

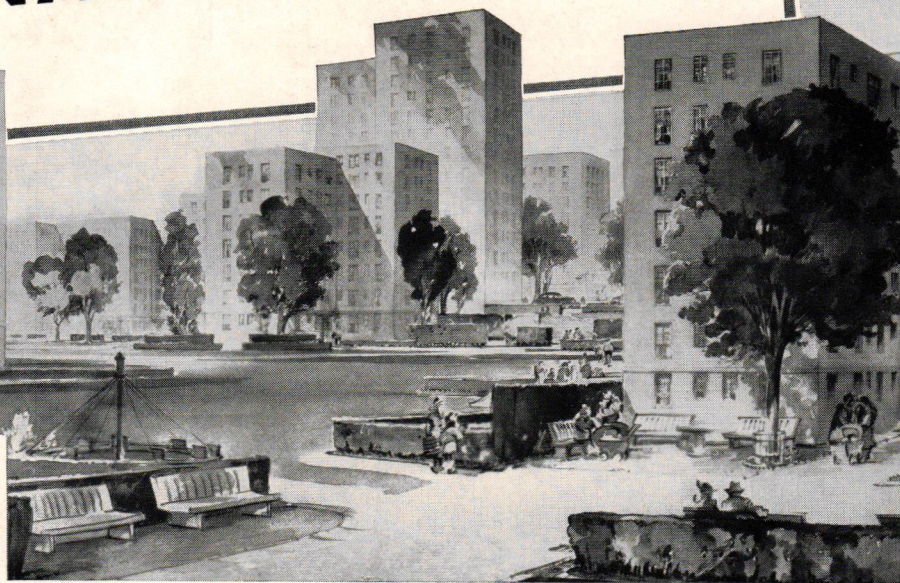
E S I G N
TENNESSEE VALLEY AUTHORITY ARCHITECTURE

PENCIL POINTS

NOVEMBER

1939

World's **LARGEST** **HOUSING PROJECT** ... uses Tons of **NATIONAL PIPE**



Architect's conception of one section of Parkchester, important housing project now under construction in the Bronx, New York City. Of the many tons of pipe to be used in this project, the bulk will be NATIONAL Pipe, selected because of its long record of successful applications. Board of Design: R. H. Shreve, Chairman; H. C. Meyer, Jr.; G. D. Clarke; Irwin Clavan; A. J. Eken; George Gove; Robert W. Dowling, New York. Engineers: Meyer, Strong and Jones; Purdy and Henderson; Burns and Roe, New York. General Contractors: Starrett Bros. & Eken, Inc. Heating Contractors: Baker, Smith & Company, Inc.

(Below) Work is progressing at a rapid rate at Parkchester, with first buildings scheduled for occupancy early in 1940. NATIONAL Pipe is used extensively throughout this project, because it is widely recognized as a clean, strong, thoroughly uniform pipe of low cost.



PARKCHESTER, Metropolitan's new record-breaking housing project, is worth watching. For besides being far the largest of its kind, it offers facilities which have heretofore never been available in moderate-rental housing.

Designed to house 42,000 people, the project will consist of 51 buildings, some scheduled for completion early in 1940. It will occupy 129 acres of the Bronx, New York City, and includes a full complement of stores, a theater, and garages. In addition, provision has been made for parks, shaded walks and malls, playgrounds, wading pools, roller skating paths, handball

and softball courts, and other recreational facilities.

Buildings will be of fireproof construction, modern in every detail. In keeping with the general character of the project, only finest quality materials have been approved. That is why, of all the pipe to be used in this gigantic undertaking, the major tonnage will be NATIONAL Pipe.

Here, as in other famous commercial, public, and residential building projects, NATIONAL Pipe was the choice of architects and builders, because in all-round building applications it gives more service per dollar of cost than any other type of pipe.

NATIONAL TUBE COMPANY

PITTSBURGH, PA.



Columbia Steel Company, San Francisco, Pacific Coast Distributors • United States Steel Products Company, New York, Export Distributors

UNITED STATES STEEL

PENCIL POINTS

ARTICLES

DESIGN IN TVA STRUCTURES	KENNETH REID	691
ARCHITECTURE OF THE TVA	TALBOT F. HAMLIN	721
OF SNAILS AND MICE	HUBERT G. RIPLEY	745
CONSTRUCTION WITH PLYWOOD	OSCAR FISHER	751

PLATES

TVA CONSTRUCTION	SELECTED DETAILS	733
------------------	------------------	-----

COMPARATIVE DETAILS GROUP 52

BRIDGE RAILS, THE WORK OF Aymar Embury II, Madigan-Hyland, Waddell & Hardesty, Theodore E. Blake, Robinson & Steinman; Arthur J. Barzaghi, New York World's Fair Board of Design; City of New York, Department of Parks, Robert Moses, Commissioner; Triborough Bridge Authority; Marine Parkway Authority; Henry Hudson Parkway Authority; Long Island State Park Commission; Port of New York Authority	739
---	-----

DATA SHEETS PREPARED BY DON GRAF

DOUGLAS FIR PLYWOOD; COLORS OF DECORATIVE PLYWOODS; R. C. SLAB; PLANNING THE FARMSTEAD	47
--	----

HERE, THERE, THIS, AND THAT

NEWS FROM THE FIELD, COMPETITION ANNOUNCEMENTS, AND BOOK REVIEWS, ETC.	15
--	----

COVER DESIGN AND TYPOGRAPHY BY GUSTAV JENSEN

PENCIL POINTS

KENNETH REID, EDITOR. CHARLES
MAGRUDER, ASSOCIATE EDITOR
DON GRAF, TECHNICAL EDITOR
THE MONOGRAPH SERIES
RUSSELL F. WHITEHEAD, EDITOR

Published Monthly by REINHOLD PUBLISHING CORPORATION, Stamford, Conn., U. S. A. Ralph Reinhold, President and Treasurer; H. Burton Lowe, Vice President and Secretary; Philip H. Hubbard, Vice President; Francis M. Turner, Vice President. Executive and Editorial Offices: 330 West 42nd Street, New York. 50 cents a copy. Yearly subscription \$3.00, two years subscription \$5.00, payable in advance, to the U. S. A. and all U. S. Possessions. To Canada, Cuba, Mexico, Central and South America, \$3.50 a year. To all other countries \$5.00 a year. Remittances by International or American Express Money Order or by Draft on a bank in the U. S. should be payable in United States funds. Subscribers are requested to state profession or occupation. Changes of address must reach us before the 20th of the month to assure delivery of forthcoming issue. Be sure to give both your old and new addresses. To Contributors: Articles, drawings, photographs, etc., sent with a view to publication will be carefully considered, but the publisher will not be responsible for loss or damage. Copyright, 1939, by Reinhold Publishing Corporation. Trade Mark Registered. All rights are reserved. Entered as second class matter, March 10, 1930, at the Post Office, Stamford, Conn., under the Act of March 3, 1879. Volume XX, No. 11, November, 1939. Indexed in Art Index.



An interesting angle on
Permanence and Beauty



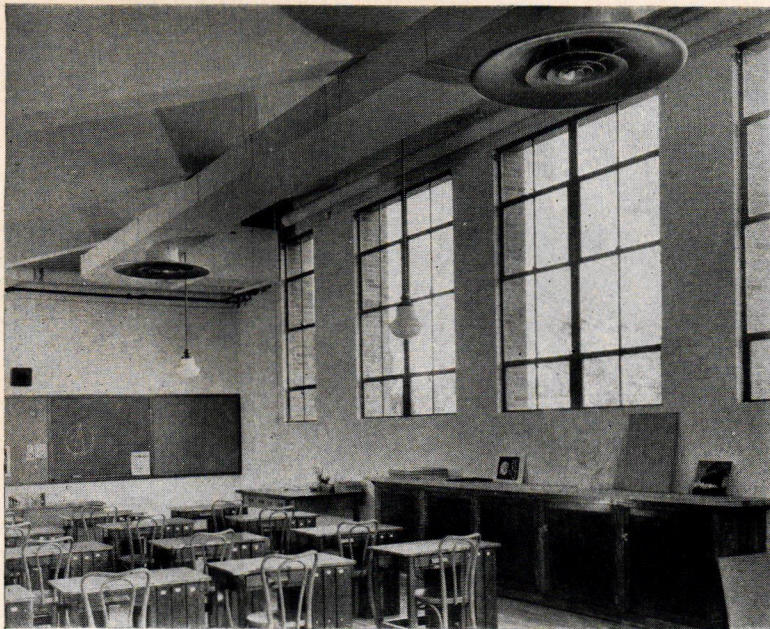
Aluminum allows free scope to the creative designer. Enables him to meet that triple demand for utility, attractiveness and the permanence which is economy.

Spandrels of Alcoa Aluminum add beauty to the exterior; the most intricate patterns are reproduced faithfully. Their light weight makes handling and erection easier, greatly simplifying construction. They reduce loads on structural frameworks. As a result, building costs are often less.

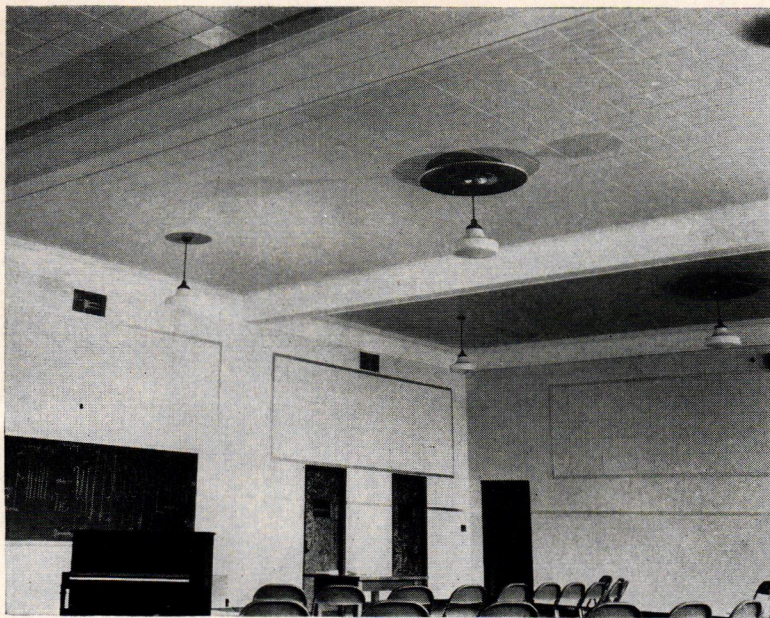
Windows and sills of Alcoa Aluminum offer equally desirable features. Setting of the standard extruded sill sections is simple and rapid; there are no troublesome joints. Aluminum windows add much to the appearance of a building, provide maximum glass area, operate easily and are permanently weather-tight. First costs are surprisingly low.

The natural ability of Aluminum to resist corrosion eliminates the need for protective painting. Where Aluminum is used, your maintenance costs are low. Aluminum Company of America, 2198 Gulf Building, Pittsburgh, Pennsylvania.

ALCOA · ALUMINUM



ART ROOM



MUSIC ROOM

ANEMOSTAT HIGH VELOCITY AIR DIFFUSER

Leading educators and authorities on school design recognize that the heating and ventilating systems of modern schools must function without the harmful and unpleasant sensations caused by drafts.

The rapidly increasing number of school installations is evidence of the broad acceptance of the ANEMOSTAT High Velocity Air Diffuser for the draftless distribution of air and equalization of temperature in enclosures of every size.

ANEMOSTAT CORPORATION OF AMERICA
10 EAST 39TH STREET, NEW YORK

A TYPICAL SCHOOL INSTALLATION

FAIRMONT SCHOOL DAYTON, OHIO

RIAL T. PARISH
ARCHITECT AND ENGINEER

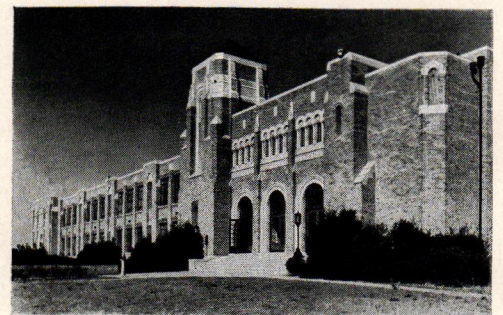
Installation Data

ART ROOM

Ceiling Height	12'
Volume of air through each of two Anemostats	1283 c.f.m.
Velocity in Neck of Anemostat.....	1200 f.p.m.
Neck Diam. of Anemostats.....	14"
Temperature Differential.....	.85°

MUSIC ROOM

Ceiling Height.....	14'
Volume of air through each of three Anemostats	1283 c.f.m.
Velocity in Neck of Anemostat.....	1200 f.p.m.
Neck Diam. of each Anemostat.....	14"
Temperature Differential.....	.80°



*"No Air Conditioning System is
Better than its Air Distribution"*

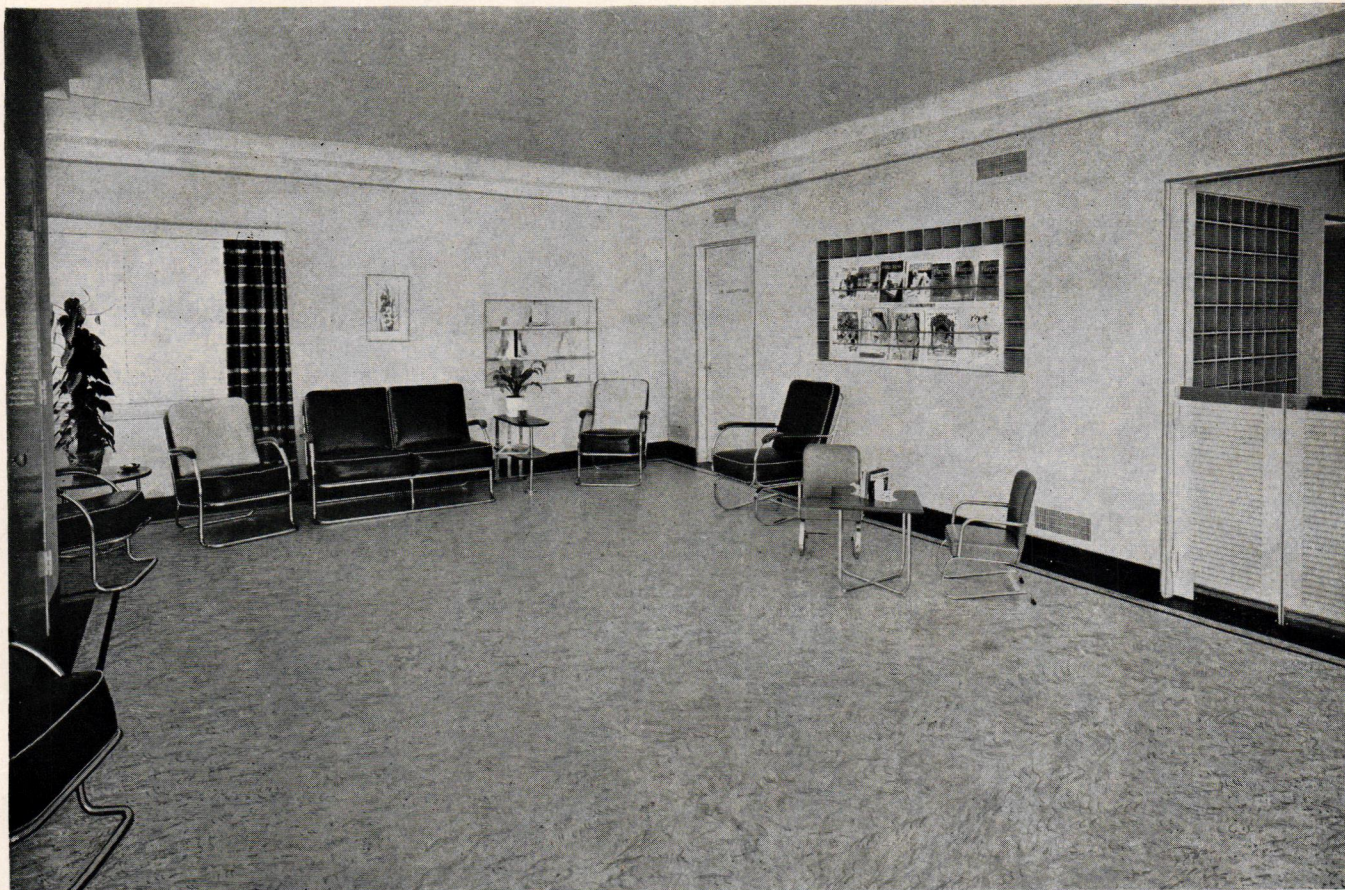
ANEMOSTAT

AN-37-A

HOSPITAL FLOORS MUST DO

"Double-Duty"

Read how up-to-date hospitals are making double use of Armstrong's Linoleum Floors



HOSPITALS faced with decorating problems require floors that serve two purposes.

First, they seek to avoid giving their rooms a cold, institution-like appearance. With Armstrong's Linoleum, colorful homelike floors are easily created because of the wide range of rich colors and textures available. And these floors can be made distinctive with smart custom-cut insets or with Armstrong's Ready-Cut Linosets.

Second, hospitals want flooring that stands up under heavy traffic. Wear-resistance is assured with Armstrong's Linoleum because this linoleum is strong and resilient. The colors run right through the material . . . can't scuff off. Maintenance

is easy and inexpensive. Daily sweeping and occasional washing and waxing preserve this quiet, restful flooring for years.

Send for Booklet

Get the facts on linoleum flooring. Write to us and we will send you a free, color-illustrated book showing a few of the attractive floor effects possible with Armstrong's Linoleum. Armstrong Cork Company, 1213 State St., Lancaster, Pennsylvania.

A FRIENDLY RECEPTION ROOM greets patients in the Medical-Dental Clinic Laboratory of Orange, California. The room is floored with Armstrong's Marbelle Linoleum with a feature strip of cadet blue. Note the easy-to-clean flash type core base at the walls.

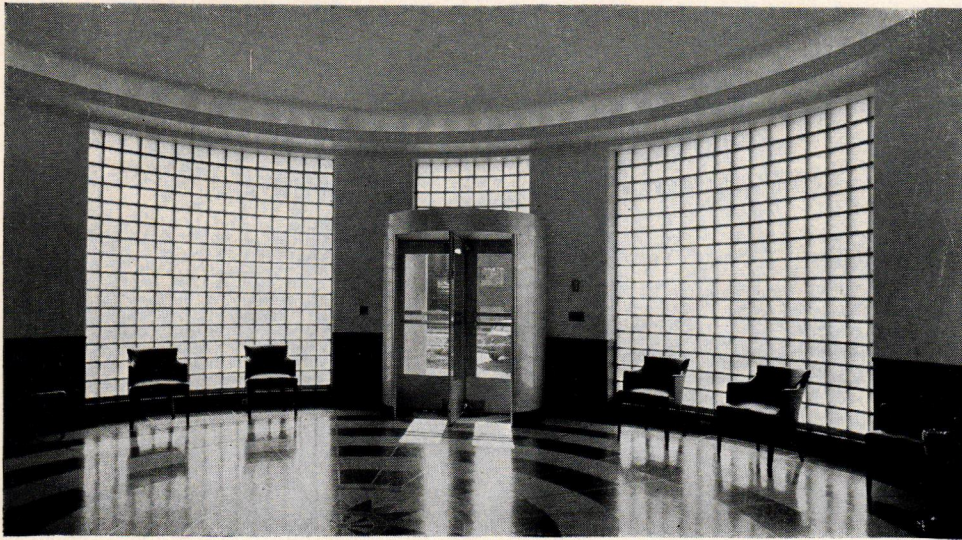
For hospitals, Armstrong manufactures the only complete line of resilient floors: Linoleum, Asphalt Tile, Linotile (Oil-Bonded), Rubber Tile, and Cork Tile. Let our Architectural Service Bureau help you in planning new floors. There is no charge.



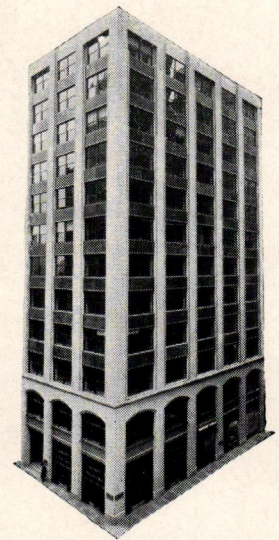
RUBBER TILE • LINOTILE (OIL-BONDED) • ASPHALT TILE

Armstrong's **LINOLEUM**
and **RESILIENT, NON-CERAMIC TILES**

CORK TILE • LINOWALL • ACOUSTICAL CEILINGS



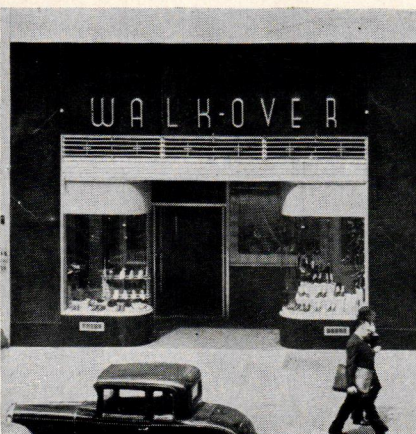
Virginia Black Serpentine Base in Lobby, United Air Lines Bldg., Chicago, Ill., Albert Kahn, Architect.



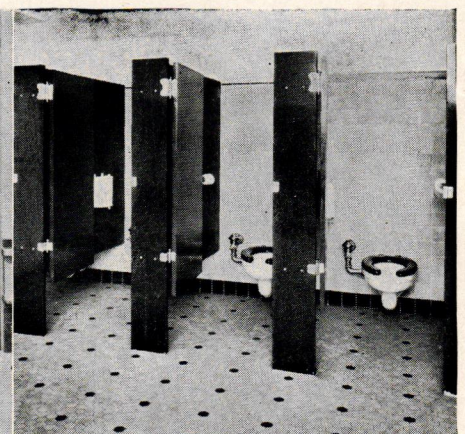
Thin Virginia Green Tremolite Spandrels, 280 Madison Ave., New York; Walker & Gillette, Architects.



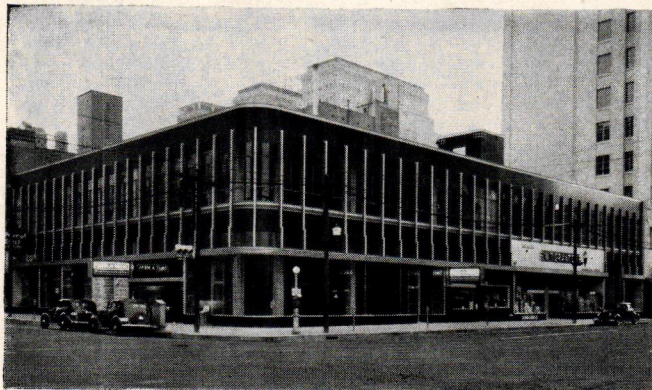
Virginia Black Serpentine Facing and Hearth, "LIFE" House, Chicago, Ill., Royal Barry Wills, Architect.



Virginia Black Serpentine Ashlar front, Walk-Over Store, 5th Ave., New York, Kenneth Norton, Architect.



Toilet stalls of Virginia Black Serpentine, Home Ins. Co. Bldg., New York; Voorhees, Walker, Foley & Smith, Architects.



Polished Virginia Black Serpentine Facings and Bulkheads, Varner Bldg., Houston, Tex., Kenneth Franzheim, Archt.



Polished Virginia Black Serpentine Bulkheads, United Shoe Machinery Co. Bldg., Boston, Mass.

"A picture is worth a thousand words". . .

so there are seven thousand words on this page describing the versatility of the popular dark stones from the Alberene Quarries in Virginia. Cost is moderate... polish is natural and free from glare... stone is tough and dense. Set of samples gladly sent if requested on your business stationery. Alberene Stone Corporation of Virginia, 419 Fourth Avenue, New York, N. Y. Sales Offices in principal cities. Quarries and Mills at Schuyler, Virginia.



Whatever your problem
in store front design . . .

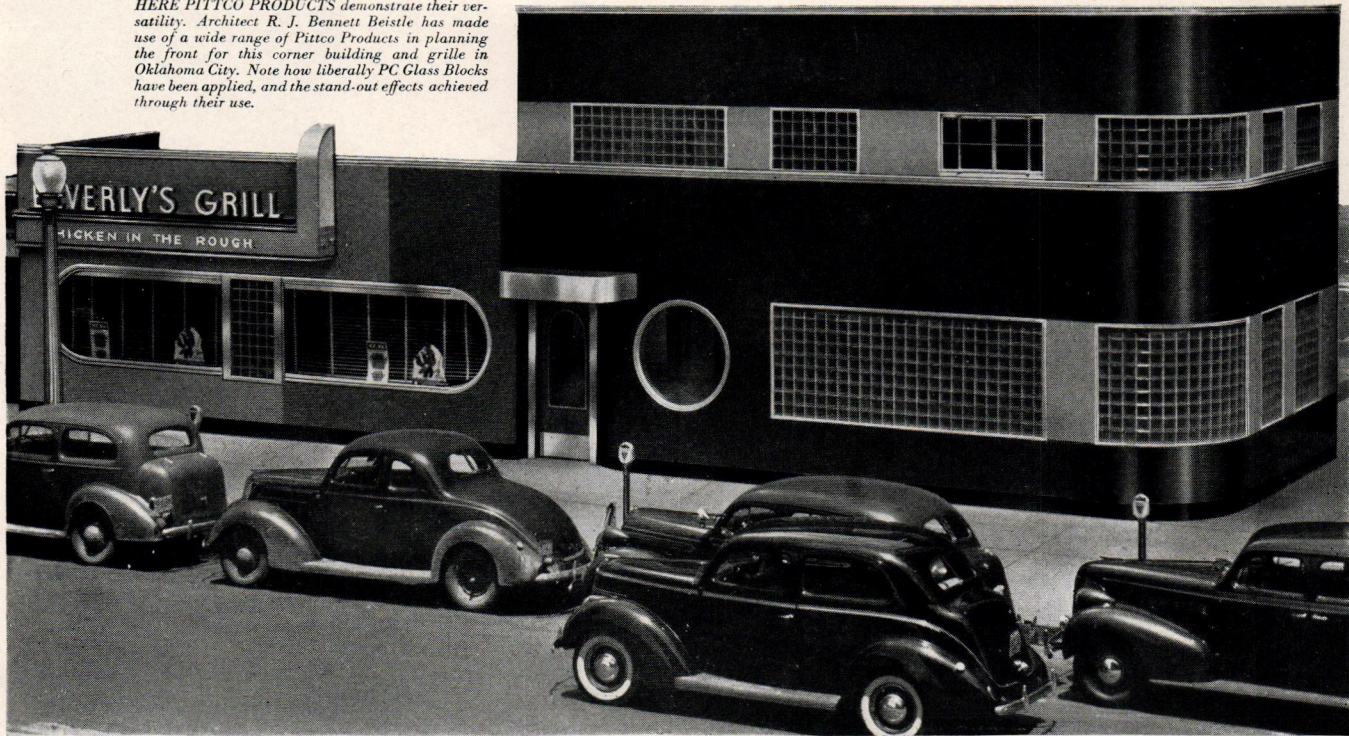
GLASS can meet the Challenge!

GLASS provides the architect with countless store front design possibilities. It is being employed in ever-widening range to achieve effects that are possible with no other medium. For fronts that are gay and bright or dignified and subdued, for the small store in the middle of the block or the important corner location with large frontage, architects the country over are using glass to

create distinctive, customer-winning effects.

Thousands of Pittco Store Fronts everywhere testify to the versatility of glass. The consistent excellence of Pittco Products, their nation-wide availability in identical quality, make this line of products the ideal choice for architectural expression in store front work. We invite you to mail the coupon for complete, free information about them.

HERE PITTCO PRODUCTS demonstrate their versatility. Architect R. J. Bennett Beistle has made use of a wide range of Pittco Products in planning the front for this corner building and grille in Oklahoma City. Note how liberally PC Glass Blocks have been applied, and the stand-out effects achieved through their use.



PITTCO STORE FRONTS
PITTSBURGH PLATE GLASS COMPANY
"PITTSBURGH" stands for Quality Glass


Pittsburgh Plate Glass Company
2256-9 Grant Bldg., Pittsburgh, Pa.

Please send me, without obligation, your literature on PC Architectural Glass.

Name

Street

City State



Exide Emergency Lighting "Stars" when nearby fire plunges theatre in darkness . . .

It's
the first
60 seconds
that count

SEVERAL weeks ago a serious fire across the street from this theatre made it necessary to cut off the electric power to the entire business section about 10 P.M. The Exide System in the theatre flashed into action instantly, and furnished ample light for the patrons to leave in safety"—excerpt from the report of an Exide Engineer.

Thanks to Exide Emergency Lighting a possible panic was avoided . . . terror which may easily result in danger or personal injury to persons in crowded public places. When lights unexpectedly go out—in theatres,

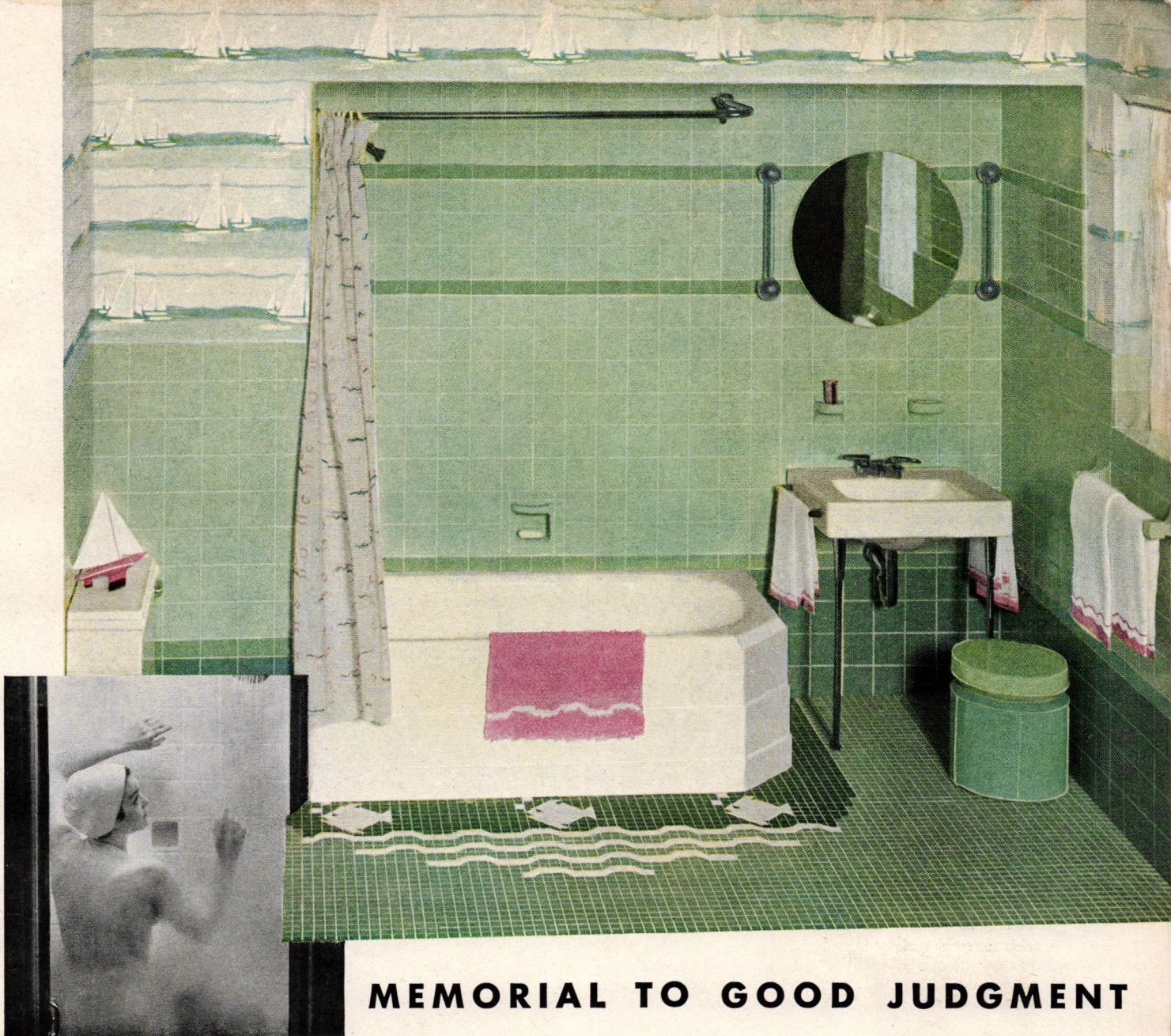
stores, schools, restaurants, public buildings, and in hospitals especially—it is *the first sixty seconds that count.*

An Exide Unit *automatically and instantaneously* supplies abundant emergency light, for a single room or an entire building. The utility companies take every precaution, but cannot control the effects of storms, floods, fires, or street accidents.

Exide
Keepalite
**EMERGENCY LIGHTING
UNITS**

The only care an Exide Unit requires is the addition of water four times a year. Why not write for free bulletin giving full details?

THE ELECTRIC STORAGE BATTERY COMPANY, Philadelphia
The World's Largest Manufacturers of Storage Batteries for Every Purpose
Exide Batteries of Canada, Limited, Toronto



MEMORIAL TO GOOD JUDGMENT

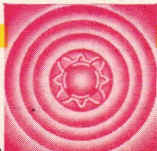
NO OTHER DECORATIVE MEDIUM CAN TRUTHFULLY CLAIM ALL THESE QUALITIES

- **Lowest Lifetime Cost**
- **Unrestricted Utility**
- **Structural Soundness**
- **Ageless Beauty**
- **Style Flexibility**

Suntile for this smart modern bathroom will be gladly displayed by your local authorized Suntile dealer. He has complete specifications for this Sunstyled room. (9' x 5' 6" overall.)

This tile work (without fixtures) can be duplicated under present conditions, in Cincinnati for \$6.05 per month under F.H.A. plan, based on total price of \$189.00. Prices will vary according to location and conditions.

Suntile



Bright with color-Right for life

Suntile Color Selection SERVICE

A patented system of balanced color presentation, through an interchangeable section assembly of full size tile panels. You and your client can see in a few minutes color balanced combinations, including floors, wainscot and trim as they will appear in an actual installation.

Every architect possesses a natural desire to make his work a never ending reminder of a job well done, a work that lives on in the clients praise and pride . . . a **memorial to good judgment**. Such memorials are built only through the expert use of good taste, good materials and good installations.

Good taste finds a perfect medium in **Suntile's** exclusive color balance—its well conceived design—its infinite capacity to provide individual expression in smart, modern styling.

Good materials installed under guarantee by selected dealers add the final assurance that good taste can be permanently reflected in every **Suntile** Installation.

Suntile . . . the one decorative medium in which is fused the traditional qualities of yesterday—the style urge of today, and the security of a lifetime of tomorrows has the power to make honest architectural judgment . . . eloquent.

THE CAMBRIDGE TILE MFG. CO., Cincinnati, Ohio

Warehouses in

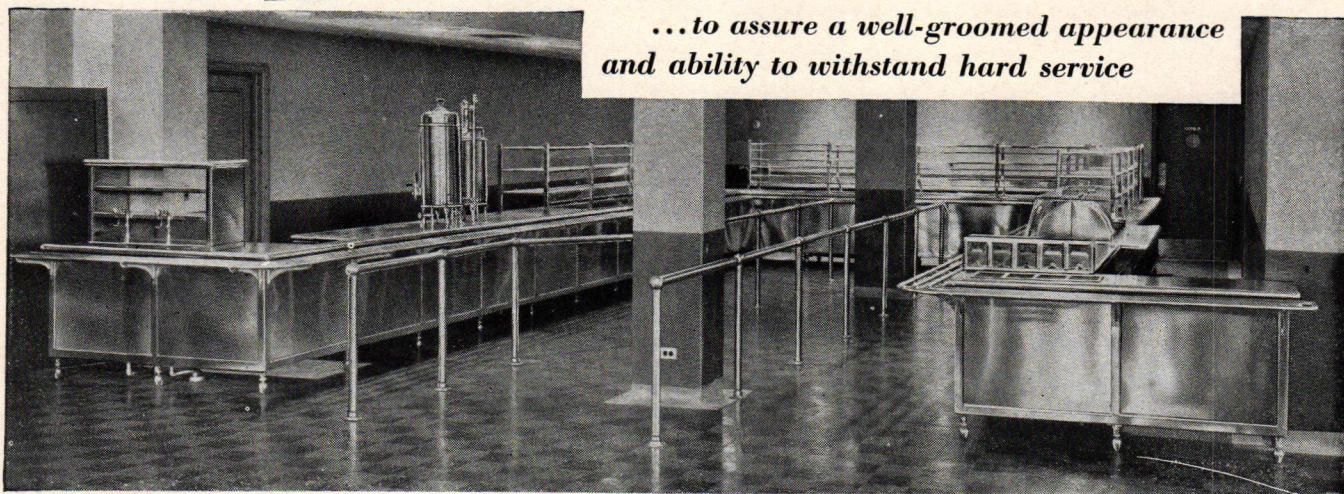
New York City, Brooklyn, Chicago, Dallas, San Francisco, Los Angeles

Combinations of your preference can be quickly demonstrated. Experience has proved that this quick, effective presentation saves time, eliminates confusion, and the error of mental visualization. It avoids the difficulties so often encountered through insufficient or misproportioned samples. A demonstration by your authorized **Suntile** dealer will convince you.

What the **WELL-DRESSED SCHOOL SHOULD WEAR**



*...to assure a well-groomed appearance
and ability to withstand hard service*

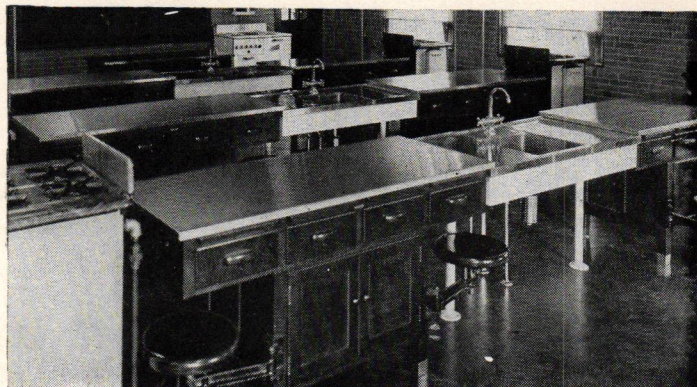


IN THE CAFETERIA...MONEL

In this new cafeteria at Brooklyn College, Brooklyn, N. Y., 1100 students can be served at one sitting. Not one of them, however, outshines these silvery food service counters in smartness of appearance. And as to wear: If a student could buy clothes with anything like the wearing qualities of this equipment his money problem would be solved for good. For throughout the kitchen, as well as cafeteria, the material employed is #35 Monel.

IN THE LABORATORY...MONEL

One place that's hard on metals as well as on students' clothes is the Domestic Science Laboratory. But in the Rhode Island School for the Deaf at Providence, R. I., there's no worry on that score. Tables and sinks are built to withstand abuse and the corrosive effects of food. Furthermore, made of lastingly smooth, rust proof Monel, they are easy to keep clean and sanitary.



ON THE ROOF...MONEL

One part of a school that deserves the best of materials is the roof. From the standpoint of both safety and cost of upkeep it pays to use a metal that is strong, tough, durable, rust proof and resistant to the ravages of weather. The same considerations governed selection of roofing materials for the Cloister Museum, Fort Tryon Park, N. Y. Gutters, coping and flashing are all Monel.

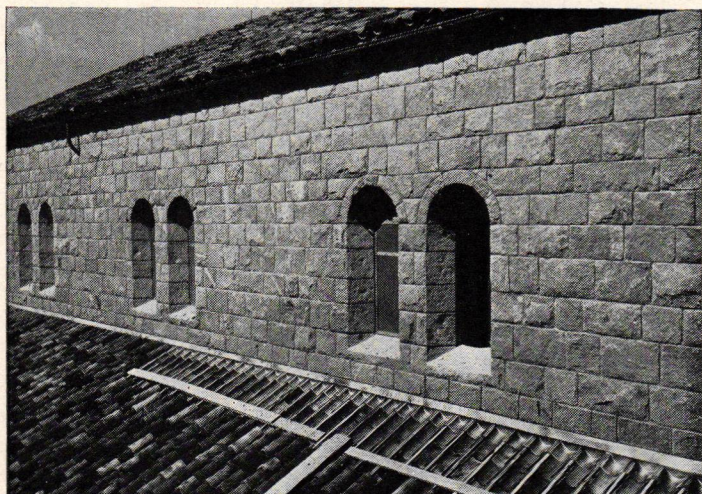
Because of Monel's exceptional strength, toughness, resistance to corrosion, excellent wearing qualities, and beauty, it is a highly desirable material for numerous building applications. These applications in relation to various types of structures are discussed in a new booklet "Rustless Strength in Vital Spots." Write for your copy today. Address:

THE INTERNATIONAL NICKEL COMPANY, INC., 67 WALL ST., NEW YORK, N. Y.



MONEL

"Monel" is a registered trade-mark of The International Nickel Company, Inc., which is applied to a nickel alloy containing approximately two-thirds nickel and one-third copper.



INSULUX

A Functional Material with Decorative Value

FOR HOMES

The prime function of Insulux Glass Block is to transmit diffused light to the interior of homes. But this modern material offers the architect and the owner many other advantages.


The versatility of Insulux Glass Block gives you new freedom in designing light-transmitting areas, from small panels to light basements to tall panels in rooms and halls.

Insulux panels help lower heating bills, for the high insulation value of glass block minimizes heat loss.

Insulux Glass Block give the owner privacy, shield him from outside noise, prevent soot and dust from seeping in, need no painting.

Yet, with all their functional efficiency, Insulux Glass Block are also a decorative material, adding beauty to both the interior and exterior of homes. Their harmony with traditional and modern architecture is proved by successful use in homes in every state.

Technical advice by our staff on any use of Insulux is yours for the asking. Owens-Illinois Glass Company, Insulux Products Division, Toledo.

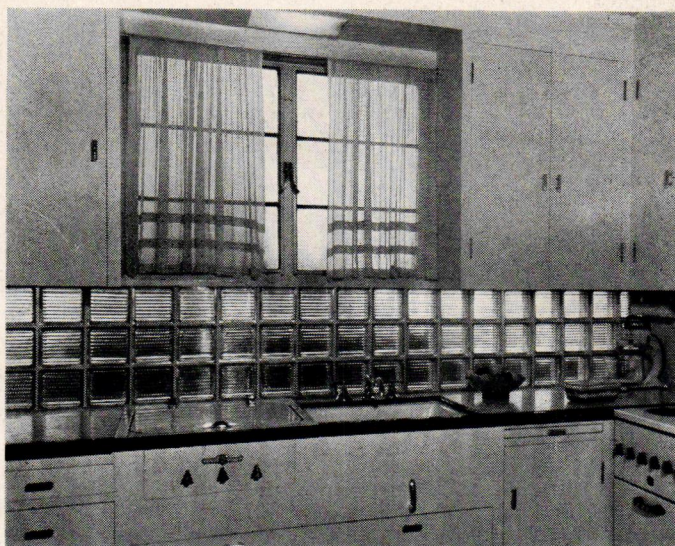
OWENS - ILLINOIS
INSULUX  **Glass Block**

Insulux Competition No. 3 Closes November 20th

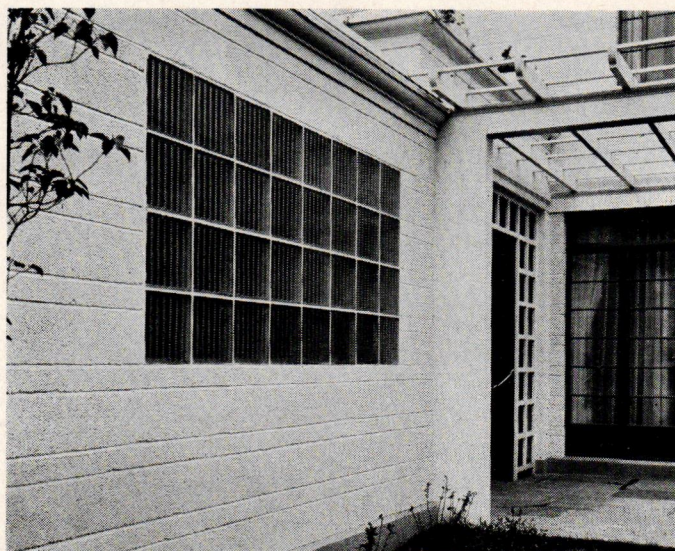
You can still enter Insulux Competition No. 3 — a dairy — and compete for \$2,500 in prizes, plus \$5,000 in grand prizes. For full technical information on the problem and title lettering, write Henry H. Saylor, A. I. A., Professional Adviser, 9 Rockefeller Plaza, New York City. You will not be obligated to submit drawings. Competition No. 3 closes November 20, 1939.



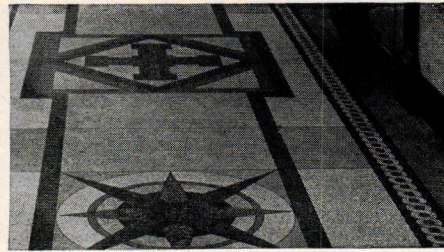
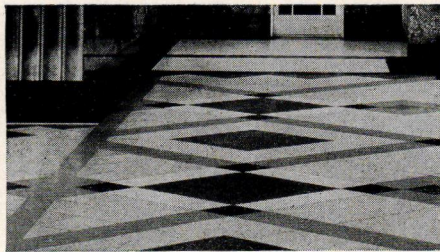
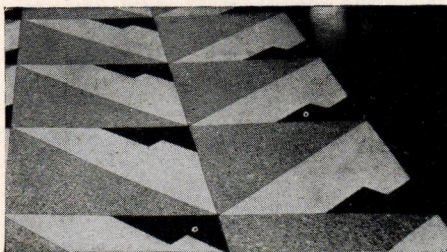
In this New York World's Fair model home, Insulux panels were used to increase the daylight effect in the dining bay without adding to heat loss. The effect is highly decorative.



A running panel of Insulux above the sink and drain-boards puts light where it's needed—on the work areas. The glass block absorb no grease or odors . . . wash easily.

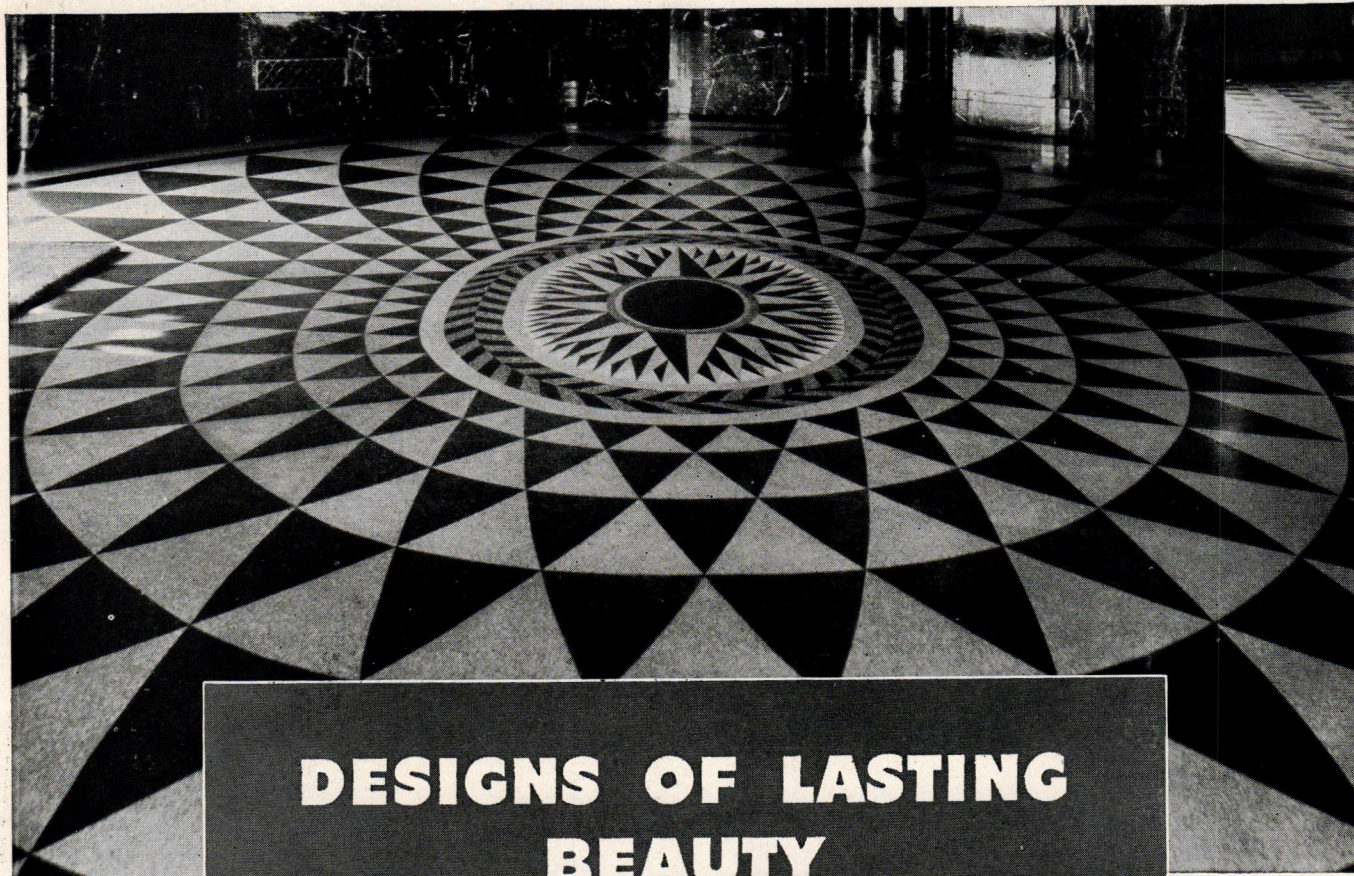


In garages, where ventilation is not needed, solid panels of Insulux provide light, prevent heat loss, maintain privacy and cannot be entered by intruders.



