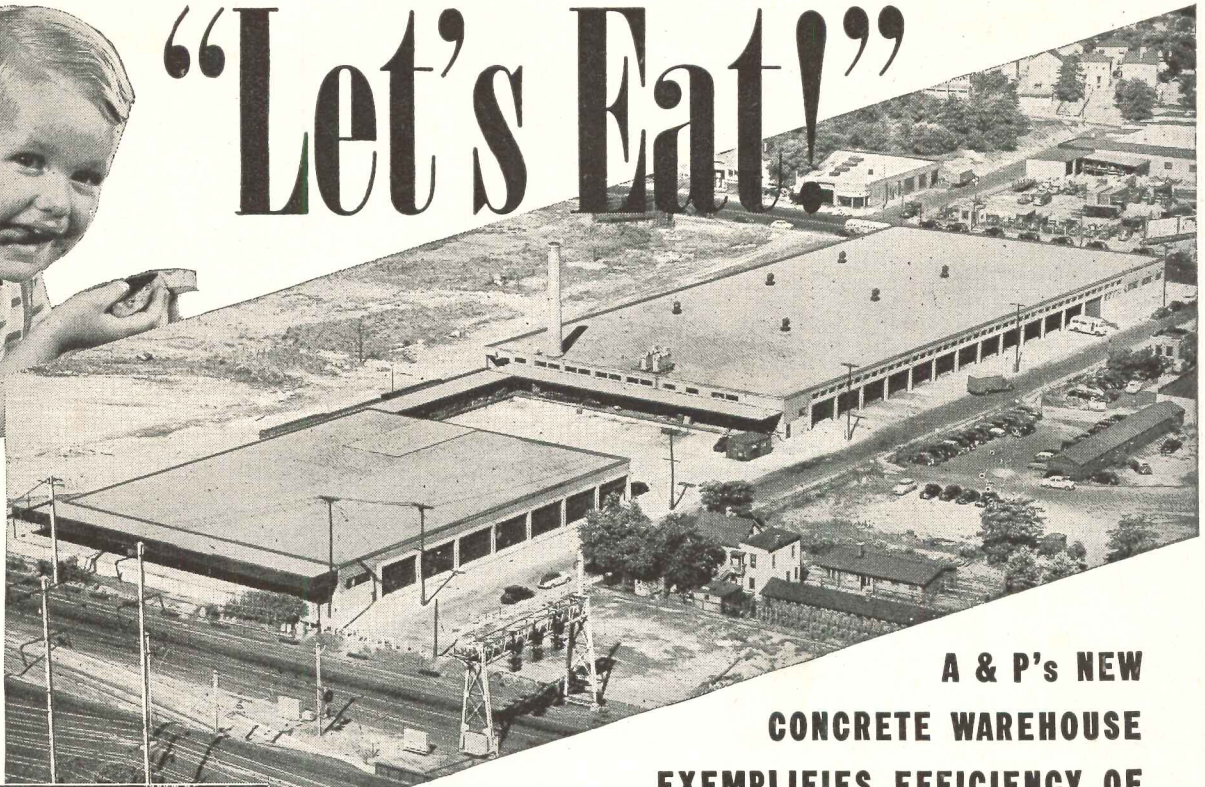


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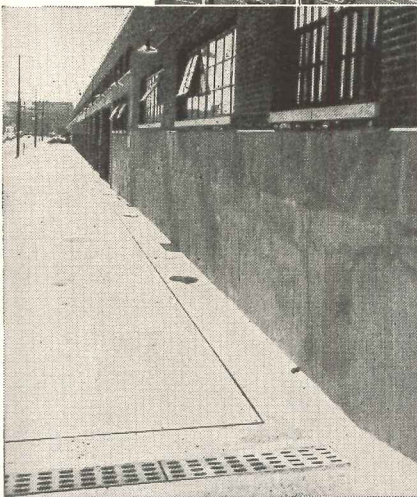
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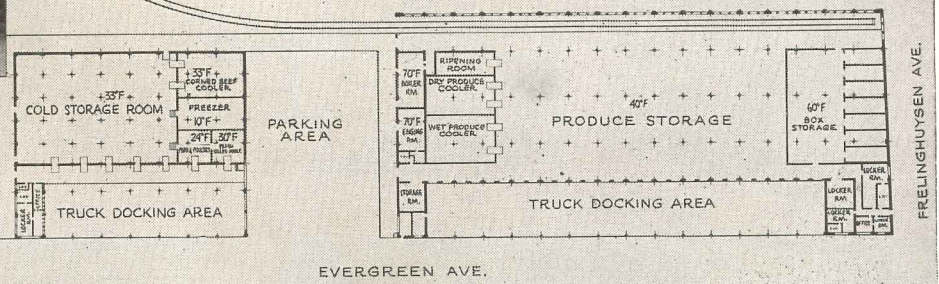
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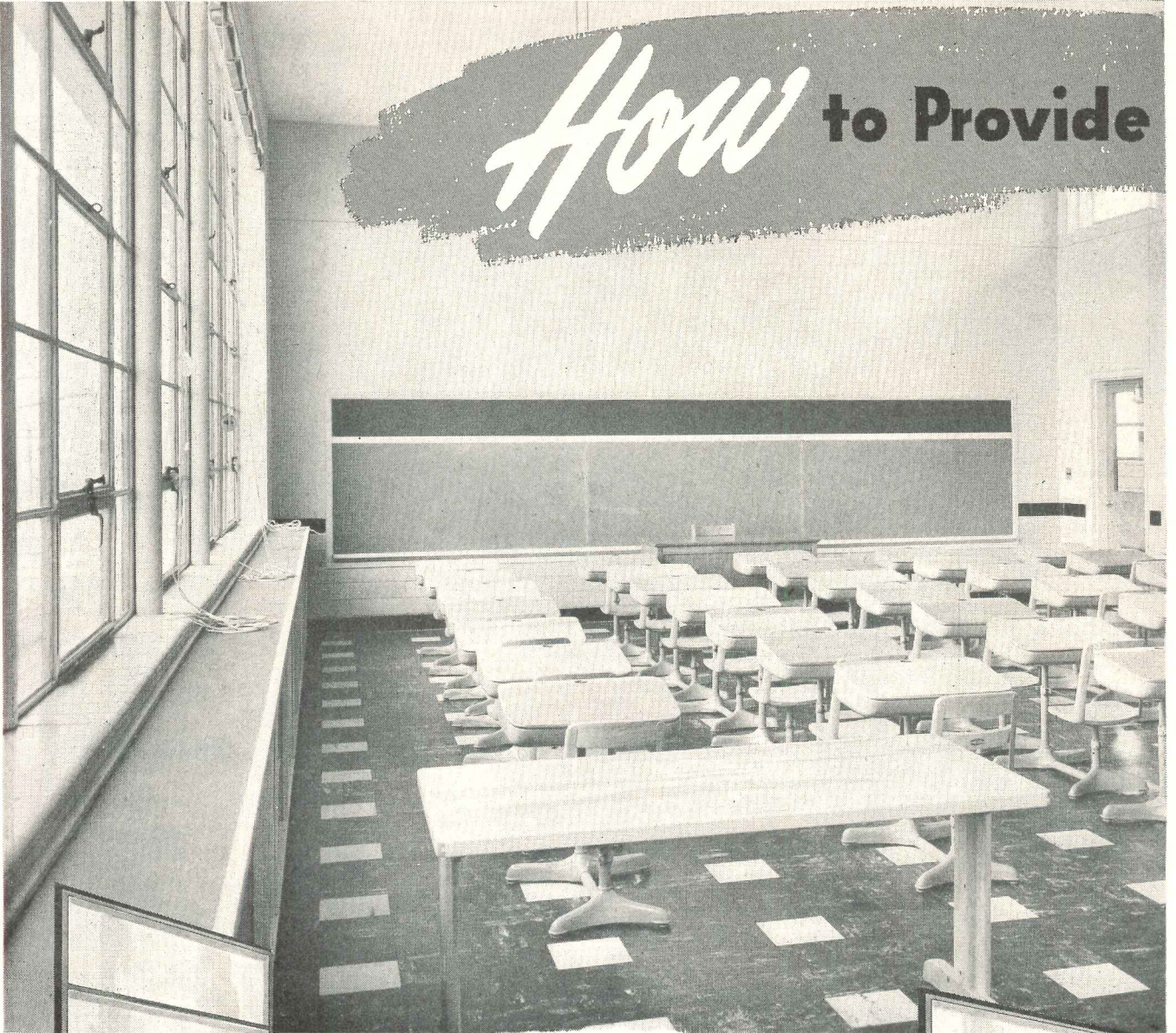
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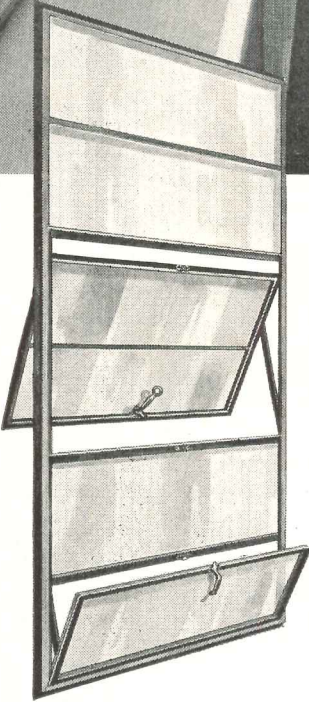
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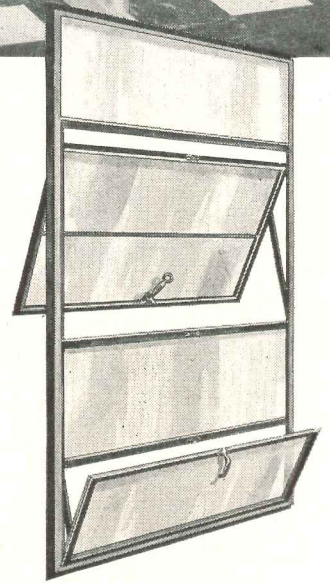
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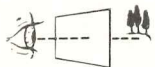
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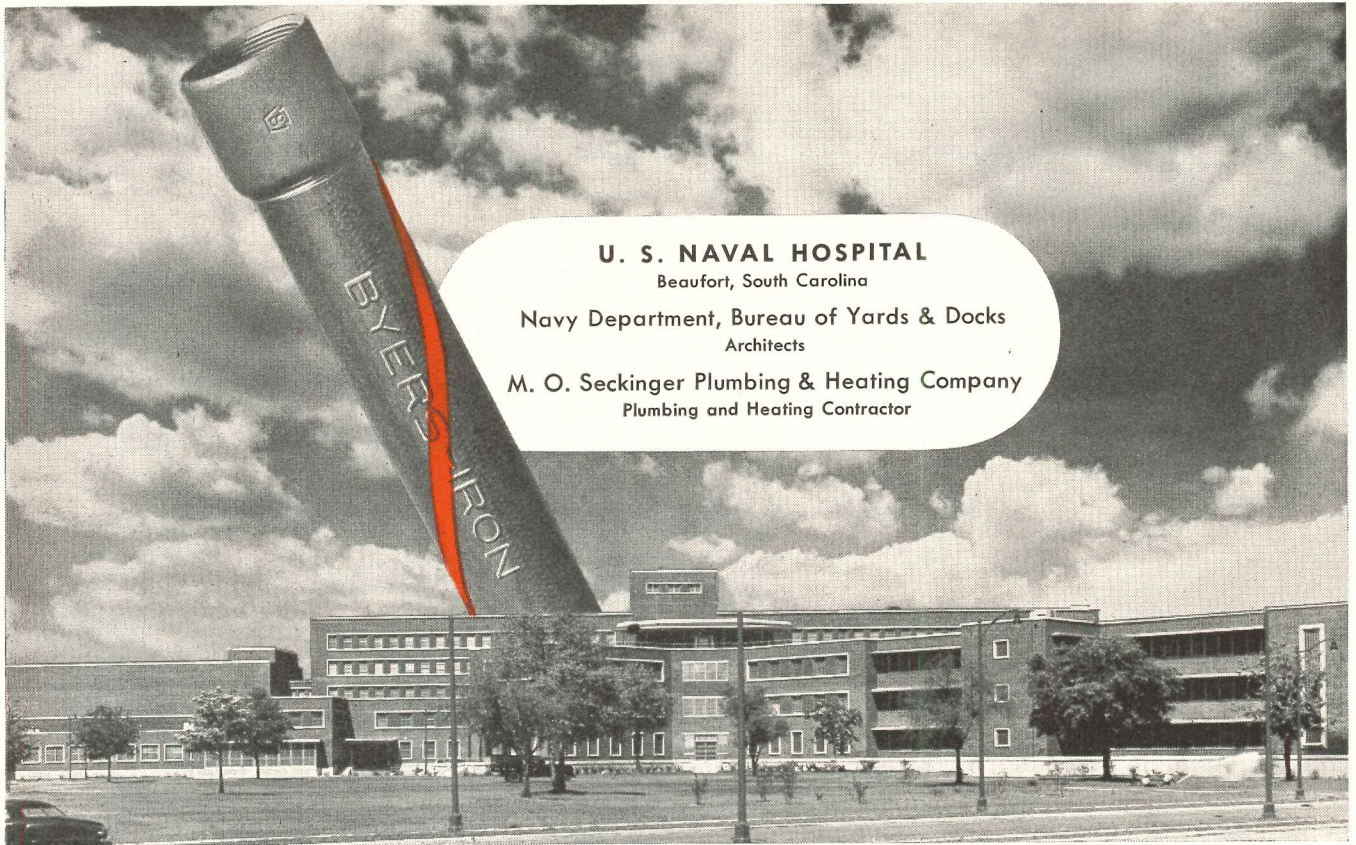


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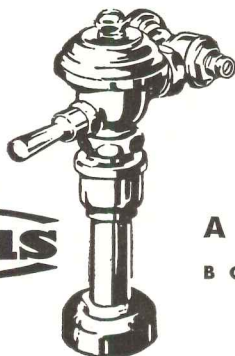
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THE RECORD REPORTS

HHFA Program Picks Up Speed with Appointment of an Assistant Administrator; FHA Prepares Mortgage Insurance Plan for Military Housing

More than any other word, confusion aptly described the state of housing legislation on the national level as the Senate worked doggedly at its stuffed calendar and the House took a 26-day recess. The federal housing agency was moving ahead rapidly with the new public housing program, assigning reservation quotas to those new cities that had made up their minds as to how many units they want to construct in the next two years.

There were important progressive developments in the housing agencies as a result of legislation enacted this year.

Mr. Foley announced appointment of Berchmans T. Fitzpatrick, HHFA's general counsel, as his assistant administrator. This now assigns to Fitzpatrick new responsibilities in connection with public housing, slum clearance and research activities. He had been serving as a program director but now has a position ranking with heads of three constituent agencies — Federal Housing Administration, Home Loan Bank Board and Public Housing Administration.

Official Washington agreed that Foley's was a wise choice. Fitzpatrick has served in legal and administrative positions in connection with government housing programs since 1938. He was general counsel of the old National Housing Agency as well as HHFA. Since March 1948, he had served as assistant administrator for program operations.

The industry was watching for two other appointments scheduled to come soon under the new Housing Act of 1949. Foley planned to name a Director of Slum Clearance and a Director of Research to head up those respective programs.

Public Housing Gets Underway

Meanwhile, the Public Housing Administration showed signs of new life. Saddled with the handling of the nation's new six-year, 810,000 unit program of public housing, this agency began assigning "program reservations" amid considerable pomp in the administrator's office. Galveston, Tex., was the first city to bring in its two-year plan for approval. It was followed closely by Norfolk, Va., Los Angeles and Chicago. New

York was assigned 23,000 units for construction in two years and the list grew steadily

At the same time most of these cities applied for preliminary planning loans so they might get an immediate start. While Congress fumbled with appropriation bills to support administrative functions in connection with the public housing program, the legal machinery had been set up for these early loans. They awaited only the formality of approval by the President. PHA Administrator John Taylor Egan planned to send a number of the loan applications to the White House in a single group with immediate presidential approval anticipated.

The preliminary loans will be used for preparation of development plans including architectural work. As soon as the local housing authority has obtained its program quota on a two-year projection and its preliminary loan if one is sought, it can prepare its local program and enter into a contract with PHA for financial aid. It then proceeds to plan its projects in detail, acquire sites and call for construction bids.

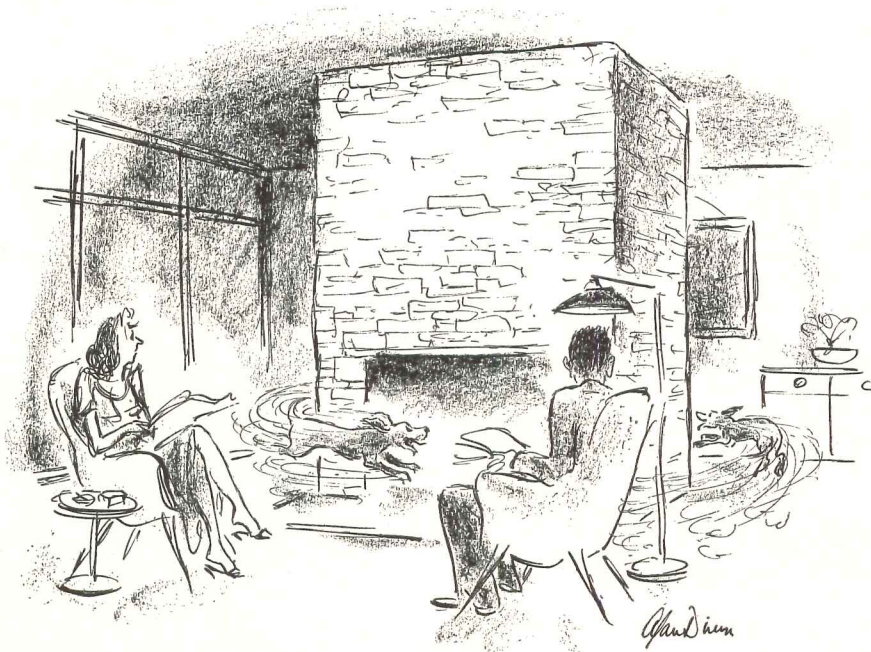
It is significant that all initiative must come from the local group first. (Of approximately 500 local housing authorities that have received instructions from PHA, 472 have had past experience with public housing programs under earlier laws. Eighty-six per cent are in localities with populations of less than 100,000, 63 per cent in cities of 25,000 or under.) A program reservation does not bind the locality to contracts for capital loans or annual subsidy payments. It merely indicates PHA's intention to set aside enough loan and subsidy money to cover the indicated quota of units until the authority is able to prepare its specific local program.

Relation to Unemployment

There is a tie-in now between this housing activity and the Administration's effort to cushion the unemployment blow in certain localities with federal construction and procurement speed-ups. Foley has announced applications of local authorities in those cities cited as being in the "depressed" group (where unemployment has reached 12 per cent or more) will be given special attention by PHA in Washington. So far, the list of 32 critical areas includes only industrial cities in the east and a few mining areas of the near midwest.

All this puts public housing now in the "going" category. The highly important slum clearance and urban redevelopment program is another phase in

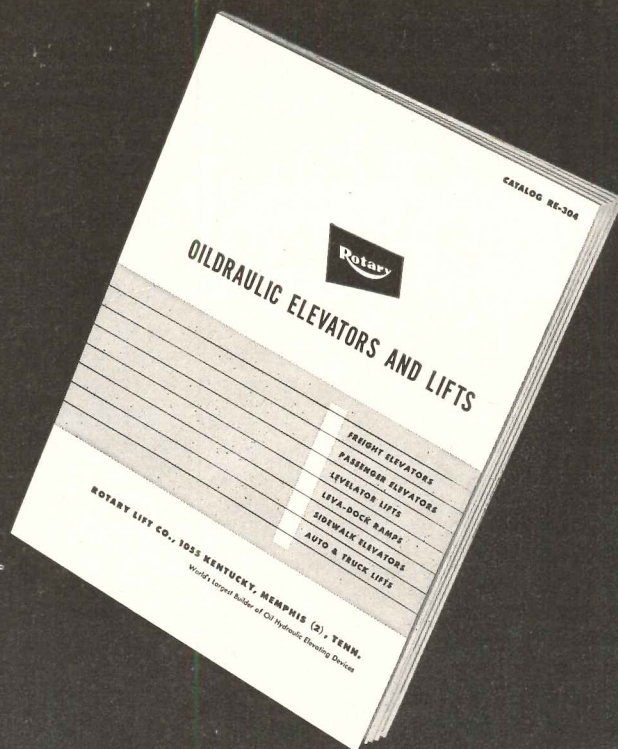
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—Drawn for the RECORD by Alan Dunn

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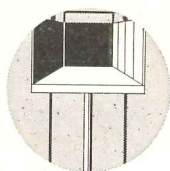
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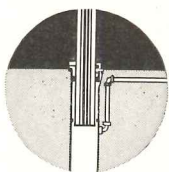
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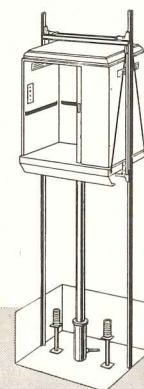
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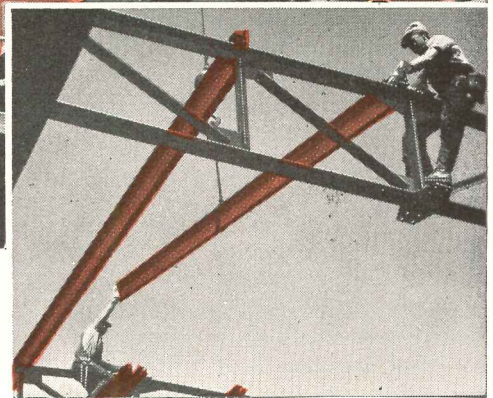
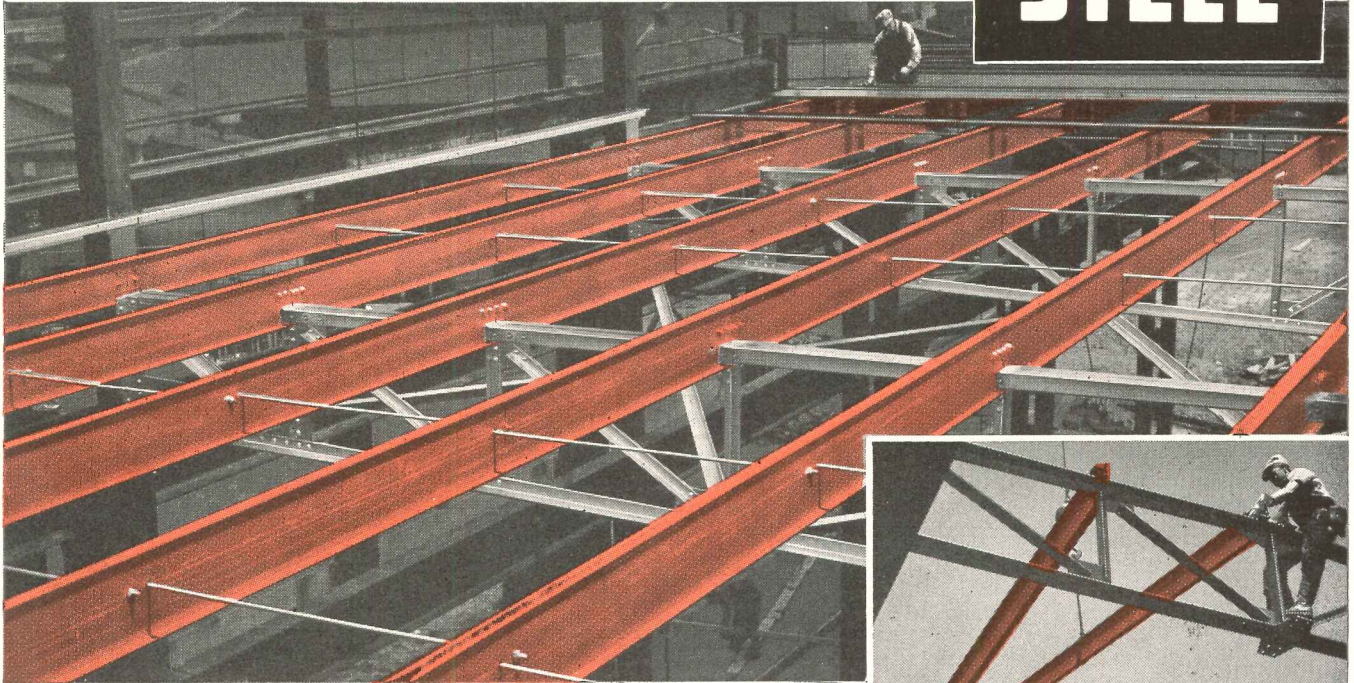
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THE RECORD REPORTS

(Continued from page 7)

HHFA's administration of the new housing law. This is lagging a bit due to inexperience in its details. But the administrator's office has issued a preliminary explanatory statement defining how slum clearance may be initiated and this has been circulated to mayors of all cities of 25,000 or more.

The statement explains prerequisites for participation in slum clearance activity: types of local projects that can be assisted, kinds of work and redevelopment activity eligible for federal help, types of federal loans available to cities for slum clearance projects, provisions for private financing, requirements for federal capital grants and local grants-in-aid, legal authority required and other items. This is preliminary in that it advises cities what to do in preparing for formal filing of applications later on. Still, HHFA is trying to help cities "get their slum clearance and urban redevelopment projects underway without undue delay."

Military Housing Program

While PHA directed new energies to its program assignments, the Federal Housing Administration began a new insurance program of its own — that for military housing. Rough estimates from the armed services placed at 60,000 the number of units of rental housing to be built at Army, Navy, and Air Force installations. FHA Commissioner Frank-

lin D. Richards issued rules and regulations. All such housing will be built by private contractors. Stemming from the Wherry bill, the new Act amends the National Housing Act of 1937 by adding a new Title — VIII. This provides FHA insurance of mortgages on rental housing for both civilians and military employees of the National Military Establishment in the U. S.

Insurance under Title VIII parallels the Sec. 608 provisions. Maximum of any single mortgage is \$5 million, representing not more than 90 per cent of replacement costs and not more than \$8100 per family unit except where the need will be better served by single-family dwelling units. In such latter cases, mortgage principal may be as much as \$9000 per family unit. Interest rates are held at four per cent.

The Army says it plans to sponsor construction of a large number of garden-type apartments, a minimum of single-family residences.

Funds to implement administration of all these new programs had not been appropriated at this writing. The House had passed the Supplemental Appropriations bill of 1950 containing them, but the Senate's subcommittee had just started work on it.

VA Hospital Question Reviewed

The question of building those 16,000 Veterans Administration hospital beds was up again in the House but left dangling when Rep. Rankin could not get support for his resolution attempting

(Continued on page 12)



Before
After



Studman Photo

ECONOMY REMODELING

The above pictured building housing Air Conditioning, Inc., Carrier Corp. dealer in Austin, Tex., was remodeled at an approximate cost of \$2500 from plans drawn by Page, Southerland & Page, Austin architects.

Materials used in the process were paint, corrugated transite, sheet metal and 4 by 4 in. posts. Economy was observed by use of the sheet metal shop connected with the firm in production of the projecting frame, louvers on door and window and the sign letters. The transite fence conceals storage of sheet metal and scrap materials essential to the business. Color scheme is dark gray, light gray and red coral for lettering.

NEWS FROM CANADA

by John Caulfield Smith

Architects Display Wares

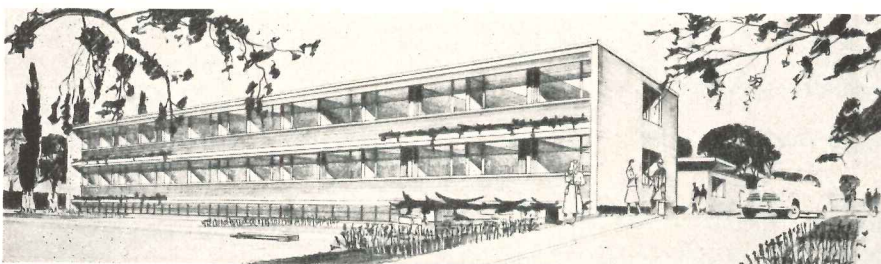
One of the eye-catching booths at the recent Canadian National Exhibition, Toronto, was jointly sponsored by the Royal Architectural Institute of Canada and the National Gallery of Canada.

Purpose of the display was to explain the importance of architecture in everyday life. It did so by means of example, showing what the profession itself considered its best work. There were photographs of structures in nearly every

province — schools, hospitals, churches, factories and commercial and public buildings. Community planning and housing came in for their share of attention. And, to lift the veil of mystery that shrouds the public's understanding of how buildings are designed, generous space was devoted to the architect's relationship with clients. The manner in which he analyzes their problems and develops solutions in keeping with their needs, tastes and pocketbooks was fully publicized.

The National Gallery proposes to send the exhibition to tour various Canadian cities. This will assist many thousands of people to gain an appreciation of the architect's role in modern society.

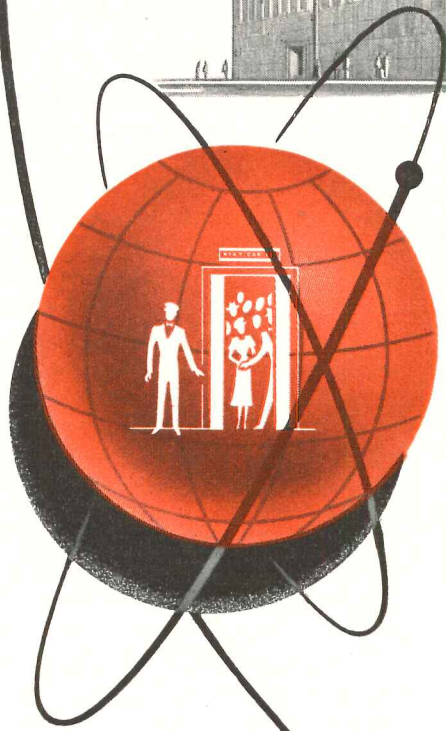
(Continued on page 172)



Humber Memorial Hospital, Weston, Ont., has 52 beds. By John B. Parkin Associates

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It beams 80% of the footcandles directly down on the working area...directs 20% upward for eye-easy brightness ratios.

Its dust-discouraging design and hinged eggcrate louvres make it one of the easiest of all fluorescents to keep clean and efficient. Versatile, too...you can mount the Futurliter in units or rows, surface or suspended.

"Eye-to-the-Future" Futurliters give a lighting system flexible footcandle capacity. Up to 45% more light can be had by adding a third lamp to two-lite units.

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THE RECORD REPORTS

(Continued from page 10)

to force President Truman to order VA to go ahead with authorized plans.

These beds are the 24 new and 14 remodeling projects ordered stricken from the construction program originally approved by Congress. Rankin said he wanted to force the White House to reverse itself on the decision not to go ahead with these 16,000 beds; but though he tried twice to get his resolution passed without rules committee approval, he was defeated. His office said he might try other tactics after the House recess. Approximately \$270 million in contract authority is involved. This amount appears in the appropriation bills for fiscal 1950, designated for the construction of the additional VA hospital facilities, but this does not mean the work will proceed. The executive order to VA still holds preference and it was doubtful Congress would go as far as to try to overrule the White House in this matter.

Another question of VA policy in construction arose with House committee hearings on bills which tried to authorize employment of GI trainees in the construction trades on outside "live" projects. The House finally passed a bill limiting this outside employment to school building construction—the building of any publicly supported school structures. In hearings, the proposals had drawn the wrath of organized labor, which said general outside employment would pit the apprentice against the journeyman with unfair competition, and opposition from the Budget Bureau and VA itself as being unworkable.

The House-passed measure, going to the Senate, does not allow the trainee to be paid any more than his regular subsistence allotment for this off-campus work. Proponents of the plan to throw the door open to apprentices in GI training schools to work on all public buildings said they sought a plan whereby the veteran learning construction skills could get more practical experience. As it is now, they argued, he merely builds up walls in the classroom and tears them down again.

Amendments Considered

Housing officials were watching the complex legal manipulations on Capitol Hill and wondering what would come

(Continued on page 14)



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THE SCHLAGE "Long Backset"

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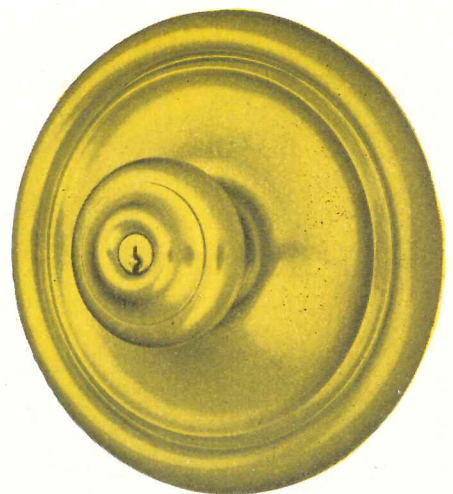
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THE RECORD REPORTS

(Continued from page 12)

next. They had observed a two months' continuation of the Federal Housing Administration mortgage insurance programs with a concurrent boosting of Title II (National Housing Act) authority by \$500 million. This gave Congress a breather for more deliberate consideration of the second broad, long-range housing bill of the session—the Housing Amendments of 1949.

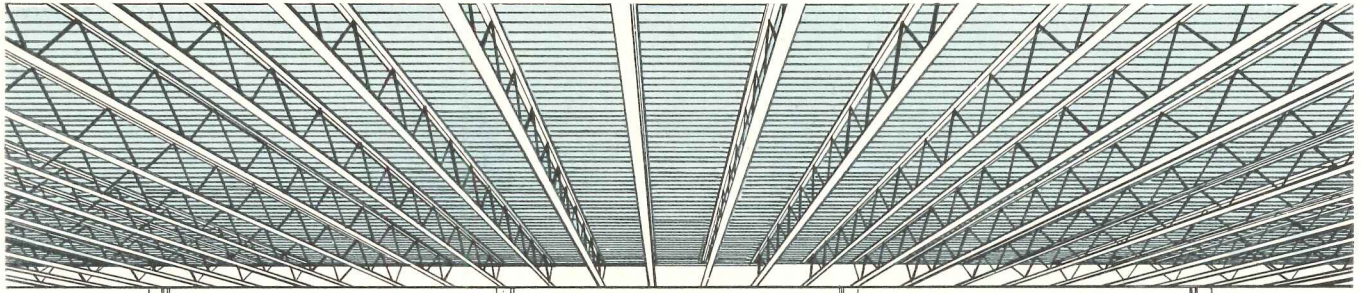
Just before House members took their 26-day respite, they approved the Spence bill and sent it over to the Senate, planning to complete work on that measure for a conference committee report after their return to business Sept. 21.

But the Spence bill which finally gained approval was quite different from the Spence bill introduced to parallel Sparkman's proposed amendments to the National Housing Act in the Senate. When the rules committee refused to clear the measure with its controversial direct loan provisions, the banking committee chairman quickly submitted a new bill without them to get a floor hearing. Immediately direct loans to veterans at four per cent interest rate for housing purposes were put into the new bill by amendment.

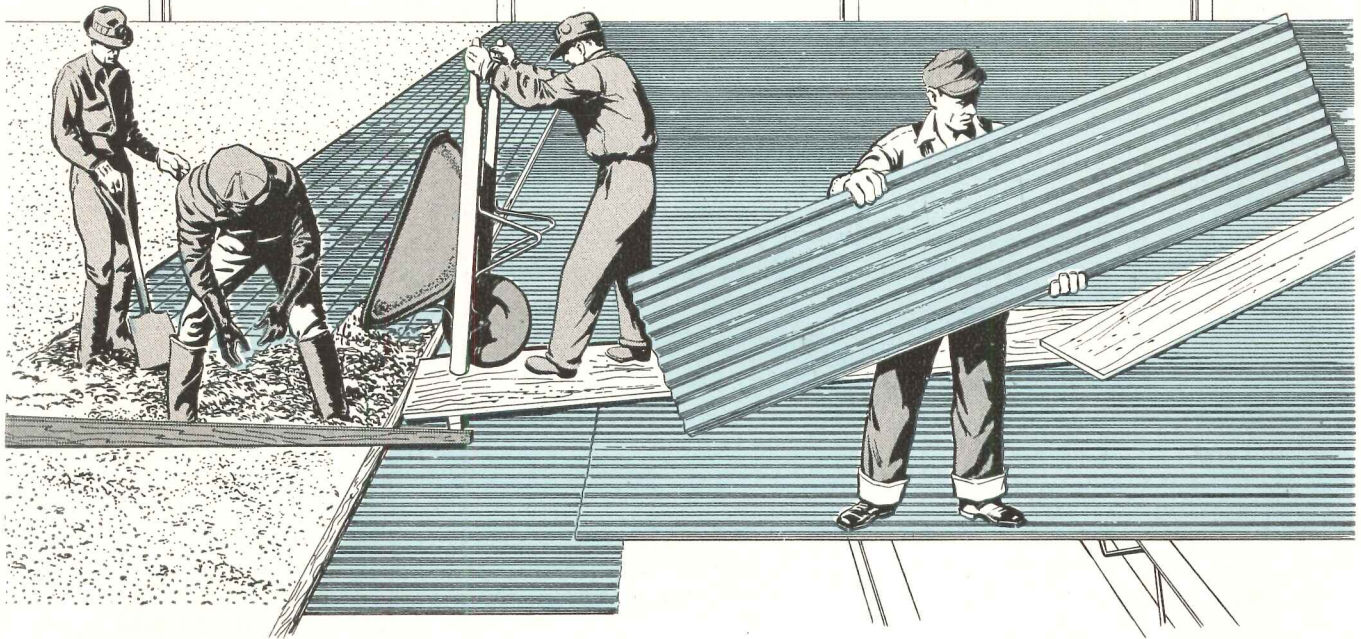
The enthusiasm of backers was short-lived, however. The next day Rep. Marcantonio (ALP-N. Y.) succeeded in tacking on an anti-segregation amendment which surely would have spelled defeat for the Spence bill had it stuck. But there is always another legislative day ahead. Rep. Spence brought out another clean committee bill, again shorn of the highly debatable direct loans. This time all effort to re-enter the direct loans by amendment was defeated. Two more attempts to tack on the fatal "civil rights" issue also were beaten back. (These last-minute proposals to end all segregation of races in housing constructed under federal assistance programs were submitted by Dolinger [D-N. Y.] and again by Marcantonio.)

House passage of the legislation without direct federal loans to veterans for individual housing construction or to non-profit cooperatives and trusts for large-scale ventures left up to the Senate this vital question that has drawn so much fire from critical industry sources. A \$300 million fund for use by the Vet-

(Continued on page 16)



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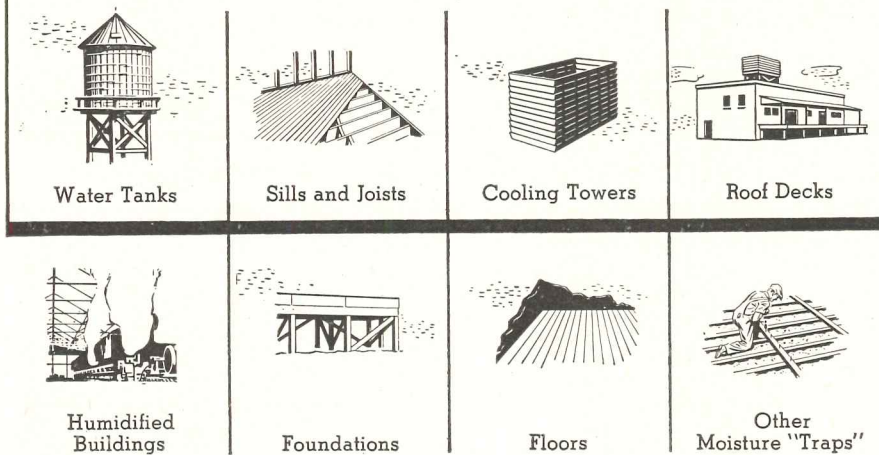


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THE RECORD REPORTS

(Continued from page 14)

erans Administration in making direct loans to veterans whenever they cannot get four per cent money from their local lending institutions, and another \$1 billion for direct loans to cooperatives remained a part of the Sparkman bill as it was reported out by the senate banking committee.

Victory for Builders

Thus, the home builders and the lenders had achieved a major victory insofar as House action was concerned. They had opposed direct loans bitterly all the way through, supporting only the FHA program extensions. Another fight lay ahead in the Senate, however, with certain opposition looming during floor consideration. It was possible the argument might have to be carried over into a conference of both houses, a condition that would throw this major housing bill into the final days of the hectic first session and cloud its chances for survival in any extensive form.

Though the direct loans claimed the headlines, there were other issues involved of vital concern to architects and builders. The House-approved measure, for example, liberalizes the mortgage insurance programs in an effort to emphasize low-cost home construction. The secondary market of the Federal National Mortgage Assn. in Reconstruction Finance Corp. is thrown wide open to most of the loans. It now can absorb up to only 50 per cent of the individual portfolios of lending institutions. There is a fund of \$75 million in the House bill for direct loans by R.F.C. to manufacturers of prefabricated housing now holding commitments from that agency under the present Sec. 203 provision. Also, the Spence bill contains direct loans to educational institutions by R.F.C., unlimited in amount—40-year four per cent loans to construct campus housing facilities.

All this, covered not in identical form but by similar provisions in the Sparkman amendments, would mean large new volumes of work for all segments of the housing industry if enacted.

If the Spence measure should finally be adopted in its present form, the following loans would be taken out from under the 50 per cent limitation now applying to each lender and henceforth could be sold in full amount to the R.F.C.

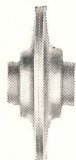
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recommend it with confidence...

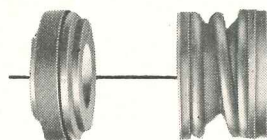
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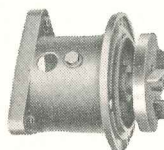


Silent operation—perfectly balanced single-suction, open-type impeller eliminates vibration . . . molded rubber shaft couplings, resilient mounting eliminate noise.



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Built to last—cast iron body and fittings . . . precision-machined steel shaft . . . powdered bronze bearings.

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THE RECORD REPORTS

(Continued from page 16)

agency, clearing out the portfolios of lending institutions and permitting them to do more business:

- Title I, Sec. 8, rural home loans;
- Title II 203 (b) 2 D, urban low priced new home loans;
- Title II 207, rental housing loans;
- Title II 213, cooperative loans;
- Title VI 608, rental housing loans;
- Title VIII 803, military housing loans;
- Title VI 611, loans to large-scale builders;
- Title VI 610, loans on purchase of public housing, and
- Veterans Administration guaranteed loans of less than \$10,000 per dwelling unit.

The ratio of guarantee on GI home loans would be increased from 50 per cent to 60 per cent and the amount raised from \$4000 to \$7500 with the loan term extended from 25 to 30 years. Builders and lenders both balked at the idea of repealing the combination FHA-VA guaranteed loan but the Spence measure as well as the stronger Sparkman amendments would do away with these benefits. The Senate version would repeal them immediately but the Spence bill cuts them off after 180 days following passage of the Act.

All GI financed housing built after Nov. 1, 1949, would have to conform to VA's minimum construction standards.

**WITH THE A.I.A.
New York Chapter Officers**

Officers for the coming year were elected at the 80th annual business lunch of the New York Chapter, A.I.A. Chapter president will be Walter H. Kilham. Also named to office were: Ben John Small, vice president, M. Milton Glass, secretary and William Potter, treasurer.

New members of the executive committee are Morris Ketchum, Jr., and Robert Allan Jacobs. Continuing members include Harry M. Prince, Daniel Schwartzman and Harold R. Sleeper. Elected to the professional practice committee were Geoffrey Platt, chairman, Malcolm G. Duncan and John C. B. Moore; to the medal of honor jury: Max Abramovitz, William Lescaze, Lorimer Rich and Stephen F. Voorhees. The committee on fellows to 1952 will include

(Continued on page 20)

A *New* ARCHITECTURAL COMPETITION

Covering One of America's Most Popular and Rapidly-Developing Types of Housing . . . *The Suburban Apartment*

\$5,000 IN CASH AWARDS

for the Most Interesting and Practical
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**Eight-Family Wood Garden-Type
APARTMENT BUILDING
of Wood Frame Construction**

Open to:

Architects, Designers, Draftsmen and Senior Students.
Opens October 1, 1949—closes January 15, 1950. Prizes
awarded March 15, 1950.

The Problem:

The expanding popularity of the suburban or garden-type of apartment offers a broad and interesting new architectural challenge.

This competition is intended as a source of inspiration to architectural designers, and to builders, developers and investors in communities which have need for increased rental facilities, and who may be encouraged through examples of improved design and economy, to undertake more construction of this type.

It is the sponsor's belief that a well-integrated combination of the fundamentally low-cost garden-type of structure with traditionally low-cost wood construction can provide an economical satisfactory answer to many existing housing problems.

It is believed that this competition will serve to demonstrate how well architectural grace, beauty and originality can be expressed in a multi-family dwelling designed in wood.

The Prizes:

Major Awards

First Prize\$1,500
Second Prize\$750
Third Prize\$500

Honorable Mention
10 Awards at \$100 each.

Student Awards

First Prize\$500
Second Prize\$250
Third Prize\$150

Honorable Mention
7 Awards at \$50 each.

The Jury of Awards:

MR. GEORGE W. PETTICORD, JR., A.I.A. Washington, D. C.
MR. JOHN M. WALTON, A.I.A. Washington, D. C.
MR. EDWARD R. CARR, *Builder* Washington, D. C.
Professional Advisor: LAWRENCE M. STEVENS, *Architect*, Washington, D. C.

How to Enter:

To enter this competition, secure an entrance application form and contest rules from the Contest Secretary, Wood Garden Apartment Design Contest, c/o Timber Engineering Company, 1319 18th Street, N. W., Washington 6, D. C. Upon receipt of the application form properly filled out, the company will send you a file of informational data on the use of its products as specified in the contest conditions.

The Sponsor:

TIMBER ENGINEERING COMPANY

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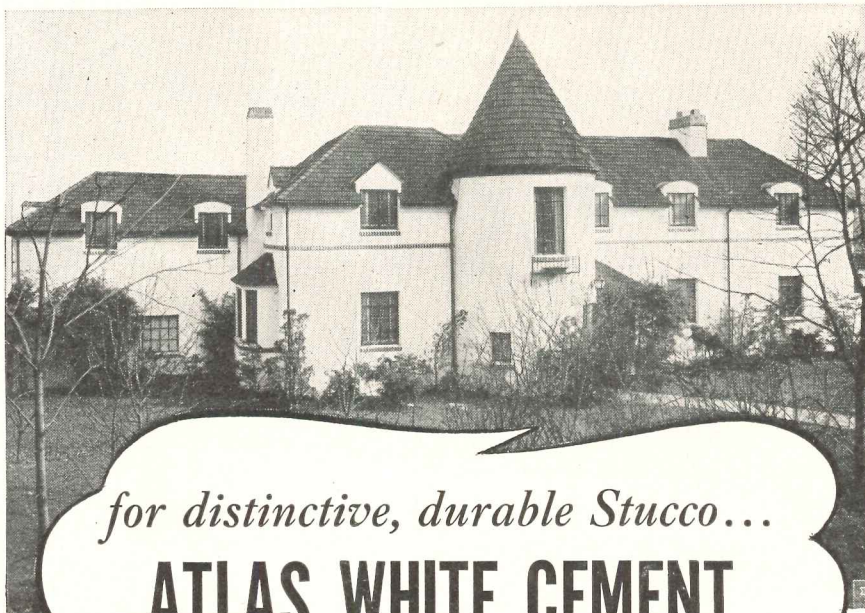
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Approved by the Committee on Competition of the AMERICAN INSTITUTE OF ARCHITECTS

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For further information on the uses of Atlas White Cement, see SWEET'S Catalog, Section 4B/3 and 13C.5, or write to Atlas White Bureau, Universal Atlas Cement Company (United States Steel Corporation Subsidiary), Chrysler Bldg., New York 17, New York.

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THE RECORD REPORTS

(Continued from page 18)

Louis Skidmore and Edgar I. Williams and William F. Lamb and Clarence Stein to 1950 and 1951 respectively (to fill the unexpired terms of Ralph Walker and Arthur Holden who had resigned because of the new office each now holds with the national body).

New England A.I.A. Meeting

The six New England chapters of the A.I.A. plan to hold a seminar to discuss the proper design of hospitals early in December in Boston. The program will include topics of interest to the hospital consultants, administrators and medical personnel as well as to professional architects. Speakers will be chosen from among leaders in the hospital field and will deal with the most up-to-date solutions to the problems encountered in the design of the medium sized general hospital.

The seminar will be held for two days and will include special luncheons featuring speakers of national eminence on topics of concern to the development of the hospital system in New England.

The committee in charge of the seminar includes architects from all six New England states: from Massachusetts — Charles D. Maginnis, Jr., Sherman Morss, Charles G. Loring, Hugh A. Stubbins, Jr.; Connecticut — Victor A. Frid, Hugh McK. Jones, Jr.; New Hampshire — Nicholas Isaak, Stewart A. Lyford; Rhode Island — James E. Walker, Bernt C. V. Zetterstrom; Maine — Alonzo J. Harriman, Walter S. Lancaster; Vermont — William W. Freeman, Kenneth Reid, chairman.

Five-State Convention

More than 200 architects from five states are expected to attend a convention for members of the A.I.A., planned by the St. Louis chapter. Members of two state associations not affiliated with the Institute are also invited to the meeting which will take place Nov. 18 and 19. States which will be represented include Nebraska, Kansas, Iowa, Oklahoma and Missouri.

Gift to A.I.A. Chapter

The Buffalo-Western New York Chapter, A.I.A., has been awarded \$2500 annually for the establishment of Edward H. Moeller scholarships for the study of architecture. The money is part.

(Continued on page 22)

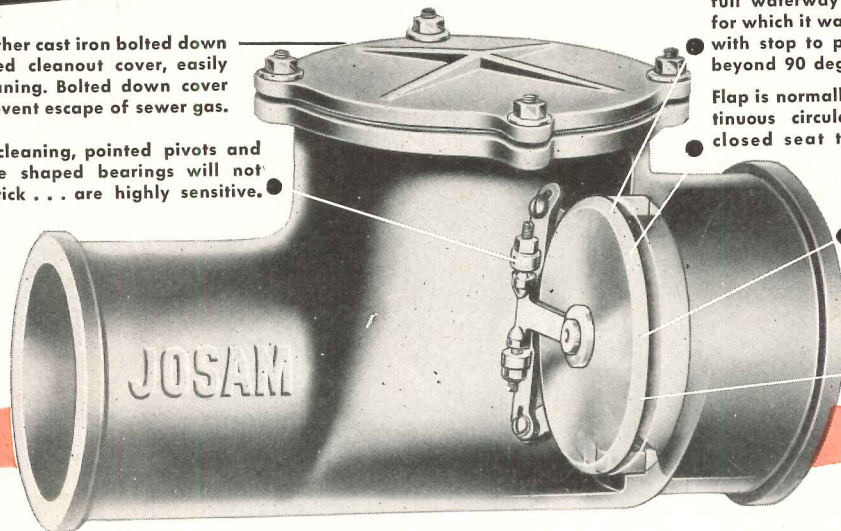
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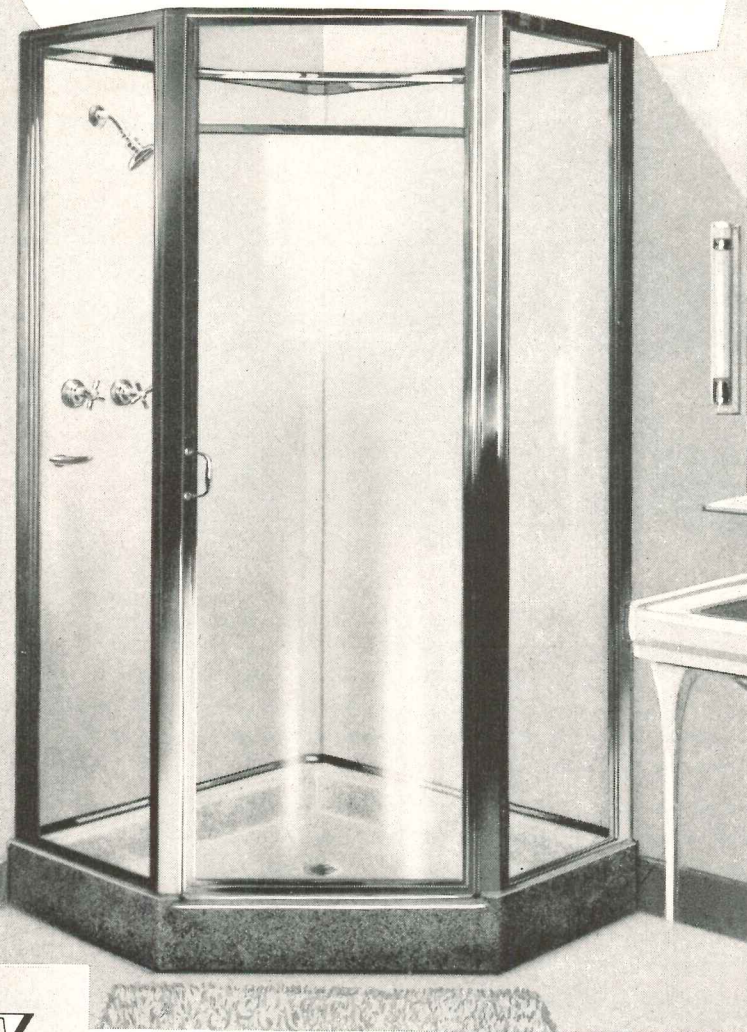
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DESIGN NO. 2000-C



The finest in shower cabinet design and construction, now again available for installation in bathrooms where the ultimate in luxury is desired.

Back wall panels are white vitreous porcelain enamel, glass panels set in solid brass chromium plated frame. Receptor deep type terrazzo generous size with overall dimensions 40" x 40" x 80". Architects, Builders and home owners will welcome back this Fiat shower cabinet that typifies luxury shower bathing equipment.



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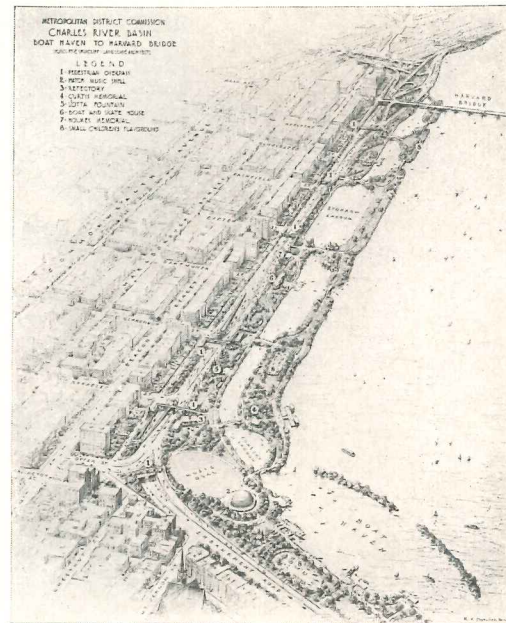
LOS ANGELES 33, CALIF.

In Canada Fiat showers are manufactured by Porcelain and Metal Products, Ltd., Orillia, Ont.

THE RECORD REPORTS

(Continued from page 20)

of a fund of nearly \$325,000 left in trust to the Buffalo Foundation by the late Col. Edward H. Moeller, Buffalo architect who died in 1948. The gift was entrusted to the foundation for the establishment of scholarships. The first allocations of funds have gone also to the Albright Art School, the Studio Theater and the Community Music School of Buffalo.



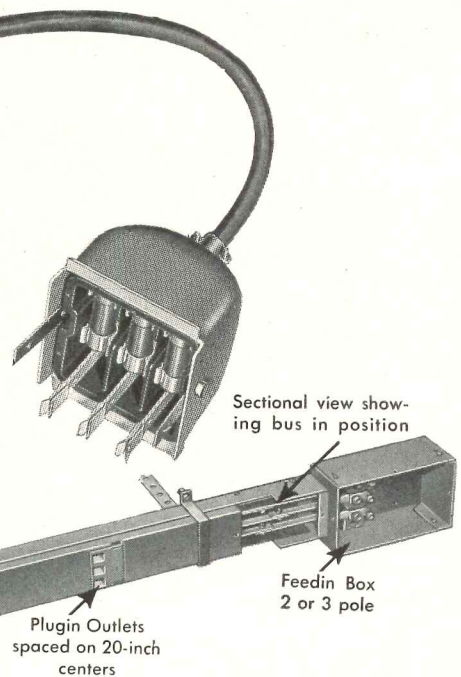
CHARLES RIVER BASIN PLANS

Construction of new recreational areas on the shores of the Charles River Basin is planned by the State of Massachusetts to replace those which will be lost with the building of the new Esplanade Highway, as directed by a recent act of the Commonwealth legislature.

The proposed replacements, which were formulated after a conference between Gov. Paul A. Dever, Commissioner William T. Morrissey, of the Metropolitan District Commission, and Arthur A. and Sidney N. Shurcliff, landscape architects, include a new Charlesbank center for the West End, complete with swimming pool and athletic fields; a canoeway for small boats; a new boat and skate house to replace those being razed for the highway and changes to the shore line between Harvard and Boston University bridges to provide over five acres of new park land. In addition 11 pedestrian overpasses over

(Continued on page 154)


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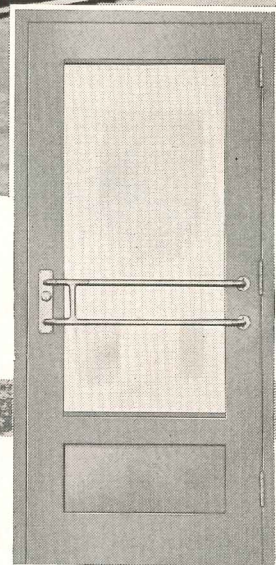
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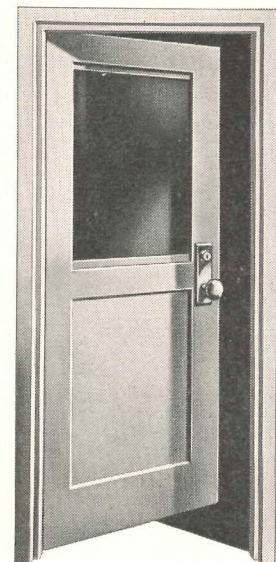
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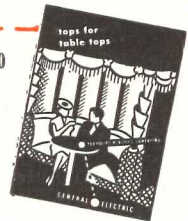
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CONSTRUCTION COST INDEXES — Labor and Materials

United States average 1926-1929 = 100

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

Period	NEW YORK					ATLANTA				
	Residential		Apts., Hotels, Office Bldgs. Brick and Concr.	Commercial and Factory Buildings		Residential		Apts., Hotels, Office Bldgs. Brick and Concr.	Commercial and Factory Buildings	
	Brick	Frame		Brick and Concr.	Brick and Steel	Brick	Frame		Brick and Concr.	Brick and 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
1941	134.5	135.1	135.1	137.2	134.5	97.5	96.1	99.9	101.4	100.8
1942	139.1	140.7	137.9	139.3	137.1	102.8	102.5	104.4	104.9	105.1
1943	142.5	144.5	140.2	141.7	139.0	109.2	109.8	108.5	108.1	108.7
1944	153.1	154.3	149.6	152.6	149.6	123.2	124.5	117.3	117.2	118.2
1945	160.5	161.7	156.3	158.0	155.4	132.1	133.9	123.2	122.8	123.3
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
May 1949	241.2	238.2	242.3	245.3	238.9	194.8	193.9	186.8	187.9	180.5
June 1949	238.7	235.1	241.4	244.7	238.0	192.0	192.7	185.2	186.6	179.1
July 1949	236.6	232.9	240.4	243.9	237.0	183.6	183.5	177.5	178.0	174.3
	% increase over 1939					% increase over 1939				
July 1949	91.9	90.3	83.9	82.8	82.2	112.7	120.8	86.6	82.8	84.1
	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
1941	118.8	118.0	121.2	121.7	122.2	116.3	112.9	120.5	123.4	124.3
1942	124.5	123.3	126.9	128.6	126.9	123.6	120.1	127.5	129.3	130.8
1943	128.2	126.4	131.2	133.3	130.3	131.3	127.7	133.2	136.6	136.3
1944	138.4	138.4	135.7	136.7	136.6	139.4	137.1	139.4	142.0	142.4
1945	152.8	152.3	146.2	148.5	145.6	146.2	144.3	144.5	146.8	147.9
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
May 1949	222.2	222.1	211.7	213.3	212.6	212.5	207.4	212.5	217.5	215.9
June 1949	219.2	218.4	210.5	212.4	211.4	210.8	204.2	212.9	219.5	215.8
July 1949	215.9	214.5	210.3	212.3	211.2	206.7	199.3	211.4	218.5	214.2
	% increase over 1939					% increase over 1939				
July 1949	95.9	100.5	77.2	77.2	77.5	95.7	100.7	80.1	79.2	83.9

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

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

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

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

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

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

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

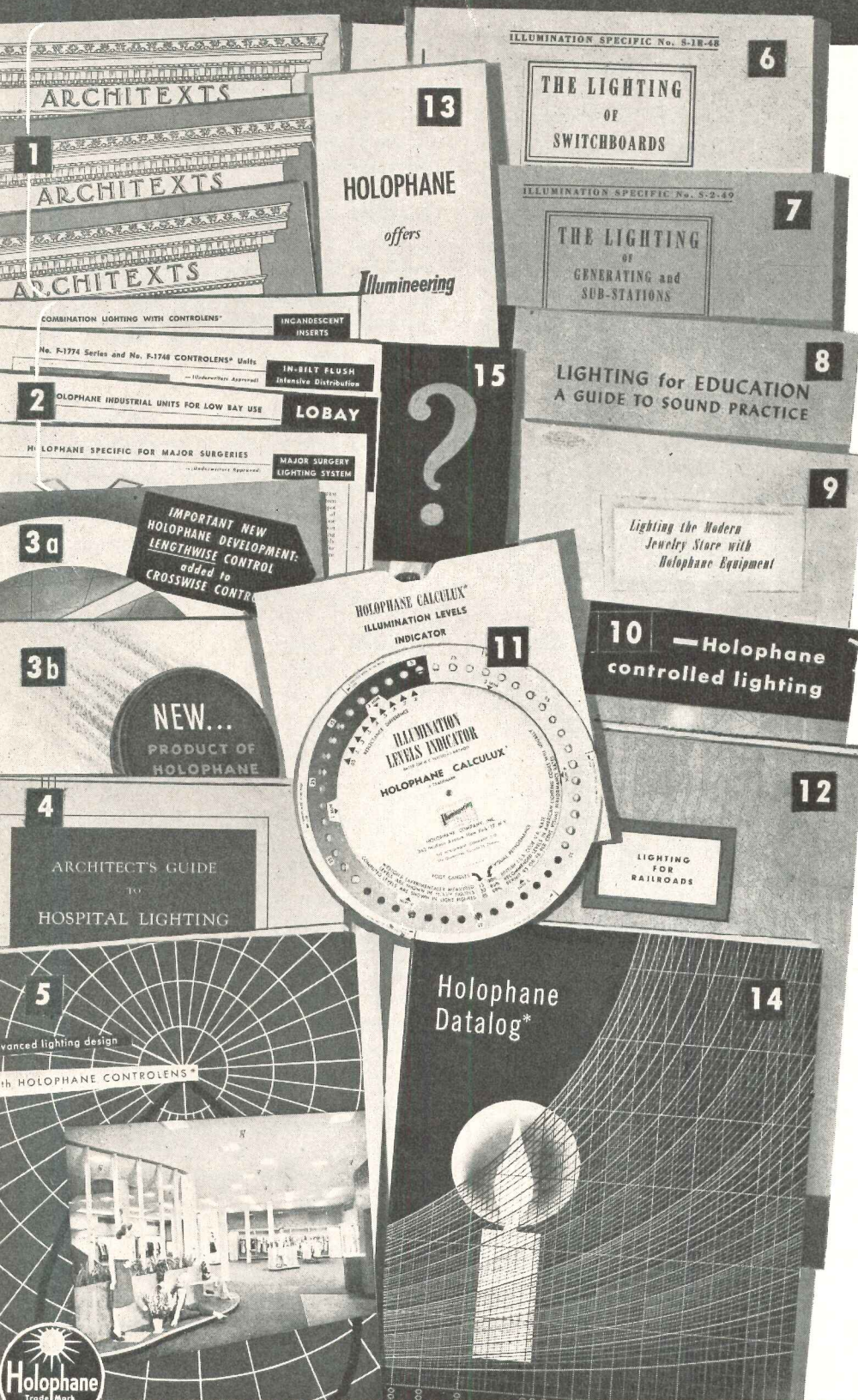
Material prices and wage rates used in the current indexes make no allowance for payments in excess of published list prices, thus indexes reflect minimum costs and not necessarily actual costs.

These index numbers will appear whenever changes are significant.

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- (b) Illumination Levels
- (c) Surgery Lighting
- (d) Lighting Economics
- (e) Light for Learning
- (f) ILLUMINEERING*
- (g) Blackboard Lighting
- (h) Drafting Room Lighting
- (i) Lighting and Safety
- (j) Industrial Relighting
- (k) HIBAY* Lighting
- (l) Small-Store Lighting
- (m) How Lenses Work
- (n) Airport Lighting
- (o) Broadcasting Studio

NO. 2 ENGINEERING DATA SHEETS (SERIES):

- (a) Lighting Design
- (b) Commercial Direct
- (c) General Utility Direct
- (d) Commercial Indirect
- (e) Commercial Semi-Indirect
- (f) Industrial LOBAY*
- (g) Industrial HIBAY
- (h) Industrial Utility
- (i) LOBAY Mercury
- (j) Vapor tight-Dust tight
- (k) Test-Cell Lighting
- (l) Spray-Booth Lighting
- (m) Flush Incandescent Intensive
- (n) Counterlites
- (o) Flush Incan. Focusing
- (p) Asymmetric Incandescent
- (q) Flush Incandescent Round
- (r) Flush Incan. Sq. No-Box
- (s) Round Recessed Drop-Trim
- (t) Flush Incandescent For Acoustical Ceilings
- (u) Medical Examination
- (v) Major Surgery Systems
- (w) Minor Surgery Systems
- (x) Night Lights
- (y) Ward Lights (Indirect)
- (z) Psychiatric Lights
- (aa) Bed Lights
- (bb) Dust-tight Fluorescent
- (cc) Industrial Fluorescent
- (dd) Combination Incandescent Fluorescent

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- (b) Surface-Attached HOLOFLUX (Fluorescent)

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- 5 ADVANCED LIGHTING DESIGN WITH CONTROLENS*
- 6 THE LIGHTING OF SWITCHBOARDS
- 7 THE LIGHTING OF GENERATING AND SUB-STATIONS
- 8 LIGHTING FOR EDUCATION
- 9 LIGHTING THE MODERN JEWELRY STORE
- 10 HOLOPHANE CONTROLLED LIGHTING
- 11 CALCULUX*—Illumination Levels Indicator
- 12 LIGHTING SPECIFIC FOR RAILROADS
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REQUIRED READING

ARCHITECTURE FOR TODAY

Architecture and the Spirit of Man. By Joseph Hudnut. Harvard University Press (Cambridge 38, Mass.), 1949. 5½ by 8¼ in. 302 pp. \$4.50.

"Since beauty in architecture consists of a harmony between the individual self and the qualities of buildings it follows that there could be no building which might not at some moment be judged beautiful; nor is there any formula, the self being so varied, uncertain and elusive, by which we may predetermine the nature of those buildings which fate may cover with that sudden and evanescent mantle."

In that one sentence Dean Hudnut sums up the theme of the two dozen essays which comprise this volume. Most of the papers have appeared in print before, a quarter of them in ARCHITECTURAL RECORD. All have as their central point the need for architecture to express the spirit of its time, to be *contemporary* in a very literal sense.

Dean Hudnut develops his theme for various types of building — university, church, house, hospital, etc. — finding in each type the human element playing its persistent part. With his usual whimsical humor he points up the sentimental reasons for style carry-overs such as the dormer window and the purely ornamental shutter. He can find no excuse at all for the dormer, but the shuttered window he considers "somewhat more practical since it provides the chink through which one may aim an arrow at a prowling Indian, should one appear on the lawns of Wellesley Hills or Newton Upper Falls; and yet the money spent each year in Boston for shutters which are never closed, plus the cost of keeping last year's shutters bright with paint — green, orange, or Williamsburg blue — would, if invested with the Shawmut National Bank at 1¾%, provide annual scholarships for 743 students at the Pawtucket Genealogical Seminary."

Progressing from consideration of buildings and building types, Dean Hudnut, in the second half of his book, takes a long and penetrating look at the city as it is today and as it could be tomorrow. Unlike most planners, the Dean presents no brief for decentralization. "We are held in the city," he says, "neither by pleasure nor by economic necessity but by a hunger which transcends both practical and sensuous ex-

perience, a hunger seldom revealed by appearances, seldom acknowledged in our consciousness. We are held in the city by our need of a collective life; by our need of belonging and sharing; by our need of that direction and frame which our individual lives gain from a larger life lived together." Closely integrated neighborhoods, self-sufficient and friendly, independent and yet a part of the whole, he thinks, should be our goal. And for the same reason he "would return the housing project to the streets of the city . . . and to the city's institutions," placing at its center church, theater and school, and making of it a neighborhood instead of an isolated and enclosed group of residential units quite apart from the life of the city.

This is a thought-provoking book, one which will appeal to student and layman almost as much as it will to architect and city planner. Dean Hudnut's philosophy of architecture is contagious, particularly when it is presented, as it always is, in delightful prose sparked generously with humor and a dry insight into human nature.

THAT MAN, THE ARCHITECT

How to Live with Your Architect. By Victor Gruen, A.I.A. Store Modernization Institute (40 E. 49th St., New York 17, N. Y.), 1949. 5¼ by 8¼ in. 32 pp., illus. \$1.50.

In its own whimsical way, this small booklet is a classic. As its title implies, it is written to explain to the general public just what it is an architect does for his client, and how he does it. Actually, of course, there should be no need for such an explanation any more than there should be for the functions of the doctor, lawyer or any other professional man. And that is exactly the premise on which Mr. Gruen has based his argument. "The architect is a professional man like the physician or the lawyer," he says. "Like they — he had to go through many years of study, years of apprenticeship, examinations — until the big day came when he became an architect. Still, his clients don't quite see him the same way they see their doctor. They would never dream of directing their physician as to how, exactly, they would like to have their appendix removed. . . ."

Knowing that a paragraph such as the one just quoted never would be read if it were presented as straight text, Mr. Gruen has made this primarily a book

of drawings, with his entire text run as short captions. He used seven drawings, for example, to get those four sentences across. The drawings are clever and eye-catching; half a dozen of the more provocative of them have been used to excellent effect on the front cover to lure the unsuspecting client into a perusal of the volume. Nor is the client the only one to whom the drawings will appeal — the architect will chuckle delightedly at them. Maybe Mr. Gruen some day will give the client a reciprocating chuckle by producing a similar treatise entitled "How to Live with Your Client."

A LOOK AT PUBLIC HOUSING

Large-Scale Housing in New York: Monograph No. 1, The Significance of the Work of the New York City Housing Authority. By the Committee on Housing, New York Chapter, American Institute of Architects. N. Y. Chapter, A.I.A. (115 E. 40th St., New York 16, N. Y.), 1949. 8½ by 11 in. 130 pp., illus. \$2.50.

The recommendations and analyses presented here by the Housing Committee of the New York Chapter, A.I.A., are the result of the committee's two years of study of large-scale housing in New York City, with emphasis on the work of the Housing Authority. The report is not concerned, happily, with the eternal arguments about the wisdom of public housing, but, as committee chairman Arthur C. Holden states in his letter of transmittal, has been limited in scope "to an evaluation of the accomplishments of the Authority solely on the basis of the living quarters provided."

What the committee wanted to find out was how well public housing is satisfying the physical needs of family living and how well large-scale housing is satisfying the needs of community living. As a result of its study, Mr. Holden says, the committee "is convinced that public housing cannot be carried on indefinitely under the existing policies of governmental expenditure and subsidy. For this reason it recommends that architects support a movement for searching investigation directed towards developing an improved technique of long term credit, investment and banking."

On the whole, the committee is well pleased with the standards set by the New York Housing Authority. The Authority, the report states, has set standards "which have begun to create an understanding on the part of the public of the better type of city living that is made possible by coordinated,

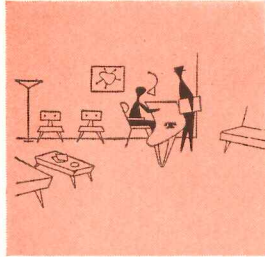
(Continued on page 30)

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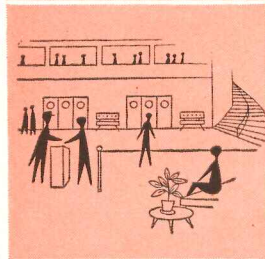
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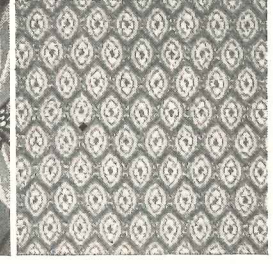
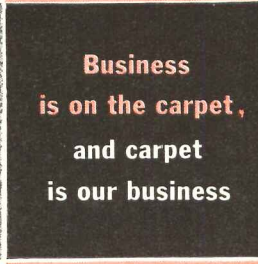
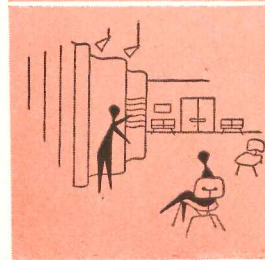
Reception Rooms



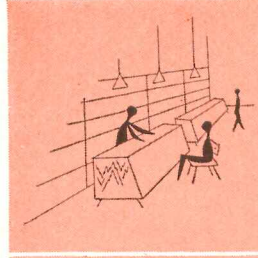
Theatre Lobbies



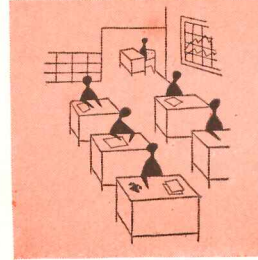
Show Rooms



Retail Stores



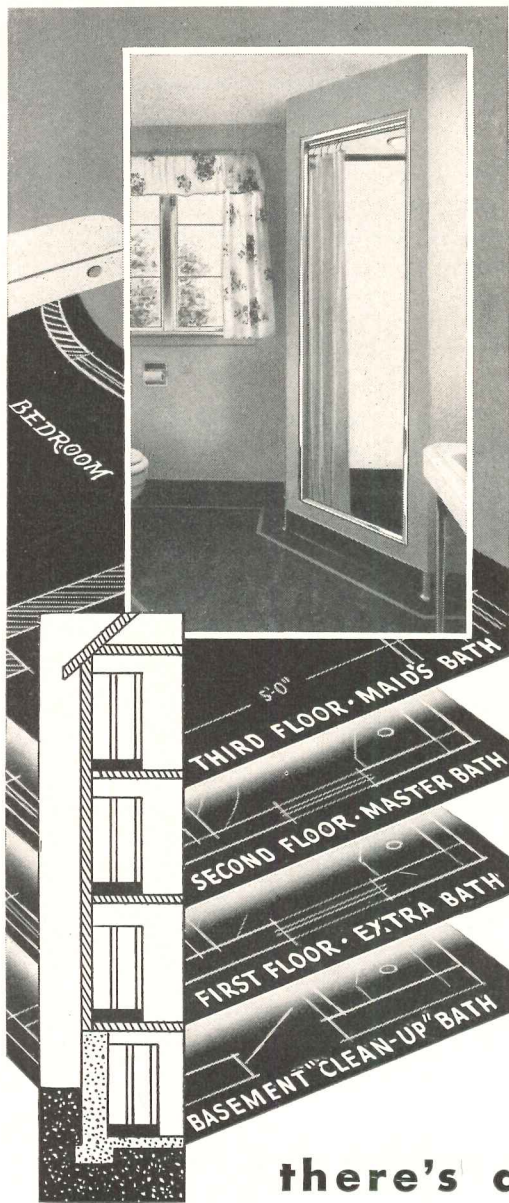
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REQUIRED READING

(Continued from page 28)

large-scale design." Where the Authority has been weak, in the committee's opinion, is in realizing esthetic possibilities (it has set a "bad example of barrenness and barracks-like appearance," the report says), in providing community centers and social rooms of desirable standards, and in coordinating its projects with the planning of the city as a whole.

This report deserves, and undoubtedly will receive, careful study on the part of architects engaged in large-scale housing design. Its analyses are well presented and backed up by numerous photos, plans and site plans. Its conclusions are grouped for convenient reference. And its usefulness is augmented by two appendices, one summarizing 12 reports on public housing, the other indexing the New York Housing Authority projects and listing for each the architects and their associates.

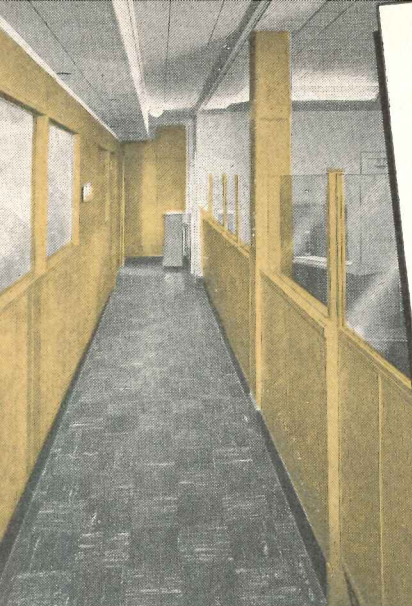
DESIGNS FROM CANADA

Canadian Designs for Everyday Use. The National Gallery of Canada (Ottawa), 1949. 8½ by 11 in. 52 pp., illus. 50 cents.

Industrial design in Canada undoubtedly has been stimulated by the Design Index established two years ago by the National Gallery of Canada. The index is qualitative and photographic, and includes only those items specifically selected for it by a committee of designers and architects. From the indexed items the Gallery now has taken a representative group which it here presents in catalog form.

American designers and architects will find this selection of Canadian design of real interest. In many instances, as would be expected, the items bear a distinct family resemblance to similar objects of American design; in others the British strain predominates. In all, however, there is a directness and simplicity which is definitely pleasing.

The items indexed by the Gallery were chosen only if they met certain rigid requirements which included: suitability of form to function; maximum simplicity of design; elimination of meaningless ornament; mechanical efficiency; durability and safety. Only original Canadian designs were considered — i.e., designs originated completely in Canada, by Canadians.



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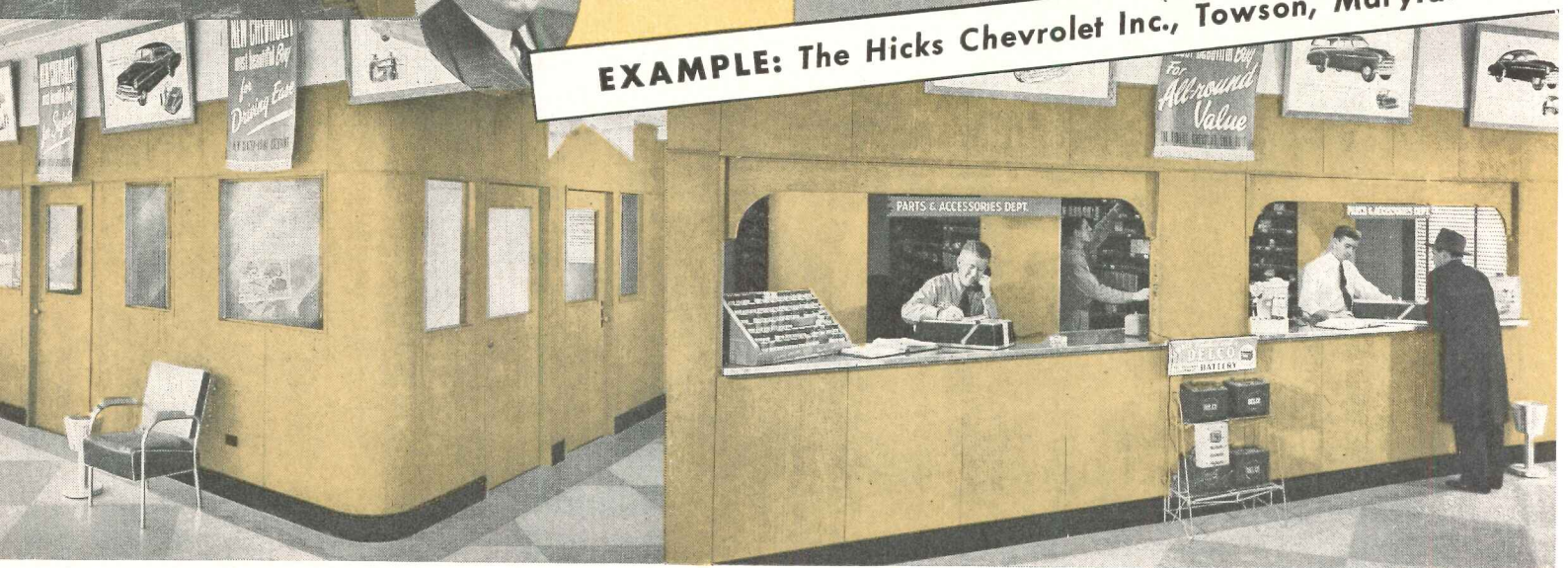
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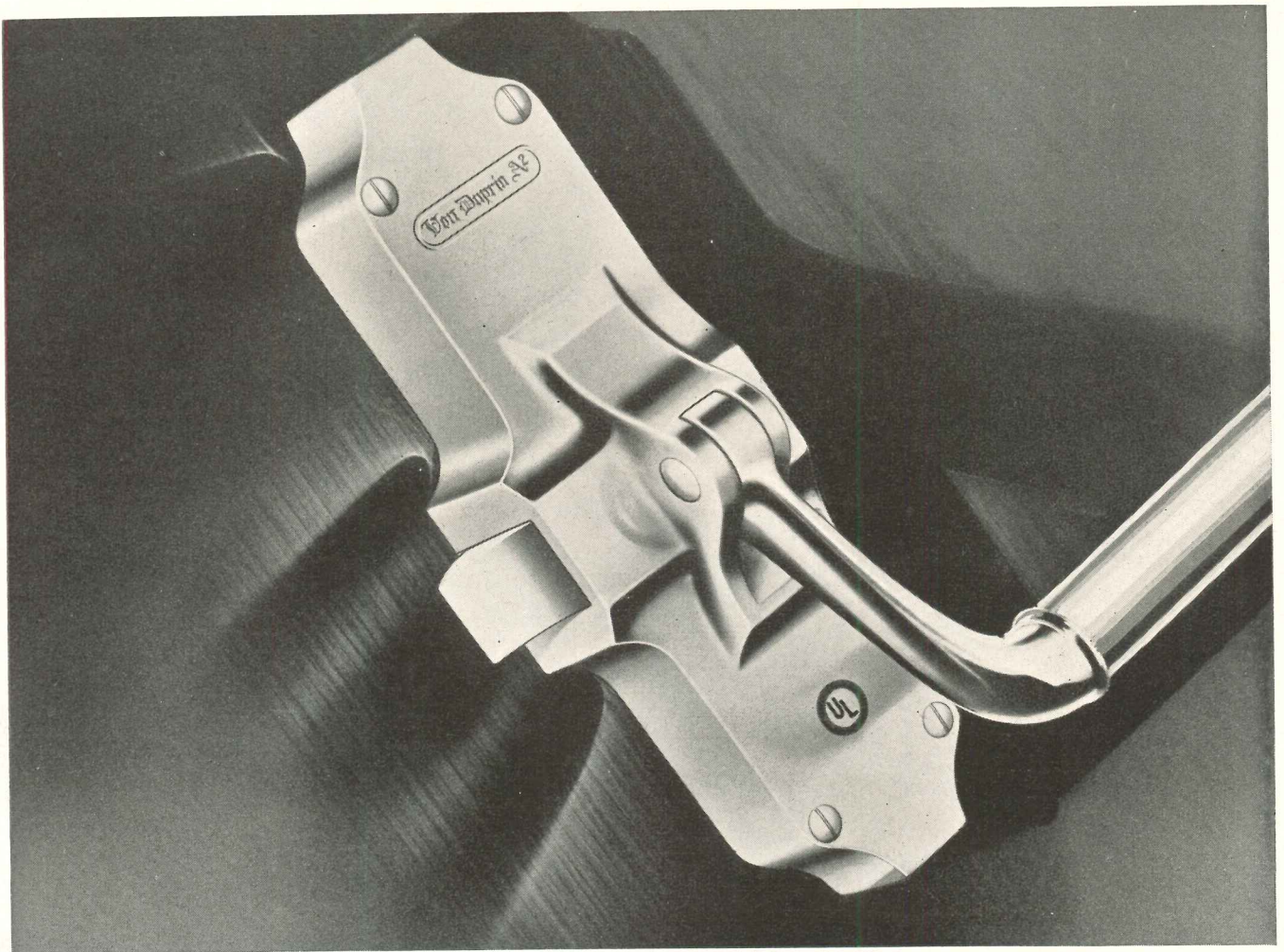
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METLWALS ALL-FLUSH PANELING MOVABLE PARTITIONS

ENGINEERING AND ERECTING SERVICE AND WAREHOUSE STOCKS FROM COAST-TO-COAST

PRODUCTS



WHEN YOU GET THE EXTRAS...FOR FREE!

You get a lot of top quality when you install Von Duprin drop-forged devices.

You get the utmost in safe, sure exit. . . . And operation incomparably smooth and quick. . . . And the beauty of precision forgings, which add character and distinction to the doors. . . . Plus durability almost beyond belief.

All of that comes at no extra cost. It, literally, costs nothing, for the Von Duprins' freedom from maintenance expense soon balances the higher first cost. They deliver the safest, surest means of exit at the lowest over-all annual cost . . . and the very real satisfaction of having these superb devices on the doors is thrown in.

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

Von Duprin

TRADE MARK REG.



FOR A

Lifetime of Beauty

AND CONVENIENCE, LOOK TO . . .

