

# RECORD

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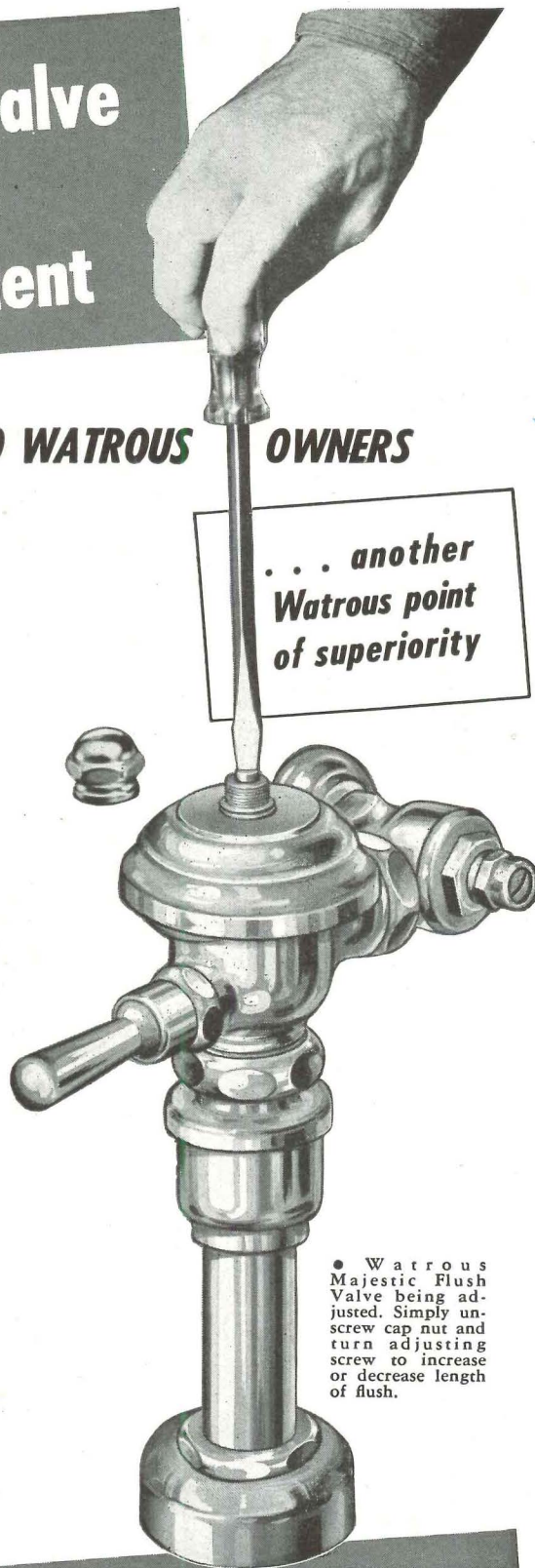
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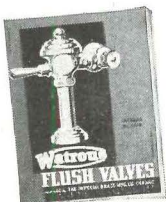
Estimated annual savings of water obtainable through proper regulation of flush valve to actual water needs of the fixture			
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# THE RECORD REPORTS

## **Construction Controls Are Likely to Remain • Commerce Department Sums Up Materials Outlook • Storm is Brewing Over Housing • Federal Buildings Will Lead Public Works**

CONGRESS has been raising its shoulders mightily in the Washington scene these closing weeks of 1945. At stake is the nation's economy—with the construction industry in an eminent role.

A wrestling match over who shall do what with business and industry during the Reconversion Period has been taking place between the White House and Capitol Hill—with the latter, after many a meek year, rising, colossus-like, to pin the Executive shoulders often to the mat.

President Truman and his Top Reconverter John M. Snyder, for instance, wanted the Executive's wartime powers continued into 1947. Congress was anxious to declare an official end to hostilities and thus set the date to finish off extraordinary powers, many of which by law terminate six months after such a declaration. So the Congress probed carefully into the whole situation, put an OK on some powers, thumbs down on others, generally followed its own whim. Scarce building goods, for one, will stay under controls.

### **Aids Given Business**

Aside from asserting its way on war powers, Congress performed other acrobatics on behalf of peacetime business. In one fell swoop it whacked off \$5 billion in taxes, affecting excess profits, corporate levies, excises and individual incomes. This means easier going in 1947. Too, the Congress called back some \$52 billion in wartime appropriations. It authorized federal aid for a nation-wide system of airports. It released funds for a road construction program. It began work on a wide range of other items.

The lawmakers weren't taking too readily to other general suggestions of the Administration. They didn't cheer much at the call for universal military training. They hemmed and hawed over the Full Employment Bill, "let the President down" on unemployment compensation for war workers, and took their own sweet time on many another piece of legislation.

### **Strikes and Prices Eyed**

At the administrative end of Washington there was plenty of excitement to keep the spectators busy. Judge Schwellenbach, the new Labor Secretary, faced with crippling reconversion

strikes, developed a labor-management conference on which hung high hopes. The new Civilian Production Administration, hatched to succeed the War Production Board, churned away at its hang-over chores at the right hand of over-burdened John M. Snyder. Chester Bowles fought manfully for ceiling prices on houses while Snyder fully accepted only the controlling of prices of building materials.

Official indications are that, although Mr. Bowles doesn't get all he asks for, numerous controls will remain effective in construction. Congress appears reluctant to vote price ceilings on homes, but prices of building materials will stay under watch; so will rents.

### **Priorities Will Remain**

Allocation and priority powers will remain. A check will be kept on inventories. Lumber, for instance, went under inventory control about November 1, with stocks limited to 60 days' requirements; this inventory restriction included the construction and transportation industries.

Note the words of John D. Small, of the Civilian Production Administration, who says:

"The rate at which construction can

be speeded up depend in large measure on achieving increased supplies of such materials as bricks, structural clay tile, clay sewer pipe, cast iron soil pipe, and lumber . . . manpower is the main problem . . . speedier delivery of equipment can substantially improve the production picture . . .

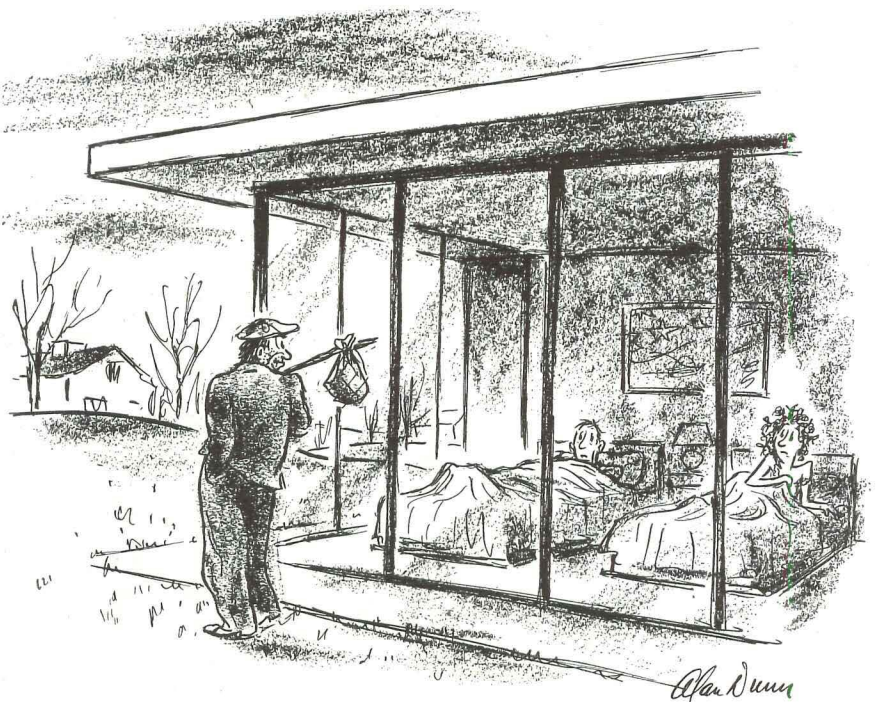
"Our primary aim in handling bottleneck items is to obtain the most rapid possible increase in their output . . ."

In this general subject of controls, it should be noted that OPA recently sanctioned a 10 per cent boost in ceiling prices for low and medium-priced hardware items essential in low-cost residential construction. The aim, says the price agency, is to stimulate production of these items.

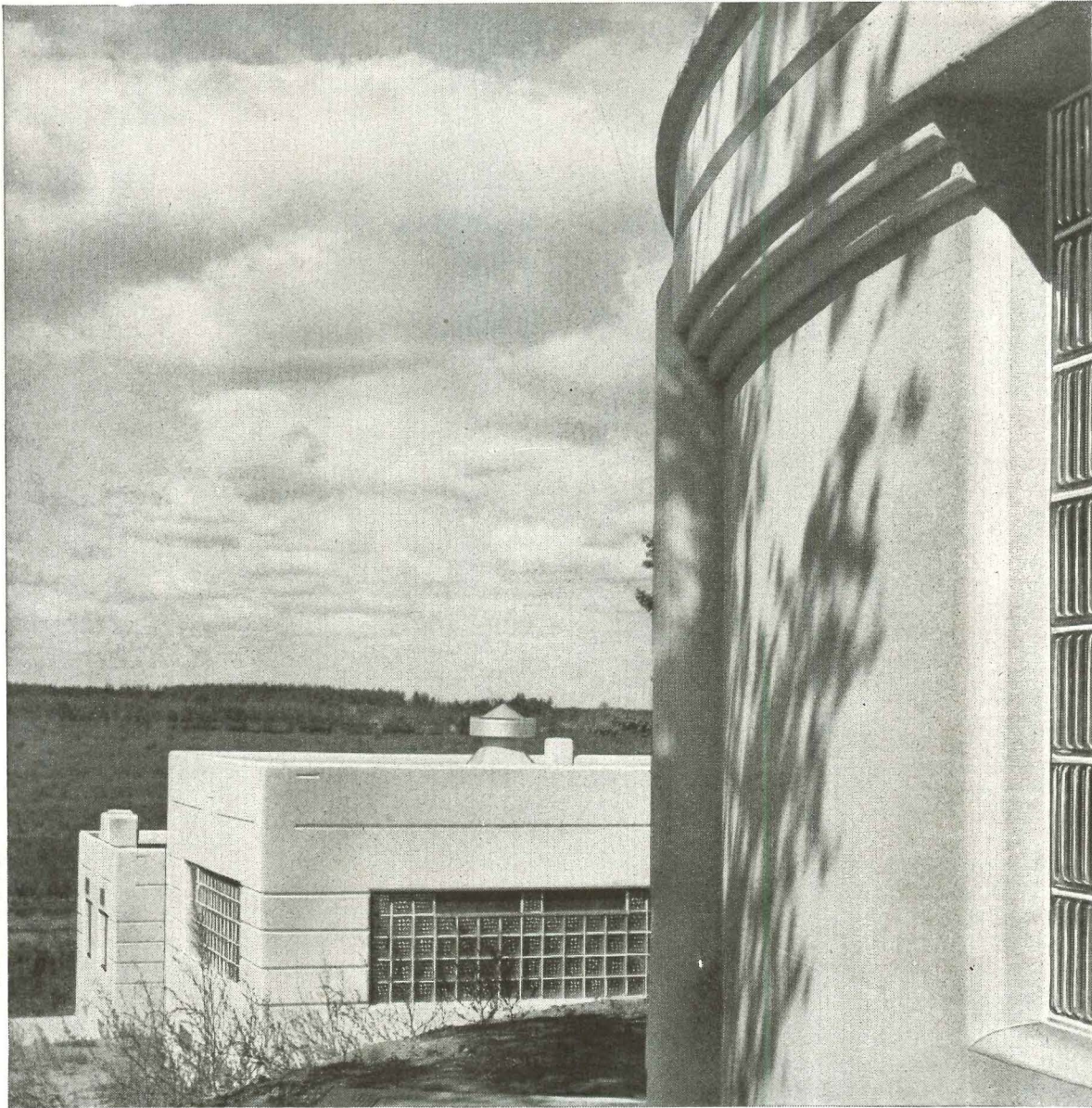
### **Materials Outlook Summed Up**

The general outlook on building materials is summed up by various Washington sources, eminently the Commerce Department and the last-minute findings of the WPB. Warns the Commerce Department: If lumber, brick, clay sewer pipe and cast iron soil pipe are not more abundant by spring, new construction will be faced with costly delays or, alternatively, will adopt the techniques and substitute materials of the war years. The Department counts on the increased market stimulating producers during the winter lull in construction to restock bare shelves and yards of distributors and make ready for the \$6.5 billion program for 1946, including \$2 billion in new housing.

(Continued on page 10)



—Drawn for the RECORD by Alan Dunn



New Sewage Treatment Plant at Bagley, Minnesota. Engineers—Druar & Milinowski, St. Paul, Minn.

Photographs—Courtesy—the Portland Cement Association.

## LIGHT ON MUNICIPAL PROBLEMS

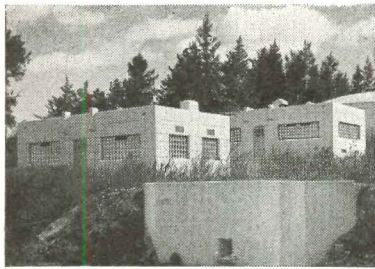
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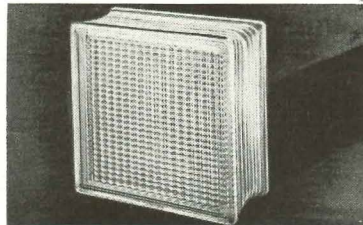
But—best of all—they reduce maintenance charges. They need little attention other than occasional cleaning. Painting is never required.



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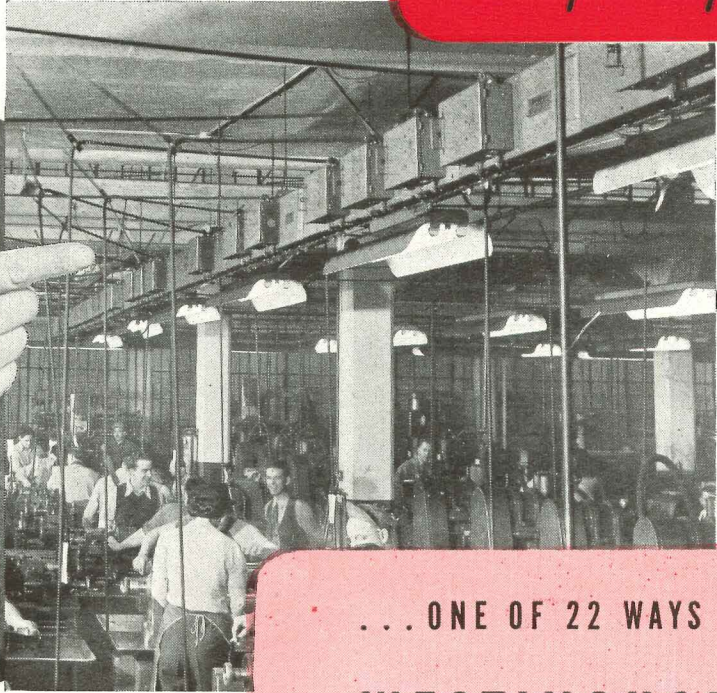
*Insulux Glass Block is a functional building material—not merely a decoration. It is designed to do certain things that other building materials cannot do. Investigate!*

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This \$6.5 billion estimate covers military and industrial construction, housing, public works, and road building, but not repairs and reconstruction work (which, some think, may reach \$4 billion or more). Production is expected to exceed 1945 by quarters as follows: January-March, by one-fifth; April-June, by nearly half; July-September, by 60 per cent; October-December, a slight drop.

Came the word from WPB (among its last) that no appreciable replenishment of lumber stocks should be counted on by the end of the year. It forecast that cast iron soil pipe output would not reach 1939 totals even by next June and that cast iron radiators will be similarly low.

Two pertinent facts come to light from these agencies. One is that the field of alterations and repairs is most likely to gain most from relaxation of controls. The other is that lumber exports will be kept under close scrutiny "to prevent interference with revival of domestic home and commercial building." However, such exports will be held to a minimum, not cut off altogether.

**Storm Brewing over Housing**

Washington officialdom, particularly Congress, reacts much less excitedly to basic material shortages than to the potential storm cloud of an increasing housing shortage. Returning veterans, anxious to make homes of their own,

find themselves having to "hole up" with their families, and disgruntled veterans bear a lot of weight with Congressmen who come up for election next year.

This is the danger signal the worried legislators see through the eyes of the National Housing Agency, the Office of Price Administration, and other agencies: the need for houses will be acute for the next two years in major cities, including New York, Washington, Chicago and San Francisco.

One NHA study shows that in 1946 nearly 3.5 million families will seek homes, and of these almost 3 million will be veterans. Only 1.5 million of these families will find places to live.

It anticipates that, in addition to the heavy "doubling up" of families now, roughly 2 million more will have to double up with relatives in the course of the next 12 months.

No solution, but rather a continued pressure for houses, is expected for the next year or two.

NHA received a sizable amount of good will in Congress by its quick action in curtailing wartime activities when Japan surrendered. "This agency," said the House Appropriations Committee, a watchdog of federal expenditures, "to the credit of its Administrator, was among the first to curtail activities and reduce expenditures . . . As a consequence, rescissions (savings) aggregating \$77,727,000 . . . are proposed."

**Plans Made for Veterans**

Not long after this President Truman sent a request to Congress for \$24.5 million to enable NHA to provide housing for veterans. The Budget Bureau explained that, under the proposal, "surplus temporary war housing will be panelized and made available to cities having a problem of housing veterans during the emergency period when permanent housing cannot be provided." Need is anticipated particularly in college and university cities.

Scheduled to open early this month is a Federal Public Housing Authority exposition on "war housing re-use" near Silver Spring, Maryland, a Washington suburb. Various types of structure are being demonstrated by FPHA, all reconstructed from panels into which emergency war houses were sawed.

**Federal Buildings Will Lead**

Apparently one of the first public works items to get attention after private construction is well under way will be federal buildings. Federal Works Administrator Philip B. Fleming stresses the fact that, except for temporary office buildings, no public building construction has been undertaken for nearly five years.

"The accumulated need for structures of all sorts for the proper conduct of the government's business is very great," he has advised the Congress. "While the eligible projects comprise a long list, it is intended to build at first only those most urgently needed. We are most anxious to avoid competition with private construction for labor and materials."

General Fleming notes that the larger number of the eligible projects are relatively small and well suited to smaller contractors.

**Classifying Surplus Real Estate**

Real estate holdings acquired by the federal government from coast to coast during the war raise a problem as they move into the surplus category. The Surplus Property Administrator, W. Stuart Symington, has announced a basis for classifying such real estate so as to fit it into the needs of the local communities where it is situated. The plan solicits the aid of real estate boards, planning commissions, chambers of commerce, and municipal officers, whose suggestions will be used in determining the proper classification, whether for park, reservoir, utility, commercial, industrial or residential use. More than 6,000,000 acres are owned outright by the federal government and a large majority will be disposed of.

(Continued on page 13)



Seven of the nine members of the jury of awards in the Chicago Tribune's \$24,000 Chicagoland prize home competition (see AR, Nov., p. 156). Left to right, standing: John Merrill, architect; Arthur E. Fossier, builder; Boyd Hill, architect and professional adviser in the contest; A. N. Rebori, architect. Seated: Philip B. Maher, architect; John R. O'Connor, builder; Irvin A. Blietz, builder; and Paul Gerhardt, Jr., architect. Missing jurors: J. E. Merrion, builder, and John W. Park, architect

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**Properties:** Crystal, translucent or opaque; broad color range; excellent high frequency electrical insulator; can "pipe" light through rod at angles, and around bends; resistant to most acids and alkalis; low water absorption; light weight; good stability at low temperatures; limited solvent resistance; available only in rigid forms.

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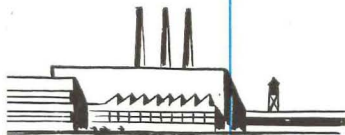
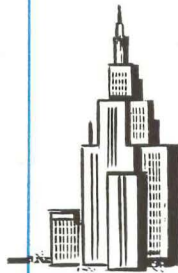
**Present and Potential Uses:** Modern window blinds; special extruded shapes for kitchen trim; rods, tubes and bars; radio cabinets; housings; tool handles; escutcheons; insulators; automotive and aircraft window frames; aircraft parts; tape and wire coating; automotive parts; containers; flashlights; refrigerator parts.

**Properties:** Extra tough, even at low temperatures; attractive colors; pleasant to handle; transparent or translucent; dimensionally stable to varying climatic conditions and temperatures; light in weight; available in wide range of flow; not available in crystal color; limited chemical and solvent resistance.

### STYRALOY 22

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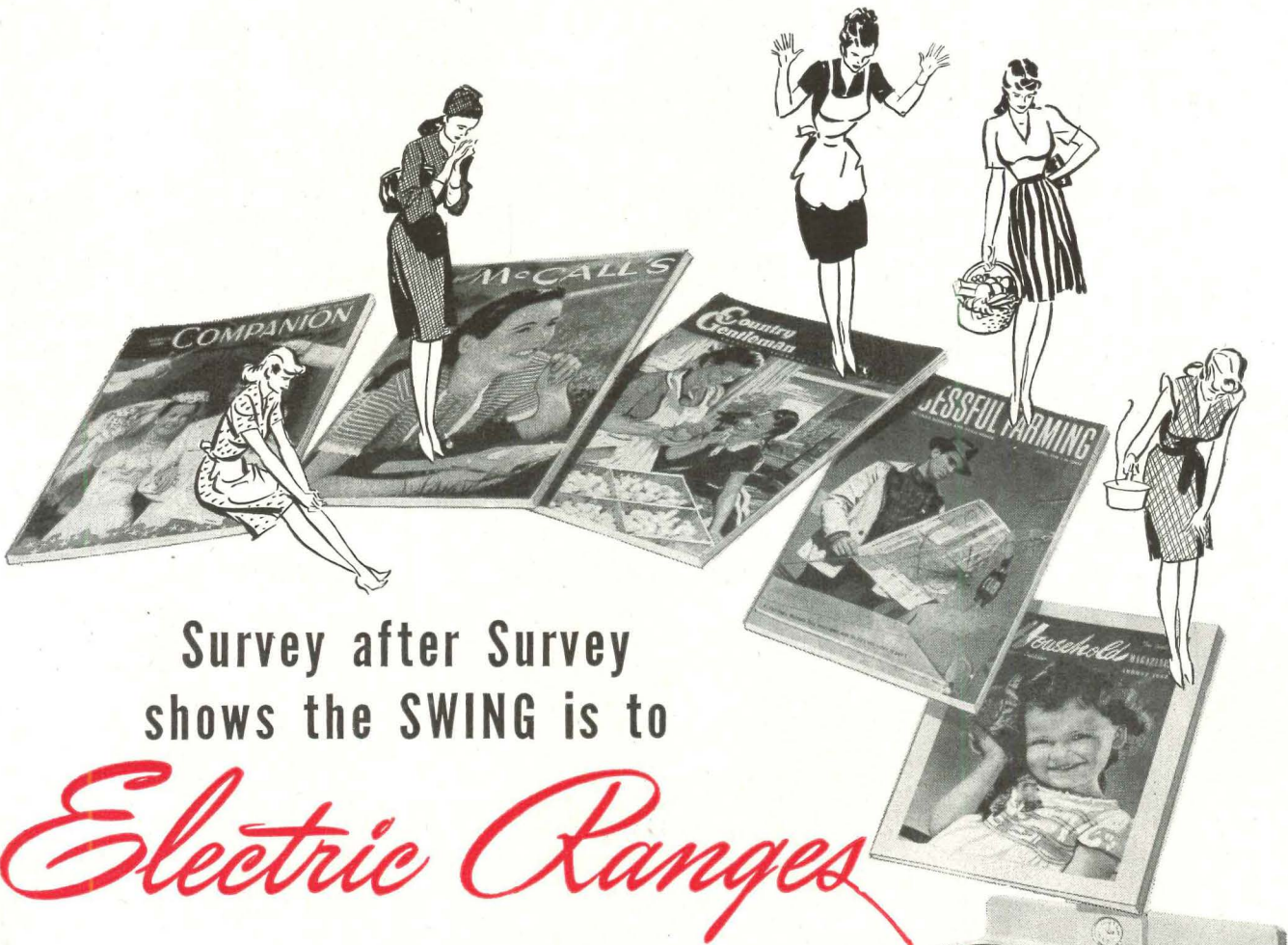
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- COUNTRY GENTLEMAN survey shows that among the upper two-thirds of white farmers, the Electric Range is the 2-to-1 choice!

And prewar sales figures further emphasize the trend; between 1933 and 1941, sales of Electric Ranges increased over 900%!



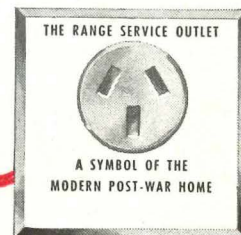
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FOR EASIER SALES

Wire your houses  
FOR ELECTRIC RANGES





## THE RECORD REPORTS

(Continued from page 10)

### Hospital Survey Recommended

Congress is moving along slowly on the Hospital Survey and Construction Bill. As the Senate Committee finished its study, it recommended passage of a measure which would assist the states in making a survey of needs and in providing funds for construction. It proposed \$5,000,000 for surveys and planning and \$75,000,000 a year for five years, 1947-51, for construction.

The committee report to the Senate discusses the need for five types of construction—general hospitals, tuberculosis hospitals, hospitals for nervous and mental illness, health centers, and chronic disease hospitals.

It advised that the need is acute and accentuated by many factors. "Without modern hospitals, laboratories and health centers, properly distributed in relation to need," it reported pointedly, "adequate health care cannot be achieved under any method."

### Construction Council Meets

The recently organized Construction Industry Advisory Council of the National Chamber of Commerce had its first meeting on Nov. 1. Problems facing the building industry in bringing about a prompt and non-inflationary revival of large-scale activity were discussed.

Speaking before the representatives of more than 80 professional and trade organizations attending the meeting, W. O. Shreve, vice president of the General Electric Co. and a National Chamber director, set the keynote by pointing out the purpose of the Council—to provide a means for the many organizations in the industry to get together for the exchange of ideas and suggestions with respect to their common interests.

One of the most timely of the addresses, in view of the labor unrest sweeping the country, was that of Richard J. Gray, acting chairman of the Executive Council of the American Federation of Labor's Building and Construction Trades Department. Sharp up and down swings of construction volume, both seasonal and over the years, Mr. Gray said, account for many of the strains between labor and management. "Most of our troubles will be cured, and costs reduced," he said, "if we can find acceptable ways and means of lengthening the work year, and of ridding the economy of the depressions which construction goes through every few years."

As to the supply of construction

workers, Mr. Gray predicted that as soon as those now in the service are back in their communities, the number will be ample to take care of all construction work which can be contracted.

### WHAT THEY SAY . . .

#### About the Murray Bill

"The proposal by Senator Murray to time public works construction in such a way as to stabilize the total volume of building and to create a \$5 billion reserve of planned projects should receive early and favorable consideration by Congress." *J. Ernest Fender, president, Structural Clay Products Institute.*

"Careful timing and scheduling of public works, for which the Murray bill provides, will do much to stabilize the construction industry and to eliminate extreme fluctuations in employment for workers in the building trades." *L. C. Hart, president, The Producers' Council, Inc.*

#### About OPA's Price Ceilings

"The plan for controlling prices of new housing, as proposed by OPA Administrator Chester Bowles, would reduce the number of new homes built by 75 per cent so long as any plan remained in force. . . . Because of uncertainty as to the cost of building materials and equipment and as to the productivity of labor, very few builders will be able to initiate housing projects if required to abide by estimates made at the time the job is started." *Frank W. Cortright, executive vice president, National Assn. of Home Builders of the U. S.*

"Where would the OPA, or any other government agency, find enough competent individuals to control individual ceiling prices for even a half million homes? Think of the careful, painstaking study that would have to be devoted to each individual set of plans before a fair and equitable price could be set!" *Douglas Whitlock, speaking in behalf of both the Chamber of Commerce of the U. S. and the Producers' Council.*

### WAR HOUSING LEASES MAY BE TERMINATED

Owners of private properties leased to the government for conversion to war housing may negotiate with the Federal Public Housing Authority for early termination of their leases, FPHA Commissioner Philip M. Klutznick has announced.

"Since converted war housing, consisting of almost 50,000 dwelling units, is no longer restricted to war workers,"

(Continued on page 134)

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Prewar Demand  
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The Trend is to  
**Electric WATER HEATERS**

In the 6 prewar years, sales of Electric Water Heaters almost tripled. And a 1943 contest conducted by McCall's Magazine shows that 2.4 times as many women wanted Electric Water Heaters as now have them. They're "the coming thing," because they're:

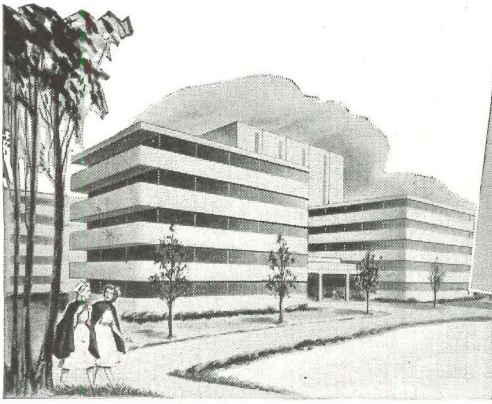
- SAFE—Flameless, fumeless
- CLEAN—Smokeless, sootless
- ADAPTABLE—Permit short hot water lines—Require no flue or vent.
- TROUBLE-FREE as electric light!

Installing Electric Water Heaters in every house you build, means giving women what they want!

Electric Water Heater Section  
NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION  
ADMIRAL • B & F • CLARK • ELECTROMASTER • FOWLER •  
FRIGIDAIRE • GENERAL ELECTRIC • HOTPOINT •  
HOTSTREAM • KELVINATOR • MONARCH • NORGE •  
PPMCO • REX • RHEEM • SELECTRIC • SMITHWAY •  
THERMOGRAY • THERMO-WATT • UNIVERSAL •  
WESTINGHOUSE

A House Wired For An Electric  
Range Is Already Wired For An

**Electric**  
**WATER HEATER!**



**HOSPITAL PLANNING?**  
 The fifth in a series of six advertisements prepared to help you plan effective communications for new or modernized hospitals.

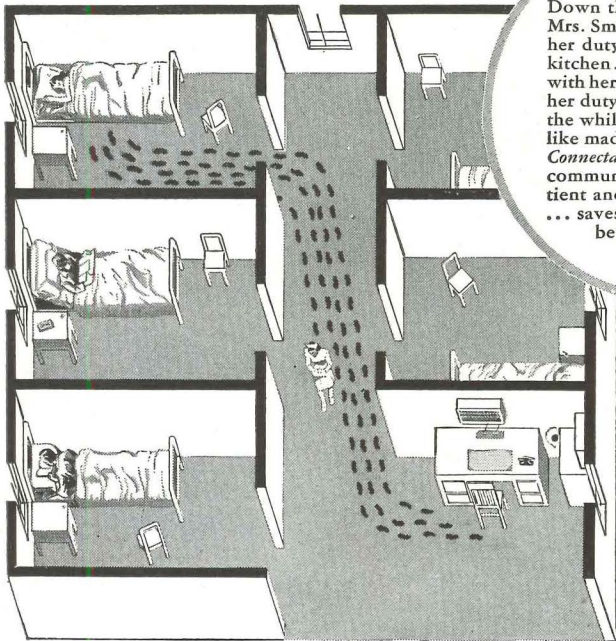
**HOW CONNECTACALL SAVES TIME... SAVES FOOTWORK**

Instant two-way *voice* contact between patient and nurse. In a word that's what Connectacall offers the new or modernized hospital you may be planning. It permits the nurse to spend *more* time at her duty station . . . *less* time trudging endlessly back and forth on routine errands. Connectacall saves time . . . saves footsteps...conserves energy. That means better patient care . . . with fewer nurses.

Connectacall offers the additional advantage of *Silent Supervision* at night. At her duty station the night nurse merely presses a button to connect with a sensitive microphone-speaker at the patient's bedside. Within a matter of minutes, she can make her night rounds by "tuning in" one room after another. And by simply turning up the *volume control*, she can instantly detect the slightest sound of labored breathing or other distress.

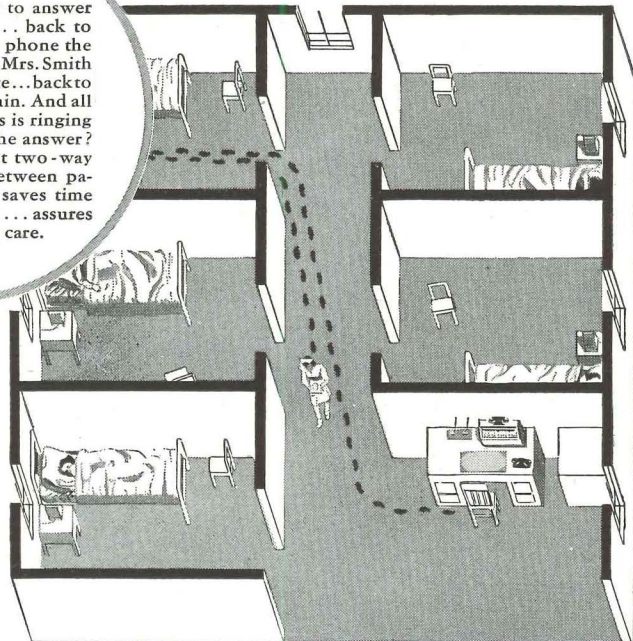
Net result: Connectacall provides greater hospital efficiency . . . at reduced nursing payrolls. For technical data on the complete line of "Connecticut" signalling systems, write for your copy of Bulletin 102. Better yet, take advantage of the free consultation service offered by our staff of experienced field engineers. Address Great American Industries, Inc., Connecticut Telephone & Electric Division, 420 Britannia Street, Meriden, Conn.

**CONVENTIONAL WAY**



Down the corridor to answer Mrs. Smith's ring . . . back to her duty station to phone the kitchen . . . down to Mrs. Smith with her orange juice . . . back to her duty station again. And all the while Mr. Jones is ringing like mad. What's the answer? *Connectacall*, instant two-way communications between patient and nurse. It saves time . . . saves footwork . . . assures better patient care.

**CONNECTACALL WAY**



**CONNECTACALL**

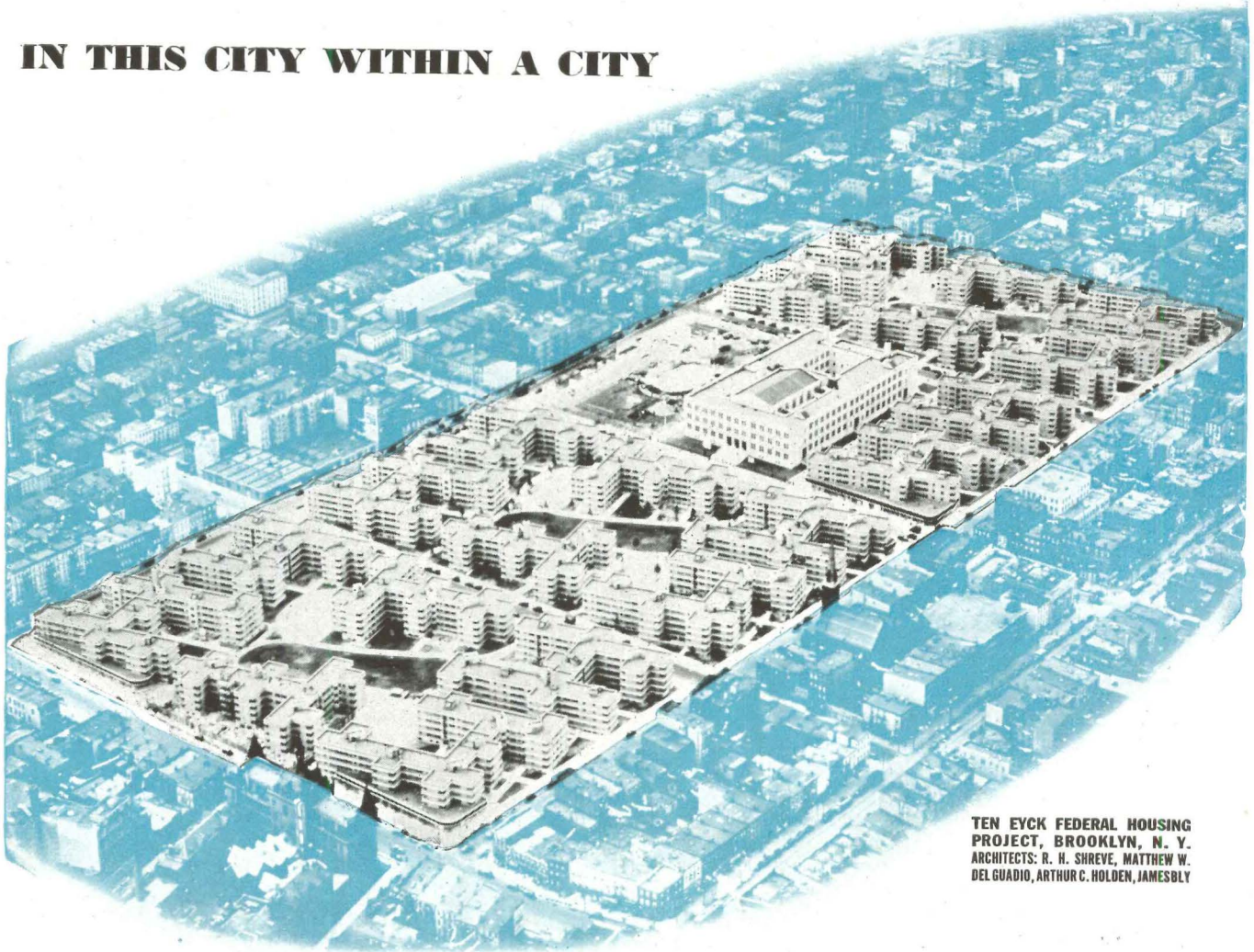
product of

**GREAT AMERICAN INDUSTRIES, INC.**  
**CONNECTICUT TELEPHONE & ELECTRIC DIVISION**  
**MERIDEN, CONNECTICUT**

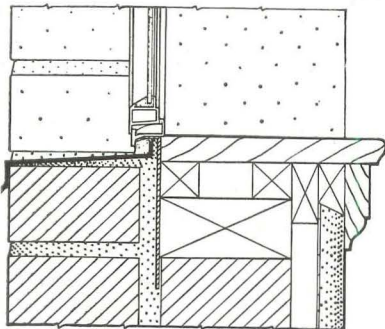


NURSES' CALL SYSTEMS • DOCTORS' SILENT AND AUDIBLE PAGING • DOCTORS' REGISTRY • INTERIOR TELEPHONE SYSTEMS • NIGHT LIGHTS • NURSES' HOME TELEPHONE AND RETURN CALL SYSTEMS

# IN THIS CITY WITHIN A CITY



TEN EYCK FEDERAL HOUSING PROJECT, BROOKLYN, N. Y.  
ARCHITECTS: R. H. SHREVE, MATTHEW W. DELGUADIO, ARTHUR C. HOLDEN, JAMESBLY



**TYPE "A" ALUMINUM SILL**  
One of many standard Alcoa sills

Section Number	A	B	C	D	E	F	Wt. Per Foot
18053	3 1/2	3	1 1/8	1 9/16	3/16	3/16	.692
18054	4	3 1/2	1 1/8	1 19/32	7/32	3/16	.768
16754	4 1/2	4	1 1/8	1 5/8	1/4	3/16	.844
18971	5	4 1/2	1 1/8	1 21/32	9/32	3/16	.919
18055	5 1/2	5	1 1/8	1 11/16	5/16	3/16	.992
18972	6	5 1/2	1 1/8	1 23/32	11/32	3/16	1.067

## every window has an Alcoa Aluminum Sill

Easy to install, neat in appearance, low on upkeep—good reasons for using Alcoa Aluminum window sill on this and many other projects before the war. Convincing arguments for continuing their use as they again become available.

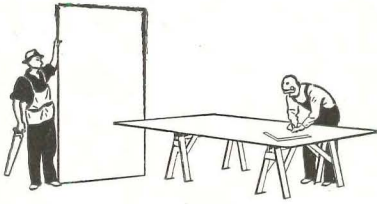
Their light weight makes handling easy. One man can set Alcoa sills. Sections are thin, permitting sills to be extended into the masonry, making tight joints. Aluminum needs no protective painting to safeguard it against the weather.

As aluminum is released for civilian uses, sills will again be stocked in convenient warehouses around the country. Plan on including Alcoa Aluminum sills in the residences and buildings you are now planning. Send for your copy of the booklet "Sills and Copings of Alcoa Aluminum". ALUMINUM COMPANY OF AMERICA, 2167 Gulf Building, Pittsburgh 19, Pennsylvania.

# ALCOA FIRST IN ALUMINUM



Reg. U.S. Pat. Off.



There are three grades of Douglas fir plywood panels made especially for various phases of wall construction. PLYWALL is made especially for standard wallboard use; PLYPANEL is a premium panel used for quality interior work; PLYSCORD is a utility panel made for wall and roof sheathing.

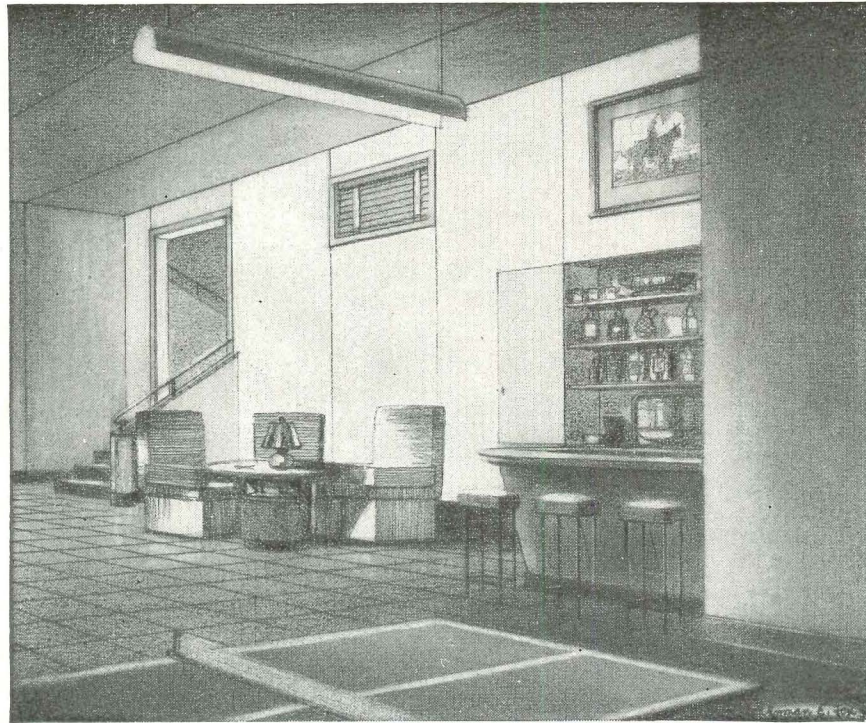
## Walls of Douglas Fir Plywood... easy to plan, easy to apply!

There is no special or complex planning necessary in designing a wall treatment with Douglas fir plywood. Just follow a few basic suggestions—and the variation of finished design is almost endless.

One of many possibilities is illustrated here. In this case, the panels of Douglas fir plywood have been placed so that the vertical joints lend a pleasing design and at the same time give the basement playroom an illusion of extra height. As in all cases, the architect started with the openings and divided the plain wall spaces in an orderly pattern for the most pleasing effect. This particular basic design treatment is diagrammed at the right.

Douglas fir plywood is an ideal material for walls —

**DOUGLAS FIR PLYWOOD ASSOCIATION**  
*Tacoma 2, Washington*



Follow these Simple Suggestions in Planning Wall Designs with Large, Durable Plywood Panels!

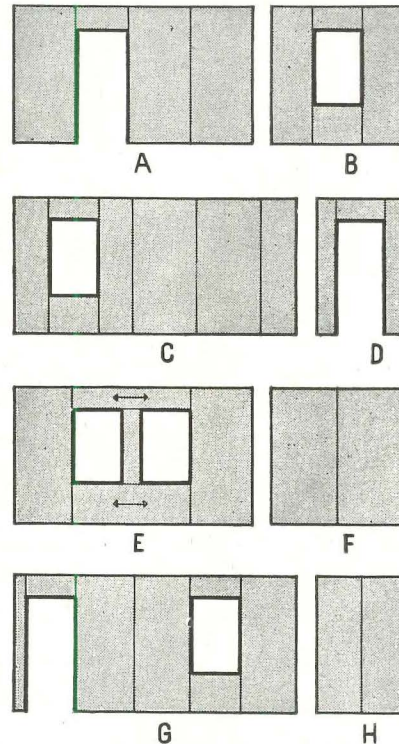
strong, rigid, kick-proof and puncture-proof. No matter what design treatment is used, the large, light-weight panels go up quickly and easily. They can be worked by hand or with power tools and they hold nails or screws right at the edge without danger of splitting.

Remember — the variety of wall design treatments is limited only by the architectural plan and the ingenuity of the designer. For more detailed information about plywood for wall construction, write the Douglas Fir Plywood Association.



No. 6 of a Series

### Vertical Treatment of Panels For an Attractive Wall Design

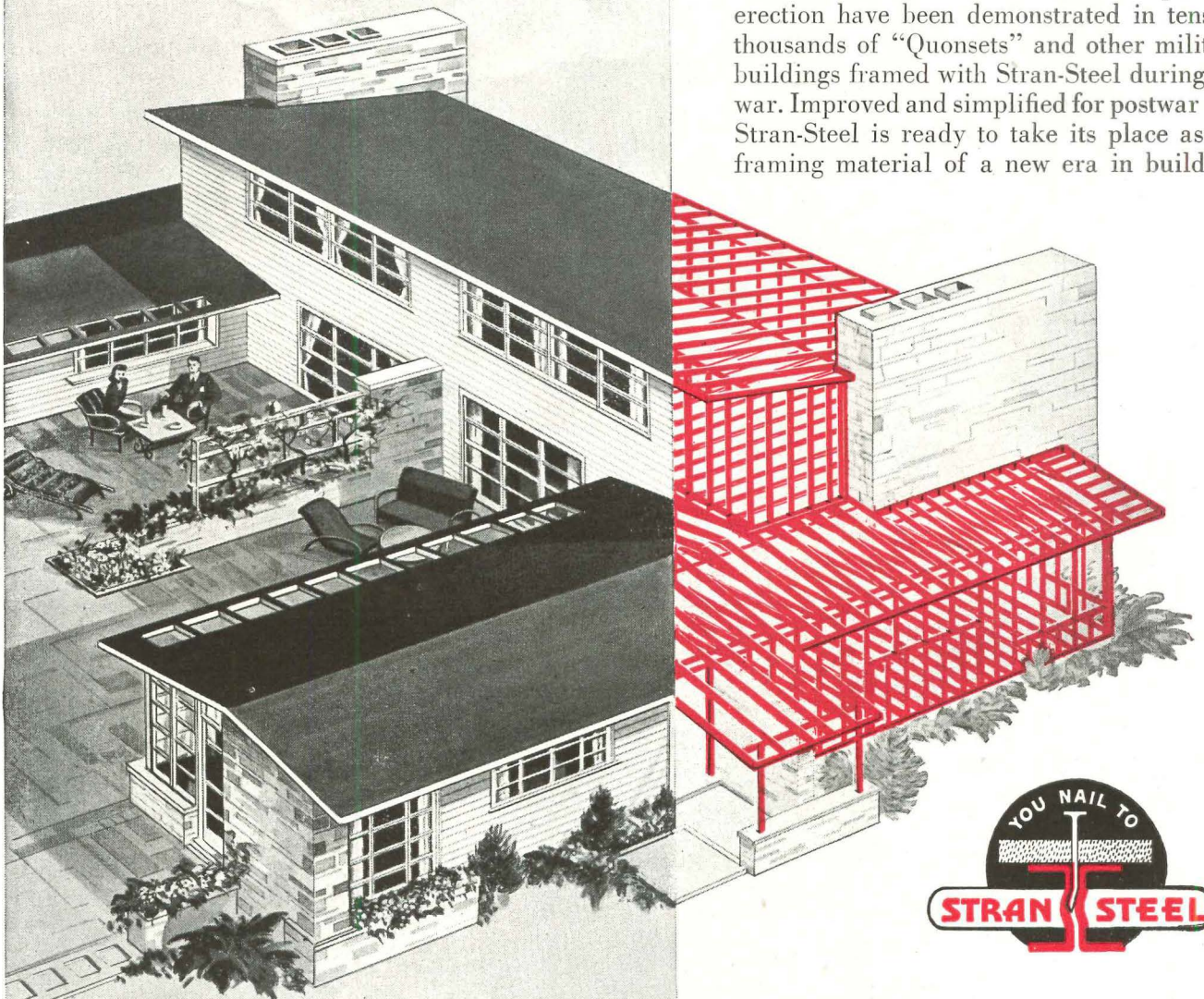


CAN PLYWOOD BE SPECIFIED NOW FOR POSTWAR USES?

The increased capacity of the industry will make MORE Douglas fir plywood available for civilian consumption THAN EVER BEFORE, as soon as the needs of the armed services lessen or war restrictions are lifted. There will be no reconversion delays; the same types and grades of Douglas fir plywood that are now being made can flow immediately into peace-time building and construction.

THINK IN TERMS OF

# STRAN STEEL



Look beneath the surface  
for the mark of the  
progressive builder

That framework of Stran-Steel, with its nailable studs and joists, sets any house apart from others of comparable design. For it imparts an inner value . . . permanence, fire-safety, freedom from warp, sag and rot . . . that safeguards the housing investment and enhances the builder's reputation.

Progressive architects and contractors are thinking in terms of Stran-Steel . . . shaping their building plans around this uniform precision material. Its ease of use and speed of erection have been demonstrated in tens of thousands of "Quonsets" and other military buildings framed with Stran-Steel during the war. Improved and simplified for postwar use, Stran-Steel is ready to take its place as the framing material of a new era in building.