● Swirling bands of color, squares, triangles—any design or pattern you specify can be followed easily with Terrazzo. The infinite pattern possibilities, plus

a color range from white through vivid colors to deepest black, are responsible for the increasing use of Terrazzo in many types of buildings.



DESIGNS OF LASTING BEAUTY

for the busy homes of business



FEET—hurrying in and out of office buildings, rushing on the errands of business!

You need a floor of lasting beauty and character to stand up under the steady, day in and day out pounding.

Terrazzo floors grow in favor more and more for modern office and commercial buildings because they refuse to wear out. They offer you the widest latitude in design and use of color—and they stay fresh and colorful for life.

Terrazzo is dense, hard concrete. It is difficult to stain or soil. It needs a minimum of care and it is reasonable in cost. Your clients will appreciate these advantages. And you will be pleased at the ever new and original designs at your command. Terrazzo floors are literally made to your special order.

Write for detailed information about this decorative and structural material for lobbies, hallways, stairways and wainscoting. Write the National Terrazzo and Mosaic Association, 1420 New York Ave, NW., Washington, D. C.

THE NATIONAL TERRAZZO AND MOSAIC ASSOCIATION

BUILT TO

Last!



with Enduring **REINFORCED CONCRETE**

Rigid frame bridge on Six Mile Road, over middle branch of River Rouge. Built by Wayne County Road Commission, Wayne County, Michigan. H. A. Shuptrine, Engineer.

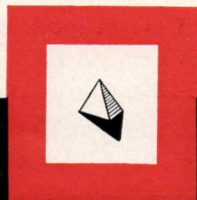
● Built to defy time and the elements—built with due respect to beauty of design and low cost, this bridge is another example of enduring service expressed in Reinforced Concrete. This great modern medium is equally adaptable to towering skyscrapers or small residences—to ornate decorative motifs or straight, simple lines. Investigate the uses of monolithic Reinforced Concrete for frames, floors, walls and beautiful exteriors . . . discover how its use permits maximum beauty, thrift and durability, how it brings new freedom to design.

SEND FOR THIS NEW HANDBOOK

This advertisement sponsored by 135 manufacturers and distributors of reinforcing materials, members of the

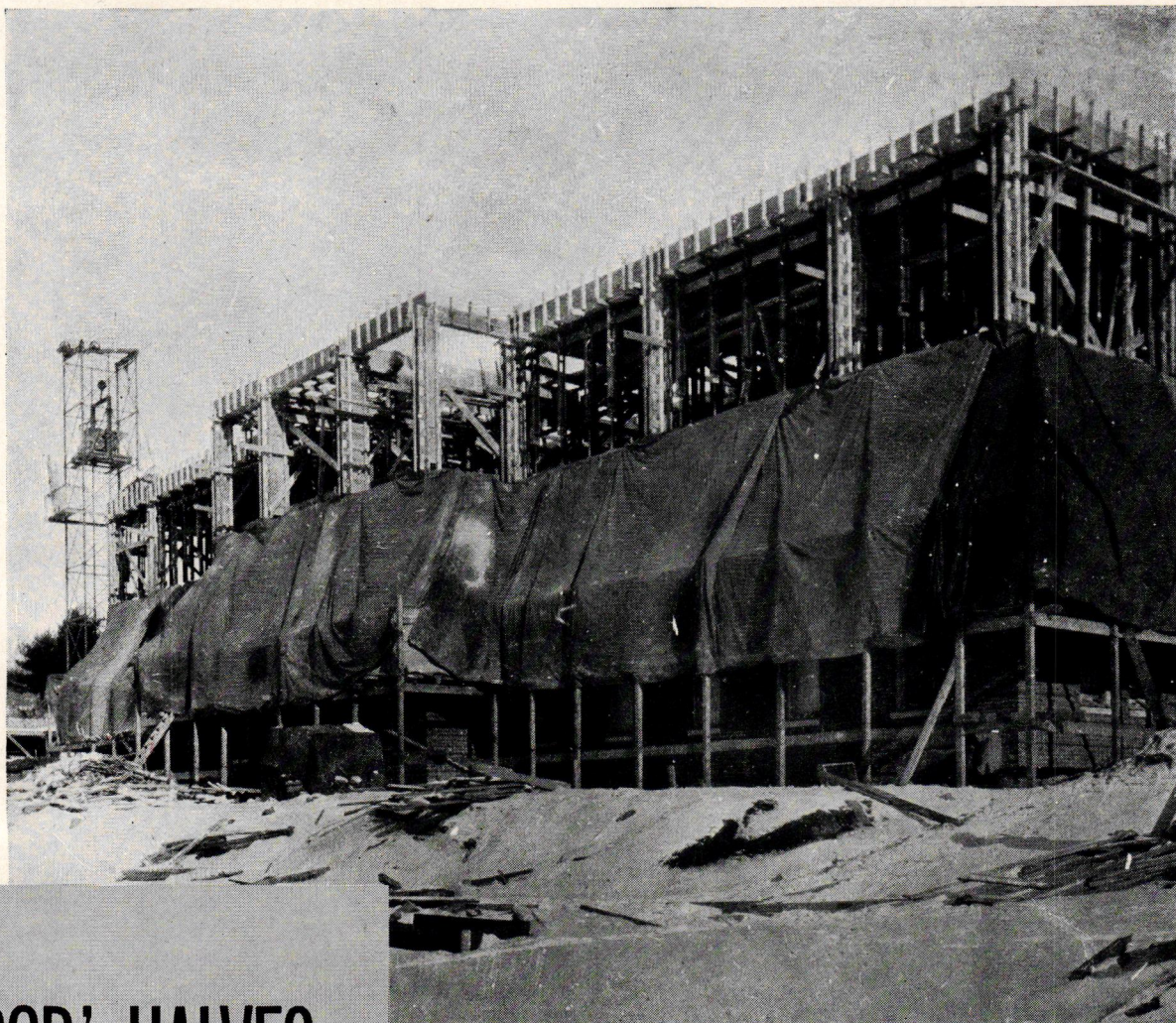
**CONCRETE REINFORCING
STEEL INSTITUTE**
Dept. 511, Builders Building, Chicago

A copy of the new 64-page booklet—"REINFORCED CONCRETE—A Manual of Standard Practices," will be sent free to you upon request. It contains standard specification data, design details, load tables and other helpful information—a ready reference for your desk. Send for it TODAY!



REINFORCED CONCRETE

ECONOMICAL — ENDURING



'INCOR' HALVES HEAT-PROTECTION COSTS

AS temperatures fall, concrete hardens slower; at or about freezing, hardening stops altogether—and, left to itself, concrete is exposed to damage by frost. So heat-protection is employed to promote hardening and prevent freezing.

Because it cures or hardens in one-fifth the usual time, 'Incor' 24-Hour Cement reduces the cost of cold-weather concreting; for the obvious reason that one hour's heat-protection with 'Incor' is equal to five ordinarily. That is why 'Incor' saves 50 to 60 percent of the usual cost of heat-protection, producing concrete that is service strong, safe from freezing, days sooner.

In addition, 'Incor's dependable high early strength makes it possible to re-use forms sooner; and faster completion means earlier use, often at lower cost.

Specify 'Incor'* 24-Hour Cement for winter work. Write for copy of "Cold-Weather Concreting." Lone Star Cement Corporation, Room 2248, 342 Madison Avenue, New York.

*Reg. U. S. Pat. Off.

LONE STAR CEMENT CORPORATION

MAKERS OF LONE STAR CEMENT • • • 'INCOR' 24-HOUR CEMENT

HERE, THERE, THIS & THAT

BOSTON NOTES

Those of us who have not seen the World of Tomorrow are craving autumnal surcease from the confusion of yarns by returning pilgrims, as to who found the body and where. We have even had sympathetic sore feet and a touch of museum fatigue, without leaving home. Our first question has always been to try and isolate an opinion on the New England States show. Few seem to have noticed it, which makes me feel sure that an earlier suggestion to enshrine the group in a Gloucester-like stench of codfish would have put it across. Signs in the vicinage might have read, "New England is calling you—let your nose be your guide."

Trade is pretty generally at low ebb with us, but features an upswing in domestic work, large and small. That does nobody any good except the luxury office and the straight house office (count 'em on your thumbs). Those of us in what we are pleased to call the commercial and institutional game tighten our belts and smile sardonically at the busy ones who think the depression is over.

At the B.A.C. dinner, October 4, Jens Frederick Larsen was speaker to the fifty-five lads present. Afterward they went up to the atelier and tore into their work; the season was On.

On October 5 the Architectural League of Boston got going, with Hubert Ripley as contributing guest. Afterward the boys went down the Hill and potted home to their wives and offspring.

There is a marked change in recent years among the stalwarts of our trade. When Grandmother cooked steatopygous gingerbread folk for the pride of the family, life in Architecture was really going on apace, so the records show. I hear stories of prodigious feats at all hours, which attest to the manhood and eupepsia of the gentlemen who are become our conservative elders. The present batch

This sketch of a typical New York scene, by William Bertkau, of Bronxville, was made with carbon pencil

of hearties upon whom the business of whooping it up now falls, with at least several bars more before reaching the *rallentamento* cue, are utterly changed. One glass of beer and eftsoons, they're either surfeited or pie-eyed. Some are credited with the simulation of a slight unsteadiness to conceal their perfidious traffic at the sweet cider jug.

On October 10 the Boston Society of Architects held its initial dinner of the season. To it were invited students from Tech, Harvard and the Club, and a performer on the accordion demonstrated the power of music over young and middle-aged.

President Whitmore presided and William Emerson introduced the speaker, who was Dean Walter R. McCornack, his successor at M.I.T. Eschewing the subject of Education Dean McCornack gave a comprehensive discourse concerning the private architect in relation to his business and governmental rivals, and towards such challenging problems as

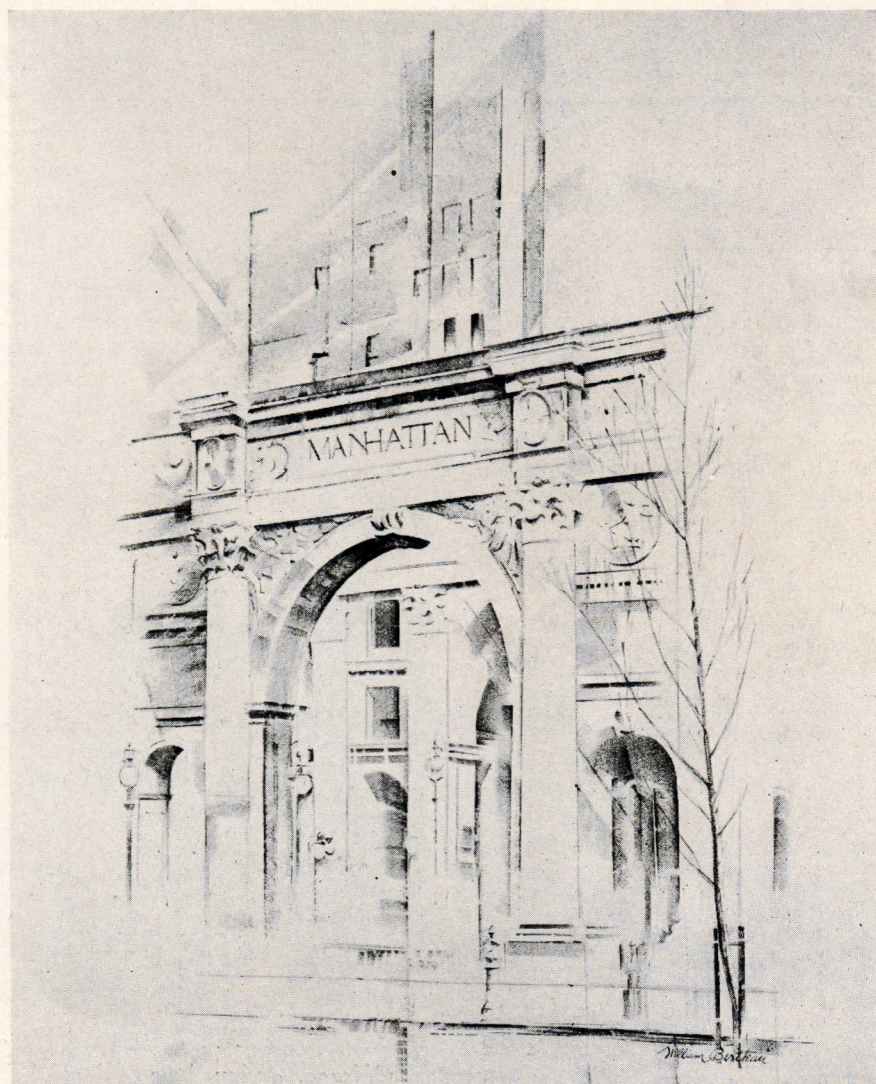
(Continued on page 16)

ARMCHAIR JOURNEYING

If many of our readers are moved to dust off their photograph albums and revisit in fancy, next month, the places that inspired them last summer, just thank Talbot Hamlin, whose pictures made on *his* vacation trip from Coast to Coast will be spread before us in the December issue. He will also write about our architecture, East and West.

Then the Editors have scheduled a provocative discussion of the "business side of the architect's practice," by Edwin H. Silverman, and an account by Dwight James Baum of work at Syracuse University's Department of Architecture. Eugene Raskin reports that he has again interviewed the Great Architect, and James C. Rose that he has some suggestions on "bringing landscape architecture to date."

The Monograph will show "Examples of Late Windows" in New England, and other regular features will include Data Sheets, an article on Keys; and Sun Deck details.



NEW IDEAS!

PLYWOOD *plus* LAUX Plywood Accessories



REZ
Synthetic resin
sealer, primer.



REZITEX
Exterior resin
plastic paint.



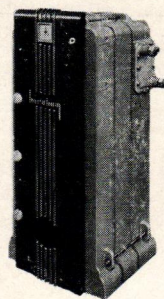
PLASTEREX
Interior resin
plastic paint.

And...other Laux specialties
Also...**REZITED**-at-mill
plywood, doors, sash, etc.

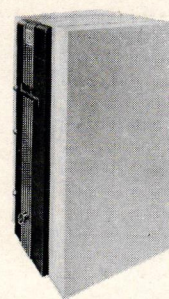
NEW IDEAS! New beauty! New economy! Put them in the homes you design, with Dry Wall plywood construction, plus Laux plywood accessories. Here are special synthetic resin finishes formulated specifically for plywood. Laux Rez, Rezitex, Plasterex, etc., give perfect results. Specify plywood plus Laux accessories on your next job! Send for information and samples.

LAUX SALES CO.

(DIVISION OF I. F. LAUCKS, INC.)
Seattle, Oakland, Los Angeles,
Chicago, Minneapolis, Houston,
Portsmouth, Va.; Vancouver, B.C.



The Junior Yellow Jacket is shipped all ready for connecting. No base to set up.



Has an attractive tailor made jacket finished in dandelion yellow and black.

A Small House Boiler That Is One

This Junior Yellow Jacket is not a big boiler squeezed down. It's an out-and-out, newly-designed small cost oil boiler, having a small fuel consumption, for small homes.

Send for printed matter.

BURNHAM BOILER CORPORATION
Irvington, N. Y. Zanesville, Ohio

Burnham Boiler

(Continued from page 15)

civic plan, antique building codes, and barriers to the truly low-cost house. He outlined the positive action so far taken by organized architects to reclaim their neglected birthrights, and hoped for a broader membership to help carry the burden and lend strength to the attack. It was a talk with the ring of heartening realism about it, and gave the impression that our shoulder-shrugging against traditionally impossible hurdles was not at all on Dean McCornack's repertoire.

The latest definitely social note contains the name of Robert E. Minot, who has gone and done it. The *Transcript* of October 14 reported his engagement to Miss Kathleen Miller, of Chicago and Boston. Bob Minot is bearing down on wedlock with an M.I.T. tradition, while Miss Miller cheers for the May and Garland schools.

Among our wanderers, Messrs. Provost and Gilpatrick are at Worcester, with L. W. Briggs Company; Silvio Zanetti is on housing at Fall River; and Providence has recently provided economic asylum for George Marshall. If the situation doesn't perk up we'll have to push further

into the hinterland than any of these.

Back in the days of Valentino it was a Bostonian's ambition to be a sheik in Wolff's clothing. Since then Wolff has departed from Washington Street, and the boys have shifted their affection to Browning King, who punctuates the debut of winter worsteds with a showing of food and drink. You wouldn't serve an alewife on crown derby, nor back up a peaty tweed with baked beans, so it works out very satisfactorily. LEON KEACH

ROCHESTER SOCIETY

A banquet in celebration of the twentieth anniversary of the founding of the Rochester Society of Architects will be given November 16 in that city. Highlights of the evening will include an historical sketch of the Architects of Rochester and reminiscences by older members of the profession. William G. Kaelber is president, and Irving Horsey serves as secretary of the organization.



U. A. L.—Grignon

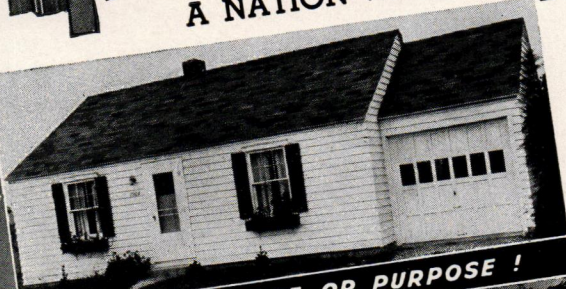
The reception room of the new \$300,000 United Air Lines office building in Chicago, designed by Albert Kahn, Detroit Architect, portrays Aviation

The **"OVERHEAD DOOR"**
 TRADE MARK
 THE DOOR WITH THE
MIRACLE WEDGE
Wedges Tightly — Yet — Opens Easily



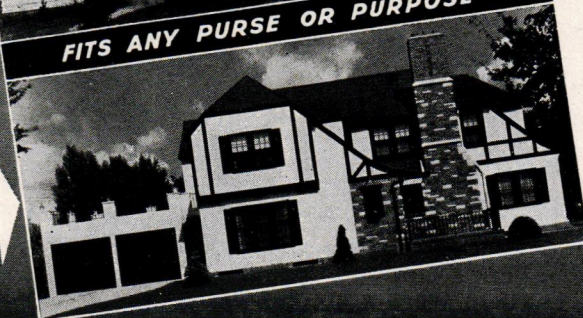
Backed By
A NATION-WIDE SALES-INSTALLATION SERVICE !

HOMES
 under
 \$2.000



FITS ANY PURSE OR PURPOSE !

HOMES
 over
 \$10.000



Please send full information and free literature on doors for the purpose checked:

- | | |
|---|---|
| <input type="checkbox"/> Private Garage | <input type="checkbox"/> Wood Sections |
| <input type="checkbox"/> Public Garage | <input type="checkbox"/> Steel Sections |
| <input type="checkbox"/> Warehouse | <input type="checkbox"/> Hand Operated |
| <input type="checkbox"/> Factory | <input type="checkbox"/> Electric |
| <input type="checkbox"/> Greasing Station | <input type="checkbox"/> Standard Model |
| <input type="checkbox"/> Other Buildings | <input type="checkbox"/> Master Model |

PP-1139

NAME _____

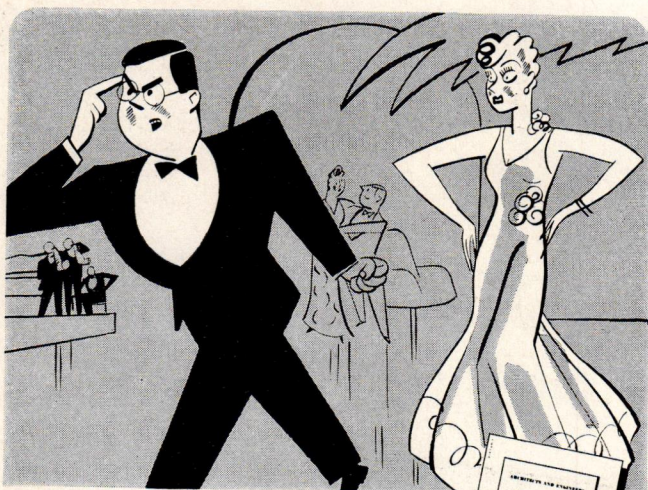
ADDRESS _____

CITY _____

STATE _____

OVERHEAD DOOR CORPORATION
 HARTFORD CITY, INDIANA, U. S. A.

**MAIL
 COUPON
 TODAY**



**SORRY TOOTS! I FORGOT
TO LOCK UP MY WADB!***

*Westinghouse Architects' Data Book.

You'll have to excuse him, Blondie. John Architect wouldn't be here tonight, if it weren't for the time saved by WADB. Remember the hours he used to spend writing electrical specifications? Now WADB saves all of that. Any architect can do the same — simply use the office copy, or Sweet's.

J-94057



Westinghouse



Rugged AS A LACROSSEMAN

Lacrosse is known as the roughest of games, played well only by men of strength and endurance.

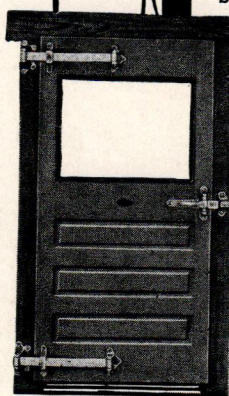
Cold storage doors are like lacrosse-men. Hard knocks are their daily lot, too. Only the most ruggedly-built can give championship performance. Leading plants use JAMISON-BUILT DOORS because performance proves they stand the strain. From diagonal and steel corner bracing to the soft but non-collapsible pure rubber gasket, JAMISON-BUILT DOORS are designed and built for years of trouble-free service.

If you are interested in cold storage doors, send for the JAMISON story. Descriptive bulletins are free. Write JAMISON COLD STORAGE DOOR CO., Hagerstown, Md., or to branches in principal cities.

Jamison, Stevenson, and Victor Doors

JAMISON
BUILT DOORS

†Jamison Window Door with Wedgetight Fastener



(See our catalog in Sweet's Catalog File)

POTOMAC PATTERN

Despite the last-minute cancellation of the Fifteenth International Congress, about a dozen delegates representing the South American countries, Canada, England and Japan were on hand the last week of September to participate in the A.I.A. Convention activities. The Congress Committees also functioned, for the benefit of those who were here, and for the excellent work and cooperation of the duly-appointed representatives of the Department of State, acting in behalf of your Government in playing host to the International Congress, credit must be given. The Hon. James Clement Dunn, Advisor on Political Relations, Department of State, extended the official welcome to the foreign delegates; the Hon. U. Grant-Smith, retired diplomat, was Honorary Secretary of the Committee on Organization for the International Congress of Architects; and Dr. Andre C. Simonpietri, served as Secretary of the International Congress. His knowledge of at least six languages made him the life of the International party, and not only did he serve the foreign contingent, as our own delegates soon

learned that the honorable Doctor could help them find their way about. To your correspondent, this exhibition of diplomacy, particularly since it deals with architects, was most interesting to observe.

The social and educational aspects of the A.I.A. convention proved most interesting to the delegates and guests. Given the opportunity to indulge in some plain and fancy sight-seeing, the conventionites reacted most favorably to the visit to "Dumbarton Oaks," the estate of the Hon. Robert Woods Bliss. Its gardens are reputed to be the most beautiful informal gardens in the—yes, world. Coincident with the tour through the gardens was the Tea Party given on the upper terrace. Sandwiches, cookies, etc., augmented the "tea" which wasn't tea at all. But it looked like tea, it was served like tea; and after the third cup the gardens looked more beautiful than ever.

The various receptions were well attended and the showing of photographs of Architecture of the Americas, in the Corcoran Gallery of Art, won words of praise. The exhibition of Public Buildings in the Procurement Division Building also drew the

attention of a good many interested in Federal Architecture. This comprehensive display of buildings designed by Architects, either in the Supervising Architect's office or under its supervision, amply illustrated the forces to be dealt with in connection with American Architecture.

There was an uncommonly large contingent of delegates and guests representing past and present connections with the University of Michigan's College of Architecture. They do like conventions, don't we? In passing, I think some recognition also should be given the young associate from the Chicago Chapter, who snatched the smouldering ember from the dead fire of A.I.A. discussions on "do something." Out of deference to his youth, President Maginnis permitted the young firebrand to reopen the "do something" discussion. After "hecking" and "darning" all over the place, he sat down amidst the most thunderous applause of the Convention. Others, taking courage, continued in their own way, and when that session ended, the smiling faces and acquiescing nods were countless. *Palman qui meruit ferat.*

(Continued on page 20)

United States Post Office at Miami Beach, Florida.
Designed by the Procurement Division, U. S.
Treasury Department, Washington, D. C. Con-
tractor: A. Farnell Blair, Lake Charles, La.



In beauty, in economy
**IT IS TYPICAL OF
CONCRETE**

Architectural thinking is moving in new channels today . . . channels that have been opened by the great adaptability of concrete.

Within the broadest limits concrete can be molded and textured according to the wishes of the architect. Yet costs remain low because structural and architectural functions are combined in *one* economical material. And the owner gets a lasting, firesafe building that is low in maintenance.

Your architect or engineer can show how concrete can be used economically for your building. On request we will mail illustrated booklet, "*The NEW Beauty in Walls of Architectural Concrete*" (free in the U. S. or Canada), or one of our engineers will call.

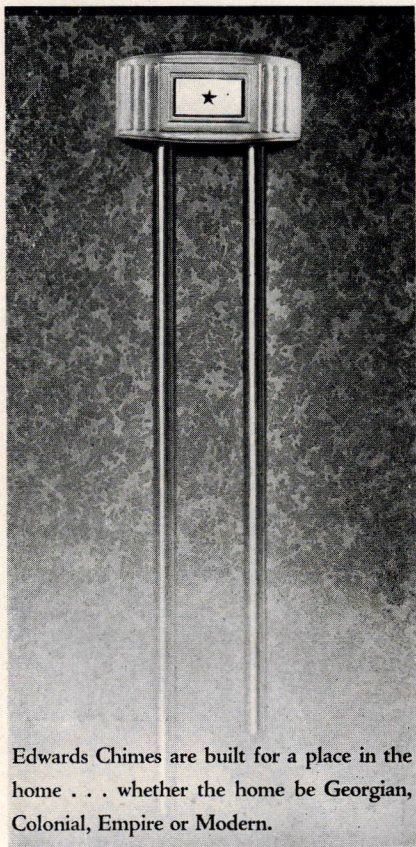
PORTLAND CEMENT ASSOCIATION

Dept. A11-25, 33 W. Grand Ave., Chicago, Ill.

A national organization to improve and extend the uses of concrete . . . through scientific research and engineering field work.

ARCHITECTURAL CONCRETE . . . Architectural
and Structural Functions Combined in ONE Firesafe, Enduring Material

Put an **EDWARDS** *Chime* in the **ENTRANCE HALL**




Edwards Chimes are built for a place in the home . . . whether the home be Georgian, Colonial, Empire or Modern.

Designed by leading stylists, there is an Edwards Chime to harmonize exactly with the architectural pattern of the house or the decorating scheme of the interior.

Chimes are an accepted necessity . . . but Edwards' chimes stand alone in the field as architectural and decorative assets.

Send for the complete full color catalog.

EDWARDS and COMPANY
INCORPORATED

NORWALK  CONNECTICUT

EDWARDS & CO.
Norwalk, Conn.

Without obligating me in any way, please mail full color catalog of Edwards Chimes.

NAME.....
ADDRESS.....
CITY.....STATE.....

(Continued from page 18)

When is a city plan not a city plan? This question was illustratively answered by a group of Associates of the Washington Chapter of the A.I.A. Led by Alfred Kastner, this group, composed of Messrs. Hansen, Jacobs, Ormiston, Palms, Reese, Riehl, Squire, Stevens, and Miss Woodard, took L'Enfant's "master-piece," the City Plan of Washington, and by careful analysis, study, and suggestion, showed how and why the city plan of Washington is not a city plan. Taking their cue from the convention, they put on an exhibition of their own, and a more forceful one has not met the eyes of your observer, or anyone else around these parts, in many years. The evidence of the panels, showing the faults of the so-called ideal L'Enfant plan, is not to be denied. At the last Chapter meeting, the most interesting and argumentative ever held by this group, the debate between the Associates, defending their work, and the old-timers or "fossils," as Harry F. Cunningham (himself one of the oldest members) chooses to call them, ran far into the night. As a result, a provocative feature article on this subject appeared in the *Washington Post* of Sunday, October 8, 1939, which you may wish to obtain for your files.

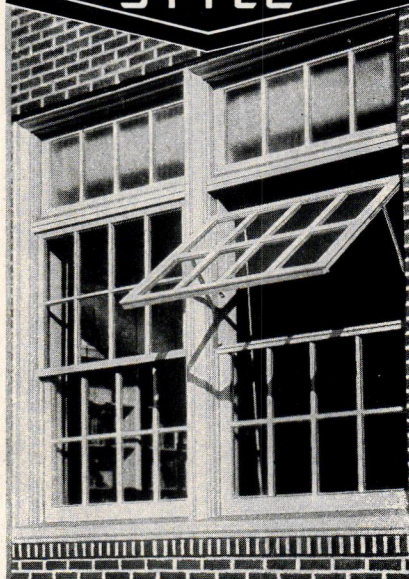
In the September issue of *PENCIL POINTS*, I made mention of the Federal Works Agency seeking a distinctive seal for its own use. The original competition among the S. A. O. boys was declared null and void. Why? Who knows? However, a new and more comprehensive program was written and the competition opened to all other divisions within the Agency. The Jury selected to make the award is composed of Architect Harry Francis Cunningham and Alvin B. Phillips, Chief of Publications, R. E. A. RED

LEVI HONORED

Julian Clarence Levi, of New York, chairman of the Committee on Foreign Relations of the American Institute of Architects, has received notification through the State Department that he has been made an Officer of the Legion of Honor of France.

Levi, formerly a Chevalier of the Legion, was cited for his services at the Paris International Exposition of 1937. A cross and diploma of the Legion have been transmitted to him.

Awning Sash with **WHITCO** **DOUBLE-HUNG** **STYLE**

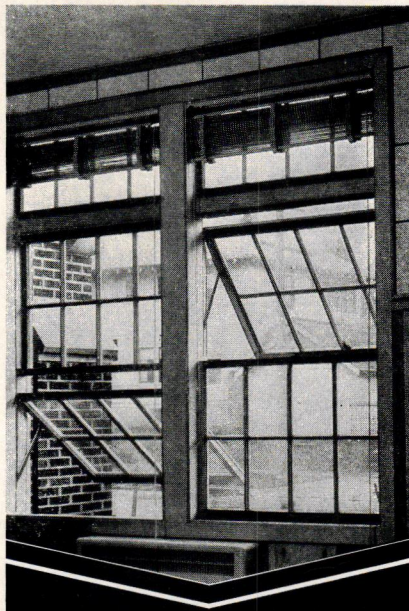


OUTSTANDING FEATURES

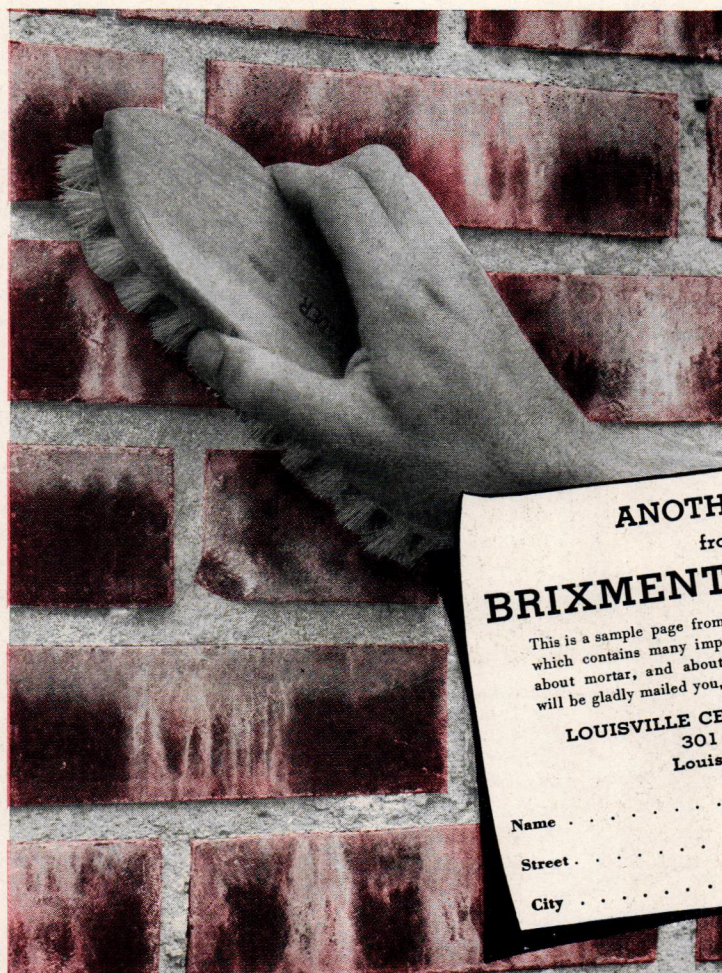
OF AWNING SASH FITTED WITH

WHITCO **HARDWARE**

Sash is easily cleaned from within
Gives most versatile ventilation
Allows for narrow mullion design
Requires only simple mill details
Operates without additional adjusters
Affords weather protection when open



A.I.A. DETAILS ON REQUEST,
VINCENT WHITNEY CO.
130 Tenth St., San Francisco, Calif.



ANOTHER PAGE
from the
BRIXMENT HANDBOOK

This is a sample page from the Brixment Handbook—a book which contains many important, yet often little-known facts about mortar, and about brickwork in general. Your copy will be gladly mailed you, on receipt of this coupon. Address:

LOUISVILLE CEMENT CO., Incorporated
301 Guthrie Street
Louisville, Kentucky

Name
Street
City

BRIXMENT Helps Prevent Efflorescence!

Efflorescence—the white scum that sometimes appears on the face of brickwork—is the result of using brick, sand, or other mortar materials which contain soluble salts. When reached by water, these salts dissolve, and are drawn in solution to the surface of the wall.

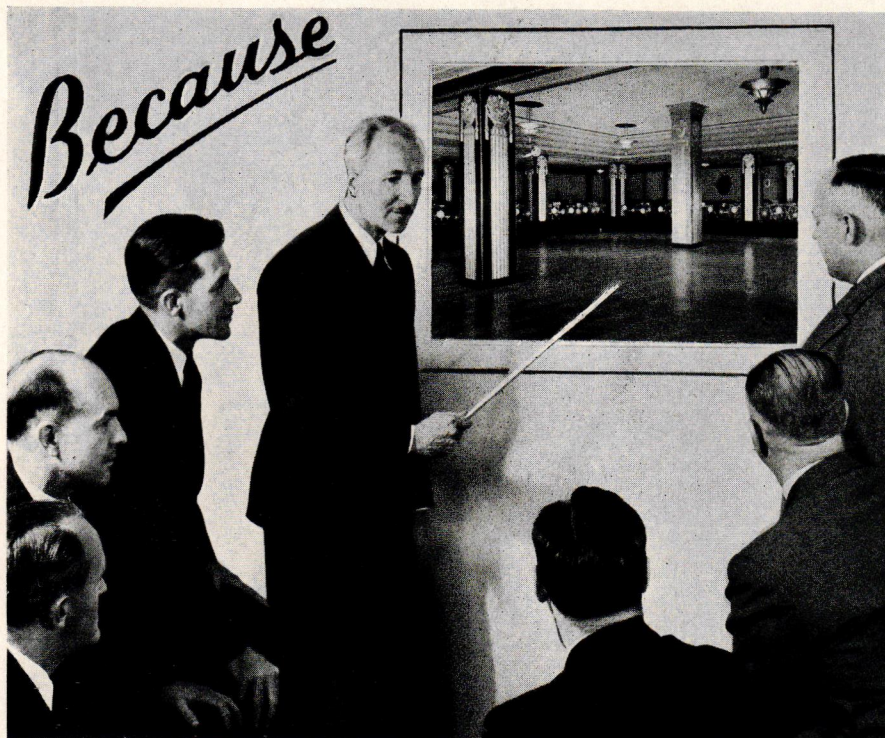
The use of Brixment for mortar has proved to be a *most effective* way of eliminating efflorescence. In the first place, Brixment itself does not contain enough soluble

salts to cause efflorescence. Moreover, even if such salts are present in the brick or the sand, the waterproofing in Brixment tends to keep them from coming to the surface of the wall. (See page 8.)*

This is the reason why so many manufacturers of face brick endorse the use of Brixment with their products. If you have been having trouble with efflorescence, the *best precaution* you can take is to use Brixment for mortar.

* See further details in the Brixment Handbook.

LEADING ARCHITECTS *Specify* HILLYARD Floor Treatments and Maintenance Products



★ BEAUTY

The rich natural colors and texture of all types of floors brought out and set by Hillyard Floor Treatments.

★ ECONOMY

Floors maintained the "Hillyard Way" are easier to keep sparkling clean thus saving time, labor, equipment, and materials.

★ EFFICIENCY

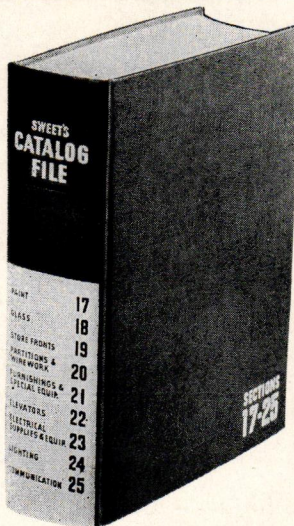
The efficiency of Hillyard Products in protecting the surface of floors has long been recognized by leading architects, flooring manufacturers, contractors and users.

★ DURABILITY

The lasting quality of Hillyard Floor Treatment Products is a fact well known for over a third of a century by maintenance men the country over.

★ RELIABILITY

For over a third of a century Hillyard Floor Treatment and Maintenance Products have been the standard of reliability. Backed by an investigating organization, Hillyard products "make good" or Hillyard's will. Call or wire for a Hillyard Maintenance Expert—there is one in your locality—his advice and recommendations are yours for the asking.



See SWEET'S Catalog, Section 17, Pages 39, for Hillyard's SPECIFICATIONS

FREE The Hillyard Manual on Proper Floor Maintenance, full of practical, helpful ideas on economical maintenance. Write for your copy today.

★ **HILLYARD SALES CO.** ★

★ ...DISTRIBUTORS HILLYARD CHEMICAL CO. ... ST. JOSEPH, MO. ★

IRVING KANE POND

1857-1939

Irving Kane Pond, of Chicago, an outstanding American architect, died in Washington, D. C. just at the close of the 71st Convention of the American Institute of Architects. He was 82 years old and was a native of Ann Arbor, Michigan.

Graduating from the University of Michigan in 1879 with a C. E. degree, he moved to Chicago soon after and entered the office of Major W. L. B. Jenney. S. S. Beman had just been appointed architect for the town of Pullman, and Mr. Pond became his first assistant in this work. Then came foreign travel and study. In 1886, he formed the firm of Pond and Pond with his brother, Allen B., which carried on until A. B.'s death, in 1929. Mr. Pond carried on in practice until October 31, 1934, with Edgar Martin as partner. Since then Mr. Pond had devoted himself to writing. The University of Michigan conferred an A. M., in 1911, and Doctor of Architecture, in 1930.

He was a man of many interests, among which were literature, philanthropy, and acrobatics. He was a vigorous worker in all these fields, besides his leadership in architecture. Beginning in the 1880's, his contributions to the architectural press continued until the end of his life. His autobiography was left in manuscript, to be published posthumously. Annually he read a paper before the Chicago Literary Club, of which he was a past president. He was also a past president of the Chicago Chapter, A. I. A.; of the Illinois Society of Architects; and of the American Institute of Architects, 1910-11. He was a member of the National Institute of Arts and Letters; honorary member of the B. D. A., of Germany; of the Central Association of Austrian Architects; and the R. I. B. A.

Mr. Pond was a founder of the Circus Fans Association of America. His prominence as an athlete and acrobat began as a football player at college. His achievements as a swimmer, diver, and trapeze performer were carried on until after his 75th year.

He was the author of "The Meaning of Architecture," "Big Top Rhythms," and "A Strange Fellow

(Continued on page 24)

THE KEY TO LASTING FLOOR BEAUTY

TERRAZZO



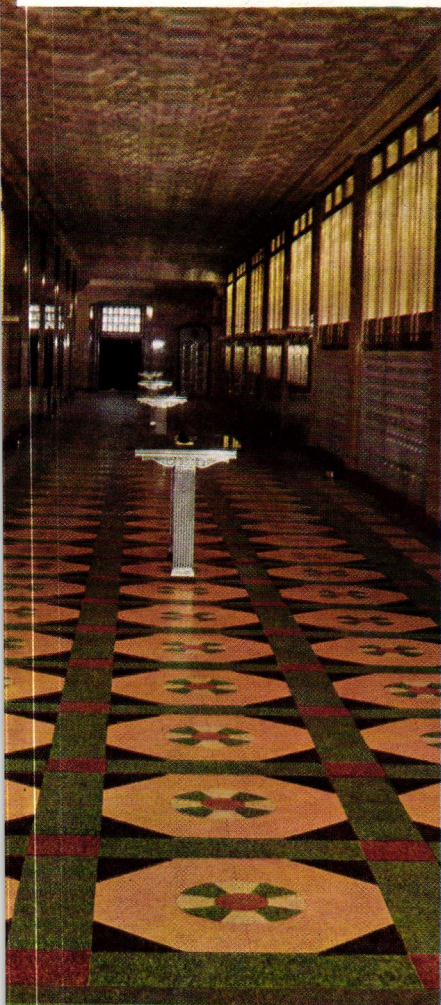
Terrazzo floor (above), made with Atlas White cement, in City Hall and Auditorium, Montgomery, Ala. Architect, Frank W. Lockwood, Montgomery. Contractor, J. S. Fornara Tile & Terrazzo Co., Atlanta.

Indian rug design (below right) in *FINE TERRAZZO* made with Atlas White cement, in Friars Club, Cincinnati. Architects, Crowe & Schulte; Contractor, Martina Mosaic & Tile Company—both of Cincinnati.

WHETHER it is in a club, a post office, or a civic building, floor specifications call for good appearance, durability, easy and inexpensive maintenance. And there is one answer to all three requirements—*FINE TERRAZZO*. All the floors shown here are built of *FINE TERRAZZO*, made with Atlas White cement. Colors are clear and true—exactly as specified. Designs are sharp in every detail. And they will remain that way permanently.

You can count on beauty and unexcelled durability for your floors when you specify terrazzo. Use any color motif you choose. Create any design or pattern. Then specify Atlas White portland cement (plain or waterproofed). Its *pure white* color assures *FINE TERRAZZO* that is moderate in first cost and low in upkeep. For detailed information, see Sweet's Catalog, or write us for free booklet showing 24 true color specimens of *FINE TERRAZZO*. Universal Atlas Cement Co. (United States Steel Corporation Subsidiary), Chrysler Building, New York City.

T-15



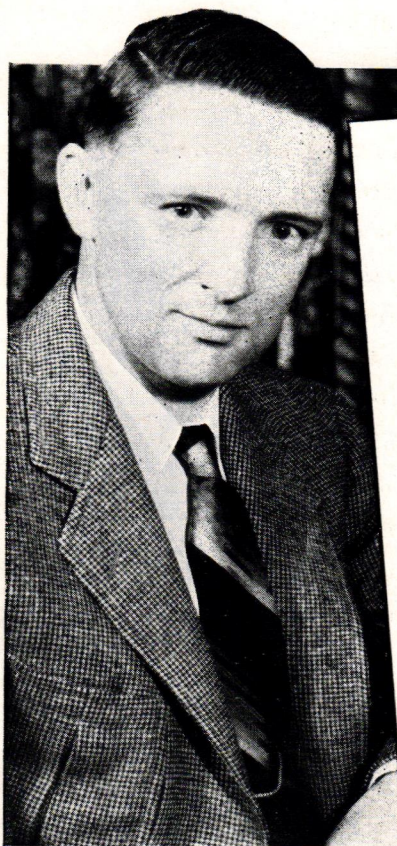
FINE TERRAZZO floor, made with Atlas White cement, withstands daily traffic in Sacramento, Cal., Post Office. Architects, Starks & Flanders, Sacramento; Contractor, California Terrazzo Marble Co., San Francisco.

FOR *FINE TERRAZZO* SPECIFY



ATLAS WHITE PORTLAND CEMENT

"Window Conditioning cut my coal bill in half...!"



"And now we don't have to worry about Drafts, Frosted Windows and Uneven Temperatures"

That's what W. D. Caswell, Manchester, N. H., says about Storm Sash. That's what thousands of satisfied users are saying clear across the country.

When you specify Window Conditioning for the new homes that you plan you bring your clients more winter comfort, greater economy than is offered by almost any other item of comparable cost.

The comforts are freedom from chilly drafts... the elimination of excessive condensation on windows... the maintenance of more even temperatures throughout the house. Its economy represents substantial savings in fuel costs.

And the small added cost of the Storm Sash or Double-Glazed Sash is often more than offset by the resultant use of smaller and less costly heating equipment without impairing heating efficiency.

Since your clients will be looking through two panes of glass instead of one, the quality of that glass becomes doubly important. L.O.F. Quality Glass is today as it has been for many years, Clearer, Brighter and Flatter than any window glass that the industry has ever offered. These superior qualities make it ideal for Window Conditioning.

Libbey-Owens-Ford Glass Company, Toledo, Ohio



ROSSFORD, O.

"Water used to run down the windows but now there is no condensation at all."

—F. R. McLaughlin



MARLTON, N.J.

"I'm a builder and I always recommend Storm Sash because of savings and comfort."

—Lewis Peters



KANSAS CITY, MO.

"With Storm Sash we sit by the windows in comfort."

—Earl W. Allen



LIBBEY · OWENS · FORD

QUALITY GLASS

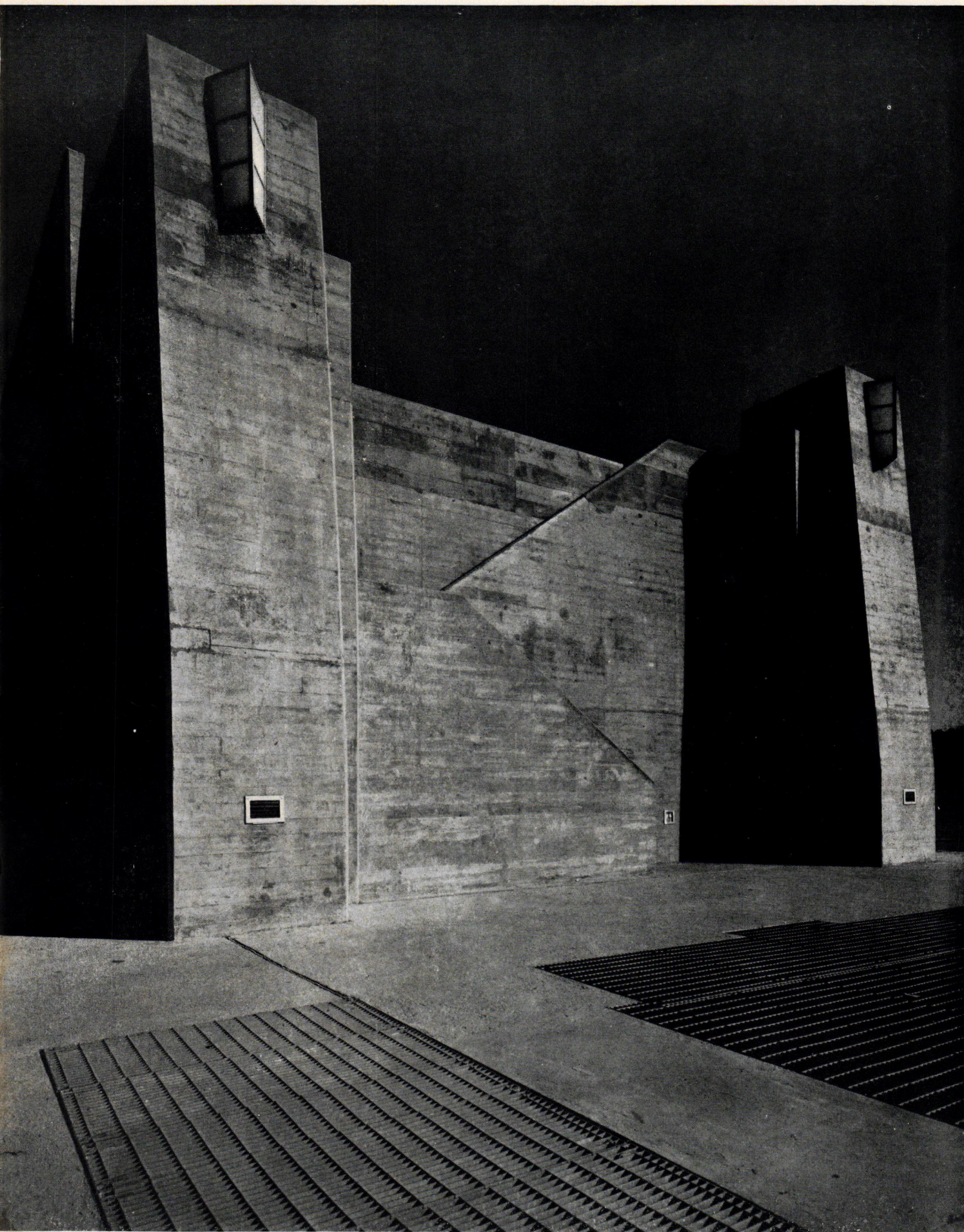


LOOK FOR THE LABEL

Gentlemen, we give you the Tennessee Valley Authority! We have devoted this issue to the TVA, not because it is engaged in what has been truly described as a far-reaching social experiment, not because it is efficiently carrying out a magnificent engineering undertaking, not even because it represents the largest regional planning enterprise in our country's history—but because it has built and is building an extensive and varied series of structures that embody a consistent and admirable architectural philosophy. While pictures are never a wholly satisfactory substitute for reality, we believe that from the following pages there may be gained a fairly good idea of the TVA architecture and an appreciation of its functional and æsthetic qualities. We have chosen to treat it in detail since a good part of its merit derives from the skill and judgment its designers showed in the selection, disposition, and articulation of materials. It was all designed under the leadership of Roland A. Wank, *Principal Architect*; Harry B. Tour, *Senior Architect*; and their assistants, Mario Bianculli and Hiram Ostrander. These men work under the direction of Theodore B. Parker, *TVA Chief Engineer*, and Earle S. Draper, *Director of Regional Planning Studies of the TVA*. We are indebted for the major portion of the photographs reproduced herewith to Charles Krutch, Photographer and Chief of the Graphic Arts Service of the TVA. A number of photographs were obtained from the Photographic and Reproduction Section, while a few were privately taken by employees of the Authority. We thank them, one and all!