GENUINE CLAY
tile



Clay tile gives you limitless flexibility in setting the stage for modern ideas, modern living. And only clay tile provides the efficiency, the beauty, the economy that today's homemakers are looking for.

Today, there is no need to accept substitutes—genuine clay tile is available—with all these advantages:

Easy to clean and keep clean because clay tile never needs waxing, polishing or refinishing.

Colors won't fade or darken because clay tile's beauty is *fired-in* to resist water, acid and stains.

Efficient because tile keeps its spic-and-span appearance despite hard wear. Water rolls off without leaving stubborn, streaky blemishes.

Long-range economy because there are no recurring charges for maintenance or replacement. Only clay tile can insure this lifetime of loveliness.

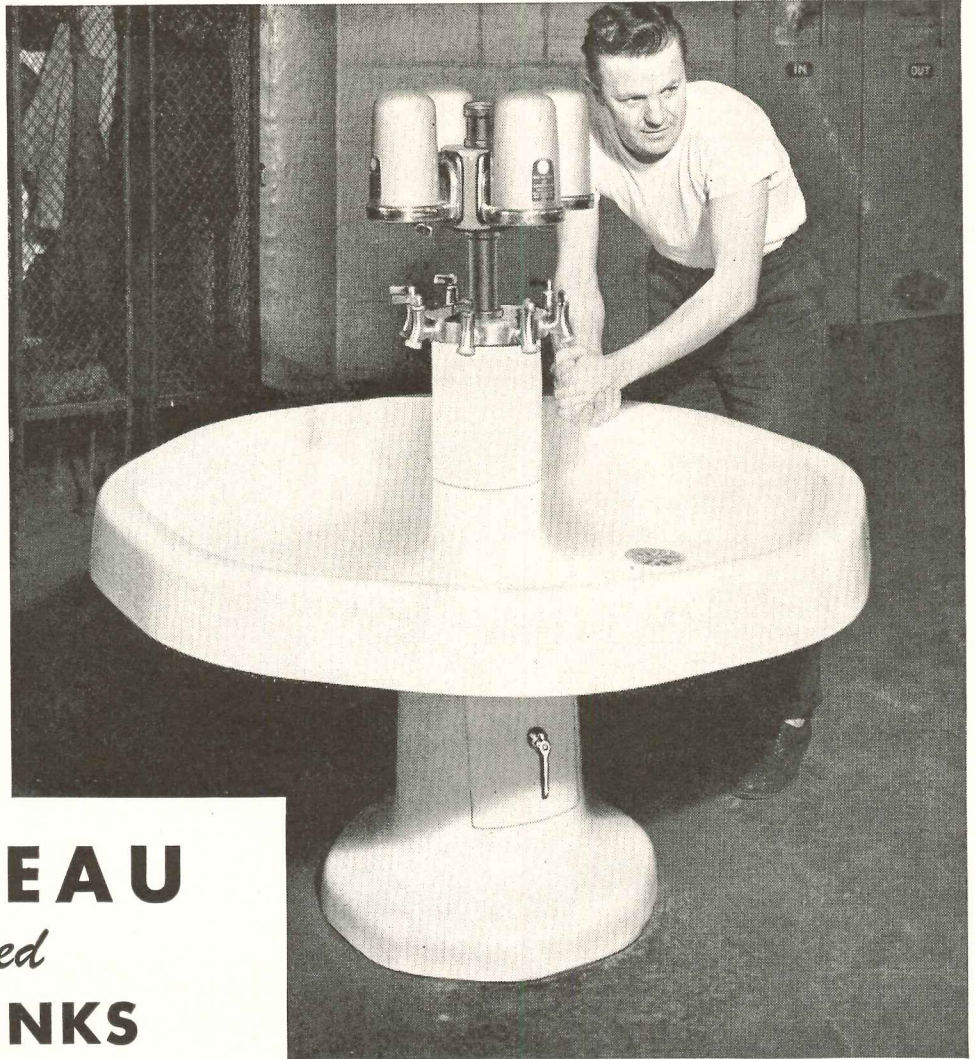
For specific information regarding types, sizes and colors, see *Sweets Architectural* or *A-E-C File*. THE TILE COUNCIL OF AMERICA, Room 3401: 10 East 40th Street, New York 16. New York. Room 433: 727 West Seventh Street, Los Angeles, California

The Tile Council of America was formed in January, 1945, to provide a central source of information about clay floor and wall tile, and to sponsor research and development projects designed to increase the usefulness of clay tile in all types of private and public building.

PARTICIPATING COMPANIES: American Encaustic Tiling Company Inc. • Architectura Tiling Company, Inc. • Atlantic Tile Manufacturing Company • B. Mifflin Hood Company • Cambridge Tile Manufacturing Company • Carlyle Tile Company • General Tile Corp. • Gladding, McBean & Company • Mosaic Tile Co. • Murray Tile Company, Inc. • National Tile & Manufacturing Company • Olean Tile Company • Pacific Clay Products • Pacific Tile and Porcelain Co. • Pomona Tile Manufacturing Company • Robertson Manufacturing Company • The Sparta Ceramic Company • Summitville Face Brick Company • United States Quarry Tile Company

THE MODERN STYLE IS CLAY TILE

K-3250-A—Kohler Flambeau Octagonal Enameled Wash Sink, for bottom supply and vent. Specify K-3252-A for overhead connection. Four unit powdered soap dispensers shown with brackets available.



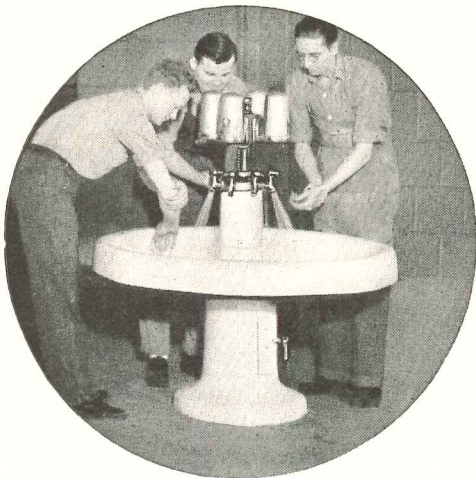
KOHLER

FLAMBEAU

Enameled

WASH SINKS

with outstanding practical features for your industrial specifications



The following features will give an extra measure of satisfaction to your clients who plan industrial washrooms.

The Kohler Flambeau Enameled Wash Sinks accommodate several persons at one time, with a separate faucet with sprayer for each. When installed in a locker room, a series of these wash sinks can be saving of both space and water. The glass-like, non-porous, acid-resisting, enameled surfaces assure the utmost in sanitation with a minimum of maintenance—at the same time providing a good-looking installation.

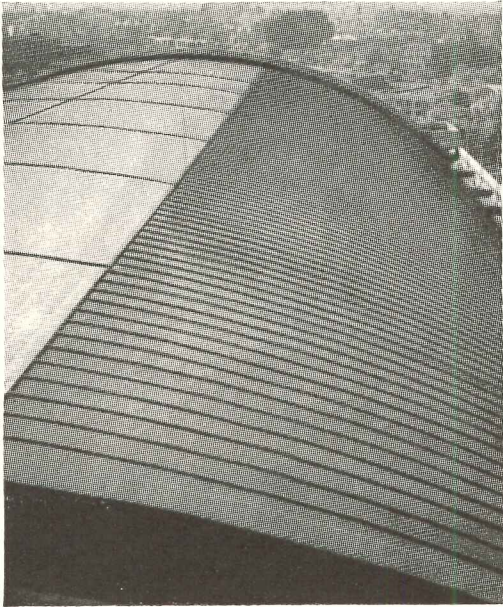
A temperature control valve mixes hot and cold water to the temperature desired. The sprayer on each faucet sends water directly down into the basin, and will not spray over the sides if pressure is increased. Faucets are designed to conserve water while providing a generous supply for the user. Each faucet has a lever to regulate the volume of water.

Kohler Co., Dept. 16-H, Kohler, Wis. Established 1873.

KOHLER OF KOHLER

PLUMBING FIXTURES • HEATING EQUIPMENT • ELECTRIC PLANTS

It's a two-acre roof ...and it's copper!



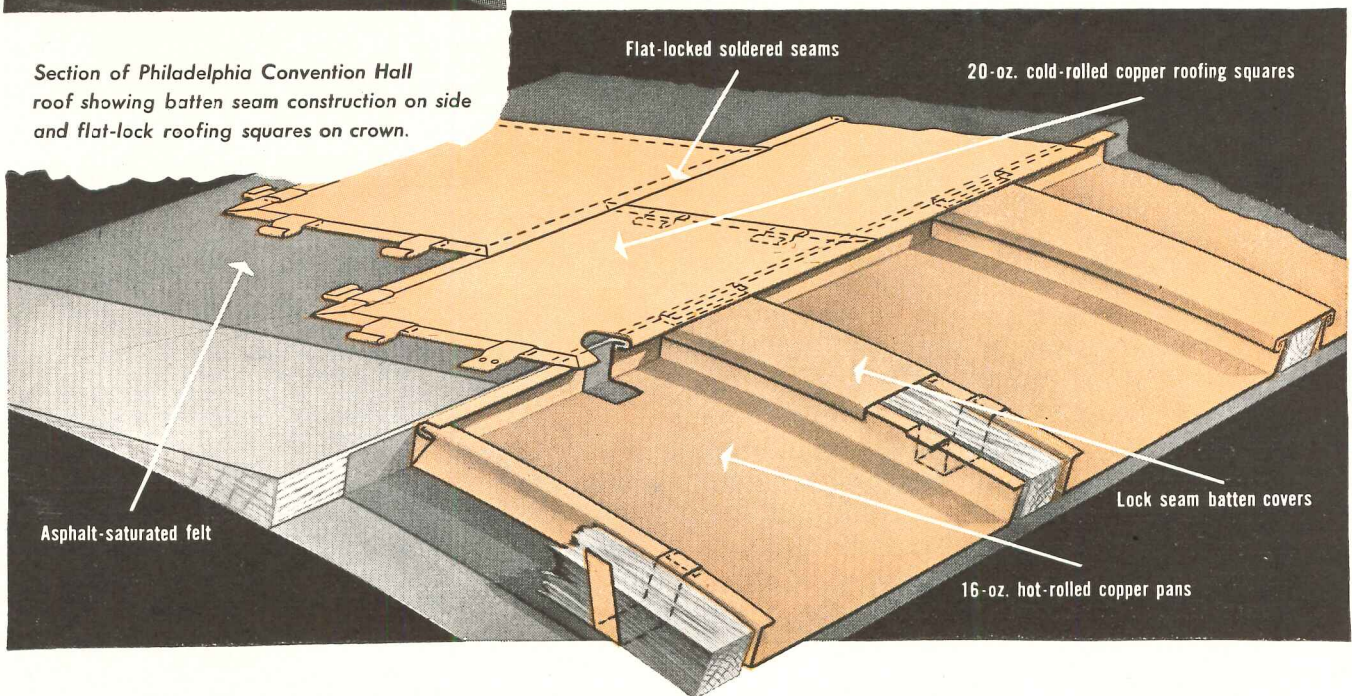
It's a roof worthy of Philadelphia's famous Convention Hall. It's made of 90,000 square feet of ANACONDA Sheet Copper.

Its design for the first time incorporated the new principle of using cold-rolled copper for all soldered work—in gages and forms appropriate to the nature and scale of the job. For cold-rolled copper provides greater stiffness to resist buckling and thus can transfer stresses to the expansion battens and slip joints.

ANACONDA Sheet Copper has stood the test of time. It's the roofing metal of first choice for appearance, low maintenance and resistance to corrosion. Let our Technical Department help you with any roofing or sheet metal problems involving copper or its alloys. Just write to The American Brass Company, Waterbury 88, Connecticut. In Canada: Anaconda American Brass Ltd., New Toronto, Ont.

4934-A

Section of Philadelphia Convention Hall roof showing batten seam construction on side and flat-lock roofing squares on crown.



You can build it better
with *Anaconda Copper*

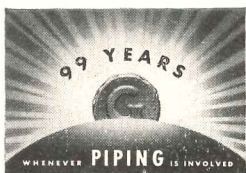


Proof that you can't "FIREPROOF" a building

A BUILDING may be termed "fireproof" if it is constructed of brick, concrete and steel. Yet, filled with furniture, supplies and other flammable materials, it may become a gigantic "firebox", as the one illustrated above. Building and contents both may be gutted, even completely destroyed.

There is one sure way to protect a building and its contents against fire . . . a Grinnell Automatic Sprinkler System—the only type of protection that will control fire quickly, effectively, at the source, whenever and wherever it strikes.

Your client will be paying for Grinnell Protection even if his building is un-sprinklered . . . through higher insurance premiums. Show him the advantages of spending his money for full protection rather than for partial compensation. A Grinnell engineer will be glad to give you any facts or other assistance. Grinnell Company, Inc., Providence, R. I. Branches in principal cities.



GRINNELL

F I R E P R O T E C T I O N S Y S T E M S

GRINNELL Fire Protection Installations



↑ Office designed by Donald Desky using the new, inconspicuous Grinnell Quartzoid Ceiling Sprinklers. This is a Wet-Pipe Sprinkler System used where temperatures remain above freezing. Dry-Pipe Systems are installed in unheated buildings. Simplex Dry-Pipe Systems are used where fire hazards are light and water supply is limited.



↑ Every room in the Georgian Terrace Hotel, Atlanta, is protected with Grinnell Side Wall Sprinklers of the Quartzoid Bulb type. Grinnell Sprinkler Heads are of two basic types . . . the Duraspeed Solder Type and the Quartzoid Bulb Type. The latter outclasses all other sprinklers in durability and speed of operation, and is particularly attractive in appearance.



↑ This airplane repair shop is protected by the Grinnell MULTITROL System, which employs a release device actuated by the *rate of rise* of the temperature, rather than by the *degree* of temperature. This is one of several Grinnell Fire Protection Systems for special conditions and hazards.

YOU CAN BE **SURE**.. IF IT'S
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SMALL SHOP

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BUILDINGS

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brings full secondary power anywhere

From the small machine shop, using only 20 or 30 feet of duct, to giant plants employing over 15,000 feet, bus duct makes a distinct improvement in secondary power distribution.

Automotive plants; metalworking shops; steel and textile mills; food processing plants; department stores; office buildings; these are only a few of the thousands of places enjoying bus duct's low-cost installation, reduced maintenance and availability of power where needed.

Operations can be expanded at any time without expensive rewiring and with minimum expenditure of time and labor.

Experienced Westinghouse field engineers are available to help plan your secondary power distribution system. For full particulars, phone your nearest Westinghouse office or write Westinghouse Electric Corporation, P. O. Box 868, Pittsburgh 30, Penna.
J-30009



Westinghouse

BUS DUCT

Kimberly-Clark announces a great new insulation!

New Kimsul* reflects heat... shuts out condensation!

Now—from the research laboratories of Kimberly-Clark Corporation—comes a great new KIMSUL*.

An insulation combining the principles of heat-reflection and heat-resistance—the most effective barrier to heat loss ever devised. An insulation made far easier to handle . . . far easier to install. An insulation with *reflective vaporseal cover* . . . meeting all FHA requirements.

We sincerely believe this new KIMSUL to be the finest insulation ever made. And you'll agree . . . when you see the handsome aluminum foil cover . . . many-layer stitched blanket . . . the tough reflective tacking flanges . . . the smaller package and lighter weight . . . of this great new KIMSUL. For it also provides the same high thermal efficiency and the many original advantages that made KIMSUL America's fastest-selling blanket insulation.

Contact your dealer today for full information about the new Reflective KIMSUL. If he does not handle KIMSUL, write directly to Kimberly-Clark Corporation.



Look at all these features!

- Reflective aluminum vaporseal
- Tough reflective tacking flanges
- Smaller package—lighter weight
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- Fire-resistant—flexible—caulkable
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- High thermal resistance
- Meets FHA vaporseal requirements
- Non-irritating—non-settling
- Resistant to insects, vermin, mold
- Over-framing compressibility

Now two types of Kimsul



REGULAR KIMSUL
(Red Package)



REFLECTIVE KIMSUL
(Gray Package)

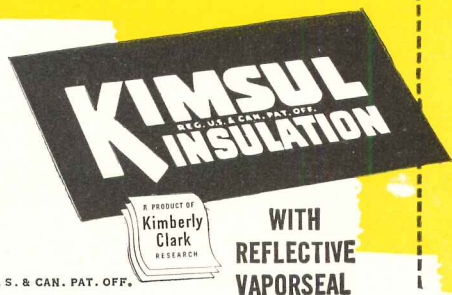
KIMSUL INSULATION

MANY-LAYER
FIRE-RESISTANT
BLANKET

TOUGH INSULATED FLANGES

VAPORSEAL COVER

HIGHLY
REFLECTIVE
ALUMINUM
FOIL



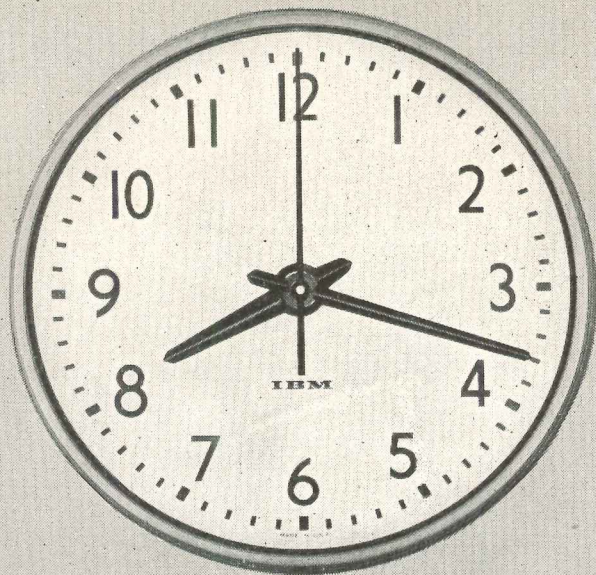
Send me complete information about KIMSUL Insulation with Reflective Vaporseal.

KIMBERLY-CLARK CORPORATION
Kimsul Division
Neenah, Wisconsin

AR10-49

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CITY, ZONE, STATE _____
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ALZAK


LOOK FOR THIS NAME


It identifies aluminum reflectors made extra bright that won't chip, spall, or peel. Clean them regularly and they will last indefinitely. Leading manufacturers make Alzak reflectors in standard shapes and sizes, in specular and diffuse finish.

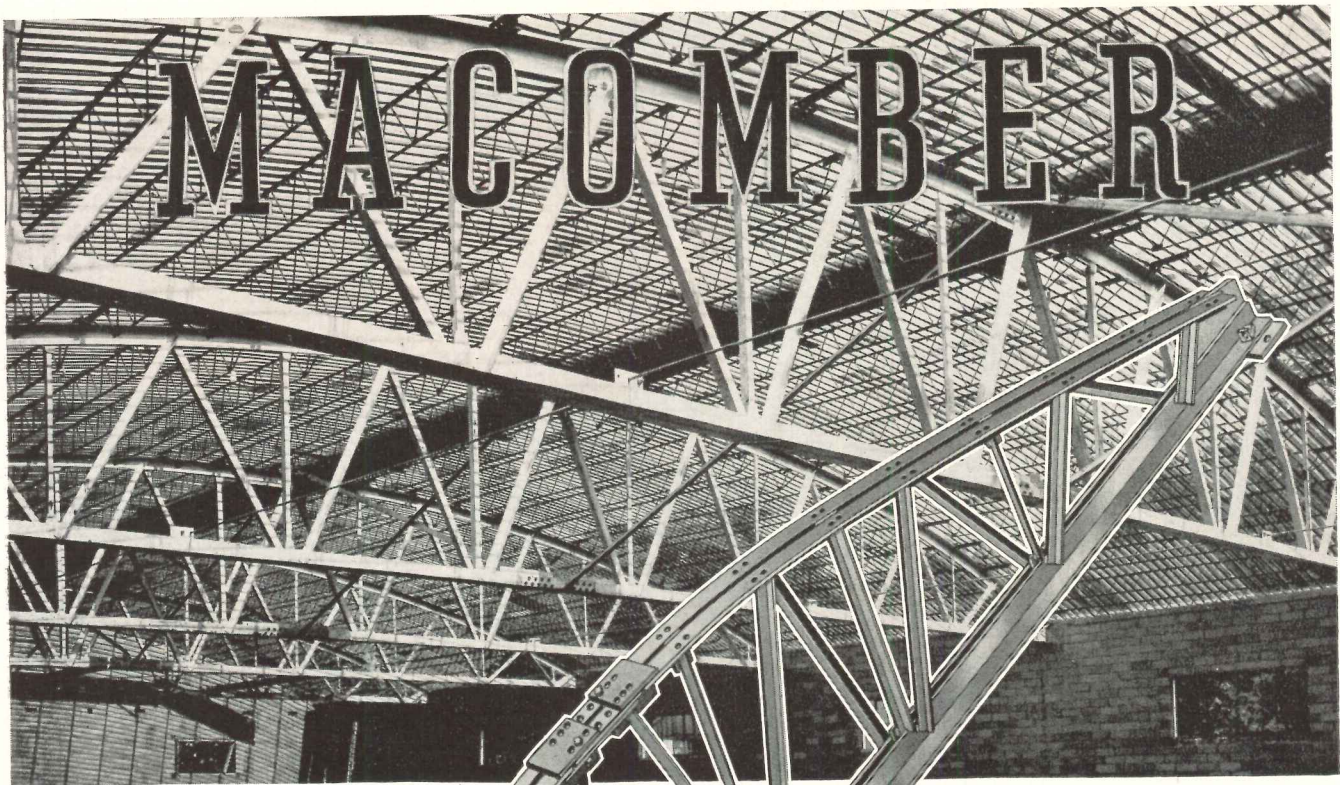
Over five foot-candles flood Falls Street in Niagara Falls, New York. That's a brilliance 200 times average moonlight. General Electric luminaires with Alzak reflectors make this street one of the world's brightest. Yet there's a note of economy here. Alzak reflectors are efficient . . . have long life . . . save lighting dollars.

Think of your lighting. Big money goes into wire, fixtures and current. Why waste that investment with poor reflectors, when Alzak reflectors give high lighting efficiency. ALUMINUM COMPANY OF AMERICA, 1474K Gulf Building, Pittsburgh 19, Pennsylvania.

ALZAK REFLECTORS
OF ALCOA ALUMINUM



made  by
*Leading Lighting
manufacturers*



**STEP UP OCCUPANCY
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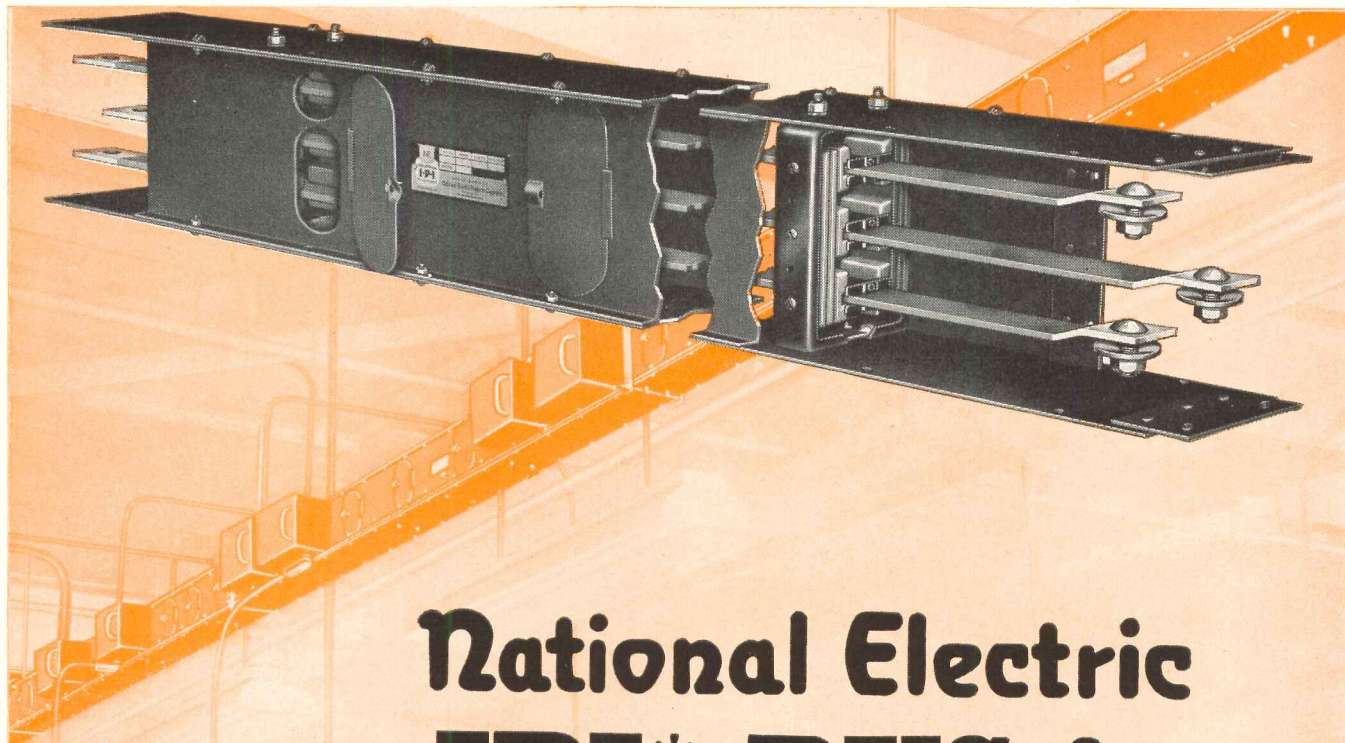
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National Electric IPI* BUS is EASY to INSTALL

CHECK THESE ADDITIONAL ADVANTAGES!

√ CONVENIENCE—

National Electric Plug-In Busway can be used to bring your present electrical distribution system up to date, or can be added to existing installations.

Plug-In openings, spaced 15" on center on two sides of Busway, permits mounting Plug-In Devices every 7½".

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Busway can be mounted to permit installation of Plug-In Devices with standard ¼-20" screws on either side, or top and bottom.

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Complete 100% salvability for alterations, additions, or relocation. Every foot of distribution system is usable.

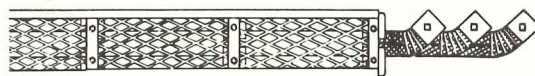
Let us send you complete information. Write for our catalog "Busways by National Electric."

National Electric Products Corporation

1327 CHAMBER OF COMMERCE BUILDING • PITTSBURGH 19, PA.

*National Electric's Industrial Plug-In Bus is a completely self-contained electrical distribution system designed for quick, simple installation. Insulator bolts extending through the enclosure make suspension from ceiling or walls an easy job.

Approved by Underwriters' Laboratories, Inc.



"Lo-Loss" Feeder Bus—specifically designed for transmission of current up to 4000 amp. at 600 volts or less. National "Lo-Loss" will do it economically and efficiently. Light in weight—compact in design. Easily installed because single bolt contacts are used.



Insulux Glass Block is combined with clear-vision windows to bring superior daylighting to this new Standard Oil Company (Indiana) research laboratory at Whiting, Ind. Insulux (No. 351) bends light rays, directing them at ceilings for even distribution throughout the room.

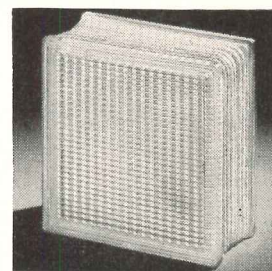


Architect: Holabird & Root & Burgee, Chicago.
Contractor: Gust K. Newberg Construction Co., Chicago.

Daylighting to laboratory standards: Research laboratory standards are unusually exacting — even when it comes to daylighting. That's why Insulux Glass Block, with its unique advantages, was selected for this job.

Insulux transmits daylight better, at the same time providing insulation. It protects against dust and dirt and permits rigid temperature and humidity control. Free from rot, rust and corrosion, Insulux Glass Block is easily maintained.

For construction details and installation data, consult GLASS section of Sweet's Architectural Catalog, or write Dept. F-24, American Structural Products Company, P. O. Box 1035, Toledo 1, Ohio.

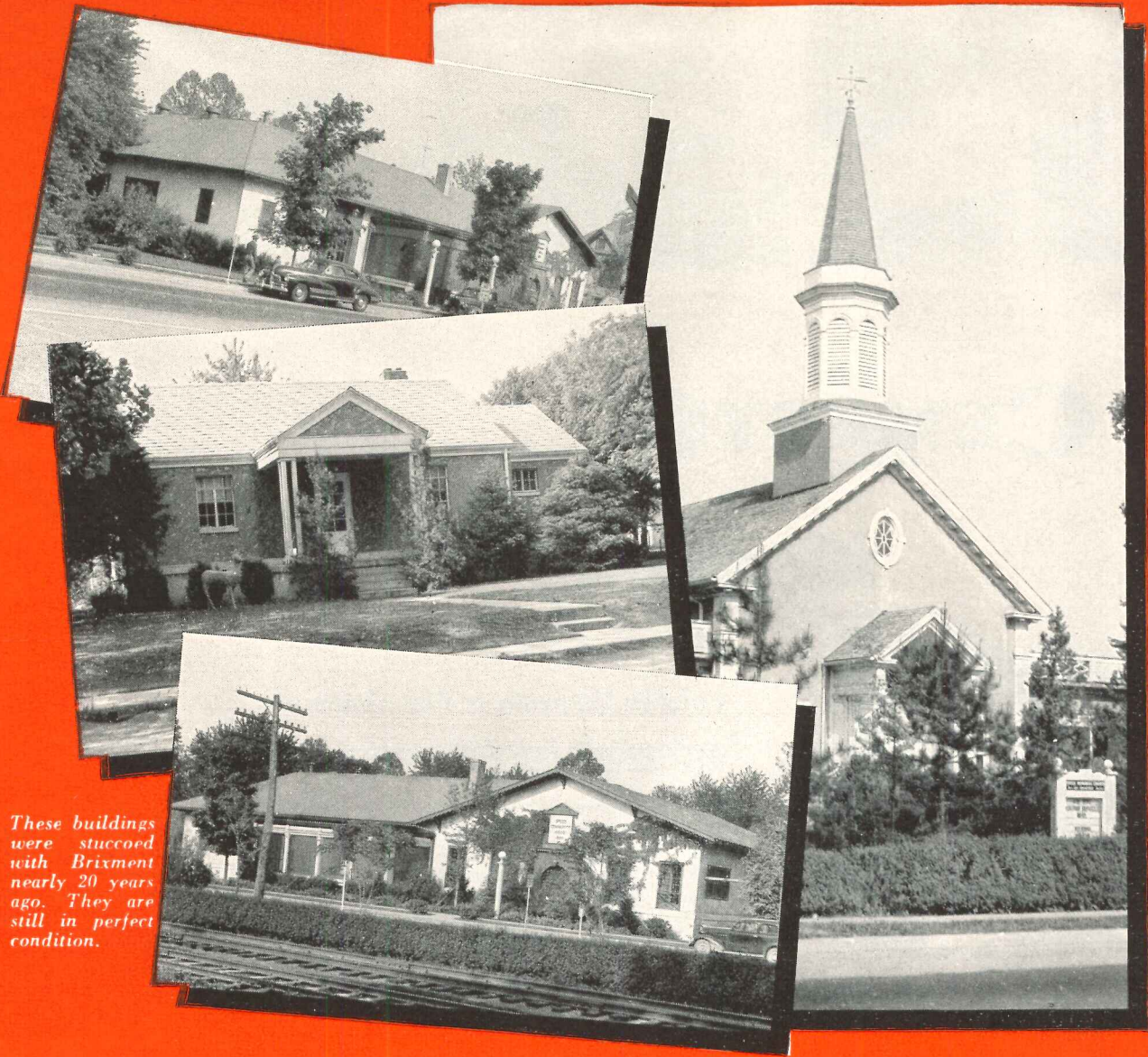


INSULUX

GLASS BLOCK®

AMERICAN STRUCTURAL PRODUCTS COMPANY

Subsidiary of
OWENS-ILLINOIS GLASS COMPANY



These buildings were stuccoed with Brixment nearly 20 years ago. They are still in perfect condition.

YOU'LL GREATLY PREFER **BRIXMENT STUCCO, TOO!**

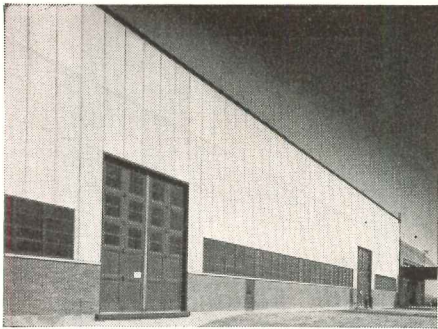
More Brixment is used for *brickwork* than any other masonry cement on the market. Literally thousands of architects, contractors and bricklayers prefer Brixment to any other mortar material.

Brixment makes better, more economical *stucco*, too. It is more plastic and easier to apply. It is used in leaner mixes, hence

reduces hair-checking and crazing. It is stronger, more weatherproof and more permanent than "workable mixes" of portland cement and lime.

Brixment can cut your costs and give you *better stucco jobs*. For proof, please ask your dealer (or write us) for a copy of the handbook "Brixment for Stucco and Plaster."

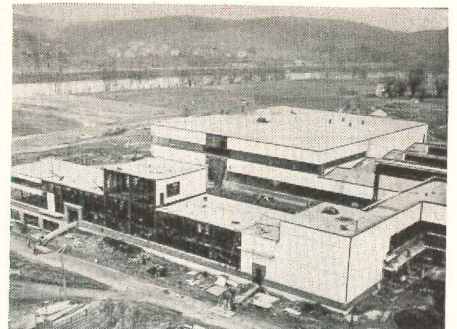
LOUISVILLE CEMENT COMPANY, Incorporated, LOUISVILLE, KENTUCKY



Unique beauty of Cemesto in a curtain wall. Curtiss-Wright Corp., Louisville, Ky. Architect: Albert Kahn Associates, Inc., Detroit, Mich.



Modern residence of Berkeley, California. Architect: Richard J. Neutra.

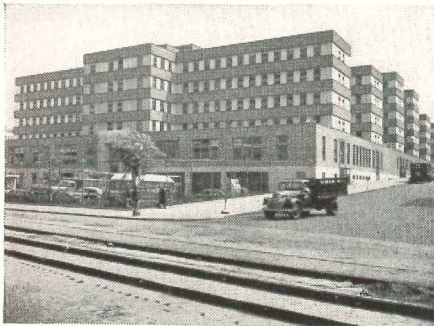


42,000 square feet of Cemesto used for roof deck and curtain walls. B. F. Goodrich Co., Marietta, O.

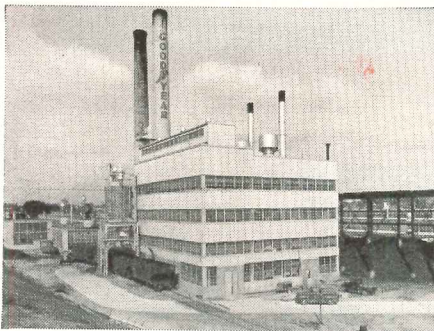
CEMESTO

REG. U. S. PAT. OFF.

amazingly Versatile!



U. S. Navy residence building of Cemesto and brick masonry built in 1939 at Brooklyn, N. Y. Contractor: White Const. Co., New York, N. Y.



Attractive and economical use of alternate bands of glass and Cemesto for power plant at Good-year Tire & Rubber Co., Jackson, Mich.

Light steel framing for 53,760 sq. ft. of Cemesto for Watson Terminal Warehouse Company, Youngstown, Ohio.

Celotex Cemesto is first choice for fast, permanent, low-cost construction of every kind

More and more architects are specifying Cemesto* for *insulated* structural roof decks, curtain walls, and partitions of every type. Because the unique properties of this amazing multi-function monowall material make possible important economies in design, erection, and maintenance.

This has been proved by 19 years of outstandingly successful use in industrial, commercial, and residential construction of all types . . . in all climates . . . all over the world!

Cemesto is a rigid structural panel made of Celotex* cane fibre board to which cement-asbestos board is bonded on both sides by a moisture-

proof bituminous adhesive. It has remarkable structural strength . . . high insulation value . . . its cement-asbestos facings are incombustible and weather-resistant. Its hard, durable, light-reflecting surfaces provide both interior and exterior finish.

Unless required for decorative purposes, Cemesto never needs painting or maintenance.

Cemesto panels are quick and easy to apply, and can be worked with ordinary hand or power tools. Discover how Cemesto can speed construction and cut material and labor costs. Write today for full technical data and application recommendations.

CELOTEX

REG. U. S. PAT. OFF.

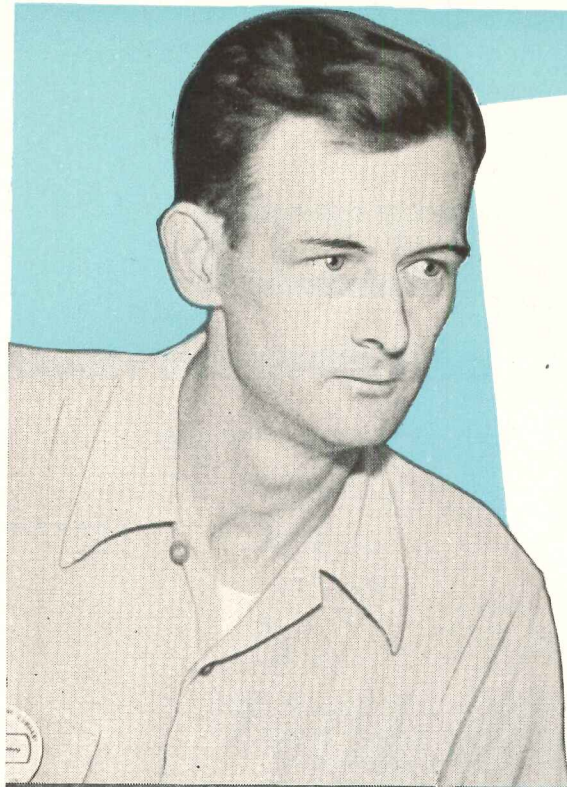
BUILDING MATERIALS

THE CELOTEX CORPORATION • CHICAGO 3, ILLINOIS

Caulking joints between Cemesto panels. Carolina Asbestos Co., Marshville, N. C. Contractor: Interstate Const. Co. Architect: A. G. Ulrey.

Asphalt roll roofing applied over Cemesto. Pittsfield Township School, Washtenaw, Mich. Architect: C. Nobel. Contractor: DeKenning Const.

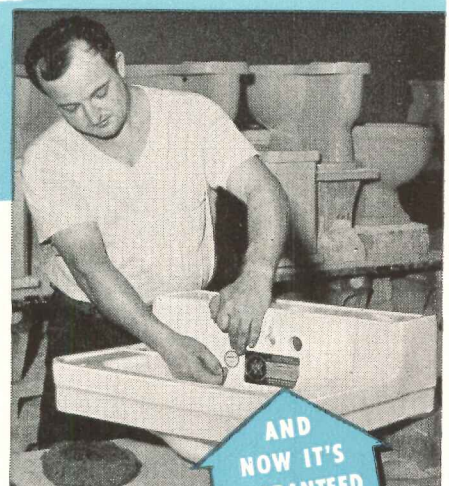
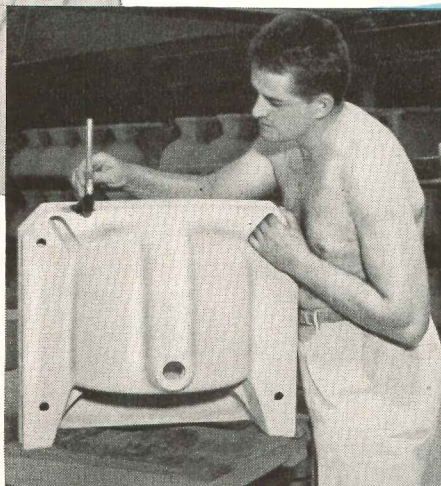
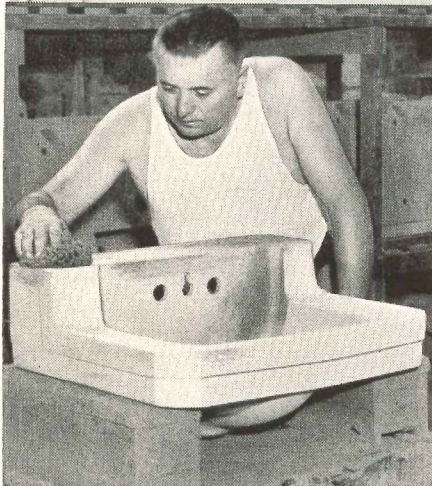




He looks for trouble in China!

CHECKING ON CHINA IS BERNIE GUSTENHOVEN'S SPECIALTY. As Chief Inspector for Richmond's Metuchen, N. J. vitreous china plant, quality control is Bernie's responsibility. Years of experience with vitreous china have given him an eagle eye for pinholes, crazing or dunts. His practiced eye, plus a craftsman's pride in his work, is your assurance of top-grade chinaware.

At every step during production, Richmond fixtures are meticulously inspected for imperfections. Because of this thorough inspection system, plus the high caliber of the craftsmen who do the inspecting, the Richmond guarantee is confidently placed on each fixture.



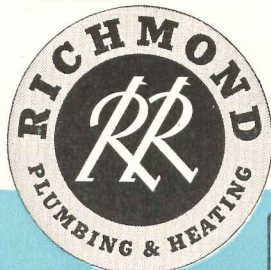
AND NOW IT'S GUARANTEED

Typical steps in the inspection of Richmond Vitreous Chinaware

John Bandics is a veteran of the ceramics industry with 34 years' experience. As a caster, he checks each fixture as it is removed from the mold. He carefully sponges the unit, smoothing the edges and flat surfaces, and looking for defects. After inspection, his number, 102, is stamped into the fixture and it is ready for the drier.

Frank Mozolic, After Drier Inspector, has been on the job for more than 15 years. With brush and testing fluid, he thoroughly inspects the units as they emerge from the scientifically-controlled drier. He makes sure the fixture has not cracked or developed pinholes. When he is satisfied, the fixture is glazed and then sent to the final step—the kiln.

John Rosko, a Final Inspector, has been checking chinaware for over 10 years. Rosko carefully inspects each unit as it comes out of the automatic, continuous-fire kiln. When his detailed inspection is completed and the fixture passes, it is classed as 1st quality ware. His inspector's seal and the Richmond guarantee are attached. The unit is now ready for shipment.



RICHMOND

RICHMOND RADIATOR CO.—AFFILIATE OF REYNOLDS METALS CO.



See your wholesaler or Mail Coupon Today:

Richmond Radiator Company
19 East 47th Street,
New York 17, N. Y.

AR-10

Please send me the latest literature and information on the Richmond line of fine plumbing fixtures. No obligations, of course.

Name.....

Company.....

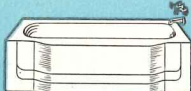
Address.....



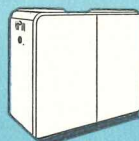
Vitreous China



Gas Boilers



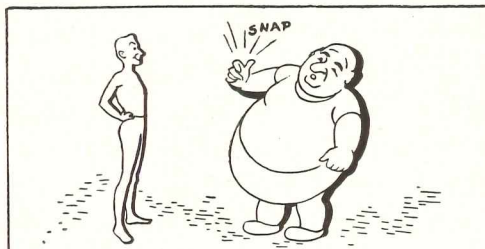
Enameled Cast Iron Ware



Winter Air Conditioners
Gas—Cast iron or steel
Oil—Steel

SLIM and the FAT FACE

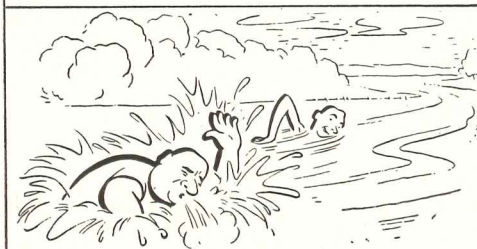
The adventures of a **Roddiscraft** standard thickness face veneer



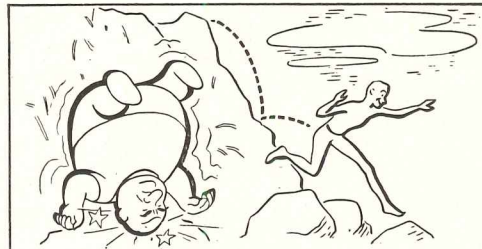
1 Two plywood characters prepare to compete for your buying favors. Roddiscraft's Slim, with his standard thickness face veneer, pitted against a confident fat-faced number.



2 They're off—through the damp, sweating heat of the jungle. Roddiscraft's Slim isn't bothered. He exposes only a little moisture-absorbing wood outside his waterproof glue line. Fat Face, however, is beginning to bloat.



3 Now, a river to swim! Standard thickness Slim takes it in stride. His glue line is near the surface, and moisture penetration is held to a minimum. Fat Face gets across, but his thick veneer is moisture swollen and checking.



4 And down the cliff they tumble. Slim bounces easily from rock to snag. Roddiscraft's hot press bonding permanently binds his face veneer to his tough hardwood crossbanding. Fat Face barely makes it—and in a shower of splinters.



5 The final test—an arid desert to cross. Slim's in fine shape. Because his veneer face is thin and tight, there's no chance for shrinking or swelling. Fat Face, with his thick veneer, is dried out and warped.



6 The winner—Slim and Roddiscraft's standard thickness face veneers. These veneers, 1/28" thick before sanding for most woods, stand up better to hard use, heat, humidity and dryness.

For better construction in doors and plywood, *Roddiscraft* makes use of standard thickness face veneers (as opposed to 1/8" and thicker veneers). Exposure tests made by independent laboratories on all types of plywood construction, with face veneers varying in thickness, prove that the check-

ing pattern on the exposed faces becomes coarser and more conspicuous as the thickness increases. That's why it pays to specify *Roddiscraft* standard thickness face veneers every time. See Sweet's Architectural File 15C-8 and Sweet's Builders File 36-3A for construction details.

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 San Antonio, Texas . . . 727 N. Cherry St.
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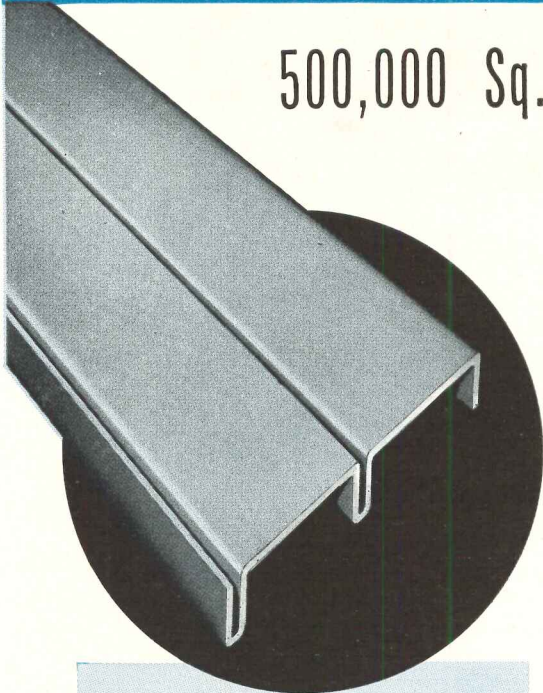
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World's Largest Electric Range Plant!



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Available in Galvanized Steel, or Cold Rolled Steel with Oven Baked Enamel Finish, in 18 or 20 Gauge with either 1½ in. or 2 in. Stiffening Ribs 6 in. O.C. Maximum Length 60 Ft. Plates Can Be Furnished Curved to Fit any Reasonable Constant Radius Arch.

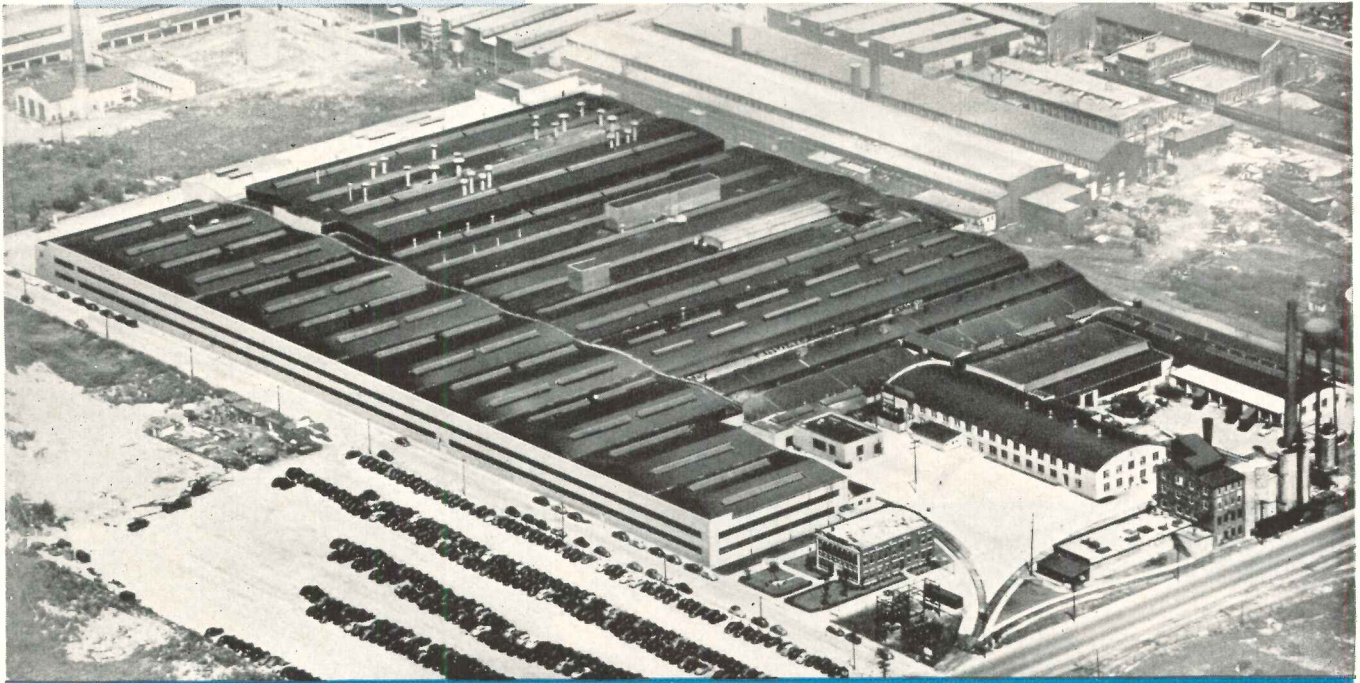
The Electric Range Plant of HOTPOINT, Inc., Chicago, Ill., is typical of thousands of modern industrial plants throughout the country in which Mahon Steel Deck plays the important role of providing built-in firesafety and permanence in roof construction. Because of its basic design, with straight-sided vertical stiffening ribs free of dust collecting ledges, Mahon Steel Deck continues to gain favor with architects, builders, and owners everywhere . . . it lends itself to a broader range of uses in modern construction. See Sweet's Architectural and Engineering Files for complete information, specifications, and construction details covering Mahon Steel Deck and Mahon Insulated Steel Walls, or write for Catalogs No. B-49-A and B-49-B.

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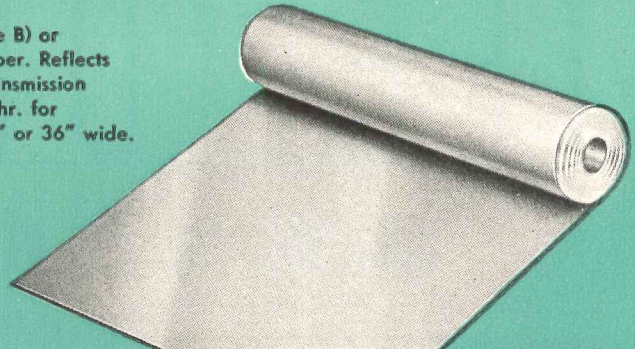
Manufacturers of Steel Deck for Roofs, Sidewalls, Ceilings, Floors, Partitions and Doors. Also Roof Sumps and Recesses, Rolling Steel Doors, Grilles, and Underwriters, Labeled Rolling Steel Doors and Fire Shutters.



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Facts (not claims)
that every architect
should know about
**REYNOLDS ALUMINUM
REFLECTIVE INSULATION**

CRAWL SPACE: Between floor joists over unheated areas, shown unshaded in ground plan above, this is the only practical, economical insulation and vapor barrier. One layer of Type B meets FHA requirements in most areas. Approximate conductance coefficient 0.10. The accepted specification. (Above Garden Apartments, only a small part shown, insulated by The Fireproof Products Co., Inc., N. Y.)

SIDEWALLS: With the increasing use of radiant heating, logic demands this insulation that is radiant heat reflective in the highest degree. Bowed between studs and lapped over stud face, Reynolds Reflective Insulation provides high efficiency at low cost in both conductance and as a vapor barrier.

CEILINGS, RAFTERS: Two layers of Type B, with intervening air space, meets FHA requirements in most areas. Conductance 0.14. Single-faced Type C with blanket insulation laid above is a superior installation. Conductance 0.07. Single layer of Type B, while not sufficient for winter FHA standards in northern areas, is excellent to take off summer sun load.

**REYNOLDS *Lifetime* ALUMINUM
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**REYNOLDS REFLECTIVE INSULATION HAS A PLACE IN YOUR PLANS
... MAIL THIS COUPON FOR TECHNICAL DATA IN A. I. A. FILE FORM**

10

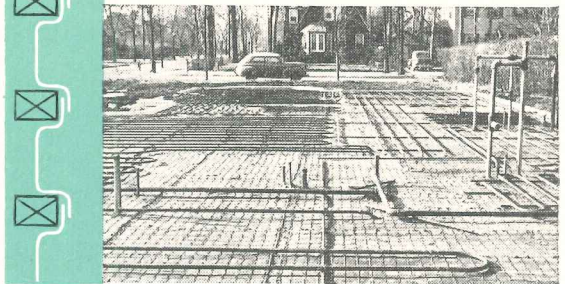
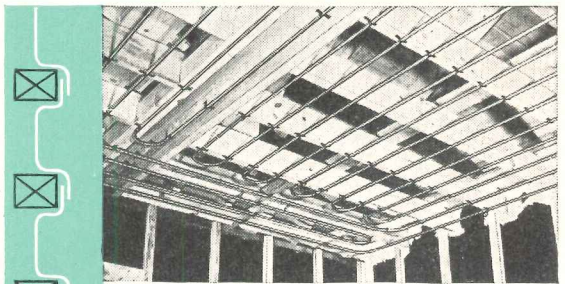
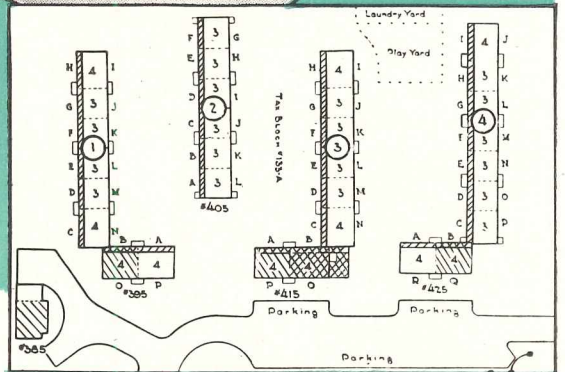
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2015 South Ninth Street, Louisville 1, Kentucky

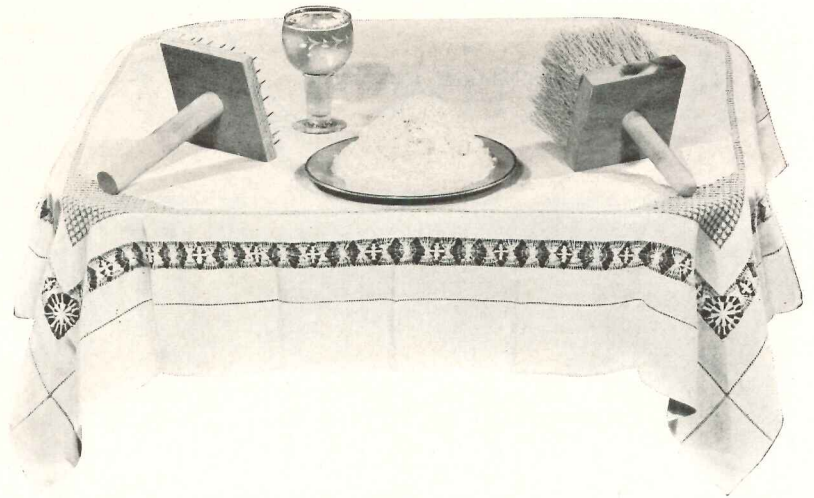
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KILNOISE gives you complete freedom to execute whatever surface appearance you desire...our "brush" and "nail" Stiplers combine to produce almost any texture...the most complicated coves, groins, recesses may be planned at will . . . water paint may be added without loss of sound absorption.

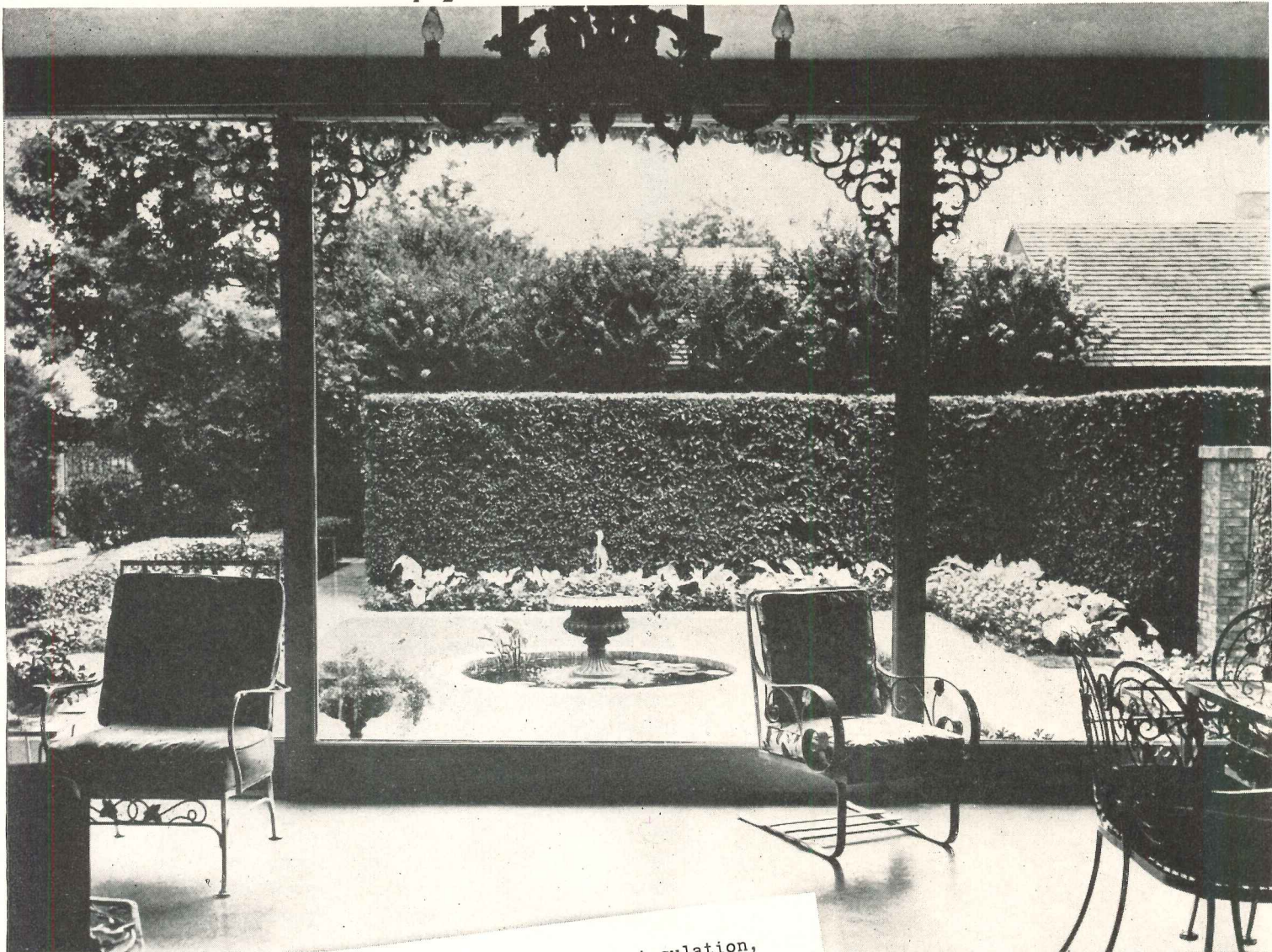
The versatility of KILNOISE permits its use for any type of construction . . . public or private buildings, commercial or domestic use. This suitability for any structure is emphasized by the fire-safety factor . . . KILNOISE is not only incombustible . . . it actually acts as a positive fire-retardant.

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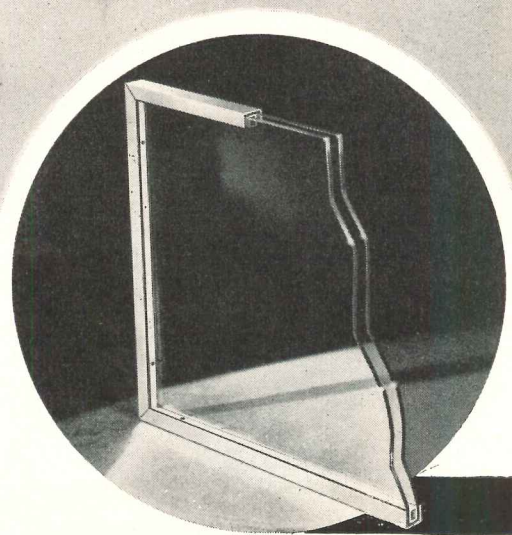
KILNOISE

Attractive *Glass* applications in



TWINDOW, the new Pittsburgh window with built-in insulation, is made up of 2 or more panes of Pittsburgh Glass with a sealed-in air space between. Twindow cuts heat losses through windows. It minimizes downdrafts near windows. And it virtually eliminates fogging and frosting of windows. Architect: Wilson McClure, Dallas, Texas.

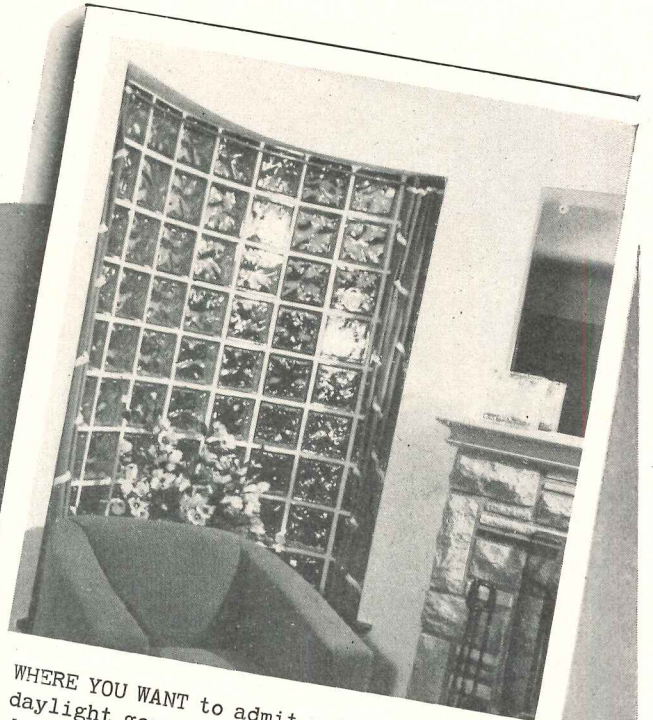
PITTSBURGH has recently perfected a remarkable instrument, which, when placed on the surface of one of the panes in a Twindow unit, measures to within thousandths of an inch, not only the thickness of that light of glass, but of the other pane of glass, and of the air space between the two as well. By using this instrument, the performance of Twindow units under all kinds of conditions, including heavy wind pressure, can be accurately determined, and product quality and performance better controlled. This is another example of Pittsburgh research, and the infinite pains taken to assure you of products which will not only look well but also perform well under field conditions.



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COLORFUL CARRARA STRUCTURAL GLASS is perfect for walls and wainscots of bathrooms, as pictured here. Carrara is mechanically ground and polished. It assures joints that are true and even—without lippage. And it is entirely free of warpage. Available in 10 pleasing colors. Architect: Marcel Breuer, New York City.

See the complete listing and descriptions of Pittsburgh Plate Glass Company products in Sweet's Catalog Files.



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Distinguished arrivals at the Rice Hotel in Houston . . .

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10 miles of them . . . to install in the rooms and corridors. This is only one example of the many fine hotels in which Bigelow Carpets are preferred for their good looks and rugged wear.

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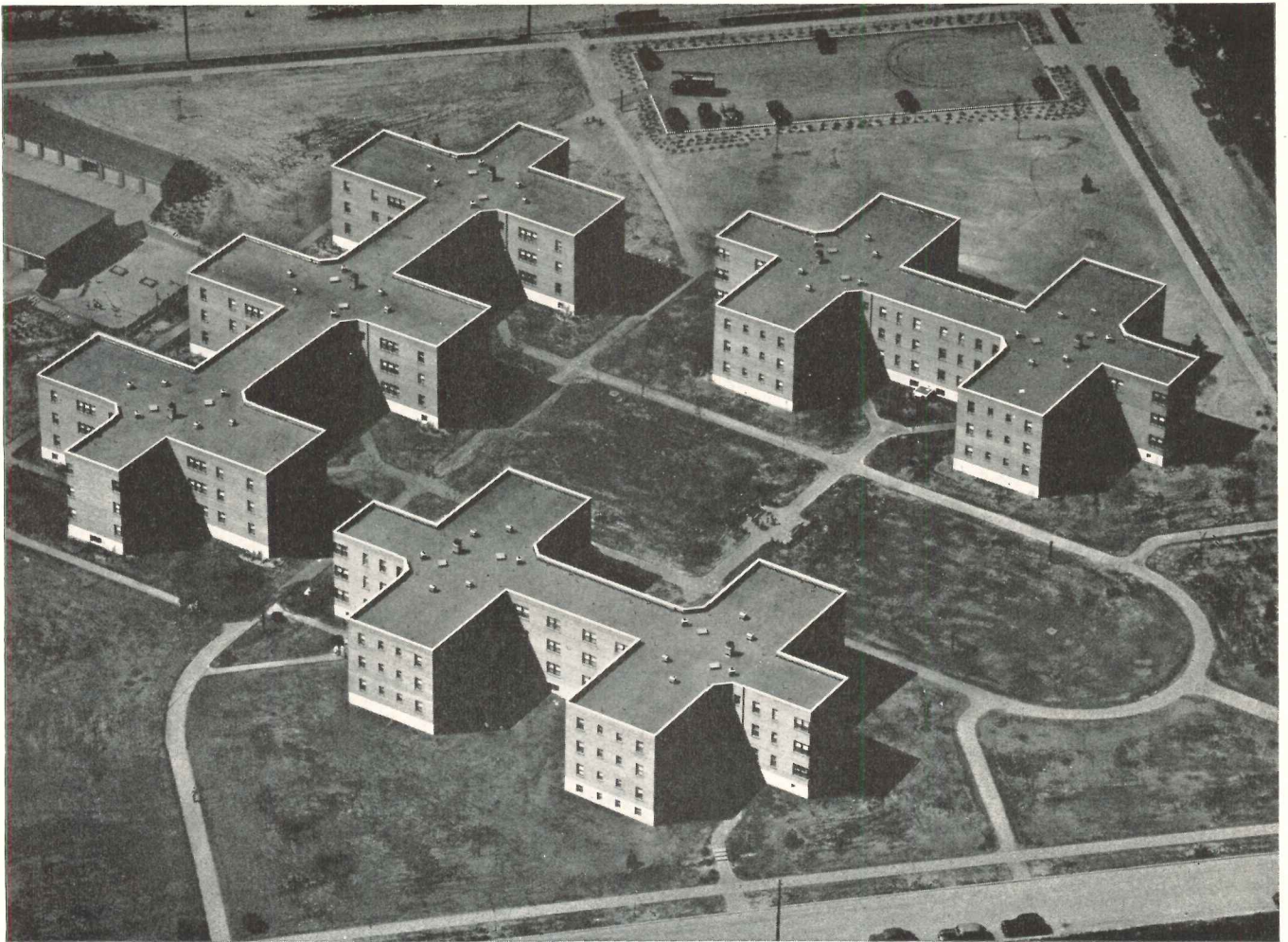
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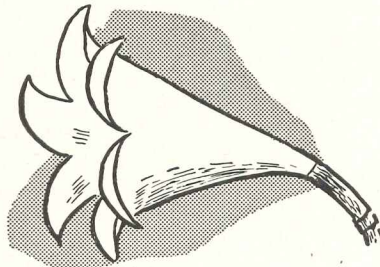


Apartment Project in Pennsylvania Has Open-Web Steel Joists—These are the Tremont Apartments, a 128-family project recently completed at Allentown, Pa. The project consists of three gas-heated, air-conditioned buildings, in which Bethlehem Open-Web Joists are used in combination with plaster ceilings and asphalt-tile floors. This type of floor construction is non-combustible. It permits a minimum of firewall subdivisions and eliminates the need for exterior fire escapes. It also allows the architect complete freedom in locating vented interior baths. Floors built with Bethlehem Joists are also shrink-proof, sound-retardant, and immune to attack by vermin. They are economical, too, for they simplify the work of building trades by permitting pipes and ducts to be run through the open webs of the joists. See Sweet's for complete details about Bethlehem Open-Web Steel Joists. *Owner:* Tremont Apartments Corporation, Allentown, Pa. *Contractor:* T. A. Construction Co., Allentown, Pa. *Architects:* S. Harman Brown and P. Frederick Genter, Bethlehem, Pa.

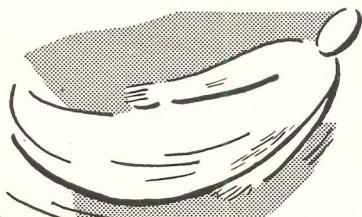




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Safeguard the hospitals you design against lighting failure

Adequate lighting protection for hospitals is of vital importance. This has been proved time after time. For despite all precautions of utility companies, accidents beyond their control can cause interruptions of normal electric current. Storms, floods, fires and collisions occur with little or no warning, and are a serious menace to electric power lines.

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1888..Dependable Batteries for 61 Years..1949

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THE ELECTRIC STORAGE BATTERY COMPANY, Philadelphia 32 • Exide Batteries of Canada, Limited, Toronto



A total of 1100 square feet of corrugated white translucent PLEXIGLAS covers the entire ceiling of the elevator foyer and entrance lobby of the Central National Bank, Cleveland, Ohio. Use of 47 1/2" x 48" x .125" sheets of the acrylic plastic results in overall, glare-free, completely diffused illumination.

WALL-TO-WALL LIGHTING FIXTURES OF **PLEXIGLAS**

**Light the Whole Room Without
Glare or Shadows**

Customers leave their shadows at the door of Cleveland's Central National Bank. PLEXIGLAS wall-to-wall lighting fixtures in lobby and elevator foyer diffuse light so perfectly that glare and shadows simply vanish. Light-absorption is negligible, and the result is better lighting with lower electrical input.

IT'S LIGHT . . . IT'S SAFE

At the same time, the lightness and shatter-resistance of PLEXIGLAS assure safety overhead. This acrylic plastic has 7 times the impact strength of glass, yet weighs less than half as much. Large, light sections can be installed easily at reasonable cost, and because PLEXIGLAS resists discoloration—even from fluorescent lighting—maintenance expense is low.

COVERS LARGE AREAS

More and more architects are using PLEXIGLAS fixtures for superior lighting, especially over large areas in offices and public buildings. Its availability in large sheet sizes, corrugated, patterned, or smooth-surfaced—and the ease with which it can be formed into shaped panels and fixtures—permit its use in highly distinctive functional and decorative lighting.

For wall-to-wall lighting fixtures, coffer panels, reflectors, shields, cove lighting fixtures—wherever optimum illumination with no direct or reflected glare is desired—get full details of PLEXIGLAS. We'll be glad to send you complete information.

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CHEMICALS



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*Canadian Distributor: Crystal Glass & Plastics, Ltd.,
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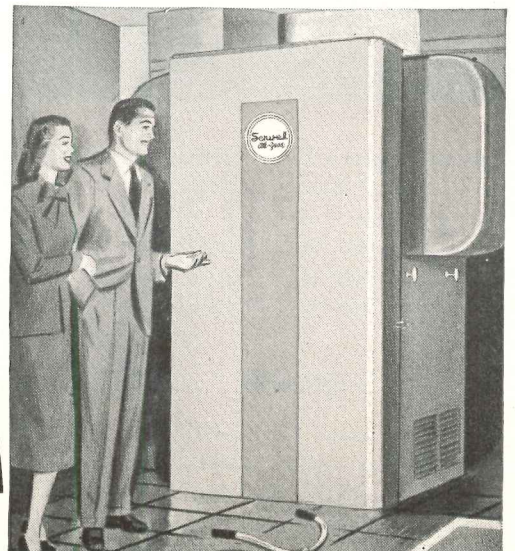
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- EFFICIENT COOLING
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How decide what shall be our next step."

Monotony In Project Housing Poses Problem For Architects And Builders

How to build "production line" houses with minimum structural change

variety of

in no ag... tra, may aboa Eve Co C of fro tra

STAINED SHINGLES & SHAKES GIVE PROJECT HOMES VARIETY IN COLOR, STYLE, DESIGN...



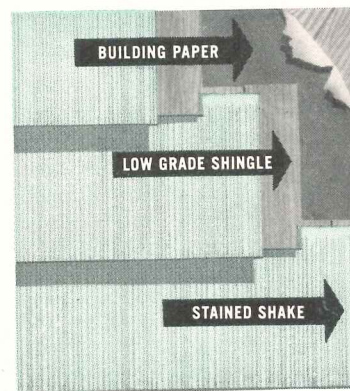
The application of Stained Shingles alternated with Stained Shake walls can be specified so that no two adjacent homes of a project are alike in color, weather exposure or surface texture. Variety of Stained Shingle roof colors adds further distinction to each home. The table below recommends a typical set of roof and wall modifications out of hundreds of practical combinations.

<p>1</p> <p>ROOF: Shingles [Green]</p> <p>WALLS: Shakes [16"] Exposure [12"] Color [Green]</p>	<p>2</p> <p>ROOF: Shingles [Red]</p> <p>WALLS: Shingles [16"] Exposure [8"] Color [White]</p>	<p>3</p> <p>ROOF: Shingles [Oiled]</p> <p>WALLS: Shakes [16"] Exposure [12"] Color [Brown]</p>
<p>4</p> <p>ROOF: Shingles [Brown]</p> <p>WALLS: Shingles [18"] Exposure [14"] Color [Tan]</p>	<p>5</p> <p>ROOF: Shingles [Red]</p> <p>WALLS: Shakes [24"] Exposure [18"] Color [White]</p>	<p>6</p> <p>ROOF: Shingles [Blue]</p> <p>WALLS: Shingles [24"] Exposure 18" Color [Grey]</p>

VARIATIONS are virtually limitless, as walls may be applied at any desired exposure between 6½" and 16". Application details are available in Sweet's File 8b 7a.

ECONOMICAL because both Shingles and Shakes are available in a wide variety of colors and pre-staining greatly reduces cost of color application after construction.

EASY APPLICATION is important in project construction. For exposures greater than 8", double-coursing application is simple and economical. Combines use of Stained Shakes over inexpensive grade of cedar shingles as shown below. Details in Sweet's File 8b 7a.



STAINED SHINGLE & SHAKE ASSOCIATION

835 CENTRAL BUILDING, SEATTLE 4, WASHINGTON



Royal Barry Wills, Boston, Mass., Architect

TELEPHONE RACEWAYS BECOME A NEW ENGLAND TRADITION

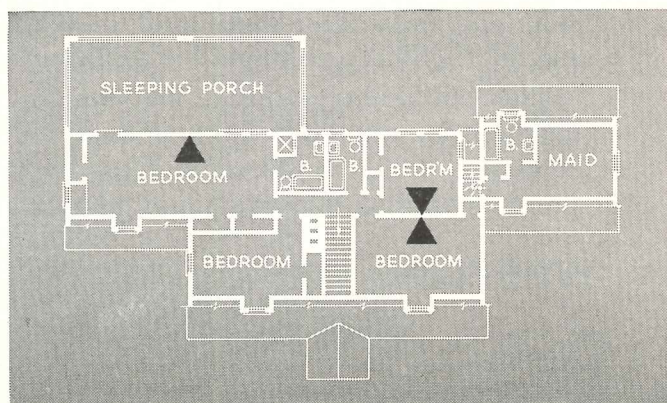
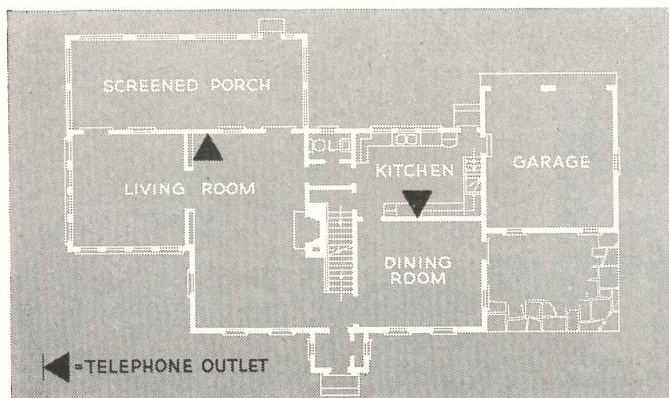
You wouldn't think of designing or building a house today with electric wires and water pipes exposed. It's just as important to conceal telephone wires.

Telephone raceways are easily installed during construction. A few lengths of pipe or tubing will carry telephone wires inside the walls to neat, convenient telephone outlets. They help to protect the interior beauty when telephones are installed, and assure the home owner of modern telephone facilities.

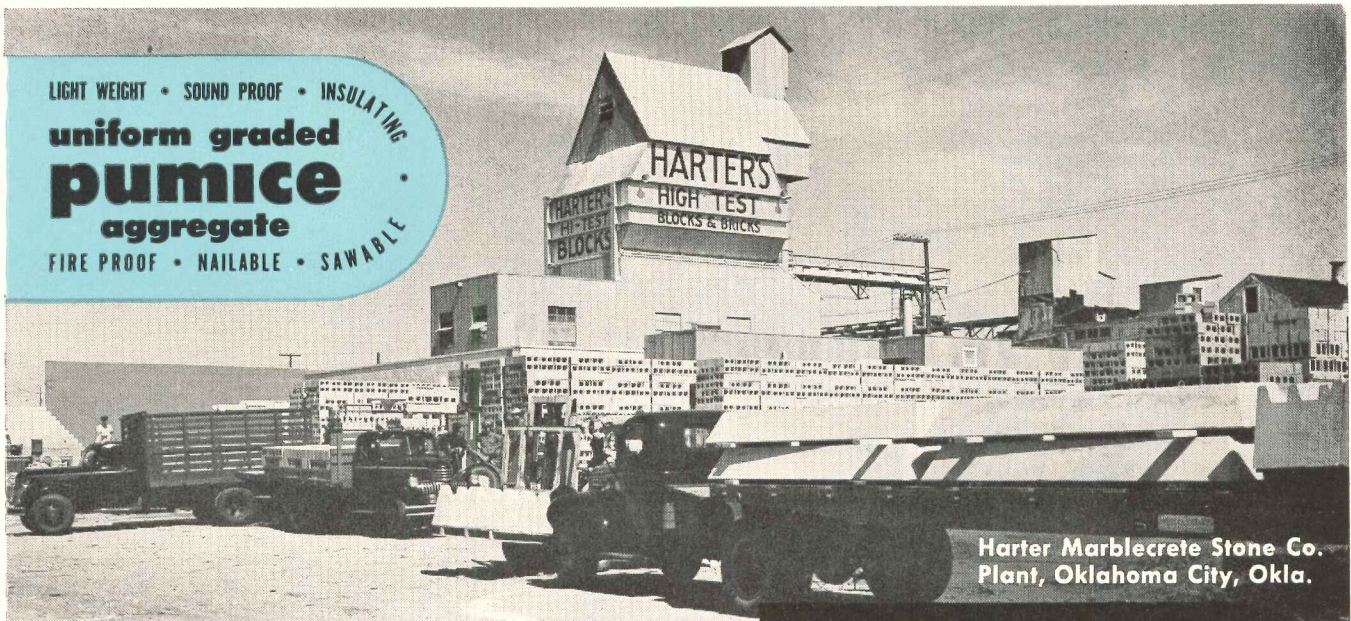
Your Bell Telephone Company will be glad to co-operate in planning telephone raceway systems. Just call your nearest Telephone Business Office and ask for "Architects and Builders Service."



BELL TELEPHONE SYSTEM



LIGHT WEIGHT • SOUND PROOF • INSULATING
**uniform graded
 pumice
 aggregate**
 FIRE PROOF • NAILABLE • SAWABLE



Harter Marblecrete Stone Co.
 Plant, Oklahoma City, Okla.

Better Masonry Plants Feature Lightweight Pumice Units

In almost every large community, the leading manufacturer of concrete masonry features a lightweight masonry unit made with Uniform Graded Pumice Aggregate. These pumice units are now being widely used for a great many masonry applications. Architects and engineers specify them for heat and sound insulation, fire safety, structural economy, durability and attractive appearance. They are usually available in standard modular sizes — ask your masonry unit manufacturer or write to one of the association members for complete information about Uniform Graded Pumice Masonry Units.

UNIFORM GRADED LIGHTWEIGHT PUMICE MASONRY UNITS SAVE BUILDING DOLLARS

Uniform Graded Pumice units have many structural advantages over standard concrete masonry. They add measurably to the utility and market value of any building of masonry design. Their thermal insulation and fire safety properties offer many design economies that are reflected in a better building with lower structural cost and insurance savings.

STRENGTH and DURABILITY

Properly designed pumice masonry units build load bearing walls with the lowest possible weight per cubic foot. Pumice units are manufactured to meet all code requirements.

THERMAL INSULATION

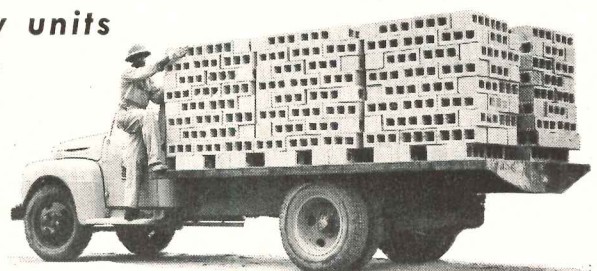
An 8-inch pumice masonry wall, with loose pumice aggregate in the core holes, has a "U" factor of 0.15. In most climates this wall can be left exposed without furring, lathing or plastering and still not sweat under extreme temperature differences.

BUILDABILITY

Lightweight pumice masonry lays-up faster with a more uniform mortar line. It can be easily sawed on the job. It takes nails as readily as wood and holds nailed-on trim satisfactorily.

A big load because it's loaded with PUMICE masonry units

One of the economies of pumice is the saving in transporting costs made possible by its light weight. A big load of 23 pound PUMICE units can be hauled on a truck that will only accommodate half as many 45 lb. standard concrete units.



<p>GENERAL PUMICE CORPORATION P.O. Box 1445 Santa Fe, New Mexico</p> <p>PUMICE LLOYD A. WILLIAMSON Bend, Oregon</p>	<p>MEMBERS</p> <p>PUMICE PRODUCERS ASSOCIATION FPA Uniform Gradation</p>	<p>DESERT MATERIALS CORPORATION 6371 Wilshire Blvd. Los Angeles 36, Calif.</p> <p>PUMICE AGGREGATE SALES CORPORATION 121 South Yale Albuquerque, N. M.</p>
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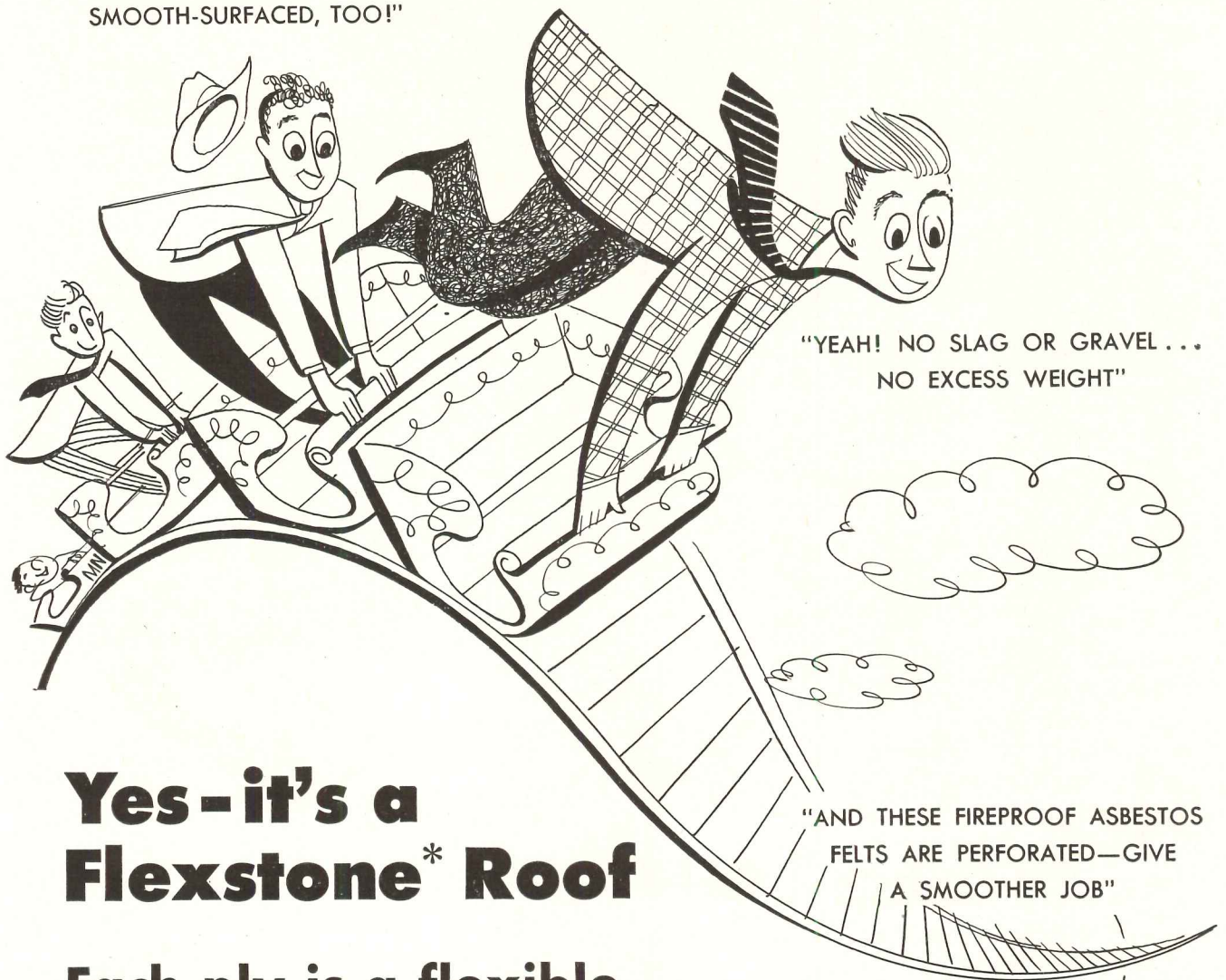
PUMICE PRODUCERS ASSOCIATION

715 FIRST NATIONAL BANK BLDG. • ALBUQUERQUE, NEW MEXICO

UNIFORM GRADED PUMICE is a name applied only to pumice aggregate produced by members of the Pumice Producers Association. Write your nearest producer for technical data. Additional information is in your 1949 Sweet's Architectural (4E/5) and Engineering (4A/8) files.

