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ARCHITECTURAL RECORD

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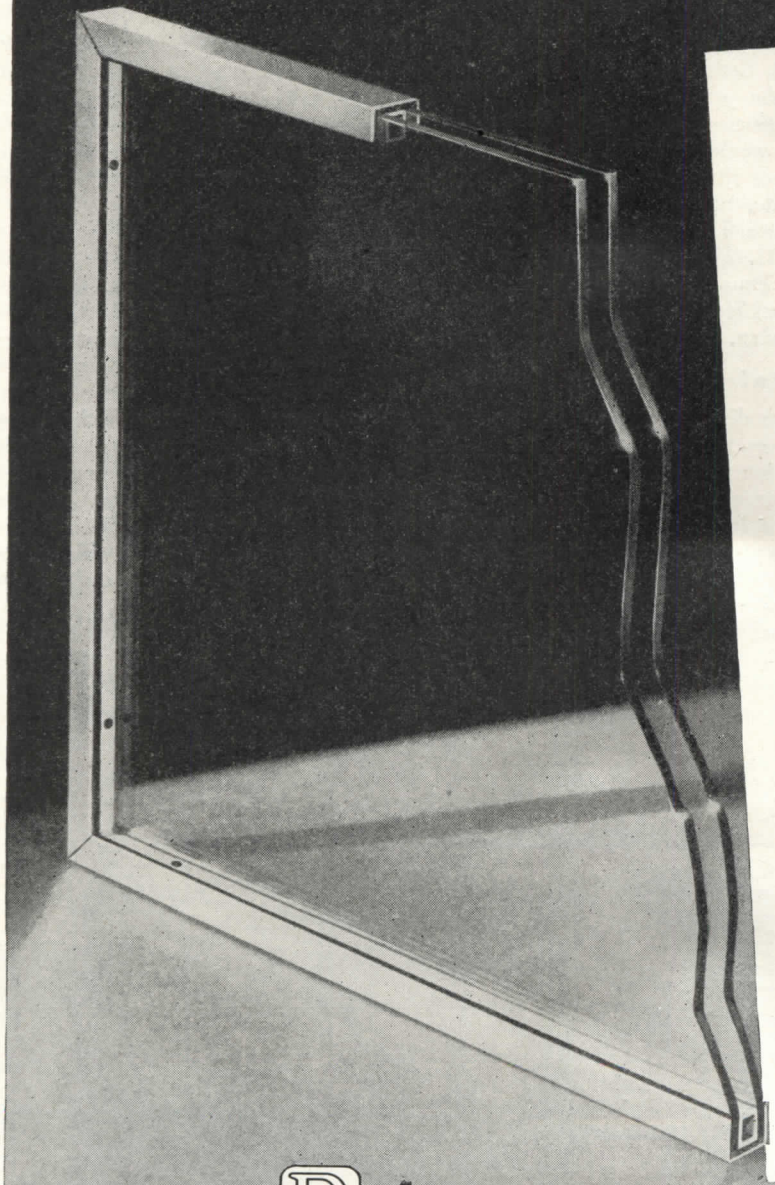
QUESTIONS and ANSWERS

"Pittsburgh's" New Window



QUESTION . . .

What is TWINDOW?

ANSWER . . .

Twindow is the newest development in insulating windows. It is a simple, prefabricated window unit, consisting of two or more panes of glass with a hermetically sealed air space between and a sturdy protecting frame of stainless steel.

QUESTION . . .

Where can TWINDOW be used most advantageously?

ANSWER . . .

Twindow should be used wherever clear vision and effective insulation are important. It is a "natural" for large windows in homes, for store front windows, large windows in factories, office buildings and institutions.

QUESTION . . .

Why was TWINDOW developed?

ANSWER . . .

Twindow is the result of extensive research at the Pittsburgh Plate Glass laboratories to develop an efficient, eco-

PPG "PITTSBURGH" stands for Quality Glass and P

PITTSBURGH PLATE GLASS

about TWINDOW

TRADE-MARK

with BUILT-IN Insulation

nomical means of combining transparency with good insulating qualities.

QUESTION . . .

Just how well does TWINDOW insulate?

ANSWER . .

Twindow reduces heat loss through windows to less than half that experienced with a single pane of glass. This insulation decreases the load on heating or air-conditioning equipment.

QUESTION . .

What effect does TWINDOW have on room comfort?

ANSWER . . .

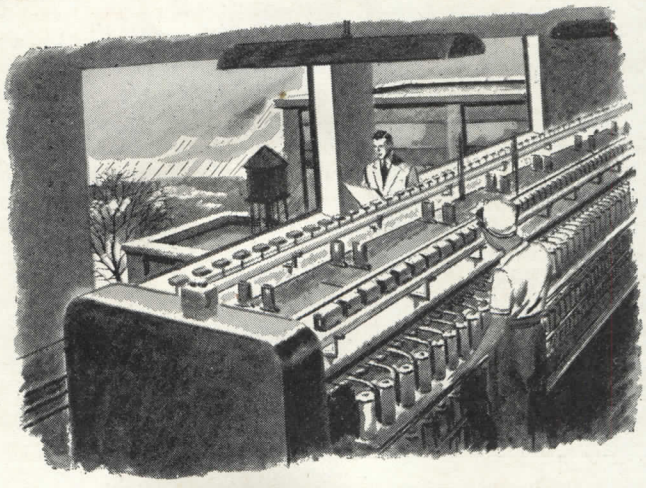
Twindow makes areas close to windows just as comfortable as other parts of the room. It minimizes downdrafts and helps to keep temperature and humidity at proper levels.

QUESTION . . .

Can TWINDOW help eliminate the nuisance of fogged windows?

ANSWER . . .

Yes. Except under extreme conditions, Twindow's sealed air space prevents condensation on the glass, assuring clear vision. And since no dirt or dust can reach its sealed-in surfaces, Twindow is as easy to clean as an ordinary window.



QUESTION . . .

Does TWINDOW require some special installation technique?

ANSWER . . .

No. Twindow is an easily handled unit, and installs as simply as a single window pane.

For more answers to your questions about Twindow, mail us the coupon. Pittsburgh Plate Glass Company, 2304-6 Grant Building, Pittsburgh, Pa.

hint

COMPANY

Pittsburgh Plate Glass Company
2304-6 Grant Building, Pittsburgh, Pa.

Please send me, without obligation, complete facts about TWINDOW, the window with *built-in* insulation.

Name... .....

Address..... .....

City..... State..... .....

THE RECORD REPORTS (*Continued from page 7*)

Building Report Asked

Building materials, in official opinion, probably will remain under price and production control longer than the rest of the national economy. Even in writing the law to extend OPA, Congress made specific note of this. It asked the President to list by next April the commodities "including housing accommodations" in such critically short supply as to need price controls after next June.

Of course, the Congress, set on getting rid of OPA, specified that the President recommend some other unit of government to handle the controls.

OPA Delay Hurts Housing

Congressional delay in extending OPA upset the housing program in many ways, both directly and indirectly. It directly affected, for instance, the premium payments schedules. The Inter-Agency Steering Committee on these payments, after studying the new law and checking on market conditions during the OPA lapse, decided to retain the July 1 opening date only on the convector radiator regulation. The regulations on hardwood flooring and on cast iron soil pipe, originally scheduled for July 1, were delayed to August 1.

Building material companies were kept in a state of uncertainty all during the month and many builders were likewise hampered.

That building costs in the second half of the year will run on a higher average goes without saying. As OPA got its life renewed, it announced a long list of ceiling price increases, including 19 in the category of lumber and building materials.

New HH Dividing Line

NHA, in announcing a new "dividing line" standard whereby at least half of all HH priorities must be at rental or sales prices below that line, had to await the decision on OPA before it could determine the future of the line. Under the plan, monthly rather than quarterly quotas are set to make the flow of materials more orderly. First preference continues for veterans on homes they intend to occupy; then comes rental housing below the dividing line.

Guaranteed Markets On

The guaranteed market program, getting under way in July, swung more fully into operation in August. However, officials recognize that broadest effects of prefabrication stimulus will not show up until the 1947 building year. Care will be exercised, they say, to keep out inferior products and fly-by-night producers.

CPA Channels Supplies

The Civilian Production Administration labored during the summer doldrums to channel more and more materials into housing. It recommended that the government release from its stocks 50 million pounds of aluminum ingots; it channeled all, instead of the original 70 per cent, of certain surplus government-owned building materials into housing; it gave preference on iron foundry schedules to iron castings for home construction; it broadened its priority system to speed the output of electrical wiring devices; it studied the need of dipping into the government's copper stockpile for three months to aid housing.

Other Building Reined

Besides these things, CPA held a tight check rein on non-residential building applications. From March 26 to July 18 it denied 22,246 requests valued at $946 million compared to approval of 39,290 valued at $1.58 billion.

It announced a survey to determine the effect of non-housing construction on the materials supply, showing that the dollar value of critical materials going into commercial and industrial construction amounts to only 3 per cent of total costs. Of the total, 55 per cent goes to labor and 42 per cent to other materials such as steel, limestone, plate glass and concrete, which are all in relatively good supply.

Model Code Studied

The Department of Commerce has under way a survey to compile data for a model basic code that could be adapted to local conditions. Points to be considered in the analysis include minimum standards, unnecessary safeguards, restrictive provisions, and administrative provisions to permit new materials and improved methods.

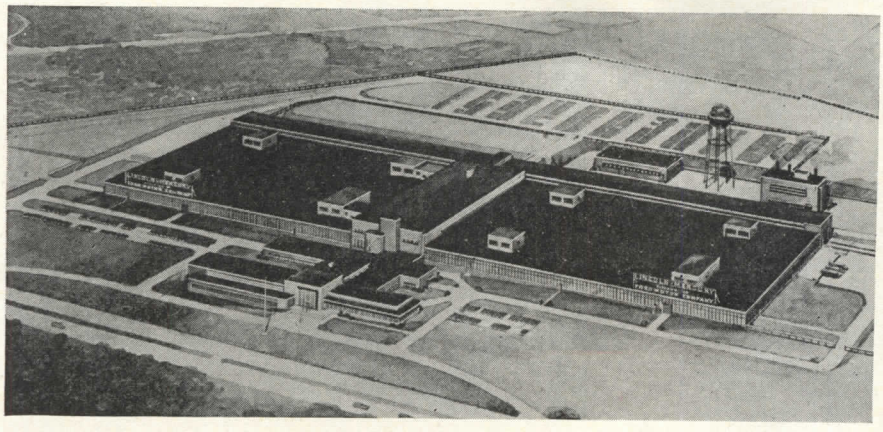
Cities will be furnished with the results of the study, which will show code deficiencies. Provisions that are unnecessary and increase construction costs will be indicated.

Survey on Repairs

In a new booklet, "The Pattern of Expenditures for Non-farm Residential Repair and Maintenance," the Department of Commerce advises that homeowners' expenditures to repair their homes in the years 1929–44 averaged two-thirds as much annually in the United States as was spent to build new homes.

The average annual expenditure for

(*Continued on page 12*)



One of three similar Kahn-designed assembly plants under construction for Ford Motor Co.

BUILDING NOTES

Ford Plants

Three new plants are under construction for the Ford Motor Co., one at Metuchen, N. J., one at St. Louis, Mo., and one at Atlanta, Ga. All three are assembly plants, and all are from the boards of Albert Kahn Associated Architects and Engineers, Inc.

The Metuchen plant, typical of the three, will have approximately 650,000 sq. ft. of floor space. Main assembly building is one story, with steel frame, brick and sash walls and cement tile roof. The office building, roughly H-shaped, is also one story, with stone facing in the central portion. Boiler house and oil house are separate, and a large parking area is provided for employees. Contractors are the Wigton-Abbott Corp.

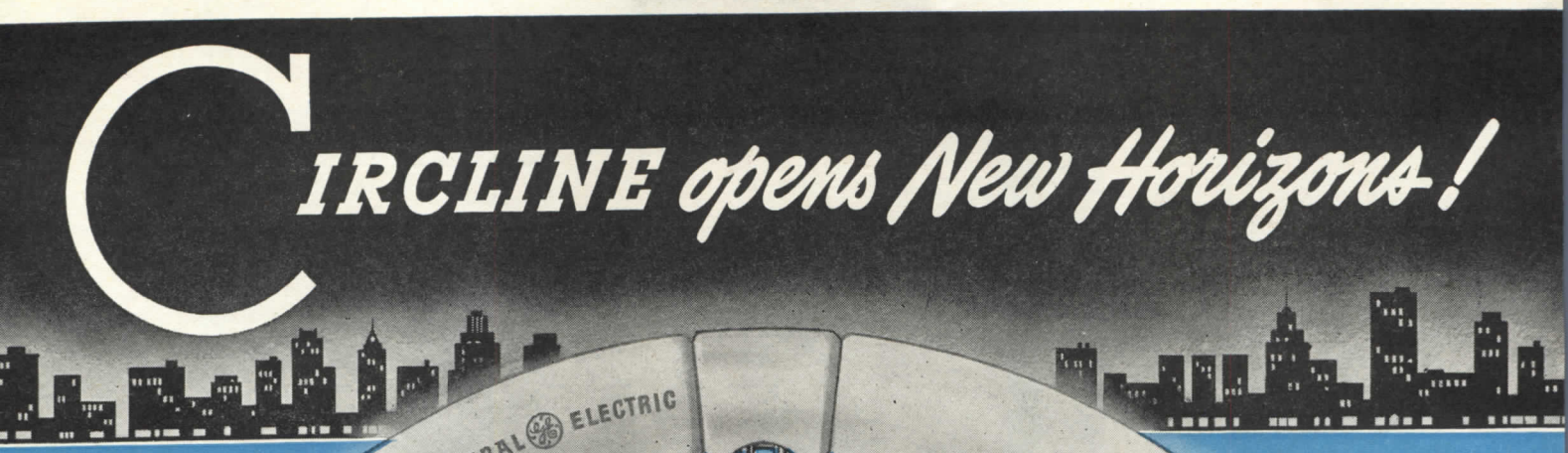
Ampule Plant

Employees and visitors who enter the new ampule building of the Winthrop Chemical Co., Inc., at Rensselaer, N. Y., must pass through a de-dusting chamber where blowers and suction devices remove all lint and dust. There are two such chambers in the basement, near the employees' locker room.

Every known scientific development is said to have been taken advantage of

(*Continued on page 152*)

CIRCLINE opens New Horizons!



Architects and designers will find that new G-E Circline fluorescent lamps suggest an unlimited number of ways to develop lighting that's original, and more attractive, and more useful. These smooth, compact circles of glass present a versatile lighting form possessing distinctive decorative quality—Circline is *flexible* and will harmonize with other light sources to create unusual and interesting light patterns. • For more information on all the newer G-E lamps... Circline, Slimline, Fluorescent, Projector and Reflector lamps . . . call your nearest G-E lamp office.

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DETROIT 26, MICH., 1400 Book Tower, CHerry 6910
KANSAS CITY 8, MO...2100 Wyandotte St., VI 7671
LOS ANGELES 13, CALIF.....601 W. 5th St., MIch. 8851
MINNEAPOLIS 13, MINN., 500 Stinson Blvd., GRan. 7286
NEW YORK 22, N.Y., 570 Lexington Ave., WIcker. 2-6300
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ST. LOUIS 1, MO., 710 No. Twelfth Blvd., CHestnut 8920
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G-E Circline lamps may be used for unusual edge lighting effects around signs and ornamental plaques.

The constant aim of G-E lamp research is to make G-E lamps

Stay Brighter Longer!

G-E LAMPS

GENERAL ELECTRIC

THE RECORD REPORTS

(*Continued from page 10*)

repair and maintenance in the 16-year period was $1,166,000,000 — of which about 92 per cent represented work done on non-farm homes — compared with an average of $1,741,000,000 spent annually to build new dwellings.

Construction Estimated

John R. Steelman, who replaced John W. Snyder as Reconversion Director, threw light on the construction picture in his first report to the President. Boosting construction estimates for the year from $14 billion to $17 billion, he made clear that a large part of the increase was in non-residential construction.

Other points:

1. Production of essential building materials continues upward.
2. Authorizations for non-residential construction will be held to a minimum.
3. Issuance of priorities is being related more closely to housing program goals.
4. Guaranteed markets for prefabricated houses are expected to boost the program substantially.
5. More units are being sought in the low-rent ranges.

New Materials Cited

He cited new materials which, on the basis of an NHA survey, "have been found useful — though on a small scale, since they cannot get into high volume production for some time."

Here is the list of new materials as presented in his report:

"Precast concrete panels, which will make it possible to build concrete houses without scarce equipment: new aggregates for use in concrete mixing, such as slag, wood chips, waste paper, and agricultural waste; pre-stressed floors and floor panels; wallboards made of plastics and chemically-treated fibrous waste; wallboards which are fireproof and have high insulating properties; wallboards reinforced with noncritical metal sheeting, and wall panels consisting of two outside 'skins' separated by a structural frame of lumber or metal or held together by an insulating core, and designed to save the lumber required for inside framing."

Odds and Ends

Odds and ends of import from the National Capital include an FHA announcement that it will seek $1 billion in rental housing out of the contemplated $2 billion of mortgage insurance under the Veterans Housing Act. . . . Another FHA announcement of broadened regulations to make "country" homes eligible for insured financing. . . . A forecast from CPA that lumber production this

(*Continued on page 14*)

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financing technique, and many other things which had nothing directly to do with veterans' housing. The framers and supporters of this bill at a later date attempted to play politics with the needs of veterans by taking on the designation that this was a 'Veterans' Housing Bill.' The subterfuge is so transparent that it needs little analysis. None of the projects contemplated by the bill can take place until we get into a period of abundant skilled labor supply and to a period of availability of large quantities of material. As a matter of fact, the bill was conceived as a depression measure to cushion unemployment by the projecting of large public projects." — *Arthur W. Binns, president, National Home and Property Owners Foundation.*

FAIR RENTS ASKED

Realtors and the millions of small property owners throughout the country will renew immediately their battle for a fair measure of relief from the oppressive rent control reestablished by Congress in the OPA revival act, according to Boyd T. Barnard, president of the National Association of Real Estate Boards.

Rents have been the only single factor in the national economy, Mr. Barnard said, which have remained rigidly controlled since their original freeze date, in most cases March 1, 1942, or before. All items of operating costs and building maintenance, however, have risen sharply in price, some as much as 100 per cent, and the typical city has already had substantial increases in tax bills, in some cases several times since the rent freeze date.

"The National Association of Real Estate Boards subscribed fully to wartime price control and assisted in establishing rent control," Mr. Barnard states. "Real estate boards throughout the country held the line on rents and prevented skyrocketing during the interim when OPA was dead. They have always cooperated 100 per cent. Consequently, it was a bitter disappointment to them that Congress failed to provide equitable relief for them, as it did for other groups in the economy. They have no alternative but to continue their fight for a just measure of relief."

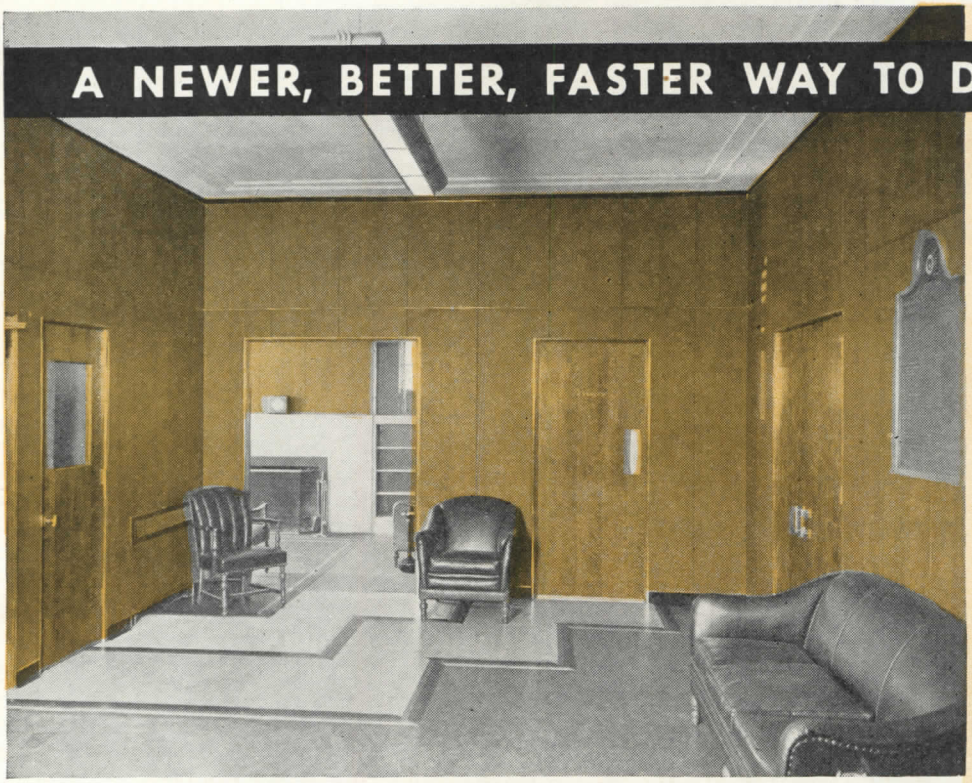
ASKS HOUSING CENSUS

An up-to-date and impartial census of housing is needed to help the construction industry make intelligent plans for meeting the country's housing needs, says J. Ernest Fender, president of the Structural Clay Products Institute.

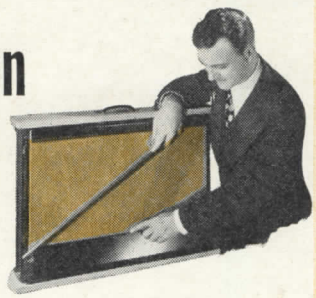
Although Congressional conferees have

(*Continued on page 18*)

A NEWER, BETTER, FASTER WAY TO DIVIDE SPACE



This 10-Minute Demonstration Brings New Ideas in Partitioning and Paneling



Write or phone the nearest Distributor listed at the right and let him show you the 10-minute demonstration of M/P Metlwal Paneling and Movable Partitions. By use of a few standardized parts and fittings, M/P Metlwals eliminate the need for plaster in new construction . . . and permit fast, clean, simple installation in dividing space. They combine rich beauty, quiet and fire resistance with low initial cost and permanent economy.

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(*Continued from page 16*)

eliminated funds for a housing census from the Department of Commerce appropriation bill, Mr. Fender points out, "it is to be hoped that some way can be found to authorize the Bureau of the Census to collect the needed data in the immediate future. . . .

"We need to know how many additional homes are needed, where and when they are needed, what the price ranges should be, how many rental units are required, and other pertinent facts. . . . The construction industry can do a far more effective job of planning to meet the housing needs of veterans and others if it has reliable data on which to base decisions than if it is compelled to guess at requirements on the basis of data which is out of date or supplied by prejudiced sources."

AT THE COLLEGES

Instructors Needed

Increased enrollments at the schools of architecture will require additional instructors for the fall semester, the Association of Collegiate Schools of Architecture reports. The need is urgent, particularly for instructors to teach architectural design and structural courses.

Those qualified and interested in teaching positions should send their personnel records to Prof. Paul Weigel, Secretary, Association of Collegiate Schools of Architecture, Dept. of Architecture, Kansas State College, Manhattan, Kansas.

Assistantship Open

The State Board of Agriculture governing Michigan State College has approved one half-time graduate assistantship in the Department of Landscape Architecture for the academic year 1946–47. This assistantship is at the rate of $800 for candidates for the Master's degree and $1,000 for those who have the Master's degree (M.S. or M.A.) or its credit equivalent and who are candidates for the Doctor of Philosophy or Doctor of Education.

Appointment is to be based particularly upon the candidate's scholastic record and his promise as a graduate student. For further information address the Dept. of Landscape Architecture, Michigan State College, East Lansing, Mich.

New Leaflets

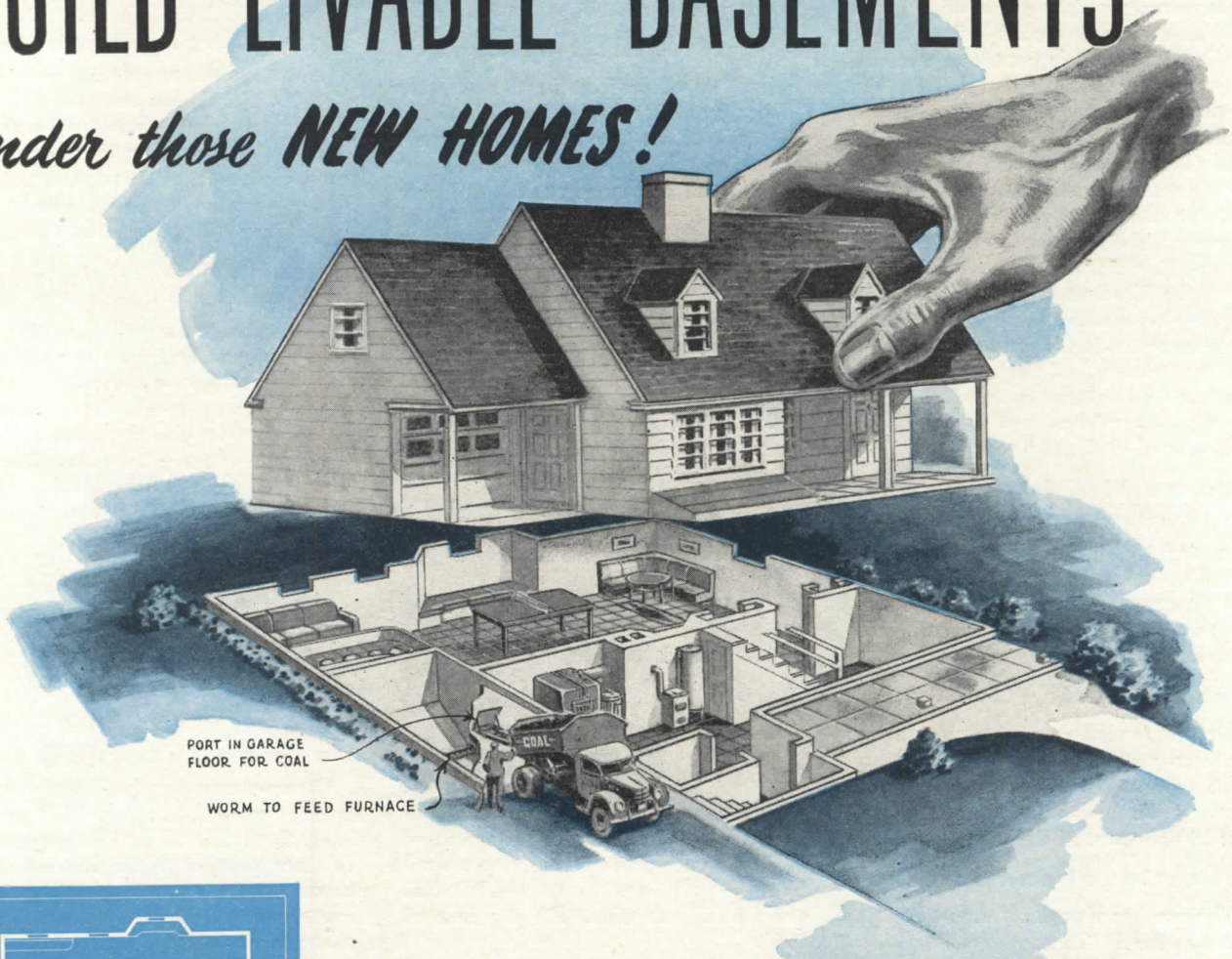
Several new circulars have been added to the University of Illinois' growing library of planning leaflets:

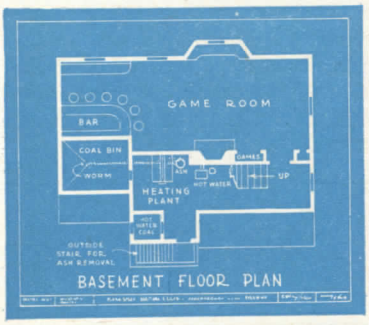
1. "Planning for Electricity in the Home" (Circular Series No. G4.0), a nontechnical discussion of the electric

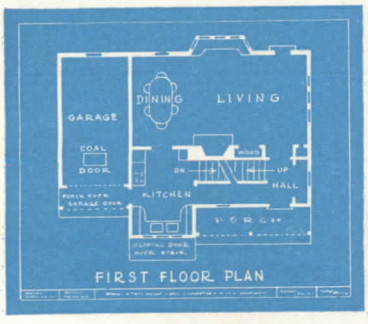
(*Continued on page 144*)

BUILD LIVABLE BASEMENTS

under those NEW HOMES!







Basement floor plan above shows playroom with refreshment bar as an added feature. Novel first floor plan shows kitchen at front so housewife can "see what's going on outside" while she works. Combination living and dining room is at the rear—away from the street—for quietness and privacy.

.. with modern COAL-BURNING heating plants for economy . . .

Here's a nice little house with a great big game room . . . the kind of home our veterans are looking for . . . and it can be built at a price they can afford.

COST and LIVABILITY are always major factors in home selection. You can help serve these interests by designing homes with modern coal heating plants. Whether designed with fully automatic heating equipment like the house above, or, less expensively, with a hand-fired coal furnace equipped with automatic controls, coal heating is the most economical in the long run.

A coal heating plant is the only installation that can be converted to all other types of heating. This is important in determining a home's market value, sales appeal an owner satisfaction. We have a three thousand year coal reserve. Other fuels may soon be exhausted. When you design or build, play safe, provide coal storage space and chimneys adequate to handle any fuel.

Build livable basements under those new homes . . . with modern coalburning heating plants. Coal heat is economical, clean, quiet, odorless and abundant.

Norfolk and Western RAILWAY

CARRIER OF FUEL SATISFACTION

BUILDING VOLUME IN NEW STRIDE

Building construction in 1946 has hit a phenomenal stride, establishing in the first six months a record dollar volume of $3,937,736,000 in contracts awarded — greater by half a billion dollars than the first six months of 1928, the previous peak year.

No longer under controls as rigid as during wartime, this great construction activity is seen not only in housing but in *every* building type. Figures released by the F. W. Dodge Corporation, covering the 37 states east of the Rockies for the six months ending July 1, reveal large increases in dollars being invested and in numbers of projects on which contracts have been awarded. The following comparisons are for the first half-year of 1945 and 1946.

Commercial Buildings

In 1946 there are 16,652 projects, compared to 4,896 in 1945: 340 per cent of 1945. Their valuation is $478,200,000: 718 per cent of 1945. *Double* the dollars, on the average, are going into each commercial project this year.

Manufacturing Buildings

Despite terrific plant expansion during the war years, 1946 projects number 8,408 against 6,416 last year: 131 per cent of 1945. And dollar valuation is up, too: 140 per cent of 1945.

Educational and Science

The number of projects almost exactly matches the 1945 figure (944 and 943). Most interesting feature: the average amount being invested in each individual building project; the '46 average is $118,177, while in 1945 it was $34,447. Total valuation is 343 per cent of 1945.

Hospital, Institutional

Number of projects in 1946 is only 27 per cent of last year, valuation only 85 per cent, but here are two important considerations: (1) more dollars are going into the average project this year — average valuations run $103,406 for 1946, compared to only $32,518 for 1945 — three times greater; (2) a vast potential is found in the tremendous number of hospital and institutional units which have not yet reached the contract stage — the RECORD'S emphasis on hospitals in June, July and August issues was based on a recent one month study made by Dodge showing 266 projects valued at $118,494,000 in the contemplated and planning stage or, in one month, more than twice the dollar valuation of the entire six-month period.

Public Buildings

Reflections are similar to trends in hospitals and institutional buildings: 1946 projects numbered only 63 per cent of 1945, but the total dollar valuation of these projects is 308 per cent of 1945.

Religious Buildings

In 1946 there are 923 projects, compared to 540 in 1945: 171 per cent of 1945. Average project valuation soared from $16,091 in 1945 to $40,260 this year; total valuation, 428 per cent of 1945.

Social, Recreational

Both numerically and dollar-wise, social and recreational buildings show a marked increase over last year: they are 164 per cent of 1945 numerically; 267 per cent of the 1945 dollar valuation.

Hotels, Apartment Hotels

Hotel building contracts awarded in 1946 were 187 per cent of 1945: 306 projects compared to 164 projects. The average dollar valuation per project jumped from $20,427 last year to $104,647 — over five times as great. Total valuation is 956 per cent of 1945.

Dormitories

The average valuation of dormitory projects has multiplied four times, increasing from $40,859 in 1945 to $164,223 this year; total valuation is 653 per cent of 1945. Most recent figures showing dormitories in the contemplated and planning stages — tabulated for one month only — place valuation at $12,262,000: almost twice that of the entire six-month 1945 period.

Apartment Buildings

Contracts awarded for apartment construction in 1946 ran 179 per cent of '45 in number of projects and 457 per cent in valuation. Average project valuation almost tripled.

One-Family Dwellings

Owner-occupancy dwellings showed a great increase, rising from 6,309 projects in 1945 to 25,420 in 1946; valuation, 718 per cent of 1945. In one recent month, Dodge reports of projects in the contemplated and planning stages showed that projects being developed were half the '45 total, numerically, and exceeded in dollar valuation the entire six-month 1945 total.

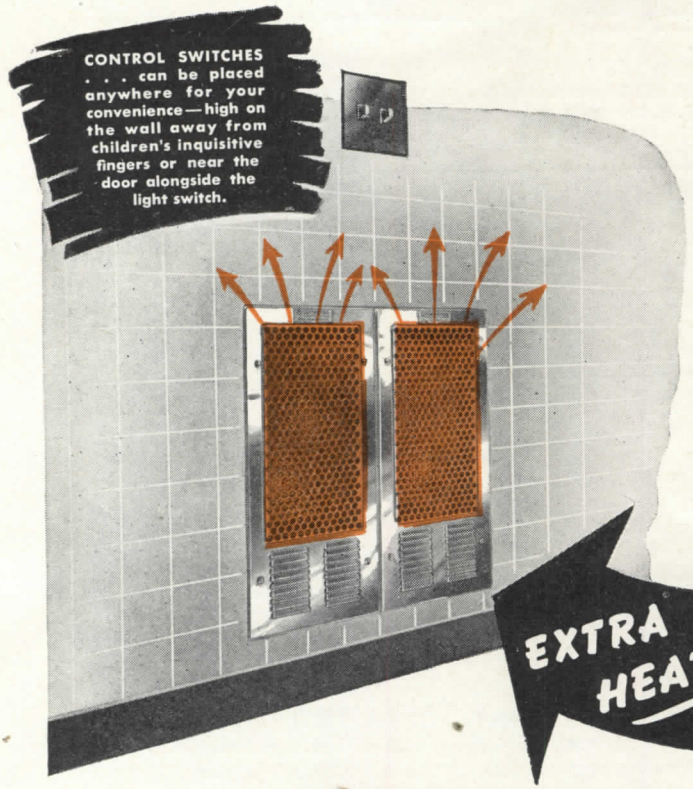
CONSTRUCTION CONTRACTS AWARDED

(New Buildings and major alterations combined)

F. W. Dodge Figures for First Six Months 1945 & 1946 *

TYPE BUILDING	NUMBER OF PROJECTS			DOLLAR VALUATION OF PROJECTS		
	½ year 1945	½ year 1946	% of 1945	½ year 1945	½ year 1946	% of 1945
				NON-RESIDENTIAL		
Commercial	4,896	16,652	340%	$66,574,000	$478,200,000	718%
Manufacturing	6,416	8,408	131%	515,806,000	721,096,000	140%
Educational & Science	943	944	100%	32,484,000	111,559,000	343%
Hospital & Institutional	1,985	534	27%	64,548,000	55,219,000	85%
Public	468	294	63%	4,068,000	12,512,000	308%
Religious	540	923	171%	8,689,000	37,160,000	428%
Social & Recreational	753	1,237	164%	22,446,000	59,904,000	267%
				RESIDENTIAL		
Hotels & Apt. Hotels	164	306	187%	$3,350,000	$32,022,000	956%
Dormitories	163	265	163%	6,660,000	43,519,000	653%
Apartment	1,836	3,285	179%	29,207,000	133,503,000	457%
1-Family Dwellings (owner-occupancy)	6,309	25,420	403%	28,463,000	204,399,000	718%

* 37 eastern states.



A good Combination!

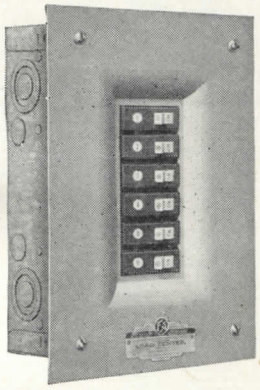
EXTRA HEAT and GREATER ELECTRICAL CAPACITY!

ELECTRIC QUIKHETER

Here are two comfort giving "extras" that should appeal to every homeowner—*extra heat* for cool chilly mornings and evenings when regular heating equipment is off... and *adequate electrical capacity* to assure the fullest measure of energy for today's and tomorrow's home service requirements.

The new and improved Built-in (FA) Quikheter is specifically designed to meet the need for auxiliary heat in homes. Equipped with a genuine Nichrome element that should never wear out, this attractive easy-to-install unit will send forth a glow of warm air that will change the room temperature in three to five minutes, thus effecting savings in time and fuel.

The (FA) Type AC Circuit Breaker Load Center and Service Equipment is another big "EXTRA" that will add immeasurably to the convenience, comfort and efficiency of homes. Shock-proof and simple to operate, requiring only the flip of a handle, these units not only make it possible to provide all the electrical capacity needed for household appliances, but provide double protection against dangerous short circuits and sustained overloads.



TYPE AC LOAD CENTER

For maximum home comfort and convenience, specify this new (FA) *EXTRA* heat and electrical capacity combination.

Capacities: Built-in (FA) Quikheters are available in single units of 1000 and 1500 watts and twin units of 2000 and 3000 watts. (FA) Load Centers, 2 to 16 poles, 15 to 50 amperes, for 120 volt AC Service.

IF IT'S (FA) IT'S "OK"

MAKERS OF...
BUSDUCT
PANELBOARDS
SWITCHBOARDS

Frank Adam
ELECTRIC COMPANY
St. Louis, Missouri

SERVICE EQUIPMENT
SAFETY SWITCHES
LOAD CENTERS
ELECTRIC QUIKHETER

CONSTRUCTION COST INDEXES — Labor and Materials

United States average 1926 — 1929 = 100

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

NEW YORK

Period	Residential		Apts., Hotels, Office Bldgs.	Commercial and Factory Buildings	
	Brick	Frame	Brick and Concr.	Brick and Concr.	Brick and Steel
1920	136.1	136.9	123.3	123.6	122.6
1925	121.5	122.8	111.4	113.3	110.3
1930	127.0	126.7	124.1	128.0	123.6
1935	93.8	91.3	104.7	108.5	105.5
1939	123.5	122.4	130.7	133.4	130.1
1940	126.3	125.1	132.2	135.1	131.4
1941	134.5	135.1	135.1	137.2	134.5
1942	139.1	140.7	137.9	139.3	137.1
1943	142.5	144.5	140.2	141.7	139.0
1944	153.1	154.3	149.6	152.6	149.6
1945	160.5	161.7	156.3	158.0	155.4
Jan. 1946	173.1	173.7	169.8	170.4	167.0
Feb. 1946	173.1	173.7	169.8	170.4	167.0
Mar. 1946	174.9	175.6	172.1	172.9	169.0
Apr. 1946	175.5	176.2	172.9	173.5	169.6
May 1946	180.3	180.6	177.4	179.3	174.7
June 1946	180.7	181.0	177.9	179.7	175.1
July 1946	181.3	181.6	178.6	180.3	175.6
	% increase over 1939				
July 1946	**46.9**	**48.1**	**36.6**	**35.1**	**34.8**

ATLANTA

Period	Residential		Apts., Hotels, Office Bldgs.	Commercial and Factory Buildings	
	Brick	Frame	Brick and Concr.	Brick and Concr.	Brick and Steel
1920	122.8	122.9	108.6	109.8	105.7
1925	86.4	85.0	88.6	92.5	83.4
1930	82.1	80.9	84.5	86.1	83.6
1935	72.3	67.9	84.0	87.1	85.1
1939	86.3	83.1	95.1	97.4	94.7
1940	91.0	89.0	96.9	98.5	97.5
1941	97.5	96.1	99.9	101.4	100.8
1942	102.8	102.5	104.4	104.9	105.1
1943	109.2	109.8	108.5	108.1	108.7
1944	123.2	124.5	117.3	117.2	118.2
1945	132.1	133.9	123.2	122.8	123.3
Jan. 1946	137.9	138.4	127.4	127.3	127.0
Feb. 1946	140.8	142.6	130.4	128.9	128.9
Mar. 1946	141.2	143.0	133.6	129.3	129.3
Apr. 1946	141.2	143.0	131.3	129.5	130.1
May 1946	144.7	147.2	133.2	131.0	131.3
June 1946	144.9	147.4	133.5	131.2	131.5
July 1946	148.6	150.2	138.6	137.0	135.5
	% increase over 1939				
July 1946	**71.0**	**80.9**	**45.7**	**40.7**	**43.0**

ST. LOUIS

Period	Residential		Apts., Hotels, Office Bldgs.	Commercial and Factory Buildings	
	Brick	Frame	Brick and Concr.	Brick and Concr.	Brick and Steel
1920	118.1	121.1	112.1	110.7	113.1
1925	118.6	118.4	116.3	118.1	114.4
1930	108.9	108.3	112.4	115.3	111.3
1935	95.1	90.1	104.1	108.3	105.4
1939	110.2	107.0	118.7	119.8	119.0
1940	112.6	110.1	119.3	120.3	119.4
1941	118.8	118.0	121.2	121.7	122.2
1942	124.5	123.3	126.9	128.6	126.9
1943	128.2	126.4	131.2	133.3	130.3
1944	138.4	138.4	135.7	136.7	136.6
1945	152.8	152.3	146.2	148.5	145.6
Jan. 1946	157.7	158.3	150.8	152.6	149.5
Feb. 1946	157.7	158.3	150.8	152.6	149.5
Mar. 1946	158.8	159.5	151.1	152.8	149.9
Apr. 1946	159.5	159.8	152.7	155.0	152.1
May 1946	162.2	163.0	154.3	155.8	153.1
June 1946	165.8	165.0	159.9	163.8	159.5
July 1946	167.8	167.7	161.9	164.8	160.8
	% increase over 1939				
July 1946	**52.1**	**56.6**	**36.3**	**37.5**	**35.0**

SAN FRANCISCO

Period	Residential		Apts., Hotels, Office Bldgs.	Commercial and Factory Buildings	
	Brick	Frame	Brick and Concr.	Brick and Concr.	Brick and Steel
1920	108.8	107.5	115.2	115.1	122.1
1925	91.0	86.5	99.5	102.1	98.0
1930	90.8	86.8	100.4	104.9	100.4
1935	89.5	84.5	96.4	103.7	99.7
1939	105.6	99.3	117.4	121.9	116.5
1940	106.4	101.2	116.3	120.1	115.5
1941	116.3	112.9	120.5	123.4	124.3
1942	123.6	120.1	127.5	129.3	130.8
1943	131.3	127.7	133.2	136.6	136.3
1944	139.4	137.1	139.4	142.0	142.4
1945	146.2	144.3	144.5	146.8	147.9
Jan. 1946	148.6	146.4	146.7	148.3	149.3
Feb. 1946	150.6	147.7	149.2	151.1	150.3
Mar. 1946	154.0	153.0	151.8	151.8	152.3
Apr. 1946	155.3	153.7	153.8	154.6	154.5
May 1946	157.6	156.1	155.7	156.5	156.2
June 1946	158.0	156.5	156.2	156.9	156.6
July 1946	159.0	157.5	158.7	158.7	160.1
	% increase over 1939				
July 1946	**50.6**	**58.7**	**35.0**	**30.1**	**37.5**

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.

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

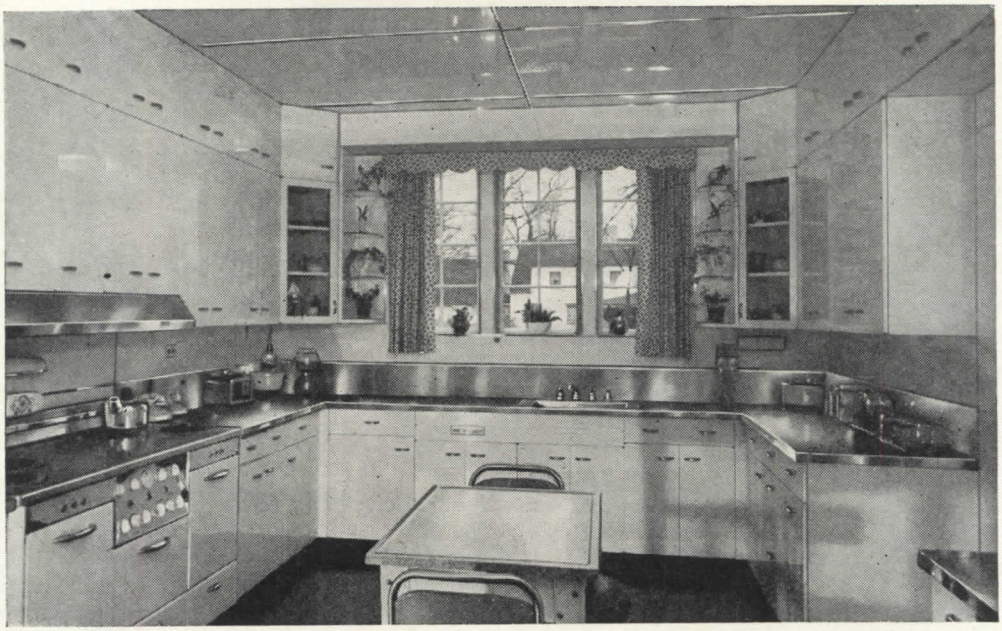
Conversely: costs in B are approximately 14 per cent lower than in A.

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

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 legal prices, thus, indexes reflect minimum costs and not necessarily actual costs.

These index numbers will appear whenever changes are significant.



HOUSEWIVES LIKE IT

Stainless steel work surfaces are easy to clean

The gleaming surfaces in this attractive home kitchen are stainless steel. They are easily wiped clean because the stainless steel is not affected by the acids in food, and it will not rust. In addition, the metal does not easily dent or scratch.

Widespread use of stainless steel for work surfaces and for decorative trim in home kitchens, as well as in larger kitchens of restaurants, hotels, and hospitals, has demonstrated that stainless steel equipment not only is pleasing to the eye . . . but it is also exceedingly serviceable.

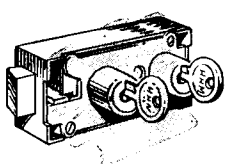
To keep informed of the newest applications of stainless steel, ask to receive our monthly publication ELECTROMET REVIEW. For information on the production, properties, or fabrication of stainless and other alloy steels, write our Technical Service Department. Although we do not make steel, we do produce the alloys used in its manufacture, and our engineers have accumulated a great deal of information about the use of stainless steel in many industries.

ELECTRO METALLURGICAL COMPANY
Unit of Union Carbide and Carbon Corporation
UCC
30 East 42nd Street, New York 17, N. Y.
In Canada: Electro Metallurgical Company of Canada, Limited, Welland, Ontario

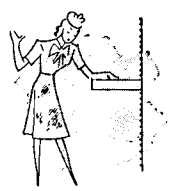
STAINLESS STEEL

BEAUTIFUL ENDURING STRONG TOUGH

BEST COMBINATION OF THESE QUALITIES



The new changeable-key lock. Write for descriptive circular.



No more grime or dirt to soil her costly garments. *Stainless Steel* is clean!

No grease, no smear to ruin his gloves and disposition. *Stainless Steel Safe-Deposit Boxes* are prestige vault equipment.

No endless work or worry to keep the vault spic and span. A swish of the dust rag reveals the original luster of the *stainless steel.*

Again, Herring-Hall-Marvin engineers are a decade ahead of the competitive parade—this time with STAINLESS STEEL SAFE DEPOSIT BOXES, featuring also the new H-H-M No. H-610-CC Instantly Changeable Sealed-Key Safety Deposit Box Lock.

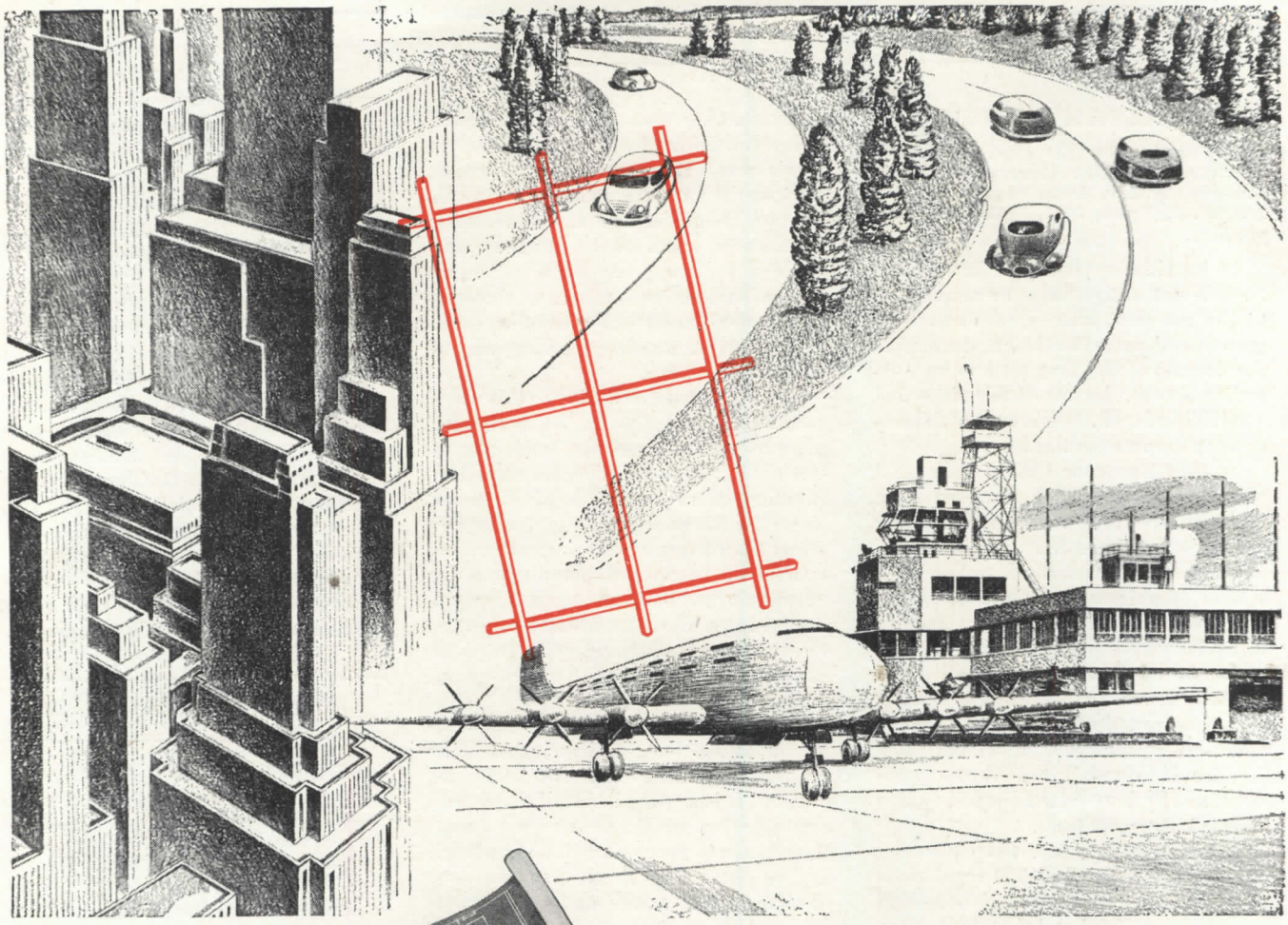
This new combination of stainless steel boxes combined with the changeable-key lock obsoletes every previous conception of safe-deposit vault beauty, customer convenience, bank protection, and fast service! Nothing like it has ever been available before. Consult your nearest H-H-M agent —or write us direct.

HERRING-HALL-MARVIN SAFE CO.

Manufacturers of Bank Vault Equipment - Bank Counters - Tellers' Buses and Lockers - Safe Deposit Boxes - Night Depositories - Bank and Office Safes

BUILDERS OF THE UNITED STATES SILVER STORAGE VAULTS AT WEST POINT

General Offices
HAMILTON, OHIO
BRANCH OFFICES
In New York, Chicago, Boston, Washington, St. Louis, Atlanta, Houston, Philadelphia, San Francisco, Los Angeles, Detroit, Pittsburgh
OTHER AGENCIES ALL OVER THE WORLD



Plan for tomorrow *with this Proven Fabric*

At our busiest airports, on our best paved streets and highways, in our tallest buildings, you can see how concrete construction contributes to modern living.

Welded Wire Fabric, the most vital factor in concrete construction, is invisible in the concrete slab, but imparts the strength and stamina to control cracks that may form in concrete.

American Welded Wire Fabric is the most widely used prefabricated concrete reinforcement. Its closely spaced steel wires are electrically welded into a prefabricated mat which fortifies against major stresses and strains.

Many additional uses of concrete will be made possible by the ability of this versatile reinforcement to meet new requirements. So when you are planning for tomorrow, it will pay you to know *all* of the ways you can use American Welded Wire Fabric. For wherever it is practical, it is also economical.

AMERICAN STEEL & WIRE COMPANY
USS
AMERICAN WELDED WIRE FABRIC
UNITED STATES STEEL

American Steel & Wire Company
Cleveland, Chicago and New York
Columbia Steel Company, San Francisco,
Pacific Coast Distributors
Tennessee Coal, Iron & Railroad Company, Birmingham
Southern Distributors
United States Steel Export Company, New York

UNITED STATES STEEL

REQUIRED READING

AUSTRALIAN HOUSING

Homes in the Sun: The Past, Present and Future of Australian Housing. By Walter Bunning. Sydney, Australia (124 Liverpool St.), W. J. Nesbit, 1945. 7½ by 10 in. 100 pp. illus.

As its title so clearly indicates, this book is not antipathetic to romance — to the romance, that is, of a country's growth and potentialities. It starts with the dreams of the first settlers on Australian shores, dreams of fair cities and good living for all. And it ends with present-day dreams for the future.

In 1788 Governor Phillip drew up a plan for Sydney which provided main thoroughfares 200 ft. wide, and building blocks not less than 60 ft. in width, with one building on each block to "preserve a kind of uniformity in the buildings, prevent narrow streets, and to exclude many inconveniences which a rapid increase of inhabitants might otherwise occasion hereafter." It was a worthy plan, but not destined to be fulfilled. Shortages of materials and labor (how familiar it sounds!) caused postponement, and Sydney grew Topsy-like along crowded, irregular lines.

Outside Sydney, too, town planning was started early. In 1829 regulations were laid down fixing the width and depth of all blocks of land and the width of the streets, and requiring cross streets to be at right angles to main streets. Furthermore, it was required that "in order to preserve uniformity the door sill of each building shall be one foot above the level of the Crown of the street . . ." and that "no person shall be permitted to build at a greater or less distance from the footpath than 14 feet, which space to be appropriated to an open verandah or such plantations as may be desired." The plan drawn by Col. William Light for Adelaide in 1837 provided a green belt of parkland entirely around the town, and a gridiron system of parallel roads. Melbourne, too, was planned in 1837, by Robert Hoddle, with a green belt surrounding the town, and actually laid out that way; unfortunately, suburbs since have sprawled over it.

As for the houses, there gradually evolved what Mr. Bunning terms Australia's "first real architecture" — "sensible homes surrounded by trees with verandahs to shade the walls and provide space for social living. The verandah in the country takes the place of the living room in urban houses. The bedrooms, living-dining rooms and kitchen are usually entered from the verandah. This provides a cool arrangement because the breeze can pass right through the house; there are no passageways and halls to obstruct it."

Despite the efforts of the early town planners, of course, the promise of good living conditions for everyone failed to materialize. The reason, Mr. Bunning says, can be summed up in the one word, *poverty*. Slums developed, profit-seeking speculators subdivided the land and gobbled up the green belts and open spaces. Today there is a shortage throughout Australia of 196,500 dwellings and a third of Australian families are inadequately housed.

What will tomorrow bring to this wide-awake land "down under"? Community planning seems to be no catch phrase there. To help speed it on its way, Mr. Bunning offers a number of plans for single dwellings, a brief chapter on the principles of house planning, others on apartment houses, community needs, community planning and town planning. And to top it all off, he adds a final chapter on regional planning, with maps of Australia showing population, resources, topography, climate, etc.

"The city is an outward expression of the life of the time," he concludes. "The present chaotic development is no exception. It is a true picture of the selfish scramble for private monetary gain at the expense of the community as a whole. Let us put a stop to the muddled expansion of our towns and reconstruct the centers so that we can again live in them and glory in them. It is for the community to patch up the errors of the past."

BUILDERS OF BOSTON

Boston After Bulfinch: An Account of Its Architecture, 1800–1900. By Walter H. Kilham. Cambridge 38, Mass., Harvard University Press, 1946. 6 by 9 in. xvi + 114 pp. illus. $3.50.

Architects really seem to be coming into their own at last in print. This is the third volume to appear within the past few months dealing primarily with the early architects of this country. It is a much shorter account than either Beatrice St. Julien Ravenel's *Architects of Charleston* or Thomas Tileston Waterman's *The Mansions of Virginia*, but its brevity is no deterrent. It is a highly readable report on the architectural growth of Boston in the 19th Century, enlivened with bits of history and local color, and replete with brief sketches of the leading architects of the period — Charles Bulfinch, Asher Benjamin, Peter Banner, Samuel McIntire, Alexander Parris, Solomon Willard, Richard Upjohn, Edward C. Cabot, William Robert Ware, Henry Hobson Richardson, and others.

Mr. Kilham, himself an architect, does much more than chronicle past history, however. He describes the successive architectural styles, the effects of new building materials, the importation of architectural ideas from abroad. He knows Boston architecture and history — and he knows Bostonians. The result is a compact study of one phase of a city's development.

HOUSES TO SUIT

Home Planners' Guide. Hartford, Conn., The Hartford Times, 1946. 8½ by 11 in. 168 pp. illus.

Prospective home owners will enjoy poring over this collection of house plans by such architects as A. Raymond Ellis, Herbert Gibson, Keith Sellers Heine and Raymond J. Percival. The houses range in size from small two-bedroom, one-story cottages to large 10-room units, and in style from the Cape Codder to the flat-roofed modern. Articles provide basic information on mortgages, design, construction loans, the need for an architect, lighting, heating, etc. One section is devoted to interior decoration, one to kitchen and bathroom planning.

Technical Books

ENGINEERING DATA

Data Book for Civil Engineers: Vol. II, Specifications and Costs. By Elwyn E. Seelye. New York 16 (440 Fourth Ave.), John Wiley & Sons, Inc., 1946. 9⅜ by 11¾ in. 326 pp. $6.75.

This second volume in a series of three "Data Books" covers contract documents, structural specifications, and costs. With Volume I, Design, published late last year, and Volume III, Field Practice, soon to appear, the series will offer the practicing civil engineer a whole library of the special information he needs.

The current volume presents structural specifications for site preparation, borings, excavation and grading, piling, foundations, masonry, stone masonry, structural concrete, structural steel, fireproofing, steel joists, waterproofing, wooden buildings, wood preservation and painting. In addition there is a table of suggested grades and species for timber specification. Also included are suggestions for specifying paints.

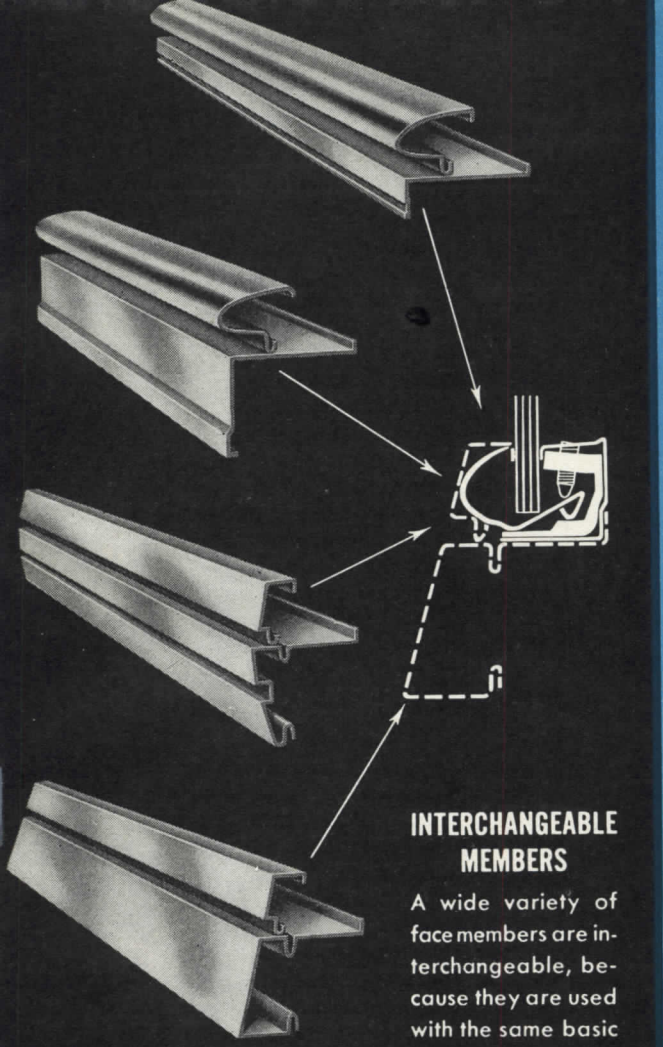
Separate sections of the book deal with airports, roads and railroads, bridges, docks, dams, drainage, sewers, sewage treatment and water. A special feature is the exhaustive glossary, which runs to 72 pages.

TEMPERATURE CONTROL

Heating and Ventilating for Architects and Builders. By R. K. Cornell, A.M.I.H.V.E. London, E.C.1 (37–38 Hatton Garden), Paul Elek Publishers Ltd., 1946. 7½ by 10 in. 56 pp. illus. 7s. 6d.

From England comes this slim little volume of highly useful information. Written in layman's language, and pre-

(Continued on page 28)

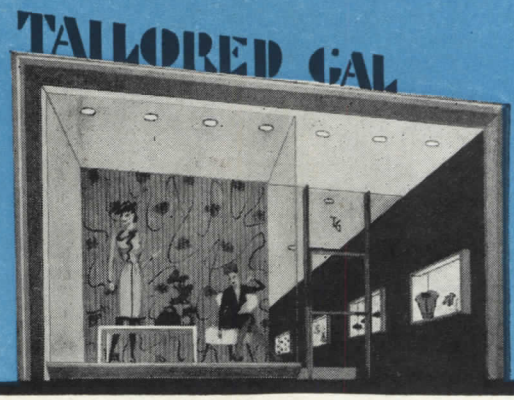


INTERCHANGEABLE MEMBERS

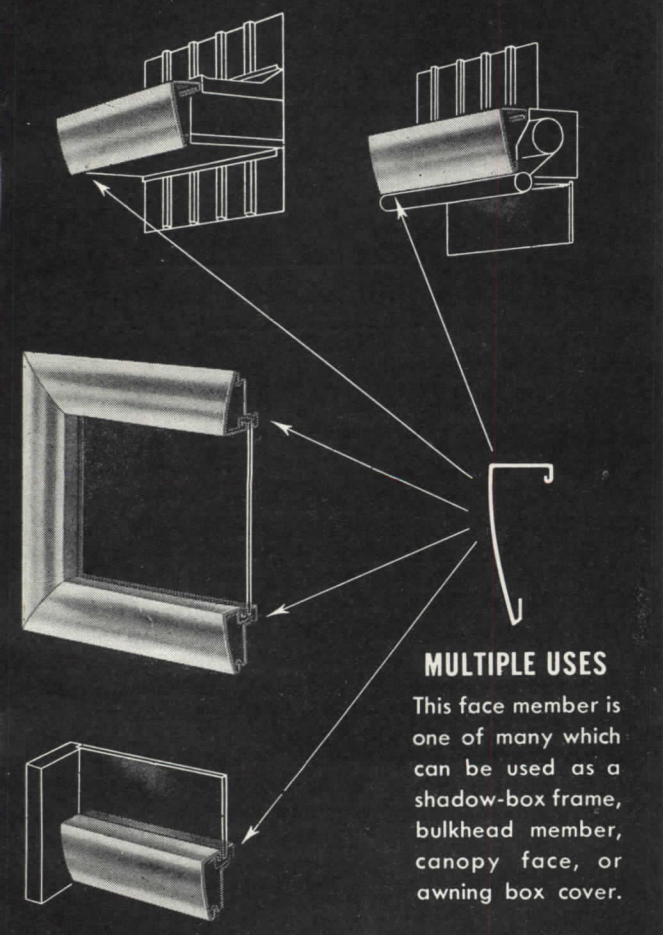
A wide variety of face members are interchangeable, because they are used with the same basic gutter assembly.

new

Interchangeable Members With Multiple Uses



Designed by Ketchum, Gina and Sharp, Architects, New York City



MULTIPLE USES

This face member is one of many which can be used as a shadow-box frame, bulkhead member, canopy face, or awning box cover.

You can create an endless variety of custom-styled store front designs with the K-47 Line of store front metals, because its members are interchangeable and they also serve multiple uses.

A typical example of K-47 interchangeability is illustrated in the upper panel at the left. It shows a few of the many face members which are used with this same gutter assembly. And an illustration of the multiple uses of a K-47 member is shown in the lower panel.

These two outstanding features enable you to obtain unparalleled flexibility and freedom in designing a limitless number of distinctive store fronts.

They also reduce drafting expenses, since you can use the elements of a good design more than once and obtain new effects with K-47 interchangeable members. The use of a standard assembly for each type of construction simplifies installation and minimizes the costs of job supervision.

For details of the striking new K-47 Line and the Kawneer Standard Line, fill out and mail the coupon below.

Kawneer
STORE-FRONTS

THE KAWNEER COMPANY, 717 North Front Street, Niles, Michigan

Check portfolio you desire. Both will be sent if checked.

☐ Details of new Kawneer K-47 Line. ☐ Details of Kawneer Standard Line.

Name_____ Firm_____

Address_____ City and State_____

REQUIRED READING

(Continued from page 26)

supposing no technical knowledge whatever, it explains the basic theory of heating and ventilating, the various systems in common usage and how they work. Of particular interest are the many tables and the section on comparative costs. The tables include transmission coefficients, temperature and air change requirements for homes, institutions, offices and schools, fuel consumption and running costs of the various kinds of heating systems. A final chapter deals briefly with ventilation and air conditioning, describing the several types of systems in common use. Diagrams are numerous.

GEOMETRICAL LIVING

The Geometry of Art and Life. By Matila Ghyka. New York (63 Fifth Ave.), Sheed & Ward, 1946. 6 by 9 in. xviii + 174 pp. illus. $4.00.

Here is a learned and highly technical volume on symmetry or proportion. It is not the sort of thing one picks up and reads through casually, but an architect or engineer blessed with a mathematically alert mind should find considerable enjoyment and profit in a study of it.

The author, visiting professor of esthetics at the University of Southern California, has traced the transmission of regulating diagrams and canons of proportion from antiquity to the present. He shows, with diagrams, how "as early as Egyptian times the plans of the important monuments of every great period or style of architecture were executed according to a very subtle and rational 'dynamic symmetry'. . . ." And he concludes that "in all great periods of Western Art the knowledge and use of Symmetry in its antique meaning have been the mainspring of 'symphonic' composition. . . ."

New Editions

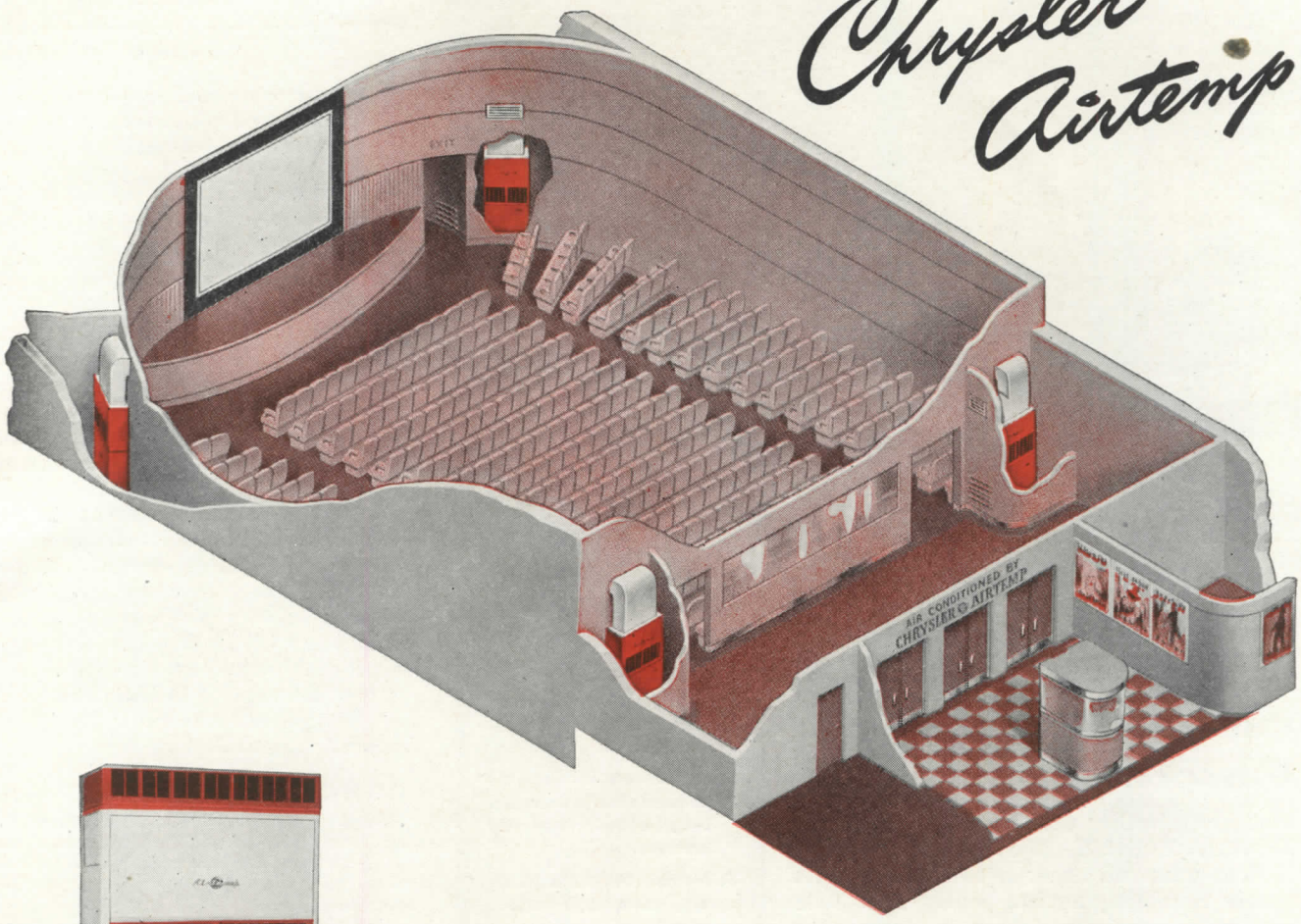
HEATING GUIDE

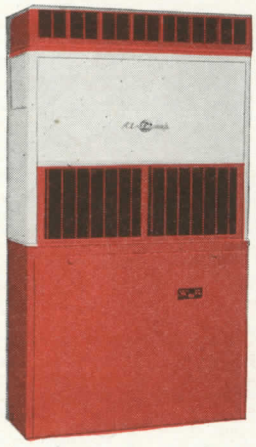
Heating, Ventilating, Air Conditioning Guide: 1946 Edition. New York (51 Madison Ave.), American Society of Heating and Ventilating Engineers, 1946. 6 x 9 in. xxiv + 1,373 pp. $6.00.

This 24th edition of the "Guide," like its annual predecessors, provides the latest available data for use of the practicing engineer, compiled from authoritative sources and reflecting progress of engineering in this field. All chapters have been revised to conform with current engineering practice. Principal changes or amplification occur in the following: Fluid Flow, Air Contaminants, Physiological Principles, Cooling Load, Dehumidification by Sorbent Materials, Heating Boilers and Furnaces,

(Continued on page 30)

Chrysler Airtemp





"Packaged" Air Conditioner

A simplified form of easy-to-install air conditioning for every kind of business. Heating coil can be added right in the package for Winter air conditioning.

Simplified Cooling for Small Theaters

A Number One Box Office Attraction for small theaters can be planned right on the architect's drawing board. It's Chrysler Airtemp "Packaged" Air Conditioners.

Architects will find this simplified form of automatic air conditioning so compact and flexible that it will fit perfectly into even the most unusual plans. And theater owners will find that Chrysler Airtemp "Packaged" Air Conditioners quickly pay their way by increasing summer audiences.

Backed by Chrysler Corporation, these "Packages" of cool comfort are reasonable in price and give trouble-free operation at an amazingly low cost. All are equipped with the famous Chrysler Airtemp Sealed Radial Compressor for economical operation, long life and finer performance.

For specifications, architects are invited to write Airtemp Division of Chrysler Corporation, Dayton 1, Ohio; in Canada—Therm-O-Rite Products, Ltd., Toronto, Ont.

CHRYSLER AIRTEMP

HEATING • COOLING • REFRIGERATION

REQUIRED READING

(*Continued from page 28*)

Warm Air Systems, Refrigeration, and Codes and Standards. The technical section also has been enlarged.

BUILDING WITH BRICK

Brick Structures: How to Build Them. 11th Edition. Revised and Edited by Ralph P. Stoddard. New York 18 (330 W. 42nd St.), McGraw-Hill Book Co., 1946. 5¼ by 8½ in. x + 170 pp. illus. $2.00.

This is the first "permanent" edition of "Brick — How to Build and Estimate," a handbook originally written by William Carver and published in 1920 by The Brick Manufacturers Association of America. It has been completely revised and modernized.

Intended to give contractors, builders, architects and engineers all necessary information for brick construction, the handbook covers structural properties of brick, building brick masonry, structural uses of brick masonry, and construction other than exterior walls. Generously illustrated, it includes a number of tables for estimating costs, weights, quantities, durability, etc.

CONCRETE DESIGN

Design of Reinforced Concrete Structures. By Dean Peabody, Jr. 2nd Edition. New York 16 (440 Fourth Ave.), John Wiley & Sons, Inc., 1946. 5½ by 8¼ in. xii + 532 pp. illus. $5.50.

This new edition of Professor Peabody's textbook has been completely revised and brought up to date to conform with the most recent codes and recommended practices. New material includes the plastic theory of design and the design of forms. Several sections have been rewritten and expanded, including the material on shrinkage and plastic flow and the chapter on elastic frame analysis.

Written for use at Massachusetts Institute of Technology, this text is clear-cut and thorough. Diagrams are numerous. An appendix furnishes building code regulations, tables and graphs.

ELECTRICAL EQUIPMENT

List of Inspected Electrical Equipment: May, 1946. New York 13 (161 Sixth Ave.), Underwriters' Laboratories, Inc., 1946. 5¾ by 8½ in. 448 pp.

Including all listings up to May 1, 1946, and replacing all earlier lists, this latest Underwriters' Laboratories volume is as usual carefully classified and indexed. It contains summaries of reports on electrical equipment which has been examined with reference to fire and accident hazards and for conformity with the provisions of the National Electrical Code. At the head of each classification is general information on the method of listing in that group, and, where necessary, certain general information on requirements, suitability, safety requirements, installation, etc.

it's a pleasure

Select the desired temperature of water you like and enjoy your shower as you never have before!

it's a treasure

Simple and trouble-proof . . . a shuttle valve operated by the pressure of the hot and cold water is the entire control!

and it's "tops" in shower protection

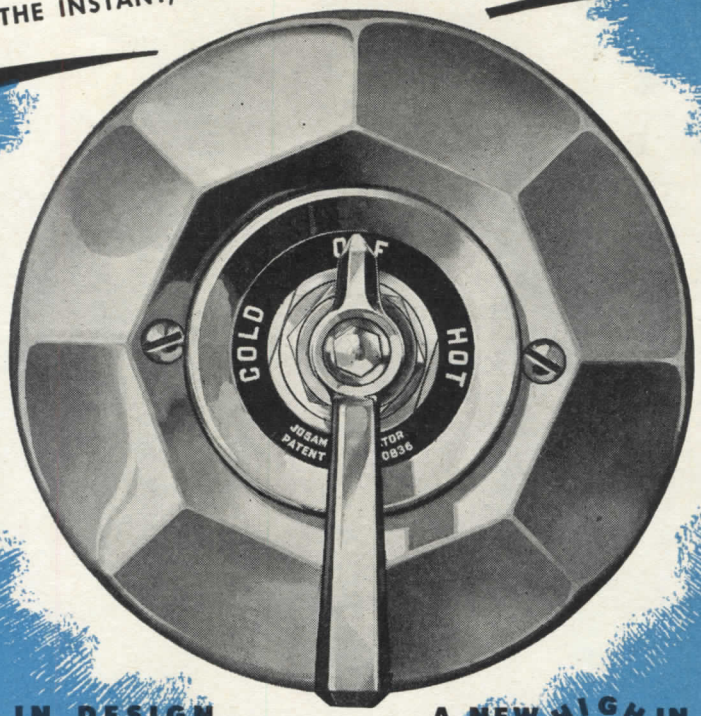
No danger of accidental scalding . . . if the cold water pressure fails, the hot water is shut off instantly!

Josam

scald-preventing

MODERATOR SHOWER MIXING VALVE

WITH THE INSTANT, POSITIVE-ACTING HYDRAULIC SHUTTLE VALVE



A NEW HIGH IN DESIGN

Out of war-time lessons in precision and split-second timing, out of months upon months of continuous tests, comes this modern, improved shower mixing valve. For sheer shower bathing pleasure...for protection against accidental scalding, it has no superior! You merely select the temperature of water pleasing to you and step in for a shower that stays the way you like it!

You need have no fear of accidental scalding, for if the cold water supply fails at any time, a single moving part—the safety shuttle valve—shuts off the hot water before it reaches the shower head. The Josam Moderator Mixing Valve combines a beauty of design with a simplicity of construction and installation that is hard to believe until you see it. It is an investment that pays over and over in lifelong pleasure and protection.

A NEW HIGH IN PERFORMANCE

The Josam Moderator Mixing Valve is ideal for installation in homes, clubs, institutions, industrial plants, schools and hotels. Every architect should have complete details on this latest type of mixing valve. Mail coupon below today!

Josam

JOSAM MANUFACTURING COMPANY

Executive Offices, 302 Empire Bldg., Cleveland 14, O. • Manufacturing Division, Michigan City, Ind.

Representatives in all Principal Cities

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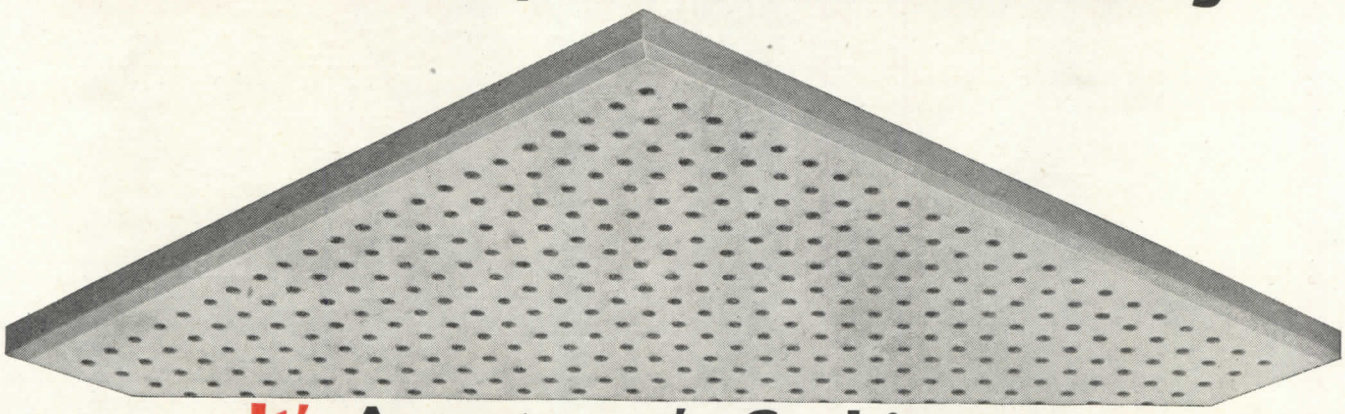
You can't turn off Noise Demons . . .

But you can trap them with this ceiling



It's Armstrong's Cushiontone

NERVES GET ON EDGE when an office is infested with noise demons. These pests come from banging machines, jangling bells, and raised voices. They're annoying and costly. That's why more and more clients want their offices designed to keep down noise demons.

Many architects today are meeting this need—abolishing noise demons efficiently and economically—by specifying ceilings of Armstrong's Cushiontone*. The 484 deep holes in each 12″ square of this fibrous material absorb up to 75% of all noise striking the ceiling. In addition, a ceiling of Cushiontone is an excellent reflector of light. It can be repainted without loss of acoustical efficiency. **Free Booklet,** "How to Exterminate Office Noise Demons," gives all the facts. Write for your copy to Armstrong Cork Company, 2409 Stevens Street, Lancaster, Penna.

* Reg. U. S. Pat. Off.

MADE BY THE MAKERS OF ARMSTRONG'S LINOLEUM AND ASPHALT TILE

THE DISTINCTIVE BRASCO FRONT immediately identifies *any* retail establishment as a smart, progressive trading center. Designed in the modern manner, built with complete Brasco Construction, the front appears both unique and distinguished—and the buying public doesn't forget it.

★

A COMPLETE LINE FOR EVERY DESIGN

★

Why Brasco Construction? Because it is best adapted to the new open-type designs with their alluring contours and revealing expanses of clear glass. For over thirty years, Brasco technicians have been constantly alert to the trend in store front development and have interpreted that trend fully and faithfully.

Our complete line of unified members harmonizes with any architectural conception and simplifies installation problems. Providing sound, structural strength and dependable glass protection, Brasco Construction assures store fronts of enduring beauty . . . *sales magnets* of impelling power.

Brasco MODERN STORE FRONTS

BRASCO MANUFACTURING CO.

HARVEY · (Chicago Suburb) · ILLINOIS

National Distribution Assures Effective Installation

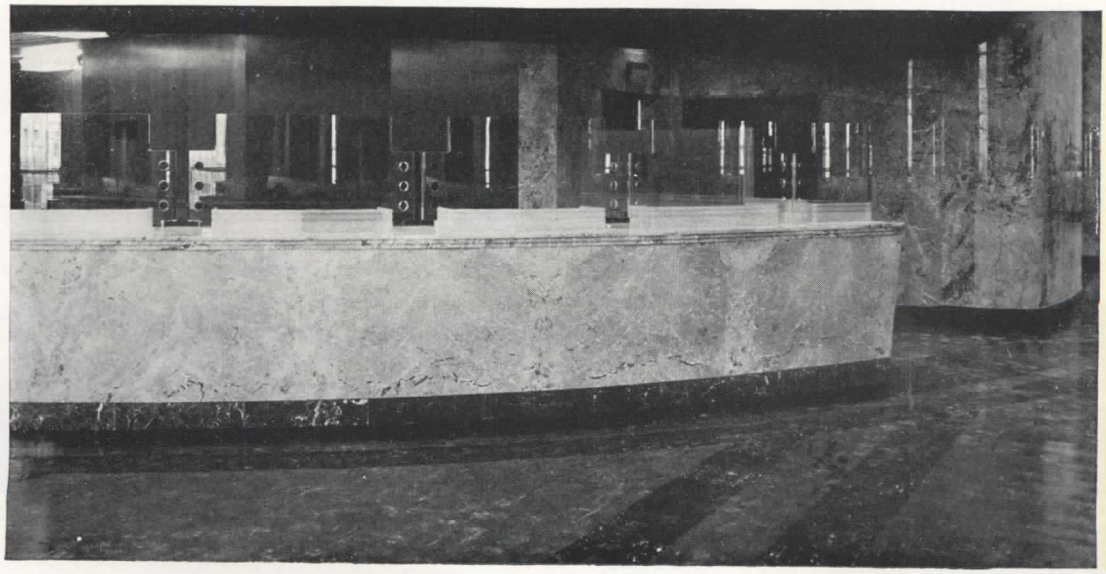
COLOR VALUES

LOREDO CHIARO

That happy blending of colors so very important in the modern building is often attained by combining the varieties of colored marble produced in Europe with those from our own American quarries.