## GREAT LAKES STEEL CORPORATION

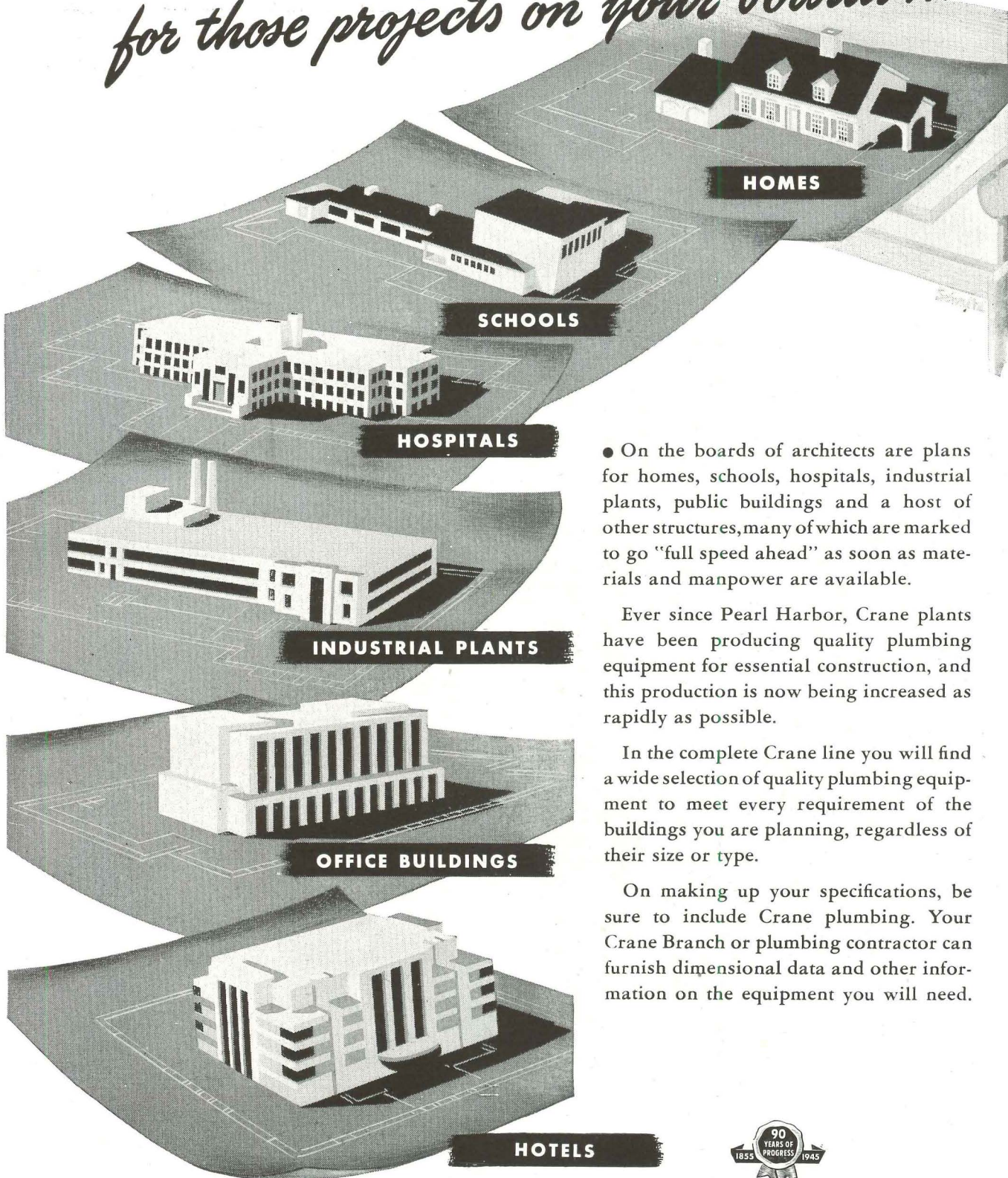
*Manufacturer of the Famous Quonset Hut for the U. S. Navy*

STRAN-STEEL DIVISION • 37th FLOOR PENOBSCOT BUILDING • DETROIT 26, MICHIGAN

UNIT OF NATIONAL STEEL CORPORATION

# FULL SPEED AHEAD ...

*for those projects on your boards...*



**HOMES**

**SCHOOLS**

**HOSPITALS**

**INDUSTRIAL PLANTS**

**OFFICE BUILDINGS**

**HOTELS**

● On the boards of architects are plans for homes, schools, hospitals, industrial plants, public buildings and a host of other structures, many of which are marked to go "full speed ahead" as soon as materials and manpower are available.

Ever since Pearl Harbor, Crane plants have been producing quality plumbing equipment for essential construction, and this production is now being increased as rapidly as possible.

In the complete Crane line you will find a wide selection of quality plumbing equipment to meet every requirement of the buildings you are planning, regardless of their size or type.

On making up your specifications, be sure to include Crane plumbing. Your Crane Branch or plumbing contractor can furnish dimensional data and other information on the equipment you will need.



# CRANE

NATION-WIDE SERVICE THROUGH BRANCHES, WHOLESALERS, PLUMBING AND HEATING CONTRACTORS

CRANE CO., GENERAL OFFICES:  
836 S. MICHIGAN AVE., CHICAGO 5

VALVES • FITTINGS • PIPE  
PLUMBING • HEATING • PUMPS

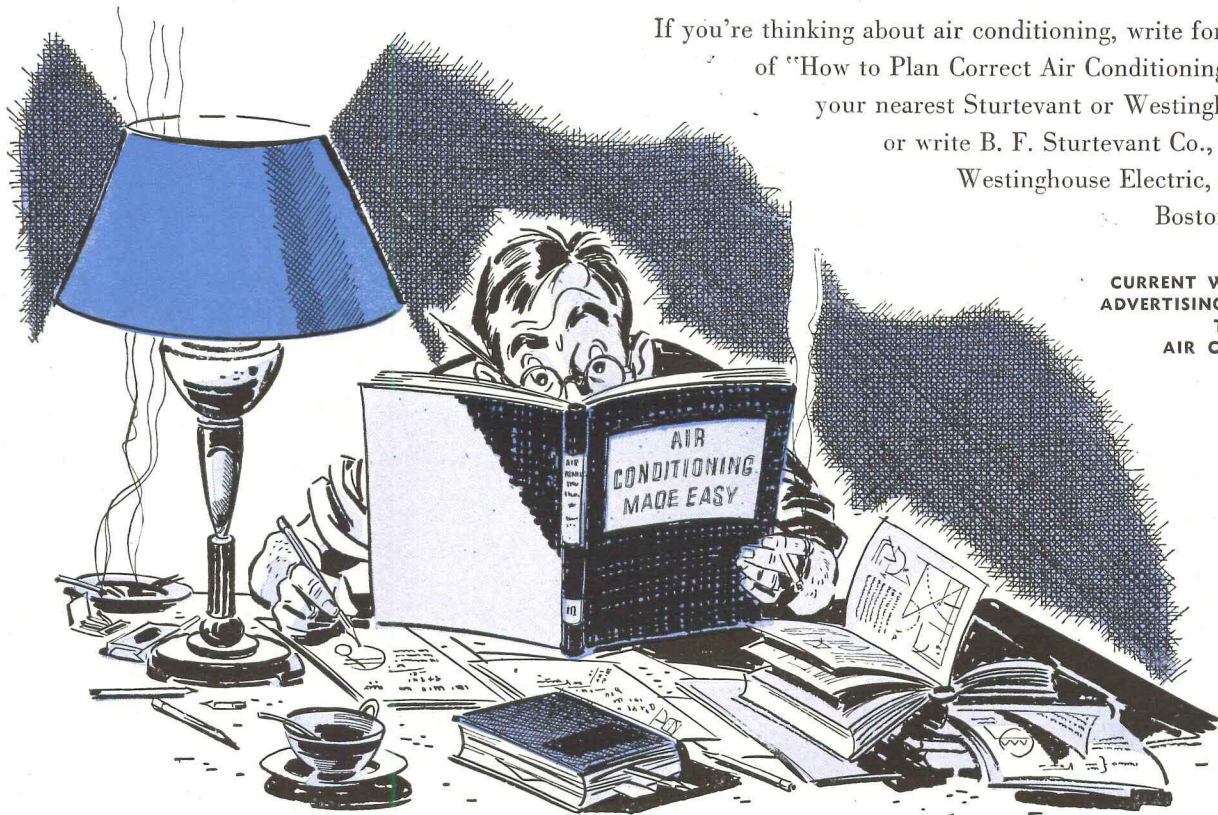
# ...no job for an amateur

The best way to avoid a lot of "blind alley" figuring when planning an air conditioning installation is to call on the experience of a qualified expert—right from the start. That's the sure way to arrive at *correct* air conditioning.

By *correct* air conditioning Westinghouse means the scientific blending of correct temperature, humidity, circulation, ventilation and air cleanliness.

Consider these advantages of Westinghouse *correct* Air Conditioning. First, an air conditioning plant which will provide exactly the conditioned air you want to "live" with. Second, an installation which can be depended upon to give continued trouble-free and economical service. Third, correctly engineered equipment resulting from Westinghouse know-how.

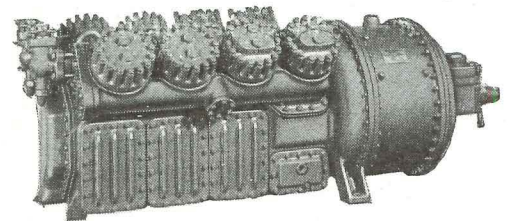
If you're thinking about air conditioning, write for your copy of "How to Plan Correct Air Conditioning." Address your nearest Sturtevant or Westinghouse office or write B. F. Sturtevant Co., Division of Westinghouse Electric, Hyde Park, Boston 36, Mass.



**CURRENT WESTINGHOUSE  
ADVERTISING IS DESIGNED  
TO SELL YOUR  
AIR CONDITIONING  
KNOW-HOW**

## *The Heart of Correct Air Conditioning* **WESTINGHOUSE HERMETICALLY-SEALED COMPRESSOR**

*The entire mechanism of the Westinghouse Hermetically-Sealed Compressor—including its motor—is sealed gas-tight. This feature means sealed-in power and sealed-out trouble... has been service-proved in thousands of Westinghouse installations. Compact and lightweight for easy installation. Low operating costs.*



Westinghouse presents John Charles Thomas — Sunday, 2:30 E.W.T., N.B.C. Tune in Ted Malone, Monday through Friday, 11:45 A.M., E.W.T., Blue Network.

**Westinghouse**  
PLANTS IN 25 CITIES OFFICES EVERYWHERE

**CORRECT**

# Air Conditioning

## FOR BETTER BUILDING



Flexible design for a service station

### SERVICE STATION

Commissioned by Allegheny Ludlum Steel Corp. to design an automotive service station looking toward expected competitive developments in that field, George Cooper Rudolph, New York industrial designer, has come up with the *Moto-Serv*. Features: eligibility for mass prefabrication; ease of installation; high flexibility and ready expansion; easy upkeep.

The basic design of the *Moto-Serv* consists of an office and storeroom cubicle and a single island-and-canopy unit with two stainless steel tubular supports footed in stainless castings.

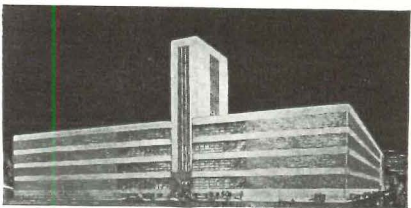
### FIBERGLAS SOUNDPROOFING HELPS POLICE RADIO

Improved radio transmission from the radio operations room at the Newark, Ohio, police headquarters has resulted from the installation of inch-thick Fiberglas acoustical board on the walls and ceiling of the room and in other parts of the building. The room is used to maintain two-way radio communication between headquarters and the radio-equipped patrol cars.

### AIR CONDITIONED PRINTING PLANT

Air conditioning which controls temperatures to within one degree and humidity to within one per cent of desired levels is being installed in a new \$1,900,000 printing plant now under construction for the Newman-Rudolph Lithographing Company in Chicago. It is expected to result in faster and less costly printing on paper that is more thoroughly seasoned and thus of better quality.

The building, designed by R. N. Friedman, of Alschular and Friedman,



Air conditioned for speedier printing

Architects, will have a brick exterior with granite and Indiana limestone trim. Construction will be steel and concrete, with a floor load of 250 lb. per sq. ft. Four stories in height, the plant will cover 53,500 sq. ft., will be ready for occupancy about the first of next May.

### HOUSE "CORE"

A new home-building unit engineered for assembly-line production is an enclosed central core containing household heating, hot water, plumbing, electricity and meters. Attached to three sides are a complete kitchen, laundry and bathroom, with floor areas, walls, windows and doors placed according to individual house plans. The unit is said to be adaptable to both conventionally-built and prefabricated houses ranging in price from \$3,000 to \$10,000.

The enclosed core has service access through panels, is equipped with forced warm air furnace—gas or oil; hot water heater—gas or electric; all plumbing, vents and stacks; chimney connections; electrical connections. Kitchen equipment includes refrigerator, cabinets, gas or electric range and sink; an electric washer is provided in the laundry. Ingersoll Division, Borg-Warner Corp., Kalamazoo, Mich.

### NAILABLE STEEL

Nailable steel for framing in residential and light industrial construction is now available, it has been announced. Consisting of grooved framing sections, this is the framing which is a basic part of Quonset huts. The groove permits the driving of nails into the metal framework. Stran-Steel Division, Great Lakes Steel Corp., Penobscot Bldg., Detroit 26, Mich.

### THEATER CONSTRUCTION EQUIPMENT

Anticipating a widespread development in drive-in theater construction following the lifting of wartime restrictions on building materials, equipment and gasoline, the Theater Equipment Section of RCA Victor has announced plans to supply a complete line of sound and projection equipment designed to meet the special requirements of this type of theater.

The line will include new types of in-car speakers, combined terminal-box and speaker-receptacle units, and self-adjusting amplifier systems. The in-car speakers are said to be 100 per cent weatherproof, so that they can be permanently located at parking spaces on the ramps, within reach of patrons

from their car windows. They are specially designed to be acoustically correct for in-car operation; a volume control on the front of the speaker permits the patron to adjust the sound level to his own satisfaction. Radio Corp. of America, RCA Victor Division, Camden, N. J.

### REFLECTIVE INSULATION

A low-cost insulation material just announced, *Sisalation*, is composed of specially-treated asphalt, fiber reinforcement, and aluminum-coated Kraft paper. It is said to reflect heat and cold very much as a mirror reflects light, keeping the heat in and the cold out in winter, and reversing the process in summer. It also prevents moisture-vapor within the home passing into the sidewalls and condensing, it is claimed, and prevents infiltration of dust and dirt through walls, around windows and doors. The Sisalkraft Co., 205 W. Wacker Drive, Chicago.



Portable washer for apartment use

### PORTABLE WASHER

Especially designed for apartment use, the 1900 *Whirlpool Portable Washer* will hold 2 lb. of clothing, has a 2½ gal. water capacity, rinses as well as washes. Its small size—13 in. in diameter and 20 in. in height—permits easy storage when not in use. Nineteen Hundred Corp., St. Joseph, Mich.

### PREFAB HOUSE

National distribution through lumber dealers is planned for a two-story prefabricated house called *HomeOla*, built of plywood with a steel "chassis." All wall and floor panels are of plywood stressed-skin construction with the panels glued to both sides of light wood framing members. Floor sections are in 4-ft. squares and have special wearing surfaces of vertical grain fir. Wall panels are 4 by 8 ft.

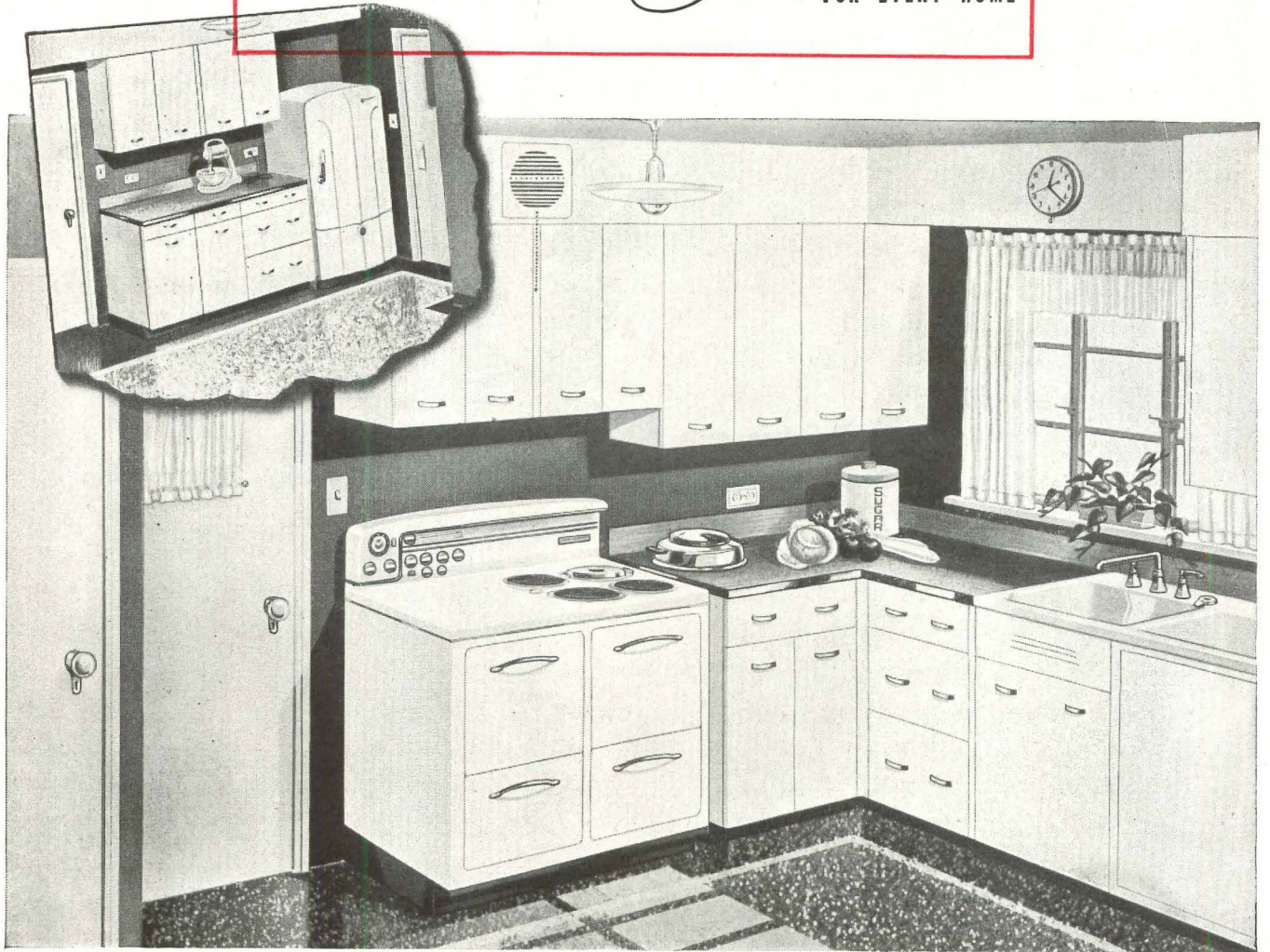
(Continued on page 22)



THERE'S A DEGREE OF

*Electrical Living*

FOR EVERY HOME



## Here's an ELECTRICAL LIVING Kitchen for the "BUDGET" Home

There is a degree of Electrical Living for every price class of home... "Thrift", "Budget", "Ideal" and "De luxe".

For a "Budget" home, this smart kitchen design incorporates essential electrical features (range, refrigerator and dishwasher) together with expertly-planned work centers, modern lighting, electrical outlets placed for maximum convenience, and progressive lighting switches. Designs for kitchens with the other degrees of Electrical Living are available.

*The Westinghouse Home Wiring Handbook will help*

★ ★ ★

Better Homes Department, in addition to its consulting service, offers you the following FREE books: *Electrical Living in 194X—Professional Edition*; *Manual of Better Home Wiring*; and *Better Living Means Electrical Living*.

*you plan and specify an efficient wiring system for Electrical Living for the entire home.* This Handbook is helping thousands of architects and builders to select the proper degree of Electrical Living and to provide necessary wiring facilities. The book has 120 pages, dozens of charts, diagrams and tables, suggested specifications, etc. Costs only \$1.00. Send for your copy to Westinghouse Electric Corporation, Industrial Relations Dept., 306 Fourth Avenue, Pittsburgh 30, Pa.

J-91534



**Westinghouse**  
PLANTS IN 25 CITIES... OFFICES EVERYWHERE

*Better Homes Department*

# HI-DENSITY

# LEAD in a DRAWING PENCIL

## "Engineered" for Sharp, Clear-Cut Reproduction

Try a half-dozen Microtomic "Van Dyke" Drawing Pencils of the same degree one at a time. Notice how each draws the *same weight* line as the other. The reason: ALL HI-DENSITY "Van Dyke" Leads are identical...uniformly graded and "engineered" never to vary in any given hardness. Work goes faster, smoother with fewer sharpenings.

Ask Your  
Dealer to  
Demonstrate  
**TODAY**

# MICROTOMIC VAN DYKE DRAWING PENCILS

The EBERHARD FABER Drawing Pencil  
in 18 degrees, 7B to 9H plus 6 degrees  
with Chisel Point Leads

## FOR BETTER BUILDING

(Continued from page 20)

Blanket insulation in both wall and floor units is placed during fabrication.

Built-up plywood roof rafters, completely fabricated at the factory, have been developed, over which longitudinally braced plywood roof decking is placed; finish roofing is conventionally applied. Roof insulation, in blanket form, is attached to the back of second-story wall and ceiling panels.

The house, exclusive of lot, is intended to sell complete for less than \$3,000. Shipment of the house parts will be to building material dealers who will provide the crews for erection. Willisway System, 9 S. Clinton St., Chicago 6, Ill.

### TEMPERATURE REGULATOR

A self-contained, spring loaded, internal pilot, piston operated *Temperature Regulator* for steam service features Duo-Matic Control—both accurate temperature regulation and pressure control obtained simultaneously with a single regulator. The unit has a thermostatic element with 100°F. adjustable temperature range, equipped with metal diaphragms. All wearing parts are renewable. Leslie Co., 57 Delafield Ave., Lyndhurst, N. J.

### HEAT PANELS

Immediate production of the *Base-Ray Heat Panel* has been announced by Burnham Boiler Corp., Irvington, N. Y. Developed by research engineers at the University of Illinois, the panel is a hollow, cast iron baseboard unit (see AR, June, 1945, p. 124).

### UNIT LOCK

A new lock, the *Corbin Unit Lock*, is said to offer home owners complete freedom from the annoyance of sticking and binding knobs and latches because it is assembled at the factory in one complete unit. Installation is simple, with no mortising necessary—the unit slips into a slot in the edge of the door and is made fast by two bolts without touching or adjusting the working parts in any way. P. & F. Corbin, New Britain, Conn.

### DOORSTOP

An easily installed *Door Stop-Nut* slips over the top knuckle of a door hinge and is held secure by the hinge pin. Eliminating the need for baseboard or floor type door stops, the unit prevents the banging of doors against walls or furniture. Door Stop-Nut, Inc., 810 W. 76th St., Chicago 20, Ill.

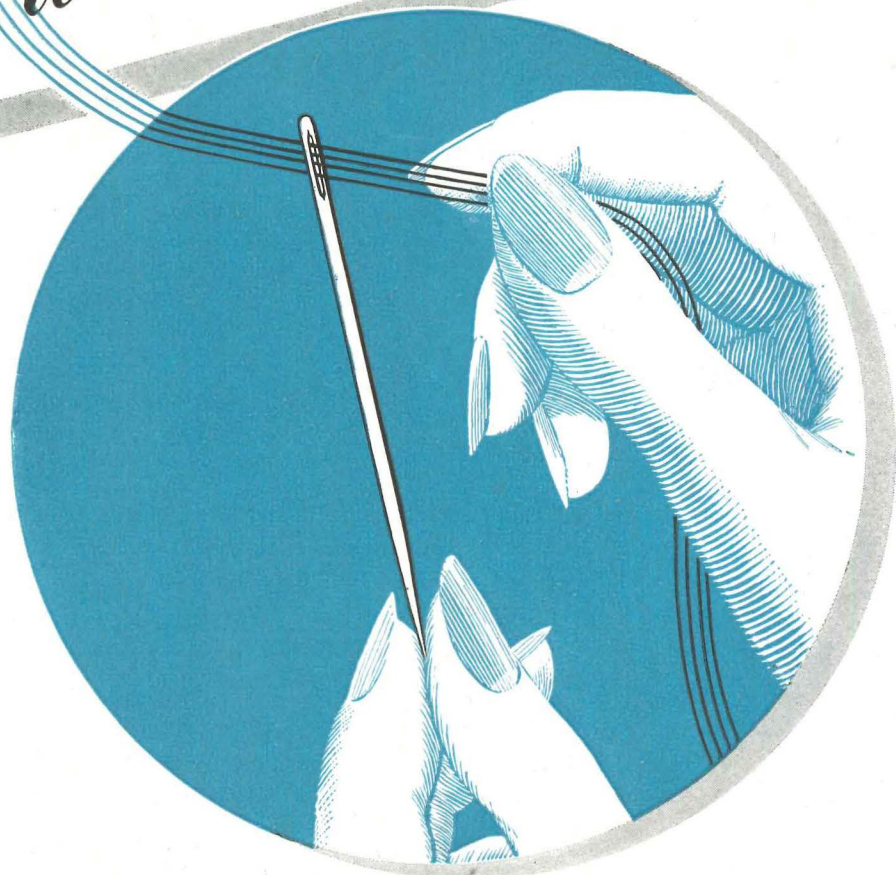
(Continued on page 140)

*Streamlined to thread  
more wires in conduit*

New space-saving Laytex Wires and Cables are now available for branch circuit wiring.

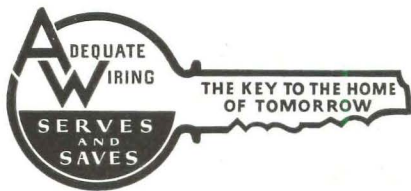
These smallest diameter, lightest weight rubber covered wires and cables make possible *adequate wiring* with *minimum conduit space*.

Produced by the unique "U. S." process of continuous dipping, drying and vulcanizing, Laytex Wires have perfectly centered conductors, insulated with 90% unmilled, grainless natural rubber having excellent dielectric strength. Laytex Wires are compact, durable, flame retardant and highly resistant to moisture. They are particularly suited to modern architectural needs.



**U.S. Laytex**

**ELECTRICAL WIRES AND CABLES**



- ★ Smallest diameter, lightest weight rubber covered building wire.
- ★ High dielectric strength.
- ★ Perfectly centered conductors.
- ★ Flame-retardant, moisture-resistant finish.
- ★ Free stripping.

Listen to "Science Looks Forward"—new series of talks by the great scientists of America—on the Philharmonic-Symphony Program. CBS network, Sunday afternoon, 3:00 to 4:30 E. S. T.



Serving Through Science

**UNITED STATES RUBBER COMPANY**

1230 AVENUE OF THE AMERICAS • ROCKEFELLER CENTER • NEW YORK 20, N. Y.

## MANUFACTURERS' LITERATURE

### AIR CONDITIONING

**Air Filtration in Central Systems.** Full information on Fiberglas Dust-Stop Air Filters: dimensions, ratings and manufacturing tolerances table; data on efficiencies; installation details; specifications; maintenance; applications. 24 pp., illus. Owens-Corning Fiberglas Corp., Toledo, Ohio.\*

**Water-Chilling Units.** General information and specification summary. 4 pp., illus. Westinghouse Electric Corp., Air Conditioning Division, 150 Pacific Ave., Jersey City 4, N. J.\*

**Westinghouse Precipitron.** Description of the Precipitron electronic air cleaning system for commercial and industrial uses. Capacity and dimension table. Explanation of how the system works. 6 pp., illus. Westinghouse Electric Corp., Air Conditioning Division, 150 Pacific Ave., Jersey City 4, N. J.\*

**Worthington Evaporative Coolers (Bulletin C-1100-B27).** Description, specifications, selection tables, typical piping arrangements. 8 pp., illus. Worthington Pump and Machinery Corp., Air Conditioning and Refrigeration Division, Harrison, N. J.\*

### BAR SCREENS

**Mechanically Cleaned Bar Screens (Bulletin 479).** Description of the machine and how it operates, specifications, data tables, applications. 8 pp., illus. Chain Belt Co., 1600 W. Bruce St., Milwaukee, Wis.

### BATHROOM FIXTURES

**Sanitary Toilet Seats.** A catalog of self-raising and other seats. 8 pp., illus. Sperzel Co., Minneapolis 3, Minn.

### CONVEYORS

**Lamson Lightweight Portable Gravity Conveyor.** Description including parts specifications, with typical uses. 4 pp., illus. Lamson Corp., Syracuse 1, N. Y.\*

### DUMBWAITERS

**Dumbwaiters and Doors.** A catalog of electric and automatic brake dumbwaiters, counterbalanced dumbwaiter doors, passenger, freight and sidewalk elevators, freight and passenger cars. Includes specifications, tables of standard sizes, and full information on scope of use. 24 pp., illus.

John W. Kiesling & Son, Inc., 2409-33 Pacific St., Brooklyn, N. Y.

### FACTORY PLANNING

**Industrial Logistics.** How a planned system of materials transportation reduces costs in procurement, production and distribution of goods. 12 pp., illus. The Elwell-Parker Electric Co., 4205 St. Clair Ave., Cleveland 14, Ohio.

### GLASS

**Planning Ahead With Glass for More Enjoyable Living.** Over a hundred ideas for the use of glass in residential building—in living room, hallways, dining room, kitchen, bathroom, bedroom, basement and attic. Includes basic information on solar heating and "window conditioning." 30 pp., illus. Libbey-Owens-Ford Glass Co., Toledo 3, Ohio.\* 10 cents.

### HEATING

**Byers Radiant Heating in a Garage (Case Study No. 5).** Application of radiant heating in an industrial garage and service station. Describes the installation, design of the heating coils, operation. 6 pp., illus. A. M. Byers Co., Pittsburgh, Pa.\*

**Certified Counterflow Air Conditioner Heating System; Certified Gravity Steel Furnace and Air Conditioning Units; Mammoth Certified Vertical Steel Tubular Heaters.** Descriptive circulars including complete specifications for each type of furnace. 4 pp. each, illus. Stainless & Steel Products Co., 1000 Berry Ave., St. Paul 4, Minn.

**Convactor Radiation (Bulletin 245).** Describes method of operation, advantages claimed. 4 pp., illus. Modine Mfg. Co., Racine, Wis.\*

**Econostat Temperature Control System.** Heat regulation system controlled by outdoor temperature. Description of system and how it works, features, applications. 8 pp., illus. Barber-Colman Co., Rockford, Ill.\*

**S.B.I. Rating Code (A.I.A. File No. 30-C).** The Steel Boiler Institute Rating Code covering commercial and residential steel boilers. Includes standardized sizes for mechanically-fired boilers, a new grate area formula and furnace volume requirements for hand-fired boilers and a code for testing oil-fired boilers. 24 pp. Steel Boiler Institute Inc., 366 Madison Ave., New York 17, N. Y. 50 cents.

### JALOUSIES

**Jalousies.** Description of and uses for jalousies; specifications; stock sizes; diagrams. 4 pp., illus. Pro-Tect-U Jalousie Co., 2762 S. W. 10th St., Miami 35, Fla.

### PARTITIONS

**Certain-Teed 2-in Solid Plaster Partition.** Description of a non-load bearing partition for new construction or remodeling. Includes specifications and method of construction. 6 pp., illus. Certain-Teed Products Corp., 120 S. La Salle St., Chicago, Ill.\*

### PIPING

**Volumetric Capacities of Tube-Turn Welding Fittings.** Formulae used to compute the volumetric capacities, and tables giving the volumetric capacity in cu. in. of the most commonly used Tube-Turn welding fittings. 10 pp., illus. Tube Turns, Inc., Louisville 1, Ky.

### PLASTICS

**Plastics Primer.** Factual information on the phenolic plastics, with a table showing the characteristics and uses of various phenolic compounds. 8 pp., illus. Durez Plastics & Chemicals, Inc., North Tonawanda, N. Y.\*

**Velon and Foamex.** Description of the two materials, their qualities and uses, plus two pages of general information on molded and extruded plastics. 20 pp., illus. Firestone Industrial Products Co., Akron, Ohio.\*

**The Watertown Book of Plastics.** General information on thermosetting and thermoplastic materials, saran, lucite, cerex, nylon and polyethylene, and specific information (including properties chart) on Neillite. Also a discussion of molding methods and engineering details. 44 pp., illus. The Watertown Mfg. Co., Watertown, Conn.

### RECONVERSION PLANNING

**Production Planning Data.** A set of production planning cards and data sheets intended for use in reconversion, provision for expanded facilities, and new building plans. Provide scale machine models to be placed on factory floor plan and arranged to meet specific requirements. Plan-O-Mill Corp., 1811 E. Eight Mile Rd., Hazel Park, Mich.

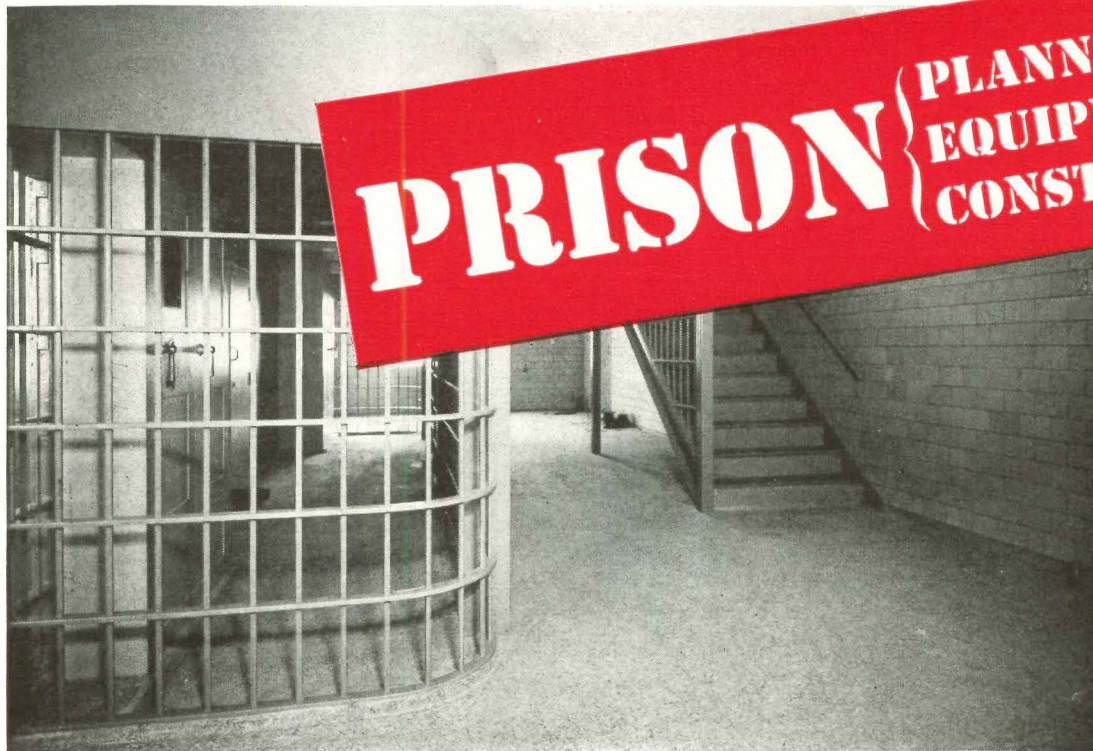
### RUBBER

**Cellular Rubber.** Describes various forms in which sponge rubber, bonded fiber and other sub-density materials are manufactured. 4 pp., illus. Sponge Rubber Products Co., Shelton, Conn.

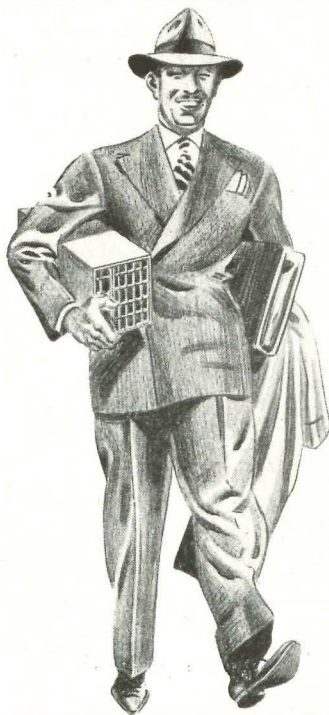
(Continued on page 26)

\*Other product information in Sweet's File, 1945

# VAN DORN *Recognized Authority on*



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**EQUIPMENT**  
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Fairfield and State • Bridgeport 5, Conn.

**SILV-A-KING**  
LIGHTING EQUIPMENT

SINCE 1921

## Manufacturers' Literature

(Continued from page 24)

### STEEL

**Jessop Stainless Steels.** The various types produced by Jessop, their physical properties and mechanical characteristics, plus a page of information on the company's stainless-clad steels. 8 pp., illus. Jessop Steel Co., Washington, Pa.\*

### SURFACE COATING

**Aquella.** Question and answer brochure describing a mineral surface coating that waterproofs and dampproofs interior and exterior porous masonry surfaces such as concrete, masonry blocks, common brick, rough plaster and stucco. 4 pp. Prima Products Inc., 230 Fifth Ave., New York 1, N. Y.

### VENTILATION

**Put the Wind to Work.** Bulletin on the "Agitair" air exhauster. Typical applications, engineering data selecting the proper size, location principles. 10 pp., illus. Air Devices, Inc., 17 E. 42nd St., New York 17, N. Y.

### WINDOWS

**The Ultimate in Modern Ventilation and Vision.** Descriptive folder on an aluminum package window unit. Gives specifications and installation details. 4 pp., illus. Watco Engineering, Inc., 2200 Scranton Road, Cleveland 13, Ohio.

## LITERATURE REQUESTED

The following architects request manufacturers' literature:

Frank N. Emerson, F.A.I.A., and Richard S. Gregg, A.I.A., 300 Alliance Life Bldg., Peoria 2, Ill.

E. Ellsworth Giles, 113 Morristown Rd., Bernardsville, N. J.

Fenno and Podd, 525 Delaware Ave., Buffalo 2, N. Y.

Charles C. Henderson, A.I.A., Construction Dept., Northwestern Univ., 619 Clark St., Evanston, Ill.

August Julius Ignelzi, A.I.A., 852 Carolina St., Gary, Ind.

Thomas Larrick, A.I.A., 166 Morris Ave., Athens, Ohio.

Joseph H. Messineo, Dr. Scholl's Foot Comfort Shops, Inc., 213 W. Schiller St., Chicago, Ill.

Harry Ray Nay, Cadiz Pike, R.F.D. No. 1, Martins Ferry, Ohio.

Samuel Pelton, 427 N. Broad St., Elizabeth, N. J.

Stern de Mexico, S. de R. L., S. Juan de Letran 21-914, Mexico, D. F.

Thomas H. Voshell, 88 Broad St., Charleston 5, S. C.

Lawson Libby Wagner, Winch Bldg., Laredo, Texas.

Stanley M. Ward, 19 N. Fullerton Ave., Montclair, N. J.

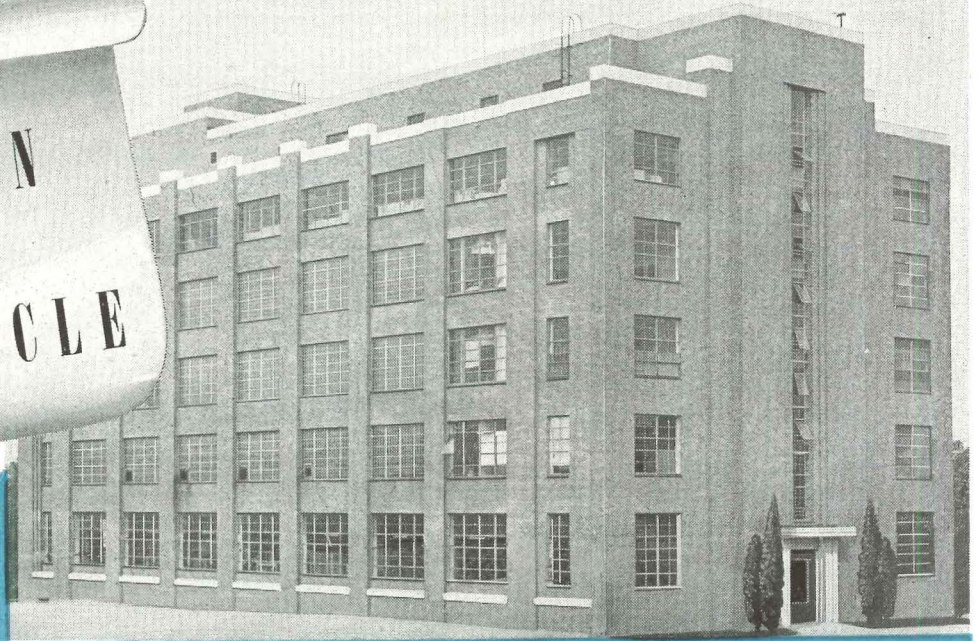
# DESIGN for A MIRACLE

**LEDERLE LABORATORIES INC.**  
Pearl River, N. Y.

Architects and Mechanical Engineers:  
Chemical Construction Corporation,  
New York, N. Y.

General Contractor: Turner Construction  
Company, New York, N. Y.

Plumbing Contractor: Warsfold &  
Hawvermale, Inc., Nyack, N. Y.



## the home of **PENICILLIN**

### **Josam** DRAINS *again met every requirement*

Penicillin—the wonder drug of the year—can well stir the imagination . . . for from the lowly mold of ordinary earth comes a life sustaining substance so potent that through its healing power, ravaging diseases become powerless and almost incurable persons are made whole once more. But the production of Penicillin is still another story, for the problems of culture and control on a large scale basis were far different than obtaining a drop or two from a mold.

To the men who designed and created this great modern laboratory-type building—home of Penicillin at Lederle Laboratories, Inc., Pearl River, New York, goes the lasting appreciation of a grateful people who have already seen the wonders this drug has performed since it has been available in quantities. Here is a building unique in construction, in which every material, equipment and product used had to measure up to a standard that tolerated no compromise with the perfection of control so necessary to the specialized production of Penicillin. Proud that Josam drains and other products were used throughout, Josam has still greater pride in the part that it contributed to the means by which new hope is given to so much of humanity.

**ONE ACHIEVEMENT DESERVES ANOTHER . . . TO BE SURE, PUT JOSAM ON THE JOB!**



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**LEDERLE LABORATORIES, INC.**  
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#### **A DESIGN for PRODUCTION**

Construction: Steel and brick, daylight lighting provided through multi-window installations. Total space 120,000 feet.

Temperature control: Third and fourth floors almost entirely filled with incubators with temperature maintained at 37° F; fluctuation allowance—1°.

Peak employment—500.

First building of its particular type, devoted to the production of Penicillin on a commercial scale by the flask method. Penicillin, as a result is now available for general use as the need for it arises.

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Grease Interceptors



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Floor Drains



Oil Interceptors



Shock Absorbers

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# REQUIRED READING

## TOMORROW'S HOUSE

By George Nelson and Henry Wright. *New York (1230 Sixth Ave.), Simon and Schuster, 1945. 8 by 11 in. 214 pp. illus. \$3.00.*

Of all the many books on home planning which have mushroomed into existence within the past few months, this is certainly one of the most stimulating. Not because it offers vast amounts of useful information; not because it abounds with clever hints and adroit planning tips. It doesn't. There is almost none of the usual "Do-and-Don't" type of textbook information within its 200 pages. There is not a single floorplan. Messrs. Nelson and Wright did not set out to write a manual; they set out to pry the prospective homeowner loose from his traditional complacency. They set out to make him *think*.

The trouble is that those prospective readers with the strongest traditional leanings will probably not be actual readers. It would take the merest riffling of pages to provoke a reaction like this: "It's all about *modern* houses. That's not what I want." Those already converted probably will buy it enthusiastically, and read it the same way.

Such an enthusiastic reader might, if he also read thoughtfully, arrive at a vague feeling of disappointment. Disappointment not with the clean philosophy of the authors, but with the prospect for getting the house that would grow in his mind. The authors write frankly and honestly about "tomorrow's house," and they do not make any effort to make it sound easy to achieve or acquire. Some of the chapters deal almost wholly with future possibilities, with trends instead of present-day facts. They speak frankly about the bugs yet to be taken out of some of the newer ideas. The reader is left with the feeling that relatively few architects could handle the house proposed, and is told pretty definitely that it would cost like sin.

And yet — Messrs. Nelson and Wright have spoken well for the "modern" house. Once you have forgiven them for their very crude satire in the second chapter (a choice bit entitled "Home is Where You Hang Your Architect," which would have the architect a hidebound clod), you are pretty sure that the lay reader would start looking around his present abode with a slightly jaundiced eye. With superb accuracy this book puts its finger on any number of sore spots in the traditional house: the bad lighting, the generally poor acoustics, the

kitchen that has been efficientized down to a glorified closet, the eternal struggle with temperature and fresh air. No soothing ointment is proffered for these sore spots, but a nice, sharp, sterile knife has been laid out ready for use. Here, the authors say in effect, you don't have to put up with these things, you know. You can have your home light conditioned, sound conditioned, air conditioned, planned just the way you like it.

The sum total is a book which will make its every reader, architect and client alike, probe more deeply into the underlying reasons for a house before he starts to plan.

## STANDARDS FOR SCHOOLHOUSE CONSTRUCTION

*West Virginia Council on Schoolhouse Construction. Charleston, W. Va., Division of Schoolhouse Planning, State Dept. of Education, 1945. 6 by 9 in. 84 pp. \$1.00.*

Here is a small book crammed full of practical information for both the school board and its architect. As the introduction says, it offers them "the accumulated, recent, screened experience of their myriad brethren."

Starting with a chapter on "Planning a School Building Program," which discusses such school board problems as determining building needs, planning the building and choosing the architect, it continues with matters of more direct concern to the architect — site selection, building characteristics and construction details, and service systems.

As its title makes clear, this is a book of *standards*. As such it presents only the minimum requirements, and allows for the maximum flexibility in actual planning. It is exceptionally thorough, giving even such details as the proper distance from floor to top of chalk trough for chalkboards for the various grades.

## FIRE PROTECTION

*Through Modern Building Codes. By B. L. Wood. New York 1 (350 Fifth Ave.), American Iron and Steel Institute, 1945. 6 by 9 in. 246 pp.*

Mr. Wood has divided this book quite sensibly into two sections, the first dealing with recent developments in fire protection, fire hazards, classification of buildings by occupancy, fire safety objectives and criteria, etc. The second section consists of regulations which were prepared as a part of the program of the Committee on Building Codes of the American Iron and Steel Institute to illustrate a practical application of the principles of fire pro-

tection. The regulations reflect careful study of the provisions and recommendations of the National Bureau of Standards and other regulatory bodies, and represent the Committee's recommendations relative to fire protection regulation through building ordinances.

## PERIODICAL LITERATURE

### GARDEN CITIES

*Garden Cities and the Metropolis. By Lloyd Rodwin. The Journal of Land and Public Utility Economics (Sterling Hall, Univ. of Wisconsin, Madison 6, Wis.), Aug., 1945, pp. 268-281.*

Largely a critique on Ebenezer Howard's turn-of-the-century book, *Garden Cities of Tomorrow* (1902), this article makes a number of highly pertinent points. "Well integrated cities, planned land use and controlled size and growth are recognized desiderata. . . . Though bigness is not a curse, amorphous sprawl certainly is," Mr. Rodwin says. He explodes the argument that decentralization is necessary as a safeguard against bombings, maintaining that even with the atomic bomb a city is by its very nature a strong point in a nation's defense. "The weak points of the Garden City idea stem from its failure to comprehend many of the essential chores of the city," he declares. "Goals must always prove impracticable unless related to vital needs and interests. . . . He who would help build the city of tomorrow must reckon with the lives and living habits of human beings: with jobs and security, homes and population trends, aesthetics and economics, politics and social drift."

### UBIQUITOUS PREFABS?

*The Truth About Prefabricated Houses. By Gordon H. Cole. Science Digest (200 E. Ontario St., Chicago 11, Ill.), Nov., 1945, pp. 7-10. Condensed from PM.*

The prefabricated house is not going to take its place as an integral part of our landscape for many years to come, Mr. Cole predicts. Factory-built houses, he says, "still are in their horseless carriage stage, still are looking for a Henry Ford, still are fighting for permission to be built inside city limits."

### SPECIALIZED LIGHTING

*Art Gallery Lighting. Report of the Committee on Art Gallery Lighting of the Illuminating Engineering Society, New York. Journal, Royal Architectural Institute of Canada (57 Queen St. W., Toronto 1, Can.), Oct., 1945, pp. 197-207, illus.*

An excellent report offering general guidance in the difficult problem of art gallery lighting. Especially helpful are the tables of display specifications and the numerous diagrams.



## On Choosing an Architect

*And someday it may happen that a victim must be found,  
I've got a little list, I've got a little list  
Of qualified designers whose feet are on the ground  
And who never should be missed, who never should be missed.*

◆ This parody of Ko-Ko's song, which threatens to be a duet of the deep bass of A.H.A. and the tenor treble of the A.I.A., might be amusing if it did not have such far-reaching implications. The first implication, to the lay public, would be that only firms which had "done" hospitals were competent to do hospitals, and by the same token, they would be recorded and branded as specialists in that field and that field alone.

◆ To the lay mind, such a list of specialists in one field would tend to eliminate those firms from consideration in another field, a result to be deplored as inimical to the best interests of the public, the profession and to the hospital administrators themselves. Creative ability and architectural competence is not, and cannot be, relegated to a single type of building, or even a group of building types, except as the individual architect or firm may so choose to devote his or its talents.

◆ Experience in dealing with the special problems in any specific field is unquestionably valuable. But experience *alone* is poor criteria for the selection of an architect in that field, and the proposed list is based on experience. The fresh unprejudiced point of view of a competent firm, possessed of creative and administrative ability, may be even more valuable in providing improved solutions and most efficient, economical and aesthetically satisfying designs. A competent firm that has never done a hospital, can, through its powers of analysis, synthesis, imagination and ingenuity produce the sought-for improved design. It can consult any number of men experienced in hospital problems. It can profit also by vicarious experience. Hospital planning is no atomic secret, there is available an immense amount of published material, recorded experience, thoughtful discussion, present-day standards, projected ideas.

◆ It is both natural and proper that architects who have shown superior ability in designing outstandingly successful hospitals should be considered for subsequent similar projects. But—how would they ever have had their first opportunity to produce such buildings if a building committee used an "official list" limited to those who had done hospitals before?

◆ It would be a mistake for any building committee to limit its choice of architects to any list of those who had designed the particular type of building under consideration. The committee should seek the best creative and executive ability in the profession, whether or not its superiority or competence had been demonstrated in that *one* field. The talents shown in some other field can, with remarkable facility be effective in the design of any specific building type. This is demonstrated by innumerable examples.

◆ For a professional organization to attempt officially to list its members as qualified or not, with all the implications (ethical, legal, practical) of such a listing, would seem a matter of such importance as to call for the most careful deliberation and a final democratic decision by referendum.

  
EDITOR

# CONSTRUCTION REVIVAL: A PREVIEW OF 1946

By Thomas S. Holden, President, and Clyde Shute, Assistant Vice-President, Statistics & Research Division, F. W. Dodge Corp.

**H**OW FAST can the predicted construction revival proceed?

That is the question to be answered in attempting a realistic estimate of 1946 volume. It is a question as to what extent the pressure of enormous needs and enormous potential demand can, in the space of a year, overcome retarding factors which are, at the outset of revival, quite potent.

**Potential Demand** Potential construction demand is generally considered so large that it is likely to require construction volume, over an extended period, in larger amounts than in any previous peacetime years. Many people anticipate high-volume revival to last five years; there are reasons to believe it may last ten, as (in spite of one major setback and some minor fluctuations) it did in the period following World War I.