THE EMBLEM of the Pumice Producers Association stands for Quality Pumice suitable for aggregate in the production of lightweight concrete for structural purposes. It is for your protection; only members of the Association and their franchised manufacturers are permitted to display it.

"LOOK AT THAT ASBESTOS ROOF! IT'S
SMOOTH-SURFACED, TOO!"



"YEAH! NO SLAG OR GRAVEL . . .
NO EXCESS WEIGHT"

Yes—it's a Flexstone* Roof

Each ply is a flexible
covering of stone!

"AND THESE FIREPROOF ASBESTOS
FELTS ARE PERFORATED—GIVE
A SMOOTHER JOB"

● The secret of a Johns-Manville Flexstone Roof is in the felts. They're made of fireproof, rotproof, enduring *asbestos*.

Flexstone Built-Up Roofs won't dry out from the sun . . . need no periodic coating. They're *smooth-surfaced*, too—permit thorough drainage . . . make any damage easy to locate and repair. They are engineered to each job . . . applied only by J-M Approved Roofers.

J-M Asbestos felts are perforated to make application easier . . . give you a smoother job and conform better to irregularities in the roof deck.

Send for Flexstone brochure BU-51A. Contains complete specifications. Address: Johns-Manville, Box 290, New York 16, N. Y. *Reg. U. S. Pat. Off.

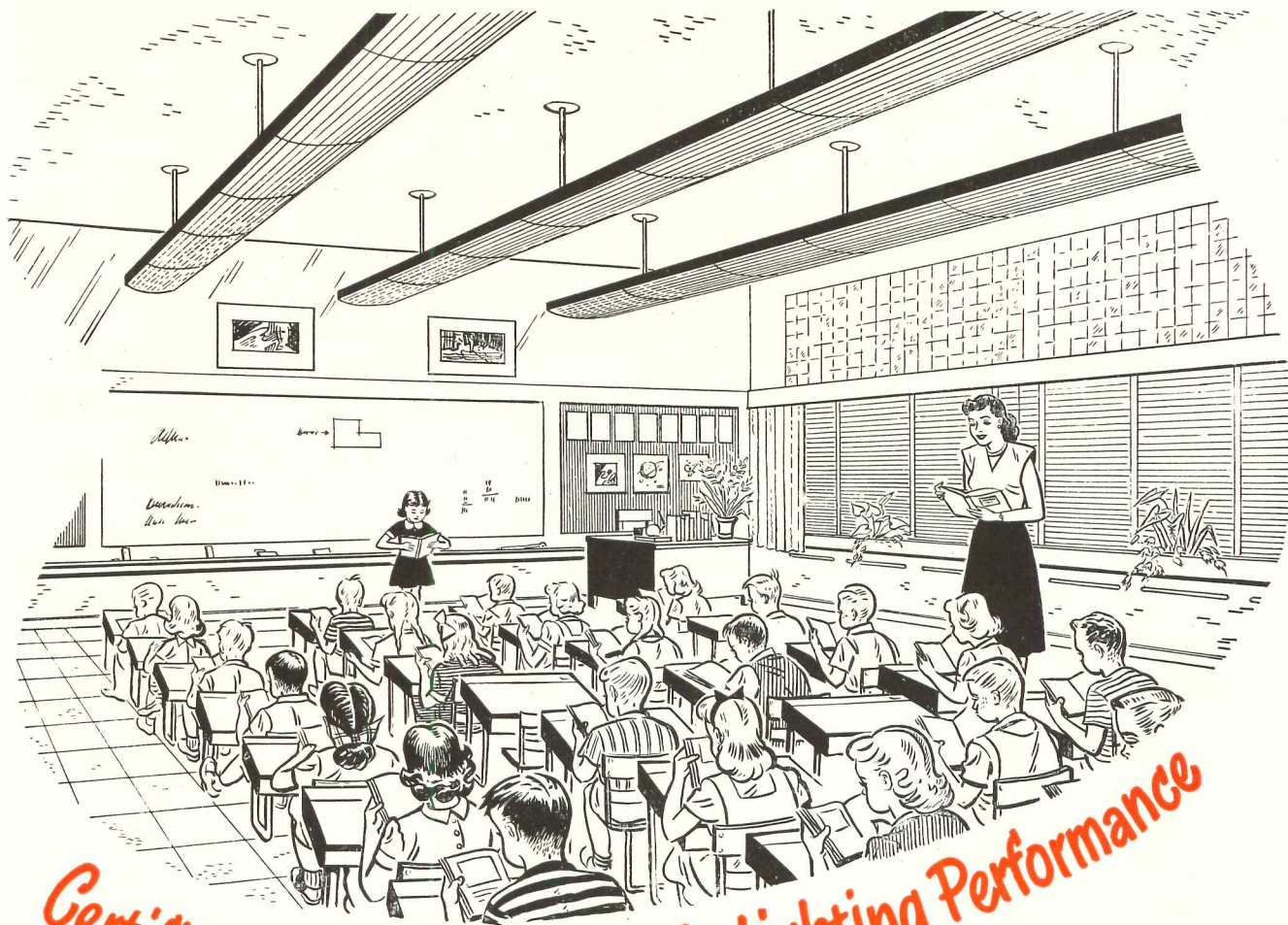


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Johns-Manville **FLEXSTONE*** Built-Up Roofs

CORRUGATED TRANSITE* • ACOUSTICAL CEILINGS

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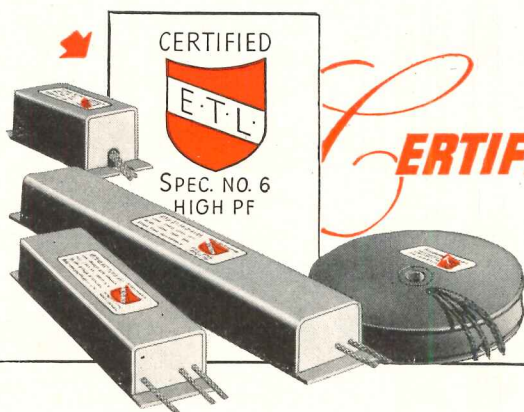
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• You can be sure of long, dependable service from fluorescent fixtures by insisting on Certified Ballasts in the equipment.

**Certified Ballasts deliver... Full lamp life
Rated light output
Dependable performance**

The reason for this is: Certified Ballasts are made to precise specifications ... specifications which conform to the exact requirements of fluorescent lamps ... then tested, checked and certified by impartial Electrical Testing Laboratories, Inc.

All Fleur-O-Lier fixtures use Certified Ballasts.



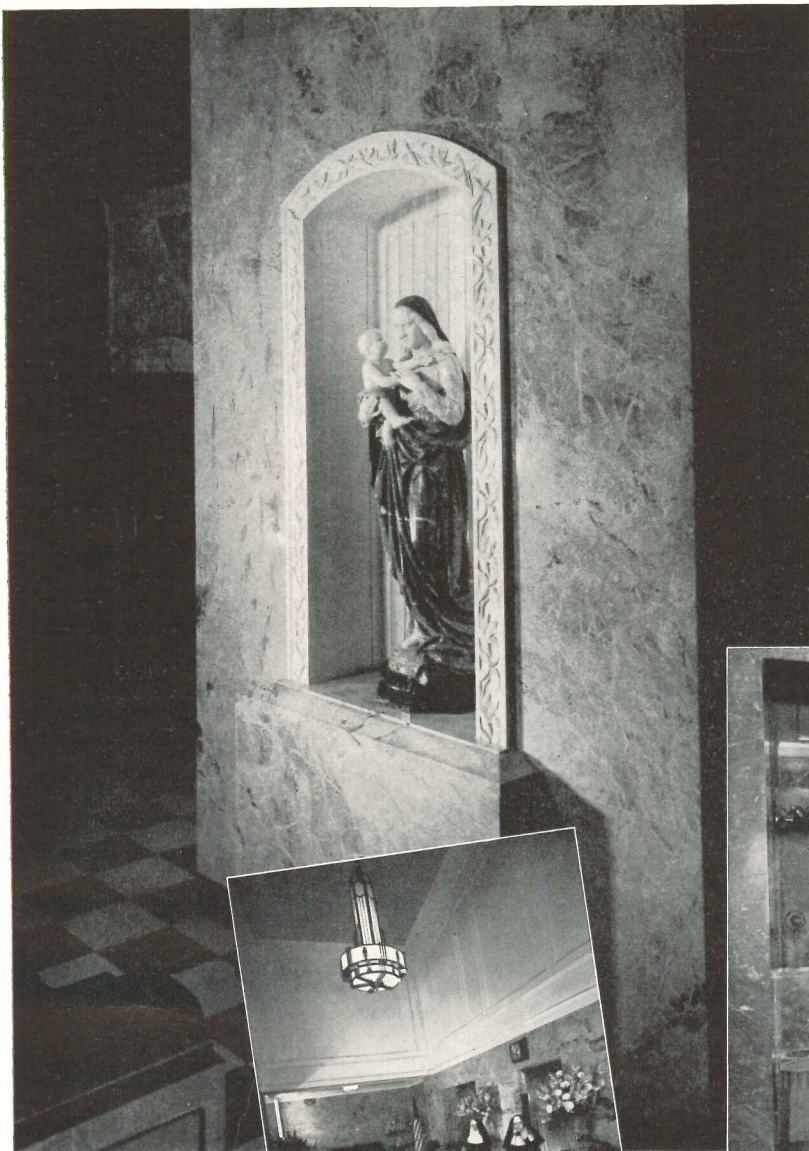
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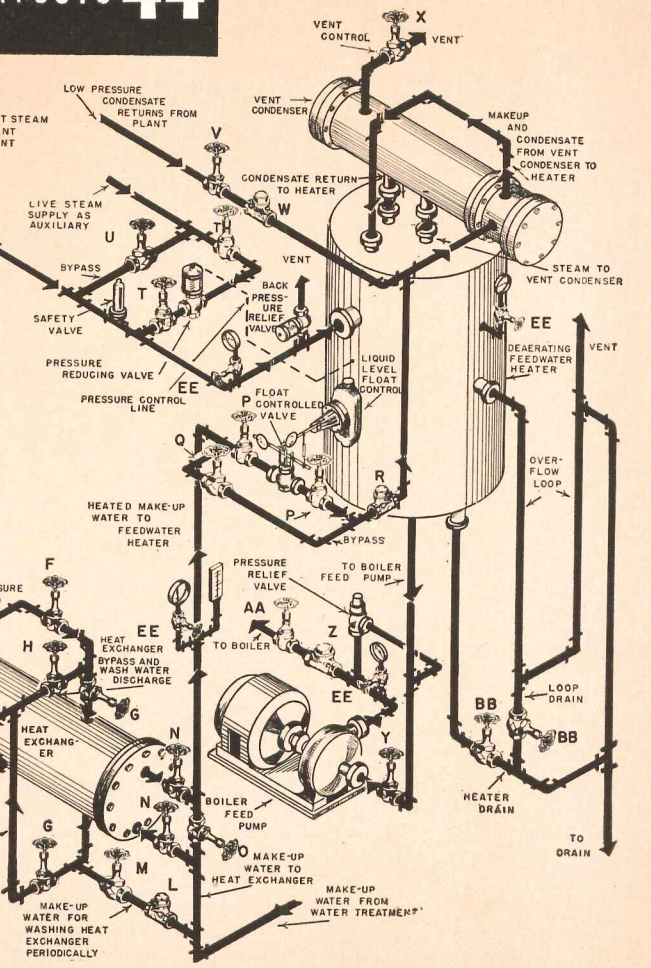
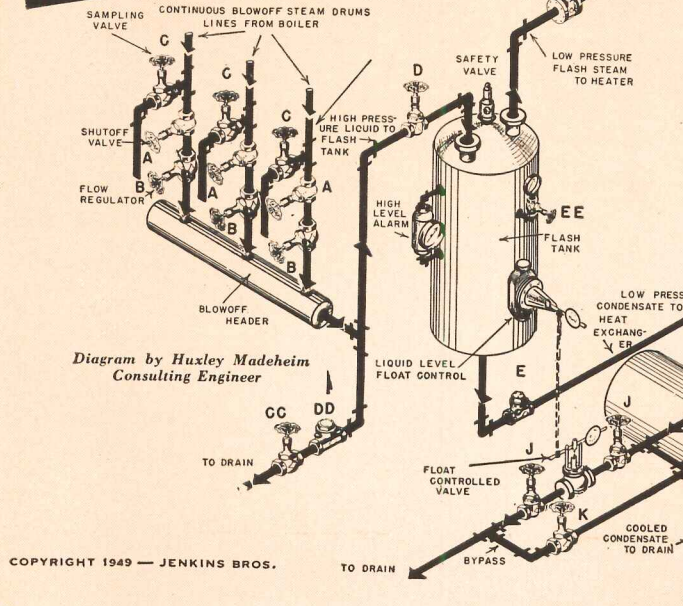


**Marble Institute
of America, inc.**

108 FORSTER AVENUE, MOUNT VERNON, N. Y.

Jenkins PRACTICAL PIPING LAYOUTS 44

How to plan a CONTINUOUS BOILER BLOWDOWN SYSTEM



VALVE RECOMMENDATIONS
For details and valves to suit varying conditions see Jenkins Catalog

Constant foaming and priming of power boilers, which cause excess moisture in the steam discharge from the boiler, result from high concentration of dissolved or suspended solids prevalent in the boiler water. Some method of boiler blowdown is required to rid the boiler of these troublesome solids—to avoid unsatisfactory boiler operation and deterioration of boiler tubes. **The continuous blowdown system** shown has the advantage of keeping solids concentration at a uniformly low level and also of utilizing practically all the heat in the blowdown discharge.

This system can be adapted to boilers of any pressure rating, but the valves used on the blowdown lines from the boiler must always be of the corresponding boiler rating. The Jenkins Valves recommended here are for a 300 lb. boiler. Selection can be made for other pressures from the complete Jenkins line.

Consultation with accredited piping engineers and contractors is recommended when planning any major piping installation.

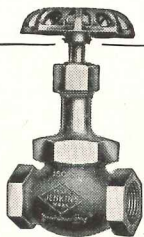
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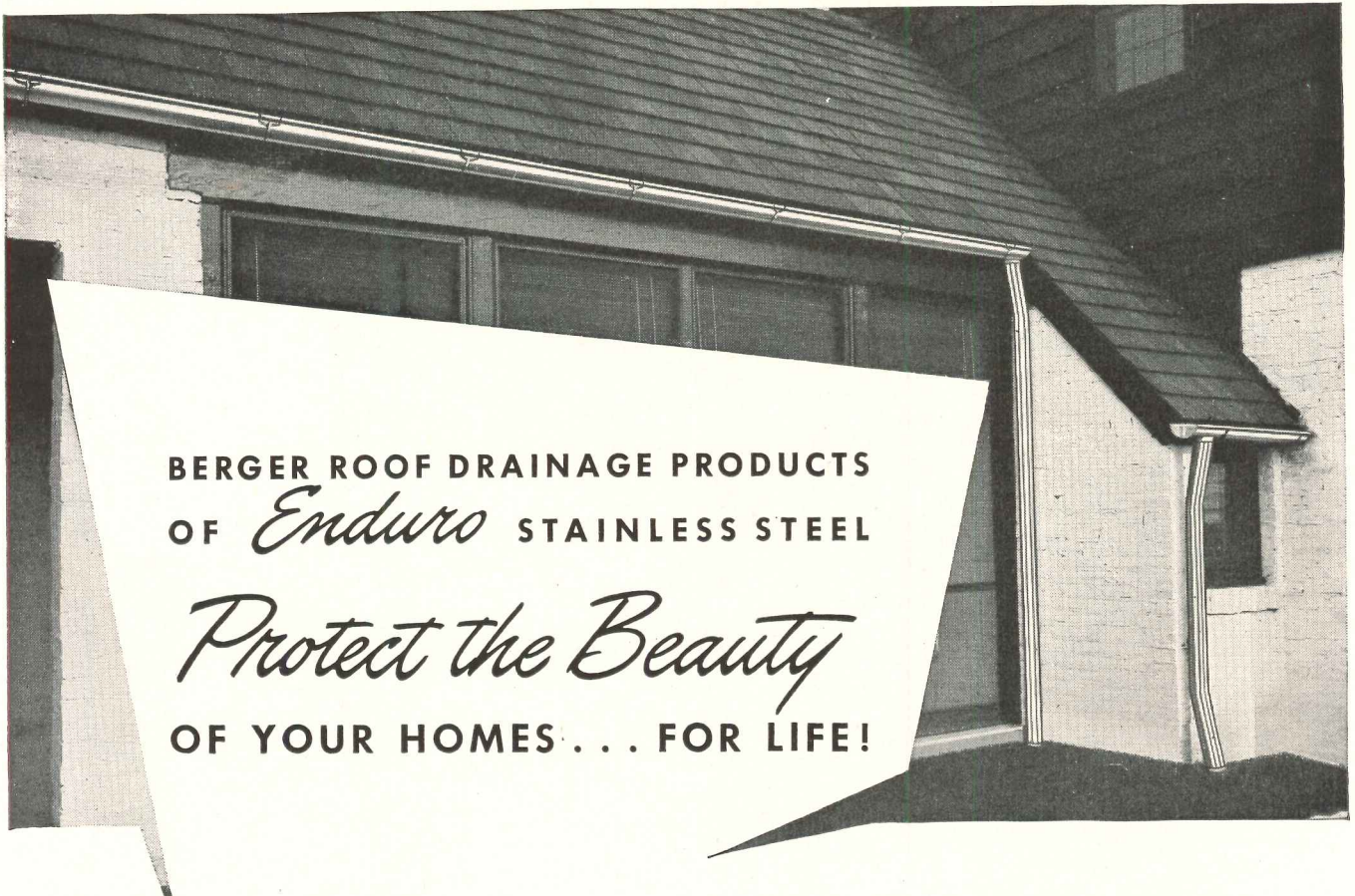
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For every Industrial, Engineering, Marine, Plumbing-Heating Service . . . in Bronze, Iron, Cast Steel, and Corrosion-resisting Alloys . . . 125 to 600 lbs. pressure.

Sold Through Reliable Industrial Distributors Everywhere

CODE	Quan.	Jenkins Valve	Service
A	3	Fig. 280 Bronze Gate	Shutoff Boiler Drum Connections to Blowoff Header
B	3	Fig. 976-A Bronze Globe	Control Blowoff to Blowoff Header
C	3	Fig. 976-A Bronze Globe	Sample Boiler Water Shutoff
D	1	Fig. 280 Bronze Gate	Shutoff Feed to Flash Tank
E	1	Fig. 92 Bronze Swing Check	Prevent Backflow to Flash Tank from Heat Exchanger
F	1	Fig. 47 Bronze Gate	Shutoff Liquid Discharge from Flash Tank
G	2	Fig. 47 Bronze Gate	Shutoff Condensate to Heat Exchanger
H	1	Fig. 47 Bronze Gate	Bypass Heat Exchanger
J	2	Fig. 370 Bronze Gate	Shutoff Float Control Valve
K	1	Fig. 106-A Bronze Globe	Float Controlled Valve Bypass
L	1	Fig. 92 Bronze Swing Check	Prevent Contamination of Make-up Water
M	1	Fig. 106-A Bronze Globe	Manual Periodic Washing of Heat Exchanger
N	2	Fig. 47 Bronze Gate	Make-up Water to Heat Exchanger
O	1	Fig. 47 Bronze Gate	Heat Exchanger Bypass of Make-up Water
P	2	Fig. 370 Bronze Gate	Float Controlled Valve Shutoff
Q	1	Fig. 106-A Bronze Globe	Float Controlled Valve Bypass
R	1	Fig. 92 Bronze Swing Check	Prevent Backflow
S	2	Fig. 651 I.B.B.M. Gate	Steam to Feedwater Heater
T	2	Fig. 280 Bronze Gate	Pressure Reducing Valve Shutoff
U	1	Fig. 976-A Bronze Globe	Pressure Reducing Valve Bypass
V	1	Fig. 47 Bronze Gate	Low Pressure Condensate to Feedwater Heaters
W	1	Fig. 92 Bronze Swing Check	Prevent Backflow from Heater
X	1	Fig. 106-A Bronze Globe	Vent Flow Control
Y	1	Fig. 47 Bronze Gate	Boiler Feed Pump Suction
Z	1	Fig. 962 Bronze Swing Check	Prevent Backflow to Pump
AA	1	Fig. 280 Bronze Gate	Boiler Feed Pump Discharge
BB	2	Fig. 106-A Bronze Globe	Drain Valves
CC	1	Fig. 970 Bronze Globe	Blowoff Header Drain
DD	1	Fig. 962 Bronze Swing Check	Prevent Backflow to Blowoff Header
EE	4	Fig. 741-G Bronze Needle	Pressure Gauge Control

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OF *Enduro* STAINLESS STEEL

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A complete Berger ENDURO Roof Drainage System is a real beauty treatment. It is free from patina type corrosion; it resists corrosive atmospheres and does not rust or tarnish. In addition, it is stronger and more attractive than old-style systems, requires little or no maintenance and costs less in the long run. It blends well with every architectural style. And, although paint is not

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Give your clients the lifetime service and protection they want. Specify Berger Roof Drainage Products of Republic ENDURO Stainless Steel—the metal already proved by more than twenty years' service in buildings of every type.

Berger



Manufacturing Division

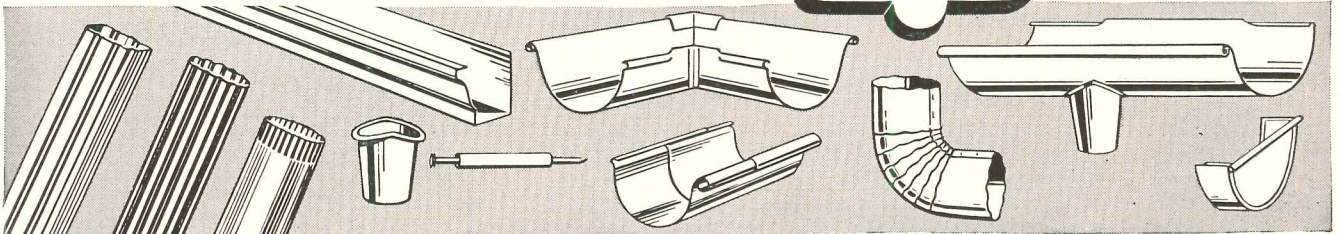
REPUBLIC STEEL CORPORATION • CANTON 5, OHIO

Warehouses in BOSTON, PHILADELPHIA and ST. LOUIS • Sales Offices in DETROIT, MICH., and INDIANAPOLIS, IND.

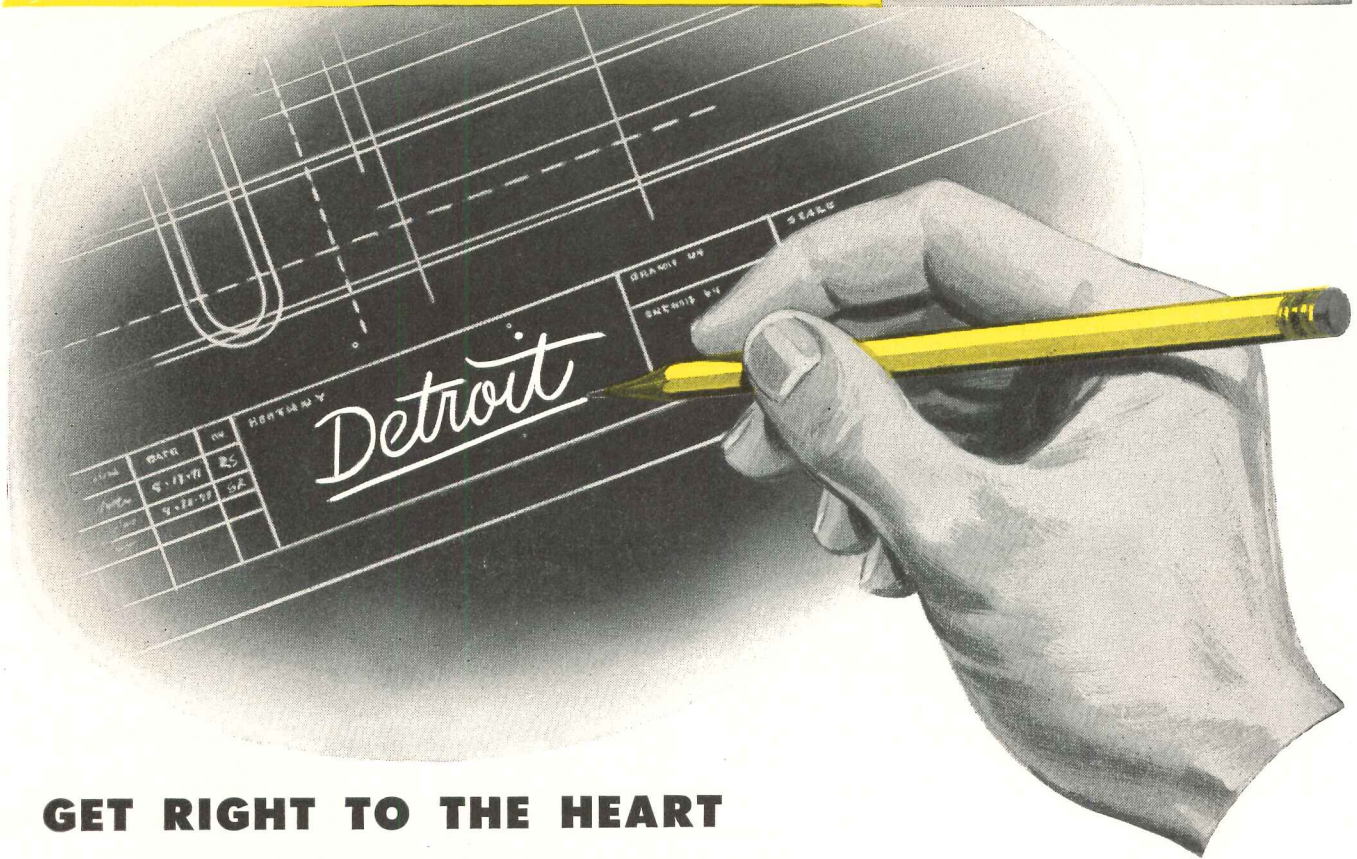
Berger Stainless Steel Roof Drainage Products include Snap-tite Eaves Trough; "K" Gutter; Plain Round, Corrugated Round and Corrugated Square Conductor Pipe; plus a complete line of all necessary fittings. All are made of 28-gauge Republic ENDURO Stainless Steel, type 301, No. 2, satin finish.



*Reg. U. S. Pat. Off.



specify
DETROIT CERTIFIED CONTROLS



**GET RIGHT TO THE HEART
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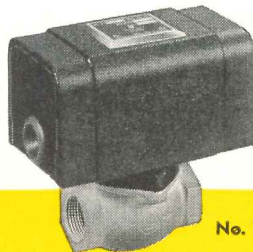
A careful selection of heating controls is mandatory—both for the comfort of your clients and the safety of your reputation. For heating plant performance is entirely dependent on the controls—the very *heart* of good heating. That is why, today, thousands are relying on **DETROIT** to solve their control problems. **DETROIT** controls are designed and built from the accumulated experience of the finest sales and field service organization in the industry. As a result,

DETROIT'S performance records are the standard of comparison for reliability.

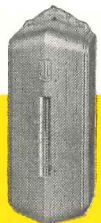
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No. 411 Thermostat—A sensitive and accurate *Timed Cycling* thermostat for all types of heating systems. Provides close control of room temperature. Attractively styled, easily installed and adjusted. Write for Bulletin No. 193.



No. V-570



No. 411

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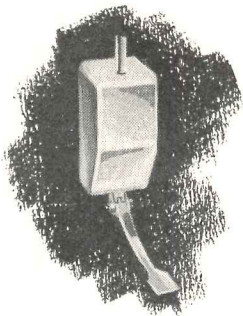


DETROIT - HEATING AND REFRIGERATION CONTROLS • ENGINE SAFETY CONTROLS • FLOAT VALVES AND OIL BURNER EQUIPMENT • DETROIT EXPANSION VALVES AND REFRIGERATION ACCESSORIES • STATIONARY AND LOCOMOTIVE LUBRICATORS

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for Any Public
Washroom...



Sanitary—and saving, too!

A foot pedal on the lavatory, a foot pedal on the closet. They add up to real sanitation in any public washroom—ideal for factories, filling stations, schools.

See how everything is kept off the floor—the most sanitary arrangement—and how it saves on clean-up time!

There's a saving in water, too, with the foot-operated lavatory. No switching from hot water to cold, but a warm, even spray right from the start.

Fixtures shown: the Crane *Oxford* Lavatory, the Crane *Rapidway* Closet.

Get Everything from CRANE

No matter if it's a low-budget job, or a lavish installation—Crane has what you need.

If it calls for a unique style, or for specialized equipment—you'll find it in the broad Crane line.

If you want everything from *one source*—plumbing fixtures, piping, controls, any type of heating—Crane supplies them all.

Thus, you have one high quality throughout. You have the latest in styling, the utmost in dependability—*everything* that goes to make Crane the best-known name in the field.

In making selections from the Crane line, check plans early with your Crane Branch or Crane Wholesaler.

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SPECIFY
Spic and Span Splendor!
FOR HARD WORKING FLOORS



A typical illustration of the use of Tuff-Tex in a cafeteria area

TUFF-TEX* is a Greaseproof Plastic-Asbestos Tile that combines Beauty and Design-ability with Rugged Durability under severe service.

Pick out a flooring requirement where the going is tough...where grease abuse is severe...where traffic is heavy...where easy, inexpensive maintenance is a must...where appearance and design are important.

Then review the extraordinary qualities that Tuff-Tex has to offer, and notice how completely it fills the bill.

For this modern, plastic-asbestos tile is *truly* greaseproof. Spilled foods, factory lubricants, lathe coolants and the like roll off its satiny surface like water off a duck's back.

It's so rugged that you can even specify Tuff-Tex for factory aisles, where materials handling trucks travel constantly.

Maintenance? Daily sweeping to remove loose dirt,

periodic washing, water-waxing (if desired)...that's the easy, inexpensive formula that keeps your clients' Tuff-Tex floors at their sleek, smooth best.

And...on top of all that...you get the versatility of design offered by tile-at-a-time installation. Use Tuff-Tex functionally or decoratively. Identify bays, mark entrances and exits, direct traffic. Take advantage of the wide range of rich colors and various sizes to give your interiors verve and appeal. You can even design custom-cut inserts to your client's individual taste, and we'll make them up to your specifications.

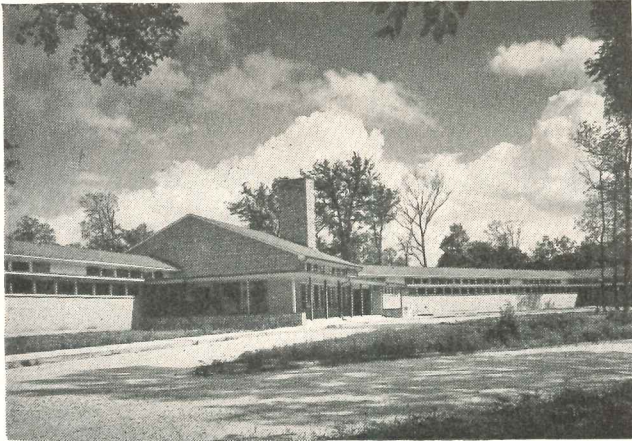
Your telephone directory carries the name and number of your local Tile-Text contractor...a carefully selected, specially trained expert in the installation of Tuff-Tex. He'll be glad to supply you with complete data and estimates. Or write us. We'll rush you full details. THE TILE-TEX DIVISION, The Flintkote Company, 1240 McKinley St., Chicago Heights, Illinois.



Tuff-Tex

*REGISTERED TRADEMARK, THE FLINTKOTE COMPANY

GREASEPROOF PLASTIC-ASBESTOS TILE



Flashing, counter-flashing, gutters and downspouts on the CLYDE L. LYON ELEMENTARY SCHOOL in Glenview, Illinois are all constructed of Revere Copper. Architect: Perkins & Will; General Contractor: Erik A. Borg Co.; Sheet Metal Contractor: General Sheet Metal Works, all of Chicago.



Revere Copper Water Tube in sizes under 2" and Red-Brass Pipe in sizes from 2" through 4" were used for plumbing lines in this new dormitory at PEMBROKE COLLEGE, Providence, R. I. Architect: Perry Shaw and Hepburn, Boston; Contractor: Joseph Cuddigan, East Providence, R. I.

From Coast to Coast REVERE COPPER DOES WELL AT SCHOOL!

In schools and other buildings that are *built to last*, you are almost sure to find copper, the colorful, corrosion-resistant metal that gives you rock-bottom cost per year of service.

Yes, trouble always costs more than Revere Copper. That's why it pays to specify Revere

Copper Water Tube for plumbing, heating and air conditioning, and Revere Sheet Copper for roofing, flashing, gutters, valleys and other sheet metal construction.

These and other Revere Copper and Brass Products are handled by leading distributors in all parts of the country.

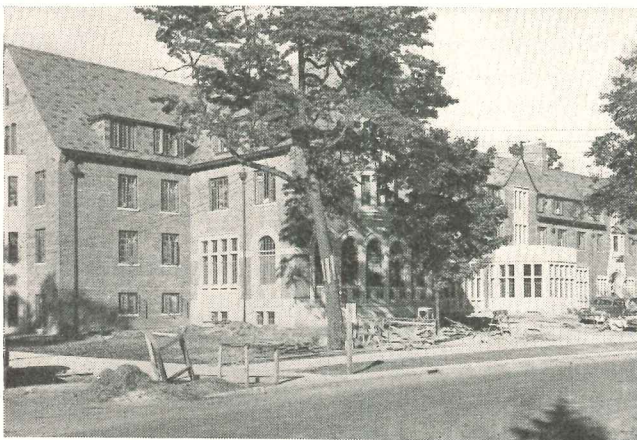
REVERE

COPPER AND BRASS INCORPORATED

Founded by Paul Revere in 1801

230 Park Avenue, New York 17, New York

*Mills: Baltimore, Md.; Chicago, Ill.; Detroit, Mich.;
Los Angeles and Riverside, Calif.; New Bedford, Mass.;
Rome, N. Y.—Sales Offices in Principal Cities,
Distributors Everywhere.*



Ridges, flashing, valleys and gutters of Revere Copper protect 5 new dormitories at MICHIGAN STATE. Architect for Girls' Dormitories: Ralph R. Calder, Detroit; Contractor: Christman Co., Lansing. Architect for Men's Dormitories: Orlie J. Munson, Lansing, Contractor: Reniger Construction Co., Lansing. Sheet Metal Contractor: Michigan Sheet Metal Works, Lansing.



The four buildings comprising the modern design WESTSIDE UNION ELEMENTARY SCHOOL, Lancaster, California, utilize over 10,000 feet of Revere 1/2 inch type L hard temper Copper Water Tube in the radiant panel heating system. Architect: Frank Wynkoop; General Contractor: M. J. Brock & Sons; Heating Contractor: Ray Engineering Co.

the **NEW** Trend in lighting!

LOUVERALL LIGHTING WITH LUMINOUS VINYLITE LOUVERS CREATES A NEW EXPERIENCE IN SEEING!

The trend not only is unmistakably to louvered ceilings of light... but to ceilings with LUMINOUS LOUVERS!

When you experience the lighting effect achieved with luminous louvers it's not hard to understand why those who see it, so overwhelmingly prefer it!

The secret of "Sky-Glo" superiority is in its exclusive Vinylite (plastic) louvers which not only reflect light but also transmit light.* Thus "Sky-Glo" provides a translucent ceiling that not only affords a means of obtaining more light without annoying glare but actually offers a new experience in seeing!

"Sky-Glo" makes possible these high levels of illumination (in range of 50 to 150 footcandles) with exceptional low brightness (less than 1 footcandle per sq. in.). The result: a soft glareless illumination that makes seeing easy; that creates a restful yet stimulating atmosphere; that makes one completely unaware, visually and psychologically, of the high levels of illumination that are responsible for this "new experience in seeing."

Translucent "Sky-Glo" louvers heighten the beauty of the ceiling and add a scintillating and harmonizing note to the entire decorative scheme. Add to these exclusive advantages of "Sky-Glo" all of the many conventional advantages of the louverall lighting system and you can see why the new trend in lighting is so definitely to Benjamin "Sky-Glo."

BENJAMIN ELECTRIC MFG. CO., Dept. Q-1, Des Plaines, Ill.

*Reflection Factor is 19%.
Transmission Factor is 71%.



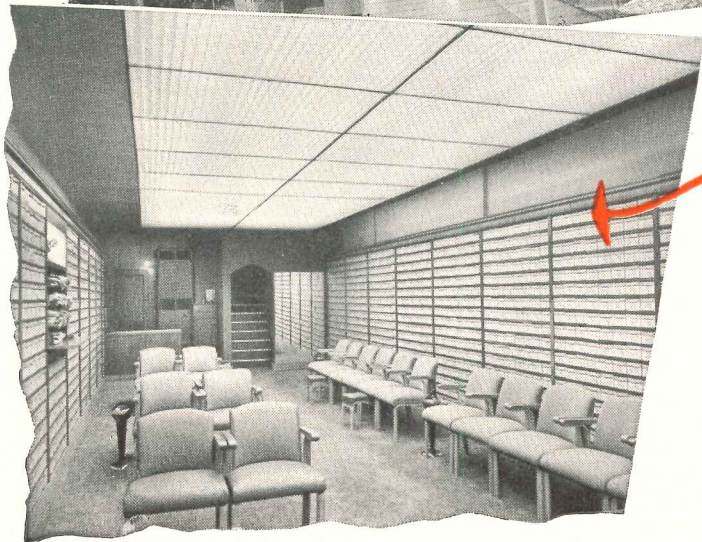
Broadway Florist Shop, 218 W. Fifth St., Los Angeles, Calif.; Sales Area For Florist Shop. Peter Telegin, Consulting Engineer with Basso and Riddel, General Contractor, Keith Electric Co., Electrical Contractor.

Illustration left—Wright Clothing Store, Greensboro, N. C. Designer and Contractor: Starr Electric Co., Greensboro, N. C.

Stetson Shoe Store, Pittsburgh, Pa.; Shoe Store Sales Area. John Schurke, Pittsburgh, Designer; Wood Electric Construction Co., Pittsburgh, Electrical Contractor.

"Sky-Glo" Lighting Manual Available FREE to Illuminating Engineers

For complete story and data on one of the most significant developments in fluorescent lighting history in terms of lighting performance, applications, modernization and maintenance, write for your complimentary copy of Bulletin "SG."



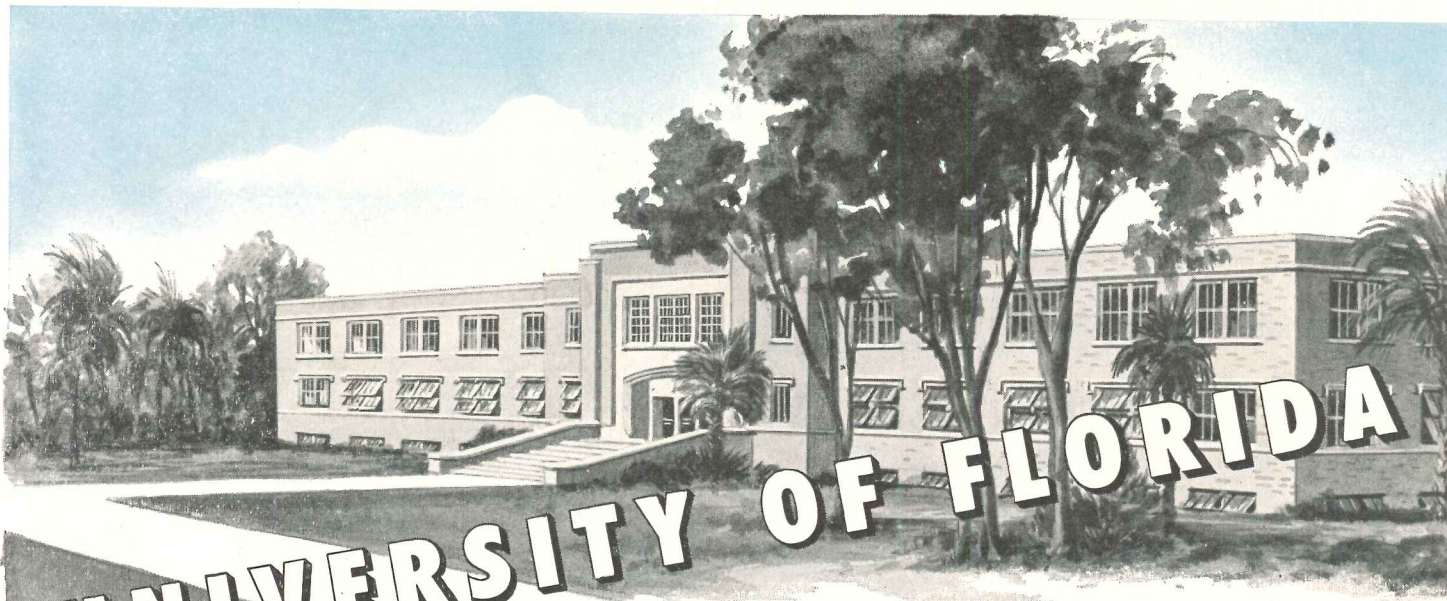
BENJAMIN

"Sky-Glo"

LUMINOUS LOUVERED LIGHTING SYSTEM

Distributed Exclusively Through Electrical Wholesalers

R-3488



UNIVERSITY OF FLORIDA

for the latest and best in modern gym equipment! It was not merely a matter of buying pieces of equipment . . . gym seats, lockers, wire baskets, basketball backstops . . . Medart was in the picture at the "blue-print" stage, when the *planning* was done.

Contractor:

Geo. D. Auchter, Jacksonville, Fla.

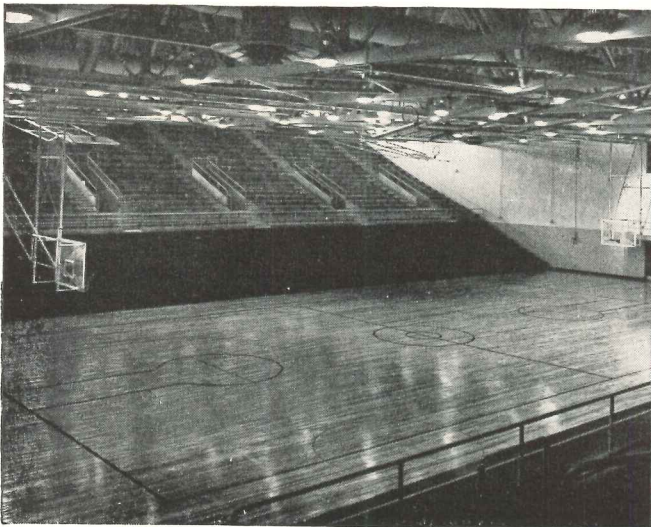
Architects:

W. Kenneth Miller, Orlando, Fla., in Association with Guy C. Fulton, Architect, to the State Board of Control, Gainesville, Fla.

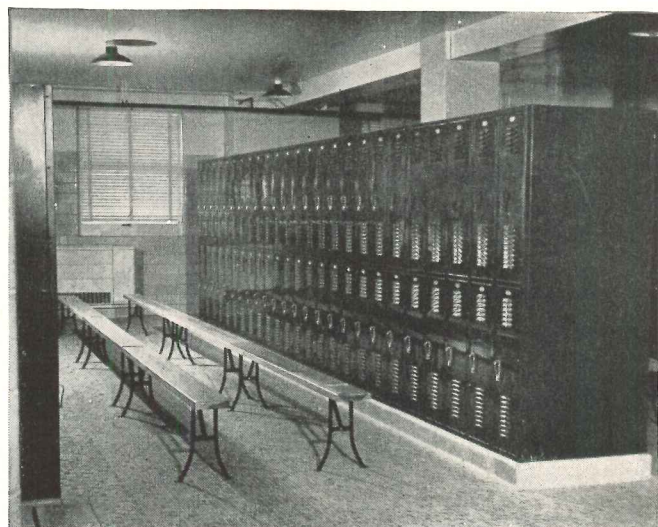
Equipment Installation by:

H. J. Williams, 407 Exchange Bank Bldg., St. Augustine, Fla.

Medart Engineers met installation problems before they arose . . . and the result: one of the finest gymnasiums in the country. Another reason why more and more schools and universities are modernizing with Medart! For Seventy-Five years the leader in serving the Nation's schools.

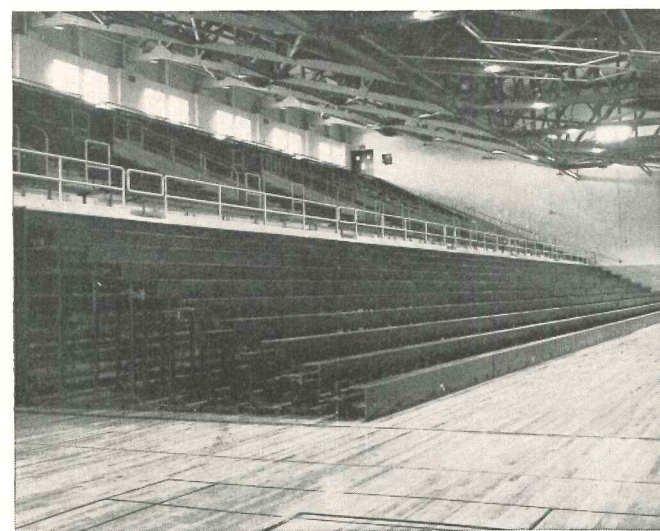
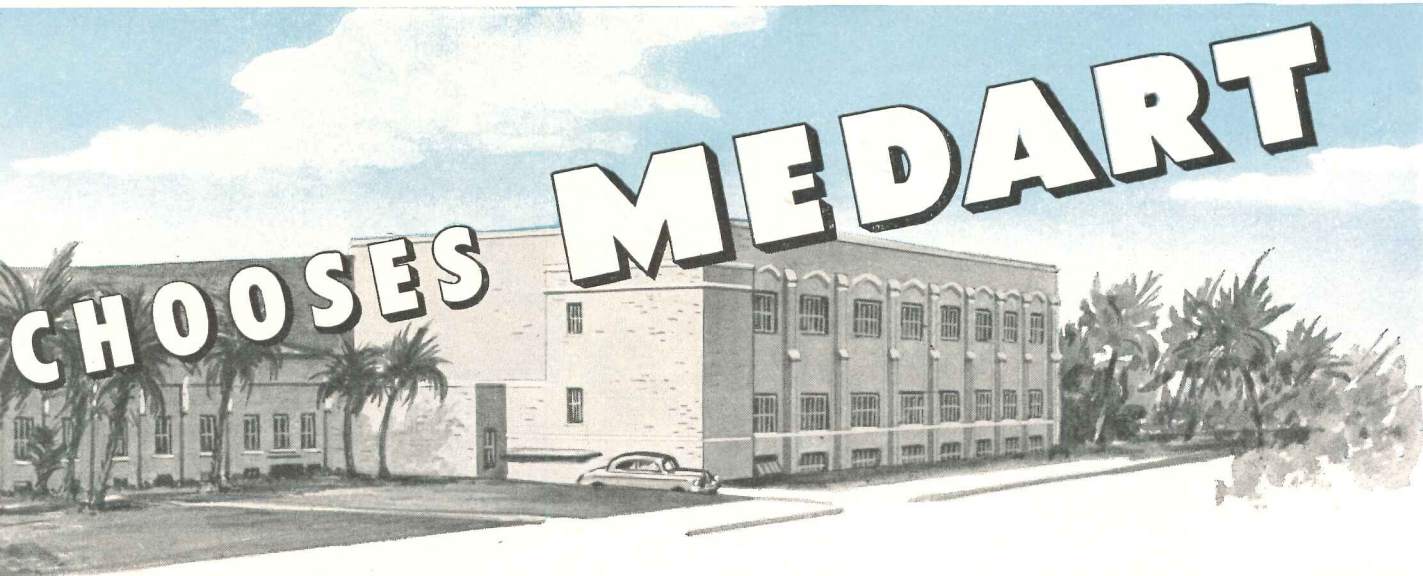


MEDART BASKETBALL BACKSTOPS — Two main-court and eight cross-court backstops installed. All are swing-up type. Main-court backstops are transparent permitting view from rear.

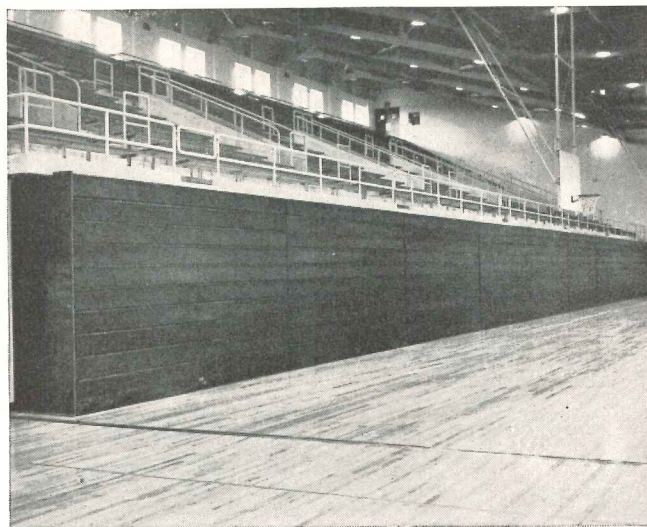


MEDART STEEL LOCKERS — Seven locker rooms completely equipped with Medart Steel Lockers. Various types, including single-tier, double-tier and golf lockers.

FM49-11



MEDART TELESCOPIC GYM SEATS (OPEN)—Several thousand additional seats are provided when Medart Telescopic Gym Seats are opened. Several sections of movable type Telescopic Gym Seats furnished which can be rolled onto floor for additional seating at end of main court.



MEDART TELESCOPIC GYM SEATS (CLOSED)—Four full size cross-courts for basketball are provided when Medart Telescopic Gym Seats are closed and eight cross court backstops are lowered from ceiling.



MEDART WIRE BASKETS AND WIRE BASKET SHELVING—Swimming pool shower rooms for both men and women completely equipped with Medart Wire Baskets and Wire Basket Shelving.

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manufacture of school equipment.*

TTTT
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MOTOR- OPERATED VALVES



TYPE FYBA
 MOTOR OPERATOR
 ON GLOBE FLANGED
 VALVE BODY

FOR ZONE CONTROL

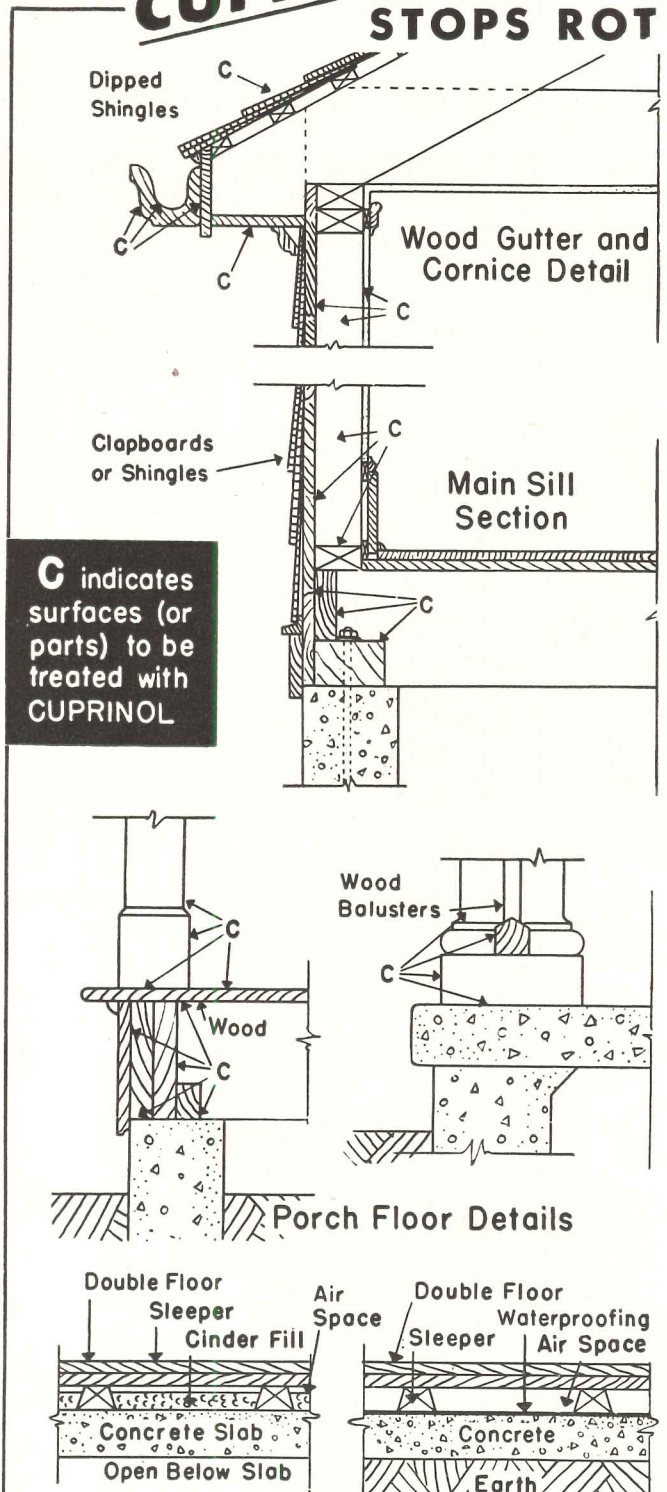
Zone control systems on hot water and steam heating installations require good, remotely-controllable valves for efficient operation. Barber-Colman Motor-Operated Valves have proved ideal for this service in thousands of buildings of all types and sizes. Barber-Colman Valves are ruggedly built for *maximum performance with minimum maintenance*. They are made in all standard sizes up to 6", with globe screwed pattern from 3/4" to 4" and globe flanged pattern from 2 1/2" to 6". Three types of motor-operators are available, the choice depending on service requirements. Barber-Colman Motor-Operated Valves are delivered *completely assembled* ready for installation. Motors operate on low voltage and valves may be remotely (and automatically) controlled by any three-wire circuit single-pole double-throw switch or its equivalent, such as a thermostat, pressure switch, or relay. Be sure your files include latest engineering data on these useful, dependable, economical Valves. *Consult your Barber-Colman representative for any advice on applications.*

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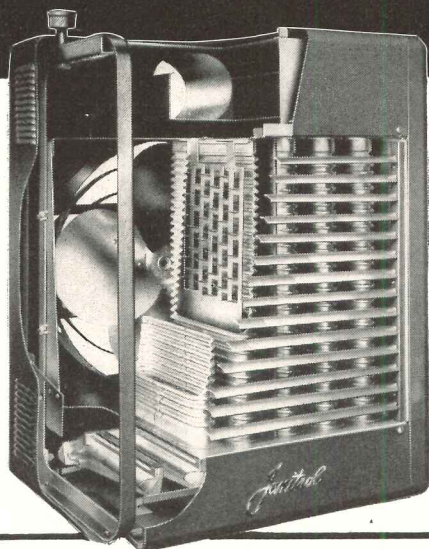
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One of a series of papers prepared by leading authorities on air conditioning. The opinions and methods presented are those of the writer and are not necessarily endorsed by Kinetic Chemicals, Inc. Reprints of this, and other articles in the series,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

Air Conditioning for Modern Office Buildings

by A. C. Buensod, Mechanical Engineer



A. C. Buensod, president of Buensod-Stacey, Inc., New York, received his Mechanical Engineering degree from Stevens Institute of Technology. His company has installed many air conditioning systems, among which are several office building installations in the Rockefeller Center group in New York City.

AIR CONDITIONING office buildings is important, not only for the comfort of the occupants but in retarding obsolescence of the actual structures. The present building trend is toward completely air conditioned office buildings because renting unconditioned space is becoming highly competitive. Where formerly an individual tenant would arrange to condition his own floor or suite of rooms, today he looks for air conditioned space.



Many office buildings today are completely air conditioned to provide personal comfort and to retard obsolescence.

SOLAR HEAT GAIN

In no other type of occupancy is solar heat gain such an important factor. It may account for as much as 60 per cent of the total sensible heat load. Most large office buildings have at least three, and sometimes four, exposed sides, so at different times of the day the warming effect of the sun is directly

on one of the sides. There is no lag in the transmission of solar heat through window glass, which in office buildings may be as much as 70 per cent of the exposed wall area.

Changing positions of shadows, cast on the building by nearby or adjacent structures, complicate the air conditioning problem. As the shadows move across a sun-exposed wall, shady areas develop which cause less heat to be transmitted from the outside. Because of these moving shadows the internal heat load will vary from room to room, thus requiring the air conditioning system to regulate, where practical, the cooling in each of the rooms so that comfortable conditions are maintained at all times.

For design purposes, each office or space is considered as an individual occupancy, with its own air conditioning problem of either cooling or heating.

ZONES

Normally, in air conditioning design, each floor is divided into several zones: zones for offices with exposures on each side of the building and others serving the interior offices, or spaces. In general, the exterior bays of a floor, for a depth of about 15 feet, are occupied by executive offices. This leaves interior offices, or spaces, which present different problems from the exterior offices, or spaces. These interior spaces have large heat gains from lights, and also from occupants, and therefore require the supplying of cooler air during the winter months than is supplied to the exterior spaces.

DESIGN DATA

Approximately 2 cubic feet of conditioned air per square foot of floor area are supplied to the exterior zones and 1 cubic foot of conditioned air per square foot of floor area to the interior zones. The average heat gain from lights is 3 watts per square foot of floor area. The number of occupants is estimated at one person per 100 square feet of floor area, on the average. The total refrigeration will vary from .0025 to .004 tons per square foot of rentable area, with an average figure of .003.

CONVENTIONAL SYSTEMS

Chilled water for cooling is circulated to the various cooling coils at about 45° F. from a central

refrigerating system. Multiple reciprocating compressors, with a central water-cooling interchanger, have been used for chilling water particularly in the smaller capacity systems, while centrifugal compressors have been more widely used on the larger systems. Centrifugal compressors can be operated by variable speed electric motors or steam turbine drives, and the capacity of the machine can be throttled by lowering the speed to take care of light load requirements.

An apparatus room containing the air conditioning equipment usually serves one floor. In the apparatus room would be located the supply air fan, or fans; the cooling coils for cooling and dehumidifying the air; the heating coils for tempering the incoming outside air in winter and for reheating the supply air to the floors.

The supply air to each of the floors would be conveyed through ductwork at velocities from 1200 to 1800 feet per minute. The supply air ducts would deliver air through grilles or outlets with velocities of approximately 500 feet per minute. Air conditioning systems are generally designed to cool spaces to 80° F. and 50 per cent relative humidity under summer design outside weather conditions, and operated with lowered temperatures in the spaces when lower than maximum outdoor conditions prevail. In summer, dehumidification is needed to promote comfort, and the dew-point of the supply air is lowered by passing air over the chilled water coils, thereby removing the excess moisture in the air. The air is then reheated, when required, in order to maintain the proper temperatures in the conditioned spaces. Under light load requirements of the conditioned spaces an air bypass around the cooling coil is used to maintain the leaving supply air at the proper temperature without the use of excessive reheat. Another method is to reduce the volume of supply air to the conditioned space by partial dampering and the use of reheat.

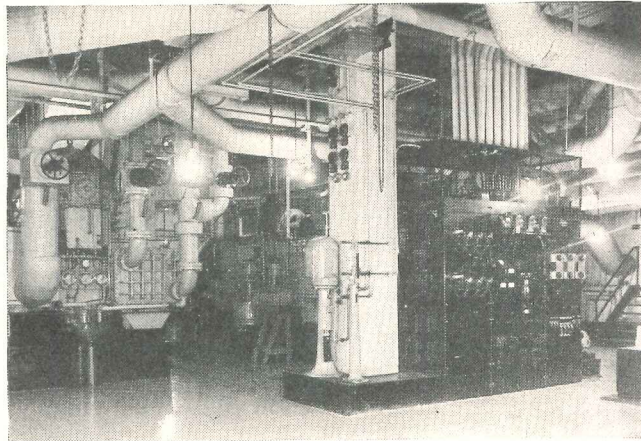
Temperature regulation for such systems consists of bypass, or volume damper control, together with reheater control, with thermostats for each zone, and thermostatic control over the volume of chilled water circulated in the cooling coil. In winter the radiators placed under the windows of exterior spaces supply the heat loss from the exposed wall and the supply air temperature to the zone is governed by the zone thermostat as in summer use. The amount of outside air required for ventilation and for make-up air for exhaust system supply is generally from 20 to 30 per cent of the total amount of air circulated.

ANOTHER APPROACH

Another method of air conditioning office buildings is to utilize the conventional-type system just described to serve the interior spaces on all floors. The exterior spaces on the perimeter of the building are considered as one zone. Since these exterior spaces are subject to a high variable heat they require more cooling and control than the interior spaces. Instead of doing all the cooling in the central apparatus rooms, each of the offices, or spaces,

of the exterior zone has a unit, or units, placed under the windows. These units are served with chilled water in the summer, for cooling, and with hot water in the winter, for heating.

Elimination of horizontal supply air ducts avoids the necessity of false ceilings or the furring of ducts. Each room served by a unit is subject to its



A small part of the equipment necessary to air condition the buildings in Rockefeller Center.

own individual temperature control for both cooling and heating.

THE FUTURE

In the near future it is expected that developments now under way will make it possible to air condition existing as well as new buildings, combining the better features of present practices and lowering the total cost of installations below levels now prevailing. Whatever the future design may be, it is certain that air conditioning for office buildings will be an economic necessity.

* * *

Most property owners today are fully aware of the value of air conditioning . . . particularly in office buildings, stores, restaurants, theatres and other rentable structures. Whenever installation of a new system is being considered, many architects and engineers strongly recommend equipment designed to utilize "Freon" refrigerants. These refrigerants are 100% safe . . . nontoxic, nonflammable, nonexplosive, noncorrosive, anhydrous and are as pure as scientific methods of production can make them. They help assure dependable, economical operation of the equipment . . . aid in prolonging its useful life. Kinetic Chemicals, Inc., Tenth and Market Streets, Wilmington 98, Delaware.



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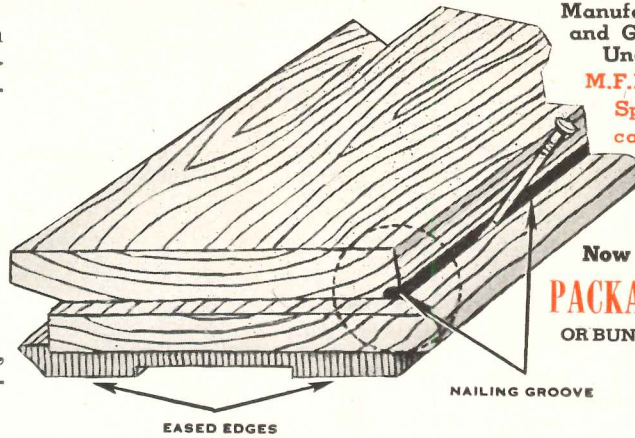
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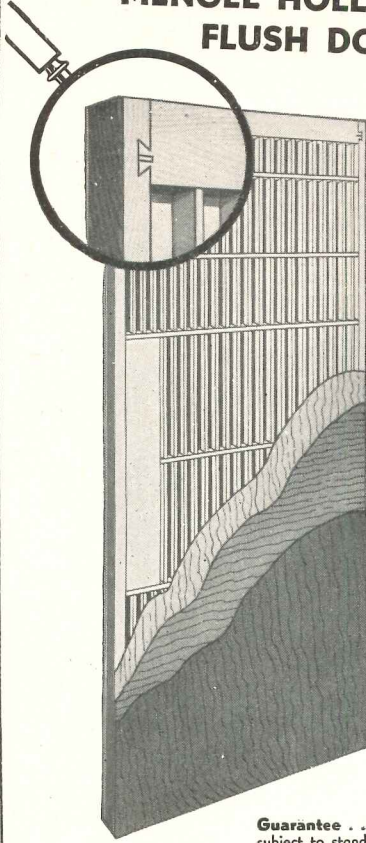
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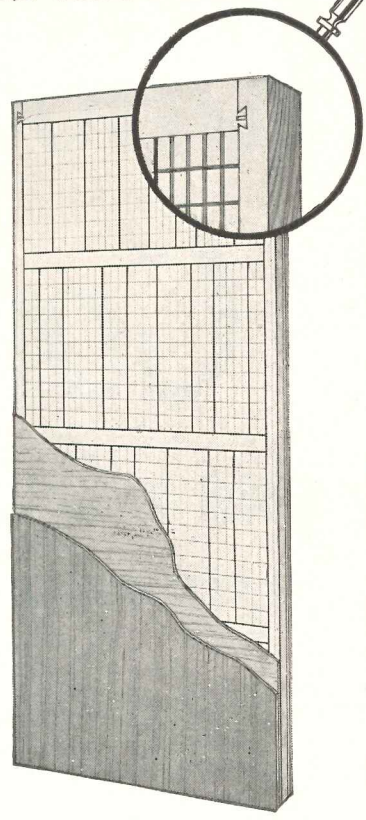


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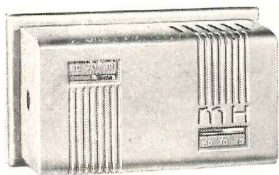
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I N T R A N S I T I O N

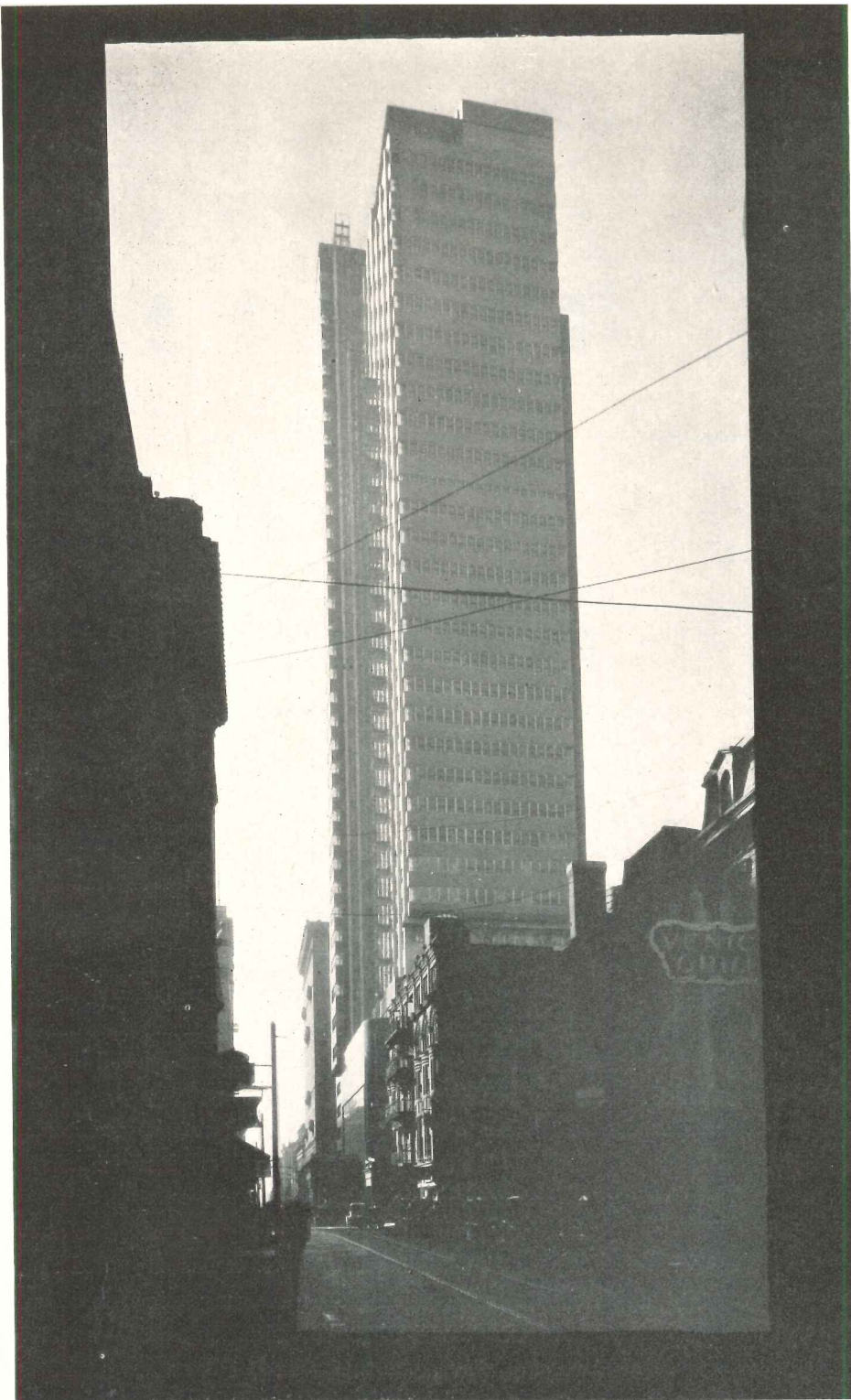
I t is apparent that architecture is in a transitional phase. For many years it has been struggling to evolve an expression characteristic of the contemporary world. More recently there has been an attempt to appraise the success of this effort. Has the movement progressed rationally, or has it gone too far off the track? Has it found a new beauty, or lost the common touch? What direction will development now take? It is hardly necessary to debate any longer the merit of the functional plan versus that of facade architecture. As a premise this is reasonably well established, yet architects expect further pursuit of its implications.

In these transitional times there are other questions that beset the architect: what is the new relationship with engineers? with manufacturers of the new materials? and with the many other activities that comprise the complex art of building? The rapid growth of technology has increased greatly the materials and methods available for accomplishing our building programs. It has expanded the scope so much that no individual is capable of visualizing the range of possibilities. In order to realize the latent potentialities of modern construction techniques, the highest degree of understanding and teamwork must prevail between architect and engineer.

At this time when so much fermentation is taking place in architectural thinking both as an art and as a science, ARCHITECTURAL RECORD is especially aware of its responsibility to the profession to report developments candidly and objectively, and to render those informational services most likely to facilitate the work of the architect and engineer.



EDITOR



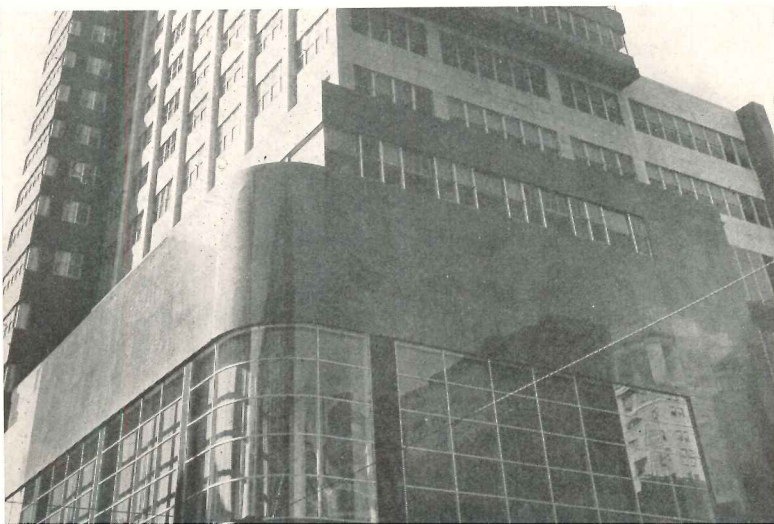
Ph. B. Wallace Photo

THE PHILADELPHIA

George Howe, writing from the American Academy in Rome—a post he is soon to relinquish, says: “. . . As the president of the Society at the time of building made me guarantee on my word of honor that we had designed the building in the interests of the bank and not of our personal reputations among the ivory tower boys, I take a personal and particular interest in its success. . . .” Photographs, left: construction nearly complete in 1932. Below, street façades show little change; note modern automobiles in 1949 view. Facing page, main banking room shows greatest change, in lighting and counters, required by tremendous growth in bank’s business

1932 1949

Joseph Molitor Photo



Howe and Lescaze, Architects

SAVING FUND SOCIETY BUILDING: A RE-APPRAISAL

In August, 1932, the Philadelphia Saving Fund Society opened its new branch bank and office building at 12th and Market Streets. Almost immediately the building won national and international acclaim; it has been pointed to as a thorough fusing of structure, materials and equipment; hundreds of high school and college students still visit it annually. Does the building live up to this succes d'estime? The seventeen years since its completion afford time enough for an honest re-evaluation based on the experience of owner and tenants as well as our own more mature critical attitude toward non-traditional architecture.

THE OLD BEAUTY

By Frederick Gutheim

FROM along the Schuylkill, through the web of overhead wires, you can see it, still the biggest and proudest thing in Philadelphia, now almost twenty years since it was born on the drafting table in the office of Howe and Lescaze. A fretted white tower announces with authority **PSFS**, spelled out at night in red neon, still commanding the skyline.

A cynic might very well say that the last thing built always commands the skyline, and nothing much of consequence, admittedly, has been built in downtown Philadelphia since the Society erected its skyscraper in the depression days of 1932. But hold! Have the last twenty years produced anything in the way of a tall building — except for the United Nations secretariat, now a promise in steel — that provides the same functional satisfaction or as much eye food? If you had to pick the one American skyscraper, this would have to be it.

When people have finished talking about verticals in the Daily News Building, horizontals in the McGraw-Hill Building, the planning virtues of Rockefeller Center, or the simple height of the Empire State — when all this has been done, and you come down to the fundamentals of good building and design — there is PSFS. Today it is still a satisfying building, to its occupants,

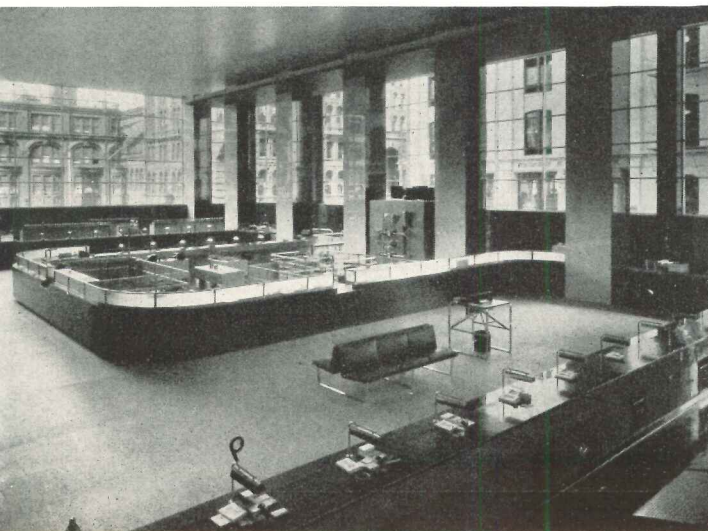
to the public, and to the architecturally aware visitor. It does not invite comparison. It still has an excitement to communicate, a few surprises one has forgotten since the last visit, against a pleasant sense of finding things as satisfactory as one remembered them. Most of all, the building has that unique combination of boldness, of rugged strength approaching ugliness that was Lescaze's polytechnic contribution, and of richness, luxury and refinement approaching over-refinement that was Howe's.

You admire it still, although the building belongs in the awkward age. Not new enough to be contemporary, but not old enough to have become a readily placed historical monument, it is aging gracefully. That fascinating miraculous preservation is part of its charm. There was an architectural wisecrack contemporary with the building of PSFS, calculated to jar the exponent of pure functionalism: "Yes, but will it make a good ruin?" It has become almost possible to answer that one. We can see that a modern building does not age in the same way a traditional building does. Modern materials — and double entry bookkeeping, perhaps — assure that in age the modern building will have a special charm of its own that we have not known before.

At first you think that jaunty ageless, frightening atmosphere, a little on the embalmed side, is due chiefly

Dooner Photo

1932

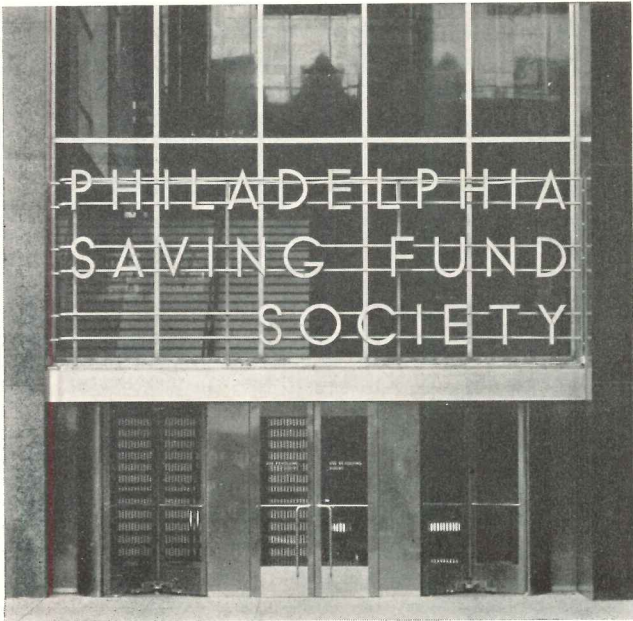


1949



Joseph Molitor Photo

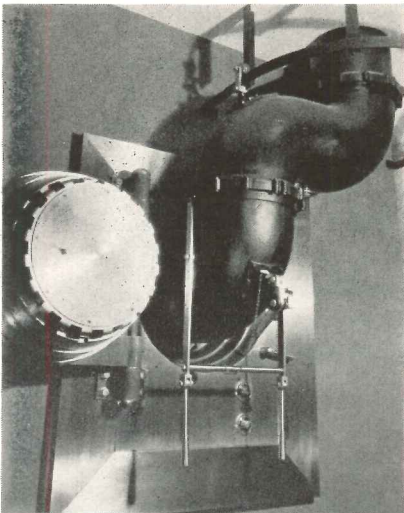
Entrance to second-floor bank: the simple doorway hardly prepares one for the monumental stair hall. Stairs begin so close to entrance that incoming customers automatically hurry up. Facing page, top and bottom: comparisons, main banking room. Number of customers' desks substantially increased; tellers' windows doubled; and local lamps eliminated from counters to make room for the machines required to accommodate increased business



Steiner Photo



Richard Dooner Photo

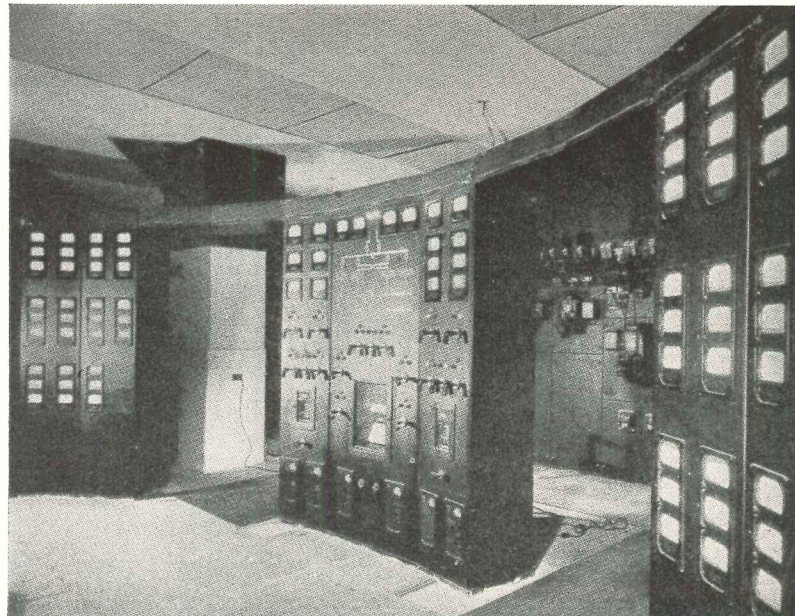


Steiner and Nyholm

Entire building is air-conditioned; to this, plus efficient maintenance, is attributed low cost of upkeep. Above, duct supplies conditioned air to vault, pivots out of way so door can be locked at night. Air-conditioning and good office-floor design have consistently attracted tenants although building is not in Philadelphia's financial district. Right, remote control board for electrical system, (C. D. Fawcett, designer). Incoming high voltage is stepped down for separate light and power circuits, so interconnected that one may take both loads if the other fails

to the extraordinarily good maintenance the building receives. Then you think it derives from the marble, glass, stainless steel, copper and bronze, the whole battery of ageless, and nothing but ageless, materials that have gone into it. The building, piece by piece, might just as well have been built yesterday. But obviously, it wasn't.

What has aged is not the building but the style. With-





Richard Dooner Photo

1932



1949

Joseph Molitor Photo

out even entering you see the enormous curved corner, the building's principal label of association with the modern movement of the late twenties and early thirties. Critics were not lacking, even at that time, to point out that the corner destroyed the sense of volume, but it took subsequent excesses and corruptions to kill off this cliché simply by making it tiresome. Anyhow, there it is, unarguable evidence of the period.

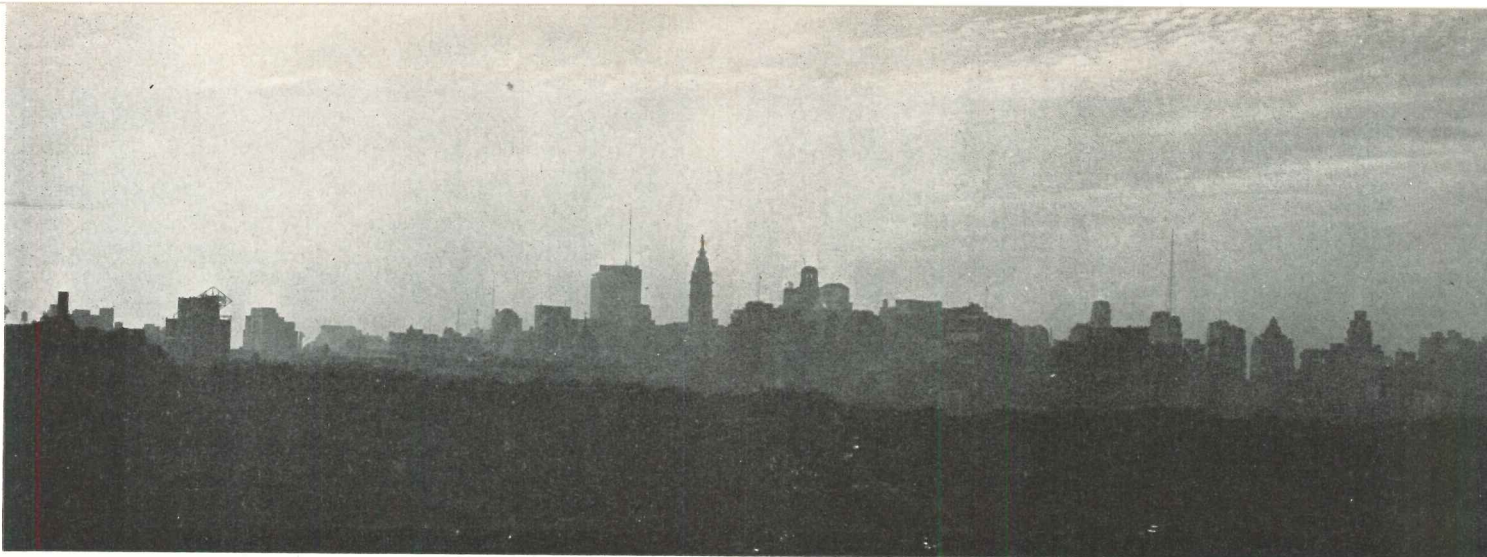
1932

Inside, it is still what Frank Lloyd Wright denounced as "the cardboard box;" inside you are even more conscious of style. The monochrome interior emphasizes what must have been, twenty years ago, new and daring structural forms; the design proclaims its affinity with the T-square and the layout artist's pad. There is a strong flavor of typography. And there is a faint formaldehyde reminiscence of buildings and sketches

1949

Joseph Molitor Photo





Joseph Molitor Photo

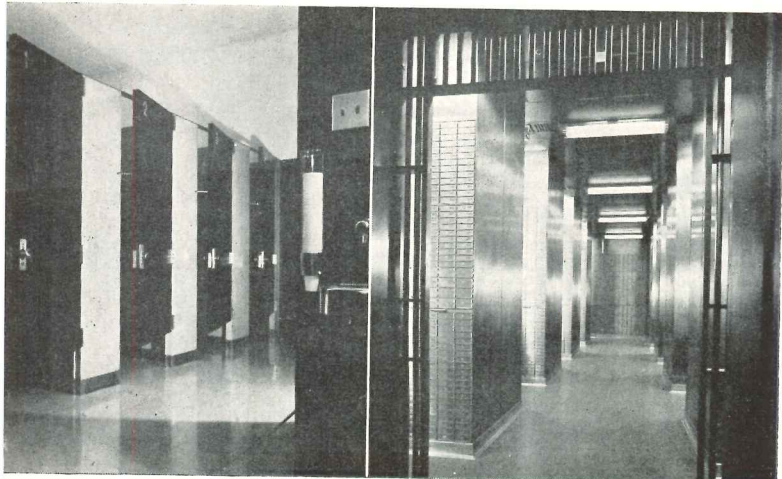
Philadelphia's skyline shows little change except for television masts, one of them atop PSFS. Though not in the financial district, PSFS office space has

of buildings seen in books, not of buildings seen as buildings. Was this, perhaps, a paper architecture expressing a wistfulness ingrained in the modern movement, with its many unbuilt projects and its emphasis on theory?