PICKWICK LANDING DAM, DOWNSTREAM, LOOKING TOWARD POWERHOUSE





DESIGN IN TVA STRUCTURES

BY KENNETH REID

There are perhaps two phases in the design of any serious work of architecture. The first is the general conception which culminates in the fixing of the plan and the definition of masses. During this phase the architectural genius displays his brilliance, his logic, his feeling for form and proportion. One mind usually takes the responsibility here and deserves all credit.

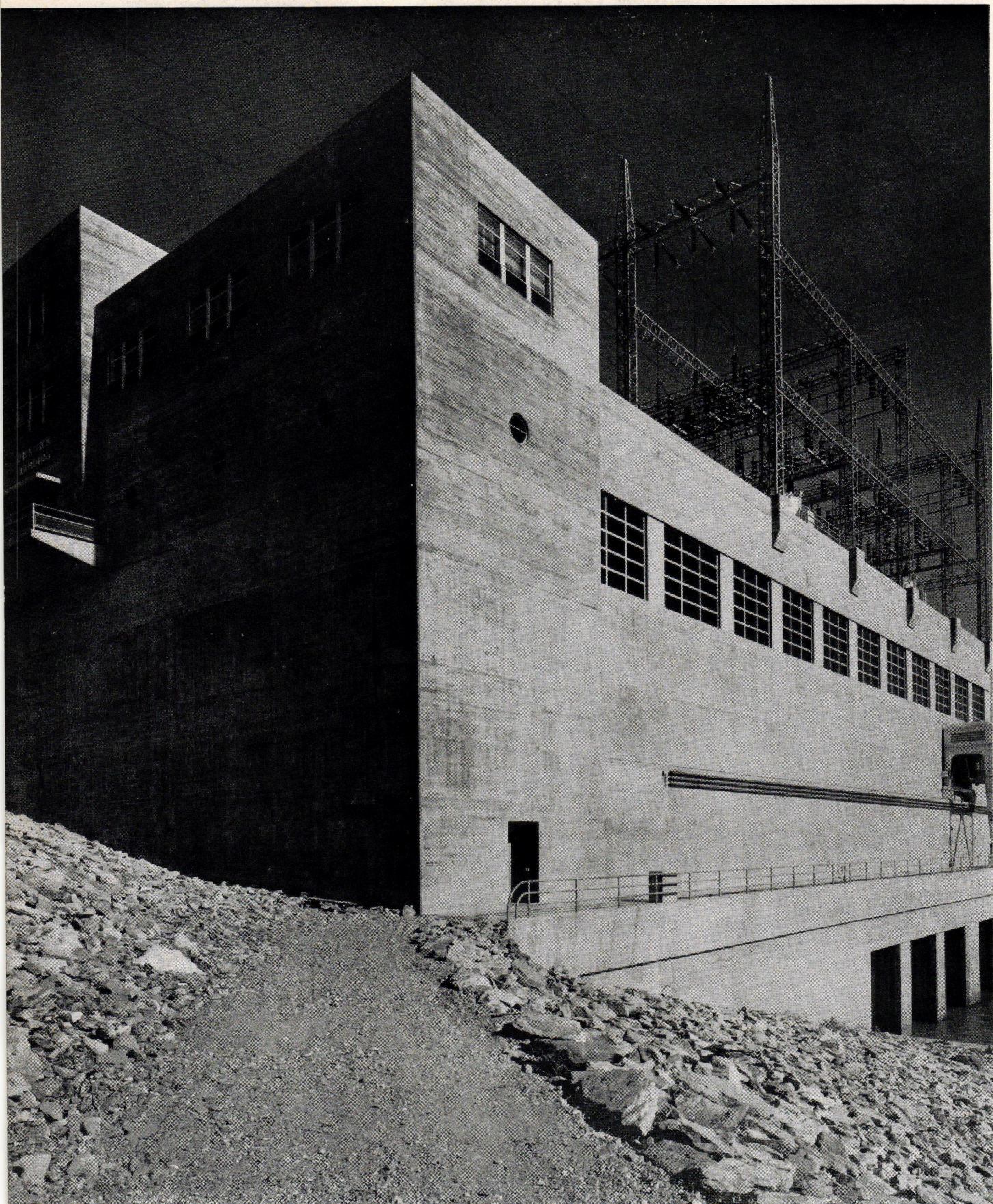
There follows another phase, less spectacular but no less vital—the design of detail and its articulation. The ultimate success of the whole depends in large part upon the taste, the skill, the ingenuity with which the designers and detailers develop the elements out of which the building is to be compounded and devise the ways in which they are to be put together. In this work the functional and the æsthetic must be nicely blended, the practical must become the full partner of the beautiful. Where this desirable marriage is accomplished, the result is likely to be a true work of architecture. And, between ourselves, the process itself is more than likely to have been a collaboration,

whether acknowledged or not, among a number of individuals, each of whom has applied creative thought to solving some part of the problem.

It is this aspect of the TVA design that has particularly interested and impressed me. Behind the finished work lies an admirably composed and closely integrated organization of architectural and engineering workers, all of whom, behind excellent leadership, have shared in the development of the unusual assemblage of buildings illustrated hereafter.

The Norris Dam and Powerhouse have been already presented in another magazine rather completely; hence they are not included here. The general scheme of the TVA as a great regional development has also been ably published elsewhere. We have felt, however, that the principal lesson for the average architect lies in the details—in the way true economy and substantial construction requirements have been reflected in the choice and combination of materials, all touched with the magic of orderly disposition and harmonious form and color. There is a consistent logic and sensibility running through all these structures, small as well as great. Everywhere the arrangements are adjusted to the human being, not only as a worker in and user of buildings and accessories, but also as one who sees and feels and enjoys. The observant designer, as he turns the following pages, will find many ideas that are worth incorporating in his own work. That way progress lies!

MASSIVE END OF SPILLWAY SECTION AT PICKWICK LANDING DAM, AT INTERSECTION WITH NAVIGATION LOCK. PYLONS HOUSE BUMPERS FOR GANTRY CRANE ON SPILLWAY DECK AND WOULD TRANSMIT STRESSES TO BULK CONCRETE BELOW IN CASE OF COLLISION. STAIRS USED BY VISITORS AND OPERATORS LIGHTED BY COUNTERSUNK CONTROL LENS UNITS. ALUMINUM AND OPAL GLASS FIXTURES ON PYLONS PROVIDE FOR GENERAL LIGHTING



HERE AND OPPOSITE ARE EXTERIOR AND INTERIOR VIEWS OF THE PICKWICK LANDING POWERHOUSE AS IT IS TODAY. THE ULTIMATE LENGTH, WHEN FUTURE GENERATOR UNITS ARE ADDED, WILL BE ABOUT THREE TIMES AS GREAT. THE CONCRETE ON THIS JOB WAS FORMED WITH DRESSED LUMBER. PIERS BETWEEN GENERATOR ROOM WINDOWS ARE STEEL, PAINTED GRAY

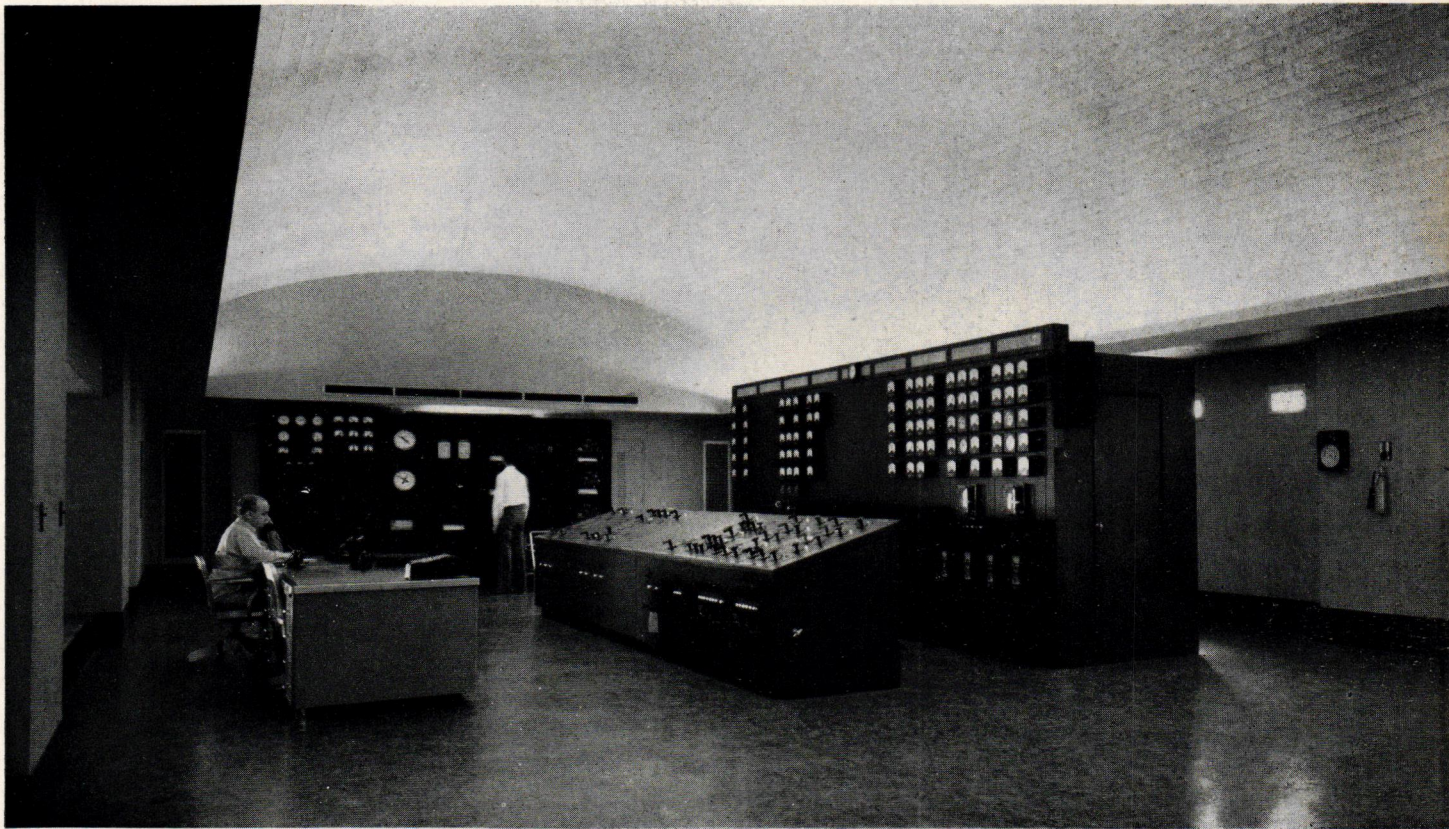


THE GENERATOR ROOM FLOOR AT PICKWICK IS FRENCH GRAY CERAMIC TILE; THE WAINSCOT, EGGSHELL-GLOSS GLAZED TILE OF A GRAY-BLUE-GREEN COLOR. CONCRETE ABOVE WAINSCOT IS PAINTED A LIGHTER SHADE OF THE SAME COLOR TO THE CRANE RAIL LEVEL, THENCE LIGHT SULFUR YELLOW TO THE TOP. TRUSSES AND ROOF PAINTED GRAY, WINDOW PIERS ALUMINUM

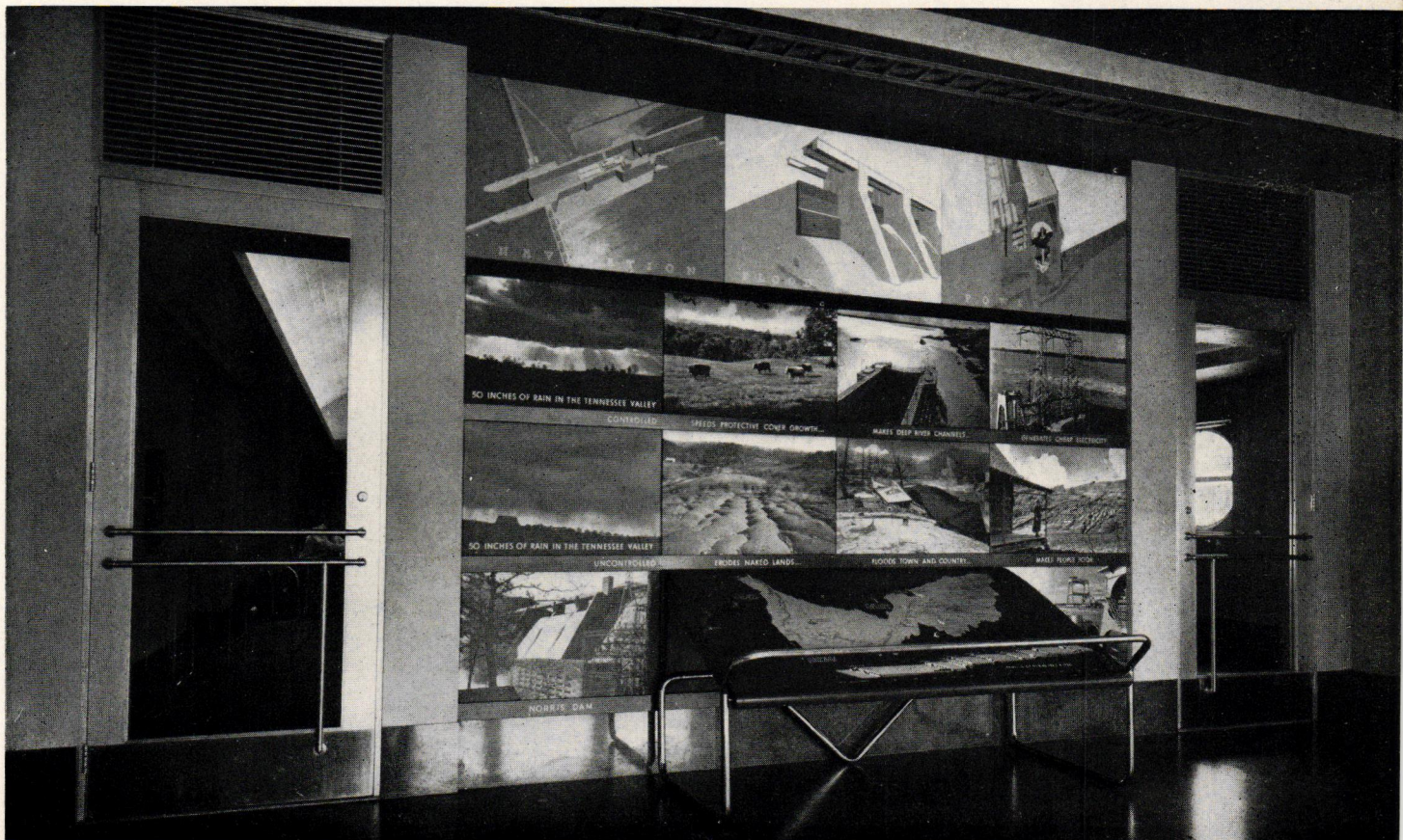


NORTH VIEW OF PICKWICK POWERHOUSE TAKEN FROM TOP OF DAM. BELOW IS RECEPTION LOBBY AS SEEN FROM INSIDE ENTRANCE DOORS. REDDISH BROWN AND WHITE TERRAZZO FLOORS WITH RED-BROWN BASE AND BURLAP-COVERED WALLS PAINTED GRAY ARE BRIGHTENED BY BLUE SOFFITS AND LEMON YELLOW PLASTER CEILING. ALUMINUM FURNITURE, UPHOLSTERED BLUE, AND ALUMINUM DOORS FURNISH SHARPER ACCENTS IN THIS ORDERLY ENSEMBLE





PICKWICK CONTROL ROOM, WITH PERFORATED ACOUSTIC INSULATION TILE PAINTED WHITE TO REFLECT COVE LIGHTING SO ARRANGED AS TO MINIMIZE GLARE AND MAKE INSTRUMENT READING EASY. BELOW IS THE DISPLAY JUST OUTSIDE, IN THE RECEPTION LOBBY, WHERE GUIDES USE IT TO EXPLAIN THE TVA AND ITS FUNCTIONS TO VISITORS. NOTE THE MAP TABLE OF CHROME PLATED TUBING AND BENT PLYWOOD UPON WHICH IS PRESENTED THE REGION





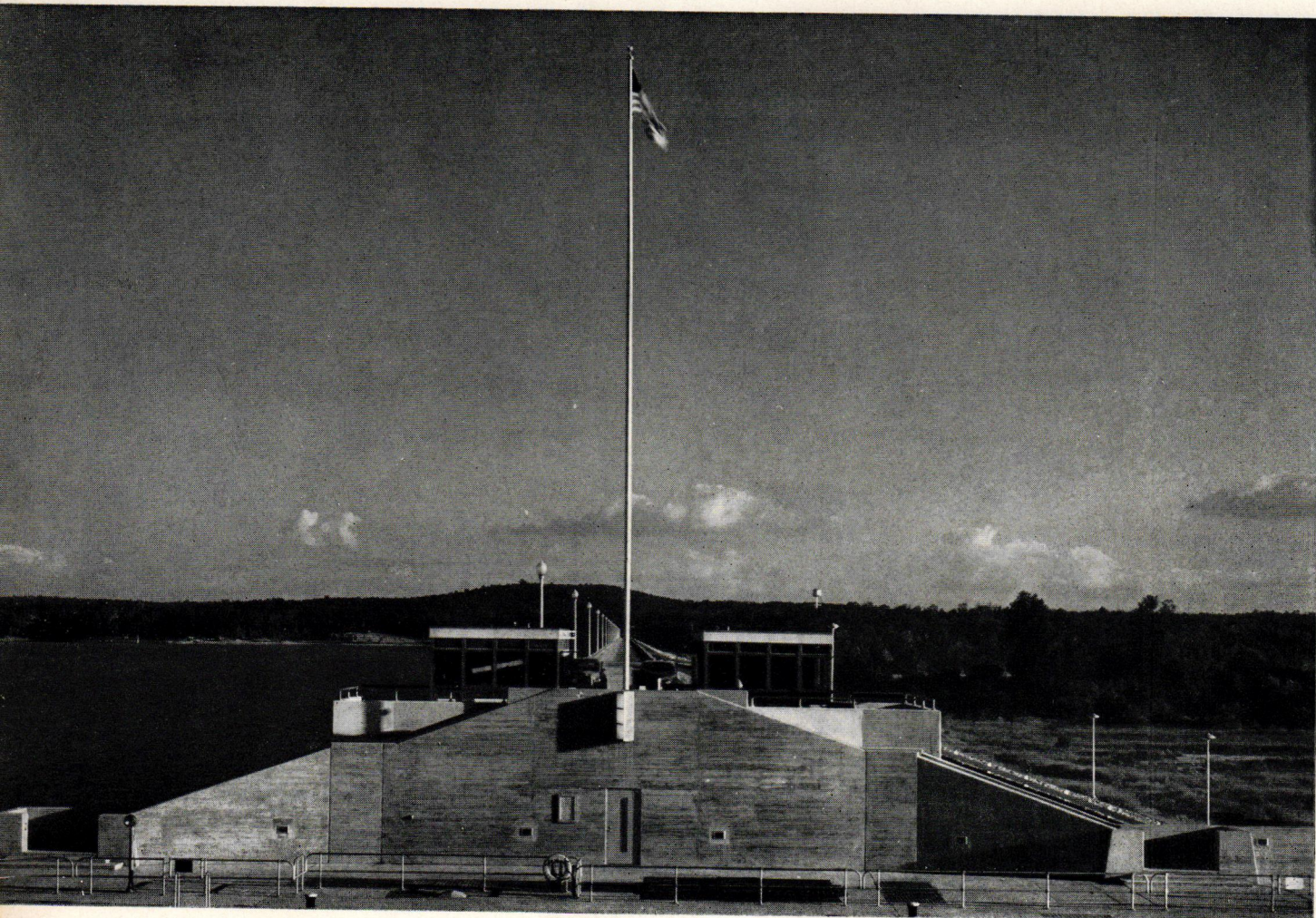
THE MAIN ENTRANCE ON THE NORTH END OF THE PICKWICK LANDING POWERHOUSE IS A FINE EXAMPLE OF STRONG SIMPLE DETAIL FOR A CONCRETE BUILDING. THE DOORS, FRAMES, AND LETTERING ARE OF ALUMINUM. FLUSH CONTROL LENS FIXTURES UNDER THE CANOPY FURNISH NIGHT LIGHT FOR THIS ENTRANCE. DRESSED LUMBER FORM BOARDS WERE USED



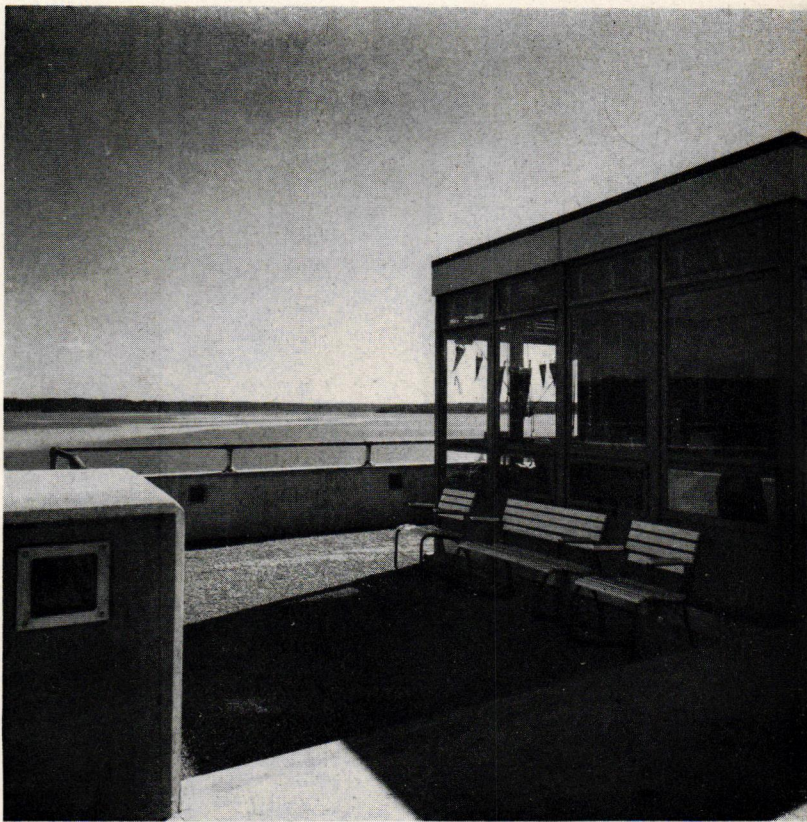
FROM THE FLOOR OF THE GENERATOR ROOM AT PICKWICK, LOOKING UP AT THE VISITORS' OBSERVATION GALLERY OUTSIDE THE CONTROL ROOM WINDOWS. GALLERY LEVEL IS BELOW THAT OF CONTROL ROOM FLOOR TO PERMIT CLEAR VIEW TO OPERATORS. THE ALUMINUM STAIR RAIL IS WELL PROPORTIONED AND STRONGLY CONSTRUCTED. COMPARE WITH PAGE 720



TWO VERY INTERESTING LITTLE BUILDINGS ARE PLACED AT THE END OF PICKWICK LANDING'S EARTH DIKE ADJACENT TO THE NAVIGATION LOCK. SEPARATED TO PERMIT EMERGENCY HAULING OF MACHINERY, THEY FLANK THE ROADWAY TO FORM RECEPTION CONVENIENCES FOR VISITORS. THEY CONTAIN A RECEPTION ROOM WITH DISPLAYS, A REFRESHMENT STAND, STORAGE SPACE, AND TOILETS. THE VIEW AT THE LEFT LOOKS BETWEEN THE BUILDINGS, ACROSS THE LOCK TOWARDS THE DAM AND POWERHOUSE. BELOW IS WHAT IS SEEN LOOKING AWAY FROM THE DAM FROM THE SPILLWAY LEVEL ON TOP OF THE CONSTRUCTION SHOWN ON THE FRONTISPIECE. FROM THE OBSERVATION END OF THE RECEPTION ROOM, THE VISITOR GETS A VIEW OF THE LOCK AND WHEN THERE ARE BOATS OR BARGES GOING THROUGH CAN SEE THE ENTIRE OPERATION. IN GOOD WEATHER HE CAN VIEW THE PROCEDURE FROM THE TERRACE OUTSIDE. STAIRS LEAD FROM EITHER SIDE DOWN TO THE LOCK LEVEL. NOTE THE STEEL FLAGPOLE



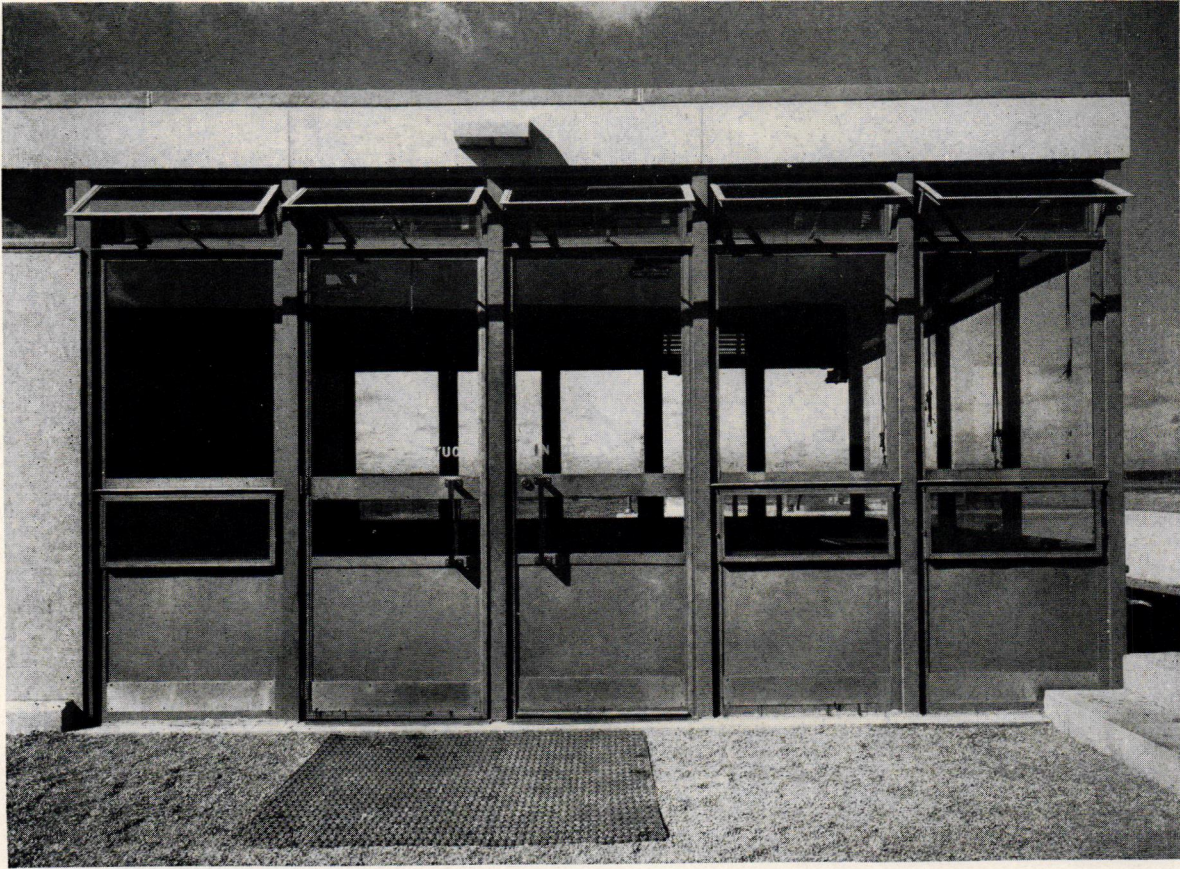
TWO OTHER VIEWS OF THE RECEPTION BUILDINGS SHOW ONE OF THE TERRACES AND THEIR RELATION TO THE RIP-RAP COVERED EARTH DIKE. IT WILL BE NOTED THAT THE WALLS ARE MADE IN PANELS OF UNIFORM WIDTH. THE WHOLE CONSTRUCTION IS BASED ON A MODULE OF 40". THE FRAMING IS OF WOOD STUDS, 3" X 3", WHICH ARE COVERED WITH QUARTER-INCH STEEL PLATE WHERE EXPOSED BETWEEN TOILET VENT SASH. IN THE OBSERVATION ROOMS, STEEL MULLIONS MADE OF TWO 3" CHANNELS WELDED FULL LENGTH TAKE THE PLACE OF THE STUDS. THE OUTSIDE WALL COVERING IS $\frac{3}{8}$ " ASBESTOS-CEMENT BOARD, HELD BY PLATED COUNTER-SUNK SCREWS, PULLED UP TIGHT AGAINST 3" STRIPS OF HEAVY ASPHALT FELT UNDER JOINTS FOR WEATHERPROOFING. THE JOINTS ARE CHAMFERED. SPACING OF WOOD STUDS AND ROOF JOISTS IS 20" ON CENTERS. THE ROOF IS BUILT-UP, WITH LEAD-COVERED COPPER FOR GRAVEL STRIP AND COPING. THE OBSERVATION PORTIONS HAVE STEEL SASH GLAZED WITH PLATE GLASS



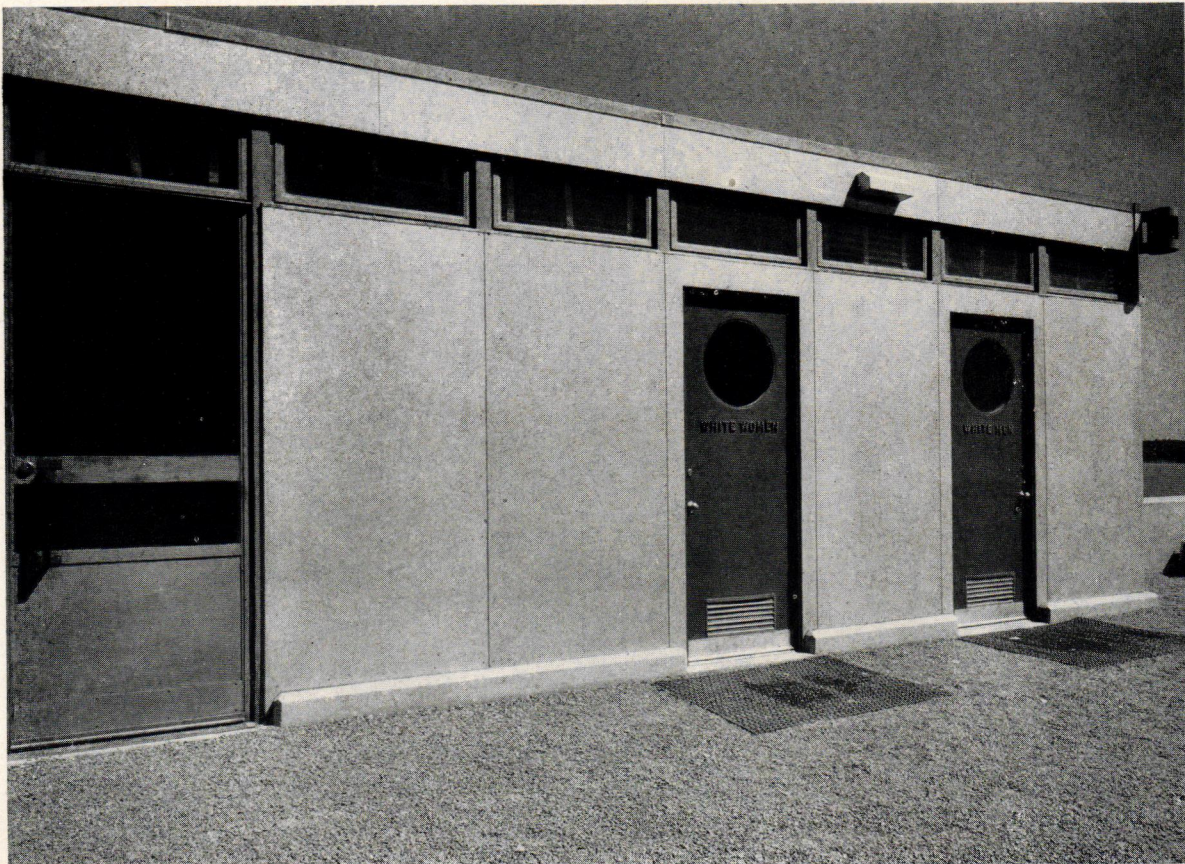


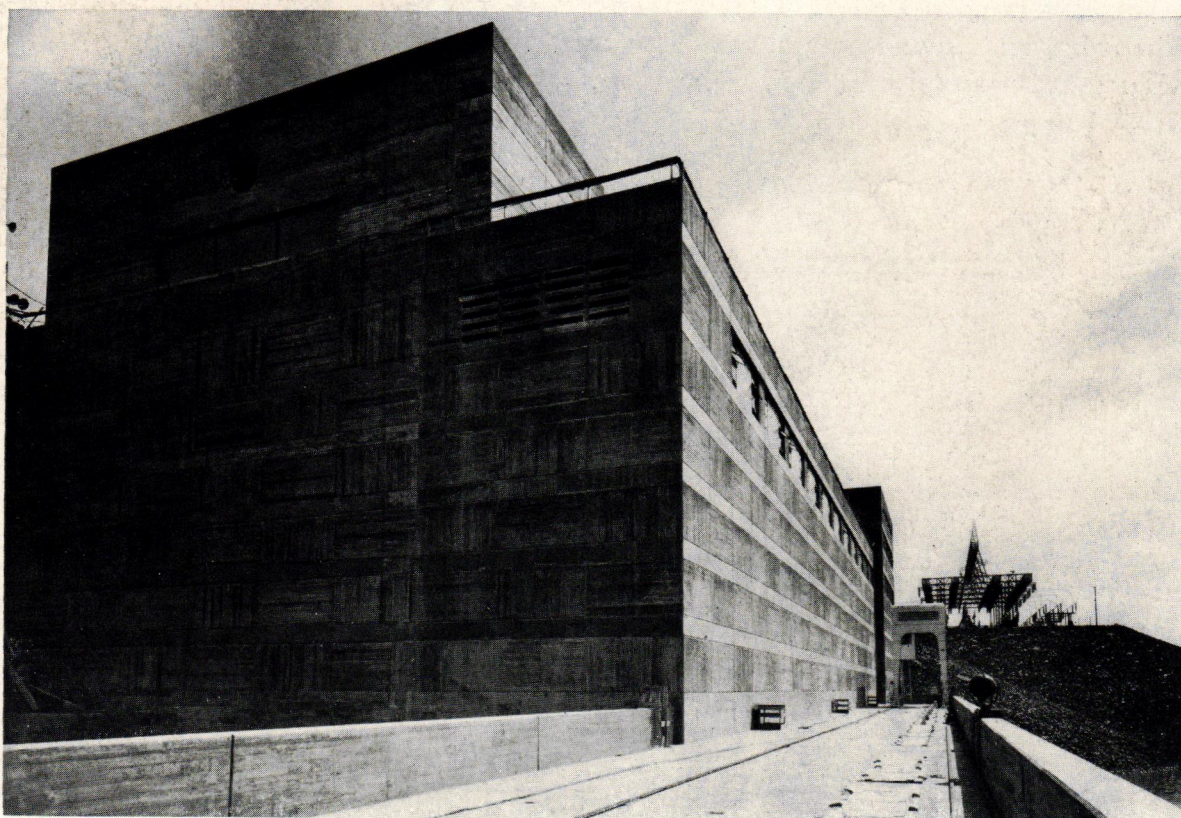
ON THE INTERIOR OF THE PICKWICK LANDING RECEPTION BUILDINGS THE WALLS ARE FINISHED WITH 40" WIDE SHEETS OF 3/16" STEEL-PRESSED, FLEXIBLE, ASBESTOS BOARD OF A MEDIUM GRAY COLOR. THE DISPLAY PANEL IS OF 1/4" PLYWOOD, PAINTED LEMON YELLOW. CEILINGS, LIKEWISE PAINTED LEMON YELLOW, ARE PLYWOOD, V-JOINTED IN 40" SQUARES





CLOSE-UPS OF THE EXTERIOR SHOW THE CONSTRUCTION CLEARLY. NOTE THAT THERE IS A LARGE PANE IN EACH WINDOW AT VIEW HEIGHT WITH TOP PANES THAT SWING OUT AND BOTTOM PANES THAT SWING IN. ALL VENT SASH ARE SCREENED. TOILET INTERIORS ARE TREATED WITH STEEL-PRESSED, FLEXIBLE, ASBESTOS BOARD FOR WALLS AND STOCK STEEL PARTITIONS

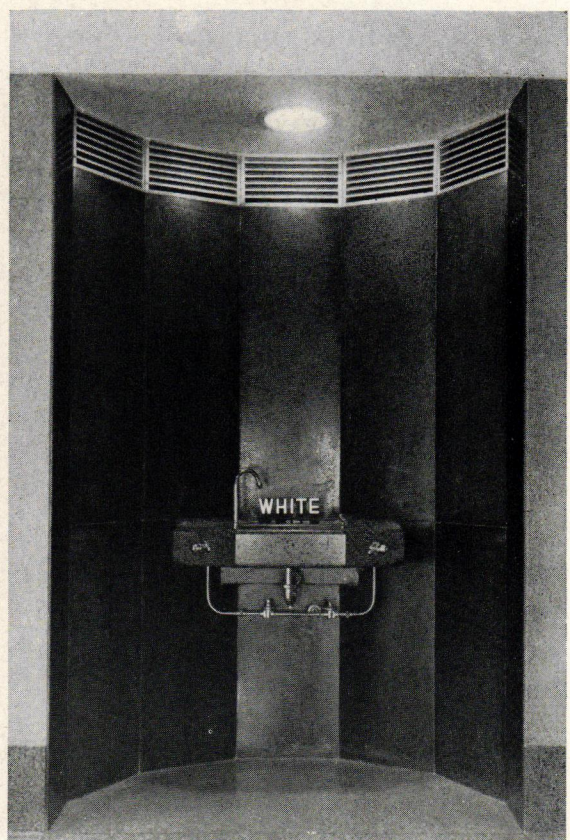
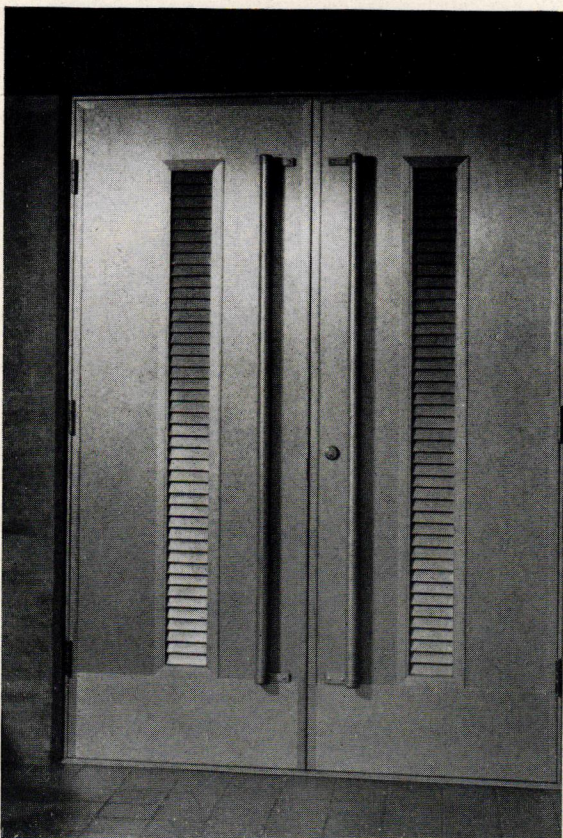
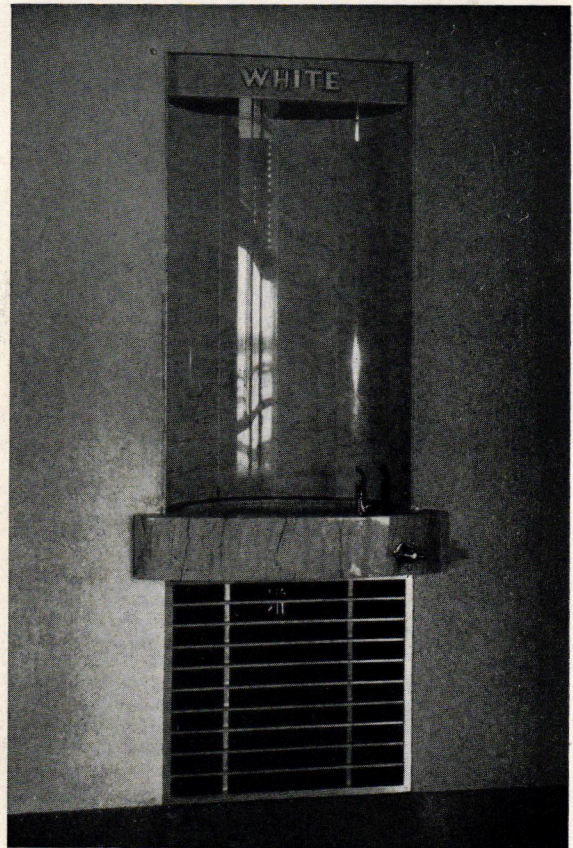
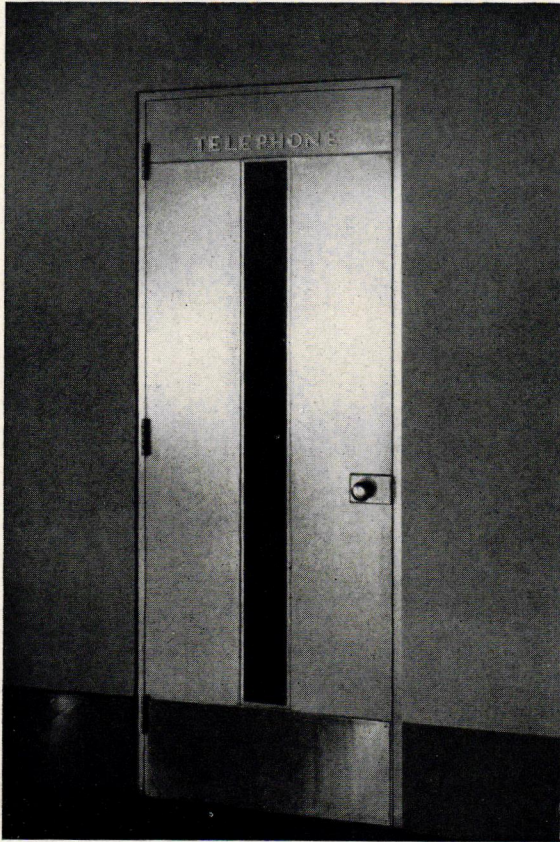




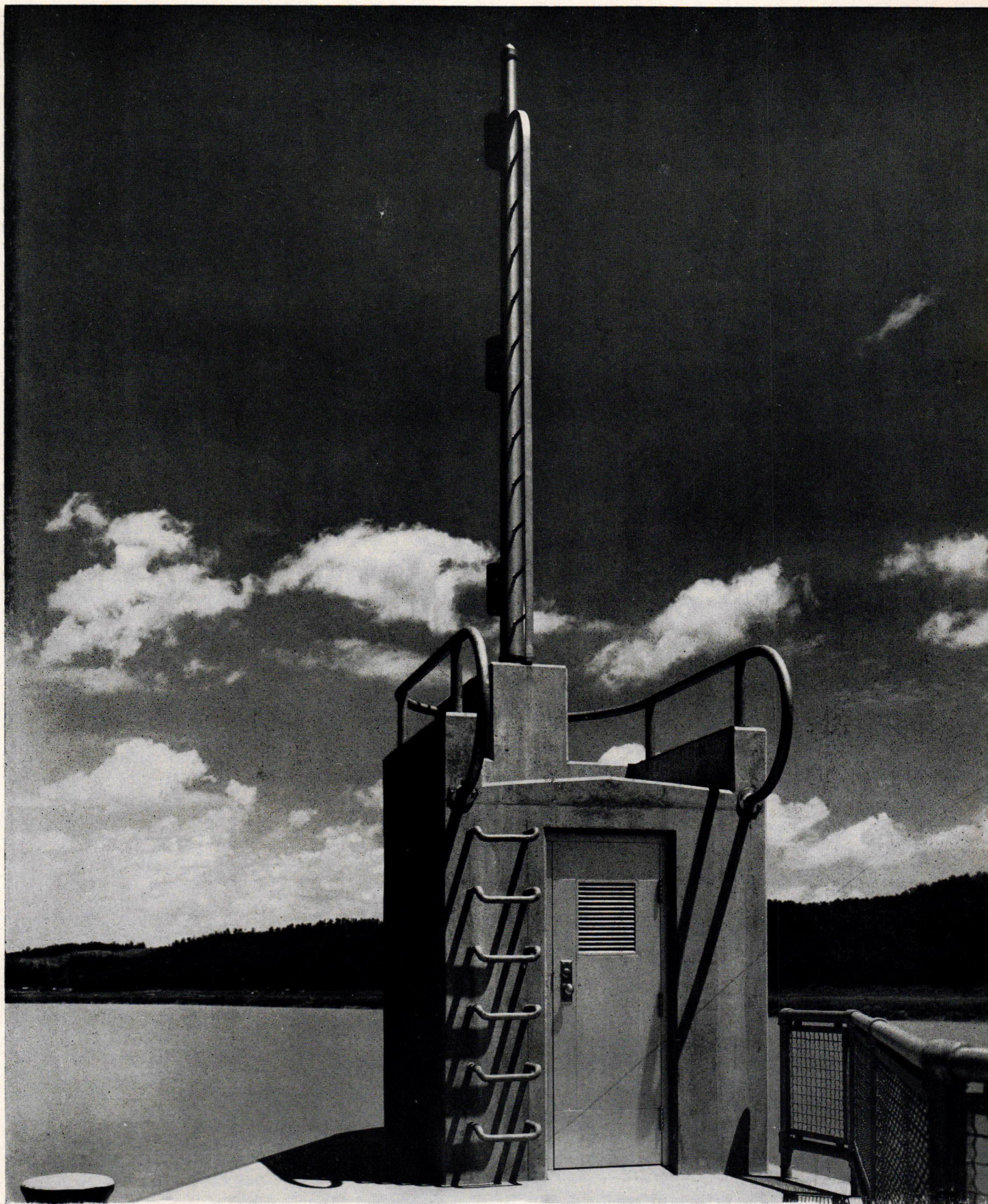
THE EXTERIOR OF CHICKAMAUGA POWERHOUSE, STILL UNDER CONSTRUCTION, SHOWS AN IMPROVED TREATMENT FOR THE CONCRETE SURFACE. THE VIEW ABOVE SHOWS THE SIDE OF THE GENERATOR HALL AS VIEWED FROM THE ROOF OF THE "SET-BACK" IN THE LOWER PICTURE. GLASS BRICK WAS USED TO ADMIT LIGHT AND REDUCE HEAT. COLUMNS PAINTED ALUMINUM



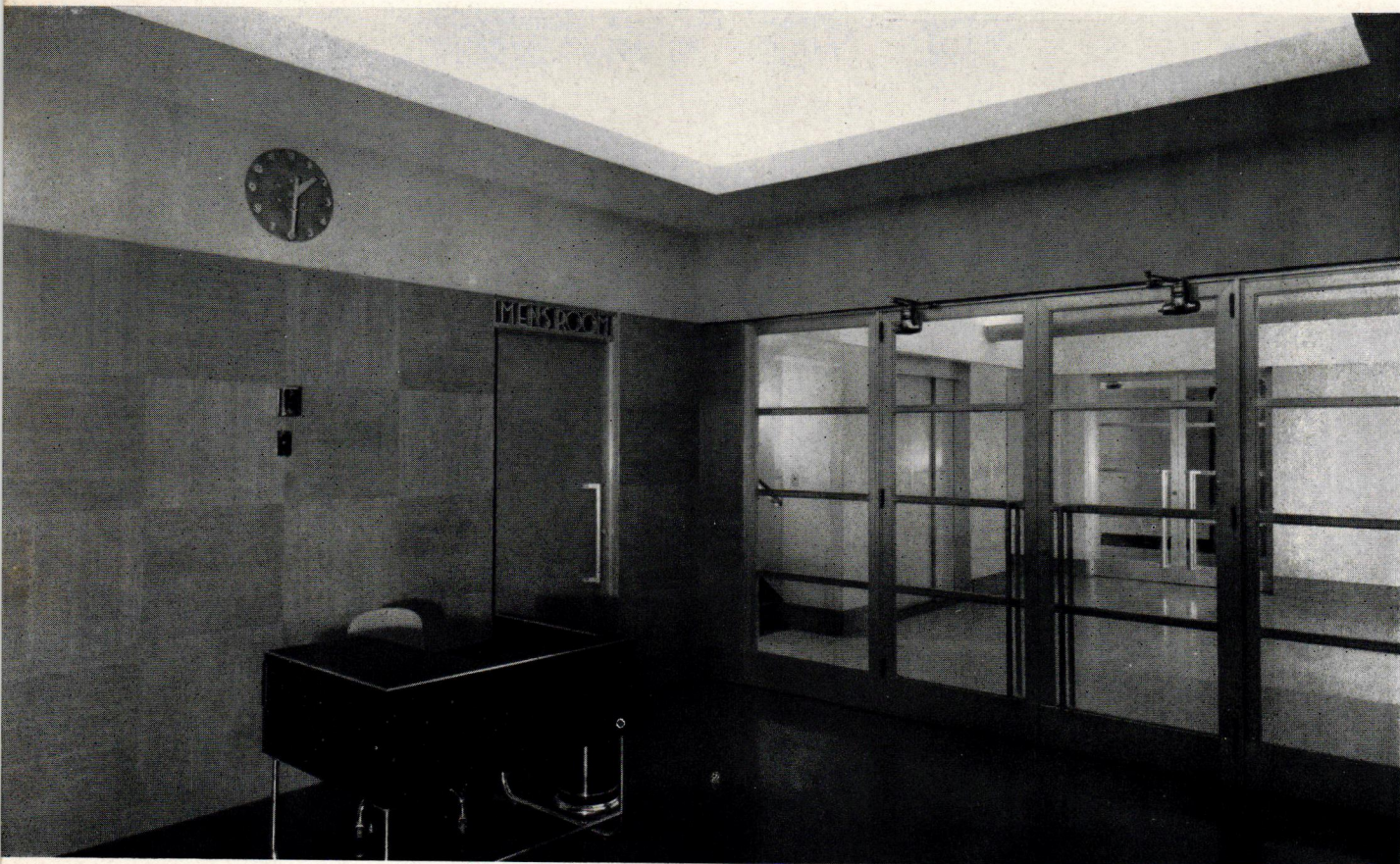
ALTERNATING FORM PANELS OF VERTICAL AND HORIZONTAL ROUGH-SAWN BOARDS WERE USED HERE AS AT NORRIS, BUT WITH NARROWER PANELS OF PLYWOOD TO GET BANDS OF SMOOTH SURFACE BETWEEN. THIS PRODUCES AN INTERESTING PLAY OF LIGHT. THIS VIEW SHOWS THE ADMINISTRATION WING. NARROW TOP OPENINGS WILL BE LOUVERED FOR AIR CONDITIONING



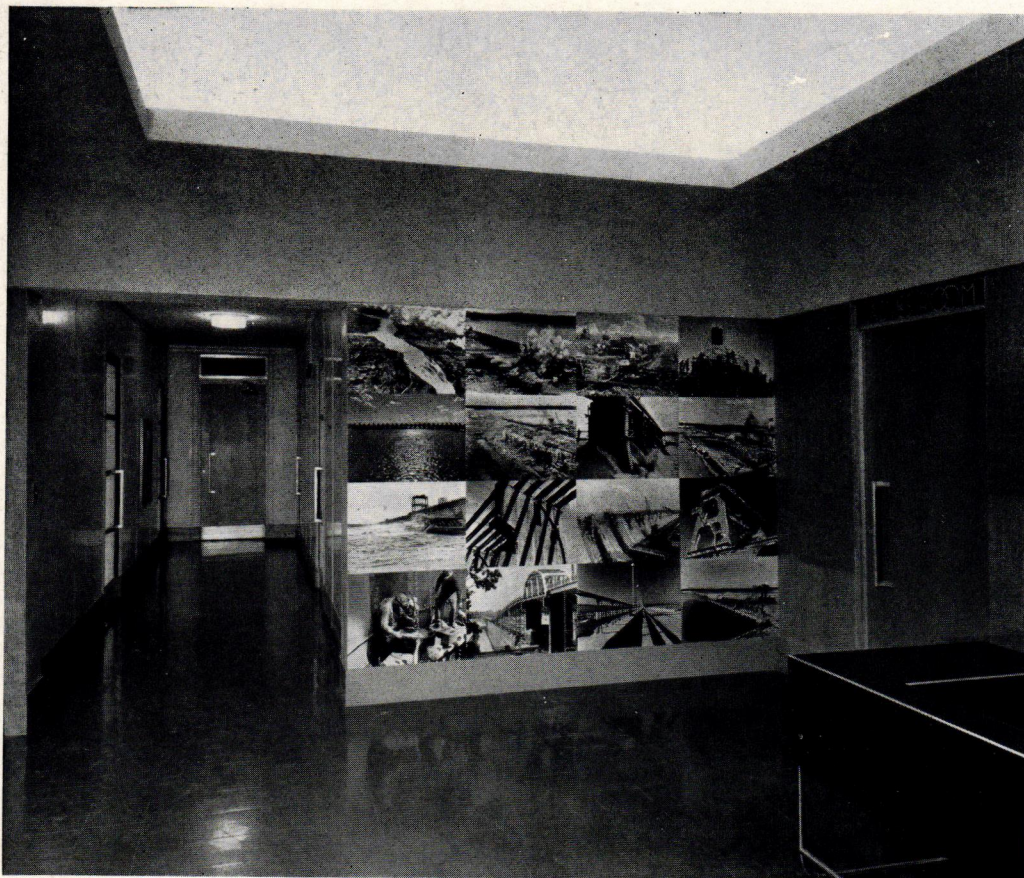
THE CLEAN, EFFICIENT-LOOKING DETAILS THAT ARE USED IN ALL THE TVA BUILDINGS ARE THE RESULT OF CAREFUL STUDY. THEIR ELEMENTS ARE SIMPLIFIED AND, WHERE POSSIBLE, STANDARDIZED. THE RESULT IS A FEELING OF EXTREME ORDERLINESS. SUBSTANTIAL MATERIALS—ALUMINUM, TERRAZZO, MARBLE—BESPEAK THE PERMANENT NATURE OF THE BUILDINGS



AT EACH END OF EVERY TVA NAVIGATION LOCK STANDS A GAUGE HOUSE IN WHICH READINGS ARE TAKEN PERIODICALLY OF THE WATER LEVEL ABOVE AND BELOW THE DAM. WITH IT IS INCLUDED A MAST WITH NAVIGATION LIGHTS AND AN ACCESS LADDER. DESIGNED SIMPLY IN CONCRETE AND GALVANIZED IRON AND PAINTED STEEL, WHAT CHARACTER IT HAS! WHAT BEAUTY!