There is plenty of factual evidence of a vast accumulated demand; evidence in the form of estimated shortages, of listings of contemplated and planned construction projects running into many billions of dollars, of announced expansion and rehabilitation programs of industries, commercial organizations, utilities, state and local governments.

**Retarding Factors** Three kinds of retarding factors exist. They are:

1. Increased costs and current confusion about market conditions, tending to discourage investors and influence postponement of decisions.
2. Continuing government controls.
3. Growing pains of an industry, made up of widely diverse factors, called upon to expand very suddenly its volume of operations.

**Effects of Increased Costs** Many prospective investors, large and small, receive a shock when presented with current estimates of the costs of their projects, as compared with their earlier estimates. Current estimates, for good reasons, are frequently higher than would be indicated by published cost index numbers, which range for different types of structures from 25 to 35 per cent over averages for the year 1939. Some contractors are currently refusing to make lump-sum bids on large projects, preferring to take work only on a cost-plus basis. Lump-sum bids, when tendered, must necessarily include margins of safety to protect the contractor against uncer-

tainties on prices, deliveries of materials, wage-scales, work-stoppages and labor-efficiency factors.

Public officials must, in many cases, secure additional appropriations to cover costs that are greater than their earlier estimates. Business executives and individuals must also increase their construction budgets; they must frequently negotiate loans on a different basis from that which they anticipated. Many tend to assume that they might fare better, in terms of price and in terms of improved materials and equipment, by postponing their projects. Against these considerations they must weigh the cost and inconvenience of waiting for needed facilities, and the quite real possibility of further rises in construction costs.

It is our view that the two principal components of construction costs, material prices and wage scales, will rise somewhat further. It is our hope that they may reach a fairly stabilized level not too much above the present, without extreme fluctuations resembling those of the 1919-1920 postwar inflation period and at a level not conspicuously out of line with general commodity prices.

**Government Controls** The War Production Board abolished all L-41 orders on October 15, 1945. It has also eliminated most restrictions on production of construction materials.

Price and rent controls remain.

Price controls, highly desirable in theory, have acted in some degree to retard production of needed materials. OPA has reluctantly granted some increases in ceiling prices, to permit manufacturers to offer the increased wages necessary to recruit adequate manpower. The process of securing approvals for increases is frequently drawn out, and the continued effectiveness of price control in a peacetime market is an open question.

Rent control, which applies nationally to housing accommodations only, is a deterrent to new rental housing projects. OPA has been petitioned to exempt from rent ceilings all new rental housing, as a sound measure to encourage this much-needed class of building, which is now the one type of project definitely retarded by a specific control of the federal government.

**The Industry's Capacity to Expand** The construction industry is, by its nature, the most versatile and  
(Continued on page 82)

## ESTIMATED CONTRACT VOLUME FOR 1946 (In millions of dollars\*)

* 37 Eastern States	PROJECT TYPE	*Year 1945	Estimate Year 1946	% Change
	COMMERCIAL BUILDINGS	260	480	+ 85
	MANUFACTURING BUILDINGS	1000	900	- 10
	EDUCATIONAL AND SCIENCE BUILDINGS	95	170	+ 79
	HOSPITAL AND INSTITUTIONAL BUILDINGS	125	170	+ 36
	PUBLIC BUILDINGS	15	50	+ 233
	RELIGIOUS BUILDINGS	30	60	+ 100
	SOCIAL AND RECREATIONAL BUILDINGS	60	100	+ 67
	MISCELLANEOUS NONRESIDENTIAL BUILDINGS	155	150	- 3
	<b>Total Nonresidential Buildings</b>	<b>1740</b>	<b>2080</b>	<b>+ 20</b>
	APARTMENT BUILDINGS, HOTELS AND DORMITORIES	95	225	+ 137
	ONE- AND TWO-FAMILY HOUSES	348	1100	+ 216
	OTHER SHELTER	42	25	- 68
	<b>Total Residential Buildings</b>	<b>485</b>	<b>1350</b>	<b>+ 178</b>
	<b>TOTAL BUILDING</b>	<b>2225</b>	<b>3430</b>	<b>+ 54</b>
	PUBLIC WORKS AND UTILITIES	935	1320	+ 41
	<b>TOTAL CONSTRUCTION</b>	<b>3160</b>	<b>4750</b>	<b>+ 50</b>

Note: Estimates here given include volume of contracts and work started on new construction and major alterations and additions, such figures being comparable with F. W. Dodge Corporation's factual records.

\* 9 Months Actual  
3 Months Estimated

### THE ESTIMATES BY PROJECT CLASSIFICATION

**Commercial Buildings** Estimated at a relatively high rate of increase. Store modernizations, moderate-sized store buildings, filling and service stations likely to predominate in early revival stages. A number of department store and chain store organizations have large building and expansion programs, some of which are likely to get started in 1946.

**Manufacturing Buildings** In the course of the year 1945, there was a shift from ordnance and war plant construction to reconversion and expansion programs of industries planning for peacetime production. This second phase will continue in 1946, possibly not in large enough volume to offset the war plant construction of early 1945. The volume estimated

for 1946, although under 1945, is very high compared with previous peacetime years.

**Institutional and Public Buildings** This broad category is meant to include Educational and Science Buildings, Hospitals and Institutions, Public Administration Buildings, Religious Buildings, Social and Recreational Projects. Needs in these classifications are very great, and the accumulation of planned projects is impressively large. Public projects will not be needed or pushed as a means of providing employment. With the possible exception of schools and hospitals, the urgency of need in these classifications is somewhat less than in the fields of housing, commerce and industry. Many

projects in these classifications are postponable; many will require reconsideration from the point of view of costs. Moderate dollar increases, as estimated, represent fairly high percentage increases.

**Miscellaneous Nonresidential Building** War projects in this classification have dropped off. Transportation terminals constitute the principal peacetime projects in this classification; they are expected to increase in number as revival progresses.

**Residential Building** This probably represents the most widespread need of the country. Postwar estimates of residential volume range from an average of 500,000 non-farm

flexible of the important industries of the country. Architects, designers, general contractors, builders, and sub-contractors are usually ready to expand their operations greatly on very short notice. At this time most of these organizations are understaffed. For example, architects and engineers have, during the past year, been unable to recruit enough draftsmen to enable them to handle the volume of project-plans offered them. Building organizations will have to recruit superintendents and foremen. This condition, however, is not likely to last very long.

Material supply is still a problem as this is being written. It has been widely stated, however, that most of the essential materials will be flowing into the markets in near-adequate quantities by the spring of 1946. Rail and truck transportation difficulties may affect delivery schedules.

The manpower situation, particularly with respect to skilled building labor, is spotty. There has been unemployment in some trades and some localities, particularly in spots like New York where construction volume in the past two years has been even less than in the low years of depression. In many places, there are even now shortages in a number of the skilled trades.

At some fairly early stage of revival, shortages of skilled building labor are likely to constitute the principal retardment to rapid expansion of construction volume. Apprenticeship training will again become a very live issue in the industry.

Prospect for a reasonable minimum of labor trou-

bles and work-stoppages in 1946 is fairly good, particularly if the New York stabilization plan becomes a pattern that will be followed in other important centers.

In New York an agreement has been worked out, between the Building and Construction Trades Council and the Building Trades Employers' Association, providing for a 7-hour day, hourly wages to be adjusted within the range of the Little Steel formula, liberal terms for admission of qualified veterans into union membership, and machinery for settling jurisdictional disputes without work-stoppages; at this writing, the agreement has not been approved by all the separate trades.

Present conditions with respect to materials and manpower do not suggest any ultimate limit on the capacity of the industry. They do indicate, however, a moderate speed of expansion in the transition year.

**Volume in 1946** In consideration of the retarding factors of transition we estimate total 1946 dollar volume of new construction (as measured by contracts recorded for the 37 eastern states) at 50 per cent over 1945.

In dollars, this volume is greater than that of any of the years immediately preceding the war. Taking cost increases into account, it represents a physical volume somewhere between that of 1939 and 1940. The percentage increase is about as high as the highest ever previously attained from one calendar year to the next.

## ESTIMATES BY PROJECT CLASSIFICATIONS *(Continued)*

family dwelling units a year (including housekeeping suites in two-family and multi-family buildings as well as single-family houses) to an average of 1,260,000 non-farm units a year for the ten years following the war. The Dodge annual-average estimate is 820,000 non-farm units a year through the years 1946-1955.

Apartment house building, for which there is a great need in most of the cities of the country, is apt to make a slow start, unless new rental housing is exempted from OPA rent ceilings at a fairly early date. Modernization of apartments, apartment hotels and hotels is likely to be large in volume as revival proceeds, probably not extensive in early stages of revival.

House building will start with buildings in middle price ranges. There exists today a far more alert and better organized home building industry than has existed in previous revival periods. These operative builders are set to push ahead as rapidly as possible on single-family

houses for sale. There is also a huge backlog of plans for houses to be built on owners' order for owners' occupancy.

Total residential building in the entire United States, including all price ranges and all types (single-family houses plus housekeeping suites) is apt to approximate 325,000 units in 1946. On the assumption that house building will move much faster than apartment building, about 80 per cent of the units built in 1946 are likely to be single-family houses.

Estimates on 1946 residential building volume are based on the assumption that no ceilings will be imposed on sales prices of new houses. A bill has been introduced in Congress which would give OPA authority to impose such ceilings. While a preponderance of published opinion is to the effect that Congress is unlikely to enact this legislation, the proposal adds another element of doubt in the situation. It is generally believed that imposition of such ceilings would retard home building. Present esti-

mates should probably be discounted substantially in the event the ceilings are imposed.

**Heavy Construction** Demands are very great, by privately owned utilities and by public agencies responsible for community improvements. Highway construction is likely to move ahead very rapidly. Heavy engineering construction uses mainly unskilled labor and, to a large extent, non-critical materials. Transportation bottlenecks affecting bulky materials may develop to the extent of slowing down heavy construction projects to some extent.

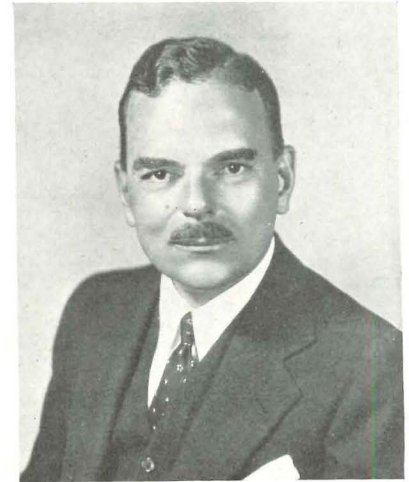
**Deferred Maintenance and Repairs** While not included in contract statistics, this represents a very large current market for materials and labor. Needs are enormous, urgent, less subject to postponement than new construction projects. The volume in 1946 could easily top all previous records.

# NEW YORK STATE'S PLANS ARE READY

## A BILLION DOLLAR BUILDING PROGRAM

By *Thomas E. Dewey*

*Governor, State of New York*



NEW YORK STATE is prepared to prosecute its billion dollar postwar public works program. This includes highways, parkways, grade crossing eliminations, state-aided public housing projects, and other state building projects.

New York State is in the enviable position of being ready to undertake a construction program of sound and necessary projects, but it is imperative that their construction should not proceed in strong competition with a private demand for men and materials. It is imperative that this construction be done at stabilized prices not inflated by competition between private and public demands. The projected New York works should be completed at a reasonable cost as an economic safeguard to the welfare of the people of New York State. These are important factors in determining the timing of our program.

The construction program developed by the New York State Postwar Public Works Planning Commission embraces construction and reconstruction of buildings, together with other projects for the Executive, Conservation, Education, Health, Mental Hygiene, Public Works and Social Welfare Departments. There are presently 583 of these approved departmental projects estimated to cost \$117,224,755. When highways, housing and the like are added to the program it passes the billion dollar mark. This article deals only with departmental projects.

A major share of the approved departmental works is for the Department of Mental Hygiene. Our mental institutions now are overcrowded by more than 17 per cent. In the immediate future the demands imposed upon these institutions will be greatly increased. Modern methods in the scientific care of mental illness, with emphasis upon cure rather than custodial care, dictate the urgent need for construction of new additions and the replacement of antiquated structures. The Commission has approved projects for this department contemplating construction, reconstruction and modernization of existing buildings at a cost of \$61,364,857.

Education Department construction and reconstruction, consisting of technical buildings, dormitories, additions and other structures as now approved will cost \$23,383,836. Estimated costs of projects for other departments are: Conservation, \$12,097,390; Correction, \$8,189,244; Health, \$394,282; Public Works, \$6,499,300; Social Welfare, \$3,-

582,959; and Executive, \$1,712,876.

This departmental program is plant construction planning on a state-wide basis as it should be. It is a forward step for this state. Our Planning Commission has not only made ready for the postwar construction, it has devised a procedure of examination of construction and reconstruction requirements that will pay dividends to the people of this state for all future construction. Every project is closely scrutinized as to its need and its requirements to the end that a most efficient and economical unit is designed. Throughout the process, the department affected, the Superintendent of Public Works, the Director of the Budget, the Postwar Planning Commission, the State Architect and the private architect designated for the project, work together closely. Architects in private practice make a marked contribution to the thought and planning that accompany the actual work of design. New York private architects are doing the design work on a major share of the Departmental program.

Not only has the State projected these improvements but it is prepared to finance them. Upon my recommendation, the 1944 and 1945 Legislatures created and built up the Postwar Reconstruction Fund. It now totals \$320,000,000 and by April 1, 1946 it should exceed \$400,000,000.

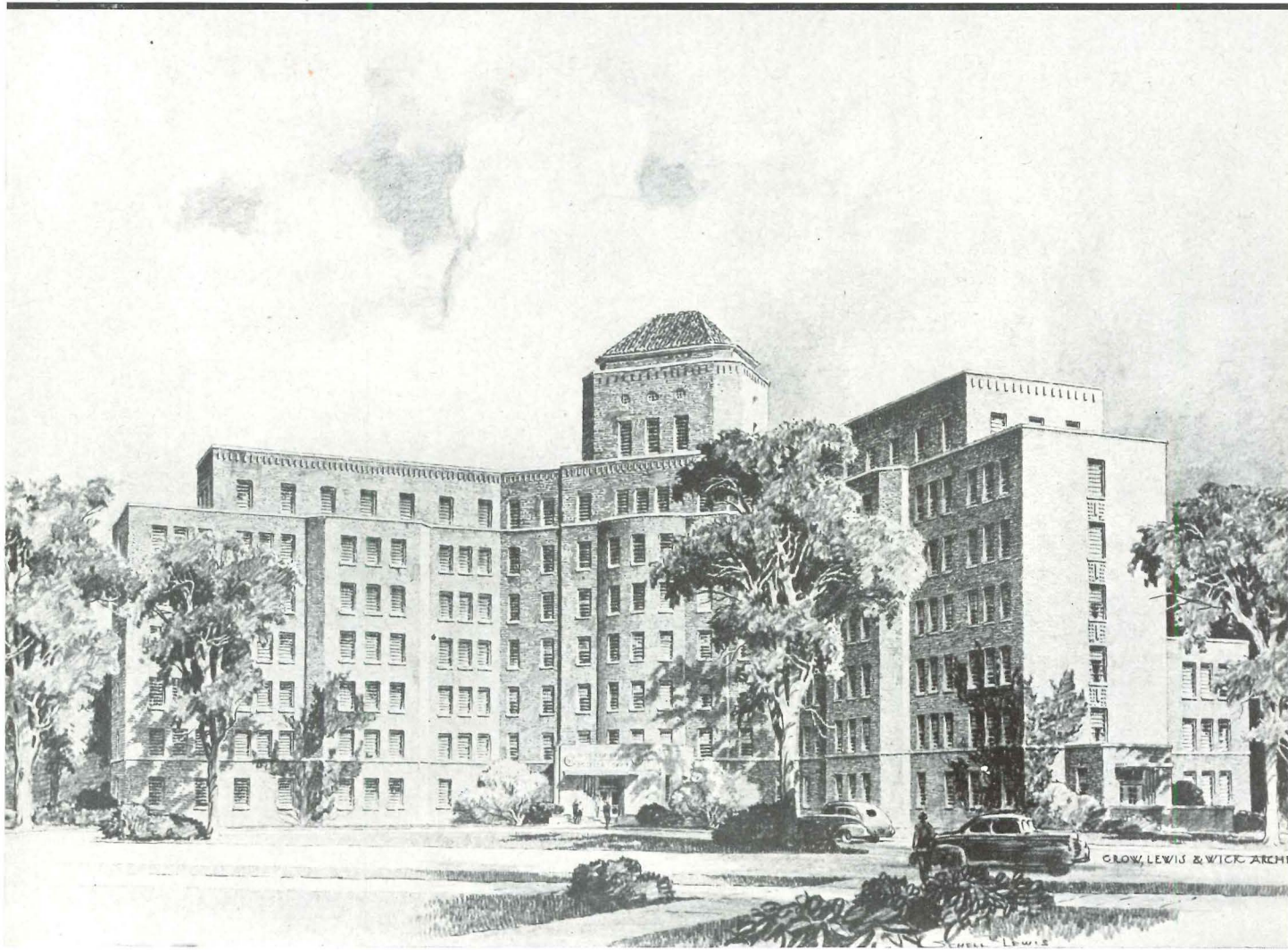
The Postwar Public Works Planning Commission has also developed a municipal program of postwar public works providing assistance to municipalities by defraying one-half the cost of the preparation of plans. Municipal projects approved by the Commission number 3,223, representing a total construction cost of \$242,406,579.

The Commission has filled an important role in discharging its statutory obligation of recording progress of design of railroad grade crossing eliminations, highways, parkways, public housing projects and other structures. It allocates funds subject to reimbursement, to Public Authorities including: The Port of New York Authority, Whiteface Mountain Authority, Jones Beach Parkway Authority, Nassau County Bridge Authority, New York City Tunnel Authority, Lower and Central Regional Market Authorities and Niagara Frontier Authority.

New York State is beyond the preliminary stage of postwar planning. It is ready to translate that planning into actual construction.



# Projects of the Postwar Public Works Planning Commission

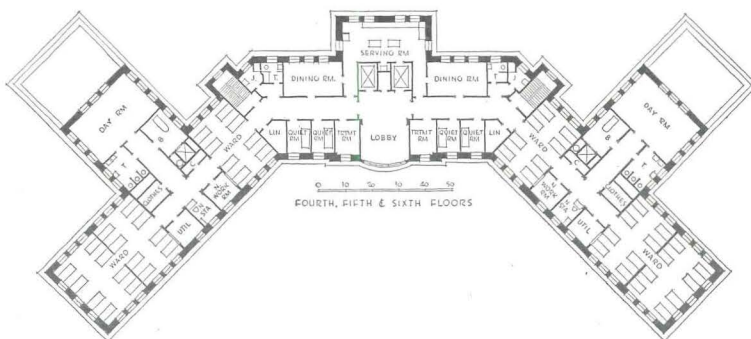


## MEDICAL AND SURGICAL BUILDING

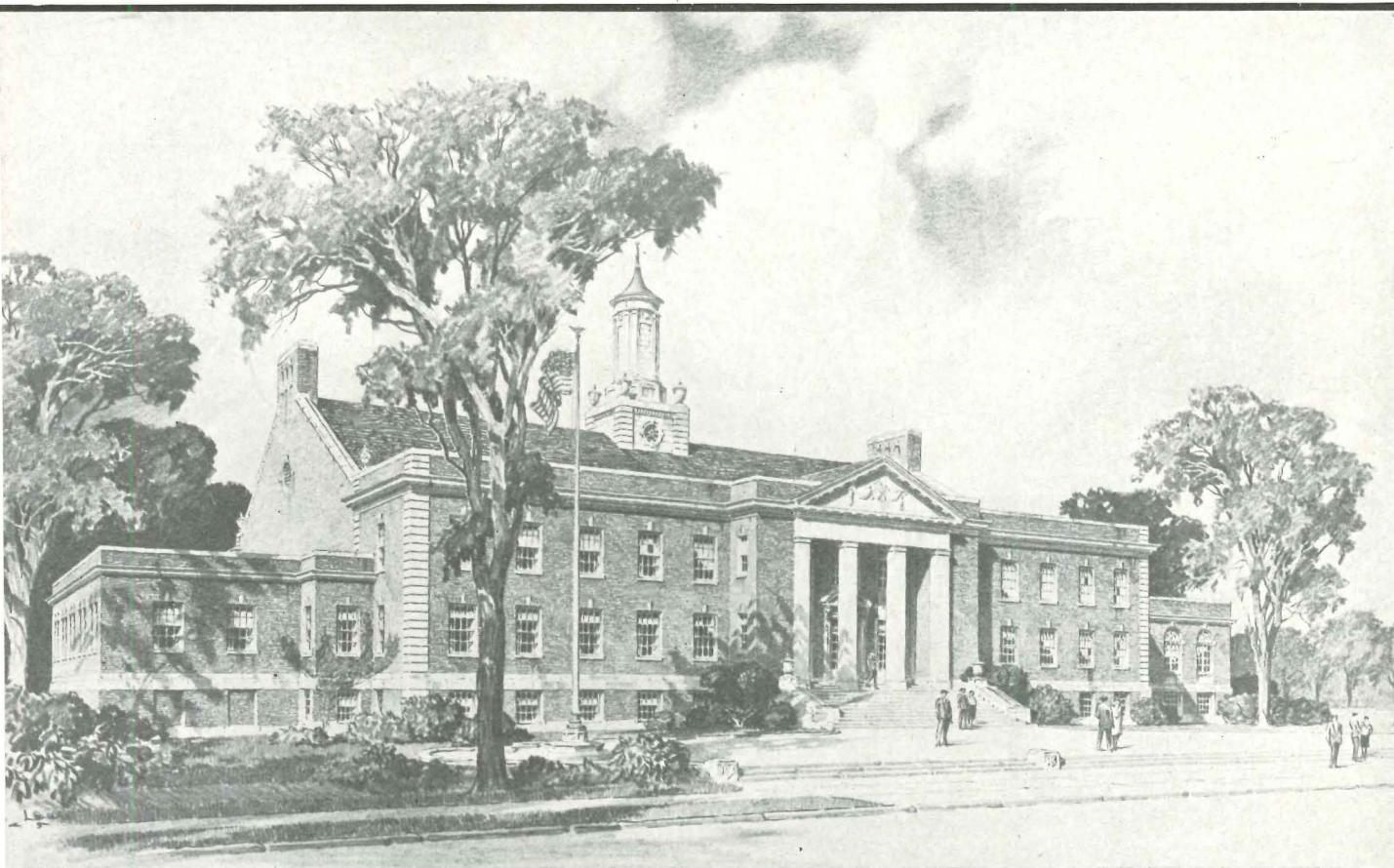
*Craig Colony, Sonyea, New York*

*Crow, Lewis & Wick, Architects*

THIS new building at Craig Colony, an institution for epileptics, will provide adequate centralized facilities for reception, diagnostic, and laboratory services, as present facilities are scattered and inadequate. The project is part of the institution's new rehabilitation program. Accommodations for 584 patients in 16 wards will alleviate existing overcrowded conditions and the wards will permit better care for those physically chronically ill. Facilities are provided for the medical care of employees.



# NEW YORK STATE'S PLANS ARE READY

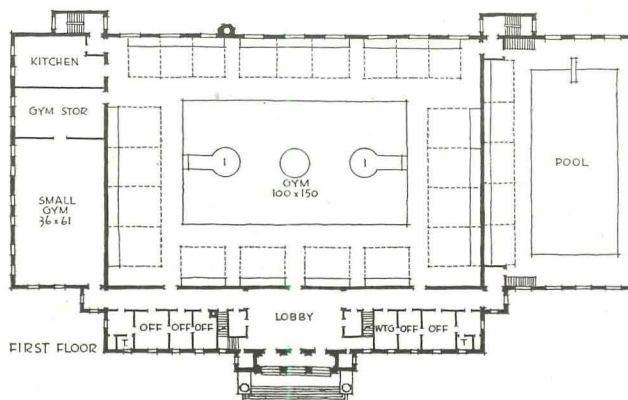
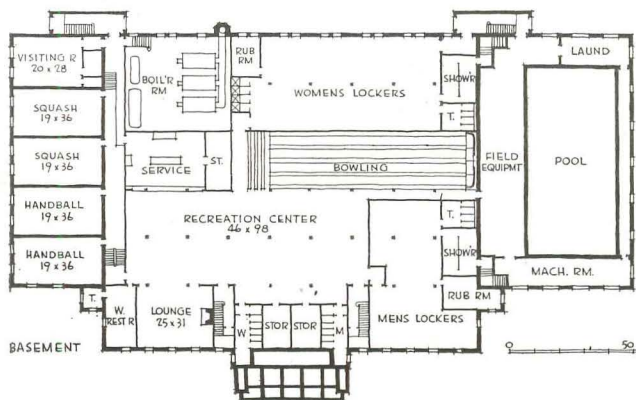


## PHYSICAL EDUCATION BUILDING

*New York State College for Teachers, Albany*

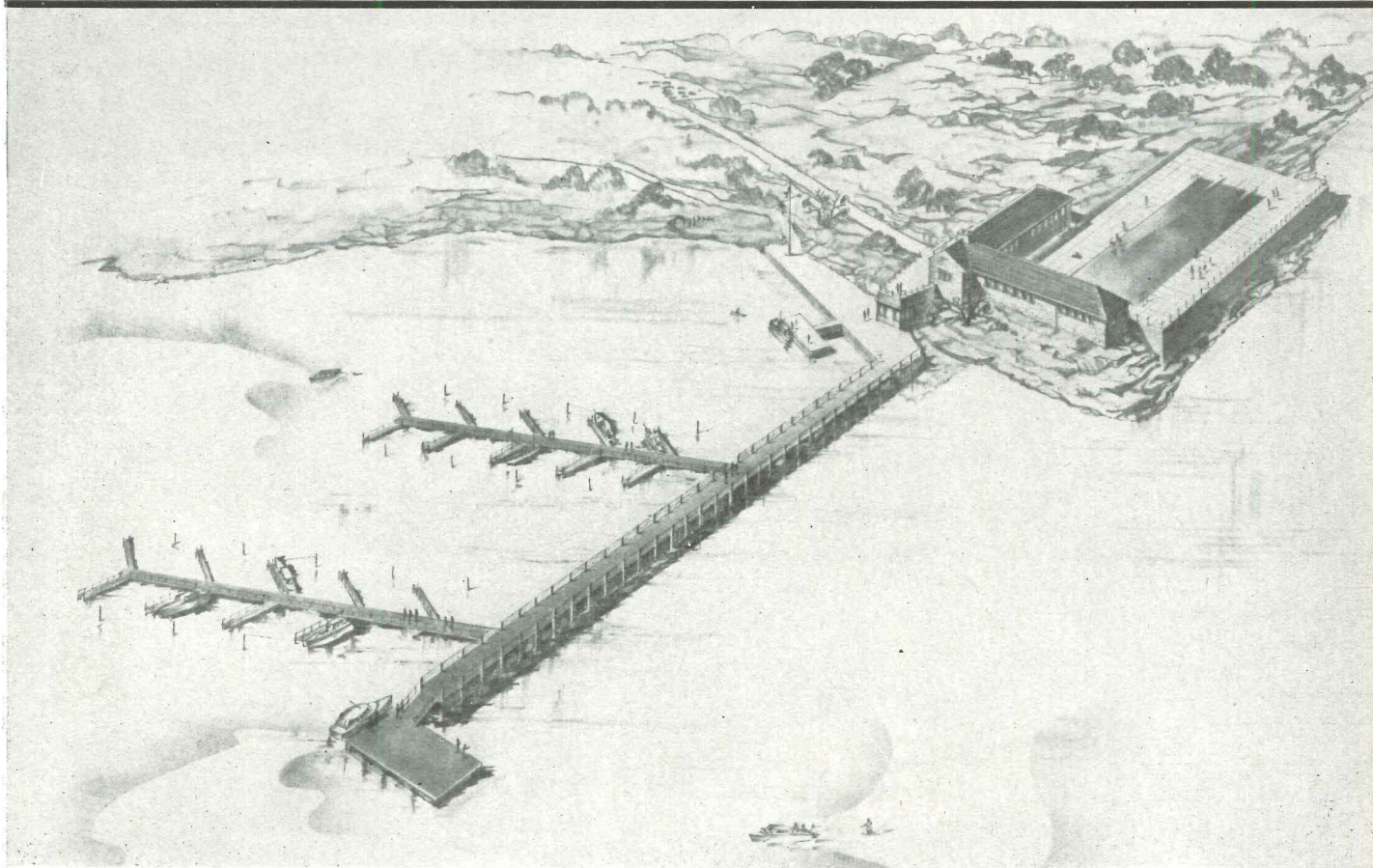
*Gander, Gander and Gander, Architects*

THIS new building has been approved to overcome the handicap that limited gymnasium facilities placed on the health and physical education program at the college. The new building provides adequate modern facilities, including a gymnasium 150 by 100 ft., which can be divided into three playing courts by removable partitions, or can provide a seating capacity of some 2,400 around a basketball court. Swimming pools, smaller gymnasiums, squash courts, bowling alleys, and the usual locker rooms and other facilities are provided.





## Projects of the Postwar Public Works Planning Commission



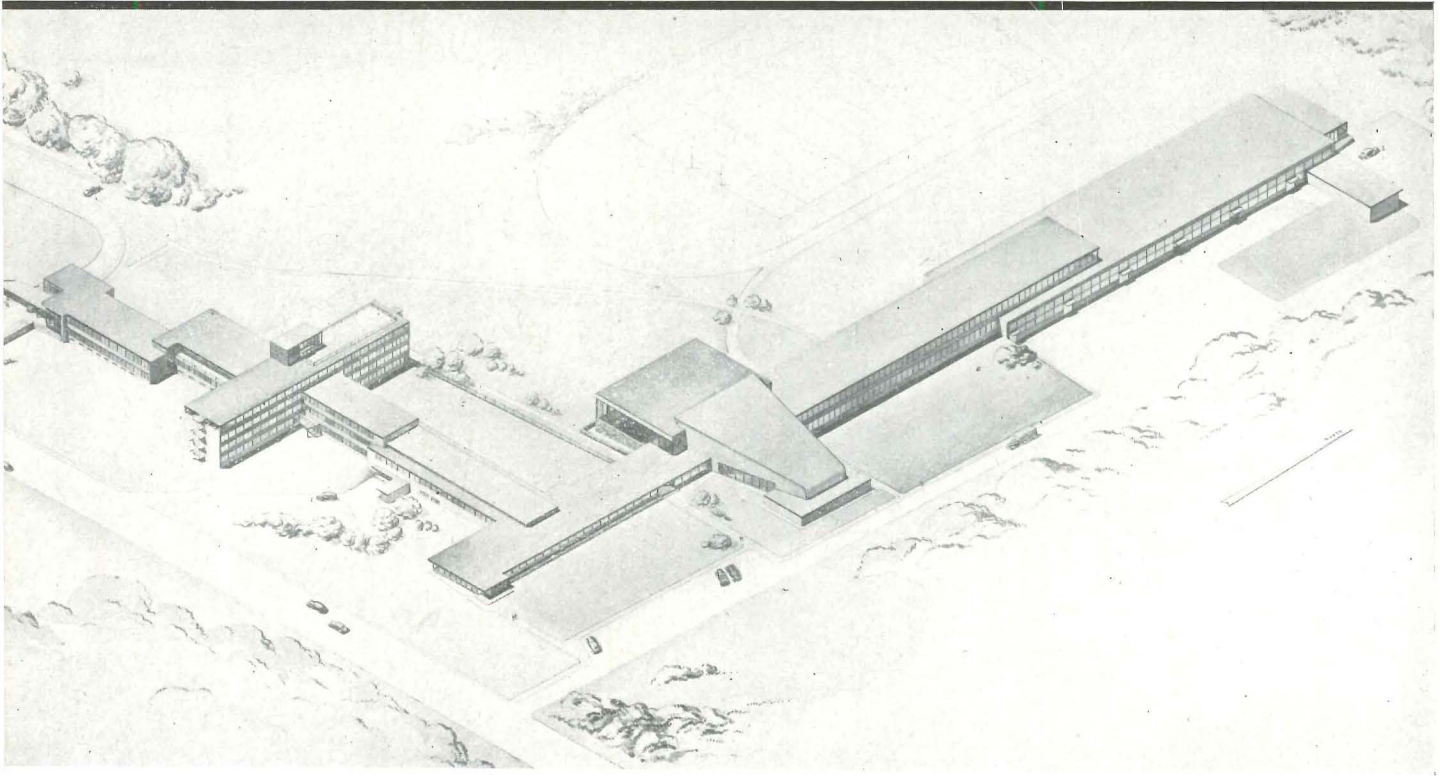
### BATHHOUSE

*Margaret Lewis Norrie State Park*

*Skidmore, Owings and Merrill, Architects*

**M**MARGARET LEWIS NORRIE STATE PARK on the Hudson River, nine miles north of Poughkeepsie, has existing facilities for camping, picnicking, boating, fishing, and restaurant accommodations. There are no other proper bathing facilities existing within a radius of 30 miles of the park, and within this area dwell approximately 75,000 persons. The project proposed to meet these needs contemplates a boat basin and a swimming pool with a bathhouse to accommodate 520 persons.

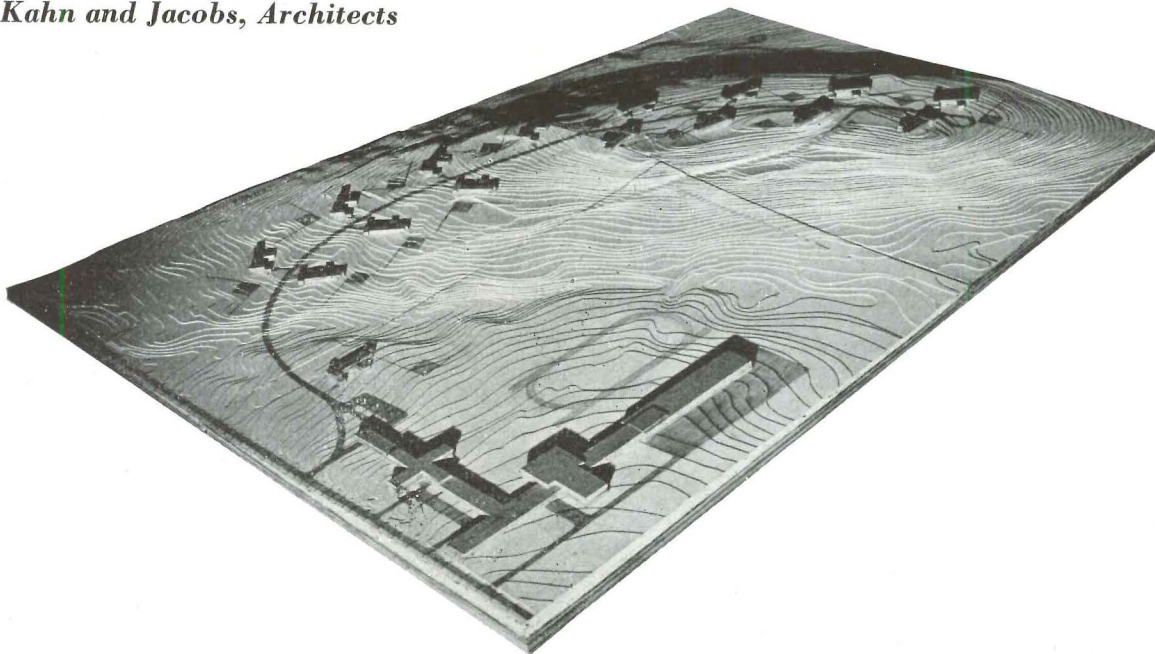
# NEW YORK STATE'S PLANS ARE READY



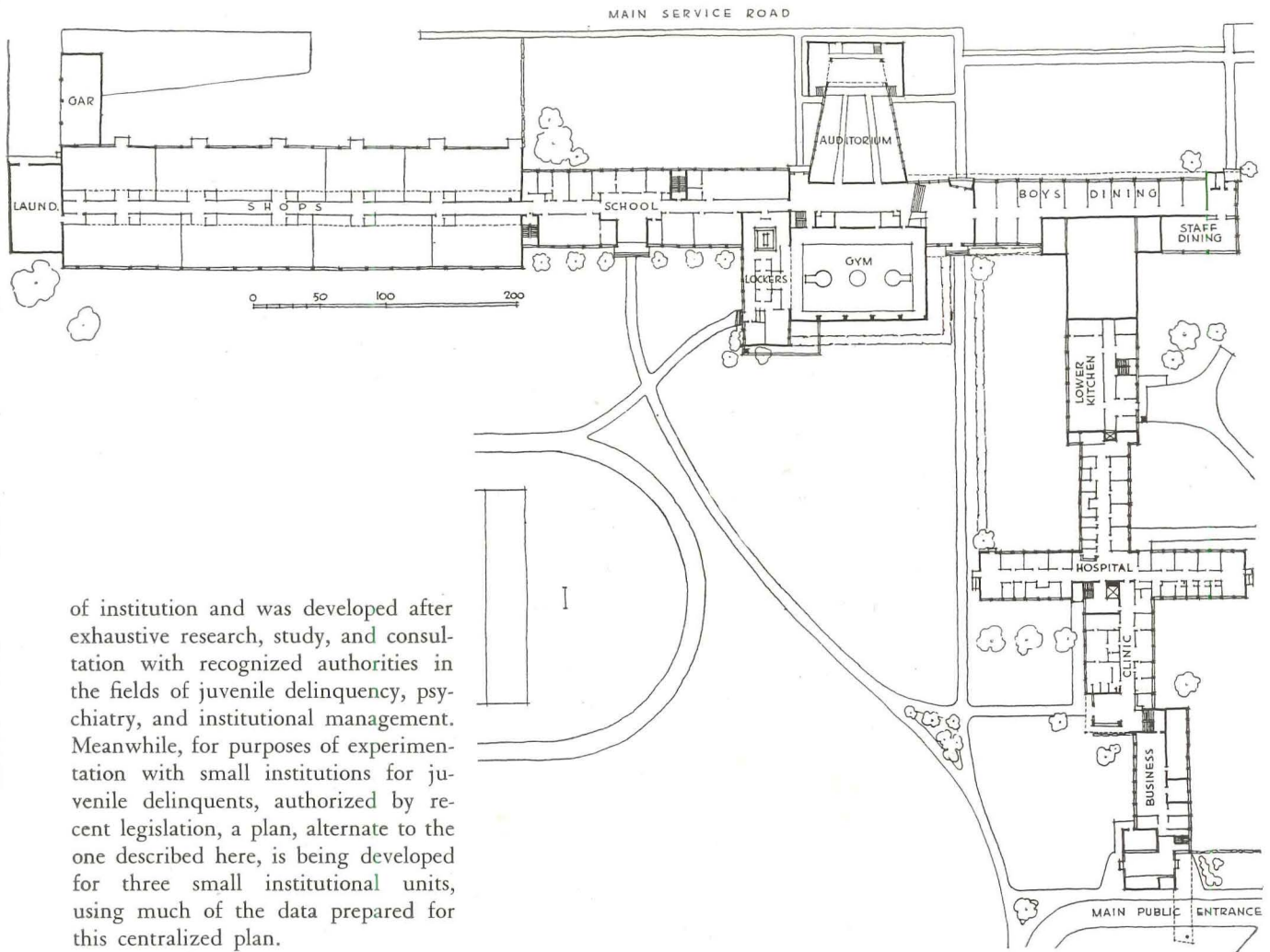
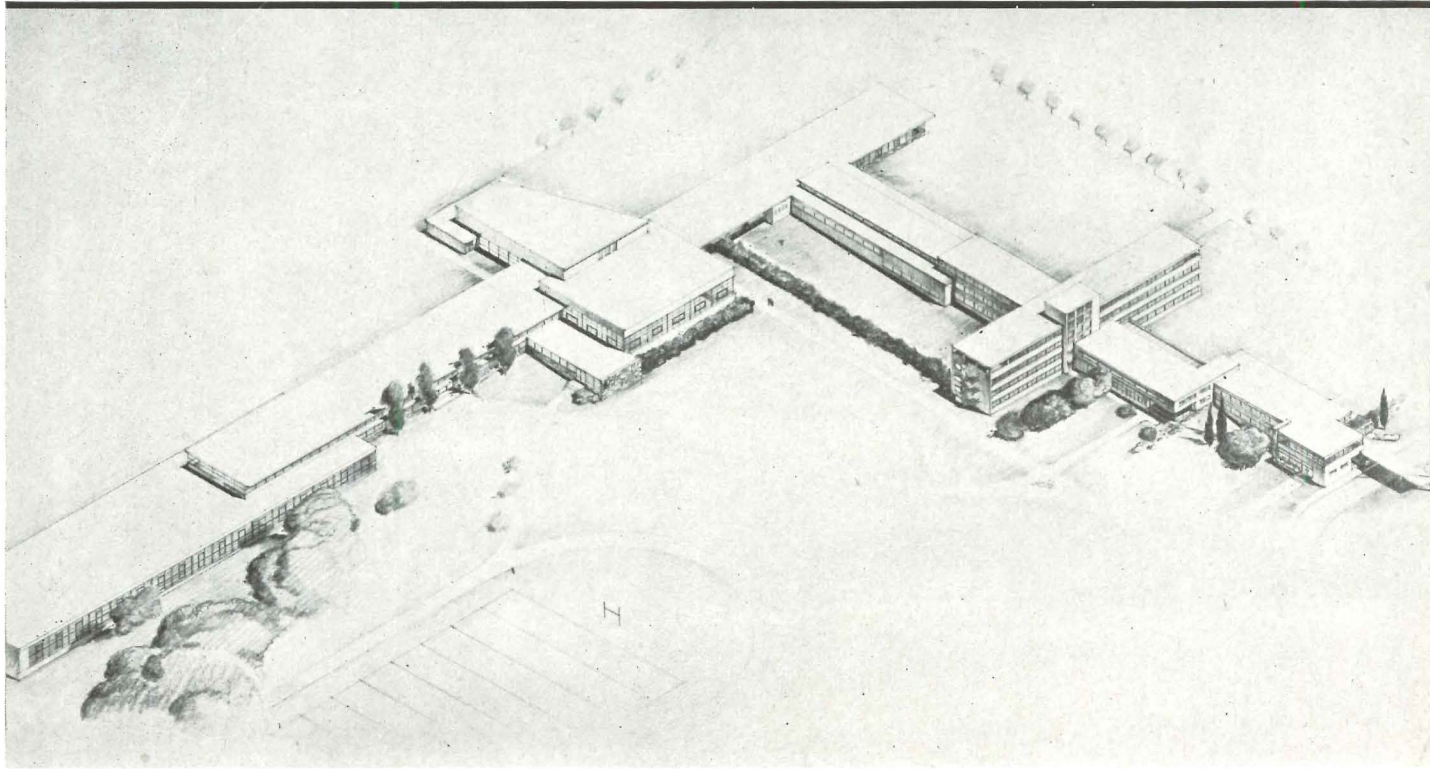
**NEW YORK STATE AGRICULTURAL  
AND INDUSTRIAL SCHOOL *Industry, N. Y.***

*Kahn and Jacobs, Architects*

**T**HIS PROJECT, proposed for the New York State Agricultural and Industrial School at Industry, N. Y., centralizes all facilities with living quarters for 450 male juvenile delinquents. It represents the present ultimate in this type



# Projects of the Postwar Public Works Planning Commission

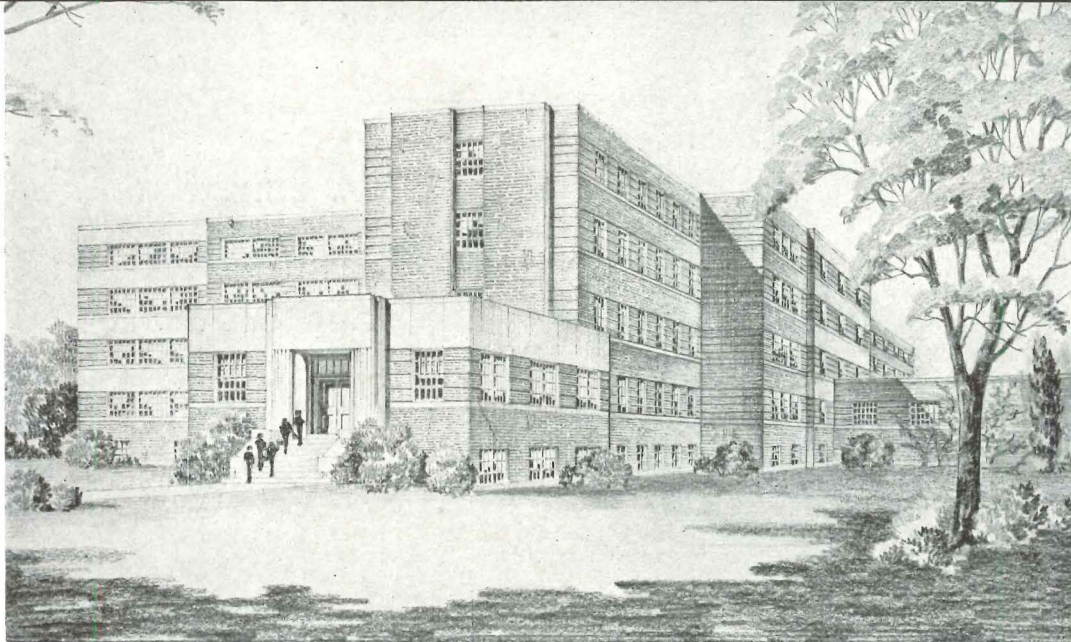


of institution and was developed after exhaustive research, study, and consultation with recognized authorities in the fields of juvenile delinquency, psychiatry, and institutional management. Meanwhile, for purposes of experimentation with small institutions for juvenile delinquents, authorized by recent legislation, a plan, alternate to the one described here, is being developed for three small institutional units, using much of the data prepared for this centralized plan.





# NEW YORK STATE'S PLANS ARE READY



## ISOLATION BUILDING FOR BOYS

*Rome State School, Rome, N. Y.*

*Bagg and Newkirk, Architects*

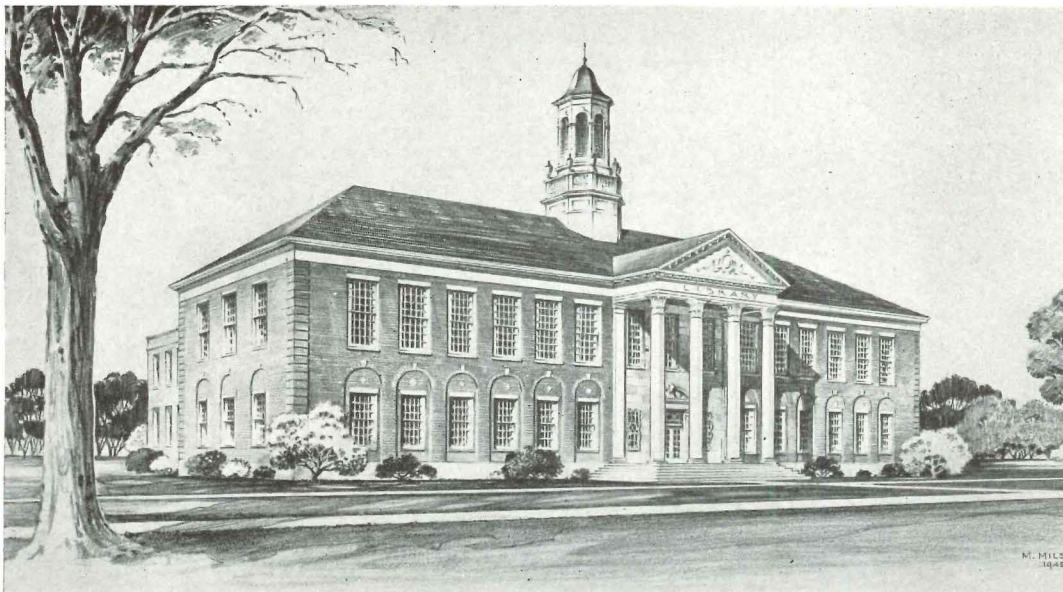
AN ISOLATION BUILDING for psychopathic boys is approved for construction at the Rome State School, an institution for the care, treatment, and training of mental defectives. This will accommodate 160 boys in four wards, relieving a serious condition of overcrowding. Isolation facilities presently are provided in an old, inadequate structure.

## NEW LIBRARY BUILDING

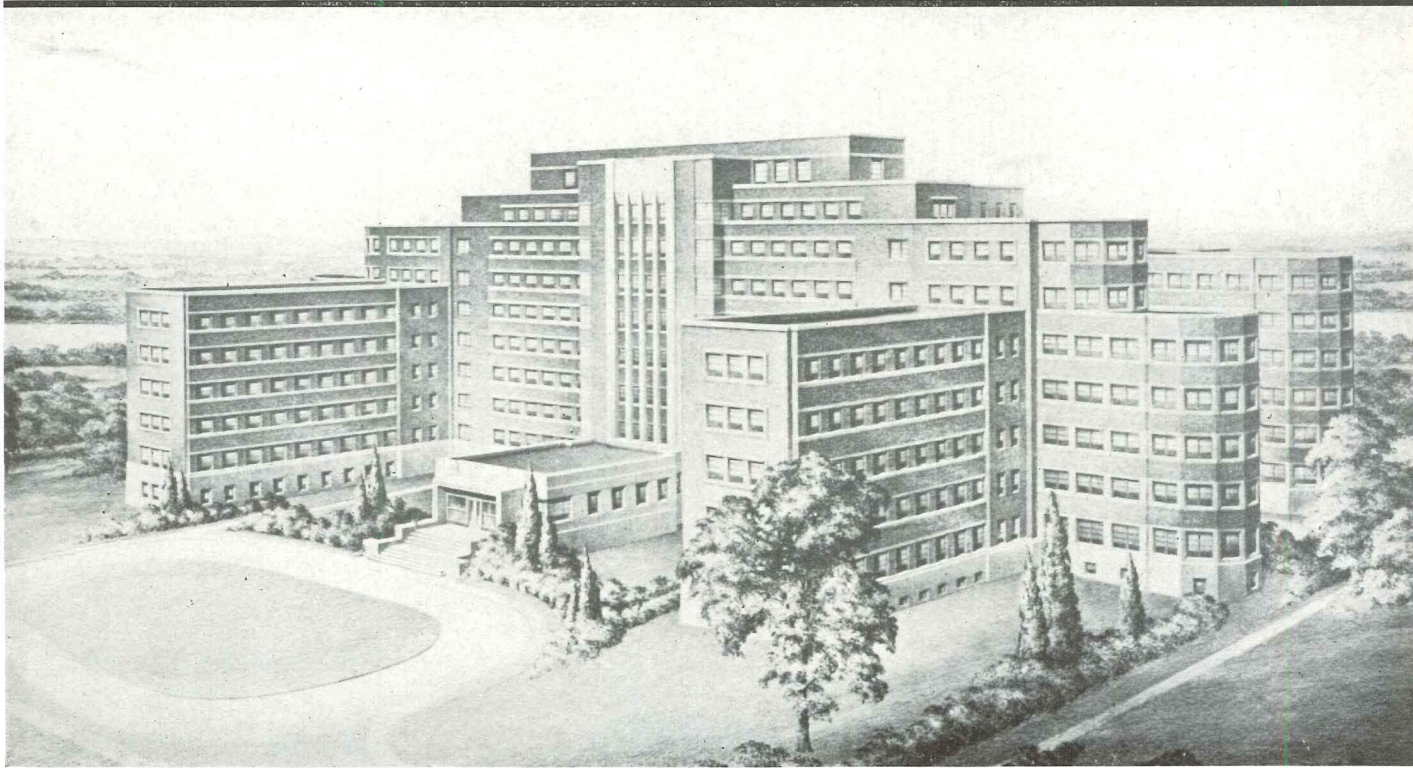
*State Teachers College, Buffalo, N. Y.*

*James W. Kideney, Architect*

A NEW library building will provide adequate facilities to implement the general, special, and technical course offerings of the college. This building will include a main library room for 300 students, reference book room for 200 students, periodical reading room for 100 students, three seminar and study rooms, a map room, and an instructional materials laboratory. It includes, also, general administration and work rooms.

