

ARCHITECTURAL RECORD



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THE RECORD REPORTS

NPA ADVISES ARCHITECTS ON DESIGN FOR CONSERVATION

Seven Standards, Many Practices Recommended—Urgency Underscored by Sharp Cuts in Fourth Quarter Steel Allocations — Most 1952 Building with Available Materials Is Goal — More NPA Advice to Come

ARCHITECTS AND ENGINEERS got advice as well as bad news from the National Production Authority last month. Hard on the heels of the bitter facts about fourth quarter steel allocations (see page 17) came NPA's September 6 "Memorandum on Conservation of Controlled Materials in Construction."

Seven design standards (see box) were identified as "good practice, considered acceptable to most engineers, architects, building officials and municipalities" and recommended as conservation measures. In addition, the Memorandum recommended a long list of practices to save critical materials in building.

The standards and the suggested practices were not news for architects and engineers; but NPA said its review of requests for materials allocations and permission to commence construction had not revealed adoption of "these basic conservation methods" to any substantial degree.

The news was in the source of the recommendations and in their foreseeable effect. As the construction industry prepared to endure a more rigid phase of regulation under the Controlled Materials Plan beginning October 1, the relationship of NPA's advice on conservation to its future screening of project applications was not hard to predict. NPA stressed that recommendations are "suggestive rather than compulsory" but "urged" that they be followed and noted that it had under consideration an amendment to CMP Regulation 6 which would incorporate the principles contained in the Memorandum.

"Other national standards or accepted engineering practices" which may be recognized by NPA are being studied, according to the Memorandum. The entire program has been devised by the Subcommittee on Building Construction of the Conservation Coordinating Committee of NPA's parent organization, the Defense Production Administration, and has the backing of Defense Mobilizer Charles Wilson and the 17 government agencies represented on the Coordinating Committee.

Among the "practices" listed in the Memorandum are the following:

1. Structural and reinforcing steel may be conserved in many one-, two- or even three-story buildings by using wall-bearing masonry construction in lieu of structural steel frame or reinforced concrete frame.

2. For many types of structures, savings of approximately 50 per cent in steel content may be made when reinforced concrete replaces structural steel; and even greater savings are possible when timber is used instead of structural steel or reinforced concrete.

3. Many steel conservation measures are available in reinforced concrete construction, including flat slab construction instead of beam and girder, pan or masonry filler types; also the use of

square or rectangular columns with ties instead of smaller columns with spirals.

4. Fireproofing requirements are important for certain kinds of occupancy and for certain building locations, but in many instances fireproofing of adequate resistance may be obtained by specific use of non-critical materials.

5. For many uses lightweight concrete and plaster aggregates may be successfully used to replace heavier aggregates, and thus lower quantities of structural or reinforcing steel needed for load-carrying members and foundations.

6. Alloy steels should not be specified in building construction where suitable substitutes are available. Enameled, plated and even stainless clad carbon steels are conserving of alloys when used in lieu of stainless steel.

STANDARDS IDENTIFIED BY NPA AS GOOD PRACTICE

For structural steel: "Specification for the Design, Fabrication and Erection of Structural Steel for Buildings" (revised June 1949) — American Institute of Steel Construction, 101 Park Avenue, New York City.

For reinforced concrete: "Building Code Requirements for Reinforced Concrete" (A.C.I. 318-51) — American Concrete Institute, 18263 West McNichols Road, Detroit 19, Mich. (50 cents)

For lumber: "National Design Specification for Stress-Grade Lumber and Its Fastenings" (revised 1950) — National Lumber Manufacturers Association, Washington, D. C. (25 cents)

For plumbing: Proposed "National Plumbing Code" (June 1951), issued jointly by the National Pro-

duction Authority and the Housing and Home Finance Agency — Superintendent of Documents, U. S. Government Printing Office, Washington 25, D. C. (50 cents)

For electrical work: "National Electrical Code" (1947 edition) — National Board of Fire Underwriters, 85 John St. N.Y.C.

For light gage steel: "Light Gage Steel Design Manual" (January 1949) — American Iron and Steel Institute, 350 Fifth Avenue, New York City. (One dollar)

For floor or roof systems designed with open web steel joints: "Standard Specifications for Open Web Steel Joist Construction" (as revised and adopted Oct. 20, 1949) — Steel Joist Institute, 1346 Connecticut Avenue, N.W., Washington 6, D. C.



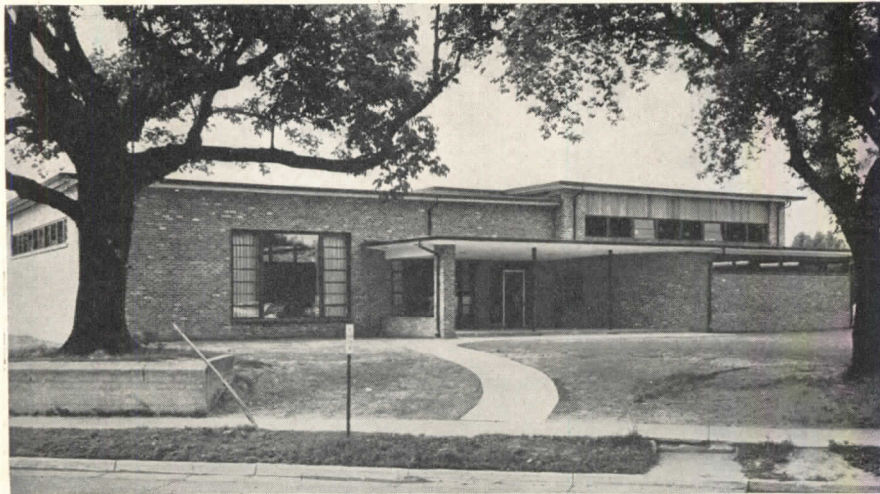
SECOND FLOOR GIVEN TO GARAGE AND STORAGE IN 17-STORY LAKE SHORE DRIVE APARTMENT

THE 17-STORY APARTMENT building at 3410 Lake Shore Drive in Chicago will use the entire second floor for garage and storage space, and, at ground level, will have walls set back from the main building walls to create an open arcade in front of them. Living quarters will start on the third floor.

The building, 220 by 130 ft, will have 117 apartments, ranging in size

from two to five rooms, all of them, including kitchens, daylighted. The plan orients as many apartments as possible to face Lake Michigan. Construction is reinforced concrete with wood piling.

Louis R. Solomon and Associates designed the building, with Josef Guinayer as associate architect. Financing was arranged under an FHA commitment to insure a \$1,887,700 loan for the project.



AMERICAN LIBRARY ASSOCIATION SELECTS \$70,000 PUBLIC LIBRARY FOR EXHIBITION

A SMALL public library in Rossford, Ohio, was among buildings the American Library Association chose for exhibit at its recent conference in Chicago. Karl B. Hoke of Toledo was the architect.

The building, which has exterior walls of brick with redwood trim, has facilities for 12,000 volumes in the present collection and an ultimate capacity of

20,000. It contains 6157 sq ft of floor space.

Libbey-Owens-Ford Glass Company contributed \$50,000 of the \$70,000 cost of construction of the building, in commemoration of the 50th anniversary of the former Edward Ford Plate Glass Company, which in 1930 joined with the Libbey-Owens Company to form Libbey-Owens-Ford.

ARCHITECT'S WIDOW WILLS \$270,000 FOR FELLOWSHIPS *Columbia Gets Legacy to Give Traveling Fellowships to Architecture Students*

TRAVELING FELLOWSHIPS for students of architecture would be set up by Columbia University under a bequest from Mrs. Elizabeth Steele Fellows, widow of William Kinne Fellows, Chicago architect.

Mrs. Fellows' will, filed September 4 in probate court in Chicago, left \$270,000 of her \$500,000 estate to Columbia with that stipulation. The fund would be one of the largest in the School of Architecture.

Mr. Fellows, an 1894 graduate of Columbia, died in 1948.

DR. RATCLIFF RESIGNS AS HHFA RESEARCH DIRECTOR *Returns to Wisconsin, Ending Lengthy Leave; Orendorff Is Acting Director*

DR. RICHARD U. RATCLIFF has left his post as director of housing research for the Housing and Home Finance Agency and HHFA Commissioner Raymond Foley has named Joseph H. Orendorff acting director.

Doctor Ratcliff resigned effective August 31 to return to his position as professor of land economics at the University of Wisconsin. He left the university on a year's leave of absence at the end of 1949 to set up the new HHFA housing research program authorized by the Housing Act of 1949. His leave was extended for another six months at HHFA's request. Mr. Orendorff had been serving as assistant director of the HHFA Division of Housing Research and as chief of housing technology. He has been engaged in architectural and planning aspects of housing with the federal government since 1939. Since 1946, he has had key positions in connection with technical and general housing research undertaken by HHFA.

At Wisconsin, Doctor Ratcliff is in charge of teaching and research in the fields of housing, real estate, land economics and home building. He is author of the book *Urban Land Economics*.

Doctor Ratcliff was with the federal government in Washington from 1934 to 1937, Federal Housing Administration, and 1941 to 1944, National Housing Agency.

Why does "rain" often form inside roof spaces of a crowded store or school? (pages 19, 32)
Why does moisture gather on a water-and-vapor-proofed concrete floor? (page 32)
Why is it wrong to vent cold roof spaces to a warm inside space? (page 33)
Does a concrete floor slab lose heat only at the edges? (page 40)
In what direction does heat flow by Conduction? Convection? Radiation? (pages 11, 15)
Do "dead air spaces" exist with respect to heat flow? (page 16)
Why do metals radiate and absorb less heat than wood, plaster, rockwool? (pages 13, 46)
Why replace low-conductive air with denser materials of greater conductivity, i.e. ordinary insulation. (pages 11, 13, 14, 29)

**The answers to these and numerous other problems
of heat and vapor flow are found in the pages of
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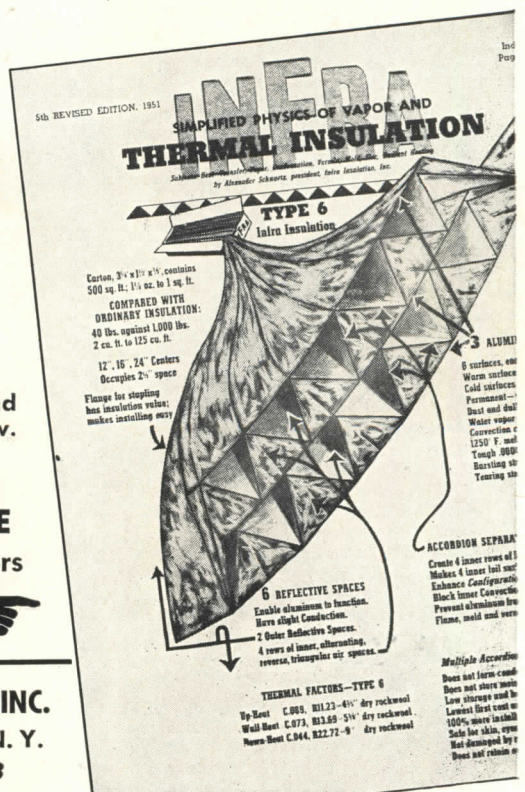
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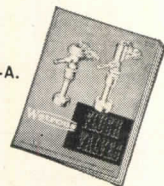
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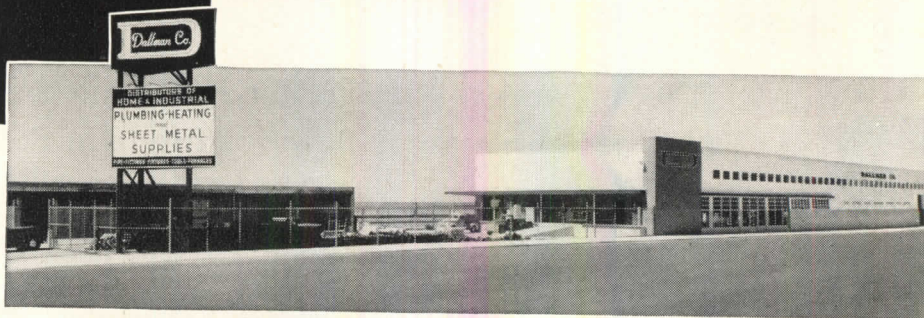
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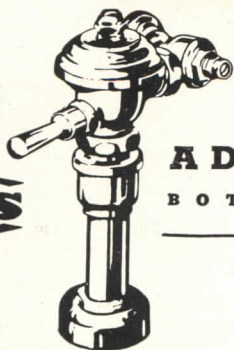
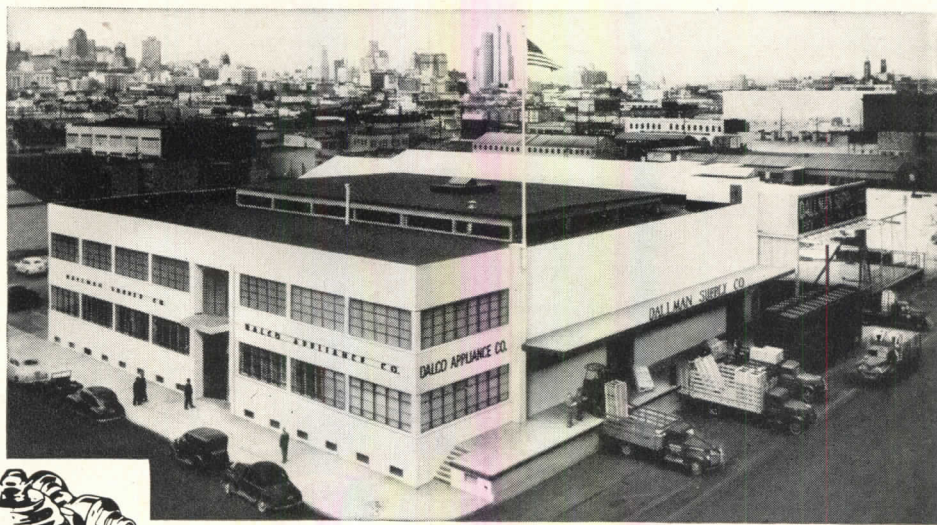
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THE RECORD REPORTS

NEWS FROM WASHINGTON *by Ernest Mickel*

Critical Steel Shortage Slashes Fourth Quarter Allotments; Credit Curbs Eased on Housing Under \$12,000; Mortgage Money Still Tight; B.R.A.B. Sets Program for Atomic Design Meeting

FOURTH QUARTER ALLOTMENTS of structural steel by the Defense Production Administration showed that DPA officials had meant what they said about the severity of the pinch on non-defense building in the last three months of the year. Even the steel expansion program got just 51 per cent of its needs; other industrial expansion, also a favored category, got 26 per cent; and general commercial construction a mere 11 per cent. Only direct military requirements and aluminum expansion were allotted 100 per cent of their screened demands. This was the climate in which construction faced the stricter phase of regulation under M-4A and CMP Regulation 6 beginning October 1.

Client Reaction Is Concern

Most architects were worrying more over the effect tighter controls would have on clients' plans to build than over the dent they would make in building activity, the American Institute of Architects reported. In this area, there was some comfort to be drawn from the statement in a New York City address by Henry M. Heymann, a counsel in the National Production Authority's Construction Controls Division, that M-4A might be eased before mid-1952. Mr. Heymann's assertion that controls were tightened as a temporary measure to meet peak needs at critical defense construction sites was a reprise on a familiar NPA theme; but his estimate that nine months from September 1 might bring the end of the most stringent regulations over building was more specific as to duration than any prior official statement had been.

DPA-NPA Administrator Manly Fleischmann himself emphasized that applicants refused allocations in the fourth quarter 1951 should not feel that consideration of their projects had been dropped permanently. He stressed that non-approval meant deferment, not denial, and urged such applicants to reapply for the required steel for their jobs for the first quarter 1952. These requests and all applications for advance

allotments of controlled materials for construction scheduled in the first quarter of 1952 and succeeding quarters were due to be filed by September 20.

Designing to Save Metals

Architects and engineers were presented with a DPA guide to conservation of metals in design, with the announcement last month of DPA adoption of a program devised by its Conservation Coordinating Committee. The program was embodied in a set of standard design practices recommended by the NPA's Facilities and Construction Bureau (see page 11).

Housing Credit Curbs Relaxed

House builders, who had been cheered by the provision for self-authorization under the Controlled Materials Plan of limited amounts of steel, copper and aluminum, had another reason for rejoicing in the terms of the Defense Housing and Community Facilities and

Services Act of 1951 as it finally became law.

The "defense housing" act provides for relaxation of residential credit controls throughout the nation for both veterans and non-veterans on a sliding scale up to a maximum of \$12,000 and for extension of the amortization period to 25 years. In areas designated as critical defense housing areas, residential credit controls are to be *suspended* on programmed housing costing \$12,000 or less or renting at \$85 or less per unit per month. Controls are to be *relaxed* "in such manner and to such extent as the President determines to be necessary" on all other housing in such areas.

Revision of Regulation X and related restrictions on housing credit affecting one- to four-family housing to bring the regulations into conformity with the new law was announced early last month by the Federal Reserve and the Housing and Home Finance Agency.

The schedule follows the requirements of the law up to \$12,000 and then returns, "as rapidly as practical," to the schedule of down payments required under the credit controls instituted last October. Except for fractional changes made in the interest of simplifying calculations, the level of the previous regulations is reached at \$15,000 and from that point on the mortgage limits are substantially the same as before.

The new schedule of minimum down payments and maximum mortgage

(Continued on page 18)



—Drawn for the RECORD by Alan Dunn

"Dinner is served, Madam—"

THE RECORD REPORTS

WASHINGTON (Continued from page 17)

amounts as released by the two agencies follows:

For Veterans

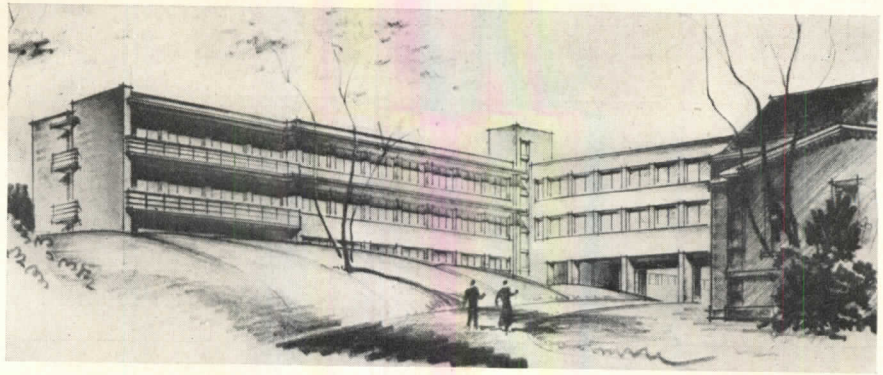
	Minimum Payments		Maximum Mortgages	
	% of Value	Dollar Amount	% of Value	Dollar Amount
\$ 5,000	4.0	\$ 200	96.0	\$ 4,800
6,000	4.0	240	96.0	5,760
7,000	4.0	280	96.0	6,720
8,000	6.0	480	94.0	7,520
9,000	6.0	540	94.0	8,460
10,000	6.0	600	94.0	9,400
11,000	8.0	880	92.0	10,120
12,000	8.0	960	92.0	11,040
13,000	13.8	1,790	86.2	11,210
14,000	18.7	2,620	81.3	11,380
15,000	23.0	3,450	77.0	11,550
16,000	26.2	4,200	73.8	11,800
17,000	29.1	4,950	70.9	12,050
18,000	31.7	5,700	68.3	12,300
19,000	33.9	6,450	66.1	12,550
20,000	36.0	7,200	64.0	12,800
21,000	38.3	8,050	61.7	12,950
22,000	40.5	8,900	59.5	13,100
23,000	42.4	9,750	57.6	13,250
24,000	44.2	10,600	55.8	13,400
24,500	45.0	11,025	55.0	13,475
25,000	45.0	11,250	55.0	13,750

For Non-Veterans

	Minimum Payments		Maximum Mortgages	
	% of Value	Dollar Amount	% of Value	Dollar Amount
\$ 5,000	10.0	\$ 500	90.0	\$ 4,500
6,000	10.0	600	90.0	5,400
7,000	10.0	700	90.0	6,300
8,000	15.0	1,200	85.0	6,800
9,000	15.0	1,350	85.0	7,650
10,000	15.0	1,500	85.0	8,500
11,000	20.0	2,200	80.0	8,800
12,000	20.0	2,400	80.0	9,600
13,000	23.1	3,000	76.9	10,000
14,000	25.7	3,600	74.3	10,400
15,000	28.0	4,200	72.0	10,800
16,000	31.2	5,000	68.8	11,000
17,000	34.1	5,800	65.9	11,200
18,000	36.7	6,600	63.3	11,400
19,000	38.9	7,400	61.1	11,600
20,000	41.0	8,200	59.0	11,800
21,000	43.3	9,100	56.7	11,900
22,000	45.5	10,000	54.5	12,000
23,000	47.4	10,900	52.6	12,100
24,000	49.2	11,800	50.8	12,200
24,500	50.0	12,250	50.0	12,250
25,000	50.0	12,500	50.0	12,500

Note: Dollar amounts may vary slightly from amounts derived by use of percentages due to rounding.

(Continued on page 22)



Photograph of rendering shows proposed addition for Allan Memorial Institute in Montreal, the psychiatric institute connected with Royal Victoria Hospital, now pushing an expansion program. Architects are Barott, Marshall, Montgomery and Merrett

NEWS FROM CANADA by John Caulfield Smith

Building Up 104 Per Cent For Seven Months of 1951

CONSTRUCTION CONTRACT AWARDS of \$326.8 million in July pushed the cumulative total for the first seven months of 1951 to \$1505.1 million, though the total was 15 per cent less than June's record of \$382.8 million.

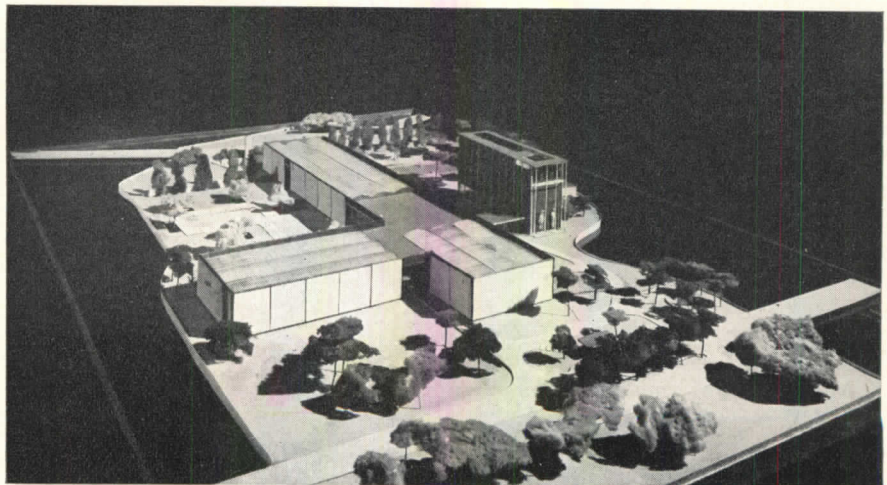
MacLean Building Reports Ltd. comments that the July figures have their roots in a peculiar regional pattern:

"The gain for the month was carried entirely by tremendous increases in the West and the Maritimes, with appreciable overall losses registered in the Central Provinces. In Quebec, a small gain

in engineering was the only favorable total to set against losses in the other categories. For the first time this year, engineering in Ontario was behind the same month last year, and this debit was increased by a large drop in residential work."

Main factor in the Maritimes was the announcement of a steel plant expansion which swelled the industrial category to an unusual size, supplemented by small gains in residential and commercial construction. British Columbia accounted for the major part of the increase in the West, though the latter

(Continued on page 294)

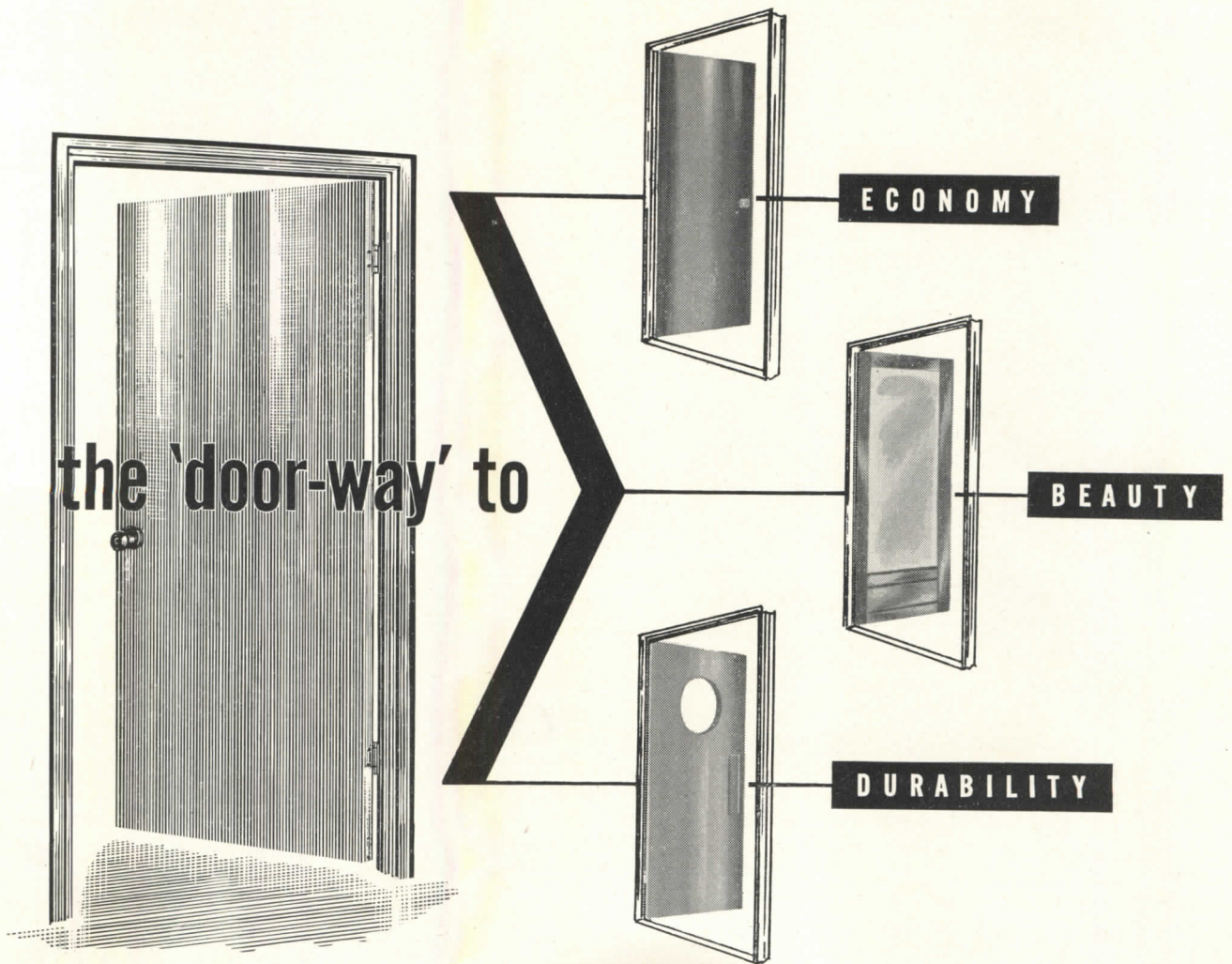


Panda photography

"A new national gallery for Ottawa" was the problem in the recent student competition for the Pilkington Glass Scholarship. Photograph above shows a model of the winning entry, by Hart P. V. Massey of the University of Toronto School of Architecture. The \$1500 prize is given for a year's study in England and on the Continent

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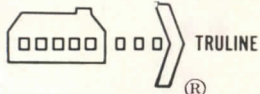
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The law increases the mortgage insuring authority of the Federal Housing Administration by \$1,500,000,000. It contains a \$10 million fund for purchase of housing sites and \$15 million for loans to stimulate production and distribution of prefabricated houses. A \$60 million fund is created for loans and grants for the construction and operation of community facilities, including water works

and hospitals which could not be locally financed.

The act is generally an encouragement to private construction of needed housing; but if private industry fails to meet the need, the law permits the government to build up to \$50 million worth of public housing.

A provision authorizing the Federal National Mortgage Association to make

advance commitments to purchase mortgages up to \$200 million was considered one of the most significant features of the act, as it was expected to bring to life much planned construction that had been stopped dead in its tracks for lack of financing.

Wanted: Mortgage Money

The mortgage market was still tight. In another government move toward relief, the Reconstruction Finance Corporation announced that it would, for the first time, consider applications for military and defense housing and housing in critical areas. Until now RFC has not considered loans for "acquiring, constructing or improving real property which is to be held for investment," regarding such loans as inflationary.

Spokesmen for the government's big lending agency tended to play down the announcement, but some Washington quarters considered it the most important announcement in housing construction for a long time. And there was unbridled enthusiasm in Congress. Senator Burnet R. Maybank, South Carolina Democrat who is chairman of the important Senate Banking Committee, said the new RFC plan had his approval; that it was, in fact, worked out in consultation with him and some other members of the banking group. He issued this statement after the RFC loan policy change was made known:

"The Housing Act passed by Congress last week enables the Federal National Mortgage Association to issue \$200 million in advance commitments to purchase FHA-insured and VA-guaranteed mortgages on military, defense and disaster housing. Builders should be able to obtain an equal amount of construction financing from private lenders against these FNMA commitments. However, the need exists for another \$200 million or more in loans to finance housing which is vital to defense.

"It is hoped that these additional loans may be made by private lenders against the advance commitments of private investors, such as banks and insurance companies, to purchase the long-term FHA and VA mortgages when the construction is completed. However, to the extent that such private construction financing may not be obtained, due to the unavailability of advance mortgage purchase commitments, the gap is now closed by the action of the RFC.

"It is to be understood that this new RFC program will not result in the

(Continued on page 26)

Efficient Food Delivery for Modern Hospitals



Above: Assembly line tray preparation at the new Michael Reese Psychosomatic and Psychiatric Research Center.

Trays with menus move automatically from server to server. When checked by dietician trays automatically transfer to an OLSON Subveyor which carries them up or down to the proper floor. Another OLSON System takes soiled dishes from all floors to central washing area.

A similar OLSON Subveyor installation serves the Michael Reese Hospital.

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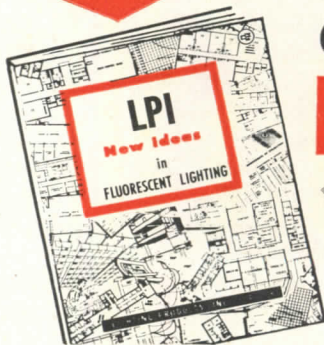
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freezing of government funds in long-term mortgages for their full terms of 30 to 40 years. The RFC loan funds will be made only upon the security of the long-term mortgages, and the mortgages will be sold to private investors as soon as the market price returns to par. The sales proceeds will liquidate the RFC investment."

It was said on Capitol Hill that \$400

million worth of FHA-insured military and defense housing construction was at a standstill because the prospective builders could not borrow construction money. The Federal Housing Administration acknowledged that it had issued commitments on \$1 billion worth of all types of housing, but said it did not know how much of this was being held up for lack of mortgage money. All of it,

however, was being deferred, FHA said.

The National Association of Home Builders, holding an emergency committee meeting on the day the RFC announcement came, said it was a step in the right direction in the defense and military areas. The builders agreed that the loans would, in a sense, take the place of the Federal National Mortgage Association activities in the field of government mortgage operations.

FNMA, or Fannie Mae as it is called by the trade, was established by Congress to relieve the pressures on lenders by buying up portions of their portfolios as a secondary market outlet. It was in the RFC until transferred to the housing agency just over a year ago.

RFC as of September 1 had the authority to make loans up to \$993 million in the aggregate. Of that total, the agency had loaned out \$630 million, leaving \$363 million for other types of loans. The housing loans would come as a part of this latter figure.

Modular Savings Urged

New proof that architects are deeply concerned with moves to save critical materials came with the announcement that A.I.A. and two other construction industry groups — the Producers' Council and the N.A.H.B. — had urged federal government agencies with important construction programs to give greater consideration to the use of modular coordination.

The moving force behind this suggestion was William Demarest Jr., the Institute's secretary for modular coordination. Letters signed by Glenn Stanton, A.I.A. president, A. Naughton Lane, Producers' Council president, and W. P. Atkinson, N.A.H.B. president, were sent out to the Army Corps of Engineers, Navy's Bureau of Yards and Docks, the Department of the Air Force, Bureau of Standards, Housing and Home Finance Agency, Munitions Board, Public Buildings Service, Veterans Administration, and Public Housing Administration.

A copy of the letter also was sent to the Conservation Division of the Defense Production Administration. The Division recently set up a subcommittee, headed by James W. Follin, to study means of saving building materials in federal construction work. In fact, Mr. Follin has a subcommittee of his own group devoted to a special study of the modular coordination aspect. This is headed by Joseph Orendorff, now acting director of research for the Housing and Home Finance Agency.

(Continued on page 30)

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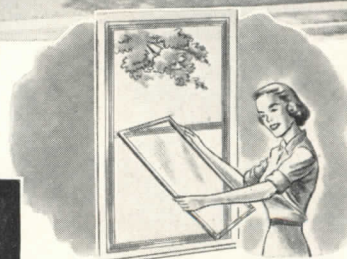
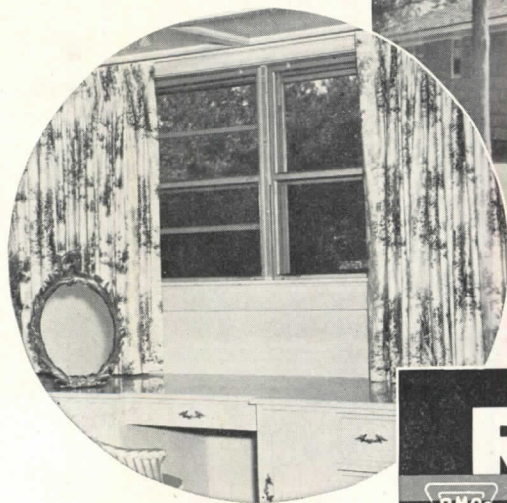
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QUESTION: Are specifications for wood finishing available?

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THE RECORD REPORTS

WASHINGTON
(Continued from page 26)

Materials Use Studied

The exact quantities of materials used at major defense construction sites in the provision of housing have been studied by personnel of the N.A.H.B. staff in on-the-spot visits. Leonard Haeger, materials expeditor for the Association, was scheduled to visit Atomic Energy Commission's Savannah River project; Carl Lans, technical adviser, went to San Diego, Calif., a "critical" housing area, and other N.A.H.B. staff members were planning trips to defense areas to study not only the materials picture, but all phases of housing construction in these places where shelter is needed so badly. They were planning full reports in the Washington office when they returned.

Steel Shortage Hits Schools

Officials of the U. S. Office of Education, through which applications for authorizations and materials allocations school building now must clear, said the nation's construction program in primary and secondary type buildings was nearing virtually a standstill. Why? Because, they said, their quarterly steel allotments from the Defense Production Administration did not permit them to sanction anything like the essential volume of school building.

The steel allocation to the Office for the fourth quarter of the year—the initial allocation announced by DPA and the one under which applications to build have been processed—gave the claimant agency only enough steel to permit 50 per cent of "actual requirements" to go forward. It was estimated that 196,000 tons of steel would have been required to permit essential minimum amounts of school construction to go ahead; and an estimated 192,000 tons will be needed for first quarter 1952 demands, it was said.

But even if the Office of Education should get its full request for first quarter steel, and put the program back on the "required" basis, there still would be the large quantity of construction denied in fourth quarter processing this year that would add to the country's backlog.

Dr. N. E. Viles of the Office of Education said there were 492 school projects under construction for which steel was

not immediately available. In addition, more than 1300 requests were in the office in Washington for allocations of steel this fall. These cover schools that authorities would like to see started in the last quarter of the year.

A priority system has been developed on the basis of need for handling the applications. First come those schools already underway that need steel and copper for completion. Then come schools needed to replace those destroyed by fire, flood or other disaster. Of course, school buildings needed in areas that are "federally impacted" — that is, those where an influx of government workers or military personnel or both has placed a heavy burden on existing facilities — also get a priority in the scale.

Doctor Viles expressed the opinion that those communities that are hardest pressed for school facilities to meet increasing pupil loads might turn to temporary and frame construction. One East Coast state actually has indicated its intention to turn to frame construction for its new schools.

While the Office does not encourage temporary construction of school buildings, it realizes the great need and the almost desperate plight of some local school authorities. Of course, those buildings that use less than two tons of carbon steel (including structural) and 200 lb of copper (including copper-base alloy) and no aluminum at all can commence without prior approval of any agency.

Labor Amendments Welcomed

Congress considered amendments to the labor relations law which would remove the construction industry from certain union election requirements for participation in National Labor Relations Board activities. Senator Robert A. Taft, with some of his colleagues, introduced the bills to clear up some of the confusion caused employer-employee relations in building by the Taft-Hartley amendments of 1947.

One bill (S. 1959) would make it unnecessary to hold an election in any industry in order to use the union security clause in a contract. Whether it would permit recognition and bargaining with unions prior to engaging employees on a construction job was not clear.

The other bill (S. 1973) would authorize employers to make an agreement with the unions covering wages, hours, working conditions and union security, but would reduce from the standard 30 to seven days the time within which a

(Continued on page 32)

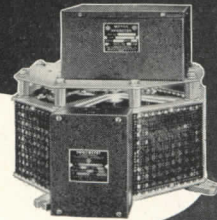
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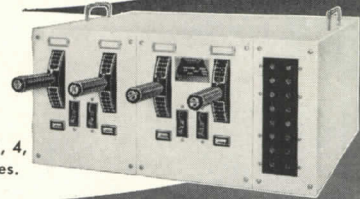
1 NON-INTERLOCKING TYPES

available in manually-operated and motor-driven models in capacities from 1,000 to 30,000 watts.



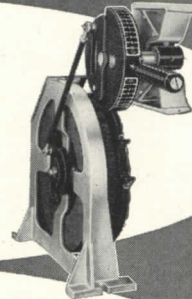
2 PACKAGED UNITS

compact facilities in one cabinet for dimming control. Offered in 6 - 1000 watt and 3, 4, 5, 6 - 2000 watt packages.



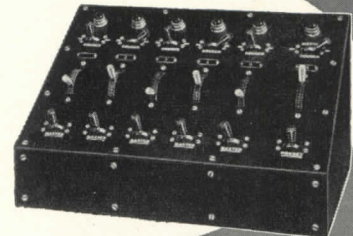
3 INTERLOCKING TYPES

for large switchboard installations. 2000 and 5000 watt assemblies can be mastered and grand mastered.



4 POSITIONER CONTROLS

a remote controller providing miniature selector station operation of non-interlocking motor-driven POWERSTAT dimmers.



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COMPLETE INFORMATION

THE **SUPERIOR ELECTRIC CO.**
BRISTOL, CONNECTICUT



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Please send literature on the following items of POWERSTAT Light Dimming Equipment. 1 2 3 4

NAME _____

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CITY _____ ZONE _____ STATE _____

non-union man may be employed without union membership. Both organized labor groups and the general contractors had supported the main features of both bills in committee hearings.

Richard J. Gray, president of the Building and Construction Trades Department of the American Federation of Labor, told the Humphrey Labor Subcommittee of the Senate that he believed

S. 1973 would "eliminate one of the most obnoxious and unworkable obstacles placed in the path of building tradesmen and contractors in the building and construction industry since the enactment of the Labor-Management Relations Act of 1947." Mr. Gray, who said he spoke for 2,750,000 building and construction tradesmen, was of course referring to election procedures stipulated

in the Taft-Hartley law. He concluded that since the National Labor Relations Board itself has found it impossible to carry out the law's provisions in regard to election procedures, the trade unions are denied the right to enter into even the limited union-security contracts freely available to unions in other industries.

Through James D. Marshall, assistant managing director, the Associated General Contractors of America, Inc., pointed out that the right to recognize certain unions as the exclusive representatives of both their present and future employees for collective bargaining and other purposes is now denied when impossible elections are required, and when decisions of the NLRB prohibit recognition without elections.

The opinion of NLRB members was given by James J. Reynolds, acting chairman at the time he testified before the subcommittee. He said that in event S. 1973 was enacted into law, conduct which would be illegal in all other industries subject to the labor relations act would be legal in the building trades. According to his interpretations the secondary boycott phases of the law would remain unaffected. He asked that the committee clarify the language and define terms more precisely to avoid future confusion and uncertainties should the bill be enacted. He feared complexities from the ambiguity in such terms as "the building and construction industry," "construction, alteration or repair," and "structure and improvements." Mr. Reynolds also said the board would be confronted with the question of deciding when an employer "is engaged" in the building and construction industry.

But the fact remained that the NLRB had tried one extensive election in the heavy construction field in May of 1948 and could hardly count it successful. This election was conducted in 33 counties in Western Pennsylvania. Mr. Gray explained that it covered only five of the 19 crafts whose members were employed in the heavy construction industry in that area. It was held on approximately 100 jobs and, according to reports, some 50 agents of NLRB were needed to hold the election on the specified day. Many other Board staff members had been engaged for months previously checking payrolls, investigating the workers and their employment records and in preparing voting lists.

That single instance proved that the task of preparing for and conducting

(Continued on page 276)

Free!

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Blodgett—a leader in the oven field for over 100 years offers this book containing a series of actual Hospital Kitchen layouts. In addition, Blodgett offers another booklet, "Case Histories." Both are designed to aid Architects in planning efficient work space for mass production of food in new hospitals, as well as modernizing kitchens in older hospitals.

Please send me your FREE booklets

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Case Histories

Name

Street Zone.....

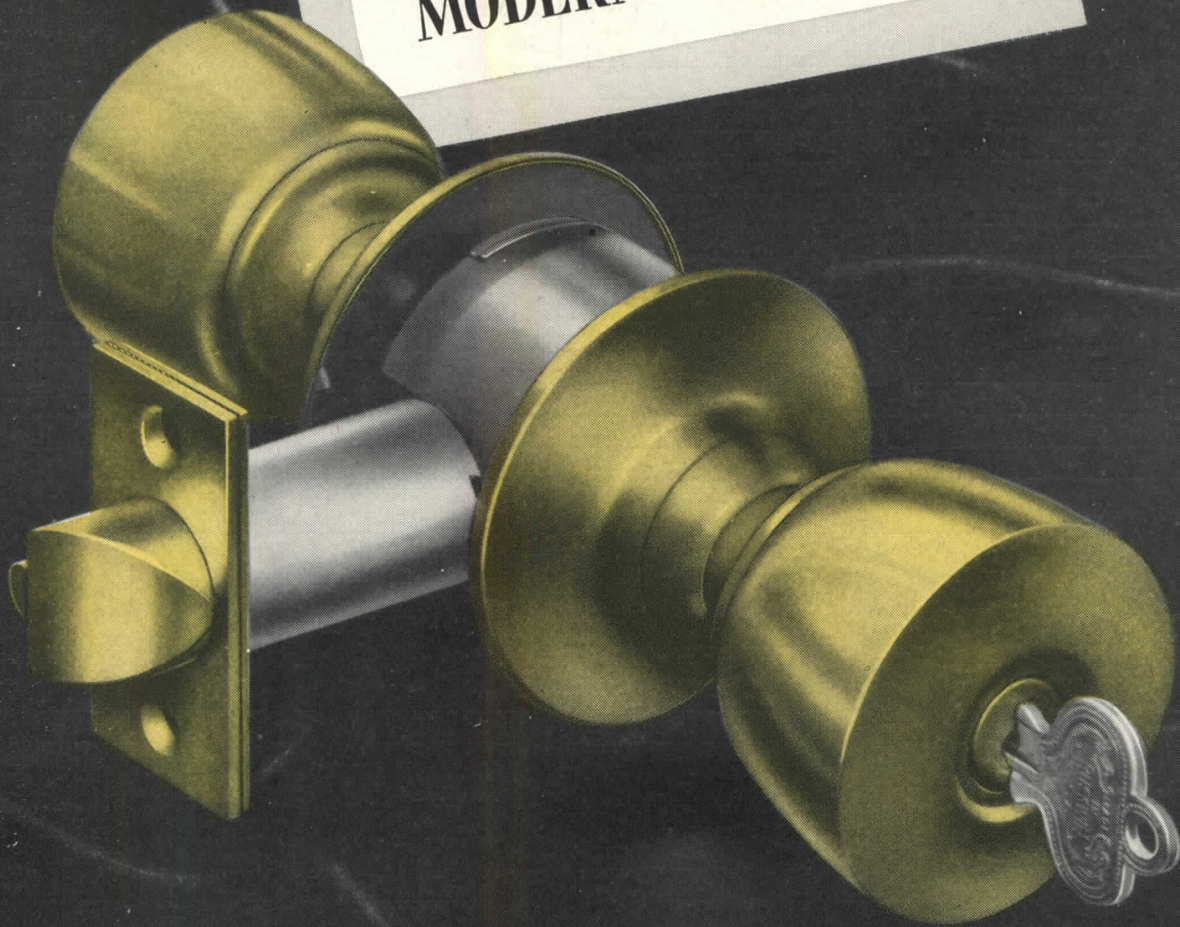
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The G. S. Blodgett Co., Inc.

50 Lakeside Ave., Burlington, Vt.

For the
Grand "Opening"
of
**AMERICA'S MOST
MODERN BUILDINGS**



The **RUSSWIN**[®] *Heavy Duty Cylindrical Lock...*
SINCE 1839
DISTINCTIVE HARDWARE

designed specifically for schools, hospitals, apartment houses, commercial, institutional and industrial buildings . . . two styles . . . wide range of functions . . . featuring full $\frac{5}{8}$ " throw; seamless tubular knob shank; extra large steel knob bearing on brass bushing; extra large bearing area on latch retractor; and a minimum number of parts. This latest member of a famous lock family makes the Russwin line better than ever as a single source of quality builders' hardware. Russell & Erwin Division, The American Hardware Corp., New Britain, Conn.

CONSTRUCTION COST INDEXES

Labor and Materials

United States average 1926-1929 = 100

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

NEW YORK

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	Steel		Brick	Frame		Brick	Steel	
1925	121.5	122.8	111.4	113.3	110.3		86.4	85.0	88.6	92.5	83.4	
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	
May 1951	273.6	271.8	262.9	264.2	262.4		213.0	214.6	203.5	202.4	202.9	
June 1951	272.9	270.9	264.6	266.3	262.9		212.3	213.9	204.4	203.2	204.6	
July 1951	272.3	269.8	264.5	266.3	263.2		211.9	213.4	204.8	203.6	206.6	
July 1951	% increase over 1939		% increase over 1939		% increase over 1939		% increase over 1939		% increase over 1939		% increase over 1939	
July 1951	120.5	120.4	102.4	99.6	102.3		145.5	156.8	115.4	109.0	118.2	

ST. LOUIS

SAN FRANCISCO

1925	118.6	118.4	116.3	118.1	114.4		91.0	86.5	99.5	102.1	98.0	
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	
May 1951	252.9	249.1	240.1	241.7	240.2		245.0	240.4	239.9	244.1	244.2	
June 1951	252.1	248.0	240.4	242.4	240.2		245.7	241.5	240.5	244.2	244.5	
July 1951	251.6	247.3	240.3	243.2	240.7		245.7	240.2	240.3	244.1	244.2	
July 1951	% increase over 1939		% increase over 1939		% increase over 1939		% increase over 1939		% increase over 1939		% increase over 1939	
July 1951	128.3	131.1	102.4	103.0	102.3		132.7	141.9	104.7	100.2	109.6	

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.

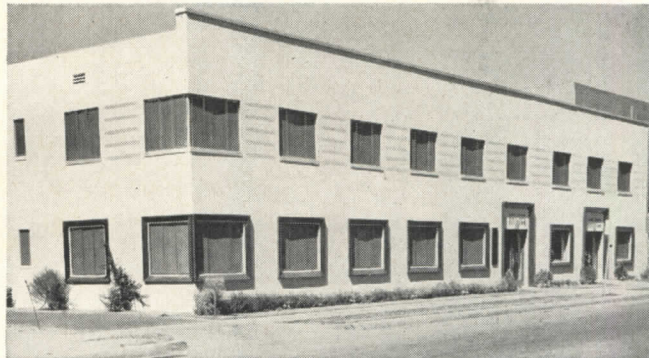
$$\frac{110-95}{110} = 0.136$$

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.

KAISER ALUMINUM SHADE SCREENING on windows of this medical office building in Phoenix keeps interiors cooler during hot weather. Tiny louvers stop the sun's rays, screen out insects, but freely admit comfortable light and air. Kaiser Aluminum Shade Screening makes up for lack of roof overhang in helping to screen the sun.



ALL DUCTWORK in Foley's department store in Houston is made of Kaiser Aluminum. Pound for pound, it has three times the working surface of steel, is less wearing on shop equipment, can't spall. Can be fabricated easily on the jobsite and installed faster. Uninsulated, it delivers as much heat as insulated galvanized material!



KAISER ALUMINUM SIDING is *versatile* material; modern, but able to blend beautifully with traditional design. Installed under tension, the curved surface is rigid, sound-deadening, insulating. Pre-painting keeps first costs low—and maintenance costs are low because the lustrous enamel finish is baked on.

PLAN WITH ALUMINUM?

PLAN AHEAD NOW—with Kaiser Aluminum building products!

Vast expansion of production facilities will make aluminum among the most plentiful of building materials.

For instance, Kaiser Aluminum is increasing its production of primary aluminum by 80 per cent.

This plentiful supply will encourage many *new* uses of strong, light, corrosion-resistant aluminum in the building fields.

Check before you substitute

Kaiser Aluminum is helping to meet the needs of national security—supplying vast amounts of aluminum to manufacturers of defense items.

Thus, we can't *guarantee* that you'll readily find

Kaiser Aluminum building products. But many dealers *have* been maintaining ample supplies—so ask for Kaiser Aluminum building products before you use a substitute material!

You'll often find that you're able to give your clients the best: *Aluminum!*

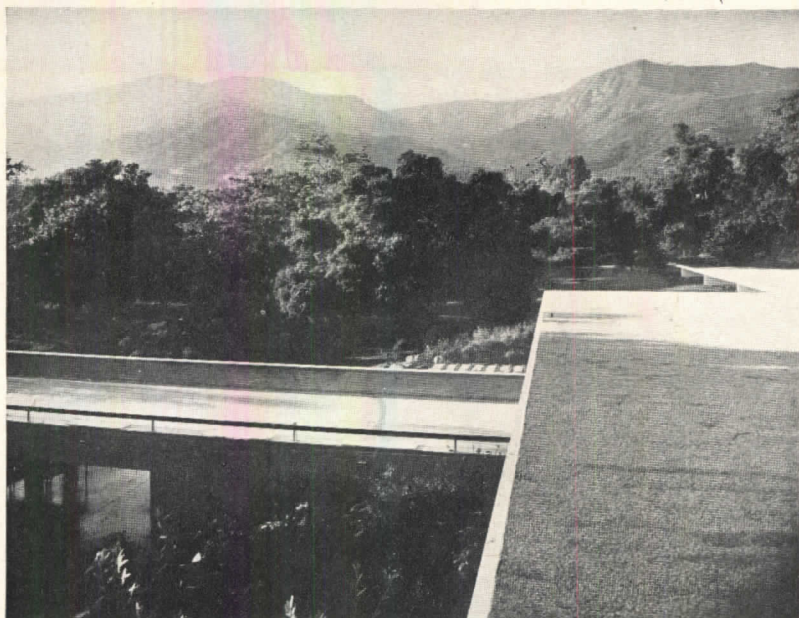
Aluminum is the building material of the future

Building products made of Kaiser Aluminum offer exclusive advantages in design, beauty and quality. Representative applications shown here prove *today* that they're the building materials of the future!

For full information about Kaiser Aluminum building products—and for AIA files—write: Kaiser Aluminum & Chemical Sales, Inc., Oakland 12, California. Sales offices in principal cities.

Kaiser Aluminum

A major producer of building materials for home, farm and industry



REQUIRED READING

NEUTRA

Mystery and Realities of the Site. By Richard Neutra. Morgan & Morgan (High Point Road, Scarsdale, N. Y.), 1951. 8 by 10 in. 64 pp., illus. \$3.75.

REVIEWED BY THEODORE CRILEY, JR.

Architects, students and amateurs of architecture, long familiar with publications by and about Richard Neutra, may be startled by the publishers' statement that this is his first book printed in the United States. After one look at *MYSTERY AND REALITIES OF THE SITE* their reaction will be twofold — "It's about time," and "Let's have more." Neither a technically-worded textbook nor an

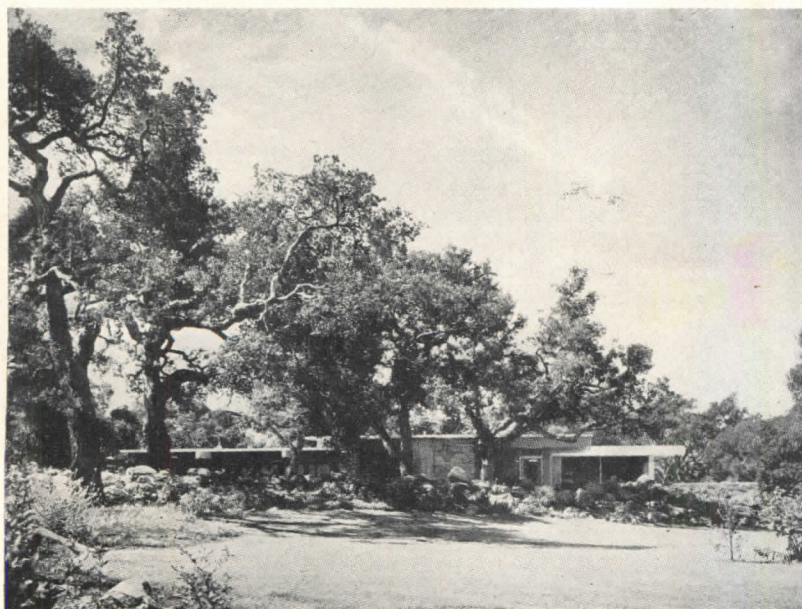
essay in arty jargon, it is a statement in everyday terms on the philosophic approach to the design of living space within, and a part of, that portion of the Earth's surface that we call a site; and illustrated by handsome Julius Shulman photographs of Neutra's recent residential work. Text and pictures complement one another and create a superb exposition of the architect's aims and achievements. It is brief and clear. It is also profoundly stimulating to reflection and imagination.

In the eighteenth century the sophisticated traveler through the Swiss Alps drew down the blinds of his stagecoach to shut out the "hideous scenes of wil-

derness and desolation." In our time a Filipino architect (ex-prisoner of the Japanese in the Mindanao jungle) replied to the question "Do you have many forests in the Philippines?" with a shudder and "Yes, terrible, horrible forests!" To the European of the Age of Reason, to the member of a people still struggling against Nature in the Rough, civilized habitation means shelter against the outdoors, or at least that part of it that is not trimmed and manicured. We in America some time ago outgrew our pioneer's fear and enmity toward Nature; but for too long we have in turn brutalized it, bulldozed it, and bill-boarded it. And when we built houses in unspoiled surroundings we shut Nature out of them, or at best conceded a picture window that "framed the view" like a flat mural decoration, but in no way brought the house and the site together.

Neutra's thesis is the denial of such a conception that "House is House and Site is Site and Never the Twain Shall Meet," and his book is a convincing proof that living space, in the hands of a daring and sensitive architect, can encompass the entire surroundings. Freed by the stylistic revolution to which he contributed so greatly, as well as by the possibilities of modern construction methods and materials, his houses reach out and embrace not only the distant view but also the immediate space and its shrubs, lawn, trees, rock outcrops and pools. He is far beyond the solution

(Continued on page 46)



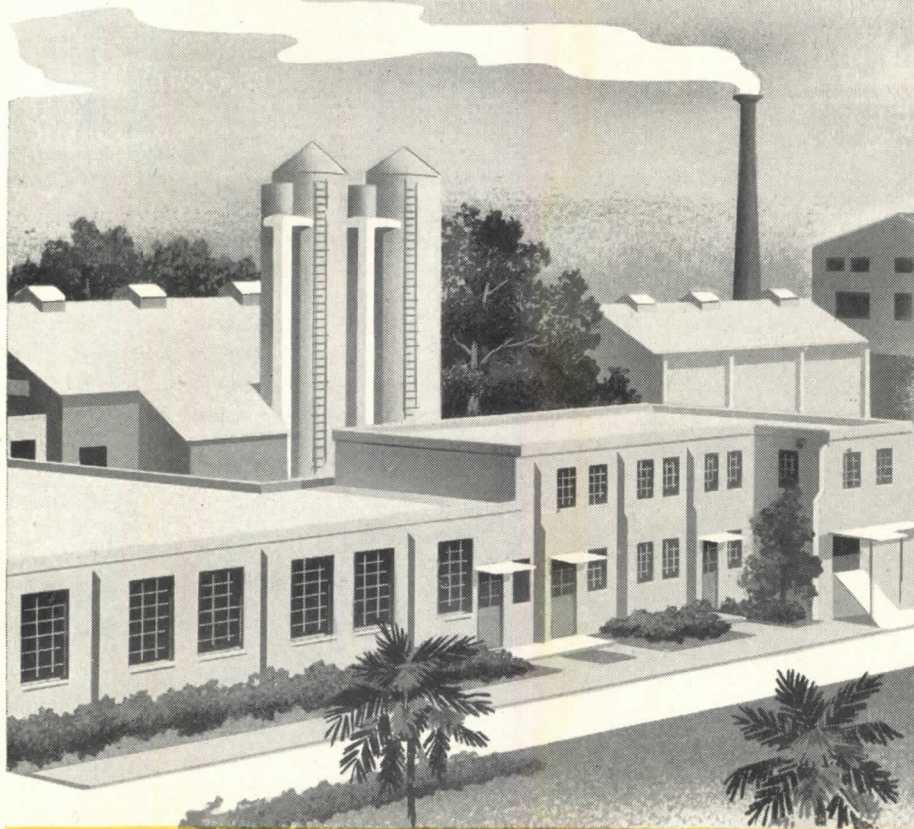
Photos from *MYSTERY AND REALITIES OF THE SITE*

Julius Shulman Photos

AMERICA'S *Number 1* HARDWARE

COOPERATIVE CHOOSES

YALE HARDWARE!



A MODERN MODEL OF EFFICIENCY

What's the best way to house a really efficient fruit processing operation?

When the Fosgate Citrus Cooperative of Orlando, Fla. built this huge, nine-building plant they took advantage of every lesson that could be learned from experiment, research and experience in older plants.

As a result, every detail of this impressive new plant is carefully planned, integrated, *right!* That's why Yale door closers are used to maintain the precise temperature and atmosphere conditions, required for fruit storing, processing, canning, freezing... why Yale tubular locksets are used to maintain the finest security and clean appearance.

• • •

Architect: Mr. Raymond C. Stevens, Orlando, Fla.

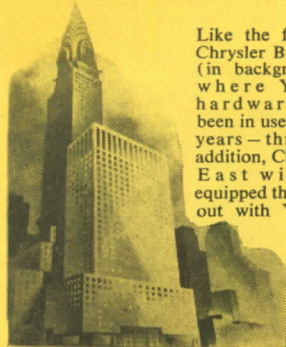
General Contractors: Stevens & Sipple, Orlando, Fla.

Hardware Supplier: Harry P. Leu, Inc., Orlando, Fla.

Vice President, Fosgate Coop: Claude C. Mershon.

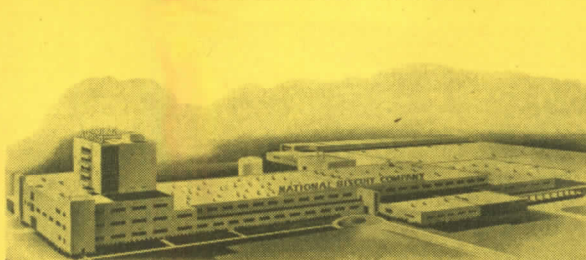
Prod'n Mgr. Fosgate Coop: J. M. Fiske, Forest City, Fla.

THE NEW CHRYSLER BUILDING EAST



Like the famous Chrysler Building (in background) where YALE hardware has been in use for 21 years — this new addition, Chrysler East will be equipped throughout with YALE.

THE NATIONAL BISCUIT COMPANY



Here in this giant new 10-acre plant, at Portland, Oregon as in *three* other Nabisco plants, YALE hardware is the choice for beauty, day-in-and-day-out efficiency and lower maintenance.

THE FARM MUTUAL BUILDING



YALE hardware is the choice here in Columbus, Ohio. In this solid city block of impressive architecture there'll be greater security at lower cost for years to come.

37 FALLING ACCIDENTS



WILL ONE OF YOUR MEN BE NEXT?

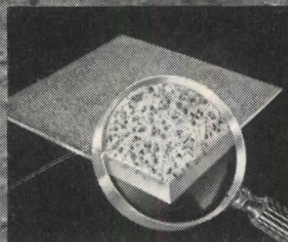
Every hour, falling accidents kill or disable 37 workmen!*

Are you sure your men are safe from unsafe footing?

You can give your workmen maximum protection against costly slipping and falling accidents with A. W. ALGRIP Abrasive Rolled Steel Floor Plate. ALGRIP is made by rolling tough abrasive grain as an integral part of the upper portion of steel floor plate. Wet or dry ALGRIP gives non-slip protection even on steep inclines. Wear only exposes new abrasive particles so maintenance is not required.

Engineers, architects, purchasing agents, and safety engineers are specifying A. W. ALGRIP for thousands of industrial and commercial applications. Follow their lead. Get more information now. Write for booklet B-20.

**THERE'S NEVER A SLIP
ON A.W. ALGRIP!**



Magnification shows even distribution of abrasive grain in A.W. ALGRIP.



Even on steep inclines A.W. ALGRIP IS NON-SLIP!

A.W. ALGRIP ABRASIVE ROLLED
STEEL FLOOR PLATE
ALAN WOOD STEEL COMPANY
CONSHOHOCKEN, PA.

125 Years of Iron and Steel Making Experience

Gentlemen:

Please send me your 8-page information-packed booklet B-20.

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COMPANY _____

ADDRESS _____

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Other Products: PERMACLAD Stainless Clad Steel • A.W. SUPER-DIAMOND Floor Plate
Plates • Sheets • Strip • (Alloy and Special Grades)



*17% of the 222 occupational injuries which occur every hour are due to falls. Source: National Safety Council's 1949 edition of Accident Facts.

REQUIRED READING

(Continued from page 42)

of the 1920's — the stark box of concrete, steel and glass that proclaims the mastery of technique over a natural environment.

Architecture has had to pass through such a period of defiance to break the tradition of the rose-bowered cottage, the picturesque ivy-grown manor, the rambling hacienda. In mass and in materials such anachronisms did have an affinity for natural surroundings, but their plans and fenestration showed how superficial the relationship was, and how lacking in human values.

Humanism is the keynote of this book. Not Man against Nature but Man in harmony with Nature (and himself and his neighbors) and how he can build to enjoy this harmony indoors and out. A site is a three-dimensional space to be wholly used by Man by means of controlled shelter and privacy and controlled openings and penetrations into solids, to fit the needs of his daily living. This architecture is not frozen music but warm and tender poetry.

"Charm" has acquired cheap connotations — shutters, dormers, dovescots, window boxes — until one is embarrassed to use the term. But using the true meaning of the word, MYSTERY AND REALITIES OF THE SITE is a charming book. It has taken time for today's architectural Renaissance to get beyond its early revolutionary period, to rediscover the warm and rugged materials of tradition, and the fact that the pursuit of happiness needs a better habitat than a "machine for living." A prophet no longer appreciated only by a few fellow-rebels, Richard Neutra now speaks for, and to us all.

TECHNICAL WRITING

Report Preparation. By Frank Kerekes and Robley Winfrey. The Iowa State College Press (Ames, Iowa), 1951. 8 by 11 in. xiv + 448 pp., illus.

How often have you heard the comment that it is difficult to find architects and engineers who write well? Yet it is the combination of technical and writing ability that frequently wins advancement and recognition. This difficulty is by no means innate, so, many schools, in an effort to prevent it, require the study of report writing. This book can

(Continued on page 50)

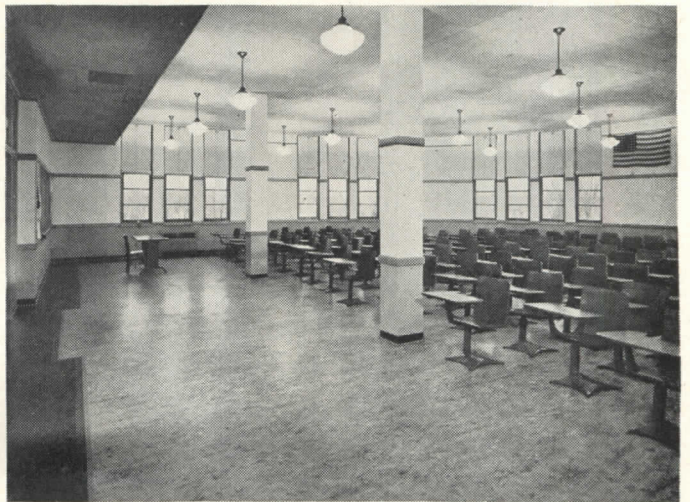
importance in a room . . .



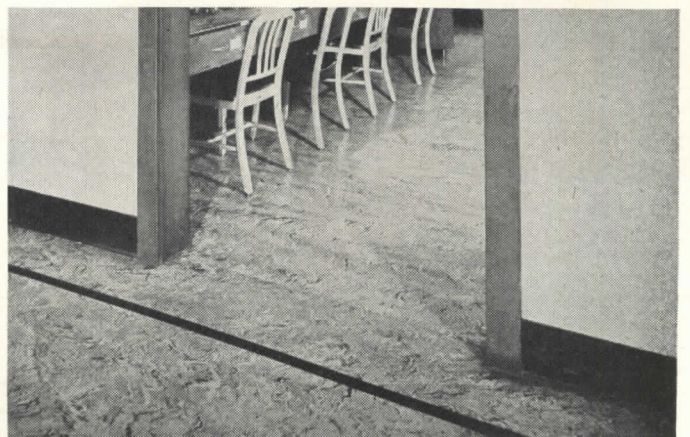
light company is easy to keep spotlessly clean—and it's truly resilient for quiet and for ease underfoot.



2. In a doctor's office where an attractive floor is a "must," Nairn Linoleum is the answer. It's rich-looking, easy to keep spotless . . . and years of service make it inexpensive to own!

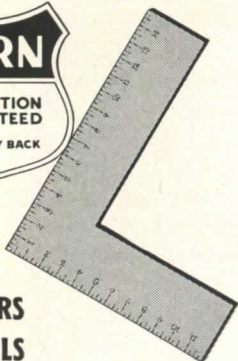


3. Look closely at the Nairn Linoleum in this modern high school . . . its beauty and true resilience endure even after years of the heaviest traffic.



4. In this hospital record room—as in every room and corridor—Nairn Linoleum provides sanitary, crevice-free floors that won't collect dust and germs.

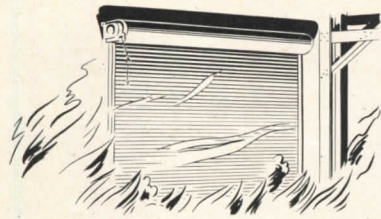
Nairn Linoleum!



- 1. Long Life**
- 2. Enduring Beauty**
- 3. Easy Maintenance**
- 4. True Resilience**

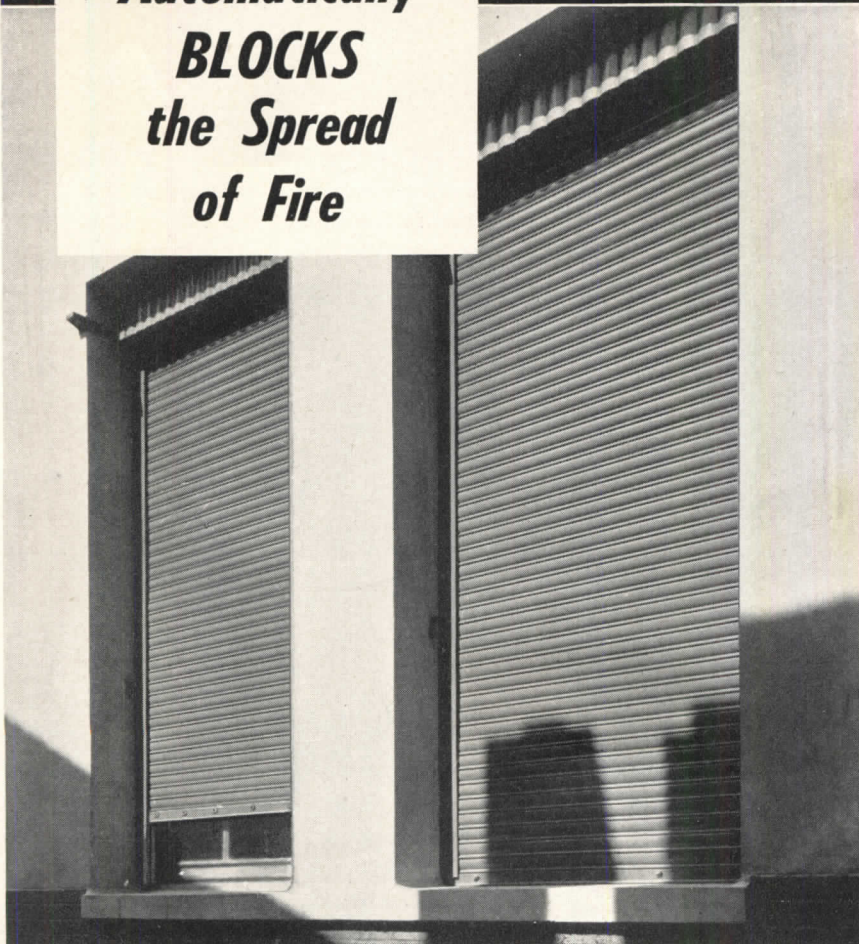
**For FLOORS
and WALLS**

"Akbar"—the famous Kinnear



**Automatically
BLOCKS
the Spread
of Fire**

**Rolling
Fire
Door**



Safety Features Give Building Occupants EXTRA Protection

You get *positive, automatic, dependable* fire protection at doorways, windows and other horizontal openings with the famous Akbar Fire Doors. They're *pushed* downward by a strong spring . . . *controlled* in downward speed by a special safety device . . . and operable *after* automatic closure, for emergency use. These efficient doors remain coiled out of the way overhead when not in use, but lower into place with speed and efficiency when fire threatens. They combat fire loss by cutting off drafts, blocking the spread of flames, and confining fire to small areas. Approved and labeled by Underwriters'

Laboratories, they have saved as much as 33% of their cost *annually*, in reduced insurance rates. Built to fit windows, doorways or other openings of any size. Write for complete information.

Kinnear Rolling Fire Doors can also be equipped for daily service use, with or without motor operation. But the regular (non-labeled) Kinnear Rolling Doors are preferred for service use where extra fire protection is not required.

Saving Ways in Doorways
KINNEAR
ROLLING DOORS

The KINNEAR Manufacturing Co.

1860-80 Fields Ave., Columbus, Ohio
1742 Yosemite Ave., San Francisco, Calif.

REQUIRED READING

(Continued from page 46)

serve not only as a school text, but, also, as a refresher for those who want to improve their technical writing and very admirably as a reference book.

The authors' objective is to assist readers to acquire skill and effectiveness in preparation of reports. It is met by providing specific procedures and sequence of assembly, thus placing the emphasis upon the complete process of report preparation rather than upon the single skill of writing.

A decided asset of this book is the use of reproductions of actual material employed in assembling reports, illustrations used in them, and the reports themselves. The section on preparing illustrations for publication is especially good in that it shows various devices, including color, for getting more effectiveness in drawings. This chapter includes topics such as selection of illustrations, standards of format, drawing for photographic reduction and reproduction, and types of charts.

Other highlights of the book include a chapter on how to prepare magazine feature articles and technical papers (editors would be grateful if such guidance is heeded) and oral presentation of reports and technical papers.

BOOKS RECEIVED

We Took To Cruising. From Maine To Florida Afloat. By Talbot and Jessica Hamlin. Sheridan House, New York — Sea-going architect Professor Hamlin (Columbia University) and his wife spin cruising yarns and show no little competence where boat design is concerned.

High Victorian Design. By Nikolaus Pevsner. The Architectural Press, London — A study of the Exhibits of 1851 and a most interesting interpretation of Victorian design.

Old Sturbridge Village. By Samuel Chamberlain. Hastings House, New York — Chamberlain's camera again — recording interiors and exteriors of the Wells' restoration of an early New England community; photographs and captions.

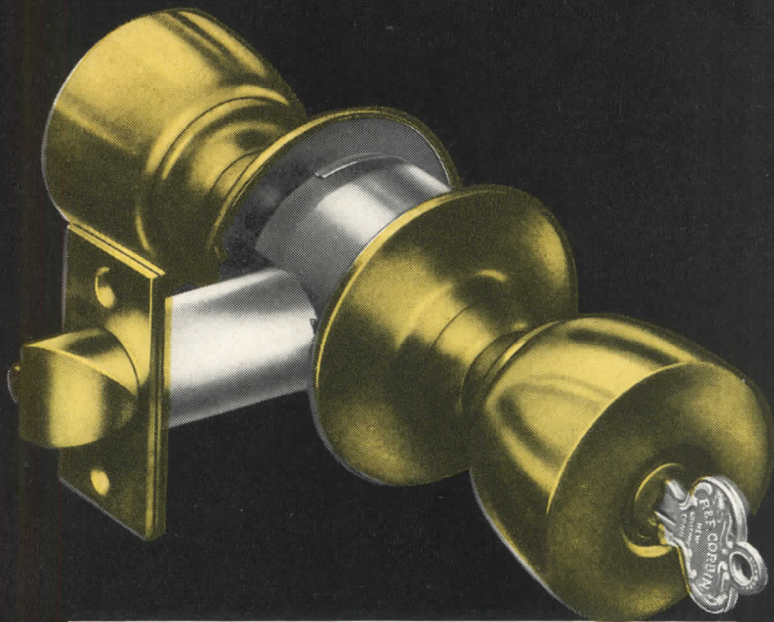
(Continued on page 52)

No other cylindrical lock offers you all
the advantages of

THE NEW HEAVY DUTY



CYLINDRICAL LOCKS



Before you specify *any* locks on your next large-building job, compare this new Corbin with any other cylindrical lock you've used. Compare them point by point — feature by feature. You'll find only Corbin has all these extra-quality advantages that mean smoother operation — longer wear with less maintenance—fast, low-cost installation.

And now, *for the first time*, you can offer your clients every major type of lock — unit, mortise, tubular, cylindrical — from one manufacturer. Your clients can choose any of these types for different parts of a building and have all locks master-keyed as needed and harmonious in design.

The new Corbin Cylindrical Lock comes in four designs — each made in the 13 functions most frequently used in schools, hospitals, apartments, office and public buildings and fine residences. If you have not yet received complete specifications — if you would like further information on all this new lock can do — write or wire us now.

Check All These PLUS Features:

- Five-Eighths Inch Throw!
- Same Smooth-Working, Long-Lasting Roll-Back Latch As Famous Corbin Unit Lock!
- 100% Reversible!
- Cylinder Easily Replaced From Inside If Keys Are Lost!
- Compact heavy-duty construction throughout
- Master ring cylinder for greater protection and flexibility
- No screws in roses or knob shanks
- Adjustable for doors 1 $\frac{3}{8}$ to 2 inches thick
- Extruded brass 5 pin tumbler standard; 6 pin tumbler for extended master key systems
- Seamless tubular knob shank with long bearing surface is specially designed for easy knob action and to prevent knobs from becoming wobbly
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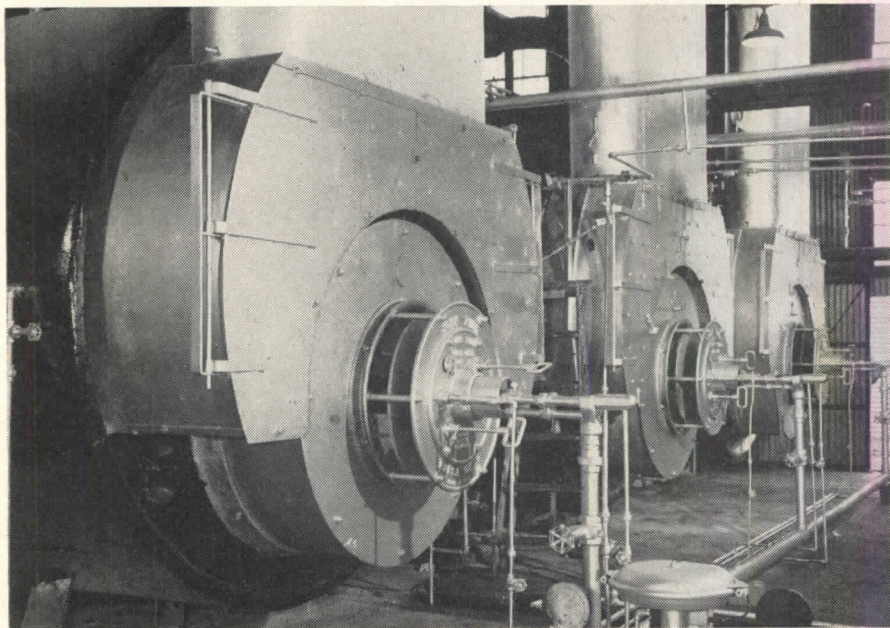


P. & F. Corbin Division

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with minimum maintenance.

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REQUIRED READING

(Continued from page 50)

An Essay Toward Architecture. By Pierre C. Zoelly. The Carnegie Press, Pittsburgh — Who We Are, Where We Are, Why We Are Here, and What Architecture Is, as told by Mr. Zoelly in a provocative series of graphic illustrations of basic architectural principles.

Ladenbau. By Adolf Schumacher. Julius Hoffman, Stuttgart. Agent in U. S.: Architectural Book Publishing Co., New York — Store buildings of all types, with sections on windows, facades, sales areas, lighting, signs, etc., and a large section devoted to details (in German).

Housebuilding in the San Francisco Bay Area. By Sherman J. Maisel. Reprinted from the *Journal of Political Economy*. Bureau of Business and Economic Research, University of California, Berkeley — Survey includes information on the size of the builders of the area, the importance of operative or merchant building, and the selling prices as related both to the area and size of the builder, as well as the extent of interdependence between housebuilding and the other construction activities.

Selected Items from the Urban Reference. Prepared by Dorothy E. Whiteman. The Bureau of Urban Research, Princeton University, Princeton — Precip of periodical articles, pamphlets, books, etc., concerned with various phases of city problems and planning, and with emphasis on new information pertinent to urban problems.

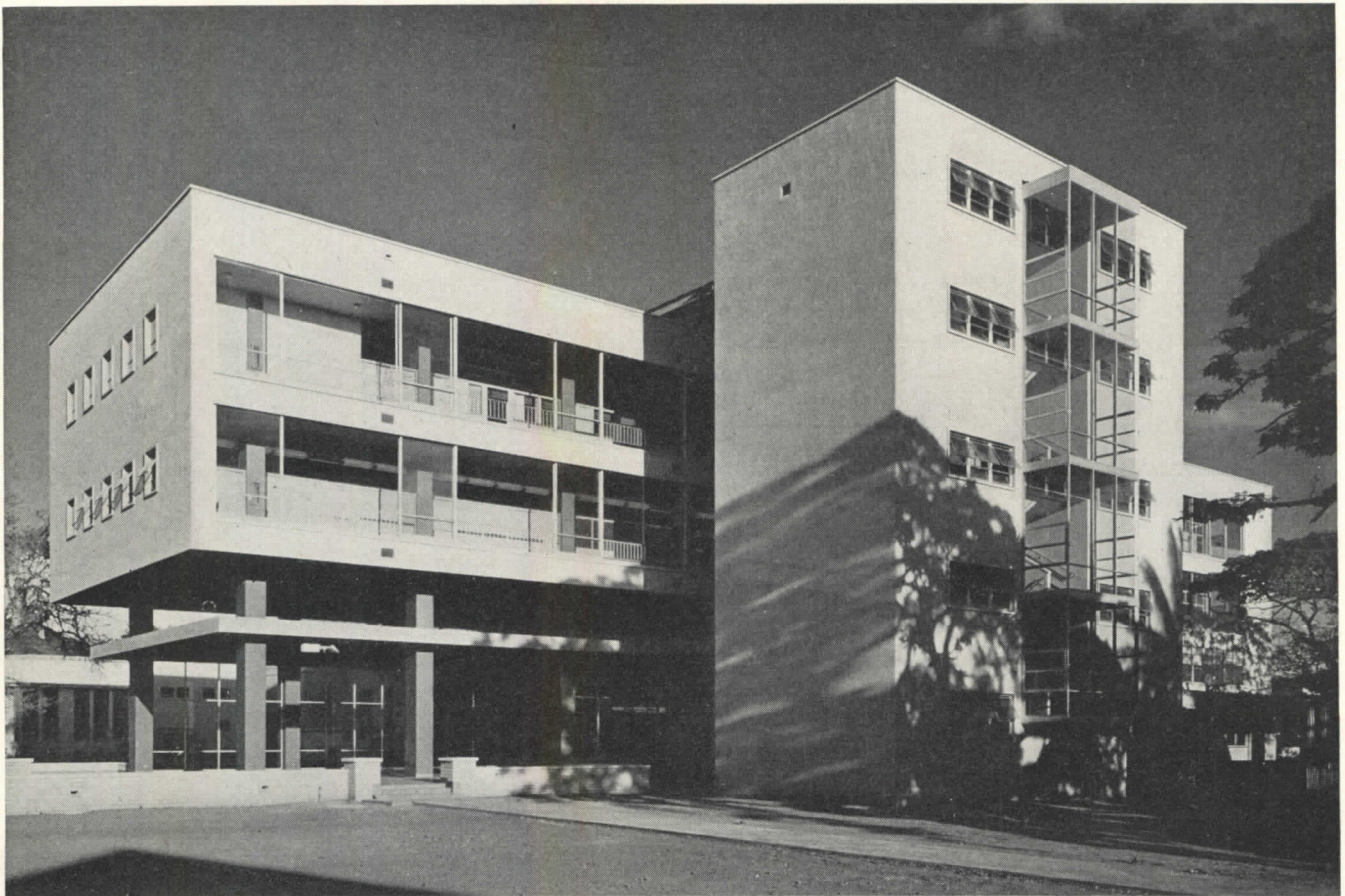
Urban Real Estate Markets: Characteristics and Financing. By Ernest M. Fisher. National Bureau of Economic Research, Inc., New York — The structure and behavior of urban real estate markets described and analyzed, an appraisal given to the instruments employed in financing real estate transactions, and several kinds of markets examined.

Elementary Problems in Engineering. By Leach & Beakley. The Macmillan Co., New York — Aimed at courses in engineering problems for freshman year college level.

Introductory Soil Mechanics and Foundations. By Sowers & Sowers. The Macmillan Co., New York — A text for undergraduate civil and architectural engineering students, as well as an aid for practicing engineers encountering soil problems.

KEELIKOLANI BUILDING

TERRITORIAL OFFICE BUILDING, HONOLULU, T.H.



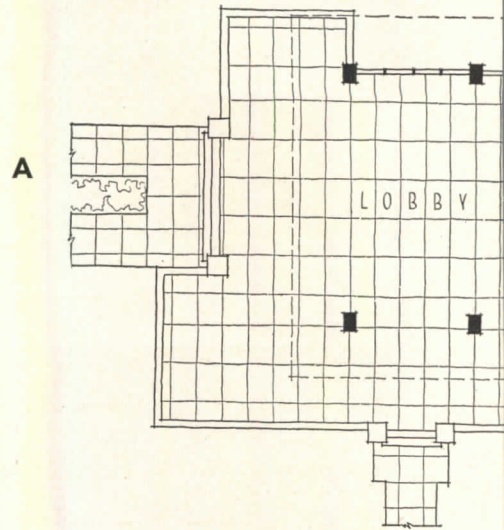
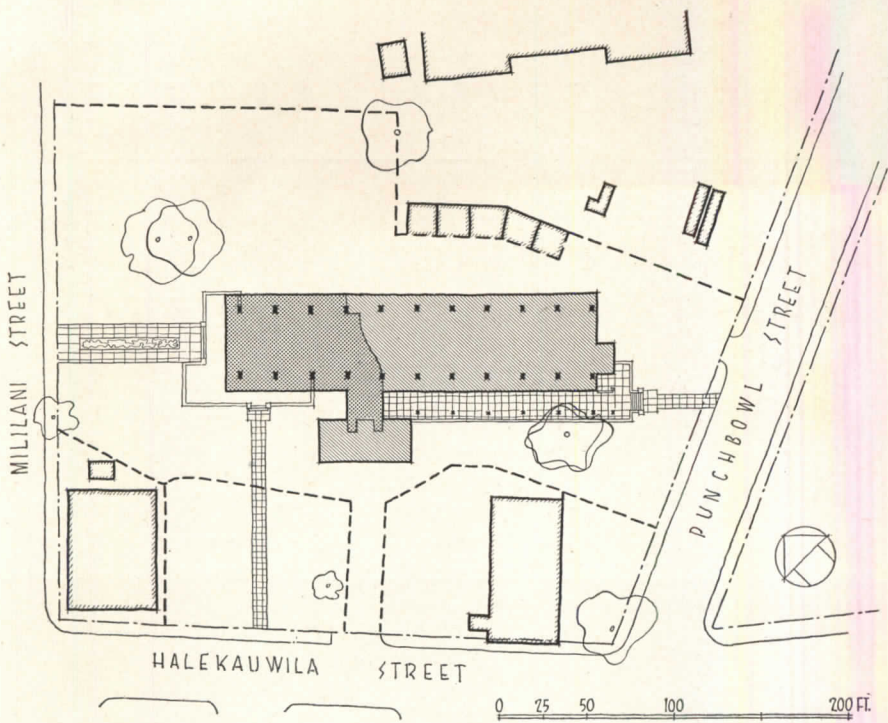
R. Wenkam Photos

*R. E. Windisch
Edwin L. Bauer
Wimberly and Cook
Architects*

*J. Grant Morgan
Structural Engineer*

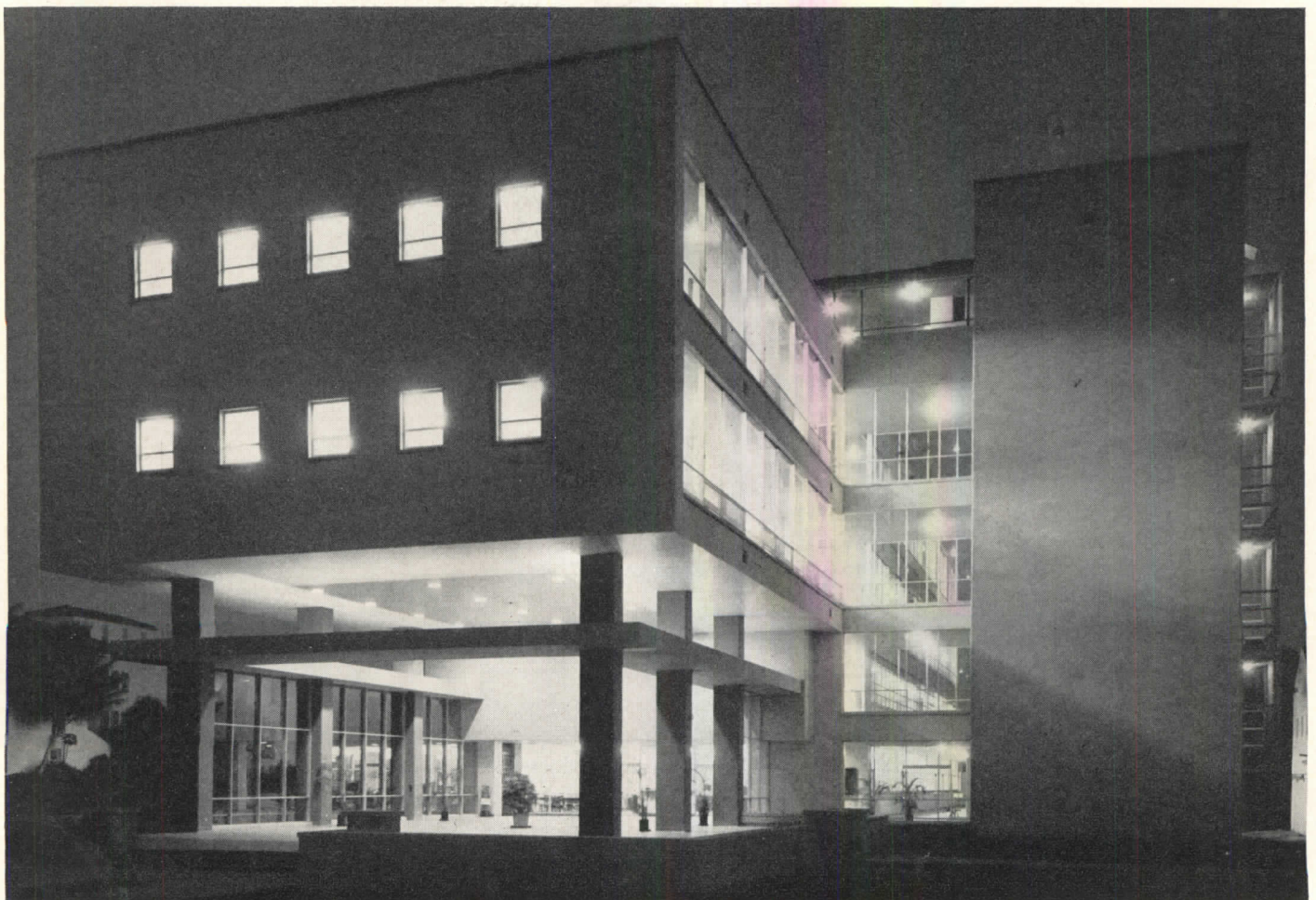
FLUCTUATING SPACE REQUIREMENTS, orientation and climate combined to dictate the form of this Territorial Office Building in Honolulu. Unemployment compensation offices, industrial insurance bureaus, and territorial employment agencies all had to have quarters in the building; space also had to be made available for rent to federal employment offices and bureaus. Maximum flexibility was essential, since all labor offices in the Islands must expand and contract continuously to meet the varying demands of the local economy, and since several of the Islands' chief industries are seasonal.

Several ingenious devices were used to permit economical and easy rearrangement of the entire office area. Site limitations neces-

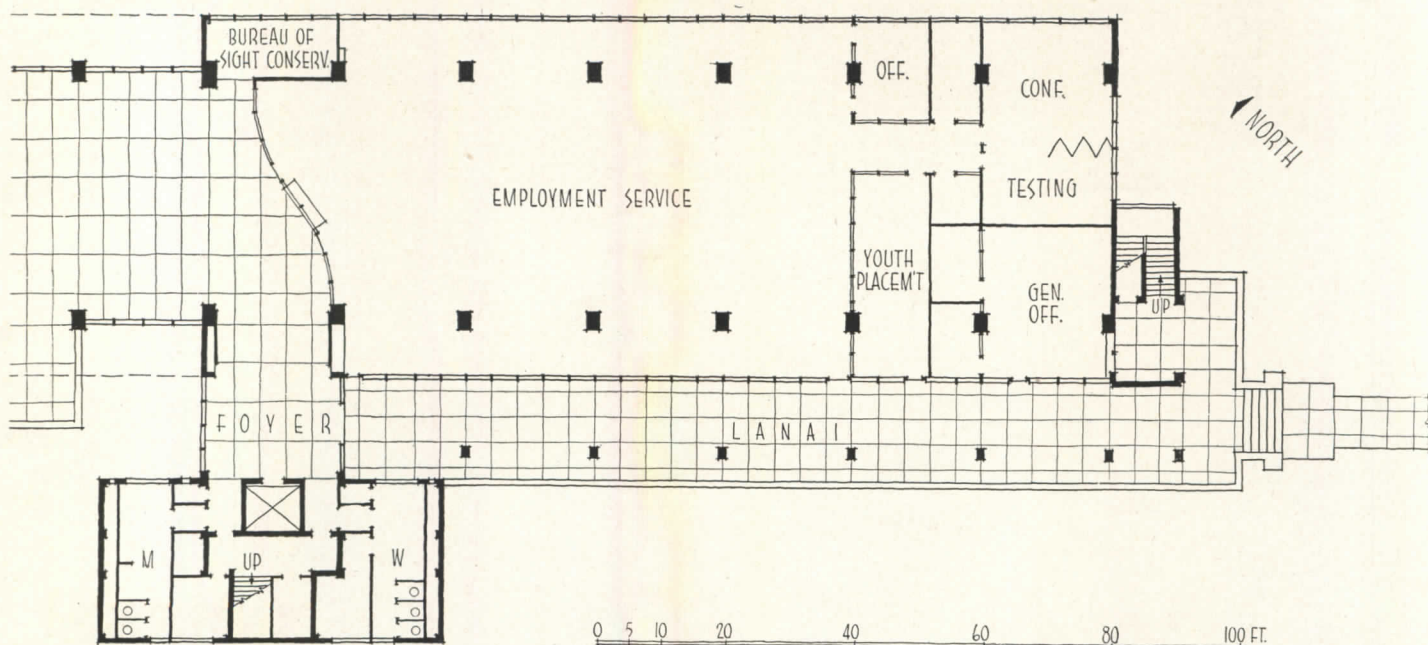


GROUND FLOOR

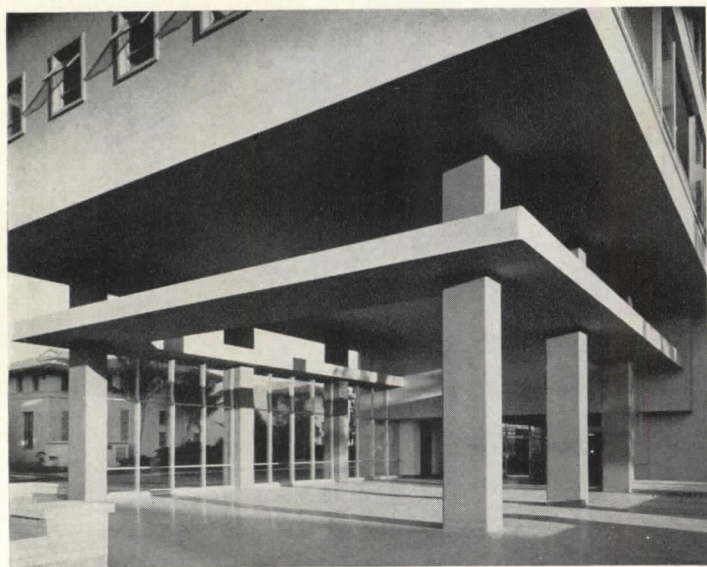
Because of the shape and location of the site, main entrances had to be placed at the ends of the building. They are connected by a lanai which, together with the lanai-corridors of the upper floors, the open lobby and the glass-walled bridge between tower and main building, emphasize the open airiness characteristic of architecture in the Islands



A



A

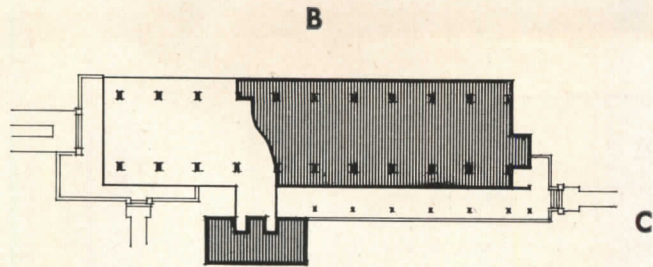


R. Wenkam Photos

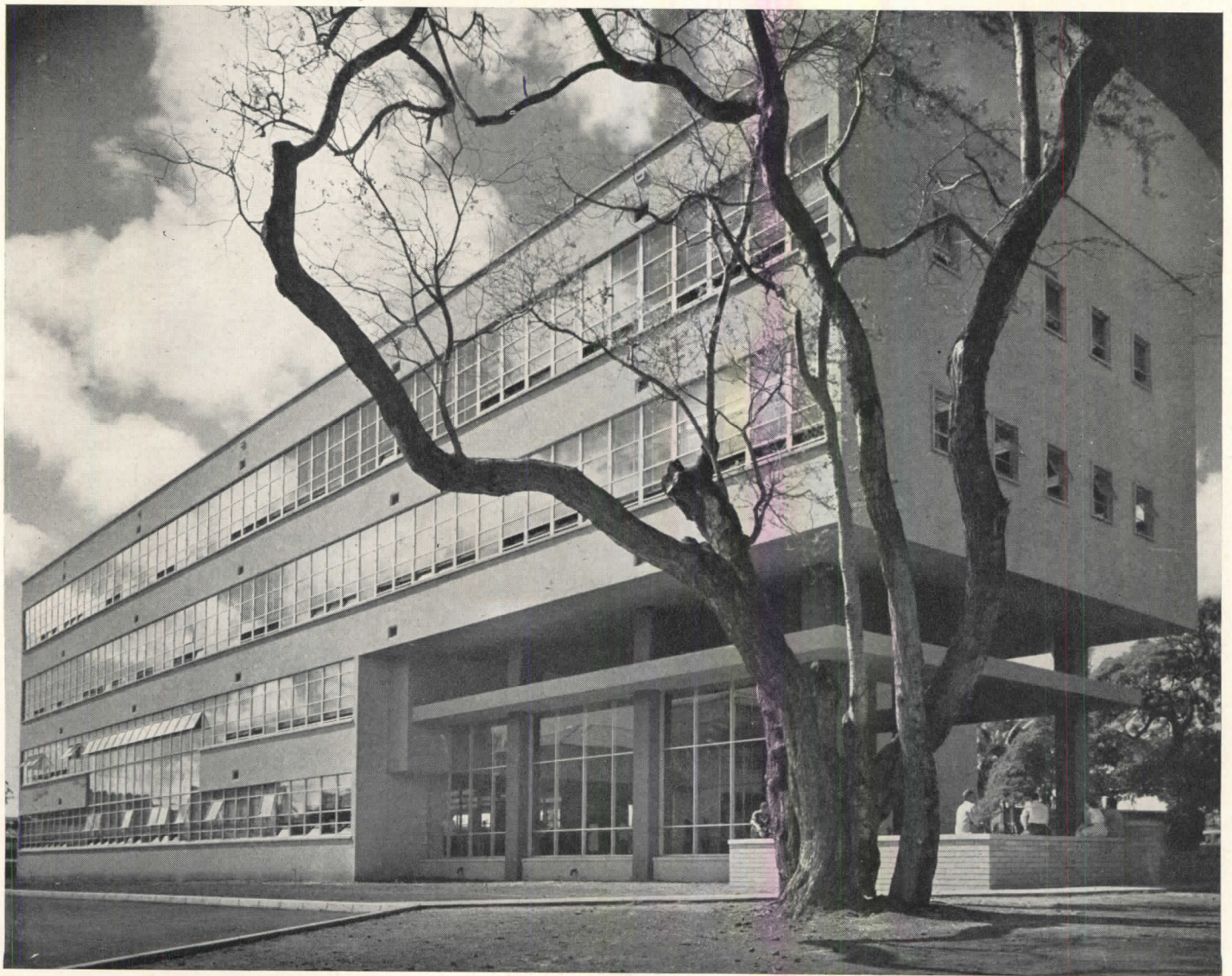
sitated orienting the building with one major side facing the setting sun, and wide lanais were decided upon as a sun control measure along that side; the lanais eliminate the need for a central corridor. Elevators and washrooms were placed in a separate tower, bridged to the main building at each floor, leaving the entire length of the building free for office space. The employees' lounge and cafeteria are on the roof.