These characteristics, not unique in PSFS, are difficulties of that right-angled age into which it was born; nor are these stylistic details of cubism obtrusive. You think of them only when you find the building eluding criticism by explaining politely that it was not born yesterday. You could even say that no building twenty years old can with decency seem to have been born yesterday.

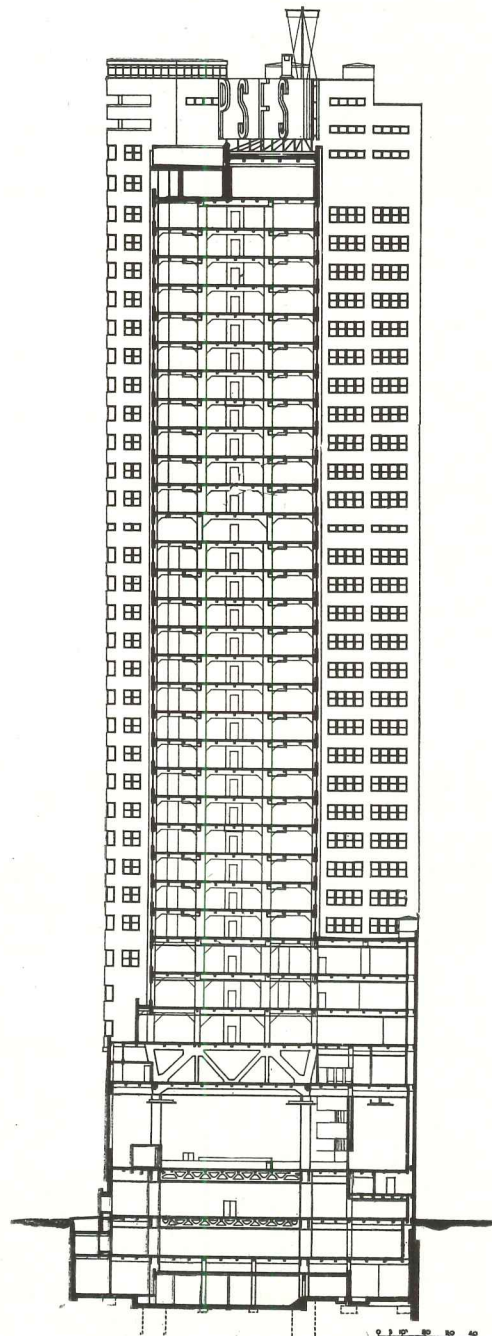
From the time a building is completed its destruction begins. This change the unadulterated functionalists of the twenties denied. They could not see that closely reasoned designs would grow out of date as there came change in the human needs they were designed to meet. Consider, for example, that the PSFS building, first

1949. Building originally provided for growth in nearly every department: of the more-than-enough coupon booths (left) initially installed one row was dismantled and later re-installed. Vault (right) had room for greatly increased number of safe deposit boxes



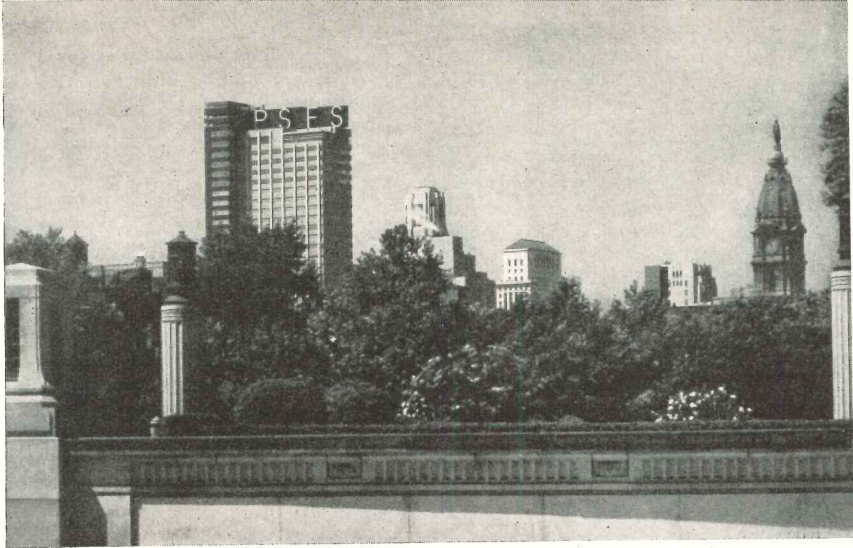
Steiner Photo

Joseph Molitor Photo



←
Twentieth floor: mechanical equipment, including air-conditioning for offices.

←
Third floor truss space: air-conditioning for bank. Store conditioners are in basement.



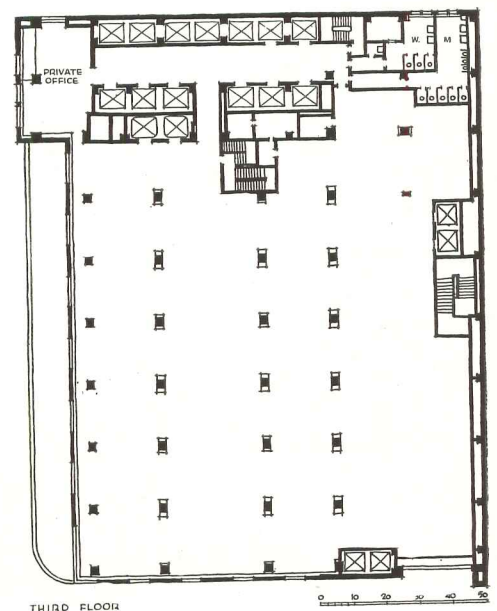
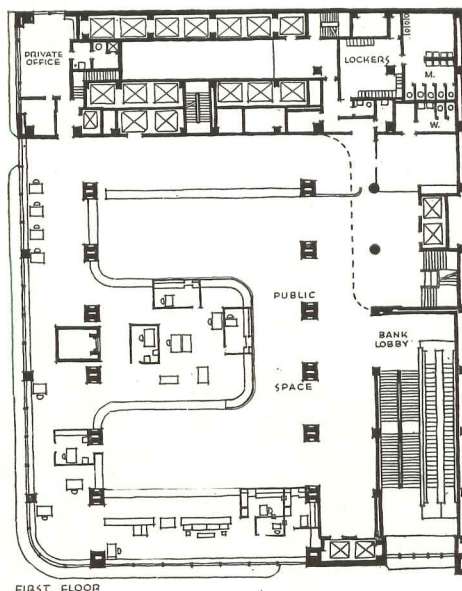
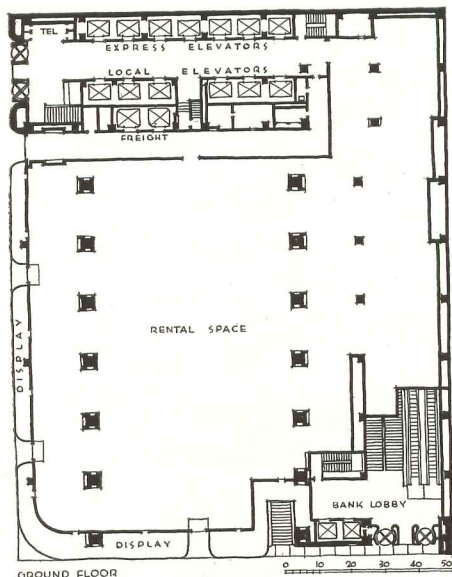
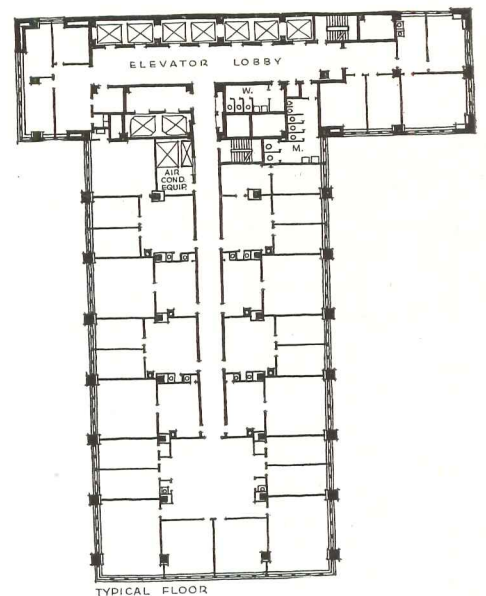
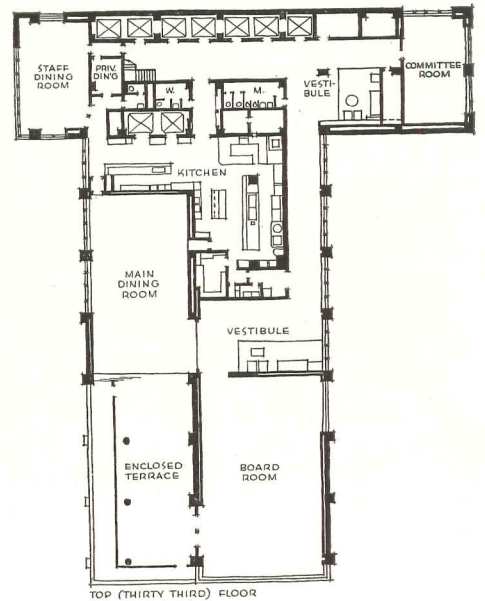
Richard Dooner Photo

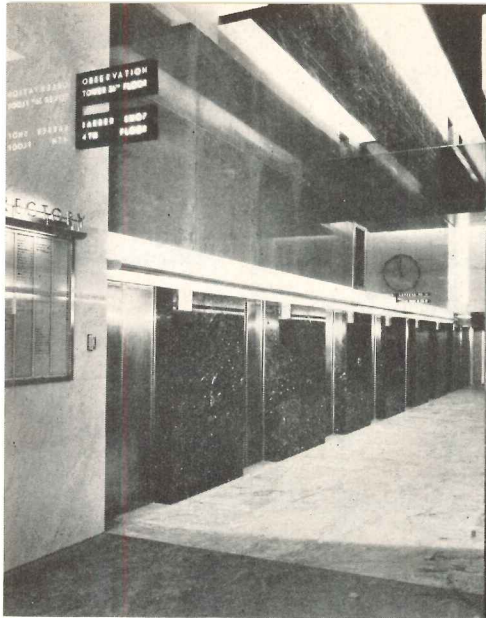
been fully rented for years, thanks to management, equipment, planning, "style"

thought of as a branch, is now the headquarters of the bank; that since 1933 traffic through the main banking rooms has about doubled. It would have been astonishing if these changes had not made necessary corresponding changes in the design of the building, invalidating the doctrine of extreme functionalism, urging a greater flexibility and more recognition of changing needs.

Yes, a series of changes, undertaken in the names of progress and of maintenance, begins to take place in a building from the moment it is occupied. The process begins most easily with decoration and other elusive details. In older buildings it spreads to store fronts, lighting fixtures, elevator cabs, lobbies, corridors, and their very facades. Advanced stages are signaled by major reconstructions. Hardly one of these individual changes can be objected to with any force, but their cumulative effect leads to anonymity.

In PSFS the process starts with the main banking room, which originally took the appearance of a cube,





Steiner Photo

1932



Joseph Molitor Photo

1949

Office building elevator lobby: directory at left caused traffic jam; moving it to alcove at right eliminated crowding. Typical upper floor corridor (right) has black marble wainscot, reducing maintenance. Thanks partly to air-conditioning, plaster above marble has required repainting only at infrequent intervals

Ph. B. Wallace Photo



Joseph Molitor Photo

each side with its own character: now glass, now marble, now white, now black, now hard, now soft. The recently installed lighting changes that conception. So does the substitution for the original white nubbly textured curtain that covered nearly the whole of the room's east wall of a new curtain in a color called burgundy.

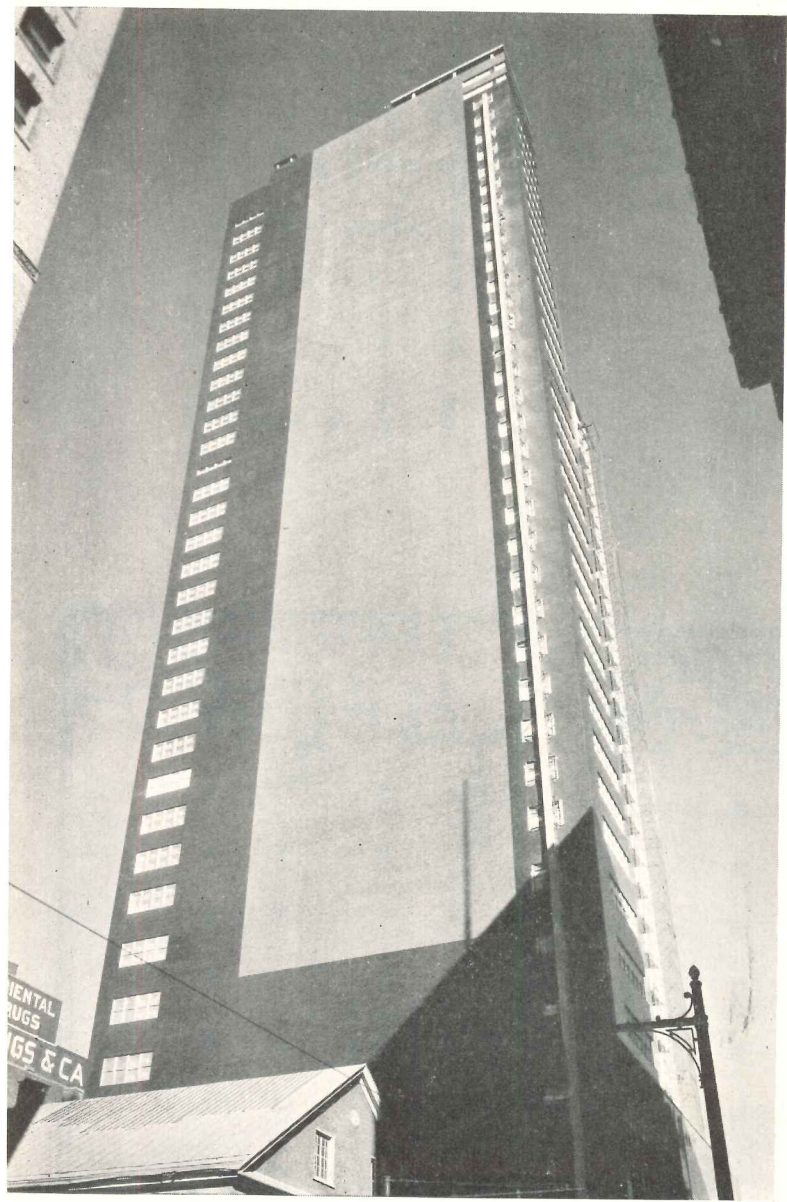
The catalog of change might be expanded. It leads squarely into questions which deserve full exploration, for which there unfortunately is not space here: How far may the architect go in translating into rigid form the fluid function at the moment of design? What is the responsibility of an owner for his work of art?

The PSFS building is our most charming skyscraper. It has, I insist, style. That style, integral throughout the building, can be tampered with only at the risk of destroying the building's chief distinguishing features. Its handsome directors' rooms on the top floor, with their views over the city and its two rivers that took the breath of the United Nations Headquarters Site Commission when they visited Philadelphia, are designed, if you please, in browns. Its chief room is a study in black and white. Its corridors are cleanly designed, sharply developed in light and shadow, boldly composed in squares and primary colors. These are the details that decide everything in the building's appearance.

If I may borrow for the heading of this article the title of Miss Willa Cather's last slim volume of stories, without her suggestion that in a gentler day it was enough to be beautiful, it may serve to express some conclusions we may draw from our experience with PSFS. When functionalism in the United States was raw, red, and steamy-new, it found few more devoted followers than Howe and Lescaze. Theirs was the pure dogma. Up with pure function and to hell with good looks; at best, it was claimed, good looks would take care of themselves.

Yet today what remains is not function but beauty.

It is a curious, haunting, and distinctive kind of beauty, this palette of black and white, these textures of stainless steel, polished marble, and plate glass, these forms so purely cubistic. The effect may not have been calculated, although one doubts the assertion, but it is





1949



Typical rentable office space

1932

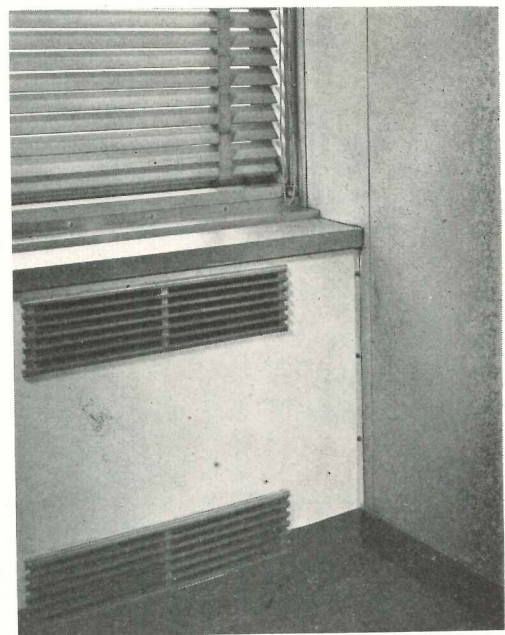
consistent beyond accident. It is not what one would aspire to today, but it is what one is glad someone once aspired to and succeeded in creating.

PLANNING, STRUCTURE, MATERIALS, EQUIPMENT

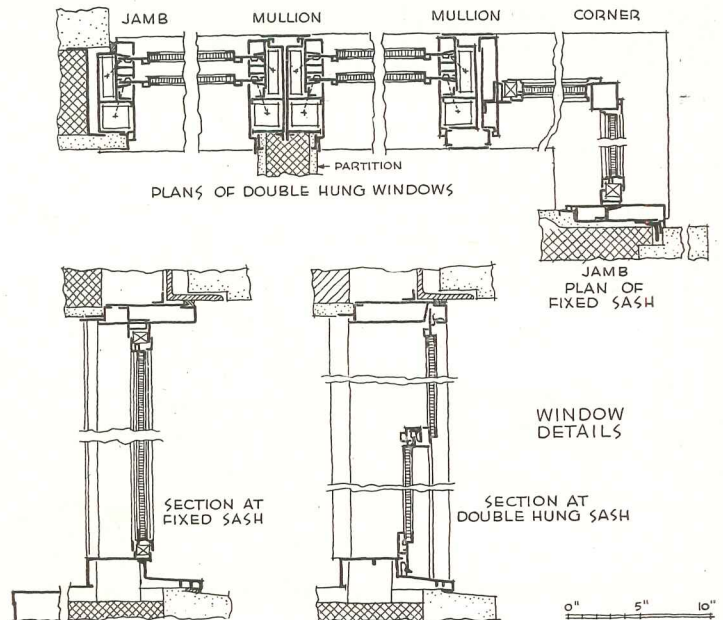
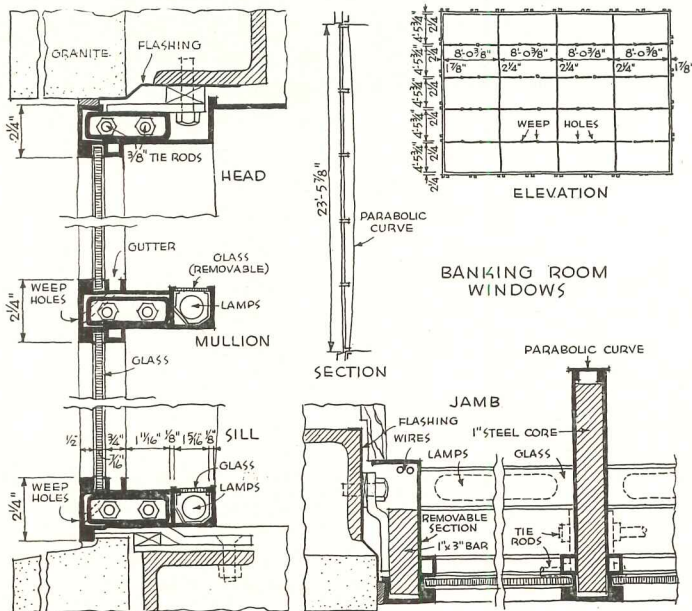
Inevitably the building has undergone the changes of which Frederick Gutheim writes, many of them because the bank's business has grown; since 1933 daily

(Continued on page 180)

Office floors: location of columns, plumbing, etc. is such that an average tenant can be accommodated in 15 to 25% less space than in other Philadelphia buildings. Stainless steel window sills and radiator covers have right-angled profile and square corners for durability and to simplify the work of fitting partitions for tenant changes. Due to air conditioning, windows are locked except when being cleaned. Tenants have always accepted this without protest.



Joseph Molitor Photo

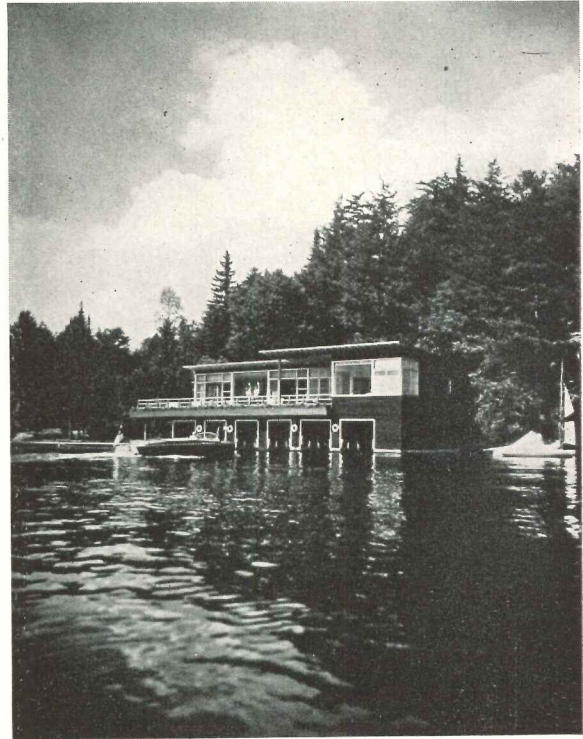




SUMMER RESIDENCE OF MR. AND MRS. ALBERT ROSE, LAKE PLACID, N. Y.

The vivid colors of the exterior make the Rose house stand out gaily against water and mountains (see cover). The walls are black, set off by scarlet and yellow rail and trim and deck furniture in same colors; under side of roof overhang is yellow

BOATHOUSE

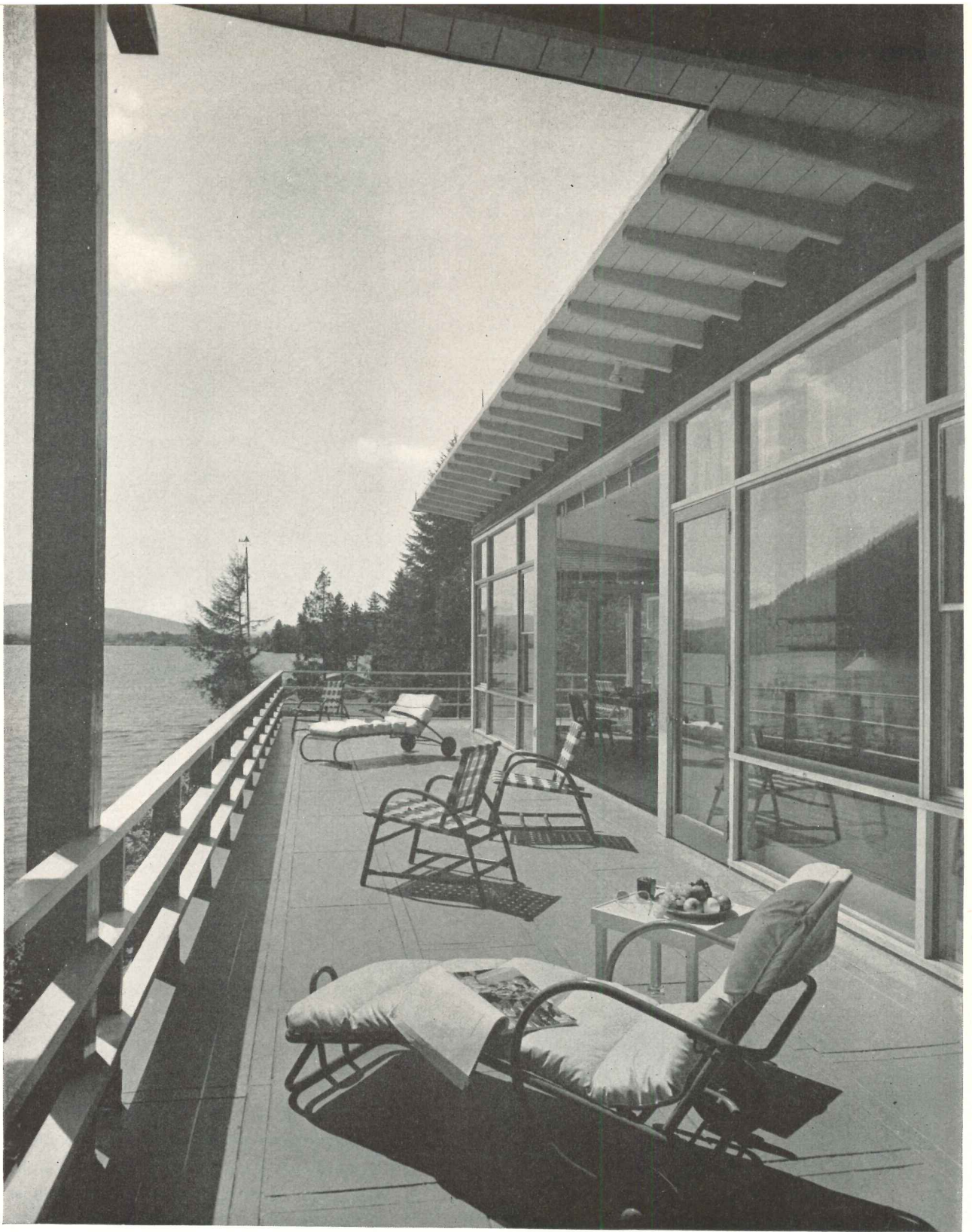


Kahn & Jacobs

Architects

IF the chief purpose of a summer home is conceded to be provision for the maximum enjoyment of sun, fresh air, and relaxation from winter restraints, then this unusual Lake Placid residence is tops. Built over a boathouse, it extends 14 ft. out from shore; from its broad deck and most of its rooms land is visible only across water, creating a shipboard atmosphere highly conducive to relaxation. Continuous glass areas and sliding doors flood the large rooms with sunshine and the good Adirondack air. Mountains and lake are more a

CONVERTED INTO AN IDEAL SUMMER HOME

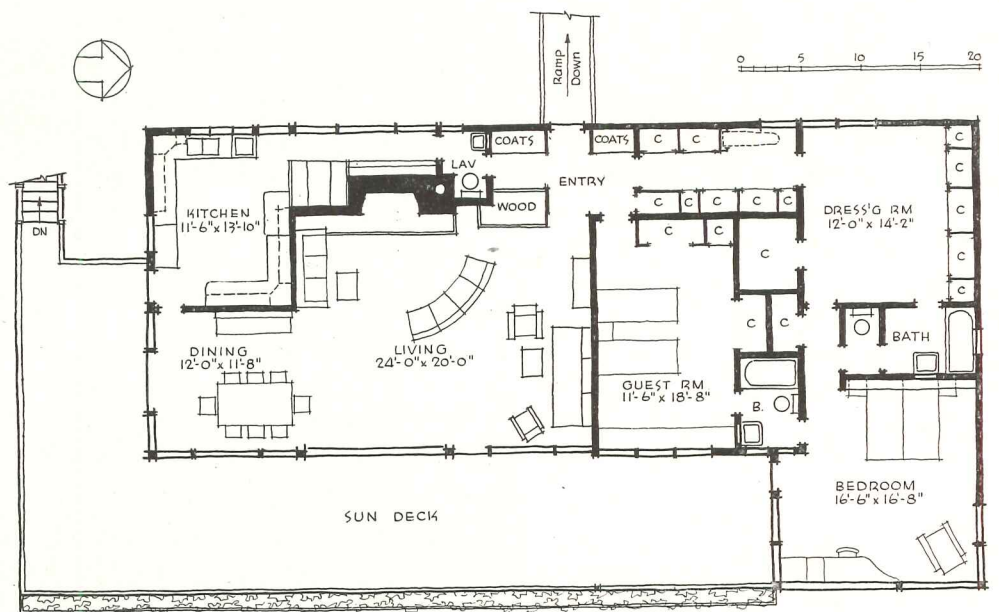
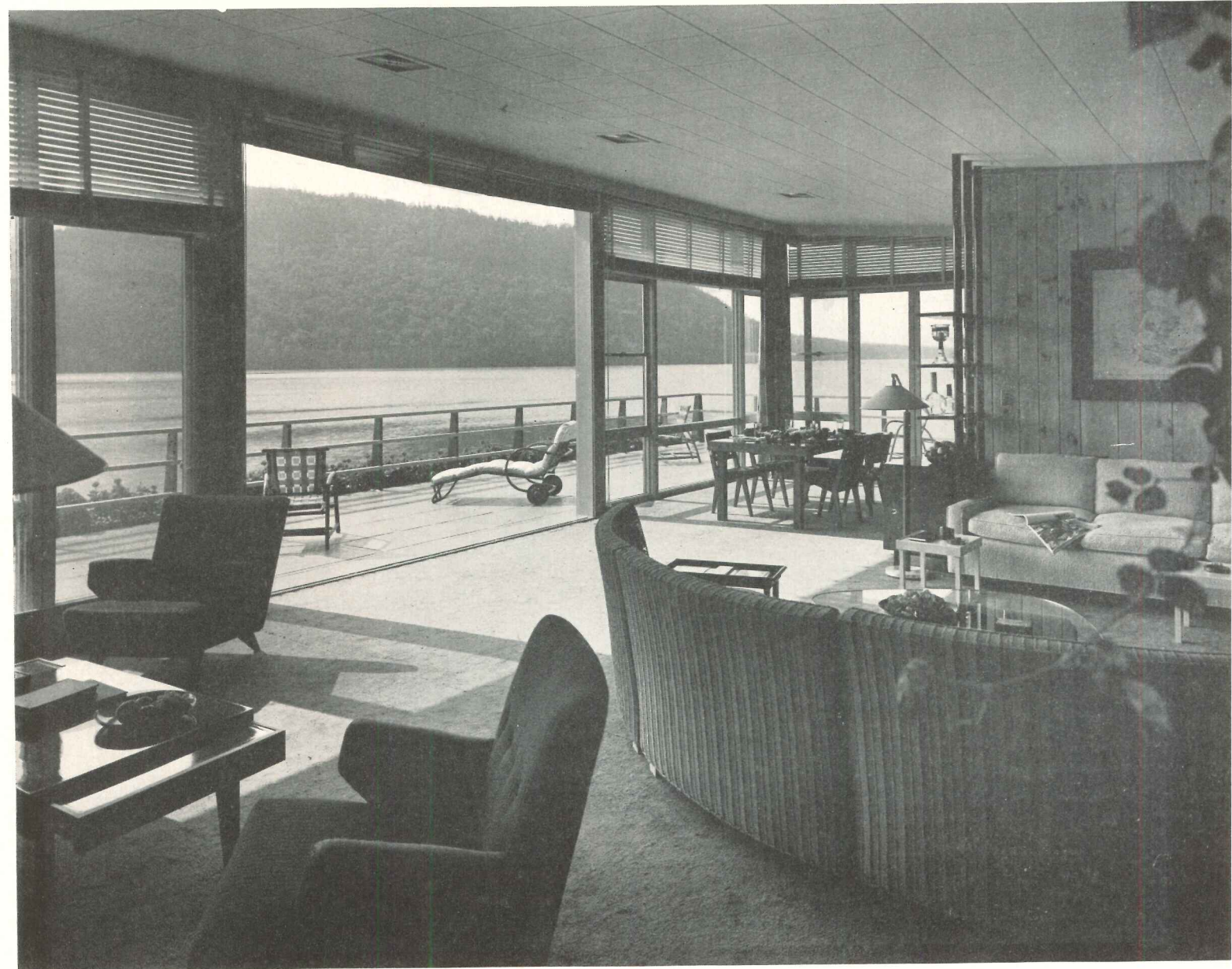


Damora

part of the house than are its foundations.

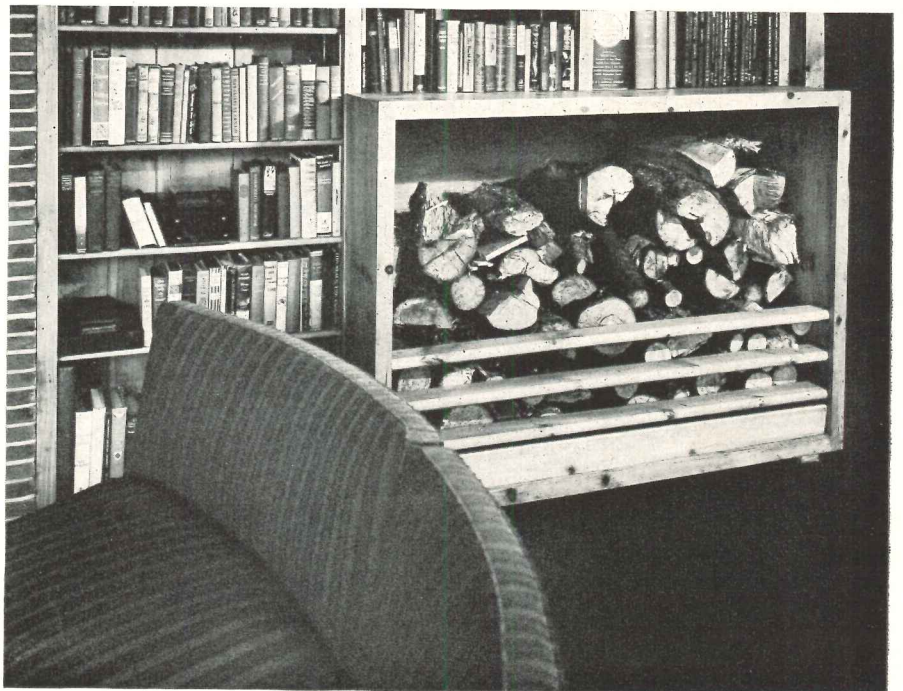
In a way all of this was a happy accident. The boathouse a few years ago was just a vital front door to the island home of Mr. and Mrs. Rose. Through it flowed supplies and guests transported from the mainland by boat. The residence itself

was up the hill, deep in the woods, cut off from view and sun. Then came a fire, and the boathouse was all that was left. The owners immediately decided to rebuild on the same site, and called in Architect Robert Allan Jacobs. This was in the days of priorities and unavailable materials,





The living room is carpeted in coral, with the same color used for the semi-circular couch. Ceiling and long couch are yellow, furniture is black or dark brown. Walls are knotty pine, fireplace wall is coral brick. The master bedroom (opposite page) is predominantly yellow and white



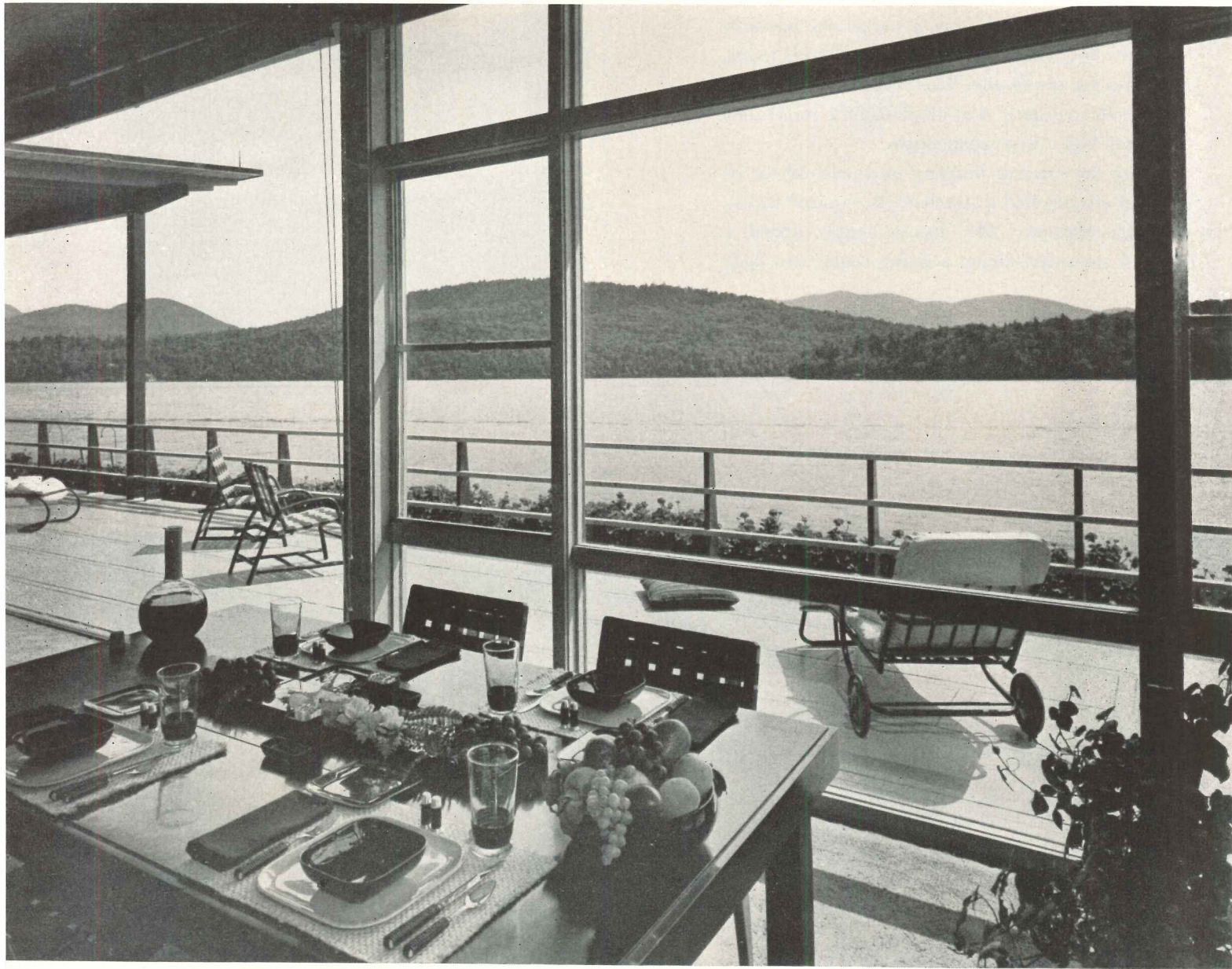
so Mr. Jacobs suggested as a temporary measure that the boathouse be remodeled to provide living quarters for the family. The results met the owners' needs so exactly that all plans for a larger and separate house were abandoned.

Since the existing building measured 32 by 70 ft. and already had a sun deck, it required no expansion whatever. Mr. Jacobs simply added a second story containing a living room, two bed-



Damora





rooms, dressing room and kitchen, all but the last two facing the lake and opening directly to the broad deck and the morning sun. A study of the plan (page 99) reveals a number of handy details such as the special closet for bridge tables, the passage lined with storage space, the living room wood box which can be loaded from the

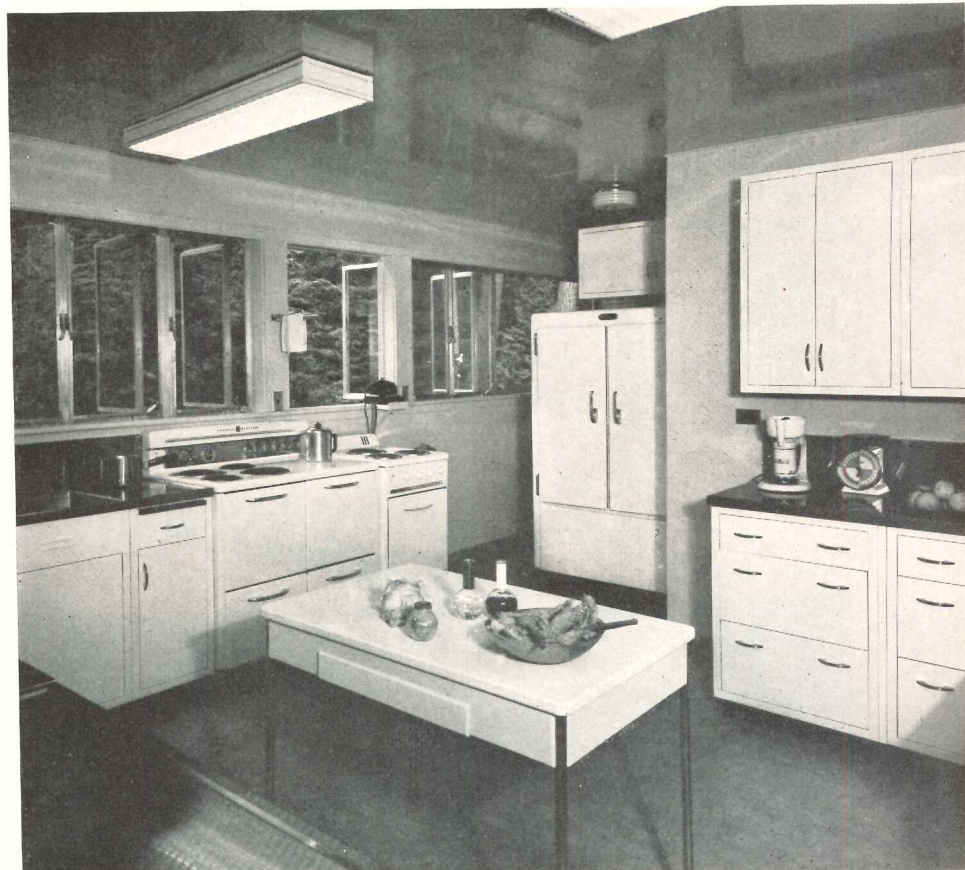
hall. Boat slips are immediately below, readily accessible to the kitchen for the bringing in of supplies. Bathers have their own dressing rooms and shaded deck on the lower level at the south end of the house, right next to the beach. Servants' quarters are in a separate building a little way up the hill.



Artful placing of the dining area (see plan) makes it almost a separate room despite continuation of coral carpeting and knotty pine walls of living room. Built-in cabinets are walnut and coral, chair frames are coral. Storage space in the kitchen is much more generous than indicated at right, to permit once-a-week marketing. Servants have their own sitting room just off the kitchen

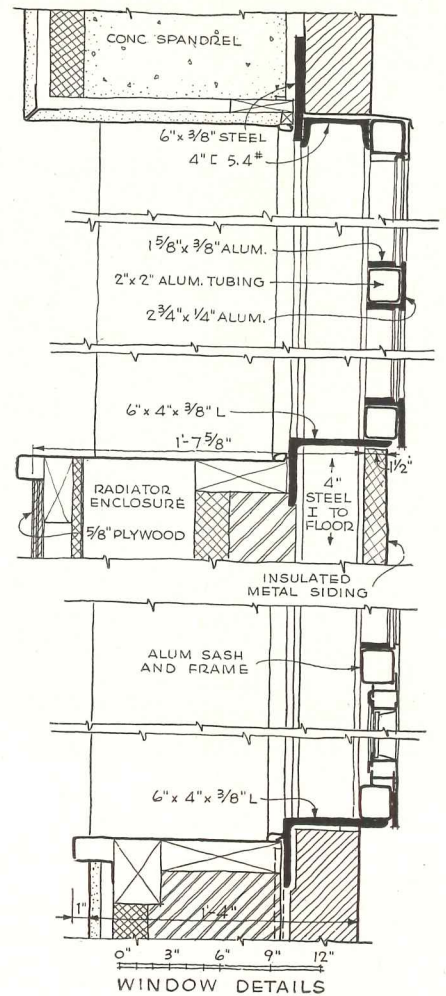
OCTOBER 1949

Public Lobby, Pilots Lobby and
Weather (see plan on next page)





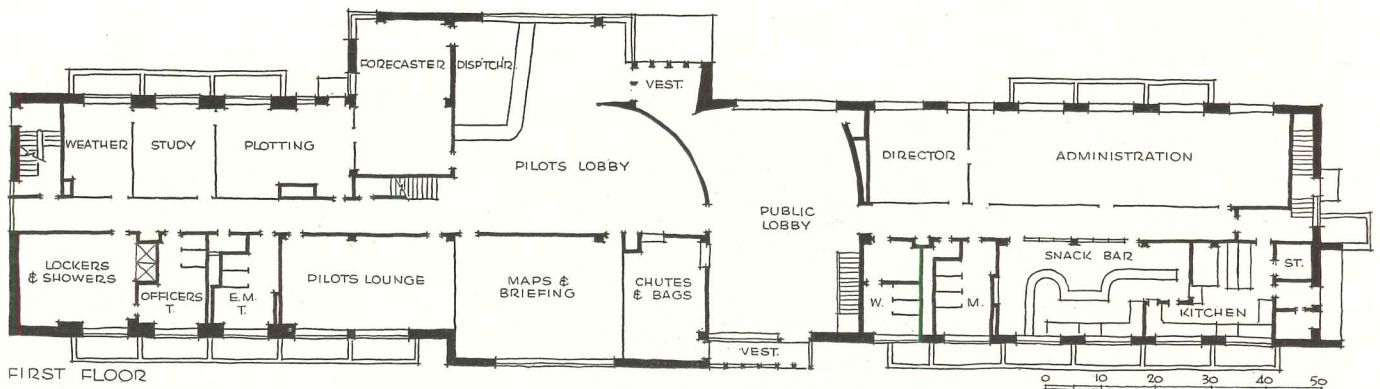
Floyd Yewell

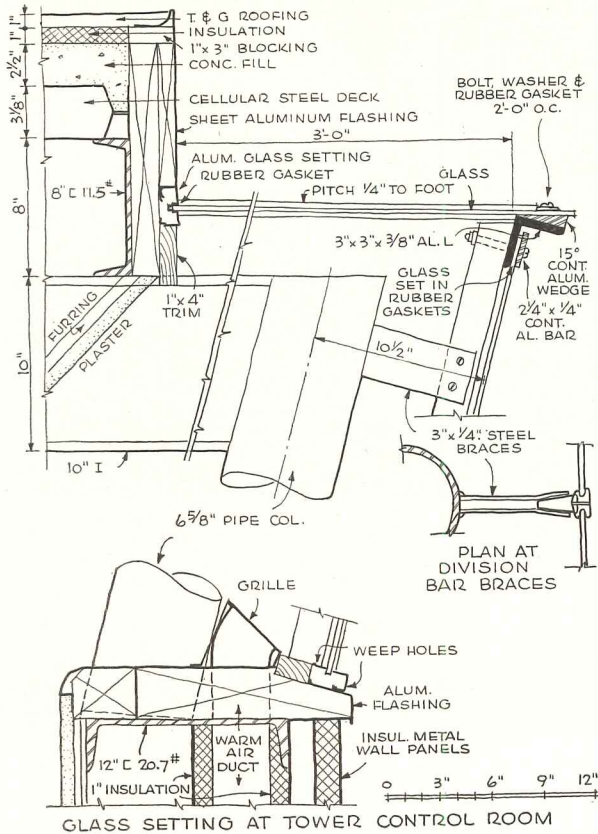


In designing the Operations Building, a modular basis was adopted for all the normal windows and the aluminum panels which separate them. These are removable and interchangeable so that any system of fenestration, from continuous windows to complete blackout can be obtained. All office space, as indicated in the plan below, is also designed to facilitate rearrangement as may be required. Because of the intricate system of wiring, a cellular steel decking is used for all of the second floor, part of the first, and all floors and roof of the Control Tower. The specially adapted wiring is led through its hollow cells

the progress of the work, since the existing soil became very slippery and sticky when wet.

As might be anticipated, the climate had an even more pronounced effect on the design. Since the winter climate of northern Maine can be severe, a design temperature of -30 was decided upon. In addition to exceptionally thorough insulation of all buildings, integral double glazing is used in every window. The steam heating systems of the buildings are so designed that adaption can readily be made when the central heating





plant and distribution systems, carrying high-temperature hot water under pressure, are constructed.

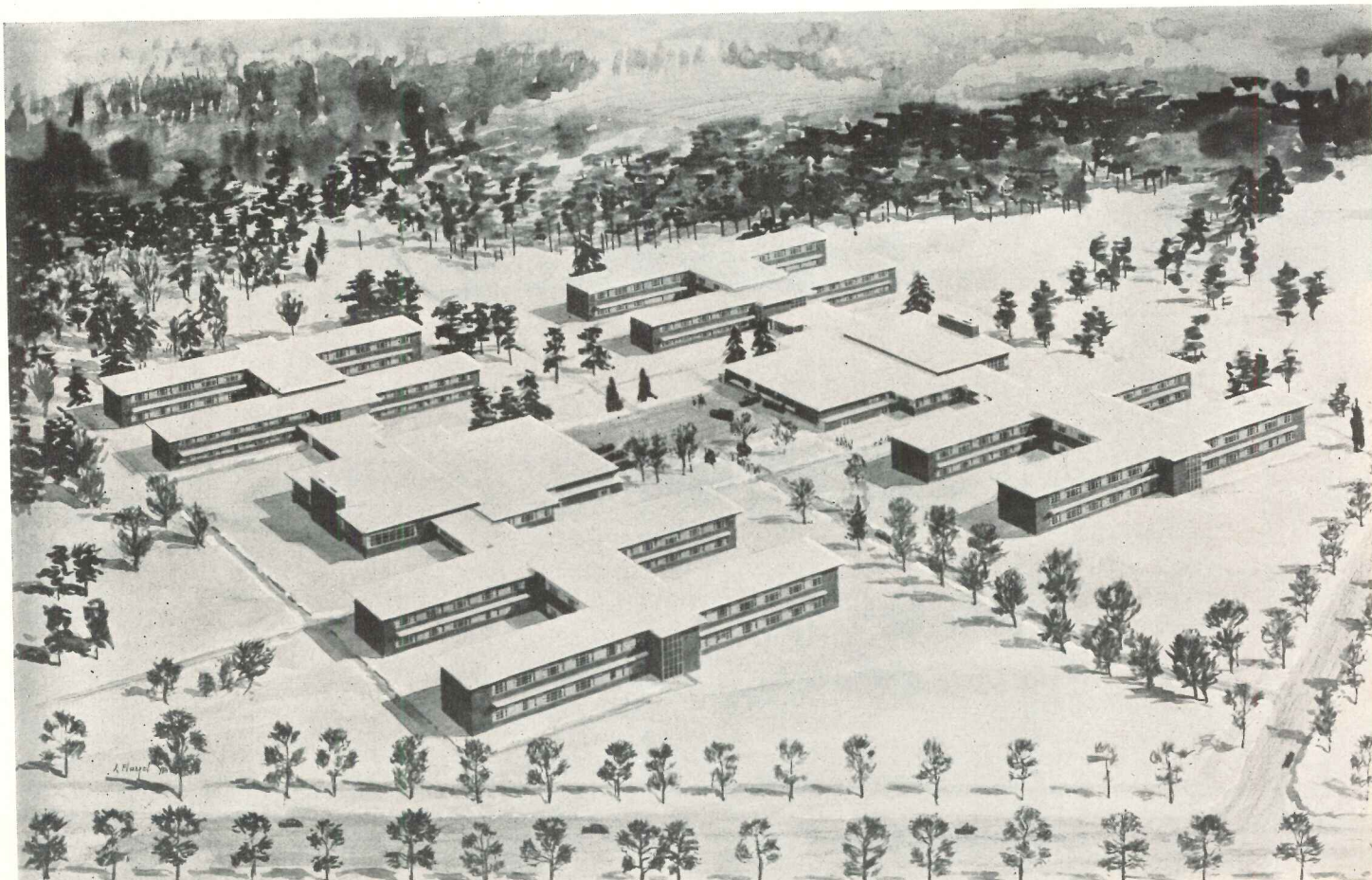
Although all current needs are met in this group of buildings, it was required that the designs be drawn to provide for possible future expansion. Thus, the Operations Building is so constructed that a whole additional floor can be superimposed upon it, and the present Power Plant represents only about one-third of its potential maximum development. The addition of more barracks units if needed, of course, presented no special problem.

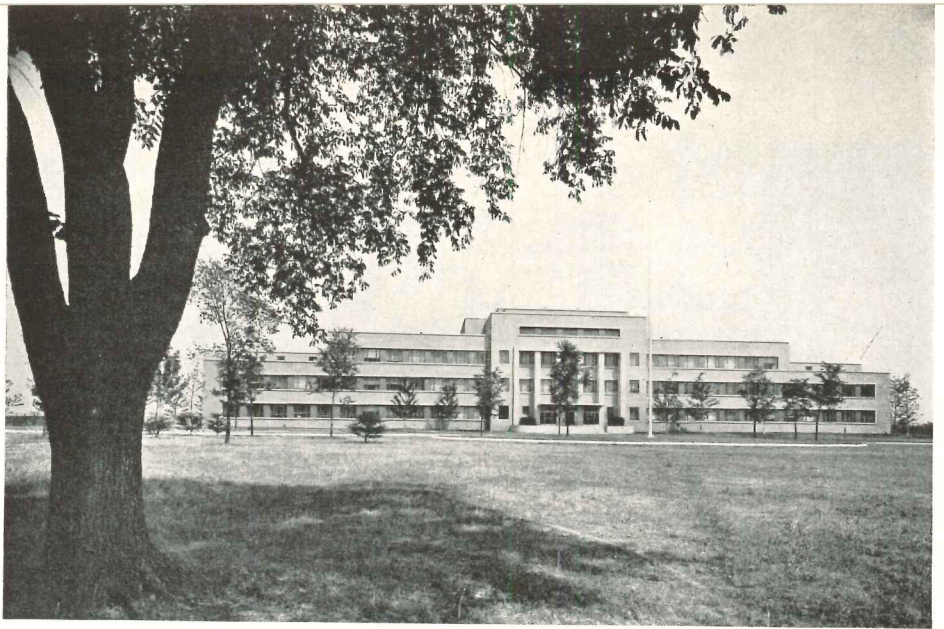
Since Limestone is at a considerable distance from any large center, it was decided that locally available materials should be used to the greatest possible extent. All buildings are concrete frame (except the steel framed Power Plant), and water-struck Maine brick figures largely throughout. Except for some steel sash, practically all exterior metal — cornices, doors, panels, railings, etc., — are aluminum. The fact that it requires no painting weighed heavily in the selection of this material.

The Barracks (below) comprise typical squad room units flanking a central building which houses kitchens, mess hall, day room, etc., on the first floor, and boiler room, storage facilities, etc., in the basement.

Above: In addition to the tempered glass windows of the Control Tower, there is a section of glass roof extending 3 ft. in from the edge to increase visibility for the operators. In cold weather the entire glass area is "defrosted" by means of a forced warm air system exactly similar to that used for automobiles. The slant of the pipe columns is not for esthetics but is said to afford better visibility

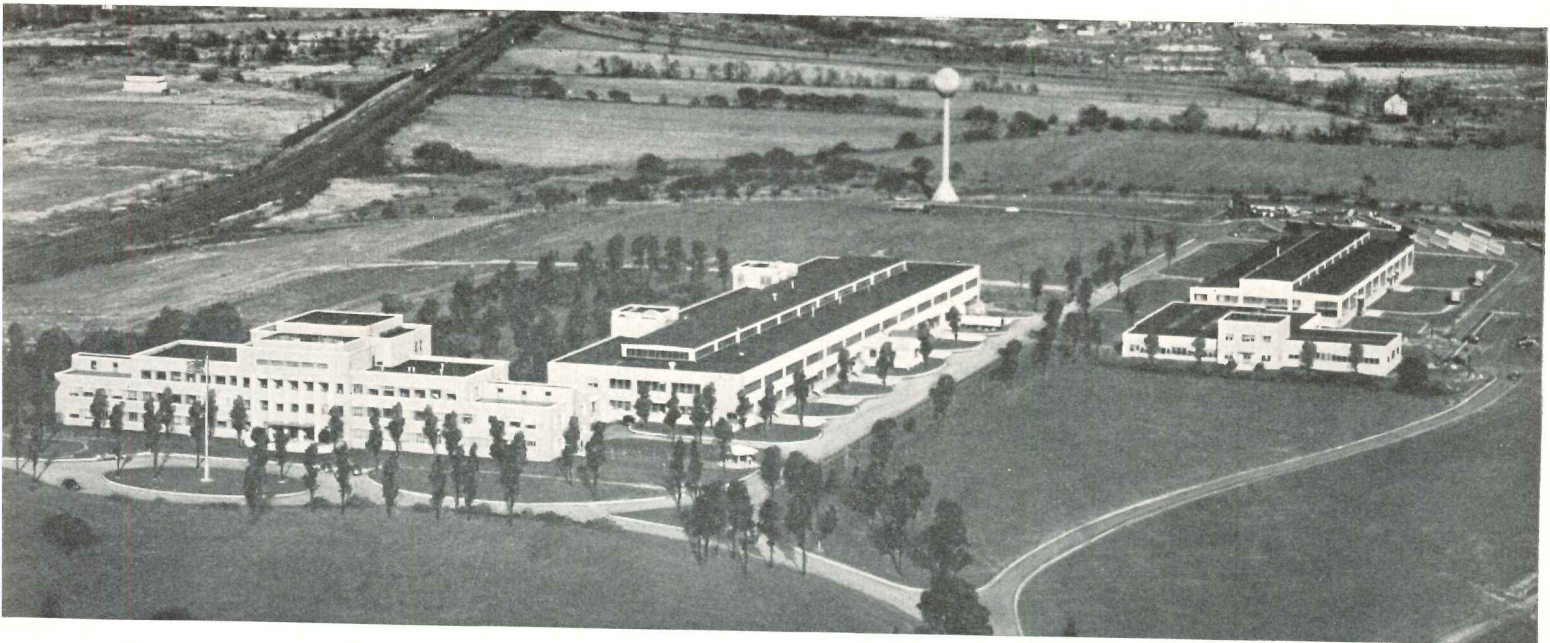
Floyd Yewell





Gottscho-Schleisner Photo

LARGE CORPORATION BUILDS A RESEARCH



Weitner Aerophoto Service

Gottscho-Schleisner Photo

From the campus side, the Product Development Building, and . . .



Shreve, Lamb & Harmon

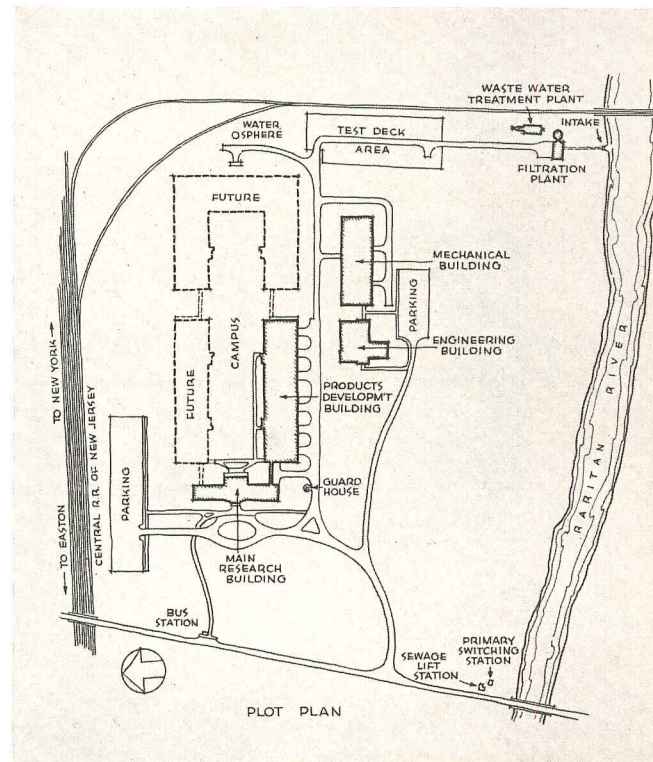
Architects

This flexible expansible scheme also required the services of Purdy & Henderson Associates, Structural Engineers; Syska & Hennessy, Mechanical Engineers; Clarke, Rapuano & Holleran, Landscape Architects; under the supervision of Johns-Manville's Department of Engineering and with the active participation of C. F. Rassweiler, J-M's vice-president for Research and Development.

CAMPUS IN NEW JERSEY

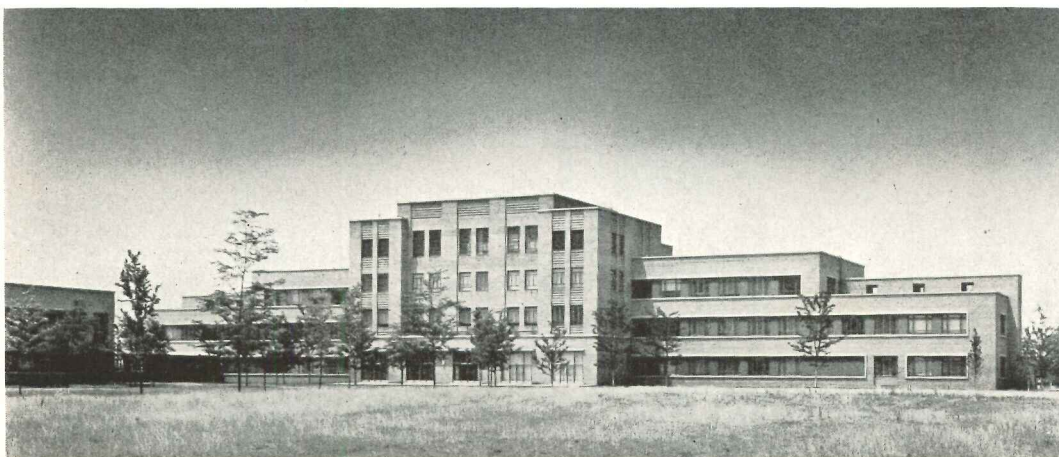
JOHNS-MANVILLE RESEARCH CENTER, MANVILLE N. J.

The corporation's Research and Development organization is responsible for all experimental work affecting quality of a diversity of products — various construction materials, products for controlling sound, heat and motion, and filtration aids and fillers. The organization required an unusual scheme to accommodate, on the one hand, pure research and primary experimental work, and on the other, applied research closely related to actual pilot production, where products and processes are readied for full-scale manufacture by lab technicians who also run the pilot plants. The organization contains 21 Sections, each charged with what amounts to research and development responsibility for a separate industry. Close cooperation has to be maintained with the Mechanical Section (housed in its own building



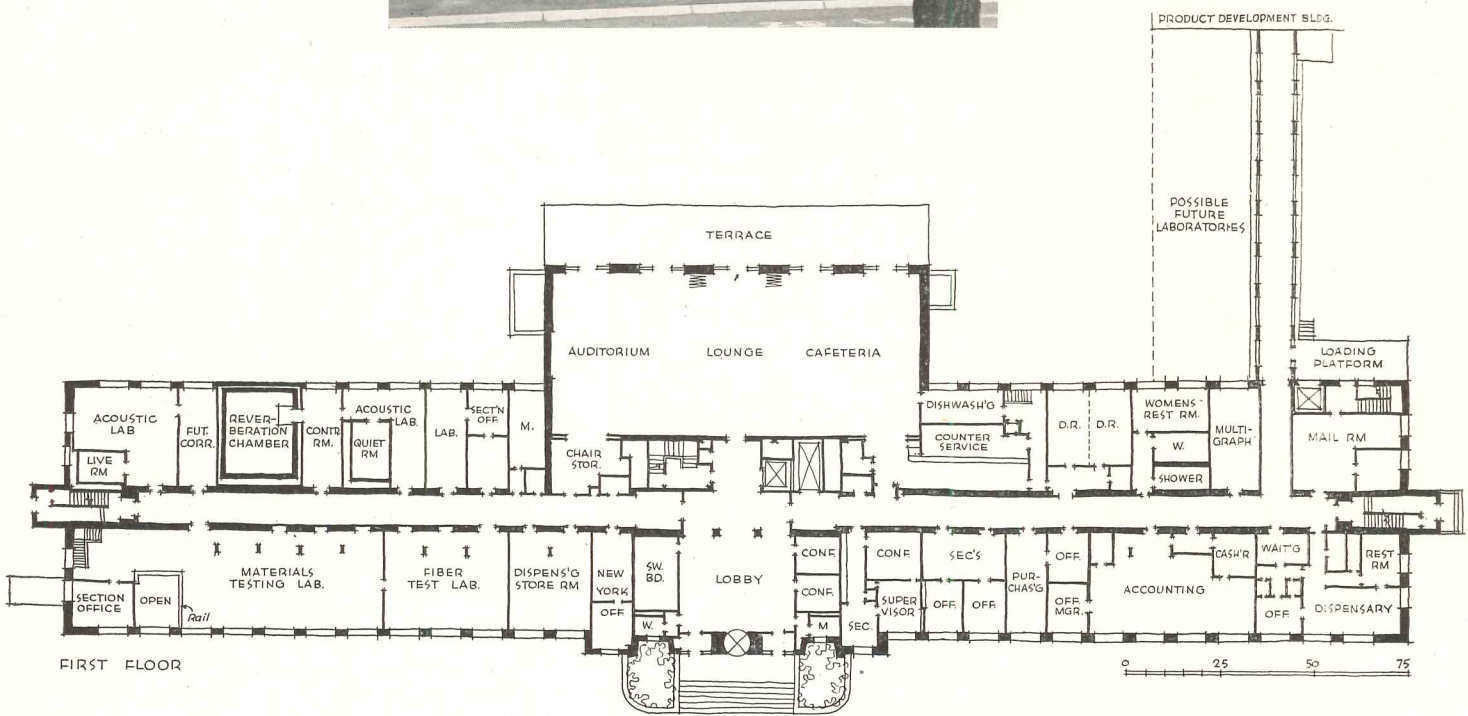
Research and Administration Building

Gottscho-Schleisner Photo





Research and Administration Building (left, main entrance; across page, private office and conference room) has three complete stories of which only the first floor plan is here shown, and a four-story center section. Built with reinforced concrete basement, steel-framed superstructure, concrete floor slabs, brick curtain walls, and limestone and stainless steel accenting



Entrance leads to cafeteria-lounge-auditorium, whose partitions fold back to form one large room



the principal entrance, the building contains the Center's pure research laboratories (materials testing, acoustic, optics, insulation testing, physics, electrical testing, heat flow, photography, spectrophotometry, spectroscopy, chemistry, air filtration, organic, etc.) as well as offices, auditorium, library, dispensary, cafeteria, dining rooms, and kitchen. Entire building is air conditioned



Above and below: Gottscho-Schleisner Photos

Johns-Manville Photo



South end, Research and Administration, showing present connection (which can ultimately be enlarged to provide more laboratories) to first-floor corridor, Product Development Building (right photo)

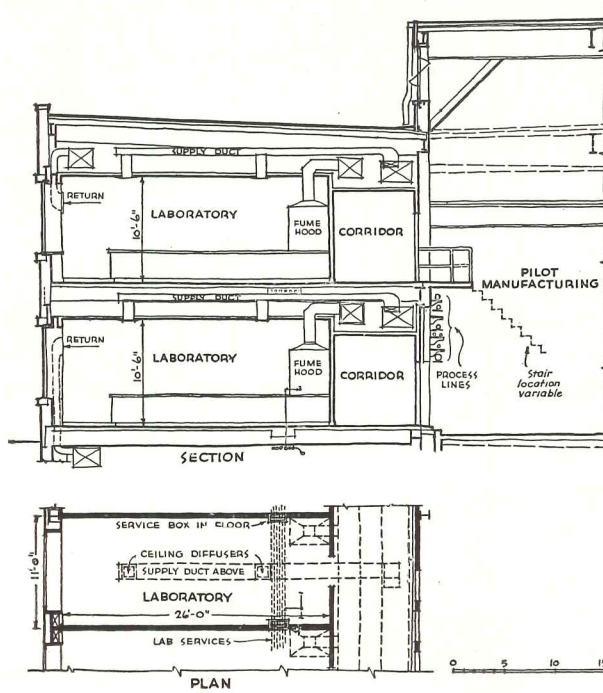
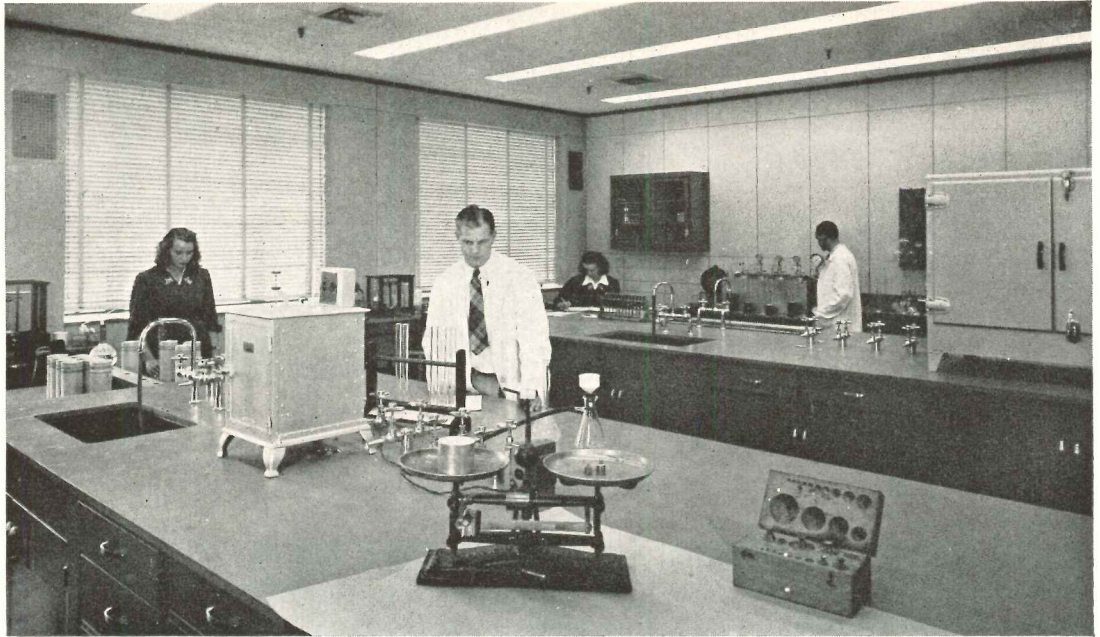
where are constructed equipment and machines for research and plant operation) and with the Engineering Departments in another building. These requirements are further complicated by a need for flexibility of space arrangement and for expansion over a period of years.

First completed was the filtration plant, where process water taken from the Raritan River is treated to provide a supply equal to the normal demand of a town of 10,000 people. Most recently finished (dedicated May 24, 1949) is the Research and Administration Building, which with the structures shown in solid line on the campus plan, completes the present part of the construction program. While the last building is the nerve center, probably the most interesting is the Product Development unit, in which are the applied research laboratories and pilot plants.

In the Product Development Building a 38-ft. wide,

two-story laboratory structure runs full length of a one-story manufacturing space which contains 10 pilot plants under one roof. The two-story section contains many laboratory units (each expandable on a module 11 ft. wide), and offices, conference rooms, etc. Between the two areas are 8-ft. corridors, one on each floor, across which technicians may step to observe plant operations through wire-glass windows. Doors open directly from corridor into plant space; at the second laboratory floor they open on small balconies to which may be attached stairs leading down to the manufacturing floor. Arrangement of laboratory service and plant process piping is extremely flexible and convenient.

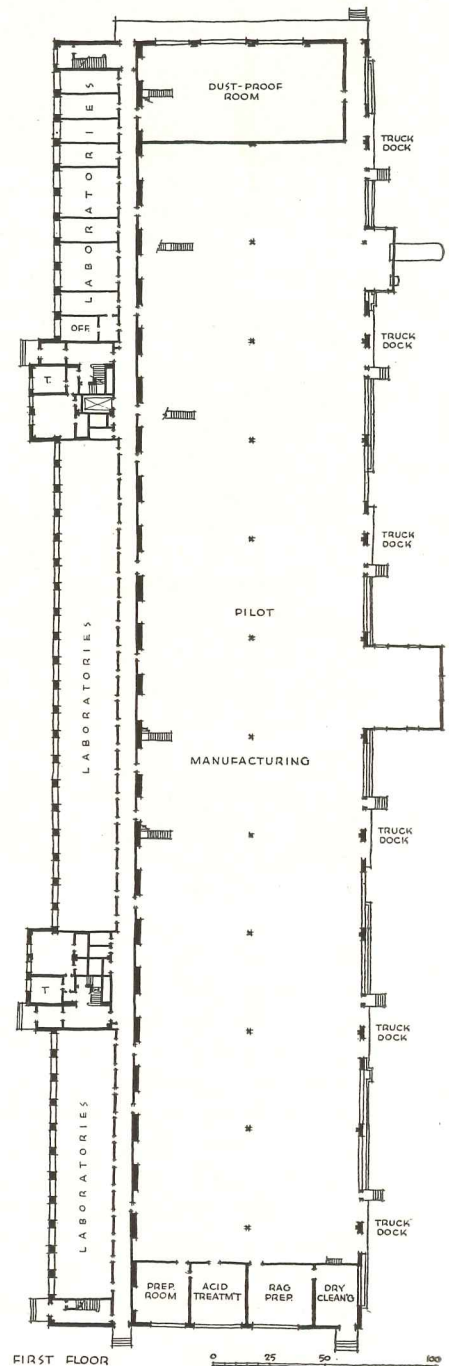
Under the laboratory section is a continuous concrete basement for storage and building equipment, and as a service tunnel through which pass steam, water and other mains. The campus facade and end walls are of

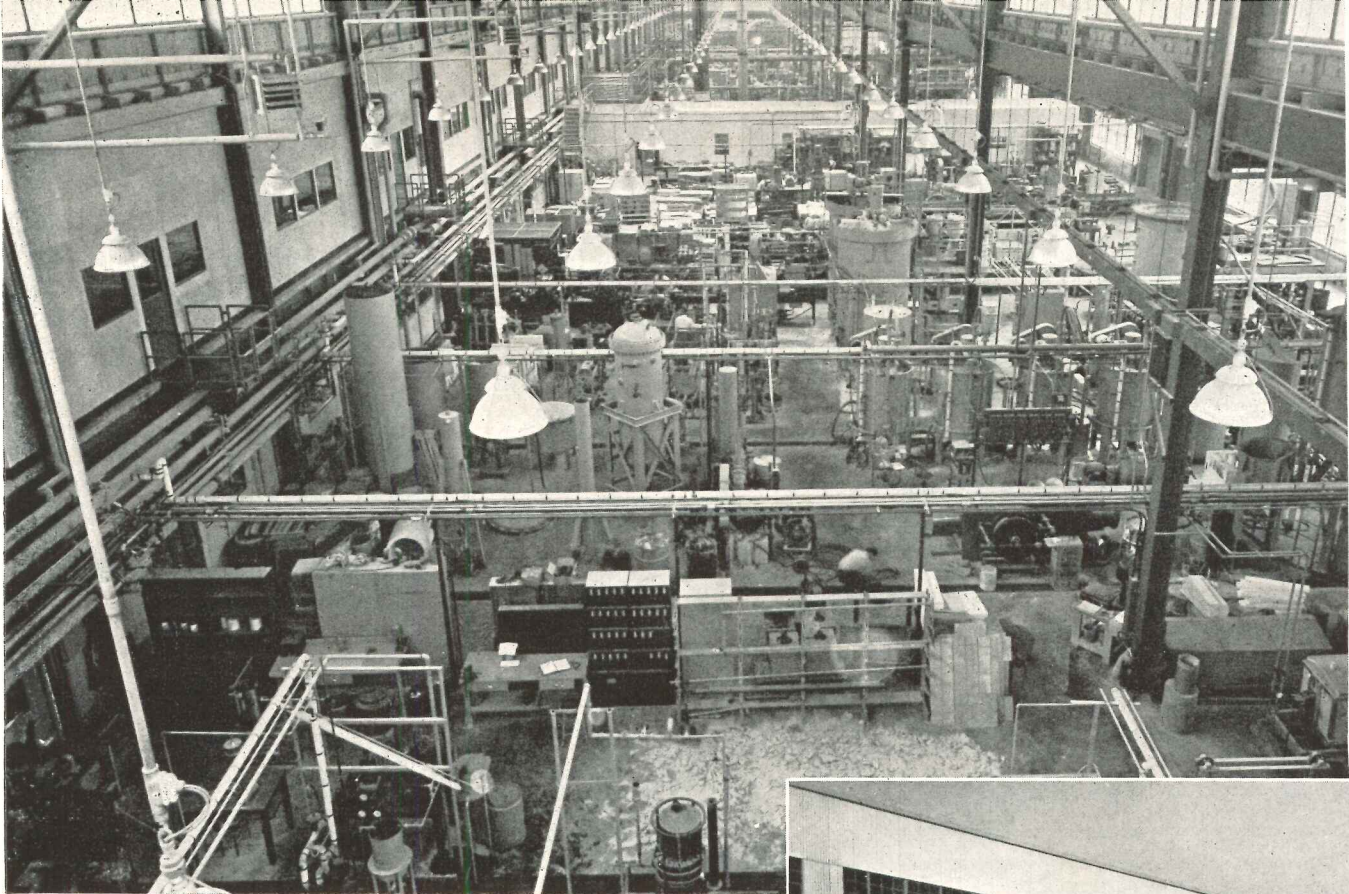


Photo, section and plan above show typical laboratory, designed on an 11-by-26 ft. module which determined column spacing for both the two-story laboratory portion (22 ft.) and manufacturing space (44 ft.) of Product Development Building. Note immediate access across corridor to pilot plants

face brick and 8-in. concrete back-up block. Roof construction is interesting: to light purlins 3 ft. o.c., corrugated asbestos-cement sheets were fastened with welded studs; over this, insulating board and roof surfacing were applied. The stud-welding method, in which all work is done from the top, resulted in substantial economies over such methods as drilling the asbestos-cement and fastening it with bolts, which necessitates working from beneath.

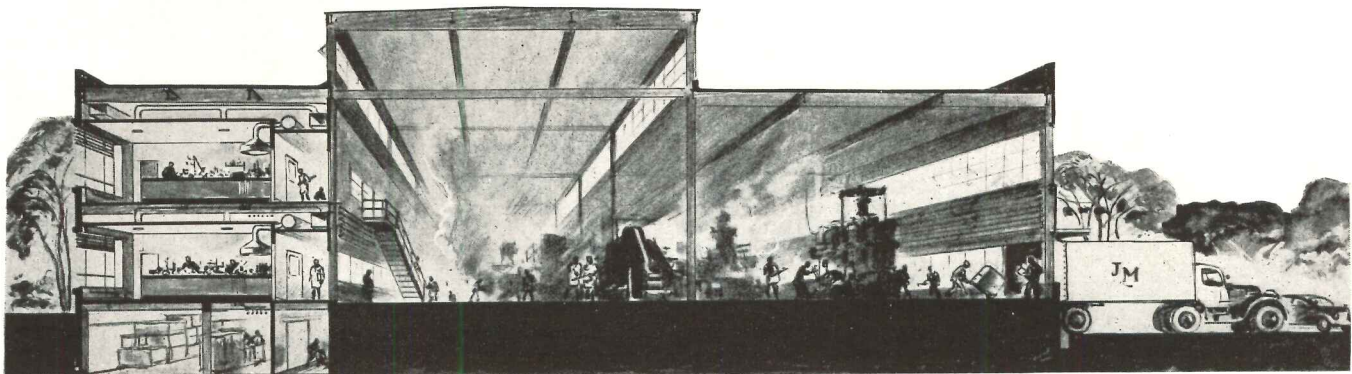
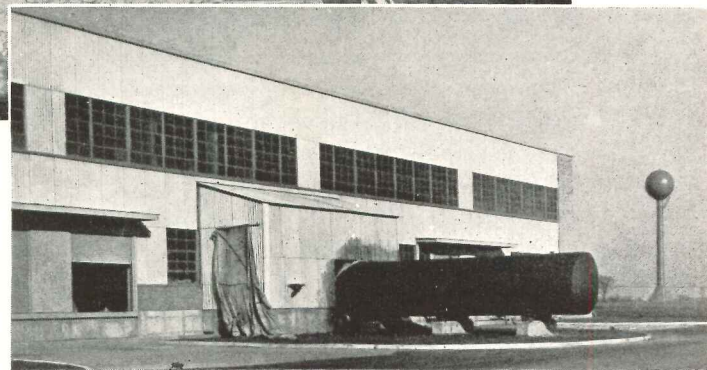
Laboratory partitions and furring at exterior walls consist of integrally colored asbestos-cement panels which, while they are wholly demountable, salvageable





Above: Gottscho-Schleisner Photo

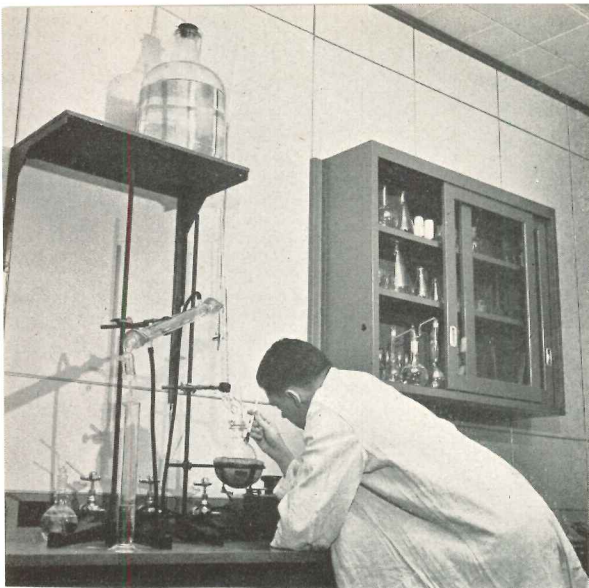
Above: pilot manufacturing space accessible to both laboratory levels. Process piping encircles area at about mid-height. Right: portion of wall removed and manufacturing bay extended to accommodate extra-long process. Below: section; basement under labs for storage and equipment; construction of plant's exterior wall facilitates truck shipping and receiving



and revisable, have a surface coating, pre-finished, which is designed for permanence and ease of maintenance. The panels are mounted on light-weight steel studs (see following page for details) which also carry laboratory piping, electrical, and waste lines; and provision is made for attaching shelving and equipment to studs at panel joints. Floors are asphalt tile, ceilings acoustic tile. The entire laboratory section is air conditioned, with a separate exhaust for the fume hoods. Location of the air distribution, ducts and laboratory service piping is visible in the sections above.

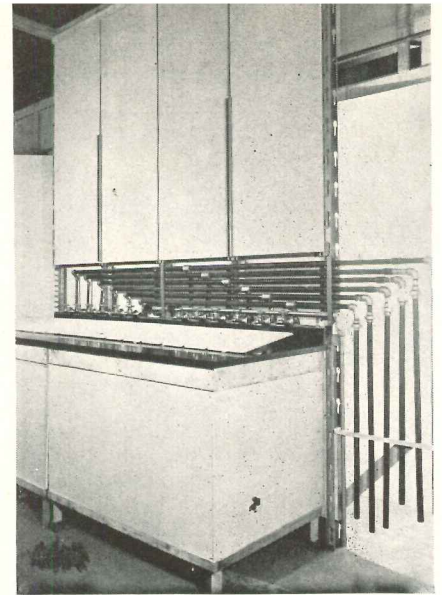
The 100-ft. wide experimental manufacturing area

has one continuous high-bay monitor. Its south wall is an 8-in. brick curtain up to sill height, with glass and corrugated asbestos-cement above; the wall is easily removable to accommodate processes longer than the normally enclosed space, and to "button on" trucks for loading and unloading. Glazing of south, east and west walls is of glare-reducing glass above eye level. The floor is a 6-in. slab with heavy-duty finish; in it are trenches, 22 ft. on centers, covered with gratings and running transversely to a collection trench along the outside wall. This was necessary because most of the pilot manufacturing deals with wet processes.