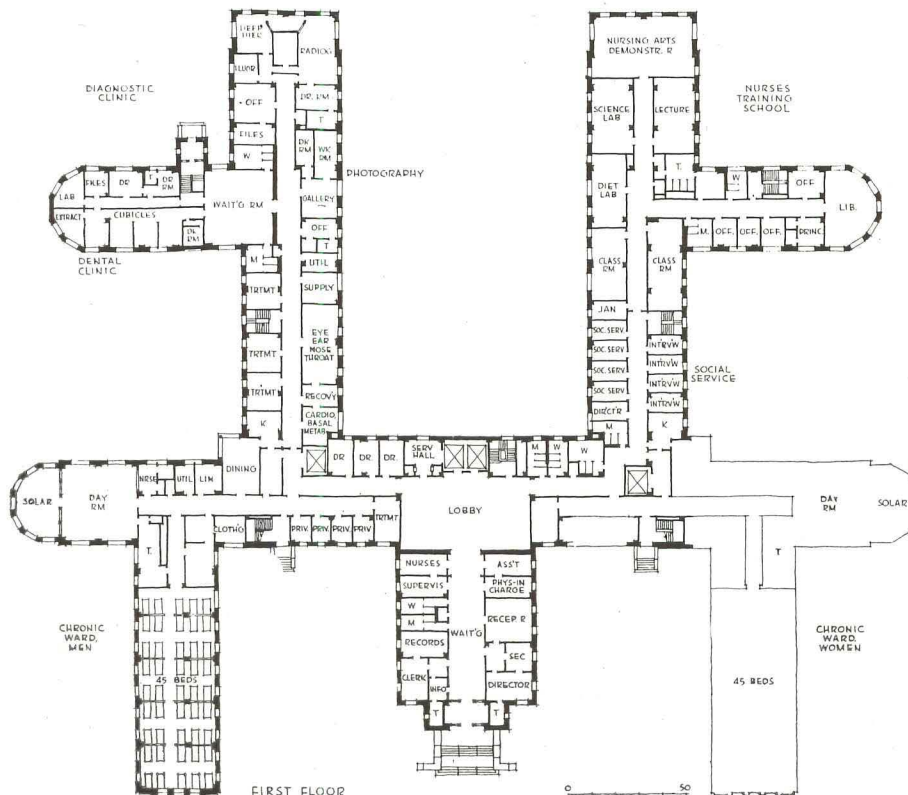


# Projects of the Postwar Public Works Planning Commission



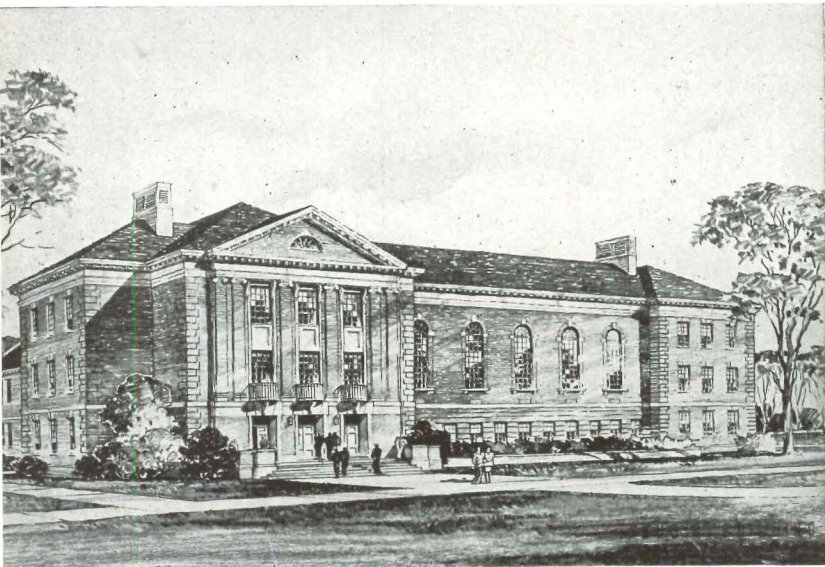
## MEDICAL AND SURGICAL BUILDING, HUDSON RIVER STATE HOSPITAL

*John B. Peterkin, Architect*



AT THE Hudson River State Hospital, an institution for the mentally ill at Poughkeepsie, will be added a medical and surgical building. It will have twenty-two wards with facilities for 960 patients. This new structure will permit centralization of reception, medical, and surgical services. Although new laboratory services are not provided, the most advanced and scientific facilities will be available for shock therapy, in addition to the regular medical and surgical services. Quarters will be available for sick employees. The overcrowded condition at the Hudson River State Hospital, which has a population of 5,088, will be alleviated.

# NEW YORK STATE'S PLANS ARE READY



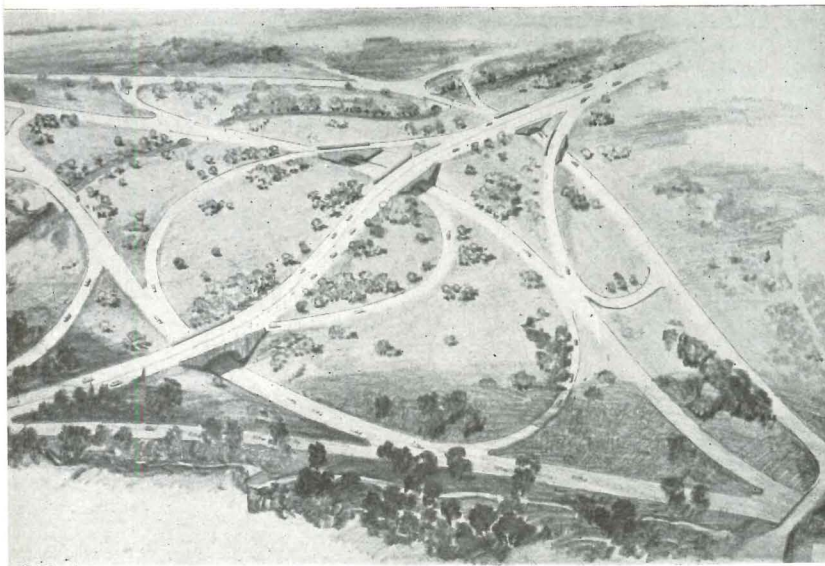
## MUSIC BUILDING

*Archibald F. Gilbert Architect*

A MUSIC BUILDING at the State College for Teachers at Potsdam will make available modern and adequate facilities in the field of public school music. The building will include choir, orchestra, band, and rehearsal rooms, studios, practice rooms, a small auditorium for public performances, a music library, eight classrooms, and the necessary administration and auxiliary rooms.

## GRADE CROSSING SEPARATION

*Parsons, Brinckerhoff, Hogan  
and McDonald,  
Landscape Architects*

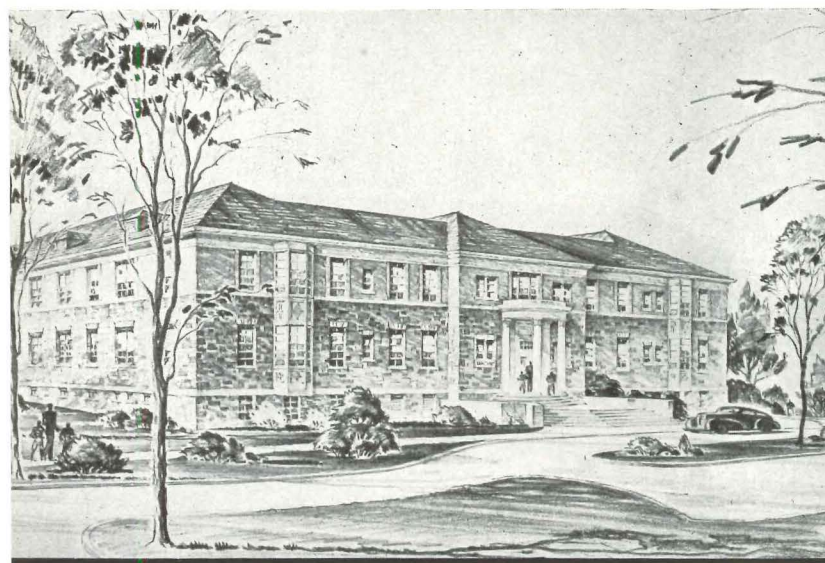


To relieve traffic congestion on four main arteries which converge with a fifth at Hawthorne Circle in Westchester County, the New York State Public Works Planning Commission has approved the Department of Conservation's plans for separation of existing grade crossings. The separation will relieve clogged conditions and will eliminate a dangerous traffic hazard from the Taconic Parkway, the Saw Mill River Parkway, the Bronx River Parkway, a State highway, and Broadway, which converge here. This is in the five-year construction program recommended by the Superintendent of Public Works to conform the State's transportation system to the commercial, industrial, and recreational demands of the State.

## HOSPITAL BUILDING

*Kohn and Butler, Architects*

A HOSPITAL building for younger children at Letchworth Village, a State institution for the care, treatment, and training of mental defectives, located at Thiells, has been approved for construction. This building will accommodate 100 children for whom will be provided all services, except kitchen. Present facilities for this type of care of younger children are inadequate.





# Master plans for master politicians

By George Howe,  
Retiring Deputy Commissioner  
Design and Construction,  
Public Buildings Administration

Illustrations by Robert Osborn

I HAVE OFTEN had occasion to seek for an answer to the question, where do architects and planners stand today? Let me be more specific. I am concerned with the position of the architect-planner as distinguished from other planners, and his relation to that over-all planning which is inseparable from government action at all levels.

First let's consider where planning in general stands today. Planning stands about where alchemy stood in the seventeenth century. On the basis of a still unorganized science—the science of government planning—it promises wealth, health and happiness. Even its operative symbol is reminiscent. As elements of the “project,” the *opus*, we have first the “new material,” shall we say *materia prima*, and then its transmutation into social satisfaction and economic benefit, shall we say the philosopher's stone and liquid gold?

This comparison is not intended as ridicule. It is well known that alchemy was inspired by high purpose and served a useful one. You will recall Carl Jung's chapter on the “Idea of Redemption in Alchemy” as a part of the unending struggle of the collective unconscious to emerge into the light. The necessary qualifications of a good alchemist as set down in the *Liber Perfecti Magisterii* would fit a good architect-planner about as well. “He must have a subtle mind and possess a sufficient knowledge of the metals and minerals. But he may not have a coarse and hard mind, nor may he be greedy and avaricious, undecided and vacillating; furthermore he may not be in a hurry, nor may he be conceited; on the contrary, he must be firmly resolved, tenacious, patient, mild, long-suffering and moderate.” The best among these paragons were conscious of the obstructive complications of their laboratory operations. One of their sayings was, “Thou seekest hard and findest not. Perhaps thou wilt find if thou dost not seek.” It sounds rather like one of Frank Lloyd Wright's jabs at Moses the Mole.

When chemistry became a science, the alchemist became an experimental chemist. When government planning becomes a science, the architect-planner may become an experimental government planner. That time has not yet come.

Government planning has only gone a short way toward becoming a science. Of its three modes of action, political, legislative and administrative, the first is an imaginative art, the second is the projection of concepts as formulae and the third is the building of laboratories where formulae can be tested and enlarged. Imagination has not gone far enough in government planning. We cannot yet clearly formulate our ideas nor build laboratories to test them.

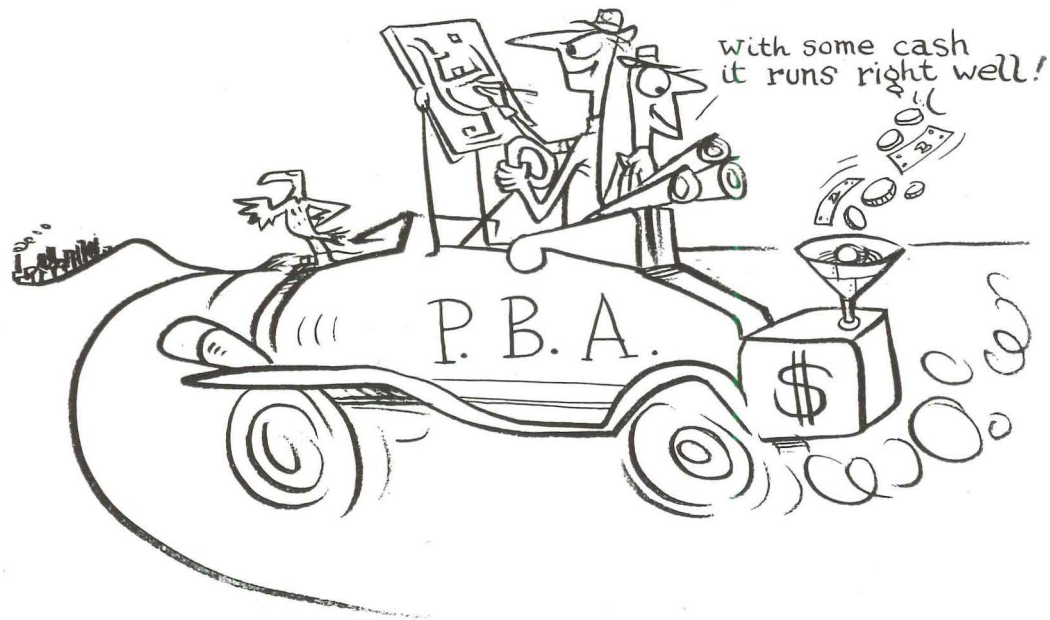


The architect-planner is faced by a double necessity. As artist his imagination must run ahead of reality. As technician he must work with texts and in laboratories that seem to him, and are, inadequate. In whatever one reads about planning it is obvious that imagination is hampered at every turn by the insufficiency of legislation and administrative machinery. Political action must be the architect-planner's first interest.

Administrative and technical agencies are of course themselves fully conscious of the need for enabling legislation but even so they can consider it only under legislative authority. Fortunately the need of appropriations for planning is now recognized. You may be interested to hear something about the Advance Planning Program of the Public Buildings Administration which was authorized by Congress in 1943. This research into requirements, standards and procedures in government construction was confined primarily to public buildings as such but it is impossible to consider these without relation to public roads, community facilities and planning problems in general.

The results of the studies covering these related parts of the research program are contained in the "Statement of W. E. Reynolds, Commissioner of Public Buildings, before the Public Buildings and Grounds Committee of the House of Representatives" under the title "Post-War Urban Redevelopment" which some of you have probably seen. It is a clear, concise and comprehensive recapitulation of urban planning problems in their social, administrative and economic aspects, and definitely states his opinion on national responsibility with respect to them. "These problems are not insurmountable," he concludes. "We have the opportunity and we have the ability to do a good job of rebuilding our cities. We cannot avoid some national responsibility to do just that."

Studies of a tentative urban redevelopment pattern applied to a selected area were submitted with the statement as illustration. They pay special attention to the urgent problem of the relation to roads to densely inhabited areas. Express highways connecting through routes, at present interrupted, are interlaced with the existing street pattern of a whole city



leaving the healthy areas intact. The areas ripe for redevelopment are divided by these highways into neighborhood super-blocks, accessible only at fixed points, penetrated by a new, graduated system of traffic arteries and provided with complete community facilities. The proposal, based on already accepted principles, is at once realistic and daring.

In the field of existing legislation and administration you are certainly aware that a great deal of valuable experience has been gained during the war in providing community facilities in collaboration with local agencies, architects and engineers through the War Public Works Program au-

thorized under the Lanham Act and administered by the Federal Works Agency in which a Bureau of Community Facilities, headed by a Commissioner, has recently been set up by the Administrator on a parity with the Public Buildings and Public Roads Administrations to round out its operating organization. Recently too the Congress has authorized the Administrator under the War Mobilization and Reconversion Act to loan or advance funds to states and other non-federal agencies for the preparation of complete designs for public works, provided they conform to over-all state, local or regional plans under properly constituted authorities. No funds are as yet available for this purpose but it is anticipated they will be provided in the present year.

These developments promise well for the not-distant future. Out of legislative authority and administrative experience the necessary machinery for the realization of large-scale plans may well emerge. When it becomes effective, and I believe it may become so in the postwar period, the technical services of the architect-planner will be in demand. With this situation he might rest content, but he should not. He differs from all other planners, political, social, economic and legal, in one important respect. He is, as the name architect-planner implies, more of an artist than any of the others.

The inherent nature of art may preclude analysis but qualitatively it has been well-defined through its purpose in society by the philosopher Edgar Singer. "Only the art whose purpose is to change the purposes of the beings to whom it is addressed is fine ('free' or 'freeing') art," he wrote in his essay "Esthetic and the Rational Ideal," and again, "the artist must be a messenger of discontent," and again, "the artist creates no new ideals" (Singer refers to ideals external to art, let me interpolate); "he creates the creators of ideals." Obviously this is not the facile art of the eclectics and the city beautiful.



It is rather the fashion nowadays to scoff at plans that are not practical. By practical plans presumably are meant those that fall within the immediate or not too remote social, political, economic and legal possibilities. In an article on "The Political Art of Planning" Dean Hudnut last year made scholarly fun of the master plans buried in the Planning Library at Harvard. Yet it is obvious from a recent controversy in the public press that even the most modest proposals of architect-planners are beyond the scope of the practical-minded. Nor is it recorded that they ever liked artists any more than they like them now. They sent Phidias to jail for his part in directing the public works of Pericles, and Baron Haussman, who carried out Napoleon III's plan for a city supposedly safe from the fury of mobs and external enemies, had no use at all for architect-planners. "As artists," he wrote, "they had little concern for expenses. I might add that in general they possessed neither the knowledge required for drawing up an estimate nor the careful and detailed attention which is needed for checking a bill."

Architect-planners resent these still-current imputations but they must admit that others who are not architects can prepare estimates and check bills at least as well as they. These others have the further advantage in the eyes of the practical-minded that they do not raise difficult questions, questions of human values, questions of esthetics—all sorts of questions about



things which, as the respectable citizens of Athens complained of the works of Pericles, "cost a world of money." These questions it is the function and duty of architect-planners to raise.

There are two great showmen living and working today who are also great architect-planners. Each has produced a planning pattern to meet the challenging problem of how to tie the pattern of speed and power represented by the New York Parkway system and the Tennessee Valley project into the pattern of human living. Each foresees a different solution. The American of the plains prophesies the abandonment of rurification of the city, the European on a crowded continent prophesies its rebuilding.

Their plans have one great quality in common. Though they purport to be founded on present realities, their chief claim to fame is their splendid disregard for all practical impediments to their execution. They transcend the momentary limits of social, political, economic, and legal possibility, and yet, or perhaps therefore, their authors are better known to the world at large than any of their fellows. Nor are their plans buried in Planning Libraries. They are very much a part of the art of political action. I am speaking of course of Broadacre City and the 1922 Plan of Paris, and of their authors, Frank Lloyd Wright and LeCorbusier.

With lip and pen and picture these two have tirelessly stated the cause and the case of the architect-planner, always with emphasis on the role of the artist in society. I venture to state that their impractical plans and words have done indirectly as much as all the practical together to bring the legislative and administrative machinery of planning to the point it has reached today.

In the hope that you may have forgotten it and at the risk of seeming frivolous I am going to recall the story of Dinocrates told by Vitruvius in one of the amusing introductory passages that lard the lean meat of his technical treatise. I offer it, as you will see, only by way of parable.

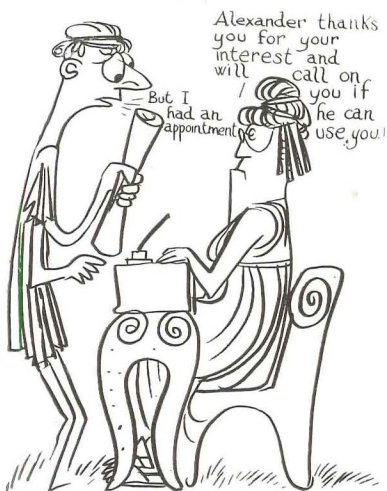
Dinocrates was an architect-planner of the time of Alexander the Great who anticipated by twenty-three hundred years Salvador Dali's personal publicity stunts and the popular appeal of Gutzon Borglum's images carved out of mountains. He had a city plan to propose to the king and approached him at first with the usual letters of introduction to important personages. As still so often happens, they put him off with fair promises until his patience was exhausted and he decided to attract attention to himself in his own way. Vitruvius thus tells what he did:

"He was, I should state, a man of tall stature, pleasing countenance, and altogether of dignified appearance. Trusting to the gifts with which nature had thus endowed him, he put off his ordinary clothing, and having anointed himself with oil, crowned his head with a wreath of poplar, slung a lion's skin across his left shoulder and carrying a large club in his right hand, he sallied forth to the royal tribunal, at a period when the king was dispensing justice. The novelty of his appearance excited the attention of the people; and Alexander, soon discovering with astonishment the object of their curiosity, ordered the crowd to make way for him and demanded to know who he was. 'A Macedonian architect,' replied Dinocrates, 'who suggests schemes and designs worthy your royal renown. I propose to form Mount Athos into the statue of a man holding a spacious city in his left hand, and in his right a huge vase, into which shall be collected all the streams of the mountain, which shall thence be poured into the sea.'"

On making inquiries among his economic and industrial advisers Alexander discovered that the site of Mount Athos was utterly unsuited to the life of a city but he was so delighted with Dinocrates and his proposal that he kept him thereafter constantly by him. When he came to Egypt this favorite architect-planner was commissioned to lay out Alexandria.

I do not suggest that an architect-planner could achieve this happy result today by imitating Dinocrates in any literal sense. I would only point out that a bold plan, dramatically presented, is one of the most powerful instruments of political pressure in the hands of any section of society. Furthermore, such a plan may bear fruit at a season and in a form not foreseen by its author.

By way of contrast I submit the fruitlessness of Vitruvius' method of approach. He failed to read the lesson of his own story. "Dinocrates," he said, "obtained this honor through his comely person and dignified de-





portment," and then went on to present his own qualifications of employment, presumably to Augustus Caesar, in the following terms: "But to me, Emperor, nature hath denied an ample stature, my face is wrinkled with age, and sickness has impaired my constitution. Deprived of these natural accomplishments, I hope, however, to gain some commendation through the aid of my scientific acquirements, and the precepts I shall deliver." As with Dean Hudnut's dusty dons it is not told that he ever produced anything but a thesis on planning, design and construction.

So it seems to me, in the light of recent experience and old story, the architect-planner can best serve himself as well as society by standing frankly on his function as artist, as "messenger of discontent," as creator of "the creators of ideals." As artist he cannot but stand or fall by master plans for master politicians.

In support of the power of the plan as a weapon of political action, on condition that it be boldly promulgated and promoted, I recall to your minds the words of an English legislator published in the London *Architectural Review* something over a year ago under the title "The Politics in Planning." Sir Richard Acland, member of Parliament and founder of the Commonwealth Party, is no totalitarian but he believes that collective political action by free democratic consent must go much farther in fact than it goes now even in our thinking if planning on a broad scale is to become a reality within the lifetime of any infant now living. He points out that any architectural plan of any scope is in fact a revolutionary manifesto. He reproaches architect-planners for their timidity in failing to recognize the revolutionary implications of their own planning philosophy. He urges them not to be afraid to state its inevitable political consequences. Every plan, he concludes, should be issued with the following words: "These are the towns which you can have if you want them and if you make up your minds to reject all the basic principles on which your society is founded."

This is a stronger statement than most men are prepared to make in this country. I cite it to bring out the position of the architect-planner. He stands between two extremes: between the reality of existing planning legislation and administrative machinery, which are acknowledged to be inadequate, on the one hand, and the consequences of his own planning philosophy, which carry him far into the realm of political imagination, on the other.

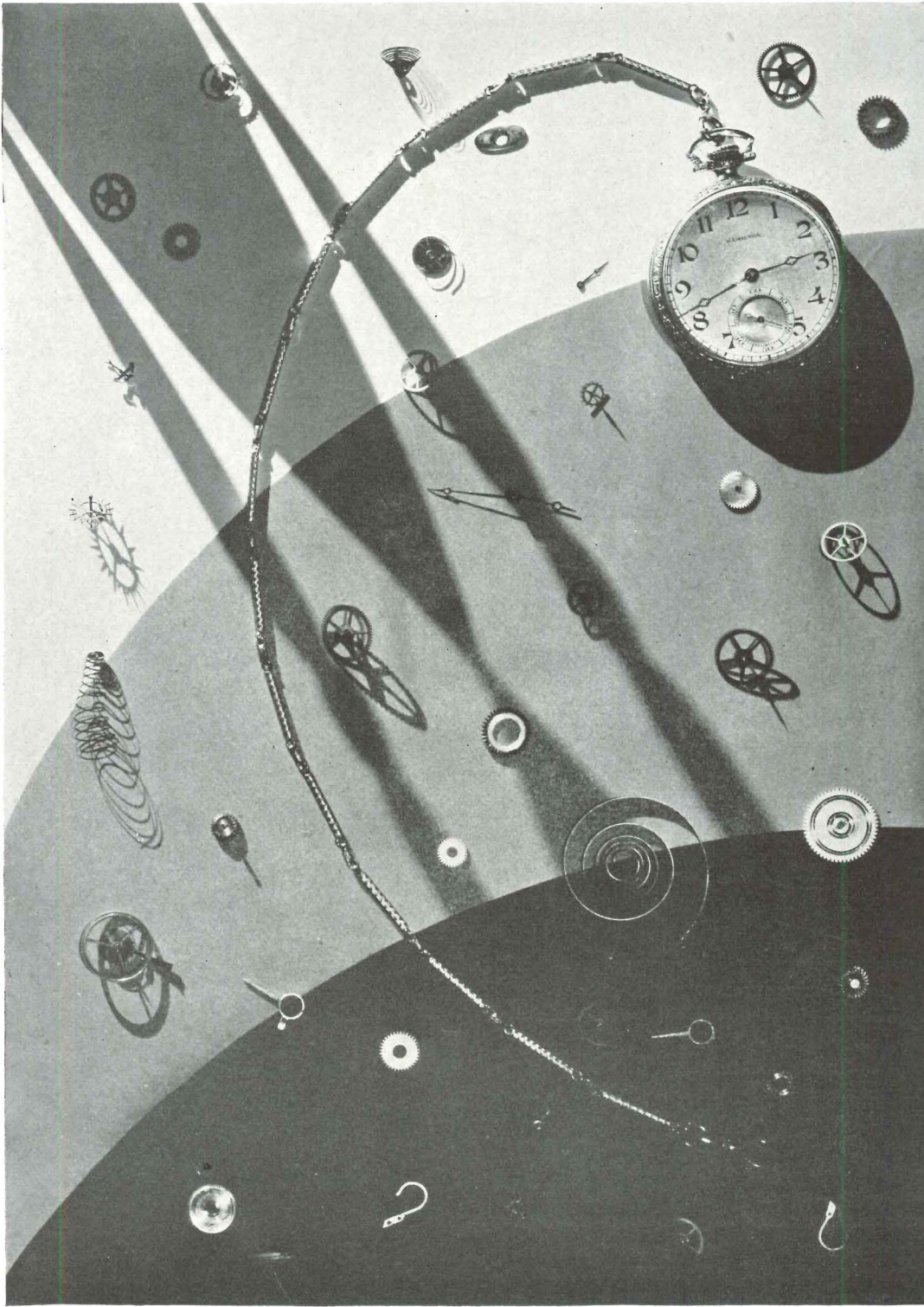
This realm is peculiarly the architect-planner's. Others whose business it is can work out details of legislation and administration as well, I will venture to say better, than he. Only he can present the image of the end toward which these working instruments are directed. Only he can provide the statesman with graphic projections of the still impossible, leading to imaginative political action that will set the machinery moving. Whatever else he does, this he must continue to do.

He must provide master plans for master politicians.



# DESIGNING WITH FLUORESCENT LIGHTING

By Dr. Matthew Luckiesh



*Any visual task involves four fundamental factors of visibility: (1) the size of the details to be seen; (2) the brightness-contrast between the objects and their background; (3) brightness of the objects, which varies with footcandle level; (4) time required to see. From "Light, Vision and Seeing," by Matthew Luckiesh, D. Van Nostrand Co., N. Y.*

*Director, Lighting Research Laboratory, Nela Park, Cleveland*

EVERYWHERE in the world of industry the taste, understanding and ingenuity of the architect are needed if the relatively unlimited possibilities of fluorescent lighting are to be adequately practicalized.

In the past decades of filament lighting, the ability of the architect was challenged only by the occasional interior. For the most part his problems in artificial lighting were confined largely to providing the wiring and outlets and to the selection of ready-made lighting fixtures. There were relatively few opportunities for ingenuity and creative ability, particularly in the work-world. But the advent of fluorescent lamps has opened a new era.

Artificial lighting is no longer confined to hanging individual fixtures on ceiling outlets. Structural details in new buildings can be the "fixtures." The architect can make structural forms serve the additional function of reflectors or luminous areas. In offices, drafting rooms and elsewhere, desirable impressions of extent, expanse, order, neatness and smoothness can be realized by lines, areas and patterns of light flush with the ceiling. Even in old industrial interiors the architect can lead troughs of light continuously in lines, curving around corners or combining in patterns, symmetrical and consistent with the work-spaces and with the interior structure.

#### *Fluorescent Lamps Provide Impetus*

The influence of a science of lighting, which has been evolving from the science of seeing, was already evident when filament lamps were still the dominant light-sources. However, with the advent of fluorescent lamps, the flood-gates of opportunity were opened wide. The new luminous era became an extensive and practical reality. The luminous efficiency of these new sources was initially more than twice that of filament lamps. They provided relatively cool footcandles. The amount of energy accompanying each footcandle is only about one-fourth that accompanying each footcandle provided by filament lamps. Fluorescent light upon the work and worker is comparable in coolness with natural light. For the first time in the course of light production, efficient and effective control of the color of artificial light became possible. World War II interrupted developments, but it can be safely predicted that in all these respects further progress is in the offing.

Filament lamps are not bowing off the stage. Their relatively small and brilliant light-sources make possible the optical control of light for a variety of purposes. However, fluorescent lamps with their relatively low brightnesses, large light-sources, coolness of light, and color quality which blends with daylight, will dominate the work-world. They provide opportunities for ingenious structural lighting, desirable area lighting, and satisfactory space lighting which provide adequate light for critical seeing over long periods.

#### *Good Seeing Conditions*

Seeing is a very complex matter which not only involves the task to be performed and the relationships of

light and sight. It involves brightness not only of the task but also of the immediate and general surroundings. Furthermore, the seeing conditions should be such that not only is seeing easy and comfortable at the moment, but over long periods of prolonged critical seeing. Here the major principles are merely stated but they are discussed in connection with illustrations selected for the purpose.

The dividends from better seeing conditions are paid not only in increased production and safety and in decreased waste of time and materials. Such benefits are more or less obvious and immediate. Less apparent, but of even greater importance, is the waste of human resources, such as eyesight and energy, as the days and years pass. The efficiency of a worker is not measured merely by the useful work he does per hour or per dollar. It is properly measured in terms of his expenditure of his own human resources. He is most efficient as a human seeing-machine when the waste of his resources is reduced to a minimum. Better lighting for easier seeing not only influences production, spoilage and safety today; its contributions to the conservation of human resources, to human welfare and to human progress extend far into the endless procession of tomorrow.

The objectives of lighting and seeing conditions can be simply stated if not easily attained:

1. Maximum visibility of the object to be seen or of the visual task to be performed.
2. Maximum comfort of the observer (worker) at all times and, more broadly, maximum ease of seeing when critical seeing is being done.

The term, comfort, is here used in an extended sense. It means more than the absence of obvious discomfort, for it includes effects of seeing which cannot be appraised introspectively but which combine to produce some degree of ease of seeing.

The minimum requirements that should be fulfilled by a lighting installation are briefly:

1. There must be a sufficient quantity of light (footcandles) on the object to be seen or on the task to be performed.
2. The light must be applied so that the distribution of brightness in the visual field does not cause unnecessary annoyance or discomfort. This involves the elimination of preventable glare from light-sources and the proper reflection-factors of surfaces obtained by paint or other finishes.

Reduced to its fundamentals, comfortable lighting and good seeing conditions depend chiefly upon three factors which should be borne in mind in studying any work-world environment. They are briefly:

1. *Footcandles on the seeing task.* The requirements in this respect vary enormously for various work-world tasks.
2. *Footcandles at the eyes of the worker.* These should be limited to a fraction of that on the work. Too much light on the eyes compared with that on the work definitely means unnecessary glare. The results are decreased visibility and increased annoyance and discomfort.
3. *Brightness of light-sources (or areas) and brightness-ratios in the visual field.*

**1.** Fig. 1 illustrates a very common defect of lighting installations in industrial places. The bright fixtures are seen against the dark background above. This background is dark for two reasons. Little light

reaches it directly, and the reflection-factor is low. The ceiling, and generally the upper walls, should be painted white, and an appreciable amount of light should be permitted to escape upward. The resulting

luminous background greatly decreases the brightness-ratio between the bright fixtures and their immediate surroundings, reducing the glare from fixtures in the visual field of the worker.

The sky outdoors greatly mitigates the glare of the sun, and it contributes light to the shadows. Of course the sun is too bright to be viewed with comfort, but on a hazy day the analogy is fairly satisfactory. Good lighting and seeing conditions indoors are produced by the equivalent of a luminous sky. Light and white paint (or its equivalent) on the ceiling are generally essential for comfortable seeing indoors.



**1.** Illustrating some common defects of lighting: spottiness, shadows, dark ceilings and high contrast-ratios between fixtures and their background



**2.** This is some better, but there is still too much contrast with the dark ceiling, even though fluorescent lamps are not as "bright" as filament lamps

**2.** Although high brightness-ratios between lighting fixtures and the ceiling are more common defects in filament lighting, the same short-coming is found among fluorescent lighting installations. Fig. 2 illustrates some improvement over Fig. 1 by supplying more footcandles at the work from sources of fairly low brightness. There is also an advantage of less harsh shadows due to the more extended light sources and fixtures. However, the ceiling is still dark, with the result that the brightness-ratio between the fixtures and their background is too great for ideal seeing conditions. If a worker must be in such a position that the length of the room is in his field of view, and if he is looking in a horizontal direction, the footcandles at his eyes would be a rather large fraction of the footcandles on his work. This would indicate too much preventable glare. Plenty of light on the work and not too much light on the eye is a simple statement of an objective which is not always easy to attain. However, it must be attained if seeing conditions are to be satisfactory.

**3.** Naturally, with the advent of fluorescent lamps, lighting fixtures were adapted to utilize them. However, as the lighting industry began to sense the extended possibilities of these long light sources of low brightness, the old fixture traditions began to give way. An example of



an installation of fluorescent lamps without fixtures is illustrated in Fig. 3. Advantage was taken of the structural forms in the ceiling. These were not specially designed to be ideal for the purpose, but they illustrate the possibilities that are within the control of the architect. The resulting illumination on the theoretical horizontal work-plane was 85 footcandles after 1000 hours of operation.

This level of illumination is readily obtained with fairly satisfactory seeing conditions. A worker looking in a horizontal direction perpendicular to the ceiling beams is not confronted with bare lamps in most of his visual field. The lamps are screened from his eyes by the beams. The sides of the beams are painted white so that the ceiling appears to be an expanse of brightness intercepted at close intervals by the darker bands. This installation suggests what an architect might accomplish by designing the ceiling members so as to perform their major purpose as supports and still be ideal in form for the most efficient utilization of light. The sides of the recesses might be inclined more from the vertical or might be curved. The cross-section could be parabolic so that the light might be directed more generally downward. This would result in less light lost by multiple reflections in the recesses themselves.

If the sides of the recesses were properly sloped or curved, there is some advantage in using aluminum paint. Its characteristics are such that the apparent brightness of the sides could be reduced if desirable and still efficiently reflect the light generally downward.

**4.** In large interiors with very high ceilings many individual fixtures contribute light to a given work place near or at the floor level. The effect approaches, in some major respects, the lighting effect of a large expanse of uniformly bright ceiling. This is illustrated in Fig. 4. The floor is of concrete with a relatively high reflection-factor. This so-called white concrete is an excellent feature which contributes favorably to lighting and seeing conditions. The floor reflects some light to the ceil-



**3.** *Structural elements serving as lighting fixtures illustrate design possibilities. (Installation at W. M. Welch Manufacturing Co., Chicago)*



**4.** *In a large interior, with high ceilings, the fixtures should be hung as high as possible. (Bell Aircraft plant, designed by the Austin Company)*

ing and upper structure, which are properly painted white. This reduces the brightness-ratio between the fixtures and their background. These brightness-ratios are still too high to be ideal. Some lamps might well be installed so as to send their light to the upper regions. The reduction of these brightness-ratios is an important objective toward the realization of the over-all objective of comfortable seeing.

In a large interior such as illustrated in Fig. 4, the fixtures can be

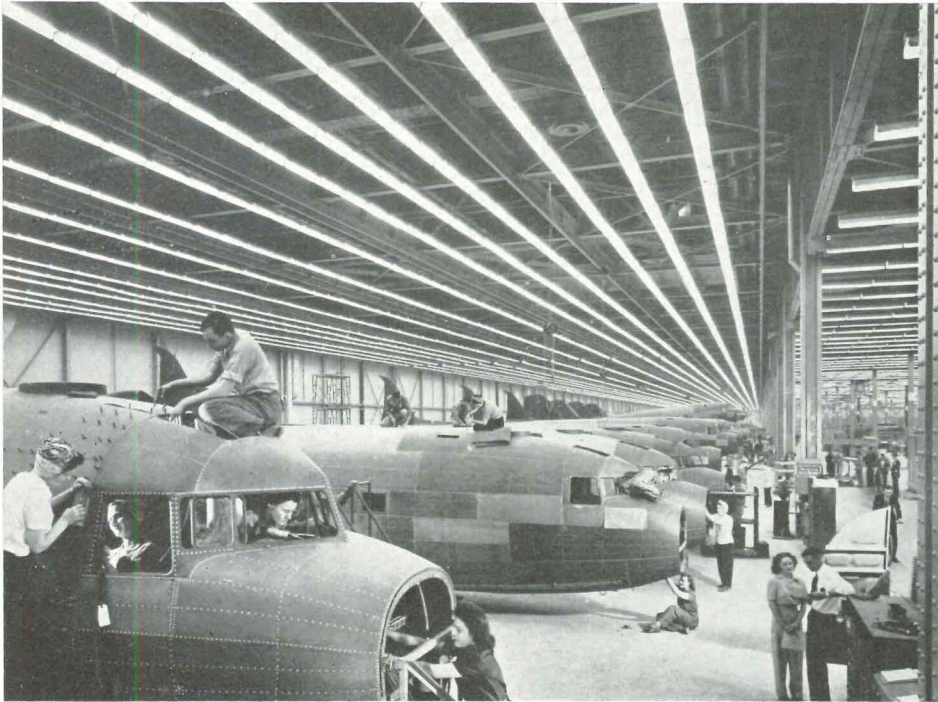
hung high without seriously reducing the efficiency of utilization of light. Actually, if a work-area is very large, the fixtures can be hung very high without any appreciable loss of light. This is a simple fact which is easily proved; it is surprising that so many persons believe that light is wasted in such interiors if the fixtures are hung high. Hung high, fewer of them are in the visual field of the worker. This reduces the foot-candles at his eyes, which is a partial measure of glare.

**5.** In Fig. 5 is illustrated a low-ceiling section of a windowless aircraft plant of enormous area. Here individual two-lamp fixtures were installed in continuous strips, with a sufficient number of rows to provide 55 footcandles throughout the horizontal work area. The floor is of so called white cement, which reflects a good deal of light upward, thus promoting both visibility and comfortable seeing. The result on the upper and vertical surfaces of

the aircraft is a fairly "shadowless" illumination.

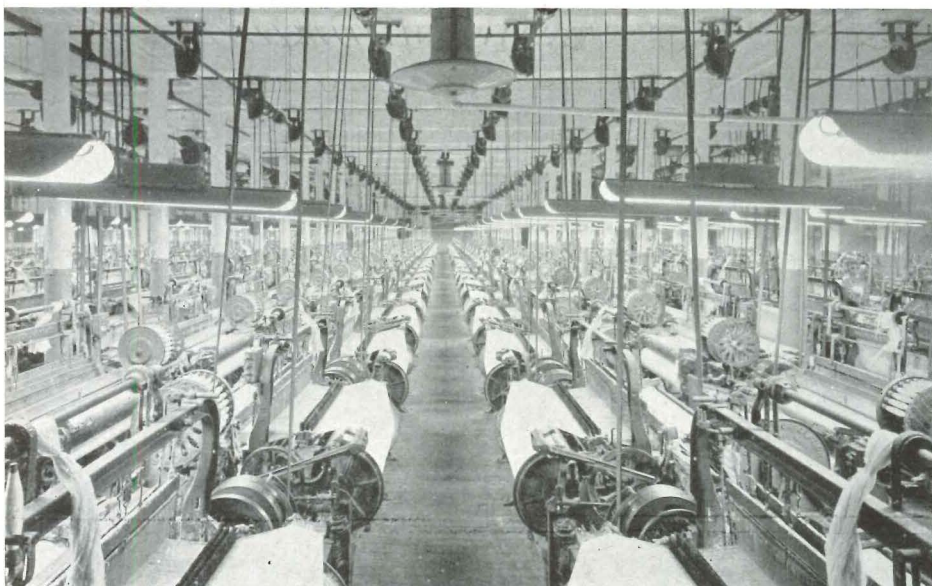
The result can best be appraised by recalling how satisfactory the lighting is outdoors in the shade of a building. The annoyance of shadows is reduced to a minimum and many work surfaces, regardless of their orientation, are well lighted. Of course, portable lighting units are necessary for critical seeing in the interior of the aircraft. The lighting and seeing conditions ap-

proach that of a natural skylight without the annoyance due to powerful sunlight in the latter case. Incidentally, the reflectors were made of pressed wood which was bent to a proper shape and coated with a synthetic white enamel. This illustrates another departure from the traditional use of metal reflectors. Architects may well bear this in mind in designing strips, areas, troughs and coffered to fit the location and routing of work.



**5.** Close-spaced continuous strips of light in a low-ceiling area provide "shadowless" lighting approaching a skylight effect. (The Austin Company)

Hedrich-Blessing Studios



**6.** Acres of intricate machine parts and threads in this textile mill can be seen easily; ceiling lighted by reflection. (Mills Mill Co., Greenville, S. C.)

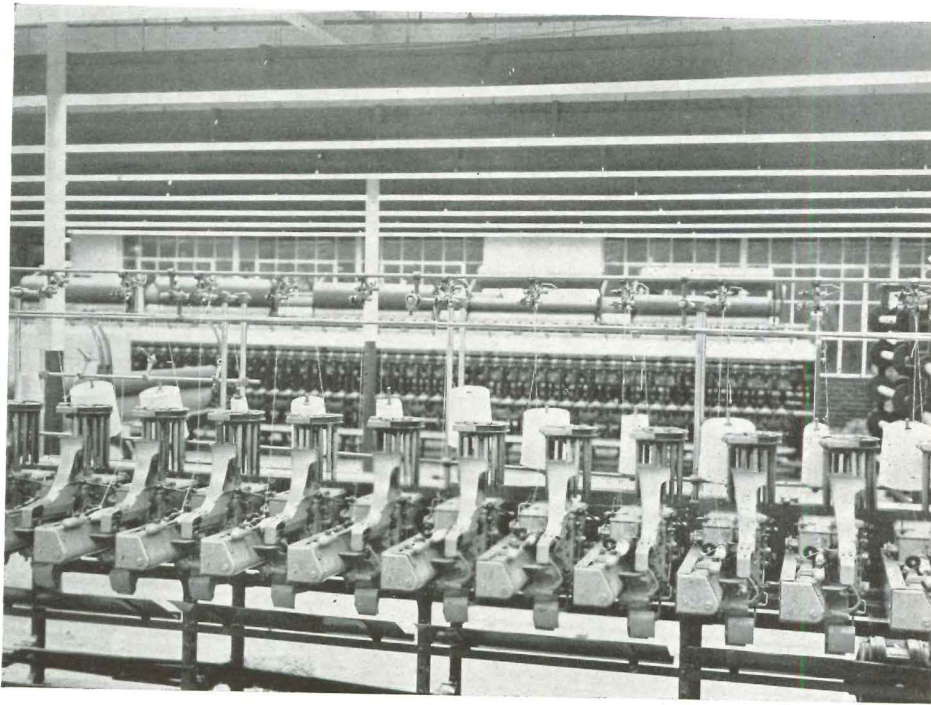
**6.** Textile mills well represent the extreme condition where critical seeing must be done everywhere throughout acres of intricate machines. The results illustrated in Fig. 6 are a far cry from the seeing conditions in many mills with the spotty and shadowy lighting due to poor spacing of filament lamps. This is one of the first installations of the fluorescent-lamp era in textile mills. The fixtures were spaced at 8-ft. intervals and hung from the ceiling as shown. They supplied 40 footcandles to the critical work-areas. With the ceiling painted white, it is far from dark, due to the light reflected upward from the white textiles. However, eventually it will be recognized that, in such places where the ceiling can be maintained with white paint, it is not a waste of light to emit some

light from the lamps directly upward. This reduces the brightness ratio between the fixtures and their background as seen by the workers, which results in increased visibility of the work and in more comfortable lighting.

**7.** Continuous strips of fluorescent light are illustrated in Fig. 7. The room is 152 ft. long and 50 ft. wide. There are 25 rows of metal troffers, each consisting of 12 4-ft. sections and each section containing a 40-watt, 48-in. fluorescent lamp. The level of illumination from the skein to the rack is 35 to 40 footcandles. By installing two lamps in each section, 75 footcandles are readily obtained. Here again it is seen that in designing such a structure it may be easy to provide places for continuous strips of artificial lighting. The installation as illustrated in Fig. 7 represents a great step away from spotty shadowy lighting of the dark era of not long ago. However, higher levels of illumination are still desirable and preventable glare can be still further reduced. It appears unnecessary to emphasize that the greatly improved seeing conditions inevitably pay large dividends in decreasing spoilage and waste of time. Furthermore, favorable effects upon the attitude, morale, safety, eyesight and expenditure of energy of the workers are inevitable. Workers *are* human beings and as such they cannot escape the favorable effects of favorable seeing conditions.

**8.** A close-up of frame spinning is illustrated in Fig. 8. The rows of luminous troffers were spaced 6 ft. apart and in each row there were two continuous lines of 40-watt, 48-in. fluorescent lamps. The illumination at the upper rolls is 57 footcandles and at the lower rolls is 40 footcandles. On the vertical plane of the machine there were about 30 footcandles.

Although these levels of illumination are far less than outdoors in the shade, the lighting from the viewpoint of being able to see the various details regardless of their orientation is reminiscent of skylight



**7.** This "great step toward daylighting" makes countless details fairly visible from most directions. (Installed at Uxbridge Worsted Co., Uxbridge, Mass.)



**8.** From the standpoint of seeing details regardless of their orientation, this lighting approaches that of outdoors in the shade. (Uxbridge Worsted Co.)

outdoors in the shade. Imagine the ceiling of this interior to be tilted on one edge until it is vertical, leaving these intricate machines and processes exposed only to the out-

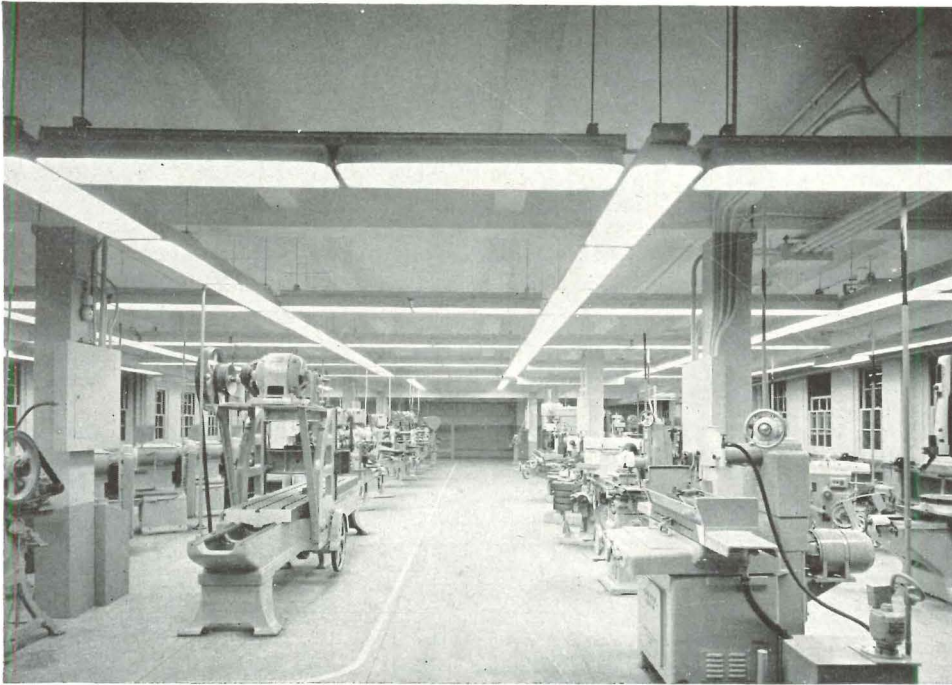
door skylight. It does not tax the imagination to visualize how easily all the moving threads and all the intricate parts of these machines could be readily seen outdoors.

**9.** In Fig. 9 is illustrated an advanced example of the use of fixtures in continuous strips and the proper use of paint as a powerfully to lighting and seeing. With continuous luminous strips in two directions at right angles to each other, the elimination of annoying, harsh shadows is fairly well achieved by a general-lighting system. A large luminous area such as a skylight or the ceiling of an indirectly lighted

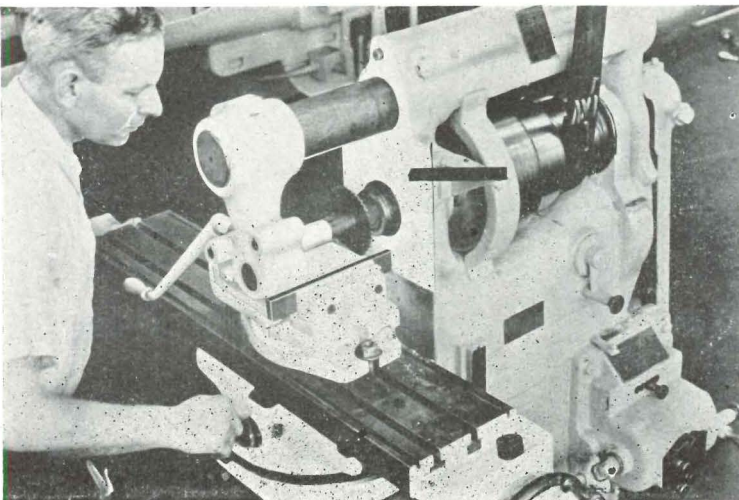
room sends light to the work from many directions. This greatly reduces the shadows cast by the worker or by parts of the machinery upon the critical visual task. Where luminous strips are widely separated as in Fig. 9, the additional strips at right angles are helpful in reducing undesirable shadows. The illumination on the horizontal work-plane is 85 footcandles.