All office partitions are worked out on a modular basis and can be dismantled and rearranged as required. Electrical conduits in the floor are carried in a duct system; lighting throughout is switched by zone rather than to individual offices to increase flexibility still further.

The large open gallery on the first floor serves not only as an impressive entrance to the building but also as a pleasant waiting room. It also provides the space required to accommodate the crowds signing up for seasonal work in the pineapple canneries and other Island industries. At such times temporary desks and registration booths are set up there.



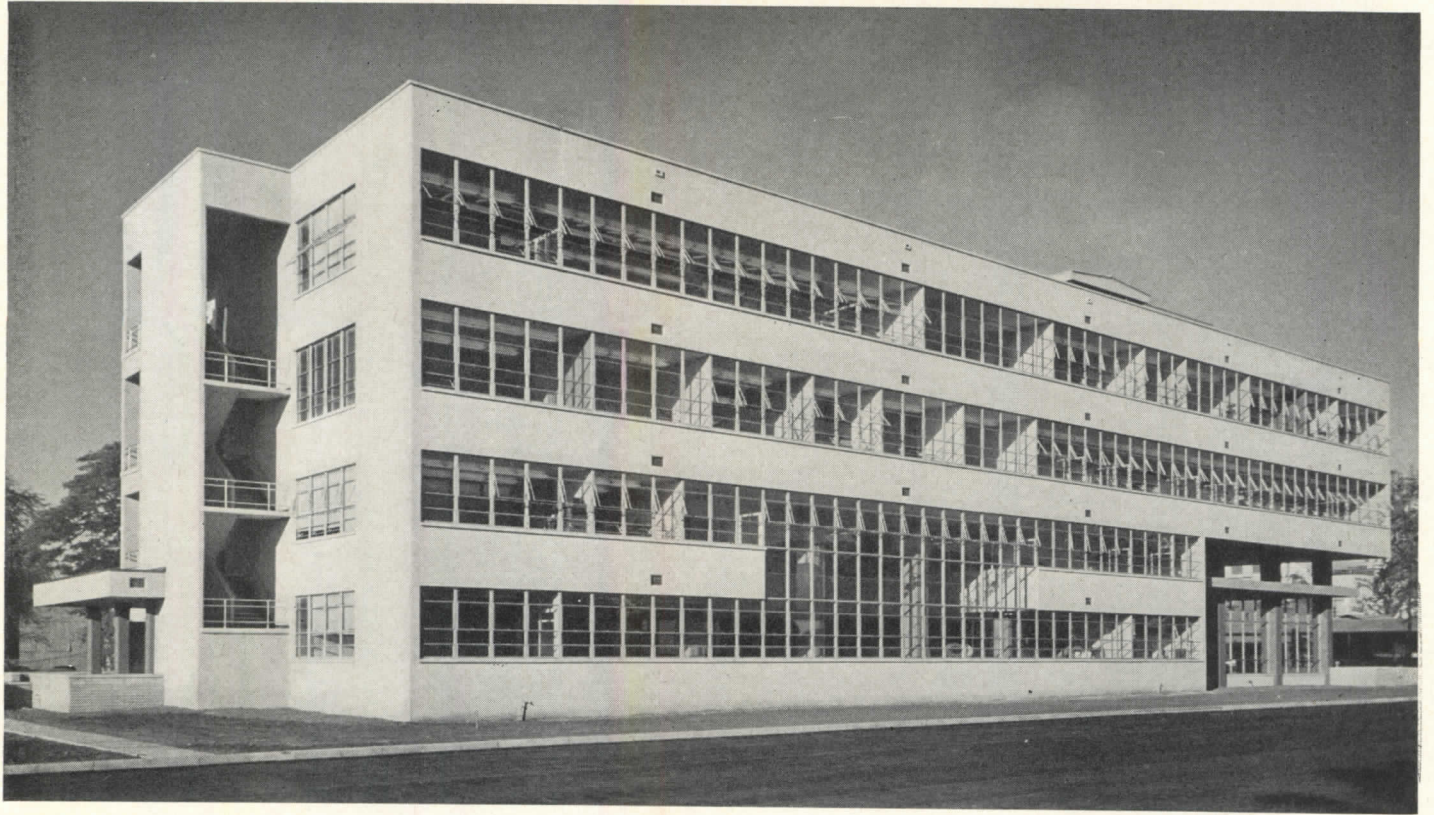
Building proper is long and narrow to fit site. Each floor is completely free for easily rearranged office space: lanais, installed for sun control, double as corridors; elevators and washrooms are in a separate tower. Construction is reinforced concrete; exterior walls are colored stucco



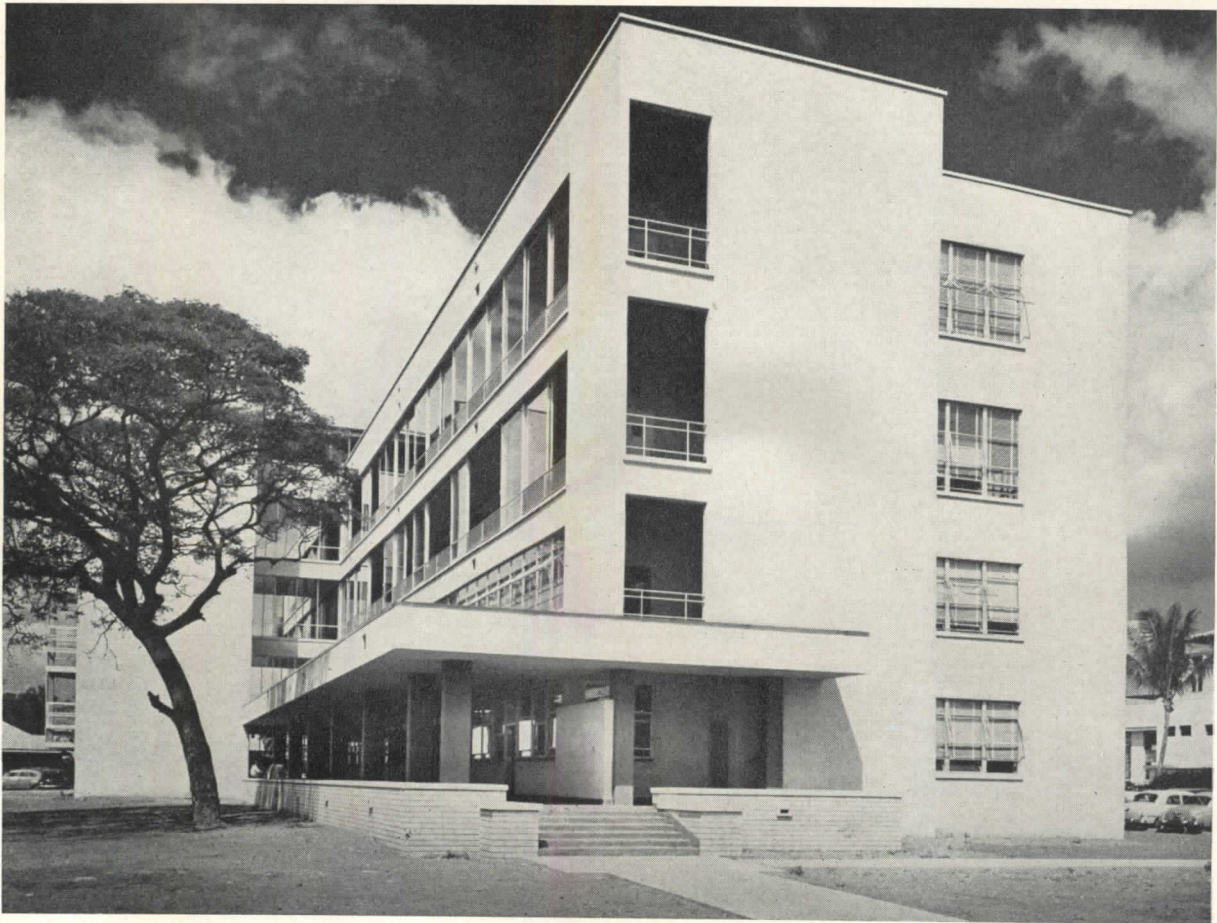
B

R. Wenkam Photos

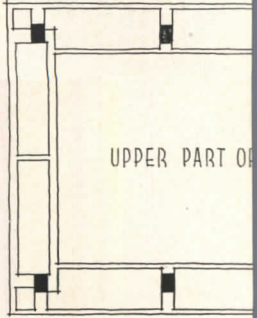
North side gets sun for only about an hour in morning, and venetian blinds give sufficient control



B



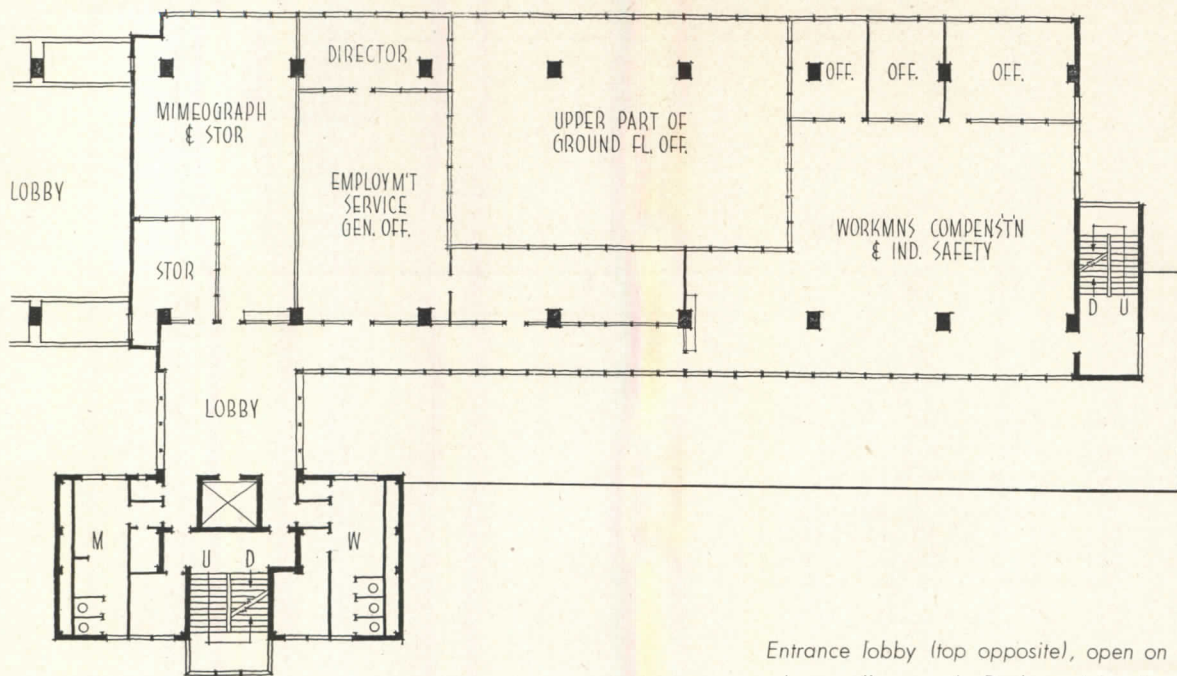
C



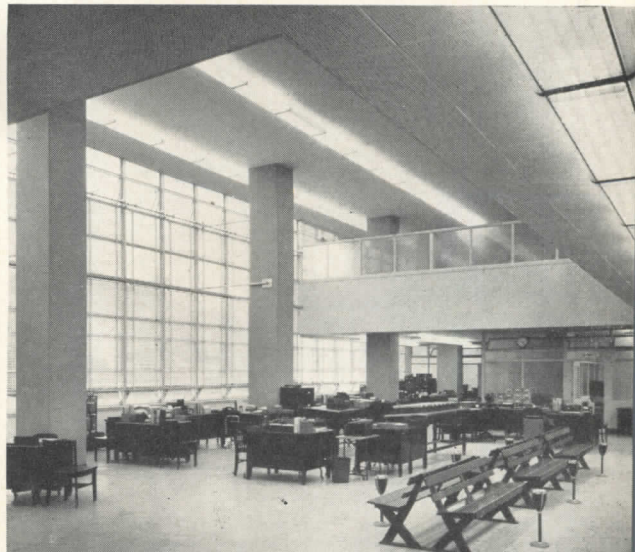
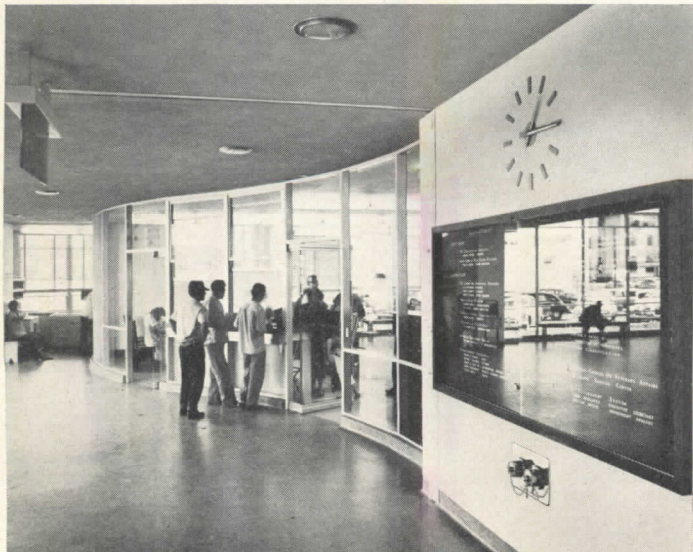
MEZZANINE

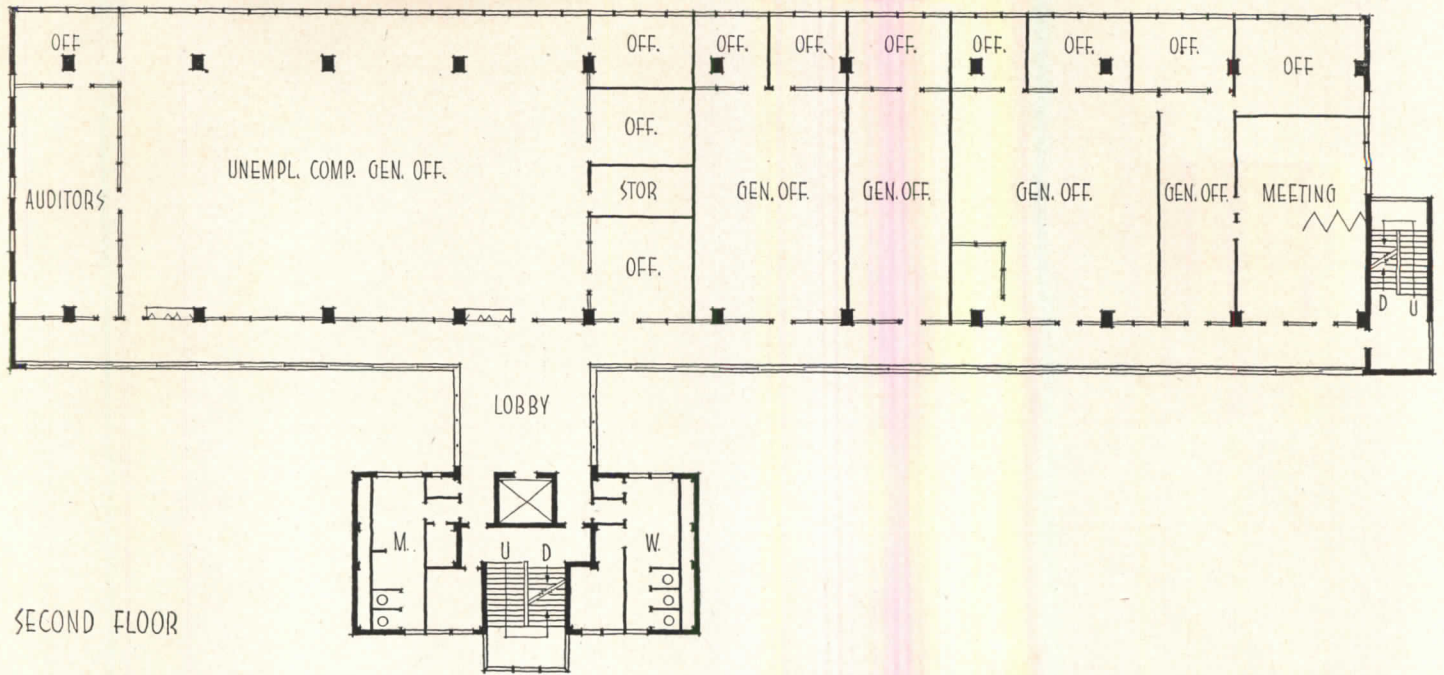
R. Wenkam Photos





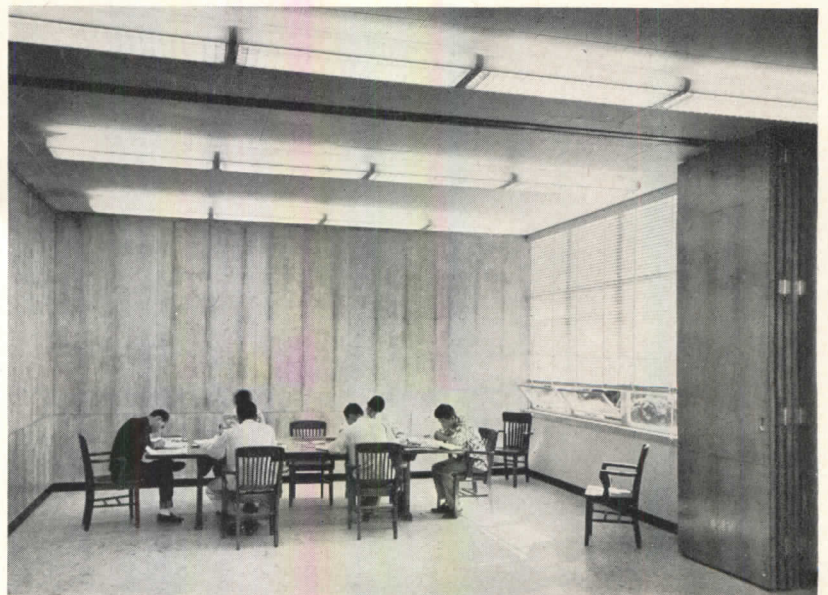
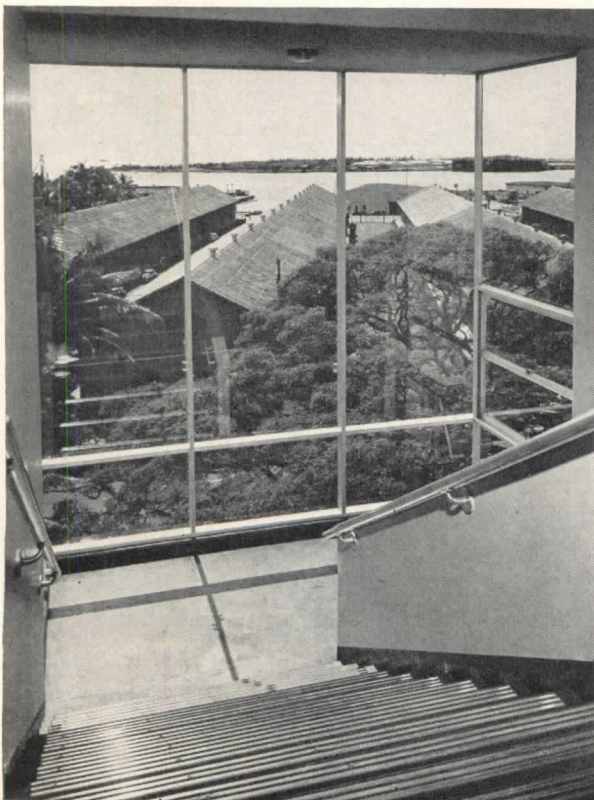
Entrance lobby (top opposite), open on two sides, has glass wall on north. Desks and booths are set up here when necessary to take care of crowds applying for seasonal work. Curving wall in background closes in the main employment service section (below) which is a story and a half high with mezzanine on three sides. Office partitions throughout building are modular prefabricated wood, easily rearranged to meet requirements. Floors are terrazzo and asphalt tile, ceilings are acoustic tile or plaster

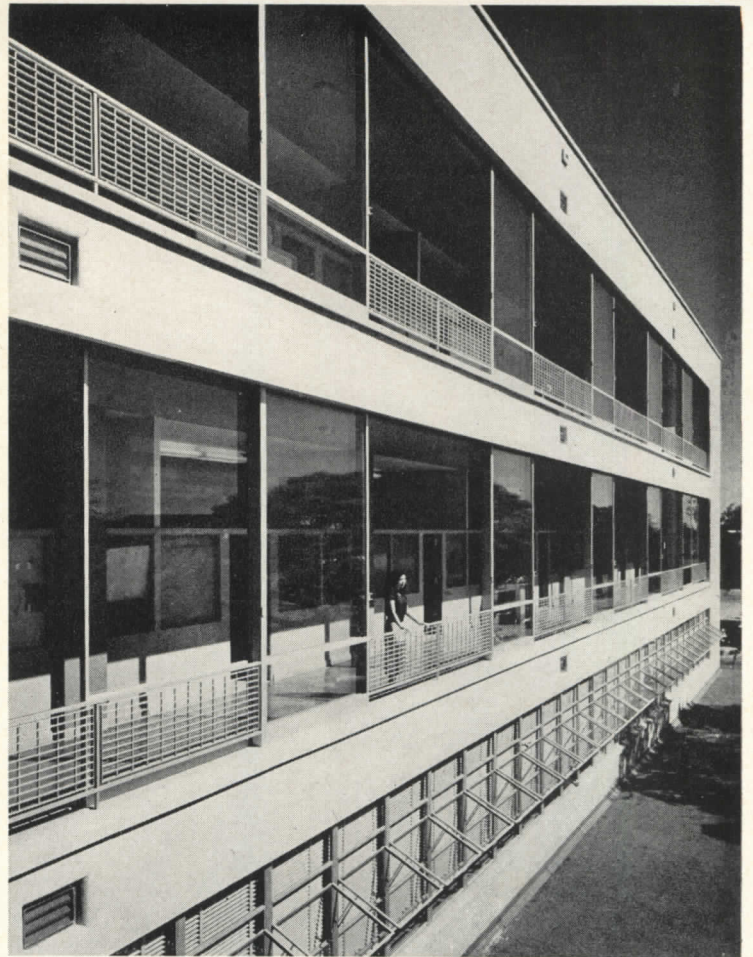
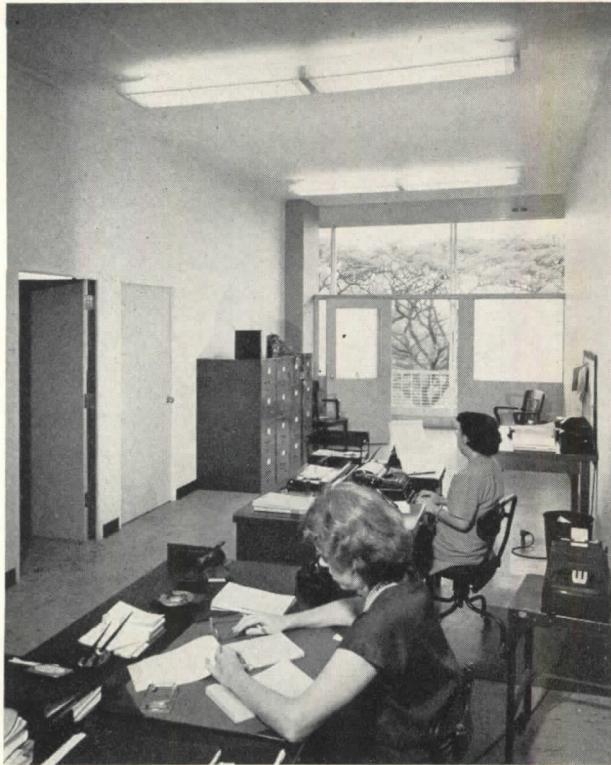




R. Wenkam Photos

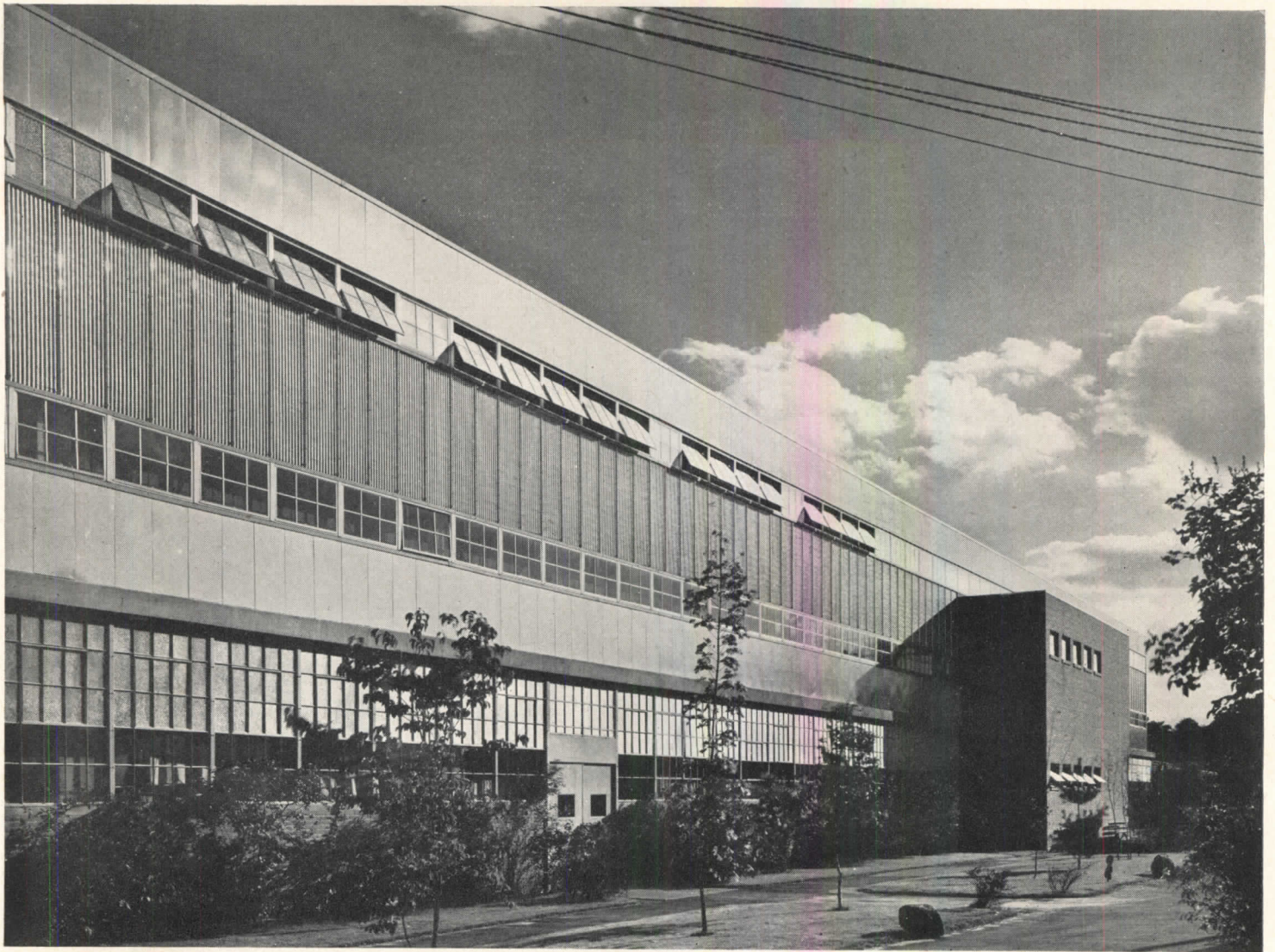
Almost every office in the building has cross ventilation and ample daylight. Central stair tower (below, left) has glass bay from mezzanine floor to top for light and view. Below: meeting room at east end of second floor



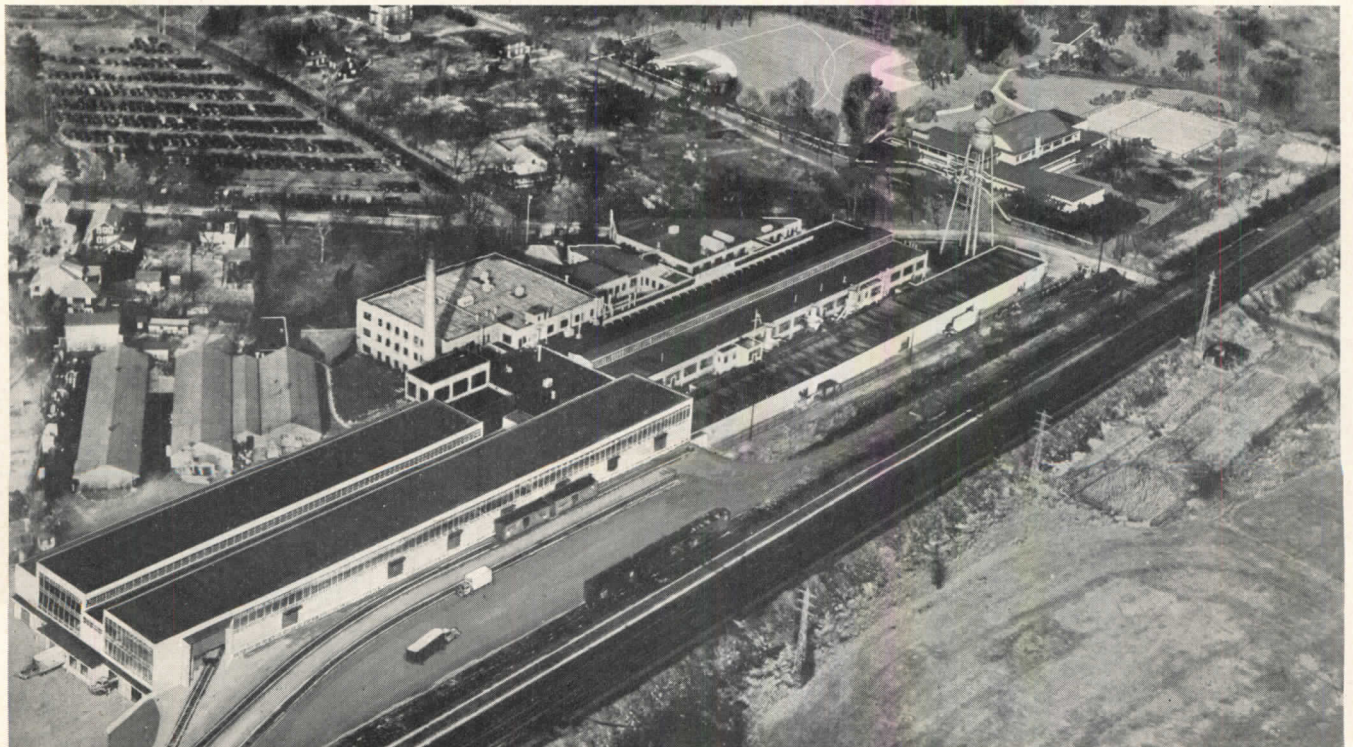


All except small private offices on upper floors are reached via the lanai-corridors. Lanais have sliding glass panels along their full length and are wide enough to serve as waiting rooms





Joseph Molitor Photos



INDUSTRIAL BUILDING FOR THE ELECTROLUX CORPORATION

OLD GREENWICH, CONNECTICUT

Antonin Raymond & L. L. Rado, Architects-Engineers

THE ELECTROLUX CORP. has at Old Greenwich the largest single plant in the world devoted to manufacturing vacuum cleaners. Established at that location in 1933, its facilities have since been gradually enlarged. At the same time, the manufacturing processes have been undergoing evolutionary changes; these continuing developments mean that plant space has to be kept completely flexible. At least as important in designing these recent buildings was the necessity of solving the

transportation problem. Raw materials are received and finished products shipped both by rail and by truck. The rail siding is a full story above surrounding streets. In general, the manufacturing process is conducted on one level, with raw materials, parts and products distributed by overhead conveyors. No process-generated heat or corrosion difficulties affected design of the new buildings; rather, they had to provide space principally for warehousing, with the condition that its full future use

Paul Weidlinger
Structural Engineer

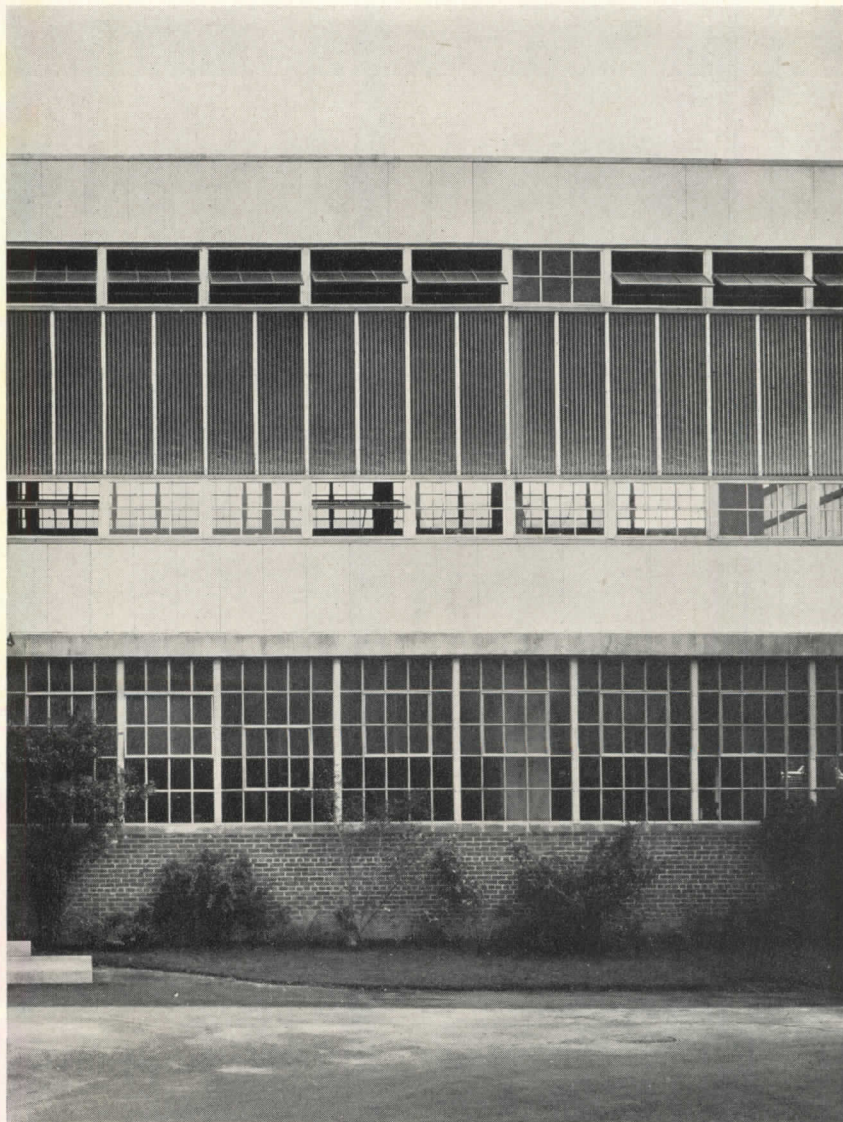
Morris Shapiro
Mechanical Engineer

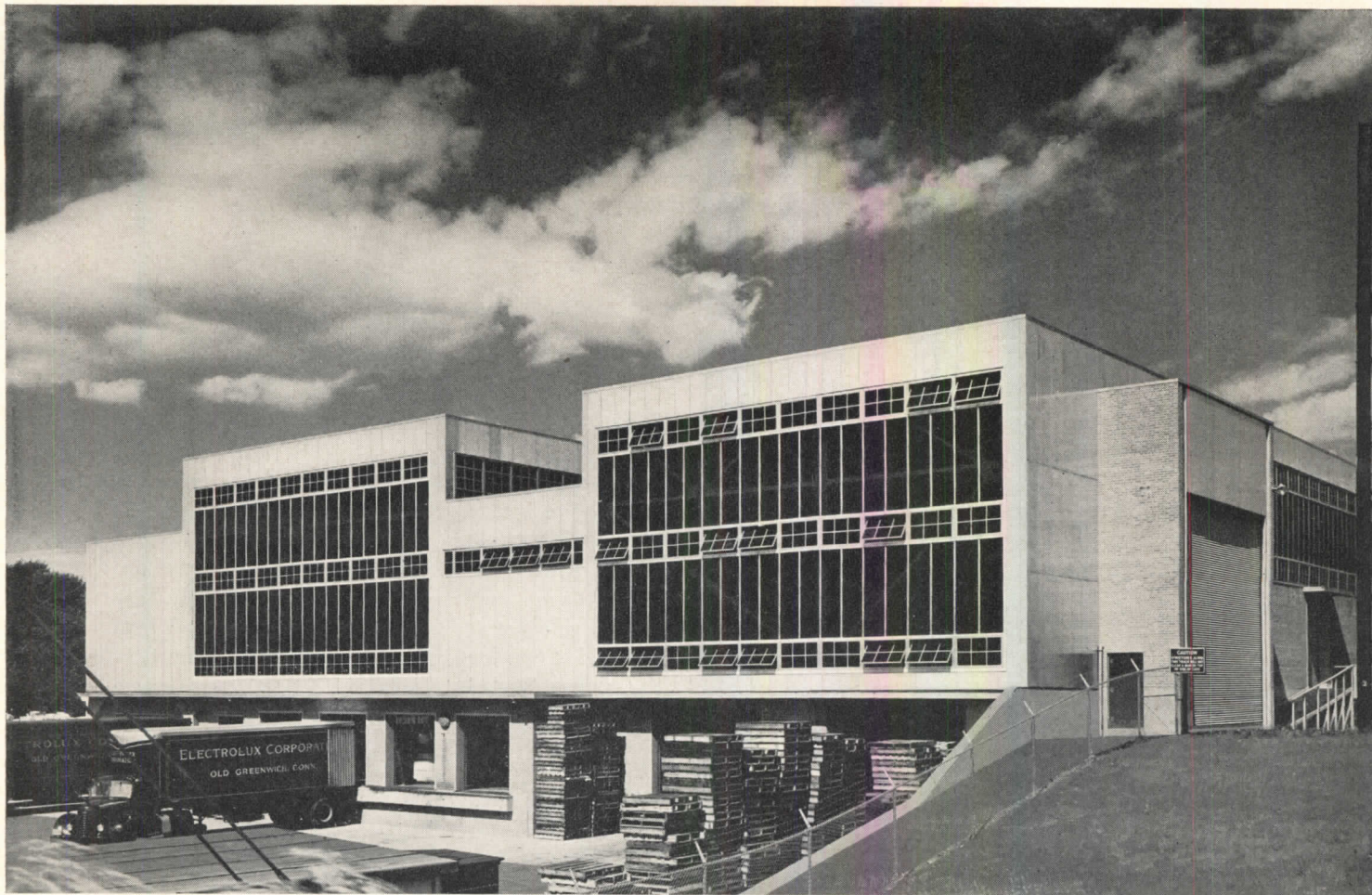
Claude R. Engle, Jr.
Electrical Engineer

Frank W. Binckley
Architect in Charge

Turner Construction Co.
General Contractors

Facing page: top, north side of new building; bottom, air view showing new buildings at lower left, paralleling railroad siding. At right: detail, north façade



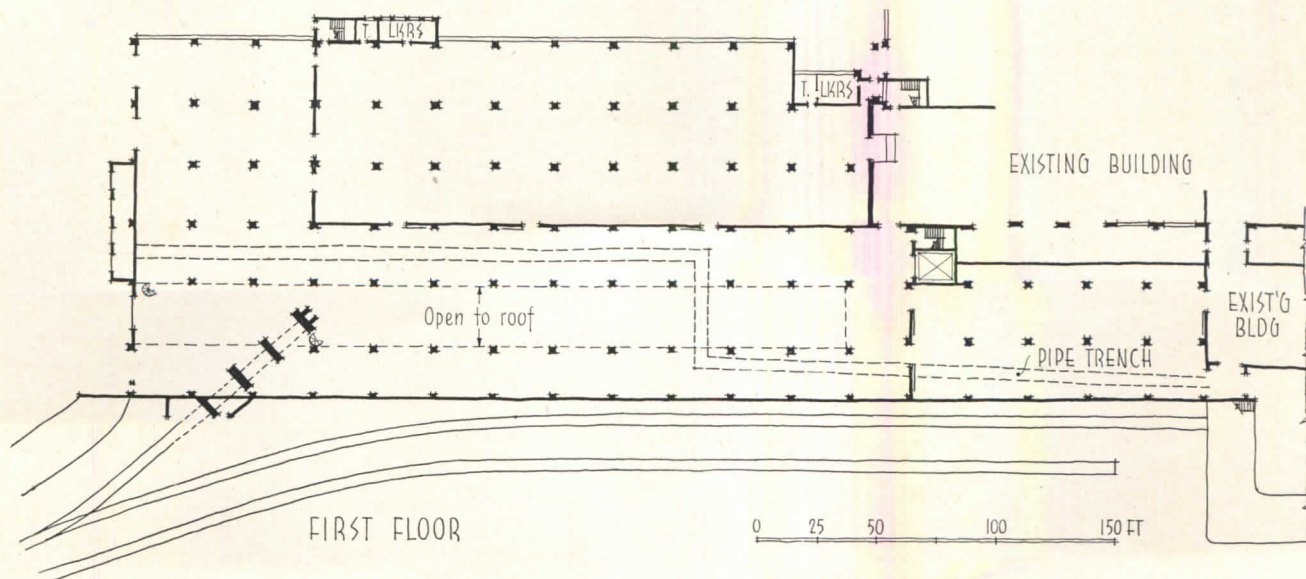


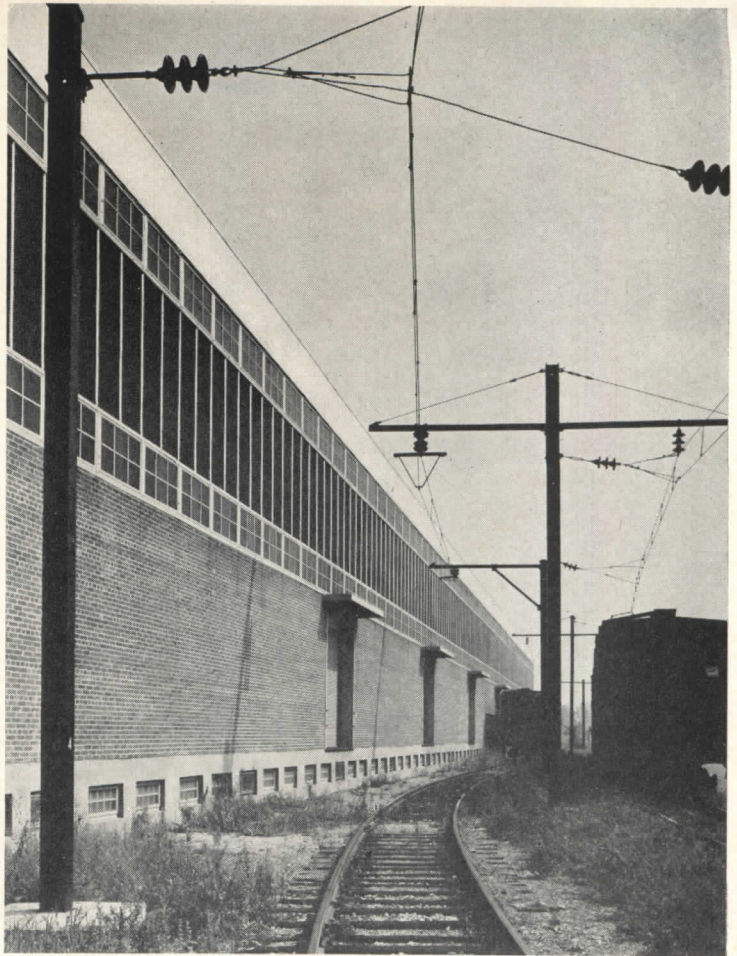
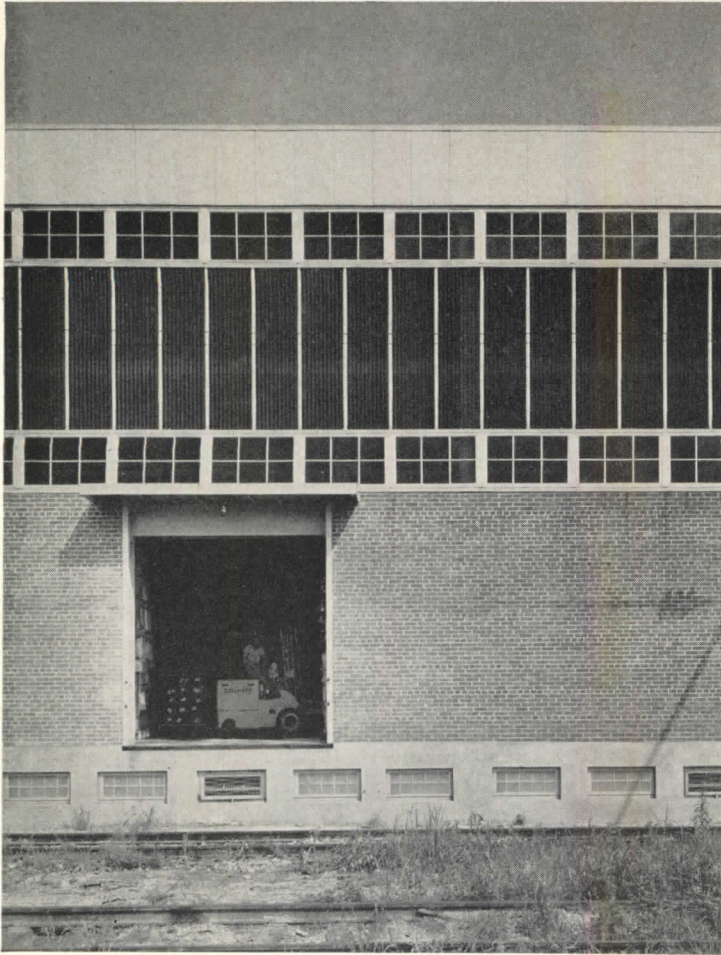
ELECTROLUX PLANT: west end; note difference in level between railroad siding, at right, and truck docks, at left

as manufacturing area should not be inhibited.

The new structures paralleling the railroad have their long axes running east and west. They not only increase the plant's warehousing and manufacturing space; by keeping the two types of shipping (rail and truck) on separate levels yet relating them vertically they reduce confusion to a minimum and achieve a substantial degree of coordination. Heavy shipments arriving by

rail can be brought inside the building on a railroad trestle. Here they can be picked up by the 10-ton crane which travels full length of the south building and transferred to the mezzanine, or second floor, level; other shipments unloaded at the freight car-level doors can be similarly shifted; loads can be transferred to the first floor through the open well in the mezzanine under the crane runway. Both trucking entrance and existing



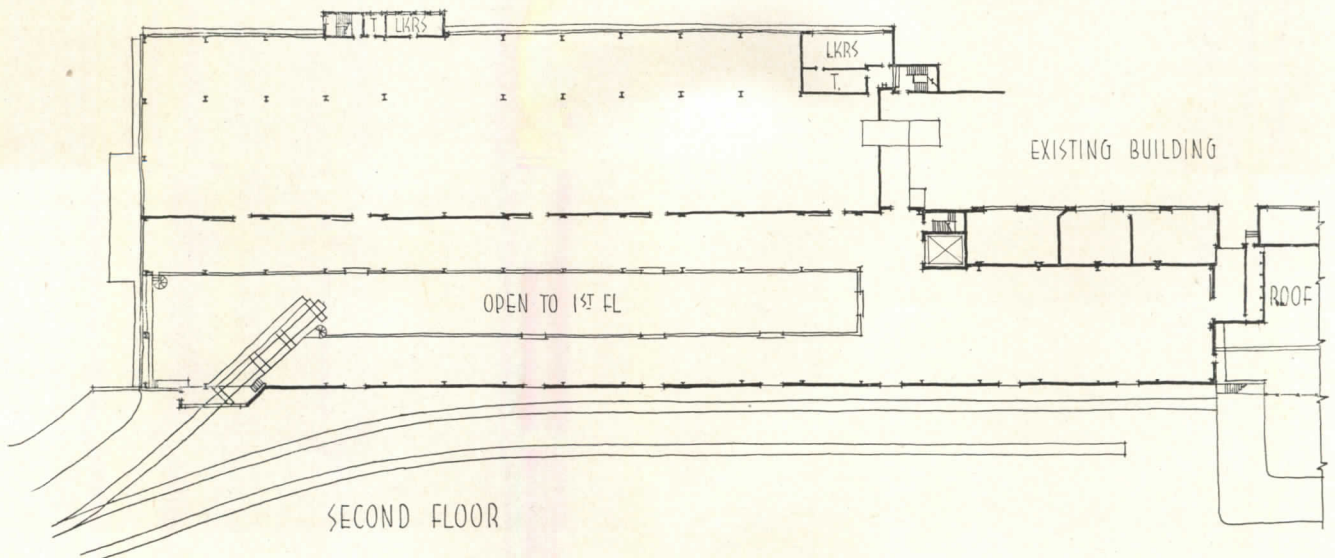


Joseph Molitor Photos

manufacturing areas are at the lower level. An automatic freight elevator also connects the two floors. A minor problem was designing the south building to be erected over a pipe-trench containing waste lines serving the entire plant.

Where walls are exposed to impact they are of concrete block and face brick; above that level they are insulated metal panels whose aluminum surface, clean and

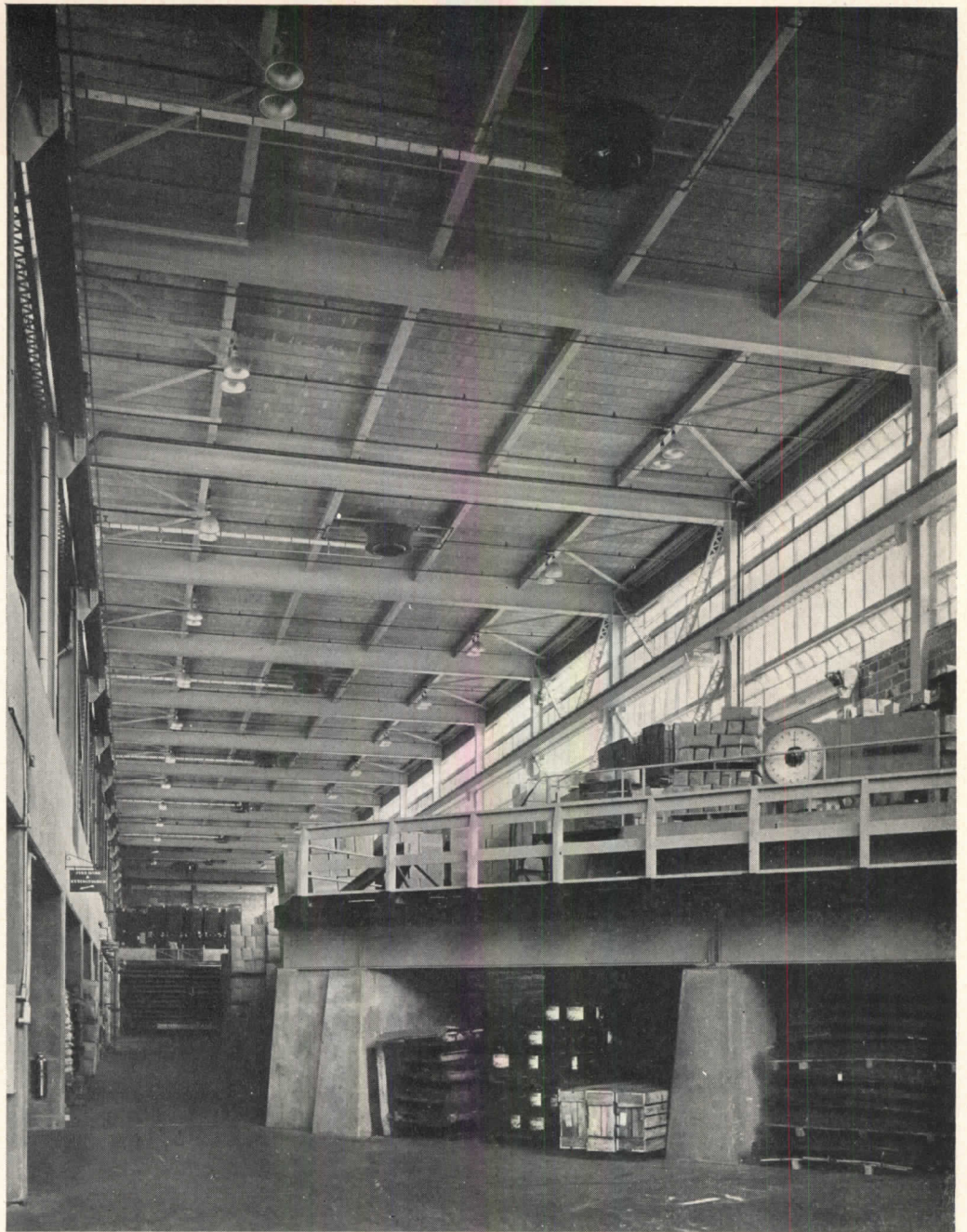
sparkling, was selected to minimize maintenance. Much of the wall area is glass: heat-absorbing and glare-reducing on the south and west sides, with large expanses of fixed corrugated wire glass in aluminum frames and horizontal bands of pivoted aluminum sash, motor-operated. The exterior is a careful composition of brilliant metal and blue glass, whose translucence indicates the high level of natural light within.



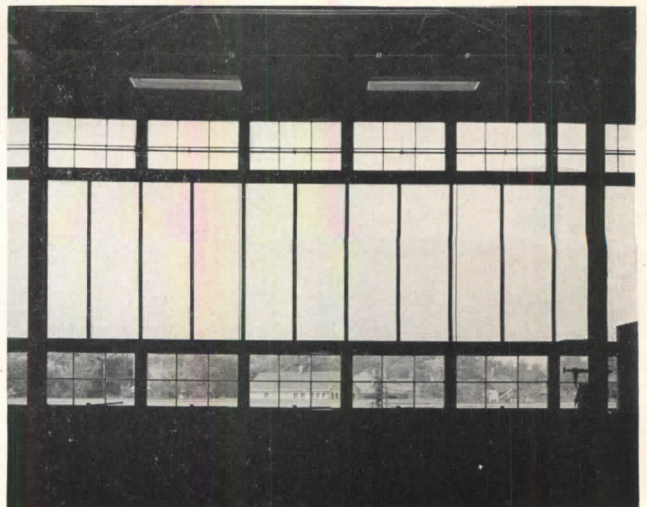
ELECTROLUX PLANT

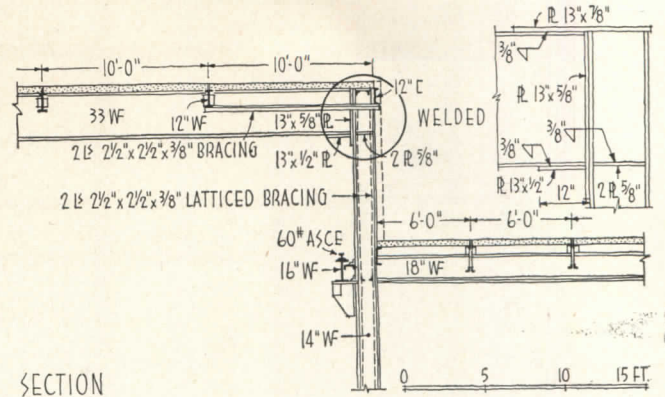
Up to mezzanine floor level this is a fireproof concrete structure; above that are curtain walls and roof with exposed steel frame. Before design was set, various framing systems were compared; studies eventually concentrated on roof trusses vs. rolled sections. Simple rolled sections (see photos and drawings) proved economical since additional initial cost was negligible in relation to total building cost and several advantages could be obtained through their use: for instance, overall exterior height could be kept within zoning requirements yet sufficient interior height could be attained for crane operation.

Light weight insulating concrete roof decking was similarly selected: its slightly higher cost per square foot was offset by possibility of wider joist spacing; and the material's acoustic properties, though not required by the owner, would enhance the building's use. In high bays, light rolled section joists were used; in low bays, where closer joist spacing was needed to attach conveyors and their equipment, open-web joists were found more economical.

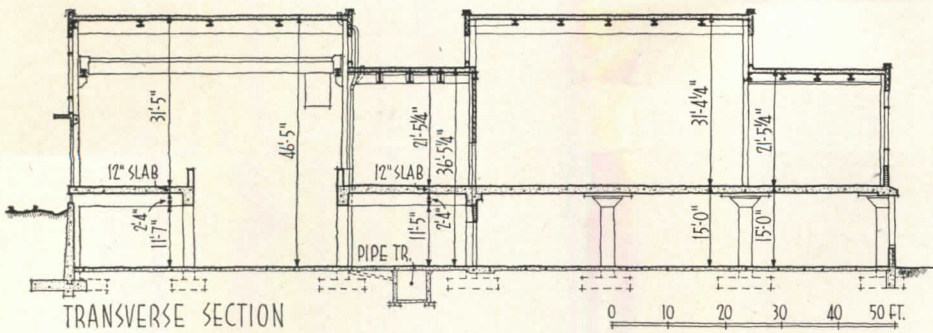
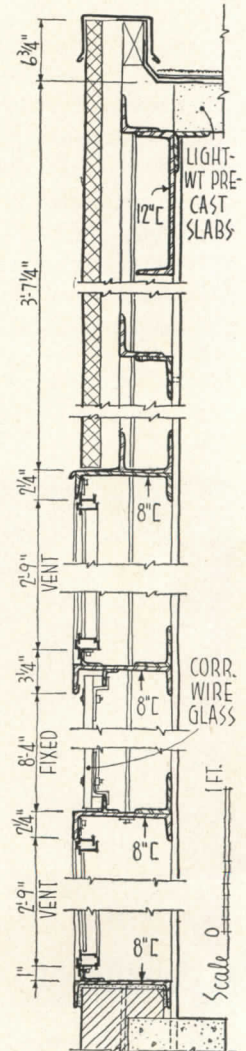
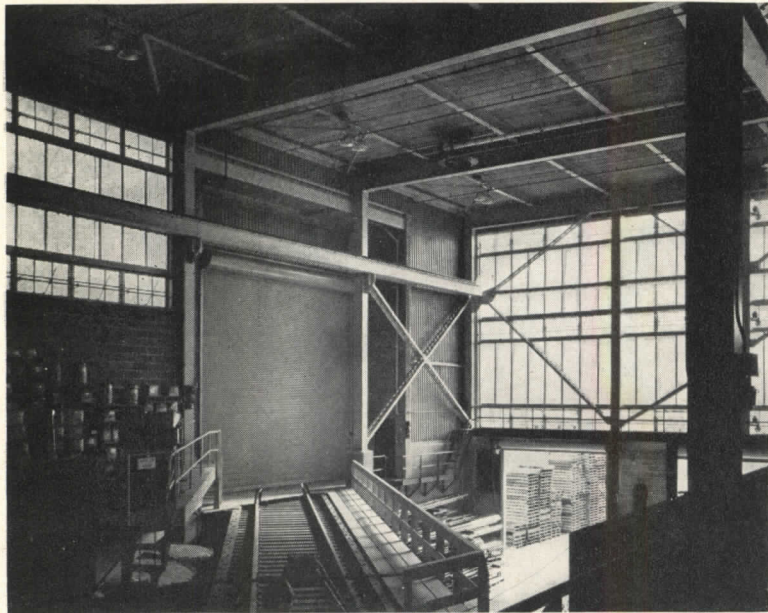


Joseph Malitor Photos





Detail at clerestory shows welded column-girder joint; roof bracing; rolled-section joists, widely spaced, over high bays; open-web joists over low bays where conveyors are supported. Below: section, sash and fixed corrugated wire glass in west wall



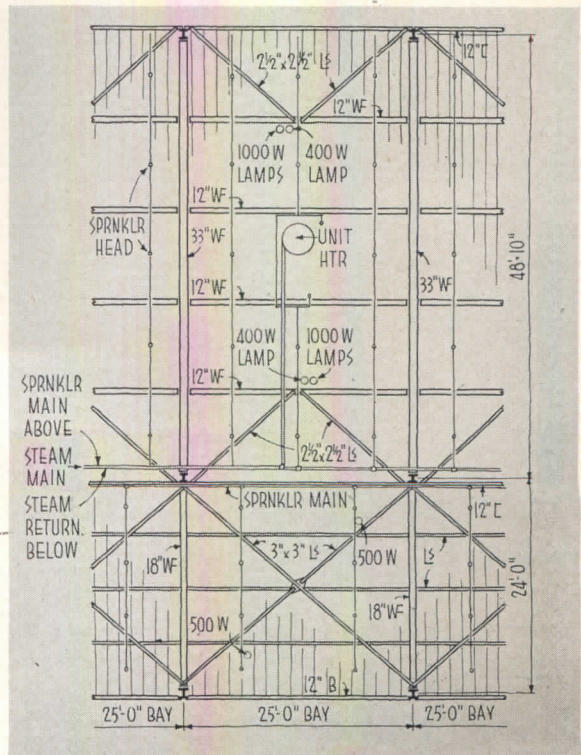
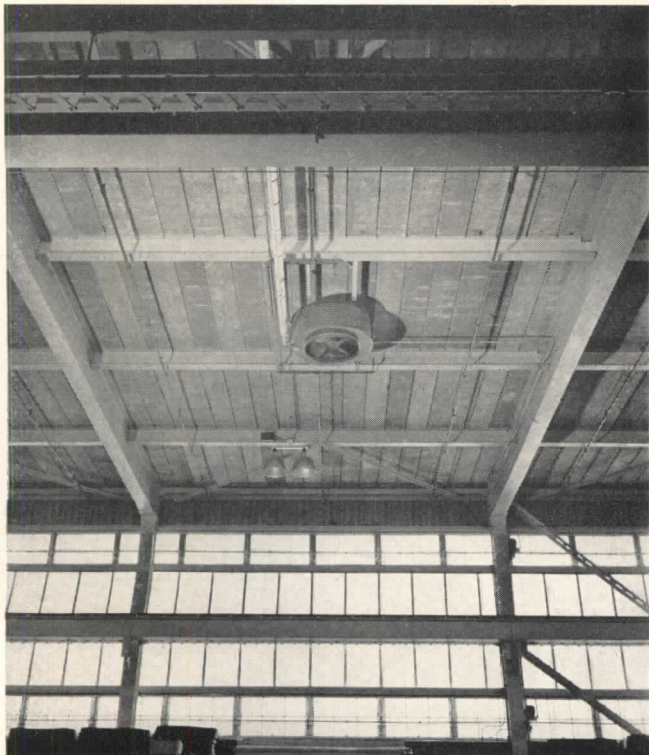
Steel columns and girders, with welded joints, form rigid frames. All other connections were bolted and riveted to accommodate the steel fabricators. Mezzanine floor has a 12-in. slab to carry a design load of 500 lb per sq ft. In the east section, where the open crane-well interrupts continuity, a two-way beam and slab system is used; in the north section, a continuous flat slab on mushroom columns

SOUTH WALL WINDOWS



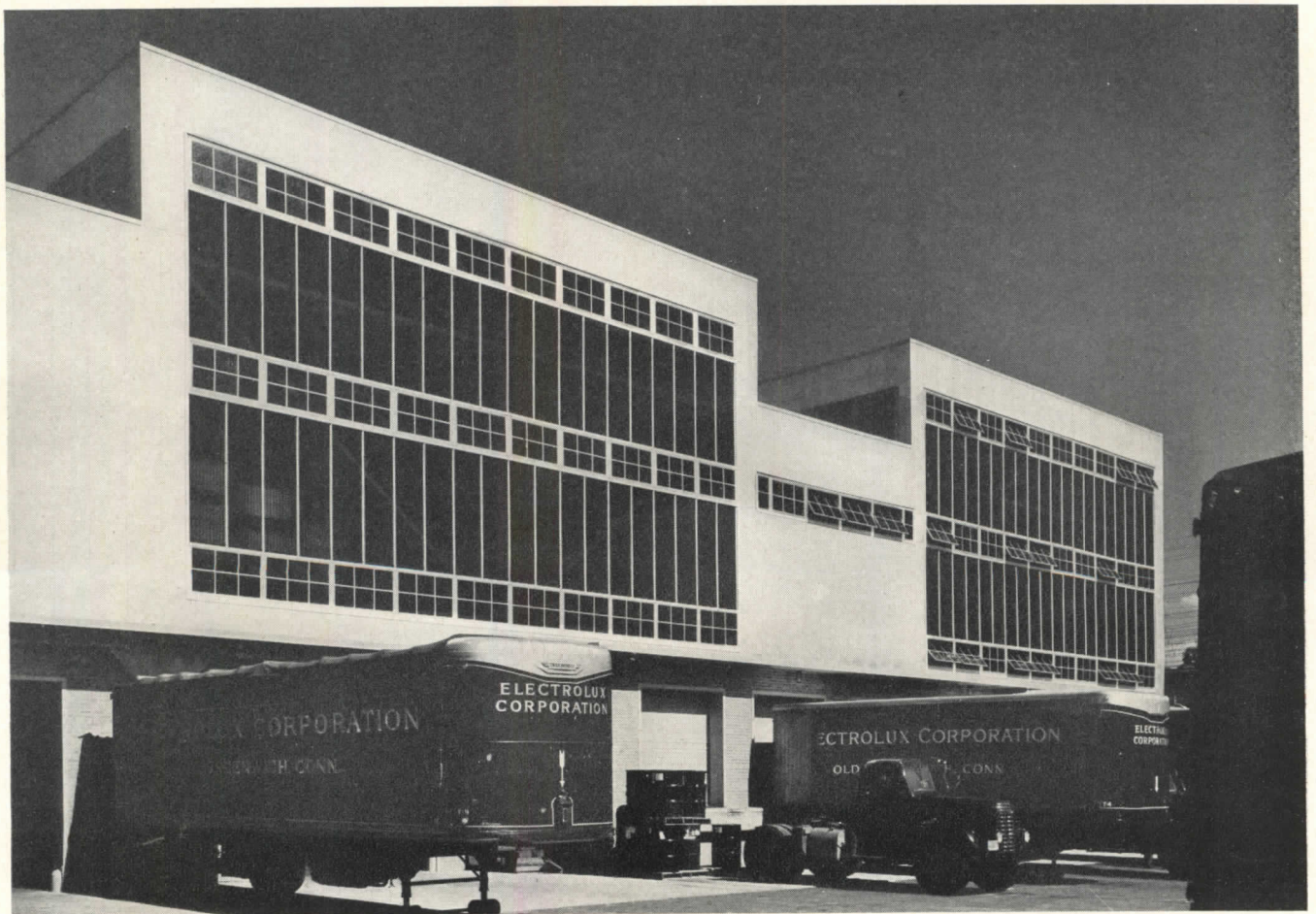
Throughout the plant's design there is recognizable a conscious effort to coordinate functional planning and structural and mechanical elements. Structural details and the framing system as a whole are extremely simple and uncluttered, so that not only were the client's definitely stated requirements and the building's functions provided for; but also, a number of major and minor benefits could be obtained without additional cost. Another evidence of this design concept is contained in the mechanical installations, shown below in

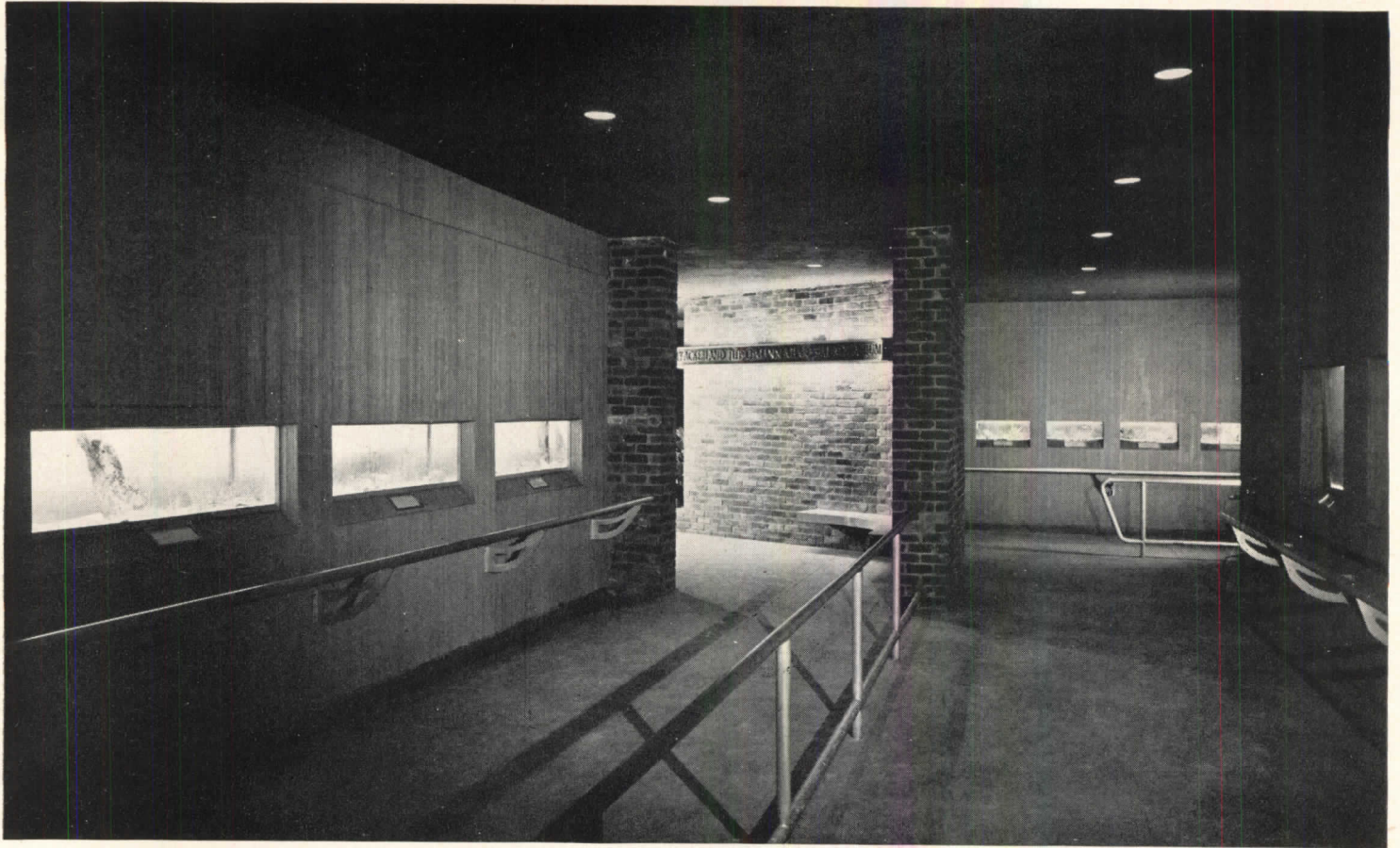
photo and diagram, in which the careful placement of unit heaters, bay lighting and electrical runs, sprinkler piping, etc., is in very apparent contrast to the oft-time expedient or haphazard erection of equipment. The benefits of this consistent design policy in regard to selecting and installing materials, structure and equipment include improved acoustical and thermal properties, low maintenance cost, elimination of clearance problems, and — equally important — that esthetic appeal which only a thoroughly "clean" building affords.





Joseph Mollitor Photos



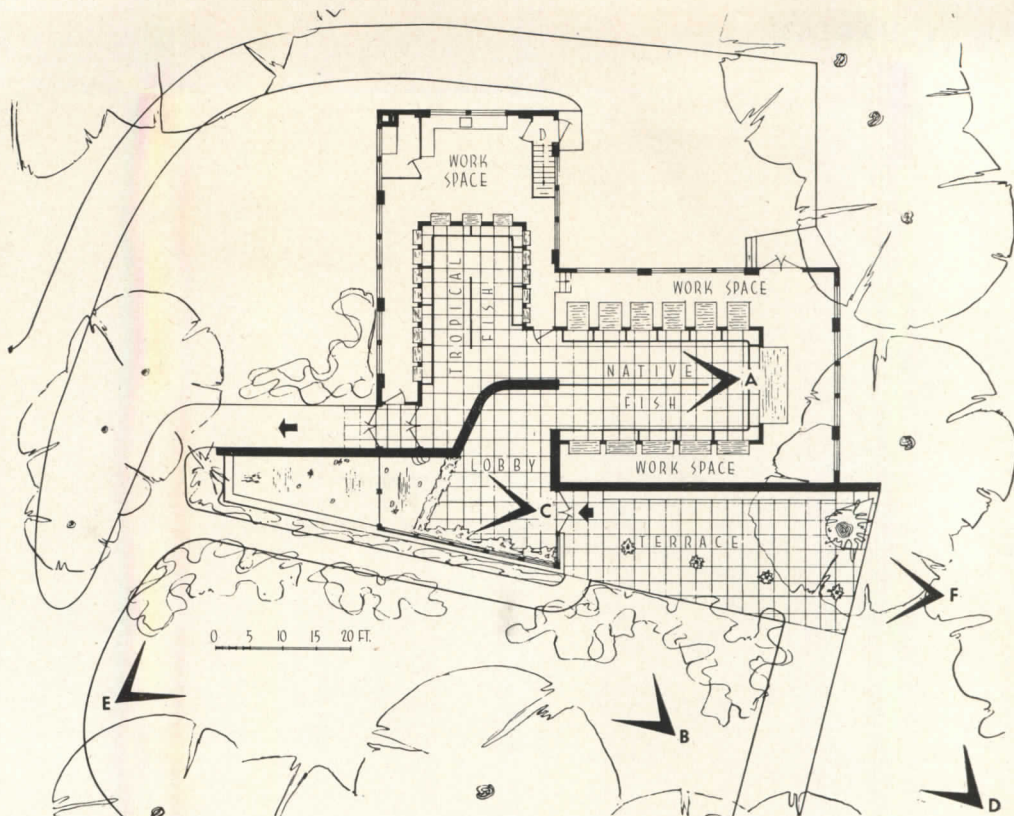
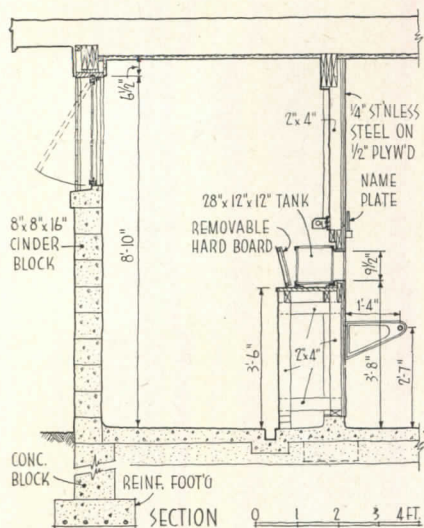


A

THE LILLY ACKERLAND FLEISHMANN

B





MEMORIAL AQUARIUM

Zoological Gardens, Cincinnati, Ohio

Carl A. Strauss, Architect

James E. Allan, Engineer

APPROACHING from "Tiger Grottoes" and the "African Veldt," the visitor to this small aquarium in the Cincinnati Zoo may register surprise at a calm goldfish pool adjacent to the building's wide entrance terrace. But the inside-outside pool, extending into the glass-walled lobby, is a natural guidepost to the interior where native and tropical fish are exhibited in two separate display rooms. These, together with a continuous work space of equal area behind them, comprise the building, winner of the Gold Medal Award, Architects Society of Ohio 1950 Competition.

Provision for correct water for the fish was one of the architect's most critical problems: native fish require constantly changing water, free of chlorine; tropical, "balanced" tanks which must always be clear, although not constantly changed. Because of the aquarium's size, large storage tanks and aerators were replaced by a more compact system of mechanical filters and compressed air for purification. In the basement an open receiver tank takes up fish tank overflow, is supplemented by fresh city water. Aerated and twice filtered, the water is then pumped through plastic piping (copper is harmful to fish) to the fish tanks.

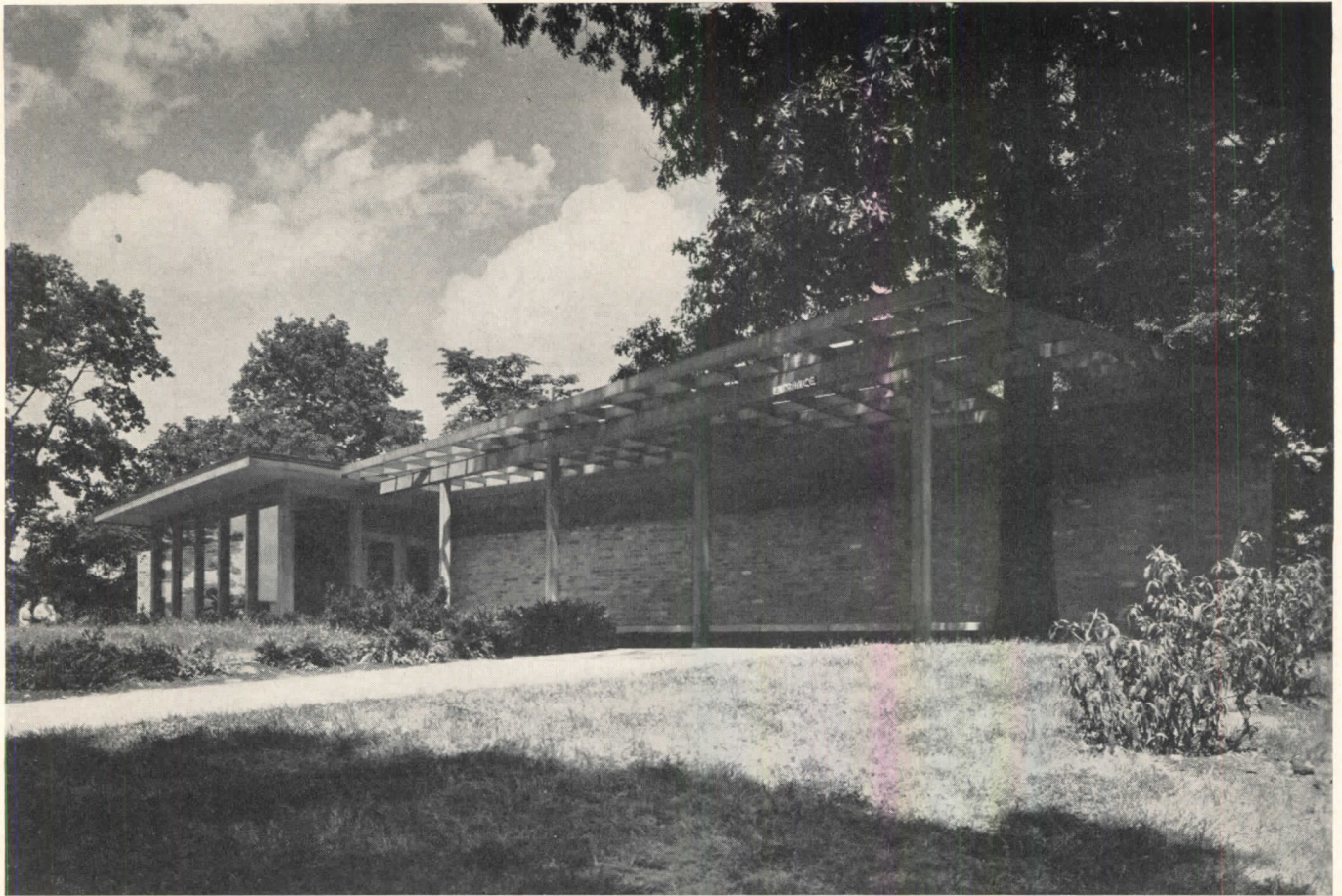


Hedrich-Blessing Studios Photos

Lighting in purposely darkened display rooms, opposite page, top, comes primarily from tanks themselves, focusing observer's attention directly to their occupants. Glass-walled lobby, far left, is approached from terrace with curving brick wall, planted pool (left)

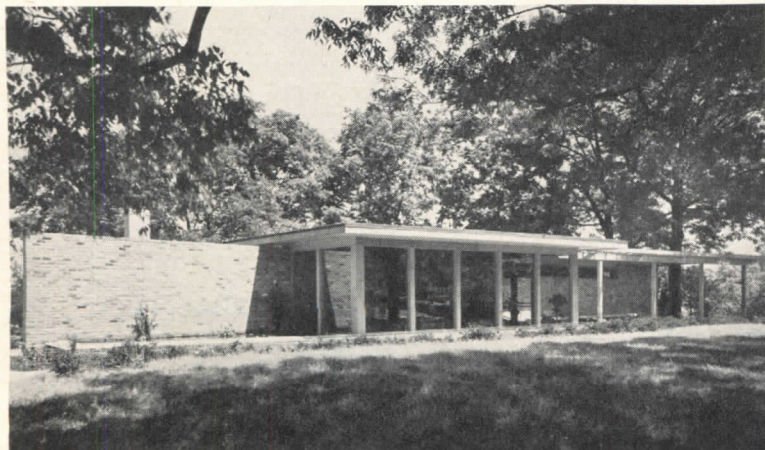
AQUARIUM

D



Hedrich-Blessing Studio Photos

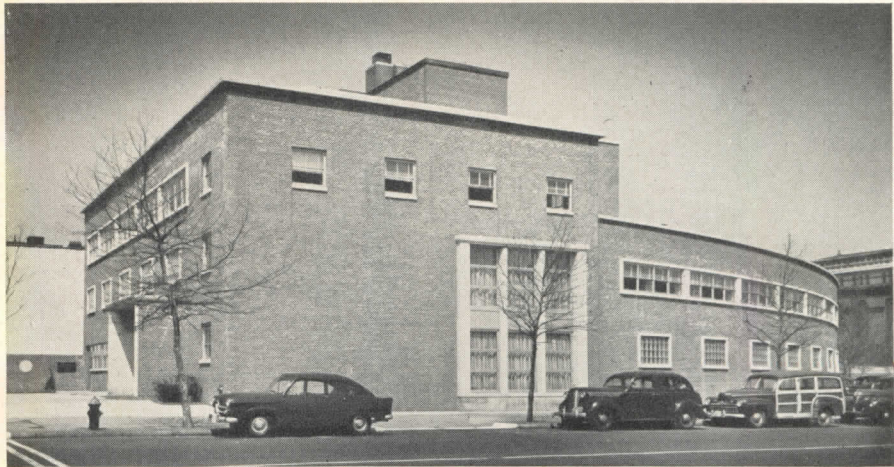
Exterior walls are reclaimed brick and concrete block and cypress. Framing is steel and wood, foundation and basement, concrete block and concrete. Orientation of entrance views, top and below, is indicated on site plan, page 139



E



F



NEW YORK A.S.P.C.A. HEADQUARTERS

Walker & Poor

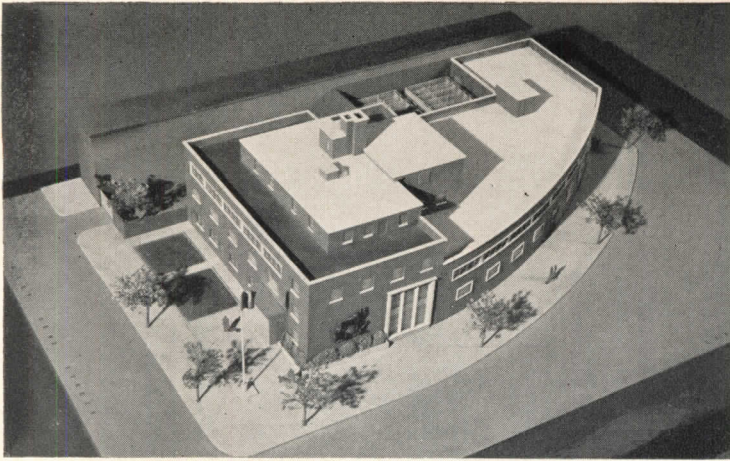
Architects

Severud-Elstad-Kreugar

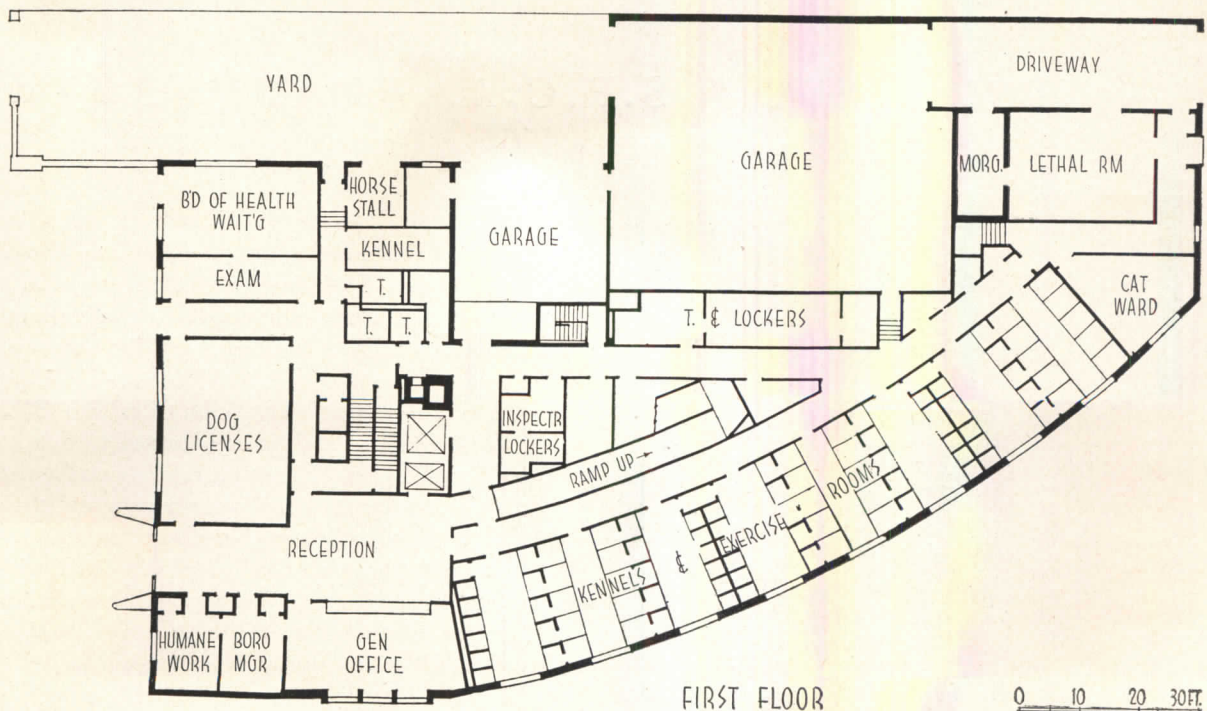
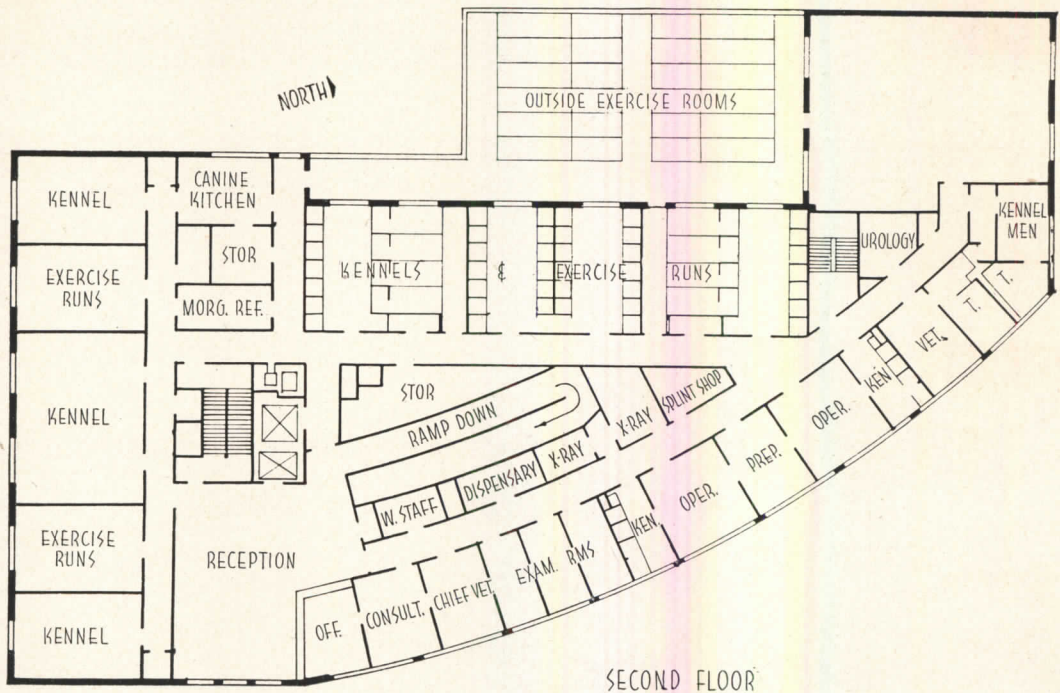
Structural Engineers

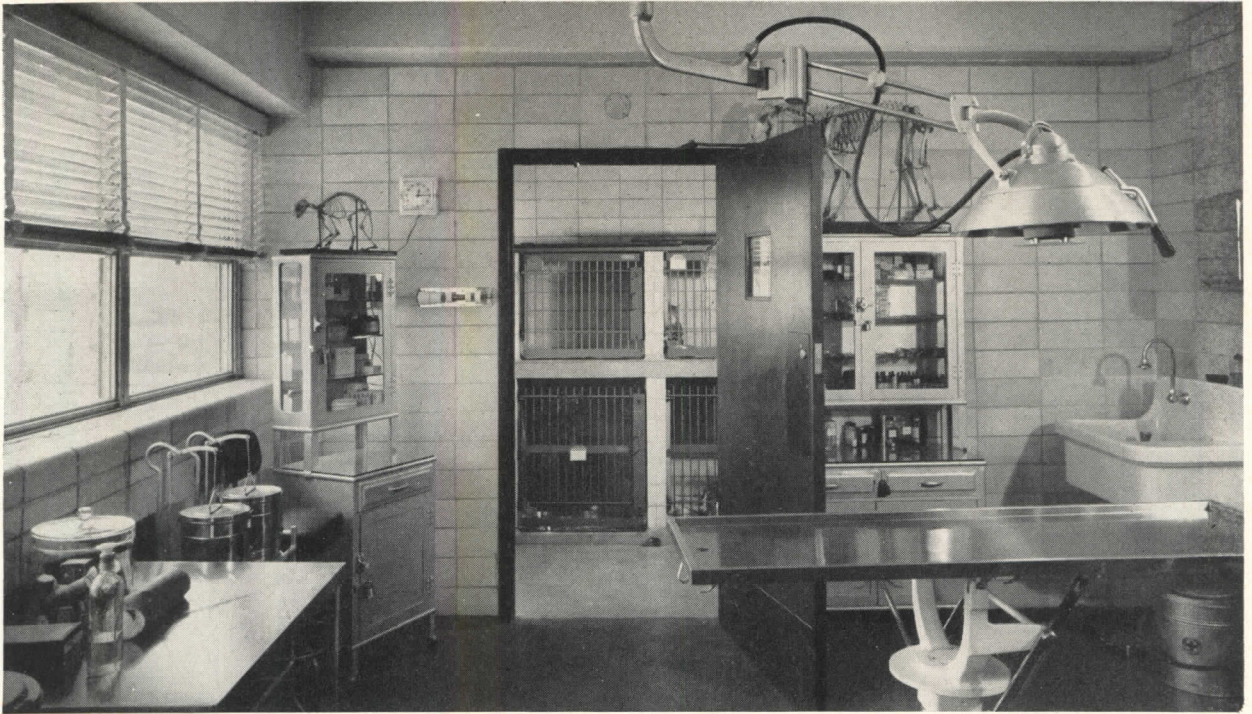
A STAGGERING NUMBER OF FACILITIES had to be provided in this new building for the American Society for the Prevention of Cruelty to Animals. The list included: (1) the home office of the organization; (2) a complete hospital unit for dogs, cats and other pets; (3) an office for licensing dogs; (4) a Board of Health station for checking dogs under suspicion of rabies; (5) a complete disposal unit for dogs condemned to death; (6) a shelter for the care of temporarily homeless pets; (7) living quarters for the chief veterinarian and the superintendent; (8) schoolrooms for classes in dog training; (9) a photographic unit used chiefly in connection with educational programs; (10) a garage for ambulances.

Since the building is in a residential area, no signs were permitted along the front.