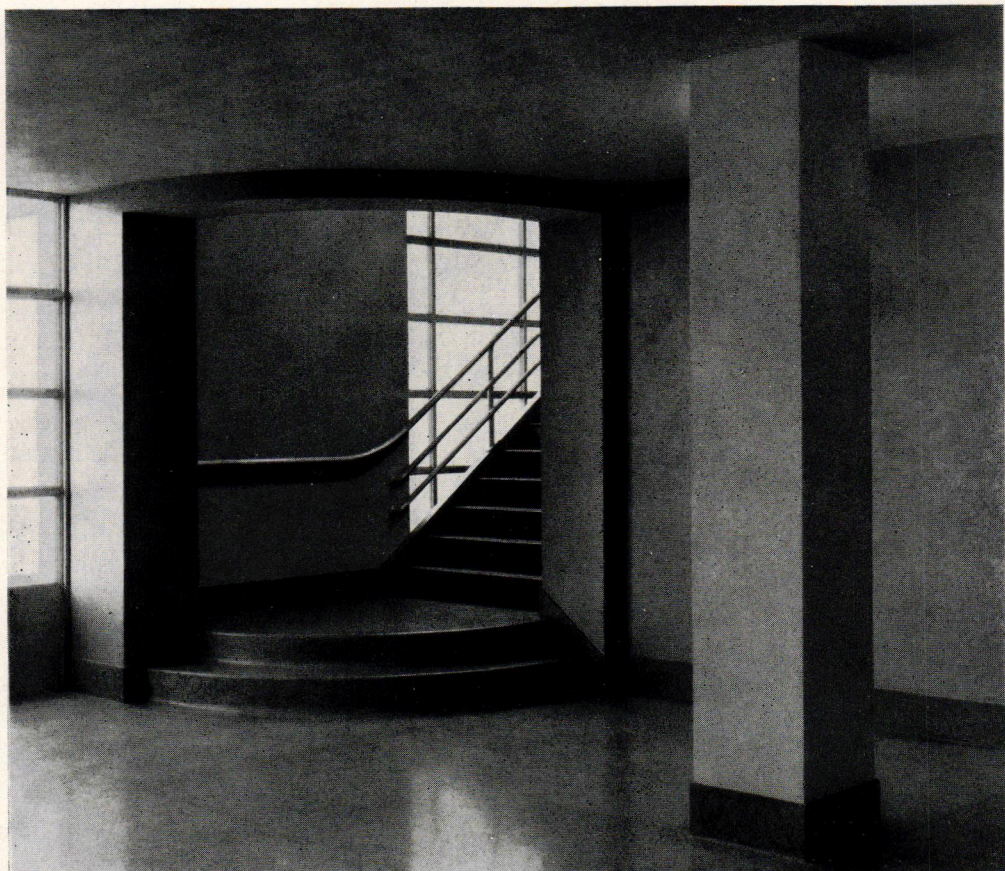


AT WHEELER, THE OFFICE RECEPTION ROOM HAS A RED RUBBER TILE FLOOR, A STEEL BASE PAINTED GRAYISH BLUE, NATURAL OAK FLEXWOOD WAINSCOT, ALUMINUM DOORBUCKS AND HARDWARE, LIGHT GRAY ENAMEL DOOR PANELS, AND A PAN-SHAPED LIGHTING DOME IN ACOUSTIC PLASTER PAINTED LEMON YELLOW





LOBBY ON LOWER FLOOR OF WHEELER, WHERE VISITORS REENTER BUILDING AFTER TOUR OF PLANT. LIGHT FIXTURES CONTAIN FIVE BULBS WITH FILA-
MENTS CENTERED IN CYLINDERS. FLOOR AND BASE, LIGHT GRAY TERRAZZO. PATH TO ELEVATOR, WHITE WITH YELLOW EDGE. CEILING, CANARY YELLOW





THE RECEPTION ROOM ON THE UPPER OR ENTRANCE FLOOR AT WHEELER IS DECORATED BY A HANDSOME DISPLAY OF PHOTO PRINTS MOUNTED DIRECTLY ON THE PLASTER AND KEYED IN COLOR TO THE WARM TAN OF THE BURLAP WAINSCOT. THE BASE AND LOWER PART OF THE WAINSCOT ARE REDDISH BROWN PRECAST TERRAZZO. FLOORS ARE GRAY TERRAZZO AND THE ACOUSTIC PLASTER CEILING IS PAINTED A WARM LIGHT GRAY EXCEPT FOR THE REFLECTING CIRCLES WHICH ARE SLIGHTLY OFF WHITE

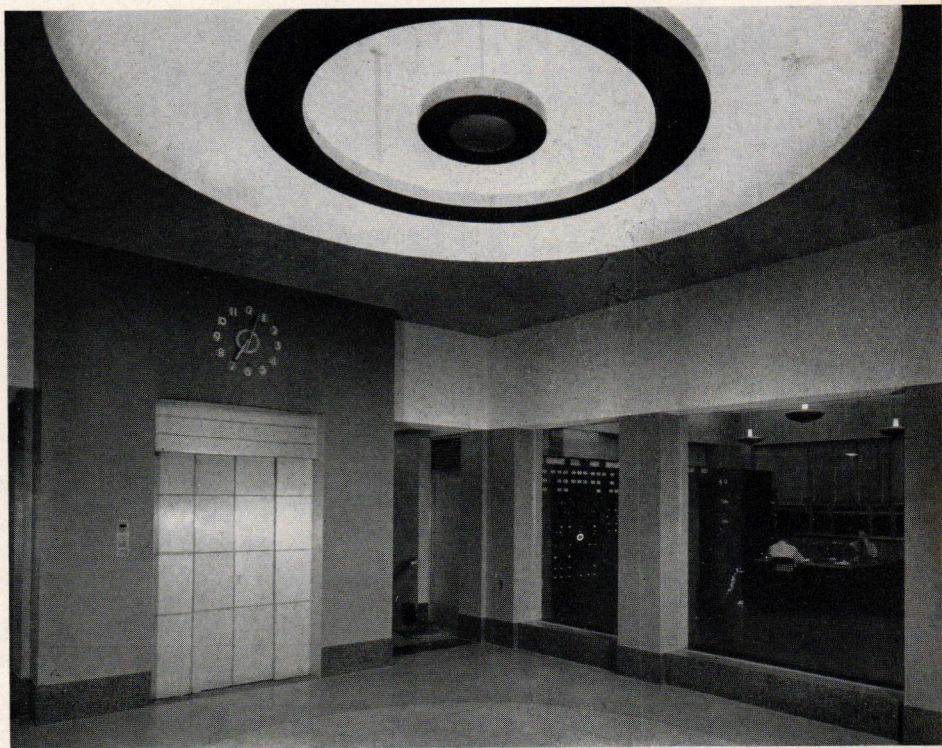


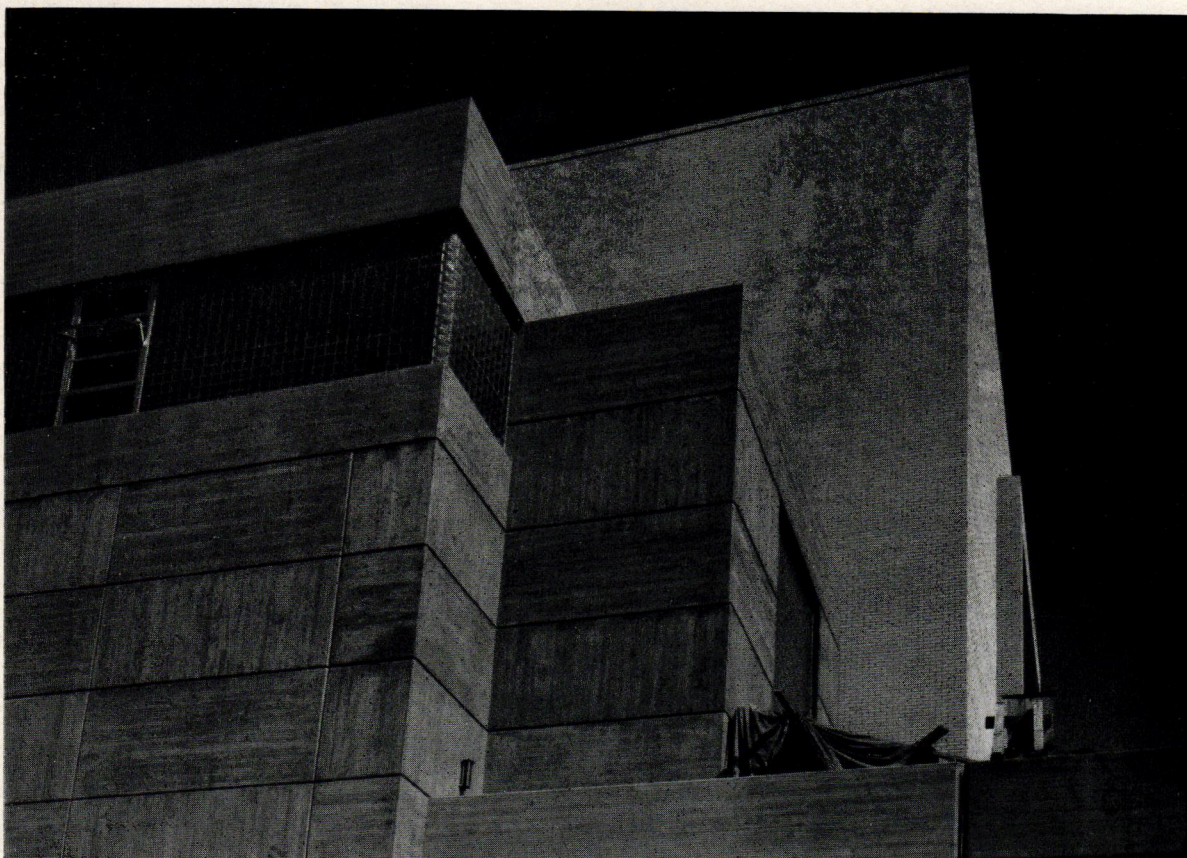
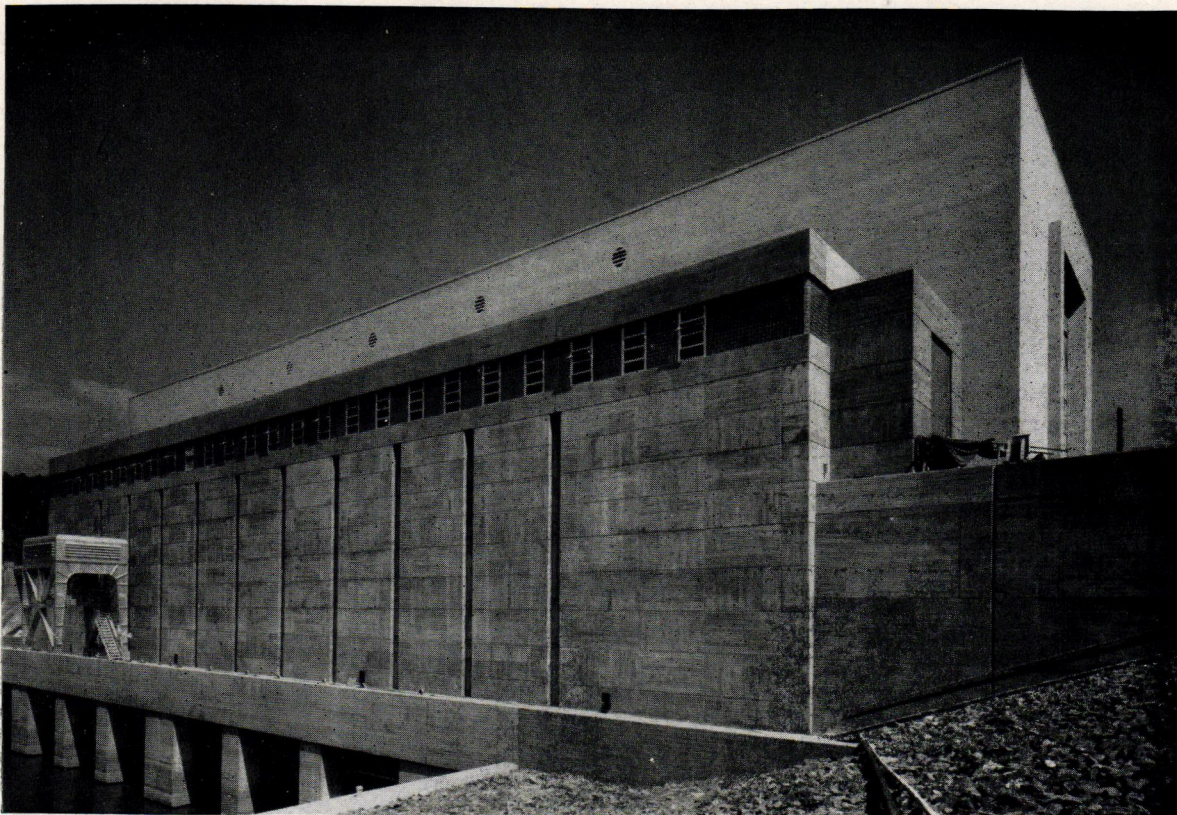
ILLUMINATION OF DISPLAY IS ACCOMPLISHED BY TWO ROWS OF CONTROL LENS FIXTURES, TOP AND BOTTOM. THESE ARE WIRED IN SEVERAL CIRCUITS SO THAT DIFFERENT INTENSITIES CAN BE HAD. THE BOTTOM TROUGH, WHICH ALSO SERVES AS THE AIR EXHAUST, IS NEATLY TIED IN TO THE DOOR ENFRAMEMENT, INCIDENTALLY GIVING A GOOD DEEP REVEAL. THE AIR SUPPLY IS AT THE CEILING END. ALL METAL IN THIS ROOM IS ALUMINUM, INCLUDING THE HANDSOME DOORS WHICH HAVE A SATIN FINISH

THE CORRIDOR OFF THE RECEPTION ROOM HAS PAINTED BURLAP WALLS AND A SEMICIRCULAR VAULTED CEILING WHOSE SURFACE IS ACOUSTIC PLASTER, PAINTED A RICH OCHRE. A TROUGH FIXTURE IN SATIN FINISH ALUMINUM THROWS THE LIGHT UPWARD TO BE SO WELL DIFFUSED THAT THE FORM OF THE VAULT IS LOST. THIS VIEW LOOKS THROUGH THE RECEPTION ROOM OUT ONTO THE VISITORS' OVERLOOK TERRACE ON THE ROOF AT THE RIGHT SIDE OF THE ILLUSTRATION ON PAGE 707. NOTE MAP TABLE

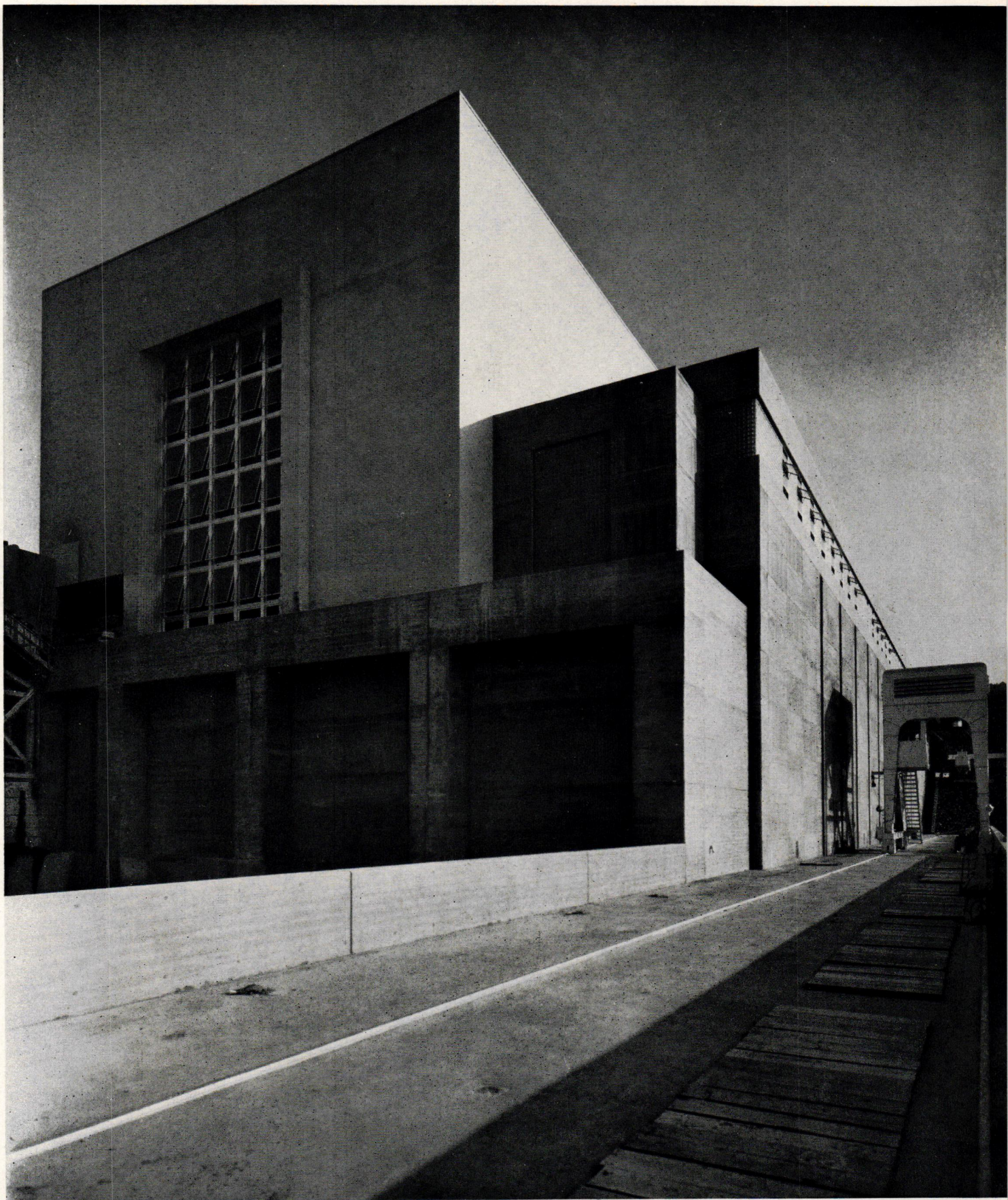


THE MAIN ENTRANCE LOBBY ON THE SAME LEVEL AS THE RECEPTION ROOM HAS AN INTERESTING LIGHT-FIXTURE MADE OF SATIN FINISH ALUMINUM AND REFLECTING INTO AN ELLIPTICAL DOME. FOUR CIRCUITS OF INCANDESCENT BULBS PERMIT VARIOUS DEGREES OF BRILLIANCE. THE PLATE GLASS WINDOWS AT THE RIGHT GIVE A CLEAR VIEW INTO THE CONTROL ROOM. A DETAIL SHOWING HOW THE GLASS IS HELD IN PLACE WITH A CONCEALED ALUMINUM FRAME WILL BE FOUND FURTHER ON IN THE ISSUE

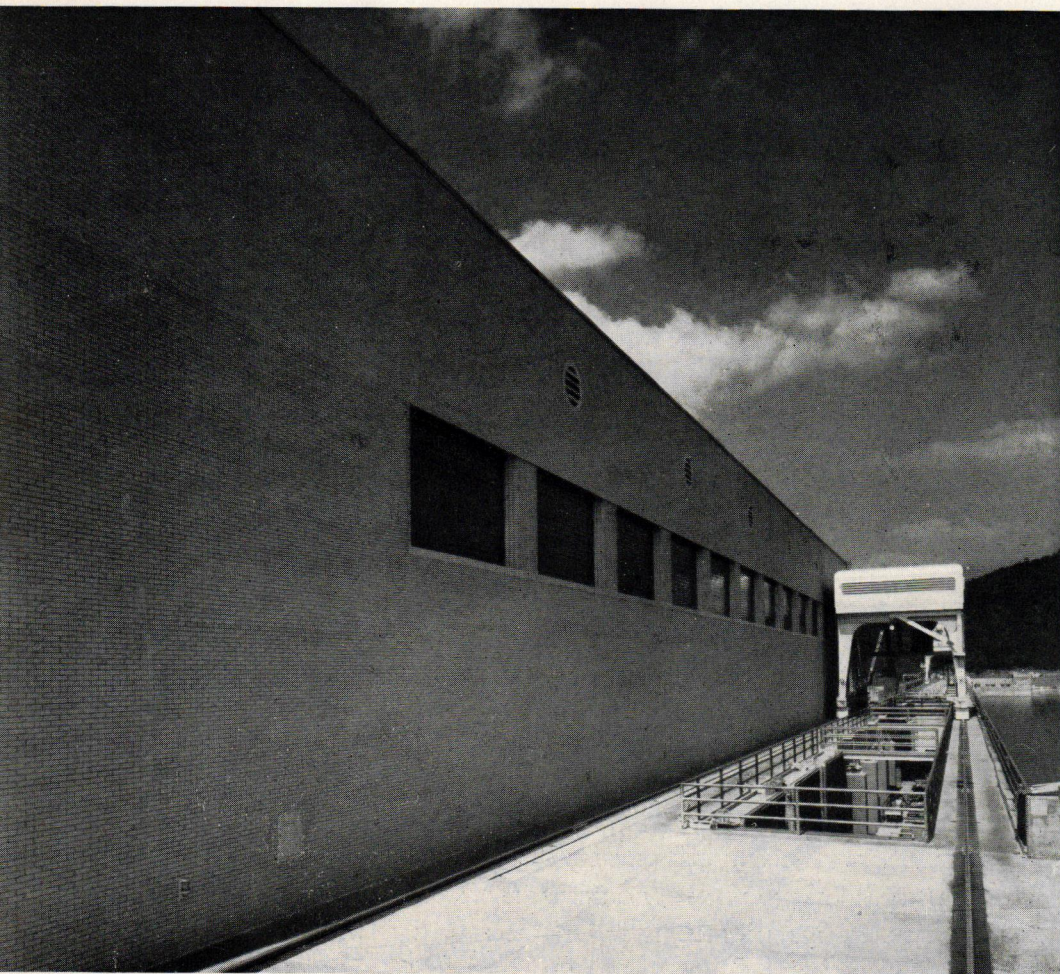
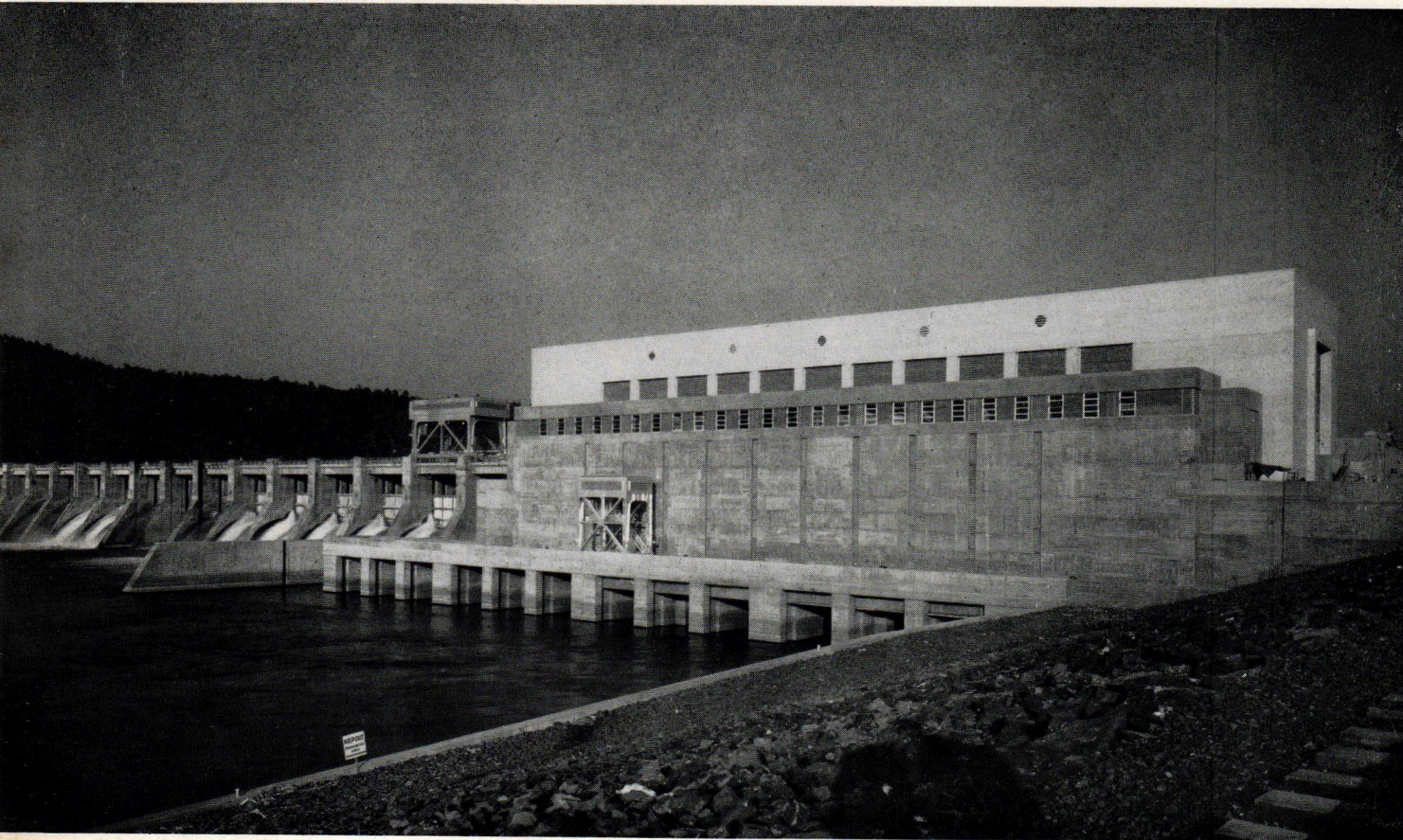




DOWNSTREAM SIDE OF GUNTERSVILLE POWERHOUSE. THE UPPER PART OF THE GENERATOR HALL WAS HERE BUILT OF BRICK SINCE THERE IS NO POSSIBILITY OF THE TAILWATER RISING FAR ENOUGH TO REACH THIS PORTION. THE CONCRETE WALLS SHOWN HERE ARE VERY THICK, TO PROVIDE SUFFICIENT WEIGHT TO KEEP BUILDING FROM FLOATING OFF IN HIGH WATER



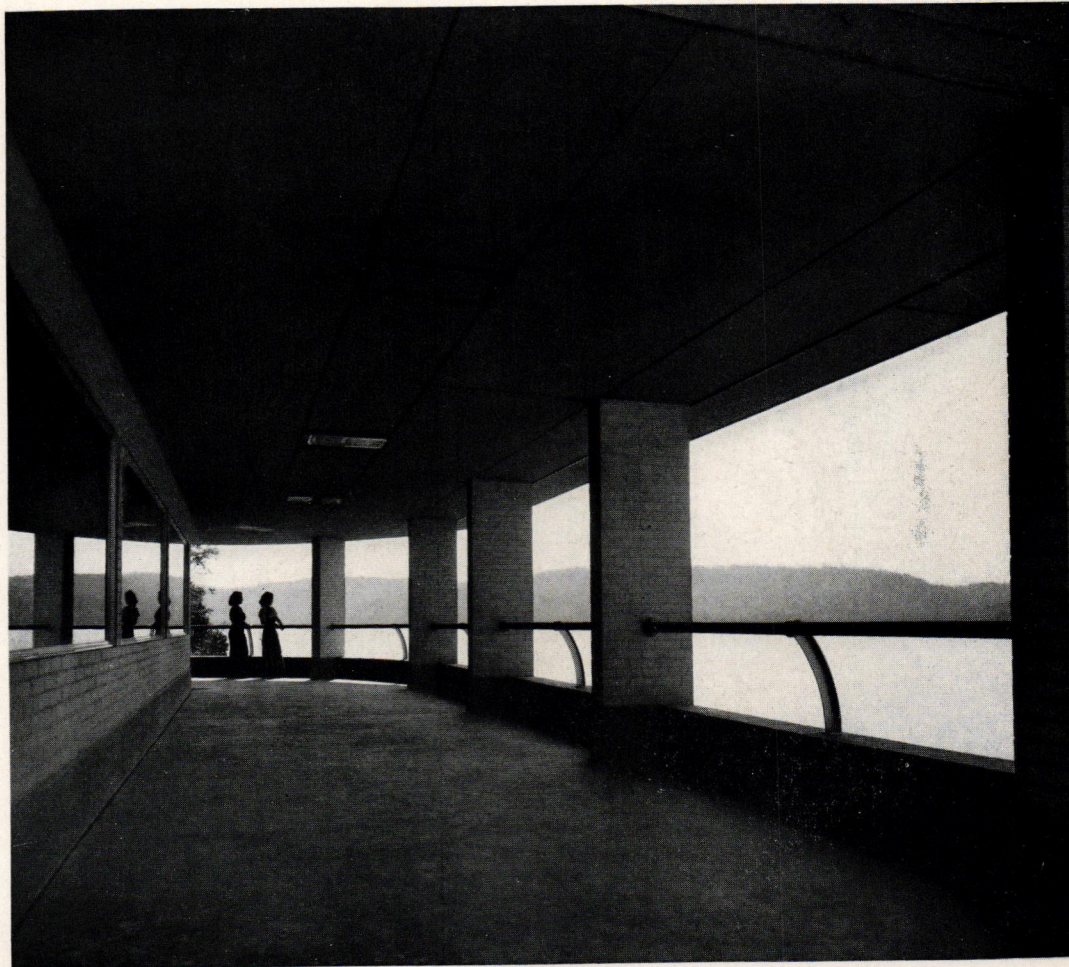
THE GUNTERVILLE POWERHOUSE IS STILL UNDER CONSTRUCTION. THE GRAYISH BUFF BRICK GENERATOR HALL WITH ITS MAGNIFICENTLY SCALED END WINDOW CONTRASTS WITH THE CONCRETE OF THE ELECTRICAL AND OFFICE BAY. STAIRS IN THE LOW CUBICLES ARE LIGHTED WITH GLASS BRICK. ALTERNATE WINDOWS AND GLASS BRICK PANELS LIGHT ROW OF OFFICES

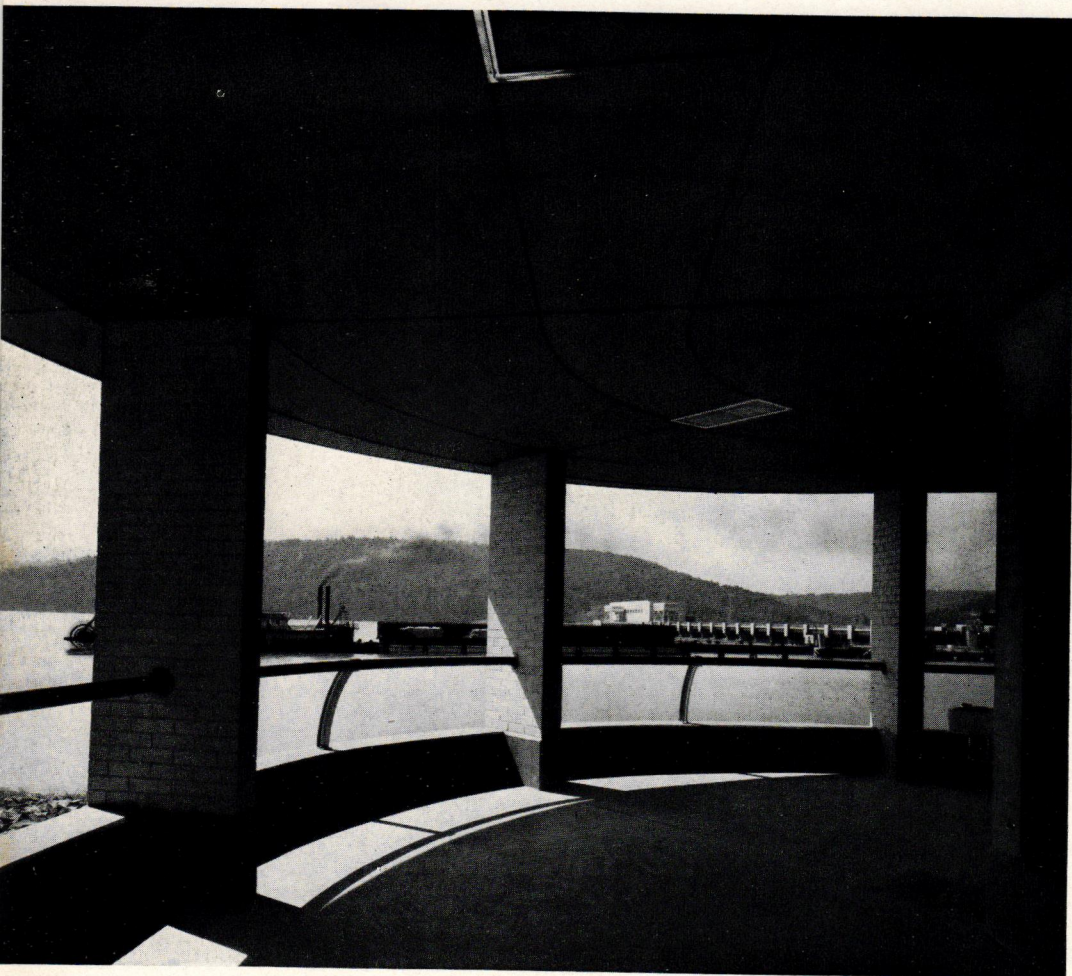


A MORE DISTANT VIEW OF GUNTERVILLE POWERHOUSE SHOWS ITS RELATION TO THE DAM. BELOW IS SEEN THE UPSTREAM SIDE OF THE GENERATOR HALL ALONG THE TOP OF THE DAM. HERE AS AT CHICKAMAUGA GLASS BLOCK IS USED FOR LIGHTING AND HEAT INSULATION. THE LEVEL OF THE CONTINUOUS LIMESTONE SILL WAS DETERMINED BY THE HEIGHT OF THE CRANE RAIL

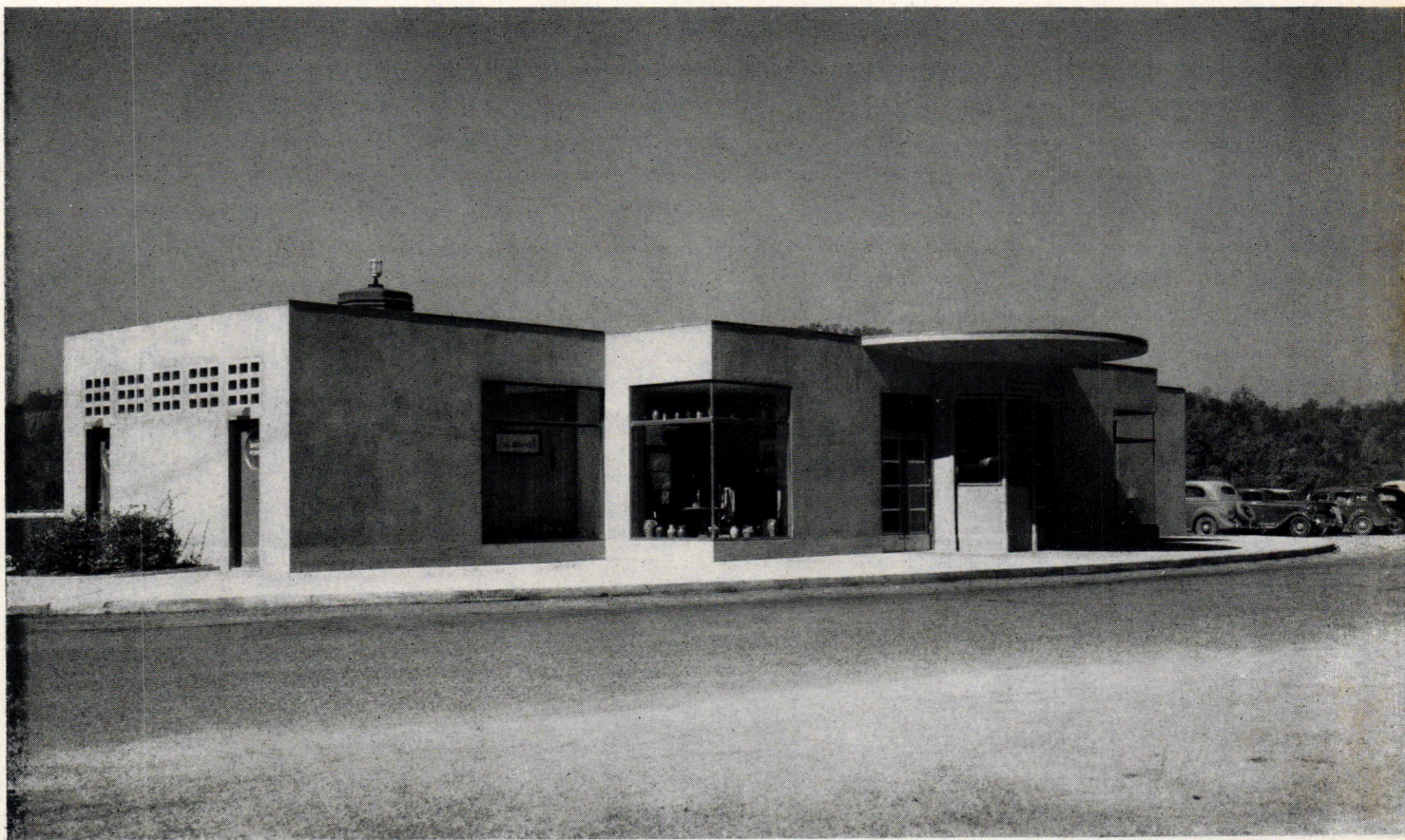


THE VISITORS' SERVICE BUILD-
ING AT GUNTERSVILLE IS NOT
QUITE FINISHED. IT HOUSES
TOILETS AND DISPLAY AND HAS
A WIDE OBSERVATION PORCH
WITH VIEW OF LAKE, DAM,
LOCK, AND POWERHOUSE.
STEPS LEAD DOWN RIP-RAP
COVERED EARTH DIKE TO A
BOAT LANDING. IN-BENDING
RAIL STANDARDS HELP TO GIVE
SENSE OF SECURITY. NARROW
COLUMNS GIVE A CLEAR VIEW

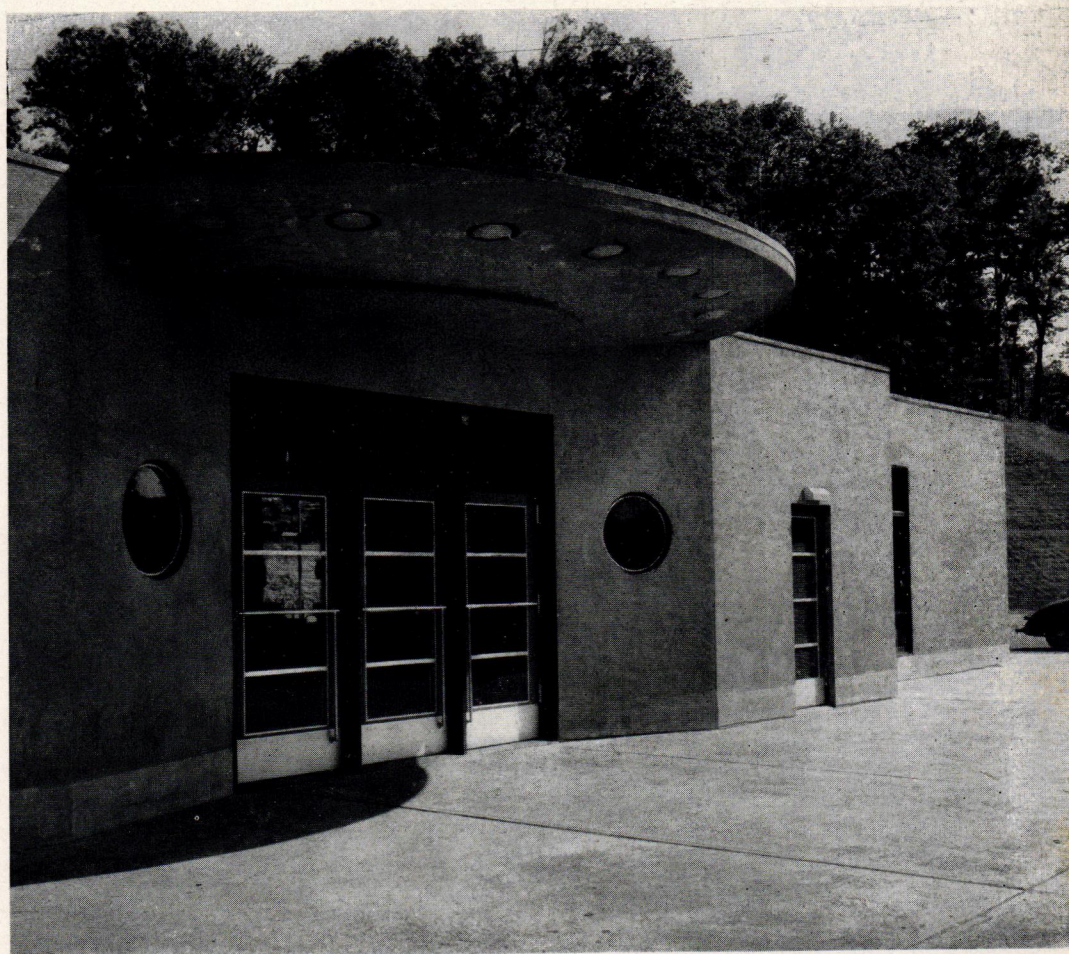




TWO MORE VIEWS OF VISITORS' BUILDING AT GUNTERSVILLE. THE FOUNDATIONS AND BASE ARE OF CONCRETE, THE WALLS AND PORCH COLUMNS OF BUFF BRICK. A BUILT-UP ROOF, FRAMED WITH WOOD JOISTS, HAS A LEAD-COVERED COPPER EDGE STRIP AND FACIA. THE PORCH SOFFIT IS OF INSULATING BOARD PAINTED LEMON YELLOW. NOTE FLUSH LIGHTS



A CORRESPONDING BUILDING AT NORRIS DAM IS LOCATED ON THE EAST ABUTMENT. IT CONTAINS GUARD BOOTH, REFRESHMENT STAND, TELEPHONE BOOTHS, CRAFTS SHOP, LOBBY, TOILETS, AND STORAGE. THE BUILDING IS WOOD FRAME WITH CINDERBLOCK VENEER, STUCCOED WITH LOCAL MARBLE-DUST SAND TO MATCH CONCRETE WORK NEARBY

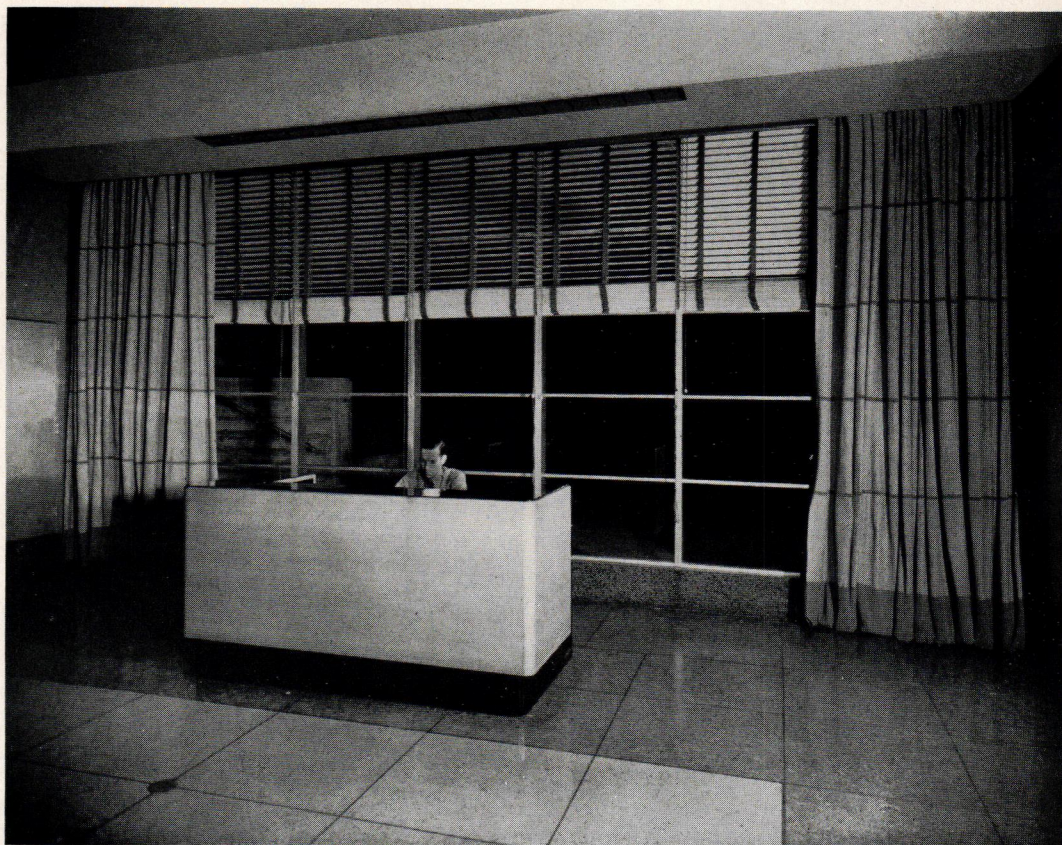


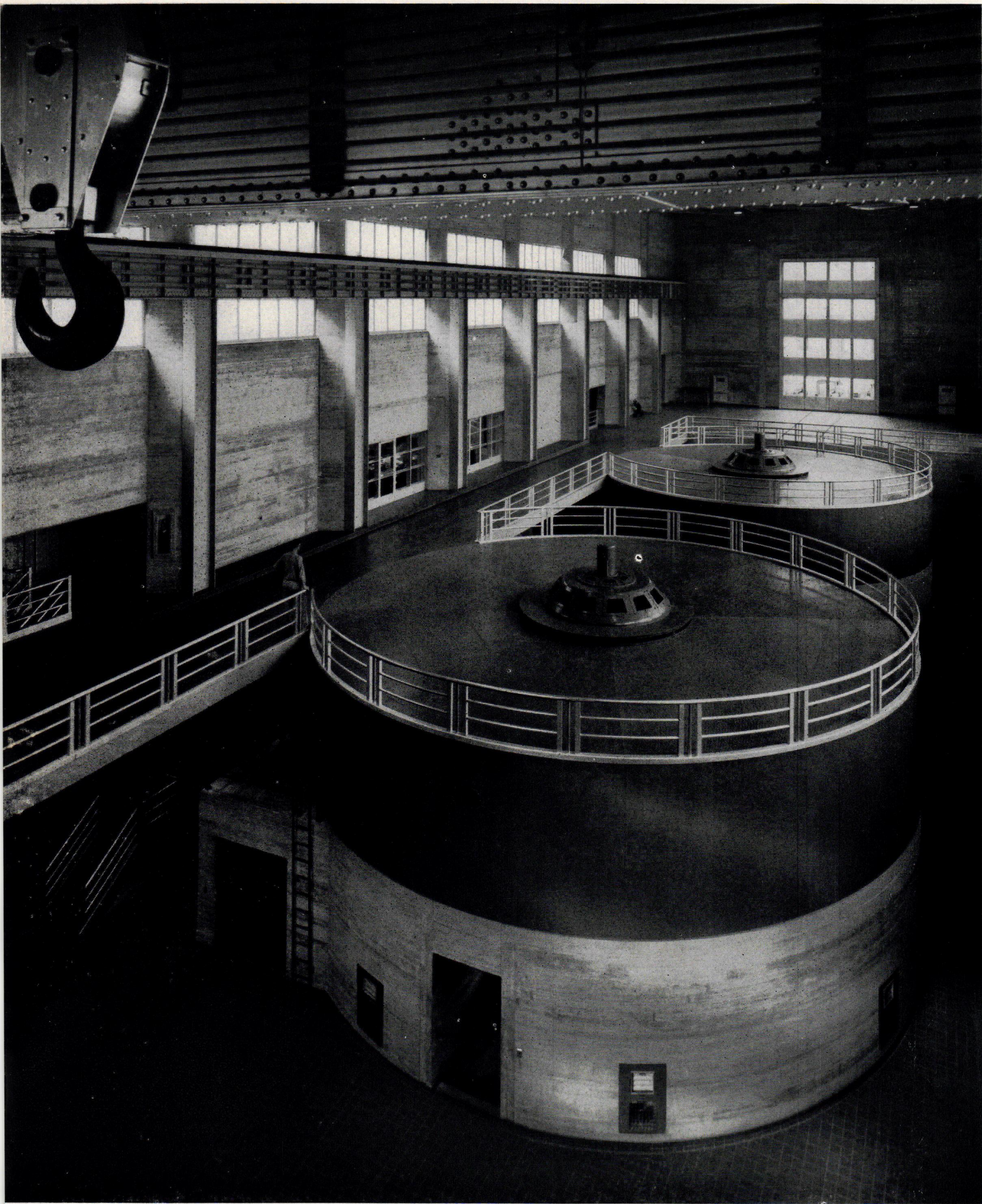


THE STRIKINGLY BEAUTIFUL VISITORS' RECEPTION ROOM AT NORRIS POWERHOUSE HAS NEVER BEEN ADEQUATELY ILLUSTRATED. ON THIS AND THE FACING PAGE ARE ITS FOUR WALLS. THE FLOOR AND BASE ARE VENETIAN TERRAZZO OF A REDDISH BROWN COLOR FOR THE BORDER AND A LIGHT PINKISH BROWN FOR THE CENTER TO INCREASE REFLECTIVITY. THE PHOTO DISPLAY IS LIGHTED TOP AND BOTTOM BY RANGES OF CONTROL LENS FIXTURES. PAINTED DIAGRAM USED TO EXPLAIN OPERATION OF DAM AND GENERATORS



THE PAN-SHAPED REFLECTING CEILING IS SURFACED WITH ACOUSTIC PLASTER PAINTED JUST OFF WHITE. THE SUSPENDED TROUGH FIXTURE IS OF ALUMINUM AND IS WIRED IN FOUR CIRCUITS FOR DIFFERENT INTENSITIES. THE COVE SOFFIT, ALSO OF ACOUSTIC PLASTER, IS TINTED A REDDISH BROWN AND THE DROP BEAM, IN PLASTER, A STILL DARKER SHADE. THE WALLS ARE BURLAP COVERED AND PAINTED MAROON. ALL METAL SHOWING IS ALUMINUM. FURNITURE IS UPHOLSTERED IN MAROON LEATHER, PIPED





ARCHITECTURE OF THE TVA

BY TALBOT F. HAMLIN

Building under the jurisdiction of the Tennessee Valley Authority is one of the largest construction projects in the world. Its scope is amazing. It includes dams, power houses, navigation locks, and all the service structures which they require, as well as bridges, recreational buildings, residences, and even gas stations. In plain brute size, measured by any yardstick, whether of money cost, of amount of material used, or of the number of people employed, it is tremendous. And its importance is even greater than its size would indicate; for by its accomplishments not only will the Government of the United States be inevitably judged, but also the whole culture of our present day. The standards which it sets in beauty as well as in efficiency are going to descend as evidences of what we are, for many generations to come.

