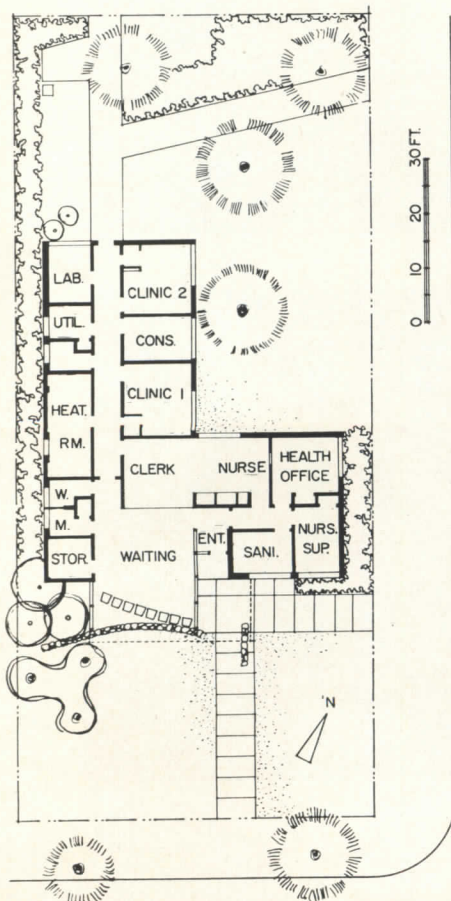
Joseph A. Schlapp, General Contractor

INYO COUNTY'S POPULATION is small (11,600) considering its size (10,000 sq mi) but its distances are great, and one health officer must cover the whole county. Although Bishop is the county's only incorporated town, the actual center of population is nearer to Independence, 46 miles south, where the county's Health Center is located. The main north-south highway, U.S. 395, runs through Independence and since there are no railroads in the county, this is an important factor in location.

The Center provides administrative offices for the county's health service which has since its beginning been closely allied with the school health program. The service consequently includes nursing service for the schools as well as for communicable diseases; physician service for school health, immunization and consultation programs; clinics; sanitation service; and laboratory work not privately done.

The same materials were used here as in the library — the concrete wall panels and river boulders not only demonstrate a new way of handling familiar materials but endeared the projects, contemporary design and all, to the county's residents. Built under the Hill-Burton Act, the Health Center cost \$56,273, including Group I equipment. The county's part in this was paid out of operating funds; it has no bonded indebtedness.

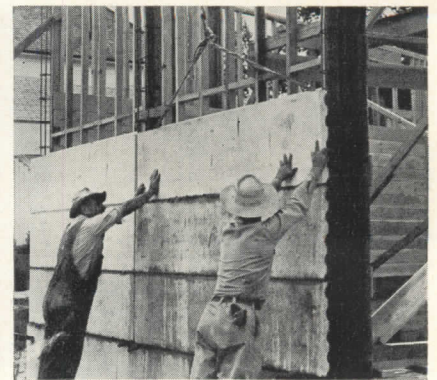
Like the library, this building is air conditioned — a necessity where the temperature ranges from -10 to 104 deg.



Local prototype for use of boulders



Concrete wall panels are made in Bishop

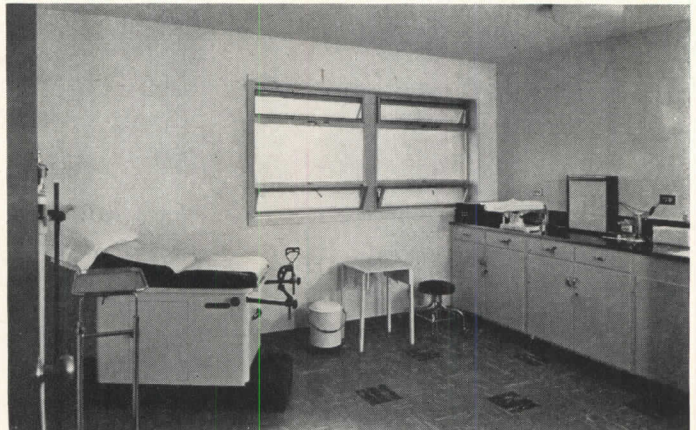


INYO COUNTY
HEALTH CENTER

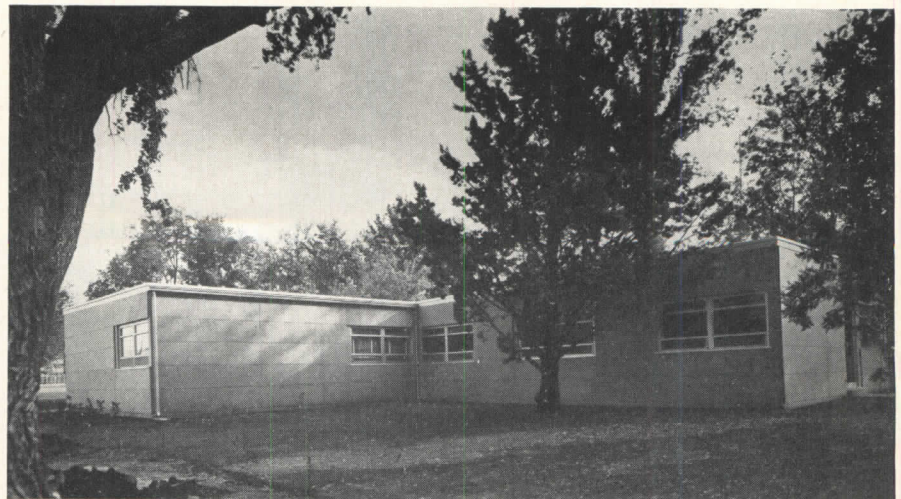
Independence, California



Waiting room (above) can be used for health lectures, staff meetings, etc. Clerk's desk (left, below) oversees entrance, waiting room, offices. Center includes two clinics (below is one) and consultation room



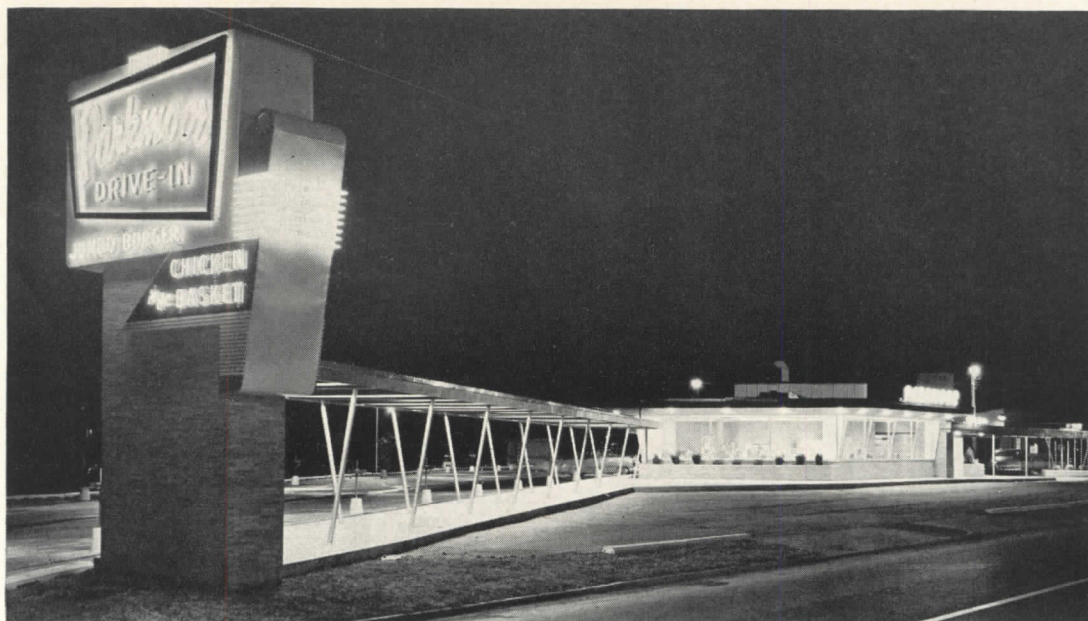
Rear of building shows effective use of local concrete panels, laid horizontally. Poor soil bearing quality required light steel frame and roof decking to reduce dead load on foundations



1 A BUSY URBAN INTERSECTION

*Parkmoor Drive-in,
Dayton, Ohio*

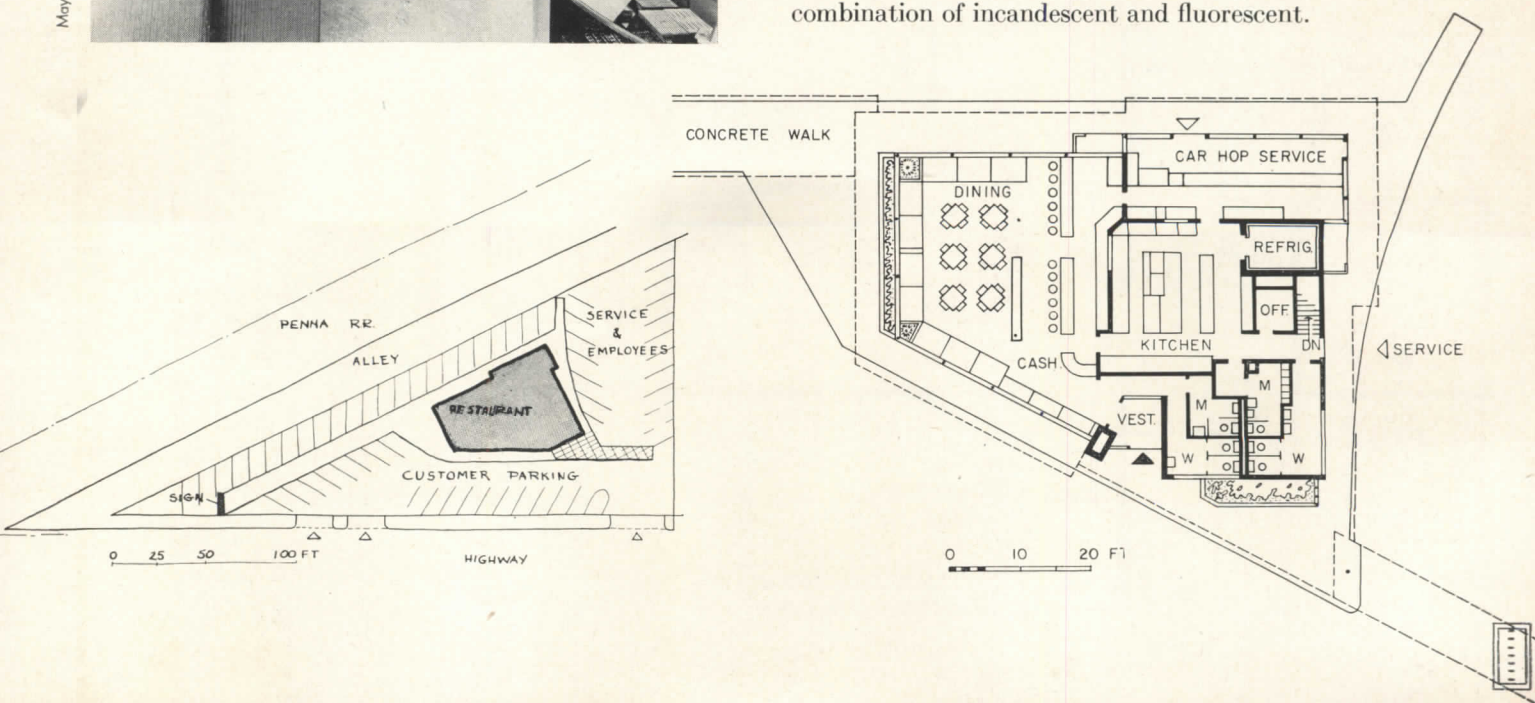
*Rollin L. Rosser,
Architect & Engineer*



Mayfield Photos

THIS AIR-CONDITIONED drive-in, located on one of Dayton's busiest thoroughfares, extends a beckoning finger to motorists by means of a covered, lighted walkway reaching out to a sign pylon near the road. Customers may park and be served by carhops after phoning in their orders via a Tel-e-tray system, or may stroll into the building and sit in a booth or at a counter.

The plot plan below shows how service deliveries and employee's cars have been carefully separated from customer parking. For the building itself, doors and sash are aluminum; floors are asphalt tile; ceiling is acoustic tile; lighting is a combination of incandescent and fluorescent.



2 SUPERHIGHWAY SITES

*New York State Thruway
Restaurants and Service Stations*

Eggers & Higgins, Consultants

Weiskopf & Pickworth, Structural Engineers

A. Carl Stelling, Site Planner

Jaros, Baum & Bolles, Mechanical Engineers

Smith & Silverman, Electrical Engineers

Howard Post, Food Service Consultant

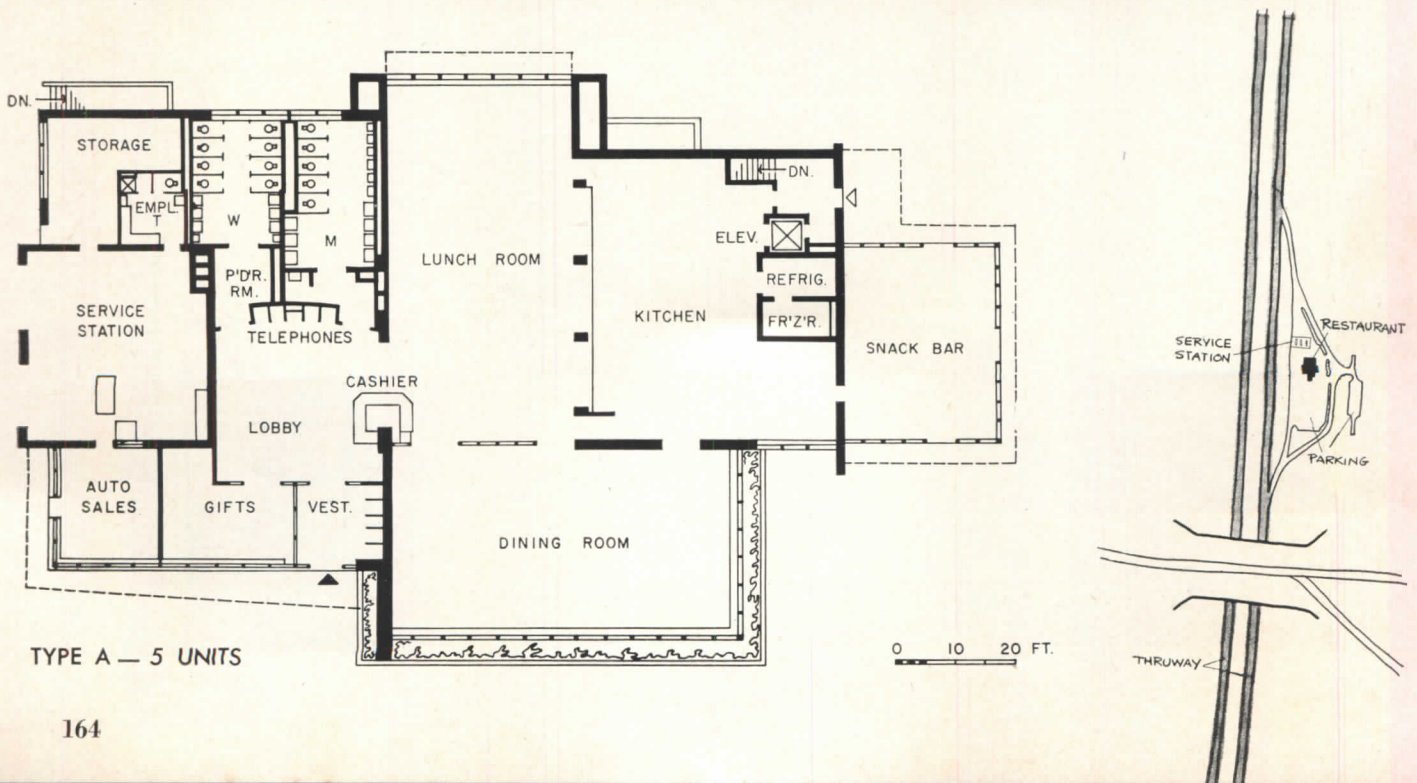
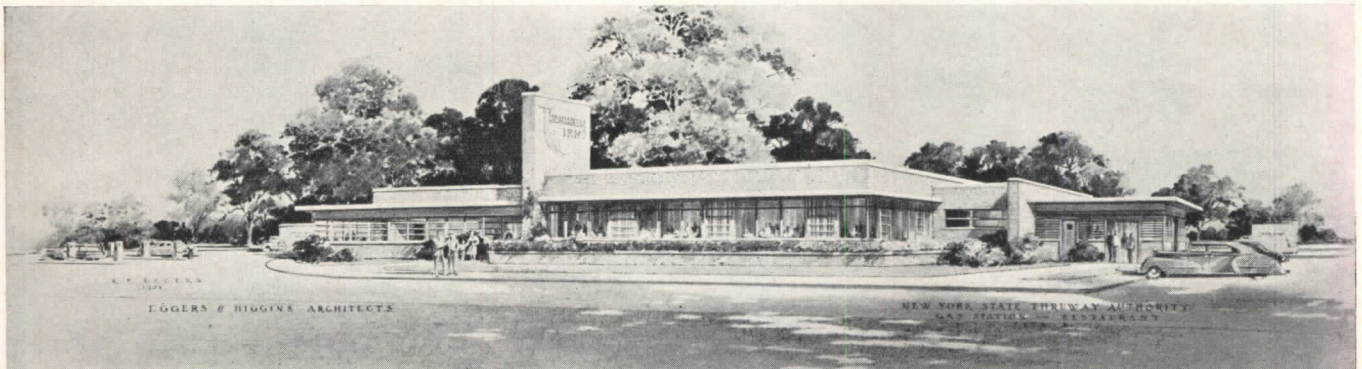
SEVENTEEN AND ONE-HALF MILLION MEALS a year will be served on the 427 mile Thruway from Buffalo to New York — that is the forecast. To build the necessary 27 buildings of 4 types, 20 million was budgeted, thus creating the largest restaurant construction program on record. The first unit will open in December.

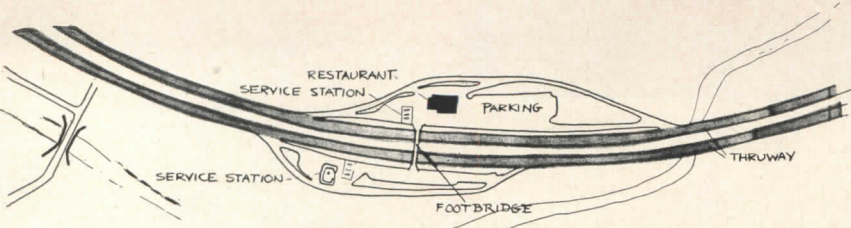
The buildings have been designed for 24-hour operation and their materials have been selected for minimum maintenance cost. The smaller "B" and "C" units are readily expandable into larger types, if needed.

Resolving the needs of the three operating concessionaires into a scheme satisfactory to all required only four meetings and concerned such items as conveyor systems, size of utensils, type of equipment, etc. Each operator

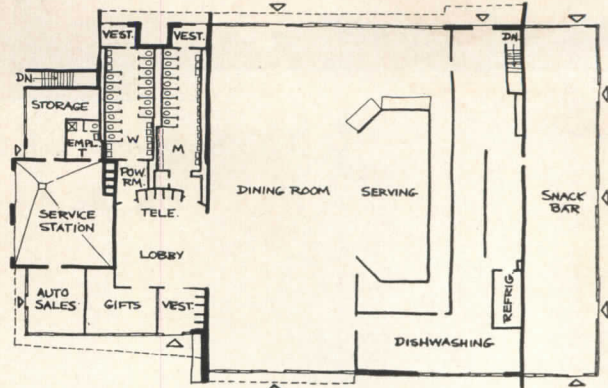
will be able to retain his commercial identity by controlling interior decoration.

After general location was determined, site selection involved many considerations, enumeration of which resembles a designer's checklist: an attractive locale to provide a pleasant environment; a site affording the oncoming motorist a long-range view to avoid surprise in driving; a supply of 100 gallons of drinkable water a minute; electric power; proximity of access roads to keep trucks off the Thruway; avoidance of locations too near swamps, quarries, industrial plants, etc.; nearness to a flowing stream to receive the treated sewage; ground configuration to provide a floor about 4 ft above the road without excessive cut and fill.

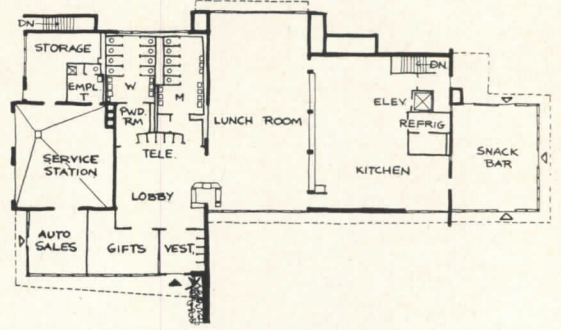
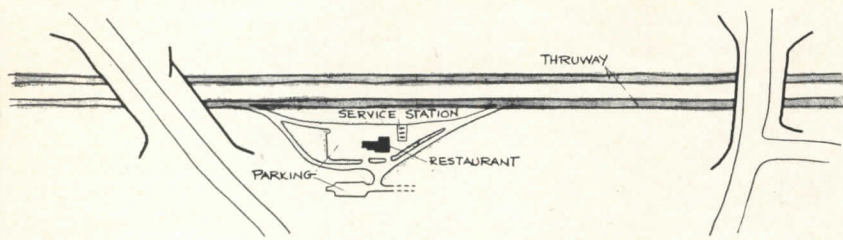




At two locations a footbridge will be constructed to connect an "A" unit to a gas station across the road so that the restaurant can thus safely serve motorists traveling in both directions

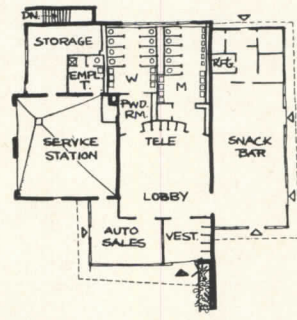
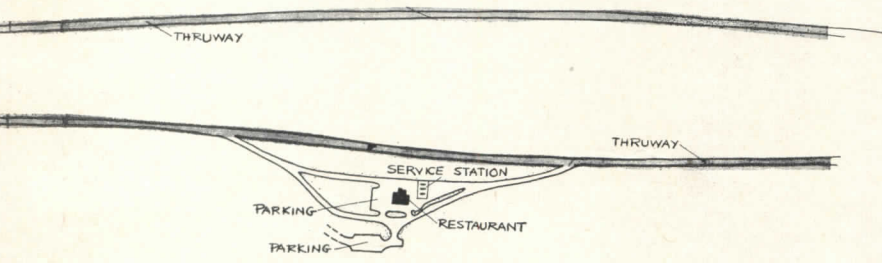


TYPE SUPER A — 2 UNITS

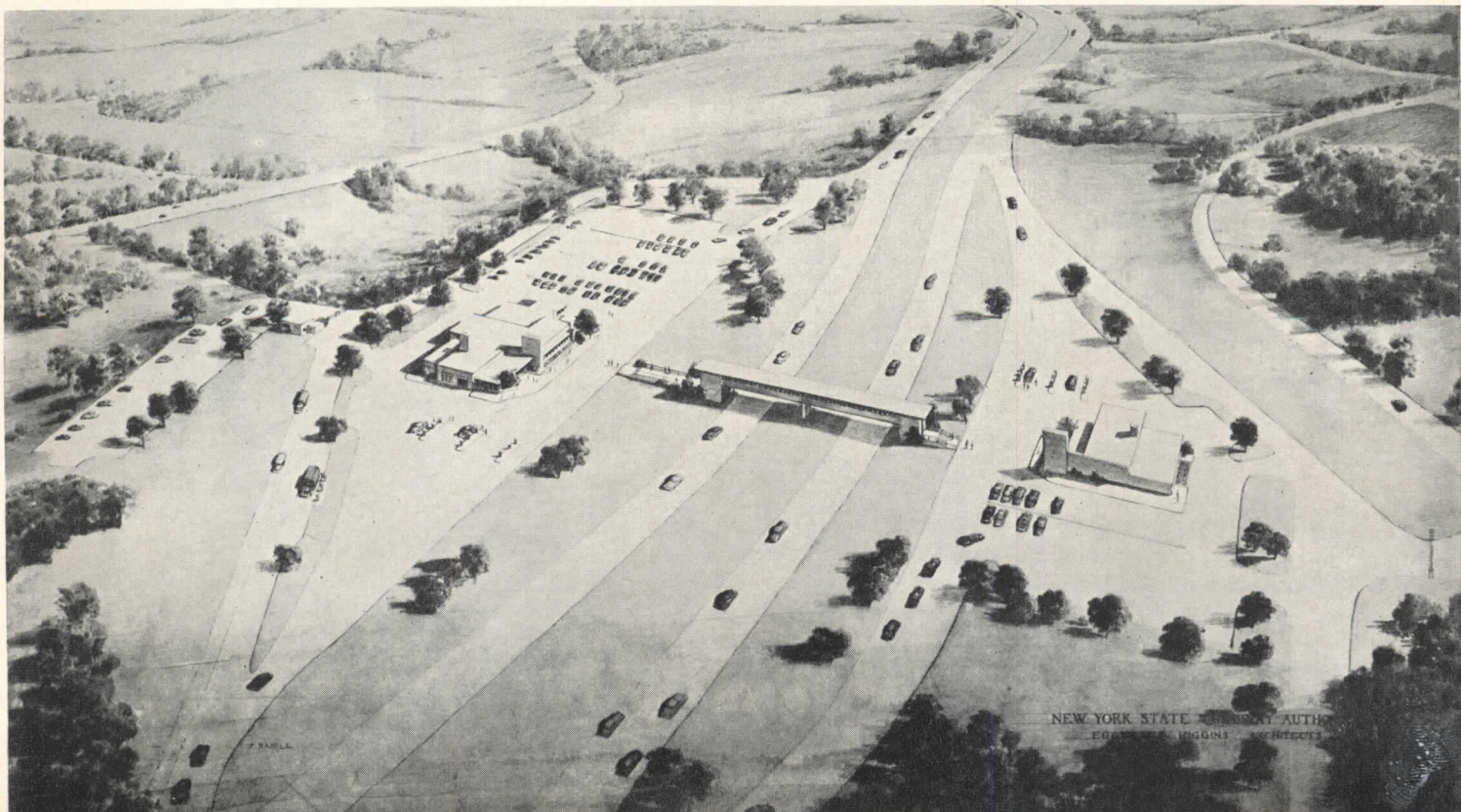


TYPE B — 11 UNITS

Plans for "B" and "C" units reveal how these types can be expanded to become similar to the "A" type. Toilets and auto service are similar in all units



TYPE C — 7 UNITS



3 IN A SEMI-RURAL MOTEL

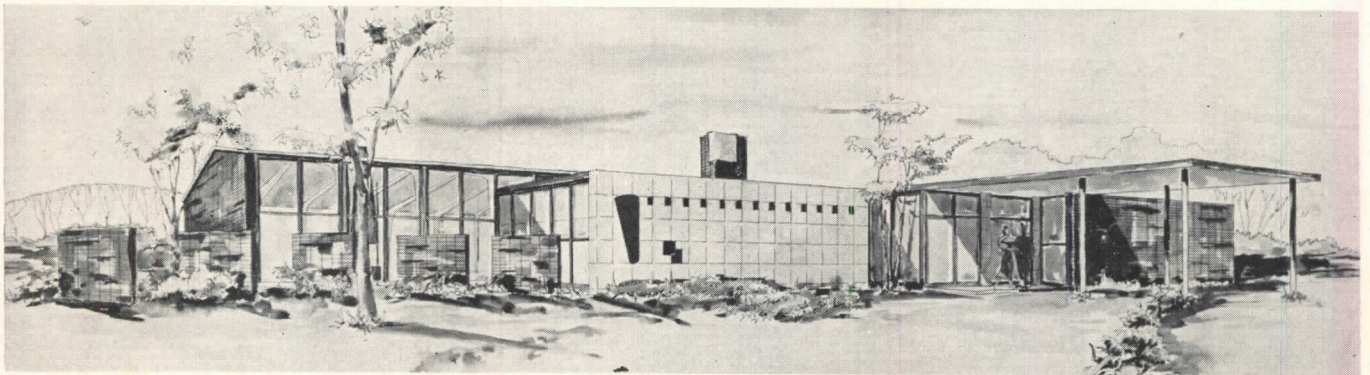
*Proposed Restaurant and Motel,
Toledo, Ohio*

*Ralph W. Zimmerman, Architect
Paul T. Bailey, Builder and Owner*

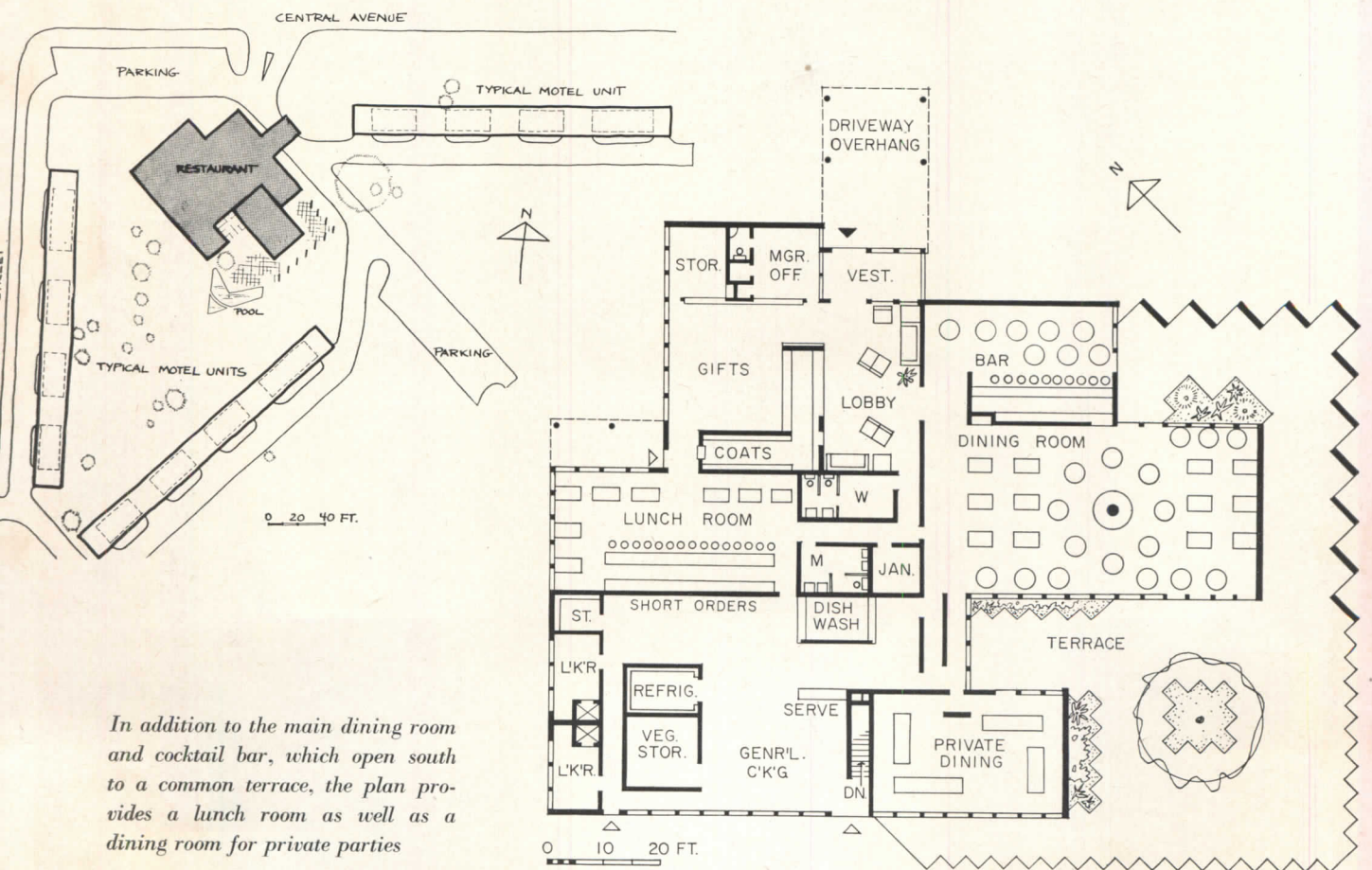
LOCATED on a 12-acre wooded roadside site about five miles west of Toledo on the highway to Chicago, this restaurant will be part of a projected motel group of better than average design. The project will eventually be extended to the south by adding more motel units and a swimming pool. The restaurant proper is calcu-

lated to attract a volume of both tourist and local trade in addition to the overnight guests of the motel.

Preliminary plans contemplate a group of wooden post-and-beam structures with exteriors of brick and natural wood, double-glazed fixed sash, and interior finishes of painted plaster, brick and wood.



Rendering by Robert Sullan



In addition to the main dining room and cocktail bar, which open south to a common terrace, the plan provides a lunch room as well as a dining room for private parties

4 EYE-CATCHER FOR NARROW FRONTAGE

Russell Forester, Designer

*John S. M. Daniels,
Structural Engineer*

A. Schrieber, Jr., Builder

*Western Pioneer Sales,
Kitchen Equipment*

*Oscar's Drive-in,
San Diego, Calif.*

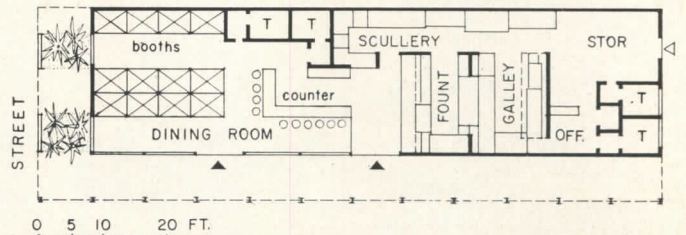
THE OWNER didn't care for the design of this drive-in when it was first presented to him, but changed his mind when business flourished. A second building of the same design — to replace an existing establishment — increased sales there by 40 per cent.

Gay colors catch the eye and help to offset the disadvantage of a rather narrow frontage. The regular steel frame is painted white, while the vertical pressed wood

panels facing the street are bright red. Inside, the color combination includes aquamarine, pink and black. The ceiling is acoustical plaster, the floor is terrazzo, the partitions plaster, and the lighting is a combination of flush fluorescent troffers and incandescent downlights.

The disproportionately large plan area devoted to the kitchen and service areas is due to the large percentage of business that comes from parked cars.

For economical construction, the plan elements have been organized within the 4 ft. module of the structural steel frame. Carhops' access is at center of plan where fountain and scullery are located



5 FOR "QUICKIES" OR THE CARRIAGE TRADE

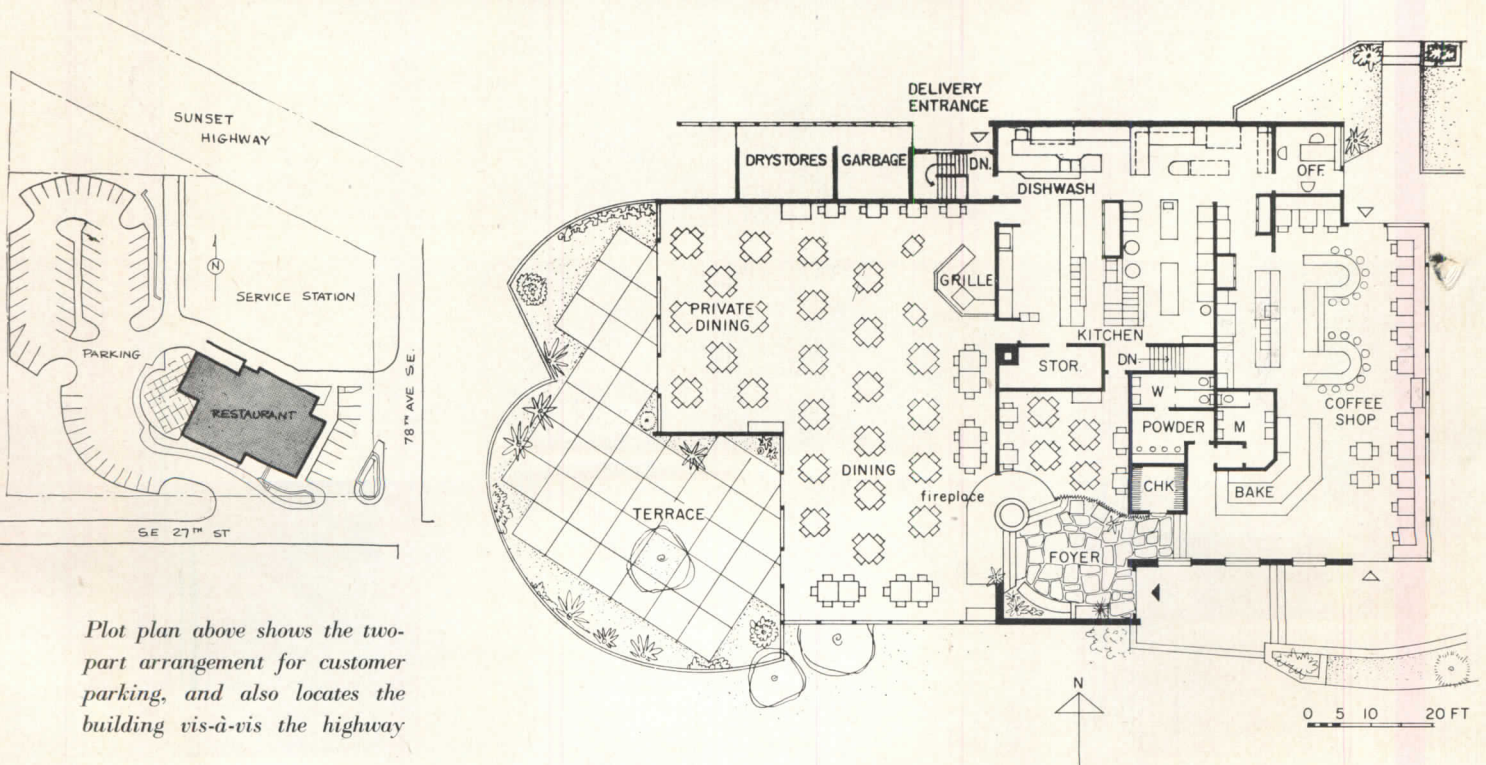
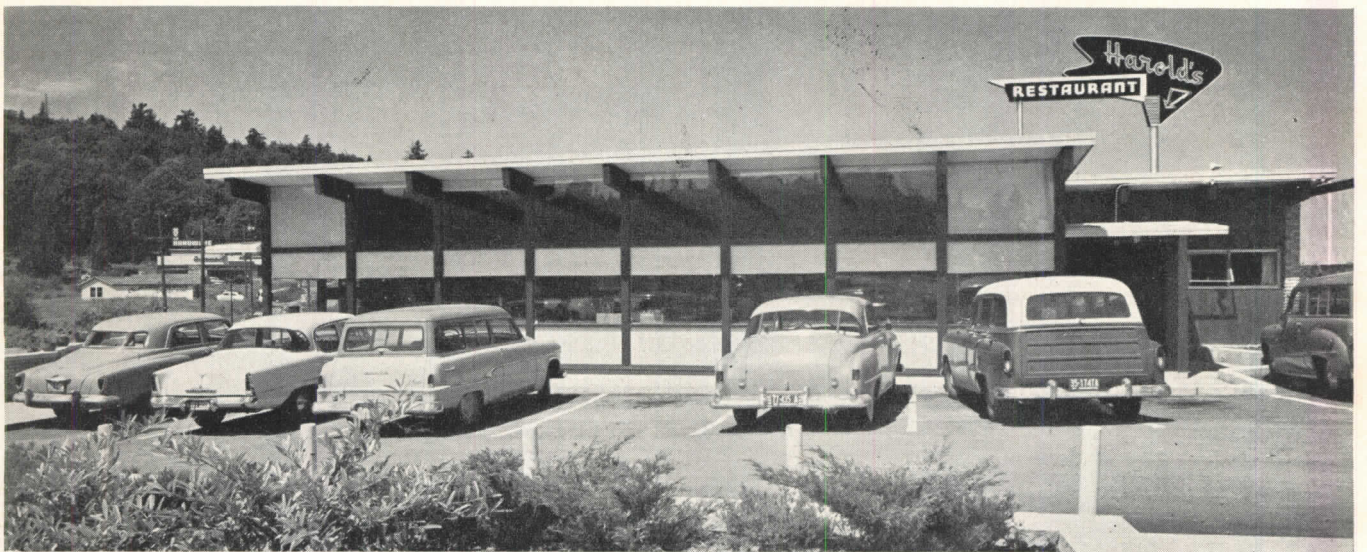
*Harold's on Mercer Island,
Seattle, Wash.*

FEATURING innovations in dining not formerly available in Seattle and catering to the carriage and expense account trade, this restaurant also shrewdly eyes nearby Sunset Highway and provides a coffee shop for the faster moving tourist potential. The two-part plan extends out into the parking area, likewise dual. The highway trade has proved profitable enough that the

retail pastry counter shown in the plan has recently been converted into more coffee shop seating space.

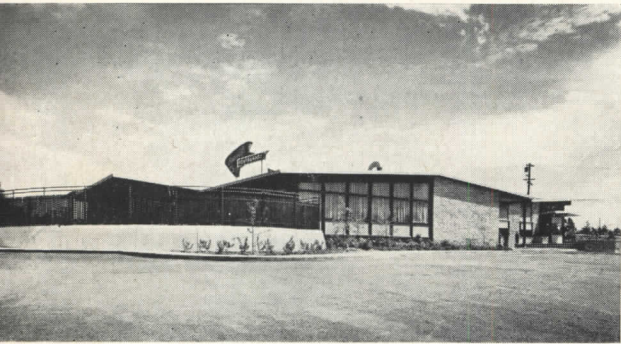
Architecturally, the design follows the Northwest tradition, using materials and methods indigenous to the region. The regularly spaced beams are stained very dark with ceilings and walls of natural boards — cedar or fir. Certain interior walls are brick.

Charles R. Pearson

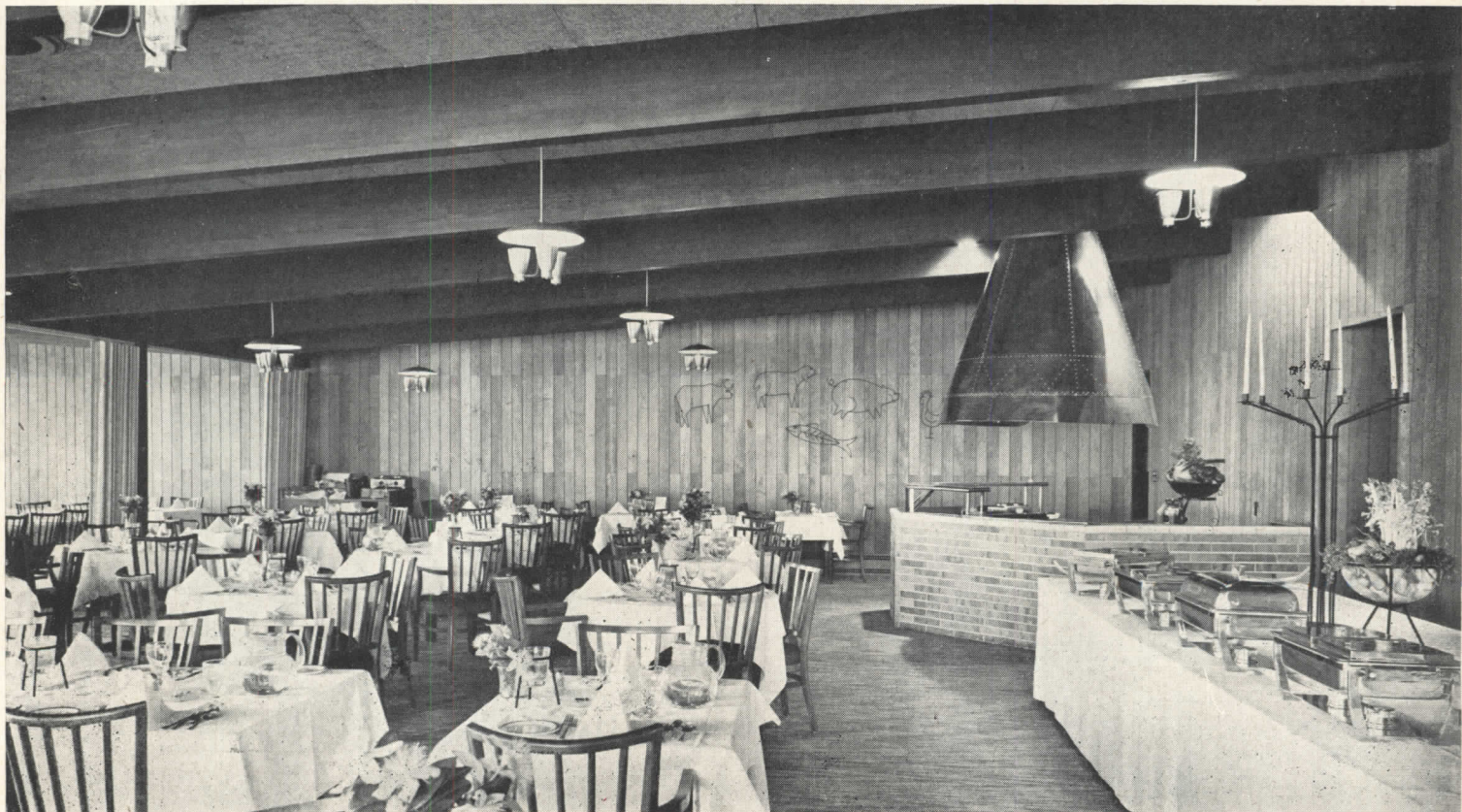


Plot plan above shows the two-part arrangement for customer parking, and also locates the building vis-à-vis the highway

Decker & Christenson, Architects
C. W. May, Mechanical Engineer
B. A. Travis, Electrical Engineer
Cash Beardsley, Landscape Architect
Fenton & May Co., Builders
John Byers, Equipment Consultant



Interior features include the open fireplace with polished copper hood and chain link screen, top, and the open charcoal grille, similarly hooded, bottom. The incandescent fixtures are of special design



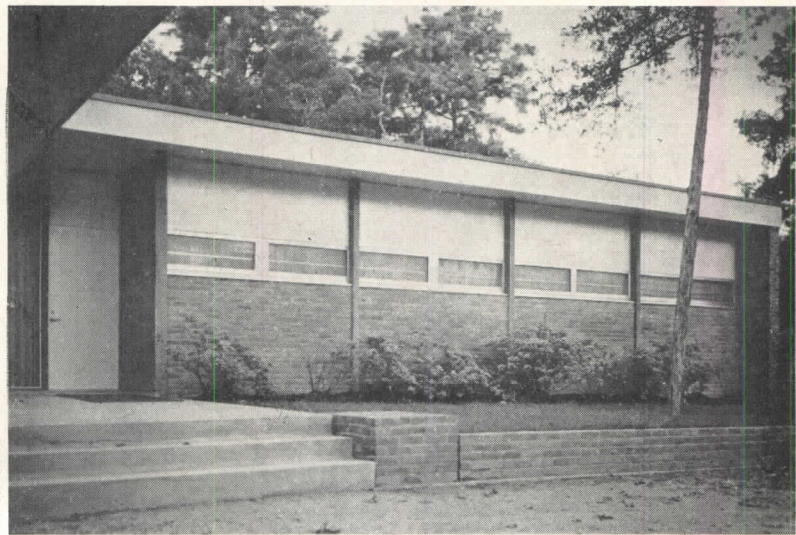
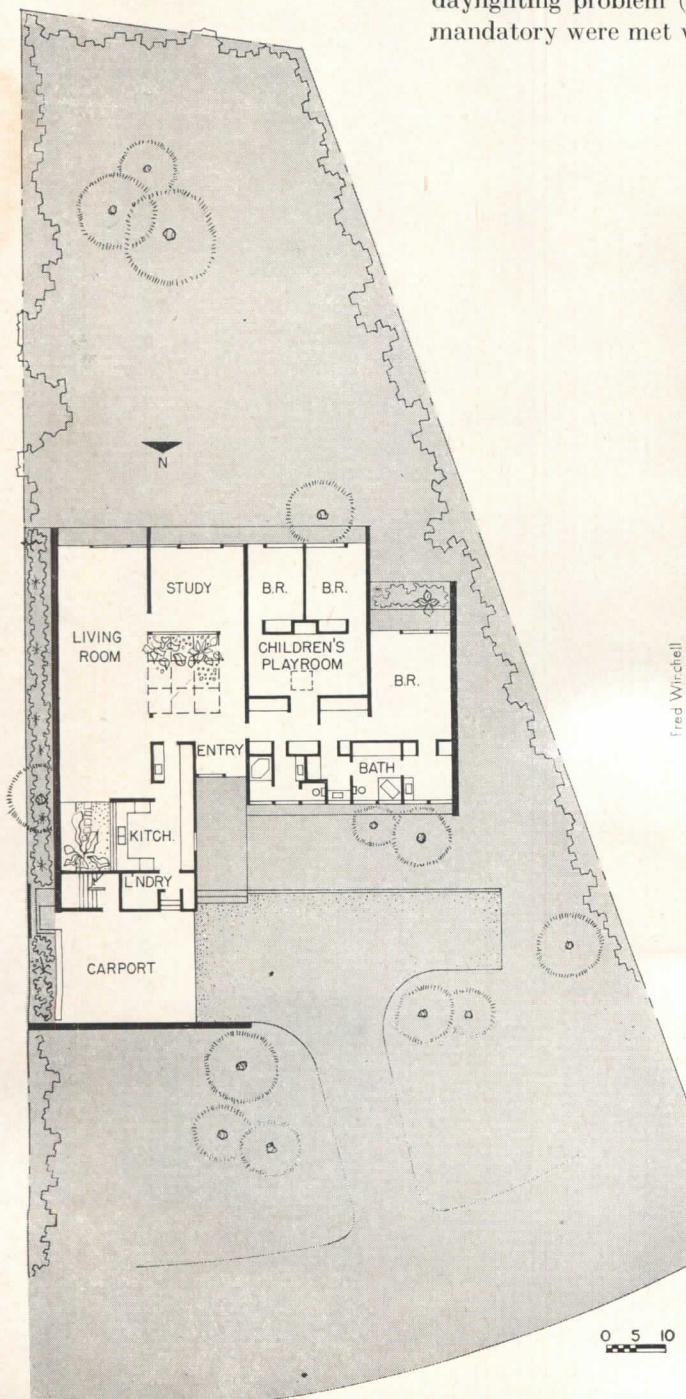
HOUSES ON DIFFICULT SITES

AN ALMOST-TRIANGULAR LOT, WIDE END TO STREET

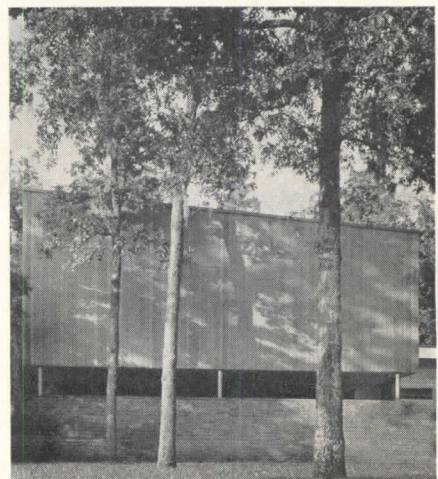
*House for Mr. and Mrs. M. G. Rosenthal, Houston, Texas
Bolton and Barnstone, Architects*

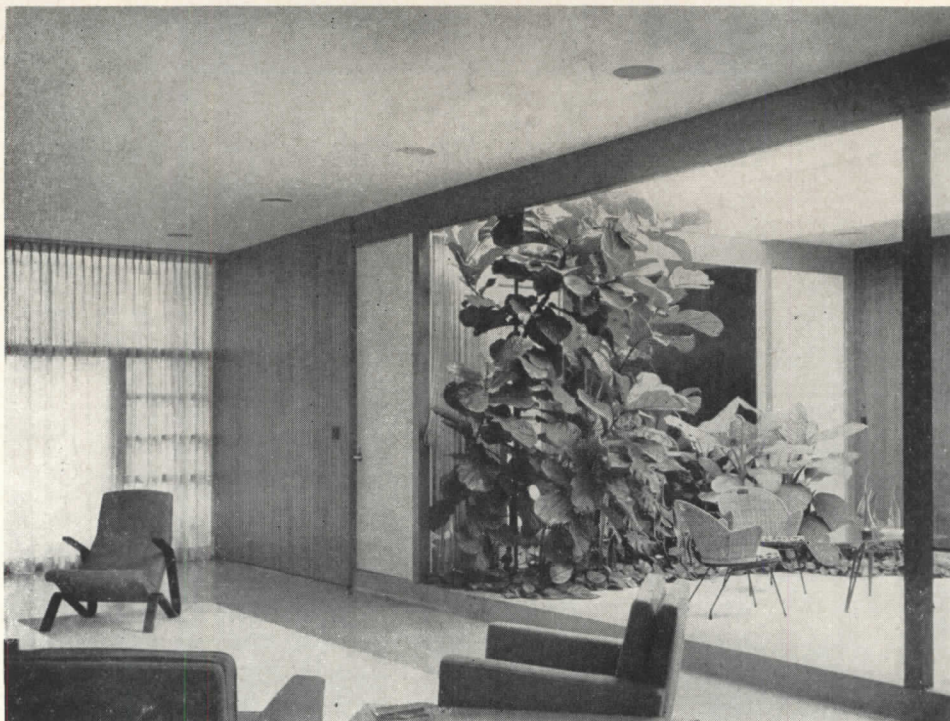
THE SHAPE AND SIZE OF THE LOT were the governing factors in the planning of this Texas house: there was not overmuch room for a house of 4600 sq ft even without the complication of a large two-story structure on each side of the property. The solution was a plan straddling the lot and extending to the allowable building lines on front and sides. Since this put the house within 10 ft of each of its flanking neighbors, a new problem — privacy — was introduced. This one was solved by turning the house in on itself, with almost no windows on three sides — adding a daylighting problem (see opposite page). Deed restrictions making a second floor mandatory were met with servants' quarters over the carport.

Privacy problem was solved by holding front and side window areas to minimum

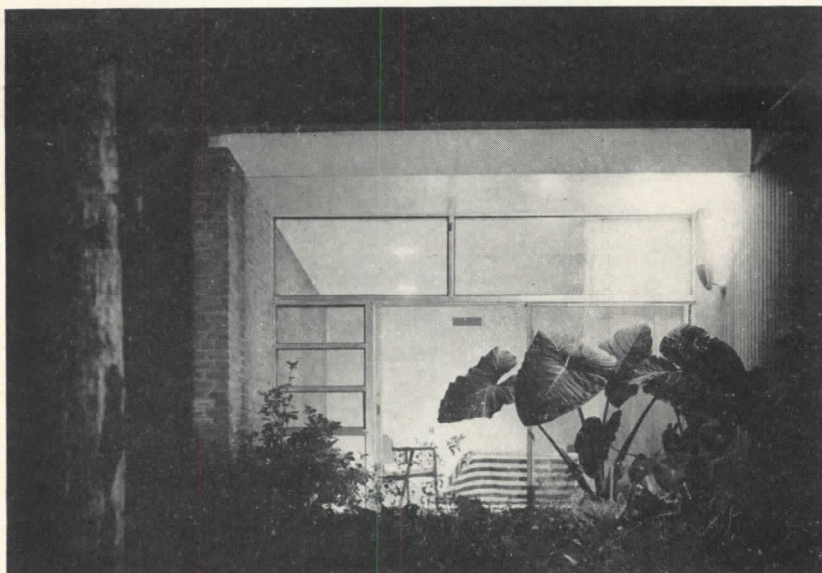
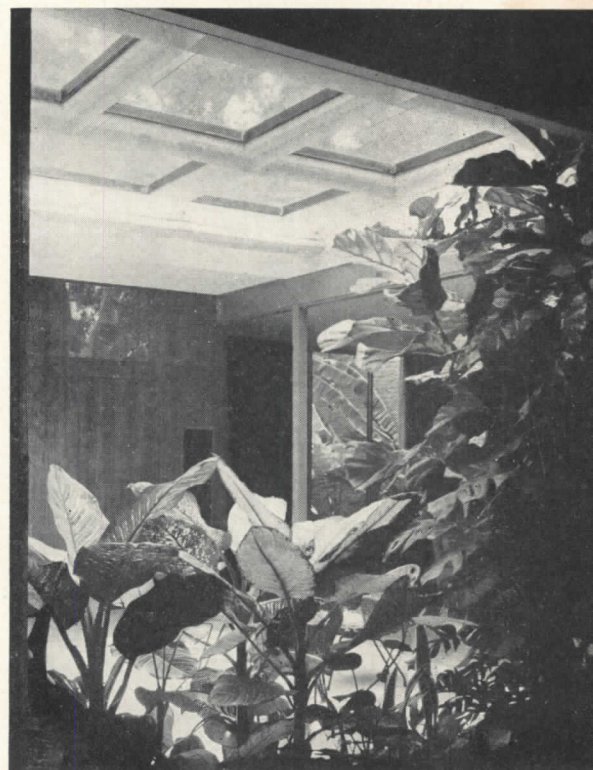
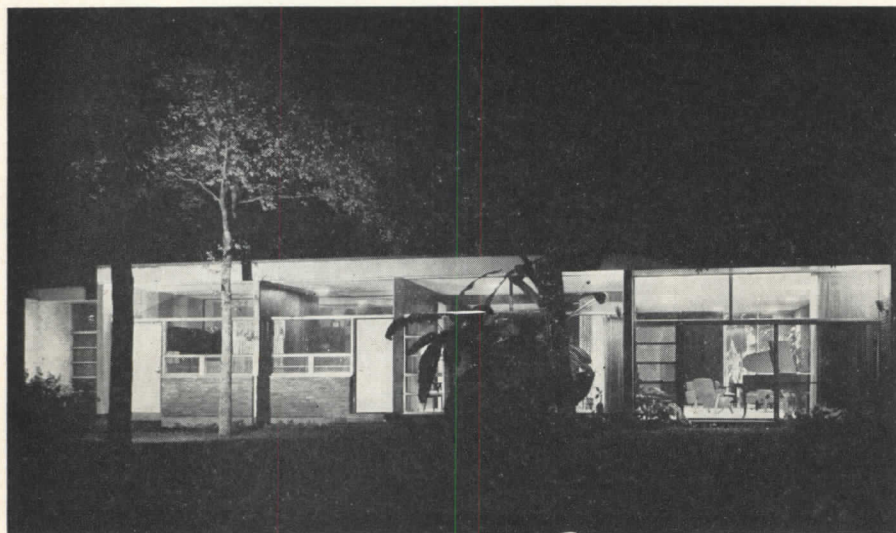


Fred Wirtzell





Since rear of lot is well protected from neighbors, rooms on this side are wide open



Daylighting of almost-windowless peripheral rooms was accomplished by use of skylights over interior garden (above) and children's playroom, and by light well in corner forming dining area and kitchen. Flat roof deck caused build-up of heat between joists, so air conditioning system was augmented by low-cost roof sprinkler, automatically thermostated

A SUBURBAN LOT WITH PRIVACY AT A PREMIUM

House for Mr. and Mrs. Arthur M. Gordon, Chicago, Ill.

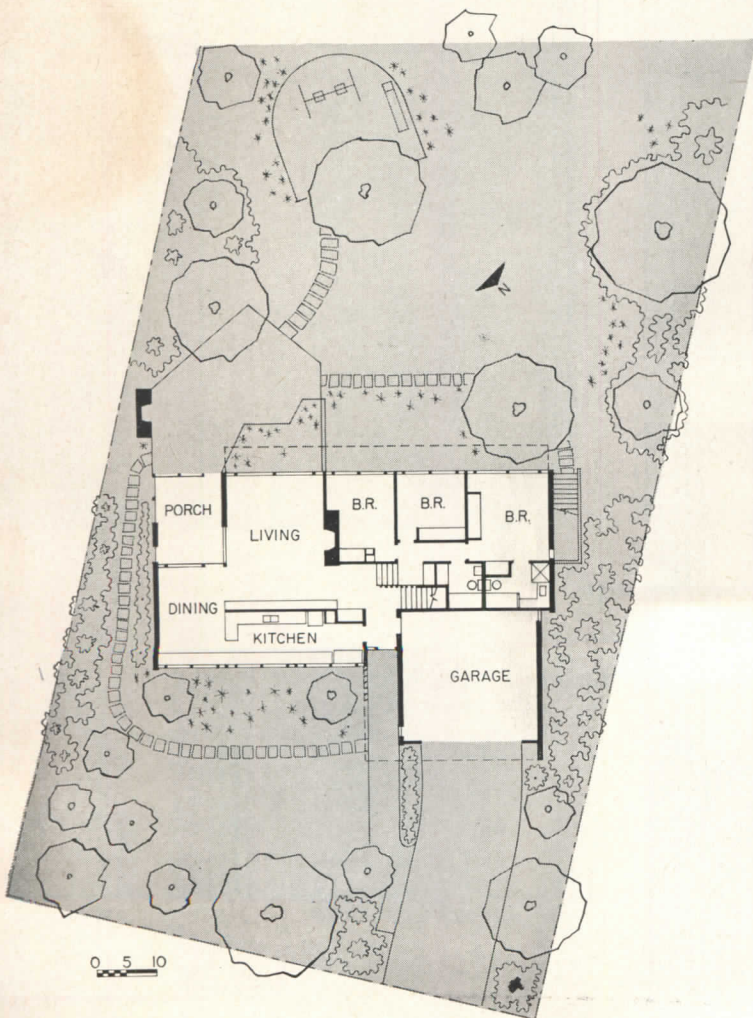
George Fred and William Keck, Architects

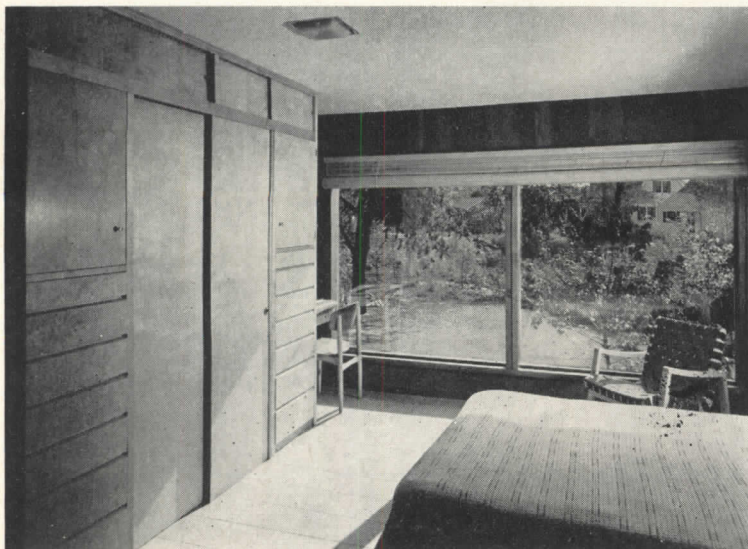
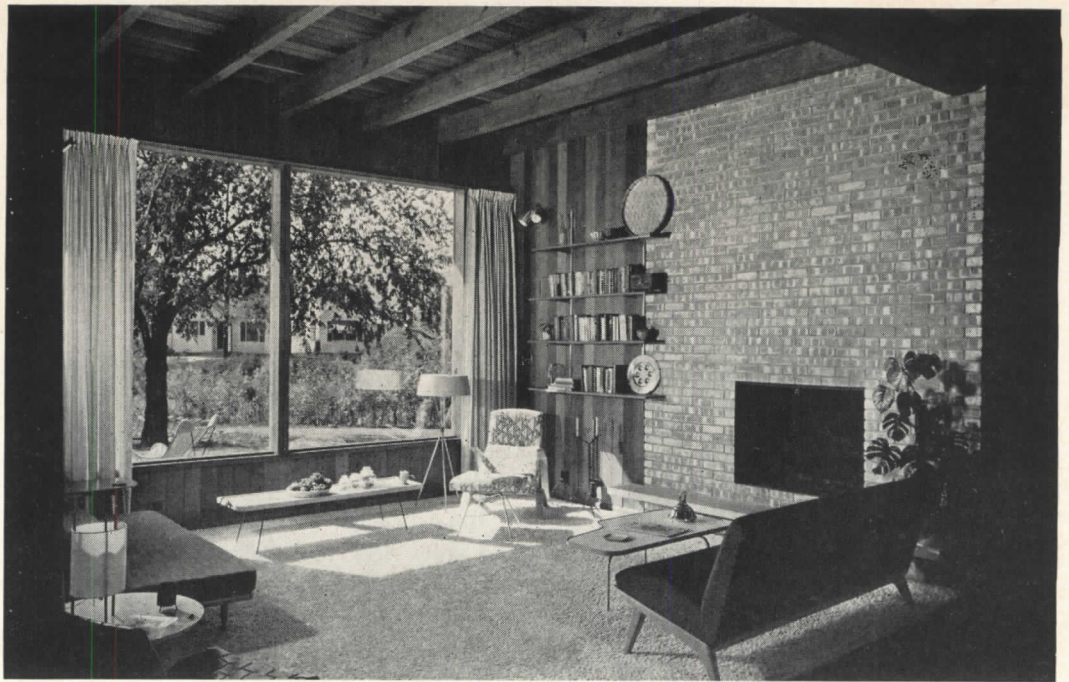
A SLIGHTLY-SLOPING SUBURBAN LOT some 30 miles from the center of Chicago was given the feeling of a country estate by the three-level plan of this compact house. Only the main entrance and the services are on the street side of the property; the house proper looks out on the large lawn and garden area at the rear. The three-level plan was devised to fit the site, and the roof-line was studied to combine spaciousness with intimacy. Master bedrooms are a few steps above the living room, but have the same roof plane; this provides an 8-ft ceiling in bedrooms and an 11-ft ceiling in the living room. Below the bedrooms is a large recreation room, one end of which can be closed off by a folding door to form a guest room; on that level there is also a bath and a utility room.

House turns its back to street, concentrates on garden area at rear. Slight slope of site permitted three-level plan with greatly increased privacy



Hedrich-Blessing





Most rooms in house, including bedrooms, face country-like lawn area at rear of property. View from recreation and guest rooms on lowest level is particularly non-suburban: outlook is over eye-level planting toward a receding lawn. Structural note: where brick is used, it is used on both interior and exterior with insulation in hollow core; such walls are laid 10 in. thick, with layers of brick separated and expressed as hollow wall at ends

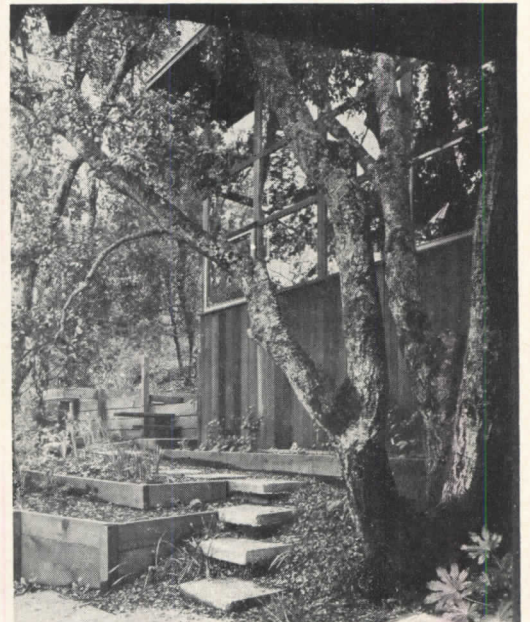
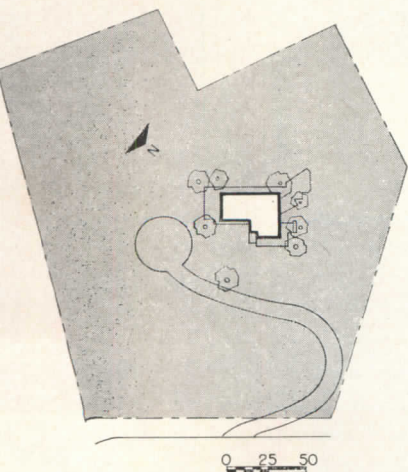
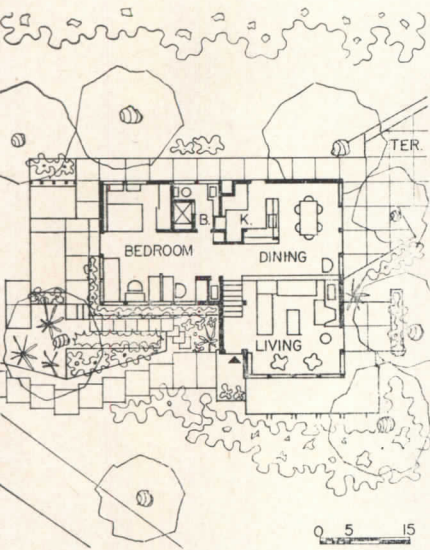
A STEEP, ALMOST INACCESSIBLE WOODED SITE

House for Mr. and Mrs. H. R. Petersen, Orinda, Calif.