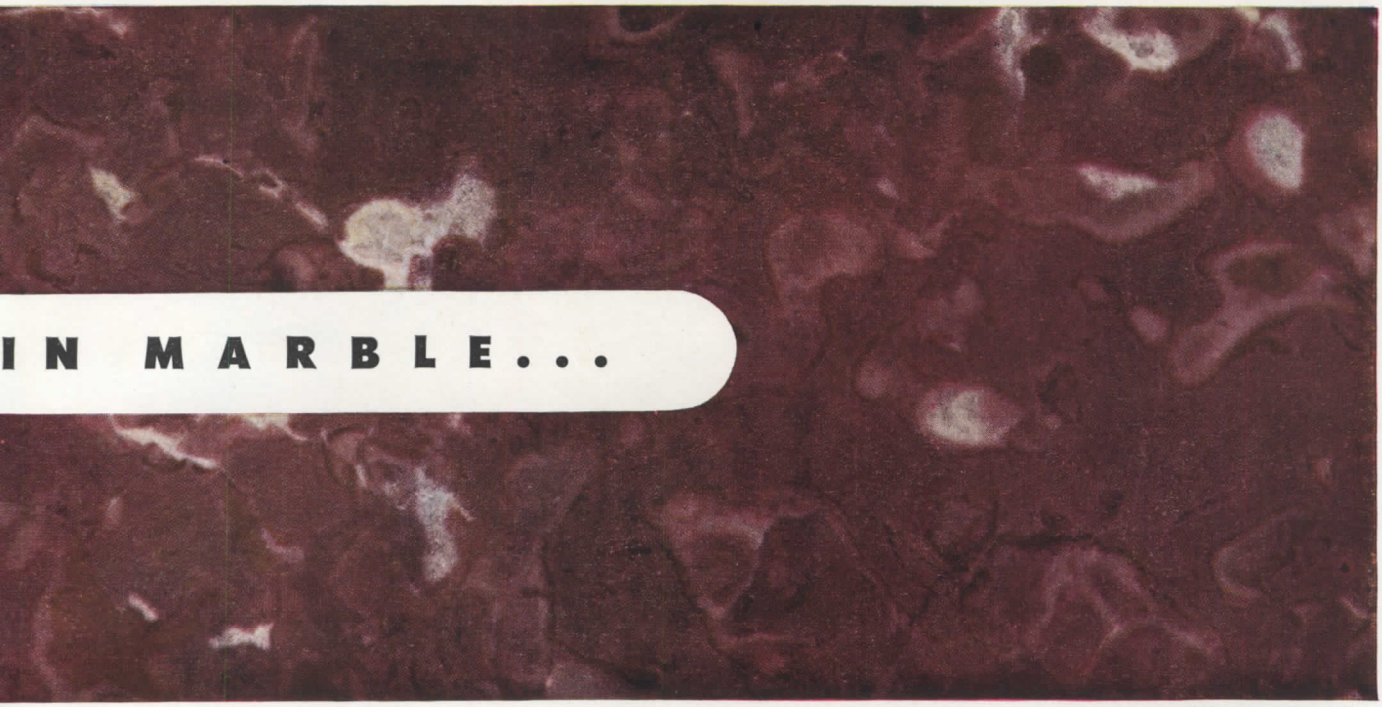
Since the war's end we have imported more than twenty of the most popular selections of marble. In the near future, as facilities in foreign lands are rebuilt, our choice of material will become much wider.

Teamed with foreign production are our own reliable quarries, mills, finishing plants and contracting organization . . . to give you a



Mercantile National Bank, Dallas, Texas. Walter W. Ahlschlager, Architect. Henger Construction Company, Builder.

Banking room circular counter and several pylons finished in Loredo Chiaro marble.



VERMONT ORIENTAL

complete service when free scope is again allowed to the activities of the construction industry.

The Vermont Marble Company, producers, importers, finishers and contractors, maintains branch offices in principal cities to serve you.

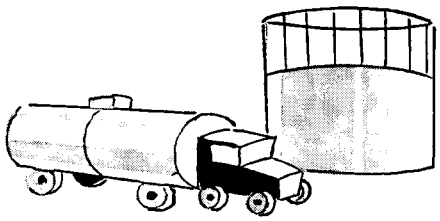
VERMONT MARBLE

Enduring Beauty

VERMONT MARBLE COMPANY • PROCTOR • VERMONT

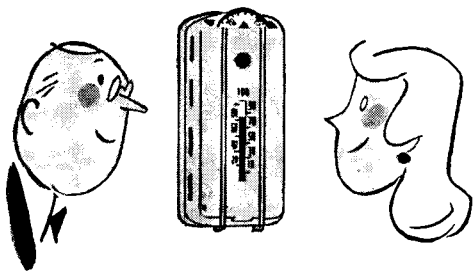
Straight counter on opposite side of Banking Room, Mercantile National Bank, Dallas, Texas.

Carrying out the rich atmosphere of color, Vermont Oriental marble was used in the Barber Shop.



Whether they burn OIL... or GAS

Clients join the "leisure class"



Heating's easy as can be

When you specify G.E.

WHEN YOU'VE sweated over plans to give your client the best possible job...don't stop short at the heating plant. Make it a G.E.

If you must keep an eye on costs, keep in mind that G-E equipment is competitively priced, and, if part of your plans call for client contentment—just remember that General Electric units deliver the kind of performance that lives up to the high expectations people have for any home-product initialed "G.E."

You have a full line to choose from—gas-fired and oil-fired equipment for steam, hot water, or warm air systems.

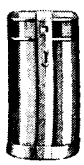
You'll find full specifications in Sweet's. Your G-E dealer will supply prices and delivery information.

General Electric Company, Air Conditioning Department, Section 6449, Bloomfield, N. J.

Automatic Home Heating

GENERAL ELECTRIC

OIL-FIRED



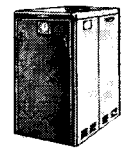
G-E Boiler for steam or hot water heat.

G-E Winter Air Conditioner (Warm Air)

G-E Oil Burner

GAS-FIRED

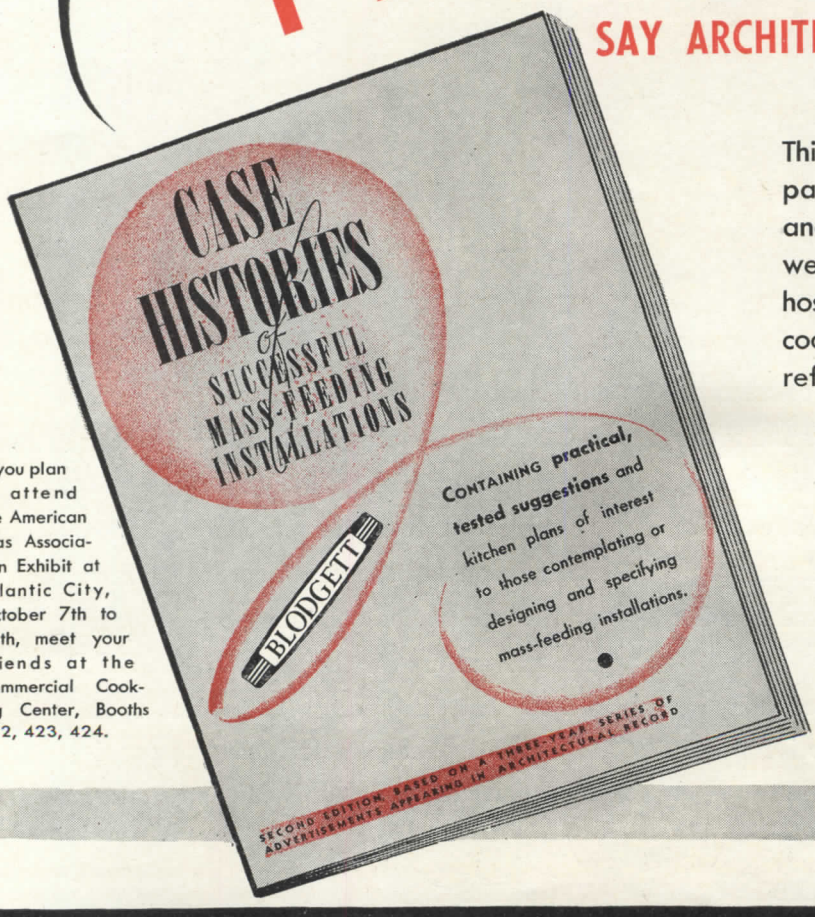
G-E Boiler for steam or hot water heat.



G-E Winter Air Conditioner (Warm Air)

"A VALUABLE AID TO EVERY KITCHEN PLAN"

SAY ARCHITECTS, CONSULTANTS, USERS



If you plan to attend the American Gas Association Exhibit at Atlantic City, October 7th to 11th, meet your friends at the Commercial Cooking Center, Booths 422, 423, 424.

This new, deluxe edition of "Case Histories" packs twenty-eight profusely illustrated and annotated kitchen plans, covering well-designed restaurant, hotel, school, hospital, institution and industrial feeding cooking installations into forty easy-reference pages.

Whether it's a new kitchen in a project still on the boards—or a modernization of an existing installation, architects, consultants, designers, owners and operators will find plenty of helpful ideas and assistance in the new "Case Histories."

Write for your copy now, to

THE G. S. BLODGETT CO., INC.

50 LAKESIDE AVE., BURLINGTON, VERMONT

Makers of Fine Ovens Since 1848

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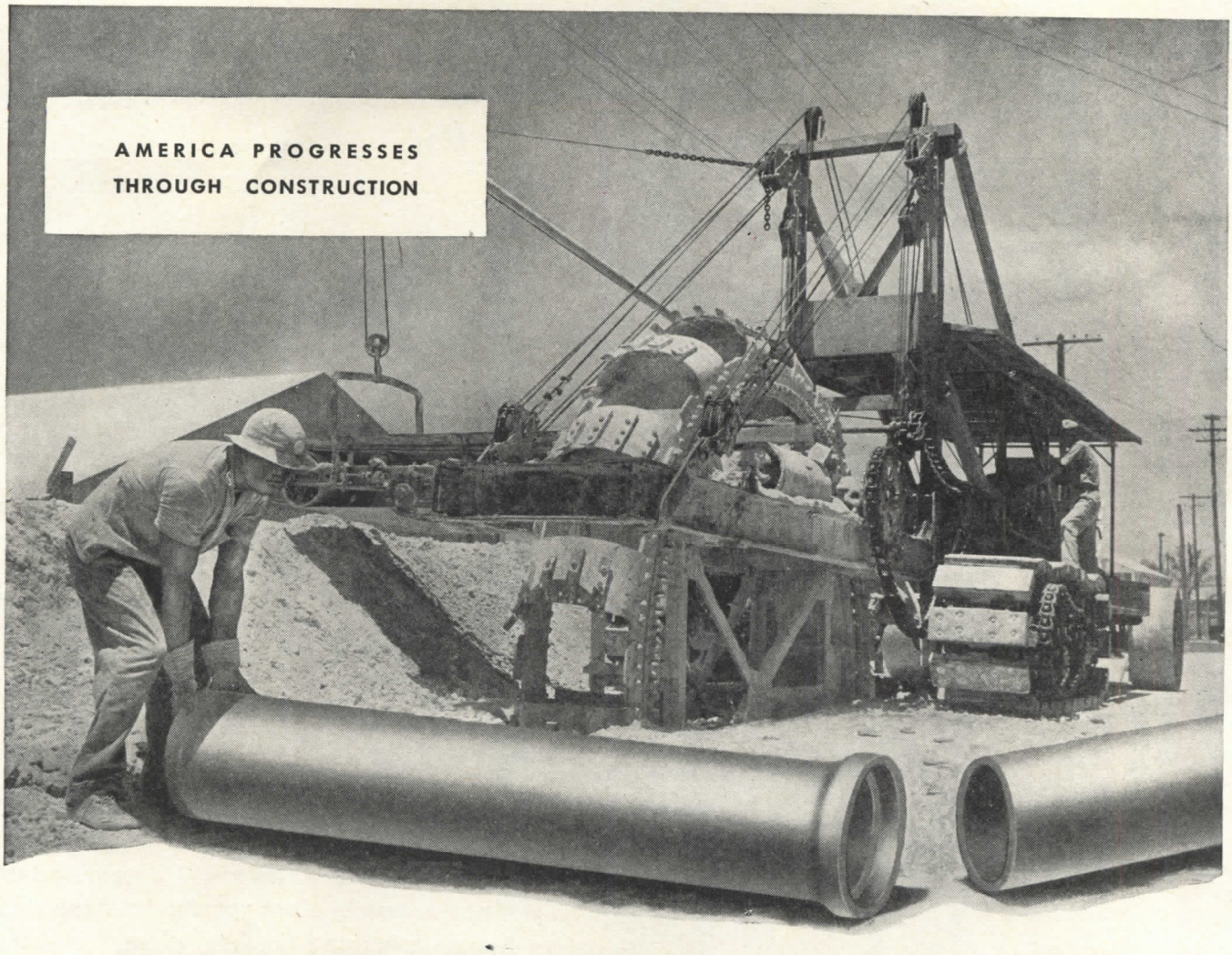


Adequate "Facilities For Living" Needed!

RIGHT NOW—just about every community needs expansions to its water and sewer systems—more streets and sidewalks, schools, hospitals, playgrounds, stores, fire stations, post offices, gas lines and other projects—as cities are extended and housing is built.

For each new house or apartment an additional $2,000 in construction is needed, on the average, for these municipal facilities. In the next few years the nation will need $5,000,000,000 worth of this type of work.

For greatest efficiency and economy in the construction of these projects necessary for the growth of communities—to save time and money for the taxpayer—A.G.C. general contractors can be depended upon for the skill, integrity, and responsibility for which this emblem stands.

THE ASSOCIATED GENERAL CONTRACTORS OF AMERICA · REG. U.S. PAT. OFF. · SKILL INTEGRITY RESPONSIBILITY

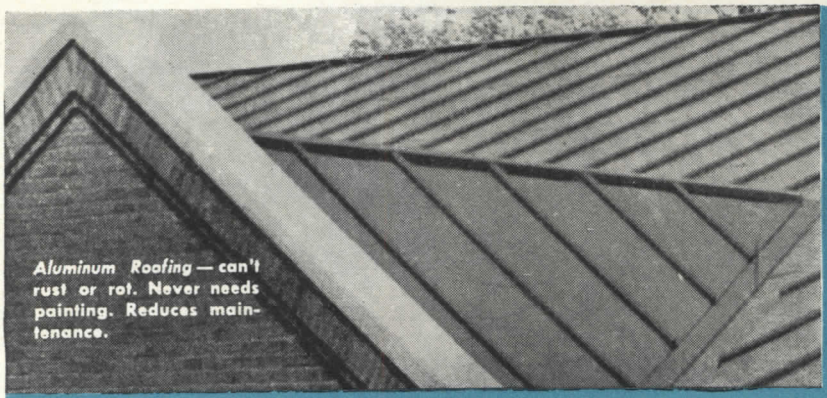
This advertisement is No. 7 of this series

THE ASSOCIATED GENERAL CONTRACTORS *of* AMERICA, INC.

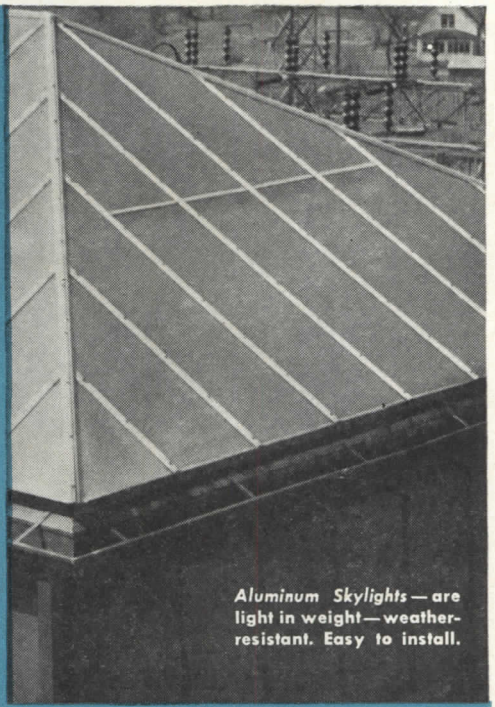
More Than Ninety Branches and Chapters Throughout America

National Headquarters—Munsey Building, Washington 4, D. C.

SKILL, INTEGRITY AND RESPONSIBILITY IN CONSTRUCTION OF BUILDINGS, HIGHWAYS, RAILROADS, AIRPORTS AND PUBLIC WORKS



Aluminum Roofing — can't rust or rot. Never needs painting. Reduces maintenance.



Aluminum Skylights — are light in weight — weather-resistant. Easy to install.

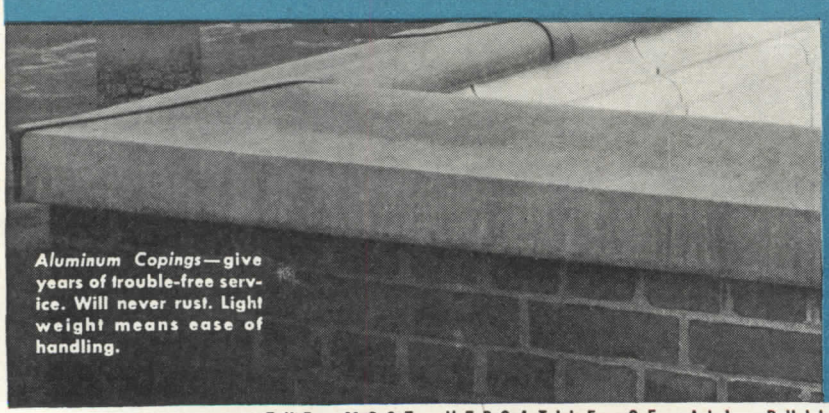
YOU CAN PUT

ALCOA ALUMINUM

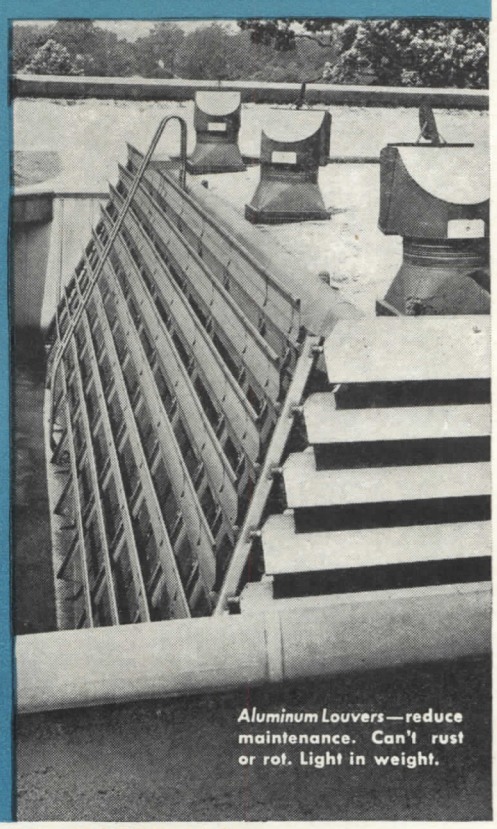
RIGHT ON TOP

That's another place where Alcoa Aluminum shows to advantage—up on the roof where weather resistance is important. It can't rust. It can't rot. It can't warp. And its lightness makes it easy to handle.

Put Alcoa Aluminum at the top of your material list now, for those buildings you are planning for the future. ALUMINUM COMPANY OF AMERICA, 2167 Gulf Building, Pittsburgh 19, Pennsylvania.



Aluminum Copings — give years of trouble-free service. Will never rust. Light weight means ease of handling.



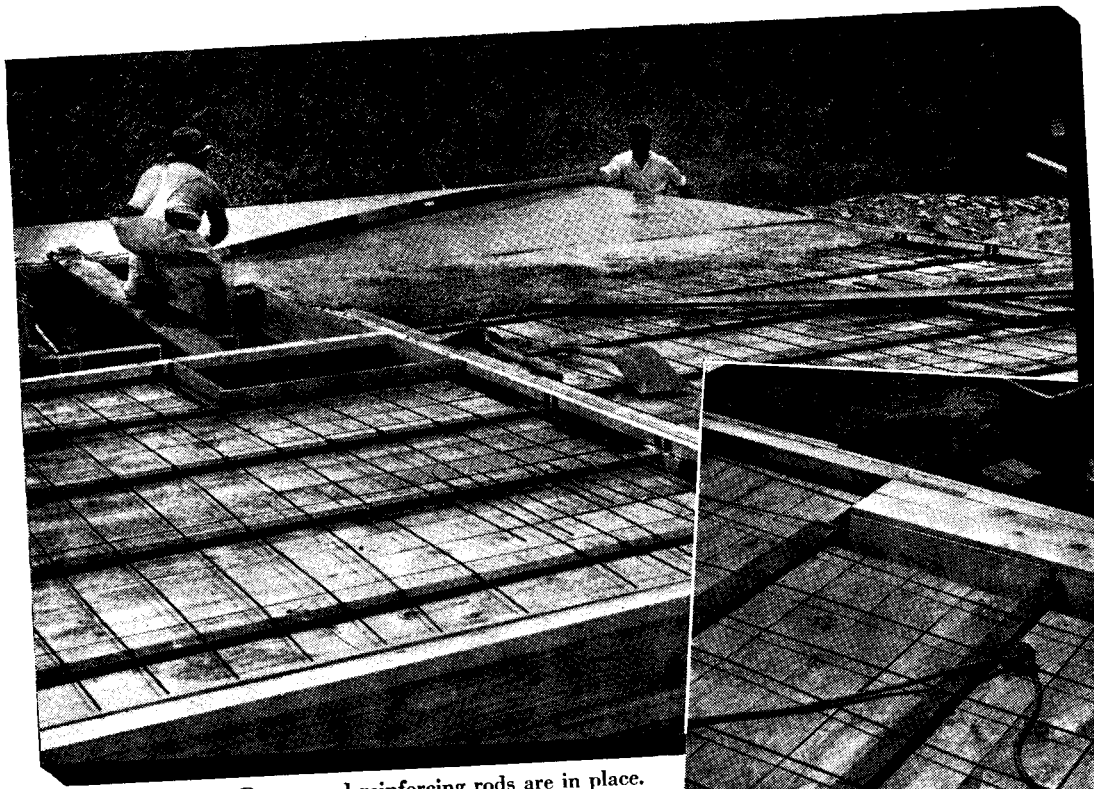
Aluminum Louvers — reduce maintenance. Can't rust or rot. Light in weight.

THE MOST VERSATILE OF ALL BUILDING MATERIALS

ALCOA

FIRST IN ALUMINUM

IN EVERY COMMERCIAL FORM



The steel Junior Beams and reinforcing rods are in place. The form has been completed and sills are in place to provide screed strips. Sill through center will be supported by a concrete fire stop. Finished floor will be parquet wood block or linoleum laid in mastic. Form lumber can be salvaged for use as sheathing.

Detail at fireplace shows how concrete will encase ends of steel beams providing a fire stop all around the chimney. BX cable has been placed in slab, since room below is to be a play room.

Prompt Shipment to Builders—

J&L JUNIOR BEAMS

Speed your house construction jobs by using J&L Junior Beams. They are quickly available from 7 J&L Warehouses listed below. In addition, installation of this rigid fireproof, verminproof, shrinkproof floor is simple and fast. Write your nearest J&L Warehouse.

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PITTSBURGH 30, PENNSYLVANIA

WAREHOUSES: CHICAGO · CINCINNATI · DETROIT · PITTSBURGH · MEMPHIS · NEW ORLEANS . LONG ISLAND CITY, N. Y. *

** Operated by Jones & Laughlin Steel Service, Inc.*

J&L STEEL

Even this won't mar... beautiful VARLAR!

Looks New After 25,000 Washings!

HERE'S wall *beauty* that begins a new era of low-cost wall *maintenance.*

Because, by actual laboratory test, Varlar is *stainproof.* Pencil, ink, lipstick, oil, hot kitchen grease, perfume, jam, dirt-accumulation—stains of ALL kinds—wash clean from Varlar with ordinary soap and water. Varlar is fire-resistant, water-resistant, and proof against mildew, bacteria and vermin, too.

Varlar goes up easily as wallpaper . . . comes in 90 beautiful styles, including a variety of solid tones. But don't confuse it with laminated wallpapers. Varlar is a new *kind* of wall covering, made with miracle plastics an entirely new way. It has no coatings to crack, peel or discolor. Write today for laboratory test reports (shown below) on Varlar's amazing performance.

Never Before Such Enduring Beauty

VARLAR

Stainproof Wall Covering

VARLON, INC., Division of UNITED WALLPAPER INC.
Merchandise Mart, Chicago 54, Ill.

Walls of *Louvrex Glass* overcome cramped space limits

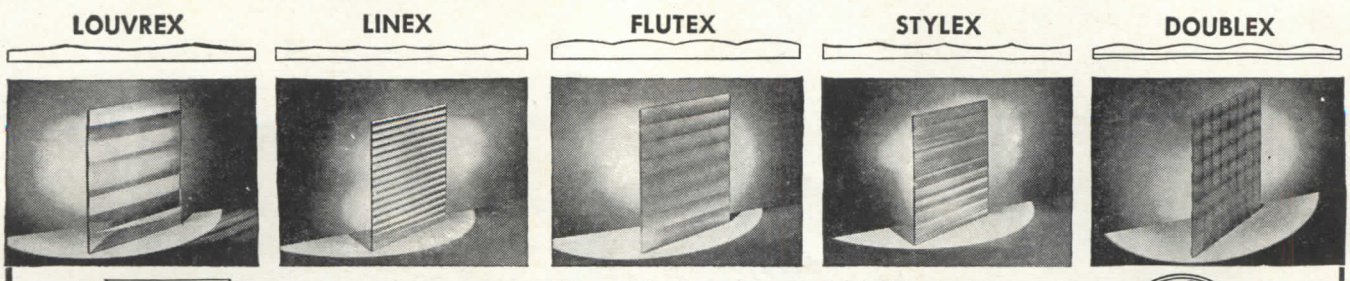
Bertell, Inc., uses glass for more space and light in its New York offices.

When a top-notch design firm redesigns its own offices for more space and more light by using glass—*that's news.*

Bertell, Inc., New York design and development firm, recently was confronted with severe space problems in reconverting wartime quarters to civilian work. Under the guidance of President Roy C. Bertell, the staff created a foyer, reception room, design department, storage space and executive offices in an extremely limited area.

How was this accomplished? No small credit, according to Mr. Bertell, is due to the use of Blue Ridge *Satinol Louvrex*—a patterned glass which adds distinctive delineation and borrows light for otherwise dark areas. Louvrex is one of more than twenty patterns in the Blue Ridge Decorative Glass line. Most of these can be obtained in plain or Satinol finish, in both flat or bent shapes. Made in the Blue Ridge plant in Kingsport, Tennessee, these Decorative Glasses are sold by Libbey·Owens·Ford's glass distributors. Inquiries should be addressed to your nearest L·O·F District Sales Office or to Blue Ridge Sales Division, 8996 Nicholas Building, Toledo 3, Ohio.

"Design it with one of the 5 EX's"



L·O·F

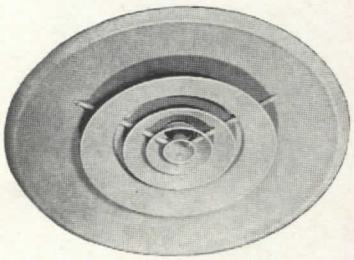
BLUE RIDGE *Decorative* GLASS

FOR SOFT, DIFFUSED LIGHT · SMART DECORATION · COMPLETE PRIVACY

BLUE RIDGE GLASS CORP. MANUFACTURERS OF QUALITY GLASS KINGSPORT TENN.

The Best Laid Plans...

will include ANEMOSTAT DRAFTLESS AIR-DIFFUSION for *successful* air-conditioning



On the boards today, the ultra-modern commercial and industrial buildings of tomorrow are being designed to assure unsurpassed production. Incorporating all the newest advances in architectural design, they will add much to worker efficiency and comfort.

The best laid plans for newly designed commercial and industrial buildings include *successful* air-conditioning. To get it, more and more architects, engineers, and contractors are specifying Anemostat—the patented air-diffuser—which completes the air-conditioning process by providing scientifically correct distribution of the conditioned air to every part of the conditioned rooms.

The extreme changes proposed in building and structural design, the new ideas for interiors and equipment, *all* magnify the need for correctly engineered air-distribution as provided by Anemostat. Without it, the air-conditioning system is incomplete—drafts occur . . . stale air-pockets persist . . . temperature and humidity are unequalized.

The Anemostat eliminates these trouble-breeders by distributing conditioned air in pre-determined patterns, and precisely in accordance with prescribed-for-comfort air velocities. The result: *SUCCESSFUL* air-conditioning for *true* air-comfort!

Anemostat engineers are air-diffusion specialists. Backed by 25 years of experience, they can capably solve difficult air-diffusion problems. A consultation can be arranged today. There is no obligation.

Descriptive literature is available on request.

AC-1092

"No air-conditioning system is better than its air-distribution"

ANEMOSTAT

REG. U. S. PAT. OFF.

ANEMOSTAT CORPORATION OF AMERICA
10 East 39th Street, New York 16, N. Y.

REPRESENTATIVES IN PRINCIPAL CITIES

★ There's a degree of *Electrical Living* for every home ★

. . . AND THIS IS THE MINIMUM FOR

When planning and building homes for families with modest incomes, you will find this "Thrift Degree" a helpful guide. It was developed by Westinghouse to include the very minimum of equipment for Electrical Living . . . electric range, refrigerator, ironer, washer, water heater and ventilating fan.

The equipment and lighting in the "Thrift Degree" is supported by an engineered wiring system to insure proper operation.

Even though all this equipment is not bought when the house is built or modernized, a wiring system of sufficient capacity to meet these minimum Electrical Living needs should be installed at the time of construction or modernization.

For technical information on Better Wiring Systems for popular priced homes, ask for free booklet described below. Also available at $1.00 per copy is the Home Wiring Handbook, now in its 4th printing.

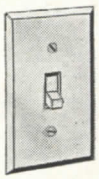
J-91550

free

For more details about "Thrift" and other degrees of Electrical Living, and Better Wiring, send for booklet "Four Degrees of Home Electrification". Westinghouse Electric Corporation, Better Homes Department, Box 868, Pittsburgh 30, Pennsylvania.

MODERN HOMES *the Thrift Degree*

These Bryant wiring devices will help insure a quality wiring job...

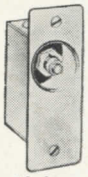


GENERAL-PURPOSE SWITCHES

A complete line of Standard Type, Mercury Line and Interchangeable Line switches for single-pole, double-pole, three-way and four-way installations. These Bryant switches carry a "T" rating and are listed as standard by Underwriters' Laboratories, Inc. They have plaster ears to assure perfect alignment with wall surface when installed.

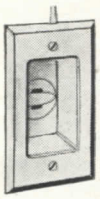
SWITCH WITH OIL BURNER COVER

Where oil burner control near head of basement stairs is required, this single-pole, flush handle switch is ideal. Red covers are inscribed—"Oil Burner—Emergency Switch".



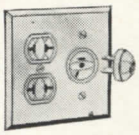
DOOR SWITCH

A "must" in modern homes. Automatically turns on closet light when door is opened. Furnished with box and plate for mounting in door jamb. Has adjustable plunger (Nos. 2968 and 2969).



CLOCK HANGER

The right way to hang a clock. Recessed to provide space for surplus cord. Clock conceals hanger. No. 2992 (Brown) and No. 2992-I (Ivory).

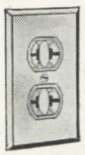


RADIO OUTLET

For modern radio installations. Two outlets . . . one for connection to power circuit, and other to aerial and ground wires. Brown (No. 27146) or Ivory (No. 22146-I).

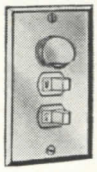
RANGE OUTLET

This three-wire outlet provides a convenient way to connect electric range. Brush brass plate (No. 3846). Three-wire range cord set also available.



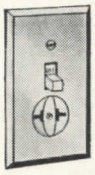
DUPLEX CONVENIENCE OUTLET

Two types . . . one with separate terminals so only one outlet is controlled by wall switch (No. 4832-Y); other is conventional with common terminals (No. 4832).



NIGHT LIGHT

A modern nighttime convenience . . . lights the way to bedroom or bath. One switch controls night light; other controls hall or room lights.

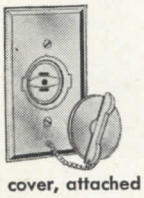


SWITCH AND CONVENIENCE OUTLET

Specially desirable for bathrooms. Convenience outlet is always hot. Switch controls lighting (No. 2989). Bakelite plate.

CLOSET LAMP HOLDER

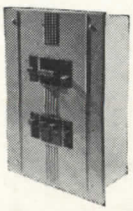
An inexpensive way to provide a closet light. Designed for wall or door switch control, or with pull-chain. Each type made in two sizes, for 3¼" x 4" box. Each has shade holder groove.



WEATHERPROOF CONVENIENCE OUTLET

Has plate and quick clamp cover, attached by chain, to prevent exposure to moisture when not in use (No. 3880).

And Westinghouse Circuit Breakers give modern circuit protection



Completely Automatic, they open circuits when a worn cord causes a "short" or if circuits are overloaded by too many appliances. A flip of breaker lever —even by a child—restores service when condition is corrected. Nothing to replace. Avoids unnecessary interruptions. Flush mounted—can be installed in any convenient place, such as a kitchen. Reasonable in cost. Offers a sales advantage when installed in homes you build.

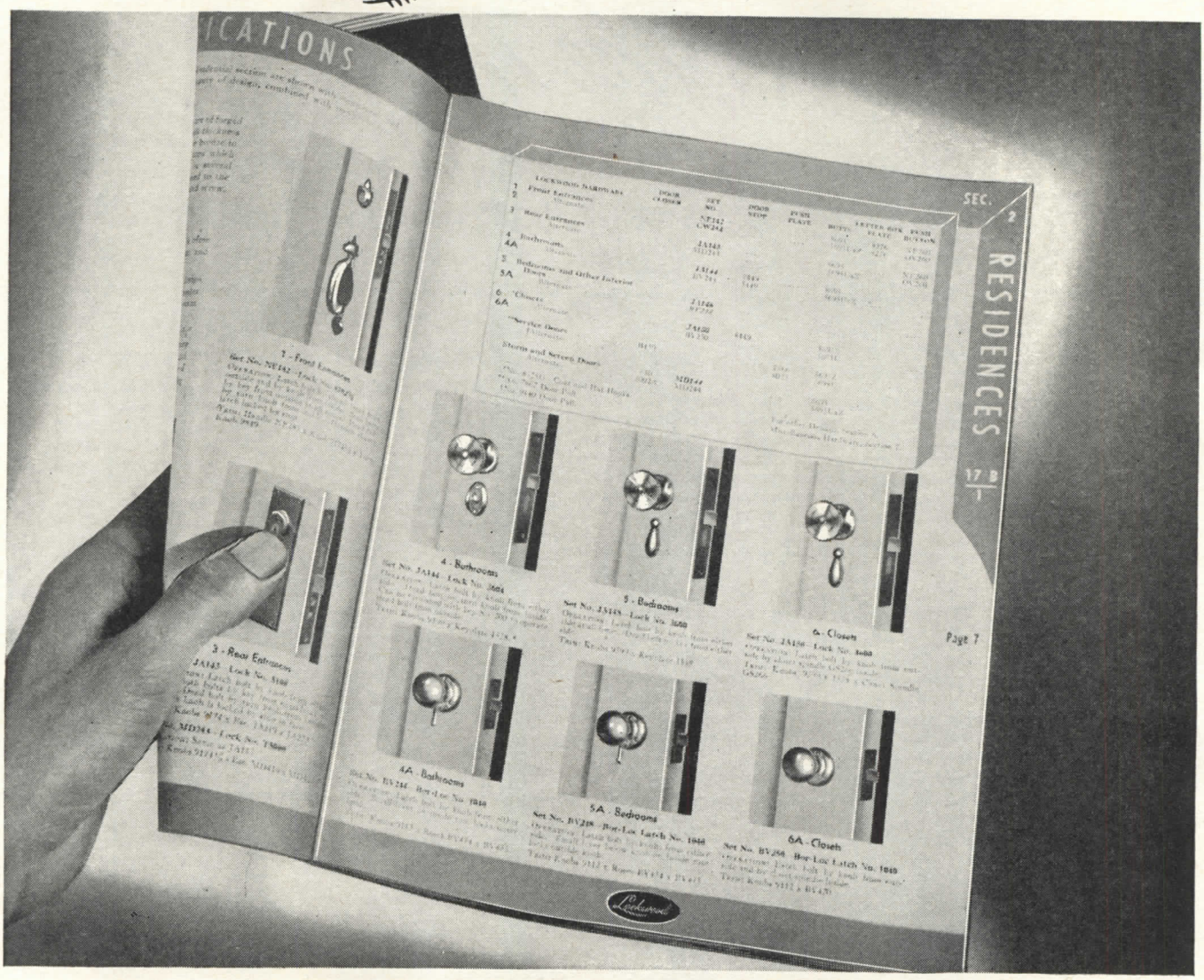
Westinghouse

PLANTS IN 25 CITIES . . . OFFICES EVERYWHERE

Better Homes Department

PITTSBURGH 30, PA.

the eye becomes quicker than the hand . . .



. . . when architects use lockwood simplified specifications

A glance at this visual guide is all an architect needs to help him specify Builders' Hardware. For here, grouped by sections, are streamlined listings of hardware requirements that meet specific needs for typical types of door openings in Residences, Apartments, Hospitals, Hotels, Schools and Institutions. The sections are charted for choice in style and finish, and proper locks with trim can be selected quickly.

Listed in Sweet's Architectural File for 1946, this practical handbook is another of the reasons why more and more architects are turning to Lockwood — for sound co-operation and dependable builders' hardware.

L-8A

lockwood builders' hardware

LOCKWOOD HARDWARE MANUFACTURING COMPANY
Division of Independent Lock Company • Fitchburg, Massachusetts

"MAKE MINE MUSIC," Disney feature picture now showing, was being made at Disney Studios when these photographs were taken. The artist is at work on the "Two Silhouettes" sequence . . . The air conditioning equipment is by General Electric Company.

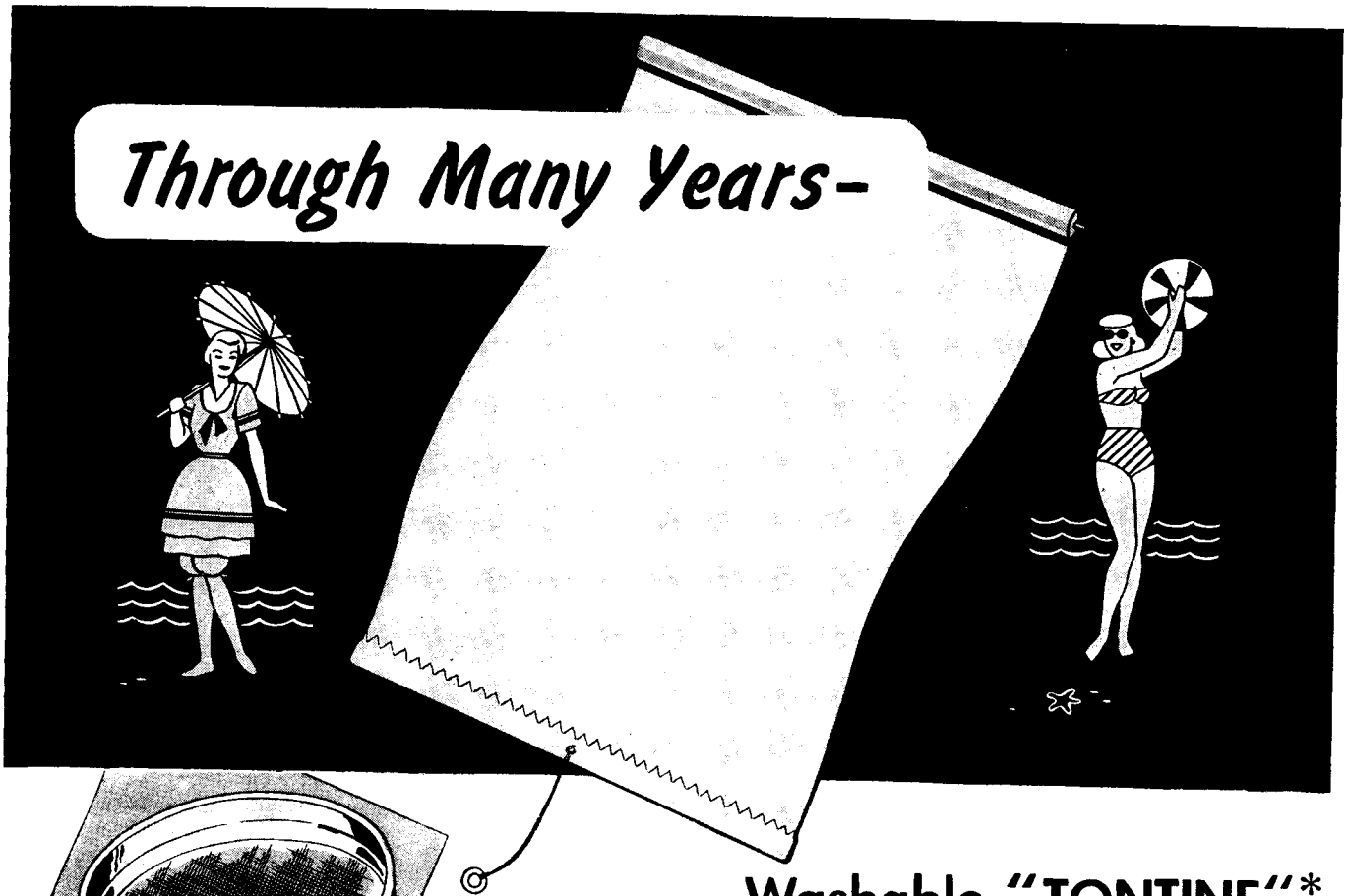
COMPLETE AIR CONDITIONING JOHNSON CONTROLLED IN THE ANIMATION BUILDING AT Disney STUDIOS

MORE THAN 150 Johnson room thermostats have controlled the air-conditioned temperature in each room, since the Animation Building at Disney Studios, Burbank, California, was completed in 1939. Other buildings on the Disney "lot" also are equipped with Johnson-controlled air conditioning systems . . . In the photograph of the artist at work, the Johnson room thermostat is "on watch," operating a Johnson mixing damper so as to deliver conditioned air to the room at exactly the required temperature. In the view at upper right, several ducts serving individual rooms are shown. In each of these there is a Johnson mixing damper, controlled by a long-travel, piston type Johnson damper operator, a number of which are visible on the sides of the ducts.

The room thermostats in each wing are adjusted automatically by an outdoor master thermostat, so that the temperature in each room is increased gradually from 75° to 78°, during the cooling season, as the outdoor temperature rises from 75° to 100°. . . Hundreds of Johnson thermostats, valves, dampers, and damper operators, with thousands of feet of copper tubing and countless auxiliary devices, were assigned to the important job of maintaining exactly correct conditions in the various stages, offices, studios, and laboratories in this great group of buildings. Many of the smaller buildings and projection rooms are incased completely in sound-proof walls, without exposure to outside temperatures, insuring complete elimination of noise. Ingenious arrangements of control apparatus insure accurate control of temperatures and humidities . . . Ask a Johnson engineer, from a near-by branch office, to solve *your* next temperature control problem. Johnson Service Company, Milwaukee 2, Wisconsin. Direct Branch Offices in Principal Cities.

JOHNSON *Automatic Temperature and Air Conditioning* **CONTROL**

DESIGN · MANUFACTURE · INSTALLATION · SINCE 1885



. . . Washable "TONTINE"* Shade Cloth Stands the Wear!

HERE'S WHY "TONTINE" SHADE CLOTH OFTEN GIVES UP TO 20 YEARS' SERVICE

Deep into the fibers of the fabric, the pyroxylin is driven. This chemical—a liquid form of cotton—is soaked up by the cotton fabric as a sponge soaks up water, then it hardens. Thus the two become, in effect, one material.

Pyroxylin is washable—it is impervious to water, rain, grime and dirt. When a shade made with "Tontine" becomes soiled, it can be scrubbed with soap and water, then rehung fresh and clean as ever. Service records show that "Tontine" can be scrubbed—vigorously—20 times or more without damage! And colors resist fading, stay bright for the life of the shade.

Resists cracking and pinholing. "Tontine's" pyroxylin impregnation gives it a protective finish that resists cracking and pinholing. And it gives maximum resistance to fraying and ripping. Constant improvement of all these qualities through the years makes today's "Tontine" one of the best values in its field.

Thousands of reports show that window shades of durable "Tontine" have been in use up to twenty years. Fewer replacements are needed; costs are cut to a minimum. "Tontine" actually saves money for your clients—in schools, hotels, and office buildings.

By specifying "Tontine" Shade Cloth for *all* window shades, you'll be saving your clients' time and trouble, too. An economical washing service that keeps shades looking bright and new can be arranged by an authorized "Tontine" dealer. E. I. du Pont de Nemours & Co. (Inc.), "Tontine" Sales, Newburgh, N. Y.

*"TONTINE" *is Du Pont's registered trade mark for its pyroxylin-impregnated* washable *window shade cloth.*

DU PONT "TONTINE"
WINDOW SHADE CLOTH
Looks Better Longer

DU PONT
REG. U. S. PAT. OFF.

BETTER THINGS FOR BETTER LIVING
. . . THROUGH CHEMISTRY

Red Lead NEUTRALIZES ACIDS *that Speed Up Rusting*

Every maintenance engineer knows that Red Lead has long been the outstanding protective paint for metal.

But did you know that one of the important reasons is the ability of Red Lead to counteract the acid conditions which are recognized as accelerators of rust?

Structural steel is usually exposed to acid environments. This is so because acid-forming compounds are produced by certain gasses and smoke in contact with moisture. Pollution of waterways also results in acidity.

Moreover linseed oil, synthetic resin varnishes and other commonly used paint vehicles *themselves* produce organic acids in the normal process of aging. Many of these also accelerate corrosion.

When Red Lead is the pigment in a protective paint, rust-causing acidity is kept under control. Actually, a "controlled" acid level is maintained in the paint film. This is a singular property of Red Lead and also contributes to the utmost in film flexibility, impermeability and long life.

* * *

The value of Red Lead as a rust preventive is most fully realized in a paint where it is the only pigment used. However, its rust-resistant properties are so pronounced that it also improves any multiple pigment paint. No matter what price you pay, you'll get a better paint for surface protection of metal if it contains Red Lead.

* * *

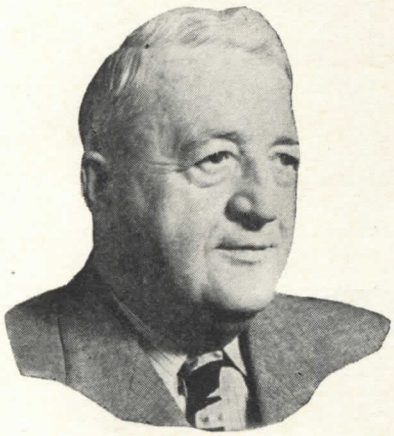
Write for New Booklet—"*Red Lead in Corrosion Resistant Paints*" is an up-to-date, authoritative guide for those responsible for specifying and formulating paint for structural iron and steel. It describes in detail the scientific reasons why Red Lead gives superior protection. It also includes typical specification formulas. If you haven't received your copy, address nearest branch listed below.

* * *

The benefit of our extensive experience with metal protective paints for both underwater and atmospheric use is available through our technical staff.

NATIONAL LEAD COMPANY: New York 6; Buffalo 3; Chicago 80; Cincinnati 3; Cleveland 13; St. Louis 1; San Francisco 10; Boston 6, (National Lead Co. of Mass.); Philadelphia 7, (John T. Lewis & Bros. Co.); Pittsburgh 30, (National Lead Co. of Pa.); Charleston 25, W. Va. (Evans Lead Division).

Dutch Boy Red Lead



Insurance Executives rely on Johns-Manville for noise-quieting

MR. ROBERT E. L. CHAPMAN, Building Superintendent of New England Mutual Life Insurance Company of Boston, says:

"We made a good decision five years ago when we specified Johns-Manville Sanacoustic Ceilings for our new building.

"The quieter working conditions are conducive to greater efficiency, less nerve strain, a more pleasant office atmosphere for everyone.

"What's more, these acoustical ceilings are so much easier to keep clean that they are a major factor in bringing down our cleaning costs 50% throughout the building."

Your Noise Problems, too,

can benefit from Johns-Manville undivided responsibility

"J-M materials installed by Johns-Manville"—that's the undivided responsibility you can get for your acoustical job, large or small, simple or complex.

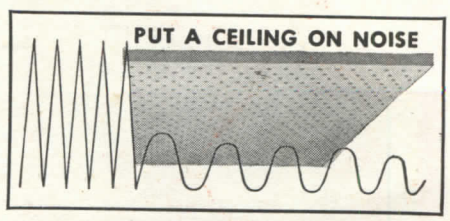
To give your noise-quieting problems the most effective possible solution, Johns-Manville combines the knowledge of *what* materials you should use with the facilities to apply them *properly* for maximum results.

In other words—undivided responsibility for the complete job.

Our 35 years of pioneering in sound control includes the highest type of experience in providing acoustical treatment for radio studios, auditoriums, restaurants, schools, offices, hospitals, churches, stores, and factory areas. You can *rely* on Johns-Manville for efficient noise-quieting.

For the complete story, write for our brochure, "Sound Control." Johns-Manville, Dept. AR-9, P. O. Box 290, New York 16, New York.

Because of the unprecedented demand for J-M Building Materials, there may be times when we cannot make immediate delivery of the J-M products you need. We urge you to anticipate your requirements as far in advance as possible.



JOHNS-MANVILLE JM PRODUCTS **Johns-Manville** *Pioneers in* **Sound Control** Member of ACOUSTICAL MATERIALS ASSOCIATION

NOW AVAILABLE! A. W. FABER'S The WINNER

handy easel box assortment of the 12 most popular colored pencils

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A. W. Faber—the most important name in pencils since 1761—now brings you the famous assortment of The WINNER thin lead colored pencils. Packed in a swing-type box for fingertip convenience, The WINNER offers all the qualities that have endeared it to pencil craftsmen the country over... breath-taking brilliance, insolubility in water (prevents finger marks on your drawings), easy sharpening, crayon practically as strong as lead in your black lead pencil. Even sharpened to a needlepoint, it stands up when you bear down. If your Dealer doesn't yet have his supply, write to A. W. Faber, Inc., Newark 4, N. J.

A.W. FABER INC.
NEWARK, N. J.

Sure as shootin' this big full-color Gold Bond ad in The Saturday Evening Post will hit straight at the hearts of home-loving Americans. They'll be building and remodeling the Gold Bond way, just as soon as restrictions are lifted and materials are available. And they'll probably write us for plans of houses like this. As usual, we will say, "Consult your architect!" National Gypsum Company, Buffalo 2, New York.

Haven't you dreamed of such a home? You can have it a lot sooner if you start planning now. See your local Gold Bond dealer.

How not to build a Haunted House . . .

NOT all haunted houses are old. Many a new house starts to haunt its owner from the day he moves in. Haunt him with troubles, worries, and ever mounting expense. This has always been true. And it's even truer today with so many people wanting homes that there isn't enough good material to go around.

But whether you can build today or not it's wise to start planning now. Planning to build so soundly that the ghosts of shoddy construction and flimsy materials will never rise up to haunt you. For, thanks to scientific research, new methods and modern materials assure you greater comfort and long-lasting freedom from annoying repair expense. Take walls and ceilings for example. For over 100 years almost no progress was made in this field. Then research developed lightweight fireproof gypsum lath. Stronger than wood lath, it bonds so securely to modern improved gypsum plaster that a team of horses can't pull them apart.

The same kind of research discovered how to lock winter heat in and summer heat out, with fireproof high-efficiency rockwool home insulation. Pays for itself in fuel savings alone!

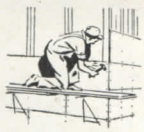
You can plan on stronger, tighter outside walls at low cost, too, thanks to fireproof Gold Bond storm-sealed gypsum sheathing under the outside finish. In normal building times more than 10,000 lumber and building material dealers can supply all you need of the 150 research-produced Gold Bond Building Products. Today things are different, for even our full production can't keep up with demand. But just the same your local Gold Bond dealer is on the job, helping GIs to get housed, helping his customers in every way he can.

See him first when you plan your own house. He will help you build better. Not today perhaps, but tomorrow sure! National Gypsum Company, Buffalo 2, New York.

Over 150 tested Gold Bond Building Products for new construction or remodeling add greater permanency, beauty and fire protection. These include wallboard, lath, plaster, lime, sheathing, wall paint, insulation, metal and sound control products.

DEMAND THESE SIX GOLD BOND FEATURES IN YOUR NEW HOUSE

GOLD BOND FIREPROOF GYPSUM SHEATHING



Big, weatherproofed panels of Gold Bond Storm Sealed Gypsum Sheathing add structural strength and built-in fire protection. Costs less than old-style sheathing.

GOLD BOND FIREPROOF GYPSUM LATH

Gold Bond Gypsum Lath is the perfect plaster base. Can't warp, expand or contract. Adds fire protection and structural strength for better wall and ceiling construction.

GOLD BOND FIREPROOF GYPSUM PLASTER

Gold Bond Gypsum Plaster is especially processed to bond perfectly with gypsum lath. Builds firesafe, rock-like walls and ceilings with greater durability and beauty.

GOLD BOND FIREPROOF FINISH LIME

Over the plaster, goes a coat of Gold Bond Finish Lime. This is the smooth white finish that you see in a new house before the wallpaper or paint is applied.

GOLD BOND FIREPROOF ROCK WOOL INSULATION

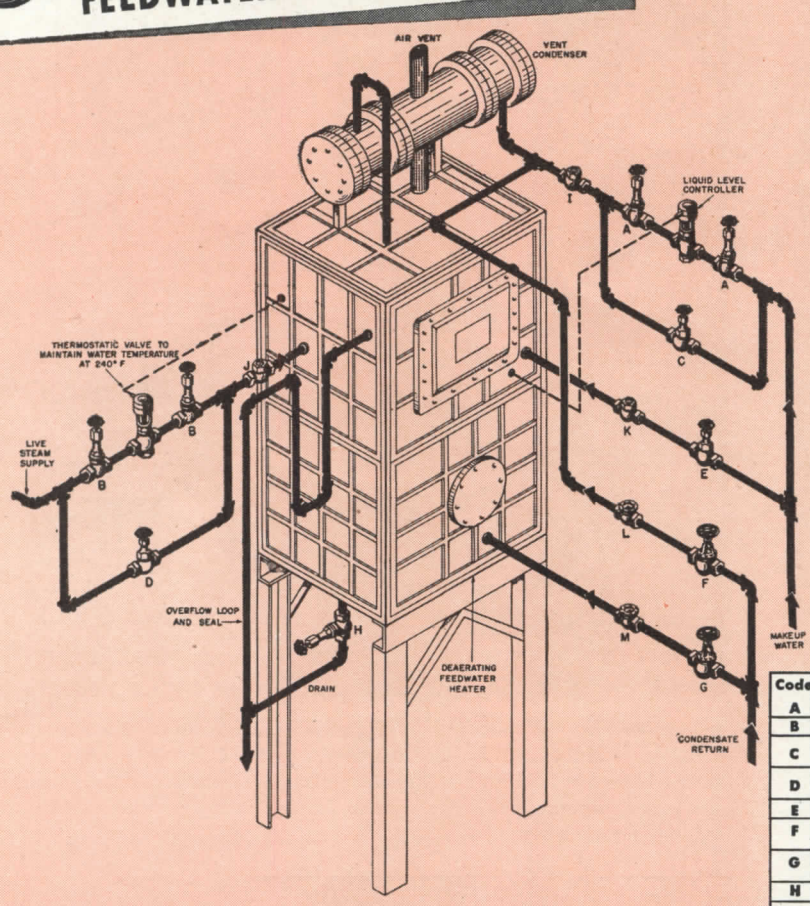
Builds a fireproof blanket of insulation around the house for greater year 'round comfort, family health, and fuel savings up to 30%. Available for new or old homes.

GOLD BOND—SUNFLEX 1-HOUR WALL PAINTS

Dries in one hour with no objectional painty, after-odor. Easier to apply. This modern decoration is now available at your dealer's in a full range of colorful tones.

Jenkins PRACTICAL PIPING LAYOUTS 14

How to plan a DEAERATING FEEDWATER HEATER SYSTEM



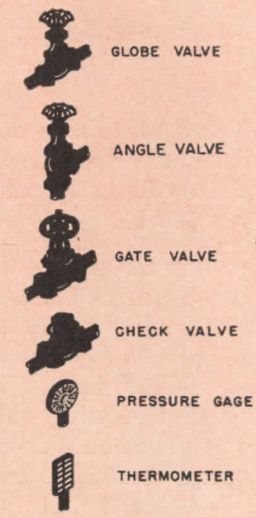


Diagram by Huxley Madeheim, Consulting Engineer

Code	Quan.	Jenkins Valves	Service
A	2	Fig. 47 Bronze Gate	Liquid Level Controller Shut-off
B	2	Fig. 47 Bronze Gate	Thermostatic Valve Shut-off
C	1	Fig. 106A Bronze Globe	Makeup Water thru Vent Condenser By-pass
D	1	Fig. 106A Bronze Globe	Live Steam Heating Makeup By-pass
E	1	Fig. 106A Bronze Globe	Makeup Water Direct to Heater
F	1	Fig. 141 IBBM Globe	Condensate Return thru Vent Condenser
G	1	Fig. 141 IBBM Globe	Condensate Return Direct to Heater
H	1	Fig. 47 Bronze Gate	Heater Drain and Clean Out
I	1	Fig. 117A Bronze Lift Check	Makeup Water thru Vent Condenser
J	1	Fig. 117A Bronze Lift Check	Live Steam Heating Makeup
K	1	Fig. 117A Bronze Lift Check	Makeup Water Direct to Heater
L	1	Fig. 623 IBBM Swing Check	Condensate Return thru Vent Condenser
M	1	Fig. 623 IBBM Swing Check	Condensate Return Direct to Heater

Here is a common Combination of deaeration and heating in a feedwater heater as used to avoid corrosion of boiler tubes and cold water shock to the boiler. In this layout a vent condenser is superimposed to help maintain a little pressure in the heater to produce higher temperatures and consequent better deaeration. In addition, the vapors, which would represent waste heat, are condensed by either cold makeup water or a mixture of makeup water and condensate. Provisions are shown for introducing condensate or makeup water either directly into heater or through vent condenser.

Normal operation usually puts water through makeup condenser, utilizing the automatic level controller. Condensate, which cannot be controlled is returned directly to heater. Thus makeup water replenishes natural losses in condensate system and evaporation losses in heater. To maintain deaeration, live steam must be added in condensate system.

Many Types and Pressure Ranges of Jenkins Valves can be used for this type of layout according to the factors involved. Consultation with accredited piping engineers and contractors is recommended when adapting these suggestions to your own requirements, or when planning any major piping installation.

Copies of Layout No. 14 enlarged, with additional information, will be furnished on request . . . also future Piping Layouts. Just mail coupon.

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

A CHOICE OF OVER 600 JENKINS VALVES

To save time, to simplify planning, to get the advantage of Jenkins specialized valve-engineering experience – select all the valves you need from the Jenkins line, fully described in the Jenkins Catalog, No. 76. It's your best assurance of *the lowest cost in the long run.*

Jenkins Bros., 80 White Street, New York 13; Bridgeport; Atlanta; Boston; Philadelphia; Chicago; Jenkins Bros., Ltd., Montreal; London, England.

LOOK FOR THIS REG. U.S. PAT. OFF. TRADE JENKINS MARK DIAMOND MARK
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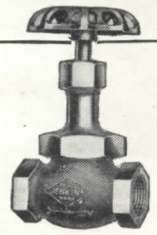

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.....

Perspective on a contemporary stair hall

AREAS which traditionally are dull and gloomy can easily be flooded with cheerful daylight by panels of Insulux Glass Block.

The increasing use of Insulux by architects is the result of this ability to perform in an important functional capacity while also doing an appealing decorative job. When installed in large areas, the high insulating value of Insulux lowers the cost of heating and air conditioning operations. Dirt and dust are blocked out. Sound transmission is lowered.

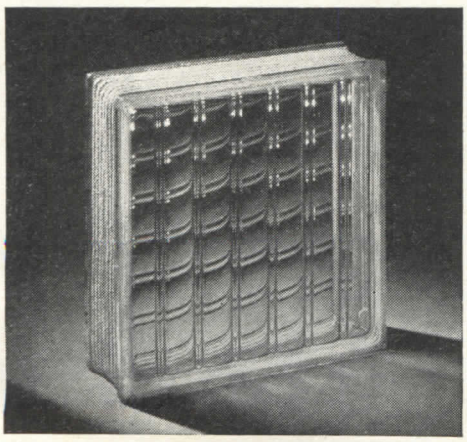
Upkeep of Insulux panels is remarkably low, even under adverse conditions because they resist moisture and will not rot, rust or corrode. Painting is never required and the occasional washing necessary is a simple matter.

Consider the use of Insulux Glass Block at any point—in *any* building —- where natural daylight will increase livability or improve working conditions.

OWENS-ILLINOIS

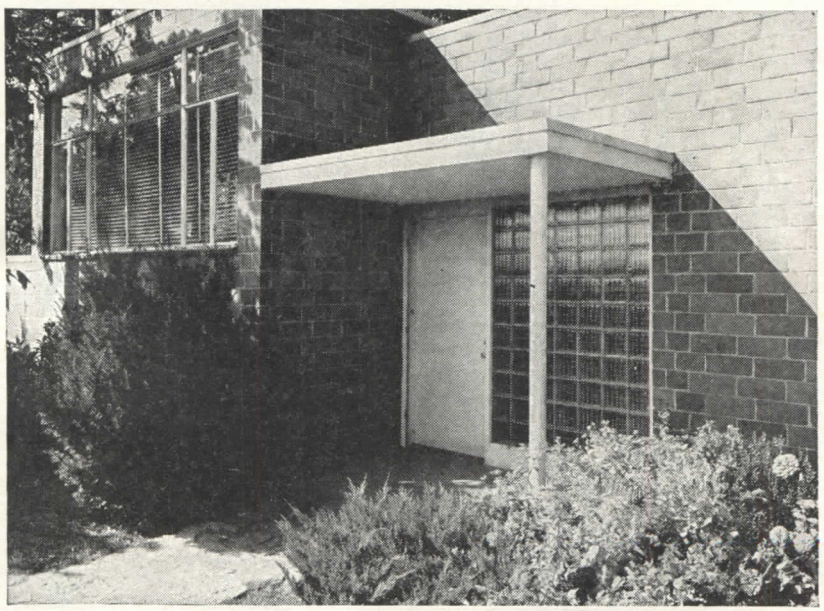
INSULUX

GLASS BLOCK



Insulux Glass Block is a functional building material—not merely a decoration. It is designed to do certain things other materials cannot do. Investigate!

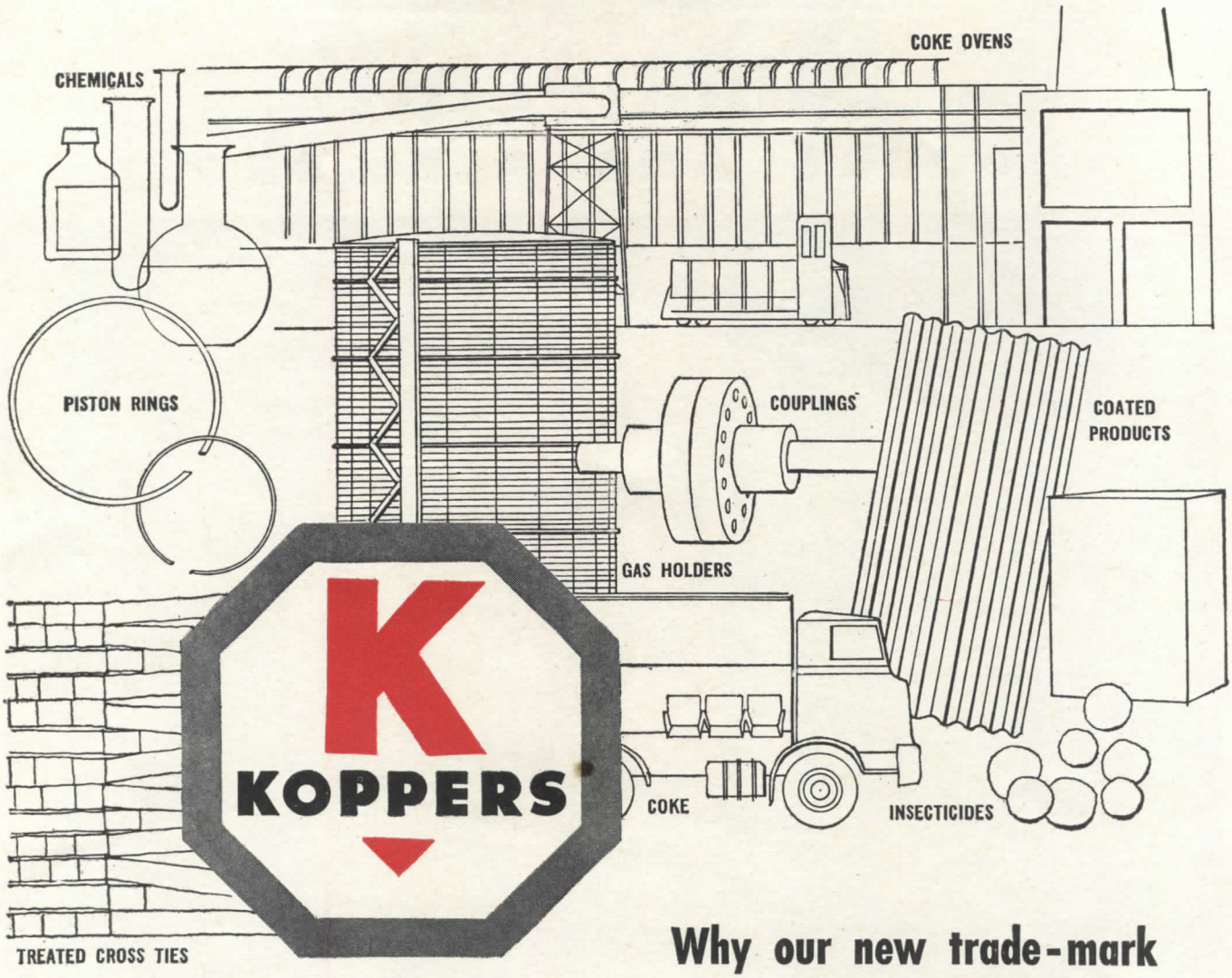
One of the many residential uses for Insulux Glass Block is shown in the stair hall of this home in the Little Switzerland development. This community of contemporary homes is located on Brown's Mountain, six miles from Knoxville, Tenn. All homes are by Alfred and Jane West Clauss. Insulux brings pleasantly diffused daylight inside—privacy is assured.

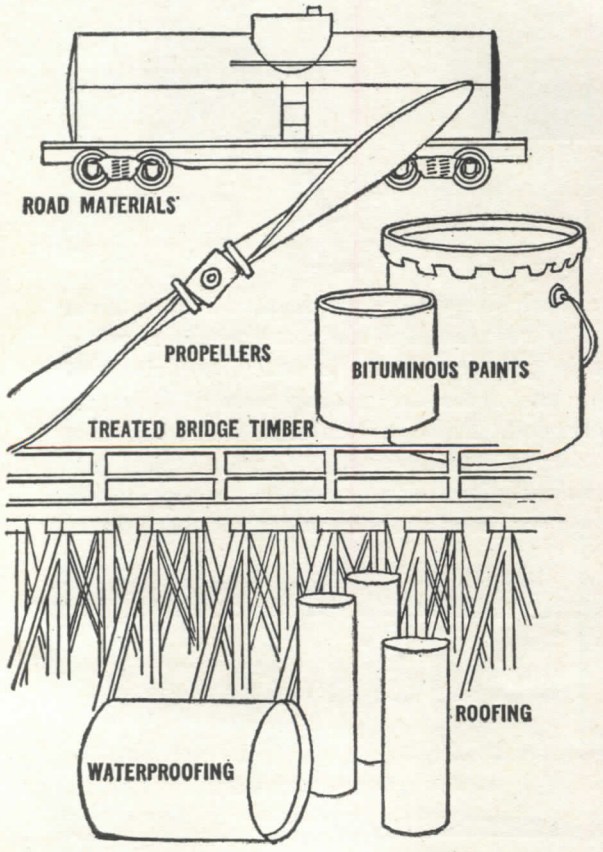


In tone with contemporary exteriors. Insulux is extremely practical for daylighting entrances, stairways, bathrooms, kitchens—any room where light with privacy is desirable.

* * *

For technical data, specifications and installation details, see our section of Sweet's Architectural Catalog, or write Dept. C9, Owens-Illinois Glass Company, Insulux Products Division, Toledo 1, Ohio.





Why our new trade-mark is important to you

Every day, you place your health, your safety, your children, even your life at the mercy of manufacturers whose products you trust.

Often you do it because of some small mark which doesn't actually say anything in words, but which says volumes in the meanings you read into it.

That's what trade-marks mean to the American people. In effect, the trade-mark says, "Here is a manufacturer who is so sure of this product that he puts his name on it."

That's why our new Koppers trade-mark is important to you.

There are dozens of Koppers products; there will be dozens more as opportunities expand in the rapidly growing chemical field.

Often you will not be able to see the Koppers label on those products—you can't see it, for example, on road paving material or on a bottle of medicine—but the roadbuilder sees it and the medicine maker sees it, and their confidence in it is your safeguard.

Koppers also is well known as a dependable source for many other products and services which we furnish directly, such as the design and construction of coke ovens, roofing material, piston rings, couplings, propellers for your private plane, coke for your furnace, moth balls for your clothes, paints, pressure-treated wood and scores of others.—Koppers Company, Inc., Koppers Building, Pittsburgh 19, Pa.

KOPPERS—THE INDUSTRY THAT SERVES ALL INDUSTRY

Roddiscraft

DOORS AND PLYWOOD

By devoting our production exclusively to stock sizes, we have been able to increase materially the volume of Roddiscraft products going to our customers. While this greater volume is still insufficient to meet all requirements, *more* customers are getting *more* Roddiscraft flush veneered doors and plywood. Plus-production of stock sizes has enabled us to increase our output considerably. Adequate stocks will be maintained in our conveniently-located warehouses to supply the Roddiscraft doors and plywood you need at the moment you need them.

Roddiscraft WAREHOUSES

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DALLAS, TEXAS	2615 Latimer Street
DETROIT, MICHIGAN	11855 E. Jefferson Ave.
KANSAS CITY 8, MO.	2729 Southwest Blvd.
LOUISVILLE 10, KENTUCKY	1201-5 S. 15th St.
LONG ISLAND CITY, N. Y.	Review and Greenpoint Ave.
MARSHFIELD, WISCONSIN	
MILWAUKEE 8, WIS.	4601 W. State Street
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SAN ANTONIO, TEXAS	727 N. Cherry Street

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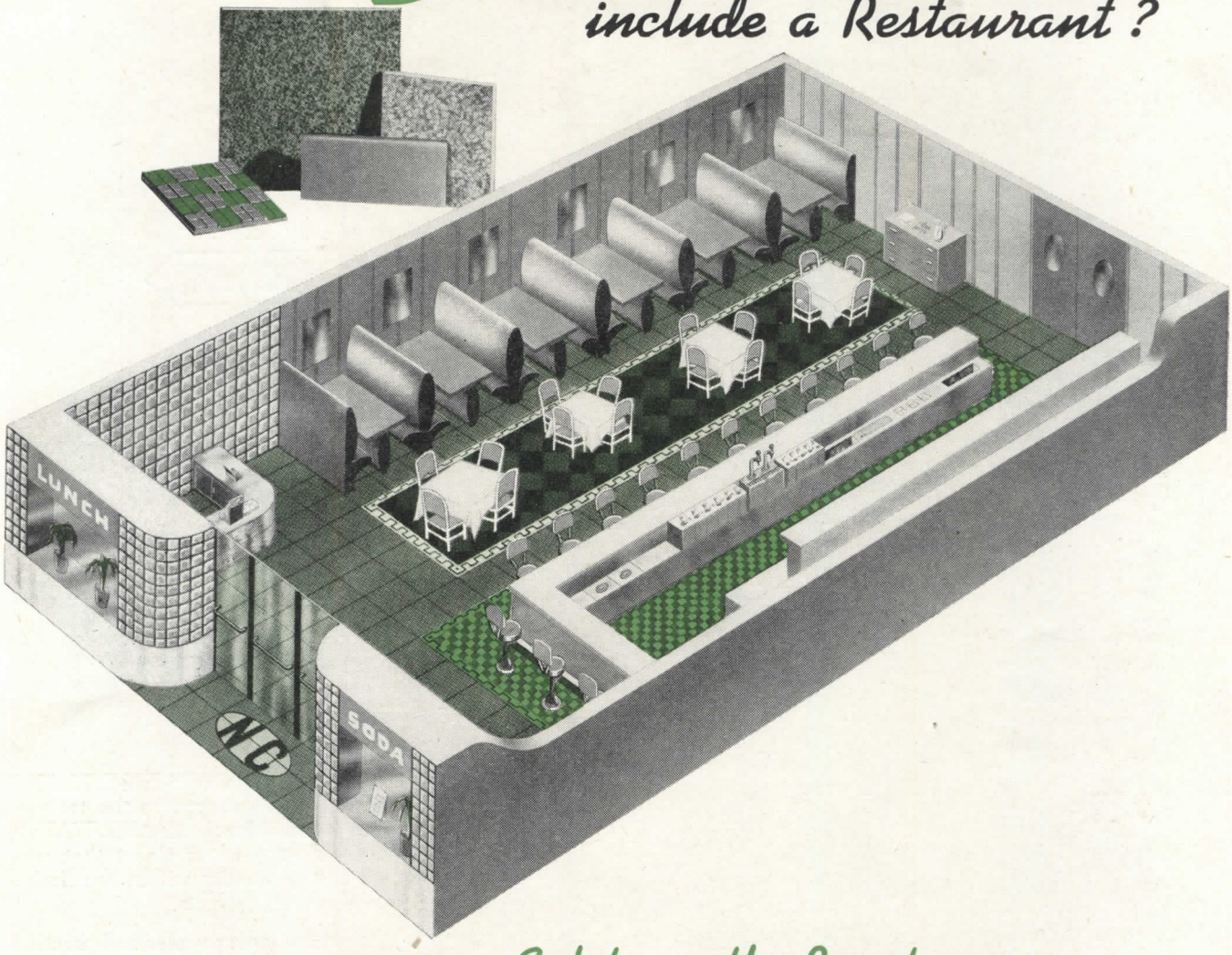
Roddiscraft

Roddis Lumber & Veneer Co.

MARSHFIELD, WISCONSIN

Do your building plans include a Restaurant?



THEN COMBINE *Safety with Beauty* IN NORTON *non-slip* ALUNDUM FLOORS

To date the restaurant above is just an artist's drawing. However, there's nothing impractical about it, including the very practical Norton Floor which provides a wear-resistant surface that is permanently non-slip, even when wet. Here ALUNDUM Aggregate has been added to marble to make the terrazzo floor in entry way and restaurant safe from slipping hazards. ALUNDUM Ceramic Mosaic Tile adds a decorative pattern to the floor around the soda fountain, at the same time guaranteeing safety and wear resistance. For free color samples, or for further information as to how you can combine safety with beauty in your floors, stairs and ramps write to:

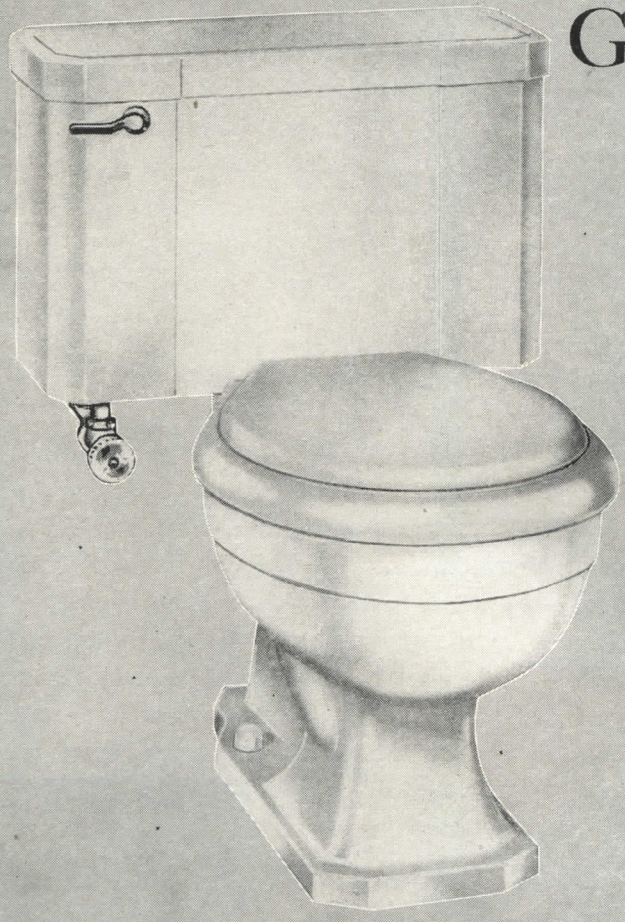
NORTON COMPANY, WORCESTER 6, MASS.

ALUNDUM — Registered Trade-mark for Norton Company's Aluminum Oxide Abrasive

See our catalog in Sweet's

NORTON *non slip* ALUNDUM FLOORS

Here's the "Camel" that fits GI plans today!



The famous Case CAMEL WATER SAVER Closet Combination is the ideal fixture for Veterans' housing and remodeling.

PRODUCTION GOES HIGHER AND HIGHER in response to the tremendous demand for the CAMEL WATER SAVER—the water closet that provides Case quality within the limitations of "GI" budgets.

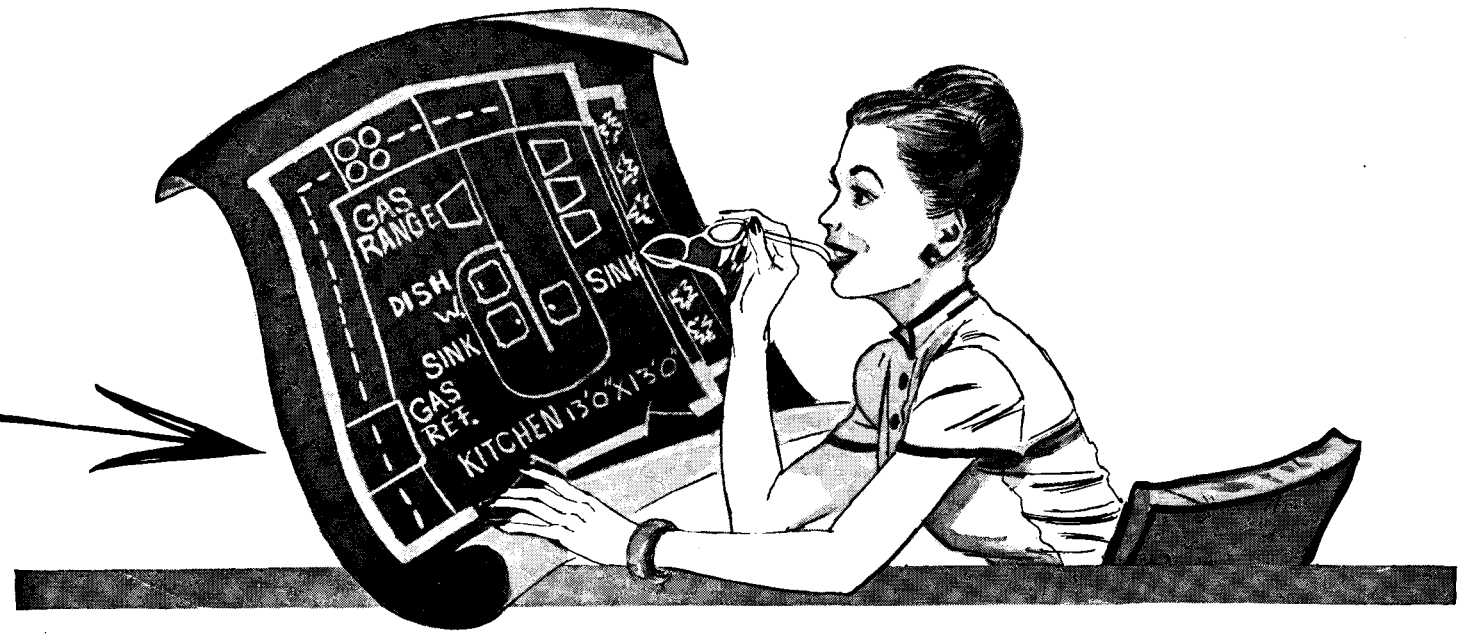
One of the most popular and practical fixtures we have ever developed, the CAMEL has the merits of neat, modern appearance and thorough, quiet flushing with *minimum water consumption.* Free-standing design, vitreous china construction and efficient fittings make this a "luxury" bathroom appointment at a cost that Joe and Jane can well afford.

Case plumbing fixtures are distributed nationally. See your Classified Telephone Directory or write:

W. A. Case & Son Mfg. Co.
Buffalo 3, N. Y. Founded 1853.

Case

LIFETIME PLUMBING FIXTURES



It's her bailiwick! It's the place where she spends most of her time, does her most absorbing work! So it's no wonder women are more interested in the kitchen than in any room in the house . . . are full of ideas on kitchen planning which you, as architects and builders, will be interested in noting! For example, here are some of their actual comments from a recent survey conducted on this particular "New Freedom Gas Kitchen" design:

Re: the layout: "*Shows how even a double-purpose kitchen can be both compact and step-saving!*" "*Very practical arrangement of work areas.*" "*Light and airy—plenty of cabinet space.*" "*Handiest breakfast bar I've ever seen . . . grand for children!*" "*Love the big picture window!*"

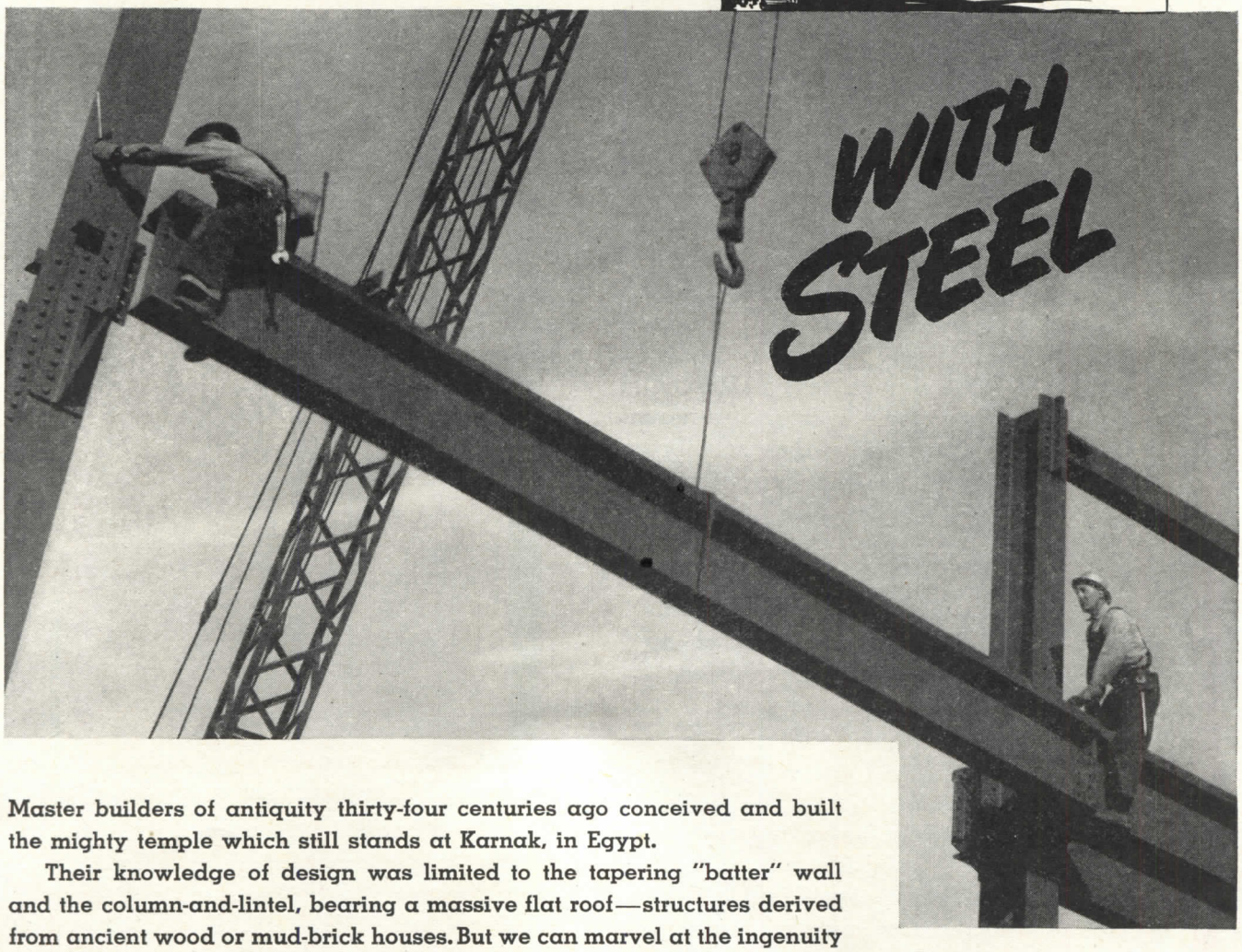
Re: the equipment: "*I sure would enjoy cooking on that streamlined new Gas range—why, it even has automatic clock controls!*" "*I've always preferred cooking with Gas. It's faster, cheaper, and gives better results.*" "*I want a Gas refrigerator, too. It's silent—and* always *dependable.*" "*As far as I'm concerned, there's nothing like Gas service throughout the house!*"

Re: the decorative treatment: "*So bright and cheerful . . . red and green are my favorite kitchen colors!*" "*The flower sink is a wonderful idea!*" "*I see two things I've always wanted in my kitchen—a utensil rack and a telephone!*" "*Like the book and tray shelves.*" "*This kitchen looks so modern and easy to keep clean!*"

ONE THING STANDS OUT! The vast majority of women want clean, economical, dependable Gas as their "new freedom" kitchen fuel! In 20 million homes throughout America women are cooking with Gas *now* . . . enjoying the speed, flexibility and dependability which *only* the Gas flame can offer. Gas is the preferred fuel for refrigeration and water heating, too . . . as well as for automatic house heating and up-to-the-minute year round air conditioning. That's why it's wise to recommend Gas equipment for all 5 jobs in the homes you plan and build. Your local Gas Company will be glad to give you complete technical details on modern Gas practice, appliances and systems.