The various facilities are so arranged that there is almost no cross traffic. Board of Health has own quarters at south end of building, with licensing bureau, waiting and examination rooms on first floor, detention kennels and exercise runs on second. Homeless pets are housed in ground-floor kennels, close to main entrance and general office. Examination and operating rooms are on second floor, reached by ramps rather than stairs for comfort of patients. Kennels for in-patients have own exercise deck kept free of snow in winter by radiant heating in slab. Individual stairs lead directly from ground floor to two penthouse apartments





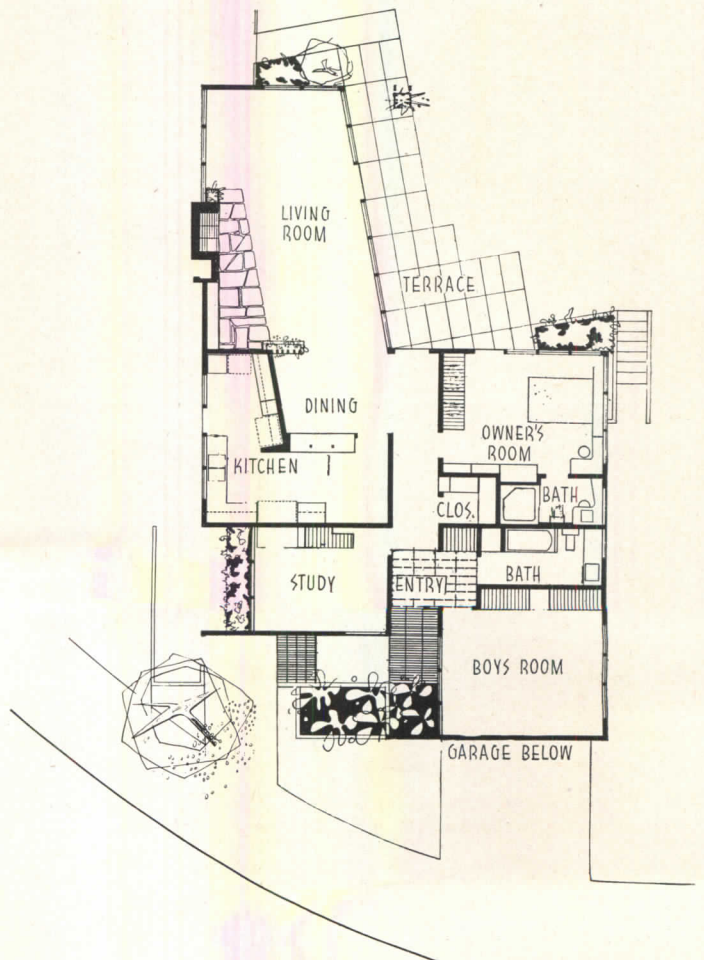
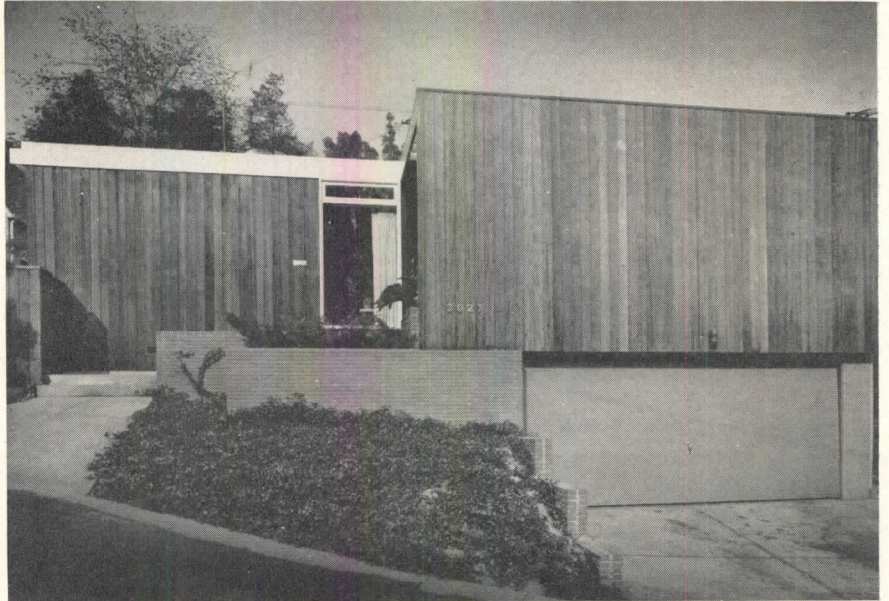
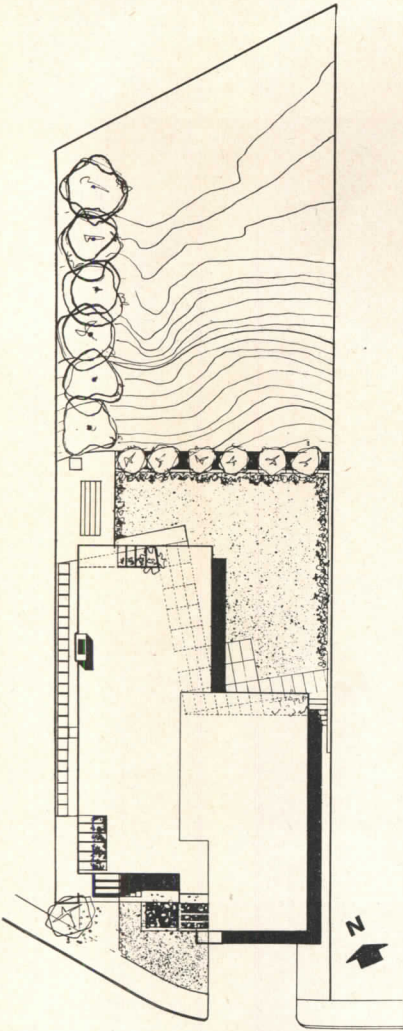
Gottscho-Schleisner Photos



ARCHITECT DESIGNS OWN HOME FOR

Residence of Mr. and Mrs. Eugene Kinn Choy

Los Angeles, California



NARROW HILLSIDE LOT

Eugene Kinn Choy, Architect

William M. Rowland, Landscaping Consultant



Julius Shulman Photos

A HILLSIDE LOT only 50 ft wide, sloping in two directions and curving at a 30 deg angle along the front turned the planning of this house into a test of the architect-owner's ingenuity. Complicating the problem still further, changes in floor level were ruled out because of the family's two small children (both boys, one four and the other six). A shaded garden-terrace with complete privacy was considered essential, and privacy for the diversified activities of parents and children was still another requisite.

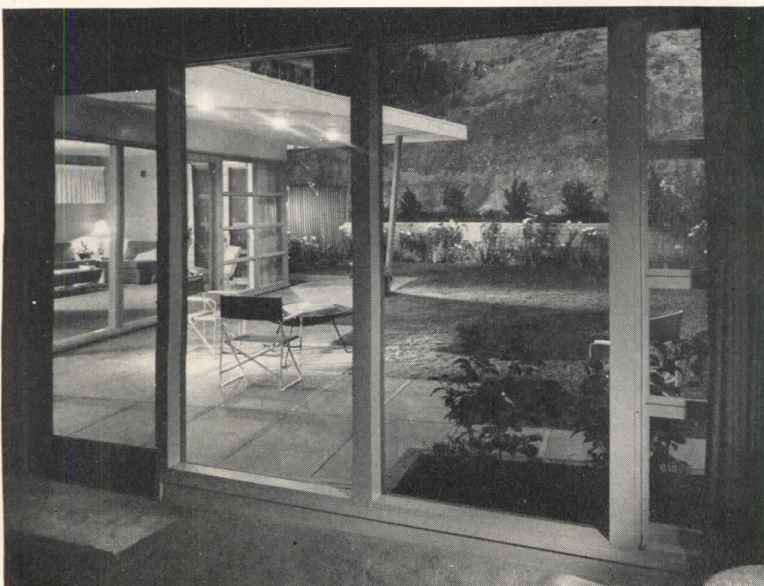
To achieve a one-level house with a secluded terrace at the rear, a shelf had to be cut into the hill. The down-

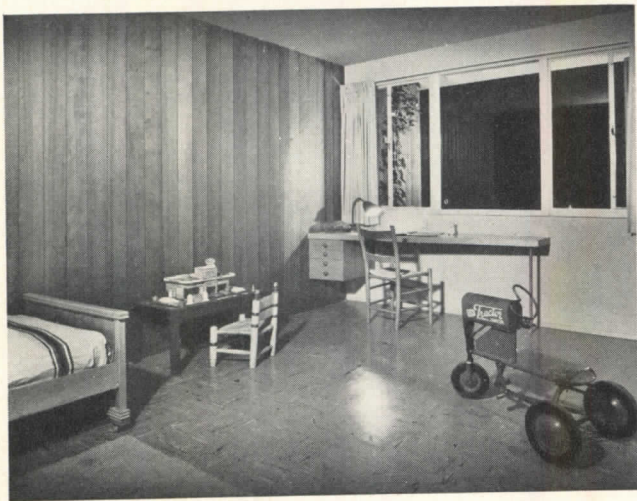
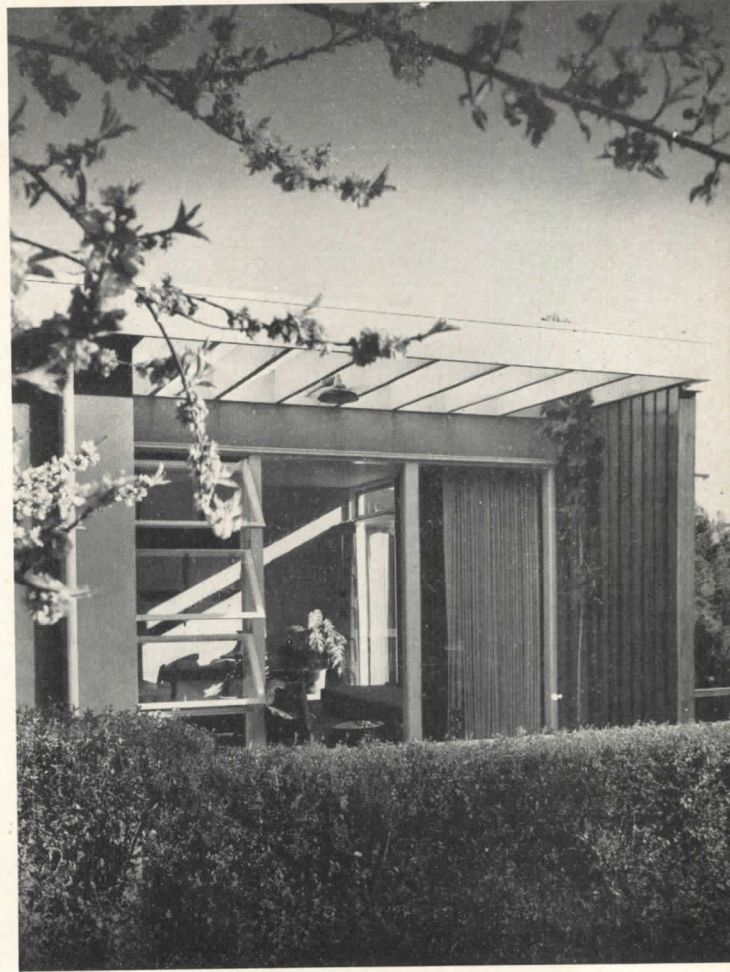
ward slope of the site at the front then permitted placing of the garage on a lower level. The living-dining area is at the rear, facing the terrace; it is not directly visible from the entrance, and is completely free from cross-traffic. The master bedroom also is at the rear, facing the terrace, but is so located that no part of the house is more than a few steps away. The boys' bedroom is almost completely isolated from the rest of the house. The study, which doubles as a guest room, is similarly isolated by location, and given even more privacy by the use of sound-absorbing materials in ceiling, walls and floor.

CHOY HOUSE



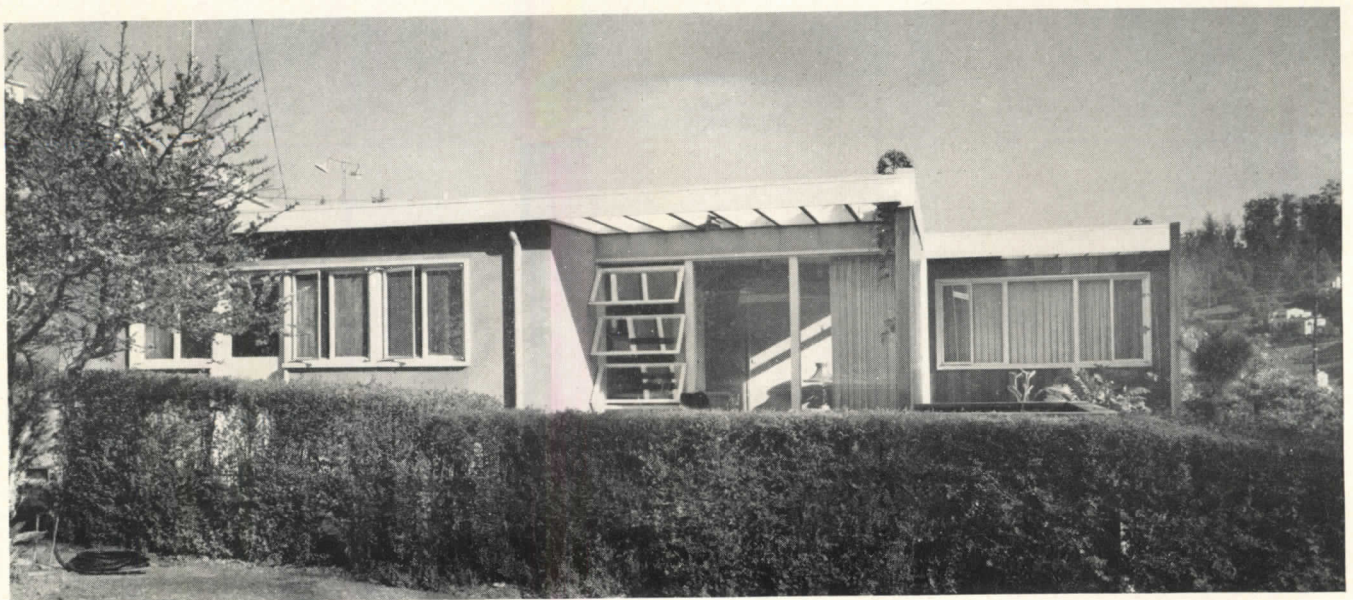
Living room (above) has floor-to-ceiling windows along one whole side and parts of two others to emphasize feeling of openness; dining area opening from living room and two-way cabinet between dining and kitchen areas (right) serve the same purpose. Master bedroom (below, right) has built-in bed and shelf-cabinet headboard, dressing-table and mirror, dresser-drawers and mirror, wardrobe and storage shelves. Below: wall along terrace

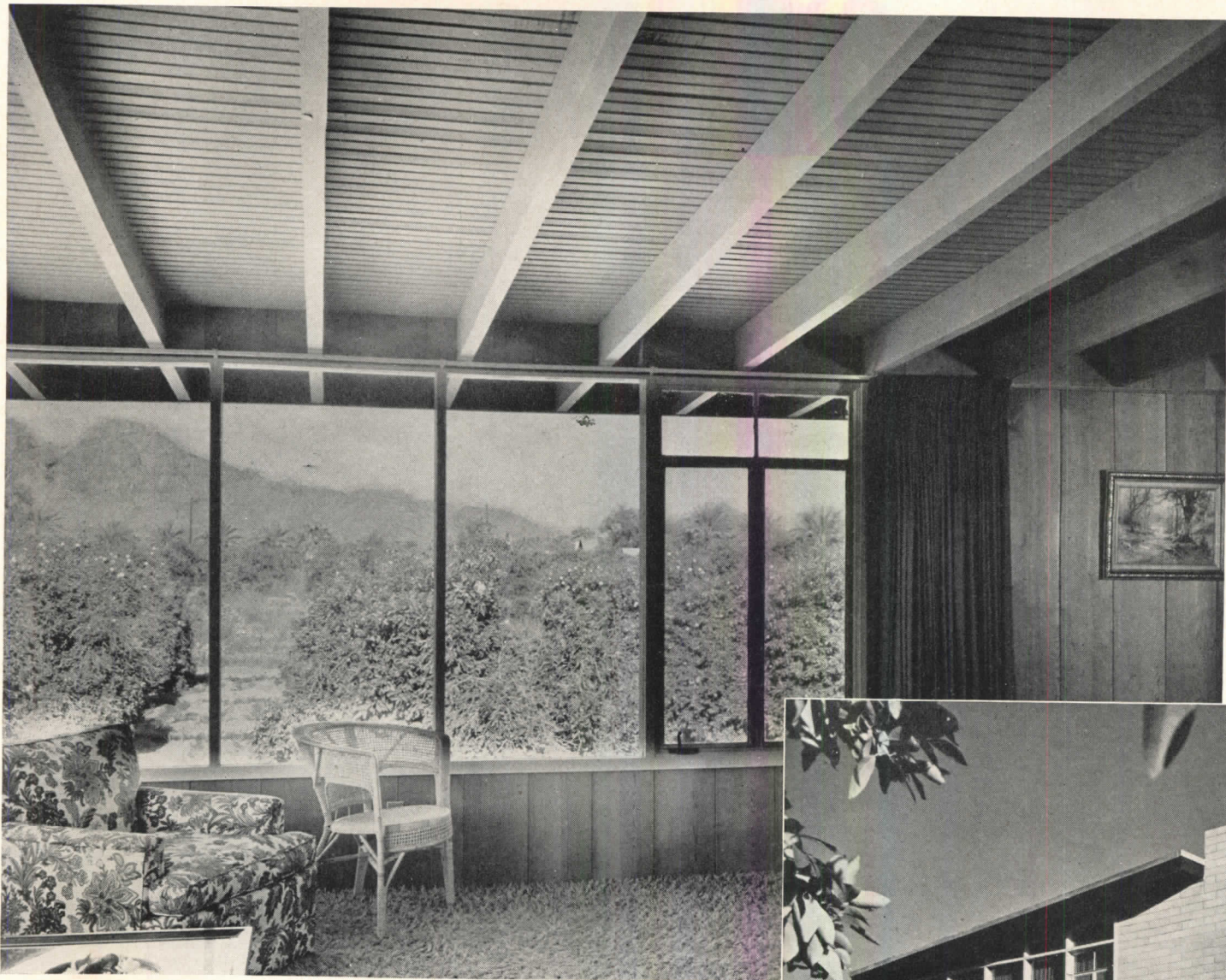




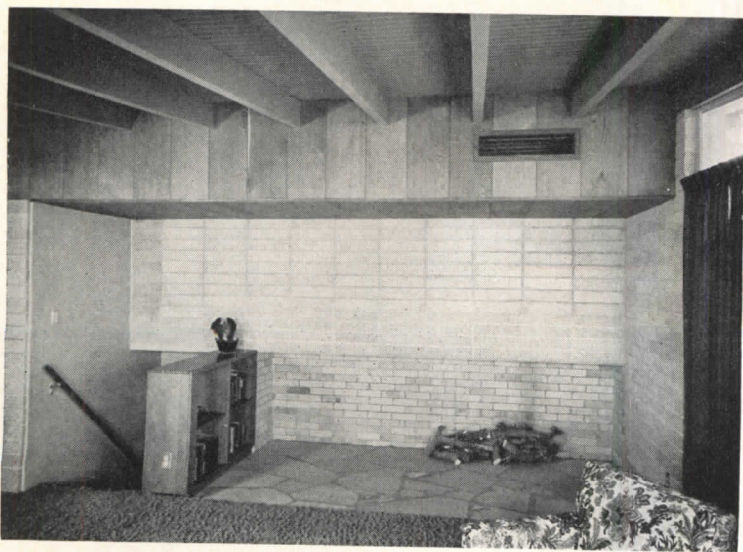
Julius Shulman Photos

Above and top left: study-guest room has acoustic tile ceiling, cork floor and glass fiber insulation on walls separating it from entry and kitchen; area outside its windows is shielded from street by extension of vertical redwood siding front wall. Bottom left: boys' room, like study, repeats vertical siding of exterior on wall facing street. Below: east facade, with boys' room at extreme right, study in center, kitchen at left





Stuart A. Weiner Photos



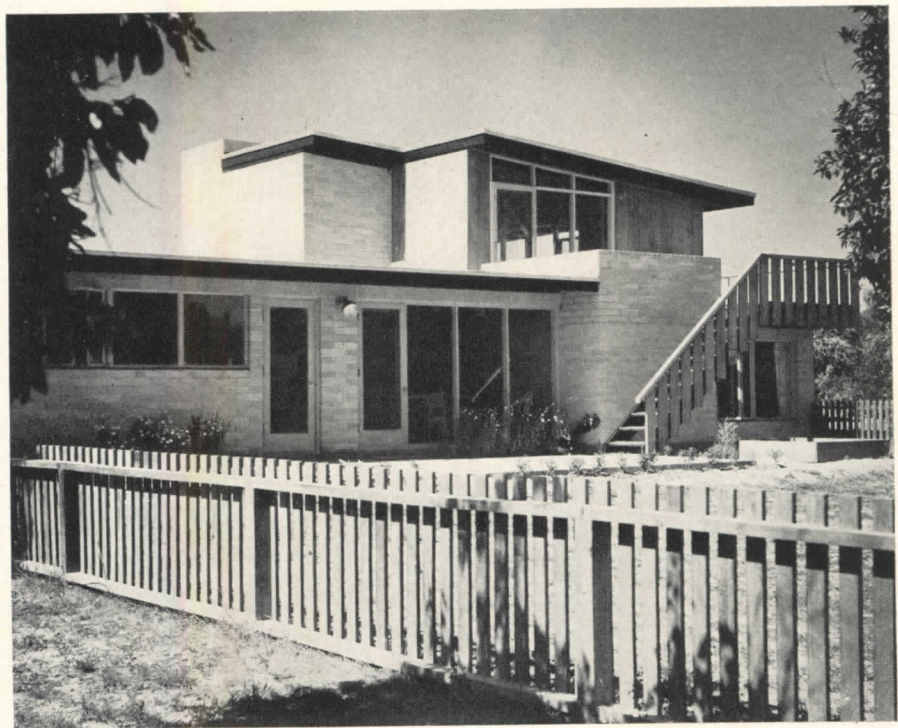
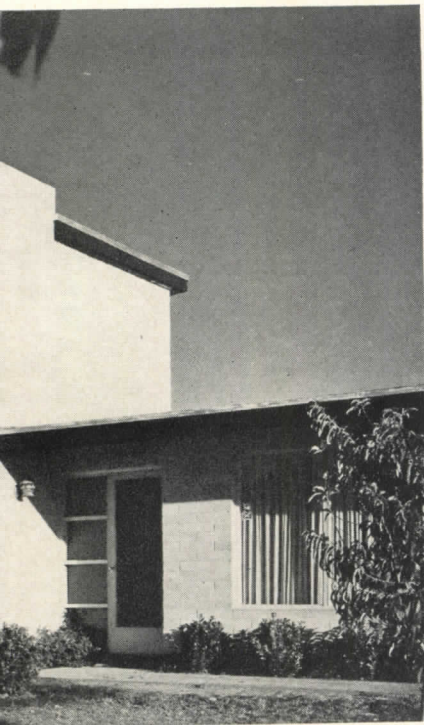
The mountain view shown upper left was a deciding factor in the layout of this Arizona house—the many-windowed living room was placed on the second floor to obtain a clear panorama. Hooded alcove on opposite wall (left) serves as mammoth fireplace

RESIDENCE FOR MR. AND MRS. H. V. POLADIAN

Phoenix, Arizona

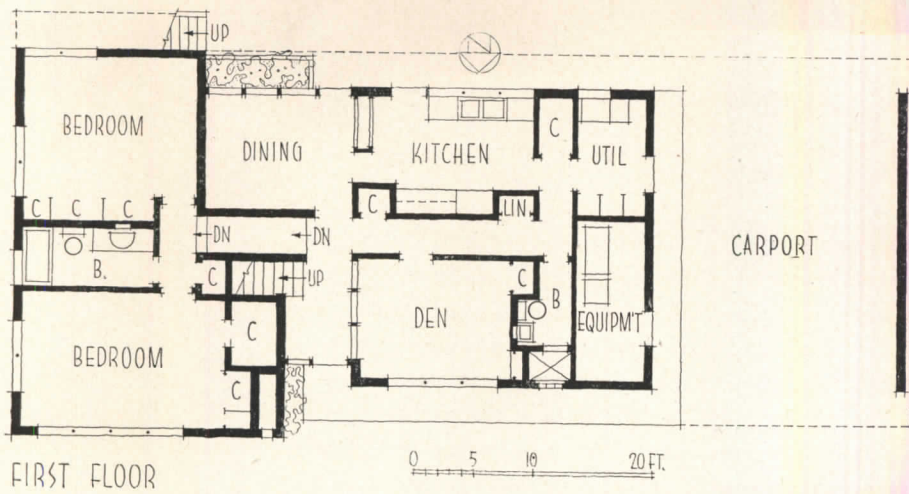
Ralph Haver, Architect

THE SOMEWHAT UNUSUAL PLAN ORGANIZATION of this trim house is the result of efforts to gain full advantage from site and climate conditions. The plot is near a scenic group of mountains, but at ground level the view is blocked by a grove of orange trees. To offset this, the living room was placed on the second floor where it has a clear vista of the countryside. An outdoor stairway gives easy access to terraces and play yard. The bedrooms, placed directly below the living room, are lent privacy on the exterior by the orange trees, on the interior by a slight change in floor level. The latter device also serves to shorten the stair run to the second floor. In the central

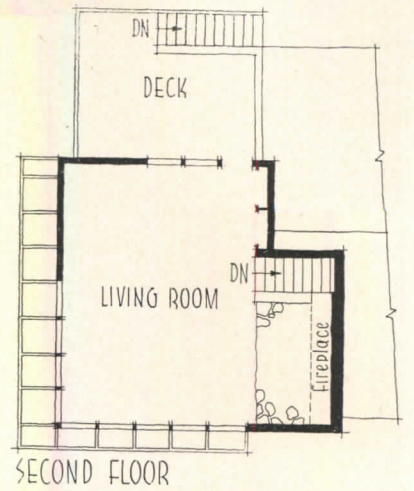


portion of the building, half-partitions are used to add a sense of space to the smallish rooms. Service facilities and blank walls face the west to shield living areas from the hot afternoon sun. Further interior comfort is assured by air conditioning and wide overhangs above all windows. Oiled redwood and painted pumice block, used as finishes both inside and outside the house, give a sense of continuity to the design and are conducive to an informal way of life.

POLADIAN HOUSE



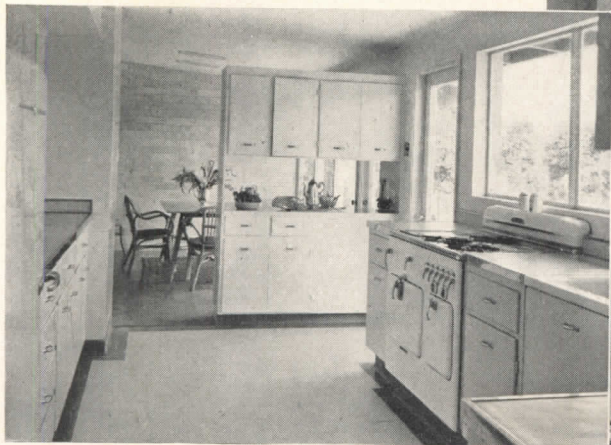
FIRST FLOOR



SECOND FLOOR

Stuart A. Weiner

The plan divides the house into three centers of activity, the upstairs living room, the central downstairs rooms, and the bedrooms set at the end of a short ramped hall



Open doorways and half-partitions increase the apparent size of dining room, kitchen and entry, as does outdoor terrace to the south

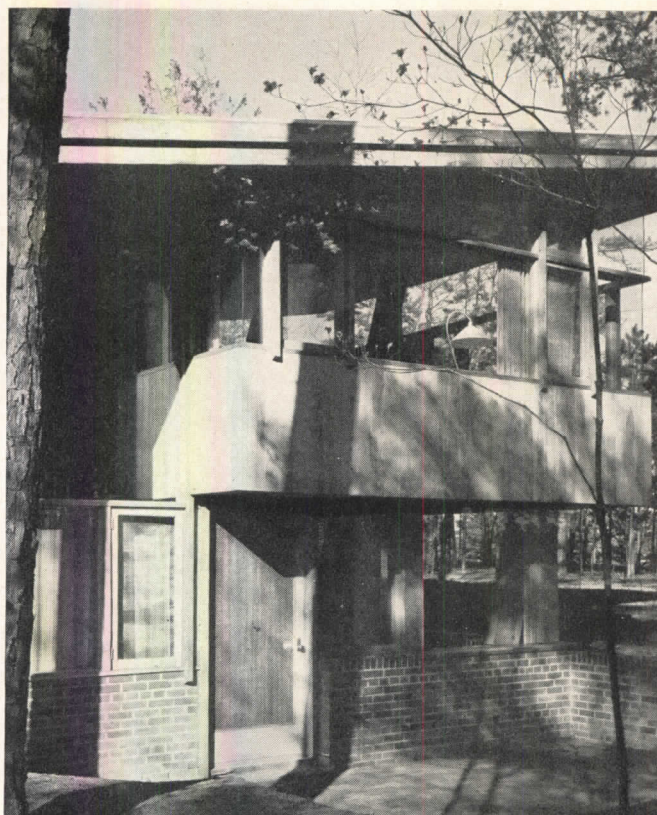




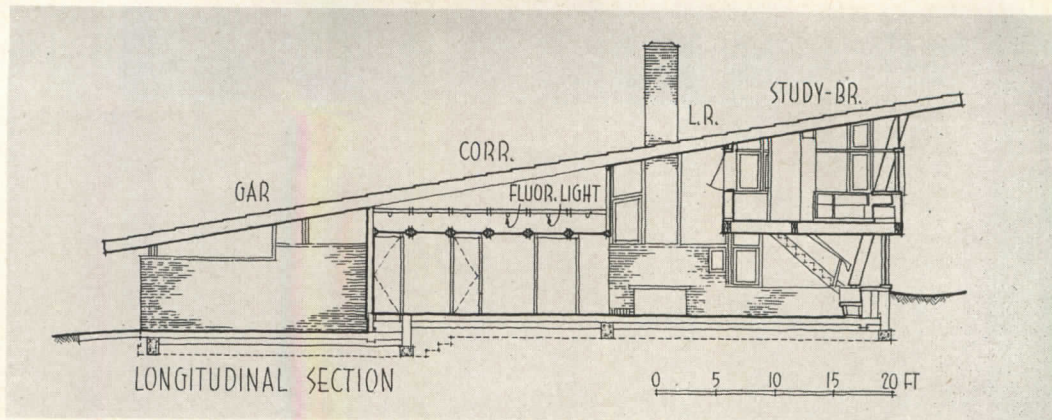
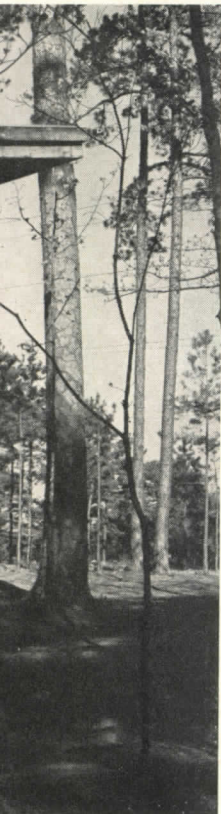
HOUSE IN RALEIGH, NORTH CAROLINA

James W. Fitzgibbon, Architect

NORTH CAROLINA HOUSE



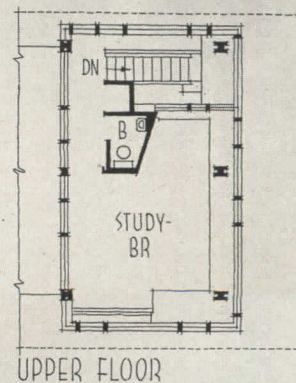
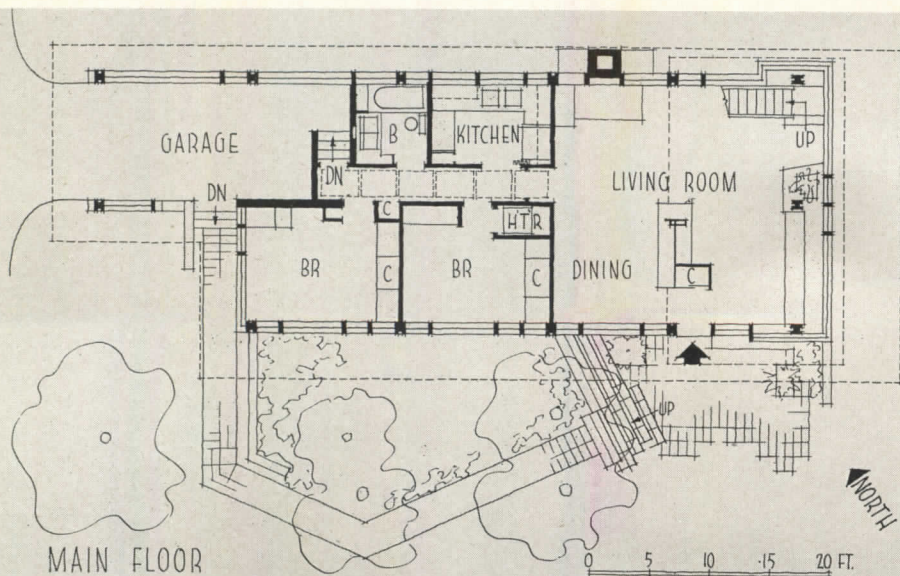
Joseph W. Molitor Photos

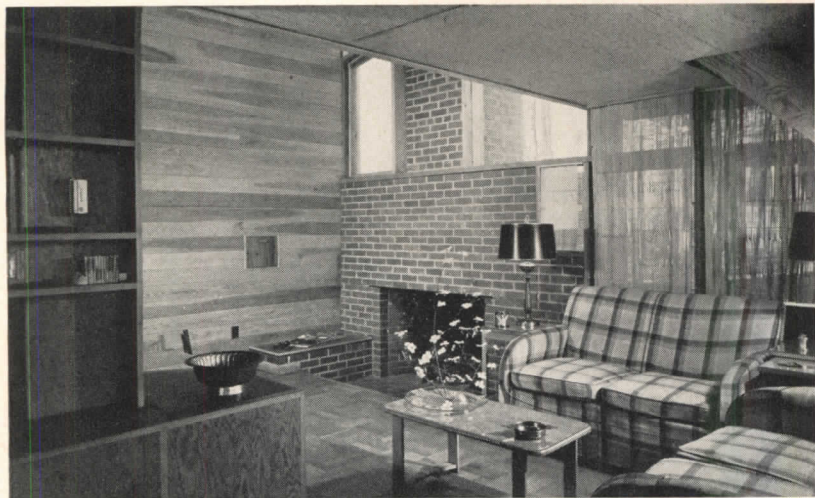


Materials and structure key this house to its site, echo natural surroundings. A sophisticated handling of the design preserves these qualities, yet lifts it above mere rusticity. The house slopes up from the low street front (below left) to encompass view at rear (above left). Main entrance is at side (above center)

AN UNUSUALLY CLOSE RELATIONSHIP to its sloping, pine-dotted site characterizes this Raleigh, North Carolina residence of Mr. and Mrs. Ralph R. Fadum. From a low, unobtrusive street facade, the structure's roof slopes up, recalling the land contour, to afford two-story living areas at the rear which take full advantage of views across an adjoining golf course. The living room is half-sunken to avoid awkward changes of level within the house. The naturalness of the landscape is also reflected in the materials selected for the house — exterior walls are natural finish brick and cypress, interiors are cypress and douglas fir.

A light, suspended quality is given the design by the structural system used. The house is supported by a series of built-up wood columns, anchored by steel plates; roof girders fit between sections of the columns. Walls are mostly screen-like glazing, with much of the conventional sash eliminated. The suspended effect is greatly increased from the rear by slanting the columns to the interior, where they connect with built-in cabinets. Frank A. Walser was contractor.



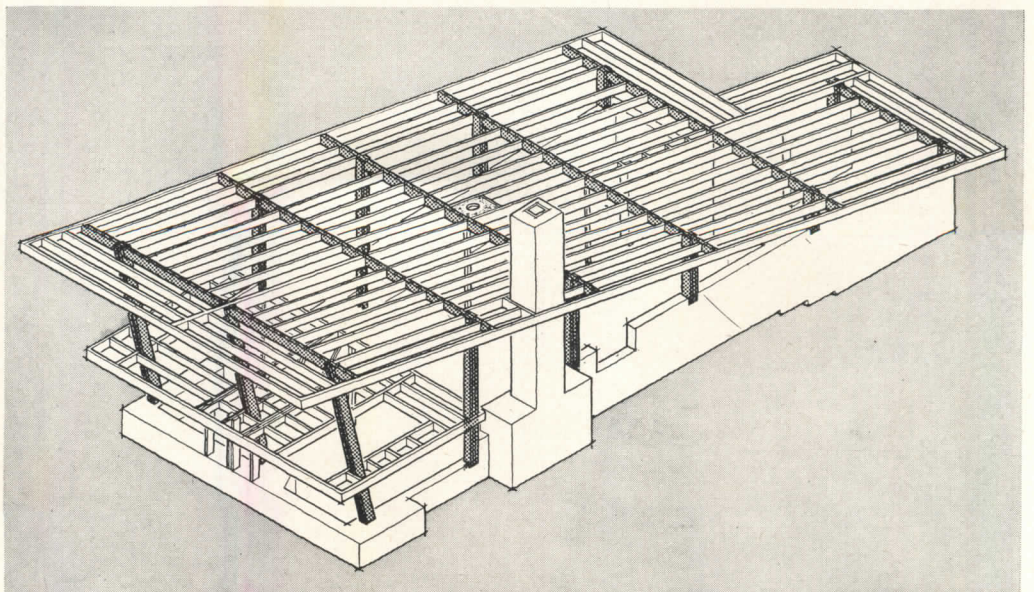
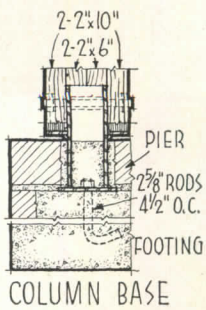


The living room (below and left) focuses on view across golf course. The building was placed well back from the course for privacy and protection from golf ball hazards. A central built-in cabinet separates the living room from the dining area (far right), which runs full height of structure. Heating is by hot air, with an oil-fired furnace located in a central closet. Upper level study is heated by opening sash above dining area. The effect of lightness is carried through the design by such details as the elevation of stair and column bases on short metal brackets (see detail below center). Even the kitchen (right) shares view of woods

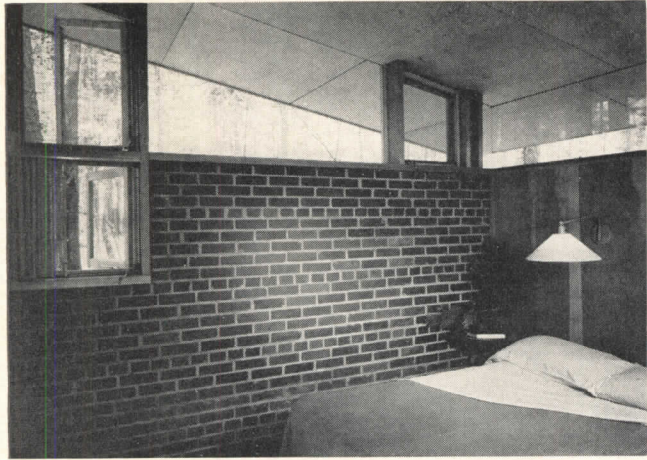




Joseph W. Molitor Photos



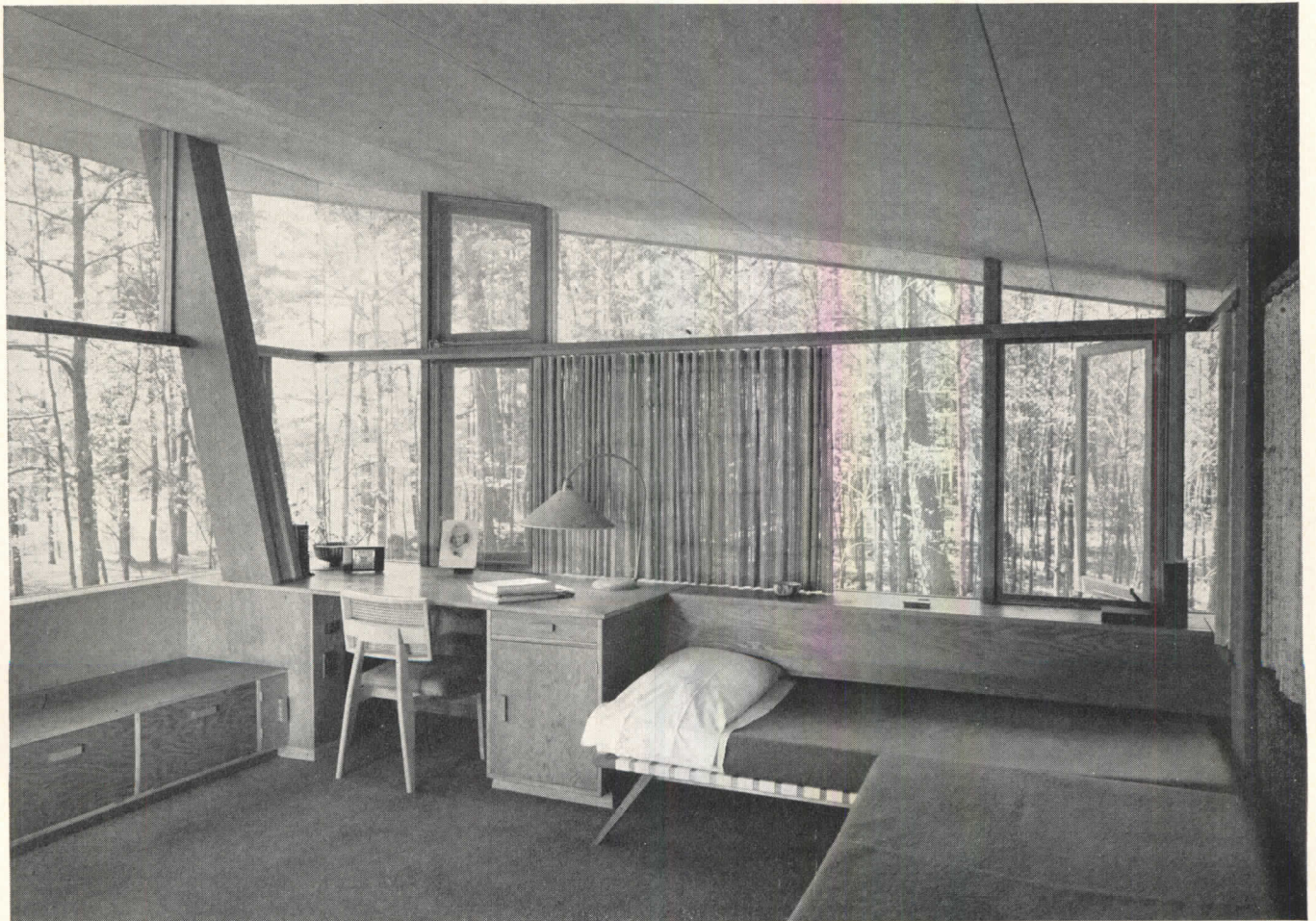
NORTH CAROLINA HOUSE

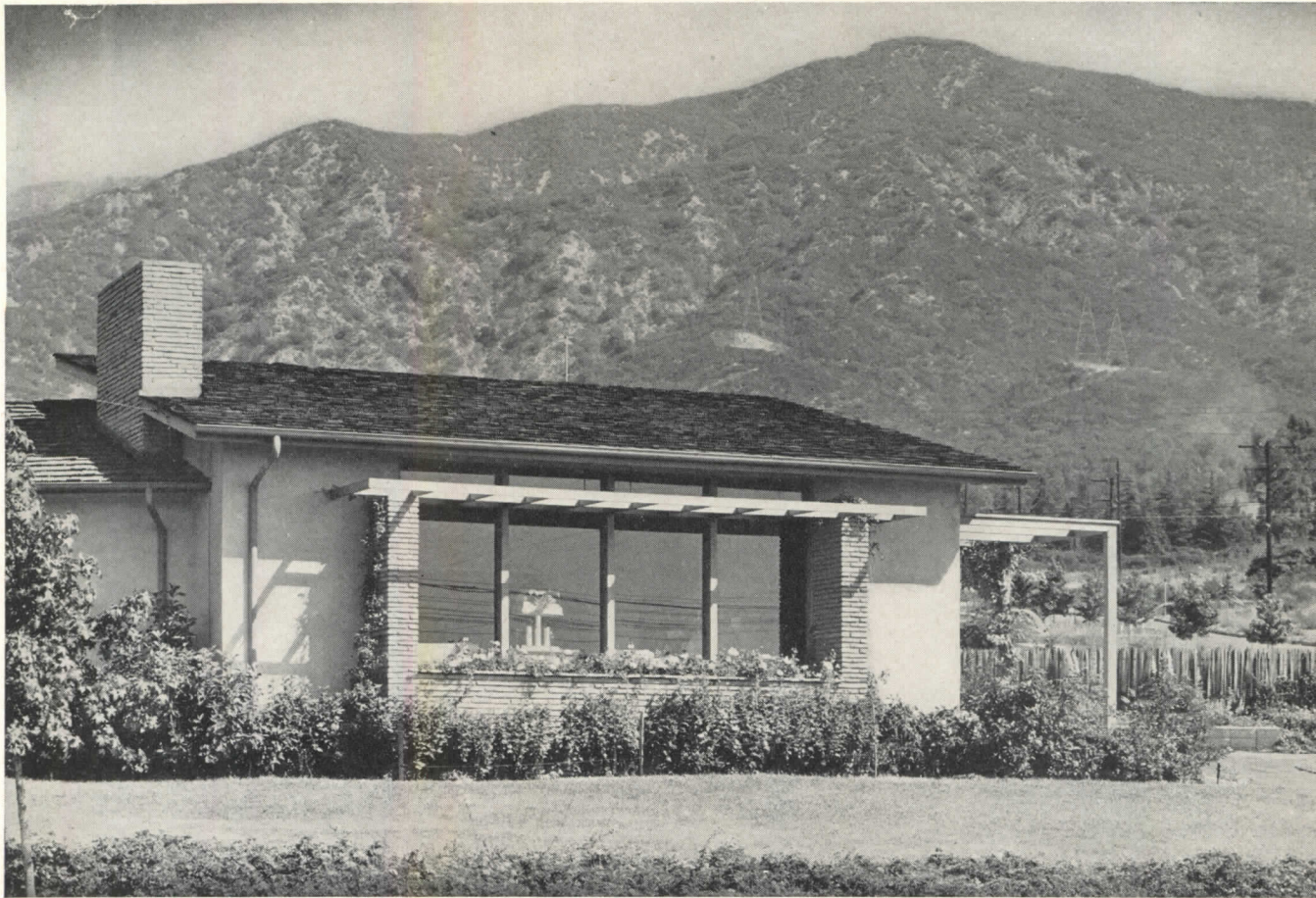


Joseph W. Molitor Photos



High windows give privacy to bedrooms (above left). Glazing is set between plywood ceiling panels, has no trim at corners. The upper level study-bedroom (above right, below) opens wide on view, can be closed by reed curtains





HOUSE DESIGNED FOR MR. ROBERT MAIN

LA CANADA, CALIFORNIA

Frederick Hodgdon, Architect

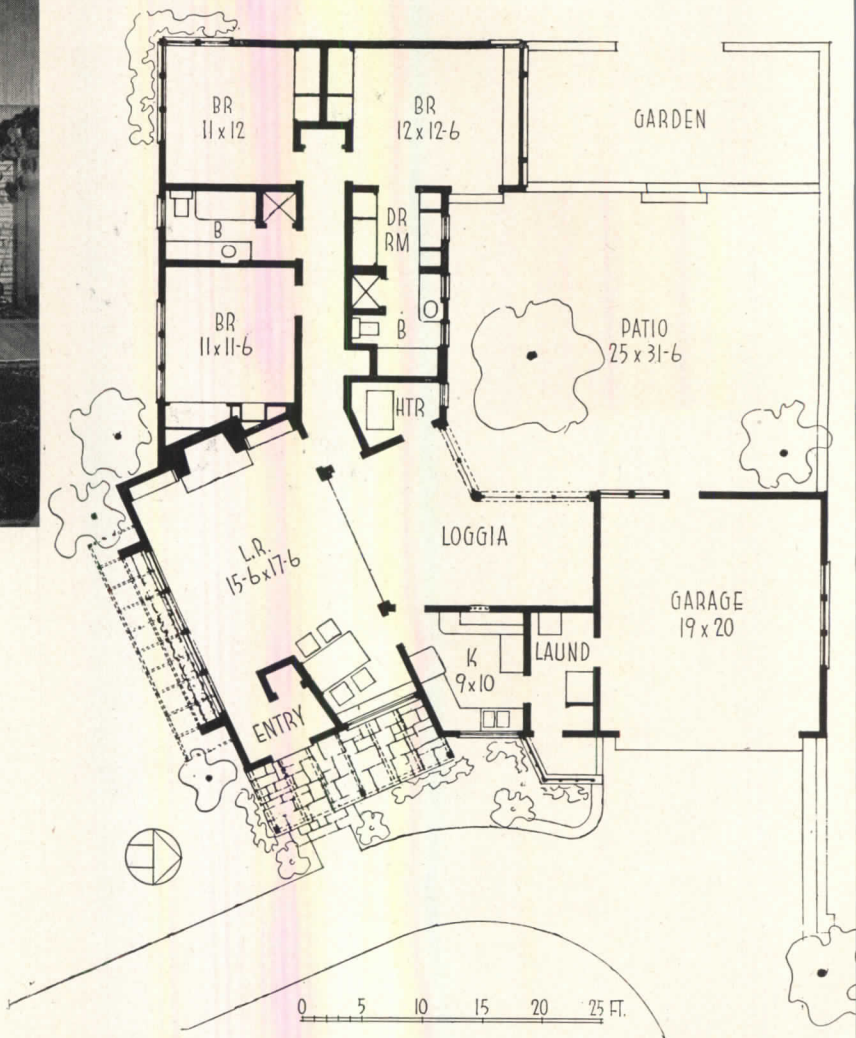
THIS RAMBLING HOUSE in the foothills of La Canada is oriented to overlook both the city lights of Pasadena to the southeast, and mountains to the northwest. Windows line the two long walls of the living rooms to gain views in each direction. Service areas and bedrooms are placed in flanking wings to define a glassed-in loggia and an open patio to the rear of the house. A plate glass partition separates living room and loggia, and may be raised to the ceiling to combine indoor and outdoor areas.

The main facade of the house features a brick plant-

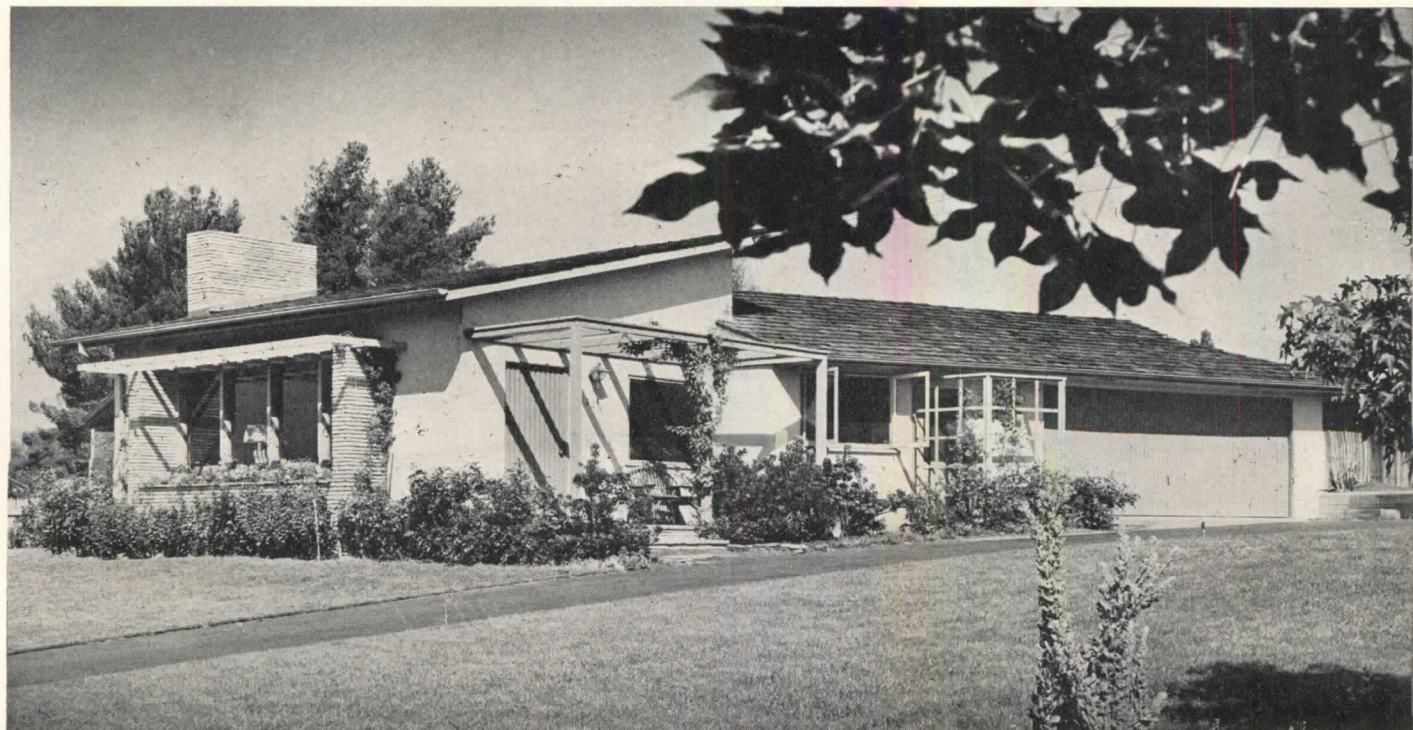
ing box, topped by a wood trellis, which frames and emphasizes the large window. Textures of the brick and a shake shingle roof are used to contrast with the stucco exterior. Interiors are finished with plywood panel walls and hardwood floors. A number of built-in items are incorporated in the house, including a dining table which folds into a pocket in the wall, storage cabinets, and a fluorescent lighting cove around the living room and dining alcove ceilings. Heating is by radiant coils installed in the plywood-surfaced ceilings. The furnace is placed in a central closet.

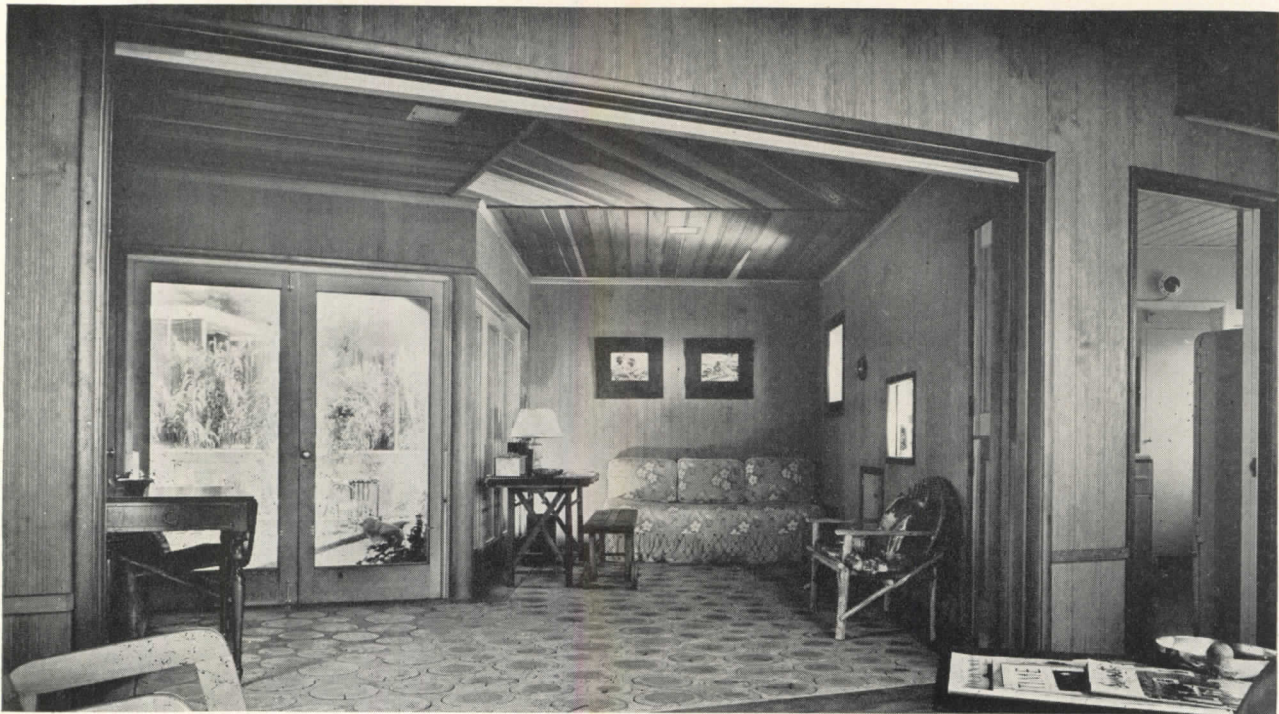


ROBERT MAIN HOUSE



Window wall in living room (above) is placed to face view of Pasadena. Trellises shade the window and set off entrances, as well as display profusion of California plants. Interiors are surfaced in textured plywood; ceiling panels are set with grains in alternating directions



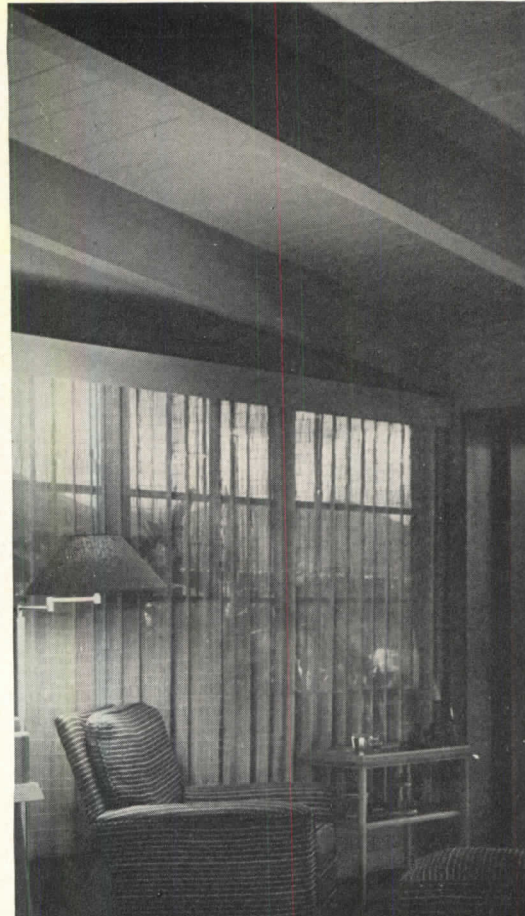


Glass wall between living room and loggia (shown open above) permit living areas to be joined with out of doors. Built-in dining table (below) folds into wall pocket

Julius Shulman Photos



SMALL HAWAIIAN HOUSE DESIGNED



*Residence for
Colonel and Mrs. R. Throckmorton*

MIKIOLA, KOOLAUPOKO, OAHU, T.H.

*Cyril W. Lemmon, Architect
Douglas Freeth, Associate*



A GOOD ANSWER to the growing problem of providing spaciousness at reasonable cost is found in the plan of this small Hawaiian house. The scheme basically consists of a very large room for living and sleeping, plus minimized service areas and a small room either for guests or the owners. Such a plan, of course, is feasible only for clients with no children, or as in this case, a retired couple who obviously prefer simple informal living, and whose children are married and

living away in homes of their own.

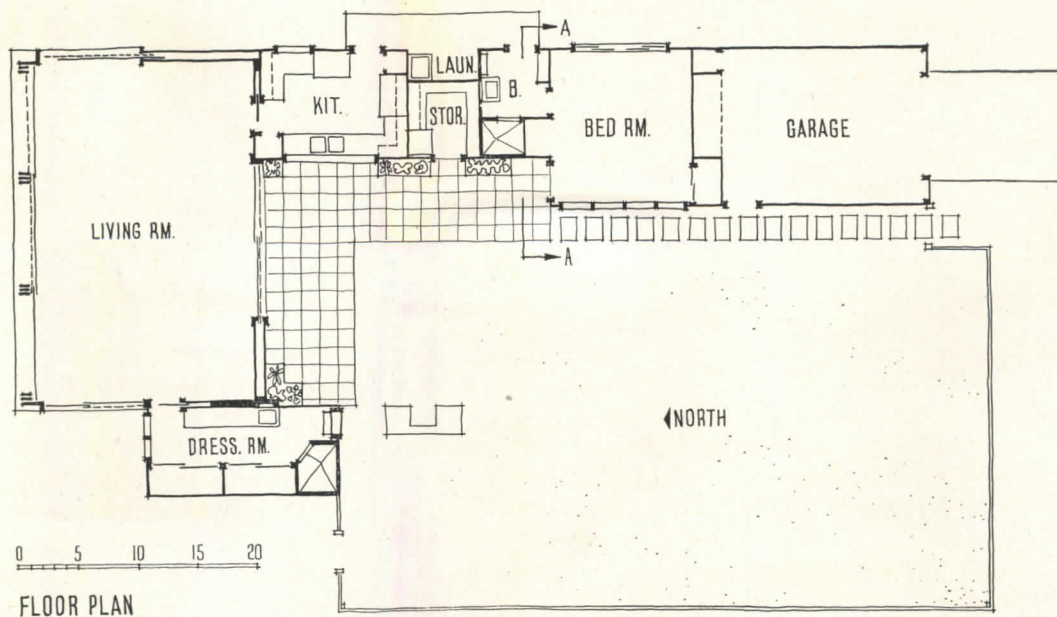
The mild Hawaiian climate and tropical landscape also add greatly to this conception of a house, by permitting maximum use of outdoor areas and by giving a sense of luxury to an otherwise simple structure. The whole side of the living room facing the sea and half the opposite side open by sliding glass doors to terraces and gardens. Enclosed corridors and a central heating system are eliminated.

FOR SPACIOUSNESS



The main room of this house serves as living room, dining room, study, and for sleeping when there are house guests. A combination bath-dressing room is provided off the main room for such occasions. The size of the house is extended by a lawn toward the sea, and by a lanai and enclosed garden to the south, where they are protected from sea winds

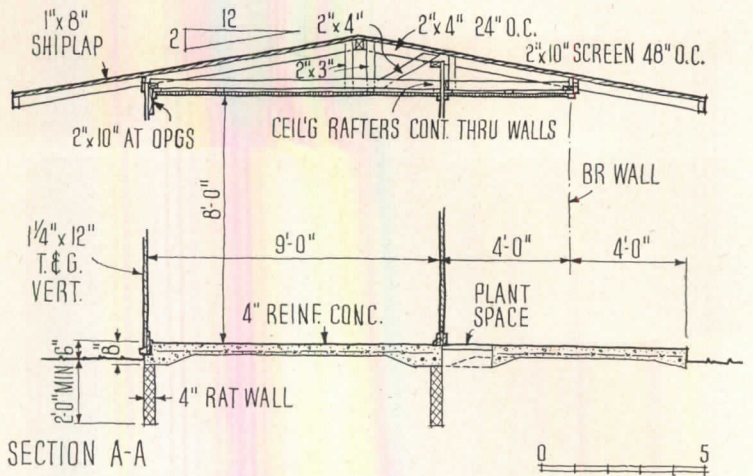
F Wenkam Photos



HAWAIIAN HOUSE



R. Wenkam Photos



SECTION A-A

The structure of the house is simply, neatly designed. Section through bedroom wing (above) shows west wall set back for covered terrace. Floor slabs are colored concrete. The rest of the structure is redwood, painted for interior and exterior finishes. Baths opening on lanai (below) have cut-out baffles over windows to give privacy



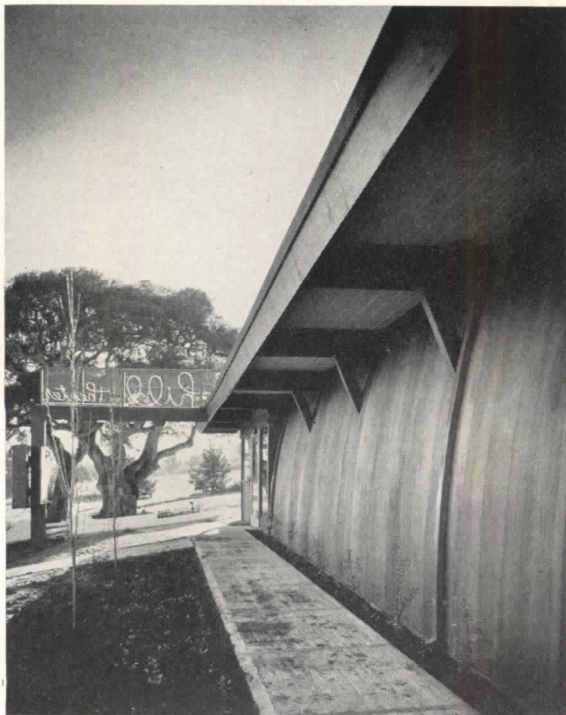


SUBURBAN MOVIE HOUSE

Carmel Hill Theater

Monte Vista Village, Monterey, California

*Thomas S. Elston, Jr.,
Architect*

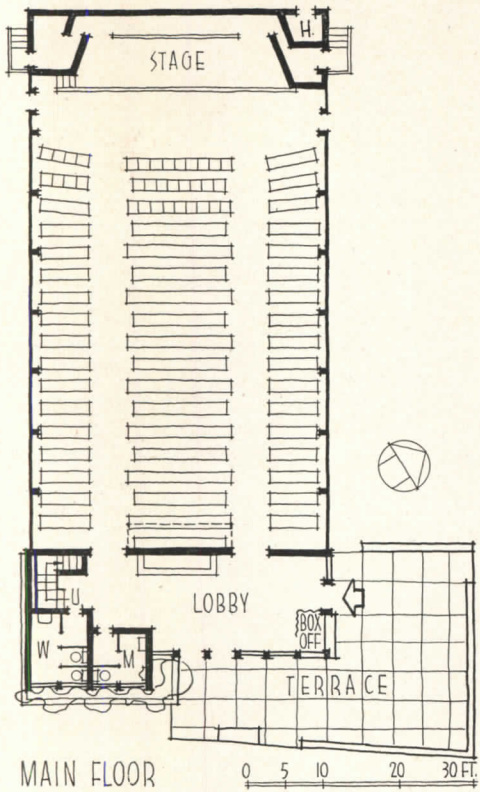


Mo rley Baer Photos

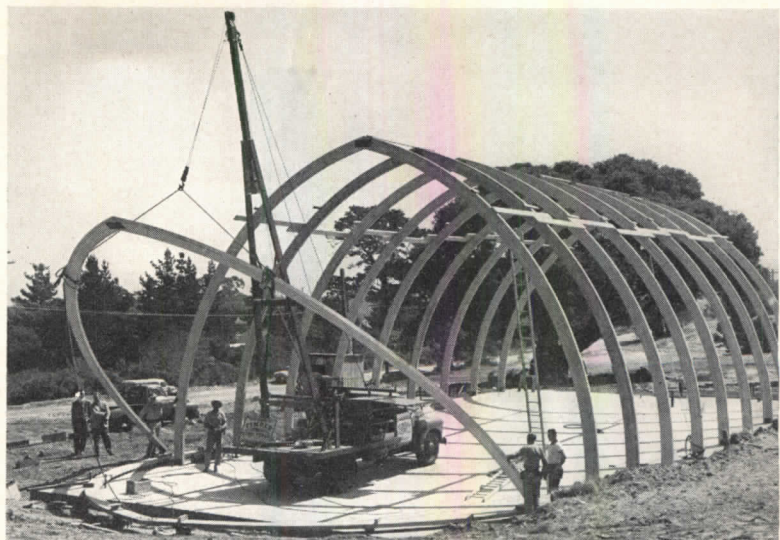
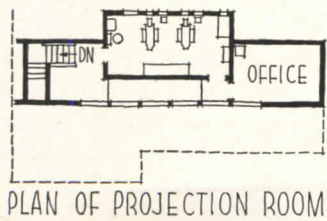
THIS simple, straightforward movie theater is the pleasant result of a project for a workable, comfortable theater at minimum cost. The owner desired that it be informal, for about 300 people, and have facilities for serving coffee. It was to be planned for single showings of selected, adult type films.

In the search for an inexpensive structural system for the basic plan, glued laminated wood arches were finally selected as the type most attractive if exposed on the interior. The arch form lends itself well to the scheme, with center height for the screen and low side heights. For the interior finish, wood sheathing was left exposed and stained. The exterior was surfaced with oiled redwood siding, composition shingle roofing. Use of fire separation walls, usually required by code, was avoided by setbacks from property line and limitation of seats to 299.

CARMEL THEATER

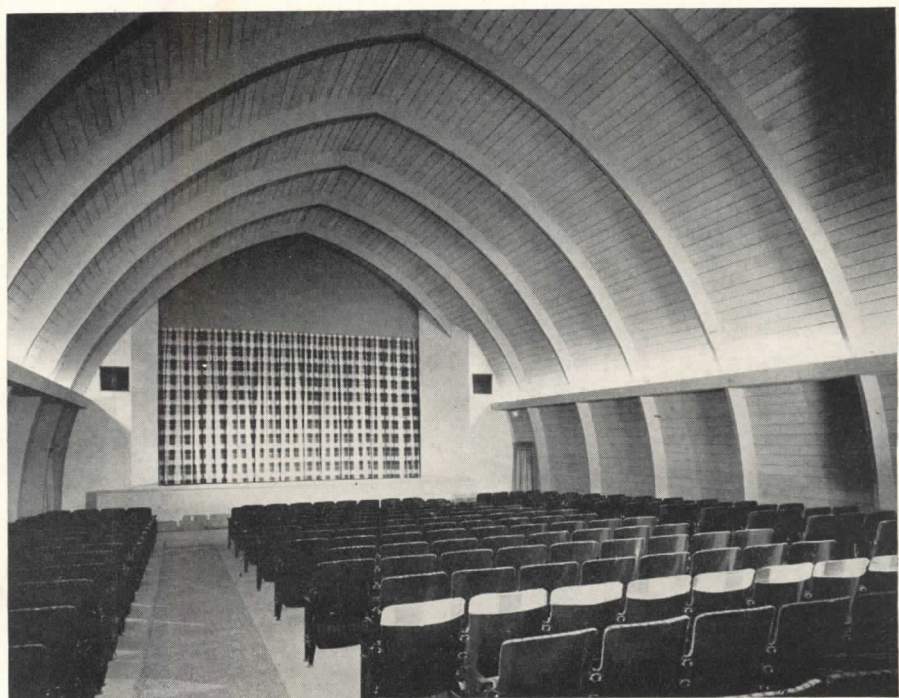


Morley Baer Photos





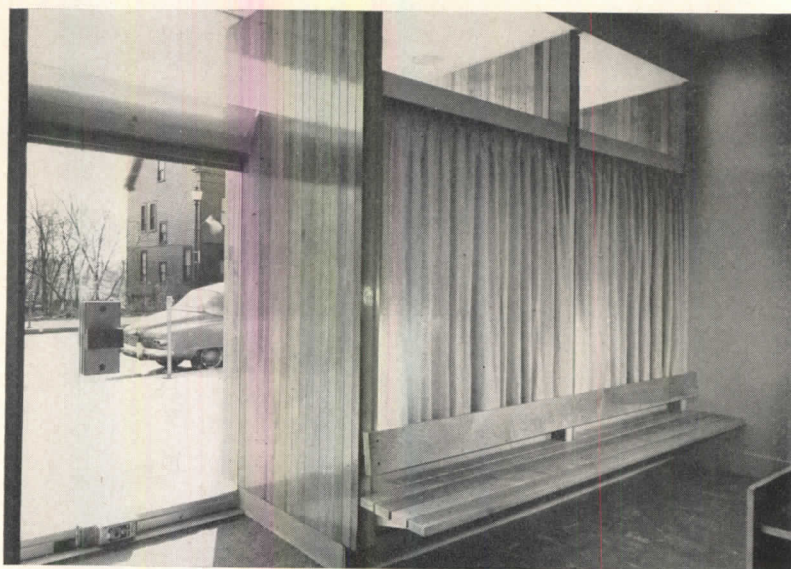
Several dual-purpose and space-saving elements helped to reduce costs of the theater. Lobby (above) has bar for serving coffee, terrace to extend its area. Box office fits in corner, faces parking lot. Plastered walls are integral-color lightweight aggregate, left unfinished to double as acoustic treatment. Floor is single-pour concrete slab with embedded radiant heating. Lighting troughs in auditorium (right) serve also as raceway for electrical conduit



PROTOTYPE FOR A SHOE STORE CHAIN



COWARD SHOE STORE
HACKENSACK, N. J.



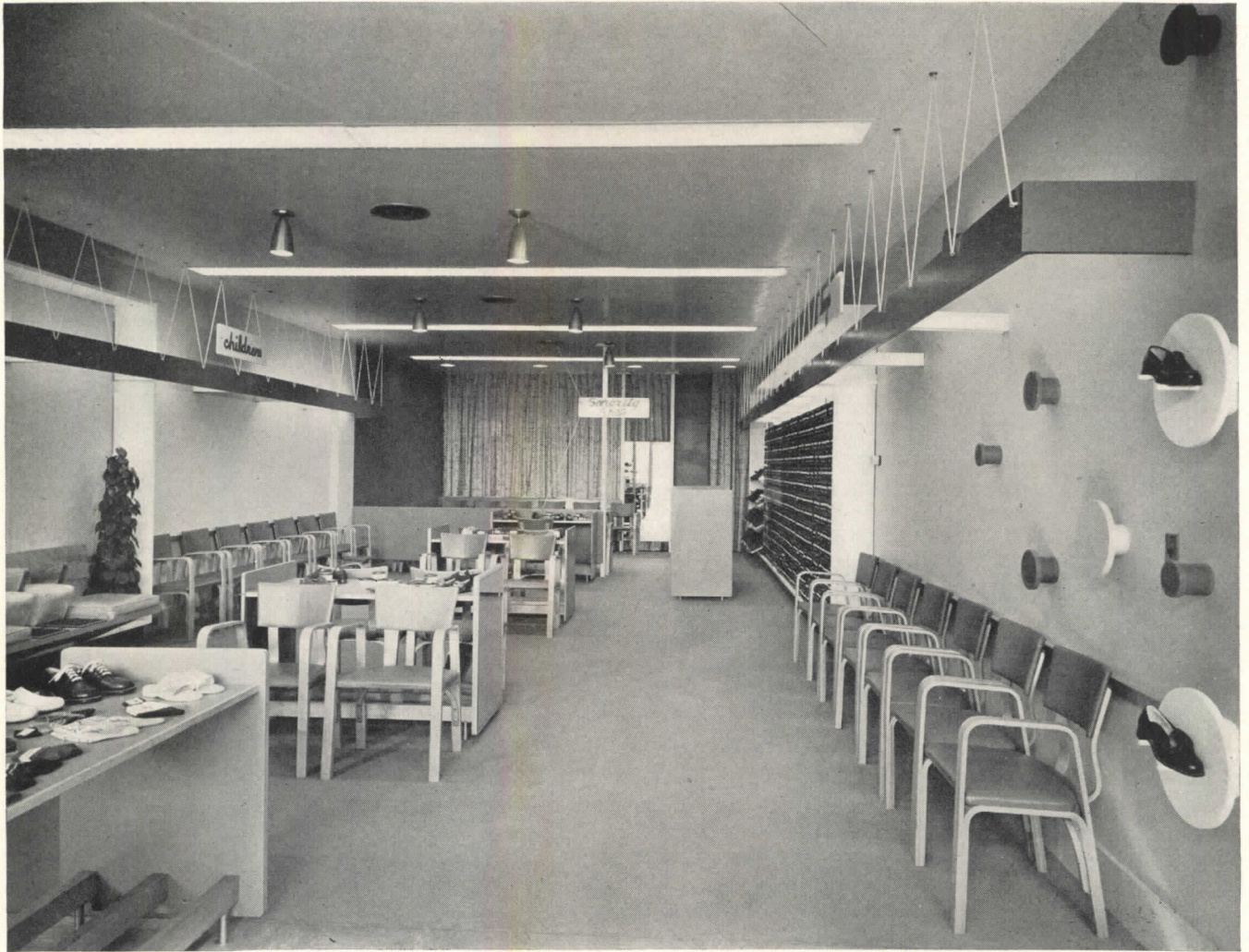
Sanders, Malsin and Reiman, Architects

THE ESTABLISHMENT of architectural motifs to be used as a trade mark was the paramount design consideration for this small shop. The owners of the parent store desired a simple, easily recognizable building which would serve as a prototype for a branch chain of children's shoe shops, to be built in several eastern communities. The architects developed a simple facade,

dominated by a sign of stained wood and plastic letters, patterned after the label insignia used by the store. Child-appeal was given to the durable, easy-to-keep interior by the introduction of bright colors, and plastic clotheslines to support lighting covers. Special consideration was given to minimizing upkeep, display and operational problems for a limited staff.

Shop windows are divided into sections by cypress siding to simplify window decoration. Window bases are white opaque glass. Fascia beneath sign houses awning. Entire shop interior is visible from street when curtains are opened; it was found, however, that most customers prefer privacy





Ben Schnall Photo

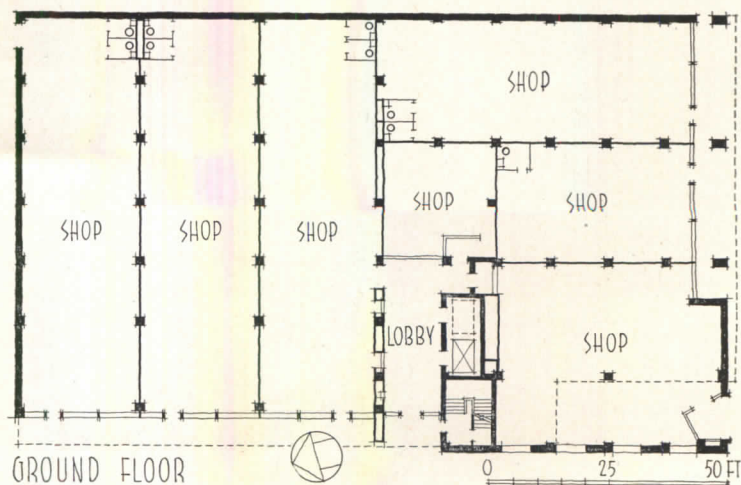
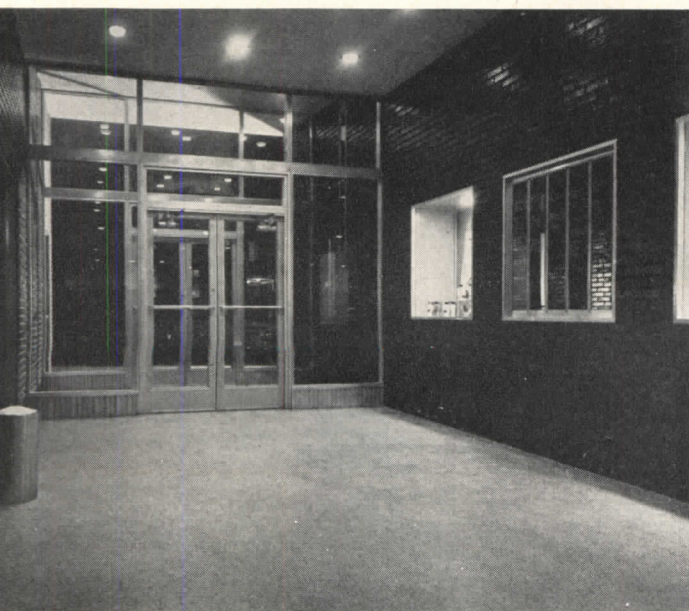


Interior walls are light gray, deep brown. Accents are brilliant colors. Shoes and boxes are prominently displayed to simplify selection. The stock room is located behind whimsical curtains at rear of shop. Air conditioning and other equipment is in basement

COMMERCIAL BUILDING



I.B. Lindenthal Photos



IN EAST TEXAS TOWN

BRAMLETTE BUILDING

Longview, Texas

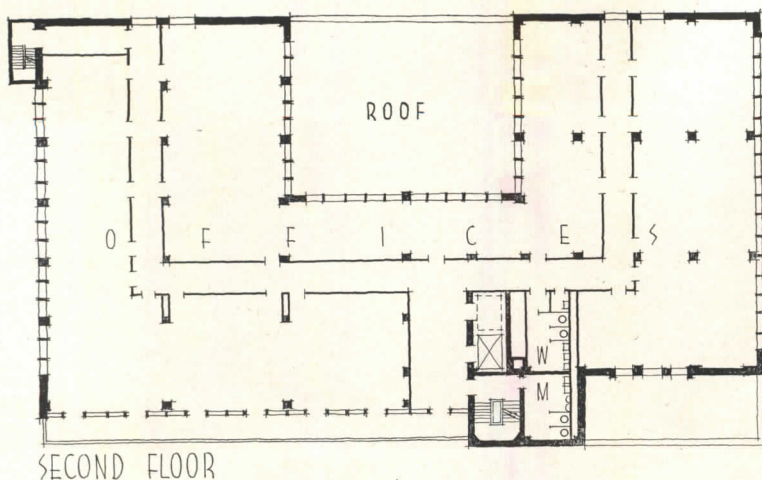
Wilson, Morris & Crain, Architects

THIS SHOP AND OFFICE BUILDING in eastern Texas emphasizes its corner location with two quite different facades and a deep set-back above the first floor at the intersection. The dark brick of the elevator tower is carried southward and around the corner to the east to tie the two facades together and is repeated in the columns of the south arcade.

Of the seven ground-floor shops six have good street frontage and display space; the seventh opens to the small, centrally located lobby. On the upper floors,

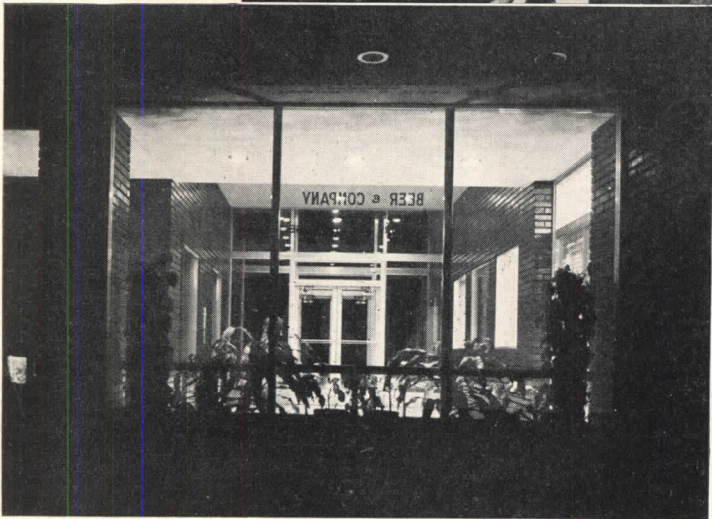
columns are spaced to permit the typical office layout, and a light well is introduced to carry daylight deep within the building. The balconies provide a secondary means of access to the offices along the west.

Construction is lightweight throughout, using metal joists and 1-in. insulating plaster on exposed lath and channels. Floors are terrazzo on concrete slab in lobbies and corridors, concrete slab with cement finish in offices and shops. Exterior is brick veneer with cast stone trim.



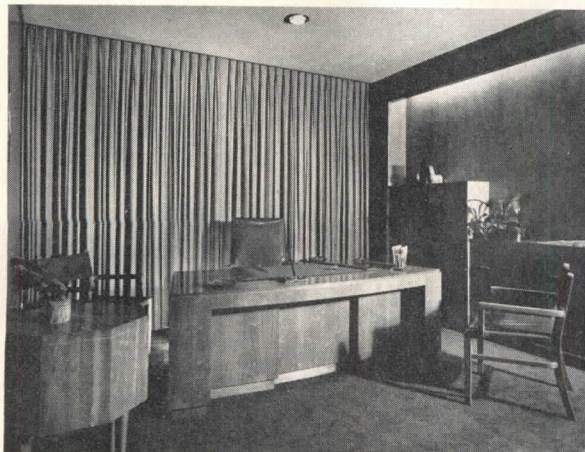
Roof overhang, balconies and small windows limit afternoon sun penetration on west facade. Arcade protects shops on southern side

BRAMLETTE BUILDING



Space within the building is easily adapted to shops and offices of various kinds. Present ground-floor rentals include a restaurant, a florist, a drug store, and an appliance shop. Elevator lobby and washroom facilities are stacked to leave most of space on upper floors open for offices of size required

I. B. Lindenthal Photos



HOSPITALS AND HEALTH CENTERS

ARCHITECTURAL RECORD'S BUILDING TYPES STUDY NUMBER 179

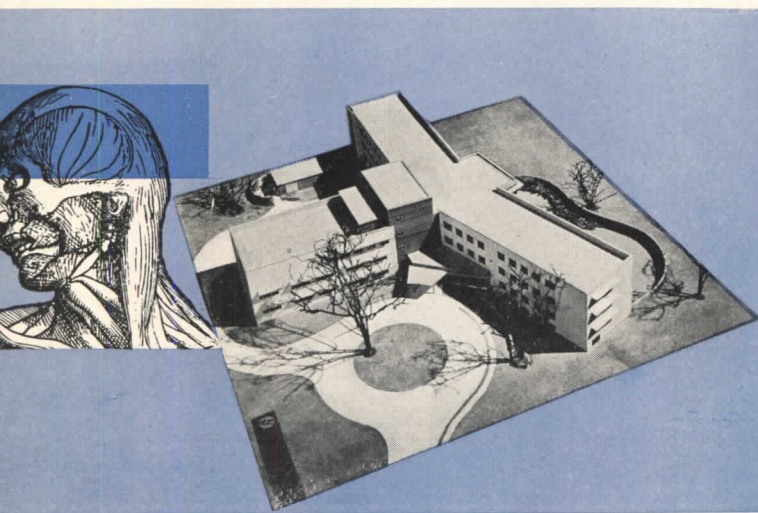
Hedrich-Blessing Photo

OCTOBER 1951

171

IMPROVING STANDARDS in new mental hospitals are nowhere better illustrated than in this psychiatric unit for a famous general hospital. Architecturally speaking its achievements are of a high order, and nowhere is that more appreciated, more functional of itself, than in an institute for psychiatric care and study. But the fact remains that the merits of this building go deep into the advancing concepts of treatment of emotional illness, so that the building and its visual attributes sprang from a penetrating analysis of everything that could possibly be involved in "commodity and firmness."

Basic study for this hospital of 82 beds began six years ago, actually before the Institute for Psychosomatic and Psychiatric Research and Training became an identified division of the Hospital. Parenthetically, Michael Reese was one of the early general hospitals to launch a psychiatric clinic, back in 1922. Now, as its



multisyllabic name indicates, it has acquired status and facilities for research, teaching and training, as well as caring for patients.

As in many another of the newer hospitals in this field, this study took as its premise the more enlightened concept of cure-not-permanent-care, for "an increasing number of physicians feel that 70 per cent of people who are sick have some emotional factors involved."

That idea is important in the study of the building and its plans. "Every effort has been made in the design of the building to eliminate any gloomy institutional feeling, to encourage group activities and to facilitate social adjustment. . . . Patients cannot be cooped up during their stay in the Institute. Dayrooms have been provided where each patient can develop an interest in handicraft and various hobbies. A spacious landscaped

garden enables patients to engage in healthful outdoors activities. On each floor there are numerous treatment rooms where patients can be interviewed and treated with utmost privacy." This from a description by the hospital staff.

The architects add that the design "also attempts to create an atmosphere that will be warm, friendly, and homelike, for obvious psychological and therapeutic values. Hence the broad windows, large glass areas, and the absence of bars or other visible restraints, made possible by use of protective or detention screens in the psychiatric and disturbed patient areas. Draperies, furniture and furnishings have also been selected with an eye to avoidance of institutional character, and the customary high ceilings eliminated."

Another important consideration in the planning was flexibility of use. Each patient floor is divided into two

A NEW HIGH FOR MENTAL HOSPITALS

INSTITUTE FOR PSYCHOSOMATIC
AND PSYCHIATRIC RESEARCH AND TRAINING
MICHAEL REESE HOSPITAL, CHICAGO

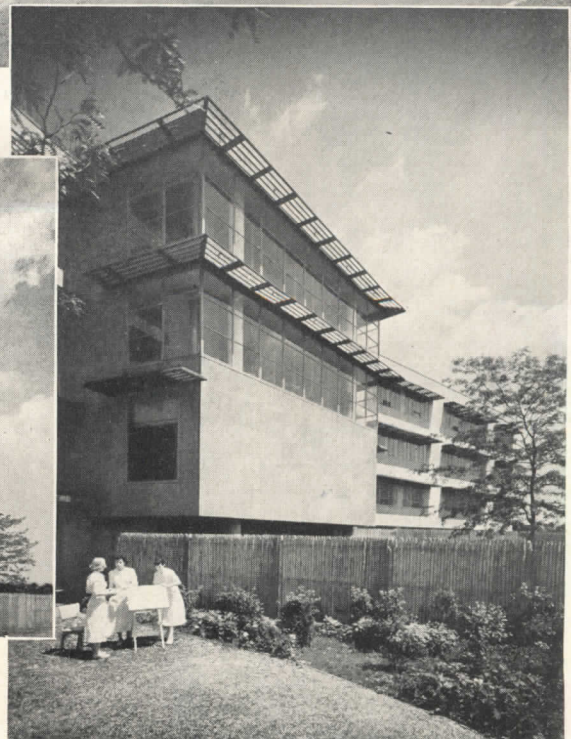
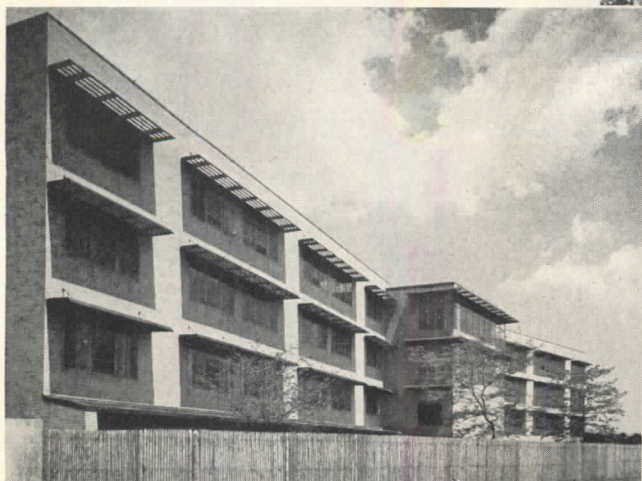
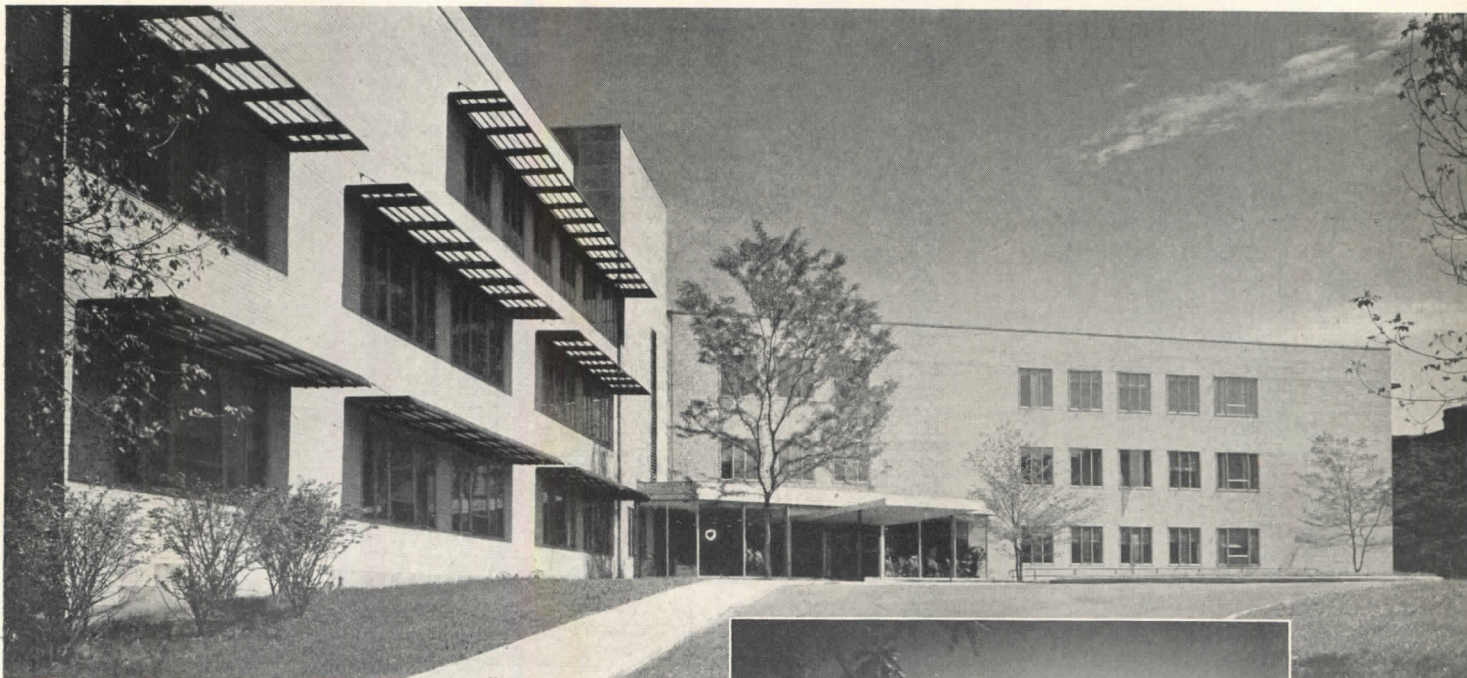
Loebl, Schlossman & Bennett, Architects

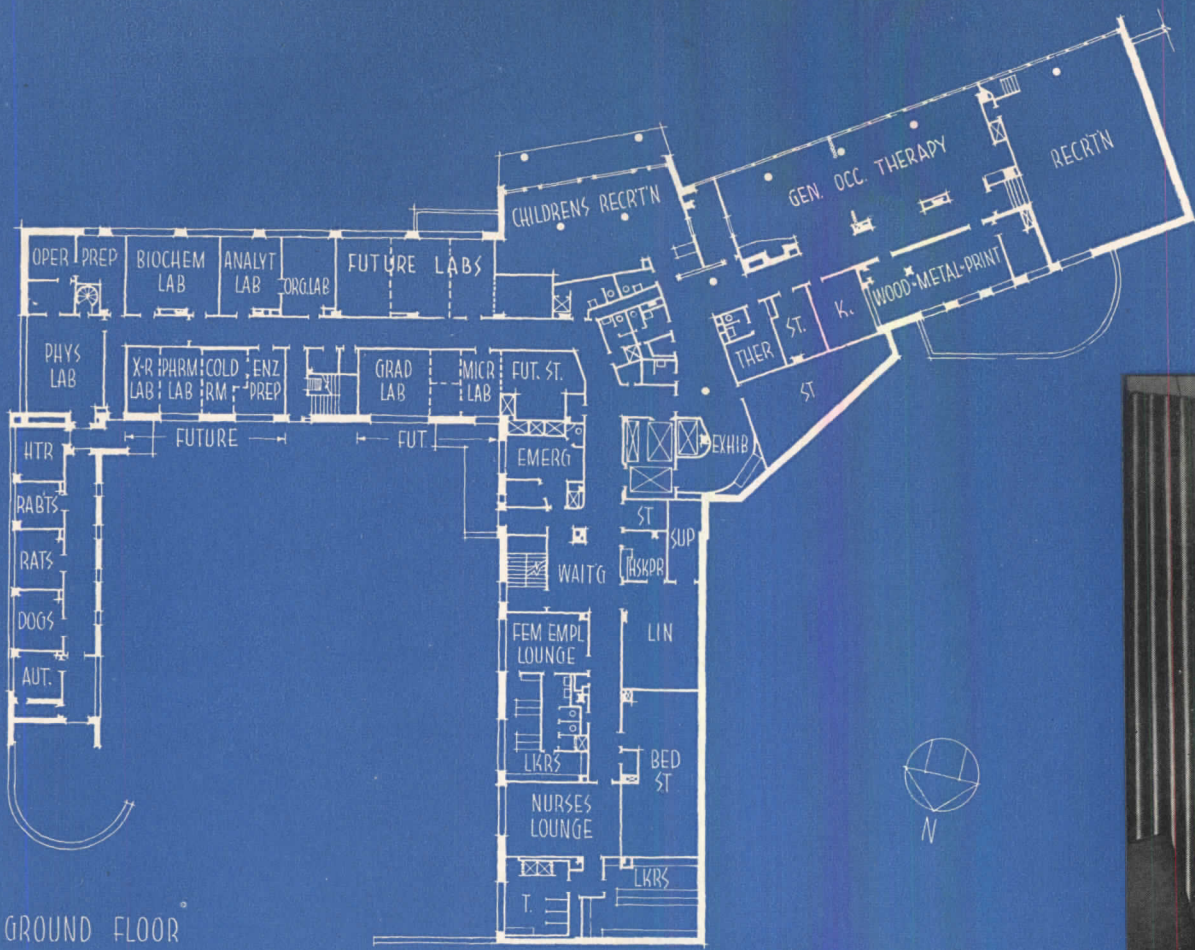
halves by a common dayroom area. The dayroom serves for dining, as well as for living, lounging and passive recreation, so that dining space is usable throughout the day, instead of only at meal time. The dayroom can be divided by means of a sectional partition, the erection of which can separate the floor into two departments, making possible a large variation in the number of beds devoted to either psychiatric or psychosomatic patients. There has been no attempt at separation of patients by sex, but the flexible planning makes this possible also, were it ever deemed advisable.

The building received the award of the Chicago Chapter, American Institute of Architects, in the hospital classification, for buildings constructed since 1946. The cost of land, building, tunnel connecting to other hospital buildings, and equipment, was \$2,000,000.

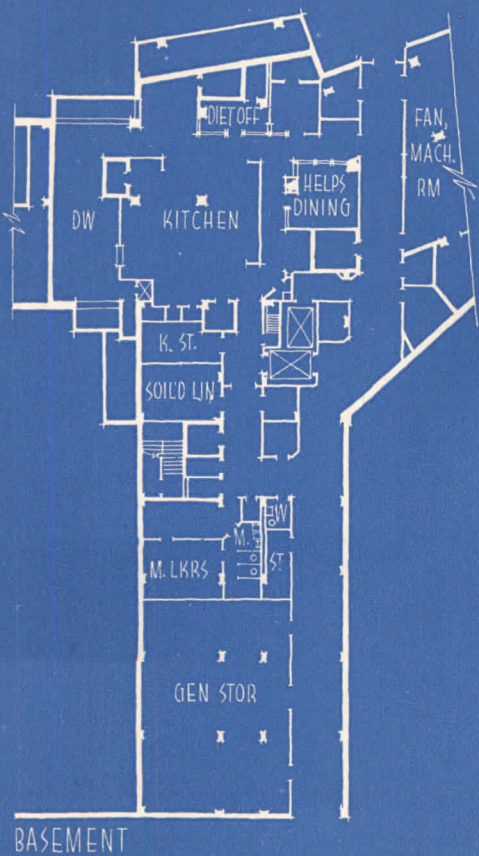
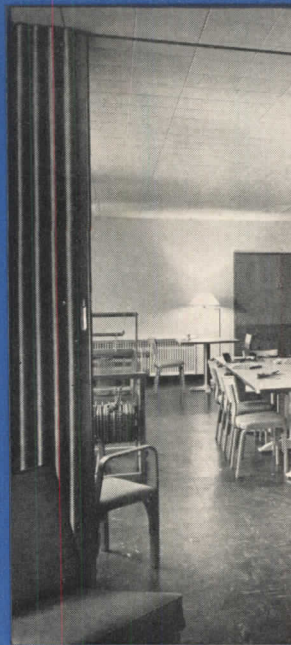
"Our general purpose," says Dr. Roy R. Grinker, director of the Institute, "is to have a facility in which the problem of the emotionally disturbed patient, with or without physical symptoms, can be studied and treated with the concept that both his mind and body constitute an inseparable unit which requires the co-operation of many specialists, and that this concept is a central point of teaching not only psychiatrists but all other medical men."