Kolbeck & Petersen, Architects

THE DENSELY WOODED LOT ON which this house is located is so steep that construction materials had to be hauled up to the building site in a small pickup truck — larger trucks could not negotiate the unavoidably sharp curve in the driveway. The property is a north slope of an acre and a quarter, at the end of a dead-end street; deep ravines form its side boundaries. Privacy was no problem with the house placed as it was, well up the slope, but a split-level plan was mandatory. This worked out well, however: since the house is small (1000 sq ft), all partitions, except around the bathroom, were omitted to create a feeling of spaciousness and the enforced change in level was used to separate the various areas.

Site is so heavily wooded that photographer could not get overall view of house. Trees — live oaks primarily — grow out of an



impenetrable mass of poison oak which owners let stay because of "beautiful fall coloring" which, they admit, their "allergic friends" do not appreciate. Main entrance (above left) is on lower level, connected by paved walk with turn-around at end of driveway. Dining area opens (above right) to small rear terrace a few steps below



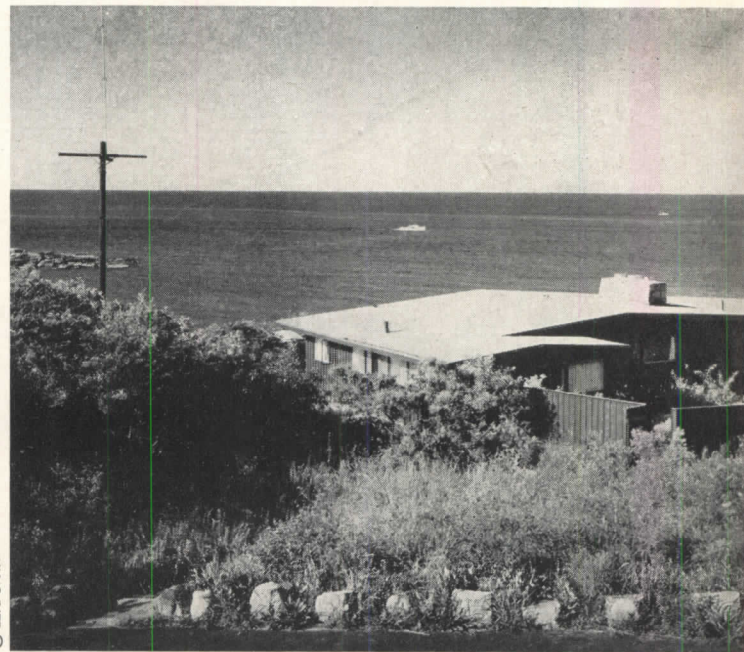
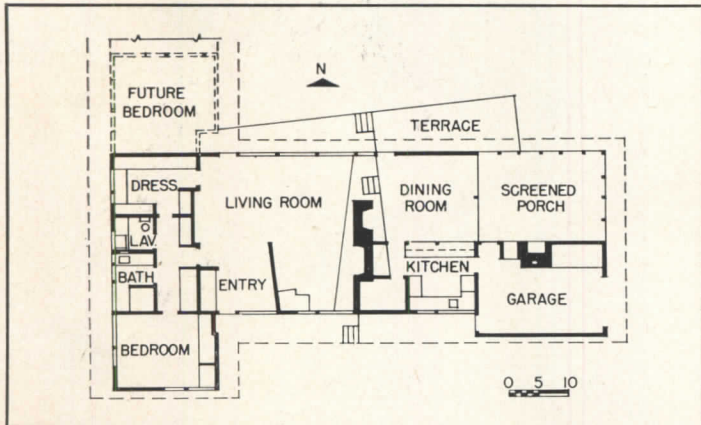
One leg of gable roof over kitchen-dining area slopes on down over living room to give feeling of snugness and to direct eyes toward valley view. Other gable leg continues up to form a shed over bathroom, bed alcove and hobby area, extending view from bed alcove and giving excellent light to hobby area. Skylight over breakfast bar brings daylight to center of house

A SEASIDE CLIFF WITH VIEW ON WRONG SIDE

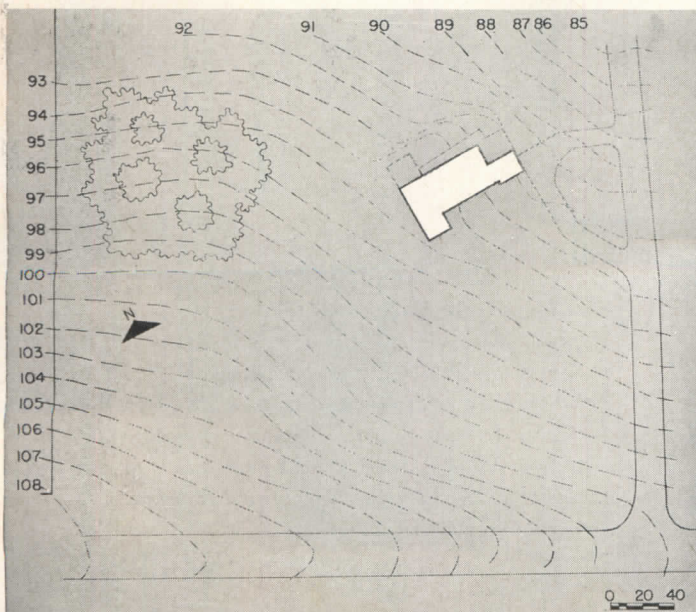
House for Mr. and Mrs. Louis H. D. McLeod, Rockport, Mass.

Carl Koch & Associates, Architects; Margaret M. Ross, Associate

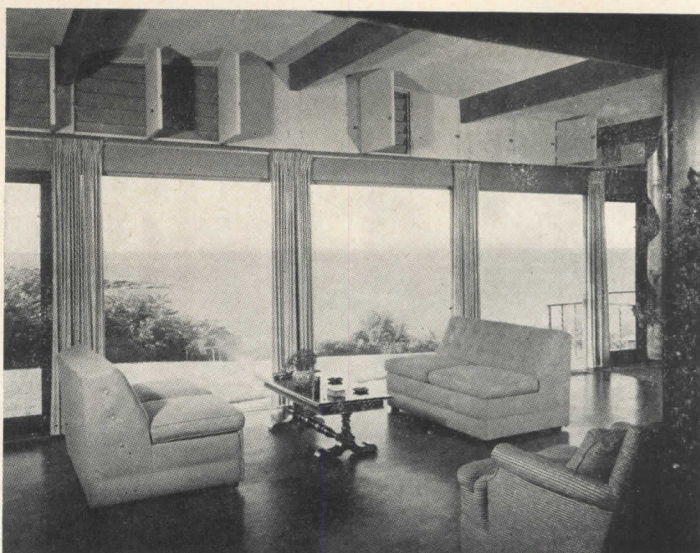
A VIEW TO THE NORTH was the most important feature of this large site on the rocky shores of Cape Ann, creating an orientation problem which had to be faced. The owners originally planned the house for summer use only, but before working drawings had been made decided to make it their year-round home base, which added the problem of "winterizing"; they also demanded a huge living room facing the view. The use of insulating glass along the entire north side took care of the orientation difficulties; an alcove on the south side of the living room was introduced to humanize the scale in that room and to admit necessary sunlight. Plans call for the addition of a new master bedroom on the ocean side.



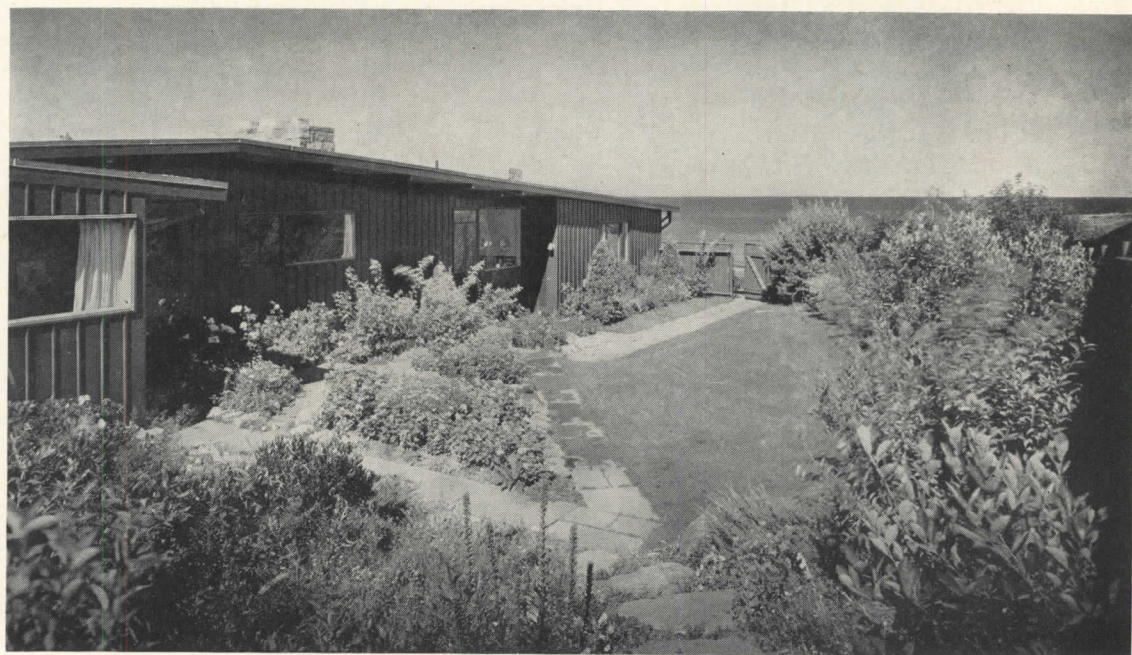
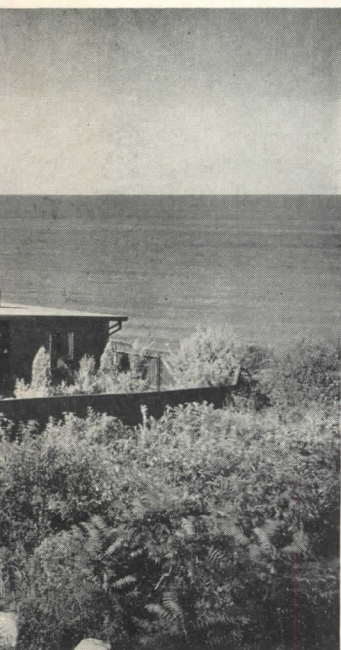
© Ezra Stoller



Site is typical of Cape Ann, sloping down from street to rocky ocean shore on north. View over bay is framed by government reserve on one side and house-filled small point on other. House is much lower than main road, but still is many feet above shoreline; when projected new master bedroom is added, it will share the ocean view



Living room alcove provides seating space around fire-place without detracting from main view over bay to the north. Fenced-in garden, typical of Cape Cod and other parts of New England, surrounds main entrance (below)



From road (opposite page), house seems to be on edge of beach; actually, however, a wide lawn and a fairly steep slope intervene. Shore side of house is mostly glass



HOW DO STUDENTS BECOME ARCHITECTS?

This is the last of three reports on problems of architectural education today based on a survey of leading educators and practitioners

as summarized by

John Knox Shear

*Head, Department of Architecture, College of Fine Arts
Carnegie Institute of Technology*

MANY OF THE STUDENTS in our schools of architecture today tend to copy dominant contemporary "styles." Most of their teachers believe that this tendency to imitate is natural and necessary. All of the teachers who responded to an ARCHITECTURAL RECORD questionnaire indicated strong convictions on the subject even though some of them were disturbed or confused about this magazine's use of the word "copy." Harold Bush Brown of Georgia Tech wrote: "I wish someone would think up substitutes for the one word 'copy' with its various shades of meaning and connotation. I am tired of seeing this word used to describe anything and everything from an accurate reproduction to something which has a faint odor of familiarity." Other replies expressed the same concern. The RECORD had used the word because Professor Shlomo Sha'ag used it several times in the report on his visit to American Architectural schools. That report had prompted the mailing of this and six other questions to educators and practitioners across the country. The question, number five, was stated in this way:

"Is a student tendency to 'copy' dominant contemporary 'styles' a serious problem and, if so, how do you cope with it?"

Fred Lasserre, who copes with problems at the University of British Columbia, seems untroubled by this one: "There is no real problem here in connection with students copying dominant contemporary styles. We have sufficient variety of opinions in members of the staff to encourage the student to make up his own mind. We do not feel that it is to be considered a problem if a student, during the course of his studies, produces buildings à la Wright, Mies, Corbu, etc. On the contrary we feel that this will be a valuable educational experience for him." Walter Gropius, whose work has inspired students and fellow architects for nearly a half century, says: "It is natural that a student often subconsciously tries to copy what he has seen either of former periods or of the work of his teacher. As long as the teacher determinedly points that out to the student, he will gradually try to eliminate what is not his own. At least it will keep him from unfounded vanity. The student's gradually developed attitude will

depend very much on the approach of the teacher towards this problem."

The role of the teacher was stressed by many of the correspondents. Pietro Belluschi of M.I.T. concluded his answer with: "Young minds do not grow in a vacuum. The educator should be forever vigilant that the process of maturing be protected from destructive criticism as well as overbearing paternalism. He must be alert to guide the student and show some tolerance of the way in which he chooses to unfold his peculiar talents, even if they must feed for a while on what is fashionable." John Grand, of Florida, wrote: "It has always been one of the instructor's most difficult tasks to refrain from doing the student's thinking for him while at the same time guiding him through the shoals of superficial imitation." Earlier in his answer he had said: "The student's tendency to copy is not so much a serious problem as it is a natural phenomenon. Some years ago André Malraux pointed out that students acquire their interest and desire to study art through acquaintance with some example or examples of the art. Usually they will admire the work of an artist, and the tendency will be to want to emulate him. Malraux notes that an artist should not be surprised when his students ape him because if they were not properly enamoured with his work they would not seek him as a master in the first place. Students do not tend so much to ape their local master in our time, but thanks to modern communications media, they ape 'international masters'. This is something which can and will be outgrown with experience. Imitation, it must be remembered, is the first step in the learning process."

Imitation Natural, but Plagiarism to be Avoided

George Whittier, practicing in Oregon and a member of the A.I.A. Committee on Education, indicates that he feels the problem is not serious and that it is "normal for a student to copy until he finds himself." Linus Smith, of Nebraska, agrees: "The tendency to 'copy' dominant contemporary design is not bad. The student must have a vocabulary. Vocabulary in English begins very slowly; first with words, with phrases, with sen-

tences, with paragraphs, and then essays. A student must have enough of a vocabulary to begin to think." A few seemed to interpret the word "copy" — and quite understandably — as meaning outright plagiarism, and showed considerable concern. Frank Montana, of Notre Dame, said "the student tendency to copy dominant contemporary styles is a very serious problem and we try to cope with it in the understanding analysis of the architecture and forms produced by our contemporaries. We try to have the student reason his architecture and to study the development of the so-called contemporary ' clichés'." Roger Bailey, of Utah, described program writing methods and site selection principles which assure that "direct copies rarely would be possible. We have few offenders. Such occurrences are a matter of disgrace or ridicule among the students." Kansas' George Beal wrote that copying is always a problem and that he felt that it "arises at times out of too much required in a problem in too short a time from underdeveloped student abilities and immature methods."

Students Always Copy — but Whom?

On the whole there was general agreement and what might be taken for some divergence in opinion may probably be laid to individual interpretations of the meaning of the word. The answer of John Burchard expresses the consensus concisely. He is now Dean of Humanities and Social Studies at M.I.T. and his understanding of students, architecture and architects urges the careful consideration of his words by both student and practitioner. "As Malraux remarked, students always copy and the whole question really is whether they are copying a master or a pedant. Malraux suggested that it was the tragedy of every great artist that he had finally to kill his master and the great young man will ultimately kill his present masters. The mediocre ones will not and will keep on copying roughly from the period in which they were trained although they will try as fashions change to do something in the new fashion and will succeed very badly since they will not understand it."

How Much "Ideological Confusion" Is There?

The RECORD's sixth question asked: "Are you conscious of much 'ideological confusion' among students and, if so, how can educators help to reduce it?"

Once again Dean Burchard had a concise answer: "No." Many shared this view. Some thought there is confusion but no more among students than elsewhere; others that there is confusion and that it is by and large a good thing — or can be made a good thing. A few, including some teachers, felt that if there were no confusion at the moment it was simply a temporary oversight on the part of our faculties who could be counted on to stir up some soon enough. Definition of terms again was a matter of concern to many and Olindo Grossi, Pratt, made a meaningful observation in "awareness of differences is not necessarily indicative of 'ideological confusion'." Sidney Little, Oregon,

wrote: "I would say that the student consciousness is toward ideological *variety* rather than ideological confusion. We look on that as a healthy situation."

Pietro Belluschi expressed the view that: "These are difficult times of transition, yet I am not aware of any unusual ideological confusion but ideological confusion would be better than dogmatic certainty." Lawrence Anderson, also of M.I.T., also discussed the nature of our time of transition and said: "During this transition a certain dogmatism on the part of the teacher can be helpful, but it is a dangerous diet in excess. The student should be made to eat doubt as soon as he can digest it." Theodore Pritchard, Idaho, asked for the RECORD's definition of "ideological" and added: "In a world of 'ideas' there is *always* confusion. I don't think I would want to reduce it too much." Richard Bennett, practicing in Chicago and formerly a teacher of many years' experience, wrote that he would "rather see a little ideological confusion among students than blind obeisance or a serene indoctrination." This reaction was shared by Ronald Whiteley of Kansas State: "I am convinced that a certain amount of 'ideological confusion' among students is a healthy state of affairs. Would it not be better to have the student search for the kernels of architectural philosophy in the chaff of confused ideology than to create an educational block by a philosophical dogmatism? A disciple can never lead — he always follows." John Grand lined up with this group, saying: "I hardly think it desirable to reduce the fermenting of ideas (which often intoxicates students and causes their elders pain) which we call 'ideological confusion', for in a large measure it is the very essence of education and should be stimulated and guided."

Confused Teacher, Confused Student

Walter Gropius wrote: "If the teacher himself is confused, so will his student be. If he has a clear ideological approach of his own, he will be able to give a student a definite conviction which is the prime aim of a good architectural education." Milton Osborne, Penn State, went a little further with this: "I wonder if the ideological confusion is not among the staff rather than the students. I doubt if a straightforward approach to the solution of architectural problems on the part of a design critic will bring anything but straight thinking. Most students seem to know where they want to go, if they are not led astray." And George Whittier

THE QUESTIONNAIRE

Article Three

5. Is a student tendency to "copy" dominant contemporary "styles" a serious problem and, if so, how do you cope with it?
6. Are you conscious of much "ideological confusion" among students and, if so, how can educators help to reduce it?
7. What suggestions would you make toward (a) easing the transition from education to practice and (b) strengthening the relationship between student and profession?

suspects who can accomplish this last kind of shepherding: "Some educators," he wrote, "create 'ideological confusion' thinking that they are 'stimulating investigation'." Linus Smith felt that educators can help reduce this kind of confusion by "being calm," by being reasonable, and above all not trying to dramatize architecture to such an extent that there must be a crescendo each day and a climax every minute. Much architecture is the world's work. You can neither be heroic nor exquisite all the time. I believe that if educators were more reasonable, students might be more reasonable."

Robert Snyder, of Cranbrook, is much taxed by today's talk and rips into the problem with these terse comments: "More and more time and energy are being dissipated in verbiage at the expense of architecture. Noise has supplanted achievement. Being bred today is a whole generation of critics rather than architects. Glib phrases and bad drawings clutter the drafting rooms and the profession grinds to a halt under this negativism. Historians recording our achievements for humanity will listen to our buildings — not our verbal Utopias." On reading these phrases an anonymous architect, who wished, unaccountably, to remain so, suggested that the schools institute immediately the practice of regularly washing out the mouths of the talkers with soap — OCTAGON soap.

From Education to Practice

Which brings this symposium, somehow, to the relation of the student to practice and the practitioner. The RECORD's last question was: "*What suggestions would you make toward (a) easing the transition from education to practice and (b) strengthening the relationship between student and profession?*"

Several replies indicated that if (b) were solved (a) would cease to be a problem. Many others felt that the solution of (a) was prerequisite to that of (b). Accordingly the answers to this question often fused its two aspects. Attitudes and specific suggestions were divided into two rather distinct groups: those who felt that the schools — in their methods and objectives and in their students' attitudes — held the keys to the solution; and those who felt that the professional practitioners — individually and through the A.I.A. — owned both the responsibility and the means of achieving the happy relationship desired by all.

Practical Experience is Necessary

Donald Mochon, Rensselaer, expressed confidence in the balanced curriculum as an effective means: "The transition from education to practice can be eased if we train well-rounded men for the profession. Over-emphasis on certain aspects of architecture, whether design, or structures, or history, or construction, or freehand drawing, does not produce the kind of man who will easily become a 'whole' architect." Walter Gropius made this indictment of the curricula today: "The present educational system suffers from being too platonic and bookish. From the start on, it should

be adapted much more to the practice of architecture. The greatest necessity is to make the workshop and the building site (field work) a definite part of the curriculum. That will give the student the necessary familiarity with the building process itself." A number of replies pointed up the value of realistic design problems, particularly in the later years. Fred Lasserre urged real sites and 'office methods' as nearly as possible in the senior drafting rooms. Lawrence Anderson spoke for: "Orientation of student work toward real situations in the life of the community." He also pointed up what can almost be taken as an index of the suggestions of others: "Formalization of the architect-in-training status by the A.I.A." "Encouragement of the student to decelerate his degree and to alternate school experience with work experience." In this regard he notes that it "would be a good thing if military experience came earlier." Finally he wants: "Encouragement for staff members to continue consulting work." Others voiced this same concern that teachers practice. Fred Lasserre was one of many who turned it the other way around and asked that practitioners teach. He wanted also a full year of practical experience for all students before graduation. Several mentioned two summers as an administratively practical experience requirement for the degree. The alternate work and study sequence which has been in effect for many student generations at Cincinnati was described by Ernest Pickering. A few expressed doubt about the continuity problems raised in this kind of program. Frank Montana proposed simultaneous work and study in the later years of schooling: "This would mean, however, that the course of study must be lengthened from five to six years in order to make up the necessary time. I feel that a continual cooperation between work and education in the last two years is better for both student and employer than intermittent employment and education."

Practicing Architects Could Help

Roger Bailey wrote: "We would like each office to sponsor one of our third year students so that the student might have a definite connection with a practicing firm." In this and in Sidney Little's answer the other side begins to get its inning. Dean Little said: "Probably no one thing would help the profession as a whole more than for each school to be able to guarantee to each graduate at least one year in an office after graduation. This would not be an impossible task since of the six students per registered architect certainly no more than one would graduate, so that the ratio to be accommodated is one to one. The responsibility of each office would be to take one student each year per registered architect in the office." Henry Kamphoefner, of North Carolina State College, warned: "A more sincere interest by the profession in the schools would help. The profession must not consider the schools as institutions for the training of draftsmen for them to use and exploit. The schools have the obligation of preparing the student

(Continued on page 316)

TEN LITTLE HOSPITALS, AND WHAT THEIR ARCHITECTS LEARNED

By Richard J. Adams

Sherlock, Smith and Adams, Architects and Engineers

HOSPITALS

ARCHITECTURAL RECORD'S
BUILDING TYPES STUDY
NUMBER **215**

HOSPITAL BUILDING TYPES STUDIES IN ARCHITECTURAL RECORD

Hospitals	July	1937
Chronic Hospitals	Aug.	1938
Hospitals	Dec.	1939
Health Centers	Sept.	1940
Hospitals	Aug.	1941
Hospitals in Wartime	Aug.	1942
Hospitals	May	1943
The General Hospital	Aug.	1944
Coordinated Hospital Service Plan	Aug.	1945
Elements of the General Hospital	June, July, Aug.	1946
Hospitals	June	1947
Type Plans for the General Hospital	Jan.	1948
Hospitals	May	1949
Hospitals	Feb.	1950
Mental Hospitals	Oct.	1950
Tuberculosis Hospitals	Apr.	1951
Hospitals and Health Centers	Oct.	1951
Revised Elements of the General Hospital	Apr.	1952
Hill-Burton Hospitals	Oct.	1952
Hospital Planning Studies	Feb.	1953
Mental Hospitals	Nov.	1953
Hospitals and Health Facilities	Mar.	1954

BOOKS:

"Psychiatric Sections in General Hospitals,"
by Paul Haun, M.D.

"Design and Construction of General Hospi-
tals," by U. S. Public Health Service, published
jointly by ARCHITECTURAL RECORD and
The Modern Hospital

THESE SMALL COMMUNITY HOSPITALS, basically similar in program requirements, are shown here to illustrate the evolution in planning which can and should take place in an architectural office. We trust they show how the stand-still, stereotyped plan—standardization by specialization—may be avoided in a process of constant development toward an ideal solution of the design problem. The process is cumulative; each job gains additional desirable features, while retaining those of the preceding one. We have selected these ten small hospitals, designed over a period of several years, to demonstrate this gradually changing design.

The two architectural principals of the firm of Sherlock, Smith & Adams both had experience in hospital design prior to the war and the subsequent organization of the firm. However, the research and progress made by Marshall Shaffer's Hospital Facilities Division of the U. S. Public Health Service immediately following the war started a new trend of thought in hospital design, and we realized that we had to start more or less from the beginning. Research and study are still going forward. Better ways of doing the same thing are constantly being investigated. Continuous investigation has resulted in gradual improvement of many features, the abandonment of some principles, and the restatement of others.

We believe that our real progress began when we realized that the cost of operation of a hospital can equal the capital investment in from three to five years. From this point on we began to think of staffing, since a large portion of the operating budget of a hospital is salaries. An extra nurses' station, for instance, if not absolutely necessary due to patient load, can add a tremendous burden to the hospital's financing, and over a period of the life of a building can actually equal the original capital investment for the facility. Unless the architect considers this important factor, he may find that he has planned the hospital into bankruptcy before it has admitted its first patient.

It is our opinion that a hospital is the most complicated structure which our profession is called upon to design. In an industrial plant initial errors in organization, production flow, etc., can be corrected by simply relocating machinery, but the elements of a hospital are where we place them, and must be coped with during the entire life of the building.

A small hospital, to function properly, requires the same basic technical personnel as required in large hospitals. However, there is never enough work in say a 20- to 50-bed hospital to keep a technician in each of the various departments busy. So we studied small hospitals with the idea of grouping these facilities and placing them under the charge of a combination technician; for instance, by retaining the services of a consultant radiologist and pathologist from a larger hospital in the area, we are able to combine an X-ray technician who also serves as laboratory technician, handles the small physical medicine department, and in many cases, has charge of the hospital drug room. The operating room nurse also has charge of the delivery suite, and central sterile supply. She is retained on an 8-hour-per-day basis, and subject to call in case of emergency. The positions of dietitian, housekeeper and supply officer are also combined to reduce the staff, and provide enough work to keep one person occupied. Also, in the business office a combination bookkeeper, stenographer, information clerk and medical records clerk is sufficient for the smaller hospitals. However, it may be necessary to bring in a part-time typist to keep medical records up to date. The orderly serves as janitor and yard-man. The maids serve both in the kitchen and on the patient corridors, simply changing their uniforms.

We have been fortunate in most of our small hospitals to be near some facility which retains the services of a full-time operating engineer, and have arranged for hospital boards to retain this person on a consultant basis, to spend a couple of hours per day supervising the janitor, and making the necessary adjustments and tests of the equipment. Although we have not yet been able to accomplish it, we believe that one high caliber administrator could take care of the administration of from three to four small hospitals, if within a 40- to 50-mile radius.

In many of these hospitals the administrator was not employed until the last two to three months of construction, and it was necessary for us to prepare equipment lists, and set up the various techniques to be used in the operation of the facility. When the administrator arrived, he was given a complete memorandum on how the hospital was to function, as well as a recommended staffing list. In view of this responsibility which we are forced to accept, we continue to study the problem, with advice and suggestions of the administrators who are operating the hospitals we have planned. A member of our staff calls on these hospitals at least once each six months, reviews the plant with the administrator, in regard to functional planning, and examines the facility to determine how various materials are holding up from a maintenance standpoint. These continual contacts have been most beneficial, and the information gained has influenced our latest designs.

Orientation and siting play a most important part in initial stages of planning. No patient room should be given a western exposure, and on southern exposures overhangs or other devices should be utilized to control

direct sunlight. Siting of the building should be studied with the earliest schematics, so that patient rooms open on to quiet lawns instead of parking areas, noisy service courts or ambulance entrances.

The already intricate circulation pattern of small hospitals is further complicated in these ten buildings by the requirement for segregation. This particular problem has been studied progressively in each successive hospital, and is handled in a much more successful manner in Geneva County Hospital, the most recent of these facilities.

As we go through the individual hospitals in the chronological order in which they were designed, we will endeavor to point out the various changes in our thinking, and the reasons for these changes.

Kendrick Memorial Hospital in Luverne, Alabama, was designed in 1947, by the then new firm of Sherlock, Smith & Adams. This rural community of 3500 people awoke one morning to find the only doctor in the county had passed away. After several weeks of trying to persuade several young physicians to open a practice there, they realized that it was impossible to secure doctors unless some facility was provided for them to work in. There was no time to wait their turn on the priority list for Hill-Burton funds, so a group of citizens met and pledged \$75,000 for the construction of a small hospital. A young internist and a surgeon were contacted, and a lease purchase agreement was made.

The U. S. Public Health Service elements of a general hospital were followed as closely as practical with the limited budget available. Offices for two doctors and 13 beds were provided, with adjunct facilities set up so as to serve both the doctors' offices and the hospital. Here the double corridor, with a central core, lighted and ventilated by a clerestory, first appeared in our planning. The facility has been in operation for seven years, and has shown a profit.

Another hospital, not illustrated, is an example of how planning can be handicapped by superimposed requirements. A functional plan with a contemporary exterior was submitted to the hospital board, but they demanded a traditional exterior. The functional plan therefore had to be warped to fit a prescribed colonial skin, causing confusion within the circulation patterns of the structure. It was necessary to provide a separate maternity department of seven beds, with a separate nursing staff.

It was here that we learned never to submit a plan and a rendering at the same time, but rather to so thoroughly sell the board and staff on the circulation patterns and functional plan arrangement, that they would not sacrifice these to acquire any preconceived exterior appearance.

We were not too pleased with the planning of the two previous facilities, and were convinced that we should further re-evaluate the importance of planning for efficient and economical operation.

In the Perry County Hospital, a 20-bed facility at Marion, Alabama, we accomplished probably our greatest change in thinking, and became more acutely con-

scious of circulation patterns, control and consideration of staffing in the early stages of planning.

It was on this project that we developed the 3-ft 8-in. module, which we are still using to lay out small hospital plans. Schematic plans were drawn, staffed and discarded. Ways and means of shifting areas and combining facilities to eliminate all excessive personnel were devised, until we were sure the minimum staff provided could properly operate the facility.

Since the nurses' station in a small hospital is the center of activity, it was placed at the heart of the plan. By moving 6 ft in either direction, the nurses could control all corridors, and by using a sliding glass panel into the waiting area, would have complete control of the hospital at all hours.

Although the double corridor system had been first used in Kendrick Memorial, here in Perry County it again appears, to facilitate segregation and shorten the nurses' travel from patient rooms to work areas which are located in the central core. The rooms in the core extend above the roof in a clerestory, providing natural light and ventilation. Windows in the clerestory are operated by a motorized gang operator, with push buttons at the nurses' station. It was also in this hospital that the "Ventilightolator" was developed, which is a combination ventilator, skylight and lighting fixture, ventilating and lighting inside rooms.

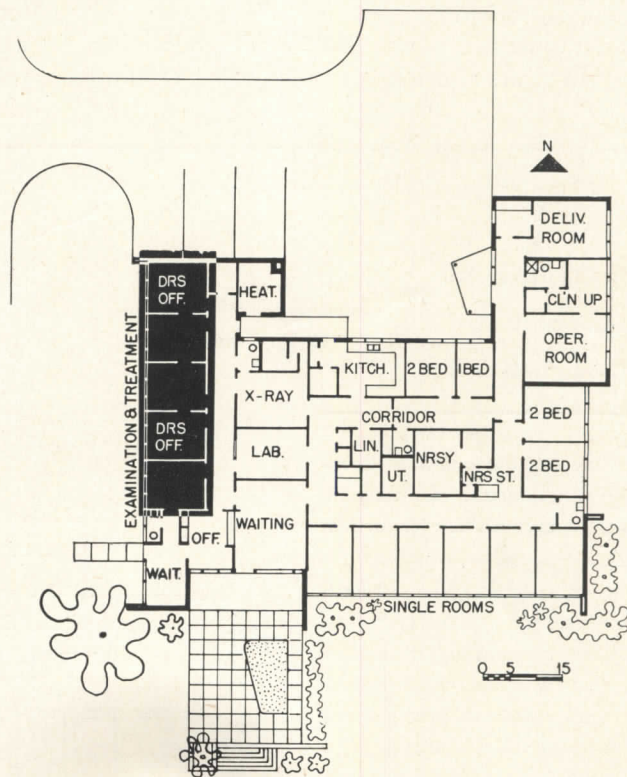
Here at Perry County Hospital an economical arrangement of operating and delivery suites, X-ray, laboratory, dietitian, housekeeper and supply officer

Kendrick Memorial Hospital

Luverne, Alabama

13 Beds, Designed 1947

The first of the series of ten by these architects, this hospital was designed to attract new doctors to the community, hence the doctors' offices and examination rooms. It has the double corridor, which appears in most of these hospitals, to help in circulation patterns, also in the problem of segregation. X-ray and laboratory facilities are placed to serve both the hospital and the doctors' offices. Certain features were improved in later hospitals



were devised, and although we have studied and re-studied these units, they appear more or less intact in the subsequent plants.

Isolation rooms were combined with N.P., and also served as private rooms. A sliding door between the room and toilet and closet not only provided a safety factor, but made it possible to use these areas as deluxe private rooms.

In this hospital we used every device possible to save the nurse extra work and extra steps, so that she might in turn be able to spend more time with the patient, and hence provide better patient care. Audio-visual nurses' call system, including a push button and speaker at front door and ambulance entrance were provided. An electric strike was installed at the ambulance entrance to allow this door to be unlocked from the nurses' station, so that emergency cases could be admitted without delay.

A small refreshment area was also provided, adjoining the waiting area, where drink boxes and other vending

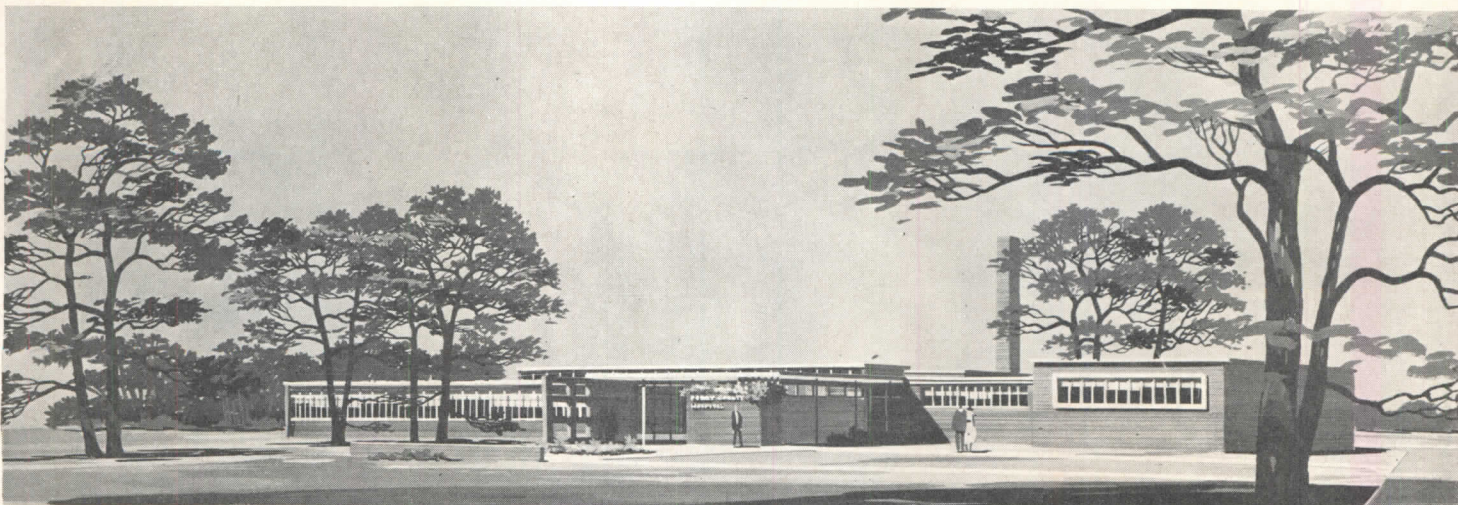
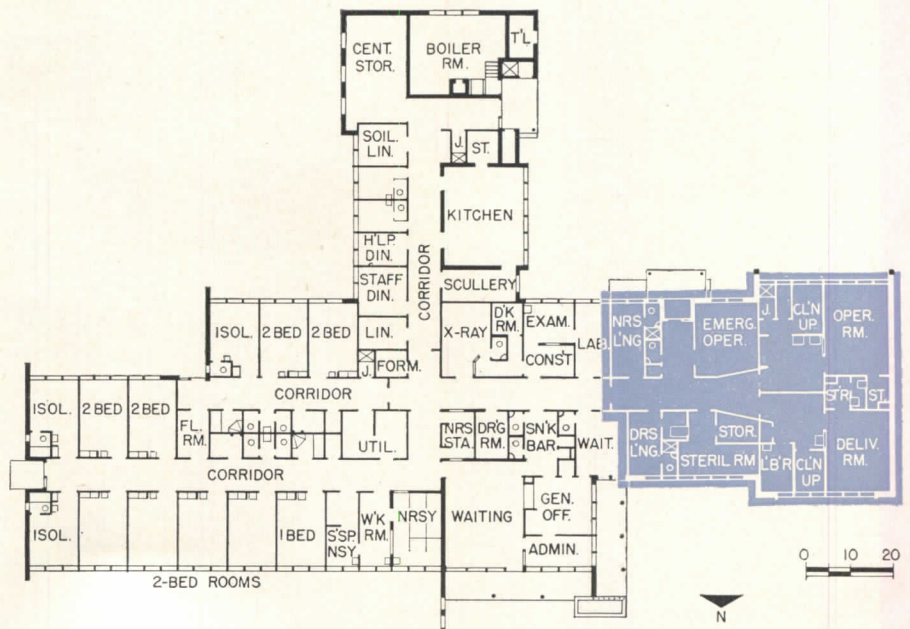
machines are located. This space provides extra revenue for the hospital.

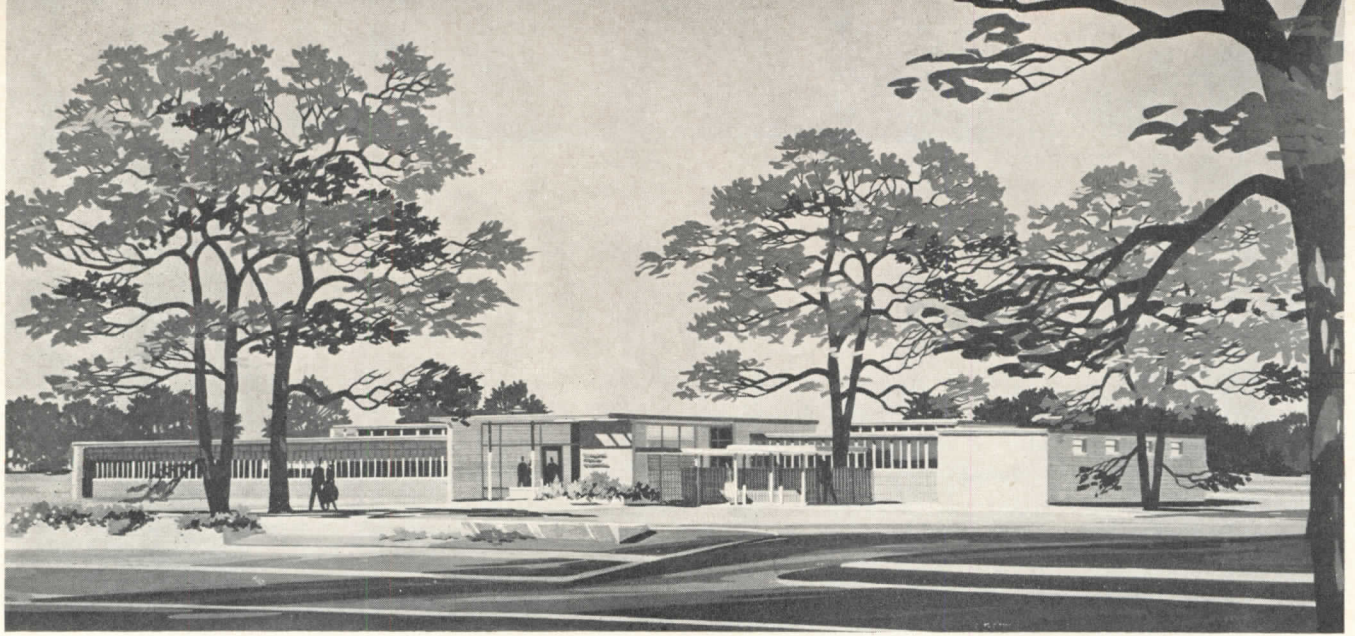
All in all, the Perry County Hospital plan was most successful, and has indeed proved to work remarkably well. The hospital has attained an occupancy of 80 to 85 per cent, and has operated at a profit since its opening. At the present time a 10-bed addition is being constructed.

The Bullock County Hospital at Union Springs, Alabama, a 30-bed facility, repeats many of the design elements mentioned above, and although they appear in a somewhat rearranged pattern, due to orientation and siting, all of the units formulated for Perry were refined and carried over into this hospital. As a result of our studies of the operation of Perry County Hospital, we realized that in a small community hospital, the family and friends of very sick patients should have some place to congregate. In this facility a family room was provided to keep family and friends out of the patient corridors where they added to the confusion,

Perry County Hospital
Marion, Alabama
20 Beds, Designed 1948

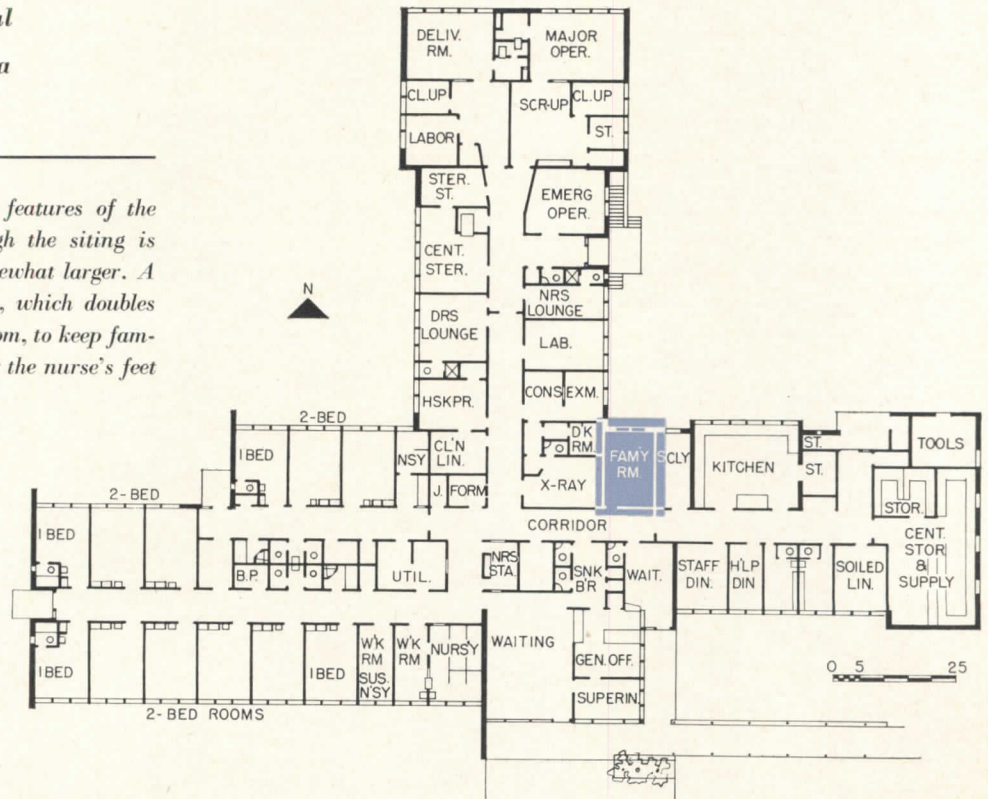
An early example of the architects' attention to staffing problems, this hospital shows several features carried forward in later buildings — combination of operating and delivery suites in cul-de-sac location, nurses' station placed for best control, isolation rooms designed to serve also as psychiatric room, or as private room. The various elements were planned for a staff set-up in which several employees have multiple duties — in the office, the laboratory, the housekeeping department





Bullock County Hospital
Union Springs, Alabama
30 Beds, Designed 1949

Bullock contains most of the features of the previous Perry County, though the siting is different and the building somewhat larger. A new feature is a family room, which doubles as expectant father's pacing room, to keep family and friends out from under the nurse's feet



disturbed other patients, and generally got in the nurse's way. This additional space has added to the efficiency of the operation. It also is used as an expectant father's room, when not otherwise in use. All subsequent plans include this unit.

Bryan Whitfield Memorial Hospital, a 30-bed facility at Demopolis, Alabama, shows few changes in thought. It is significant primarily as it indicates how the advances and developments made in previous hospitals have been refined and expanded to meet the requirements of a larger facility. This hospital has had several years of successful operation, and is now planning a 10-bed addition.

Washington County Hospital, a 20-bed facility at

Chatom, Alabama, uses all of the basic elements previously developed; however, circulation patterns and controls were restudied, and segregation was handled most successfully. The housekeeper-dietitian-supply officer's office was relocated adjacent to the service entrance, for control, as many a hospital shows loss due to the back door route. This facility has been fully utilized by the community and has operated several years within its budget.

Conecuh County Hospital at Evergreen, Alabama, which followed Washington County, is possibly the best up until that time, as far as control is concerned.

The usual general elements already described were included, and the most attention was paid to circulation

and nurses' station control. The double-corridor system, with central core with clerestory was retained, and used to a decided advantage. Nurses' stations here control all major corridors.

The Chilton County Hospital at Clanton, Alabama, shows significant deviations in some respects. These deviations resulted from a community situation which had not heretofore been encountered — the existence of a hospital and a number of practicing surgeons already established in the area. In most of the other communities, the hospital has been intended partly to attract surgeons to the community, and the growth and success of the hospital would depend to a considerable extent upon the reputation of the surgeon who came to practice in it. Also, these other hospitals had in each case been the first local hospital. In Clanton, the hospital designed was to replace an existing facility

which had been condemned by the State Health Department. The larger operating facilities in Chilton County were determined by the fact that the practice of several surgeons was already assured at the time of planning.

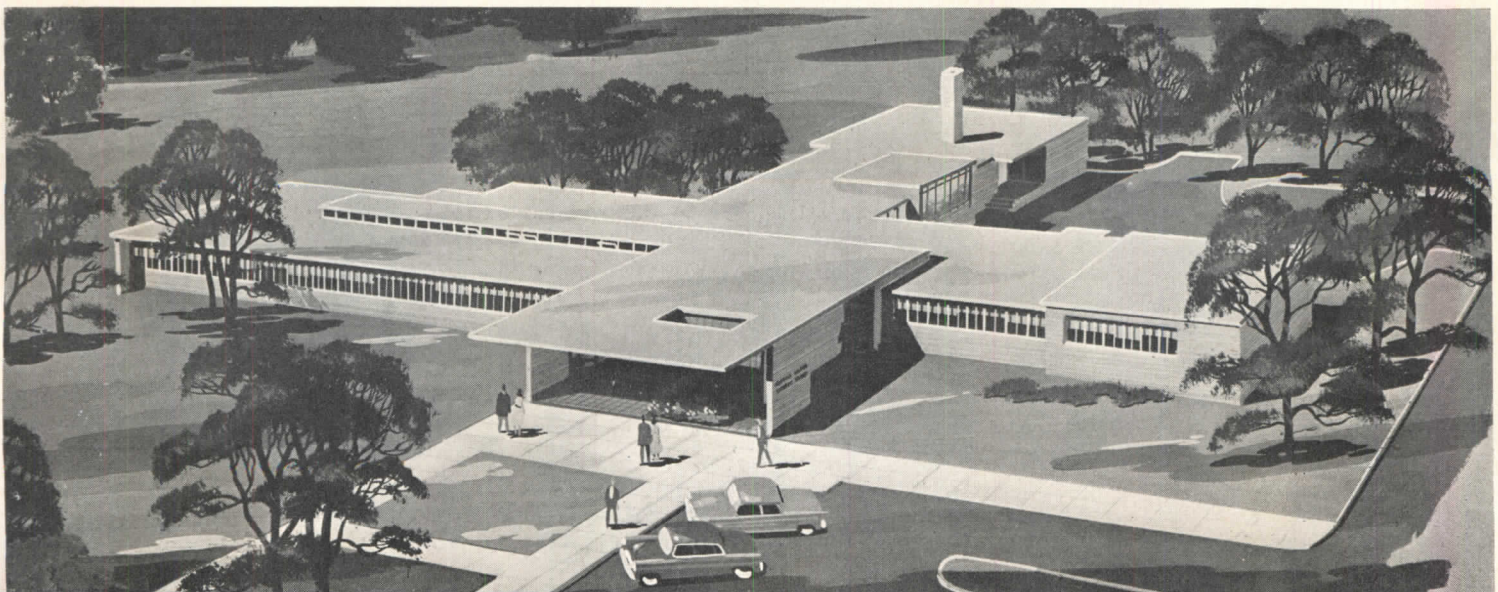
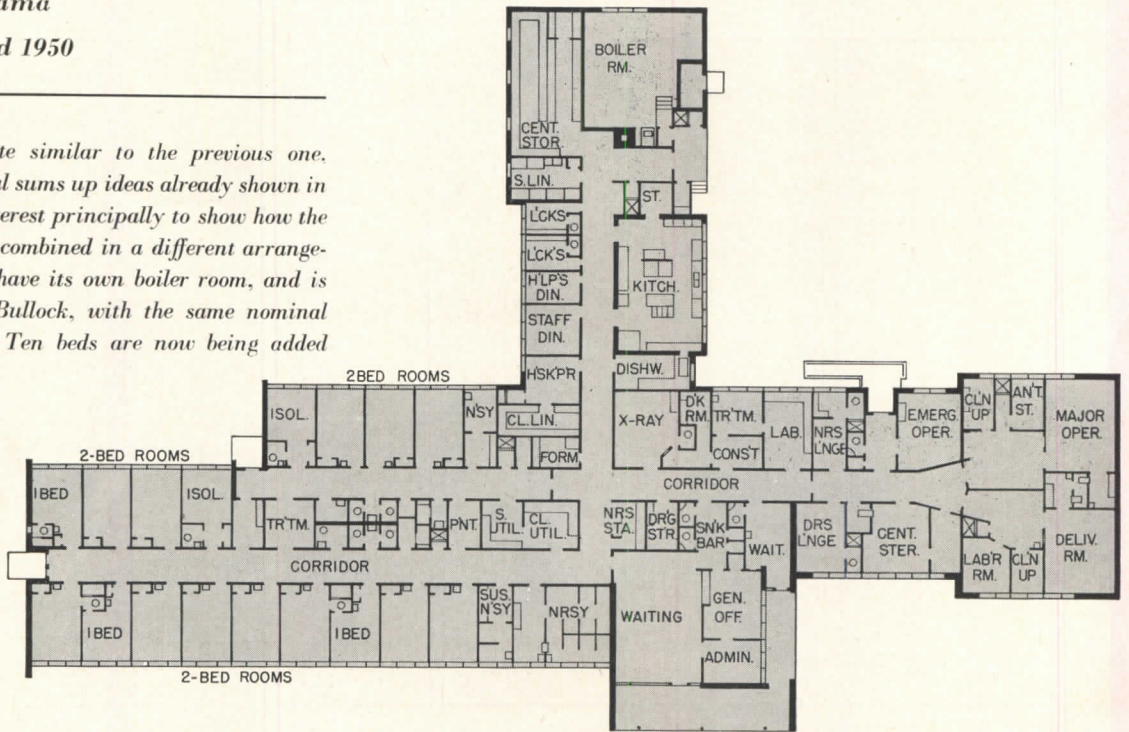
There is only one multi-story hospital in this group — the Barbour County Hospital at Eufaula, Alabama. It is interesting to note that in this three-story building it was possible to carry through the same basic elements that appear in the single-story hospitals, and the integrated units that have worked so well in the smaller jobs are retained. However, since the town of Eufaula is located at the converging points of several major highways, the automobile accident rate is proportionately high, and this fact indicated larger facilities for emergency, operating, fracture, and an observation room for the emergency suite. The same fact to a large

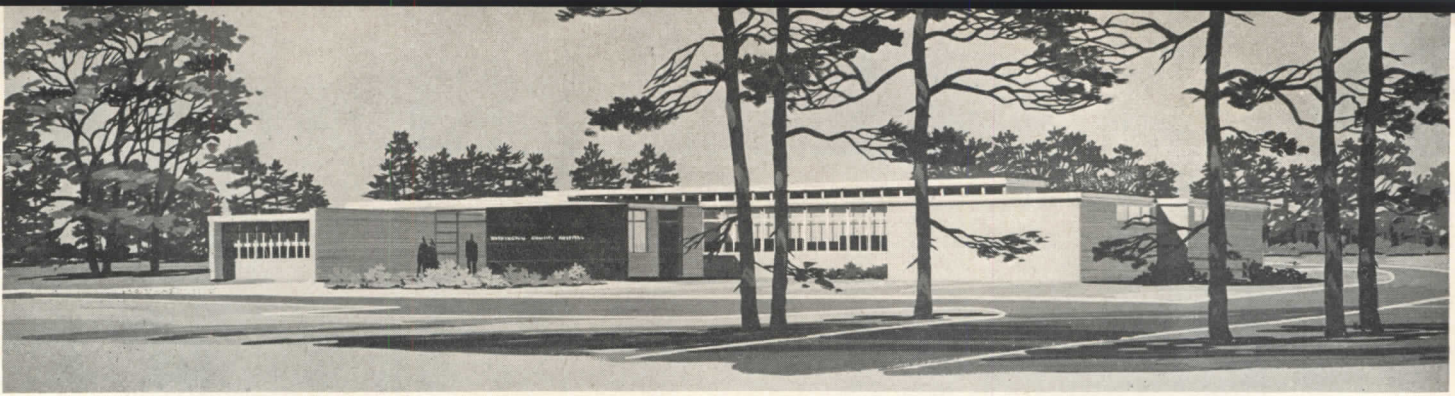
Bryan W. Whitfield Memorial

Demopolis, Alabama

30 Beds, Designed 1950

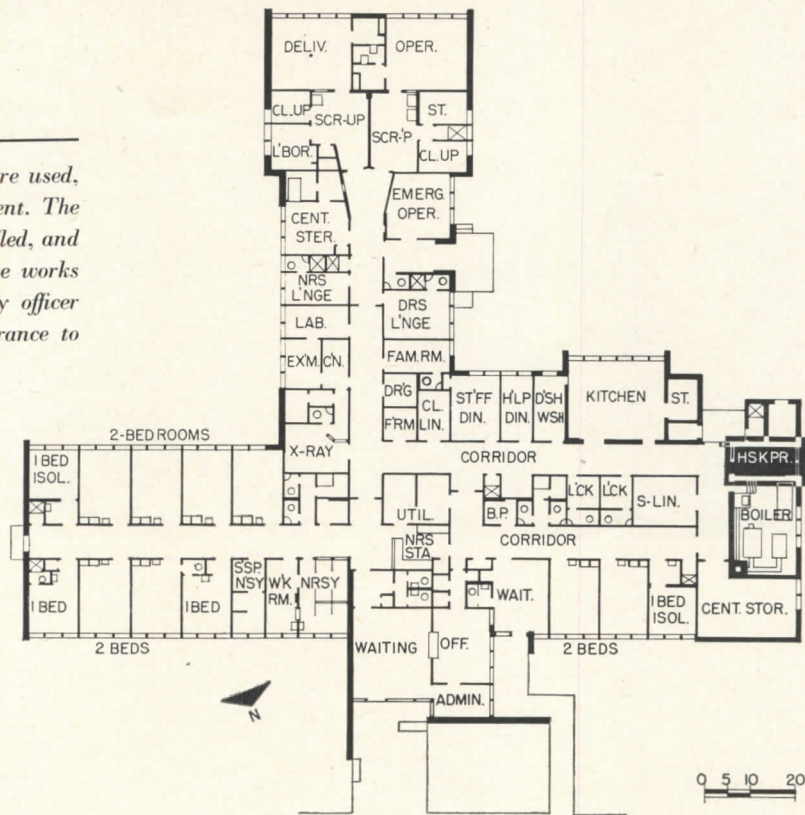
This hospital is quite similar to the previous one, Bullock, and in general sums up ideas already shown in this series. It is of interest principally to show how the same elements can be combined in a different arrangement. This one does have its own boiler room, and is slightly larger than Bullock, with the same nominal capacity of 30 beds. Ten beds are now being added





Washington County Hospital
Chatom, Alabama
20 Beds, Designed 1951

Here again the same basic elements are used, but in an entirely different arrangement. The segregation problem is differently handled, and experience has shown that this scheme works well. The housekeeper-dietician-supply officer was relocated next to the service entrance to make pilferage difficult



extent sized the operating suite, which provides two major and one minor operating room. Here for the first time we initiated a recovery room for the operating suite. The size of the operating suite in relation to the size of the hospital was further influenced by the prominence of its chief of staff — a surgeon who owned the existing hospital, and had agreed to close it upon completion of the new facility, and early ambulation, of course, justified the arrangement.

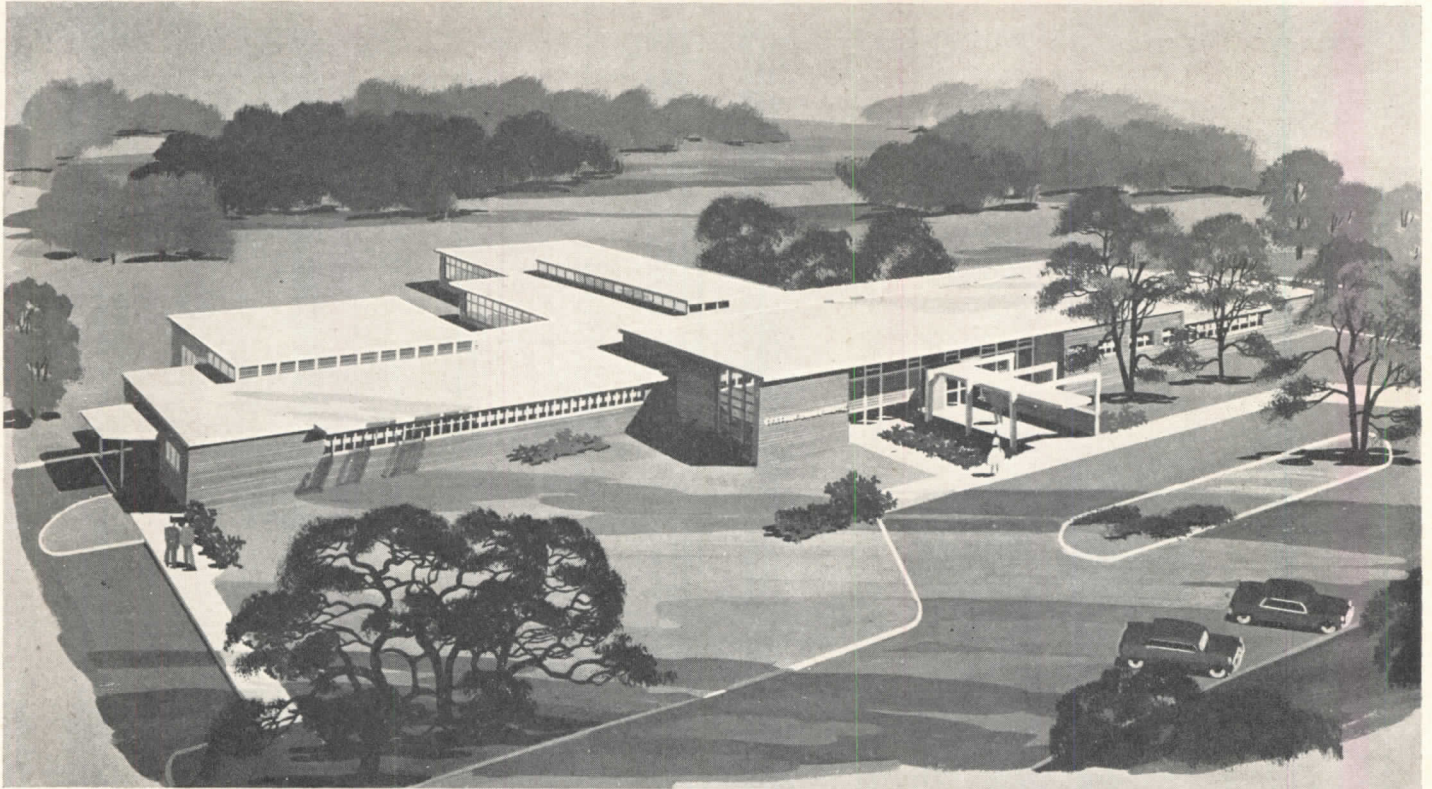
The third floor contains the delivery suite and 25 beds for maternity patients and clean surgical cases. In the nursery on this floor, the wash-fountain, centrally placed, was used for the first time, planned and placed for easy accessibility for nurses to wash their hands between handling of different babies.

The earlier hospitals had all used central tray service, but owing to the size and arrangement of Barbour County Hospital, we decided on a bulk food distribution system, with a small diet kitchen on each patient floor.

The 40-bed Geneva County Hospital, at Geneva, Alabama, the latest facility of this group, we believe represents the utmost in good circulation and nurses' station control. The nurses' station is located at the very heart of the intersecting corridors, and the nurse on duty is at all times virtually looking down every corridor. She is also placed at the center of the patient load. As in Chilton County Hospital, enlarged operating facilities were indicated, due to the presence of several practicing surgeons.

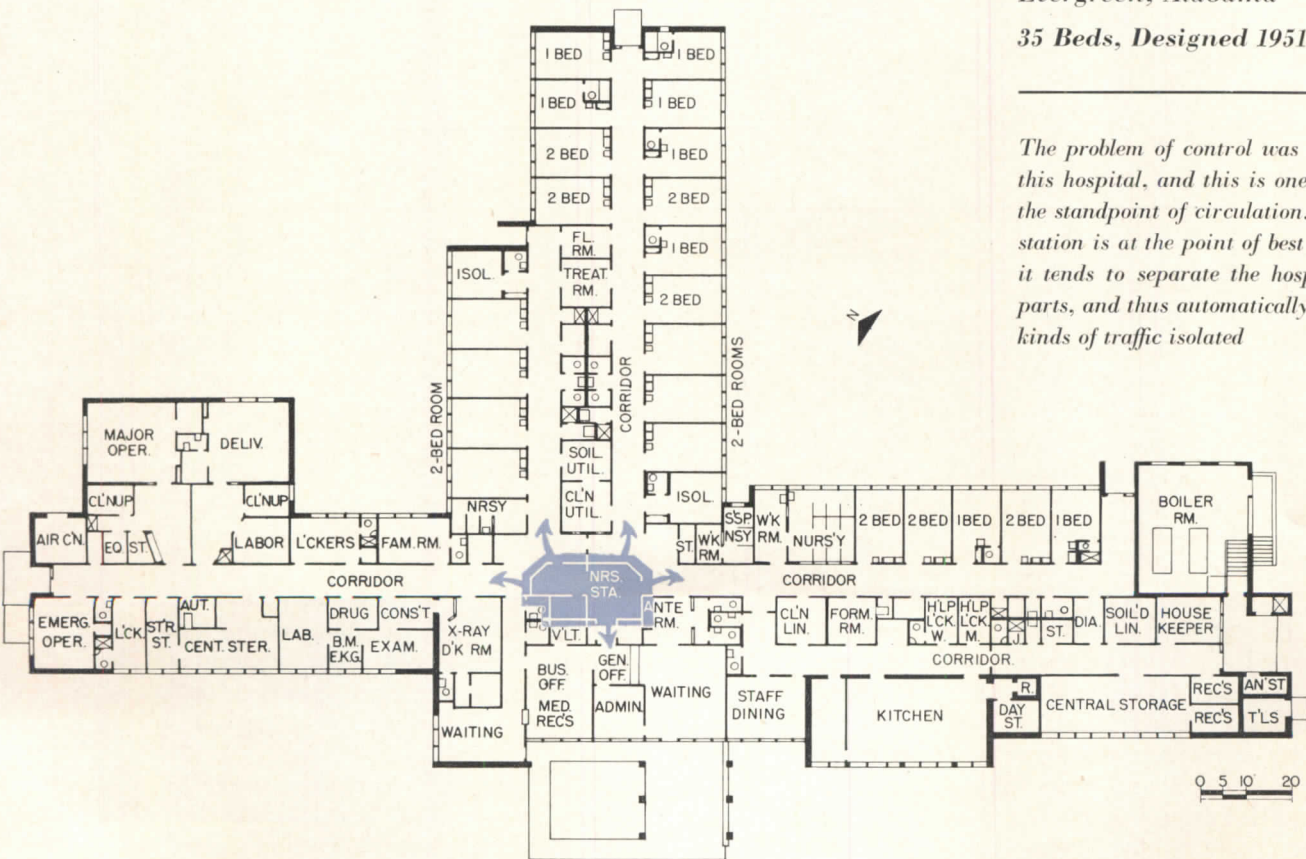
The adjunct facilities, though enlarged in Geneva County Hospital, retained the unit set-up, and such features as the housekeeper's office adjacent to the rear entrance also re-appear here, since their usefulness and advantage have been positively proved in the earlier jobs.