Educationally, too, it is of vast significance. Built in large measure in portions of the country which before its coming were among the most primitive, its character is bound to affect profoundly the inhabitants of the whole region. To them it stands for the 20th Century United States; to them its buildings appear as the greatest examples of present-day architecture which they have ever seen. In addition, the very size of the

enterprise and the fact that it can be reached with comparative ease by automobile from many parts of the Central States have made it a great sightseeing center, and hundreds of thousands—literally—of visitors have poured through its buildings day after day from all over the country. It is, moreover, in a vastly true way, the people's own project. Those who live in its neighborhood feel that strongly. They have made it their own. To them it has become much more than a means of easy navigation, flood control, or cheap power. It has become to them a symbol of their own Government's efforts on their behalf, and they feel for it both pride and a strange kind of affection. This in itself is of course an indication that its design is successful.

This success has been achieved in the face of enormous difficulties. Engineering problems of the most complicated kind had to be solved; large problems in the organization of the work and the handling of the great amount of labor, both skilled and unskilled, which the project required had to be met. And there were the basic human problems. Again and again, in the past, in large engineering projects and many necessary public works, there has been a rivalry between engineers and architects that at times became almost hostility. To many engineers on other works, the architect, if employed at all, has been a thorn in the flesh, an extraneous element hauled in to "prettify" the engineer's otherwise "efficient" solutions. To the architect, in many other works of the type, the engineer has

THE GREAT GENERATOR HALL AT NORRIS POWERHOUSE HAS A BEAUTY THAT WAS NOT ATTAINED ACCIDENTALLY. CAREFUL STUDY WAS GIVEN TO ALL DETAILS AND THEIR RELATIONSHIPS. NOTE THE EFFECTIVE RAILING. HOW SIMPLE IT IS; HOW ADMIRABLE!

seemed an inflexible, unimaginative dealer in mechanical details. Happily—and the results show with what excellent results—this division of interest has never occurred in the ranks of the TVA. The architectural and site-planning group and the engineers from the beginning have worked out a co-operation, a mutual understanding of each other's aims, a true respect for each other's specific skills, which has been exceptionally valuable to both. To the engineers of the TVA, the architect is no longer a mere prettifier; he is, instead, the great humanizer. And, to the architect, the engineer is no longer the hard-and-fast dictator, but, instead, a true partner guaranteeing the perfection of the total result, both mechanically and structurally. Each has learned from the other, and it is only through this magnificent and willing cooperation that these extraordinary results have been achieved.

There were almost as many problems with people as there were with water pressures and flows in these buildings. They had to be so designed that the thousands of visitors could be welcomed, directed, and shown easily through the powerhouses and around the dams with no interruption of the efficient working of the entire plant. They had to be given rest rooms, refreshment places, view areas; for, since the whole system was the people's, created by their own Governmental representatives, it was obviously necessary to receive as many of the people as possible, to make them feel as much at home as possible, and to render their visits as truly educational as they could be made. The comfort of large numbers of employees had to be considered, the just placing of control boards, of observation platforms, of locker rooms, toilet rooms, and offices, so that there should be the minimum of lost effort during the day's work, the maximum of pleasant surroundings, the greatest sense of a true—because it is human—efficiency based on individual men and women.

In the course of the study of these various questions, certain general arrangements were developed which hold true in all of the TVA multiple-purpose dams, although of course varied tremendously to suit each

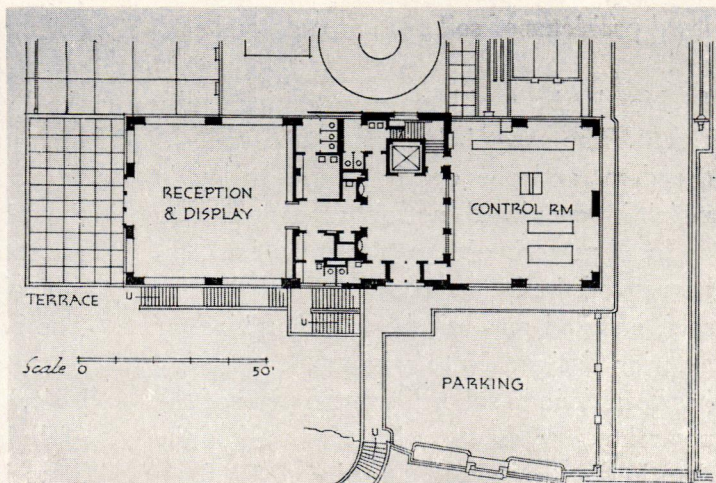
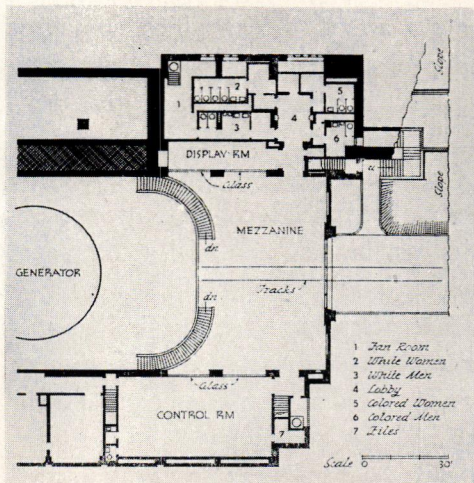
local site. The control bay was usually placed at one end of the powerhouse, and so designed that the public flowed into the structure on the ground level, went through the display room and the visitors' office—where, if necessary, guides or lecturers could be detailed to accompany them—then along upper galleries looking down into the powerhouse, and so out again, without ever crossing any line of ordinary working traffic. They are shown everything without interfering with any worker, and this alone entailed the most careful circulation planning. For those who merely wished to see the outside of the buildings and perhaps to cross the dams, other visitors' structures were erected, usually at one end of the dam, where again simple displays sketched the purposes and achievements of the TVA and the relation of the special dam in question to the whole scheme could be explained. Usually, too, these dam structures contained sitting rooms where the view was most superb, and ample, beautifully detailed comfort stations. In some cases, as well, these buildings were combined with small refreshment stands, so that the visitor, after he had stopped to view the water rushing over the spillway or had looked down at the churning water below the dam or the placid lake above, could take advantage of his wait to get a snack and a soda.

In the solutions of this general pattern there has been continual growth and change. No designs have been allowed to become set standards, to be followed irrespective of site. Each problem has been considered on its own merits and solved in accordance with its own requirements, so that it is impossible for a visitor to say that in seeing one of the dams he has seen all. Each is a different problem, and each successive structure has been solved in the light of the lessons learned in the ones built previously.

The powerhouses, for instance, are of three basically different types. In one, where the level of the tail water—that is, the water on the down-stream side of the dam—can never reach the housing of the generators, there is no real powerhouse. The modern enclosures of the turbines and generators,



THE PUBLIC TOILET AND REST ROOMS AT ALL THE TVA POWERHOUSES ARE OF SIMPLE AND CLEAN DESIGN, CARRIED OUT IN MATERIALS WHICH INSURE EASY AND SANITARY MAINTENANCE AS WELL AS DURABILITY. THE VIEW ABOVE SHOWS PART OF ONE OF THE WOMEN'S REST ROOMS AT WHEELER WHICH IS TREATED TYPICALLY WITH STRUCTURAL GLASS WALLS. SOME HAVE TERRAZZO FLOORS, SOME HAVE TILE, ALL ARE COLORFUL. BELOW, VISITORS' ENTRANCE FLOORS OF CONTROL BUILDINGS AT GUNTERSVILLE AND WHEELER REPRESENTING TWO TYPES



interesting combinations of concentric cylindrical forms, have become so simple and so perfect that they themselves are sufficient shelter for the machinery beneath, and no additional building is necessary. In those dams where tail water can rise to a higher level, of course protection of the generators is necessary, and in that case enclosed powerhouses are used, with the lower walls of concrete designed to withstand pressure, and with upper walls—where water never can come—masonry. Finally, in those powerhouses where water can rise to great heights the entire structure is necessarily of concrete. Thus, in Wheeler Dam the generator tops make interesting cylindrical notes below the level of the dam wall, rising unashamed above their foundations, and between them and the shore at the very end of the dam rises the control building, interesting in its simple rectangular rhythms of glass and wall; an additional note is given by the alternating rhythms of the window divisions themselves.

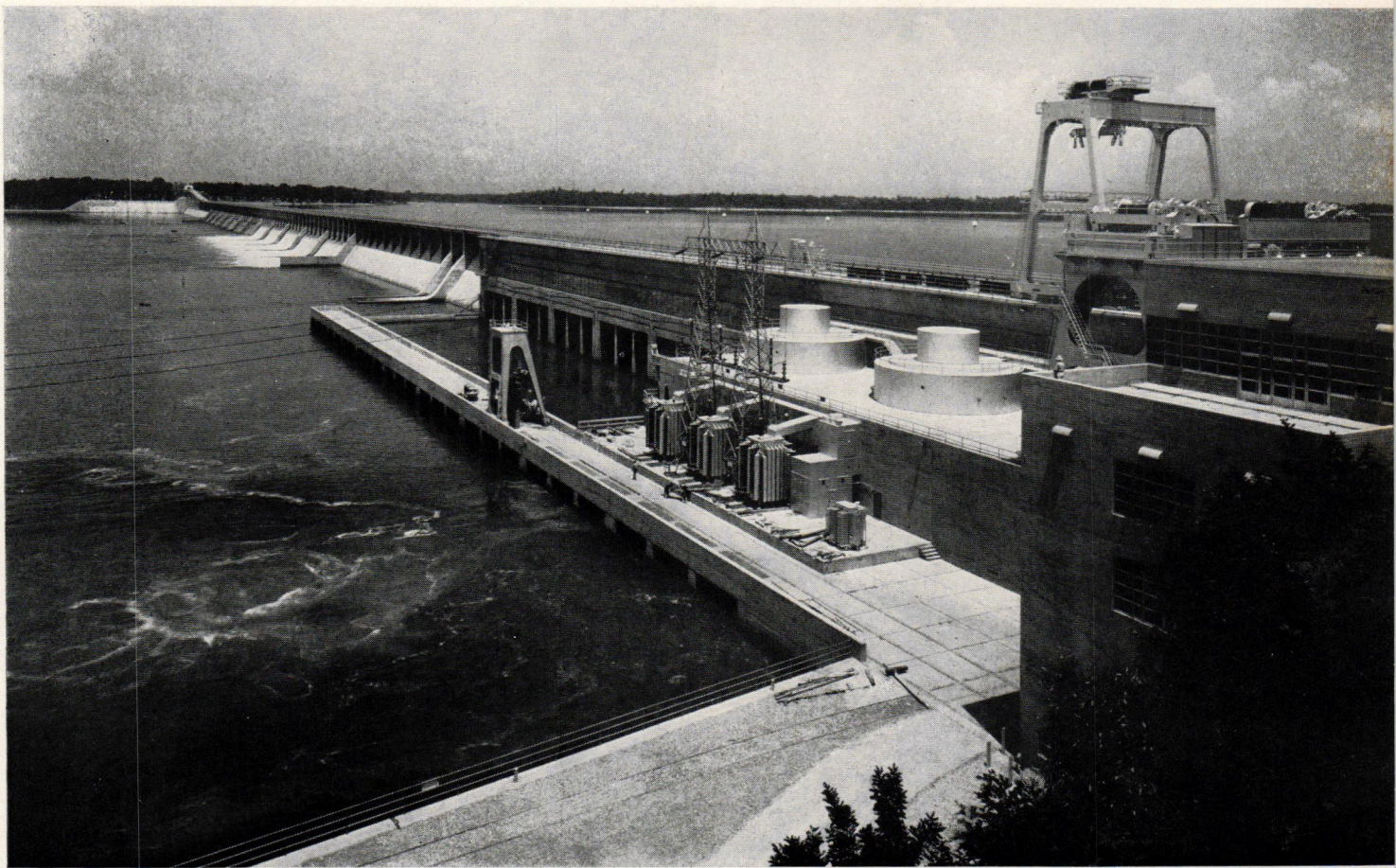
The simplicity which characterizes the exterior distinguishes the finishes of walls and ceilings and floors within, and the large doors and windows which flood the public spaces with light are a delight, as are the simple lighting troughs that are used here and there for artificial illumination. The visitors' reception room in Wheeler is typical of the warm feeling of welcome that a visitor must invariably get. Lighted naturally from three sides, it is most interesting in color treatment, and one whole wall is devoted to displays dramatizing in beautiful lettering and exciting photograph the related problems of soil erosion and flood control.

In Norris the problems were entirely different. The great height and huge scale of the dam, and the depth of the valley in which it was placed, not only meant that an enclosed powerhouse was necessary, but also, because of the immense scale of the dam itself, entailed an entirely different kind of exterior design. Here, rightly, everything has been done to subordinate the mass of the powerhouse to the sheer battered wall of the dam in front of which it is placed. Its form

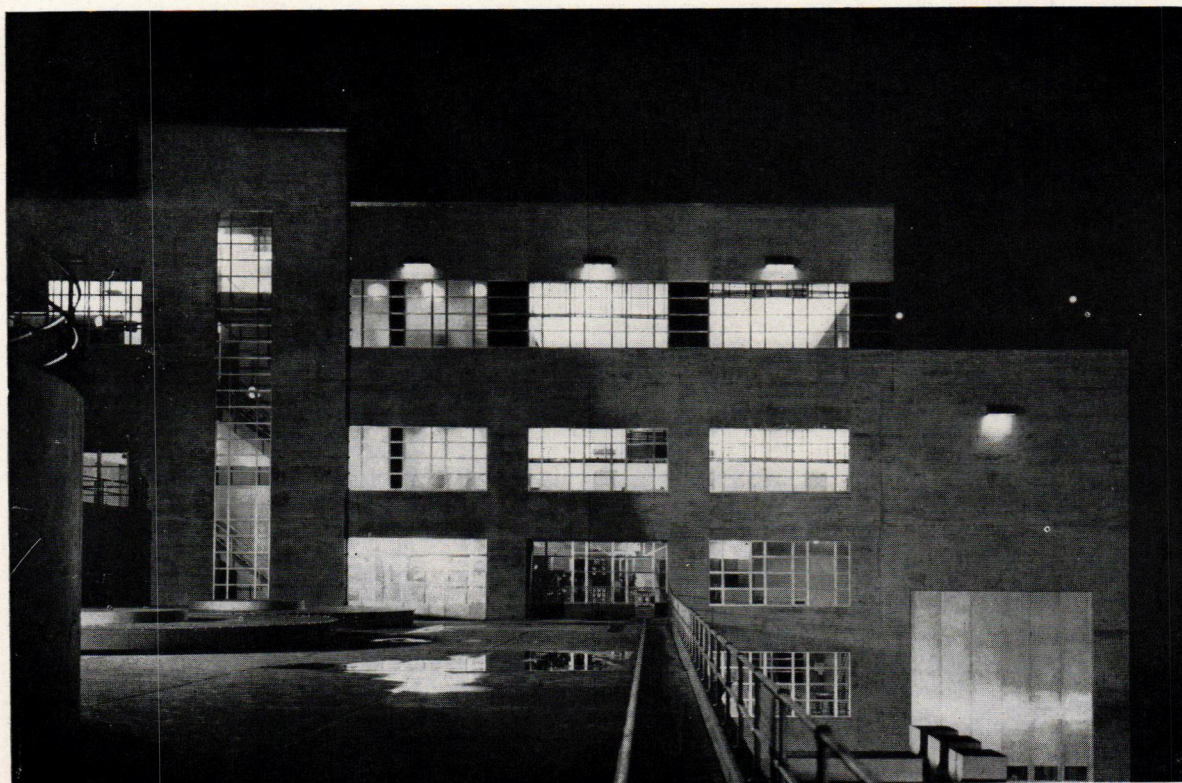
has been kept a severe rectangular mass; and, in order to give it the proper scale of power, its windows have been treated as successive rhythmically-spaced rectangular openings separated by broad areas of concrete, both vertically and horizontally. It may have been this type of exterior design which suggested one of the first great improvements in earlier usage, a new and creative handling of the exterior of the exposed concrete, by means of a simple adjustment of form work.

In structures of this size it is almost impossible to guarantee uniformity of color throughout in exposed concrete work. In any concrete, stain is bound to happen, and the use of plain, dressed-board, horizontal forms at Pickwick did little to conceal color variations or inequalities of staining. There was sufficient roughness in the form boards employed so that the exterior is not a dead gray. The walls have life. Yet the inevitable staining and the slight variations in color have not helped the appearance of the plain surfaces on which the design of the building depends. In Norris, the rhythmical handling of the windows is combined with a similar treatment in the form work. The forms were built in panels of generally uniform size, with the boards running alternately vertical and horizontal in adjoining panels. The result is a kind of checkerboard, elongated, for the panels are rectangular and not square; and at once much of the difficulty consequent on the nature of the concrete itself disappears. The subtle change of light between the panels with horizontal and those with vertical joints gives most interesting surface patterns, which somehow completely obscure color inequalities, and the deep joints between the panels give sufficient interest without destroying unity. It is a type of concrete building which retains all the power of exposed concrete work, expresses its cast nature, and still at the same time obviates its difficulties.

The interior of the powerhouse has its disadvantages. Its deeply trussed roof, though basically simple in pattern, is a poor reflector of light; and the arrangement of the windows is such as to darken the ceiling still



LOOKING FROM THE CLIFF-TOP PAST THE WHEELER CONTROL BUILDING, TOWARD THE DAM, ONE SEES THE HUGE CYLINDRICAL FORMS OF THE GENERATOR CASINGS WHICH ARE WEATHER TIGHT. MAXIMUM TAILWATER LEVEL LOW SO NO GENERATOR HALL IS NEEDED. BELOW, LOOKING BACK FROM BESIDE GENERATOR TOWARD CONTROL HOUSE AT NIGHT





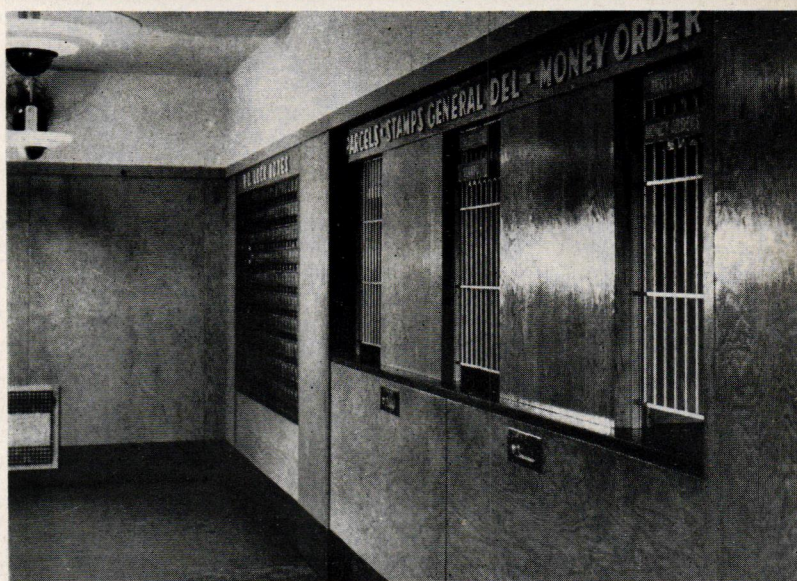
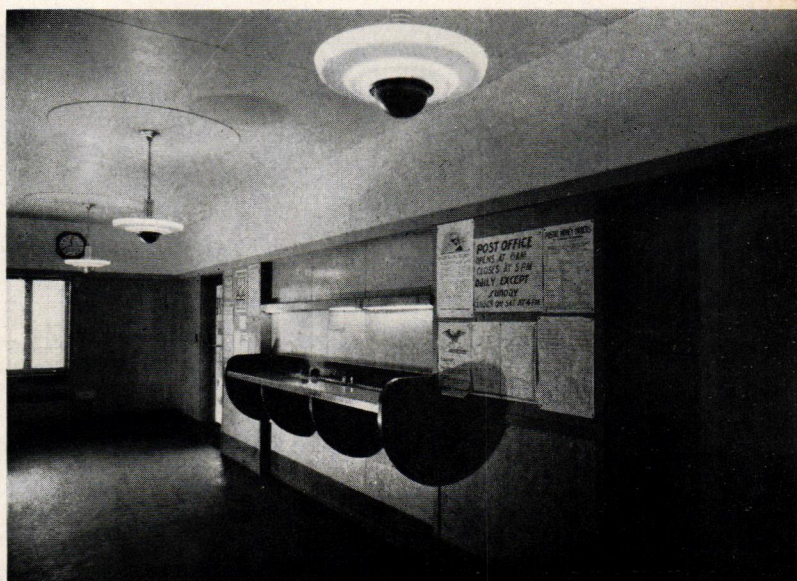
NORRIS DAM IS MORE SPECTACULAR THAN THE DOWN RIVER DAMS BY REASON OF ITS GREATER HEIGHT. THE POWERHOUSE AT ITS BASE, ITSELF A SIZABLE STRUCTURE, IS DWARFED BY ITS MAJESTIC NEIGHBOR. AT THE BOTTOM OF THESE TWO PAGES ARE THREE TYPICAL HOUSES IN THE TOWN OF NORRIS. THEY SHOW THE HONEST APPROACH TO DESIGN SEEN IN THE DAM



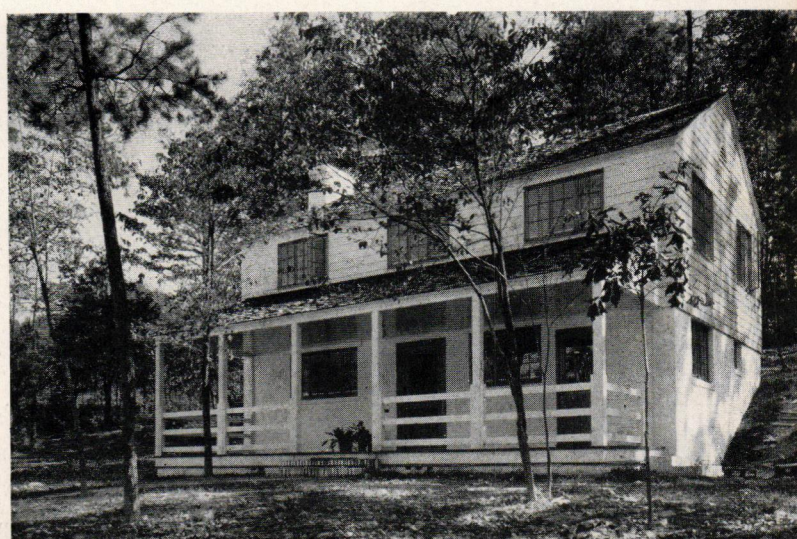
more. The powerhouse is a beautiful hall in its fundamental proportions, but in illumination, as in certain elements of finish, it still leaves something to be desired.

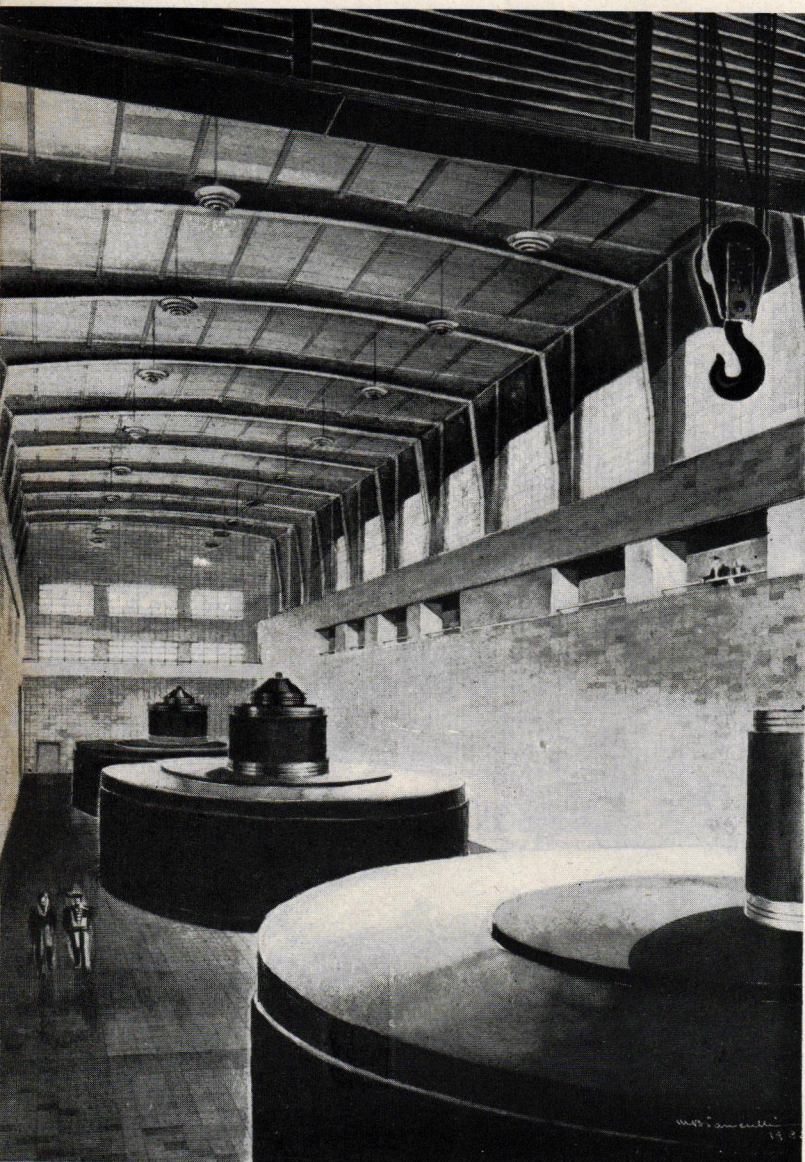
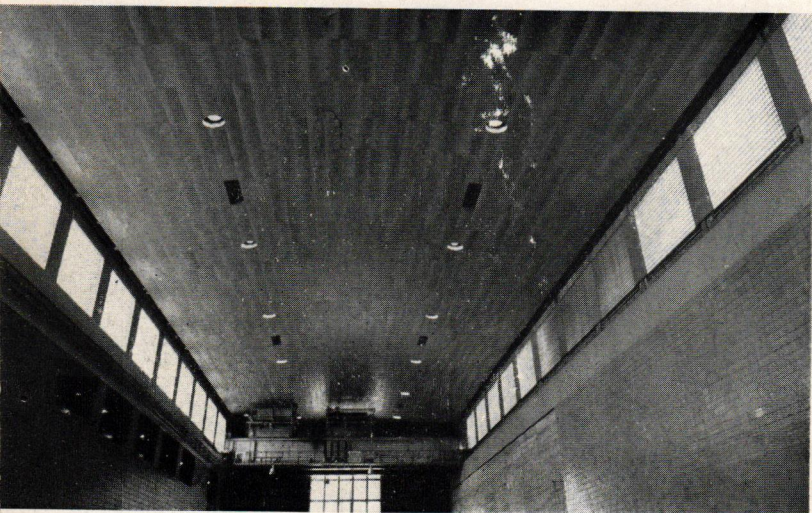
Norris of course is famous for much other building of unusual quality. The whole village, set so attractively among the trees, has been criticized as too romantic in its labyrinth of curving roads, and too historical in its usual type of house design. But the whole purpose of the plan was to make the most of an exceedingly uneven site—to follow contours, to preserve beautiful groves of trees, to blend the village as far as possible with the neighborhood. And the design of the houses followed in the main from the nature of the materials used. As far as possible these were local—a pleasant rough stone, and timber;—and in those houses which were built without change from the architect's original plans there is a beautiful natural simplicity in the gabled roofs, the quiet walls, the large windows, and the protected porches. One of the most interesting things in Norris is the post office. Its interior is done chiefly in plywood at a remarkably low cost, and by setting window and door heads at the same level, carrying a board around just above this, lining all the wall faces below with natural plywood, and the upper walls and ceilings with the same $\frac{1}{4}$ " three-ply fit, painted a light color, a most delightful, unified, "designed" character has been achieved. There is no fuss or feathers about it, but there is thought and proportion, and there is lovely color treatment in the ceiling, enlivened by large circles over the lighting fixtures. One would commend it unreservedly to the Office of the Supervising Architect at Washington for a careful study of what a cheap post office may be. It is so refreshing a contrast to the usual stuffy interiors that have become apparently and unfortunately standardized in the Federal Architect's work.

In Pickwick Landing a powerhouse of different type was produced. Here the old horizontal form work was used, for Pickwick was begun while the results at Norris were still considered experimental. In Pickwick the long, simple, rectangular power-



THE INTERIOR OF THE LITTLE NORRIS POST-OFFICE IS EFFECTIVE BY REASON OF ITS SIMPLICITY. THOUGH LOW IN COST, IT HAS PLENTY OF DIGNITY AND REFINEMENT





THE HUNG CEILING IN GUNTERSVILLE'S GENERATOR HALL WAS PARTLY TO HIDE ELABORATE TRUSSWORK. AT CHICKAMAUGA, STEEL RIBS PROVIDED A BETTER ANSWER

house carries the steel grid of the high voltage wiring on its roof, so that there is a most interesting contrast between the blocky forms of the concrete and the lacy forms of the steel. Yet even here the designer's hand has been at work, so that the proportions of the steel frame fit beautifully into the entire composition. At the shore end of the powerhouse rises the control building, like a simple pylon, almost Egyptian in its quiet strength. The interior of the powerhouse is a definite step ahead. The light is more perfectly distributed, and the whole system of walls has become cleaner, simpler, more direct.

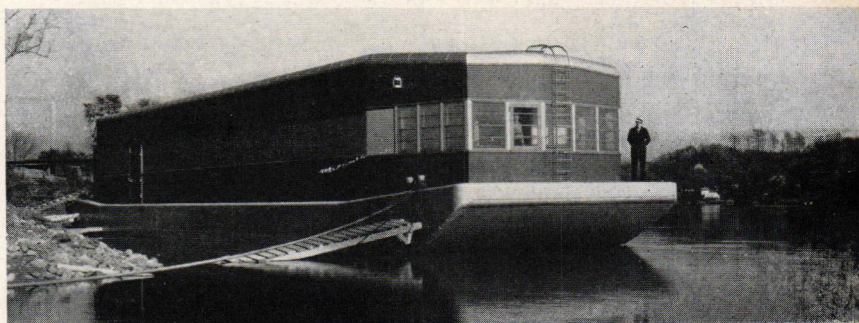
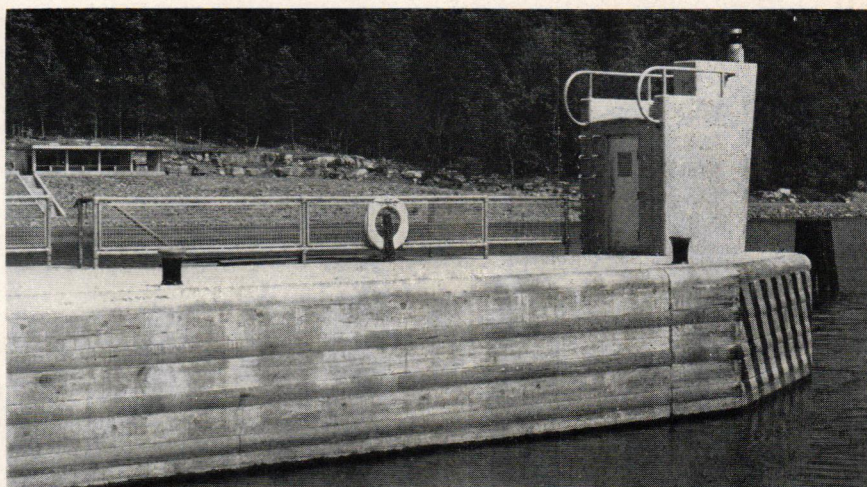
Another step ahead was made at Guntersville. Here the powerhouse was frankly in two sections: a lower section of concrete to resist possible flood waters; an upper section of buff brick. The concrete walls are treated as in Norris, with a checkerboard of form patterns alternately of vertical and horizontal boards. The whole design has been simplified and everything done to emphasize the horizontal quality. For the first time, too, in the effort to obtain the greatest possible diffusion of light, a frieze of glass block was used in the upper part of the walls to light the interior, and a hung ceiling was installed as part of the ventilating system, and this also hides the confusion of the light-devouring truss work. Aesthetically, the exterior is one of the most successful of all of the TVA powerhouses, interesting in rhythm and with a magnificent serenity in its long horizontal lines, which combine with the horizontal of the dam top and contrast dramatically with the cross-walls of the dam gates. The powerhouse interior, too, is lighter, pleasanter, more airy than any of its predecessors; but the use of the hung ceiling was, in a way, a compromise and not a perfect solution of the problem. This was only reached in Chickamauga, where, both outside and in, the final steps of complete integration between the engineering elements, the spillway walls, and the powerhouse structure itself—the exterior and the interior—have been completely effected. The powerhouse is one of those subject to possible flood; hence its concrete walls rise

in stately and simple power to the frieze of glass brick and windows which lights the upper-story offices. The end bay is of the pylon type found in Pickwick Landing, but designed with more power, more vivid and gorgeous scale.

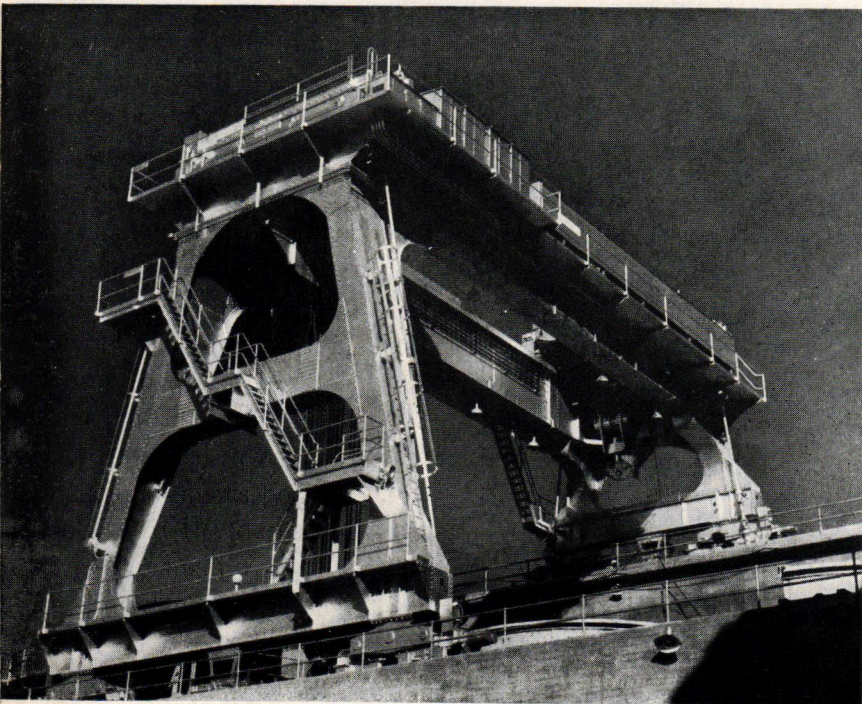
The whole structure as it rises above the roof stone rip-rap embankment is, to my mind, one of the great conceptions of American architecture. In this building, too, additional refinements in the concrete treatment have entered in, for the alternation of vertical- and horizontal-patterned panels is interrupted by smaller horizontal bands, given an almost smooth and mirror-like texture by using plywood forms for these areas. Extremely interesting is the slight recessing of the piers between the windows, as is the emphasis on the horizontal obtained in the ventilating sash.

And the same quality carries through into the interior. The three great generator tops march down the center with unbroken simplicity and majesty. The walls rise clear to the visitors' gallery on one side and the frieze of light on the other; and above these the framework is built of welded-steel, braced-arch construction. Gone is the earlier confusion of dark and complicated truss work, gone too the compromise of the hung ceiling. Instead, one gets the clean lines of the graceful steel arches, tied together by the delicate purlins connecting them, and between them merely the under-surface of the precast pans. This is stripped architecture to suit the most puritanical functionalist, but it is stripped architecture endowed with grace and the beauty of excellent proportion. It is characteristic of the TVA cooperation that such a result could only be obtained by the most immaculate engineering working sympathetically with the most imaginative design.

The results of the same cooperation are shown in the navigation work—the locks and their control buildings, which are an essential part of the entire scheme. This system has opened wide areas to effective and profitable navigation; and already the barges and tugboats are carrying the products of the uplands down towards the Ohio, and



IMAGINATIVE DESIGN IS EVIDENT IN THE QUAY AND GAUGE HOUSE AT TOP, THE LOCK CONTROL HOUSE BELOW IT, AND THE REFRIGERATED PRODUCE BARGE AT BOTTOM



THE STRIKING GANTRY WHICH MOVES GENERATOR PARTS WHEN NECESSARY AT WHEELER WAS CONSIDERED ADVANCED IN DESIGN WHEN IT WAS INSTALLED. ITS LATER COUNTERPART IS SHOWN OPPOSITE

allowing bulk freight of manufactured goods to be brought cheaply and simply into the hinterland. The locks, occurring at all the run-of-river dams have long projecting quays. At the end is usually a gauge house, where the exact level of the river can be read. These little gauge shelters, placed at the entrance of the locks, carry also the navigation lights. The ends of the railings of the top platform are treated in interesting curves; the ladders of approach, bent steel rungs inserted in the concrete, are direct; and the projecting sloped fin on which the lights are carried adds a vivid note. The interesting handling of the lining of the lock, with its simple quarter-circle profile above and the alternation of flat and slightly projecting elements, has remarkable variety and life. The control rooms, from which the lock gates are operated, are simple structures of concrete, with broad window areas directed towards the lock; yet, simple as they are, the difference between their design and that of the ordinary lock gatehouse in the usual American canals shows the originality and the imagination of the TVA

designers. In the usual lock there is a little rectangular building for operating machinery, and no attempt is made to afford the operators a view of the lock itself from the inside. The TVA operation buildings are so designed that their windows command both sets of gates, so that there is instant visual control of boats passing through and approaching in either direction. This is a little thing, to be sure, but it is a characteristic evidence of that kind of careful forethought and unconventional imagination which has resulted from the close cooperation of engineers and architects.

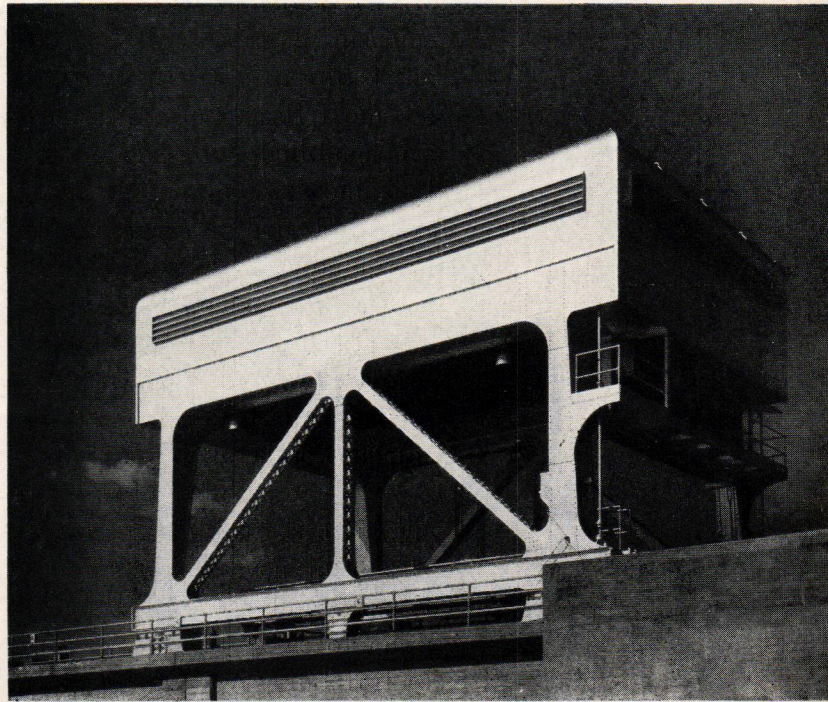
In the TVA work itself there is a significant evidence of advance even in purely mechanical features. The traveling crane at Wheeler dam was a superb piece of engineering, dramatic in its forms, and full of that kind of complexity of pipes, conduits, pulleys, boxes, wheels, ladders, and riveted frames which is the conventional layman's idea of a great machine. For its time it was an advanced piece of design; nevertheless the TVA designers could not rest satisfied—it seemed full of unnecessary complexities. The newer cranes and lifts, such as one finds in Pickwick Landing or Chickamauga, are totally different in feeling. In them everything has been simplified, coordinated, made more compact, and then housed in straightforward, well-ventilated protective coverings; so that the newer machines not only look smaller, more graceful, and more efficient, but they are also, according to the engineers, better designed as machines, and at the same time, as the architect desired, they fall much more truly into the picture of the new dams and become much more definitely part of the entire composition. All the old false romanticism of the machine has disappeared.

The more purely "architectural" elements in the project are an equal pleasure to look at, to visit, to study. The simple panel treatment of the visitors' buildings at Pickwick Landing dam is an excellent example. These twin structures are designed with pleasant large glass areas, and wall units of equal widths, and the effect is direct and attractive. Interesting also is the dam parapet

at Norris, with its large rounded upper rail, so pleasing to lean on, and its lights recessed in the railing supports so as to shine on the roadway without dazzle. The gauge buildings, with their interesting ladders and railings and navigation light mountings, have already been mentioned, and a special word is due about the beautiful displays in the visitors' buildings. Formed in successive panels of diagram and photograph, with the simplest, most legible, but most beautifully proportioned lettering, they tell their story with all the more power because of their quietness.

In the success of TVA construction there seems to me to lie an enormous hope for the future of American architecture and American engineering. These are not the only buildings in which this close cooperation of architect and engineer has been achieved; especially in many of our bridges something of the same feeling of creative form, developed through a similar understanding between the two professions, is more and more evident. One might cite such things as the Bronx-Whitestone bridge, with its exquisite simplicity of tower, its graceful delicacy of structural form, its beautifully designed anchorages which so directly express the stresses within them. Here, too, the beauty came from close cooperation. It is this same kind of cooperation, which the TVA more than anything else has expressed, which has made its buildings—its dams, its powerhouses, its navigation locks—things of architectural beauty.