Hedrich-Blessing Photos





GROUND FLOOR



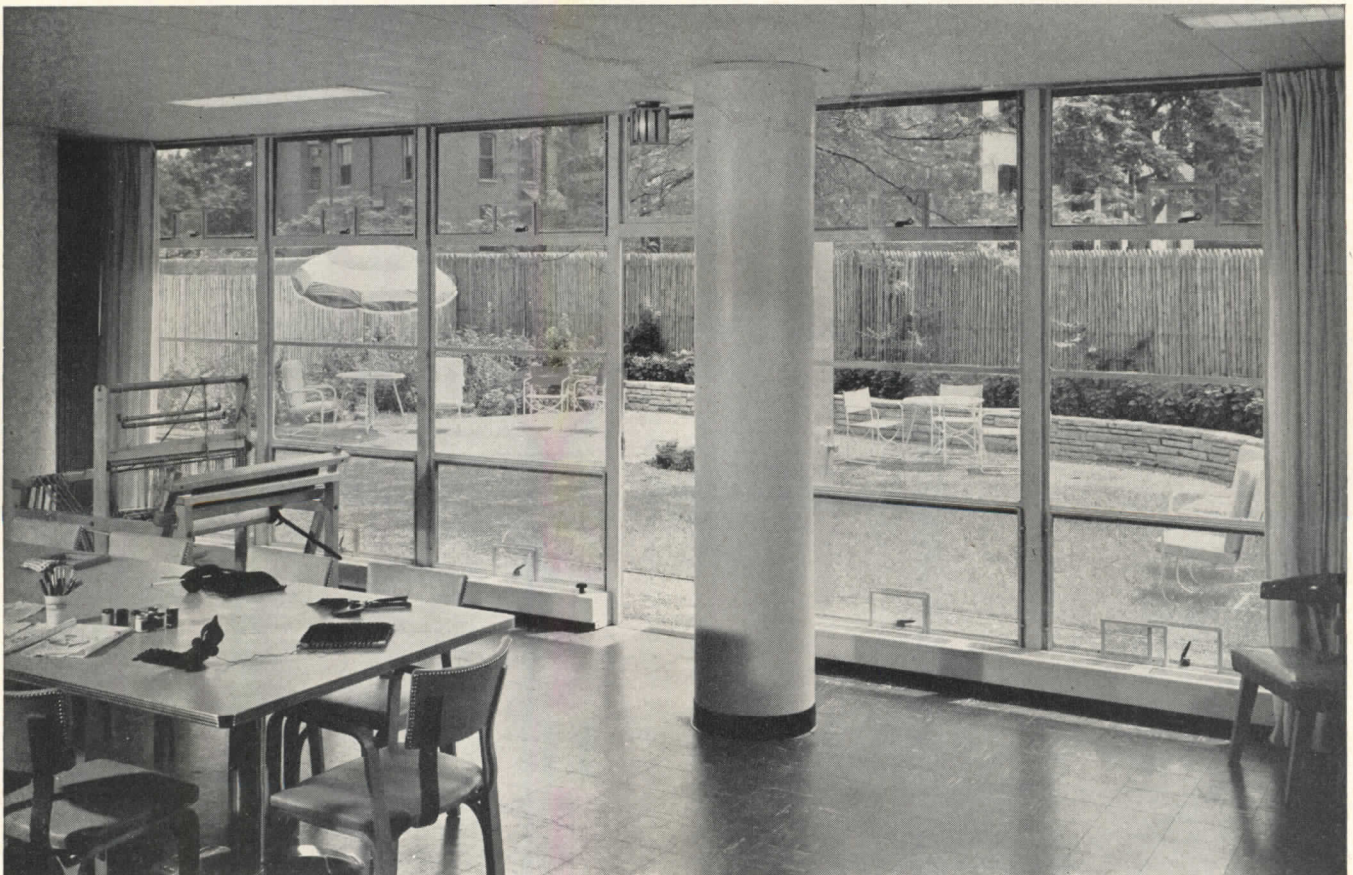
BASEMENT

Both in plan and photographs, the ground floor shows what a heavy proportion of space in a mental hospital is devoted to recreation, relaxation and occupational therapy, for the patient must be lured with various devices and interests into new participation attitudes. The photographs show nicely how architectural designers can contribute to this objective. Occupational therapy suite, shown here in three views, is colorful and generally residential in character, and full use is made of outdoor areas to add a sense of freedom and use the allure of nature to rekindle patients' enthusiasms

MENTAL HOSPITAL

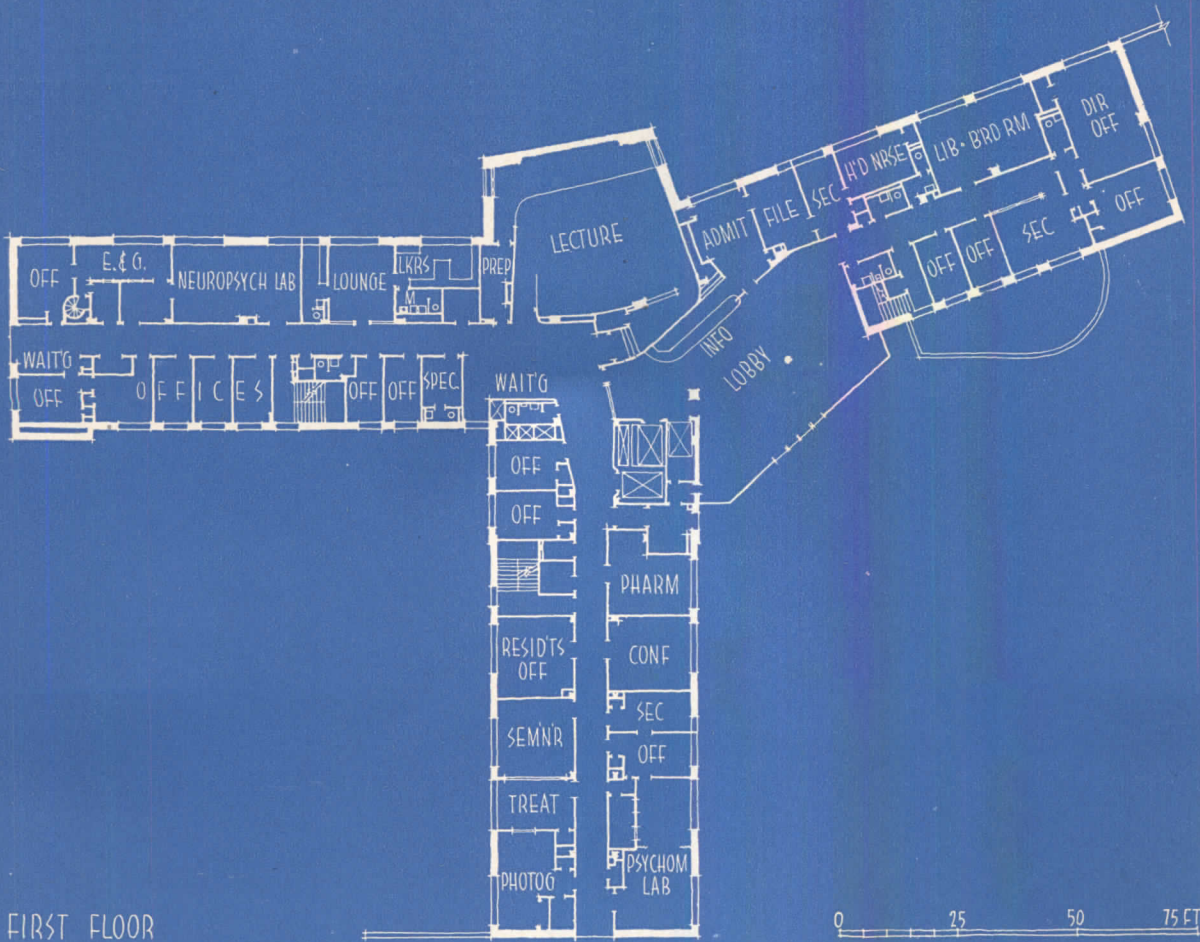
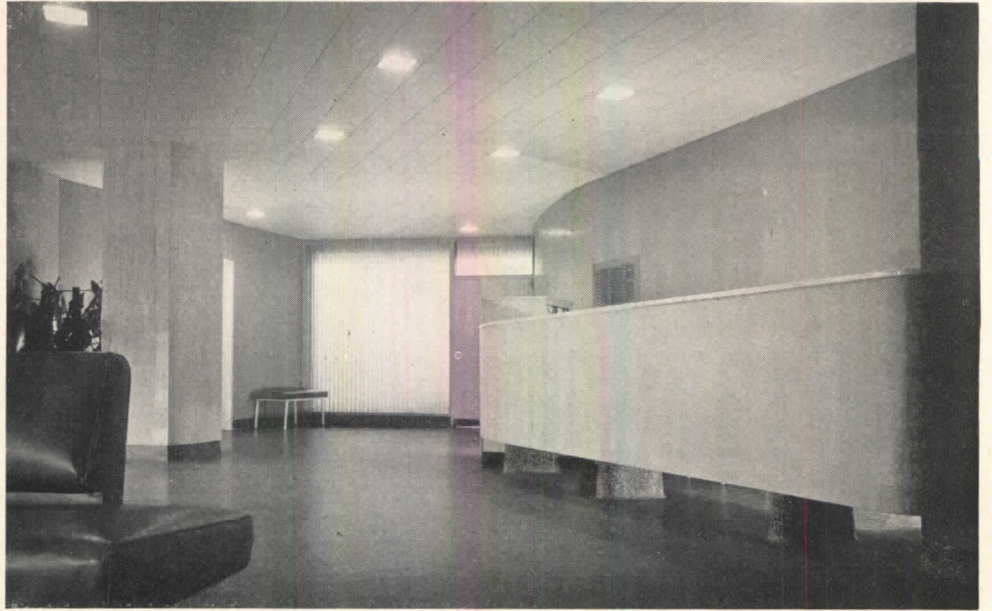
Loebl, Schlossman & Bennett

Hedrich-Blessing Photos



MENTAL HOSPITAL

Loebl, Schlossman & Bennett

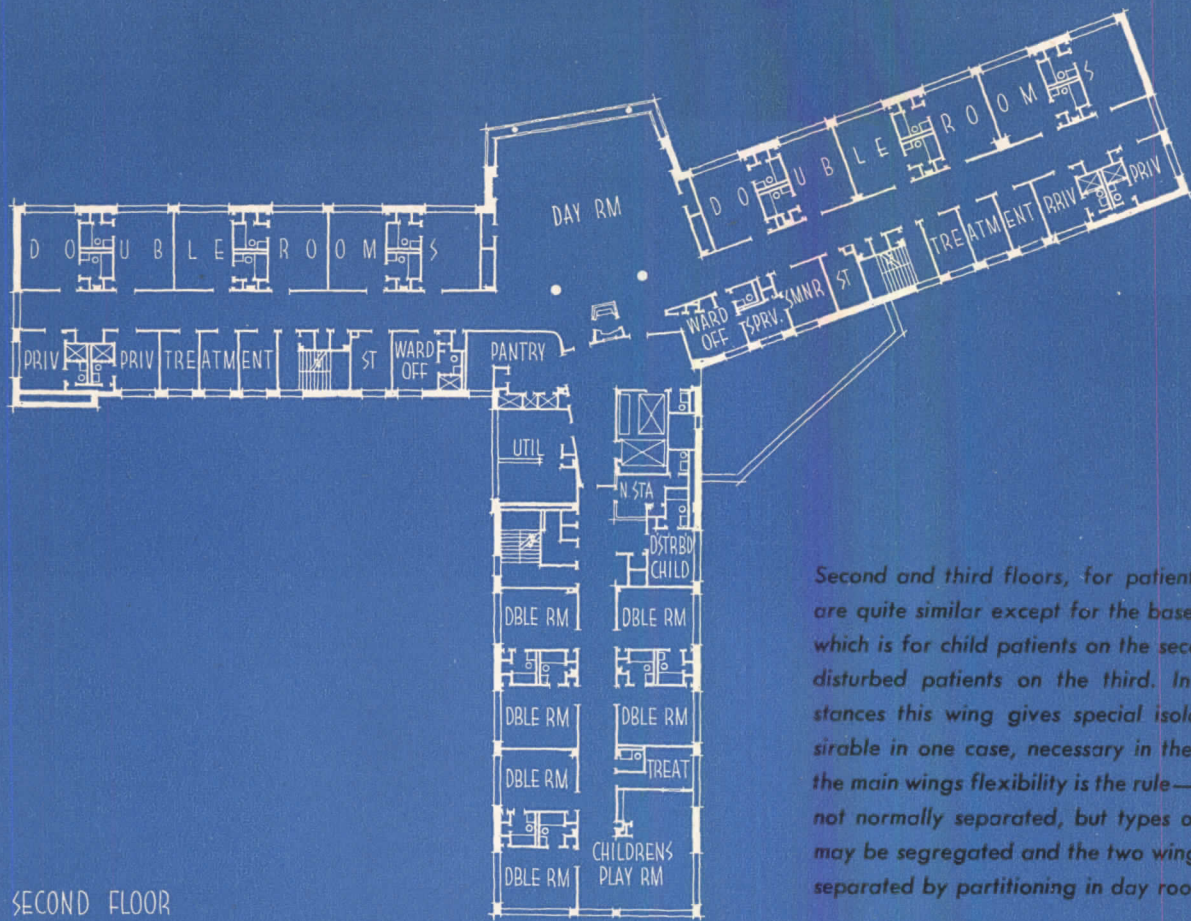




The concept of sparkling design in a generally residential character is carried throughout the hospital wherever possible. Shown here are various spaces on the first floor: the reception desk and entrance lobby in the two upper views, the director's office and auditorium below. First floor is largely devoted to offices and laboratories



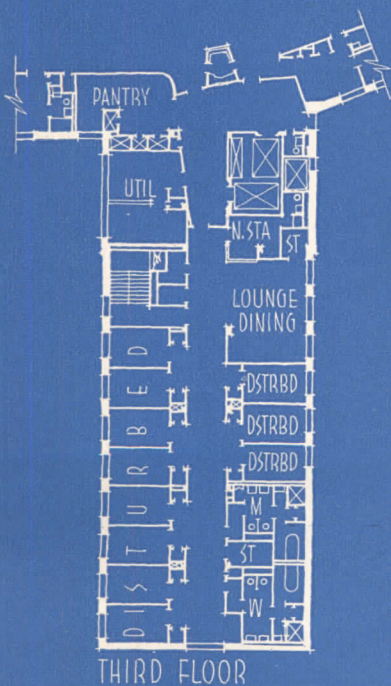
Hedrich-Blessing Photos



SECOND FLOOR



Second and third floors, for patients' rooms, are quite similar except for the base of the T, which is for child patients on the second floor, disturbed patients on the third. In both instances this wing gives special isolation, desirable in one case, necessary in the other. In the main wings flexibility is the rule—sexes are not normally separated, but types of patients may be segregated and the two wings may be separated by partitioning in day room



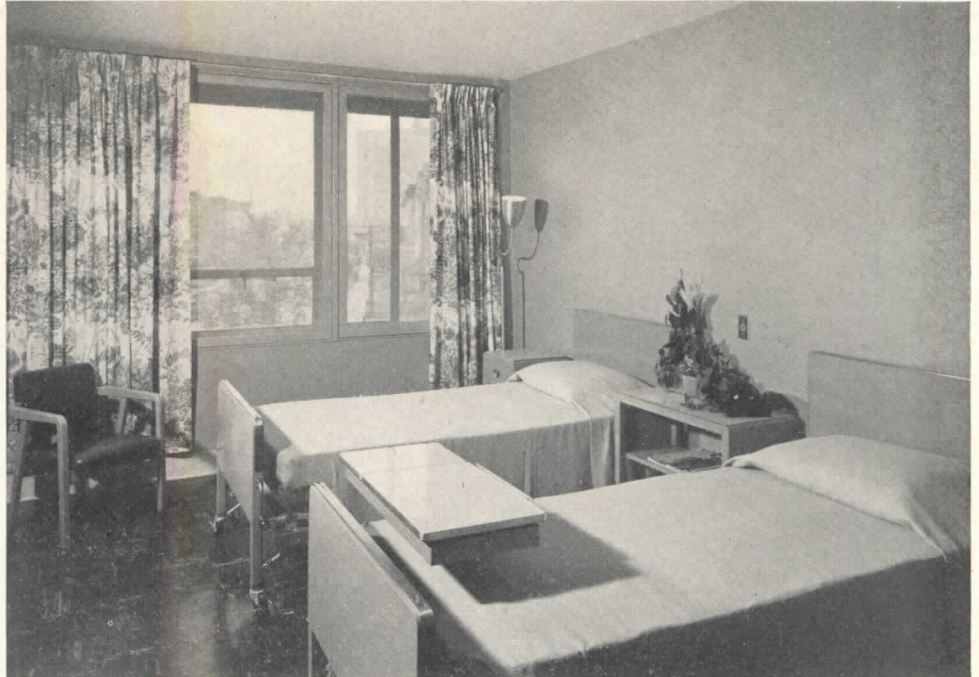
THIRD FLOOR



MENTAL HOSPITAL

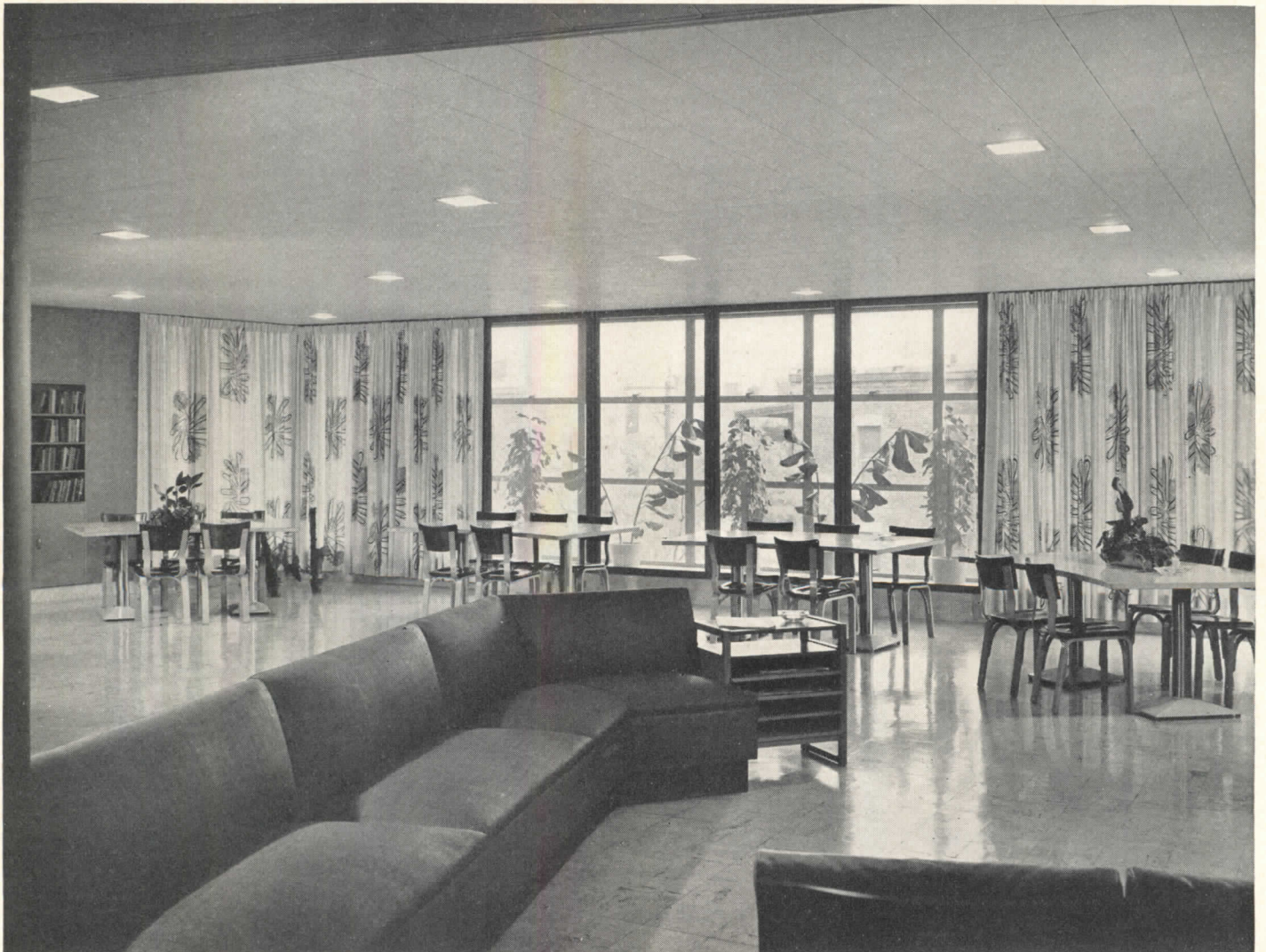
Loebl, Schlossman & Bennett

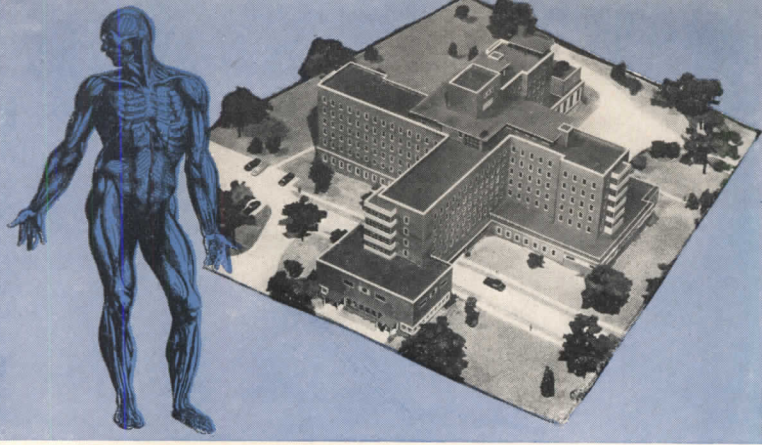
All patient rooms are heated by radiant floor panels. Floor, wall and ceiling finishes were selected for economy of maintenance, reduction of noise and warmth of character



Hedrich-Blessing Photos

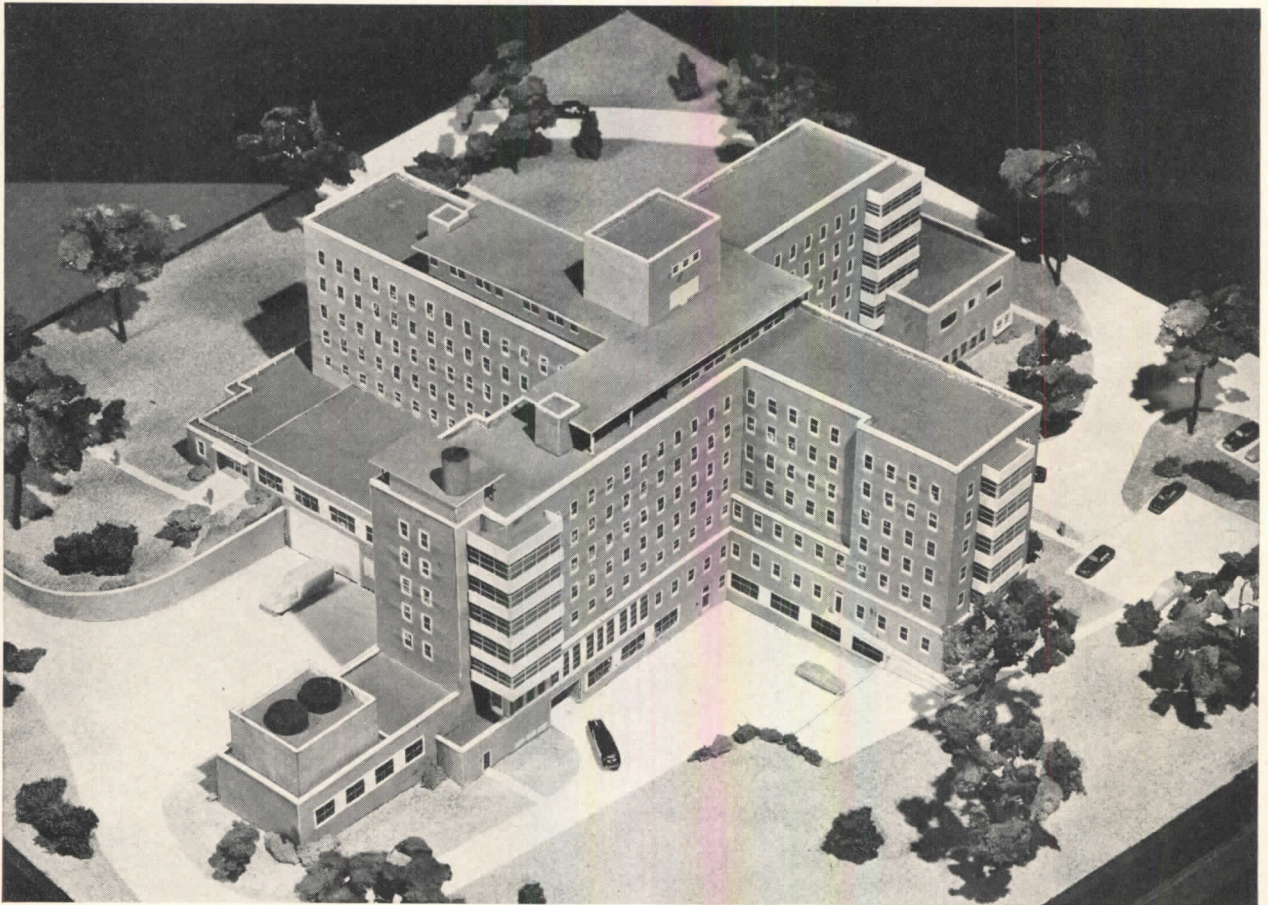
Day room has double glass walls with planting between, for unobtrusive protection





A GENERAL HOSPITAL

OAKWOOD HOSPITAL, DEARBORN, MICHIGAN



WITH NEW PLANNING FEATURES

Henry F. Stanton, Architects

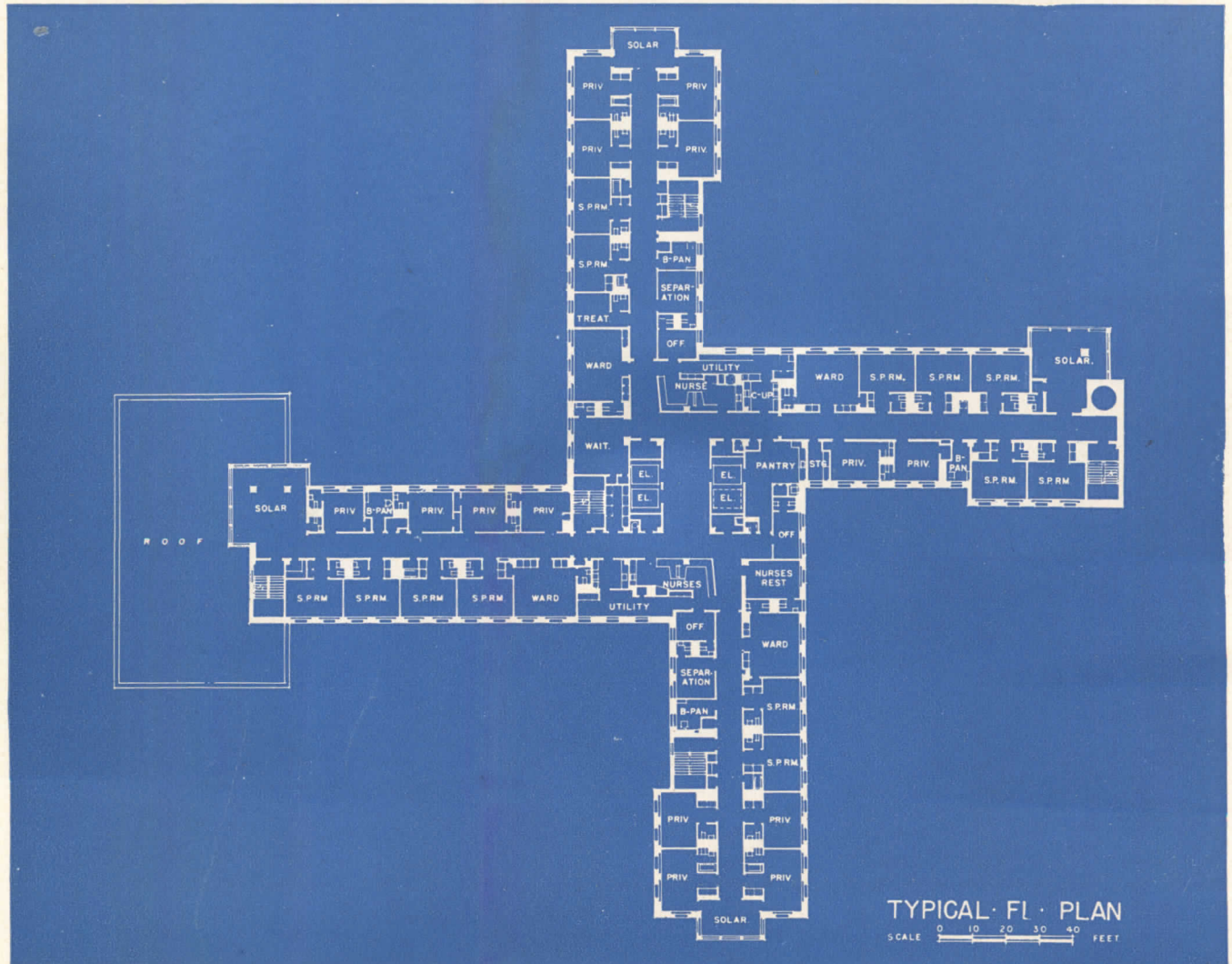
THIS HOSPITAL is included in this study as representing quite high standards for a general hospital of fairly typical requirements. It is one of four new hospitals financed by the Greater Detroit Hospital Fund with federal assistance under the Hill-Burton Act, in a rather intensive scramble to obtain additional facilities for booming Detroit. It has a nominal capacity of 215 beds, maximum 232, but its central core and services are designed for the later doubling of patient areas.

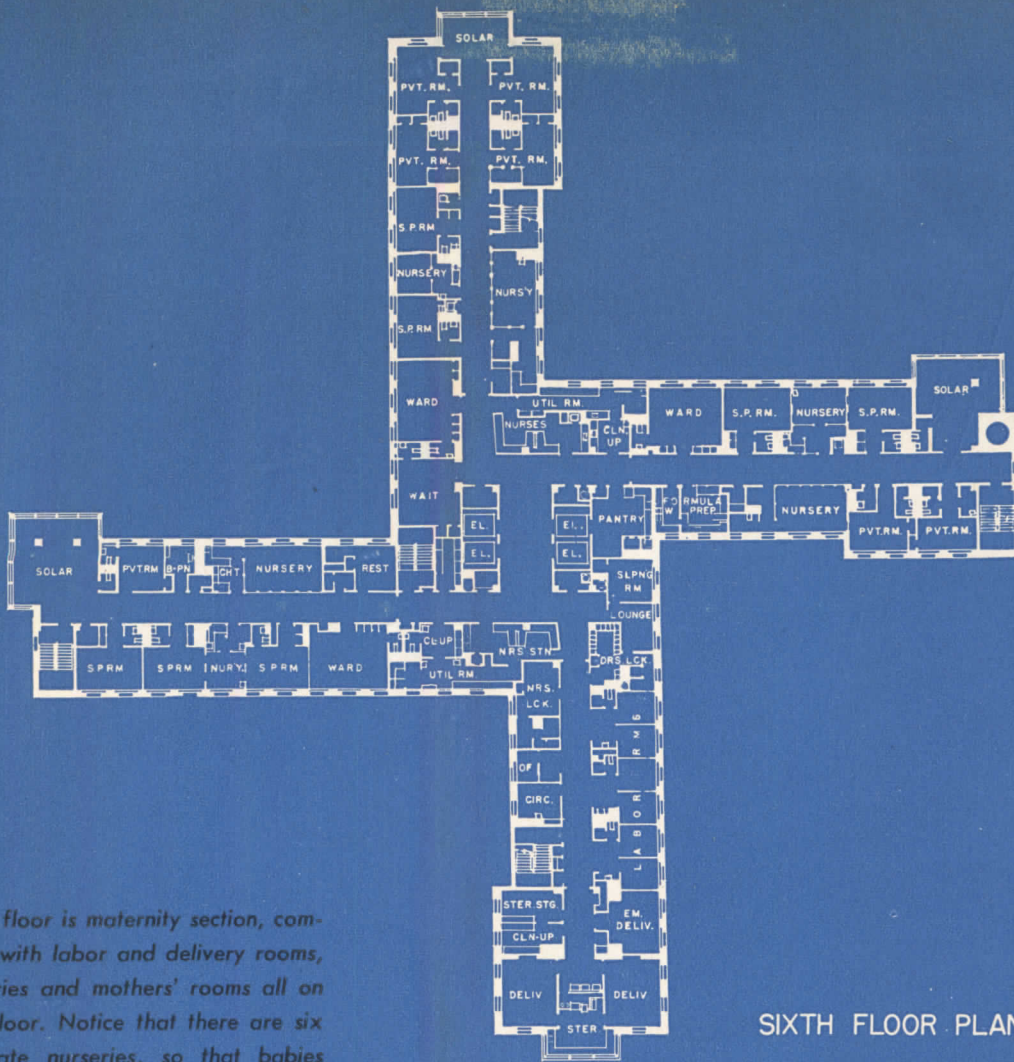
As a planning concept it favors the vertical theory of hospital transportation — power carries things vertically; horizontally people have to push them. Thus vertical transport saves labor. So the building now goes up to six stories, will rise four floors higher.

From this basic decision came the form of the off-set cross, with relatively short nursing wings focusing at the central elevator lobby. The two nursing stations face each other across the lobby, to maintain exceptionally good control at all times, and to permit cross supervision

in relief periods, particularly at night. Planning for least nurses' travel goes something like this: each station is centrally located in its own half of the floor. There is a bed-pan unit in each wing of each half, each unit centrally located in the wing; the pan need never be brought to the center of the floor. The nurses' stations are exceptionally large, with an office for the head nurse, utility services surrounding the station, these services being divided into "dirty" and "clean." In a sense, then, the nursing staff is surrounded by the patients, medical staff, charts, and utilities, and this arrangement is here considered optimum.

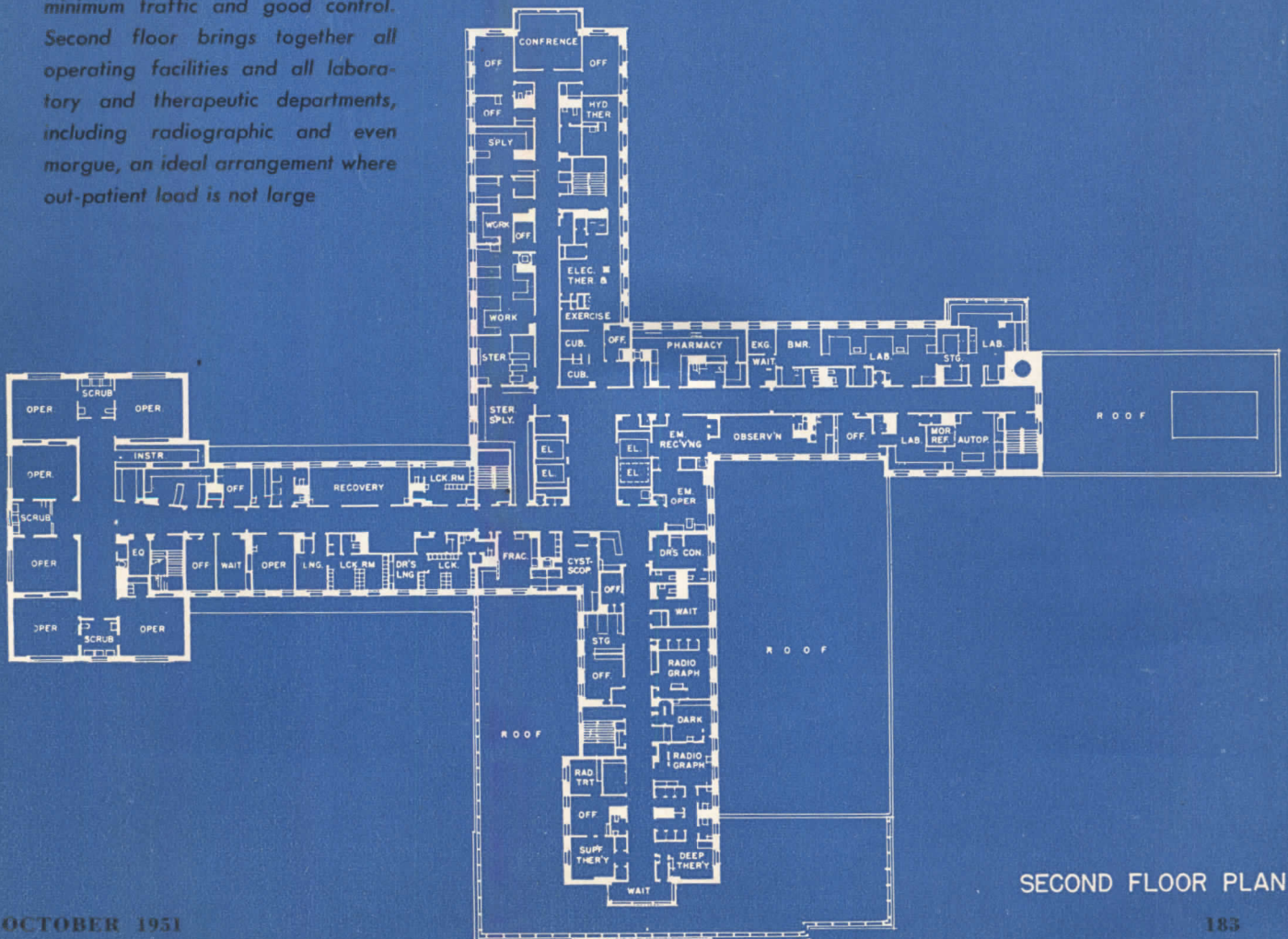
Notice that the two-bed rooms are unique in that each bed has its own window. This is in contrast with the usual arrangement of one bed on the outside, one inside. Each room has toilet and lavatory, and this feature, along with the advent of early ambulation, should further save that precious commodity known as nurses' steps.



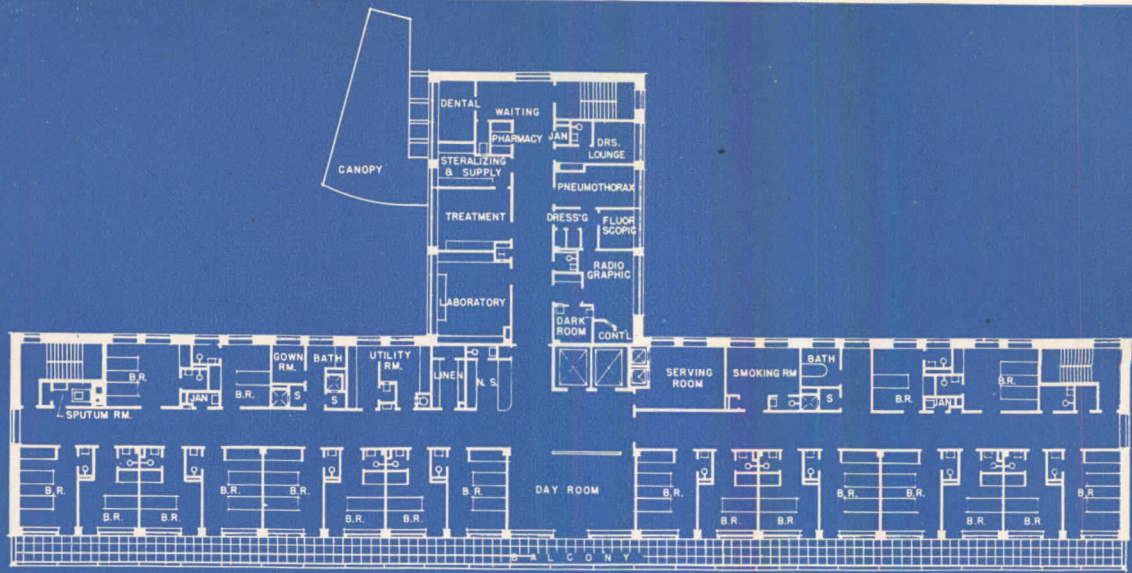
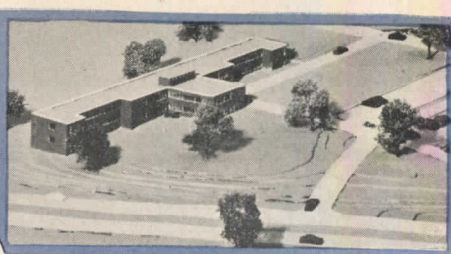
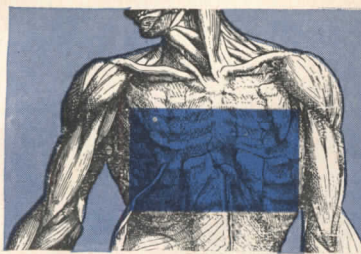


SIXTH FLOOR PLAN

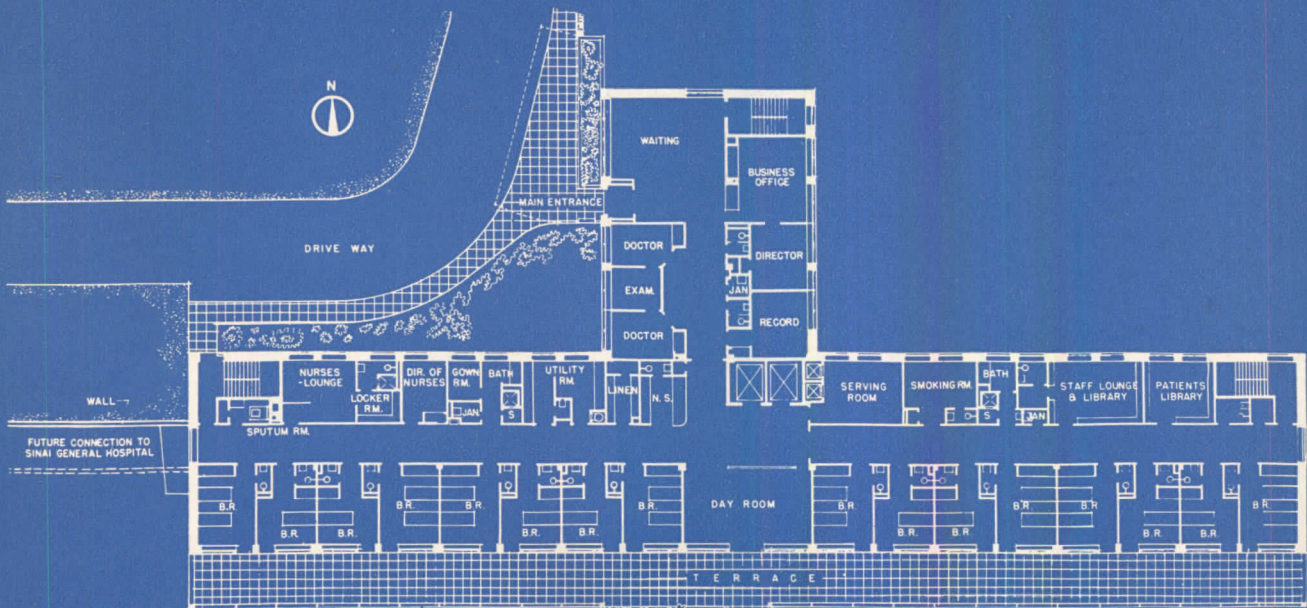
Sixth floor is maternity section, complete with labor and delivery rooms, nurseries and mothers' rooms all on one floor. Notice that there are six separate nurseries, so that babies can be kept close to mothers, for minimum traffic and good control. Second floor brings together all operating facilities and all laboratory and therapeutic departments, including radiographic and even morgue, an ideal arrangement where out-patient load is not large



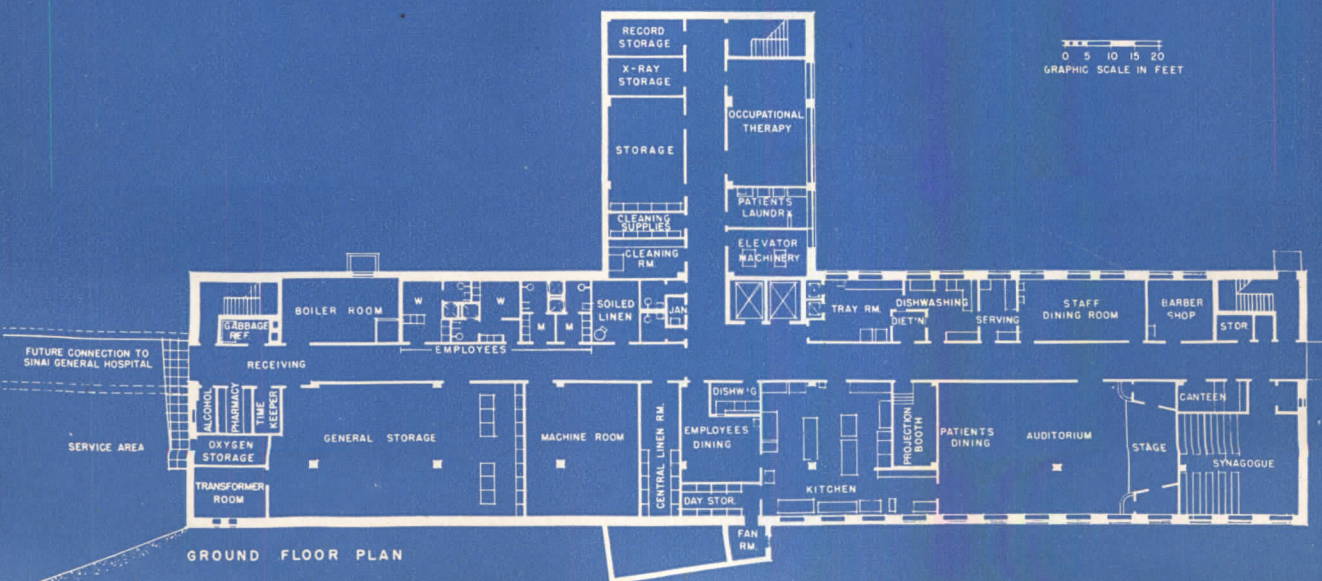
SECOND FLOOR PLAN



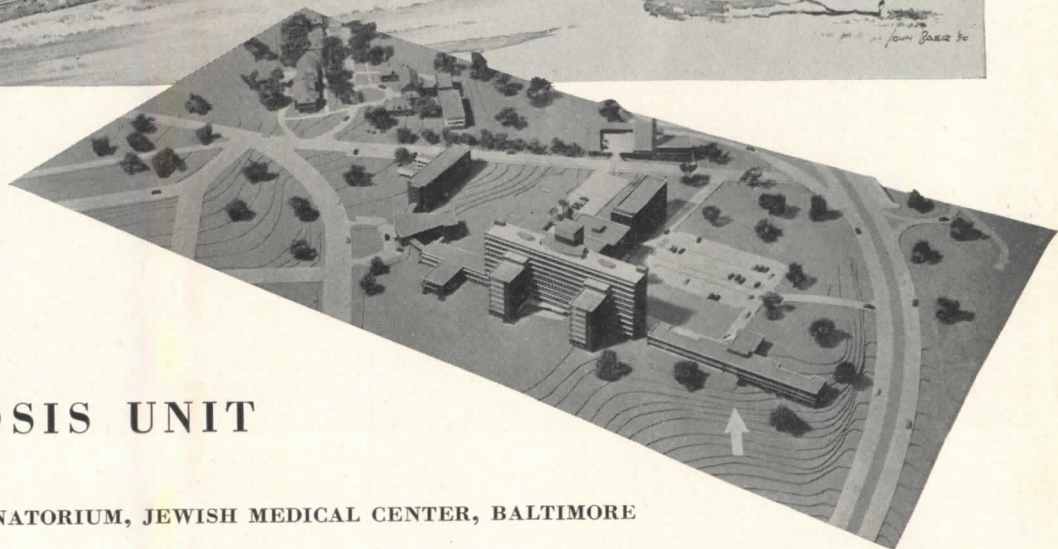
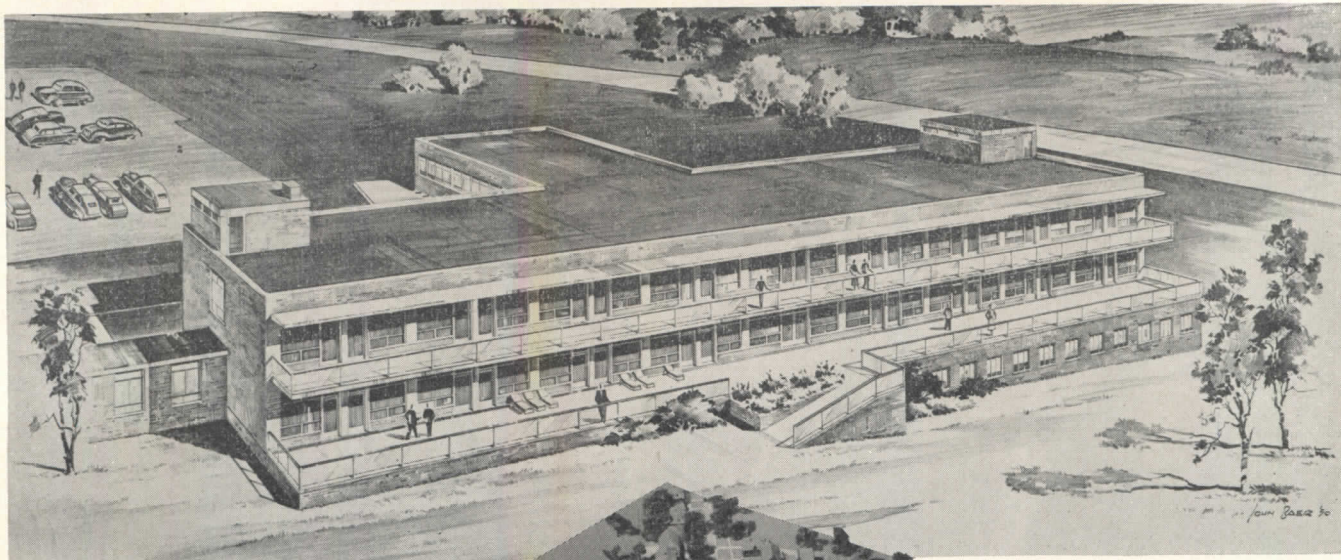
SECOND FLOOR PLAN



FIRST FLOOR PLAN



GROUND FLOOR PLAN



TUBERCULOSIS UNIT

MOUNT PLEASANT SANATORIUM, JEWISH MEDICAL CENTER, BALTIMORE

The Office of James R. Edmunds, Jr., Architects
Basil C. MacLean, M.D., M.P.H., Medical Consultant

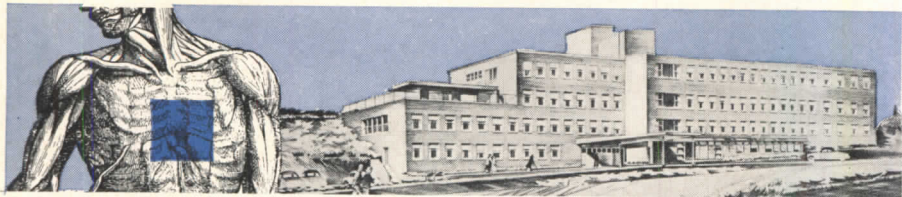
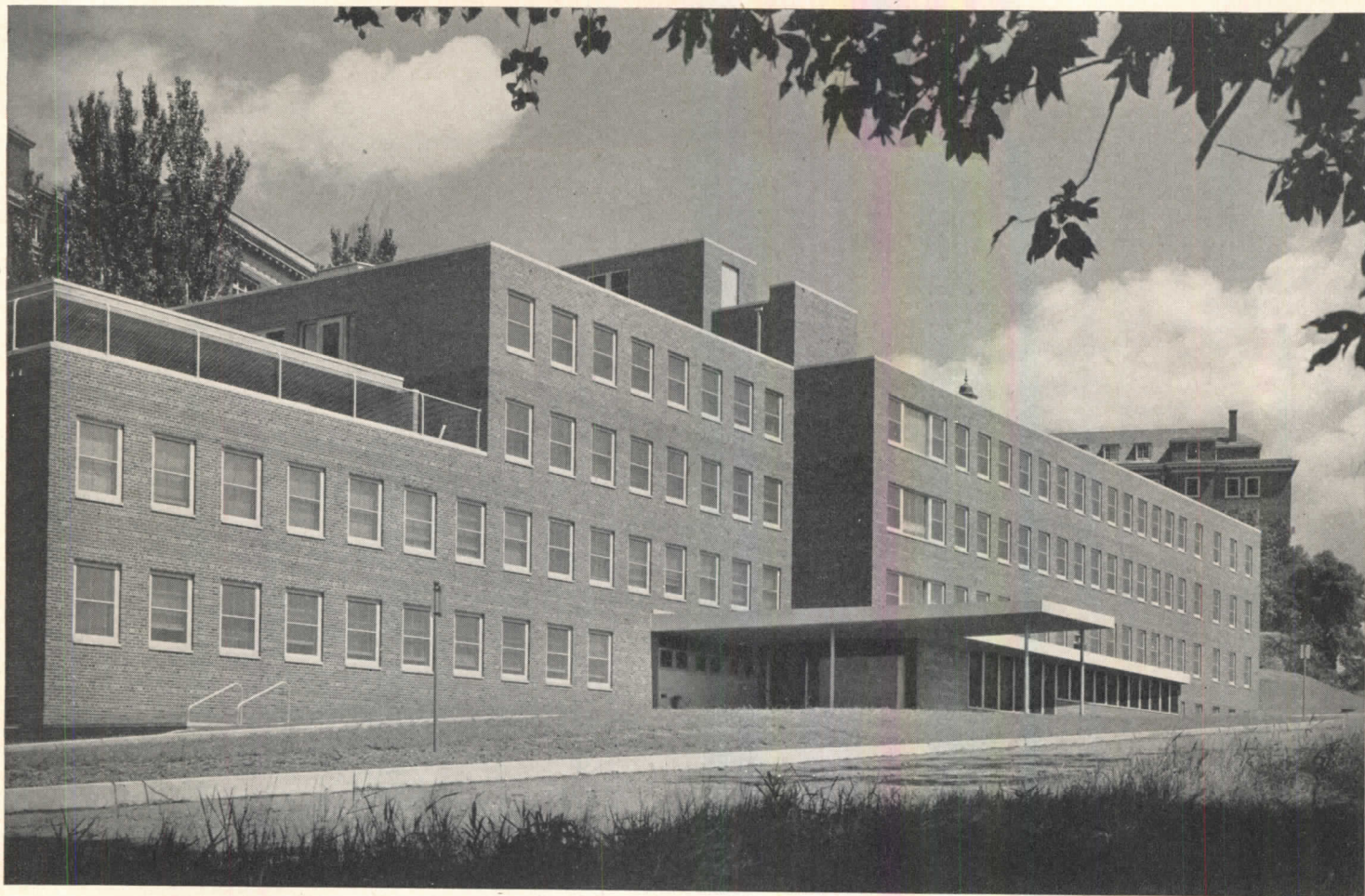
TUBERCULOSIS, it is felt by many doctors, will see radical changes in treatment in the future, as in the past, and perhaps eventually the need for separate hospitals may disappear. Mount Pleasant, the tuberculosis unit of the developing Jewish Medical Center in Baltimore, was therefore designed to care for all types of pulmonary diseases, also to be completely converted to other use should the need for sanatorium care decrease.

Mount Pleasant will be divided into two nursing units with a total of 54 beds, in one- and two-bed rooms. Each room will have a private toilet. Forty-eight of the beds will be located on the south side of the building with direct access to terraces or balconies. As the average patient must stay in the institution for six months or more, the rooms are as noninstitutional in character as possible, and are larger than the general hospital room. A telephone outlet is provided in each room and there will be a central television antenna system serving all patients' rooms. Other patient facilities include dayrooms, smoking rooms, a library, auditorium, synagogue, canteen, barber and beauty shop,

patients' laundry and an occupational therapy shop. The auditorium will be combined with the patients' dining room until the main hospital is built. Then the patients will use the staff dining room and the staff will eat in the main hospital.

The balconies are large enough for beds although it is contemplated that most of the ambulatory patients will be housed on the second floor and the bed patients on the first where their beds can be rolled onto the wide terrace. From the terrace there will be a ramp to the lawns and gardens. The balconies have glass railings which permit complete visibility but will protect the patients from the wind. The south wall of the patients' rooms is of glass from 1 ft 10 in. above the floor to the ceiling. This glass area is protected by the balconies and canopy and by venetian blinds.

Provision has been made for future expansion either horizontally or vertically; mechanical and structural designs will permit two additional floors, or extension of any of the wings horizontally. The building, now under construction, will cost \$2.04 per cu ft, \$24.40 per sq ft, or \$20,000 per bed.



VARIETY CLUB

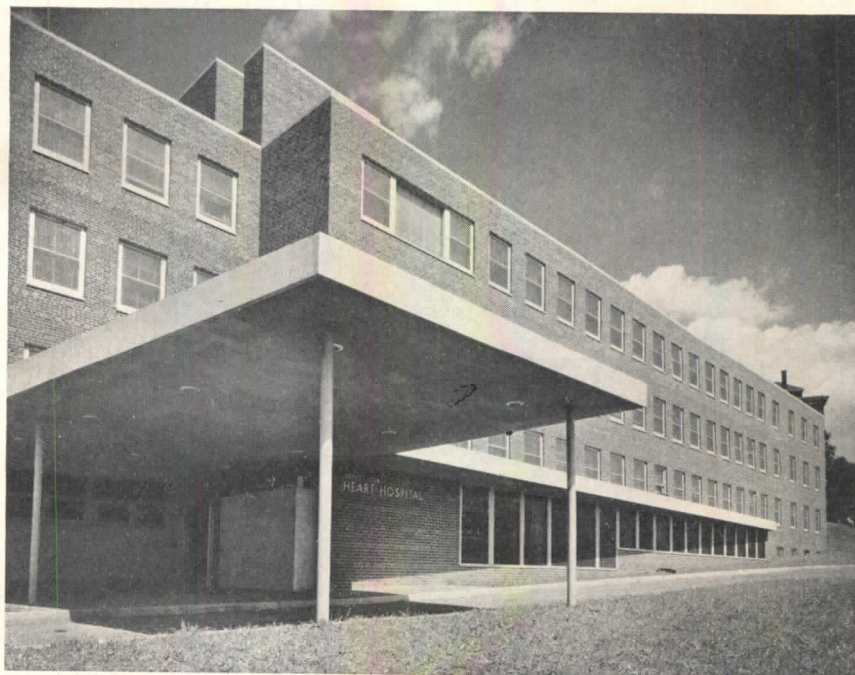
Photography Inc. Photos

Magney, Tusler & Setter

Architects and Engineers

Roy Jones and Winston Close

University Advisory Architects



FOR THIS HOSPITAL the program was unique. It is the only hospital in the United States for the study and teaching of the best methods for treating heart conditions, and the care of chronic heart patients. Thus its facilities are heavily loaded on the research side. Another factor is that while there are beds for only 38 adults and 40 child in-patients, the hospital is designed to accommodate up to 200 out-patients a day. While it is part of the overall facilities of the University's medical center, the heart unit operates as an individual entity; it does, however, receive light, power, heat, food, supplies and similar services from the university hospitals and the university.

For flexibility, always so necessary in research buildings, much consideration was given to changing uses of space and facilities. Offices, class and conference rooms can quickly be converted into working laboratories, since capped mechanical connections are readily available.

A narrow, irregular site was developed advantageously, in that patient rooms face the Mississippi River and the Minneapolis skyline beyond, with various service rooms and laboratories cut into the hill.

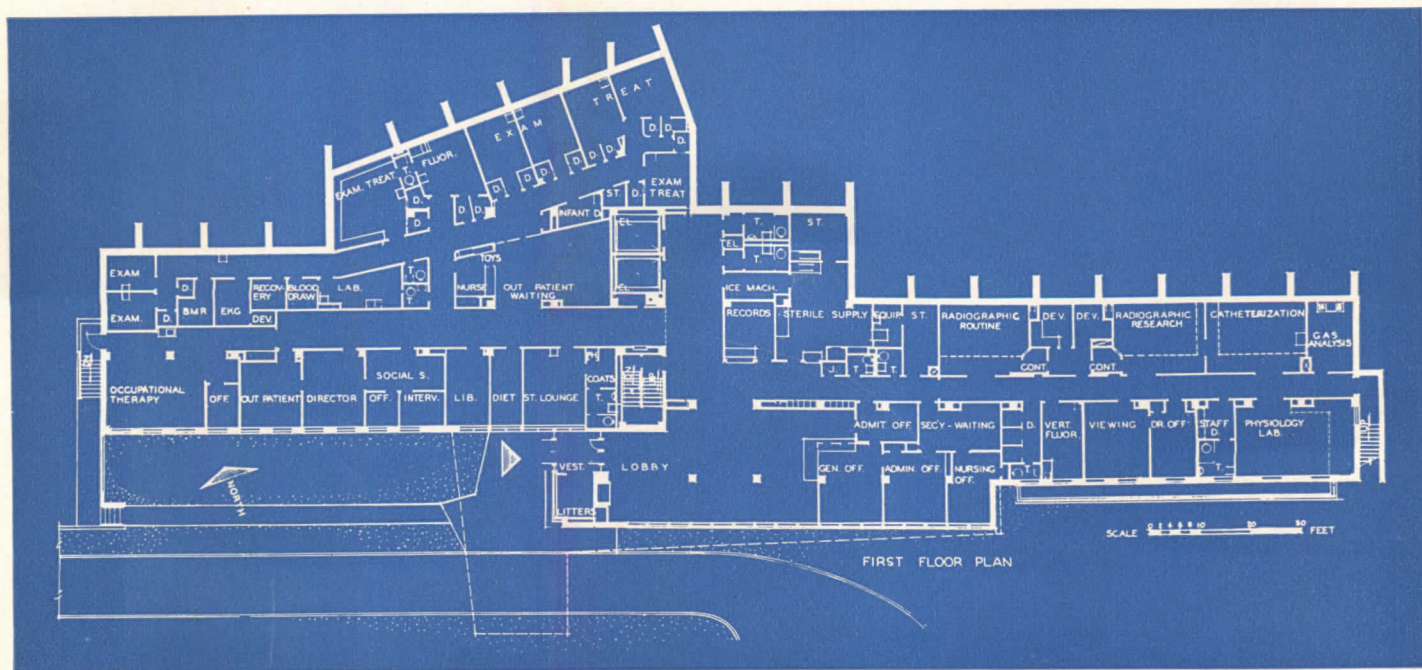
The building is welcomed into that wise and progressive school of thought that seeks to make a hospital a place of color, gaiety, and friendliness. The interiors were designed by Johns Hopkins, the University's color consultant. The main-floor reception room has a large fireplace, with windows overlooking the river, and

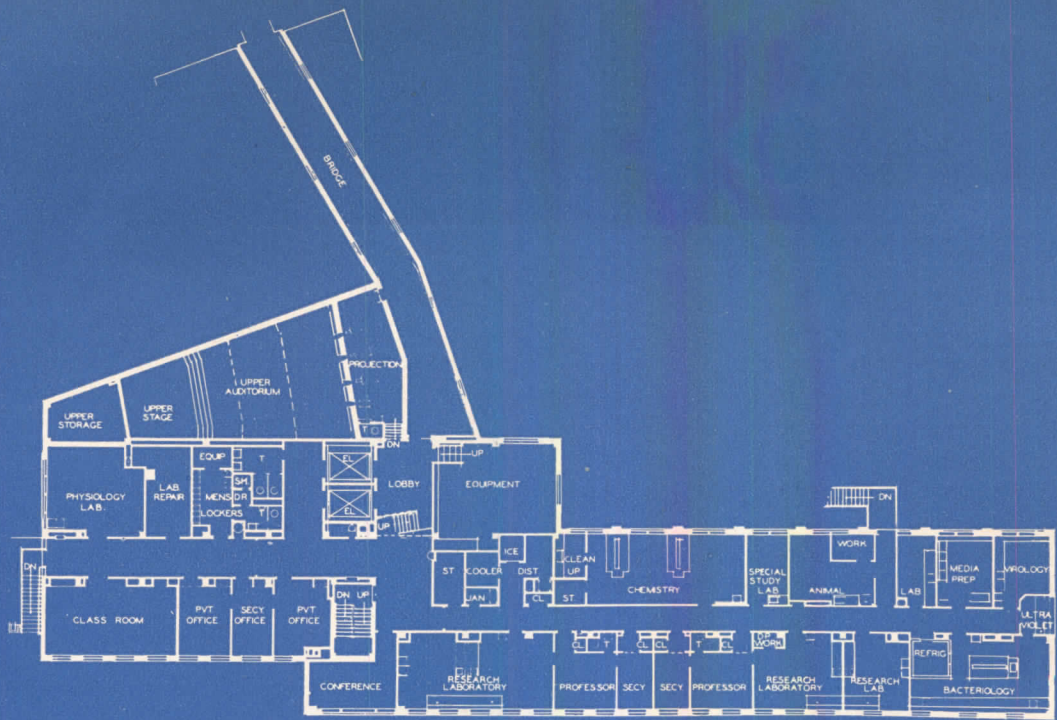
furniture especially designed by Hopkins. Most of the children's lavatories and interiors of closets have been painted fire-engine red. Second floor rooms, for adults, combine gray and yellow. Much red has been used in out-patient rooms; first-floor reception room is gray, gunmetal and red.

Further nice touches for patients include handrails along corridors, raised bathtubs and handrails, and ramps instead of stairs wherever possible. Special facilities include recessed concealed oxygen outlets in certain bedrooms, aspirators in each examination room, special outlets for portable air conditioners and radiographic equipment in all bedrooms, electrically filtered air throughout the building.

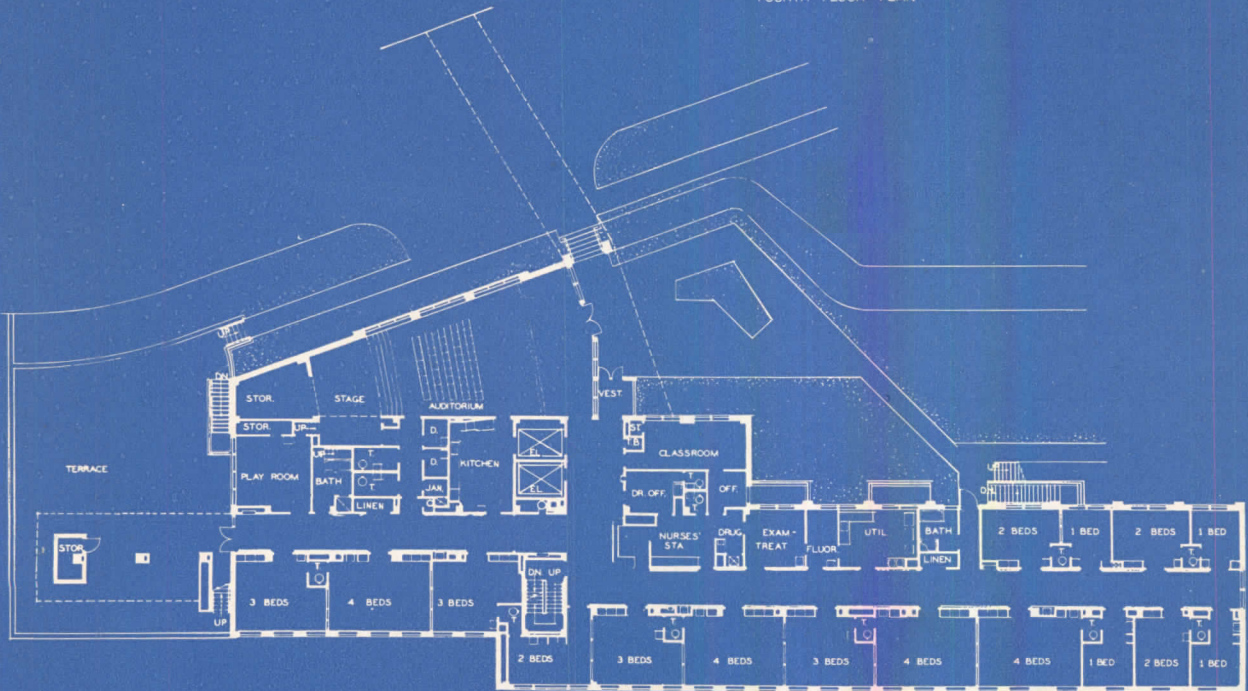
HEART HOSPITAL

UNIVERSITY OF MINNESOTA, MINNEAPOLIS

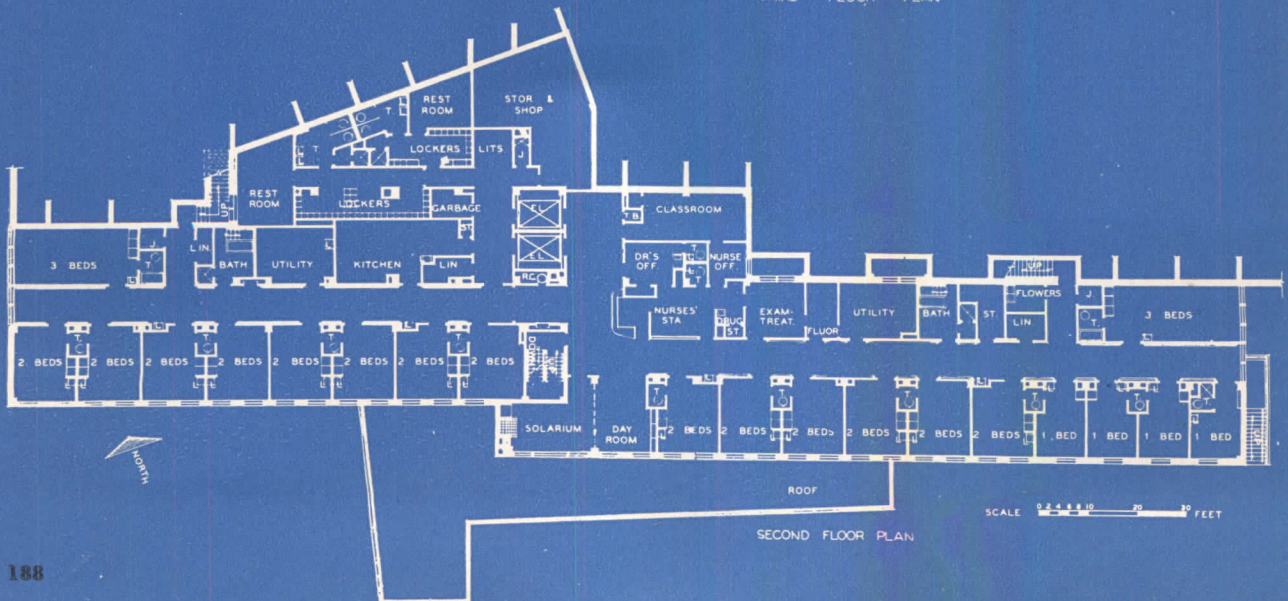




FOURTH FLOOR PLAN



THIRD FLOOR PLAN



SECOND FLOOR PLAN

Magney Tusler & Setter, Architects



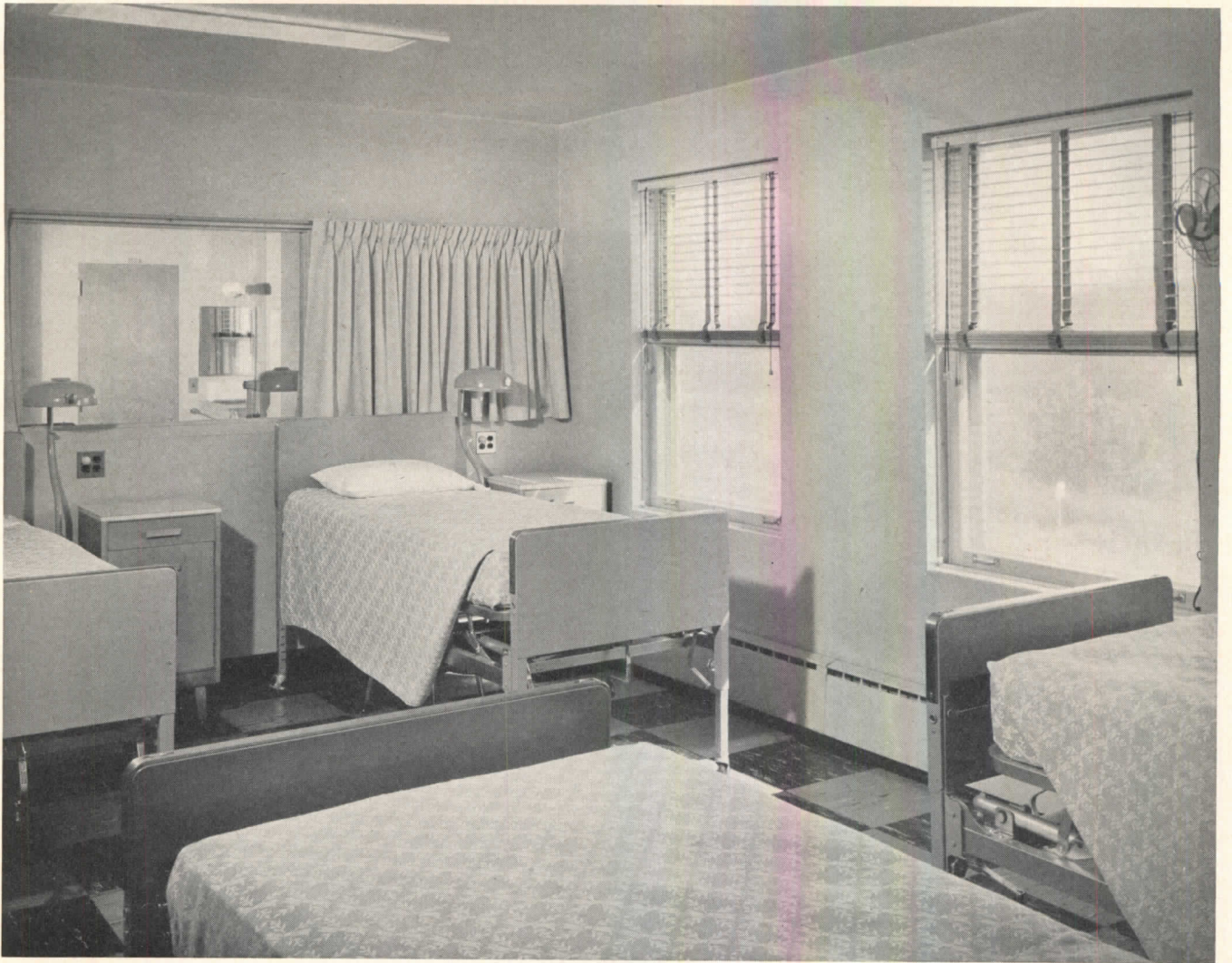
Photography Inc. Photos

Main lobby, looking toward principal entrance

Auditorium for Variety Club shows, for dining and recreation

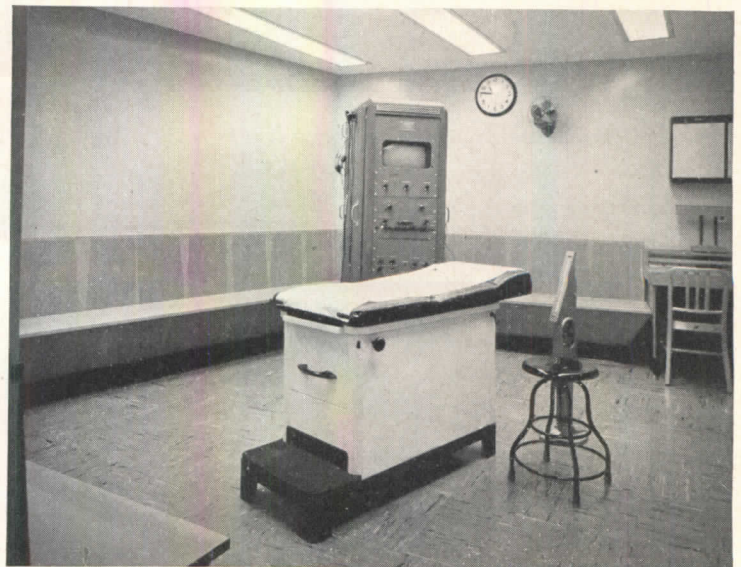
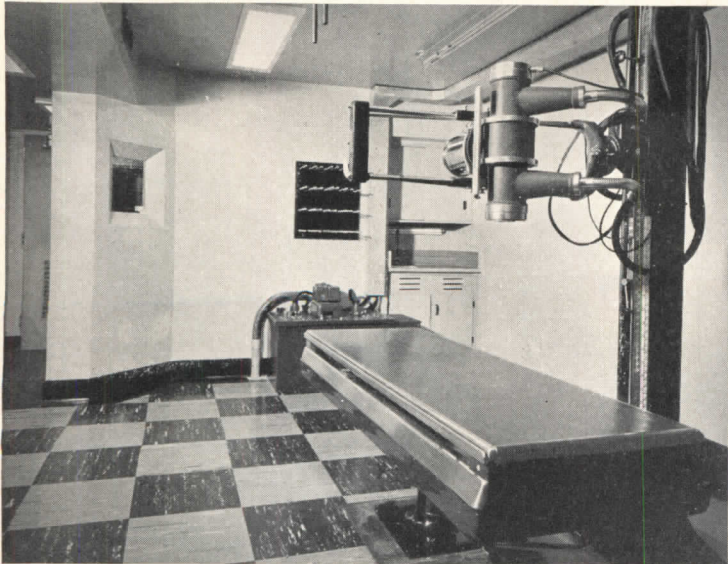
Third floor, for children, gets the enclosed roof terrace as play space, with adjoining interior playroom. Since for children privacy usually means loneliness, most beds are in ward rooms. The fourth floor was really an afterthought, due partly to enlargement of first floor radiographic space to accommodate new techniques, partly to the University's desire for more research area than was first planned





Photography Inc. Photos

Bedrooms in the Heart Hospital feature gay colors and many small extra comforts since, while many patients are convalescent or at least ambulant, the hospital stay is commonly long. Clinic room, lower right, has benches for student doctors who can plug into electrocardioscope and listen to heart sounds



HOUSING FOR PUBLIC HEALTH ACTIVITIES

by John W. Cronin, M.D.

Chief, Division of Hospital Facilities

Public Health Service



THE PAST DECADE has seen many health departments of the Nation emerge from dingy quarters in basements of city halls and courthouses into their own specially designed health centers. The Lanham Act Program of World War II provided the original impetus for this movement. Since 1941, under the Hill-Burton Program, 286 health centers have been constructed or are in process of construction. Of these, 43 are combined with general hospitals. This activity reflects an awareness by the medical profession and the public of the importance of the public health field in relation to the general health of our country.

The basic functions carried out in a health center are control of communicable disease, public health nursing, individual health protection, nutrition and sanitation control, health education, vital statistics and public health administration. Within this framework may be included such services as maternal and child health care, diagnosis and treatment of tuberculosis and venereal disease, communicable disease immunization, health examination of school children, dental care, public health education, preventive mental hygiene and inspectional services for milk, food and water, among others.

The programs and facilities of individual health departments vary considerably in types of services offered because of the many factors entering into the development of a local health program and the planning of a suitable health center facility.

State health departments administer state and federal grants for a number of established health programs. Through these grants local health groups are encouraged and guided in providing the basic health services. The extent and quality of these and other supplementary services is limited only by the ability

and desire of the community to support them. Such support lies in community interest, professional leadership and financial resources.

Political sub-divisions, ranging from rural counties to large municipalities, present a broad field for the development of many types of health centers. The rural areas of some states are served by county or multi-county health centers covering populations up to 35,000. Much of the field work is done with mobile units, in auxiliary health centers, in schools, and with cooperating civic groups. Only the basic health services are provided. Cases requiring special services are referred to specialized facilities where these services are available.

In more populous states many of the city health departments usually operate from a main administrative office through several neighborhood clinics. These clinics may vary in size and scope of service. Ready referral is available to the main office, to cooperating hospitals, or to other facilities.

Closer cooperation between health and welfare agencies has aided in the fight against tuberculosis and venereal disease. The need for early diagnosis of such chronic diseases as heart disease, cancer and diabetes is generally accepted. Advances in health promotion and maintenance in preventive medicine, in nutrition, in case finding and in the rehabilitation services are being utilized for the benefit of the individual and the community.

In planning a health center the architect should work with the local health committee in the development of a comprehensive forward-looking program. Health programs are subject to frequent change. New services are added, old ones are reduced. Techniques improve, making equipment or even rooms obsolete.

In his planning, the architect should bear in mind the

potential changing nature of the health centers function. Multi-purpose rooms which can be used for several types of services should be provided rather than rooms specially designed for a single purpose. However, in some instances such as x-ray and dental rooms, this cannot be avoided. Future expansion should be anticipated and reflected in both the plan and site. Separation of clinical from administrative areas is basic. The ele-

ments of operational unit planning should be flexible.

The modern medical commodity is the promotion, maintenance and conservation of the individual's health. This requires the close relationship at all times of curative services and preventive services for the individual as well as for the mass population. The degree to which this can be accomplished will vary considerably but the goal remains constant — Better Health for All.

THE URBAN PUBLIC HEALTH CENTER

By Anthony J. Borowski, Dr. P.H.

Chief, Division of Hospital Facilities

Ohio Department of Health

IN RECENT YEARS leaders in all fields of medical care have expressed their conviction that curative and preventive medicine no longer can be separated by a clearly defined line of demarcation. Members of the medical profession agree that many of their services include those which previously had been regarded as being primarily the responsibility of the local health officer.

In this transition has come greater emphasis upon the type of facility which should be provided to house adequately the local health department. In smaller communities there is a growing conviction that the health center can be housed in the same building which includes the local hospital, provided there is only one hospital in the community. In the larger urban areas, health centers are being erected as separate buildings, and properly so, because only in such a structure can sufficient space be provided to accommodate all of those things which are requisite to a good local health department. In this category is the new health center which will be erected in Columbus, Ohio, in the near future.

In developing architectural plans for an urban health center, the architect's task is difficult even under the most favorable circumstances. Frequently the architect's problem is aggravated by the fact that insufficient construction funds are available to accomplish all of the desired objectives.

To avoid disappointments and confusion at the time bids are opened, a written work program is essential. The architect must have available a statement which outlines:

1. Types of services to be provided
2. Number of persons to be employed
3. Number and types of patients to be served

4. Relationship between services, if any
5. Desired location of selected departments
6. Exclusion or inclusion of certain adjunct facilities
7. Anticipated future needs or potential growth of services
8. Additional desirable features if funds will permit their inclusion
9. Total funds available for construction

In addition, the architect must have a plot plan with existing building or buildings, if any. Only when all of this information is available can the early stages of paper planning be undertaken.

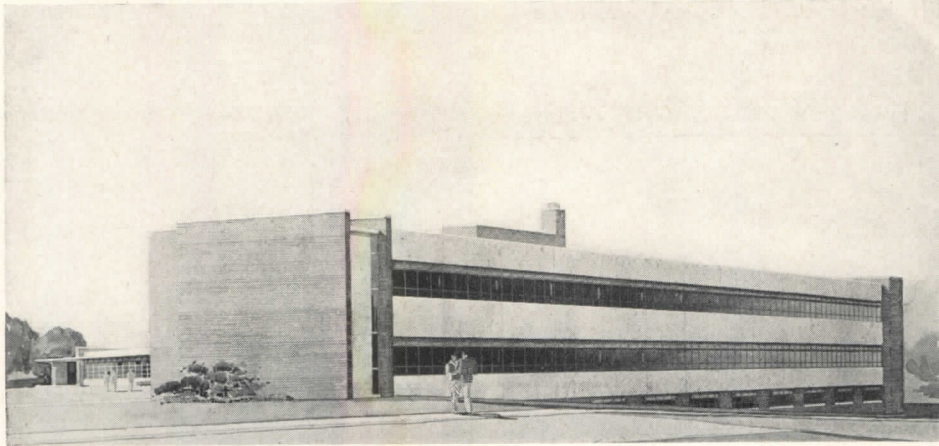
In developing plans for the public health center, the existing health program plus any contemplated extensions of it must be interpreted for the architect.

Some of the basic features which must be included in the plans under any circumstances are a waiting area and an information desk. The health officer must be provided with private office space and an adjoining examining area. It is entirely possible that one area can serve for maternal and child hygiene, tuberculosis control and venereal disease control if a rotating schedule for clinics is practical. Ideally, however, each of these three services should have space of its own, but they can be combined if it is necessary to conserve space. Separate quarters should be provided for sanitarians and public health nurses. In the information or lobby area there should be an office, or at least a small fenced-in area to care for vital statistics. Provision should be made for a water and milk laboratory, and if health education is to realize its real emphasis, demonstration, conference or lecture room area should be provided even though it is confined to one room. Last, but not least, some storage space is essential.

LARGE HEALTH AND SAFETY CENTER

FOR THE MUNICIPAL GOVERNMENT OF COLUMBUS, OHIO

Dan A. Carmichael and Sims, Cornelius and Schooley, Associated Architects



THIS LARGE HEALTH CENTER, as Dr. Borowski points out in the foregoing text, combines a great many widely different functions, in clinics, laboratories and office space. It is worth noting that it packages them in a frankly modern building, even though it is to be part of an older group in the Civic Center, for "the patient should not be intimidated by an austere monumentality."

The plans (next page) show very careful allotment of areas to departments, based on the following loads and considerations:

Venereal Disease. Estimated 25,000 visits a year, mostly in evening hours, maximum load of 100. Large expansion is not expected, due to continuing treatment and prevention programs. Rescheduling could presumably take care of any overloading. First floor, 1900 sq ft.

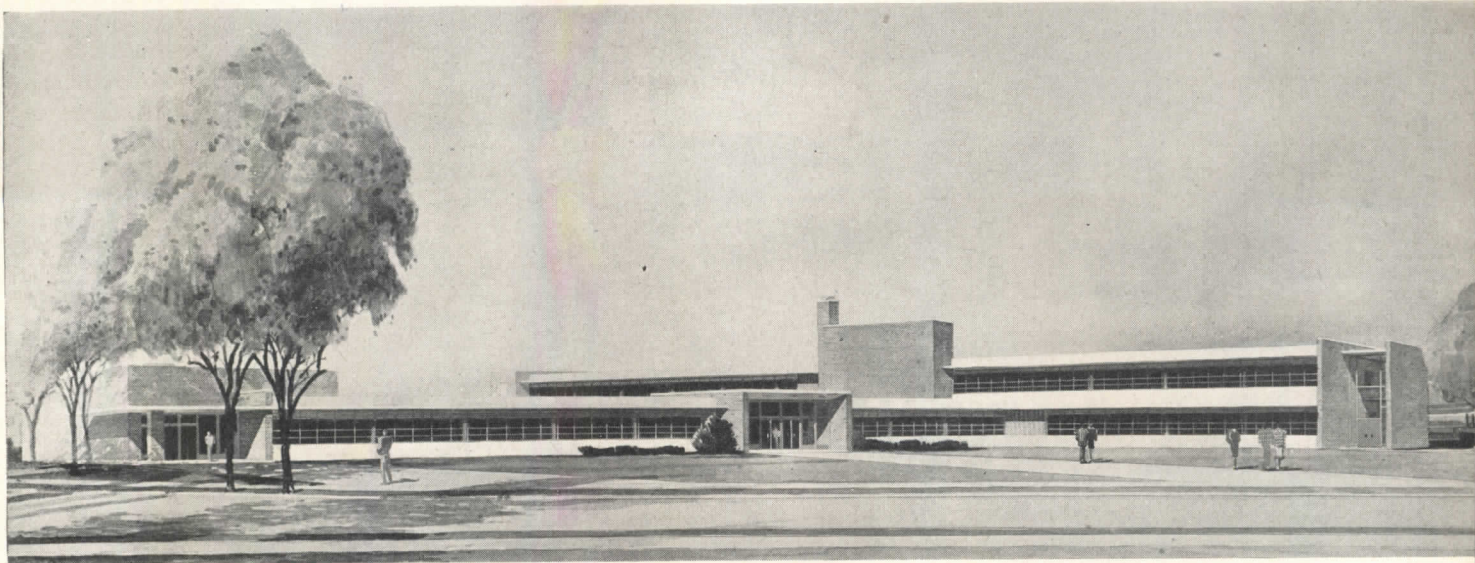
Tuberculosis. Normal load of 13,000 visits a year, plus 15,000 food handlers. Expansion to be taken care of by scheduling of hours. Total of 4200 sq ft, including 2000 in X-ray department.

Maternal and Child Health. Location nearest main entrance. 1350 sq ft including two treatment rooms, one demonstration room, three offices and small waiting room.

Vital Statistics. Mainly office space for clerks, but should be near main entrance because 20,000 visits a year are expected.

Laboratories. Much laboratory work comes from V.D. clinic, so location should be arranged accordingly. North light desirable but not mandatory.

Mental Hygiene. Quiet and seclusion desirable, therefore



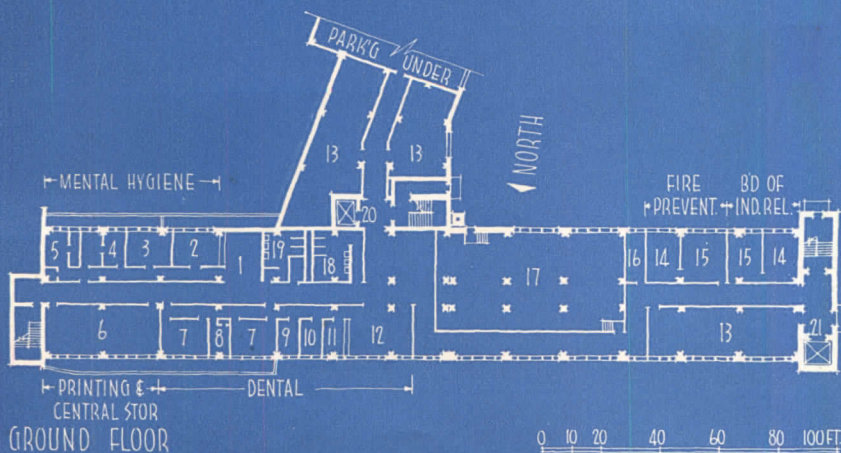
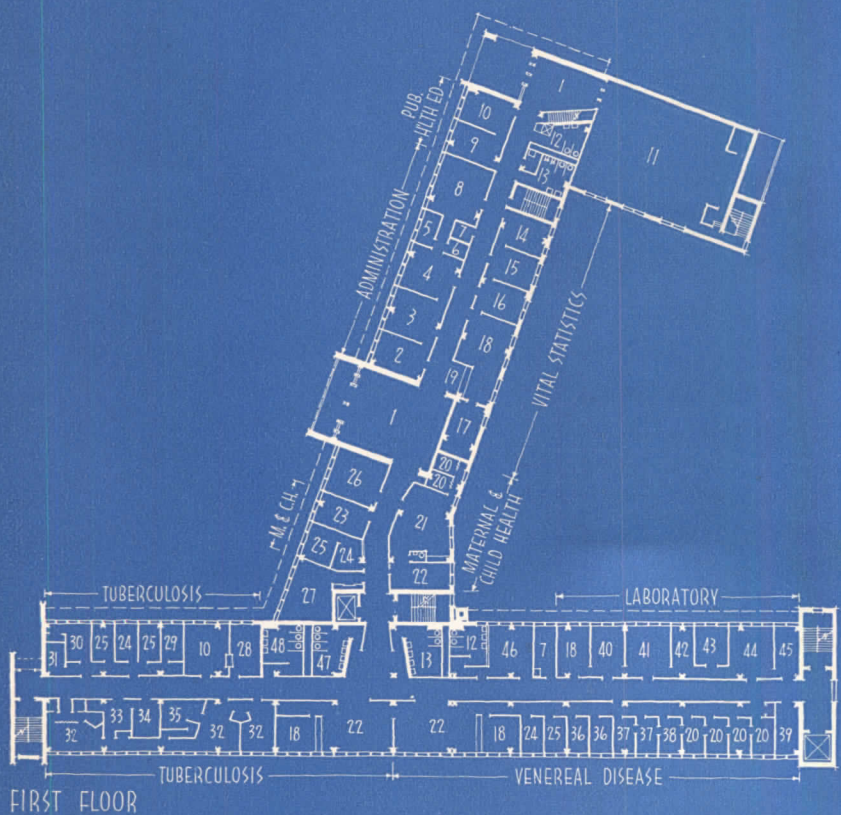
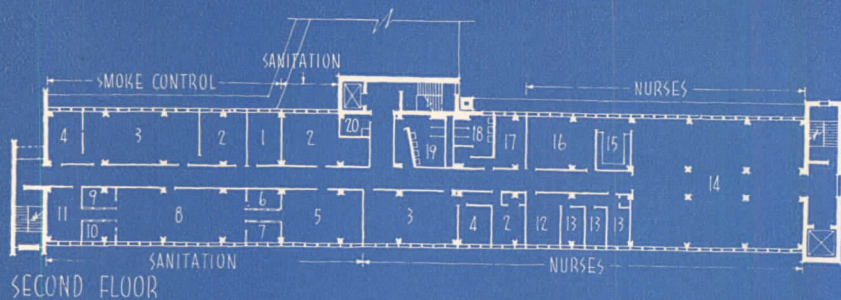
ground floor location is suitable. Space for one psychiatrist, one psychologist, three clerks, three case workers.

Dental. Dental room for four chairs, separated by part-height partitions, and three offices. Total 1750 sq ft.

Nursing. General work area for 72 nurses and 10 supervisors, each of whom has office with part-height partitions, overlooking nurses under her supervision. Each nurse is in the office only about two hours a day, but each needs a desk for her own paper work.

Sanitation. This department has four groups of inspectors: milk, meat, restaurant, and general sanitation. Only two groups, restaurant and general, hold daily meetings, so space has some multiple use.

Under *Safety* there are three departments: *Smoke Control*, *Fire Prevention*, and *Board of Industrial Relations*. The latter two require only an office for the chief and one or two clerks. Smoke Control has 16 men besides the chief and needs a smoke demonstration room and conference room.



LEGEND

GROUND FLOOR

Mental Hygiene

- 1. Waiting
- 2. General Office
- 3. Case Workers
- 4. Psychiatrist
- 5. Psychologist
- 6. Printing & Central Storage

Dental Dept.

- 7. Operating
- 8. Laboratory
- 9. Records
- 10. Doctor
- 11. Nurse
- 12. Waiting Room
- 13. Storage & Repair

Board of Industrial Relations

- 14. Chief
- 15. Clerks

Fire Prevention

- 16. Storage for Smoke Control
- 17. Boiler & Mechanical Rm.
- 18. Men's Toilet
- 19. Women's Toilet
- 20. Staff Passenger Elevator
- 21. Freight Elevator

FIRST FLOOR

Entrance

- 1. Lobby

Administration

- 2. Assistant Health Commissioner
- 3. Secretaries
- 4. Health Commissioner
- 5. Work Room
- 6. Toilet
- 7. Janitor
- 8. Library & Conference

Public Health Education

- 9. Chief
- 10. Clerks
- 11. Auditorium
- 12. Women's Toilet
- 13. Men's Toilet

Vital Statistics

- 14. Registrar
- 15. Business Office
- 16. Assistant Registrar
- 17. Vault
- 18. General Office
- 19. Public Service Area

Maternal & Child Health

- 20. Treatment
- 21. Demonstration

- 22. Waiting Rm.
- 23. Administrator for M. & C.H.
- 24. Nurse
- 25. Doctor
- 26. Cancer Society
- 27. Tumor Registry

Tuberculosis

- 28. Chief
- 29. Social Service
- 30. Pneumothorax
- 31. Fluoroscopy
- 32. X-Ray
- 33. Film Viewing
- 34. Film Storage
- 35. Dark Room

Veneral Disease

- 36. Consultation
- 37. Examination
- 38. Laboratory
- 39. Storage

SECOND FLOOR

Smoke Control

- 1. Smoke Demonstration
- 2. Chief
- 3. General Office
- 4. Assistant Chief

Sanitation

- 5. Clerks
- 6. Sanitation Supervisor
- 7. Restaurant Supervisor
- 8. Inspectors' Meeting Rm.
- 9. Meat Supervisor
- 10. Milk Supervisor
- 11. Coat Room

Nurses Dept.

- 12. Educational Director
- 13. Consultation
- 14. Nurses & Supervisors
- 15. Dispensary
- 16. Lockers
- 17. Women's Rest Rm.
- 18. Women's Toilet
- 19. Men's Toilet
- 20. Janitor

Laboratory

- 40. Serology
- 41. Bacteriology & General Lab.
- 42. Microscopy & Reports
- 43. Milk Lab.
- 44. Washing, Sterilizing & Media Preparation
- 45. Chemical Lab.
- 46. Staff Women's Rest Rm.
- 47. Public Men's Toilet
- 48. Public Women's Toilet
- 49. Linen





HOSPITAL AND HEALTH CENTER TOGETHER

MAURY COUNTY HOSPITAL AND HEALTH CENTER, COLUMBIA, TENN.