In this case paints of proper re-

flexion-factors are used on ceiling, walls and machinery. It has long been known that by painting appropriate areas of machines with white or other highly reflecting paint, seeing of the critical tasks and parts of machines is improved. This is due in part to the reflection of light by these areas and partly to the bright backgrounds against which the critical detail of the task is silhouetted.



**9.** An excellent example of the use of light and paint to reduce harsh shadows. Criss-cross arrangement helps to minimize glare. (New York Trade School)



**10.** Better seeing, better safety, from painting machine parts white

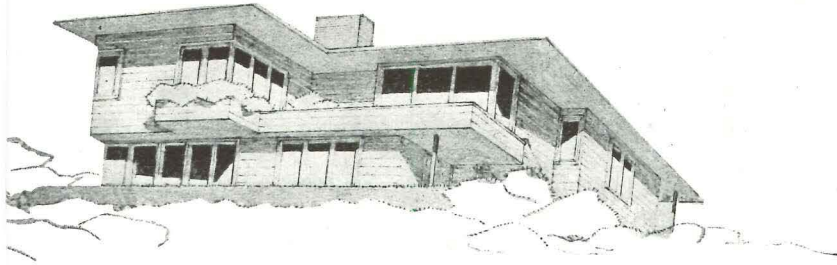
**10.** In Fig. 10, a close-up of a machine, with certain parts painted white, suggests something of the contribution made to visibility and easier seeing which results in better work and increased safety. Colored paint has some possibilities from a safety viewpoint, but one should avoid the confusion of too many colors. The use of color should be restrained and should be based on careful study of each case. Brightness is the major factor in seeing, but color can be used to delineate dangerous parts of machines. The color should have a fairly high reflection-factor in order not to lose the brightness-contrast advantage.

(To be continued)

# HOUSES

*Architectural Record's*

*Building Types Study Number 108*



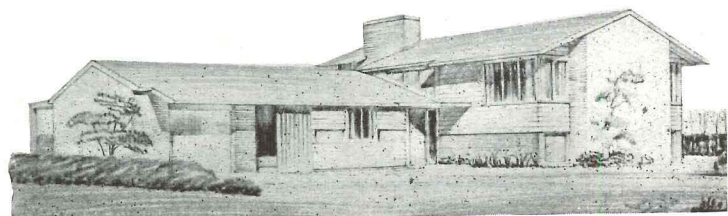
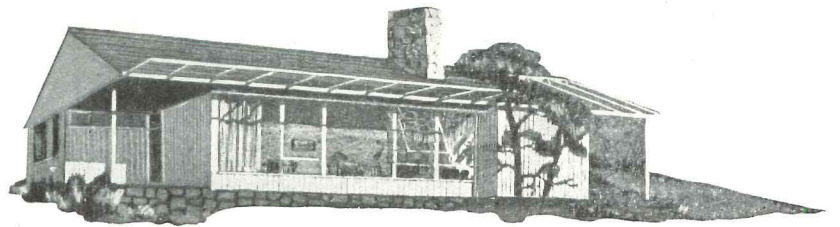
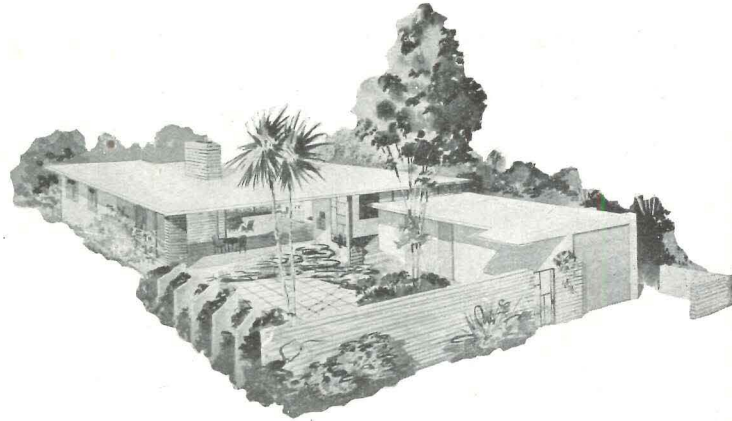
NORTH, south, east, and west, drawing boards are feverish with new plans today and many of them read, "A Residence for Mr. and Mrs. ———." New houses are needed in great quantity and new houses are going to be built. The subject is hot in more ways than one, however, because the house is probably the most contentious of all the architect's problems; sometimes it has raised more ructions than roofs. One conclusion is very evident now; there is no *one* over-all formula for the house in this country. Neither prefabrication of itself, nor flat roofed rectangles with solar heated, in-line rooms, nor modified Colonial schemes will supply the one solution.

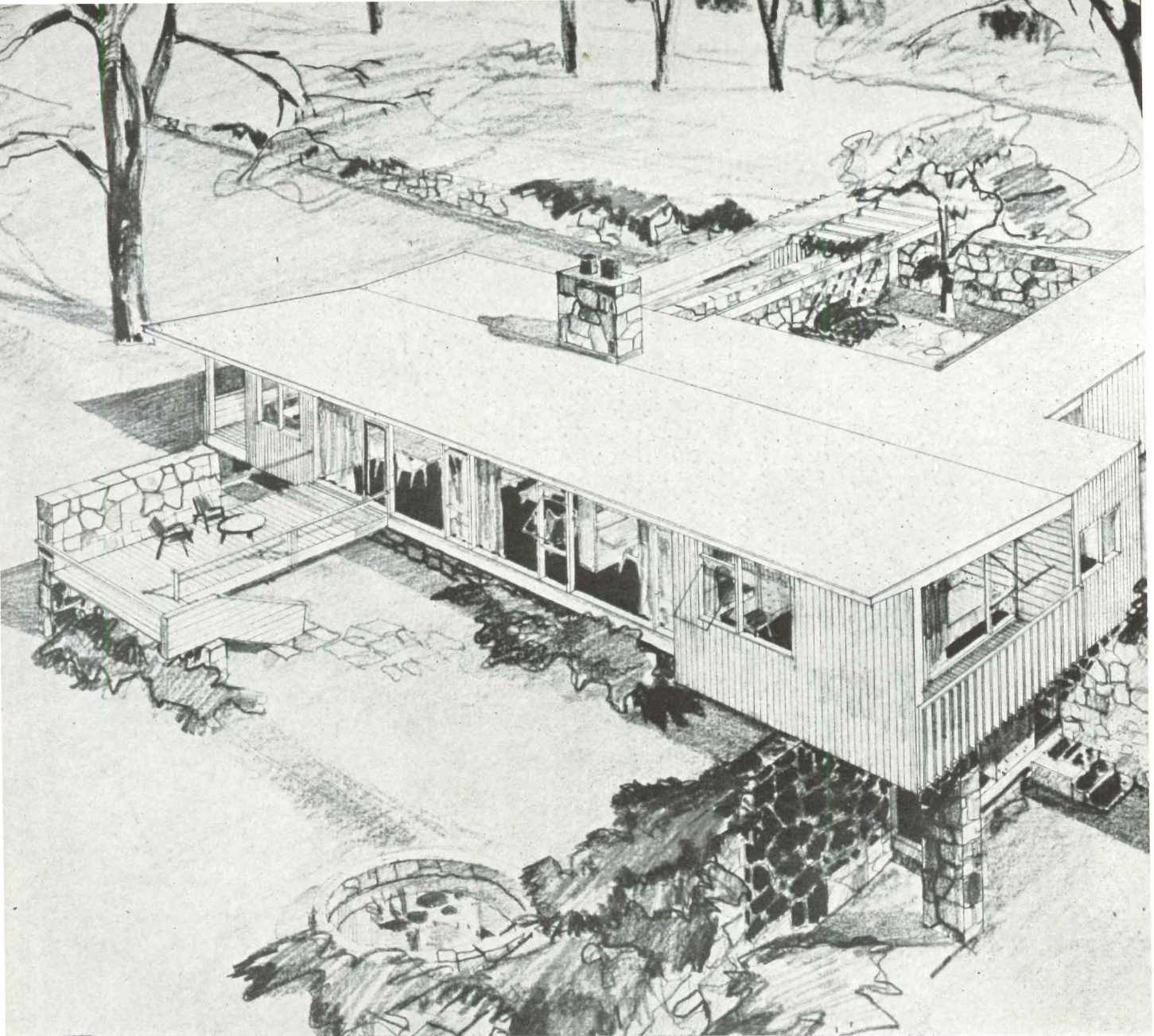
On the following pages we show some recent work of outstanding residential architects in representative, particularly active parts of the country. These houses are moderate in size and modest in cubage but the designers have skillfully integrated the space at their disposal so that ample, enjoyable living facilities are provided, not mere minimum space. They've included the double duty rooms, the abundant storage space, the extension of the house to outdoor areas, and other features which literally expand the physical limits of the house. All are houses designed for specific clients, not post-war dreams, and they are tailored to their owners as well as to their sites.

Notable among them are the houses designed for three levels; at a time when building costs require space saving ingenuity as never before, the three level scheme provides the extra rooms and extra livability at not much over the cost of a one-story house. By staggering its floor levels this scheme gives living quarters ground level location, while sleeping quarters and basement recreation room or study gain the natural seclusion and quiet of a higher or lower floor level.

There are also a number of basement and one story house designs which rejuvenate that scheme. In place of costly, waste cellar space, these hillside designs excavate partial basements at the rear of the house to gain above-ground quarters for the extra bedroom and bath, storage space, extra living room or study, which would cost more, require more heating, if added to the house as a second story.

The heating merits of these two schemes are of particular interest in view of R. K. Thulman's heating article, included in this issue, which summarizes new heating practice and methods and speaks out frankly on some recent theory.



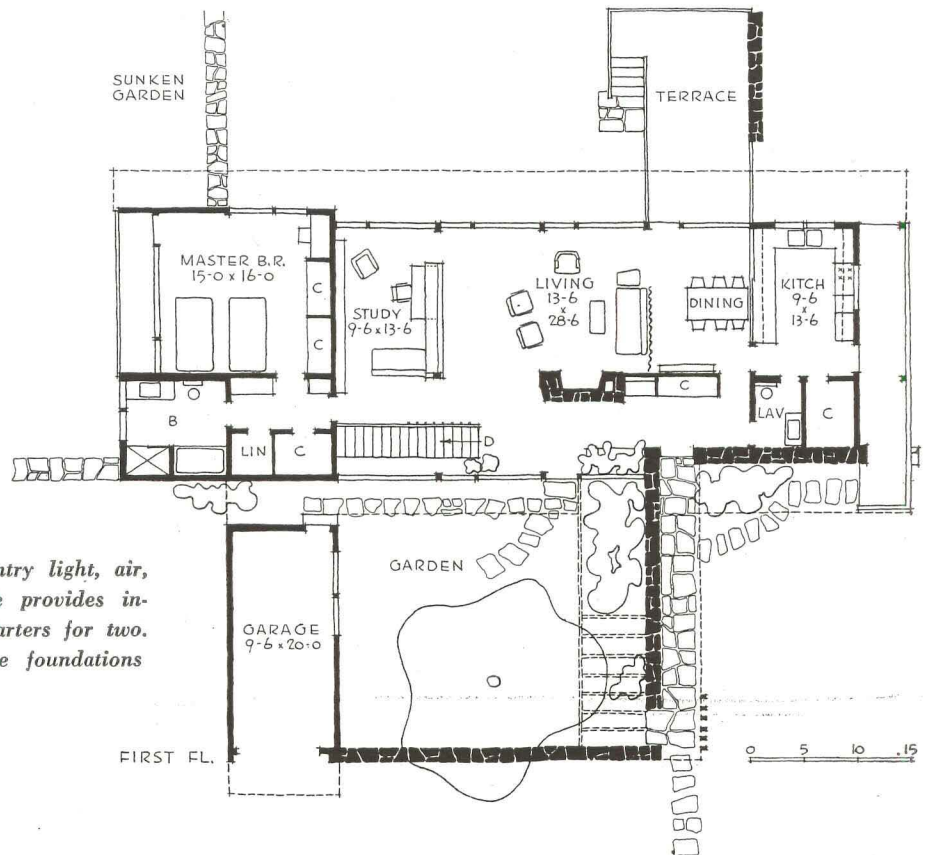
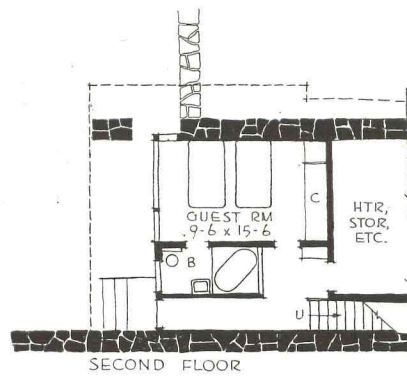
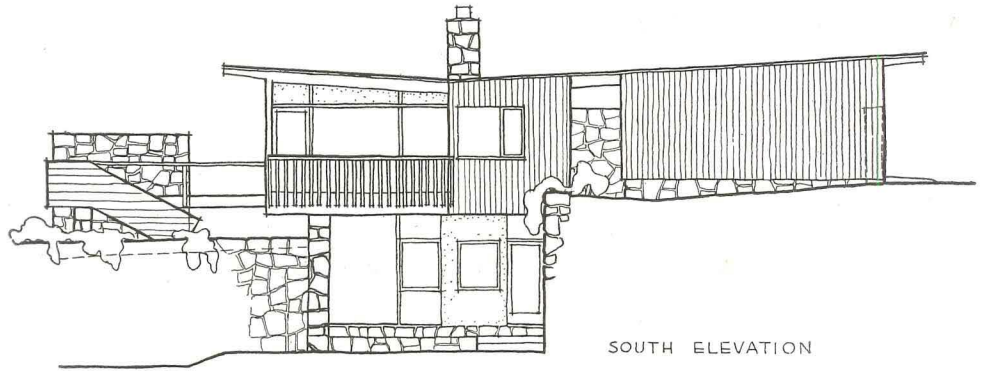
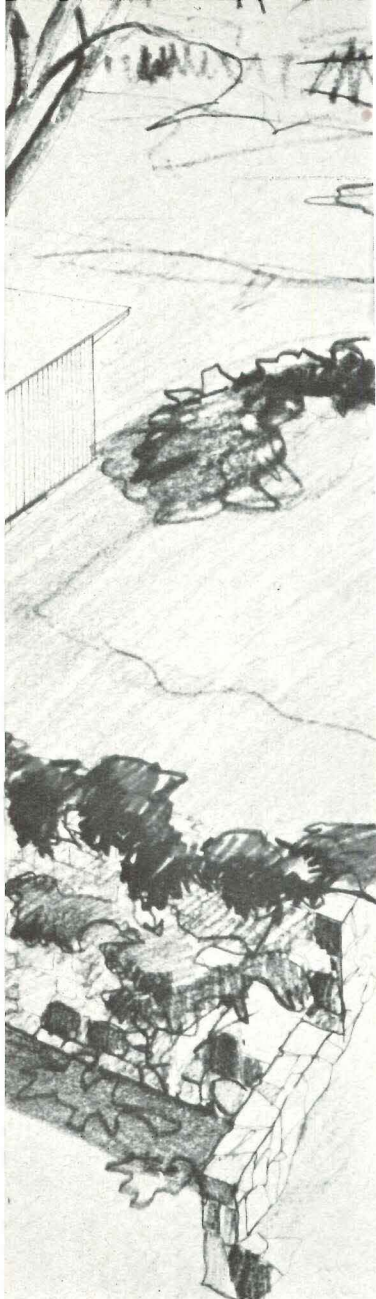


## MASSACHUSETTS

*Residence for Dr. Harry C. East, Andover, Mass. • Hugh Stubbins, Jr., Architect*

**T**HERE'S more to this scheme than meets the casual eye. The master bedroom, kitchen porch, and pergoled path to the front door, give every side of this house a pleasant tie with the gardens fore and aft of it. Add to these features exterior walls which are chiefly of glass, for indoor enjoyment of the countryside, an interior agreeably casual and informal in its arrangements while still providing areas carefully tailored for specific functions, and you have a house happily fitted for country living. The site is no stranger to such because it used to hold an old farmhouse whose foundations have been incorporated in this design to eliminate much grading. A silo foundation will become a lily pool and cows will be mildly surprised to find a

sunken garden within the foundation walls of their demolished barn. Inside the house, wall cabinets will divide kitchen from dining space *and* supply service between the two, cabinets serving as useful furniture will set the study apart from the general living area, and a movable curtain partition can give seclusion to the dining spot. Privacy is given the master bedroom by the only major permanent partition on the main floor. The location of the house on old foundations allows a hospitable guest suite below stairs and abundant storage space. Outside walls will be fieldstone and painted cedar siding, interiors of plaster; shed roofs, tar and gravel; floors, stone and wood; heating, radiant heating arranged in the ceiling.



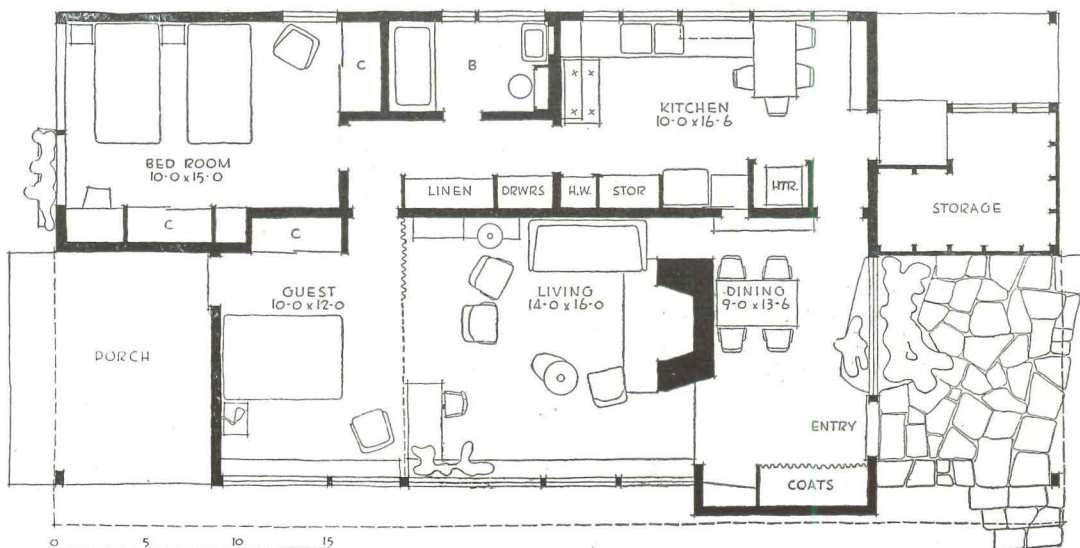
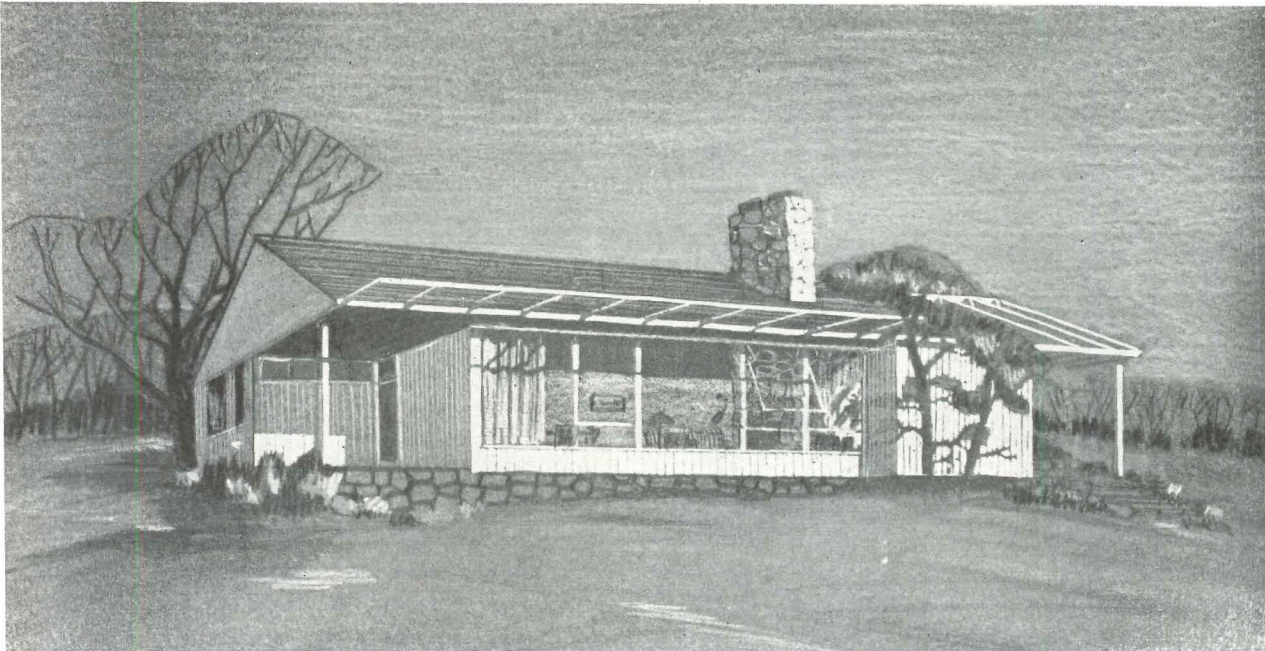
*Leaving itself wide open for country light, air, view on three sides, this scheme provides informal, flexible, well equipped quarters for two. It will incorporate old farmhouse foundations*

# PENNSYLVANIA

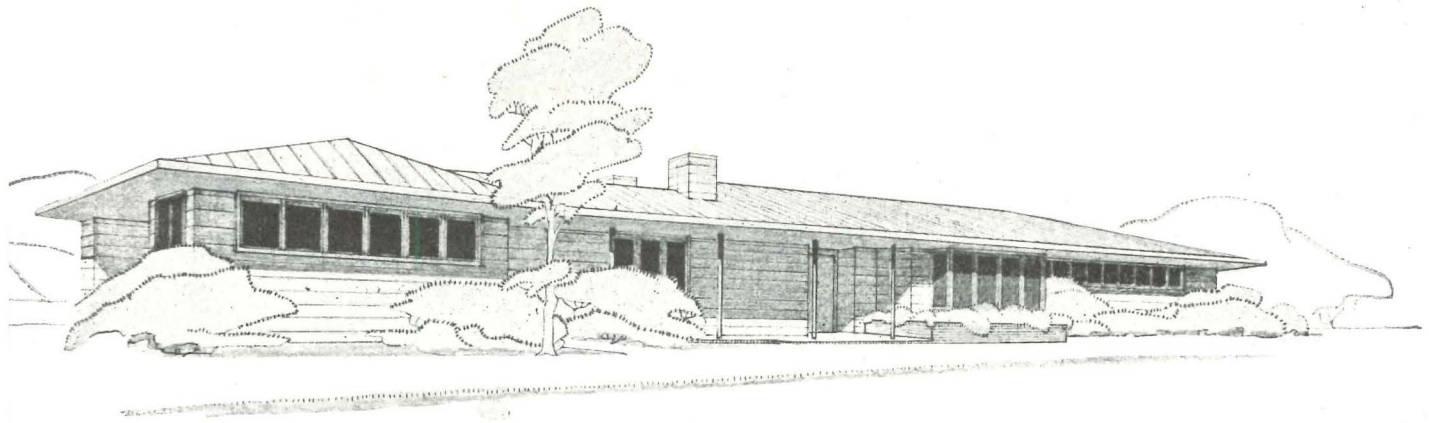
*Bucks County, Pennsylvania house • Hugh Stubbins, Jr., Architect*

OTHER than the short passage between bedroom, bath, and kitchen at the back of the house (and it includes storage), no space is wasted on halls in this open plan. The front of the house, glazed to overlook the rolling Pennsylvania countryside, is one big living room. A movable partition can shut off the end of the room next to the main porch for an occasional guest, and table and chair group at the other end form a dining spot (served by open cabinet in the kitchen wall) which may also be used for

cards, work or study. A stone floor marks off this dining area, which does additional duty as the front entrance hall—a pleasant combination reminiscent of the old country farmhouse in which the most used entrance led to a sociable kitchen-dining room. The flagged entrance porch has a glass roof to prevent darkening the dining hall, a welcome feature where gaining a desirable porch frequently means spoiling a desirable interior. The house will be vertical cedar or painted redwood outside, plaster inside.





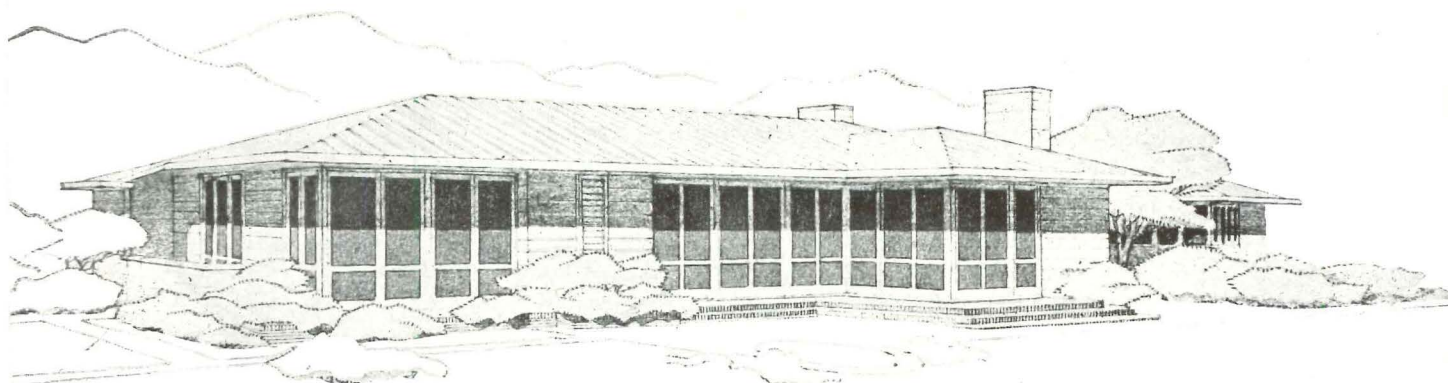
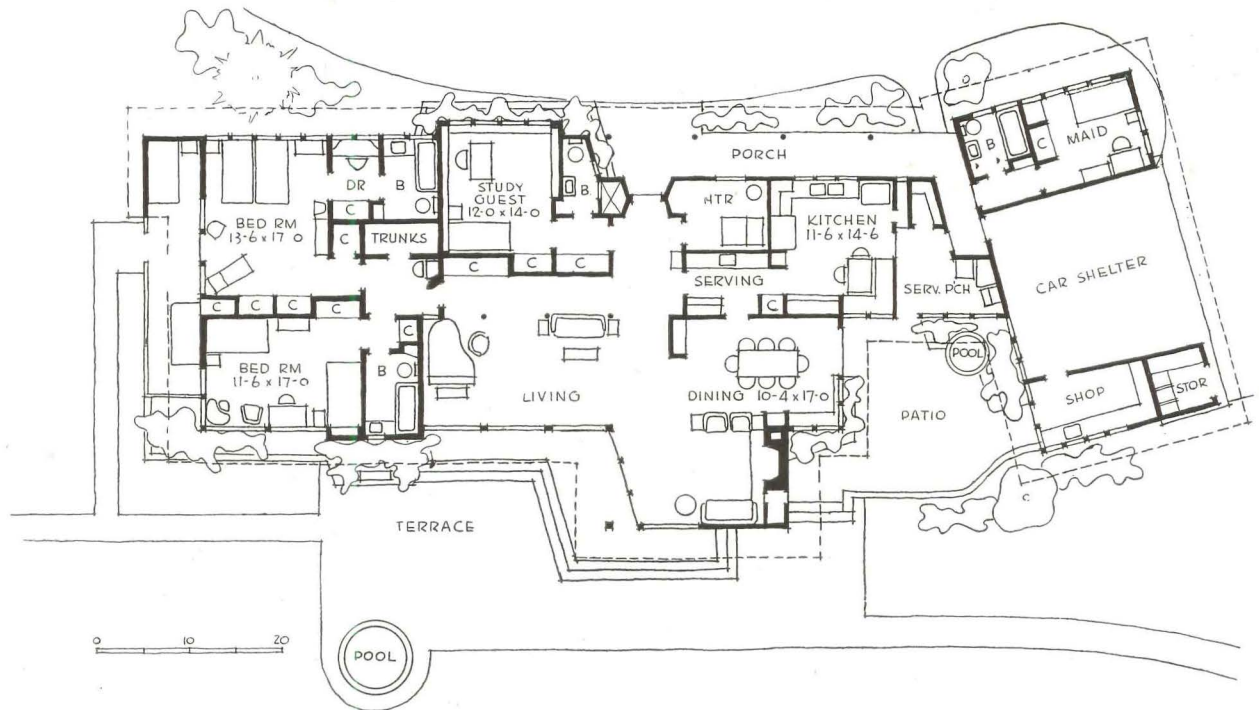


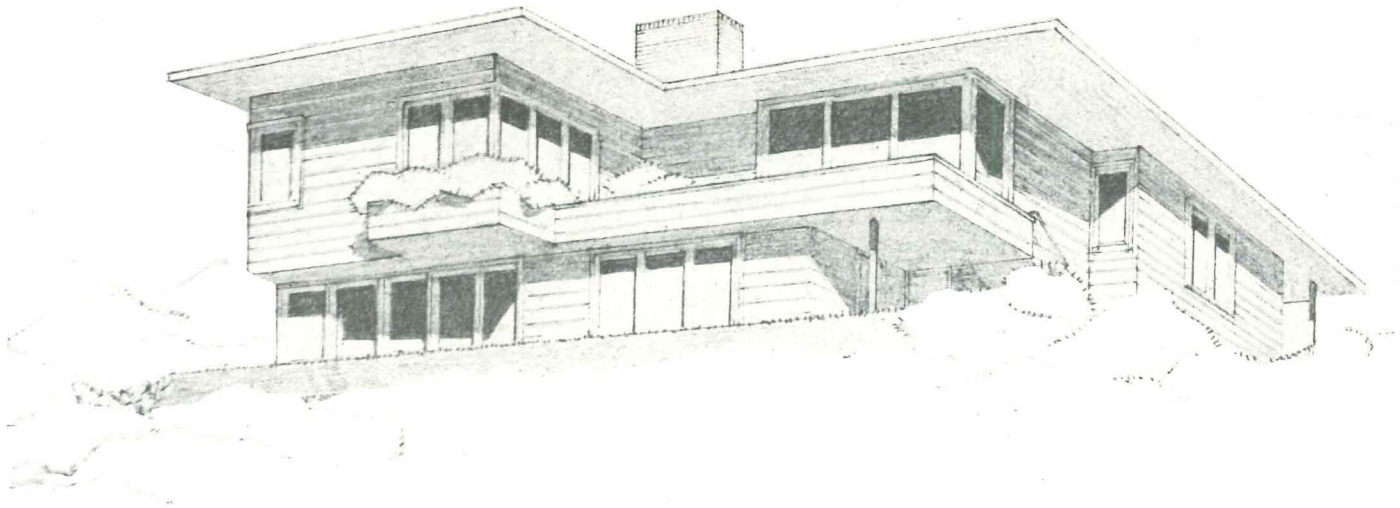
# CALIFORNIA

*Residence for Mr. Herbert N. Witt, Kent Woodlands, Cal. • Howard Moise, Architect*

**T**AKING its cue from its level lot and two-acre scope, this house spreads itself long and low, keeping woods and mountain in view, while achieving a modestly spaced, well coordinated plan. The living room jogs out to catch southwest views with full windows but is protected from afternoon sun by roof overhangs.

Extra assets of the plan are its abundant closet space, privacy of study-guest room, independence of servant quarter, enlargement of living room by adding circulation space without turning room into a hall, insulation of living-dining area from kitchen noises and odors by serving pantry and the well protected southeast patio.



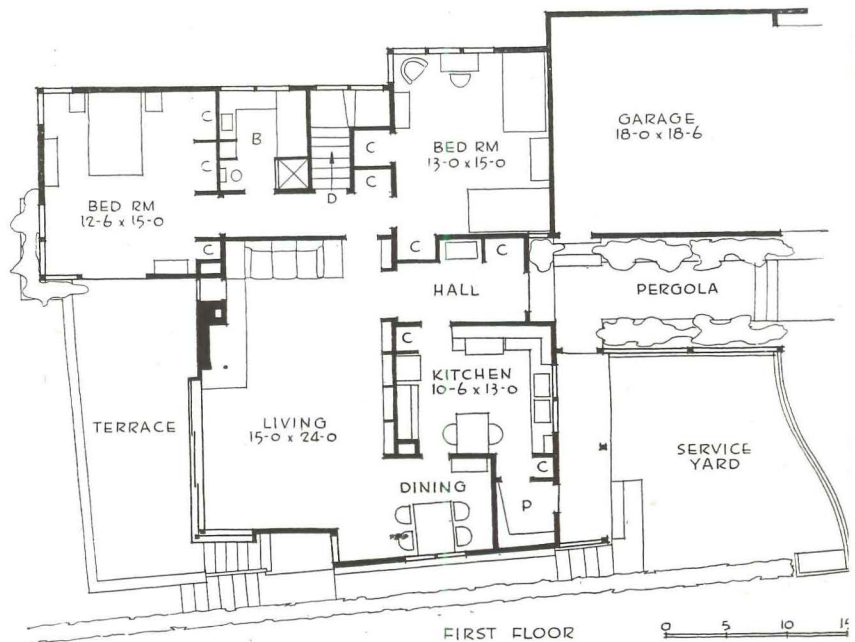


# CALIFORNIA

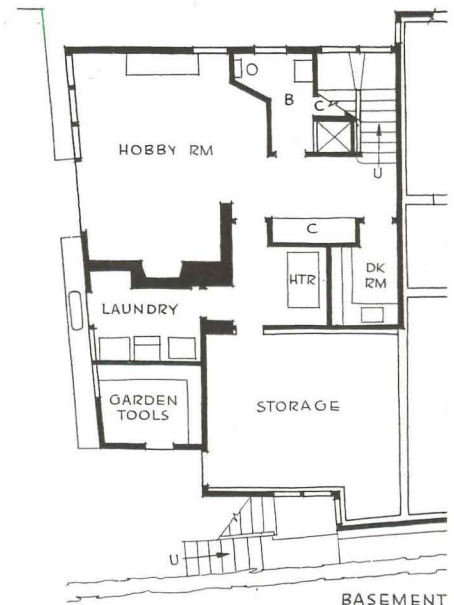
*Residence for Mr. and Mrs. E. F. Zimmerman, Berkeley, Cal.*

*Howard Moise, Architect*

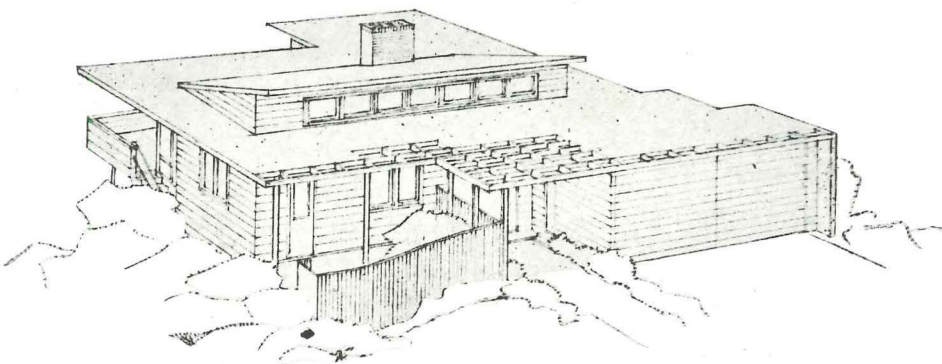
THE back of the house, facing west, gets first call here; the downhill site gives it that fabulous San Francisco bay view, enables it to add a lower story. Hobby room and adjoining bath, readily used as a guest suite or work room; dark room, tool room, plentiful storage space, laundry opening directly on ground level, are added, making the difference between a house of limited living space and one for ample living. The house is geared to the western view but windows are placed carefully on that side to minimize blazing afternoon sun, overhangs shade them on both stories, a bedroom wing extends out to protect living room terrace from north-west wind. East front of house includes clerestory windows for living room, enclosed front yard, covered passage from the garage to both front and kitchen doors.



FIRST FLOOR



BASEMENT

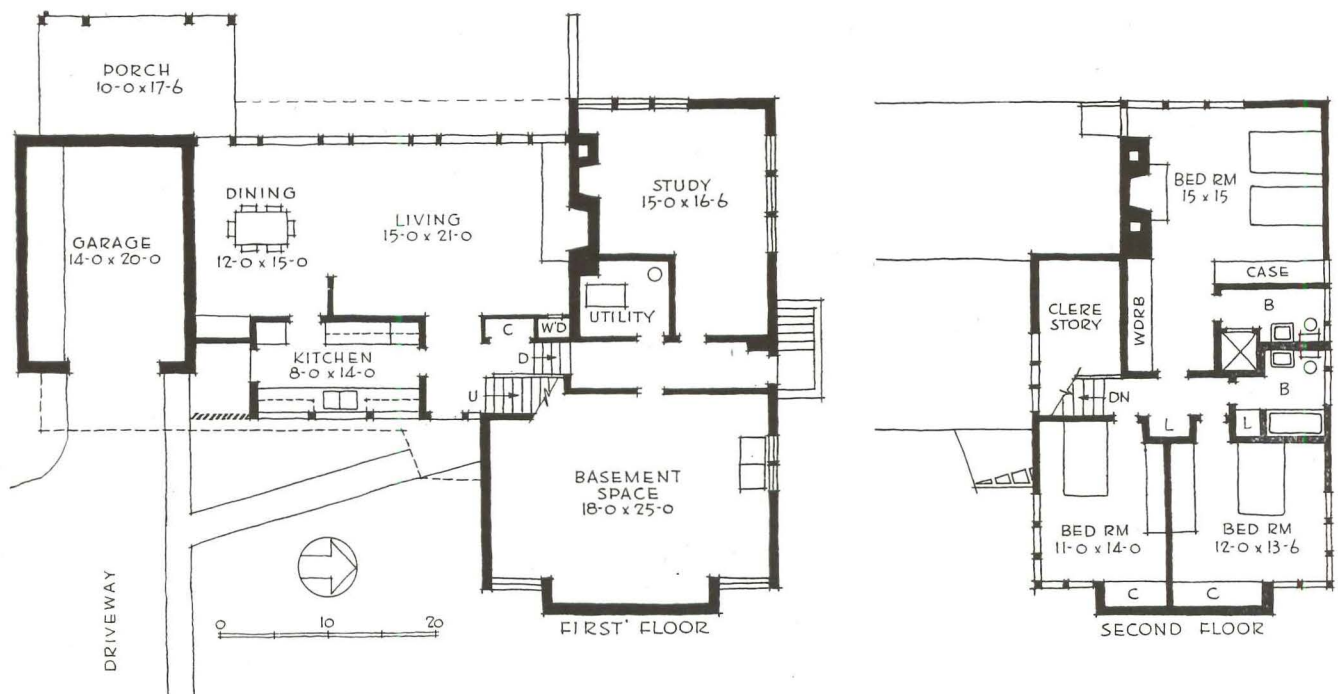
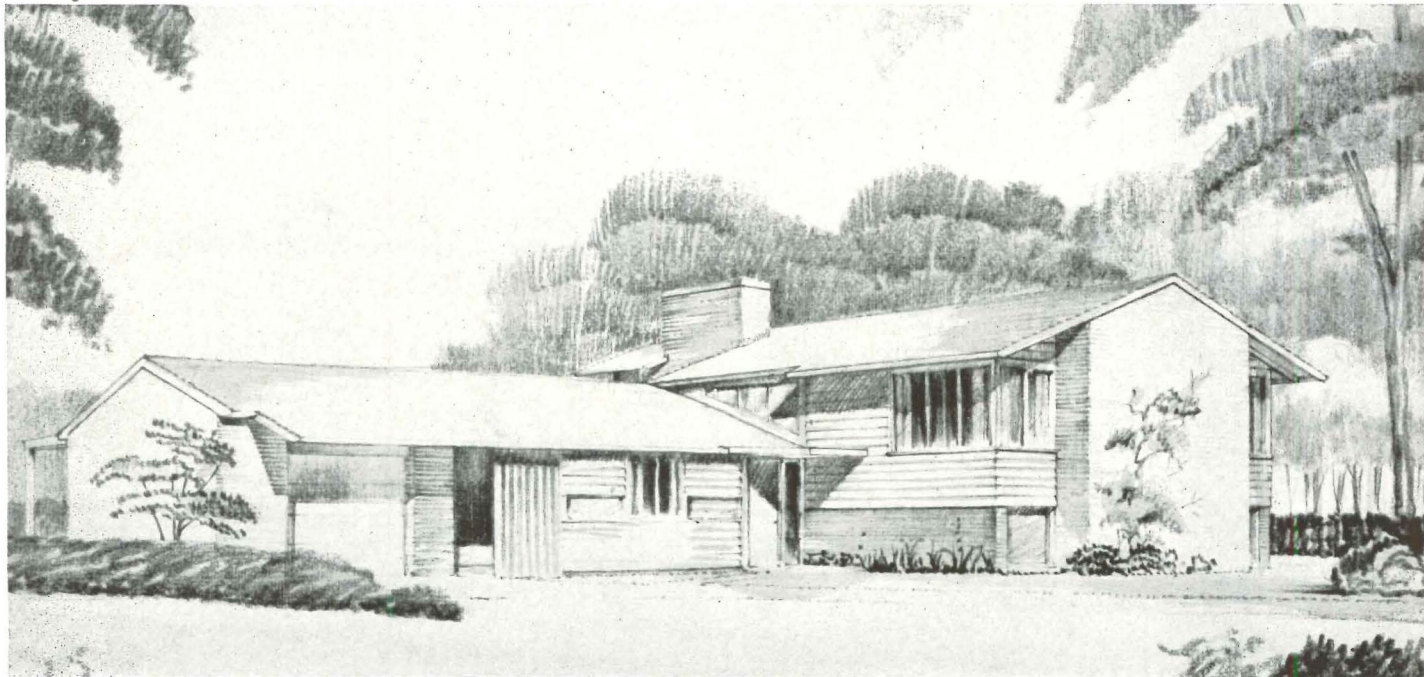


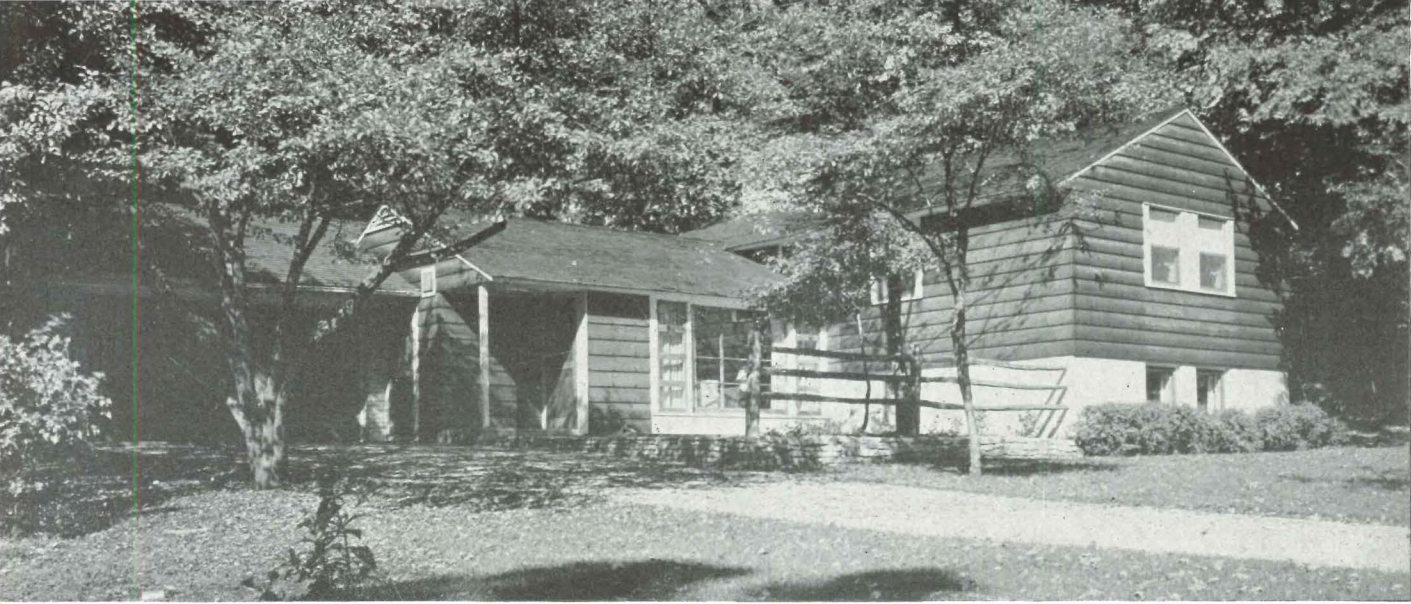
# ILLINOIS *Residence for Mr. and Mrs. A. W. and Lt. George Hitchcock, Highland Park, Ill.*

*L. Morgan Yost, Architect*

ADVANTAGES of the story and a half, three level house, are evident in this plan which the architect calls "an exercise in getting as much livable space as possible in a given volume." He makes the basement pay its way for the cubage it uses by planning it as a truly habitable floor, providing extra rooms which are well ventilated, well lighted by above grade windows. Handy to but separated from the main floor by a few steps, it is a logical spot for a private study and a general activity room supplementing the living room. The compact, L-shaped arrangement of the house—single story, living

room-service quarter ell, joined to two story basement and bedroom ell, not only adds up to an economical design calling for less construction than a similar number of rooms stretched out in one story, or in a full two stories, but the rooms are better related where nearness is a virtue, better separated where seclusion is desirable. The difference between short flights of stairs between floors and a full flight is a livability factor of major importance to those who live in a house day in, day out. As an additional blue ribbon, the compact plan is a cost saving factor in the installation of the heating system and in its maintenance.





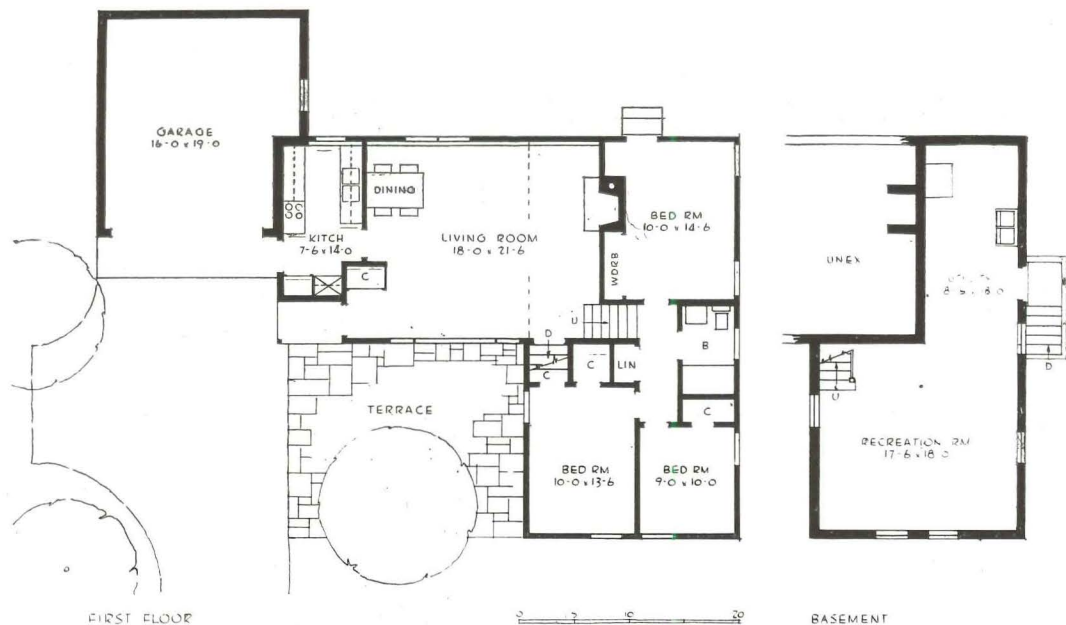
# ILLINOIS

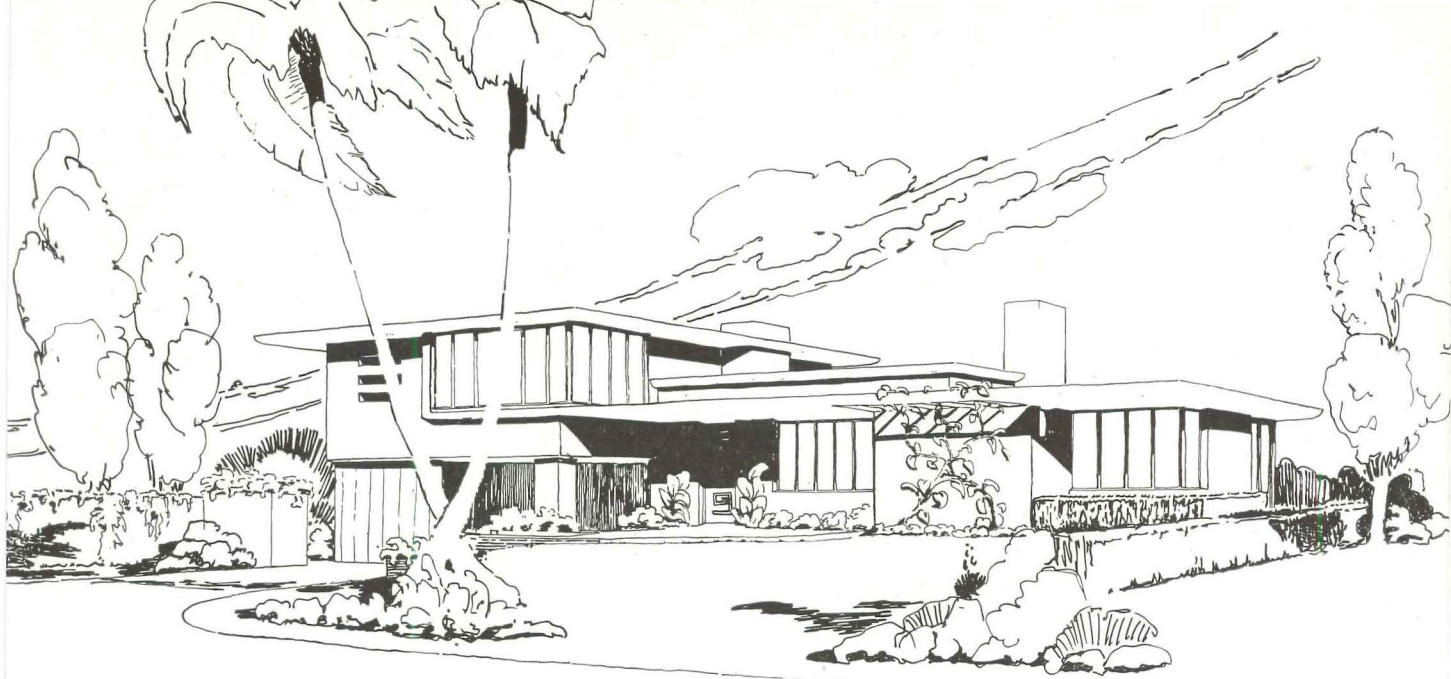
*Residence of Mr. and Mrs. J. C. Frehner, Highland Park, Ill.*

*L. Morgan Yost, Architect*



LIVING on three levels has worked successfully in this completed, occupied house. The closely knit scheme places the living room on ground level in easy reach of the important, view commanding front terrace. It locates the bedrooms seven steps up from the living room, sufficiently far away to give them seclusion, not half as far away or as tiring as a full flight of stairs. It fits in a recreation room six steps down from the living room; only slightly below ground, lighted by full windows, this doubles the general living space, and isn't a dark cellar catch-all.