We believe that the greatest influence on our hospital work has been the splendid leadership in this field by Dr. Jack Cronin, Marshall Shaffer and the technical



*Conecuh County Hospital
Evergreen, Alabama
35 Beds, Designed 1951*

The problem of control was restudied for this hospital, and this is one of best from the standpoint of circulation. The nurses' station is at the point of best control; also it tends to separate the hospital into its parts, and thus automatically keep several kinds of traffic isolated

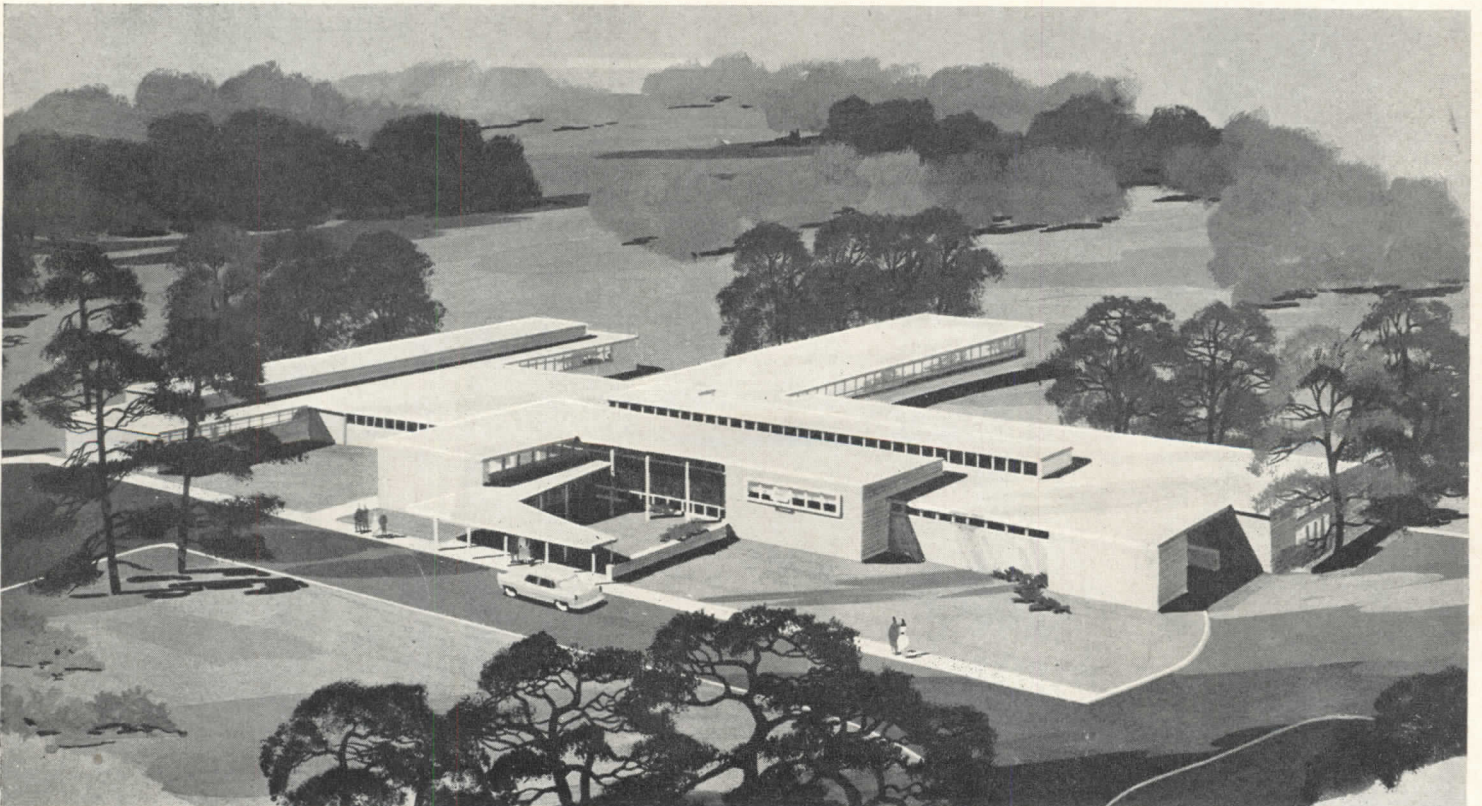
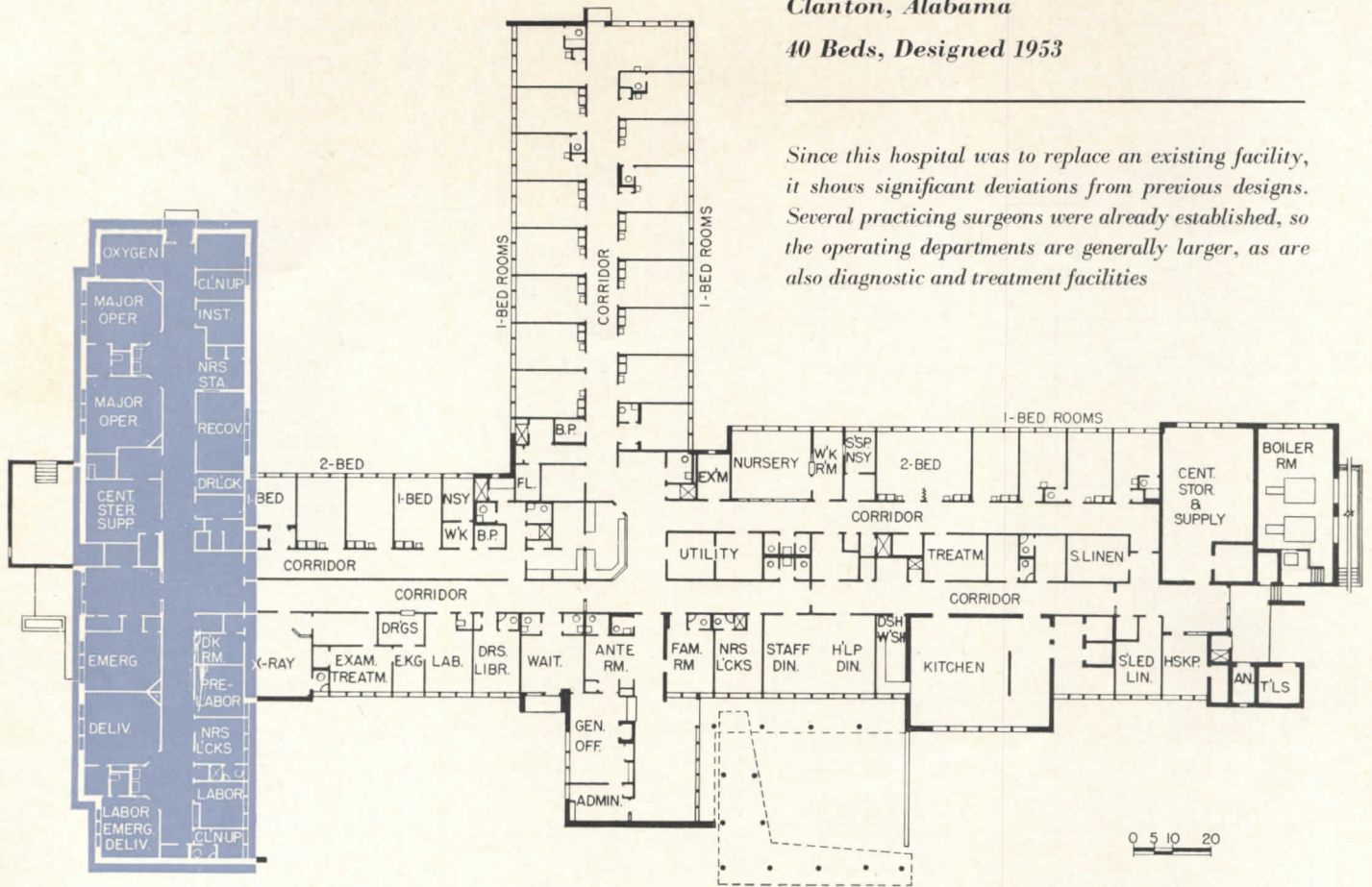


Chilton County Hospital

Clanton, Alabama

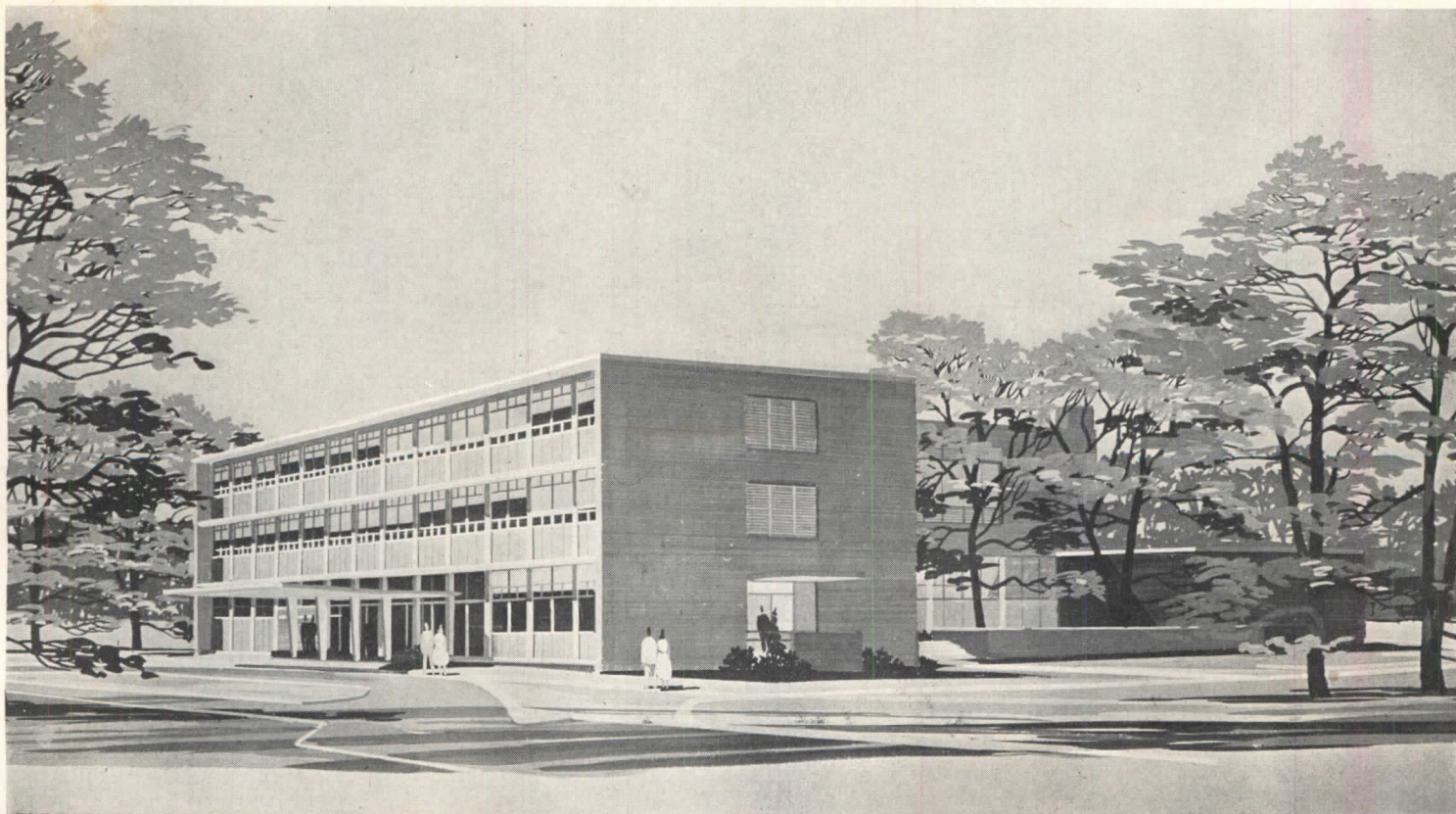
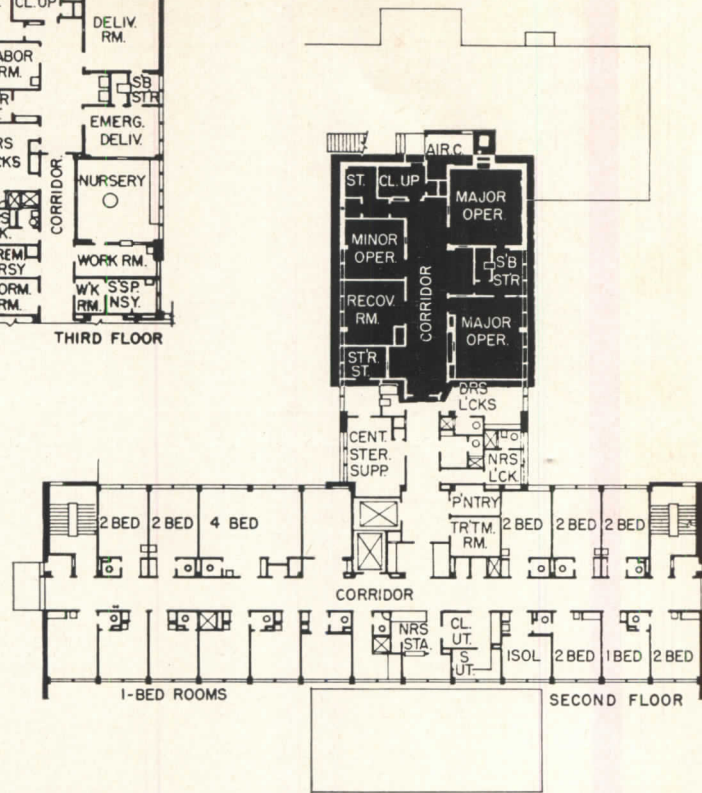
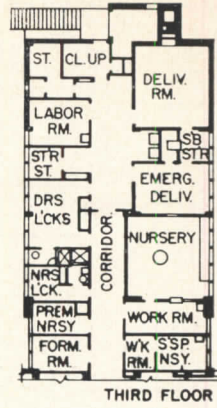
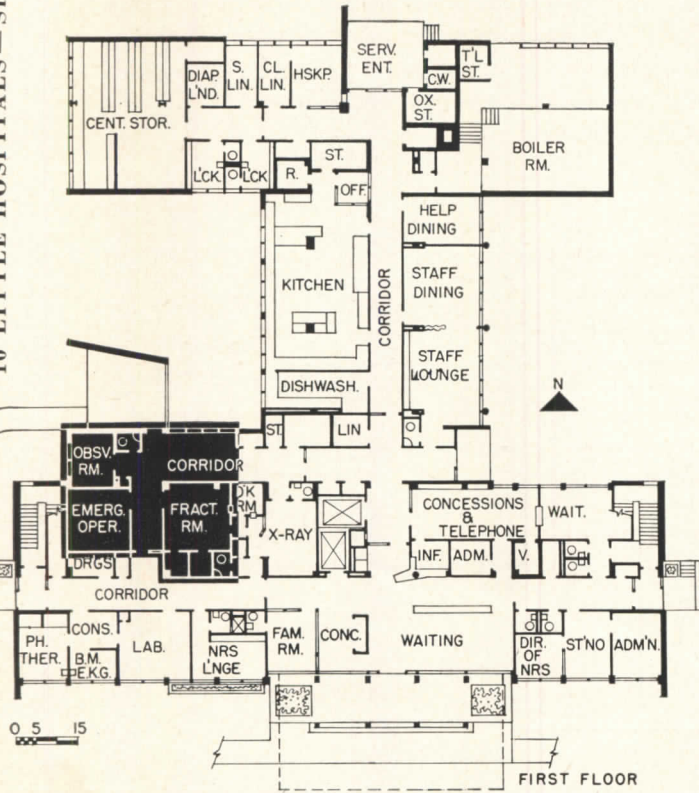
40 Beds, Designed 1953

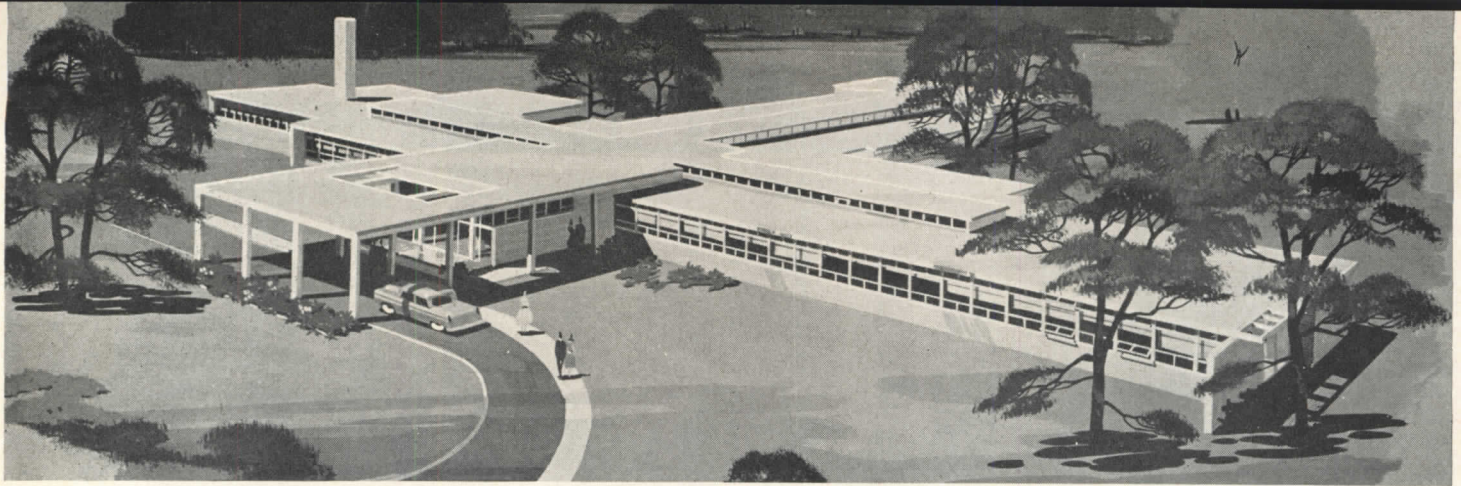
Since this hospital was to replace an existing facility, it shows significant deviations from previous designs. Several practicing surgeons were already established, so the operating departments are generally larger, as are also diagnostic and treatment facilities



Barbour County Hospital
Eufaula, Alabama
52 Beds, Designed 1952

The only multi-story building in this group, Barbour has most of the features earlier shown, but of course the plan layout and circulation are entirely different. A high accident rate, due to major highways, determined the larger size of the emergency suite, also affected the major operating group. This building, alone of the group, uses bulk food service, from small kitchens on each floor

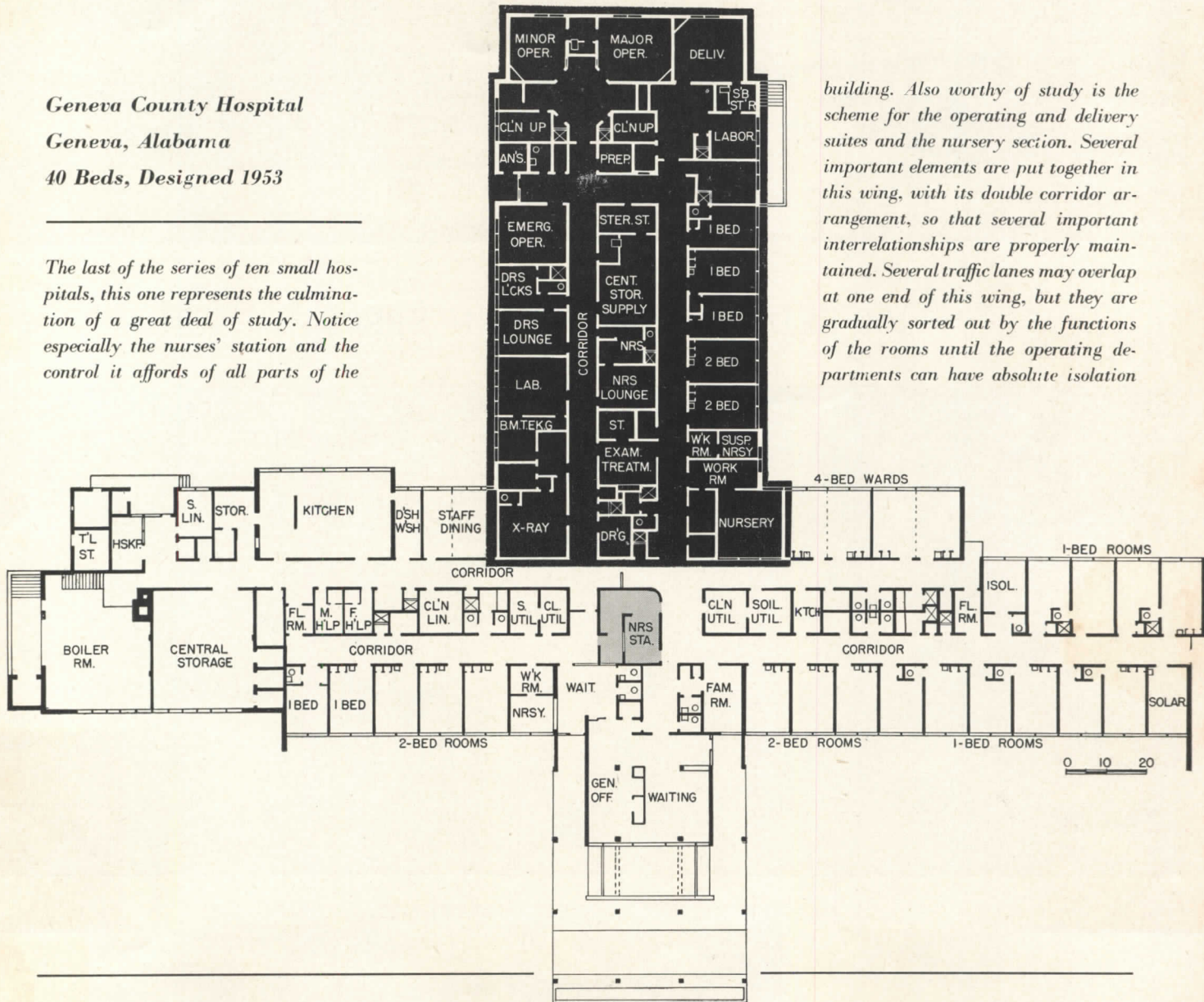




Geneva County Hospital
Geneva, Alabama
40 Beds, Designed 1953

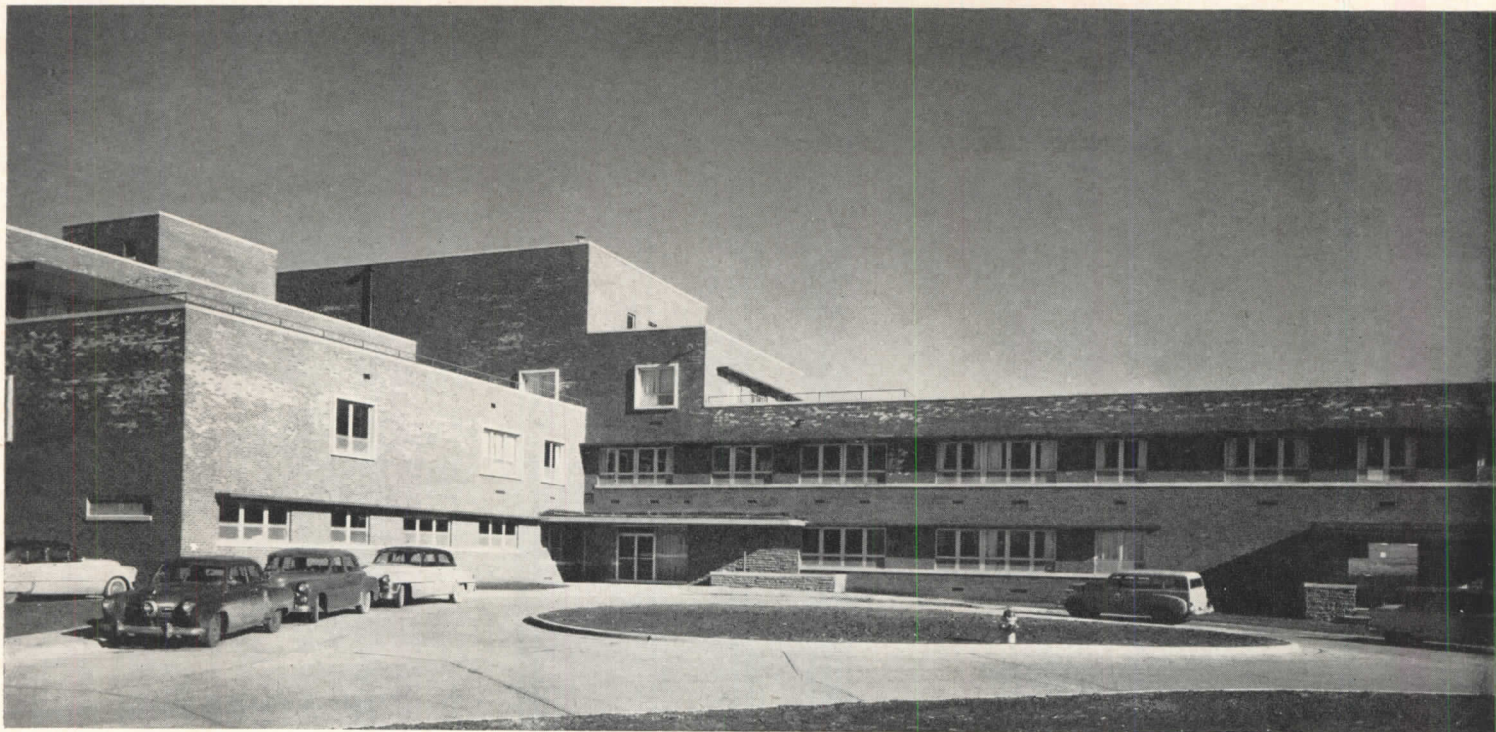
The last of the series of ten small hospitals, this one represents the culmination of a great deal of study. Notice especially the nurses' station and the control it affords of all parts of the

building. Also worthy of study is the scheme for the operating and delivery suites and the nursery section. Several important elements are put together in this wing, with its double corridor arrangement, so that several important interrelationships are properly maintained. Several traffic lanes may overlap at one end of this wing, but they are gradually sorted out by the functions of the rooms until the operating departments can have absolute isolation



staff of the Hospital Facilities Division of U. S. Public Health Service. The vast amount of research published in their technical bulletins, and their able administration of the Hill-Burton Hospital Construction Program have rendered a great service to the architectural profession, and have demonstrated the way a government planning agency should function.

We trust that these hospitals demonstrate avoidance of the ever-present architectural hazard — the stereotyped office solution. Because of what we have accomplished in them, others of our hospitals have been better. The end is not yet in sight, nor, we trust, will it ever be, for we do not believe that the ultimate will ever be reached.



100-BED HOSPITAL WITH SPECIAL FACILITIES FOR



Hawks-Terrell, Inc.

AN EXAMPLE of good planning in many respects, this hospital is especially noteworthy for its facilities for treating polio. The incidence of Poliomyelitis had been unusually high in the area for many years, so the polio wards were planned to fill a real need. There is an emergency polio operating room next to the acute ward (third floor plan, next page); there are also facilities for physical therapy, hydrotherapy, diathermy, and space for exercise. Beds are in wards in this department as most of the patients would be children, although there are no real ward rooms elsewhere in the hospital.

The plan uses its own variation of the conventional T form, although here the base of the T is widened and shortened. On the first floor this rectangular area provides an ideal shape and location for kitchen and storage space. On the second floor it houses an unusually well laid out combination of operating and delivery suites. These departments are large enough for ultimate expansion of the hospital to 200 beds. The double corridor arrangement keeps these departments separated from each other and isolated from the rest of the hospital,

yet the departments are close together in a scheme very convenient for nurses and doctors. Also the emergency suite is adjacent, though again kept isolated, to keep the "dirty" emergency cases away from the surgical areas. If sterile supply could have had a corner location in the same wing, that would be ideal, but its actual location is quite convenient.

A fortunate topographical condition made it possible to have the emergency and ambulance entrance widely separated from the visitors' entrance and up one floor.

The building is of conventional reinforced concrete construction. Floors are of the joist and slab type, with suspended plaster ceilings. Exterior walls are of face brick, backed up with hollow tile. Interior partitions are of red clay tile, generally covered with sand-finish plaster, though smooth plaster is used where frequent washing is necessary. Kitchen and service rooms have walls of structural glazed tile, with quarry tile floors; service kitchens, nurses' utility rooms, and surgical suites have ceramic tile walls, and the floors are of either tile or carbon conductive terrazzo. The building is completely air conditioned throughout.

TREATING POLIO

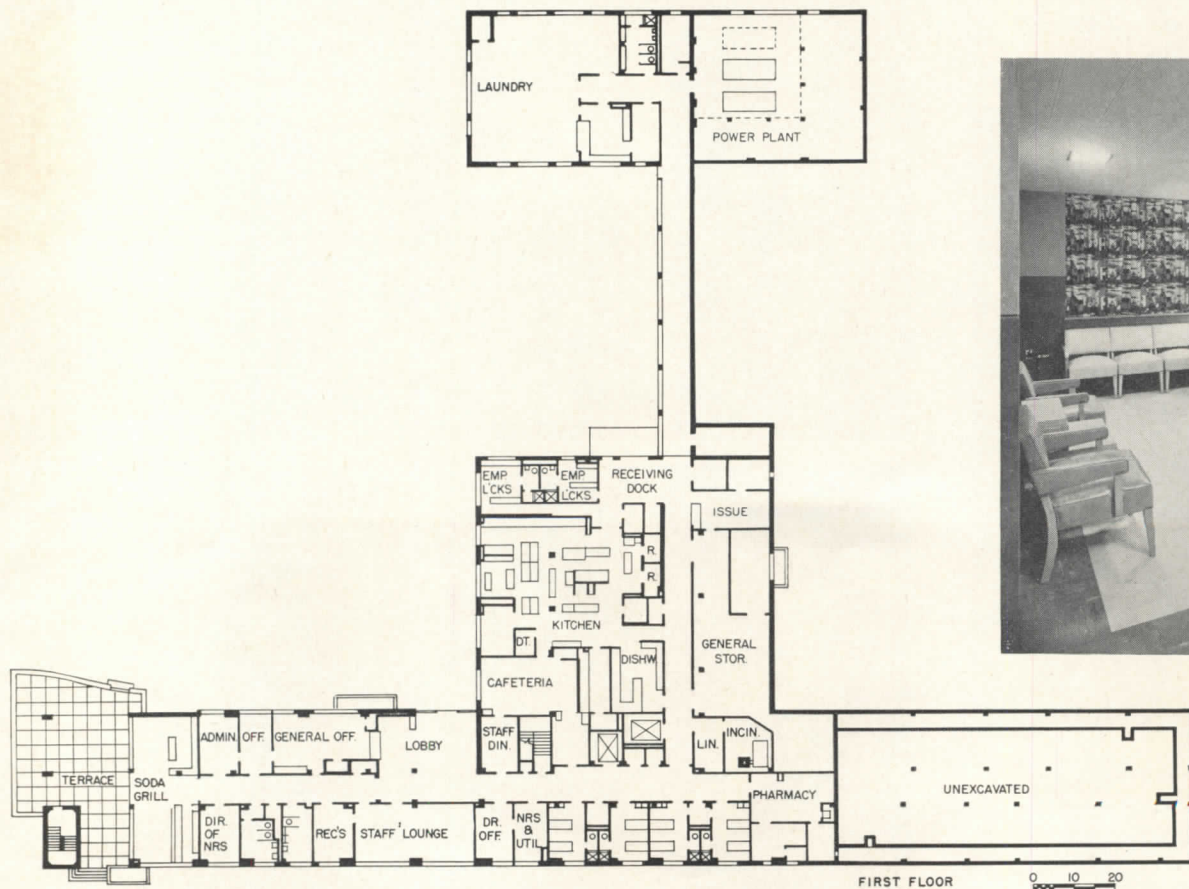
Jane G. Phillips Memorial Hospital, Bartlesville, Oklahoma

Neville, Sharp & Simon, Architects

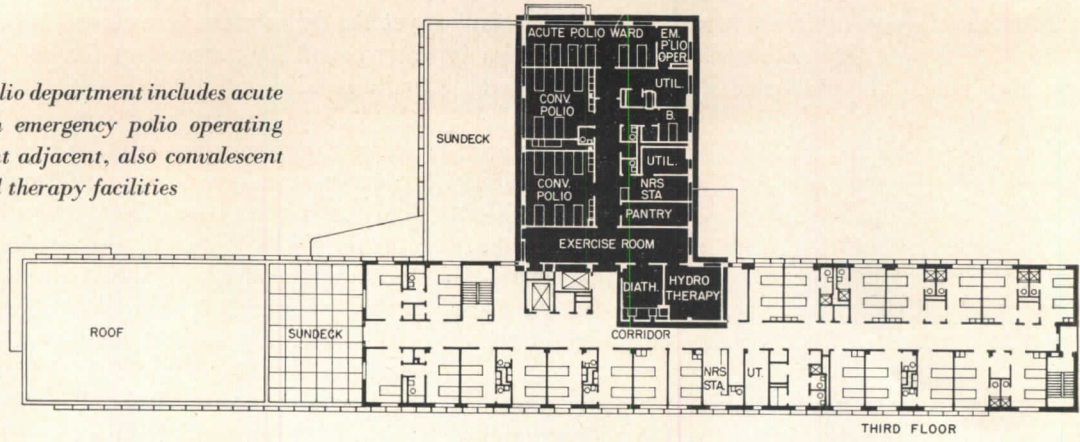
William I. Cassell, Mechanical Engineer

Pfuhl & Shideler, Structural Engineers

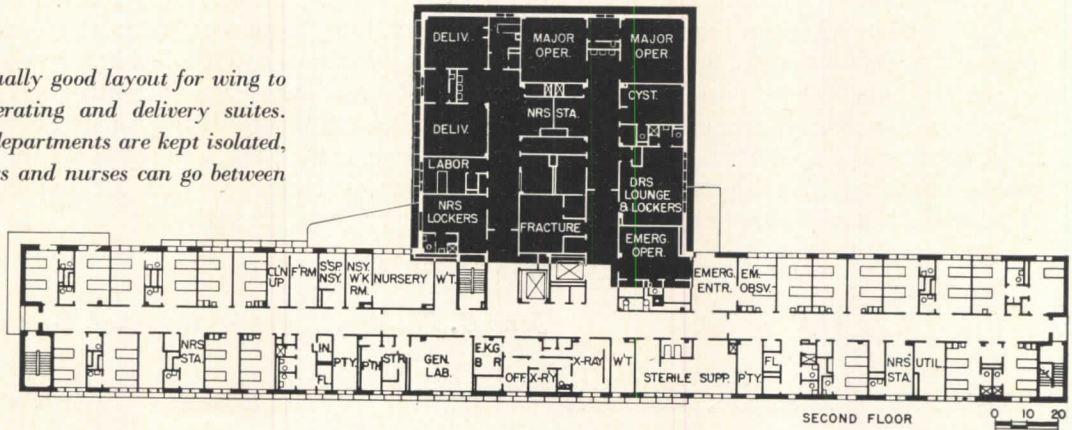
Hare & Hare, Landscape Architects



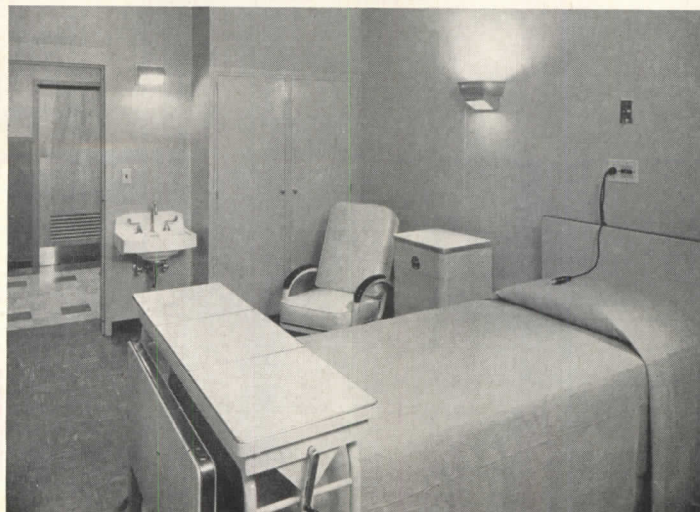
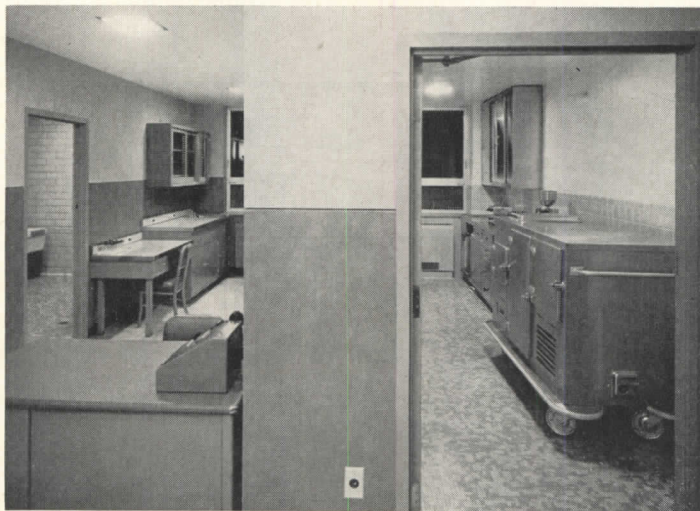
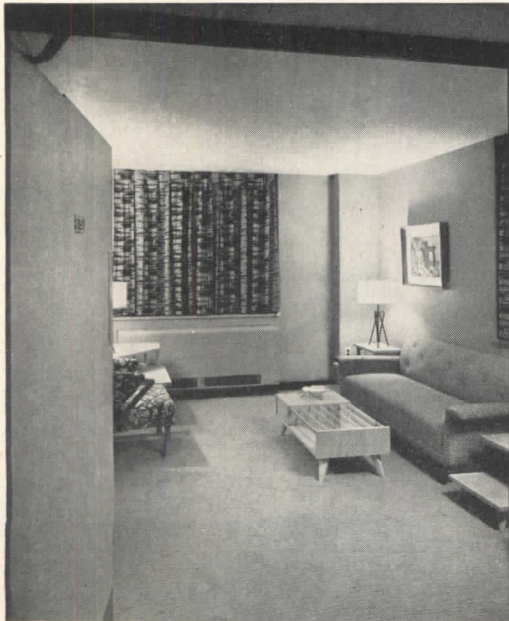
Special polio department includes acute ward with emergency polio operating department adjacent, also convalescent wards and therapy facilities



An unusually good layout for wing to house operating and delivery suites. The two departments are kept isolated, but doctors and nurses can go between



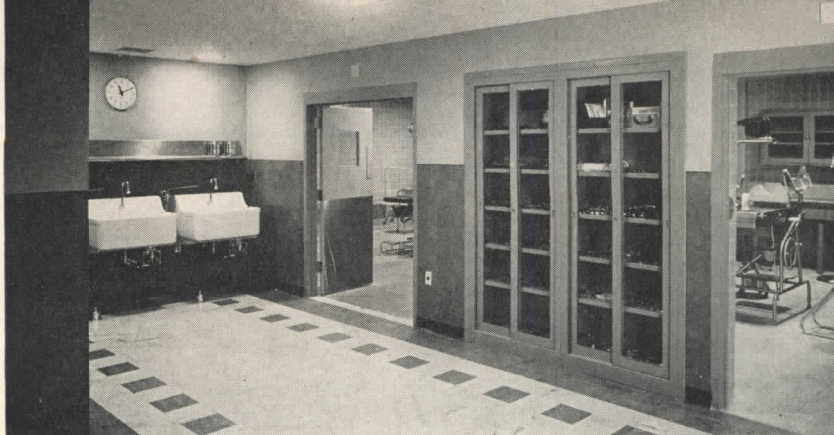
Below: sitting room at end of nursing unit; can also be used as bed room. Right: view into pantry, and polio nurses' station



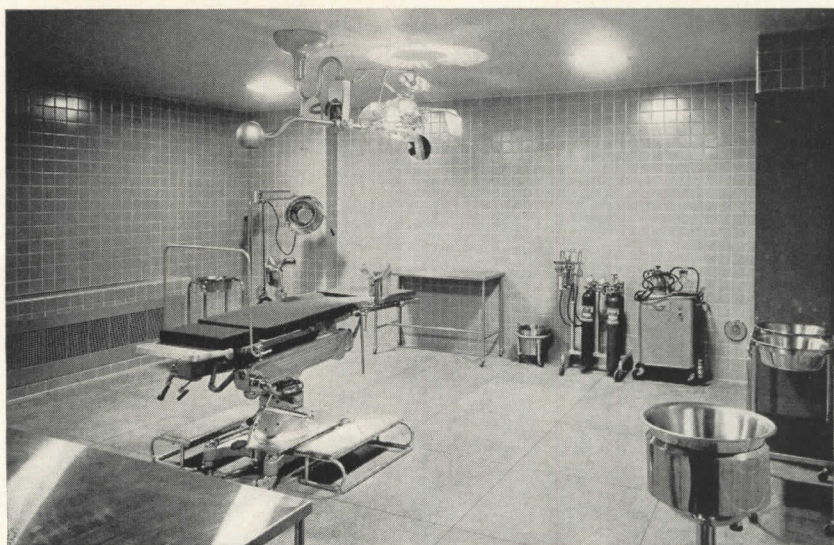
Right: virtually all patient rooms have lavatory, toilet and shower. There are a few two-room suites, with sitting room as shown above

Hawks-Terrell, Inc.

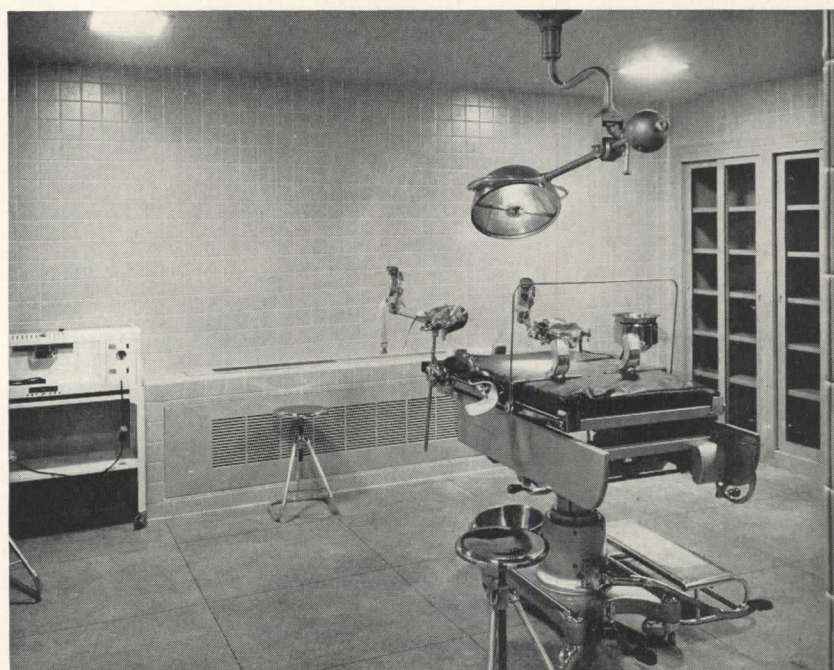
*View in operating department;
cystoscopy room at far right*



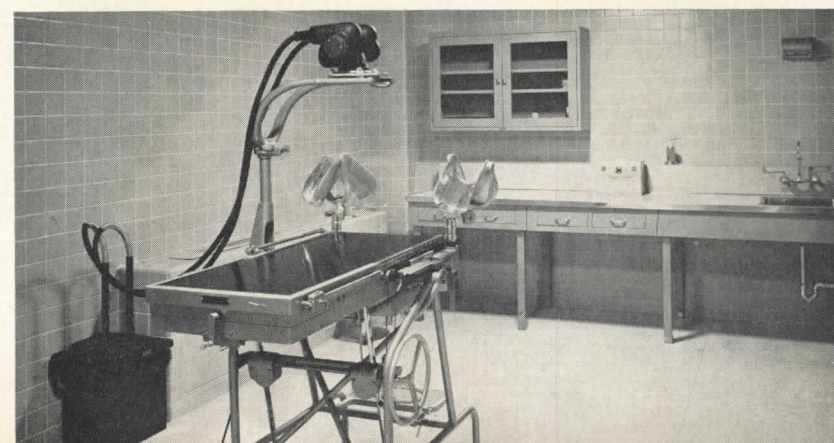
One of the major operating rooms



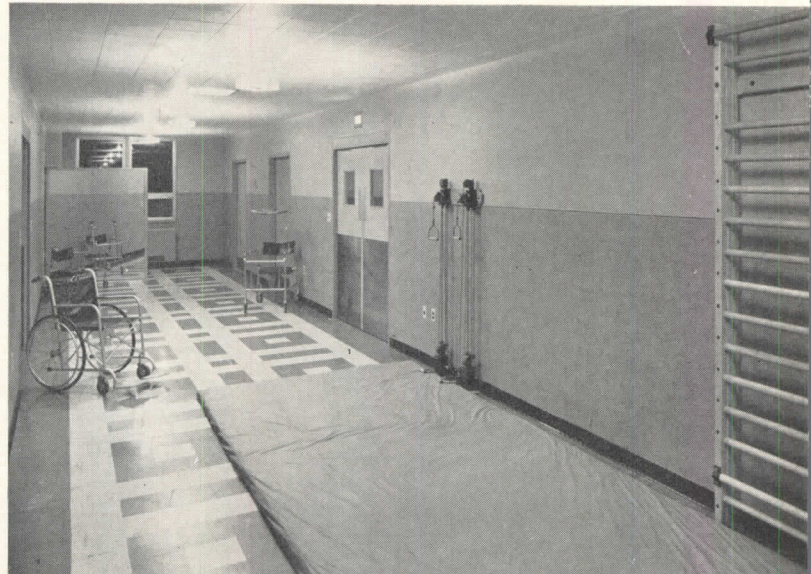
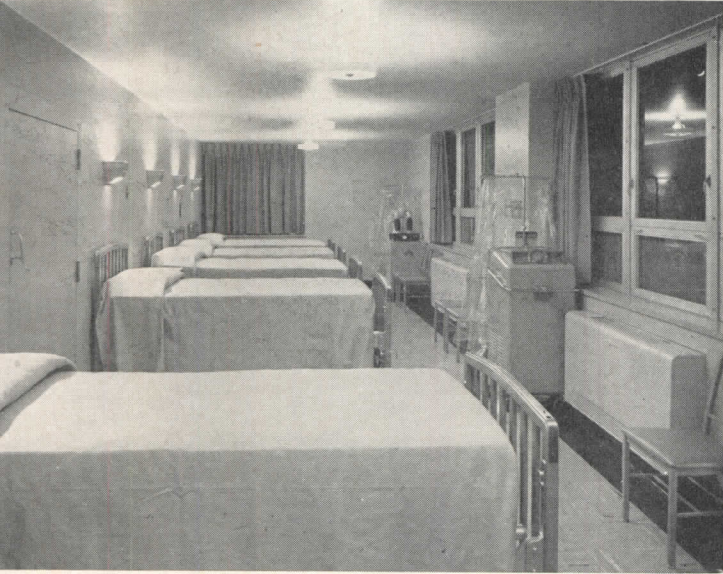
One of the delivery rooms



Interior of cystoscopy room

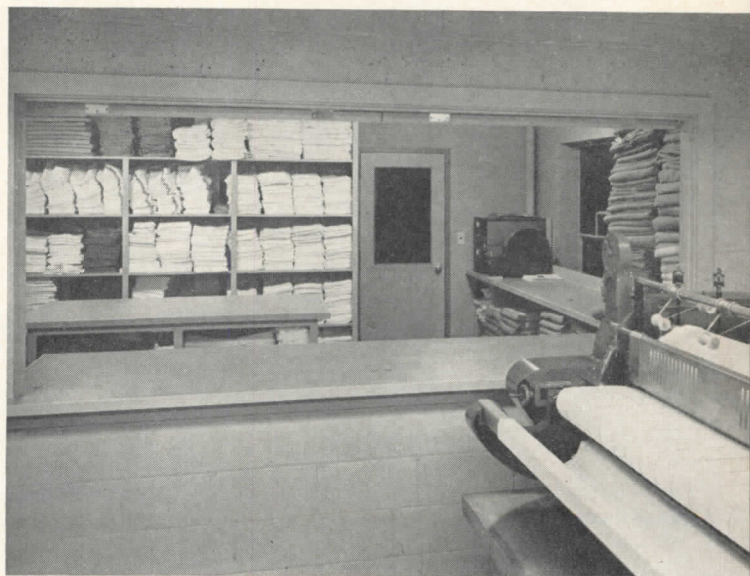
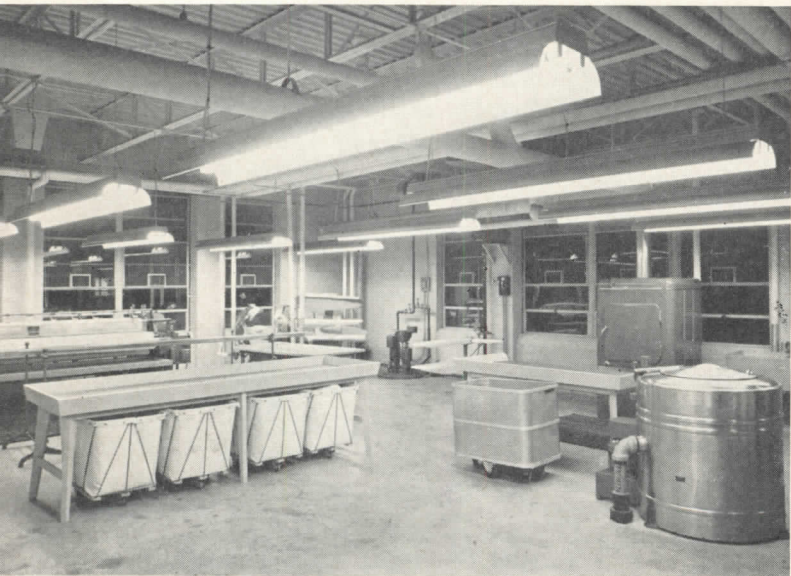
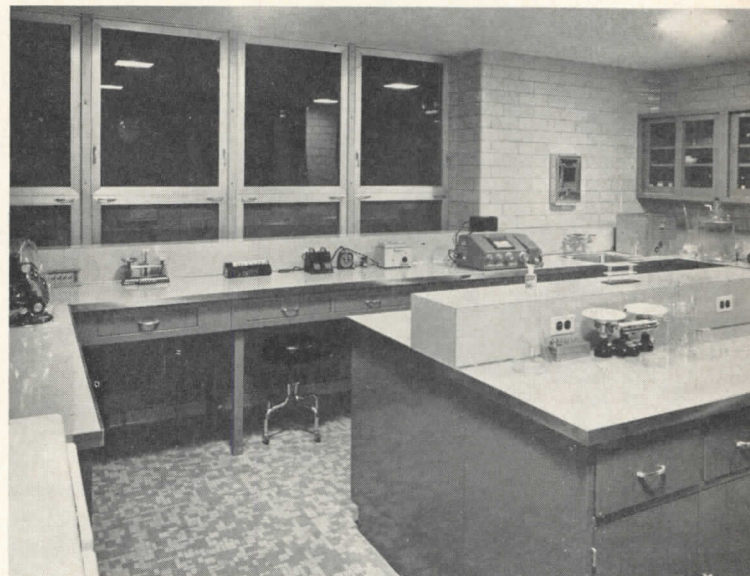
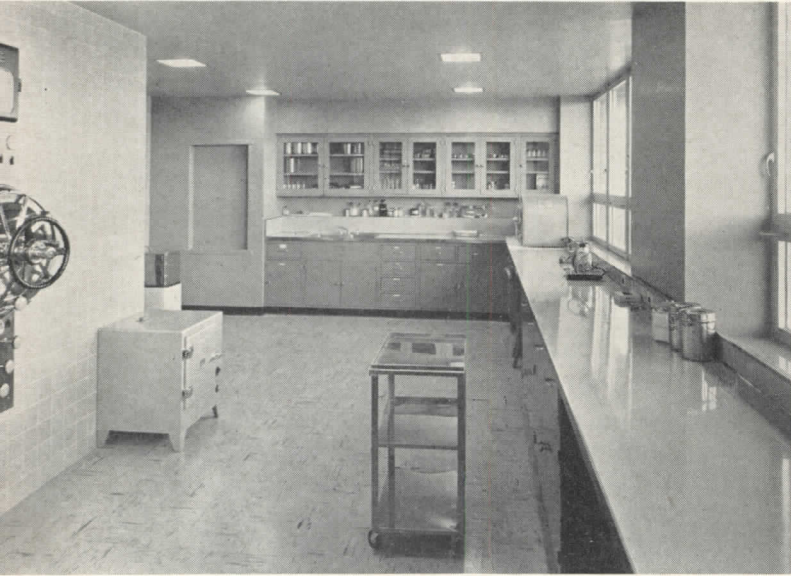


Below: the Bartlesville area having suffered a high incidence of polio, the hospital has a special department. Left: acute polio ward; right: exercise room



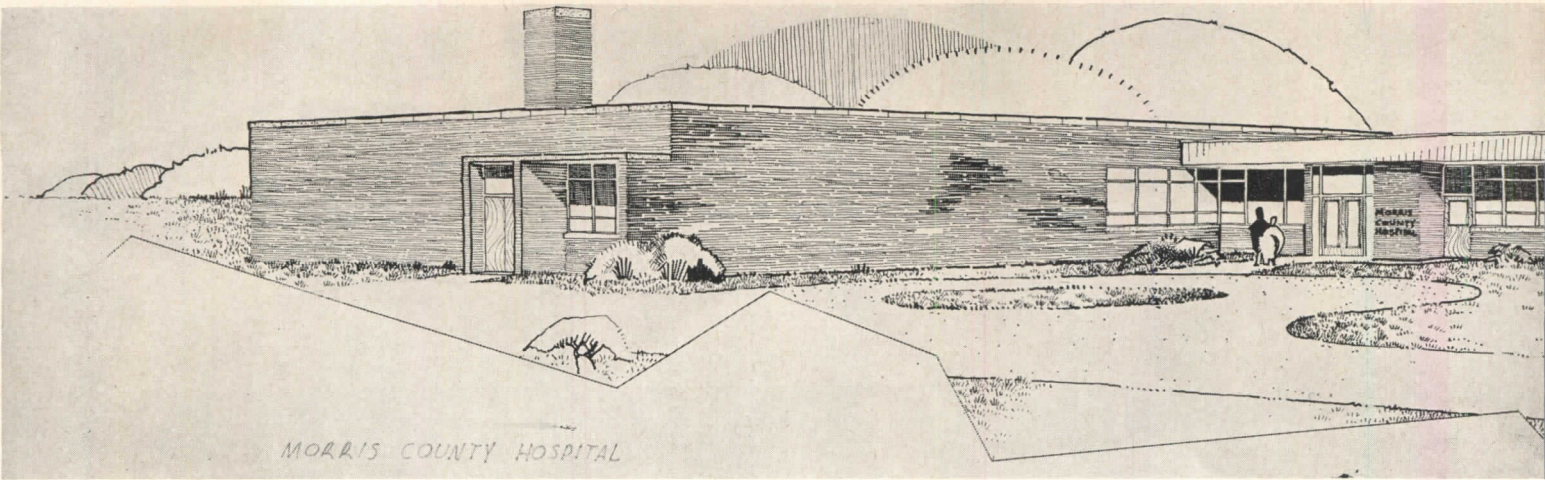
Above left: wall between nursing room and waiting room will give visitors, or expectant fathers, a good view. Right: large snack bar opens onto terrace

Below left: central sterile supply room, second floor opposite surgical suite. Below right: laboratory in same general location, conveniently near surgery



Hawks-Terrell, Inc.

Above: Jane G. Phillips hospital has its own extensive laundry in isolated rear location near boiler room, connected to main building by passage



MORRIS COUNTY HOSPITAL

30-BED HOSPITAL FOR MINIMUM PERSONNEL

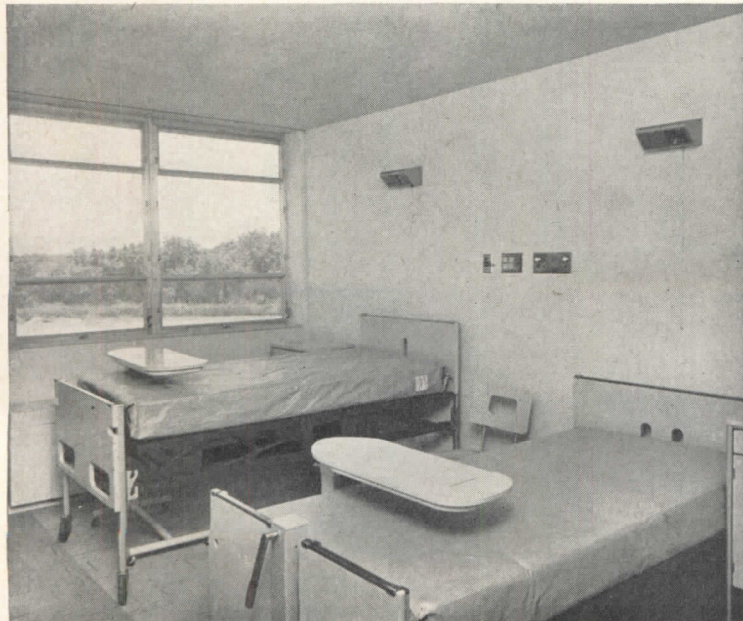
Morris County Hospital, Council Grove, Kansas

HERE IS ANOTHER small hospital planned with principal emphasis on operation by a small staff, with some of the employees doubling in various responsibilities. A hospital of but 30 beds is a small operating entity, and skilled personnel must be skillfully used. The compact arrangement of operating room and delivery suite, in interior space, is one feature that makes possible multiple usefulness by top nursing staff. The same people, moreover, might serve in the adjacent emergency room, or even in laboratory or x-ray. Of course, there is not supposed to be cross traffic between departments such as these, but in a small hospital the use of facilities is likely to be quite intermittent. The nurses' station, too, is placed so that a nurse can serve also in the admitting office. The nurses' station is located at the center of what is in effect a cruciform plan,

the traditional location for good control. This is especially good for the night hours, when a single nurse would be in charge of the entire hospital. This plan shows the usual advantages of the cruciform scheme, with isolated locations for all major departments, and with the possibility of enlarging outward from the center. Indeed the scheme was drawn for the addition of 16 to 20 more beds.

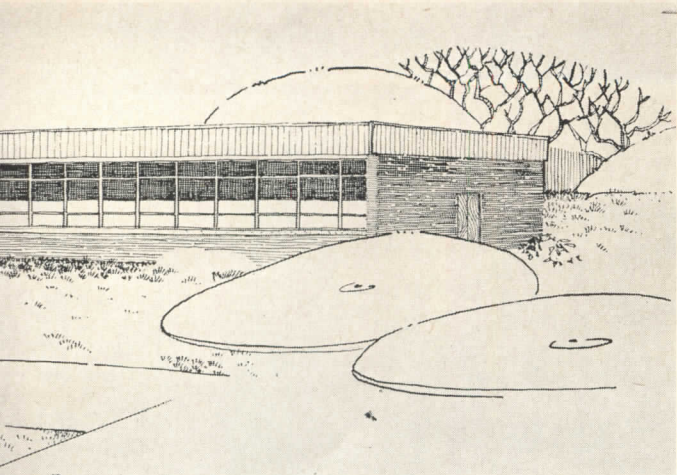
Economy of building maintenance was another major design objective. Exterior walls are of brick, windows of aluminum, projected sunshades and parapet enclosures of porcelain enamel, so that painting is virtually eliminated on the outside of the building. Contracts totalled \$355,552, exclusive of Group II and III equipment, land and fees, or \$21.60 per sq ft; \$1.54 per cu ft.

Typical patient room, east exposure

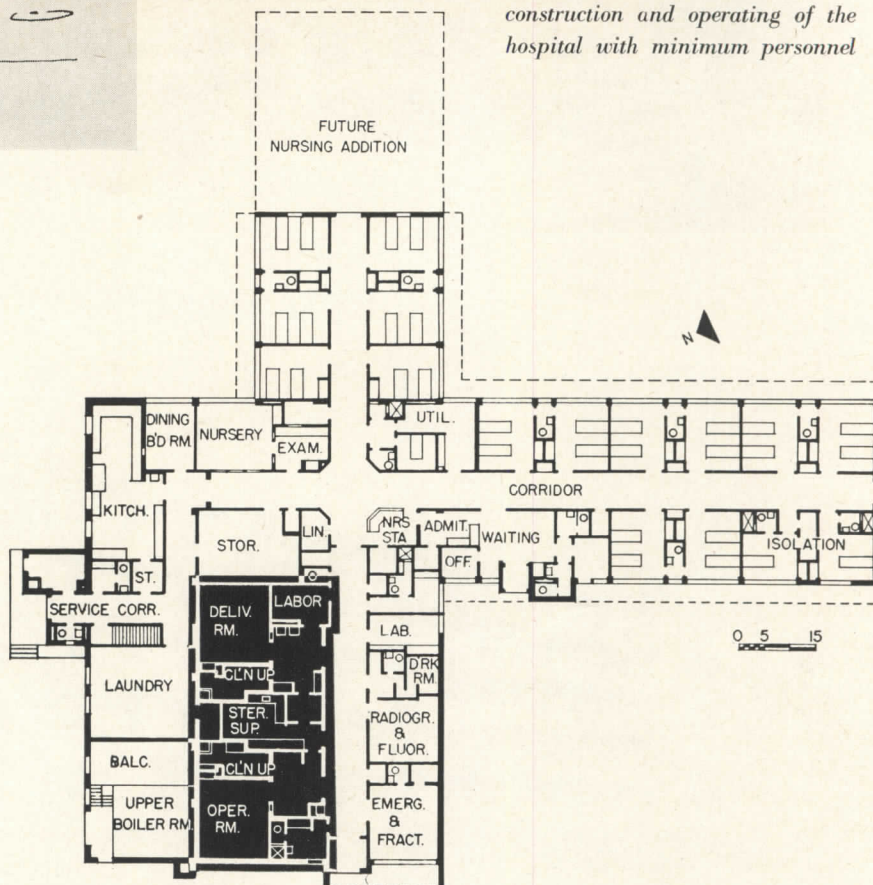


Nurses' station; door at left to admitting office



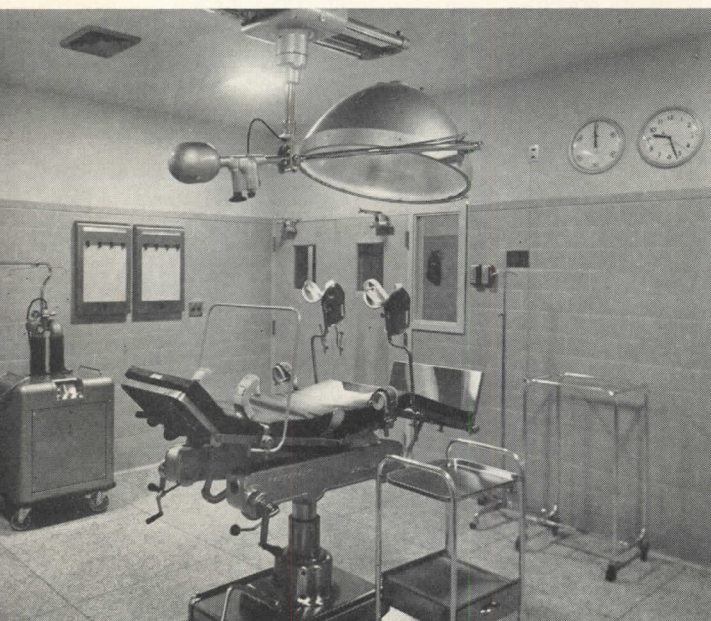


Plan is essentially cruciform, except that boiler-laundry-kitchen wing is folded back against surgical wing. Scheme makes ,or economy of both construction and operating of the hospital with minimum personnel

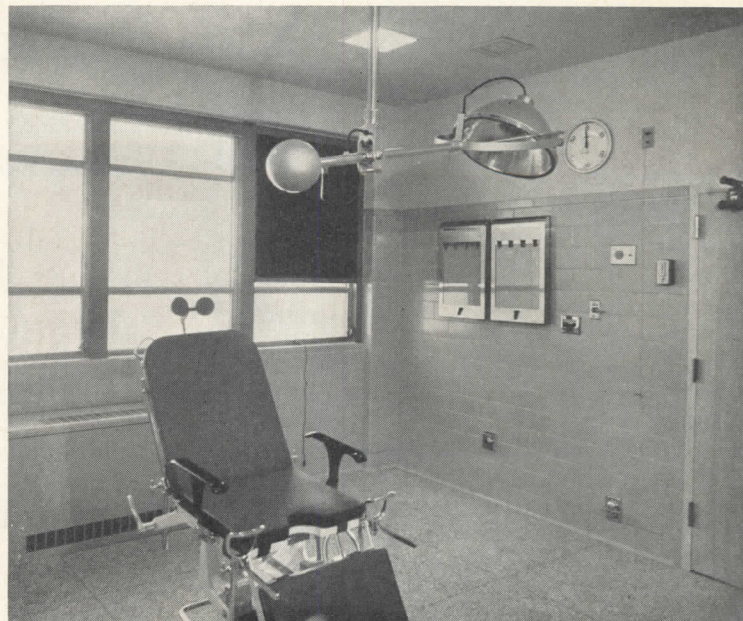


*F. O. Wolfenbarger & Associates, Architects
 Finney & Turnipseed, Structural Engineers
 E. E. Hysom & Associates, Mechanical Engineers*

Operating room in interior space

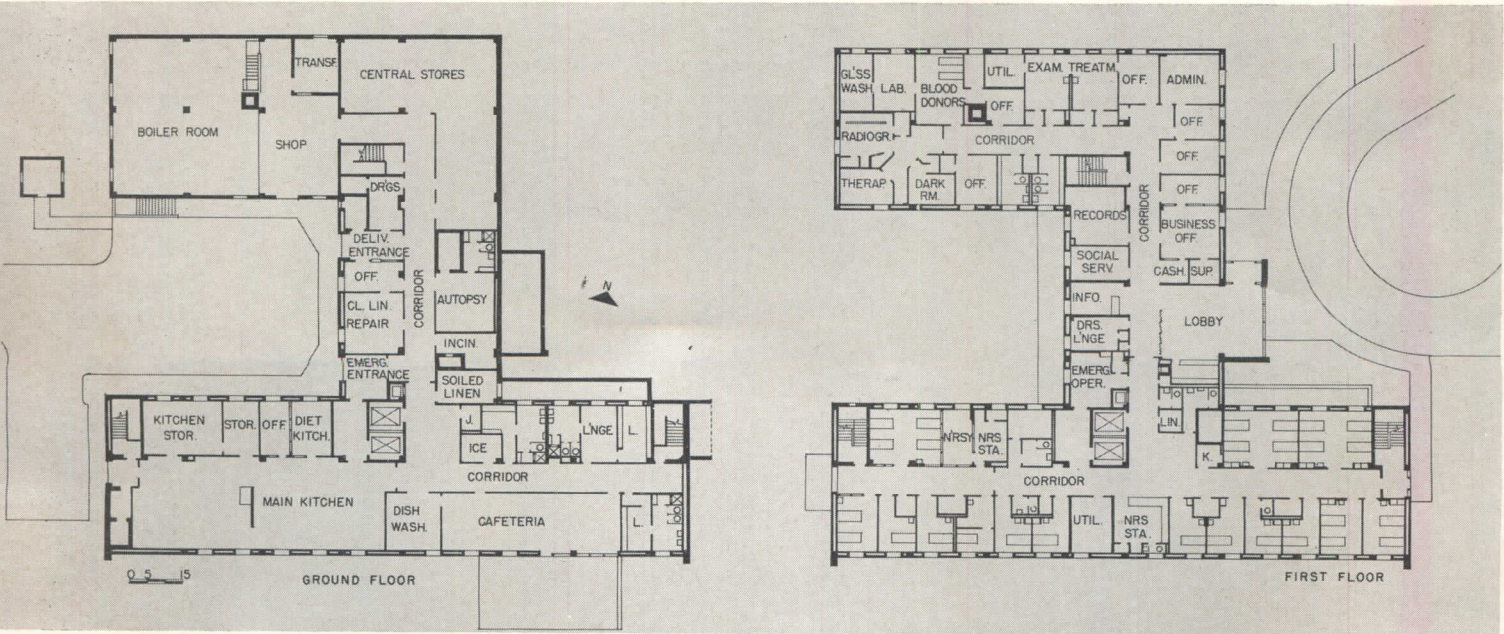
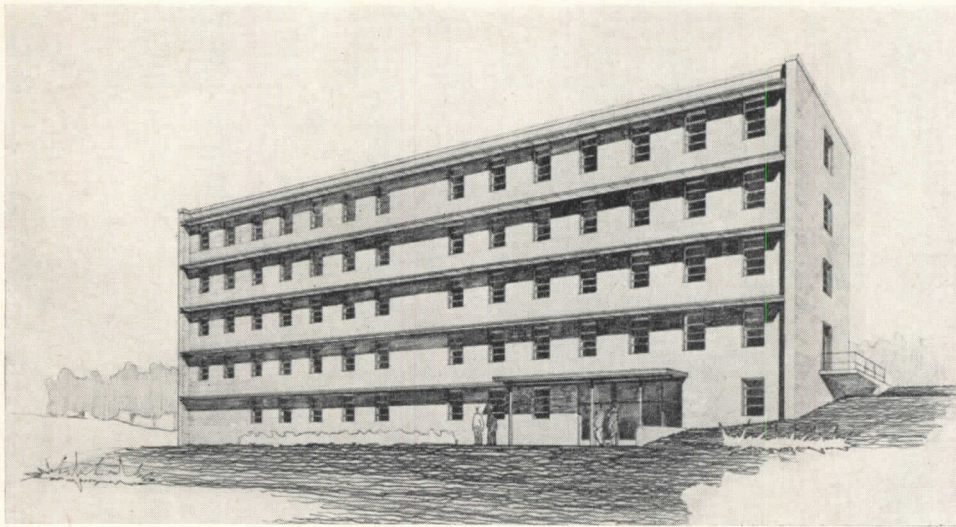


Emergency and fracture room (light-proof shades)





100-BED HOSPITAL WITH PUBLIC HEALTH





UNIT FOR A LARGE RURAL AREA

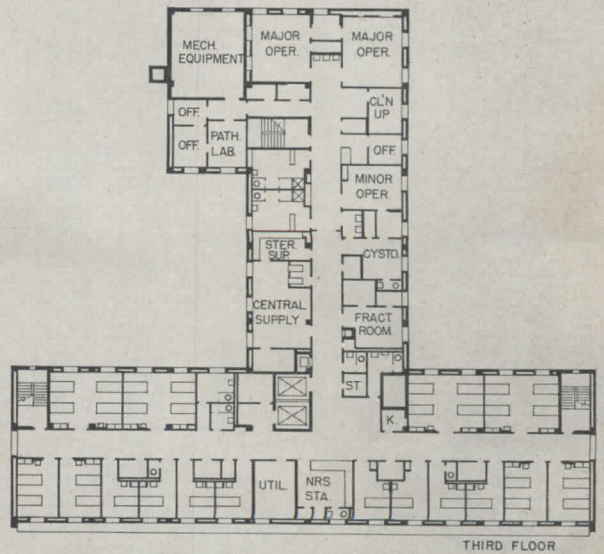
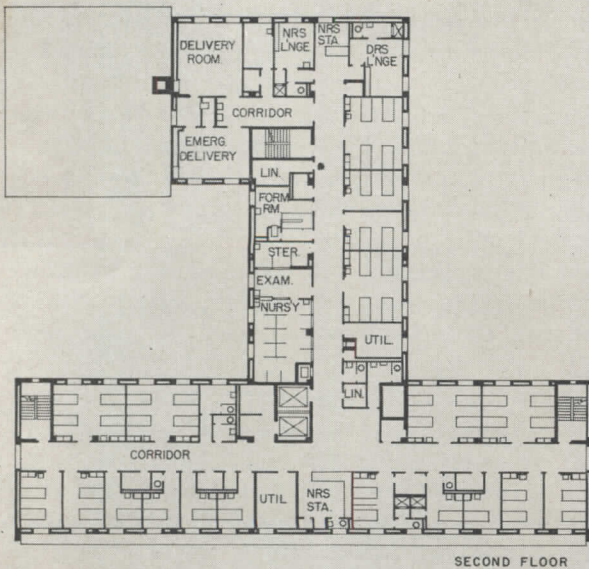
Broaddus Hospital, Philippi, West Virginia

C. E. Silling & Associates, Architects

IN ITS PRESENT STAGE this hospital has a capacity of 102 beds; this to be increased to 134 beds with the addition of a fourth floor nursing unit (shown on renderings). This building is an example of the flexibility of the T plan. The conventional use of this scheme is seen on the third floor — nursing unit in the top of the T, surgical suite in the base. On the second floor, however, much of the base is used for patient rooms, with the delivery suite extended outward. Similarly the ground and first floor plans are extended to add space.