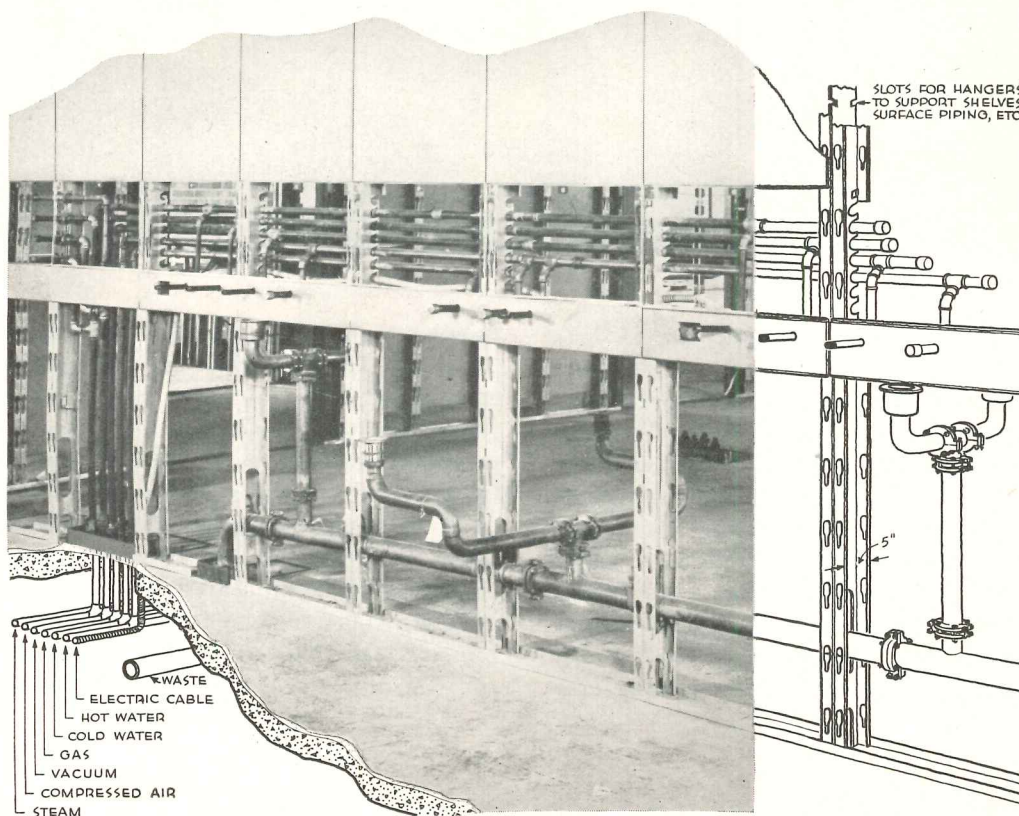
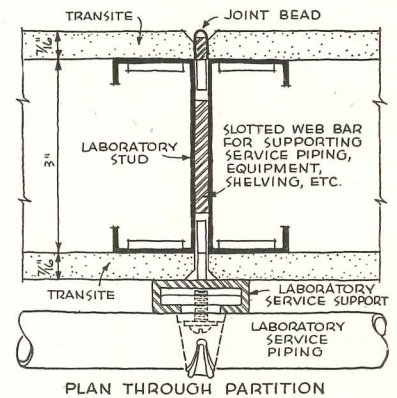
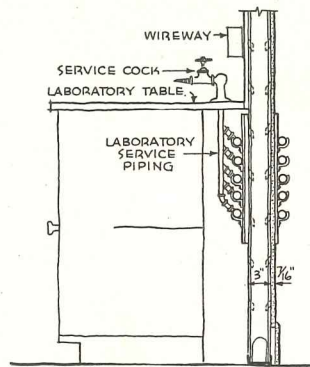


Sheldon Merritt Machlin Photo

Laboratory module was developed to its final dimensions, 11 by 26 ft., only after extensive work and deliberation. Width was determined by building a series of mock-ups (photo at right) and determining clearances essential for the type of equipment which might be required in aisles and on counters. Length is appropriate both for economical steel spans and to subdivision into anteroom plus private office for lab directors, etc.



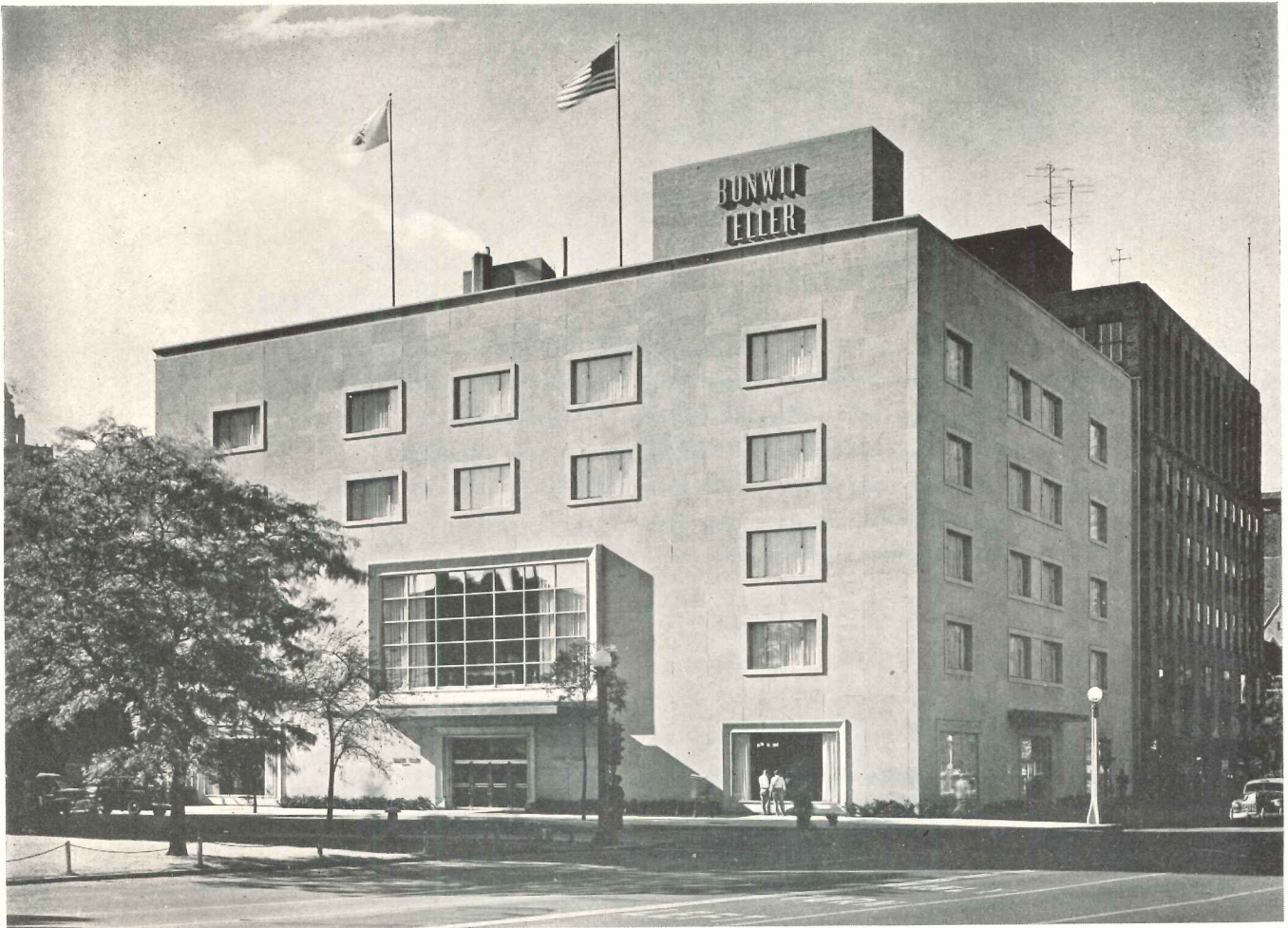
Extremely important in laboratory design was development of a wall which, in addition to subdividing space, can carry services efficiently to the point of actual use; and which also can support shelving and equipment without destroying the surface. Services may be carried either within (as in these laboratories) or on surface of wall. Integrally colored asbestos cement panels are secured by means of buttons which slide into slots in studs. Easily relocated or changed, 100 per cent salvageable when demounted, this patented construction system is now available commercially



Shaw, Metz and Dolio, Architects

BONWIT TELLER'S NEW CHICAGO STORE

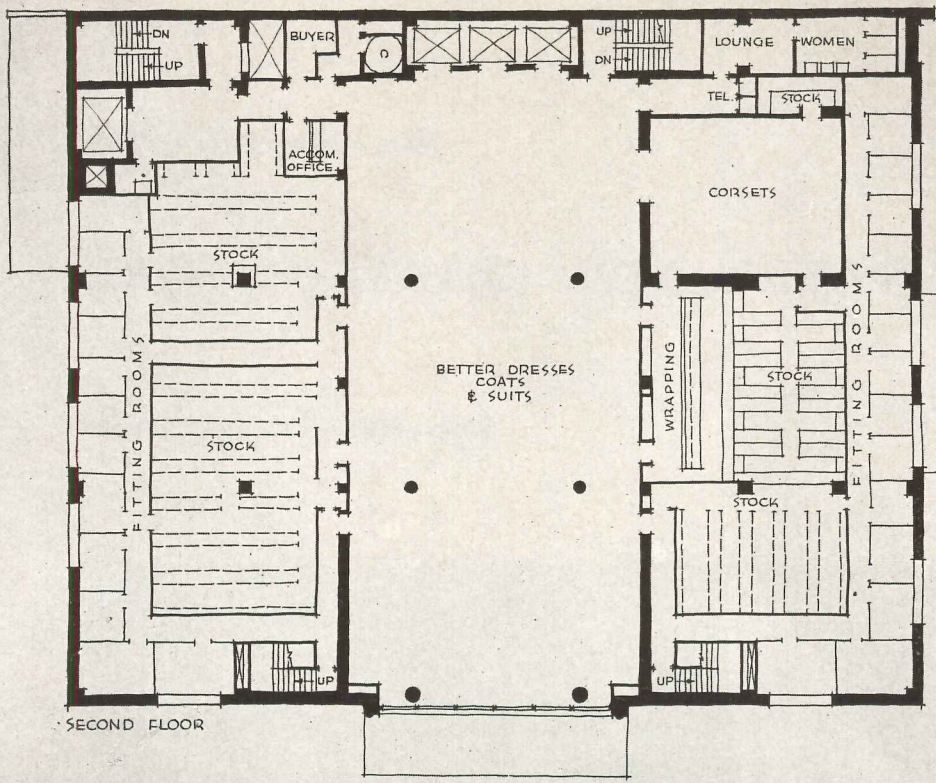
William Pahlmann Associates, Interiors



Hedrich-Blessing Photos

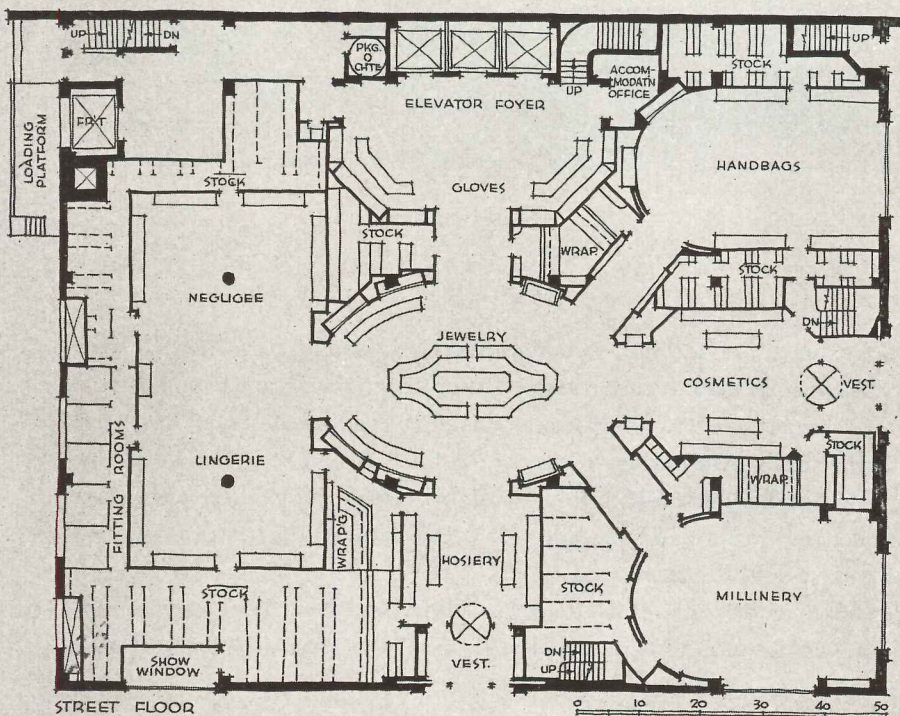
FROM the moment of the first announcement concerning it, Bonwit Teller's new Chicago store held the interest both of prospective customers and of store architects the country over. What would this new building, designed in accordance with the firm's own selling technique, be like? Would it be "modern" and full of new ideas? Would it follow the "free-flow" pattern of counter placement? Bonwit Teller could afford and undoubtedly would demand the best; the question was, just what would it consider the best?

Until a couple of years ago Bonwit's was exclusively a New York store, a Fifth Avenue specialty shop drawing its customers from the most discriminating and



All through the store fitting rooms and stock rooms are arranged around central sales salons giving daylight to the fitting rooms and permitting strict control of lighting in the sales areas. Delivery and shipping facilities are banked in one corner (upper left). Second floor plan is typical of the three upper floors

the most fashionable of feminine circles. In 1947, however, it expanded its activities to include Boston's elite, choosing — presumably because of the still lingering shortage of building materials — the old Museum of Natural History as the showrooms for the very much *au courant* merchandise it features. William Pahlmann, called in to give the sedate Victorian museum the required Bonwit atmosphere, flooded the high-ceilinged, out-dated building with color and imaginative detail to the complete delight of fashionable Bostonians.



Main floor handbag salon (right) has yellow-green walls, satin-stripe yellow-green and beige curtains, a 14-ft., 19th century Sheraton bookcase. The "Oval Room" at center of main floor (below) displays accessories in the only real showcases in the store; walls here are gray, accented by pink leather banquettes



Hedrich-Blessing Photos





Hedrich-Blessing Photos



Main dress salon on second floor (above and opposite page) is 100 ft. long, 50 ft. wide, and 18 ft. high, dominated by huge bay window framed in ruby velvet. Walls are mauve-gray, carpeting is in two shades of gray, upholstery is red, purple, cerulean blue. Debutante salon on third floor (left) is in canary yellow and sage green, with pink-red accents; merchandise is accessible to impatient young customers



Eate last August the new \$2,000,000 Chicago store opened its doors. Not unexpectedly, perhaps, it proved to be conservative, aristocratic, and oblivious to customary showmanship, combining the dignity of the Fifth Avenue quarters with the whimsy and flair of the converted Boston museum. As Bonwit's own staff puts it, the building is based on "drawing-room" selling in which the background is intended to approximate the surroundings in which the merchandise on sale will be worn. The straightforward interior provided by the architects was prettied up, therefore — by Pahlmann, of course — with crystal chandeliers, wholly uncommercial color schemes, imported antiques, fine woods and handsome fabrics to create the informal living rooms, libraries and drawing rooms desired as a selling background. Bonwit Teller's new store, in other words, has been custom designed to fit the firm's reputation for catering to the elite; it depends upon the magic of a name (displayed prominently) rather than upon show windows (of which it has only one) and the intricately arranged display counters intended to lure the customer into impulse buying.

A STORE FRONT DESIGNED TO REDUCE VEILING GLARE

Siegel's, Grand Rapids, Mich.

Wilfred P. McLaughlin, Architect; Kenneth C. Welch, A.I.A., Associate Architect

SUCCESSFUL present-day store window design must normally eliminate, or reduce as far as possible, distracting glare caused by the reflection of surrounding outdoor objects. Siegel's, a luxury-apparel-gift store, makes an honest and straightforward effort to do just that. The accompanying sketches and photographs show the architects' studies and their final solution — a geometrical arrangement of glass in reference to normal and important viewpoints so that only surfaces of lower brightness are reflected.

There are many ways that the successful elimination of veiling glare can be accomplished. Mr. Welch presents

various solutions to these problems in his article "Reflection Factors in Store Windows," in *ARCHITECTURAL RECORD*, July 1946.

Briefly, it has been established that the point of "apparent veiling glare" is reached when the ratio of brightness* of the principal surfaces being reflected to that of the surfaces being viewed through the glass is unity (one to one). In this case the veiling glare is just barely apparent and may be called a quite satisfactory condition. Increases, however, in this ratio naturally result in

* Brightness, measured in foot-lamberts, equals the amount of light, measured in foot candles multiplied by the reflection factor, which is the percentage of total light reflected.



Photograph at left, taken about noon in late summer, illustrates effectiveness of slanting display window drawn in section at right. Note how 90° vertical glass in end of shallow display and in door reflect sunlit objects and buildings, completely obliterating display. Objectionable veiling glare in slanting window (moving bus, white line in street) is above normal display height. Section at right indicates reflection angles and brightness of both show window display and environmental objects. Architects made every effort to highly illuminate background to attract attention and emphasize form by silhouetting merchandise

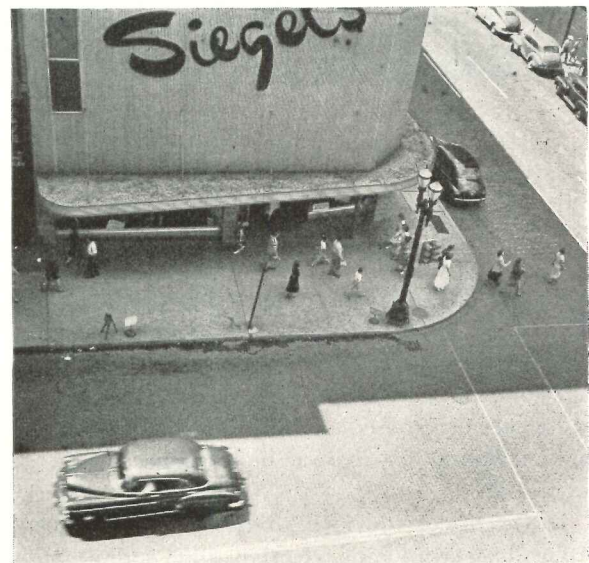
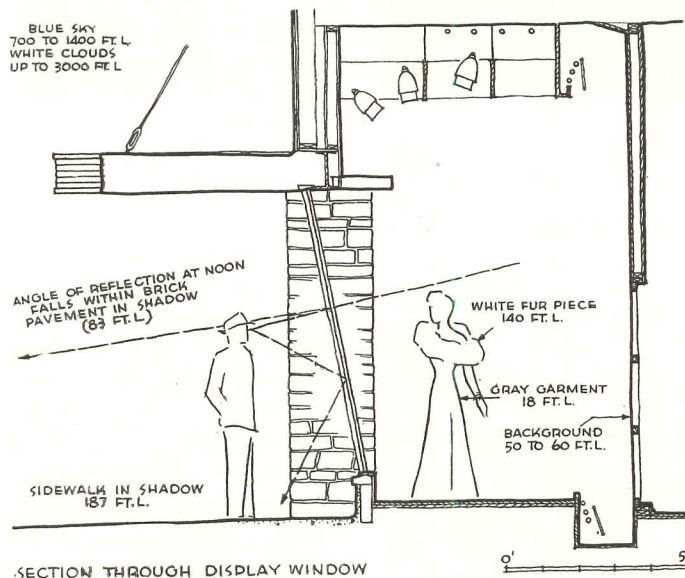
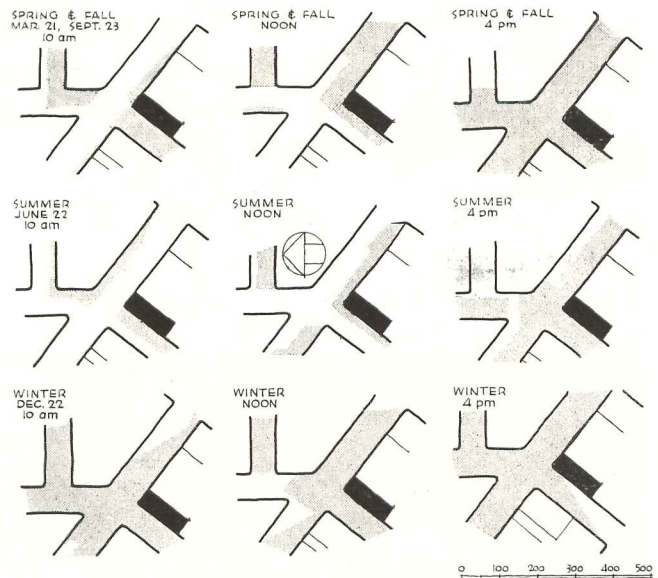
an increasingly unsatisfactory condition. When the ratio of reflected to viewed brightness reaches two, a condition results which can be called the threshold of destructive veiling glare. When a ratio of five is reached, an unfortunate glare condition arises which completely destroys the primary function of the display. This condition may easily result when a clear sky, or some light sidewalk, street or building surface, with medium reflection factors, is reflected in a store window.

Obviously, as has been done with Siegel's, a necessary preliminary to store window design is a thorough analysis of the given site with relation to its solar orientation and the brightness of surrounding elements such as sidewalks, streets and buildings which, if reflected, can destroy display values. The type of store, its time of daily and seasonal peak load and the class of customers to which it appeals must also be considered. Pertinent to the final solution for Siegel's, which does its luxury business from 11 o'clock in the morning on and does less business in summer than in Spring and Fall with peak load in December, was that shadows cast on streets were greatest during peak sales periods.



Kenneth C. Welch Photos

Right: Architects made plan drawings of site and surrounding structures with shadows cast for spring and fall, winter and summer as part of thorough evaluation of brightness environment. Photograph bottom right, made during August about noon, confirms environmental studies, illustrates how angle of reflection (shown on section below) falls within street shadow. Canopy protects display window glass and sidewalk from sky and cloud glare, window shoppers from rain, snow and morning sunshine



John Eken Dinwiddie A.I.A., Architect, and Richard Maxwell

LUXURY SHOP PRODUCED



LOCATED in an expensive shopping area and offering luxury items of imported silver, porcelain and bronze, this store has had to achieve its quiet elegance and good taste at a minimum of expense. The owners had plenty of resources in Copenhagen but few American dollars. Money for construction was necessarily rigidly restricted.

The architects thus solved this typical jewelry store problem on a basis of effective color and simple well-

proportioned form. It's of note that the small display units on the exterior have no expensive frames. Surrounding moldings are simple, refined, and match the color of the wall. The one vivid accent is the fluted chromium column at the entrance.

The interior is suitably but modestly designed for the general display of many small expensive items. Special features such as the flatware sales cabinet, which is illustrated, have been created to assist the customer in a

WITH A MINIMUM BUDGET



Roger Sturtevant Photos

S. Christian of Copenhagen, Inc.

San Francisco, Calif.

comfortable and orderly examination of merchandise. Dark mahogany was chosen for cabinet work as the best background for the gleaming silver and porcelain on display. The ceiling is a royal blue and other colors are in harmony to produce the desired luxury atmosphere. General lighting is provided by simple spots through diffusing lenses. The use of planting on both the exterior and interior adds life and color.

OCTOBER 1949



New Warsaw Bakery

Brooklyn, N. Y.



A MODERN OPEN FRONT BAKE SHOP

SINCE grandmother's day bakeries have been attracting passers-by with the pleasurable aromas of oven-fresh delicacies. Present day moppets (and grownups) are now not only subjected to this same sweet persuasion through the olfactory nerves but more and more frequently are faced with a formidable visual appeal as well. The combination is well-nigh irresistible, and perhaps in no other use is the "open front" so successful as in modern bakery design.

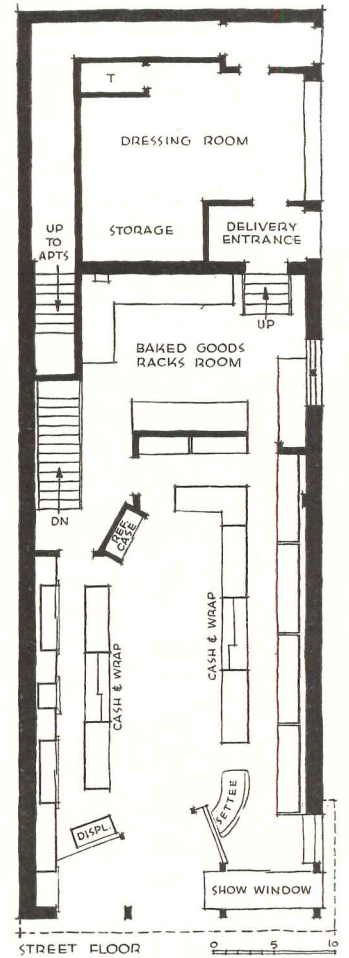
Architects Kaplan and Neivert have planned their shop with as open a front as possible. The three existing cast iron columns have been covered with aluminum; two of these columns, converted into pylons, support a low all-glass air conditioned showcase at the sidewalk

line. The whole front is framed with red marble at top, sides, below the showcase and at the return of the entrance vestibule. The plate glass front is well recessed and thus less vulnerable to veiling glare.

The shop is neatly organized on the interior, merchandise is attractively displayed, and lighting is of high intensity from inconspicuous sources. The plan is divided into two selling areas, one area to the left of the entrance is for special orders; the other, for general bake goods, forms a long L to the right. Both sections have generous well protected display areas and both have wrap-up counter and cash register facing customers. A refrigerated counter for ice cream cakes and candies is set diagonally at the rear.



Alexandre Georges Photos



Robert Kaplan, A.I.A., and Marvin J. Neivert, Architects

The general lighting scheme is indirect augmented by direct recessed lensed units set into ceilings and coves. The wall fixture in the general bake goods section is worthy of note; it provides indirect lighting sources for the illumination of the built-in cove above and also, by the use of tilted plate glass shelves, clearly displays well-lighted merchandise against a luminous background.

Ceilings and walls above light coves are of soft lemon yellow. The under sides of light coves are green. The left side of the shop is painted red rouge color to match the marble of the entrance vestibule. The floor is light beige terrazzo. Natural wood counters and fixtures are of bleached oak.



HOW THE WELL-LIGHTED STORE SHOULD LOOK

Broadstreet's, Fifth Avenue, New York City

Kenneth C. Welch, A.I.A., Architect

THIS men's shop in the medium-price field goes all out to attractively display as much of its merchandise as possible. In doing so it incorporates the interior lighting principles set forth by its architect at a recent engineers' conference.*

Mr. Welch believes that a store should keep as simple a total environment as is compatible with the atmosphere desired. This is done first, by keeping the apparent brightness of the lighting equipment itself reduced to a

minimum (its effect should be seen but its appearance not heard). Second, by planning the interior so that the reflection factors and surface characteristics of the architectural and equipment surfaces will produce, when illuminated, brightnesses and brightness patterns that are simple in themselves. Mr. Welch assures us that conscientious use of these two principles will give merchandise full right of way.

The control of the directional distribution of light to best display the kind of merchandise being illuminated is also an important point. It is possible with good de-

* Conference of the Milwaukee Chapter of the Illuminating Engineering Society, May 19, 1949.



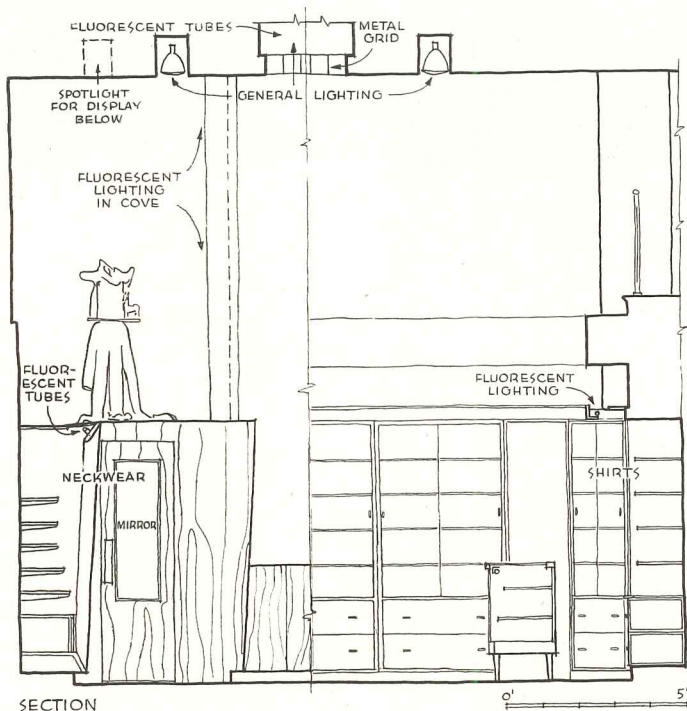
Section at right clearly indicates general lighting scheme. Fluorescent tubes behind metal grids are combined with spotlights for added illumination of merchandise appraisal areas. Also shown are lighting details of shirt fixtures (illustrated in photograph at left) and neckware display cases (illustrated upper right). Note the high quality of display lighting combined with low brightness of lighting equipment, simplicity of architectural surfaces and brightness patterns

sign, using the proper reflectors and lenses for control, to produce the highest brightness on fashion apparel or soft goods of diffuse texture. This attracts the customer and saves equipment and electrical energy as areas used for display of this kind are small. On the other hand, merchandise such as silverware, appliances and automobiles, with primarily specular surfaces, need an overhead or surrounding brightness pattern which does most to bring out their form. Low brightness incandescent or fluorescent lights, or both, surrounded or partly reflected to other architectural surfaces are obviously the best answer in these cases.

The use of a combination of fluorescent and incandescent light sources in even distribution to bring out correct color values is generally advisable. Incandescent alone accents the yellow and red colors; common fluorescent sources exaggerate the blues and purples.

Lastly, Mr. Welch emphasizes that the artificial lighting equipment used in a store must appear to be an integral part of the structure. This does not necessarily mean the use of special built-in equipment, but, preferably, simple, direct design with the use of mass-produced and packaged equipment.

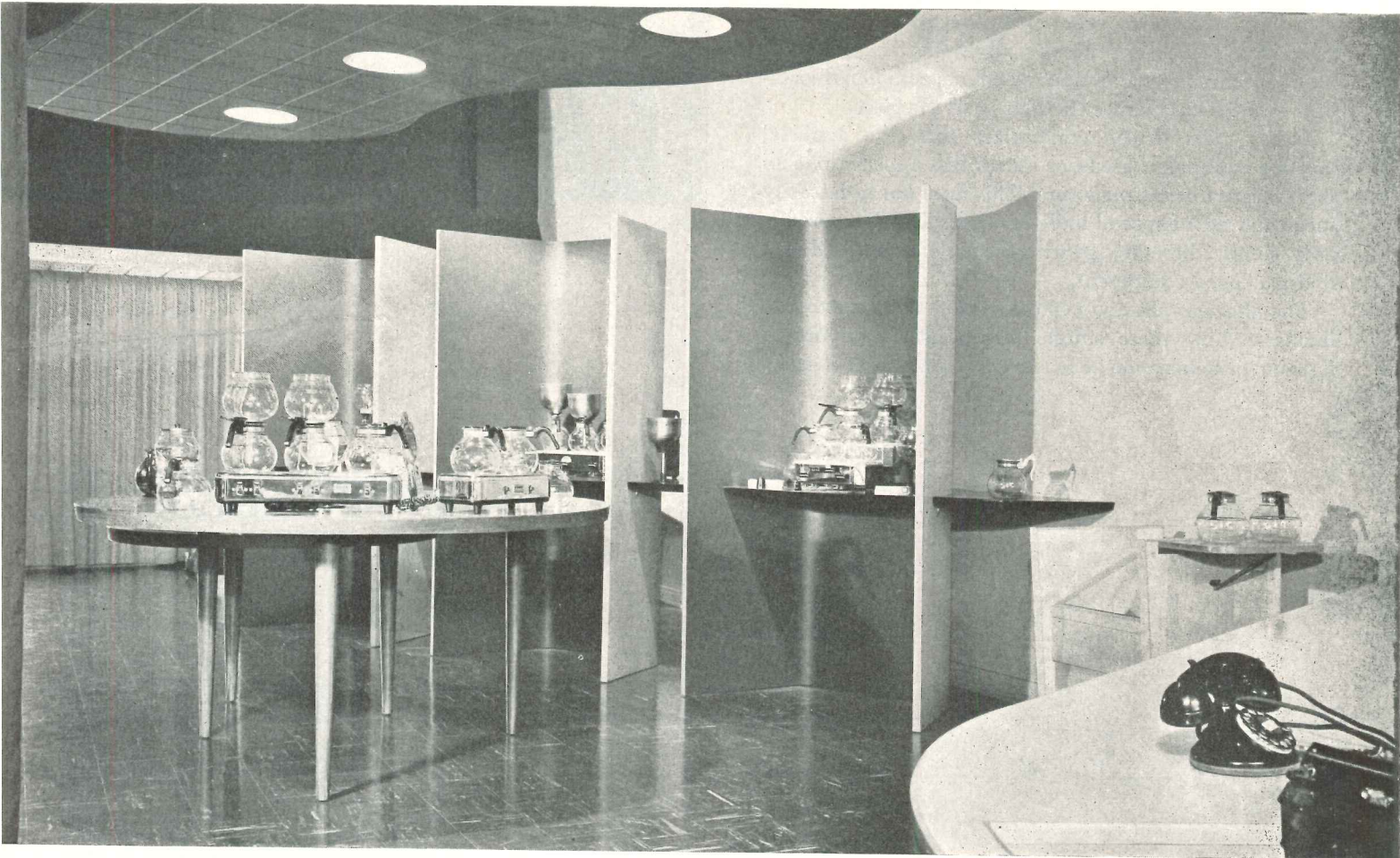
The photographs and typical section of Broadstreet's illustrate how these simple but basically important lighting principles can be put to good merchandising use.



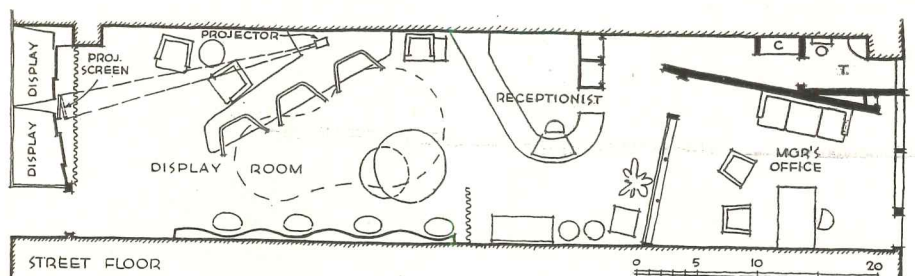
Ceiling is an off-white, walls are blended shades of gray, blue and warm tan. Carpet is rust colored. Fixtures are light oak

CORY SHOWROOM, LOS ANGELES, CALIF.

Maynard Lyndon, Architect



Merge Studios



The curving acoustic tile panel is painted dark blue; the wall behind is claret; opposite wall is light blue. Dark green was chosen for the suspended ceiling panel; the high ceiling is yellow. Rear curtain is claret matching wall; front curtain concealing street window display is gray



THE essential planning problem of this dealer's showroom was to provide for the efficient display of current items of manufacturer's equipment and current advertising without alteration of permanent walls, ceiling, doors, or shop front. In solving this problem the architect has created unusually refreshing and original space arrangements and backgrounds through the studied juxtaposition of contrasting geometrical forms.

The principal display area with its most dramatic background — three curved plywood display recesses — has been developed in widening perspective directly off the street entrance. These three plywood recesses, which intersect a continuous black table, have dark blue linings, all other surfaces natural wood. An adjustable display table arrangement, permitted by pivotal small

table that swings under large one, is also a feature. Facing the plywood recesses is a curving wall of composition acoustic tile which provides a background for the display of current advertising. Models featured in advertising are shown on small rounded tables cantilevered forward at the lower edge of the tile.

The whole display area, faced and controlled by the large curved receptionist's desk, has a suspended panel ceiling introduced to provide scale and unity and accommodate concealed spotlights.

The space directly to the left of the entrance, behind the principal display features, has been organized for the projection of slides and movies of manufacturing processes, successful sales techniques, etc. Coffee is served in this area.

The long curved receptionist's desk has white linoleum top, natural birch sides. The display fixture at left of desk has built-in mirror to show bottom of equipment. Pivoted tables in center of the display area are natural mahogany. Translucent wall conceals manager's office



Elwood M. Payne Photos



SHOE DEPARTMENT



SPORT COATS AND SLACKS

PAGING THE DISCRIMINATING TRAVELER

Shamrock Hotel Men's Shop, Houston, Texas

Brochstein's, Inc., Designers

CLOTHING





SHIRT DEPARTMENT

This same decorative theme is carried all through the store, much of the merchandise being concealed in the interest of controlled atmosphere. Exceptions are the toiletries counter where display levels in the background are individually lighted and the wall fixtures in the shirt and hat departments where slots have been left in slid-

ing doors so that customers may have a dignified peek at stock.

It is of interest to note in the illustrations of the shoe and the sportswear departments that the interior displays are well integrated with window displays which face the streets.

HAT DEPARTMENT



The store fixtures are South American walnut. Furniture is upholstered in pomegranate colored leather. Carpeting is light gray; ceilings mocha. Potted plants have been used to add freshness and life to the setting. Handcarved mahogany plaques in background of the display foyer depict resources and progress of Houston

LIGHT SLABS AND BLOCKS FOR THIN CURTAIN WALLS

Two backup wall materials meet stiff tests

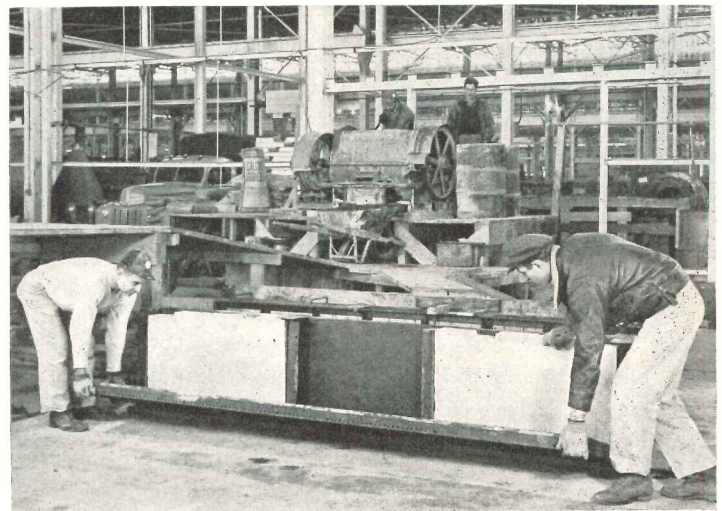
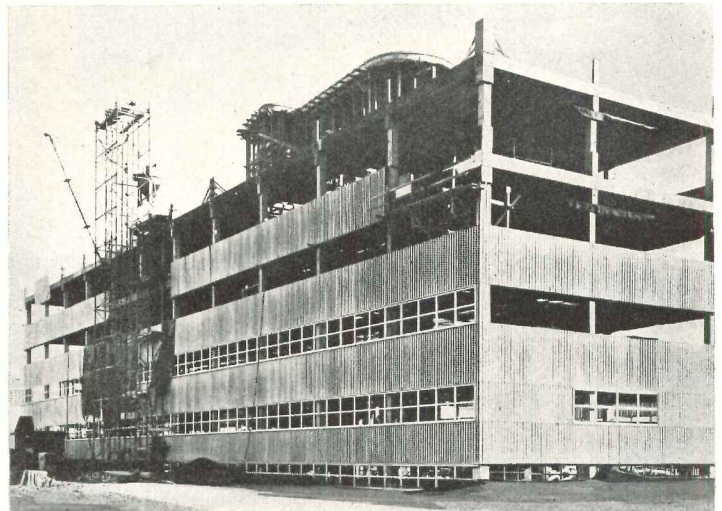
A THIN, lightweight curtain wall has many recognized advantages — lower construction costs, increased rental area, savings in structural framing and foundations. Yet, any backup material used to achieve these, in addition to being thin and light, should be a good insulator, capable of being handled easily and with little breakage, and still have adequate strength and fire-resistance to meet the building codes.

Extensive research along these lines has recently resulted in precast slabs and blocks which have earned a 4 hr. fire-retardent rating for non-bearing walls from Underwriters' Laboratories, Inc.

Lightweight Wall Slabs in Alcoa Building

Developed for use in the 4½-story Aluminum Company of America administration building at Davenport, Ia. is a precast slab made of Portland cement and calcined diatomaceous earth aggregate. The wall, consisting of cast aluminum panels backed by the lightweight slabs, has a total thickness of 9½ in. including the interior furred finish and an air space between aluminum spandrels and slabs. Aluminum foil, cemented to the inner face of the slabs, serves as a vapor barrier. Various sized slabs were used, although most of them are 2 ft. 9 in. high and 4 ft. wide.

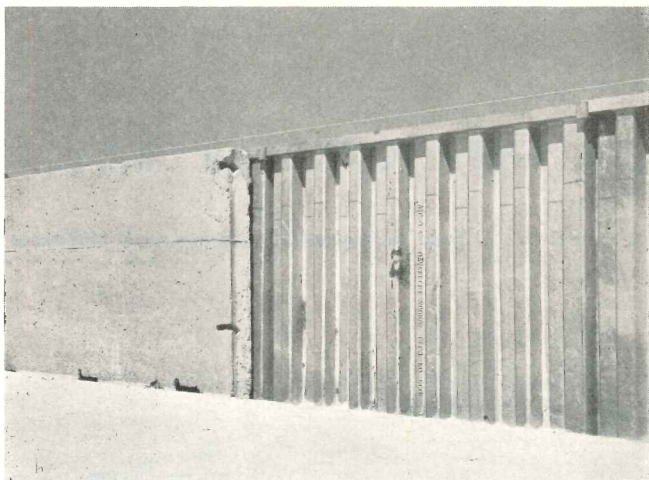
In construction of the Alcoa building, designed by Harrison & Abramovitz, Inc., Architects, all scaffolding, rigging and derricks were eliminated since all sections of the wall could be installed



Alice Cook Photos



Top: Alcoa administration building has 9½ in. wall comprised of cast aluminum panels backed by lightweight concrete slabs. Center: precast slabs, poured on the site, are removed from the molds. Bottom: size and lightness of slabs makes them easy to handle

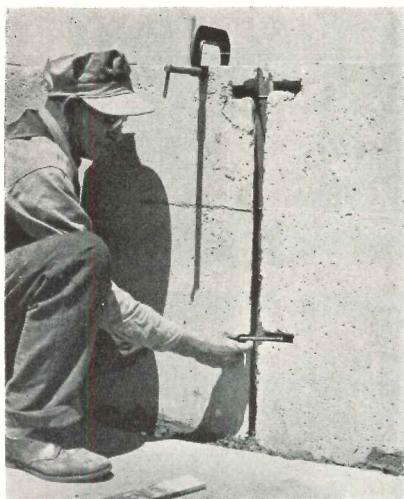


Alice Cook Photos



Photos courtesy of Great Lakes Carbon Corp.

Upper left: 4-in. thick lightweight concrete panels, made with calcined diatomite aggregate, are set on top of spandrel beam in a special mortar. Right: corrugated, aluminum panels are easily fastened to the spandrel beams by means of cast anchors, cutting erection time



Above: backup panels for Alcoa building are tied together with steel rod dowel pins; open space around pins and between panels is later filled with mortar. Below: aluminum foil, cemented to inner face of panels, is the vapor seal

from within. Erection time was speeded through the use of cast anchors on each aluminum panel which were fastened directly to the spandrel beams.

The doweled, precast slabs, reinforced with wire, were designed to withstand a wind load of 60 lb. per sq. ft. on a 10 ft. span and to conform with the New York City building code.

Cost of the backup wall was \$1.00 per sq. ft., erection costs 38 cents per sq. ft., and furring and plastering costs were 25 cents per sq. ft.

All slabs were poured on the site, using a mix ratio of one part Portland cement to six parts aggregate. They can, however, be shipped without difficulty.

The slabs can be used in exterior or interior non-bearing walls, but should be protected in exterior uses by some weather-resistant material. The weight of this light concrete is about one-half the dry installed weight of regular concrete. And a 6-in. thick wall of it conducts only one-fourth as much heat as regular concrete. Depending on the proportions used, it has a compressive strength of from 1000 to 1500 psi. The concrete made with calcined diatomaceous earth is said to mix well in standard mixers without segregation.

Tests over a period of several years to

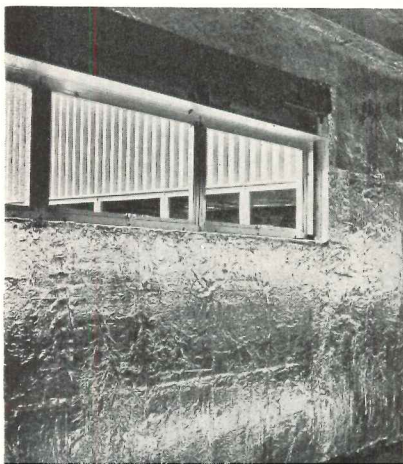
develop the backup wall for the Alcoa building were conducted by the builders, George A. Fuller Co., with their chief engineer, Peter Dejongh, in charge.

Calcined diatomite concrete slabs have also been used by the Fuller Co. in the General Cable building, St. Louis, Mo., and in a hospital now under construction at Bradford, Pa. They are proposed for use in the 30-story Alcoa skyscraper, scheduled to be built next year in Pittsburgh.

Lightweight Blocks for Curtain Walls

Lightweight blocks, 4 by 8 by 16 in., formed the backup wall in the Employers' Casualty Insurance building in Dallas, Texas. In this building, 17,000 of the blocks were used, made with the lightweight aggregate, perlite. The blocks are similar to ordinary cinder blocks, except they are only half as thick. A non-bearing wall built with them also has a 4-hr. fire rating, and is designed to meet the requirements of the New York City building code. The architect was George Dahl and the general contractor, James Stewart Corp., both of Dallas.

It is expected that perlite will soon be used for the large slabs as well as blocks



NOISE REDUCTION IN DWELLINGS

by **Albert London, Physicist**

National Bureau of Standards

Washington, D. C.

The lack of privacy resulting from transmission of sound and vibration through walls and floors of dwellings has become somewhat of a problem. Yet considerable technical acoustical knowledge in the design and construction of buildings is available, much having resulted from fundamental and applied research at the National Bureau of Standards. Dr. London, a physicist of the Bureau's Sound Laboratory, points out some of the general principles of sound control in this article, together with the applications of these principles to problems occurring in dwellings.

Principles of Sound Control

The methods by which noise reduction may be obtained involve essentially three different procedures: (1) control of sound sources; (2) sound absorption; and (3) sound insulation, with which this article is mainly concerned.

For any given situation, remedial action may be obtained by using the three methods singly or in combination, depending on the relative applicability and cost of each.

As an example of the first procedure we may consider the case of a person who decides to build a house in which he wishes a minimum of noise from external influences. The simplest procedure is for him to select a site which is inherently noise free. If he should choose to use a lot located on an arterial highway, he could not hope to cope with the traffic noise unless he were to use an expensive sound insulating scheme. Or again, if he desires to air-condition a room or rooms in his house he should choose a quiet operating unit rather than depend on an expensive sound absorbing duct, and might find it desirable to operate the unit at lower cooling rates to obtain quiet operation. And as still another example, the vibration generated by mechanical and home equipment located in the basement may be reduced at its source by mounting the equipment on a suitable vibration insulating base. All of these examples, while more or less obvious, are typical noise troubles resulting from lack of planning, unwise selection, or from overlooking the control of sound at its source. It cannot be too strongly emphasized that the first step in noise reduction is the control of sound sources, by elimina-

tion, site selection, or choice of operating conditions for equipment, etc.

When all possible steps for reducing sound at its source have been accomplished, it is then advisable to consider the use of sound absorption or sound insulation to further reduce noise levels. Sound absorption and sound insulation are different and distinct physical phenomena and where the distinction between the two occurs may be seen from the following illustration. In a factory where the din is terrific, workmen are subjected to the effect of incessant noise. And people who live in the neighborhood may complain about the unbearable racket. Here there are two distinct problems to solve: one is to reduce the sound level within the building to relieve the employees; the other is to prevent the noise from leaving the building in order to pacify residents in the vicinity of the factory.

To set the neighbors at ease, the walls must be changed so that they become more effective sound insulators. It is possible to obtain better efficiency in several ways, one of which is to increase the weight of walls considerably. The heavier wall transmits less sound, but to secure the additional insulation desired a more complicated solution may be necessary.

Such a wall does not, however, give respite to the workmen; the noise is still just as loud on the inside. The application of sound absorbing materials to the walls of the interior will effect a substantial reduction in loudness. Furthermore the use of absorption in the interior also aids in reducing the sound level outside the building and to the same extent as the inside. In this sense,

the utilization of sound absorbents may be said to have some sound insulating value. However, since it is usually not possible to secure a reduction of more than 10 decibels by this means, it is necessary to make special provision for sound insulation. The decibel, for those not too familiar with the term, is the acoustician's yardstick for measuring sound levels and changes in sound level. One sound level is 10 decibels (db) greater than another if its sound energy or intensity is 10 times greater than the other; it is 20 db greater if it is 100 times larger; and 30 db if it is 1000 times larger. In other words, each time the ratio of sound energies is increased tenfold the sound level increases 10 db.

Sounds at the upper limit where hearing becomes painful are 120 db greater than the sound levels at the threshold or limit of audibility — an energy ratio of 1,000,000,000,000 (one million million). At the upper limit, sounds of this intensity are painful, while at the lower limit the sound is just barely heard.

In addition to specifying sound level differences it is often necessary to state the actual value of a given sound intensity. For this use, it is customary to use a decibel scale in which 0 db is very close to the threshold of hearing, and 120 db is the threshold of pain. On this scale the sound level of a purring cat is 25 db, normal conversational level about 50-70 db, subway noise 90 db. Sound levels as large as 150 db have been measured close to a V-1 type jet bomb.

As has been mentioned, a basic difference between the use of sound absorbing materials and sound insulating constructions for reducing noise levels is that sound absorbing materials as us-

ually applied to a wall can at most reduce noise levels by about 10 db. Sound insulating constructions, on the other hand, may be designed which reduce noise levels as much as 55 to 60 db and it is possible to go even higher

than that with elaborate constructions.

While sound absorbing materials may not be very efficient in preventing the transmission of sound through walls they may be used to great advantage in reducing the reverberation of sound

within a room. The reduction of reverberation is not usually a problem in the small rooms of dwellings since there are sufficient sound absorbing materials present, such as rugs, drapes and upholstered furniture, which readily ab-

SOUND TRANSMISSION LOSS OF WALLS

Type of Construction	Weight* lb./sq. ft.	Transmission Loss Range, db		Type of Construction	Weight* lb./sq. ft.	Transmission Loss Range, db	
		From	To less than			From	To less than
a. 4 in. hollow pumice cement block, no plaster on faces	15.5	10	15	s. 4-in. structural clay tile core or 4-in. hollow cinder block. 5/8-in. gypsum plaster faces	30 to 40	40	45
b. Single sheet of aluminum .025-in. thick	0.35	15	20	t. 2 x 4 wood studs, 1/2-in. gypsum plaster faces on 3/8-in. gypsum lath special nailing or resilient clip on plaster lath (Fig. 2)	14	40	45 ¹
c. Single sheet of 1/4-in. plywood	0.73	20	25	u. 2 7/8-in. thick partition; 1/2-in. fiberboard core attached to plasterboard by means of steel clips; 1/4-in. airspace on each side of fiberboard; 1/2-in. gypsum plaster faces (Fig. 3)	15.9	45	50
d. Single sheet of 1/2-in. fiberboard	0.75	20	25	v. Similar to "t"; a more efficient clip was used	14.3	45	50 ²
e. Single sheet 1/8-in. glass	1.6	25	30	w. 4, 8, and 12-in. load-bearing clay tile 5/8-in. gypsum plaster faces	37 to 65	45	50
f. One sheet of 1-in. cement-asbestos-cane fiber composition board on 2 x 4 wood studs on one side only	4.0	25	30	x. 6-in. wall; 2 x 4 staggered wood studs 7/8-in. gypsum plaster on metal lath (Fig. 4)	19.8	45	50 ³
g. Double wall, 1/4-in. fiberboard faces on 2 x 2 wood studs	—	25	30	y. 4-in. reinforced concrete wall	53.4	45	50
h. Heavy wooden door approximately 2 1/2-in. thick; rubber gaskets, felt strip at bottom to close crack	12.5	25	30	z. Two 2-in. solid gypsum plaster partitions as in "n"; not in contact with each other. Wall thickness 4 1/2-in.	17.2	50	55
i. Single sheet of 1/4-in. plate glass	3.5	30	35	aa. 5-in. partition, 3/4-in. gypsum plaster faces on metal lath, fastened to special metal studs, glass insulation board between stud and metal lath (Fig. 5)	—	50	55
j. 1/2-in. gypsum plaster on metal lath on one side of 3/4-in. steel studs	8.1	30	35	bb. 8-in. brickwalls, 1/2-in. gypsum plaster faces	45 to 97	50	55
k. Same as panel "a" with 1/2-in. gypsum plaster on one side only	20.4	30	35	cc. Two 4-in. brickwalls or two 4-in. concrete walls separated by a 3-in. airspace			greater than 55.0 ⁴
l. 2-in. solid vermiculite plaster partition	8.8	30	35				
m. Same as panel "a" with 1/2-in. gypsum plaster on both faces	25.3	35	40				
n. 2-in. solid gypsum plaster partition	17.0	35	40				
o. 1/2-in. gypsum plaster faces on metal, wood, or 1/8-in. gypsum lath nailed to 2 x 4 studs	15.0	35	40				
p. Same as "f" with composition board on both sides of studs	8.3	35	40				
q. 3/4-in. plasterboard faces on 2 x 4 studs	8.3	35	40				
r. 7/2-in. thick panel, 2 rows 2 x 2 studs 1/2-in. fiberboard set loose in 2-in. space between rows of studs; 3/4-in. fiberboard on outer faces of studs (Fig. 1)	6.2	40	45				

* This is the weight in pounds per square foot of surface of the construction.

1. Varies considerably with design of clip and weight of panel. Some constructions with clips may be slightly less than 40 db.
2. One particularly efficient clip resulted in a loss slightly greater than 50 db.
3. This panel gave a loss of 49.8 db. Other staggered stud constructions are somewhat better than 50.0 db.
4. This result is estimated. No measurements available.

The ratings given are usually the most probable range of values to be expected from a given class of partitions, but some test results may fall slightly outside of this range. Minor variations in weight or method of construction cause some fluctuation in the results so that it is more pertinent to group the results into transmission loss intervals of 5 decibels.

sorb sound. Consequently the use of absorbing materials in dwellings will not be discussed in any great detail in this article.*

Sound Insulation Ratings of Walls and Floors

A measure of the sound-insulation efficiency of a wall or floor structure may be obtained by determining the sound-transmission loss in decibels. The latter is merely an expression of the amount by which sound energy incident on a wall or floor between two rooms is reduced by its passage through the wall or floor.

Whether a given partition or wall will provide adequate insulation depends to a large extent on the existing noise levels in the spaces or rooms separated by the wall. For average conditions in apartment buildings and other dwelling units, it has been found that a wall or floor having an average transmission loss of 45 db will reduce conversation at normal speech levels to inaudibility.

* For information on the use and ratings of such materials see National Bureau of Standards Letter Circular LC 870, Sound Absorption Coefficients of the More Common Acoustic Materials, which is available free upon request from the National Bureau of Standards.

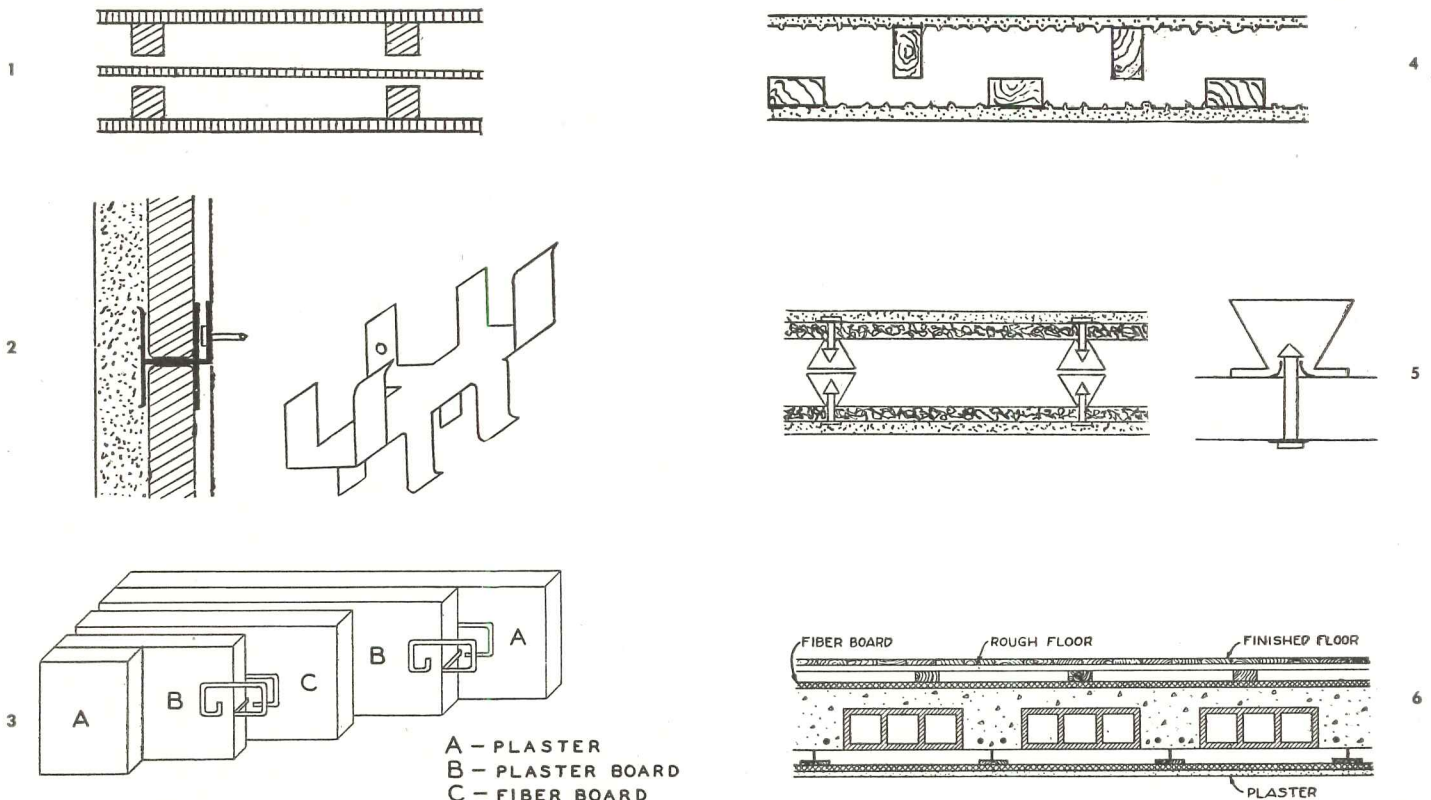
Some housing projects have used partitions having a loss as low as 40 db. Under quiet conditions ordinary conversation transmitted through a 40 db partition will be audible and partially intelligible. If the noise conditions are more severe than normal or if exceptional quiet is desired it may be necessary to use a wall with a higher rating. Thus in the case of hospital partitions it is advisable to use a 50 db partition.

Two important factors which determine the transmission loss of a wall or floor are weight and method of construction. For a homogeneous partition the sound-transmission loss increases slowly as the mass is increased. If the weight is doubled, the loss is increased by approximately 4 db. A homogeneous wall must be relatively massive to give satisfactory sound insulation. For example, a thin steel wall and a thick plywood wall having the same weight per square foot of construction surface would have approximately the same transmission loss. Furthermore, the sound transmission loss of a homogeneous wall is, to a large extent, independent of the wall material, provided the material is not porous.

Efficient sound insulating structures without excessive weight may be constructed by connecting the individual lamina in the partition as loosely as possible. Wood-stud partitions finished with plaster or plasterboard lath fastened with resilient spring slips are examples of this type of construction. Also staggered stud constructions, in which two sets of independent studs are used, one for each face of the wall, is another example of a loosely coupled wall.

The question often arises as to the utility of installing a sound absorbing blanket or fill in an airspace of a double wall. Extensive tests indicate that only for light walls is a decided improvement obtained. For walls of moderate weight there are usually solid sound conducting paths in the nature of studs, nails or other connections. The fill in the airspace, therefore, is not very effective, at most only a 2 to 4 db improvement being obtained. Consequently, the use of such a fill is not recommended from the cost viewpoint. If fill is required, however, for thermal insulation, it should not be packed too tightly in the space since it may cause an actual increase in transmitted sound as a result of tying

Figs. 1 to 5 below illustrate wall constructions listed in the table opposite for reducing the transmission of airborne sound. Fig. 7 shows a floor-ceiling construction for insulation against impact or tapping noises. The rough and finished floors are laid on fiber board through the use of nailing strips instead of directly on concrete; similarly, the ceiling is suspended by wires



the walls together more solidly.

Variation in kind and proportion of plaster has no decided effect on the sound-insulation efficiency provided the weight of the panel is approximately the same. Lime plaster is an exception. In comparable sound-transmission tests, lime-plaster partitions have shown higher sound-insulation efficiencies than gypsum plaster partitions. Apparently this is caused by the greater internal friction resulting from the softness of the lime plaster. Recently lightweight plaster aggregates which have heat-insulating value have been investigated. On an equal thickness basis these are poorer sound insulators than gypsum plasters, since they are lighter in weight. On an equal weight basis, they probably are as good or even better than gypsum plaster walls.

In addition to insulating against airborne sounds it is necessary to prevent the transmission of impact sounds. Airborne sounds are those that originate within a room or space, are carried through the air, and then through walls, partitions, or floor. Impact sounds are those caused by tapping or other mechanical contacts, such as heel clicking. Floor or other constructions may be good insulators against airborne sounds, but very poor insulators against impact sounds. The type of floor and surface treatment determines the effectiveness of the construction in providing insulation against tapping noises. Soft coverings may be applied to floors to reduce such noises. In addition, so-called floating floors may be used in which resilient fiber board or blanket units are inserted between the rough and finish floors of the construction.

In the table on page 142, the airborne sound-transmission losses of some typical walls are listed. The ratings are average transmission losses for audio frequencies. Figures showing the constructions in question are included where necessary. The entries summarize the results obtained on some 250 wall and floor constructions investigated by the National Bureau of Standards.†

† For complete details see National Bureau of Standards Building Materials and Structures Report, BMS17 and Supplements Nos. 1 and 2, which may be obtained from the Superintendent of Documents, Washington 25, D. C. for 35¢ a set; and also Technical Report on Building Materials, TRBM44, Fire-Resistance and Sound-Insulation Ratings for Walls, Partitions and Floors, which is available free upon request from the National Bureau of Standards, Washington 25, D. C.

It may be of interest to analyze some of the data of the table since it will serve to illustrate some of the principles involved. The poor insulating qualities of a moderately massive wall which is porous is evidenced by the results on panel "a". In this case the sound is transmitted through the pores, the mass of the wall having little effect. When the wall was plastered on one side, the transmission loss (TL) increased approximately 20 db (panel "k") and when both sides were plastered, its TL range was increased to the 35-40 db class (panel "m"). This indicates the importance of having a truly impervious partition with no air leaks. Thus, cracks around a baseboard, cracks due to electrical outlets, or to plumbing pipes passing through a wall should be carefully sealed.

Panel "h" shows that even a fairly heavy door is a poor insulator. The only safe way to remedy the situation is by the use of two doors in a double door combination. Here too, cracks between the door and jamb and bottom sill should be carefully treated or closed off by felt or batten strips. Glass windows in a wall are also weak links in an otherwise good wall. Double-glazed or double windows are required if the sound insulation effectiveness of a wall is not to be seriously weakened.

It should be noted that a double wall is not twice as effective as a single wall. Thus on comparing panel "f" with panel "p" we see the rating improved in the latter panel only by about 10 db. However, the rating for a double wall tends to approach twice that of a single wall as the distance between walls increases. If instead of the 4-in. airspace used in panel "p", a 6-ft. airspace were provided, it is probable that the TL of the double wall would be twice as large as that of the single wall.

In the case of floors, airborne transmission loss measurements show that conventional floors usually have losses greater than 40 db. Inasmuch as they are generally thick and massive and have non-continuous elements or layers built into them many of them have losses in the range of 50-60 db.**

** No attempt at grouping floors into classes having a 5 db TL range has been made because of the many variations and modifications used in the floor constructions. For constructional details on floors the original reports BMS17 and supplements or TRBM44 should be consulted.

In insulating against impact or tapping noises, the important consideration is to provide non-continuous elements in the floor so that the vibration caused by the impact does not have a continuous sound-conducting path. Such a construction is illustrated in Fig. 6 which comprises a floor "floated" on fiberboard and a ceiling suspended by flexible wires. This construction is not only an effective airborne sound insulator, its loss being in the range of 65-70 db, but is also effective against impact noises (50 db tapping loss).

Acoustical Design Applied to Single Dwellings

In planning any type of building construction, whether it is a single or multiple dwelling unit, auditorium, meeting hall, office building, or hospital, it is extremely important to include appropriate acoustical design in the initial plans. Usually it is not possible to remedy existing acoustical defects by the application of magic "soundproofing" to the walls of a room. The term "soundproofing" is frequently misused, as a consequence of which it is not always clear whether reference is being made to sound absorbing materials or sound-insulating constructions. In fact, it may be impossible to apply acoustical correction without drastic remodeling or extensive remedial action.

For single dwelling units, the first consideration is to keep the house as far away from external noise sources as possible. Shrubbery, if extensive, may be of some assistance in reducing sound.

With respect to construction of the house, there are two distinct problems — selecting exterior walls which will provide adequate insulation for noise outside the house and choosing partition walls and floors in the interior which will assure adequate privacy. The exterior walls should be of such a type of construction that the sound level in bedrooms and other quiet rooms during the evening and early morning hours will not exceed 30 db. This refers to quiet neighborhoods. In the case of noisy districts it may be necessary to increase the upper limit to 40 db. This means that for quiet neighborhoods the wall loss should be at least 45 db.

An effective wall construction from an acoustical standpoint may be com-

pletely destroyed by cracks such as those caused by settling of a brick wall, shrinking of wood, or other openings in the wall. Thus it will not be possible to maintain a low interior noise level if windows are kept open. In fact, the use of windows of single panes of glass installed in an 8-in. brick wall materially reduces the insulation effectiveness of the wall, in which case it may be found desirable to install either double windows or those having double panes of glass.

Large picture windows made of single panes of glass will greatly reduce the effectiveness of a 45 db wall. They should be double glazed if possible, not only for sound insulating purposes but also for thermal insulation. On the other hand, windows made of 4 7/8-in. thick glass bricks have a transmission loss of 41 db, so that this type of window or wall is much better than a single glass pane.

Doors must be fitted into their casings quite snugly if sound leaks are to be

avoided and should be fairly heavy and substantial to be good sound insulators. In cases where houses are located near areas carrying heavy truck, trolley car or train traffic, there may be considerable ground vibration which will shake the house. In order to prevent the transmission of this vibration it would be necessary to pour the footings of the house on a resilient bed of suitable nature.

With respect to the interior construction of the dwelling, room placement according to function is of considerable importance. For example, quiet rooms, such as bedrooms, should be located in the same general area. If it is necessary to locate a noisy room next to a quiet one, a suitable partition having at least a 45 db loss should be installed between them. In addition, if privacy is required between bedrooms it is believed that 45 db partition walls should be used.

An attic usually provides adequate insulation against penetration of outside noises to lower floors of the house

by way of the roof. A fairly substantial ceiling at least equivalent to 3/4-in. plaster should be provided.

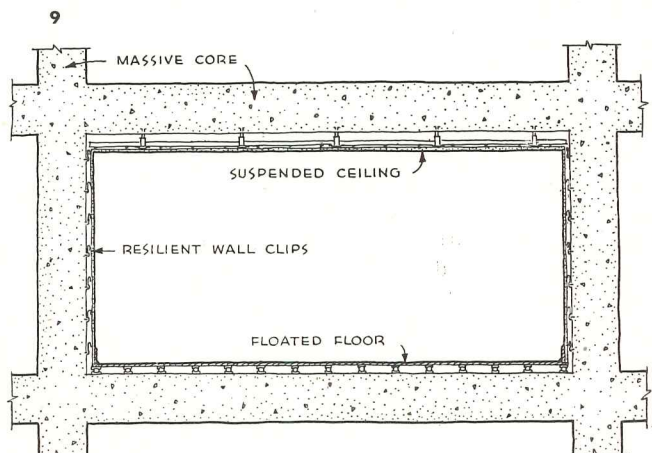
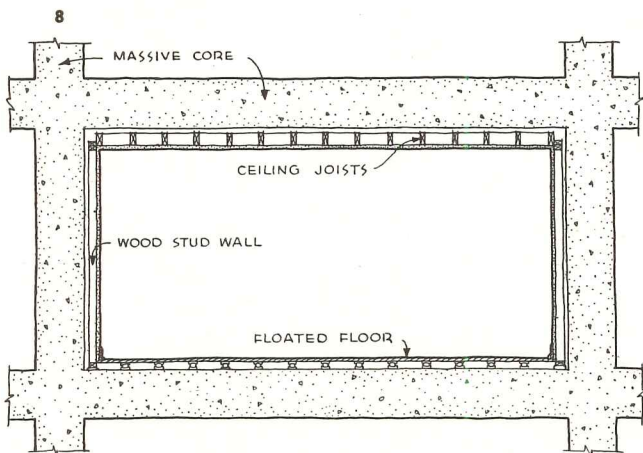
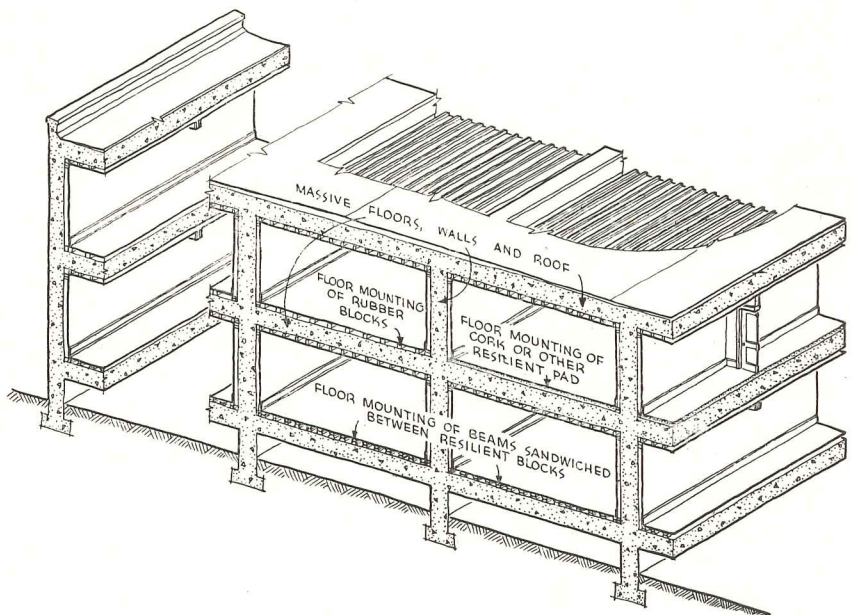
Similarly, it is often the case that no ceiling will be provided in the basement. Noise due to mechanical equipment which may be located in the basement will readily be transmitted through a construction consisting only of a rough and finish floor nailed to joists. It would, therefore, be advantageous to install a ceiling on the underside of the floor joists. Fiber board ceilings are often used in basements, but are too lightweight to be very effective. A fairly massive ceiling, equivalent to 1/2 to 3/4 in. plaster and suspended by flexible hangers or wires is more effective than one directly attached to the joists from both sound insulation and fire protection standpoints.

For reducing the transmission of vibration caused by mechanical equipment in the basement, it may be neces-

(Continued on page 184)

7

One method to get sound insulation between multiple dwellings units is the massive core construction shown at right. In each "cell" a secondary box of the types shown below is built and subdivided into the desired number of rooms. At left, below is a rigid, self-supporting box, supported on the core structure by a floating floor. At right, below is shown a box with suspended ceiling, loosely coupled wall, and floating floor. The massive core also can be constructed so that an air space separates each cell



HARDWARE-1: Hand of Doors, Casement Windows

By Seymour Howard, Architect, in cooperation with American Society of Architectural Hardware Consultants

CONVENTIONS for the hand of hardware must be determined accurately so that there is no misunderstanding between specification writer, dealer and manufacturer.

Hardware in general may be:

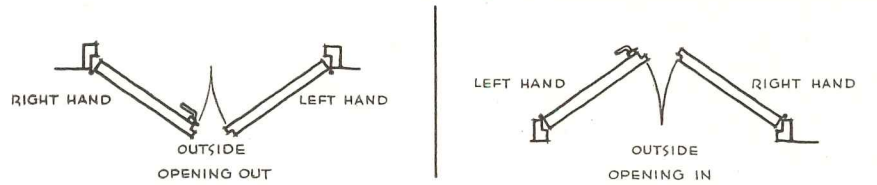
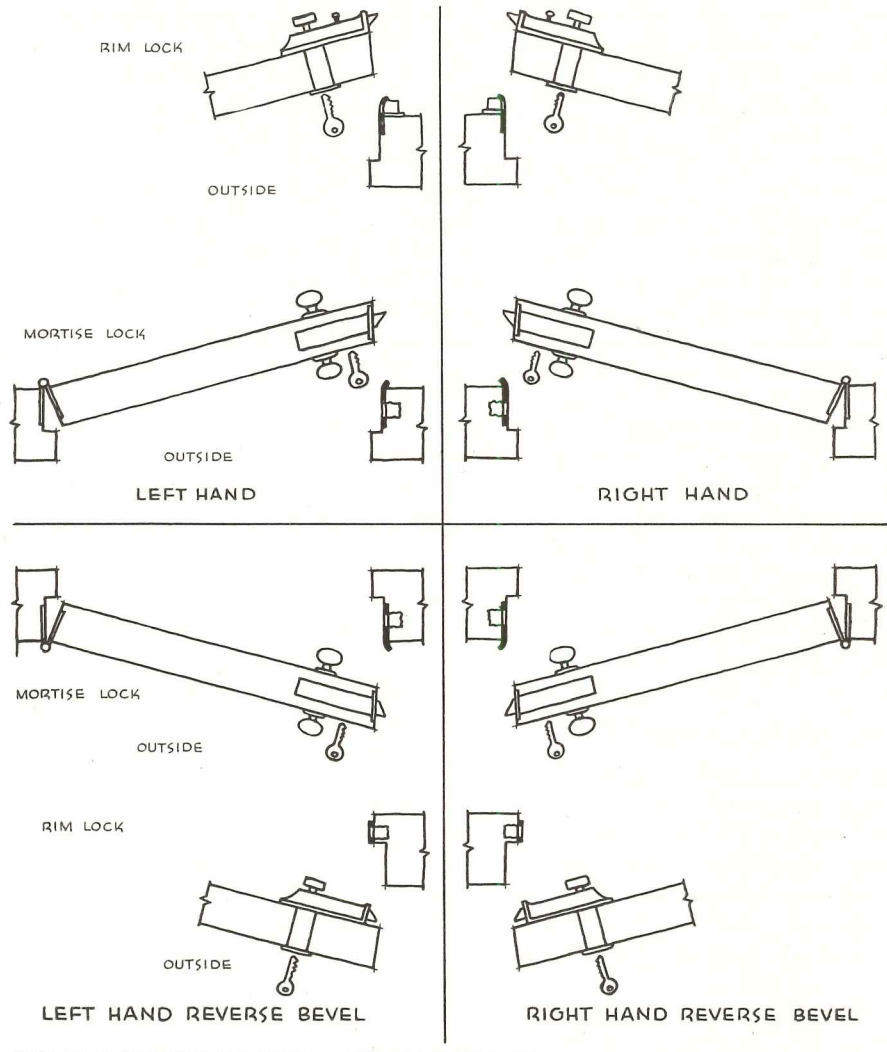
- (1) *Universal*: can be used in any position (example, door stop)
- (2) *Reversible*: can have "hand" changed by revolving from left to right or by turning upside down or by reversing some part of the mechanism (example, many types of locks and latches)
- (3) *Handed (Not Reversible)*: can be used only on doors of the hand for which designed (example, most bevel or rabbeted front locks and latches, loose-joint butt hinges).

Although the hardware item specified may be reversible, or even universal, it is safe practice to state the hand completely, in accordance with the conventions shown here.

For all doors (except casements and doors with cremone bolts) the hand is determined from the *outside*. The outside is the side from which security is necessary. In a series of connecting rooms (as for a hotel suite) the outside will be the side of each successive door as you come to it proceeding from the entrance in. For two rooms of equal importance with a passage between, the outside is the passage side.

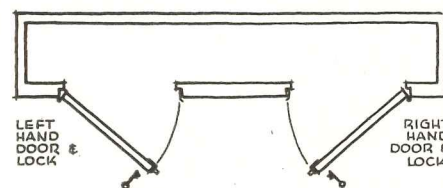
Strictly speaking, the door itself is only right or left hand; the locks and latches may be reverse bevel. However it is best to include the term reverse bevel and to specify in accordance with the conventions shown here. This will prevent any confusion over which side is the outside, particularly important when "split finishes" are desired. It will place the responsibility for the correct choice on the hardware dealer or manufacturer.

(TSS continued on page 151)

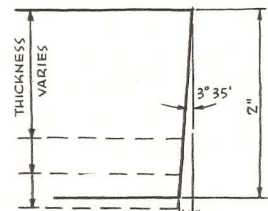


CASEMENT WINDOWS - SPECIFY WHETHER IN-OR OUT-OPENING
ALSO APPLIES TO CREMONE BOLTS

NOTE-THESE CONVENTIONS ARE EXACTLY OPPOSITE TO THOSE FOLLOWED BY THE METAL WINDOW INSTITUTE



CUPBOARDS, CABINETS, BOOKCASES
NOTE - REFRIGERATOR DOORS FOLLOW THESE CONVENTIONS



STANDARD BEVEL

DISPLAY RACKS, CASES

Architects Walter Wurdeman and Welton Becket have designed a new modular system of display racks and cases, utilizing only eight basic modules, which is said to be flexible enough to provide all the display and counter fixtures needed to equip an entire store.

Components of the *Wur-Kel* unit include three large open chassis, four inserts and a frame for converting the inserts into counters. The chassis are 4 ft. wide and come in heights of 4 ft. 8 in., 5 ft. 6 in. and 6 ft. Glass tops and open sides are used, and each chassis can be quickly fitted with either hanging rods or glass display shelves.

The inserts, wooden cabinets fitted with doors or drawers, are all 22 in. in depth and are designed to fit securely in the chassis without being bolted in place. Two smaller inserts can be quickly converted into counters by being placed in a wooden "saddle."

The modular display racks and cases will be introduced for the first time in Buffum's new store in Santa Ana, Calif. and are being made by the Wavell Fixture Co., Long Beach, Calif.

PLASTIC-LAMINATED PANELS

Lamidall wall paneling consisting of a decorative pattern impregnated on a base of tempered Presdwood and covered with a plastic surface is reported to withstand heat, cold, moisture, abrasion and impact. It is also said to be unaffected by water, soap, beverages, fruit juices, alcohol and common solvents, and is claimed not to crack, chip or peel.

Panels can be applied by nailing or cementing. They are available in a full range of sizes up to 4 by 12 ft. in a selection of colors, patterns and wood grains. Service Products Div., Woodall Industries, Inc., 2035 S. Calumet Ave., Chicago 16, Ill.

PLASTIC TAPE FOR VENETIAN BLINDS

A plastic tape recently developed for use with Venetian blinds is reported to be resistant to fading, weathering, stretching, shrinking, heat or cold and to be completely washable.

Another advantage claimed is that the colors are more brilliant than can be secured in fabrics because pigments are used rather than dyes.

The tape is of vinyl plastic reinforced

with pre-shrunk threads, and thus is expected to last as long as the blind itself. Hunter Douglas Corp., 150 Broadway, New York 7, N. Y.

CONCRETE WALL PANELS

Two different types of insulated, concrete wall panels have been developed recently in Canada. The first is a sandwich panel having a 2 in. core of cellular glass covered by 2 in. layers of concrete (described in June Products for Better Building). In the other system, panels 16 in. wide and room height, insulated with aluminum foil, are used (shorter panels are used under windows). The panels are bolted together on the job and are keyed together with waterproof mortar. The reflective insulation is furred out from the panels and a furring strip separates the interior finish from the insulation; thus there are two air spaces provided.

With specially designed form clamps, a reinforced concrete beam is poured at the top of the panels and window and door lintels, thus tying all the panels together. The first type is being manufactured by Creaghan & Archibald Ltd., 393A Fleet St., W., Toronto, Canada. The second type is made by Sa-Co Panels Ltd., 227 Lakeshore Rd., Humber Bay, Ontario.

SMOKE DETECTOR

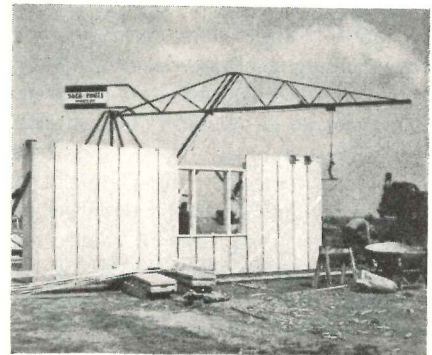
A *Multi-Space Smoke Detector* now on the market is intended for early fire detection in unfrequented plant areas, vaults, or warehouses where fire may smoulder and produce smoke long before flames actually break out and produce enough heat to actuate other types of protective devices.

In each protected zone, one or more accumulators are installed at the ceiling. These accumulators are connected to piping that leads to a control cabinet.



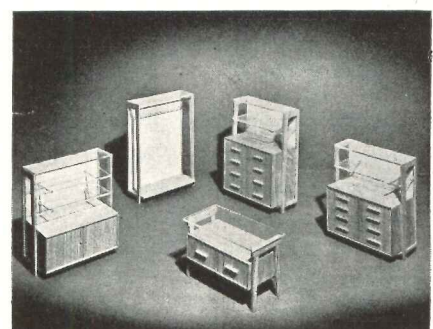
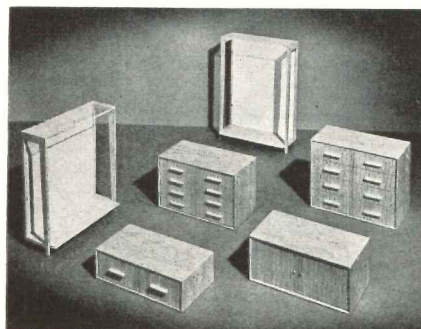
Crane hoists sandwich-type precast panels into place (above). Derrick is used with 16-in. panels of another system (below)

Samples of air picked up by the accumulators are passed through an analyzer, and if three or more per cent smoke is present in any sample, the fire alarm rings. Concentrations of smoke lower than 3 per cent set off a trouble alarm. A numbered zone wheel, visible through the control cabinet door, indicates where the trouble is. A clean-out valve in the control cabinet opens after each space is sampled, and clean air is drawn through



(Continued on page 188)

Left: modular display system by architects Wurdeman and Becket consists of eight basic components, of which six models are shown. Right: some of the possible combinations



MANUFACTURERS' LITERATURE

School Daylighting

Better Environment Through Daylighting in Schools. Takes up the use of metal windows in the design of daylighting for schools. The booklet covers this subject under the following headings: How to Determine the Potential Daylight Available, How Metal Windows Provide the Best Source of Daylight Plus Controlled Ventilation, The Importance of Reflectance to Proper Daylighting, Basic Requirements for School Daylighting, How to Increase Illumination by Reflectance, Methods of Controlling Daylight Illumination. Other parts discuss orientation, cost, maintenance, and remodeling. 16 pp., illus. Metal Window Institute, 806 Roland Rd., Cheltenham, Pa.

Convectors

National Art Convectors (Catalog No. 555). Information on the construction, installation and operation of convectors in homes, stores, schools, offices and institutions. The copper tube, aluminum fin, heating element used with the convectors is illustrated and described. Reinforced sheet steel enclosures for free-standing, semi-recessed or wall-hung convector installations are reviewed. Dampers and air chambers for use with these convectors are shown and their advantages outlined. Installation and engineering data are included, as well as drawings of piping used in connecting the convectors to steam or hot water systems. 16 pp., illus. The National Radiator Co., Johnstown, Pa.*

Acoustic Telephone Booths

Burgess Acousti-Booths (Bulletin No. 172). Illustrates applications of sound insulated phone booths together with various models available. Describes acoustic construction. Price list is included. 6 pp., illus. Burgess-Manning Co., Libertyville, Ill.

Corrosion-Resistant Metal

Durimet 20 Corrosion Resisting Sheet & Plate (Bulletin 502). Lists properties of a special stainless steel, alloyed to possess a corrosion resistance higher than conventional 18-8 stainless steels. It is said to be especially suitable for

* Other product information in Sweet's File, 1949

laboratory fume ducts, hoods, table tops, troughs, etc. Describes fabrication methods and includes table of standard gauges, sizes, weights and finishes. 8 pp., illus. The Duriron Co., Inc., Dayton 1, Ohio.*

Rubber Floor, Wall Tile

Stylized Floors-Walls of Rubber. Shows 28 colors and variety of designs in *Flexi-Floor and Wall-Flex*—rubber wall and floor coverings. 4 pp., illus. The R.C.A. Rubber Co., Akron, Ohio.

Hot Water, Radiant Heating Controls

Sarcotherm Weather Control (Technical Bulletin No. 2). Covers centralized panel program control systems for hot water and radiant heating in apartment houses, offices, schools, etc. Schematic diagrams of boiler hookups and wiring diagrams are included along with specifications. Sarcotherm Controls, Inc., Empire State Bldg., New York 1, N. Y.

Air Diffusers

Type HU Anemostat Air Diffusers for Projection Unit Heaters (Bulletin 28). Explains operation and application of the Type HU air diffuser. Shows how it is used on vertical-discharge unit heaters for installation from 10 to 30 ft. above the floor. Also covered is the Type HU-4 for installations 8 to 16 ft. above the floor to provide a broad downward air pattern. Dimensional data are listed. 4 pp., illus. Anemostat Corp. of America, 10 E. 39th St., New York, N. Y.*

Hollow Steel Doors, Frames

U.S.F. Hollow Steel Doors and Frames. Features door applications typical of six multiple dwelling projects for which U.S.F. doors have been selected recently. Complete technical data are included covering types of doors available, door and frame sizes, fire test data, etc. 4 pp., illus. United Steel Fabricators, Inc., Wooster, Ohio.

Explosion-Proof Hospital Equipment

Appleton Hospital Equipment. Pictures and describes explosion-proof X-ray film illuminators, dead-end re-

ceptacles and plugs, sealed switches, pilot lights, grounding units and electric clock. Specifications are included. 8 pp., illus. Appleton Electric Co., 1701-59 Wellington Ave., Chicago 13, Ill.

Tie-Wire

Monel Tie-Wire. Outlines advantages, range of use, and installation of Monel Tie-Wire. Installation drawings and specifications are given for its use with suspended ceilings, partitions, floors and walls and as brick anchors, concrete anchors and tile roof anchors. Various characteristics of the wire are listed. 8 pp., illus. The International Nickel Co., Inc., 67 Wall St., New York 5, N. Y.

Non-Skid Coating

Keep Floors Safe With Tread-Sure. Folder on an abrasive-filled plastic brush coating developed to produce an anti-skid surface on wood, concrete or steel deck. Describes properties, lists available colors and directions for application. Illustrates typical uses. 4 pp., illus. A. C. Horn Co., Inc., 10th St. & 44th Ave., Long Island City 1, N. Y.*

Food Freezing Equipment

The Ultimate in Quick-Freezing Equipment (Bulletin No. 148-D). Describes operation and illustrates various types of tunnel freezers for handling all the components of the tunnel freezer for both conveyors and push trucks. 4 pp., illus. Frick Co., Waynesboro, Pa.