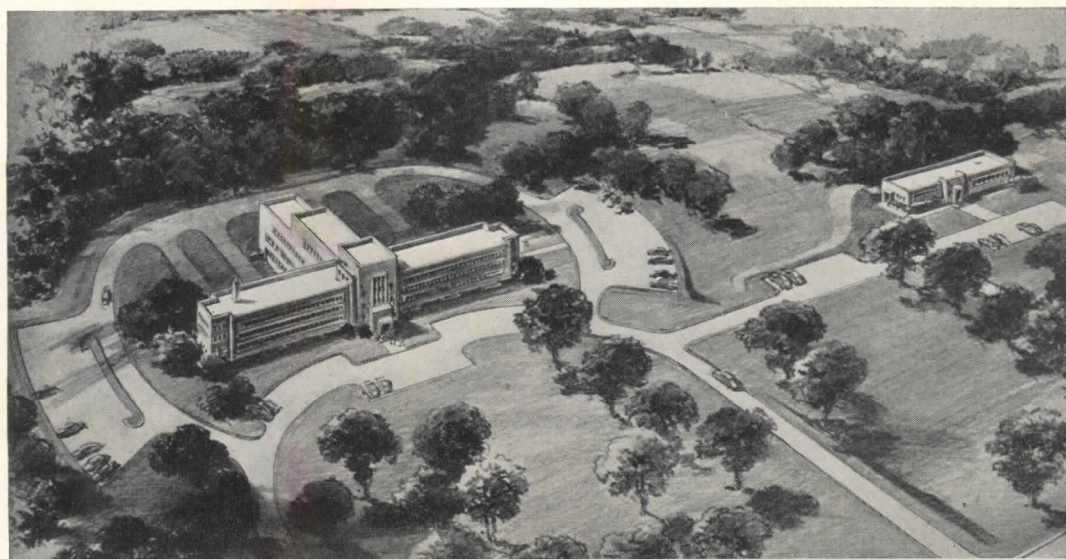
Howard, Hickerson & Jordan, Inc., Architects — Engineers

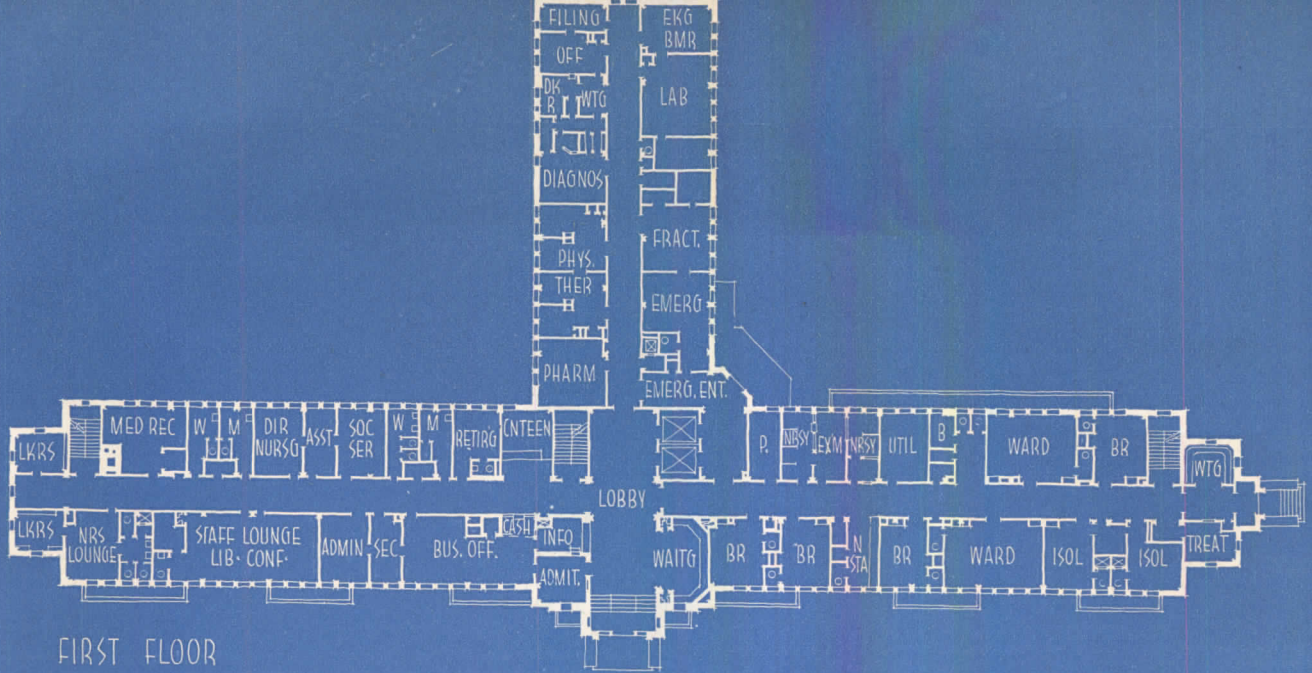
A COMMON observation has it that a health center logically belongs with a hospital, as there is a strong community interest in preventive and curative health measures. In smaller communities they could be combined in the same building. Here, however, the hospital is quite large, for a rural area. Also the hospital is a strictly county enterprise, the health center jointly owned by the state and county. Thus a separate build-

ing seemed indicated, but on the hospital site for the integration of activities.

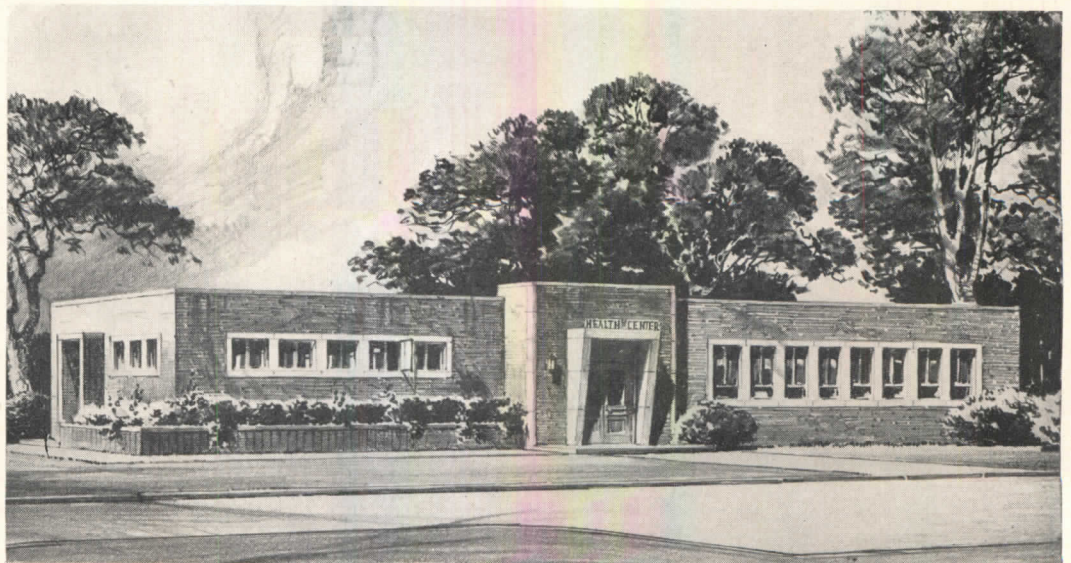
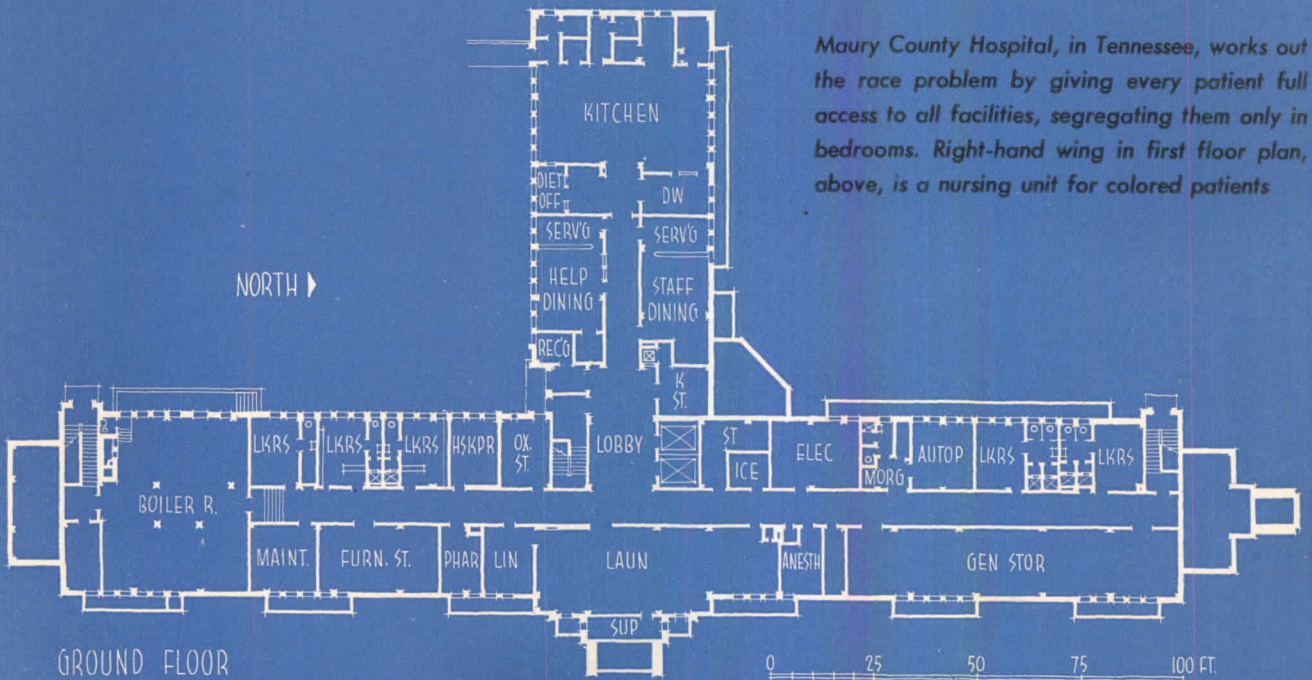
The hospital is a fairly typical 100-bed general hospital, with most of the planning features recommended by the U. S. Public Health Service. The health center is relatively small, with three typical clinics and the usual health officer, sanitary engineers and staff of visiting nurses. (Plans on following two pages.)

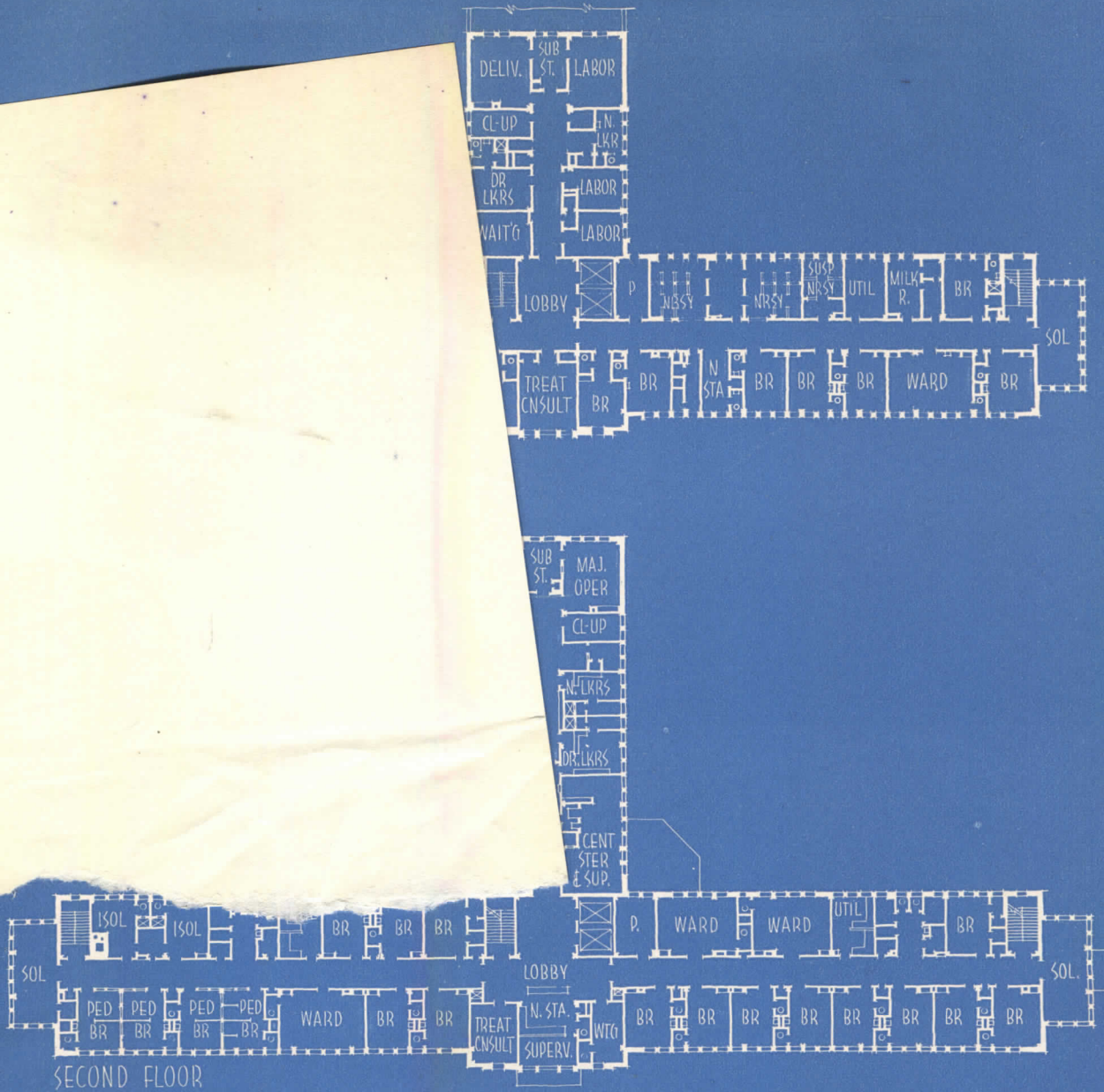
Health Center is small building at the right. It and hospital have separate ownership and administration, but are logically together for joint activities



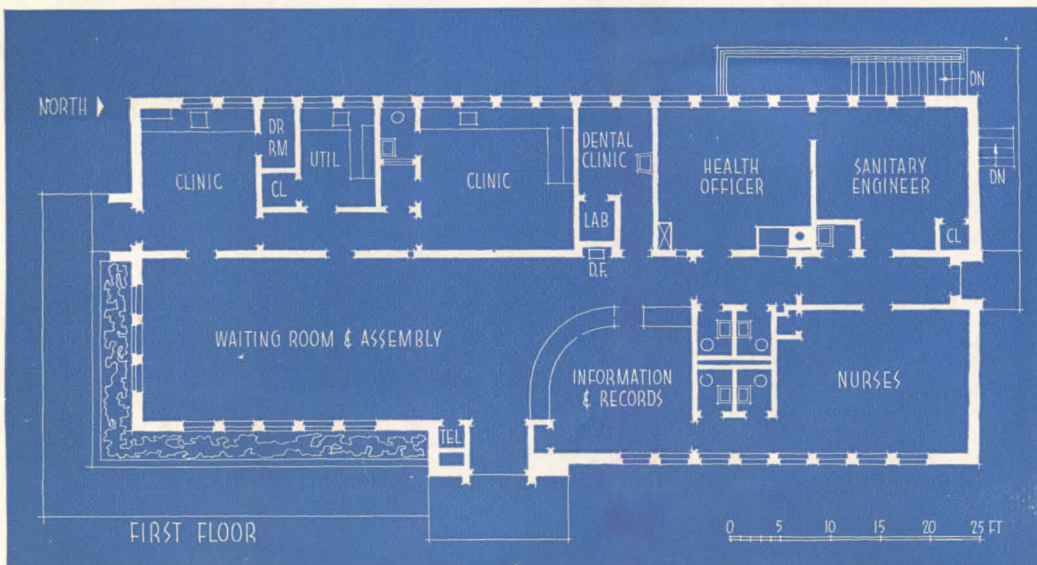


Maury County Hospital, in Tennessee, works out the race problem by giving every patient full access to all facilities, segregating them only in bedrooms. Right-hand wing in first floor plan, above, is a nursing unit for colored patients





SECOND FLOOR



FIRST FLOOR

This represents a just about minimal health center for a rural locality, with clinic areas for multiple use, small quarters for usual health staff. Waiting room doubles for demonstrations or lectures on health topics

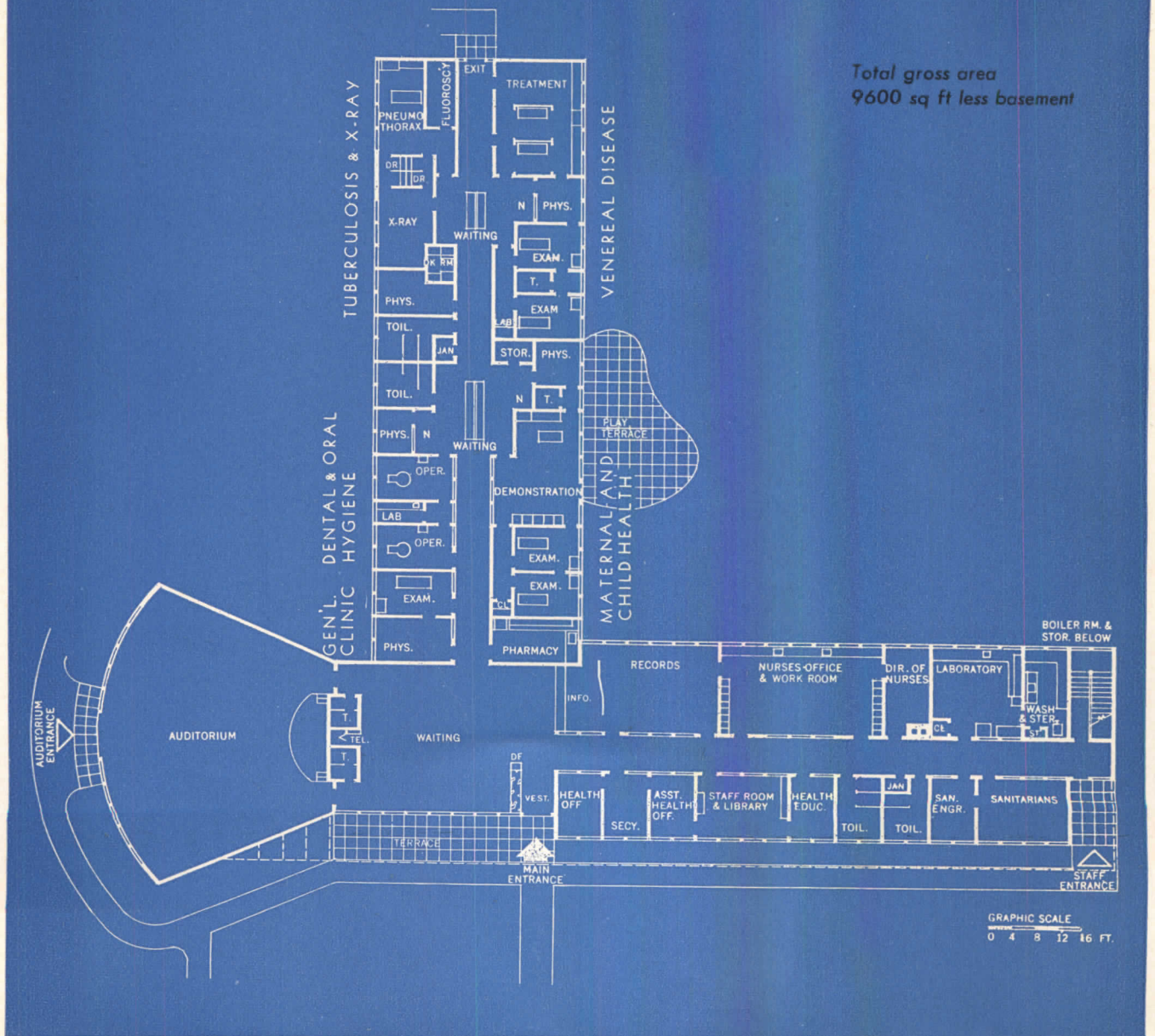
REVISED PLAN, TYPE C HEALTH CENTER



THIS IS A REVISION of one of the earlier type plan recommendations of the U. S. Public Health Service for a health center for a community of up to 100,000. It was originally published in ARCHITECTURAL RECORD'S Building Types Study of July 1942, reprints of which are still used as reference for health center planning. Other recommendations still hold, but this one type has been revised in the two areas for tuberculosis and venereal disease. The new clinics are detailed, with equipment lists, on the opposite page.

Supersedes plan in ARCHITECTURAL RECORD'S Building Types Study number 67

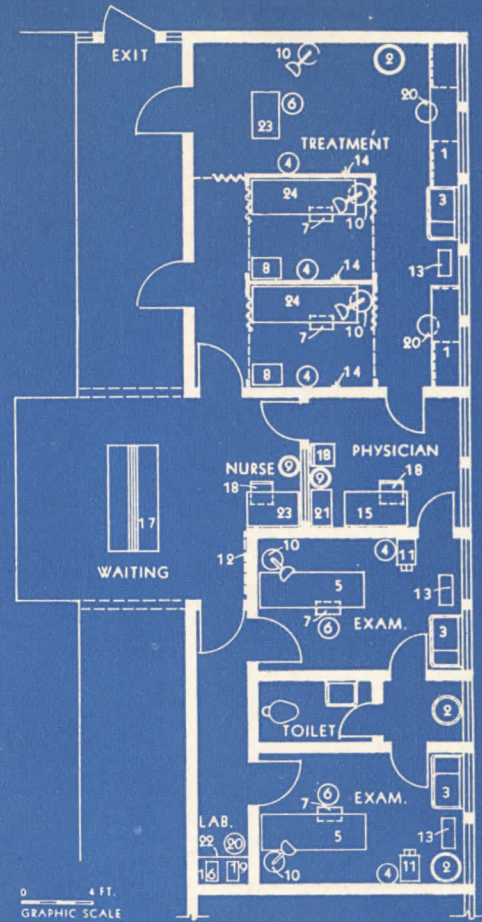
Total gross area
9600 sq ft less basement



VENEREAL DISEASE CLINIC
TYPE C HEALTH CENTER

Equipment Legend:

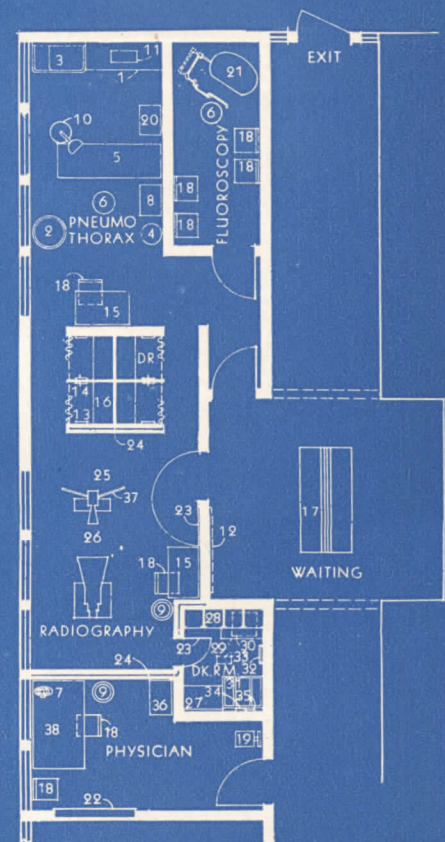
1. Work counter with cabinets below
2. Laundry hamper
3. Combination sink with arm or knee control
4. Waste can, foot lever
5. Examination table
6. Operator's stool
7. Operator's footstool
8. Instrument table
9. Waste receptacle
10. Gooseneck examination light
11. Mayo instrument table
12. Educational wall display
13. Instrument sterilizer on stand
14. Hook strips
15. Small desk
16. Microscope (ordinary)
17. Bench
18. Chair
19. Microscope (dark field)
20. Stool
21. File cabinet
22. Work counter—open below
23. Table
24. Treatment table



TUBERCULOSIS AND X-RAY CLINIC
TYPE C HEALTH CENTER

Equipment Legend:

1. Work counter with cabinets below
2. Laundry hamper
3. Combination sink with arm or knee control
4. Waste can, foot lever
5. Examination table
6. Operator's stool
7. Film viewer, 70 mm.
8. Instrument table
9. Waste receptacle
10. Gooseneck examination light
11. Instrument sterilizer
12. Educational wall display
13. Mirror
14. Hook strip
15. Small desk
16. Seat
17. Bench
18. Chair
19. Clinic scale
20. Pneumothorax apparatus with stand
21. Vertical fluoroscope
22. Illuminator, 4 panel
23. Lead lined door, light proofed
24. Lead lining (size and extent varies)
25. Control panel
26. Photo-roentgen unit
27. Wall hung film drier; water cooler below
28. Wall cabinet
29. Loading bench
30. Film storage bin
31. Developing tank
32. Towel bar
33. Ceiling light, white and red
34. Safe light
35. Timer
36. File cabinet
37. Mobile protective screen
38. Desk, double pedestal

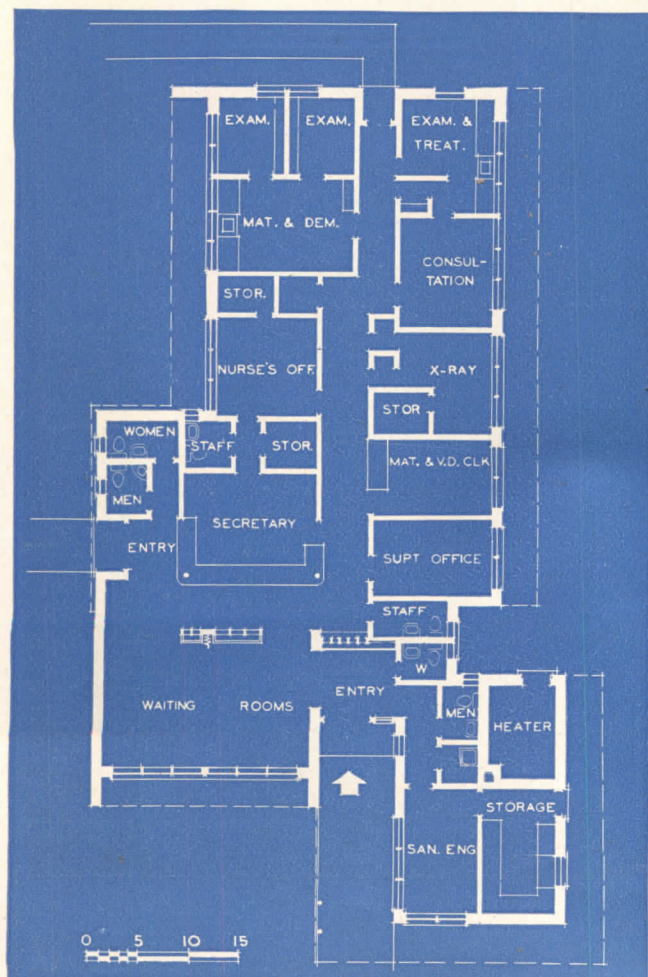




MADISON PARISH HEALTH CENTER

TALLULAH, LOUISIANA

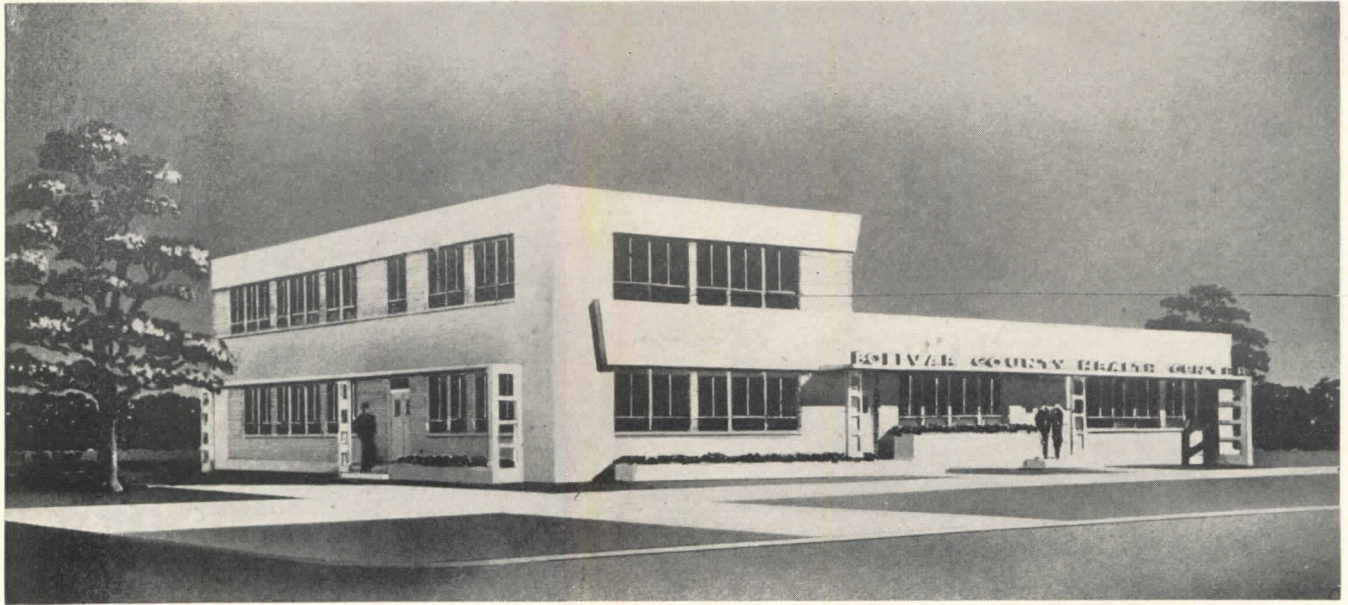
Ricciuti, Stoffle and Associates, Architects



THIS LITTLE HEALTH CENTER is the first in a state-wide program of such centers, constructed under the Hill-Burton Act, to make health facilities available at the rural level.

It has the usual facilities for both the clinics and the health offices: large, double waiting room, dentist's office, X-ray and dark room for tuberculosis work, consultation room, examination and treatment room adjoining, maternity demonstration room with adjoining examination rooms, plus necessary offices for sanitary engineer, health officer and visiting nurses. The waiting room, as in some other health centers, serves also for lectures, demonstrations or health movies.

If you look closely you can see that this building follows the nominal segregation that seems the current custom in the south — the same health facilities are available to all; segregation is maintained in waiting rooms and toilet facilities, and, of course, entrance.



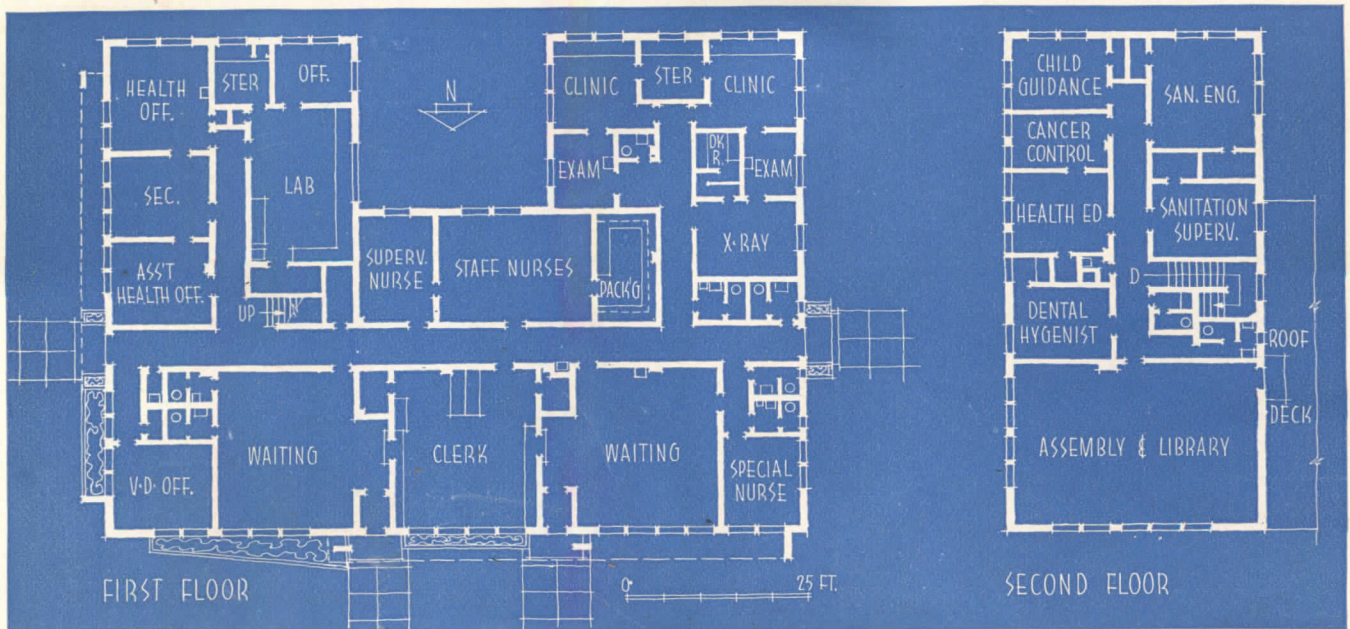
BOLIVAR COUNTY HEALTH CENTER

CLEVELAND, MISSISSIPPI

N. W. Overstreet & Associates, Architects—Engineers

HERE IS a slightly larger health center, also for a generally rural locality. It has all of the customary facilities of the preceding example, though here somewhat larger departments are contemplated, plus a few additional activities. The typical routines and clinics

have the first floor; the additional activities, not producing so much traffic, are housed in a partial second story. Child guidance here is a separate department, as is also health education, with the addition of an office for cancer control, also a large laboratory.





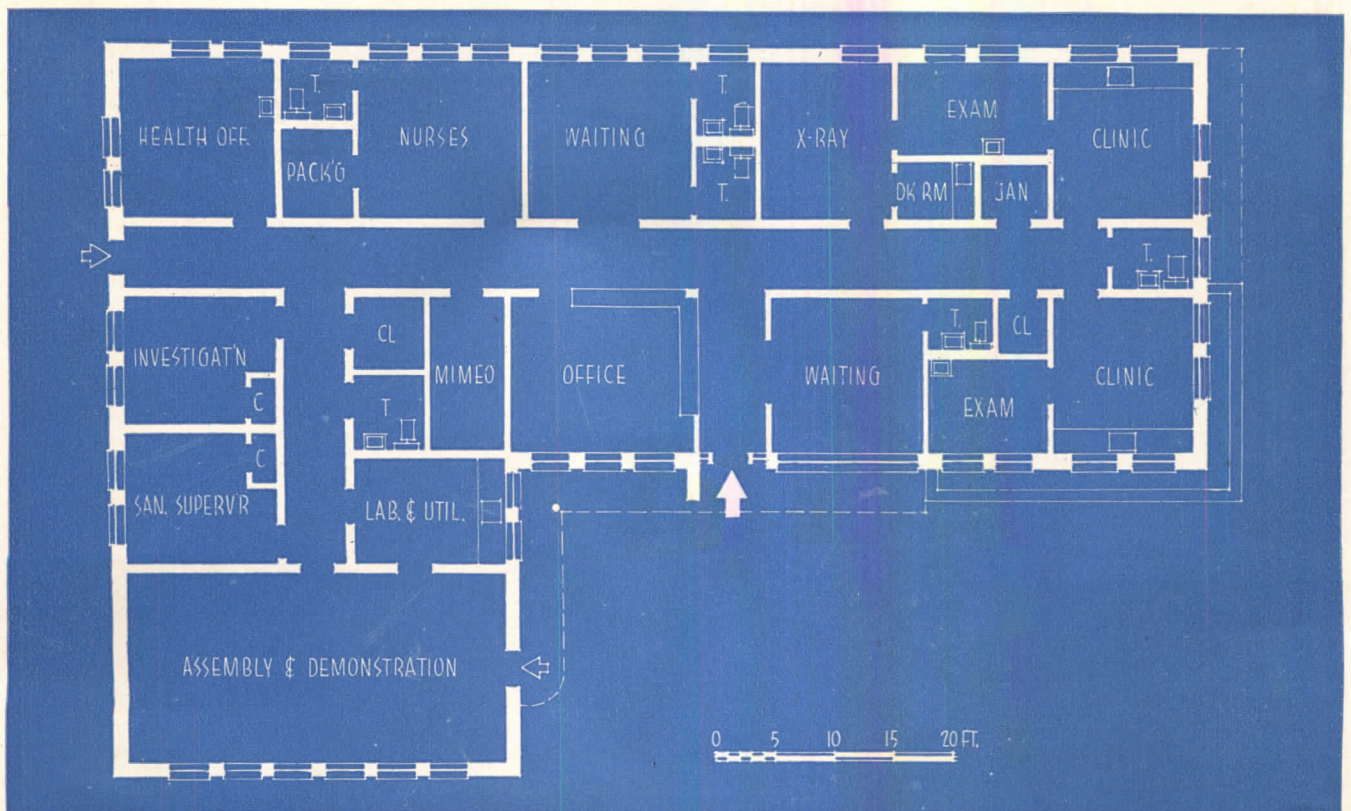
TALLAHATCHIE COUNTY HEALTH CENTER

CHARLESTON, MISSISSIPPI

E. L. Malvaney, Architect

ANOTHER HEALTH CENTER in Mississippi's program for extending its health improvement work in rural communities, this one makes a special point of separating traffic, not just by races, but also by activities. The office activities are grouped at one end, with a separate entrance. And the assembly or demonstration room has an isolated location with front entrance so that lecture

groups need not get tangled up in maternity or V.D. visitors. While clinic hours are usually set so as to keep traffic groups divided, it is not possible to stagger hours completely. A nice feature of this plan is the unit of X-ray, examination room and clinic room with connecting doors, a device which also helps to avoid confusion in the corridors in busy hours.





Joseph Mollitor Photo

TIDE WATER POWER CO. BUILDING, WILMINGTON, N. C. *Charles C. Hartmann, Architect*

HEAT PUMPS IN TWO CONTRASTING BUILDINGS

Both located in North Carolina, but one has much glass, the other practically none

Climate Ideal in North Carolina for Heat Pump

WHENEVER A BUILDING is to be cooled in summer as well as heated in winter, like the two office buildings presented here, the heat pump is a potential money saver because the same refrigeration equipment can perform both functions. The heat pump is especially applicable when the capacity required for heating about equals that for cooling, so no extra capacity will lie idle.

Climate in North Carolina is ideal for the heat pump. For example in the Tide Water Power Co. Building at Wilmington, the heat gain and heat loss at summer and winter design temperatures are within 6 per cent of each other. Then look at the offices and laboratory of J. P. Stevens & Co., a textile manufac-

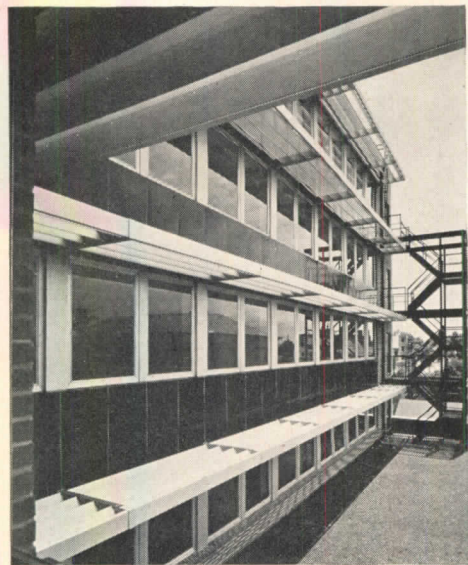
turer, in Greensboro. In this windowless building, the cooling requirement predominates for a large part of the year due to the necessity of absorbing heat from lights and from occupants.

In both buildings well water yields heat in winter and removes it in summer. Temperature of wells at the Stevens Building is expected to vary year around from 55F to 65F. To someone unfamiliar with the heat pump, it might seem fantastic to obtain much heat from water at 55F. Probably the reason this is difficult to grasp is that heat quantity (Btu) is confused with the meaning of temperature (degrees F or C). By using a refrigerant much colder than 55F, heat is extracted from the relatively low temperature well water and is raised to

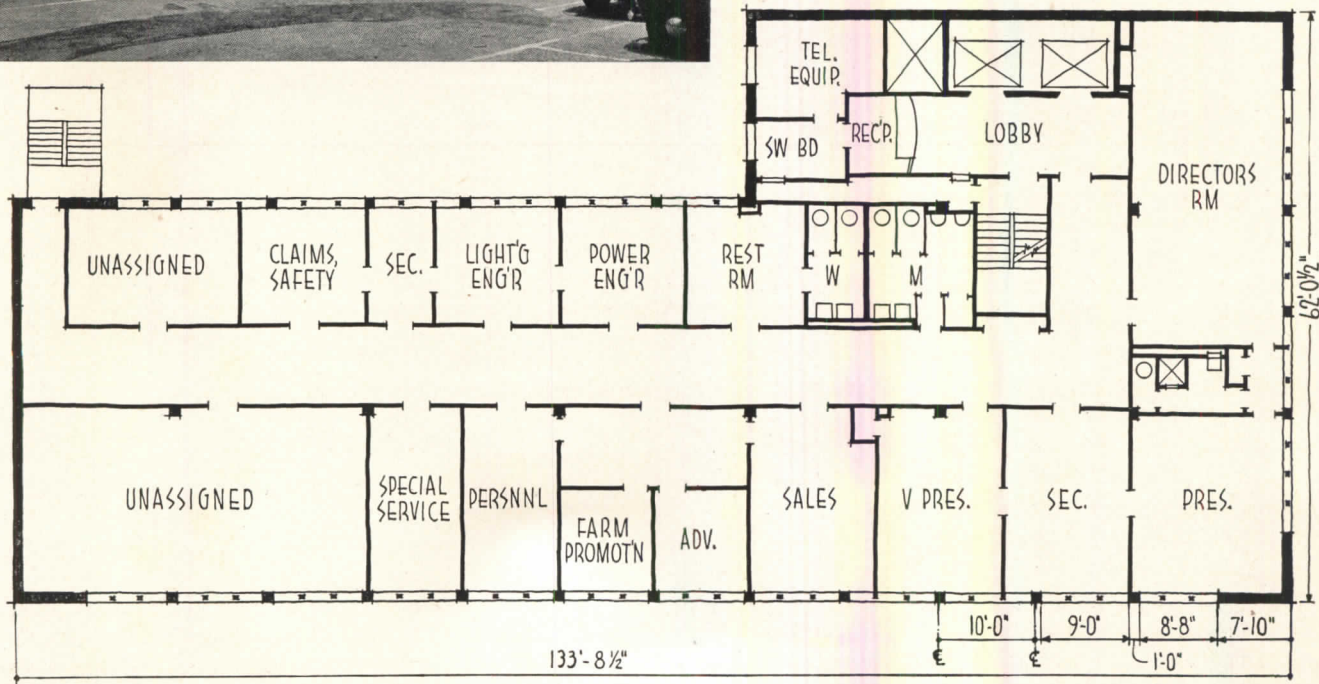
a high enough temperature for space heating. When the refrigerant vapor is compressed, the mechanical energy required to do it is converted to heat, and water supplied to the zone heaters has a temperature of about 110F.

Well water enters the cooler at 55F and is reduced to 42F before being discharged to waste. For every gallon of water cooled 13 degrees, more than 100 Btu are removed, and the mechanical work of refrigeration machinery adds approximately 30 Btu. So 130 Btu are delivered for heating with the expenditure of only 30 Btu of electrical energy — an output of over four times the input.

Well water at both Wilmington and Greensboro is cool enough in summer to



Penthouse containing heat pump equipment can be seen from the back of the building. Equipment layout is shown on facing page. Aluminum eyebrows were installed to cut solar load and reduce proportionately the size of equipment. Plan is the 5th floor; top of plan is back of building



remove some heat from the air before the air flows to the main cooling coils.

TIDE WATER sells electricity to 49,000 customers as well as gas to 12,000. Like in a good many utilities, engineers of this one have been experimenting with the heat pump because it is a desirable electrical load, and particularly because of their favorable climate. For a utility looking for more business, there was no

better place to demonstrate what the heat pump can do than in their own office building.

Officials of the company brought up the question of using the heat pump, and the architects became convinced of the practical, economical and all-around advantages of the system after conferring with an authority on heat pump design and inspecting an office building installation in Roanoke, Va.

The Tide Water Building has six floors with heat pump equipment in a penthouse. Most of the heating and cooling, except for the first floor, is supplied to the rooms by unit conditioners underneath the windows, permitting individual control. Ventilation air enters the room through diffusers — in private offices at tops of windows — and is not counted on to take much of the air conditioning load.

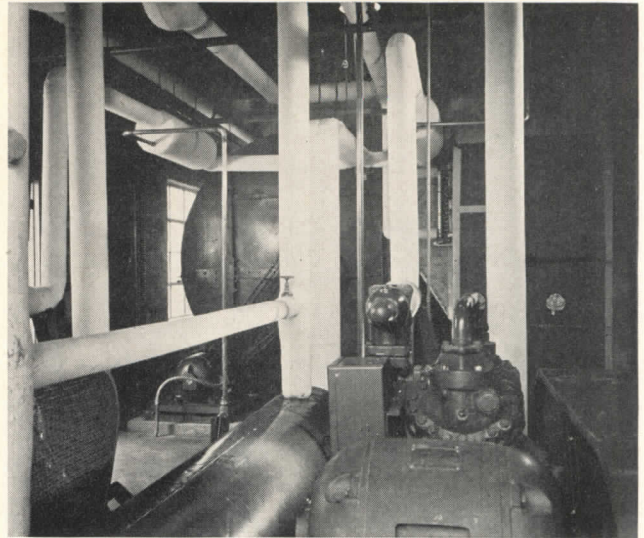
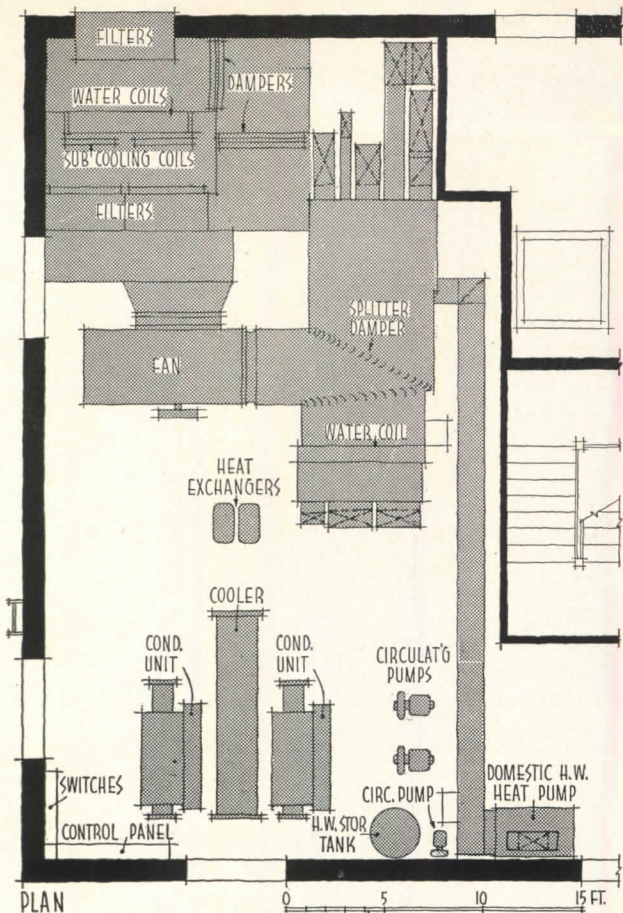
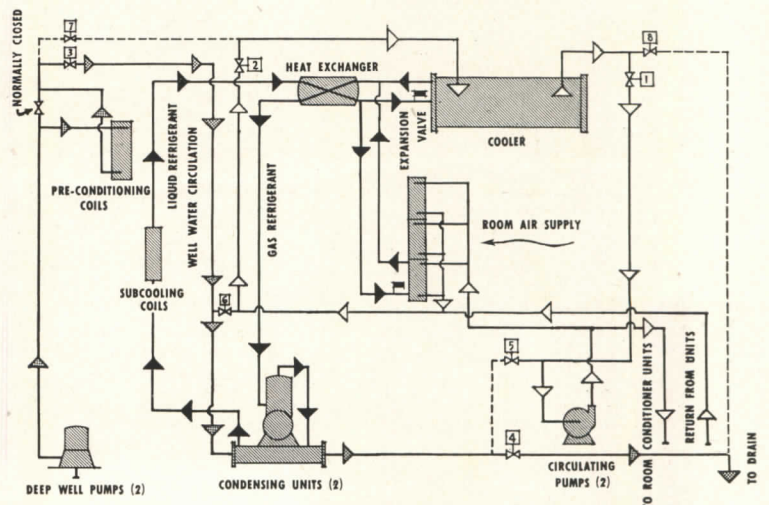
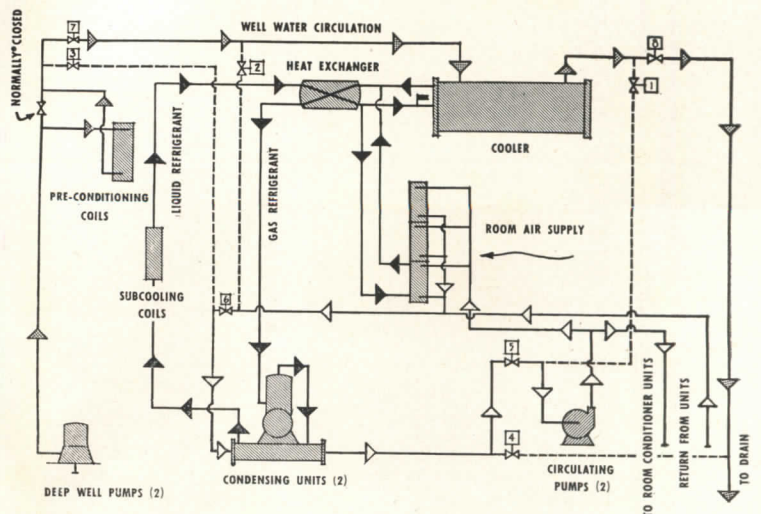


Photo at top right was taken behind the right-hand condensing unit on the plan. Note the small heat pump for domestic hot water which operates on room exhaust air. To see how the main heat pump works trace through the flow diagrams at right. **Cooling Cycle** — Well water (gray arrows) flows first through pre-conditioning coils to cool incoming summer air somewhat and then goes through condensing units to remove heat generated by compression of the refrigerant vapor, before discharging to the drain. Liquid refrigerant passes through heat exchanger to recover some cooling effect from refrigerant vapor, is allowed to expand through a valve, becomes very cold, and chills water (white arrows) coming into cooler. Valves 5, 6, 7 and 8 are closed; dashed lines indicate piping not used. **Heating Cycle** — Well water in preconditioning coils tempers winter air, and then flows through the cooler where it gives up much more heat to the refrigerant. In this cycle, water which heats room air obtains it from the condensing units. Outside air also picks up heat from the subcooling coils. Valves 1, 2, 3 and 4 are closed



COOLING CYCLE



HEATING CYCLE

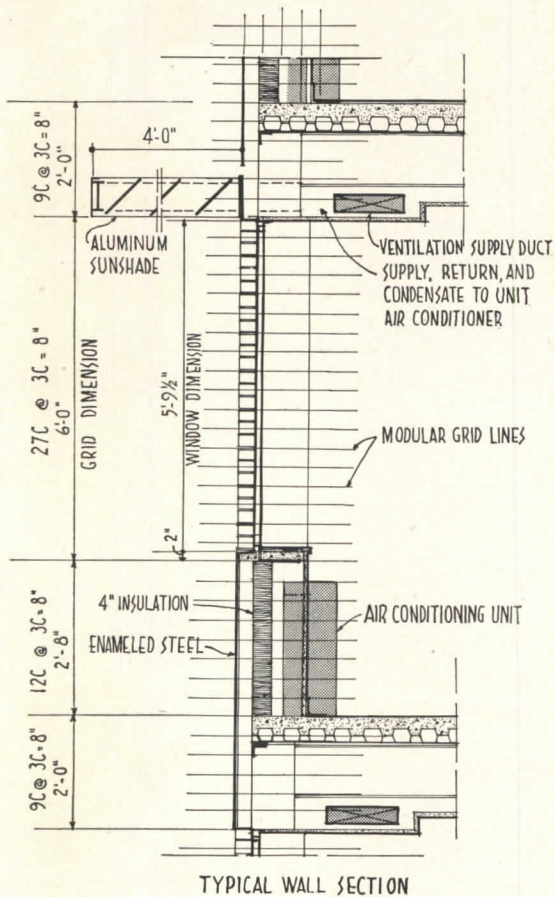
On the first floor, which is conditioned by air alone, modern appliances are on display and for sale, and the customer can conduct his business with the accounting and credit departments.

The second floor accommodates general accounting and the treasurer's office.

Third and fourth floors have rental offices for professional and business men.

The fifth floor houses the executive offices, directors' room, waiting lounge

TIDE WATER POWER BUILDING



Above: private office with room air temperature controlled by the unit conditioner under the right-hand window. Ventilation air comes from duct above the windows. Piping for room conditioners of floor above is located alongside this duct. Below: first floor, temperature controlled by air supply alone

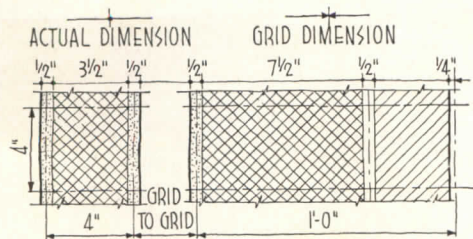


and special service offices as well as all telephone equipment and switchboard.

The sixth floor contains an auditorium for 350 persons, which can be used by the utility for meetings, cooking schools and demonstrations and will also be available to civic groups.

Exterior walls are brick, mosaic slabs and steel blue enameled steel over a structural steel frame.

ARCHITECT APPLIES MODULAR COORDINATION



The architect attributes considerable savings in time, money and materials to the use of modular coordination by the whole staff. Draftsmen must be able to understand and apply the precepts of the modular system as established by ASA. Modular symbols used on each set of architectural drawings are explained by the drawing left and by this note, "All dimensions . . . are grid or actual. All dimensions locate structural units by their relative position to grid lines. Grid dimensions are modules of 4" squares and are indicated by arrows. Actual dimensions figured from actual building unit sizes are indicated by dots."

J. P. STEVENS & CO. BUILDING, OFFICES AND TEXTILE LABORATORY, GREENSBORO, N. C.

Charles C. Hartmann, Architect

P. L. Davidson, Consulting Engineer for Heat Pump

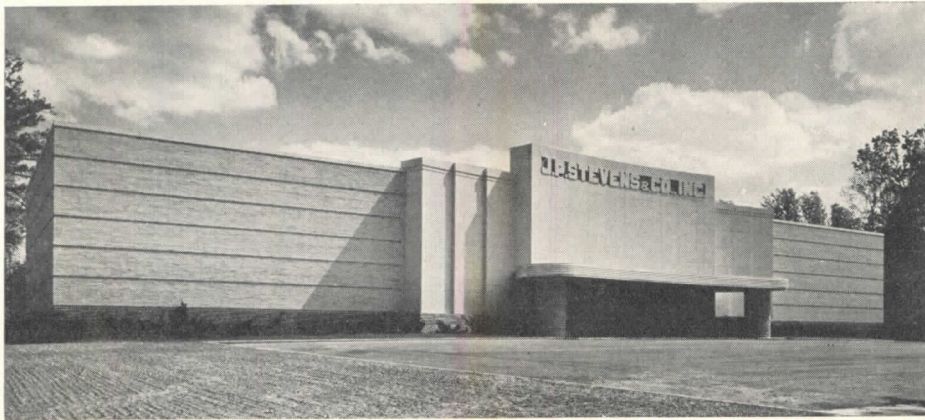
Two points were uppermost in the minds of the Stevens Co. officials: (1) economy and (2) maximum flexibility for rearrangement of interior partitions. According to the architects, economy was achieved by selection of basic materials and through application of modular coordination in design, materials and drawings. Flexibility was possible by

making the structure windowless and hanging the metal acoustic tile ceiling independent of all interior partitions. With this design, there are no preferred spaces and no conventional limitations such as established by fixed window or column arrangement.

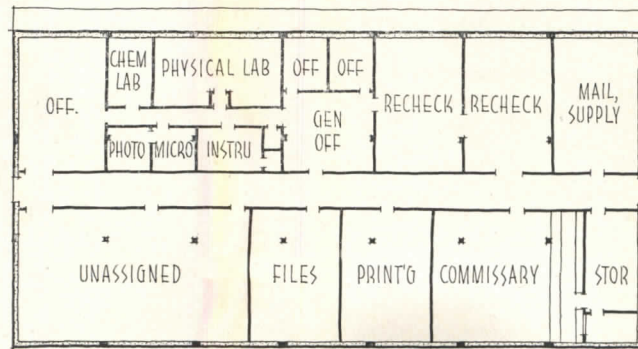
When this building was being designed, the heat pump study for the

Tide Water Power Building was completed. The thought came to the architects that if the heat pump worked in that building, then in this windowless structure, it should be perfect.

At first the client was skeptical, but following a report made by their consulting engineer, they were won over to the idea.

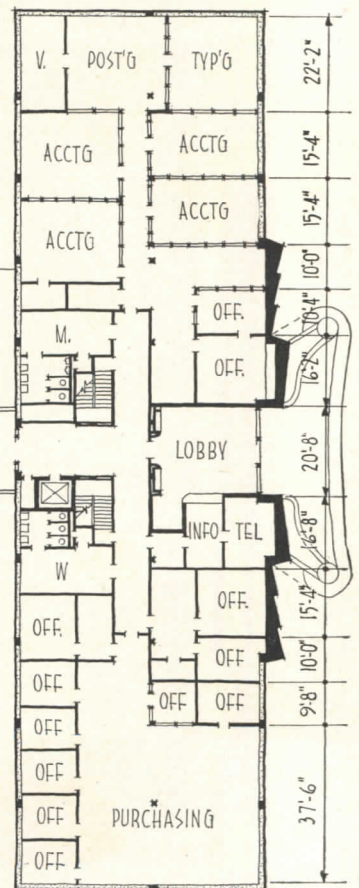
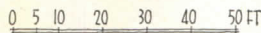


Main reason for windowless structure was to keep interior flexible. Another factor was one of public relations — to keep it from looking too commercial as it is in a main residential section of Greensboro



LABORATORY ANNEX

FIRST FLOOR



OFFICE WING



Air Conditioning System

Since only moderate zoning was required to take care of offices (1) with exposed solid wall; (2) with no exposure; or (3) to satisfy individual requirements, the simplest design appeared to be one with constant air distribution at a condition capable of maintaining the lowest desired temperature in any area. Separate heating coils were installed for each of the zones to permit raising the temperature above the minimum condition to suit particular requirements of the occupants. These coils also furnish all heating that is necessary.

With the type of equipment used with the heat pump, it was possible to eliminate a conventional basement and to consolidate all mechanical heating and ventilating equipment on the roof.

Three reasons for deciding on the heat pump were: (1) it eliminated a conventional oil or coal heating plant; (2) the

heat pump fits in well with a constant air delivery system and (3) there was a good possibility of obtaining well water on the extensive grounds surrounding the structure. The plant is designed so that in case something should happen to the wells, the plant can be reconverted for conventional operation with cooling tower and oil fired hot water generator. However, wells drilled during construction show every sign of sustaining the delivery necessary to carry the load.

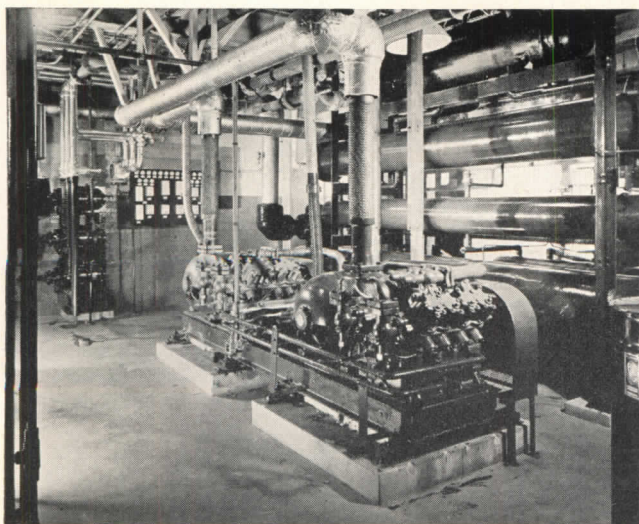
In a windowless building there is a very good inherent balance between the capacity to cool the building in the summertime and to heat it in the wintertime. And as mentioned before, the cooling load in this building is foremost for much of the year. The plant has the capacity to heat the building in the coldest weather with no occupants and without lights, by operating

it entirely on a recirculating basis.

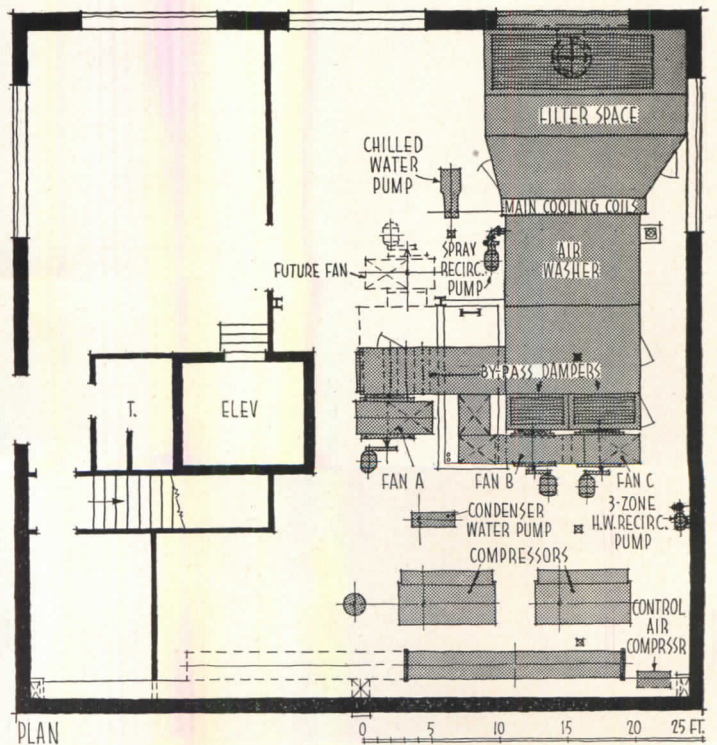
The system is designed for straight line operation; that is, both heating and cooling cycles are continuously in operation and under control. There is no summer-winter switchover. Also it is essentially a comfort conditioning installation. In the physical lab, where it is necessary to maintain the air at 72F and at 65 per cent RH, so as to duplicate mill conditions, a separate textile lab air conditioner has been installed.

In general, the air conditioning system is of conventional design. Replaceable filters provide primary air cleaning ahead of the cooling coils. Beyond the coils is a spray washer which the designers of the heat pump describe as a means of partially saturating the air to obtain some benefits of evaporative cooling.

All main distribution ducts and heating coils are above the corridor ceilings.



Equipment room has the only windows in the building, except for the ladies lounge, which is below it. In contrast to the Tide Water Building with its unit conditioners, the Stevens Building is heated and cooled by air. Cooling takes place in the equipment room, after which air is reheated by heating coils in the supply ducts to each zone so as to meet the variety of temperature requirements. The same coils furnish all heating



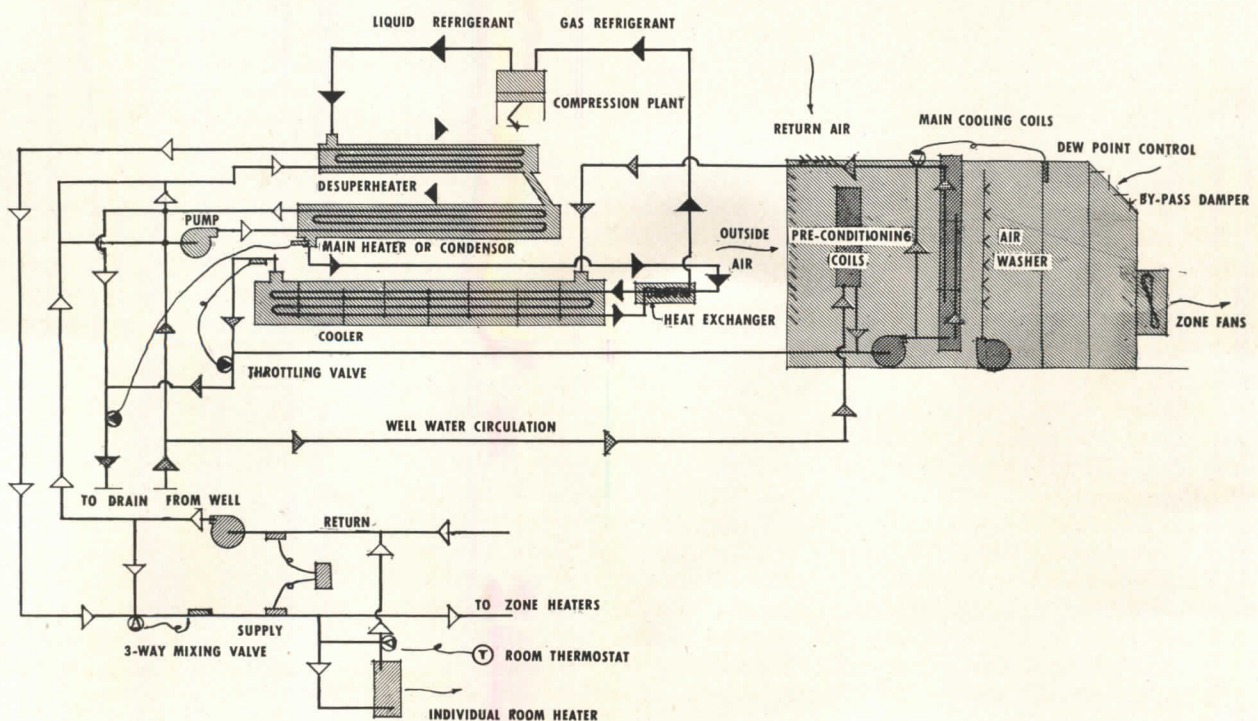


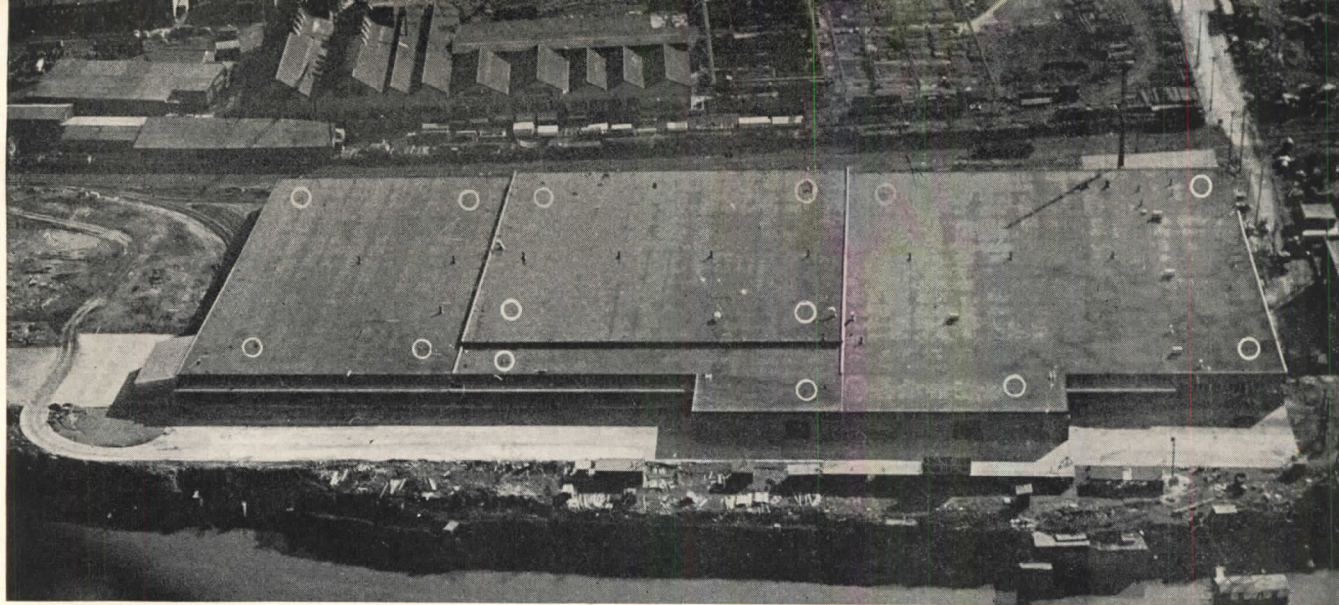
Left: conference room on second floor. The whole executive suite is paneled in Philippine Mahogany. Right: interior partitions are independent of metal tile ceilings to permit partition rearrangement

HEAT PUMP FLOW DIAGRAM

Cooling Predominant—Well water (gray arrows) pumped into the preconditioning coils has some cooling effect. Water circuit through the cooling coils and back to the cooler reduces air temperature. Well water also is pumped through the main condenser to remove heat of compression. The desuperheater is in effect a short condenser, and the engineer's reason for using it is to have hot enough water to temper cool air. According to the engineer, the air washer at times furnishes evaporative cooling

Heating Predominant—Well water flows through the cooler to give up 100 Btu from every gallon to the refrigerant, and then is drained. When the heating load is heavy, well water is shut off from the main heater, and the heat of compressing the refrigerant combined with that extracted from the well water is taken from both the main heater and the desuperheater by water circulation to the zone or room heaters. By-pass and return air dampers are regulated by the temperature differential between heater lines





Circles indicate small number of rainwater inlets needed to drain main roof sections of Sears Roebuck & Co. warehouse

FLAT-ROOF DRAINAGE CONSERVES PIPE

By Bradford G. Storey and Joseph Wells,
The Ballinger Co., Philadelphia, Pa.

THE simple fact that rainwater can drain slowly off a flat roof in contrast to a sloping roof where it all runs off at once has been used to save as much as \$100,000 in the cost of the drainage system for an industrial building. With slow drainage, smaller rainwater conductors can be used, cutting both cost and the pipe required. In addition, less load is imposed on our already overburdened storm sewers.

Since this plant mentioned above was to have a flat roof anyway, we searched for a method of calculating the runoff from a flat roof, but found none. Most plumbing codes specify the size of pipe to drain a certain area, based on experience with sloped surfaces. But where a building has a flat roof with no slope to roof inlets, the rainwater must accumulate until it develops sufficient head to discharge over the gravel stops of inlets. The entire roof acts as a storage basin for the rainwater which drains off during and following the storm.

In order to determine the maximum runoff for our first design, we set up a series of calculations, based on a 1-yr storm (largest storm in any single year) and plotted the results on a graph. However, at the request of Philadelphia authorities, their formula for a 10-yr storm was used, resulting in the graph for Area 2 across the page. Our drainage design for the industrial plant was subsequently approved by them and is

believed to be the first one based on computed runoff from a flat roof.

Since that time, The Ballinger Co. has used this drainage design method in nearly 50 buildings, up to 17 acres in size, including the Sears Roebuck & Co. warehouse shown above. And these buildings are located in Philadelphia, Pittsburgh, Elizabeth, N. J. and Youngstown, Ohio. Also, we now have three graphs instead of one which cover the eastern half of the U. S. They are published on the facing page. In the near future we hope to have them for the whole country.

The first design, based on calculations without the corroboration of tests under actual weather conditions, necessarily had to be a compromise with conservative methods—additional rainwater inlets to act as overflows were installed also scuppers in parapet walls.

By looking at these graphs, you can see that much greater roof areas may be safely drained into a given sized conductor than is permitted under normal practice. For example, a flat roof of 26,000 sq ft will have (in Area 2) a maximum discharge of 0.74 cu ft per sec if one 8-in. conductor is provided. Normal practice would require two conductors of this size, and twice as much water would be discharged to the sewer from the same area.

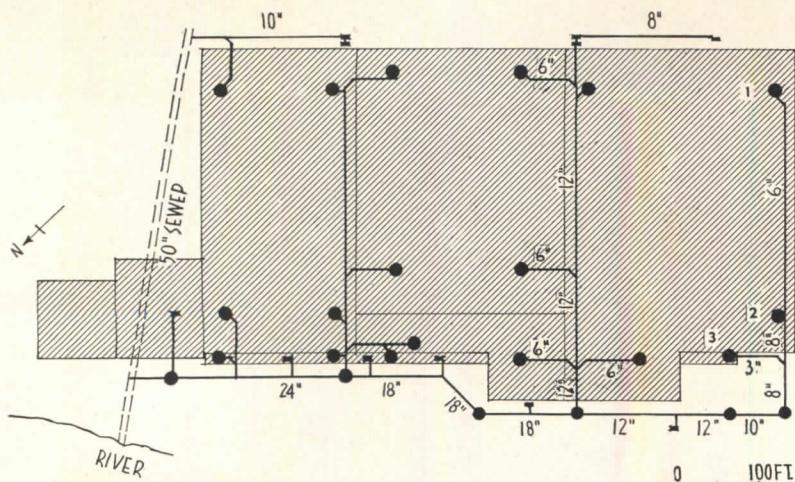
From this graph it can be determined that an acre of roof can be drained

safely into one 8-in. conductor. A design begins to effect economies with 0.2 acre to a single conductor, substantial savings result at 0.5 acre to a conductor, and a full acre has been used without any repercussions.

We have had no trouble getting a 20-yr bond for the roof. To make sure that buildings will not have wet walls, we have made it a rule to run flashing to a minimum height of 1 ft on parapets and adjoining walls. If puddles might have a tendency to form in the middle of a long span roof, and they were felt undesirable by the client, a conductor could be installed to drain them.

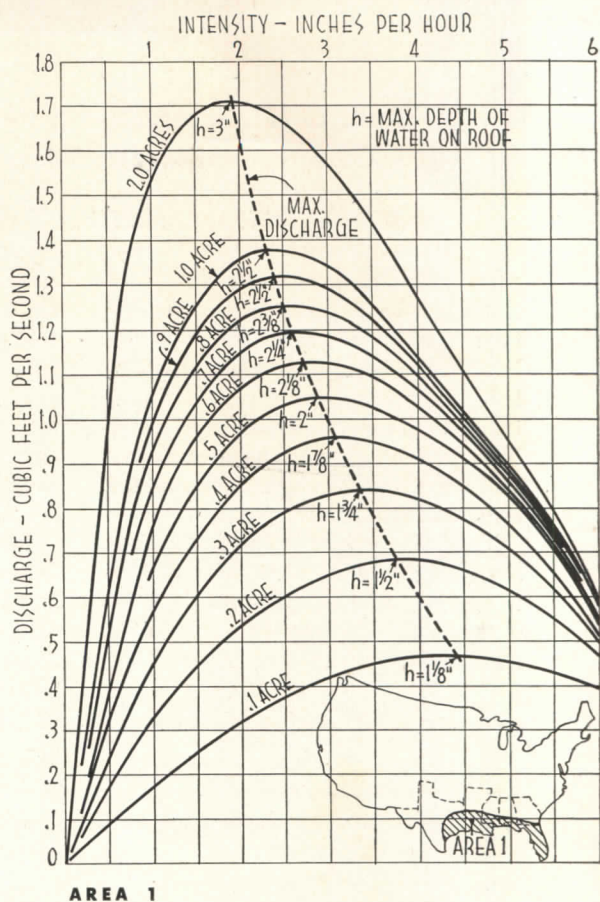
A roof designed to support a snow load of 30 lb per sq ft is sufficient to support the flooding of the roof to a depth of 6 in. However, this depth is never approached with this design. An impounding effect takes place during the storm, but never to a depth of more than 2½ in.

Curves for Area 2 were based on the formula $I = 166/(t+16)$ where I is the intensity of rainfall in inches per hour and t is the concentration time in minutes. For a sloping roof, t is the time it takes water to flow from the most distant point on the roof to the roof inlet, and through the system to the point being considered. For a flat roof, t is the time during which a sufficient head of water is built up to produce maximum discharge into roof inlets.



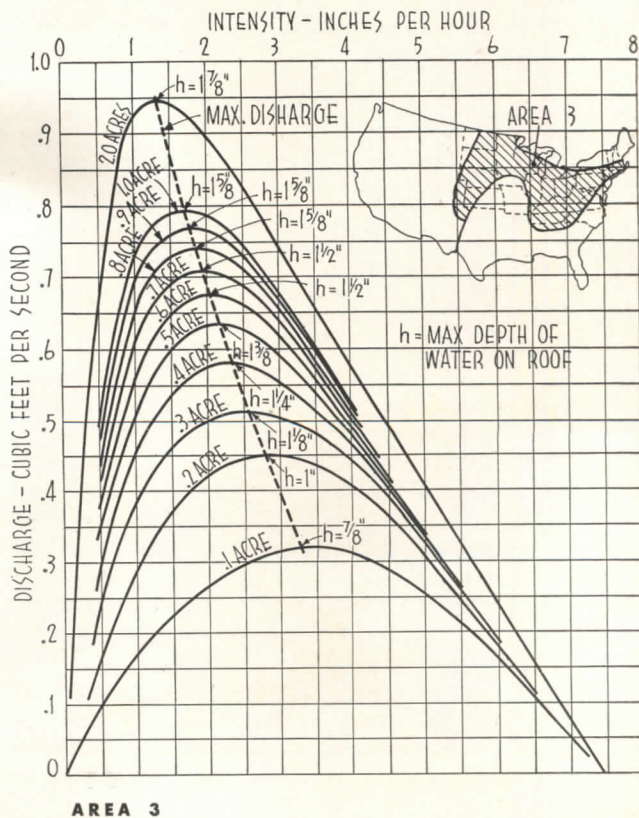
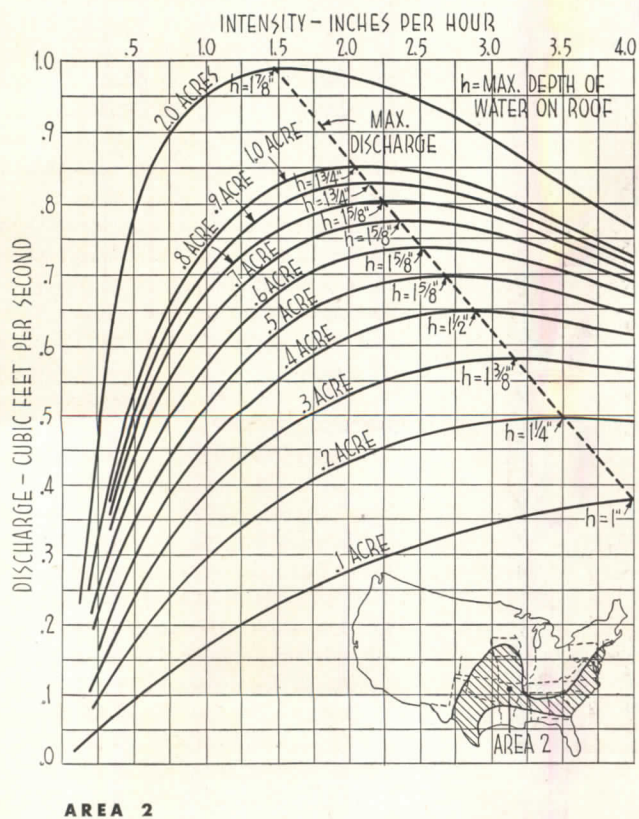
Plot plan of warehouse—roof shown shaded. To demonstrate how pipes are sized, the area of roof, quantity of water, and size of pipe will be given for inlets numbered on the plan. No. 1: .7 acre, .71 cfs, 6.0 in.; No. 2: .7, .71, 6.0; No. 1 + No. 2: 1.4, 1.42, 8.0; No. 3: .018, .11, 3.0; No. 1 + No. 2 + No. 3: 1.418, 1.53, 8.0

Basis of Graphs and Their Use. All curves are based on a weir length of 3.81 ft (gravel stop circumference of a 6- or 8- in. drain) and a formula for 10-yr storms in each of the three areas. Area 1, $I = 300 / (t + 36)$; Area 2, $I = 166 / (t + 16)$; Area 3, $I = 170 / (t + 23)$. I is the intensity in inches per hour and t is the time in minutes for maximum discharge to develop. Note that each curve has a peak at maximum discharge, and then slopes down at greater intensities. The reason for this is that the greater intensity storms don't last as long as lesser ones



Curves give discharge of rain water from flat-roof areas over a 3.81 ft weir and into the drain pipe connected to it

Graphs for Areas 1, 2 and 3 copyrighted, 1950 by The Ballinger Company



TEST ROOM FOR PANEL COOLING—HEATING BY AIR

Built to obtain essential operating data on (1) ceiling panels integrated with lights and acoustic strips, (2) cellular steel floor panel carrying both wiring and conditioned air

John D. Dillon, Consulting Engineers *

LATE SUMMER around New York City was not very good weather for testing new panel cooling systems critically, but tests so far in a mock-up room just built by this private engineering firm indicate that several installations under construction and on the boards will provide the occupants with comfort and the owners with economy.

Tests were started in July in this full-size laboratory at Port Washington, L. I., located in the garage of the chief of the heating and ventilating section of the firm, Richard P. Goemann, who has

* Cooperating in the tests are the H. H. Robertson Co. and the Simplex Ceiling Co.

had his headaches with not hot enough weather to suit him, and rushing to get enough test data when the weather was hot.

The firm has had wide experience with panel heating by air with installations in an airplane hangar, synagogue, children's clinic and houses, and now it is investigating panel cooling by air.

The Navy hangar, designed by John Dillon and another engineer before the present firm was formed, was completed as long ago as 1941. The firm was employed on the Schlumberger laboratory in Ridgefield, Conn., designed by Philip Johnson and now doing

built, which has panel cooling and heating in the floor of cellular steel.

What are the Systems Under Test?

The ceiling system consists of four components: (1) plain anodized aluminum panels, 12 in. wide, forming the bottoms of air troughs, (2) diffusers to supply ventilation air, (3) perforated aluminum panels, also 12 in. wide, with glass fiber behind for acoustical control, and (4) fluorescent fixtures.

In the floor of cellular steel, air flows through three cells in a row and then skips the one in which the wiring is threaded. Electrical wiring can be in one cell and telephone in another. Ventilation air is supplied to the room in any conventional manner.

What are the Merits of the Systems?

Architects and engineers who have already visited the test room have been interested in how comfortable panel cooling is, whether there would be any condensation, what the cost is likely to be.

Many of them expressed surprise at feeling comfortable in a room cooled to a temperature of 65F. They didn't experience the shock effect normally encountered with "air conditioning". But they learned the reason when they were told that only 60 per cent as much air was being circulated as in a conventional air cooling system. Figures show that 80 per cent of the cooling load is carried by the ceiling panel, while the floor takes about 60 per cent. A ceiling panel can be run at a lower temperature than the floor. During tests, the ceiling panel temperatures have been as low as 54F and the floor at 60F, although the floor begins to feel a little uncomfortable at that temperature. The engineers acknowledge that floors probably wouldn't be run this low particularly where the rooms might be occupied by women.

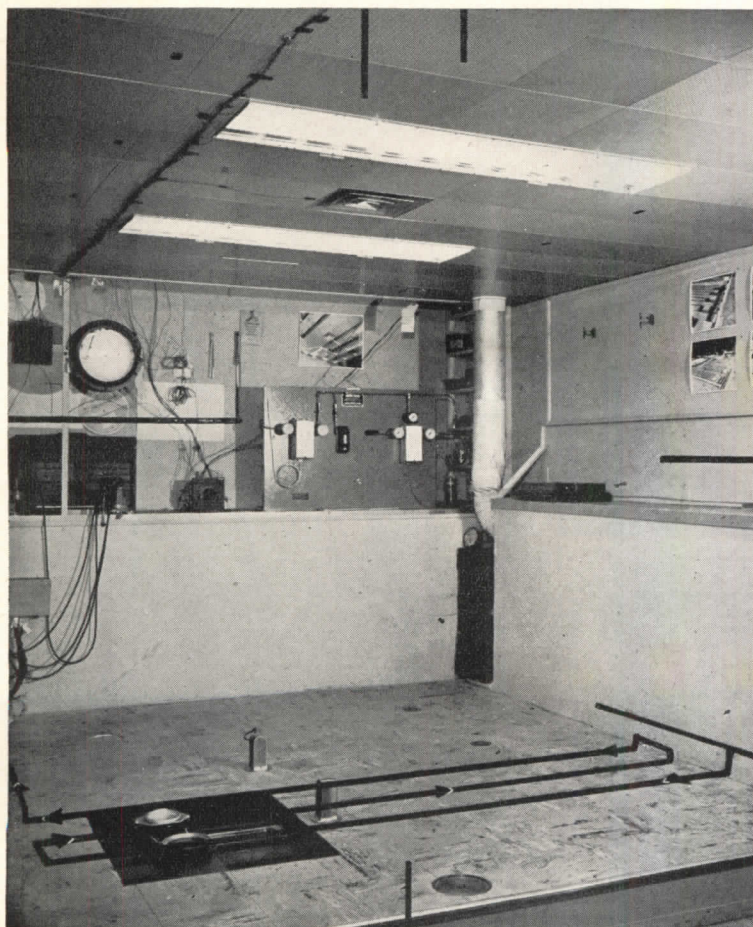
Now about condensation. This is no problem because in an all-air system, the air can readily be dehumidified.

Costs have not been fixed for the ceiling system yet, but installation is expected to be less than conventional air conditioning. The mechanical contract

(Continued on page 224)

Both ceiling and floor panels (air flow shown) can be seen. Bold numbers are surface temperatures with floor cooling; light numbers are for ceiling cooling. Air temperatures were 73F and 70F respectively

65 64
72 73

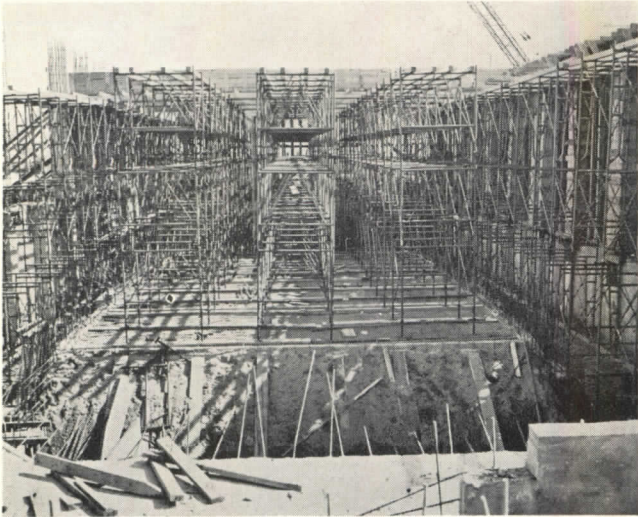


77
76

76
83

61
66

PRODUCTS for Better Building



Steel scaffolding was used successfully in Detroit to simplify and support construction of concrete slab over swimming pool

Steel Scaffold Construction

A new idea for forming and supporting concrete slabs was successfully adopted in the construction of one of the largest high schools built in Detroit in the last 20 years. The building, to be known as the Frank E. Cody High School, was designed by Giffels and Vallet of Detroit and built by the F. H. Taylor Construction Company.

In preparing the forms for a second floor slab over a swimming pool, the Taylor Company utilized over 400 *Safway* steel scaffold frames to support the wooden forms. The scaffolding bridged an area over 120 ft long and 47 ft wide, supporting a dead weight of over 980,000 lb of concrete after pouring.

Engineers said the equipment was utilized because it enabled them to accurately calculate the deflection caused by the weight of the span. They reported that they had calculated a deflection of 1 in. for the slab, whereas in the final measurements, the deflection was $\frac{1}{2}$ in. Considering the weight involved, this was thought to be a very low per cent of deflection. Another factor in the selection of the equipment, according to Taylor officials, was its adaptability to the slanting contour of the swimming pool's floor, which could not be overcome by other materials.

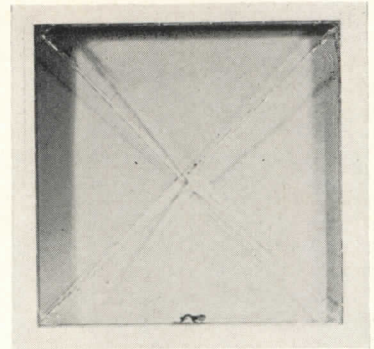
Safway Steel Scaffolds, Inc., 57 E. Canfield Ave., Detroit 1, Mich.

Plastic Swimming Pool Cover

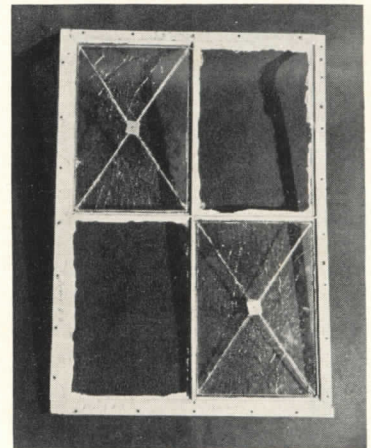
A lightweight, custom made, *Vinylite Swimming Pool Cover* claimed to be easily put on or taken from a pool's surface by one person, is said to be both a cost-cutter and safety device for swimming pools. The *Vinylite* plastic, according to the manufacturer, discourages algae growth in addition to resisting weathering and mildew. When installed, the cover not only traps falling leaves, rubbish, etc., thus minimizing litter in the pool and reducing maintenance costs, but acts as a safety trap for accidental falls when pool is not in use. By resting on the surface of the water, the cover is claimed to prevent the escape of chlorine, as well as to retard evaporation of water. It is also said that the cover cuts pool heating expense by 50 per cent. *Krohme Industries, Del Amigo Rd., Danville, Calif.*

Safety Windows

Designed for use in any area where explosion hazards are present is *Flexseal Bomb Glass*. When normal atmospheric pressures are exceeded, as by a bomb blast or pressure wave, the window is said to open by folding its edges, preventing glass from shattering.



Window folds in from explosion, can be temporarily repaired (below); jagged sections were double-strength window glass



The window consists of three layers laminated into a single unit: outer layer, sheet of glass; middle layer, partially segmented sheet of polyvinyl butyral plastic; and inner layer of four triangularly shaped pieces of glass, the central area edges of which register with the segmented edges of the plastic. The plastic layer extends beyond the glass edges and is bolted to the window frame to serve as hinges, permitting the four segments to open like doors when the outer plate of glass is broken.

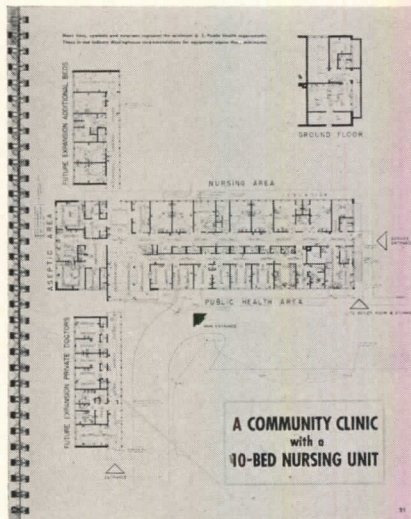
After an explosion of sufficient force to open the window, the four segments may be returned to position and held by temporary measures until the window can be replaced. *Pittsburgh Plate Glass Company, 632 Duquesne Way, Pittsburgh, Pa.*

(Continued on page 230)

LITERATURE FOR THE OFFICE



New booklet gives many hospital electrical layouts as page shown (right)



Hospital Electrical Planning

Hospital Electrical Planning for Architects and Engineers. A long and comprehensive study which should be of great value to architects faced with the problem of integrating and adapting a complex electrical system to the design of either a large or small hospital. Published with the co-operation of the U. S. Public Health Service in response to the recent acceleration of hospital construction which has naturally involved increasing numbers of architects in private practice, the purpose of the book is to provide such architects, who may be unfamiliar with the scope and nature of the problems involved, with detailed electrical planning data. Beginning with a general discussion of basic planning procedures, including brief descriptions of several types of electrical systems, the book proceeds to an outline of requirements, illustrated with plans and diagrams, of typical hospital projects. These include a community clinic with a 10 bed nursing unit, a 40 to 50 bed hos-

pital, 200 bed, and 100 to 150 bed units. To illustrate in greater detail the nature of the problems to be found and the recommended solutions to these, a detailed room-by-room analysis of electrical requirements is given, including both U. S. Public Health minimum requirements and recommendations for other equipment above the minimum. This analysis is supplemented with charts of load calculations by rooms, load calculations by panelboards, tabulation of panelboard circuit details, panelboard feeder conductor and conduit sizes, total Kva demand calculations and transformer application calculations. Included is a discussion of signal systems, also calculated for the requirements of a 100-150 bed hospital. A long section on X-Ray planning, equipment and protection is included in the book, with calculations and specifications for large and small hospitals. Examples of the manufacturer's X-Ray and other electrical equipment is appended. 238 pp., illus. Westinghouse Electric Corporation, Agency and Construction Dept. (12L), East Pittsburgh, Pa.

* Other product information in Sweet's File, 1951.

Institutional Feeding

(1) *Modern Hospitals, Modern Feeding, Modern Ovens;* (2) *Case Histories of Successful Mass-Feeding Installations.* Plans and photographs of representative installations of kitchen equipment in hospitals and other institutions, together with brief specifications of the capacities of gas-fired oven units. 11 pp., illus.; 36 pp., illus. The G. S. Blodgett Co., Inc., 50 Lakeside Ave., Burlington, Vermont.

Glass

Glass For Construction (1951 Revised Edition). Catalog illustrates and describes an extensive line of glass products for building purposes. Each type is presented with notes on features, uses, suggested specifications, sizes and other pertinent data. Among the items covered are plate glass, mirrors, safety glass, insulating glass, structural glass and patterned glass. 14 pp., illus. Libbey-Owens-Ford Glass Co., Nicholas Bldg., Toledo 3, Ohio.*

Plastic Panels

Alsynite Building Panels of Beauty and Light. Folder describes features and properties of a Fiberglas laminate panel. Examples of standard colors and corrugation patterns available are illustrated, along with sketches and photos of typical applications of the panels in various types of structures. 4 pp., illus. Alsynite Co. of America, 4654 Desoto St., San Diego 9, Calif.

Painting Metal Roofs

How to Paint Follansbee Terne Metal Roofs. Color brochure discusses terne roofing and methods of painting and refinishing the surface. Notes are included on preparing the surface, choosing and applying the paint. The back cover lists 37 paint manufacturers and their recommendations for primer and finish coats on terne roofs. 8 pp., illus. Follansbee Steel Corp., Pittsburgh 30, Pa.*

(Continued on page 272)

RADIANT HEATING SYSTEMS FOR HOUSES - 8: Hot Water Systems

By William J. McGuinness

Professor of Architecture, Pratt Institute

The third installment in a series on radiant heating, the following pages present a typical example using ceiling panels, and worked out by simplified methods presented in the Time-Saver Standards for August and September 1951. A similar example for a floor panel installation will appear in a subsequent issue.

This is a modern house, fully insulated and double-glazed. The floor slab rests on the ground, there is no cellar. An air space separates the insulated ceiling from a slightly sloping roof. Either ceiling or floor panels may be used. Example 1 uses ceiling panels. Carpet is used throughout.

1. Layout — Figs. 7 and 8 show the room use, size and area available for panels. While Fig. 9 is a final drawing summarizing the findings of the design, it is necessary in the preliminary stages to make several sketches resembling Fig. 9 in order to anticipate the most desirable location for the boiler, headers, adjusting valves etc. and the possible routing and location of coils.

2. Heat Loss — If the ceiling is used for panels, there is no loss from the room through this surface so it is not included in the net room heat loss upon which the panel net output is based. The gross output of the panel coil is later computed to include the reverse loss of the panel. The net loss in this case must include floor or perimeter loss, and of course, in all cases infiltration. Table 4 shows a convenient form for use as a work sheet in designing the system. Column 1 is reserved for the net hourly heat loss.

3. Adjustment — Since no heat flows from the back of a panel into

another usable space, there is no adjustment to be made.

4. Net Output — If the net heat loss be divided by the available panel area in each room, the required output is arrived at in each case. This is listed in column 4 of Table 4. Since none of these outputs exceeds 75 Btu per hr per sq ft, it is unnecessary to plan for auxiliary floor coils in this example.

5. Gross Output — Fig. 1A (See Sheet 2, Time Saver Standards, August 1951) represents the condition of reverse flow in this house. The net output represents 90 per cent of the total heat loss from panels. By dividing the net output in each room by .90 the gross output of each panel is determined. This will finally establish the length of pipe or tube needed in each panel when the water temperature is chosen.

Fig. 7. Plan, Example 1.