The first floor houses a normal out-patient department, but adds on a public health unit. The hospital seems large for a small community, but serves a large area.

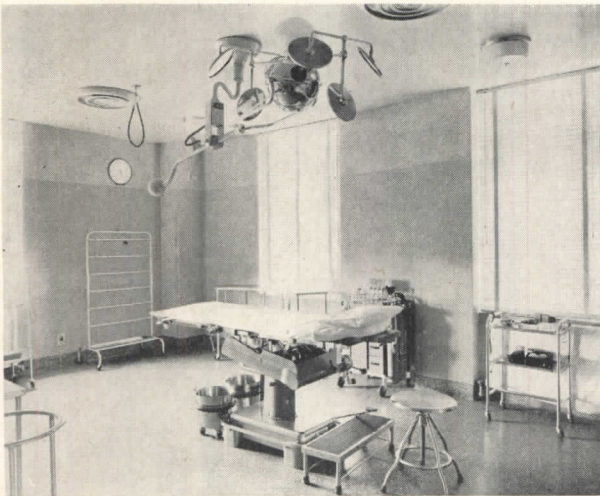
Construction is steel frame, with slab floors on steel joists. Obstetrical and surgical departments are air-conditioned. The building cost \$1,575,000 (present stage), exclusive of land, fees, and loose equipment. On this basis cubic foot cost is \$1.84. The hospital is pleasantly situated on the Alderson-Broaddus College campus, and will offer a nurse training program.





70-BED HOSPITAL WITH NON-TYPICAL T FORM

*Margaret R. Pardee Memorial Hospital
Hendersonville, North Carolina
Six Associates, Architect and Engineers*

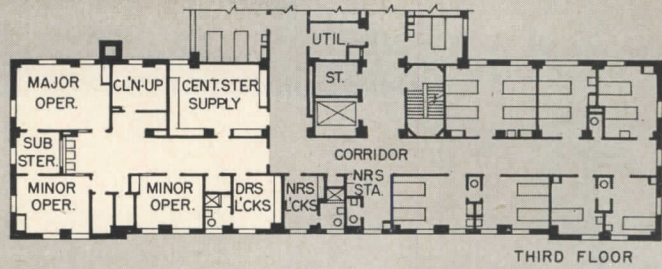


WITH A CAPACITY of 70 beds this hospital is large enough to escape the personnel problems of the really small institution. It is large enough to have full time technicians in such departments as x-ray, laboratory, pharmacy, and thus does not need to locate them for multiple operation by a single person. In such a building efforts to save staff time are likely to take the direction of more equipment — signal systems, private toilets, and other items that save nurses' steps. This hospital is exceptionally well equipped with such devices, also with facilities, such as x-ray therapy, which permit use of the techniques too specialized for the small hospital.

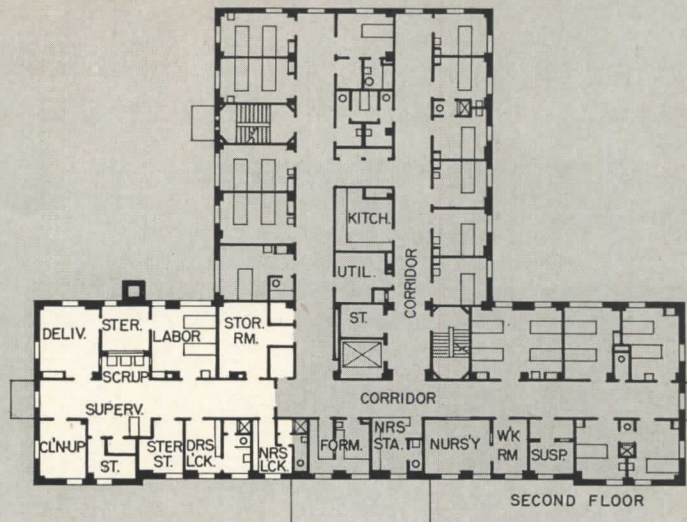
The building takes the typical T form, but does not use it in typical fashion. Notice that the operating and delivery suites are at one end of the top of the T, instead of in the base. Here it would appear that the base section, being larger, serves better for patient rooms, with the double corridor idea proving useful to keep the distances of nurse travel from growing too long.



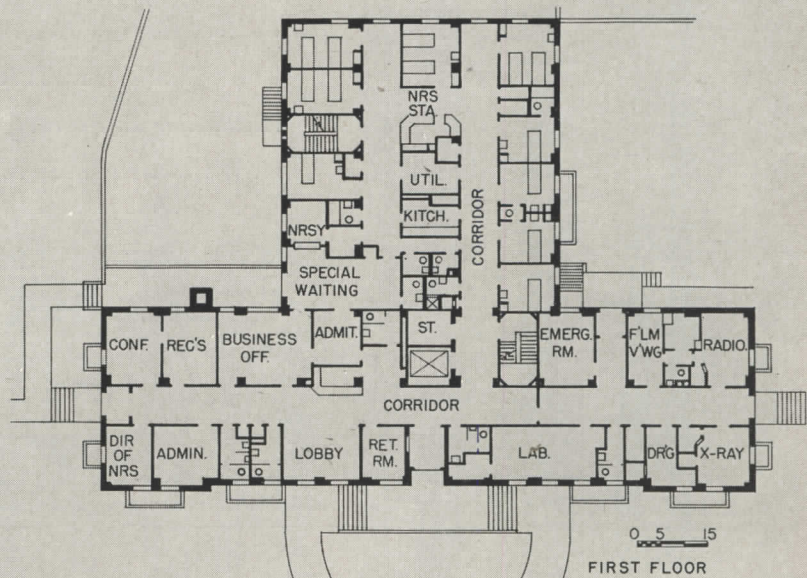
Third floor is similar to second, except that surgery takes place of delivery suite



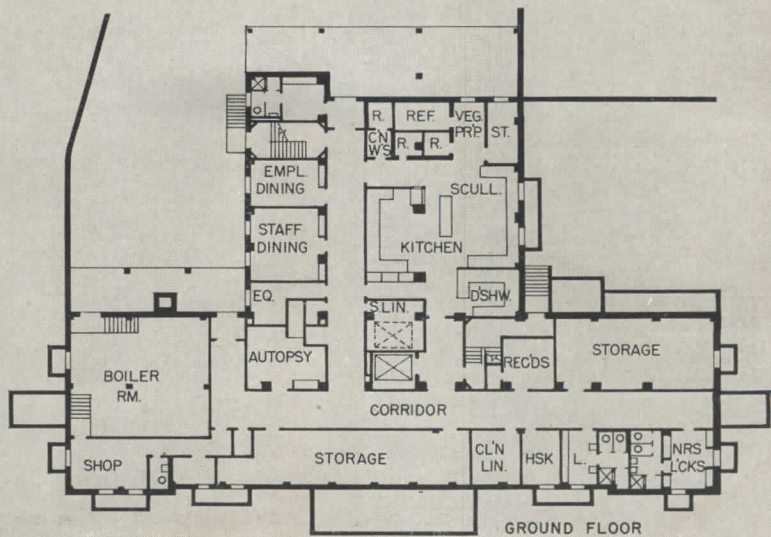
Delivery department is in top of the T, instead of more typical position in base

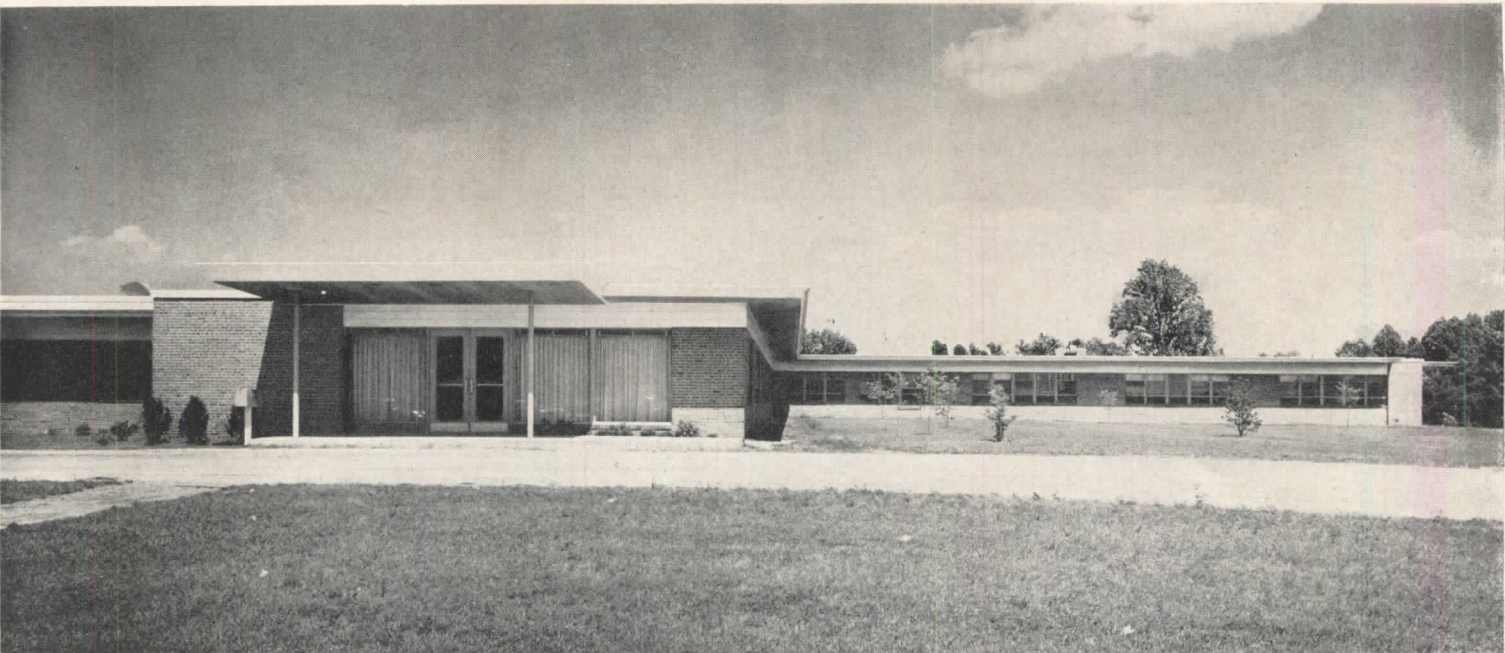


This hospital has the problem of segregation, with the separate, and wasteful, nursing unit



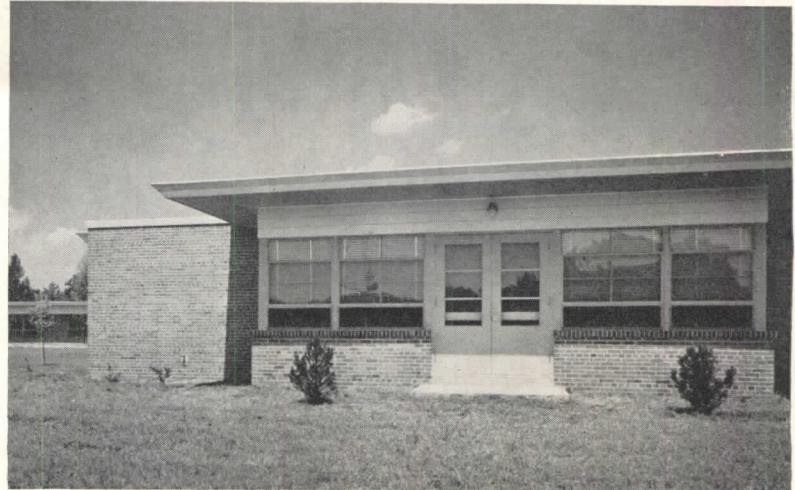
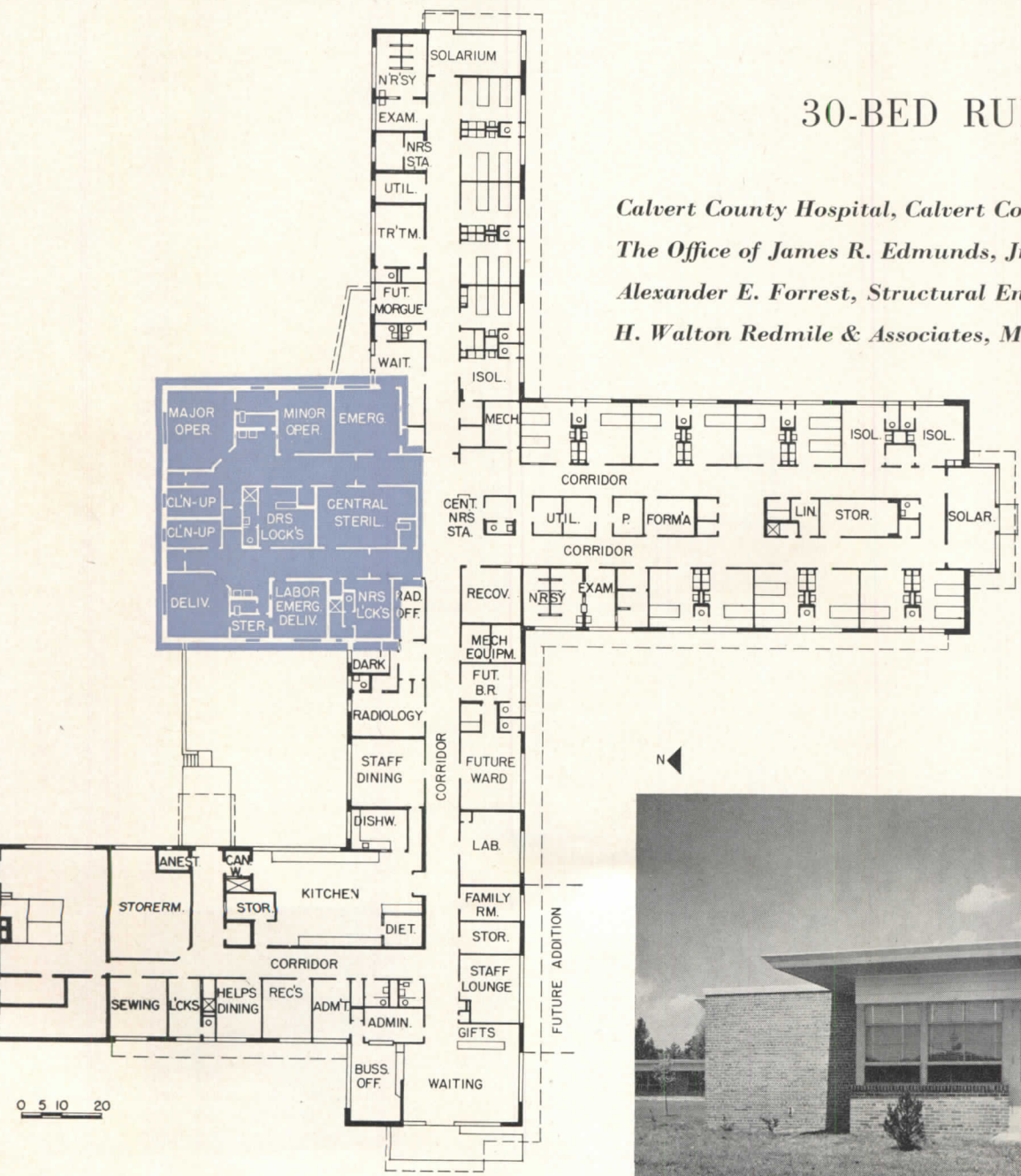
Basement is at ground level at rear, for convenient loading of supplies and fuel

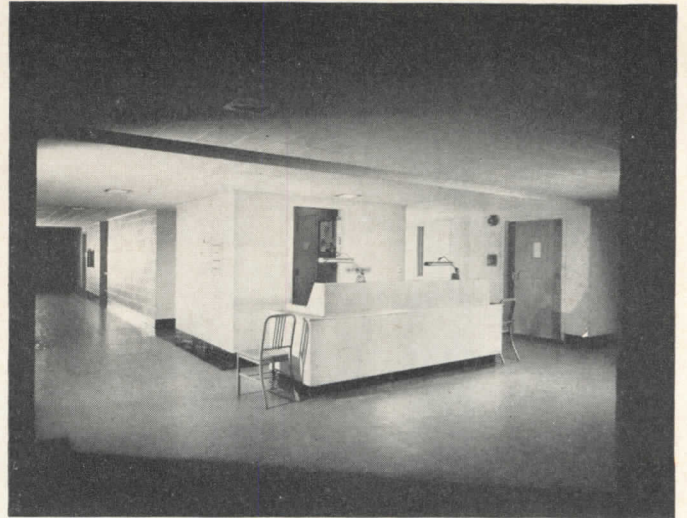
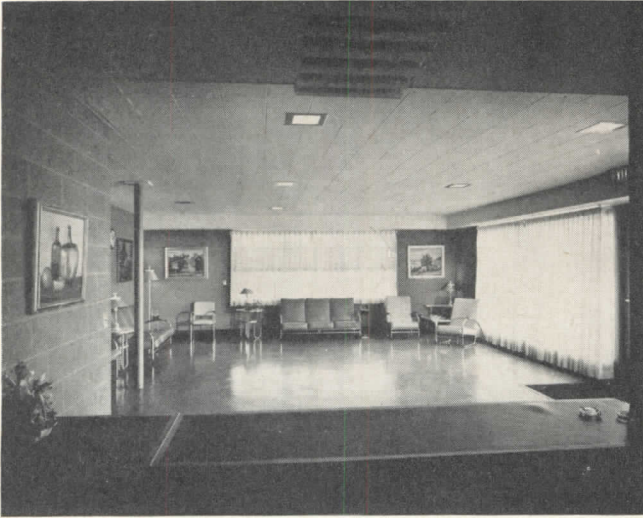




30-BED RURAL HOSPITAL

Calvert County Hospital, Calvert County, Maryland
The Office of James R. Edmunds, Jr., Architects
Alexander E. Forrest, Structural Engineer
H. Walton Redmile & Associates, Mechanical Engineers





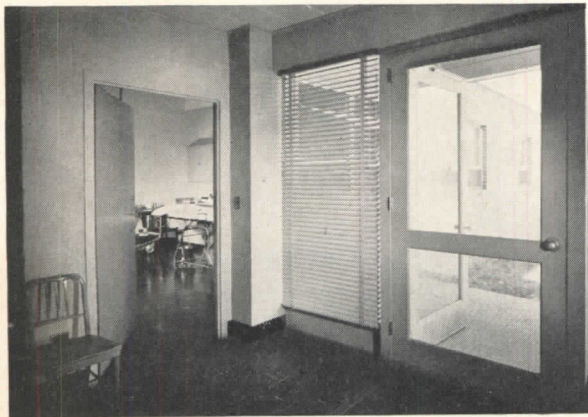
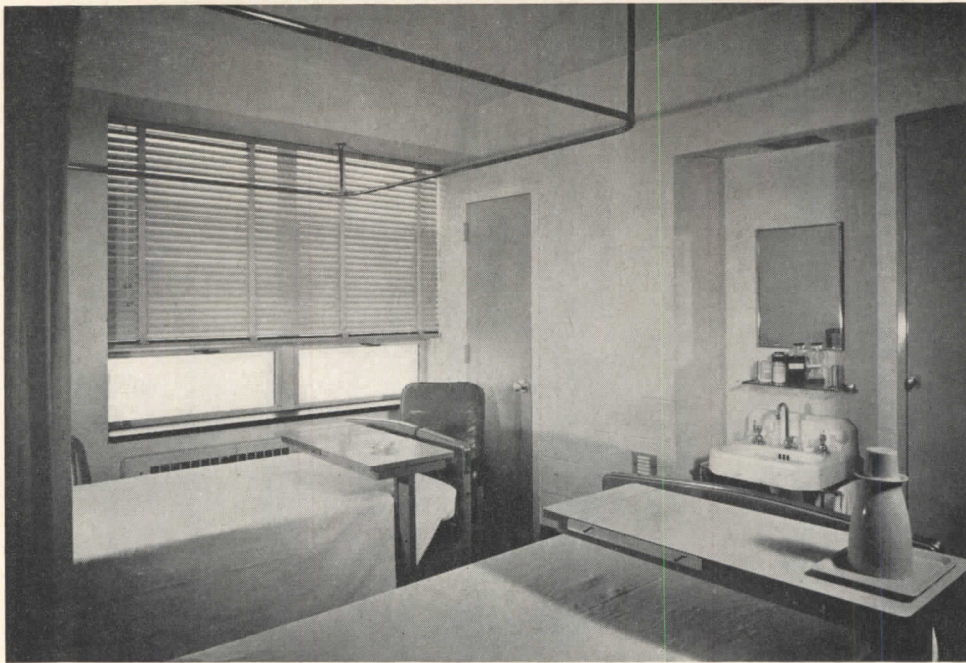
Joseph W. Mollitor

PLANNED FOR LATER EXPANSION

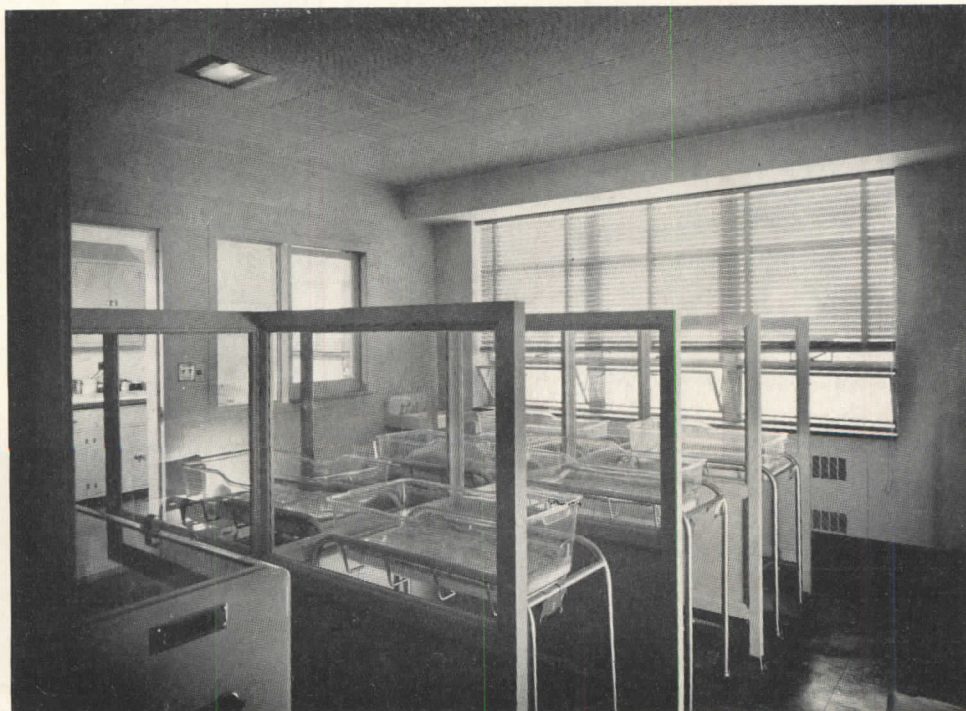
AS HOSPITAL STANDARDS have been defined at a high level, along with medical techniques, the small rural hospital has faced some problems. It must have operating, delivery, diagnostic and treatment facilities, just as a larger institution, but all of the necessary equipment and departmentalization places a burden on the small community, tends to increase operating costs as well as construction budgets. If the community is fairly isolated, as this one is, it is difficult to leave things out on the theory that some patients will be referred to city hospitals. This hospital indeed was so isolated that it had to build its own power plant, water treatment facilities, and sewage disposal system. Its present bed capacity is 30, but additional bed space will eventually be added at which time its present extra capacity in some departments will be put to better use. It is planned for operation with minimum nursing personnel, but it does have department layouts that make no compromise with full hospital standards, with piped oxygen as a single example of good practices.

The building is slab-on-grade construction with masonry walls. Exterior wall is brick with the interior face of fine-textured block, which is also used for interior partitions. Ceilings are of plaster, except where acoustic treatment was necessary.

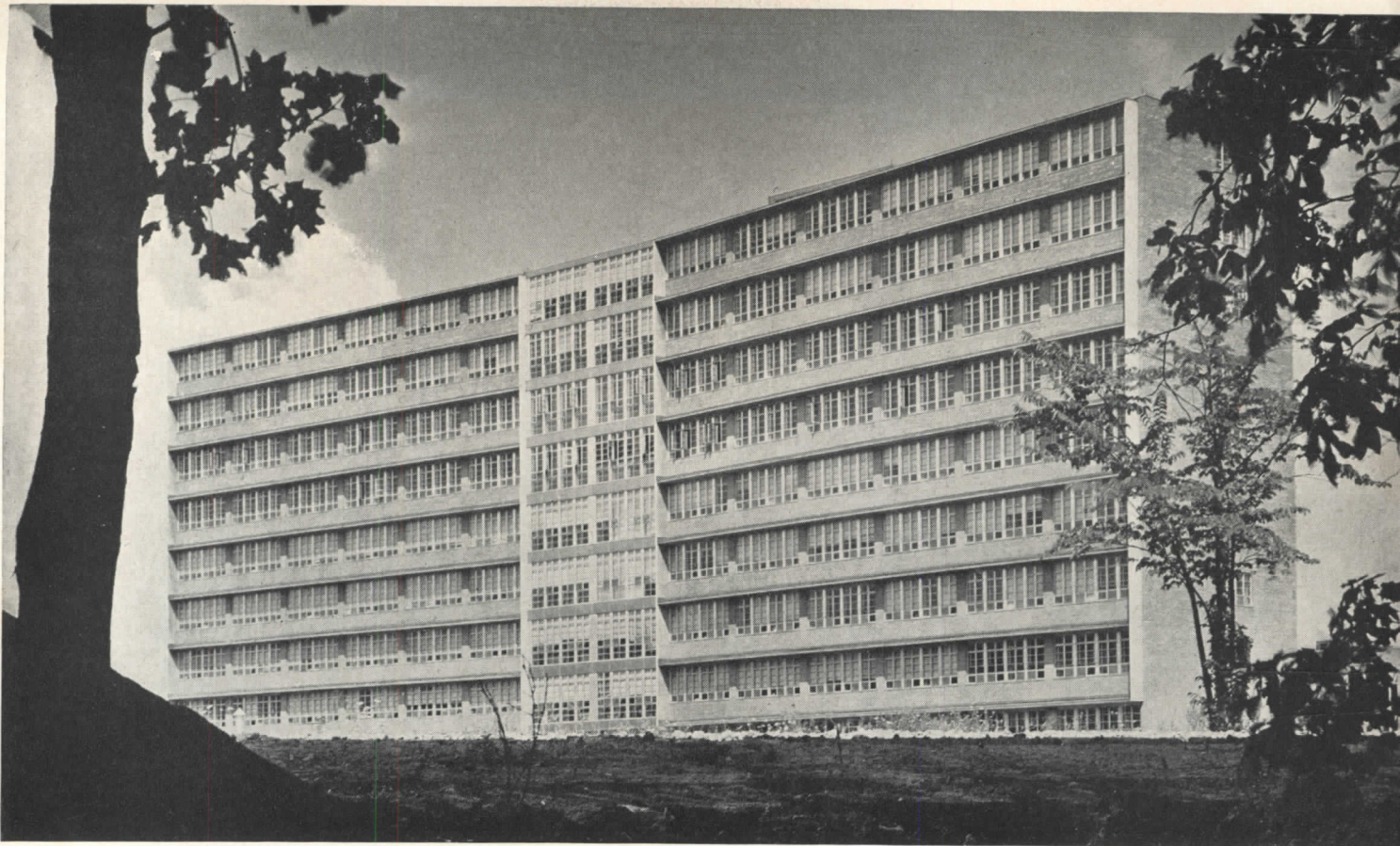




Above: at the Calvert County Hospital most of the beds are in two-bed rooms; all rooms have lavatories, with connecting toilets. Left: view into emergency room from waiting room at the ambulance entrance. Below: nursery has separate cubicles for the bassinets; nursery is reached only through work room



Joseph W. Molitor



INTERIM REPORT ON 3500-BED HOSPITAL

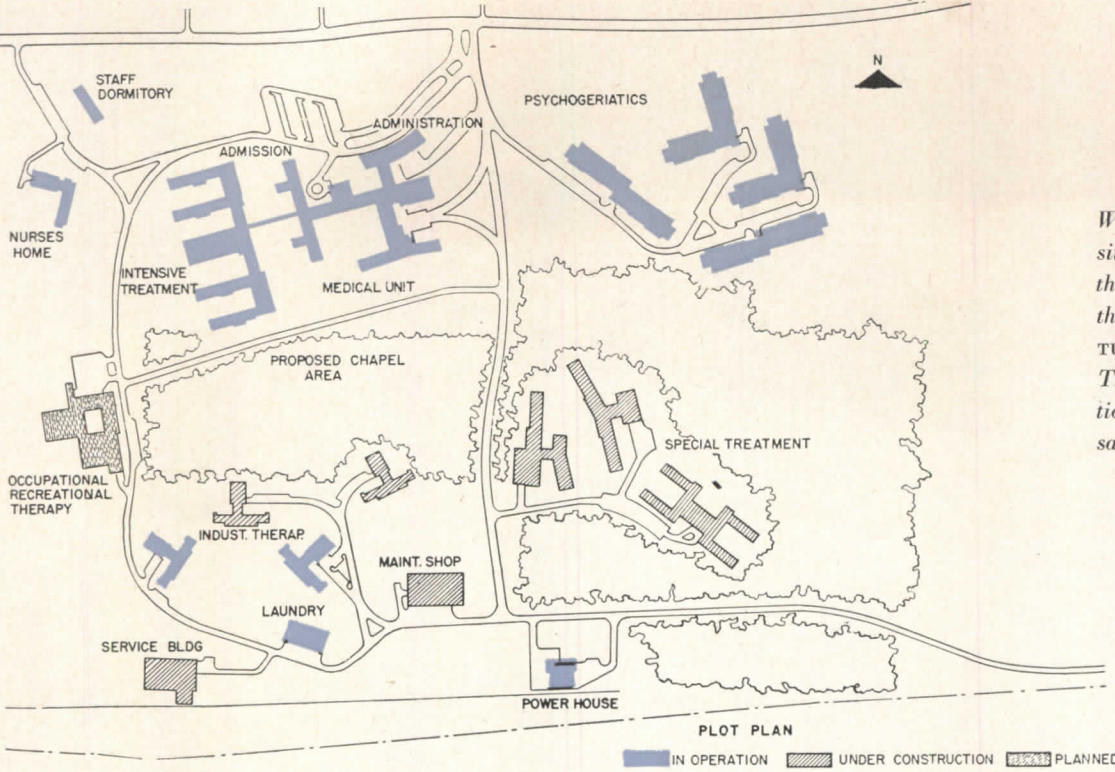
Northville State Hospital, Northville, Michigan

O'Dell, Hewlett and Luckenbach, Architects

SEVERAL YEARS AGO (June, 1947) the RECORD published an account of the programming researches that preceded the planning of this new 3500-bed mental hospital. At that time the architects were in effect breaking through an age-old barrier in mental hospital design, with no modern precedents for guidance. Mental care was obviously going into a new era, but neither architects nor doctors had any sure knowledge of how new treatment techniques would change the patterns of mental hospitals, or how even to classify patients in various groups and different kinds of building facilities. Preliminary programming, then, amounted to a pace-setting study.

This presentation is by way of being an interim report on the building of this great hospital, concentrating mostly on the largest building of the group, the medical unit. The site plan (next page) shows how construction is progressing. The larger group of connected buildings was the starting point — administration, admissions, medical unit and intensive treatment buildings. Some of the other buildings are in operation, others under construction. It will be some years yet before the planned scheme of operation can be realized; probably no single building can function according to its true purpose until all are finished and operating. Right now, for example, the medical unit, designed for physically ill bed patients,





With one major exception, the site plan of Northville follows the programming diagrams in the earlier article (ARCHITECTURAL RECORD, June, 1947). The group for convalescent patients was considered unnecessary and omitted

HOSPITALS

is having to house many different patient groups, even including disturbed cases. For the new groups of buildings must pick up their share of the state's load as new accommodations are provided, theories of building design notwithstanding.

Dr. Philip N. Brown, medical superintendent, reports nevertheless that "we who work in it are very proud of the installation." Apparently some of the newer design ideas are proving out even if the patients cannot be properly sorted out. "The extensive use of glass," reports the doctor, "has provided lightness, and the many pastel colors used in painting the rooms have produced an atmosphere for our patients which we consider extremely satisfactory. The small wards in the hospital, none of which houses more than 54 patients, also, we feel, have worked out extremely well as far as the care of the patients is concerned, and is much more desirable than large wards, housing from 100 to 150 patients." The doctor points out, however, that the small wards require more attendants. Incidentally, it should be explained that "wards" here means nursing units in the planning sense — no single room houses more than six patients.

Mr. Luckenbach, of the architectural firm, makes it clear in his notes that it was all planned that way: "One of the features that we deliberately planned was that no ward in these buildings should have more than six patients. It was felt that this would force the institution to have more attendants and therefore be able to do a better therapy job. It has actually worked out that way and the superintendent likes it, but he is not always able to get the personnel to do the job required."

The doctor also mentions some difficulties, where the appointments did not work too well in practice. One was with elevators — "we have had a considerable amount

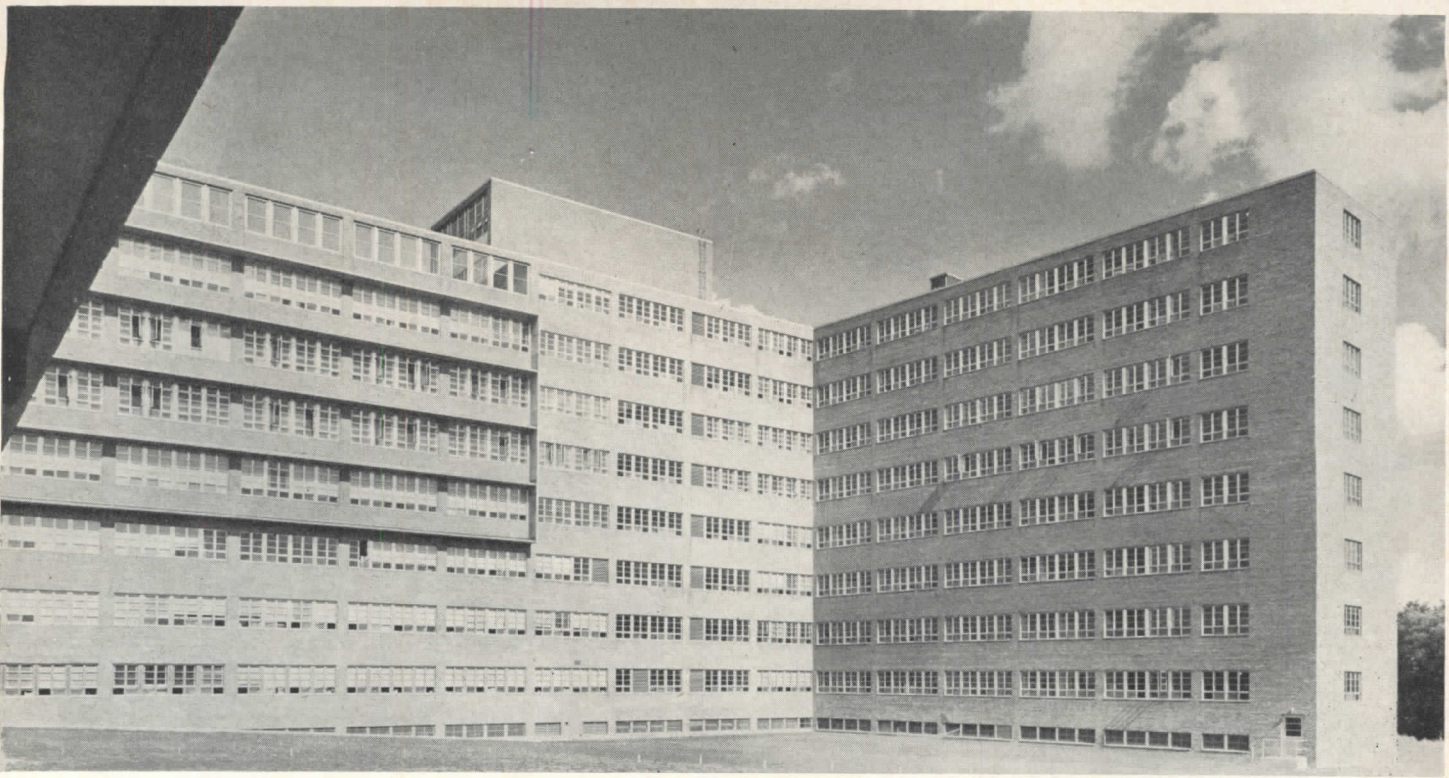
of difficulty with our elevators. It would be our recommendation that, instead of having button calls on the various floors, all of these should be keyed switches, so that the elevator could be called to that particular floor only by a member of the hospital personnel who has a key."

The matter of detention screens was thoughtfully worked out, and the difficulties of non-conforming use were anticipated. The glass areas are generally quite large; in order to avoid the appearance of detention sash, half aluminum sections were used, and all glass in patient areas above the ground floor is tempered plate glass. The opening of windows is restricted to five inches, and this was felt to be adequate protection for the majority of patients in the medical unit. However, since this building would have to house others at first, provision for psychiatric sash was made.

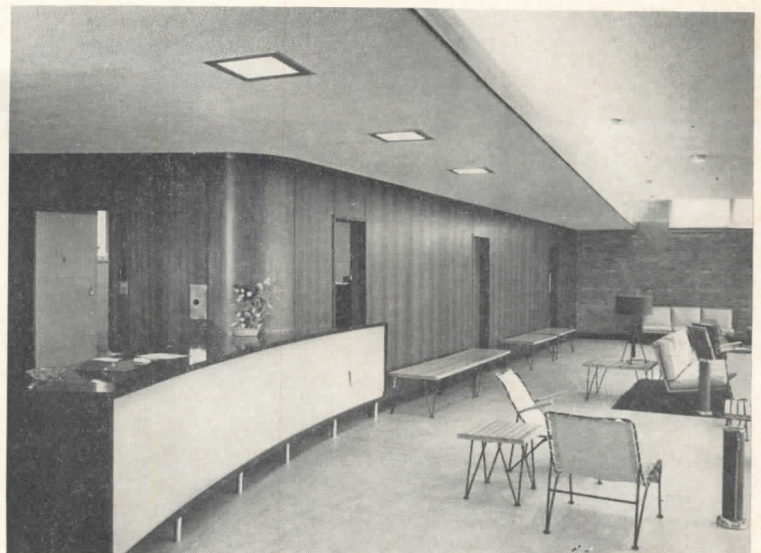
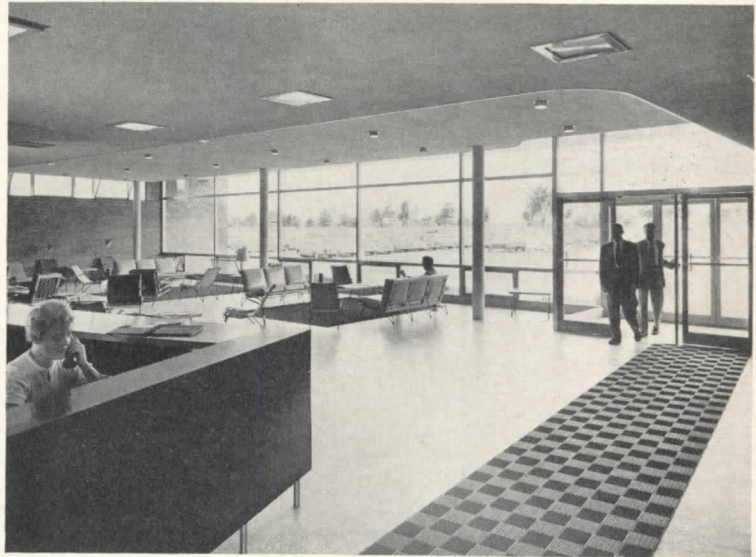
Heating is calculated at 65 per cent radiant heat and 35 per cent warm air. There was some thought that this might prove expensive, but it is not believed so, since normal radiators would have to have tamperproof grilles and fittings for mental hospital use. In any case, the superintendent speaks favorably of the heating system as it is.

Acoustical plaster was used throughout, except in service areas and detention rooms. All corridors are glazed structural facing tile, with a quarry tile base and cap to soften the rather institutional appearance. Stairways are lined with face brick with exposed concrete floor beams and ceilings.

One equipment item that is much used is a music broadcasting system. Patients use it for playing records and for broadcasting their own live talent as well. It is one extra feature that distinguished the old type of mental hospital from the new.



Below and right: main entrance and its lobby were kept as bright and cheerful as possible, with plenty of glass and gay modern furnishings within



Joe Munroe photos, except as note.

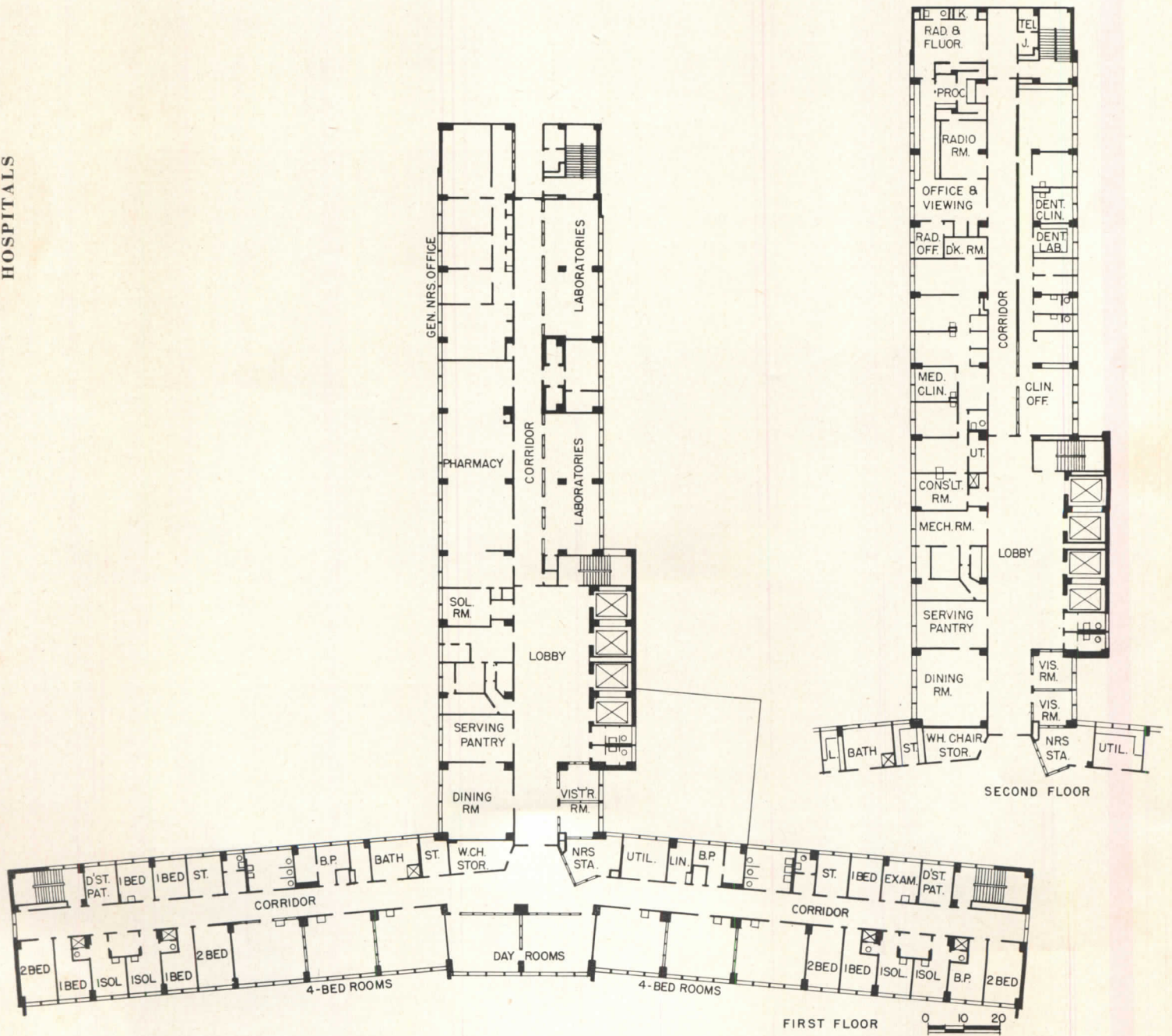


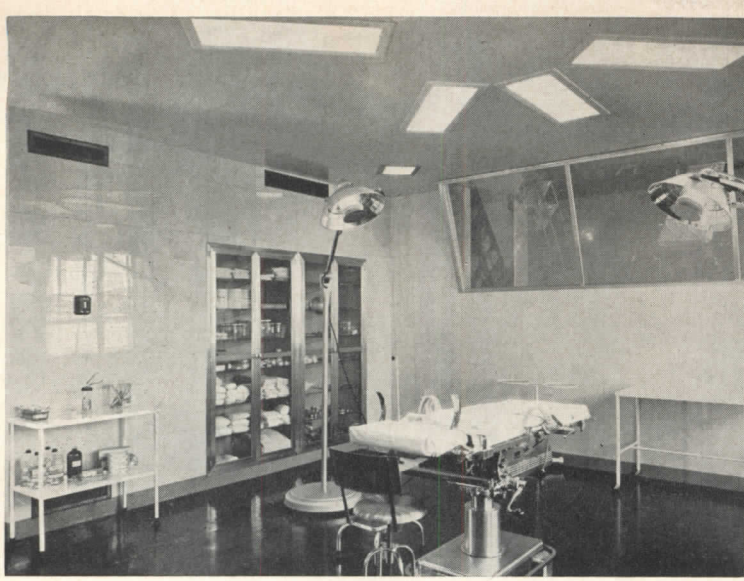
Main corridor in administration building



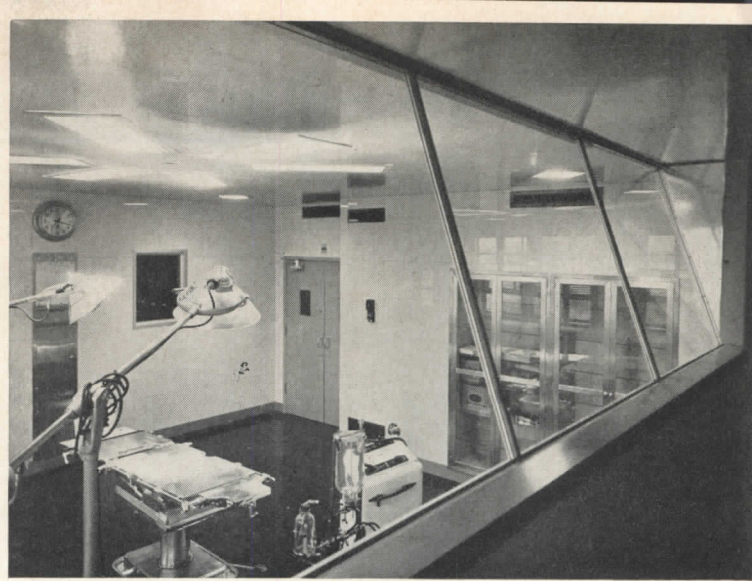
Medical wards have glass partitioning

HOSPITALS





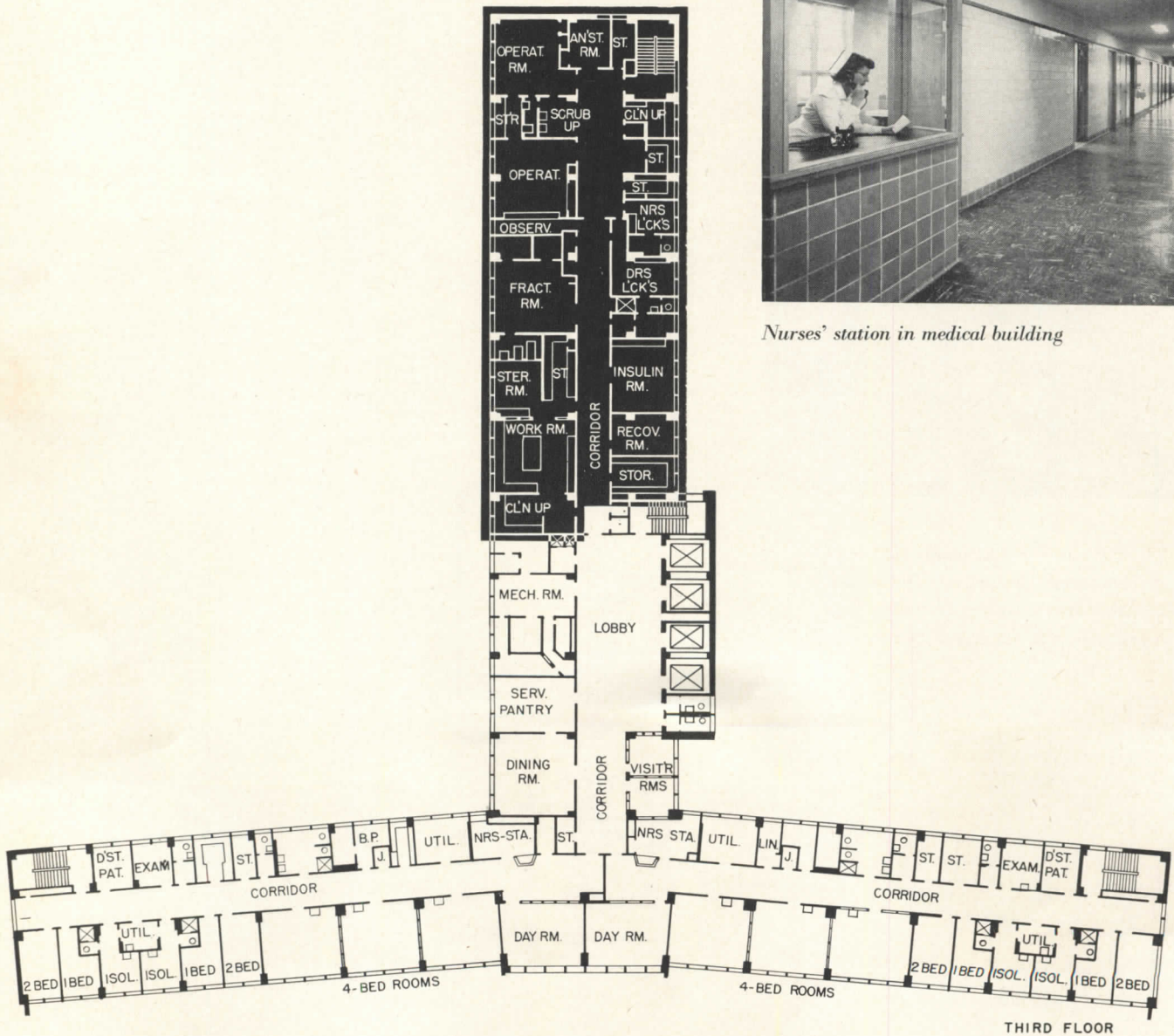
Major operating room



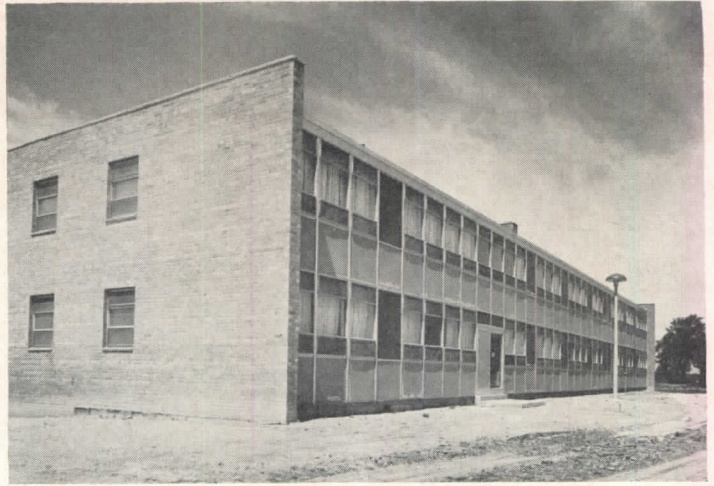
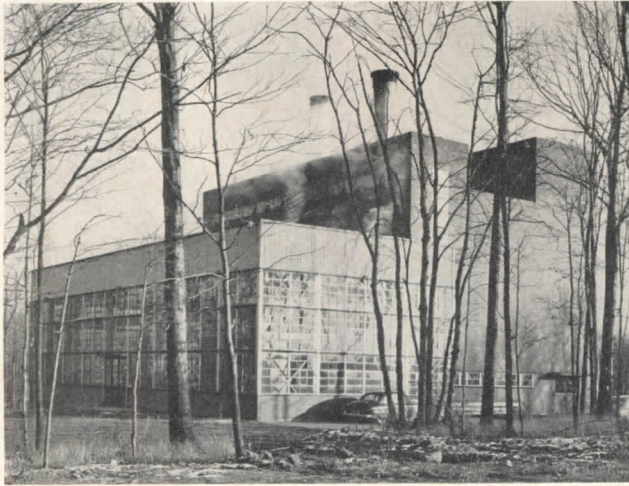
Gallery overlooking operating room



Nurses' station in medical building



Joe Munroe

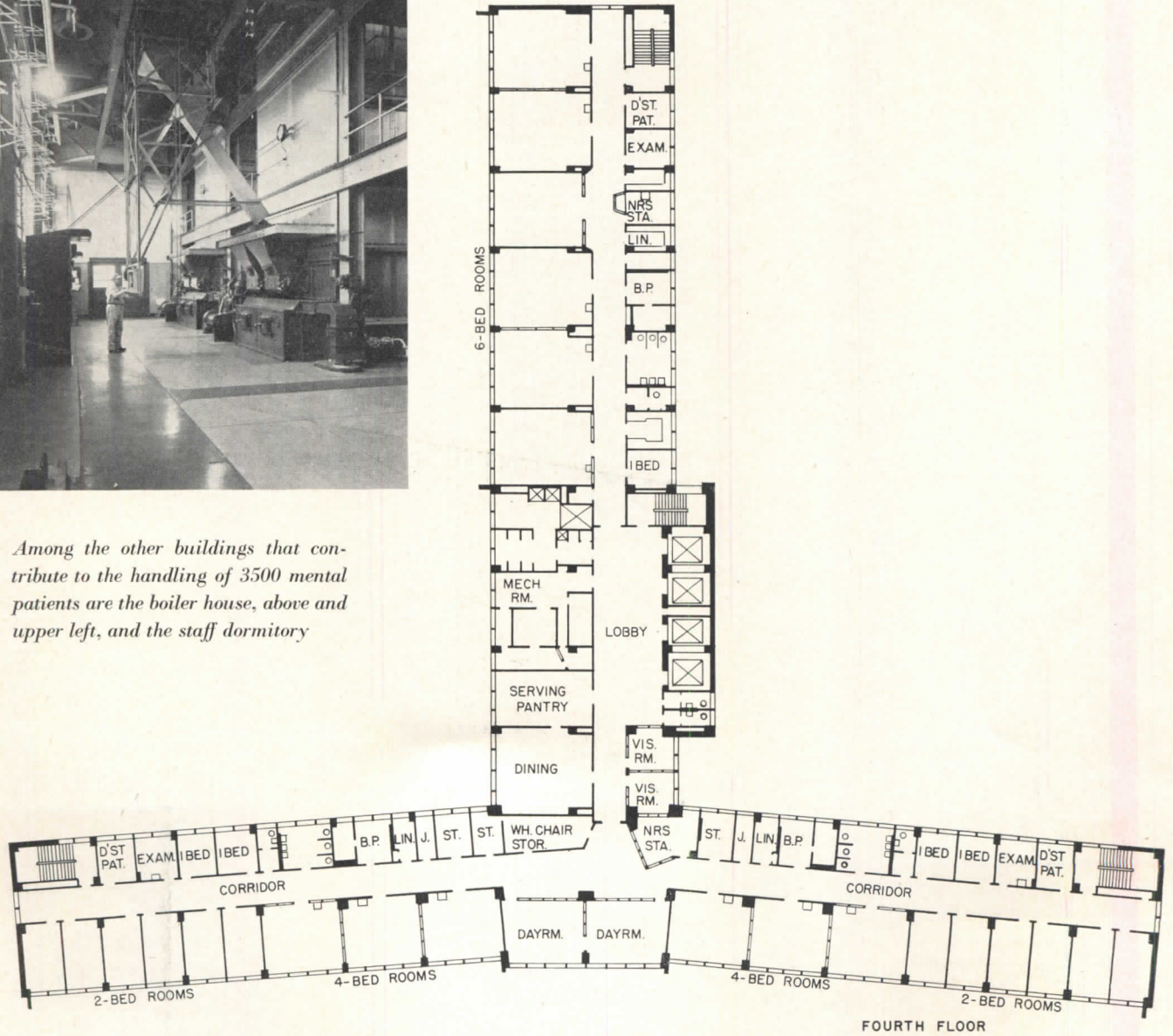


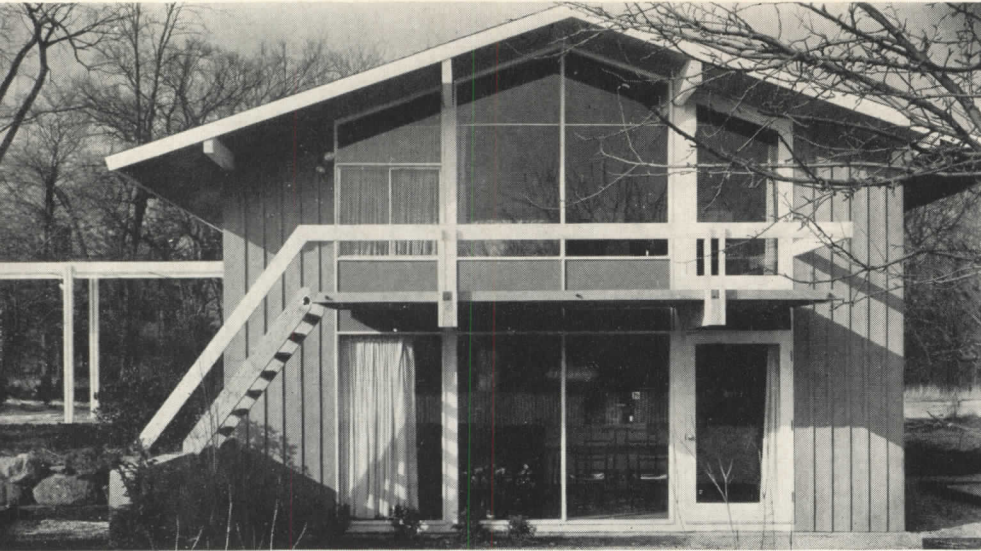
Richard Shirk

Joe Munroe



Among the other buildings that contribute to the handling of 3500 mental patients are the boiler house, above and upper left, and the staff dormitory





George Montgomery Photos



Stressed-skin roof panels, 4 by 16 ft., of fir plywood pressure-glued to 2x4's, are shop-assembled for installation in Carl Koch's Techbuilt house (left). Note aluminum foil insulation which has been inserted between the plywood skins

Engineering principles are responsible for new structural systems (such as stressed-skin panels) and for more efficient use of century-old systems (such as plank and beam), both of which could be more fully exploited

WOOD STRUCTURES FOR HOUSES

By Albert G. H. Dietz and William J. LeMessurier*

For design data on stressed-skin plywood panels, see beginning of the new Time-Saver Standards series on Engineered Wood Design, pages 225, 227 and 229. Later issues will cover wood trusses and plank and beam construction

Wood, the most traditional material for house construction, is being neglected by today's designers in favor of carefully manufactured materials with engineered design. These new building materials have made possible structural methods adapted to the modern architectural trend toward the use of large glass wall areas, plans with continuous open spaces and unconcealed surfaces. However, wood does not have to be sacrificed in order to have up-to-date house construction. In the discussion that follows several engineered uses of wood will be considered. Detailed de-

signs for many of these applications will appear as "Time-Saver Standards" in this and subsequent issues.

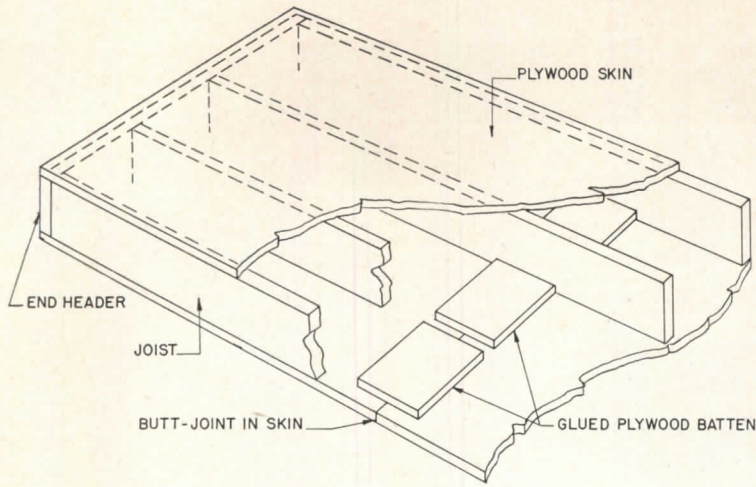
STRESSED-SKIN CONSTRUCTION

Stressed-skin construction is a method of building walls, roofs and floors in which the surfacing materials are made to act integrally with the studs or joists to which they are attached. In ordinary building methods, flooring, ceilings and wall coverings act structurally only to carry local loads and keep out weather; they are otherwise dead weight. In stressed-skin construction these coverings are continuous skins which are bonded firmly by gluing to the studs or joists. They thus contribute greatly to the strength of the combination. The

principal requirement of this skin material is that it be continuous, and in house construction plywood is almost universally used. To achieve proper control and efficiency, stressed-skin construction demands prefabricated assembly.

The principal advantage of stressed-skin construction is its efficient use of materials. Without increasing joist sizes, longer spans can be achieved than are possible with standard procedures. In the usual house construction, for example, 2 x 10 joists of No. 2 Structural Douglas Fir spaced 16 in. on center can span only 16.4 ft with live-load deflection limited to $\frac{1}{360}$ of the span and total deflection limited to $\frac{1}{300}$. The same joists at the same spacing with a glued-on top skin of $\frac{3}{8}$ -in. plywood and a

* Professor and Assistant Professor, respectively, in the Department of Civil and Sanitary Engineering, Course in Building Engineering and Construction, Massachusetts Institute of Technology.



D. Uglis Fir Plywood Association



Left: Typical stressed-skin panel. Right: Stressed-skin wall panel which is hinged to ceiling panel and swings into position as roof section of three wood trusses is hoisted into position for a house designed by John Graham, Seattle architect

bottom skin of $\frac{1}{4}$ -in. plywood can span 22.2 ft with the same deflection limitations, an increase in span of 35 per cent. Expressed as an increase in load-carrying capacity on identical spans, the joists with the glued-on skins will carry 109 per cent more load.

An additional benefit of this method is the labor saving obtained in shop fabrication. For a single building, the labor saved will be little if any; but for a large group of houses, prefabrication will reduce total costs.

To design floor panels with plywood stressed skins, a computational procedure similar to that for steel-plate girders is used. The top plywood skin acts as a compression flange, the joists as webs, and the bottom skin as a tension flange. Only those plies of the plywood having grain parallel to the direction of the span are considered in calculating the moment of inertia. Since the top skin is in a state of almost pure compression, it is subject to buckling and its effectiveness depends on the closeness of joist spacing. In addition to direct tension and compression in the plywood, shearing stresses between plywood and joists are critical. For adequate strength this joint must be glued under pressure. A detailed procedure of gluing is given in the "Time-Saver Standards" accompanying this article.

The principal difficulties of using stressed-skin panels occur in the joints between panels and at discontinuities in the skin. At the joint between parallel panels, splines or dowels may be used to prevent differential deflections. If one panel is splined into the adjoining panel, the projecting edges of the plywood must be protected against damage from

handling by a temporary filler strip. To obtain panels longer than 16 ft, the plywood skin must be spliced, since plywood is not readily obtainable in lengths greater than 16 ft. Full continuity may be achieved by gluing a plywood batten over a butt joint in the skin.

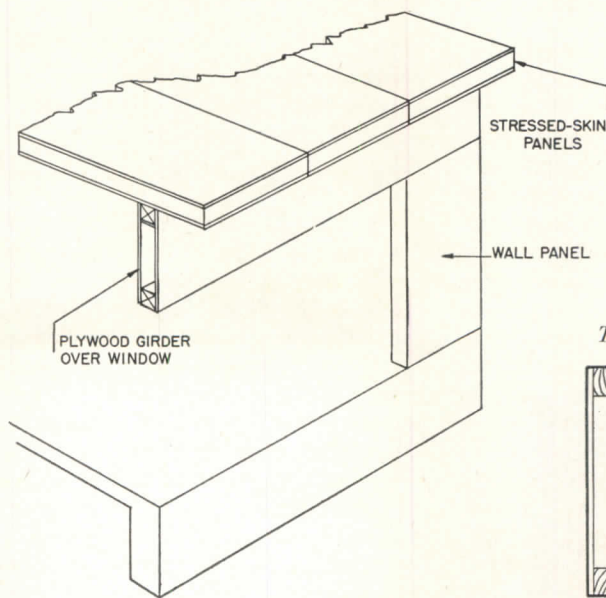
To make the most effective use of standard materials, stressed-skin plywood panels may be built of regular 4-ft-wide sheets using four regular 2-in. nominal joists in the cross section. Panels may be made in any length, although the length should be planned to use full plywood sheets where possible in the 8-, 10-, 12- or 16-ft lengths. For the top skin in floor construction, plywood of $\frac{3}{4}$ -in. thickness should be used when it is the only structural material spanning between joists. In all but very thin panels, a full header is required at

each end of the panel to provide lateral rigidity to the joists.