There is also, I think, in the TVA project another, even deeper, source of hope and confidence. It is the world's most striking contemporary example that planning—large-scale planning—is possible in a democracy; that no such false efficiency as that of a dictatorship is necessary to produce great national works, conceived and executed for the benefit of all the people. Perhaps one could go further and even say that, under a dictatorship, that controlling atmosphere which creates the humanity and charm of much of the TVA work would have been impossible. The designers have somehow, through subtle design and human planning,

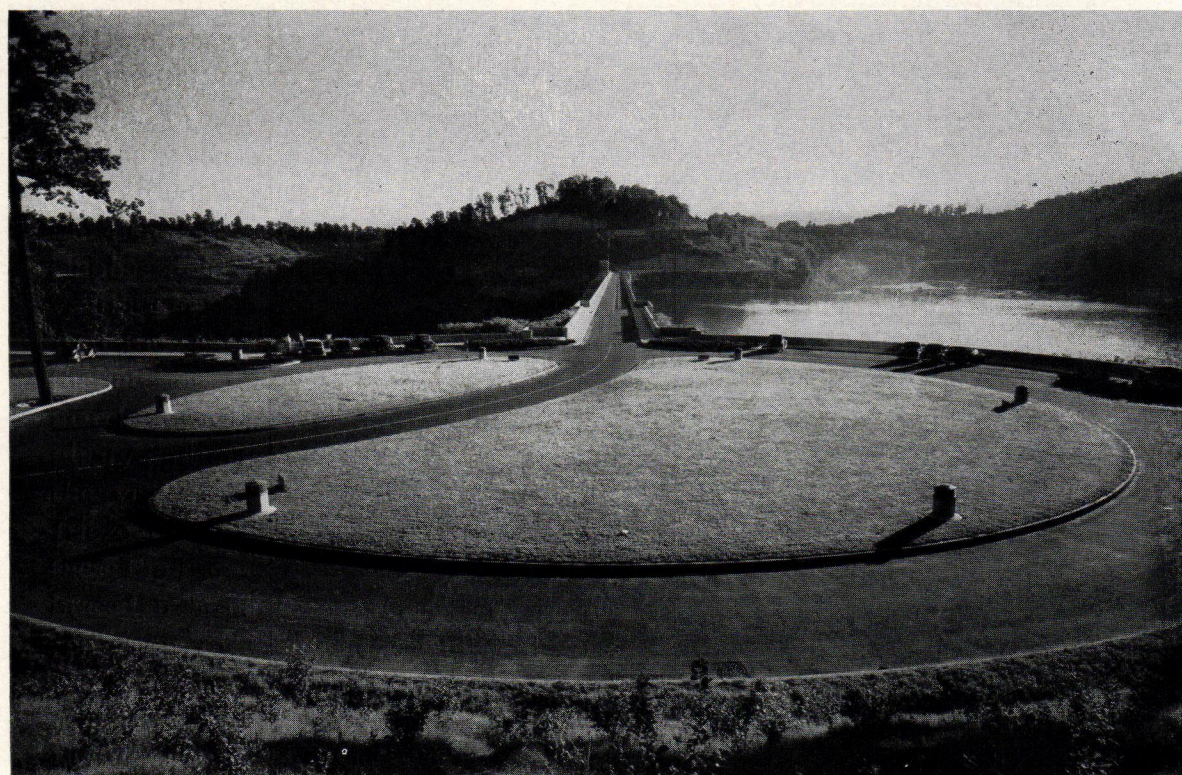
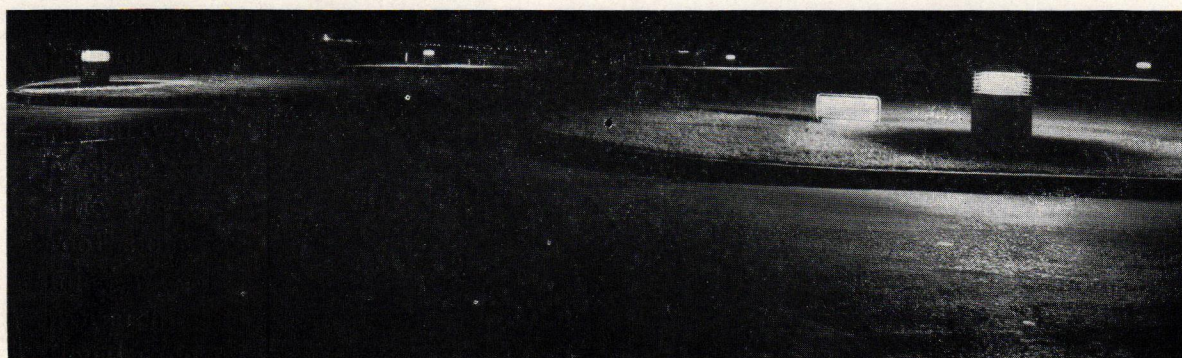


THE TYPE OF GANTRY USED AT GUNTERS-
VILLE, CHICKAMAUGA, AND PICKWICK IS
GREATLY SIMPLIFIED EXTERNALLY AND BY
BETTER COORDINATION OF ITS WORK-
ING PARTS HAS BECOME TRULY MODERN

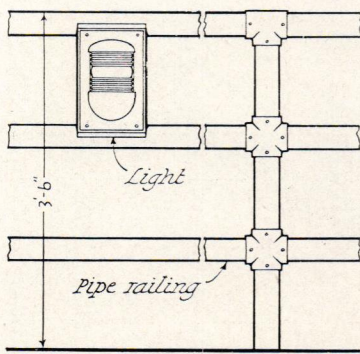
set human beings as the center of the whole scheme. Before these buildings one feels inevitably that, despite their size, despite the billions of gallons of water which they control and the several millions of horse-power they generate, they all exist for the advantage of simple human persons, for the common good.

Perhaps this matter of democracy goes even deeper than the mere purpose of this enterprise; perhaps it is this ideal of democracy itself, permeating the entire TVA organization, which has made possible within it a type of enthusiastic, sympathetic, understanding cooperation that no other system could produce. If the world is to progress in these highly mechanized times, tremendous public works, tremendous efforts at planning will be necessary. It has long been the boast of totalitarian thinkers that only in their system is efficient large-scale planning possible. In the achievements of TVA the United States has proved the contrary, and for that the TVA projects gain an importance which may even transcend their entire practical performance.

TVA DETAILS

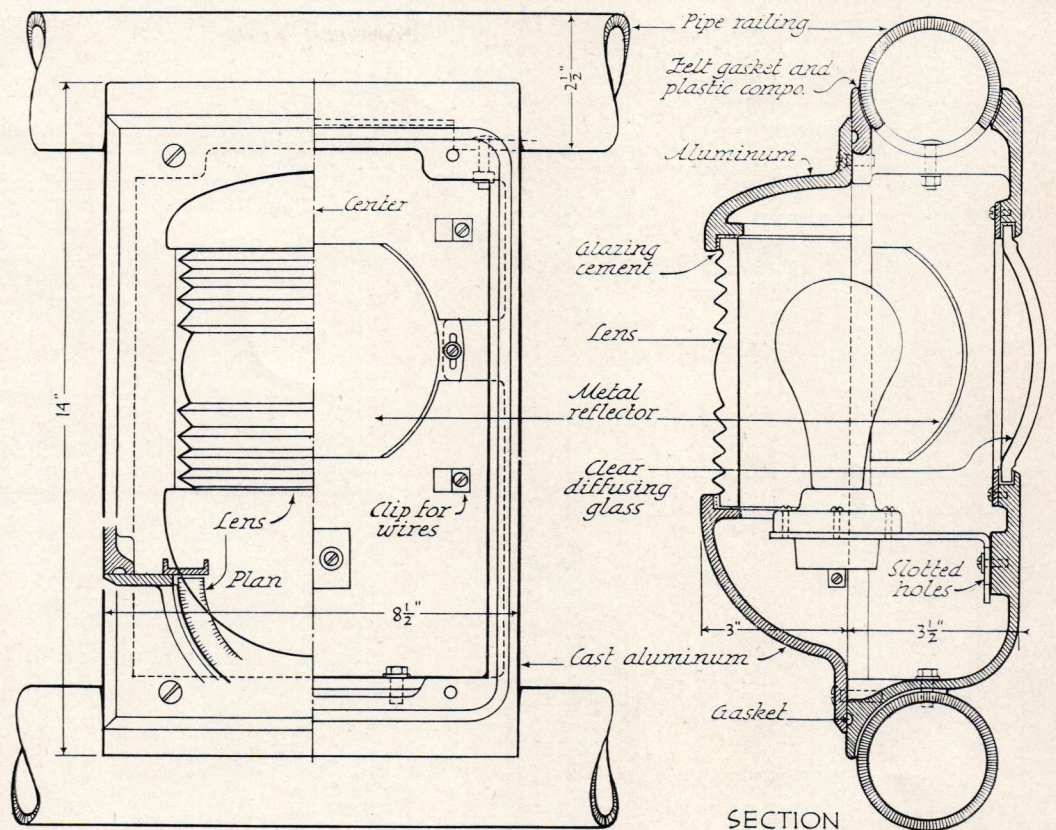


THE TRAFFIC CIRCLE AT THE EAST ABUTMENT OF NORRIS DAM IS NOW LIGHTED BY A SET OF INGENUOUSLY DESIGNED LOW FIXTURES WHICH ILLUMINATE ROADWAY WITHOUT GLARE. DETAILS OPPOSITE. ALSO DETAILED OPPOSITE ARE THE SPECIAL FIXTURE FOR PICKWICK LANDING HANDRAIL (PHOTO ON PAGE 738) AND THE METHOD USED FOR ATTACHING LETTERS TO MASONRY WALL AT GUNTERSVILLE. (SIMILAR LETTERS AT GUNTERSVILLE SHOWN ON PAGE 729)

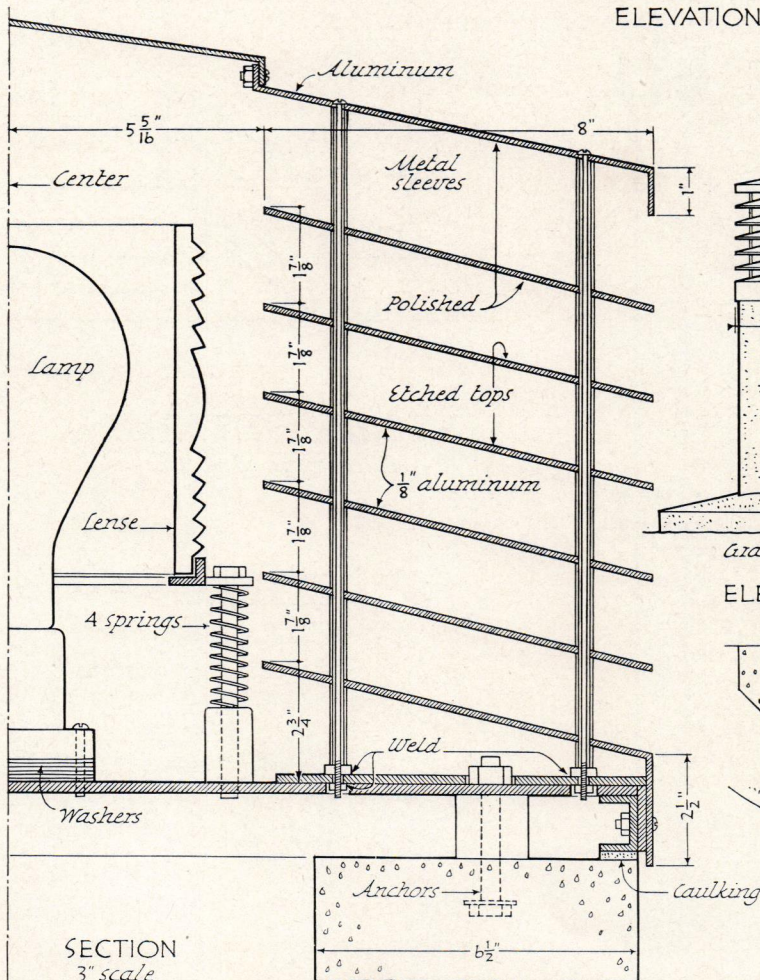


RAIL ELEVATION $\frac{1}{2}$ " scale

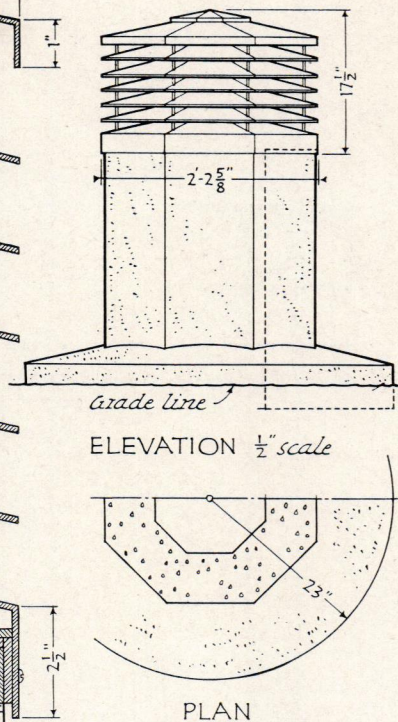
THE ARCHITECTURAL WORK PRESENTED HERE HAS BEEN DESIGNED UNDER THE LEADERSHIP OF ROLAND A. WANK, PRINCIPAL ARCHITECT; HARRY B. TOUR, SENIOR ARCHITECT; AND THEIR ASSISTANTS, MARIO BIANCULLI AND HIRAM OSTRANDER. THESE MEN WORK UNDER THE DIRECTION OF THEODORE B. PARKER, CHIEF ENGINEER, AND EARLE S. DRAPER, DIRECTOR OF REGIONAL PLANNING STUDIES, OF THE TENNESSEE VALLEY AUTHORITY



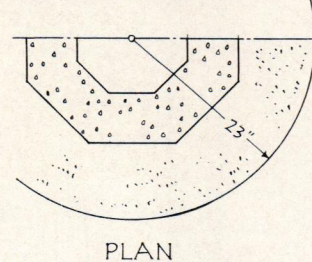
ELEVATION $\frac{3}{4}$ " scale



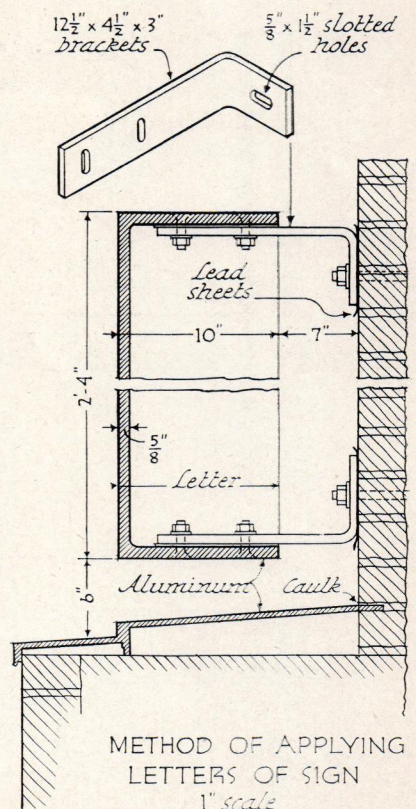
SECTION $\frac{3}{4}$ " scale



ELEVATION $\frac{1}{2}$ " scale

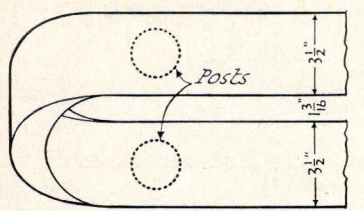


PLAN

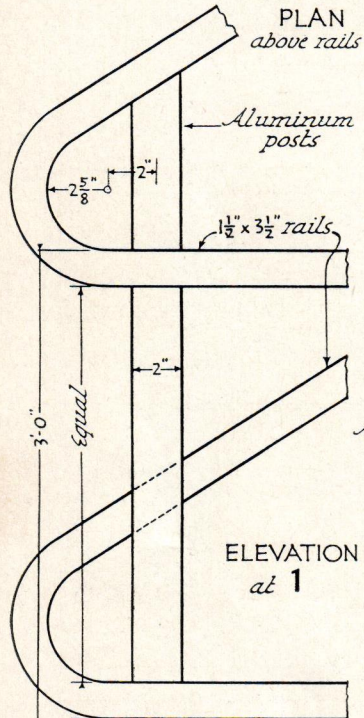


METHOD OF APPLYING LETTERS OF SIGN $\frac{1}{4}$ " scale

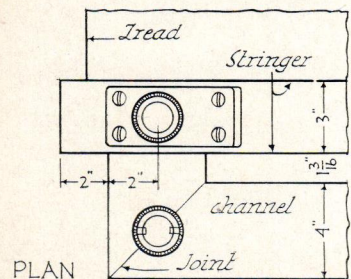
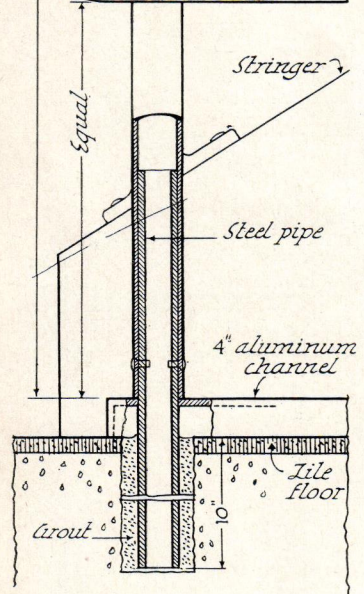
TVA DETAILS



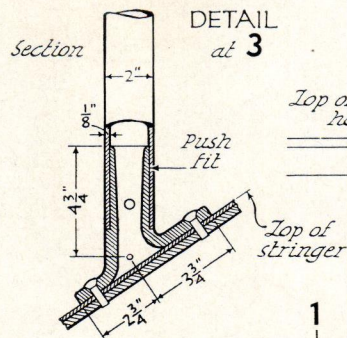
PLAN
above rails



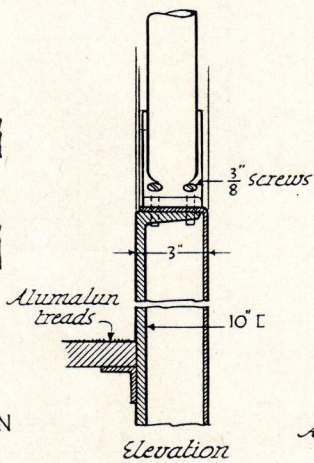
ELEVATION
at 1



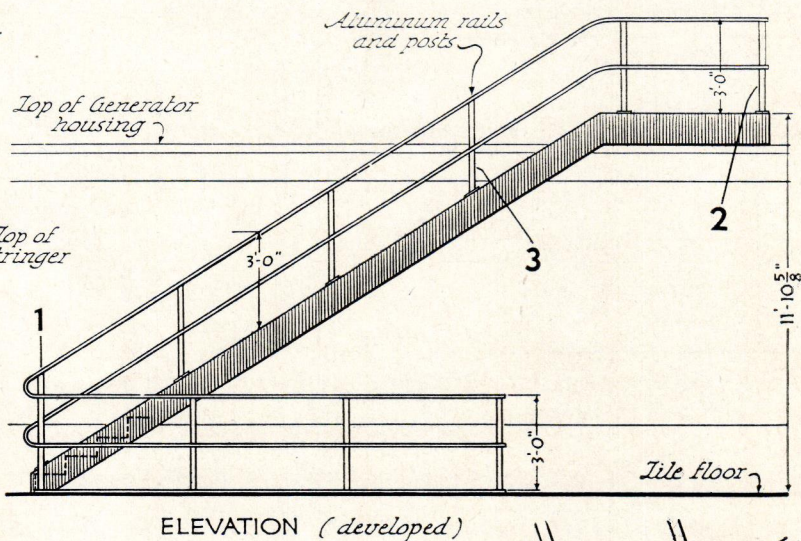
PLAN



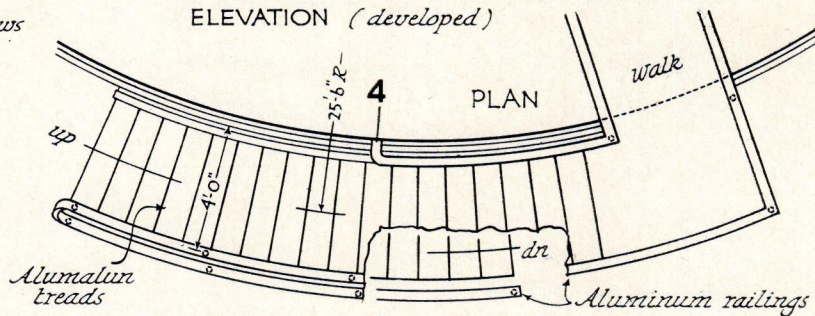
DETAIL
at 3



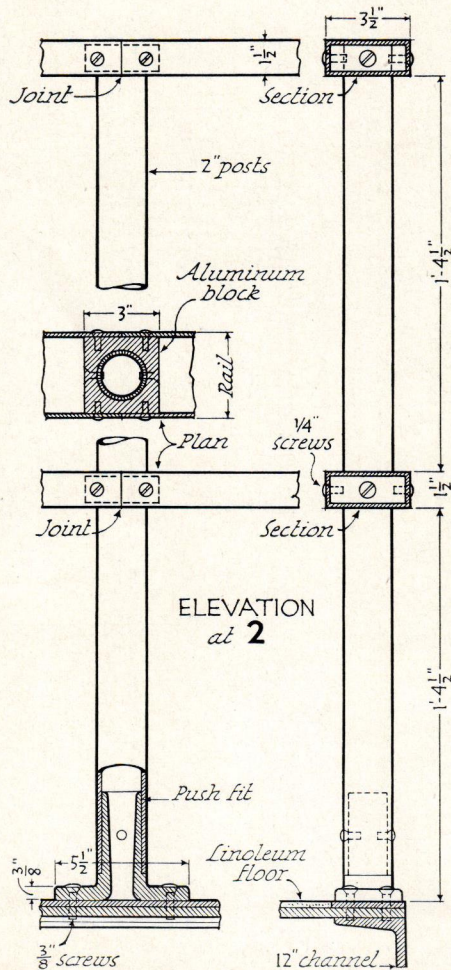
Elevation



ELEVATION (developed)

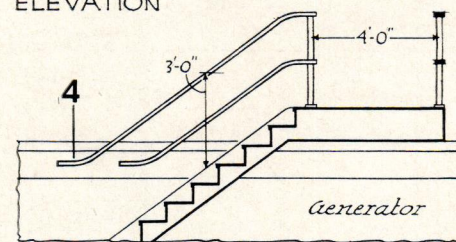


PLAN



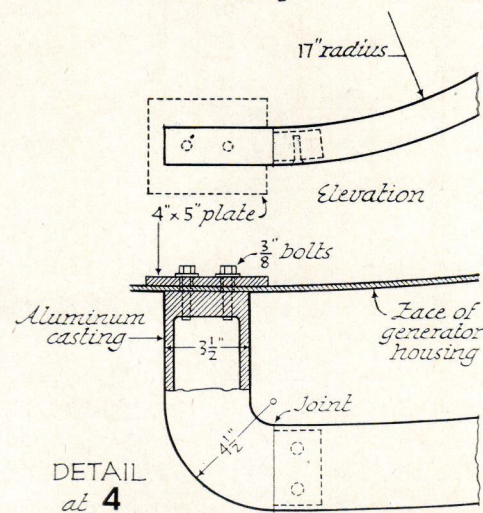
ELEVATION
at 2

WALL RAIL
ELEVATION



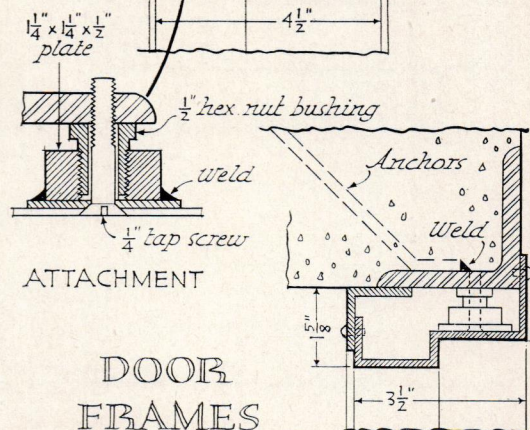
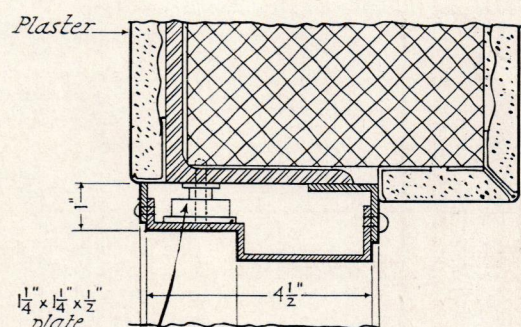
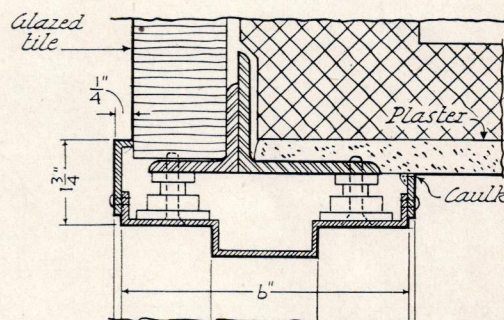
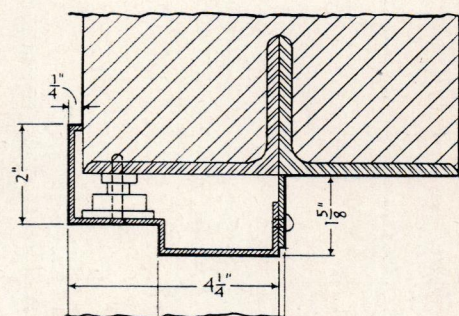
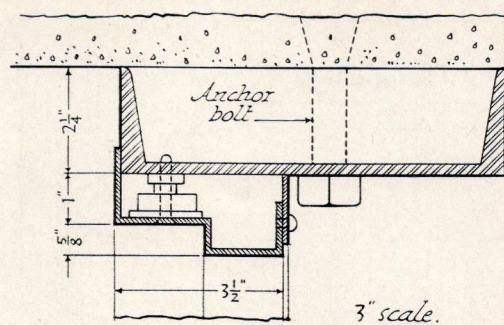
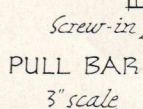
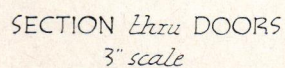
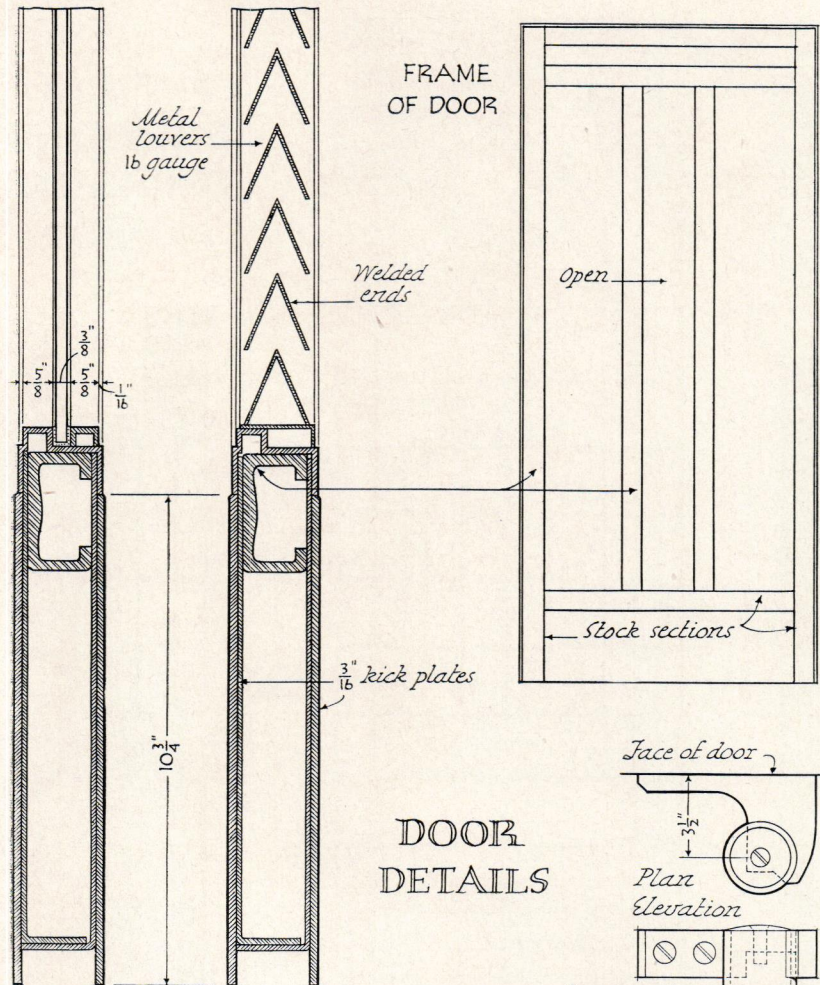
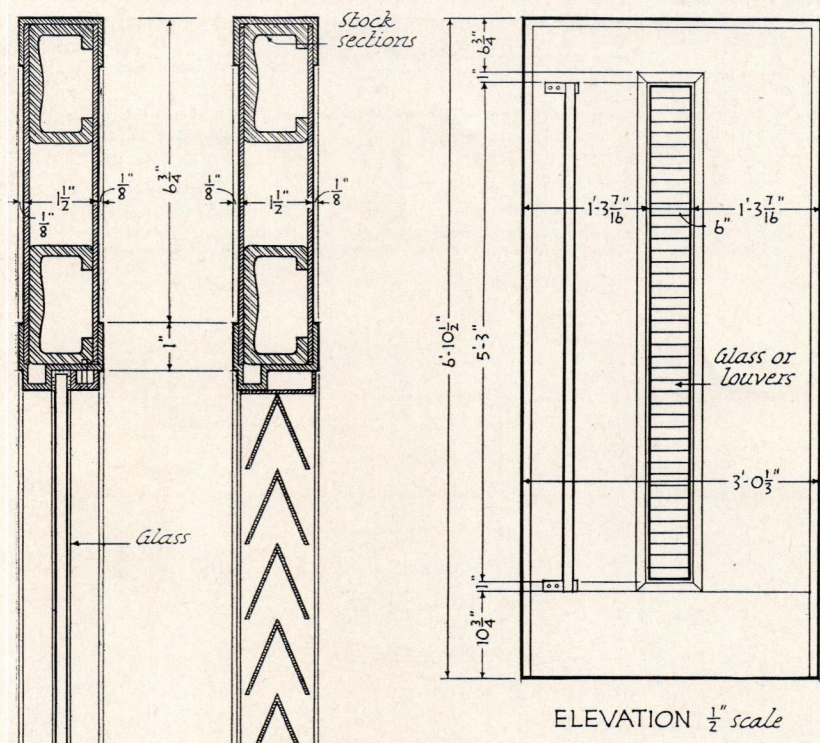
STAIR DETAILS

All sections at 1/2" scale

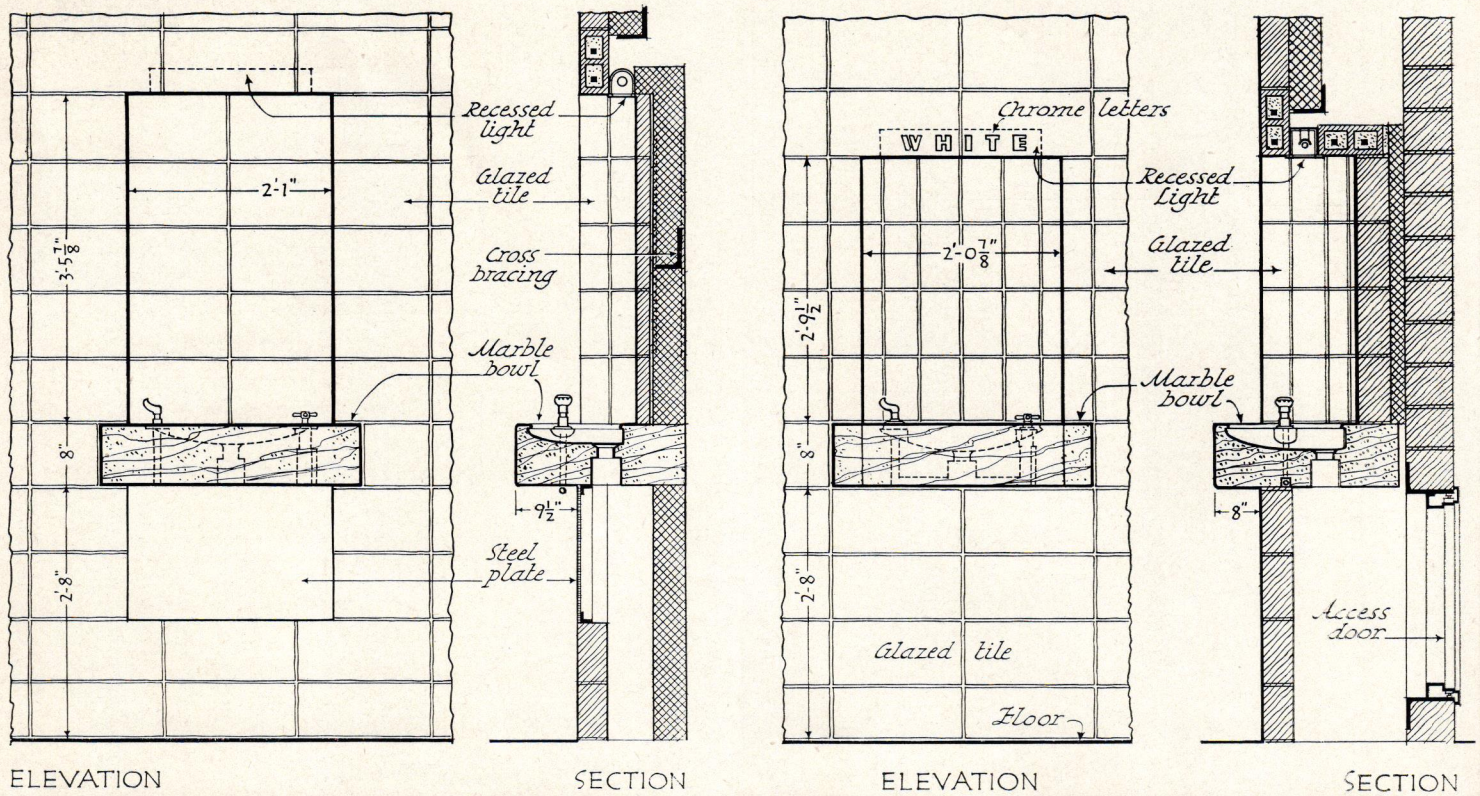
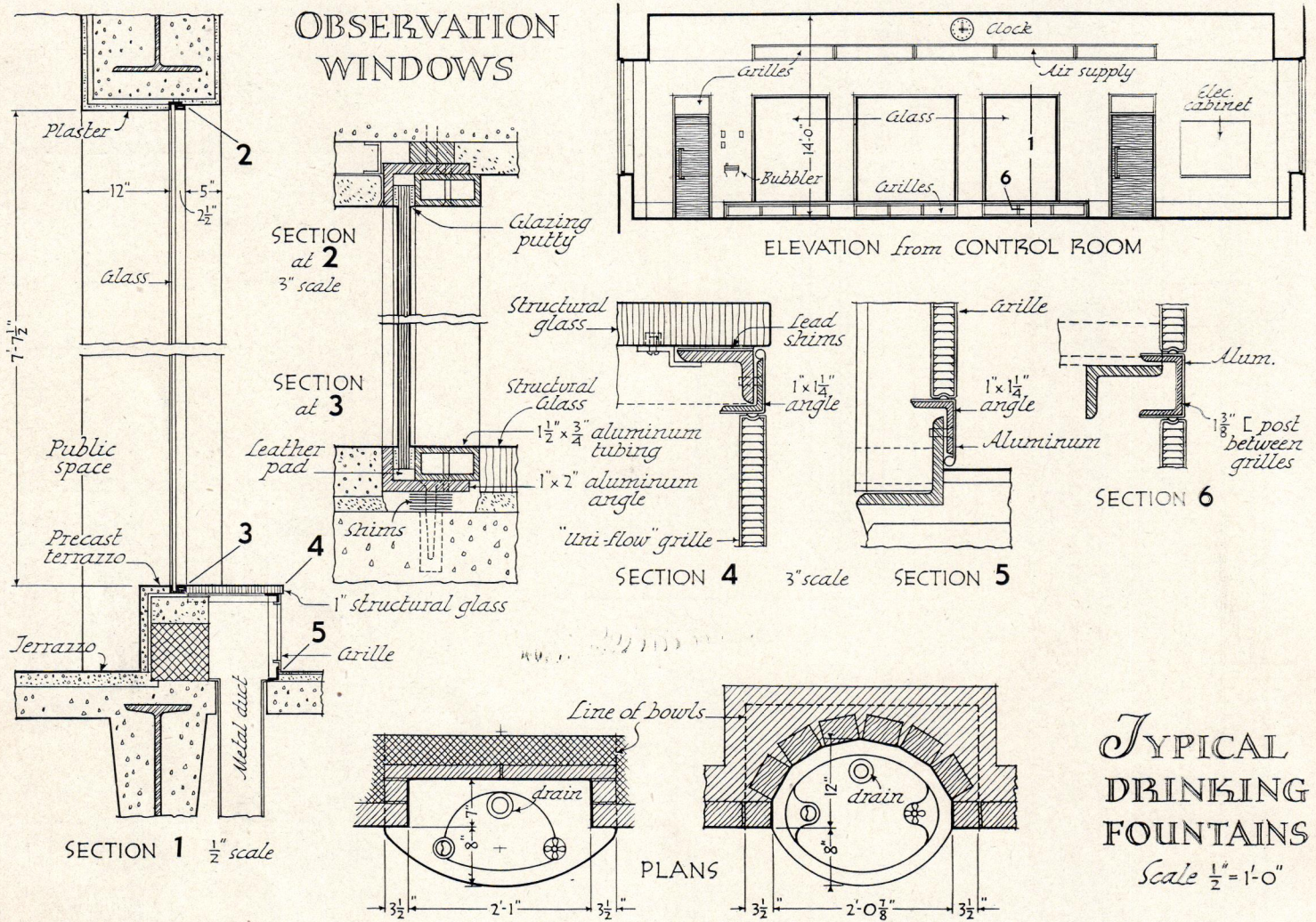


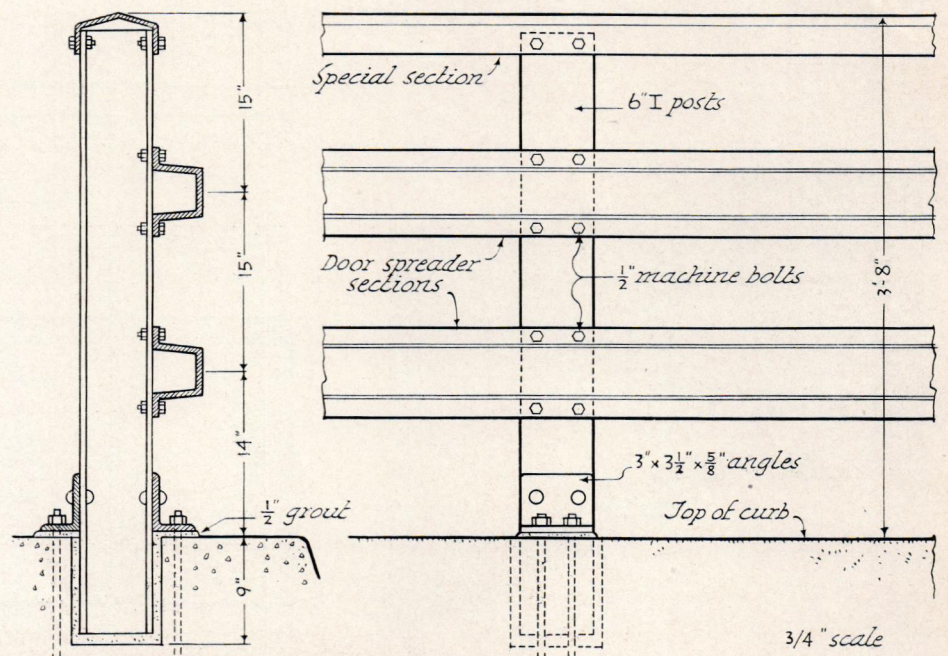
DETAIL
at 4

DETAILS

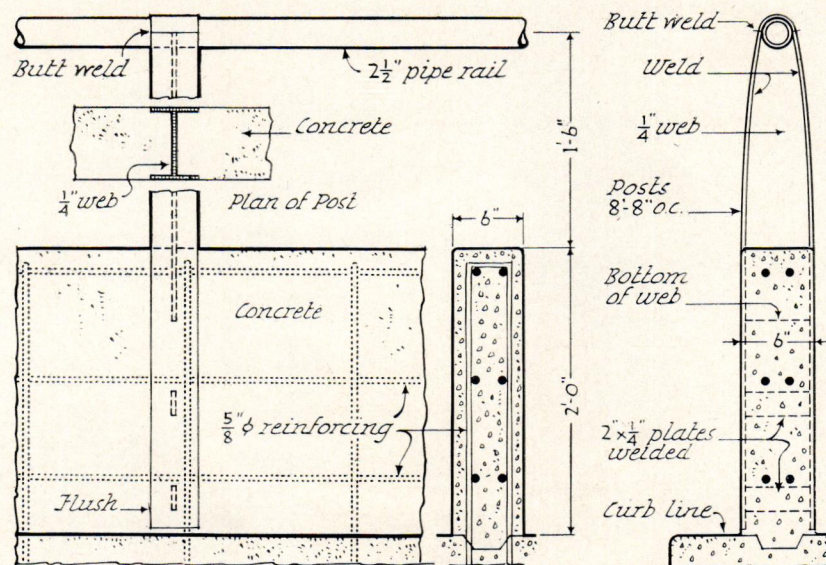
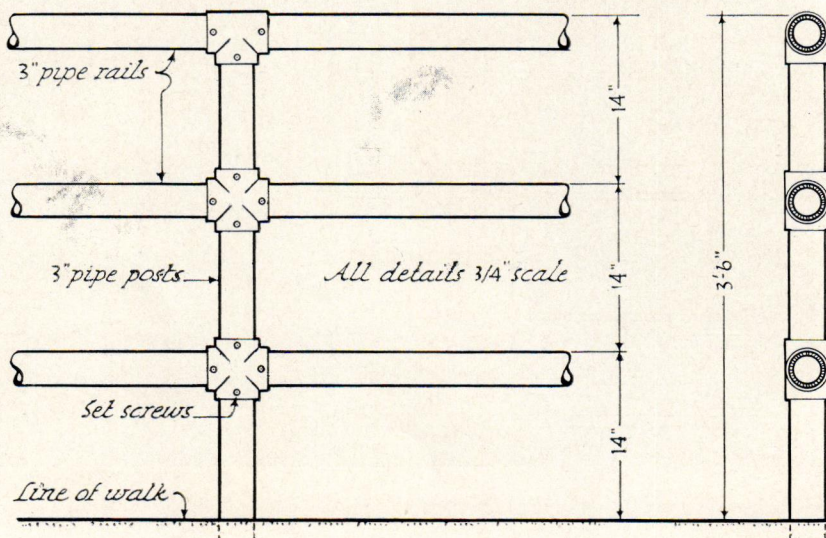
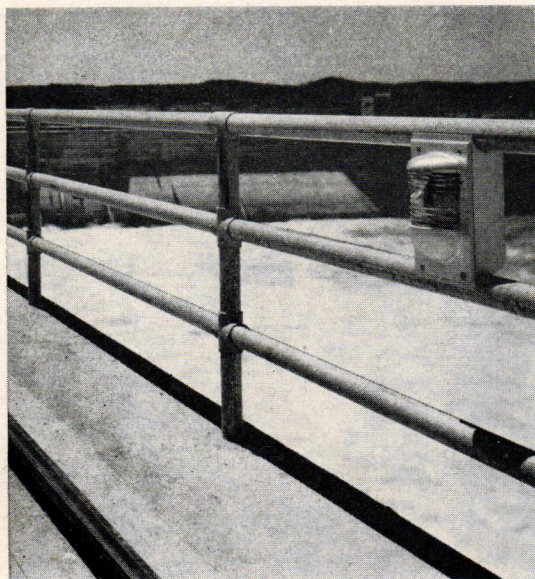
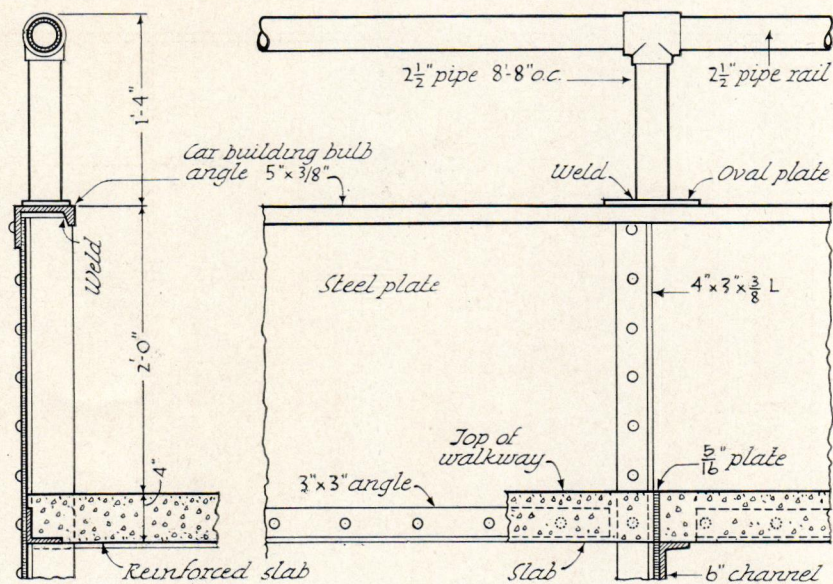


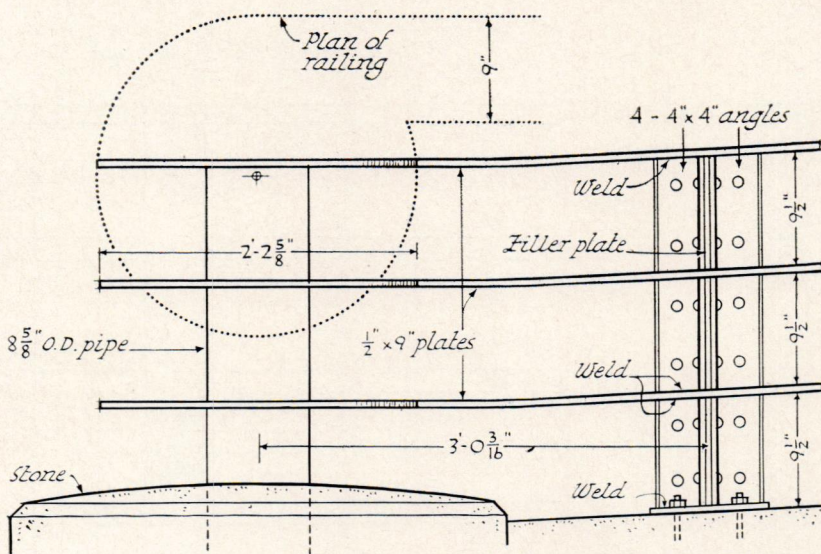
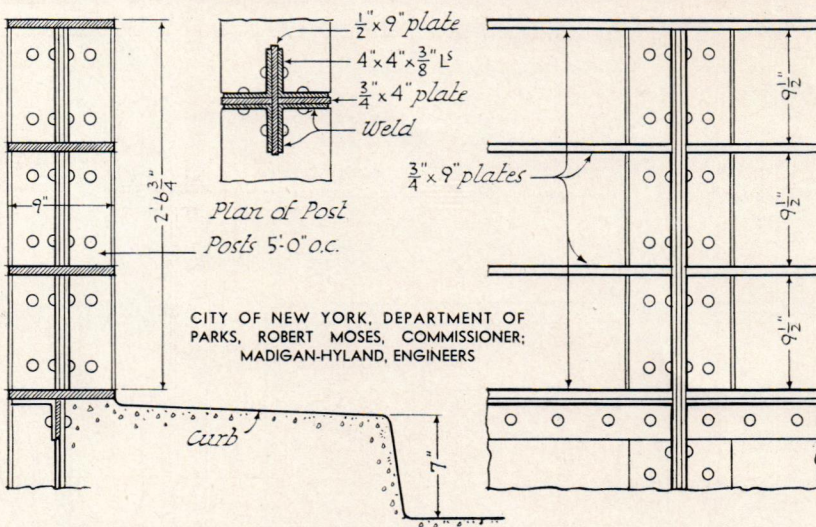
T V A D E T A I L S



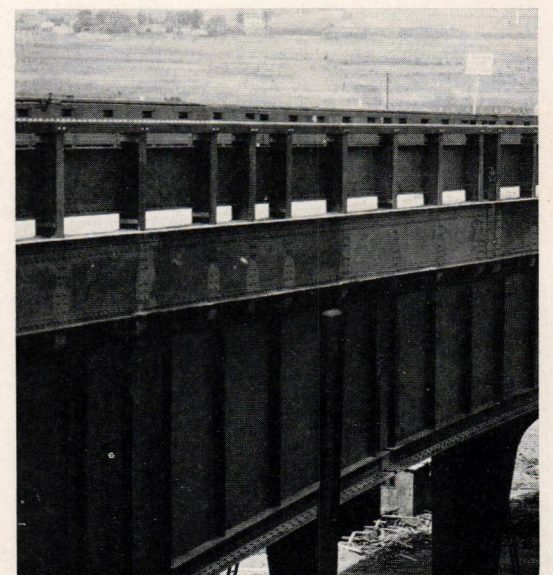
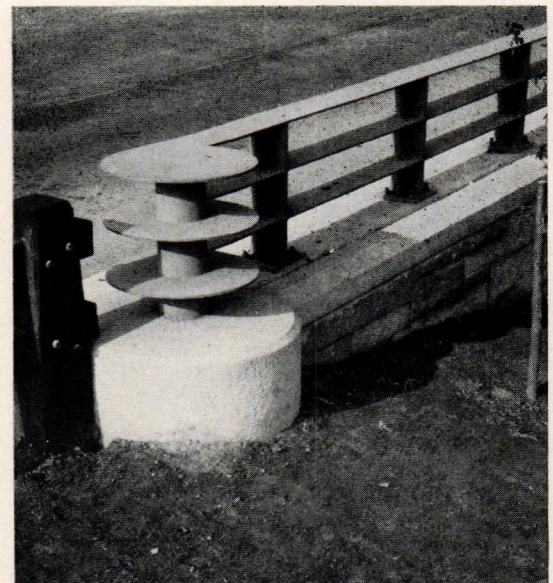
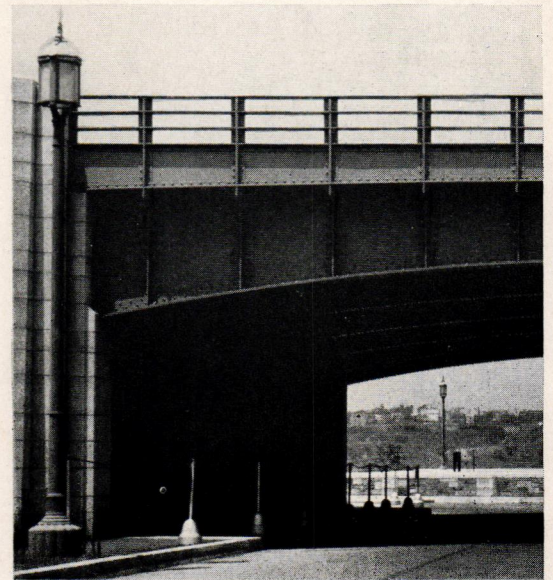
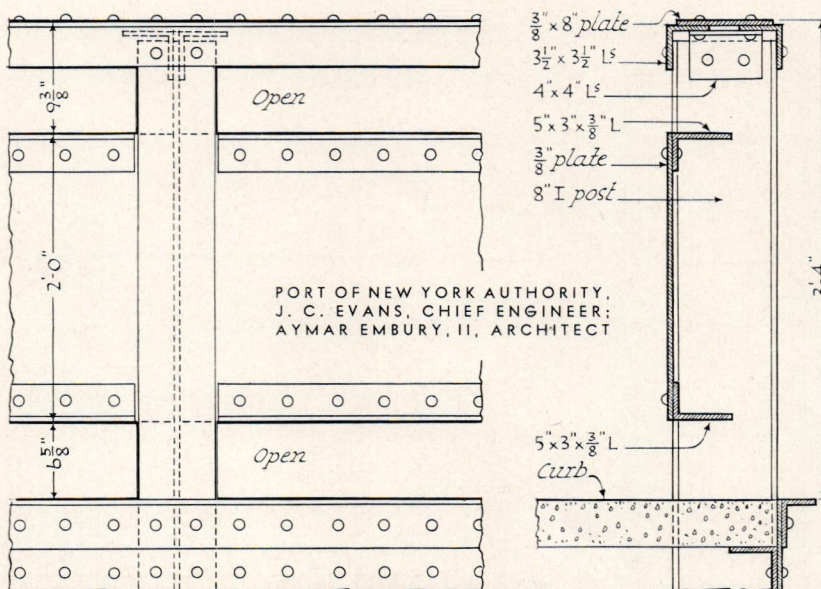