AMERICAN GAS ASSOCIATION

MASTER BUILDERS



Master builders of antiquity thirty-four centuries ago conceived and built the mighty temple which still stands at Karnak, in Egypt.

Their knowledge of design was limited to the tapering "batter" wall and the column-and-lintel, bearing a massive flat roof—structures derived from ancient wood or mud-brick houses. But we can marvel at the ingenuity and perseverance with which they quarried their huge stones, dressed them, and raised them in this temple, whose central columns, more than 10 feet thick, tower 76 feet high!

As to their builders' acquaintance with engineering principles, we know little. One theory is that stones were raised into place with rockers, by leverage and blocking, along huge inclined planes of sand.

Modern master builders work with strong, compact structural steel, which bears loads undreamed of in antiquity, and forms a framework making possible designs of infinite variety. Bethlehem's introduction of wide-flange structural shapes, nearly forty years ago, marked the dawn of a new era in steel construction, bringing larger possibilities and greater latitude in the use of steel to builders and designers of our day.

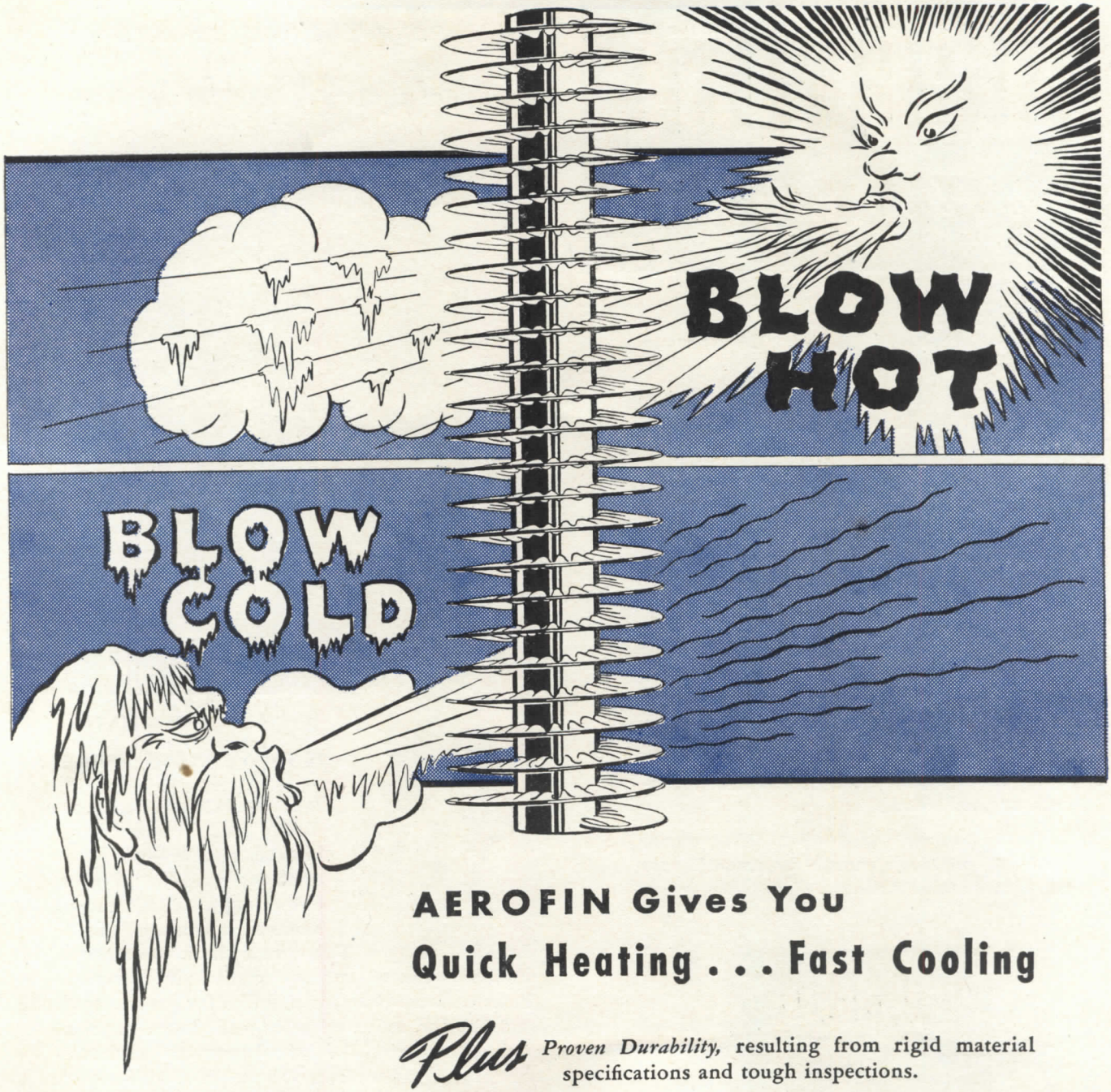
Bethlehem

STRUCTURAL SHAPES

★ BETHLEHEM STEEL ★

BETHLEHEM STEEL COMPANY, BETHLEHEM, PA.

On the Pacific Coast Bethlehem products are sold by Bethlehem Pacific Coast Steel Corporation



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Quick Heating . . . Fast Cooling

Plus *Proven Durability,* resulting from rigid material specifications and tough inspections.

Freedom from Service and replacement costs due to thorough application engineering.

Accurate Ratings which are maintained through the life of the installation.

Easy Installation because of light weight and unit assembly.

Air your problems with an experienced Aerofin Engineer.

Over 100,000,000 feet of Aerofin have been specified for DEPENDABLE PERFORMANCE in Air-Conditioning, Heating, Cooling, Condensing.

Aerofin is sold only by Manufacturers of Nationally Advertised Fan System Apparatus—List upon Request.

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HUBBELLITE
is a Floor Surfacing

that repels roaches. (Think what this means to a restaurant, bakery or hospital.)

that inhibits many molds and bacteria growths. (Think what this means to sanitation and odors in kitchens, bakeries and locker rooms.)

that is static-draining, non-sparking, non-dusting, non-denting under ordinary point loads. (Think of mills and factories.)

that resists food and kitchen fats and oils. (Think of a kitchen floor that will not go to pieces.)

that withstands neutral oils and greases. (That means it will not dissolve under machine shop conditions.)

that comes in several colors and is monolithic —no joints. (Applied only 3/8" thick over concrete or good wood.)

that rivals cement or hardwood for wear. (Resilient, yet tough enough for constant foot and light wheeled traffic.)

HUBBELLITE
IS SOMETHING TO KNOW ABOUT

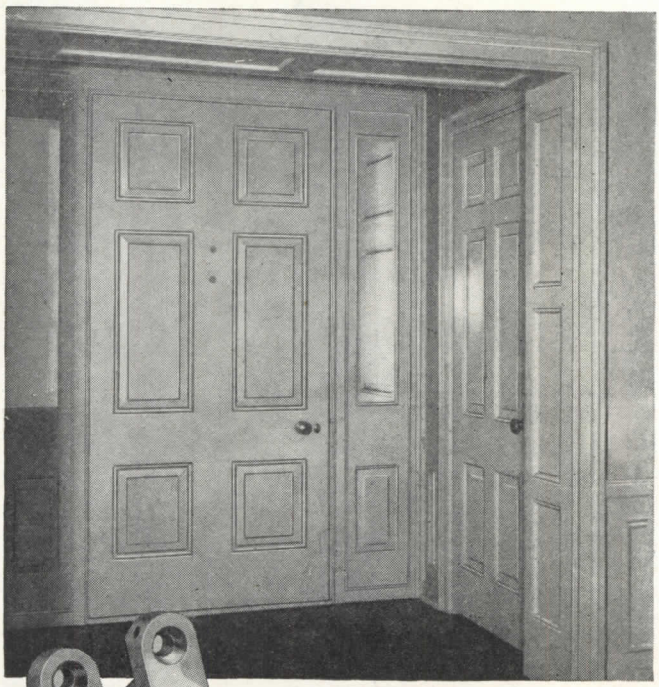
These claims for Hubbellite are conservative, but we realize they sound like an awful stretch, just stated baldly like this. We have records of tests from impartial scientists and also of actual installations. Will you write for literature on the particular feature of Hubbellite that interests you most? Or better—ask for the complete account. You never know when you'll get a call for any one or all of Hubbellite's qualities. Write

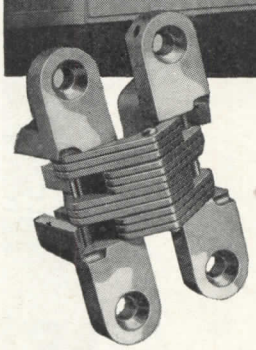
H. H. ROBERTSON COMPANY

2404 Farmers Bank Building
Pittsburgh 22, Pennsylvania

Offices in 50 Principal Cities
World-Wide Building Service

A Modern Home Needs a Modern Hinge





BUT JUST WHAT IS A "*Modern* HINGE"?

It's one, of course, that is completely hidden from view. A hinge is a utility—not a thing of beauty—and should be kept out of sight. That's the big, modern advantage of Soss Invisible Hinges. This hinge eliminates unsightly broken surfaces—surfaces marred by protruding butts and, naturally, it provides far greater opportunities for artistically designed doors, cupboards and secret panels. It contributes to streamlined interiors by permitting those flush surfaces that make the home of today so distinctly modern.

Write for the Soss "Blue-Print Catalogue." This catalogue gives full details for the many applications of this modern hinge. Sent free to you on request.

SOSS MANUFACTURING COMPANY
21765 HOOVER ROAD • DETROIT 13, MICH.

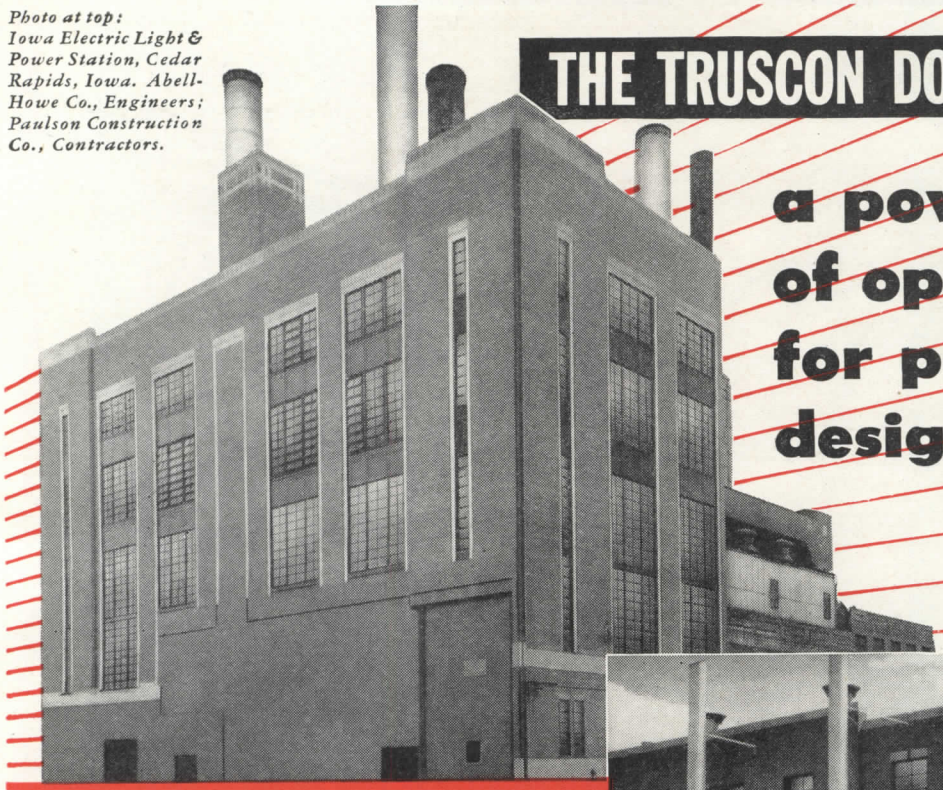
SEE OUR CATALOG IN SWEET'S

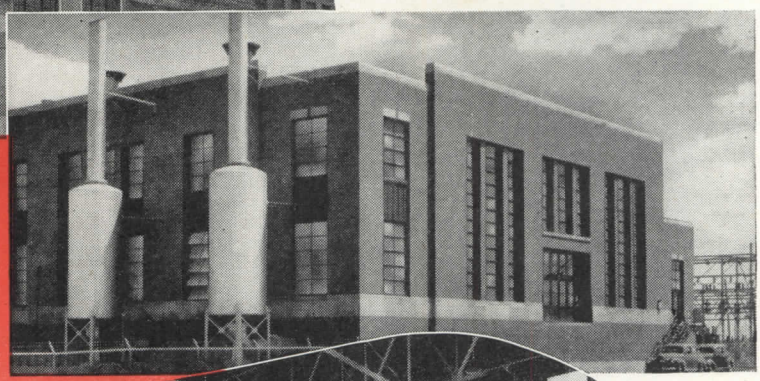
SOSS Invisible HINGES
The Hallmark
OF TOMORROW'S HOME

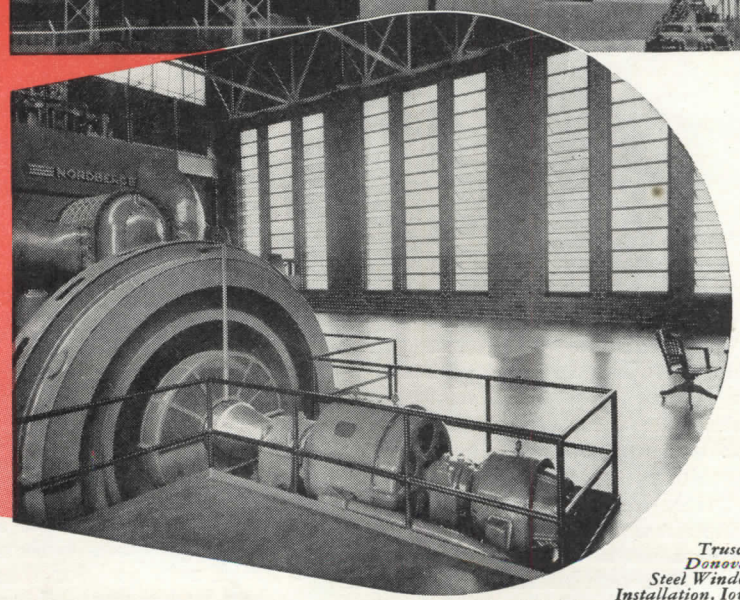
Photo at top: Iowa Electric Light & Power Station, Cedar Rapids, Iowa. Abell-Howe Co., Engineers; Paulson Construction Co., Contractors.

THE TRUSCON DONOVAN WINDOW

a powerhouse of opportunities for powerhouse design . . .







No other steel window offers the architect and engineer such a wide range of features for distinctive design and functional efficiency in the planning of powerhouses and similar structures requiring large window openings mechanically controlled. The Truscon Donovan Window delivers these advantages on such jobs:

1. All operator control mechanism is completely concealed in the window unit, resulting in the elimination of unsightly control arms and shafts.

2. Extra size and weight of Donovan hot-rolled sash sections permit construction of units in sizes exceeding anything possible with conventional types of windows.

3. All operating mechanism is readily accessible for inspection and repair, insuring uninterrupted window function and reducing maintenance cost to a minimum.

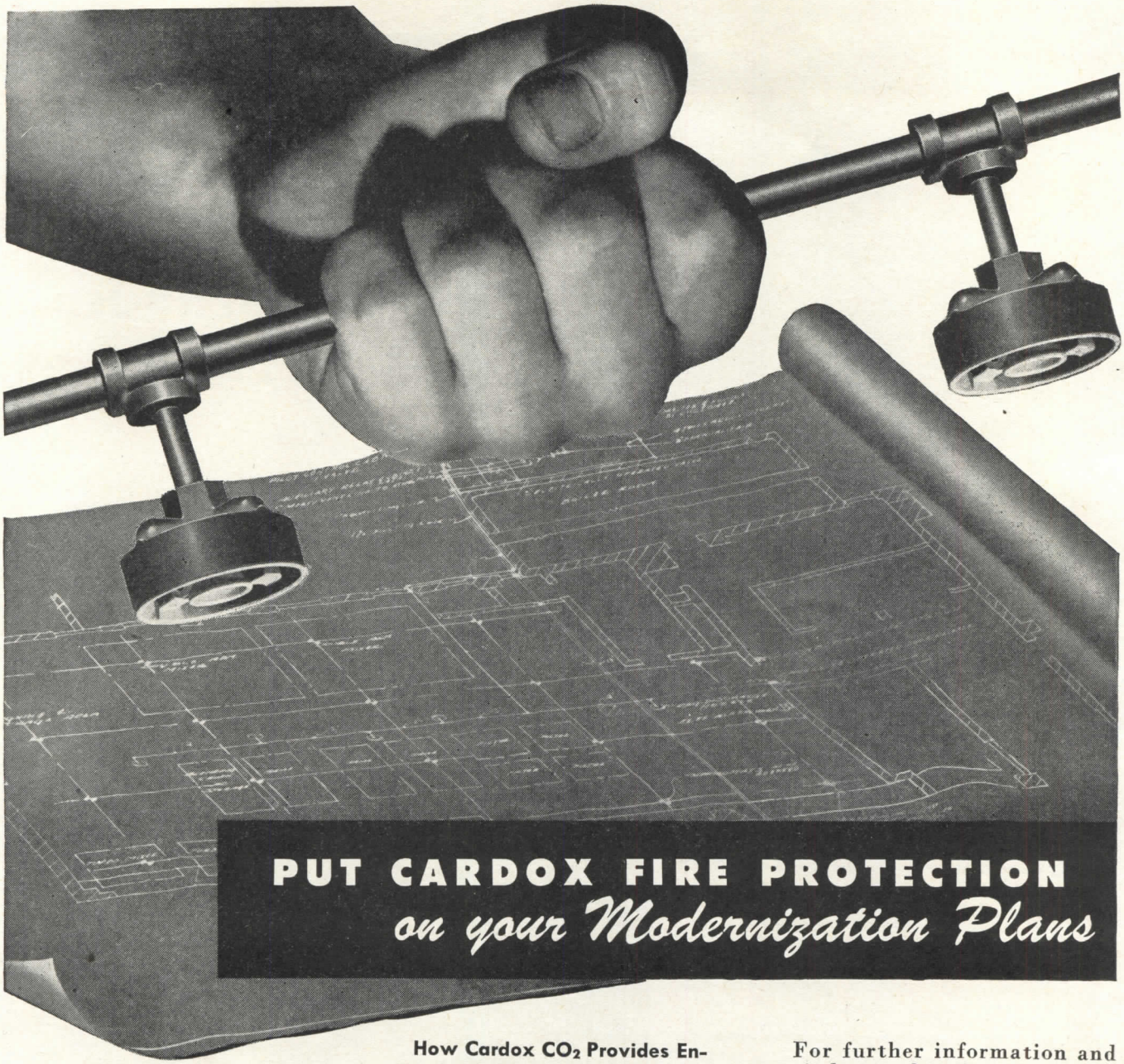
4. Units with integrally built operators are shipped completely factory-assembled, making total installed price unusually favorable.

Over 25 years experience in the manufacture and sale of this exclusive Truscon window assures you and your client of excellent service, both from the standpoint of initial value and lasting efficient operation. Write for detailed information on Truscon Donovan Steel Windows.

Truscon Donovan Steel Window Installation, Iowa Electric Light and Power Station, Marshalltown, Iowa. Abell-Howe Co. Engineers and Contractors.

TRUSCON STEEL COMPANY
Reg. U. S. Pat. Off.
YOUNGSTOWN 1, OHIO • Subsidiary of Republic Steel Corporation

Manufacturers of a Complete Line of Steel Windows and Mechanical Operators . . . Steel Joists . . . Metal Lath . . . Steeldeck Roofs . . . Reinforcing Steel . . . Industrial and Hangar Steel Doors . . . Bank Vault Reinforcing . . . Radio Towers . . . Bridge Floors.



PUT CARDOX FIRE PROTECTION *on your Modernization Plans*

If you have buildings under construction or projected that present tough fire hazards, check the facilities of Cardox Research Division and Engineering Department for helping you provide the most effective protection.

Utilizing the wide experience gained in developing fire extinguishing systems now guarding many of the most severe hazards in American industry, these fire protection specialists will recommend a system engineered to the specific hazards encountered.

Analysis will cover all engineering factors involved, including the careful study of the nature of each hazard, fire characteristics of combustibles and operations, types of application and quantity of extinguishing medium for most efficient extinguishment. Such an analysis costs you nothing, but can be of vital importance to you.

How Cardox CO_2 Provides Enhanced Extinguishing Performance

The enhanced extinguishing performance of carbon dioxide, as controlled and applied in Cardox Systems, is due to these four basic factors: (1) It has uniform extinguishing characteristics regardless of plant or atmospheric temperatures; (2) It is available in ample quantity for application at high rate and for total flooding (when necessary) of large areas; (3) It provides high CO_2 "snow" yield for increased cooling effect; (4) It achieves effective projection through relatively great distances—even outdoors.

For further information and typical examples of the broadened performance scope of carbon dioxide as applied in Cardox Fire Extinguishing Systems, write for Bulletin 1596.

CARDOX CORPORATION
BELL BUILDING • CHICAGO 1, ILLINOIS
District Offices in New York • Philadelphia
Washington • Pittsburgh • Cleveland
Detroit • Cincinnati • Houston • Los Angeles
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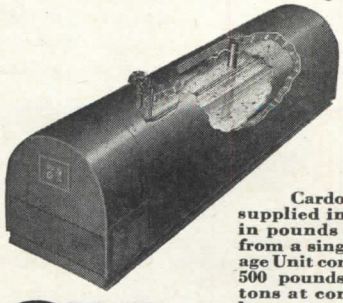


Cardox CO_2 is supplied instantly in pounds or tons from a single Storage Unit containing 500 pounds to 125 tons at controlled low temperature of 0° F. and 300 p.s.i.

CARDOX
CO_2 FIRE EXTINGUISHING SYSTEMS

Douglas Fir Doors Are Being Produced in Quantity for the Reconversion Housing Program

TODAY, most Douglas fir doors are being channeled to meet the needs of the Reconversion Housing Program.* This, combined with the shortage of shop lumber from which stock doors are made, makes the supply situation for general needs very critical. However, even though current demand for housing and inventories is momentarily overwhelming, productive capacity is ample to produce more doors almost immediately if the quantity of raw materials available to the factories is increased in the period ahead. But when fir doors are readily available again you can be assured that every door will be produced to high quality standards by modern precision methods.

PRE-FIT

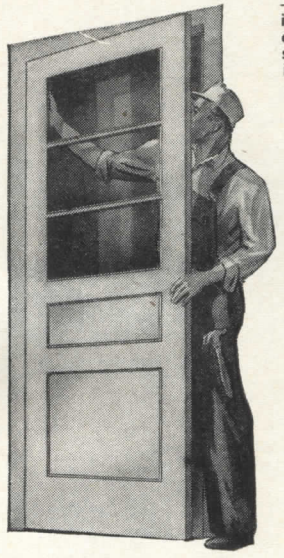
Douglas fir doors will be available pre-fit to exact book size . . . ready to hang without on-the-job sawing and fitting.

PRE-SEALED

Douglas fir doors will be available pre-sealed . . . a feature which improves dimensional stability, reduces moisture absorption, and eliminates the need for one prime coat.

FACTRI-FIT

Douglas fir doors will be available completely machined on order—pre-fit, gained for hinges and mortised or bored for locks.
Doors will be grade-marked, of course—for ease in specification and ordering. Scuff-strips will protect the precision-cut corners during handling and shipping. They will be better doors in every way!

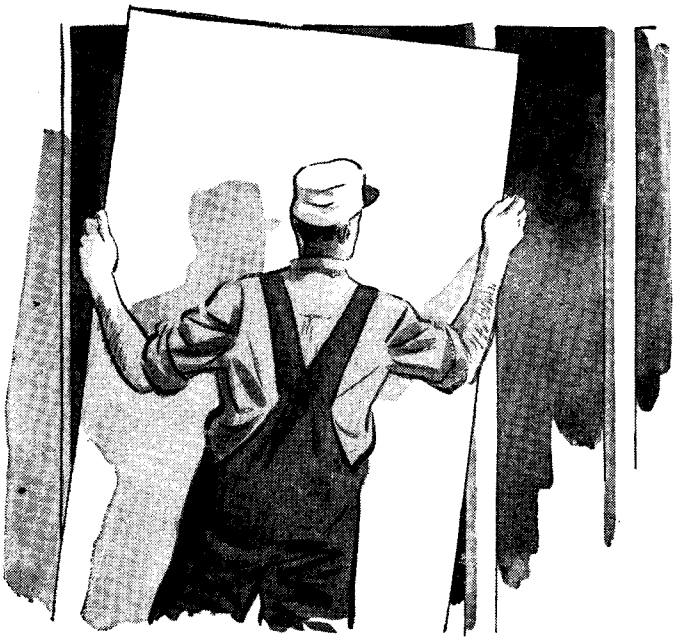


*Study the Pre-fit and Factri-fit features of Douglas fir doors. They provide the biggest advance in stock door values in a decade; save time and labor in installation, improve appearance of doors in use.

Every door will be sturdy, attractive, durable—made according to rigid requirements of Commercial Standard 73-45 governing manufacture of fir doors.

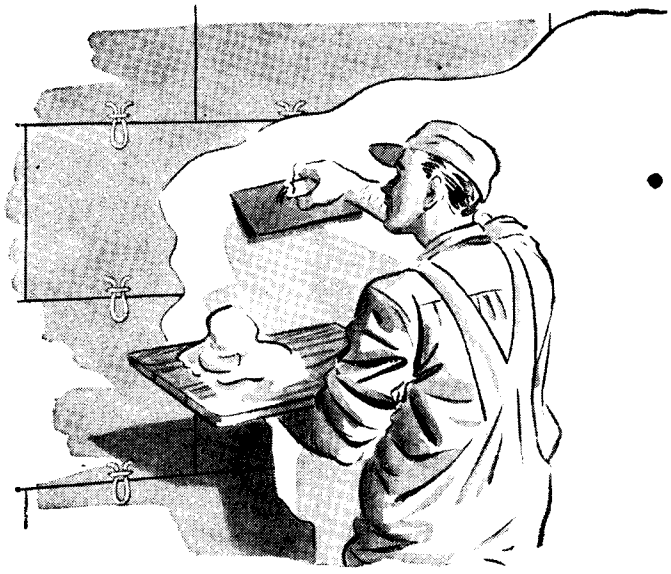
THE NATIONAL ASSOCIATION OF FIR DOOR MANUFACTURERS

INSULATE
AS YOU BUILD



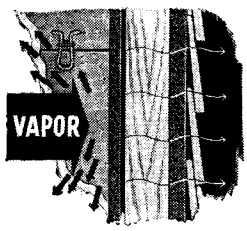
. . . Insulation Outside:

Insulite sheathing builds a strong, weather-tight, windproofed wall . . . providing effective insulation.



. . . Insulation Inside:

Insulite Sealed Lok-Joint Lath provides a strong, rigid plastering surface . . . plus a second wall of insulation.



Vapor Control

Insulite Lok-Joint Lath, with asphalt barrier against the studs, retards vapor travel. And Insulite sheathing, being permeable to vapor, permits what little vapor that escapes the barrier to pass on toward the outside.

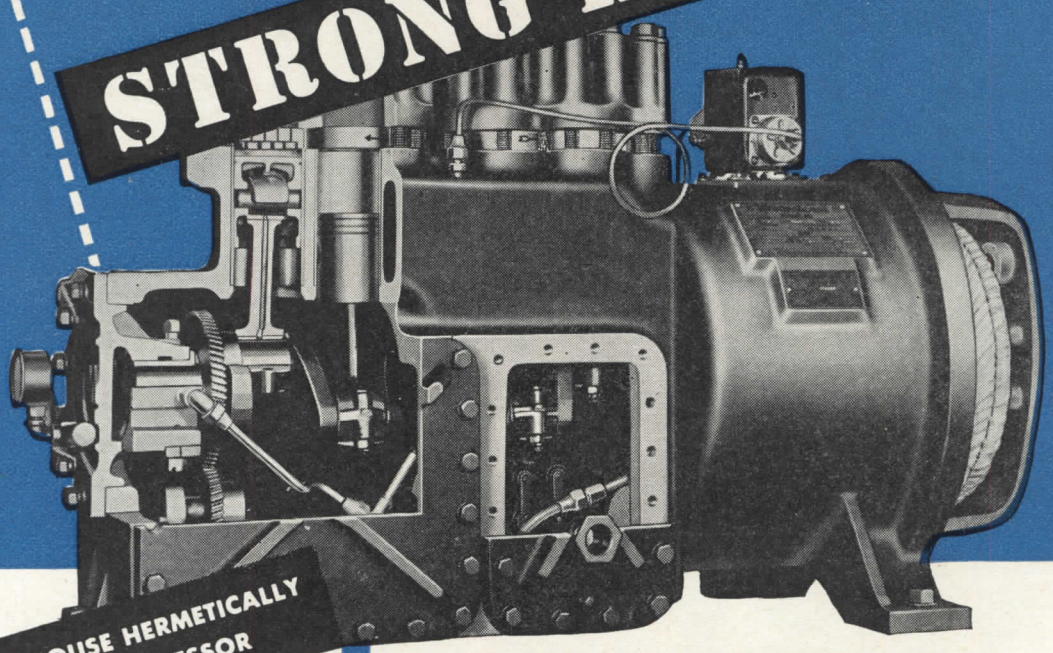
Refer to Sweet's File . . . Architectural Section 10 a/9.

INSULITE
Insulates as you build

INSULITE
Minneapolis 2, Minn.

The Original and Best* Wood Fibre Structural Insulating Board
**As Determined by Leading Testing Authorities.*

STRONG HEART



WESTINGHOUSE HERMETICALLY SEALED COMPRESSOR

In an air conditioning system STRONG HEART means . . . a WESTINGHOUSE HERMETICALLY SEALED COMPRESSOR

No air conditioning system can be better than its compressor—*the heat pump* that makes it work. And if anyone tries to tell you that all compressors are alike, just show him this cutaway of a Westinghouse.

One reason it gets top billing in the industry is that we've designed it at high rotational speed—for steady power, without pulsations. But, at the same time, we've held the piston speed down—for quietness and long life. Then, we put all the rotating elements on one shaft—and sealed the whole unit hermetically! No wonder it takes so little space, is so easy on the power bills . . . and *it doesn't leak!*

Performance like this calls for precision finishing and fitting at every step. It built such a reputation before the war that we haven't been able to meet today's demand—yet. It's not too early, however, to start *your* planning—to insure prompt delivery when these units roll off our production lines in *quantity*. As a first step, write for a free copy of "How to Plan Correct Air Conditioning" to the B. F. Sturtevant Company, Hyde Park, Boston 36, Mass.

80016

Your BEST Buy in Air Conditioning because . . .

1. Completely enclosed mechanism—sealed-in power, sealed-out trouble. No exposed moving parts.

2. Direct drive—no belts, pulleys or couplings to adjust or replace.

3. No shaft seals—or stuffing boxes to develop leaks.

4. Compact design—makes it easy to handle and install. Saves valuable floor space, eliminates special foundations.

5. Self-cooled motor—guards against over-heating and permits installation in unventilated space.

6. Positive lubrication system—forces oil to all wearing surfaces. Lower maintenance cost, longer life.

NOW, IT'S WESTINGHOUSE PLUS STURTEVANT

Westinghouse Air Conditioning is teamed up with another famous name in the industry—Sturtevant. This combination offers you the *only source* where design and manufacture of all major components are an undivided responsibility. Because one organization does the whole job, equipment can be depended on to deliver maximum efficiency when *working together* . . . to give economical, trouble-free service for years to come.

Sturtevant
REG. U.S. PAT. OFF.
Puts Air to Work

B. F. STURTEVANT COMPANY · DIVISION OF
Westinghouse
ELECTRIC

HEATING · VENTILATING · AIR CONDITIONING · PRECIPITRON · DRYING · DUST AND FUME CONTROL · MECHANICAL DRAFT

"The ABC's OF EFFICIENT BOILER DESIGN"

A Highly efficient combustion chamber is specially formed to streamline the flow of gases and prevent collection of sediment on crown sheet.

B Boiler tubes scientifically staggered for maximum heat transfer.

C All tubes readily accessible for complete and easy cleaning.

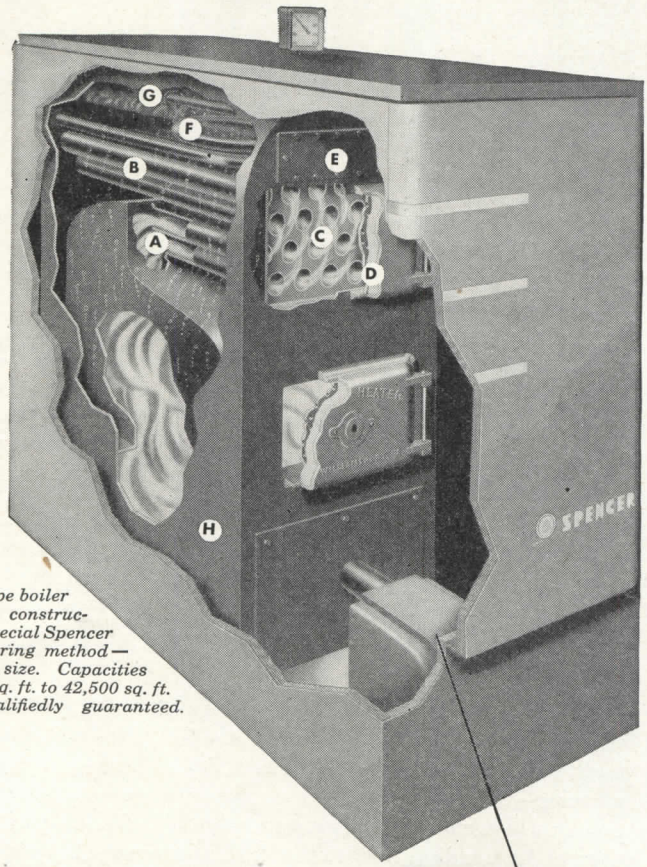
D Flue and fire doors of sturdy cast iron. Doors and frames precision ground and fitted.

E Removable plate for insertion of hot water coils and for internal inspection.

F Submerged coil for year 'round service hot water.

G Patented service hot water connection at rear of boiler.

H Integral base results in gas tight unit.



Jacketed "C" type boiler for medium-size construction. There is a special Spencer type for every firing method—every building size. Capacities range from 400 sq. ft. to 42,500 sq. ft. (steam) — unqualifiedly guaranteed.

A good boiler is cheap at any price. When a Spencer, the best in heating carries *no price premium* . . . it is sound business practice to have one on your job. Write or wire for a catalog of the complete line of modern, all-fuel Spencer steel boilers *today*.

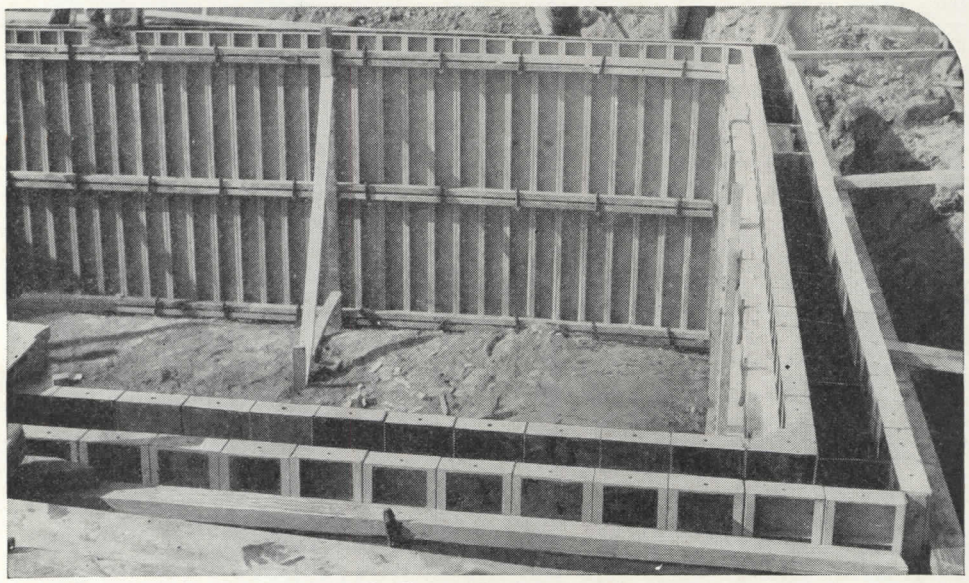
SPENCER HEATER

Division—The Aviation Corporation, Department A-7

***Cast Iron and Steel Boilers* SINCE 1890**

Williamsport, Pennsylvania

ATLAS LABOR-SAVING *SPEED* FORMS



Housing Project at Portchester, N. Y. • Portchester Fuel Company, *Developers*

A House Foundation a Day

New PROCESS
for CONCRETE CONSTRUCTION
FOR RENT *or* SALE

ARCHITECTS, Engineers and Contractors are amazed at the speed and savings they make with Atlas STEEL Forms. In housing projects, they get a sound, water-proof foundation a day, including stripping, moving, erection and pouring at a much lower cost than with cinder block or wood forms. In apartment house, Industrial and heavy construction, they make savings of 25% and more in comparison with wood forms. Finish is smooth and uniform — no grain marks — nothing to remove. Irregularities and inserts are easily accommodated. Light-weight — anyone can lift them. Strongly built of steel — good for an indefinite number of uses.

Available for Early Delivery

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Irvington 15, New York

Costs Less Than Cinder Blocks

Because you Save both on labor and materials.

Better Than Concrete Block

Solid and easier to waterproof.

WEDGE BOLT

Speedy Erection—Forms go together quickly with no thread bolts.

Union Carpenters Will Handle Speed Forms.

Some New Users

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F. H. McGraw, Oceanport, N. J., Monmouth Park Jockey Club
Brown & Matthews, Inc., N. Y. C., E. R. Squibb Plant, New Brunswick, N. J.
Hillsmith & Co., Dayton, Ohio, Sears Roebuck & Co. Store, Dayton, Ohio. Nimmons, Carr & Wright, Arch. Engrs.
Donald M. Love, Philadelphia, Pa. Housing Project
Benoit's Red-E-Mix Concrete Co., Bontiful, Utah, Housing Project
Henry W. Streeter, Corp., Elmira, N. Y. Moore Business Forms, Inc., Bldg. Duane Lyman & Assoc., Arch.
Island Dock Co., Inc., N. Y. Swimming Pools
Kingston Contracting Co., Lebanon, Pa. Dam
Gunite Service Corp., Philadelphia, Pa., Housing Project

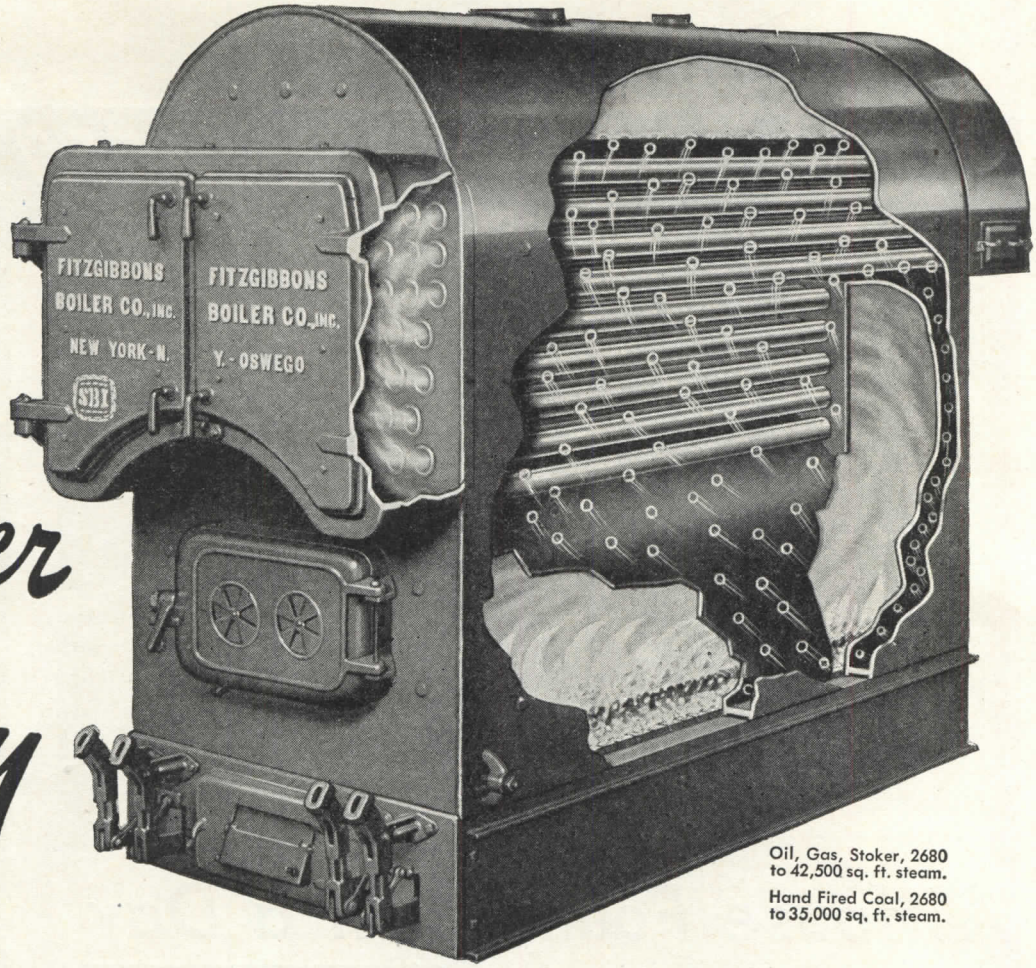
Everyone wants a House with a Sound Foundation and Dry Cell

3 Units Atlas SPEED Forms

Light Weight — Even a baby can handle them.

ATLAS STEEL FORMS FOR EVERY PURPOSE

Boiler for Today



Oil, Gas, Stoker, 2680 to 42,500 sq. ft. steam.

Hand Fired Coal, 2680 to 35,000 sq. ft. steam.

Here is the modern low pressure steel boiler for modern heating systems . . . a boiler which responds enthusiastically to thermostat demands under automatic firing . . . oil burner, gas burner, coal stoker, and hand fired coal, in all heating systems . . . steam, hot water, vapor, vacuum, and panel heating or air conditioning. This is the "D" Type . . . developed product of generations of Fitzgibbons boiler makers trained in a boiler-making community—Oswego, N. Y. This is the *boiler* for *today*.

You will want a copy of the new Fitzgibbons "D" Type Catalog. It is full of information and complete technical data and tables. Many helpful sections, such as "how to select a boiler in accordance with the approved Rating Code of the Steel Boiler Institute" are also included.

See Sweet's Catalog, section 29d/5 for additional data on this and other Fitzgibbons products.

MEMBER
STEEL BOILER INSTITUTE
SBI
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BUILDING A MARKET FOR DESIGN

IT MAY seem strange even to consider such a topic when the demand for design services are at an all time peak, when architectural and engineering offices are so busy they can find neither the time nor the trained personnel to execute the commissions that are offered, when the professions as well as all other business are in a "sellers' market." Yet this is precisely the time when a re-examination of methods of organization, of production, of promotion and merchandising is most necessary to insure the professions' increasing share in both the present and future markets. It will be much too late when there is a buyers' market.

With so much design work clamoring to be done, all sorts of organizations are expanding to handle it, and such organizations constitute the future competition of the professional firms in private practice. A list of such competitors of the profession would include the so-called industrial designer, the "complete production" firms (which offer all design, construction and equipment services, delivering a building complete), the contracting firm, with "our own designer and architectural department," the plan-book or ready-made blueprint sellers, the corporations with their own design-and-construction departments, and the government architectural and building bureaus, local, state or national.

Of course the profession must expect competition; there is nothing new in this. In fact, if my memory serves me aright, it was just this sort of competitive situation that brought about the formation of the American Institute of Architects. It was the desire of the founding group to be "of ever-increasing service to society" by establishing a firm business and ethical basis for carrying on their design work, both in their own and the public interest.

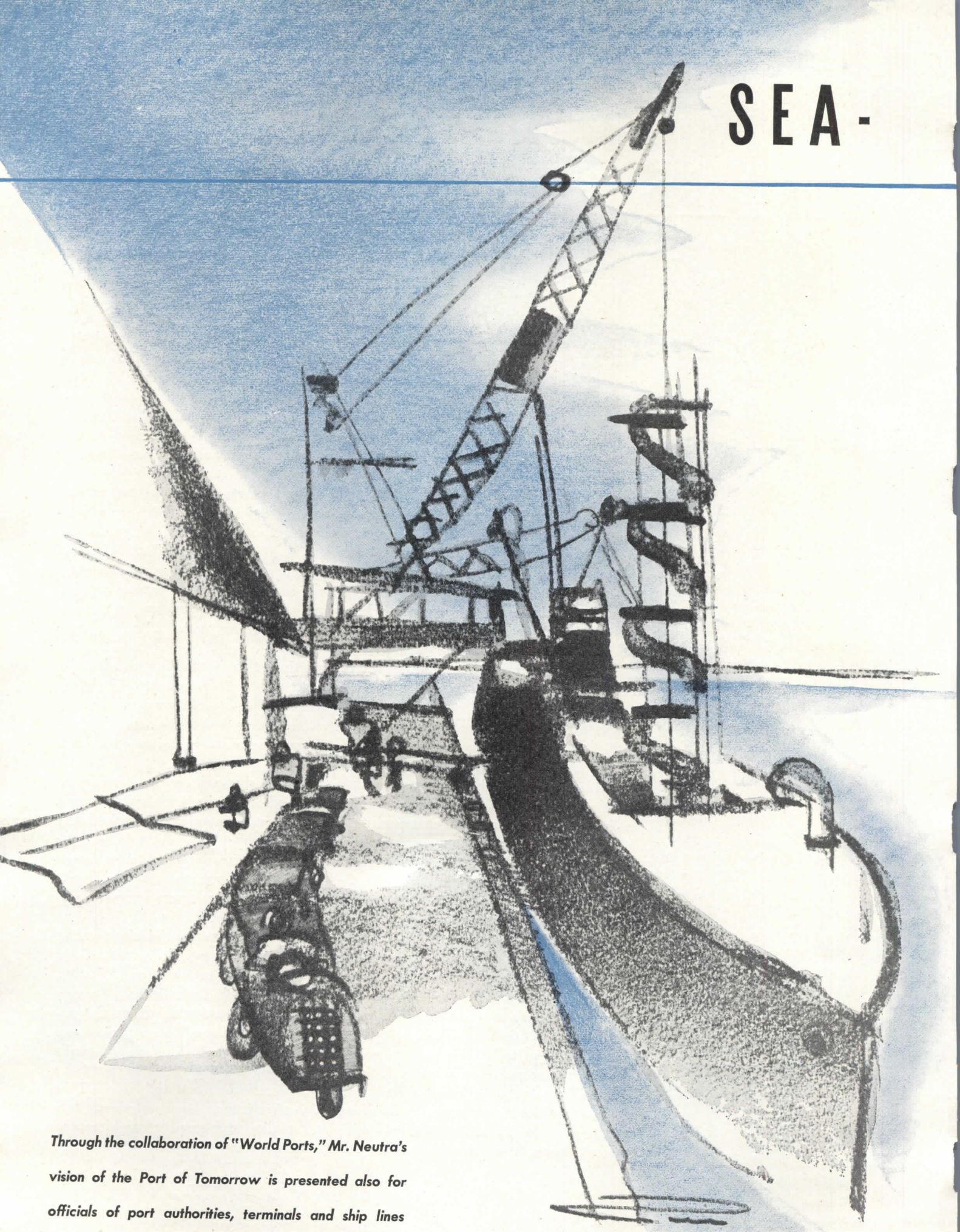
This is the crux of the matter: on what basis, under what policies and procedures, by what methods will the public be convinced of the best methods of obtaining their ends — better buildings and communities, safe, efficient, economical and esthetically satisfying? Through the competition among the groups just listed the public will be able to make its choices; one or two types of organization will emerge as preferred because of their efficiency in producing the kind of service and the tangible results that the public wants. Certainly the profession must be as alert to changing business techniques as to changing building methods.

It may well be that in order to serve society better, new responsibilities must be assumed, new or more complete services must be offered. New types of organizations, new methods of doing business, new forms of contracts, new instruments of service, new educational and public relations techniques may well be indicated. Perhaps some sacred cows must be sacrificed, some traditional taboos relegated to the discard. A study of the methods of the professions' competitors would show their strong points (perhaps their more modern merchandising methods for one thing), might unearth better public relations techniques, might suggest ways and means to be adopted or adapted to increase the efficiency, effectiveness and influence of the profession without compromising fundamental professional or business ethics. Only alertness to the possibilities of improving the quality and scope of architectural service will insure an expanding market for the professions' services.

Kenneth K. Stowell

EDITOR

SEA-

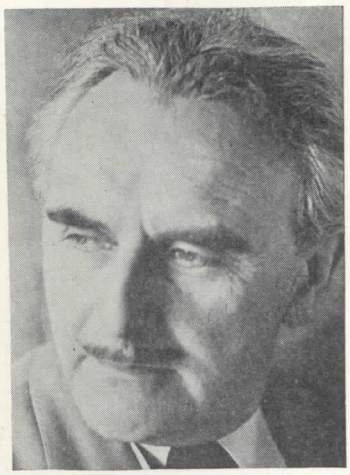


Through the collaboration of "World Ports," Mr. Neutra's vision of the Port of Tomorrow is presented also for officials of port authorities, terminals and ship lines

LAND TRANSFER

BY RICHARD J. NEUTRA

ARCHITECT AND CONSULTANT



GREGORY WARCHAVCHIC Photo

"If these postwar days of world wide port construction and reconstruction will not warm us up to truly new plans, grandly adjusted to a singular opportunity of rejuvenation, then we may not live to see a similar chance arrive once more." All his life a zealous observer of ancient and modern seaports of all the Seven Seas, the author long ago turned his passion for PLANNING toward ports, to the economics that make them transfers, not terminals ("Terminals? — Transfer!" Architectural Record, Aug., 1930), and to the people who toil in them . . . "A seaport constitutes a link in a vastly extended national and global machine, but it also constitutes a community, with human requirements and contemporary living standards."

THE first world-renowned ports of the western hemisphere were, I believe, St. Thomas, in the Virgin Islands and Porto Bello, on the north coast of Panama. In the 16th century they illustrated those two distinguishable historical types: the *transfer* and the *port without a hinterland.*

Through Porto Bello, for more than four generations, before buccaneer Henry Morgan sacked it thoroughly in 1668, went all the precious metals of Peru that were shipped up from Lima to the great dividing isthmus, and again all the manufactured commodities and all the adventurous passengers from back home, en route to New Spain beyond the seas and mountains.

By contrast St. Thomas was an end in itself, the hideout, the pirate's den, the gambling spot of the Carribean. It became all of that pretty soon after the Columbus fleet, groping along, had found its passage between these lovely isles, so fit for ambush and so little connected with anything beyond them.

But, generally speaking, many seaports had for long been points at which regular voyages simply seemed to come to their end, to *terminate.* Rio de Janeiro is typical for this sort of a colonial port, which, rather isolated by itself, develops to repeat in time the towns of the home country, or even surpass them, *but from which no great inland route takes its start.*

"Inner Brazil" is even at this late date amazingly undeveloped, in other words, full of promise — and Rio still has much less of a hinterland than, for example, Santos-São Paulo to the south.

In very recent times, it was surprising how short a distance one could drive an automobile inland out of the metropolitan area of so vast a city as Shanghai. In many historical cases like these, the port almost seemed to justify the expression *terminal.* For the most part they filtered and delayed the further movement of people and goods, acting as sedimenting pools beyond which movement could only seep and spread — sometimes with almost imperceptible slowness. However, as Porto Bello shows, there are notable exceptions, and a curious variety in the genetics of seaports.

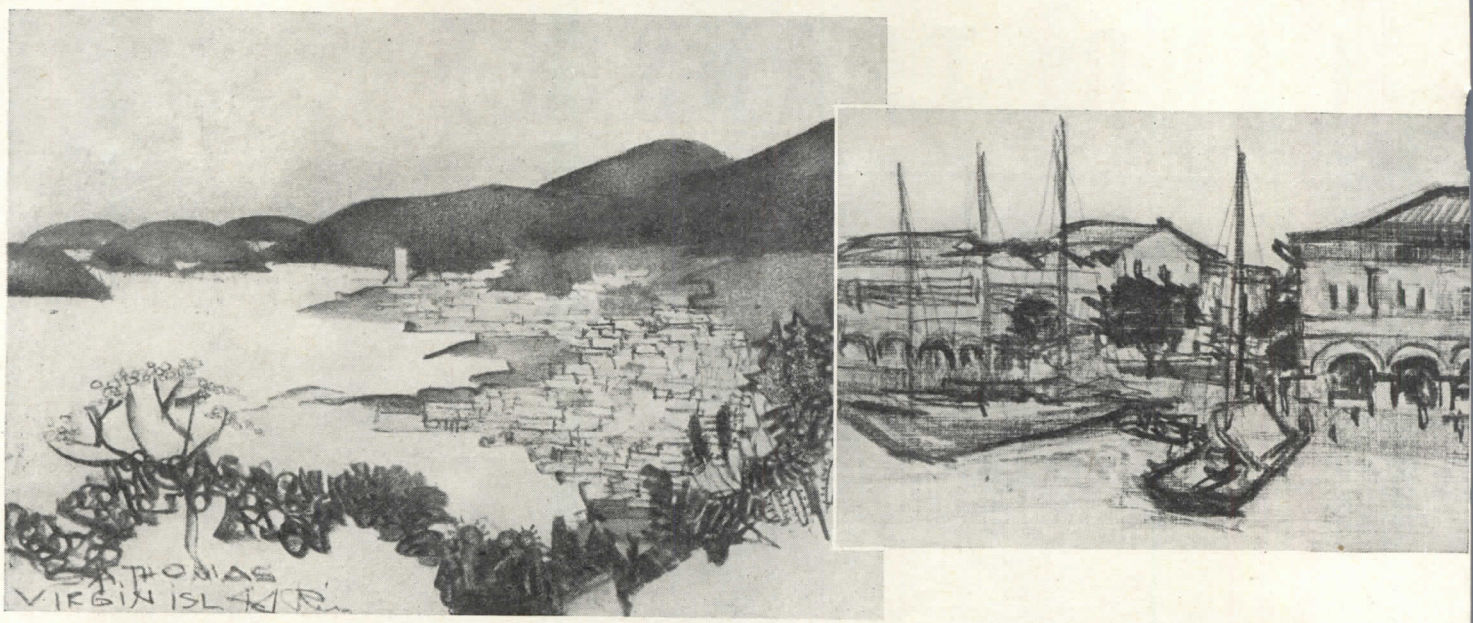
Some of them, even in colonial countries, developed, like Buenos Aires, *after* the "hinterland." The vast Argentine, in those first three centuries of precious metal exploitation in the new Spanish countries beyond the seas, was penetrated at a snail's pace from Bolivia and Peru. World interest in the Southern Pampas was to develop only at a much later date. Then, and only then, Buenos Aires started its fantastic ascent, to become the greatest harbor of the South Atlantic — and that *without* any *particular natural topography or setting,* such as helped Montevideo, to bring about its growth.

MAN-MADE PORTS

Nature was here overtaken by doings of man, as in the construction of many a modern port. San Pedro, Los Angeles, which in *natural* advantages cannot compare with the unique bays of San Francisco, and an ample number of similar cases would encourage us not to let things happen fatalistically but to *correct fortune by plan.*

It is good to shun alibis which blame nature for our failures. It can be shown that *man-made construction and planned circumstances can often prevail.*

In some cases they do prevail to an amazing degree,



St. Thomas, Virgin Islands, West Indies *(above): A typical* port without hinterland; *it is the historical counterpart to Porto Bello, the famous isthmus* transfer *of the 16th century Spanish trade from the Atlantic to Pacific, the "South Sea" and greater Peru. St. Thomas and Porto Bello make up the earliest examples of world-renowned ports in the Western Hemisphere.*

Far East, Colonial-Portuguese Port of Macao *(above, 2nd & 3rd drawings, l. to r.): Waterfronts used to have their architectural flourish, and, even with their habitual depravity, were more personalized and more in human scale than the exhaustingly far-flung, monotonously stretching, unoverseeable shore installations of late-Victorian ports. In Chinese-Portuguese Macao, the ship-to-brothel distance is as short as the walk a man from a buccaneer crew had to take on shore in St. Thomas of the Virgins, to pawn his bit of booty and to get roaring drunk after. Modern ports will be more orderly and sanitary than those of the olden days, but they will also, beyond their technification, be more human than they have been in past and present examples*

as in Santos, which now, quite unexpected by earlier generations, contests the rank of Buenos Aires.

Almost like Hongkong or Singapore, Santos is situated on an island; like the above described Rio, it seems naturally cut off — by a coastal mountain bank, a divide and a bluff of several thousand feet — from an interior that with all its water streams used to turn its face away from the coast and toward the large river of the west.

It seemed by no means a promising situation or physiography for a world harbor, but the unique reversing of water ways on the high plateau, the construction of a system of artificial lakes to head a series of great hydroelectric plants down coastward, have transformed the entire region of harbor *and* hinterland into one of highest industrial potential, into a region with import needs that match its huge and bulky export possibilities. From a one-outward-cargo harbor, Santos has now quickly grown to a most diversified receiver as well.

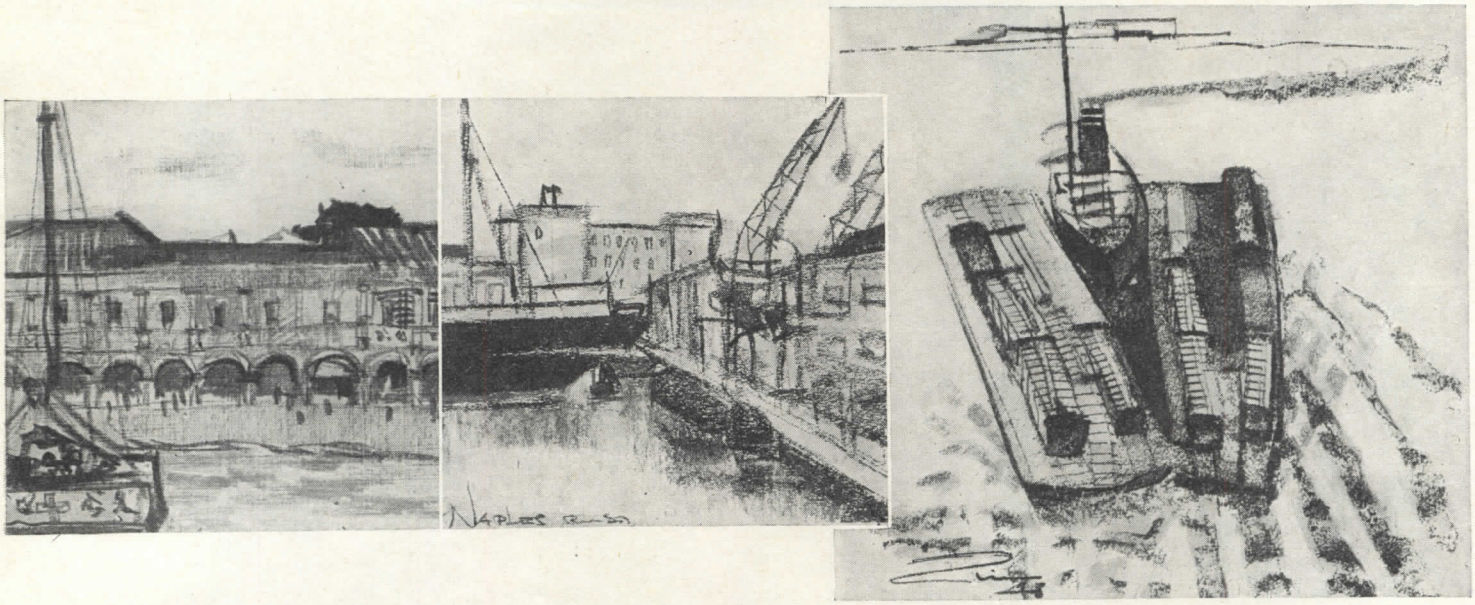
Considering such gigantic successes of modern technological ingenuity, the mere systematic perfection of what too long has been called "port terminal operations" seems encouragingly less difficult.

The fundamental attitude here must be *transfer not terminal.* Coordinated, continuous flow fits modern mass transactions best, with no static ending to them anywhere.

SEAPORT ALSO A HUMAN COMMUNITY

A seaport constitutes a link in a vastly extended national and global machine, but it also constitutes a community, with human requirements and contemporary living standards.

A port has to be considered as to the ultimate capacity it will have, when all its natural potential is fully realized by resourceful engineering in keeping with the economic possibilities of the region served. Then, once this ultimate but clearly limited capacity — the number of ships berthed, the tonnage and kind of goods to be transacted — is as well established as possible, a refined quantitative analysis must be made, and not merely as to trackage of classification yards, floor footage of warehousing, size of graving docks, and facilities for voyage repairs. *Human elements must be recognized and computed:* the numbers of stevedoring personnel, on the basis of contemplated mechanical equipment; and the entire human crew, from pier guards to fire fighters, cargo checkers, skilled mechanics and maintenance men, from steamship agents and pilots to time keepers, railroad employees, and switchboard girls, who all will have to serve this transfer. *Finally the total population tributary to it,* in terms of families, children, adolescents, adults, and oldsters will have to be accommodated. All will live nearby and in articulated residential neighbor-



Naples, Waterfront in Need of Rejuvenation *(above, 4th drawing): Ah, Naples! — a glamorous name: but it was a drab, essentially 19th century waterfront, which the Germans blasted to bits before they left. Two and three story warehouses, with diminutive aprons in front, cast the shadow wherein a tired longshoreman could rest his head on a rubbish heap to hold siesta. Naples will have a new and a greatly promising start like Le Havre, Marseille, Hamburg.*

Tug With Two Floating Sidings *(above, 5th drawing): The freight bagged, crated and palleted uniformly; the huge containers, of which two or three make up the load of a truck trailer; or the flowing type of bulk, like oil, grain or coke, unloaded, handled, transported, stored and warehoused: all these—together with the size and type of carrier from which and to which goods are transferred—are the basic subject of technical port design. Handling larger units, tugging a dozen box cars on floating sidings, gives more efficiency than movement piecemeal and in petty quanta*

hoods of easy commuting distance to the waterfront.

To design a port in this sense means indeed apportioning lanes and transit storage or parking for highly diversified traffic, but it also means calculating and pleasantly supplying the required number of grade school classrooms, day care centers, kindergartens, health substations, transient hotel rooms, less transient apartments, and garaging; above all, of stable homes, and the various recreational and auxiliary amenities which paleotechnic builders always seemed to forget but which modern people insist on. Convenient local shopping, lunch hours, evenings and weekends spent in wholesome recreation call for provisions in the plan; as well as properly laid-out industrial zones and practically connected subdivisions for such light manufacturing as will logically congregate about the port.

Among a host of specialized technical experts, the architect will keep his place if he is skilled to evaluate the human motor behind all the machinery, and is intent on avoiding its exhaustion, by ponderable and, often enough, by subtle imponderable means.

COOPERATION OF AGENCIES

To achieve the desired broader integration, *a close cooperation of many agencies is needed.*

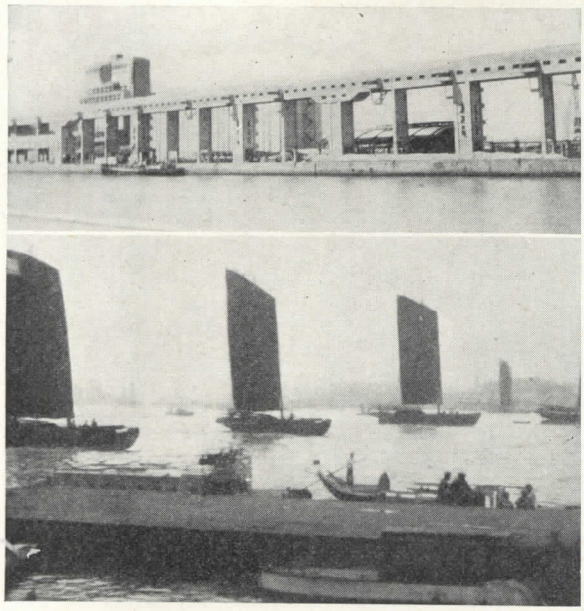
When chairman of the California State Planning Board and visiting for mutual information with local commissions, I was often enough astounded to find that the members of a harbor board would never meet with the city planning commission or the park or school board; they would not know one member of those other civilian policy-making bodies, nor follow their work, or pay attention to the plans of, say, the local Housing Authority. Calling *all groups together into one hall, into joint meetings*, inviting and effecting a regional combine of neighboring communities and of the corresponding county commission, seemed to me the most deserving scheme.

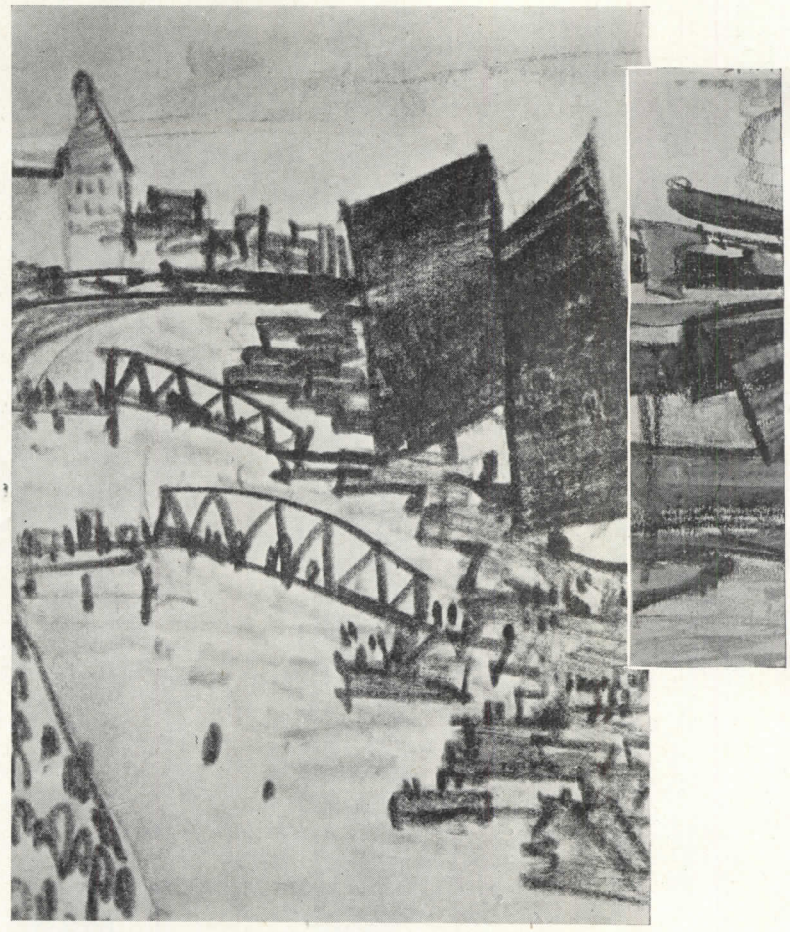
PRIDE OF COMMUNITY

In past periods, not endowed with the technical means of virtually limitless multiplication, human scale was more or less naturally preserved. Standing under Galeazzo Alessi's Porta Marina, anyone could overlook Genoese shipping in one sweep. The best architect of the Republic had chosen the spot and made the layout.

In those past periods the economic activities had been more clear to all, more conspicuously over the table — in fact they were the pride and exhibit of a community. The jewelers' and goldsmiths' street, the potters' shops in a medieval or any oriental town, the glassmaking of Murano-Venice, all the industrious occupations of a

RICHARD J. NEUTRA Photos





The Brand New German Built and Never-Used Grain Elevators of Buenos Aires *(above, top) are an example of the need for world-wide interchangeable technique and equipment. The German contracting firms have disappeared and no other equipment but theirs fits the extensive structure.*
The River Port of Shanghai *(above), crowded with black-sailed junks. Picturesqueness has to make up for a rational pattern.*

place were quite conspicuously located and comprehensible to the eye, whether in Cairo, in Canton or in Nuremberg. The seaport with its foreign ships, big and small, was something to look at, to appraise in a glance, and to be proud of — in Antwerp, Basra, Valencia, Marseille, or Lübeck.

When, however, the real mass-handling started in the Victorian age, dry exploitation of space, material, and human beings took not only to a bewildering scale, but also to a manner not in keeping with official moral concepts. Industrial activities were generally banished out of sight and, as well as possible, relegated to ever new mistreated outskirts or sacrificed "faubourgs," as the down-town Parisians would call them.

However, this process of pushing the new technified activities about in the community, as a bastard stepchild, was, in the case of the seaport, not so easy. The waterfront was there and simply could not be pushed away. It could be developed, though, to be humanly bearable, according to an integrated plan, according to a feeling of the oneness of life — in and out of working hours — or it could be publicly and grossly exploited, humanly neglected, as a depressing man-made fringe of desert.

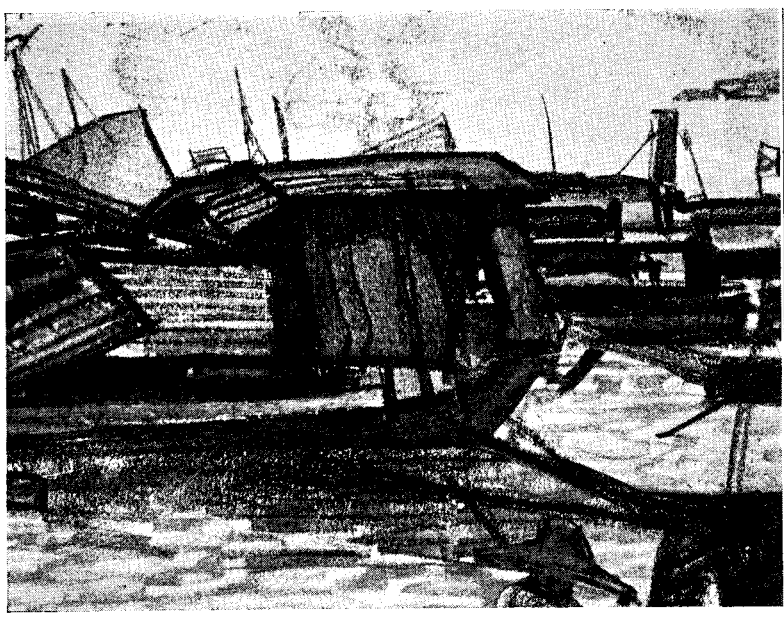
But in fact harbors, as in some classical examples, can also today be more attractive than railroad stations and airfields. While ships, picturesque, old fashioned, or modern, are not and will not be as fast as streamliner trains and jet propelled planes, they are really more pleasant in their motions, arrivals and departures for anyone watching them from a café terrace, and they are less noisy.

In Montevideo the city administration has recently built a noise-removed café restaurant at the slope of lighthouse hill. The view over the harbor is the loveliest sight in town, and points the way to esthetical considerations in any new or to-be-improved port.

Arrivals and departures should be pleasant memories — for the traveler, certainly, as well as the onlooker. But as it is, they are too often memories of drab confusion, of psychological fatigue, of physical discomfort. There is no opportunity for the traveller or visitor to master and integrate his first impressions. The mere task of orientation, of finding a place, a particular office, a transit shed, a ferry — and reaching it unexhausted — should in itself be a consideration for suitable design.

WORLD-WIDE UNIFICATION

In many respects a seaport is a most significant example of today's planning problematics. In general, *land-sea transfer*, or what used to be called "terminal operation," is becoming a systematic technique, which should lead to broadly acceptable principles and standards, just as air transfers and airfields also tend toward



"Bund" and "Go Downs" in Shanghai *(left): But port work, even with all improvements, is never so hundred-per cent mechanized that it does not profoundly depend on human beings to get things done. Ports may have had their glitter and soaring incomes, but they also have too often been known for debasement of humanity, moral and physical filth. Shanghai used to boast its "bund" and numerous "go downs," where starving coolies, with many-voiced sing-song, carried back-breaking loads, only to gain a handful of rice and to sleep nights in any dirty alley.*

"Sampans," Floating Housing in Far Eastern Ports *(above): Many thousands of longshoremen in Singapore must lodge their families in house boats, the watery counterpart of our emergency living in trailers with the same tendency to turn permanent.*

unification all over the earth. Our technological civilization is at bottom cosmopolitan in its trends, and port designers must here be leaders and path finders.

Of course, we know that a pleasing harmonization and the shrinkage of the globe is painfully obstructed by background contrasts and economic discrepancies. Widely divergent wage scales and labor supply will engender equally divergent methods and pose difficulties in finding a common denominator for a peaceful world civilization.

Sea-land and air transfers show up this transition difficulty in brightest relief; but they also may become crystallization points for tuning a modern world together. Provincialism *per se* will finally have to wither in the face of global needs.

Too many new features and considerations to be ignored have entered the field since the pure railroad age created its harbors. There is tailgate loading of trucks. There is the cab-over-engine tractor, which has transformed the waiting truck driver into a busy man, spotting and picking up big trailers. There is the docktrain tractor pulling and depositing here and there miniature and not-track-bound freight trains (up to 12 small low units), slipping through side ports on ship, rolling along its decks, as on the floors of transit sheds, of warehouses and in the wide span halls of "portside" industries (which now can really be a mile off the waterfront). Docktrains rise on ramps, reach overhead boxcars and special truck loading docks, and feed gravity conveyors and chutes. There is the left truck, numbly wheeling and working in boxcars, *a carrier entering the inside of another carrier.*

A nationwide, perhaps a worldwide, regulation and standardization of means and methods, above all, of ship length, berth length, as well as general length and cross-dimensioning of piers (of course, with all due consideration to special cases and particular requirements) may ultimately be anticipated. Also the dimensional standardization of cubage for crates, pallets and containers — in rational relation to dock and truck trailers and modernized boxcars, to customary lifting and traction equipment, as well as to tiering space and stacking height.

Optimum elementary units, established first, lead naturally to a design in multiples of such a module, which will have to find approval of the maritime commission and last but not least of the practical operators, the steamship, trucking, and railroad people, whom port administrators should mobilize as voting consultants, before architects' and engineers' proposals are given the go signal. Vessels will then not have to be shifted ahead and astern, holds will always coincide with shed doors, and the entire over-all pier traffic pattern will achieve the needed integration and harmony.

A planned port will set a new keynote, overcoming the endless drabness of material exploitation, the mere striving for technical efficiency and the debasement of humanity near an important working place. We try to find even a quicker "way out of Manchester," than to get drunk like a sailor — and it will be a more over-all wholesome way, too

1

Typical docks 750 feet wide: all electric supply lines underground; high-line double tracks along 50-foot wharf apron; fluorescently illuminated, free-span transit sheds, 120 and 200 feet deep, windowless; overpaved low-line trackage between sheds and truck-loading dock space. Warehousing largely removed from harbor to "consumer's ends" of metropolitan region. Port-maintained heavy equipment such as portal cranes, coal loading equipment, grain elevators. "Gear corrals" for stevedoring companies, with free-wheeling equipment (dock-trains, lift up trucks)

2

Lighthouse promontory park: drives and bridle paths leading toward town center, and to vacation beaches on North Shore

3

Repair docks, west, oil harbor, east (with pipe line to refinery); centrifugal pumps load a tanker in six or eight hours. 10,000 barrel barges motor to slips and refuel ships during stevedoring operations

4

Intermediate warehousing facilities accessible to railway sidings and freight-trailer parking ribbons; with 3-ft. 10-in. loading platforms, 50-ft. truck drives in front, helicopter roof loading docks

5

Lumber import and storage area. (Lumber export harbors with timber pool and portside saw mills require special planning also in relation to inland water ways)

6

Employees' parking and lunch recreation area with garden-porch canteens, health stations, game facilities, all accessible to industrial operators, shore and ships' crews

7

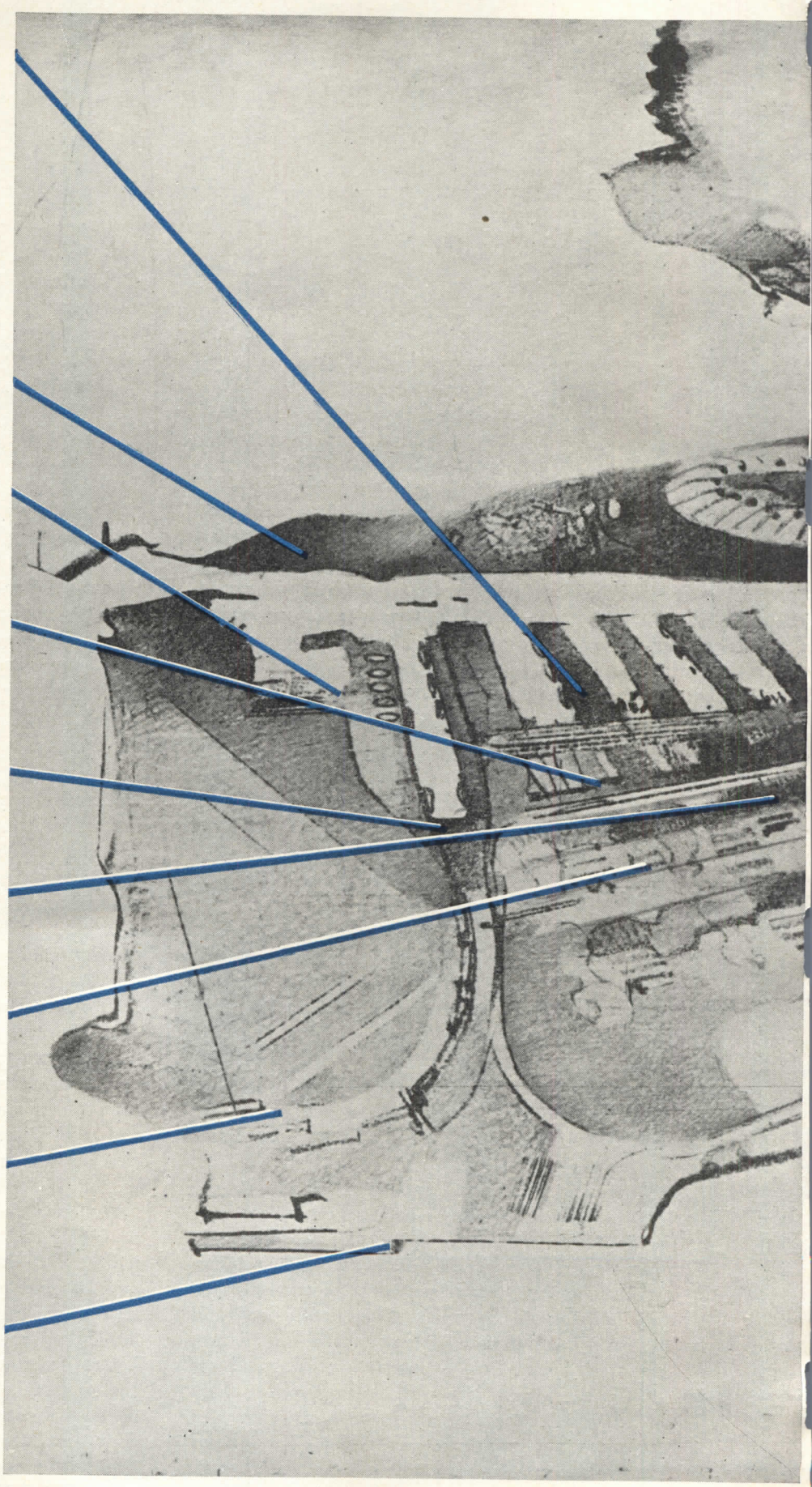
Portside light and subsidiary manufacturing (smaller establishments without need of immediate water frontage), accessible to dock trains directly from shipside by a system of under- or over-passes

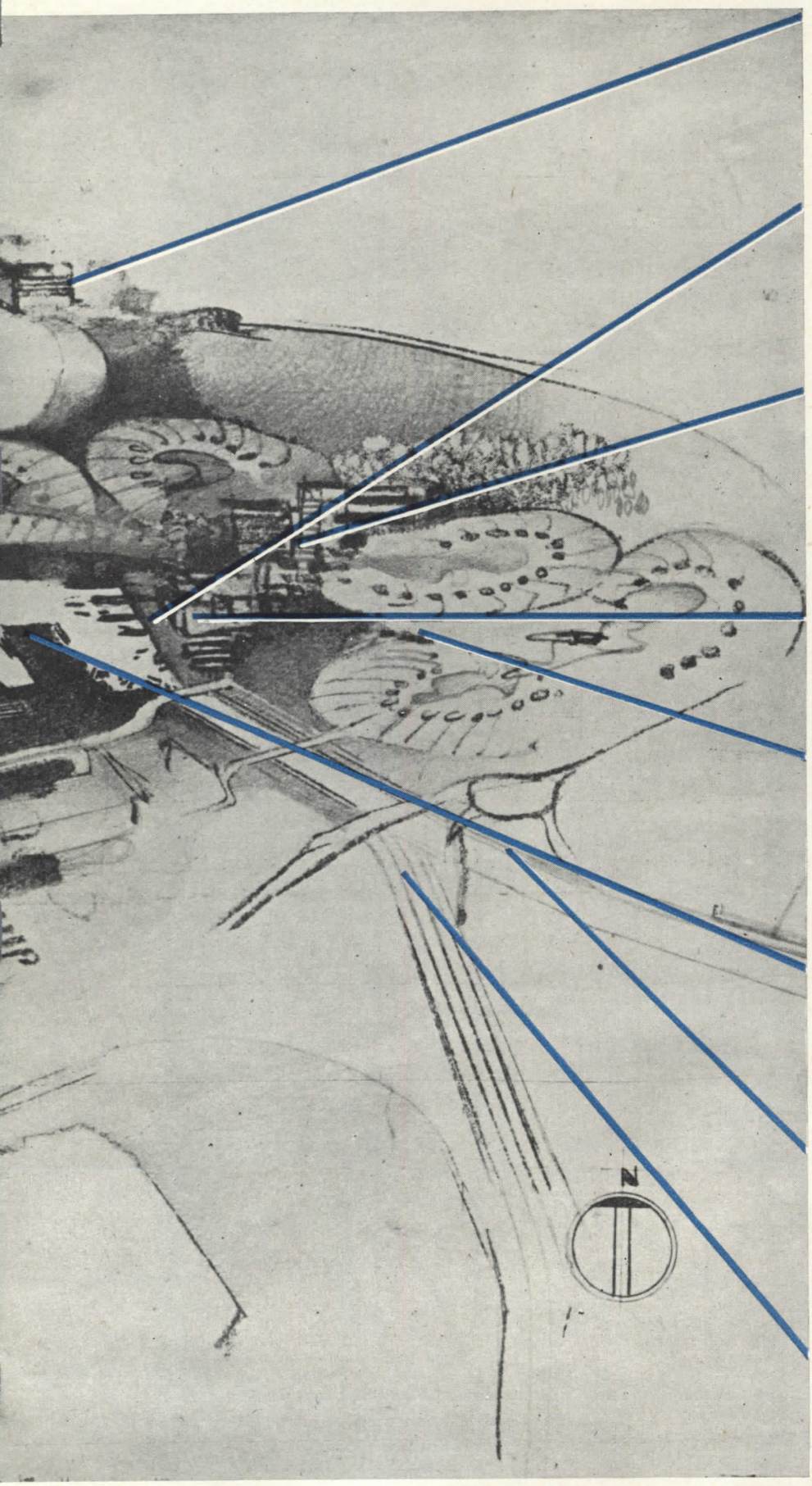
8

General freight airfield for inland distribution and collection of speed freight. Warehouses leased to companies operating their own air-carrier fleets. Dock-trains drive to wharf aprons; tracks connect directly with low and high pier lines

9

Sea plane base and entry to "extension basin," with such portside industries as require immediate water frontage or large areas; or which are obnoxious and require segregation (fish canneries; oil refining, borax, potash plants, etc.)