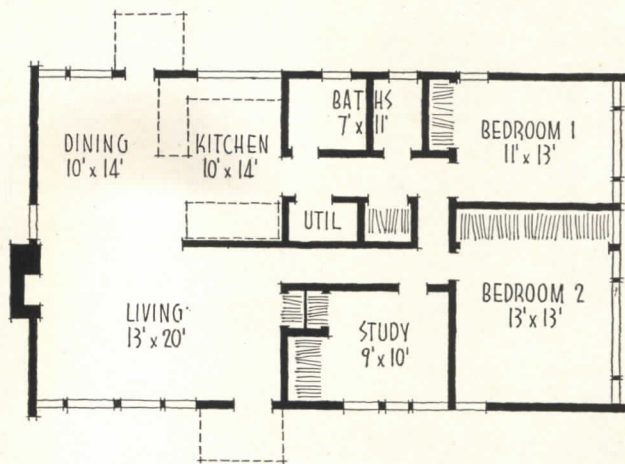
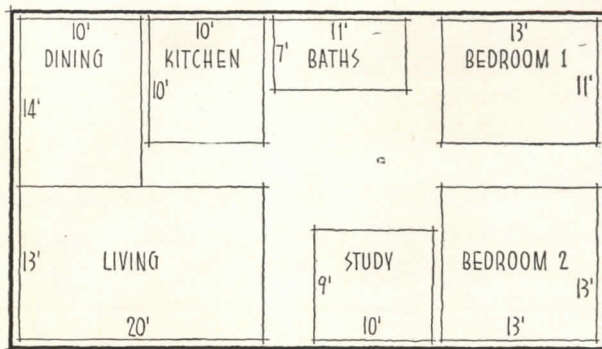


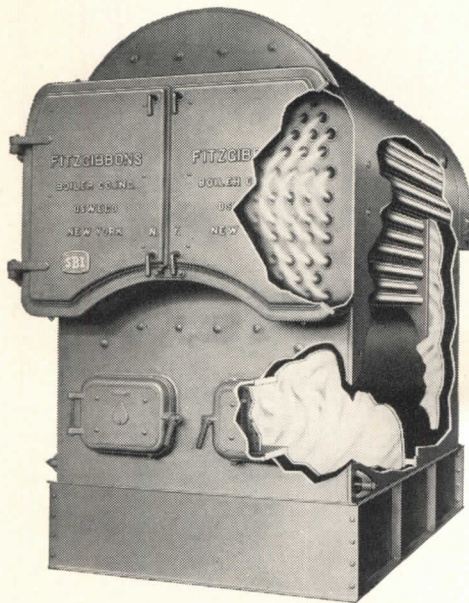
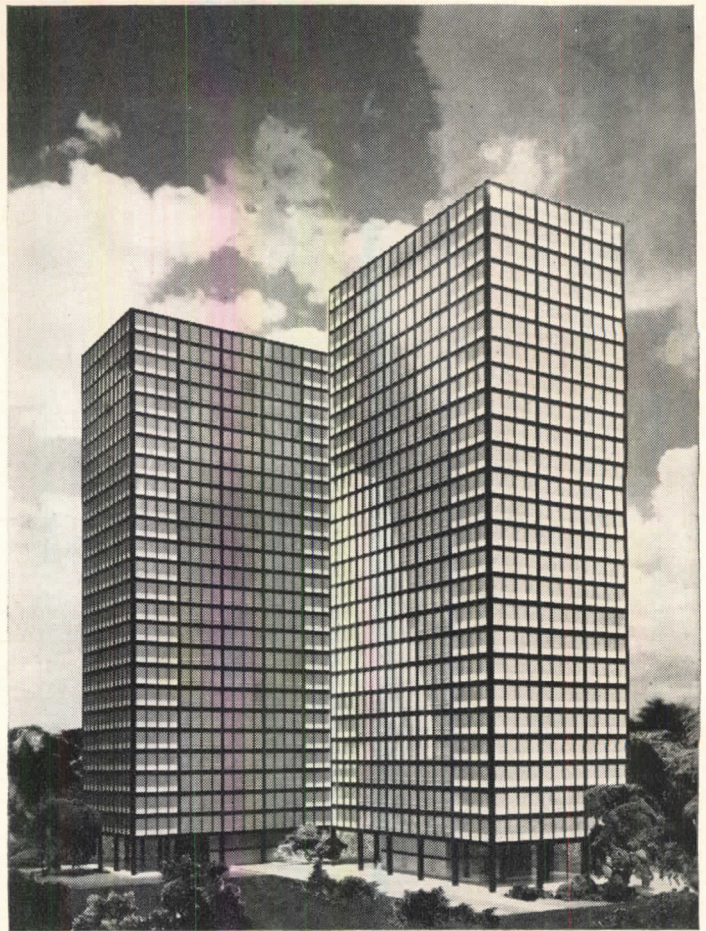
Fig. 8. Panel Areas Available, Example 1.



IN CHICAGO

a Striking Building

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RADIANT HEATING SYSTEMS FOR HOUSES - 9: Hot Water Systems

By William J. McGuinness

Professor of Architecture, Pratt Institute

Fig. 9. Coil Layout, Example 1.

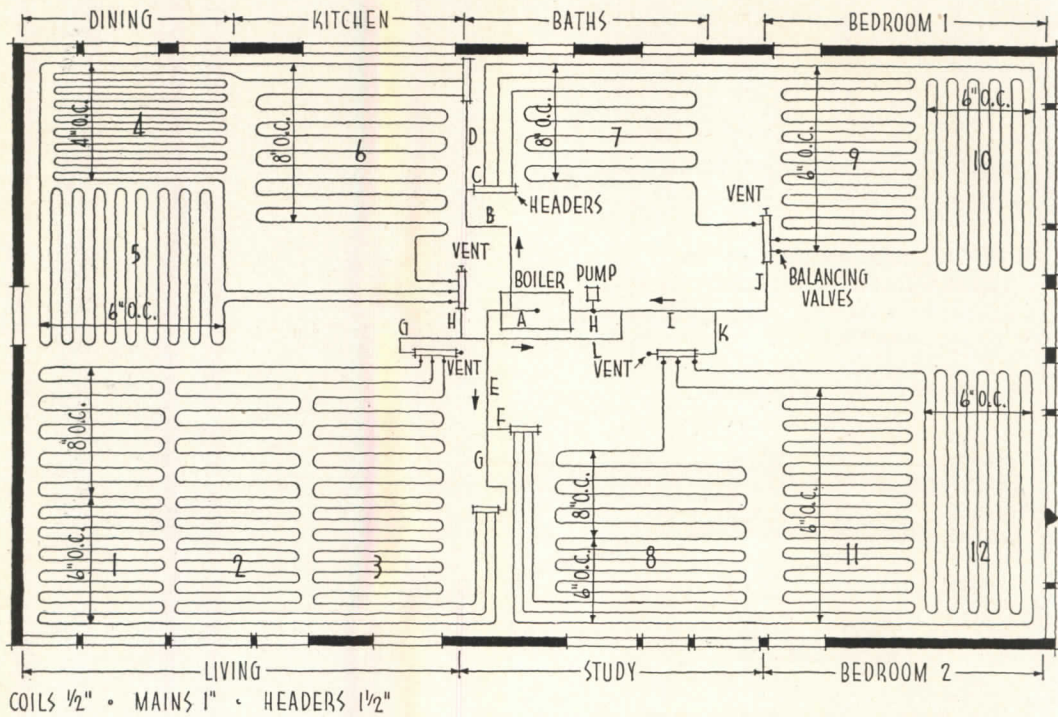


TABLE 4. Design Work Sheet, Example 1.

House shown in Fig. 7.

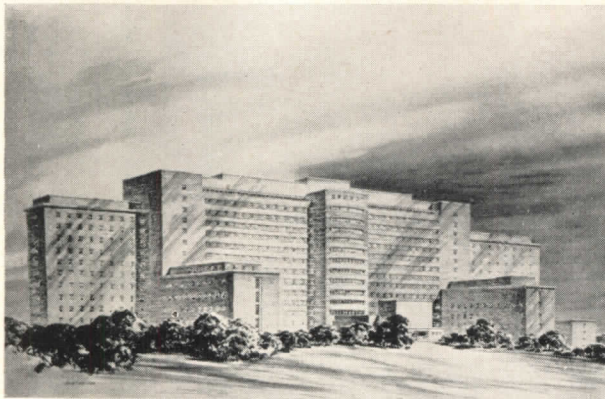
General Design Data, Coil Location Ceiling
 Tube Size 1/2 Copper Gross Unit Output, Btu/hr/ft of Tube 30†

Average Water Temp. 135° F
 Temp. Drop in System 20° F

Col. Nos.	1	2	3	4	5	6	7	8	9	10	11											
												Net Room Heat Loss	Available Panel		Unit Output of Panel	Reverse Flow	Gross Heat Loss	Tube Req'd. Per Room	Sinuous Coils	Identification	Approximate Tube Spacing	
													Dimensions	Area							Trial	Final
	Btu/hr	Feet	Sq. ft.	Btu/hr/s.f.	% of Gross	Btu/hr	Feet	Number Per Room	Coil Numbers	Inches C. to C.	Inches C. to C.											
Living	11,320	13 x 20	260	43	10	12,600	420	3	1,2,3	7	6 & 8											
Dining	8,060	10 x 14	140	*57	10	9,000	300	2	4,5	5	4 & 6											
Kitchen	2,860	10 x 10	100	29	10	3,200	107	1	6	10	8											
Baths	2,560	7 x 10	77	34	10	2,900	97	1	7	8	8											
Study	3,550	9 x 10	90	39	10	3,900	130	1	8	7	6 & 8											
Bedroom 1	6,590	11 x 13	143	46	10	7,300	242	2	9,10	6 1/2	6											
Bedroom 2	8,200	13 x 13	169	49	10	9,100	303	2	11,12	6	6											
Totals	43,160					48,000	1,599	12														
Notes	Not Incl. Ceiling Loss	See Fig. 8		Col. 1 ÷ Col. 3		Col. 1 ÷ .90	Col. 6 ÷ 30†	No coil to Exceed 150 Feet	See Fig. 9	See explanation in Text	See Layout Fig. 9											

* Critical Output (Not to exceed 75 for Ceilings)

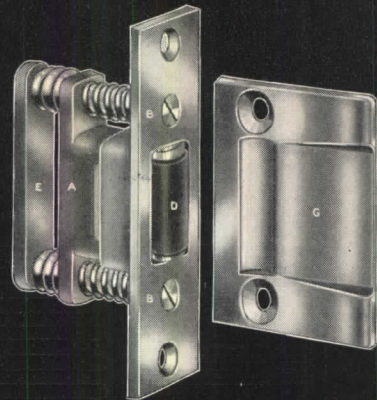
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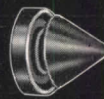
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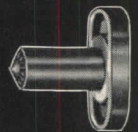
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Door Silencers



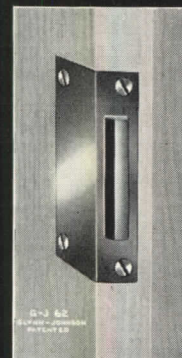
G-J 320 Friction Door Holder

G-J DOOR DEVICES

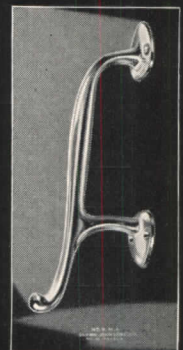
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RADIANT HEATING SYSTEMS FOR HOUSES — 10: Hot Water Systems

By William J. McGuinness

Professor of Architecture, Pratt Institute

6. Temperature Drop — The use of relatively small diameter tube in this installation suggests the use of a 20 deg drop in the water temperature. It is recorded as the design drop in Table 4.

7. Average Water Temperature — The critical output of 57 Btu per sq ft per hr in the dining area is quite moderate, therefore it is unnecessary to choose a high water temperature. 135 deg will be used.

8. Critical Panel — In order to avoid the close spacing that might be necessary with $\frac{3}{8}$ -in. tube at this moderate temperature, $\frac{1}{2}$ -in. nominal size tube is used, attached to the joists with metal lath and plaster below it. Table 1. (See Sheet 4, Time-Saver Standards, August 1951) shows $\frac{1}{2}$ -in. tube to have a gross output of 30 Btu per hr per lin ft of tube at the temperature of 135 deg. Dividing the gross heat loss from the dining space panel by 30, it is found that 300 ft of tube is required in this panel. Making the assumption that the tube will lie about 6 in. within the available panel limits, it is found that 5-in. spacing will provide the required length. For instance, if a tentative scheme called for 13 ft long tubes in the dining area, there would have to be $300 \div 13$, or 23 lengths. The distance between the outer and inner tube would be 9 ft or 108 in. $108 \div 22$ spaces is about 5 in. Of course, two coils are needed because $\frac{1}{2}$ -in. tube may not exceed 150 ft in length. Also, closer spacing is indicated near glass. Finally, the job would do well to confine itself to two or three standard spacings. This job is adapted to the use of 4-, 6-, and 8-in. spacing. A little study of the dining area and some more arithmetic result in coils 4 and 5, which together provide the required length of tube. Each designer will improvise his own

system. Simplicity of layout, ease of fabrication, plan-readability, uniformity of tube size and spacing are all important. Note that the coils start at the glass and at the perimeter with hot water supplied through header at the termination of main branch "D." Balancing valves and a vent precede the header which feeds return main "H."

9. Other Panels — Having established that the critical panel can operate with the spacing as chosen (4 in. is about the minimum possible spacing) it is possible to lay out the other panels, all of which operate at the average temperature of 135 deg, and in which the spacing of tube will be somewhat greater. The approximate tube spacings arrived at by the method already described can be entered in column 10 of Table 4. and standard spacings worked out and listed in column 11. Coils 9 and 10 use 6-in. spacing instead of $6\frac{1}{2}$ and therefore fill less than the panel area. Coil 6 uses 8-in. spacing instead of 10

and also uses a little less panel area than was planned. In each case the lin ft of tube must be as shown in column 6 of Table 4. and must divide into multiples of 150 ft.

10. Size the Mains — Table 2. (See Sheet 6, Time-Saver Standards, September 1951) shows that a 1-in. main will supply up to 70,000 Btu per hr in a system using a 20 deg drop. Since our total gross heat load is 48,000 Btu, a 1-in. main is satisfactory and is used in that size to supply all the headers.

11. Water Flow — Dividing 48,000 Btu by the factor of 10,000 for a 20 deg drop, the hourly pumping rate is found to be 4.8 gal. per min.

12. Select a Pump — The friction through the longest circuit expressed in feet of head must be determined before the pump may be chosen. The following arrangement of computation is convenient. The flow is that through coil number 12 from the

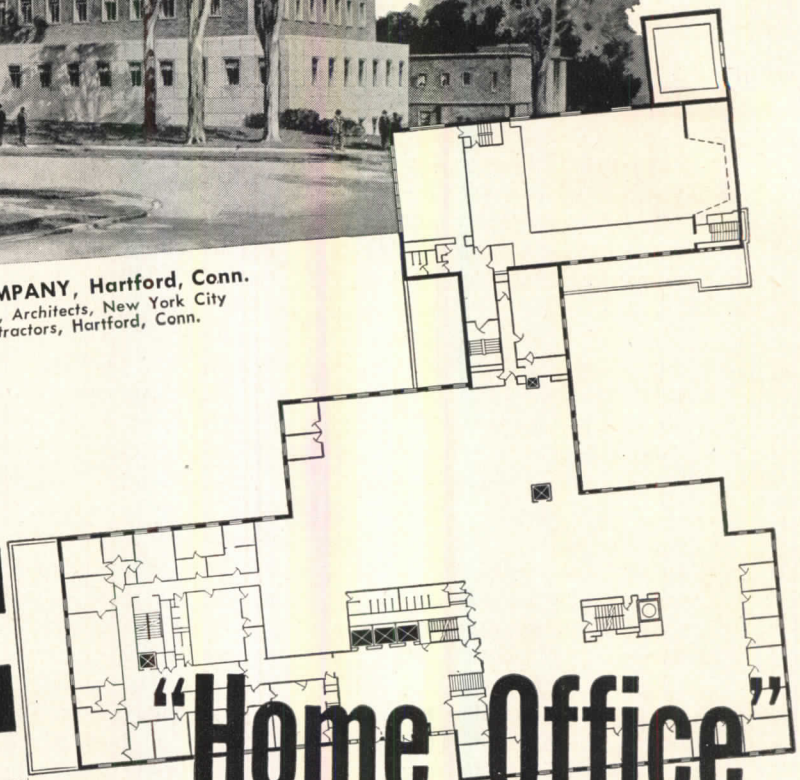
TABLE 5.

Tube Identification	Heat Conveyed	Tube Size	Actual Length	Friction Ft/100 Ft Tube	Friction Head Ft
A	48,000 Btu	1 in.	2 ft	1.8	.036
E	25,600	1	5	.5	.025
F	13,000	1	2	.2	.004
$\frac{1}{2}$ " to coil	4,550	$\frac{1}{2}$	33	.4	.132
Coil No. 12	4,550	$\frac{1}{2}$	151	.4	.604
$\frac{1}{2}$ " to header	4,550	$\frac{1}{2}$	12	.4	.048
K	13,000	1	2	.2	.004
I	23,200	1	8	.4	.032
H	48,000	1	2	1.8	.036
					.921

*(From Fig. 5)



THE PHOENIX INSURANCE COMPANY, Hartford, Conn.
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RADIANT HEATING SYSTEMS FOR HOUSES - 11: Hot Water Systems

By William J. McGuinness

Professor of Architecture, Pratt Institute

boiler and back. See Table 5, Sheet 10, for example worked out.

Adding 50 per cent for the effect of the friction of the fittings, boiler, flow-control valve, the total friction is $.921 \times 1.50$, or 1.38 of head.

With a delivery of 4.8 Gpm and a head of 1.38 ft, it is apparent from Fig. 6 (Sheet 7, Time Saver Standards, September 1951) that any of the pumps shown will be satisfactory, since the curves of performance for all of them lie above the point of intersection of the two known characteristics. It is well to use a 1-in. pump as a minimum size, and it is chosen.

13. Boiler — The connected load for heating is 48,000 Btu per hr, and a boiler selected to carry this load together with the demands for domestic hot water.

14. Compression Tank — A tank of 15 gal. capacity will be satisfactory, as shown in Table 3 (See Sheet 6, Time Saver Standards, September 1951).

General

Fig. 10 shows how to trap the entrained air at the end of the coils so that it may be vented automatically from the header. An overflow protects the plaster. At this point, adjusting (balancing) valves are accessible, together with purge cocks for the purpose of bleeding or blowing out the air at the beginning of operations. The whole must be insulated against freezing and heat loss. Fig. 11 shows the more important of the boiler connections. For simplicity, the domestic hot water facilities have been omitted in the sketch. This and the other boiler controls are very largely as shown for hot water heating in TSS article on hot water heating, ARCHITECTURAL RECORD, September 1949.

Fig. 10. Return Header Arranged for Venting and Adjustment, Example 1.

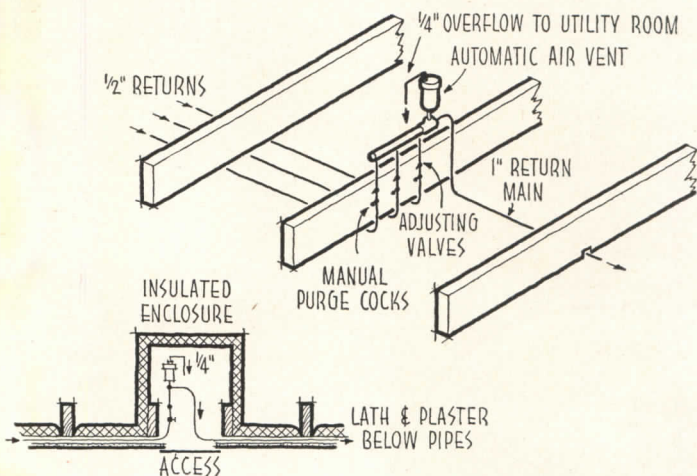
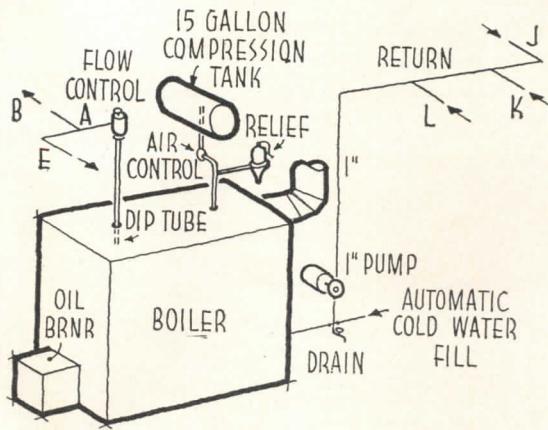


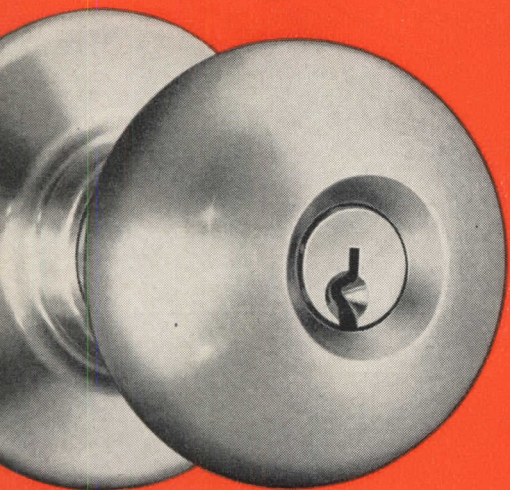
Fig. 11. Boiler Connections, Example 1.



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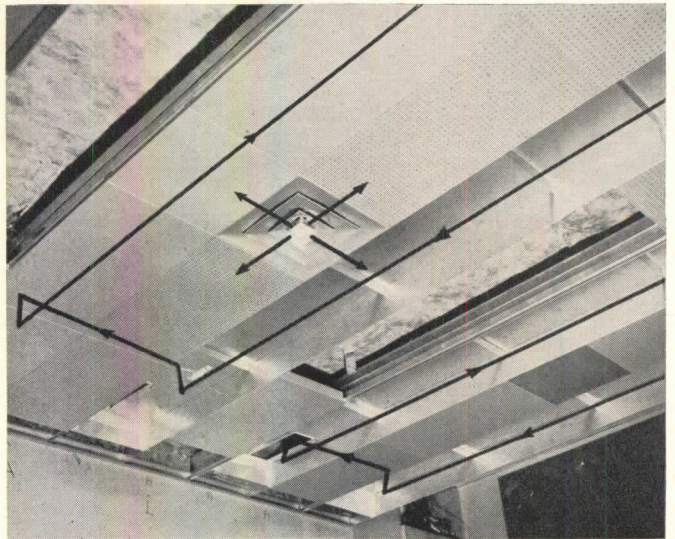
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SAN FRANCISCO NEW YORK

TEST ROOM FOR

(Continued from page 212)



Air flow through ceiling troughs

in the Schlumberger lab is 8½ per cent of the general contract.

Both ceiling and floor systems save duct work. With the ceiling, all work is handled by one trade, the sheet metal workers; and, even here, duct work is kept to a minimum and is easy to install. (Photos these pages.) With the floor, there is practically no duct work since the cells themselves are ducts—just enough to serve as supply and return headers and to run to ventilation and exhaust outlets.

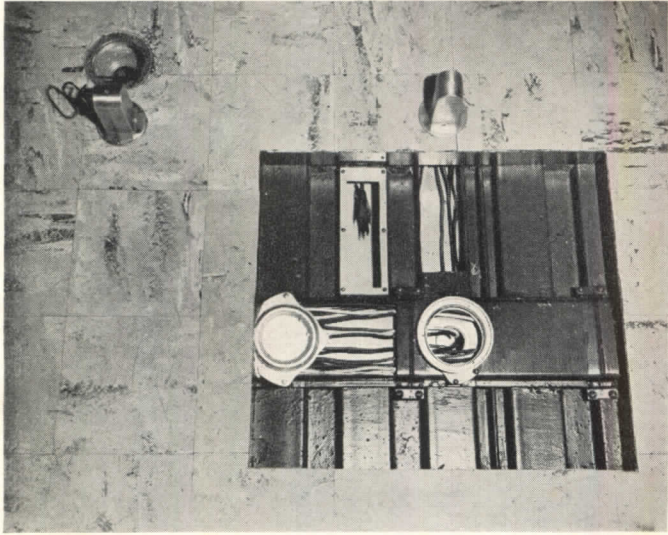
Potential Applications

Both ceiling and floor systems are believed to have good possibilities for multi-story construction. Whenever cellular steel flooring seems indicated in large buildings, extra value can be ob-

Installing the trough crossover



PANEL COOLING—HEATING BY AIR



Opening exposes cellular floor

tained by employing some of the normally unused cells for circulating air.

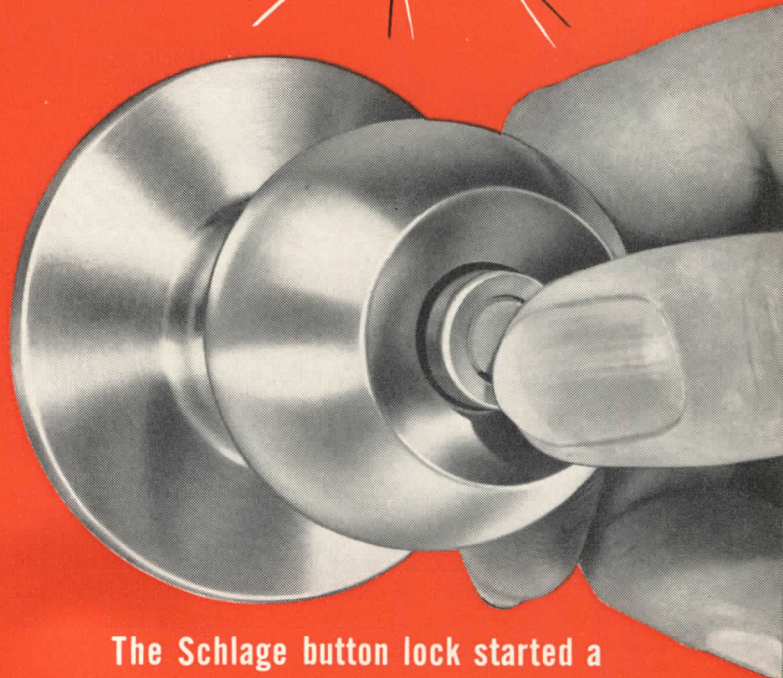
The ceiling system can be installed in structures with solid slab floors, and, important these days, can completely modernize stores, office buildings, banks etc.

The panel cooling-system as it is now conceived for multi-story buildings would consist of water distribution lines from floor to floor which would connect with coils for heating or cooling the air to the proper temperature before it was supplied to the room panels. Advantages claimed for this arrangement are that little space would be occupied by the water lines, and that only one set of controls—for air alone—would be required.

The ceiling air panel being attached



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19

YEARS OLD...



"It hardly seems possible!"

● These elevator doors of Republic ENDURO Stainless Steel were installed back in 1932. For 19 years they've been subjected to the kind of service that usually wears and mars elevator doors. But, according to the building superintendent, "It hardly seems possible, because these doors still have their original brightness and lustre."

Yes, their cost may have been somewhat higher than that of other materials—but it has been *more than offset* by the saving in maintenance and cleaning.

Those are important facts to remember about ENDURO. In times like these when construction materials are becoming difficult to obtain, there's no need to worry about replacing ENDURO Stainless Steel—regardless of whether it has been

used for decorative or functional purposes. It lasts . . . and lasts . . . and lasts. Save materials which otherwise might be needed for replacement. Saves man-hours, and cost of tearing it out and replacing it. Keeps equipment, plants and offices operating day after day—because there's no need for repairs.

And while you're at it, why not file those facts away in your memory—until the time when stainless steel and other materials again are freely available?

*In the meantime, see Sweet's
or write us for literature.*

REPUBLIC STEEL CORPORATION

Alloy Steel Division • Massillon, Ohio

GENERAL OFFICES • CLEVELAND 1, OHIO

Export Department: Chrysler Building, New York 17, N. Y.

Republic



ENDURO STAINLESS STEEL

See Sweet's for data on Republic Pipe, Sheets and Roofing... Electrunite E.M.T. ... Fretz-Moon Rigid Steel Conduit... Berger Lockers, Bins, Shelving and Cabinets... Truscon Steel Windows, Doors, Joists and other Building Products.

It's
Vivid!

It's
Versatile!

It's
Vitachrome!



... truly Greaseproof Resilient Flooring at moderate cost

Shrugs off attacks of the acids, alkalis, oils and fats in food...stays at its sparkling best with a minimum of maintenance ... brilliant colors brighten interiors.

What does a restaurant man want in a resilient flooring material?

First, he wants resistance . . . resistance to the factors in foods that can ruin ordinary resilient floors . . . resistance to the oils and fats, resistance to the acids and alkalis, that bite into a floor when food is spilled.

Vitachrome gives him that . . . even more than he needs.

Second, because, ordinarily, maintenance is expensive...he wants a floor with simple upkeep requirements.

Vitachrome merely needs daily sweeping, to remove loose dirt...

periodic washing...and water-waxing, when it's desired.

Repairs are quick and easy. Replacement is limited to damaged area, because of tile-by-tile installation.

Third, the modern restaurateur demands decorative beauty. A bright, attractive interior brings in customers.

Vitachrome comes in many brilliant colors and sizes, making it difficult to beat for decorative versatility. And, since a restaurant man is a *business* man, he wants all these advantages at as low a cost as possible.

Vitachrome again fills the bill, with its many advantages.

Ask local Tile-Tex* Contractor. Or, if you don't find his name in your telephone directory . . . write THE TILE-TEX DIVISION, The Flintkote Company, Dept. R, 1234 McKinley St., Chicago Heights, Ill.

Tile-Tex
RESILIENT
FLOORS AND WALLS

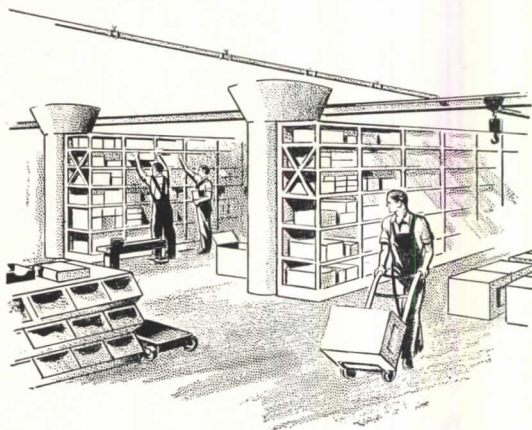
*Registered Trademark, The Flintkote Company

BUSINESS IN MOTION

To our Colleagues in American Business ...

The fact that a Revere Distributor is now celebrating its 125th anniversary year is an indication of the service the company has given its customers through those years. It is also another proof of the essential function performed by distributors for American industry. Most goods, whether industrial materials such as copper and copper alloys, aluminum alloys, iron and steel, or consumer articles such as refrigerators, radio and television receivers, kitchen utensils and ranges, go through the hands of distributors. Generally speaking, only the large buyers are in a position to purchase direct from manufacturers, who do not find it economical to handle the smaller orders. Yet those orders when pooled in the hands of an organization set up to handle them attain sizable totals, and hence a good distributor account is exceedingly attractive to a large manufacturer such as Revere.

A distributor serves not only the factories from which he buys. He also performs an invaluable service to his customers by making quickly available to them the products they require. A machine shop, for example, may need only a few hundred pounds of brass rod; there is a distributor within easy reach who can furnish it almost immediately. Or a contractor may want a few pieces of steel pipe and a thousand feet or so of copper water tube. Again, the distributor has them. A metal products distributor has to carry such items and an infinite number of others. The Revere Distributor who started in business 125 years ago actually has in stock 53,000 different items, cataloged, indexed, and held in warehouses ready for immediate shipment throughout its territory. Each month this stock is drawn upon by 5,000 to 8,000 customers, each order relatively small. There are many Revere Distributors with similar stocks and offering equal service.



To keep this distributor's warehouses filled with a balanced inventory, 18 people are required in his purchasing staff, which includes specialists in various kinds of materials, machines, tools and supplies. And to serve customers with information, quotations and the like, 25 salesmen are on the go constantly, calling on manufacturers, contractors, builders and stores throughout the busy industrial area in which the distributor operates. The large business done by the company is in great contrast to that of 125 years ago, when it was little more than a hardware store. The enterprise has grown in the American tradition of freedom to prosper in accordance with the principles of reliability and efficiency, fair dealing and integrity in performing a desired function.

Revere Distributors are selected for their ability to serve, and also chosen as to location, so that no matter where you are in this big country of ours, there is a Revere Distributor within easy reach. Today metal stocks may be short due to defense demands but manufacturers are doing everything possible to keep distributors supplied.

If you buy from distributors we suggest you remember that they are not only "central stockrooms," but have a great deal of special knowledge about the products they sell and can give you much helpful advice. Not only that, through the Revere Distributors you can be put in touch with the Revere Technical Advisory Service, which will cooperate with you on matters concerning the selection and fabrication of the Revere Metals. Our distributors, and those of every other manufacturer, render many essential services, both to those to whom they sell, and to those from whom they buy. The distributor system as it operates in the United States arose in response to the need for it. Today it fulfills that need more effectively than ever before.

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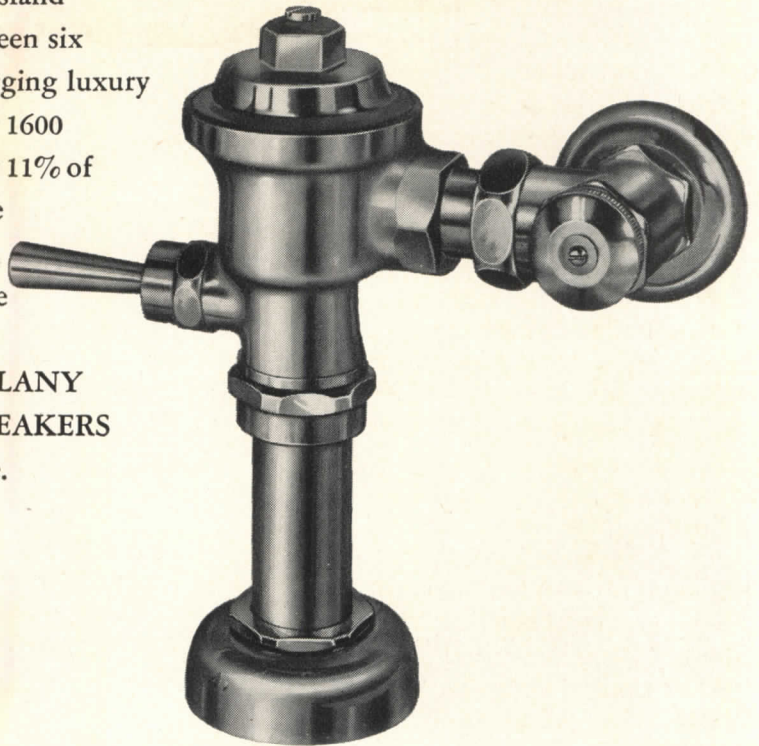
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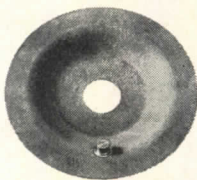
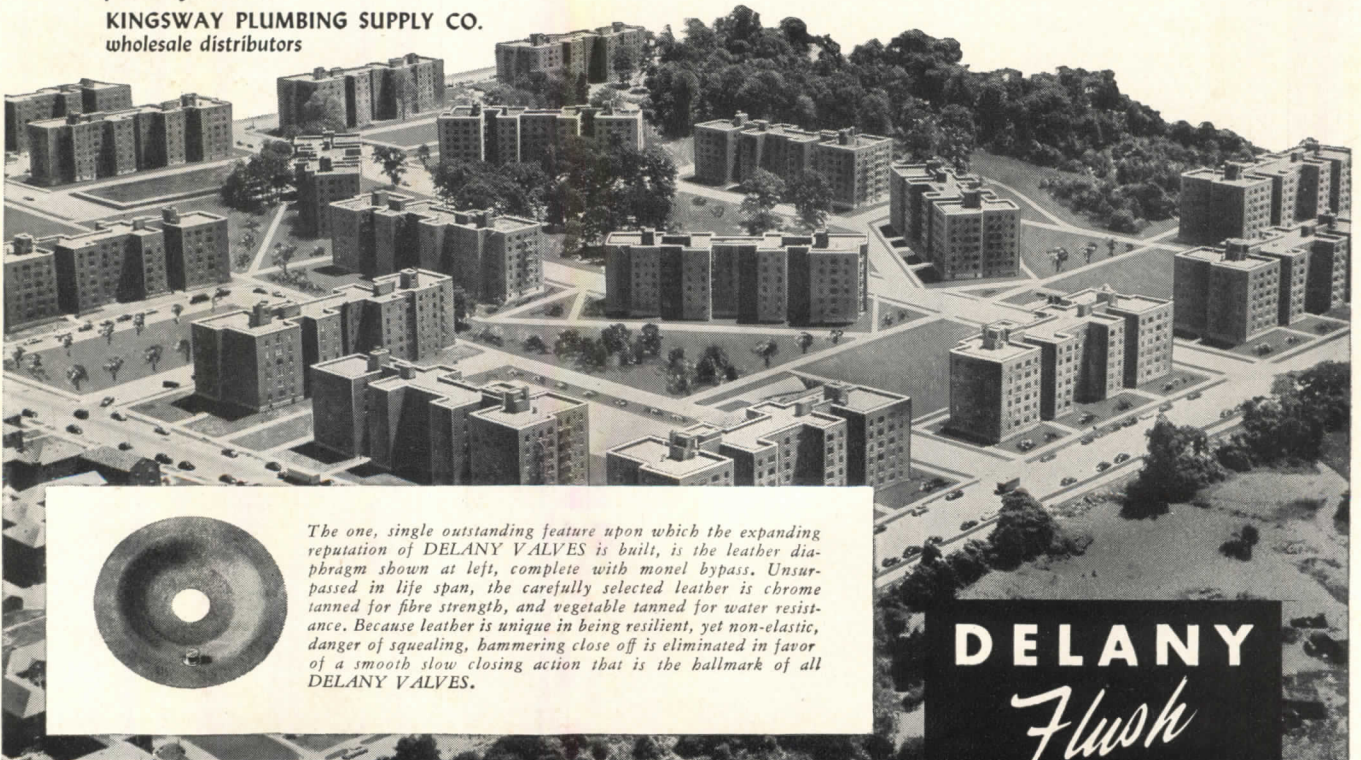


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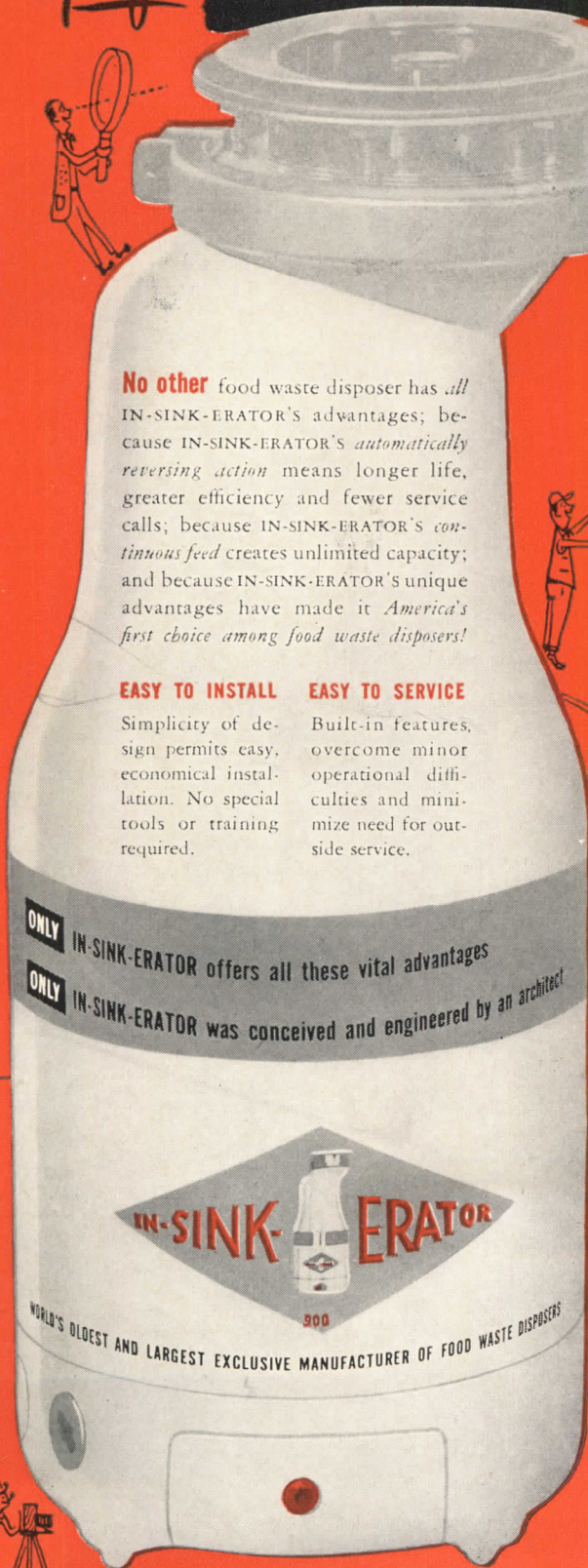
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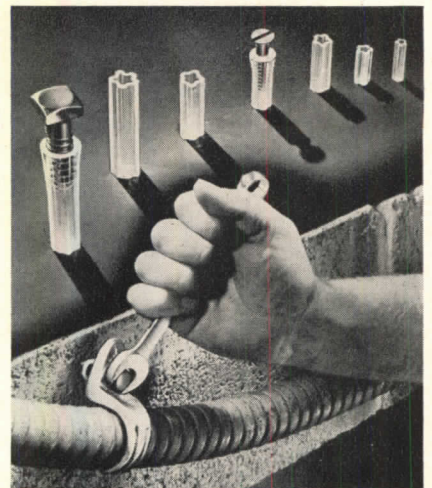
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Architectural Engineering

PRODUCTS (Continued from page 213)

Plastic Anchor Plugs for Masonry

Corrosion-proof plastic anchor plugs are said to incorporate the special features of being unaffected by atmospheric conditions and of being excellent electric insulators. *Scru-Tite* screw anchors are suggested for use in all solid materials such as brick, wood, concrete,



Plastic screw anchors are light weight, not affected by atmospheric conditions

glass, metal, or any solid. They are adaptable to most screw sizes. The plug is hammered into a drilled opening, and when the screw is set expands to make a solid bond. The manufacturer claims that it has strong holding power. Mastercraft Products, 95-01 150th St., Jamaica 4, N. Y.

Translucent Reinforced Plastic Panels

Light transmitting plastic panels reinforced with glass fiber, called *Alsynite*, offer the architect an easily worked, and highly resistant-to-impact glazing medium. The panels are molded from *Laminac* resin, manufactured by American Cyanamid Co., and reinforced by Owens-Corning's *Fiberglas*. The manu-

(Continued on page 234)

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First in heating . . . first in plumbing

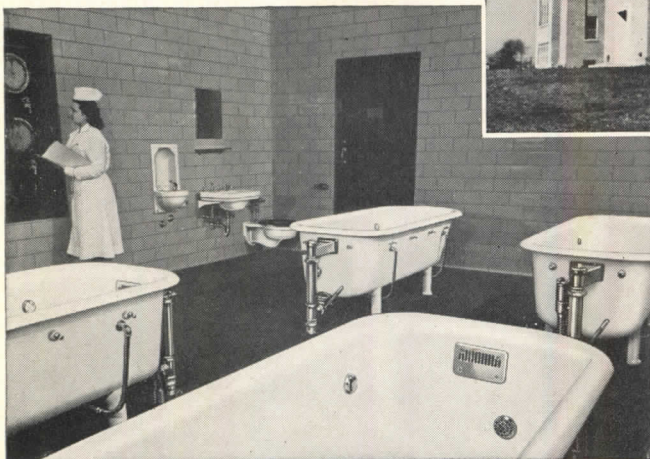
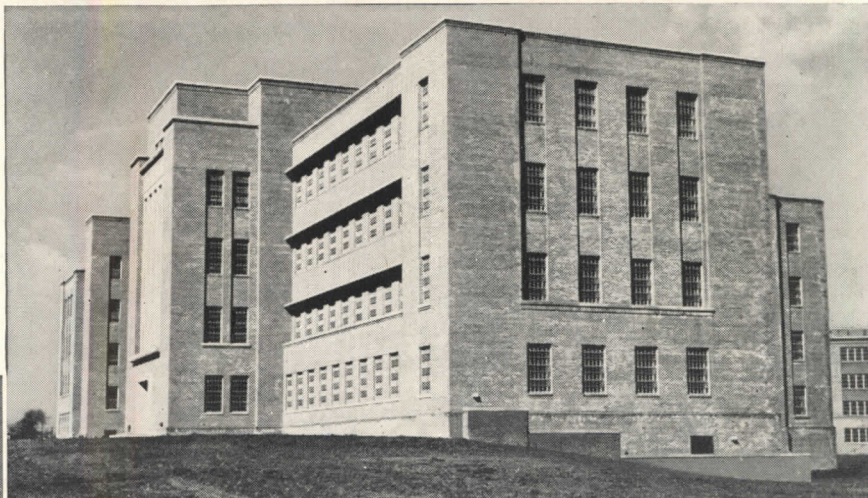
Architects:
The Pepper Associates

Mechanical Engineers:
Moody & Hutchinson

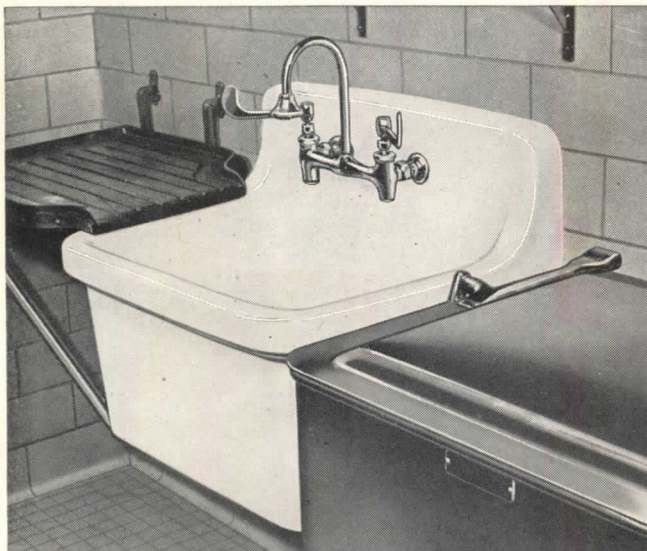
General Contractor:
Wark & Company

Plumbing Contractor:
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Hydrotherapy treatment room at the Philadelphia State Hospital, showing battery of Prolonged Treatment Baths. The automatically-controlled baths are made of rigid cast iron and finished inside with a heavy coating of acid-resisting enamel. The wall-supported fixtures in background are the Cardic Drinking Fountain, Buena Lavatory and Instanto Water Closet. All are made of genuine vitreous china that is easy to clean, and *keep* clean.



Philadelphia State Hospital selects AMERICAN-Standard fixtures for new Active Therapy Building

■ Dependable, trouble-free plumbing is assured the new Active Therapy Building of the Philadelphia State Hospital. It is equipped throughout with American-Standard Plumbing Fixtures.

In specialized hospitals like this, as well as in countless general hospitals all over the country, American-Standard Heating Equipment and Plumbing Fixtures have *proved* their durability and dependability in service. And they've proved to be easy and economical to maintain too.

American-Standard products are designed to conform to the most modern hospital techniques . . . they are built for utmost convenience of hospital attendants, and for utmost comfort of patients. These quality products are made in a wide variety of styles and sizes to fit any installation condition . . . to meet the most exacting hospital requirements.

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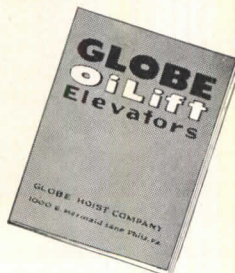
This Globe Elevator carries 15,000 lb. loads between 3 floors in a Philadelphia factory. It is a perfect illustration of the simplicity of design that makes Globe America's most economical elevator.

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Architectural Engineering

PRODUCTS

(Continued from page 230)

facturer states that this material can be sawed, drilled, or bolted without fracturing. These panels are made in flat sheets, and in corrugated sheets and are available in a variety of colors. The manufacturer suggest that this material can be used in skylights, inter-office partitions, awnings and canopies as well as many other applications. The Alsynite Co. of America, Portsmouth, Ohio.

Miniature Noise Meter

Designed with sub-miniature tubes and components, a new *Type 410-B Sound Level Meter* is claimed to accurately measure noise, sound and vibration. The meter has a sound level range from 34 to 140 db above the standard



Small noise meter for field-testing runs on tiny hearing aid batteries

A.S.A. reference level, says the manufacturer, and runs on hearing-aid batteries. It is available with optional accessories including carrying case, extension cables and vibration measuring equipment. Hermon Hosmer Scott, Inc., 385 Putnam Ave., Cambridge 39, Mass.

New England Rugs

Custom made hooked and braided rugs are now available in decorative designs and in any color, size or pattern, a New Hampshire firm announces. Moreover, individual designs or shapes, etc., can be made to order, it is stated. The manufacturer claims authentic preserva-

(Continued on page 238)



**Massachusetts Hospital has
Air Conditioned Nurseries,
Individually Controlled
Room Temperatures**

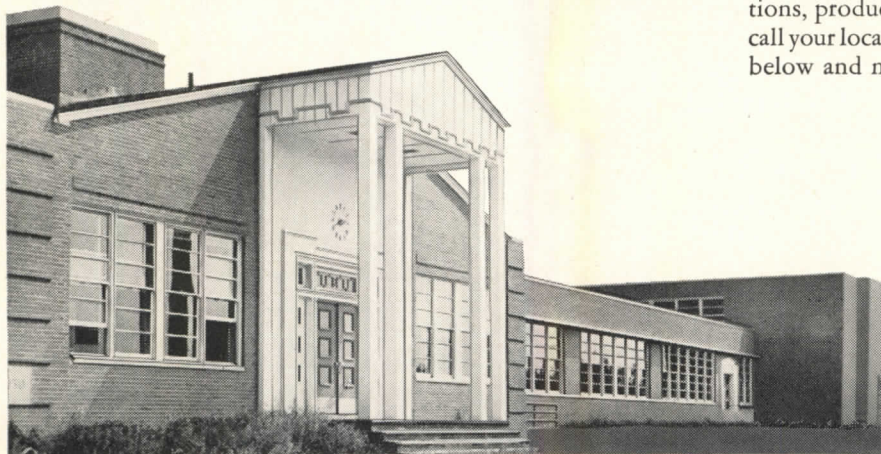
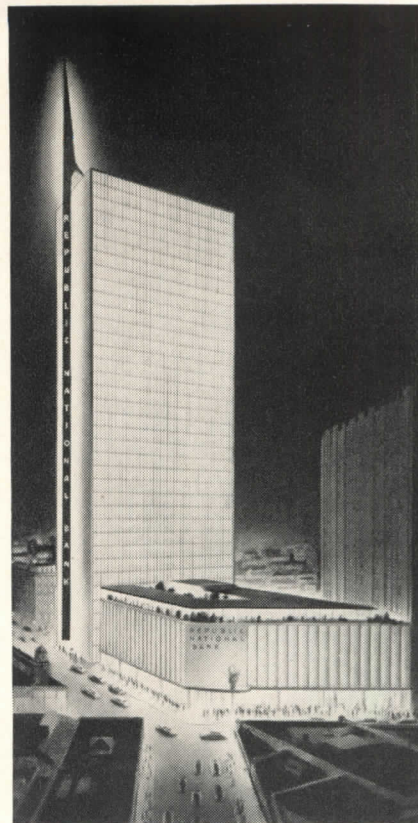
Most medical authorities agree that rigidly controlled room temperatures are needed to give new babies maximum protection. That's why Lowell General Hospital will have Honeywell temperature and humidity controls in the nurseries, labor, delivery and operating rooms of the new maternity and pediatric building. Moreover, to help bring mothers back to normal faster, each bedroom will have Honeywell Individual Room Temperature Control—the only practical way to compensate for effects of wind, sun, open windows and variations in occupancy in hospitals.

Architects: James H. Ritchie & Associates, Boston; General Contractor: Daniel Cunningham Construction Co., Inc., Boston; Mechanical Engineers: C. E. Doucette, Boston; Mechanical Contractor: J. J. Hurley Co., Boston.

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Southwest's Largest Building**

When the Republic National Bank's impressive new home is completed in Dallas sometime next year, every room will have the wonderful kind of comfort offered by Honeywell Individual Room Temperature Control. This system compensates better than any other for effects of wind, sun, temperature and variations in internal load. It makes sure occupants always receive exactly the right amount of warm or cool air needed for comfort—no matter what the Dallas weather. Room thermostats in the new bank will be pneumatic. And, of course, all other controls needed for year-round air conditioning will be supplied by Honeywell. Instruments will be furnished by Honeywell's Industrial Division.

Architects: Harrison & Abramovitz, New York; Assoc. Architects: Gill & Harrell, Dallas; Engineers: Jaros, Baum and Bolles, New York; Assoc. Consulting Engineers: Zumwalt & Vinther, Dallas; General Contractors: J. W. Bateson Co., Inc., Dallas; Mechanical Contractors: The Farwell Co., Inc., Dallas.



New Jersey Classrooms "Coordinated" for Faster Learning

What determines how fast a child learns? Inborn capacity, of course. And classroom conditions—according to recent large-scale experiments. These tests showed that in "Coordinated Classrooms"—rooms where seating, lighting, noise level, heating and ventilating are properly controlled—stu-

dents of all I. Q. levels make greatly improved progress. Shown above is a new Cedar Grove, N. J., elementary school, all nine rooms of which will be "coordinated." To keep room temperatures uniform and air properly fresh, Cedar Grove officials chose simple, accurate Honeywell controls.

Architect: Alfonso Alvarez, Jr., Upper Montclair, N. J.; Engineers: Vogelbach and Baumann, Jersey City, N. J.; Heating Contractor: Albert F. Ruehl Co., Newark, N. J.

For additional information on any of the installations, products or systems mentioned in this report, call your local Honeywell office. Or fill in the coupon below and mail it to us *today*.

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The Answer is *Yes* to All 6 Questions

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SIMPLIFIED PLANNING—Because JUST Line Stainless Steel equipment is custom built to your specifications, it simplifies planning and meets every individual requirement.

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JUST Line Stainless Steel Equipment is ideal for Government and private institutions, laboratories, hospitals, schools and industrial plants.

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Architectural Engineering

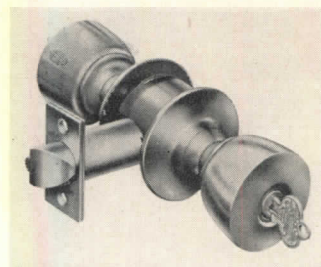
PRODUCTS

(Continued from page 234)

tion of traditional New Hampshire art in the rugs. New Hampshire Homecraft Industries, Inc., Daniel Webster Highway, Tilton, N. H.

Cylindrical Locks

Designed for application in large buildings such as schools, apartments, office buildings and large residences, a new line of *Corbin Cylindrical Locks* is said to provide for the functions most often required in this type construction.



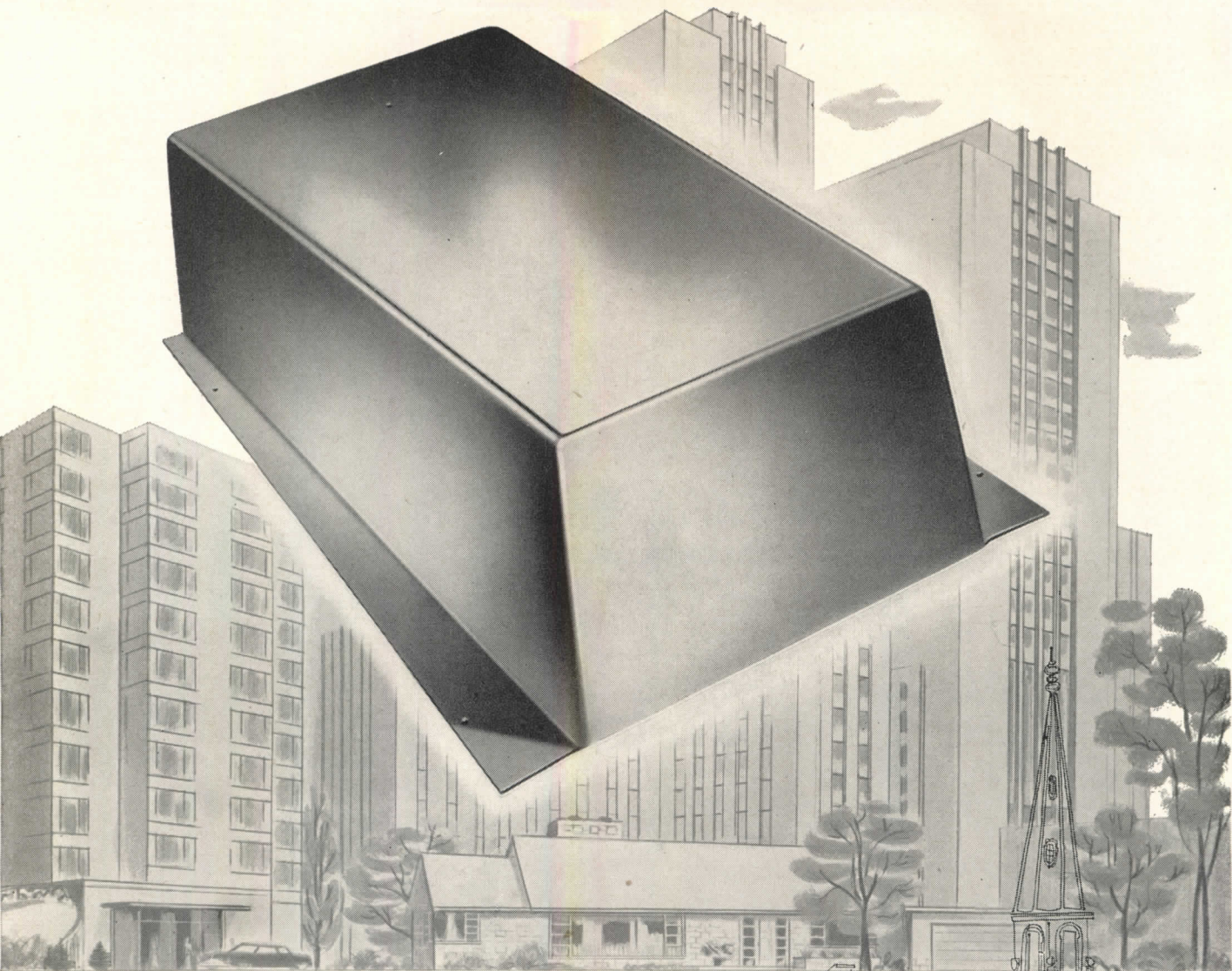
New heavy duty cylindrical lock features simplicity of design, durability

Among the features that are included in this design are the roll-back latch mechanism adapted from the Corbin Unit Locks, latch bolts with $\frac{5}{8}$ in. throw, 100 per cent reversibility, screwless roes and knob shanks, extruded brass 5- or 6-pin tumbler cylinders and automatic deadlocks. The locks are adjustable for doors of $1\frac{3}{8}$ to 2-in. thick. Installation requires the drilling of two holes in the door and a shallow mortise for the face plate. P. F. Corbin Div., The American Hardware Corp., 67 Park, New Britain, Conn.

Water Purifier

A new water purifying device has been developed by the Sunroc Company. Known as the *Sunroc Purifier*, Model SF-5, the filtering device employs a replaceable cartridge containing Sterilium, a development of the manufacturer's research laboratories. It is reported to remove objectionable tastes,

(Continued on page 242)

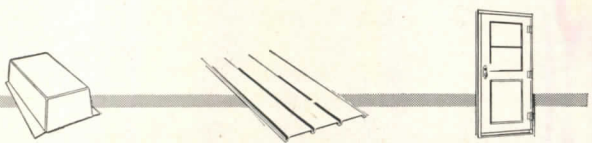
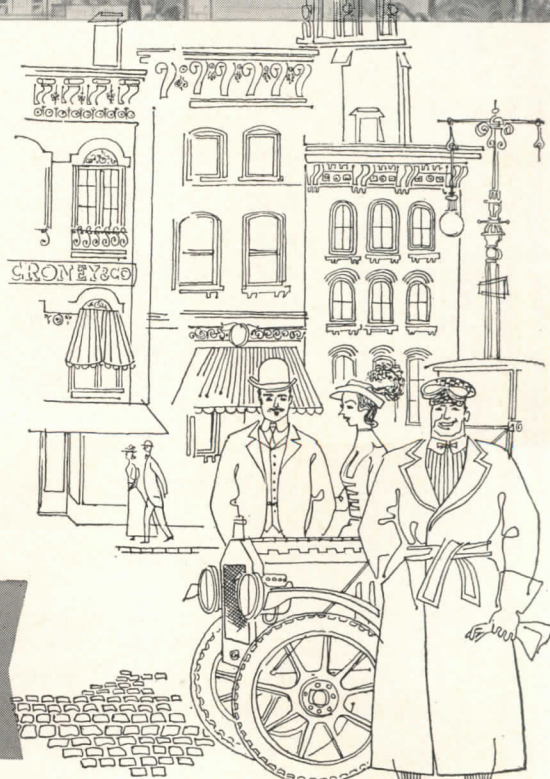


Ceco—one source—one responsibility for many major Building Products of Steel and Aluminum.

Here, too, you will find the fastest, most dependable service from Ceco's 14 strategically located plants —plus a warehouse and nationwide dealer setup.

CECO STEEL PRODUCTS CORPORATION

General Offices: 5601 West 26th Street, Chicago 50, Illinois
Offices, warehouses and fabricating plants in principal cities



makes the big difference

PRODUCTS

(Continued from page 238)

odors and foreign matter from water without affecting essential mineral properties or palatability. The cartridge is said to be easily replaced without the use of tools. Replacements are described as inexpensive and infrequent since filtering qualities remain effective for months under normal conditions. Although the purifier was designed essentially for use

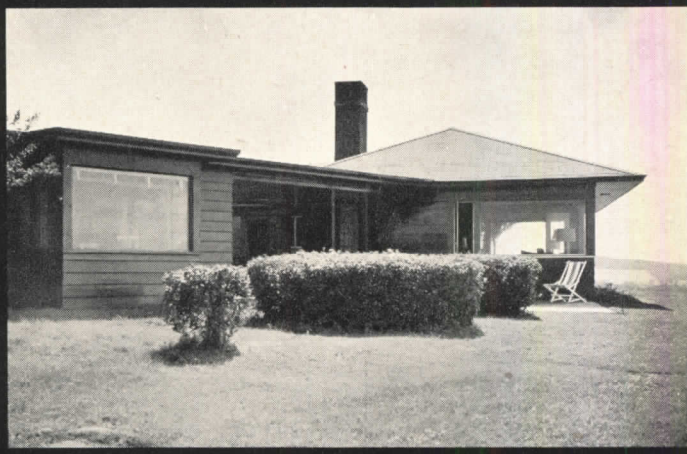
with the manufacturer's own electric water coolers, it can be used with any make, and may be easily installed at cold water faucets in homes. Sunroc Company, Glen Riddle, Pa.

Small Size Copying Machine

The *Ozomatic*, a new and smaller copying machine styled by Raymond Loewy, has been added to the *Ozalid* line. Besides its lightweight and compact design, the manufacturer stresses the high output and low operating cost of the new machine, which can produce

up to 1000 8½ by 11 in. copies per hr for about 1½ cents a copy. Since it reproduces directly from translucent originals, the machine saves clerical time and work, eliminating the need for re-typing and proofreading. Additions and deletions from standard forms are possible and reproductions of combined originals can be made. Copies are said to be possible in several colors on a variety of materials with no machine alterations. The construction is described as durable, stainless steel or special grade aluminum alloy being

LASTING PROTECTION — CABOT'S CREOSOTE STAINS



Gordon B. Wyland,
Architect
Oneida, N. Y. ▶

For wood preservation you can't beat Cabot's Creosote Stains. Their 60-90% content of creosote oil — best wood preservative known — gives years of protection against decay and termites.

SAVE ON COSTS Cabot's Stains cost only ⅓ as much as good paint . . . are quick and easy to apply . . . capture all the beauty of wood siding, shingles and clapboards.

EXCLUSIVE CABOT COLORS Cabot's Stains come in a wide range of attractive colors, from clear brilliant hues to soft weathering grays and browns — many available from no other source.

WRITE TODAY for Creosote Stain Color Card. Address Samuel Cabot, Inc., 1029 Oliver Bldg., Boston 9, Mass.

CABOT'S CREOSOTE STAINS



Small copying machine has high output, reproduces from translucent originals

employed for all parts that come in contact with the ammonia used in the developing process. Other features are a stabilized lamp, said to maintain constant printing speeds, and a thermostat heat control designed to help standardize print quality. Ozalid, Div. General Aniline & Film Corporation, Johnson City, N. Y.

Fireproofing Steel Columns

Due to the results of tests sponsored by the Gypsum Association and recently completed at the National Bureau of Standards, fire ratings of 1, 1½, 2, 3, and 4 hours can be obtained for steel columns by the use of *Rocklath* gypsum base and plaster.

To obtain a one hour rating, ⅜ in. thick perforated gypsum lath was applied vertically against the column with double-strength 18 ga galvanized wire. A type 1-A corner bead was used to establish ½-in. plaster ground. Gypsum plaster, properly sanded, was applied to within ⅜ in. of the ground dimension and left rough to receive the finish coat. For a 1½ hr rating a ⅝-in. ground is

(Continued on page 246)



One man hauls two logs easily, with this powerful tractor unit. Mechanized logging not only adds greatly to efficiency, but increases speed and safety in forest operations.



Loads weighing up to 125 tons are carried in one trip on mammoth Weyerhaeuser truck units. Some have two trailers in tandem, making a carrier 100 feet long.

Good Lumber... *through* Efficiency in Logging

Today, on visiting an efficient logging camp you would clearly see how the operations have been modernized by economical, waste-saving machinery. You would see power driven chain saws helping to harvest the mature trees—powerful “cats” hauling logs to the roads—swift modern cranes loading them—rail cars and great diesel powered truck-trailers delivering them to the mills.

Mechanical progress has made every man-hour vastly more productive in the harvesting of timber. It has opened up new timber resources, by reaching terrain formerly called “impossible” for logging—and thereby saving many mature trees for useful service. Also, mechanized handling reduces log damage and delivers the logs to the mills in condition to produce maximum lumber footage.

Correct logging is but one of the important factors which directly affects the quality and quantity of the lumber yield. The trademark “Weyerhaeuser 4-Square” on lumber also means the coordination of modern timber har-

vesting, modern reforestation, and modern manufacturing methods. The result is the best in good lumber, which delivers the utmost in sound, economical construction.

One of a series of advertisements defining the important factors contributing to the production of good lumber.



THE LEWISTON, IDAHO MILL

At mills located on the West Coast and Inland Empire, Weyerhaeuser 4-Square Lumber is produced in a range of products from Douglas Fir, Idaho White Pine, Ponderosa Pine, West Coast Hemlock, Western Red Cedar and related species.

Weyerhaeuser 4-Square Lumber and Services

WEYERHAEUSER SALES COMPANY • ST. PAUL 1, MINNESOTA

PRODUCTS
(Continued from page 242)

established. A 2 hr rating is obtained by setting the ground at 1 in. and using a perlite aggregate in place of sand in the gypsum plaster mix.

A 3 hr rating was achieved by using a double thickness of 1/2-in. gypsum lath with 1 in. hexagonal 20 ga mesh wrapped tightly about the column; the corner bead was set to provide 1-in. plaster

grounds, then plaster of gypsum perlite mix was applied. The same procedure is followed for a 4 hr rating, except the grounds are set to receive 1 1/2 of gypsum-perlite plaster.

Fireproofing of the 1 hr rating weighs approximately 6 lb per sq ft while the 4 hr protection weighs about 11 lb per sq ft of finished surface area. Ease of application plus the use of standard plastering materials are pointed out by the manufacturer as an economic note. United States Gypsum Co., Chicago 6, Ill.

Power Roof Exhausters

• The *Chicago Axial Mushroom Power Exhauster*, for industrial and commercial roof ventilation, can also be employed as a fresh air supply unit, states the manufacturer, simply by reversing the direction of air flow. The 2-ft-high unit has a squat, one-piece heavy gauge steel, mushroom type diffuser head which, aerodynamically designed, is said to reduce turbulence and discharge losses to a minimum. Welded to the inside of the unit, an air deflector splits and directs the flow of air to the outside atmosphere. All blades have adjustable pitch. The totally enclosed motor is



AMWELD
INTERIOR STEEL
DOORS, FRAMES
and SLIDING CLOSET
DOOR UNITS ★

Preferred because they're Better

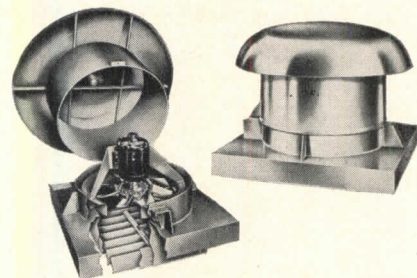


The outstanding features of AMWELD Interior Steel Doors, Frames and Sliding Closet Door Units, have been recognized by the country's leading architects and builders. Home owners everywhere are voicing their complete satisfaction of these quality products. They are designed and built to blend with all types of construction, provide lasting beauty and durability, and cut building costs. May we send our catalog describing styles, sizes and complete specifications?



★ **SLIDING CLOSET DOOR UNITS** are available in two styles: (1) Frames in 1-piece welded assembly, or (2) with header, jambs and track in knocked-down form. Door panels are identical. Both are complete with all hardware.

BUILDING PRODUCTS DIVISION
THE AMERICAN WELDING & MANUFACTURING CO.
340 DIETZ ROAD • • WARREN, OHIO



Mushroom power exhauster provides neat efficient design for industrial use

standard ball-bearing, mounted in air stream. The whole assembly is supported on vibration eliminators. Blade Diameters are from 14 to 48 in.; air capacities from 870 to 47,800 cfm; pressures from 1/8 to 1 1/2 in.

• *Chicago Gyra-Flo Power Exhauster* is designed for such buildings as schools, hospitals, churches, etc., where operating noise must be thoroughly minimized. Guide vanes which sheer the air off the revolving wheel, forcing it into the atmosphere, are stationed at cut-off points and are said to account for high fan efficiency. A discharge cone that emits the forced-out air is claimed to considerably limit turbulence. The assemblies are available in belt or direct drive and are floated on suspension mountings and vibration control pads. Air capacities are from 830 to 29,750 cfm; static pressures from 1/8 to 3/4 in.; noise level db from 61 to 88. Chicago Blower Corp., 4558 West Congress St., Chicago 24, Ill.

Architectural Display Properties

Scale model trees, shrubs and flowers under the trade name *Lilliputs* are designed for use as landscape backgrounds

(Continued on page 250)

ARCHITECT AND CONTRACTOR

tell how manufacturers' catalogs in Sweet's File help them select, specify and buy

Sweet's referred to first according to Merle V. Abbott

"Sweet's File is an old familiar friend to everyone in this office. My own experience with it started twenty-seven years ago when I first used it as a reference in college building construction courses.

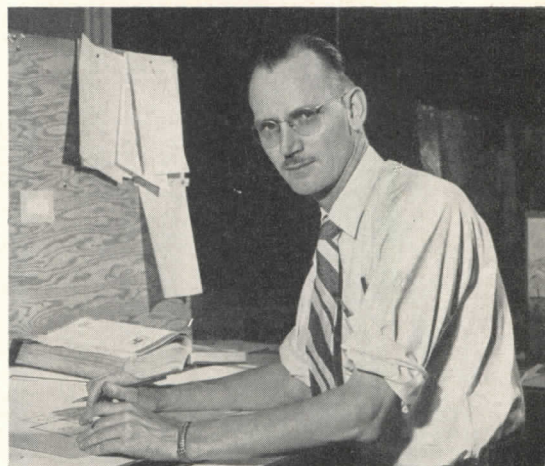
"In practice, of course, we find Sweet's indispensable. The time we save by being able to refer to a ready-made catalog file having a cross-index system could not be calculated. On the Heart Hospital job, for instance, we studied hundreds of different products in various manufacturers' catalogs in order to make the proper selection. I can also recall several conferences with the client and contractor on such items as fixtures, grilles, elevators and windows. Naturally, Sweet's helped a great deal in these discussions by making it possible for us to show, with pictures and diagrams, exactly what we had in mind.

"When we need information on a product — which is about once every five minutes — we turn to the catalogs in Sweet's first. Then if we can't find just what we want, we try to get the information some place else. We wish that all manufacturers of building materials would send us their catalogs each year in Sweet's File."

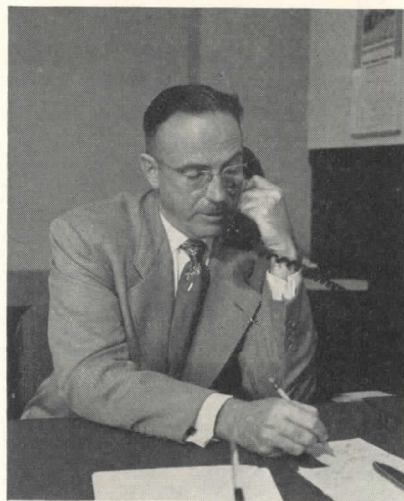
use Sweet's every day says Peter M. Dougall

"Hardly a day goes by that we don't refer to Sweet's File in this office. We use it in estimating, preparing working drawings, in conferences with clients, architects and local jobbers, and in the final selection of products. We go to the various catalogs in Sweet's for information of a general nature on specified products that we may not be completely familiar with, and for details on all products.

"When the architect specifies a product that is not readily available in this area, we turn to Sweet's to select an alternate. This happened in several instances on the Heart Hospital job. In line with this, I consider it most important for the manufacturers to give us as much information as possible about their products, and to include the name and address of their local outlet. In this business, time is of the essence, and the manufacturer who makes his product easiest to buy is the manufacturer who is going to make the sale."



Merle V. Abbott,
Partner in Charge of Hospital Design
Magney, Tusler & Setter, Architects and
Engineers
Minneapolis, Minnesota



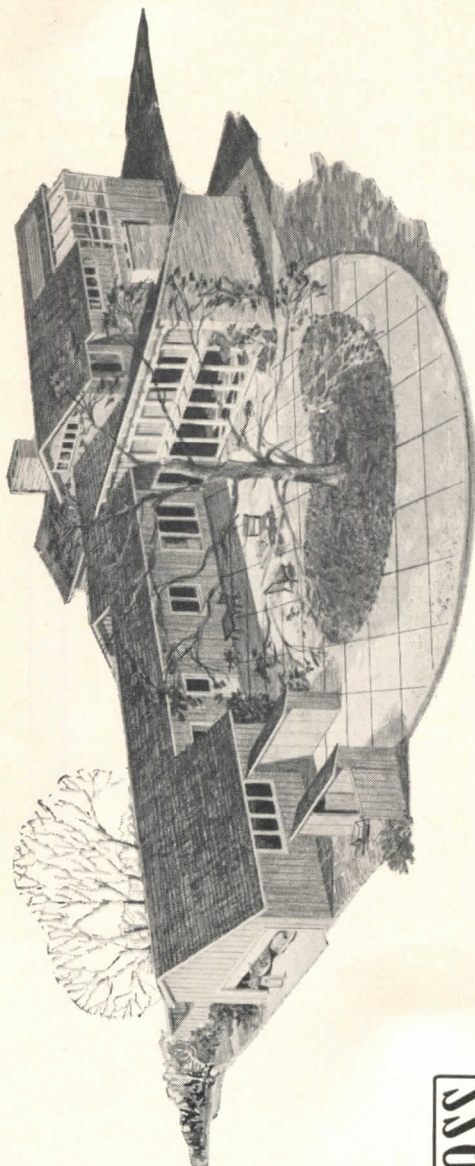
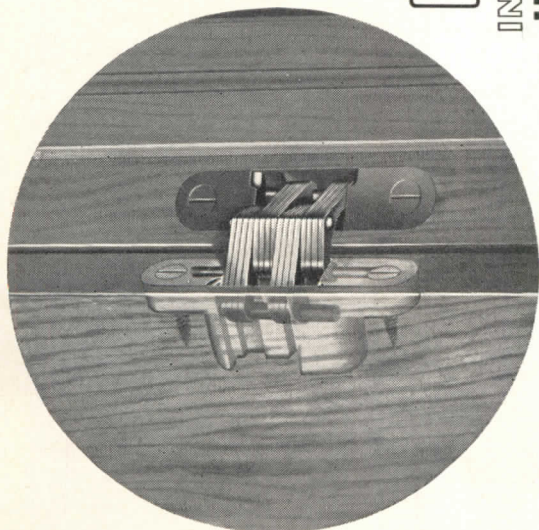
Peter M. Dougall,
Vice President and Secretary
Naugle-Leck, Inc., Building Contractors
Minneapolis, Minnesota

Catalog Service

DIVISION OF F. W. DODGE CORPORATION
119 WEST 40TH STREET, NEW YORK 18, N. Y.



SOSS Invisible HINGES STREAMLINED THE DOORS IN THIS MODEL HOME!



SOSS
INVISIBLE
HINGES

"the hinge that hides itself"

And the people talked and talked and said the nicest things about the house, the architect and the Soss Invisible Hinges.

These modern Soss Hinges eliminated unsightly, protruding hinge butts in this House Beautiful Home. They made it possible for the architect to create unusual, strikingly smart, fashionably flush interiors that fully reflected his own and his client's good taste.

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SOSS MANUFACTURING COMPANY
21769 Hoover Road, Detroit 13, Michigan

A. I. A. File No. 27-B-1

Architectural Engineering

PRODUCTS

(Continued from page 246)

in the assembling of materials by architects for display purposes. They may be used as properties in counter or window display pieces and also for photographing architectural models. Created by Jean Carpenter, 9112 Watsonia Ave., Clayton 24, Mo.

Modern Lamp Series

A series of five new modern lamps, which were inspired by one-of-a-kind Italian imports of last fall, is now being presented in quantity. Mass production methods have resulted in prices reduced from those of the original hand-made collection. The lamps come in



Adjustable floor lamp, in white with brass accents, is one of five new models

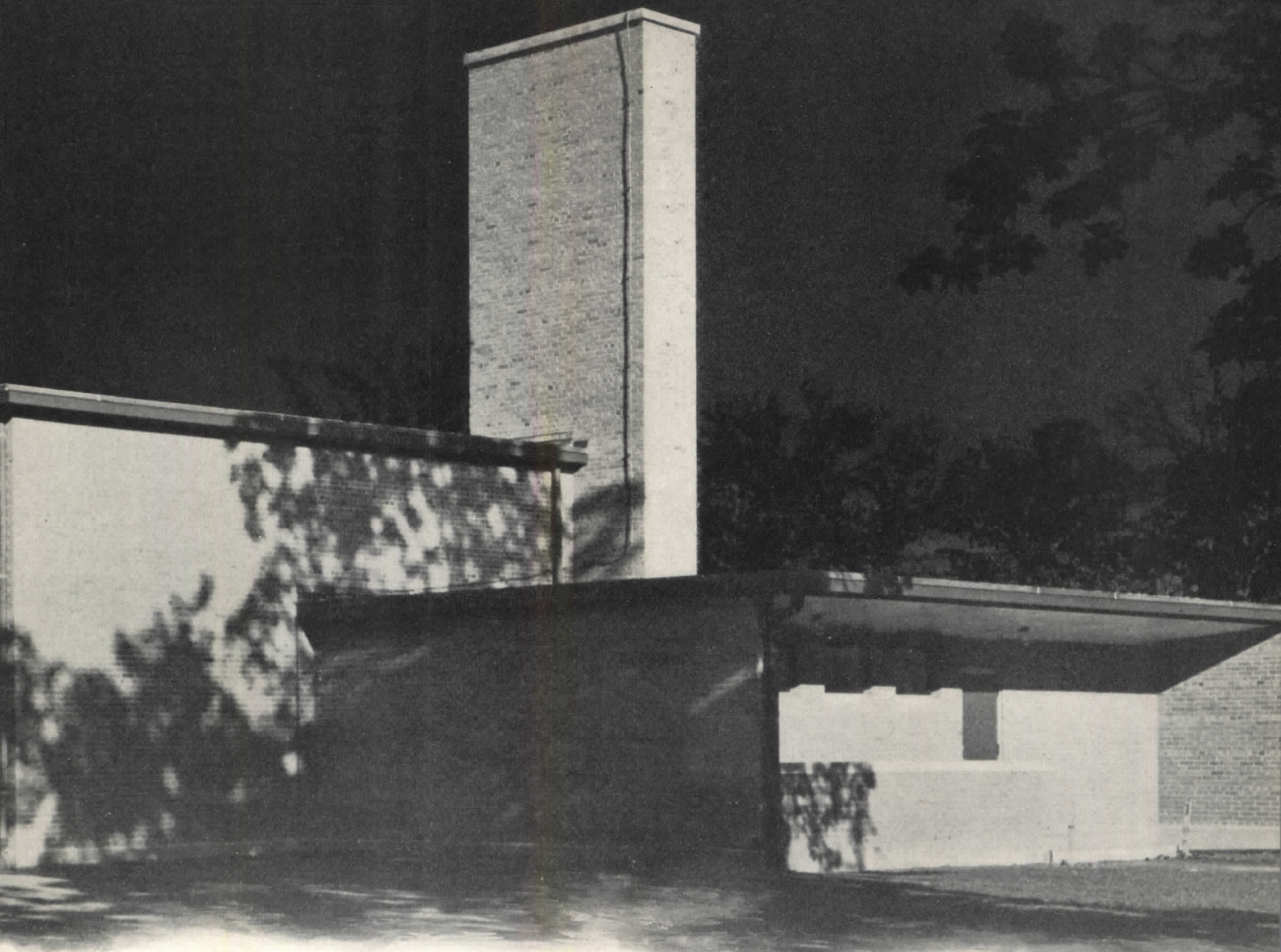
table and bridge models and are made of polished brass in combination with black or white enameled metal. Most of the models can be adjusted to throw light where it is wanted. Lightolier, Inc., 11 E. 36th St., New York, N. Y.

Rubber Matting

Designed for industrial and store applications, *Lite Step* is a 1/8-in. corrugated rubber matting with a 1/4-in. live sponge rubber base. The mat is designed to ease fatigue from prolonged standing

(Continued on page 254)

is specifically edited



Architectural Record

*"Workbook of the active
architect and engineer"*

119 West Fortieth Street
New York 18, N. Y.
LOngacre 3-0700



Primary School, Deerfield, Ill., first
presented to architects and engineers in
Architectural Record.

Architect-engineers: Perkins & Will, Chicago;
Photographer: Hedrich-Blessing Studio.

PRODUCTS

(Continued from page 250)

behind counters or on production lines. It comes in all lengths, and up to 72 in. in width. The producer states that it is odor free and resistant to most ordinary chemicals. Ace Hose and Rubber Co., 1706 S. State St., Chicago 16, Ill.

Three-in-One Heater

A combination all-electric heater, overhead light and air circulator, *Heat-a-lite* is installed in the ceiling and is suggested for use in bathrooms, bedrooms, nurseries and other areas where floor space may be at a premium or where there is danger from contact with the heating unit. Heated air is forced by the fan from ceiling level down into the room. Models for summer use are



Single electric unit is heater, air circulator, light. Exterior grill not shown

designed to provide the air-circulating and lighting service without the heating element. The lighting unit is placed in the center, surrounded by circular grill-work. Housing for the unit, guaranteed for a year, is designed for installation during the "roughing-in" period of building with the remainder to be added as building nears completion. NuTone, Inc., Madison and Red Band Rds., Cincinnati 27, Ohio.

Heat Absorbing Plate Glass

An improved heat absorbing plate glass has been introduced by Libby-Owens-Ford. The same glare reduction capacity of the original glass has been

(Continued on page 256)

DRIVE-IT
HELPS LICK
MANPOWER
SHORTAGE

... AND SAVES MONEY, TOO!

ONE MAN
CAN DO THE WORK
OF SIX
BY USING DRIVE-IT POWDER
POWERED TOOLS FOR FASTENING
STEEL OR WOOD TO CONCRETE OR
STEEL . . . YOUR CHOICE OF
TWO TOOLS. THE "300" FOR
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1,984,117;
2,400,876
Other patents
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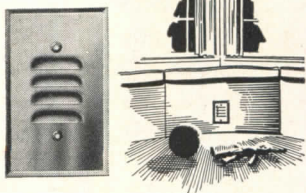
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DRIVE-IT
DON'T DRILL IT...
POWDER-POWER TOOL

powder powered fastening tool

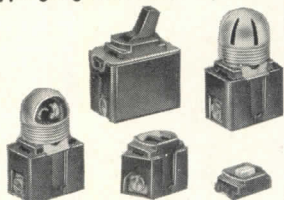
Wiring Devices:

TOP TYPES FOR TOTS



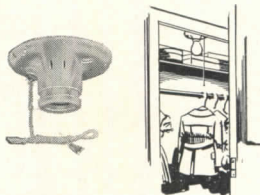
LOUVERED WARNING LIGHT

Provides deflected lighting in children's rooms so as not to disturb sleep. Many other warning type gangs available.



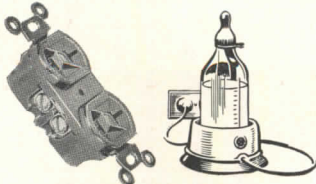
INTERCHANGEABLE LINE

Many attractive space saving combinations are possible with the H&H interchangeable line. A complete assortment of plates, outlets, switches, bell pushes and others.



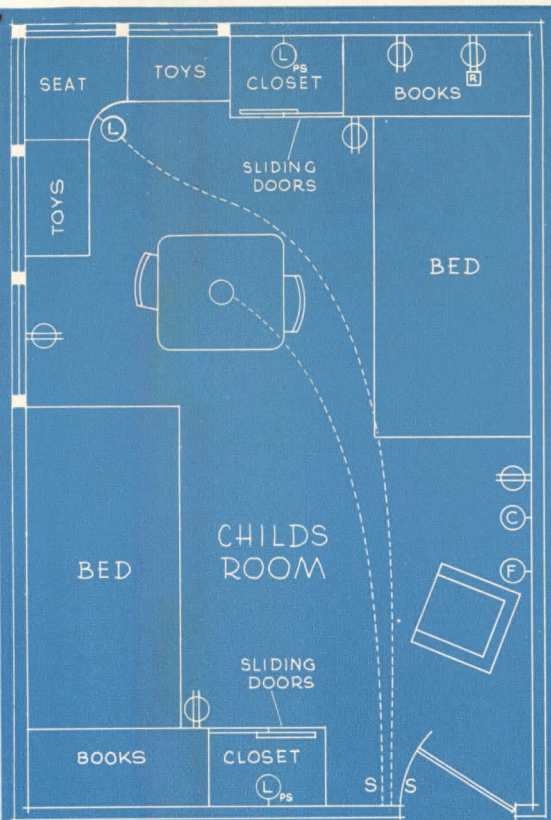
PORCELAIN RECEPTACLES

Shadeholder grooves accommodate overhead shaded lights. Practical for closets and stairways. Available in many types, with or without convenience outlets.

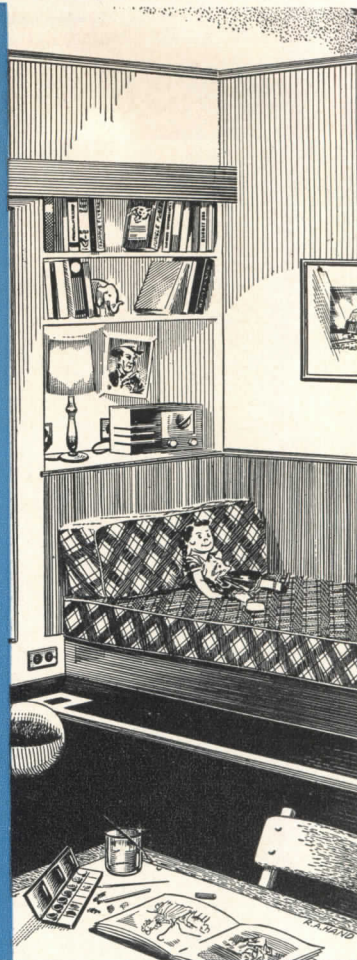


DUPLEX OUTLET

Back-wired for easy, economical installation, the duplex outlet is the old faithful of wiring devices. Many types available for multiple uses.



- ⊕ DUPLEX CONVENIENCE OUTLET
- CEILING OUTLET
- ⊖ L LOUVRE LIGHT
- ⊖ C CLOCK OUTLET
- ⊖ F FAN OUTLET
- ⊖ L LAMP, Pull Switch
- ⊖ R RADIO OUTLET
- S SINGLE POLE SW.



Important Room!

BE SURE ADEQUATE CONVENIENCES ARE SPECIFIED • INSTALLED • ENJOYED
TAKE BETTER CARE OF THE KIDDIES WITH H & H WIRING DEVICES

See to it that what you *specify* in the way of electrical convenience is *installed and enjoyed!* Follow through with the contractor and the homeowner to make sure they include plenty of wiring devices in every room, and outdoors, too. Wiring devices cost little at the outset, plenty to add later on. The H&H catalog includes everything in the standard wiring device line, plus many new and unique items. Plan to investigate the complete line today.

For more information, write today to: 1910 Laurel Street, Hartford 6, Connecticut. "Electrical Planning In The Home" booklet, chock full of ideas, sent on request.



QUALITY-MINDED ARCHITECTS SPECIFY



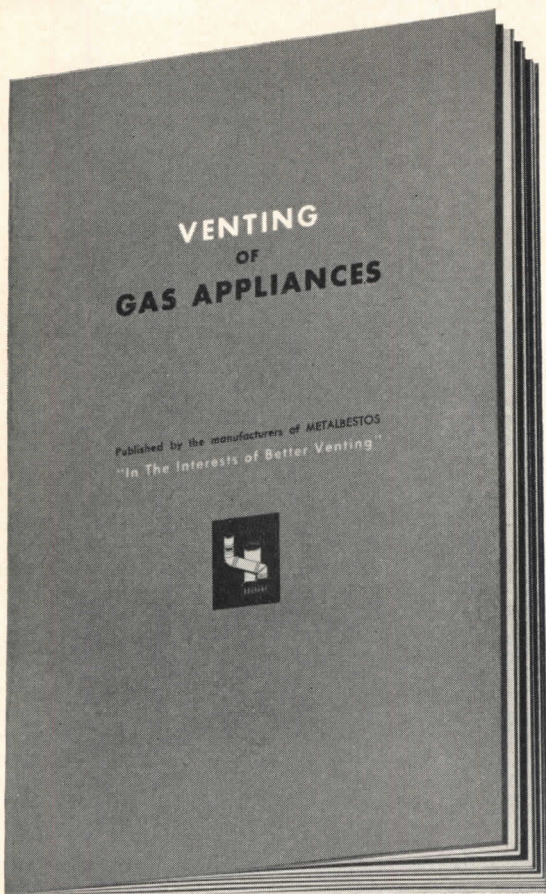
WIRING DEVICES

ENCLOSED SWITCHES

THE ARROW-HART & HEGEMAN ELECTRIC COMPANY
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complete information on
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Architectural Engineering

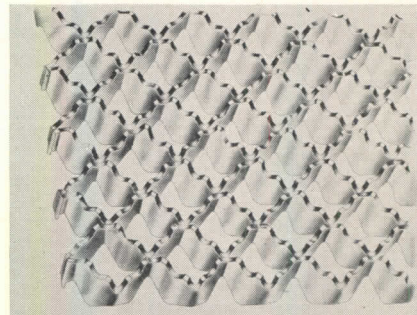
PRODUCTS

(Continued from page 254)

retained while a greater resistance to thermal shock has been achieved by the firm's engineers. The 1/4-in. plate glass transmits 79 per cent of average daylight, but permits only 40 to 50 per cent of the sun's total radiation to pass, the manufacturer claims. The producer suggests that this glass can be substituted for the exterior light in a Thermopane unit for all-year window insulation. The maximum available size of the heat absorbing glass is 1/4 in. thick, 100 by 150 in. Libby-Owens-Ford Glass Co., Nicholas Bldg., Toledo 3, Ohio.

Non-Skid Grating

Firm-Grip, a new non-skid grating said to have a high degree of traction, is now being manufactured by the Bustin Iron Works of New York. It is especially recommended by the manufacturer for all industrial uses where excessive oil, grease, water and icy conditions make walking and working dangerous, and where drainage and sanitation are important or desirable. It is said to



Non-skid grating can be set in serrated frames or welded to angle iron frames

be especially adaptable for platforms, stair treads, ramps, ladder rungs and catwalks. Several styles are available, all made of 1/8 in. stock. The grating can be welded into angle iron frames or set into serrated edged frames, and can, it is reported, be built to carry considerable weight. Bustin Iron Works, Inc., 110 E. 130th St., New York 35, N. Y.

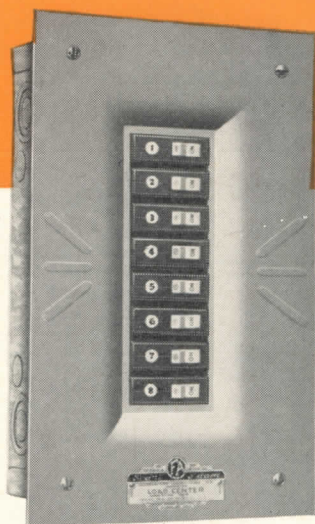
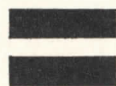
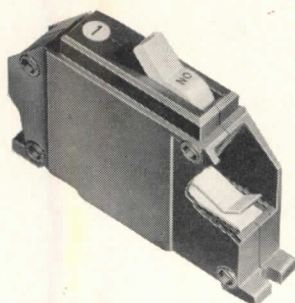
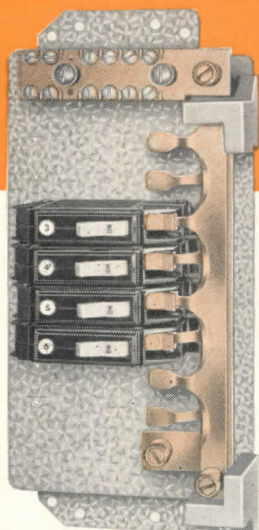
(Continued on page 258)

Specify Greater Convenience and Flexibility



with the new LOAD CENTERS and SERVICE EQUIPMENT

with **ADD-ON TYPE**
(just slip 'em in)
Circuit Breakers



ALL THE FEATURES of dependable thermal-magnetic automatic circuit protection... plus... the *add-ed* convenience and flexibility of ADD-ON TYPE CIRCUIT BREAKERS are now incorporated into **FA** Load Centers and Service Equipment.

Five basic units (see chart) plus a stock of individually-packaged single pole and double pole **FA** THERMAG type circuit breakers meet any job requirement... from then on it's a simple matter of addition to add new circuits... change capacities... or replace damaged units. Because all ADD-ON breakers are interchangeable and readily installed, it's as easy as buying and replacing light bulbs. Other features are the screwless assembly and only one pressure type connection between circuit breaker and bus bar.

This flexible system of load center assemblies made-up with *individual circuit breakers* was pioneered by **FA** almost 20 years ago. Today, with the plus value of the ADD-ON breaker, architects can specify electrical equipment for residential or

commercial use that allows for future circuit expansion and future changes in capacities... knowing that it can be done later by simply adding new breakers of the desired capacity.

*For everyone concerned, it all adds up to greater convenience, flexibility and economy. So write for your copy of Bulletin No. 204 which describes the new ADD-ON feature of **FA** Load Centers and Service Equipment.*

Type	Cat. No.	Basic Unit	Max. Feeder Capacity	Maximum Total Poles*
THERMAG	FA LC4-4F (or S)		100 Amp.	8
THERMAG	FA LC4-8F	4-S.P., 2-S.P.	100 Amp.	12
THERMAG	FA LC4-12F	and 1-D.P., or	100 Amp.	16
THERMAG	FA DLC4-8	2-D.P. (specify requirements)	100 Amp.	12
THERMAG	FA DLC4-16		100 Amp.	20

*Including any number of Double Pole.

Complete factory assemblies furnished at slight additional charge. Similar units with QUICKLAG Circuit Breakers also available! Add "Q" to catalog number: thus **FA** "QLC4-4," etc.

Other add-on units with 30 amp. maximum capacity **FA** JUNIOR Type Thermal trip circuit breakers (6 poles or less, including 1 D.P.) are available.



Frank Adam Electric Co.

P. O. BOX 357 ST. LOUIS 3, MO.

Makers of BUSDUCT • PANELBOARDS • SWITCHBOARDS • SERVICE EQUIPMENT • SAFETY SWITCHES • LOAD CENTERS • QUIKHETER

Our 60th Year

PRODUCTS
(Continued from page 256)

Photoelectric Lighting Controls

G-E Photoelectric Lighting Controls, designed to aid school illumination systems, take advantage of available daylight while protecting eyes from strain and fatigue, state the manufacturers. In two incandescent-lighted classrooms, one with southeast, the other with west exposure, for example, two

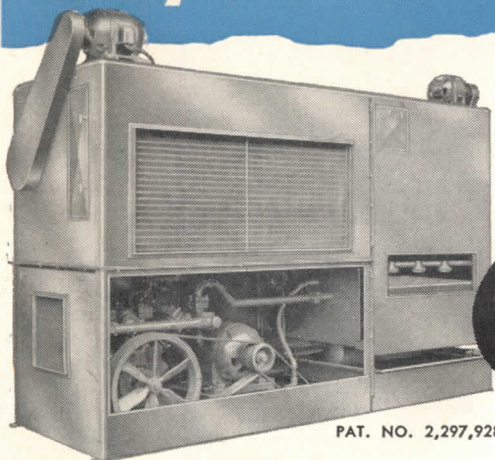
lighting controls may be mounted in each room. These devices are claimed to govern the lighting in all classrooms in the school having the same geographical exposure as those in which the controls are mounted. One control may be installed near a bank of windows to regulate the lights near the windows, the other close to the inside wall to regulate the remainder of the lights. Thus when daylight from the windows falls below a certain level, the inside lights in the room on that exposure are automatically turned on. When the prevailing light

level falls below a predetermined lower point, say the manufacturers, the control near the window operates in similar fashion on the outside fixtures. The controls turn lights off as well as on when necessary. The Photoelectric controls are cut in and out of the lighting circuit by manual switches which can be turned off to prevent lights burning at night. General Electric Co., Schenectady 5, New York.