Awning Windows

Lemco Series 62 Extruded Aluminum Windows—Awning Type. Folder lists standard types and sizes, architects' specifications and shows full-size sections of aluminum awning-type windows. Installation details are also included, as well as details of the operating mechanism. 6 pp., illus. Croft Steel Products, Inc., Jamestown, N. Y.*

Wood Applications and Properties

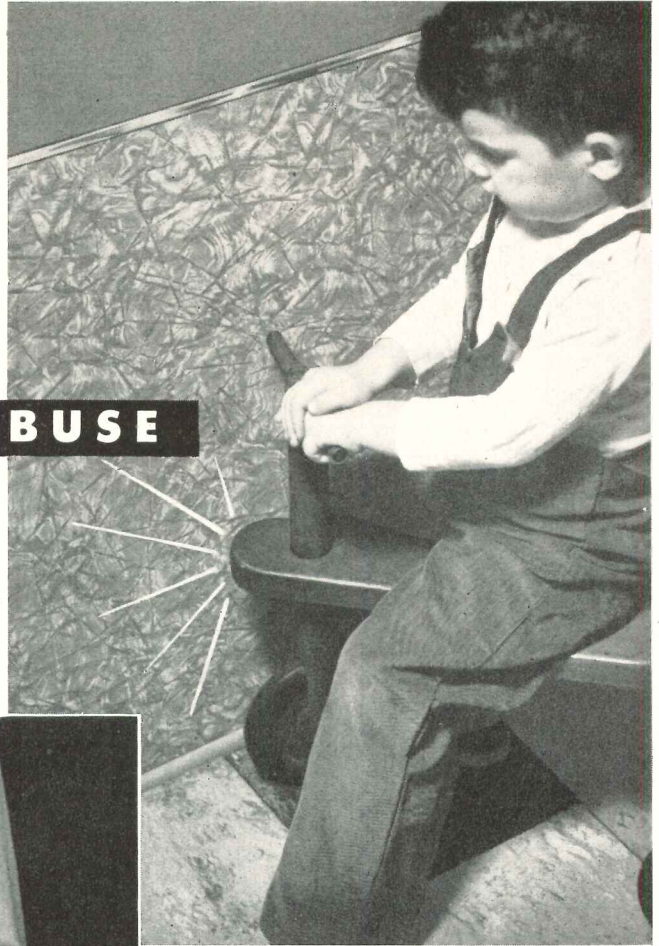
(1) *Idaho White Pine, Its Properties, Uses and Grades;* (2) *Enchanting Homes of Western Pines.* The first book is one of a series on wood species grown and manufactured in the Western Pine Region. It reviews the properties, characteristics, applications and grades. Full page photographs show typical pieces of each grade.

The second pictures actual paneling and interior woodwork of the three

(Continued on page 200)

CONSOWELD SURFACES

STAND UP TO ABUSE



OR

TAKE IT LYING DOWN

The hard-working handsomeness of *Consoweld* Decorative Laminates makes them a highly satisfactory answer to almost any vertical or horizontal surfacing problem. Available in a wide array of smart patterns and colors, *Consoweld* combines functional beauty with permanence. It keeps its good looks year after year without the use of costly cleaners, painting or redecorating. In room and corridor walls, counter-tops, show cases and many other interior applications, *Consoweld* is the ideal surfacing material. Sweet's File, Architectural, will give you complete details on *Consoweld*. Samples and bonding and fabrication data are available on request.

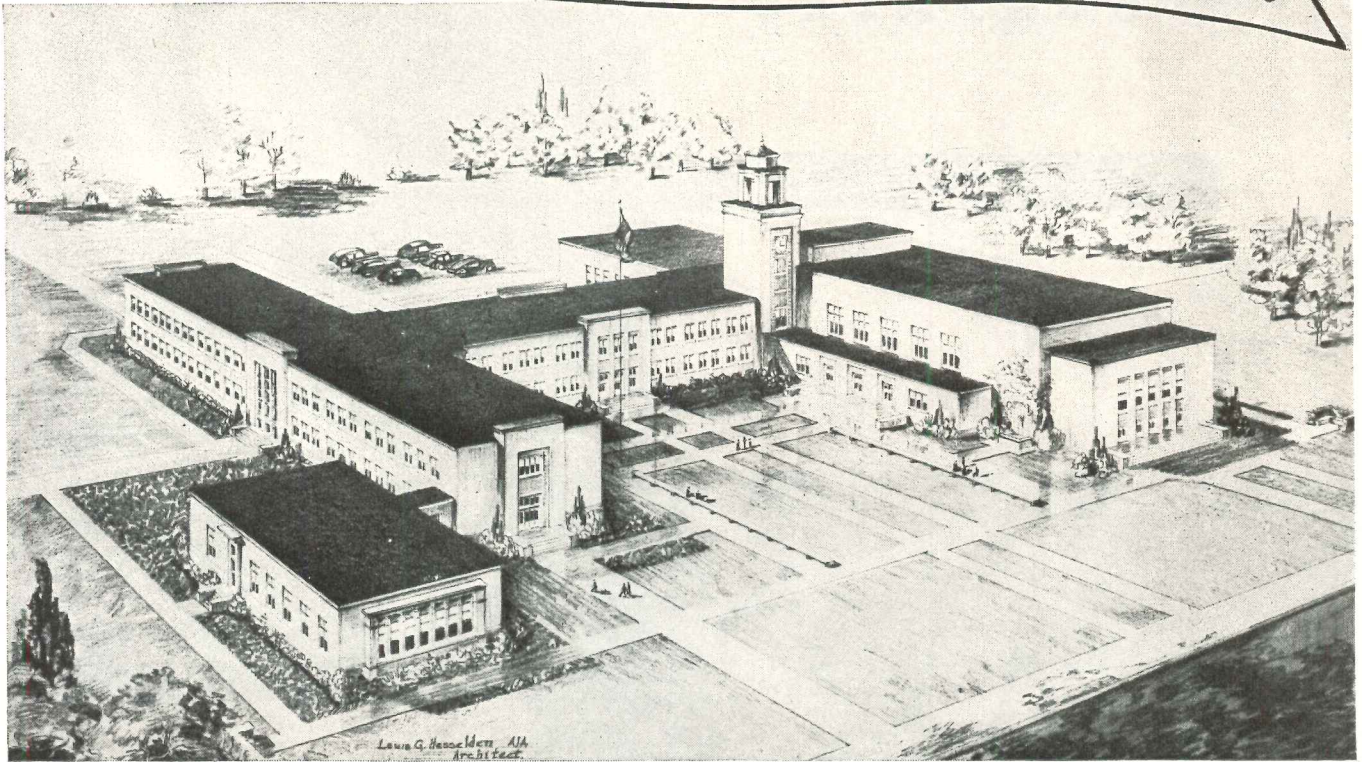
GOOD FOR A
colorful
LIFETIME

CONSOWELD
decorative laminates®

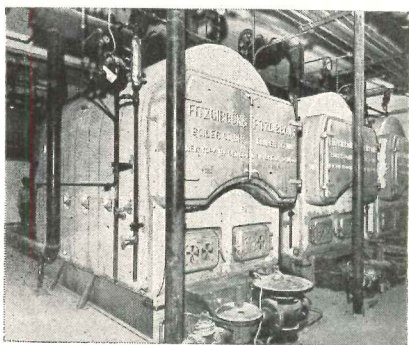
PLASTICS DIVISION • CONSOLIDATED WATER POWER & PAPER COMPANY
WISCONSIN RAPIDS 13, WISCONSIN

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heats the big jobs!



ALBUQUERQUE HIGH SCHOOL gracing one of New Mexico's fastest growing cities . . .



Boiler room of the new High School.
Architect: Louis G. Hesselden, Albuquerque.
Heating Contractor: Bonded Plumbing & Heating Co., Albuquerque.

THREE FITZGIBBONS STEEL BOILERS heat this new and impressive educational building in up-and-coming Albuquerque. The boilers are natural gas fired, but with coal grates at hand for quick change-over should emergency require.

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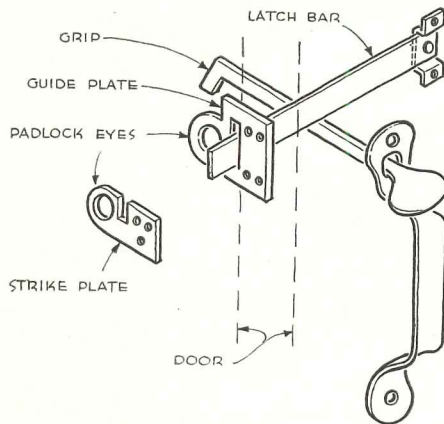
City: Zone: State:

HARDWARE-2: Types of Locks and Latches

(Continued from page 146)

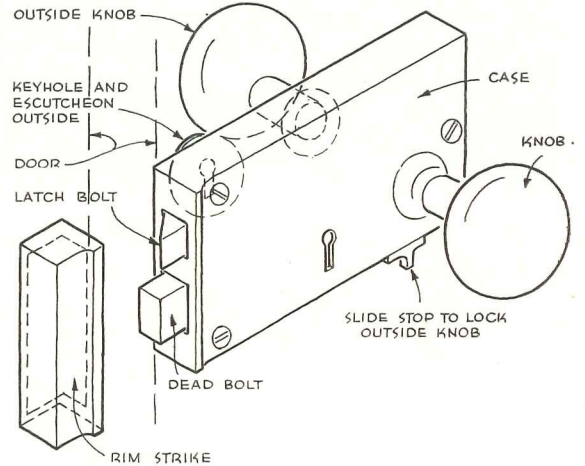
THUMB LATCH

Oldest type; simple to install; difficult to adjust; may be padlocked. Made generally. Often used instead of outside knob for period front doors.



RIM LOCKS & LATCHES

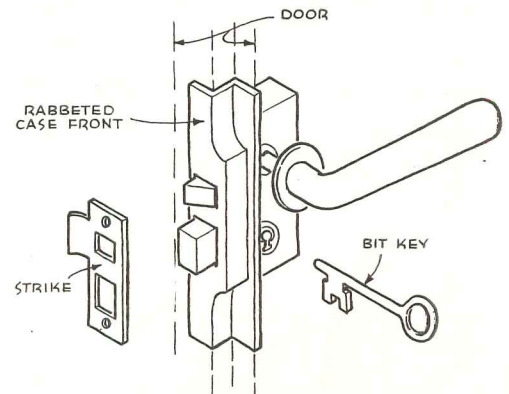
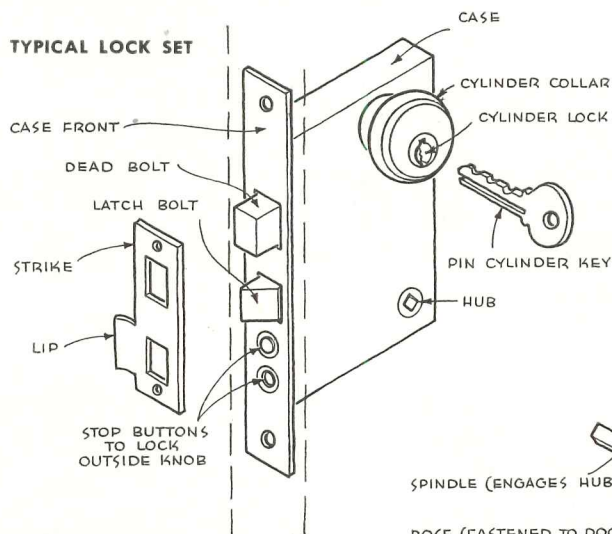
Case and strike both mounted on face of door and trim without mortising; colonial design.



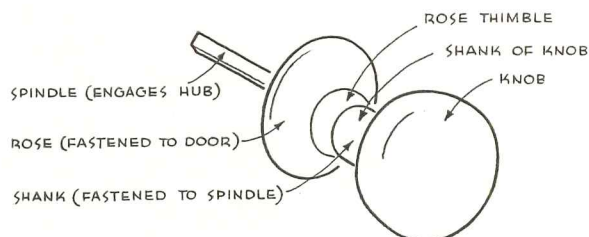
OTHER TYPES, SUCH AS RIM NIGHT LATCHES, OFTEN USED IN REMODELING WORK.

MORTISE LOCKS & LATCHES

Developed historically from rim types; large mortise makes for lengthy installation in wood doors; hollow metal doors easily fabricated to template to receive case, cylinder and spindle. Size of case and accessibility of mechanism make economically possible the maximum number and variety of key and latch functions. Made generally.



TYPICAL LOCK SET WITH RABBETED FRONT & LEVER HANDLE FOR DOUBLE, NARROW STILE DOORS



TYPICAL KNOB

(Continued on page 153)

Used in Foremost Buildings Everywhere

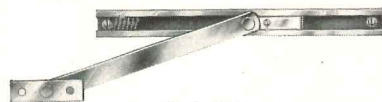
G-J DOOR DEVICES

- 1 A Complete Line
- 2 Proved in Service
- 3 Known for Distinction

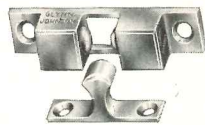
For Any School Door Requirement

At a Complete Price Range

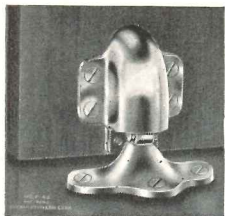
- ✓ Entrance
- ✓ Vestibule
- ✓ Classroom
- ✓ Stairwell
- ✓ Gymnasium
- ✓ Closet
- ✓ Office
- ✓ Transoms



G-J 400
Concealed Transom Adjuster



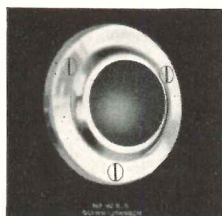
G-J 21A
4-Way Catch



G-J F-40
Door Holder
and Bumper



G-J FB-13
Dome Type
Door Bumper



G-J WB-5
Wall Type
Flush Bumper



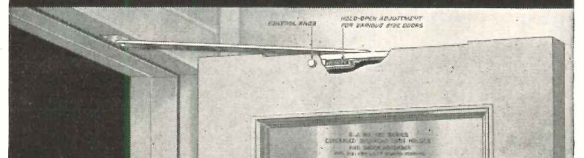
G-J F-20
Door Holder
and Bumper



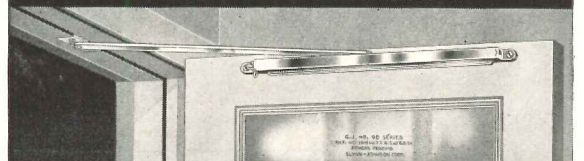
G-J F-9
Door Holder
and Bumper



G-J No. 4
Hercules Door Holder



G-J 100
Concealed Overhead Door Holder



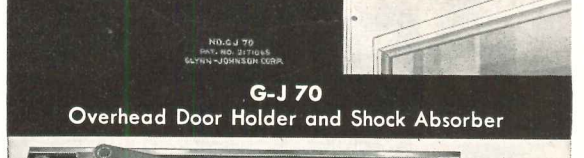
G-J 90
Surface Type Overhead Door Holder



G-J 80
Overhead Door Holder and Shock Absorber



G-J 70
Overhead Door Holder and Shock Absorber



G-J 500
Concealed Overhead Door Stay and Shock Absorber

For detailed description and applications of these devices, refer to our general catalog.



GLYNN-JOHNSON CORPORATION

Builders' Hardware Specialties for Over 25 Years

4422 N. Ravenswood Ave.,

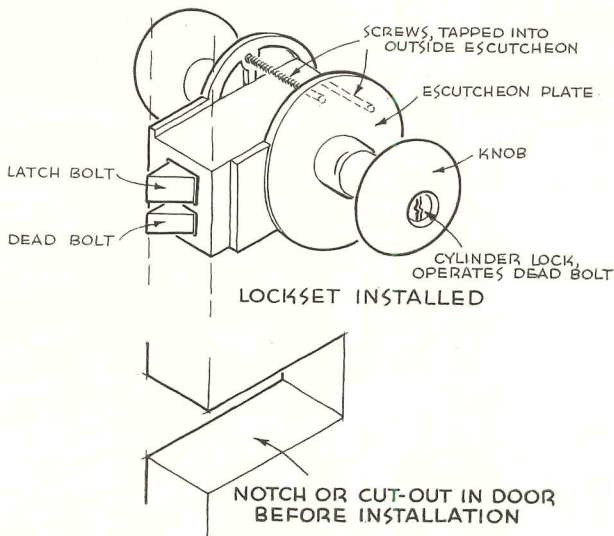
Chicago 40, Illinois

HARDWARE-3: Types of Locks and Latches

(Continued from page 151)

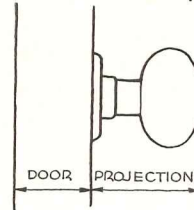
UNIT LOCKS

Complete factory assembly eliminates much adjustment on job. Unit slid into notch cut on job (wood) or prepared at shop (metal doors). Dead bolt may be omitted to make simple latch set to match. Lock-set also made without dead bolt but with button in inside knob to prevent outside knob from turning (for bathroom, bedroom, etc.); made by relatively few manufacturers.



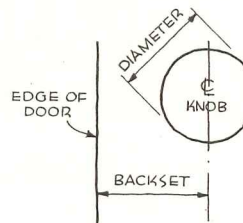
BACKSETS & PROJECTIONS

NORMAL KNOBS



KNOB PROJECTION USUALLY
2 1/8" TO 2 1/2"

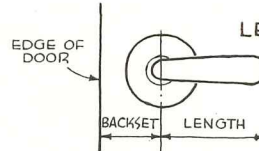
KNOB DIAMETER USUALLY
1 3/4" TO 2 1/4"



BACKSETS NORMALLY BETWEEN
2 3/8" AND 2 3/4"

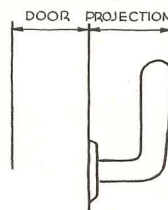
NARROW BACKSETS AVAILABLE
AS SHORT AS 1" FOR NARROW
STILE DOORS, FRENCH DOORS, ETC.
LEVER HANDLES USUAL WITH THESE

EXTRA LONG BACKSETS (5", 7", 10"
AND UP TO HALF WIDTH OF DOOR)
AVAILABLE FOR CYLINDRICAL
LOCK SETS.



LEVER HANDLES

LENGTH OF HANDLE VARIES
FROM 2" TO 4"

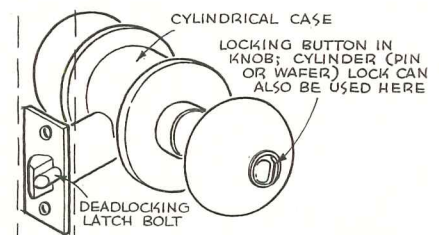
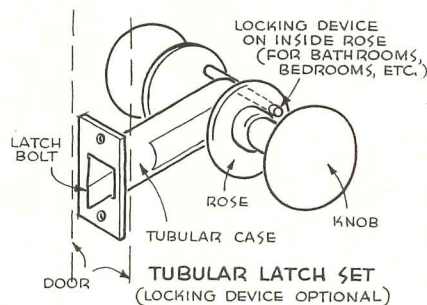
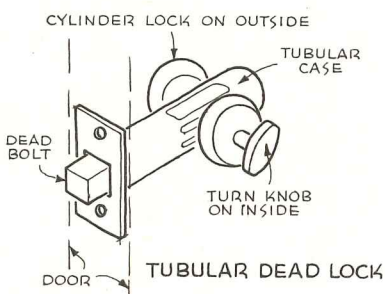


PROJECTION OF LEVER HANDLES
VARIES FROM 1 1/8" TO 3" OR MORE
(2" ± MOST USUAL)

NOTE - LEVER HANDLES REQUIRE
AUXILIARY SPRING IN MECHANISM
TO RETURN HANDLE TO
HORIZONTAL POSITION

BORE-IN LOCKS & LATCHES (TUBULAR & CYLINDRICAL TYPES)

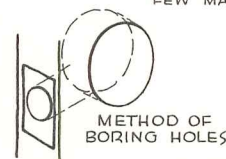
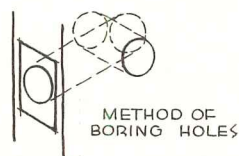
Simple to install in wood doors; only two holes to bore and shallow mortise for case front; metal doors also can be easily fabricated to receive these types.



CYLINDRICAL LOCK SET
ALSO AVAILABLE AS SIMPLE LATCH SET
AVAILABLE WITH LONG (5", 7", 10" ETC.) BACKSET

SEPARATE TUBULAR LOCK SETS AND LATCH SETS MADE BY MANY MANUFACTURERS.

THIS TYPE MADE TO DATE ONLY BY A
FEW MANUFACTURERS.



AT 75 . . . A MOST EFFECTIVE BEAUTY TREATMENT!

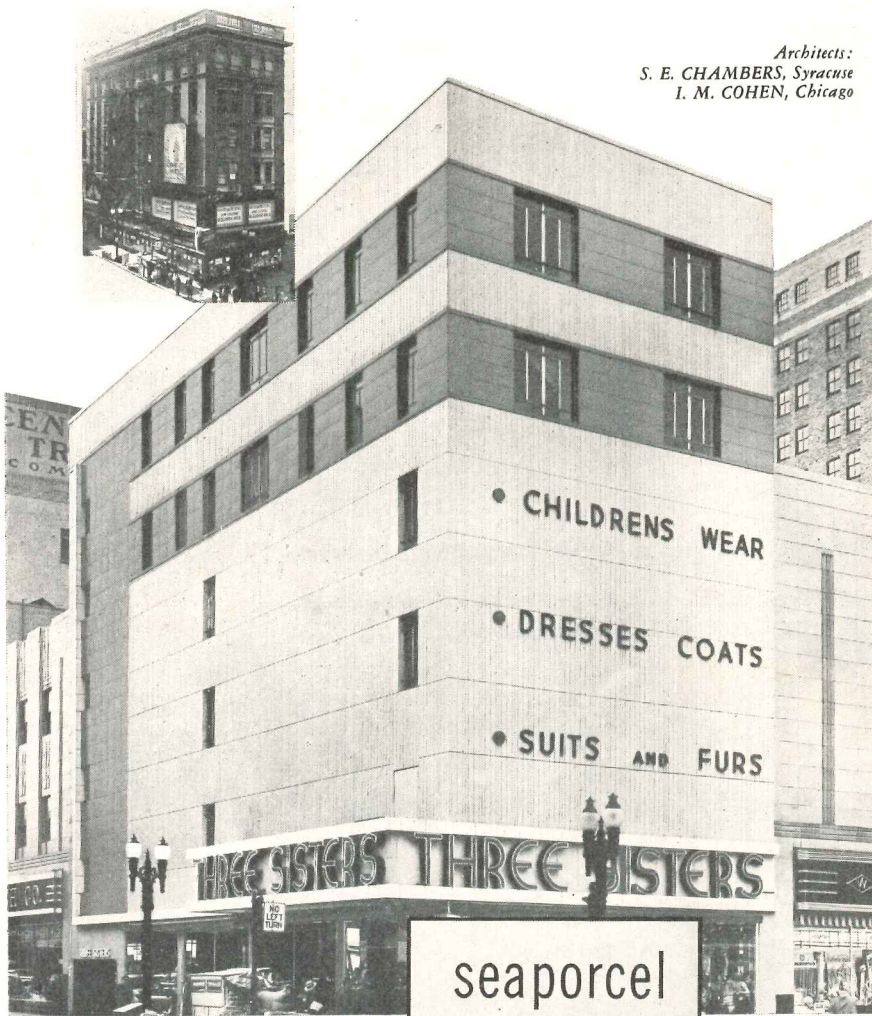
*new beauty • added sales with
architectural porcelain enamel by*

seaporcel*

In the heart of Rochester, N.Y., stands the 75-year-old Three Sisters Building. Look at it *before*. Look at it *today*, with its handsome new facade of SEAPORCEL* Porcelain Enamel.

Covered entirely with SEAPORCEL, in a harmonious blend of colors, the building looks good . . . inviting to *shop in!* Fluted area, both elevations, is in buff semi-matte finish. Flat panels between windows are light green. Protruding fin and sign background are white, with letters in burgundy semi-matte finish.

WRITE TODAY for detailed information on applications, current jobs, and a free sample of a "shaped" part in rich terra cotta finish.



*Architects:
S. E. CHAMBERS, Syracuse
I. M. COHEN, Chicago*

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LONG ISLAND CITY 1, N.Y.
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SEAPORCEL CORPORATION OF CALIFORNIA
Represented by McFarland Co.,
1206 West 7th St., Long Beach 3, Calif.

SEE OUR
CATALOG IN
SWEET'S

*Reg. U.S. Pat. Off.

THE RECORD REPORTS

(Continued from page 22)

the new highway are planned to provide easy access to the Embankment.



Acme Photo

George Howe, F.A.I.A.

NAMED TO YALE POST

George Howe, F.A.I.A., of Philadelphia and co-designer of the first modern office building in the United States, has been appointed chairman of the Yale University Department of Architecture. He succeeds Harold D. Hauf, recently named editor-in-chief of the ARCHITECTURAL RECORD.

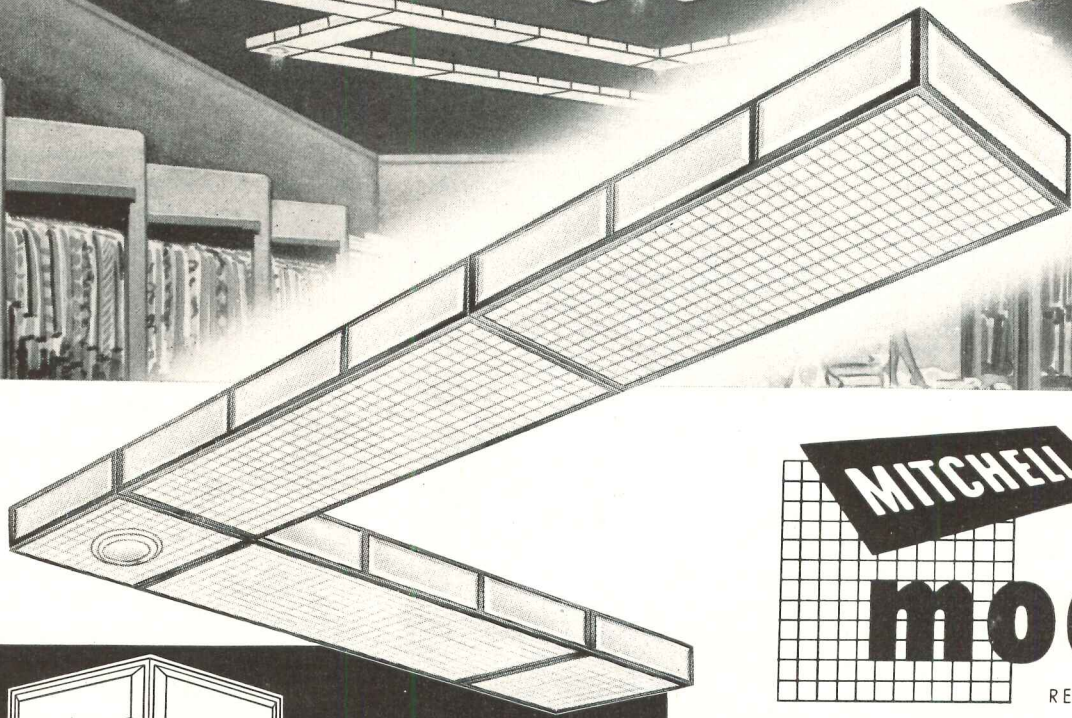
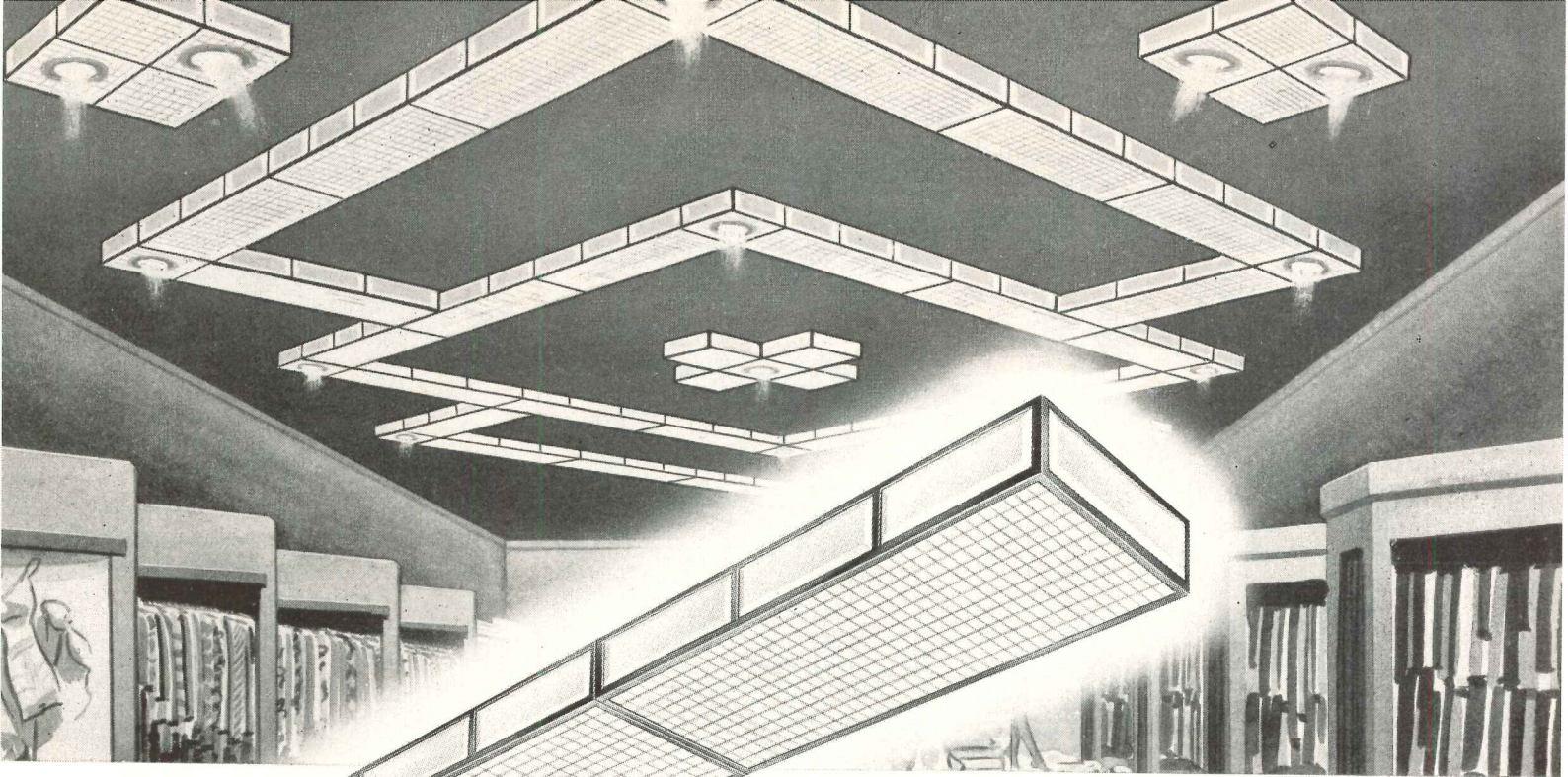
Mr. Howe will join the Yale faculty upon completion of his present work in Italy where he is serving as architectural adviser to the American Academy in Rome and as architect to the American Consulate in Naples. In 1932 with William Lescaze, he designed the 33-story Philadelphia Savings Fund Society building, first air conditioned modern office building. Mr. Howe is also well known for his work with the Public Buildings Administration during the war and with low-cost and wartime housing projects. He is a graduate of Harvard University and the École des Beaux Arts.

AEC SUBURBAN HOUSING

New procedure in planning and construction of a self-contained community has been developed with the building of White Rock, N. M., first of a number of suburbs to be constructed outside Los Alamos, the Atomic Energy Commission wartime atomic city.

Completed in less than eight months after breaking of ground and costing less than half the unit cost of any known housing project built by government or private industry in the semi-permanent type field and under like conditions, the project is a community of real homes, dormitories, trailer areas and contains a

(Continued on page 156)



REG. U. S. PAT. OFFICE

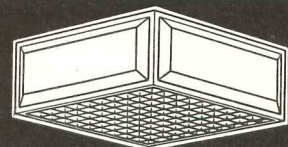
Revolutionizes Commercial Lighting Installations!

For the First Time! All the Advantages of the Finest Custom-Fitted Installations Using Low Cost, Simply Installed Stock Units!

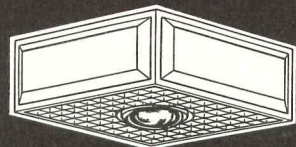
It's amazing! See what these 4 simple, low-cost "building blocks of light" accomplish *for the first time!* Custom-fitting MITCHELL MODULE makes possible unlimited 90° lighting patterns, fits any ceiling regardless of shape or size, mixes all light sources in one harmonious system, provides equal low brightness throughout. MODULE *really* puts the light where it's needed—is recognized and acclaimed by leading authorities as truly *superior* lighting. There's never been anything like it before. For full details, write today.

Only MITCHELL makes MODULE

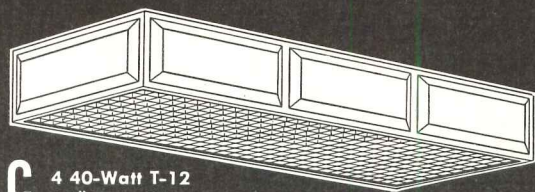
MITCHELL MANUFACTURING COMPANY
2525 N. CLYBOURN AVE., CHICAGO 14, ILLINOIS
Send full details on MITCHELL MODULE.



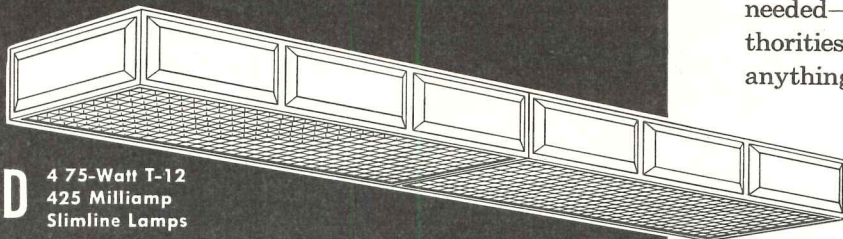
A 4 14-Watt T-12
15" Type F Lamps



B 1 32-Watt 12" Circline
Lamp, & 1 PAR Spot
or Flood Lamp



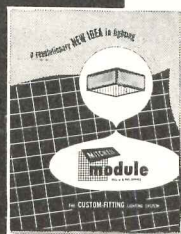
C 4 40-Watt T-12
48" Type F Lamps



D 4 75-Watt T-12
425 Milliamp
Slimline Lamps

these 4 modules
are the "building
blocks" of the
Mitchell Module
Lighting System

Write today for the free 20-page MODULE brochure which gives every detail of this revolutionary new lighting development. Use coupon at right.



Firm Name _____

Address _____

City _____ Zone _____ State _____

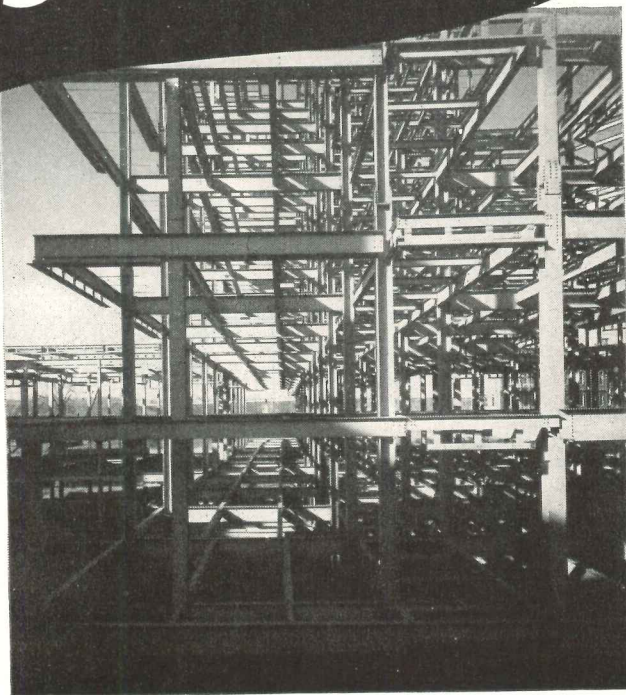
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with

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Industry-proved Coating Rustproofs Metal Against Moisture Damage in Sealed Spaces

For structural protection, specify the use of Rust-Oleum on all iron and steel — particularly in inaccessible areas where condensation causes rust. Rust-Oleum positively stops rust and adds years of life to structural members, pipes, sheet metal, etc. which are difficult or impossible to reach in normal maintenance.

Indoors or out — Rust-Oleum seals metal with a tough, pliable, destruction-proof coating. Originally developed to resist the highly corrosive effects of salt water and salt air, under tough sea-faring conditions, Rust-Oleum gives lasting protection where ordinary materials fail. It's *your* best answer to all rust problems.

We will gladly offer specific recommendations on Rust-Oleum application and uses, if you will give us full information as to technical requirements. See the complete Rust-Oleum catalog in Sweet's, or write for a copy.

PERSONAL — Do you have a rust problem? We'll be glad to send a free sample for a test application on your car or at home. Be sure to state color preference. There is no obligation, of course.

Rust-Oleum is available through industrial distributors in most principal cities



RUST-OLEUM CORPORATION

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Evanston, Illinois

THE RECORD REPORTS

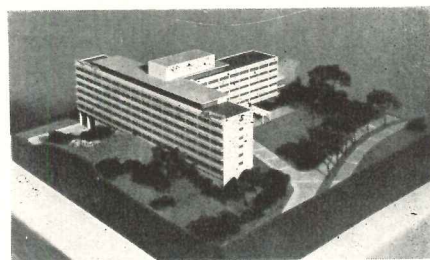
(Continued from page 154)

church, school, police and fire station, post office and all stores needed to supply goods and services for a city of 5000 population.

A complete operating procedure was planned in advance by the New Mexico Housing Co., of Santa Fe, which served as architects and engineers. Walter W. Cook & Associates, architects and engineers, of Dallas, and Carter and Burgess, engineers, of Fort Worth, served as associates on the project.

With \$4 million available for the construction the bids received were enough less than that to provide addition of 40 more houses, several more buildings in the service center and, with the amount left over, to bring water and electricity to White Rock from Los Alamos. Cost comparisons revealed that the project was constructed at a unit cost of \$1010 per occupant or \$2080 per worker housed.

All residential units contain pre-cut and panelized floors, walls (including both exterior and partitions), ceilings, roofs and gables. Interior finish was plywood in all but staff houses which contained sheet rock. All houses had double flooring. Exterior finish was asbestos shingle and all roofs were of composition shingle.



Fennar Photo

New voluntary hospital at Greenwich, Conn. By Skidmore, Owings & Merrill

NATIONAL HOME WEEK

National Home Week, sponsored by the National Assn. of Home Builders, was celebrated Sept. 11-17 in communities throughout the nation with displays of newest construction methods, how homes are built, how whole neighborhoods are developed and what the newest homes contain in furnishings and decoration. Apartment projects as well as individual houses were displayed. In Chicago, 90 new homes, completely furnished, went on display. In Pittsburgh a show was put on by the use of an

(Continued on page 158)



Floor of Northern Hard Maple, 80 x 100 feet, a dual-purpose innovation which combines gymnasium and roller-skating rink, at Archbishop Stepinac High School, White Plains, N. Y.—an interesting development in supervised recreation. Eggers & Higgins, Architects, New York, N. Y.



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Good Judgment

in the bright beauty, endurance and economy of
NORTHERN HARD MAPLE

Formed to conserve the natural supply and to raise and stabilize the mill standards of genuine Northern Hard Maple Flooring, the **MFMA** has, naturally, watched and recorded for many years the performance of the thousands of fine Maple Floors that have been laid in American institutions, residences, stores, offices and factories.

MFMA records prove that true economy and thorough satisfaction are assured by a well-laid, properly-finished floor of Northern Hard Maple. *It reflects good judgment.* Northern Hard Maple is close-grained, tough, strong, rigid. It is truly resilient. It is amazingly resistant to denting by pointed impact or pressure, and to abrasion by scuffing. It is

non-splintering. It is readily stained to many varied tones, and it is brightly beautiful without any stain.

Second Grade, Second-and-Better Grade and Third Grade Northern Hard Maple, **MFMA**-marked, provide very appreciable economies, too, at no sacrifice of performance characteristics.

For full data, see Sweet's, Arch., 13/g/6—Eng., 4/5/22. Write for latest listing of **MFMA**-approved finishing products and processes. Address—

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 Room 363—46 Washington Boulevard
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MICHAELS

"Time-Tight"

Display Cases



When you specify Michaels "Time-Tight" Display Cases you may be sure of perfection in exhibition. In Michaels cases exhibits stand out like jewels in a beautiful setting. Visibility is perfect from every angle. Displays are kept clean and safe, too, because Innerlocking Frames, an exclusive feature, keep exhibits free from dust, and prevent handling or theft. Michaels "Time-Tight" Cases are available in a wide range of styles and sizes to meet virtually all exhibition requirements. Or special cases will be designed to meet individual specifications.

Every architect should have a complete file on Michaels "Time-Tight" Display Cases. Write for literature containing details on structural features, case styles, various lighting arrangements and other specifications.

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Bank Screens and Partitions
Welded Bronze Doors
Elevator Doors
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Check Desks (standing and wall)
Lamp Standards
Marquises
Tablets and Signs
Name Plates

Astragals (adjustable)
Stair Railings (cast and wrought)
Wrought and Cast Radiator Grilles
Grilles and Wickets
Kick and Push Plates
Push Bars
Cast Thresholds
Extruded Thresholds
MI-CO Parking Meters
Museum Trophy Cases

The MICHAELS ART BRONZE Co., Inc., 234 Scott St., Covington, Ky.

★

THE RECORD REPORTS

(Continued from page 156)

outdoor exposition area for displays in county fair manner. San Franciscans combined their event with "garden week" for a colorful combination.

HOBART BROWN UPJOHN

Hobart Brown Upjohn, Architect, died Aug. 23 in Scarsdale, N. Y. He was 73.

Mr. Upjohn was a graduate of Stevens Institute of Technology and the Polytechnic Institute of Brooklyn. He was head of a firm founded at New Bedford, Mass. in 1833 by his grandfather, Richard Upjohn, who designed Trinity Church in New York in 1839. Himself noted for his church work, Mr. Hobart Upjohn in 1935 supervised the restoration of the Trinity Church tower and in 1932 drew the plans for All Souls Unitarian Church in New York City. Mr. Upjohn was awarded the diploma of merit at the International Exposition at Turin, Italy, for the Village Chapel at Pinehurst, N. C., the Chapel of the Cross at Chapel Hill, and the library at North Carolina State College.

ON THE CALENDAR

Through Oct. 10: 3rd Annual Chicagoland Home and Home Furnishing Festival, Chicago, Ill.

Through Nov. 20: "For Modern Living," exhibition of contemporary design in home furnishings and objects, Detroit Institute of Arts, Detroit, Mich.

Through Dec. 4: 20th Anniversary Exhibition: Modern Art in the Modern World, Museum of Modern Art, New York City.

Oct. 10-14: First Pacific Area National Meeting, American Society for Testing Materials, Hotel Fairmont, San Francisco.

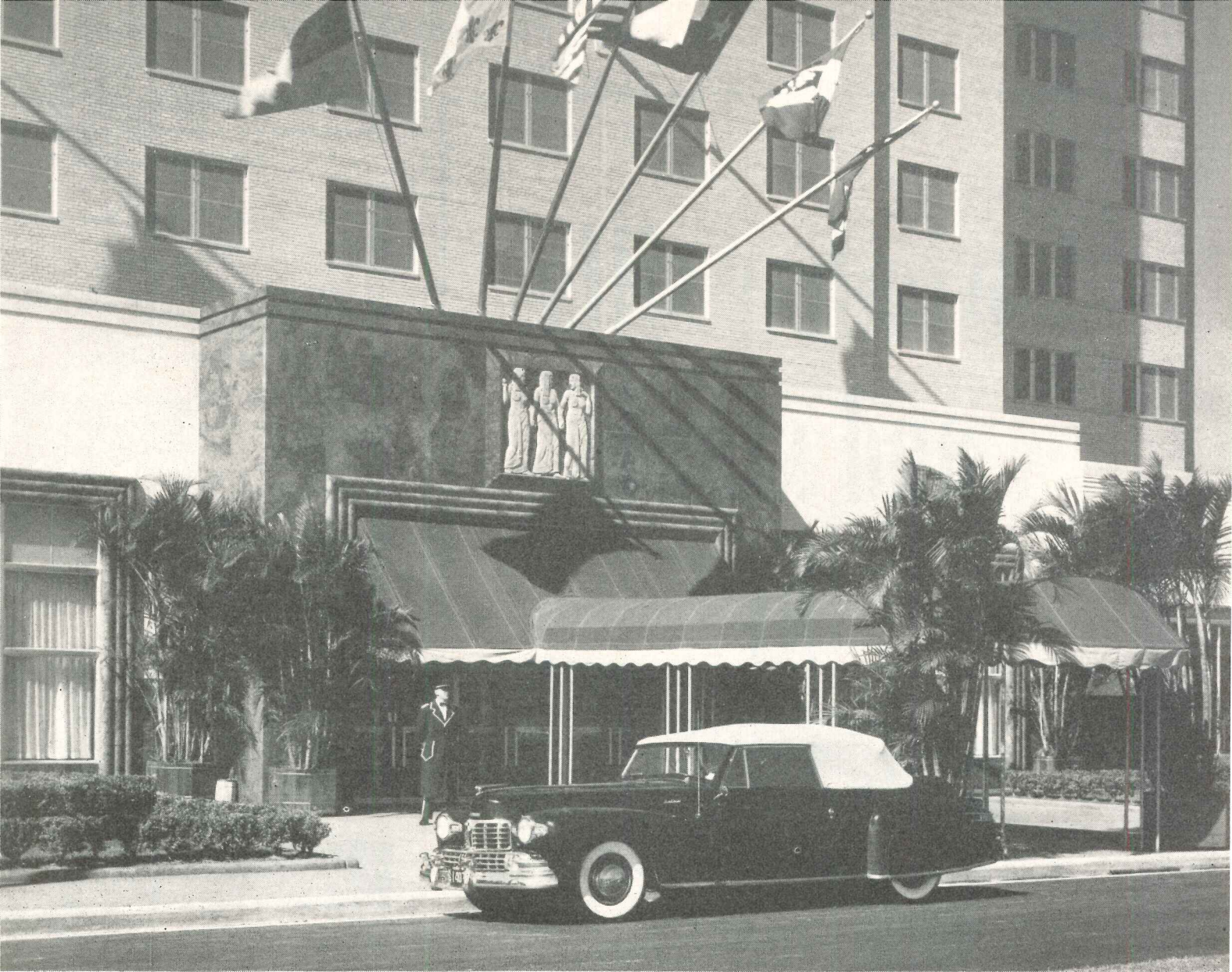
Oct. 17-21: Midwest General Meeting, American Institute of Electrical Engineers, Netherland Plaza Hotel, Cincinnati, Ohio.

Oct. 17-21: 31st National Metal Congress and Exposition, American Society for Metals, Cleveland, Ohio.

Oct. 20-22: Convention of the New York State Assn. of Architects, Rochester, N. Y.

Oct. 24-28: 37th National Safety Congress and Exposition, featuring

(Continued on page 160)



A COOL \$20,000,000

Glenn McCarthy's fabulous hotel, "The Shamrock"—new \$20,000,000 Aladdin's palace in Houston—has given rise to hundreds of exciting stories.

Especially exciting are the 18 completely air conditioned stories that make this wonderful new hotel a miracle of comfort from lobby to penthouse.

That was because equipment—Trane-built to engineers' rigid specifications—came into the picture. Making possible the world's most completely individualized air conditioning system. It heats, cools, dehumidifies every floor of "The Shamrock".

Here's what it took to do the job. Over 1200 Trane-built

room units. 25 Trane Climate Changers and dehumidifiers. Dozens of Trane heating and cooling coils, convectors, unit heaters. All tailor-made to exacting specifications by the makers of the same equipment that makes air more efficient, more comfortable, more usable in thousands of stores, offices, plants.

You may not want to cool a hotel: but if you have an air problem, remember that Trane engineers know air. How to warm it, cool it, dry it, humidify it, clean it or move it. Your local Trane representative will be glad to work with you on your own projects.

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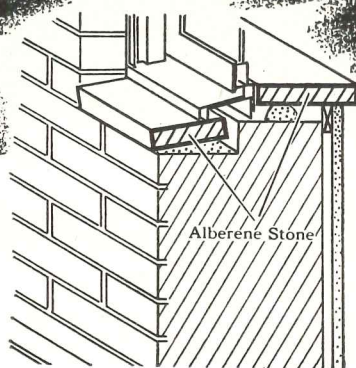
Manufacturing Engineers of Heating and Air Conditioning Equipment . . . Offices in 75 Cities.

*Wyatt C. Hedrick, Architect and Engineer, Houston • Charles L. Kribs, Jr., Air Conditioning Engineer, Houston • Stone and Webster Engineering Corporation, Construction Managers, Boston
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THE RECORD REPORTS

(Continued from page 158)

home safety sessions, Morrison Hotel, Chicago, Ill.

Oct. 24-29: Second Annual Fall Market, National Assn. of Summer Furniture Manufacturers, Chicago, Ill.

Nov. 2-4: Fall Meeting, American Society of Civil Engineers, Washington, D. C.

Nov. 4-13: 24th Arizona Art Exhibition, Arizona State Fair, Phoenix, Ariz.

Nov. 13-16: 16th Annual Meeting, National Assn. of Housing Officials, Copley Plaza Hotel, Boston, Mass.

Dec. 4-10: 7th Panamerican Congress of Architects, including an Industrial and Commercial Exposition of architectural construction materials and methods, Havana, Cuba.



Mexico City's first 40-story building. By La Latino-Americana, Cia. de Seguros Sobre La Vida, S.A., engineering staff

BUILDING NOTES

Aluminum Office Building

Completion of a thin-walled aluminum administration building at Alcoa's 52-acre sheet and plate rolling mill on the banks of the Mississippi above Davenport has been announced. This departure from traditional office building design and erection provides Alcoa with a four-and-a-half-story building consisting of hundreds of cast aluminum panels, fastened to the structural steel building frame and backed with light weight concrete insulating slabs only 4 in. thick.

So designed and constructed that it can readily be adapted to multiple story building construction in metropolitan areas, the structure has materially increased usable floor space within the building and may become the prototype of Alcoa's proposed 30-story skyscraper in Pittsburgh, scheduled to go under con-

(Continued on page 162)

Blo-Fan^{*}

ELECTRIC CEILING VENTILATOR



*Tops in Appearance * Tops in Performance*

Blo-Fan^{*} installs conveniently at the highest point over the range, where a fan belongs—where it blends into the room without interfering with the overall design—where it harmonizes with modern kitchen appointments and appliances.

Blo-Fan combines the best principles of both a fan and blower. The propeller element feeds air to the blower element, supercharging the vortex of the

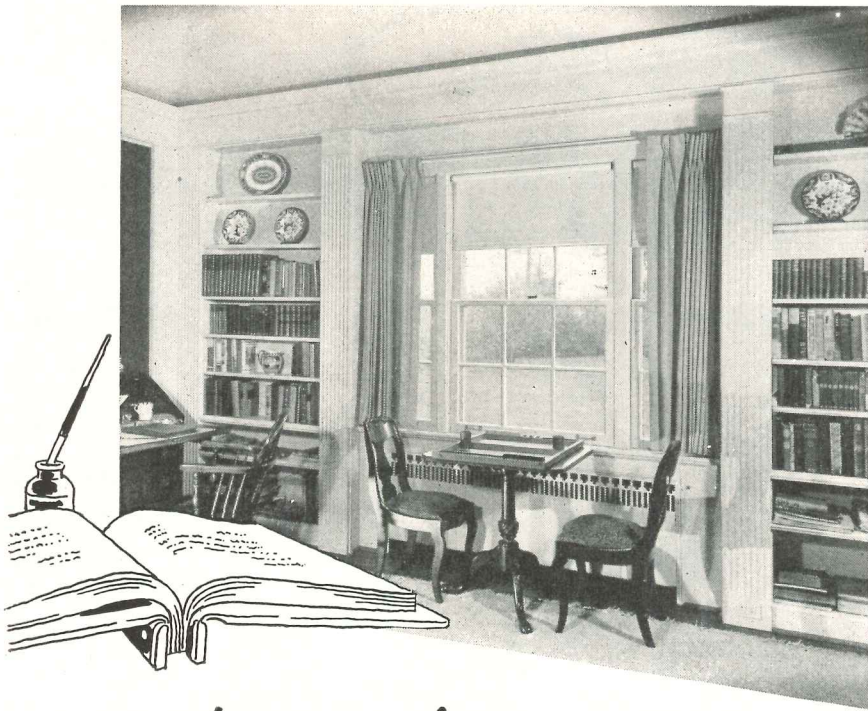
blower so the vanes are fully loaded for peak performance. That's why Blo-Fan delivers more air at moderate speeds than either a blower or a propeller-type ventilator.

*Trade Mark Reg.

SPOT VENTILATION AT THE POINT OF AIR POLLUTION
FOR KITCHEN...BATH...GAME ROOM...AND LAUNDRY

ALSO MANUFACTURERS OF *Pry-Lites* ... the modern recessed lighting fixtures with snap-on fronts

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Architect—Herman Lackner
Winnetka, Ill.

in the record
of experience... **WOOD** windows
prove their superiority!

EXPERIENCE—owner-experience in thousands of houses—has proved wood an ideal material for windows. For wood, with its natural insulating qualities, keeps rooms more comfortable by retarding the passage of heat and cold. Wood discourages condensation and frosting... wood provides an excellent bonding surface for all finishes... lastingly holds any decorative treatment.

EXPERIENCE, too, explains the widespread preference for windows of Ponderosa Pine. Easily workable, Ponderosa Pine permits precision construction in stock-design windows. This same workability, plus a wide selection of sizes and designs in *all* window styles, affords you unlimited fenestration planning. Ponderosa Pine windows are available toxic preservative treated in accordance with tested standards—added protection where staining, decay, insect attack or humidity are problems.

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Ponderosa Pine
WOODWORK

Send for your copy of this new book! "Ponderosa Pine Woodwork for Today's Home" is a profusely illustrated booklet showing Ponderosa Pine windows, doors and other woodwork in actual room settings. Many illustrations are in full color. You'll find it worth while to keep a copy in your file as a source of ideas. Mail the coupon—there's no cost or obligation.

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Dept. SAR-10, 38 South Dearborn Street
Chicago 3, Illinois

Please send me a copy of "Ponderosa Pine Woodwork For Today's Home" (Please print)

Name.....

Address.....

City.....Zone.....State.....

THE RECORD REPORTS

(Continued from page 160)

struction in mid-1950. Harrison & Abramovitz, Architects, were designers of the Davenport structure and will draw plans for the Pittsburgh building.

Economy Housing Program

First construction in New York State under the National Economy Housing Program is under way with the erection of a Bailey Homes, Inc. development near Farmingdale, Long Island. The project will consist of 200 two-bedroom Cape Cod style homes priced at \$6990 and \$7290, including landscaped lot 100 by 60 ft., or larger, oversize kitchen with dinette space, range, oil-powered radiant heat, 4 closets and ceramic tile bathroom. Monthly carrying charges on the house, which is FHA approved, will be \$49.50 for 25 years.

New Gymnasium

Kelly & Gruzen, architects and engineers, have been commissioned to draw plans for a new modern gymnasium building adjacent to the Power Memorial High School at Amsterdam Ave. and 61st St., New York City. The new structure, which is to be built for the Christian Brother Institute, Inc., will contain, in addition to the usual handball and basketball courts, lockers, shower rooms and complete gymnasium facilities, an arena accommodating 2000 spectators.

University-Developed House

A house costing around \$5000 has been developed by the Engineering Experiment Station of Louisiana State University. Providing two bedrooms, the house is of concrete and concrete masonry construction and contains walls of 6 in., lightweight, steam pressure-cured concrete blocks, painted outside with two coats of water repellent paint and inside with one coat of primer and one of oil. Sink cabinet and cabinets over sink are metal. Roof is of trussed rafter design and house rests on concrete footings and 4 in. concrete slab floor.

Low Cost Industry Houses

Five-room, industry engineered homes are being sold to veterans for prices as low as \$6000, including land and utilities, James M. Ashley, president of the Producers' Council, has announced.

Having a floor area of 788 sq. ft., these

(Continued on page 164)

Here's Why It Pays To Specify

Pittsburgh Steeltex Lath For Plaster

You get low maintenance and high fire protection in your buildings with Pittsburgh Steeltex Lath for Plaster. This combination of galvanized welded wire mesh and absorbent backing makes possible positive embedment of the wire mesh and provides maximum *reinforcement* and protection against plaster cracks. Also this reinforcement has earned high fire ratings for

Steeltex including Underwriters' Laboratories, Inc. test R-2258.

In addition Steeltex provides a rigid troweling surface which speeds its application and saves plaster. For better plaster construction see our catalog in Sweet's or write for Catalog D.S. 130 to Dept. AR, Pittsburgh Steel Products Company, Grant Building, Pittsburgh 30, Pennsylvania.

PITTSBURGH STEEL PRODUCTS COMPANY

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THERE'S 27 YEARS OF PROOF BEHIND THIS FLOOR!

The architect of this building wasn't taking chances. He specified the floor of proved performance . . .

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When you specify Wright you specify all this:

Proved long life. Many WRIGHT RUBBER TILE floors, in heavy traffic service for 27 years, still look as good as new. When measured for wear, they show a potential life of over 100 years.

Proved low maintenance. Hundreds of large commercial users testify that WRIGHT RUBBER TILE has cut their cleaning costs by more than half — saving them the total cost of their floor in less than two years.

Proved foot comfort. Twenty-seven years of experience by thousands of users has proved beyond doubt that resilient

WRIGHT RUBBER TILE drastically reduces foot fatigue.

Proved over-all economy. Long life and low maintenance combine to make WRIGHT RUBBER TILE the most economical floor covering you can possibly specify.

Proved user satisfaction. In 27 years, Wright has built an unmatched list of enthusiastic users. When you write for samples, be sure to ask for a list of satisfied users in the application you are considering. WRIGHT MANUFACTURING CO., 5205 Post Oak Road, Houston 5, Texas.

WRIGHT RUBBER TILE

is made in two different types:

WRIGHTEX Soft Rubber Tile for homes, hospitals, churches and other installations where quiet is important.

WRIGHTFLOR Hard Surface Rubber Tile for offices, stores, restaurants and public buildings—wherever traffic is heavy and long wear is most important.

WRIGHT-ON-TOP Compression Cove Base

The ideal finishing touch for every flooring installation, WRIGHT-ON-TOP is available in black and all twenty field tile colors.

WRIGHT RUBBER TILE

FLOORS OF DISTINCTION

THE RECORD REPORTS

(Continued from page 162)

homes feature time-saving devices in construction, including the roof truss (which enables much of the inside work to be completed before partitions go into place) and use of modular materials.

AT THE COLLEGES

Special Courses

Two courses in housing and planning are being offered at the New School for Social Research, New York, for the fall term and in the spring Lewis Mumford, author and former professor of humanities at Stanford University, will deliver six lectures on "Goals for Urban Development."

Columbia University is offering evening courses in housing, planning and real estate for both the fall and spring semesters.

Faculty Appointments

Alfred Roth, of Zurich, will join the faculty of the Washington University at St. Louis, School of Architecture as critic in senior design.

H. T. Wijdeveld, Dutch architect and teacher, has been appointed visiting professor of architecture in the School of Design at North Carolina State College. He relinquishes a position as professor in the College of Architecture at the University of Southern California to accept the State College job.

Walter Sanders, of Sanders & Malsin, Architects, New York City, has been appointed professor of architecture at the University of Michigan. He will establish a branch office of the firm at Ann Arbor. The New York office of the firm will continue operations under the direction of Arthur Malson and Don Reiman, recently made an associate of the firm.

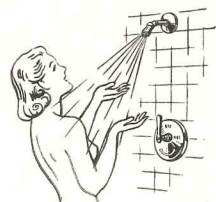
CONCRETE INSTITUTE AWARD

Charles S. Whitney, representing the firm of Ammann & Whitney, consulting engineers of New York and Milwaukee, has received the first annual award of the Concrete Reinforcing Steel Institute for his contribution to the advancement of reinforced concrete construction.

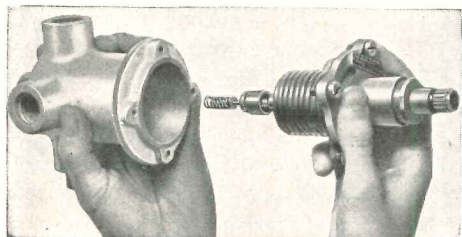
Whitney received the award on behalf of his firm for their paper entitled, "Thin Shell Concrete Structures." The award consisted of a certificate and \$500.

(Continued on page 166)

For SAFETY • COMFORT • ECONOMY



Bathers can really relax and enjoy a Powers regulated shower. No danger of scalding. No unexpected temperature changes.

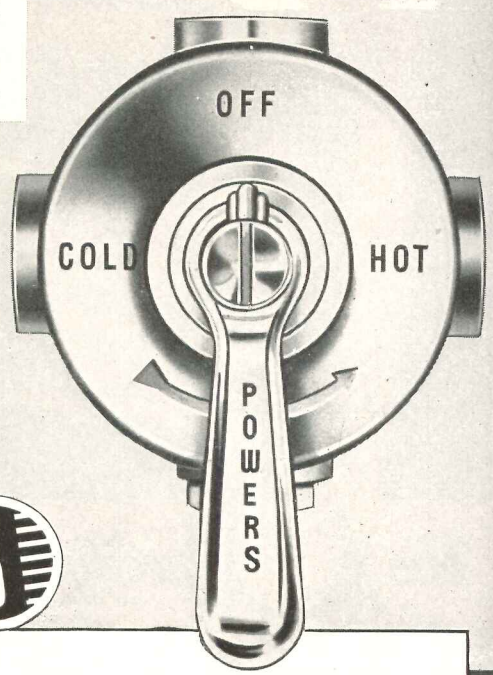


ONLY ONE MOVING PART

SIMPLICITY and durable construction insure many years of efficient carefree operation. Mixer body is made of bronze and parts subject to wear have a hard chromium finish.

Back in 1923 Powers introduced the first and original pressure equalizing type water mixer. Now it offers the SAFEST thermostatic water mixer made.

TYPE H MIXER For exposed piping $\frac{1}{2}$ " pipe connections. Capacity: 6 to 10 gals. per min. at 45 lbs. pressure. Dial diam. $3\frac{1}{4}$ ". Mixer for Concealed Piping has 6" diam. dial.

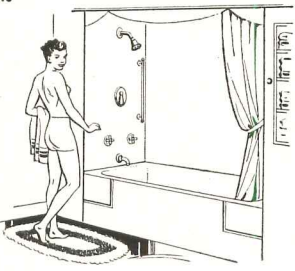
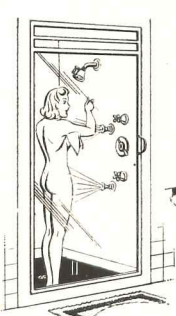


use

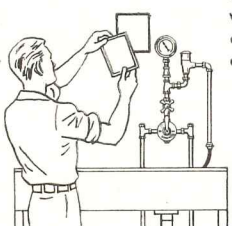
POWERS



For modern showers the Safety of Powers Mixers is indispensable.



Safest for use by children, the aged or infirm. Powers mixers are widely used in hospitals on hydrotherapeutic and infant baths.



Accurate within $\frac{1}{2}$ °F. Powers mixers are used by leading builders of X-Ray and color film developing units.



Thermostatic SHOWER MIXERS

they are SAFE against scalding caused by

1 PRESSURE or 2 TEMPERATURE

fluctuations in water supply lines

To assure the safety and comfort required of today's modern showers specify POWERS Type H Mixers.

Being *thermostatic* they give positive two-way protection against scalding or jumpy shower temperatures caused by pressure or temperature changes in water supply lines . . . two dangerous variables in all shower installations.

POWERS mixers are modern, really safe and non-scald. They're economical too. They save time and there is no waste of hot or cold water while waiting for a shower at the right temperature.

48HA

Phone or write our nearest office for Circular H48

CHICAGO 14, ILL. 2752 Greenview Ave. Phone BUckingham 1-7100
 NEW YORK 17, N. Y. 231 East 46th St. Phone ELdorado 5-2050
 LOS ANGELES 5, CAL. 1808 West Eighth St. Phone DUnkirk 2-4187

THE POWERS REGULATOR CO.
 OFFICES IN 50 CITIES • SEE YOUR PHONE BOOK
Over 55 Years of Water Temperature Control

(Continued from page 164)

**ARCHITECTURAL
ENGINEERING**
TECHNICAL NEWS AND RESEARCH

POURED RESILIENT FLOORING FOR HOUSES

WHEN hardwood flooring was in extremely short supply following the war, housing authorities sought a composition plastic flooring that would be attractive and durable and that could be poured in-place over concrete, wood, or steel subfloors.

One type of such flooring, approved by Federal Housing Authority, was composed of kiln-dried oak flour, asbestos fibers, and chemical binding agents. Chemically it belonged to the magnesite family of composition flooring. Another type of composition flooring, now on the market, has a base of liquid rubber latex, to which is added either cork or marble chips. Installation and finishing methods vary, but all types are said to answer the need for a floor that is resistant, wear-resistant, and easy to clean. All are considered permanent.

... mixed with magnesium oxychloride cement, poured-in-place and finished with a sander. Right: (1) Oakined, wood chips in oxy-... actual size: (1) Oakined, wood chips in oxy-... flooring with a cork chip filler, and (3) same with terrazzo effect. The rubber latex base sets hard yet resilient

The Specifying of your products

is Architectural Engineering. That is the area of building design where architecture and engineering merge, where problems of form and function are resolved in terms of actual building materials, equipment and systems.

Each month the architects and engineers who specify building products find in the *Architectural Engineering* section of *Architectural Record* a solid package of purely technical information on the close-linked subjects of building products and building design.

This exclusive editorial feature is one more reason why *Architectural Record* is first, among all architectural publications, in architect circulation, in consulting engineer circulation, in number of advertisers and total pages of advertising carried. *Architectural Record* is the *work-book of the architect-engineer*.



ARCHITECTURAL RECORD, 119 West 40th Street, New York 18, N. Y.

Please send me the following reports for my file on the building market and architectural advertising:

- | | |
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| <p><input type="checkbox"/> 6-month 1949 analysis of architect-engineer-planned work by dollar volume and numbers and kinds of projects.</p> <p><input type="checkbox"/> 6-month 1949 analysis of architectural advertising by product classifications and by publications.</p> <p><input type="checkbox"/> Who writes specifications? A survey of architectural offices.</p> <p><input type="checkbox"/> 30-month chart of advertising volume in the architectural field.</p> | <p><input type="checkbox"/> Six regional studies of coverage of planning and specifying activity.</p> <p><input type="checkbox"/> How "controlled-paid" circulation is influencing the sale of your product today.</p> <p><input type="checkbox"/> A simple summary of architect and engineer circulation, by publications.</p> <p><input type="checkbox"/> A report on reader preference studies in the architectural field.</p> <p><input type="checkbox"/> Pointers on writing architectural copy — a check list for advertisers.</p> |
|--|--|

NAME _____

FIRM _____

STREET _____

CITY _____

(Please clip to your letterhead)

OFFICE NOTES

Offices Opened, Reopened

Robert J. Bennett, Architect, announces the opening of offices at the Monongahela Bldg., Morgantown, W. Va.

George F. Hellmuth, Associates, Architects, have opened offices at the International Office Bldg., 722 Chestnut St., St. Louis, Mo.

Hollis Johnston, A.I.A., formerly of the offices of Stanton & Johnston, has opened a new office at 603-606 Concord Bldg., Portland 4, Ore.

Annette Yates Maier, Architect, announces the opening of her offices at 35 W. Market St., West Chester, Pa.

Emil J. Szendy, A.I.A., has established offices at 401 Euclid Ave., Cleveland 14, Ohio.

Robert I. Upshur, Architect, has opened an office for the practice of architecture at 608½ Harden St., Columbia, S. C.

Wallace and Clemmons, Architects and Engineers, have opened a new office at 1911 Division St., Nashville, Tenn.

Max J. Wolfram, Architect, has opened an office at 1005 W. Belmont Ave., Chicago, Ill.

New Addresses

The following new addresses have been announced:

Eugene D. Corwin, Architect, First National Bank Bldg., St. Paul 1, Minn.

William H. Elliott, Architect and Consulting Engineer, Old Kent News Bldg., Chestertown, Md.

Morton T. Ironmonger, A.I.A., 1229 E. Las Olas Blvd., Ft. Lauderdale, Fla.

Elections, Appointments

Howard P. Gerlach has been appointed vice president of John W. Harris Associates, Inc., builders. He will be in charge of the Chicago office of the firm.

Lester O. A. Johnson, Architect, James D. Murphy and George S. Fowler have been added to the technical staff of the Chicago Land Clearance Commission.

Maurice Mantel, formerly of the Ross Frankel Co., has been named architect of the store design division of Kelly & Gruzen, Architects and Engineers, New York.

(Continued on page 168)



Sumner Spaulding & John Rex
Architects

DOOR CLOSERS BY *LCN*
CLOSERS CONCEALED IN FLOOR

• SHOWROOM OF LUCIEN LELONG, INC., LOS ANGELES

LCN CATALOG II-E ON REQUEST • LCN CLOSERS, INC., 466 WEST SUPERIOR STREET, CHICAGO 10



Lever Bros. processing plant at Los Angeles, Calif., leaves much equipment in the open

NEW LEVER BROS. PLANT

A new \$25 million processing plant, largest of its kind ever to be built in the west, will be constructed on a 30-acre site seven miles east of downtown Los Angeles for Lever Bros. Co.

Facing the Santa Ana Freeway, the new plant will consist of two large manufacturing buildings joined by an office and service unit. One five-story wing will be devoted to soap finishing and packing; the other wing, which is six stories high, will be used for finishing and packing edible products put out by the company.

Designed by Wurdeman & Becket, architects, the plant includes a processing building, a steam generating plant, storage tanks, cooling towers and a hydrogen plant. Much of the processing equipment will be installed completely in the open with only the equipment requiring workers' attention under roof. Two-thirds of the site will be landscaped. The Bechtel Corp. is in charge of engineering and construction.

APARTMENT DESIGN COMPETITION

Cash awards amounting to \$5000 will be presented to the winners of a competition for the design of a suburban apartment building, sponsored by the Timber Engineering Co., an affiliate of the National Lumber Mfrs. Assn.

Approved by the committee on architectural competitions of the A.I.A., the competition calls for the design of an eight-family wood garden-type apartment building of wood frame construction and plot plan. Family size is to be generally that which would be encountered in a rental project catering to moderate income groups. The building may be up to two stories, but not over and may or may not include a basement, at the designer's discretion. There are no restrictions as to room size, number or shape but the competition is confined to the design of a single basic building, which may be an independent building or part of a larger apartment project.

Eligible for the competition are all architects, designers or draftsmen and students who will graduate from recognized schools of architecture in 1950. Awards will be in major and student categories with a \$1500 first prize in the major and a \$500 first in the student. Students' designs which equal or exceed the student's design for which it would qualify will receive the major award. Jury of award will consist of George W. Peticord, Jr., A.I.A., John M. Walton, A.I.A., and Edward R. Carr, builder.

**Your "Shortest Cut"
to the Finest Laboratory
... without wasting a Dollar!**



■ ■ ■
**Send for the New
KEWAUNEE BOOK
of
Hospital Casework &
Laboratory Furniture**

Includes typical floor plans
and elevation drawings

*A Few of the Many
Kewaunee Installations*

- St. Mary's Hospital, Rochester, Minn.
- Wesley Memorial Hospital, Chicago, Ill.
- Presbyterian Hospital, Chicago, Ill.
- City Hospital, Baltimore, Maryland
- Eye, Ear, Nose & Throat Hospital, New Orleans, La.
- Mobile Hospital, Mobile, Ala.
- Naval Medical Center, Bethesda, Maryland
- Veterans Hospital, Fort Hamilton, New York
- Greenbrier Hotel, White Sulphur Springs, W. Va.
- Mercy Hospital, Jackson, Michigan
- Hahnemann Hospital, Philadelphia, Pa.
- Flow Memorial Hospital, Denton, Texas
- Kings Daughter's Hospital, Staunton, Va.
- Marion County Hospital, Columbia, Miss.
- Divine Providence Hospital, Williamsport, Pa.
- Hospital of St. Raphael, New Haven, Conn.
- St. Albans Naval Hospital, St. Albans, New York
- Northern Indiana Hospital, Westville, Indiana
- St. Joseph's Hospital, Menominee, Mich.
- West Tennessee T. B. Hospital, Memphis, Tenn.

See what Kewaunee's method of mass-production and matched-unit assembly plan has to offer you. See how by reducing engineering and installation time we give you true economy without any sacrifice of quality.

For a laboratory of streamlined beauty, time-saving conveniences, and lasting service, equip with—

**Kewaunee Casework and
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*Write for the New Kewaunee Catalog of Hospital
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The services of Kewaunee Laboratory engineers are available to you without cost or obligation.



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COLOR DYNAMICS

Pittsburgh's new painting system utilizes the energy in color to make offices more attractive and efficient.



We'll gladly submit a **COLOR DYNAMICS** Survey to go with your plans . . . Free and without obligation!

THERE is no longer reason for the depressing monotonies found so often in commercial structures of all types. Pittsburgh COLOR DYNAMICS enables those responsible for the planning and construction of hotels, hospitals, schools and office buildings to specify with certainty color arrangements that retard fatigue, increase safety and improve efficiency of employees.

This new system of painting takes into consideration many factors upon which an accurate color plan must be based. We'll gladly make a *scientific color engineering study* of buildings on which you are working at your request—free and without obligation on your part.

COLOR DYNAMICS is based upon the influence of the *energy in color* upon people. Laboratory tests have proved that color can be used to help them relax, feel more cheerful, inspire trust and confidence, create better feeling among employees.

With COLOR DYNAMICS you can make offices or living quarters seem more spacious and attractive. Rooms can be made to appear longer or wider, ceiling higher or lower, halls brighter and more cheerful.

For a complete explanation of what COLOR DYNAMICS is and how it works, get our free, profusely illustrated booklet. Send the attached coupon.

There's a Pittsburgh Paint For Every Painting Need

WALLHIDE—PBX, extra-durable; SEMI-GLOSS, for higher sheen; FLAT, for velvet-like finish; GLOSS, for severe service and frequent cleaning.

LAVAX PBX ENAMEL—durable finish for interior use. Dries quickly to an eggshell finish that eliminates glare. For wood, metal or other surfaces.

FLORHIDE—for floor surfaces; can be scrubbed repeatedly with soap solutions.

Pittsburgh Plate Glass Co., Paint Div.
Dept. AR-109, Pittsburgh 22, Pa.

Please send me a FREE copy of your new revised and enlarged Booklet, "Color Dynamics."

Please have your representative call for a Color Dynamics Survey without obligation on our part.

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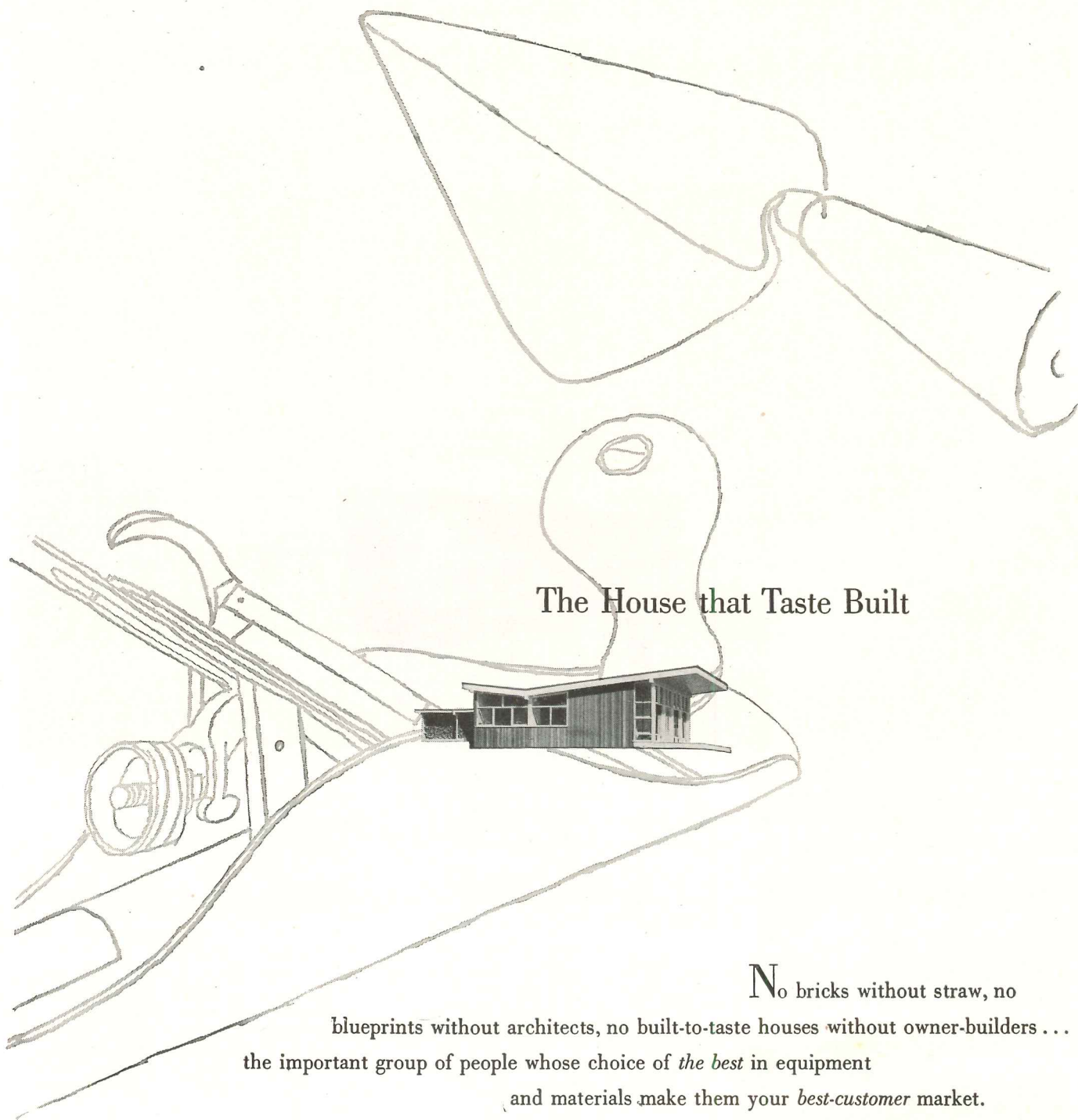
PITTSBURGH PAINTS

PAINTS • GLASS • CHEMICALS • BRUSHES • PLASTICS

FREE BOOKLET! →



PITTSBURGH PLATE GLASS COMPANY



The House that Taste Built

No bricks without straw, no blueprints without architects, no built-to-taste houses without owner-builders . . . the important group of people whose choice of *the best* in equipment and materials make them your *best-customer* market.

House & Garden points to more than 400,000 of them—year-round readers with top taste and top incomes* who are the acknowledged leaders in their communities, influencing nation-wide building trends. Reach this important group of people who have *the power to specify your product* through the magazine that sets the pattern for *the houses that taste builds*.

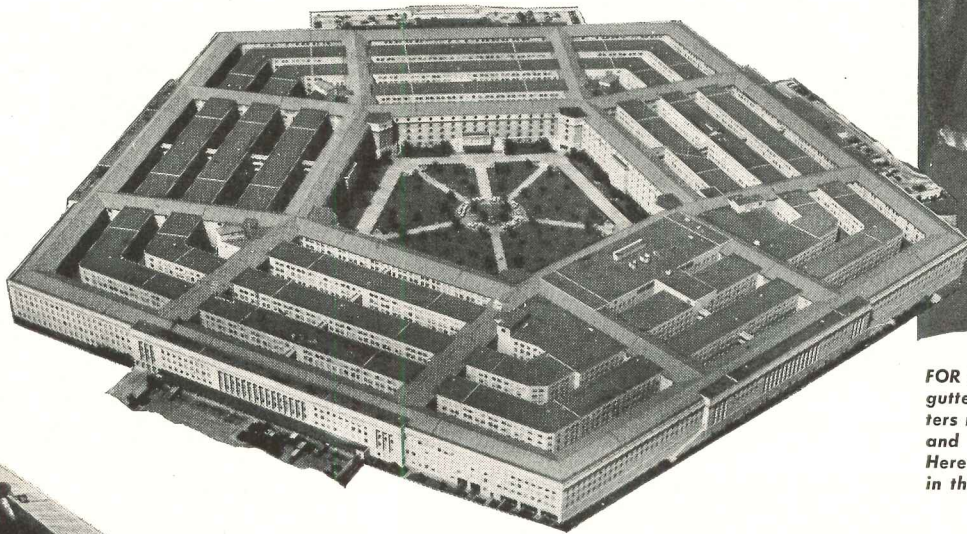
**reaching families with incomes of \$10,000 and over at the lowest advertising cost per page per thousand in its field.*

House & Garden

©1949. THE CONDÉ NAST PUBLICATIONS INC.

for the owner-builder market

Famous Pentagon gets *replacement gutters...*



FOR PERMANENT PROTECTION, the old gutters have been replaced with gutters made of strong, corrosion-resistant and economical Monel Roofing Sheet. Here a worker solders a riveted seam in the gutter lining.



...and this time they're **MONEL!**

INSTALLING A RIVETED AND SOLDERED section of Monel Roofing Sheet in the built-in gutter of the Pentagon's outer perimeter. Fabricator, Rupertus Sheet Metal Works, Washington, D. C., reports: "Some of the gutters were 55 inches in girth, but Monel was easy to fabricate and install."

There were two reasons why it was decided to put new gutters on the Pentagon Building.

Repairs to the existing gutters would have been costly. And — more important — repairs would have provided only temporary relief.

Replacement was the only permanent solution.

So replacement it was. And this time the gutters were fabricated of Monel* Roofing Sheet.

Advantages of Monel

With its low expansion rate, its high strength and toughness, its resistance to fatigue and corrosion, Monel Roofing Sheet assures "life-of-the-building" protection for the Pentagon. The new gutters are safe from damage by heat, cold, rain, snow, ice and airborne corrosives.

Use light-gauge sheet

Cost-wise, too, there were advantages in using easy-to-form Monel Roofing

Sheet on the Pentagon Building. Because of this nickel-copper alloy's greater strength and rigidity, it was possible to use a lighter-gauge sheet for the gutters.

As a result, material cost and installation cost were both reduced.

Get NEW architects' bulletin

Other benefits, too, go hand in hand with the use of Monel Roofing Sheet. You'll find them covered in our brand new bulletin, *Basic Application Data — Monel Roofing Sheet*.

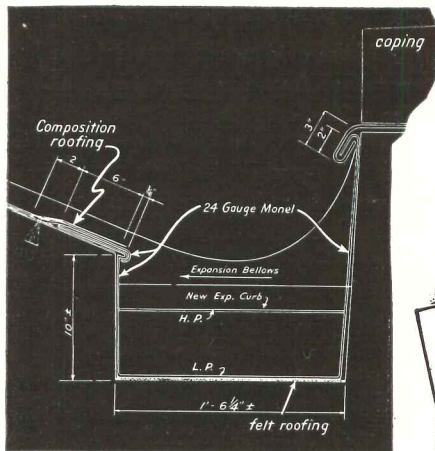
This new publication lists suggested gauges of Monel Roofing Sheet for principal building applications, reviews its characteristics, and tells about its relative cost and availability. Installation procedures are discussed and a sample specification wording provided.

Send for your copy — now.

*Reg. U.S. Pat. Off.

THE INTERNATIONAL NICKEL COMPANY, INC.
67 Wall Street, New York 5, N. Y.

* * *



DETAIL OF SECTION of built-in gutter showing how Monel Roofing Sheet was used.



MONEL...FOR THE LIFE OF YOUR BUILDING



Architectural Section
The International Nickel Company, Inc.
67 Wall Street, New York 5, N. Y.

I'd like to know more about durable, economical Monel Roofing Sheet. Please send me without obligation your new folder, *Basic Application Data — Monel Roofing Sheet*.

NAME.....

COMPANY.....

STREET.....

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

AR-10-49

NEWS FROM CANADA (Continued from page 10)

They will undoubtedly be convinced that the average architect is less a Howard Roark than a human being possessing creative talent and practical sense, plus ability to organize and supervise a building program.

Culture—Hot House Style

Culture, like economics, has its planners. Possibility that recommendations to be made by the Dominion Govern-

ment's newly constituted Royal Commission on National Development in the Arts, Letters and Sciences, may open the public coffers for worthy purposes has resulted in a plethora of briefs.

The latest comes from the National Federation of Canadian Artists, Vancouver, and proposes that Parliament establish a national cultural board. Art is not a luxury, the brief states, and cultivation of the arts "is an essential

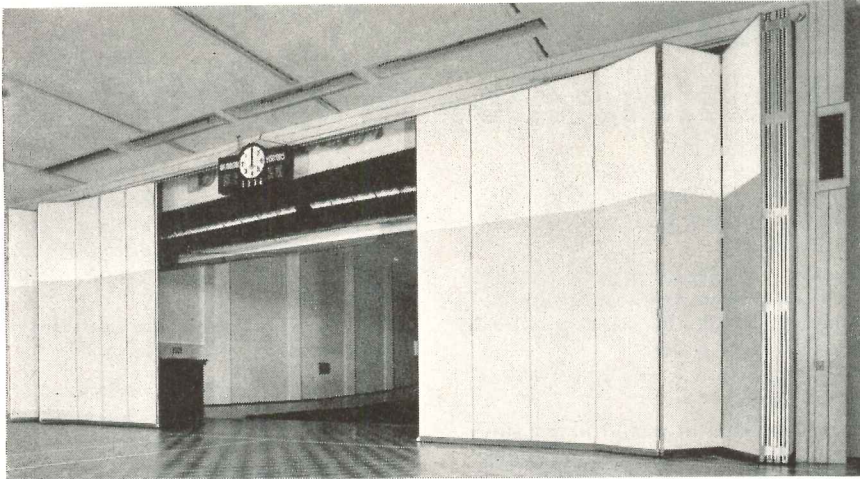
prerequisite to the development of a stable national culture."