10
Beaches which make North Shore resorts the weekend and holiday areas of the port people and the metropolitan region, are segregated as well as possible from port traffic on land and sea

11
"The Quay." Town waterfront with ferry and suburban-island commutation wharfs; buildings of port administration, marine exchange, radar and radio operation, port police guard — headquarters, post office, etc.

12
Hotels and transient apartments at conflux of residential commuters' area, near terminal of Monorail Rapid Transit to city, central helicopter park and adjacent country club area on the northeastern rolling hills. Seamen's and port hospital on 30 acre plot in wooded area, east-northeast

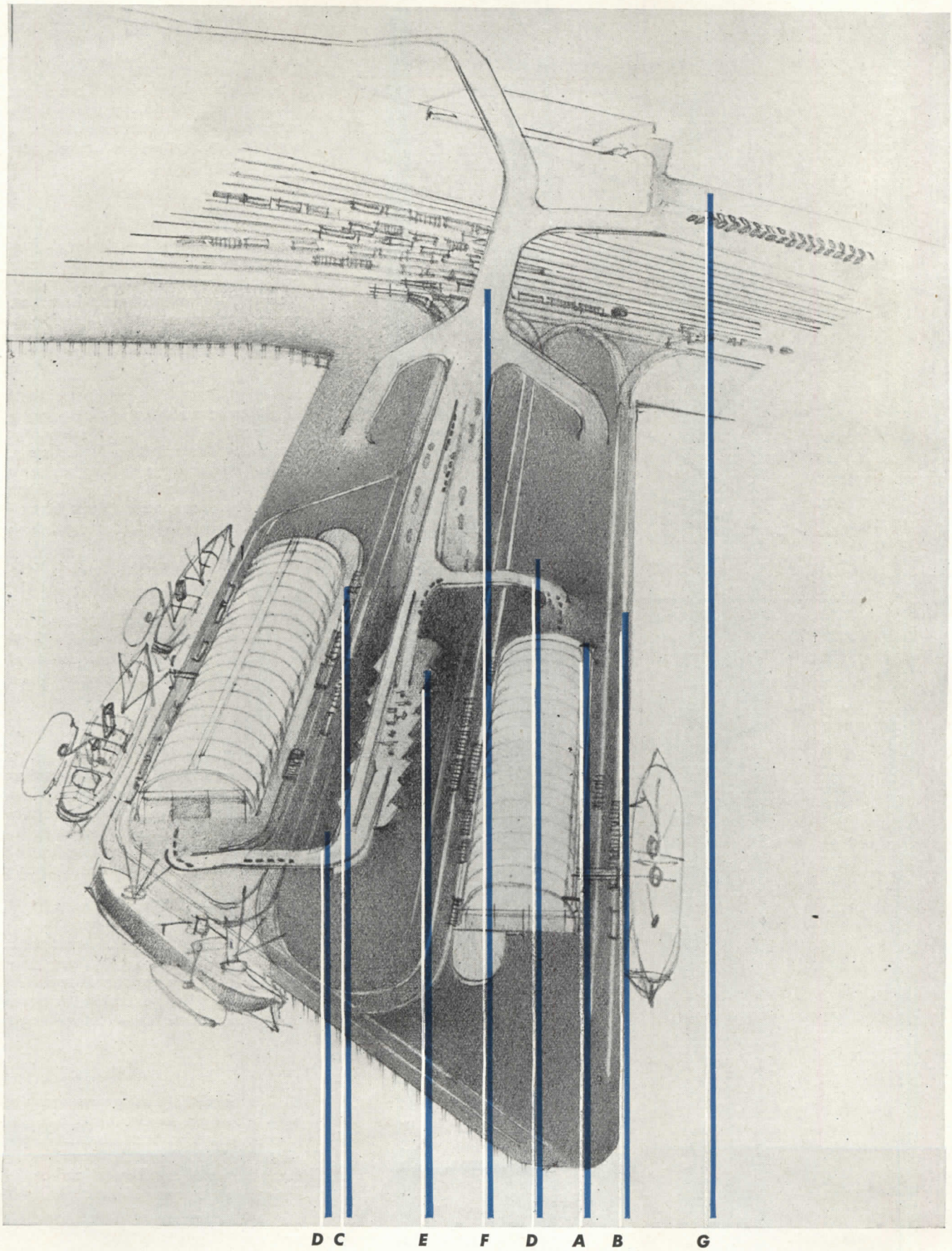
13
Port shopping center slightly elevated, with central underground parking facilities above high tide line, and peripheral multi-story garage zone adjacent

14
Residential neighborhoods with belt roads and stub-end service drives, a pedestrian green core to each neighborhood, with communal recreation grounds and desirable facilities from health sub-stations to branch libraries, day care centers for children, kindergartens and grade schools

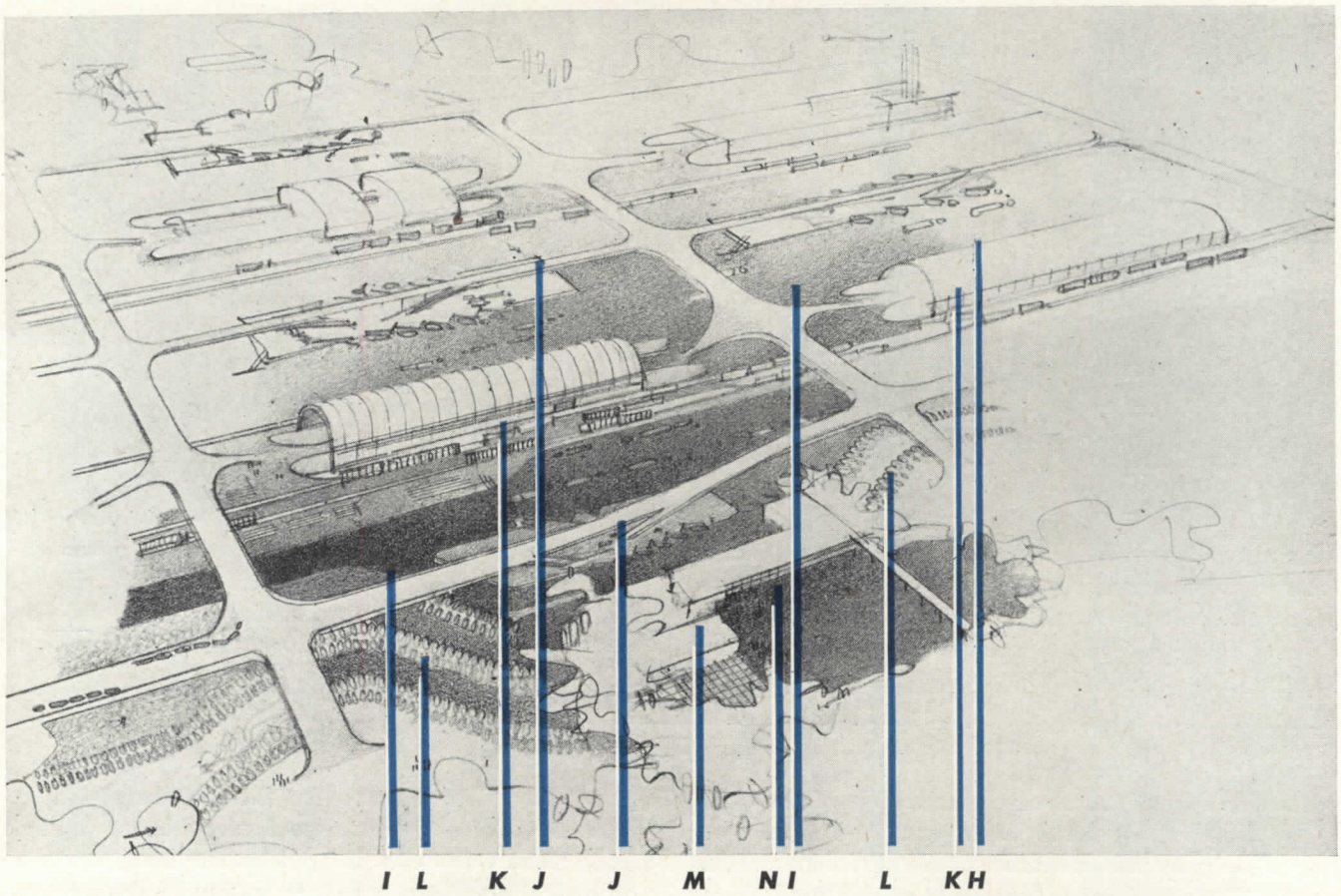
15
Passenger docks for several transoceanic lines with two-story transit sheds, passenger gallery and portal-supported "gangplanks" or embarking bridges, rolling past berths on waterfront tracks

16
Six lane parkway, passing passenger air-transfer east and leading within 1000 foot landscaped strip, partly between residential neighborhoods and partly along heavy industrial development and extension zones, to metropolitan center area

17
Trucking super-boulevard, straddling Rapid Transit to city, paralleled by Port-operated electrified railway-belt line which connects all industrial zones of "Rush City Reformed"



Schematic Sketch of Pier: *With (A) 200-ft. free span sheds and continuous broadside door arrangement both to (B) 50-ft. wharf aprons and to (C) 15-ft. loading platforms at lowlines. Dock-trains cross overhead (D) to specialized truck trailer loading dock (E), and all rubber-tire traffic reaches level free crossing (F) over rail sidings and classification yards to trailer parks (G). Berthed vessels may break out cargo onto both wharfs and lighters, and refuel simultaneously from barges in ample slips*



Portside Light Industries *cannot all have and do not all* need *immediate water frontage but they all call for a new type of subdivision and segregated traffic provisions. (H) Wide-span, unobstructed plant structures for mass handling need a continuous raw material approach, by rail, over-the-road-truck-trailer, and docktrain from shipside. Finished products may leave by the same three types of carriers, and thus also reach the air freight terminal. (I) Rubber wheel traction elevated. (J) Truck trailer loading docks without interference with box cars spotted at lowlines (K). (L) Parking lots of workmen and employees. (M) Lunch canteens, and (N) recreational green area, play field, health substation, etc.*

HAND OPERATION STANDARDS FADING

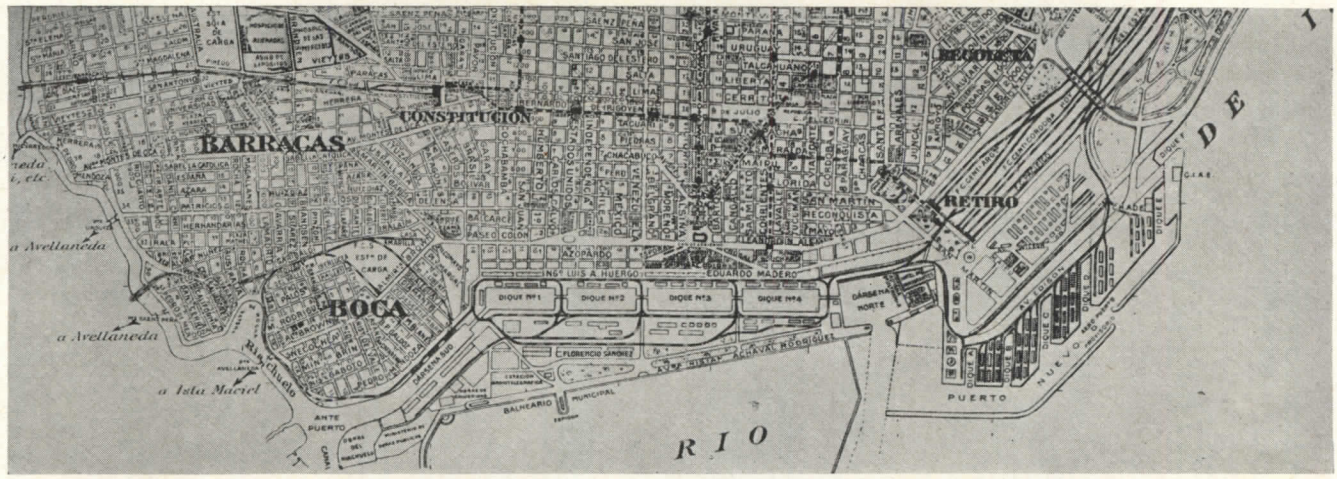
In certain Asiatic and African ports natives are still ready to dive three minutes for a nickel, and their diminutive wages keep out more rational and more human methods.

But also in these United States, if we analyze it correctly, long past pay scales, and in keeping with them, hand operation in breaking out and moving cargo, once upon a time established a great deal of our still existing pier layouts — for example, practical cross dimensions of transit sheds. Now, the fact that inadequacy of hand equipment, and layout to suit it, means that there will be congestion-crippled ports and that terminal operation, as it is, may run as costly as the entire water transport, calls for measures which cannot well be too far reaching.

We need a sort of minimum quanta theory of cargo handling, so to speak. Unit volumes, unit loads, unit energy exertions, which the mechanized stevedore, the railroad man, the truck driver who picks up properly maneuverable trailers, find optimum common denominators for their operation, must be recognized by the producer, by the crating designer, the makers of containers and pallets. Thus also the stowing on dock and in ships' holds may become unified accordingly and less of a puzzle.

The containers may turn out to be expendable and thrown away in one case, or stabilized and re-usable in the other; they may be weatherproof and obviate the protection of transit sheds. Still they may fit into a modular system of volume and have the unified handling feature of allowing the tines of a fork truck under the load. Or perhaps the overhead handling gear or crane will have its comeback for handling the more colossal ones of these containers of goods.

First must come the establishment and acceptance of basic quanta governing containers and handling equipment. Then, the paths which these elemental particles must travel, the routes of their carriers within sheds,



Map of Port Buenos Aires: *From the "Boca," with its Genoese fishermen, to the newly filled-up and well-landscaped shore park area at Barrio Parque (upper right), the Buenos Aires "Diques" and new harbor stretch intimately at the front lawn of a capital metropolis, with the Plaza de Mayo, the President's pink palace, the Plaza San Martin facing the ships. There is pleasant tidiness about this great southern port, and administrational skill and ambition for a representational setting is evident*

outside on wharfs and along the inner lines of piers and quays could stand better segregation and should be helped along by the acceptance of the minimum quanta theory. Their continuous flow would greatly profit from elimination of all possible mutual interference.

Circular routes are generally the correlate of such a continuous flow. In principle the design must establish them, and they must be made elastically possible for adaptation to particular cases. Almost continuous door opening along all shed fronts is a vital point in this desirable flexibility.

CROSS TRAFFIC

Free wheeling mechanical equipment should ideally have its opportunity to level-free cross-over from pier front to pier front, from shed to shed, from trucking dock to ship side or to nearby industrial establishments. Power operated bridges are a solution that take time and energy. They are far from automatic. Two level traffic systems, with easy ascent and descent ramps, may in some cases pay for themselves. Seven per cent grades are recommended for loaded fork truck or dock tractor pulling its train of trailers.

REDESIGN FOR MASS FLOW

In a time of air freight on the increase for less bulky quality goods, sea cargo may become more uniformly of the bulkiest kind, and unprecedented mass transactions will dominate the pier and port scene.

If these postwar days of world wide port construction and reconstruction will not warm us up to truly new plans, grandly adjusted to a singular opportunity of rejuvenation, then we may not live to see a similar chance arrive once more, until indeed atomic bombs are being scattered for the final general leveling.

Le Havre is now in rubble, like Hamburg; Naples, Marseille, Kobe, Manila are war casualties; and places like Santos, Galveston, Long Beach are bound to move up several notches at a time — so that profoundly new starts, not only piecemeal improvements, are going to happen under our eyes. It is probably an unprecedented moment in the history of port renewal and planning.

And so a picturesque variety of suggestions are at hand. But naturally, all proposals and novelties ought to be tempered with the practical know-how of experienced waterfront men. The bold and original, as P. R. Shoemaker, chief harbor engineer of Long Beach says, must be merged with the conservatism of tested routine.

PASSENGER PIERS

One wonders whether, apart from a few mass immigration and pleasure cruising ports, steamship passenger disembarking facilities will be overtaxed, as undoubtedly will be cargo provisions. However, to cut interference on the cargo handling level and give safety and and comfort to the passenger, specific designs are well foreshadowed and will undoubtedly develop in practical application.

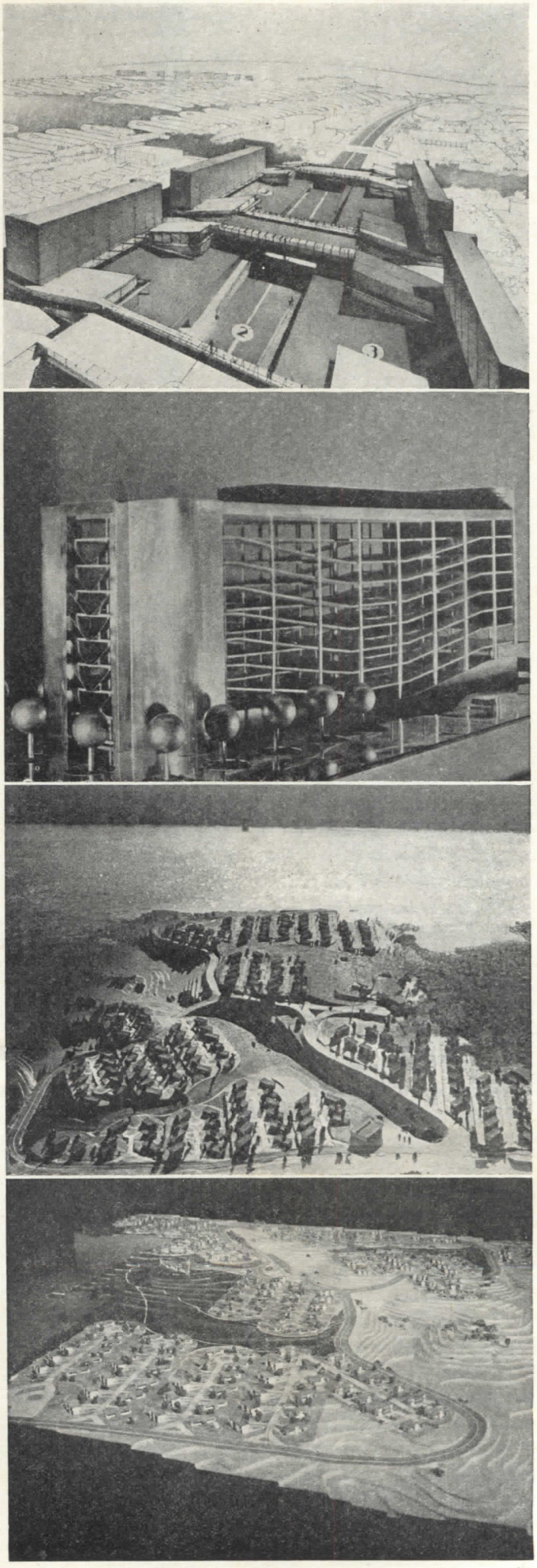
Such a cargo-passenger "terminal" provides a one-story type shed structure, with a shipside mezzanine passenger corridor. This again connects to shipdeck by means of an electrically operated, automatically adjustable traveling landing stage, gangplank, and platform for the handling of baggage. Baggage inspection, etc., is also placed on the upper level. There is cross connection by overhead walkways above the cargo ground floor, to landside and to the elevator which lowers passengers and their baggage to street level, taxicabs and auto park. Accident risks are here, as always, best minimized by suitable segregation and organization of traffic.

Free Ways with Level Free Crossings *(top, right) and commercial centers placed between residential neighborhoods will connect the harbor area with other sectors of the metropolitan region; by their accompanying zones of landscaping these arteries will wholesomely articulate the vastness to which modern communities tend.*

Multi-Story Parking Garage *(2nd from top, right): Passenger cars, like all other vehicles and carriers, will accumulate in large numbers about a port. Provisions for them should be no afterthought, and horizontal acreage may not suffice.*

Portside "Neighborhood" *(3rd from top): Housing projects at seaports may often be greatly benefited by lovely, sometimes panoramic, outlooks over sea or harbor.*

Channel Heights Housing Project *(bottom, right): Built for the Housing Authority of Los Angeles, Howard Holtzendorff executive, L. S. Wilson consultant, takes all possible advantage of the promontorial ground configuration of the Palos Verdes Peninsula. The living quarters of every dwelling face down to the Pacific. All communal facilities and local market and trading center were part of architect's planning work. (Richard Neutra was architect for all projects described above.)*



MORE SPACE AND OPENINGS

Apart from a diversity of specialties, stands *the principle of allotting more unobstructed and elastic space* to aprons, to dock stowage and transit sheds, to railway cars, to over-the-road trailers, backed up onto loading platforms or onto special docks of their own.

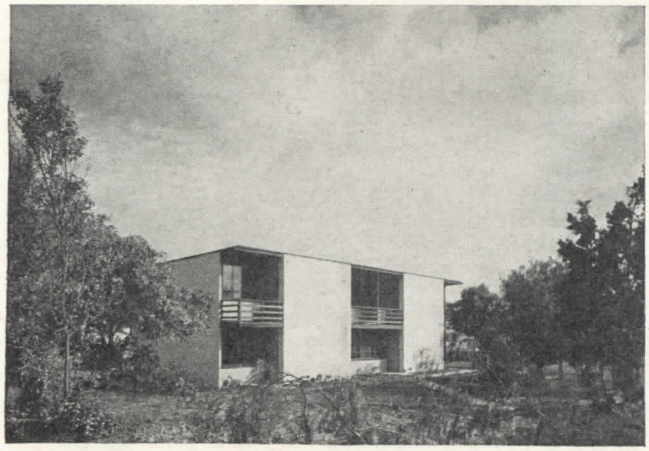
The opinion grows that a wharf of 50 feet may be very superior to one of 32, in allowing track passage to neighboring berths or to spot boxcars and truck trailers under the hook opposite the holds of each ship. Free span sheds of 200 feet width and more, and practically continuous front doors, working upward, somewhat like in the new Long Beach proposal, become more frequently constituent parts of pier design; end doors take on new significance when docktrains begin to serve segregated truck loading docks.

LIGHT AROUND THE CLOCK

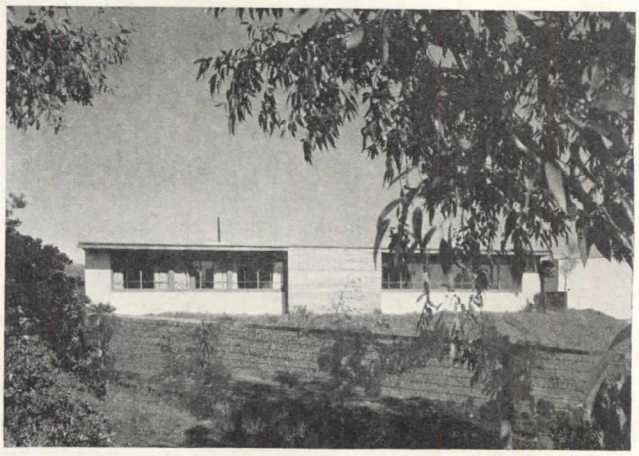
Industrial engineers for the manufacturing and production field have increased — even almost doubled — the output, while cutting the accident rate, by proper and well-distributed, shadowless illumination. But they have also recognized that daylight hardly ever does the trick economically or satisfactorily, and that modern mass operations utilize expensive facilities best by a continuous sequence of working shifts. Once general and well localized night lighting is installed, it may perhaps best serve around the clock. Weatherproof flashing and glass may be forgotten together with the more complicated structural features to provide for daylight.

EASING OF WORK

Managerial supervision from an upper level, with a catwalk-network, with loudspeakers and intercommunicating microphone connections, engage the



JULIUS SHULMAN Photo



JULIUS SHULMAN Photo

For Port Labor in Green Setting: *Two-story row houses (above) and ground floor double houses (above, 2nd photo, l. to r.) serve the families of longshoremen, chandlers and shipyard workers, who, in their spare time, grow their own vegetables and flower gardens.* Grade School in Green Setting *(3rd photo) and Kindergarten (4th photo): are needs of the new living neighborhoods to be developed within walking or easy commuting distance of the harbor. Health centers (perspective,*

imagination of designers. Paper work should be shot from office to office through a system of pneumatic tubes, instead of cluttering the place with runners and messengers, like highroads of the Persian king. Finally, there may even be broadcast exhilarating music over the docks, a late and more accomplished substitute for the coolies' sing-song on the go-downs of Shanghai which, as I noticed, sweetened a bit and eased so much hard and sweated work.

But more important than all gadgets and trimmings is the substructure itself. Concentrated and impact loads on the pier deck may be on the increase, and solid level and mildly ramped, non-skid floors, with tracks always over-paved, and with lane width and curve radii provided for the maneuvering of dock trains and heaviest truck trailers, will become characteristic, not only for pier design, but for the layout of the entire warehousing and portside industrial area.

PORTSIDE MANUFACTURES

Portside industries may, of course, be of a great diversity and vary profoundly from one geographical location to the other. But, in general, they may by proper provisions partake in the immediate benefits of free-wheeling mechanical stevedoring and port traction equipment without themselves being directly forced *onto* the precious and restricted waterfront itself.

Granted that light manufacturing of a mass output is the typical industry at immediate portside, shop fabrication for large quantity housing may serve as example.

It may need raw material approach by truck, by rail and water of several hundred thousand board feet of lumber a day, and perhaps twice as many square feet of panel board, plywood, etc. to produce the elements of a thousand houses a month. The finished panel elements will go off the plant on the other end of a hall of say 300 feet width by 1000 or even 1500 feet lengths.

The mechanization of a continuously running production, the suitable assembly line, will, of course, be very diversified for different products, but there is, in most cases, the same character of a non-stop *flow from whatever external transport carrier to the internal carriers within a hall of extraordinary dimensions.*

No belt conveyor can interrupt action, no truck or docktrain can overpark its time at the loading platform, no ship must be berthed longer than pre-allocated — or *all the facilities and their time capacities, as well as the required spaces, appear at once dimensionally out of gear.*

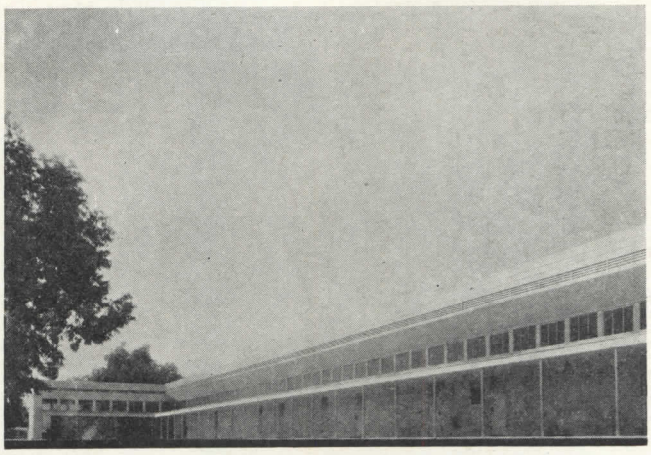
A new type of subdivision for light industrial zones is needed, providing for circumflux of diversified traffic with level-free intersections on one hand, and on the other for employees' parking and recreation areas.

The bewildering contrast between an amorphously stretching desert of technico-commercial activities and far distant residential areas which alone are allowed to have human aspirations, is not the only and certainly not the most truly productive or timely approach to a contemporary order of things. The solution must become well-rounded and more equitable.

IN CONCLUSION

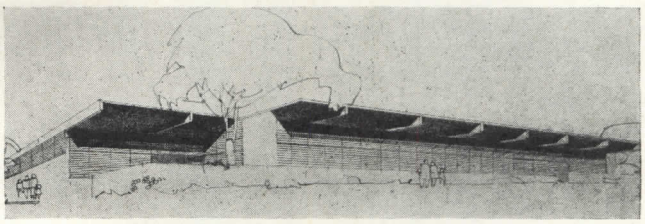
Technical perfection in quasi-automatic harbor facilities concerned with an almost continuous flow of goods, based on and helped by the rational unification of containers and cargo elements — is, after all, *only one line* of progress for a coastal transfer. *The comfort of the numerous human beings* who spend their working lives on and about the docks, of travellers and ships' crews, of the labor employed by portside manufacture, of a concentrated shore population at large — call for a

JULIUS SHULMAN Photo



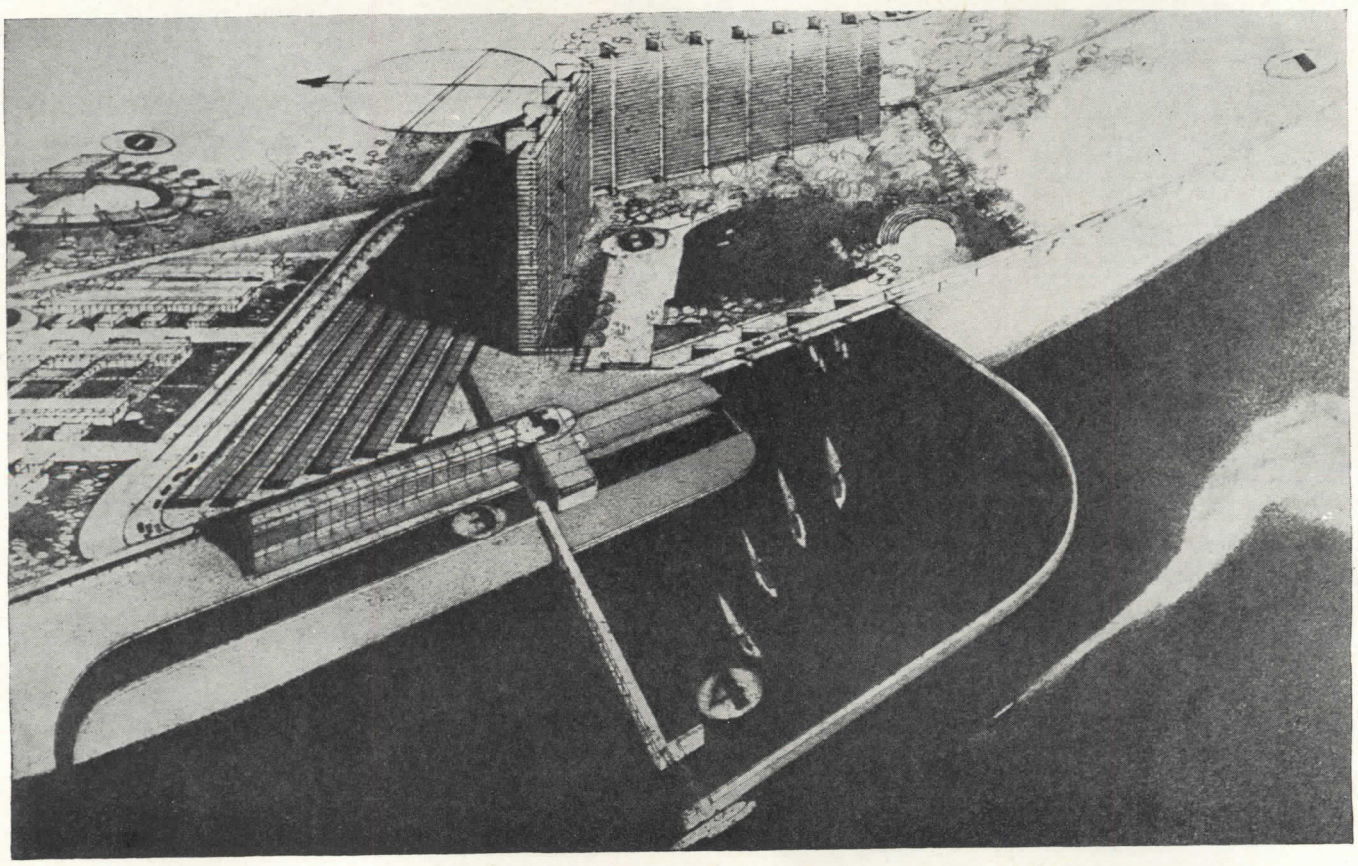
LUCKHAUS STUDIO Photo

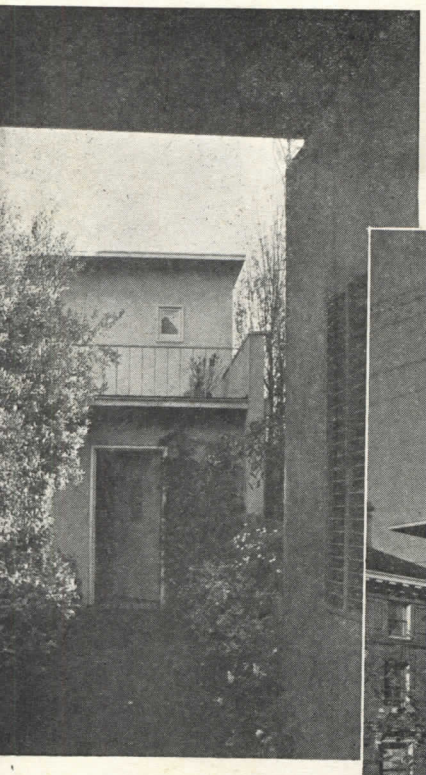
right) must serve even small ports, and sub-stations be as well distributed over working areas of the harbor as over residential neighborhoods. Health Department, Harbor Commissioners and Metropolitan Housing Authority must work hand in glove



more circumspect, a farther reaching, a more wholesome design and for a planfully integrated layout, so as to make a truly *living entity* out of the far-flung installations, the tributary industrial, commercial and dwelling areas that cluster around the modern mass transfer of a seaport.

Suburban Holiday Beach for the People *(below) is segregated as well as possible from port traffic on land and sea, but it serves the port population and the entire region with its sail sport, shore amusement park, bathing establishments, yacht harbor, vacation housing, and summer schools. (Richard Neutra was the architect for all projects shown on these two pages)*



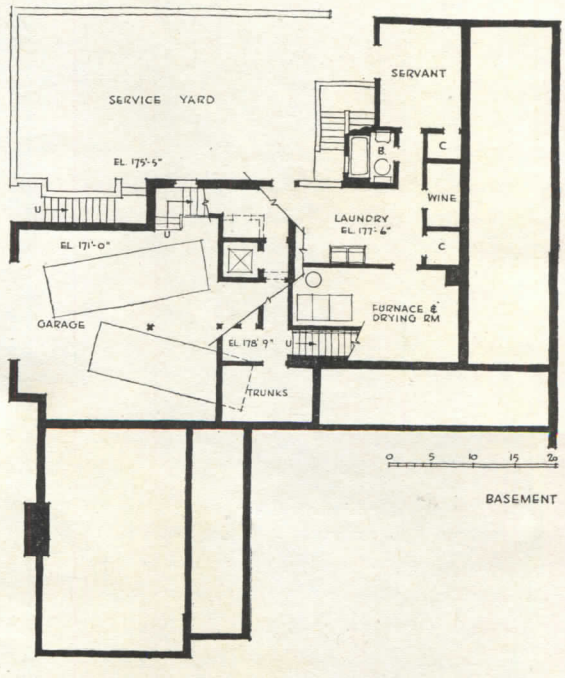


Main entrance from street is an open passage along the enclosed living terrace, a patio where family and guests may soak up sunshine and still escape the trade winds that so often bring a chill to the hilly spots in San Francisco. Planting consists of a large olive tree in one corner, a magnolia stellata in another, and azalias, dwarf lemon trees along with seasonal flowers. Children have their own outdoor area, where toys supplant the flowers

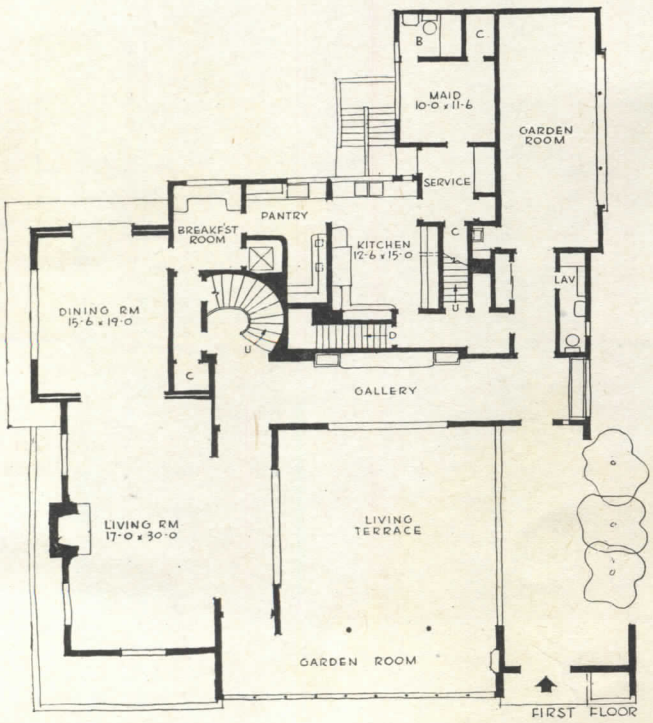
A HOUSE DIVIDED KEEPS THE PEACE

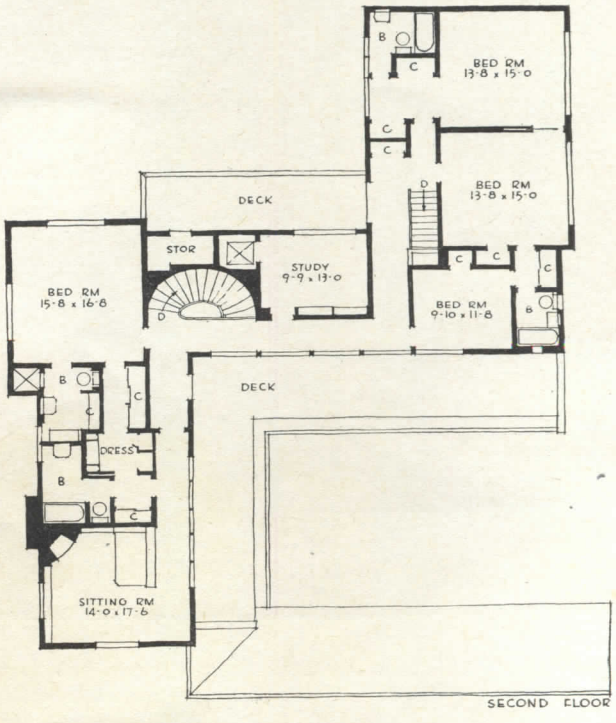
James P. Bradley Residence, San Francisco
Gardner A. Dailey, Architect

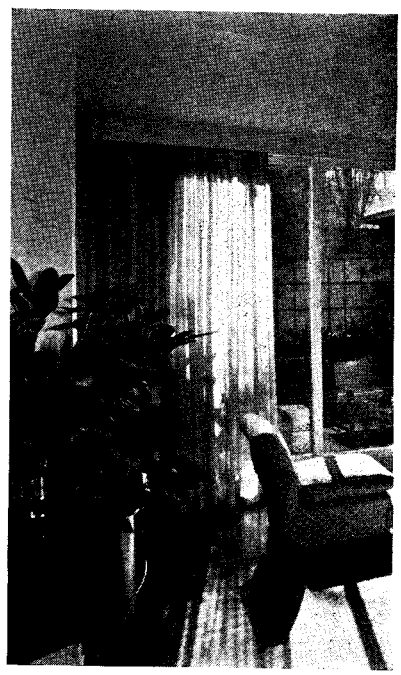
HERE is a plan that requires, and repays, considerable study. Gradually it becomes apparent that functionally this house is really two houses, one for the children and servants, one for the grown-ups and guests. The clients asked that this dual concept be carried out also in the outdoor living spaces, to provide a fairly formal living terrace for grown-ups, sheltered from the San Francisco winds, and a play yard where youngsters could work off their energies without fear of breaking windows or trampling flower beds. The children also have the rear garden room as part of their domain, where they have room to play vigorously even on rainy days, and may strew toys around as they like.



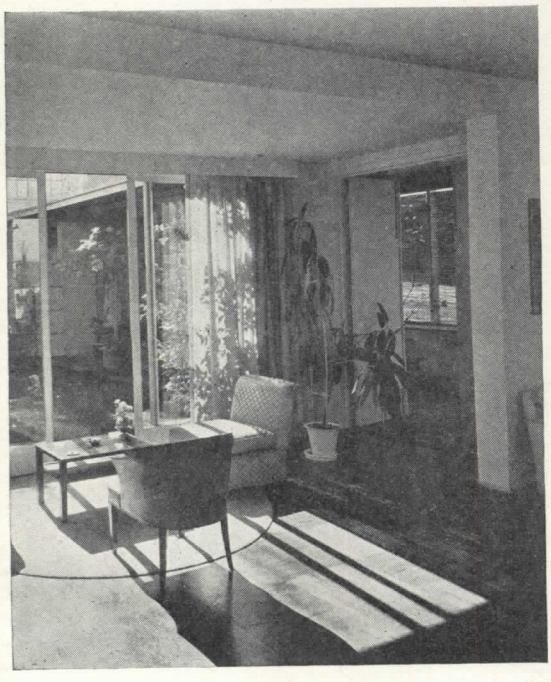
ROGER STURTEVANT Photos

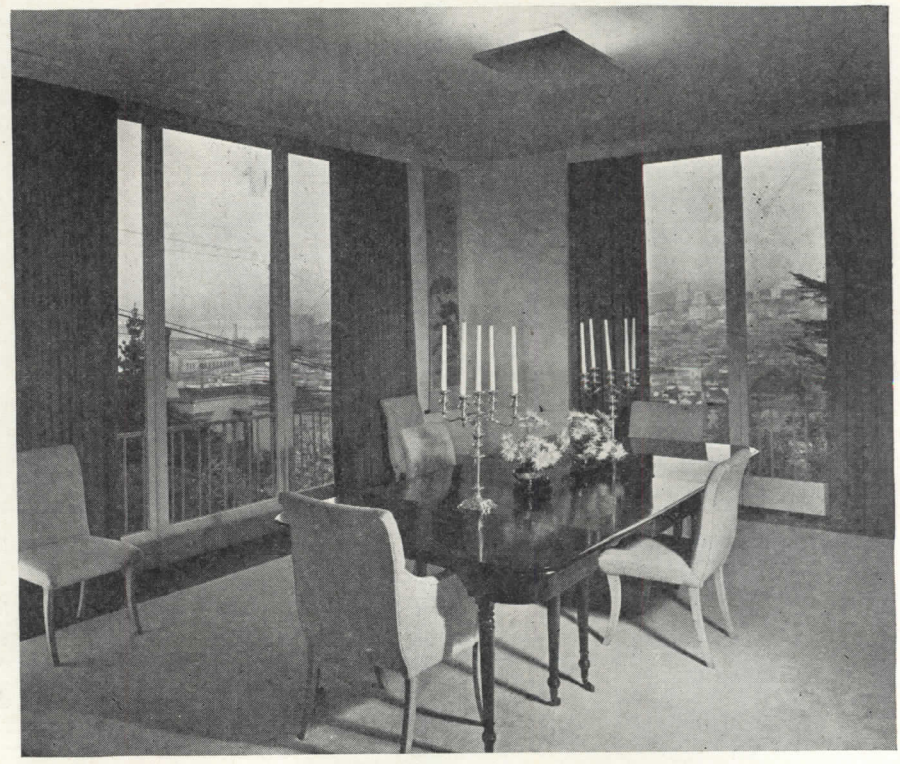


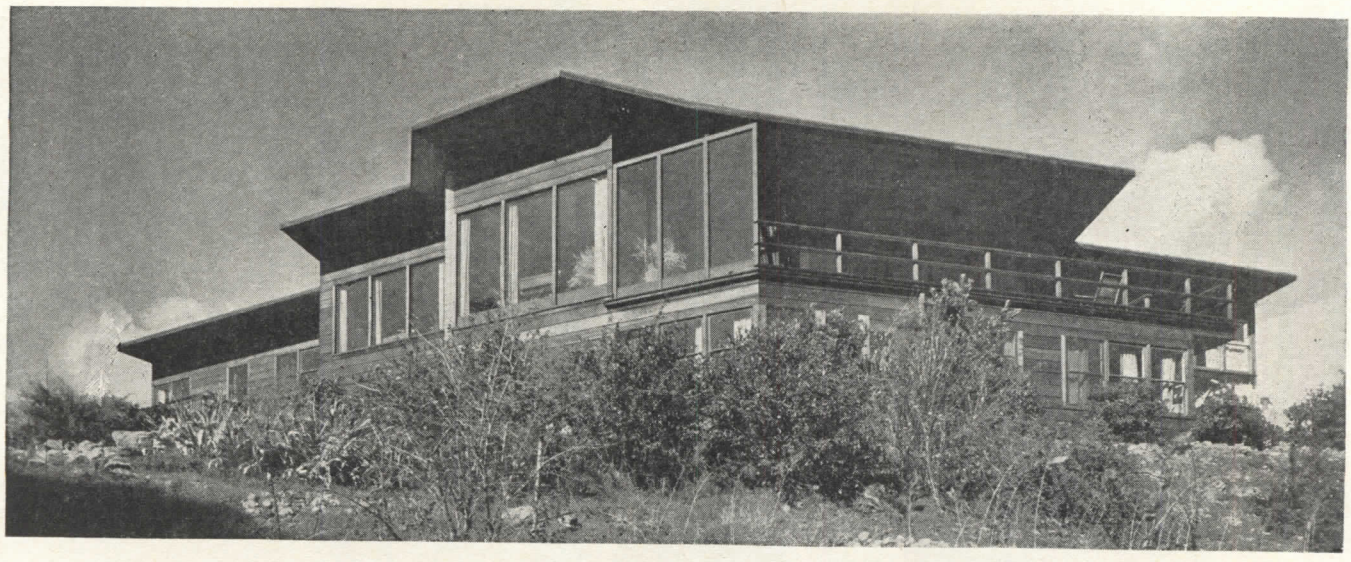




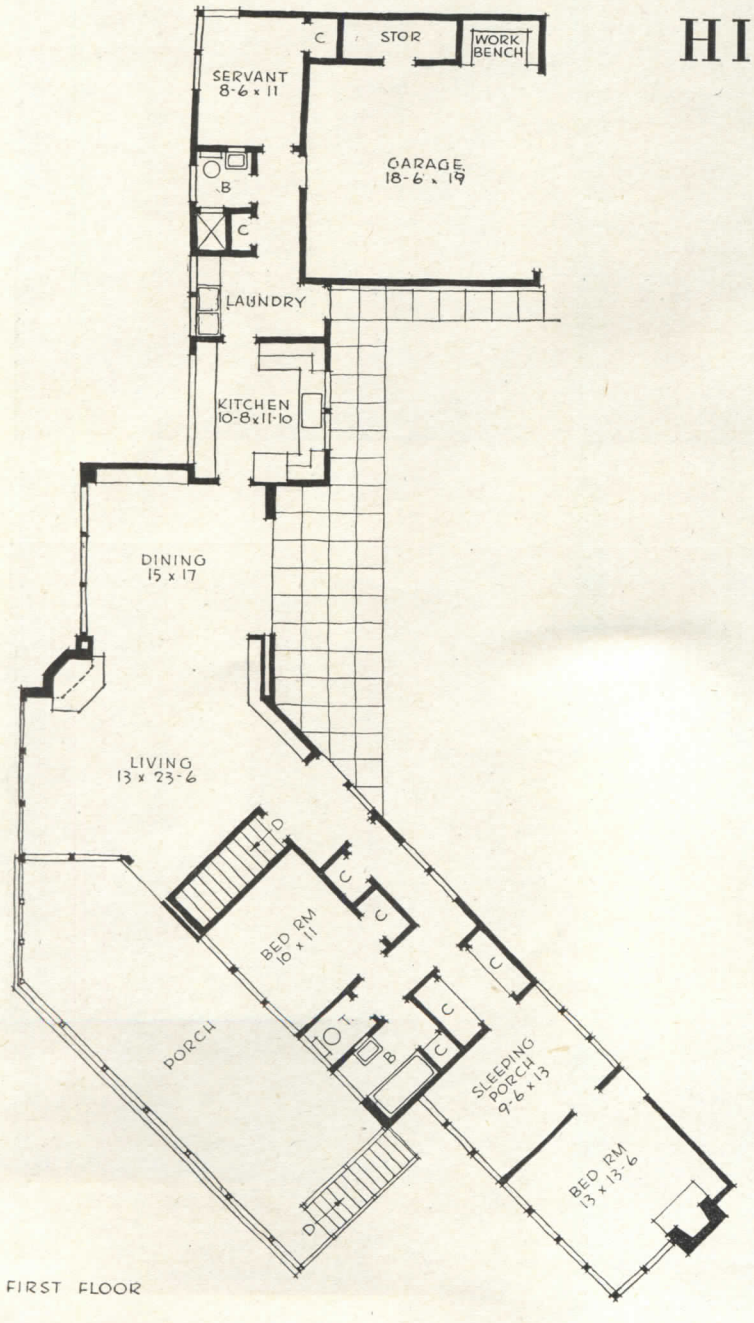
Left: Front of the house is the sheltered portion of the patio ("garden room" on plan). Left below: on opposite side of patio is the gallery from entrance past the kitchen section. Center below: view of living room facing patio. Decoration of living rooms was influenced by Mrs. Bradley's collection of Chinese Tomb figures (decorator, Beth Armstrong, of Armstrong, Carter & Kenyon). Views out the dining room windows give just a suggestion of the panoramic scenery which is always a design factor in houses near San Francisco



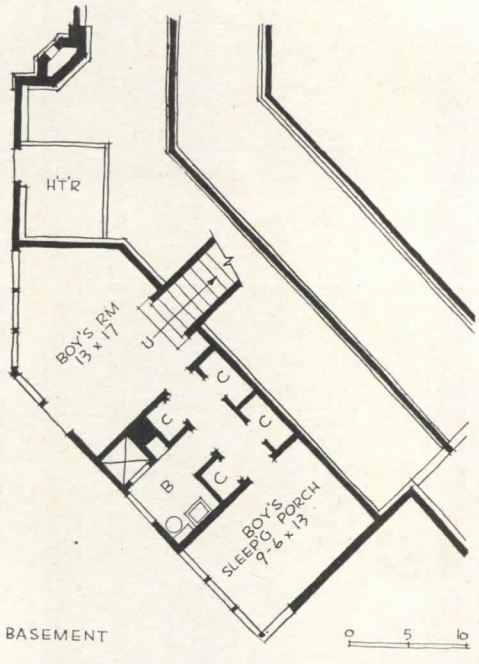




HILLTOP HOUSE TOO

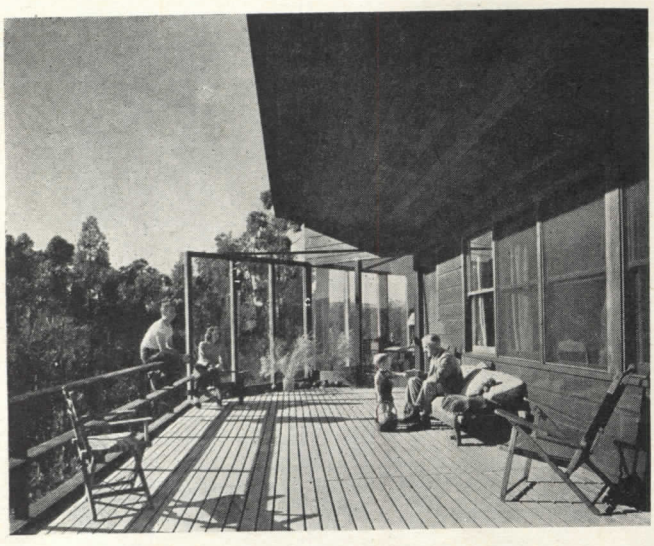


FIRST FLOOR



BASEMENT

This completely unrestrained plan grew partly out of the nature of this hilltop site, partly from the requirements of the owner, partly from orientation considerations. It protects a sheltered garden against summer sun, invites the winter sun to warm the porch, while protecting it against the wind, and also provides an expansible house for welcoming any given assortment of grandchildren



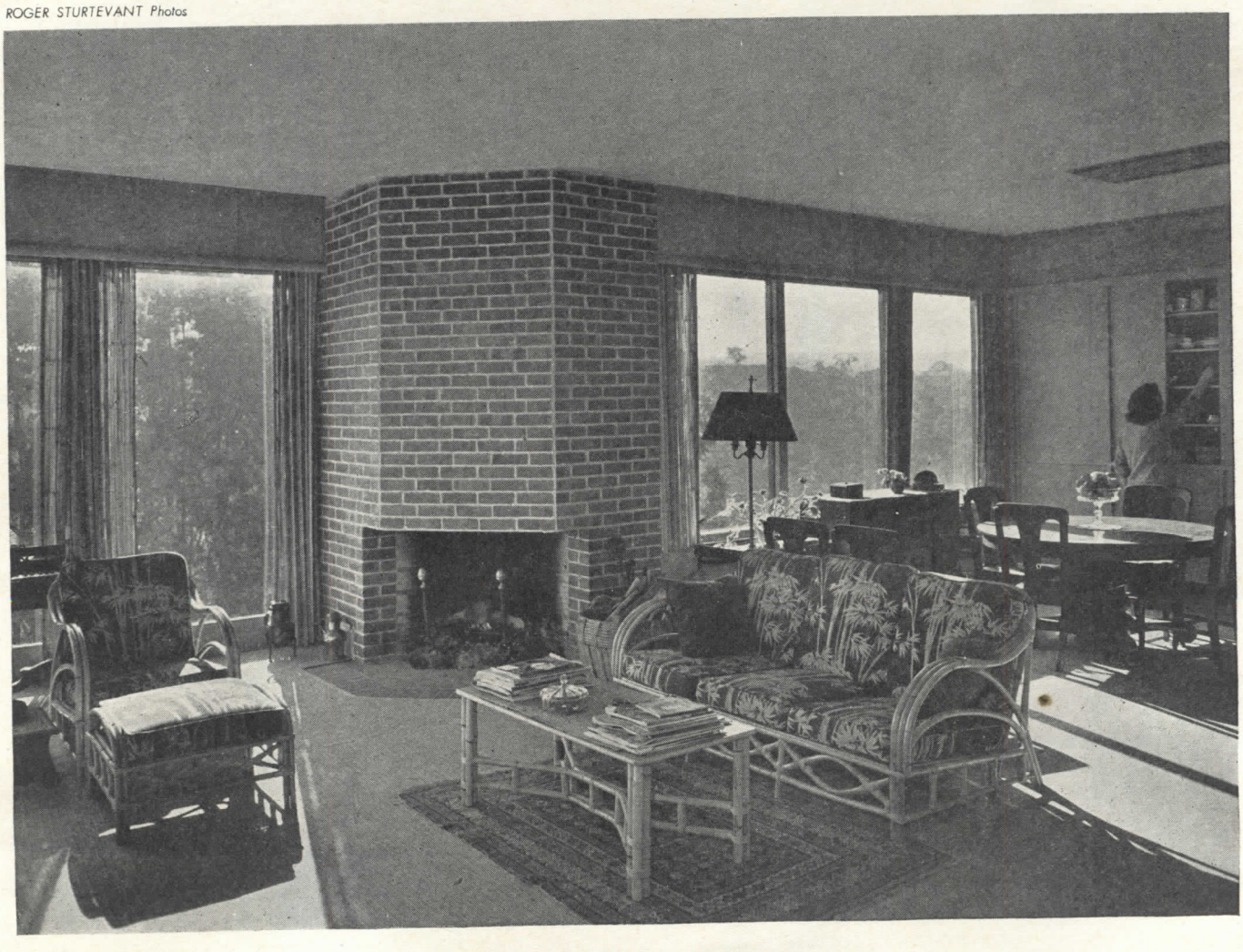
CLOSE TO THE SKY

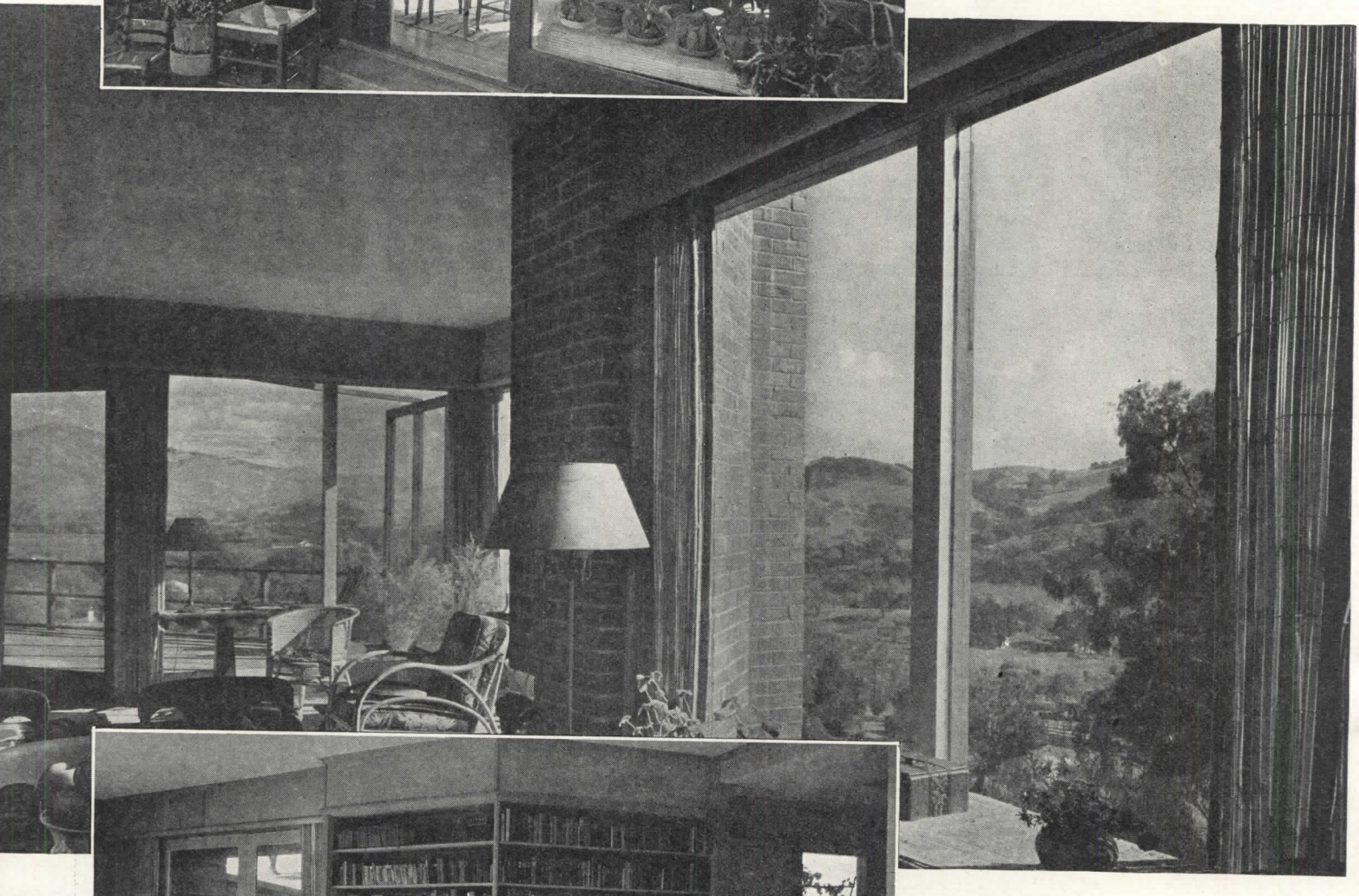
J. Warren McKibben Residence, near San Francisco

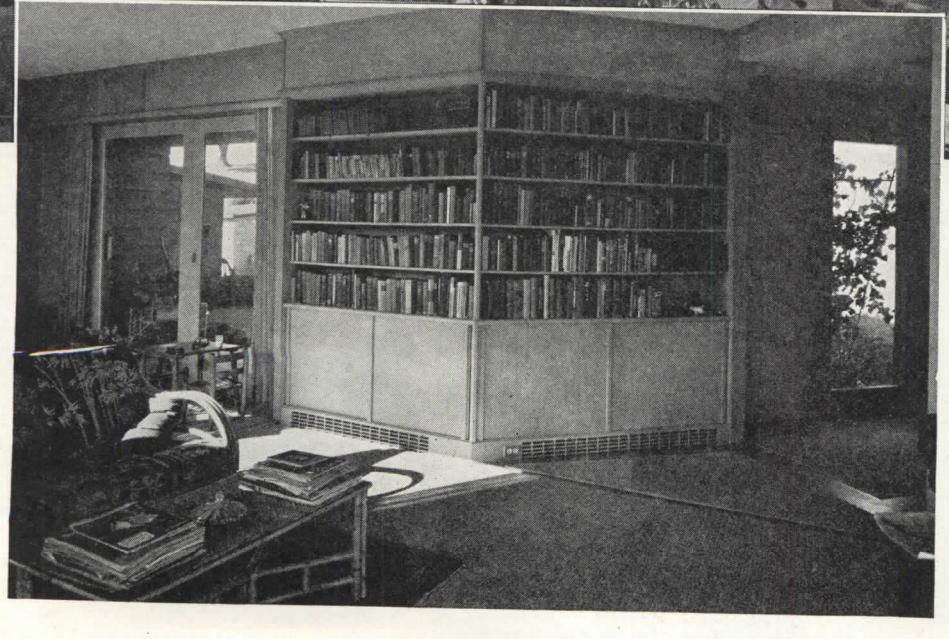
Clarence W. W. Mayhew, Architect

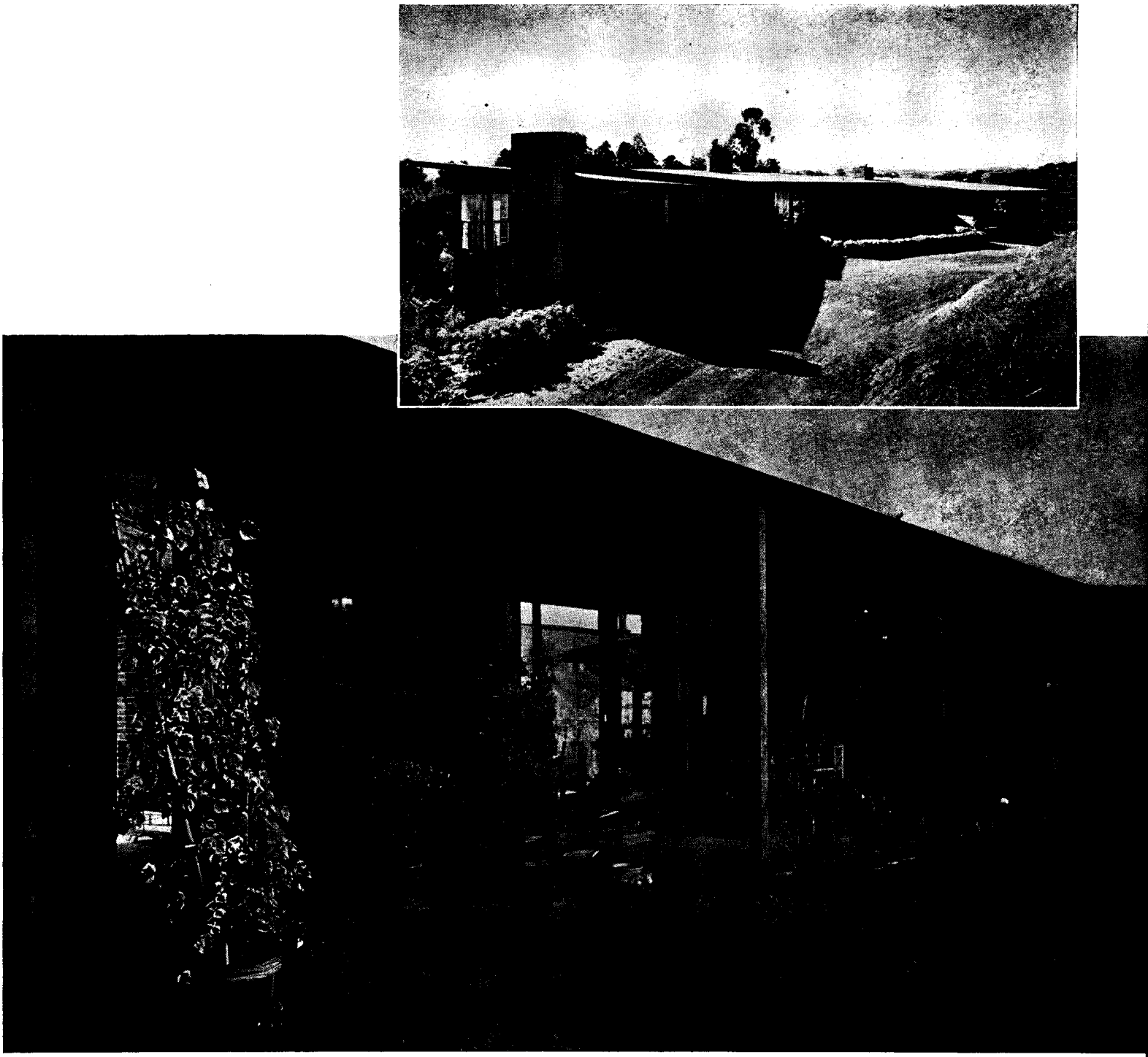
If this house has somewhat the appearance of an outsize flying wing, there is a reason for it. And the architect was a bit reluctant about the whole thing. He was bothered by the "constant intrusion of the sky" on this sun-swept hillock. But the clients insisted, and the view of Mt. Diablo was persuasive too. The problem of glare, coupled with the desire to bring in the outdoors and the view, led to the wide up-angled overhangs and wide low construction which give the house that airplane appearance. The glare was further reduced by a dark stain on the horizontal redwood siding. There was another problem which made its contribution to the far-flung scheme of the plan. The McKibbens have four children and many grandchildren, and they anticipated the inevitable confusion of three generations together on visiting occasions. Thus the master bedroom is isolated, beyond a sleeping porch, at the end of the house. And sleeping rooms for children were tucked in under the huge porch; these extra rooms can be closed off when not in use. Sliding glass doors open the living-dining room to the sheltered front garden, which, with its northern exposure, offers cool shade in summer. On the other side the overhang permits winter sun to warm the porch, and a glass screen protects it against the wind. The porch serves as outdoor living room, especially nice for grandchildren.

ROGER STURTEVANT Photos

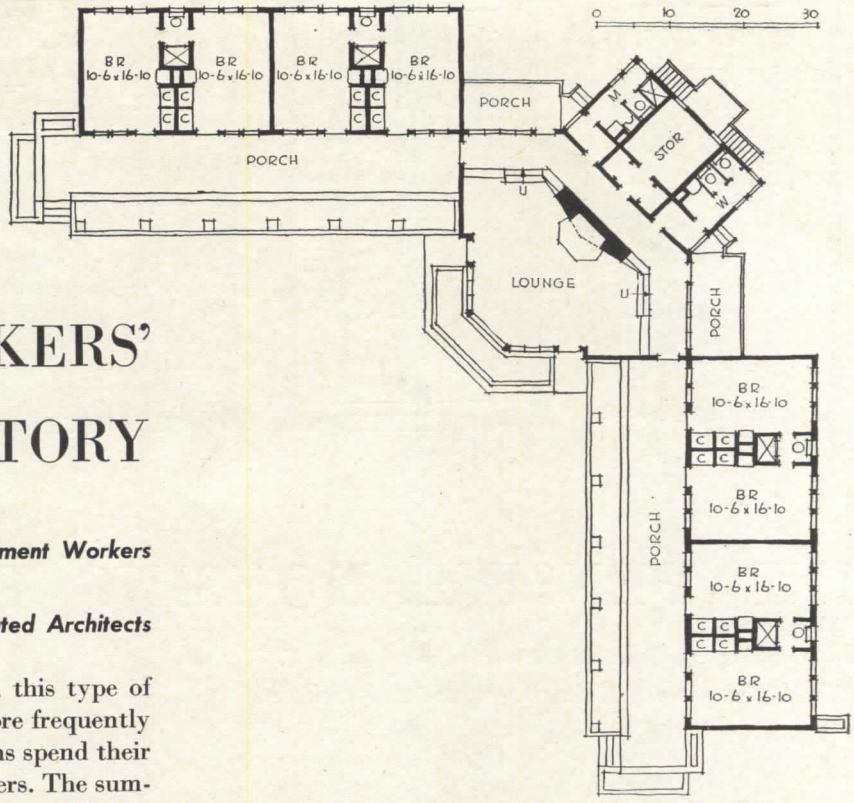








The McKibben house is designed for the informal living that goes naturally with an isolated hilltop site in Contra Costa County, Cal., where views of hills in all directions make for close communication with sun and wind and storm. So the house looks outward, not inward, and the professional decorators' wiles were strictly forbidden; indeed the furnishings represent the family's accumulation of the things that had stood the one test of comfort. An example is the curtains of vertically hung bamboo, in the living room view. The McKibbens insisted on this simple screening, but could not convince the workmen, who insisted on putting in a complicated system of rods, strings, pulleys and the whole works. Despairing of argument, they finally just watched quietly and later when the coast was clear took out all but the rod, achieving simplicity the hard way



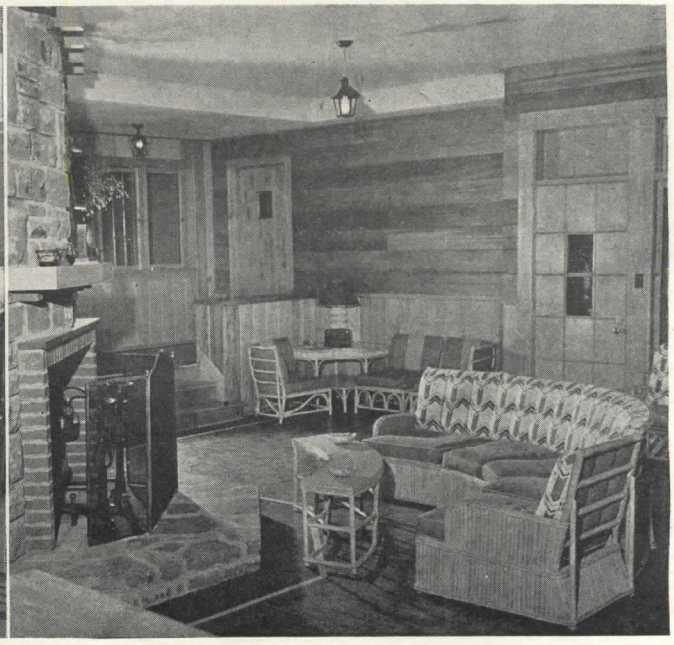
GARMENT WORKERS' SUMMER DORMITORY

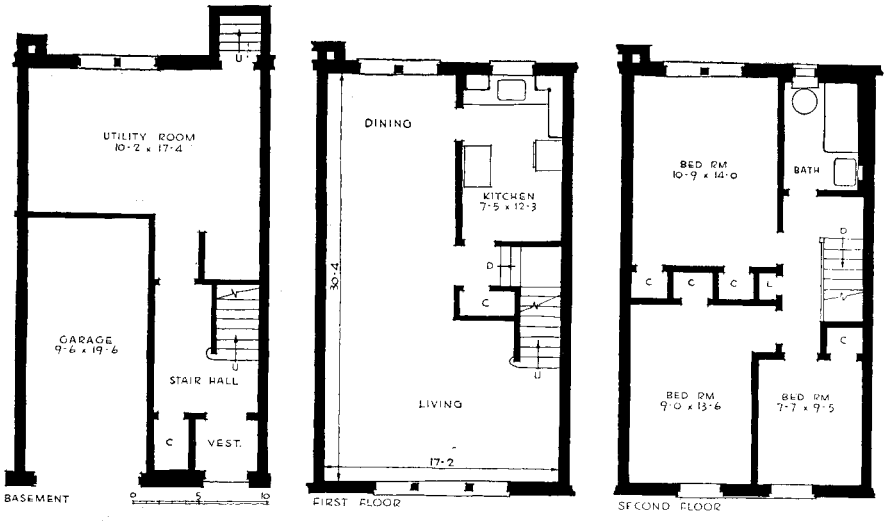
Camp Dormitory for International Ladies Garment Workers Union, Forest Park, Pa.
Alfred March and Robert Kliegman, Associated Architects

AN unusual assignment a few years ago, this type of project may be expected to appear more frequently in the future as more and more labor unions spend their funds to entertain as well as to enlist workers. The summer camp of which this dormitory is a part is an old one; this project was completed just as the war closed down on building. It is strictly a dormitory; all meals are served in another building. And it runs by nature to a playfulness in design expressive of the carefree atmosphere of vacation time. The plan is open, not only for through ventilation, but also for the porch area which serves as additional get-together space. The connecting passage is carried through the lounge as a raised gallery. A solarium, well screened from surrounding grounds, was provided over the service wing.

Woodwork in the lounge is a combination of cypress and cedar. Some of the bedrooms are finished in pine, others in cedar. Bedroom windows are at high level, can be lowered in a slot below the sill to permit full opening. The wall of native stone around the porch was laid up dry around lower flower beds, with mortar at the upper porch wall. A slate coping was installed at the upper wall at a little above seat height

KATHERINE JOSEPH Photos



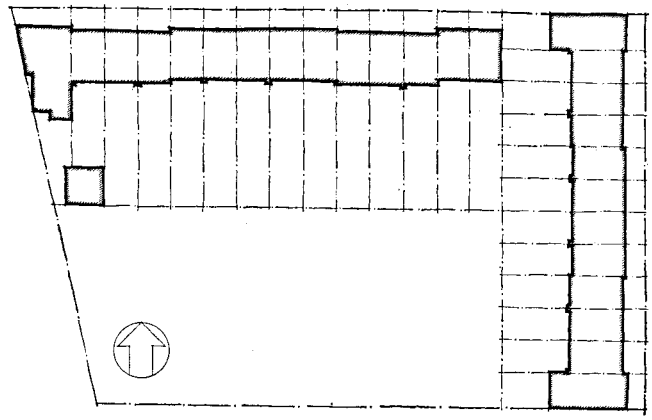


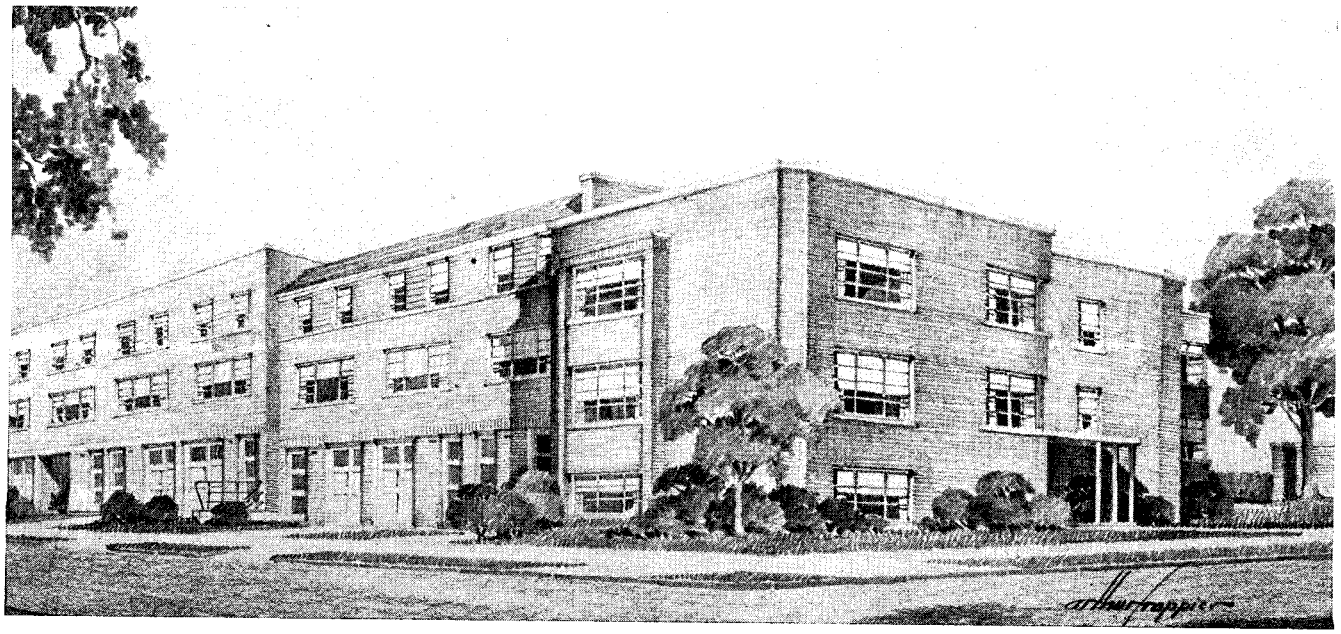
Project includes 26 dwellings for sale to veterans, built under priorities. Except for the corner lots, all are of the typical one-family plan shown. The outside corner unit is a special plan for two apartments, and the end lot has a special unit

INEXPENSIVE HOUSING FOR VETERANS

Row Housing by Oakcrest Estates, Inc., Flushing, N. Y.
Robert Kliegman and M. Sherman, Associated Architects

MAIN purpose in the design of these row houses was to produce a maximum house within existing limitations. Thus modern simplicity was stressed throughout, and all unnecessary frills eliminated. Since the existing grade of the property was higher than the street level, placement of entrances at street level obviated the need for outside stairs and allowed for more flexible and efficient plans above. The stair lands at a central point above, saving steps and keeping the living room free for the full width. A five-foot high closet separates the stair landing from the open living-dining room. This stair scheme also allows a generous vestibule and stair hall on the ground floor, and closet.





DRIVE-IN RESTAURANTS AND LUNCHEONETTES

ARCHITECTURAL RECORD'S BUILDING TYPES STUDY NUMBER 117. IN COLLABORATION WITH RESTAURANT MANAGEMENT

These two types of eating establishment, distinct from each other in some obvious respects, are for other important reasons in common united for joint consideration. Both depend largely for their profitable existence on transient customers, rather than upon a regular or repetitive clientele. These must be attracted by devices in addition to excellence of cookery and efficiency of service. Both, for profit on food at minimum prices, depend on fluid and frequent customer turnover—necessitating maximum efficiency in food-preparation and service layouts.

E. M. Fleischman on page 107 discusses principles in luncheonette planning. Below, Architect Harry E. Werner, on the basis of extensive experience with the type, outlines principles of drive-in planning in California, where a basic circular arrangement appears to have become a wide-spread prototype.

FOR the typical circular drive-in with no formal dining or cocktail room, nothing less than the equivalent of a 150 by 150-ft. corner should be chosen, as the seating capacity and gross receipts of the project are entirely governed by the number of cars that can be parked on the property. When dining and cocktail space are included, additional parking space must be provided.

The drive-in building must be designed to attract the attention of motorists and pull them in. This can be accomplished partly by maximum use of glass. The eating public feels that a crowd indicates good food. Glass reveals the crowd inside, as well as the attractiveness of the building's interior and equipment.

Illumination and illuminated advertising also help to attract the motorist. Large illuminated signs, visible and legible as far away as possible, arrest attention and give motorists an opportunity to reduce speed and get into the proper traffic lane. After they have entered the property, the illumination into which they look as they sit in their cars should be subdued and in no case shine directly in their eyes. This can best be accomplished by neon tubular lighting or by recessed spot and flood lights. If a canopy is used, neon tubing can be made a part of the design, reflecting softly against the lower side of the canopy and illuminating the building and parking space. Recessed lights under a canopy will throw the light downward and leave the canopy in darkness . . . a very unattractive effect.

If soft-colored illumination is used on the outside, stronger recessed spotlights can be used over the counter and service areas, thereby attracting the eye through the soft light to the final goal . . . the interior. Care should be used, however, to shield this strong light from the eyes of customers. Care should also be taken in the selection of neon colors, as certain colors distort the appearance of food and the ladies' make-up.

In California, most drive-in operators prefer a wide canopy. A width of 18 ft. will protect service to both front and rear car doors. It may be of cantilever construction, either wood or steel — easily adaptable to any type of construction or fire requirement.

The service walk under the canopy should be three and one-half feet wide. Wider walks will force the cars beyond the canopy; narrower walks will be obstructed by car bumpers. The walk should be raised six inches above the parking lot; over six inches makes a tiring step for the car hops; less than six inches permits cars to jump and obstruct the walk or break the glass. The parking area should slope away from the curb at the rate of ¼ in. to the foot; more induces the cars to move

if brakes are not set; less does not handle drainage.

All parking areas and traffic lanes should be distinctly marked with traffic-white in order to encourage the maximum amount of parking.

Drive-ins are designed primarily for speedy service from the standpoint of both customer and owner. The more rapidly a car can be served, the more the turnover. Drive-in customers do not like to linger. To obtain this speedy service, care must be used in the selection and arrangement of equipment and fixtures, eliminating lost motion and double and triple handling.

The average car hop can handle six cars. Sufficient pick-up space should be allowed for fifty per cent of the required car hops at one time. They themselves should be able to secure all service set-ups, trays and water, obtainable from wings at each side of the pick-up counter.

All checking is done at the time food is delivered to the car hops; therefore, the cash register should be centrally located in the pick-up space.

Counter men serving the car hops should, by taking not more than three steps, be able to reach the pass port from the kitchen, coffee urns, malt mixers, fountain, and refrigerated bottle box.

Inside the port, the cooks should have at their fingertips a make-up table with refrigerated salad cabinet below, a steam table, griddle, waffle irons, deep-fat fryers, and a reach-in refrigerator.

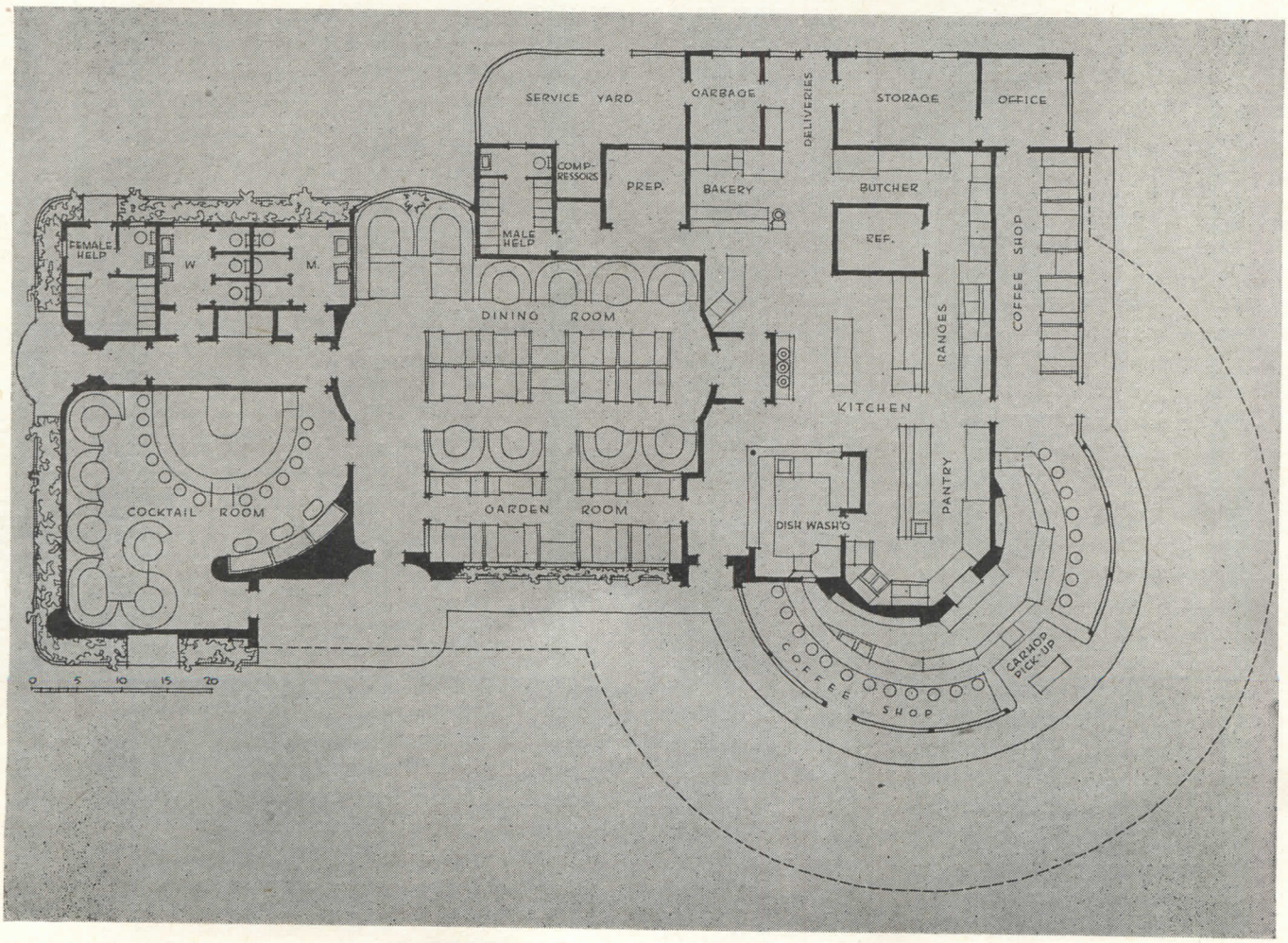
Adjacent, but not interfering, should be ample range space, baker's table and bake ovens, sinks and preparation space.