Interior Glass Doors

An interior patterned glass door, equipped and ready to hang, permits the transmission of soft light and at the same time maintains privacy between rooms. It is a single slab of 3/8-in. glass, patterned on both sides, and heat treated. In case of severe shock or impact, the door is said to disintegrate into small crystals rather than to shatter.

**For day in, day out
DEPENDABILITY
you can't beat a**



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COMPLETELY PACKAGED
AIR CONDITIONER

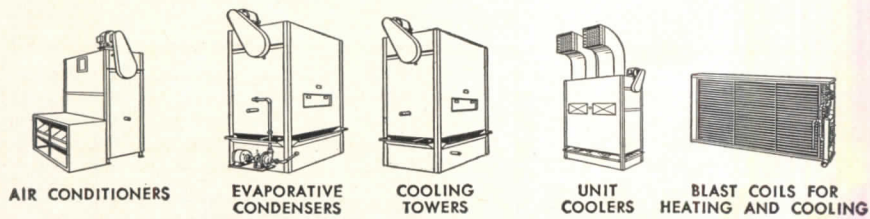
PAT. NO. 2,297,928

Name your job . . . any air conditioning job requiring from 3 to 50 tons . . . and you'll find that you can't beat a Governair system for day in, day out dependability.

operate at peak efficiency— with all parts precision-matched to work together. And they're built to give years and years of low-cost trouble-free service.

Governair Packaged Air Conditioners are designed to

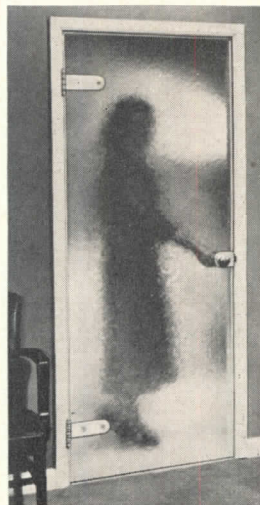
Choose Governair . . . and you choose the best!



ORIGINATORS OF COMPLETELY PACKAGED AIR CONDITIONERS

GOVERNNAIR

GOVERNNAIR CORPORATION • 513 N. BLACKWELDER • OKLAHOMA CITY, OKLA.



Interior obscured glass door permits maximum light while insuring privacy

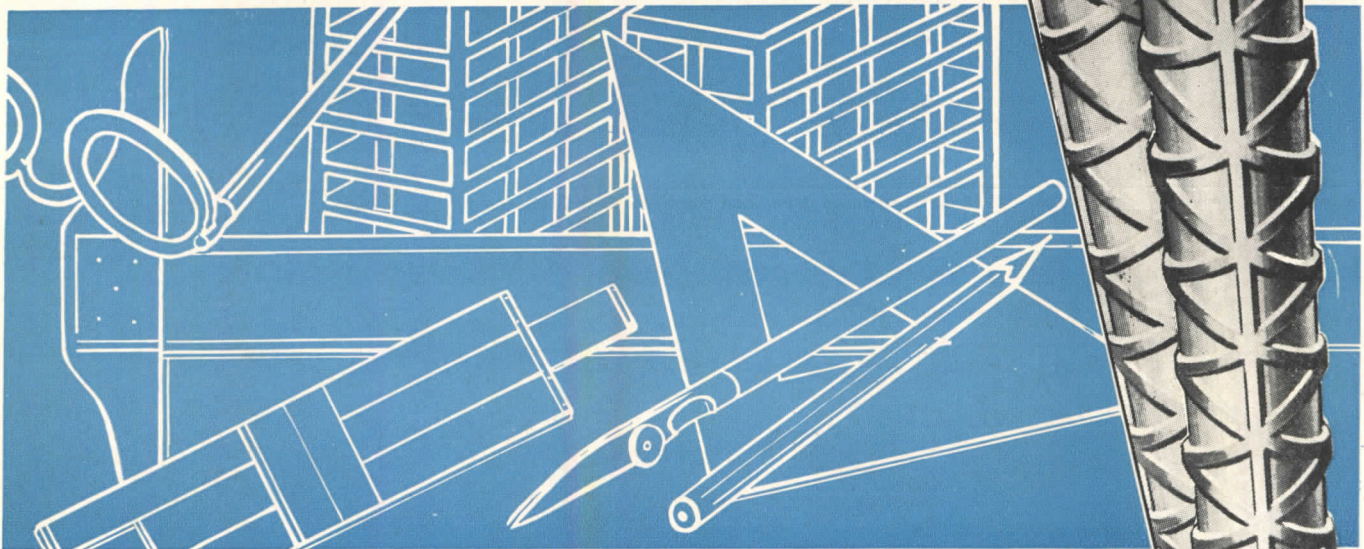
The door comes in three standard sizes: 3 by 7 ft, 3 by 6 ft 8 in., and 2 ft 8 in. by 6 ft 8 in., with special sizes available on order. Also included are hardware fittings, with ball-bearing hinges and lock, and instructions for erection. The door is reversible, either right hand or left hand. Libbey-Owens-Ford Glass Company, Nicholas Bldg., Toledo 3, Ohio.

Resin Products

A newly developed thermosetting synthetic resin, *Ampreg E*, is designed for application to concrete and porous castings. It can be applied by brush or dip coat methods, and forms a room-temperature sealer which is said to be

(Continued on page 260)

CONNORS Improved Reinforcing BAR Meets ASTM A-305 Specifications



Designed for Greater Bond

Engineers long have desired a concrete reinforcing bar with a bond approaching the maximum. The new ASTM A-305 Bar is a forward step in that direction.

CONNORS STEEL COMPANY soon will have in full production its new bar which will meet ASTM A-305 Specifications.

ORDER BY NUMBER

TABLE OF ASTM A-305 SPECIFICATIONS

BAR NUMBER	WEIGHT	DIAMETER	AREA	PERIMETER
②	.167	.250	.05	.785
③	.376	.375	.11	1.178
④	.668	.500	.20	1.571
⑤	1.043	.625	.31	1.963
⑥	1.502	.750	.44	2.356
⑦	2.044	.875	.60	2.749
⑧	2.670	1.000	.79	3.142
⑨	3.400	1.128	1.00	3.544
⑩	4.303	1.270	1.27	3.990
⑪	5.313	1.410	1.56	4.430

CONNORS STEEL COMPANY

DIVISION OF H. K. PORTER COMPANY, INC.
BIRMINGHAM, ALABAMA

OTHER CONNORS PRODUCTS

- ★ Merchant Bars
- ★ Tobacco Hoghead Hoop
- ★ Bulk Binder Strapping
- ★ Fence Posts
- ★ Highway Sign Posts
- ★ Cotton Bale Ties
- ★ Hot Rolled Strip

PRODUCTS

(Continued from page 258)

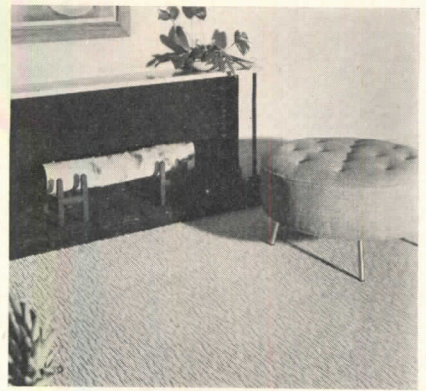
resistant to water, salts, organic solvents, and many mild acids, the producer claims.

Vitroplast, a light-colored synthetic resin cement, is said to set hard in contact with concrete and metals. It is suggested for the jointing of brick and tile, and adhering glass, concrete, metal, and other materials. The manufacturer states

that this cement is resistant to many acids, solvents, greases and oxidizing agents such as sodium hypochlorite and chlorine dioxide. The Atlas Mineral Products Co., Mertztown, Pa.

New Fall Rug Patterns

Among new patterns in rug design announced by C. H. Masland and Sons are two which seem especially adaptable to contemporary design. One of these is *Ballerina*, which has a striated texture pattern created by an intricate new high and low round weave. Avail-



New rug patterns fit well with contemporary interiors. Above: *Ballerina* pattern. Below: *La Vista* pattern



able in beige, green or grey. *La Vista* is a cotton broadloom with deep pile and a broken-stripe pattern. It is available in several combinations, including natural and cinnamon, natural and grey, grey and gold, hunter and beige, grey, aqua and hunter, and natural, grey and aqua. C. H. Masland and Sons, 295 5th Ave., New York, N. Y.

Automatic Door Openers

The Robot Door Operator, Model CA-300 Series, incorporates in its design many safety features and ease of maintenance. It can be operated by standard three-button remote switches or by Robot Magnetic Control from cars or trucks in motion or by a combination of these methods. Among the safety features included in the design of these operators is an optional piece of equipment that reverses the direction of the door if it touches any object during closing. The manufacturer states that the friction drive of the electric motor supplied on all doors allows the power to slip until the obstruction is removed, or until the motor is overloaded to the point where the fuse on the unit cuts off the power supply. The engine is standard make and is easily replaced.

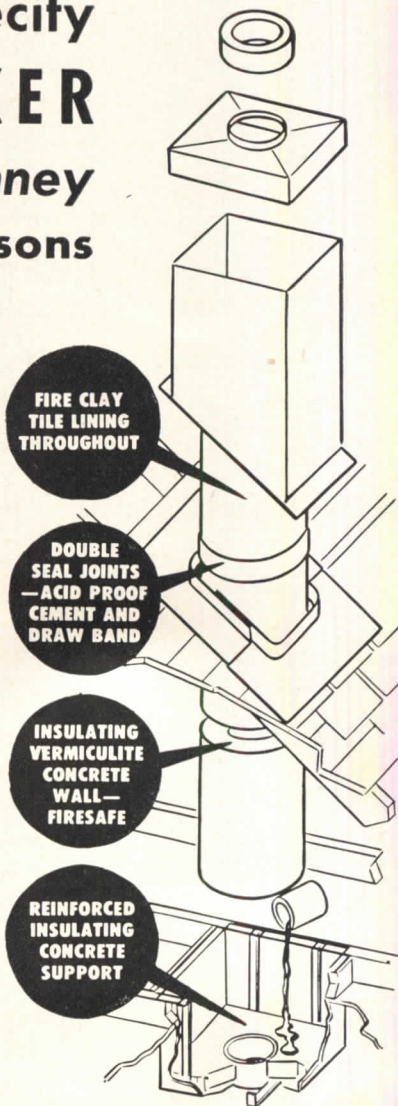
(Continued on page 262)

**Architects Specify
VAN-PACKER
Complete Chimney
...for these 7 reasons**

1. There's greater freedom in planning. A Van-Packer installation eliminates the necessity of locating the furnace near the fireplace at one end of the house. Instead the heating plant can be centrally located where it will operate with the greatest efficiency.
2. The architect knows the exact installed cost of a Van-Packer complete chimney without "guesstimating". He can save up to 50% compared to brick construction and pass these economies on to the buyer.
3. Van-Packer is easily installed in 3 man-hours or less.
4. Van-Packer develops sufficient draft for heating plants designed to serve homes of ten rooms or less. Underwriter and F.H.A. accepted for all fuels.
5. **Maximum Heater Output for Van-Packer 7" I. D. Flue**

20' Floor Suspended		10' Ceiling Suspended	
Coal	B.T.U.	Coal	B.T.U.
250,000	PER	150,000	PER
Oil	300,000	Oil	200,000
Gas	500,000	Gas	450,000
	HOUR		HOUR

6. Valuable floor space is saved as a Van-Packer chimney can be hung from the ceiling.
7. The Van-Packer Chimney is nationally distributed through reliable heating and building material jobbers. Availability and immediate delivery assure you that Van-Packer will be on the job when it's needed.



Write for New Architect Sheet!

Van-Packer CORPORATION

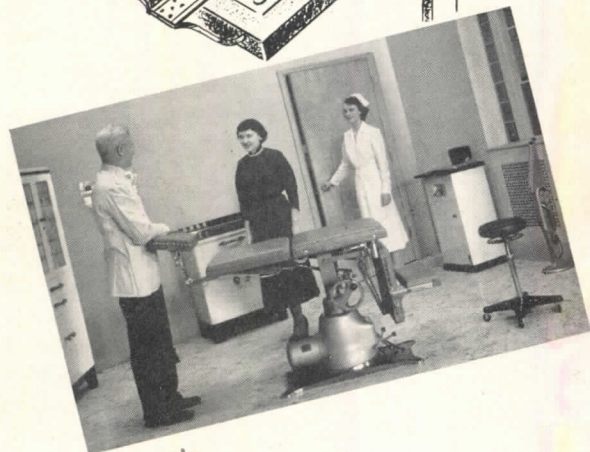
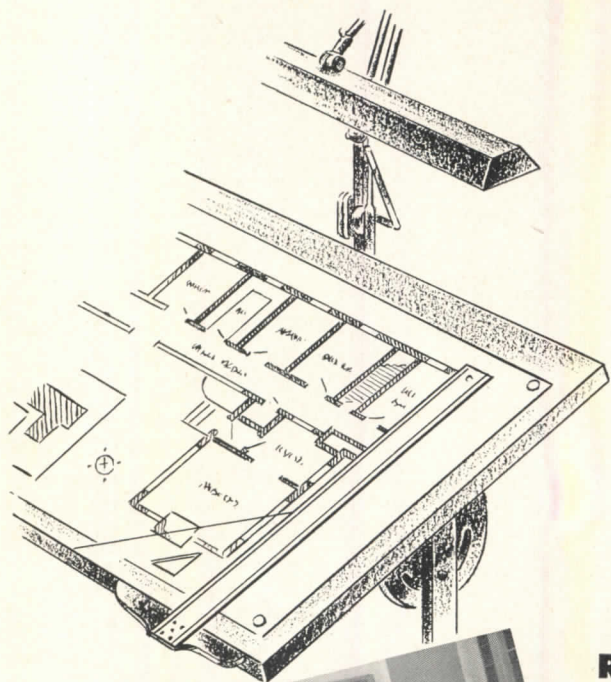
209 S. LaSalle St. • Dept. 1410 • Chicago 4, Ill.

Also Manufactured and Distributed in Canada by
C. A. McRobert and Son, Ltd., St. Laurent, Quebec

RITTER EQUIPMENT

Designed

for Leading Institutions of America

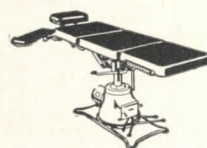
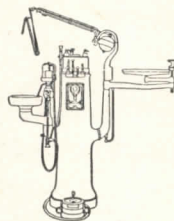
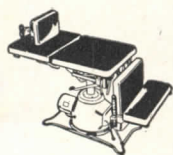
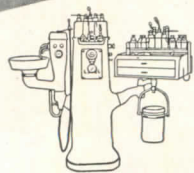


Because Ritter equipment has been selected for many of the country's leading hospitals, Ritter designers are familiar with the special problems of medical and dental care in such institutions. Ritter installations include Ear, Nose and Throat Units, and many of the eight models in the Ritter Motor-Elevated Table line such as Minor Surgery Tables with explosion-proof motor, Proctologic Tables and Specialists' Tables.

The Ritter Company maintains a special consultation service to help architects make layouts for proper installation facilities.

**RITTER CONSULTATION SERVICE . . .
CAN HELP YOU 4 WAYS**

1. Many years of experience in helping hospital architects lay out proper installation of Ritter Equipment.
2. Hundreds of medical and dental floor plans on file provide valuable references in our office planning department.
3. A staff of trained, experienced personnel are thoroughly familiar with the specialized problems of medical and dental equipment installations.
4. The Ritter Consultation Service is available merely for the asking.



FOR ADVANCED EQUIPMENT
LOOK TO

Ritter

COMPANY INCORPORATED
RITTER PARK, ROCHESTER 3, N. Y.



Weyerhaeuser *fabricates* **TIMBER TRUSSES** and other structural wood products



WEYERHAEUSER'S Fabricating Department offers a complete service in factory-made structural wood products, engineered for light or heavy timber construction.

Ready-to-use structural products, including hardware, are shipped as complete units through retail lumber dealers. Units are easily, quickly and economically assembled on the job with regular local crews.

Weyerhaeuser manufactures structural framing members for wall and roof systems—trusses, columns, girders... arch centering... bridges, box culverts, retaining walls... framework for factories, warehouses and schools... church trusses.

Here is a service upon which you can depend for prompt delivery of required structural wood products. Write, wire or phone for complete details and catalog.

WEYERHAEUSER **SALES COMPANY**

SAINT PAUL 1, MINNESOTA

TACOMA, WASH.

NEWARK, N. J.

Architectural Engineering

PRODUCTS

(Continued from page 260)

It operates at a rate of $1\frac{1}{2}$ ft per sec but this rate can be varied by the substitution of suitable engine and drive pulleys. The different types of controls offered are: 3 button control, toggle switch, key switch, pull switch, foot pressure control, drive-over control, photo-electric control, and magnetic ground switch. Robot Appliances, Inc., 13165 Prospect Ave., Dearborn, Michigan.

Clothes Dryer

An automatic *Moistureless Electric Clothes Dryer* features a sealed-in mechanism that is claimed not to give off moisture, lint or heat in the drying room. The machine operates on the principle of water being condensed inside the appliance by pumping hot moist air into a cold chamber. After a fine spray of water is injected into the bottom of the drying chamber, heated air is passed over the tumbling clothes and picks up the moisture as well as bits of lint, and eventually becomes hot and saturated. When, in this condition, it passes through the water spray, moisture condenses, say the developers, and falls, together with wet lint, to the bottom to be pumped out with the water. Cooled air, then circulating over electric heating units, quickly expands under the heat to repeat the cycle. Clothes are said to be dried both faster and softer in this method. Hotpoint, Inc., 5600 West Taylor St., Chicago 44, Ill.

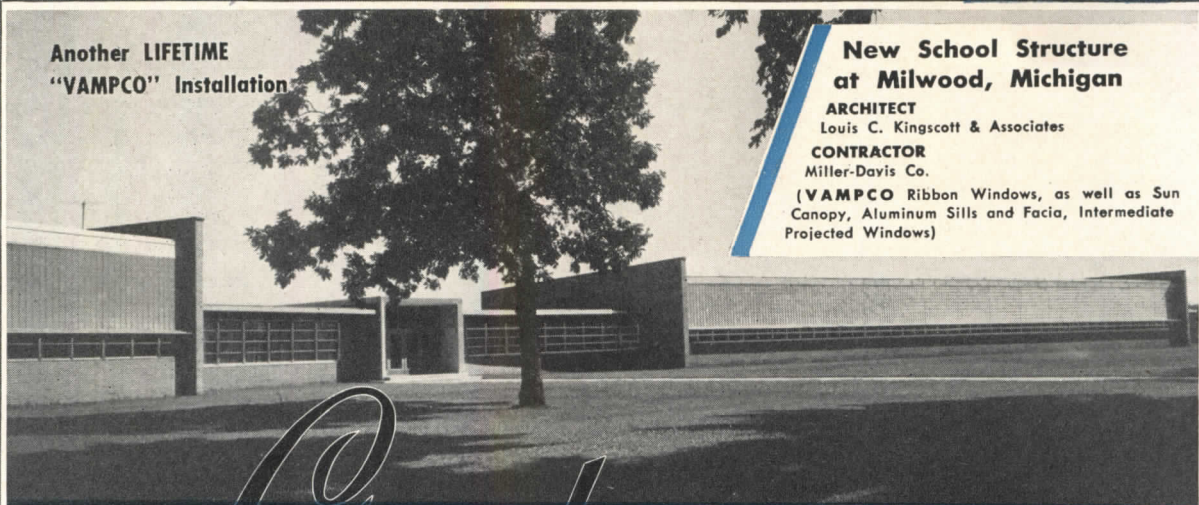
Water Coolers

Elimination of the need for storage tanks supplying cold water only when it is needed is said to be effected by an instantaneous self-contained *Heat-X* water cooler which has capacity range from 10 to 40 GPH. Water and refrigerant tubes cast into a solid aluminum block are reported to provide for sufficient holdover capacity to eliminate short cycling and sufficient strength to prevent freeze-up damage. Installation of the unit is described as simple, necessitating only the connection of water lines and the plugging in of the electric extension cord. Heat-X-Changer Company, Brewster, N. Y.

(Continued on page 264)

VAMPCO ALL-ALUMINUM WINDOWS

Another LIFETIME
"VAMPCO" Installation



**New School Structure
at Milwood, Michigan**

ARCHITECT
Louis C. Kingscott & Associates

CONTRACTOR
Miller-Davis Co.

(VAMPCO Ribbon Windows, as well as Sun
Canopy, Aluminum Sills and Facia, Intermediate
Projected Windows)

DOUBLE

Check

YOUR

**ALUMINUM WINDOW
SPECIFICATIONS**

✓ **IN SWEET'S** You'll find unusually complete descriptions, specifications, and installation data on Vampco All-Aluminum Windows in Sweet's Catalog . . . information that will help you take practical advantage of their amazing versatility, labor-saving features, and maintenance economy.

✓ **WITH VAMPCO'S ENGINEERING SERVICE** If a window can be built of aluminum, VAMPCO can do it — and do it right! Special applications, custom forms and assemblies . . . you can give free play to your creative imagination with the VAMPCO staff to help.

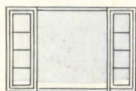
REMEMBER VAMPCO can save your client a good share of his total window bill . . . because every VAMPCO window is precision-fabricated at the factory for quick, trouble-free installation . . . because maintenance costs are reduced to zero . . . because extra-strength materials and construction mean free, perfect operation for the life of the building.

Write
Dept. AR-10, our Engineering Department, for money-saving suggestions.

FOR ALL THESE WINDOW TYPES — IN LIFETIME ALUMINUM



CASEMENT



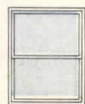
PICTURE



BASEMENT



INTERMEDIATE PROJECTED



DOUBLE HUNG



WINDOWS FOR GLASS BLOCK



PSYCHIATRIC



COMBINATION CASEMENT AND PROJECTED



DOUBLE CHECK WITH VAMPCO TODAY! YOUR INQUIRY WILL GET IMMEDIATE ATTENTION!

VALLEY METAL PRODUCTS COMPANY - PLAINWELL, MICHIGAN

PRODUCTS

(Continued from page 262)

Wide Cover Roof Deck

Introduction of a new wide cover corrugated steel roof deck is announced by Granco Steel Products Company. The wide cover deck, developed for use on industrial buildings, is said to increase erection labor savings, since each sheet covers up to 35 sq ft. The total number of side laps is decreased and handling and shipping charges are said to be also reduced as a result of the new wide cover dimensions. Other advantages



Size of new steel roof deck gives labor savings, design flexibility

cited by the manufacturer are maximum flexibility for architectural design, since rib depth of the deck is the same thickness as a nominal 2 by 4; baked-on rust-retarding paint, which serves as a primer or a permanent finish and which has high reflection qualities; maximum steel strength and high moment of inertia, which give high structural efficiency. Since the new deck is produced on rotary corrugators instead of by the conventional press method, it is reported to insure a high degree of pattern uniformity and to effect savings in manufacturing costs. The deck is now available in lengths up to 14 ft, 4 in. Granco Steel Products Company, Granite City, Ill.

Gas Conversion Burner

Easily installed, this gas burner is certified by the A.G.A. for use with all types of gases. Designed for furnace or boiler installations, the burner is a

(Continued on page 266)

A.W. SUPER-DIAMOND
FLOOR PLATES THAT GRIP

FOR UNDERFOOT SAFETY AND OVERHEAD SAVINGS

Specify
A.W. SUPER-DIAMOND
ROLLED STEEL FLOOR PLATE

Grips Without A Slip!

Easy To Clean!

Easy To Match!

Write for complete 16-page catalog C-54

ALAN WOOD STEEL COMPANY
CONSHOHOCKEN, PA.

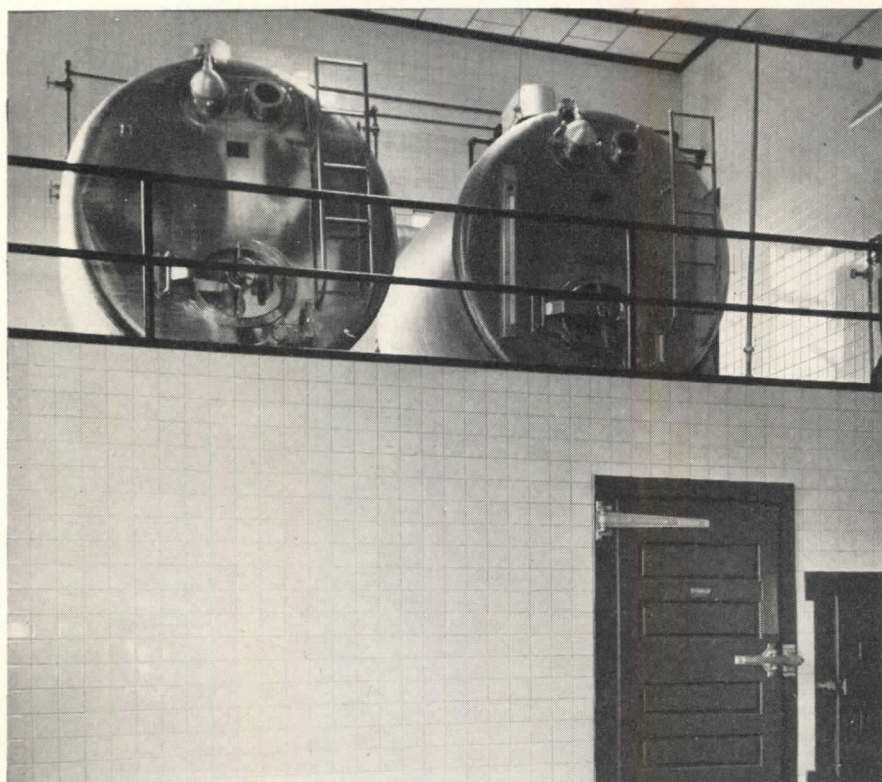
125th **A.W.** YEAR
1826
CONSHOHOCKEN, PA.

125 Years of Iron and Steel Making Experience

Other Products: PERMACLAD Stainless Clad Steel • A. W. ALGRIP ABRASIVE Floor Plate • Plates • Sheets • Strip • (Alloy and Special Grades)

New Colors... soft-toned and function fitting now yours in real clay *Suntile*

WHAT THESE COLORS MEAN TO INDUSTRIAL PRODUCTION



Production has increased both in quantity and in quality!

This is the usual report you'd get if you visited an industrial plant where functionally correct colors have been selected for walls and floors.

Color fitted to the function of industrial interiors helps reduce accidents, aids lighting and saves eye-strain, increases employee morale and efficiency, decreases absenteeism. In short, the *right* color can be a valuable aid to any production process.

Now, with Suntile, you have colors that have been scientifically developed to aid the design and purpose of building interiors...of manufacturing and processing plants, of schools, hospitals, and other institutions, of offices and commercial buildings.

You get more than functionally correct colors with real clay Suntile, however. You also get low maintenance and upkeep, permanence, resistance to fire, economy and ease of cleaning.

Our new color booklet, "Suntile Functional Color Recommendations," describes the Suntile functional color line, tells you how to use color to greatest advantage. See your local Authorized Suntile Dealer, or write our Dept. AR-10 for a copy. The Cambridge Tile Mfg. Co., P.O. Box 71, Cincinnati 15, Ohio.

Buff Hauteville 724



Suntile

BUFF HAUTEVILLE 724

A practical color of widespread use

Buff always has been a favorite ceramic tile color. Suntile now has added an attractive subdued mottle and extremely hard surface which give Buff added advantages. Buff Hauteville is one of the best colors

where light may be on the dim side or where bright, clean environment is needed. It probably should not be used where critical seeing tasks are performed. However, in large wall areas, corridors, stairwells, locker rooms, boiler rooms, lavatories and gymnasiums and in manufacturing areas of foundries, machine shops, food and chemical plants, Buff Hauteville is ideal. The mottled finish resists soiling and does not require "mirror-clean" maintenance. This is but one of the new Suntile line of functional colors developed by Faber Birren, outstanding color authority, and The Cambridge Tile Mfg. Co.

WEST COAST OFFICES

The Cambridge Tile Mfg. Co.
 470 Alabama Street
 San Francisco 10, California

The Cambridge Tile Mfg. Co.
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 Los Angeles 19, California



SUNTILE OFFERS YOU BOTH • BETTER TILE • BETTER INSTALLATION

**QUIET
HOSPITAL
ZONE!**

**DO NOISY FLOORS
MAKE THIS SIGN A JOKE?**



**You get both sanitation and silence with
floors of WRIGHT RUBBER TILE!**

Clattering footsteps and hollow echoes make a monkey out of many hospital signs like this—but *not* when floors are Wright Rubber Tile.

Wright Rubber Tile meets most exacting standards of sanitation. This non-porous flooring is the easiest of all materials to keep spotlessly clean and sanitary. Yet it also has a resistance that silences footsteps and stops noise before it starts.

These two qualities alone make Wright Rubber Tile the ideal floor covering for hospitals. But in addition,

it is the longest wearing, most comfortable, most beautiful floor you can get.

Years of service in hundreds of hospitals back up every claim we make. Get the complete story and you will insist on Wright Rubber Tile for your next hospital job.

**FREE SAMPLE KIT
FOR ARCHITECTS**

Write today, on your letterhead, for a complete set of 4x4 samples of Wright Rubber Tile in 21 beautiful colors.

WRIGHT MANUFACTURING CO.
5204 Post Oak Rd. • Houston 5, Texas



WRIGHT RUBBER TILE

FLOORS OF DISTINCTION

- ♦ WRIGHTEX—Soft Rubber Tile
- ♦ WRIGHTFLOR—Hard Surface Rubber Tile
- ♦ WRIGHT-ON-TOP Compression Cove Base

2962

Architectural Engineering

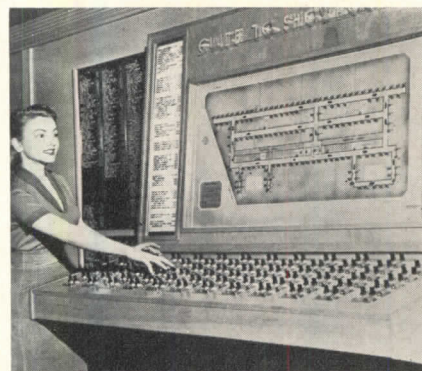
PRODUCTS

(Continued from page 264)

single-port, up-shot type. The one-burner model is said to meet all domestic heating requirements; its input rating ranges from 60,000 to 300,000 Btu per hr. The burner orifice is easily changed to vary gas input. Ingersoll Products Div., Borg-Wagner Corp., 760 E. Vine St., Kalamazoo, Mich.

Direction Finder

Magic Board, currently installed in Chicago's Merchandise Mart, is a direction finder similar to the Paris Metro's and indicates to the operator the most direct route to his destination. 150 tiny electric light bulbs, each representing a



Illuminated building directory shows direct routes to all offices by lights

showroom, operate the device, and a yellow light indicates the exact corridor location to the person seeking information, while electrically lighted arrows point out the route on the board. City Advertisers Corp., 185 N. Wabash Ave., Chicago, Ill.

Wood Awning Window

The Ludman Corporation, manufacturers of *Auto-Lok* aluminum awning windows, has announced the addition of a new wood window to its line. The newcomer is said to incorporate the special advantages of its aluminum predecessors and features a "floating seal"

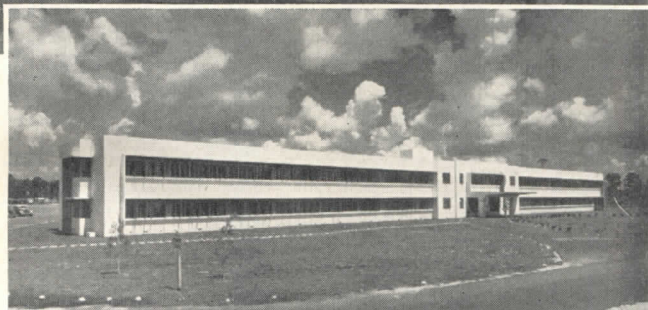
(Continued on page 268)



Why Rotary Oildraulic Elevators were selected for new Doctor's Hospital at Coral Gables

■ Quietness was an important consideration in the design of the new Doctors' Hospital in Coral Gables. Rotary Oildraulic Elevators were selected because the Rota-Flow hydraulic power unit eliminates the noise and vibration of ordinary hydraulic elevator pumps. The elevator car rises and descends on a pulsation-free column of oil which is "locked" whenever the car is stopped.

Smooth starting, smooth stopping and precise, automatic floor leveling are other essentials. Patients must be moved without jolt or shock. By means of a balanced-pressure hydraulic control system (Rota-Relief), Oildraulic Elevators operate with velvet smoothness. And Rotary guarantees automatic landings

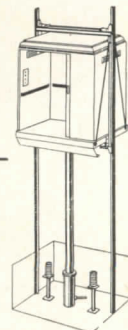


*Architects: Stewart & Skinner
Contractors: Fred Howland, Inc.
Elevators installed by: Miami Elevator Co.*

within $\frac{1}{4}$ " of floor level, regardless of load size or rate of speed.

Low installation and operating costs, flexibility of design made possible by eliminating penthouse and heavy shaftway structures, and long life make Rotary Oildraulics the most practical of all elevators.

If a 2, 3 or 4-story building is among your projects, see our section in Sweet's File or write for Rotary Catalog 304 and list of recent installations.



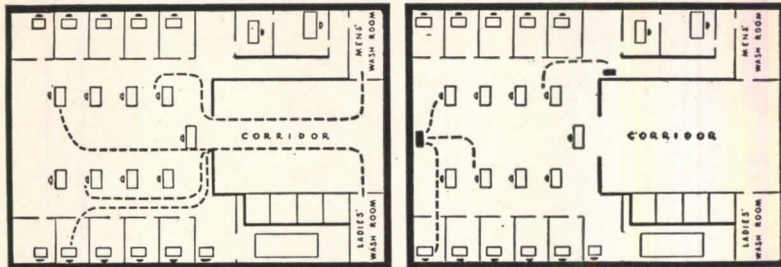
Oildraulic Elevators

PASSENGER AND FREIGHT

Rotary Lift Company, 1006 Kentucky, Memphis 2, Tennessee

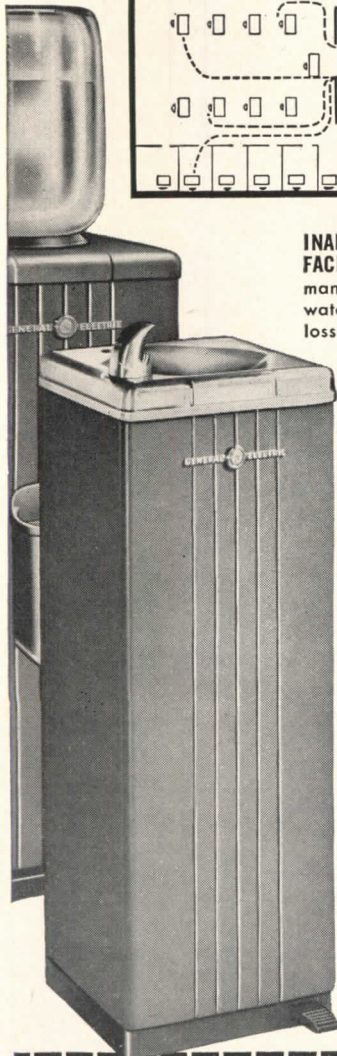
Cut wasted man-hours with the compact new G-E Water Coolers!

PRODUCTS
(Continued from page 266)



INADEQUATE DRINKING FACILITIES cause wasted man-hours. Long trips to water source bring the loss of work time.

CONVENIENT LOCATION of G-E Water Coolers means time saved. Employees stay near their desks, are available when needed. G-E Water Coolers are compact, fit in where convenient.



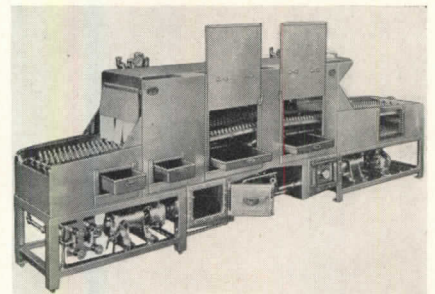
WATER COOLERS

Your payroll dollar brings a greater return when cool, refreshing water is easily available, near employee working areas. The handsome new G-E Water Coolers, near at hand, save time, build efficiency and morale. Ask your local G-E Dealer for advice on the water cooler requirements of your business establishment.

which the manufacturer offers as the answer to the problem of sticky wood windows. Facilities have been expanded to insure volume production. Ludman Corporation, Box 4541, Miami, Fla.

Nylon Conveyor Dishwasher

A new pump-type dishwashing machine featuring a rackless all nylon molded conveyor which is said to be the first of its type to be produced, has been announced by G. S. Blakeslee and Company. The conveyor has no exposed metal which might chip or mar dishes.



Institutional and commercial dishwasher features nylon moulded conveyor

Plates are placed upright between nylon pegs, while bowls, cups and glasses are simply placed on the conveyor, which eliminates dish racks. Nylon rollers afford smooth operation over extruded brass rails. Another feature cited by the manufacturer is easy accessibility to all parts and to scrap trays through large clean-out doors on the front of the machine. Scrap trays are described as completely covering each wash and rinse tank and as having fine perforations which assure efficient filtration of food particles. The machine is available in three standard models; two-tank, two-tank with pre-wash from available water supply, and three-tank. They vary in length from 15 ft to 17 ft, 7 in. and reportedly can handle 6000 to 18,000 pieces per hr. G. S. Blakeslee and Company, 1844 S. Laramie, Cicero, Ill.

(Continued on page 270)

**General Electric Company, Section AR-7
Air Conditioning Department
Bloomfield, New Jersey**

Please send without obligation to me the fully illustrated book, "Water at Work."

NAME.....

COMPANY.....

ADDRESS.....

CITY.....ZONE.....STATE.....

You can put your confidence in—

FREE!
24 PAGE
BOOK!

GENERAL ELECTRIC

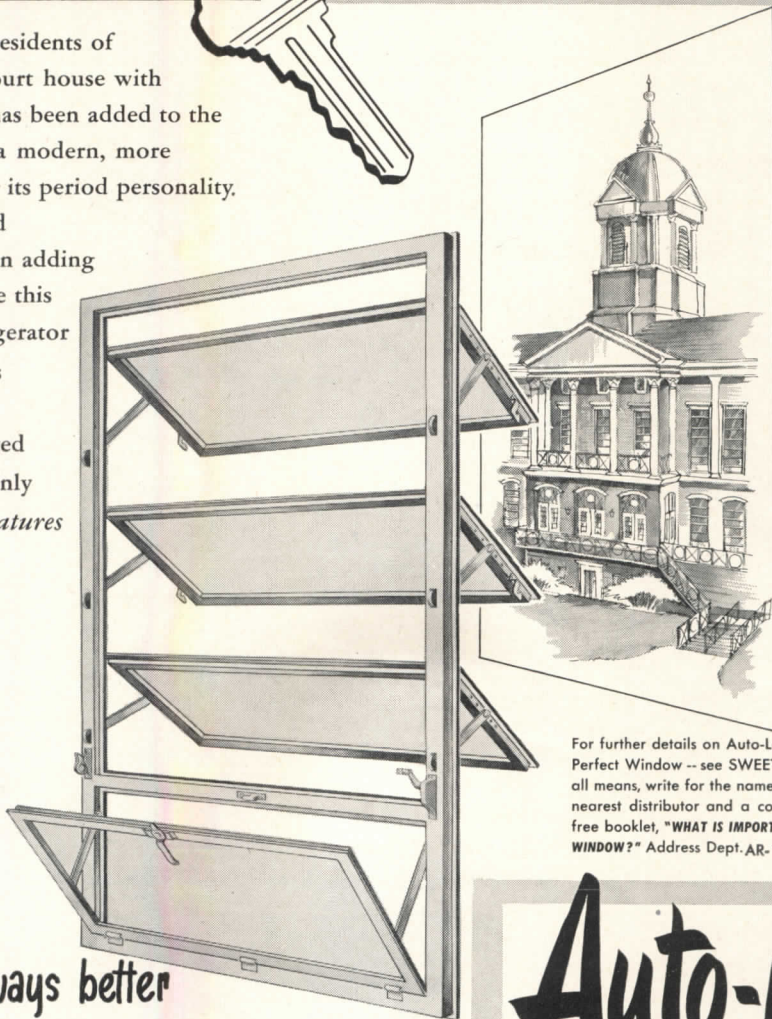
how an Architect found the

COURT HOUSE KEY TO KITTANNING

through **Auto-Lok**
PATENTED
the perfect window















Over in Kittanning, Pennsylvania, residents of Armstrong County point to their court house with added pride today. Something new has been added to the charming old structure to make it a modern, more practical building without sacrificing its period personality. . . Architect Charles J. Marr specified Auto-Lok aluminum Windows when adding and remodeling . . . not alone because this is the window that seals like a refrigerator when closed . . . or because it affords ventilation even when it's raining. Like many other architects, he selected Auto-Lok because Auto-Lok is the only window which combines the *best features of all window types!*



For further details on Auto-Lok -- The Perfect Window -- see SWEET'S and, by all means, write for the name of your nearest distributor and a copy of the free booklet, "WHAT IS IMPORTANT IN A WINDOW?" Address Dept. AR-10.

Auto-Lok is twelve ways better

-  Tightest closing -- sealed like a refrigerator.
-  Widest opening -- 100% ventilation.
-  Ventilation -- even when it's raining.
-  Fingertip control . . . as easy to open as to close.
-  Automatic locking thwarts intruders -- vents cannot work loose or be jimmied.
-  Draft-free ventilation -- air scooped in and upward.
-  Delayed Action Opening -- 100% control of ventilation.
-  Clean the outside from the inside.
-  Removable inside screens and storm sash.
-  Unobtrusive operator -- no interference with blinds, drapes, etc.
-  Precision balanced hardware eliminates need for periodic adjustment, absolute minimum of maintenance.
-  Skyscraper to cottage, Auto-Lok meets every requirement.

Architect:
 Charles J. Marr,
 New Philadelphia, Ohio
 Associate Architects:
 Scheeren & Rittenhouse,
 Kittanning, Pa.
 Contractor:
 Fred Lundgren,
 Kittanning, Pa.

*Tightest
 Closing
 Window
 Ever Made*

Auto-Lok
PATENTED
WINDOWS
aluminum or wood
SEALED LIKE A REFRIGERATOR

LUDMAN
Corporation

BOX 4541 • MIAMI, FLORIDA

PRODUCTS
(Continued from page 268)

New Light Bulbs

Introduction of a 60 w incandescent "white" lamp has been announced by G. E. The new lamp contains a special inside "Q" coating that spreads the light evenly over the entire surface of the bulb. This coating is composed of a silicon compound said to give near-

perfect diffusion. The manufacturer states that the new lamps cast soft shadows, diffuse light evenly, and have a white, clean appearance, without appreciable loss in the amount of light produced. The 60 w is the fourth in a line of "white" lamps to be introduced by this Manufacturer. General Electric, Nela Park, Cleveland 12, Ohio.

Westinghouse announces three new bulbs:

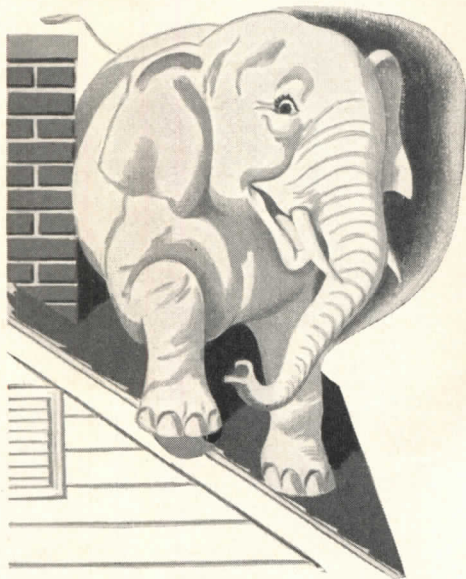
- A tiny lamp that dissipates odors through an output of ozone-inducing

radiations claimed to be three times as powerful as that of the ozone lamp introduced in 1945. This 3½ w lamp is said to destroy a variety of common odors and is recommended for general use in homes and offices. Many are already in use in clothes dryers and washers, professional hair drying equipment and beverage vending machines. Reported to last six months when operated 24 hours a day, the lamp must be burned in a special fixture with a current-controlling device such as a transformer. Eight manufacturers now produce such fixtures, using one to four lamps in each unit.

- An 800 w, 7⅛ in. maximum diameter incandescent lamp, described as resembling the picture tube of a small television set, which will burn an average of 1500 hr, or about four months on a two-shift operation. A built-in reflector on the inside of the bulb, which helps prevent dirt from reducing its efficiency, is said to suit the lamp especially for use in industries where smoke and fume particles float in hard-to-reach high-bay factory areas.

- A 400 w fluorescent mercury-vapor lamp described as a basically new light source. The bulb has an inside coat of a phosphor which fluoresces red when activated by invisible ultraviolet light generated by a quartz arc. This, according to the manufacturer, tends to balance the spectrum to provide a light that is white enough for most industrial purposes. The new lamp will burn in any position and can be used in existing fixtures for 400 w mercury lamps. Lower brightness is said to make operation at lower mounting heights practical, thus widening the field of use for mercury lamps. Westinghouse Electric Corporation, 306 Fourth Ave., Pittsburgh 30, Pa.

Why Build In WHITE ELEPHANTS?



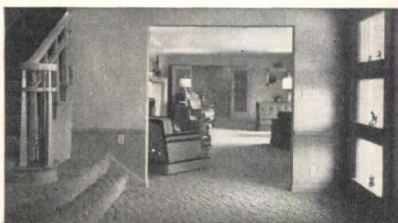
Lightweight ZONOLITE® Plaster Aggregate Saves Dead Weight Handling

On an average house you easily save up to 10,000 pounds dead weight (the weight of several elephants) with the use of lightweight Zonolite Plaster Aggregate—used in plaster in place of sand.

Zonolite Aggregate, weighing only 1/12 as much as sand, saves time in plaster preparation and clean-up. In one recent multiple-story job, Zonolite plaster was instrumental in saving 86 days in construction time.

Zonolite plaster provides safer homes too, for it has attained fire ratings up to four times as great as sand plaster.

For Finest Homes, or Low Cost Housing, Peoria Plastering Team Uses ZONOLITE Plaster



Left to right: Ellis Hartseil, LeRoy Wallace, Everett Hartseil (contractor), Norman Hartseil, on a low-cost job with ZONOLITE. At right another Hartseil job—\$100,000 "finest" Peoria home with ZONOLITE plaster throughout. LET ZONOLITE VERMICULITE AGGREGATES save time and money on your next job. Write for details today.



Member of Vermiculite Institute

Zonolite Co., Dept. AR-101
135 S. LaSalle St.
Chicago 3, Illinois

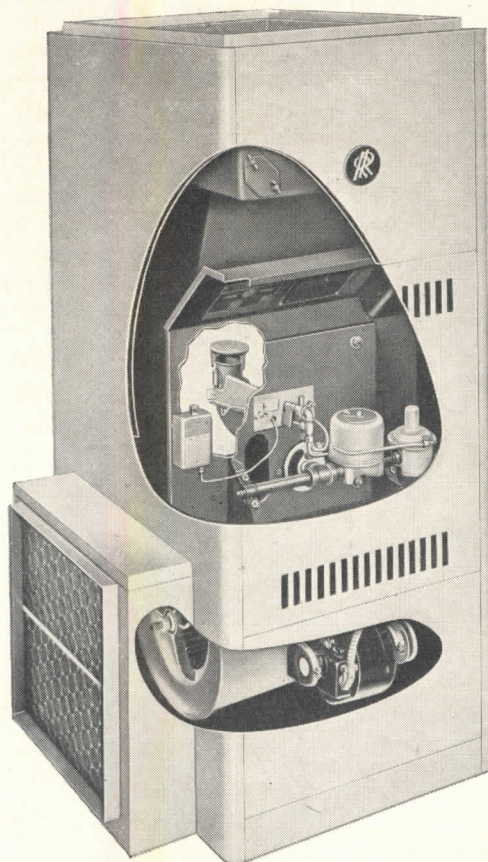
Please send complete specification material on Zonolite vermiculite Plaster Aggregate, including summary of fire tests.

Name.....
Address.....
City.....Zone.....State.....

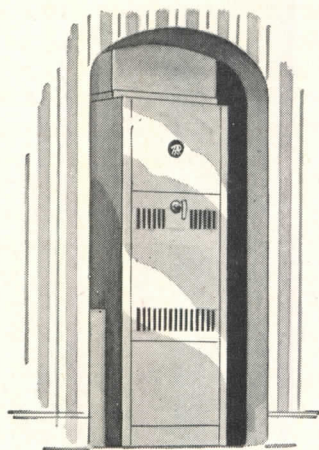
Hand-Painted Wallpapers

Hand-painted scenic wallpapers at lower cost are now available through a new method of production. A screen print is made of the design, based on the sketch which serves as a guide for the artist. Using these printed guide lines, the artist functions primarily as a colorist, employing paints in a gouache or water color technique. Four scenics by this method, available from the wallpaper firm listed below, were done by Count Bernard de Perthuis, French artist-designer. They feature subjects of cultural and historical significance and geographical scenes. Richard E. Thibaut, Inc., 44 E. 53rd St., New York 22, N. Y.

SU-30-G
85,000 BTU
input per hour

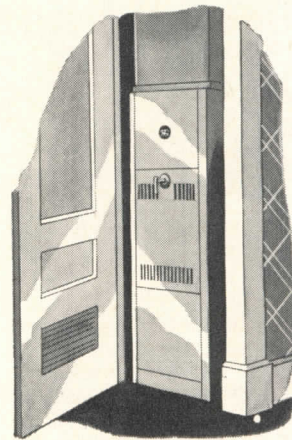


SU-35-G
110,000 BTU
input per hour



AGA Approved!

**for alcove and
closet installation**



Gas-fired **RICHMOND** winter air conditioner

Where space is tight, use the Richmond SU-G, gas-fired, vertical winter air conditioner...ideal for the small ranch-type installation.

Now the SU-G is approved by the AGA for alcove and closet installation. When ordered for this type of installation our standard unit is especially adapted to meet the rigid AGA requirements. When ordering the Richmond SU-G for closet or alcove use, be sure to state that fact.

Remember that the SU-G can be furnished with a bottom filter rack as optional equipment at no extra charge. And remember these special features: Remote pilot igniter (standard equipment) for convenience and safety in lighting burner from outside of furnace...burner and controls quickly and easily removable as mounting plate is held securely in place with four nuts. When space and economy count...count on the Richmond SU-G.



RICHMOND

RICHMOND RADIATOR CO.—AFFILIATE OF REYNOLDS METALS CO.

See your wholesaler or Mail Coupon Today

Richmond Radiator Company AR/10
19 East 47th Street, New York 17, N. Y.
Please send me full information on Richmond SU-G
gas-fired winter air conditioners.

Name.....

Company.....

Address.....

LITERATURE

(Continued from page 214)

Aluminum Windows

Peterson Aluminum Horizontal Sliding Windows. Folder gives features and specification data on this line of windows. Details are included on construction of the units and on installation in various types of building construction. 4 pp., illus. Peterson Window Corp., 1383 East Eight Mile Rd., Ferndale 20, Mich.*

Welding

Fleet-Welding — A Method for Increasing the Speed of Welding of Mild Steel. This little manual, replete with diagrams and tables, was prepared "to assist users of arc welding in establishing proper welding procedures and procedure control — for obtaining welds of high quality and good appearance at maximum economy." The method is compared with conventional techniques, and is covered step-by-step for various applications. 47 pp., illus. The Lincoln Electric Co., Cleveland 1, Ohio.

Stainless Steel

Stainless Steel Handbook. Clothbound data and handbook discusses approximately 40 different types of stainless steel. Each type is treated from the standpoints of analyses, fabrication, heat treatment and special conditions of service.

A series of tables are included for the selection of a particular type of stainless steel according to such properties as: physical data, electrical properties, heat resistance, working and treating temperature, mechanical properties and creep strength. A second group of tables list the resistance of steels to corrosion due to such media as organic substances, acids and salts.

Subsequent sections of the book deal with the various types of stainless steel in detail. Graphs and tables show comparatively the strength properties, creep strength, and include reference material on weights of tubing, plates, bars and wire. One section is devoted to fabrication of the steels. 120 pp., illus. Allegheny Ludlum Steel Corp., Room 2036, Henry W. Oliver Bldg., Pittsburgh 22, Pa.*

Luminous Ceiling

The Wakefield Luminous Acoustical Ceiling. Booklet covers conception, principles and development of this fluorescent channel and translucent plastic ceiling. Data is also included on applications of the ceiling to new and old construction, construction methods, illumination levels, acoustics and air conditioning. 34 pp., illus. The F. W. Wakefield Brass Co., Vermilion, Ohio.*

Hardwood Grading

Rules for the Measurement and Inspection of Hardwood Lumber, Cypress, Veneers and Thin Lumber. This new edition of the National Hardwood Lumber Association's Grading Rules Book contains the current rules and the sales code of the Association, and has illustrations of the principal hardwood species together with a summary of their uses, range and working properties. The book also includes a list of lumber associations providing grading rules, list of trade papers, shipping information and sources of data on specific uses of a wide variety of woods. 80 pp., illus. Price \$1.00. National Hardwood Lumber Assn., 59 E. Van Buren St., Chicago, Ill.

(Continued on page 274)

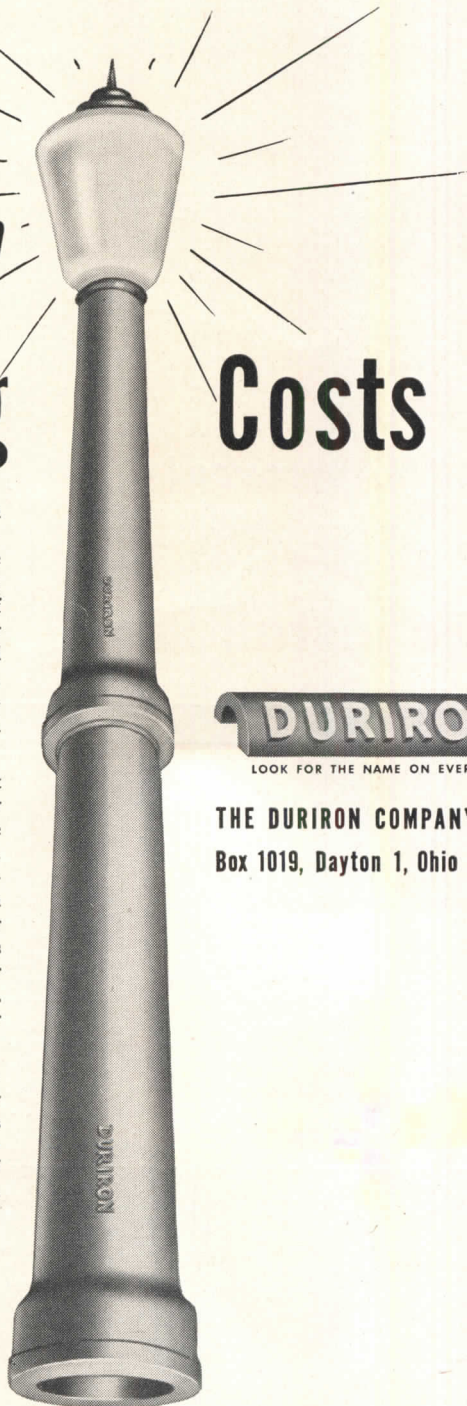
Let's shed a little light on

Piping Costs

When installing drain pipe for handling corrosives, there are three cost factors to consider: (1) the original cost of the pipe, (2) the labor cost of installation, and (3) the number of times, in the life of the building, these costs will occur.

With non-permanent pipe, replacement may be necessary if corrosive conditions are severe. With DURIRON acid-proof drain pipe, which does cost more, the labor cost of installation is exactly the same as for less permanent pipe . . . and this money never has to be spent again.

This permanence offers long-term economy . . . the kind that makes your service most valuable. Specify DURIRON Acidproof Drain Pipe. Write for full details.



THE DURIRON COMPANY, Inc.
Box 1019, Dayton 1, Ohio



Outstanding floor beauty can be achieved on a limited budget with Armstrong's Asphalt Tile. "Designer's Palette" Series E colors have muted tone-on-tone marbleizing. Both these and regular colors feature Armstrong's distinctive swirl graining. Singly or in combination, the two color groups offer unusual design possibilities.

Offices of Ameritex Division
United Merchants and Manufacturers, Inc., New York City
S. Brian Baylinson, Architect; Frank A. Faillace, Associate Architect

ARMSTRONG'S ASPHALT TILE
ARMSTRONG CORK COMPANY • LANCASTER, PENNSYLVANIA

LITERATURE

(Continued from page 272)

Air Conditioning Equipment

Westinghouse, Sturtevant Division, Air Conditioning Equipment and Air Handling Apparatus. Condensed catalog presents a selected list of equipment from the full-line of air conditioning and air handling equipment made by Westinghouse. Each item is covered with photographs and descriptive and specification

data. 16 pp., illus. Westinghouse Electric Corp., Sturtevant Div., 200 Readville St., Hyde Park, Boston 36, Mass.*

Nails

Hassall Catalog No. 60. Bulletin covers the processes involved in the production of special nails, rivets and screws. Uses and development of various types are discussed to aid in the selection of a fastener for a particular construction problem. 34 pp., illus. John Hassall, Inc., Clay & Oakland Sts., Brooklyn 22, N. Y.

Fire Resistive Ratings of Metal Lath and Plaster

Summary of Metal Lath and Plaster Fire Resistive Ratings (First Revision — April 1951). Folder gives comprehensive summary, in tabular form, of 85 fire-resistance ratings of constructions using metal lath and plaster. The ratings range from one to four hours. Each type of construction is amply described. These include metal lath and plaster fire protection for columns, steel beams, girders and trusses, floor assemblies, steel roof decks and commonly used types of solid and hollow partitions. The rating Authority is quoted for each item. 4 pp. Metal Lath Manufacturers Assn., Engineers Bldg., Cleveland 14, Ohio.*

Metal Framing

Unistrut Catalog 700. Booklet describes many applications and variations of a line of metal framing struts. It includes methods of framing, hanging, mounting and supporting many kinds of mechanical and electrical equipment. Tables give sizes of struts available and design load data. 77 pp., illus. Unistrut Products Co., 1013 W. Washington Blvd., Chicago 7, Ill.

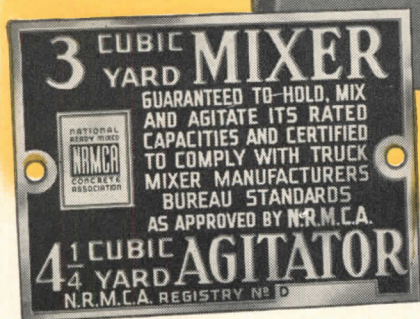
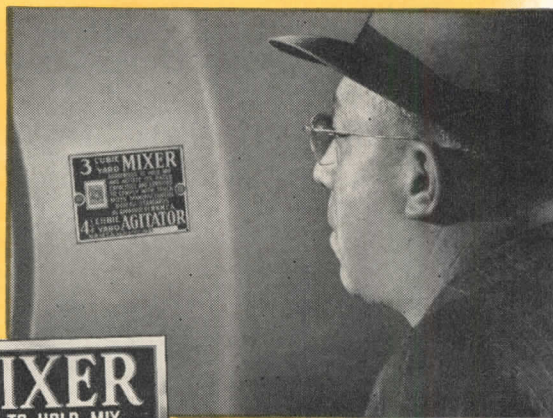
Industrial Flooring

Emeri-Crete Flooring. Pamphlet describes the use of Emeri-Crete and the results of previous applications. Charts are included for comparison of this product with other industrial floor coverings. Photographs show installations and procedures followed in application of the flooring. 8 pp., illus. Walter Maguire Co., Inc., 60 E. 42nd St., New York 17, N. Y.

Circuit Breaker Panelboards

Panelboard Planning to Meet Today's Electrical Requirements. Booklet describes the Westinghouse line of De-ion circuit breakers for industrial and commercial installations, ranging in capacity from 10 to 600 amperes. 18 pp., illus. Westinghouse Electric Corp., 306 4th Ave., Box 1017, Pittsburgh 30, Pa.*

Quick answer to a \$300,000,000 question



How can you know whether the truck mixers that serve your jobs have the accuracy of water control, design and speed of drum and full amount of free mixing space needed to properly mix the concrete they deliver?

You simply look for this standard rating plate.

The Bureau rating plate is available to all manufacturers who meet its quality standards and requirements.

To the construction industry, which uses more than \$300,000,000 worth of ready-mixed concrete a year, this rating plate gives indispensable protection against questionable concrete from non-standard truck mixers. Insist on it, when you approve or buy concrete ready-mixed.

Truck Mixer Manufacturers Bureau

BLAW-KNOX DIVISION
Pittsburgh, Pa.
CHAIN BELT COMPANY
Milwaukee, Wis.

CONCRETE TRANSPORT MIXER CO.
St. Louis, Mo.
THE JAEGER MACHINE COMPANY
Columbus, Ohio

THE T. L. SMITH COMPANY
Milwaukee, Wis.
WORTHINGTON PUMP & MACHINERY CORP.
Dunellen, N. J.

LITERATURE REQUESTED

The following individuals and firms request manufacturers' literature:

H. Edwin Nicholson, Architect-Engineer, 407 Insurance Building, San Antonio, Texas.

M. E. Utley, B. Arch., 253 Hazel Street, Sudbury, Ontario, Canada.

House Beautiful's
1951
Pace Setter House

DOBBS FERRY, N. Y.
 JULIUS GREGORY, ARCHITECT



Plywood Specified For Finest Construction

EACH YEAR *House Beautiful* builds a Pace Setter house which represents the ultimate in design, construction and use of materials. In the 1951 Pace Setter, Douglas fir plywood plays a major role.

Durable Exterior plywood creates the weather-wise board and batten siding . . . the smooth, flush soffits and breezeway ceilings.

For the important structural parts of the house, PlyScord was specified for strong, rigid wall sheathing . . . for roof decking . . . for firm, solid panel backing.

It's the finest construction money can buy—bar none!

®PlyScord is a registered grade-trademark identifying the sheathing grade of Interior-type plywood inspected by Douglas Fir Plywood Association (DFPA).

Five Pace-Setting Plywood Features Point the Way to Quality Construction

- 1. PANEL BACKING.** PlyScord provides solid backing for paneling. Gives extra stiffness and strength needed to keep thinner, more expensive decorative paneling firm, rigid and flat. Permits freedom in arrangement of finish paneling.
- 2. ROOF SHEATHING.** PlyScord roof deck was used for both sloping, shingled roof and flat, built-up roofs. Stronger yet lighter than conventional decking, PlyScord speeds construction, resists swelling and shrinking.
- 3. WALL SHEATHING.** PlyScord is twice as strong and rigid as diagonal sheathing. Insulates. Protects against drafts. Speeds construction by over 25%.
- 4. EXTERIOR SIDING.** Exterior plywood siding adds youthful richness. Will not puncture, sag or split. Bonded with waterproof adhesives, it lasts a housetime!
- 5. SOFFITS AND BREEZEWAY CEILINGS.** Smooth, flat panels form texture contrast with siding. Unbroken by detracting lines and joints, plywood is ideal for gable ends, trim.



IDEA BOOKLET FOR YOU!

Now available is a special 12-page, full-color booklet "Ideas From The Pace Setter House." Ideal to help your clients crystallize their plans. For free copy write (USA only) Douglas Fir Plywood Association, Tacoma, Washington.

LARGE, LIGHT
 STRONG PANELS
 OF REAL WOOD



**Douglas Fir
 Plywood**

AMERICA'S BUSIEST BUILDING MATERIAL

such an election is so great that many contract jobs would be completed before elections could be held. It began to look as though the new amendments would clear up an old and troublesome provision in the law.

B.R.A.B. and "Atomic" Design

On November 27 and 28 a conference of vital interest to architects considering

the atomic energy field will be held in Washington. Those dates now have been set definitely by the Building Research Advisory Board as the days for its next conference session, which will be on the subject of designing laboratories using radioactive materials. It is hoped that the conference program will add useful material to the limited bibliography now in existence.

"Laboratory Design for Handling Radioactive Materials" has been decided upon as the official title of the meeting, which will be sponsored jointly by the American Institute of Architects and the Atomic Energy Commission. The main speakers and their subjects as announced by B.R.A.B. are:

Alexander Mackintosh, of the Idaho Falls, Idaho, atomic energy laboratory, "The Design of Laboratory Facilities for Research with Radioactive Materials at Various Levels."

Carleton P. Roberts, member of the architectural firm of Voorhees, Walker, Foley and Smith, New York, "Air Supply and Exhaust for Laboratories Handling Radioactive Materials."

Dr. Nelson B. Garden, of the radiation laboratory, University of California at Berkeley, "Shielding for Various Levels of Radioactivity."

James G. Terrill, U. S. Public Health Service, Washington, D. C., "Surfaces and Finishes for Radioactive Laboratories."

Dr. E. C. Pitzer, of the Knolls atomic power laboratory, chemical engineering division, Schenectady, New York, "Waste Disposal."

William Scheick, executive director of B.R.A.B., said papers on these subjects were being prepared to form a working basis for much of the later literature that will undoubtedly be generated by the symposium. Each of the topics is to be discussed by a panel, then opened up for general discussion on the floor. A complete list of panel members was to be announced.

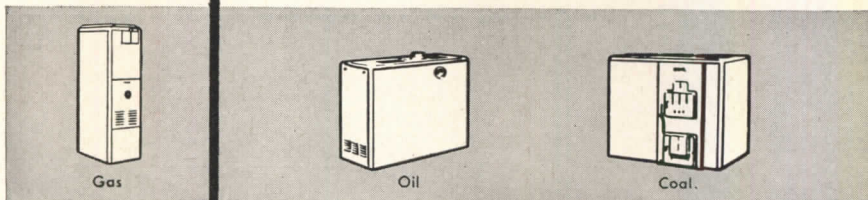
Those wishing to attend the conference were advised to write B.R.A.B. in Washington for advance registration blanks, to be forwarded along with complete information as soon as final details of the conference could be arranged. Meetings will be held in the main auditorium of the National Academy of Sciences. An evening meeting on November 27 is being planned.

Hill-Burton Approvals at 1596

Projects approved for construction under the Hill-Burton Act governing the building of hospitals with federal aid numbered 1596 as of August 1, a compilation from the U. S. Public Health Service disclosed. Of this number, 474 hospitals were in operation, 990 were under construction throughout the country, and another 132 had received initial approval from the health agency. The program provides for partial payment of

(Continued on page 278)

**FOR YOURSELF,
YOU'D CHOOSE**



**WEIR-MEYER
FURNACES • AIR CONDITIONERS**

When you know the facts about WEIR-MEYER steel warm air heating equipment, you'll see why you'd choose it for your own home. At least, we've reason to believe that you would, for many architects and consulting engineers in our own home town have done just that.*

Of course, we don't know *nationally* how many architects and consulting engineers own WEIR-MEYER, but we do know that many continue to specify our equipment year after year. And we believe that the reason is this: *WEIR-MEYER performance pleases home owners.* After all, isn't that what you want?

* Names on request.

Whatever the fuel—gas, oil or coal—there is a WEIR-MEYER warm air steel unit to fit your plans. Outputs range from 35,000 Btu/hr through capacities of 1,000,000 Btu/hr and greater for schools, churches, factories and other large installations.



WEIR-MEYER MEANS Modern HEAT
THE MEYER FURNACE CO. Peoria 2, Illinois
Manufacturers of Weir & Meyer Furnaces • Air Conditioners
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The Meyer Furnace Co.
Professional Service Division
Peoria 2, Illinois

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Street _____

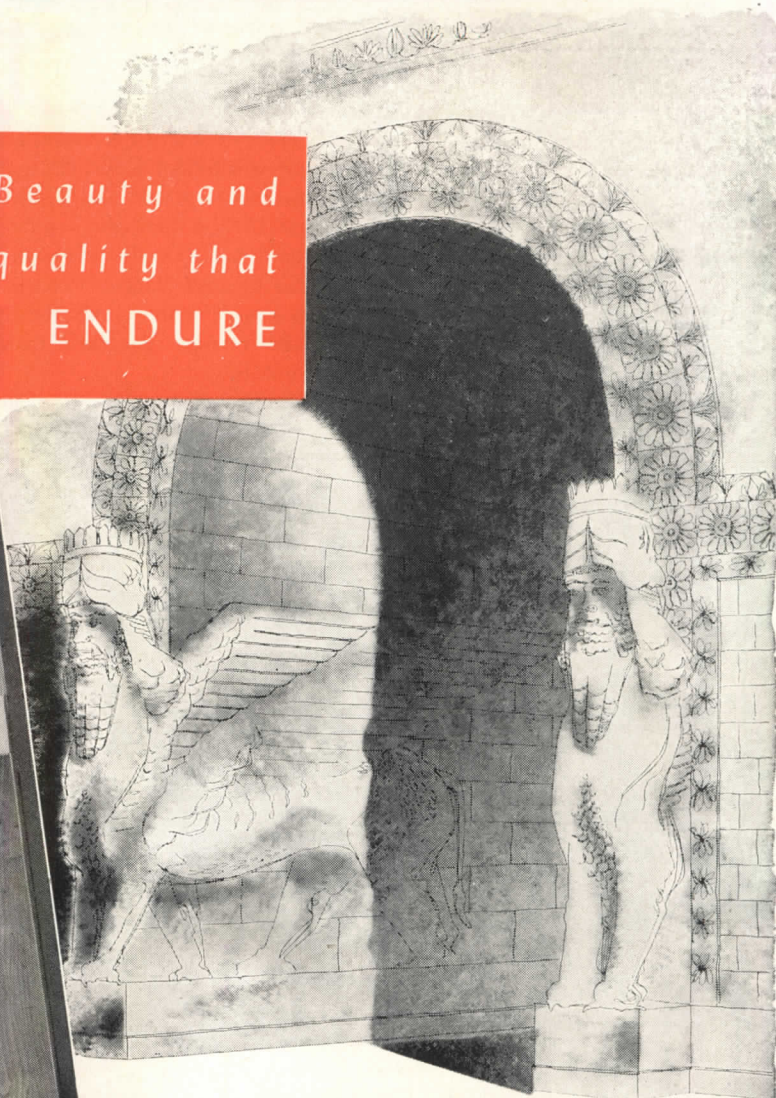
City _____ State _____

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Keep WEIR-MEYER data on hand for reference. Send for complete AIA File Catalog on WEIR-MEYER Equipment.



Beauty and
quality that
ENDURE



HASKO **ARCH-KOR** DOORS

the result of proved performance
through the use of proved
construction principles

The ARCH-KOR construction assures resistance to warping and complete support of the faces of the Hasko doors.



Since Neolithic Man's discovery of the principle of the arch a perfection of beauty and strength have been added to our structures. Since Haskelite Men utilized the principle of the arch in HASKO ARCH-KOR DOORS, their lasting beauty and enduring strength have created a constantly growing demand, which places them today

in a position of top leadership in their field. The highest quality materials and the best in craftsmanship have helped build and maintain the reputations of suppliers of materials who specify and use HASKO DOORS. These are proofs of their worthiness of your endorsement and use. Ask your supplier for HASKO DOORS. Write for complete information.

Hasko ARCH-KOR and SOLID-KOR Flush Doors are available faced with birch, mahogany, oak, maple, walnut, and gum.

HASKO

HASKELITE MANUFACTURING CORP., Grand Rapids 2, Michigan

West Coast Agents: Clay Brown & Co.,
Portland, Ore., and Los Angeles, Calif.

One of the world's largest manufacturers of plywoods, metal clad plywood,
and other laminated materials for use in industrial and consumer products.

the estimated cost of hospital and health center construction and repair by the federal government with funds administered by the Federal Security Agency, of which U. S. Public Health is a part. The federal share of building cost usually runs at approximately one third of the overall cost.

The consolidated summary of the program through July showed a total esti-

mated cost of \$1,211,349,436 for all the 1596 projects on PHS books. The federal share was \$433,978,400. Altogether, this construction would add 77,303 hospital beds to the nation's supply of non-federal facilities. In addition, the program to date embraces construction of 245 health centers, excluding 44 other health centers combined with general hospitals.

Shorts

• A few more approvals of advance loan funds for preparing plans and engineering drawings on non-federal public works projects are being announced from week to week by the Community Facilities Service of the Housing and Home Finance Agency. But no further allotments will be announced after October 13. The program is virtually concluded, with no new funds for fiscal 1952 being allowed by Congress. No new applications for funds under the second advance planning program have been taken by the HHFA constituent since June 29.

During the life of the two programs, the first of which was born during depression times when the need was greatest, billions of dollars worth of non-federal public works projects have been planned and shelved for starting at a future date. It worked this way: the federal government advanced interest-free funds which the community used to prepare its plans and specifications. Upon start of construction, the borrower was bound to start making repayments on the loan direct to the U. S. Treasury. Much of the work planned has, of course, never been undertaken; but a good share of it has been completed, too.

The program covered such work as schools, hospitals, sewer and water facilities, streets, municipal buildings and other local public works. Among the latest announcements as the program now winds up were advances of \$239,780 to assist Salt Lake City, Utah, and Zanesville, Ohio. A planning advance of \$90,000 went to Salt Lake to prepare plans on a 52,800 foot gravity outfall sewer with 42,240 feet of trunk line and lateral sewers. The advance of \$149,780 for Zanesville covered preparation of plans for intercepting sewer and sewage treatment plant. The Salt Lake City job will cost an estimated \$2,895,000, and the Zanesville project, \$4,596,000.

• The tiff developed between Congress and President Truman over the Administration's dispersal plans for new industrial construction appeared to be subsiding. At its high point, the President issued a prepared statement answering his Capitol Hill critics, who accused him of attempting to move industrial plants and labor by executive order contrary to the edicts of Congress. In his answer, President Truman said the program "merely encourages the spacing of new defense and defense-supporting industries a few miles apart," moving them

(Continued on page 280)



Pella
ROLSCREENS

fit all types and makes of windows

For Commercial and Home installations, Pella RolSCREENS are the practical, low maintenance screen to use. Pella RolSCREENS provide freedom from screen troubles because they're installed on the inside of the window. They roll up and down like window shades. Once in place, always in place. No putting up — no taking down! Painting and ordinary seasonal repairs are eliminated because RolSCREENS are protected from the weather. No storage problems. Pella RolSCREENS are ideal for all institutional installations.

ROLSCREENS PAY FOR THEMSELVES

One of the time consuming tasks in institutions is the annual putting up and taking down of screens, plus storage. Labor expense is minimized when RolSCREENS are used because once up—they're always up, ready for instant use.

ROLSCREEN COMPANY, Dept. C-51, Pella, Iowa
Without obligation, please send Free new file of RolSCREEN details and specifications in A.I.A. folder.

NAME _____
ADDRESS _____
CITY _____ ZONE _____ STATE _____

Write Today

for RolSCREEN details in Handy File Pack for installing on all types of windows. Ready for tracing right on to your plans.

2-WAY PROTECTION

WITH SQUARE D CIRCUIT BREAKERS

RESIDENTIAL and INDUSTRIAL

Coilless THERMAL-MAGNETIC

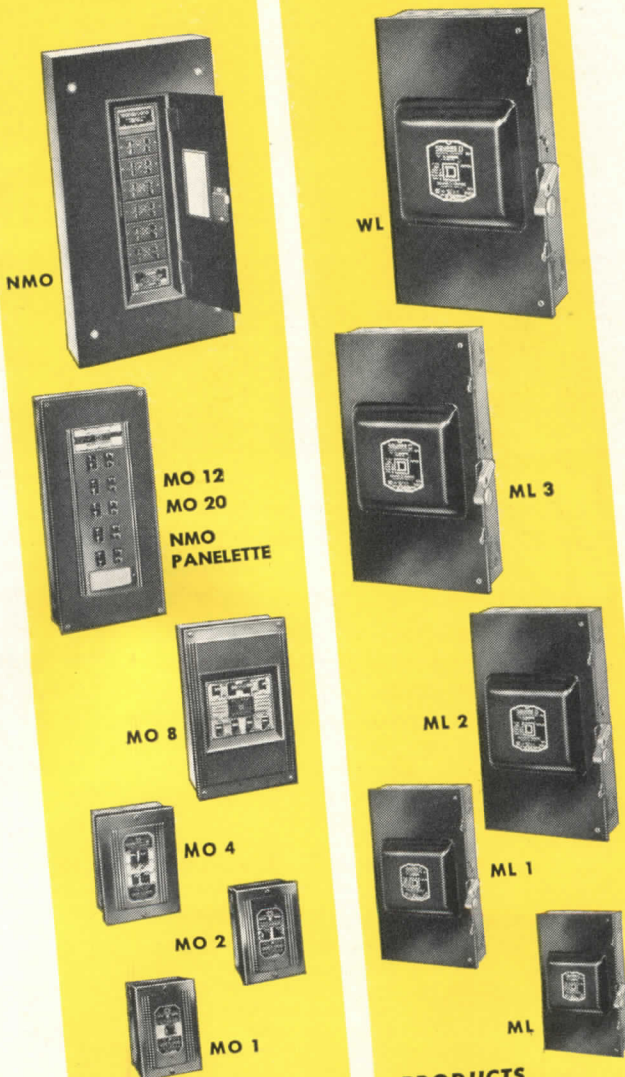
—combining the proven advantages of both Thermal and Magnetic tripping elements. They give positive protection against dangerous overloads and act instantaneously on "shorts." Useless tripping on harmless momentary overloads is eliminated.

1 THERMAL element is a bi-metal providing positive and timed response to heating effects of both load current and surrounding atmosphere. The life of wire insulation is prolonged by limiting total temperature to a safe value.

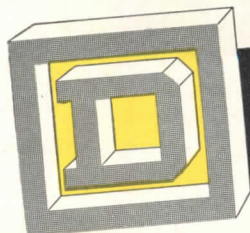
2 MAGNETIC element responds instantaneously to the higher values of current characteristic of dangerous overloads and "shorts." Damage is minimized.

Both ELEMENTS ARE NEEDED FOR Complete PROTECTION!

Write for Bulletin SA 590
Square D Company, 6060 Rivard Street,
Detroit 11, Michigan



ASK YOUR ELECTRICAL DISTRIBUTOR FOR SQUARE D PRODUCTS



SQUARE D COMPANY

DETROIT

MILWAUKEE

LOS ANGELES

SQUARE D COMPANY CANADA LTD., TORONTO • SQUARE D de MEXICO, S. A., MEXICO CITY, D. F.

(Continued from page 278)

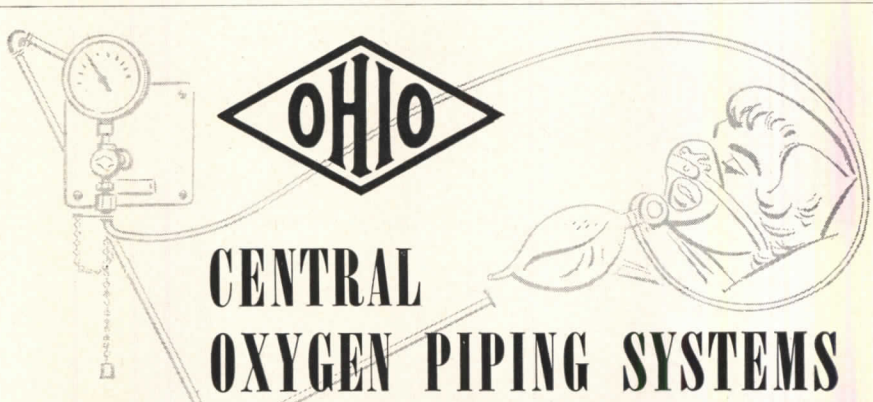
away from existing installations. "The program merely suggests that in building a new plant in such (heavy industrial) areas the site of the new plant should be located a few miles away from other defense plants in the same locality. On the other hand, the program does nothing to interfere with the normal efforts of non-industrial areas to attract businesses."

- The House Small Business committee heard testimony from official sources that despite the aluminum expansion program, no more aluminum would be available for civilian manufacture during 1952 than during 1951. The 1951 figure is about 40 per cent below 1950.
- The Federal Civil Defense Administration struggled with its plans for the cur-

rent year, fiscal 1952, after receiving an 88 per cent cut in its budget request in the House of Representatives. There was hope the Senate would restore some of the funds. The House action came after the Appropriations Committee recommended the drastic reduction because, it said, FCDA did not present any firm program to justify its request for operating revenue. Later, the National Civil Defense Advisory Council, appointed by the President, expressed complete confidence in the FCDA program as being sound, well-coordinated and entirely realistic.

- The Army Corps of Engineers found itself confronted with something new in Congressional reaction. A blistering House Appropriations Subcommittee report (upheld by the full committee) carried some extreme criticism of the Corps' handling of its civil works construction program. Particular emphasis was on the methods used in presenting fund requests and general programs to Congress. Usually, the Corps has been considered pretty much immune to such criticism in high places. But the recent report pulled out all stops in blasting the Army Engineers for their actions.

- The New York home building firm, Levitt and Sons, Inc., will start work this fall on a 16,000-home development to serve the Bucks County, Pennsylvania, defense area. More than 2000 acres of land have been acquired. Levitt will build a self-contained garden community about two miles from the main gate of the new Fairless works of the U. S. Steel Corp. being built near Morrisville, Pa. In August, the work at the new steel producing plant was approximately 12 per cent completed. The plant will have an annual ingot capacity of 1.8 million tons. Finishing facilities will include hot and cold rolled sheets and strip, tin plate, bars, and standard pipe.

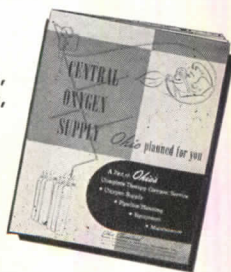


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ON THE CALENDAR

Oct. 2-19: "The Engineer's Contribution to Contemporary Architecture," an exhibition of photographs — The Architectural League, 115 E. 40th St., New York City.

Oct. 4-6: Annual Convention, California
(Continued on page 282)

The greatest improvement ever made
in dry wall construction

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An exclusive CERTAIN-TEED development

**ALL THE ADVANTAGES OF CONVENTIONAL
GYPSUM WALLBOARD—PLUS UP TO**

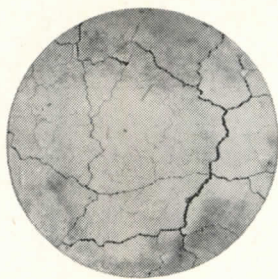
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FIRESTOP BESTWALL offers every advantage of ordinary gypsum wallboard, plus fire resistance *up to three times* as great. It is the only gypsum wallboard made under the Underwriters Laboratories' Reexamination Service. A single-layer application of $\frac{5}{8}$ " FIRESTOP BESTWALL has a 1 hour fire resistance rating *for walls and ceilings!*

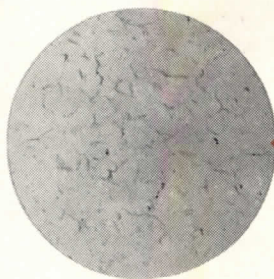
Now architects, builders and contractors can meet rigid municipal and State building code requirements as well as those of FHA and VA—for fire-resistant interior wall and ceiling construction in nearly any building.

The $\frac{5}{8}$ " FIRESTOP BESTWALL has greater structural strength and sound-deadening characteristics than ordinary gypsum wallboard, yet handles and cuts as easily.

Write today for our FIRESTOP BESTWALL Folder. It contains complete information and specifications on this remarkable Certain-teed gypsum development.



Unretouched photo showing a section of ordinary gypsum wallboard after it has been subjected to a fire temperature of 1,700°F. for 1 hour. Note the shrinkage cracks, characteristic of ordinary gypsum exposed to heat.



Under the same conditions, FIRESTOP BESTWALL shows no appreciable cracking, because its core is stabilized with incombustible fibers and unexpanded vermiculite, through an exclusive Certain-teed process.

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AVAILABLE
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nia Council of Architects — Coronado, Calif.

Oct. 5: Second Annual Noise Abatement Symposium, sponsored by the Acoustical Society of America, the National Noise Abatement Council, the National Research Council and Armour Research Foundation — Technology Center, Illinois Institute of Technology, Chicago.

Oct. 8-12: 39th National Safety Congress and Exposition, National Safety Council — Chicago.

Oct. 9: Sixth Regional Plan Conference, Regional Plan Association, Inc. — Hotel Roosevelt, New York City.

Oct. 9: Reception by the Royal Institute of British Architects for visiting architects and students — 66 Portland Place, London.

Oct. 9-12: 18th Annual Conference, National Association of Housing Officials — Hotel Statler, Washington, D. C.

Oct. 11-13: Annual Convention, New York State Association of Architects — Hotel Statler, Buffalo.

Oct. 12-13: Fall Meeting, Alabama Society of Architects — Auburn, Ala.

Oct. 14-15: National Planning Conference of the American Society of Planning Officials — William Penn Hotel, Pittsburgh, Pa.

Oct. 17-19: Regional Seminar, Great Lakes District, the American Institute of Architects, scheduled in conjunction with annual convention of the Architects Society of Ohio — Hotel Deshler-Wallick, Columbus, Ohio.

Oct. 17-19: Annual Convention, Architects Society of Ohio — Hotel Deshler-Wallick, Columbus, Ohio.

Oct. 18-20: Regional Conference, Central States District, the American Institute of Architects — Tulsa, Okla.

Oct. 22-24: 33rd Annual Meeting, American Standards Association — Waldorf-Astoria Hotel, New York City.

Oct. 22-26: Fall General Meeting, the American Institute of Electrical Engineers — Hotel Cleveland, Cleveland, Ohio.

Oct. 22-26: Annual Convention, American Society of Civil Engineers — Hotel Statler, New York City.

Oct. 24-26: 12th Annual Convention, Texas Society of Architects — Menger Hotel, San Antonio, Tex.

Oct. 26-27: Fall Meeting, Gulf States Regional Council, the American Institute of Architects; first of series of annual meetings — Memphis, Tenn.

Oct. 26-27: Annual Convention, Louisiana Architects Association, in conjunction with Gulf States Regional Meeting — Memphis, Tenn.

Oct. 30-31: Regional Meeting, American Concrete Institute — Hotel Sheraton, St. Louis, Mo.

Oct. 29-Nov. 26: Strickland Architectural Exhibition — The Art Alliance, 251 S. 18th St., Philadelphia 3, Pa.

Nov. 1-2: 15th Annual Time and Motion Study and Management Clinic, sponsored by Industrial Management Society — Sheraton Hotel, Chicago.

Nov. 1-3: 37th Annual Convention, Florida Association of Architects — Roosevelt Hotel, Jacksonville, Fla.

Nov. 1-3: Fall Meeting, Virginia Chapter, the American Institute of Architects — Hotel Natural Bridge, Natural Bridge.

Nov. 14-28: Building Exhibition — Olympia, London. Details from: Man-

(Continued on page 284)



Any size, any shape, any design. Plaques for public buildings, lobbies, offices, parks and playgrounds, for memorials, name plates for desks, tellers' windows, and any other purpose. Michaels plaques are made of genuine bronze with lettering, borders and ornamentation hand chased and burnished for contrast. Tell us what you need, and we'll be glad to furnish sketches and quotations without cost or obligation. Write for illustrated literature.

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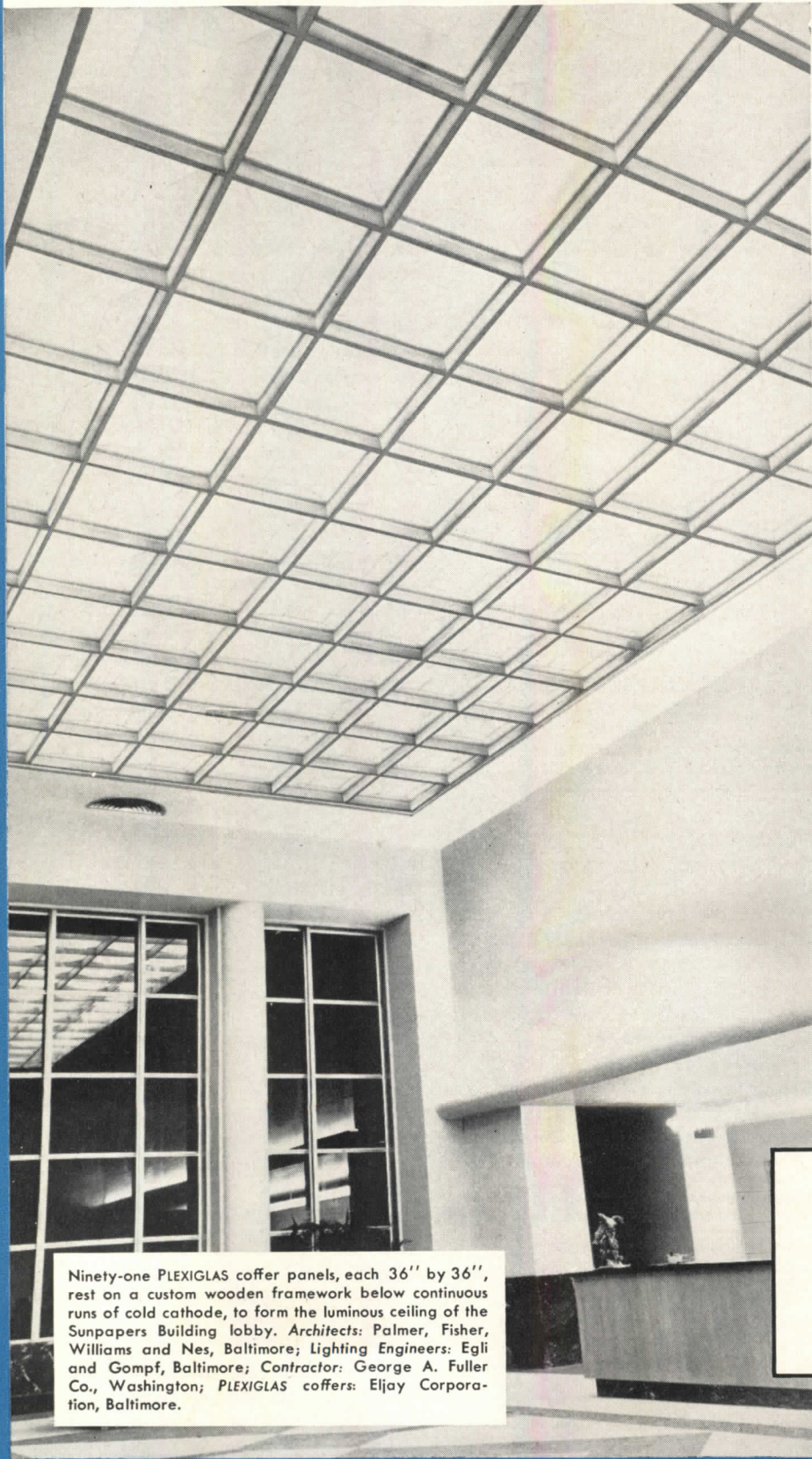
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|-----------------------------------|-----------------------------------|
| Bank Screens and Partitions | Welded Bronze Doors |
| Elevator Doors | Store Fronts |
| Lettering | Check Desks (standing and wall) |
| Lamp Standards | Marquises |
| Tablets and Signs | Name Plates |
| Astragals (adjustable) | Stair Railings (cast and wrought) |
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Problem: To light this spacious, high-ceilinging lobby of the new Sunpapers Building in Baltimore, and maintain its clean architectural design. **Solution:** A luminous ceiling of PLEXIGLAS acrylic plastic panels.

With PLEXIGLAS luminous ceilings, lighting becomes an architectural component, not a design afterthought. The white translucent diffusers—corrugated, flat, or formed into three-dimensional shapes—conceal lamps, ducts and pipes *completely*. Yet the output of the lighting source is utilized fully, due to high transmission efficiency. The luminous area overhead is the visible source of light—a lighting fixture as big as a room.

Other advantages: Complete, uniform diffusion; high illumination levels with low source brightness; control of brightness ratios; reduction of glare, shadows, and specular reflection to a minimum; the creation of a luminous environment. And the light weight and strength of PLEXIGLAS give freedom from breakage during installation and maintenance, and safety overhead in service.

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Ninety-one PLEXIGLAS coffer panels, each 36" by 36", rest on a custom wooden framework below continuous runs of cold cathode, to form the luminous ceiling of the Sunpapers Building lobby. *Architects:* Palmer, Fisher, Williams and Nes, Baltimore; *Lighting Engineers:* Egli and Gompf, Baltimore; *Contractor:* George A. Fuller Co., Washington; *PLEXIGLAS coffers:* Eljay Corporation, Baltimore.

aging Director, 4 Vernon Pl., London, W.C. 1.

Nov. 27-28: Building Research Advisory Board Conference on design of laboratories for atomic research, jointly sponsored by the Atomic Energy Commission and the American Institute of Architects — Washington, D. C.

Nov. 28-Jan. 27: "Good Design," selections from the 1951 Good Design exhibition of home furnishings on view in

Chicago throughout the year — Museum of Modern Art, 11 W. 53rd St., New York City.

Dec. 7-Feb. 24: "American Sculpture Today 1951," National Competitive Exhibition — Metropolitan Museum of Art, Fifth Ave. at 82nd St., New York City.

Dec. 18: Annual Dinner, New York Society of Architects — Hotel McAlpin, New York City.

Offices Opened, Reopened

• H. Edwin Nicholson, Architect-Engineer, has announced the opening of his offices at 407 Insurance Bldg., San Antonio, Tex.

• A. C. Shire, formerly chief of the Housing Technology Branch, Housing and Home Finance Agency, has opened offices in the DuPont Circle Bldg., Washington, D. C., for consulting services in building and housing.

New Firms, Firm Changes

• Donald S. Haarstick, A.I.A., and Louis R. Lundgren, A.I.A., announce the formation of a new firm, Haarstick, Lundgren and Associates, Architects and Engineers, with offices at E-1410 First National Bank Bldg., St. Paul 1, Minn. Associates are William B. Berget, A.I.A., and Robert E. Howe, A.I.A. The firm was formerly known as Dimond, Haarstick and Lundgren.

• Walter D. Bliss of San Francisco, for 50 years a practicing architect, has announced his retirement. The original firm of Bliss and Faville executed many of San Francisco's well-known buildings, including the St. Francis Hotel, the Southern Pacific Building, the Matson Building and the State Building. Since 1948 the firm has been Bliss & Hurt, Trudell & Berger.

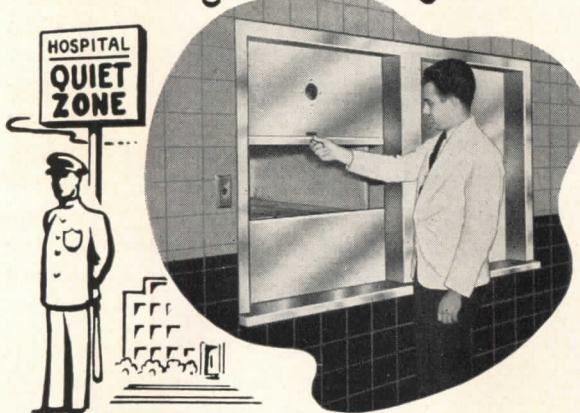
With Mr. Bliss' retirement, the firm has been reorganized and will continue practice as architects and engineers under the new firm name of Hurt, Trudell & Berger at 883 Mission St., San Francisco.

• Arnold Voorhees Cook has joined the firm of Kelly & Gruzen, Architects-Engineers, as chief supervising architect in charge of all field operations. Mr. Cook was formerly with the Wigton-Abbott Corp. and Merritt-Chapman & Scott Corp. as architect and project engineer on a number of hospital projects, chemical laboratories and industrial installations.

• A. D. Engle, district engineer at Chicago since 1945 for the Austin Company, has been appointed assistant vice president for research. Mr. Engle, who has been on the engineering staff of the Austin Company since 1920, will be responsible for special engineering re-

(Continued on page 286)

Why **SLAM** the Door...



...on greater

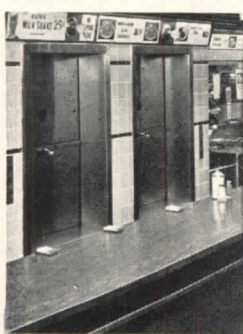
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Factory-assembled as a complete door with frame and trim as a unit, these easily installed doors must be set before walls are erected. Constructed to give **LASTING** trouble-free service, Security Doors provide improved operation with their adjustable **ANTI-FRICTION GUIDE SHOES** and rugged, easy action **THUMB-OPERATED POSITIVE LATCHES**. **ELECTRIC INTERLOCKED** for Safety with Security's own sturdy switches, these doors are usually furnished with **INSULATED PANELS**, and may be **UNDERWRITERS LABELED** for complete fire protection.