TVA DETAILS

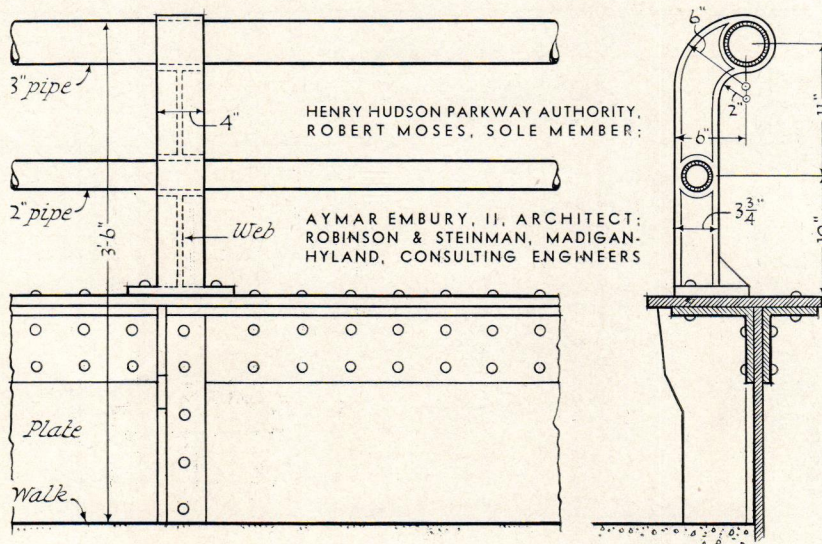




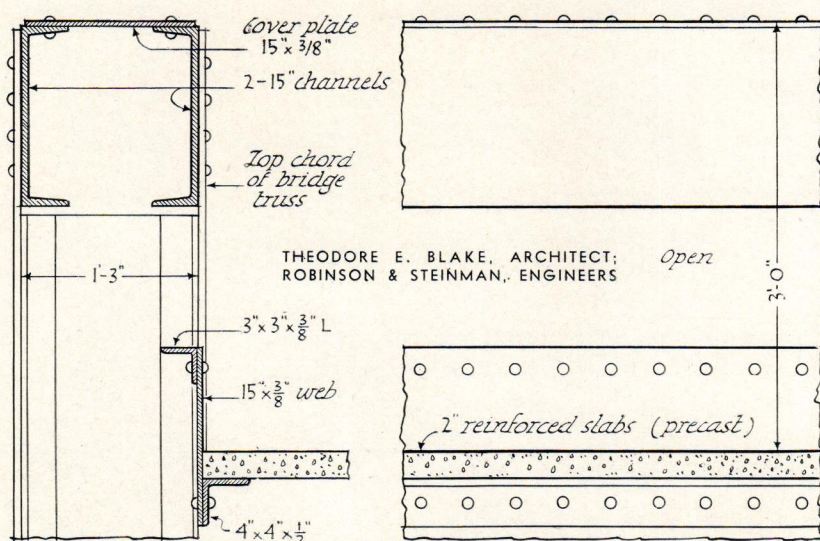
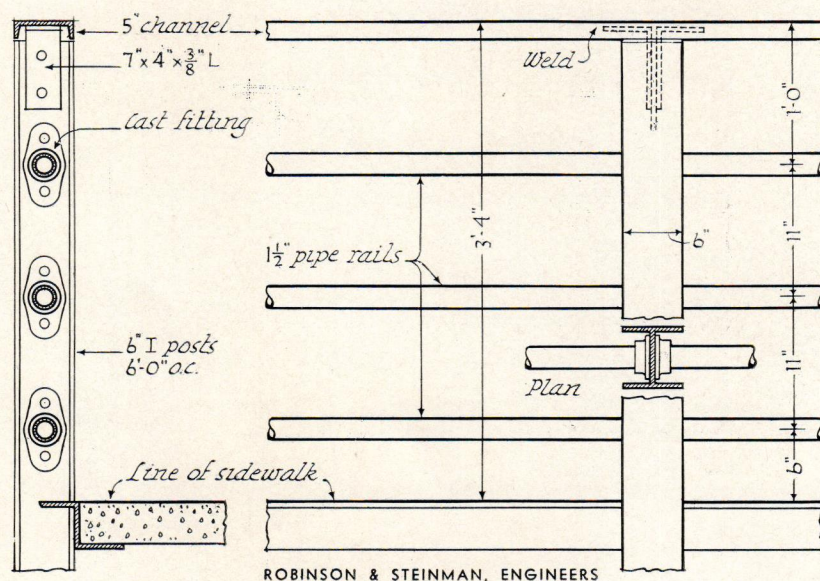
All details 3/4" scale

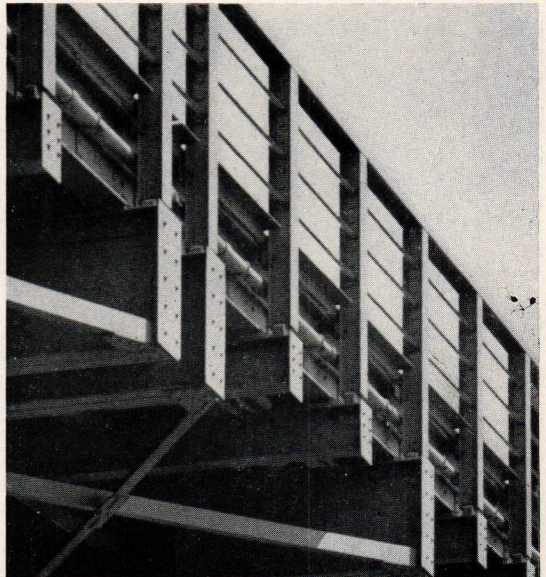
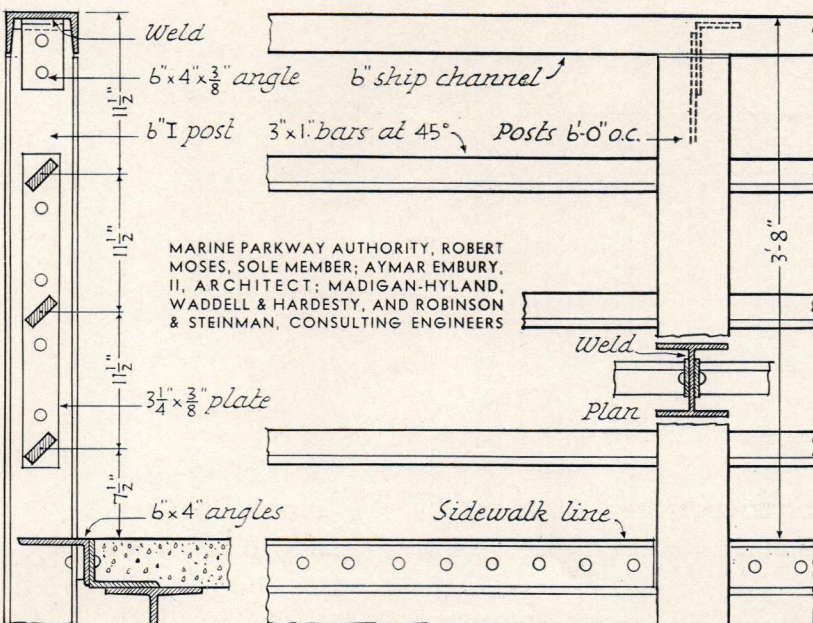
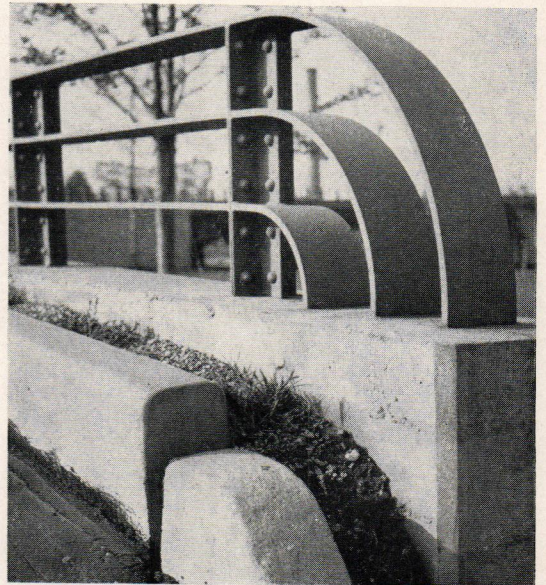
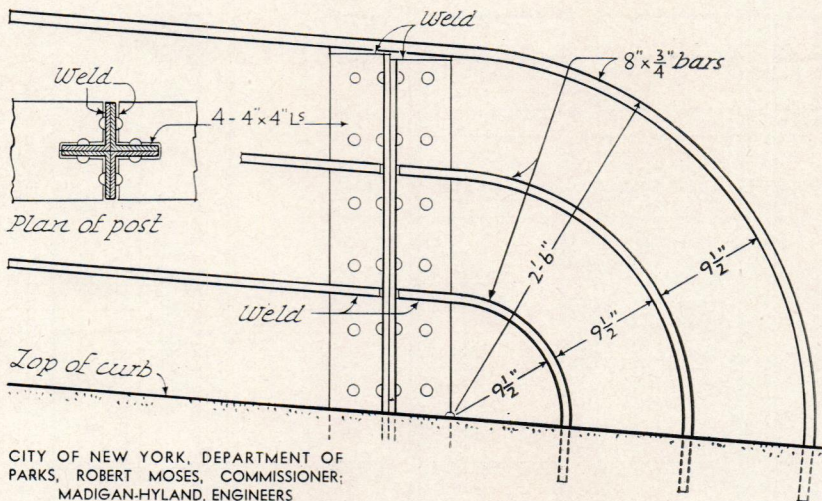
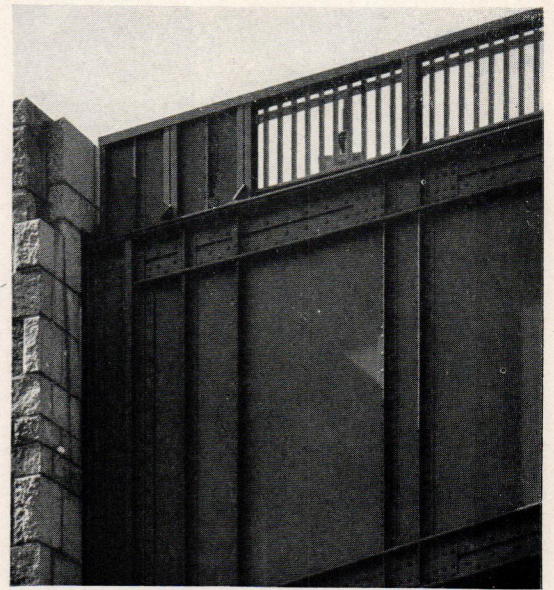
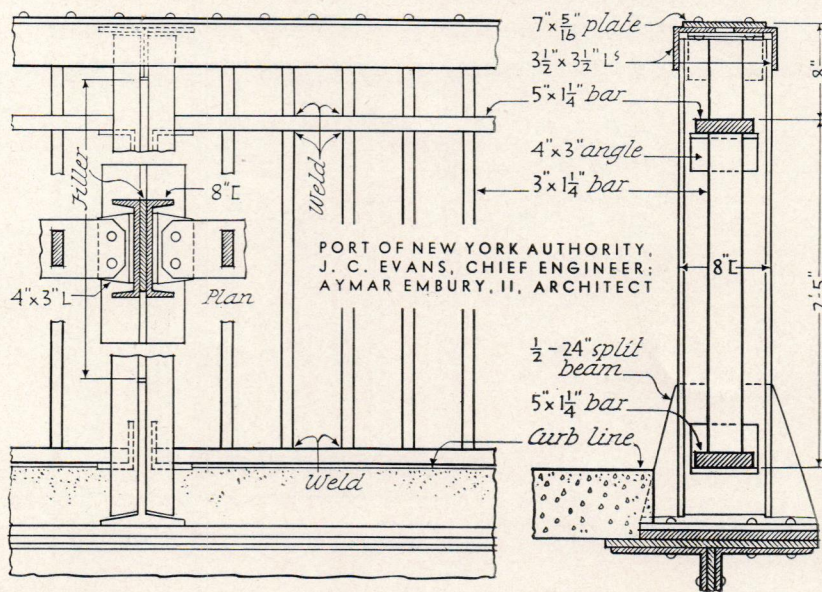


COMPARATIVE DETAILS

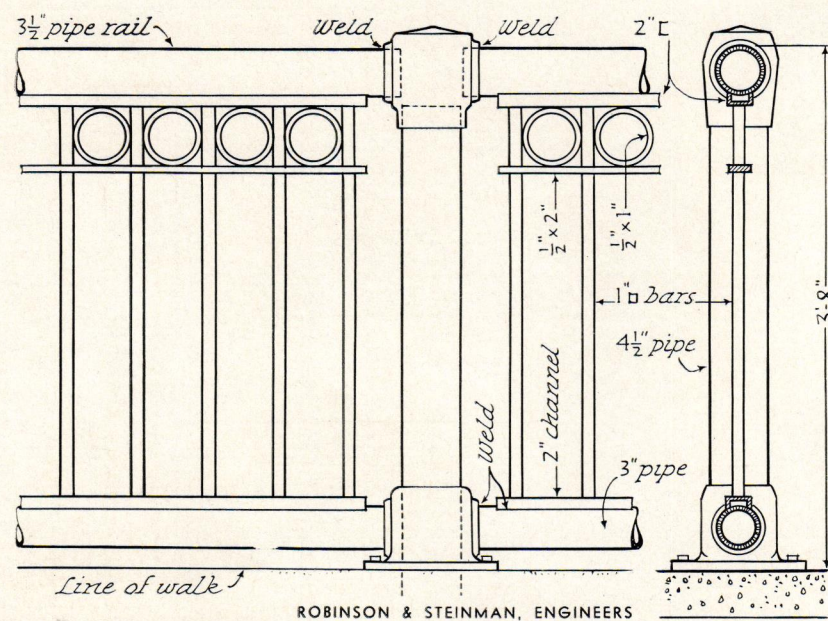
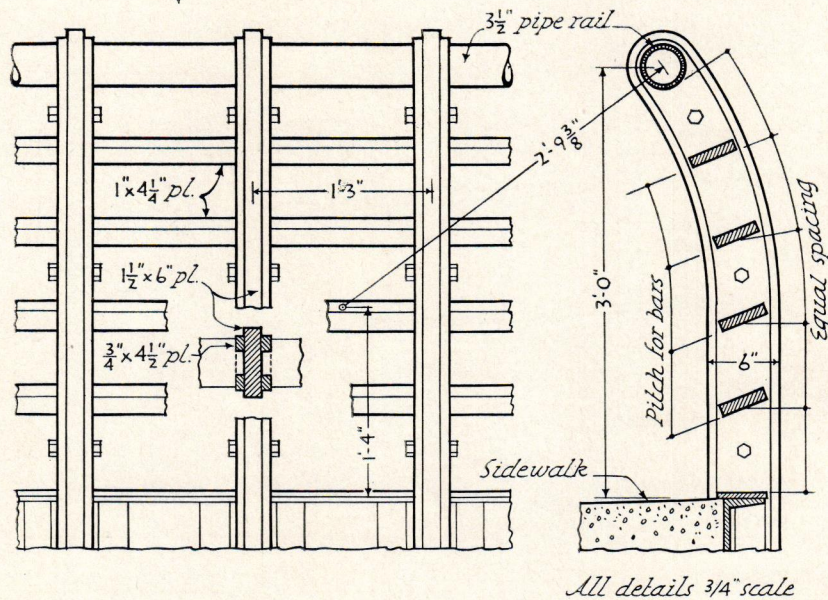
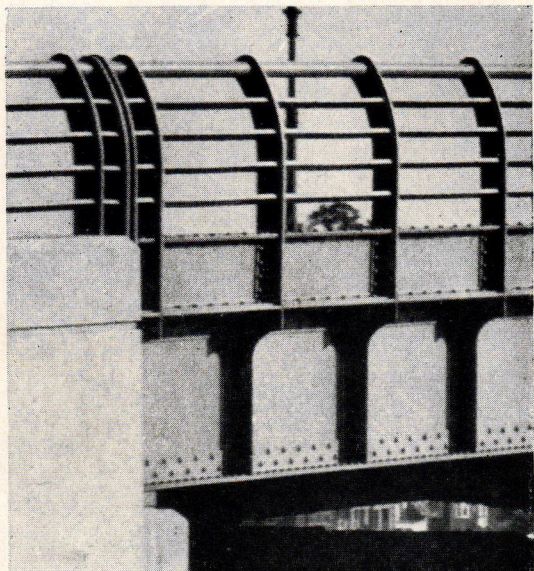
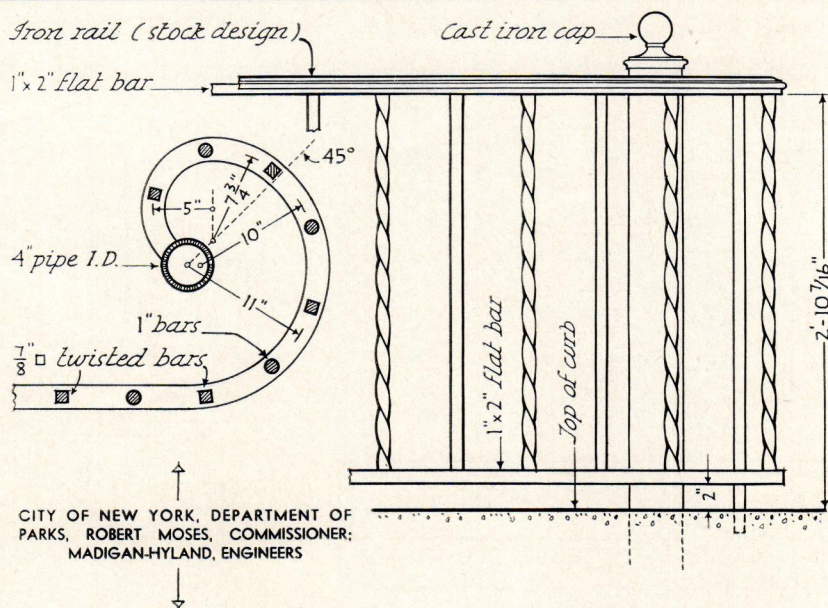
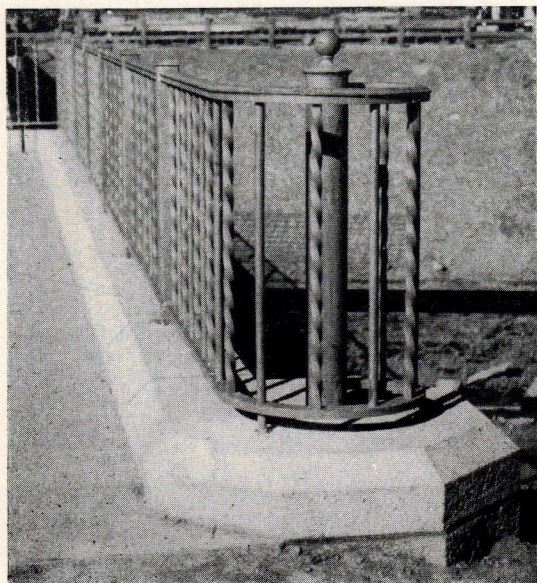


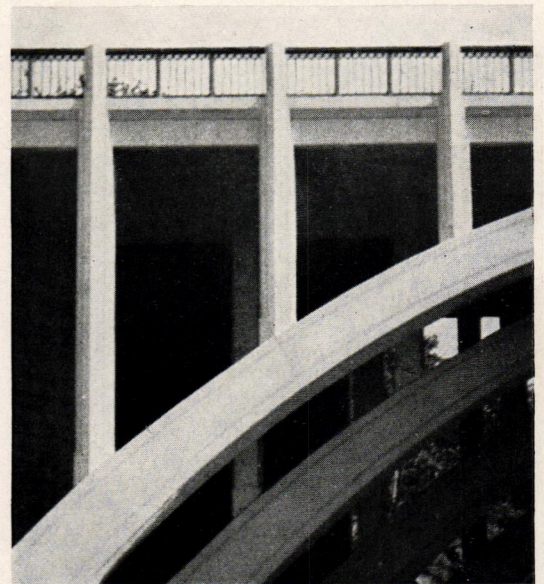
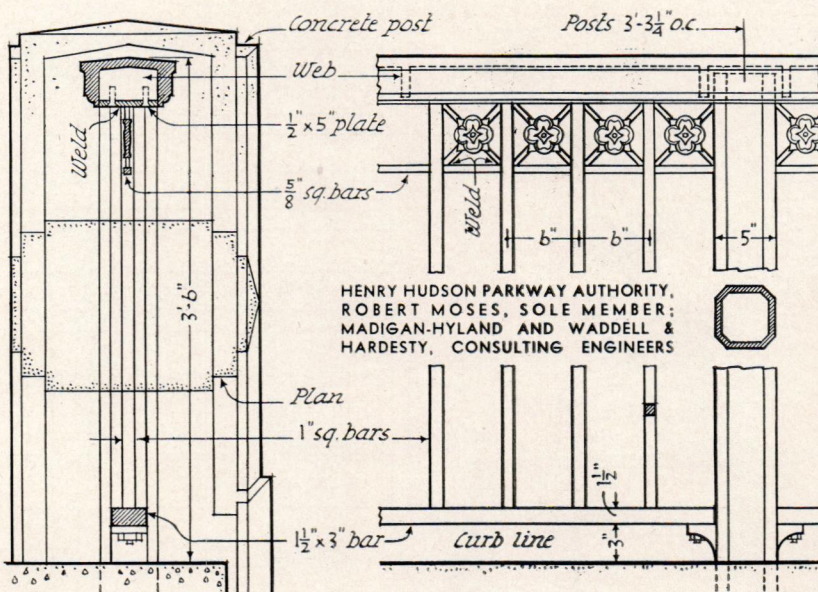
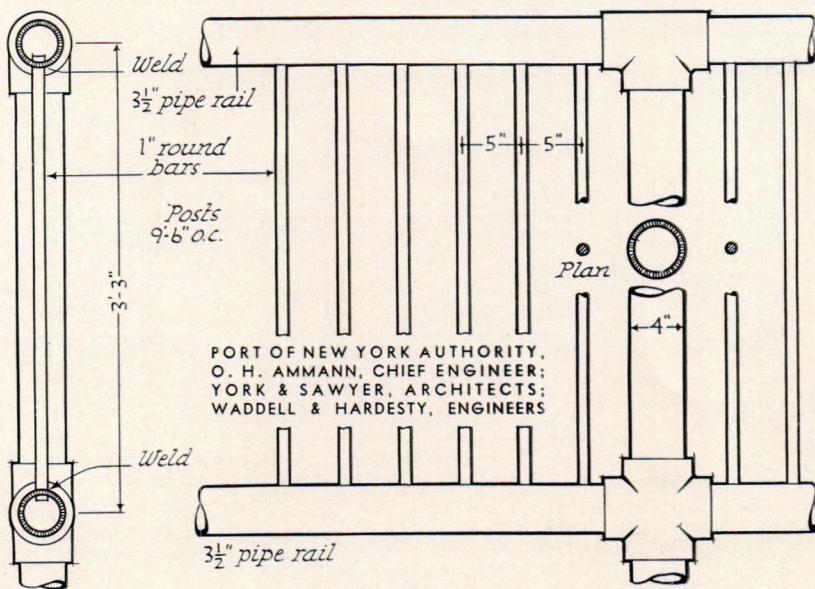
All details 3/4" scale



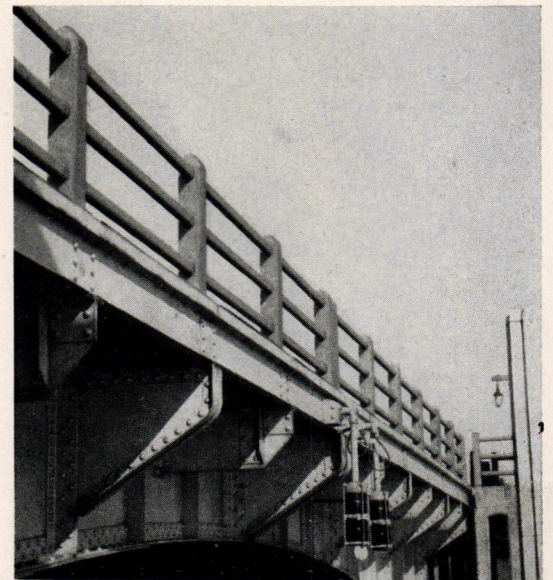
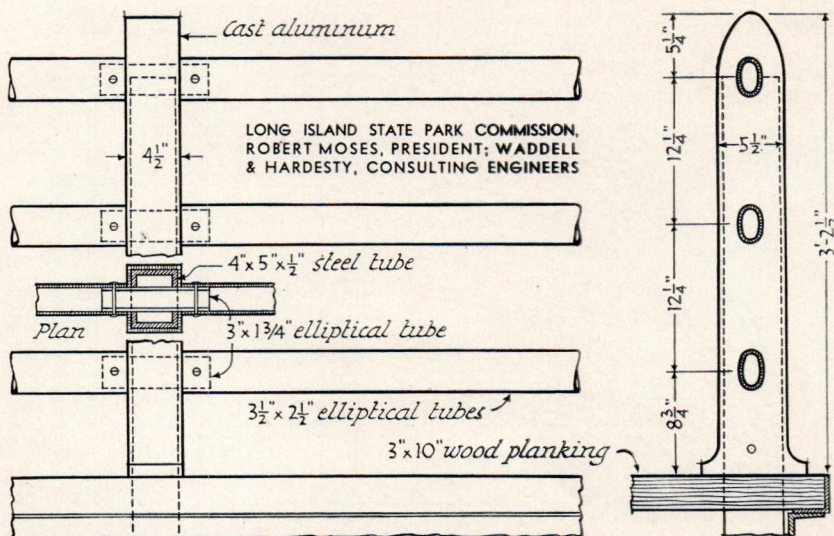


COMPARATIVE DETAILS

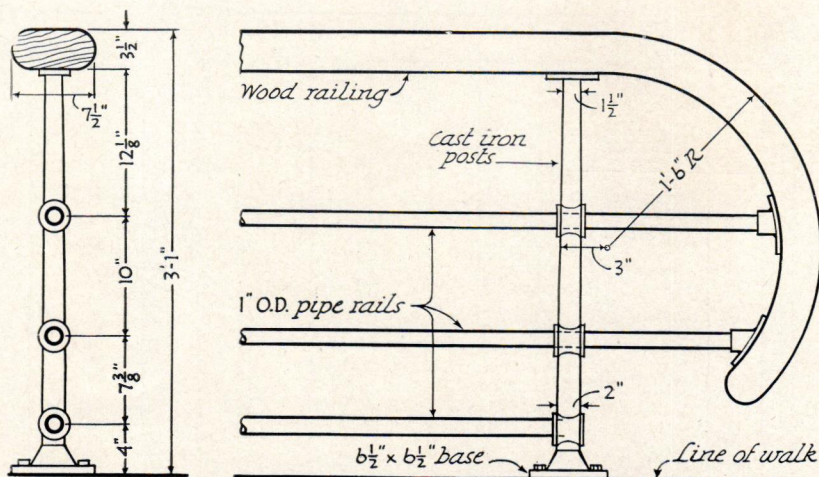




All details 3/4" scale

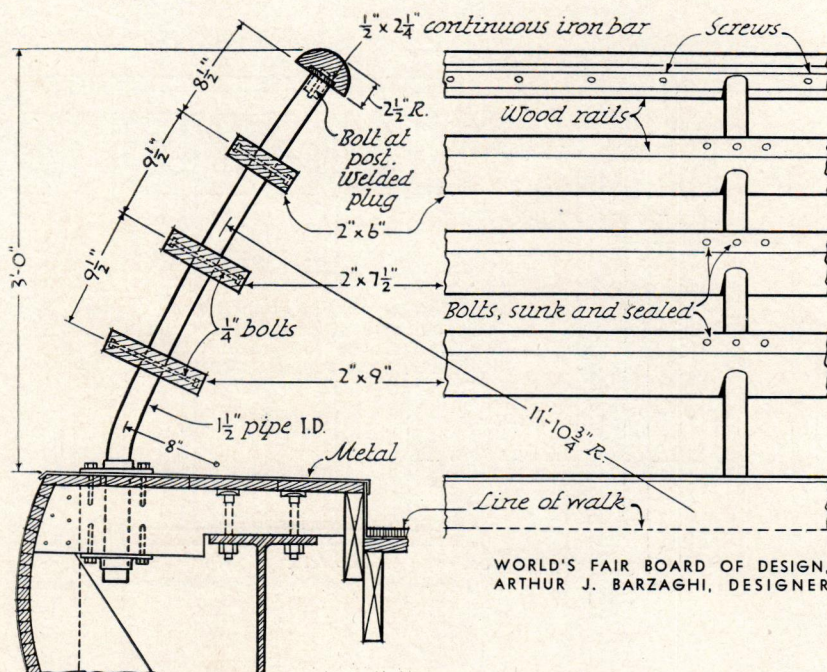


COMPARATIVE DETAILS

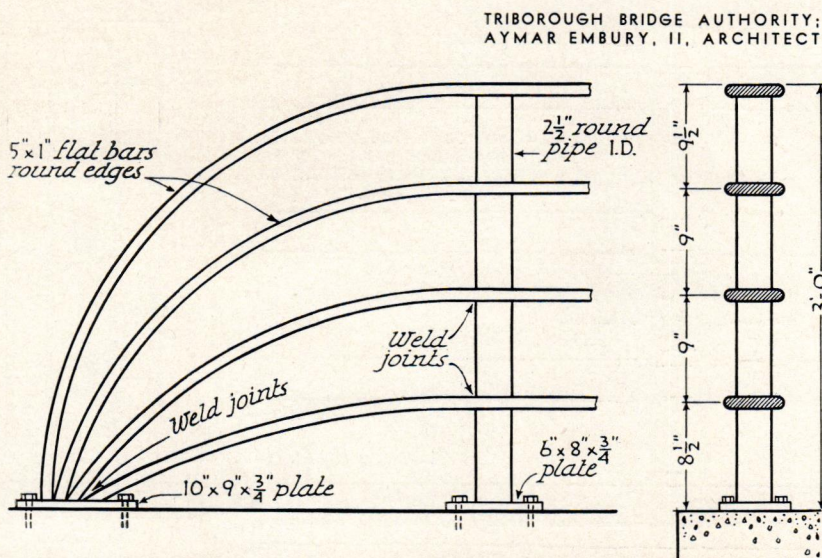


All details $\frac{3}{4}$ " scale

CITY OF NEW YORK, DEPARTMENT OF
PARKS, ROBERT MOSES, COMMISSIONER;
MADIGAN-HYLAND, ENGINEERS



WORLD'S FAIR BOARD OF DESIGN,
ARTHUR J. BARZAGHI, DESIGNER



TRIBOROUGH BRIDGE AUTHORITY;
AYMAR EMBURY, II, ARCHITECT

OF SNAILS AND MICE AND EVERYTHING NICE

BY HUBERT C. RIPLEY

An interview by Hubert Ripley with Colonel Fullerton, distinguished archæologist, patron of the Arts, bon vivant, flaneur, and member of the National Geographic Society. The Fullerton Foundation and the Fullerton collection, result of long and painstaking research in many lands from Guatemala to the Coromandel Coast, are recognized as sources of base material for æsthetic expression. When exhausted by his arduous labors, the Colonel finds peace and quiet in occasional visits to his native heath, a suburb of Mashpee, Cape Cod. Here he dreams away the long summer afternoons, alternately scanning a verse from the Zend-Avesta between sips of modest gin and water—his favourite beverage—'til the rising quahaug moon warns him that dinner time draws nigh. Sometimes Dr. Fellows, the Antiquary, joins him for a chat on the Fine Arts, and it was due to his urging that the Colonel decided to attend the 71st Convention of the American Institute of Architects, of which body he has long been a fellow in absentia.

We discovered the noted archæologist one morning in Washington relishing snails at L'Escargot and chatting brightly with Madame la Patronne (which, by the way, is no hardship at all). Beside his plate stood a small bottle of Nuits St. Georges and a basket of the tenderest and crispiest French bread we ever tasted this side of Normandy.

"Did you enjoy the Convention?" we asked. —It was Friday noon, the sun was crossing the yard arm and most of the delegates had departed. "Immensely," replied the Colonel. "Sit down, my boy, and have a Vermont Cassis. I must talk to somebody." "Go as far as you like, old fellow." We could see he was relaxed, in a mellow mood, so to speak.

"I reached Washington," he began, "just in time to get under the wire for accreditation and enrollment, and consequently missed tea at Dumbarton Oaks and the Reception at the Corcoran. Did see the exhibition of Architecture of the Americas later on, however, and was greatly impressed by the many examples of significant form, particularly some lesser known Spanish Colonial buildings in South America and recent work in the United States. Strangely enough, the Mayan and Inca source material, whose remains to my way of thinking compare favourably with the finest fragments of antiquity found anywhere in the world, is only just beginning after centuries of neglect, to make its influence felt in 'Modern Architecture.'

"You mean in North America?"

"In North, Central and South America, including the Virgin Islands, and San Domingo. A race track structure in the latter place, or maybe it was Uruguay—I've seen so much during the last five days I'm not

sure of anything—was awarded a grand prize by the jury. *Au fond*, it's pure Mayan in conception with the addition of some modern amenities such as cocktail bars, open plumbing, and a shelter roof. The photograph didn't do it justice, so I was told by a tall, dark, distinguished looking gentleman who spoke perfect English. He said one should see it during the racing season filled with fair women and brave men dressed in their sport clothes, wildly cheering the winner of the Grand Prix. 'Your English is perfect,' I told him; and he replied, 'I was educated at the University of Pennsylvania!' 'No awards were made in the United States section, the jury not wishing to be invidious perhaps. I noticed however the United States section was hung in a large well-lighted gallery where it could be seen to the best advantage, while the South American exhibit was strung around casually in an inner corridor on movable frames.' 'Tell us about the President's Reception.' 'It was a jolly party. Everyone got off to a good start. I've never before seen so many architects and their ladies in one room. The receiving line, headed by our well-loved president, four Past Presidents and their ladies, was an impressive sight. It was amazing to note that the president was able to call by name almost all who shook his hand. Charley Ingham, tall and handsome, who stood beside him, identified those whom the president did not know. There might have been five or six hundred, more or less, who passed in a steady stream from the guarded entrance, down the line to tables groaning with edibles and potables; a marvelous opportunity, if one had the inclination, to catch up with one's steady drinking. 'I always know when I've had enough because I become unconscious,' someone remarked. The Mayflower certainly did us extremely well.

"The opening session on Monday morning was the occasion of an inspiring address by the president. Combining a happy faculty of expression with a penetrating insight into the problems of the profession, Mr. Maginnis' speech was closely followed by the largest assembly at any Institute meeting it

has ever been my privilege to attend. In fact, at each session during the past four days (and some of them were dullish in spots) he enlivened the proceedings with a constant stream of sparkling sallies, pungent and pertinent. I wish a verbatim report of all the president said during the four-day meeting might be placed in the hands of every architect. It would not only be fascinating reading, but also a human document worthy of a special niche in one's library. "Near the end of the meeting, a rather long list of complicated resolutions were under discussion, resolutions the Board or a special committee should have been empowered to pass upon without taking up time that might have been devoted more stimulatingly to cultural matters (a round table discussion at Harvey's, for example), and the delegates became uneasy. This was commented upon and the situation was reviewed at some length by William Lescaze. He spoke winged words which were echoed by others. The discussion must have lasted an hour or more, Mr. Lescaze doing most of the talking; and ended in another resolution! Architects may not care to read, but they certainly like to talk.

"The Banquet was on Wednesday evening; so, shortly after lunch at the Cosmos Club with Frank Sullivan—little necks, welsh rabbit, and green salad washed down with pale ale, one of my favourite noonday repasts, but not for the atrabilarious—I indulged in an afternoon siesta in the quiet of Suite 654. Did I mention the suite? Four of us shared it, the pleasant thing to do at Convention meetings. Uncle Edward and I had one room and two big shots from New York had the other with a large parlor between. Breakfast wheeled in on a cart at eight each morning; we sipped our coffee and talked over events of the previous day and made plans for the present, dressing leisurely the while. By ten we were either ready for whatever the day had to offer; or to go back to bed again, as fancy dictated, safe in the knowledge that if one missed anything of import the others would tell all about it next morning. Uncle Edward always sleeps with a long black silk stocking



THERE IS A STORY TOLD IN WASHINGTON THAT THIS BRONZE BY CARL PAUL JENNEWEIN, BESIDE THE OLD DISTRICT COURT HOUSE, WAS FOUND ONE MORNING GARBED IN GINGHAM. THE LADY'S NUDITY HAD AROUSED A STORM OF CONTROVERSY. PHOTOGRAPH BY EMANUEL ELSNER

over his eyes, partly for sentimental reasons and partly to keep the morning light from awakening him too early.

*"Oh, but life went gaily, gaily,
In the house of Idledaily.
There were always jugs of sherry,
Waiting for the makers merry."*

"Dressed for the Banquet shortly after six, I strolled down to the lobby and peeked into the Pan-American Room from whence issued inviting sounds of music, gay laughter, and the tinkle of ice cubes. The Pittsburgh Chapter was holding a song fest. Charley Ingham had been kind enough to invite me to be present, so I went in, was most cordially received and given a tall glass to hold. A delightful young man named Robert Schmertz—who, I may say, will some day go far—had just finished a plaintively provocative ditty about Pietro Massimi and his masterly Palazzo, the inspiration of many a millionaire's mansion. Shave off a few dentils and you have a modernistic building like New York State's at the World's Fair. Which only goes to show there's little new under the sun—except the pyramids and Chichen-Itza, of course. Anyhow Bob's ditty was a masterpiece, suavely rendered with banjo accompaniment. Maybe there's room for a sample verse which lists some of the guests at the cocktail party when the Palazzo was finished.

*"Pietro's housewarming was quite a success,
And Rome became all of a twitter.
The Pitti, the Pazzi, Ricardi and Strozzi,
The Medici, D'Este, and Borgia came,
Not to mention the proud Pandolfini,
And the swell Davanazati, a trife high-
hatti,
And, of course, Benvenuto Cellini."*

"The music is elusive; a melange of 'O'Dooley's First Five o'Clock Tea,' interspersed with wisps of 'Love's Old Sweet Song.' I only wish I might quote it, in toto, for the readers of PENCIL POINTS. Peruzzi

would have loved it, I'm sure. Maybe he was listening in that Wednesday afternoon over a short wave from the Elysian Fields."

"How about the Banquet you started to tell us about?"

"I'm coming to that. The banquet committee had, I understand, a complex problem in arranging the order of precedence at the head table. Should the Supreme Court or the State Department sit at the President's right? In what order should distinguished delegates from foreign countries be placed? These things are, or seem to be, vital in the Nation's Capital. Edmund Purves and the Maitre d'Hôtel of the Mayflower had arranged the menu in masterly style that left little to be desired. The Ball Room was filled to capacity. I don't see how another table could possibly have been managed. The President of the Institute was again in a happy vein, retailing stories of his early days, mingling wit and pathos with just the right touch, holding his convives in merry mood, now gay, now serious. The fair sex was well represented, brilliant, sparkling. A more distinguished gathering would be difficult to conceive."

"When the Banquet was over what happened?" we asked, for we realized that among seven or eight hundred people all dressed up there must be some who wanted to go places.

"Some went mouse-hunting and some had biscuits and cheese in various spots. They say there are lots of night clubs in Washington that merrymakers like to close up. Then there are always parties in the spacious Mayflower suites that continue into the small hours. We all turned in early, around two'ish, after discussing Art and Life over a glass—well, maybe two or three—of gin and tonic."

"Just what is mouse-hunting?"

"Excuse me a minute, my boy, I see someone just leaving I must speak with." The Colonel disappeared for a few minutes. When he returned, he'd forgotten about the question and we didn't press him for the answer.

"Thursday's sessions," he continued, "were most interesting of all. Had it not been en-

livened by the president's shafts of ready repartee to question and comment from the floor, the morning might easily have been a dull one. The afternoon session was most inspiring, a model for future emulation; the ceremonies attending the presentation of certificates of Fellowship and Honorary Membership were conducted in happy vein; Nathan Strauss' response being especially notable, receiving a fitting ovation. The installation of new officers and directors was preceded by a spontaneous and almost overwhelming tribute to Charles D. Maginnis, who has so ably presided over the destinies of the Institute since June 1937. The great Ball Room of the Mayflower must still ring with the echoes of thunderous plaudits.

"Edwin Bergstrom, of Los Angeles, modest and retiring, is the new president. His long and faithful service in the affairs of the Institute has kept alight through tragic years the divine spark on the altars of the Muses who dwell in high Olympus. A worthy recognition of his unselfish devotion to the interests of the whole profession. In a short address, thoughtful and impressive, he outlined briefly his policies for the future, touching on the problems that confront those who serve the Arts and Sciences. Alluding to his predecessor, he said in substance: 'Mr. Maginnis has told you how deeply he has appreciated the privilege of his work and association with the Board of Directors, and the members of the Institute. I wish I had his happy faculty of expression that I might fitly characterize *our* appreciation of association with *him*.'

"The Institute is to be congratulated in having such leaders. *Ave atque vale, praeses!*" The Colonel, who can eat and talk at the same time, had finished his snails and arose from the table, announcing he was off for New York and the World's Fair.

"We're just going too. Won't you join our party?"

"Willingly," he assented, "I'd love to finish my talk with Uncle Edward about his early days on the Ohio. They say his collection of Indian arrow heads is unique."

So we all motored to the Great City, stop-

ping at Newcastle on the way to steady our nerves with brief glimpses of the serene old town and to quaff a dish of tea in the Assembly Hall. The week-end was misty with frequent sputters of rain. Architects' Day at the Fair was bleak, cold and wet, nevertheless night effects, color, light, fireworks, filled us with undimmed enthusiasm.

In this mood we made directly for the Masterpieces of Art Museum, wherein are to be seen examples from the World's great collections. Eight centuries of painting, arranged in chronological order, are on display. Twenty-five galleries are hung with a thousand or more works of the divine masters of the Renaissance, dating from its early beginnings to the close of the XVIIIth century, and form a collection unparalleled in museum annals. For three hours we basked contentedly in the companionship of the truly great.

*Have little care that Life is brief,
And less that Art is long.
Success is in the silences
Though Fame is in the Song.
(Songs from Vagabondia.)*

Our favourite building, the French Pavilion, was superb on Saturday night, a wonderful place from which to view the ever-changing chiaroscuro in the Lagoon below the terrace. We saw John Cady perched on a streamlined stool beside the bar discussing a Pernod. (\$1.03 the pair.) Unfortunately the surging crowd swallowed us both and we missed some of his pithy comment. The Perisphere was looking her best in an opal evening gown trimmed with deep purple ruching bordered with pale rhubarb, like a gay Salamine. Two of the best façades were in the power section where great sheets of water tumbled between columns of rich ultramarine, extending from the pool below clear to the roof with only a thin line to show where the sky begins. Nearby was a puzzling structure of corrugated iron, not exactly a building, and yet one could doubtless go inside if one was in the mood. The exterior appearance was like a more or less

orderly collection of giant snow plows, such as one sees in the upper reaches of the Rocky Mountains. The water façades were fascinating and we studied them for some time. They seemed to melt into the landscape and meld with the flanking planting, beautifully done. It finally dawned on us that these aquatic structures support Ken Murchison's thesis that the architect is one-third plumber.

This reminded the Colonel of a story Harry Cunningham told him in Washington about some new buildings at Washington University. Until further appropriations are available, the exterior facings of limestone or brick and interior plastering have been omitted. A lot of piping that will eventually be buried in the masonry, now runs outside the walls—Y's, T's, and hubs all exposed naked to the breezes. This didn't look very pretty, so they painted the walls and piping white. While this helped some, the irregularity of the plumbing system was still rather *quelconque*; so on the next building the piping and conduits were run in orderly parallel lines, with screw joints, nipples, etc., replacing the Y's, T's, and angle bends, just as if Norman Bel Geddes—not to be confused with J. Peter Geddes, II, distinguished Providence practitioner—had designed it. After experimenting with various color schemes, a tender green, the exact shade of the under side of an olive leaf rather than a white, gave the most pleasing result. "Now," Harry concluded, "the ceds may view *les feuilles à l'envers* without going out into the country."

Colonel Fullerton liked the Italian Building. He didn't mind a mighty statue poised above a waterfall, and was amazed that one could go behind the scenes and look through plate glass at falling water on the front, then turn around where today's menu was posted beside the entrance doors and read: "Roast Guinea Hen, \$5.00." It was the wedding of Art and Industry.

Once one gets accustomed to exotic things, the Brazilian Building begins to shape up naturally enough. The garden side is en-

dowed with suave grace, flowing serenely into the eurythmic shrubbery and pools set off by gay tables and umbrellas where one may seek peace and sustenance. The water-lilies and great lotus plants seemed part of the architecture.

"For lands sakes, I really believe I'm beginning to appreciate the full significance of the 'flow of space,'" remarked the Colonel. Before leaving New York we took the Colonel to see the new building that houses the Museum of Modern Art, just as a test. The old gaffer stood up bravely under the strain, whispering, "It's a frozen waterfall! My word, what a window! Does it open?"

"Want to step inside and see?"

"N-n-no; later on, perhaps. I'm all pepped up as it is and mustn't overdo—there's a limit, my boy you know. Who's the architect?"

"Eddie Stone's one of them. How do you like it?"

"I like it the way Grandma Lowett liked mushrooms. Grandma once said she was very fond of mushrooms but didn't like them well enough to eat 'em!"

"Any further comment before we leave? We've a little shopping to do at Park and Tilford's. In case of a seizure on the road, you remember some States are dry on Sundays."

"Yes, I remember," he sighed feelingly. "A comment on the Museum? Let's call it the Eddystone Lighthouse."

On the way to the station our taxi, held by the traffic lights at a cross street, drew up close beside another in which sat a distinguished looking couple. The man was evidently making a train we gathered, and the taxi cabs almost touching we couldn't help overhearing a little conversation: "I think I'd better wipe off some of this lip stick before you kiss me good-by," said the dark lady of the Sonnets. "Here, take my handkerchief," said her companion. "No, no, no! I mustn't do that! Don't you realize that many a divorce case has been decided on the evidence of lip stick on a man's handkerchief?"

CONSTRUCTION WITH PLYWOOD

BY OSCAR FISHER

The economic desirability of building with larger units to reduce the number of construction operations has encouraged the production of a variety of panel materials. Of these, plywood is extremely important. Many ingenious methods, utilizing plywood in new or improved ways, are being developed. The laminated construction of Egyptian mummy cases has been revived after thousands of years and is again being utilized in even more permanent and versatile fashion today. The history of plywood and its extensive use is far more impressive than is commonly supposed.

Out of a welter of discussion and theorizing, a sound approach to the utilization of plywood in permanent construction has emerged. Somewhere between the breathless watcher for a material which will make it possible to blow a house as one would a bubble, and the "ostrich," who would still have us living in mud huts, caves, and log cabins; we have the inevitable developer of new materials and methods, who combines the good of the old and the new and rejects the bad of both.

Natural wood may have twenty times as much tensile strength along the grain as across it. It may swell and shrink thirty times as much across the grain as it will along the grain with changes in moisture content. These variations furnish the reason for twisting and settling—and myriad complicated complaints against wood, when these factors are not carefully considered in the design of a structure.