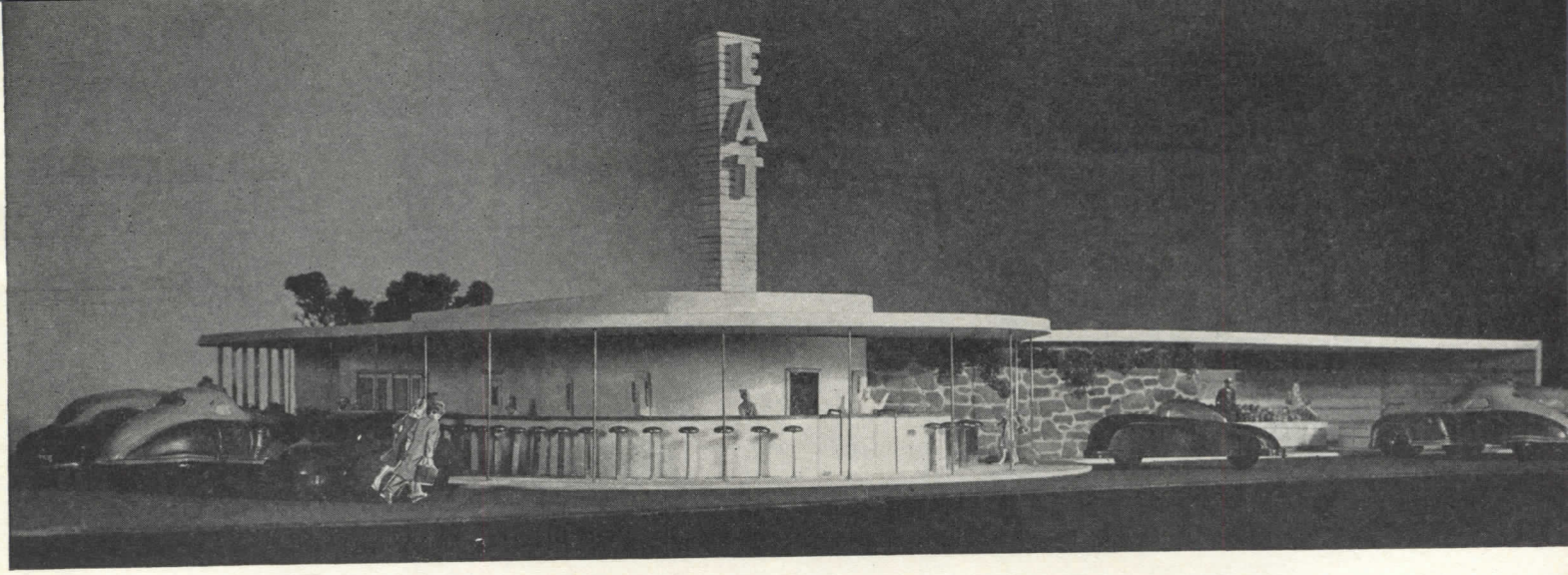
Too much emphasis cannot be placed on the dishwashing compartment. Regardless of the efficiency of kitchen, counter service and car hops, all can be bottlenecked if there are not sufficient clean dishes, glasses and silverware.

This compartment should be located so as to be accessible to car hops from the outside through an automatic pass door, to the inside counter service, and to the kitchen. It is well to conceal this compartment from the public as it is impossible to keep it as clean in appearance as the balance of the building.

When a dining room is included, this area must also have easy access to the dishwashing compartment. The preparation ranges, sinks and baking table can also serve this room. Additional pantry space, steam table, refrigerators, coffee urns, etc., should be provided. Where possible the layout should be such that during quiet hours one cook can handle the entire kitchen.

Below (see also frontispiece, preceding page): Carl's Drive-In Restaurant, Los Angeles; Harry E. Werner, Architect. On a plot 218 by 355 ft., this drive-in offers dining, garden and cocktail rooms in addition to the typical basic circular car and counter services

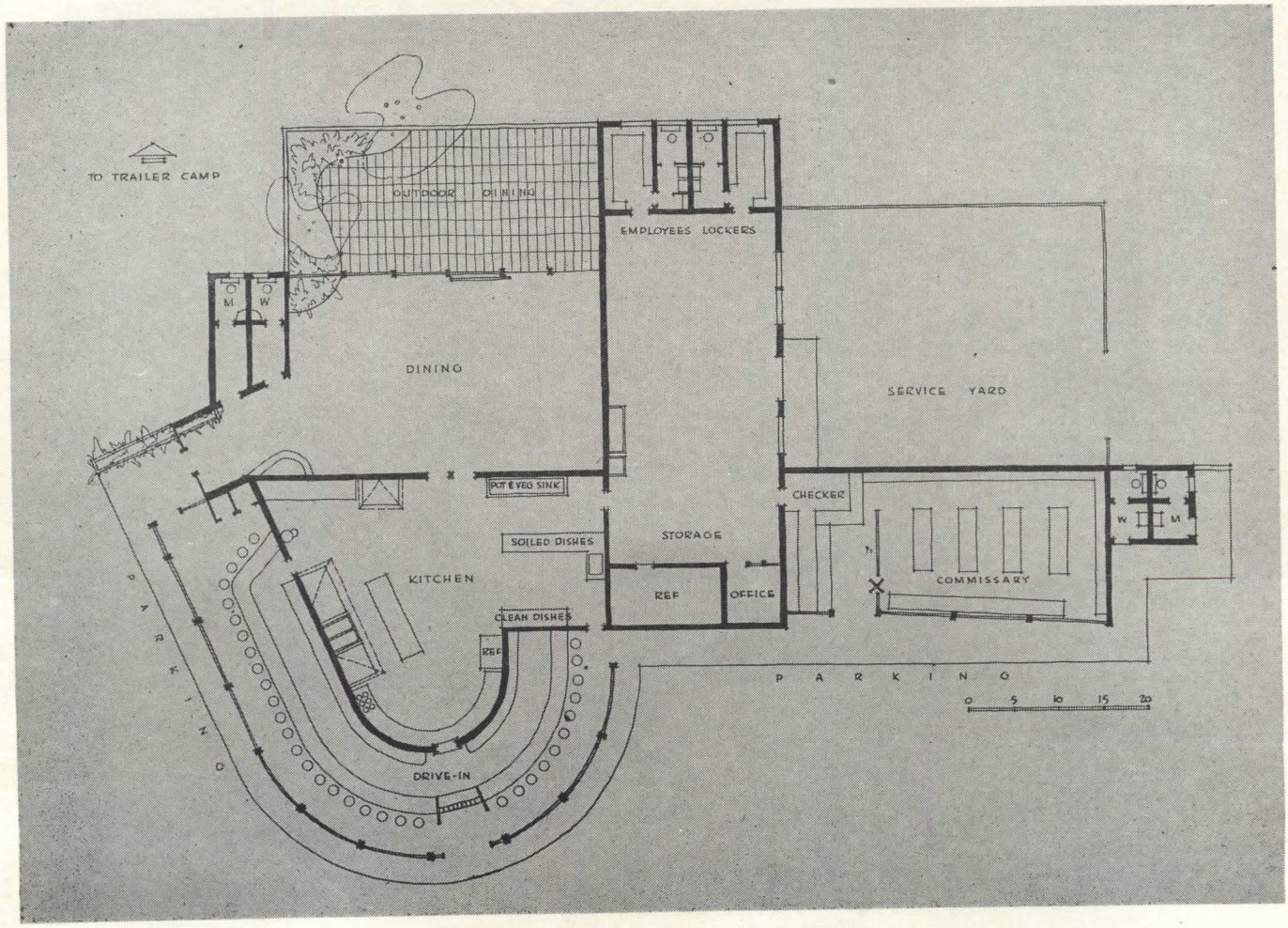


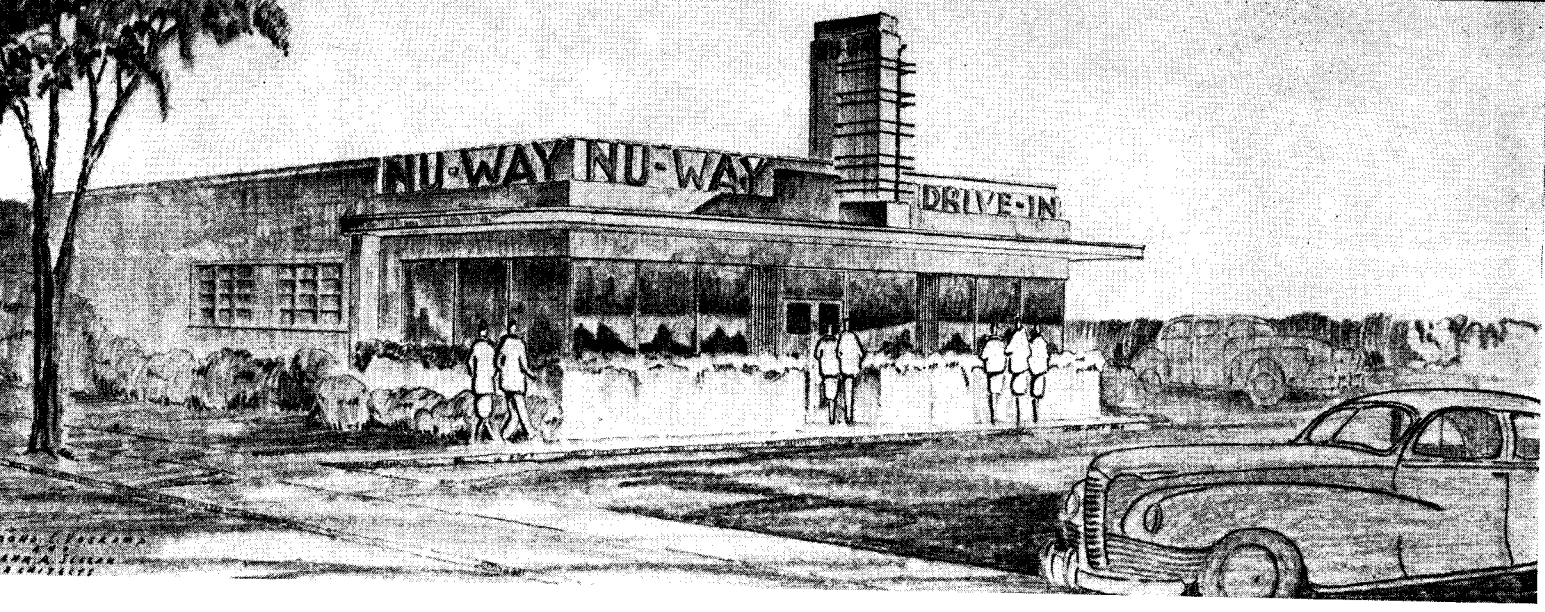


CIRCULAR DRIVE-IN INCLUDES COMMISSARY

CONFIRMATION of many Werner principles are evident in this plan by another architect for a drive-in at Van Nuys, Calif. Employing an almost identical arrangement of car-hop facilities, he has also similarly achieved a convenient placement of the dishwashing area, equally for car, counter and dining-room servers. Differing regard for local climatic tradition has, perhaps, in this case produced a reduction in the dimensions of the canopy. Also this architect, in place of a cocktail lounge, chooses to include a commissary. Construction will be wood frame and stucco, with portions of stone veneer.

Louis Shoall Miller, Architect

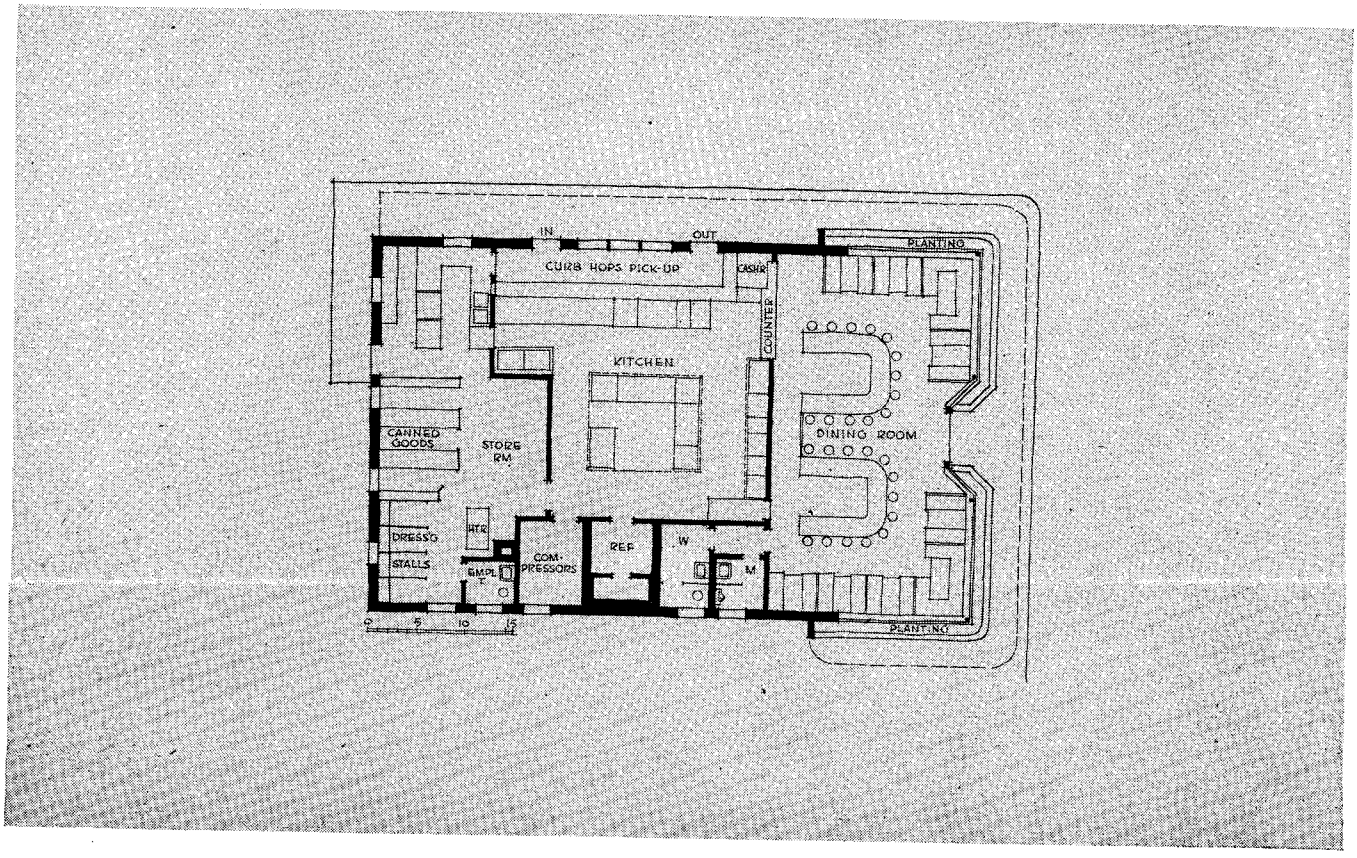


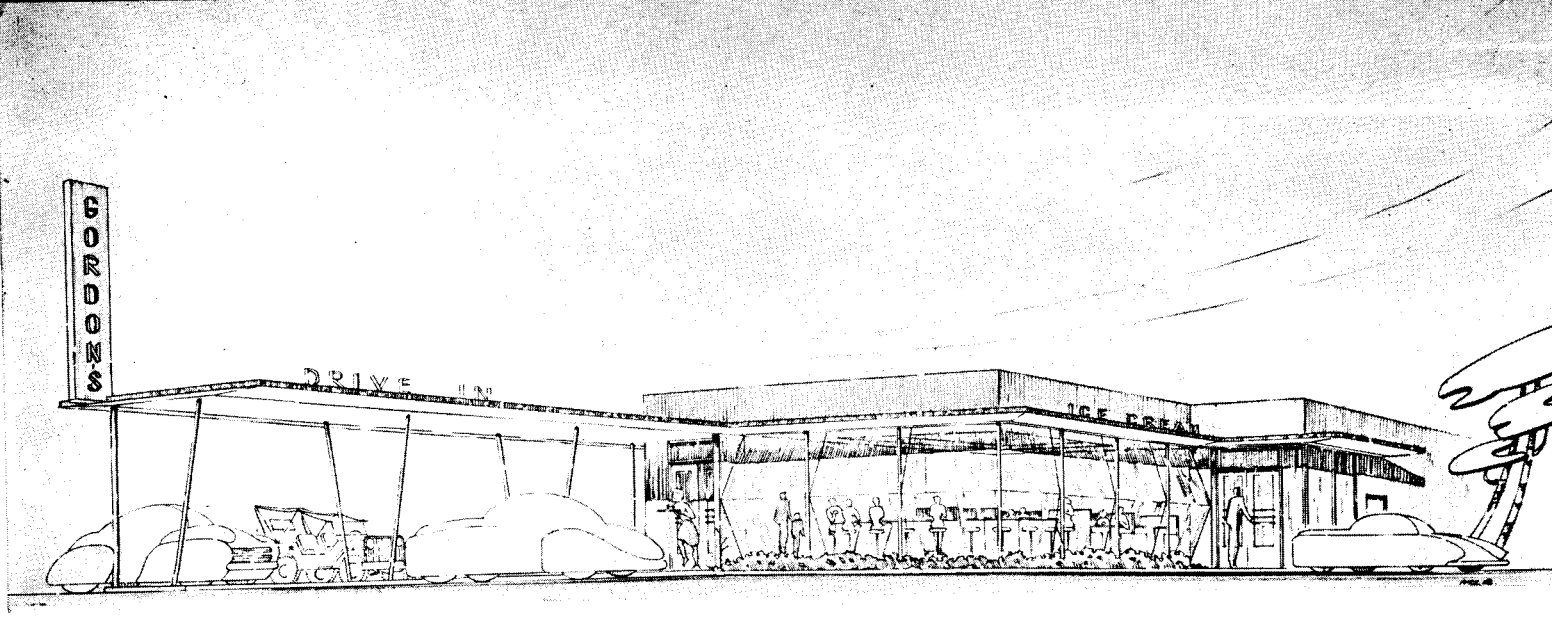


RECTANGULAR PLAN SEPARATES SERVICES

Raymond L. Voskamp and Frank R. Slezak, Architects

THIS rectangular Kansas City version, in common with the California prototype, shows free and effective use of plate glass; follows similar canons in lighting, with neon tubing on the display tower, fixtures reflecting on the underside of the canopy and semi-indirect interior illumination drawing attention into the dining room. The plan, however, almost completely separates car-hop and counter services. Cashier's location, convenient for car hops, is less so for booth and counter servers. Position of dishwashing area (upper left in plan), handy for car hops, requires long-distance bussing of dining-room dishes. Construction is concrete block; light buff stucco outside; plastered inside and painted.

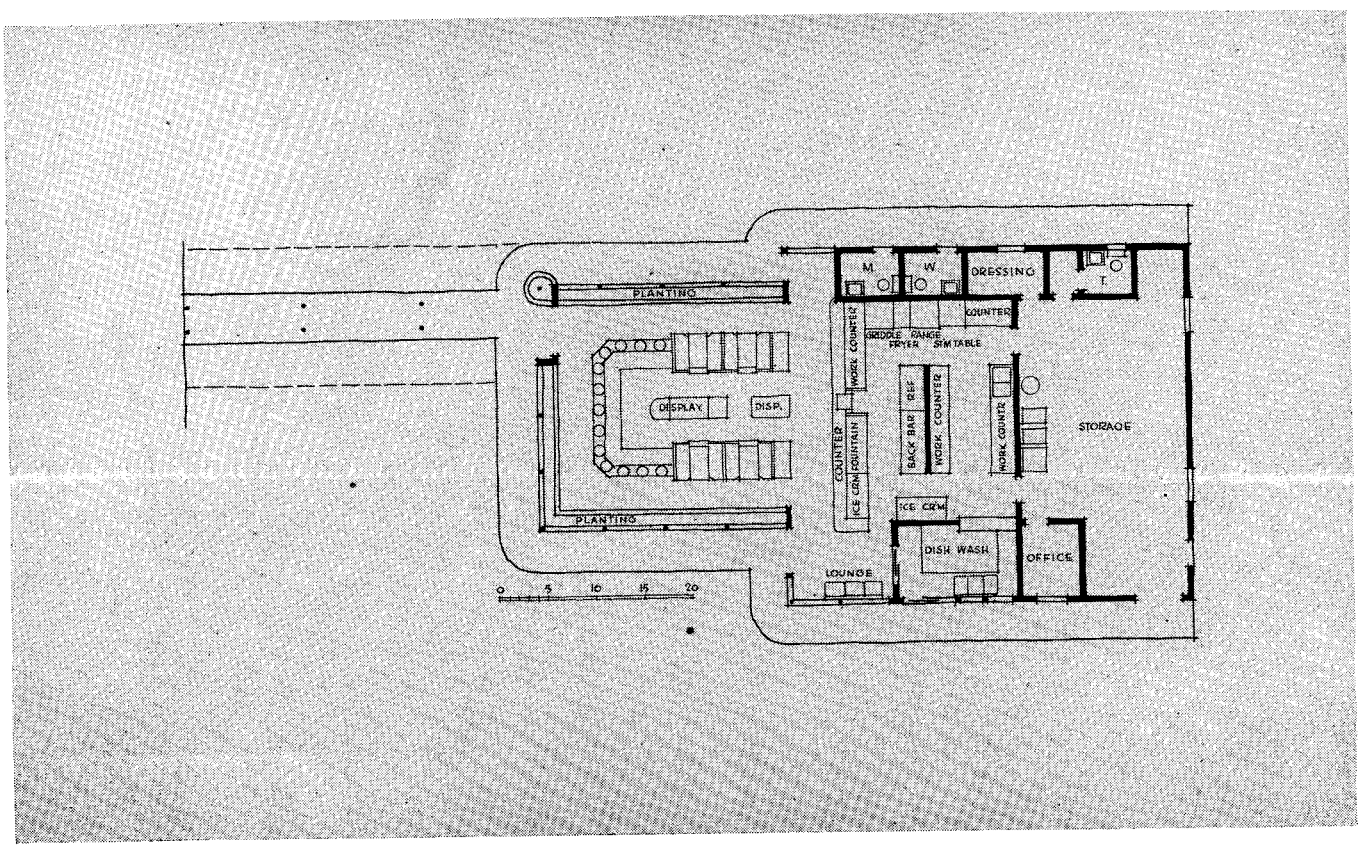




RECTANGULAR DRIVE-IN WITH NON-GLARE FRONT

DEPARTURES from the circular prototype occur also in California. Sheets of plate glass in this one at Richmond are canted out from top and bottom, supported at meeting point by 2½-in. pipe columns. Flat roof is water covered. Plan permits both booth and counter service from inside "horseshoe." Curb service is from the general counter rather than a special pick-up center. Dishwashing area is convenient by pass port to car hops; is relatively so, also, to booth and counter area. Cashier's location between fountain and work counter in plan is more favorable to counter servers, less to car hops. Construction is wood frame; exterior surfaces, cement plaster; interior, plaster on gypsum lath.

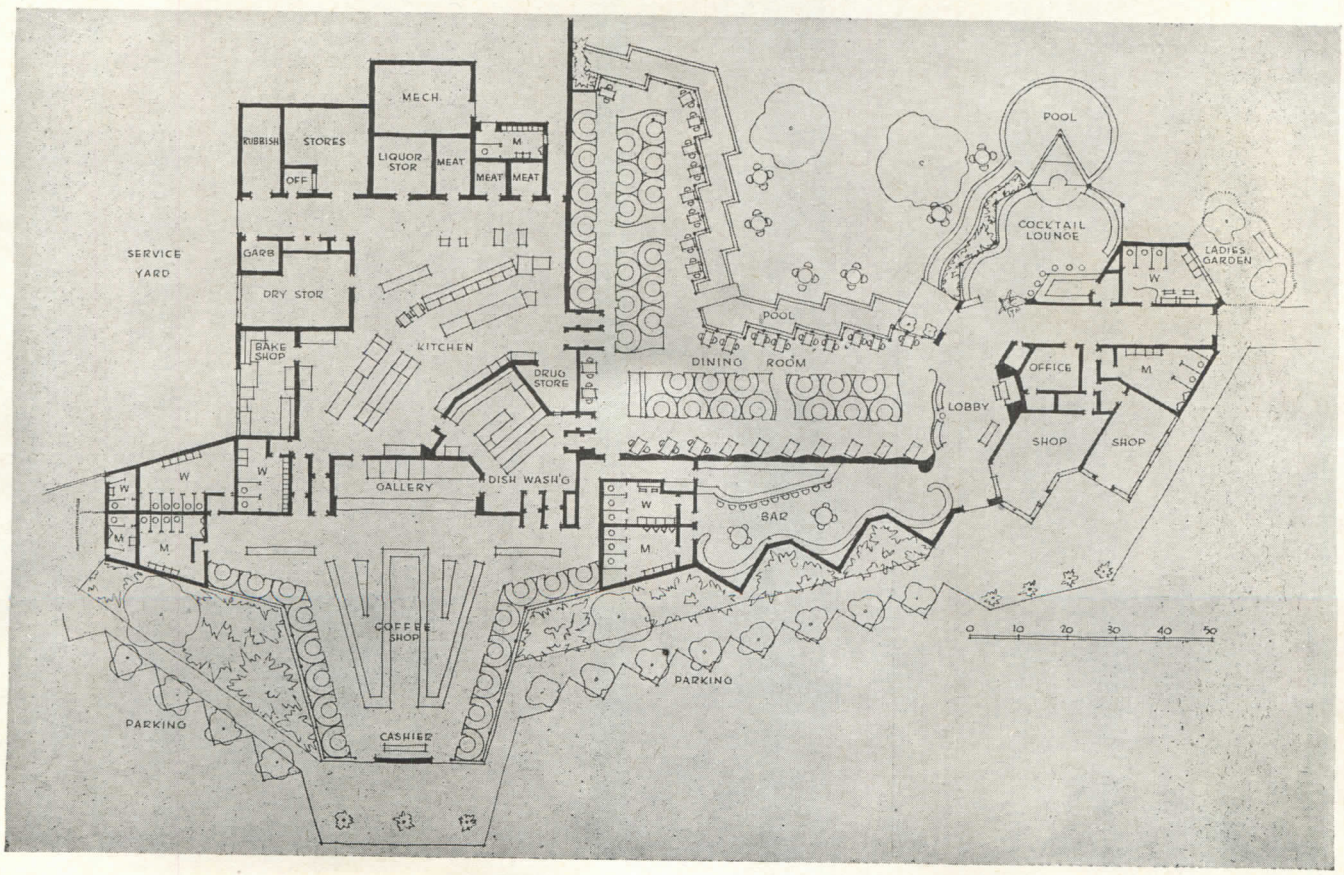
Hardison, Rhoda & Moist, Architects

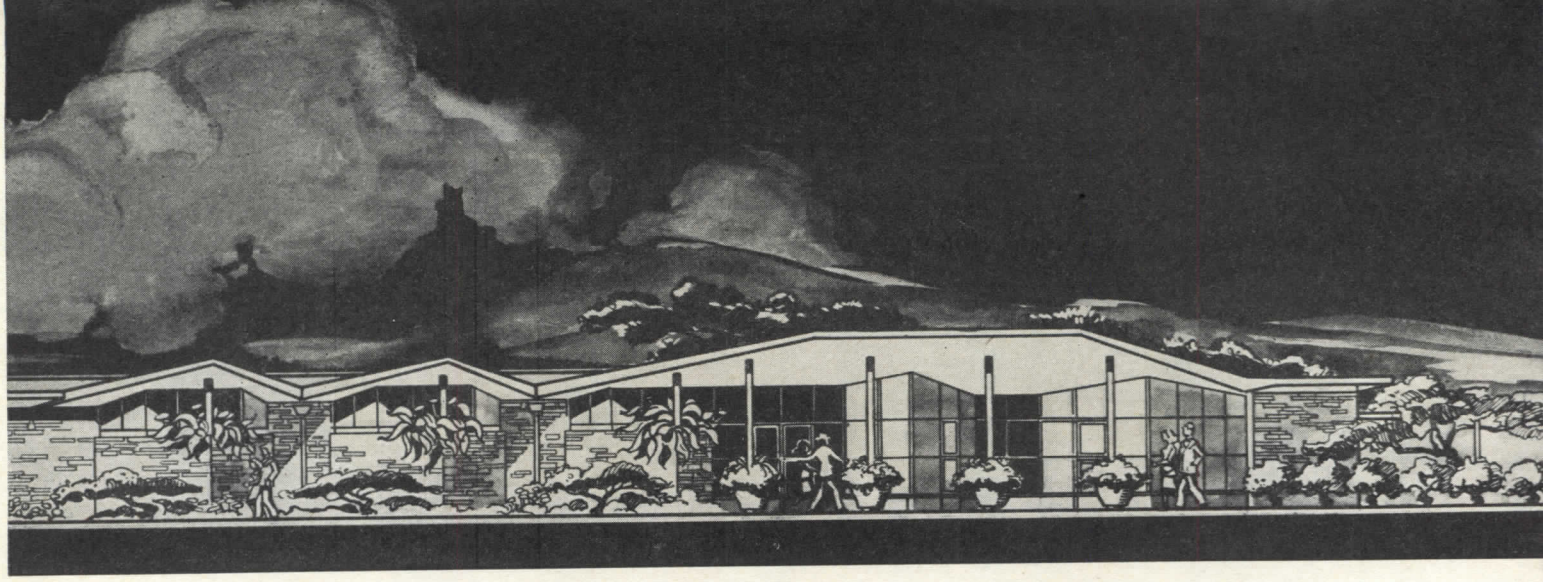


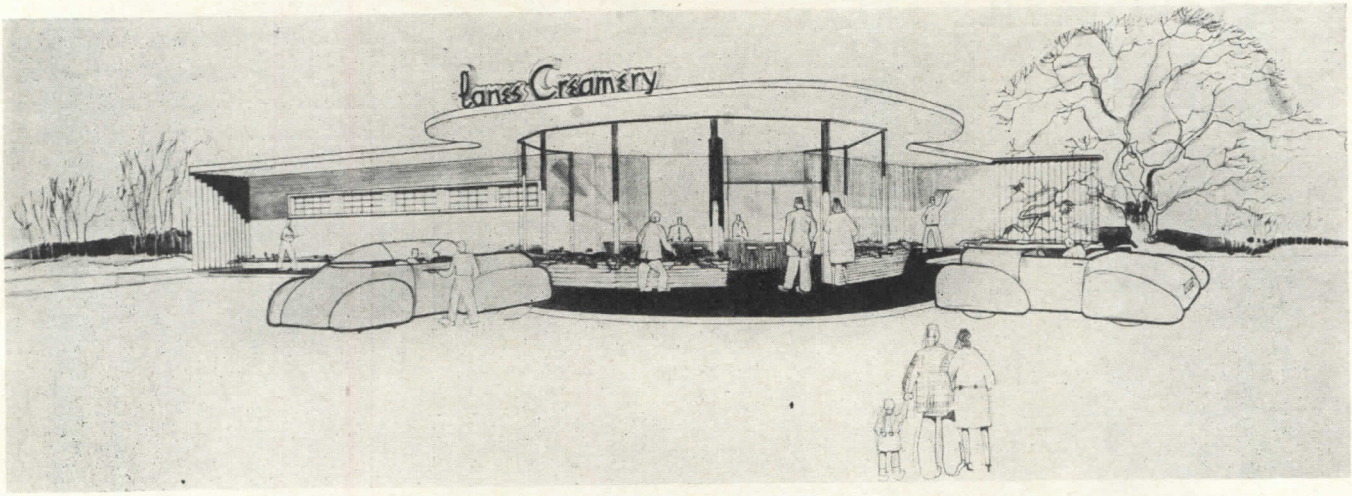
COLOSSAL DRIVE-IN FOR SUPER SCENERY

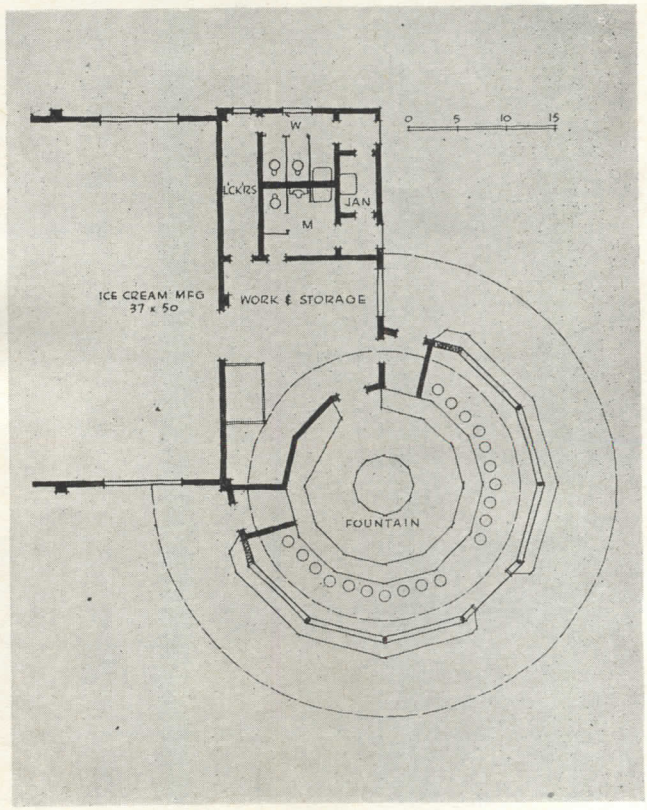
Robert Stanton, Architect

LOCATION of this proposed drive-in will be on the main four-lane highway between San Francisco and Los Angeles, "in a small valley rich in citrus ranches and surrounded by mountains." It is to be the initial building in a group eventually to include a central hotel building, cottages and shops. Construction will be of local stone, with steel frame roof and pipe columns to withstand earthquake stresses. Interiors will be treated wood and colored plaster. Large areas of glass will permit close association between inside and garden dining spaces; a water course at the level of the patio will be circulated by pumps and stocked with tropical fish.









DRIVE-IN OUTLET FOR ICE-CREAM

Lawrence Gentry, Architect

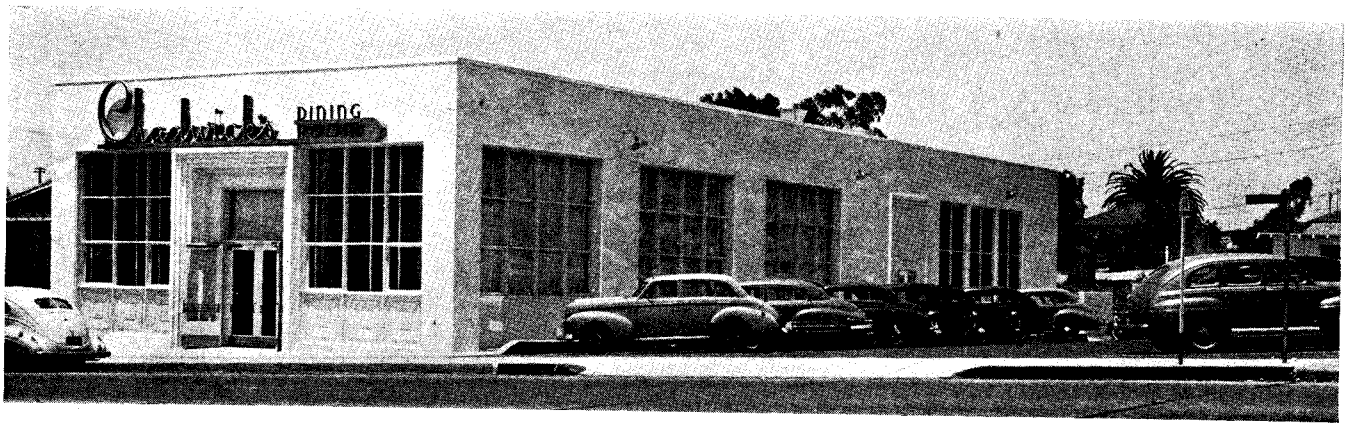
RETURNING for a moment to circular orthodoxy, this project now under construction at Mountain View, Calif., combines the processes of ice-cream manufacturing with the principles of drive-in distribution. Construction is wood frame; steel roof framing over the fountain. Exterior wall surfaces are stucco with brushed texture; interior walls are of hardwood plyboard. Compressor and other heavy machinery are in the basement.

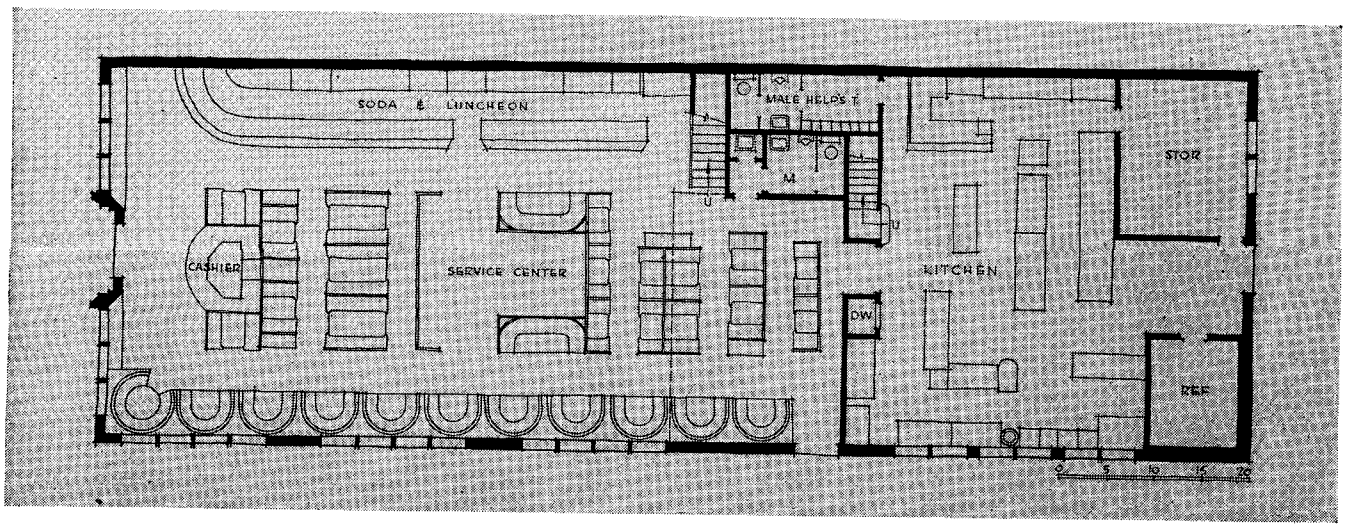
GENE LYLE Photo

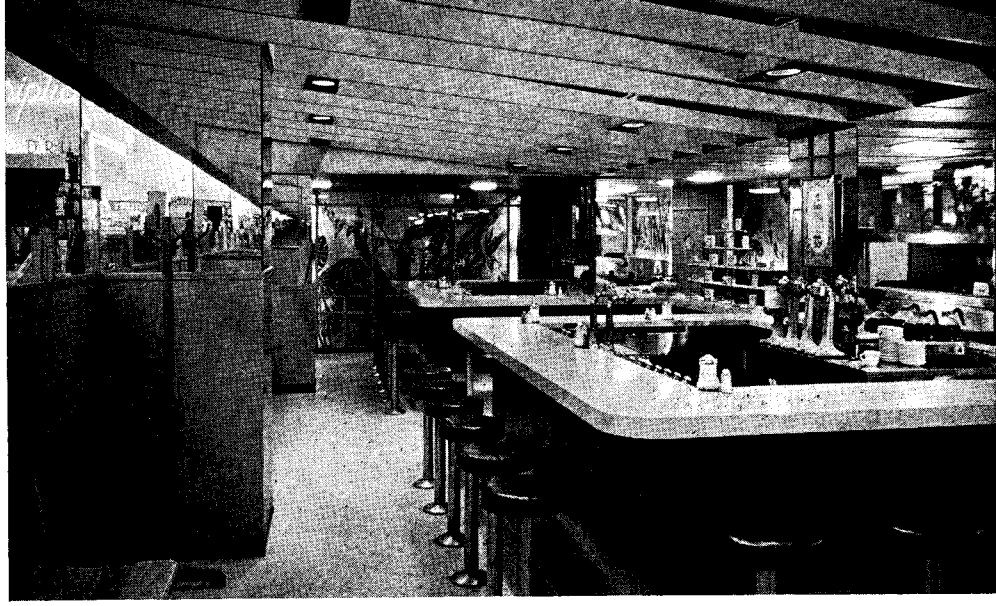
CENTRAL SERVICE AREA INCREASES EFFICIENCY

Frank L. Hope, Architect

LOCATION, size and parking features retain this example, at San Diego, Calif., in the drive-in category, although many characteristics make it a logical cross-over into discussion of the luncheonette type. Position of cashier and arrangement of booths and counter in relation to preparation and service areas imply many of the principles of luncheonette planning outlined on pages 107 to 109. Loose relationship between kitchen, booth and counter areas, not endorsed by Mr. Fleischman, is offset by provision of the service center.







Soda-luncheonette in the Owl Drug Store, Hollywood and Vine, Los Angeles. Floor, step and base of counter are pale grey, white and small amount of red terrazzo. Counter top is beige; front, gun metal; stools, red. Rafters and walls are darker beige. Soiled-dish conveyor moves along entire length of counter, concealed from customer. Alyne Whalen, Designer; Fred L. Schmid, Vice President, United Rexall Drug Co., in charge of layouts

PLANNING THE MODERN LUNCHEONETTE

***By E. M. Fleischman** **

LUNCHEONETTE design is preponderantly a question of adapting layouts and architectural treatment to limitations of space within existing structures. The first architectural requirement is an inviting entrance — attracting patronage and allowing free flow of traffic in both directions. A dark and uninviting entrance, jammed with people in confusion, does not promise the prospective patron anything but an inefficient and not very pleasant atmosphere for the taking of food and refreshment.

Counter Seats vs. Tables

If the operation is to be small or medium sized and the location is a busy one, counter seats should predominate in the layout — in fact, they are best for the entire operation. The turn-over will be much faster; the cost of operation much less than with tables.

If the luncheonette is large and the location busy — counter seats still should predominate and be placed nearest the entrances. The balance of the available space may then be devoted to tables or booths, or both. In this case care must be taken to provide space at the counter for the servers of tables and booths, as well as easy access to the kitchen.

People like to sit at counters for many reasons. As against sitting at a table awaiting server, and then food, a patron at the counter has much closer contact with counterman or girl. He can see various food items at close view instead of picturing them from a menu. He can change his mind without being a nuisance, by calling out to the counterman to leave out this or add that. He can quickly secure condiments or extra cream, butter, bread or water.

If the operator desires tables to invite "off-hour" business, or for dinner, it is wiser to use two seaters placed a few inches apart. When demand arises for three or four in a party, two tables are simply pushed together.

Booths waste more space than all other systems. They are also the slowest in turn-over and the most difficult to serve properly. Also, four-seater booths tend more than tables to be occupied by only two patrons; 50 per cent of capacity is wasted.

If the location is in a home or suburban section, booths or tables may be an incentive for some customers. But care must be taken in their arrangement. There are four good ways to use the space along the two long walls: as aisles for free circulation of customers and waitresses; for two-seater booths; for two-seater tables; for four-seater tables placed with one point of table near wall, allowing the four chairs to be placed so that they do not obstruct the aisle, also permitting each place to be served easily. Tables or booths, open at both ends, may be used in the balance of the space available. A popular system is two-seater booths next to each other with a 4-ft. partition along the center line.

Types of Layout

The first and simplest form of luncheonette consists of a counter with fixed stools, the length of counter determined by the over-all interior dimensions, and the amount of space required for the kitchen and other facilities. If the existing space is wide enough for kitchen and washrooms to be placed behind the counter, practically the entire length can then be utilized for the counter. In such case a central entrance to the kitchen from behind the counter is desirable. Preferred is a central entrance from behind counter and a rear entrance for deliveries. If only a central entrance is used from behind the counter, make the aisle in rear and the aisle space behind the counter wider to allow for deliveries, removal of garbage, etc. without confusion.

If the space is not wide enough for kitchen behind the counter, space must be cut off from the rear. One quarter of the length of the space as a minimum should be

** Vice President of A. Schulte, Inc. Treasurer and Vice President of N. Y. State Restaurant Assn. Former Director of National Restaurant Assn. This article is essentially a digest of the chapters on design and planning from the author's forthcoming book, "Modern Luncheonette and Restaurant."*

used for the kitchen if basement, mezzanine or upper floor is available, and one third or more if not.

It is good business to have washrooms for customers. When cutting off rear part of space for the kitchen, it is advisable to use the section cut off opposite the counter side for washrooms.

In some places where ground floor space is limited, customers' washrooms may be placed on mezzanines, other floors, or in the basement.

If the space is shaped like an L with one part long and the other short, the rear part is, as a rule, the short end of the L. In such a case this section will make an ideal kitchen space. In a T shaped space, the long part will be the counter, one upper side of the T will be the kitchen and the other upper side of the T may be men's and women's washrooms.

To determine on which side of a luncheonette to have the counter is important. Here is a fairly good rule to follow for "inside the block" locations: People keep to the right on most sidewalks. Therefore, the counter should be placed to the left side looking in. The entrance should be in the center, or on the right side looking in. If planning for a corner location, place counter on opposite wall from entrance, so that it may be seen from the street.

If enough space is available, two doors into the kitchen are preferable. One "In" and one "Out" door prevent accidents and speed up traffic. If the kitchen is behind the counter, openings should be provided counter high for passing out hot dishes and salads, clean dishes, glasses and silverware; and below counter height for passing in trays of soiled dishes. These aids cut down walking, carrying of trays, and will speed up service.

A popular type of layout is a U-shaped counter, either in single or multiple form — two, three, or more sections, joined together to form one large unit. These are favored greatly by chain and department stores, because of space economy and ease of operation.

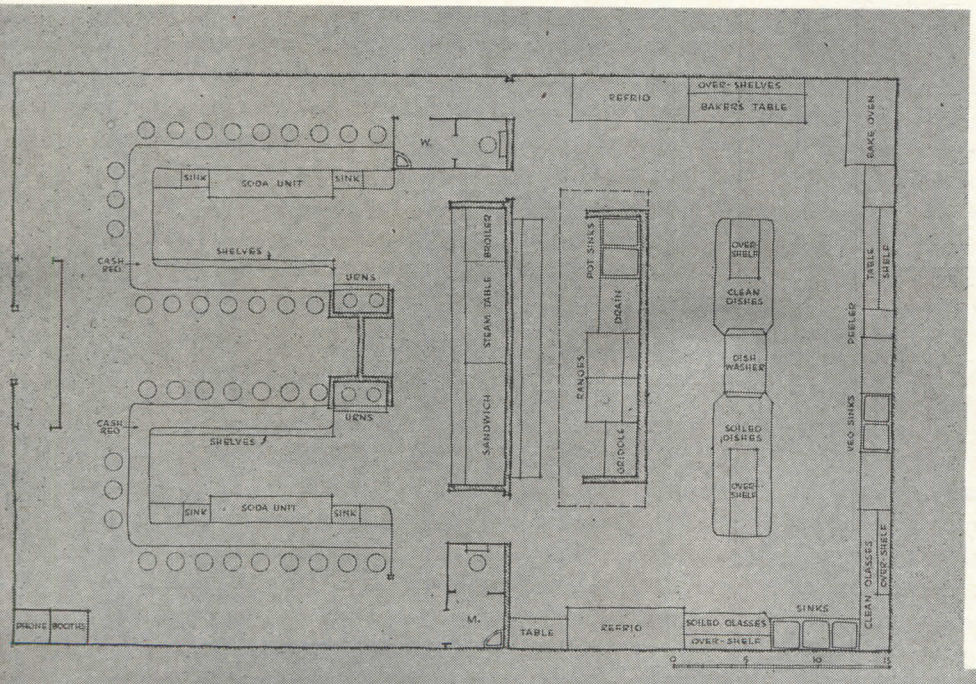
The bays may be only 8 to 10 stools each or they may run as high as 30 and 40 stools. The usual layout for small seating capacity bays is to have the equipment placed at the point where two bays meet in rear. The equipment is placed across the meeting point of bays facing the rear of the store.

If bays are large and counters tall enough to carry the equipment, the layout is the same along one side as for a straight counter. Along the other side there is shelving for dishes, pies, napkins, etc. If bays are low, serving equipment must be placed at the point of meeting of the bays or against the rear wall.

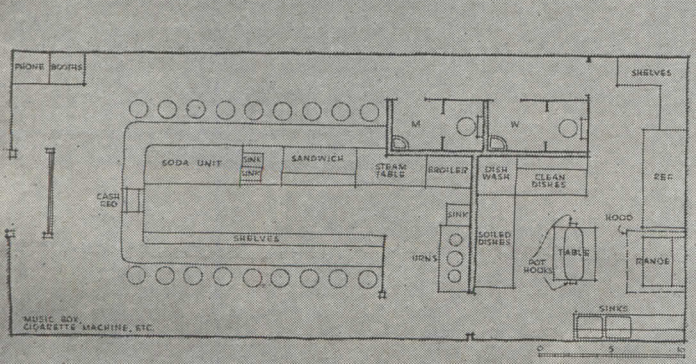
Quite often these multi-counter operations are combined with additional tables or booths, in which case service is supplied from the same serving stations, sometimes reinforced by service from the kitchen proper.

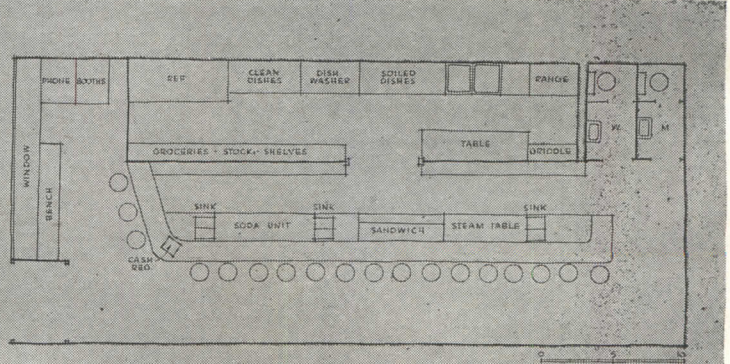
Stools and Counters

The spacing of stools is determined primarily by whether or not they have backs. With backs, more space is



Basic counter types and equipment requirements: Type A (below), straight counter with kitchen behind, shows kinds and layout of equipment required for efficient typical luncheonette service of 18 stools or less. For 18–24, same equipment should be spaced out. For 24–30, duplicate soda unit at other end of counter; increase size of other units. For over 30, place larger soda unit in center; duplicate other units for 18 stools on both flanks. Type B (below, left), U-shaped counter with kitchen behind, 18 stools. Increase of stools up to 30 may be accomplished with increase and rearrangement of equipment similar to that for straight counter. Stools in excess of 30 are usually best accommodated by an arrangement of multiple U-shaped units, using Type C (left) as a basis for layouts





needed to allow persons to turn on the seats to get in or out. Good practice is to use 24 in. centers for stools with backs; without backs, 22 in.

Stools, with counter heights of 32 in. to 42 in., require foot rests. Some systems have individual rests; others require a rail fastened to the counter or floor, or both. A popular solution is a counter built-in foot rest, approximately 7 in. wide and of a height suitable to counter and stool.

Another solution is to use stools of normal chair height (18 in.) placed on a platform 18 in. to 24 in. wide. The height of the platform will vary with counter height.

Many modern counter installations are as low as 30 or even 28 in., practically precluding the use of equipment behind the counter and necessitating its placement along the rear wall. This counter height is popular, particularly with women, because it does away with foot rests or platforms and the possibility of accidents. The stools used with this installation are normal chair height of 18 in. Frequently with this arrangement the floor behind the counter is lowered 6 or more in. permitting the installation of equipment behind the counter.

Counter tops should be of a material which does not discolor, scratch or chip easily. The best woods for the purpose are mahogany, walnut, maple, knotted pine, or birch, usually left unstained and impregnated with oil and beeswax.

Black glass will scratch and chip. Rubber will discolor and wear away too quickly. A good grade of inlaid linoleum, if waxed frequently, will stand up quite well. Stainless steel is good, but not as warm looking as other materials. Marble is good but expensive, and heavy construction is necessary to support it. Tile, in one color or combination of colors, is economical and durable. Terrazzo is very good and clean looking in various colors or in one shade. The entire counter, front of counter and foot rest may be continued, to blend into the floor.

Formica or similar type of plastic, in thin sheets or bonded on wood, stands up very well under heavy usage, does not discolor and needs no particular maintenance except hot water and soap.

Kitchen Equipment

Size of steam tables should be in proportion to the anticipated volume of business. Most places underestimate their requirements in this respect. It is far better to have extra capacity at first than insufficient space later.

Cutting boards in conjunction with the steam table, are useful for handling plates and carving meats. The board may be as narrow as 5 to 6 in., or wider if there is sufficient room. (While implying the question of aisles behind counters, we advise that as much clear working space as possible be allowed. Certain cities have laws specifying no less than 30 in.; some require 36.)

Floors should be of tile, terrazzo, concrete or a magnesium composition, and should be pitched to drains. A hot water faucet with a threaded end should be available for hose flushing. A sanitary edge all around the room should be 6 in. or 8 in. high, rounded at corners and part of the floor proper, to discourage the breeding of vermin and rodents. All equipment should be on legs, except built-in refrigerators or ranges. Ranges, ovens, broilers and fryers should be placed on bricks or a raised solid platform. Ranges should, as a rule, be near the rear wall, properly hooded so that exhaust fans in the hood will draw fumes and odors from the other part of the kitchen towards the rear and then out.

Refrigerators: Two smaller ones may well be more convenient and flexible than a large one — one at about 40 degrees for vegetables, dairy items, eggs, fruits and general purposes; and another, at about 36 degrees for meats, fish, etc. A freezing cabinet in which to keep frosted foods is desirable. This should be in a separate room away from the heat of the kitchen.

Spreader plates are useful between ranges to hold pots and pans. Arrange to have a cold water faucet on a swivel handy at ranges.

Decorating — Painting — Plumbing

As a rule, it is unwise to have dark walls in a food shop. Light colors — salmon, rose, green or blue with gold or silver — with darker borders of the same shades will be attractive. Mirrors make a store cheerful. They reflect light and brighten the place, besides making it appear larger. People like to look in mirrors.

Brass pipes are a good investment. Unless local regulations prevent it, try to get a union coupling in as many places as possible for hooking up equipment. It will enable any defective apparatus to be removed, repaired or replaced with a minimum of time and effort.

Savell faucets instead of the old-fashioned screw shank type will prevent leaking — an expensive loss.

If using dumbwaiter from basement or mezzanine, make sure that it is a sturdy one, with steel cable and steel body rather than wood, which absorbs drippings — a breeding place for vermin.

There should be plenty of electrical outlets on back bar, in dining room, behind cashier's desk, in kitchen, stock room and washroom. Fuse boxes should be conveniently placed, easily accessible and plainly marked with the designation of each station and outlet. Try to get machines of the same voltage throughout the store.

Have plenty of non-glaring lights in kitchen. Accidents will be cut down greatly and glasses and dishes will be washed cleaner.

Lighting — Cashier's Desk

A well-lit place invites trade. Fluorescent lights are economical in operation and flexible for use on back bars in various treatments. It is inadvisable, however, to use white light alone. The coffee will look greenish and other foods will appear unnatural. This defect can be overcome by combining different color tubes — daylight, rose or light amber. The combination of incandescent lights with fluorescent is also good.

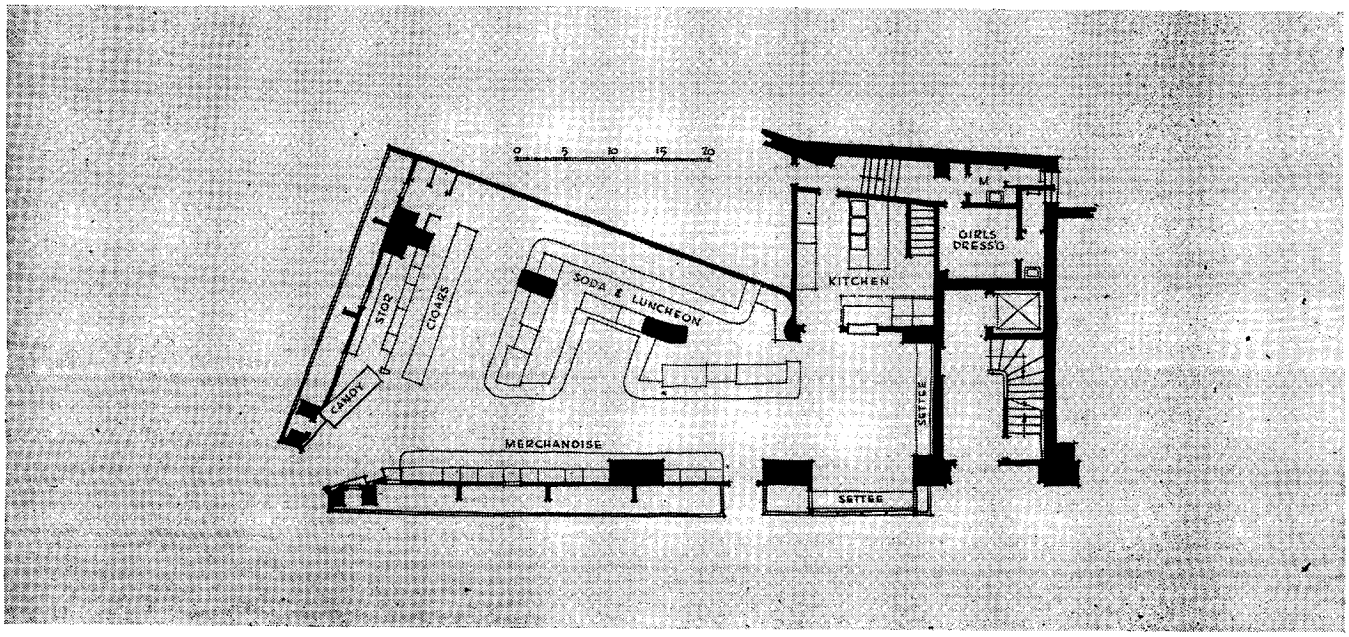
The cashier's desk should be sufficiently large to take care of several customers at once, and placed near the entrance for control and supervision, but not so near as to cause congestion. It may have a small case for the sale of cigars, chewing gum, candy, etc.

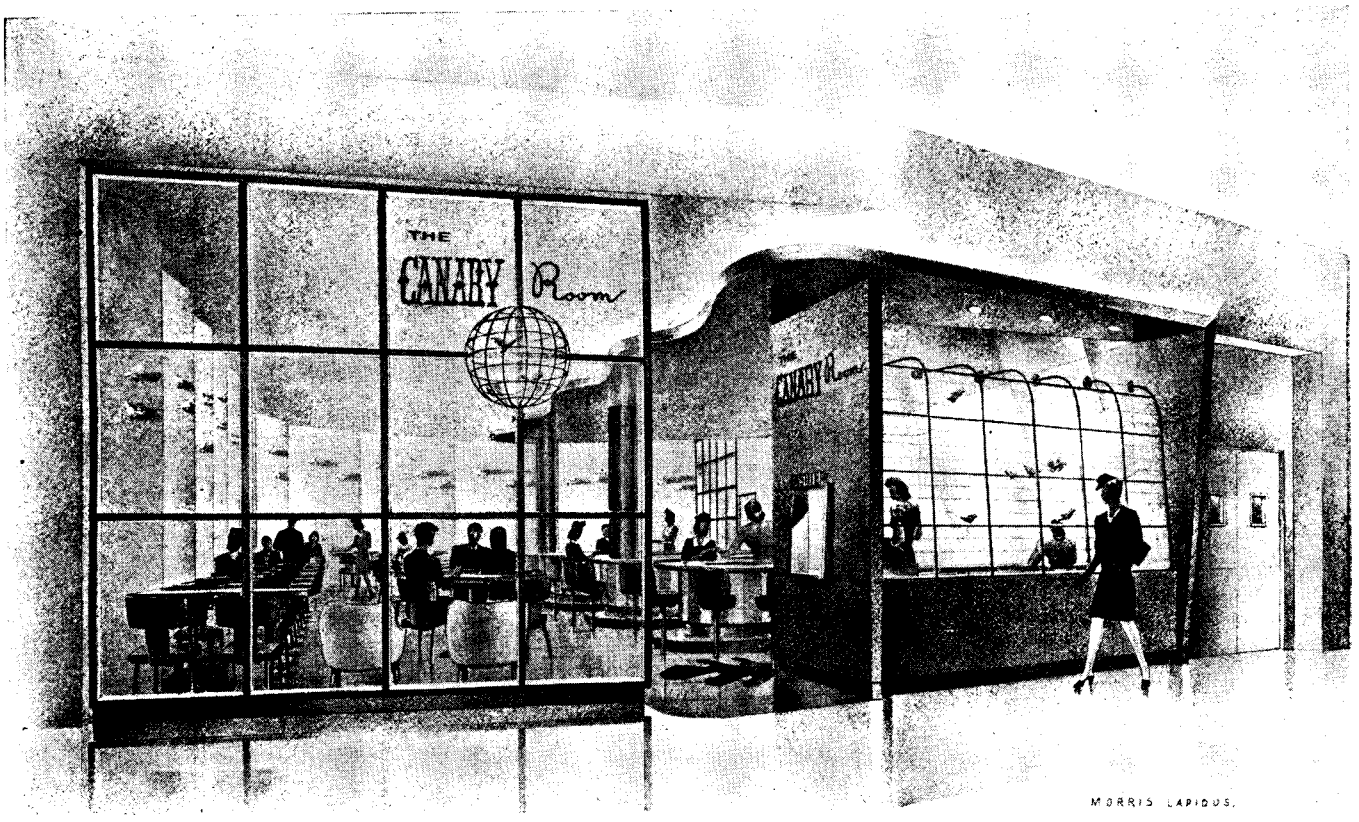
LOUFT & WOLF Photo

LATEST SCHULTE PLAN FOR CORNER LOCATION

Designed by John A. Young, Engineer
Morris Lapidus, Associated Architect

THIS most recent Schulte luncheonette, in Washington, D. C., is a typical exploitation of the corner site preferred by that organization for its chain locations. In accordance with Fleischman principles, the counter is on the wall opposite the entrance and visible from the street. Counter arrangement is a combination of single "U" and straight counter, with a joint steam table; otherwise they adhere to the basic layouts prescribed for each on page 108. Relationship of counter, kitchen and table area is tightly planned for maximum efficiency.

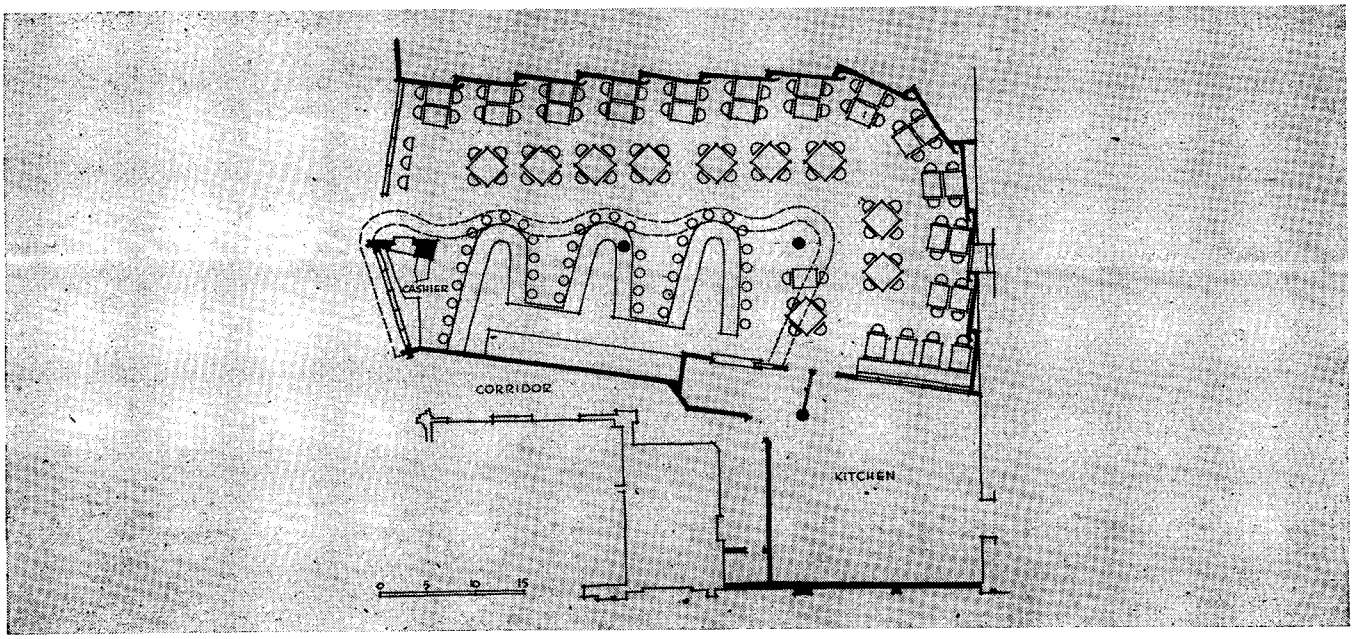




INTERIOR LOCATION SETS SPECIAL PROBLEM

At least equally with luncheonettes on teeming street fronts, varieties of the type located in diversely busy building interiors require imaginative architectural treatment to make them distinctive and attractive. Bird-cage motif at Namm's, Brooklyn, is implemented by wood and glass screen at the entrance. Counter is backed with squares of architectural glass. Cashier is boxed in marble. The plan provides for separation of counter and table service. Counter waitresses get food through pass port; table waitresses enter kitchen directly.

Morris Lapidus, Architect

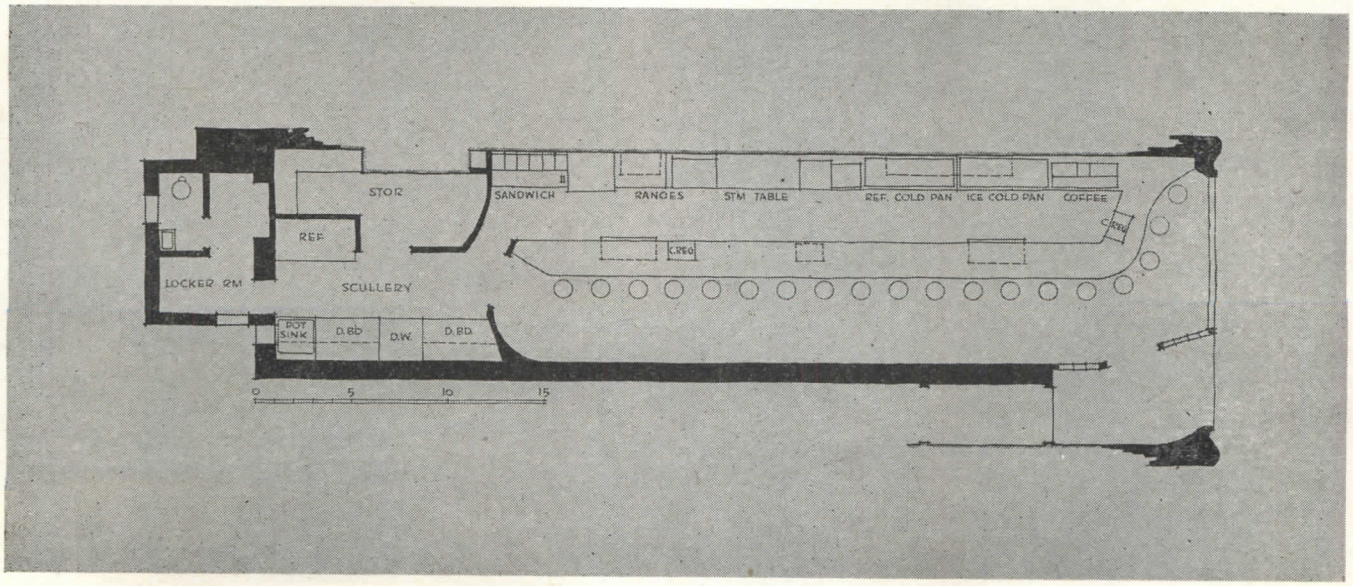


BEN SCHNALL Photo

MOSAIC FOR NEW DRAMA

Daniel Laitin, Architect; Mark J. Joseph, Engineer

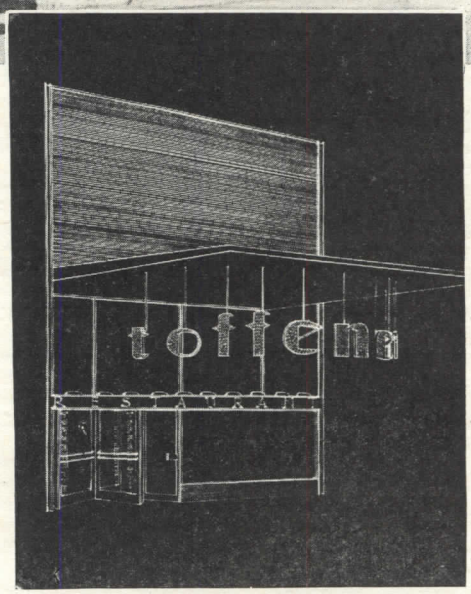
MOSAIC tile was used extensively in this New York City Riker shop, according to the architect, "to make it as sanitary as possible . . . the first premise in design" — but as well to advance the new owner's intention of "transforming this set of shops from the white porcelain enamel stage." Glass tapestry mosaic, on the exterior, alternates in colors of Venetian red and buff. Special lettering originally designed for each panel gave way to owner insistence on traditional insignia "to retain some character of the old business." On the interior, diagonal tile strips are alternately cerulean blue and buff.

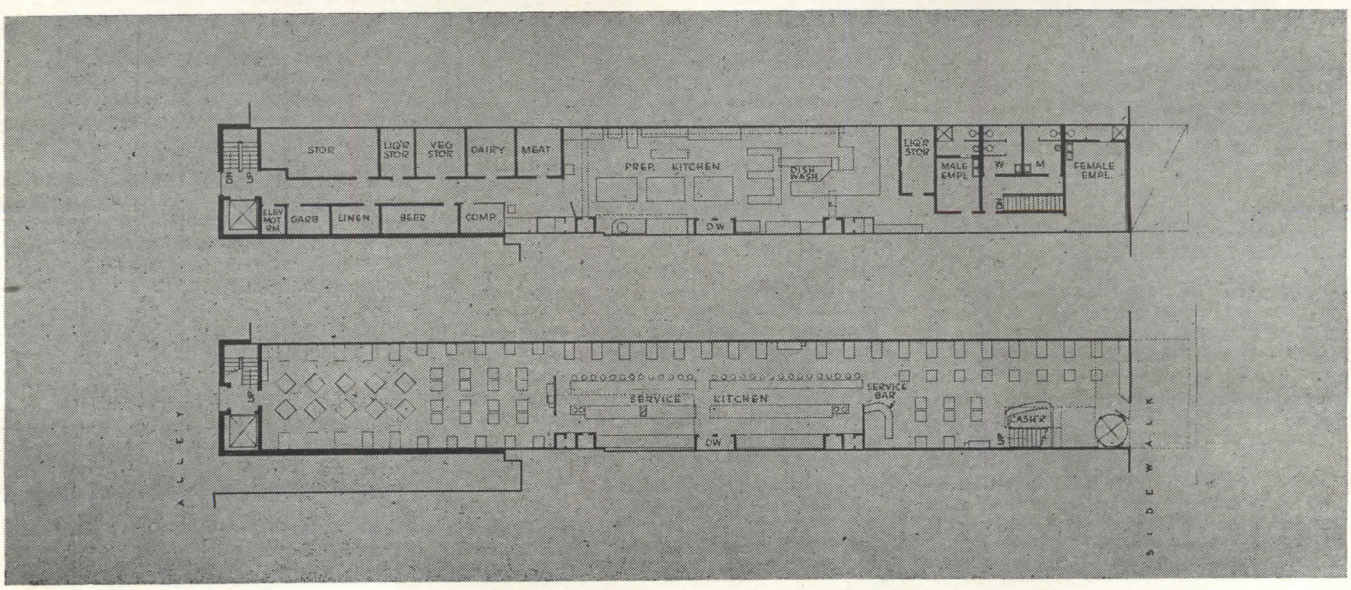


VERTICAL BASIS FOR DESIGN

Skidmore, Owings & Merrill, Architects

PART of Mr. Toffenetti's technique," say the architects, "is in keeping open to patrons' view the preparation of food, especially the operation of the service kitchen, the preliminary or heavy preparation being done behind the scenes," in this case on the second floor. Relative location of the two kitchens was the major consideration in fitting this restaurant into a Chicago location 24 by 190 ft. A basement location for the preparatory kitchen would have required very costly underpinning. "The two kitchens, one above the other, form a central core and a vertical basis of design for the entire restaurant."





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ARCHITECTURAL ENGINEERING

TECHNICAL NEWS AND RESEARCH

BLACK LIGHT AND COLOR MAGIC

LUMINESCENCE and "black light" suggest that kind of open magic which the modern architect especially loves. The whole process by which luminescence is produced by near-ultraviolet light, the so-called "black light" which is invisible in itself, creates a visual effect that is entrancing and mysterious.

Rarely has the emotional content of "black light" been capitalized by architecture as art, although spectacular use of it has been made on the stage of theaters. There, surrounded by darkness, figures in luminescent costumes are superlatively transformed. The only limit upon its effectiveness has been the skill and imagination of choreographer and stage designer. Some of the first attempts at architectural effects, on the other hand, have been rather infantile, consisting of decorative doodlings which jump at the spectator out of the darkness and merely suggest the possibilities dormant in the medium.

In the meantime the secondary use of luminescence, for safety, has been given enormous impetus by the war. On countless ships, proceeding through pitch-black night, phosphorescent marking tape, which glows after exposure to light, served to guide crews and passengers to their stations after "darken ship." Below decks it was used to help locate vital equipment in the event of power failure, and as a guide to firefighting equipment and escape hatches.

In aircraft, the dials of instrument panels and gauges were delineated in fluorescent paint so that they could be seen under black light; maps and navigational charts were printed in fluorescent ink, or by standard lithographic process on fluorescent-filled paper. This enabled the pilot to read his instruments and charts with eyes adapted to darkness.

Use of the afterglow characteristics of phosphorescence for safety purposes in the event of light failure has been carried over into peacetime practice. Fire insurance companies recommend that fire-escape doors and emergency exits in public buildings, theaters, and institutions be marked with phosphorescent signs that will continue to glow for a considerable time after power failure. In fact, the city of Hartford has passed a city code requiring that all buildings of this type be equipped with exit signs that will glow for at least one half hour. In addition to directional signs, phosphorescent paint or plastic moldings might well be used to outline the base of walls in enclosed halls and stair risers.

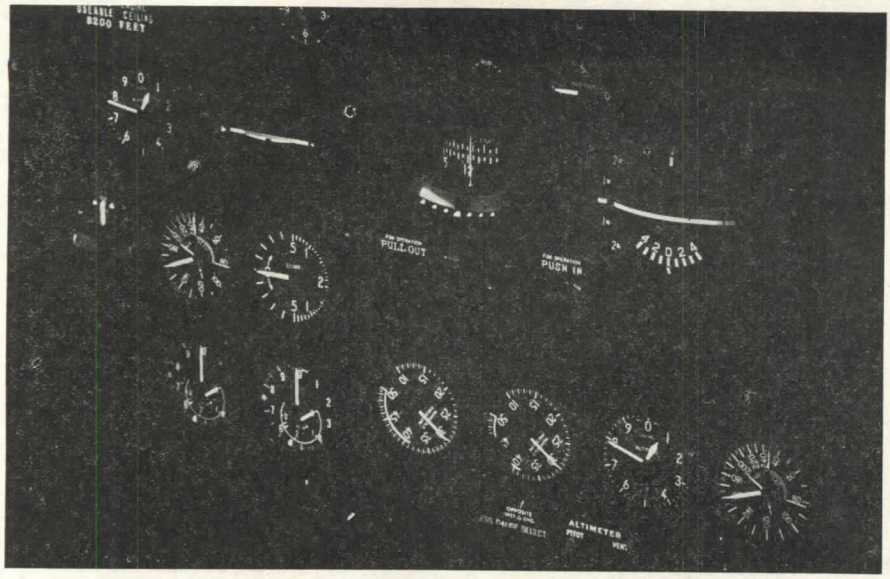
In houses, phosphorescent materials in strategic locations can save many a cracked shin resulting from groping in the dark. Light switches and switch plates, door knobs, and kick plates are being made from phosphorescent plastics which will glow for hours after exposure to natural or artificial light. Pointing to the promised day of television, fluorescent or phosphorescent lighting offers a means of providing minimum directional lighting for rooms when lights are turned off for its reception.

It has also been suggested that luminescent paints might offer an economical means of stepping up lighting in rooms that employ conventional tubular fluorescent lighting. Luminescent paint on walls and ceilings is activated by ultraviolet light escaping from the fluorescent fixtures, and thus utilizes the otherwise wasted energy. The glow of the paint, although not apparent in the lighted room, would add to the total effect.

LUMINESCENT LIGHT *Luminescent Light is cold light, which glows colorfully in certain chemical pigments when activated by outside radiant energy.*

BLACK LIGHT *Black Light, the usual source of this radiant energy, is that portion of ultraviolet light nearest the visible portion of the spectrum.*

There are two types of luminescent pigments: FLUORESCENT and PHOSPHORESCENT. Fluorescent pigments emit light only during time of exposure to radiant energy and require black light for viewing. Phosphorescent pigments emit light not only during exposure but produce an afterglow. When only afterglow is to be used, sunlight or ordinary lighting can serve as "charging" medium.



An invaluable wartime use of black light was to illuminate instrument panels in aircraft. Gauges were delineated in fluorescent paint in order to be visible to dark-adapted eyes

DECORATIVE EFFECTS

In the field of decoration, luminescent lighting offers an effective kind of color magic. Its first large-scale use for decorative effect was in theatrical staging and costuming. Under black light, scenery painted with fluorescent pigments bloom with clear color, and chorus girls, costumed in fluorescent treated fabrics, become disembodied patches of color in the darkness.

In similar fields of architectural decoration where showmanship and unusual color effects are desirable, such as in theaters, bars, and night clubs, luminescent lighting offers a new medium of decoration. In such darkened or dimly lighted interiors, luminescent colors can furnish glowing accents of color in murals, architectural trim, displays, and fixtures, and also in draperies, fabrics, and floor coverings. Since luminescent color is a direct source of transformed light, rather than merely a reflecting surface, the effect is that of exceptionally pure color glowing from within. Certain fluorescent lacquers display a heightened brilliance even in daylight or shadow, with a luminous quality not found in ordinary colors. Under black light, the effect is increased.

These signs, glowing in the dark, demonstrate the use of phosphorescence for safety in the event of sudden power failure

Decorative murals have been overpainted with luminescent paints in several motion picture theaters, and, aside from their arresting effect, were found to give the audience a feeling of being within a theater rather than in the center of black nothingness. Also, theater patrons need no longer grope in darkness for seats. Carpets, woven with fluorescent-treated yarns, mark aisles clearly and less obtrusively than aisle lights.

There are no harmful effects upon eyesight that are characteristic of commercial black light. While one probably should not stare directly at its source for a long period of time any more than at any source of light, its wavelength is very near that of visible light and above that of the harmful ultraviolet rays of a lower wavelength.

Black light requires shielding at its source, however, because direct near-ultraviolet rays may produce an unpleasant haze, due to calcium in the eyeball and chemicals in some tinted eyeglasses which are mildly fluorescent. It should be shielded from people for this reason and also because it causes hair, teeth, and finger nails to "glow" or fluoresce, upon direct exposure. Sources of black light can readily be directed and shielded, just as any type of confined lighting source, and is best suited for wall, cove, and ceiling lighting. An ideal location to assure proper illumination of a fluorescent wall mural is in the ceiling. Black-light sources should be placed at an angle, centering their beams two-thirds of the way from ceiling to floor. They should be evenly spaced for equalized light upon the mural so that resulting colors will be uniformly bright.

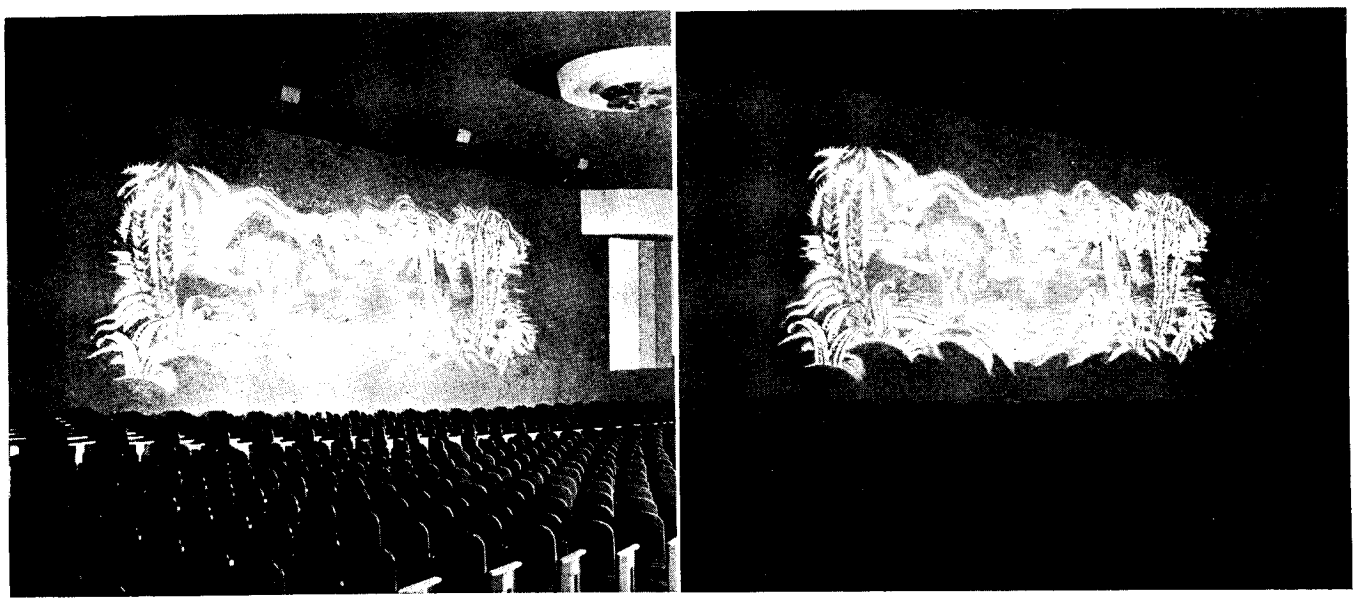
In locations where black light is inapplicable, phosphorescent afterglow can be used. After exposure to normal artificial light, phosphorescent material will glow independently for a considerable length of time, though with decreasing intensity. In a night club, the normal interval between floor shows would seem to be sufficient to "excite" phosphorescent surfaces more than enough to last for the duration of the performance, when lights are dimmed. The brightness level of afterglow of a bluish green phosphorescent pigment has been compared with the visibility of white paint on a bright starlit night and found to be 25 times as bright in the first hour. diminishing to twice the brightness, or more, after seven hours.