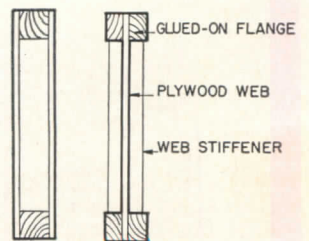
For special uses, such as short spans or light loads, panels may be designed with a skin on one side only. Or when necessary, the plywood skin may be designed to stop short of the ends of the panel to facilitate installation of wiring, piping and ductwork between joists.

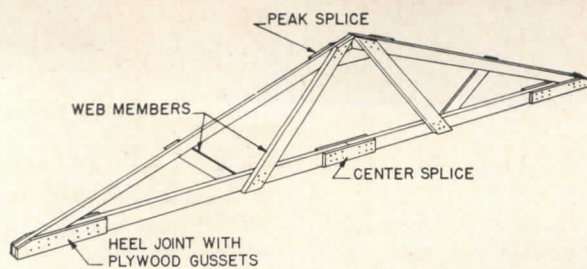
PLYWOOD GIRDERS

Girders built with plywood webs and solid or laminated wood flanges are used for very long spans and heavy loads. They are especially useful when incorporated into walls or partitions, as in a spandrel over a large window. Here the structural action of stressed-skin panels is reversed. The plywood becomes the web member and the solid lumber, the flanges. The economy lies

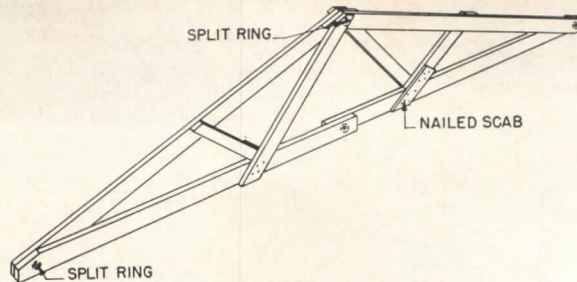


Typical plywood girders





Nailed trussed rafter



Split-ring trussed rafter

in using thin material in the lower stressed central portion of the girder and concentrating the lumber at the top and bottom of the section.

The design procedure for such girders consists in proportioning flanges to carry the tensile and compressive stresses set up in bending and in dimensioning the plywood webs to carry shearing stresses. In general, the calculations are similar to those made for a steel-plate girder. They are normally glued together for maximum strength, although they have been successfully built with nails only, the nails being computed for shear as in the design of rivets for a riveted steel-plate girder. In checking deflections for wood girders, the contribution of shear deflection as well as bending deflection should be considered. To prevent local buckling of the plywood, stiffeners are usually necessary. Girders of built-up wood construction will not economically replace the steel or wood girders of normal house construction. Their best use is where a thin, deep girder can serve as structure and wall simultaneously. Detailed discussions of the design procedure for both stressed-skin panels and built-up plywood girders are in "Technical Data on Plywood," published by the Douglas Fir Plywood Association, Tacoma, Wash.

TRUSSED RAFTERS

The trussed rafter is a sophisticated cousin of the standard rafter as used in gable framing. The ordinary pitched roof is built with pairs of fairly deep rafters meeting at a ridge and tied by ceiling joists from plate to plate. This form of construction is the most elementary truss, since it consists of a single triangle. When the width of this triangle becomes large, however, the sizes of the rafters and ceiling joists become excessive. Since these members must carry roof and ceiling loads as beams between the corners of the triangle, their size is primarily determined by beam action. By subdividing the large triangle with additional web members, the spans of each piece between joints are reduced. This in turn reduces the depths of the members needed to resist bending. This more complex construction is commonly called a trussed rafter.

The trussed rafter, by the reduction of bending moments in the individual elements, is capable of spanning much larger distances than simple rafters. Rafters, or chords, as they are called in this case, may be 2 x 4's when trussed instead of 2 x 6's or 2 x 8's. The ability of the trussed rafter to span clear between outside walls eliminates the need for interior bearing partitions. Other partitions installed to subdivide space may be made thinner, and complete flexibility of interior planning is possible. By omitting bearing partitions, foundations are also simplified.

Since the trussed rafter is a rigid, self-contained unit, it may be completely prefabricated. Either in the shop or at the site, a simple jig may be set up and rafters assembled with production-line efficiency.

The chief disadvantage of the trussed rafter results from the elimination of attic space by the presence of web members. Since attic space is lost, roof pitches are ordinarily low. This problem may be overcome with a somewhat modified form of the trussed rafter, utilizing principles of rigid frame design to create an open space in the center of the roof for storage.

The increased complexity of the trussed rafter necessitates careful workmanship and detailing. Each design must be carefully detailed, since the joints between members are critical. The extra labor required may, however, be reduced by well-planned prefabrication.

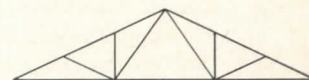
The connections between individual pieces in trussed rafter construction may be made with nails, bolts, or split-ring connectors. Where spans are small and pitches not too low, nails alone may be used to make connections. With pitches lower than about 4 in 12 and spans greater than 24 ft, bolts or split rings are desirable. The critical joint is at the heel of pitched roof trusses. Here, at the plate, the outward thrust of the rafter must be transmitted to the horizontal bottom tie and the stresses are relatively large. The stresses at this point increase with increasing span or decreasing pitch. It is often impossible to obtain adequate nailing area here, and split-ring connectors are used instead.

In nailed construction the trussed rafter is usually built with the top and bottom chords lying in the same plane. The heel joint is then made with a pair of gussets connecting the bottom chord to the rafter. These gussets may be cut from 1/2-in. plywood or 1-in. nominal boards. Although twice as many nails are required at this joint compared with a lapped chord connection, the application of the web members is simplified. The web members may simply lap over the chords and be nailed directly to them.

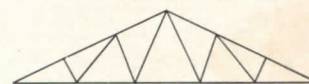
For nailed joints, nailing templates of cardboard or light metal should be prepared. By planning nail placement and spacing carefully, strong joints may be built with little labor. When long spans require bolts or split-ring connectors, the truss assembly is slightly different from the nailed design. To minimize the number of bolts or rings required, the top and bottom chords are lapped at the heel joints. In this way it is usually possible to make a strong joint with a single split ring. Web members will then lap over one chord and be joined to the other with a scab. Assembly with split rings or toothed rings is a new technique for many carpenters, but when a trussed rafter is produced in quantity, the efficiency of these connections will offset time lost in acquiring new skills.

Alternate web systems:

1 Used with light ceiling

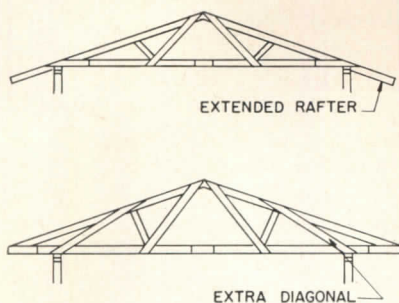


2 Used with plaster ceiling



The web system for a trussed rafter may be made in several ways. The simplest and most common is the Pratt truss which uses one diagonal from the middle of the top chord to the third point of the bottom chord, and a second diagonal from the bottom of the first to the peak. This truss then consists of only four different types of pieces, using two of each. For longer spans, diagonals may connect the third points and peak of each rafter to the third or fifth points of the bottom chord.

Trussed rafters with overhangs



Roof overhangs are detailed most simply with a straight extension of the top chord. *In no case should the heel joint be placed at the edge of the overhang.* If it is desired to extend the bottom chord beyond the plate, a separate web member extending from the middle of the rafter to the plate is necessary.

PLANK AND BEAM CONSTRUCTION

Plank and beam construction as it is used in modern houses is essentially the same as the heavy mill structures which have served industry for over one hundred years. This method is characterized by the use of relatively few, heavy framing members to form a skeleton together with slab-like planking for floors and roofs. The plank and beam system is very close to steel framing in conception. As in any skeleton frame, this method of building achieves structural efficiency by concentrating loads on a few large pieces.

As applied to house building, the plank and beam frame consists of beams at spacings of 4 to 12 or more feet supported on isolated columns of at least 4 x 4 cross section. Tongue and groove planking of 2- or 3-in. nominal thickness spans between beams, forming the complete floor or roof structure.

By comparison with the normal joist floor construction, the most important savings with the plank and beam system results from the reduced number of pieces to handle. The typical joist floor involves setting joists, application of a subfloor, cutting and installing bridging, strapping, lathing and plastering. With the erection of beams and planking, the floor is complete in two operations. In a comparison made by the National Lumber Manufacturers Association, the plank and beam system saved 26 per

cent labor and 15 per cent material over normal joist framing.

Perhaps the most attractive advantages of the plank and beam system are architectural. Because of load concentration on posts, large window openings between beams are easily framed without heavy lintels. The requirement of regular beam spacing creates a disciplined structure, ideally suited to modular framing with the resulting elimination of cutting waste. The volume of interior space is increased. With the underside of the planks forming the finish ceiling, the thickness of the actual floor is only 2 or 3 in. The effective floor-to-ceiling height is thereby increased 7 or 10 in. without increased studs or total building height.

In most cases, details are simplified with plank and beam framing. Roof overhangs may be built with short cantilevered beams on side walls and cantilevered planks on the end walls. A narrow fascia board and metal gravel stop and drip complete the eave. Foundations may be built of isolated piers directly supporting the beams in place of continuous foundations under bearing walls.

One of the important reasons for using plank and beam construction for mill buildings is its relative fire safety. It is a fundamental principle of wood construction that the rate of burning depends on the ratio of surface area to volume of timber. Since wood does not lose all of its strength even if its surface is charred, the use of fewer, heavy pieces makes the construction slow-burning. In addition, the lack of concealed spaces through which fire can spread makes the danger more easily detected.

Among the difficulties arising with plank and beam construction, the most important is the need for careful location of partitions over floors. Since the planking is not ordinarily adequate for heavy concentrated loads, partitions should be located over beams. When this is not possible, as with partitions at right angles to beams, extra framing members must be provided. A 4 x 4 or 4 x 6 sole at the base of such partitions may span between beams. Additional light members between main beams may be required beneath bathtubs and other concentrated loads.

Since there are no concealed spaces with plank and beam framing, particular care must be taken to plan electrical wiring. Raceways may be provided along beam bottoms by using cross sections built up from three or four pieces of 2 in. nominal thickness. Concealed troughs for lighting fixtures may also be built in this way.

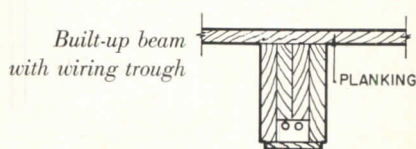
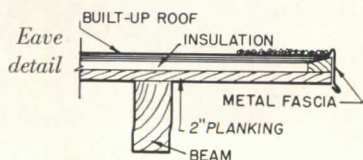
In building roofs with the plank and beam system, insulation is ordinarily required to prevent undue heat loss and to eliminate condensation. The most effective location for this insulation is above the planks. Since the insulation must be able to support the weight of workmen without crushing, it should be of the rigid type, preferably nailable. A vapor barrier between insulation and planking is essential to prevent condensation, and the thickness of the insulation must be designed to keep the temperature at the vapor barrier above the dew point.

A further requirement of plank and beam construction is the need of materials of good quality and for careful workmanship. If the plank is exposed, lumber of better character than ordinarily used for subflooring is needed. Large knots, streaks, resin ducts and other blemishes will be objectionable even with paint. Carpenters should take particular care to align planking at right angles to beams. In most cases planks must be made continuous over two or more spans to reduce deflections, and careful supervision is necessary to prevent the use of short lengths. Ideally, a drawing showing the exact location and length of all planks should be provided for each case. Careful engineering and architectural design will ordinarily effect sufficient savings to offset the cost of the extra quality.

CONCLUSION

Stressed-skin construction, built-up girders and trussed rafters use wood to build longer, lighter spans. To accomplish this goal, greater complexity and more prefabrication is necessary than is common with traditional methods.

The plank and beam system attains the goal of greater simplicity in construction by using fewer and heavier pieces. But both approaches are valid ways of building better, more economical houses. In all cases the reduction of labor in erection of the individual building is a common denominator. Further progress with wood will increase this saving.



BASIC ELEMENTS IN THE PLANNING OF ELECTRICAL SYSTEMS

by Felix B. Graham
 Chief of Electrical Department
 Syska & Hennessy, Inc.,
 Consulting Engineers

ARTICLE 5: HOSPITALS

This is the fifth in a series of six articles. Previous articles were: 1. General Principles, February. 2. Office Buildings, March. 3. Stores and Shopping Centers, May. 4. Industrial Buildings, August.

THE ELECTRICAL DEMAND of a modern hospital ranges from less than 1 kw per bed to more than 2 kw per bed depending on whether cooking and sterilizing operations are performed electrically or by other means. Electricity is used in many applications of which the most common ones are shown on the accompanying chart.

The desirable qualities of the electrical system can be listed in the following relative order of importance: (1) safety, (2) reliability, (3) durability, (4) appearance, (5) expansibility, (6) low initial cost, (7) flexibility, (8) low operating cost, (9) small space.

The order of the above items may vary with each project but safety, reliability and durability should always be considered first.

As for safety, the National Electrical Code (or local code) must be followed as with other installations. But, in addition, special attention must be paid to Article 500, "Hazardous Locations," of the aforementioned code and to Bulletin 56 of the National Fire Protection Association, "Recommended Safe Practice for Hospital Operating Rooms." The NFPA Bulletin explains the problems of explosion hazards in surgical areas and recommends solutions. It is directed not only to the designer, but to the hospital staff as well.

Reliability: Power Sources

Reliability of electric service can be attained in various degrees by one of these arrangements:

1. Two utility company services, each independent of the other, and each capable of carrying the entire load.

2. One utility company service for normal load, and one utility company service, independent of normal service, of sufficient capacity to carry emergency load.
3. One utility company service for normal load, and one stand-by generator for emergency load.
4. A private generating plant with utility company stand-by.
5. Utility company service with stand-by batteries for emergency lighting only.

The extent of stand-by provisions will depend on the probable frequency and duration of outages on the utility system. For instance, where a hospital is served by a dependable underground network system, as in city downtown areas, only a minimum of stand-by is required. At the other extreme, an isolated hospital served by overhead rural lines subject to lightning and sleet conditions must have stand-by capacity for a considerable part of normal load.

The following loads are considered essential:

1. Surgical and delivery suites
2. Stair lighting
3. Partial corridor lighting
4. Exit signs
5. Fire alarm system

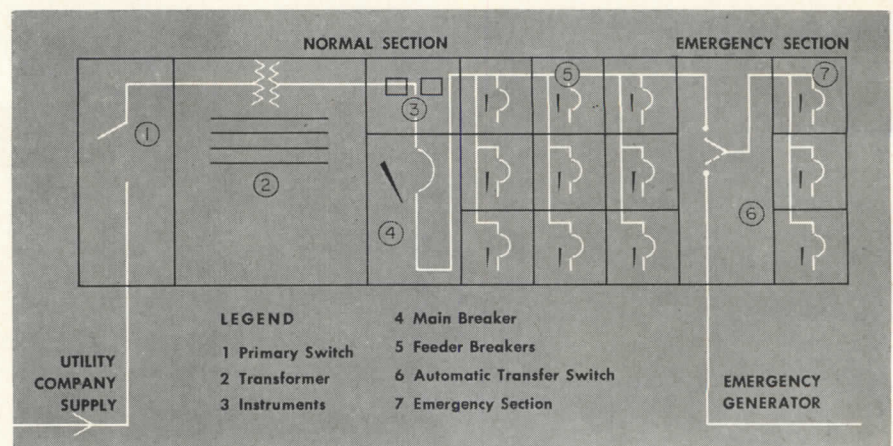
6. Boiler plant operation
7. Food refrigeration
8. Certain laboratory processes
9. In multi-story hospitals at least one elevator to move stretcher cases
10. Incubator.

If cooking and sterilizing is electric, portions of these loads must also be emergency service.

Emergency loads should be supplied through an automatic throw-over switch. (See drawing of unit substation below.) This switch is connected to normal supply until normal supply fails, when it automatically connects to emergency supply. If the emergency supply is an automatically started generator, some time will elapse between failure of normal supply and full voltage output of the generator. Therefore, the operating room lights should be connected to a battery to keep them working until the generator voltage is high enough.

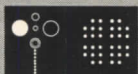
The prime mover for the emergency generator is usually a gasoline or diesel engine. Gasoline will start more easily, while diesel is less hazardous. Either engine requires a battery for starting which must be kept charged at all times.

Reliability of the interior wiring systems can be further increased by splitting the loads within given areas between two feeders.



ELECTRICAL REQUIREMENTS

NURSING AREA



PATIENT'S ROOM

Equipment: Fan outlet • Convenience outlets

Communications: Telephone jack • Nurse call station at bed and toilet • Nurse call light over door • Television antenna outlet • Multi-channel broadcast outlet

Lighting: Bed light • General room light • Lavatory light • Night light

NURSES' STATION

Equipment: Clock • Drug closet tamper outlet

Communications: Nurse call central station • Telephone • Fire alarm station

Lighting: Corridor lighting control

PANTRY

Equipment: Toasters • Hot plates • Refrigerator • Range • Food cart warmer outlet • Egg boiler • Clock

Communications: Nurse call signal

UTILITY ROOM

Equipment: Portable sterilizer • Utensil sterilizer • Hot plate • Clock

Communications: Nurse call signal

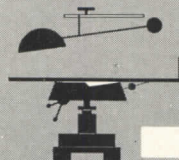
CORRIDOR

Equipment: Floor machine outlets • Portable X-ray outlets

Communications: Paging system

Lighting: Night lights

Note: use silent switches throughout



SURGICAL

Equipment: Outlets for power-driven surgical instruments • Outlets for portable operating light • Sterilizers • Instrument sterilizers • Blanket warmer • Clock • Elapsed time indicator • X-ray viewing cabinet • Conductive flooring

Communications: Foot-operated nurse call

Lighting: High level general illumination • Operating light

Note: observe code requirements for hazardous locations and NFPA Bulletin 56

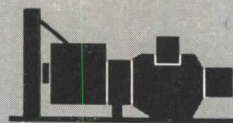
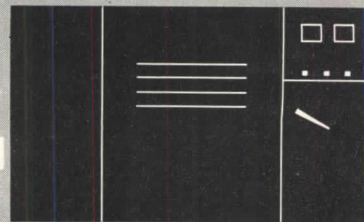
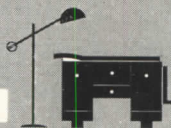
OUTPATIENT AREA

Equipment: Instrument sterilizers • Utensil sterilizers • Dental chairs • Portable X-ray outlets

Communications: Waiting room call system • Doctor-Nurse call systems

Lighting: Outlets for examination lights • Illuminated room signs

Note: emergency operating room (see Surgical)



STAND-BY GENERATING PLANT



LABORATORIES

Equipment: A-C outlets • D-C outlets • Voltage regulators • Hoods with light and exhaust • Drying cabinets • Centrifuges • Hot plates • Water baths • Cold room refrigeration

Note: Use waterproof outlets in animal rooms

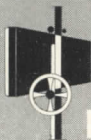
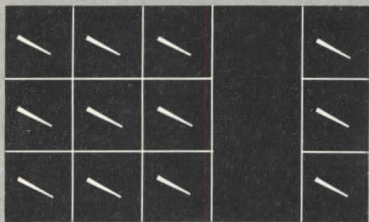
FOR A HOSPITAL

SPECIAL ELECTRICAL REQUIREMENTS

Equipment: X-ray department: fluoroscopy, radiography, therapy, dark room, viewing room • Radioactive therapy • Oxygen system alarm • Central EKG system • Hydro-therapy equipment • Physical therapy equipment • Sterile ray lamps • Electrotherapy • Diathermy • Short-wave therapy • Mortuary refrigerator

Lighting: Solarium lighting

Note: incubators on emergency system



COMMUNICATIONS

Doctors' register system • Doctors' paging system • Nurse call system • Entrance call system • Ambulance call system • Clock system • Fire alarm system • Departmental intercommunication systems • Telautograph system • Television antenna system • Multichannel broadcast distribution system • Chapel microphone pick-up • Closed-circuit television system for surgical demonstrations • Telephone outlets, jacks, booths • Pneumatic tube system • Clinical records conveyor system



LAUNDRY

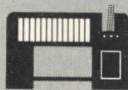
Equipment: Tumblers • Washers • Extractors • Flat irons • Manual irons • Starch cooker • Air compressor • Exhaust ventilation

Note: watch heavy inrush current of laundry equipment



ADMINISTRATION

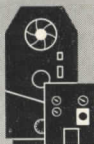
(See Article 2 on "Office Buildings," Architectural Record, March 1954)



BUILDING UTILITIES

Equipment: Boiler plant • Hydraulic systems • Air conditioning and ventilation systems • Unit heaters • Equipment alarms • Outlets for floor maintenance machines • Compressed air system • Elevators • Fire pump • Water cooler outlets

Lighting: Parking area illumination



CENTRAL KITCHEN

Equipment: Ranges • Fryers • Ovens • Food warmers • Coffee urns • Mixers • Peelers • Food cutters • Slicers • Hot plates • Toasters • Egg boilers • Ice cream cabinets • Ice flake machine • Water cooler • Compressors for walk-in refrigerators • Unit coolers for walk-in refrigerators • Garbage refrigerator • Dish washer • Glass washer • Sterilizer • Hoods with exhaust and light • Heated food cart outlets • Photo-electric door operators • Conveyors to dumbwaiters

Lighting: Light for walk-in refrigerators

PLANNING OF ELECTRICAL SYSTEMS: HOSPITALS
Other System Characteristics

Equipment and materials used in the electrical systems of hospitals should be of the very best quality to insure reliability of operation and durability. The very nature of the hospital as an institutional building demands that more than casual attention be given to clean, finished appearance of electrical items. This condition, of course, helps to promote cleanliness in the housekeeping.

Many hospitals, having only limited funds available, start off by building only part of the ultimate building project. Therefore, their electrical systems should be designed to permit future expansion with a minimum of change to existing systems.

Flexibility is normally not too important since the complexity of a hospital requires a definite space permanently assigned to each piece of equipment.

Lighting of Patients' Rooms

Illumination of the patient's room, simple as it may appear on the surface, has given rise to a great deal of discussion, and opinions are still divided as to the best method. Basically, there should be low-level, restful, even, general illumination throughout, with higher levels available for reading, examination and at the lavatory. General illumination can be achieved by:

1. Pendant mounted, incandescent, indirect units where excessive brightness either on the fixture or on the ceiling must be avoided
 2. The upward component of a fixed "hospital bed light"
 3. The upward component of a portable floor lamp
 4. Cove lighting
- The reading and examination light can be a:
5. Permanently wall-mounted hospital bed light
 6. Clamp-type bed light
 7. Bed light with a permanently wall-mounted base, but light unit removable for examination
 8. Portable floor lamps.

The above types of lighting should be augmented by a glare-free light source over the lavatory.

In private and semi-private rooms a

floor lamp will add toward a homelike atmosphere. The night light should be placed so that it will not cause grotesque shadows from the legs of beds or chairs. Switching should be done by noiseless mercury switches. The nurse will switch general illumination and night light from the door. The patient should have control over his reading light. Lights in corridors should be located so that they will not be visible to any patient in bed with the room door open.

Call and Register Systems

The nurse call system is operated by the patient at bedside or at the toilet. A dome light over the room door, an annunciator at the nurse's station, and a light and buzzer signal in the pantry and utility room are actuated. A more expensive system provides, in addition to the above, voice communication between patient's bedside and nurses' station.

A further refinement consists of a scanning device which will pick up sounds from each room in rotation for about ten seconds at a time. In this manner the nurse can be kept informed of conditions in each room without leaving her station.

The doctors' paging system can be a voice, chime or visual flasher system. If a voice paging system is installed, its disturbance can be reduced by employing numerous low-volume loudspeakers.

A new system is now available; it is a radio-call system. The doctor carries a miniature radio receiver in his pocket which picks up a signal broadcast by a local hospital transmitter.

Another possibility of a paging system arises from the use of an electronic clock system, wherein impulses are carried throughout the electrical system and can be picked up with a suitable device through any convenience outlet.

The doctors' register system consists of a register board at each main entrance and at the telephone switchboard. A doctor entering will close the switch opposite his name. This will cause his name to light up at each register board. The telephone operator can cause the doctor's name light to keep flashing on and off to call his attention to a waiting message. This is known as the recall feature.

Fire Alarm

The fire alarm system should be of the pre-signal type. In this manner the first alarm turned in will sound only at predetermined stations where responsible persons can check the extent of the fire before deciding whether to turn in a general alarm. The latter should activate chimes rather than loud gongs in order to minimize excitement in patients' quarters.

Communications

For patients' entertainment, hospitals often provide a multi-channel broadcasting system. This consists of receivers for AM and FM broadcasts, a record turntable and the equipment required to distribute to each bed, through wires in conduit, three or four selected programs. Each patient has an under-pillow speaker and a program selection switch. The conduit for this system can also be used to distribute the co-axial cable to each room from a television master antenna system.

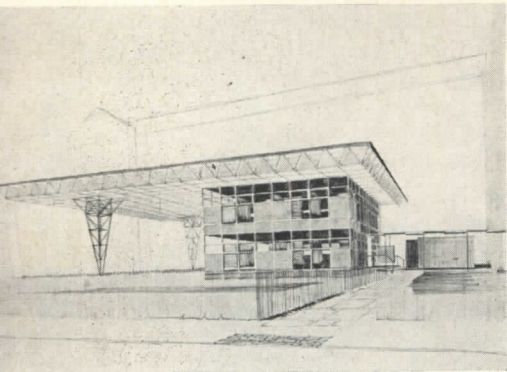
The telephone outlet at the patient's bed should be suitable to receive a jack rather than a permanent connection. In this manner a telephone can be plugged in when desired, resulting in telephone charges to the hospital being lower than if all outlets had phones permanently installed.

X-ray Equipment

A study of the accompanying chart will reveal a large number of items requiring special, complicated wiring. Such wiring must be designed in close coordination with the various equipment manufacturers. This is especially true of the X-ray department. A layout based on one manufacturer's equipment will be unsuitable for another. Of common importance for X-ray equipment are the following:

Stable voltage for radiography is highly important because voltage fluctuation during exposure may require a re-take. In X-ray therapy stable voltage is necessary to control penetration and dose reliably. Therefore, separate feeders and sometimes even separate transformers are required. These feeders should be oversized to minimize voltage drop. X-ray wiring requires a separate ground conductor. Manufacturers' recommendations should be observed.

SPACE FRAME *For Laboratory Bolted Together for Flexibility*



Space frame construction, a method of building strong, light roof frameworks by introducing a third dimension of reinforcement, is being used in the Research Laboratory of the College of Architecture and Design of the University of Michigan. Designed by a research staff under the direction of C. Theodore Larsen, Professor of Architecture, the structure will be "durable, flexible, expandable, demountable and reusable," with a roof which can be extended indefinitely and walls which can be shifted to enclose more space.

The space frame utilizes diagonal struts which permit stresses to be distributed in three directions. The diagonals connect horizontal lattices at the roof and ceiling, zigzagging back and forth to form a steel network which can absorb loads far in excess of the strength of its individual parts. As a result, supporting columns are needed only at widely spaced intervals. Enclosed areas beneath the overhanging roof can be enlarged or reduced with ease, since the interior walls carry none of the roof load.

Intended as a temporary structure, the laboratory will have a framework made up of standard 4-ft steel struts and connecting plates, which will be bolted together in an area adjoining the Architecture Building. Materials have been pre-planned and pre-cut at the plant of the Uni strut Corp., which cooperated with the University in research on the space frame. Panels, 4 ft by 4 ft, many of transparent and translucent plastic, will make up the walls, ceiling, floor and roof. Construction work, much of it experimental, is being done by architectural students.

PLASTICS *Conference Will Consider Their Applications in Building*

"Plastics in Building" is the subject of a two-day conference — the first of its kind — for architects, engineers, designers, builders and manufacturers, to be held the 27th and 28th of this month at the National Academy of Sciences in Washington, D. C. The meeting will feature seven technical sessions and is sponsored by the Building Research Advisory Board, the Society of the Plastics Industry and the Manufacturing Chemists' Association.

Authorities on plastics from the architectural and engineering professions and the plastics, chemical, construction and manufacturing industries will discuss structural parts of buildings, glazing, walls and partitions, ceilings, roofing, flooring, ductwork and insulation. (Turn the page for some recent product developments in plastics.)

In an advance summary of his paper on the future of plastics, Johan Bjorksten, of Bjorksten Research Laboratories, remarks that the chief contribution of plastics in building is saving of time and weight. Freedom from corrosion and decorative effects are important secondary advantages, he says. Mr. Bjorksten states that just as steel reinforce-

ment has revolutionized the use of concrete, so have glass and other fibrous reinforcements given plastics high structural qualities with minimum weight. He predicts that foamed wall techniques may lend themselves to mass production of entire hulls of dwellings.

Professor Albert G. H. Dietz of M.I.T. feels that plastics will find increased engineering applications in building as a result of several new trends in design and construction: growing use of shop-made units, assembled in the field; emphasis on the open plan, and the trend toward open, light-transmitting walls and roofs.

Titles of the discussions are:

Kinds of Plastics; Engineering and Design with Plastics; Evaluating Plastics for Building Application.

Light Transmitting Panels; Glazing and Interior Illumination; Thermal Insulators and Vapor Seals; Structural Panels; Surfacing and Decorative Uses; Piping; Plastic Ducts.

Standards for Plastic Products; Building Codes.

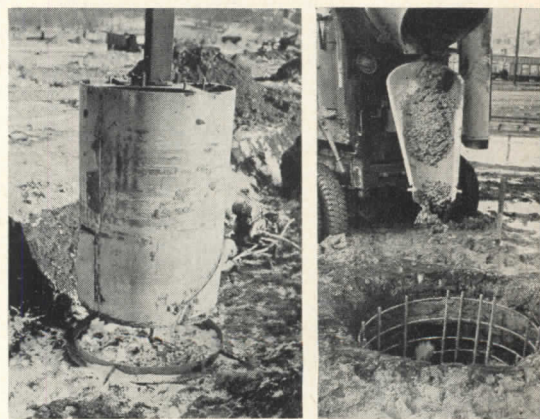
Future of Plastics in Buildings; Round-Table Discussion of Future of Plastics in Buildings.

ROUND FOOTINGS *for Heavy Loads Cut Excavation and Form Costs*

Round reinforced foundation footings — which can offer economies over the conventional type of reinforced spread footing by reducing excavation and eliminating forms, mat footings and back-filling — have been placed for the Pennsylvania Railroad's new Samuel Rea Freight Car Repair Shops, now under construction in Holidaysburg, Pa.

Pennsylvania Railroad's engineering department specified round reinforced footings to support a 6- to 8-ton per sq ft bearing load, the heavy live load of the 90-ft cranes which will run the length of the building, and the heavy wind load which will result from the building being open at both ends.

The new repair shops, which will be about a half-mile long, will be built over a river bed which was filled initially 30 years ago and again a few years ago. The 457 round footings were sunk into the river gravel strata to a depth averaging 19 ft and varied from 4 to 5 ft in

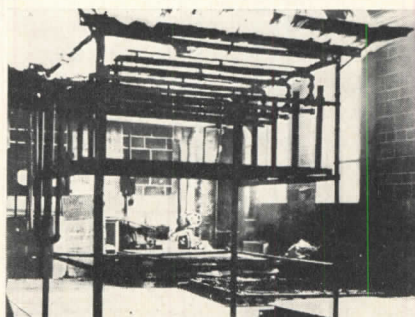
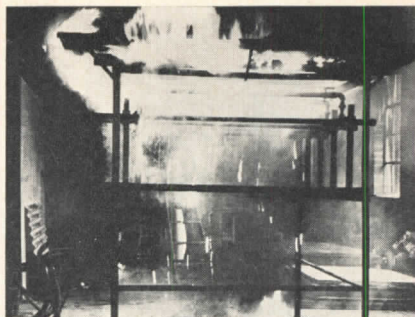


diameter. The holes were dug by a foundation borer, consisting of a digging bucket with mounting. The digging bucket was positioned over a starting ring (picture left), and after the digger was removed and the reinforcing steel cage placed, concrete was chuted into the hole (right).

(Continued on page 236)

SOME NEW PLASTICS FOR BUILDINGS

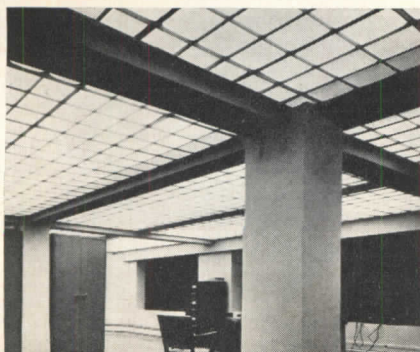
ROOFING An asbestor-plastic material is used in *Fire-Chex Vapor Barrier* for preventing the spread of fire in built-up roofs. When subjected to flame or intense heat, the plastic compound will not melt or flow, but instead forms a skeletal mat that remains in place and so blocks melted bitumen from flowing through joints in the deck. The picture on the top shows the dripping of burning asphalt and the burning of gases on the underside of a conventional-type roof over steel deck in a fire test at the Carey Research Laboratories in Cincinnati. On the bottom, there is no drip and only slight burning of bases under the steel deck on which has been placed a layer of Fire-Chex Adhesive covered by Fire-Chex Vapor Barrier sheet. Fire-Chex sheets are made in rolls 38 ft long and 36 in. wide, which weigh approximately 60 lb. *The Philip Carey Mfg. Co., Cincinnati 15, Ohio.*



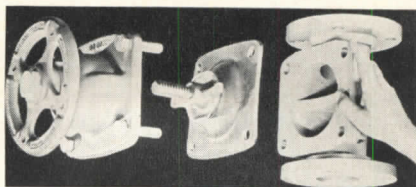
WALLS AND PARTITIONS that are washable, dimensionally stable, easily cleaned and resistant to moisture, scuffing, tearing, grease and most stains and chemicals, are possible in *Panlam*, a lamination of thermoplastic rigid vinyl sheets and colorful fibers, fabrics, natural grasses and plumage. In this Panlam "Seascape" fishing flies, coral sea fans, tropical sea plants and a fishnet are laminated with the plastic sheets. *Pan Laminales, Inc., 441 Madison Ave., New York 22, N. Y.*



CEILINGs that are decorative as well as sound absorbent are made with panels formed of translucent *Bakelite vinyl* rigid sheet. Uniform light is provided by diffusion through suspended 24-in. panels, supported by a flexible "T" suspension system to form either entire or partial ceilings. The panels are reported to be durable and to permit easy servicing of lights. *Daylight Ceiling Co., 1250 17th St., San Francisco 7, Calif.*



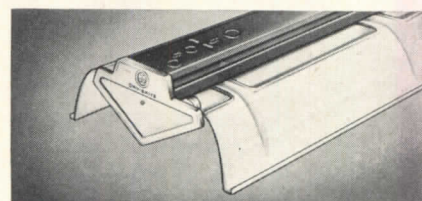
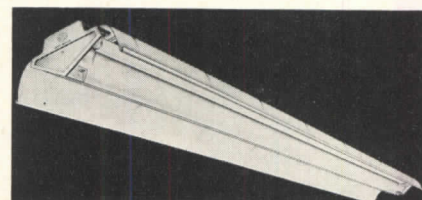
PIPING in plastic is supplemented by valves which are made of a lightweight styrene copolymer called *Uscolite*, produced by U. S. Rubber Co. The 3-in.-diameter rubber-plastic valve body to the left in the picture makes possible corrosion-resistant and non-contaminating piping systems of greater capacity than ever before for handling food products, sensitive chemical solutions and acids. *Hills-McCanna Co., Chicago, Ill.*



GLAZING is one of many applications of this flat Fiberglas reinforced polyester resin translucent material. *Plexolite*, also useful for awnings, skylights and translucent ceilings, can be sawed and drilled to any size, thus eliminating the waste which often results from standard lengths. It is available in rolls 65 ft long and 24 in. wide, which weigh only 60 lb. Widths from 12 to 40 in. are available, and a range of 15 colors. *Plexolite Corp., 2051 East Maple Ave., El Segundo, Calif.*

Industrial Luminaire Has 25 Per Cent Uplight

In line with the current trend to uplighting for industrial buildings, an industrial lighting fixture with a 25 per cent upward component is being offered in a rugged-type construction, and still at low cost. The *Lifetime CFI-25* is furnished with full 8-ft reflectors instead of pairs of 4-ft reflectors. The reflecting surfaces, finished in white porcelain enamel, have a reflection factor of 85 per cent or more, according to the manufacturer. The improved lighting for more comfortable working conditions is supplied without any sacrifice of the strength and rigidity which are essential in an industrial fixture. The uplighting apertures are die-embossed, and ribbed construction reinforces lateral strength to prevent the reflector from spreading and getting out of alignment. A longitudinal "V" center louver provides 30° cross-wise shielding and reinforces lengthwise



rigidity. The CFI-25 is available with or without hinged louver assembly. Another fixture in the CFI series is the CFI-10, which has 10 per cent uplighting. *Day-Brite Lighting, Inc., 5411 Bulwer Ave., St. Louis 7, Mo.*

Light Control for Homes

Home light control is possible in *Luxtrol* which permits the setting of the light intensity of lamps to any value from darkness to full brightness. Each Luxtrol unit, operating from a 120-volt AC source on the dimmer principle used in theaters, can handle any number or combination of lamps, colored or uncolored, up to a load of 360 watts. *The Superior Electric Co., Bristol, Conn.*

(Continued on page 252)

ENGINEERED WOOD DESIGN — 1: STRESSED-SKIN PLYWOOD PANELS

By William J. LeMessurier and Albert G. H. Dietz*

Stressed-Skin Panels

The drawings on this and the following pages present cross sections of stressed-skin plywood panels for floors and roofs of houses. A panel consists of a bottom face of 1/4-in. 3-ply plywood, four joists and two headers, and a top face of 3/8-in. 5-ply or 3/4-in. 5-ply plywood. All panels use standard 4-ft-wide plywood with the face grain parallel to the joists. The lengths of the panels are variable, the maximum safe length being given in each case as a function of loading.

Structural Characteristics

In its structural action a stressed-skin panel is similar to a wide-flange steel beam. The top face carries compressive stress and the bottom face tension. Due to the tendency of the top and bottom faces to slip horizontally with relation to one another, important shearing stresses exist between the plywood and the joists and also within the joists. The only practical way to transmit this shear is by a glued joint between plywood and joists.

The top face of the panel has additional stresses resulting from slab action since it must carry local loads between joists. When the top face serves as a floor with only an asphalt tile, linoleum or carpet covering, it must be 3/4 in. thick to carry local loads up to 250 lb without excessive deflection. For roof construction not intended for use as a deck and for floors where a finish hardwood floor is laid over the plywood, a 3/8-in.-thick top cover is satisfactory.

Gluing Technique

To obtain satisfactory glued joints pressure must be applied along the glue line. The best technique, obtainable only in a shop, is to use presses to apply a pressure of 150 lb per square inch of contact area uniformly along the entire glue line. For those panels with narrow joists

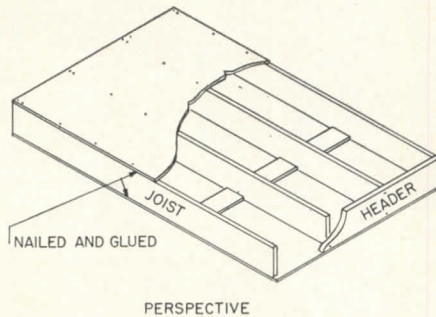
of 25/32 in. this method must be used. An alternative method is to use nails to provide pressure. To provide proper pressure 6d common nails at 2 in. on center must be used for 1/4-in. plywood, at 3 in. on center for 3/8-in. plywood and for 3/4-in. plywood 8d common nails at 5 in. on center are required. Sufficient pressure will be achieved by nailing when a uniform squeeze-out of the wet glue along the juncture of plywood and joist or header is visible. This nail-gluing method is satisfactory for all panels with joists 1 5/8 in. wide.

The glue employed is extremely important. For panels which are not

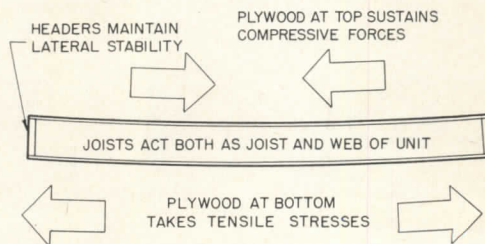
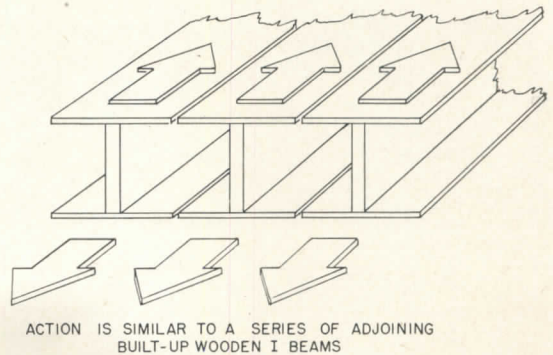
exposed to weather or high relative humidities, casein and urea resin glues will provide satisfactory bonds. For panels exposed to moisture, a highly moisture-resistant adhesive such as resorcinol formaldehyde or, with heated presses, phenol formaldehyde resins and melamine formaldehyde resins may be employed.

Framing Details

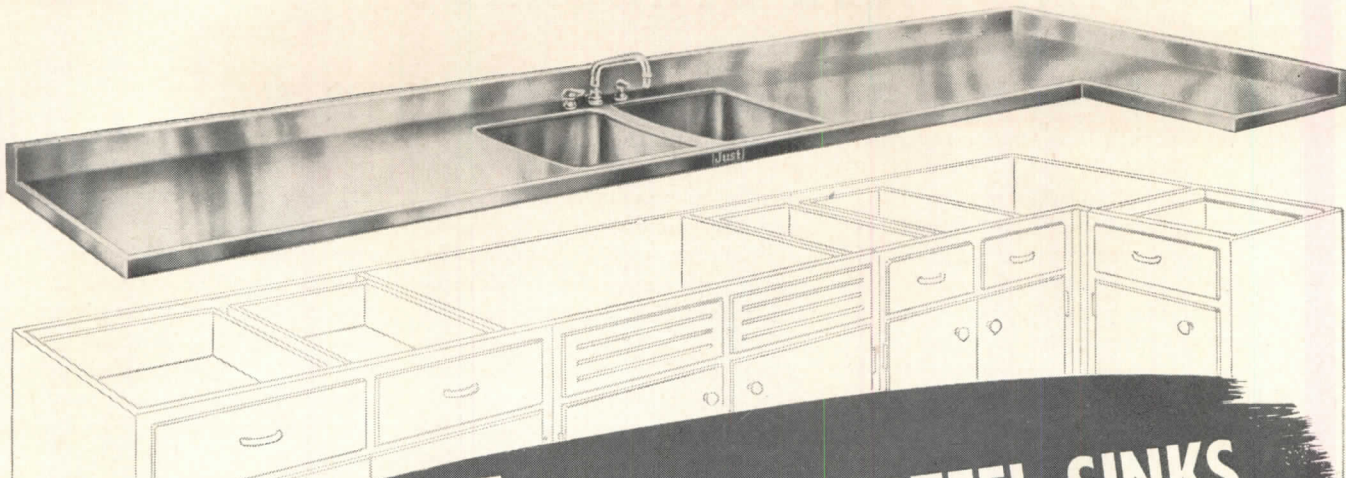
There are no unusual requirements in framing details for plywood panels. In general these panels may replace ordinary joist construction. The only unusual problem is the joint between panels. In floors with



The Time-Saver Standards in this issue provide, for the first time in any architectural magazine, tabulated solutions for designs of stressed-skin plywood floors and roof panels with commonly encountered spans and loads



* Assistant Professor and Professor, respectively, in the Department of Civil and Sanitary Engineering, Course in Building Engineering and Construction, Massachusetts Institute of Technology.

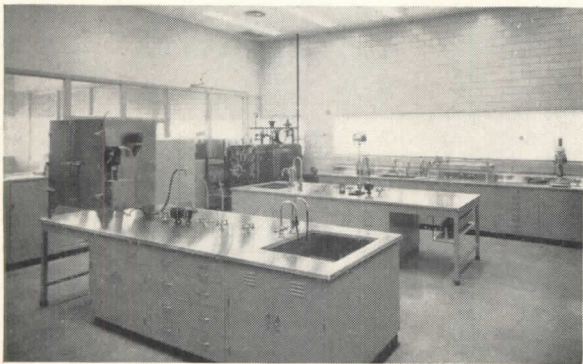


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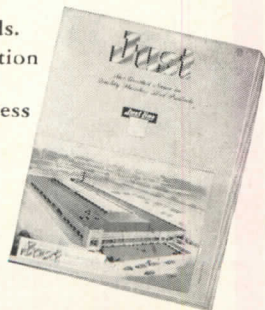
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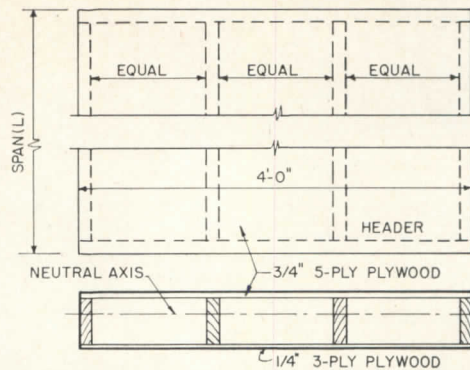
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ENGINEERED WOOD DESIGN — 2: STRESSED-SKIN PLYWOOD PANELS

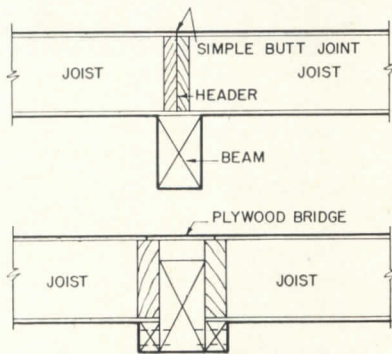
By William J. LeMessurier and Albert G. H. Dietz

out finish wood a spline joint should be provided to prevent uneven deflections. In other cases panels may be simply butted together.

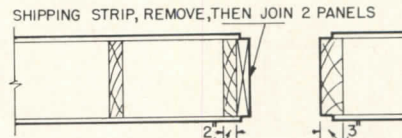
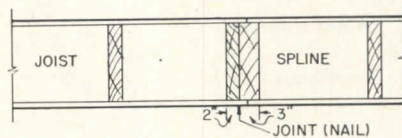
For panels longer than 16 ft, the plywood faces must be spliced, since plywood is not obtainable in longer sheets. These splices should be located at a point not more than one quarter of the span from the ends of the panel for joist depths of 6 in. or less and not more than one third of the panel length from the end for joist depths greater than 6 in. The splice may be made with a strip of plywood 10 in. wide of the same thickness as the plywood joined, and glued under pressure.



PLAN AND SECTION OF TYPICAL PANEL



DETAIL OF JOINT AT BEAM



Nominal thicknesses shown above

SPLINE DETAIL

(METHOD OF JOINING TWO ADJACENT PANELS)

Design Specifications:

- Exterior Douglas Fir Plywood Grade A-B
- Top panel: 3/4-in. 5-ply plywood
- Bottom panel: 1/4-in. 3-ply plywood
- No. 2 Structural Douglas Fir Joists

Design Data:

- 250 lb point load or
- 40 psf distributed load
- 10 psf dead load
- Maximum deflection:
 - 1/300 for full load
 - 1/360 for live load

Note: Type designations: FH stands for a floor panel with a heavy (thick) top layer; the first number is the joist thickness in inches; the second number or pair of numbers is the joist depth in inches (nominal dimensions). For example, FH212 is a heavy floor panel having joists 2 in. thick and 12 in. deep.

FLOOR PANELS (HEAVY)

JOIST DEPTH—SPAN TABLE

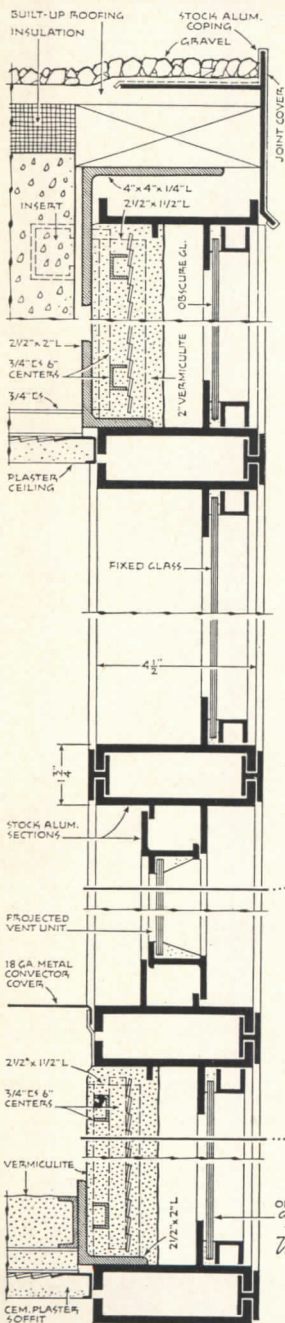
Floor Panels for Use with Composition or Cork Flooring or Carpeting (Without Finished Wood Floor)

Type	Joist	Maximum Span Limited by		l in 4'/ft of width	Glue type
		Deflection	Stress		
FH14	2 5/8" x 3 5/8"	.....	7' 2"	25.0	Pressure
FH16	2 5/8" x 5 5/8"	.....	11' 4"	59.4	Pressure
FH24	1 5/8" x 3 5/8"	11' 9"	14' 0"	29.0	Nail
FH26	1 5/8" x 5 5/8"	16' 0"	18' 6"	72.5	Nail
FH28	1 5/8" x 7 1/2"	19' 10"	22' 8"	136.8	Nail
FH210	1 5/8" x 9 1/2"	23' 8"	27' 0"	235.6	Nail
FH212	1 5/8" x 11 1/2"	27' 8"	31' 2"	372.0	Nail

VAMPCO

WINDOW WALL

International Institute, Detroit, Mich.
Architects: O'Dell, Hewlett
& Luckenbach
General Contractors: Barton-
Marlow Company

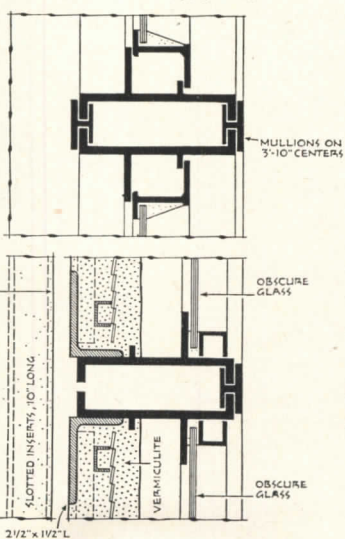


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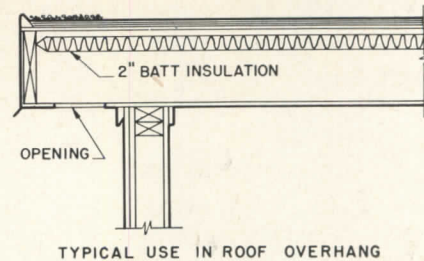
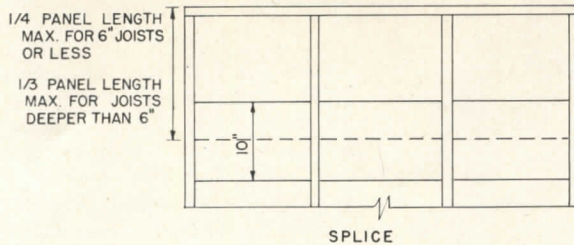
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ENGINEERED WOOD DESIGN — 3: STRESSED-SKIN PLYWOOD PANELS

By William J. LeMessurier and Albert G. H. Dietz



FLOOR PANELS (LIGHT)

JOIST DEPTH—SPAN TABLE
Floor Panels for Use with 7/8-in. Finished Wood Floor

Type	Joist	Maximum Span Limited by		l in 4'/ft of width	Glue type
		Deflection	Stress		
FL14	2 5/32" x 3 5/8"	.....	9' 5"	18.06	Pressure
FL16	2 5/32" x 5 5/8"	.....	13' 4"	44.4	Pressure
FL24	1 5/8" x 3 5/8"	10' 7"	12' 6"	21.0	Nail
FL26	1 5/8" x 5 5/8"	14' 6"	16' 5"	55.0	Nail
FL28	1 5/8" x 7 1/2"	18' 4"	20' 2"	107.2	Nail
FL210	1 5/8" x 9 1/2"	22' 2"	23' 9"	189.5	Nail
FL212	1 5/8" x 11 1/2"	25' 11"	27' 7"	305.0	Nail

Note: Type designations: R stands for roof panel; FL stands for a floor panel with a light (thin) top layer. The first number is the joist thickness in inches; the second number or pair of numbers is the joist depth in inches. For example, R210 is a roof joist 2 in. thick and 10 in. deep. FL14 is a light floor panel having joists 1 in. thick and 4 in. deep (all nominal dimensions).

Design Specifications:

Exterior Douglas Fir Plywood Grade A-B
Top panel: 3/8-in. 5-ply plywood
Bottom panel: 1/4-in. 3-ply plywood
No. 2 Structural Douglas Fir Joists

Design Data:

250 lb point load or
40 psf distributed load
10 psf dead load
Maximum deflection:
1/300 for full load
1/360 for live load

Design Specifications:

Exterior Douglas Fir Plywood Grade A-B
Top panel: 3/8-in. 5-ply plywood
Bottom panel: 1/4-in. 3-ply plywood
No. 2 Structural Douglas Fir Joists

Design Data:

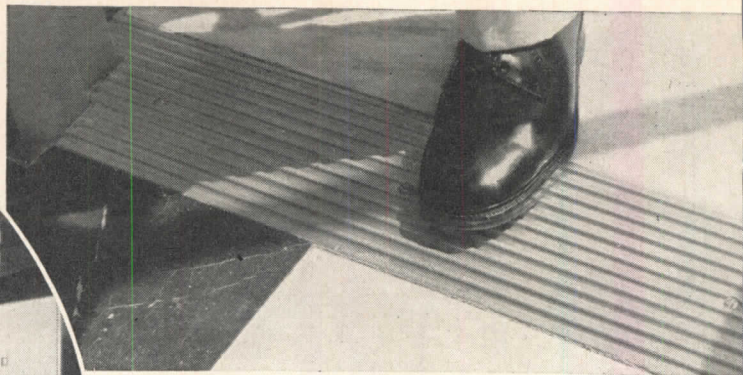
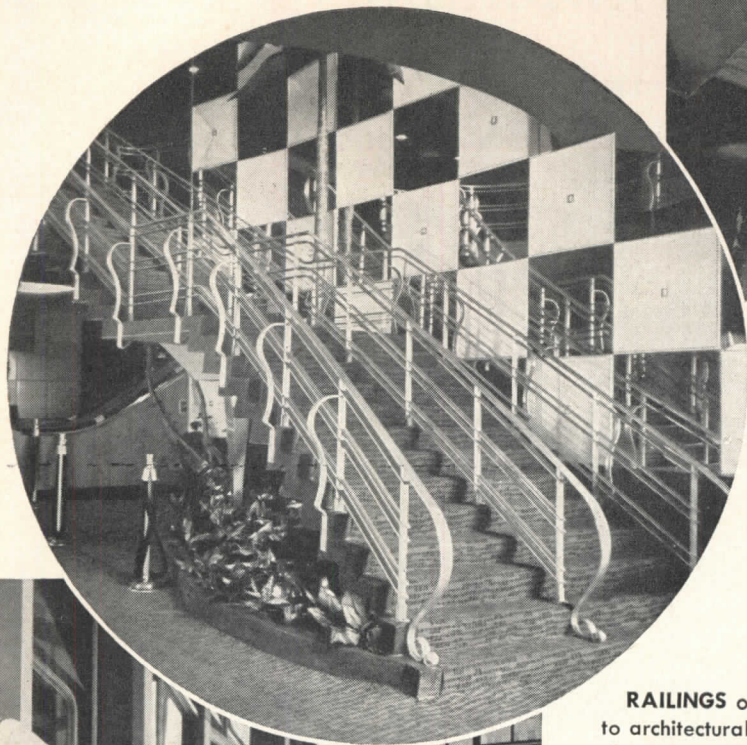
20, 30, 40 psf distributed load
15 psf dead load
Maximum deflection:
1/240 for full load

ROOF PANELS

ROOF JOIST—SPAN TABLE

Roof Panels for Use with Insulation, Tar and Gravel or Shingles

Type	Joist	Maximum Span Limited by						l in 4'/ft of width	Glue type		
		Defl.		Stress		Defl.				Stress	
		Live Load 20 psf		Live Load 30 psf		Live Load 40 psf					
R14	2 5/32" x 3 5/8"	12' 3"	13' 1"	.....	10' 2"	.....	8' 4"	18.06	Pressure
R16	2 5/32" x 5 5/8"	16' 7"	18' 0"	.....	14' 10"	.....	12' 2"	44.4	Pressure
R24	1 5/8" x 3 5/8"	12' 10"	14' 10"	11' 10"	13' 1"	11' 1"	11' 11"	21.0	Nail		
R26	1 5/8" x 5 5/8"	17' 10"	19' 8"	16' 4"	17' 5"	15' 4"	15' 8"	55.0	Nail		
R28	1 5/8" x 7 1/2"	22' 3"	23' 11"	20' 5"	21' 2"	19' 1"	19' 2"	107.2	Nail		
R210	1 5/8" x 9 1/2"	26' 11"	28' 5"	24' 7"	25' 2"	.....	22' 10"	189.5	Nail	
R212	1 5/8" x 11 1/2"	31' 5"	32' 10"	28' 11"	29' 2"	.....	26' 5"	305.0	Nail	



THRESHOLDS of Alcoa Aluminum, designed to meet the various problems which arise in the floor areas at entryways, are in the warehouse stocks of Alcoa distributors. Types applicable to outside entries are available together with those designed for interior use. The former have provision for accommodating weather stripping as well as compensation for the changes of level occurring with the use of interior floor coverings such as linoleum, resilient tile or carpet. Tread patterns are designed to minimize slip hazards. The length of sections stocked gives the designer great freedom in setting the width of accessways.

RAILINGS of Alcoa Aluminum are among the earliest applications of aluminum to architectural use. The selection of railing sections in stock at your nearby Alcoa distributor permits their adaptation to any architectural treatment. The soft, lustrous surface of the metal is pleasing to the eye and to the sense of touch.

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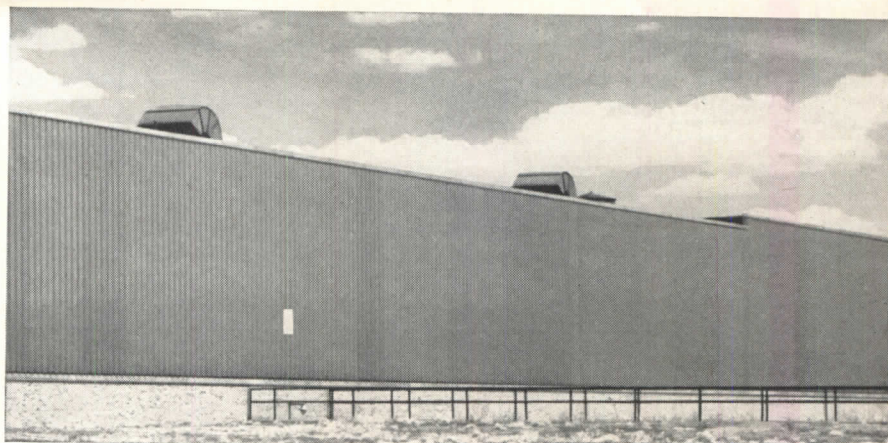
FOR DESIGN FLEXIBILITY STOCK AVAILABILITY FABRICATION ECONOMY

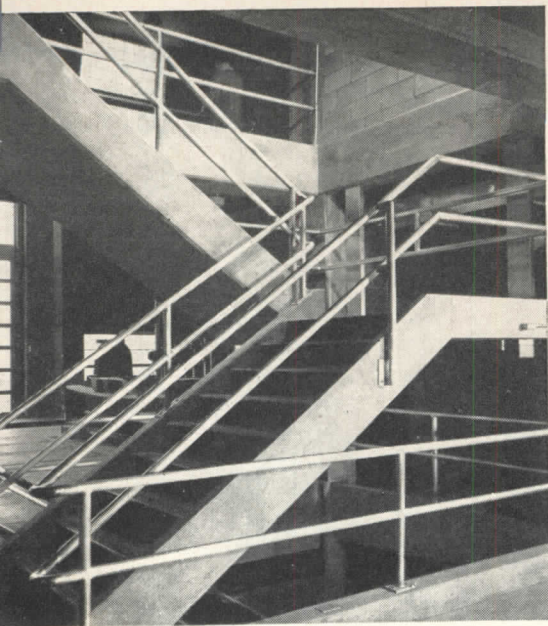
SHEET METAL PRODUCTS of Alcoa Aluminum can be used to channel and direct warm and cold air, to reflect light and heat, to cover, to protect and to embellish. The range of sheet sizes, thicknesses, alloys and tempers in Alcoa Aluminum distributor stocks gives the designer a selection for any use. Specially processed forms of sheet include Alumilite* sheet for attractive appearance, lighting sheet for illumination problems, tread plate for special flooring requirements and patterned sheet for surface decoration. Corrugated sheet is available for complete roofing and wall system with all necessary accessories.

*Trade-Name of Aluminum Company of America

TRIM AND DECORATIVE SHAPES sections available in the stocks of Alcoa Aluminum distributors have many architectural uses. Glazing members, door edgings and jamb sections, interior moldings and pilasters have the crispness of edge and cleanliness of surface which will stay that way under long use.

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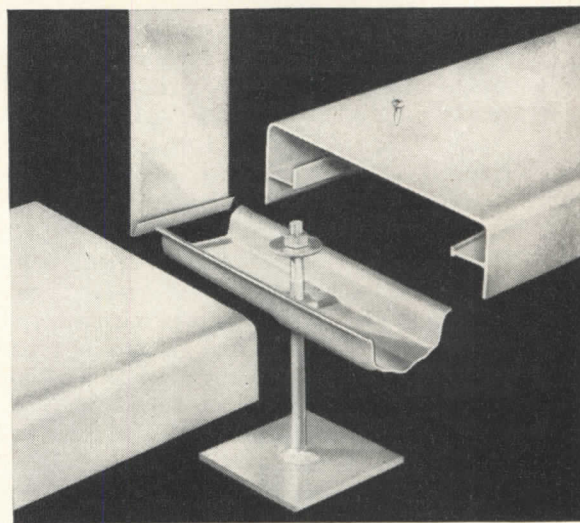
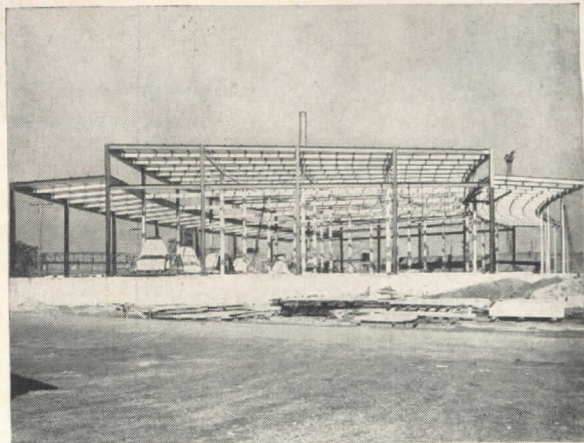


TUBE AND PIPE of Alcoa Aluminum are readily available in a wide range of sizes, cross sections and wall thicknesses from your local Alcoa distributor. Tubing of square, rectangular or circular cross sections has a wide variety of applications in special architectural details such as decorative partition screens, railings and lighting fixtures; for light structural systems such as flexible exhibition and shelving units and for light load bearing columns and posts. Alcoa's tube and pipe give the architect a medium for flexibility of design.

STRUCTURAL SHAPES of Alcoa Aluminum are increasing in usage in commercial, industrial and residential buildings. There is mounting appreciation among designers that aluminum members can do both a structural and a decorative job. Good surface integral with structural strength leads to economy through simplified design and erection since structural members may stand exposed without need for concealment by facing materials.

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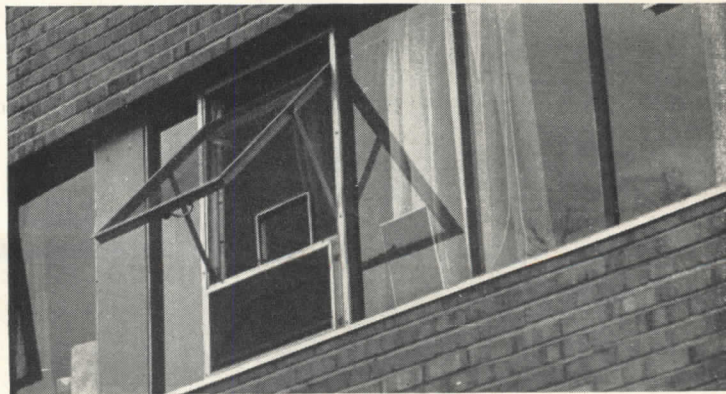
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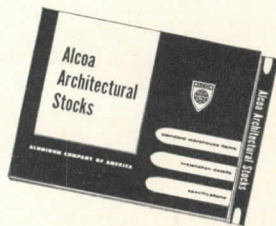
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FIRE SAFETY IN BUILDINGS

Figures have been published by the National Board of Fire Underwriters, in conjunction with the 35th Annual Fire Prevention Week, indicating that the number of fires has decreased sharply in proportion to the amount of new construction during the past dozen years. Some new literature which relates to fire prevention and fire safety measures is listed below.

- *Permalite Lightweight, Insulating, Fire-proof Concrete Roof Deck Specification Manual* is a 218-page working handbook in a looseleaf binder, thoroughly indexed and tabbed at the sides and bottoms of pages for quick reference. The manual contains complete specifications on Permalite concrete for use in all usual roof deck construction, with different types of ceilings, and tables on slab thicknesses, strengths and insulation factors for all recommended mixes. By reference to the manual, the architect, having selected one or two roof types having the desired insulating value, can proceed with detailed engineering and cost calculation. It is the time-saver in that it eliminates the task of calculating the over-all *U* factors for combinations of various materials. *Perlite Div., Great Lakes Carbon Corp., 612 So. Flower St., Los Angeles 17, Calif.**

- *Safety* discusses safe practices in setting up, adjusting, using and shutting down of oxyacetylene and arc welding equipment. Sketches illustrate not only safe practices but also some of the malpractices in a field which presents a serious fire hazard. 32 pp, illus. *Air Reduction Co., Inc., 60 East 42nd St., New York 17, N. Y.*

- *Detection equipment* employing ultrasonic sound waves, which is designed for burglar protection but which also reports a warm air movement above a flame or the rupture of a sprinkler pipe or steam line, is described in *Kidde Ultrasonic Alarm Systems*. 12 pp, illus. *Walter Kidde & Co., Inc., Ultrasonic Div., Belleville 9, N. J.*

- Five new booklets on fire safety have been published by the National Board of Fire Underwriters:

- *Fire Hazards and Safeguards for Metal-Working Industries* points up the increasing incidence of fires in what is considered a fire-safe industry. 57 pp, illus.

- *Fire Safe School Buildings* suggests ways and means for obtaining fire safety in new and existing school buildings. 21 pp, illus.

- *Your Fire-Safe Home*, in a revised edition, outlines the elements of fire safety in the home.

- *Your Farm and Fire Safety* tells how to overcome many dangerous fire hazards in farm construction.