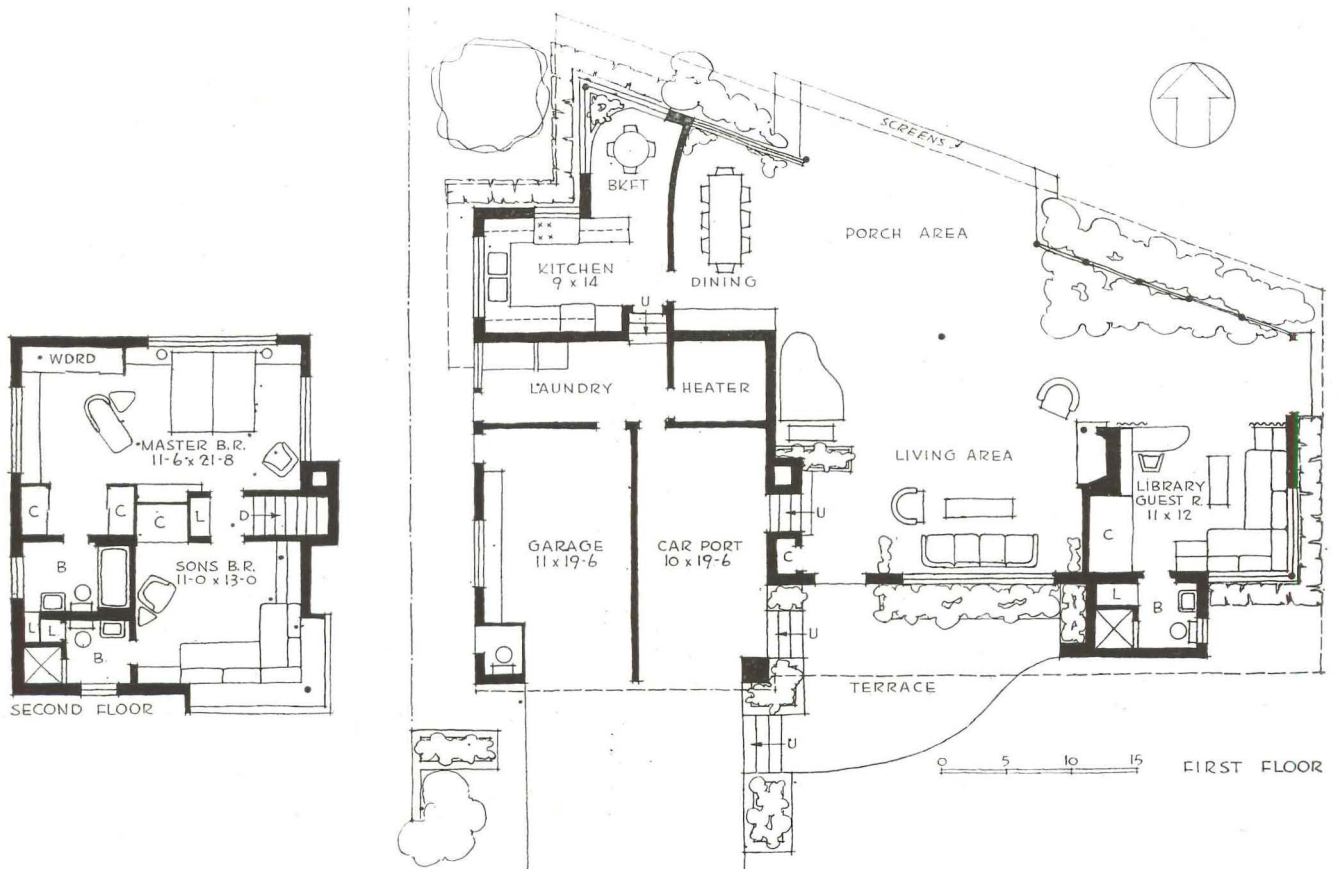
## FLORIDA

*Residence for Mr. and Mrs. N. M. Kaplan,*

*Miami Beach*

*Snyder, Nims, and Lowry, Architects*

THE story and a half house turns up in Florida too, where it has special advantages. Tailored to the tropics, it permits the elastic, luxuriously spacious, many purpose, indoor-outdoor living space so suited to activities of this blue sky, blue water setting. Compactly combining the bedroom-service wing on two levels keeps the house modestly fitted to a 75 by 150 ft. lot instead of spread out in costly, step wasting, one story wings. With halls non-existent, all rooms are close at hand, and the general room serves equally well for separate living and dining room, library and porch, or as huge all purpose room.





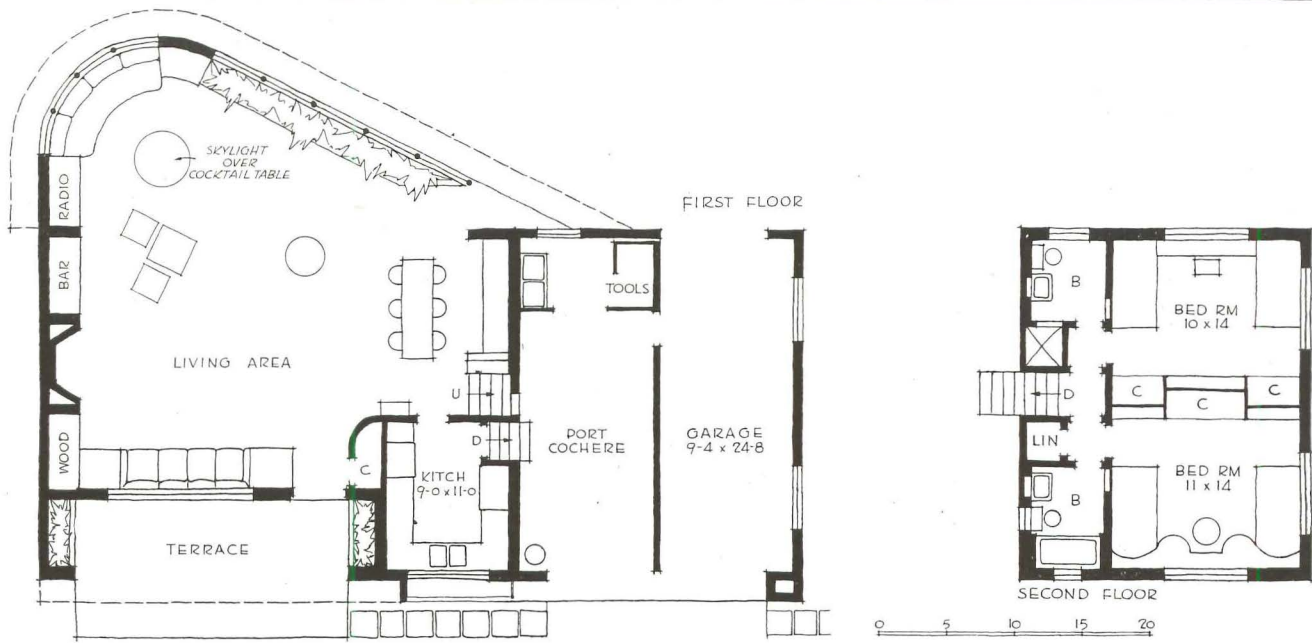
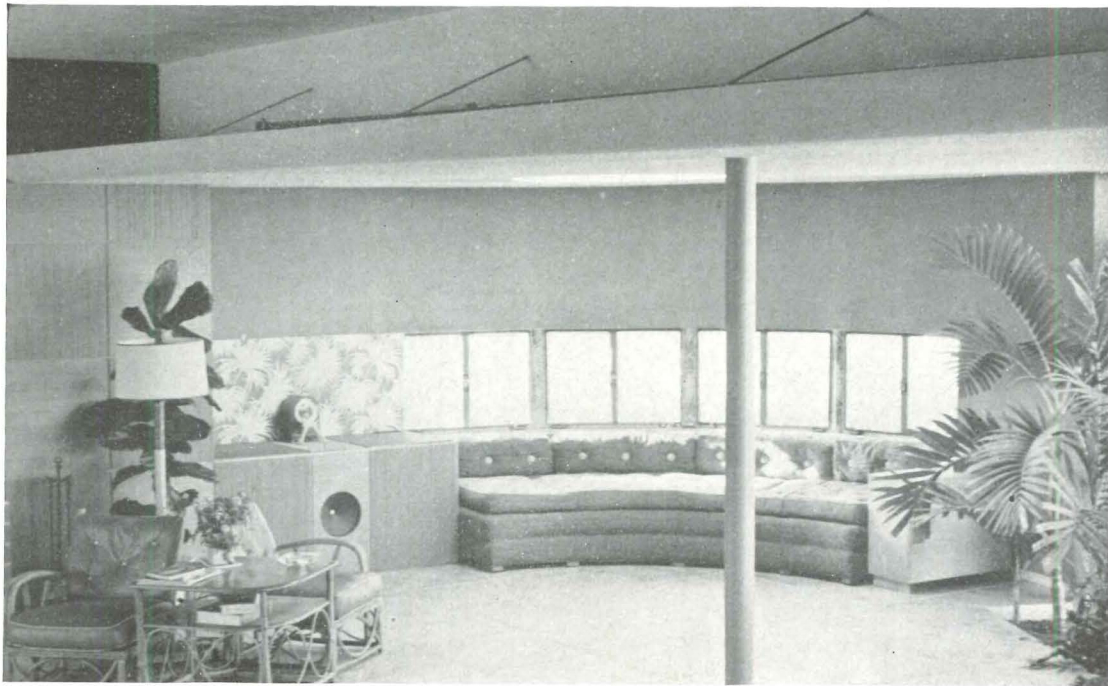
## FLORIDA

*Residence of Mr. Wahl J. and Miss Jean D. Snyder, Biscayne Pines, Fla.*

*Snyder and Lowry, Architects*

**T**HERE'S more to this scheme than meets the casual eye. Shrewdly plotted on three levels, raising the rooms above the high water and dampness line, the interior does an expert job of giving its owners the particular kind of living space and home making facilities they need and yields an attractive, individual exterior. Since the need was for an oversize, flexible living room, for group entertaining, for dining, for conversation, an irregular room was provided with adjoining kitchen. Wide window areas, fore and aft, catch the water views, expand the apparent room limits, as does the inside-outside window planting. Dropped ceilings over built in sofa areas give conversational intimacy. Eight steps lead to bedrooms separated by closet wall; five steps lead down to carport, laundry, garage-boat house.





*Built above high water and dampness line, this story and a half house affords living, working, sleeping areas in close proximity. View catching window gives large scale to living room, dropped ceilings reduce it for quiet corners*





## WISCONSIN

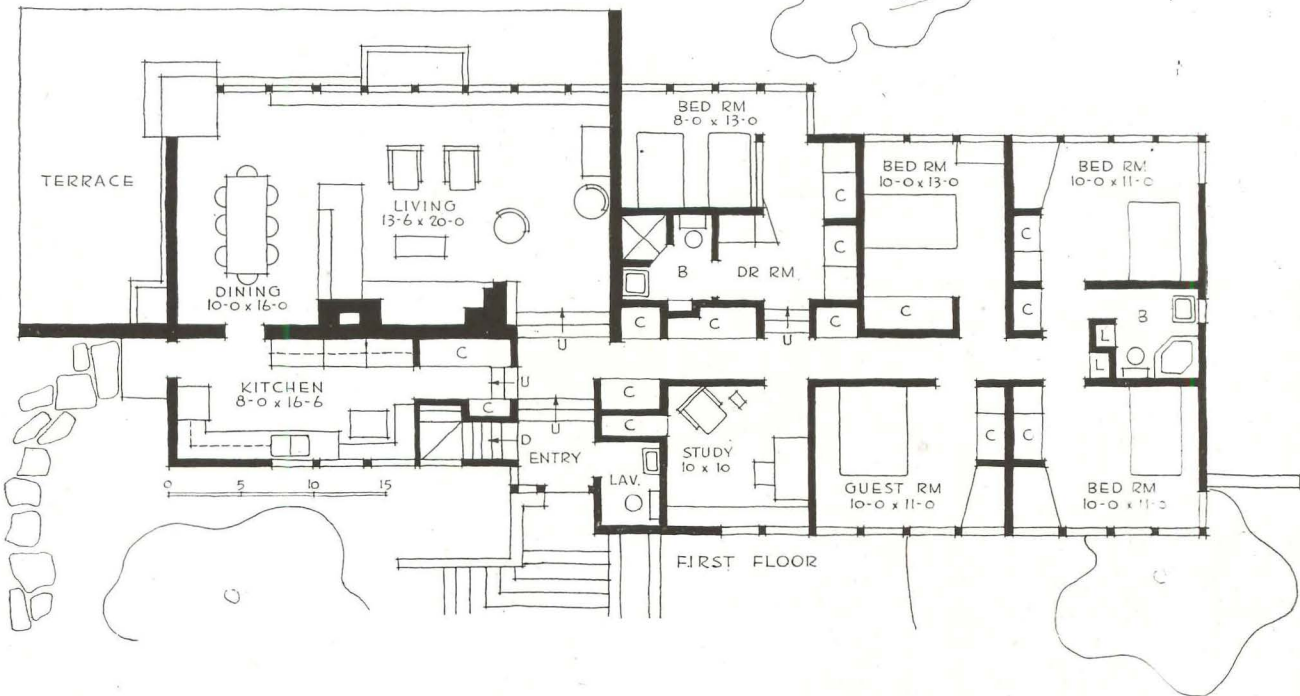
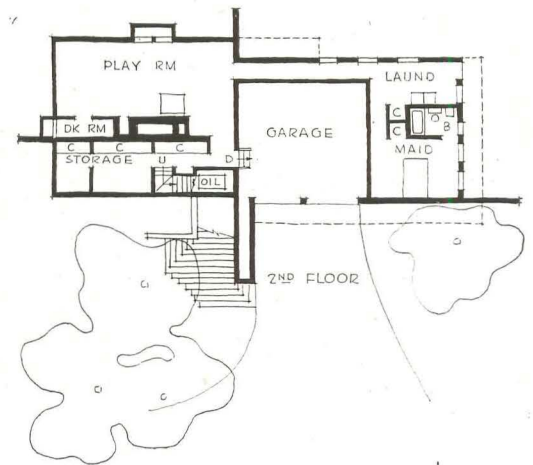
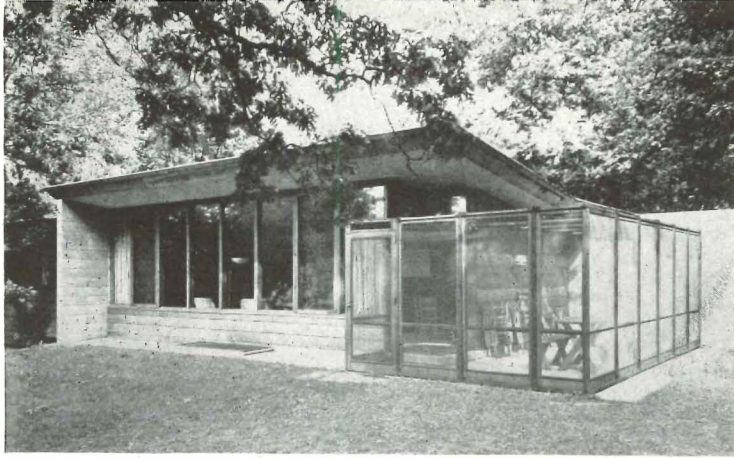
*Residence of Dr. and Mrs. Cooper, Shorewood Hills, Wis. • William V. Kaeser, Architect*



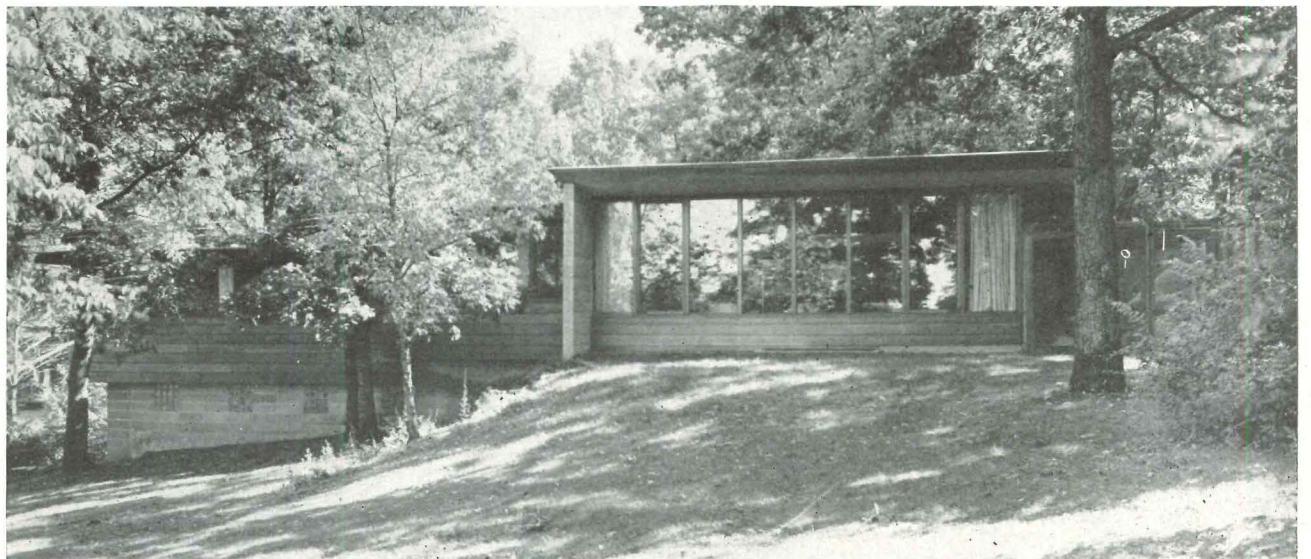
**R**ARER than the dodo bird is a plan providing *five bedrooms*, along with generous living, dining, service, and storage areas, in an economically compact, single story and basement house. That's the trick turned here with shoe-horn skill in a 31 by 72 ft. rectangle with no costly, cubage-consuming wings or ells. The plan has a simple, effective division: left half for living, dining and kitchen areas, each amply spaced, comfortably organized, directly keyed to the outdoors and to each other; right half, secluded from general living activities, for individual sleeping rooms fitted with built-in desks, cabinets, ample storage space. Circulation is adroitly controlled by a single hall on which the front door and every room on this floor opens. The dividends of the plan, its above minimum, extra livable features, include a study easily serving as a sixth bedroom, a dressing room with master bath, entrance hall lavatory, two car basement garage, 12 by 30 ft. recreation room, dark room, maid's quarters (with outside entrance through laundry) and 23 closets plus a storage room. Cypress siding and 4 by 8 by 24 in. concrete block were selected by the architect "for getting a lot of space at reasonable cost and for its decorative possibilities." Exposed inside and out of the house, the blocks were laid up in straight joints in double walls tied by reinforcing rods.







*Terrace: southwest corner screened to keep activities of insect world outside, those of household's young fry inside. Plan: five bedrooms, study-bedroom, separate servant quarters, 23 closets, storage room, two car garage, generous living and service quarters in uncomplicated rectangle*

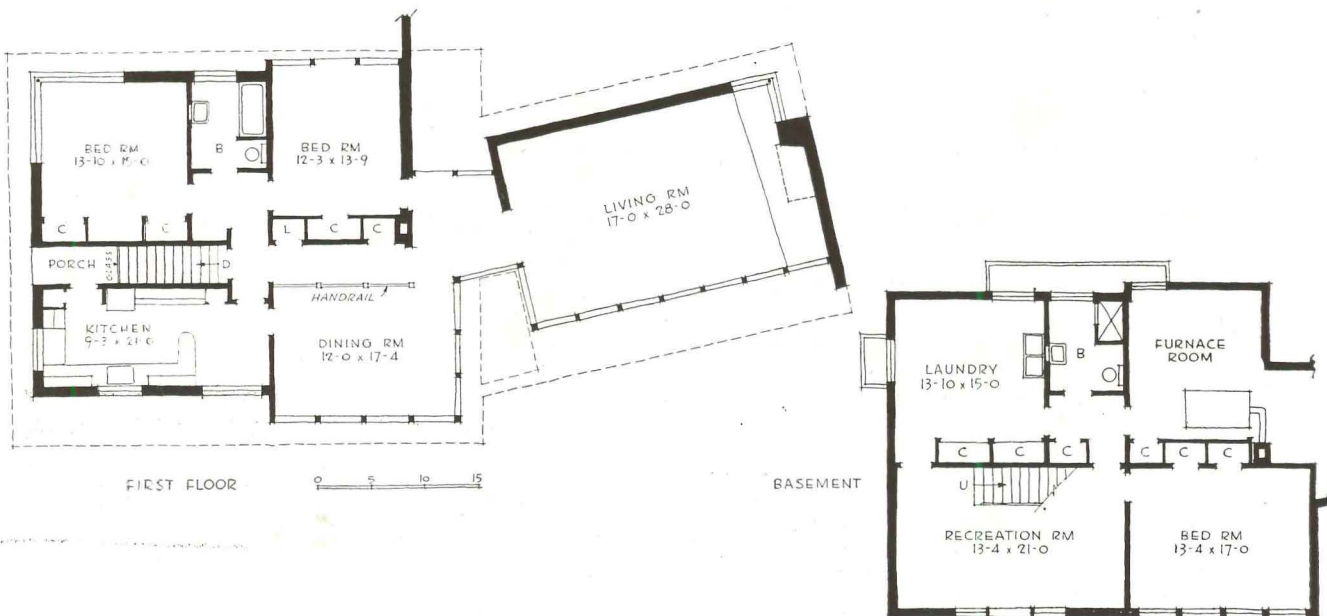
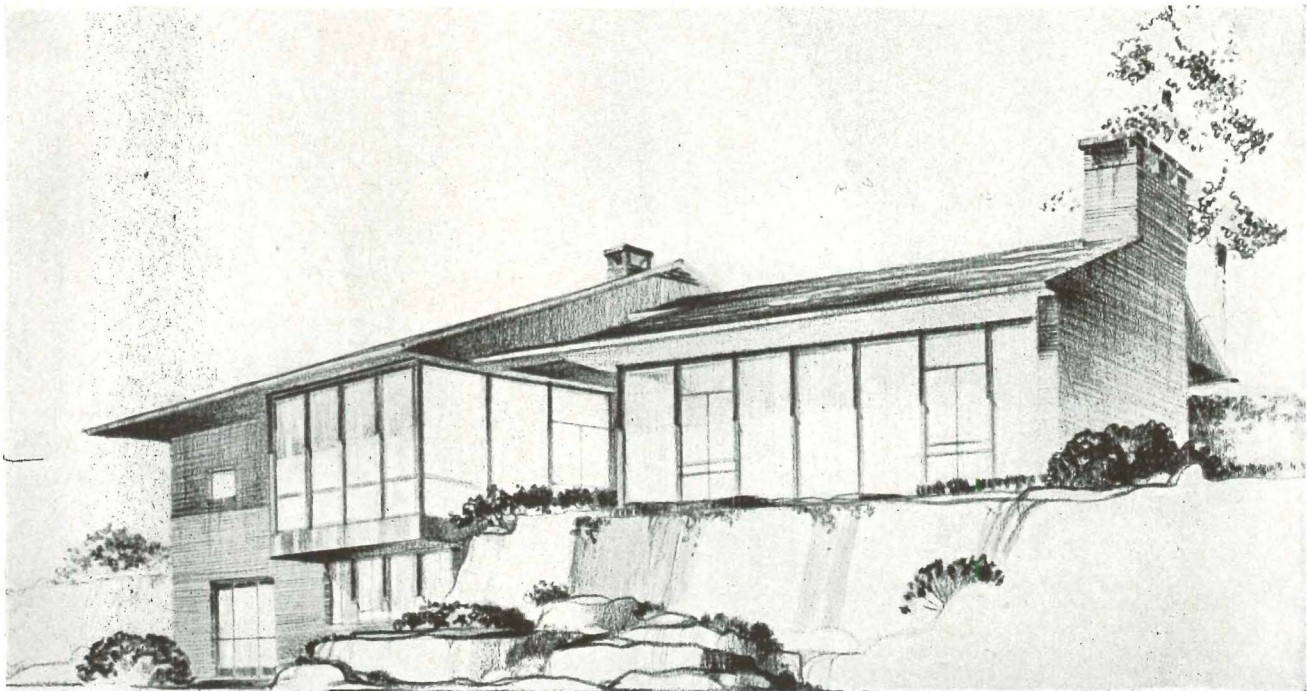


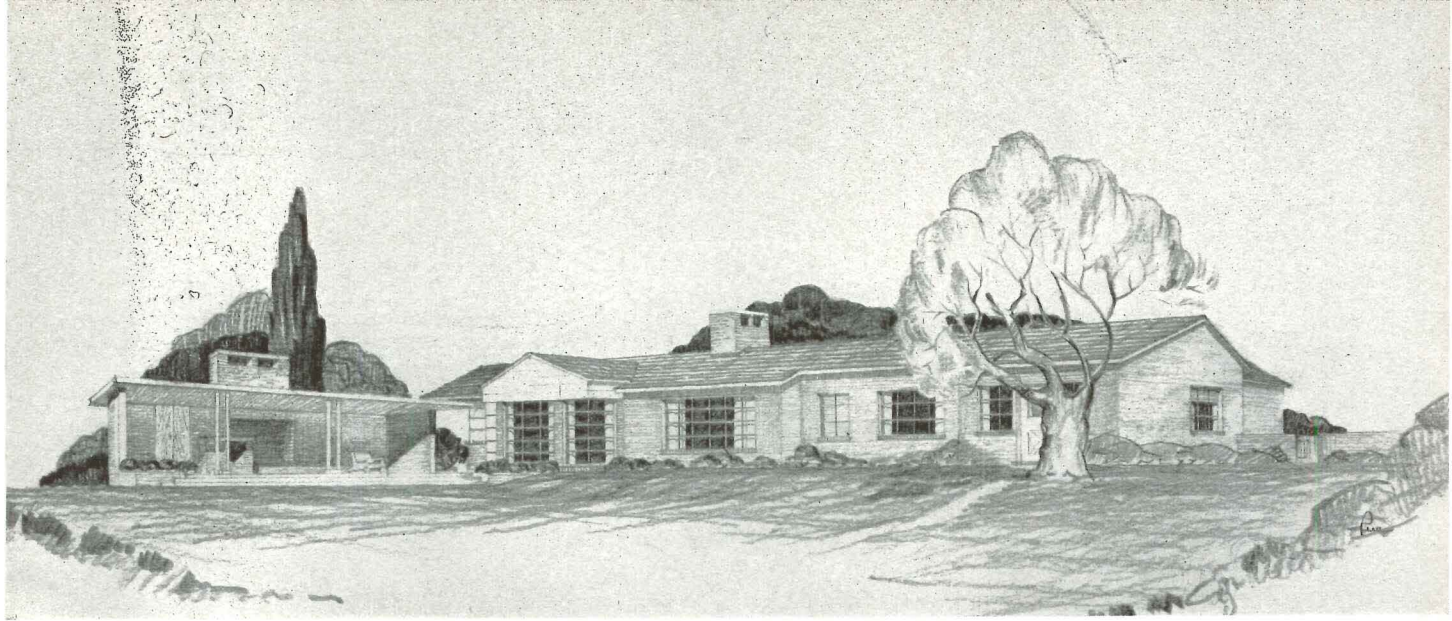
# WASHINGTON

*Residence for Mr. and Mrs. George H. Lewis, Overlake, Wash. • Paul Thiry, Architect*

WORKING with these ingredients—hillside sites, magnificent lake and mountain views, local masonry and timber materials, a fresh and frank approach to planning, freedom from a heavy-handed architectural tradition—Pacific Northwest architects are shaping many of the most intelligent, and attractive of tomorrow's houses. Well placed and well planned, Mr. Thiry's scheme fits its sloping, one acre, lakeview site agreeably, fills its owner's wants successfully. Pleasingly domestic in character, it has sloping

shingled roofs, frame and brick veneer walls with fixed glass panels, screened, steel sash windows. Conforming to the land contour, the living room wing bends away from the house and a glass wall weaves across its entire west wall as a view-snaring, floor-to-ceiling window; it continues around the connecting entrance hall and juts out as a dining room bay. The hillside site allows a lower floor to the house, amplifying its storage, service, sleeping and living facilities.

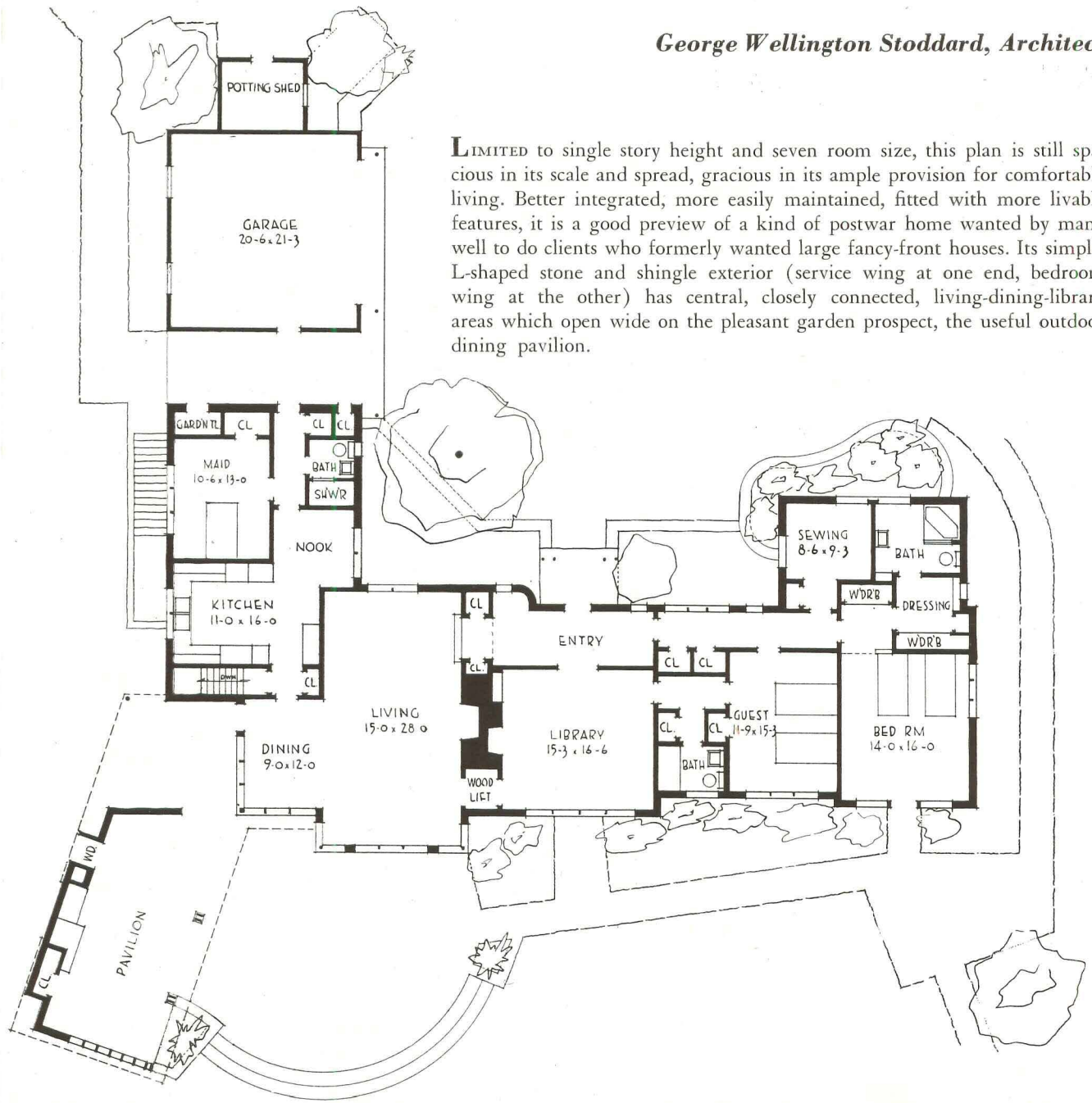




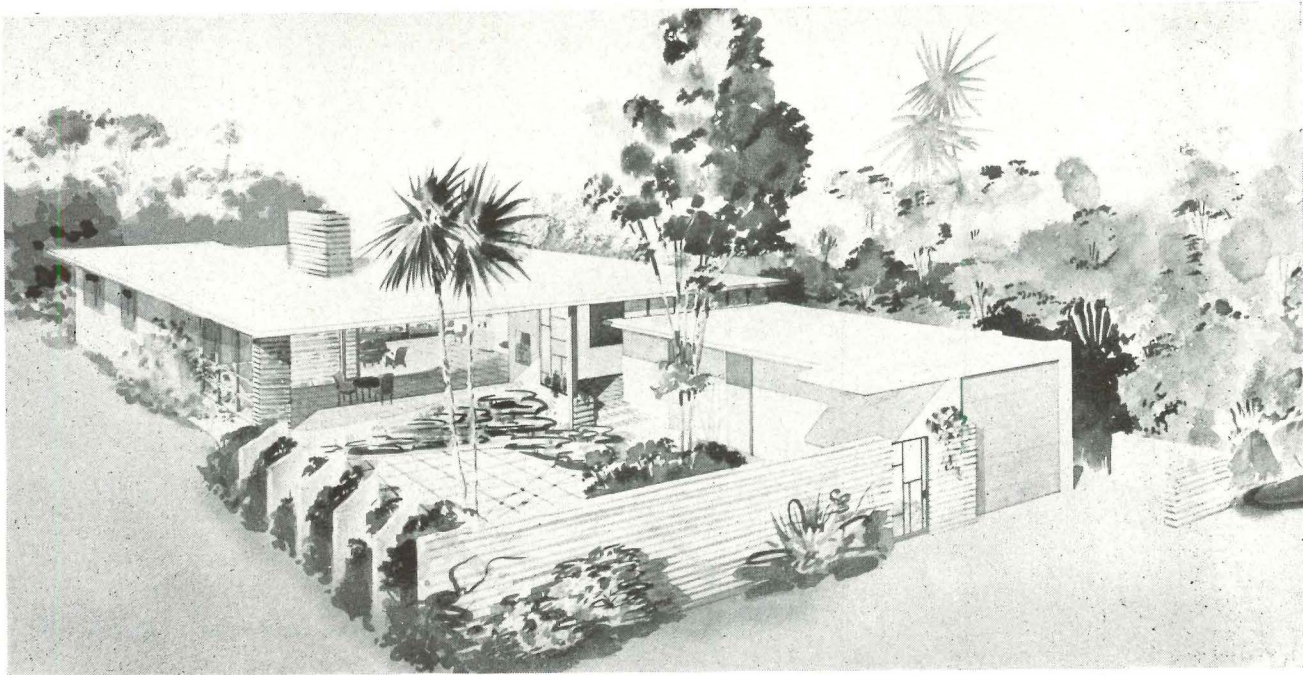
# WASHINGTON

*Lake Washington House, Wash.*

*George Wellington Stoddard, Architect*



LIMITED to single story height and seven room size, this plan is still spacious in its scale and spread, gracious in its ample provision for comfortable living. Better integrated, more easily maintained, fitted with more livable features, it is a good preview of a kind of postwar home wanted by many well to do clients who formerly wanted large fancy-front houses. Its simple, L-shaped stone and shingle exterior (service wing at one end, bedroom wing at the other) has central, closely connected, living-dining-library areas which open wide on the pleasant garden prospect, the useful outdoor dining pavilion.

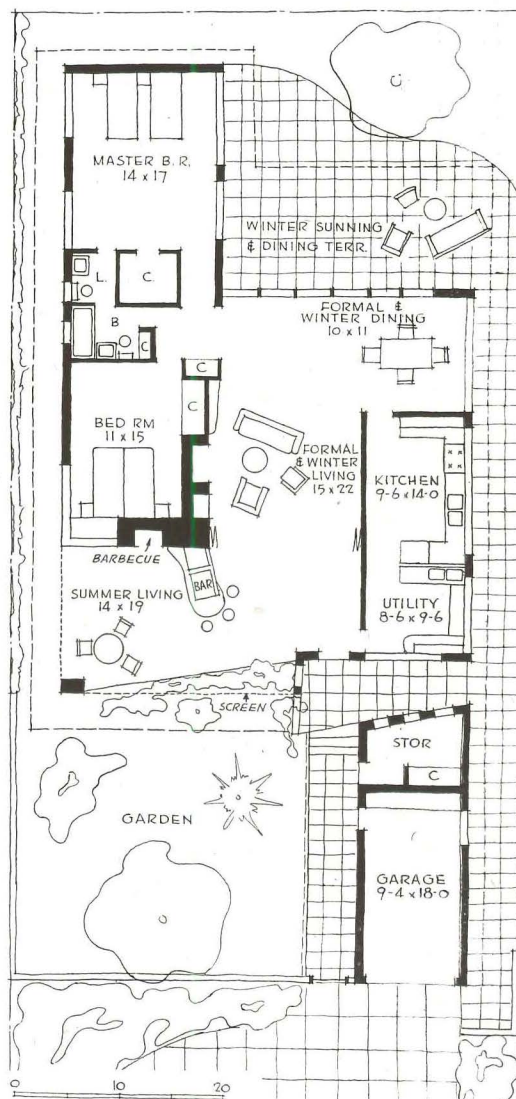
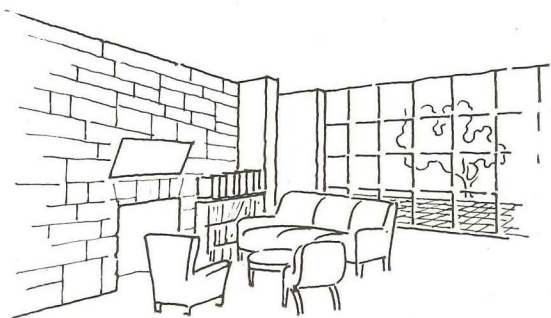


# FLORIDA

*Residence for Mr. and Mrs. Benjamin Mesrobian, Surfside, Fla.*

*Igor B. Polevitzky, Architect*

**M**AXIMUM ventilation was a must for this house, designed for South Florida where the architect says, "the area would be untenable but for the southeast trade winds." The 50 by 112½ ft. lot faces east on the street, posing the problem of preserving front door privacy while opening the house to the southeast. The wide open plan devised furnishes flexibly adjustable living quarters to meet formal or informal, indoor or outdoor needs of the family of two in any season or condition of sun, wind and weather. At the same time, garage and front wall, cleverly contrived south wall, protect it from street, while inside the house well placed bedroom and service areas have necessary privacy, though little space is spent on halls, little expenditure on partitions. Interesting is the placing and planning of bath-lavatories, the front terrace screening which, "hung from roof without wood supports, lapped and sewn together, allows planting to wander through screen, is flood lighted inside and out, eliminating it visually at night." House will be built on elevated concrete slab with terrazzo finish, flat roof will be well insulated and ventilated.



# WHAT'S AHEAD IN HOUSE HEATING?

By Robert K. Thulman

*The author, an expert in technical matters for the Federal Housing Administration, steps out of his official role for the moment to speak his personal piece on the pros and cons of the many new ideas in residence heating, ranging from those already tried and accepted to some that are still in the clouds*

A FEW short months after Pearl Harbor, the greatly increased demand by the armed forces and war industry for petroleum and natural gas resulted in the virtual prohibition of the use of these fuels for the heating of new homes. With the rationing of fuel oil, much oil-burning equipment was removed from existing houses. The oil burner user who elected to continue to use oil was forced to shiver, shut off some rooms, use auxiliary space heaters and stoves, burn wood (somewhat ineffectually) in his fireplace, and insulate.

number of units in each line. Overlapping of sizes between lines was largely eliminated. The almost universal use of insulation in new, and the widespread application in existing housing has made the postwar buying public "insulation conscious" to a degree far beyond the hopes and expectations of the most sanguine in the insulation industry. Insulation has created a demand, especially in new housing, for equipment of smaller capacity than the manufacturers of heating equipment have been accustomed to build.

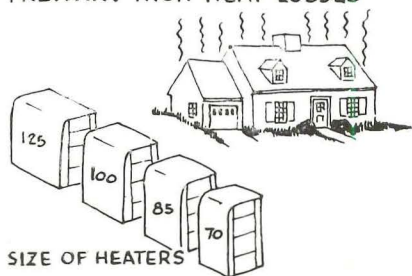
contractor. He will probably try to make his "line" of large equipment fit the new house market. He will probably find it prudent to utilize his established distribution channels to supply the new housing which will be built principally by operative builders accustomed to buy direct in large quantities.

The new manufacturer who has decided to enter the heating field also faces this problem, but we can generally expect that many will look upon the new house market and find it worth-while to concentrate their designs and selling on it exclusively.

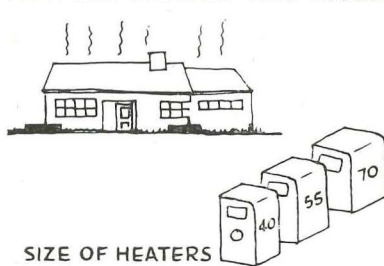
Lower heat losses through insulation enable the architect to specify equipment burning the more convenient and cleaner, but usually more expensive, oil and gas fuels without fear of exceeding a cost of heating which his client can afford. The need to use cheaper fuels for the sake of economy is considerably lessened.

For the next few years most of the heating equipment supplied to new housing will be basically similar in appearance, design and performance to that used in the prewar years. New products will take time to develop and try out. It must be remembered that wartime restrictions were not

PREWAR: HIGH HEAT LOSSES



POSTWAR: LOWERED HEAT LOSSES

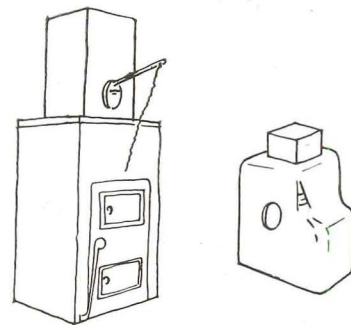


*"insulation has created a demand, especially in new housing, for equipment of smaller capacity than the manufacturers have been accustomed to build"*

WPB regulations limited the capacity of heating equipment in order to reduce the quantity of metal required. This practically forced the use of insulation in all new construction. Restrictions in the use of lumber and other building materials effected a general reduction in the physical size of houses. The combined over-all effect was a reduction in the capacity of heating equipment required in new construction, of approximately 30 per cent. Manufacturers voluntarily reduced the number of "lines" of equipment and also the

## What size heater?

The old line manufacturer of heating equipment is generally not prepared to meet this condition. He is faced with a dual market—replacement equipment for old houses ranging in heat loss from 70,000 to 125,000 Btu, equipment for new houses ranging in heat loss from 30,000 to 70,000 Btu. Even in a good building year about 60 per cent of his product goes to the replacement market through the customary channels of jobber, distributor, dealer and



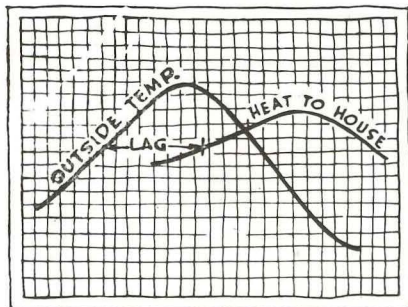
*"... basically similar to those of prewar years... new products take time"*

conductive to the orderly development of new products in the house heating line with the possible exception of control equipment. Advances in automatic controls make possible both more uniform heat throughout the house and desired variations for certain rooms. There may be some change in heat distribution systems, and herein lies an opportunity for the architect.

### Radiant floors and ceilings

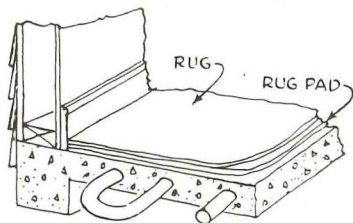
Economies can usually be effected by combinations of function. Economy dictated the now common combination of dining-living room and kitchen-dinette; it is responsible to some extent for the "open" plan. Economy will result from the utilization of floor, wall and ceiling areas as heated surfaces taking the place of radiators and warm air registers. Floor heating is not new. It contributes to a great degree to the greater comfort of the basement house with a boiler or furnace and a distribution system located in the basement. There is usually a substantial heat output from the first floor surface into the rooms due to the vagrant heat losses from the heating plant located in the basement.

The deliberate heating of floor construction accomplishes the same thing and there are a number of successful installations of floor heating systems in residences. They consist usually of a masonry slab in which pipes are imbedded. Hot water is circulated through these pipes and the entire slab is warmed. Several installa-

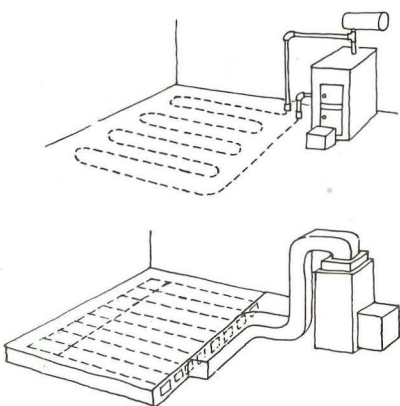


"heat output may lag behind a falling room temperature several hours . . ."

perature necessary for close control. Heat output may lag behind a falling room temperature several hours and will continue a comparable time after a satisfactory room temperature is reached. The treatment of the floor, especially the masonry floor, in terms of the surface finish and carpeting is unpredictable. The owner may elect to leave the floor bare or he may insulate it heavily with rugs with waffled rug cushions underneath. He



"owner . . . may insulate it heavily with rugs with waffled rug cushions . . ."

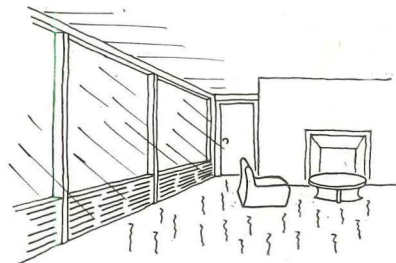


" . . . slab in which pipes are imbedded . . . tile in which warm air is circulated"

tions of masonry slabs use tile through the hollow spaces of which warm air is circulated. Floor construction is necessarily heavy, massive, and has high heat capacity. Slow to heat, slow to cool, it is not responsive to the fairly rapid changes in tem-

perature necessary for close control. The problems of the designing engineer are apparent. The situation is similar to what might occur when an owner decided to install covers on some or all of his radiators in a carefully balanced radiator system.

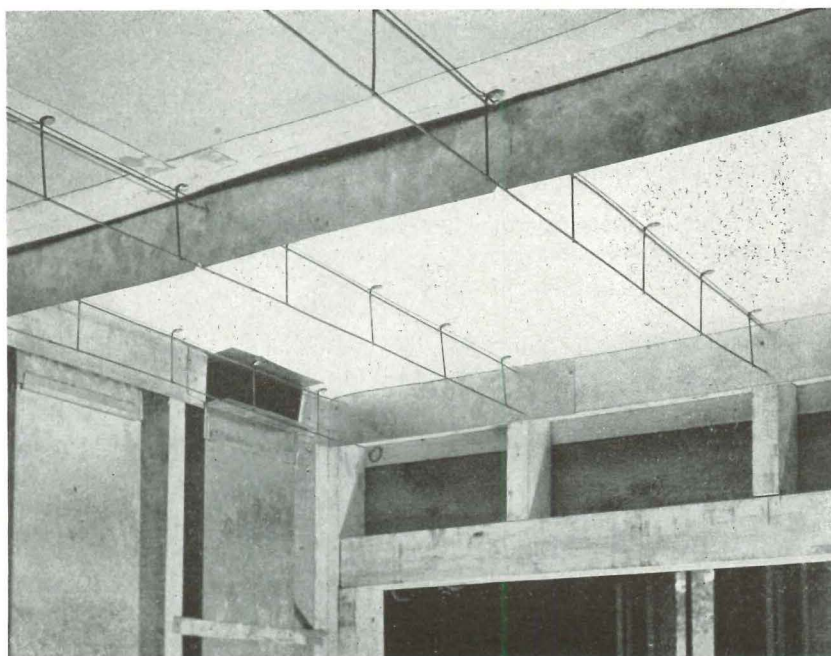
Some floor heating installations have been used in houses characterized by large glass areas. The uncontrolled and spasmodic heat gain in



" . . . uncontrolled and spasmodic heat gain in rooms with large glass areas"

the rooms with the large glass areas plus the typical heat lag of the heavy floor construction disturb the uniformity of heating and complicate the control problem still further.

A more promising area for use as a heated surface is the ceiling. Generally light in weight, its heat capacity is low and its response to change in the temperature of the heating medium used is greater. Its temperature can be varied over a wider

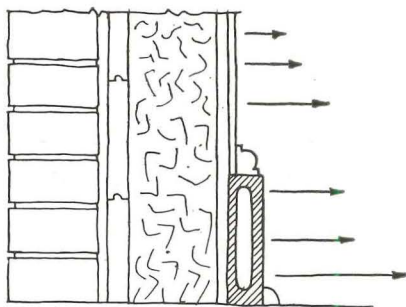


" . . . promising area for use as a heated surface is the ceiling . . . many successful installations have been made . . . usually heating medium is warm air . . ."

range without discomfort and the temperature control problem is greatly simplified. Its treatment after construction is predictable within a narrow range; usually nothing more than a repapering job or a new coat of light-colored paint is all it ever gets. Many successful installations of ceiling radiant systems have been made. Usually the heating medium is warm air and in some jobs the air is circulated by gravity, a logical scheme even in a basementless house.