THE ABC's OF LUMINESCENCE

In chemistry there are certain pigments or chemical substances which absorb energy from a radiant source, and, after converting such energy to another form, re-emit it as visible, colored light. In other words, the pigment swallows up one form of light and immediately or slowly re-emits visible light of another color. The basic ingredients of these substances are organic or inorganic chemical compounds manufactured under exactly controlled conditions. Before the war they were scarce and expensive, but now are produced on a tonnage basis.

These inorganic compounds include zinc sulfides, zinc and cadmium sulfides, and calcium and strontium sulfides, depending upon which metal is predominant in each compound. In their manufacture, an exceedingly small amount of some other metal, such as copper, bismuth, silver, or manganese, is mixed with the pure compounds because none of the compounds alone would have a brilliant luminescence. When a little of this activating metal is added, however, a compound is formed which will glow colorfully. Organic materials consist of synthetic dyes, dye intermediates and their metallic salts, including such materials as rhodamine, eosine and flavine.

Consequently, luminescent compounds or pigments have the unique ability of being able to absorb radiant energy



Auditorium walls are a logical place to utilize fluorescence in the decorative scheme of theaters. Left: A mural usually is effective only when house lights are on. Right: When painted in colors that are fluorescent under black light, it glows subtly in the dark. Black light sources, located in the ceiling, confine their unseen rays to the mural. Auburn Theater, Rockford, Ill.: Edward Paul Lewin, Architect

principally from near-ultraviolet light, and re-emit it as visible light.

In commercial practice, these substances are incorporated in paints, dyes, or plastics and a ready source of activating energy used, so that large surfaces and objects can be given luminescence with an altogether new freedom.

There are, of course, the two different types of luminescent pigments: fluorescent and phosphorescent. Fluorescent pigments emit light only during the time of activation. When the activating source of ultraviolet or black light is cut off, the fluorescent pigments cease to glow practically immediately. Phosphorescent pigments, however, have a useful afterglow and continue to emit visible radiant energy for varying periods after activation ceases. This afterglow varies in duration from 30 minutes to eight to ten hours, depending upon the phosphorescent material used. When only the afterglow characteristics are to be utilized, the activating source need not be black light but can be sunlight or any form of artificial lighting, which of course must be removed before the phosphorescent effect can be seen.

COLORS AND INTENSITY

Colors of fluorescent pigments in daylight or under regular lighting, appear as white, green, buff, cream, light yellow, deep yellow, cerise, and blue. But during excitation in comparative darkness these colors change to various other colors: light yellow to brilliant orange-yellow, deep yellow to rich red, and slate blue to light blue. Other pigments fluoresce green and yellow. Phosphorescent pigments after excitation range in color from blue to orange yellow. Certain organic substances have been developed which have bright, rich daylight color and retain practically the same color under black light, merely increasing in brilliance.

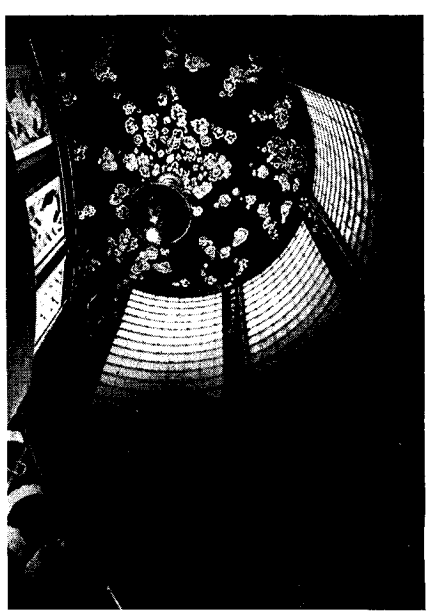
Aside from the color, the intensity or brightness of fluorescence depends on the type of pigment. For example, under the same excitation, one pigment fluorescing a yellow light may be brighter than another pigment which also fluoresces yellow. The brightness or intensity also varies with the intensity or power (wattage) of the exciting light. Each of these pigments will be considerably brighter under a 100-watt "black" light than when exposed to a 2½-watt argon glow lamp, which is a weak source.

In the case of phosphorescent pigments, the intensity and length of afterglow depend on many factors, including (1) type of pigment, (2) medium in which it is incorporated, (3) intensity of the exciting light, (4) the length of time that the pigment is exposed to the light, and (5) the temperature. For instance, one type of phosphorescent pigment will glow for a longer time than another when both are excited by the same light for an identical period of time. Either pigment would require a much longer exposure to a 25-watt lamp than to a similar 100-watt lamp to excite its full duration of phosphorescence.

The amount of activation required to attain maximum afterglow also depends on the type of pigment. Generally speaking, a pigment that has a long afterglow requires more time of exposure to an exciting light than a pigment that has a short afterglow. A few seconds direct exposure to sunlight will fully excite a short-afterglow pigment, while a long-afterglow pigment may require a minute or two. The sun, of course, is a very intense light source and will excite these pigments more rapidly than any man-made light.

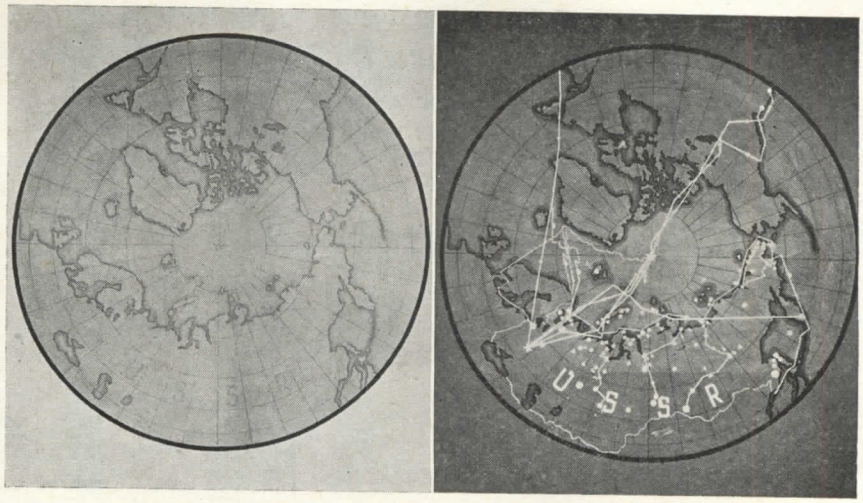
Another fact to keep in mind is that the initial brightness, which is the brightness of afterglow immediately after the exciting light is removed, is not the same for all phosphorescent pigments. The brightest pigment may be about ten times more intense than the dimmest pigment, the brightness of the others being somewhere between them.

It is difficult to say definitely to what point the afterglow can fade before it becomes no longer visible. In complete



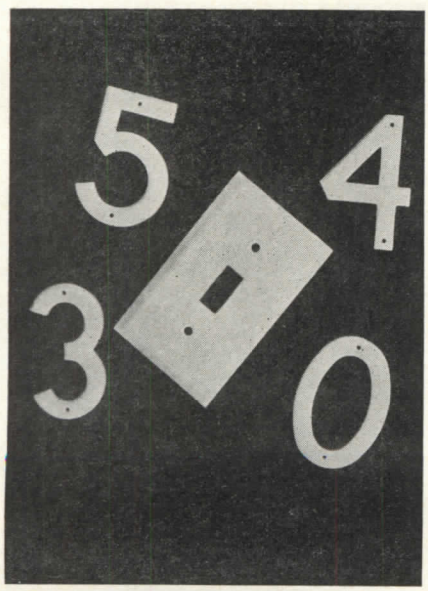
On ceilings, too, fluorescence imparts a self-luminous effect in glowing color, adding interest to an otherwise dim void

Fluorescent-treated yarns are woven into carpet so that under black light they guide theatergoers in darkened auditoriums



You may remember seeing this at the New York World's Fair in 1939. One of the first striking uses of fluorescence, this air-routes chart gave little indication of its fluorescence until exposed to black light. Then directional lines "jumped" at spectators in bright color

darkness, the afterglow of most pigments can be detected by dark-adapted eyes for twenty-four hours or longer, particularly where large areas are to be covered. For decorative effect, its useful duration would be less, of course, from 30 minutes to about eight to ten hours, depending upon the pigment and area covered. In addition to the brightness and the size of the area covered, other factors which are involved are the degree of surrounding darkness, the sensitivity of the eye, and the distance from which the phosphorescence is observed.



Phosphorescent door numbers and switch plate can be seen for six to eight hours after exposure to sunlight or other illumination

DURABILITY

Similarly, it is not easy to formulate an exact standard of durability for luminescent pigments, due to the varying factors and conditions involved. Some phosphorescent types, however, were in continuous use for two or three years during the war. All of the zinc and cadmium pigments, both fluorescent and phosphorescent, are quite stable under conditions of normal service. Under certain conditions of outdoor service and in certain vehicles, some pigments may show a photochemical change called "light-darkening." Calcium and strontium phosphorescent pigments are sensitive to water and acids, and, if not protected by a binder medium, are unstable. When properly protected, these pigments are said to give service for at least six months outdoors. Organic pigments, which have a brighter daylight color, now possess a fair resistance to sunlight and excellent durability indoors.

LUMINESCENT PAINTS

Both types of luminescent materials, fluorescent and phosphorescent, are used in making luminescent paints. Best results are obtained when luminescent paints are applied over bright white surfaces. In general, it is good practice to use an undercoat of regular paint or two undercoats using the same vehicle as that used in the luminescent coating. Since fluorescent pigments are comparable to regular pigments in their paint-making properties, fluorescent paint can be applied readily by brush, spray gun, or palette knife.

Phosphorescent pigments, because of their coarse crystalline structure, provide poor brushing characteristics to paint. The best method of applying is by spray gun. Uniform covering, however, can be obtained by the application of two coats over at least one coat of white primer.

No radium, radioactive material or elemental phosphorus is used in these pigments, and therefore luminescent materials are non-toxic. Of the sulfides used, only cadmium sulfide can be thought of as a possible hazard; but in the amounts contained in paint, it is impossible to consider that this compound of cadmium will be as dangerous as is the ordinary application, either by brush or spraying, of paints using lead pigments. In the removal of the cadmium-containing paint from old surfaces, precautions ordinarily used for lead paints will be entirely satisfactory.*

LUMINESCENT TEXTILES

Textile fabrics may be coated or printed with luminescent pigments, or processed with fluorescent dyes, for such applications as marking tapes, draperies, upholstery, and wall and floor coverings. Treated yarns have been used with success for luminescent carpeting.

LUMINESCENT PLASTICS

Plastic rods, sheets, discs, cast films, and laminates are being made, which contain luminescent pigments incorporated in transparent or translucent plastics at the mill. Also, ordinary plastic articles can be coated with luminescent paints or printed with luminescent inks. In the first case, the luminescent pigment is incorporated with the resin before the molding or casting operation.

*Quotation from a letter by Dr. C. K. Drinker, Dean and Professor of Physiology, Harvard University School of Public Health.

In the other, the plastic product is molded or finished and then given a luminescent coating by one of several printing processes — letterpress, silk screen, lithography, dusting process, or decalcomania.

LUMINESCENT INKS AND PAPERS

Also available, although not as applicable to the field of architectural decoration, are pigment-coated paper and luminescent printing inks.

ACTIVATING LIGHT SOURCES

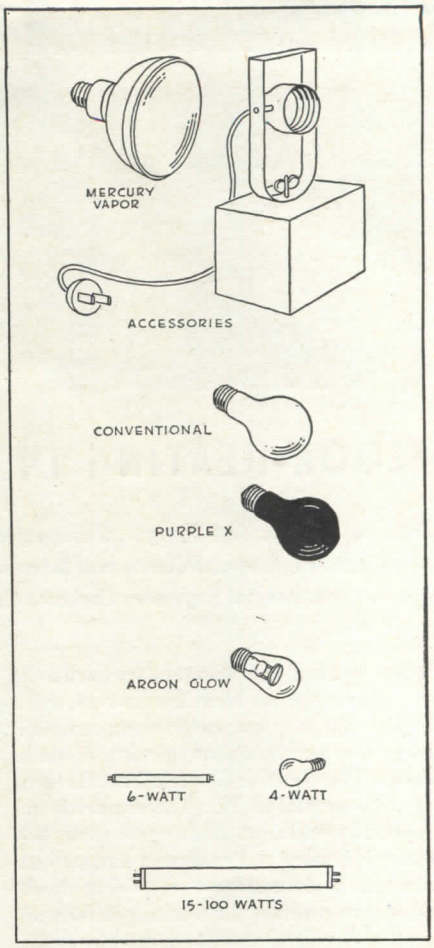
The sun, of course, is the most efficient light source. Its use, however, is limited to the excitation of phosphorescent pigments since fluorescent pigments must be viewed during the time of exposure to the light source and the sun is too bright to permit full viewing of fluorescence.

Mercury Vapor Lamps: A number of mercury-arc lamps, ranging from a 100-watt to 1,000-watt (water-cooled) and higher, are available. They are probably the most efficient light sources for the excitation of both types of luminescent pigments, but if used to excite fluorescent pigments they must be equipped with suitable filters to eliminate the greater part of visible light. They can be used only with alternating current, and require a few minutes warm-up before output reaches normal. If turned off, they must cool before they will relight.

Fluorescent Tubular Lamps: These are very efficient for use with phosphorescent pigments, but do not deliver sufficient ultraviolet light for the excitation of fluorescence, except at close range. However, the new fluorescent lamps which contain the so-called "360 BL" phosphor are highly efficient for use to excite fluorescence, but they must be equipped with filters to eliminate most of the visible light. A 4-watt (known as the RP-12) fluorescent (360 BL) lamp operates on a 24-volt direct-current circuit. Also available are 6-, 15-, 30-, 40-, and 75-watt tubular fluorescent lamps, for use on regular 110–120 volt, 60 cycle alternating-current circuits. They are suitably filtered, and can be used for efficient excitation of fluorescent or phosphorescent pigments. If phosphorescence only is to be utilized, any of these lamps without filters can be used.

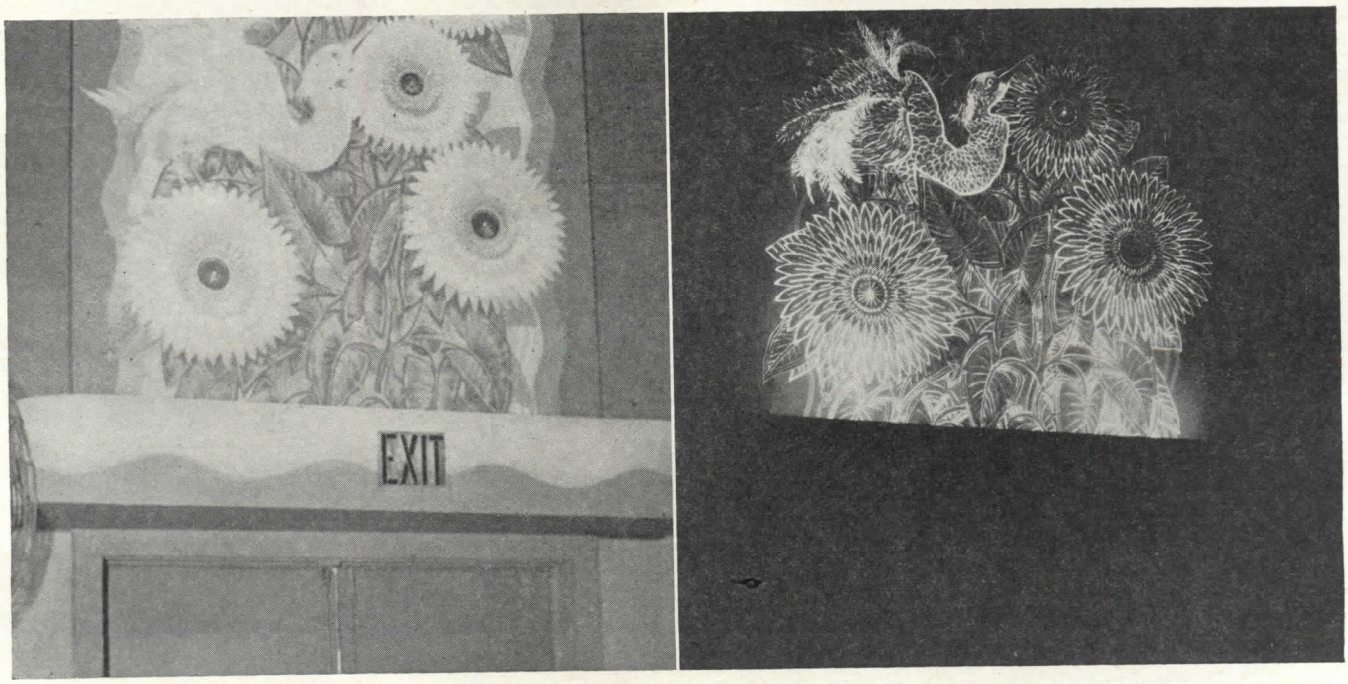
Incandescent Filament Lamps: Filament lamps are used primarily for the excitation of phosphorescent pigments but the lamp can also be used to excite fluorescence if it is properly filtered to exclude white light. A "purple-X" bulb is a filtered filament lamp (250 watts) operating at overvoltage on either alternating-current or direct-current circuit for intermittent use to excite fluorescent pigments. It should not be used for periods longer than 10 minutes as the bulb will overheat and soften.

Argon Glow Lamps: These lamps are small in size, low in cost, light up immediately, and have a long life. They are available in conventional sizes and operate on either alternating current or direct current. Although they are satisfactory for the excitation of either fluorescence or phosphorescence, their use is limited to such uses as glow lamps and small decorative effects, because of low output, $\frac{1}{16}$ to $2\frac{1}{2}$ watts.

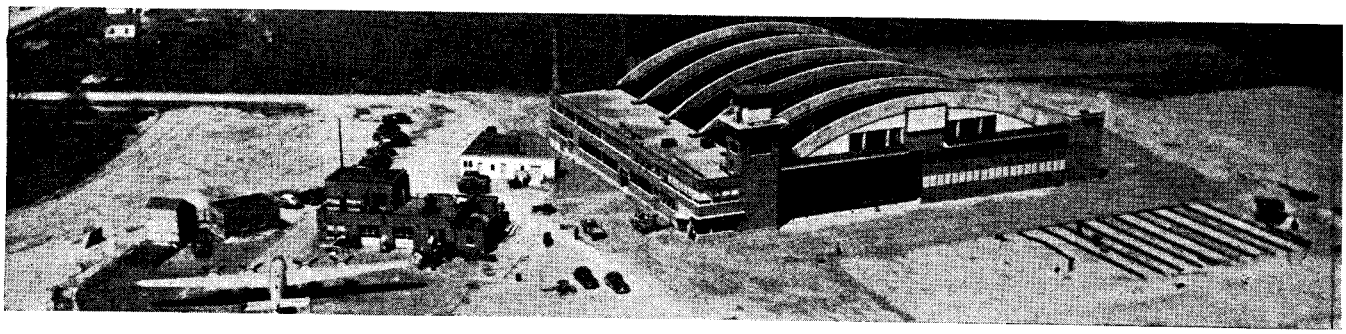


Some activating sources of black light

Photos courtesy of The New Jersey Zinc Company; Switzer Brothers, Inc.; Black Light Products; Stroblite Company; Monsanto Chemicals Company, Plastics Div.; Alexander Smith & Sons Carpet Company; Theatre Catalog 1945 Transcontinental & Western Air, Inc.



Normal under ordinary light, this theater mural glows mysteriously in darkness Centre Theater, Bloomfield, N. J.: M. D. Sornik, Architect



FLOOR-HEATING IN HANGAR DESIGN

General Electric Test Hangar, Schenectady, N. Y. Office of Marcus T. Reynolds, Architects-Engineers; Roberts and Schaefer Company, Engineers; Joseph L. Ottenheimer, Mechanical Engineer; Corbetta Construction Company, General Contractor

THE heating of hangars customarily presents a problem because of their high ceilings, great cubic area, and the large size and frequent opening of their doors. The General Electric Test Hangar at Schenectady, N. Y., required an especially efficient heating system because it is used not only as a hangar but also as a laboratory, requiring both adequate comfort for working personnel and relatively constant temperatures for development and test work. Indications were that this would be a logical building type for radiant heating, by the circulation of hot water through a carefully designed system of pipes embedded in the concrete floor; a premise borne out by later tests.

Hangar is 160 ft. wide and 175 ft. deep, with a two-story office and workshop wing and an adjoining 60-ft. control tower. A steam vapor heating system is used for the offices and workshops, but the entire hangar area is heated by 20,000 ft. of 1¼-in. pipe in the concrete floor for the circulation of hot water.

DESIGN AND INSTALLATION

The radiant-heating system is designed to provide comfortable conditions in cold weather with floor surface temperature of 85° F., and water supply temperature not to exceed 130° F.

Floor area of the hangar is divided into 20 heating panels, each 40 ft. long and from 24 to 40 ft. wide. The longest radiant panel coil was designed to be 1,600 ft. long, which indicated use of 1¼-in. pipe for proper flow resistance. Wrought-iron pipe was employed because of its adaptability to bending and welding, and sinusoidal pipe coils, to insure full water circulation.

In periphery floor panels, spacing of pipes is on 12-in. centers; and in interior floor panels, on 24-in. centers. Floor slabs were placed upon a 12-in. fill of compacted gravel. Each radiant heating floor panel is isolated from adjacent panels and walls by a preformed expansion joint. Wherever floor panel supply or return lines pass through construction expansion joints, flexibility is provided by expansion loops, covered with asbestos cell insulation jacketed with roofing felt, all of which is embedded in the concrete. Each radiant heating floor coil has a manual air relief valve for bleeding air to prevent air binding, and the system has master automatic air-relief valves.

BOILER EQUIPMENT AND CONTROLS

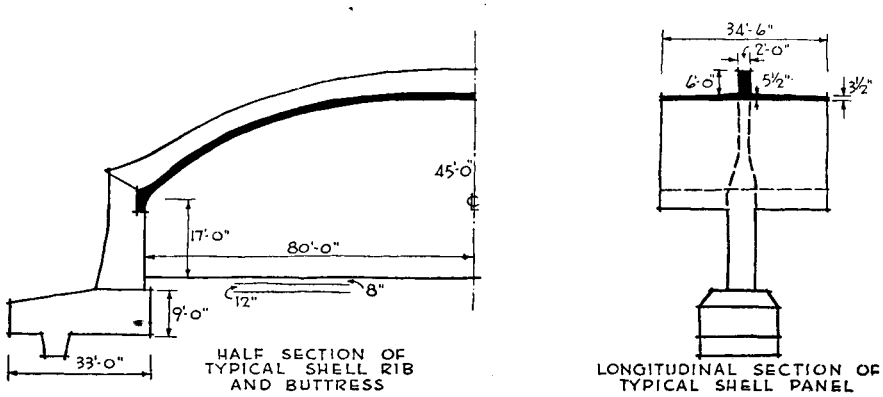
Boiler equipment consists of two cast-iron sectional steam-heating boilers, fired by heavy oil burners. Water for floor-panel coils is heated by means of a steam-water heat exchanger. Positive water circulation to the floor panel coils is obtained by means of two electric centrifugal pumps. Temperature within hangar area is controlled by an outside thermostat and a pilot limiting the temperature of the water for the heating panels. These two controls activate the steam valve which supplies heat to panel water as required.

LEAK TESTING

A hazard in such a heating system is the possibility of leaks in pipe joints, bends, and seams that cannot be reached for repair once the floor slab has been completed. Therefore, as each radiant panel pipe coil was completed, and before concrete was poured, it was hydrostatically tested under 150 lb. per sq. in. pressure for 24 hours, losing a minimum of 5 lb. per sq. in. Water was then drained and the coil pneumatically tested at 150 lb. per sq. in., inspecting all joints for leaks with a soapy solution.

INITIAL OPERATION

The system was completed and placed in service in March, 1946. Radiant floor panels were filled with water when the temperature of the concrete was 34° F.; air temperature within the hangar, 40° F.; and outside temperature, 35° F. After five hours of operation, a complete set of readings showed that the outside temperature had dropped to 25° F.,



Detail of concrete-arch clear-span roof and buttress of General Electric Test Hangar

while the radiant floor panels had reached 84° F. and the air temperature within the hangar had risen to 48° F. At the time of these readings, the temperature of water supplied to the radiant floor panels was 130° F., and that of returned water, 90° F.

After 15 hours of operation, the temperature of the air within the hangar assumed the desired 60° F., while the outside temperature continued to drop. Average vertical temperatures from breath line to ceiling of the hangar showed a variation of less than 2° F.

While no extreme winter weather has been encountered since this initial operation, it is expected that such a condition can be met without difficulty, due to the system's previous performance and the heat "pick-up" shown upon starting and operation.

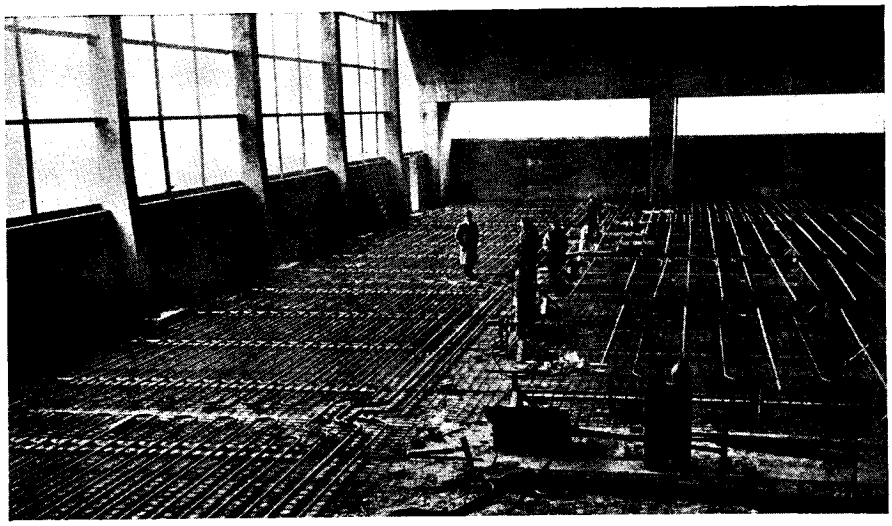
HANGAR CONSTRUCTION

Of interest also in these days of material shortage is the construction of the hangar, itself, which is of reinforced poured concrete with brick and glass curtain walls. The hangar proper, 160 ft. by 175 ft., is roofed by a concrete-arch clear-span roof with a height of 17 ft. at side walls and 45 ft. at the center of the span.

The roof is divided into five panels having four main and two end arch ribs homogeneous with a concrete roof slab or shell, covering a width of 34 ft. 6 in. by the full span of 160 ft., and constructed in the inverted T-beam manner. Ribs are 2 ft. thick and 6 ft. high, and the roof slab supported from the bottom of the rib is 5½ in. thick at the rib and 3½ in. thick at the construction and expansion joints. Each rib springs from a concrete abutment pier, 3 ft. by 10 ft., which in turn is carried on a concrete footing, measuring 15 ft. in width, and extending in the form of a foot 33 ft. away from the building. The keyway measures 3 ft. by 3 ft. by 15 ft. Footing, pier, rib arch, and roof arch slab are all homogeneous, the footings being carried down to solid rock base.

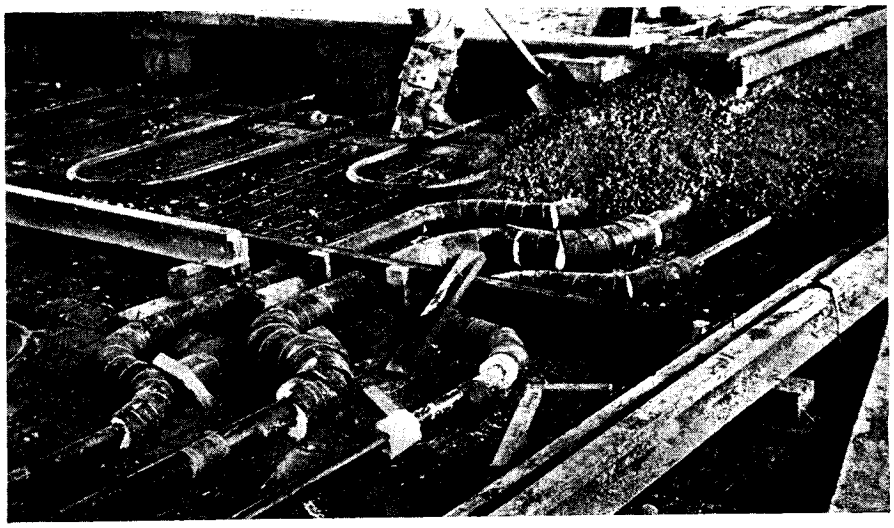
This particular type of construction was selected because it made possible immediate building with readily available materials. Its fire-resistant qualities were demonstrated by a wartime accident when a B-29 bomber crashed inside a similar hangar in Dayton causing fire and explosion of six smaller aircraft within the hangar. The intense heat caused practically no damage to the hangar other than minor surface damage.

Other advantages of this type of hangar roofing is that it may be painted white for improved interior lighting, and that the elimination of exposed steel trusses affords no nesting surfaces for birds, which often frequent such areas and cause no small expense for cleaning.



Floor area, 160 ft. by 175 ft., is divided into twenty radiant-heating panels. Spacing of pipe is on 12-in. centers, in periphery panels, and on 24-in. centers, in interior panels

Radiant-heating coils form an integral part of the floor. Cement is poured on a 12-in. fill of compacted gravel. Before pouring, pipe joints are pressure-tested for leaks



Where supply or return lines pass through construction expansion joints, expansion loops are provided, covered with asbestos cell insulation, then jacketed with roofing felt

TRENDS IN MARINE TERMINAL DESIGN

Now that the world has returned to the peacetime pursuit of trade, new interest centers on marine terminal and port construction. The RECORD, in collaboration with the publication World Ports, presents a factual report on design features recommended by port engineers and operators.

THE function of a marine terminal is to provide efficient handling of cargo between ship and rail or truck. Its workable operation depends largely upon the design and relationship of component parts, such as length and width of sheds and platforms, vertical clearances, spacing of wall and interior columns, dimensions of door openings, and location of railroad tracks.

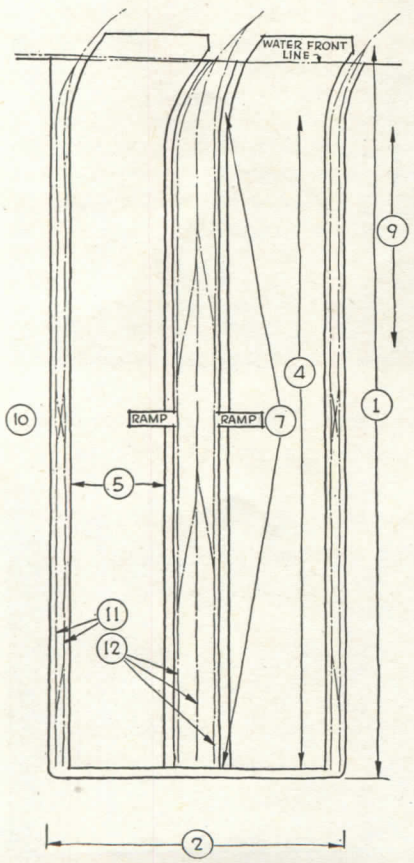
Basis of the following recommendations for the design of marine cargo terminals was a survey conducted by two port engineers, E. C. Earle of Los Angeles and Frank G. White of San Francisco. Port engineers and operating companies were canvassed by questionnaires to learn the general dimensional factors which they favored for future construction, in order to provide a helpful index of recommendations based on experience.

The "double pier" type of terminal with one-story sheds was approved in the majority of cases for the handling of general cargo. Recommended dimensions for a pier of this type are shown in the accompanying table. The dimensions consist of the highest figure recommended by anyone, the lowest figure, and the average of all replies. These are recommendations of port engineers. Operators of steamship companies and stevedoring companies gave averages for certain basic dimensional factors as shown in the right-hand column of the table.

Note should be made of the fact that recommendations of all experts in the survey were in relatively close agreement as to dimensional recommendations, despite the fact that they had been made with local considerations in mind.

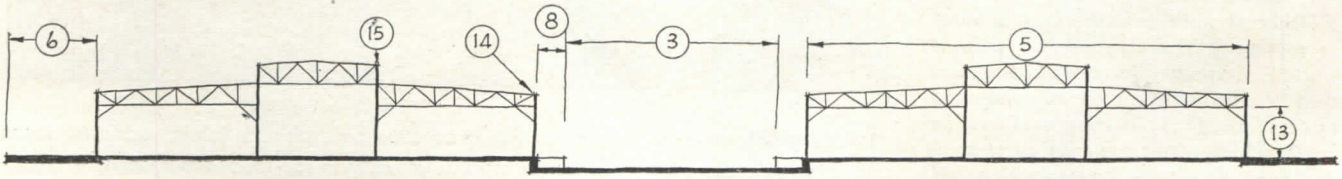
The recommendations are summarized as being indicative of a trend toward wider transit sheds with wider apron wharves, resulting from changes in types of vessel construction, size of vessels and modern methods of cargo handling.

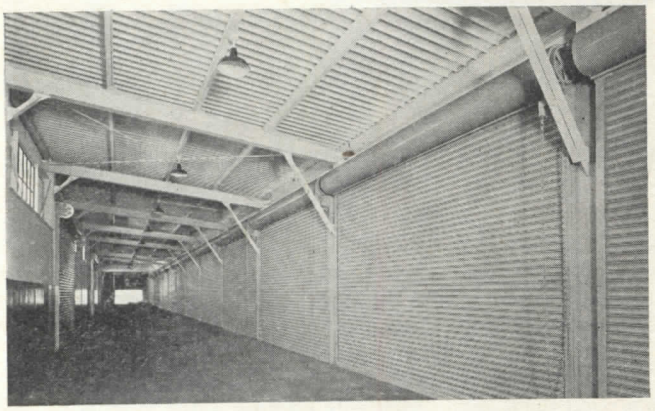
Many engineers question the usefulness of the loading platform (guide numbers 7 and 8) in terms of the cost of the additional pier width required to provide for it. Its appearance in the plan is for reference purposes only. Individual cost conditions, such as whether the terminal is to be constructed on piling or fill, or is to be a marginal wharf, are the governing factors.

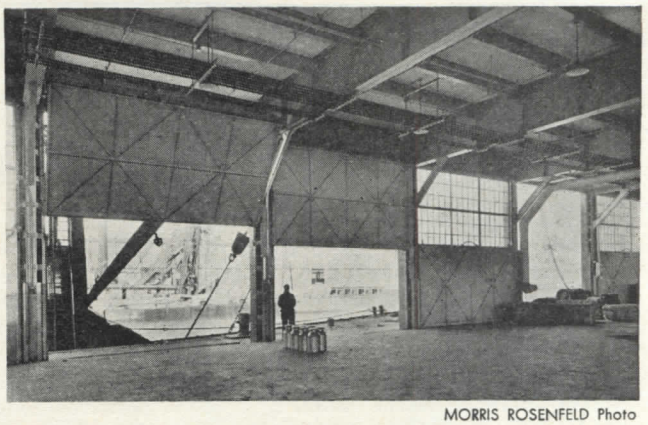


DESIGN RECOMMENDATIONS FOR GENERAL CARGO MARINE TERMINAL FACILITIES

Dimensional Factor	RECOMMENDATIONS (ALL DIMENSIONS IN FEET) Highest	Lowest	Average	Average Recommendation by Steamship and Stevedoring Companies
1. Over-all length of terminal	1500	500	1100	920
2. Width of double pier	676	316	489	
3. Width between platforms	164	38	86	
4. Length of shed	1460	450	810	
5. Width of shed	220	96	155	200
6. Width of apron	50	15	33	33
7. Length of loading platform	1460	450	840	
8. Width of loading platform	17	4	12	
9. Average length of ship accommodated	600	400	470	
10 Depth of water alongside	40	30	35	
11. No. shipside railroad tracks	4	1	2	2
12. No. landside railroad tracks	5	1	3	2
13. Minimum vertical clearance in shed	24	12	17	25
14. Longitudinal spacing of wall columns	44	10	24	
15. Longitudinal spacing of interior columns	100	20	33	
16. Width of door openings waterside	24	12	16	
17. Height of door openings waterside	20	9	14	
18. Width of door openings landside	24	10	16	
19. Height of door openings landside	20	9	12	







MORRIS ROSENFELD Photo

Good pier shed design features continuous series of doors. Shown here are two general types. Left: The rolling curtain type door is made with interlocking slats, fitted with end locks for easy operation, and counterbalanced by means of coil springs inside the roller shafts. Wind locks prevent pulling out in high winds. Right: The turnover door is divided into two leaves or sections, the lower section rising behind the upper one and both then swinging away from the door header to assume a horizontal position

PIER DOORS—PRINCIPLES AND TYPES

TYPICAL pier and dock shed construction embodies solid ends, inshore and offshore, in which may appear utility openings in the form of windows and doors. However, by "pier doors" is generally meant that series of large doors running the length of the shed, with emphasis upon those serving the shipside or landside portion of the terminal. These doors are of two basic types: the rolling curtain door with metal slats, and the horizontally-hinged section-type door with panels formed of structural members covered with heavy sheet metal, usually 16 to 14 gauge. A recent survey reveals an over-all preference of port engineers for the rolling curtain door, although several major ports, particularly on the east coast, prefer the folding type.

Regardless of type of construction, certain major principles apply.

Size: Height and width must permit unimpeded flow of mobile freight-handling equipment and regular and easy traffic to and from apron area. (See Table of Recommendations, opposite page.)

Spacing: Doors, particularly shipside doors, should be numerous to the extent of being practically continuous.

Durability: Doors must withstand frequent opening and rough usage. Rolling curtains or sections should be heavily galvanized by hot process on account of moisture and salt air.

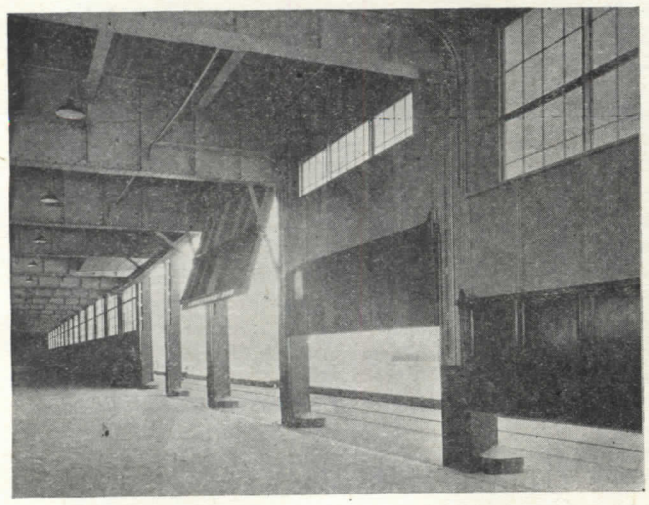
Operation: Primary requirement is simplicity. Doors should open upwards so that close proximity of stacked cargo will not impede their opening. Doors generally are manually operated, there being little time element in their operation. Motor-operated doors are preferable, however, from the standpoint of convenience and protection against pilferage.

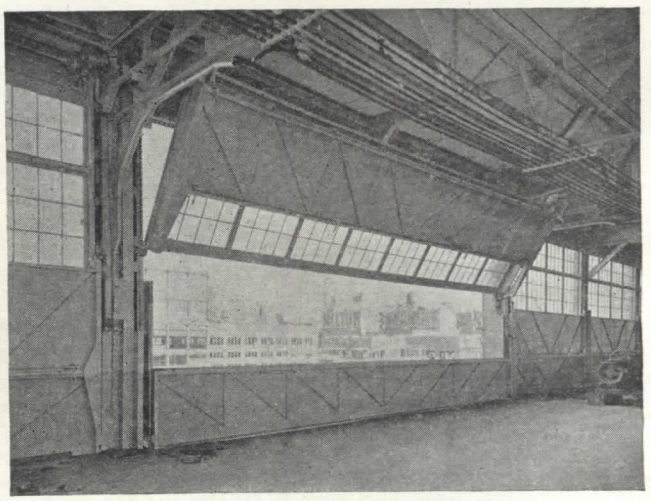
Safety: Manufacturers have incorporated safety devices to prevent uncontrolled descent in case a chain breaks.

Lighting: Doors can provide additional natural lighting within shed, particularly in two-story pier sheds where sash in upper panels can furnish light to that area. Solid doors, however, give more protection against fire and pilferage.

Maintenance: Doors require systematic maintenance. A regular program of lubricating moving parts and making minor repairs will prolong their life indefinitely. The rolling-curtain type door can be repaired readily in case of damage by sliding in new interlocking sections to replace damaged portion. This type has an additional advantage of adjusting itself to settling of pier structure.

Left: The lift-swing door is similar to the turnover door in operation except that it swings inward at the bottom. This has the advantage that in bad weather the door does not have to be opened fully to permit cargo hoisting lines to clear the door. Right: The lower section of this type of door may be left in position when it is desired to provide a barrier for passenger decks of steamship piers





DESIGNING THE HOME DARKROOM*

THE construction of the darkroom will be influenced by these factors: How often will the room be used? How many people are to work in it simultaneously? And, what type of work is to be done there — film development, contact printing, enlarging, or the "works"?

A room that is to be used frequently, even by only one person, should naturally be larger and better fitted for convenient operation than one which is to be used only on occasion. Likewise, two workers will definitely require more space than one. And since photography is a companionable art, and most photographers enjoy having another work with them from time to time, two workers should be considered the rule rather than the exception.

As for processing operations, contact printing and film development require relatively little space, but enlarging is a bit more demanding. Many amateur photographers today either own enlargers or have definite plans for acquiring one as soon as possible. Therefore, from any standpoint it is not practical to think of the home darkroom exclusively in terms of an additional closet. A darkroom may be located in a large closet, but for photographic efficiency and for added home appeal, it is advisable to approach the proposed darkroom as a room — complete in itself, and yet an integral part of the house.

Location Fundamentals

The location of the darkroom will, of course, be determined by what space is available, yet consideration must be given to convenience in relation to plumbing and electrical facilities, uniformity of temperature, and dryness.

An attic is seldom satisfactory for a darkroom, because unless well insulated it is likely to be too hot in summer and too cold in winter. The installation of plumbing in the attic is often difficult and usually expensive. Spillage and overflows can cause extensive damage. A *damp* cellar, on the other hand, is just about as poor a location as an attic. Dampness causes deterioration of films and papers, and results in weak, mottled pictures. A first or second floor room is likely to work out nicely if space can be allotted there, but the *ideal* location for the darkroom is a dry basement — particularly if uniform temperatures are maintained there — since plumbing and electrical connections are usually nearby.

But regardless of location and size, the first requirement is obviously that the room be capable of excluding all light. The sensitivity of modern photographic materials is such that total darkness is an absolute necessity. No white light can be permitted to leak in around the door or through any other opening.

The second requirement is that space for necessary equipment and apparatus should be so arranged as to allow the work to progress in the most convenient and efficient manner with a minimum of lost motion. The general flow of all photographic processing is from dry work to wet, and, finally, to drying or dry work again. In printing, this is exemplified by dry work at the contact printer or enlarger, then wet work as the print moves through the developer, stop bath, fixing bath, and wash water, and dry work once more as the print is dried again. It is therefore good practice to plan the darkroom in such a manner that all of the dry work can be done on one side, or at one end, and the wet work on the other side or the opposite end.

A darkroom of the type of Plan A (page 125) is very well adapted to all amateur work, and provides all necessary facilities for processing and print making, so that the home photographic unit is complete. Notice that the number of electrical outlets in the room provides for two safelights on the "wet" side, a safelight and outlets for the printer and enlarger on the "dry" side, and a central overhead indirect lighting box. An indirect lighting box can be used, incidentally, for a white light, or if preferred, for a general over-all safelight.

Home Darkroom Sinks

Since the majority of the operations on the "wet" side of the darkroom will center about the sink, and since several operations may be carried on in the sink itself, it is important that the sink be large and properly placed.

A good standard size for the sink is 36 to 48 in. long and 18 to 20 in. wide. The best sinks for darkroom work are those made of stainless steel, but they are also the most expensive and, these days, the most difficult to get. Enameled iron sinks are also very satisfactory, but if a metal sink is not obtainable, wooden sinks can be utilized.

Waterproofed plywood has made good sinks, but cypress is more or less the standard wood for such construction. Tongue and groove joints should be used and the sides of the sink should be held in position by steel tierods. A rubber-based paint, when obtainable, gives a good binding for wooden sinks. Wooden sinks are, by and large, not as good for amateur use as metal, for the main trouble with wooden sinks is that when used only intermittently, they may dry out with resulting opening of the seams.

Whatever type of sink is used, however, it is best to overlap the linoleum or other shelf covering about the edges of the sink, so that spillage or drippings may be easily wiped off the shelf surface and into the sink. Note in the sketches of Plan A how the linoleum shelf covering, on both the wet and dry sides, rounds the corner and runs in an unbroken sheet up the wall to a height of 6 or 8 in. Such design prevents seepage down the corner and protects the wall from splashings.

Tray and Drying Racks

Note also, on the "wet" side, that space has been provided below the sink for a tray rack. If the tray rack is built as a unit, to slide into the space provided, it may be easily removed for cleaning as occasion demands.

On the "dry" side of the darkroom a most important inclusion is that of drying racks for prints. These racks are simple wooden frames covered with cheese-cloth — on which the prints may be laid — designed to slide in and out on fixed wooden supports.

Floor and Bench Covering

A sheet of linoleum which is given a slight turn-up at the sides to protect the corners, is recommended for floor covering in a darkroom of this type. Benches and shelves are all mounted on 2 by 4 studding and covered with at least ¼-in. plywood or other suitable lumber. Note that toe space is provided at the bottom of all cabinets and structures.

Ventilation

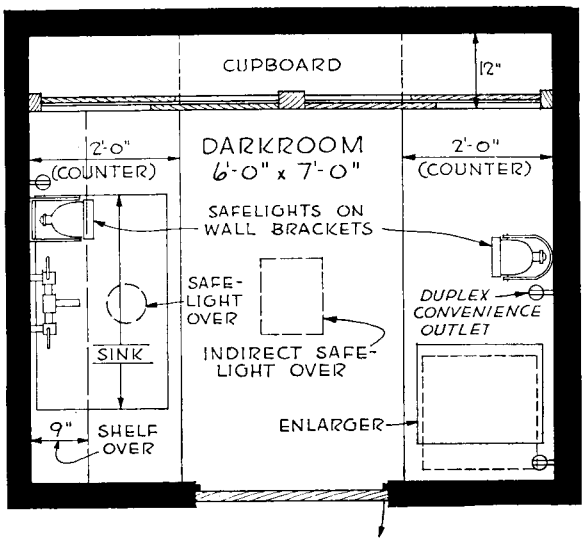
Regardless of the type of home darkroom decided upon, there is one further factor that should be taken into consideration in planning and construction — that is, the matter of proper ventilation. Small darkrooms which are not ventilated properly will show a decided rise in temperature, as the result of enlarger and body heat, in a short period of time. The best solution to this problem is the use of an automatic darkroom fan for forced draft ventilation, but if this is not possible, light-trapped ventilators should be installed near the floor and ceiling.

*By N. C. Ferguson, Eastman Kodak Co.

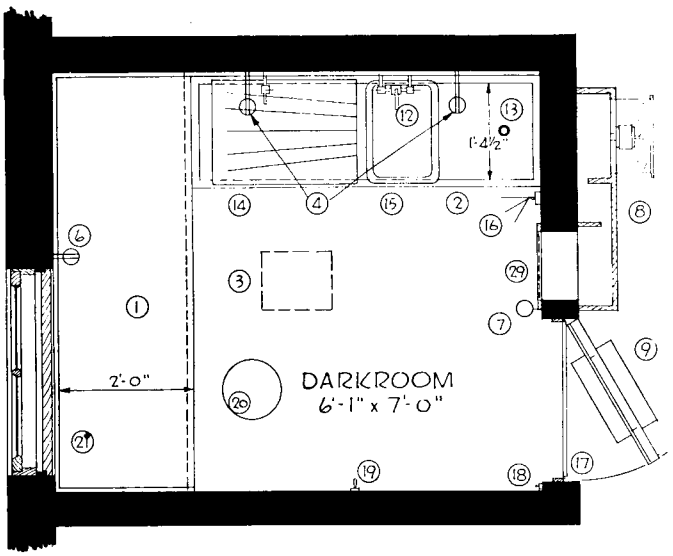
DARKROOMS: HOME

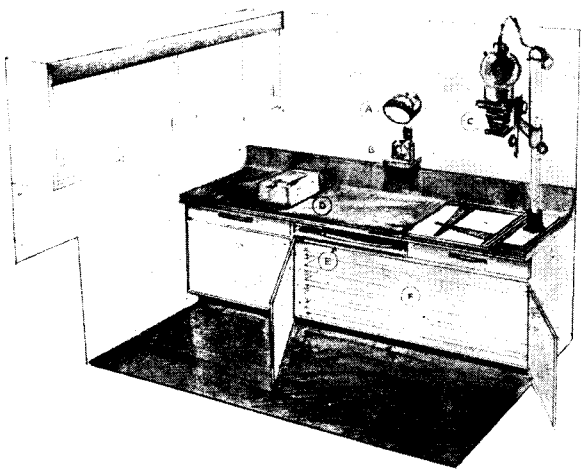
(Continued on page 129)

Plan A (by Eastman) Approx. scale: ⅜" = 1'

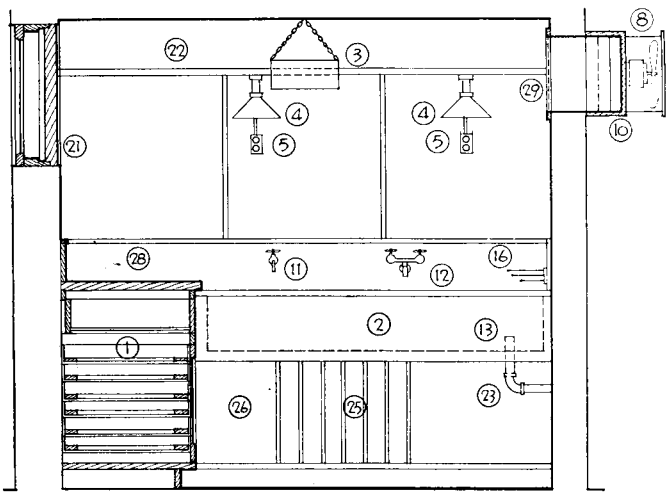


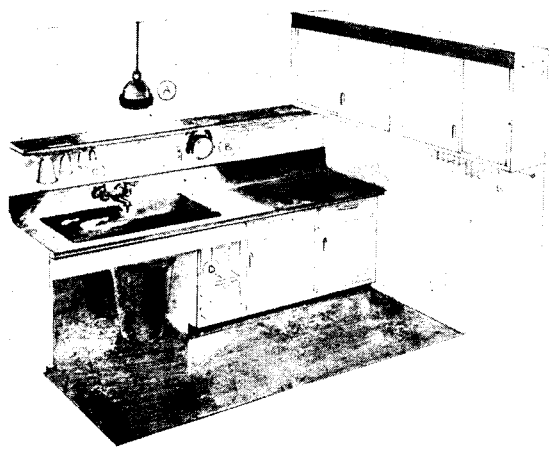
Plan B (by Lee Parsons Davis) Approx. scale: ⅜" = 1'





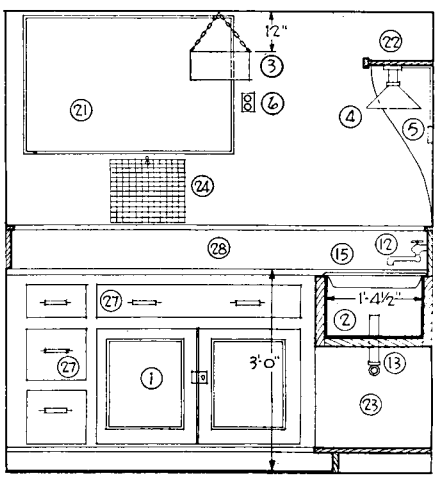
A — Adjustable safelight
B — Timer
C — Precision enlarger
D — Printer
E — Trimming board
F — Print drying racks





A — Darkroom lamp
B — Adjustable safelight
C — Graduates
D — Tray rack
E — Negative drying line

1. Print drying racks
2. Lead lined sink
3. Indirect safelight
4. Adjustable safelights
5. Convenience outlets
6. Enlarger outlet
7. Bright light
8. Exhaust fan
9. Light-trapped air inlet
10. Foul air outlet
11. Cold water faucet
12. Hot and cold water
13. Variable drain pipe
14. Removable drain board
15. Sliding trays
16. Towel rack
17. Door gasket
18. Air thermometer
19. Coat hook
20. Stool
21. Window blind
22. Storage shelf
23. Storage space
24. Trimming board
25. Tray rack



26. Storage space
27. Full depth drawers
28. Micarta back board
29. Air outlet grille

MANUFACTURERS' LITERATURE

AIR CONDITIONING

Corrosion Control in Air Conditioning: The Chromate Treatment of Their Water Systems. How to employ chromate to the best advantage in various central systems of unit air conditioners. Data on chromate consumption and effects of chloride concentrations. Graphs and examples. 12 pp. Mutual Chemical Co. of America, 270 Madison Ave., New York 16, N. Y.

HEATING

Automatic Heat for Real Living. A pocket-book sized manual for the home owner and prospective owner describing what heating comfort is and how to get it. Discusses the various types of heating systems, the advantages and applications of each, the choice of fuel, etc. Provides a check-list of the heating system in the home, and an explanation of heating terms. 56 pp., illus. Surface Combustion Corp., Toledo, Ohio.*

Warm Floor Comfort (Catalog No. 4). Bulletin on oil floor furnace designed for homes with or without basements. Description of unit, specifications, installation details, placement diagrams. 16 pp., illus. The Coleman Co., Inc., Wichita 1, Kansas.

Heating the Modern Home Electrically. Discussion of electrical home heating, containing factual data on insulation, home wiring, climatic requirements. Description of available models, with specifications tables and diagrams. 18 pp., illus. Electromode Corp., Rochester 2, N. Y.

Williams Oil-O-Matic Heating. Folder outlining the patented features of the Oil-O-Matic Low-Pressure principle of operation with photographs and brief description of all low pressure burners, broiler-burner units and furnace-burner units in the Oil-O-Matic line. Separate specifications sheet available for each unit. Williams Oil-O-Matic Division, Eureka Williams Corp., Bloomington, Ill.

KITCHENS

Case Histories of Successful Mass-Feeding Installations. Contains 28 plans of successful kitchen installations in hospitals, schools, hotels, restaurants and institutions. Photos and description of equipment, planning tips, and a brief article on the essentials of kitchen planning also are included. 36 pp., illus. The G. S. Blodgett Co., Inc., 50 Lakeside Ave., Burlington, Vt.

LIGHTING

America's No. 1 Lighting Job. Résumé of the relighting of West Point study rooms and classrooms, together with information from the lighting research and eyesight studies upon which the relighting was based. Included also are details of the lighting units used. 6 pp., illus. The Edwin F. Guth Co., 2615 Washington Blvd., St. Louis 3, Mo.

"Custom" Fluorescent Lighting with Standardized Fixtures. Catalog of 11 standardized commercial fluorescent fixtures suitable for offices, stores, schools, institutions, drafting rooms and laboratories. Includes specifications and installation data, and maintenance features. 34 pp., illus. Sylvania Electric Products, Inc., Salem, Mass.*

(1) Flexible Lighting to Step Up Furniture and Appliance Displays; (2) Lighting Menu for Tomorrow's Restaurant; (3) Lighting that Attracts and Pleases for the Modern Restaurant. Three more in a series of "lighting perspectives" planned by architects and designers. Each includes a floorplan and lighting diagram. 8, 12 and 12 pp., respectively, illus. Lamp Dept., General Electric Co., Nela Park, Cleveland, Ohio.*

PLASTICS

Du Pont Plastics. A new booklet describing the special characteristics and combinations of properties, product applications, recent developments, in the Du Pont line. Included are Lucite, Polythene, Nylon, BCM, CCA, Butacite, Pyralin, Plastacele and Teflon. 12 pp., illus. E. I. du Pont de Nemours & Co., Inc., Plastics Dept., 626 Schuyler Ave., Arlington, N. J.*

How to Work with Kimpreg Plastic Surfaced Plywood. A fabrication-data sheet on the methods of sawing, glueing, painting, nailing and refinishing Kimpreg surfaced plywood. Gives the names and manufacturers of recommended resin glues and paints. Illustrates uses of Kimpreg in the building and industrial fields. 6 pp., illus. Kimberly-Clark Corp., Plastics Division, Neenah, Wis.*

Plastics for Light Conditioning. The uses of plastics in the lighting field for shades and reflectors. Advantages claimed, and models now available. 12 pp., illus. General Electric Co., Pittsfield, Mass.*

SHEATHING

New Water-Repellent Gypsum Sheathing. Specifications for erection of water-repellent gypsum sheathing; details showing application of brick veneer, wood siding, asbestos cement, etc., over sheathing. Advantages claimed. 12 pp., illus. Gypsum Assn., 211 W. Wacker Drive, Chicago 6, Ill.

SPRINKLERS

"Automatic" Sprinkler Systems (Bulletin No. 56). A catalog of fire protection equipment including wet and dry pipe sprinkler systems, installations for extra and light hazards, electric and mechanical control systems, fire alarms. Full description of each. 20 pp., illus. "Automatic" Sprinkler Corp. of America, Youngstown, Ohio.

STAIR TREADS

Free Footsteps from Fear with Wooster Safety Treads. Catalog of treads, nosings, thresholds, window sills, curb bars and elevator sills. Applications, installation details. 16 pp., illus. Wooster Products, Inc., Wooster, Ohio.

STEEL JOISTS

The Handbook of Steel Joist Construction, 1946 edition. Article on open web steel joists for use in floor and roof construction; standard specifications for steel joist construction; recommended abbreviated regulations for use in building codes; code of standard practice of the Steel Joist Institute; recommendations of the Institute for handling and erection of steel joists; and a properties and loading table for open web steel joists. 16 pp., illus. The Steel Joist Institute, 3709 24th St., N. E., Washington 18, D. C.

STEEL UNITS

The Rigidsteel Standard Building. Full information on the development of prefabricated steel building — stiff-jointed structures made up of a system of beams, rigidly joined together to form a rigid frame. Specifications, description, advantages claimed, applications. 8 pp., illus. McCloskey Co., 313 Sixth Ave., Pittsburgh 22, Penn.

STORE FRONTS

Set the Stage for Selling. Photos and renderings of a variety of modern store fronts, including both new construction and remodeling. Information on a line of storefront units. 4 pp., illus. Brasco Mfg. Co., Harvey, Ill.

STRAINERS

Adsco Strainers and Separators (Bulletin No. 46–50). Catalog giving

(*Continued on page 132*)

*Other product information in Sweet's File, 1946.

It's what's inside that Counts!

STREAMLINED . . . well designed . . . balanced and good looking, yes. But the *heart* of those fine binoculars is the precision ground prisms *on the inside.*

It's what's *inside* that counts with quality building products, too. Hidden, *inside* values the eye seldom sees. That's why building-wise people insist on Celotex Building and Insulating Products.

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And rigid production controls all along the line guarantee uniformly high quality of every product bearing the Celotex name.

Tireless laboratory research perfects materials and methods still *more* . . . helps to maintain Celotex leadership year after year.

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Building Board **Celo-Rok Sheathing and Wallboard**
Interior Finish Boards **Celo-Rok Lath and Plaster**
Cemesto **Rock Wool Insulation**
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BUILDING PRODUCTS

THE CELOTEX CORPORATION • CHICAGO 3, ILLINOIS

SWITCH ON *The Eye Appeal*

and watch how Day-Brite Fluorescent Fixtures improve the appearance of store and merchandise. They're *optically engineered.*

May we send our new bulletin with complete details?

Day-Brite Lighting, Inc., 5465 Bulwer Avenue, St. Louis 7, Mo.
Nationally distributed through leading electrical supply houses.

In Canada: address all inquiries to Amalgamated Electric Corporation, Ltd., Toronto 6, Ontario.

The KINGSWAY

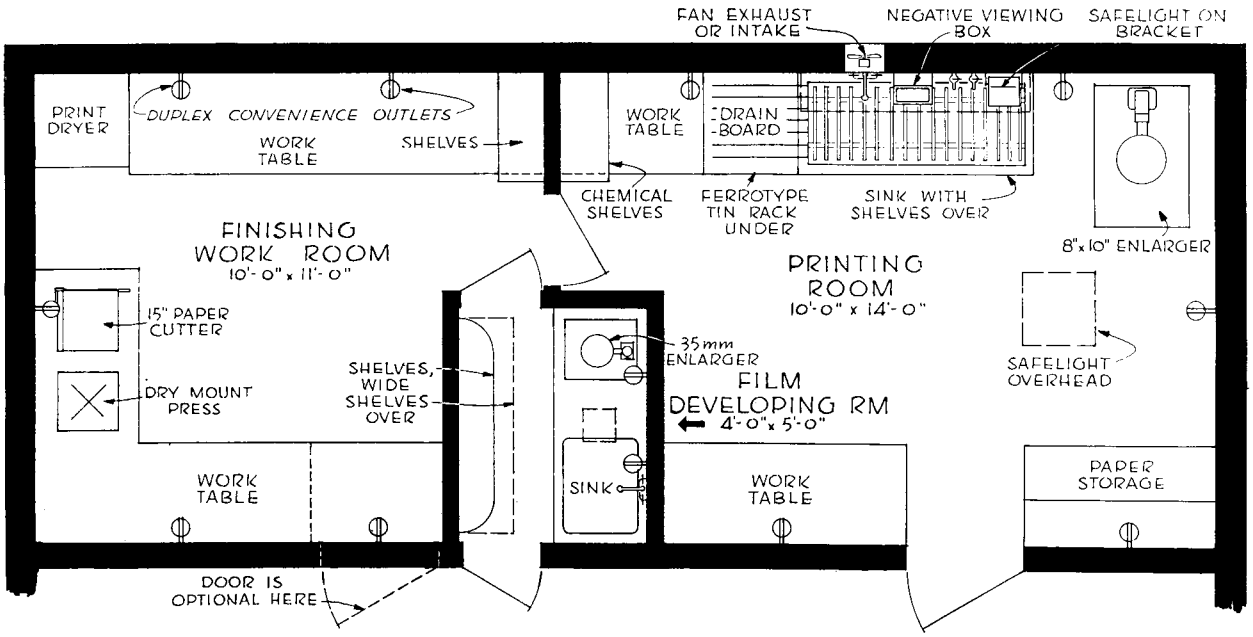
For surface mounting. Streamlined fluted glass prevents glare. Luminous die-cast ends. Suitable for any length installation, in multiples of 2, 4 and 8 feet.

IT'S EASY TO SEE WHEN IT'S

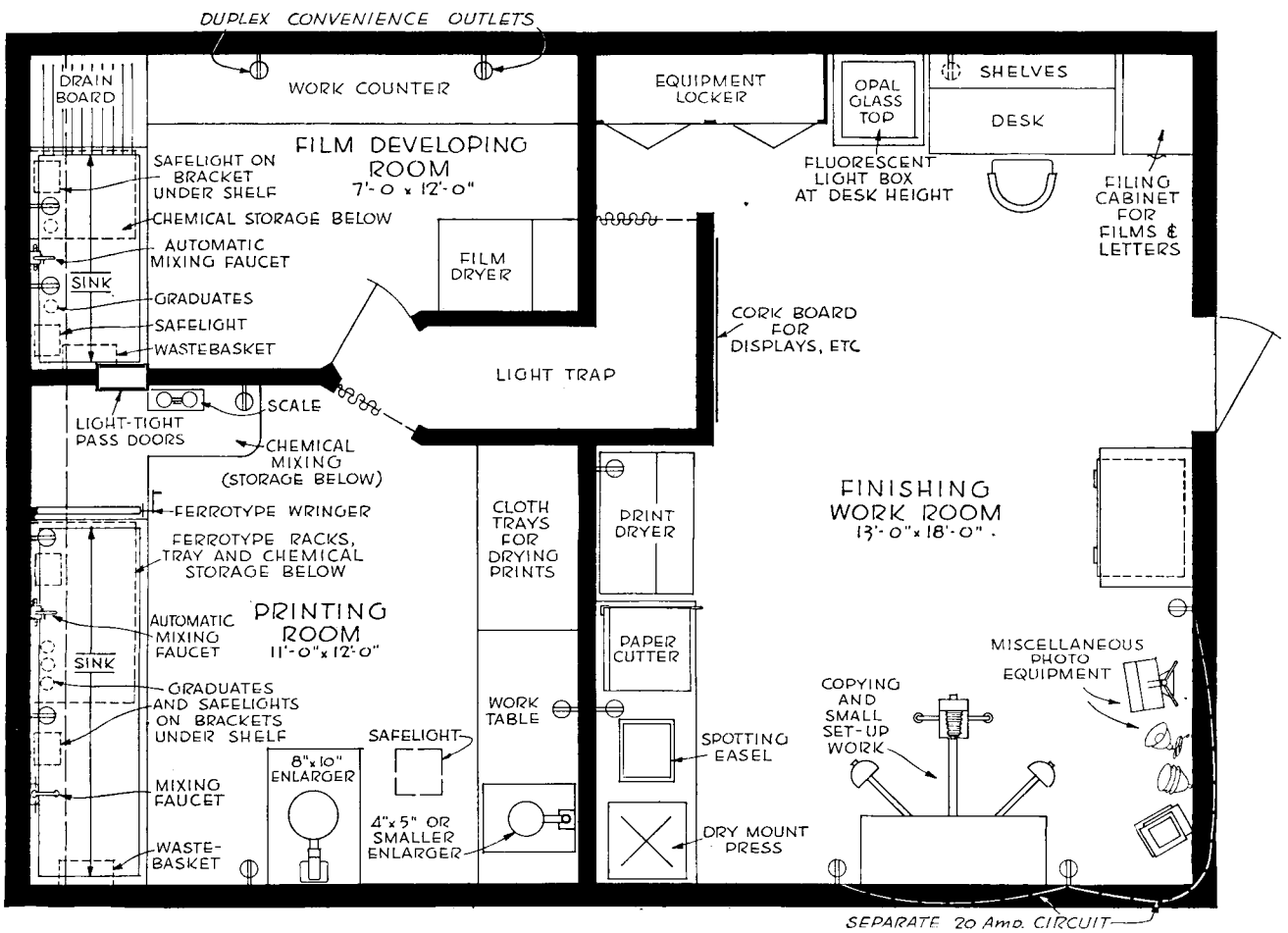
DAY-BRITE *Lighting*

DARKROOMS: ADVANCED

(Continued on page 131)

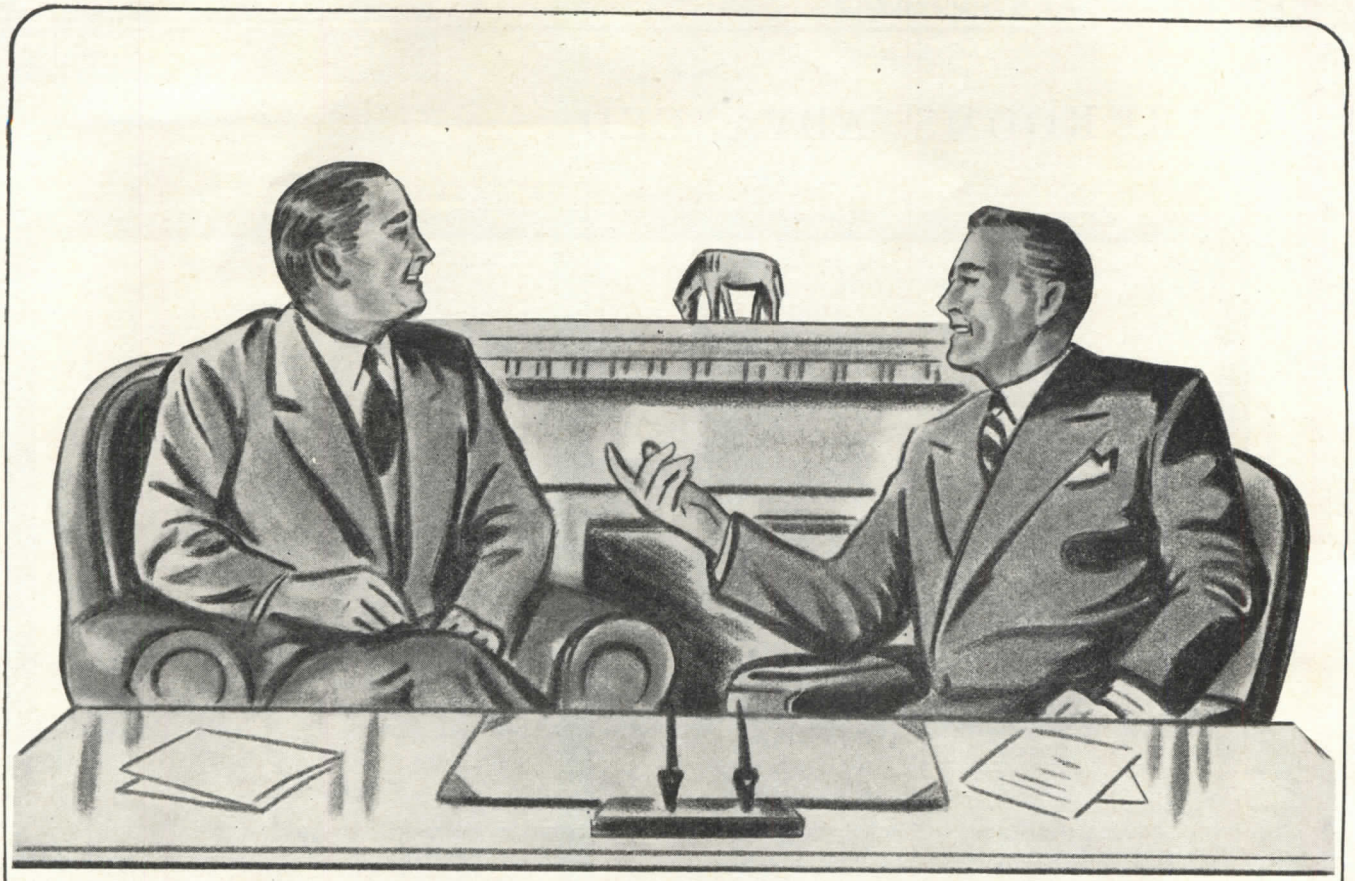


Advanced Amateur — Small Professional Workshop. Planned by Willard D. Morgan



Professional Workshop. Planned by Willard D. Morgan

Approx. scale: ¼" = 1'



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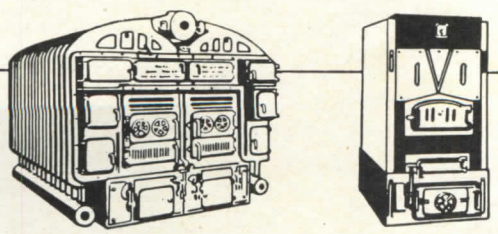
Bankers concerned with real estate and its management almost invariably advise cast iron for new boilers or for replacement. Experience has taught them good reasons why cast iron is a sound investment . . .

They know that cast-iron boilers last longer—and that the cost may be amortized over longer periods. They appreciate the high rust-and-corrosion resistance of cast iron—the ease of installation and replacement because of sectional construction. They have watched with approval the consistently-low operating costs resulting from high efficiency. They understand the ready adaptability of modern cast-iron boilers to all fuels and fuel-burning methods.

Bankers who know cast iron also know the superiority of H. B. Smith Cast-Iron Boilers for every use—in business, industry, institutions and homes. Plan to use them for every new building, every replacement. Write for your free catalog.



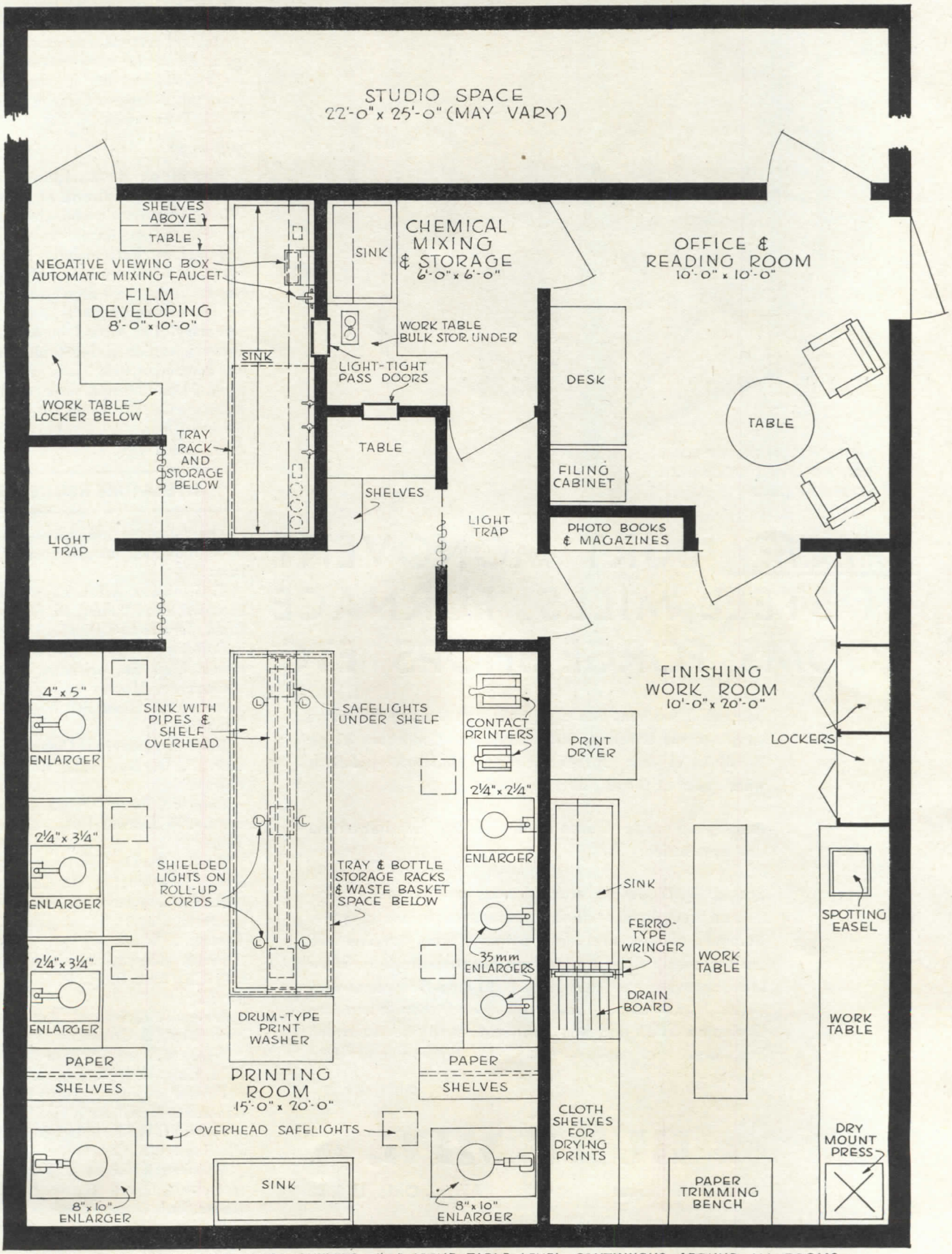
H.B. Smith

CAST-IRON BOILERS

THE H. B. SMITH CO., INC., WESTFIELD, MASS. Offices and Representatives in Principal Cities

DARKROOMS: COMMUNITY

Community Center Photo Workshop. Planned for groups of 12–15 by Willard D. Morgan Approx. scale: ¼" = 1'.



NOTE – STRIP-TYPE CONVENIENCE OUTLETS, 1'-0" ABOVE TABLE LEVEL, CONTINUOUS AROUND ALL ROOMS. SEPARATE FUSES FOR 8"x 10" ENLARGERS, PRINT DRYER AND DRY MOUNT PRESS.

(*Continued from page 126*)

dimensions and list prices of Y-type and type T strainers, large pipe line strainers for water or oil service, horizontal and vertical separators for steam, air or gas service and receiver separators for various installation conditions. 16 pp., illus. American District Steam Co., North Tonawanda, N. Y.

WIRING

Handbook of Residential Wiring Design and **Handbook of Farmstead Wiring Design.** Two booklets on wiring to meet the specific needs of the home and the farm. Each includes floorplans, a list of electrical symbols and definitions, general and special requirements, outlet and circuit requirements, and a tabular summary. The second booklet also includes a section giving tables and data on demands, wire sizes and voltage drop. 24 and 56 pp., respectively, illus. Industry Committee on Interior Wiring Design, Room 2650, 420 Lexington Ave., New York 17, N. Y.

LITERATURE REQUESTED

The following individuals and firms have requested manufacturers' literature:

F. G. Ascher, A.I.A.A., Architect and Licensed Land Valuer, 16, Saadya Gaon Road, Jerusalem-Rehavia, Palestine.

Building & Manufacturing, Ryan House, Eagle St., Brisbane, Australia.

Cameron, Murray and Fairfield, Architects, 128 Bloor St. West, Toronto, Canada.

Jules P. Channing, Consulting Engineer, P. O. Box 572, Miami Beach, Florida.

Cooper & Perry, Architects and Engineers, 204 Journal Bldg., Knoxville 8, Tenn.

Walter W. De Cherrie & Associates, 180 W. Washington St., Chicago 2, Ill.

James C. Gardiner & Associates, Architects, Puget Sound Bank Bldg., Tacoma 2, Wash.

Frank Gibson, Architect, McCaysville City Hall Bldg., P. O. Copperhill, Tenn.

Jesse T. Johnson, Architect, 713 Sycamore St., Columbus, Ind.

Nashaat Morsy, Architect, P. O. Box 1731, Cairo, Egypt.

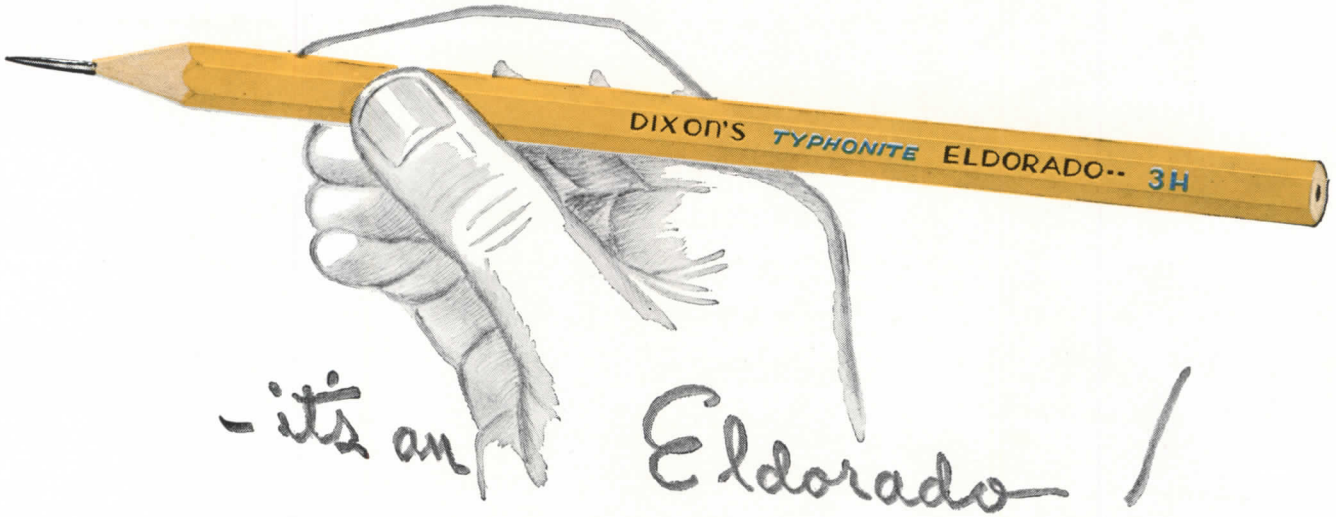
Palmer Sabin, Architect, 1009 E. Green St., Pasadena 1, Calif.

Robert I. Upshur, Architect, 4 Loring Pl., Sumter, S. C.

Vonnegut, Wright & Yeager, Architects, 402 Opera House Bldg., Terre Haute, Ind.

Wright and Selby, Architects and Engineers, 211a Hightower Bldg., Oklahoma City, Okla.

Expert fingers know—



—it's an Eldorado!

The Easy drafting Pencil Just as a superior instrument responds to the sensitive fingers of a master pianist—so do the true degrees of Typhonite Eldorado leads respond to the skilled fingers of a draftsman. Eldorado is the easy drawing pencil that puts harmony in all work. Let it work for *you!*

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PENCIL SALES DEPARTMENT, JOSEPH DIXON CRUCIBLE CO., JERSEY CITY 3, N. J.

WIRE INSULATED WITH GEON OFFERS THESE ADVANTAGES

in domestic, industrial, and utilities wiring, and in manufacturing

Excellent electrical properties
Thin coating of insulation
More conductors in a given space
Ease of handling
Easy stripping
Light weight
Resistance to ozone, wear, sunlight, water, chemicals, and most other normally destructive factors
14 colors including NEMA standards

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COPPER PLUMBING

. . . installed at a price competitive with rustable pipe

IF YOUR CLIENTS could have copper plumbing at little or no more than the cost of a rustable installation which would they choose? Today they can have just that by using Anaconda Copper Tubes, Type K or L, with Solder-Type Fittings.

Made from deoxidized 99.9+% pure copper, Anaconda Copper Tubes are furnished soft in 60-foot coils in sizes up to and including 1¼"; also hard or soft in 20-foot straight lengths. Larger sizes are supplied hard or soft in 20-foot straight lengths only.

Because of the excellent performance records of Anaconda Copper Tubes for water lines, they are gaining wide acceptance for forced circulation hot water heating, and also for lawn sprinkler systems, tank-to-oil-burner, bottled gas and other connections. Detailed information is available in Publications B-1 and C-2. Write for a copy of each.

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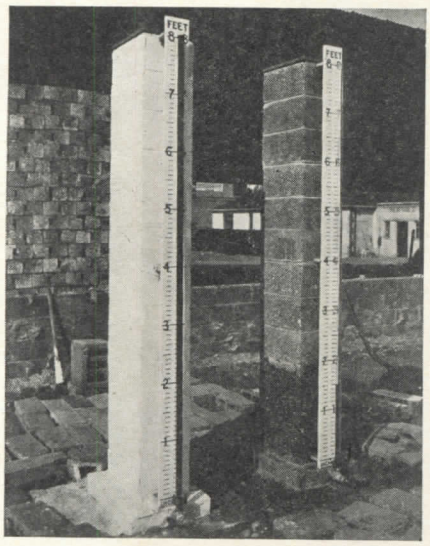
PRODUCTS for Better Building



Treated cinder block resists seepage

WATERPROOFING

The resistance to moisture and seepage afforded to masonry by *Aquella* waterproofing compound has been demonstrated by the manufacturer in a series of waterproofing tests conducted before a group of architects, engineers, and contractors at the Long Island City plant of National Brick Corporation. Two test towers, made of highly porous cinder concrete blocks were constructed, with the absorption rate of the blocks predetermined as being from 22 to 25 per cent by weight. The column, shown above on the left, was treated with Aquella, while the one on the right was not. The Aquellized tower was filled with water to a height of 8 ft., equivalent to a hydrostatic pressure of about 500 lb. per sq. ft. at the base. The un-Aquellized tower could not be filled higher than 18¾ in. because water seeped through at a rate of 2 gal. per minute. These test conditions are said to be 50 times more severe than that prescribed by the U. S. Bureau of Standards, which calls only for a maximum 2 in. head of water, or 10-lb. pressure per sq. ft. Aquella Products, Inc., Richmond Hill, New York.

TOUGH FLOORING

During the war *Nairn Marine Deck Covering* was developed for shipboard use to provide a fire-retardant resilient deck surface that would withstand rough usage and the intense heat of possible fire between decks. It gives off no combustible smoke or fumes at temperatures corresponding to red or white hot steel, approximately 2000° F. Now available for civilian use in three colors, green, terra cotta, and gray, this linoleum is said to offer a number of advantages for use under conditions where an attractive floor covering that will take abuse is needed — in public corridors, elevator cabs, bars, motion picture booths and laboratories: it is not surface-marred by burning cigarettes; resists stains, wear, and alkali cleaners; and is less slippery than conventional linoleum. Congoleum-Nairn, Inc., Kearny, N. J.