- *Suggested Ordinance on Existing Buildings Used or Converted for Use as Nursing, Convalescent and Old Age Homes* is offered for adoption as an amendment to appropriate portions of a building code. 7 pp. *National Board of Fire Underwriters, 85 John St., New York 38, N. Y.*

- *For Complete Fire Protection*, Catalog L-154, includes specifications for centrifugal fire pumps, centrifugal booster pumps and tank filling pumps and includes a guide for writing a fire pump specification. *Economy Pumps, Inc., Div. of C. H. Wheeler Mfg. Co., 19th and Sedgley Ave., Philadelphia 32, Pa.*

- A new *Component Parts Catalog GEC-1025* contains complete information on circuit breakers, disconnect switches, open knife switches and component parts used in switchboards and panelboards for protection against circuit overloading, a serious consequence of which often is fire. 100 pp, illus. *General Electric Co., Trumbull Components Dept., Plainville, Conn.**

- *DPS Masterplate* describes an "iron-clad" concrete floor surface which is "a precaution against loss of life, property and production from fire and explosion caused by static and mechanical sparks." 12 pp, illus. *The Master Builders Co., 7016 Euclid Ave., Cleveland 3, Ohio.**

HOSPITALS

- *Hospital Fire Safety* includes extracts from previously published fire reports, up-to-date revisions of NFPA standards pertinent to hospitals, a new statistical analysis of hospital fires and other material needed for reference in connection with hospital fire hazards, structural features and planning of improvements. 176 pp, illus. \$2.50. *National Fire Protection Assn., 60 Batterymarch St., Boston 10, Mass.*

- *Maysteel Hospital Casework* presents designs and construction details of standard steel hospital units, with sections on accessories and typical room layouts. 86 pp, illus. *Maysteel Products, Inc., 740 No. Plankinton Ave., Milwaukee 3, Wis.*

ALUMINUM

- *The Aluminum Association Alloy Designation System for Wrought Aluminum* presents a new system of designations which will go into effect on October 1. Consisting of four-digit numbers, the new system is expected to meet all of the industry's present and future needs for wrought alloys. *The Aluminum Association, 420 Lexington Ave., New York 17, N. Y.*

FORMING, BENDING ALUMINUM

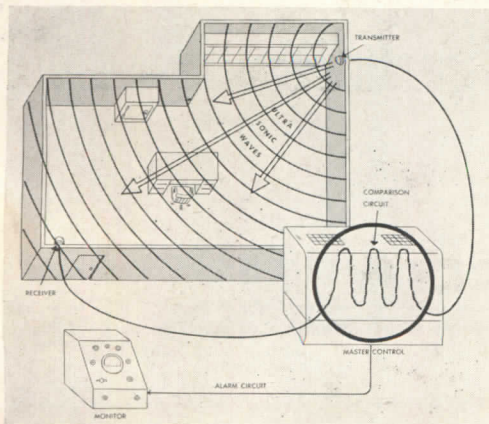
- *Forming and Bending Kaiser Aluminum* gives comparative data on various types of forming and bending equipment, characteristics of specific alloys and their suitability to particular operations, comparisons of methods and technique suggestions to solve specific production problems. 272 pp, illus. *Kaiser Aluminum & Chemical Sales, Inc. (Technical Editor), 919 No. Michigan, Chicago 11, Ill.*

FLOOR TILE

- A new catalog for *KenFlor*, the most recent Kentile vinyl tile floor product, illustrates the tiles in 12 colors and explains how they are installed. *Kentile, Inc., 58 Second Ave., Brooklyn 15, N. Y.**

*Other product information in *Sweet's Architectural File, 1954.*

(Continued on page 306)





Complete details of the CFI-25 (left) are covered in Bulletin OD-626. The CFI-10 (right) is described in Bulletin OD-625. Write for either or both today! Day-Brite Lighting, Inc., 5405 Bulwer Ave., St. Louis 7, Mo. In Canada: Amalgamated Electric Corp., Ltd., Toronto 6, Ontario.

See! Examine! Compare!

You must see this revolutionary new industrial series yourself to appreciate the lifetime advantages it offers. Examine the CFI-25 and the CFI-10. Compare them with other industrial fixtures. Mark your calendar now to arrange a *Lifetime CFI* demonstration—and know firsthand why this new series is the industrial lighting value of your lifetime!

"DECIDEDLY BETTER"
DAY-BRITE®
Lighting Fixtures

497

CALL OR WRITE YOUR NEAREST DAY-BRITE REPRESENTATIVE



STAINLESS STEEL SINK BOWLS

GO TO SCHOOL TO STAY!



These lustrous, easy-to-clean bowls provide a good looking, permanent installation in counter tops of any material. Bowl illustrated is available with one side ledge, two side ledges, or side and back ledge—serves dual purpose of sink and drinking fountain. ELKAY Lustertone never needs replacing—saves on cleaning and maintenance—stays bright and lustrous for class after class, year after year. School boards and teachers alike will *always* be happy with a Lustertone installation.

ELKAY Lustertone SINK BOWLS come in a wide range of sizes—single, double and triple bowl models—find innumerable uses throughout the school . . . kitchens, club-rooms, laboratories, domestic science classrooms . . . are completely seamless for utmost sanitation. SINK AND TRAY combination gives advantage of large bowl for dishwashing . . . small bowl for hand washing and rinsing . . . makes a wonderful sink for kindergarten clean-up use. Modern DRINKING FOUNTAIN is another fine application of ELKAY Stainless Steel in schools.



Drinking Fountain



Sink & Tray Combination



Ledge Type Double Bowl

See Sweet's **23b Elk**
or write for complete information

ELKAY MANUFACTURING COMPANY

1874 South 54th Ave., Chicago 50, Illinois

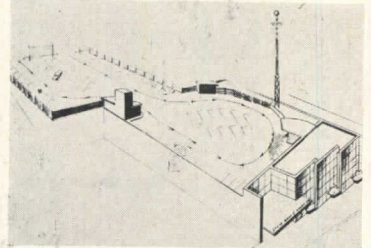
The World's Oldest and Largest Manufacturer of Stainless Steel Sinks . . . since 1920

A-E ROUNDUP

(Continued from page 221)

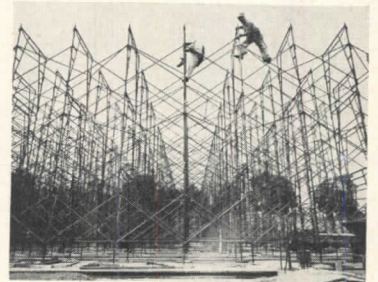
ROOF BANKING Customers Use Speakers and Periscope Mirrors

Customers will bank by means of "Snorkels"—which are actually penthouses containing periscope-type mirrors and two-way speakers—from the roof of the State Bank & Trust Co. in St. Louis, Mo., due to open this month. Architect Bernard Bloom has utilized a sloping site so that customers will drive onto the roof from street level, stop at either of two bullet-proof penthouses and transact their business with a teller on the first floor without leaving their cars. A small, tray-like elevator will convey deposits and withdrawals from motorist to teller and back again. It is estimated that each "Snorkel" can accommodate 60 cars per hour.



Customers wanting to conduct their business inside the bank will be able to park their cars on the roof and take an elevator to the main floor. Present plans call for the roof to be floodlighted for night-time operations.

SCAFFOLD Jacks Raise, Then Lower to Wheels for Mobility



A rolling scaffold for building construction is raised on jacks and lowered to 4-in. wheels for moving from one location to another on the site. The 112- by 250- by 22½-ft rolling scaffold at the site of the Western Electric Co. telephone distribution center in Pittsburgh will hold a plywood deck on which an 8-in. concrete floor will be laid. Three moves will be necessary to lay the entire 250- by 400-ft floor.

(Continued on page 241)



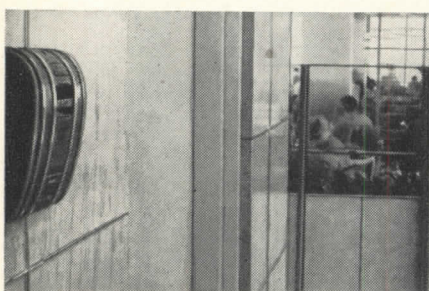
SAVES STEPS, TIME, EFFORT...

Edwards Soft Speaking Nurses' Call System makes life easier for nurse *and* patient. Patient can make known her needs before nurse goes to bedside.



SPLIT-SECOND ACCURACY!

Every clock — one, ten or a hundred—tells precisely the same time, thanks to Edwards centrally controlled Clock and Program Systems. No Master clock is needed. Write for Bulletin "CL" or see our catalog in Sweet's Architectural File.



TRIM, MODERN, EFFICIENT:

Edwards Fire Alarms are chosen by leading architects to protect America's most important buildings.

EDWARDS

protects... everywhere!



A-E H R O U N D U P

(Continued from page 236)

FIRE PROTECTION in Buildings Stressed at M. I. T. Conference

Three general "fire faults" occur most frequently in the planning stages of all building types, stated William H. Brown, Associate Professor of Architecture at M.I.T. and one of the speakers at a Fire Protection Engineering Conference at M.I.T. from August 17 to 19. In his discussion of "Liaison in the Planning Stage," Prof. Brown categorized the three faults as: (1) lack of foresight about fire hazards; (2) lack of information in the planning stages, stemming from poor liaison; (3) lack of a planned and effective administration of basic fire prevention principles.

Much stress was placed on the importance of considering the threat of fire in planning exits, ventilation, water supply, space separations, vertical openings, materials and, of course, fire protection equipment.

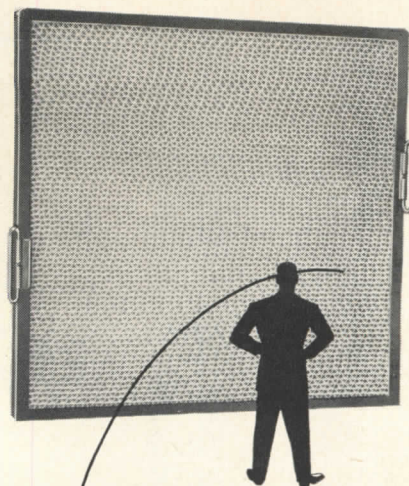
Other subjects discussed during the three-day conference included: "Basic Forces Determining the Design of Structures," by Walter C. Voss, Professor Emeritus, Department of Civil and Sanitary Engineering, M.I.T.; "Points of Reference in Building Design for Fire Safety," by Horatio Bond, Chief Engineer, National Fire Protection Association; and "The Significance of Fire Loading," by Raymond C. Corson, Factory Mutual Engineering Division.

"Fire standards are road maps to fire safety," said James J. Duggan, Superintendent of Fire Protection, Carbide and Carbon Chemicals Co., in his speech on "Fire Prevention Methods." Road maps show where to go, but they must be interpreted with intelligence and discrimination to determine the best route to take.

FOOD ENGINEERING Curriculum

Florida State University is initiating a new course in Food Facilities Engineering this fall. The course, which has the support of the architectural and engineering professions, the American Dietetic Association, the manufacturers of food service equipment and the owners of large feeding establishments, will include four years at the University and one year in the field. Graduates will receive a degree of Bachelor of Science in Engineering.

(Continued on page 246)



You're really looking at 9 air filters!

- 1** Type 68 — 2" — finer mesh media and tighter pack for higher efficiency on smaller particles.
- 2** Type 44-68 — 4" — double packed for special applications requiring highest efficiency.
- 3** Type 44 — 1" — gable crimped for high efficiency; for ventilation, package air conditioners, furnaces, etc.
- 4** Type 44 — 2" — general ventilation for dirt, lint, paint, grease, oil, etc.
- 5** Type 44 — 4" — for greater dirt holding capacity.
- 6** Type MZ — 2" — zinc chromate painted before and after assembly; hot dipped galvanized frame; marine ventilation application.
- 7** Type MZ — 4" — same except 4" thick.
- 8** Type C4C4 — 2" — all copper media and frame; for corrosion resistant water eliminators, etc.
- 9** Type C4C4 — 4" — same except 4" thick.

Except as noted, filters are made of zinc electroplated herringbone-crimp steel screen media in sturdy steel frames. Other materials are aluminum, stainless steel and monel. Available in all sizes.

Because one filter won't do every air cleaning job, Farr Company has nine standard types designed to handle practically any dirt condition. Each embodies the famous herringbone-crimp media design and other Far-Air quality features, but differs in materials, thickness, etc. The efficiency of your air handling system is dependent on the filters used. Be sure you install the *right type*.

Send for complete catalog of FAR-AIR products to Farr Co., P.O. Box 45187, Airport Station, Los Angeles 45, Calif.

ORIGINATORS OF FAR-AIR CERTIFIED FILTER SERVICE



Manufactured under license by Farr Company Manufacturing Ltd., Montreal, Canada

STAINLESS STEEL FOR BUILDINGS



McLouth

STAINLESS

Steel

High quality stainless sheet
and strip steel . . . for the product
you make today and the product
you plan for tomorrow.

McLOUTH STEEL CORPORATION
DETROIT, MICHIGAN

Manufacturers of Stainless and Carbon Steels



The Dining Room of the Downtown Athletic Club in New York City. Note how Bigelow's beautiful Hartford-Saxony® with its circular pattern, gives complementary contrast to the rectangular designs of ceiling and walls.



BIGELOW *Number 1 name in Carpets*

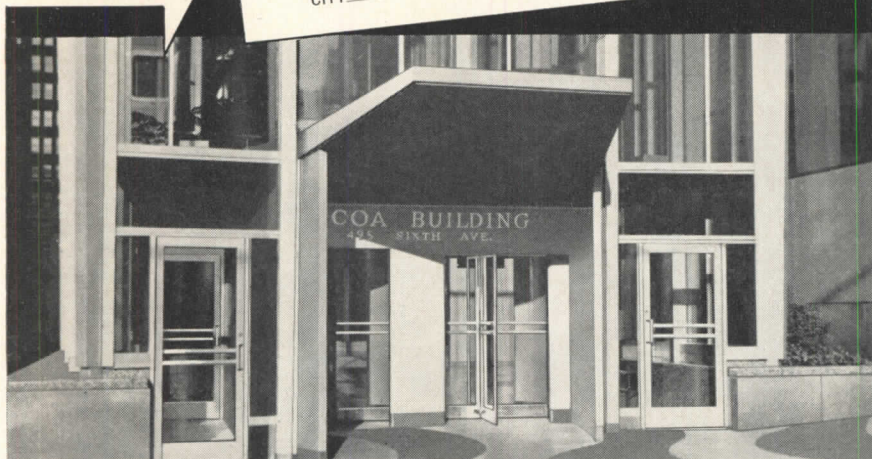
Bigelow sales offices are located in the following strategic cities: Atlanta, Ga.; Boston, Mass.; Buffalo, N. Y.; Chicago, Ill.; Cincinnati, Ohio; Cleveland, Ohio; Dallas, Tex.; Denver, Col.; Detroit, Mich.; Hartford, Conn.; High Point, N. C.; Indianapolis, Ind.; Kansas City, Mo.; Los Angeles, Calif.; Minneapolis, Minn.; New York, N. Y.; Philadelphia, Pa.; Pittsburgh, Pa.; St. Louis, Mo.; San Francisco, Calif.; Seattle, Wash.

(Continued from page 246)

MAIL THIS COUPON FOR YOUR NEW ENTRANCE-PLANNING MANUAL

REVOLVING DOOR DIVISION
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Send me without cost or obligation my personal copy of the new International "Entrance-Planning Manual":

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ADDRESS _____ ZONE _____ STATE _____
CITY _____



Harrison & Abramovitz: Architects; Altenhof & Bown, Mitchell & Ritchey: Associate Architects

REVOLVING DOORS, of course,
for the New home of Alcoa



FIRST IN THE "OFFICE OF THE YEAR" AWARDS FOR 1953, the first metal-clad skyscraper ever constructed . . . lightest weight office building of its size in the world . . . the new Alcoa Building furnishes a truly fitting setting for the offices of a great corporation.

And what more fitting entrance for this epoch-making structure, than the revolving doors that welcome you into Alcoa's new home! Made of aluminum and crystal — set into a main entrance soaring a full 4½ stories high — these doors offer far more than advanced design to merit architectural specification. For, they alone assure all the entrance advantages essential to maintaining the comfort and cleanliness demanded for this most modern of buildings. They alone are "always open . . . always closed" . . . always a self-paying investment in entrance safety, efficiency, and unfailing dependability.

Before planning any structure, be sure you have the new International handbook on the latest and best in modern building entrances. The above coupon brings you this valuable data without cost or obligation. Mark it and mail it now.

REVOLVING DOOR DIVISION
2002 EDGAR ST. EVANSVILLE 7, IND.



INTERNATIONAL STEEL COMPANY

MATERIALS HANDLING | *Help Offered in Planning Systems*

Technical assistance in planning materials handling systems for new or remodeled buildings is available to architects through an Architects Advisory Service established by The Rapids-Standard Co., Inc., Grand Rapids, Mich., manufacturers of conveying equipment. The new service provides help in the planning stages of construction and includes consultation, suggested layouts, prints and specifications of equipment, and recommended practices for handling any type of material in single- and multi-floor buildings. A brochure of case studies, photographs and specification bulletins showing application of materials handling equipment to shopping center operations is also available.

MEETINGS *Slated on Welding, Automation and Maintenance*

- Sessions on structural welding, weldability and welding in design and production are among nineteen sessions to be held during the National Fall Meeting of the American Welding Society in Chicago from Nov. 1 to 5. Fifty-seven papers covering all phases of welding activity will be presented.

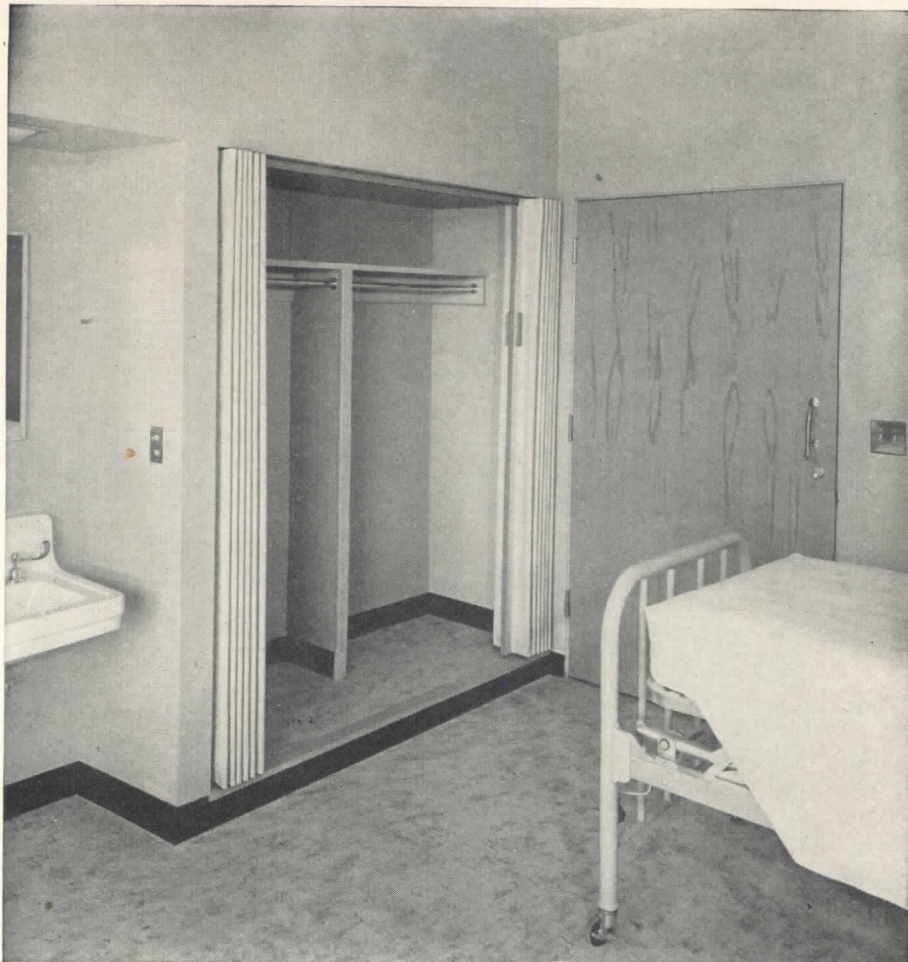
- The First International Automation Exposition is scheduled for Nov. 29 to Dec. 2, 1954, at the 244th Regiment Armory in New York City. The Exposition, presented by Richard Rimbach Associates, publishers of *Instruments and Automation, Instrument Apparatus News* and *Instrument Manufacturer*, is designed to bring together basic equipment that makes automation possible.

- "Plant Layout and Construction" will be one of the topics discussed during a three-day symposium scheduled during the annual convention of the Industrial Housekeeping Safety Guild at Atlantic City from Nov. 6 to 11. A panel on Tuesday, Nov. 9, will discuss a proposal to establish a Guild seal of approval for recognized, trade-marked and nationally advertised products, to be issued only after laboratory testing as a prestige symbol. The panels will supplement an exposition of new products, new equipment and new methods of industrial maintenance of 150 exhibitors.

Additional Hospital Space At No Additional Cost . . .

when you specify "Modernfold" doors, according to Architect Gerald G. Scott, Portland, Oregon. Writes Mr. Scott: "'Modernfold' doors were specified as an alternate to the Specifications for the Central Oregon District Hospital, but when the bids were opened, it became apparent that these doors could be had for no additional cost over wood doors. Their use was more than justified by an overwhelming list of advantages, including economy, but particularly by their space-saving feature. The Contractor was especially pleased because they relieved him of the responsibility of hardware, painting, and installation; resulting in less time on his part spent during the finishing stage of the job."

Pictured is one of the rooms from Central Oregon District Hospital, Redmond, Oregon. Scott & Payne, Portland, Architects.



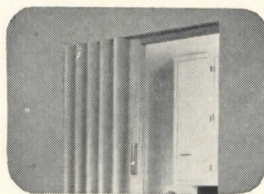
Your ideas come to life . . . for life with "MODERNFOLD" doors

For every room division or door closure problem, there's a simple, economical, space-saving solution. That's "Modernfold," the original folding door.

Specifying "Modernfold" doors keeps clients happy. For these steel-framed, vinyl-covered doors can't be equaled *anywhere* for quality of design . . . for quality and strength of materials.

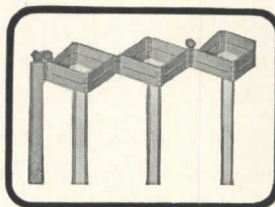
And because this line is *complete*, you're sure to save time and get exactly what you want when you specify better looking, easier operating, longer lasting "Modernfold" doors.

NEW CASTLE PRODUCTS, INC.
New Castle, Indiana; Montreal 6, Canada



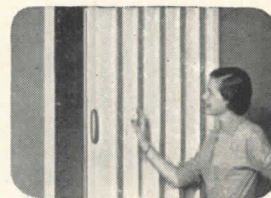
Better Looking

Fabric covering conceals all operating mechanism. No cornice needed. Adjustable trolleys keep doors hanging flush to jamb.



Longer Lasting

Balanced hinge construction both top and bottom. Trolleys attached at hinge intersections. No sidewise twist or pull possible.



Better Background

Over 100,000 "Modernfold" doors now in operation—a backlog of space engineering experience that's your guarantee of satisfaction.

YOU CAN'T GET MORE IN A FOLDING DOOR



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Please send full details on "Modernfold" doors.

Name

Address

City.....County.....State.....

(Continued from page 222)

MORE PLASTICS

FABRICS

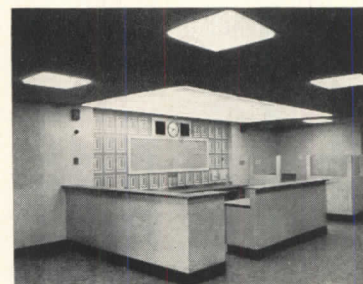
• Plastic-coated fabric patterns are suitable for furniture upholstery and other types of interior decoration. Kyoto is the name of a new two-tone design which resembles the natural fiber effect of Japanese matting. *Textileather Div., The General Tire & Rubber Co., Toledo 3, Ohio.*

INSULATION



• Insulation of plastic Styrofoam not only keeps heat in but also keeps it out. Here second layer of Styrofoam blocks is skewered to first layer on which a cold-setting asphalt has been troweled to insulate cold-storage room. *Dow Chemical Co., Midland, Mich.*

LIGHT PANELS



• Light diffusing panels are produced in square and rectangular multiples of 12-in. ceiling blocks for hospital, school, hotel, institutional and commercial installations. Formed of 1/8-in.-thick impact-resistant Plexiglas, the panels are hinged for ease in cleaning. They can be mounted individually or in continuous rows. Units are available with rapid start or standard fluorescent lamps. *The Safety Car Heating & Lighting Co., Inc., New Haven, Conn.*

(Continued on page 258)



**Provides Engineered Cove Lighting
AT A NEW LOW PRICE***

VISIONAIRE is a unique fluorescent fixture engineered to meet the structural and mechanical problems encountered in cove lighting that cannot be solved with conventional equipment.

VISIONAIRE is, in reality, a prefabricated lighting system available in easily installed unit lengths of 24, 33 and 48 inches to present an unbroken line of light, extremely decorative in effect.

The bottom louvered opening provides efficient down-wall lighting, while the metal side reflector, which may be either luminous or opaque, provides soft, even, over-all indirect lighting without any trace of glare.

In new construction or on a remodeling project, **VISIONAIRE** with its low initial cost, easy installation and simple maintenance, will "pay its own way" in efficiency, economy and effectiveness.

* The equipment cost for a prefabricated Visionaire lighting system is, on the average, under five dollars per foot . . . a considerable saving on ordinary built-in cove lighting that provides neither the efficiency, nor the fine finished appearance of Visionaire.

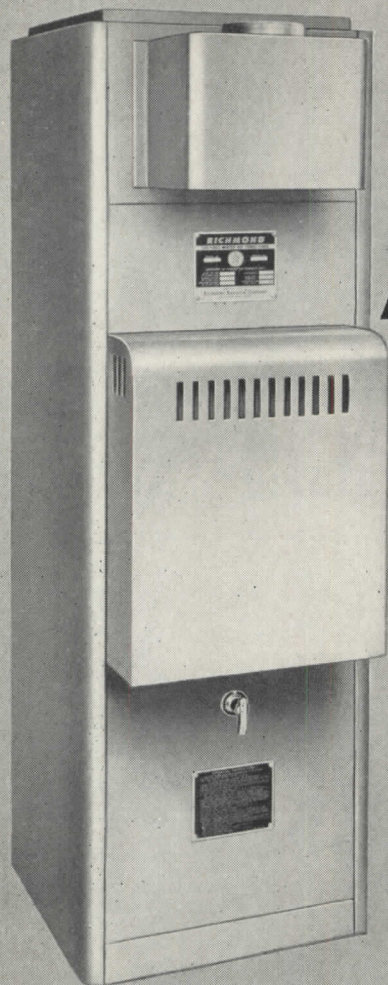
FOR COMPLETE DETAILS ➔

For complete details on Visionaire, send for this informative bulletin sheet No. 521S-11. It contains construction, performance and application data that will help you put Visionaire to its most effective use. Address request to Dept. V . . .



SILVRAY LIGHTING, INC.
RKO BLDG., RADIO CITY NEW YORK 20, N. Y.

NOW — top quality heating
at a *budget price*



the RICHMOND Budgeteer

type SV-36-G

Here's a new steel, gas-fired furnace designed to solve many of your installation and service problems. The *Budgeteer* is amazingly compact—ideal for limited floor space installations in utility rooms, closets or alcoves—it's approved for one inch clearance. All working parts are easily accessible from the front for complete servicing. Rated at 70,000 Btu/hr. input, the *Budgeteer* SV-36-G provides fully automatic operation for constant, dependable heat. The low-speed, direct-drive blower makes for quiet, efficient operation.

Heating element and radiator are of heavy gauge steel welded together in one compact unit with all-welded, gas tight seams. Insulation is heavy corrugated asbestos, faced with aluminum foil. The *Budgeteer's* sturdy, steel casing is finished in smooth Hammertone baked-on enamel in attractive light green color.

Approved by the American Gas Association Laboratories for use with natural, mixed, manufactured, liquified petroleum and LP air gases, the *Budgeteer* is engineered to provide long, efficient operation at a budget price. Write for complete specifications.

AR/10

RICHMOND radiator company

16 Pearl Street, Metuchen, N. J.

Please send me complete information on the new SV-36-G *Budgeteer* the new "Weather-Aire"

NAME _____

COMPANY _____

ADDRESS _____

CITY _____ STATE _____

We are architects builders heating wholesalers
 heating contractors.

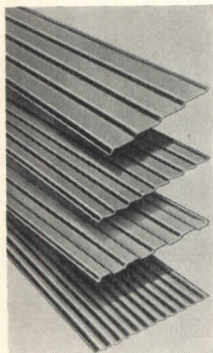


Affiliate of Reynolds Metals
16 Pearl Street
Metuchen, New Jersey

(Continued from page 252)

BUILDING PANELS

• Daycor fiber glass building panels are produced in both corrugated and flat types for application as patio covers, carports, porches, awnings, room partitions, skylights and greenhouses. Translucent and shatterproof, Daycor is produced in 10 colors and black. *Plastics Div., Strick Co., Whilaker & Godfrey Aves., Philadelphia, Pa.*



• Structural panels of glass fiber and plastic are shatterproof and weather-resistant and are available in nine sealed-in colors. The new "502" Small Shiplap and "400" Bat and Board designs shown have a 4-in. flat surface and a 3/4-in. offset, with corners rounded to a 1/4-in. radius. *Rippolite Plastic Products, Inc., 3910 Cohasset St., Burbank, Calif.*

SURFACE COVERINGS



• Plastic Veneer wood grain is a covering for cabinets or walls available in rolled sheets about 24 by 34 in. It is easily applied and is available also in leather and marble finishes. *The Meyer-cord Co., 18 East 60th St., New York, N. Y.*

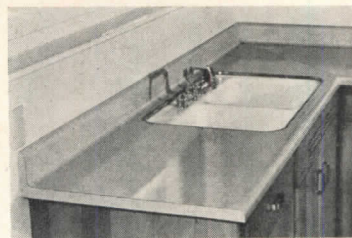
• FibeResin school desk tops are claimed to be resistant to gouging, nicking, prying, trenching and doodling with crayon, pencil or pen. Composed of plastic materials molded and bonded under heat and pressure into one solid homogeneous board unmarred by separate glue lines or backing sheets, the surface is easy on the eyes and easily cleaned. *FibeResin Plastics Co., Oconomowoc, Wis.*

• Panelyte plastic board is a high-pressure laminated, thermosetting composition

of synthetic resins and paper available in 1/10-in. thickness, which can be filed, sawed, glued, planed and curved and which resists stains, swelling, cracking, chipping and burns. *Panelyte Div., St. Regis Paper Co., 230 Park Ave., New York 17, N. Y.*

• Fabri-Form plastic sink top is said to be impervious to damage by food, stains, grease, alcohol, boiling water and cosmetics and is available in standard lengths and sizes or can be cut. This pre-formed drainboard unit eliminates

cracks, joints and the need for metal molding. *Fabritex Mfg. Co., 415 South Ave., Los Angeles 17, Calif.*



(Continued on page 262)

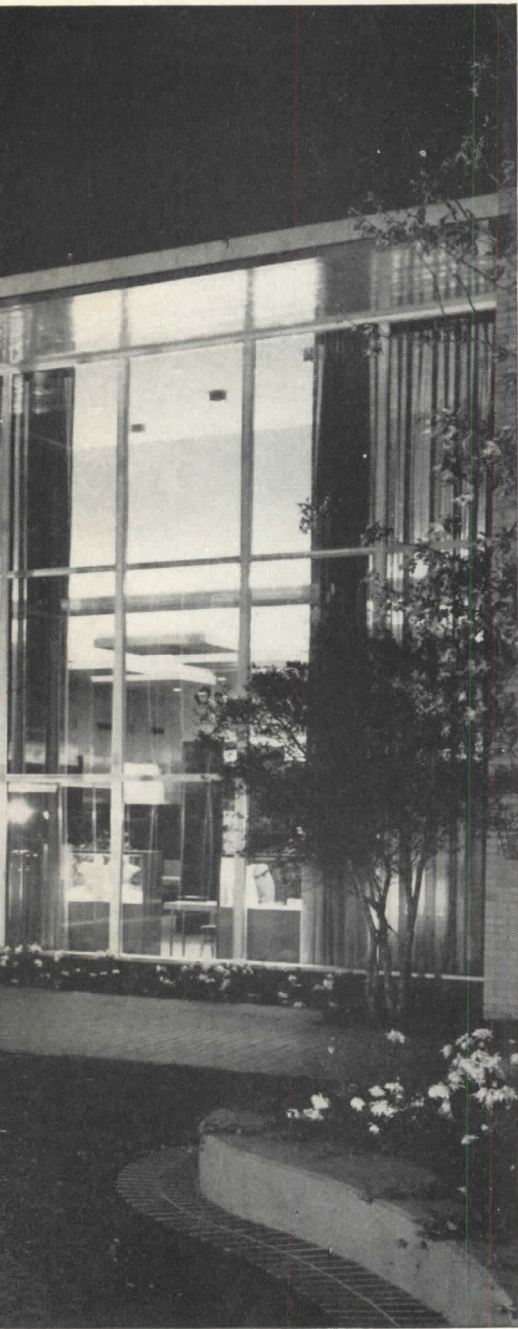


NOW INSTALLING *Forestone* ACOUSTICAL TILE
Fissured for beauty... Fiber for economy

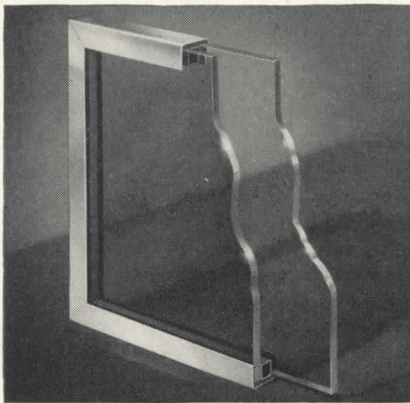
- ALABAMA**
Badham Insulation Co., Inc., Birmingham
Stokes, Inc., Mobile
- ARIZONA**
Fiberglas Engineering & Supply Co., Phoenix
Hall Insulation & Tile Co., Tucson
- CALIFORNIA**
Coast Insulating Products, Los Angeles and San Diego
Cramer Acoustics, San Francisco and Fresno
- COLORADO**
Construction Specialties Co., Denver
- CONNECTICUT**
Wilson Construction Company, East Hartford, Bridgeport
- GEORGIA**
Dumas and Searl, Inc., Atlanta
- ILLINOIS**
General Acoustics Co., Chicago
- INDIANA**
The Baldus Co., Inc., Fort Wayne
E. F. Marburger & Son, Inc., Indianapolis
- IOWA**
Kelley Asbestos Products Co., Sioux City
- KANSAS**
Kelley Asbestos Products Co., Wichita
- KENTUCKY**
Atlas Plaster & Supply Co., Louisville
- LOUISIANA**
Ideal Building Materials, Inc., Shreveport
- MARYLAND**
Lloyd E. Mitchell, Inc., Baltimore
- MASSACHUSETTS**
Acoustical Contractors, Inc., Brighton
- MICHIGAN**
Detroit Fiberglas Insulation Division, Detroit
- MINNESOTA**
Dale Tile Company, Minneapolis
- MISSISSIPPI**
Stokes, Inc., Jackson
- MISSOURI**
Hamilton Company, Inc., St. Louis
Kelley Asbestos Products Co., Kansas City
- NEBRASKA**
Kelley Asbestos Products Co., Omaha

- NEW JERSEY**
Kane Acoustical Co., Fairview
- NEW MEXICO**
Fiberglas Engineering & Supply Co., Albuquerque
- NEW YORK**
Davis Acoustical Corp., Albany
Davis-Fetch & Co., Inc., Buffalo, Rochester and Jamestown
Robert J. Harder, Inc., Lynbrook, L. I.
James A. Phillips, Inc., New York
- NORTH CAROLINA**
Bost Building Equipment Co., Charlotte
- OHIO**
R. B. Brunemann and Sons, Inc., Cincinnati
The Mid-West Acoustical & Supply Co., Cleveland, Akron, Columbus, Dayton, Springfield and Toledo
- OKLAHOMA**
Harold C. Parker & Co., Inc., Oklahoma City
Kelley Asbestos Products Co., Tulsa
- OREGON**
Acoustics Northwest, Inc., Portland
R. L. Elfstrom Co., Salem
- PENNSYLVANIA**
General Interiors Corporation, Pittsburgh
Selby, Battersby & Company, Philadelphia
- SOUTH CAROLINA**
General Insulation & Acoustics, Inc., Columbia
- TEXAS**
Blue Diamond Company, Dallas
Fiberglas Engineering & Supply Co., El Paso
Builder's Service Co., Fort Worth
- UTAH**
Utah Pioneer Corporation, Salt Lake City
- VIRGINIA**
Manson-Smith Co., Inc., Richmond
- WASHINGTON**
Elliott Bay Lumber Co., Seattle
Fiberglas Engineering & Supply Co., Spokane
- WISCONSIN**
Building Service, Inc., Milwaukee
- CANADA**
Albion Lumber & Millwork Co., Ltd., Vancouver, B. C.
Hancock Lumber Limited, Edmonton, Alberta

construction



THIS INTERESTING entrance at the Schmidt Provision Company, Toledo, Ohio, is completely walled with Pittsburgh Plate Glass (approximately 20 ft. wide and 20 ft. high—running from the floor to the ceiling). It is set in Pittco De Luxe Sash No. 12 C and divided with horizontal and vertical mullions of No. 24 CTC. The doorway itself is a standard Pittsburgh Doorway, Style No. 16. Architect: Karl B. Hoke, Toledo, Ohio.



SOLEX-TWINDOW gives all the advantages of Twindow—Pittsburgh's window with built-in insulation—plus the solar-heat-absorbing, sun-glare-reducing properties of Solex. As shown by this cutaway view, these units consist of two panes. The outer is Solex, the inner clear Plate Glass. In between is a sealed-in air space. A stainless steel frame protects the seal and glass edges, and it also makes handling safe, quick and easy.

Design it better with Pittsburgh Glass

Your Sweet's Catalog File contains detailed information on all Pittsburgh Plate Glass Company products . . . Sections 7a, 13e, 15, 16b, 21.

PAINTS · GLASS · CHEMICALS · BRUSHES · PLASTICS · FIBER GLASS

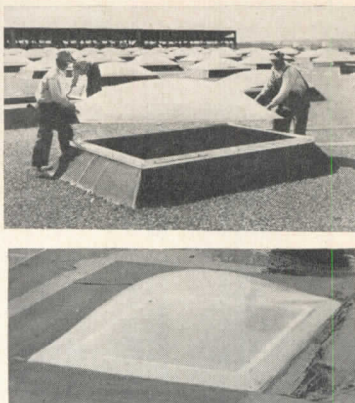


PITTSBURGH PLATE GLASS COMPANY

(Continued from page 258)

SKYLIGHTS

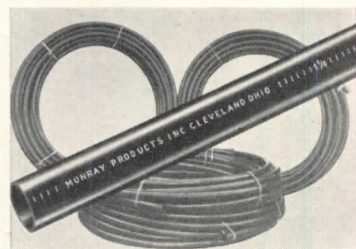
• A thermoplastic acrylic resin dome skylight, the AP is designed for use on any flat roof. Available in sizes made to fit standard roof joist spacings and roof openings, the dome and metal trough are placed in position and attached by screws. The roofing material is then spread over the flange to complete the job. *Architectural Plastics, Inc., 20 Fitch St., East Norwalk, Conn.*



• Plastic skydomes provide efficient and economical natural daylighting for interiors of windowless structures. In this 500- by 400-ft U. S. Signal Corps Depot in Tobyhanna, Pa., 585 domes were installed on an extruded aluminum frame screwed to a wood border. The domes are 64 by 96 in. and have a rise of 19 in., which prevents obstruction by snow and makes them self-cleaning in rain. *Wasco Flashing Co., Cambridge, Mass.*

PIPING

• Plastic valves of unplasticized polyvinyl chloride are produced as needle valves ranging in size from 1/8 through 3/4 in. and globe valves ranging from 1 through 2 in. *Industrial Plastic Fabricators, Endicott St., Norwood, Mass.*



• Flexible plastic pipe furnished in nine standard sizes up to 6 in. in diameter eliminates, according to the manufacturer, the deteriorating effects of sunlight encountered in other types of polyethylene pipe. It is usable in above- and below-ground installations in domestic, farm, industrial, chemical and food processing applications. *Murray Products, Inc., 12400 Crossburn Ave., Cleveland 11, Ohio.*

LANTERN POST



• A plastic lantern post, a thermoplastic adaption of the Colonial Post Lantern, resembles wrought iron and can be painted as desired. Eight feet tall, the lantern is produced in four pieces and is said to be durable, rustproof and easily assembled. *Herwig Co., Chicago, Ill.*

(Continued on page 266)

Floor Specifications

Your solution for lasting protection and beauty on every floor you specify.

Will the floors you specify today be attractive and unscathed by wear ten years from now? They can be with proper maintenance methods.

The Multi-Clean Method of floor care consists of tested and proved procedures for every kind of floor . . . wood, asphalt tile, rubber tile, terrazzo, concrete, marble and many others. It combines the correct materials and equipment with the proper techniques to do a better floor maintenance job faster, easier and more economically. You can depend on The Multi-Clean Method to keep floors new and well protected against hardest wear year after year.

Multi-Clean manufactures a complete line of floor waxes, floor seals, floor treating materials of all kinds and floor maintenance equipment. Write today for complete information.

**WOOD
CONCRETE
LINOLEUM
ASPHALT TILE
RUBBER TILE
TERRAZZO
ASBESTOS TILE
UNFINISHED TILE**



FLOOR TREATING MATERIALS



FLOOR MACHINES



SCRUBBING MACHINES



WET-DRY VACUUM CLEANERS

see our catalog in **ARCHITECTURAL FILE** or write for copy

LOOK IN SWEET'S

Refer to Folio No. ¹²¹/_{Mu} Sweet's Architectural File for our 8-page catalog describing the complete Multi-Clean line.

MULTI-CLEAN[®]

PRODUCTS, INC.

2277 Ford Parkway Dept. AR-10, St. Paul 1, Minn.

THE MULTI-CLEAN METHOD: The Only Complete Floor Maintenance Program Available Through Authorized Distributors Everywhere.



The \$3.5-million nurses home at University of Pittsburgh towers 14 stories, completely air conditioned, contains library, recreation room, reception rooms, cafeteria seating 400—comfortable living quarters for 600. Steeltex in upper floors. Ingham, Boyd & Pratt, Architects. Trimble Company, Contractors.

Pittsburgh specify STEELTEX[®] floors and roofs

and reinforcement for concrete because Steeltex can be rolled out like a carpet, stretched with a special tool, and clipped tightly in place by one man (see photo below left).

Steeltex with its waterproofed backing also prevents waste of concrete by reducing leakage to a minimum from the freshly poured slab—craftsmen can continue working on the floor below without getting splattered. Expensive clean-up time is eliminated.

Steeltex insures a strong floor because embedment of steel reinforcing takes place automatically (see note below left). Steeltex allows concrete to cure slowly, properly—guards against excessive cracking—can be installed over any type of joist—will support ample safe loads from 109 to 886 lbs. per square foot depending on spacing of joists and thickness of slab. No wonder Steeltex has been the choice of architects, engineers, contractors, and building owners alike, not only in Pittsburgh but wherever concrete slabs are poured over joists.

If your building plans call for poured concrete floors, roofs, plaster walls or ceilings, masonry veneer or Portland cement (Stucco) exteriors, there's a type of Steeltex reinforcing that will do the job better, faster, with less effort at lower overall cost.

For complete details see the Steeltex catalog in Sweet's or write for your free copy of a new 24-page illustrated booklet "Pittsburgh Steeltex, Backbone of Concrete, Plaster, Mortar." It's yours for the asking.

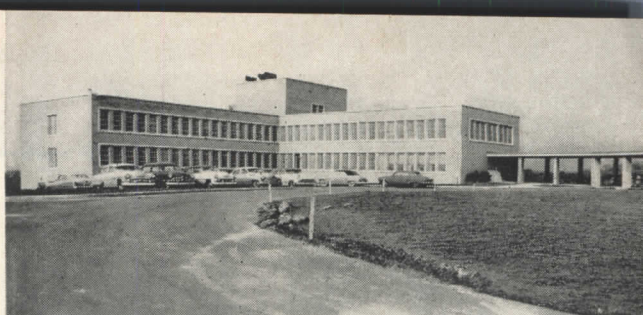
STEELTEX[®]

manufactured by the

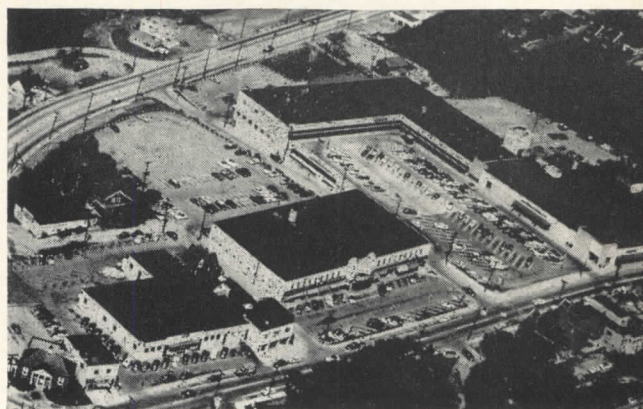
Pittsburgh Steel Products Company

a subsidiary of **Pittsburgh Steel Company**

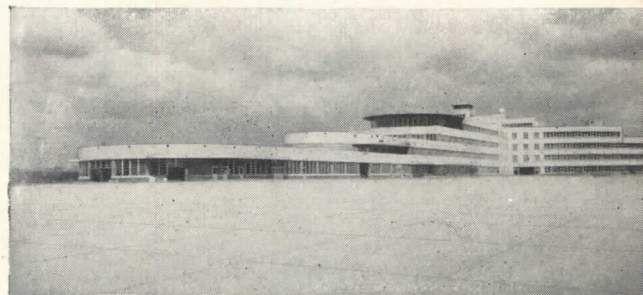
Pittsburgh 30, Pa.



St. Clair Hospital, Mt. Lebanon Township, Pa., serving the growing South Hills area has 116 beds—cost \$1.34 million. Steeltex used in all floors. Kuhn & Newcomer, Architects. R. A. Zern, Structural Engineer. H. Busse, Contractor.



Brentwood-Whitehall Shopping Center built on two levels has 25 shops in 210,000 square feet—80% are air conditioned—parks 1,000 cars. All floors reinforced with Steeltex. Forsyth & Blezard, Architects. Leland Cook, Structural Engineer. Landau Bros., Contractors.

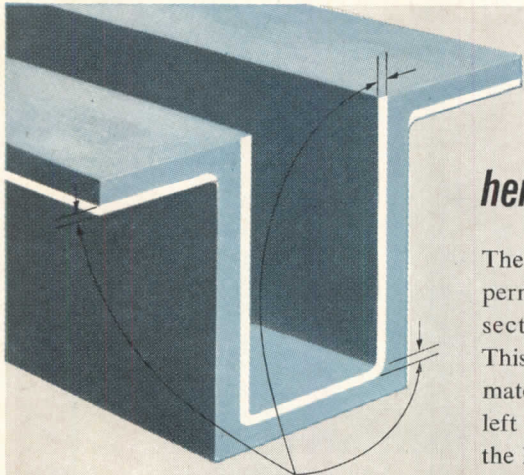


Mammoth decks in this fabulous \$10-million terminal building at \$42-million Greater Pittsburgh Airport, were poured on Steeltex Floor Lath. Last year 2.5-million people including travelers spent \$20 million at ticket counters, restaurants, nightclub, theater, hotel and shops. Joseph Hoover, Architect. Leland Cook, Structural Engineer. Dick Construction Co., Contractors.

Here are other recent buildings in Pittsburgh and vicinity using Steeltex:

- Amberson Gardens
- Bedford Dwellings
- Center-Negley Apartments
- Greentree Apartments
- Hebron Grade School
- Kennilworth Apartments
- Pennsylvania College for Women (Administration Building)
- Shadyside Presbyterian Church (Chapel)
- St. Augustine's High School
- Talbot Towers (Housing Project)
- Union Railroad (Office Building)
- Westinghouse Educational School
- Westinghouse Electric Corporation (Atomic Project Buildings)

New Harvey aluminum alloy 66S will reduce your costs



The white area indicates the saving in material made possible by using 66S.

here's how you save

The high yield strength of 66S permits you to reduce the cross section of structural members. This means real dollar savings in material costs. The extrusion at left was made of 61S. By using the high yield strength of 66S its cross section is reduced as shown. The saving in material amounts to approximately 26%. Saving in cost, 21%.



The men at Harvey Aluminum are dedicated to the idea of improving your product while reducing your costs. And remember, we prepay the freight to your plant.

An independent producer of aluminum extrusions in all alloys and all sizes: special extrusions, press forgings, bar stock, forging stock, tubes, impact extrusions, aluminum screw machine products and related products.

MAKING THE MOST OF ALUMINUM... FOR EVERYONE

HARVEY Aluminum

HARVEY ALUMINUM SALES, INC.
TORRANCE, CALIFORNIA
BRANCH OFFICES IN PRINCIPAL CITIES

high-strength-low-cost-ratio

means that Harvey metallurgists have combined the essential qualities of many ideal structural alloys into a single new aluminum alloy—66S. This general purpose alloy is bringing real economy to many industries. It combines the high strength of 24S and the good corrosion resistance, weldability and economy of 61S.

Alert aluminum fabricators can now use 66S to reduce material costs, cut weight without sacrificing strength, and lower fabricating costs. You can reduce your costs at Harvey Aluminum... tooling service charges are nominal, and Harvey prepays the freight to your dock. Send for your Bulletin on 66S today.



AH PRODUCTS

(Continued from page 262)

PLASTIC COATING

• A black, strippable plastic coating can be brushed onto any enamel surface to protect it against damage during construction. *Coal-A-Tub*, made of liquid vinyl plastic, dries to a strong, flexible film which can be peeled off at the completion of construction. *Prolectub, Inc.*, 71 Ludlow St., New York, N. Y.

AWNINGS



• *Fiberglass-plastic awnings* diffuse sun rays and shade from glare without blacking out areas under them. Washable and impenetrable by moisture, the awnings cannot corrode or rot and, as shown, are removable from slotted brackets for house painting and repairs. *Dickey Mfg. Co.*, Oakwood, Ohio.

OTHER PRODUCTS

PLASTIC CUTTER

• A portable, electric plastic cutting tool is designed for in-shop use to cut plastic up to $\frac{1}{10}$ in. thickness instead of the usual over-powered, under-speed devices. It will cut Pearlescent tile and large sheets and will also cut diagonally. *Steelgrip Plastics*, 336 No. Central Ave., Chicago 44, Ill.

CERAMIC VENEER

• A lightweight ceramic veneer — *Robco* $\frac{3}{8}$ *Vitrineer* — is a clay product $\frac{3}{8}$ in. thick and manufactured in sheets as large as 12 by 16 and 16 by 24 in. It can be cut and sawed on the job site for both interior and exterior use. Weighing 4 psf, it will not, claims the manufacturer, scratch, burn, stain or separate from a wall to which it has been applied properly. *The Robinson Brick and Tile Co.*, 500 So. Santa Fe Dr., Denver 19, Col.

(Continued on page 271)

for **DRY-EX**
 engineering help
 phone the *Acme*
 engineer
 near you



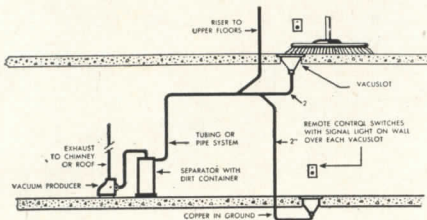
- ALABAMA, Birmingham
Robert Sansing, Cecil Buck, 54-8534
- ARIZONA, Phoenix
A. C. Baechlin, WH-5-6351
- CALIFORNIA, North Hollywood
Dave Nurse, Erv Robert,
Stanley 7-7131
- CALIFORNIA, San Francisco
R. B. Holland, Sutter 1-6062
- FLORIDA, Hollywood
Allen Dean, 2-4919
- FLORIDA, St. Petersburg
C. W. McIntyre, 7-5778
- GEORGIA, Atlanta
Walter Garrard, Leo Sudderth...Exchange 8664
- ILLINOIS, Chicago
Acme Industries, Inc.....MOhawk 4-6124
- INDIANA, Indianapolis
Charles Lugar.....Broadway 9323
- LOUISIANA, New Orleans
H. N. Stall, L. A. Flick.....Canal 9991
- MARYLAND, Washington 7, D.C.
Stuart Mitchell.....National 8-4854
- MASSACHUSETTS, Cambridge
Fred W. Smith.....Tro 6-0080
- MICHIGAN, Detroit
C. K. Carter, R. A. Day.....Trinity 1-5848
- MICHIGAN, Leslie
W. N. Hart.....404-2346
- MINNESOTA, Minneapolis
R. H. McGinty.....Atlantic 6878
- MISSOURI, Kansas City
T. J. Manning.....Baltimore 4077
- MISSOURI, St. Louis
Palmer Still.....Wydown 1-2077
- NEBRASKA, Omaha
Roger Anderson.....AT 3639
- NEW YORK, Buffalo
J. Bert Slater.....Cleveland 6477
- NEW YORK, New York
Acme Industries, Inc.....Murray Hill 2-3423
- NEW YORK, Syracuse
J. W. Stevens.....72-1071
- NORTH CAROLINA, Charlotte
Robert E. Mason.....2-1903
- NORTH DAKOTA, Fargo
John Holm
- OHIO, Cincinnati
J. W. Snyder, George Bull.....Elmhurst 2505
- OHIO, Cleveland
Wm. G. Mussun, John Ford.....Utah 1-5244
- OHIO, Columbus
Richard Farr.....Kingswood 8757
- OHIO, Toledo
J. F. Guest.....Adams 9516
- OKLAHOMA, Tulsa
H. W. Meinholtz.....2-6976
- OREGON, Portland
Wm. Woolley.....BRoadway 3082
- PENNSYLVANIA, Philadelphia
Harold Margulis, Marc Sheffler.Evergreen 2-4500
- PENNSYLVANIA, Pittsburgh
E. J. Busch.....Museum 3-2500
- TENNESSEE, Memphis
T. J. O'Brien.....8-0339
- TEXAS, Dallas
Leo J. Freitas.....Dixon 9748
- TEXAS, Corpus Christi
T. N. Inglis
- TEXAS, Houston
Acme Industries, Inc.....Keystone 1418
- TEXAS, San Antonio
L. S. Pawkett, Louis Hornor.....Fannin 1291
- UTAH, Salt Lake City
Ted Brown.....9-8677
- VIRGINIA, Richmond
E. Glenn Breeden, Jr.....88-1660
- WASHINGTON, Seattle
Frank Ozanne.....SEneca 2377
- WASHINGTON, Spokane
Hobart Teneff.....MAdison 9052
- WASHINGTON, Tacoma
H. F. Warren.....MARket 4281
- CANADA, Montreal
Blair Livingston.....BELair 6102
- CANADA, Toronto
Bernard Kaufman.....Murray 8185

A-E-H PRODUCTS

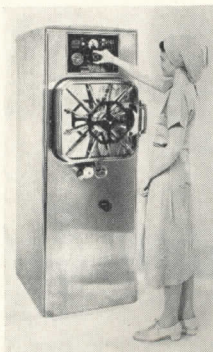
(Continued from page 266)

HOSPITAL EQUIPMENT

• A hospital bed which features bathroom facilities in the bed, fingertip pushbutton control, head and knee lifts, elevation variable from 23 to 32 in. from the floor, a self-contained hospital cart, a retractable trapeze, and a self-contained adjustable tray with 500 cu in. of space for the patient's personal items is available in the *Beem bed*. *Darlington Co., 11702 Mississippi Ave., Los Angeles 25, Calif.*



• A vacuum cleaning system for cleaning dust mops, hand dusters, dust rags, throw rugs, etc., consists of metal plates located on the floor over pipes connecting with a vacuum system in the basement. When the cleaning utensil is passed over the slot, all the dirt and dust is drawn into the piping system. The *Vacuslot System* is practical for hospitals, schools, office buildings and other types of buildings. A *Mop-Vac* is a cabinet-type dry-mop cleaner which operates on the same principle. *The Spencer Turbine Co., Hartford 6, Conn.*



• Square sterilizing equipment increases usable sterilizer capacity, says the manufacturer, by 35 to 100 per cent, depending upon the type of load, compared with the conventional cylindrical sterilizer. Available in recessed and cabinet mounting, the square sterilizer cabinet can be used wherever open-mounted equipment is normally installed. *American Sterilizer Co., Erie 6, Pa.*

(Continued on page 276)

9 reasons

why *Sedgwick*
ROTO-WAITERS
 2-stop automatic
 dumb waiters
 serve in America's
 finest buildings

1 Overload and slack cable safety device
 2 Simple motor, brake and control, cut costs

3 Adjustable landing cam assures accurate stops

4 Endless steel roller chain drive. Never overtravels

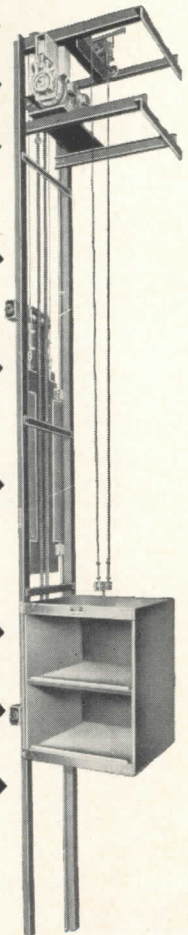
5 Completely factory assembled and tested. Easy to install

6 Steel guide rails and flexible steel traction cables for car and counterweight

7 Reinforced steel car. Sturdy construction

8 Momentary-pressure pushbutton... fully automatic operation

9 Only minimum clearances required



Available in standard and special sizes. Also multi-stop dumb waiters.

Write for illustrated booklet on Sedgwick Dumb Waiters and Doors

Sedgwick MACHINE WORKS
 142 WEST 15th ST., NEW YORK 11, N. Y.
 Specialists in Vertical Transportation Since 1893





SYMBOL OF THE STANDARDIZATION YOU ASKED FOR

This "CI" insignia on **cast iron soil pipe and fittings** is your assurance that the product meets the standards of weights, dimensions and laying lengths of the Cast Iron Soil Pipe Institute . . . standards which the plumbing industry asked for.

This "CI" insignia represents the results of years of effort by all branches of the industry. State, regional and national groups and associations requested the Institute to bring about the standardization of cast iron soil pipe and fittings. With the full cooperation of all segments of the industry,

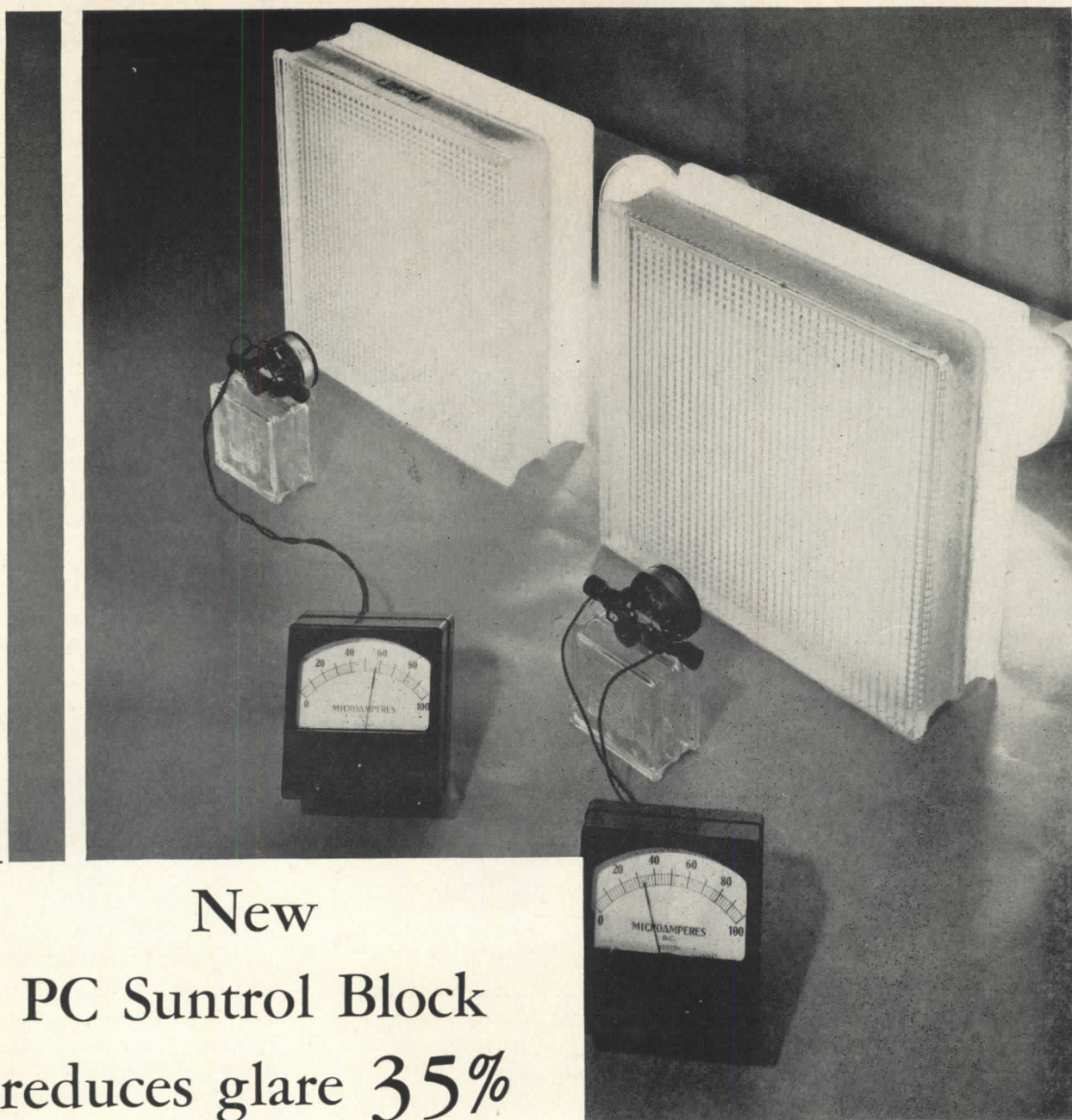
and the help of the Commodity Standards Division of the United States Department of Commerce, such standards were adopted. This "CI" symbol on soil pipe and fittings means interchangeability—that "CI" labeled products of any manufacturer will member with "CI" marked patterns of any other producer. This means a saving in time and money. This will benefit the architect, builder, wholesaler, contractor, plumber, inspector and owner.

This "CI" insignia is your assurance of quality, uniformity and permanence. **Specify and use "CI" soil pipe and fittings.**



CAST IRON SOIL PIPE INSTITUTE

1627 K Street, N. W., Washington 6, D. C.



New
 PC Suntrol Block
 reduces glare 35%

THE big picture tells the story. A standard PC Functional Glass Block is at the left. But at the right, you see the new PC Suntrol Block that contains a pale green fibrous glass diffusing screen to reduce glare and heat in unusual daylighting locations.

The photocell in front of the conventional glass block reads 57, but for the Suntrol Block it reads only 33. If you have to erect a building with an exposure in the dazzling, unshaded sun, or near a highly reflective parking surface, or even where the bright winter snows create a bad reflection, PC Suntrol Blocks will give wonderful daylighting, *without excessive panel brightness.*

The new PC Suntrol Blocks have also set a record for low instantaneous heat gain. It has been reduced by roughly 25%. The pale

green screen creates an additional psychological comfort factor too, but the color has been carefully chosen so it will not alter the apparent color of furnishings. This new block also has twice the impact strength of previous blocks.

PC Suntrol Blocks are available in light directing patterns (for use above eye level), as well as light diffusing and toplighting patterns. Write for the Suntrol catalog. Address Pittsburgh Corning Corporation, Dept. C-104, One Gateway Center, Pittsburgh 22, Pennsylvania.

PC Suntrol* Glass Blocks



ALSO SKYTROL® AND FOAMGLAS®

*PC Trade Mark

MODERN LIVING

requires modern bathing



The pace of modern living is reflected in the design of modern homes . . . functional, labor-saving, yet completely comfortable. These modern homes, this modern living, require the modern way of bathing; the shower. You can satisfy this important requisite *economically* with FIAT, the *packaged* shower with the PreCast Receptor! The sleek corner Cadet model pictured above is one of the beautiful, permanent FIAT showers. It virtually tucks away in a corner . . . occupies minimum space while providing a roomy bath. A FIAT shower will enhance the value—improve the appearance of any home . . . satisfies the modern family's demand for bathing the modern way. In your specifications, include FIAT showers . . . the one single item that will upgrade your homes most for the money invested.

send for new full-color catalog — or see Sweet's $\frac{24c}{FI}$



AMERICA'S LEADING MANUFACTURER OF QUALITY SHOWERS. EST. 1922

FIRST IN SHOWERS

FIAT METAL MANUFACTURING COMPANY

Three Complete Plants — Economy • Convenience • Service

LONG ISLAND CITY, N. Y. • FRANKLIN PARK, ILL. (CHICAGO SUBURB) • LOS ANGELES, CALIF.
IN CANADA: FIAT PRODUCTS ARE MADE BY PORCELAIN AND METAL PRODUCTS, LTD., ORILLIA, ONT.

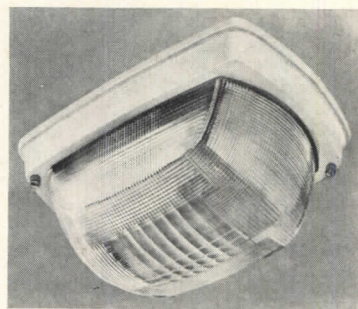
A-E PRODUCTS

(Continued from page 271)

LIGHTING

- *Color-corrected fluorescent lighting* uses a new type of phosphor in the lamp which adds nearly 40 per cent more red, simultaneously suppressing some of the blue-green abundant in other fluorescent lamps. Called *Super DeLuxe Cool White*, the new light was designed for retail use so that colors will not take on a different hue. *Sylvania Electric Products, Inc., 1740 Broadway, New York 19, N. Y.*

- A *dimmer for regulating the brightness of fluorescent lamps* will control the light output of up to twenty 40-watt rapid-start lamps at one time. The new system employs the use of a simple electrical control device of the type commonly available for dimming incandescent lamps or regulating the speed of motors, in combination with a rapid-start ballast. *General Electric Co., Cleveland, Ohio.*



- *Luminaires for corridor lighting* provide glare-free light for safe illumination of corridor traffic areas. The C-824 redirects useful light up to the ceiling and across to the walls as well as down to the floor. *Holophane Co., Inc., 342 Madison Ave., New York 17, N. Y.*

- *Metal pole luminaires* with the Thompson disconnecting and lowering hanger mechanism permit safe ground-level maintenance. The "Servisafe" metal pole units are recommended for streets, parkways, shopping centers, athletic fields, service stations and parking lots. *The Thompson Electric Co., 1112 Power Ave., Cleveland 14, Ohio.*

TELEPHONE BOOTH

- A *telephone booth* that encloses only the head and shoulders of the user but is claimed to excel in acoustics is 36 in. high and triangular, enabling two to be installed in a corner where ordinarily only one box-type unit would fit. *Burgess-Manning Corp., Chicago, Ill.*

(Continued on page 280)



DuPont saves \$7,000 a year with just partial modernization of coal burning equipment

The boiler plant at DuPont's Barksdale Works was operating inefficiently, due to an old forced draft system and unwieldy combustion control. DuPont engineers decided to modernize these operations, estimating that the cost would be amortized quickly through the increase in efficiency. An up-to-date draft fan and automatic combustion control system were installed. Today savings of \$7,000 annually have been realized—a gross return on the investment of 140%! Not only has the new equipment paid for itself in one year, but it has produced the additional advantages of reduced ash-pit losses, lowered maintenance costs, increased steaming capacity.

Thousands Saved

More and more plants are saving thousands of dollars yearly burn-

ing coal the modern way. The reasons are obvious. In most industrial areas, coal is the cheapest fuel available. Not only do you actually get more BTUs per dollar from coal, but the efficiency of modern combustion equipment extracts even more benefit from coal's inherent energy. What's more, today's automatic coal and ash handling methods mean minimum labor costs. Coal is *clean*, too. It travels in dust-tight chutes; ashes are piped out through pneumatic tubes; there is no smoke problem. And between our vast coal reserves and highly mechanized coal production, you can count on coal remaining plentiful and its price remaining stable.

Investigate Fuel Costs

If you're planning to modernize your old plant or build a new one—or if you are just interested in cutting fuel costs—find out how coal burned the modern way compares to other fuels for *your* plant. Talk to a consulting engineer or your nearest coal distributor. Their advice may save you thousands of dollars every year.



BITUMINOUS COAL INSTITUTE

A department of National Coal Association
Southern Building, Washington 5, D. C.

For further information or additional case histories showing how other plants have saved money burning coal, write to the address above.