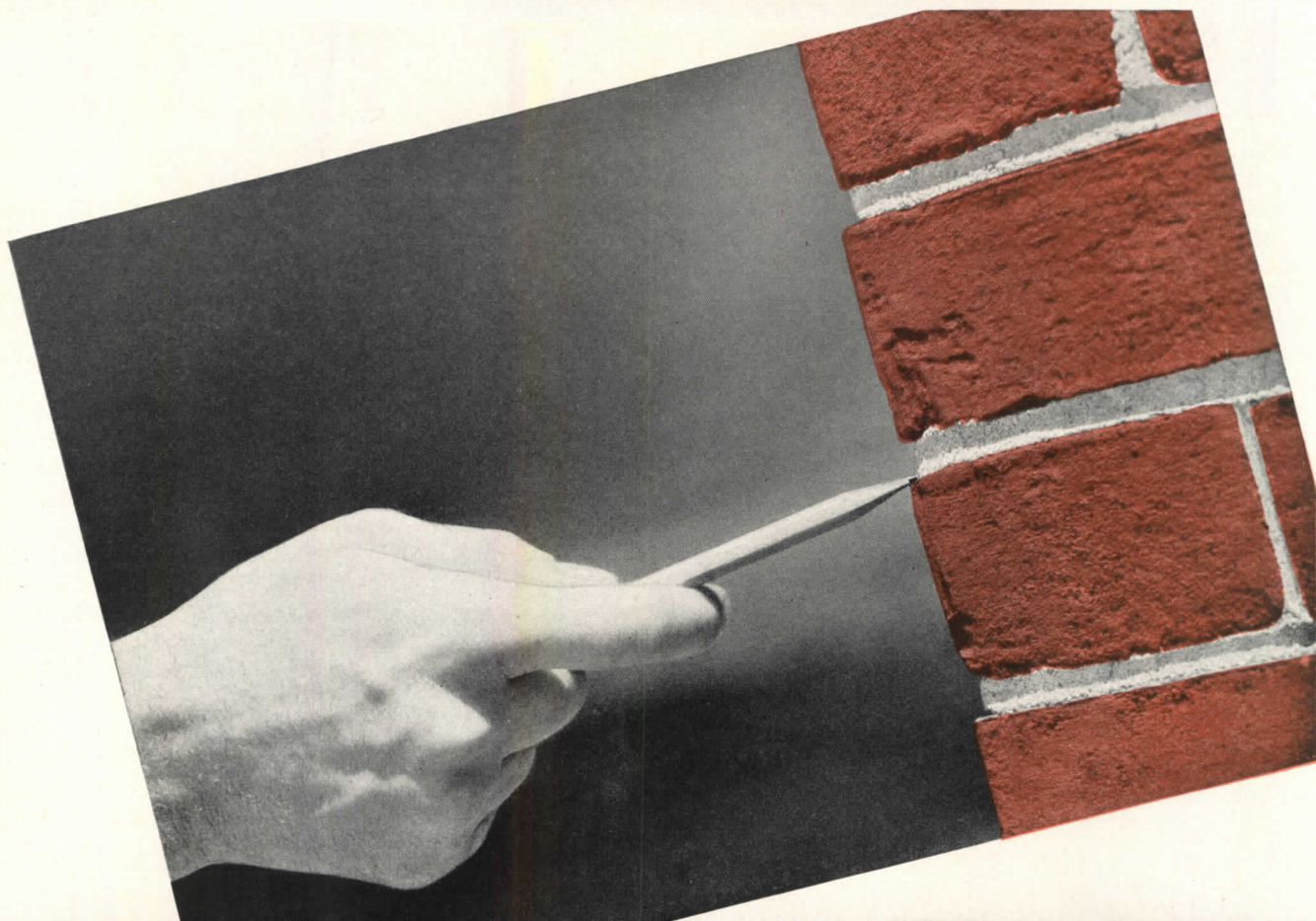
For over 30 years Security has specialized in, developed, and built unsurpassed Dumbwaiter and Freight Elevator Door Entrance Units

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LOUISVILLE CEMENT COMPANY, Incorporated, LOUISVILLE, KENTUCKY

(Continued from page 284)

search work and some foreign assignments. His headquarters will be at the company's general offices in Cleveland, where he will work directly with J. K. Gannett, vice president and director of engineering and research.

George Miller, Austin's coordinating engineer on Atomic Energy Commission work at Oak Ridge since 1948, succeeds Mr. Engle as Chicago district engineer.

• R. P. Westerhoff has been elected vice president and director in charge of the engineering department of Ford, Bacon & Davis, engineers-constructors, of New York, Chicago, Philadelphia and Los Angeles. Mr. Westerhoff, who has been with the firm for 20 years, has had charge of the engineering planning, design and construction of large-scale plants in the chemical, metallurgical, natural gas,

food processing and fertilizer industries, as well as many steam power plants.

New Addresses

The following new addresses have been announced:

Walter W. Ahlschlager, Architect, 2505 Turtle Creek Blvd., Dallas 19, Tex.

Arthur J. Dupre, Architect, 1373 Grandview Ave., Room 202, Columbus 12, Ohio.

Kyriacos A. Kalfas, Architect, 65 Nassau St., New York City.

Ernest J. Kump, Architect, 576 Sacramento St., San Francisco, Calif.

New York State Joint Hospital Survey and Planning Commission, 353 Broadway, Albany 7, N. Y.

C. William Palmer, Architect, 409 Griswold St., Detroit 26, Mich.

Ira Rakatansky, Architect, Room 48, Arcade Bldg., Providence 3, R. I.

Marcellus Wright & Son, Architects, Crozet House, 100 E. Main St., Richmond, Va.



Three typical RCA sound system control units "Unit-built" from standard parts.

... here's practical help for architects and their engineers

YOU CAN GET a lot of right-to-the-point help in laying out any type of sound system. Just call your RCA Sound Distributor. No cost or obligation to you whatsoever.

It's reliable help, too . . . from qualified men trained in working out sound systems for schools, hospitals, hotels, industrial plants, stores, airports, depots, auditoriums, stadiums, recreational centers, churches.

This helpful service is yours for the asking, virtually anywhere in the U. S. A. By calling on these experts, you are sure of getting the very latest advice on sound systems . . . sure that the system you lay out will always reflect credit on your good professional reputation.

So whenever you have a sound-system question, call your nearest RCA Sound Distributor. Or still easier, clip and mail the coupon below.

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AT THE COLLEGES

Research Positions Open In North Carolina Study

Several research assistantships are available at the University of North Carolina for students holding undergraduate degrees in architecture, landscape architecture or graphic arts. The holders must be interested in working toward a master's degree in the department of city and regional planning.

The assistantships involve mapping and graphic presentation on a project for a defense agency. Two types of posts are offered: one-third time on mapping assignments and two-thirds time on course work, with a stipend of \$100 per month through May 31, 1952; and two-thirds time on mapping assignment and one-third time on course work, with a stipend of \$200 per month through May 31, 1952.

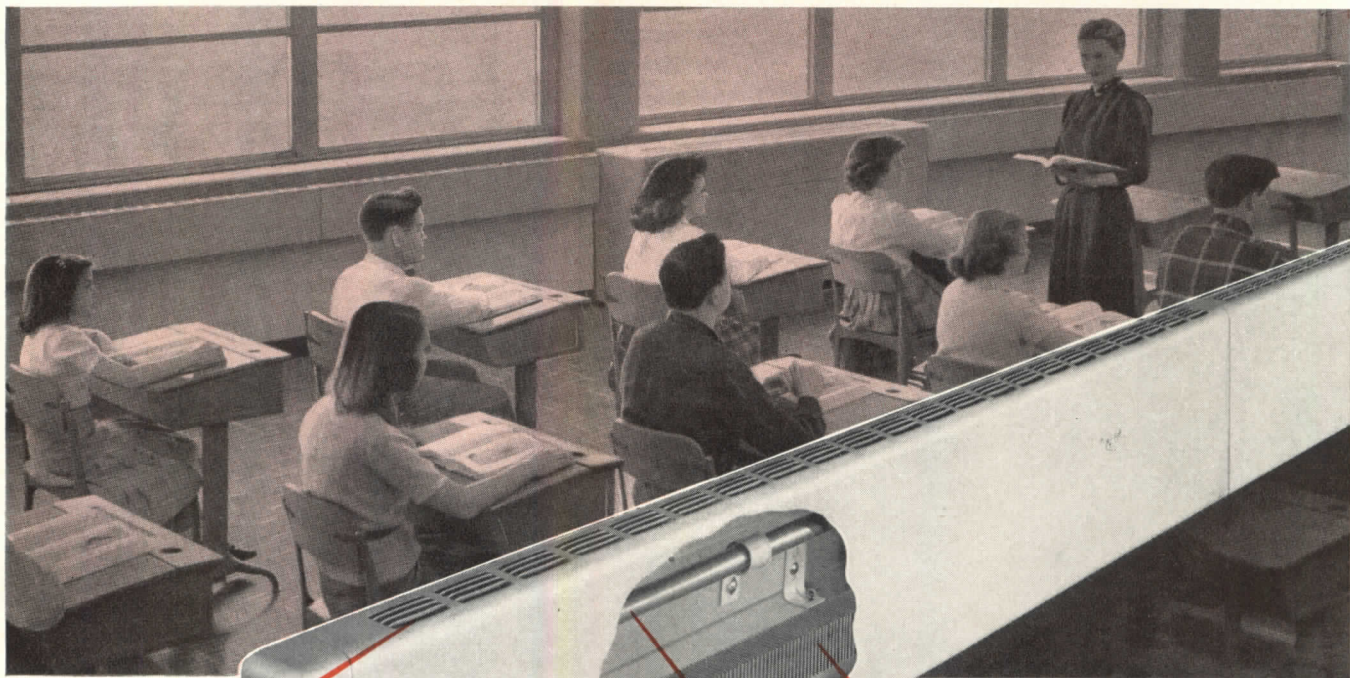
Closing date for receipt of applications is November 1. Inquiries should be addressed to: John A. Parker, chairman, Department of City and Regional Planning, University of North Carolina, Chapel Hill, N. C.

Engineering Professors Get Experience in Industry Job

Nineteen college professors from leading engineering colleges throughout the

(Continued on page 288)

Answers the "WALL-OF-ICE" Problem NESBITT Syncretizer with WIND·O·LINE



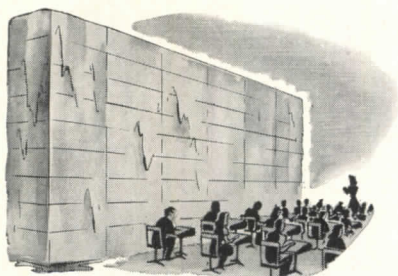
Close-up view shows wall-hung enclosure of WIND·O·LINE radiation. It has intake openings at bottom and discharge louvres of attractive design.

Copper tube, aluminum fins. WIND·O·LINE may be used at either or both ends of the Syncretizer.

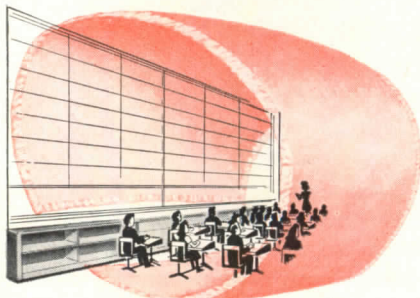
Copper supply tube feeds WIND·O·LINE radiation at extreme end. For application with steam or forced hot water systems.

Enclosure front sections fasten to wall panels supporting the radiation. Wall-hung enclosures and storage units are finished to match Syncretizer.

Combinations of standard lengths produce extent of WIND·O·LINE desired (within 6" increments). A round-cornered metal endpiece finishes WIND·O·LINE enclosure.



"Wall-of-ice" classrooms are protected by the Nesbitt Syncretizer with WIND·O·LINE.



ONLY NESBITT GIVES YOU THIS THERMAL BLANKET

The modern trend toward large classrooms and increased window areas imposes a greater demand upon the heating and ventilating unit to protect room occupants from the exposed wall-of-ice in extremely cold weather while maintaining proper thermal balance throughout the room.

Nesbitt WIND·O·LINE radiation integrated with the Syncretizer provides the extra thermal blanket where it is needed. It is controlled in cycle with the Syncretizer to give heat whenever heat is called for.

WIND·O·LINE is designed for two methods of integration: 1) wall-hung in its own casing; and 2) recessed in the units of The Nesbitt Package.

Wall-hung WIND·O·LINE is used with the free-standing Syncretizer. It is installed just below the windows to extend the full length of the sill.

As a component of The Nesbitt Package, WIND·O·LINE radiation is concealed in a channel at the rear of the storage cabinets which are provided with air-intake openings at the toe-space and attractive grilled outlets at the back of the display board. For further information request Publication 264.

The Nesbitt Syncretizer

MADE AND SOLD BY JOHN J. NESBITT, INC., PHILADELPHIA 36, PA.
SOLD ALSO BY AMERICAN BLOWER CORPORATION

(Continued from page 286)

country participated in this summer's edition of the Westinghouse Industrial Experience Program.

Goal of the program, begun by Westinghouse several years ago, is to provide the teaching engineers with an insight into engineering needs and problems of American industry. Development of more competent engineering graduates, who can more easily make the transition

from campus to industry, is the corollary.

The professors who participate are paid a regular salary by the company and are given assignments relating to their particular fields of study. The men work closely with company engineers and have considerable latitude in contacting the shops and other departments.

Highlight of this summer's program

was a week-long seminar "Developing Professional Competence," at which the teacher-workmen were joined by 19 other professors to discuss the mutual problems of engineering colleges and industry with top Westinghouse officials.

**ELECTIONS
APPOINTMENTS**

- D. Kenneth Sargent has been elected president of the Central New York Chapter of the American Institute of Architects for 1951-52. Other officers elected were: Dean Thomas W. Mackesey, vice president; Frank C. DelleCese, treasurer; Cyril T. Tucker, secretary; Charles V. Northrup, director for three years. C. Storrs Barrows is the immediate past president.

- Julian Levi has been named chairman of the 1952 A.I.A. Convention Committee of the New York Chapter of the American Institute of Architects.

- Andrew Graham Henderson of Glasgow has been elected president of the Council of the Royal Institute of British Architects for 1951-52.

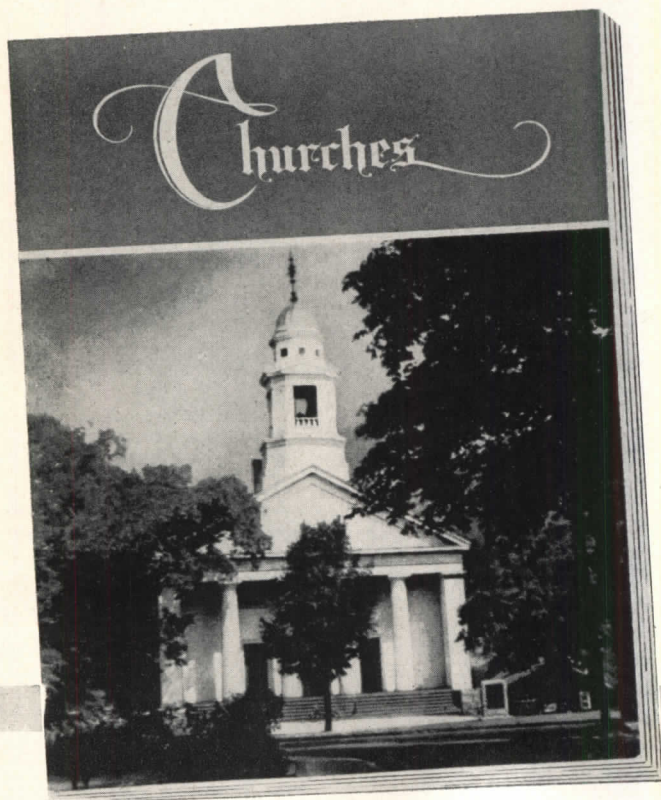
- Bernard E. Loshbough, former administrator of the Connecticut State Housing Authority, has been appointed housing specialist for the National Security Resources Board.

- The Building Industry Employers of New York State have announced the appointment of James F. Summers as executive secretary. Mr. Summers has been associate industrial engineer for the New York State Board of Standards and Appeals.

- William M. Spencer, chairman of the North American Car Company, has been appointed chairman of the Chicago Plan Commission. Mr. Spencer succeeds Architect Nathaniel A. Owings, who resigned last January.

- Carl J. Ebert, A.I.A., head of architectural specifications section, Bureau of Yards and Docks, Department of the Navy, has been elected president of the Construction Specifications Institute, Inc., a national organization formed in 1948 and devoted primarily to the im-

(Continued on page 290)



South Church built of wood in 1837 and now the parish house of Old North Congregational Church of Ipswich, Mass.

Churches

The use of wood for churches in so many structural and decorative forms nicely binds the present to the past.

For the church architect and church building committee we have prepared a 32-page illustrated book showing many large and small outstanding American churches.

Special architectural treatment is provided with three choices of wood construction—the Teco connector system, glued-laminated construction and Lamella construction.

Design your churches in timber—there's plenty of it and ready as usual for early delivery.

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Soft, pliant Masland Duran in fashionable colors and patterns helps you welcome more guests and patrons. On seating, booths, tabletops and panelling, you'll welcome Masland Duran's cost-cutting cleanability, too.

Only MASLAND makes DURAN.
This tag is your protection.

SEE DURAN IN *Sealtuft* DESIGNS

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provement of construction specifications. Its membership is composed chiefly of architects and engineers.

Other officers are: Lester T. Burn, architectural engineer, Branch of Buildings and Utilities, Bureau of Indian Affairs, Department of the Interior — vice president; Clarence F. Fisher, in charge of specifications and materials, Public Housing Administration — secre-

tary-treasurer; and directors — Horace S. Brightly, architectural engineer, military construction, Office of Chief of Engineers, Department of the Army; Fred L. Knoblock, chief of Specification Section, A. E. Division, Public Buildings Service, General Services Administration; and Joseph H. Swafford, chief of Specification Section, Construction Division, Veterans Administration.

• York Engineering and Construction Company has announced the election of the following officers: James MacGregor, president; Charles MacGregor, vice president; Philip M. Weber, treasurer; and J. Donald Cook, secretary.

**LEONARD SCHULTZE DIES;
GRAND CENTRAL ARCHITECT**

Leonard Schultze, F.A.I.A., who was chief of design for the Grand Central Terminal in New York City, died August 25 in White Plains, N. Y., Hospital, at the age of 73.

Mr. Schultze, who began his career in architecture in 1900, supervised design of the Terminal from 1903 to 1911, when he became executive in charge of the design and construction of all building relating to the terminal, opened in 1913.

The Biltmore, the Ambassador, the Park Lane, the Commodore and the Waldorf Astoria hotels were designed and constructed under his direction, as were the Pierre Hotel and the Sherry-Netherland and, more recently, the Crowell-Collier Building on the site of the Vanderbilt mansion at Fifty-first Street and Fifth Avenue.

Mr. Schultze had also designed multiple housing developments, offices, clubs, hospitals, homes and hotels in California, Florida, Wisconsin, Ohio, Georgia, Cuba and Canada.

Mr. Schultze was made a senior partner in the firm of Schultze and Weaver in 1921. On the death of Mr. Weaver in 1940, the firm became Leonard Schultze and Associates. The surviving partners are Eugene V. Meroni and Lloyd Morgan.

Mr. Schultze was born in Chicago, studied at City College, the architectural school of the Metropolitan Museum of Art and under the supervision of E. L. Masqueray.

**WILLIAM C. NOLAND, 88;
ARCHITECT IN RICHMOND**

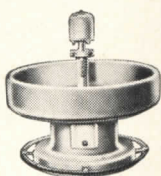
William Churchill Noland, 88, one of two Fellows of the American Institute of Architects in Virginia, died August 18 in Richmond.

Mr. Noland was the designer of the two wings of Virginia's state capitol. The central portion, built in 1785-88, was designed by Thomas Jefferson as a modification of the Maison Carree, a late Roman building at Nimes, France.

(Continued on page 292)

**How To Provide More
Washing Facilities
In Less Space**

**Use
BRADLEY
WASHFOUNTAINS**



Bradley Washfountains serve 8 to 10 persons simultaneously, save space and water, require but one set of piping connections (hot water, cold, and drain) for each of the group fixtures.

A central sprayhead eliminates need for faucets, and automatic foot-control turns water on or off. When washers leave, water flow is cut off.

Bowl is self-draining, and there are no collections of dirty water.

Catalog D-713 shows how to arrange washrooms for maximum capacity, economies, and sanitation in minimum space. Write for a copy today — no obligation. **BRADLEY WASHFOUNTAIN CO., 2227 W. Michigan St., Milwaukee 1, Wisconsin.**

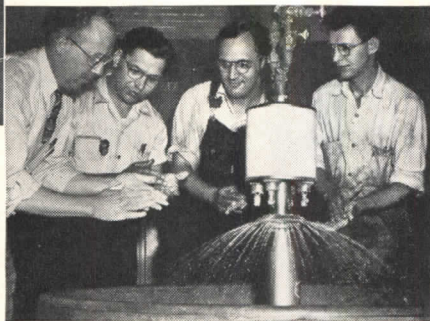


Distributed Through Plumbing Wholesalers

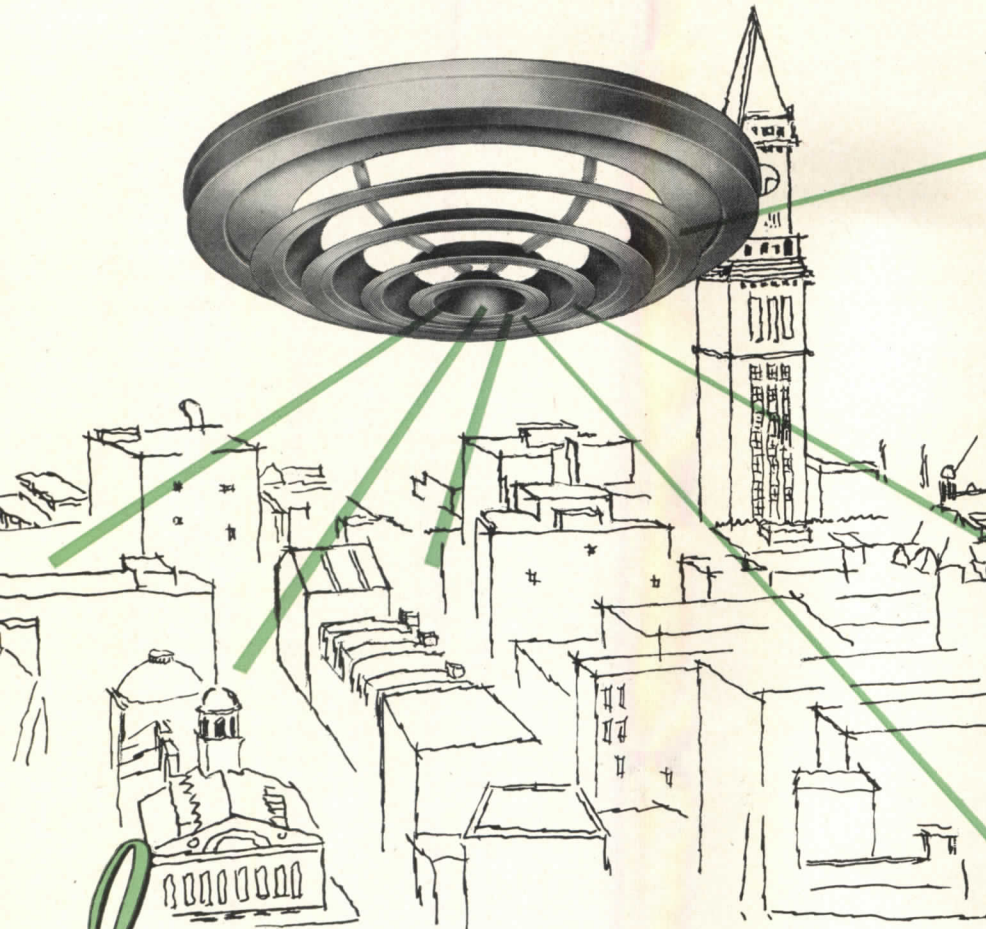


Above: Typical installation of Bradley Washfountains showing the 54" full-circle model.

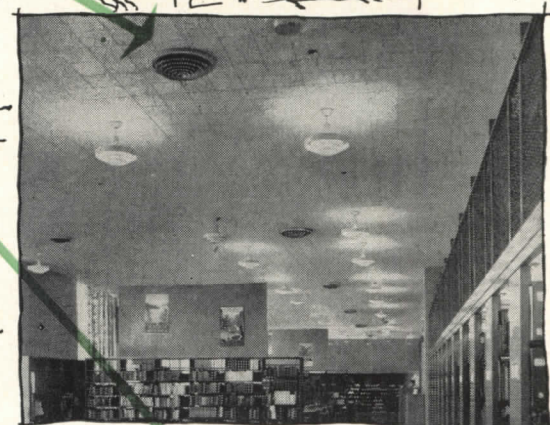
Right: Close-up view of Bradley in use illustrating even distribution of properly tempered water to one to ten persons simultaneously.



Aerofuse IN BOSTON



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In the shadow of Bunker Hill . . . Old North Church . . . and the many other historic landmarks here . . . busy Boston enjoys the comfort and convenience of modern air conditioning in its up-to-date commercial, industrial and institutional buildings.

As is the case in other cities from coast to coast, important air conditioning jobs in Boston are Aerofuse Diffuser jobs. Selected on the basis of efficient, dependable performance . . . and smart styling that blends architecturally with modern interiors . . . Aerofuse Diffusers meet the most exacting requirements at the *vital point of air delivery*, the point at which the success of an air conditioning installation is measured.

There's a complete Aerofuse line . . . a type and style to meet every job specification. For complete details, size selection information and engineering data, write for Catalog 104.

Other Typical
Aerofuse Installations
in the Boston Area

- Peter Bent Brigham Hospital
- Public Service Building
- Veterans Hospital
Roxbury, Mass.
- Brookline Trust Co.
Brookline, Mass.
- Junior High School
Somerset, Mass.



ENGINEERED PRODUCTS FOR HEATING, AIR CONDITIONING AND VENTILATING

THE RECORD REPORTS

(Continued from page 290)

The additions Mr. Noland planned were built in 1904-05.

Several of Richmond's major public buildings were also designed by Mr. Noland, who founded the firm of Noland & Baskerville in Richmond. He had earlier been with the firm of Cope & Stewardson in Philadelphia.

Other buildings designed by Mr. Noland included St. Mark's and St.

James Churches and the base of the Jefferson Davis monument in Richmond. He retired 20 years ago.

DR. LOUIS PARNES, 46; ARCHITECT AND AUTHOR

Dr. Louis Parnes, who died late last winter, was internationally known both as an architect and an author. He was

the author of the ARCHITECTURAL RECORD book, *Planning Stores that Pay*, published in 1948. Since 1940 he has had an office in New York City.

Doctor Parnes, born in Brodz, Poland, on July 15, 1905, received the Diploma of Architecture from the Federal Polytechnical University in Zurich, Switzerland, in 1929, and the degree of doctor of technical sciences in 1935. His doctorate came after presentation of his first comprehensive study of store problems, which was published in book form the same year.

Before beginning his own practice in Zurich in 1931, Doctor Parnes assisted Professor Salvisberg in Zurich and worked in the office of Le Corbusier in Paris. His work in Zurich from 1931 to 1940 consisted principally of store design; but he also planned community and religious buildings, factories, motion picture houses, apartment houses and show rooms, and was called abroad to design buildings in England, Yugoslavia, Brazil and Argentina.

Doctor Parnes was a member of the New York Chapter of the American Institute of Architects.

He designed war production plants for the Anaconda Copper Company and buildings for Hoffman-La Roche at Nutley, N. J., Rio de Janeiro, Buenos Aires and Mexico City.

REINHOLD H. F. HALSEY, ONCE ON NEW YORK STAFF

Reinhold H. F. Halsey, deputy superintendent of school buildings for the Building Bureau, New York City Board of Education, until he retired in 1937, died September 3 at his home in Newtown, Conn. He was 77 years old.

Mr. Halsey had started as a draftsman in the Building Bureau and was named as an architect before he became deputy superintendent. In all he was with the Bureau for 31 years before his retirement.

ADDENDUM

Thomas D. Church and Associates were landscape architects for the residence of Mr. and Mrs. Samuel Rubenstein in Seattle, Wash., shown on pages 114-119 of the August 1951 issue. The article inadvertently omitted to credit the firm. Architects were J. Lister Holmes and Associates.



Long spans for long shots



RILCO Type 74 Arches

Here is an efficient and economical arch to specify where a long, clear span is desired. It is uniform in curvature. Center rise is about equal to one-fourth of the span length. This provides ample head room at the center for gymnasiums . . . armories . . . arenas . . . and various other community buildings.

In most cases, decking can be applied directly to arches—eliminating cutting, bracing and bridging of joists or purlins. This means big savings in construction time and costs. Arches are machine-surfaced, ready to erect without cutting or fitting. All hardware and connectors are furnished. For full details, write for information now.

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WITH WOOD

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PRODUCTS, INC.

2518 First National Bank Building, St. Paul, Minn.



Sketch shows how type 74 arch permits maximum seating capacity in gymnasium, skating rink or other arena. Various length spans are available ranging from 40 to 120 feet. Rilco engineering department furnishes arch reactions required to prepare buttress design.

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Now, you can take all guesswork and disappointment out of your lighting installations. You can get the exact lighting results expected by you, your architect or lighting advisor. You can be *sure* you'll be satisfied! Merely ask the specification writer to express the illuminating characteristics you want—in the simple formulas of the Fleur-O-Lier Index System.

Then the problem of selecting the lighting equipment that will deliver precisely what is specified is easy. For every Fleur-O-Lier fixture is rated on its performance. You get *complete* information—the illuminating characteristics, coefficients of utilization, photometric test data and certification on its electrical and mechanical construction. You know in advance just what you're getting.

Don't gamble on a thing so important to increased sales as lighting—be sure you get what you want—specify and select with the Fleur-O-Lier Index System.

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Fleur-O-Lier is not the name of an individual manufacturer, but of a group of fixtures made by leading manufacturers. Participation in the Fleur-O-Lier program is open to any manufacturer who complies with Fleur-O-Lier requirements.

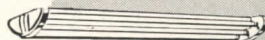
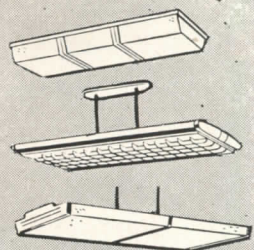
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Also ask for Electrical Testing Laboratories' report of ratings assigned to more than 300 Fleur-O-Lier fixtures offered by 25 leading manufacturers.

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was also supported by commercial and industrial gains.

The downward trend in residential building was sharply accentuated in July. Following a dip in May of four per cent and one in June of 21 per cent, compared with the same months a year ago, July dropped 41 per cent below July 1950. The peak housing month this year so far was May, with \$52.0 million in awards. This compares with \$50.3

million for June and \$43.8 million for July.

The industrial total for seven months of \$299.7 millions compares with the \$286 million figure for the same period 1950.

Building Cost Increase of 18 Per Cent Found in Year

The combined index for wholesale prices of residential building materials

and hourly wage rates of construction workers has risen again, with an increase of 18 per cent reported by Central Mortgage and Housing Corporation for the period April 1950 to April 1951. The combined index rose from 210 to 248 in the 12-month period.

With 1939 as 100, this means that the combined prices of residential building materials and construction labor wage rates are now about two and a half times as high as they were before World War II. The report comments: "Not since the 12 months following the removal of wartime price controls on building materials in September 1947 have costs risen as rapidly as in the past year."

Among the components making up the index, lumber and its products contributed most to the general price increase with a gain of 35 per cent for the 12-month period. In April, the lumber index reached 409, double the level in 1945. Explanation given is that since exports account for about 56 per cent of Canadian timber production, domestic prices are strongly influenced by world prices and especially by U. S. prices.

The report contained previously published figures showing that 32,100 houses were completed in the first five months of 1951, nine per cent more than the 29,400 completed during the same period in 1950. On the other hand, starts in the first five months dropped four per cent, from 30,100 houses to 29,000. Blame for this decline was placed on credit restrictions, higher interest rates, the defense program and other factors.

Building materials were in adequate supply during the first quarter of this year. Production increased 22 per cent over the first quarter of 1950, while "domestic disappearance" (use) rose 31 per cent. Number of workers employed in the construction industry was 15 per cent higher: 302,000 in the first week of March 1951, compared with 263,000 at the same time in 1950.

Second Biggest Award Made For Defense Construction

Defense Construction Ltd. made its second largest award to date in June.

A contract for \$2,953,500 went to A. W. Robertson Ltd., Toronto, for construction of six Royal Canadian Air Force "other ranks" barracks blocks at Camp Borden, Ont.

The largest award was made in March when George Hardy Ltd., Toronto, got a \$3,832,400 contract to build a big supply depot at Downsview, Ont.

(Continued on page 296)



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CLOSER CONCEALED IN DOOR
NORTHWEST SECURITY NATIONAL BANK
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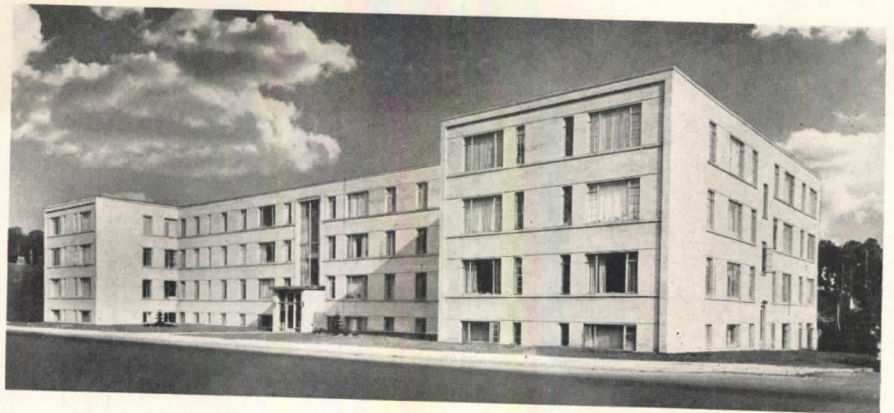
Harold Spitznagel, *Architect*

THE RECORD REPORTS

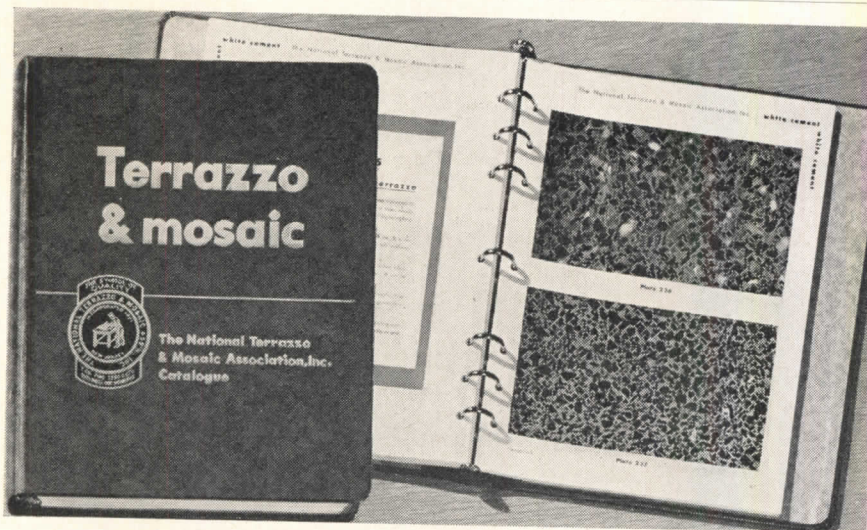
CANADA

(Continued from page 294)

This new apartment house for Toronto, Ont. has 49 apartment suites on its four floors. Murray Sklar of Toronto was the architect for the building



Panda photography



NEW *Terrazzo* CATALOGUE NOW AVAILABLE

Makes Architect's Job Easier By Showing:

- 100 Terrazzo Color Plates
- Typical Installations
- Architectural Details
- Specifications for Grounded Grilles, Radiant Heating, Non-Slip, and Outdoor Installations

NOW YOU CAN HELP your clients visualize the enduring beauty of TERRAZZO. Handsome new 136-page loose-leaf *Catalogue and Design Book* shows color plates of many of the infinite combinations of color and patterns available in marble-hard, concrete-durable TERRAZZO; provides illustrations of typical installations; offers architectural data on tested methods of installation and maintenance; presents in one compact, easy-to-file volume a wealth of material you'll want to keep at your finger-tips. Order your copy at once—directly from the Association, or from your local Association member. Price: \$10.

THE NATIONAL TERRAZZO AND MOSAIC ASSOCIATION, INC.

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Resources Expansion Leads In Top Construction Jobs

A check of the ten largest construction jobs launched so far this year reveals that most are concerned with resources expansion.

Leading the parade is the fabulous Aluminum Company of Canada project in British Columbia. Total capital expenditure involved to date is \$160 million, which is the estimated cost of the first stage of the development, planned for production of 80,000,100,000 metric tons of aluminum per year. Overall cost, when all stages of the work are completed, is estimated at \$350 million.

The project has two main divisions. The first is the construction of a smelter and town site to accommodate an eventual 50,000 persons at the old Indian Village of Kitimat on Douglas Channel, about 400 miles northeast of Vancouver. The second is a hydroelectric project in the Tweedsmuir National Park area. There a chain of lakes feeds into the Nechako River. The plan is to dam this river system, raising the elevation of the tributary lakes to a height approximately 2800 ft above sea level.

About 100 miles west of the dam where the impounded water will be backed up, large tunnels will be drilled 10 miles through solid rock to drop the water 2600 ft through penstocks inside the mountains. This very high head of water will make tremendous energy available to generate electricity. A 48-mile-long transmission line will connect the powerhouse with the smelter at Kitimat.

The ten biggest construction jobs, at mid-1951, with their owners, and their estimated cost in millions of dollars, were:

Power plant, smelter and town site, Aluminum Company of Canada, 160; power tunnel, Niagara River, Ont., On-

(Continued on page 298)



Left: Recessed Installation. All doors are simultaneously opened or closed by a Master Door Control.

Left, Below: Free-Standing Installation, (Non-recessed). Base may be steel by Medart, or built in. Sloping tops can be furnished extra.

**HOW TO SOLVE THE
LOCKER AND CLOAKROOM
PROBLEM IN
ELEMENTARY SCHOOLS.**

Specify

MEDART

LOCKEROBES

Equipped With

SIMULTANEOUS OPENING, MASTER DOOR CONTROL

Medart Lockerobes, developed at the request of numerous cooperating architects and school executives, provide many exceptional advantages over the old fashioned cloakroom or individual lockers in elementary schools:

- 1. Simultaneous Opening, Master Door Control** One person opens or closes all the doors with a master control. Eliminates confusion, noise, delays, disorder and pilfering. Promotes classroom neatness, quiet, safety and adequate supervisory control.
- 2. Saves Space And Construction Costs** Lockerobes can be installed against the wall or in unfinished recesses only 16" in depth. Either installation effects a considerable saving in space compared to ordinary wardrobes or cloakrooms. Where possible, recessing is recommended to conserve extra dollars by reducing cubic content of buildings, and by eliminating a big portion of cost in plaster or tile walls, flooring, overhead framing and other construction.
- 3. Less Maintenance, Greater Safety** Lockerobes are built entirely of steel, and offer unusually high resistance to fire, vermin and unsanitary conditions. Louvered doors provide ample ventilation. Steel framing and reinforcing prevent doors from sagging or distortion. Virtually no upkeep is required, even after many years.

Medart Lockerobes include many other features which offer major economies of money and time, in addition to the advantages of improved classroom discipline and orderliness. Get ALL the details now.

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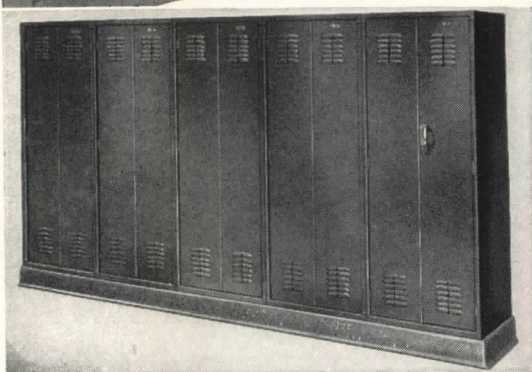
Also Ask About Medart Grade-Robes

FRED MEDART PRODUCTS, INC.

3540 DeKalb St.

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For 78 Years The Standard Of Quality



Below, Top: Note trim, modern appearance of recessed Lockerobes. Bottom: Simple, quiet one-person operation helps teach neatness and discipline.



tario Hydro Electric Power Commission, 157; steel plant, Hamilton, Ont., Steel Company of Canada, 50; chemical plant, Edmonton, Alta., Celanese Corporation of America, 40; pulp mill, Duncan Bay, B. C., Elk Falls Company, 40; oil refinery, Sarnia, Ont., Canadian Oil Companies, 18; power plant, Peribonka River, Que., Aluminum Company of Canada, 13; power plant, Shipshaw

River, Que., Price Brothers, 10; oil refinery, Sarnia, Ont., Imperial Oil, 9; power plant, mine, smelter and town site, Laurie River, Man., Sherritt-Gordon Mines, 9.

Mortgage Approvals Up For First Quarter 1951

Lending on residential real estate was relatively high during the first three

months of 1951, Central Mortgage and Housing Corporation reports.

The volume of approvals reflects the large number of applications made in late 1950, however, and cannot be taken to deny the effect of higher down payments required on houses financed under the National Housing Act after February 1951.

Total value of all real estate loans approved on new and existing property amounted to \$128 million during the first three months, a 38 per cent increase over the comparable period in 1950.

Value of mortgage loans approved on new non-farm residential construction, comprising 54 per cent of the total value of approvals, amounted to \$69 million during the first three months of 1951, an increase of 35 per cent above the period a year earlier.

The number of new non-farm dwellings on which loans were approved totaled 11,100 units, 17 per cent higher than in the first three months of 1950. Of these 11,100 units, single dwellings numbered 8200 units, an increase of 19 per cent, and multiple units numbered 2900, a decrease of 16 per cent.

Plumbers Fear Dearth of New Qualified Tradesmen

Members of the National Association of Master Plumbers & Heating Contractors are becoming worried about the future of their trade.

"Except in the Province of Quebec," says Secretary Robert Davidson, "the number of apprentices being taught in Canada hardly keeps level with the death rate of skilled tradesmen. In Quebec last year 3649 boys learned the trade—in all the rest of Canada only 511."

One of the reasons for the big showing of Quebec may be its abandonment of the indentureship system followed in other provinces. Apprentices are taken on without being articulated by an employer. They are not required to attend school and, although pre-apprenticeship training is available, it is purely voluntary.

Another reason is the high ratio of apprentices to journeymen permitted in Quebec as compared with other provinces. It is one to one, whereas the ratio in British Columbia, Alberta, Saskatchewan, New Brunswick and Nova Scotia is one to three, and in Manitoba and Ontario one to five.

(Continued on page 300)

Premium Quality... Grease Resistant

AZPHLEX

ASPHALT TILE

gives floor beauty that's there to stay!

When you install floors of tough, grease-resistant, premium-quality AZPHLEX Asphalt Tile, you can look forward to many years of floor beauty—for the fine colors of AZPHLEX can never fade or wear away. AZPHLEX quality, like its color and its resistance to grease, fats, oils, alkalis, mild acids and alcohol, is through-and-through... the result of years of research to give you a premium-quality floor. Compare this remarkable tile with any other resilient floor covering. You'll be amazed at its superiority—and at its moderate price, too!

Highly Resistant

to greases, fats, oils, soaps and compounds

Tough Surfaced

for increased resistance to indentation and abrasion

Wide Color Range

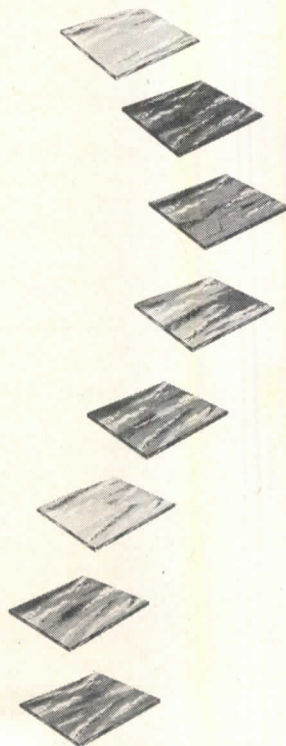
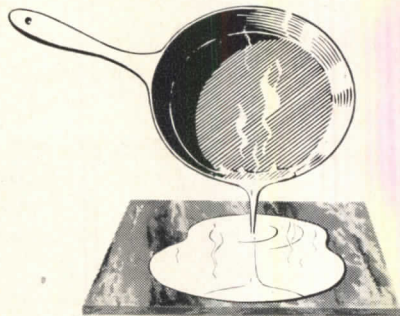
15 clear, permanent colors

Moderate Price

is only a few cents more a square foot than ordinary asphalt tile

For a floor that gives maximum service—look to **AZPHLEX!**

For complete information see or call your flooring dealer or contractor—or write to Dept. C



SEE SWEETS' 1951 CATALOG FOR COLORS AND SIZES

UVALDE ROCK ASPHALT CO.

Makers of AZPHLEX and AZROCK Asphalt Tile
FROST BANK BLDG. • SAN ANTONIO, TEXAS

SPECIFY

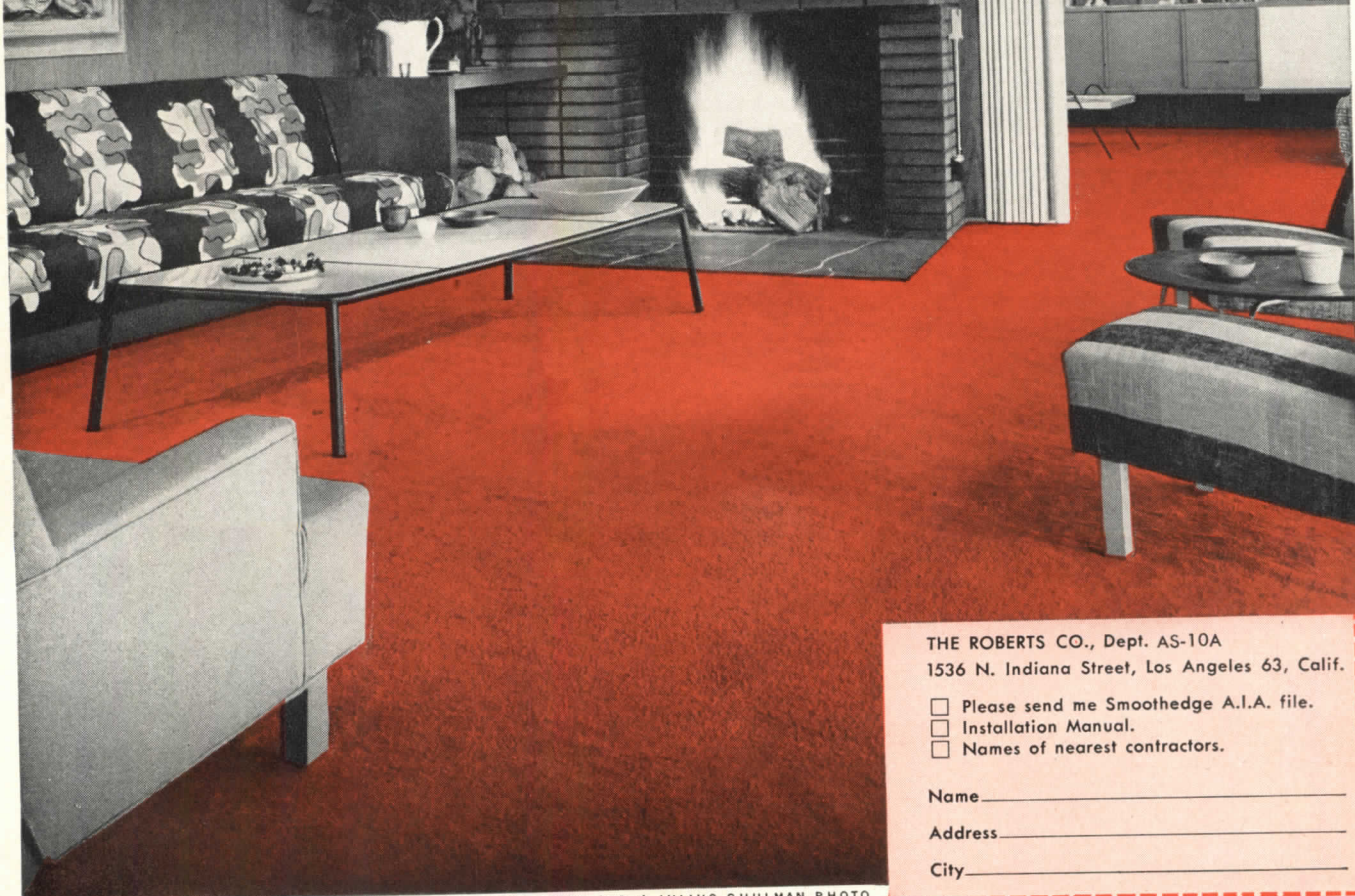
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TACKLESS METHOD
FOR PERFECT CARPET INSTALLATION

WHAT SMOOTHEDGE DOES ★ *Smoothedge* gripper holds the carpet firmly and invisibly from underneath. As a result, ugly tack marks, bulges, and dust-catching indentations are eliminated. The carpet is also easier to take up for cleaning. No special provisions are required for either wood or concrete floors. To specify, merely state, "Carpet to be installed with *Smoothedge* carpet gripper."

EASY TO SPECIFY—AVAILABLE NATIONALLY ★ Handled by over 4,000 carpet retailers and by 68 carpet distributors. Recommended by leading mills for wall-to-wall carpet installations.

SEND FOR A.I.A. FILE AND NAMES OF INSTALLATION CONTRACTORS NEAREST YOU



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- Please send me *Smoothedge* A.I.A. file.
- Installation Manual.
- Names of nearest contractors.

Name _____

Address _____

City _____

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HOSPITALS CHOOSE**

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kurt versen
"Hospitality light"



**versatile
safe • rugged**

In busy hospitals, the light that adjusts most easily and quickly to suit nurses, doctors and patients is the most popular. That's why so many leading hospitals across the country have installed the KURT VERSEN "Hospitality" light in their rooms. With a simple turn of the flexible swivel-action arms and a patient-operated switch, the KURT VERSEN "Hospitality Light" is designed for any sick room lighting need—for reading, for examinations by the doctor, and a night light. Low in price and sturdily constructed, the "Hospitality" light was designed for long, trouble-free years of safe dependable service by Kurt Versen, winner of many International awards for design and lighting.

Write to us today for free literature on the "Hospitality" light.

U.S. and Foreign Pat. Pend.

AMONG THE MANY KURT VERSEN AWARDS
FOR DESIGN AND LIGHTING ARE:



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Institute
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Museum of
Modern Art



Republic of
France,
International
Exposition



Century of
Progress

kurt versen company
englewood, new jersey

THE RECORD REPORTS

CANADA

(Continued from page 298)

B. C. Boom Is Sparked by Paper Industry Expansion

British Columbia pulp and paper interests continue to pour funds into improvements and new facilities in one of the greatest industrial booms ever recorded in the province.

C. D. Schultz & Company Ltd., Vancouver timber consultants, report that Columbia Cellulose Company Ltd. had expansion plans under way even before the recent official opening of its new plant. H. R. MacMillan Export Company Ltd. will spend \$17 million on its sulphate mill to up production to 500 tons daily. Contracts have been let for preliminary construction of the \$40 million Elks Falls Company Ltd. newsprint mill. Powell River Company Ltd. continues its steady growth with another \$12 million worth of improvements. Howe Sound Pulp Company Ltd. is spending \$4 million on the former Sorg Pulp Plant and is reported ready to spend a further \$6 million to raise output to 300 tons daily. Westminster Paper Company's plant is to get a new converting machine and more storage; Alaska Pine and Cellulose Ltd. is undertaking considerable work at the Port Alice plant.

House Mortgages Increase, CMHC Annual Review Shows

Increasing dependence of Canada's house builders upon Central Mortgage & Housing Corporation policies is demonstrated in the Corporation's annual review, "Mortgage Lending in Canada."

Federal government financial assistance through CMHC for residential construction involved 40,000 starts in 1950, 42 per cent of the total, as compared with 27,000 in 1949, or 29 per cent of the total. The report states that this rise is explained mainly by the increase in the number of dwellings begun under National Housing Act provisions in 1950. The remainder of the total of 95,000 starts was accounted for as follows: direct government housebuilding, five per cent; lending, excluding government assistance, 36 per cent; and fully financed by owners, 17 per cent.

"Mortgage Lending in Canada" com-

(Continued on page 302)

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CASTELL
Prints

NO LONGER A LUXURY

Famous CASTELL Drawing Pencil
with Imported Lead
now available to you
at practically no
extra cost



CASTELL
DRAWING
PENCIL
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REFILL
HOLDER
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"Industry demands legible prints—and the making of legible prints begins on the drawing board," states Mr. E. S. Fairley, of the well-known B. K. Elliott Company, Pittsburgh, Cleveland, Detroit.

We agree with him 100%. Imported CASTELL Lead always has produced more sharp copies per original drawing than any other pencil on the market. New price ranges now bring CASTELL with imported lead within reach of craftsmen who heretofore used ordinary drawing pencils. You, too, may now enjoy the use of the world's finest drawing pencil at no extra cost. See your Dealer today.

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PENCIL COMPANY INC. NEWARK 4 N.J.



FACTORIES, hotels, hospitals and other structures and buildings erected now will require much less maintenance in years to come — if effective *rust control* with RUST-OLEUM is written into the original specifications.

Protection against costly rust is particularly important in structural beams and columns, metal deck ceilings, crawl spaces, metal sash, etc., where manufacturing processes, industrial fumes, and condensation due to ventilation difficulties increases serious rust damage that threatens the structural strength of the metal.

RUST-OLEUM effectively retards rust because its tough, pliable, moisture-resisting film combats the causes of rust — even under many of the most difficult conditions.

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In drawing up specifications that involve the use of rustable metal, consider the extra protection that RUST-OLEUM provides. Specify RUST-OLEUM as the shop coat on all new steel. Remember, the first primer coats are the foundation on which your plan for future protection must stand. It's a profitable, *worthwhile* investment for your client!

When you deal with rust problems, we'll gladly help you with specific recommendations. See the complete RUST-OLEUM catalog in Sweets Architectural File, or write for a copy. RUST-OLEUM can be obtained promptly from Industrial Distributors' stocks in principal cities of the United States and Canada.

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"Rigid Economy Man!"

RUST-OLEUM

Stops Rust

Beautifies AS IT PROTECTS

Available in many **COLORS,** aluminum and white.

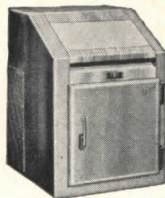


United

FOR *Quality*
AND *Economy*

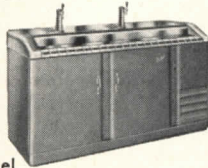
KUBEMASTER ICE CUBE MAKER

Whenever food or refreshment is served, ice cubes as you need them. Choice of 3 beautiful models.



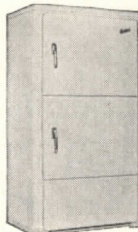
KOOLMASTER DIRECT DRAW

Engineered to serve beer to the "Brewmaster's" taste. Its smart appearance enhances any establishment. Choice of 8 models in Stainless steel or brown Dulux finish.



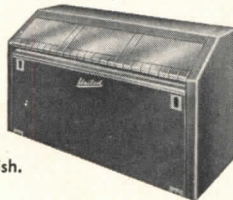
UPRIGHT FREEZER 15 Cubic Feet

Scientific placement of cooling coils, two separate food compartments, dual doors to minimize cold loss, insure balanced freezing at minimum cost.



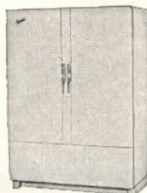
DRY KOOL BOTTLE COOLER

World famous for performance and design. 14 models to meet all requirements in stainless steel or brown Dulux finish.



REACH-INS

Modern flush fronts with recessed handles in popular sizes. Ten models to choose from. Available in white Dulux, stainless steel fronts and glass doors.



Write for illustrated catalogue

DESIGNED—ENGINEERED—MANUFACTURED
By
**UNITED
REFRIGERATOR
COMPANY**

Locust and Walnut Sts.
HUDSON, WISCONSIN

THE RECORD REPORTS

CANADA

(Continued from page 300)

ments that at the end of 1950, Canadian lending institutions had \$1,300,000,000 outstanding in loans on real estate, a figure almost double that of 1939. Expansion is seen as the result of the demand for and supply of mortgage funds. The heavy construction program in the postwar period provided an impetus to mortgage loan requirements; the growth of the over-all assets of the institutions and amendments to the National Housing Act made it easier for them to make loans.

Gross mortgage loans approved in 1950 by lending institutions, which include life and fire insurance companies, trust companies, loan companies, fraternal societies and credit unions, showed an increase of one third over the 1949 level. A total of 76,000 loans amounting to \$521,000,000 were approved in 1950, as against 62,000 in 1949 with a value of \$394,000,000.

Lending on the security of new houses for owner-occupancy accounted for the major portion of this increase. Mortgage loans on new buildings rose from \$169,000,000 in 1949 to \$257,000,000 in 1950.

A sample survey of dwellings financed under builders' sale provisions of the National Housing Act indicated that 44 per cent were acquired by people with family incomes between \$2700 and \$3500. The income range over \$3500 accounted for 38 per cent of the houses purchased, and the group with family incomes accounted for 18 per cent. First mortgages accounted for an increased share of the acquisition cost of these dwellings. "Mortgage Lending in Canada" reports that the first mortgage represented 78 per cent of the acquisition cost of the typical dwelling financed under builders' sale provisions of the National Housing Act in 1950, as against 66 per cent in 1949. The capital and savings of owners used in the down payment for such dwellings declined from an average of \$2271 per unit in 1949 to \$1842 in 1950.

Of the outlay on new housing in 1950, amounting to \$836,500,000, owners invested just under half, 49 per cent, in the form of equity or full owner financing. In 1949, owners invested 56 per cent. Loan funds from lending institutions, credit

(Continued on page 304)

SPECIFY

ALLENCO

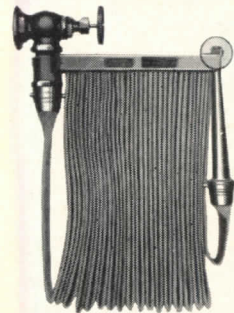
First IN INTERIOR FIRE-EQUIPMENT

1. SIMPLER

It's downright *easier* to indicate precisely the Allenco products for each job. Easier because data is *handy*: A.I.A. file 29e2 (see below); also Sweet's Architectural Catalog File. Easier because *complete range concisely presented*, optional factors *cross-indexed*. Easier because our consulting engineers will work out any appropriate problem with you.

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You can't do wrong by specifying ALLENCO products, because their reliable quality and prudent economy has been distinctive for years. Whatever units are indicated, you simply can't buy better! For example—



Almost any hose rack unit "tests" all right *without* pressure. Few, if any, match this patented ALLENCO-Bowes in split-second free-running *under pressure* as in actual emergency. Complete line of cabinets, couplings, extinguishers, hose, valves, etc.

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Allen on Interior Fire-Protection—clear and practical working data—no charge to architects and engineers. Write for your copy now.

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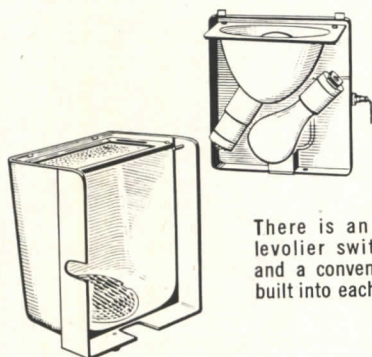
W. D. ALLEN

Manufacturing Co.

CHICAGO 6

NEW YORK 7

Adjuvant per se*



There is an individual levolier switch control and a convenience outlet built into each "Dua-Lite"

The Curtis "Glo-Ray," illustrated at the right provides necessary night lighting for hospital rooms, corridors and stair landings. A unique shutter arrangement inside the cover controls the amount of light permitted to pass through the cover glass.



we suggest that convenient complete lighting is good therapy...

The newly designed Curtis "Dua-Lite" is the ideal hospital lighting unit for installation in private rooms or multi-bed wards. The "Dua-Lite" provides indirect illumination for general hospital room lighting as well as direct illumination for the patients' reading light. The cover glass for the indirect component is Securit tempered with Sterlux pattern. This cover glass, together with an efficient Alzak Aluminum reflector, softly diffuses the light from the 150-watt lamp throughout the room. A Fresnel lens is utilized to control distribution of the 75-watt lamp used for the direct component. The housing is cast aluminum which is readily painted after installation to blend with the room interior.

Write for Curtis Bulletin 2416 for complete specifications and details.

*"that which is additional to prescription for aiding recovery"

CURTIS LIGHTING, INC.
DEPT. J3-16, 6135 W. 65TH ST.
CHICAGO 38, ILLINOIS

Name _____
Address _____
City _____ State _____

CURTIS
LIGHTING, INC.

6135 West 65th Street, Chicago 38, Illinois



it's **new**

it's Here!

HIL-TEX

HILLYARD'S Sensational Seal!

TAKES THE GUESS AND WORK OUT OF RESILIENT FLOOR CARE!

At last! A seal to ease maintenance, prolong life of asphalt tile, rubber tile, all floors of a porous or semi-porous nature (including terrazzo and cement with the exception of wood). HIL-TEX fills pores and hair cracks to provide a smooth even surface, preparing a bond between the floor and the surface treatment.

HIL-TEX has been thoroughly tested "ON THE FLOOR" IN HOSPITALS, SCHOOLS, INSTITUTIONS, INDUSTRIAL AND COMMERCIAL BUILDINGS!

The Low Cost Protection You've Been Wanting for Floors

- one coat takes the place of many expensive finish coats.
- complete protection against water, dirt, grease.
- tremendous coverage (1,500 sq. ft. on some floors).
- brings to life colors which have become dull or faded. Won't soften or bleed colors.
- saves maintenance time.
- resists deterioration from spillage as alcohol, gasoline, mineral spirits, paraffin oil.
- is not harmed by acid or alkaline salts (present in certain floorings), staves off obsolescence of floor. Hil-Tex is highly resistant to ozone or fading action of Ultra Violet Light.

SAFETY MEN APPROVE IT . . . with an "anti-slip" coefficient of friction 50% greater than minimum insurance requirements (non-flammable) (U/L)

FLOORING CONTRACTORS RECOMMEND IT . . . contains no solvents, caustic, acids, other ingredients to injure or wear out sensitive surfaces.

MAINTENANCE MEN PRAISE IT . . . keeps floors in A-1 condition at all times with only half the work.

ARCHITECTS SPECIFY IT . . . for floors of greater beauty at a minimum cost to clients.

RUBBER FLOORING MANUFACTURERS ASSOCIATION ENDORSE IT . . .

SEE OUR CATALOG IN SWEET'S

See for Yourself What HIL-TEX can do!

On Your Staff, Not your payroll!

MAIL THIS COUPON! FREE DEMONSTRATION!

Hillyard Chemical Company, Dept. O-10 St. Joseph, Missouri

- Please arrange for a FREE HIL-TEX demonstration on a _____ floor.
- Send me all the facts about Hil-Tex.

Name.....Title.....

Institution.....

Address.....

City.....State.....

THE RECORD REPORTS

CANADA

(Continued from page 302)

unions and other sources accounted for 32 per cent of the total outlay for new housing in 1950 and government expenditures in the form of loan advances or direct construction outlay accounted for 19 per cent.

Canada Second to U. S. In Housebuilding Rate

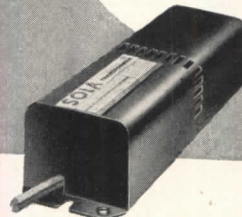
New non-farm housebuilding accounted for 4.4 per cent of Canada's gross national product in 1950, reports *Housing Progress Abroad*, a publication of Central Mortgage & Housing Corporation. Comparable figure for the U. S. was 4.6 per cent. In the United Kingdom only 1.7 per cent of the gross national product went for new dwelling construction.

As is well known, Canada and the U. S. have both reduced the size of mortgage loans available. Purpose is to hold house production to a level consistent with the competitive demand for materials and labor made by heavy defense construction. Indications are that, despite heavy carryovers, the record number of completions chalked up last year — 90,000 units in Canada, 1,400,000 units in the U. S. — will show a sharp decline. On the other hand, the U.K.'s present plans for increased defense spending will permit continuation of its housing program at the 1950 level.

"No reduction in the present rate of housebuilding in Australia is considered feasible in view of that country's mass immigration policy," the report states, "but alleviation of the material and labor shortage is sought from importation of large numbers of prefabricated houses from Great Britain and continental Europe. A similar situation applies to New Zealand, where no decrease in the housing program is contemplated at present. Here also prefabricated dwellings are being imported on an expanding scale. In South Africa as well, where the most urgent aspect of the housing program is in providing shelter for natives in urban fringes, reduction of the housing program below its present level is not contemplated. In these countries increased defense efforts depend on the expansion of industries and on the growth of industrial labor force, which in turn requires

(Continued on page 306)

FLUORESCENT FIXTURE PERFORMANCE DEPENDS ON BALLAST QUALITY



SOLA Sequenstart
CONSTANT VOLTAGE BALLASTS

reduce air conditioning load

lower operating temperatures and increased efficiency can save as much as \$1.14 investment in air conditioning per lamp.

Temperature rise of the 2-lamp SOLA Sequenstart* Ballast is exceptionally low, compared to the conventional lag-lead types. The patented SOLA Sequenstart* circuit greatly reduces the quantity of metal required in the ballast, minimizing iron and copper losses. This reduces the high ambient temperature surrounding ordinary ballasts.

In addition to cooler lighting, the circuit design of SOLA Sequenstart* Ballasts (which are wired in series rather than in parallel) results in greater efficiency. This means less wattage loss, and consequently less wattage necessary for a specified lighting level.

When you next purchase, specify or install fluorescent lighting, it will pay you to inquire of the fixture manufacturer about the ballast installed in the fixture.

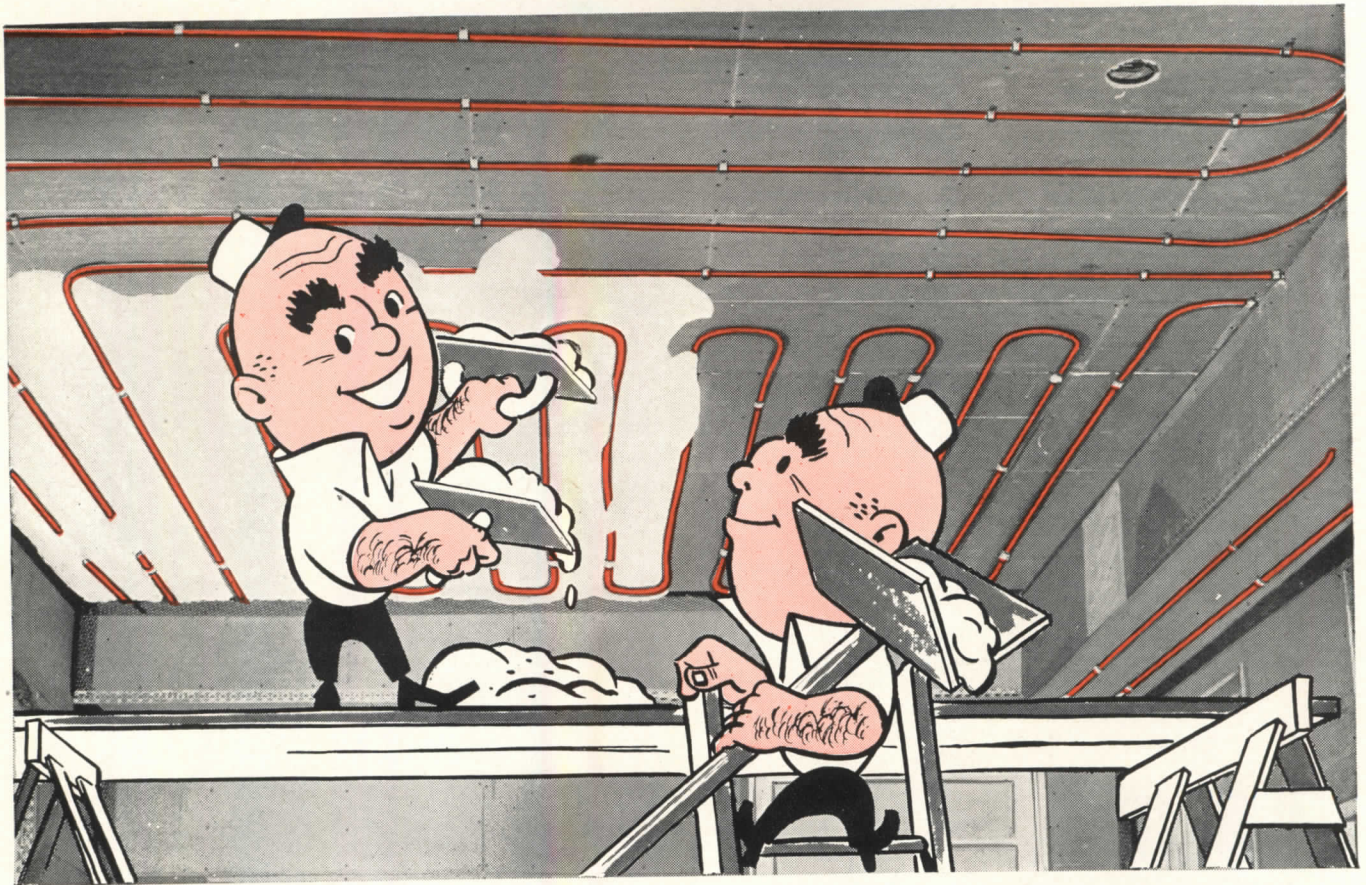
Employment of SOLA Sequenstart* Ballasts for fluorescent lighting can make a very significant saving on installed and operating cost of an air conditioning system. Write for the complete story of air conditioning savings and increased fluorescent lighting performance through SOLA Sequenstart* Ballasts. Ask for Bulletin T-FL-144.

Compare Ballast Performance—Then Specify The Outstanding Performer.

SOLA
Sequenstart
TRADE MARK

CONSTANT VOLTAGE BALLASTS

SOLA ELECTRIC CO.
4633 W. 16th St., Chicago 50, Ill.



Bundyweld Tubing . . . plays double role in better radiant heating

Handles better at your building site, **Performs** better in your systems . . .

Because Bundyweld is better tubing . . . the only tubing that's double-walled from a single strip, with a patented beveled edge. Copper-brazed through 360° of contact, its walls are safe, solid, strong.

Rugged Bundyweld arrives at your building site (one end expanded if specified) ready to ride right through fabrication steps. One man bends dead-soft Bundyweld on a simple fixture, joins the formed, rigid grids in leakproof union by soft or hard solder-

ing. Just two men position them. There's never a worry about dents or structural collapse.

Performance in your systems is just as smooth. For Bundyweld is scale-free. Water flow stays clean, even, steady. Bundyweld's thinner wall radiates heat faster, more effectively, as well.

Check your *Sweet's Architectural File* for more information. Or write: **Bundy Tubing Company, Detroit 14, Michigan**. Whatever your needs, we'll do our best for you, with the understanding, of course, that defense orders must come first.

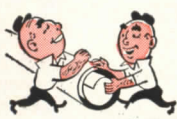
Bundyweld Tubing

DOUBLE-WALLED FROM A SINGLE STRIP

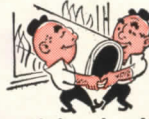
WHY BUNDYWELD IS BETTER TUBING



Bundyweld starts as a single strip of basic metal, coated with a bonding metal. Then it's . . .



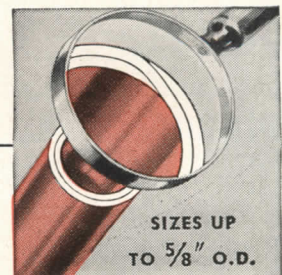
continuously rolled twice around laterally into a tube of uniform thickness, and



passed through a furnace. Bonding metal fuses with basic metal, presto—

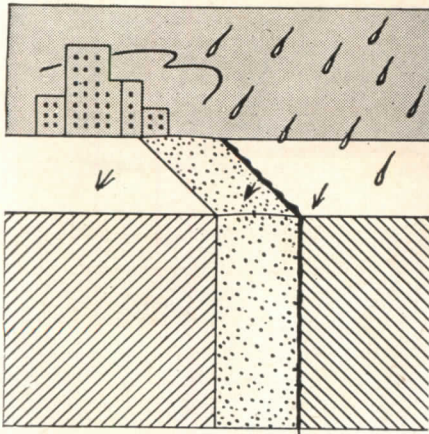


Bundyweld . . . double-walled and brazed through 360° of wall contact.



SIZES UP TO 5/8" O.D.

NOTE the exclusive patented Bundyweld beveled edge, which affords a smoother joint, absence of bead and less chance for any leakage.



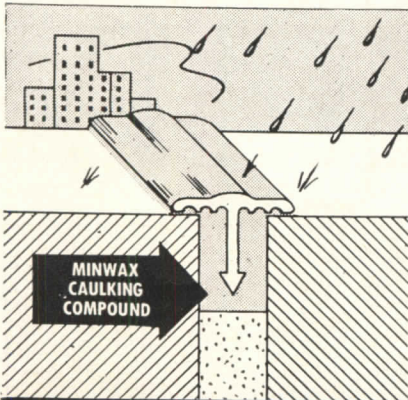
**To Prevent
Leaks in
Masonry Joints—
specify**



WEATHERCAP

set in
MINWAX CAULKING COMPOUND

• Good for the life of the building. For free sample and specification data, mail coupon.



SEND FOR YOUR SAMPLE

Minwax Company, Inc.
11 W. 42nd St., New York 18, N. Y.
Please send me free sample of Weathercap with descriptive folder and specification data.

Name.....
Address.....
City.....
State.....

AR-10-51

THE RECORD REPORTS

CANADA

(Continued from page 304)

housing accommodation in places where industrial development takes place.

"In Sweden defense expenditures have also been expanding recently. Some decline of residential building activity is anticipated for 1951, mainly as a result of lack of labor and materials, which are being devoted to meeting the rapidly growing world demand for Swedish steel and lumber."

**Poor Wiring Jobs Called
Fire Hazard for Ontario**

The Ontario Hydro Electric Power Commission would probably welcome a provincial licensing system for electricians, says E. W. McLeod, chief of the publicly owned utility's inspection department. He was commenting on an address made at the recent annual meeting of the Ontario Electrical Contractors' Association in Toronto.

Speaker was President Gordon E. Elting, who expressed the opinion that 40 per cent of all houses and public buildings in the province are inadequately wired and without proper safeguard against fire.

"Throughout Ontario there are persons who set themselves up as qualified electricians, seeking the confidence of the public," he said. "The tragic thing is that the public without any other standard to go by accepts their claims to ability. Unqualified electrical work is all too common in our cities and towns. Many backdoor and fringe operators are at work calling themselves electricians; and these, plus the 'extra-money-on-the-side' boys, are a menace to the safety of homes and public buildings.

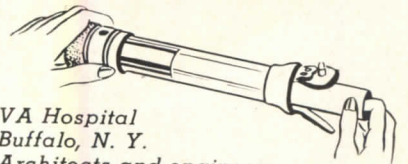
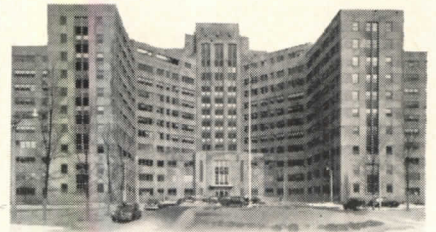
"The only sensible thing to do is for the Ontario government to institute a provincial licensing system that will require that all those holding licenses are properly qualified electricians."

Under the Hydro Act, there is no provision for the licensing of electricians. Indeed, outside the large cities and towns which have bylaws regulating the building trades, anyone can call himself an electrician whether he has any qualifications or not. Many do and never let the Hydro know they're in business.

"It's up to the inspection department to see that the standard of workmanship

(Continued on page 308)

**11 FLOORS
in
3 Silent Seconds**



VA Hospital
Buffalo, N. Y.
Architects and engineers:
Green & James and Beman & Candee

Hospital communications, paper work, records—even medicine and small instruments—whisk from floor to floor or building to building at forty feet a second in Grover Transitubes. It's silent, too; a signal light quietly announces a carrier's arrival. Saves the time of nurses, doctors, internes . . . eliminates messenger personnel. All hospital departments are effortless seconds apart.

...Other Buildings, Too!

In modern offices, factories, stores, or institutions, Grover systems handle routine paperwork, money and small packages. Some installations link just a few departments. Others are large and intricate. All provide the speed and efficiency that present-day methods demand.

Grover engineers work closely with architects in designing and estimating. Most systems are fabricated from standard parts for economy, yet are custom built to meet present and future needs. Grover Bulletins describe pneumatic tube systems for any kind of building. Write for yours today.

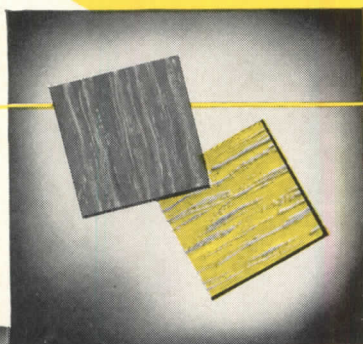
GROVER



THE GROVER COMPANY
DETROIT 19 • MICHIGAN

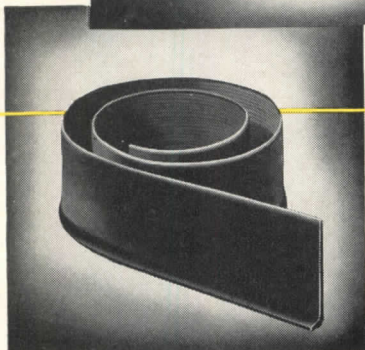
PERFECT FLOORING Package

for modern planning and building!



Rubber Tile

The present resilient flooring preference points to Rubber Tile. Fremont gives you a choice of bright or soft colors that make perfect harmony with walls and ceiling. It's easy to install and maintain, gives the home owner years of easy walking.



Vinyl Plastic Cove Base

The best in low cost base trim. Available in both 1 1/2" and 4" heights, continuous length rolls, Fremont Cove gives you a choice of nine colors (including black). It's easy to work, dresses up any floor scheme.



Rubber Tile Adhesive

The finest adhesive for installing both Fremont Rubber Tile and Cove Base. Gives a strong, firm bond—a point to remember because an inferior adhesive will spoil your perfect floor installation.

WATCH FOR NEW FREMONT PRODUCTS

Fremont Rubber Company



Sponge Rubber
Rug Cushion



Vinyl Plastic
Cove Base



Plastics



Rubber Tile

FREMONT RUBBER COMPANY
309 McPherson Highway, Fremont, Ohio
Gentlemen:

Please send me full information on Fremont products.

NAME _____
FIRM NAME _____
STREET ADDRESS _____
CITY _____ STATE _____

GRANT

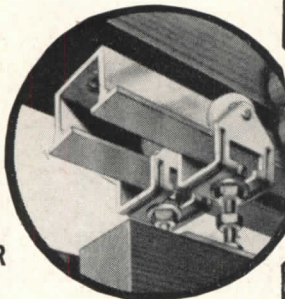
SILENT

SLIDING DOOR HANGERS

feature

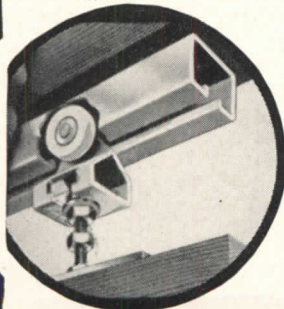


- Low Headroom Requirements
- Nylon Ball Bearing Rollers
- Three Adjustments
- Center Hung Principle-Automatic Door Alignment
- Simple Installation



**GRANT
No. 17
HANGER**

For multiple doors of the same or varying widths. Doors can never "jump track." No metal to metal contact between moving members yields smooth, silent operation. Can be equipped with Riveted Apron unit reducing headroom to but $1\frac{3}{8}$ ".



**GRANT
No. 16
HANGER**

For single sliding doors up to 50 lbs. Includes all features of No. 17 Hanger. Riveted Apron Carrier reduces headroom to $1\frac{1}{8}$ ". "Self-aligning" feature reduces installation adjusting problems.

Send for illustrated catalogue.

GRANT PULLEY & HDWE. CO.
31-83 Whitestone Pkwy.
Flushing, N. Y.

The foremost name in Sliding Devices

THE RECORD REPORTS

CANADA

(Continued from page 306)

is acceptable," Mr. McLeod explains, "and to look after everything that is brought to our attention. On the other hand we can't inspect the jobs we don't know about. If 40 per cent of the electrical work done in the province is being missed, it's because owners don't realize or care enough about the importance of good wiring to notify us. Personally, we would be very happy to see provincial licensing. It would help us out a lot."

Quantity Surveys Unwanted, Canadian Newspaper Reports

Canadian general contractors do not think the time is ripe for adoption of the British system of quantity surveying. In a survey conducted by the *Financial Post*, a leading business newspaper, doubt is expressed that any saving would result from such a move.

In Great Britain, contractors will not tender in competition on a building job costing more than 1500 pounds unless they are supplied with bills of quantities. These are prepared by an independent professional estimator, known as a quantity surveyor, who determines in each trade how much labor and material are required to erect the building according to the architect's drawings and specifications. The competing contractors price the various quantity items, total the figures and submit the sum as their tender.

The quantity surveyor's fee is two and a half per cent on contract awards up to 10,000 pounds, and two per cent on the balance above that amount. The fee may be either included in the tenders or paid directly by the building owner. If the fee is included in the tender, the contractor who gets the job pays it out of the interim certificate he receives from the owner. If the owner for any reason decides not to proceed with the work, he pays the quantity surveyor direct.

Advantages claimed for an independent estimating service for contractors are that their tenders have a uniform relationship and the quantity prices quoted are useful in valuing variations from the contract.

A quite different method is followed in Canada, except in the case of heavy engineering construction. Jobs in this cate-

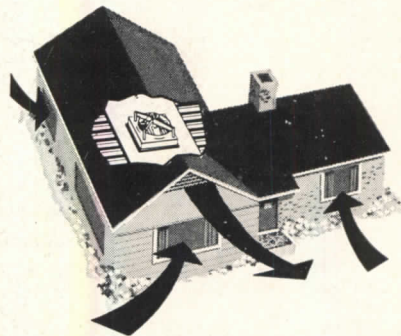
(Continued on page 310)

Hot houses
are fine for flowers



...but
not for
people!

**Plan your homes
For COOL comfort**



■ Throughout the nation, home owners are finding that no modern convenience gives them as much comfort as a Hunter Attic Fan. It drives out stale, humid air and fills every room in the home with cool, invigorating breezes.

Installation of Hunter's new, compact Package Attic Fan is simple and inexpensive. Fan, motor, suction box and shutter are a complete unit—requiring only a ceiling opening and less than 18" clearance in attic. Four models, ranging from 4750 to 9700 CFM, to fit any home size and climate. Quiet, powerful, dependable. Manufactured by Hunter, exclusive fan makers for over 65 years.

Write for new 36-page manual,
"How to Cool for Comfort."

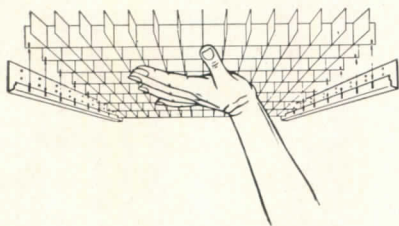
HUNTER FAN & VENTILATING CO.
396 S. Front St., Memphis, Tenn.

HUNTER
Package Attic Fans

YOU PAY NO MORE

for the
Patented and Exclusive Features in

NEO-RAY LOUVRED CEILINGS



You Pay No More for . . .

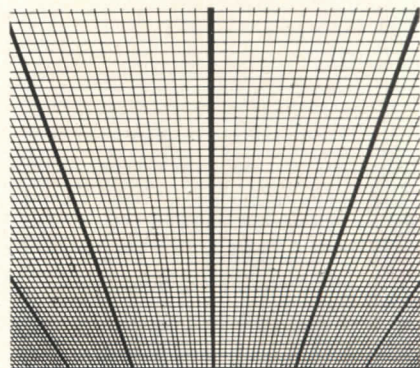
**One Man
Installation**

IDEAL FOR

- **Plants**

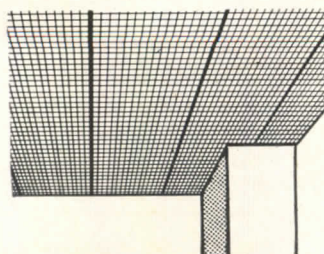
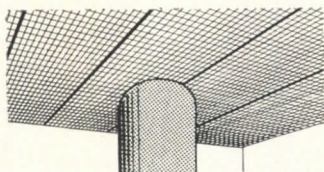
Reception Rooms
Offices
Laboratories
Inspection Areas

- **Banks**
- **Stores**
- **Schools**
- **Showrooms**
- **Lobbies**
- **Marquees**



You Pay No More for . . .

**Perfect Alignment
Under All
Conditions**



You Pay No More for . . .

**the Versatile
Adaptability to Every
Type of Ceiling**

Yes — you pay no more for the many patented and exclusive features that make Neo-Ray the outstanding louvred ceiling. Every day more and more architects are discovering the importance of Neo-Ray's patented mating slots and tracks that assure perfect alignment . . . the Neo-Ray stock sections that can be cut on the job to meet any conditions . . . the simple labor-saving design that means low cost installation. Before you write another specification — discover the many "extras" in Neo-Ray Louvred Ceilings.

SEND FOR NEW 64 PAGE CATALOG

Gives complete engineering data and lighting tables for each item in our complete line of fluorescent, slimline, and incandescent fixtures.

Plus

New simplified spot lamp tables for computing light intensities in show windows and all high-lighted areas.

See our catalogue in Sweet's
Architectural File for 1951, sec. $\frac{31a}{NE}$

NEO-RAY PRODUCTS, INC.

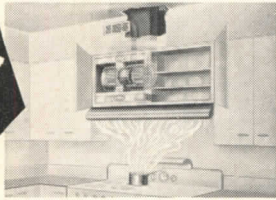
315 East 22nd Street

• New York 10, N. Y.

TRADE-WIND CLIPPER VENTILATORS

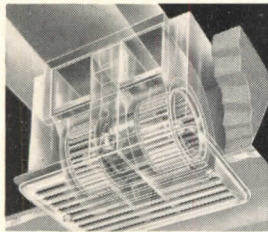
ADVANCED MODELS
FOR EVERY KITCHEN
AND ALL SMALL ROOMS

TRADE-WIND
SUPER
CLIPPER
model 3501



for Kitchen Cabinet Installation

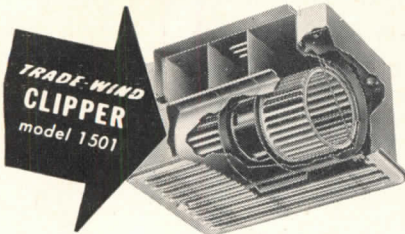
Two inlets at stove and ceiling level each with washable filters. Two centrifugal blowers, delivery 550 CFM CERTIFIED. 2-speed switch. Hood optional.



TRADE-WIND
CLIPPER
model 2501

for Large Kitchens,
Laundries, Game Rooms

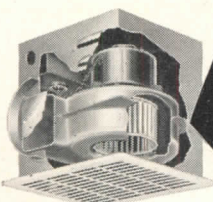
Two centrifugal blowers with motor isolated from greasy air stream. Dripless grille. 2-speed switch. Interchangeable discharge. 425 CFM CERTIFIED.



TRADE-WIND
CLIPPER
model 1501

for Average Kitchens, Laundries, Dens

This is the sensational new double centrifugal blower model. Interchangeable discharge. 300 CFM CERTIFIED. Motor entirely outside air stream. Dripless grille. 2-speed switch available.



TRADE-WIND
CLIPPER
model 1201

with Automatic Switch
for Bathrooms

Single centrifugal blower. 100 CFM CERTIFIED. Built-in backdraft damper. Available with automatic time switch which turns off unit after 30 minutes or less.

TRADE-WIND MOTORFANS, INC.

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THE RECORD REPORTS

CANADA

(Continued from page 308)

gory usually are awarded on a unit price basis, with all quantities for tendering purposes supplied by the designing engineer. As the work progresses, the physical quantities are measured and the contractor is paid at the unit price rate that was bid and contracted for.

In building construction, however, Canadian practice is for each contractor to prepare his own estimates for tendering. As much as \$1000 to \$1500 may be spent in figuring a million dollar job. There will be three, four, perhaps as many as a dozen contractors in competition with one another. The most they can hope for is to be awarded about 25 per cent of the buildings they figure.

Some Builders Speak Up

At a time of rising construction costs, it appears — at first glance — that this method of estimating is a form of economic waste that could be eliminated. The *Post*, believing that a number of small savings might cut over-all construction costs, undertook to survey several representative industry leaders on this point. It published these answers to the question:

P. G. Wilmot, secretary-treasurer, E. G. M. Cape & Company, Montreal — We are not yet ready for this type of service. Architectural practice is somewhat different in this country than in Great Britain, and in the execution of jobs more is left to the ingenuity of the contractor. If he is smarter than his competitor concerning methods and can reduce his tender because of that, he very frequently is successful on a job where he would not be if tied down to a mere filling in of the schedule of prices opposite the statement of quantities.

L. J. McGowan, vice president and general manager, The Foundation Company of Ontario Ltd., Toronto — Personally, I have had no experience with quantity surveyors' methods, but I have had occasion to question people in our business formerly from England or Scotland on the merits of their system and ours. From the opinions expressed as I recall them, the North American method is more flexible and more suited to the tempo of our operations in Canada.

While it is true that some waste re-
(Continued on page 312)



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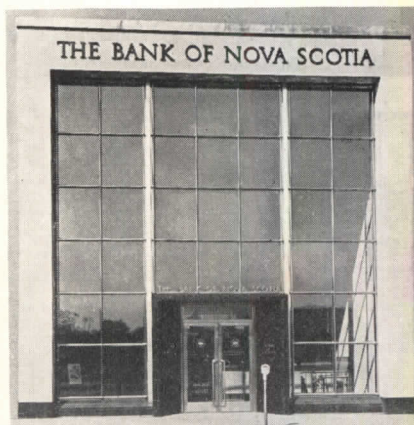
CANADA

(Continued from page 310)

sults from our method of quantity surveying and pricing in competitive work by a number of bidders, the cost is always considered as a cost of selling. Undoubtedly in very small measure, it reflects in the costs of building construction, probably something in the order of one tenth of one per cent, which I think would be considerably less than the cost of fees that would be paid to quantity surveyors plus the cost (interest in investment) of the loss of time taken in preparing infinitely more complete drawings and specifications than architects are now producing, to avoid the hazard of leaving out quantities in the surveyors' bill of material.

On the surface, the North American system appears more wasteful and cumbersome, but in practice I believe it is faster and less expensive to purchasers of building construction services.

Joseph M. Pigott, president, Pigott Construction Ltd., Hamilton — Having quantity surveyors would be, in my opinion, of no value to the industry and would save no money. There are many reasons for this; but basically the difficulty is that in Canada the taking off of quantities and the pricing and general conception of the approach to the work and how it will be carried out are all inseparably interwoven.

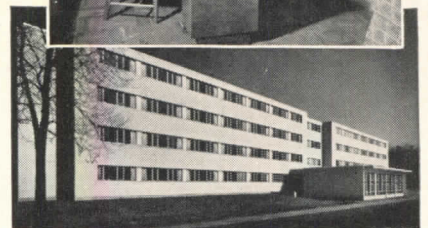
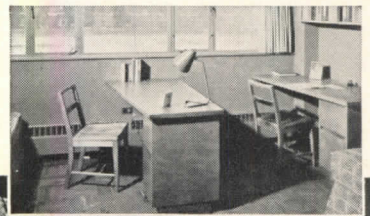


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McCormick Theological Seminary of the Presbyterian Church, Chicago, Ill. Architects: Edwin H. Mittelbush and Edward M. Tourtelot, Jr. Consulting Engineer: Frank W. Riederer. Heating Contractor: Advance Heating & Air Conditioning Corp. General Contractor: A. L. Jackson Co. Above: Webster Walvectors are used wall-to-wall in student rooms.

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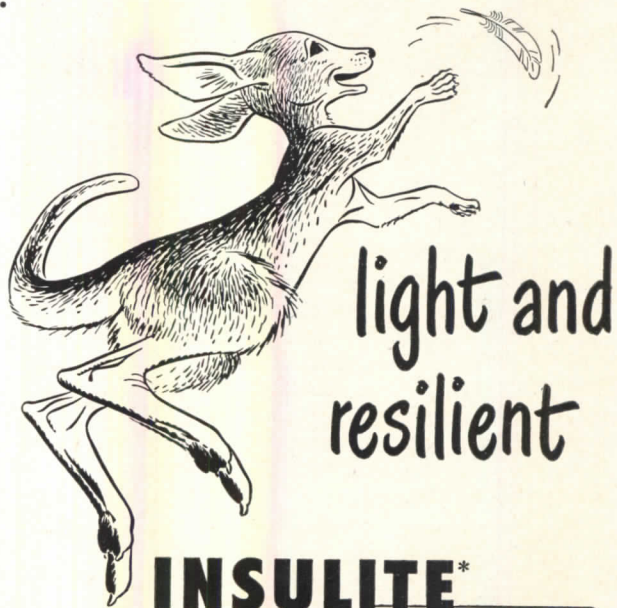
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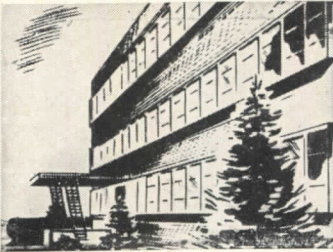
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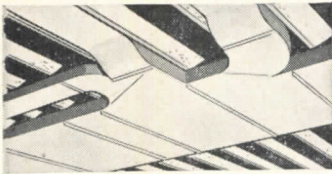
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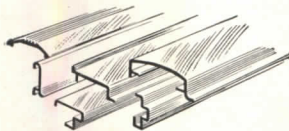
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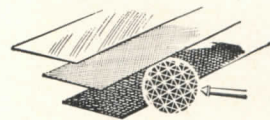
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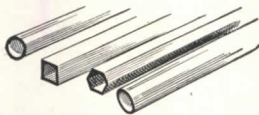
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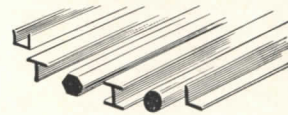
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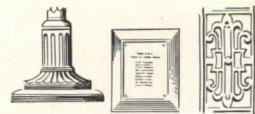
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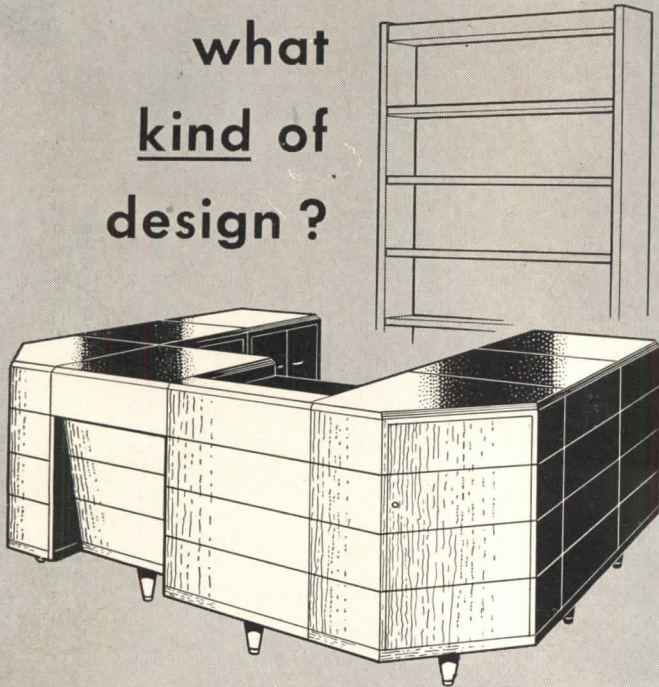
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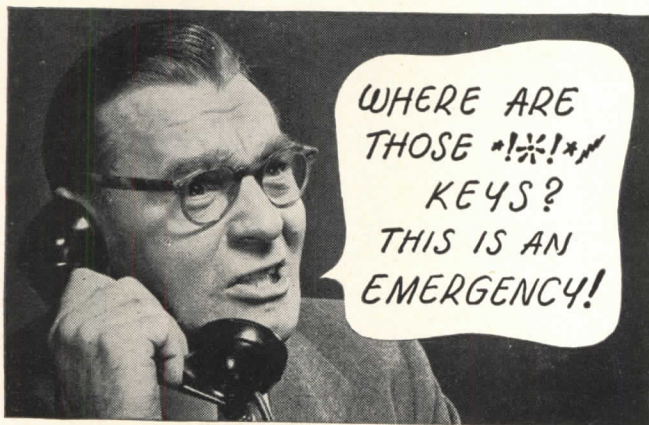
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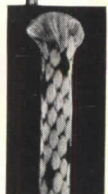
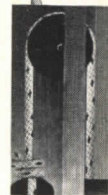
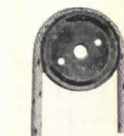
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