### *Radiation runs 'round the room*

A recent development is the baseboard radiator. Hollow cast iron or copper baseboards approximately 6 in. high are installed in place of the wood baseboards along the outer walls of the rooms and hot water is circulated by gravity or by pumps. Experiments have resulted in floor-



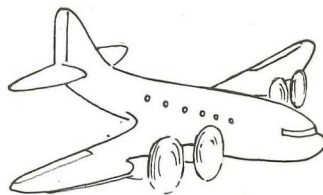
*"... baseboard radiators ... floor-to-ceiling temperature gradients of 2°"*

to-ceiling temperature gradients of only about 2° F compared with the 5½° F gradients obtained with ordinary radiators. Floor temperatures were found to be higher. Used in a basementless house, they may well provide a satisfactory answer to the cold floor problem. The manner in which they are installed and the wall construction are important. They should be applied close to the studs so as not to extend too far into the room and in order that the plaster base and plaster can be in contact with them to conduct heat into the plaster itself. This provides a greater radiating area using the lower portion of the wall as a heated surface. The wall itself must, of course, be heavily insulated.

### *Those airplane heaters!*

Several manufacturers of airplane, truck and tank heaters used in large quantities during the war, are planning modifications of these devices for use in homes. The general plan is to build small size units ranging

in output from 10,000 to 25,000 Btu and to install two or more units. The expected advantage of individual room or separate area heating may be somewhat lost due to the open plan of the new house and the probably generous use of insulation. Both these factors tend to minimize the problem of uniform heat distribution since excess heat from an overheated room



*"manufacturers of airplane and tank heaters ... planning for use in homes"*

is easily circulated to underheated rooms through wide archways, and insulation tends to lessen horizontal gradients.

There are instances, however, when spot heating is desirable. In many parts of the country the bathroom is the only room heated during the early fall and late spring. The 1½-story house in which the finishing of the second floor may be postponed for several years offers another profitable application of multiple unit heating. There is also ample opportunity for use of this kind of device in old houses in which the heating of one or more rooms has been a long standing problem. In the new house the multiple unit method of heating requires a multiple fuel supply and venting system. The devices themselves require redesigning for home use to overcome noise problems not serious in automotive equipment or aircraft.

### *The metal chimney develops*

During the war considerable progress was made in the development of new light-weight metal chimneys which have promising application in postwar housing. Originally designed to provide a salvagable chimney for demountable houses and to avoid the use of masonry, they were found to out-perform the ordinary masonry chimney by producing adequate draft quickly and by reducing standby losses.

The products of combustion of

house heating devices must be conducted safely outside the dwelling. Most such devices are supplied with combustion air in whole or in part by the negative pressure or draft of a chimney. The draft is caused by the unbalance created when the column of gases in the chimney is heated, causing it to rise and be displaced by cold air drawn into the heater. If this process can be accomplished with little heat, and quickly, the heating system is more responsive and economical than if a high outlet temperature and a long time are required to reach equilibrium. The common "Standard Ordinance" chimney is slow to heat, requires high outlet temperatures from the heating device to create the necessary draft, is slow to cool, continues to maintain high draft long after the fire is banked or shut off. Its construction conducts heat readily, its temperature gradient from bottom to top is high and if it is located on an exterior wall, its conducted heat is lost to the outdoors.

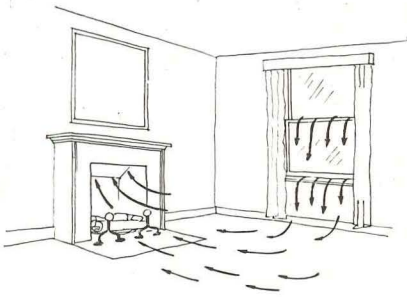
The light-weight metal chimney is the opposite of all this and its effect on improvement in the performance of all types of heating equipment is considerable. It can be designed to include means for providing air for combustion and more effective attic ventilation. It can be utilized to improve the performance of all types of heating devices including the fireplace. It requires less space and permits the architect to locate his heating equipment independent of the fireplace chimney.

### *Fireplace faults*

The war experience with auxiliary heating equipment proved fairly conclusively that the ordinary fireplace is a luxury. The large amount of excess air used for combustion in fireplaces increases the infiltration to a point where the cost of heating the air often exceeded the value of the heat output of the fireplace. We were advised to keep the fireplace damper closed when the fireplace was not being used, but this practice was a bit impractical because the usual habit was to go to bed before the last of the fire had died out and the damper necessarily stayed open until morning.

### *The chimney furnace*

An interesting wartime development in heating is the chimney furnace. It consists essentially of an enclosure of brick extending from foundation through the roof with a combustion chamber in the base and a metal flue extending from the top



*"ordinary fireplace is a luxury . . . cost exceeded value of heat output . . ."*

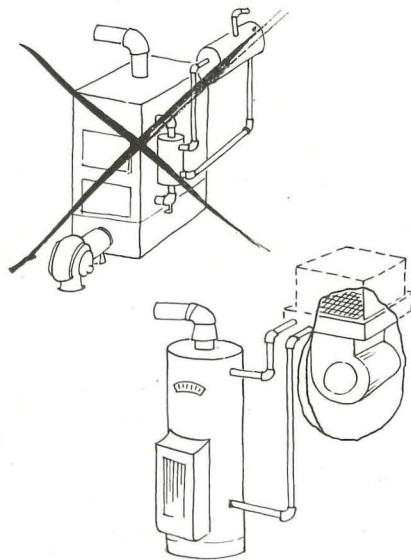
of the combustion chamber through the roof. In the attic section a closure plate sealed the space between the flue and the brick work and a fan was installed to blow air into the sealed off space. Openings in the base of the masonry enclosure were connected to a forced-air distribution system leading to the various rooms, and air, blown downward around the metal flue and brick combustion chamber, was heated and discharged into the room. Returns carried the air upward to the ceiling construction above the ceiling and back to the inlet of the blower.

Originally designed to burn oil or gas, its brick combustion chamber, used for conservation purposes in place of metal, did not stand up under the more severe conditions of coal firing brought about by the oil and gas limitation orders. Postwar designs contemplate the use of oil and gas only as originally intended (the strong draft due to the straight smooth flue is not easily controlled when coal is used), the substitution of metal for the brick combustion chamber and even the use of metal in place of the brick enclosures or chimney proper. Tests indicate high efficiencies due to almost total use of heating surface. The draft is excellent and quickly produced. Stand-by losses on pilot operation are minimized by the development of low consumption oil pilots for the pot type burner used. The output is about 50,000 Btu with approximately 0.4 gal. per hour oil consumption. Space requirements are less than 400 sq. in. and the total cost should be low. Its installation is confined for all practical purposes to new construction. The device demonstrates another combination—chimney and furnace.

### *Domesticating hot water*

For many years the heating of domestic hot water has been satisfactorily accomplished with indirect heaters attached to house heating boilers. Reduced heat losses of new

houses suggest the reverse of this procedure—attachment of the house heating system to the hot water heater. The idea is logical from another standpoint, that is the demand for more and hotter water created by the requirements of the sequence type washing machine and automatic dishwashers. The sequence laundry machine requires water temperatures of approximately 160° F and the full cycle requires quantities of water beyond the capacity of the usual 20 or 30-gal. gas storage water



*" . . . reverse procedure—attachment of house heating system to water heater"*

heater. A 40-gal. storage capacity with normal recovery capacity is about the minimum. The higher temperatures required make it necessary to use a non-ferrous heater. Ordinary galvanized tanks won't stand up under continued temperatures higher than 140° F. Glass-lined, porcelain enameled copper and alloy tanks or instantaneous heaters consisting of directly or indirectly heated non-ferrous tubing provide the necessary answer to the high temperature and high quantity requirements of the newer laundry and dish washing equipment. The greater capacity required for water service provides an adequate capacity for house heat. Air, heated by a heat exchanger attached to the water heater, can be circulated by the conventional gravity or fan method or through panels, or water heated directly or indirectly from the water heater can be circulated through radiators, baseboard radiators or floor coils to heat the house. The combination effects obvious economies in equipment and service costs and, by combining standby losses, in operating cost.

### *Mechanical cores*

There will be offered by a number of manufacturers combination units consisting of prefabricated plumbing, piping and heater and hot water units forming the mechanical central core for bathroom, kitchen and heater. Back-to-back kitchen and bath, inherent in the design of these units, was a wartime must and architects as a rule didn't like it because of the planning restrictions it imposed. Obviously more economical, the back-to-back idea has long been a characteristic of low-cost houses. The expansion of the pipe space in the common wall to include heater and water heater is a natural development but its application is, for practical purposes, limited to one-story basementless houses. It does not seem sensible to install the heater on the first floor level of a house with a basement. Lack of heat in the basement from a basement heating system loses the desirable floor heating effect already mentioned and the advantage of gravity circulation is also lost. Fan circulation for direct air heating with a first floor furnace installation is a necessity. The central core unit in two-story houses is of doubtful value although it may be logical in the 1½-story dwelling where a second conventional bath may be installed initially or later on the second floor.

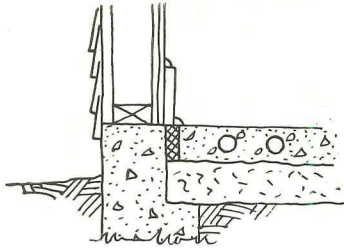
### *Gravity or forced?*

Basements and gravity circulation suggest the war restrictions placed on forced circulation warm air heating. Limitation orders permitted forced fan heating systems only in houses without basements. Shortages of fans and motors and restricted use of automatic firing equipment caused a widely increased use of the old gravity coal-fired warm air system. Well-installed, this old standby provides a uniformity and continuousness of



*" . . . old standby provides a uniformity and continuousness of heat output . . ."*



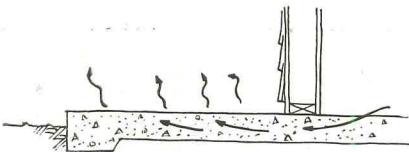


*"slab construction . . . poured on ground, lends itself readily to floor heating"*

heat output free from noise and with no electrical operating expense, highly desirable for any class of home. Service expense is practically zero and the only objection is inconvenience and a somewhat greater space requirement with some sacrifice here and there of basement headroom. New developments in gravity warm air heating provide for modulated fire with gas and oil providing an approach to and even the equal of the continuous output of the hand-fired coal installation without the inconvenience of ash handling and coal firing.

Development of economical continuous fan operation and better fans for forced air systems, and the development of more effective control devices will largely overcome the objection of the intermittent operation of the common forced air system, but gravity circulation should be seriously considered by the architect as an effective and economical means of heating.

The heating of the basementless house requires forced circulation of the heating medium, be it air or water, except when the ceiling radiant panel system is used. Cold floors have always been one of the major objections to basementless construc-



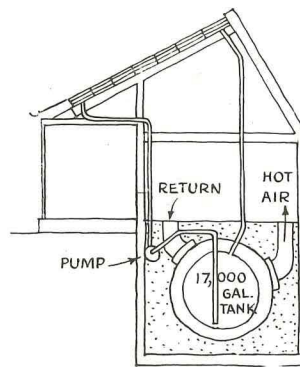
*"slab should never extend continuously outside the heated section of house"*

tion. If the floor construction is of wood the underfloor space must be ventilated. If closable vent openings are provided, there is no assurance that they will be opened by the owner in the spring. Damage from dry rot can take place quickly and can be extensive. Slab construction, when the slab is poured on the ground, lends itself readily to floor heating and, even without direct heating of the floor itself, provides a much warmer

condition than the ventilated under floor space. The edge of the slab in either case should be insulated to prevent the edge loss, and the slab should never extend continuously outside the heated section of the house to form a porch or terrace.

### **Heat from Old Sol**

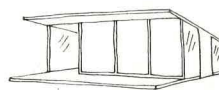
A significant exception to the statement that the war did not contribute much to improvement in house heating is the development of the use of solar energy. Experimental work at M.I.T. with solar absorbers for water distillation should accelerate the development of solar water heaters and, with small auxiliary fuel fired heaters, make it applicable over a much wider area than is now common. It is only a step from solar water heating to house heating. The experimental solar heated house in Cambridge has been in operation for several years. Admittedly not economical, it has



*"it is only a step from solar water heating to solar house heating . . ."*

nevertheless provided a wealth of data which promises to stimulate further developments of a practical nature.

Some houses have been built with large glass areas having a southern aspect arranged to trap solar energy during the winter. Interest of architects in this idea and in the use of larger glass areas appears to be considerable. The economies are questionable. The amenities of "outdoor living" are probably real, although the reduced privacy may be of doubtful value when one considers that



*"interest of architects . . . in the use of larger glass areas is considerable"*

privacy is one of the objectives of building a house. "Outdoor living" may be all right in a house with a secluded back yard located in the right direction, but doesn't seem to be too practical for mass-produced houses facing every which way in a subdivision.

One of the heating problems, spasmodic heat input, has already been mentioned. The larger glass areas and the fairly expensive double glazing usually used, tend to nullify the economies of insulation. The heating problems are not unlike those involved in designing a heating system for a greenhouse. The calculation must, to assure adequacy under night conditions, be based on the assumption that no heat is gained through the glass areas.

### **Cooling systems**

There are several interesting possibilities in the field of cooling for houses. The most common will be the smaller versions of the common mechanical refrigeration equipment consisting of compressor, evaporator and condenser with power supplied by an electric motor. The equipment may consist of a central unit connected to the same distribution system that supplies heated air in winter or of one or more room coolers located where the cooling effect is considered to be most necessary.

The absorption system, using heat as the energy source and air, or water if available in sufficient quantity and at low enough temperature, for condensing, will probably be used extensively. High initial and operating costs preclude a wide use of the mechanical system for most houses. The initial cost can be reduced by the use of the storage system in which fairly continuous operation of the system is utilized to store refrigeration in the form of ice, chilled water, or brine for use during peak loads beyond the rated capacity of the refrigeration equipment itself.

### **Reverse cycle heating**

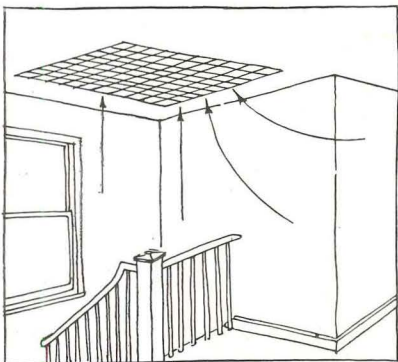
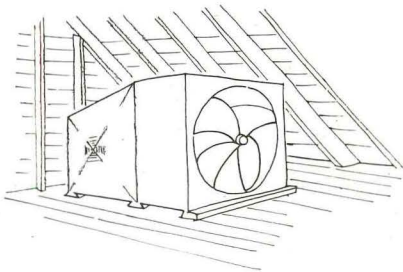
The reverse cycle system has been seriously proposed as a practical house cooling and heating method. The scheme contemplates house heating by absorbing energy from a source of heat such as outside air or well water, pumping it to a higher temperature level with a compressor and delivering it to a condenser. The heat from the condenser is used for heating the house. The source of heat energy must be available at reasonably high temperature and its temperature should not vary too much. Well water

obviously meets these conditions better than outside air but, of course, is not so readily available. Electrical energy, the usual source of power, must necessarily be cheap to make the system economically practical. The use of air as the source of heat is limited to those areas of the country where the winter air temperatures are not apt to be extremely low. Geographically, the practical use with air is, therefore, limited to southern states and possibly the coastal areas of Oregon and Washington. In other areas its practical use depends upon an ample source of well water. The cooling cycle involves the same process as that for the mechanical system using a compressor.

The evaporative coolers utilize the heat of vaporization of water to cool the air. Their success depends upon an outdoor summer wet bulb temperature low enough to permit reasonably high evaporation rates. Generally the system is not practical in localities where the wet bulb temperature rises above 75° F. Geographically the practical use is limited to Arizona, Nevada, Utah and the eastern part of California, although some success may be expected in western Texas, New Mexico, and Colorado.

### Fan coolers

The "poor man's air conditioner" applicable for installation in any house regardless of geographical location or climatic conditions is the attic



"'poor man's air conditioner' applicable for installation in any house . . ."

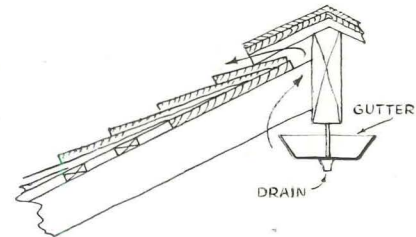
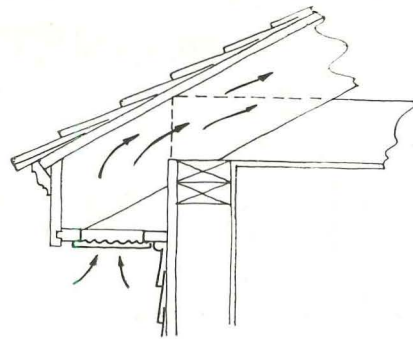
fan. The device is simple, involving only a large-capacity fan and motor, a discharge and intake grill, and a convenient switch. Air is drawn into the house after sundown through the windows, drawn into the intake grill usually located in the uppermost ceiling at some central point and discharged by the fan through an outlet grill located in the eaves.

Some installations are arranged so that during the day the air in the attic only can be circulated so that the temperature on the upper ceiling can be held down close to the outside air temperature. Originating in the southern states, the attic fan has become popular practically all over the country. Consideration should be given in the installation of this device to the possible fire hazard due to the creation of a high draft in the house, and the fan should have adequate capacity. In the warmer states such as Texas the capacity should be sufficient to provide one air change of the ventilated section of the house each minute; in other words a house of 8,000 cu. ft. volume should be equipped with a fan with a capacity of 8,000 cu. ft. per minute. In cooler areas a slightly lower capacity will produce a satisfactory cooling effect.

### Natural ventilation for attics

More attention should be given by the architect to the natural ventilation of attics. If the attic is considered as a heat absorber, the ventilating scheme should be based on the same principles that cause a chimney to operate. There should be ample inlet openings as close to the eaves as possible and ample outlet openings at or close to the ridge. Overhanging eaves provide an excellent location for inlet vent openings. The upper part of the window casing also can be connected to the attic space to provide a series of inlet vent openings where the plate is located directly on top of the window openings. Ridge vents common in industrial buildings can be modified in design to provide an inconspicuous and effective outlet opening or the combination chimney-attic ventilator can be used. Eave and ridge vents form the most effective combination and give greatest protection against rain and snow penetration. The architect would do well to study the methods used in the South, many of which are little known in the northern areas of the country. In any event, adequate attic ventilation is an important summer comfort factor and an assurance against condensation.

The contribution that insulation makes to greater summer comfort is,



"eave and ridge vents form the most effective combination . . ."

of course, well known, but the architect should be familiar with the characteristics of the different kinds of insulation material so that each can be used most effectively for both summer and winter comfort. The average specification tends to utilize one material only throughout the structure—probably due to the persuasiveness of the salesman for that particular material—rather than to combine the different materials more efficiently. Reflective materials are most effective as resistance to heat flowing downward and hence should be used, probably in combination with blankets or batts, in attics for summer protection and in floors for winter. The foils are effective vapor barriers and can be used to advantage in walls as well as floors and ceilings for this purpose, as well as to increase the resistance to heat flow.

The full realization of all of the advantages of new devices, materials and systems to the home owner can be accomplished most effectively through the architect. Homes designed by the architect and built under his supervision set the pattern for mass-produced housing. They become models and the equipment used in them establishes criteria for housing constructed without the direct benefit of specific architectural guidance. Intelligently selected and properly installed, the newer systems of heating and cooling should contribute importantly to the greater comfort and convenience of the American home owner. Too much complication should be avoided. Generally the simplest systems are better. They can be made to work best if their design is incorporated in the original design of the structure itself.

# For MODERN Commercial Construction

Specify the Leader...

## CELOTEX BUILDING PRODUCTS

### 1 CEMESTO WALL UNITS

can be used with wood or steel construction. Simplification of framing, fire-and-moisture resistance — plus versatility — are major advantages of Cemesto. Made with core of Celotex rigid cane fibre insulation, sheathed on both sides with 1/8" layer of asbestos cement bonded to core with bituminous asphalt adhesive. Sizes: 4' wide panels, 4', 6', 8' 10' or 12' long, in thicknesses of 1 1/8", 1-9/16" and 2".

### 2 CELO-ROK ROOF SLABS

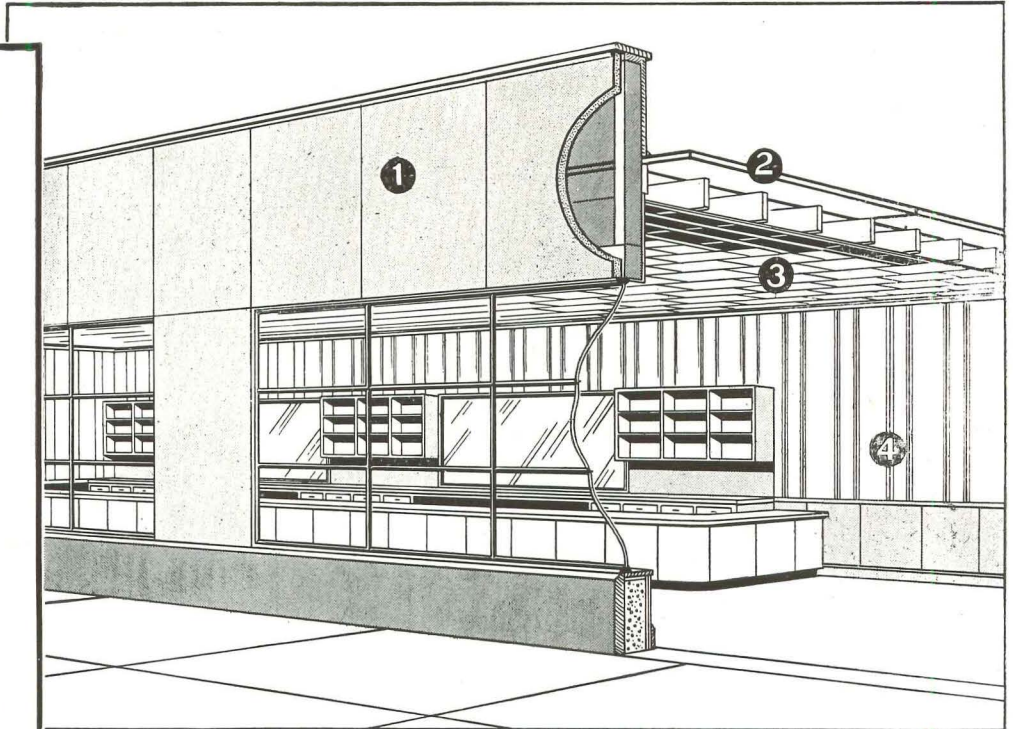
provide strong roof decks that save time and lumber—offer excellent bonding surface for built-up roofing materials. Inside surface has good light reflection value — can be painted if desired. Celo-Rok Roof slabs are laminated 1/2" sheets of fire-proof gypsum wallboard — 1", 1 1/2" and 2" thick. Width: 2 ft. Lengths 8, 9, and 10 ft. All thicknesses available with long edges shiplapped. 1 1/2" roof slabs also furnished with long edges T&G.

### 3 CELOTEX INSULATING TILE BOARD

—a predecorated insulating interior finish material with concealed nailing joints for ceilings and walls. Applied to correctly spaced framing or furring in new construction, or directly over sound old plaster in remodeling, this tile board provides beauty and insulation in one application, at one low cost. Sizes: 12" x 12", 16" x 16", 16" x 32" in half-inch thickness.

### 4 CELOTEX INSULATING FINISH PLANK

combines decorating and insulating values in a structural interior finish material for ceiling and walls. Many interesting effects can be had by using either regular or random widths. May be applied to properly spaced open framing or furring. Bevelled interlocking joint on long edges only. Sizes: 8', 10', 12' long—8", 12", 16" wide. Half-inch thick. Type "Double A" Joint.



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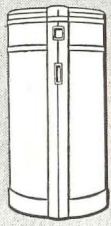
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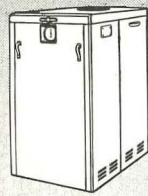
Without obligation, one of these specialists will meet with you, review your designs, suggest time- and money-saving methods for installing Celotex Building Products. Write: *The Celotex Corporation, Dept. AR-1245, Chicago 3, Illinois.*

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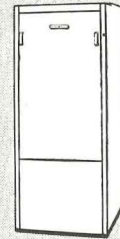
**OIL-FIRED  
BOILERS**



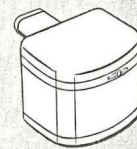
**GAS-FIRED  
BOILERS**



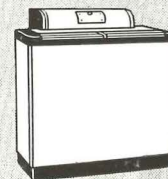
**GAS-FIRED WARM  
AIR CONDITIONERS**



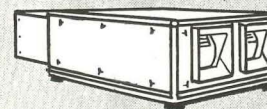
**OIL-FIRED WARM  
AIR CONDITIONERS**



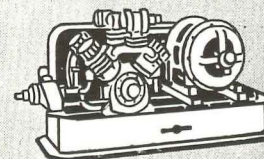
**CONVERSION  
OIL BURNERS**



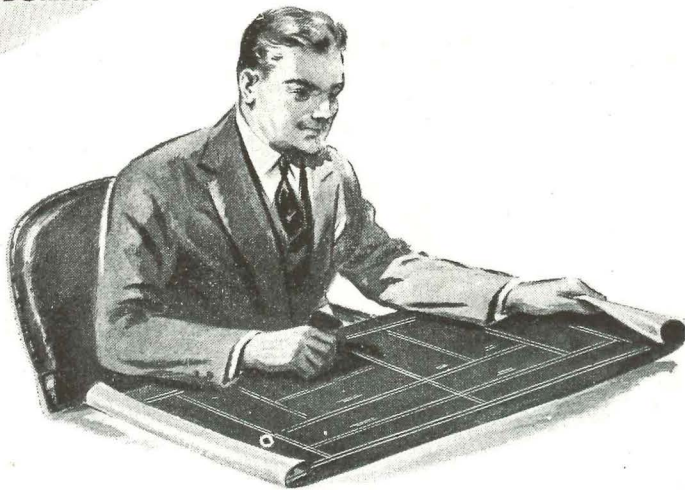
**ROOM  
COOLERS**



**CENTRAL PLANT  
AIR CONDITIONERS**



**CONDENSING  
UNITS**



# HEATING-COOLING PROBLEM?

TURN TO



**TO BE SURE!**

To heat or cool a home—to cool a skyscraper, get the facts on the complete G-E line before you specify heating or air conditioning. G. E. offers the dependable equipment for the job. Back of this equipment, ready to assist in layout and installation, is a vast fund of technical know-how. And a reputation that assures you and your clients of successful performance. See your G-E Distributor. He's listed in the Classified Telephone Directory for your convenience. *General Electric Company, Air Conditioning Department, Section 54412, Bloomfield, New Jersey.*

**BUY... and hold... VICTORY BONDS**

**AUTOMATIC HEATING AND COOLING  
AIR CONDITIONING AND COMMERCIAL REFRIGERATION**

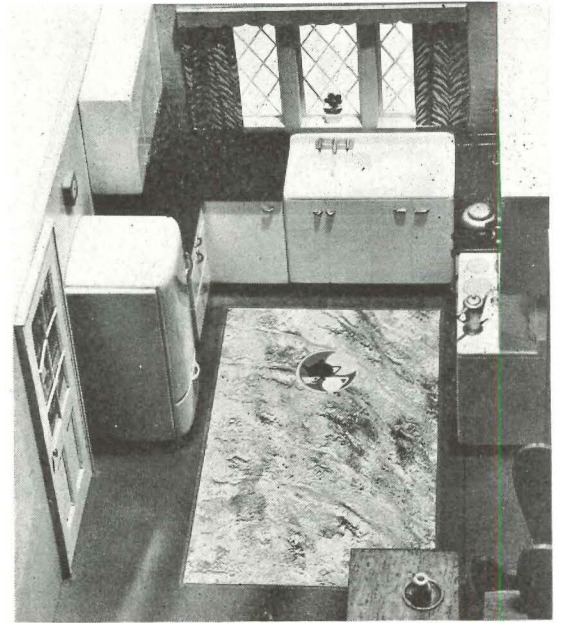
# GENERAL ELECTRIC

# KITCHEN PLANNING

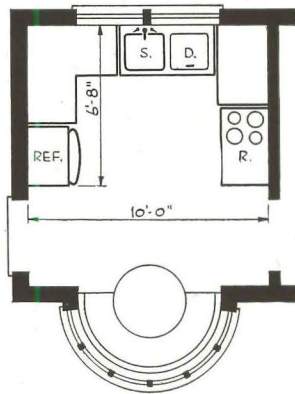
*for Flexibility with Standard Plans*

*By Victor Civkin, A.I.A.*

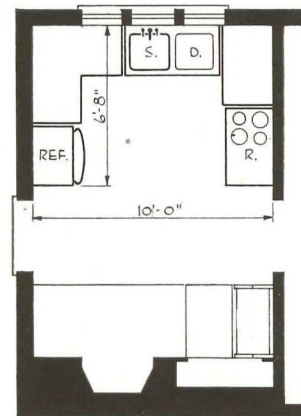
Long experience in kitchen planning indicates the wisdom of considering the kitchen as a unit of certain size and type rather than arbitrarily planning a room and trying to fit kitchen equipment into it. On this page for instance, there are two variations of the same basic U-type kitchen, standardized as to size and equipment and sequence of use, yet quite different in style and feeling to suit the needs or desires of the particular owner or architect. On the following page is still another variation, using the same standard kitchen but combining it with a laundry, snack bar, and a dining alcove. In each case the standard is a 10 ft. by 7 ft. space with work centers and equipment identical. The variations are



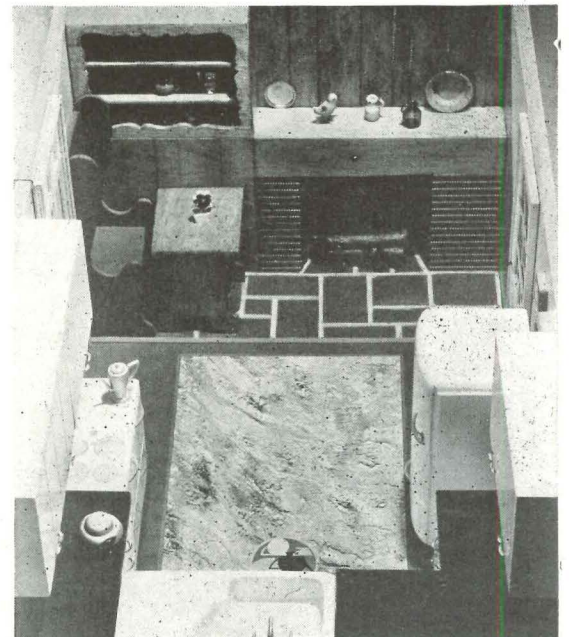
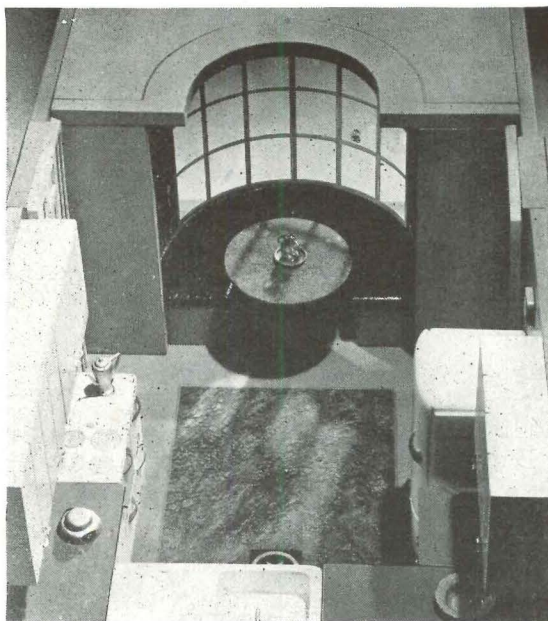
*Photos of models, courtesy General Electric Co.*



*A "U" type plan, service entrance at left, dining room door at right, dining bay on free wall*



*Same "U" kitchen with changed fenestration and architectural treatment; photos above and below*



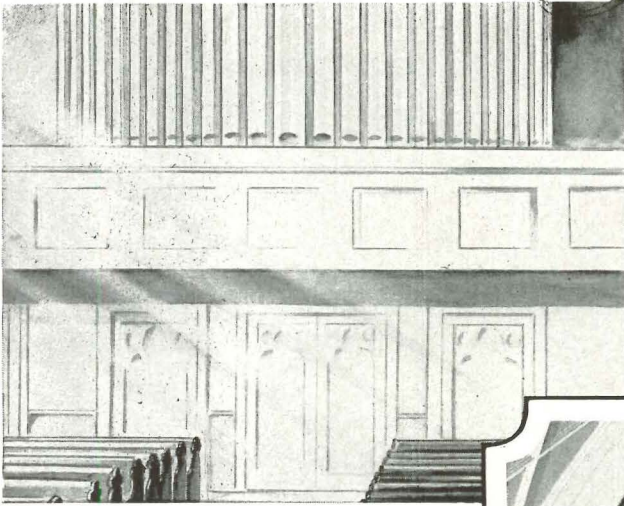
**BROOKLYN, N. Y. CHURCH**

# *Solves Double Problem*

BY INSTALLING AN

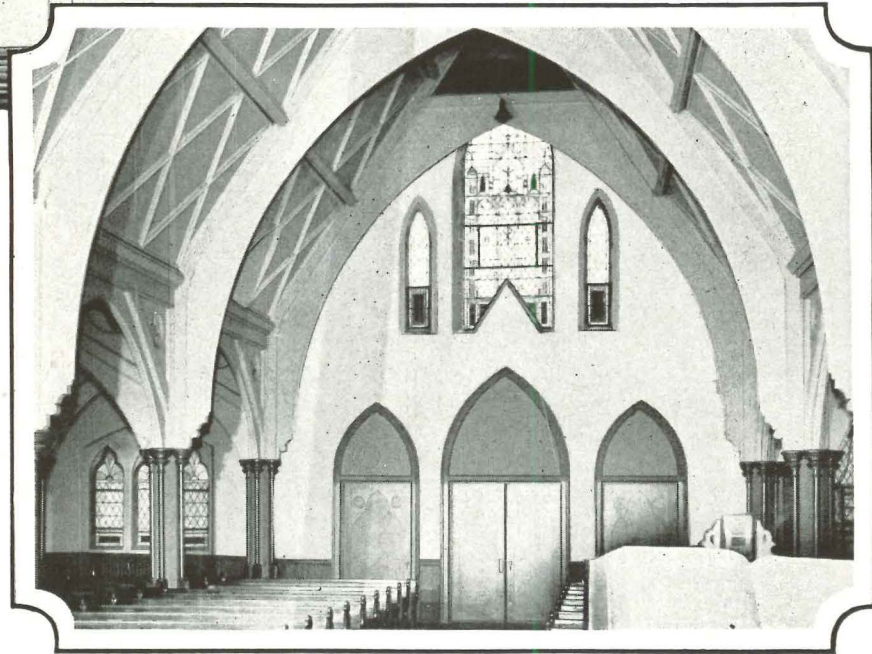
# ORGATRON

*A better blending of choir and organ music... a marked improvement in Church Beauty!*

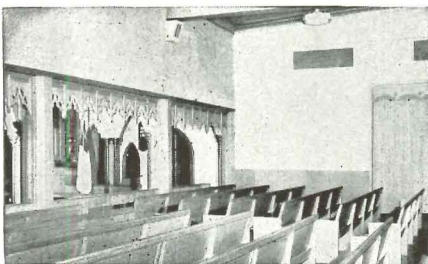


**BEFORE:** (*Above*) Over the rear of the church a balcony, supporting the old organ pipes, obscured the wall arch, three door arches and the beautiful stained glass windows.

**AFTER:** (*At Right*) Elimination of the pipe organ and supporting balcony brought into view the full beauty of all arches, doors and windows.



*Rich full organ* music from the Orgatron which is located behind the altar is carried by concealed speakers mounted horizontally along peak of chancel and church ceiling.



Organ music carried to transept by auxiliary speakers located behind wall grille.

**P**RIOR to the installation of an Orgatron in Brooklyn's Church of the Good Shepherd, the church's pipe organ console and choir were in the sanctuary but the organ pipes (*for lack of space in the chancel*) were located in the rear of the building. The result was a lag between the time when a note was played and when it was heard by the organist and the choir. Poor co-ordination of singers and organ music proved confusing to the organist, the choir and the congregation alike.

Installation of an Orgatron in the chancel with the choir put the organ music where it belonged. The finer blending and synchronizing of voice and organ, plus the resulting enhancement of the church interior solved a double problem for this prominent church.

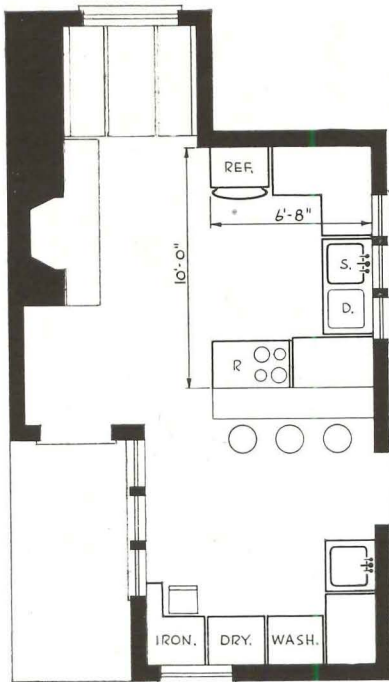
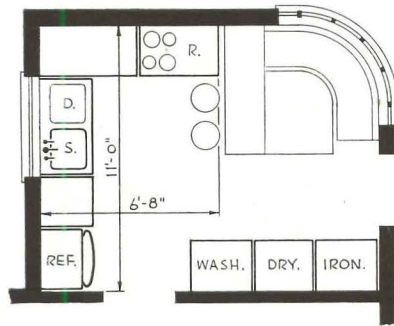
Architects desiring to learn more on the space-saving, money-saving qualities of an Orgatron, the only electronic organ with true church organ tone, are invited to write The Rudolph Wurlitzer Company, Orgatron Division, Dept. 1101, North Tonawanda, New York.

# WURLITZER ORGATRON

# KITCHEN PLANNING

*continued*

*A standard "L" type plan permitting snack bar, dining alcove and laundry equipment*



*The "U" plan with snack bar backing up range side and providing spacious laundry. (Door to dining room should be next to fire place)*

not in the kitchen layout itself, but in the remaining portion of the room and in the architectural or decorative treatment. The U-type kitchen plan is one of three basic types, the other two being the "straight line" and the L-type, both of which are shown on this page.

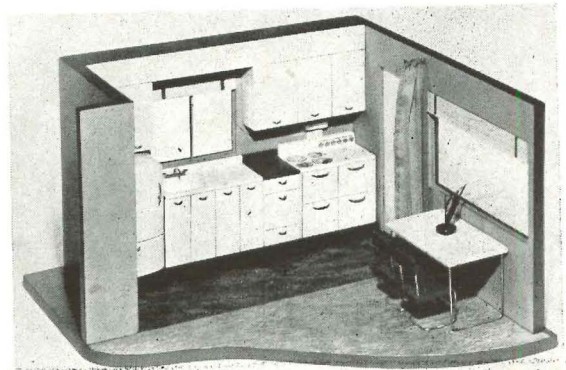
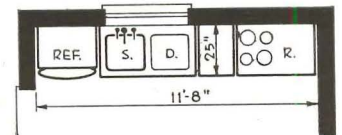
The standard kitchens, shown here in plans and photographs of models, have their equipment arranged in the time-tested, practical, step-saving order of (1) refrigerator and storage, (2) sink and dishwasher, (3) range. These are connected by cabinets with counter-tops, and have further cabinets above the sidewall working counters.

The "straight line" kitchen unit-plan is suitable for minimum kitchens. As it takes but one wall, there is maximum possible variation on the other walls. The "L" type standard plan, occupying two walls, leaves the other two for other purposes—dining, laundry, etc.

Any one of the three standard types, or kitchen-plan-units, can be used as the major and determining factor in establishing the size and shape of the kitchen. This procedure is recommended as standard practice as it saves time and assures a practical kitchen layout in which standard equipment will fit without waste space.



*The standard "straight line" kitchen arranged along one wall*



Mr. Klutznick said, "the federal policy under the leases will be to give the owners an opportunity to recover immediate possession by purchasing the unexpired lease contracts at fair value where consistent with the best financial interests of the government." Where it is not possible to reach an agreement with the owner on a fair sales price, the government will continue to operate the property for the balance of the lease term in order to achieve maxi-

mum recovery of public funds.

Any lease cancellations entered into will be subject to the rights of present tenants, including OPA regulations on rents and occupancy.

**ARCHITECTURE EXHIBIT  
PRESENTED TO RUSSIA**

An exhibition on American architecture was presented on October 25 to the Hon. Pavel P. Mikhailov, Consul-General of the U.S.S.R. at the Soviet

Consulate, New York, by the Architects Committee of the National Council of American-Soviet Friendship and the U. S. Office of War Information.

The presentation was made at a reception attended by 200 architects and representatives of American firms who contributed material to the exhibition. From the Consulate it is being shipped directly to the Soviet Union, since government regulations provide that it may be exhibited only on Soviet territory. It will be shown throughout the Soviet Union following an opening in Moscow.

The exhibit consists of an introduction and a series of nine sections covering the following phases of American building: transportation, homes, industry, commerce, social (hospitals, schools, recreation, community centers), administration, farms, cities and regional planning. Included are 40 panels, 4 by 6 ft. each, with Russian captions.

Douglas Haskell, associate editor of the ARCHITECTURAL RECORD, is picture and text editor; layout and construction designer is Frederick J. Kiesler. The advisory committee included Dean Joseph Hudnut, dean of the School of Architecture and Design, Harvard University; Prof. Talbot Hamlin of Columbia University; Mary Goldwater; Ethel Holm; Vernon Demars and Hermann H. Field.

Among the architects whose work is included in the exhibit are: Fellheimer & Wagner; Holabird & Root; Royal Barry Wills; George F. Keck; Frank Lloyd Wright; Harwell Hamilton Harris; William Wilson Wurster; Albert Kahn Inc.; Reinhard, Hofmeister, Corbett, Harrison, MacMurray, Hood and Fouilhoux.

**NEW YORK TACKLES  
TRAFFIC PROBLEM**

With the recent setting aside of several major crosstown streets for express thoroughfares, New York City has inaugurated a program to solve its ever-increasing traffic problem. Additional crosstown express streets are expected to be designated shortly.

Meanwhile the Regional Plan Association has made public an elaborate program of legislative and administrative changes intended to solve the problem in its entirety rather than piecemeal. Among its proposals are the following:

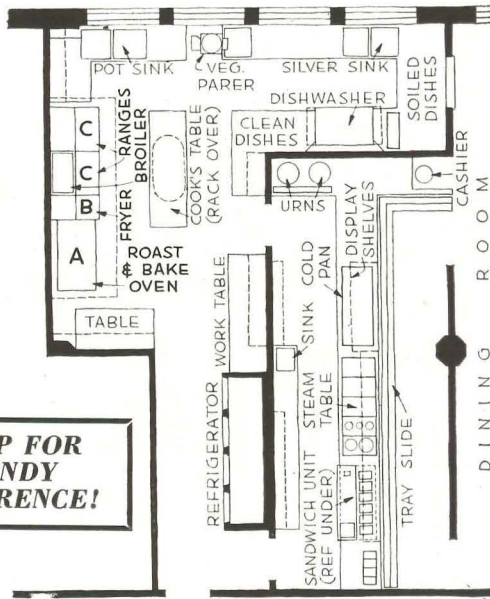
1. Require existing buildings to install offstreet truck-loading berths where practicable.
2. Amend the Zoning Resolution to permit parking garages in business and retail districts if properly designed and located.
3. Establish an administrative agency

(Continued on page 136)

**KITCHEN PLAN NO. 30:**

Thirtieth of a series of successful mass-feeding kitchen plans.

Mr. H. P. Rung, designer of the cafeteria kitchen installed at the New York Journal American, and illustrated below, states "This plan could easily be taken as it is, and installed in any restaurant."



**KEEP FOR  
HANDY  
REFERENCE!**

**COOKING EQUIPMENT USED:**

- (a) 1 NO. 959 BLODGETT GAS-FIRED ROASTING AND BAKING OVEN
- (b) 1 gas fired deep fat fryer
- (c) 2 ranges with salamander broiler

Designed by: H. P. Rung, Kitchen Equipment Engineer, Nathan Straus-Duparquet, Inc., New York, N. Y.

The flexible operation of limited-space kitchens depends upon the type of equipment installed. Here the BLODGETT No. 959 BAKING AND ROASTING OVEN with two sections, one for baking and one for roasting, saves time, space and steps. For details and specifications of BLODGETT OVENS consult your equipment house or write

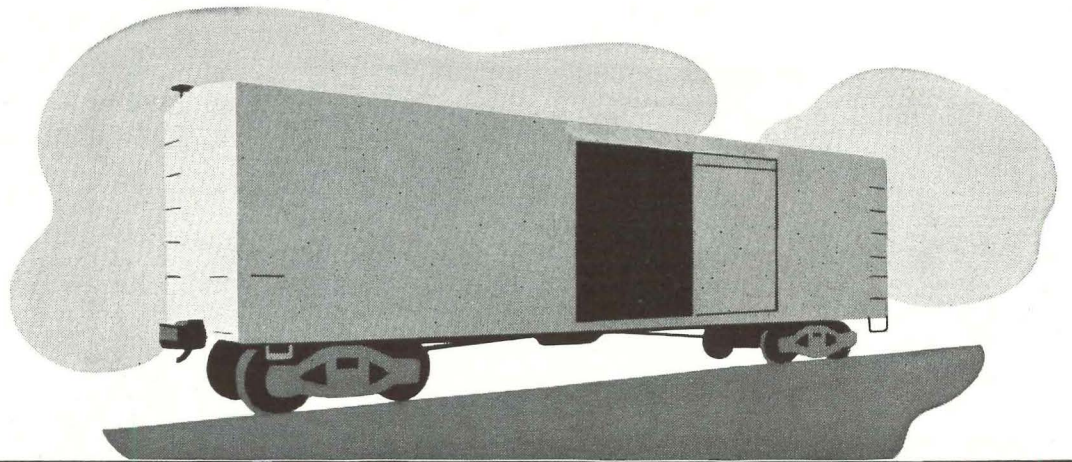
**The G. S. BLODGETT CO., Inc.**

53 Maple Street Burlington, Vermont

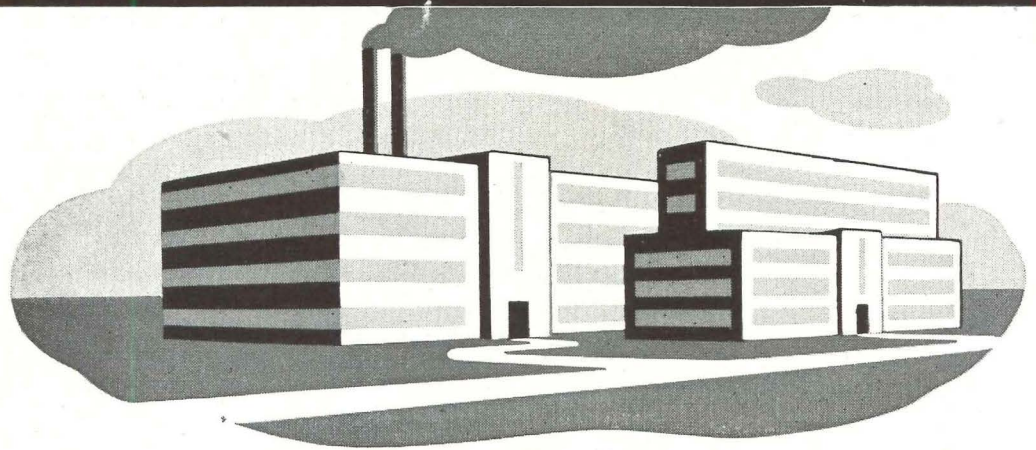
Reprints of this new series will soon be available to architects on request.







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with a Kimpreg\* Surface**

A revolutionary new alloy-like material is achieved by fusing to plywood's surface a cured plastic skin of KIMPREG. This resultant material is not a plywood in the ordinary sense, not a conventional plastic laminate. It is a brand new, better structural medium with countless applications in many products — including, very probably, those *you* plan for post-war production.

With KIMPREG, plywood is converted into an improved substance which can be machined, formed and fastened like ordinary wood — yet has a plastic's smooth,

tough surface and beautiful, permanent, painless finish.

KIMPREG adds the following advantages to plywood: 1) increases durability and flexural strength; 2) provides resistance to moisture and vapor; 3) armor-plates against extreme abrasion; 4) diminishes grain-raising effects; 5) makes the material scuffproof, splinterproof, snag-resistant; 6) affords a stainproof, washable, "wipe clean" surface; 7) creates resistance to chemical action, decay, temperature-extremes, fire, vermin, and mold. Moreover, it is warm to the touch, does not have the chill "feel" of metal surfaces.

Used for airborne "pre-fab" huts, glass-smooth tables for packing parachutes, water-proof ammunition boxes and scores of other uses, KIMPREG has distinguished itself on the vigorous proving-ground of wartime. Soon it will be offered in a variety of appealing hues.

Now is the time to investigate the possibilities of KIMPREG-surfaced materials for your *peacetime* requirements.

Write us for further information and names of those plywood manufacturers who are currently using KIMPREG plastic surfacing material.

\*TRADE MARK

Send Coupon for FREE KIMPREG Book to: Kimberly-Clark Corporation, Neenah, Wisconsin



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to assure a cooperative approach to the parking problem by all public agencies most directly involved.

4. Legalize the use of parking meters.

5. Require that storage and classification of less-than-truckload freight be done within buildings rather than on the sidewalks in the central districts.

6. Establish a series of 10 improved-type crosstown "express" streets in midtown Manhattan, cleared for four-

abreast traffic in rush hours.

7. Construct a series of modern parking garages at central points; approximately 24 new garages, each of not over 4,000 car capacity, would meet the prewar needs of the central area.

8. Provide neighborhood offstreet truck-loading berths to serve groups of buildings in the same block.

9. Relieve crosstown traffic by constructing additional links in the city's

system of expressways.

10. Provide union bus terminals to serve inter-city bus lines.

**NEW YORK WILL EXPAND PUBLIC HOUSING PROGRAM**

**Housing Authority's Proposals**

Edmond B. Butler, chairman of the New York City Housing Authority, has announced the Authority's proposals for expanding the city's public housing program. Among them:

1. Encourage public support of the Wagner-Ellender Bill.

2. Ask Congress to increase the amount of funds available for public housing in New York City.

3. Ask Congress to include a provision for unsubsidized public housing to rent at about \$10.00 a room a month for that group whose income is too high for subsidized public housing and too low for private housing.

**State-Aided Housing To Form Rehabilitation Basis**

Gov. Thomas E. Dewey, inspecting the site of a new low-rent housing project to be built with state aid in the Melrose section of the Bronx, New York City, disclosed that the State Division of Housing hereafter will require that new state-aided public housing projects in New York City and elsewhere throughout the state constitute the basis for rehabilitation of entire run-down neighborhoods by private enterprise.