A stable national culture is evidently highly desirable, since the Dominion Government is urged to get us one. Of course, in doing so the arts must not be "dominated, regimented or exploited to narrow ends." Such an admonition often means that, if taxpayers' money is forthcoming, there should be as few strings as possible attached to its spending.

Specifically, the Federation calls upon the Dominion Government to expand its Canadian Broadcasting Corporation, National Film Board and National Gallery, set up a national library and theater and establish regulatory bodies in the fields of drama, visual arts, letters, music and — architecture.



Space Savers...
FOR SCHOOLS LARGE OR SMALL



R-W DeLuxe FoldeR-Way Partition Automatic—Electric

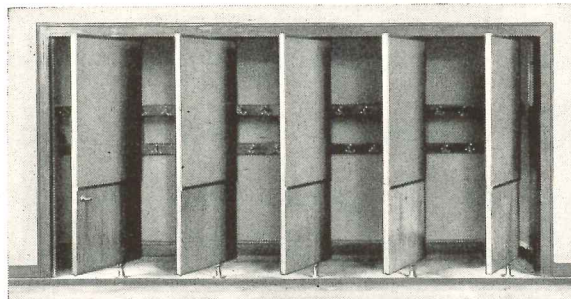
Specifically designed for school gymnasiums, auditoriums, stages, and other high or wide openings which must be closed against both light and sound, DeLuxe FoldeR-Way partitions by Richards-Wilcox

are completely automatic and cost less than many manually operated partitions. To economize in space and expenditures, consider R-W DeLuxe FoldeR-Way partitions in your building or remodeling plans.

R-W No. 883

Multiple Action School Wardrobe

An outstanding feature of Richards-Wilcox Classroom Wardrobes is that the entire unit is designed to avoid overcrowding. The hat and coat racks accommodate eight or ten pupils for each door. Note slate blackboards mounted on wood doors.

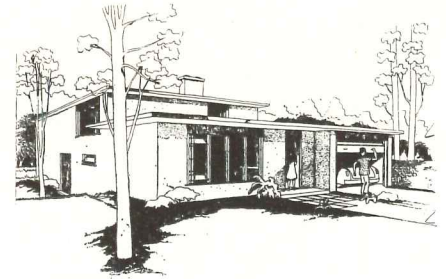


For complete information about R-W DeLuxe FoldeR-Way Partitions and Multiple Action School Wardrobes, contact our nearest office.

Richards-Wilcox Mfg. Co.

"A HANGER FOR ANY DOOR THAT SLIDES"
AURORA, ILLINOIS, U.S.A.
Branches: New York Chicago Boston Philadelphia Cleveland Cincinnati Washington, D. C.
Indianapolis St. Louis New Orleans Des Moines Minneapolis Kansas City
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1880  1949
OVER 69 YEARS



Split Level House

The three-bedroom house pictured above is one of seven built this summer by three architectural students at the University of Toronto who set up their own firm to gain actual working experience. The houses offer combined living-dining room, general purpose room, utility room, water-cooled roof, copper radiant heating and plumbing and are priced at about \$18,000.

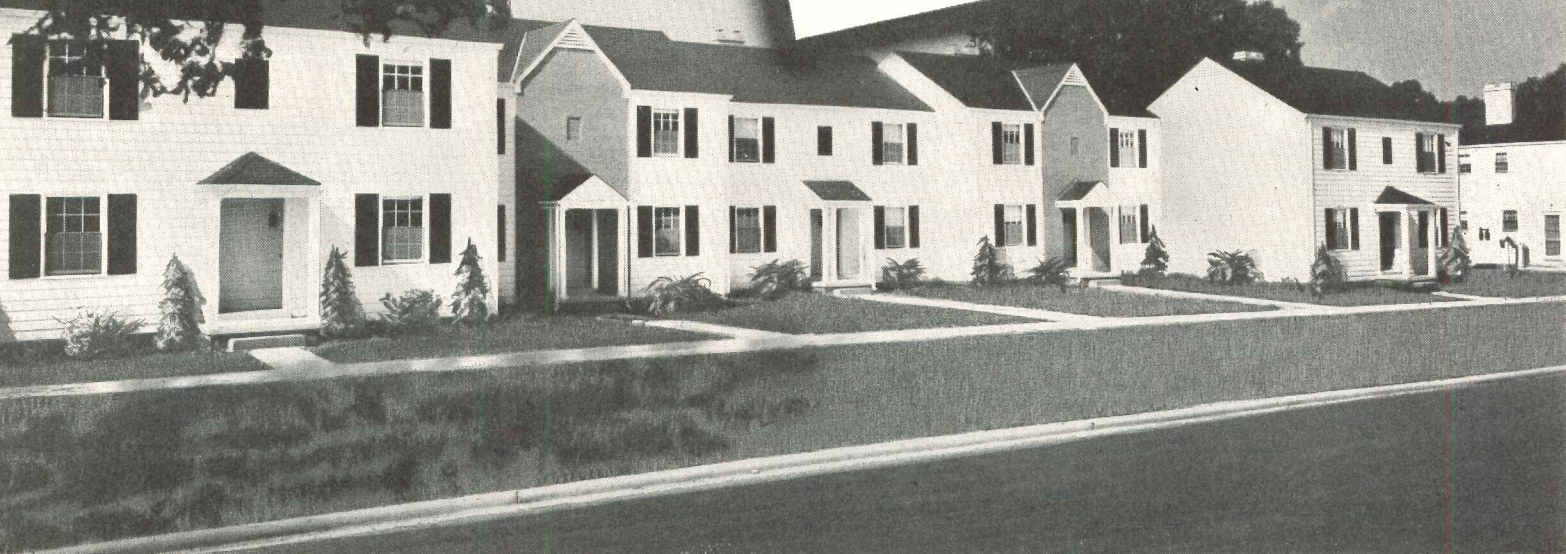
All Aluminum Bridge Begun

Further evidence that aluminum has graduated from the pots and pans class into a full-fledged structural material is provided by the world's first all aluminum highway bridge. It's being constructed at Arvida, Quebec. Insofar as is known there are only two other aluminum bridges in existence, one an experimental railway span at Massena, N. Y., the other a double leaf bascule bridge recently completed in England.

Plans call for opening the bridge to traffic by the end of the year. It consists of a main span, a fixed arch 290 ft. long, and five 20-ft. approach spans at each end. The rise of the main arch is 47½ ft. and the total length of the bridge, abutment to abutment, is 504 ft. By way of comparison, the height of the Statue of

(Continued on page 174)

IT'S A CASE OF
Quality...



View of Lewis Gardens Apartments, Henrico County, Va.; Architect, W. H. Pringle, Richmond, Va.; Builder, Franklin A. Trice, Richmond, Va.

..of GAS ADVANTAGES beyond the city mains



526 TEAMS of Bryant Model VS-304 Winter Air Conditioners and Bryant Black Seal Automatic Water Heaters provide *Personalized Heating* at Lewis Gardens. LP-Gas for this equipment is supplied by Henrico Gas Service Corp., created especially to serve this project by E. O. N. Williams, President of Bottled Gas Corp. of Virginia, Richmond, Va.

There is a Bryant *Personalized Heating* system in each of the 526 suites at Lewis Gardens. Each family enjoys *independent, automatic control* of all heating in its own home. Indoor temperatures are as they want them, and there is no waste heat. There is always plenty of hot water on tap, too, for each family has its own *individual* hot water service.

For *management*, there are these benefits: *Personalized Heating* is maintained at low cost. It requires the supervision of only one man. Service or repair, if necessary, is *quickly* performed, for it is entirely local. There can be no general heating breakdown in the project.

Lewis Gardens is beyond the range of the Richmond city gas supply. Yet, its occupants enjoy the unmatched ad-

vantages of gas for *all four* important household services—heating, water heating, cooking and refrigeration. These advantages are provided by *liquefied petroleum gas*, supplied from a specially-designed central distribution system within the project itself.

Personalized Heating is the basis for this *all-gas* service. Operational economies of this equipment on LP-Gas help make possible a combined low rate for four services that will make its yearly cost to Lewis Gardens families comparable to or less than that of any other fuel or combination of fuels.

You will have a heating problem in your next project *beyond the gas mains*. Ask your Bryant Distributor to show you how you can solve it successfully with LP-Gas and *Personalized Heating*.



Let the pup be furnace man
... and water boy, too!

bryant
AUTOMATIC HEATING

BRYANT HEATER DIVISION
AFFILIATED GAS EQUIPMENT, INC.
Cleveland, Ohio • Tyler, Texas

**"Bryant Personalized Heating Saved Space,
Helped Make Four Gas Services Possible"**

says **FRANKLIN A. TRICE**, Builder and
Developer, Richmond, Virginia

"Economies provided by Bryant Personalized Heating helped make it possible to offer the advantages of LP-Gas for four services at an attractively low combined rate. And, considering that its space-saving feature was a truly great construction advantage, *Personalized Heating* was a happy choice for us."



NEWS FROM CANADA (Continued from page 172)

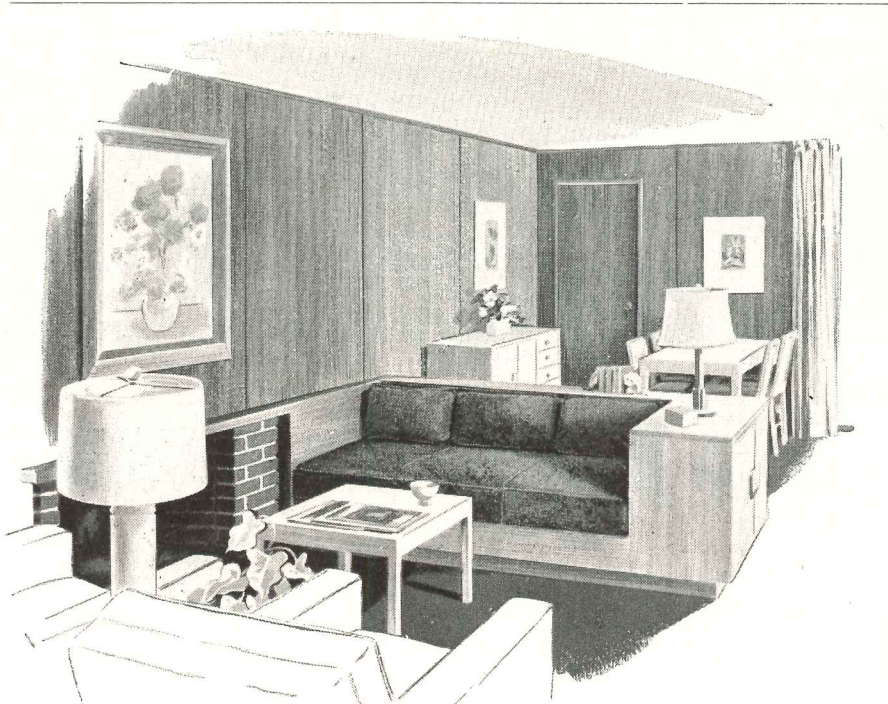
Liberty, including pedestal, is 456 ft.

The bridge roadway is 24 ft. wide and is flanked by two 4-ft. sidewalks. The roadway and sidewalks are formed so as to provide a continuous slab over the entire surface of the bridge between its expansion joints. Lighting is supplied by fixtures concealed under the top guard-rail, and two ornamental pylons, also indirectly illuminated, make an imposing entrance to the bridge.

Because it's aluminum, the superstructure will weigh only 400,000 lb., half as much as steel. But, although it's so much lighter, it's unlikely to blow away! It has been engineered to meet either of two extreme loading conditions: two 20-ton transports moving along it abreast, or a 50-ton transformer hauled on a 12-ton float by an 18-ton tractor.

The city of Arvida floated a bond issue for \$500,000 to pay for the bridge, its

superstructure and approaches. This is somewhat more than steel would have cost, despite economies in freight and erection charges, but it is hoped to save on painting. A number of prominent engineers collaborated on the design of the bridge, and advisors on its esthetics included architects H. L. Fetherstonhaugh, of Montreal, and the late Paul Cret, of Philadelphia.



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To give your clients smart, luxurious interiors at big savings, specify the distinctive new Wood and Marble Patterns now available in Marlite plastic-finished wall and ceiling panels. Here's all the warm beauty of fine finished woods, the stately grandeur of imported marbles—plus economy of installation and maintenance. Marsh harmonizing mouldings are available in Aluminum Alloy and Presdwood for both Wood and Marble Patterns.

See Sweet's Architectural File for details on the wide range of Marlite sizes, colors, and patterns.

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John Palmer Photo

John B. Parkin, of John B. Parkin Associates, Toronto architectural firm (designers of the hospital pictured on page 10 of this issue), has been elected to a fellowship in the Royal Institute of British Architects

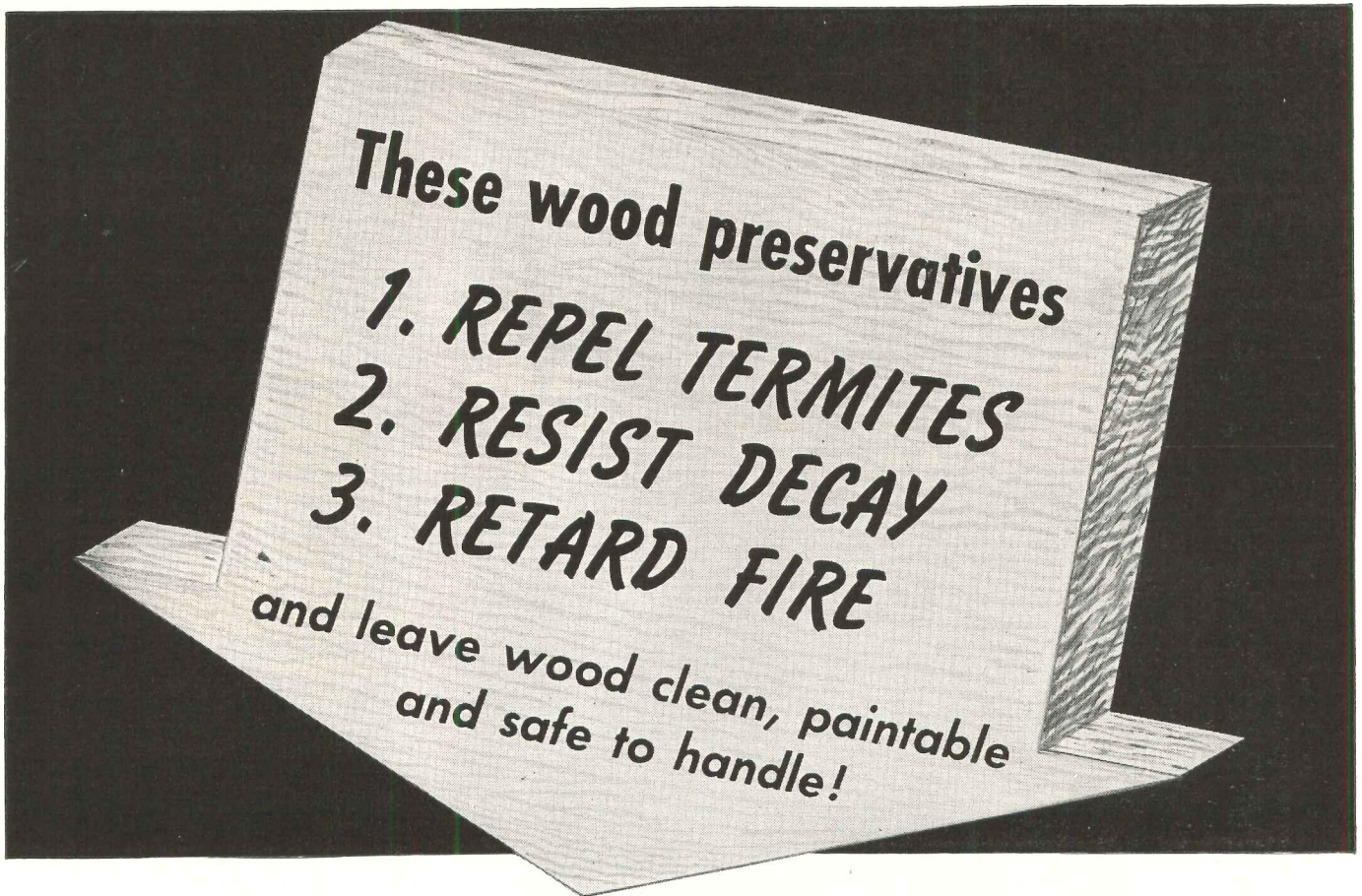
Urges Research Institute

The progress of housing in Canada and the world would be facilitated a great deal if an international organization could take over the difficult task of education, demonstration and the interchange of experience between countries. So writes Dr. E. G. Faludi, Secretary of the Institute of Professional Town Planners, in a recent issue of the Institute's Review.

"The world," says Dr. Faludi, "needs the help of those who are able to contribute to the rebuilding of the destroyed countries, and to the progress and improvement of the others which were not directly affected by the war. The task to be accomplished is gigantic and neither individuals nor countries will always be able to find the right solution without international collaboration."

With considerable skill, the doctor argues that an international Housing Research Institute is likely to contribute more to the cause of human progress than any national organization, however skillfully organized. That Canada as yet has no national research center and the

(Continued on page 176)



NEW DU PONT COPPERIZED CZC

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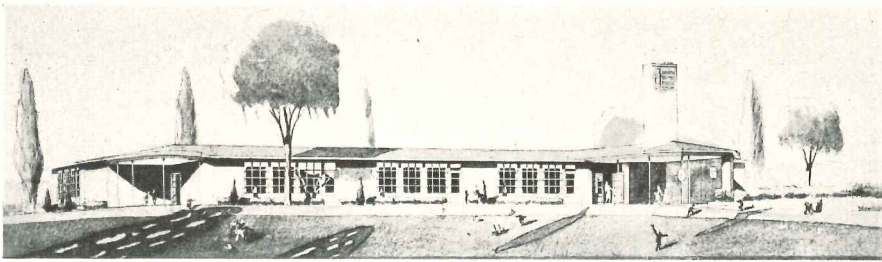
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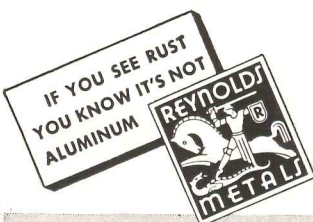
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| Doors and Jambs | Showcase Mouldings |
| Bases | Escalator Balustrading |
| Railings | Elevator Doors, Cabs |
| Pilasters | Terrazzo Strips |

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world no international one shows, in his opinion, how far "we are from a real attack on the great social problem of housing."

Nails Plentiful This Year

Nails are now being produced in increasingly satisfactory quantities. Last year Canada's building program might have bogged down had not steel rod normally used for other purposes been diverted to their manufacture.

The Dominion Bureau of Statistics reveals that output during May amounted to 8124 tons compared with 6590 in the same month a year ago. This production boost raised the five-month total for 1949 to 37,058 tons, compared with 33,393 for the corresponding period in 1948.

Work Starts on New Subway

Hon. Ray Lawson, Lieutenant-Governor of Ontario, lifted a block from the pavement in front of the Toronto Transportation Building on September 8 to signify that the building of Canada's first subway had begun.

While it won't affect the city's skyline—still the North American symbol of urban prestige—the new rapid transit system will be Toronto's biggest project in steel and concrete for years to come. Its ultimate cost is estimated at \$50 million. Construction of the first section, 7000 ft. in length, is being handled by a unique syndicate of one Canadian and three U. S. firms. They have been awarded the general contract on a unit price basis. It amounts to about \$10 million, with financing and responsibility "jointly and severally."

Calls for Housing Handout

The Community Planning Association of Canada has again recorded its belief that a subsidized low-rental housing program is the only solution to our shelter problem. The Association is a nationally organized citizen group having about 500 members.

In a statement timed to coincide with preparations for federal government meetings with provincial and municipal representatives on the housing question, R. E. G. Davies, president of the Association, called for a program to include families of below-average income. "Our housing efforts so far," he claims, "have left half the tenants in Canada out of the picture."

Mr. Davies points out, as he often has in the past, that rental subsidies are

(Continued on page 178)



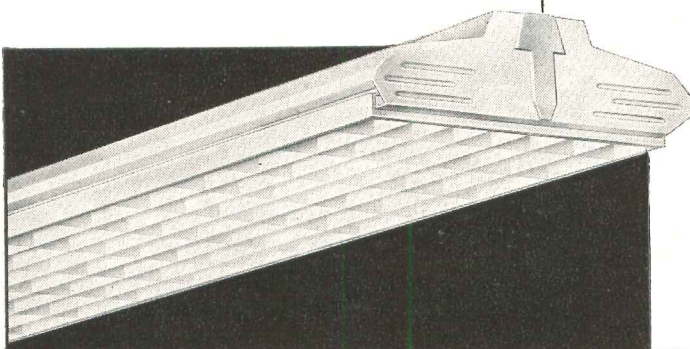
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Lamps: 40 watt, 3500° white
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Whether your clients are interested in selling more goods or in increasing visual efficiency, you'll find it will pay to prescribe Litecontrol fixtures. In this wide line, there are sturdy, graceful units that smoothly blend with any architectural design. All are extra-sturdy in construction, easy to install, built to give your clients more years of ample, glareless light with minimum maintenance. Write today — we'll be glad to help you by supplying complete lighting layouts.

... with **LITECONTROL NO. 4044 FIXTURE**

Offering full light distribution with low surface brightness, this fine Litecontrol unit is also distinguished by unusually low installation and maintenance costs. Hinged louvers swing down for easy lamp replacement and cleaning.



Cat. No.	No. of Lamps	Length	Width	Height	Approx. Ship. Weight
4044	4-40W	49"	16"	5 1/4"	44 lbs.
		4000-20 Downlight reflectors			6 lbs.

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KEEP UPKEEP DOWN

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

required to make new dwellings available to deserving families. "We realize that analysis and negotiation are needed to establish the exact share of initial and operating responsibility at each level of government. But Canadians are worried about what our society as a whole pays for the lack of a low rental program."

The Association head went on to summarize what he said was the essence of

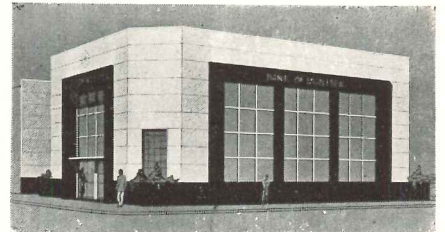
most Canadian recommendations in recent years:

1. Municipal government should, wherever possible, manage public housing by setting up an independent authority for this purpose.

2. Provincial governments should authorize the municipal management of public housing. Where such housing is needed and the municipal government is unable to supply it, the province

should take the initiative.

3. The federal government should lend nine-tenths of the initial cost of public housing to the municipal or provincial government undertaking its construction. The loan should be amortized over a period of at least 40 years and bear an interest rate not higher than 3 per cent.



Tony Archer Photo

Bank of Montreal

Construction will start soon on the first drive-in Canadian bank to be constructed by the Bank of Montreal in Vancouver. Plans for the new office call also for inside baby carriage parking area. The exterior finish of the building will be stone with black marble trim. Sharp and Thompson, Berwick, Pratt are the architects in charge.

Housing Still Forges Ahead

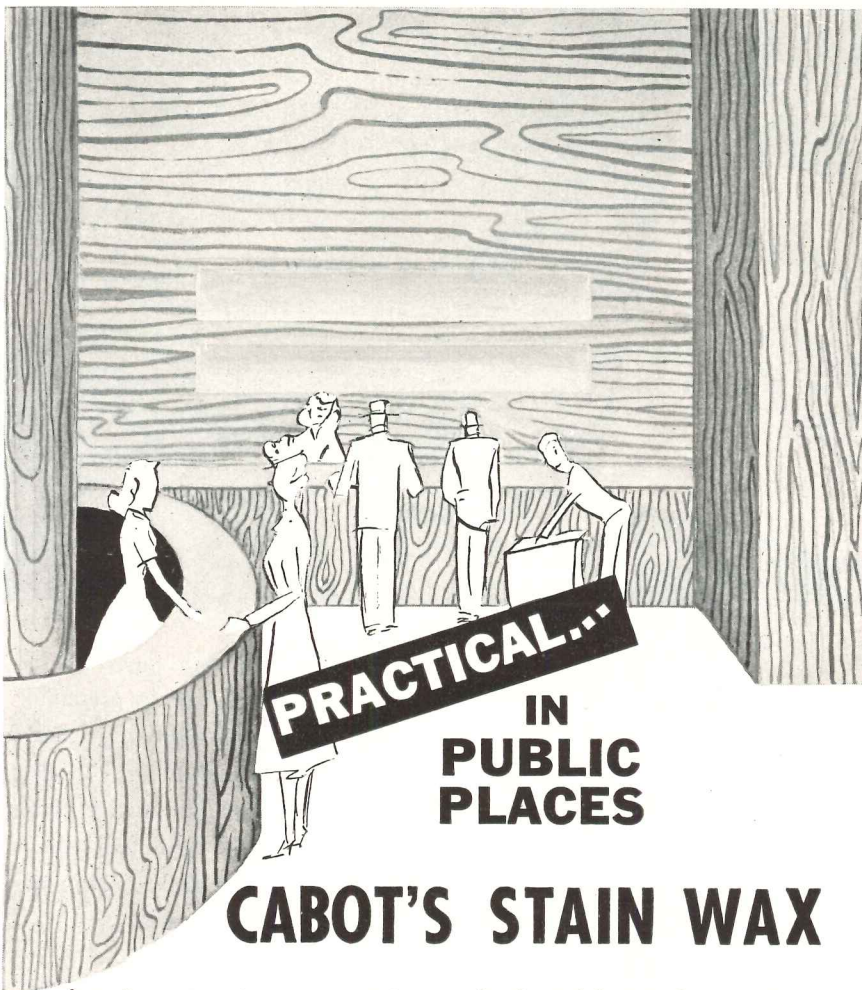
In a recent review of Canada's economy, the Dominion Bureau of Statistics points out that an estimated 7374 dwelling units were completed during the month of May, or 17 per cent more than in May 1948. Cumulative total of completed units for the first five months of the current year was 32,451, an increase of almost 33 per cent over the same period last year.

New dwelling units, not completed but under construction, totaled 53,533 as of May 31 last, compared with 44,572 on May 31, 1948. Starts during the month numbered 12,809 compared with 11,407 during the same month last year. About two-thirds of all dwellings being built are for owner-occupancy.

Brickmakers Launch Program

William C. McGolpin, President of the Brick & Tile Manufacturers' Association of Canada, announces that clay products manufacturers in Canada and U. S. have embarked on a million dollar program of brick and tile research.

"The brickmakers have pledged more than \$250,000 a year for a five-year, long range industry-wide research program," Mr. McGolpin states. "The research will be concentrated on end-use of structural clay products." Election of an 18-man board to manage the program is proceeding.



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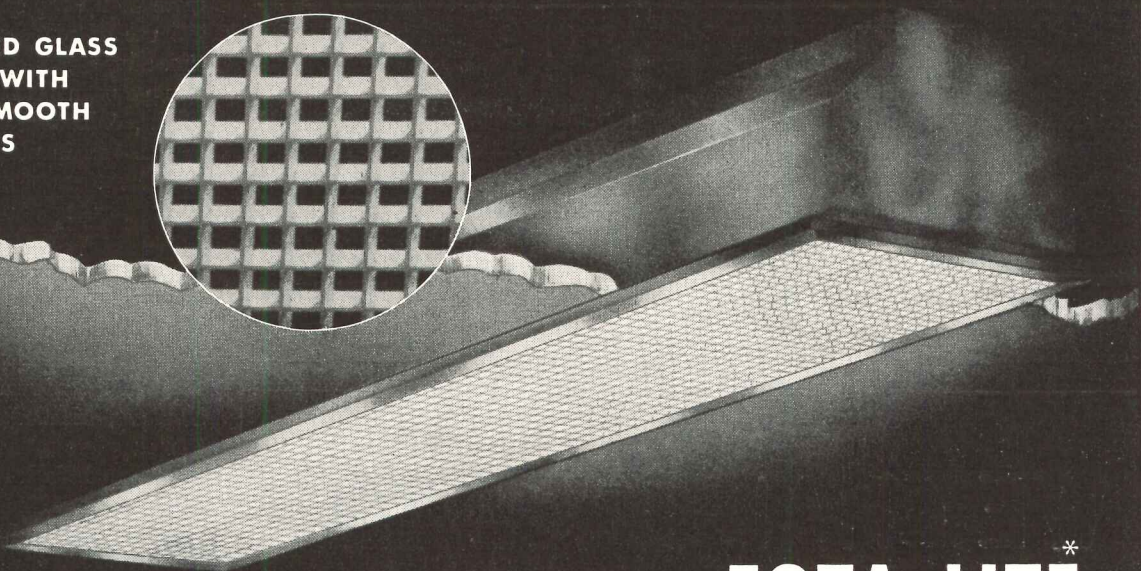
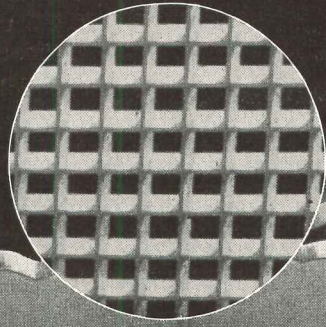
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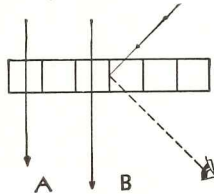
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THE PHILADELPHIA SAVING FUND SOCIETY . . .

(Continued from page 95)

traffic through the main banking room has increased from 1250 persons to about 2500. Fortunately there was space for much of the increase. The Society is not certain but suspects with gratitude that the architects provided a series of corner offices, one above another and connected

by a private elevator, for the precise purpose of housing the chief officers when the change from branch to head office should be made. When the demand for safety deposit boxes increased, room for more was found waiting in the vault. Doubled banking traffic doubled the

number of tellers' windows required and more than doubled the work, entailing the use of numerous machines. Some time after the building's opening, George Howe says, a scheme of U-shaped teller spaces, following the original counter outline and in plan much like the arrangement whose installation has just been completed, was developed in collaboration with Louis McAllister (who ran the Howe & Lescaze office in 1932 and now has his own Philadelphia office). That scheme was never detailed. As now rebuilt, the counters were designed by the building's own competent tenant architect, Alexander Hazell, using unframed plate glass and, surmounting the original black counter, some of the light gray marble left over from 1932.

In the original banking room design, general lighting was indirect, coming entirely from incandescent lamps concealed above the long air conditioning baffles just beneath the ceiling. This supplied relatively few foot candles at counter levels; intentionally, there were individual counter lamps for local high-intensity lighting. Also, in accord with then accepted technical theory, the heat load of the general lighting sources was to be overcome by the air conditioning system. Today such a theory is questioned; operating costs usually force minimizing of the lighting heat load. Because the local lamps occupied valuable counter space and to reduce the air conditioning load by an appreciable number of tons of refrigeration, then, the owners have disconnected the original general lighting, removed the counter lamps, and installed recessed, lensed downlights which, sparkling in the high ceiling and reflected in the polished marble walls, supply 30 or more foot candles at counter height. Neither Howe nor Lescaze was consulted on this change.

Second-guessing the structural (Purdy and Henderson) or mechanical (R. Berkeley Hackett) engineers on PSFS is difficult. The great difference in column spacing between lower and upper floors is a logical solution of the differing requirements of stores and bank vs. rentable office space. The great load of the tower on the trusses above the banking room ceiling and on the columns below entailed massive construction which was considered as a series of rigid frames in designing the tower wind bracing. For this purpose kneebraces were used at every girder-to-column connection, to develop full continuity in the girders. Possibly a different form of

(Continued on page 182)

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Beauty, that's more than superficial,

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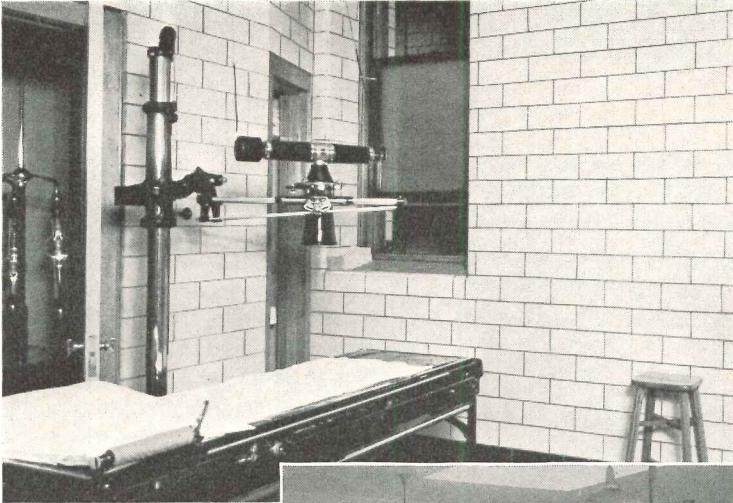
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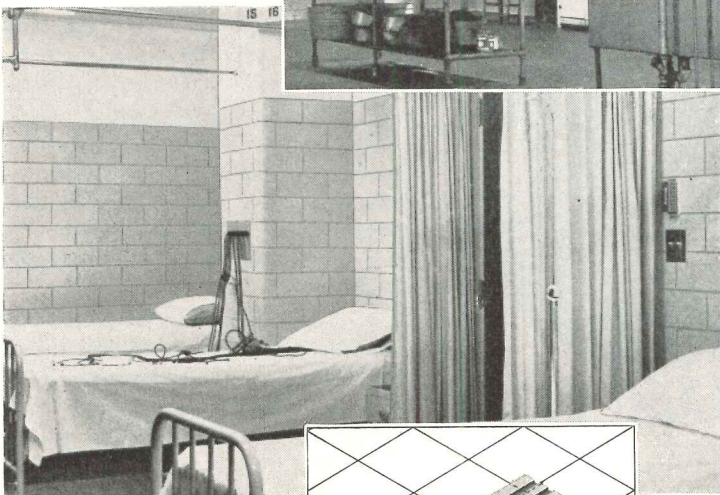
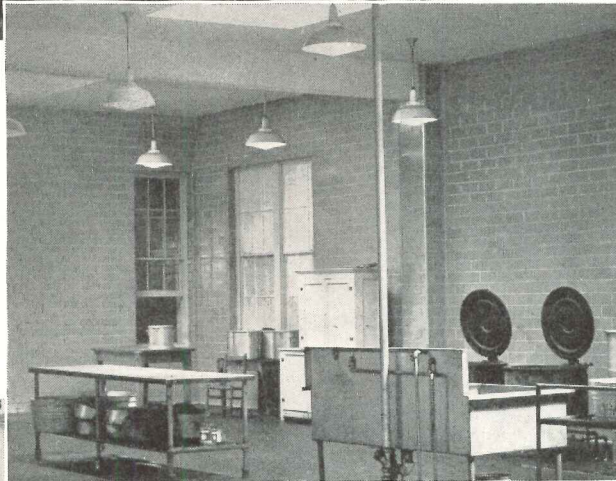
BRIGHT
WALLS
OF
HEALTH-
STIMULATING
CLEANLINESS



(Above) X-ray Room with walls of Natco Glazed Structural Facing Tile in St. Francis Hospital, Pittsburgh, Pennsylvania.

(At Right) Kitchen in Bryce Hospital, Tuscaloosa, Ala. Walls of Natco Structural Glazed Facing Tile. Warren-Knight & Davis, Architects; Foster & Creighton Co., Contractors.

(Below) Natco Glazed Structural Facing Tile used in the Mayo Hospital, Rochester, Minnesota. O'Meara and Hills, Architects; McGough Brothers, Contractors.

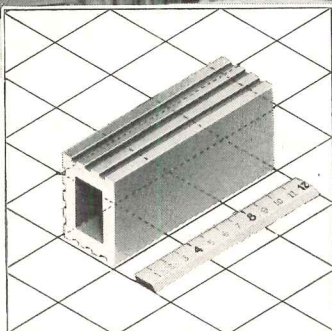


All the requirements of interior hospital walls—cleanliness, germ-resistance, moisture proof, fire-safety, cheerful brightness . . . all of these are met with walls constructed of Natco Glazed Structural Facing Tile.

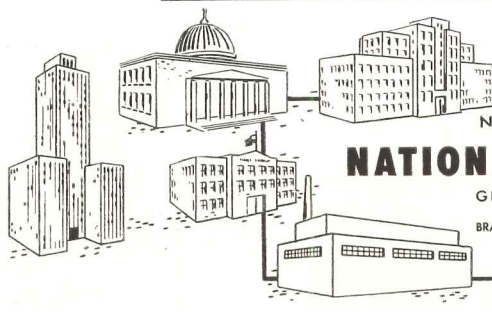
First cost is last cost . . . because Natco Glazed Structural Facing Tile needs no maintenance except occasional soap and water cleaning . . . no painting, no repairs, ever. They are economical to erect, too . . . because they are available in modular sizes, which means little or no cutting on the job . . . saving material and labor, with better workmanship assured. Write for descriptive Catalog PF-47.

Modular Coordination

Tile with 12 inch ruler is laid at right on grids made up of 4" squares. This 4" module unit of measure is the basis of modular coordination for all building materials and equipment.



Architects—See Sweet's Architectural
File No. 4-A-8 for details.



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THE PHILADELPHIA SAVING FUND SOCIETY . . .

(Continued from page 180)

haunch, perhaps welded, might be used today; the detail is mentioned, however, because it is an instance of recognition of the structural principle of continuity at a time when that was not common practice.

Utilizing continuity gave practical

benefits. Office stories are only 12 ft. floor-to-floor. While the knee-braces cut down considerably on the headroom around columns, column spacing (17 ft. 8 in.) is such that a bay accommodates a pair of average-sized private offices or one larger office; in these instances



NO VISIBLE WEAR AFTER 30 YEARS OF CONSTANT USE!

Stairs get a lot of punishment in 30 years under the thousands of busy feet which go up and down them—year in, year out. Yet this unretouched photograph (just taken) of the "Feralun" stair treads, installed 30 years ago in the plant of the Dennison Manufacturing Co. at Framingham, Massachusetts, shows no evidence of more than a quarter-century's "foot traffic." 30 years of resistance to wear! 30 years of non-slip underfoot safety! Good for many years to come!

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braces are in the plane of partitions. In large general office space, it is true, headroom appears to be low (1932 office photo shows one condition, 1949 photo the other). To gain every possible inch of headroom, the ceiling is not furred; beams, the underside of the floor slab, and air conditioning ducts, all plastered, are exposed. All this results in a minimum cubage for the total rentable area. Without air conditioning and ample daylighting the relatively low ceilings might be oppressive; with them—and the scheme included both from the beginning, at least in the architects' minds—this is not much of a problem.

Although air conditioning for the entire building was not accepted until construction of the steel frame was almost complete, space was found without much difficulty for the ducts and equipment—another instance of advance planning?—which has all functioned perfectly for 17 years. In 1949, one unit broke down and was out of service for a few days; to obviate further difficulties, an additional standby unit is to be installed shortly.

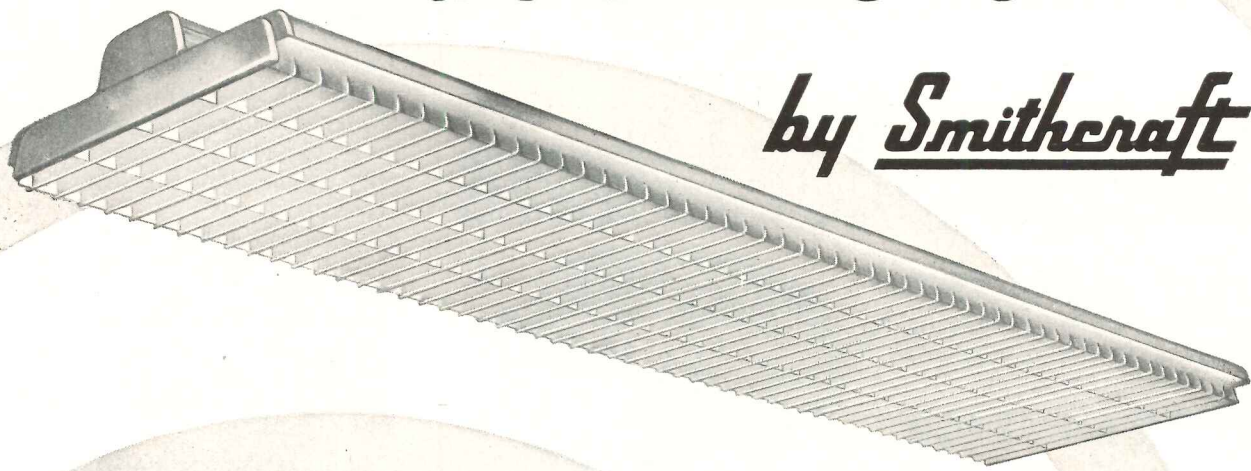
The cooling towers on the roof are concealed by the sign whose huge neon initials, PSFS, have become a landmark. The owners were at first dubious (this was in pre-alphabetical-agency days) of the dignity of such a sign; but when they saw that the Society's full name was undecipherable from any distance they acceded. Since, PSFS has become the name by which the bank is generally identified.

As to materials, there have been two instances only in which today's knowledge might have been of benefit. All the large panes of glass at bank level have been reset; some time ago one fell out and others cracked. The cause, determined to be hardening of the setting material, has been remedied. At another time some brick joints were observed to be powdering; though the condition was not serious, as a part of their policy of preventive maintenance the owners decided to repoint all brickwork. In some places the hard surface glaze of the tower brick appears to be weathering. Interior surface finishes—marble, sheet bronze and stainless steel, rubber tile flooring, painted plaster in rented offices, even the plywood panels surfaced with rare woods which line the directors' suite on the top floor, all have a record of relatively easy maintenance and, for items such as the sheet metal, of thorough polishing required at extremely infrequent intervals. In part, air conditioning is credited for this.

A New Slimline Lighting "Element"

the DIRECTOR

by *Smithcraft*



AN "AREA-OF-LIGHT" SOURCE

Director, by Smithcraft, is a louvered fluorescent lighting "element" . . . an extensive, yet unobtrusive, "area-of-light" source, which effectively develops the advantages of the new 75-watt instant-start T-12 8-foot lamp. Director is available for two, three, four and six T-12 96" 75-watt lamps; two, three, four and six T-8 96" Slimline lamps; and, in matching units, for two, four and six T-12 40-watt lamps with instant-start ballasts. This unit provides a downward component of light varying from 70% for the two-light unit to 55% for the six-light unit. Cutoff from lamp glare is 35° lengthwise and 30° crosswise from the rigid and square louvers. The Director can be surface or pendant mounted, individual or continuous rows. Director is constructed of electrolytic zinc-coated bonderized steel and finished in white supercoat baked enamel with more than 85% reflectivity. Maintenance and installation are effectively simplified in the Director — another new and

outstanding fluorescent unit by Smithcraft — manufacturer of "America's finest lighting fixtures" and the leader in progressive lighting design.

Smithcraft

LIGHTING DIVISION

CHELSEA 50, MASSACHUSETTS

sary to supply a resilient mount or base support for the device. In addition, if a serious problem is created by generation of airborne noise from the machine it may be advantageous to build an enclosure of fairly substantial walls to act as sound barriers. In the case of noisy hot air heating systems it may be necessary to provide sound absorbing ducts. In addition, acoustically lining a duct reduces the transmission of other

sounds through the duct — say machinery noise occurring in the basement; such lining should be fire-resistant.

Bathroom noises are often quite a problem. Here an important item to consider is the use of wall and floor constructions which have high sound transmission losses. The bathroom door is often the chief cause of sound leaks inasmuch as it is usually of the light-weight variety. Precautions outlined

previously in connection with doors should also be followed with regard to bathroom doors. Some plumbing equipment, such as flushing mechanisms used in toilets, may be obtained which are fairly quiet in their operation. In some cases plumbing noise is transmitted by way of pipes which are tied directly to adjacent wall structures. This condition may be remedied by wrapping resilient materials around the pipes between the pipe hangers or straps which are fastened to the wall. If the pipe line is split into shorter sections which are coupled together by sections of a resilient material, the transmission of vibration is greatly reduced.

Sometimes clicking noise caused by operation of light switches, or closing of doors may be annoying. The answer to these problems is the use of quiet-operating accessories and hardware.

Acoustical Design Applied to Multiple Dwelling Units

In this category are problems relating to adequate privacy between dwelling units which are occupied by different family groups. Many of the precautions outlined in previous sections apply, with the exception that requirements for sound insulation in the case of multiple dwelling units are more stringent.

The basic idea in providing sound insulation between multiple dwelling units is to have very effective constructions, walls and floors, between adjoining units. The transmission loss of such party walls and floors should be at least 45 db and preferably 50 db. While it is possible to use massive homogeneous masonry walls and floors, there is considerable advantage to the use of double-sandwich type walls and floors. For one thing, a massive single wall or floor construction, while it may be an effective insulator for airborne sound, is a very poor insulator for impact or other noises caused by direct mechanical impact.

From this point of view, one suitable method of construction would consist of a massive core divided both horizontally and vertically by the floors and walls between separate units, as shown in Fig. 7. In each one of these cells or boxes a secondary box would be located suitably subdivided into the appropriate number of rooms. If the box is made sufficiently rigid and self-supporting such as in Fig. 8, it could be supported on the

(Continued on page 186)

Dramatic Color Effects

with **AZROCK** at **Amazingly LOW COST!**

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Good looks, low cost and long life are three "musts" for the brightly attractive flooring that has become an integral part of today's residential and commercial building program — and AZROCK Asphalt Tile meets the challenge with ammunition to spare.

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- 2 Installed cost is wonderfully low, and upkeep is as inexpensive as it is simple.
- 3 Top quality and longevity are attested to by AZROCK floors that have been in service 15 years and more, and still retain their new-floor good looks.

When specifications call for *greaseproof* flooring, premium-quality AZPHLEX asphalt tile will meet the most rigid specs — without blasting the budget. This is the most nearly universal floor covering ever produced. "The asphalt tile that has everything!" Both of these colorful lifetime tiles can be laid over wood, concrete or metal sub-floors, on, above or below grade.

For complete information contact your AZROCK-AZPHLEX dealer — or write to Dept. A. Please identify yourself as architect, contractor, owner, etc.



UVALDE ROCK ASPHALT CO.

Makers of AZROCK and AZPHLEX Asphalt Tile FROST BANK BLDG. SAN ANTONIO, TEXAS

ELECTRUNITE E. M. T.

the ORIGINAL
lightweight
rigid steel
wiring raceway

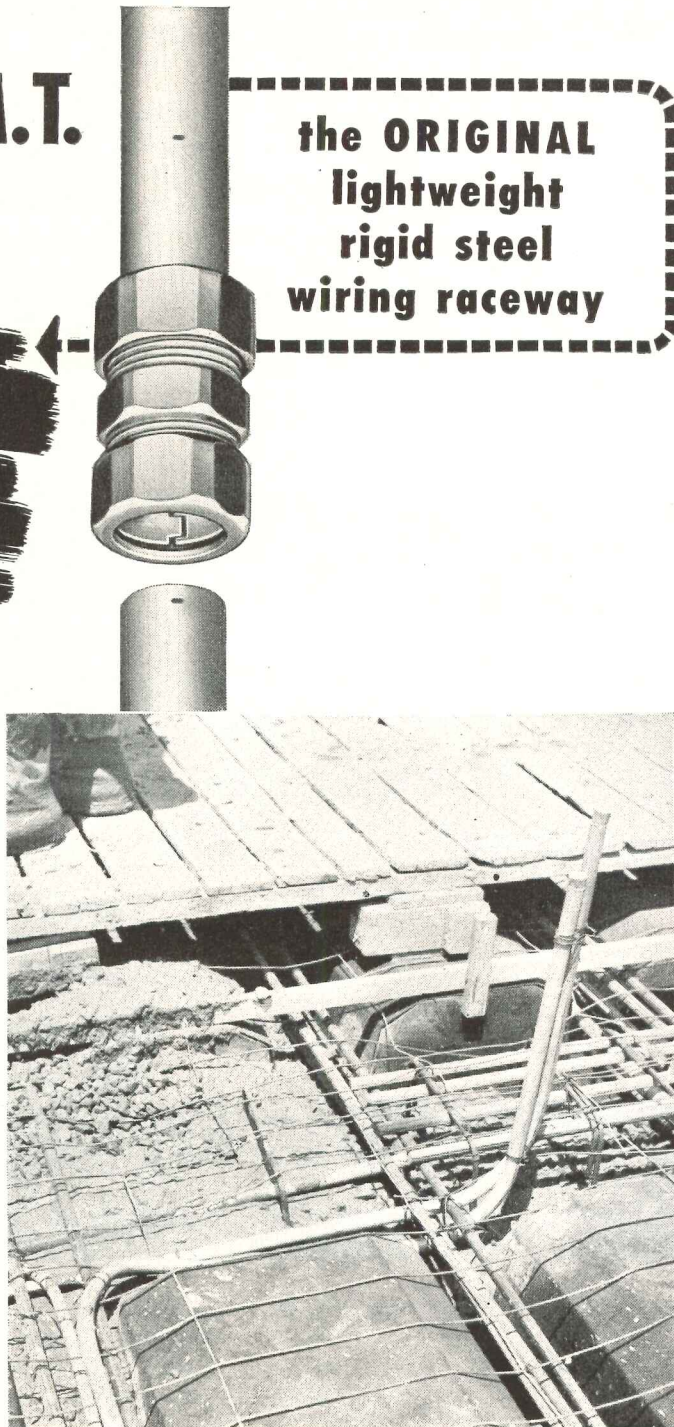
PROVIDES WATER-TIGHT
PROTECTION THROUGHOUT
THE INSTALLATION

● Water-tight protection—particularly in concrete construction installations—is a vitally important factor in the specification of wiring raceway material. That's why more and more architects are specifying Republic ELECTRUNITE E. M. T.—the time-saving, light-weight rigid steel raceway.

With modern compression fittings, such as that shown in the illustration, properly applied and tightened, there can be absolutely no danger of joint seepage in an ELECTRUNITE raceway installation. Actual test and records of countless installations in concrete construction, have proved that fact many times over.

For complete information about *all* of the up-to-date advantages of ELECTRUNITE E. M. T., call your nearest Steel and Tubes Division Representative, or write today to:

REPUBLIC STEEL CORPORATION
STEEL AND TUBES DIVISION • CLEVELAND 8, OHIO
Export Department: Chrysler Building, New York 17, New York



Close up view of first-floor raceway installation in large midwestern hospital project illustrates a typical application for ELECTRUNITE E. M. T. "in concrete".

SEE SWEET'S FILE

or write us for detailed information on these Republic Steel Building Products:

- Pipe—Sheets—Roofing
- Enduro Stainless Steel
- Toncan Enameling Iron
- Electrunite E. M. T.
- Fretz-Moon Rigid Steel Conduit
- Taylor Roofing Ternes
- Berger Lockers, Bins, Shelving
- Berger Cabinets for Kitchens
- Truscon Steel Windows, Doors, Joists
- and other Building Products

Republic
ELECTRUNITE E. M. T.



(Continued from page 184)

core structure by an appropriate floating floor, possibly a concrete slab on a resilient pad, or on beams or joists mounted on resilient pads. Another possibility for the box-within-a-box construction is to float the floor, suspend the ceiling, and secure the outer vertical walls of the inner box by resilient or loosely coupled elements, Fig. 9. Adequate walls in the inner-box unit should be provided. Still another possibility,

is to separate the massive core into self-supporting vertical units so that each unit is separated by an air-space.

It is important that both wall and floor construction should have sound insulation ratings which are roughly comparable. In other words, if an effective party wall is used with a poor floor, it is possible for more sound to be transmitted into the room adjacent to the party wall indirectly by way of the

floor construction than is transmitted through the wall.

Inasmuch as in ordinary building materials — i.e., concrete, brick, or wood — sound is not reduced very much in transmission over even long path lengths, the sound may reappear readily in other parts of a building which may be remotely removed from the original source room.

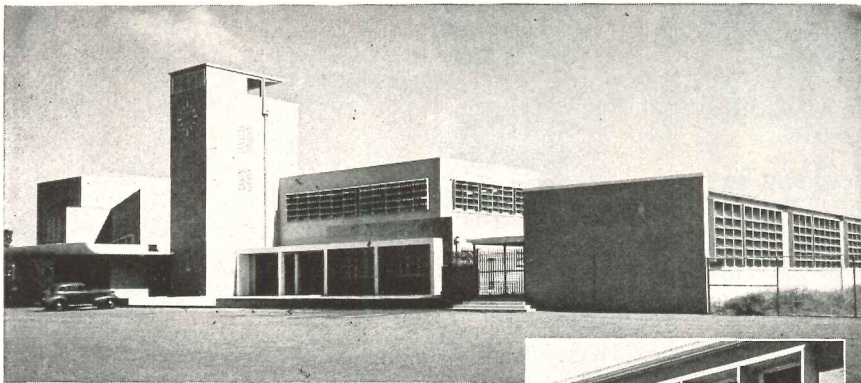
Another possibility, which has been particularly exploited in European multiple dwelling building projects, is that of locating the massive load-bearing walls in the interior of the building in such a way that they function as effective party walls in addition to supporting the building.

Arrangements of rooms according to compatibility of function on opposite sides of a party wall is an important consideration. Thus it is advisable not to locate a kitchen in one apartment next to a bedroom in the adjoining housing unit.

Mechanical equipment, such as central-heating units in multi-family structures are often high-powered devices which must serve many apartments at one time. Usually they are located in the basement, and apartments located directly over and adjacent to such equipment are subjected to high noise levels caused by their operation. In such cases, it is well to provide a particularly effective floor construction as a sound barrier. In addition, other precautions mentioned in the section pertaining to single dwellings, to prevent the transmission of vibration along heating pipes, should be followed. In the summer open windows in apartments near the basement will be a problem, if equipment is in operation at that time. A somewhat better way to handle this type of situation is to provide a special small service building for mechanical equipment separated from the housing units.

Conclusion

In the foregoing discussion we have not touched upon the problems involved in remodeling and additions to existing buildings. From the principles described it is believed that one could apply the correct acoustical principles to any special problem. In many instances the acoustical measures outlined will be expensive, yet no one should be deluded by the effectiveness of halfway measures.

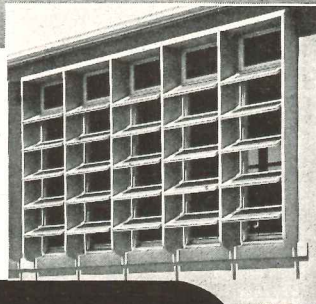


AN UNUSUAL INSTALLATION

South Broward High School, Hollywood, Florida

Architects: Clinton Gamble Associates, Fort Lauderdale, Fla.
Bayard Lukens, Hollywood, Fla.

All Gate City Awning Windows glazed with heat-resisting and glare-reducing glass. Concrete fins (right) keep sunlight from entering rooms diagonally between sash.



Cooler Under the Sun...

In countless locations, in city as well as country, Gate City Awning Windows are satisfactorily answering the need for adequate ventilation—and doing so *without mechanical assistance!*

Completely adjustable, these windows induce fresh air to enter when days are calm . . . break up and deflect breezes . . . eliminate drafts . . . protect against damage by rain. Precision fabricated of toxic-treated wood, they are economical to install, easy to

operate and rot-resistant. One redecorating bill avoided by the rain-deflecting sash more than pays any additional initial cost!

No matter what the location or climate, you can assure abundant light and scientifically controlled ventilation—with Gate City Awning Windows. For data refer to Sweet's or write direct to Gate City Sash & Door Co., Dept. AR-10, Fort Lauderdale, Florida.

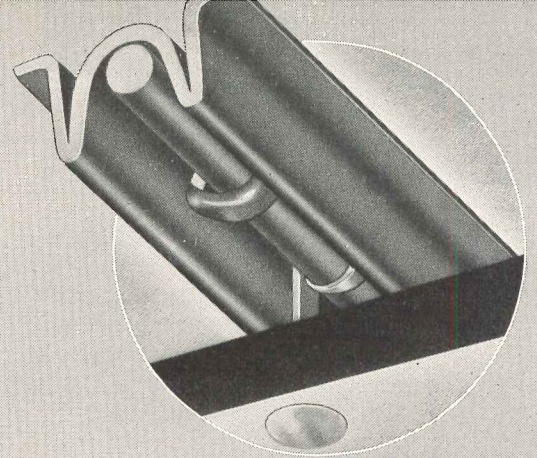


AWNING WINDOWS BY
Gate City

Offices and Factory: Fort Lauderdale, Florida • Export Sales Representative: Frazer & Company, 50 Church Street, New York 7, U.S.A. • Cable Address: Frazer, N. Y. • Agents in principal cities throughout the world

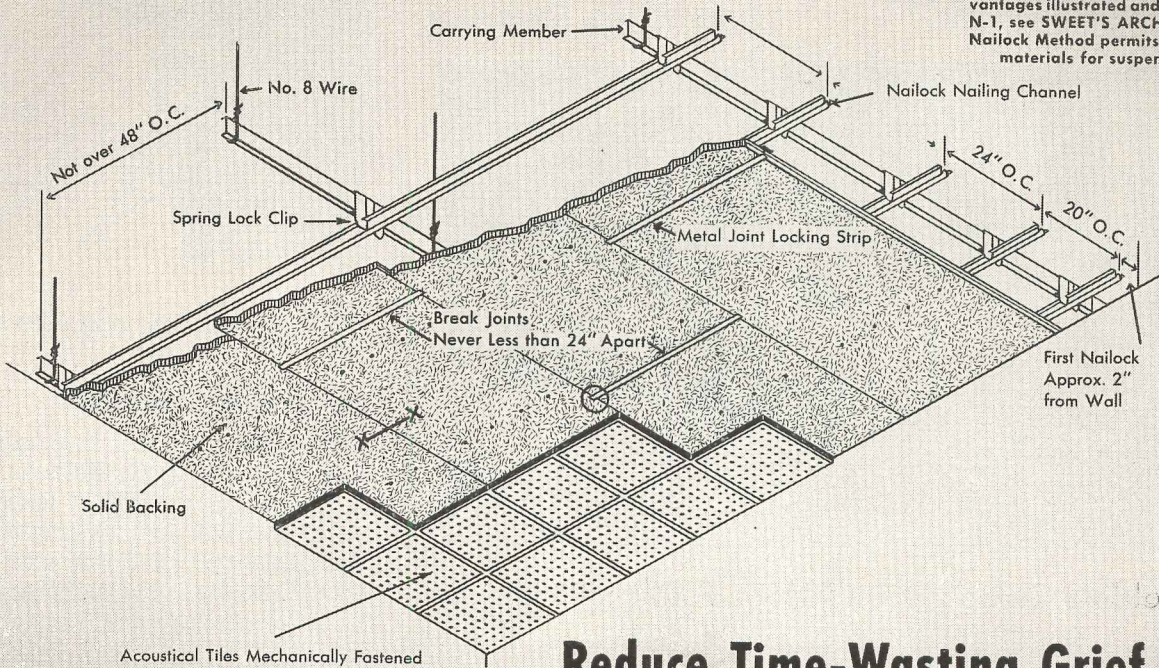
For Suspended Ceiling Construction

Use Nailock



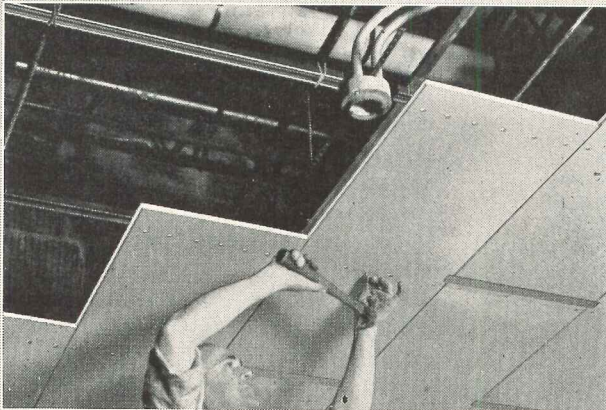
Safest and Simplest Method

The Nailock Method is the simplest and safest method of installing a suspended ceiling with or without acoustical tiles. This method presents many exclusive advantages illustrated and described in Nailock Catalog N-1, see SWEET'S ARCHITECTURAL FILE, 11b/1. The Nailock Method permits the use of a wide variety of materials for suspended ceiling construction.



Reduce Time-Wasting Grief and Time Costs on Suspended Ceiling Jobs

● Nailock Universal Nailing Channels provide a means for securely fastening every unit in place, and assure a rigid, safe and permanent suspended ceiling installation. It permits the use of larger crews in making installations in large areas due to the speed with which Nailock Universal Nailing Channels can be attached to carrying members and the simplicity of nailing backing or backerboard materials to these channels. The Nailock Method permits the use of any type of acoustical materials attachable by mechanical means, or by cementing, and all of the usual methods and materials of finishing a ceiling, including plastering. Refer to Nailock Catalog N-1 in SWEET'S 1949 ARCHITECTURAL FILE, 11b/1. Catalog available on request. Please use coupon.



Permits Use of Any Acoustical Materials Required
Installation with Nailock requires only three operations. This shows nailing solid backing to Nailock Universal Nailing Channel with Nailock Nails which form locking loop around rod. Assures rigidity and permanency and safety.



NAILOCK STEEL DIVISION

THE SANYMETAL PRODUCTS CO., INC.

1704 URBANA ROAD • CLEVELAND 12, OHIO

Nailock Steel Division, The Sanymetal Products Co., Inc.
1704 Urbana Road, Cleveland 12, Ohio

Please send Nailock Catalog N-1 and name of nearest Nailock Distributor.

Name Position

Company

Address

City State

(Please attach to your business letterhead)

(Continued from page 146)

the analyzer tube, eliminating the possibility of error in zone indication. A relay in the control panel, operating on fire signal, can be used to operate ventilating fans, dampers, door-closing releases or power cutoff. Walter Kidde & Co., 40 E. 34th St., New York 16, N. Y.

FLASHING

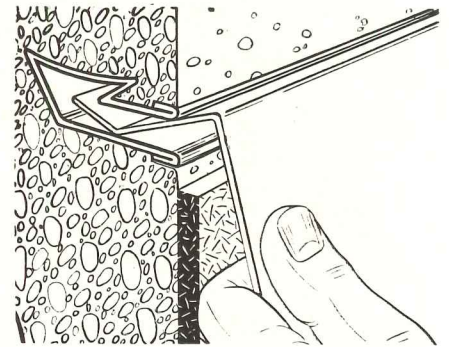
A new method of installing counter flashing is designed to eliminate exces-

sive labor, prevent leakage for practically the life of the building and to reduce roof repairs.

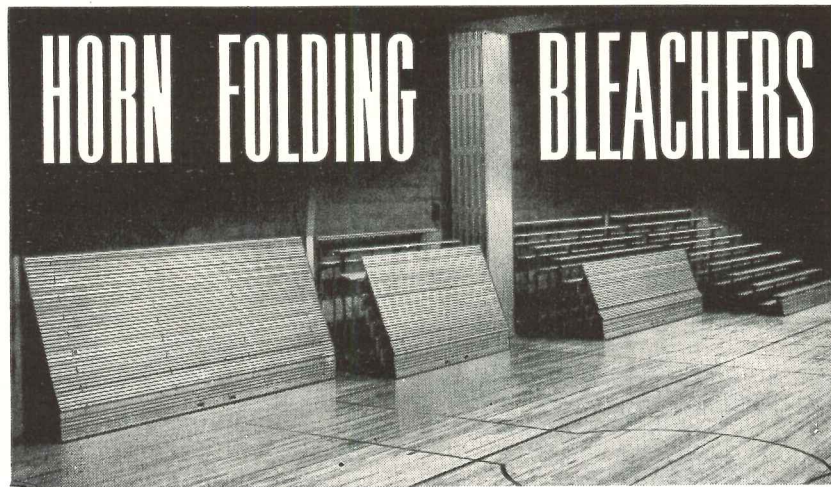
A rolled metal form, called *Fry Flashing Reglet*, is attached to the forms for imbedding in concrete parapets, or placed between courses on masonry construction. Counter flashing, supplied by the sheet metal contractor, can be inserted in the reglet in a few minutes without grouting or soldering.

Plastic rope, supplied with the reglet, makes the weather seal. It is rolled into the space between the reglet and flashing with a wheeled tool, making contact at all points between the two surfaces.

When roof maintenance is required, only the plastic rope has to be removed in order to take out the flashing. Fry Reglet Co., Division of Watts Electric & Mfg. Co., Birmingham, Mich.



Flashing simplified by using metal forms



Horn Folding Bleachers and Horn Folding Partitions for Greater Space Utilization

CHECK YOUR SPACE REQUIRE- MENTS	FLOOR SPACE		**HEIGHT
	IN USE	*CLOSED	
3	4 Ft. 9 In.	1 Ft. 8 3/4 In.	3 Ft. 0 In.
4	6 Ft. 7 In.	2 Ft. 0 1/2 In.	3 Ft. 9 In.
5	8 Ft. 5 In.	2 Ft. 3 1/2 In.	4 Ft. 6 In.
6	10 Ft. 3 In.	2 Ft. 6 1/2 In.	5 Ft. 3 In.
7	12 Ft. 1 In.	2 Ft. 10 1/4 In.	6 Ft. 0 In.
8	13 Ft. 11 In.	3 Ft. 1 1/2 In.	6 Ft. 9 In.
9	15 Ft. 9 In.	3 Ft. 5 In.	7 Ft. 6 In.
10	17 Ft. 7 In.	3 Ft. 8 1/2 In.	8 Ft. 3 In.
11	19 Ft. 5 In.	3 Ft. 11 3/4 In.	9 Ft. 0 In.
12	21 Ft. 3 In.	4 Ft. 3 1/2 In.	9 Ft. 9 In.
13	23 Ft. 1 In.	4 Ft. 6 1/2 In.	10 Ft. 6 In.
14	24 Ft. 11 In.	4 Ft. 9 1/2 In.	11 Ft. 3 In.
15	26 Ft. 9 In.	5 Ft. 1 1/4 In.	12 Ft. 0 In.
16	28 Ft. 7 In.	5 Ft. 4 1/2 In.	12 Ft. 9 In.
17	30 Ft. 5 In.	5 Ft. 8 In.	13 Ft. 6 In.
18	32 Ft. 3 In.	5 Ft. 11 3/8 In.	14 Ft. 3 In.
19	34 Ft. 1 In.	6 Ft. 2 3/4 In.	15 Ft. 0 In.
20	35 Ft. 11 In.	6 Ft. 6 1/2 In.	15 Ft. 9 In.

*Dimension includes 4 1/2 in. space between top seat and wall.

**Height in open position same as closed. For Bleachers higher than 20 Rows write for complete details and dimensions.

FOR SEATING CAPACITY FIGURE 16" PER PERSON. WRITE FOR COMPLETE DETAILS ON THE "3 IN 1 HORN GYM PLAN". NO OBLIGATION

HORN BROTHERS CO.

A DIVISION OF HORN INDUSTRIES

FORT DODGE, IOWA



ESTABLISHED 1909

FLUORESCENT LUMINAIRES

Two new luminaires have recently been introduced by the Miller Co. The first, a luminous downlight luminaire, is available with three types of hinged door enclosures: (1) hinged door with lightweight, non-shattering Polystyrene lens designed to provide good downward light with well-controlled brightness; (2) hinged metal louver door, with predominant downward distribution of light shielded 40 degrees clockwise and lengthwise; and (3) hinged door with crystal clear, prismatic Lucite lens, designed for brightness control both crosswise and lengthwise. All three have curved side panels of diffusing extruded Polystyrene, providing upward light to minimize contrast between luminaire and ceiling. The door enclosures hinge down from the reflector for servicing and cleaning. The *Hartford* is available in 48, 72 and 96-in. lengths. In 48-in. lengths, two or three 40-watt fluorescent lamps are used, and in 96-in. lengths, four or six lamps. In the 72 and 96-in. lengths, 2 or 3 Slimline lamps are used.

The *Berkeley* is a new all-metal fluorescent luminaire designed particularly for schools, stores, offices and commercial interiors. The predominant downward distribution of light is shielded 40 degrees crosswise and 30 degrees lengthwise. Approximately 43 per cent of the total light is directed upward to minimize contrast. If no upward light is

(Continued on page 190)

Mesker Steel Windows



Every architect who specifies Mesker Steel Windows does so, it seems, for a different reason. You'll find one man contends no heavier or stronger window is made—and he's right. Another enthuses over Mesker's attention to detail . . . to better hardware, to finer finish—and he's right, too. Ease of installation, simplicity of operation, low cost maintenance . . . whether you specify Mesker for these or any other reason, remember: dollar for dollar, Mesker Steel Windows are one of America's greatest values in a building product!

JACKSON COUNTY MEMORIAL HOSPITAL
ALTUS, OKLAHOMA

Architects:

Hudgins, Thompson, Ball & Associates, Oklahoma City, Okla.

Contractor:

Lippert Brothers, Oklahoma City, Okla.

Mesker Sales Engineers:

Scovil & Sublett, Oklahoma City, Okla.



MESKER INTERMEDIATE PROJECTED WINDOWS

Hospitals, schools, banks, factory offices, stores and public buildings all over the nation feature these popular steel windows. Steel members are $1\frac{3}{4}$ " deep . . . extra heavy, extra strong. Available with or without hopper ventilators in a wide range of heights and widths.

MESKER BROTHERS • 4338 GERALDINE AVENUE • SAINT LOUIS 15, MISSOURI

(Continued from page 188)

desired, baffles may be attached to the top of the reflector. This luminaire uses two 40-watt lamps. The Miller Co., Illuminating Div., Meriden, Conn.

UNDERCOUNTER REFRIGERATOR

A 4 cu. ft., undercounter refrigerator is now available for such limited areas as efficiency kitchens, doctors' and business offices, recreation rooms, etc. The new model, the U-4, is 34½ in. high, 24

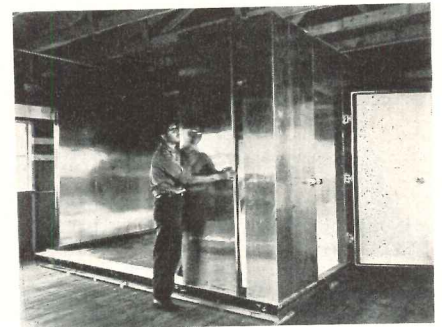
in. wide and 27 in. deep, including hardware. It is designed to fit under standard-height drainboards and kitchen counter surfaces. The door is mounted for right-hand opening, but can be converted easily to a left-hand door.

The refrigerator has a 0.45 cu. ft. freezer which can hold 16 lb. of frozen food and two 14-cube ice trays, according to the manufacturer. An anodized aluminum meat tray (holds up to 10

lb.), two chrome-finished metal shelves and an acid-resistant food liner are provided. Westinghouse Electric Appliance Div., Mansfield, Ohio.

MODULAR COOLERS

Five sizes of *Armorply* panels, consisting of a thin strip of metal adhesively bonded to plywood, have been designed to provide almost any desired amount of refrigerated space for large industrial, commercial and farm applications.



Metal-covered plywood panels, backed by insulation, serve as cooler enclosures

The modular panels, faced with either stainless steel, aluminum or electrically zinc-coated steel, are designed around a 4-in. thickness of Fiberglas insulation. The panels are available for coolers 8 ft. high, 8, 10 or 12 ft. wide, and, within 2-ft. multiples, in any length desired.

The panels, which have been under test for the past two years and are now in practical operation, provide an impervious barrier to the transfer of water vapor, according to the manufacturer. This is said to effectively eliminate, within practical limits, the main factor causing insulation to "ice up" and lose efficiency. United States Plywood Corp., Weldwood Bldg., 55 W. 44th St., New York 18, N. Y.

AWNING WINDOW HINGE

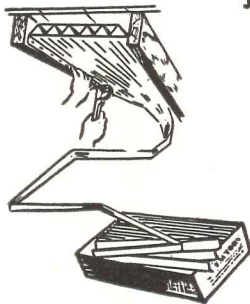
Developed to permit painting and cleaning the top sash of awning windows from indoors, is a new maintenance hinge. To operate this hinge, the mechanic simply disconnects the upper links, springs two friction type pins and lowers the sash. When through he raises the sash to its regular position, connects the links and the window is ready for normal operation. The manufacturer claims that the *Gate City Awning Window* provides access to both sides of all sash without affecting the weather-tightness. Gate City Sash and Door Co., Fort Lauderdale, Fla.

(Continued on page 192)

INFRA Insulation Pleases the Professors



Infra Insulation has had remarkably wide use in buildings of a long list of Colleges, Universities and Engineering Schools. They have access on their own campuses to the finest scientific talent, make thorough tests, base their selection on searching, impartial appraisal. In college after college, in test after test, Infra is selected — because Infra's superior insulating values are so quickly and decisively established.



JUST A FEW COLLEGES WHICH HAVE USED INFRA

Bowdoin College, Brunswick, Maine
Colby College, Waterville, Maine
Culver Military Academy, Culver, Ind.
Harvard University, Cambridge, Mass.
Massachusetts Inst. of Technology
Michigan State, Traverse, Mich.
Princeton University, Princeton, N. J.
Purdue University, Purdue, Ind.
Wells College, Aurora, N. Y.

Infra's multiple separated aluminum sheets provide 4 reflective spaces and 4 reflective surfaces, each non-condensation-forming. Two sheets of aluminum and the accordion partition block convection currents. Infra's triangular reflective air spaces and small mass eliminate conduction as a problem.

INFRA C FACTORS AND ROCKWOOL EQUIVALENTS

C.052 Heat Flow Down, equals 6" Rockwool.
C.093 Heat Flow Up, equals 3½" Rockwool.
C.10 Lateral Heat, equals 3 1/3" Rockwool.

MULTIPLE ACCORDION ALUMINUM &
TRIANGULAR REFLECTIVE AIR CELLS

Infra

INSULATION, INC.
10 Murray St., N. Y., N. Y.

WRITE

Infra for details and FREE COPY of "Bulletin No. 38," issued by the National Housing Agency of the Government, reporting tests of Aluminum Insulation made by the U. S. Bureau of Standards, and dealing principally with the problems of heat transfer and condensation.

Address Dept.

AR

For your Next Job Specify...
WELDWOOD FIRE DOORS
 the *ONLY* wood-faced fire doors
 that bear this label!

ONLY WELDWOOD FIRE DOORS GIVE YOU THESE 8 UNIQUE ADVANTAGES

1. Increased Safety

The *only* wood-faced fire door which bears the Underwriters' label. All Weldwood Fire Doors are approved for class B openings.

2. Beauty

Because of their beautiful wood faces, Weldwood Fire Doors harmonize perfectly with any decorative scheme.

3. Durability

The Underwriters' Laboratories tested a Weldwood Fire Door for durability by mechanically opening and closing it 200,000 times. At the end of the test, the door was unaffected and still opened and closed perfectly.

4. Dimensional Stability

Weldwood Fire Doors are so dimensionally stable that we guarantee them against sticking in summer or rattling in winter due to any dimensional changes in the door.

5. Light Weight

At last... a real fire door that is *not* heavy or unwieldy. A standard 3 x 7 door weighs approximately 80 lbs.

6. Vermin and Decay Proof

The mineral composition core used in Weldwood Fire Doors is permanently resistant to fungus, decay, and termites.

7. High Insulating Qualities

Another noteworthy characteristic of the core is its high insulating value over a wide range of temperatures. It is efficient against temperatures from freezing up to that of superheated steam.

8. Moderate Cost

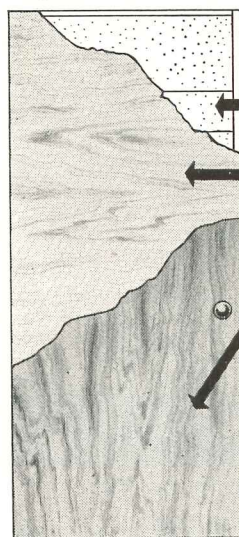
Investigate these doors for use on your next job. You will be pleasantly surprised at the low initial cost, and the minimum of maintenance required.



Now... plan on permanent fire protection *plus* the rich beauty of real wood! Here at last is an absolutely fire-safe door that is also a decorator's delight.

Thanks to the handsome hardwood facing that distinguishes this unique Weldwood door, you can plan on bringing extra beauty to every room. Yes, these beautiful new Weldwood Doors help you to carry your decorative theme throughout the building... while giving you lasting fireproof construction!

Write today for complete information. You'll also want full details about the *Weldwood Standard Flush Veneer Door* with incombustible mineral core for use where a labeled door is not required.



EDGE BANDING

Of fireproofed Birch hardwood matches the faces.

MINERAL CORE

Strong, light, fireproof material. Great dimensional stability.

CROSS BANDING

Of 1-16" veneer is bonded to core with waterproof Tego-Film glue.

FACE VENEER

Is birch. Other decorative woods available on special order.

SIZES AND THICKNESSES:

Made in wider range of sizes; 1 3/4" thick.

MAIL COUPON FOR DETAILS



United States Plywood Corporation (Dept. 483)
 55 West 44th Street, New York 18, N. Y.

Please send literature giving complete details of new Weldwood Fire Doors and matching Weldwood Standard Flush Veneer Doors.

NAME _____

COMPANY _____

ADDRESS _____

UNITED STATES PLYWOOD CORPORATION

55 West 44th Street, New York 18, N. Y.

Distributing units in Albany, Baltimore, Boston, Brooklyn, Buffalo, Chicago, Cincinnati, Cleveland, Detroit, Fresno, Glendale, East Hartford, High Point, Indianapolis, Los Angeles, Milwaukee, Newark, New Hyde Park, N. Y., New York, Oakland, Philadelphia, Pittsburgh, Portland, Ore., Richmond, Rochester, San Francisco, Seattle, St. Paul, Toronto. Also

U.S.-Mengel Plywoods, Inc., distributing units in Atlanta, Birmingham, Dallas, Houston, Jacksonville, Kansas City, Louisville, New Orleans, San Antonio, St. Louis, Tampa.
In Canada: United States Plywood of Canada, Limited, Toronto. Send inquiries to nearest point.

(Continued from page 190)

DOUBLE-DUTY KITCHEN VENTILATOR

Now available is a kitchen ventilating fan that can be operated as a window exhaust fan or can be snapped out of its window panel and be used as a portable circulating fan. The unit consists of an adjustable steel panel which holds a 10-in. fan having three, wide-area, plastic blades. When used as an exhaust the fan has a capacity of 550 cu. ft. per

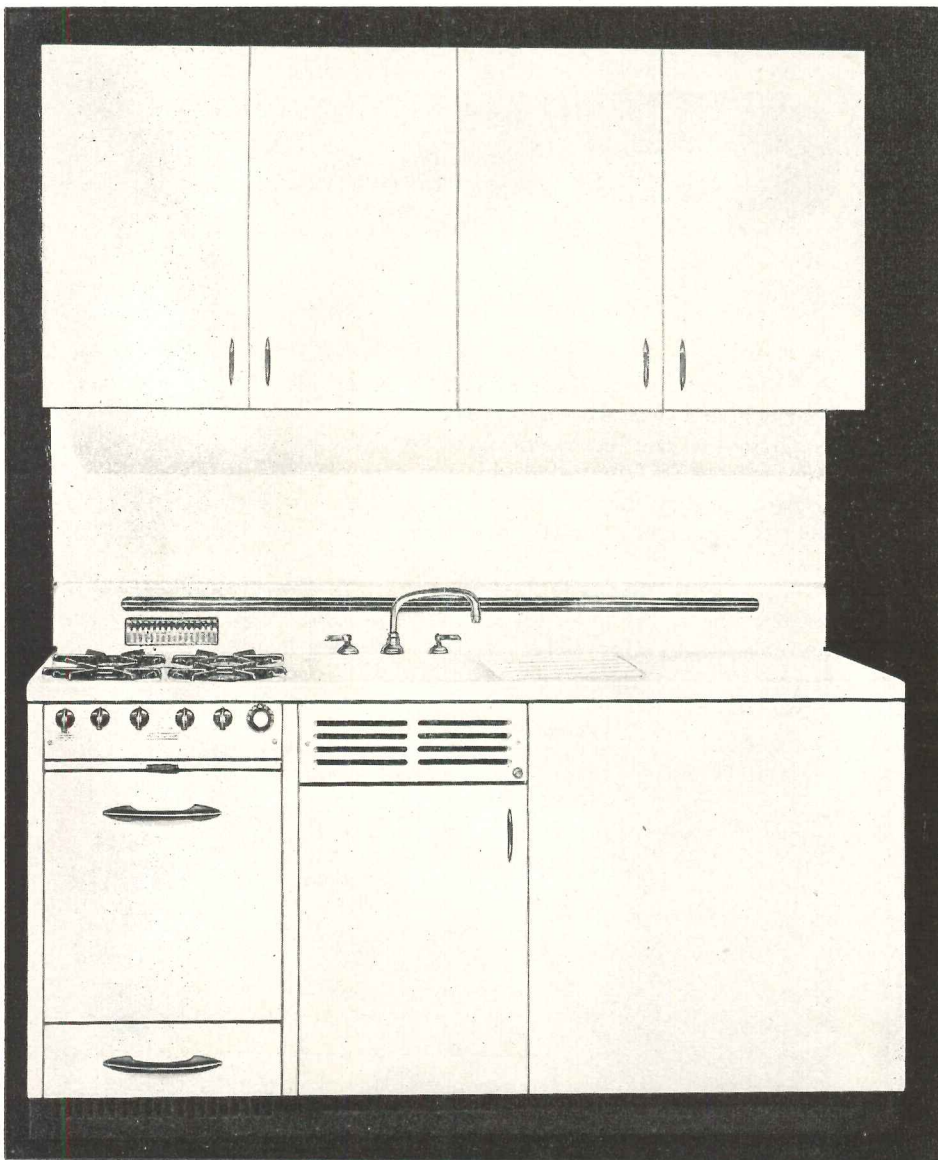
min. When used as a portable circulating fan it can move 900 cu. ft. of air per min. Westinghouse Electric Appliance Div., East Springfield, Mass.

MODULAR LIGHT FIXTURES

Design features of *Mitchell Module* fluorescent lighting fixtures are said to make it possible for a mass-produced lighting system to fulfill custom-fitted lighting requirements. The new system

consists of four modules having either a single or multiple measurement of $16\frac{1}{4}$ in. which can be put together end-to-end, side-to-side and end-to-side to achieve unlimited patterns.

Module "A" is $16\frac{1}{4}$ in. sq., and uses four 14-watt, 15 in. lamps. Module "B" is the same size but uses one 32-watt, 12-in. dia., Circline lamp and either a spot or flood lamp. Module "C" is $48\frac{3}{4}$ by $16\frac{1}{4}$ in. and uses four 40-watt, 48 in. lamps. Module "D" is $97\frac{1}{2}$ by $16\frac{1}{4}$ in. and uses four 75-watt, 425 ma Slimline lamps.



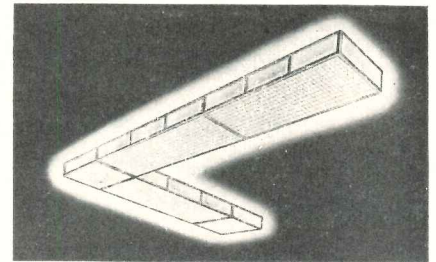
6 cubic foot (net) refrigerator on the

MURPHY - CABRANETTE KITCHEN - Series 69

Here is a complete family-size kitchen . . . streamlined into compact assembly only 69 inches wide. Modern range (gas or electric) with full-size oven and broiler, a 6 cu. ft. (net) refrigerator with stainless steel frozen food locker, a one-piece sink-and-range top,

storage space. Entire front is genuine vitreous porcelain . . . permanent beauty that cleanses with soap and water, retains its gleaming whiteness forever. Minimum maintenance cost is proven in more than 25 years of service in rental properties. Write for complete bulletin.

DWYER PRODUCTS CORPORATION
Dept. R10 - MICHIGAN CITY, INDIANA



Fluorescent light fixtures in four basic sizes can be combined for many patterns

Development of a new clamp connector is said not only to make original installation simple, but also to make it possible to add Modules to existing patterns. Mitchell Mfg. Co., 2525 N. Clybourn St., Chicago 14, Ill.