WARM-TONE FLUORESCENT

Introduced last year in 40-watt and 100-watt size fluorescent lamps, the new 4500-white color is now available in a full line of fluorescent lamps, from 6-watt to 100-watt sizes, and in all four sizes of Slimline fluorescent lamps. The new color has characteristics which are a balance between white and daylight colors, lighting engineers at Nela Park say. The color is described as being sufficiently near daylight to meet ordinary needs for color discrimination, and at the same time, warm enough in tone to be pleasing for indoor illumination. Colors of most materials will appear more natural under the 4500-white lamp, appropriate for all lighting applications including home, office, store, and industrial uses. General Electric Company, Nela Park, Cleveland, Ohio.

INSULATING GLASS

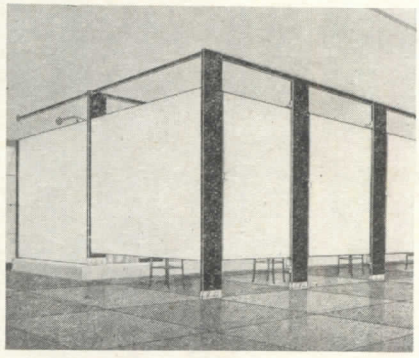
Soon to be available in standard window sizes is *Thermopane*, the double-glazed windowpane consisting of two panes of polished plate glass with a dehydrated and sealed-in air space between. The sizes are standard for picture windows, double-hung wood sash, and residential steel casement windows, based upon American Standards Association data for modular window construction. Glass distributors, as well as sash and door manufacturers, will in time carry these standard sizes in their warehouse stocks. Sash and door jobbers will stock window frames designed for this type of windowpane as well as glass units for immediate service. Libbey-Owens-Ford Glass Company, Toledo 3, Ohio.

FLOOR ARMOR

Many industries require a heavy-duty surface armor for floors in shops, mills, freight terminals, loading docks, platforms, and bridges. Produced for this purpose, *Hexteel* is a heavy-duty steel grid designed to be embedded in concrete, mastic, or any plastic floor material to provide a solid, one-piece, rigid, and seamless mat over the entire surface. The steel tops of the mesh are exposed so that truck wheels may move in any direction without leaving the steel bearing surface. Dropping of heavy materials leaves the flooring unaffected. *Hexteel* comes in standard units, 3 ft. by 10 ft., 12- and 14-gauge thickness, and in ¾-in., 1-in., and 1¼-in. depths, for new floors and the repair of broken or crumbling spots in existing flooring. Wm. F. Klemp Company, 6601 S. Melvina Ave., Chicago 38, Ill.

PAPER-PLASTIC RUGS

Some time in the future, plastic-treated paper rugs may find wide use in patios, sunporches, and summer cottages where formality is not the rule. Paper twine is coated with a flexible plastic called *vinyl butyral* and then woven on standard mill equipment into rugs that have improved resistance to water, wear, skidding, mildew, and fading. It will be possible to wipe stains from them with a damp cloth. For decorative effects weavers can use pigments permanently incorporated in the plastic. Monsanto Chemical Company, St. Louis 4, Mo.

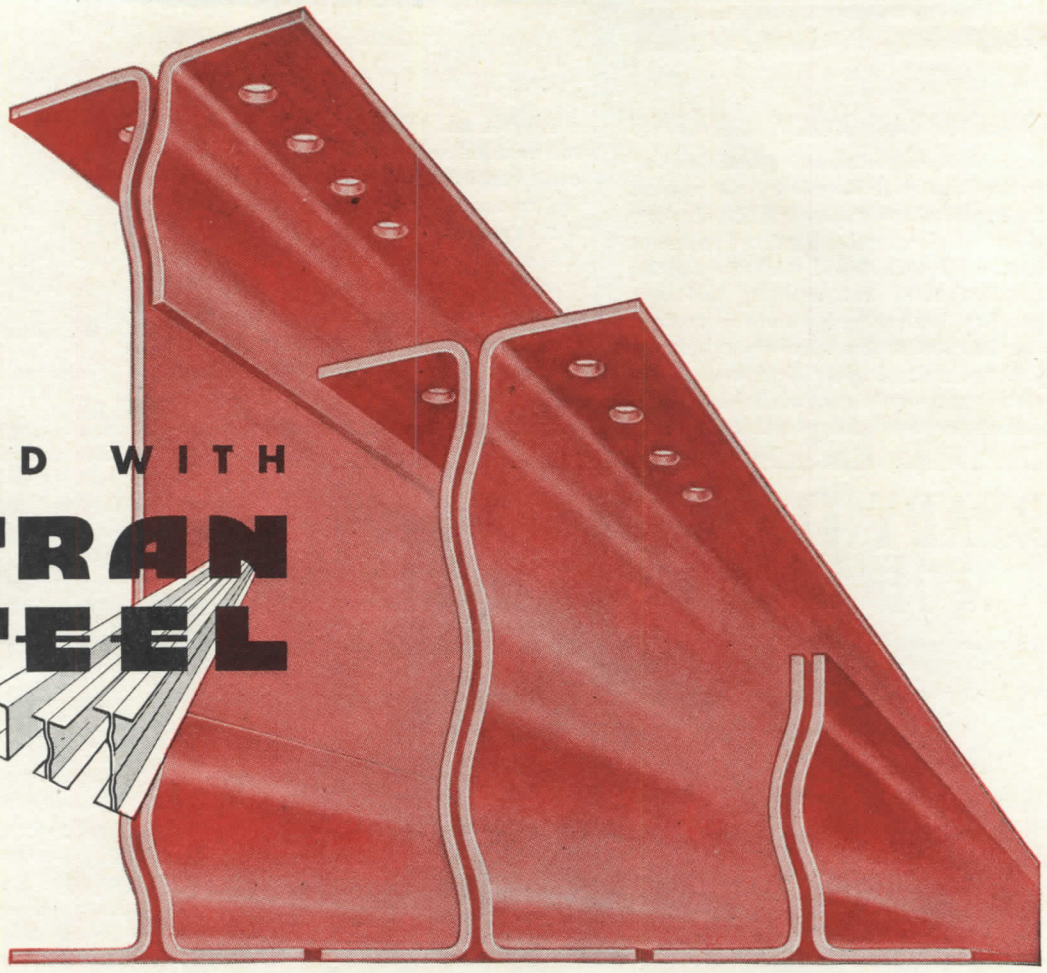


Private showers and dressing rooms

SHOWER UNITS

Shower stall compartments are now being made of *Porcena*, a porcelain-on-steel product with a vitreous enamel finish said to be scratch-resistant and resistant to blows because of the high degree of elasticity offered by glass and sheet steel, with a hard smooth surface which is easy to clean and discourages defacement. Shower stalls are available with or without dressing room compartments in as many units as desired. Installations are usually composed of compartments 3 ft. sq., but are available in any size that complies with the modular system of dimensional coordination. Doors are usually furnished for the entrance to the dressing room compartment and the opening between shower stall compartment and the dressing room is customarily equipped with a white duck curtain. Sanymetal Products Co., Inc., 1705 Urbana Rd., Cleveland 12, Ohio.

(*Continued on page 138*)



BUILD WITH

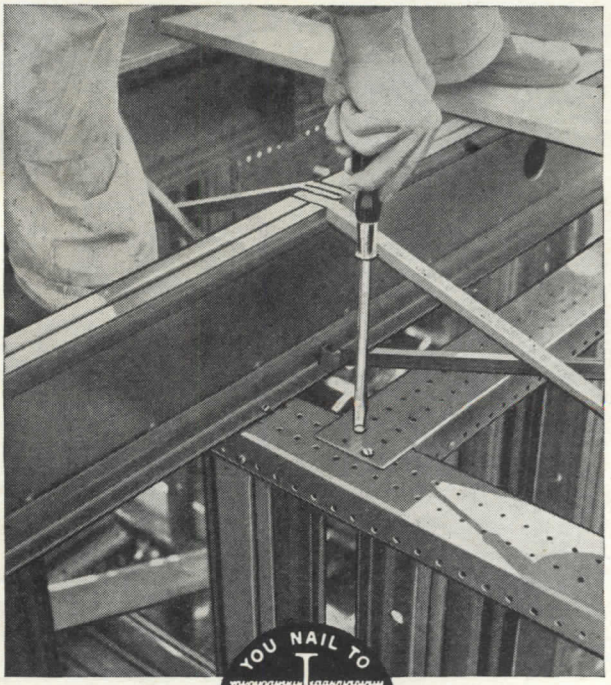
STRAN STEEL

THE LIGHTWEIGHT STEEL FRAMING THAT GOES UP FAST

Stran-Steel's fast, efficient erection method appeals to both architects and builders. Studs, joists and channel plates are laid out on the ground and joined with self-threading screws to form a section of convenient handling size; then the whole is raised and secured in place. Other building materials are later attached directly to the frame with hammer and nails. No special tools or equipment is required.

Stran-Steel provides a fire-safe, rigid, long-lasting frame that assures low maintenance costs. It is a material of precision and uniform quality, free from such variations as are caused by growth, seasoning or "greenness." The patented *nailing groove* grips nails more securely than wood does.

Get the full story of this economical, *fast-erecting* framing system. See Sweet's File, Architectural, Sweet's File for Builders, or the January issue of Building Supply News.



GREAT LAKES STEEL CORPORATION

Stran-Steel Division • Penobscot Building, Detroit 26, Michigan

UNIT OF NATIONAL STEEL CORPORATION

(*Continued from page 136*)

COLD-SPRAY ROOF COATING

A cold-process adhesive and built-up roofing material is now on the market for application by spraying. Eliminating the need of expensive heating equipment on the job and skilled workmen for the application of hot asphalt, this new product, both adhesive and top coating, can be used with a specially developed package unit of spray equipment. Formerly spray equipment available was too delicate to handle heavy fibrated roofing materials, and the materials themselves, too unsuitable for spray application, because coatings thus produced were heavily pockmarked or "orange peeled" by the impact of the spray. These difficulties have been overcome through development of special spraying equipment and new cold-process products especially engineered for spray application. The following advantages are announced: (1) faster application; (2) improved workmanship through more uniform coatings; (3) easier application on inaccessible areas; (4) rapid dampproofing of parapet walls and coating of metal surfaces adjacent to roof areas; (5) tighter bond because of impact effect of spray; and (6) more effective merchandising by roofers through convenience and neatness of method. The Flintkote Company, Inc., 30 Rockefeller Plaza, New York 20, N. Y.

Faster roof-coating by cold-spray method

HEATING UNIT

Combining the advantages of convected and radiant heating, the *Trane Convector-radiator* has been so simplified that it can easily be specified and ordered directly from jobbers' stock for large or small jobs. There is only one model, so designed that it can be installed either as an exposed floor cabinet or as a semi-recessed unit. A universal header has been developed which permits either top or bottom connections at each end. It is said to be suitable for any gravity or forced hot water system or any two-pipe steam system. The complete line consists of 57 sizes in three standard depths and lengths with capacities ranging from 16 to 100 sq. ft. The Trane Company, La Crosse, Wisc.

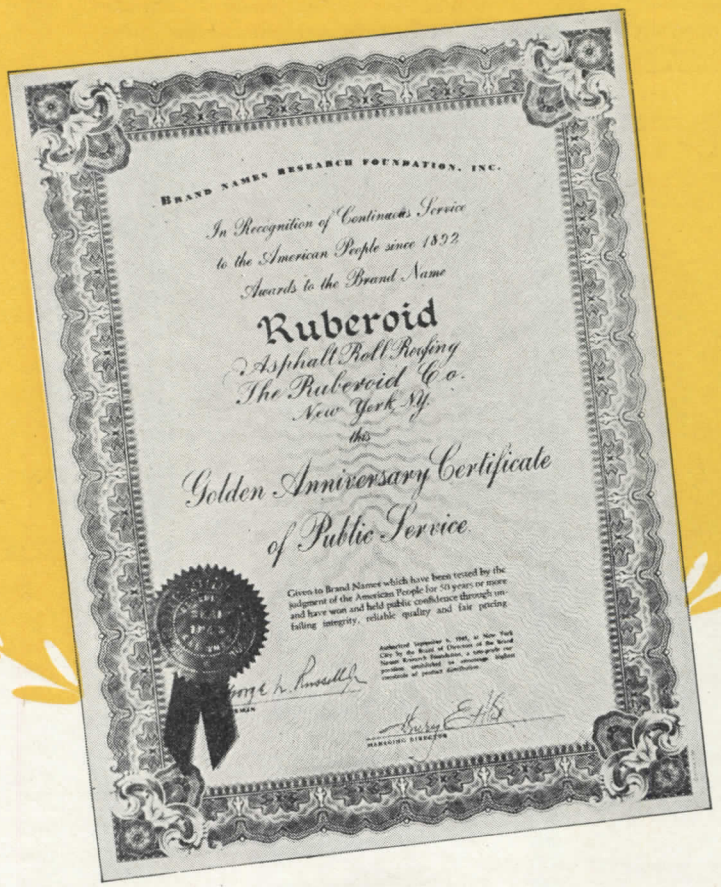
ELEVATOR GUIDES

Savings in current consumption and maintenance costs of 24 to 44 per cent are claimed for the *Elsco Safety Roller Guide* for elevators, designed for new installations or as a replacement for the old slipper-type sliding shoes. This guide contacts the guide rail with rollers mounted on compensating arms designed to yield automatically under varying conditions of use and yet maintain constant contact. Elimination of friction results in savings in maintenance and current, and eliminates greasing of the rails, thereby reducing the fire hazard within the shaftway. A stabilizing spring suspension eliminates rail joint knocks and absorbs rail inequalities, giving a smooth, gliding ride. The roller guide has been approved by the Bureau of Standards and Appeals of the City of New York for use up to 1200 ft. per minute. Elevator Safety Corporation, 165 Broadway, New York, N. Y.

(*Continued on page 140*)

FOR OVER FIFTY YEARS

"A name to remember"



THE Certificate of Public Service is awarded by Brand Names Research Foundation to names "which have been tested by the judgment of the American people for 50 years or more and have won and held public confidence through unfailing integrity, reliable quality and fair pricing."

Ruberoid recently received this honor. Naturally we take pride in this recognition of our constant endeavor to bring our customers the best.

Since 1892 many outstanding products have been pioneered by Ruberoid—products not yet old enough to be eligible for a 50 year Certificate of Public Service, but each distinguished for the same high standards of workmanship and service. Architects, contractors, dealers and the public can rest assured this company will spare no effort to maintain the policies and standards which have made Ruberoid "A name to remember."

RUBEROID

The RUBEROID Co., Executive Offices: 500 Fifth Ave., N. Y. 18, N. Y.

ASPHALT AND ASBESTOS BUILDING MATERIALS

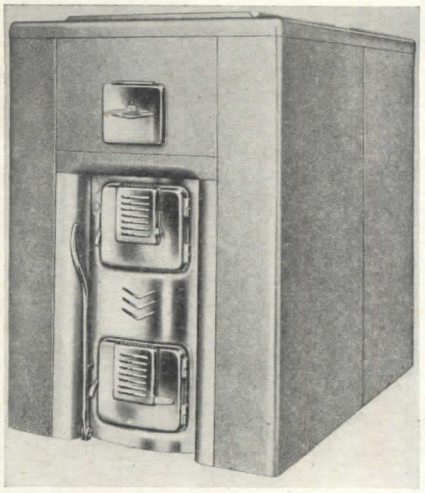
(*Continued from page 138*)

SHOWER DOORS

Aluminum frames for glass shower doors are now being sold by the manufacturer to hardware dealers, building supply houses, plumbers, glass companies, and venetian blind contractors, and shipped to them knocked-down (minus glass) in standard lengths. Two simple cuts allow the doors to be made in any width, 30 in. and under. Frame is pressure-set in non-deteriorating duo-rubber. Each door is equipped with anti-drip channel, which protects the floor from water when the door is open and insures rapid drainage of water into the shower stall. American Shower Door Company, Dept. AR, 1001 N. La Brea Ave., Los Angeles, Calif.

FORCED AIR FURNACE

War-developed processes account for many of the improvements in the *Supersteel* forced air furnace, made of "Torridsteel," a 7-gauge steel chosen for durability and resistance to corrosion, coupled with quick heat response. Eighty-eight per cent of its joints are leakproof "submerged" welded, a new process that penetrates twice as deep as ordinary welding. A new "steel ring" radiator makes smoke and gases travel farther, and speeds up heating. The new furnace design has up to 21 per cent greater heating surface than the average furnace. Kalamazoo Stove and Furnace Co., Rochester Ave., Kalamazoo, Mich.



Furnace features larger heating surface

SOIL TESTER

Damage wrought by electrolysis upon underground pipelines, water supply systems, utility services, and communications often can be avoided if it is anticipated and protective measures are taken. A *Soil Resistivity Meter Model 243* has been developed for quick and easy soil readings, in a radius of approximately 12 in. of prod tip, inserted to any desired level. Tiresome cranking is eliminated through a self-contained power source. The meter is lightweight and comes equipped with a comfortable webbed strapping harness for carrying. Associated Research, Inc., 231 South Green St., Chicago 7, Ill.

PRE-CAST CONCRETE

A new concrete-base material, *Modern Crete*, is now in first stages of production. By a patented process, this material is produced in block form, weighing approximately one-third that of an equal amount of concrete. According to the manufacturer, it can be nailed near its edge without cracking or chipping, and can be sawed to size at the construction site: a factory-controlled process permits its bending to desired specifications. In addition it is said to have a positive thermal insulation quality, and to be proof against termite-attack. Schaaf Pre-Cast Concrete Company, G-5522 North Dort Highway, Flint, Mich.

(*Continued on page 142*)

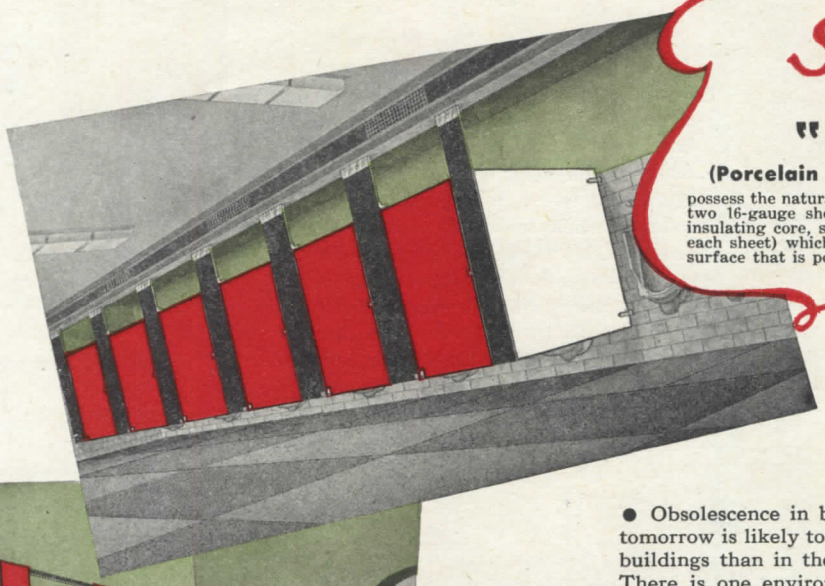
A Toilet Room Environment is More Vulnerable to Obsolescence than its Utility

Sanymetal*

"PORCENA"

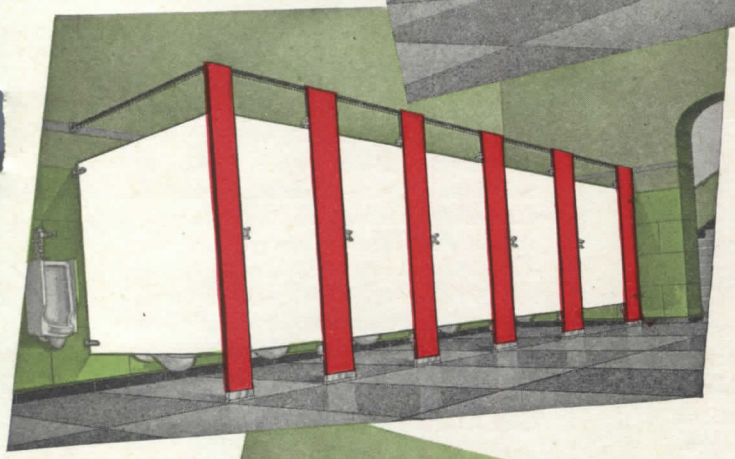
(Porcelain on Steel) TOILET COMPARTMENTS

possess the natural structural strength of steel, not one sheet, but two 16-gauge sheets securely bonded on opposite sides of dense insulating core, strengthened by porcelain enamel (four layers on each sheet) which provides a non-porous, flint-hard, glass-smooth surface that is positively impervious to odors, acids and moisture.



Sanymetal Century Type Ceiling Hung Toilet Compartments are particularly appropriate for schools. They impart dignity, refinement, and cheerfulness to the toilet room environment.

Sanymetal Porcena Academy Type Toilet Compartments satisfy architects who desire a conservative but modern toilet room environmental treatment.



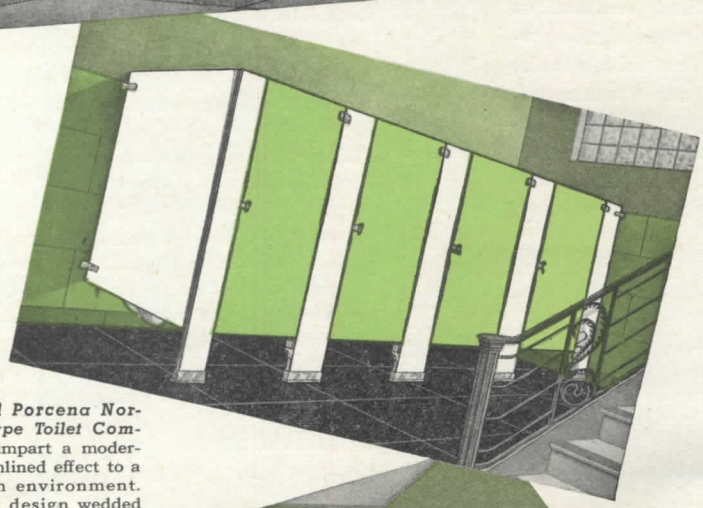
● Obsolescence in buildings that are being planned today for tomorrow is likely to occur in more places on the inside of those buildings than in their exterior treatment and construction. There is one environment you can protect against premature obsolescence—the toilet room environment. Sanymetal "PORCENA" (Porcelain on Steel) Toilet Compartments provide a generous measure of protection because of these features: modernity and beauty, fadeless, harmonious color combinations, and construction of the ageless and fadeless material—Sanymetal "PORCENA" (porcelain on steel).

Toilet room environments impress more persons favorably or unfavorably than any other single environment within a building. Toilet compartments usually dominate a toilet room and influence the toilet room environment. Install Sanymetal "PORCENA" (Porcelain on Steel) Toilet Compartments and win the favorable comment of tenants or students or customers or employees. These toilet compartments embody features the importance of which are usually unappreciated and, therefore, often neglected by those of less experience. Made of the ageless, fadeless material, porcelain on steel, Sanymetal "PORCENA" Toilet Compartments are available in a wide range of beautiful never-fade colors imbedded deep into a glass-smooth, flint-hard, non-porous surface that cleans easily, is moisture and rust proof, and always looks new.

Sanymetal "PORCENA" Toilet Compartments embody the results of over 32 years of specialized skill and experience in making more than 70,000 toilet compartment installations. Ask the Sanymetal Representative in your vicinity (see "Partitions" in phone book) for helpful suggestions on planning modern toilet room environments. Refer to Sanymetal Catalog 19-B5 in Sweet's Architectural File for 1946 or write for file copy of Catalog 84.

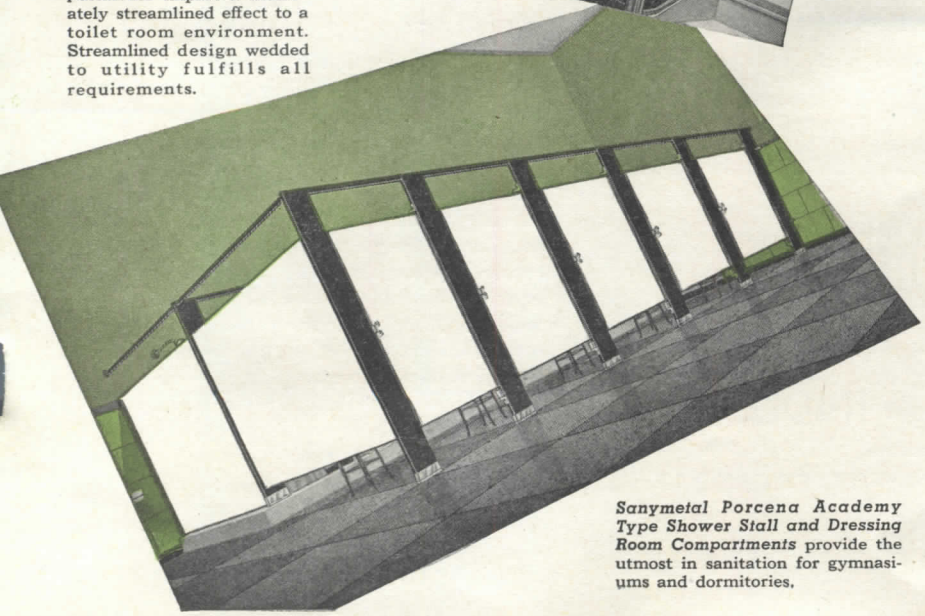
THE SANYMETAL PRODUCTS COMPANY, INC.

1689 URBANA ROAD • CLEVELAND 12, OHIO



Sanymetal Porcena Normandie Type Toilet Compartments impart a moderately streamlined effect to a toilet room environment. Streamlined design wedded to utility fulfills all requirements.

Sanymetal Catalog 84 illustrates several typical toilet room environments as well as shower stall and dressing room suggestions.



Sanymetal Porcena Academy Type Shower Stall and Dressing Room Compartments provide the utmost in sanitation for gymnasiums and dormitories.

Sanymetal*

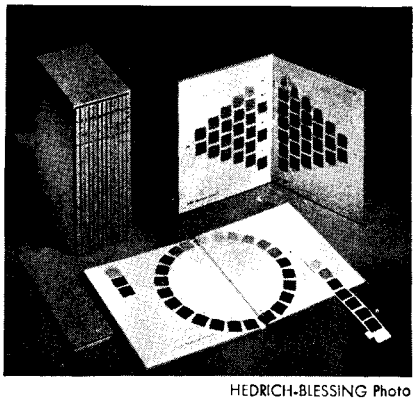
*Trade Mark Reg. U. S. Pat. Off.

TOILET COMPARTMENTS, SHOWER STALLS AND DRESSING ROOMS

(*Continued from page 140*)

COLOR GUIDE

A new "Large Chip" edition has been brought out to supplement the original Color Harmony Manual published in 1942. The new edition provides color chips that are one inch square plus a tab, with two and one-half times more working area than the chips in the first edition. This permits increased speed in visual impression, and greater ease in color matching. The Color Harmony Manual was originally published to reduce the problem of color harmonizing almost to a mathematical formula. It consists of a set of 13 volumes containing 680 movable color chips, and the Color Harmony Index, a set of mechanical indexes, which makes the same 680 colors available for comparison. Chips are dull on one side and shiny on the other so that unknown colors can readily be compared to them. A new feature is a work chart in which the chips may be arranged for study in circular or linear series. The text also has been revised. Container Corporation of America, 111 West Washington St., Chicago, Ill.



HEDRICH-BLESSING Photo

680 color chips for color harmony study

CLEANING BLUEPRINT ROLLS

The cleaning of blueprint duplicating machine rolls by hand-scraping or sanding can prove tedious work. An electrically-powered wire-brush proves a great time-saver in removing crystalline substances that form on the rolls. Brushes come in two types: .005-in. wire for normal cleaning, and .0095-in. wire for removing heavier coating. Brush Division, The Osborn Manufacturing Company, 5401 Hamilton Ave., Cleveland, Ohio.

GREASE CATCHER

A new grease interceptor of compact design can be used in places where ordinary grease interceptors are too high to install without being recessed in the floor. This unit, when installed in the drainage lines of sinks and dishwashers of restaurants, soda fountains, and cafeterias, intercepts grease by the flotation principle. The intercepting chamber can be removed readily for easy cleaning. Units are made in cast iron or stainless steel, and can be furnished with anchorage flange or seepage pan, when so specified. J. A. Zurn Mfg. Co., Erie, Pa.

STANDARDS

Welding

A 1946 edition of the Standard Code for Arc and Gas Welding in Building Construction has been published to replace the 1941 (tentative) edition. The new edition embodies revisions based on research and on recent applications of welding to structural fabrication. The section on design now provides for increased allowable weld unit stresses equal to those allowed for the steel being welded. Other sections on filler metal, workmanship, inspection, and qualification of welding operators and procedures have also been revised. American Welding Society, 33 West 39th St., New York 18, N. Y. 50 cents.

(*Continued on page 160*)

A Policy for Better Heating

If your heating system has been wasting fuel and causing discomfort, it's just "good policy" to do something about it! Here's one way to assure even, comfortable temperatures in all parts of your building . . . one way to lower fuel bills.

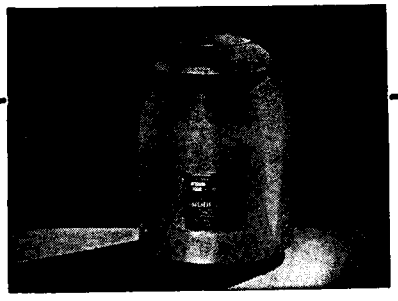
Modernize your obsolete heating equipment with the Webster Moderator System of Steam Heating. Overheating and underheating are reduced to a minimum. An Outdoor Thermostat automatically balances the heating rate to agree with changes in outdoor temperature.

More Heat with Less Fuel

If you are planning a new building or modernization of an existing building, you can assure comfort as well as economy with Webster Automatic Controls.

Find out why so many of America's finest buildings are heated by Webster Moderator Control. Here is a system unique in comfort, economy and trouble-free operation. Let us show you why.

WARREN WEBSTER & CO., Camden, N. J.
Pioneers of the Vacuum System of Steam Heating:: Est. 1888
Representatives in principal cities : : Darling Bros., Ltd., Montreal, Canada



The Webster Outdoor Thermostat, an element of the Webster Moderator System, automatically changes heating rate when outdoor temperature changes.

Fuel-Saving Starts With CONTROL

AUTOMATIC Webster Heating Systems

supply system, including outlets and fixed lights, a check-list of electrical appliances, an explanation of the principles of good lighting.

2. "Insulation" (Circular Series No. F6.0), a discussion of home insulation, giving pertinent facts, reasons for insulating the home, and including a table showing reductions in the fuel bill possible in eight types of construction for one- or two-story homes.

3. "Interior Decoration" (Circular Series No. H1.0), hints for arrangement of furniture, choice of color, style combinations, etc., in home decorating.

Copies of all three pamphlets may be obtained gratis from the Small Homes Council, University of Illinois, Urbana-Champaign, Ill.

Extension Courses

The Extension Division, University of Wisconsin, Madison, Wis., through its department of civil and structural engineering, is now offering two revised correspondence-study courses in mechanics for engineers, mainly for qualified students not currently attending schools of engineering. The aim of each is to afford a preparation in the principles of the subject and in their application to engineering problems. The courses are Mechanics 1a (statics) and Mechanics 2 (dynamics). Each embodies 24 assignments and allows three credits toward a degree in any branch of engineering. These credits are accepted by most institutions of higher learning.

Courses Reoriented

General reorientation of the landscape architecture field at Michigan State College is being undertaken by Harold W. Lautner, new head of the department, and formerly of the department of city and regional planning, Graduate School of Design, Harvard University. A broad program is being mapped for strengthening all courses in design and construction on a high professional level with emphasis aimed at techniques in keeping with progress in modern architecture, urban development and landscape architecture.

The point of view of space planning in functional design in these fields, as reflected in the work of the best modern designers, is being incorporated into the revamped courses and schedules. Commencing with the fall term, intensified work will be given in the functional esthetic approach.

Assistants in the department will be Charles Barr and Carl Gerlach, both formerly of Massachusetts State College, and Milton Baron of the Graduate School of Design, Harvard University.

HOUSING CONFERENCE

The first workshop conference on cooperative housing was held at Massachusetts State College, Amherst, July 28 to August 3. The project was designed to provide assistance to 50 groups, about half of them veterans, which have appealed to Eastern Cooperative League for help. Speakers included Dorothy Rosenman, president, National Committee on Housing, and John Jessup, project services advisor, FPHA.

COMING EVENTS

September 30 to October 3: 48th Annual Convention, American Hospital Association, Philadelphia, Pa.

October 7–11: National Exhibition of Gas Appliance Manufacturers and Annual Convention, American Gas Association, Atlantic City, N. J.

October 7–12: 18th International Congress for Housing and Town Planning, Hastings, Sussex, England.

November 11–16: 39th Annual Convention, National Association of Real Estate Boards, Atlantic City, N. J.

(*Continued on page 146*)

November 18–22: 28th Annual National Metal Congress and Exposition, Municipal Auditorium, Atlantic City, N. J.

December 2–7: 17th National Exposition of Power and Mechanical Engineering, Grand Central Palace, New York City.

May 5–11, 1947: 2nd National Plastics Exposition and Annual Convention of The Society of the Plastics Industry, Coliseum, Chicago.

HANDBOOK DELAYED

Publication of the Illuminating Engineering Society's Lighting Handbook, originally scheduled for next month, has been postponed to October, 1947.

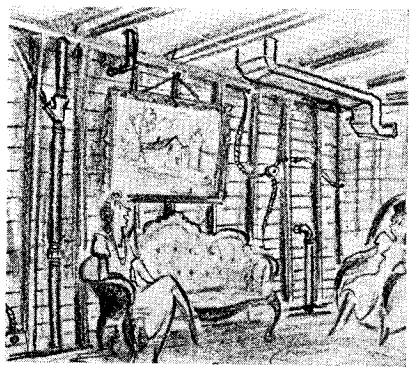
MEDAL AWARDED

The I.E.S. Medal, given by the Illuminating Engineering Society in recognition of meritorious achievement in the lighting field has been awarded by action of the Society's Council to Eugene C. Crittenden, chief of the electrical division, National Bureau of Standards, Washington, D. C. Presentation will take place at the I.E.S. convention at Quebec this month.

Architect's home is like Dunn cartoon

CARTOON VIVIFIED

When cartoonist Alan Dunn drew the two women shown below chatting amid a mass of exposed studs, pipes, conduits and wiring (published in the RECORD in July, 1943), he little thought that one day his drawing would come to life. But architect Frederick H. Reimers has sent us the above photo showing how he and his wife "are living in a corner of their unfinished home in Piedmont, Calif., due



to shortage of materials while they wait for someone to finish — anything." Architect Reimers and his wife probably are telling their visitors, as did the lady in the cartoon, "Perhaps I should explain that my architect believes in exploiting the natural characteristics of the materials."

OFFICE NOTES

Offices Opened, Reopened

The American Institute of Steel Construction, Inc., has opened a district office at 1617 Pennsylvania Blvd., Room 542, Philadelphia 3, Penn.

Frank Gibson, Architect, has opened an office in the McCaysville City Hall Bldg., Copperhill, Tenn.

R. J. Graham, Structural Engineer, has reopened his offices at 343 S. Dearborn St., Chicago, Ill.

Howard R. Meyer, A.I.A., recently released from active duty as Major in the Corps of Engineers, AUS, has resumed his architectural practice with

(*Continued on page 148*)

Beautiful New Effects in Wallpapers

You'll soon see this color page in leading national magazines. To you it brings special good news! For it means that *highly styled wallpaper* is available *now* both for fine homes and for volume housing — as well as for commercial buildings of all types. These gorgeous new patterns include a wide choice of florals, stripes, weaves, and tones . . . many in *new* effects never before seen. See them in the *United Wallpaper Style Album* now at wallpaper stores everywhere.

LOOK FOR THIS SIGNATURE

• The United Wallpaper signature is your *guarantee* of the world's finest quality wallpapers, designed by the world's leading wallpaper artists. For your convenience, every pattern is price-marked on the back . . . guaranteed washable . . . guaranteed fadeproof, style-tested and wall-tested.

Remember, too, among wall-coverings *only wallpaper* combines design, color, originality, practicality and long life.

UNITED WALLPAPER INC.

World's Leading Designers and Largest Manufacturers

Merchandise Mart, Chicago 54, Illinois

offices at 2907 Maple Ave., Dallas 4, Texas.

Sylvester Leroy Smith, A.I.A., has opened offices for the general practice of architecture at 250 N. 15th St., Philadelphia 2, Penn.

Paul Schweikher and Winston Elting, Architects, have reopened their offices on Meacham Rd., Roselle, Ill., following more than three years in the Navy.

LeRoy W. Thompson, Architect and Engineer, after four years in construction work for war plants, has reopened his office for the practice of architecture and engineering at 355 Congdon Ave., Elgin, Ill.

New Addresses

The following new addresses have been announced:

Walter W. De Cherrie, Architect-Engineer, 180 W. Washington St., Chicago 2, Ill.

Irving J. Gluck, 2110 Chartres St., Houston 3, Texas.

Palmer Sabin, Architect, 1009 E. Green St., Pasadena 1, Calif.

Theodore R. Sills & Co. and Sills, Inc., 39 S. LaSalle St., Chicago 3, Ill.

Firm Changes

Abbott, Merkt & Co., specialists in department store structures, have announced the election of Richard H. Tatlow III as their new president.

Samuel D. Cooper, A.I.A., R.E., and C. Reginald Perry, A.I.A., have announced formation of the firm of Cooper & Perry for the general practice of architecture and engineering, with offices at 204 Journal Bldg., Knoxville, Tenn.

Ingham & Boyd, Architects, announce that Charles S. Ingham and Thomas C. Pratt have been admitted to partnership, and the name of the firm has been changed to Ingham, Boyd & Pratt. Address, 1211 Empire Bldg., Pittsburgh 22, Penn.

Homer F. Neville and Mark S. Sharp have announced that on July 1st William H. Simon was taken into their firm, which will henceforth be known as Neville, Sharp and Simon, Architects. Address, 801 Midland Bldg., Kansas City 6, Mo.

John E. Somerville, Architect, and Milo Griggs, Engineer, have formed a partnership for the practice of architecture and engineering, specializing in industrial and commercial plants and processes. Address, 230 E. Walnut St., Green Bay, Wis.

E. Post Tooker, Lewis Bowman, Ira H. Davey and Ella V. Kelleher have announced formation of the firm of E. Post Tooker & Associates, Architects, with offices at 101 Park Ave., New York 17, N. Y.

Kurt Vonnegut, A.I.A., George Caleb Wright, A.I.A., and Ralph O. Yeager, A.I.A., have formed the new architectural firm of Vonnegut, Wright & Yeager, Architects, with offices at 1126 Hume Mansur Bldg., Indianapolis 4, and at 402 Opera House Bldg., Terre Haute, Ind. Mr. Yeager and Ralph O. Yeager, Jr., an associate in the firm, will operate the Terre Haute office. Other associates are W. C. Wright and A. J. Porteous.

James K. Wright, A.I.A., and Lennon Selby have established the firm of Wright and Selby, Architects and Engineers, with offices at 211a Hightower Bldg., Oklahoma City 2, Okla.

APPOINTMENTS

G. H. Collingwood has joined the staff of Wilson W. Wyatt, Housing Expediter and NHA Administrator, as chief lumber specialist in the Materials Supply Branch of the NHA.

Harry J. Durbin has been retained by the NHA as a special consultant on problems of the industry arising from the Veterans Emergency Housing Program.

(*Continued on page 150*)

ASBESTOS IN ACTION

Here's a NEW role for an old favorite...

"Century" Asbestos Corrugated

Architect:
Hugo K. Graf, St. Louis, Missouri

General Contractor:
L. O. Stocker Co., St. Louis, Missouri

Long an old favorite in industrial architecture, K&M "Century" Asbestos Corrugated now is demonstrating its decorative possibilities. Note the "different" effect achieved by the architect in designing this theatre facade.

It's an ideal material from an architect's standpoint, for in addition to its attractive appearance, "Century" Asbestos Corrugated has unlimited applications. It never needs painting (though it can be painted if desired), and is completely maintenance-free. It is fire-proof, rot-proof and vermin-proof. It goes up fast, and lasts forever, for not only is "Century" Corrugated extremely durable . . . it actually grows *tougher* with age.

Why not look further into "Century" Asbestos Corrugated? We'll be glad to supply you with whatever information you desire.

K&M best in asbestos

Nature made Asbestos . . .
Keasbey & Mattison has been making it serve mankind since 1873

KEASBEY & MATTISON
COMPANY • AMBLER • PENNSYLVANIA

William D. Flanders has been appointed Deputy Expediter for Rental Housing and Special Assistant Commissioner of the FHA. Mr. Flanders, on leave of absence from Fred R. French Companies of New York, of which he is executive vice president, will devote his attention to stimulating the provision of rental units under the Veterans Emergency Housing Program.

Harold D. Hauf, architect and engineer, has been appointed director of the Technical Branch of the NHA. He was formerly associated with Rousseau and McConkey at Ann Arbor, Mich., and York and Sawyer, New York, and was professor of civil engineering and architecture at Yale.

Thomas Larrick, A.I.A., has resigned his position with Ohio University to accept an appointment to the faculty of the School of Architecture, University of Florida.

Al Levinson, president of The Steelcraft Mfg. Co., Cincinnati, has been appointed technical advisor to the Wyatt Housing Program on prefabricated steel housing.

Charles A. Mayer has been appointed assistant engineer in the New York office of the Asphalt Institute.

Robert La Montagne St. Hubert, former professor at the American School of Fontainebleau, Paris, has been appointed professor of architecture at Clemson College, S. C.

Capt. Laurance P. Roberts, Signal Corps, has been appointed director of the American Academy in Rome. He was formerly director of the Brooklyn Museum.

Eugene Sternberg, Czech architect and town planner, has been appointed to the staff of the department of city and regional planning of Cornell University. Since the war, he has been active in the replanning of bombed areas in London, serving as senior assistant architect to Sir Patrick Abercrombie.

ELECTIONS

Frederick J. Mayo, Albert P. Durso, Murray E. Johnson and Donald W. Neville have been elected vice presidents of F. H. McGraw & Co., engineers and constructors of Hartford, Conn.

Officers elected at the annual meeting of the American Institute of Electrical Engineers are: president, J. Elmer Housley, district power manager, Aluminum Co. of America; vice presidents, E. W. Davis, Cambridge, Mass., O. E. Buckley, New York City, T. G. LeClair, Chicago, R. F. Danner, Oklahoma City, C. F. Terrell, Seattle, Wash.; directors, J. F. Fairman, New York, R. T. Henry, Buffalo, E. P. Yerkes, Philadelphia; treasurer, W. I. Slichter, Schenectady (reelected).

Gilbert K. Hardacre, manager commercial sales of the Public Service Co. of Northern Illinois, has been elected president of the Illuminating Engineering Society.

COLLECTOR'S ITEM

Joe E. Smay, director of the School of Architecture, University of Oklahoma, writes that he has "succeeded in securing a set of beautifully bound ARCHITECTURAL RECORDS beginning with Vol. I, No. 1, and continuing uninterruptedly through to Vol. XLIX, 1920." He adds that he thinks he will be able to complete the file through to the present date.

NHA NOTES

Veterans' Housing

A total of 225,000 houses and apartments were completed and nearly half a million started under the Veterans Emergency Housing Program in the first six months of the year, according to Housing Expediter Wilson W. Wyatt.

(*Continued on page 156*)

Announcing

UNITED STATES PLYWOOD CORPORATION

now exclusive distributor of

Decorative

MICARTA*

...to bring lustrous, colorful beauty to modern architecture and interiors

Beautiful Decorative Micarta in the most-wanted colors, linen effects and wood veneers will be available to architects, interior designers, and furniture manufacturers through the nation-wide facilities of the United States Plywood Corporation.

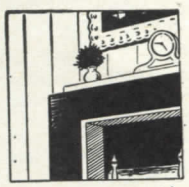
Decorative Micarta Walls are cheerful, bright, and easy to clean.

With Decorative Micarta, your modern interior ideas can be made to blossom forth into fascinating reality. You can make walls, counters, and table-tops gleam and sparkle with an eye-appealing beauty . . . a durable beauty that years of service cannot dim.

On tables and counter tops, Micarta resists spilled liquids and hard usage.

Easy to Clean and Maintain

Micarta's smooth, non-absorbing surface is easy to keep clean and sanitary. It is not marred by spilled alcohol . . . or even mild acids. In addition, it resists abrasion . . . will not chip or crack under severe service conditions.



Around a fireplace, Micarta lends a modern decorative touch.

The cigarette-proof grade is guaranteed against blistering from lighted cigarettes and cigars.

Decorative Micarta sheets may be glued or cemented to plywood, wood composition, or metal. Sheets are 1/16" thick, 30" x 60", 36" x 72", 36" x 84", 48" x 96", with current manufacture predominately in the 48" x 96" size. For prices and complete information, call your nearest United States Plywood distributing unit.

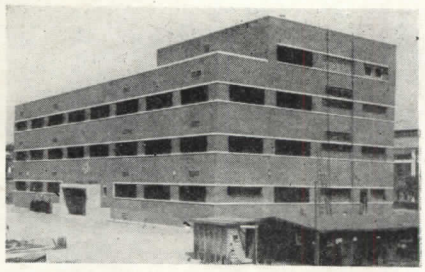
Showcases lined and faced with Micarta show off merchandise to best advantage.

*Manufactured by Westinghouse Electric Corporation
Reg. U. S. Pat. Off.

UNITED STATES PLYWOOD CORPORATION, 55 West 44th Street, New York 18, N.Y.

in the design of the three-story air conditioned and dust-proof building, used exclusively for the manufacture of pharmaceutical preparations in ampules and injectible medicinal solutions. To guard against any contamination, the production floors are divided into small bays where different medicines are isolated during manufacture. Glass bricks replace windows, and the ventilating air ducts are equipped with ultraviolet germicidal lamps. Wherever possible, right-angle corners are eliminated, and all ledges where dust might gather are avoided within the limits of good engineering.

The individual operating bays also permit variety in temperature and humidity control. The rooms will range from 60° to 80°, and ranges of humidity from 25 to 75 per cent can be differentially maintained, according to the need of the preparation. Austin Co., Cleveland and New York, were engineers for the new building.



A recently completed enameling plant

Enameling Plant

Just completed for the American Central Mfg. Corp., Connersville, Ind., is a new porcelain enameling plant built at a cost of nearly three quarters of a million dollars.

Ranking in size with the top 10 such plants in the United States, the new structure features many modern and heretofore seldom used production methods along its mile-long conveyor system. An Illinois water treatment installation softens the water in the pickle room and deionizes the mill-room water. Spray booths are air conditioned.

School Expansion

A $3,000,000 expansion program is currently under way at Boys Town, Neb., a community for underprivileged boys. The program, which will make it possible for the school to double its present enrollment of 500, includes construction of a high school building, trade school, cafeteria, administration building and 25 cottages. Each cottage will contain five dormitory rooms and a counselor's apartment, living room and study hall and two playrooms. Two warm air furnaces will be used in each cottage, one taking care of the dormitory section and the other of the living quarters; heating in both sections will be controlled by Minneapolis-Honeywell's Moduflow, intended to eliminate stratification of air. Leo A. Daly & Co., Omaha, is architect and engineer for the project.

Furniture Showroom

Approximately 38,000 ft. form the new display room and offices of the Simmons Company on Park Avenue, New York.

Display space is in two sections — the main showroom for general sales lines, and the contract and export showroom. The former, consisting of display rooms and open display space, occupies 22,000 sq. ft., comprises a total of 27 special display units. The individual displays have been given separate treatment: striped plate glass mirror backgrounds and colorful drapery to set off the tufted and richly upholstered headboards with swing beds; a colorful background of modern fabrics for the new Hide-a-Bed sofa; a terrace with trellis-work wallpaper and a real brick wall for the outdoor furniture.

(*Continued on page 154*)

Here's the Roof that Really Keeps the Weather Out!

PLASTEEL

Protection against the weather is important. But that's not all. Weather-tested Plasteel is fortified against *all* corrosive influences—the extremes of heat, cold, moisture; of gases, acid fumes, mineral dusts, salt air and other atmospheric conditions. Plasteel is scientifically processed for *permanent qualities*. It takes STEEL sheets for basic strength; hermetically seals them in weather-tight plastic for resistance to corrosion; and then for further insulation and durability, adds a protective finish of pure mineral mica that needs no paint, no repairs. A combination that really gives *extra protection!* It not only keeps the weather out but eliminates deterioration and higher maintenance costs. That's why experienced engineers, architects and maintenance operators prefer *Plasteel Roofing and Siding*.

Let us send samples and details. Write Today.

PLASTEEL Defies:

HEAT

MOISTURE

COLD

ACID FUMES

PROTECTED STEEL PRODUCTS

General Office and Plant • Washington, Pennsylvania

The contract and export display section includes a number of completely built and furnished rooms. There is a ship's cabin, portholes and all, with knotty pine paneling, to show the new Simmons ceiling berth and steel furniture, and a living room-bedroom type of ship's cabin to display a sofa which converts into a double decker wall bed. Also included are hospital rooms to show steel furniture and hospital beds, and an intern's or nurse's one-room apartment.

Architect for the new show floor was Herbert B. Beidler of Chicago, working with the Murrill Co., responsible for Simmons merchandising and styling.

Yarn Showroom

Neutral colors and a simplicity of architectural background were chosen for the new retail wool yarn display area of James Lees & Sons Co., New York. Specially designed display fixtures combine glass, plastic and oak trim, accommodate skeins, balls of yarn and style books. For skein yarn, open wall bins of glass serve the dual purpose of display unit and storage bin. Fixtures for ball yarn feature tiered trays, slanting slightly downward to allow the balls to roll forward as immediate replacements for those removed.

General illumination is a combination of recessed fluorescent and incandescent units; long-stemmed, swivel, parabolic reflectors provide accent lighting. Wall surfaces are predominantly warm gray, the carpet is gray-beige, accents are terra-cotta. Raymond Loewy Associates were the designers.

Veterans Build Homes

Tired of waiting for their housing problems to be solved, 15 Ohio veterans banded together and did their own solving. Incorporating as the Inwood Place Association, the group worked out with the First Federal Savings and Loan Assn. arrangements to finance, under the G.I. Bill of Rights, 15 six-room dwellings at Maumee, a suburb of Toledo.

Land with a 1,000 ft. frontage and a depth of 105 ft. was purchased, and two former AAF pilots, Howard Schneider and Lee Shrewsbury, now Toledo building contractors operating under the firm name of Schneider and Shrewsbury, were engaged to build the houses in accordance with FHA requirements.

The homes will be designed on a single basic plan, but each will be adapted to meet the taste of its owner. Each lot will be approximately 60 by 105 ft. Two lots in the rear of the house sites will be used as a recreation area.

Veterans' Hospitals

Army Engineers have engaged Fugard, Olson, Urbain and Neilers, of Chicago, as architect-engineers for the Veterans Administration hospitals at Iron Mountain, Mich., and Decatur, Ill. Work of preparing plans and specifications will be started immediately.

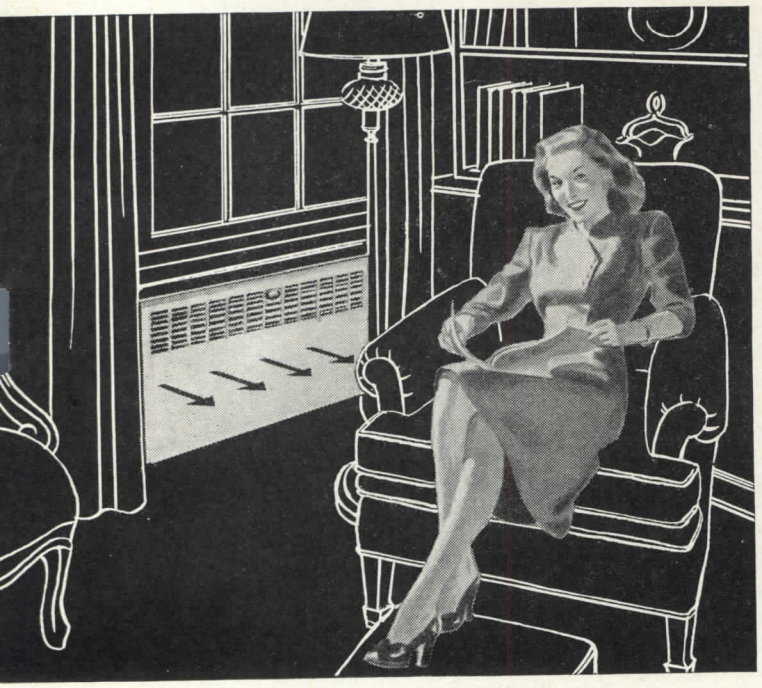
Both hospitals are of the 250-bed general medical and surgical type, and the design will be the same for each, adaptable to the site in each location. The original estimated cost of the Iron Mountain hospital is $4,633,000, that of the Decatur structure, $4,375,000.

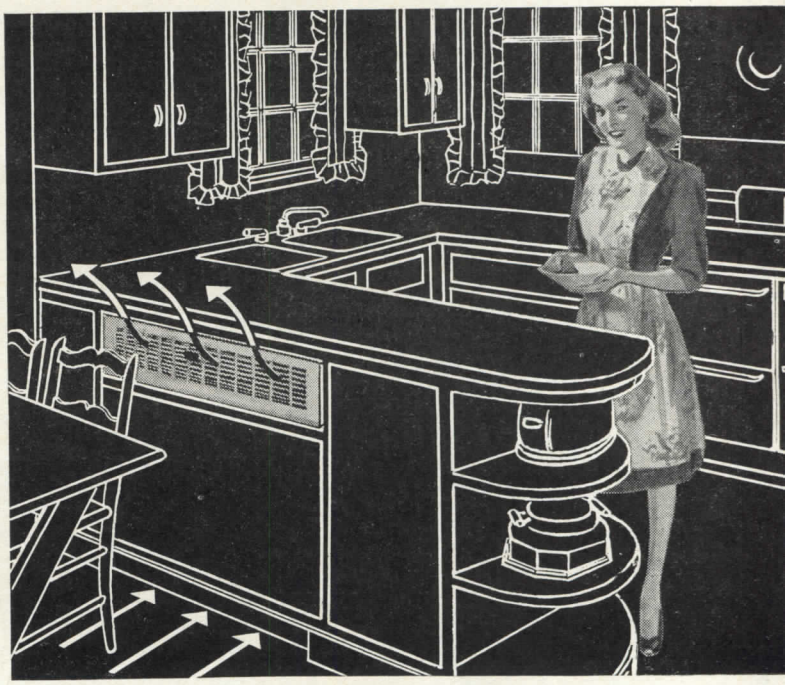
A contract has also been signed by the Army Engineers with A. V. McIver, Cushing and Terrell of Great Falls, Mont., to act as architect-engineers for the Miles City, Mont., Veterans Administration hospital. This is a 100-bed general medical and surgical hospital estimated to cost $2,750,000.

Architect-engineer contracts for three other VA hospitals will be let in the near future: a 200-bed general medical and surgical institution at Phoenix, Ariz., and another of the same size and type at Fort Wayne, Ind.; and a 1,000-bed neuropsychiatric hospital at Houston, Tex.

TWO GREAT HEATING PRINCIPLES BLENDED INTO ONE!

that's what Modine Convector Radiation offers you!





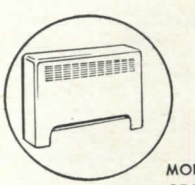
1 RADIANT HEATING

Notice those arrows? That's radiant heat . . . mild radiant heat coming from that Modine Convector panel in just enough quantity to offset heat loss from window areas. But we don't stop with just *radiant* heating. To it we add...

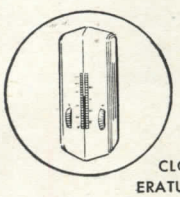
2 CONVECTION HEATING

Convection heating. The hot water or steam circulates through the copper heating unit, draws the cooler, floor-line air into the bottom of the convector where it's warmed, rises, and is then gently circulated throughout the room.

RESULT: A modern, blended heating system for modern living! • A heating system that gives you *individual* room control, that responds almost instantaneously to sensitive automatic controls . . . that gives you gentle air circulation without the use of moving parts that wear out. • Yes . . . the dependable heating comfort, distinctive charm, space-saving, cleanliness and long service life of Modine Convector Radiation is now available for moderate cost homes and apartments. Look for Modine's representative in the "Where to Buy it" section of your phone book. • Write for complete information and free descriptive literature. MODINE MANUFACTURING CO., 1773 Racine St., Racine, Wis.

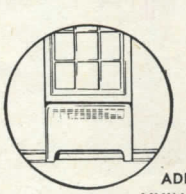


MODERN BEAUTY



CLOSE TEMPERATURE CONTROL

EASY TO INSTALL



ADDS TO LIVING SPACE

PRICED FOR TODAY'S HOMES AND APARTMENTS

Modine

CONVECTOR RADIATION

The Modern "proved by use" heating method

THE RECORD REPORTS

(*Continued from page 150*)

Of the units completed, 153,000 are new permanent houses and apartments, and 72,000 are temporary re-use housing, conversions and trailers.

College Housing

With 76,000 temporary housing accommodations for student veterans completed or under construction and another 27,000 in preliminary stages, the FPHA has announced that all allocations of emergency temporary housing to be supplied to schools at federal expense under existing authorizations have now been made.

The total of 103,000 accommodations for student veterans and their families has been allocated to 675 educational institutions. These accommodations represent about half of the veterans' temporary housing to be provided this year as part of the Veterans Emergency Housing Program. The balance under terms of the Mead resolution amending Title V of the Lanham Act, is to be supplied to local communities for emergency housing of other veterans and the families of men still in service.

Premium Payments

Premium Payments Regulations Nos. 5, 6 and 7, covering convector radiators for residential heating, and the Southern and Northern hardwood flooring industries, respectively, have been issued.

Regulation No. 5 provides for incentive payments of 10 cents per "shipment unit" produced in excess of established quotas. Together with other government action, including a 10 per cent price increase, it is expected to enable the industry to expand considerably and perhaps even double production of convector radiators for residential heating within six months.

Regulations Nos. 6 and 7 authorize manufacturers participating in the plan to pay bonuses to their suppliers of certain grades and species of hardwood lumber. A production increase of about 50 per cent within the next few months is expected to result.

Access to Timber

The allotment of $1,234,000 to Secretary of the Interior J. A. Krug for the construction of 222 miles of access roads to out-of-the-way timber lands on Indian reservations to boost production for the Veterans Emergency Housing Program by an estimated 17,070,000 board feet this year has been announced by Housing Expediter Wyatt.

Since about 10,000 board feet of lumber are required for a six-room frame house, Mr. Wyatt points out, the additional lumber from Indian lands this

(*Continued on page 158*)

for Underfoot--

SAFETY, SECURITY, PROTECTION

NOW We Can Supply All Your MELFLEX *SAFETY SURFACING* NEEDS!

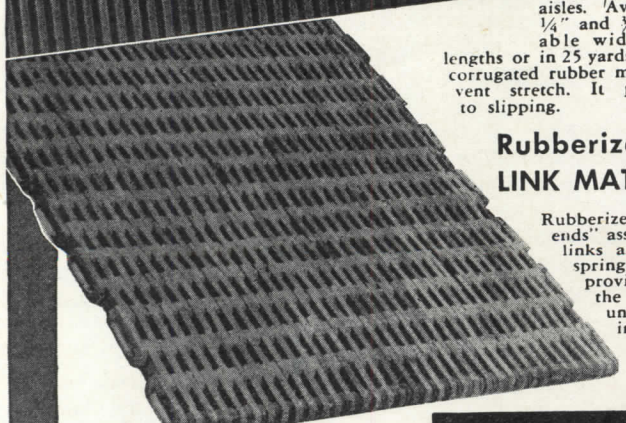
MELFLEX SAFETY Runners, Mats and Treads of high-resistance compounded rubber and shredded fibers assure maximum slip-proof service and greatest wearing economy. . . . NOW these famous SAFETY floor and step covering products can give you the efficient answer to every SAFETY-SURFACING problem. For every slip-preventing purpose—outdoors or indoors—on steps, in aisles, corridors, runways, locker rooms, shower stalls, at entrances, in lobbies, at machines—wherever stepping or walking security is essential to human safety there is a MELFLEX product to meet the need . . .

MEL-ISLE Heavy Duty Ribbed Mats and Runners . . .

Self-cleaning scraper type design presents continuously clean walking surface. Available in 1/8", 3/16" and 1/4" thicknesses. Tough rubber compound and shredded fabric mixture assures slip-proof service, wet or dry, quiet cushioning and long life under hard traffic conditions. Supplied cut to fit your specifications or in rolls 34" wide to required lengths.

Corrugated Rubber Matting . . . Light, Medium and Heavy

Jet-black, long-wearing, non-blooming floor covering especially adapted to indoor service—halls, corridors, locker rooms, aisles. Available now in 1/8", 1/4" and 3/8" thicknesses in variable widths cut to specified lengths or in 25 yards rolls. MELFLEX High-Quality corrugated rubber matting is fabric backed to prevent stretch. It provides exceptional resistance to slipping.



Rubberized Fabric Heavy Duty LINK MATS

Rubberized fabric links continuously exposing "fiber ends" assure greatest slip-resistance, wet or dry. These links are woven together on special rust-resistant spring steel wire. Mats are a full half-inch thick, providing a lasting SAFETY service far beyond the life of ordinary mats. Maximum economy under heaviest traffic conditions. For outside or inside installations—entrances, lobbies, kitchens, for standing workers at machines, behind bars. Gives fatigue-reducing cushion. Supplied in standard sizes or made to any rectangular specifications.

STEP TREADS Molded to Fit Over Step Edge . . . 7/32" Thick

Heavy molded treads of shredded fabric and tough rubber compound. One piece. Fits over step edge, cushioning and giving sure-grip SAFETY. No screws or metal strips. Applies easily with MELASTIC waterproof cement to any step material—wood, stone, metal, tile or composition—and stays "put". High frictional resistance wet or dry. Supplied cut to fit your step specifications. . . . No trimming, no waste.

Write for full details on these Safety-Surfacing products and our special Direct-from-Factory prices.

MELFLEX PRODUCTS CO.
L. E. WARFORD, President
415 Wheeler Lane, Akron 8, O.

THE RECORD REPORTS

(*Continued from page 156*)

year is the equivalent requirement for approximately 17,000 houses.

Negro Housing

Eight Southern states are making available for Negro families 21.6 per cent of new housing units already planned under the Veterans Emergency Housing Program, according to a survey by the NHA. The eight states are Alabama, Florida, Georgia, Mississippi, Tennessee, North and South Carolina and Virginia.

Goals of new construction needs in 430 urban centers have been set through Mayors' Emergency Housing Committees, and a poll of these committees indicates a substantial percentage of such units will be available to Negroes.

Memphis, Tenn., leads the nation in the percentage of such new housing units. Its goal is 8,500 units of residential construction with at least 3,500 available to Negro families. The second highest percentage quota is in Meridian, Miss., which plans 2,000 units of which 800 will be available for Negroes.

In volume of new housing planned to accommodate Negroes, New York City leads the country with a total of 6,172 units. Already under construction for the Metropolitan Life Insurance Co. are the Riverton Houses with 1,232 units, and the James Weldon Johnson Houses for the New York City Housing Authority with 1,310 units. Other projects planned include: Amsterdam Houses, 1,024 units; Abraham Lincoln Houses, 1,286 units; Stephen Foster Houses, 1,320 units.

HOUSING RESEARCH

A Low-Cost Housing Research project has been organized at Louisiana State University as a part of the Engineering Experiment Station of the University. The purpose is "to determine a better method of substantial construction, a better selection of building materials and equipment, a better type of plan and design, a better layout of utilities, at a minimum cost." The program will consist of: scientific study and research on new materials and developments, with publication of results; cooperation with all phases of the building industry; and demonstration of construction methods.

LANDSCAPE GROUP

The Washington Society of Landscape Architects has been organized in Seattle to further better design, construction and maintenance standards for garden owners and for all other landscape projects. Officers are: president, Cash M. Beardsley; vice president, Willard E. Morgan; secretary-treasurer, Roberta Wightman. Edwin W. Grohs is the architect and engineer representative.

IN MODERN FUNCTIONAL DESIGN

fabron is the ARCHITECT'S FIRST CHOICE

for the finish of the Structure of an interior Wall or Ceiling

REG. U.S. PAT. OFF.

because **FABRON** is so engineered that it possesses many desirable **PHYSICAL PROPERTIES** and at the same time affords unusual **DECORATIVE POSSIBILITIES** thereby meeting every requirement of the Architect for a finish Structural Material.

FABRON

- permanently seals the wall
- protects and reinforces the sub-surface materials
- conceals joints and irregularities in the under-surface treatment
- prevents plaster cracks
- binds and strengthens weakened or patched plaster

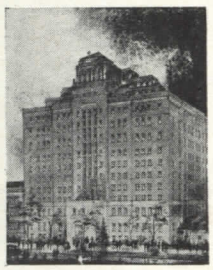
AND

- acts as a decorative medium by lending color, pattern and texture to the structure

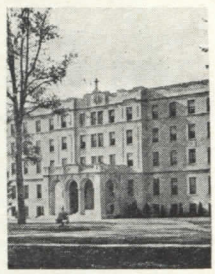
FABRON

- is washable - sunfast - durable - economical

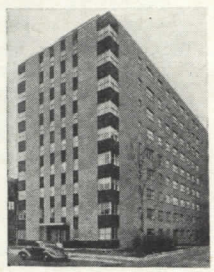
HOTELS



HOSPITALS



SCHOOLS AND COLLEGES



APARTMENT HOUSES

SEE OUR CATALOG IN SWEET'S

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- easy to apply
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- sunfast colors
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please send more information about FABRON.

Name.....

Address.....

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

ARCHITECTURAL ENGINEERING

TECHNICAL NEWS AND RESEARCH

(*Continued from page 142*)

Porcelain Enamel

In order to assure the architect of a high quality of porcelain enameling on the products that he buys, standard specifications covering the manufacture of architectural porcelain enamel have been officially approved and adopted by the Architectural Division of the Porcelain Enamel Institute. Copies of the specifications may be had by writing to the Institute Office, 1010 Vermont Ave. N. W., Washington 5, D. C.

Mineral Wool

Standard methods of testing and reporting industrial mineral wool products have been published in Commercial Standard CS131–46, after acceptance by the trade. Featured sections cover adhesive strength, compressive strength, corrosion resistance, coverage, density and thickness, fire resistance, moisture adsorption, odor emission, shot content, temperature resistance, and thermal conductivity. Superintendent of Documents, Government Printing Office, Washington 25, D. C. 10 cents.

Steel Rivets

Printed copies of Simplified Practice Recommendation R221–46, Steel Rivets, are now available according to an announcement of the Division of Simplified Practice of the National Bureau of Standards. This Recommendation was developed in cooperation with the industry to establish a voluntary simplified list of stock production sizes (lengths and diameters) for the various types of steel rivets. Superintendent of Documents, Government Printing Office, Washington 25, D. C. 5 cents.

Convectors

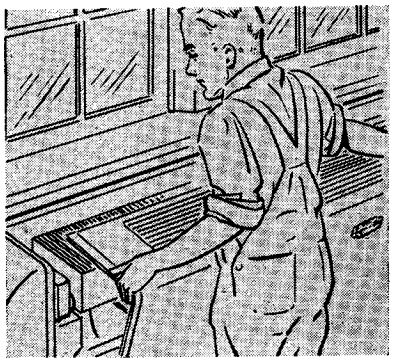
Recommended Commercial Standard on Testing and Rating Convectors, TS–4169, is being circulated to the trade for written acceptance, in order that it may become more widely effective through establishment as a commercial standard. It covers definitions, requirements, and methods of testing and rating cast-iron and non-ferrous steam and hot-water convectors; also, uniform method of guaranteeing compliance with the standard, and means for checking ratings for approval. National Bureau of Standards, Department of Commerce, Washington, D. C.

A.S.A. Year Book

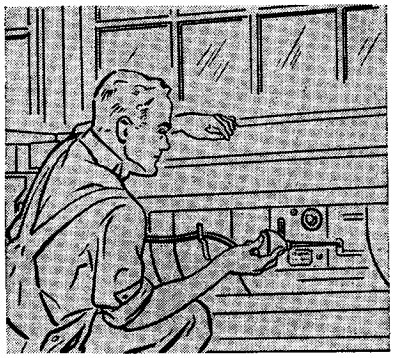
American Standards Association has published its 1945–46 Year Book, explaining how standards are developed, and listing approved standards and projects for future investigation. For a free copy, write the Association at 70 E. 45th St., New York 17, N. Y.

School's IN!

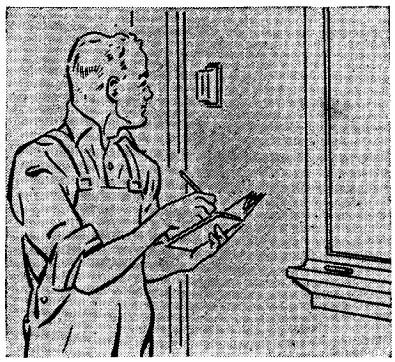
Better have your custodian, as part of his fall housecleaning, check your Nesbitt heating and ventilating equipment. You'll lengthen the service and increase the efficiency of your Nesbitt Syncretizers by having him follow the "ABC of Syncretizer Care"



A *Remove front casing to clean interior. Where filters are used, give special attention to keeping them clean. Clean all parts. Wash exterior with mild soap and water.*

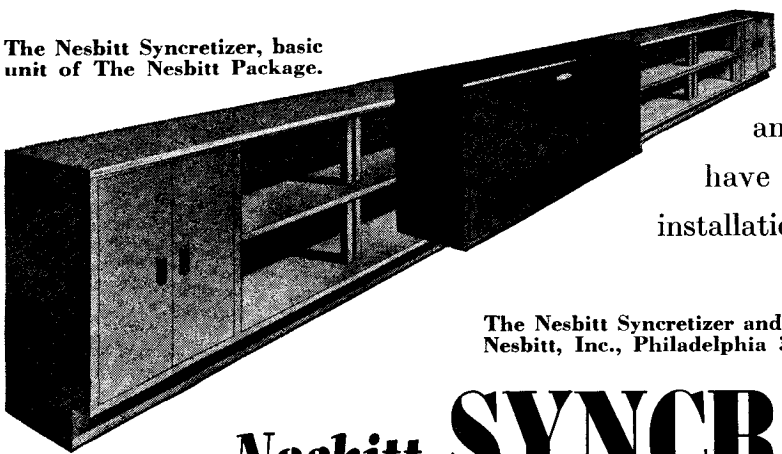


B *Oil unit fan motor once every ninety days, using light oil as required. Nesbitts recommend a No. 10 S.A.E. light machine oil.*



C *Where you are using an automatic temperature control system, be sure that it is operating properly. This check is vital for the most economical use of fuel.*

In the Nesbitt Syncretizer you have a unit ventilator for the classroom which gives draftless, uniformly pleasant air even in the coldest weather. The Syncretizer is automatic; it is quiet; it is uniquely simple in design inside and out. And the Syncretizer is flexible: the new Nesbitt Package is a modern schoolroom ensemble which combines the healthful comfort of "Syncretized Air" with the convenience and utility of integrated storage facilities. The Package is available for immediate installation. Or, you can install the Syncretizer now and add the storage units later. If you have any questions on maintenance or new installations of the Nesbitt Syncretizer, write us.



The Nesbitt Syncretizer, basic unit of The Nesbitt Package.

The Nesbitt Syncretizer and The Nesbitt Package are made and sold by John J. Nesbitt, Inc., Philadelphia 36, Pa. Sold also by American Blower Corporation.

Nesbitt SYNCRETIZED AIR

When Stanley Magic Doors are written into the plans, gone are the clump-clanks of waiters kicking open service doors, the crash of colliding dish trays and all the rest of the unavoidable annoyances of two-way swinging doors.

A tiny beam of light automatically opens Stanley Magic Doors, and *holds* them open until traffic has passed... then closes them promptly, silently. Service is speeded, air-conditioning is protected and dish breakage is greatly reduced.

And your clients will appreciate the swank finesse these modern doors add to even the best-planned restaurants, grills, clubs and hotels. For both entrance and service doors, *everybody* likes the convenience of Stanley Magic Doors.

Write for full information on Stanley Magic Doors... learn how easily they fit the plans for either new or remodeled buildings... how their simple design and rugged construction assure long, maintenance-free operation. The Stanley Works, Magic Door Division, New Britain, Connecticut.

STANLEY

Trade Mark

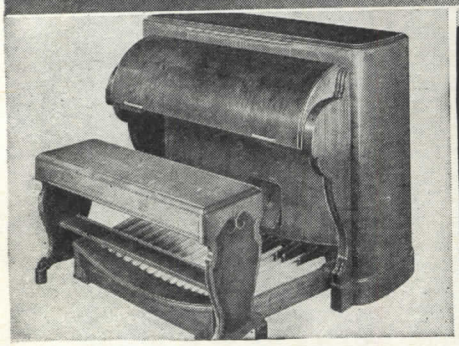
STANLEY MAGIC DOORS

Require No Hand to Open

Preview of the superb new

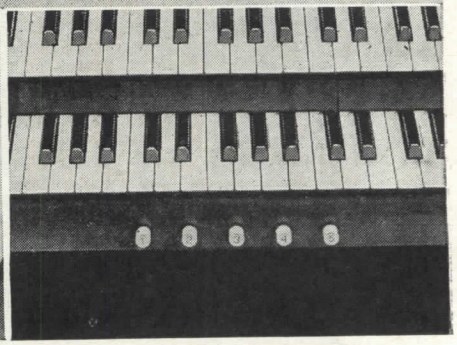
WURLITZER ORGAN

Music's Richest Voice...

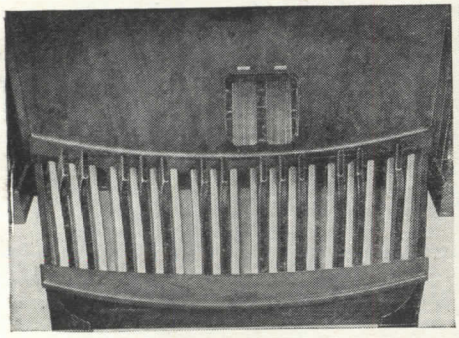


Wurlitzer, long skilled in cabinet-making, has lavishly used expensive veneers to make the new Organ superbly handsome. Open, as at the top of this page, or closed, as here, it will enrich any religious setting.

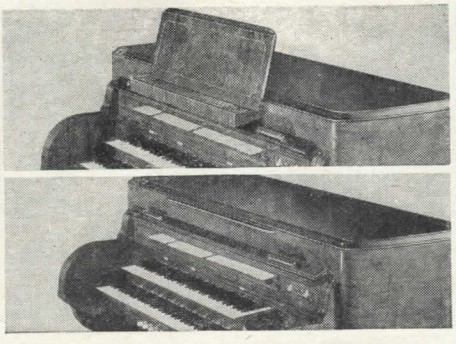
The two-manual keyboard conforms to all playing dimensions specified by the American Guild of Organists. 6 stop tablets in the Pedal, 12 in the Swell and 15 in the Great give traditional pipe-organ variety.



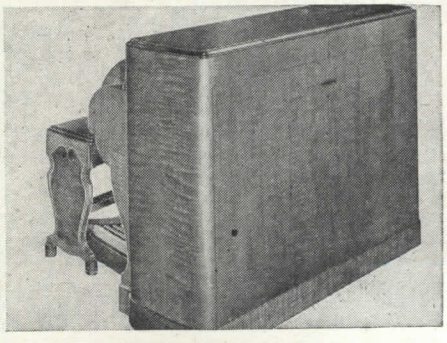
Directly below the great keyboard are the pre-set combination pistons which enable certain frequently used combinations to be instantly available...a welcome feature to both professional and inexperienced players.



The Wurlitzer Organ pedal clavier has 32 keys, concave radiating exactly according to standards of the American Guild of Organists. The pedal clavier is detachable. Pedal light available.



The music rack is another example of the great pains which Wurlitzer takes with small details. With the mere touch of a finger both rack and rest slide out or recess completely. Optional light.



Again the Wurlitzer standard of perfection in all things. The handsome veneers of the Wurlitzer Organ extend all around the case. From front or back, one sees cabinet beauty.

Your dealer will soon have a Series 20 Wurlitzer Organ for you to see and to hear

ORGAN DIVISION, THE RUDOLPH WURLITZER CO., NORTH TONAWANDA, N. Y.

Endorses PETRO 100%!

JOSEPH WATTERSON, A.I.A. of Mineola, has designed many fine residences, restaurants and small commercial buildings on Long Island. Mr. Watterson has this to say about Petro:

"From my experience I know that an architect can safely specify Petro for the smaller commercial structures as well as for the bigger jobs. In the restaurant where the basement is planned for use by customers, this area is rendered free from noise and dirt when oil systems are used. Overhead is cut down because a janitor is not needed to check an oil burner, and I believe that oil heating systems provide the clean, quiet, pleasant surroundings which add comfort for the customer and guest. The Petro System has proved highly dependable and economical in restaurants. Owners and guests are well-pleased, and I can endorse them one hundred per cent."

WHENEVER an oil burning heating system is specified, two reputations are at stake . . . . that of the equipment maker and that of the architect.

By the fact that his name is affixed to the equipment selected, the maker pledges his word that it will serve satisfactorily under the most exacting conditions of the installation for which it is recommended.

The reputation of the architect is equally involved. It, too, must be zealously safeguarded. Oil heating equipment of uncertain performance cannot be considered.

This lends added significance to the fact that an ever-growing number of architects from actual experience know, as Mr. Watterson does, it is "safe to specify Petro."

INDUSTRIAL MODELS: No. 5 or No. 6 fuel oil; manual, semi- or automatic operation; 8 sizes to 450 bhp. Thermal Viscosity preheating.

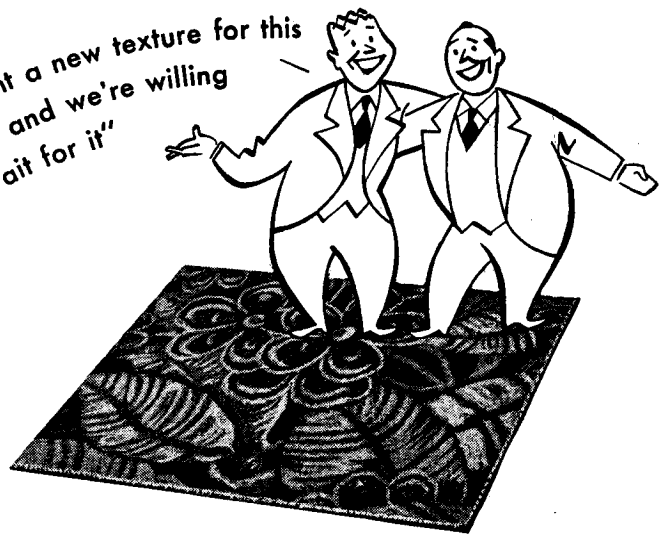
DOMESTIC MODELS: No. 3 or lighter oils; "conversion" and combination-unit types, 7 sizes. Patented "Tubular Atomization".

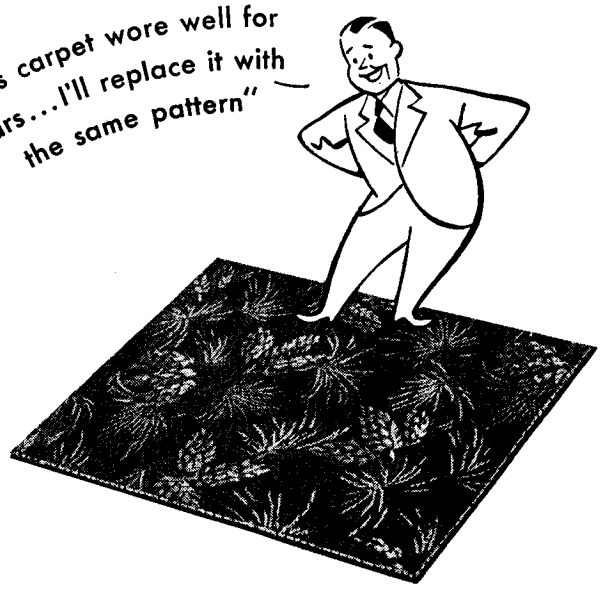
FULL DATA on Petro Industrial Burners are in catalog files of Sweet's and Domestic Engineering. Details on Petro Domestic Burners available in separate catalog. Copy of either sent gladly on request.

PETRO
REG. U. S. PAT. OFF.
cuts steam costs

PETROLEUM HEAT AND POWER CO. • *Makers of Good Oil Burning Equipment Since 1903* • Stamford, Connecticut

SPEAKING OF CARPETS...





...Thanks, Gentlemen

We appreciate your confidence, and your waiting for Bigelow carpets. We'd like to assure you that everything possible is being done to produce enough to fill your orders. In the meantime consult our Carpet Counsel. They'll help you plan for tomorrow.

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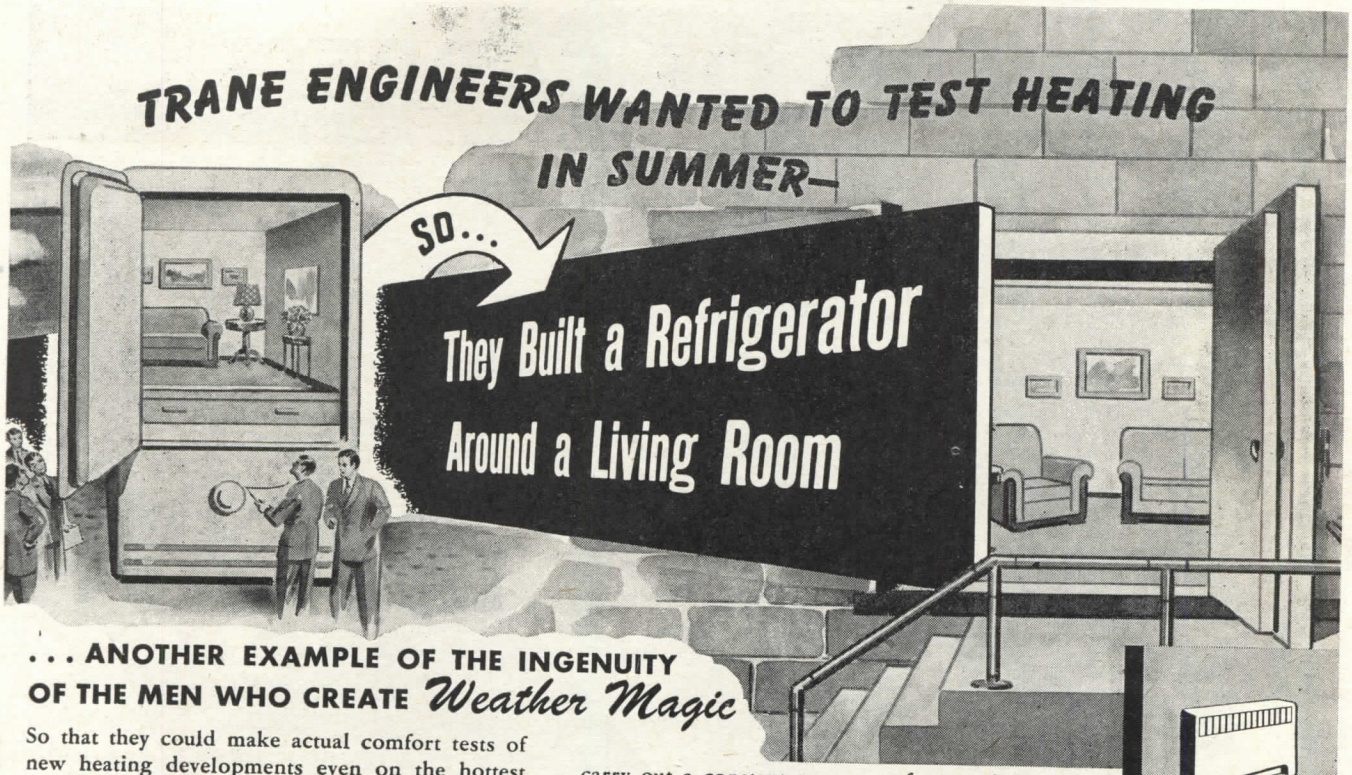
BIGELOW WEAVERS

TRANE ENGINEERS WANTED TO TEST HEATING IN SUMMER—



. . . ANOTHER EXAMPLE OF THE INGENUITY OF THE MEN WHO CREATE *Weather Magic*

So that they could make actual comfort tests of new heating developments even on the hottest summer day, Trane Engineers literally put a living room into a refrigerator.

Constructed of concrete blocks and lined with highly effective foam glass insulation, this refrigerator is so large that a regulation sized living room, cushioned on rubber, fits into it perfectly. This room may be exposed to whatever weather the tests require—by Trane Weather Magic, of course.