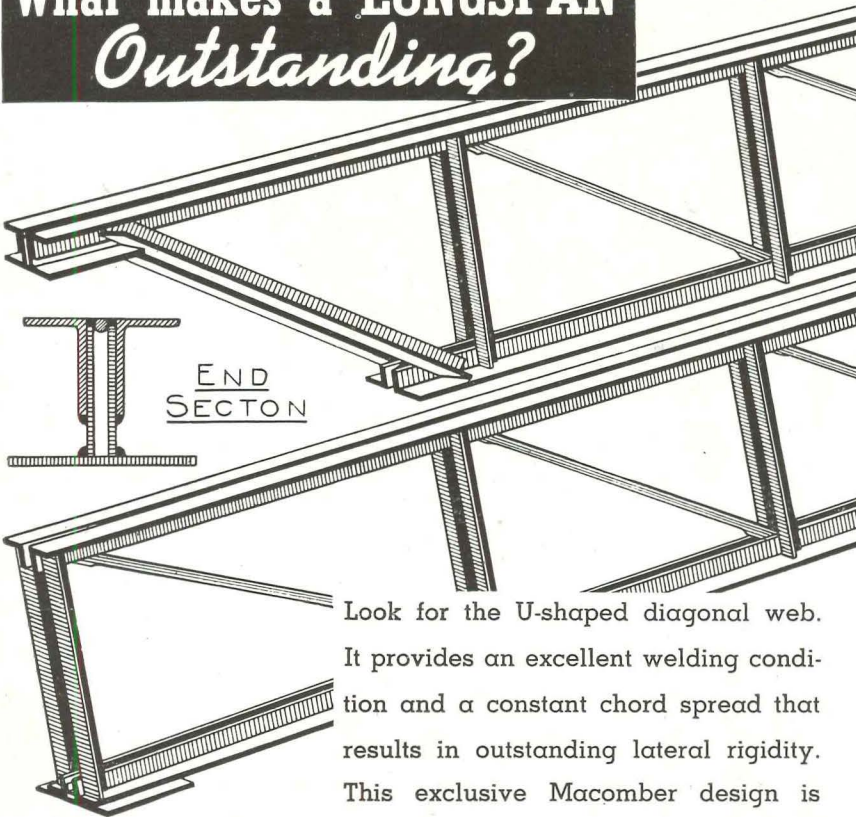
Warning against unplanned and haphazard building such as characterized the construction boom following the conclusion of World War I, the Governor said that it was imperative to coordinate neighborhood planning and home construction by private developers with public building and improvement so that large blighted areas can once again become livable neighborhoods.

Gov. Dewey warned that the building of temporary housing might create new slums and that there was danger that pressure might be exerted to make the temporary housing permanent. He said that the solution of a temporary problem must not be permitted to create another greater one in its stead, but pointed out that the replacement of slum dwellings by decent homes was being delayed because of lack of adequate housing to which to move the displaced residents.

The State Division of Housing has formed a Panel of Community Consultants including among its members Henry S. Churchill, Arthur C. Holden, Ely Jacques Kahn, William Lescaze, Ralph Walker, all of New York City; Dean Lemuel C. Dillenback of the

(Continued on page 138)

**What makes a LONGSPAN Outstanding?**



•  
**STEEL JOISTS  
 ROOF PURLINS  
 ROOF TRUSSES  
 LONGSPANS  
 ROOF DECKING  
 STEEL SIDING**  
 •

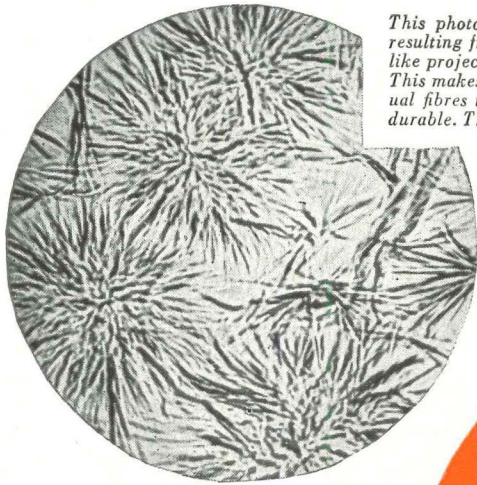
Look for the U-shaped diagonal web. It provides an excellent welding condition and a constant chord spread that results in outstanding lateral rigidity. This exclusive Macomber design is made in underslung or square end types with sloping or parallel chords in lengths up to 70 feet. Here is a completely standardized structural unit, specified from load and span tables for unobstructed floor or roof support. Get our complete design information for your next project.

STANDARDIZED SERVICE IN STEEL CONSTRUCTION

**MACOMBER**

CANTON • OHIO

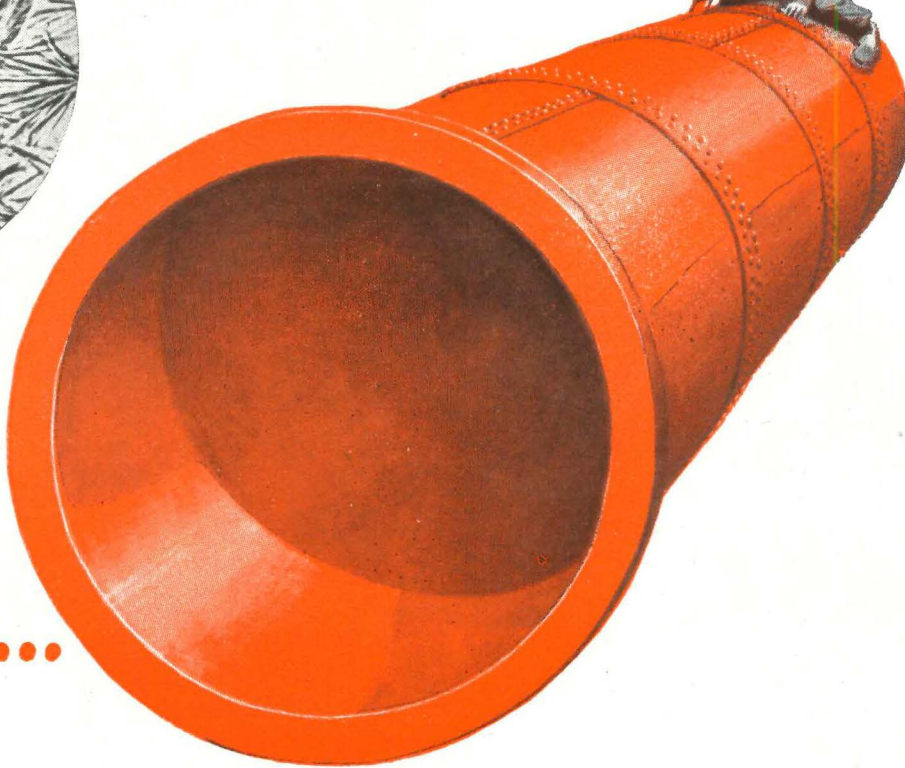
MEMBER OF THE STEEL JOIST INSTITUTE



This photomicrograph shows the distinctive lead "soap" formations resulting from Red Lead's reaction with the vehicle. Note how the rod-like projections radiating from central cores spread out and intermesh. This makes a strong, flexible, interwoven structure—just as the individual fibres in a piece of cloth are intertwined to make cloth tough and durable. This type of soap formation is unique with "lead" paint films.



**unique**  
**LEAD**  
**SOAPS ...**



**another important reason why RED LEAD**  
**means Extra Rust Protection**

Why is Red Lead outstanding as a metal protector?

One of the major reasons is this pigment's remarkable ability to impart to the paint film strong, tough, intertwining lead "soap" formations—as shown in the photomicrograph above.

These unique lead "soaps" improve the paint film in many ways. For one thing, they form a dense, intermeshing matrix which restricts the passage of water through the film. And rusting does not take place without the presence of moisture.

For another, they *mechanically* reinforce the film, giving it extra *strength* and *toughness*.

And again, Red Lead "soaps" contribute all-important *elasticity*—allowing movement along their intermeshing projections. This action helps prevent the ruptures to which a hard, unyielding film is subject. Moreover, when a paint film dries and ages, decomposition of the vehicle sets in. But, because of Red Lead's ability to combine with the decomposition products and form soaps, it increases both the durability of the paint film and its adhesion to the base metal.

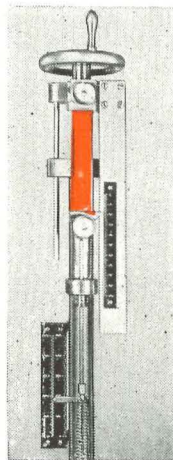
Red Lead's extra strength, toughness and elasticity are demonstrated by the ten-

sile strength test below and substantiated by exhaustive research and field service.

Remember, too, that Red Lead is compatible with practically all vehicles commonly used in metal protective paints, including phenolic and alkyd resin types.

**Specify RED LEAD for All Metal Protective Paints**

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.



In this tensile strength tester a typical Red Lead paint film has been stretched 18% without breaking. In withstanding this elongation it has maintained a load of 920 grams. Any film that exhibits these characteristics has unusual strength, toughness and elasticity. As metals expand and contract only a fraction of one percent, this film would adhere under the most extreme conditions.

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—ranging from Red Lead-*Linseed Oil* paints to Red Lead-*Mixed Pigment-Varnish* types. If you haven't received your copy, address nearest branch listed below.

All types of metal protective paints are constantly being tested at National Lead's many proving grounds. The benefit of our extensive experience with Red Lead 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-Boston Lead Co.); Pittsburgh 30 (National Lead & Oil Co. of Penna.); Philadelphia 7 (John T. Lewis & Bros. Co.); Charleston, W. Va. (Evans Lead Division)

**DUTCH BOY**  
**RED LEAD**

# THE RECORD REPORTS (Continued from page 136)

School of Architecture of Syracuse; William C. Kaelber of Rochester; James W. Kideney of Buffalo; and George B. Cummings of Binghamton.

## NHA NOTES

### Housing Study Issued

Housing experience during World War I and the boom and collapse period which followed are analyzed in a new bulletin, *Housing After World*

*War I*, just completed by the National Housing Agency. The bulletin tells how the housing industry produced 405,000 new dwelling units in 1919 and then, as prices soared, dropped to 247,000 units in 1920 — and briefly traces the underlying causes.

One of the major drawbacks to a more rapid resumption of peacetime business and construction after World War I was the uncertainty over the future course of commodity prices and

construction costs, the study found. Wholesale commodity prices by the end of the war had risen to double the 1914 or prewar level; construction costs had gone up 50 to 75 per cent. During World War II much greater success was achieved in "holding the line" on prices despite the far greater war effort. Although there have been substantial rises in wholesale commodity prices — up 37 per cent — and construction costs — up 33 per cent — they have advanced far less than in World War I.

Again, wartime federal controls on commodity prices, on the production of non-war goods and on construction, and localized rent control during the first World War were far less effective, the study shows, and were in force for a much shorter time than in the war just ended. They were removed immediately after the end of the war, but there was no immediate burst of peacetime activity. Prices eased off, business activity declined and unemployment developed.

Many of the same elements which sparked the boom in 1919 are present today and in greater force, the NHA bulletin declares. The country has gone through a greater and longer war with more shortages of civilian goods during the war. There is a much larger reconversion problem with more deferred demand backed by considerably larger liquid assets. On the other hand, the country's productive capacity to meet the demand far exceeds the capacity of the economy after World War I.

### Financing Again Available

Prewar financing facilities under the FHA program are again available to home owners, all restrictions on loans for repairs and improvements having been removed, and limitations on the use of materials for such purposes having been lifted. Such loans may be for maximum amounts of \$2,500, may run for a maximum term of three years, repayable in monthly installments.

### Departments Cooperate

An agreement designed to avoid duplication of effort and calling for a continuous exchange of data and information has been reached between the Department of Commerce and the NHA.

The agreement covers working relations between the recently established Construction Division in the Department's Bureau of Foreign and Domestic Commerce and the NHA. Highlights:

1. The NHA will provide a summary of the data and analytical infor-

*(Continued on page 144)*

**ANOTHER "MAGIC" TRANSFORMATION WITH — Mo-Sai**

REG. U.S. PAT. OFF.

**MASONRY FACING SLABS — Colorful Exposed Aggregates**

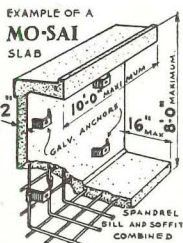


**MO-SAI** over old brick on Wickert Bldg. Escanaba, Mich. Green base, buff facing, green vitreous letters. Architects: Hubert & Gielsteen. Contractor Mike Rettman. Slabs: Badger Concrete Co.

## HERE'S NEW FREEDOM IN DESIGN FOR YOU — *plus structural soundness*

These "thin" pre-cast reinforced concrete units, made of selected aggregates exposed in a matrix of white or colored portland cement, can enhance the appearance and value of existing stores, shops and other buildings. Color is limited only by the aggregates — quartz, granite, ceramics and vitreous. Exposure of the aggregates after casting creates varied and interesting textures.

Slabs up to 100 sq. ft. or more in size; and curves, channels, angles and combinations of returns and reveals can be cast in a single unit. Hooks and anchors for attachment are cast integrally with the slab. Since over-all thickness is only 2 inches, it is often possible to retain existing walls and still stay within building lines. MO-SAI is widely used in both remodeling and new construction.



SEE OUR CATALOG IN SWEETS OR CONSULT YOUR NEAREST MO-SAI MANUFACTURER

### MO-SAI ASSOCIATES

- |                               |                                    |                     |
|-------------------------------|------------------------------------|---------------------|
| New Haven, Conn. . . . .      | The Dextone Co. . . . .            | P. O. Box 606       |
| Boston, Mass. . . . .         | Cambridge Cement Stone Co. . . . . | 156 Lincoln St.     |
| Philadelphia, Pa. . . . .     | Formigli Arch'l Stone Co. . . . .  | R. E. Trust Bldg.   |
| Richmond, Va. . . . .         | Economy Cast Stone Co. . . . .     | P. O. Box 1223      |
| Greensboro, N. C. . . . .     | Arnold Stone Co., Inc. . . . .     | P. O. Box 477       |
| Oshkosh, Wisc. . . . .        | Badger Concrete Co. . . . .        | 191 Marion St.      |
| Salt Lake City, Utah. . . . . | Otto Buehner & Co. . . . .         | 640 Wilmington Ave. |
| Cleveland, O. . . . .         | The Geo. Rackle & Sons Co. . . . . | Newburg Sta.        |
| Rochester, N. Y. . . . .      | Goodstone Mfg. Co. Inc. . . . .    | 470 Hallenbeck St.  |

**Mo-Sai** MO-SAI ASSOCIATES, founded to standardize and improve architectural slabs. The trade-mark "Mo-Sai" Reg. U.S. Pat. Off. is the property of The Dextone Co.



## For Your Files on Air Conditioning

Chrysler Airtemp has prepared a valuable set of specially drawn isometrics for architects' reference file on air conditioning. These drawings show specific applications of "packaged" air conditioners in a wide variety of carefully chosen business establishments. The installation drawings have been reprinted and bound for your convenience. The book also contains prac-

tical information about the time-tested, easily-installed Chrysler Airtemp "Packaged" Air Conditioners.

You can obtain a complete set of drawings without cost or obligation by filling out and mailing the coupon.

Invest in Your Future—Buy Victory Bonds—"Listen to the music of  
Andre Kostelanetz Thursdays, C.B.S., 9.00 p.m., E.S.T."

**CHRYSLER**  **AIRTEMP**  
HEATING • COOLING • REFRIGERATION

CHRYSLER CORPORATION  
AIRTEMP DIVISION, 1119 LEO STREET  
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GENTLEMEN: Please send me without cost or obligation a set of typical installations of "Packaged" Air Conditioners.

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CITY, ZONE, STATE \_\_\_\_\_

ARCHITECT  ENGINEER  CONTRACTOR OR BUILDER

**DRAFTING AIDS**  
**Slide Rule**

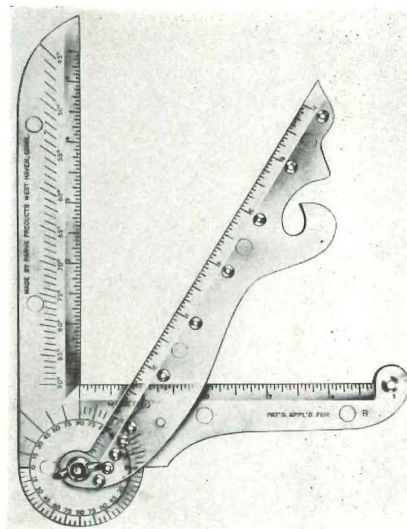
The *Deci.Point*, a slide rule which places the decimal point in involved expressions with results up to 19 places, is now being manufactured of lightweight Dowmetal (magnesium metal alloy), surfaced with a flat white plastic said to be impervious to water or chemicals and virtually immune to abrasion from regular use. The rule first was introduced in a wartime

"Demonstrator" model. Pickett & Eckel, 53 W. Jackson Blvd., Chicago 4, Ill.

**All-Purpose Device**

An all-purpose drawing and measuring device, the *Parva-graph*, is accurately designed and mathematically calibrated to serve as a square, dividers, protractor, triangle, ruler, compass, French curve and miter.

The Parva-graph consists of a combination square and a removable miter



*Versatile drawing and measuring aid*

arm which can be mounted on the square through either of two mounting holes. A wing nut locks the arm at any desired position. Made of tough, transparent plastic. Parva Products Co., West Haven, Conn.

**METAL WINDOWS**  
**Storm Sash Storage**

Manufacture of the *Rusco All-Metal Combination Window* has been resumed, it has been announced, with an important change in design incorporated. Storage of the lower storm sash is now provided within the window unit itself.

The compact unit provides screen, storm sash and weatherstripping, plus a patented spring-steel clip arrangement that permits the lower storm sash to be raised and held in storage space behind the upper sash. The F. C. Russell Co., Cleveland, Ohio.

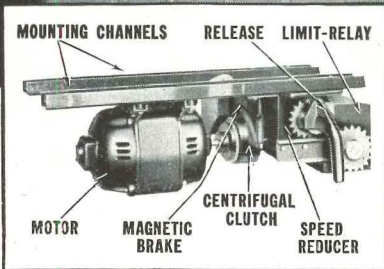
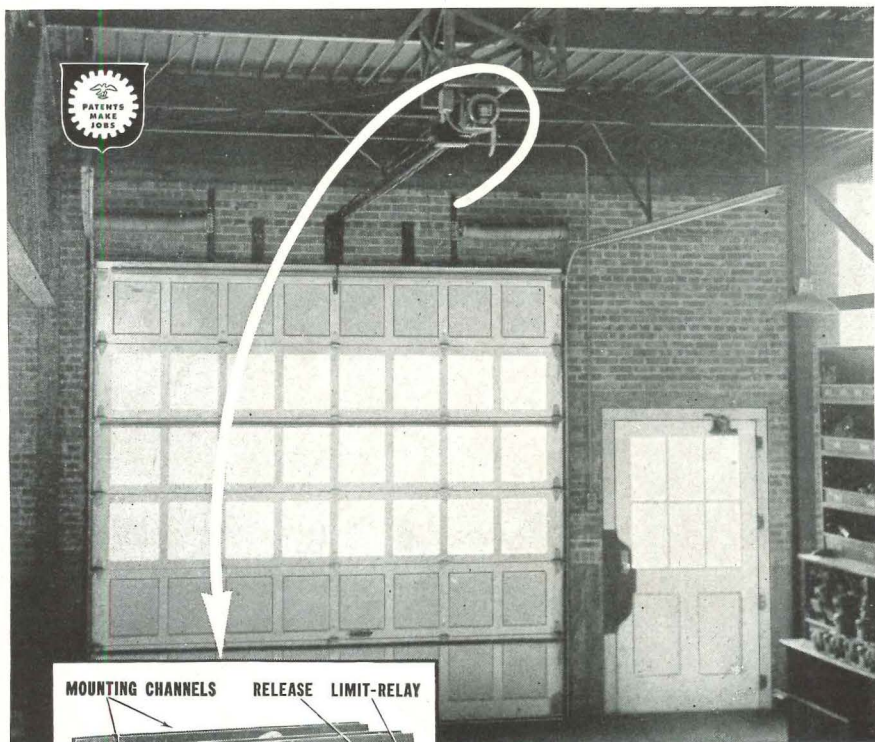
**Aluminum Unit**

Expected soon to be in production is a new aluminum extruded window unit, the *Winco*, which has no pulleys, weights, cords or springs, and requires no regular weatherstripping. Can be left open in rain or snow, as lower sash swings in. Also made for glass block installations. Watco Engineering, Inc., 2200 Scranton Rd., Cleveland 13, Ohio.

**LIGHTING NEWS**  
**Cold-Cathode Lamp**

Addition of a cold-cathode K lamp to a regular line of fluorescent products has been announced. The new lamps will be instant-starting, will have a rated life of 10,000 hours. They will be made in both 72 in. and 96 in. lengths, 1 in. in diameter, will operate on a standard 120 milliamperere multiple ballast. Sylvania Electric Products, Inc., Danvers, Mass.

(Continued on page 142)



**BARBER-COLMAN**  
**ELECTRIC**

**DOOR OPERATOR**

**SAVES TIME...HEAT...HEALTH**

When planning commercial and industrial buildings, be sure to specify *electric operators* for frequently-used doors. Barber-Colman Electric Door Operators have proved their ability to increase efficiency, reduce waste time, save fuel, and improve working conditions. *Ask your Barcol representative for complete details.*



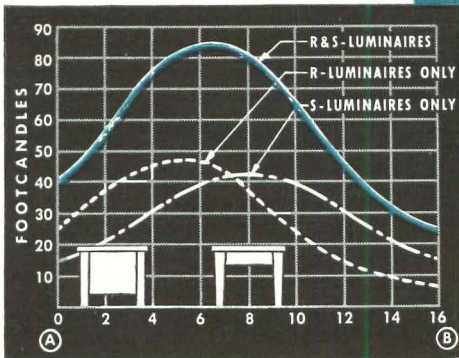
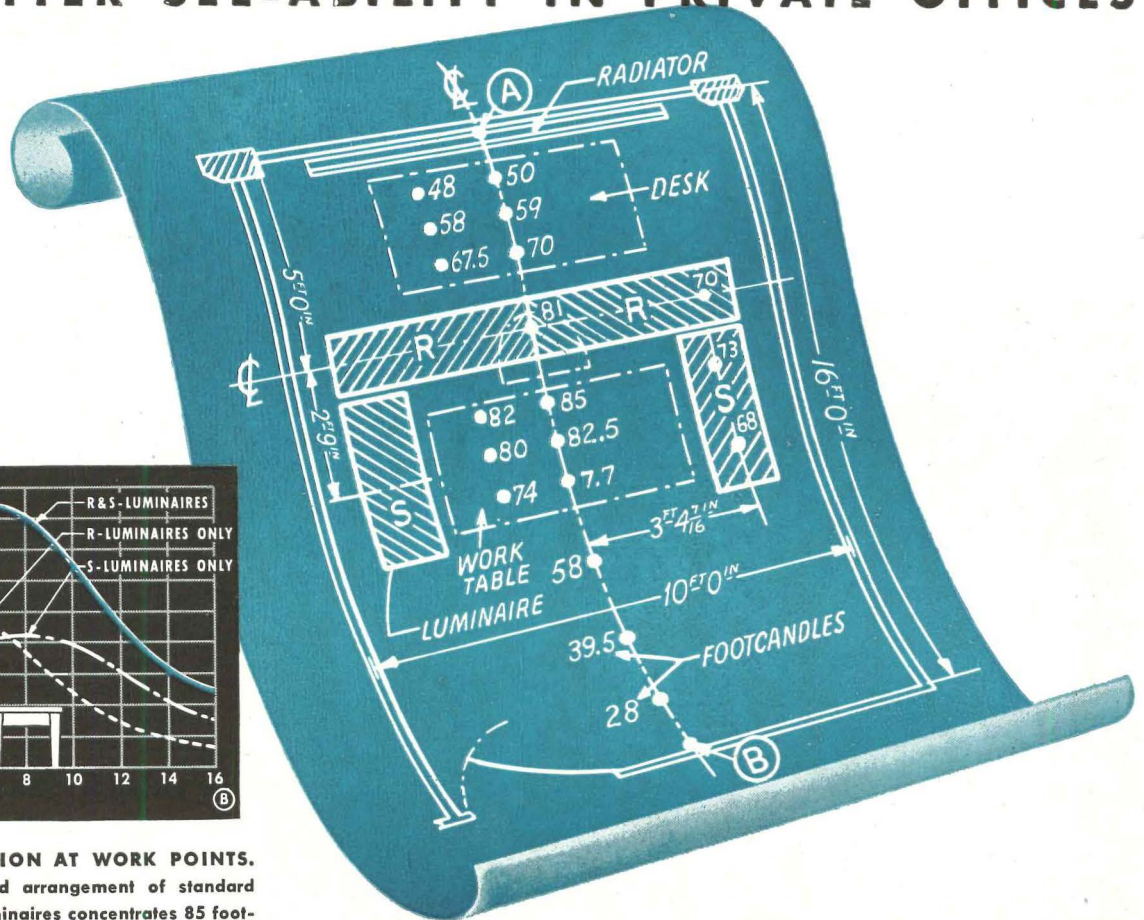
FACTORY-TRAINED SALES and SERVICE REPRESENTATIVES IN PRINCIPAL CITIES

**BARBER-COLMAN COMPANY**

102 MILL ST. • ROCKFORD, ILL.

# A new lighting yardstick

FOR BETTER SEE-ABILITY IN PRIVATE OFFICES



**GREATER ILLUMINATION AT WORK POINTS.**  
An ingenious U-shaped arrangement of standard LW-160 Fluorescent Luminaires concentrates 85 footcandles at the worktable, with about 65 footcandles on the desk. Greater seeing comfort is further provided by a low brightness contrast over the surrounding area. After 1000 hours of burning, the average illumination from A to B was 57 footcandles.

**BELOW:** Westinghouse LW-160 Fluorescent Luminaires provide a shielded light source and soft diffused illumination. U-shaped arrangement directs reflected glare away from the eyes of the person at the desk.



**IN DEVELOPING A NEW LIGHTING TECHNIQUE** for private offices, Westinghouse Lighting Engineers had two basic facts to start with. One was that practically all work in an office of this type is carried on by an individual at a desk or worktable. The other was that desirability for utilizing natural daylight makes few locations, other than adjacent to a window, suitable for desk and table.

These engineers concentrated their efforts on providing maximum seeing comfort to the person working at the desk or table. This was accomplished by having an abundance of illumination at the work points, as shown by footcandle distribution chart at the left. At the same time, direct and reflected glare are eliminated with proper control of brightness.

Such achievement proves that good lighting is not the result of good lighting fixtures alone, but is a product of correct fixture design plus application know-how.

Bulletin B-3662 describes this new lighting technique in greater detail. For a free copy of this helpful bulletin, contact your nearest Westinghouse Office, or write direct to Westinghouse Electric Corporation, P. O. Box 868, Pittsburgh 30, Pennsylvania. J-04068



**Westinghouse**  
PLANTS IN 25 CITIES . . . OFFICES EVERYWHERE

*Lighting Equipment*

AVAILABLE THROUGH 127 WESTINGHOUSE ELECTRIC SUPPLY CO. OFFICES AND INDEPENDENT DISTRIBUTORS

**Bathroom Spot Heater**

A new infrared lamp producing radiant heat is built of special ruby red glass which is highly resistant to temperature extremes. It has withstood a temperature shock test of more than 500°F., the manufacturer reports, and has continued to burn even after being dipped in ice cold water.

Its ability to withstand temperature shocks, it is suggested, will make it particularly suitable as a spot comfort

heater for the bathroom, where it is apt to come in contact with water drops. Westinghouse Electric & Mfg. Co., 306 Fourth Ave., P. O. Box 1017, Pittsburg 30, Pa.

**Downlighting**

To provide downlighting which is particularly useful in store illumination, two new silvered bowl lamps have a circular inside frosted "window" at each bulb's end. The lamps are rated

300 and 500 watts. In the former, the downlight filters through a 2¾ in. diameter inside frosted window; the latter has a circular window with a diameter of 3 in. General Electric Lamp Dept., Nela Park, Cleveland.

**Luminous Shield**

Now available is a patented luminous plastic switch plate shield which will fit over any standard toggle or push button plate and, when exposed to any normal light during the day, will glow all night. Originators Inc. National Outlet Co., 612 N. Michigan, Chicago 11, Ill.

**Convenience Outlet**

To make it easier to find and plug into convenience outlets, the new *LumiNite Duplex Convenience Outlet Plate* features a small shielded electric bulb which burns continuously. The plate is molded in a single piece of ivory plastic, will fit any standard duplex convenience outlet. Associated Projects Co., 80 E. Long St., Columbus 15, Ohio.

**Starter**

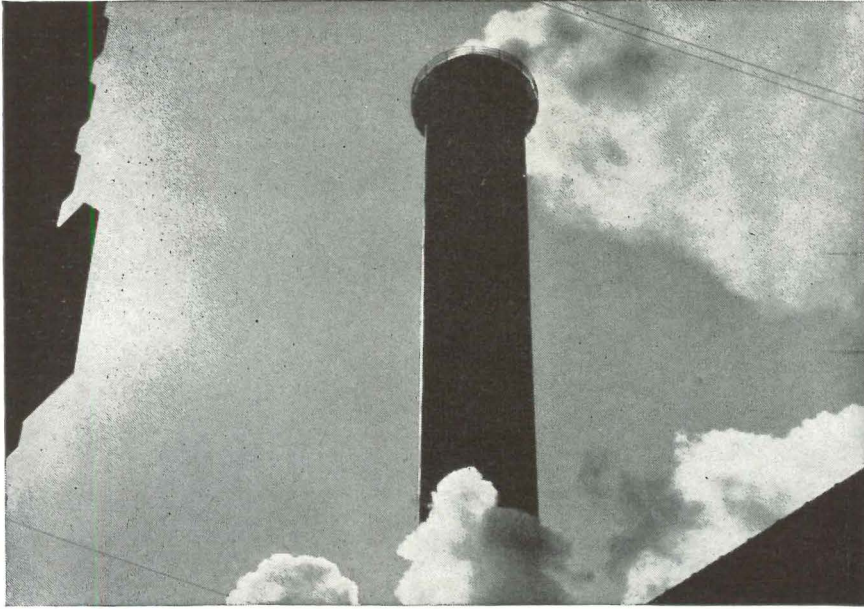
A new split-second starter for fluorescent lamps, the *Jack Rabbit*, is designed to fit in conventional starter sockets for use with instant-starting lamps. The split-second starting action, it is claimed, is accomplished with unusually high operating efficiency. With it, manufacturers can provide split-second starting in fixtures equipped with conventional low-cost ballasts. It is said to provide approximately 13 per cent greater operating efficiency than high-voltage instant-starting ballast systems. General Electric Co., 1285 Boston Ave., Bridgeport 2, Conn.

**Ballasts**

Two new special ballasts have been announced by one company. One is a single-lamp type, designed for the operation of a new line of 13-watt lamps used primarily in show cases and similar installations; the other is for the instant-starting operation of "Slimline" lamps designed for decorative and special lighting purposes. General Electric Co., Schenectady, N.Y.

**HOME FREEZERS**

Expected to be available to the general public shortly after the first of January, a 4 cu. ft. cabinet or horizontal model home freezer is 36 in. high, 34½ in. long, and 24 in. wide, weighs 250 lb. Finish is white baked enamel. Slightly less than 1½ kw of electricity are necessary to run the freezer in a normal room temperature, the manufacturers report, for a period of 24 hours. Frigidaire Division, General Motors Corp., Dayton, Ohio.



**A T L A S T !**

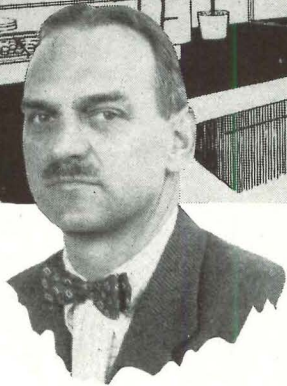
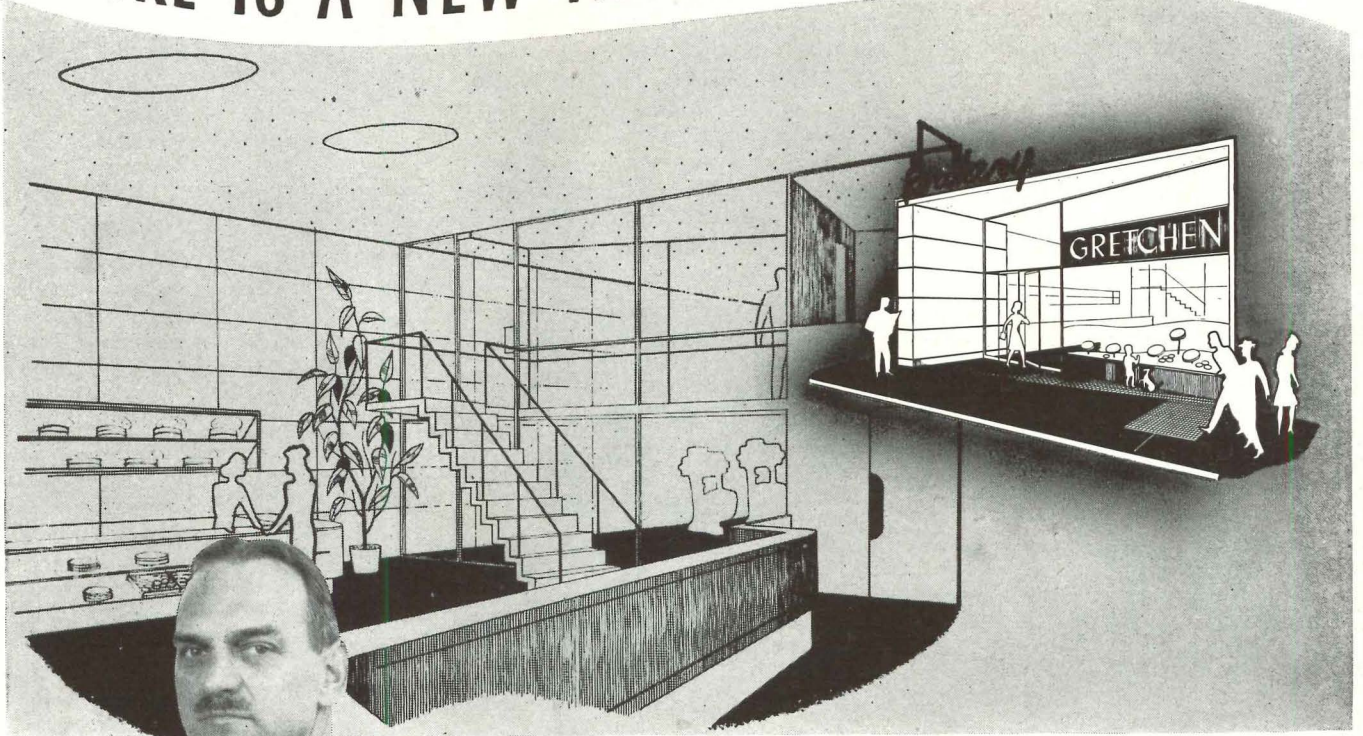
At last the first smoke of peaceful days streams from America's stacks . . . and we eagerly wait the day when we can tell you that the postwar Von Duprins are ready.

As soon as men and materials are available, these finer devices will begin to come off the assembly lines.

They will be the best devices we know how to build. In them will be incorporated all that we have learned in thirty-seven years of study and effort. These Von Duprins will be the safest, surest, fastest panic devices ever built...and well worth waiting for!



# THERE IS A NEW TREND IN STORE DESIGN



*Hervey Parke Clark*

## HERVEY PARKE CLARK'S conception of a Bakery

"The conception of this small production and sales unit is based on the assumption that seeing ideal working and sanitary conditions is an exciting experience for the customer and, therefore, good merchandising for the owner. The sales area is separated from the street by a transparent film (glass) which serves to keep the climate temperate and the air clean inside the store. A similar film divides the working area at the rear from the sales area in the front and confines odors and temperature differentials to the production area—yet customers and manager can readily view all the baking processes.

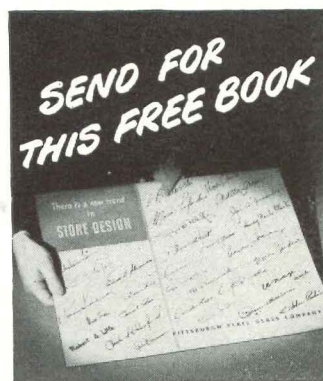
"The store front is transparent and, both day and night, clearly displays the freshly baked specialties in the shop window as well as affording a full view of the shop's interior. The entire glazed front is set in members of Pittco Store Front Metal.

"Inside, the walls of ivory Carrara Glass form a colorful and sanitary background for the sale of bakery products. The mirrored backs of the display cases on the walls instantly show the customer all sides of the cake or pastry she is about to buy. Ivory Carrara Glass walls carry through into the bakeshop where they form a spotless background for production, where cleanliness is essential."

HERVEY PARKE CLARK,  
Architect

In creating modern store fronts and interiors of distinction, you can rely upon the high quality and the adaptability of Pittsburgh Glass and Pittco Store Front Metal to help you execute your designs with striking success.

In 21 leading retail magazines, Pittsburgh Plate Glass Company is urging merchants to consult their architects, to modernize their stores *now*. Prompt, helpful service—is provided by our national organization of branches and dealers. If desired, convenient terms can be arranged on the Pittsburgh Time Payment Plan.



It contains 41 designs, submitted by leading architects, for stores, restaurants, service stations, theaters, etc. Every architect, designer and student will want to own this up-to-date reference book of ideas for building or modernizing retail stores. Send the coupon for your free copy of "There is a New Trend in Store Design." It will be sent to you promptly.

Pittsburgh Plate Glass Company  
3034-5 Grant Building, Pittsburgh 19, Pa.  
Please send me, without obligation, a free copy of the book, "There is a New Trend in Store Design."

Name.....

Address.....

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

"PITTSBURGH"  
*stands for Quality Glass and Paint*



**PITTSBURGH PLATE GLASS COMPANY**

PRODUCTS FOR STORE FRONTS AND INTERIORS

mation available as the result of its activities so that the Construction Division may make the maximum use of this material. The Construction Division will provide the NHA with the data and analytical information it develops.

2. A working liaison between the two agencies will be set up to prevent duplication of effort and to facilitate the combination of resources of the agencies on specific projects.

**BUILDING PLANS ANNOUNCED**

**New Plant**

A new truck-trailer plant nearly a half mile long, occupying a 186-acre site, will be built by the Fruehof Trailer Co. at Cleveland, Ohio. Architects are J. Gordon Turnbull, Inc.; contractors, Collins Construction Co.

Fruehof has started a nation-wide campaign to interest architects in planning for motor transport in plant design. A manual is being prepared.



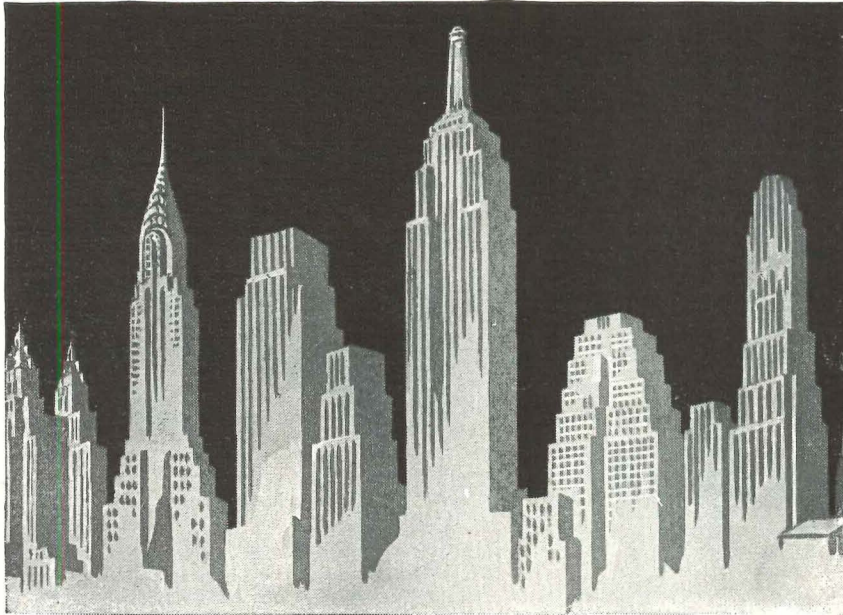
*N.Y.U.'s proposed new residence hall*

**Residence Hall**

The New York University College of Medicine has announced plans for a new \$750,000 residence hall to be erected at 33rd St. between First Ave. and East River Drive, New York City.

The 10-story building, containing 279 rooms, is one of the six major building units totaling \$15,000,000 that will be the university's share of an over-all \$27,500,000 New York University-Bellevue Medical Center project.

A special feature of the residence hall will be a three-floor wing, projecting toward the river, devoted to recreation and student activities. Various floors will be devoted to dining, lounging, reading and recreation rooms, and a gymnasium. The roof of the wing will be a large sun deck.



**THE SPENCER *Cleaned* SKYLINE**

Because few mammoth buildings have been built during the past ten years, some people forget that the majority of the biggest and best buildings of every kind in the country are Spencer Cleaned, including those shown in the New York "Skyline" above.

The reasons include faster, better cleaning; quiet, easy operation and a lower net cost in the long run.

An architect, after using a Spencer for thirty years in his own home, says "It has always been more efficient than the small portables."

Savings in larger buildings are ten-fold. Less dusting, less floor wax used. Radiators, filters, and boilers easily cleaned. Rugs, paint, decorations last longer. Ask for the bulletins.

**SPENCER VACUUM**  
HARTFORD  
**CLEANING**  
THE SPENCER TURBINE COMPANY, HARTFORD 6, CONN.



*New plant will quadruple facilities*

**Plant Expansion**

A four-fold expansion of plant facilities to meet expected demands for brake linings for postwar passenger cars and trucks was begun recently by the Marshall-Eclipse division of Bendix Aviation Corp. with the breaking of ground for a new factory at Troy, N. Y.

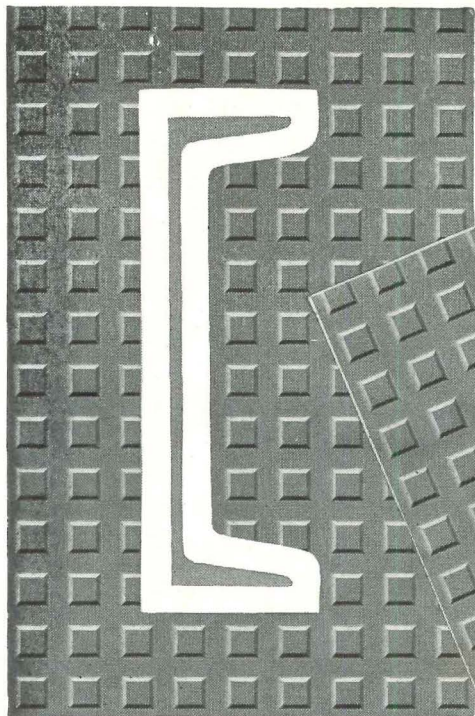
The new plant, now under construction, will be four times larger than all of the present buildings of the division. Providing approximately 80,000 sq. ft. of space, it will cost more than \$500,000, is scheduled for completion by next spring.

**OFFICE NOTES**

**Offices Opened and Reopened**

Joseph Blumenkranz announces that he is now practicing as architect and hospital consultant with Sidney L. Katz and Taina Waisman as associates. Address, 327 Lexington Ave., New York 16.

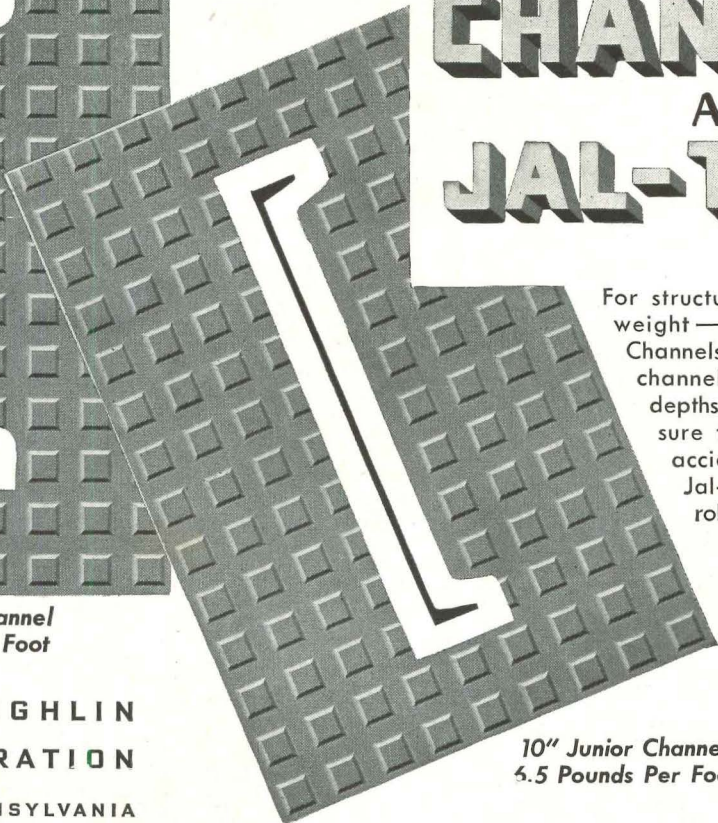
(Continued on page 146)



10" Standard Channel  
15.3 Pounds Per Foot

JONES & LAUGHLIN  
STEEL CORPORATION  
PITTSBURGH 30, PENNSYLVANIA

# J&L JUNIOR CHANNELS AND JAL-TREAD



10" Junior Channel  
6.5 Pounds Per Foot

For structural strength with minimum weight — Controlled Quality Junior Channels — the lightest rolled steel channels produced. Made in two depths and three weights. For safe, sure footing, to lessen industrial accidents — Controlled Quality Jal-Tread — the "Safety First" rolled steel checker floor plate.



## A REPORT on the PERFORMANCE of CAULKING COMPOUNDS

**"They provide greatest amount of satisfactory trouble-free performance"**

*Walter H. Packard*

WHEN re-appraising materials and methods for current maintenance as well as new construction, evidence of long satisfactory performance is a reliable guide to the final selection. The letter at the right, written by one of New England's outstanding waterproofing contractors, emphasizes the type of performance which has made MINWAX Caulking Compounds and Weathercap the first choice of many architects and owners as well as contractors.

Further evidence is contained in a file of job performance reports by the Pittsburgh Testing Laboratories, which we shall be glad to send on request, together with descriptive circular and architectural specifications. Write today for a copy. MINWAX Company, Inc. 11 West 42nd St., New York City 18.



PUBLIC SERVICE BUILDING, BOSTON, MASS.

CHAPMAN WATERPROOFING COMPANY  
APPROVED CONTRACTORS FOR  
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Minwax Company, Inc. November 5, 1945  
New York City 18

Gentlemen:

Answering your inquiry, our experience with Minwax Caulking Compound extends over twenty years and is most satisfactory.

We are now waterproofing the Public Service Building (picture enclosed) using your Caulking Compound for windows and your Weathercap for stone joints. We have found these to provide the greatest amount of satisfactory, trouble-free performance.

During the past twenty years we have used your caulking compound on over one thousand jobs with performance satisfactory to ourselves, the architects, and the owners.

Very truly yours,  
CHAPMAN WATERPROOFING CO.

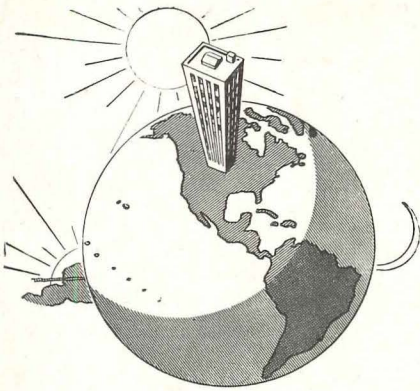
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**AUTOMATIC**  
**Webster**  
Heating Systems

## THE RECORD REPORTS

(Continued from page 144)

W. B. Cohan, R. A., has opened offices for the practice of architecture, structural engineering and industrial design at 624 S. Michigan Ave., Chicago 5.

Raymond A. Coolidge, Architect, announces the opening of his office at 640 New England Bldg., Topeka, Kans., after 3½ years with the War Department.

S. Harold Fenno, A.I.A., and Stanley C. Podd, A.I.A., have opened an office for the practice of architecture under the firm name of Fenno and Podd. Address, 525 Delaware Ave., Buffalo 2, N. Y.

George M. Foulks, R.A., returned to the practice of architecture on Oct. 15. Address, 625 Twelfth St., N.W., Canton 3, Ohio.

E. Ellsworth Giles, Architect, has announced the opening of an office at 113 Morristown Rd., Bernardsville, N. J.

T. Tardy Hart announces his return to the practice of architecture in association with I. Wm. Ricciuti. Address, Queen & Crescent Bldg., New Orleans 12, La.

Faion E. Lott, Architect, has opened an office at 12 E. Pleasant St., Baltimore 2, Md.

Harry Ray Nay, R. A., has resumed his architectural practice with a business office at 710 Hawley Bldg., Wheeling W. Va., and his working studio on Cadiz Pike, R.F.D. #1, Martins Ferry, Ohio.

Samuel Pelton, Architect, has reopened his office at 427 N. Broad St., Elizabeth, N. J.

Eugene John Stern, A.I.A., has established an office in Mexico City under the name of Stern De Mexico, S. de R. L. Address, S. Juan de Letran 21-914, Mexico, D. F.

Thomas H. Voshell, Architect, has opened an office at 88 Broad St., Charleston, S. C.

Stanley M. Ward, Architect, has opened offices at 19 N. Fullerton Ave., Montclair, N. J.

### New Addresses

The following new addresses have been announced:

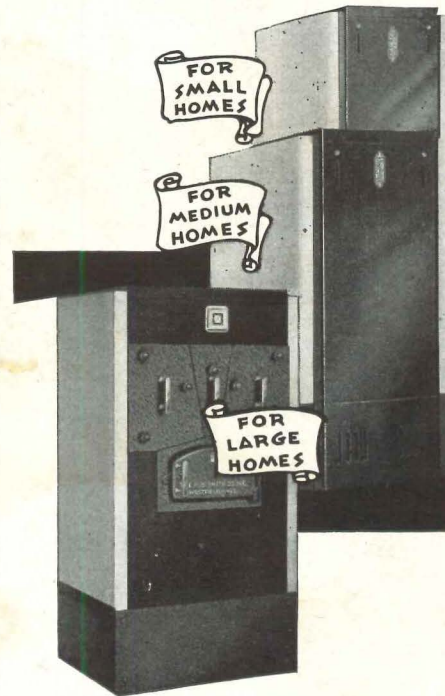
Abraham Bluestone and Enoch Bluestone (Bluestone & Bluestone, Structural Engineers), 150 Nassau St., New York 7.

Ruth Gerth and George Kosmak, 1226 Sutter St., San Francisco 9, Calif.

The Iorio Construction Co., The Bergen Theatre Bldg., 779 Bergen Ave., Jersey City 6, N. J.

William Henry Rowe, Architect, 214 Front St., San Francisco 11, Calif.

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