Photographic wall murals can be used in small rooms to provide spacious feeling

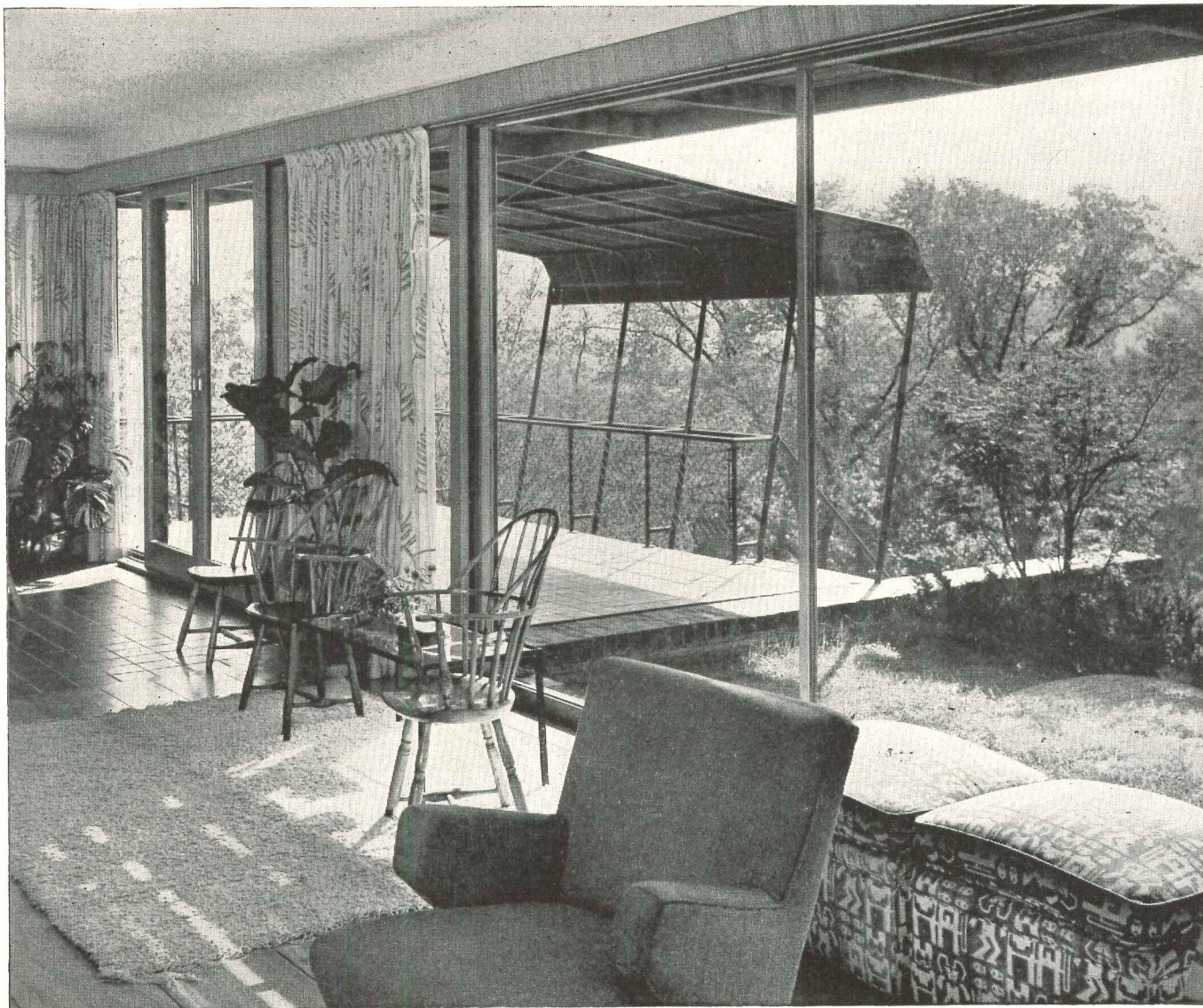
PHOTOGRAPHIC MURALS

Photographic wall murals, made by a new screenless process to maintain the high quality of the negative, are now being offered at a lower cost when used in large quantities.

Foto Murals are described as being especially suitable for use in multiple housing projects to enhance the value of the units and to create the illusion of expanding the walls of small rooms.

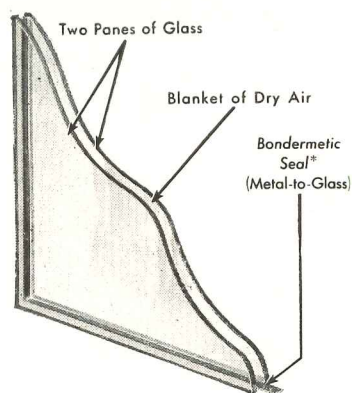
Foto Murals are available in sepia and black and can be installed like wallpaper

(Continued on page 194)



Architect: Carl A. Strauss, Cincinnati, Ohio.

Thermopane... adds extra comfort to daylight design



Cutaway view of Thermopane

FOR BETTER VISION, SPECIFY THERMOPANE
MADE WITH POLISHED PLATE GLASS



With *Thermopane**, you give your clients three advantages in one wall. You bring daylight indoors, open rooms to outdoor beauty and assure greater comfort all year.

This sealed, double-glass unit solves the problem of window insulation once and for all. By specifying *Thermopane* throughout the house, you eliminate the bother and maintenance of storm sash. In winter, *Thermopane* cuts heat loss, reduces downdrafts, minimizes condensation, saves fuel. In summer, it helps keep rooms cooler. For details, write for our *Thermopane* book and list of standard sizes.

*®



Thermopane

MADE ONLY BY

LIBBEY · OWENS · FORD GLASS COMPANY

6109 Nicholas Building, Toledo 3, Ohio

by a competent paper hanger in less than an hour, according to the manufacturer. Foto Murals of California, 672 S. Lafayette Park Place, Los Angeles, Calif.

CEILING-TYPE VENTILATOR

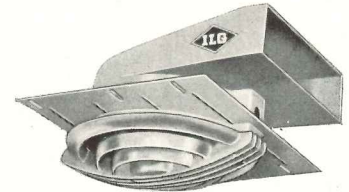
Outstanding advantages claimed for the new *ILG Ceiling-Type Ventilator* are ease of installation and maintenance and quiet operation at full capacity. The complete grille and fan assembly is

hinged so that it may be easily detached from the unit for cleaning, and the patented fan wheel has been designed to combine high capacity with low cost and quiet operation. A built-in electrical plug and the hinge hold the grille in place; when the grille is opened for cleaning, the circuit is automatically broken.

A patented spring booster on the insulated discharge damper opens the

damper freely when the ventilator is started and closes it when the ventilator is turned off.

The mounting plate is adjustable to permit installation flush with the ceiling in plaster or plywood construction from $\frac{1}{4}$ to $1\frac{1}{4}$ in. thickness. Standard $3\frac{1}{4}$ by 12 in. wall stack duct and elbows are recommended for use with the ventilator. Ilg Electric Ventilating Co., 2850 N. Crawford Ave., Chicago 41, Ill.



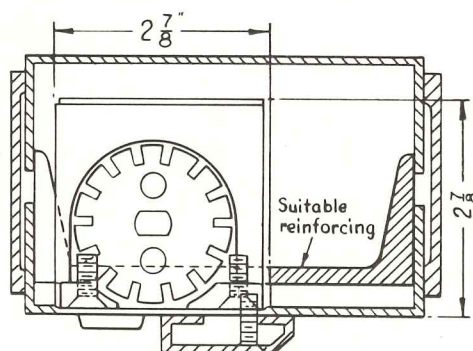
High capacity featured in ceiling fan

RIXSON CONCEALED OVERHEAD DOOR CHECKS

Especially Compact for
NARROW
Headframes and
Transom Bars
... Metal or Wood

Rixson No. 220 concealed single-acting overhead door checks—for interior, vestibule or entrance doors—are particularly desirable when small space is a factor. These sturdy, reliable units are only $2\frac{7}{8}$ " wide x $2\frac{7}{8}$ " high and 17" long. Checking action is controlled by two valves—for closing and latch control. When door is closed, no parts of the plate, check or arm are visible. Roller bearings throughout. Spring control easily adjustable. Hold-open feature available. Specific literature and specifications will be furnished on request.

controlled by two valves—for closing and latch control. When door is closed, no parts of the plate, check or arm are visible. Roller bearings throughout. Spring control easily adjustable. Hold-open feature available. Specific literature and specifications will be furnished on request.



Special problems of installation will receive prompt attention from the Rixson engineering and designing departments.

The Oscar C. Rixson Company

4450 Carroll Avenue Chicago 24, Illinois Telephone Mansfield 6-5050
Established 1900

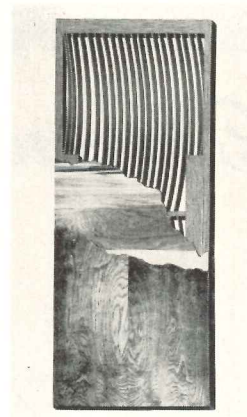
SALES REPRESENTATIVES

ATLANTA—Walter S. Johnson, 917 St. Charles Ave., Tel. Vernon 4725.
CANADA—The Richards-Wilcox Canadian Co., Ltd., London, Ont., Tel. Fairmont 2800.
LOS ANGELES—George E. Tupper, 1010 W. Olympic Blvd., Tel. Prospect 0924.
NEW YORK—Fred G. MacKenzie, 107 Reade St., Tel. Barclay 7-6852.

PHILADELPHIA—G. Norris Williams, 211 Greenwood Ave., Wyncote, Pa., Tel. Ogoniz 1929.
PORTLAND, ORE.—W. N. Browning, 529 Henry Bldg., Tel. Atwater 5839.
SEATTLE—E. R. Spragg, 4012 East 38th St., Tel. Kenwood 7605.
WASHINGTON, D. C.—L. J. Fair, 2068 14th St. N., Arlington, Va. Tel. Chestnut 6262.

HOLLOW FLUSH DOORS

The *Hasko Arch-Kor* flush door employs a series of arched ribs, running vertically within a solid lumber frame, to support the face panels of the door. By eliminating horizontal members in contact with the face panels, the manufacturer claims that any "show through" of core construction in the finished door is eliminated. The ribs are of $\frac{1}{8}$ in. veneer, spaced on $1\frac{1}{2}$ in. centers, and arched 2 in.



Flush door has arched ribs for support

Hardwood veneers ($\frac{1}{10}$ in.) and face veneers of $\frac{1}{20}$ in. birch are cross-grained and bonded to the core for maximum resistance to warping and buckling.

The doors are available in two grades: unselected for color, but matched for grain; and unselected for color and unmatched. Haskelite Mfg. Corp., Grand Rapids 2, Mich.

(Continued on page 196)

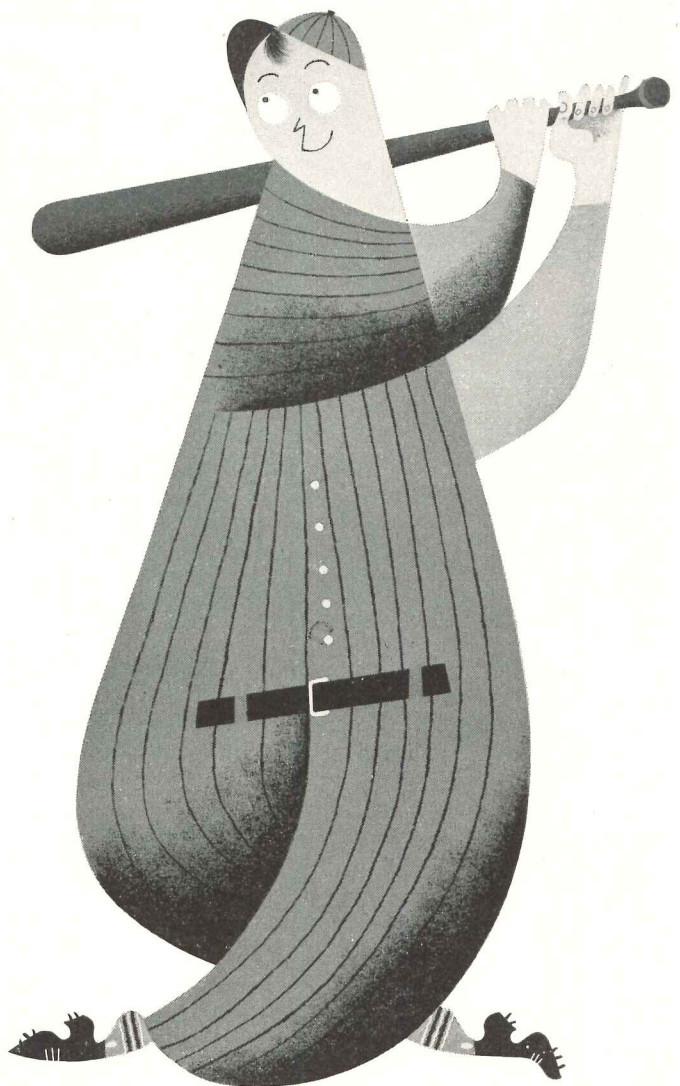
up from the minor leagues

*comes
stainless
sheet
and strip*

Stainless steel has now moved up to the major leagues. Advances in strip mill techniques have played an important part. Now, CRUCIBLE, using the best of these accepted modern techniques, plus exclusive ones of its own . . . is producing stainless by specialty steel production methods at the busy Midland Works. In the *first* mill *specifically* built for the production of stainless, top steel specialists are putting to good use \$18,000,000 of new tools and buildings. When the leader in the specialty steel field applies specialty steel production methods to stainless, you can rightly expect that from CRUCIBLE you'll get the best that a half century of experience and modern tools can provide.

The new mill will produce stainless in widths of ½" to 50" inclusive, in all gauges, grades and finishes. This is important news to users of stainless steels, because with Trent Tube Company joining the organization, you can get stainless from Crucible in every form: sheets, strip, plates, bars, wire, forgings, castings and tubing. Crucible offers comprehensive data sheets and unsurpassed metallurgical service. Your inquiries are welcome.

CRUCIBLE STEEL COMPANY OF AMERICA
405 Lexington Ave., New York 17, N. Y.
Branches, Warehouses and Distributors in Principal Cities



CRUCIBLE

hot and cold rolled

first name in special purpose steels

STAINLESS SHEET AND STRIP

STAINLESS • HIGH SPEED • TOOL • ALLOY • MACHINERY • SPECIAL PURPOSE • STEELS

(Continued from page 194)

WALL HEATER

New models of the *Royal Jet-Flow* wall-type warm air heater are said to combine compactness with high quality performance. The 45,000 and 55,000 Btu input sizes occupy a space of only 10 $\frac{3}{8}$ by 27 $\frac{3}{8}$ in., and the 25,000 and 35,000 Btu input sizes measure only 10 $\frac{3}{8}$ by 21 in. The new model which is smaller in size than former ones is en-

closed in a Masonite hardboard cabinet.

Air is taken in through a register located at floor level, and is passed over the heating element into a cone shaped duct. When it leaves the register located just below the ceiling level, it is traveling at about 300 ft. per min. With this velocity plus the downward direction of the louvers, a portion of the air is said to reach the floor almost immediately, with the balance flowing across the ceiling,

down outside walls and back across the floors to the register. Royal Heaters, Inc., 1024 Westminster Ave., Alhambra, Calif.



New model wall heater is reduced in size



Terrazzo makes every door a "service" entrance

No pampering needed when TERRAZZO is underfoot! Marble-hard and concrete-durable, TERRAZZO asks no quarter and gives no trouble. It is highly stain-resistant and practically mar-proof. It is fool-proof in maintenance, requiring only routine washing and cleaning.

Designs? *Unlimited.* Colors? *A wide range.* Other uses besides floors? *Sure: walls, baseboards, wainscots, and stairs.* Replacement? *When the building is replaced!* Specify TERRAZZO and do your client a permanent service.



Detailed information and complete specifications available in free AIA Kit. Write for yours today.



THE NATIONAL TERRAZZO AND MOSIAC ASSOCIATION, INC.

1420 New York Avenue, N. W.

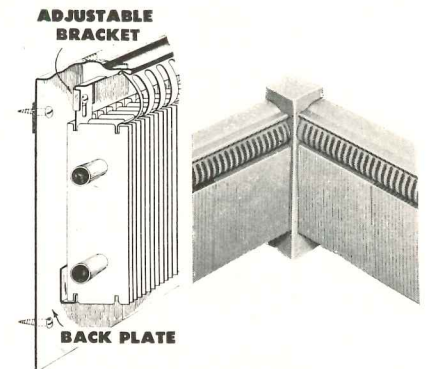
Dept. R

Washington 5, D. C.

RADIANT BASEBOARD

Featuring economy in both original and labor costs is the new *Kritzer Radiant Baseboard* which is said to require only three simple steps for a finished installation.

The coils of the baseboard system consist of 10 ft. sections of 2 by 5 $\frac{1}{2}$ in. aluminum fins mechanically bonded to two, 3 in. on center, copper supply



Baseboard heater installed in three steps

tubes. No fittings are required to join the ends of the copper tubing when the coils are being installed. As two sections are brought together, the supply ends in one section are belled, the ends of the other section are inserted into this bell, and a solder ring is heated and melted between the two.

Coils are mounted so that the air can circulate behind them. Kritzer Radiant Coils, Inc., 2901 Lawrence Ave., Chicago 25, Ill.

(Continued on page 198)

AMERICAN-Standard

First in heating . . . first in plumbing



■ American-Standard Plumbing Fixtures go into another outstanding building!

This time it's Southern California's largest office building, the new \$11,000,000 home of General Petroleum Corporation in Los Angeles.

In keeping with the scores of engineering and architectural features that make this striking structure one of the nation's most modern, are the hundreds of fine quality American-Standard Plumbing Fixtures throughout the big building.

An interesting feature about this installation is that the fixtures are wall supported. This absence of floor obstructions makes for neater, cleaner rooms . . . and greatly reduces the important item of rest-room maintenance.

For more than half a century, American-Standard products have been enjoying the unqualified recommendation of leading architects and builders. Not only because of the fine quality and unvarying dependability of the products themselves, but also because the American-Standard line covers heating and plumbing for every type of installation.

Your Heating and Plumbing Contractor will be glad to furnish full information about the complete American-Standard line. **American Radiator & Standard Sanitary Corporation**, P. O. Box 1226, Pittsburgh 30, Pa.

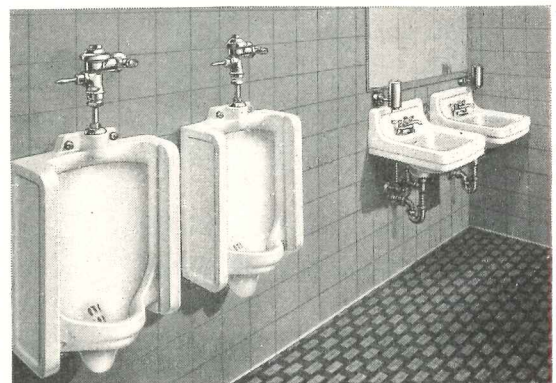
General Petroleum's New Los Angeles Home
has **AMERICAN-Standard Plumbing Fixtures** throughout



FENWICK Lavatory, made of genuine vitreous china, fits neatly into one of the coat closets built inside many of the building's modern offices.



GLENCO Water Closets are ideal for public use. Quiet, thorough-flushing, easy-to-clean. Shown in off-the-floor partitioned compartments.



LUCERNE Lavatories and **WASHAL** Urinals, both of genuine vitreous china, make the Men's Rooms in this new building models of cleanliness . . . go far towards reducing maintenance time and costs.



Architects: Wurdeman & Becket, Los Angeles
Mechanical Engineer: Ralph E. Phillips, Los Angeles
General Contractor: P. J. Walker Company, Los Angeles
Plumbing Contractors: Howe Brothers, Los Angeles
Wholesale Distributor of Plumbing Fixtures: Keenan Pipe & Supply Company, Los Angeles

Serving home and industry
AMERICAN-STANDARD • AMERICAN BLOWER • CHURCH SEATS • DETROIT LUBRICATOR • KEWANEE BOILER • ROSS HEATER • TONAWANDA IRON

Get ready
for Winter!

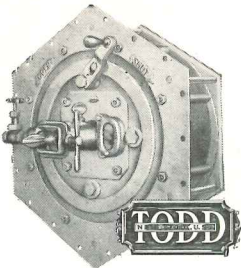
INSTALL

TODD
BURNERS

-GAS OR OIL

Don't let Winter unnecessarily increase your power costs. Have Todd burners—save up to 10% on your fuel and maintenance bills . . . get greater power capacity. Let skilled Todd specialists, backed by 35 years of Todd experience, engineer your boiler plant for utmost economy . . . replace your obsolete equipment . . . provide efficient new installations.

Oil Burners
Gas Burners
Combination
Oil and Gas
Burners



COMBUSTION EQUIPMENT DIVISION
TODD SHIPYARDS CORPORATION
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FRANCISCO • SEATTLE • MONTREAL • TORONTO
BARRANQUILLA • BUENOS AIRES • LONDON
HAVANA • PUERTO RICO • ORANGEBURG, S. C.

(Continued from page 196)

COMBINATION AIR DIFFUSER,
PENDANT LIGHT

Where architectural or decorative consideration require an air diffuser and light fixture to be located at the same spot, a modification of the *Kno-Draft Adjustable Air Diffuser* is available which will accommodate any pendant light fixture, according to the manufacturer.

The diffuser is said to retain all of its functional features when combined with pendant lighting which can be incorporated in any size or type of diffuser. W. B. Connor Engr. Corp., 114 E. 32nd St., New York 16, N. Y.

TEMPERATURE CONTROL SYSTEM

A completely self contained temperature control system for hand-fired house heating plants has been developed which automatically adjusts dampers and checks.

Since the system uses both electric and hydraulic power, the small motor is said to exert more than ample force to adjust the dampers and checks. The assembly consists of an oil-encased electric motor which operates a hydraulic pump; the pump in turn forces oil against a diaphragm, moving an arm connected by pulleys and chains to dampers.

The thermostat of the *Y 219A Electric Janitor Kit* is said to be less than half the size of conventional thermostats and is designed to activate short, regulated operations to maintain even temperatures. Minneapolis-Honeywell Regulator Co., Minneapolis, Minn.

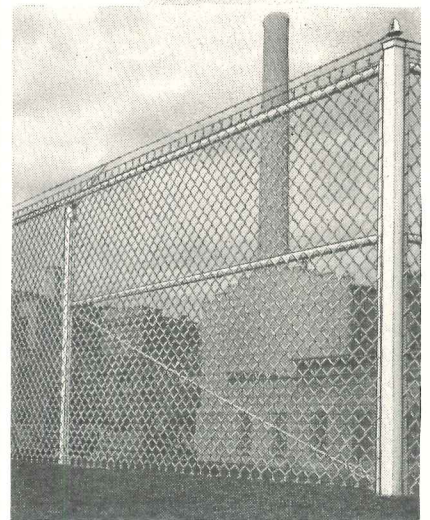
FLOW CONTROL VALVE

Among the uses for the *Dole Flow-Control Valve*, described as giving a constant flow of water regardless of pressure, are for instantaneous water heaters, showers, automobile washing equipment, etc.

Previously this valve has been offered only as an integral part of Dole equipment, but now is available as a separate unit. The valve uses a simple control consisting of a flexible orifice that varies its area in inverse proportion to the pressure. Laboratory tests are said to show that these valves will accurately control the flow at any pressure from 15 to 150 psi. The Dole Valve Co., 1933 Carroll Ave., Chicago 12, Ill.

Only **ANCHOR FENCE**
gives you

- ✓ DEEP-DRIVEN ANCHORS
- ✓ SQUARE FRAME GATES
- ✓ H-BEAM LINE POSTS
- ✓ SQUARE TERMINAL POSTS



Specify **ANCHOR** and
be **SAFE!**

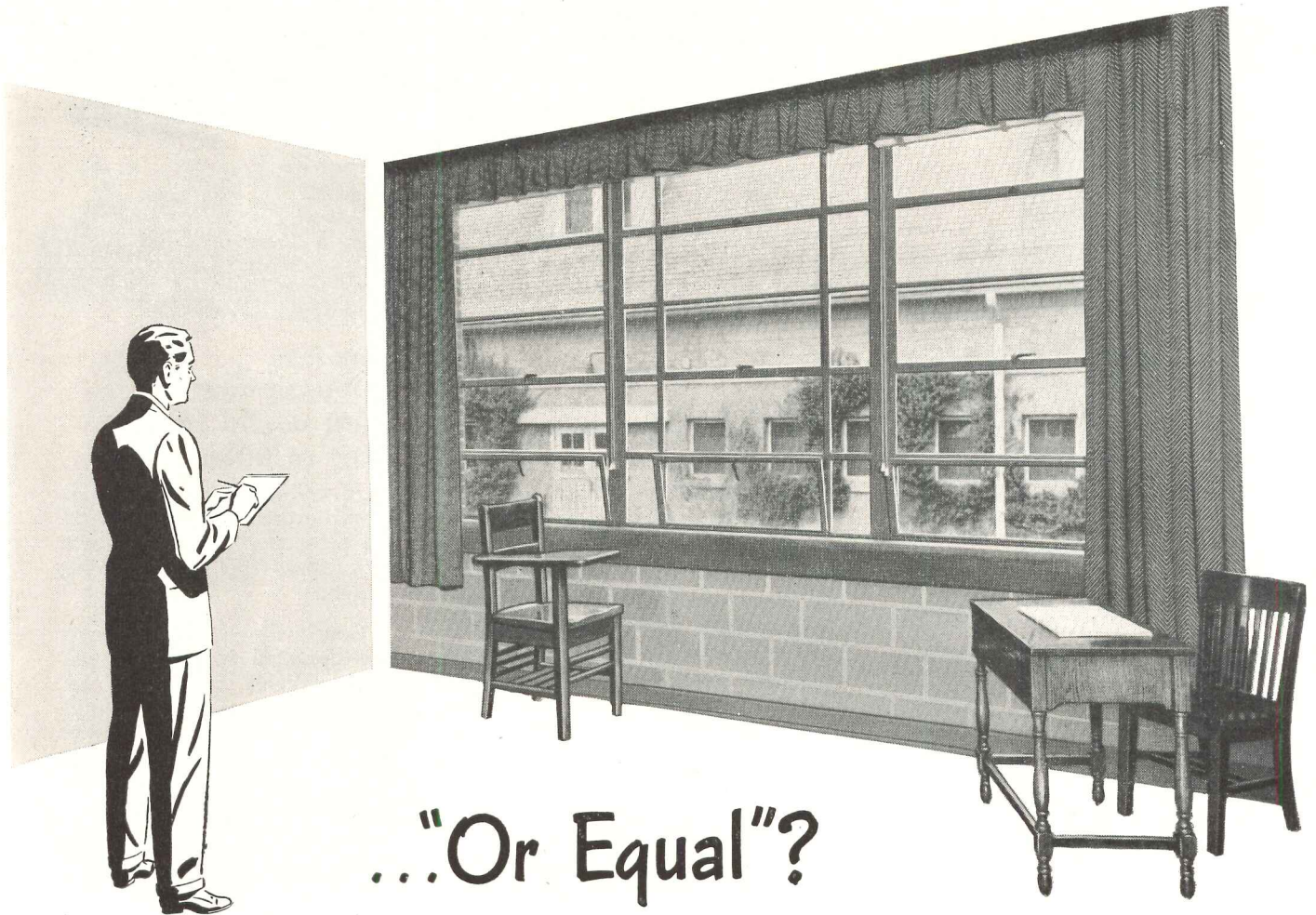
WHETHER you're specifying fence for industrial, institutional or residential jobs, you can rely on Anchor Chain Link Fence to insure lasting fence protection for your clients. For years, leading architects have been writing "Anchor" into their fence specs for features like these:

1. *Deep-Driven Anchors*, which hold the fence erect and in line, in any soil or weather;
2. *Square Frame Gates*, amazingly free from warping and sagging;
3. *H-Beam Line Posts*, self-draining, rust-free and rigid;
4. *Square Terminal Posts*, which improve strength, durability and appearance.

Make sure your A.I.A. File 14-K is complete. Write today for our free, illustrated booklet . . . showing many types and uses of Anchor Chain Link Fence . . . containing structural diagrams and specifications.

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... "Or Equal"?

"Such and such a brand . . . or equal". The term is necessary, sure. But there are so many things about a product . . .

Take Fenestra* Intermediate Steel Windows. Look closely and you'll see that there is not even a hairline crack at frame and vent corner joints. Those corners are mitered, welded and smooth finished, giving the entire window a strength and rigidity hard to "equal". Lift the window and shake it. You'll see.

Notice, too, that weathering baffles are built in . . . not just "applied". Independent laboratory tests prove Fenestra Intermediate Steel Windows tough to "equal" for minimizing air infiltration.

Specially designed hardware brackets are *welded*, not screwed, to ventilators. They stay on, tight, for years. Those are little things. But they add up to better per-

formance, longer. And, naturally, client satisfaction.

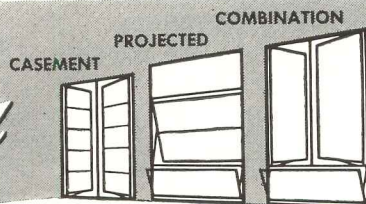
Fenestra Windows' larger glass areas invite in extra daylight. Air-deflecting vents bring in draftless ventilation. Designed to modular standards, these beautiful windows can be installed economically as single units or as whole window walls of combined units. Maintenance costs are low. Cleaning and screening are done from *inside*.

Fenestra Projected and Casement and Combination Windows are going into schools and hospitals all over the country. Commercial buildings. And homes. Sometimes for one or two of their advantages, but mostly for the combination of *all* their advantages. That combination has no "equal".

For full information on types and sizes mail the coupon. For immediate personal service, call your local Fenestra representative.

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Dept. AR-10
2252 East Grand Blvd.,
Detroit 11, Michigan

Please send me data on types and sizes of the new Intermediate family of Fenestra Windows.

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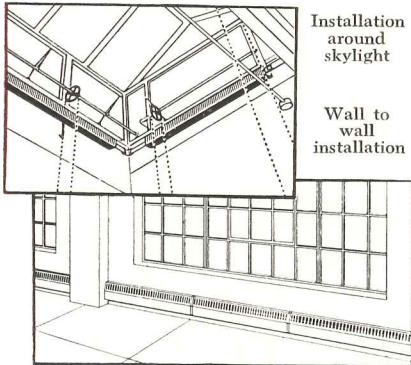
SPOT
HEAT

OR
SPREAD
IT



with Webster Type 'WI' Radiation

Use Webster Type WI Radiation with steam or hot water to "spot" heat where you want it—wherever floor space or vertical wall space, or both, are limited. Use it, too, to spread heat evenly along cold exposed walls—to provide even, clean heating comfort.



A 4-foot piece of Type WI equals 25 square feet of ordinary radiation and weighs only 14 lbs. Plain ends or threaded adapters. Pressed steel covers available.

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Webster Type "WI" Radiation in a new role. Ideal for schools, office buildings, and other institutional and commercial applications. Ask for new Bulletin B-1551, soon ready.

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WARREN WEBSTER & CO.
Camden 5, N. J. Representatives in Principal Cities
In Canada, Darling Brothers, Limited, Montreal

Webster
HEATING

(Continued from page 148)

Western Pines—Idaho White Pine, Ponderosa Pine and Sugar Pine. Both traditional and modern interiors are shown. Single copies of both booklets are available free of charge. 64 and 20 pp., illus. Western Pine Assn., 510 Yeon Bldg., Portland 4, Ore.*

Extruded Aluminum

Reynolds Aluminum Extruded Shapes. Covers the advantages and various applications, and tells how a single extrusion will frequently eliminate the assembly of two or more parts. Commercial tolerances and specified mechanical properties are discussed. Other information given includes data on lengths, alloys, tempers and chemical compositions. 4 pp., illus. Reynolds Metal Co., Aluminum Div., 2500 S. Third St., Louisville 1, Ky.*

Aluminum Roofing

How to Apply Kaiser Aluminum Roofing. Sketches and text tell how to apply corrugated aluminum roofing to new and old buildings. Drawings show various joints used such as: ridge roll, gambrel roof joint, end and side wall flashing, roof side lap and gable end, wall corner and side lap, roof end lap. Accessories and available sizes are also covered. 6 pp., illus. Permanente Products Co., Kaiser Bldg., 1924 Broadway, Oakland 12, Calif.*

LITERATURE REQUESTED

The following individuals and firms request manufacturers' literature:

Phineas Alpers, Student, 715 Hill St., Ann Arbor, Mich.

Clayton C. Cousins, Architect and Registered Engineer, 4921 Albion St., Boise, Idaho.

William H. Elliott, A.I.A., Architect and Consulting Engineer, Old Kent News Bldg., Chestertown, Md.

Maurice Girard, Registered Architect, P. O. Box 1222, Rouyn, Quebec.

Hollis Johnston, A.I.A., 208 South-west Stark St., Portland 4, Ore.

Horace B. Knight, Jr., Student, 503 West Ave., Pawtucket, R. I.

Frederick A. Phelps 21 Fulton St., Newark 2, N. J.

Ernest J. Pilotti, Consulting Engineer, 6 Main St., Binghamton, N. Y.

Robert I. Upshur, Architect, 608½ Harden St., Columbia, S. C.

TOTAL LOSS



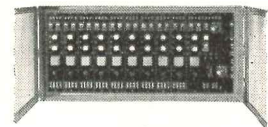
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for protection
that would have
cost so little!

A well-designed building is a well-protected building. And no protection is more important than the fire warning system.

Couch Fire Alarm Systems are designed to provide just such reliable protection by making it possible to sound an alarm . . . to call outside help . . . in a jiffy. From the many types available there's one to fit your needs.

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If you've ever received a FABRON bid that seemed far out of line . . . chances are that one or another of the following factors led to *unnecessarily* inflated figures:

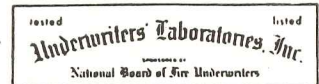
1. The bidders were uninformed as to which of FABRON's numerous price classifications applied to the job — Result: for self-protection, high classifications were selected as basis for bids . . . giving a distorted picture of FABRON costs.
2. The bidders overestimated rollage requirements for the job. This is a common occurrence in some localities where contractors have had no occasion to estimate wall covering requirements for large-scale projects. Uncertain bidders will *over-estimate* rather than *under-estimate*. Result: over-inflated bids.
3. The bidders' lack of experience with FABRON caused them to confuse it with *hard-to-hang* coverings. Result: excessively high hanging estimates.

SOLUTION? Let us estimate rollage requirements and costs from blueprints *before* specs are written. Inclusion of these figures in the specs — or asking us to forward them to bidders — will go a long way towards eliminating inflated bids and insuring FABRON figures *at a cost within your budget*. Why not call upon us?

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Special Contract Division

- In one operation, FABRON hides plaster blemishes, prevents expensive plaster repairs, assures complete washability and color fastness, eliminates expensive periodic redecorations. Initial cost within present-day budget. Applied like wallpaper. Easily repaired by invisible inlay. More than 160 colors, textures and patterns offer latitude unmatched by conventional treatments. And — FABRON prevents fire spread, carries the Underwriters' Laboratories, Inc. label.



BRISTOL HOSPITAL • Bristol, Conn.
Charles S. Palmer, Architect
H. Wales Lines Co., General Contractors

FABRON was used in this attractive hospital throughout the new Medical and Maternity wings. Long-range redecorating plans call for its installation throughout the entire original building as well.



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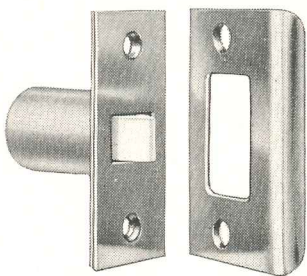
The canvas-plastic-lacquer wall covering



MODERN DOOR LATCHING

SNUG-TITE DUAL ACTION CATCHES

520 SNUG-TITE

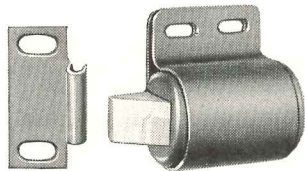


MORTISE TYPE

- LATCHES AT A TOUCH
- HOLDS SECURELY
- OPENS EASILY
- NYLON BOLT MORE QUIET, MORE DURABLE

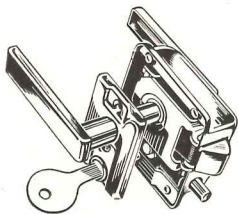
Simplified
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FOR DOORS OF ANY THICKNESS

530 SNUG-TITE



SURFACE TYPE
Adjustable to any angle

SNUG-TITE Dual Action Catches are all purpose latches that can be quickly and easily mounted on *any* type of door that does not require locking.



No. 611
KEYLOCK SCREENMASTER

COMPANIONS TO THE FAMOUS SCREENMASTER

SNUG-TITE Dual Action Catches, like the famous SCREENMASTER Screen and Storm Door Latch, are precision manufactured from the highest quality materials. They are designed to give years of dependable service.

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Order from Your Jobber or Write to—
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Watch for announcement on new
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For complete information, write E. L. BRUCE CO., Memphis, Tenn.

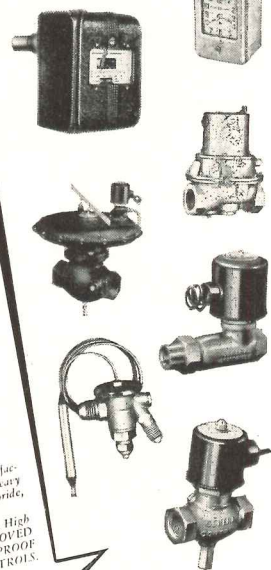


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Here are a few of an outstanding line of Controls for Industrial, Commercial and Domestic applications.

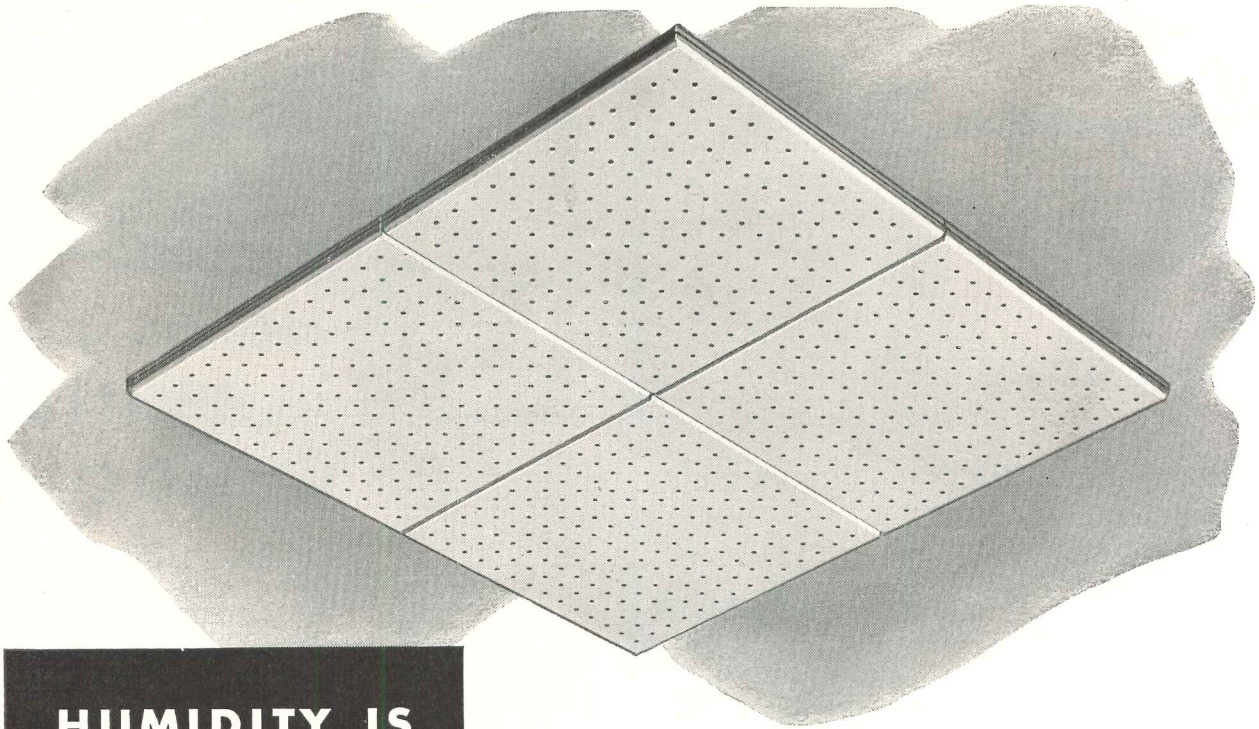
- *ALL-GAS CONTROLS
- *AIRCRAFT CONTROLS, ELECTRIC
- *AUTOMATIC SAFETY PILOTS
- *GAS REGULATORS
- *LOW WATER CONTROLS
- *GOVERNOR TYPE VALVES
- *HI-LOW-OFF VALVES
- *INDUSTRIAL VALVES
- *LOW PRESSURE GAS VALVES
- *MOTOR OPERATED VALVES
- *MAGNETIC GAS VALVES
- *PILOT BURNERS
- *PILOT GENERATORS
- *REFRIGERATION VALVES
- *SOLENOID VALVES
- *STRAINERS—RELAYS
- *GAS COCK SAFETY VALVES
- *THERMOSTATIC CONTROLS
- *TRANSFORMERS—SWITCHES
- *THERMOPILOTS

Controls for air, water, steam, natural, manufac-
tured and liquefied petroleum gases, light and heavy
oils, etc., refrigerants such as: freon, methyl chloride,
sulphur dioxide and ammonia. PROVED
and low pressures and temperatures. PROVED
AND IMPROVED PERFORMANCE IS PROOF.
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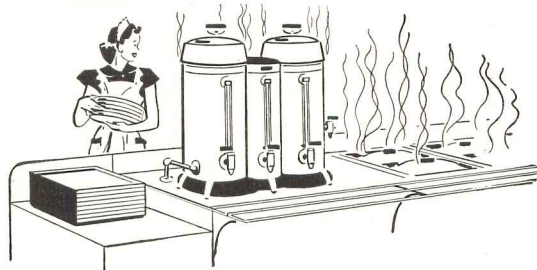
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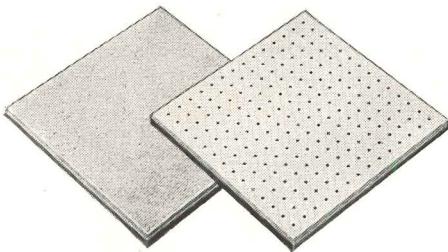


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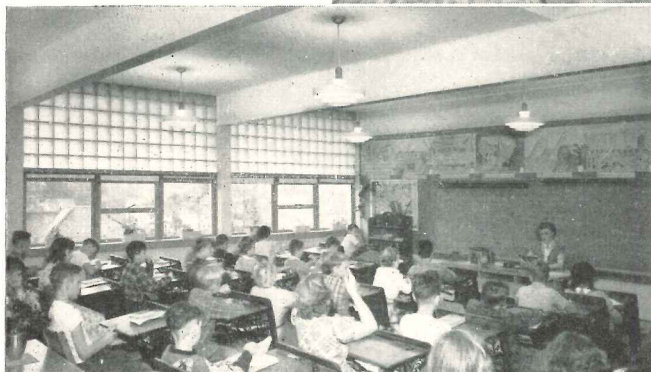
For specification information, write for our new manual: "Fiberglas Acoustical Materials" . . . Standards AC6.C1. Owens-Corning Fiberglas Corp., Dept. 831, Toledo 1, Ohio.

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Kentile offers a combination of advantages no other floor can match

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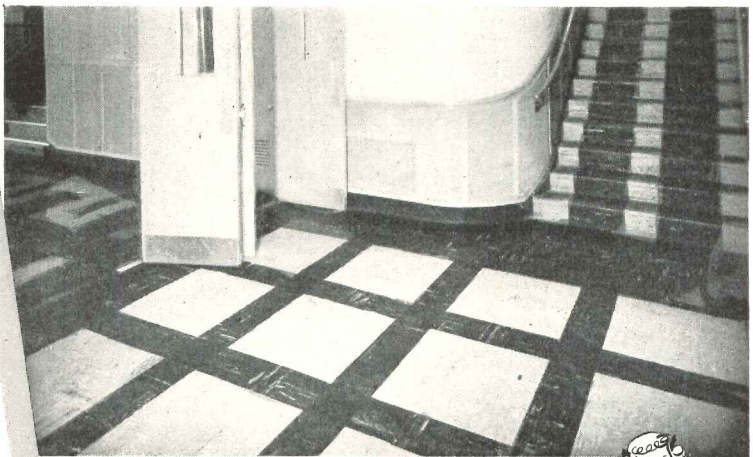
● **QUIET.** Resilient Kentile cushions footsteps, minimizes clatter—helps concentration.



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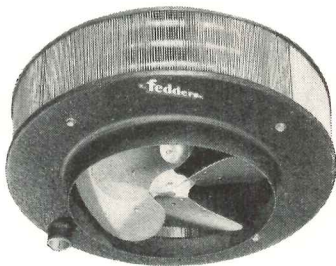
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I would consider it good business to specify Fedders Unit Heaters. They are easy to install . . . easy to look at . . . and satisfy customers easily. *Yes, what is good business is good profits.*



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UNIT HEATERS



It pays to specify Fedders Unit Heaters because.

Thousands have been giving satisfaction for years.

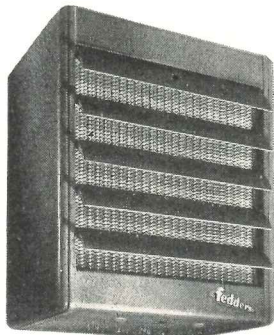
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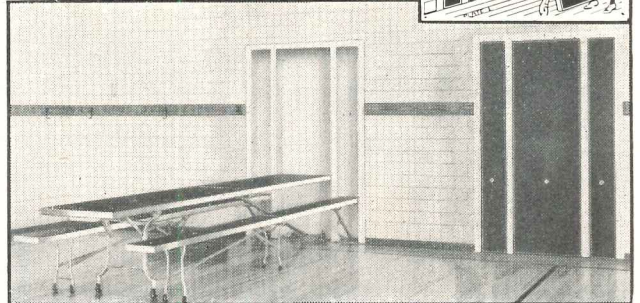


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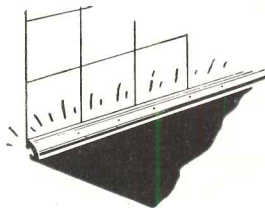
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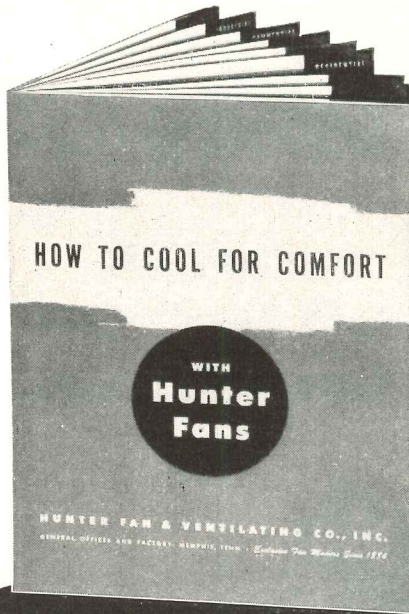
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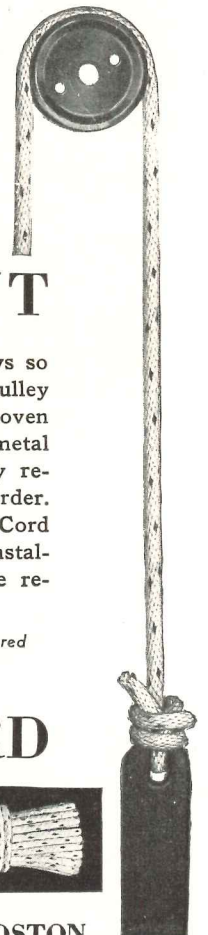
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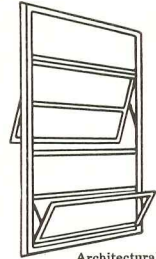
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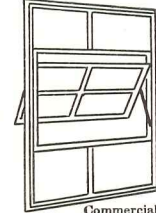
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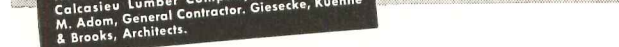
Truscon Pivoted and Architectural Projected Steel Windows, International Harvester Co., Cincinnati, Ohio. J. & E. Warm, Contractor.



Truscon Commercial Projected Steel Windows with Rack and Pinion Operators, Century Ribbon Mills, Inc., York, Pennsylvania. I. Reindollar & Son, Inc., Contractor. Joseph D. Weiss, Architect.



Truscon Commercial and Intermediate Projected Steel Windows, Pague Service Building, Cincinnati, Ohio. Gunther Reinhard, Contractor; Hake & Hake, Architects.



Truscon Architectural Projected Steel Windows, Calcasieu Lumber Company, Austin, Texas. M. Adom, General Contractor. Giesecke, Kuehne & Brooks, Architects.



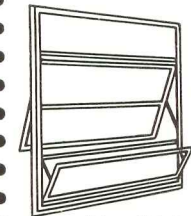
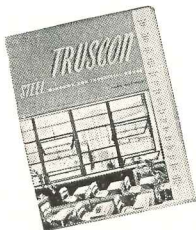
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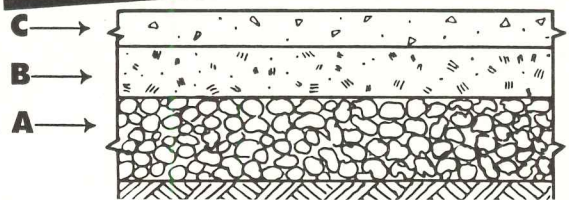
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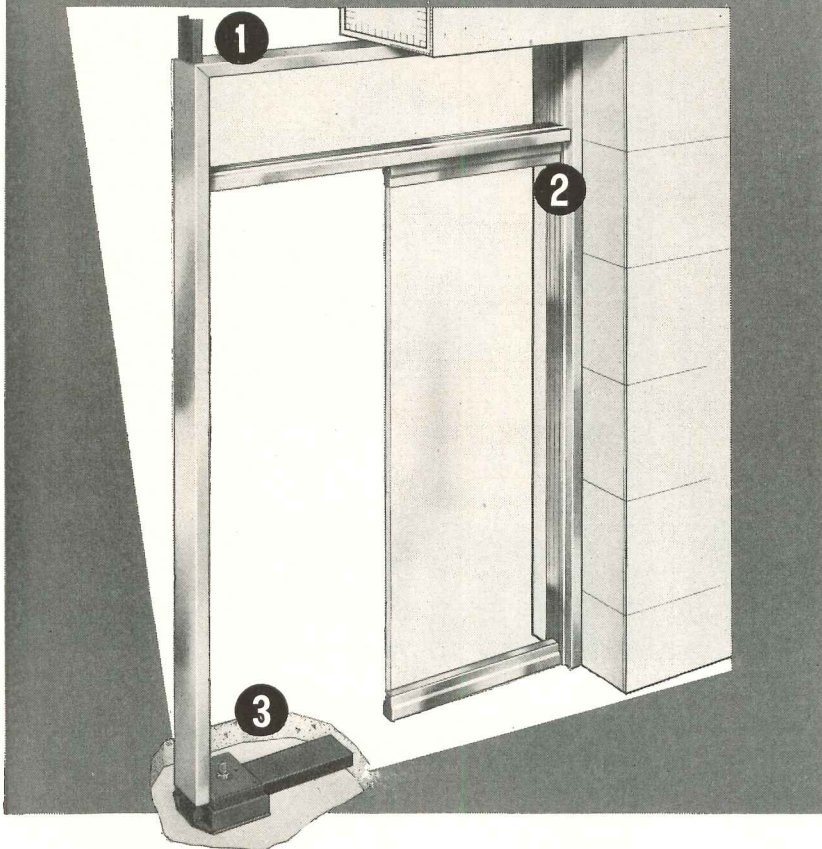
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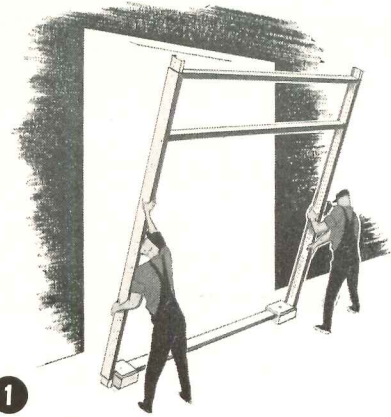
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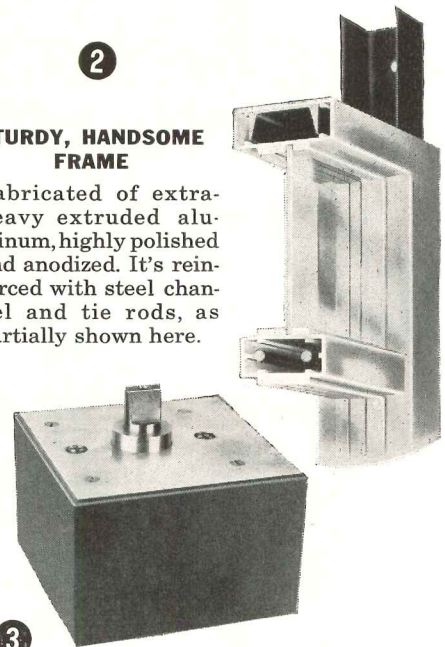
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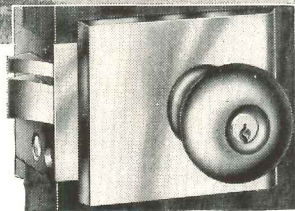
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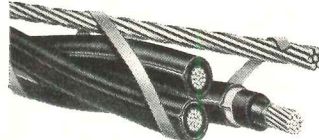


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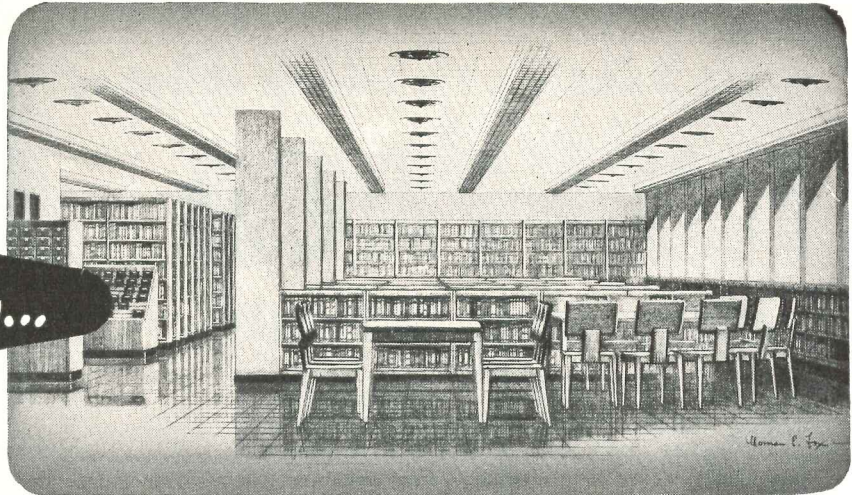
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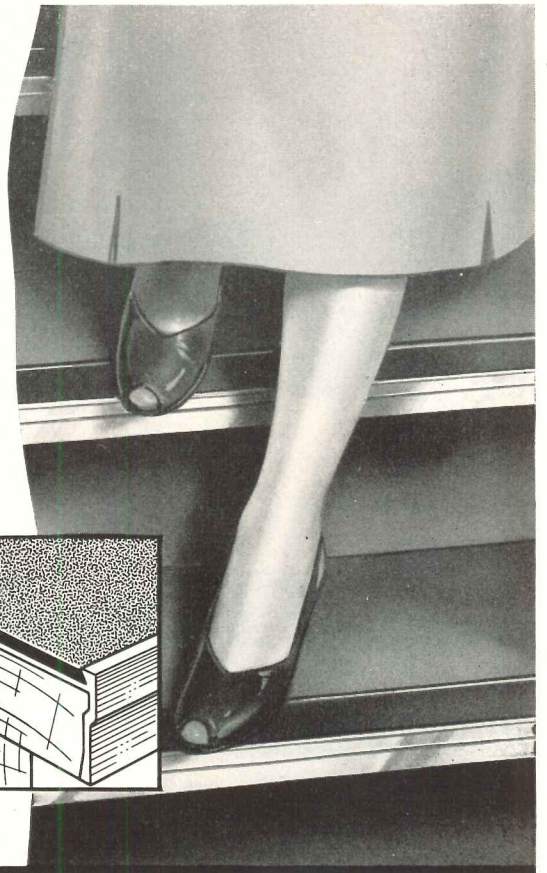
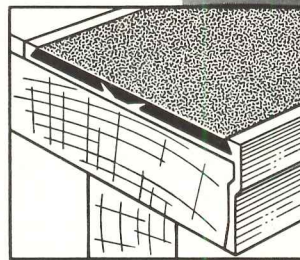
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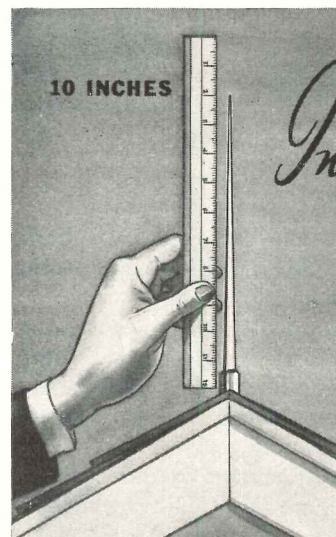


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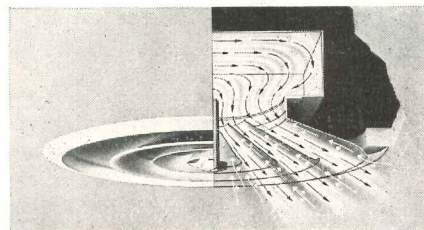
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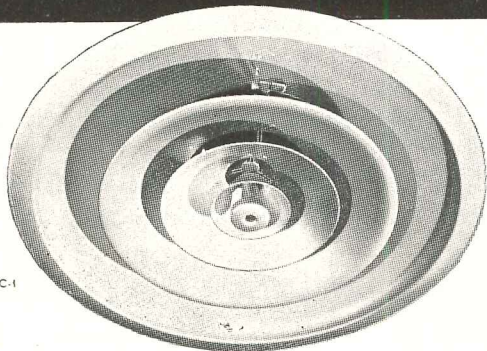
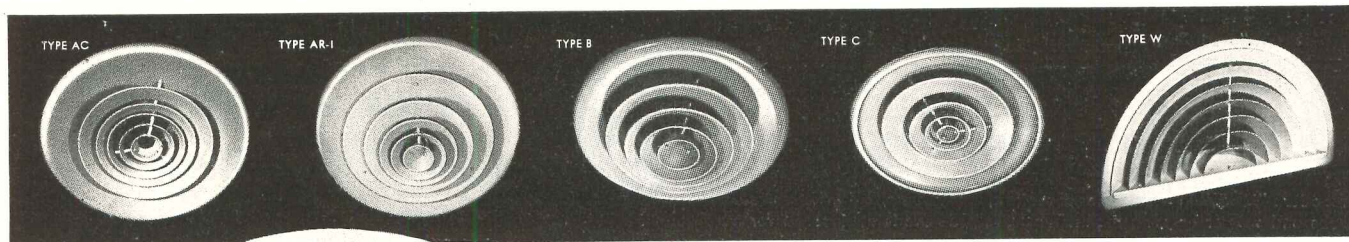
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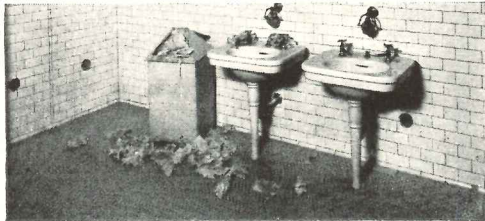
“No Air Conditioning System is Better Than Its Air Distribution”

AC 121G

Can you always be *Proud* of The Washrooms You've Designed?

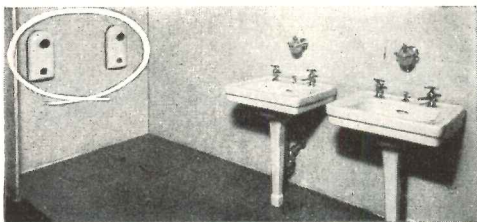
You have designed a modern building, believed perfect in every detail—but it's disheartening to think of the appearance of the washrooms each day—if they are TOWEL-STREWN! No architect can be proud of such unsightly, unsanitary, fire-hazardous towel-litter. Could you be accused of negligence if you overlooked the possibility of costly plumbing bills, or the risk of fire from towel-disposal units?

Note towel cabinet, marred walls and ugly, floor-scratching waste container.



Which is Yours?

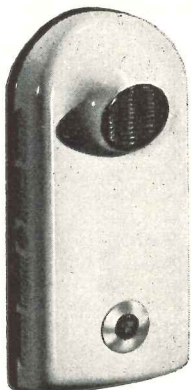
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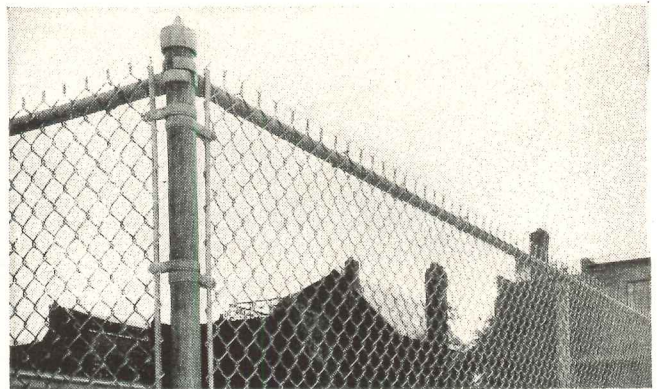
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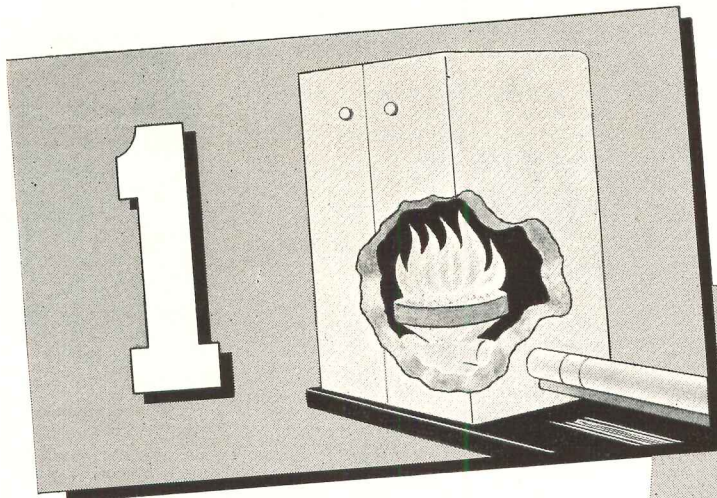
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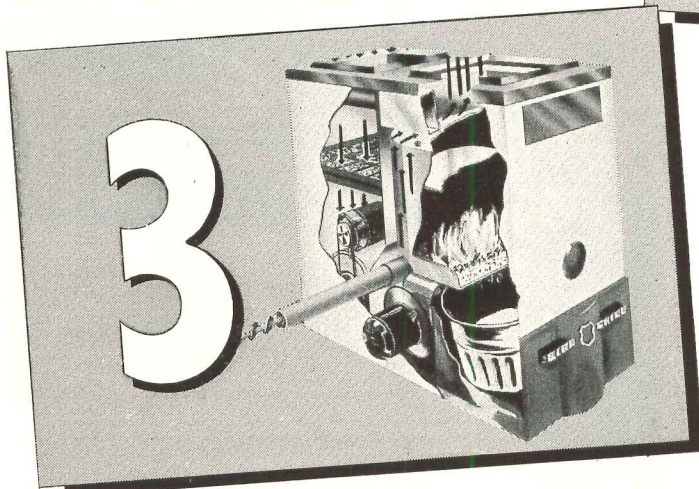
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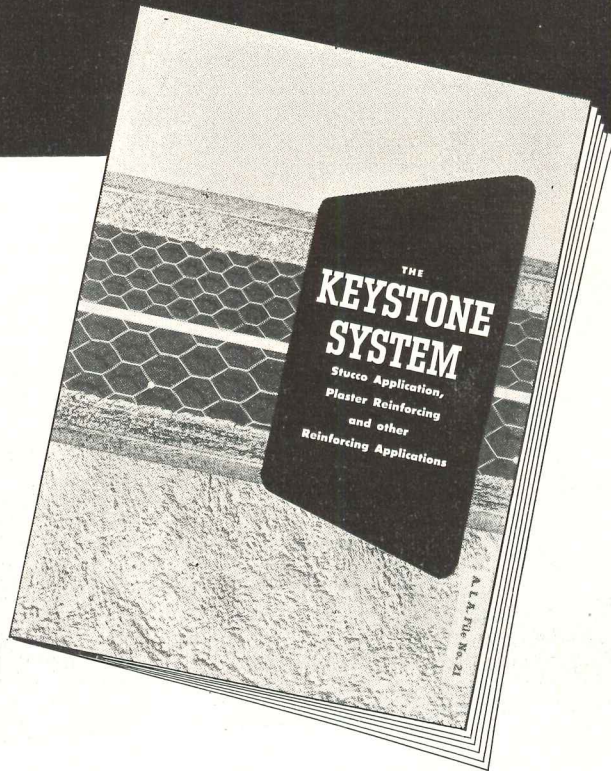
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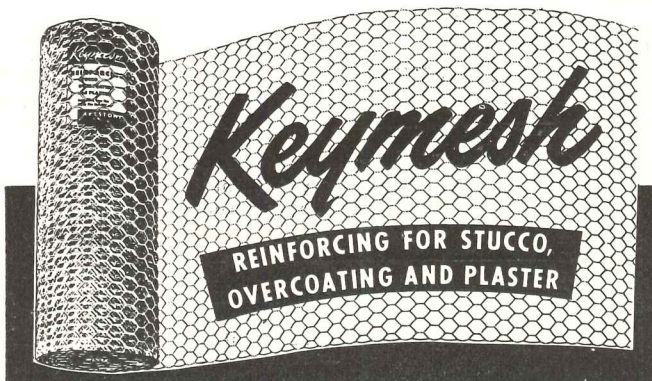
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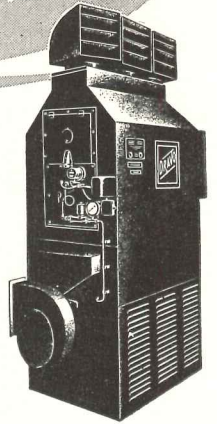


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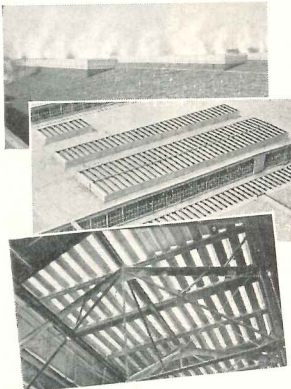


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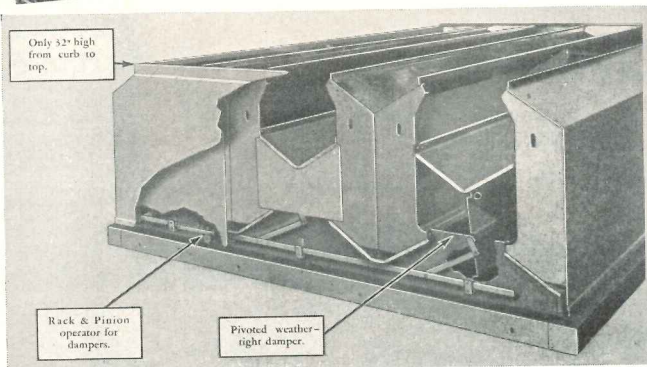
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August 26, 1949

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Mr. Paul Matheson
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Bingham, Maine

Dear Mr. Matheson:

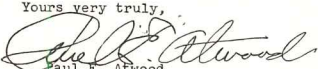
I wish to thank you for the consideration given me and the explanation of the various processes at your plant for the manufacture of flush doors. Your system of incorporating the ordinary materials that are found in nearly all doors into an entirely new structural unit is, to me, the one important advance in overcoming the door industry's biggest headache; i.e., the warping of doors after they have been completed and even after they have been hung to their final position.

The unique trussing, plus the metal stays, provide a practical, inexpensive method for the future alignment of your doors. The principle of internal trussing and the use of the exterior panels as the skin of the unit is very similar to aircraft wing construction. The same principles are involved in the manufacture of both products. I am satisfied that structurally you are on very sound ground.


Architects, Engineers, and Contractors can, now that your truss door is available, be assured of receiving perfectly straight doors capable of any set or any future adjustment necessary after the door is hung by merely use of a screwdriver. The advantage of obtaining straight doors, with no tendency to warp except under the most extreme conditions, is obvious to a builder who must obtain maximum results for his cost of hanging. The replacement of doors, hung and decorated, has always presented a problem in the building industry. With your doors that problem is now removed.

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Yours very truly,

Paul E. Atwood

PEA:T



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This unsolicited letter from Mr. Paul E. Atwood of the architectural firm of Prentiss & Carlisle Co., Inc. Bangor, Maine was received after Mr. Atwood had seen a demonstration of the Truss Door.

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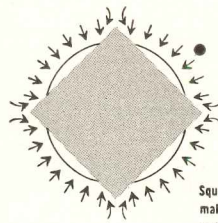
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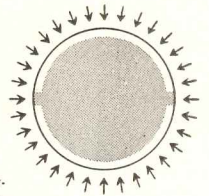
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don't put "square pegs"
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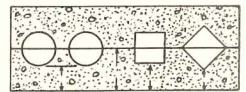
Maximum annular grip develops set uniformly around a circular section.



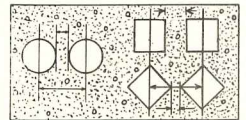
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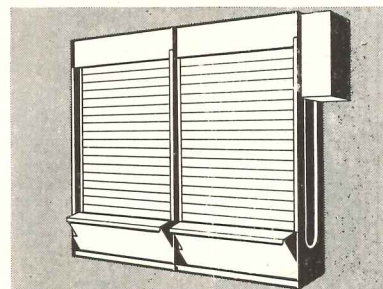
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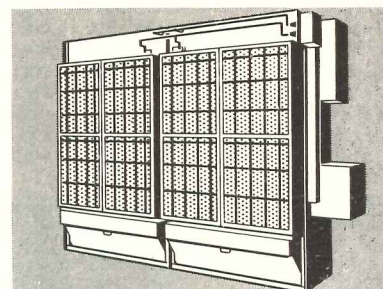


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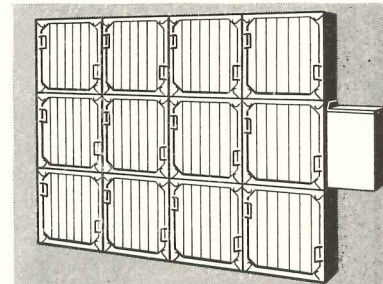
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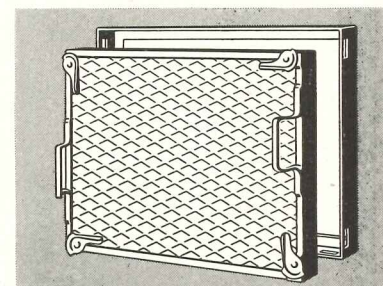
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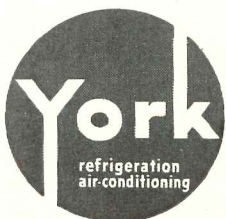
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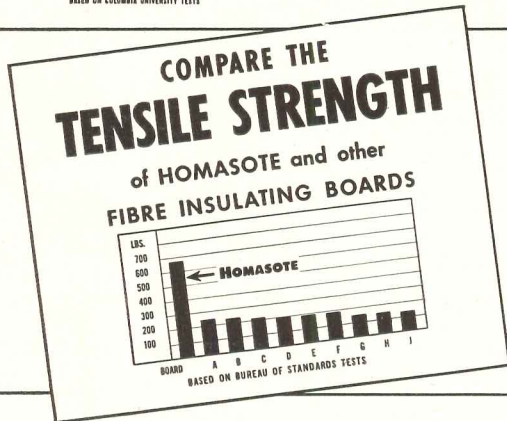
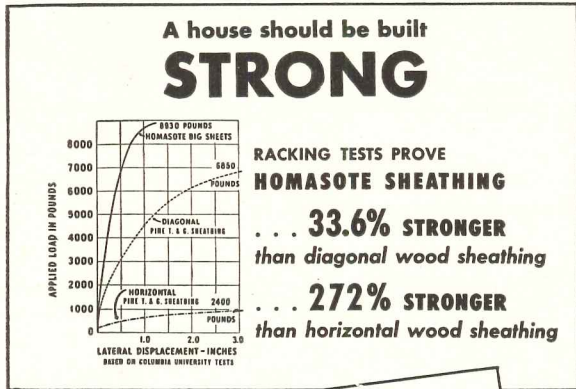
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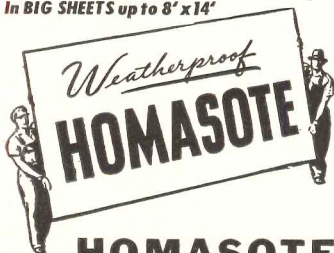
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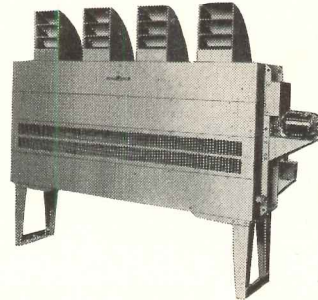
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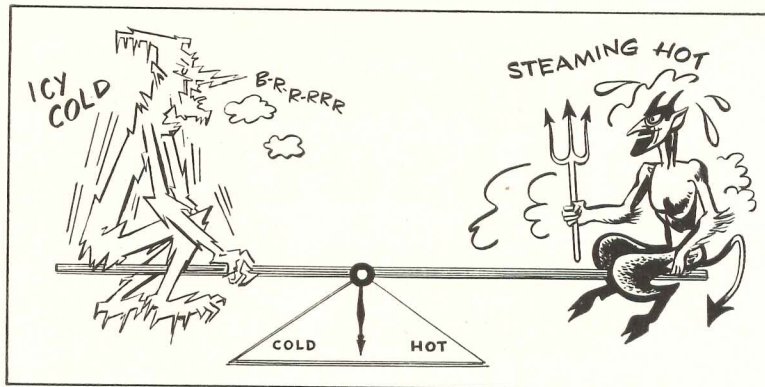
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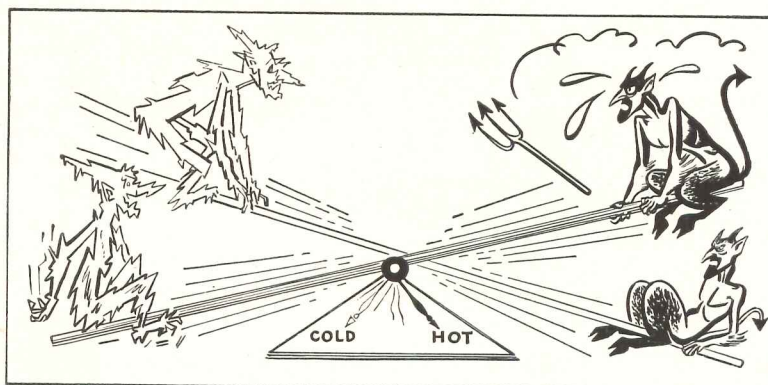
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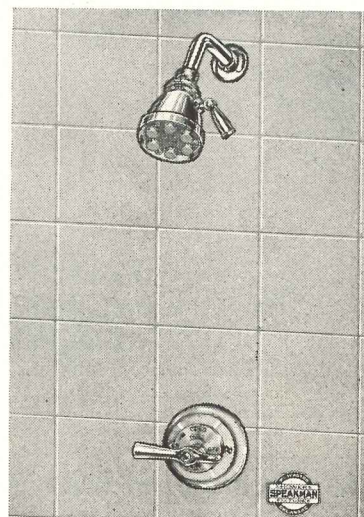


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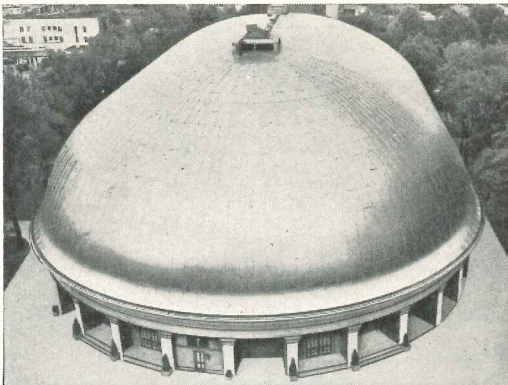
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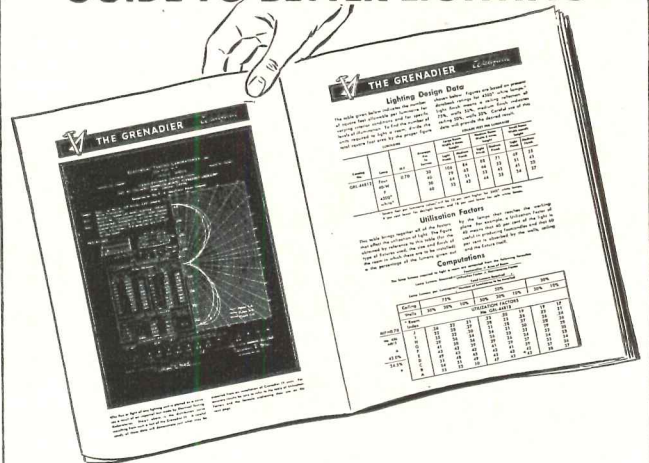
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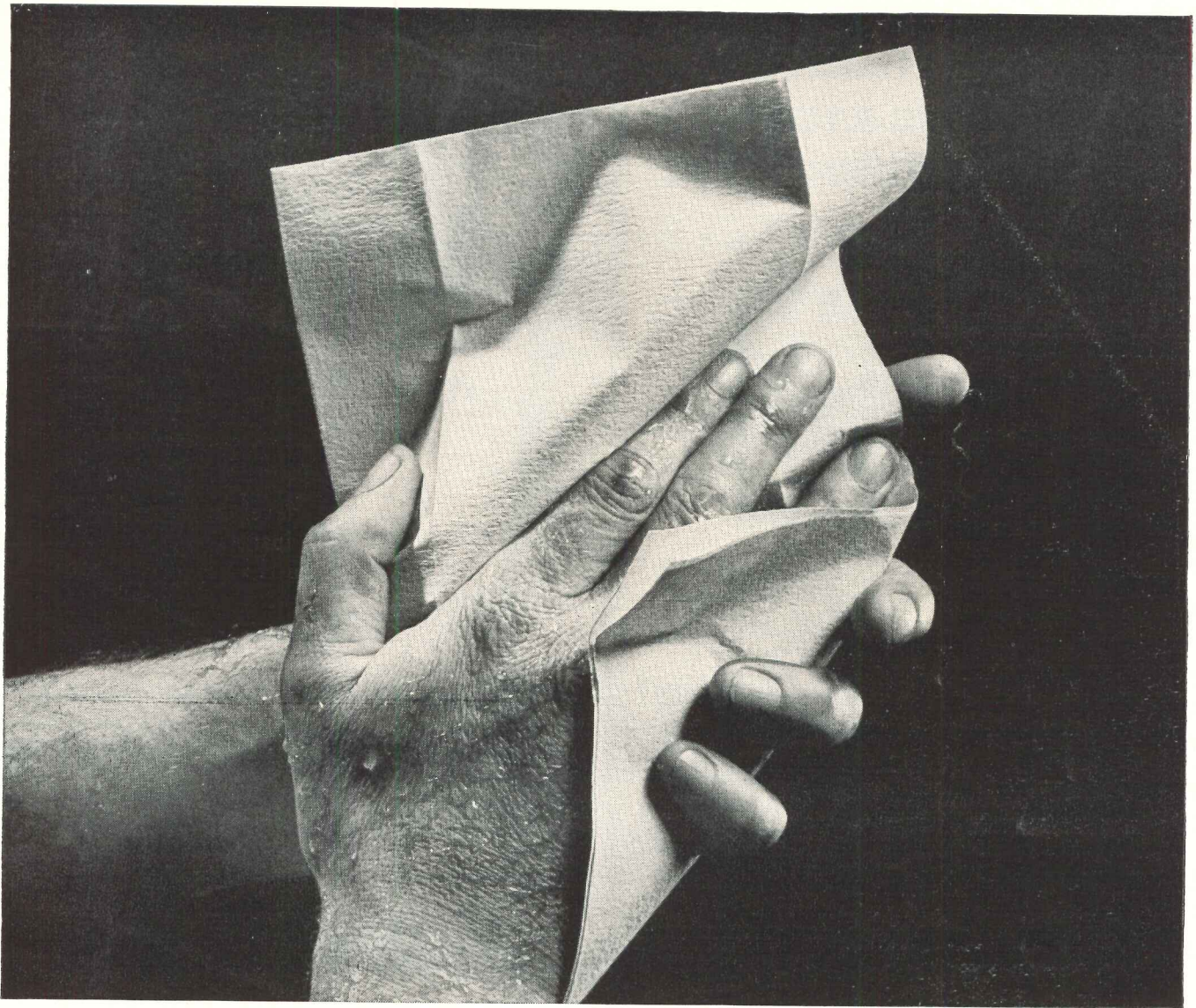
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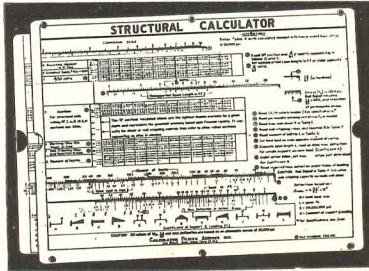


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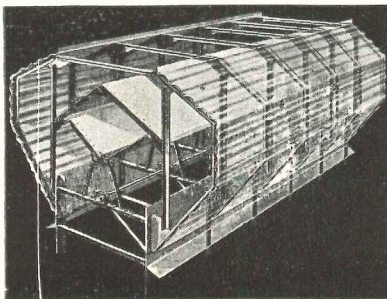
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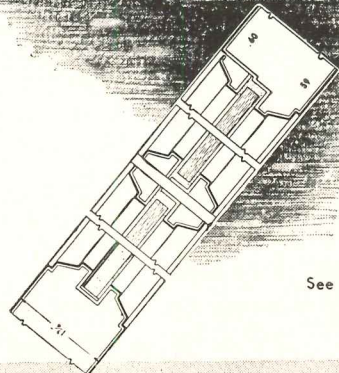
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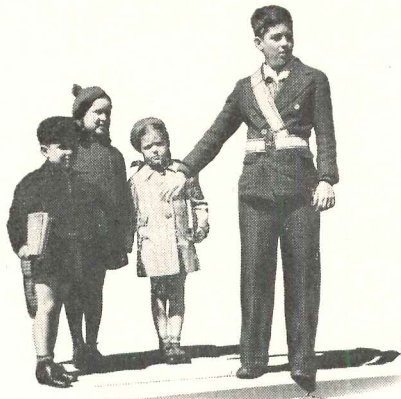
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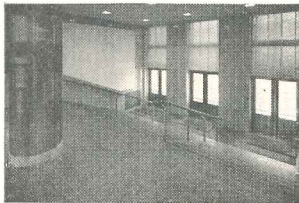
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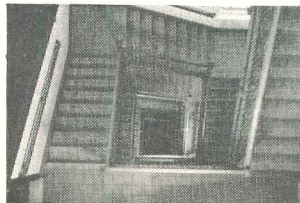
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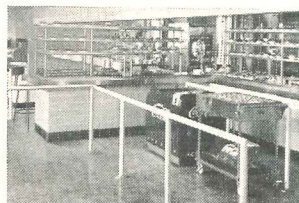
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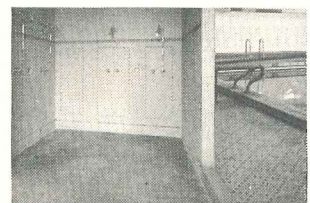
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CERAMIC MOSAIC TILE

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NORTON COMPANY

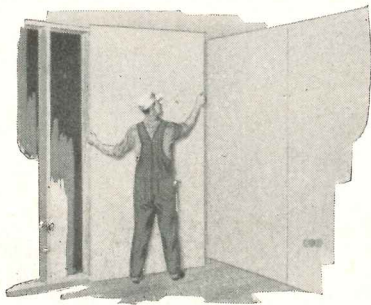


WORCESTER 6, MASS.

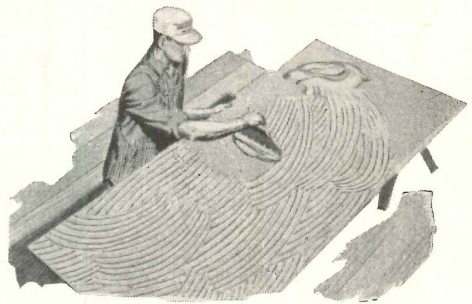
Something *Really* new
in walls and ceilings
LAMINATED SHEETROCK

T. M. Reg. U. S. Pat. Off

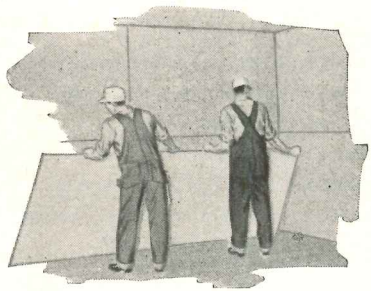
the modern double-wall system



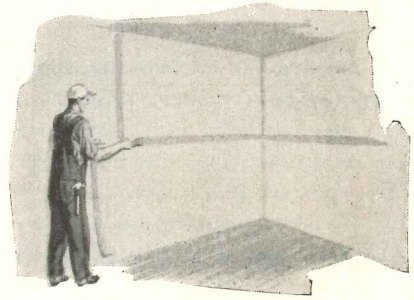
1. The first layer of SHEETROCK fireproof gypsum wallboard goes up vertically. It signifies the initial step in the added fire-protection, extra strength, greater sound-resistance, and smoother beauty provided by this outstanding, new double-wall system.



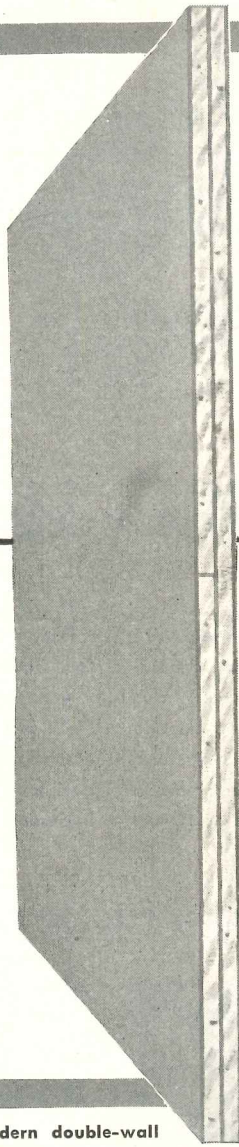
2. Ceiling boards are applied first, with long edges parallel to joists. Sidewalls follow. After first layer is up, each face layer board is covered and combed with specially formulated USG Adhesive which possesses tremendous bonding strength.



3. Face layer is then nailed up horizontally—ceilings again first, with boards at right angles to first layer. When adhesive is dry (usually within a short period), the bond between the two layers is secure. Then the nails are counter-sunk, and the nail holes filled . . . later finished with PERF-A-TAPE cement.



4. In the final step, the famous PERF-A-TAPE Joint System reinforces and conceals all joints, making wall and ceiling surfaces smooth and seamless and ready for any decoration. It's easy to see why new Laminated SHEETROCK wallboard produces one of the finest dry-walls you can specify.



Your U.S.G. representative has complete details on this modern double-wall

system. Call him, or write 300 W. Adams St., Chicago 6.



United States Gypsum

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