Control Board at Barksdale Works. Steam generating equipment consists of four 15,000 lb./hr. 150 psi stoker-fired boilers.

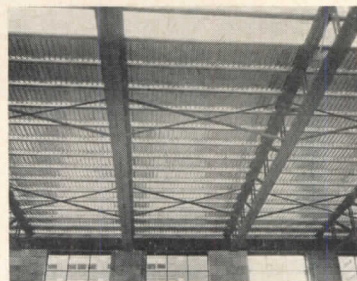
(Continued from page 288)

AUTOMATIC WASHER

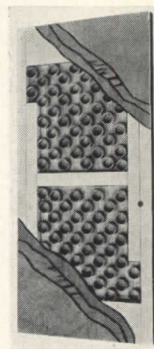
• An automatic washer, Model 451, features a water temperature selection control, allowing the homemaker to rinse clothes in hot, warm or cold water. Another feature is the "short wash cycle" which washes, rinses and spin-dries a full load of clothes in 18 min, using only 5 gal of hot water. The new automatic is 36 in. high, 25 in. wide and 26¼ in. deep. *Thor Corp., Chicago, Ill.*

ROOF SYSTEM

• A structural roof system consists of porcelain, aluminum or galvanized steel panels securely anchored to a precision-aligned grid of sub-purlins. The sub-purlins are welded to building purlins, and the panels are then dropped into place and secured by slide-on clips. Despite full freedom for expansion and contraction of panels, *Ingersol Roof Deck* is said to offer a new high in rigidity and strength at 8-ft spans. *Reflectal Corp., 310 So. Michigan Ave., Chicago 4, Ill.*

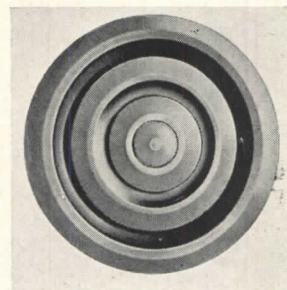


INSTITUTIONAL DOOR



• An institutional door, manufactured with a core of cylindrical fiber columns, claims heavy duty strength through the use of three-ply balanced face panels, hot-plate-pressed with core and frame into one integral unit. The top and bottom rails are 10 in. wide with an extra center cross rail and two 40-in. lock blocks which furnish space for installing panic bars, large locksets and heavy door pulls. *General Plywood Corp., Louisville, Ky.*

AIR DIFFUSER



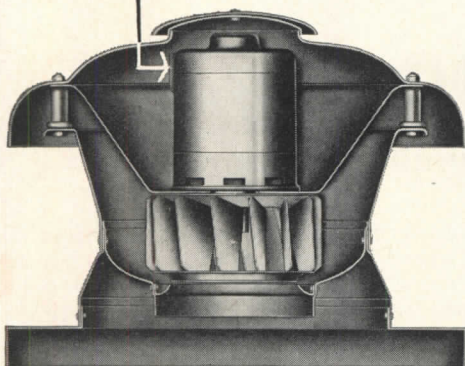
• Circular air diffusers have built-in segmented air controllers which produce any angle of air discharge from above horizontal to vertical without disturbing the relative position of the aluminum spinings. Adjustments can be made after installation. Non-adjustable units are also available. *Air Devices Inc., 185 Madison Ave., New York 16, N. Y.*

(Continued on page 298)

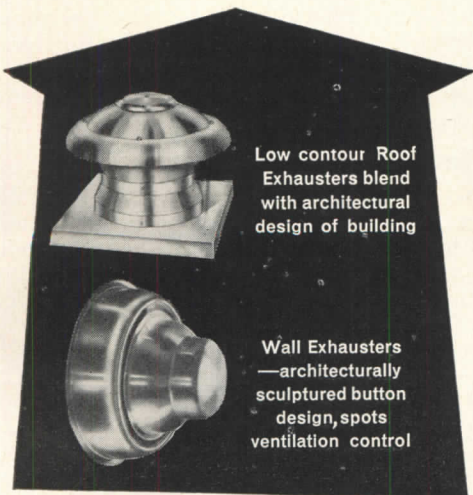


**Set it...
forget it
for 10 YEARS**

Now Jenn-Air Low Contour Exhauster Motors are Lubricated for 10 Years of Service



Once a Jenn-Air Exhauster is set in a wall or on a roof, you can forget maintenance, because the motor is lubricated for 10 years of normal service. Since the bearing is the heart of any motor, you know this vital part is adequately protected in a Jenn-Air Exhauster. This is another feature by Jenn-Air, which has been **FIRST** with spun aluminum, rust-proof construction, no painting necessary; **FIRST** with simplicity of installation and ease of cleaning. Exclusive dual low-contour design means beauty that blends with today's modern architecture. It means fitting ventilation needs to the building which adds up to savings in labor and maintenance. Consult Jenn-Air Ventilating Specialists on ventilating problems.



JENN-AIR PRODUCTS COMPANY, INC.
Architects & Builders Building
Indianapolis 4, Indiana

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Architects & Builders Building,
Indianapolis 4, Indiana
Please send me your free catalog 53B.

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Title _____
Company _____
Address _____
City _____ State _____

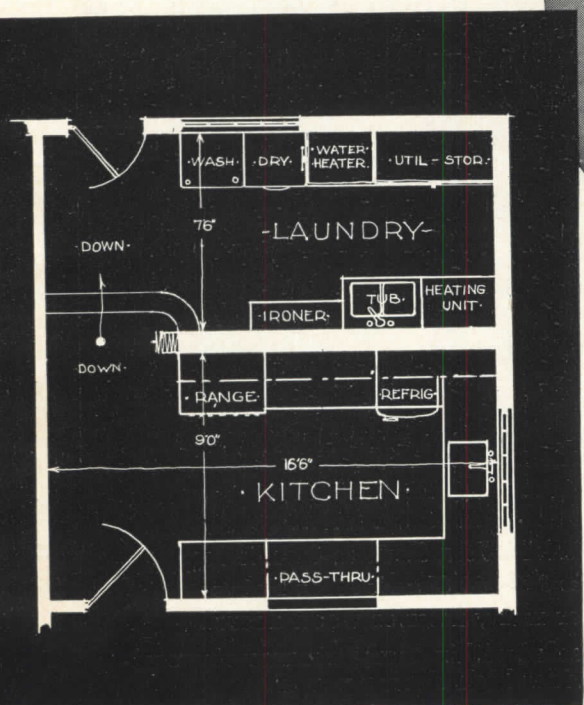
... nothing makes as much sense as Gas

This New Freedom Gas Kitchen* features an **RCA Estate** automatic Gas range made to "CP" standards by the **RCA Estate Appliance Corporation**.

Cabinets by **Mutschler Bros.**

← The **Servel** automatic Gas refrigerator shown (with copper-finish top) is completely silent, has no moving parts to wear, offers the longest warranty in the business... a full 10 years.

Caloric automatic Gas clothes dryer and **A. O. Smith Permaglas** automatic Gas water-heater.



Every advanced home deserves Gas in the laundry. Actually, you should consider an automatic Gas water-heater as part of a laundry. Although a water-heater feeds the whole house, it's the automatic washer that really makes a Gas heater essential. For Gas delivers tankful after tankful of hot water 3 times faster than any other all automatic fuel. Yet it costs less to buy a Gas heater, less to install it and less to use it. Much the same advantages—economy and speed of operation—apply to the Gas clothes dryer. In fact, professional laundrettes prefer Gas 30-1—a striking tribute to its superiority. What could make more sense than Gas in any home?

AMERICAN GAS ASSOCIATION

Your local Gas company will be happy to work with you on any problem.

Only Gas



gives you so many modern features

GAS—the modern fuel for automatic cooking... refrigeration... water-heating... house-heating... air-conditioning... clothes-drying... incineration.

*Reg. A. G. A.

(Continued from page 294)

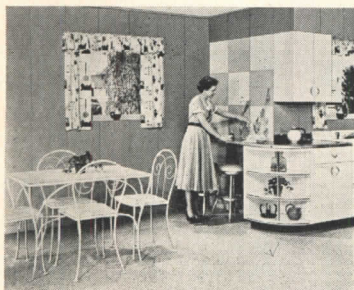
FIRE-RESISTIVE CEILING

• Fire-resistive, acoustically treated and thermally insulated ceiling construction is available in the Fryate System. This mechanical suspension system uses insulation batts that are the equivalent of 4 in. of mineral wool laid on top of incombustible acoustical tile so that ductwork, pipes and conduit are accessible. According to the manufacturer, this is the first acoustical ceiling which has been given a 2-hr fire rating. Fryate, Inc., 832 West Eastman St., Chicago, Ill.

AWNING WINDOW

• An Auto-Lok aluminum awning window with torque bar operation is a supplement to the standard Auto-Lok windows. The torque bar, radially splined and completely concealed in the sill, brings in the bottom night vent without exerting any pressure on the hinge points of the other vents, which are locked automatically. All anchor housings have been eliminated on the jambs. Ludman Corp., North Miami, Fla.

WALL PANELS



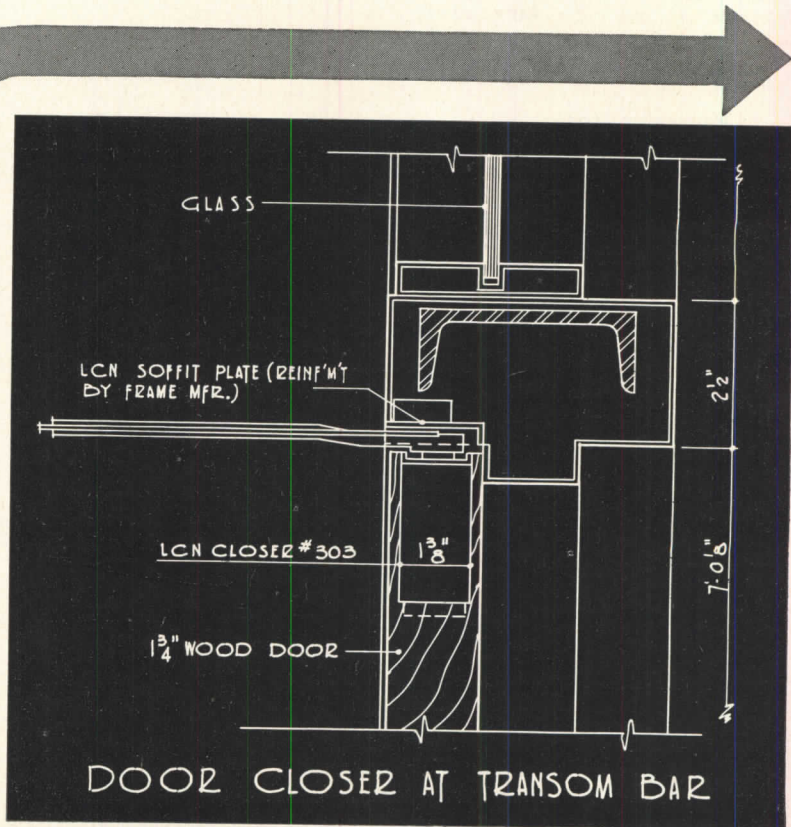
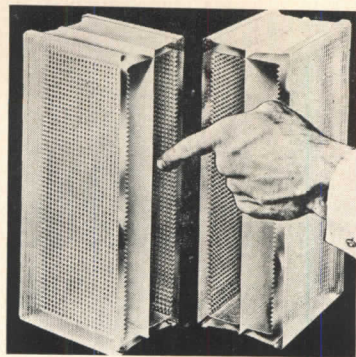
• Marlite plank and block woodpanels, installed with special metal clips, are available in 10 colors and four wood patterns. The baked finish resists grease, smudges and splashes and can be cleaned with a damp cloth. This kitchen combines light aqua and pink blocks with dark aqua planks. Marlite-Marsh Wall Products, Inc., Dover, Ohio.

GYPSUM PARTITIONS

• A gypsum partition system, demountable and reusable, is available in any height up to 12 ft. The partitions come complete with panels and all the accessories needed, including metal door and window framing. Each 24-in. panel is 1 in. thick, and the completed partition is 3 5/8 in. thick with a 1 5/8-in. hollow space for wiring, plumbing and other services. The panels are locked in place by metal studs, which attach to adjustable floor shoes and into metal partition caps attached to the ceiling. U. S. Gypsum Co., Depl. 136, 300 W. Adams St., Chicago.

GLASS BLOCKS

• "Sunrol" glass blocks, designed to alleviate high brightness problems resulting from sun and snow, contain a pale green fibrous glass diffusing screen that reduces surface brightness or glare by 35 per cent and instantaneous heat gain by 25 per cent. The 12-in. blocks are available in patterns that throw light upward toward the ceiling, that diffuse light in all directions, and that distribute light over wide floor areas. Pittsburgh Corning Corp., Pittsburgh 22, Pa.



CONSTRUCTION DETAILS

for LCN Closer Concealed-in-Door, Shown on Opposite Page
The LCN Series 302-303 Closer's Main Points:

1. An ideal closer for many interior wood doors
2. Mechanism concealed within door; flat arm not prominent, and provides high closing power
3. Door is hung on regular butts
4. Closer is simple to install and to adjust
5. Used with wood doors; wood or metal frames
6. Practically concealed control at little more than exposed closer cost

Complete Catalog on Request—No Obligation
or See Sweet's 1954, Sec. 17e/L

LCN CLOSERS, INC., PRINCETON, ILLINOIS

**today, Wing Fans, Blowers,
Unit Heaters, Draft Inducers
and Turbines are serving
industry the world over**

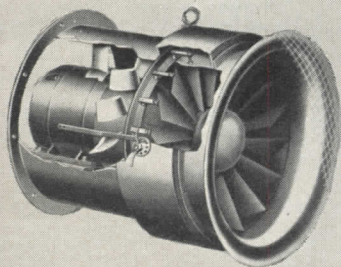


FACTORIES:
LINDEN, N.J.
&
MONTREAL
CANADA

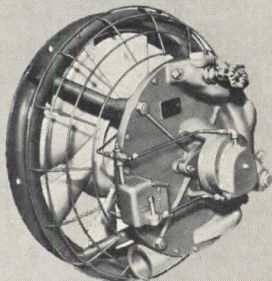
L. J. Wing Mfg. Co.

Linden • New Jersey

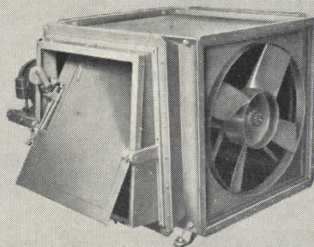
OFFICES IN
• PRINCIPAL CITIES •
EUROPEAN REPRESENTATIVE
FOR HEATERS:
ETABLISSEMENT WANSON
BRUSSELS • BELGIUM



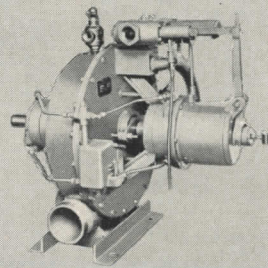
MOTOR DRIVEN BLOWER



TURBINE BLOWER



DRAFT INDUCER



TURBINE

(Continued from page 302)

HEATERS

• A brochure of engineering case studies describes nine ways in which warm air space heaters were used to heat a variety of diversified manufacturing plants. Each bulletin in the brochure describes an individual plants' requirements and lists the benefits derived by installing oil- or gas-fired warm air space heaters. *Dravo Corp., 1203 Dravo Bldg., Pittsburgh 22, Pa.**

• *Acme Flow Temp Heat Pump*, explains how water is used as a source of clean, flameless heat in winter and how heat is removed from the interior of a building in warm weather. Typical installations are shown, both with remote room conditioners and with radiant piping. 4 pp, illus. *Acme Industries, Inc., Jackson, Mich.**

• The latest design, general engineering data, capacity tables and piping diagrams of American Blower Venturafin Unit Heaters are covered in *Bulletin 7517*. *American Blower Corp., Detroit 32, Mich.**

• *Powermaster packaged automatic boilers* for light oil, heavy oil, gas or combination gas/oil firing are analyzed in *Bulletin 1219*. 16 pp, illus. *Orr & Semblower, Inc., Reading, Pa.*

AIR CONDITIONING CONTROL

• *Residential Air Conditioning Control* is a comprehensive study which considers the basic constructions encountered in various air conditioning systems, breaks the systems down into their components, discusses the control requirements imposed by each of the components, outlines methods of providing control functions for each part of the system, and by means of wiring diagrams combines the various parts of the system into complete control hookups as used by manufacturers in their current production. 84 pp, illus. *Penn Controls, Inc., Goshen, Ind.*

CHEMICAL PAINT CHECK LIST

• *ACP Check List* presents tables listing metal-protective and paint-bonding chemicals for steel, zinc, aluminum and other metals with industrial applications. 8 pp. *American Chemical Paint Co., Ambler, Pa.*

(Continued on page 312)

TAKE A CLOSER LOOK AT DOOR
details



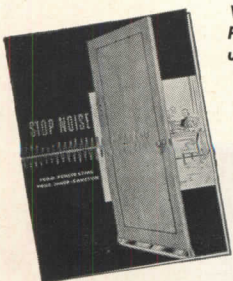
You'll quickly learn why
HARDWOOD MASTER-FLUSH DOORS
with 1/8" veneers over solid cores -

- ✓ Give stronger, more permanent functional performance
- ✓ Resist bruises — cost less to maintain and refinish
- ✓ Provide better sound insulation — assure more privacy
- ✓ Permit hardware, louvre or light applications in any area.

When you want the best for institutional requirements specify Hardwood Products' MASTER-FLUSH Doors—especially where unusually hard usage and abuse are expected. They feature Hardwood Products' solid core construction for exceptional strength and rigidity. This consists of vertical core blocks in alternate random lengths

with edge strips tongue and grooved into the core and into each other. Cross banding for stability and additional strength — plus 1/8" thick face veneers hot plate press bonded, makes exceptionally solid unit. A full range of wood veneers is available. Consult Sweet's ^{15c}/_{HA} or write for further details.

Write for this brochure describing Hardwood Products Sound-Insulating Doors in easy-to-understand sound decibel language. Box AR



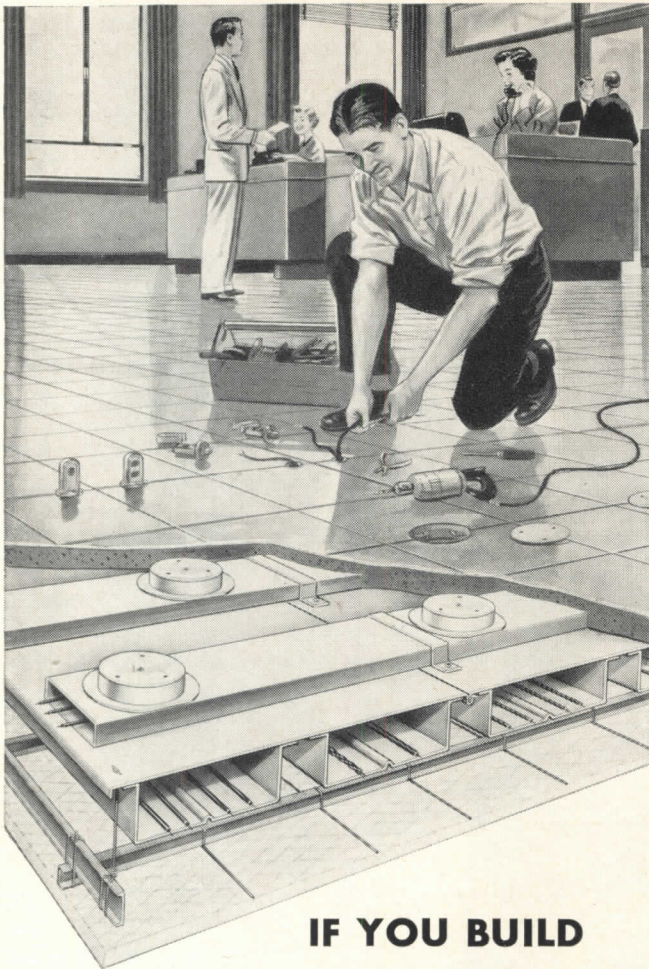
NEW YORK
BOSTON • CHICAGO
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HARDWOOD PRODUCTS CORPORATION • NEENAH • WISCONSIN



"A salute to those who made it possible" *



IF YOU BUILD WITH THIS

You will never need to disrupt your business for electrical alterations. Never need to pay for expensive labor to tear up your floors. Not if you plan your building with Fenestra-Nepco Electrifi floor* in mind!

You can save your building from electrical obsolescence. New outlets can be installed *any time . . . in any or every square foot of floor space . . . in a matter of minutes!*

You can cut your building costs . . . in one job, 1,000 tons of structural steel were saved because of Electrifi floor's combination of great strength with light weight. Foundation costs were also cut.

You can save building time and see your investment pay off faster . . . in a rush job, Electrifi floor saved 6 months' building time—as many as 7 floors went in at once. As soon as a few of the cellular floor panels were laid and interlocked, they served as material storage space and working platform.

Fenestra-Nepco Electrifi floor was developed jointly by Fenestra* (Detroit Steel Products Company) and Nepco



YOU WILL NEVER NEED THIS

(National Electric Products Corporation)—two great names in the construction field.

If you want to protect *your* building investment, write to Detroit Steel Products Company, Dept. AR-10, 2252 E. Grand Boulevard, Detroit 11, Michigan. *Trademark

Exclusive Features of Electrifi floor

1. Big, four-inch handholes in header duct for the easiest possible access to wire-carrying cells.
2. Capacity of cells is 2½ to 3 times greater than any other cellular floor, protecting against dangerous crowding of wires.
3. Flat, smooth surface, that saves concrete fill and provides utmost economy in preparation of finished flooring.
4. Unique design for great strength with lighter dead weight gives you unique structural economy.

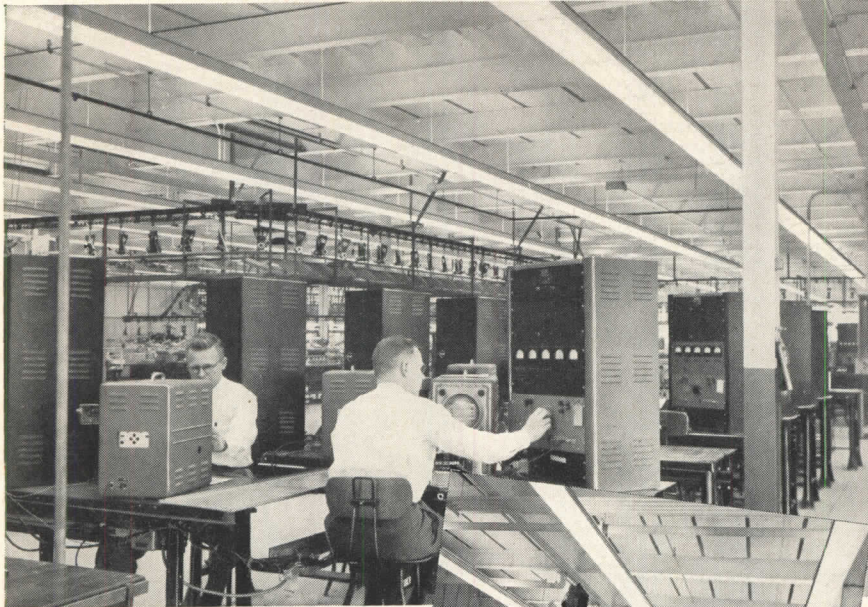
* Your need for electrical flexibility for the present and future of your building encouraged Nepco and Fenestra to develop Electrifi floor . . . a great advancement in building products.

Fenestra
Nepco

ELECTRIFLOOR

Today's *Positive Answer* to Industrial— Commercial Lighting Problems!

(Continued from page 306)



Rows of Sylvania IC Fixtures provide 50 foot candles in testing department at Sylvania's new Batavia, New York, television plant.

Note clear, high-level office lighting obtained with Sylvania IC Fixtures.

"IC Fixtures so efficient," says Sylvania Engineer, "we chose them for our newest plant."

Engineers responsible for Sylvania's great new plant at Batavia, New York, insisted it be a model of efficient and economical operation in every respect.

When it came to lighting, these men unqualifiedly selected Sylvania's latest IC Fluorescent Fixtures, with a lighting distribution of 60% downward and 40% upward. The extreme versatility of these fixtures plus their ready installation, low maintenance, and durable construction make them ideal for scores of applications. Cross-wise shielding of 45° minimizes objectionable brightness.

There's a profitable story in these award-winning fixtures that can mean job-winning bids for you. For full details drop a line to Dept. 4X-1310, Sylvania, NOW!



Plaque for outstanding industrial fluorescent fixture won by Sylvania at Second National Electrical Industries Show. Judges: Morris Lapidus and Francis Gina of the New York Chapter of the A.I.A.

SYLVANIA

Sylvania Electric Products Inc.,  1740 Broadway, New York 19, N. Y.

In Canada: Sylvania Electric (Canada) Ltd., University Tower Building, St. Catherine Street, Montreal, P. Q.

LIGHTING • RADIO • ELECTRONICS • TELEVISION

RLM STANDARDS

• The 1954 *RLM Standard Specifications for Industrial Lighting Units* includes, in addition to the latest approved revised specifications, new lighting data on upward component lighting units. *RLM Standards Institute, Suite 818, 326 W. Madison St., Chicago 6, Ill.*

JOINT SEALER

• *IGAS Joint Sealer* discusses a non-melttable mastic material which can seal joints subject to severe movement and pressure between a variety of rigid structural materials such as concrete to concrete, concrete to steel and concrete to glass. 4 pp, illus. *Sika Chemical Corp., 35 Gregory Ave., Passaic, N. J.**

METAL CASING BEADS

• Economical uses of metal casing beads for doors and windows, base screed for plastered walls and concealed picture mold for wall-hung objects are the topics covered in *Technical Bulletin No. 10, Metal Lath Mfr.'s Assoc., Engineers Bldg., Cleveland 14, Ohio.**

SHUTTERS

• *Movable Window Shutters and Lower Doors* illustrates a variety of uses and combinations of shutters and louver panels, showing installations in different rooms. Construction, finishing and hardware of the shutters and doors are covered. 6 pp, illus. *Lowercraft, 425 Austin Place, New York 55, N. Y.*

SKYLIGHTS

• *Aluminum and fiber glass skylight panels* which are preassembled for easy installation, lightweight and weathertight are presented in *Marcolite Skylight*. 4 pp, illus. Marco also publishes an 18-page illustrated price list of recessed lighting fixtures. *The Marco Co., 45 Greenwood Ave., East Orange, N. J.*

LITERATURE REQUESTED

The following individuals and firms request manufacturer's literature:

H. A. Cepeda, Architect, Villa Ballester, Buenos Aires, Argentina.

Arthur D'Oliveira, Student, 14 Pemberton St., Waterbury 6, Conn.

David G. Naumerson, Architect, P.O. Box 964, Scottsdale, Arizona.

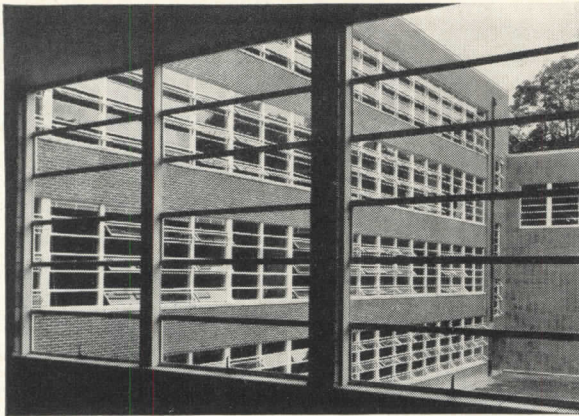
William B. Tooty, Architect, 217 Park Ave., Mooresville, N. C.



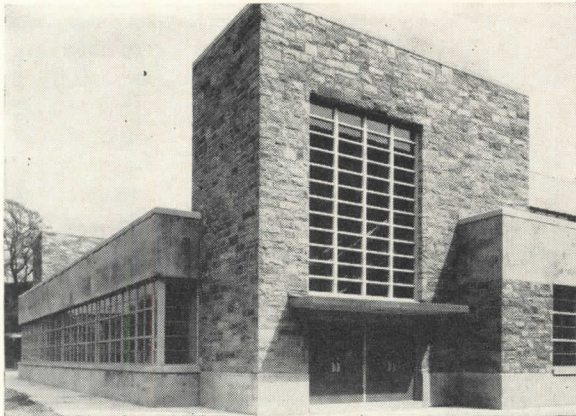
"A salute to those who made it possible" *

Why so many of America's finest schools have

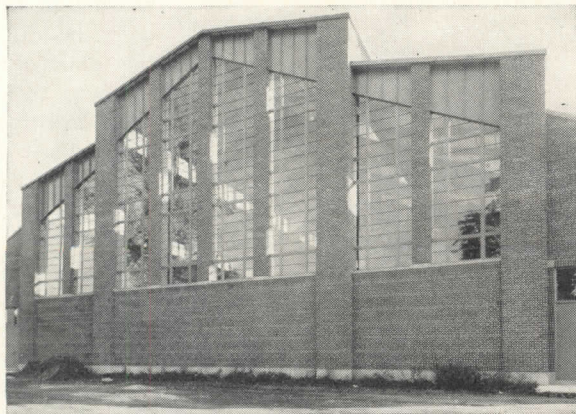
Fenestra Intermediate Steel Awning Windows in Clemson College Chemistry Building, Clemson, South Carolina. Architects: Hopkins & Baker of Anderson, S. C. Contractor: Industrial Builders, Inc., Anderson, S. C.



Fenestra Intermediate Steel Awning and Projected Windows in Lower Merriion Schools, Ardmore, Pa. Note how the high bank of windows in the entrance wall lights the stairway. Architects: Savery, Scheetz & Gilmour, Philadelphia. Contractor: Frank V. Warren, Philadelphia.



Fenestra Intermediate Steel Projected Windows in the Athletic Field House at Evanston High School, Evanston, Ill. Architects: Perkins & Will, Chicago. Contractor: Peter Hamlin Construction Co., Chicago.



Fenestra Windows-

Fenestra* Intermediate Steel Windows are selected by architects and administrators of many of the finest and best-looking schools in America. The reason is not appearance alone: because of their quality construction, Fenestra Windows do an incomparable job.

They provide *more and better daylight*. Fenestra Windows are engineered and precision built to be rigid and rugged without excess bulk. You get *more glass area* and *clear-vision view* per window opening.

You get *better ventilation*, too. Tilt-in vents bring in abundant fresh air, without drafts . . . shed rain outside. Other vents project-out to form weather-protective canopies over their openings.

Screening and cleaning are safely, economically done *from the inside* . . . no ladders or scaffolds . . . no expensive labor.

You *save on maintenance*. Steel-strong window members and sturdy hardware assure years of trouble-free service. And Fenestra Windows are available Super Hot-Dip Galvanized . . . save thousands of dollars in painting costs every few years.

Write for further information. Or call your Fenestra Representative (listed in the yellow pages of your phone book). Ask for our authoritative booklet on *Better Classroom Daylighting*. Detroit Steel Products Company, Dept. AR-10, 2252 East Grand Blvd., Detroit 11, Michigan. *®

* Your need for windows that would give better school daylighting, protected ventilation and lower maintenance costs encouraged us to develop today's Fenestra Intermediate Steel Windows . . . a great advancement.

Fenestra | INTERMEDIATE STEEL WINDOWS

for useful apprenticeship, but the profession must recognize the eventual private practice of all the graduates who apprentice with them." He adds on the other side: "A more tolerant attitude by the student with less emphasis on starting salary is also necessary for a better relationship." Henry Hill, of San Francisco, is at least one practitioner who appears to feel that schools do not achieve and should not attempt the aim of preparing men for immediate

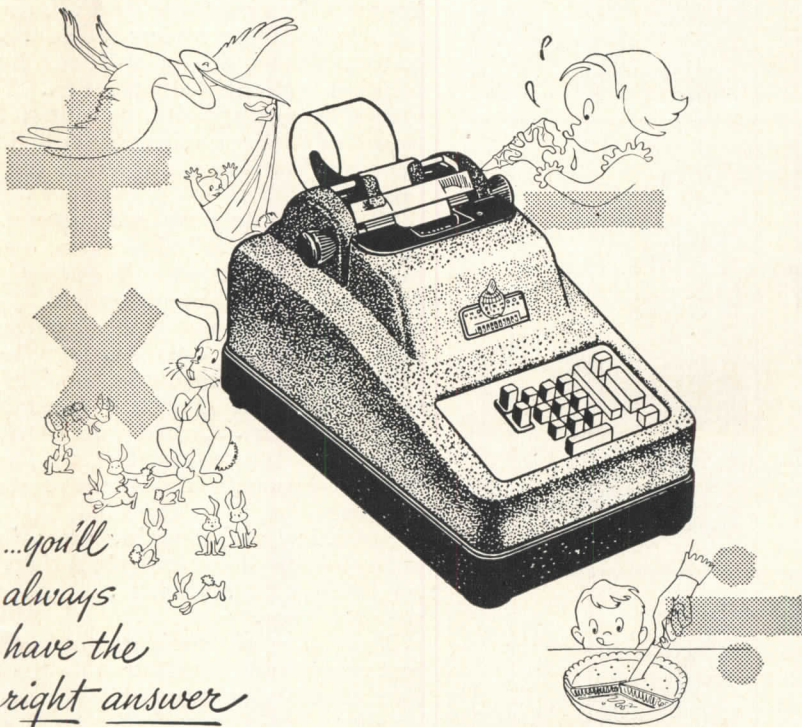
usefulness in offices. He wrote: "As everyone knows, generally speaking, the student today is worthless to an architectural office and it is many years before he is of real value. As I have said, I do not believe the University is a job-training school. But would it be possible in some way (this is just thinking out loud) — to go much further in time in architectural training, and that after the formal university education there comes an internship period

and thus bridge the gap between the university and the office."

Ray Faulkner, Stanford, asked for a "controlled apprentice program under direction of state registration boards," and Harold Hauf stated that: "A greater formalization of the three-year experience requirement and some kind of 'code of internship' among architectural offices, regarding the type of work they will give new men, would do much to strengthen the relationship between the student and the profession, and to ease the transition from education to practice." Arthur Gallion, Southern California, made a very specific analysis of the problem and had a specific answer: "The wide gap now apparently present between education and practice is created by the registration requirements, specifically, the *examination* for registration. This does not minimize the problem of practical experience and the getting of jobs necessary for practice but the psychological block is present in large part by the current requirement for an 'examination' — particularly an examination of design talent, which does not link itself to an appropriate examination technique. My suggestion is the waiver of the examination by the State Board for all students with a Bachelor of Architecture degree from an accredited school of architecture; the extension of the practical experience requirement to four or five years minimum; and a careful interview thereafter to ascertain the individual's experience, responsibility, and quality of performance during that period." Figuratively, this statement should occupy the cleanup position in the school team's batting order, but Eliot Whitaker's appeal for the "national recognition by the A.I.A. of young men entering the profession before registration" must be mentioned. Batting last for the pros is George Whittier who does not ask for recognition of the professionals but does urge that: "Educators should instill a respect for the practitioner rather than the contempt that is so prevalent."

Esmond Shaw, of Cooper Union, was an unwitting umpire with this conclusion: "There is nothing new about the difficulties between youth and age and it is only this that causes misunderstanding. If youth would learn to temper his idealism and age to curb his cynicism, there is no reason why they should not establish a relationship founded on mutual respect."

No matter how you FIGURE it:



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right answer

with this new quiet Multi-Flex **UNDERWOOD SUNDSTRAND** 10-Key Adding-Figuring Machine!

Right you are . . . getting your figure-facts with an Underwood Sundstrand Adding-Figuring Machine. It's compact, precision-built, and equipped with the world's fastest keyboard! Anyone can quickly develop a smooth touch method on its 10 numeral keys. Ask for a demonstration of the Underwood Sundstrand Adding-Figuring Machine . . . today!



Underwood Corporation
One Park Avenue, New York 16, N. Y.
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Sales and Service Everywhere

Norman Oklahoma High School, winner of the First Honor Award, 86th Annual Convention of the A.I.A. (1954). Associated architects: Caudill, Rowlett, Scott & Associates; Perkins & Will. First presented to architects and engineers in Architectural Record.

Photographer: Hedrich-Blessing.

Five hundred and twenty dollars pays for one page of advertising in Architectural Record at the 12-time rate *and* delivery of facts on your products to those architects and engineers *verifiably* responsible for planning over \$1 billion of building monthly at current rates of construction.

Contract award figures as reported by F. W. Dodge Corporation, publishers of *Architectural Record*, point to an unprecedented \$14.9 billions of architect-engineer-planned work in 1954 — not counting public works, utilities and farm building.

Based on periodic statewide checks of Dodge Reports against Architectural Record's own subscriber galleys over 85% (\$12.6 billions) of this huge building volume is coming from the boards of the Record's own architect and engineer subscribers.*

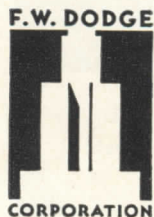
This low-cost coverage of building planning activity—*documented by Dodge Reports*—is one reason why more advertisers—again in 1954—are placing more pages of advertising in Architectural Record than in any other architectural magazine (47% more than in Magazine A—61% more than in Magazine B).

Here are two more reasons why year after year more advertisers place more pages of advertising in Architectural Record than in any other architectural magazine:

1. Editorial Quality—Architectural Record, winner of 31 awards for editorial excellence, is edited specifically for architects and engineers—covers nonresidential and residential buildings, large and small, that constitute the practice of architects and engineers—times and balances its editorial content with the aid of Dodge Reports to be of constant maximum value to architects and engineers in terms of the work on their boards.

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Architectural Record

"Workbook of the active architect and engineer"

119 West 40th Street
New York 18, N. Y.

but fixed form of a Celso Antonio reclining statue and the rectangular transparencies of the Ministry's *pan de verre*. Both roof gardens use flowing forms, equally related to abstract painting and to a definite spatial reality; they bring to mind the configuration of Brazilian rivers, as seen from the windows of a plane. Both gardens were meant to be complemented by others as ground level.

Another way in which space could be

reclaimed for collective gardens was to provide landscape planting for Botafogo Parkway, which is used all day by those who speed from the bay residential district of Copacabana to their work in the city. Here the beds were designed to give a sensation of movement. Even the concrete benches for the pedestrians contribute to these rhythms. And near the benches there is always something to hold the spectator after the first glance:


the adventitious roots of the *Pandanus utilis* (common screwpine), or the sand and quarry plants which store water in fleshy leaves, or flowers with hairy petals to catch moisture. Such an ecological group has its place here, since Botafogo is halfway between a beach and rocky hills. And it is one way to preserve vegetation which is being ruthlessly destroyed, either to make way for roads and beach houses along the coast or to be sold in open air markets.

Once in about ten years one is invited to lay out a park. The State Spa of Araxá in Minas Gerais, enclosing sloping hillsides, a radio-active mud lake, and a luxury hotel of uninspiring architecture, was the problem I was handed. Trips into the interior of Minas Gerais had revealed to me the extraordinary brilliance of the Brazilian rock plants, cactuses and lichens which are practically unknown to those who live in towns. These plant complexes start and end as suddenly as though one had put a knife through the soil; and within their own groups, they seem to have created an affinity of shapes and a color harmony which make them marvelous to behold as well as didactically valuable. At Araxá, then, we started to recreate prototypes of regions which could not be reached by the average traveler. Two gardens out of four proposed were actually planted, and fulfilled the main purpose of a garden — to give man pleasure in the shapes and colors of the growing plant. At Araxá, too, I created a color harmony on the hillsides by planting a sequence of shades of mauves and purples.

Except for the Botafogo Parkway, most of these gardens belong to early work; but their principles remain valid. The use of indigenous plants; the integration of plants and beds with the landscape; the contrast and interplay of smaller or larger moving volumes against fixed architectural forms; analogical planting; use of color and texture as a painter would, but never forgetting that color has volume, too — all these characterize any garden I plant, however different its expression may appear to be.

But, of late, I have felt the need to construct far more consciously, far more economically, controlling the exuberance of the tropical form: making one plant family in its various aspects have the importance of several, saying as much as

(Continued on page 324)



W. J. HAERTEL & CO.

—offer the most complete line of mechanical suspension systems, for the erection of acoustical tile, on the market.

Securitee *
SYSTEMS

Our top quality line, in three types, standard, 3/4 or 1 1/2 systems.

H *
SYSTEM

With 1/2", 5/8" and 3/4" transverse tee sections.

Jackson System *

In two styles—for acoustical tile cemented to plasterboard or for erection of perforated asbestos board.

Securitee Line *
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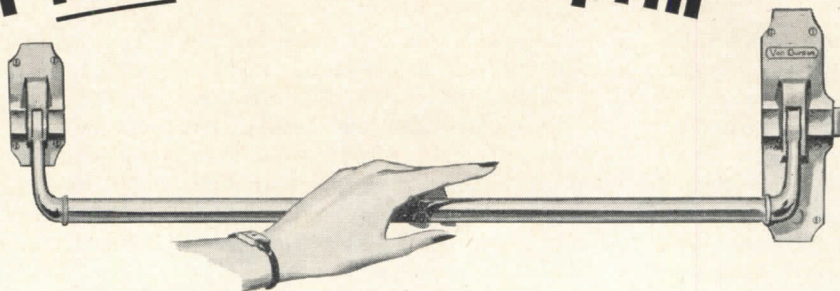
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one can with the minimum and not the maximum amount of material. Thus, in one instance an avenue of Carib royal palms (*Roystonea oleracea*) was contrasted with a sequence of flower beds between stone mosaic paving, planted with different species of *Philodendron*, with leaves of different shapes and sizes, and flowers, some crimson red, some greenish white.

Perhaps the garden where this is the most clearly expressed is the one that

was designed for a large public square in the northeastern capital of the state of Paraíba, João, Pessôa. Paraíba is famous for its white sand beaches, its intensely blue sky, and its palm trees growing on the beaches, together with its magnificent trees towering as high as a Royalpalm, — the *Pau mulato*, *Calycophyllum spruceanum* (Mulatto *Calycophyllum*), with slender trunks going from coffee brown to orange to lettuce green at different times of the year;

the *Pau rei*, *Basiloxylon brasiliensis*, with its splendid sculptured trunks spreading out as they reach the ground; the *Pau darco* with its great widespread-branches covered with foliage.

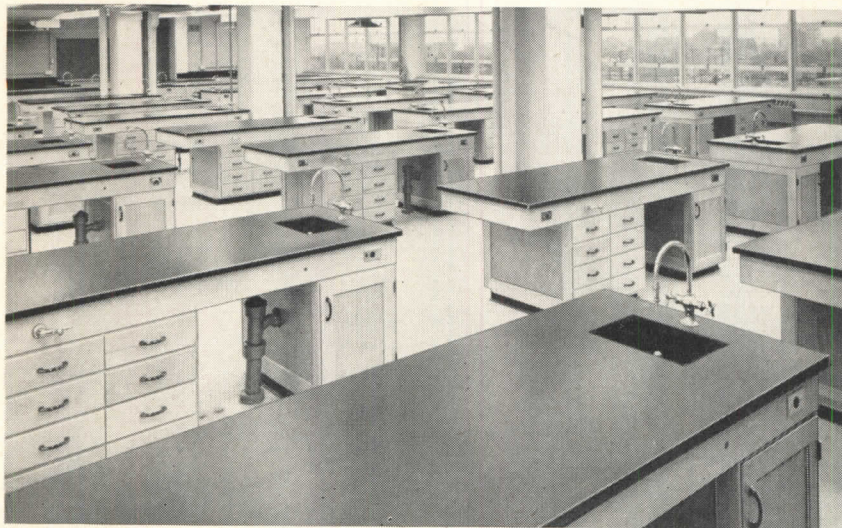
I based this garden on contrasts between the columns of the palms: great colonnades of Royalpalms linked to other colonnades by means of a delicate avenue of Assai Euterpepalms (*Euterpe oleracea*) and the sand-loving palm, the Macaiba (*Acrocomia intumescens*), with its swollen trunk. Shade colonnades are created by the mass planting of the *Pau darco*; and in the sharply rectangular blue lake, lined with glass mosaic, the verticals perpendicular to it were created by the Aninga (*Montrichardia liminifera*), a spear-shaped plant the reflection of which, in the water, gives it twice its height.

I have tried for the same controlled variety in the garden planned for the Belo Horizonte airport, in which a pool is backed by a screen wall with surfaces entirely faced in one color, as distinct from the geometric patterns in mosaic used in the undulating wall in the Olavo Fontoura garden in São Paulo. Here in Belo Horizonte a plant of the same family, color, and texture will be grown in front of two differently-colored panels of this free-standing wall in order to obtain two entirely differing reactions from one and the same plant.

This conscious control and development of an architectural use of tall plant volumes may be considered a reaction against the arabesques and curves of the Ministry gardens, yet I do not believe that this is so. There are no canons made that are never to be broken; and each terrain, each piece of architecture, calls for a different solution. But the increased desire to achieve a more clarified effect, without pouring all one's plant lore, all one's conceptions of art, into one restricted space is the normal reaction of any artist, whatever his medium.

Burle-Marx has much more to say about his theories and their execution. Fortunately a traveling exhibition of his work, sponsored by the Smithsonian Institution, is currently touring the United States. Among the places in which it can be seen will be the Dallas Museum of Fine Arts, University of Illinois, Smith College Museum of Art, Georgia Institute of Technology, J. B. Speed Art Museum in Louisville.

Frank G. Lopez



Student Physiology Laboratory, Wayne Medical School, Detroit, Mich.

Just what the Architect ordered

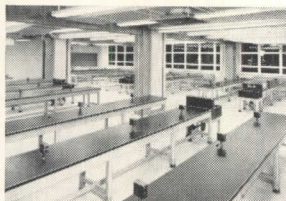
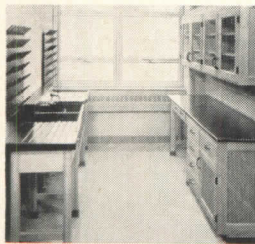
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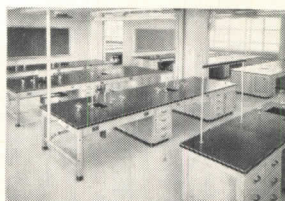
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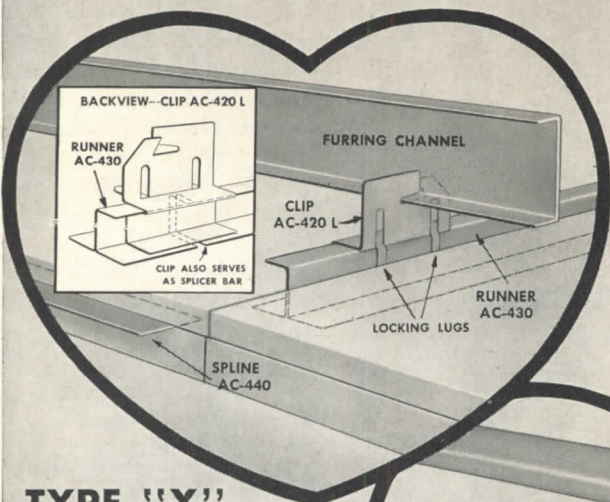
• Sterilizing Room
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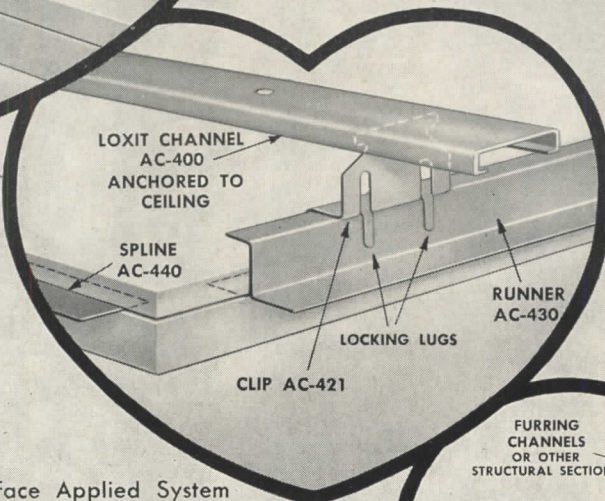
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TYPE "X"

This Loxit Victory Regular Acoustical Suspension System was engineered to care for conditions where furring channels are being used as the supporting structural members for the suspension system. It is simple and easy to use.



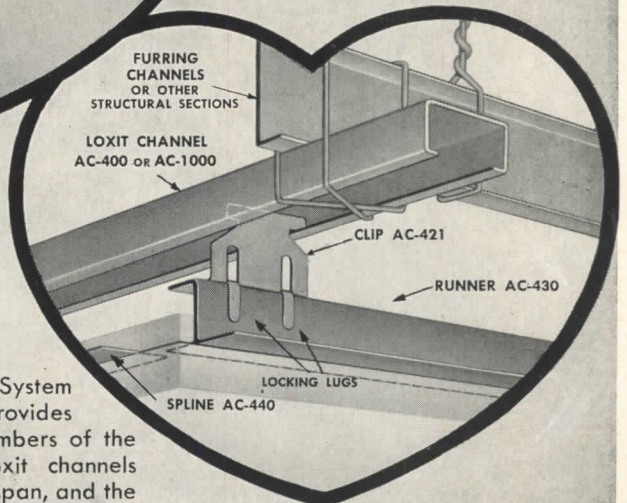
TYPE "Y"

This Loxit Victory Surface Applied System meets those conditions where no suspension is involved, with the tiles being applied directly to the ceiling. Using Loxit channels AC-400 with Loxit clips AC-421, this type of installation becomes both simple and practical.

Consult your architect—his knowledge, training and experience can help you in many ways.

TYPE "Z"

This Loxit Victory Acoustical Suspension System combines Types "X" and "Y" and provides facilities for leveling the suspension members of the system by shimming between the Loxit channels AC-400 or AC-1000, depending on the span, and the furring channels, bar joists or other structural sections.



The "XYZ"
of Dependable
Acoustical
Suspension
Systems

The new improved Loxit Victory Acoustical Suspension System, used individually or in combination, meets all acoustical tile-setting conditions and offers five important mechanical advantages. One clip cares for all sizes of furring channels, fitting the channel tightly because the groove of the clip and the locking lugs are both beveled. Clips AC-420 being right and left, and Clips AC-421 being reversible as well as the runners AC-430, right and left conditions are automatically provided for. Both AC-420 and AC-421 clips can be used as splices for runner AC-430, eliminating separate splicing clips. The supporting flanges of the runner AC-430 are single thicknesses of metal on both sides (same thickness as the splines), reducing the thickness of the kerf in the tiles to that of a single thin saw blade, automatically assuring proper alignment of the acoustical tiles and an anti-breathing seal.

Literature, samples and catalogs are available

LOXIT SYSTEMS, INC., 1217 W. WASHINGTON BLVD., CHICAGO 7, ILLINOIS



(Continued from page 10)

tion to the resolution of the future of the Central Commercial District of Chicago."

Officials of the Chicago Plan Commission, which was to receive the prize-winning plans after they had been exhibited at the Chicago Art Institute, appeared to agree with the jury. William M. Spencer, commission chairman, noted that the competition provided the Com-

mission gratis with a kind of study of the Central District redevelopment problem which it could never otherwise have afforded; he saw the competition results as "highly imaginative and exciting" and certain to be utilized by the Commission as part of a 100-year development plan that will ultimately be realized.

The winners were selected by a five-

man panel of judges headed by Dr. Henry T. Heald, chancellor of New York University and former president of Illinois Institute of Technology. Others on the jury were: Robert E. Alexander, Los Angeles architect and city planner; Miles L. Colean, Washington, D. C., architect and economist; Ladislav Segoe, Cincinnati engineer and city planner; and George Barton, Evanston traffic engineer. Howard L. Cheney, F.A.I.A., of Evanston, served as professional adviser for the competition.

In addition to the first three awards, there were five Fourth Award winners of \$500 each:

"Lewis Clarke" team: Lewis Clarke, assistant professor, Roger Montgomery and Ben Gary Jr., students, School of Design, North Carolina State College, Raleigh, N. C.; "Maston & Zwicker" team: Carl L. Maston, architect, and Beda Zwicker, designer, Los Angeles; "Glory" team: Marvin E. Goody, instructor, Kevin Lynch, assistant professor, Rai Y. Okamoto, instructor, Ralph Rapson, assistant professor, and Burnham Kelly, associate professor, Department of Architecture and City Planning, Massachusetts Institute of Technology, Cambridge, Mass.; "Cert Collaborative" team: C. H. Jordan, R. W. Heck, T. G. Hansen and E. Keith McPheeters, architectural professors, Auburn Polytechnic Institute, Auburn, Ala.; "Phoenix Group" team: Edward J. Hustoles, Ruth V. Wilson, Carl Almlad, George Vilican Jr., Maurice D. Chandler and Arthur M. Shatz, Detroit City Plan Commission, and Richard H. Jennings, Detroit.

Honorable Mentions were given as follows:

Charles Alexander Blessing, Director, Detroit City Plan Commission; team of Kenneth H. Dillon, Hollywood, Cal., designer, Blaine N. Rawdon, North Hollywood, Cal., designer-draftsman and Harry Salm, designer, of The Hague, Netherlands; team of Witold K. von Henneberg, architect and planner, and Jacek von Henneberg, Harvard instructor, partners in the Cambridge, Mass., firm of Henneberg & Henneberg, James A. S. Walker, Harvard student, and James L. Harris, Cambridge, Mass., architect and planner; Joseph Burnett, Chicago architectural designer; team of Richard N. Wenick, Thomas W. Hefley, William Koster, Gordon Garn and Richard H. Peacock, all students or graduates of the University of Cincinnati Department of Architecture; team of Barnett Berliner, member, and Sanford Greenfield and Bernard Rothzeit, graduate students, M.I.T. Department of Architecture, William Goodman, assistant professor, Harvard, and Morse Payne, architect and planner, Brookline, Mass.; team of Howard T. Fischer, J. Edwin Quinn and Alfred Burnes, Chicago architects, Roland A. Wank, New York architect, and Carl L. Gardner, Chicago city planner; team of J. Byers Hays, Cleveland architect, Stephen A. Kaufman and Morton J. Schusheim, Cleveland city planner, and Alfred D. Yanda, Cleveland civil engineer; Harry Weese, Chicago architect; team of Robert L. Geddes, Blanche Lemco, Martin A. D. Meyerson and George Qualls, of the faculty of the Departments of Architecture and Land and City Planning, University of Pennsylvania; team of Kurt K. Perlsee, Clayton, Mo., architect and visiting professor, Washington University, and Niels Stoermer, St. Louis architect.

FACTS FOR ARCHITECTS

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1.

Today it is normal procedure to install clay tile in hotel bathrooms without losing a night's revenue. This illustration shows one of the 144 rooms in the White Plaza Hotel, Dallas, Texas, in which MIRACLE ADHESIVE was used to do the job from the time the guest left his room in the morning until he returned that afternoon.



2.

Plaster applied over wire and cork which has been attached to aluminum ducts using MIRACLE ADHESIVE and MIRACLE SPINDLE ANCHORS at John Hancock Mutual Life Insurance Co. Building, Boston, Mass. ARCHITECT, Cram and Ferguson. BUILDER, Turner Construction Co.



3.

FIBERGLAS insulation, Type PF-613, 2" thick — bonded to concrete ceiling using MIRACLE PRONGED ANCHORS at Radio City Studio 6B, New York, N. Y. CONTRACTOR, William J. Scully, Inc., New York, N. Y.



4.

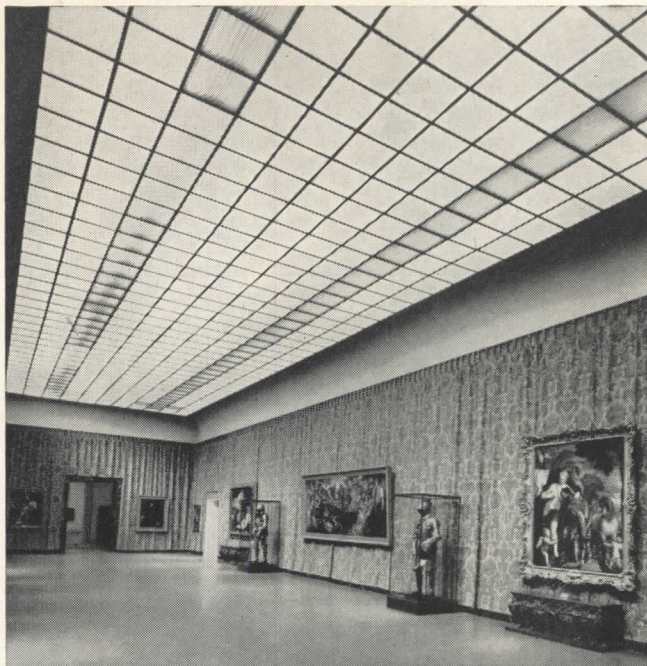
WOOD RUNNERS installed on concrete floors with MIRACLE ADHESIVE and MIRACLE ANCHOR NAILS to support 2" solid partitions. Washington Circle Apartments, Washington, D.C. GENERAL CONTRACTOR, Charles H. Tompkins Company.

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Incandescent and fluorescent light are combined to illuminate this exhibit of 16th and 17th Century English Art in glare-free, shadow-free lighting. Water-white curved lens panels and lenslites blend the two types of light.

Architects—R. B. O'Connor & Aymar Embury II
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 Architects—Brown, Lawford & Forbes
 Engineers—Edw. E. Ashley
 Recessed Lighting Fixtures by Eastern Lighting Products, Inc.



Ceiling in this room is of specially designed panels of water-white crystal by Corning. Louvers of Alba-Lite shield directional lighting used to highlight centers of attention.

How Metropolitan Museum created natural lighting for great art exhibits

Visitors to New York's "new" Metropolitan Museum now enjoy the world's great art treasures in shadow-free, glareless lighting.

In his role as the Museum's consulting engineer for the \$9,000,000 restoration program, Laurence S. Harrison sought to create a lighting system approaching the ideal qualities of daylight in the exhibit rooms and corridors. He achieved his aim with a combination of incandescent and fluorescent lighting, skylights and a wide variety of Corning Engineered Lightingware.

Corning developed a new water-white crystal glass with true color transmission characteristics to meet exacting specifications. This glass in 2-ft. square panels is installed in the skylight ceilings, in the second floor galleries. Formed into curved prismatic lens panels, it is also used extensively in recessed fluorescent troffer fixtures in lighting the first floor galleries.

True colors assured

Corning Alba-Lite glass because of its ability to diffuse and transmit fluorescent light without altering

color is used in the fixture installed in the ground floor galleries.

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they should; but the additional personnel planned in this department probably cannot now be hired.

Commissioner Mason considers the wording of the preamble to the National Housing Act as a policy mandate for his agency to encourage improvements in housing standards. He has referred to Mr. Connor as one of the two key FHA officials in the housing standards oper-

ation. The other is Charles A. Bowser, assistant for technical standards.

When he announced Mr. Connor's appointment, Commissioner Mason said: "In its early days, it was natural that the FHA sought to establish minimum requirements. These, of course, will be continued; but weight also must be given to a broader concept with emphasis upon valuation appraisal."

In a recent Chicago speech, the Commissioner put it another way:

"You don't leave much room for imagination in design when you accent only the minimum," he said.

Discussing the government's 24 ft x 36 ft "box house," which he admitted had become "institutionalized" in the last few years, Mr. Mason noted that many families who occupied two-bedroom homes a few years ago now are shopping around for larger dwellings. There will be more three- and four-bedroom houses built, the Commissioner predicted, with more closet and storage space than now; greater use will be made of folding partitions.

"With the help of the National Bureau of Standards, the Building Research Advisory Board, and industry, FHA must learn the answer."

'55 CONSTRUCTION FUNDS FAR UNDER BUDGET LEVEL

THE SECOND SESSION of the Eighty-third Congress was anything but generous in its handling of construction funds. Federal programs consistently turned up with operating money well below the figures submitted by the Bureau of the Budget, and in the closing days of the session the members took a healthy "meat axe" swing at the sizeable askings for construction purposes included in the supplemental appropriations measure.

Several new items appeared in the fiscal 1955 documents, among them a request for \$1.1 million for the most comprehensive revision of the Federal government's construction statistics ever contemplated. Private industry showed unusual interest in this proposed undertaking and supported the programs submitted to Congress by the Bureau of Labor Statistics on the housing series, and by the Business and Defense Services Administration of the Department of Commerce on nonresidential work. The U. S. Chamber of Commerce broke a long-time precedent and by order of its Board of Directors sent representatives before Congressional committees to plead for funds for the purpose of improving the statistical data upon which industry relies so heavily.

Statistics Revision Refused

The House stand on the matter was adamant from the first. It refused funds, and its views prevailed in conference

(Continued on page 336)



The bronze doors of the Holy Sepulchre Mausoleum, Detroit, are another typical example of Michaels products for the building industry. In addition to doors, Michaels produces many building products of stainless steel, aluminum and bronze.

Behind this organization is 84 years of experience in the production of high-quality products, and in working with architects and contractors, faithfully reproducing in metal their most intricate designs. When your

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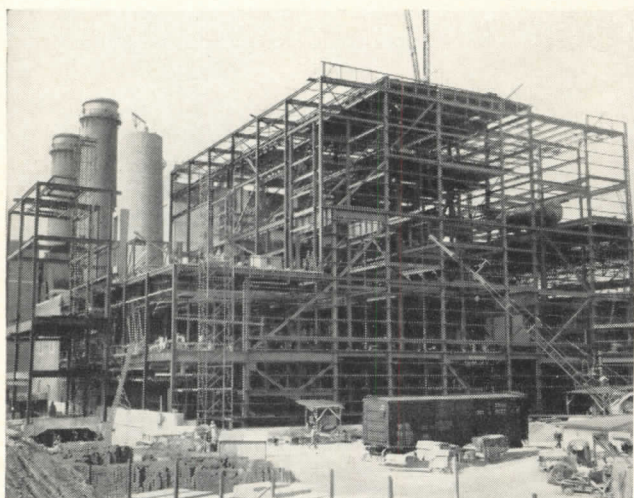
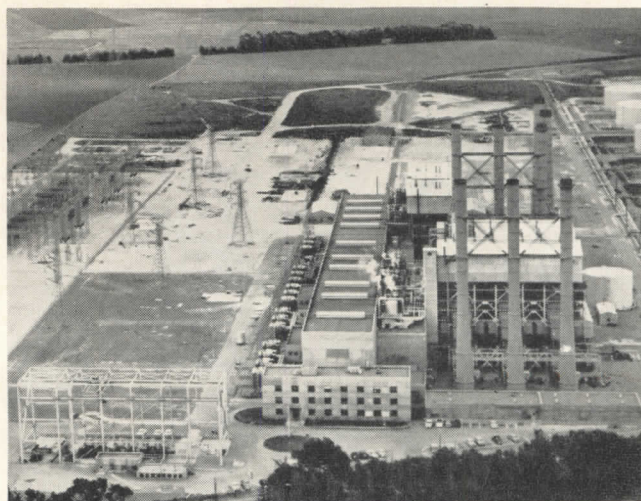
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Four New Power Stations

MOSS LANDING, CALIFORNIA ▶

One of the West Coast's biggest generating plants is Pacific Gas and Electric's 575-mw steam plant on Monterey Bay. Bethlehem Pacific Coast Steel Corporation fabricated and erected the steelwork, and fabricated the switching structures and transmission towers shown here.

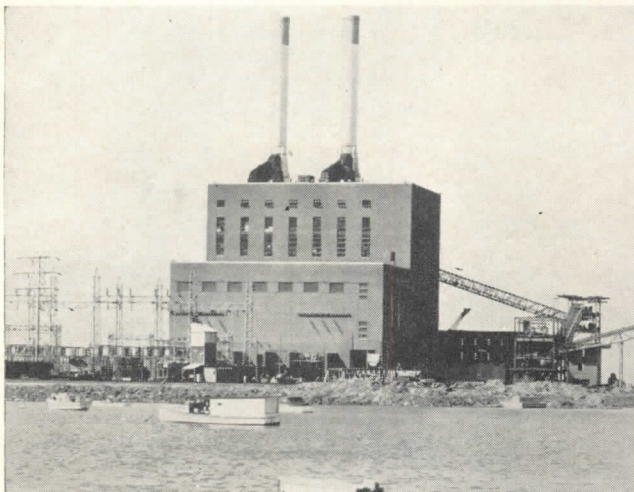
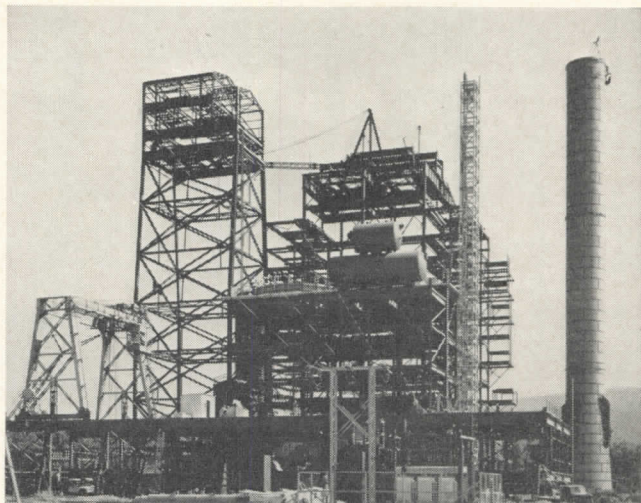


MARTINS CREEK, PENNSYLVANIA ▶

Pennsylvania Power and Light's new 132.5-mw outdoor plant on the Delaware River was designed to operate only 3,000 to 4,000 hours per year, handling peak loads. Investment was minimized by such economies as eliminating housings for much of the equipment, leaving exposed a good deal of the 2300-ton steel framework. A second unit is under construction.

◀ ALEXANDRIA, VIRGINIA

Back in 1948, Bethlehem fabricated and erected 3800 tons of steelwork for Potomac Electric's 160-mw steam-electric plant. Greatly increased power requirements have since made it necessary to construct this 3500-ton addition, to house two new 100-mw units. Final capacity will total 360 mw.



◀ DUNKIRK, NEW YORK

Niagara Mohawk's ultra-modern steam-electric generating station on Lake Erie. The steam turbine of each of the two 80-mw units is of a new design, first of its type ever made. Over 5000 tons of steel, fabricated and erected by Bethlehem Steel Company, went into the station's structural framework and boiler supports.

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BETHLEHEM STEEL

committee even after the Senate had voted to allow \$600,000 for BDSA plans, and the full amount of \$110,000 requested by the BLS for doctoring its housing series. No money was voted for the purpose.

In this instance, both industry and government were bitterly disappointed to see their combined efforts unavailing. It can be expected there will be an equally strong campaign in the Eighty-

fourth Congress to secure funds with which to do the overhauling job.

Housing Agency Funds Clipped

The housing agencies had similar cause for complaint. Their budget askings were trimmed severely in the supplemental appropriation measure which raced through under pressure during the closing days of the session. The Federal

Housing Administration, for example, asked \$1,350,000 for administrative expenses, anticipating the greatly increased work load now resulting from the new housing law. The Senate approved this full amount in its original passage of the bill, but House conferee pressure was strong and succeeded in reducing the figure to \$350,000.

A spokesman said this probably would enable the FHA field offices to hold their added personnel, but would not permit the hoped-for increases to staff to deal with Title I abuses and other policing problems. The headquarters office would just about be able to hold its own under this figure, he said.