With this refrigerator, Trane Engineers can determine exactly how a heating unit will perform under every conceivable condition of temperature, humidity, and even sound.

This "room in a refrigerator" is another example of the thoroughness of Trane Engineers who carry out a constant program of research in the development and refinement of Trane Products and Systems.

All Trane Products are designed and built together for service together. The architect and engineer will find that there is a complete Trane System for almost every conceivable application in heating, cooling and air conditioning.

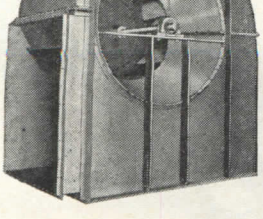
More than 200 Trane Field Engineers in principal cities all over the country co-operate with architects, engineers, and contractors in the application of Trane Weather Magic. National advertising is advising customers to seek counsel and Trane information from architect, engineer, and contractor.

TWO OF THE SECRETS OF *Weather Magic* SUCCESS . . . TRANE HEATING COILS AND FANS

TRANE TYPE E HEATING COIL

The efficiency and flexibility of Trane Heating Coils make them ideally suited for every comfort and process application. One of a wide variety of types and sizes of Trane Heating Coils, the Type E coil shown can be used with low or high pressure steam or with hot water, and it can be used for cooling with chilled water.

Used in conjunction with these coils, or in countless other air moving applications, Trane Centrifugal Fans are supplied in three types and a complete range of capacities. The fan shown is of the backward-curved non-overloading type. The Trane Fan line also includes forward-curved and utility fans.



TRANE BACKWARD CURVED CENTRIFUGAL FAN

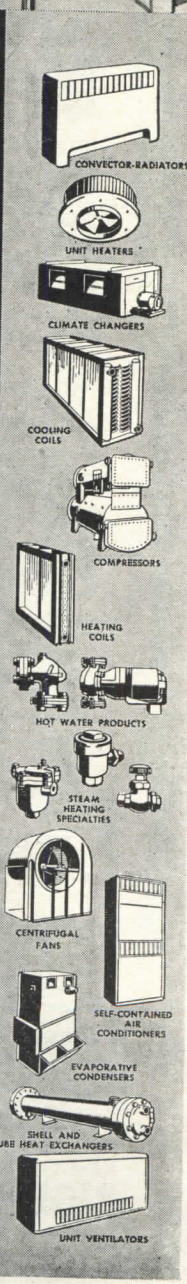
THE TRANE COMPANY

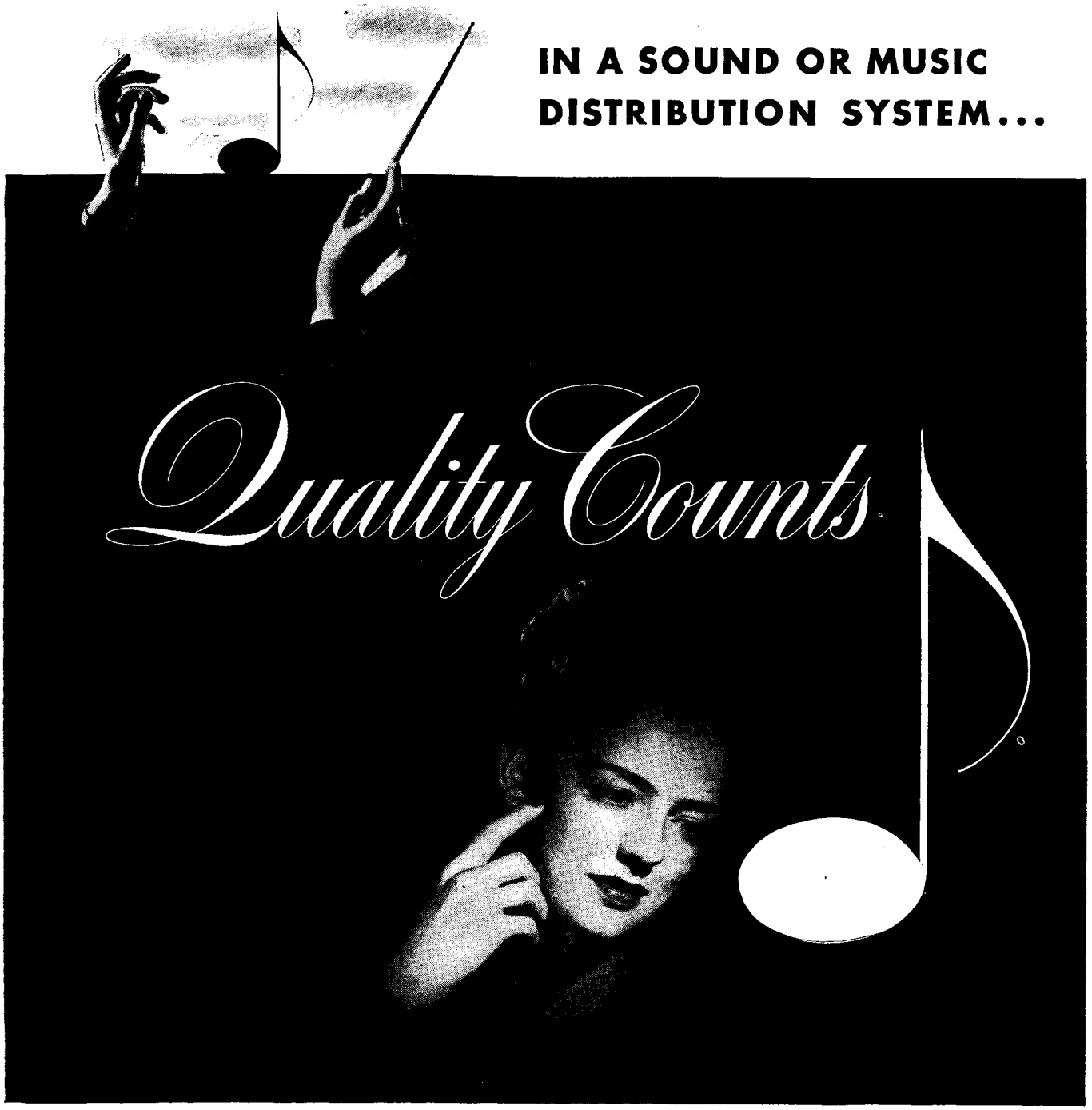
The House of Weather Magic

LA CROSSE · WISCONSIN

TRANE COMPANY OF CANADA, LTD., TORONTO

MANUFACTURING ENGINEERS OF HEATING AND AIR CONDITIONING EQUIPMENT





For highest quality...specify *Western Electric*

Your clients today are highly critical of the quality of reproduced sound—*especially music*. In hotels, schools, hospitals, auditoriums, factories, terminals—wherever Sound or Music Distribution Systems can add to the utility or enjoyment of buildings—only the *finest* sound is acceptable.

With the new Western Electric equipment now available, you can assure your clients top notch program presentation. All the elements in the system—including the revolutionary 728 type loudspeaker—are engineered by Bell Telephone Laboratories to deliver sound with a "presence"—sound with an emotional quality such as you've never before heard.

Get in touch with the nearest representative of the Graybar Electric Co., distributors of this new sound equipment. He can help you plan top-quality Sound or Music Distribution Systems *tailor-made* to your clients' needs. For his address, look in your local telephone directory, or write to Graybar, 420 Lexington Ave., New York 17, N. Y.

THERE IS A NEW TREND IN STORE DESIGN

PIETRO BELLUSCHI'S conception of a Shoe Store

• "The design for this shoe store was conceived as an effort to exploit, in a more definite and organic way, the idea of the open front. This same idea has in many cases fallen short of success, because the attention of the on-looker was divided and confused between an interior which was not designed to be seen from the sidewalk, and an exterior front which hated to lose its identity.

"It seems that a thoughtful use of glass, and a carefully laid out interior would show the inherent possibilities of the open front plan, and its probable impact as an advertising medium".

P Belluschi
Architect

MANY prominent architects include Pittsburgh Products in their specifications. They have found that Pittsburgh Glass and Pittco Store Front Metal assure faithful execution of their designs—as well as maximum eye-appeal and sales personality in the finished stores.

Through our advertising in 23 leading retail magazines, we are urging retail merchants to consult their architects now, to build new sales-power into their stores.

A nation-wide system of "Pittsburgh" branches and dealers is ready to give you prompt and helpful service on Pittsburgh Products for store fronts and interiors.

"PITTSBURGH" STORE FRONTS and INTERIORS

It contains photographs of store fronts and interiors — representing practically all kinds of business, in all parts of the country — selected from the thousands that have been remodeled with Pittsburgh Glass and Pittco Store Front Metal. Send in the convenient coupon for your free copy of this up-to-date book of ideas, "How Eye-Appeal — *Inside and Out* — Increases Retail Sales".

Pittsburgh Plate Glass Company
2345-6 Grant Building, Pittsburgh 19, Pa.

Please send me, without obligation, a free copy of the book, "How Eye-Appeal—*Inside and Out*—Increases Retail Sales".

Name_____

Address_____

City_____ State_____

"PITTSBURGH" stands for Quality Glass and Paint

PITTSBURGH PLATE GLASS COMPANY

AT LAST...THE LIGHT WEIGHT CONCRETE MASONRY UNIT HAS A PERFECT WATERPROOFING PARTNER

...AQUELLA!

What does this "partnership" mean to you as an architect, engineer or contractor planning or constructing a building of light weight concrete masonry units?

It means simply this...

That now...with Aquella adding the advantage of *watertightness* to the desirable construction qualities this type of masonry provides—you have a building material excellent in every respect.

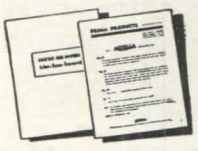
Furthermore...Aquella also gives an attractive, glistening white, eggshell-like finish that is truly beautiful in its natural color—or when painted to match any decorative scheme. Aquella does not powder or rub off, nor does it blister, peel or flake.

Specify Aquella for Brick, Concrete, Stucco or Cement Plaster

Aquella is the new, scientific way to insure watertightness inside or outside...above or below ground...on all porous masonry surfaces, such as brick, concrete, stucco or cement plaster.

SEE DATA IN SWEET'S CATALOG

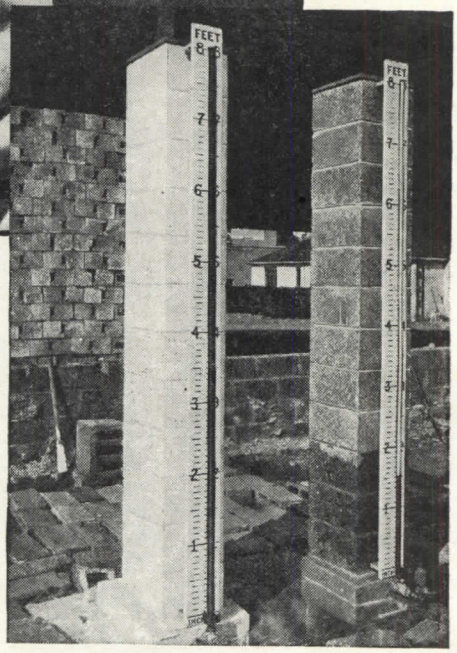
You'll want this information for your waterproofing file



Write today for your copies of "Aquella and Concrete Masonry Construction," and the "Key to Aquella Specification Types."

PRIMA PRODUCTS, INC.

Dept. E, 10 East 40th Street
New York 16, N. Y.



500-lb. Hydrostatic Pressure Test Proves that Aquella Makes Cinder Concrete Block and Other Porous Masonry Surfaces Watertight

First, both of the columns you see here were tested in their natural state and showed that they had identical coefficients for permeability. After such tests, the column on the *left* was treated with Aquella, while the one on the *right* was not. The Aquellized column withstood the pressure of an 8-ft. head of water, equivalent to a hydrostatic pressure of approximately 500 lbs. per sq. ft. The untreated column could not be filled with water higher than 18¾", because the water seeped through the cinder blocks at the rate of 2 gallons per minute.

Aquella, having proved its effectiveness on cinder concrete blocks, under conditions as extreme as this, must necessarily *be equally successful* when applied to other types of masonry construction such as concrete, brick, stucco or cement plaster.

AQUELLA IS A "MUST" *on every light-weight concrete masonry unit job!*

Conservation of space is a very important consideration, especially in large public buildings and hotels. The more space that can be utilized for rentable apartments, the more income produced. Since STREAMLINE Fittings are not connected by flaring or threading, no room is required for wrench play to tighten the Fittings into place, nor need any allowance be made for protruding valve stems, which on threaded pipe, must be swung in an arc to secure. Valves and fittings are installed in a minimum of space, they are located exactly where required, and soldered.

The installation of STREAMLINE Copper Pipe and Solder Type Fittings under normal water conditions assures many, many years of trouble-free, efficient service at low cost. Copper and bronze do not rust. STREAMLINE Pipe is made from pure copper. STREAMLINE Fittings are manufactured in copper and bronze.

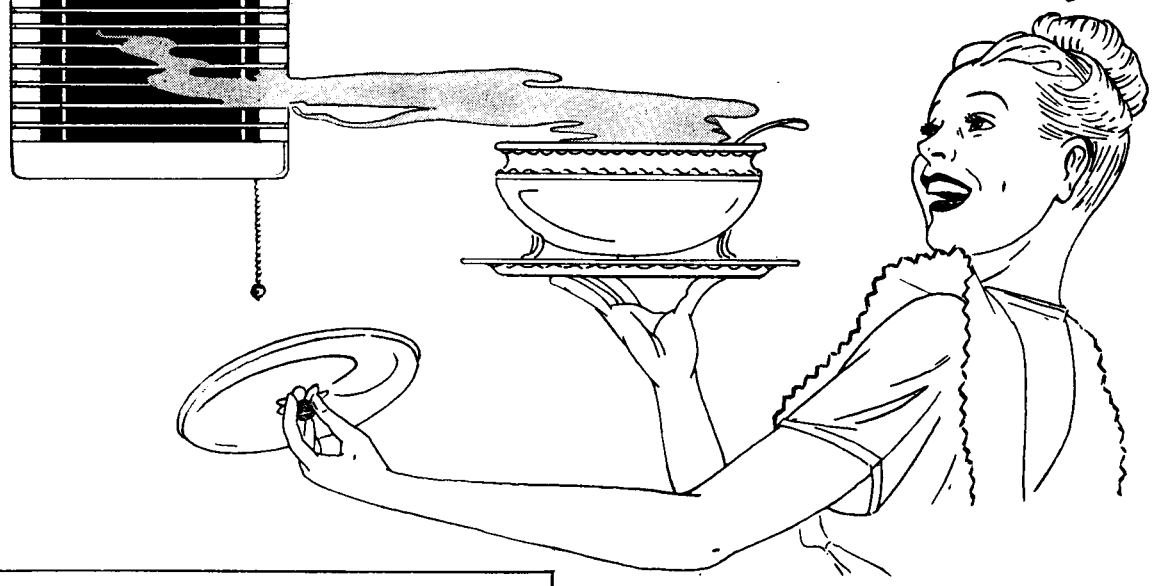
Copper Pipe loses less heat by radiation than ferrous piping, particularly if the surface is kept polished, although copper itself is a very rapid conductor of heat. Therefore, it naturally follows that there is considerably less loss when the heated element, water or steam, is being conveyed from the point of generation to the points of distribution through copper pipe of uniform, unclogged, internal conducting area.

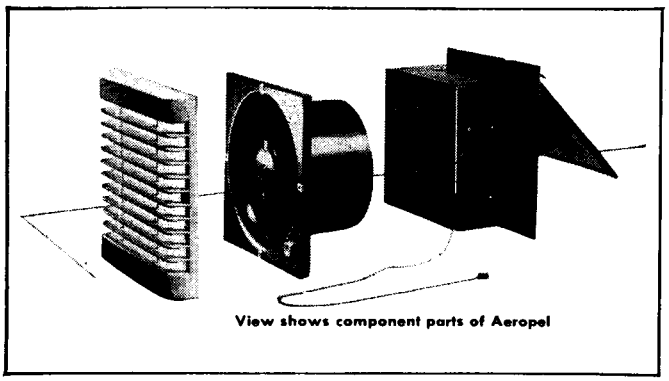
Plan on specifying and installing STREAMLINE Copper Pipe for your postwar construction—or for replacement.

STREAMLINE
PIPE AND FITTINGS DIVISION
MUELLER BRASS CO.
PORT HURON, MICHIGAN

Aeropel

Keeps kitchens fresh as a daisy





View shows component parts of Aeropel

Housewives love the new Aeropel Home Ventilator because homes stay cooler and cleaner. Aeropel whisks out cooking odors, greasy fumes and smoke.

They like the ultra-quiet operation and the modern appearance of the spotless white plastic grille.

Architects and builders appreciate the ease of installation in old homes and new —any type of construction. Styling harmonizes with *all* kitchen plans—and Aeropel is equally well suited for bathrooms, bedrooms, nurseries, laundries, recreation and utility rooms.

Generous capacity is sufficient for many commercial installations. Consider Aeropel —*designed and built with typical American Blower skill*—for individual ventilation of offices, reception, conference and restrooms.

Aeropel Home Ventilators are available through leading dealers everywhere. *The price is surprisingly low.*

FREE Aeropel Booklet

Free Aeropel Booklet with specifications, installation details and technical data is available to architects on request. Phone or write the nearest American Blower Branch Office. There is one nearby.

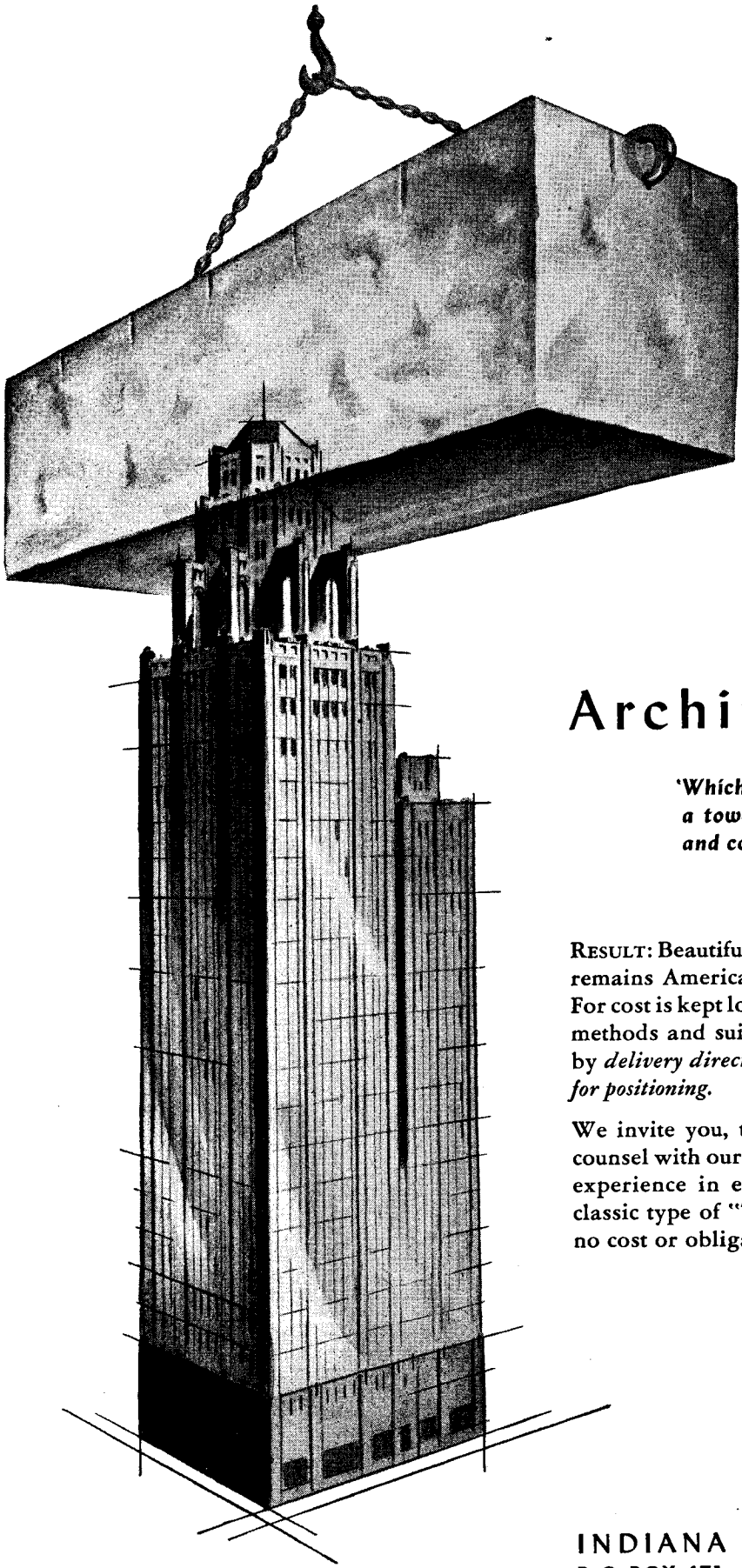
AMERICAN BLOWER

Aeropel

HOME VENTILATOR

AMERICAN BLOWER CORPORATION, DETROIT 32, MICHIGAN

Division of American Radiator & Standard Sanitary Corporation



Architect's Gospel

'Which of you, intending to build a tower, sitteth not down first, and counteth the cost?"

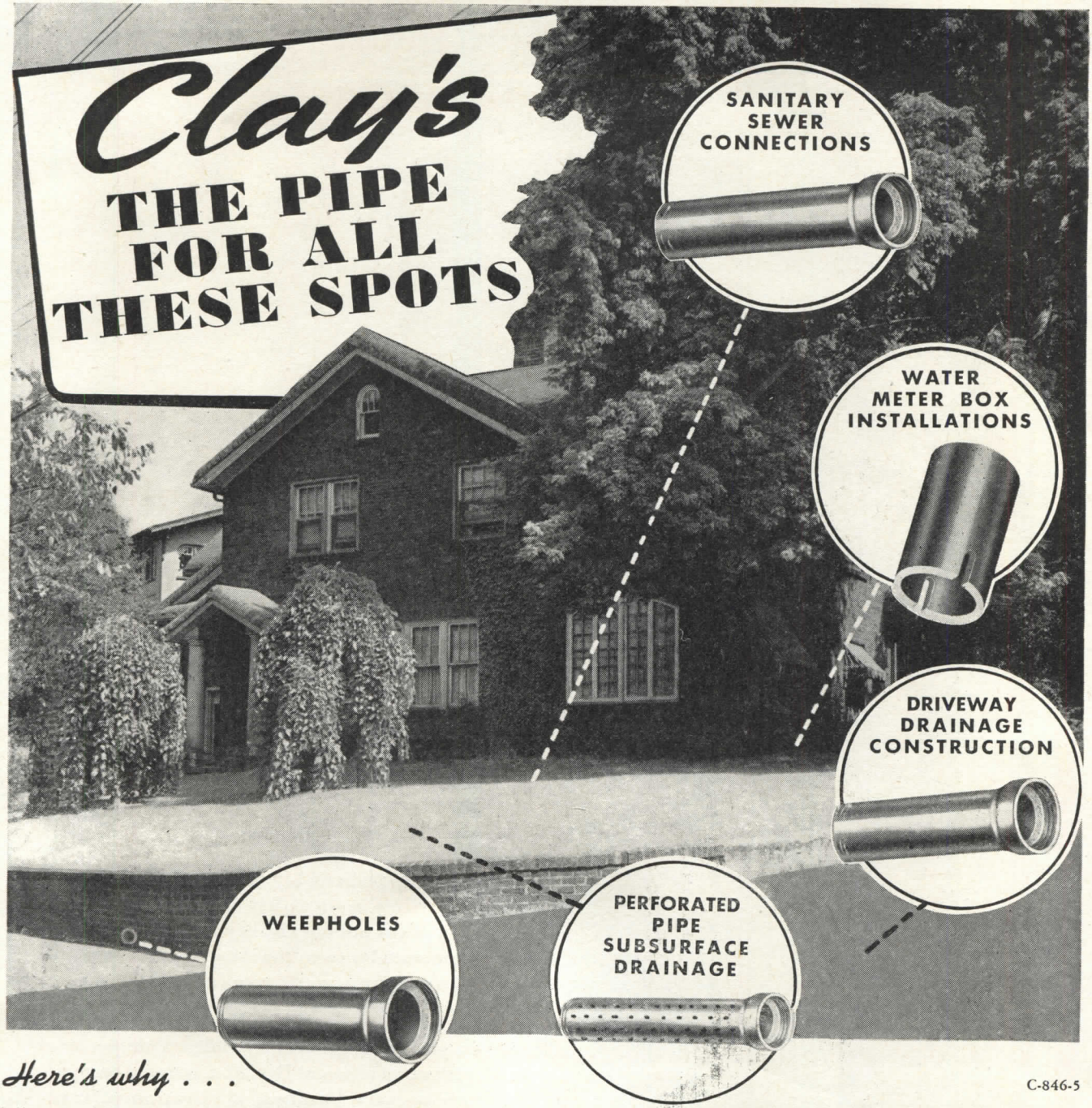
—Luke, XIV, 28

RESULT: Beautiful Indiana Limestone, *always available,* remains America's most widely used building stone. For cost is kept low not only by newest machine quarry methods and suitability to machine finishes, but also by *delivery direct from our 21 member companies, ready for positioning.*

We invite you, through correspondence or personal counsel with our Technical Division, to tap a century's experience in every building application of every classic type of "The Nation's Building Stone" . . . at no cost or obligation.

INDIANA LIMESTONE INSTITUTE
P. O. BOX 471 BEDFORD, INDIANA

ARCHITECT'S PLANS AND SPECIFICATIONS ARE WELCOMED FOR COMPETITIVE COST ESTIMATES BY OUR 21 MEMBER COMPANIES



Here's why . . .

C-846-5

The wide variety of Clay Pipe products and Clay Pipe fittings solves the toughest installation problems . . . saves valuable time. Since Clay Pipe's convenient lengths are easy to install, more jobs can be done each day per crew. You can safely stake your reputation on the fact that Clay Pipe will last indefinitely. It's the *only* pipe impervious to the acids and alkalies of sewage and drain water . . . the only pipe that will not rust, decompose or corrode! For information on Clay products, write to the closest regional office listed below.

National Clay Pipe Manufacturers, Inc.

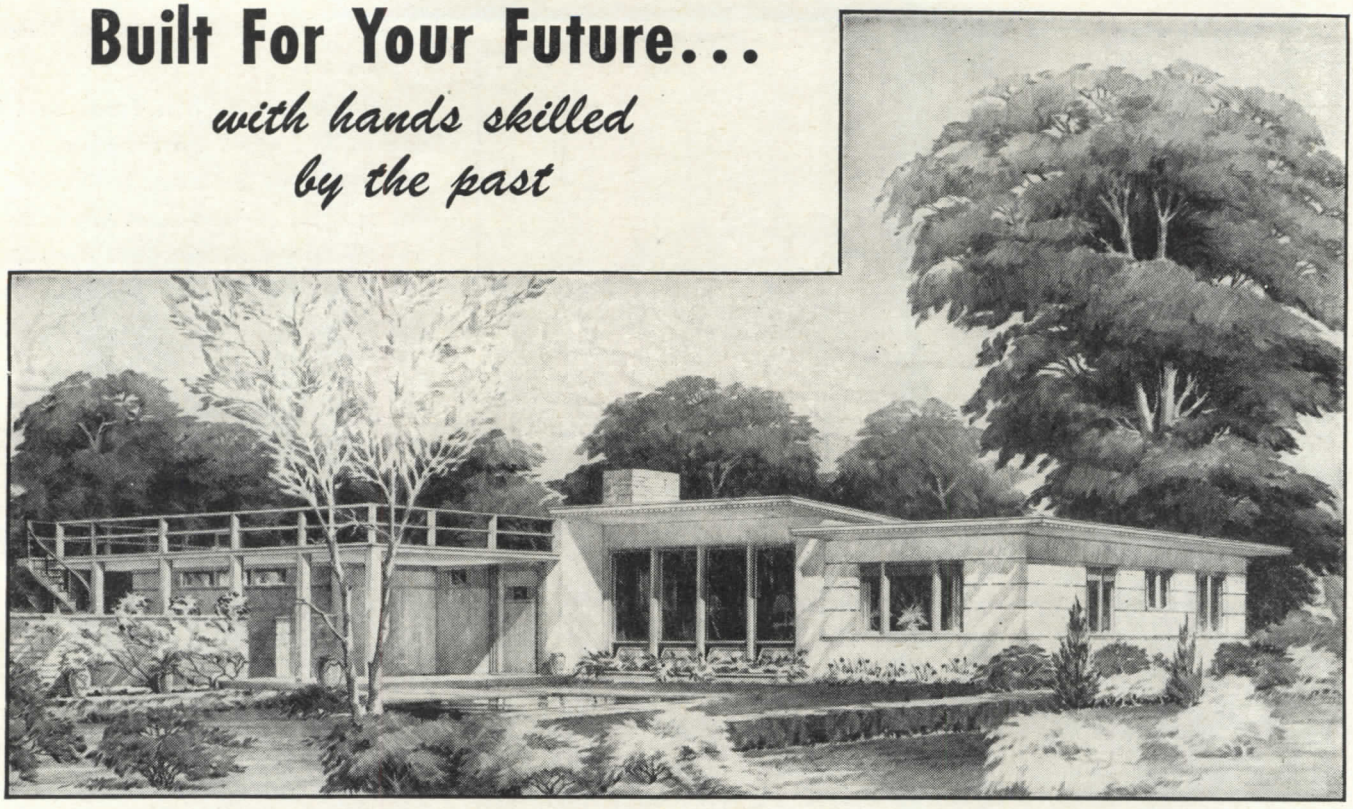
571 Chamber of Commerce Bldg., Los Angeles 15, Calif.
522 First National Bank Bldg., Atlanta 3, Ga.
1105 Huntington Bank Bldg., Columbus 15, Ohio
111 W. Washington St., Chicago 2, Ill.

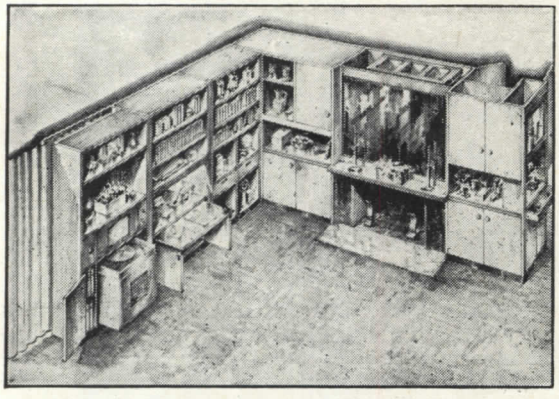
CLAY PIPE

CLAY PIPE NEVER WEARS OUT!

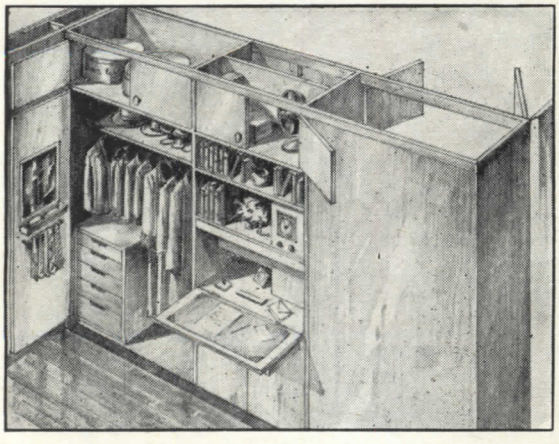
Built For Your Future...

with hands skilled by the past





Defoe's "Working Walls" are distinctly a modern innovation. They put between-room wall space to work for the housewife and provide more storage while actually saving room space.*



IT TAKES a lot of time and work to transform thought into reality. Things like the new Defoe Homes don't just happen. Back of them are the skill and experience born of more than forty years of painstaking workmanship under the exacting traditions of the shipbuilder's art.

• • For more than four decades everything Defoe has produced has been built to perform perfectly—and built to last! What the Defoe organization has learned in all those years has now been translated into the comfort, the convenience, and the economies of the new Defoe Homes. They will be a definite contribution to the better things for better living in the good times which lie just ahead.

*TRADE NAME REGISTERED

Defoe HOMES

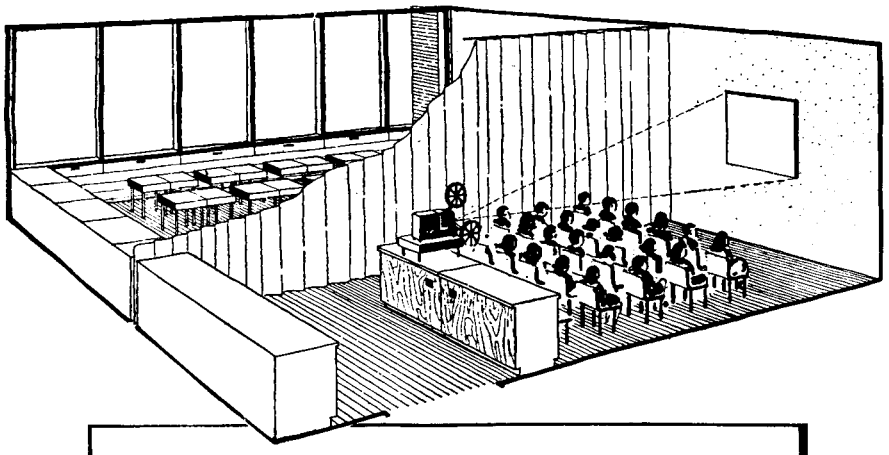
HOUSING DIVISION
DEFOE SHIPBUILDING COMPANY Dept. AR-9
BAY CITY, MICHIGAN

Please send me the descriptive brochure on the new Defoe Homes.

*Name*_____

*Street*_____

*City and State*_____



EYES AND EARS *at school*

One of the greatest problems of organizing for World War II was that of educating millions of men—*quickly*. It is now generally recognized that—in so doing—our armed forces remade education.

Most noteworthy was the use of sound film, training the eye and the ear simultaneously. The Navy alone used at least 16,000,000 feet of film in its training programs.

Recognizing the efficacy of these new educational methods, the editors of Architectural Record set out to make them available, if possible, to all of America's 30,000,000 school children. How could all classrooms—old or new, conventional or progressive—be adapted for this effective, new expansion of American education?

The editors finally found the route to their objective by retaining a top firm of school architects—Perkins & Will of Chicago. More than two years of study went into the 25-page report that was presented in a recent issue of the Record. That report was complete with photographs, diagrams, projection and wiring data—every detail the architect seeks and needs.

Record readers acclaimed this valuable contribution—but were in no way surprised to find it in their intensely practical *work book*.

They are accustomed to looking to the Record for this kind of material—always adapted to their own intensely practical work.

◆

Two facts tell the whole story of what Record readers think of this publication.

On every check, it is found that *at least 80% of all current planning for investment building is on the boards of the architects and engineers who subscribe to Architectural Record.*

The Record has 25% more architect subscribers than its nearest competitor—more total architect and engineer circulation than any other publication.

These two facts also tell you why this is the marketplace in which to *keep your story told* to the men who select and specify building materials, equipment, furnishings and services.

◆

We have gathered from many sources and compiled a check list for advertisers entitled, "Pointers on Writing Architectural Copy." Your copy will be mailed on request.

ARCHITECTURAL

RECORD

119 WEST 40TH STREET, NEW YORK 18

OTHER DODGE SERVICES

DODGE REPORTS AND DODGE STATISTICAL RESEARCH SERVICE
SWEET'S FILES HOME OWNERS' CATALOGS
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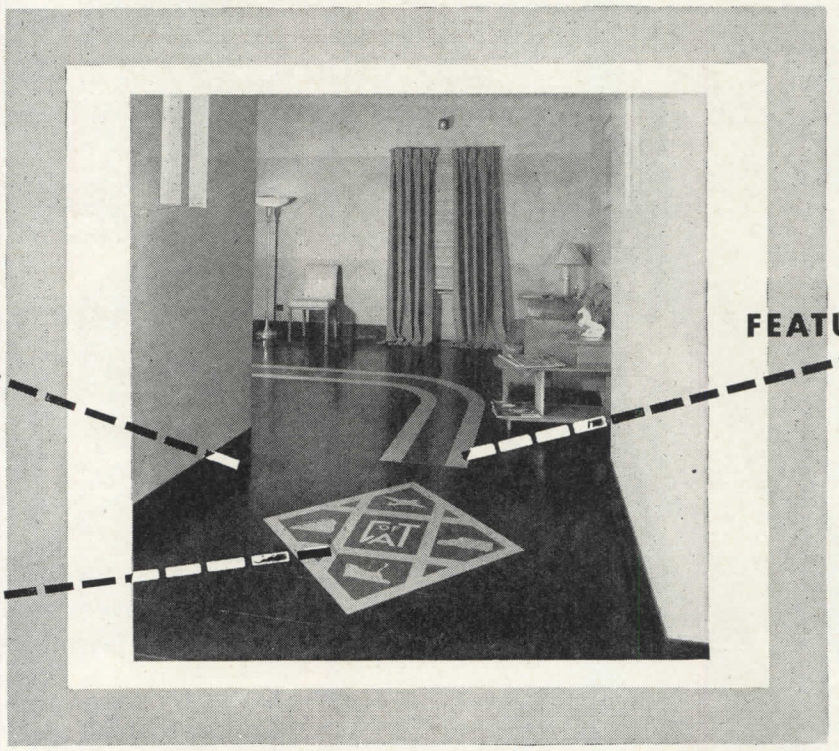
MORE DESIGN FREEDOM

When you use these Tile-Tex "Extras"



When you specify Tile-Tex Asphalt Tile, you have at your disposal many tools for executing the floor designs you need.

First of all, there are 36 plain and marbleized Tile-Tex colors in 11 sizes to provide you with endless combinations for standard and random patterns.

But colors and sizes are only part of the story! By using Tile-Tex accessories—inserts, feature strips, cove bases and reducing strips—you can be sure of complete expression of your talents for floor design.

Nothing, for instance, gives a floor as much individuality as a colorful insert. These floor "stoppers" are cut to your specifications in the Tile-Tex Design Department. We can also suggest various floor treatments employing single or multiple inserts.

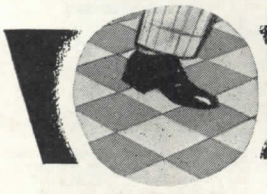
Tile-Tex feature strips are ideal for marking out certain floor areas, for separating border and field tile or for directing the flow of traffic on functionally designed floors. Reducing and edging strips in matching or contrasting colors can be used to add further interest to the decorative scheme.

Possibly we can be of some help to you in connection with the use of Tile-Tex accessories. Write us on this or any other problem pertaining to asphalt tile floors.

THE TILE-TEX COMPANY, Inc.

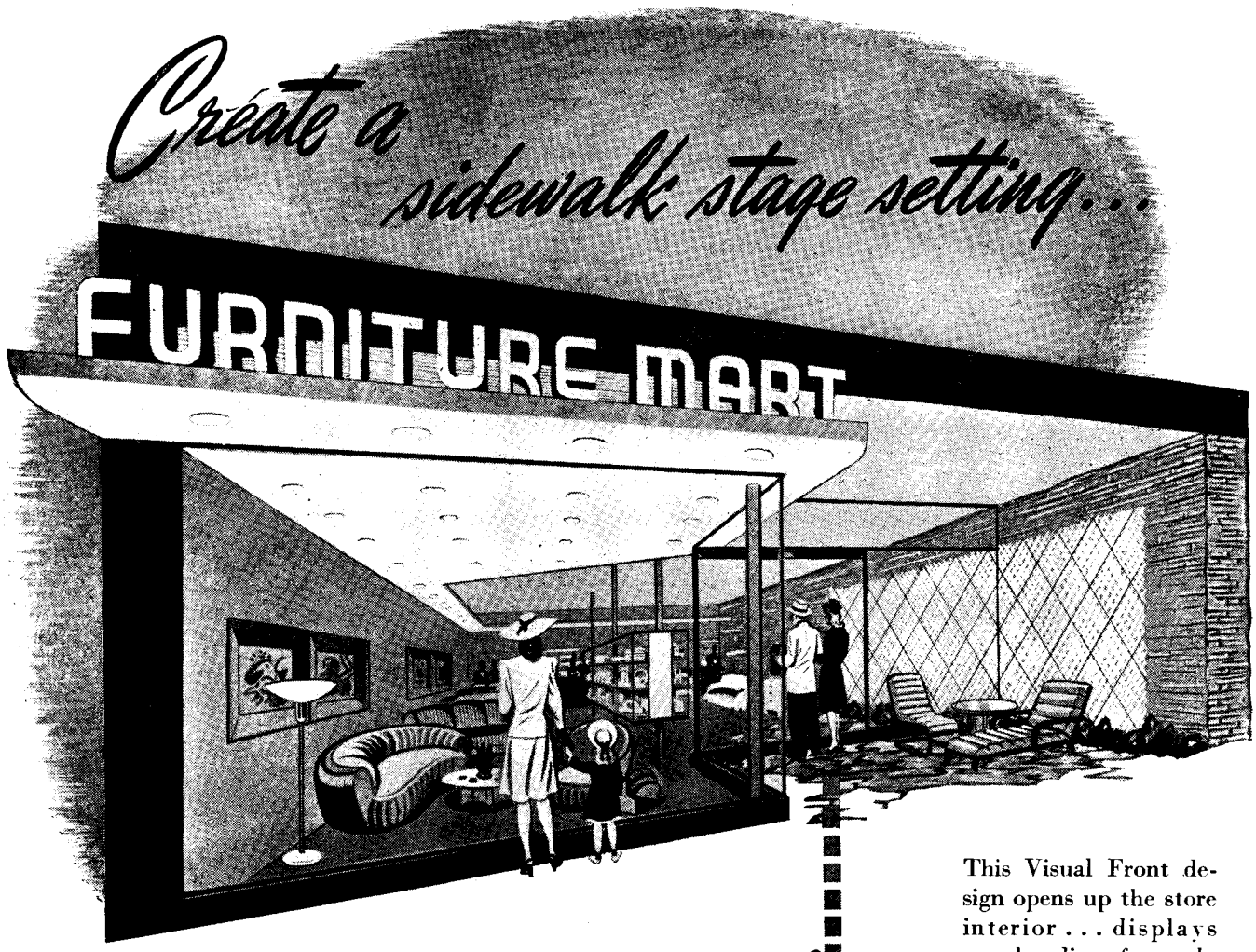
Asphalt Tile Mfr. Subsidiary of The Flintkote Company

Chicago Heights, Illinois • 220 E. 42nd Street, New York City



LOOK TO Tile-Tex IN '46
FOR THE BEST IN FLOORING

ASPHALT TILE-TEX TILE



for a storefront that attracts more business!

This Visual Front design opens up the store interior . . . displays merchandise *from the sidewalk*. Note the spotlighted display cases on the pillars . . . the intriguing "patio" for summer furniture, with latticed side wall for design unity. Store name in cut-out letters is silhouetted against Blue Ridge Patterned Glass and *Vitrolite*.

Capture attention of sidewalk and street traffic—and hold it—by making the entire store a colorful setting. Day and night it will work to bring your client more business. And when the store is open, the view of people buying will act as a magnet to bring in others.

A Visual Front is not a fixed type—it is a *style* of front, which employs glass to "open" the store to the eyes of potential customers. It exhibits far more merchandise than could be crowded into a conventional window. It promotes sales of every item on the floor.

The invitation to enter is emphasized by doors of clear *Tuf-flex** tempered plate glass. To reduce the possibility of condensation on the clear glass front, *Thermopane**, the transparent insulating unit, is recommended. And, to accent the appeal of the front, colorful *Vitrolite** is used to face pilasters, bulkhead and facade.

BEFORE YOU DESIGN your next store, write for our Visual Fronts book. You'll find many helpful ideas that you can adapt. Write to Libbey·Owens·Ford Glass Company, 3696 Nicholas Building, Toledo 3, Ohio.

*Reg. U. S. Pat Off.

VISUAL FRONT

©1943 Libbey-Owens-Ford Glass Company

LIBBEY·OWENS·FORD
a Great Name in **GLASS**

Hospital Planning for BUDGET CONTROL

Hospital Managers, their architects and dietitians, know that pay rolls and foodstuffs take the lion's share of the operating budget. To reduce the number of hired help in the kitchens and prevent waste of provisions is one of the major problems in planning. For a hundred years this problem has been simplified by the cooperation of our engineers and the use of

JOHN VAN RANGE KITCHEN EQUIPMENT

Beginning with the blue prints, preferably before the partitions have been set, our experienced engineers suggest the most advantageous location for every service connection—indicate the position, dimensions and capacity for every unit of equipment. If desired they perform all the highly specialized labor of detailing the departments in which food is to be prepared or served. Upon this sound architectural basis we design and manufacture the equipment and supervise its installation. We use only the most modern materials and techniques that assure utmost economy of labor, operation and maintenance. Automatic controls of cooking temperatures prevent waste and reduce shrinkage. Mechanical devices prevent accidents. Fewer employees are needed.

The John Van Range Co.

EQUIPMENT FOR THE PREPARATION AND SERVING OF FOOD

Branches in Principal Cities

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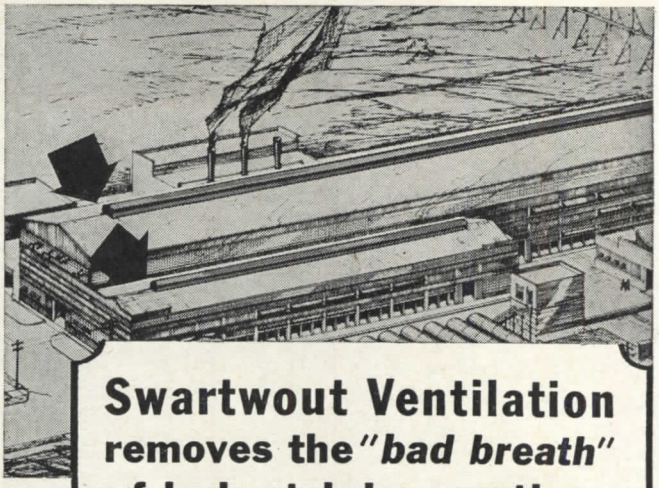
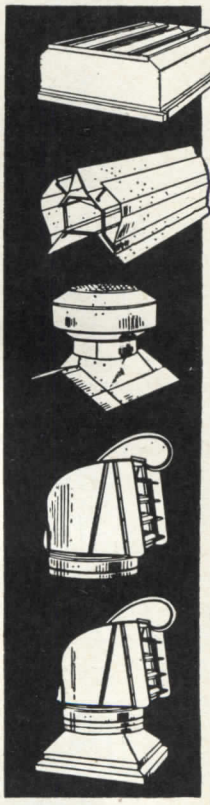


Swartwout Ventilation removes the *"bad breath"* of industrial operations

•

You can cut time losses, reduce spoilage and increase production with *better ventilation*

YOUR BUSINESS is one of the few exceptions if it doesn't produce a noticeable amount of "industrial bad breath"— fumes, smoke, fog, dust, heat, or odors. It pays you to check the possibilities of Swartwout Ventilation for your buildings. Better production and better worker morale are worth many times the economical cost of modern air-moving facilities.



Scientifically designed Swartwout ventilator types are used individually or in combination, according to your needs. The Airmover Line contains both gravity and powered type equipment, and intake louvers for vitally necessary fresh air. Swartwout engineering service, available in most principal cities, helps you to select the most effective ventilation equipment for your buildings.

Industry everywhere uses Swartwout Ventilation: steel mills, foundries, forge shops, food and chemical processing, heat treatment, paper mills, machine shops, etc. Profit by Swartwout's 45 years experience in handling ventilation problems. Write for details or see catalog in Sweet's Architectural File.

THE SWARTWOUT COMPANY
18639 Euclid Ave., Cleveland 12, O.

Swartwout

The Airmover Line

EQUIPMENT FOR EFFECTIVE ECONOMICAL VENTILATION OF INDUSTRIAL BUILDINGS

When the blueprints call for RADIANT HEATING . . .

here's why you'll want *Copper Tube*

YOU'RE designing for *lasting* appreciation. So, for the radiant heating system, be sure to include *copper tube* in your specifications. The great durability and long-range economy of Chase Copper Tube mean a satisfied client, and satisfied clients build business and prestige for you.

You boost your stock with heating contractors, too, when the specifications call for Chase Copper Tube. It's easy to bend, light in weight, comes in long lengths, and is sold through plumbing and heating wholesalers throughout the country.

The demand for Chase Copper Water Tube is so great that we are not able to satisfy it at all times. However, the technical information is now available to you for future planning. For a complimentary copy of our new handbook write, on business letterhead, to Dept. AR-96.

7 Reasons
WHY CHASE COPPER TUBE FOR RADIANT HEATING

1. *EASY TO BEND*
2. *LIGHT IN WEIGHT*
3. *SOLDERED FITTINGS*
4. *SMALL DIAMETERS*
5. *LONG LENGTHS*
6. *LOW COST*
7. *LONG LIFE*

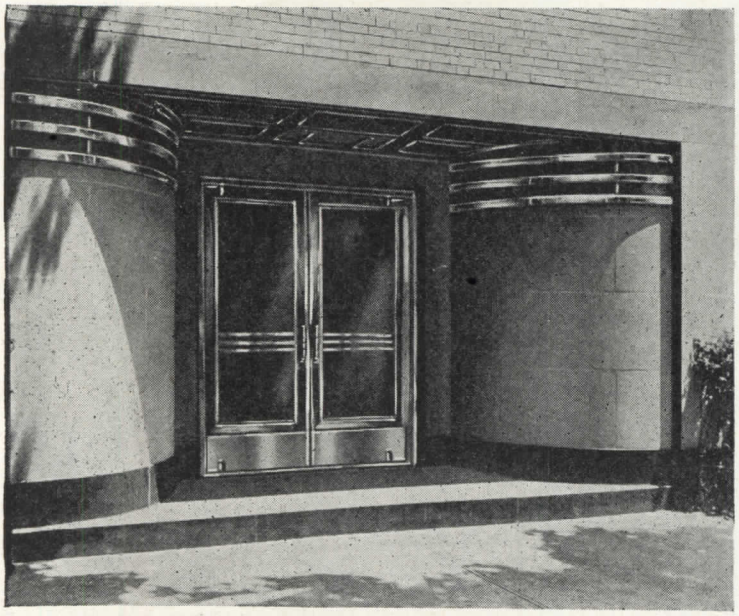
Chase
BRASS & COPPER CO.
INCORPORATED

Waterbury 91, Connecticut
SUBSIDIARY OF KENNECOTT COPPER CORPORATION

This is the Chase Network—handiest way to buy brass

ALBANY† ATLANTA† BALTIMORE BOSTON CHICAGO CINCINNATI CLEVELAND DETROIT HOUSTON† INDIANAPOLIS JACKSONVILLE† KANSAS CITY, MO. LOS ANGELES MILWAUKEE MINNEAPOLIS NEWARK NEW ORLEANS NEW YORK PHILADELPHIA PITTSBURGH PROVIDENCE ROCHESTER† SAN FRANCISCO SEATTLE ST. LOUIS WASHINGTON† (†*Indicates Sales Office Only*)

ELLISON BALANCED DOORS



Send for our booklet giving illustrations and details for various types of entrances

· (SAFETY DOORS) ·

Because They Are Easy to Operate . . .

Because They Are Furnished with Highest Quality Materials . . .

Because They Are Complete . . .

EASY OPERATION AGAINST WIND OR AIR SUCTION—The Ellison Balanced Door is pivoted at the top and bottom so that when it is being opened the pull handle edge swings outward against the wind, and the opposite edge swings inward with the wind. The entire door, therefore, moves easily and quickly to one side of the door opening.

FACILITATES TRAFFIC—The easy opening and quick closing of the Ellison Balanced Door permits an uninterrupted flow of traffic. This door can be opened and will close in any wind and weather condition—with a minimum of effort.

REDUCES PROJECTION—The Ellison Balanced Door, in fully open position, projects beyond the frame line 40% to 45% less than an ordinary hinged or pivoted door. This feature results in saving of space.

ELLISON BRONZE COMPANY, INC., *Jamestown, New York*

LOFSTRAND

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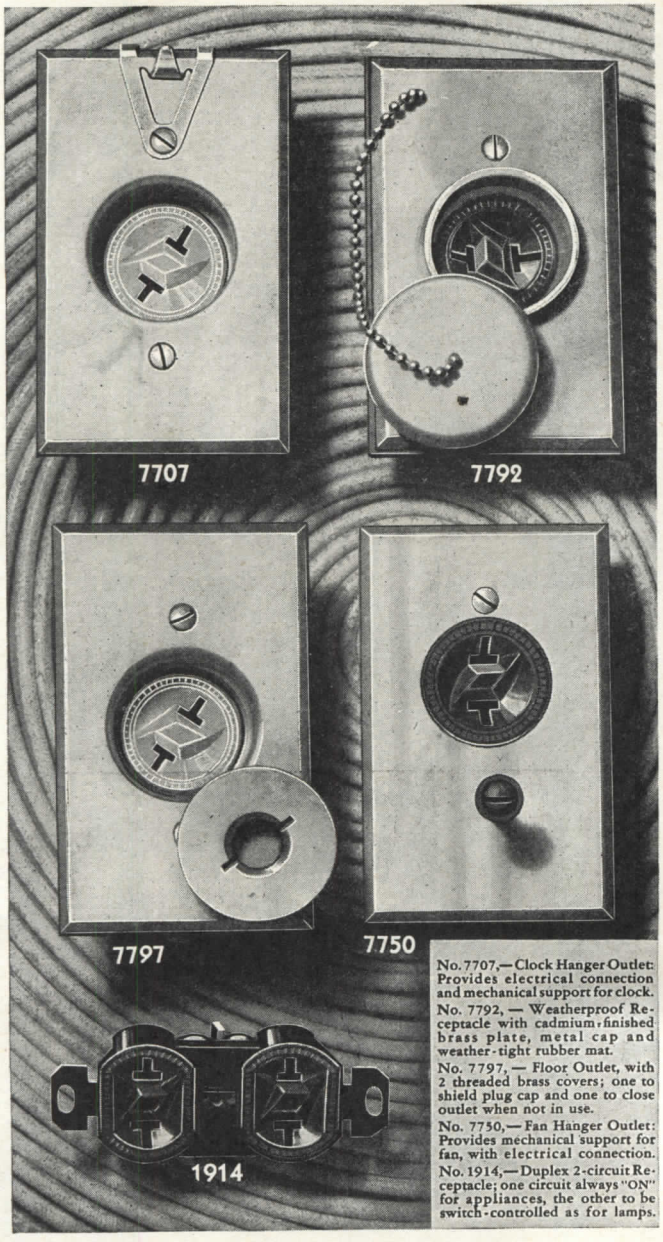

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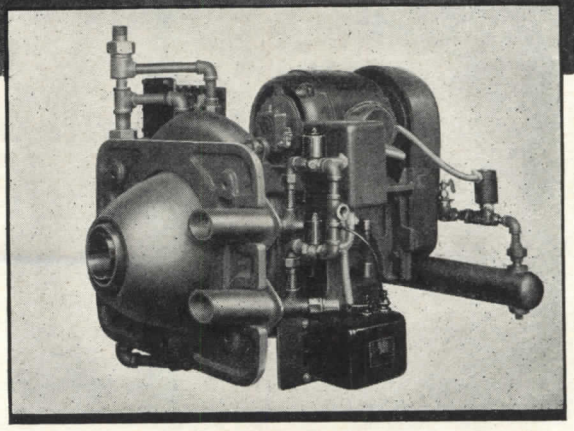

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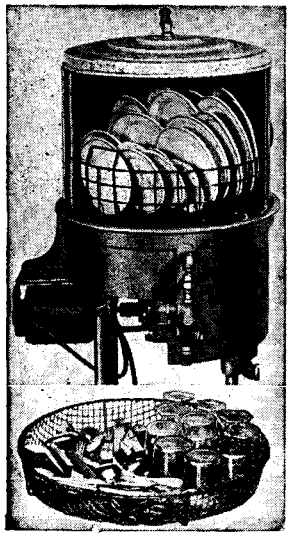

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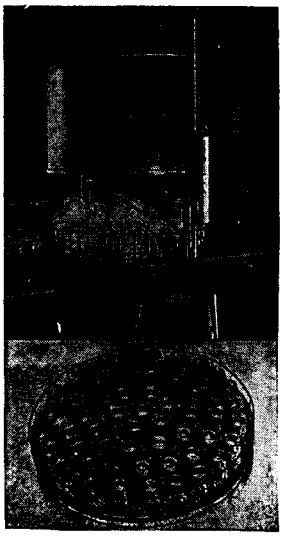

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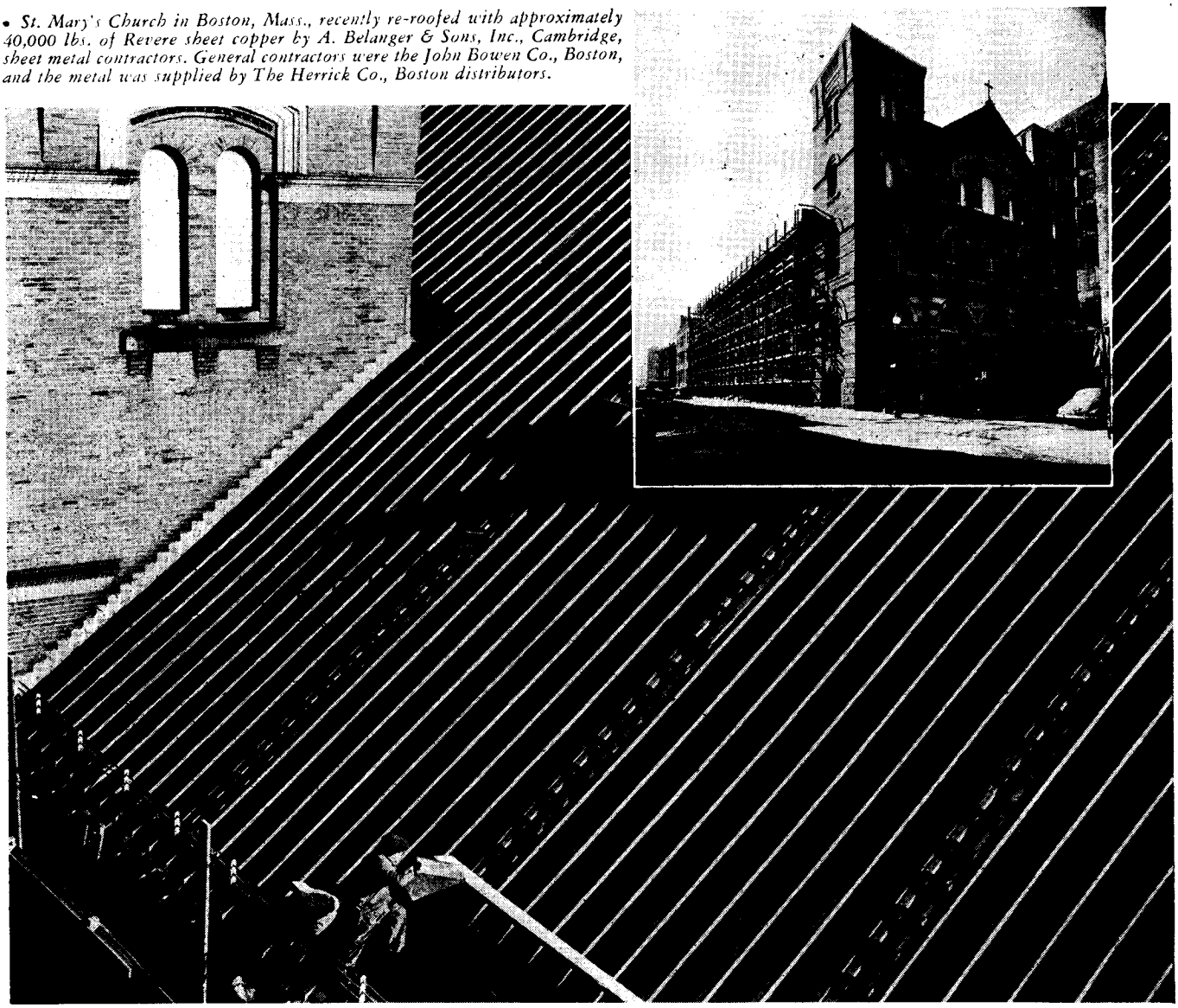

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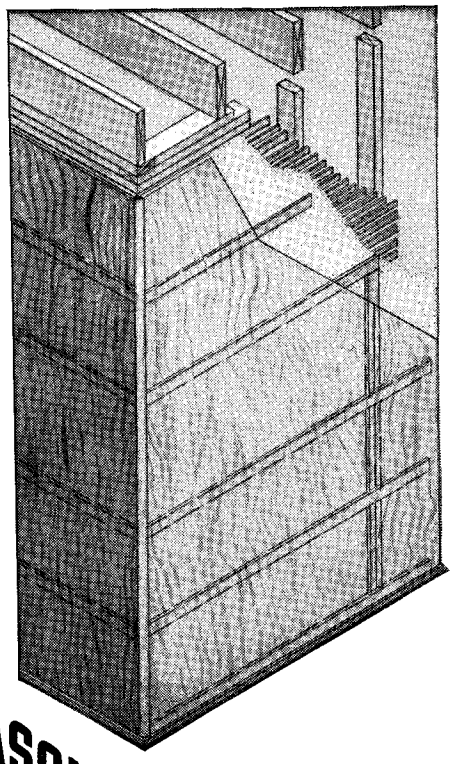
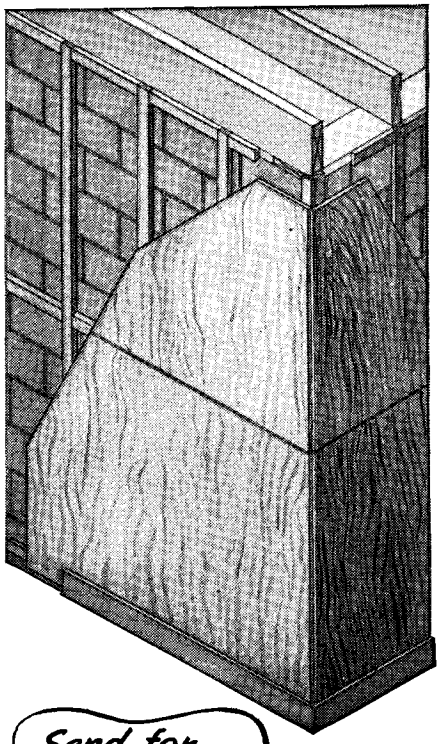


HOW TO PANEL MASONRY AND PLASTER WALLS

with WELDWOOD PLYWOOD



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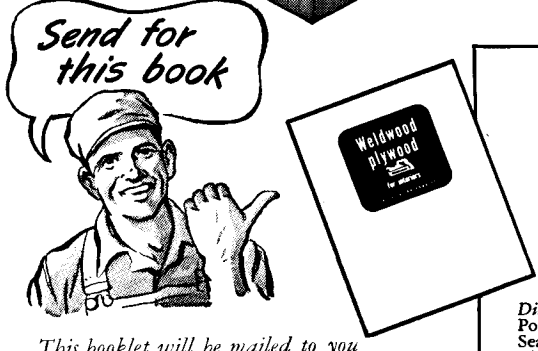

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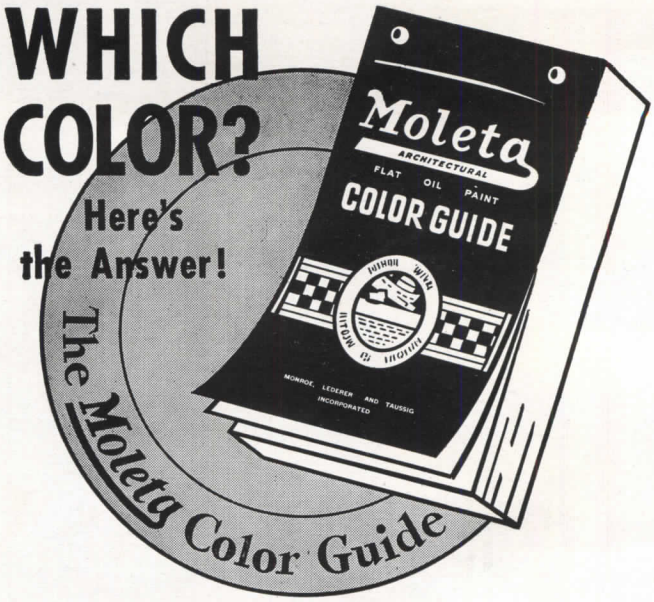

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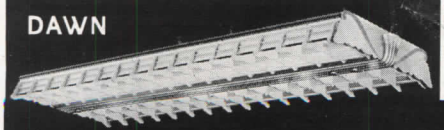

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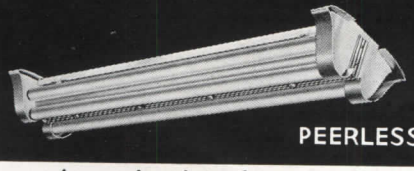

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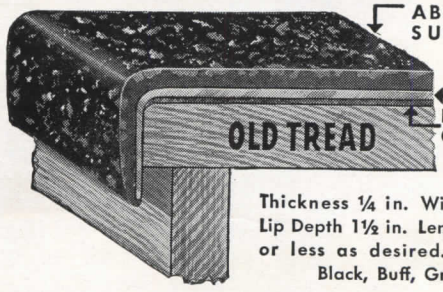

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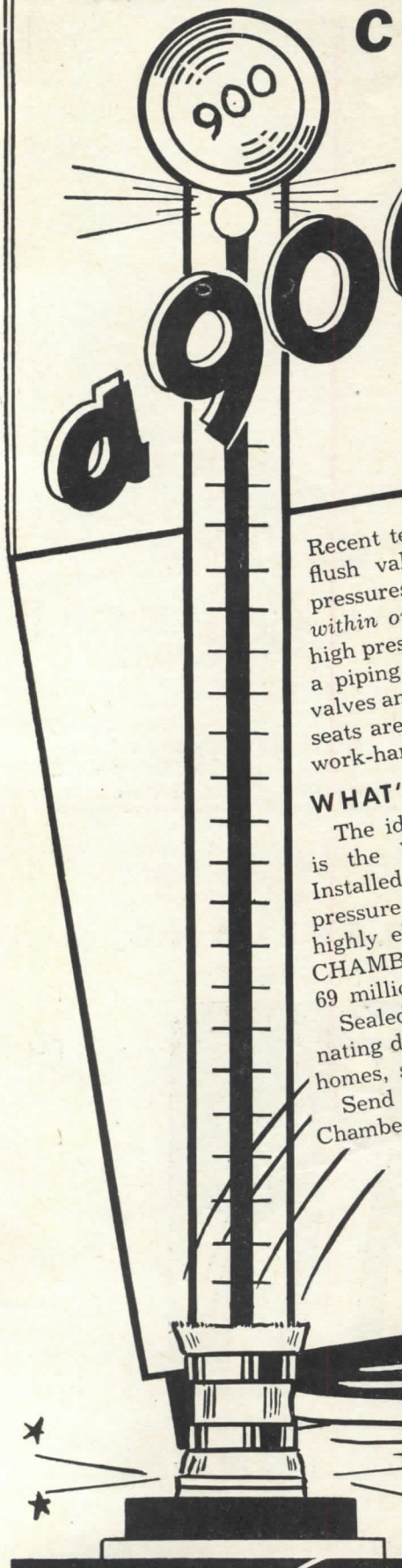

Recent tests with a one-inch pipe connected to a flush valve showed that water hammer surge pressures *rise as high as 890 lbs. per square inch within one second* after the valve shut off. This high pressure wave rushes back and forth through a piping system, stretching and straining pipes, valves and fittings. Threads loosen and wear, valve seats are damaged, piping becomes fatigued from work-hardening and finally breaks.

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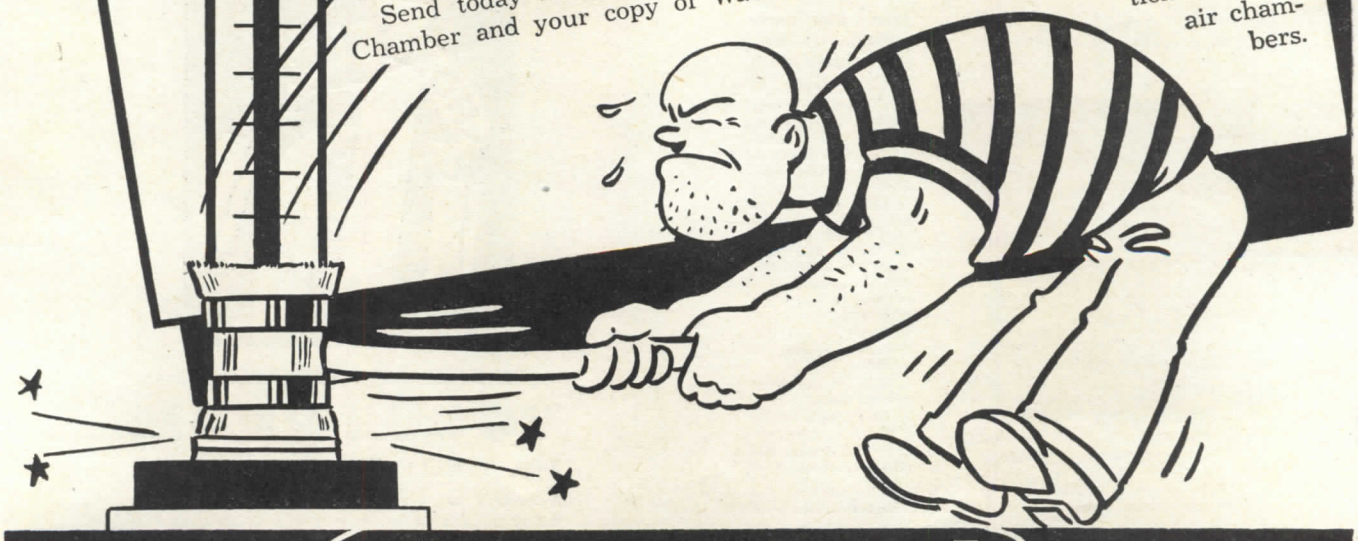

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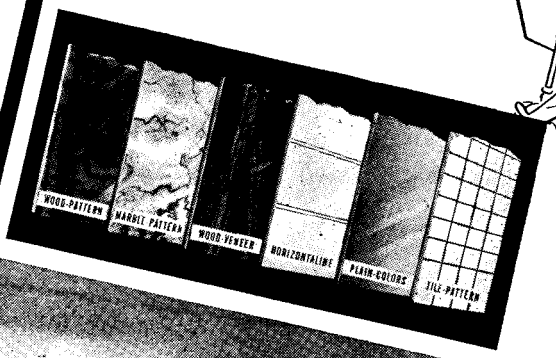

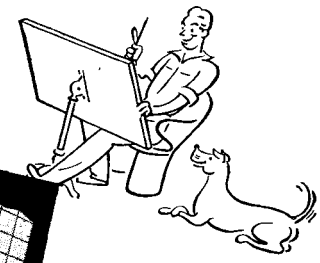

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A national organization to improve and extend the uses of concrete . . . through scientific research and engineering field work

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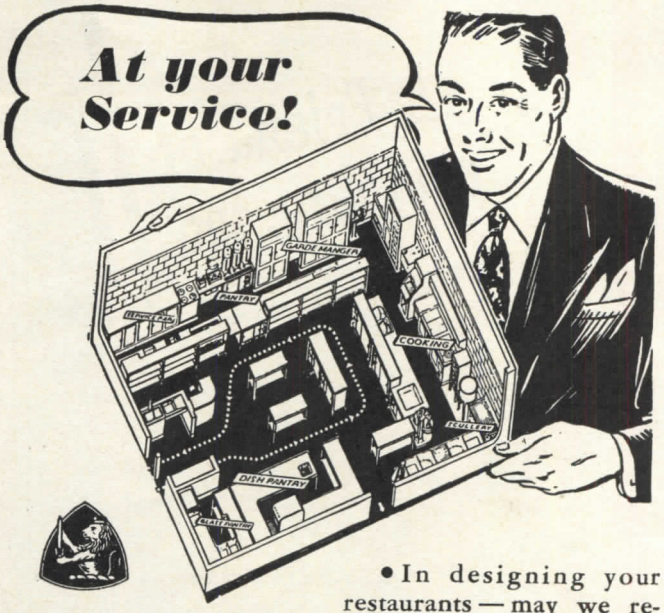

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Experienced engineers from a nearby Grinnell office will be glad to work with you or, write Grinnell Company, Inc., Executive Offices, Providence, Rhode Island.

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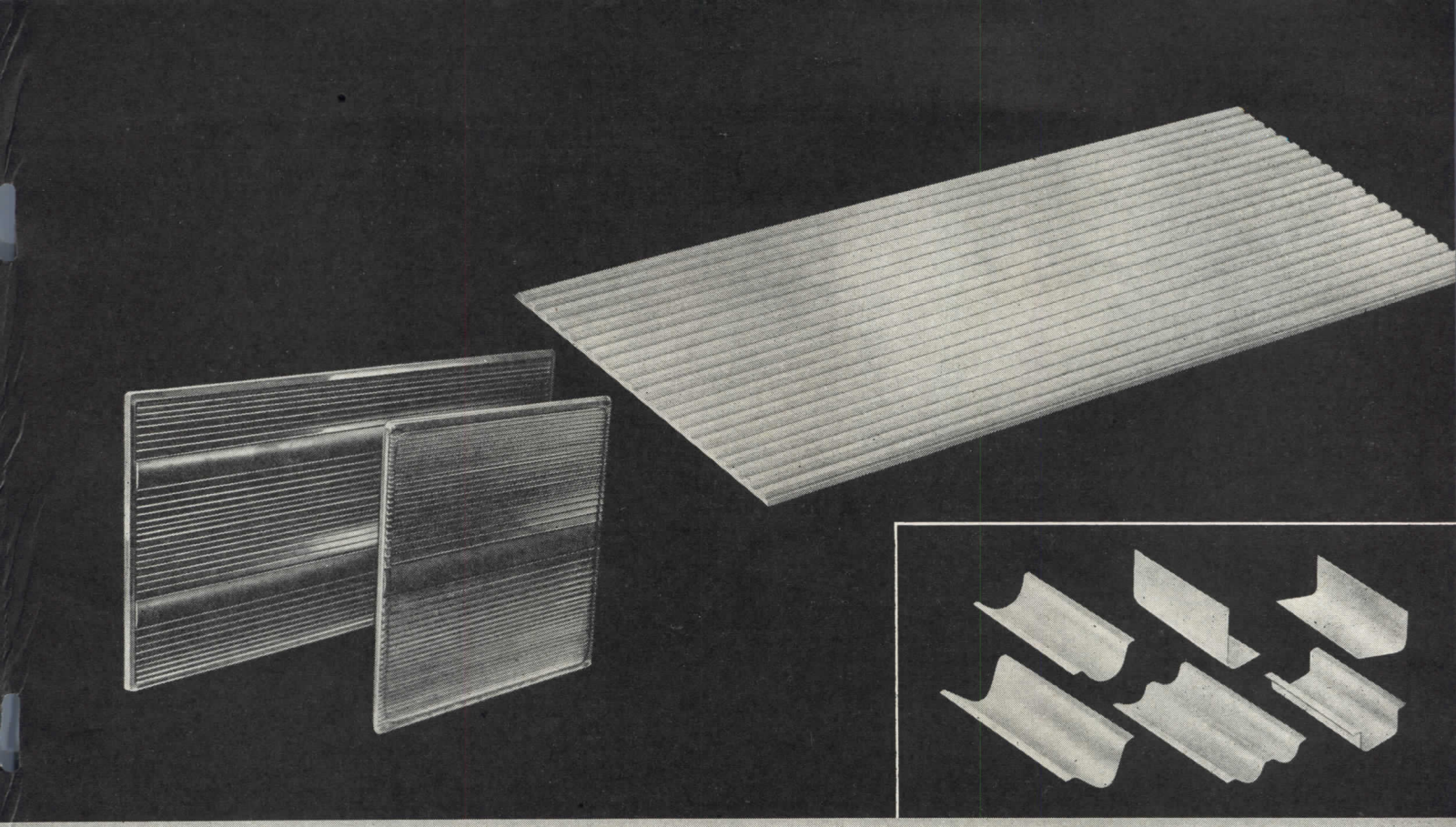

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Arketex continuous achievement in the ceramic glazed structural tile field assures you the finest in workmanship. Arketex . . . the standard of textured tile.

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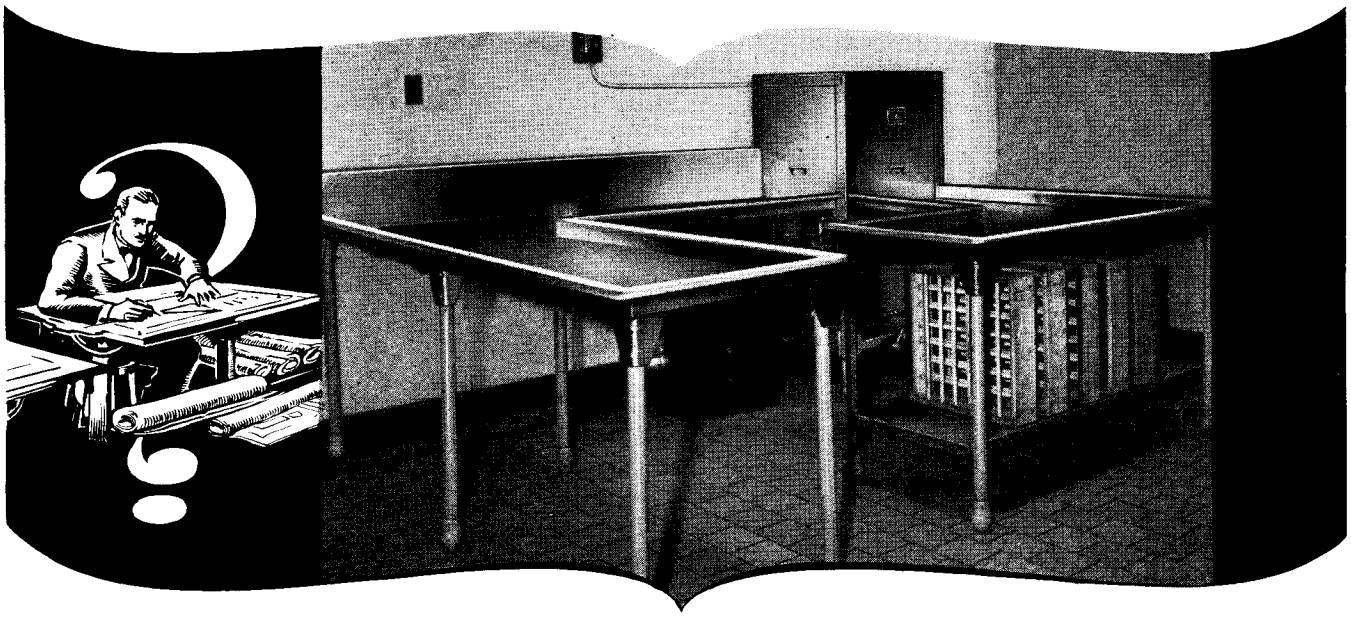

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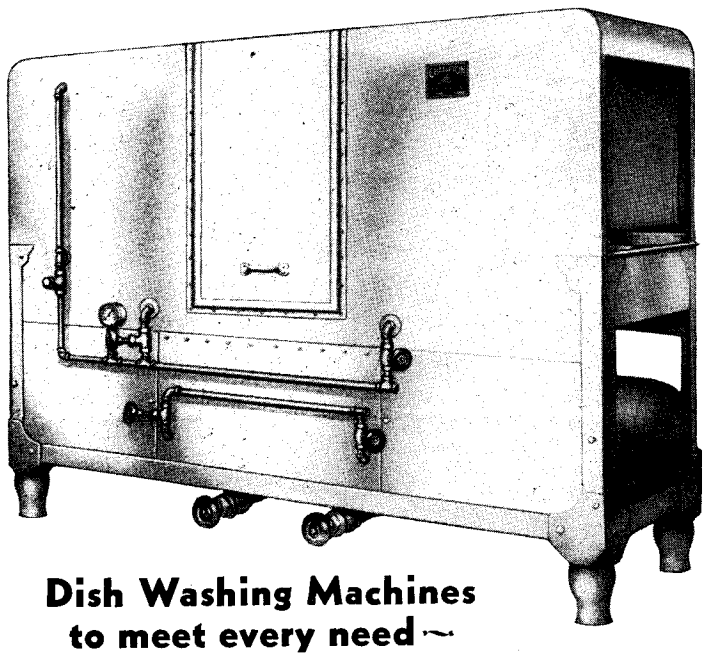

Dish Washing Machines to meet every need ~

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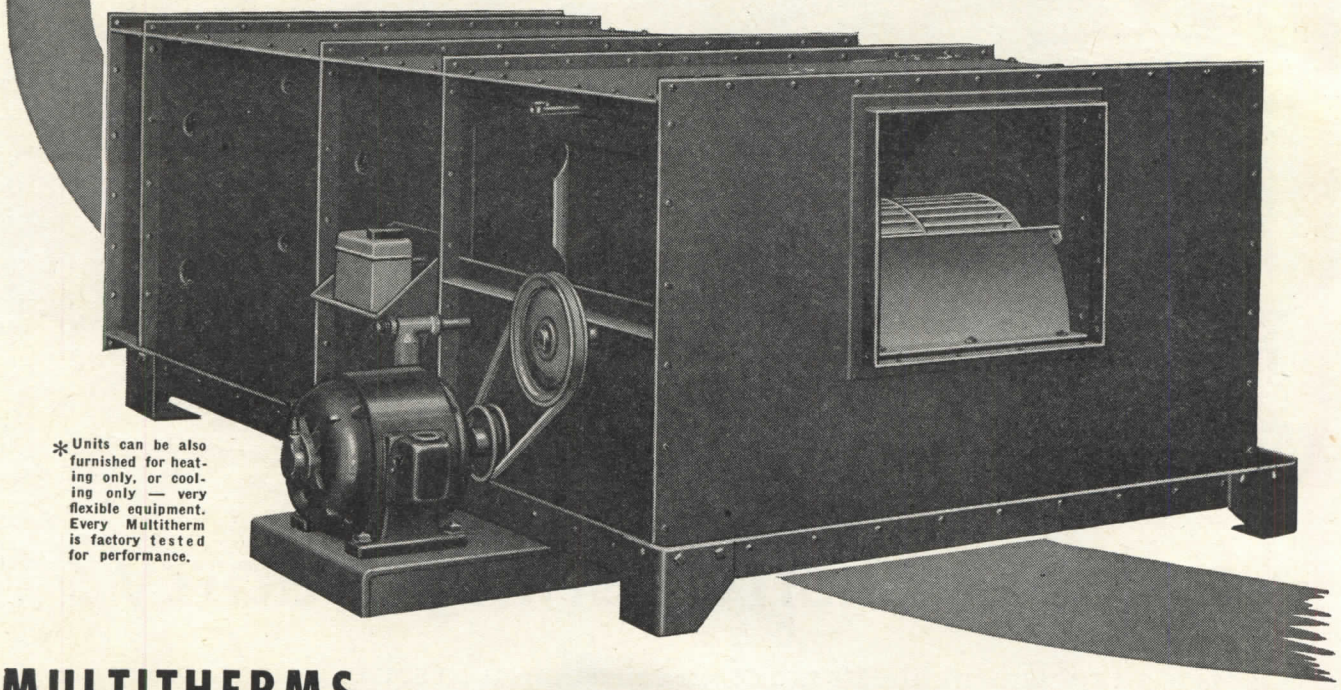

*Units can be also furnished for heating only, or cooling only — very flexible equipment. Every Multitherm is factory tested for performance.

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Look into Clarage Multitherms if you have any type of air conditioning problem. They are engineered to give precision results — compact to save space — of heavy duty construction for years of continuous trouble-free service. *And, as compared to central station conditioning, you can usually save considerable money.*

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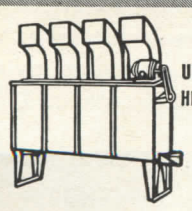
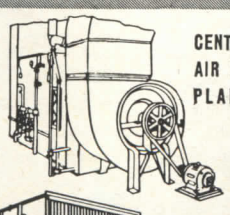
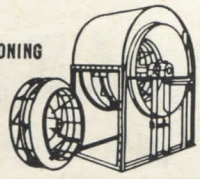


UNIT HEATERS



CENTRAL STATION AIR CONDITIONING PLANTS



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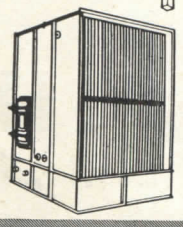

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