Of \$4 million requested for non-administrative expenses — largely field operations — only \$1,250,000 finally was approved after the Senate had first voted

(Continued on page 340)

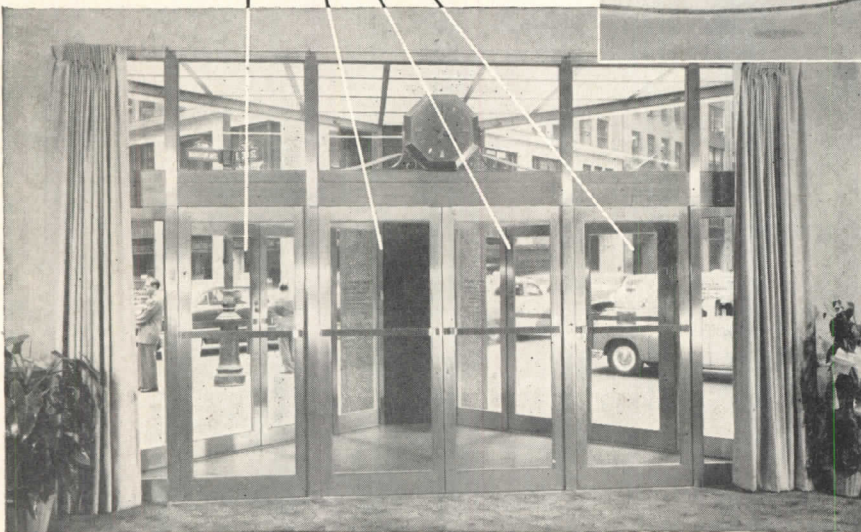
8 IN THE ENTRANCES TO Union Dime Savings Bank



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SCOREBOARD ON CONSTRUCTION FUNDS

(Supplemental Appropriations Bills *)
(In Millions)

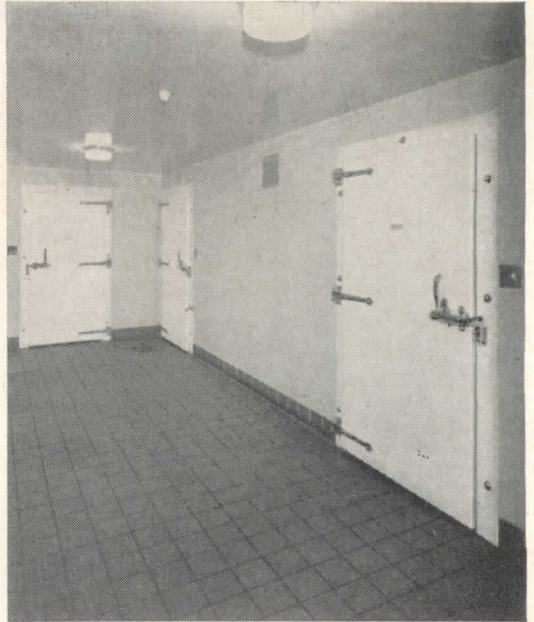
AGENCY	Budget Request	Final 1955
BLS-Commerce		
Revision of construction statistics	\$1.1	0
Civil Aeronautics Administration		
Aid to airports	22.0	\$22.0
Dept of Health, Education and Welfare		
White House Conference on Education	1.7	.9
Hill-Burton — new authorization — chronic disease hospitals	35.0	21.0
HHFA		
Office of Admin.	1.2	1.1
Public facility loans	25.0	2.0
Planned Public Works Reserve	10.0	1.5
Urban Planning grants	5.0	1.0
PHA		
"Admin. expenses" — enter into pub. hsg. contracts	.8	.4
Dept of Defense		
Military hsg. ¹		75.0
Army pub. wks.	245.6 ²	195.0 ²
Navy pub. wks.	221.4 ³	206.7 ³
Navy advance planning		3.7
Air Force pub. wks.	945.9	867.5
Air Force Academy	16.3	15.3
Army Civil Functions		
Rivers & Harbors construction	6.3	5.9
Advance engineering & design		.6 ⁴

* For "regular" appropriations, see August, page 20
¹ Budget asked provision only; no specific amount requested
² From past appropriations
³ This represents both new and unobligated funds. Of the \$206.7 figure, \$98 million is new; of the \$867.5 figure, \$630 million is new
⁴ Included in the \$5.9 figure

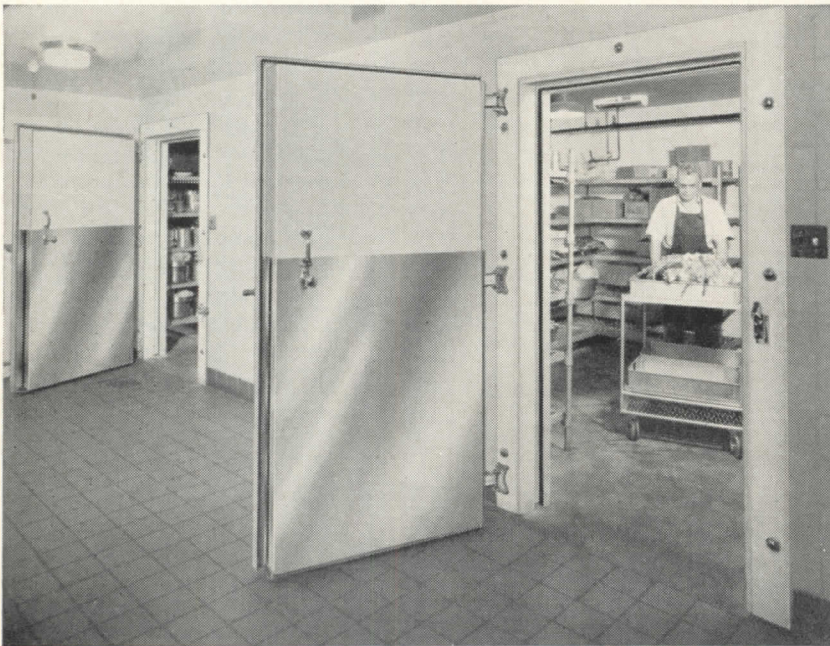
JAMISON DOORS SELECTED

**For Finest In Food Storage
At Mt. Zion Hospital, San Francisco**

Ten Jamison Doors in all, seven Standard Cooler and Freezer Doors and three Lo-Temp Doors, were installed at Mt. Zion Hospital, San Francisco. Architects Skidmore, Owings and Merrill . . . credit for insulation work goes to Armstrong Cork Company. Once again, JAMISON, leader in insulated doors is preferred by leaders who will accept nothing less than the best! JAMISON COLD STORAGE DOOR COMPANY, HAGERSTOWN, MD., U.S.A.



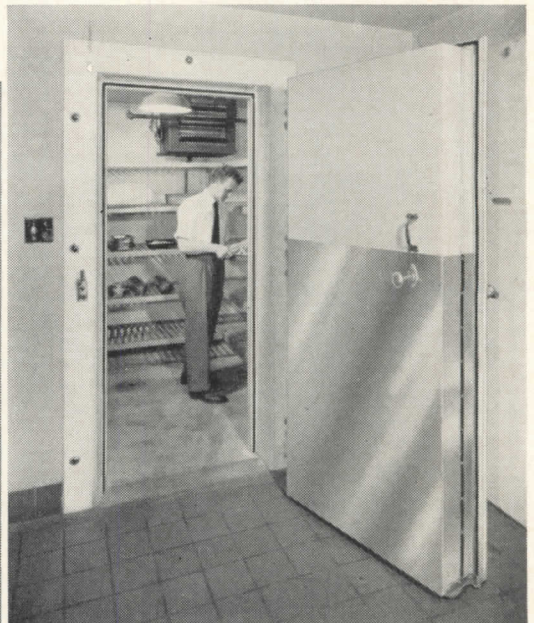
ATTRACTIVE APPEARANCE . . . Glistening white enamel over galvanized metal cladding and chrome hardware. Match harmoniously with the sanitary walls. The three doors above (l. to r.) lead to: cold cuts room; vegetable and fruit room; meat room.



STAINLESS KICK PLATES . . . Provide beauty, sanitation and extra strength on back of door. The extra strength protects the door against battering of trucks. Note also the extra wide door openings to accommodate large meat trucks.

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THE RECORD REPORTS

to give this part of the program \$3 million.

The revolving fund for public facilities loans was dropped to \$2 million from Budget's request of \$25 million; \$1.5 million was allowed for building a reserve of planned public works (the third "advance planning" program) after \$10 million had been sought, and \$1 million was voted for urban planning

WASHINGTON (Cont. from page 336)

grants, a reduction from \$5 million sought.

Military Cut — But Less

In other fields the cuts were not so noticeable on the surface but were just as keenly felt. The Army public works program, long carrying a large backlog of accumulated appropriations, was al-

lowed \$207.3 million to be spent from these previous monies. Officials had asked for permission to dip into these funds to the extent of \$245.6 million. Navy's public works program received \$196 million after \$221.4 million had been asked.

The Air Force public works program, the big one, was trimmed from a \$945.9 million budget request down to \$630 million. This compared with \$240.7 million appropriated for fiscal 1954.

The Army's civil functions activities were given \$5.9 million, in the supplemental measure, to be added to the whopping \$300.3 million that this construction received in the regular appropriations bills for fiscal 1955. A total of \$6.3 million had been asked in supplemental funds for rivers and harbors and flood control work.

SOCIAL SECURITY COVERS ARCHITECTS, ENGINEERS

The hectic closing hours of Congress produced the social security extension bill bringing the nation's self-employed architects and engineers under the retirement benefits on a compulsory basis.

The new law will affect approximately 18,000 registered engineers (10 per cent of the total number in the country) and an estimated 70 per cent of the 10,000 architects who are members of the A.I.A.; figures on non-A.I.A. architects were not available.

Those individuals who have operated under a corporate form — and many engineers and architects are so operating — already have been covered and do not change status under this measure. Only those who are "self-employed" in the strict sense are affected.

ADDENDA

RECENT APPOINTMENTS: Rudolph Weitz, to succeed Rear Admiral Joseph F. Jelley Jr. as Deputy Assistant Secretary of Defense for Properties and Installations. Admiral Jelley has returned to duty with the Navy. . . . Tracy B. Augur, as assistant director for urban planning assistance in the Housing and Home Finance Agency. . . . Loder L. Patterson, as director of the Federal Housing Administration's Division of Slum Clearance and Urban Renewal. . . . J. George Stewart, a civil engineer of Hollywood, Fla., as "Architect of the Capitol" to succeed David Lynn, also an engineer. The title is not a very clear

(Continued on page 344)

Ideal for use in Corridors and other large areas of Schools, Hospitals and other Institutions.

This new enlarged shape covers more area per piece and simplifies installation. It has recently been added to the versatile ROMANY line and possesses all the high quality characteristics that have made ROMANY Tile preeminent in the building field.

The "hard as steel" glaze and rugged buff body defy wear and this 6"x9" tile is recommended for use wherever a sturdy tile is needed.

ROMANY Tile is regularly featured in Sweet's Catalog. Detailed information to meet specific requirements will be gladly furnished upon request.

Correspondence Invited

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*f*or the specification
consider these out-
standing features

ROMANY IS:

FIRE PROOF

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than 30 attractive colors.

For lasting value in roof insulation, specify

FIBERGLAS[★]



3 MILLION SQUARE FEET OF FIBERGLAS ROOF INSULATION—General Electric's Appliance Park, Louisville, Kentucky. Architect: Albert Kahn & Assoc., Detroit. Gen. Cont'r: Turner-Struck Const. Co., Buechle, Ky. Roofers: Brown and Kerr Roofing Co., Chicago; Schreiber Roofing, Detroit, Mich.

1. **More thermally efficient,**
thickness for thickness
2. **Longer lasting because it**
will not rot

- ★ Its low "k" value provides more insulation in relation to thickness.
- ★ Resists fire and moisture, will not decay, swell, shrink or buckle.
- ★ Light weight and easy to apply, can be cut on job.
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PRODUCT DATA— FIBERGLAS ROOF INSULATION

Standard Size—24" x 48"
Packaged in
Paper-wrapped Bundles

AVAILABLE THICKNESS (Inches)	HEAT CONDUCTANCE at 75°F Mean Temp. (Btu/hr./Sq. Ft./°F.)*
1/2	.50
3/4	.33
7/8	.30
1	.25
1 1/4	.20
1 1/2	.17
1 3/4	.15
2	.13

*Subject to manufacturing and testing tolerances.



When you specify roof insulation, remember . . . It's thermal efficiency that counts . . . not thickness!

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indication of the job, which involves upkeep of the Capitol buildings and grounds — and management of the Capitol restaurants.

FORT BELVOIR, Va., has been chosen as the site for an experimental, full-scale but small nuclear power plant to be designed and built jointly by the Army Corps of Engineers and the Department of Defense. The plant is the proto-

type of a "package" or transportable power reactor which is being developed for use at remote bases, eliminating the need to transport bulky conventional fuels.

CONGRESS IMPOSED some important limitations on the use of the \$175 million it appropriated for military housing construction. Most important from the long-range standpoint was the philosophy

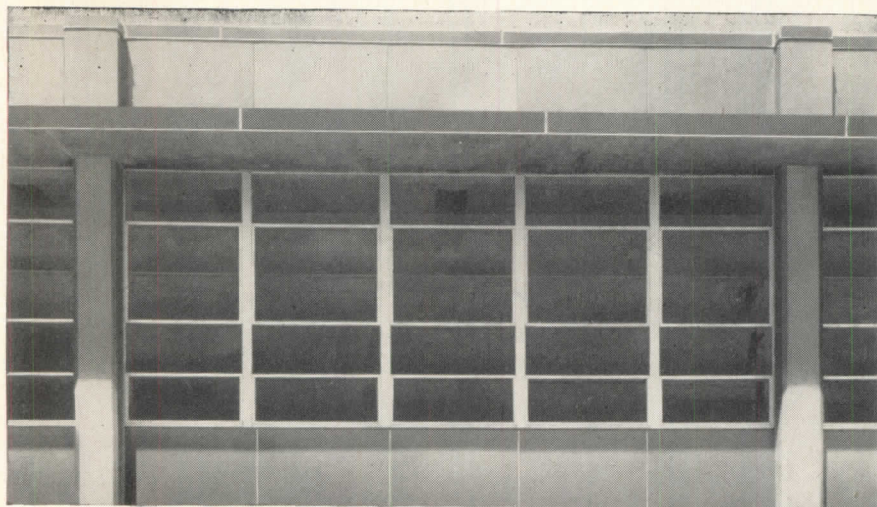
contained in a Senate amendment which became part of the law. This prevents mass construction of projects at bases where Wherry Act housing already exists or where it could be built efficiently. The law also specifies that before appropriated funds can be used for family housing on permanent installations, the Secretary of Defense must certify that (1) it is impractical to build under the Wherry Act; (2) adequate housing at reasonable rental rates is not available in the immediate vicinity; and (3) it is impracticable to acquire suitable housing under other existing provisions of law.

THE NEW HOOVER COMMISSION began a study of Federal government real estate policies. A task group headed by John R. Lotz, New York City, will look into Federal property holdings and try to develop "sound business principles, practices and procedures for planning, acquiring, improving through construction, managing, maintaining, and inventorying" such property.

THE HHFA WOUND UP its lengthy probe of Federal Housing Administration. Deputy HHFA Administrator William F. McKenna turned over details to a strengthened compliance division after giving all information on possible criminal violations to the Federal Bureau of Investigation. In a parting shot statement, he said the thorough investigation had convinced him that the Section 608 abuses stemmed not from poor legislation but from faulty administration. The builders' opportunities came from poor administration of the law, he said. "There was graft and corruption on a high level and we can demonstrate it in detail if we have to." Later he told newsmen that his remarks could not be construed to mean that more than one former FHA employe might be indicted.

AMONG ITS LAST EFFORTS was passage by the 83rd Congress of the bill extending the renegotiation law until December 31, 1954. The previous law expired with 1953, but Congress had an extension under consideration and the operations of the Renegotiation Board were not interrupted. The Board did postpone acceptance of filings for 1953 which were due on April 1. Filings ran around 40,000 for each of the fiscal years, 1951 and 1952. The new law raises the minimum amount of contractor compensation renegotiable from \$250,000 to \$500,000 for fiscal years ending on and after June 30, 1953.

(More news on page 348)



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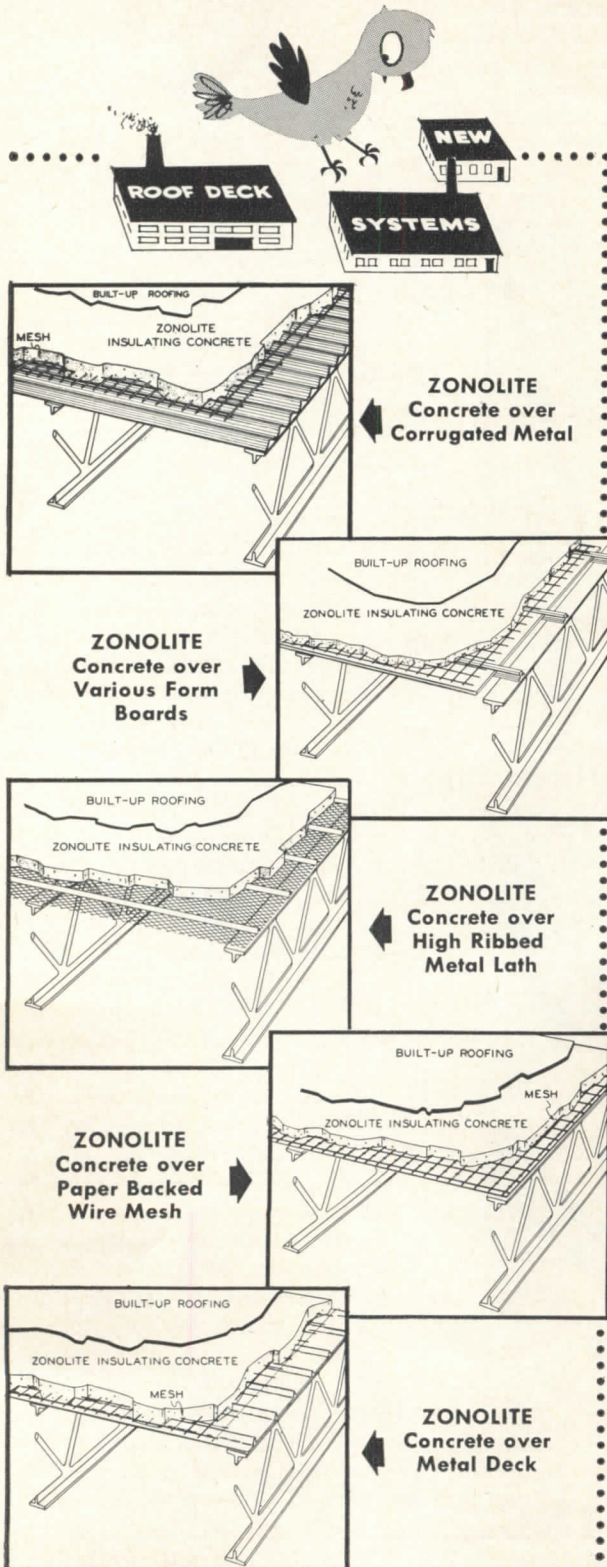


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ON THE CALENDAR

October

- 2 Sierra Nevada Regional Conference, American Institute of Architects; theme, "Strengthening of Relationship between Chapters in the Region and the Octagon" — Hoberg's Lake County, Cal.
- 2-10 "Better Homes for a Better America": an exposition sponsored

- sored by the National Retail Lumber Dealers Association — Kingsbridge Armory, New York City
- 5-7 The 57th Annual Convention, National Hardwood Lumber Association — Houston, Tex.
- 11-14 Annual Meeting, National Association of Housing and Redevelopment Officials — Bellevue-Stratford Hotel, Philadelphia

- 11-15 Fall General Meeting, American Institute of Electrical Engineers — Morrison Hotel, Chicago
- 13-16 Third Annual Conference on Atomic Energy in Industry, sponsored by National Industrial Conference Board — Hotel Commodore, New York City
- 13-17 Annual Convention, Audio Engineering Society — Hotel New Yorker, New York City
- 14-15 Annual Meeting, American Council on Education — Chicago
- 14-16 Annual Convention, Architects' Society of Ohio — Biltmore Hotel, Dayton
- 15-16 Second Annual Convention, Architectural Woodwork Institute — La Salle Hotel, Chicago
- 17-22 Semiannual Meeting, Society of Motion Picture and Television Engineers — Ambassador Hotel, Los Angeles
- 18-20 Annual Convention, American Association of Nursing Homes — Seelbach Hotel, Louisville, Ky.
- 18-22 Annual Convention, American Society of Civil Engineers — Hotel Statler, New York City
- 18-22 The 42nd National Safety Congress and Exposition, sponsored by the National Safety Council — Hotels Conrad Hilton, Morrison and La Salle, Chicago
- 21-23 Annual Convention, New York State Association of Architects — Lake Placid Club, Lake Placid, N. Y.
- 21-23 Central States Regional Conference, American Institute of Architects; theme, "Of Grass Roots and Architecture" — Wichita, Kans.
- 24-29 The 84th Annual Congress of Correction — Bellevue-Stratford Hotel, Philadelphia
- 25-29 The 32nd Annual Convention, American Institute of Steel Construction — The Greenbrier, White Sulphur Springs, W. Va.
- 27-28 The Uses of Plastics in Building: a conference sponsored by the Building Research Institute, with the Manufacturing Chemists' Association, the Society of the Plastics Industry and the Building Research Advisory Board — National Academy of Sciences, Washington, D. C.
- 28-29 Seventh Regional Meeting, American Concrete Institute — Statler Hotel, Los Angeles
- 28-30 North Central Regional Conference, American Institute of Ar-

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the all new lead holder with the
Adapto-Clutch
for leads of **ALL** DIAMETERS!

KOH-I-NOOR's Lead Holder with the ADAPTO-CLUTCH feature is the first in the world that takes drawing leads of all degrees in all diameters!

The ADAPTO-CLUTCH takes all leads from 9H to 6B. The ADAPTO-CLUTCH holds all degrees tightly. The ADAPTO-CLUTCH is guaranteed slip-proof against vertical pressure and turn-proof in all lead sharpeners and machines.

Though prominent researchers believed such a holder could not be practically manufactured, KOH-I-NOOR engineers persisted in their efforts. Now, the final result of costly laboratory research is the completely successful new KOH-I-NOOR holder with the ADAPTO-CLUTCH for leads of all degrees and all diameters.

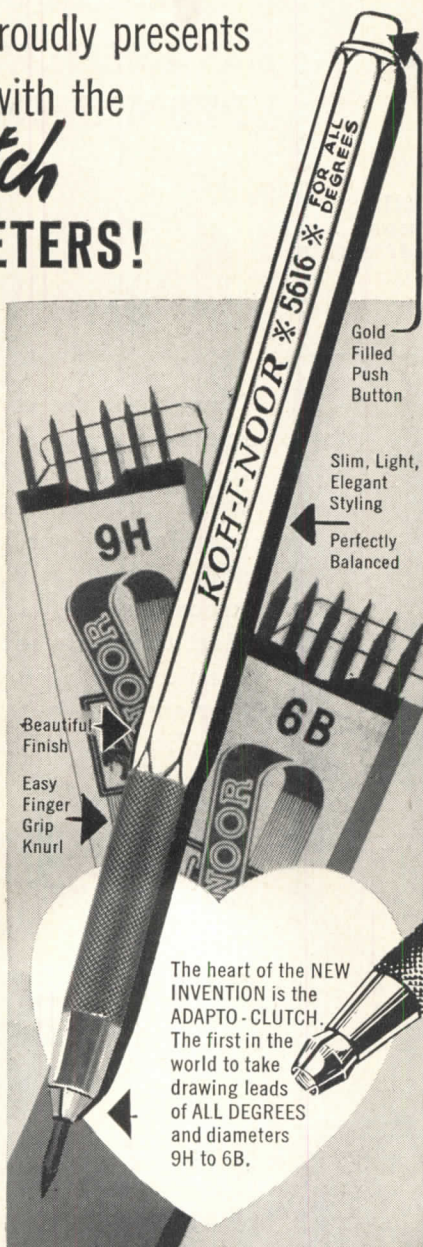
Many other manufacturers of holders and leads have tried to overcome the problem of limited clutch-adaptability by making soft leads the same diameter as hard leads. KOH-I-NOOR, in line with its usual quality standards, persisted in making soft degrees in a correspondingly larger diameter, to give them the same high breaking strength as KOH-I-NOOR hard degrees. KOH-I-NOOR, in the past, featured therefore two holders for leads, one for leads from 9H to B, and another one for leads from 2B to 6B. NOW, THE NEW holder with the ADAPTO-CLUTCH takes LEADS OF ALL DEGREES AND ALL DIAMETERS!

See and buy this sensational New No. 5616 Holder today... **\$1.50** each
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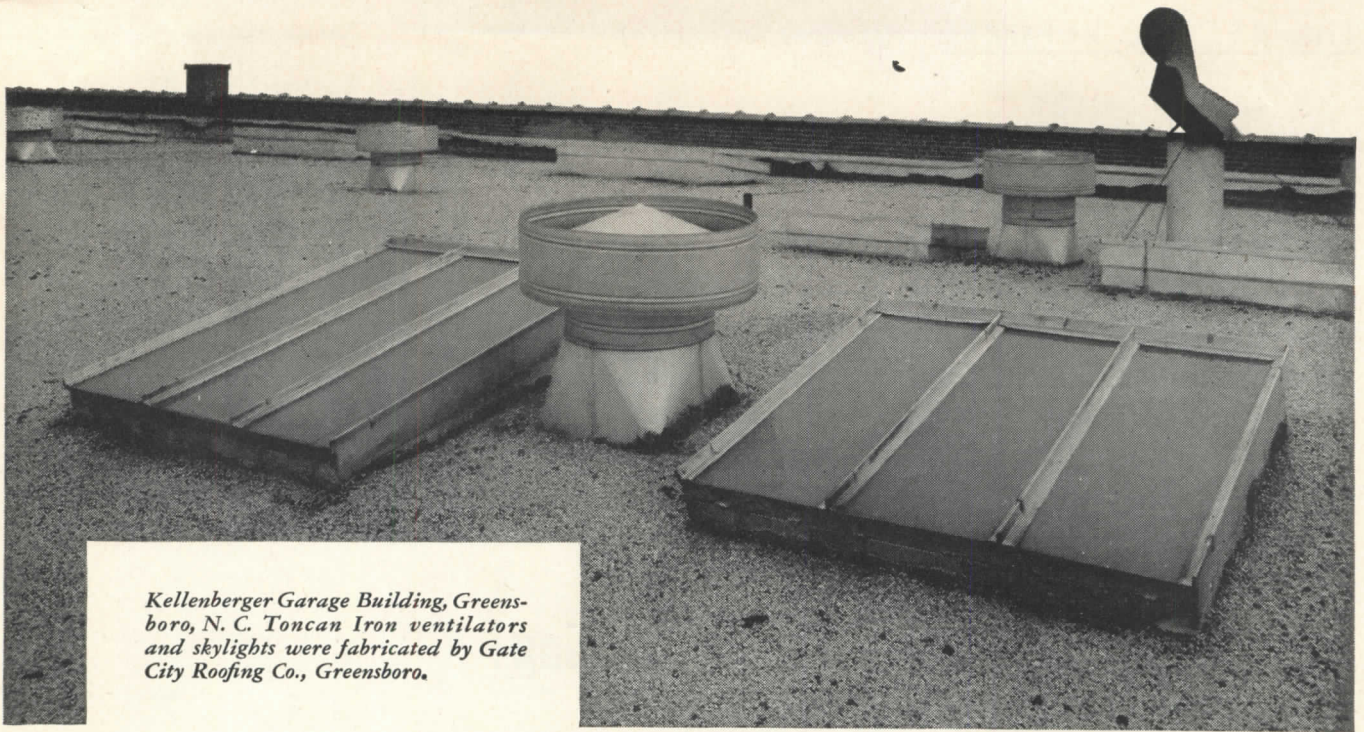
Packed in Individual Slide Boxes

For best results always use Koh-I-Noor #2200 leads available in 17 degrees

KOH-I-NOOR PENCIL CO., INC.
BLOOMSBURY, NEW JERSEY



(Continued on page 352)



Kellenberger Garage Building, Greensboro, N. C. Toncan Iron ventilators and skylights were fabricated by Gate City Roofing Co., Greensboro.

Toncan Iron Ventilators and Skylights

going strong after 26 years

When this commercial garage building was erected in 1928, rust-resisting Toncan Iron was used for ventilators, skylights and other sheet metal work. The building owner reports that today, 26 years later, the Toncan Iron sheet metal work is seemingly "as good as new." No repairs or replacements have been necessary during this period.

Decades of service in resisting rust and corrosion are not unusual for Toncan Iron. It is an ALLOYED IRON, containing twice the amount of copper ordinarily used in copper-bearing steels and irons—plus just the right amount of molybdenum to make the copper most effective all the way through. That's why Toncan Iron resists rust better and outlasts all other ferrous materials in its price class.

Toncan Iron is easy to work, too. Punching, cutting, forming, welding or other fabrication have no effect upon its rust-resistance.

You'll find more about Toncan Iron in Sweet's 1954 File $\frac{5c}{Re}$ —or write us for literature.

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 HIGHEST RUST-RESISTANCE OF ALL
 FERROUS MATERIALS IN ITS PRICE CLASS



REPUBLIC
TONCAN IRON

THE RECORD REPORTS

(Continued from page 348)

chitects — Kohler Hotel, Rochester, Minn.

28-30 Annual Meeting, Minnesota Society of Architects — Rochester, Minn.

31ff National Association for Mental Health; until Nov. 2 — Hotel Carter, Cleveland

November

1-5 National Fall Meeting, American

Welding Society — Sherman Hotel, Chicago

3-5 Annual Convention, Texas Society of Architects — Texas Hotel, Fort Worth

3-6 Annual Meeting, American Council of Commercial Laboratories — Roosevelt Hotel, New Orleans

6-10 Annual Convention, Structural Clay Products Institute — Hotel de Coronado, San Diego

7-8 Annual Meeting, Association of Urban Universities — Pittsburgh

8-12 The 39th National Hotel Exposition — Kingsbridge Armory, New York City

10-12 Short Course on Church Architecture, offered by the Department of Architecture, College of Fine and Applied Arts — University of Illinois, Urbana, Ill.

10-12 The 18th National Time and Motion Study and Management Clinic, Industrial Management Society — Hotel Sherman, Chicago

13-14 Great Lakes Regional Meeting, American Institute of Architects

15-16 Annual Convention, National Building Material Distributors Association — La Salle Hotel, Chicago

15-16 Fifth National Conference on Standards, American Standards Association — Hotel Roosevelt, New York City

18-20 Annual Convention, Florida Association of Architects — La Coquette Hotel, Palm Beach, Fla.

28ff Annual Meeting, American Society of Mechanical Engineers — Statler Hotel, New York City

29ff First International Automation Exposition: exhibit on automatic machines, factories and industries under the direction of Richard Rimbach; until Dec. 3 — 242nd Coast Artillery Armory, 14th St. off Sixth Ave., New York City

December

2-7 The 21st National Exposition of Power and Mechanical Engineers, sponsored by the American Society of Mechanical Engineers — Commercial Museum, Philadelphia

OFFICE NOTES

Offices Opened

• Walter Frederick Noyes Jr., A.I.A., has opened offices at 1055 Madison Ave., New York 28, N. Y. Mr. Noyes was formerly with the architectural firm Skidmore, Owings & Merrill.

• Sargent, Webster, Crenshaw & Fox Architects, recently opened a branch office at 140 E. First St., Corning, N. Y. Herbert Boerner, A.I.A., is in charge.

• The new firm of Smith-Hanlon & Heide-Levy, Inc., Consulting Engineers, have announced the establishment of offices at 3926 Lindell Blvd., St. Louis, Mo.

(Continued on page 356)

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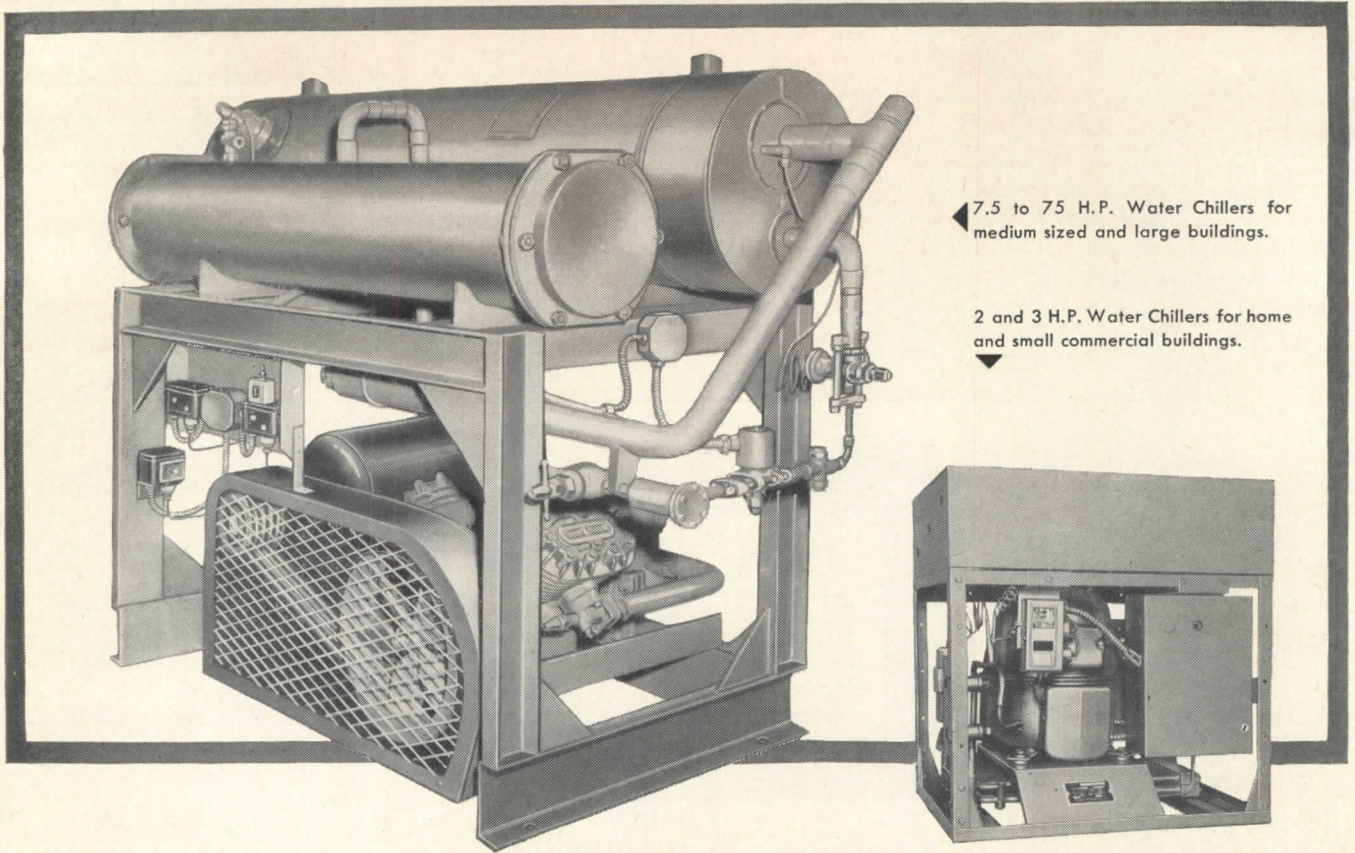
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2 and 3 H.P. Water Chillers for home and small commercial buildings.

New American-Standard Packaged Water Chillers have matched components for top performance

New American-Standard Water Chillers come factory assembled with circuits completely piped, wired and tested. Chiller components like the condenser, evaporator and compressor are carefully integrated by design engineers to meet your specific cooling requirements, efficiently and economically.

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The 2 and 3 H.P. water chillers have a hermetically-sealed motor and compressor assembly. You can get a

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- the complete Remotaire Heating and Cooling System

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Firm Changes

• Lester S. LaPierre, A.I.A., and Clarence B. Litchfield, A.I.A., have announced the formation of a partnership to succeed the firm of Alfred Hopkins & Associates. The new firm will be known as LaPierre, Litchfield & Partners, with offices at 415 Lexington Ave., New York, N. Y. Other partners in the firm include

Arthur H. Fuller, Gannett Herwig, W. Frank Bower, Arthur E. Dore, Ben John Small, and Alfred A. Rothman; these men all were associates of the old firm.

• Palmetto Associates, Architects & Engineers, is the name of the firm formerly known as Race, Forrester & Epting; Avery W. Wood Jr., Architect, is a new member of the firm. Offices

are at Crawford Bldg., 8 S. Church St., Greenville, S. C.

New Addresses

A. John Brenner, Architect, and John Brenner and Associates, Architects-Engineers, Room 702, Title & Trust Bldg., Phoenix, Ariz.

George B. Cunningham, Architect, 203-204 Methodist Bldg., Wheeling, W. Va.

Ferris & Erskine, Architects, 777 LaRue Ave., Reno, Nev.

C. Melvin Frank, Architect, 185 E. State St., Columbus 15, Ohio.

Charles H. Gillin, Architect, 389 Queens Ave., London, Ont.

Victor Gruen, A.I.A., 135 S. Doheny Dr., Beverly Hills, Cal.

Katz and Metsky, Architects, 875 Broad St., Newark, N. J.

Steinhardt & Thompson, Architects, 41 E. 50th St., New York 22, N. Y.

Lewis Stettler, Architect, 305 Third St. W., Huntington, W. Va.

Samuel Pelton, Architect, 29 W. 57th St., New York 19, N. Y.

Jack McM. Pruden, A.I.A., 310 Snow Bldg., Durham, N. C.

Waisman & Ross, Architects and Consulting Engineers, Graham Bldg., 399 Graham Ave., Winnipeg, Man.

Harvard Offers New Courses

Three new courses in urban design will be offered this year by the Harvard Graduate School of Design, it has been announced by Dean José Luis Sert. The history of urban design will be taught by Visiting Professor Sigfried Giedion. Dean Sert will teach a course in urban design with the help of Assistant Professor Jean Paul Carlhian and Hideo Sasaki; this course is to be an "expanded" version of Harvard's course "Design of Cities." Dean Sert will also teach Advanced Architectural Design, which will include projects in urban design; Assistant Professors Carlhian, Sasaki and Ronald Gourley will also teach.

This summer the Graduate School of Design offered a six-weeks course on "Plants as Factors of Design." Taught by Stanley Hart White, Visiting Professor of Landscape Architecture, the course included, according to the school's outline: Introduction to Science of the Natural Environment; Movements Within the Natural Base; Patterns from Processes of Nature; Areal Distributions of the Natural Base; and Sublimation of Nature in the Design of Landscape.

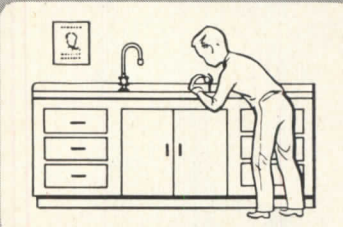
(More news on page 358)


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CLASSROOM · LABORATORY · SHOP

HAWS "Deck Type" Drinking Fountains

answer every demand





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Accommodating all schoolroom Drinking Fountain demands, the HAWS No. 2000 Series "Deck Type" Receptor mounts practically any combination of HAWS bubbler-type, pantry or fill-glass faucets—with vandal-proof fittings. Finished in acid resisting white enamel, this utilitarian shaped, cast iron Receptor is all but indestructible. Also available in stainless steel.

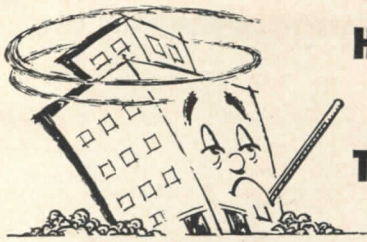
A raised, sloped, stainless steel rim provides water-tight mounting and prevents water from running onto table or cabinet tops. Shown with two fixtures, Receptor is available with one . . . or a combination hot and cold water faucet.

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Rx for a lifetime of flexing with stresses and no weak spots.

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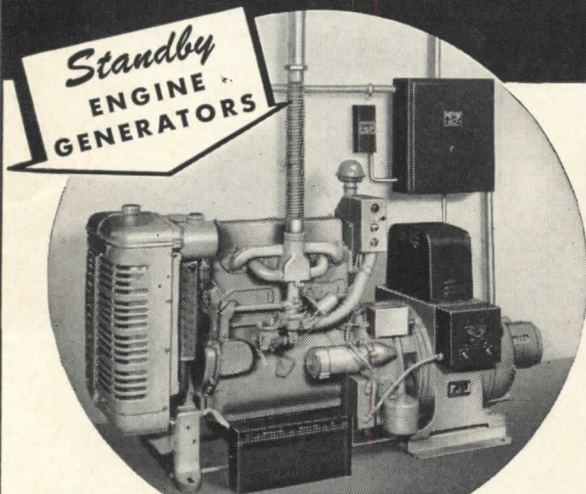
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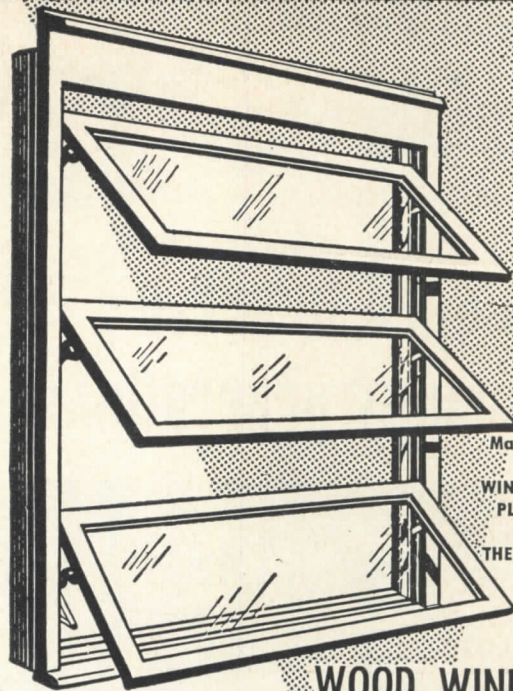


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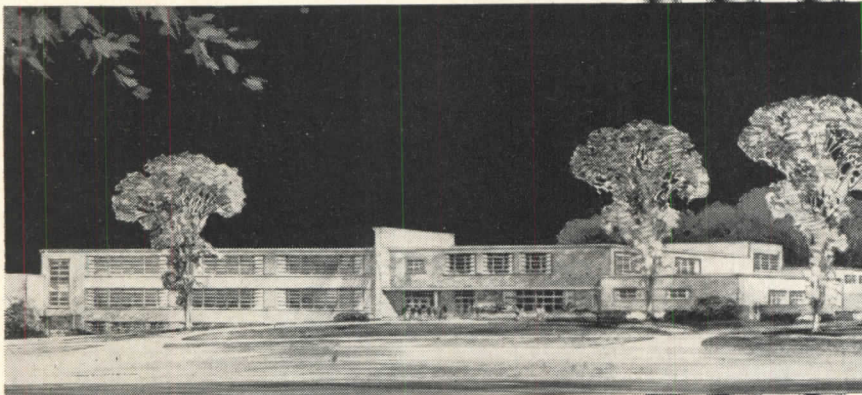
(Continued from page 356)

KANSAS CITY TO BUILD \$8 MILLION HOSPITAL

Plans have been announced for the \$8 million Baptist Memorial Hospital, a nine-story medical center to be erected in Kansas City, Mo. The complete project calls for a 600-bed Acute General



Designed to serve many generations...



EDGEWOOD SCHOOL, HIGHLAND PARK, ILLINOIS
ARCHITECT: CHILDS & SMITH, CHICAGO
PLUMBING CONTRACTOR: J. G. WEBER, CHICAGO

and Clow "IPS"* (threaded) Cast Iron Pipe will last the life of the building!

Highland Park is one of Chicago's better North Shore suburbs. Gracious design and functional superiority are prerequisites of its buildings. Thus, even its most time-hallowed structures are pleasantly distinctive today. And its new Edgewood School, low in line and embodying all that's truly modern in equipment as well as design, will remain a credit to the community a century from now. Moreover, its Clow "IPS"* (threaded) Cast Iron Pipe downspouts, drains and waste lines will still be serving faithfully . . . because Clow "IPS" Pipe is corrosion-proof, requires no replacement, no upkeep. Installation is fast, economical . . . permanent.

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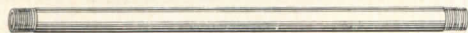
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Hospital and an adjacent 200-bed Maternity Hospital, plus a doctors' office building, a nurses' school and dormitory and a staff house. The first unit, already under construction, will be one of the T-shaped wings of the general hospital. Cost of this unit is estimated at \$2,800,000.

Bomb-Proof Operating Rooms

This building will have, in addition to its nine stories, two underground floors which will house "bomb-proof" operating rooms. These six rooms, instead of being placed in a straight line, will be set in a square surrounding common service rooms — sterilization, scrub-up rooms, anesthesia preparation. On the same level will be located X-ray facilities, diagnostic and therapy units, a central laboratory and physical therapy departments. An emergency suite on the next upper level will contain two more operating rooms.

Patients' rooms will be located on the third through eighth floors, each floor normally taking care of 49 patients. In the case of emergencies, solariums on each floor can be utilized as extra bedrooms.

Until the maternity hospital is built, obstetrical facilities will be located on the second floor of the general hospital. The top floor will provide room for 29 internes.

At the rear of the hospital, a separate building will contain the laundry, the boiler house and maintenance equipment. This building will be reached from the hospital by a tunnel. Mechanical equipment such as ventilating machinery, water tank and elevator machinery will be located in a penthouse on the general hospital.

Architects were Turnbull-Novak Inc. and the Los Angeles firm of Welton Becket, F.A.I.A., & Associates.

(More news on page 362)

the A.I.A. warns

architects and building owners concerning the purchase of materials finished outside the United States. Experience has proven that attempts to achieve extraordinary economies by having marble finished abroad frequently result in added cost and insurmountable problems.

A new marble specification, recently released by the M.I.A., reads as follows:

"All imported marble shall be selected from available stocks in this country, or, if imported, the marble shall be delivered in this country in rough form. All finishing, including selection and jointing to size, polishing, cutting and carving, shall be executed in the United States."

The Marble Institute of America has issued a bulletin incorporating the warning of The A.I.A. This is available without cost.

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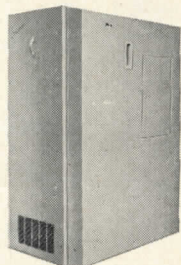
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THE RECORD REPORTS

(Continued from page 358)

ON THE RECORD

- The Beaux-Arts Institute of Design has announced winners in its spring competition among architectural students. First prize in advanced design problem, sponsored by the Marble Institute of America Inc., went to T. G. Walsh of Oklahoma A & M. J. Carney Jr., Catholic University of America, received the first prize in intermediate design; this prize was donated by ARCHITECTURAL RECORD. First prize in elementary design, sponsored by the Kenneth M. Murchison Fund, was awarded to L. Partridge, Catholic University of America. The Whitney Warren Prize went to L. L. Ketterer, also of the Catholic University of America.

- The Francis J. Plym Traveling Fellowships have been awarded to two University of Illinois graduates: Richard Edward Nevara received the fellowship in architecture and Delbert Everett Allison won the architectural engineering fellowship. The fellowships, for \$1700 each, are for travel and study in Europe.

- The 1954 LeBrun Traveling Scholarship has been awarded to Brian John Crumlish, it has been announced by the New York Chapter of the American Institute of Architects. The scholarship gives Mr. Crumlish, a graduate of the University of Illinois, a year's study and travel in Europe.

- The Architectural League of New York, in conjunction with its exhibit "Building Your Home, 1954," awarded certificates of merit to house designs done by architects for builders. For houses that sell for over \$18,000, the award was given to Allen and Edwin Kramer, Architects and Leven-Sagner Homes, builders, and to George Nemeny, Architect, and builders Chess & Siegel. Architects Sherwood, Mills and Smith and Huntley Estates Inc., builders, were winners in the \$13-18,000 category, while the prize for houses under \$13,000 went to architect Olindo Grossi and the Westhampton Realty Company.

- Columbia University has announced the eight recipients of this year's William Kinne Fellows Memorial Traveling Scholarships. The winners, all graduates of Columbia's School of Architecture, are: Lowell Brody, Richard J. Fleisch-
 (Continued on page 366)

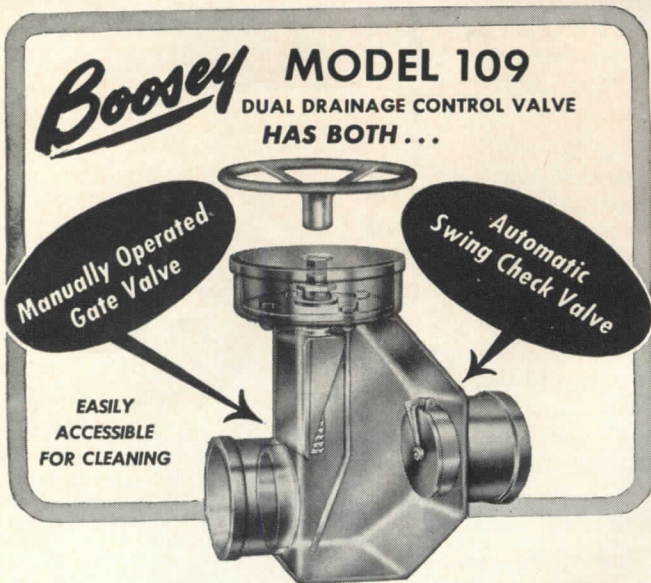
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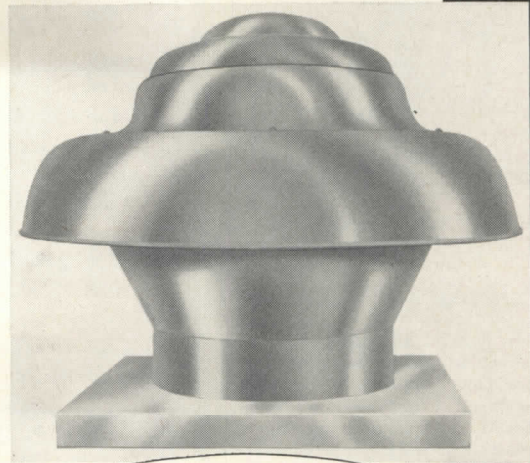
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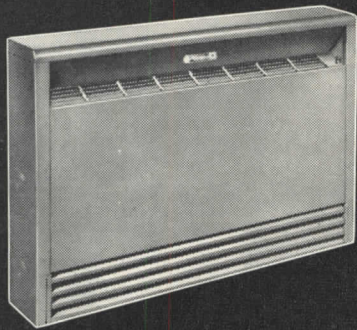
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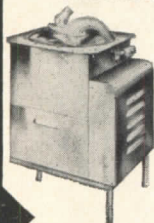
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No. 4

THE RECORD REPORTS

(Continued from page 362)

man, Eraine R. Freeman, Robert B. Kaemmerlen, Harry B. Mahler, Samuel R. Mozes, Herbert B. Oppenheimer and Seymour J. Schulman.

- The Joint Commission of Church Architecture and the Allied Arts of the Protestant Episcopal Churches have announced the winners in a competition they recently conducted among architectural students. First prize was awarded to Howard Roth, Washington University; second prize, to Bernard Kohn, Columbia University; and third prize, to George Dazilia, Columbia.

- Lawrence Grant White, F.A.I.A., has been named a Chevalier of the Legion of Honor. Mr. White is a member of the firm of McKim, Mead & White.

- The New York Chapter of the American Institute of Architects has awarded its 1954 Arnold W. Brunner Scholarship to Ralph E. Myers, A.I.A., of Kansas City, Mo. Mr. Myers will use the scholarship to edit a series of lectures entitled "Architecture — U. S. A."

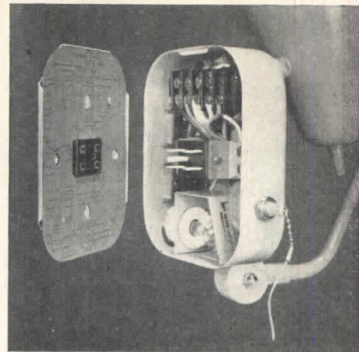
- The American Academy in Rome has announced the award of eight Rome Prize Fellowships, each providing for a year's study at the academy. Fellowships in architecture were received by James A. Gresham, of Enid, Okla., and Robert Venturi, of Rosemont, Pa.

- Winners of ten \$1000 scholarships have been announced by the American Institute of Steel Construction. The scholarships are presented to high school seniors planning to study civil or architectural engineering. This year's winners: Donald W. Iltis, Mitchell, S. Dak.; Norman W. Mahan, Tulsa, Okla.; Gard Meddaugh, Oakland, Calif.; John R. Mertens, Oak Park, Ill.; Alvin P. Mullery, Providence, R. I.; Richard A. Rosenthal, Newark, N. J.; Edwin H. Schoen, Brooklyn, N. Y.; Donald J. Shurilla, Allentown, Pa.; James A. Staley, New Milford, Ohio; and George L. Stern, New York City.

- The Washington University School of Architecture has announced the award of its \$3000 James Harrison Steedman Fellowship in architecture to Tyrus Bildner, a 1953 graduate of the school. The fellowship is awarded for travel abroad.

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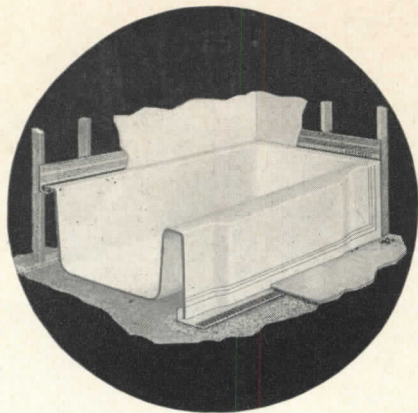


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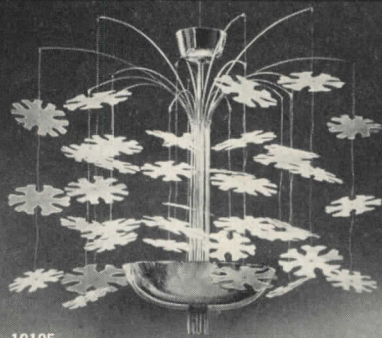
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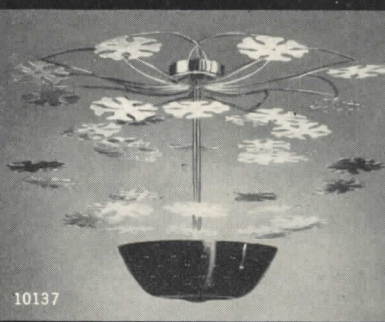
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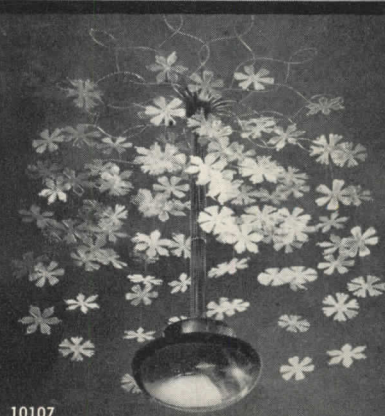
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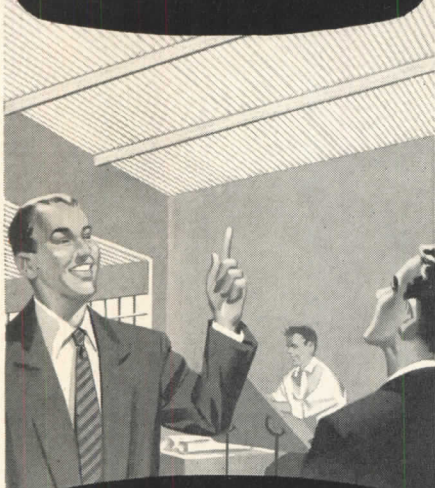
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REQUIRED READING

(Continued from page 48)

the misunderstandings existing in the United States about the meaning and possible political implications of free art expression. Strangely, a misguided public opinion tends to believe in a dangerous philosophy of "national normalcy" and has come to consider modern art as "communist, subversive, abnormal," an effective vanguard of totalitarianism. It is hardly necessary to point out that these critics refer to the same kind of art which was suppressed by the Nazis as "degenerate, Bolshevik, Jewish" and is being suppressed now by the Soviets as "capitalistic, bourgeois, formalistic." Which is the course to take in the face of this insolvable paradox? Mr. Lehmann-Haupt leaves us in no doubt. His conclusion is that "modern art is a powerful symbol of anti-totalitarian belief." It is the mission of his book to make us understand the incalculable importance of free artistic expression to the preservation and the future growth of individual freedom.

THE OLD ARGUMENT

Form and Reform. By Bertram Hume. Haley Press (London, England) 1954. 5½ in. by 8½ in., 190 pp.

The author discusses the philosophy of Ruskin, Philip Webb, Ebenezer Howard, Patrick Geddes and Le Corbusier; communism versus aristocracy in art; romanticism versus classicism; and the effect of machine age on architecture.

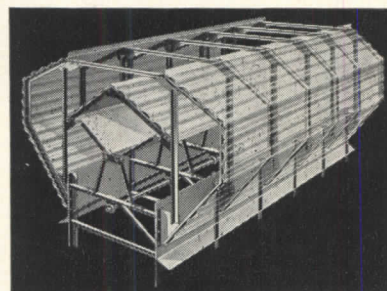
The strength of his conclusions lies in his belief that classic design (the opposite of romanticism) is the most efficient form of design because it produces unity and strength. He believes that since "architecture is an expression of society it is the business of society to find the ideal relation between order and the individual. Individuality is the dynamic (architecturally speaking) vertical thrust which separates one personality from another, and which combats the horizontal and uniting force of order. Although antagonistic, these forces are complementary. Neither can exist without the other. Order alone is sterile; individuality alone is suicidal. The ideal relation is a balance. Civilization is an equilibrium, perhaps even an armed neutrality."

He also concludes that "To judge works of architecture fairly, the observer must therefore know the condition of

(Continued on page 374)



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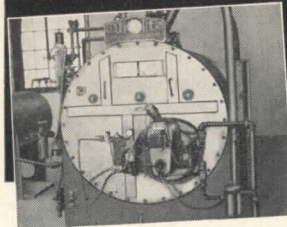
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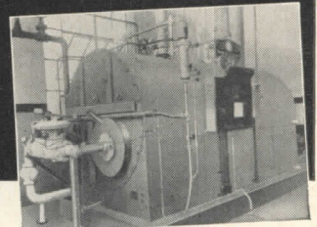
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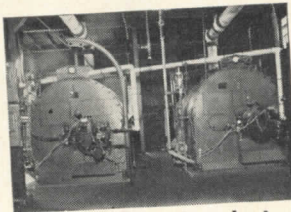
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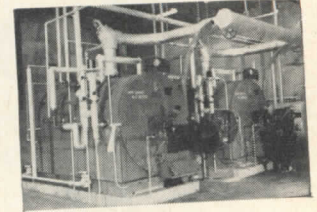
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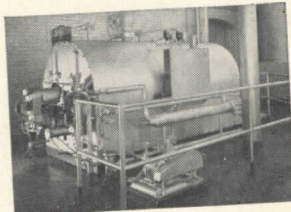
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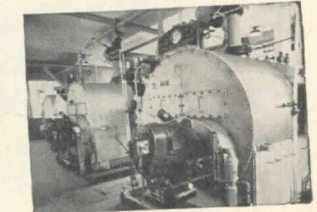
in a food processing plant



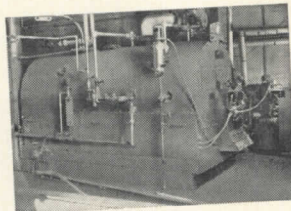
in a hospital



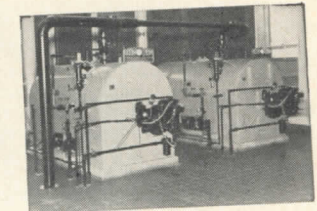
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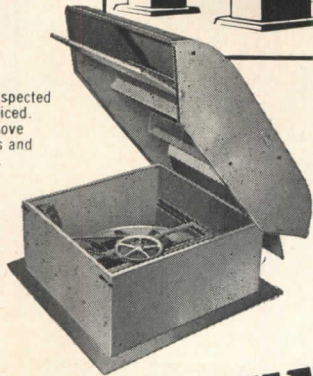
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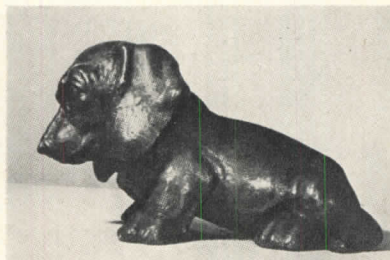
(Continued from page 370)

society at the time they were designed, so that we may know under what practical or theoretical compulsions their designer worked. . . ."

And the author brings us back to the squirrel-cage question: Civilization — and the problem not of whether it should be free or organized but whether it should be more free or more organized. It is Mr. Hume's theory as it was Ruskin's that the greatest periods are those in which the individual has felt himself most free but in which at the same time the individual was yet prepared to recognize the validity of the principles of right. Such periods declined when the romantic influence ceased to admit the authority of these principles or conversely when they were strangled by them.

This is a thoughtful book, well organized and calculated to provoke further argument on the seemingly endless debate between the romanticist and the classicist. — M. B.

SWISS SCULPTOR



Arnold Huggler-Skulpturen. By Gubert Griot. Schweitzer Spiegel Verlag (Zurich, Switzerland) 1954. 9 in. by 11 3/4 in. 47 pp. illus. \$5.00 approx

Arnold Huggler (1894-) is a popular Swiss sculptor probably best known for his animal sculptures, although this progressive study of the artist's works from 1920-1953 shows his competence as a sculptor of the human body, portraits and monumental works as well.

One imagines Huggler as living near or on a farm. His sculptures of young domestic animals are warm, subtly distorted works that truly portray the innocence and helplessness of newly born life. These qualities would make a Huggler show enjoyable to all. Aside from 31 plates, this book contains comments by the artist on the art of sculpture, a short biographical sketch by Gubert Griot and a complete chronological listing of the artist's works. — B. Purcell

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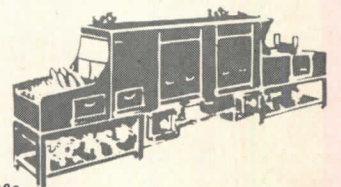
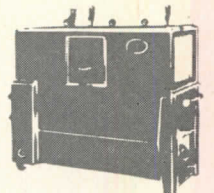
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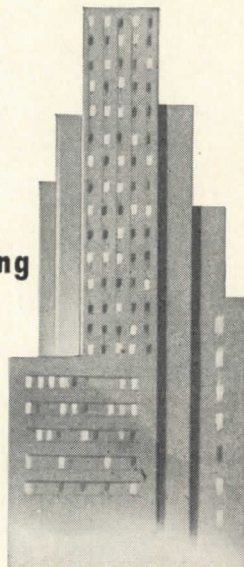
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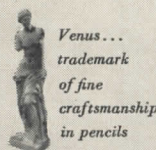
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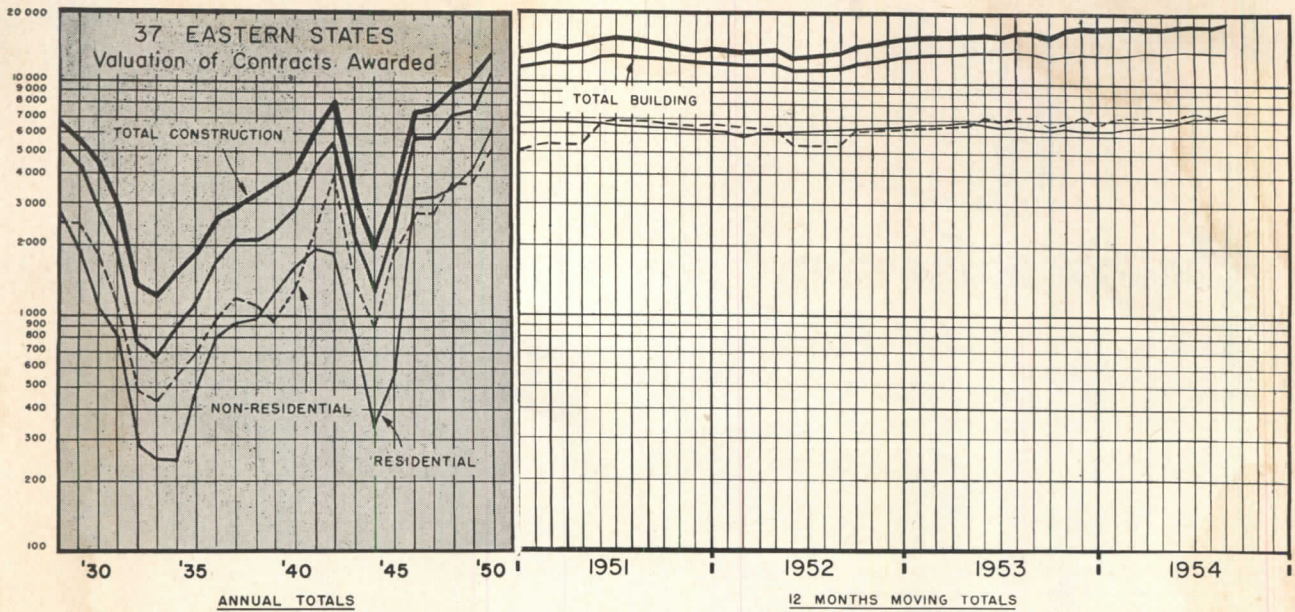
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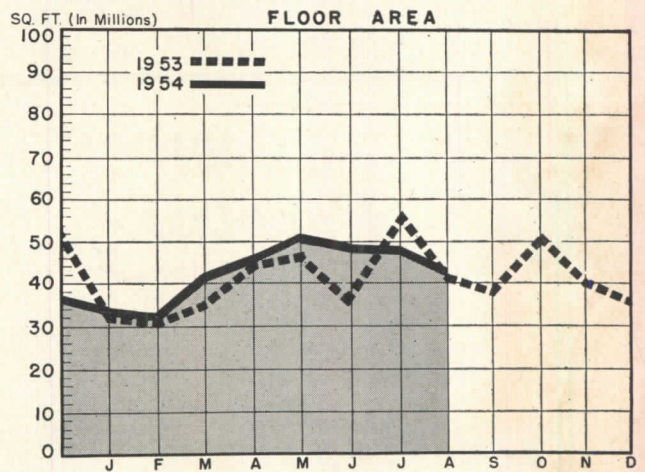


MORE RECORDS: ALL CATEGORIES HIGH

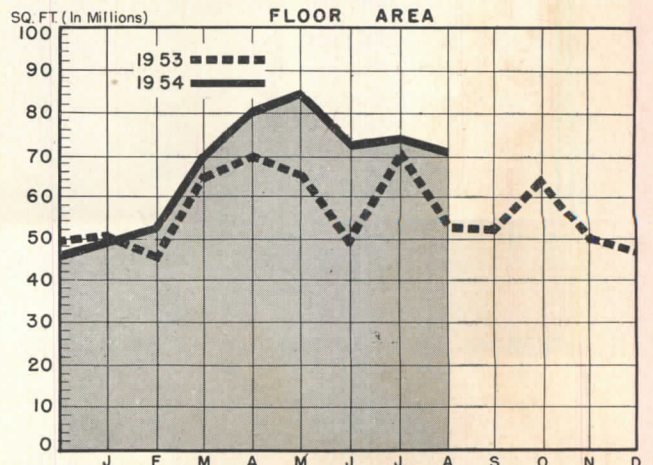
CONSTRUCTION IS CONTINUING ITS STEADY PROGRESS TOWARD a new all-time-high annual volume, according to the latest figures on dollar volume of contracts awarded in the 37 eastern states as reported by F. W. Dodge Corporation. The eight-months total of \$12,660,949,000, 14 per cent over the first eight months of 1953, established new first-eight-months records for all three basic construction categories. In the non-residential category, at \$4,600,072,000 up eight per cent from the like period last year, the hospital * and institutional classification showed the strongest percentage gain — 27 per cent — followed by religious buildings, 25 per cent; educational and science buildings, 24 per cent; commercial buildings, 20 per cent; social and recreational buildings, 13 per cent; and public buildings, 6 per cent. Manufacturing buildings showed a decline (26 per cent), as did the "miscellaneous nonresidential" classification. The residential category, at \$5,418,867,000 up 23 per cent from the 1953 period, had increases in one-family dwellings for owner occupancy, one-family dwellings for sale or rent, dormitories and hotels; declines in apartment buildings and two-family dwellings.

Charts by Dodge Statistical Research Service

RESIDENTIAL BUILDING (37 EASTERN STATES)



NONRESIDENTIAL BUILDING (37 EASTERN STATES)



HOSPITAL BUILDING*—SELECTED YEARS

F. W. Dodge Corporation Contracts Awarded (37 Eastern States)
Floor Area (thousands of sq ft)

Year	Annual Total	Monthly Average	Year	Annual Total	Monthly Average
1929	19,494	1625	1950	41,352	3446
1935	5,200	433	1951	35,812	2984
1943	19,932	1661	1952	23,200	1933
1947	18,204	1517	1953	20,923	1744

Monthly Totals

1953				1954	
Jan.	1674	July	1485	Jan.	2263
Feb.	1254	Aug.	2634	Feb.	2246
Mar.	1873	Sept.	1496	Mar.	1199
Apr.	1189	Oct.	3006	Apr.	1494
May	1450	Nov.	1946	May	2987
June	943	Dec.	1973	June	2348
				8-mos. total—	16,207

*Hospitals are the subject of Building Types Study No. 215, pages 181-212