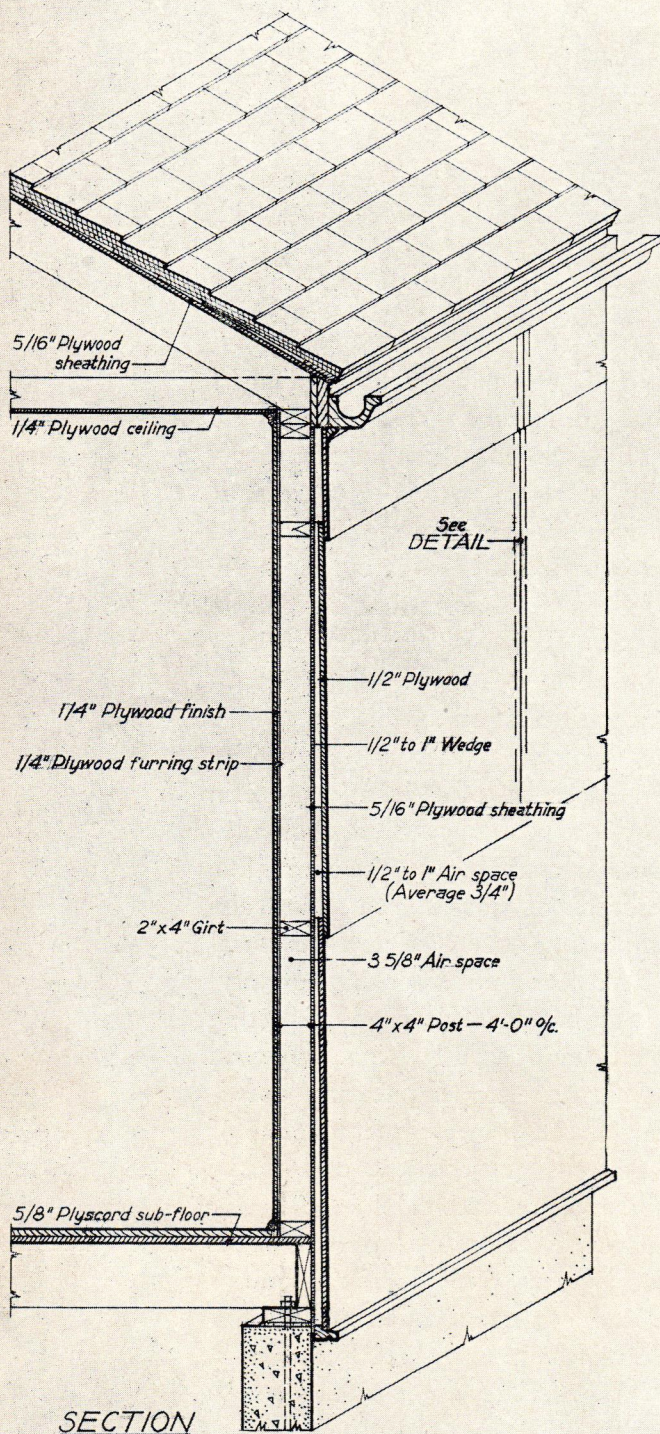
Due to the crossband construction of plywood, the differential of movement along

and across the grain and the differential of strength in compression and tension are equalized. Thus wood, which has the greatest strength of any material per unit of weight if stressed along the grain, has had its crossgrain weakness eliminated. With the variable factors thus reduced a few simple precautions in design will eliminate entirely any possible danger from swelling, shrinkage, or inequalities of strength.

Five years ago the application in quantity production methods of a synthetic resin binder made a perfectly waterproof plywood generally available. In the short time since, hundreds of houses, boats, and airplanes, employing dozens of new structural systems, have been built with this new plywood. Much has been learned respecting proper methods of construction. Plywood may be designed with engineering exactitude. One of the most temperamental of building materials has become one of the most docile and predictable.

The beauty of hundreds of different woods in plywood is at the disposal of the interior designer. Rare and exotic woods may be obtained at a relatively low cost. Used as solid panels, many of these woods would not be durable, although very expensive. But as the face veneer on plywood, where the core is of sturdy and inexpensive woods, any of them can be safely and economically used. Other plywoods have been developed to high suitability for structural use and exterior finishing.

Large expanses of unbroken surface are possible in plywood, due to the method of "unrolling" a log against a knife which cuts



BESIDES THE DOUBLE PLYWOOD WALL CONSTRUCTION SHOWN ABOVE, THERE ARE OTHER POSSIBLE VARIATIONS. THE SHEATHING LAYER MAY BE OMITTED, AND VARIOUS JOINTS USED TO PRODUCE A FLUSH EXTERIOR

a continuous veneer $\frac{1}{32}$ " to $\frac{1}{4}$ " or more in thickness. This is the most common method for cutting veneers for plywood and is called "rotary cut." Other methods are used for special grain effects. When the log is squared and moves against a knife to produce a sheet of veneer from its entire length, the method is called "slicing." "Sawing" is the method used to produce quartered rough-sawn and plain-sawn grains.

The curving of solid wood was rarely attempted since it was not a true expression of the nature of the material. Plywood, on the other hand, violates no æsthetic convictions when it is used in this manner. There are five methods of securing curves in plywood.

First—plywood may be soaked in water. It is the opinion of qualified research men that wetting plywood to bend it, except in the case of waterproof adhesives, is a frequent cause of trouble. The usual technique is to keep the plywood moist for 24 hours after which bending pressure is applied in successive stages against forms of the desired radius.

Second—steaming is another method for bending plywood. Water-resistant and waterproof-glued plywood may be steamed and bent to comparatively small radii in a manner similar to wetting.

Third—saw-kerfing is a method frequently used. Any thickness of plywood may be bent to practically any radius by saw-kerfing the back to relieve the cross-band resistance. The frequency of the kerfing depends on the radius desired and the thickness of the plywood. If the kerfing is properly done, no marks will appear on the face of the curved panel. But if the kerfing is too deep or spaced too far apart, the face of the panel will show bend marks.

Fourth—some manufacturers have offered bending panels about $\frac{1}{8}$ " in thickness, consisting of only 2 plys. By omitting the ply on the back, the stress is relieved so that curves of almost any radius can be obtained. Two-ply plywood, however, is an unbalanced plywood and some "brute force" method of keeping the material in tension is necessary. Two-ply bending panels, if

used, should be glued to a solid backing to hold it in shape. It is used successfully in furniture.

Fifth—plywood without any treatment whatever may be bent by securing one edge and forcing it into templet shaped framing, nailing it in place as it takes the desired form. This is the method most commonly employed in form work and is equally adaptable to interior finish. The following table gives the minimum radii to which plywood panels of various thicknesses can be bent. The terms *lengthwise* and *crosswise* refer to the direction of the face grain.

3-ply

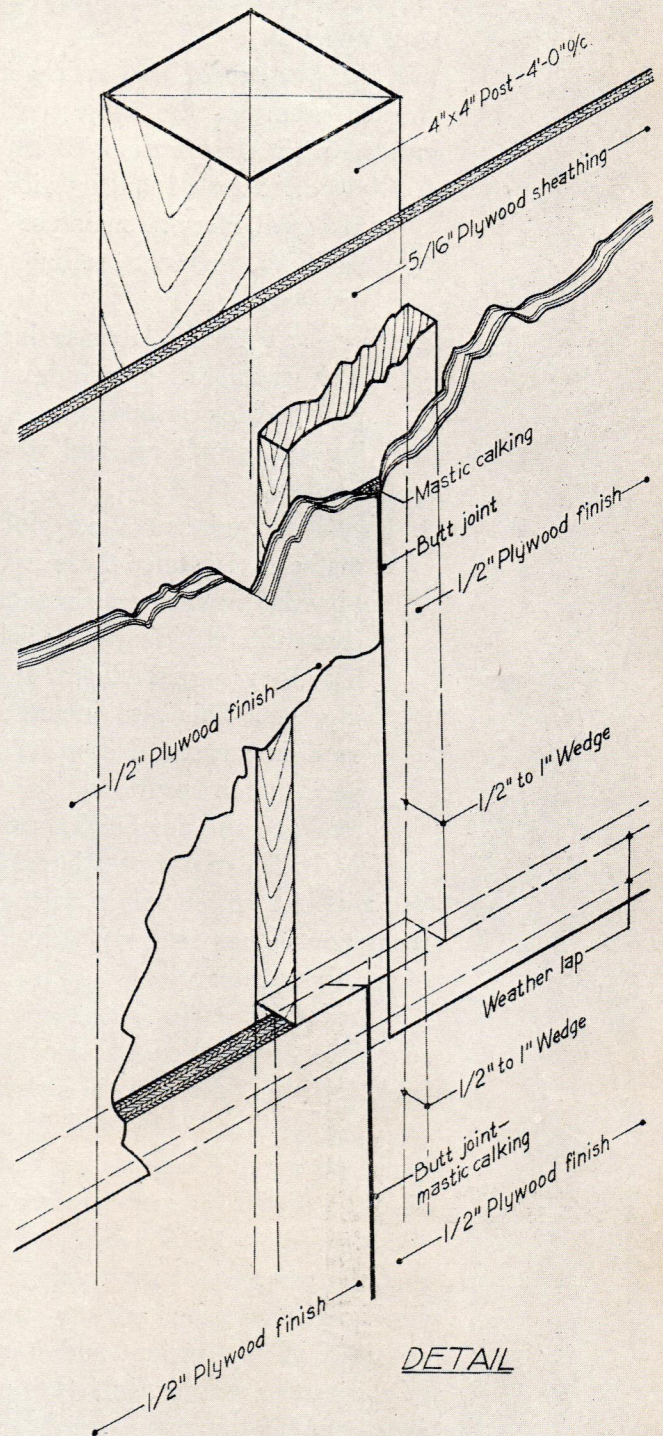
1/4" lengthwise	2'-0"
1/4" crosswise	1'-3"
3/8" lengthwise	4'-6"
3/8" crosswise	3'-0"

5-ply

1/2" lengthwise	8'-0"
1/2" crosswise	6'-0"
5/8" lengthwise	10'-0"
5/8" crosswise	8'-0"
3/4" lengthwise	12'-0"
3/4" crosswise	10'-0"

At this point it might be well to distinguish between the terms "veneer work" and "plywood." Etymologically, the way these words are used in the industry would be hard to justify. However, the term *veneer work* is considered by practicing plywood men to mean small volume or custom work wherein veneers of relatively rare or expensive woods are applied to a laminated or solid wood backing, with considerable emphasis on the æsthetic result. The woods used to produce veneer work are generally hardwoods although some of the rarer softwoods are also employed. The United States Department of Commerce, in "Commercial Standard CS35-31," have published the accepted and approved commercial standard applying to some hardwoods and Eastern Red Cedar.

The term *plywood* is looked upon as the name for a mass production material, standardized as to size, use and grade and with recognized structural, insulation, and decorative values. Plywood implies less empha-



THE DOUBLE PLYWOOD WALL CONSTRUCTION RESULTS IN ERECTION ECONOMY, GREAT STRENGTH, SATISFACTORY RESISTANCE TO HEAT LOSS, AND PROTECTION FROM THE ELEMENTS. FULL WALL SECTION OPPOSITE

sis on the æsthetic than does the term "veneer work."

In this article, it should be noted, the word "plywood" is used generically to refer to both varieties.

For the purpose of this article it is desirable to subdivide the subject of Plywood into the main classifications of its use:

1. Plywood used as an interior finishing material. Here its main use is for wall paneling, wainscots, ceilings, and cabinet-work.
2. Plywood used as a labor-saving medium. This classification includes the use of plywood for concrete forms, sub-flooring and sheathing, and as a base for linoleum.
3. Plywood used as an exterior finishing material. Included here is the use of plywood in the same manner as such conventional siding materials as clapboards, shingles, stucco, flush boarding, etc. This also includes plywood used in structural systems which depend upon plywood for structural strength and for finish on the exterior or both exterior and interior.

We will concern ourselves with general information rather than with details in each of the above categories.

Plywood Used as Interior Finishing Material. One of the earliest carpenters' handbooks written, dealt with instructions for building paneled rooms and furniture with veneered wood. Many of the best examples of old paneled interiors are monuments to the veneer worker's artistry. Few realize that the commercial plywoods of today are simply a development of the superb craftsmanship of the ancient and honorable art of the veneer worker. In fact veneering enjoyed the highest repute until a reaction set in against the mid-Victorian monstrosities, many of which had been made of veneers. The reaction proved a boon, in that it gave the veneer manufacturer time for meditation and out of this breathing period came the modern application of veneering to produce the new, engineered plywood.

The old paneled library of solid wood had joints—but in designing the library the in-

evitability of the swelling and shrinkage of wood was taken for granted and reckoned with. Moldings covered slip joints which were left apart expressly to allow for this movement. This type of construction was absolutely satisfactory as attested by extant examples in perfect condition. With modern plywood this method is equally satisfactory and safe.

Plywood, in either hard or soft wood faces, also offers a solution to the problem of creating simple interiors with large, virtually unbroken surfaces. Until a short time ago it was considered necessary to leave panels far enough apart to allow for expansion and to cover the joint with unsightly batten strips, or to close them with a filler which could not be successfully disguised. Study of the possible movement of both the plywood itself and the structural frame has made it possible to produce the effects desired by a variety of means.

There are three factors to consider when designing for a continuous wall effect: the swelling of the plywood itself; the movement of the structural frame; and ply-separation. Ply-separation has become impossible since the introduction of modern adhesives. Some of the trouble with joints, attributed to plywood, has been due to movement of the frame. The effect of frame movement may be minimized by taking simple precautions.

Most framing lumber is now properly seasoned and leaves the mill with a moisture content which approximates average conditions in use. Since wood is a live material, however, it will continue to absorb and release moisture alternately. This results in changes in dimension and causes the whole frame of a house to move slightly with changes in relative humidity. Many who have been mystified by recurring plaster cracks and opening of trim joints can trace their troubles to this same source.

Plywood erected by gluing to strips of the same material will remain unaffected by the frame movement. In essence the individual plywood panels are welded into one unit and the finish plywood on an entire wall becomes a single unit. The furring strips are

in half the time that it takes to apply one-inch by eight-inch sheathing. On both sub-flooring and sheathing, one-third of the material is ordinarily wasted. This waste is eliminated when plywood is used. Not only the cost of labor is saved but time is saved at a crucial period when rapid closing in of the building may prevent considerable delay in total construction time.

According to the U. S. Forest Products Laboratory, 5/16" plywood makes a stud framed wall forty per cent more rigid than one diagonally sheathed with ordinary sheathing. If 5/16" plywood sheathing is used, it is highly desirable that furring be applied over it horizontally to receive the siding or shingles. This will make it possible to use stock window and door frames. At the same time it will provide an additional air-space and thus increase the insulating value of the total wall construction. Tests have indicated that 5/16" plywood has greater nail holding power than 25/32" sheathing. However, one manufacturer has stated that his company prefers to recommend the 3/8" thickness for the best construction. It therefore is an excellent material for the application of shingles.

Plywood as a Waterproof Finishing Material for the Exterior. The search for a material which makes large unbroken surfaces possible for exterior walls has led the designer into the use of many new materials. Each has its merits and its disadvantages, and each presents a variety of problems in construction and design.

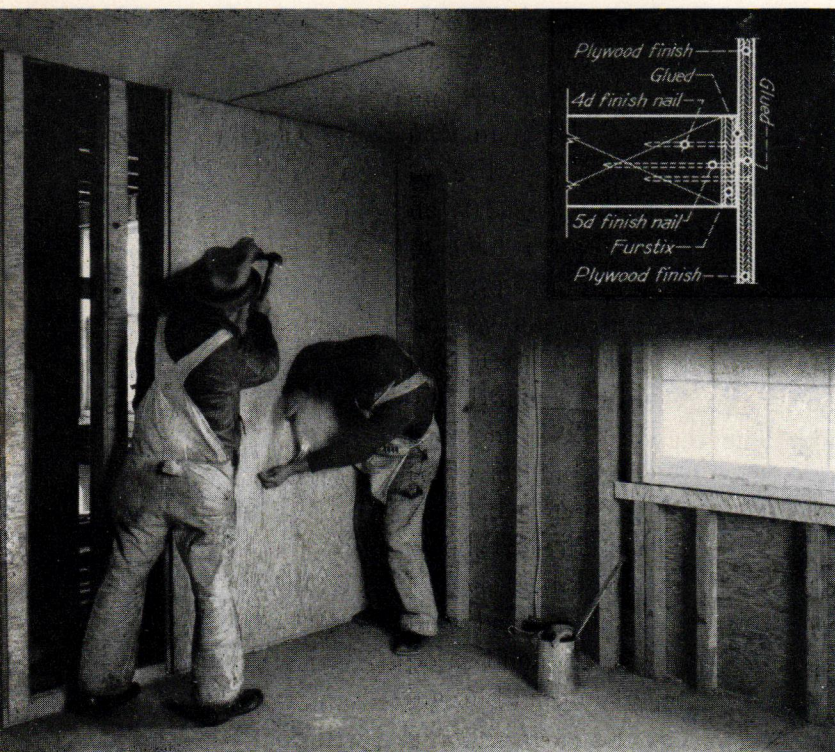
Building with a single material has obvious advantages. The most permanent types of construction in the past have always utilized a minimum number. Each material has a differing coefficient of strength, reaction to climatic conditions, and durability. Myriad chemical and physical reactions are introduced into a building with the addition of each new material. When water comes into contact with wood, the material swells; with steel, the material rusts. Water wears away stone, and sets up complicated reactions in and between different materials. It is obvious that structural simplicity dictates the choice of as near homogeneous construction

as possible. Choose steel for steel frames; wood for wood frames; plaster for masonry. From this choice, æsthetic superiority, too, is more apt to result.

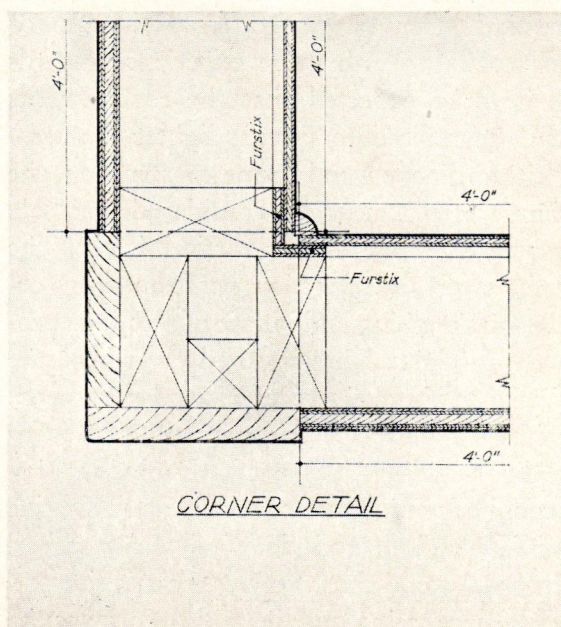
Plywood is an ideal finish for a wood frame. Much of the fine joinery used in wood construction today was first developed by boat builders. It is significant that they were also among the first to utilize the new waterproof plywood. It seems that the wider horizons of the sea stimulate original thinking. The early Americans brought back to their seaside cottages the same kind of efficient planning and sturdy construction that they put into their boats. House designers are again learning from shipbuilders.

The recent acceptance by the Federal Housing Administration of plywood for uses heretofore not sanctioned has created a new interest in plywood construction and will do a great deal to accelerate its widespread use. The requirements of the FHA are based on the U. S. Department of Commerce's terminology, definitions, and standards as outlined in the document "Commercial Standards CS45-38." A résumé of the mandatory FHA provisions follows:

"Thickness not less than 3/8 inch. Edges primed before erection. Nailed with 6d flat head nails spaced not over 6 inches o/c along edges and 12 inches on intermediate bearings. Butt edges filled with mastic or covered by battens. The FHA requirements do not allow for the increased bracing and vertical strength gained from the use of plywood." (With more experience records it is to be expected that the requirements will be revised to permit lighter frames.) With ordinary wood frame construction, the frame itself must be considered the sole source of strength for vertical loads. The only structural function performed by ordinary sheathing and interior finish is to provide for lateral bracing and even here the frame must take care of a good percentage of the required bracing strength. As for ordinary siding, it is perfectly obvious that its only functions are to provide a decorative surface and to exclude wind and weather. In usual wood construction, the exterior and interior covering may be said to serve as the



THE PHOTOGRAPH ABOVE SHOWS STRIPS OF PLYWOOD (FURSTIX) NAILED TO THE STUDDING. THE STRIPS ARE COATED WITH CASEIN GLUE AND THE PLYWOOD PANELS ARE THEN DRAWN UP TIGHTLY AND NAILED TO THE STRIPS. THE CRACK IS FILLED WITH PLASTIC WOOD OR SWEDISH PUTTY AND THE CONTINUOUSLY FLUSH WALLS OR CEILINGS ARE THEN READY FOR DECORATION. THE DRAWING BELOW SHOWS HOW A 4-FOOT MODULE FOR STANDARD WIDTH PLYWOOD CAN BE MADE TO APPLY TO BOTH INTERIOR AND EXTERIOR BY MEANS OF CORNER BOARDS



skin of the building, having no strength. In plywood structural systems, however, exterior and interior perform the function of muscle as well as skin, thus permitting the use of a much lighter skeleton, or frame. For the first time in the history of building we are approaching the efficiency which is taken for granted in the realm of natural law where the principle of the stressed skin is an essential element of the structure of all living organisms.

In this manner the strength of plywood is put to work and at the same time the full value of the natural beauty of wood is utilized to provide an excellent finish for the interior and exterior. While many materials are being developed which satisfy one or the other of these conditions, plywood can claim excellence for both purposes.

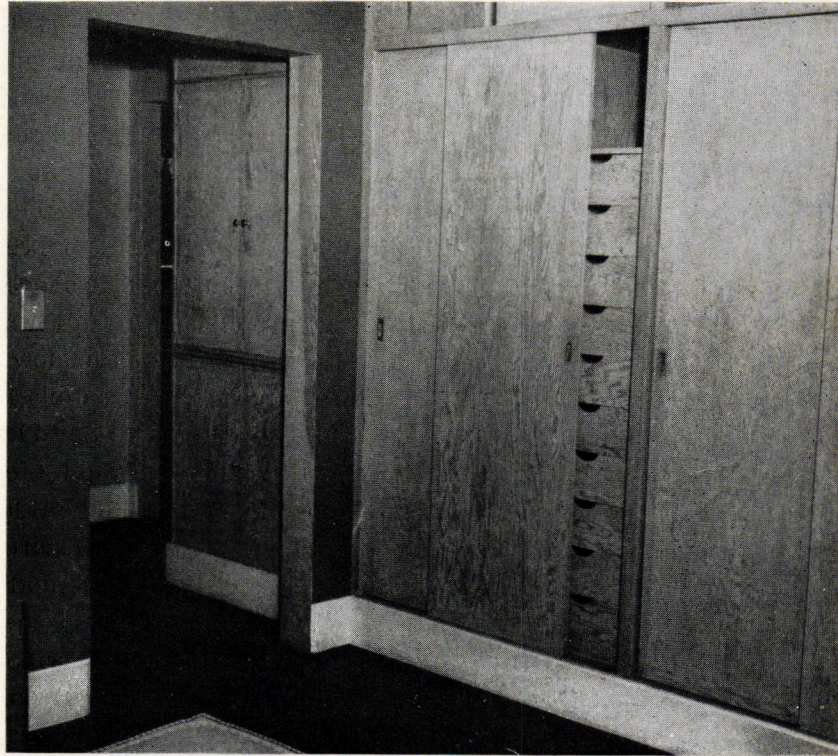
The perpetual argument about the relative merits of prefabrication or non-prefabrication, standardization or variation will become less significant when all houses are made of fewer parts. Whether prefabricated or site-fabricated, every one can agree that it is advantageous to construct out of larger and therefore fewer units. If plywood is substituted for ordinary sheathing and sub-flooring in a small house, between four and five hundred pieces of material are reduced to sixty to seventy. When the outside covering of a small house can be made out of twenty to thirty pieces which can be applied in one-half day by three men, there is less urgency to construct them in factories in order to save labor time.

There have been sufficient tests to prove conclusively that the material itself will stand the stress of time. Much water has gone over the dam, floods and hurricanes have ravaged the country since the first plywood houses were constructed, many of them taking the brunt of the destructive waters and winds. In spite of the fact that many of the structural systems employed were experimental and required revision, nothing essential has been found lacking in the material. There have been a variety of systems of construction with plywood developed, no one of which can be claimed as the only way to build with plywood.

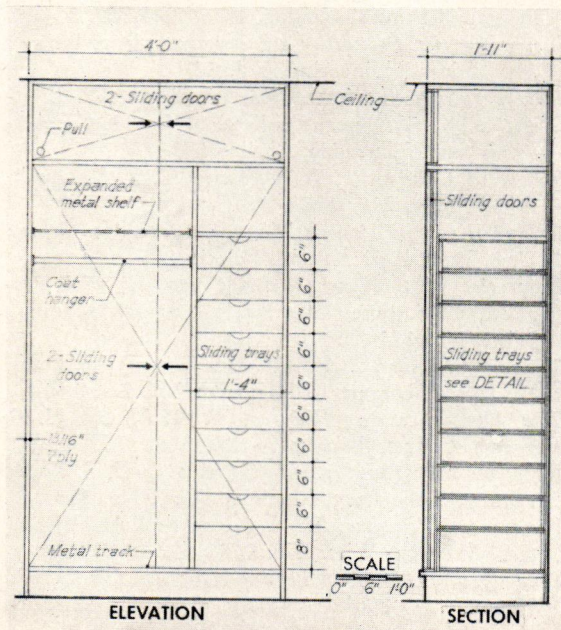
The author has developed a system of construction which can serve to indicate the elements to be considered in designing with this new material. The method was developed to utilize plywood most advantageously; its strength and simplicity of surface and to take complete advantage of its labor saving possibilities. There is nothing revolutionary about the framing method except that it dates back to Revolutionary times. The frame is built of 4" x 4"s 4'-0" o/c with horizontal 2" x 4" girts also 4'-0" o/c entirely around the building. By acting as a stressed skin the interior and exterior plywoods contribute their share to help support the vertical loads although the 4" x 4"s may be considered adequate for this purpose. The 2" x 4" girts provide lateral bracing and nailing for the horizontally applied exterior plywood. However, here too the stressed plywood provides far more lateral bracing than is common, when ordinary sheathing and diagonal bracing is used. In fact, $\frac{1}{4}$ " plywood sheathing makes a frame wall 40 percent more rigid than one diagonally sheathed or with let-in braces; nearly four times as rigid as cut-in bracing; and nearly six times as rigid as horizontal sheathing. While engineering tests have not yet been made on the system described, it is reasonable to assume that with the use of $\frac{1}{2}$ " 5-ply exterior plywood the strength and rigidity of the structure is far superior to any other ordinary method of construction.

The advantages of the 4" x 4" frame are mainly labor-saving as fewer framing members need to be cut and set. In addition, the 4" x 4"s afford a wider surface to allow for tolerance of errors or inaccuracies in framing. A number of small houses built by the author and employing this system have been framed in less than normal time and the exterior was completely covered by three men in one-half day. The total cost of the exterior and interior plywood, erected, did not exceed the usual cost of plastering the interior alone.

The advantage of having one joint where there were formerly eight is obvious when weatherproofing and insulation are consid-



THE ILLUSTRATION SHOWS THE USE OF PLYWOOD FOR CABINET WORK AS DESIGNED BY ARCHITECT A. LAWRENCE KOCHER. ABSOLUTELY FLUSH CONSTRUCTION OF ALL PARTS IS BOTH FUNCTIONAL AND IN KEEPING WITH THE MODERN TREND. DRAWERS WHICH ARE CAREFULLY MADE WITH SIDES OF 5-PLY AND BOTTOMS OF 3-PLY, ACCURATELY CUT, GLUED AND JOINED, WILL STAY RECTANGULAR AND WILL ELIMINATE THE NEED FOR CENTER GUIDES. CENTER GUIDES HAVE HITHERTO BEEN REGARDED AS A LUXURY AVAILABLE ONLY IN EXPENSIVE WORK



ered. There are a number of ways to take care of the few remaining joints. Those illustrated utilize the horizontal ship-lap and the vertical calked joints. These permit the maximum amount of movement and insures a perfect seal without any risk of buckling. A number of houses have been built with this system in New England where the variable climate has put it to a severe test. The hurricane of 1938 which severely damaged nearby structures left these houses unaffected. The experience gained in the laboratory of the great outdoors has proved the correctness of the engineering principles embodied in this new plywood and the methods of construction.

An exciting field for interesting exploration is still open to those with imagination who

desire to contribute to the inevitable progress in shelter design. Other structural systems developed by the following should be studied by the designer as a starting point for his efforts:

Forest Products Laboratory, Madison, Wis.
Douglas Fir Plywood Association, Tacoma
John B. Pierce Foundation, New York
Resettlement Administration, Washington
Tennessee Valley Authority, Washington
David Swope, Ossining, N. Y.

E. A. Horn, Seattle, Washington
Frank Watson, Purdue University
W. F. Ruck & Zara Witkin, Los Angeles
John B. Lyman & Russell E. Collins, Los Angeles

W. W. Durham, Tacoma

Michael Goodman, Berkeley, California

BIBLIOGRAPHY

Methods Used In Veneering Curved Wood Forms,
T. D. Perry

Instructions for Building Curved Plywood, T. D. Perry

The Principles Involved in Bending Plywood, T. D. Perry

The Gluing of Wood, T. R. Truax; U. S. Dept. Agr. Bull. 1500

Wood Bending, T. R. C. Wilson; Amer. Soc. Mech. Engrs. Proc., 51

Age and Strength of Glue Joints, Don Brouse; Woodworking Industries, June 1931

Serviceability of Glue Joints, Don Brouse; Mechanical Engineering, Vol. 60

Behavior of Casein and Blood Glue Joints Under Different Conditions of Service, Don Brouse; Furniture Manufacturer, Sept. 1934

Casein and Its Industrial Applications, Edwin Sutermeister; Chemical Catalog, New York, 1927

Increasing the Durability of Plywood, Don Brouse; Mechanical Engineering, Vol. 53

Holzvergleitung durch Kunstharzverleimung, P. Brenner and O. Kraemer; Publication No. 12, Fachausschuss für Holzfragen, Berlin, 1935

Spread of Condensate, W. L. Jones; F. P. L. unpublished report, May 1922

Gluing Wood in Aircraft Manufacture, T. R. Truax; U. S. Dept. Agric. Tech. Bulletin 205

Properties of Ordinary Wood Compared with Plywood, U. S. Forest Products Laboratory, Madison, Wisc., No. 131

Stresses in Laminated Wood Construction, U. S. Forest Products Laboratory, Madison, Wisc., No. 140

The Manufacture of Veneer, T. R. Truax, U. S. Forest Products Laboratory, Madison, No. 285

Notes on the Manufacture of Plywood, U. S. Forest Products Laboratory, Madison, Wisc., No. 543

Veneer and Plywood, U. S. Forest Products Laboratory, Madison, Wisc., No. 973

Data on the Design of Plywood for Aircraft, Armin Elmendorf; Natl. Advisory Com. Aeronautics, Rept. 84

Wood in Aircraft Construction; U. S. Navy Dept., Bureau of Construction and Repair, Aircraft Design Data, v. 1, No. 12, 1919

The Uses and Properties of Water-resistant Plywood, Armin Elmendorf; Amer. Soc. Testing Materials, Proc.

Twisted Plywood Panels, T. R. Truax and Don Brouse; U. S. Forest Products Laboratory, Madison, Wisc.

Plywood as a Structural Covering for Frame Walls and Wall Units, G. W. Trayer; U. S. Forest Products Laboratory, Madison, Wisc., Mimeo. R1025

Stressed Plywood Covering for Floor Panels Tested, G. W. Trayer; U. S. Forest Products Laboratory, Madison, Wisc., Mimeo. R1026

Strength Tests of Screw Fastenings of Plywood, H. S. Grenoble; Aerial Age Weekly, Jan. 1921, and Aviation, Feb. 1921

Factors Affecting Warping of Wood, Armin Elmendorf; Hardwood Record, July 1919

The Mechanical Properties of Plywood, Armin Elmendorf; Veneers, Aug. 1919

Mechanical Tests Made on Plywood, L. J. Markwardt and Armin Elmendorf; Hardwood Record, July 1919

Tests on Thin Plywood as a Substitute for Linen in Aeroplane Construction, Armin Elmendorf; Aerial Age Weekly, Sept. 1919

Wood Handbook, Forest Products Laboratory; Superintendent of Documents, Washington, D. C., 25c

Controlled Exposure Tests on Birch Plywood Indicate Durability of Water Resistant Glue Joints, Don Brouse; U. S. Forest Products Laboratory, Madison, Wisc.

List of Publications on Mechanical Properties and Structural Uses of Wood and Wood Products, March 1938, U. S. Forest Products Laboratory, Madison, Wisc.

Plywood (Hardwood and Eastern Red Cedar), Commercial Standard CS35-31, Superintendent of Documents, Washington, D. C., 10c

*TYPHONITE ELDORADO PENCIL PAGE

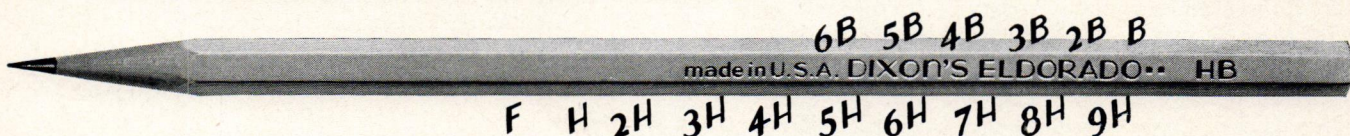
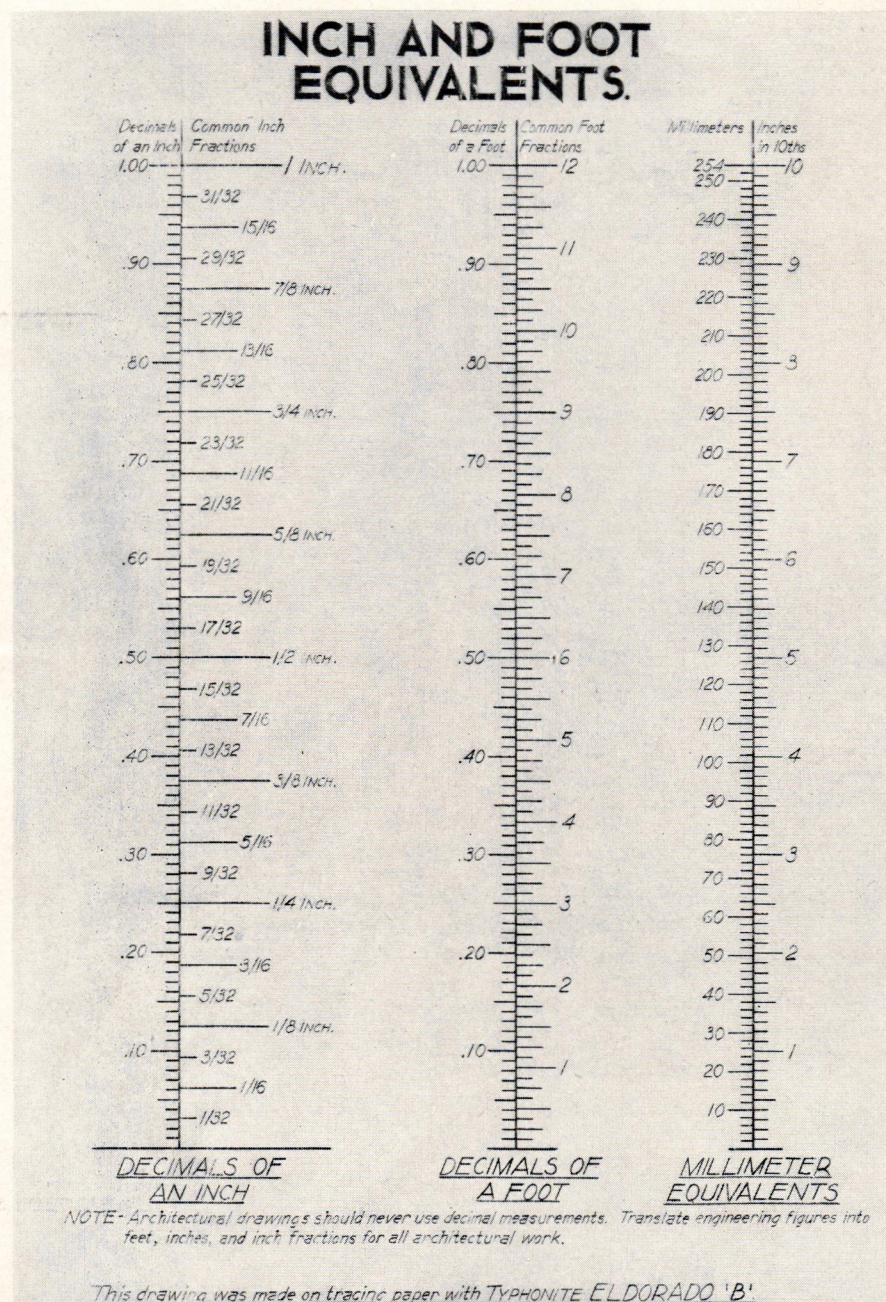
HERE is a Typhonite Eldorado drawing that will make the translation of decimals to feet, inch and inch fractions faster and easier. And here is an interesting point.

This drawing was made on inexpensive tracing paper—the kind ordinarily used for the roughest preliminary sketches. And yet look at the quality of the drawing. Don't you agree that it is a tribute to Typhonite Eldorado pencils that a clean, printable drawing can be made on such paper? The pencil used was a Typhonite Eldorado "B."

A blueprint made directly from the original drawing will be handy to hang in the drafting room. Write to address below for blueprint No. 167-J11.



***TYPHONITE** is a new form of natural graphite, used exclusively by Dixon in making leads for Eldorado, The Master Drawing Pencil. Typhonite consists of extremely minute particles produced by a whirlwind or typhoon of dry steam. This new exclusive Dixon process is one of the reasons why Eldorado pencils hold their points longer, give off freely, and make such opaque lines and figures.



Pencil Sales Department, 167-J11
JOSEPH DIXON CRUCIBLE COMPANY, Jersey City, N. J.

S E R V I C E D E P A R T M E N T S

THE MART. In this department we will print, free of charge, notices from readers (dealers excepted) having for sale or desiring to purchase books, drawing instruments, and other property pertaining directly to the profession or business in which most of us are engaged. Only those items will be listed for sale which we can no longer supply from our own stock. Such notices will be inserted in one issue only, but there is no limit to the number of different notices pertaining to different things which any subscriber may insert.

PERSONAL NOTICES. Announcements concerning the opening of new offices for the practice of architecture, changes in architectural firms, changes of address and items of personal interest will be printed free of charge.

FREE EMPLOYMENT SERVICE. In this department we shall continue to print, free of charge, notices from architects or others requiring designers, draftsmen, specification writers, or superintendents, as well as from those seeking similar positions.

SPECIAL NOTICE TO ARCHITECTS LOCATED OUTSIDE OF THE UNITED STATES: Should you be interested in any building material or equipment manufactured in America, we will gladly procure and send, without charge, any information you may desire.

Notices submitted for publication in these Service Departments must reach us before the twelfth of each month if they are to be inserted in the next issue. Address all communications to 330 West 42nd Street, New York, N. Y.

THE MART

ATTENTION: We are trying to help an unfortunate Chinese architect who has had his architectural library confiscated in Shanghai. Will members of the profession please contribute any back copies they can spare of architectural exhibition annuals or year books of any kind such as *Philadelphia Architectural Exhibition Annuals*, the *Year Books* of Architectural Clubs, Societies or Leagues of Boston, Chicago, New York, etc., irrespective of year published. Postage will be paid at this end and the issues will then be forwarded to the architect in China. Send to Miss Flagg, care of PENCIL POINTS.

WANTED: A copy of *Architectonics, The Tales of Tom Thumtack, Architect*, published by William T. Comstock Company, 1914. State price and condition of book. Communicate with Miss Flagg, care of PENCIL POINTS.

WANTED: A copy of July 1930 PENCIL POINTS, all pages intact. State price. Communicate with Miss Flagg, care of PENCIL POINTS.

Charles E. Schade, 9401 Forbell Street, Ozone Park, L. I., New York, has for sale the *Tuileries Brochures*, January 1929 through January 1931.

Harold B. Rogers, 110 Valentine Street, Mt. Vernon, N. Y., would like to obtain a copy of *Useful Data on Reinforced Concrete Buildings*, published by the Kalman Steel Company in 1929 or 1930.

Harriet E. Wilkin, Librarian, Yale School of Fine Arts, New Haven, Conn., would like to obtain the following numbers of *The Octagon*: Vol. 4, Nos. 11 and 12 (November and December 1932); Vol. 8, Nos. 7 and 8 (July and August 1936).

Sydney S. Sylvester, 3312 Perry Avenue, Bronx, New York, has the following architectural books for sale, in extra fine condition: *Letters and Lettering*, Frank Brown; *The Outline of Art*, 2 vols., Sir William Orpen; *Details of Gothic Architecture*, 2 vols., J. K. Colling; *Grammaire De L'Ornement*, Owen Jones; *Measured Drawings of Old Oak Furniture*, John Weymouth Hurrell; *Flemish Renaissance Interiors and Details*; *Details of Architecture of Tuscany*; *Architectural Shades and Shadows*, Edgar G. Shelton; *Picturesque Architecture of Mexico*, LaBeaume & Papi; *Library of Architectural Documents*, Toscane; *Elements of Drawing*, John Ruskin; *Flats, Houses and Cottage Homes*, W. Shaw Sparrow; *La Belgique Monumental*, Van Leer; *Italian Furniture and Interiors*, G. L. Hunter; *Architecture of Southern Spain*, A. Whittlesey; *Inventional Geometry*, I. N. Failor; *Il Ferro Nell Arte Italiana*, Ferrari; *Monumental Classic Architecture in Great Britain and Ireland during the 18th and 19th Centuries*, A. E. Richardson; *Skylight and Roof Tables, Stained Glass*, Hugh Arnold; *Plan Reading and Quantity Surveying*, C. F. Dingman; *Colonial Architecture of Old Salem*, 2 vols., F. Cousins; *An Architect's Simple Engineering Problems*, D. C. Pond; *Building Estimator's Data Book*, C. F. Dingman; twelve books *El Arte En Espana* as follows—1. *Catedral de Burgos*, 2. *Guadalajara Alcala de Henares*, 3. *La Casa Del Greco*, 4. *Real Palacio de Madrid*, 5. *Alhambra*, 6. *Velazquez En El Museo del Prado*, 7. *Sevilla*, 8. *Escorial*, 9. *Guadalupe*, 10. *El Greco*, 11. *Aranjuez*, 12. *Poblet*; *Building Construction and Superintendence*, 2 vols., Part 1 mason work, Part 2 carpentry work, Comstock; *Underpinning*, Prentis & White; *Wood Carver of Salem*, Cousins Riley; *Concrete Building Construction*, J. Wiley & Sons; *White Pine Series*, 61 volumes; *Architectural Review*, 16 volumes (old copies); *The Tuileries Brochures*, 17 volumes (old copies); *Service Sheets*, all working drawings, Architectural Service Press Co., Philadelphia; *Sketches Abroad*, Julius A. Schweinfurth.

PERSONALS

DAVIS & RICE, *Architects*, have moved their offices from the Sunbury Trust Building to their new office building at the corner of 4th and Chestnut Streets, Sunbury, Pa.

WILLIAM M. INGEMANN, *Architect*, has moved his office from the Globe Building to 210 Anchor Building, St. Paul, Minnesota.

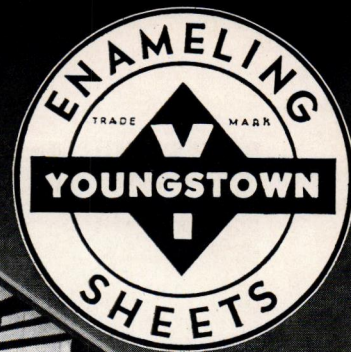
S. KENDRICH LICHTY, *Architect*, has moved his offices from Secane, Pa., to the Times Medical Building, Ardmore, Pa.

KONRAD F. WITTMANN, *Architect*, has opened an office for the practice of architecture and interior design at 118-09 83rd Avenue, Kew Gardens, New York.

S. E. CLIPPARD, *Architect*, has moved his office to 212 McWilliams Building, El Dorado, Arkansas.

PIER L. CHERICI, *Architect*, has moved his office from Brooklyn, N. Y., to Suite 1602, 277 Broadway, New York, N. Y.

MAURICE ABRAMOVITZ, *Architect*, has moved his office from 35 Newbury Street to 174 Newbury Street, Boston, Mass.



WORLD'S LARGEST MURAL

... enameled on YOUNGSTOWN SHEETS

Designed by J. Scott Williams (under commission from New York World's Fair), ground coated at Toledo Porcelain Products, and translated into polychrome porcelain by the artist Daniel Boza of Bomat, Inc. at the Cleveland Art School for Ferro Enamel Corporation, this beautiful contribution to both pure art and architecture comprises the best skill of many artisans. Significantly, Youngstown Sheets were chosen as the foundation for this critical piece of exhibition work at the New York World's Fair's Home Furnishings Building.

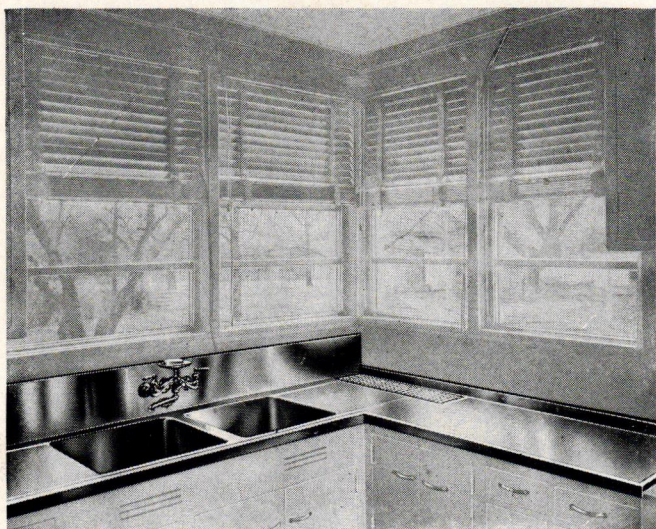
Youngstown Enameling Sheets are of such high quality that the regular production could be used even for this most exacting work -- there was no need to make any special selection of sheets. That's because Youngstown treats all enameling sheets as an important specialty, makes them under conditions which are known to produce the best results. Youngstown Enameling Sheets are free from inherent strain, free of gas inclusions, their finish is uniform, and excellent adherence is possible with their evenly etched surface.

Whether you are designing for ordinary applications or an exceptional use like this, you, too, will achieve the desired appearance and long life by specifying Youngstown Enameling Sheets.

Sheets - Plates - Tin Plate - Pipe and Tubular Products -
Conduit - Bars - Rods - Wire - Nails - Tie Plates and Spikes.
6-5B



**THE
YOUNGSTOWN
SHEET AND TUBE COMPANY**
Manufacturers of Carbon and Alloy Steels
General Offices - YOUNGSTOWN, OHIO



The Kitchen Sink of Tomorrow Can be Installed Today

The "Home of Tomorrow" must have a kitchen in keeping with the demands of the modern housekeeper. And no kitchen can be really modern, unless it is equipped with an

ELKAY "Sturdibilt" Cabinet Sink and Top

STAINLESS STEEL

MADE OF NO. 18 U. S. STANDARD GAUGE
GENUINE 18-8 STAINLESS STEEL

Be sure to look for these THREE Exclusive Features which will assure a lifetime of beauty, charm, durability, and service.

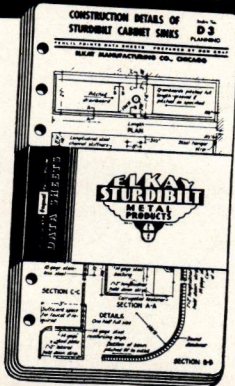
- 1 Extra heavy 18 Gauge Stainless Steel construction reinforced with 14 gauge steel sheets and heavy channel irons running the full length of drainboards. This construction prevents warping, buckling and bulging.
- 2 Electrically welded (not soldered) throughout, eliminating visible seams, joints, and overlapping flanges.
- 3 All Round Corner construction making sink, top, and bowl easy to clean and keep clean.

Ask about ELKAY FREE Kitchen Planning service and write for Booklet "The Kitchen Goes Modern."

FREE DON GRAF DATA SHEETS

ARCHITECTS AND BUILDERS:
Here is the complete information in concise form which will help you in designing the modern kitchen. Write today for Data Sheets P-1139. Complete specifications will also be found in Sweet's Catalog.

ELKAY MANUFACTURING CO.
4704-14 Arthington St. . . Chicago, Ill.



PUBLICATIONS ON MATERIALS AND EQUIPMENT

*of Interest to Architects, Draftsmen and
Specification Writers*

Publications mentioned here will be sent free unless otherwise noted, upon request, to readers of PENCIL POINTS by the firm issuing them. When writing for these items please mention PENCIL POINTS.

ARCHITECTURAL BRONZE.—Newly issued catalog containing detail drawings, specifications and descriptive matter covering Ellison balanced doors. Profusely illustrated with photographs of distinctive entrances and bank interiors in which Ellison ornamental metal work has been used, also mausoleums, tablets and a line of special hardware. 12 pp. 8½ x 11. Ellison Bronze Co., Jamestown, N. Y.

LAWSON BATHROOM CABINETS.—A. I. A. File No. 29-i-1. Folder illustrating and briefly describing four models of Lawson new one-piece porcelain enamel bathroom cabinets. Included are construction details and specifications. 4 pp. 8½ x 11. The F. H. Lawson Co., Bathroom Equipment Division, Cincinnati, O.

CHOOSING THE HEATING SYSTEM FOR YOUR HOME.—Booklet covering the entire field of home heating, illustrates and describes various types of heating systems including gravity warm air heating, forced warm air heating, one-pipe steam heating, two-pipe steam or vapor heating, hot water heating and the forced hot water heating system. Coal, oil and gas fuels are discussed as well as stokers, oil burners and automatic heating controls. 20 pp. 8½ x 11. Crane Co., 836 S. Michigan Ave., Chicago, Ill.

TRANSITE WALLS — UNIVERSAL TYPE.—Illustrated folder, Form TR-25A, describing a new low-cost movable partition for sub-dividing office and factory spaces. Erection specifications and drawings of typical details are included. 4 pp. 8½ x 11. Johns-Manville, 22 E. 40th St., New York, N. Y.

THE PHANTOM DOORMAN.—Folder giving detailed description of the operation of a device which automatically opens and closes doors either by photo-electric control or push button for use in restaurants, hotels, hospitals, factories, office buildings, public buildings, etc. 8 pp. 8½ x 11. The Yale & Towne Mfg. Co., Stamford, Conn.

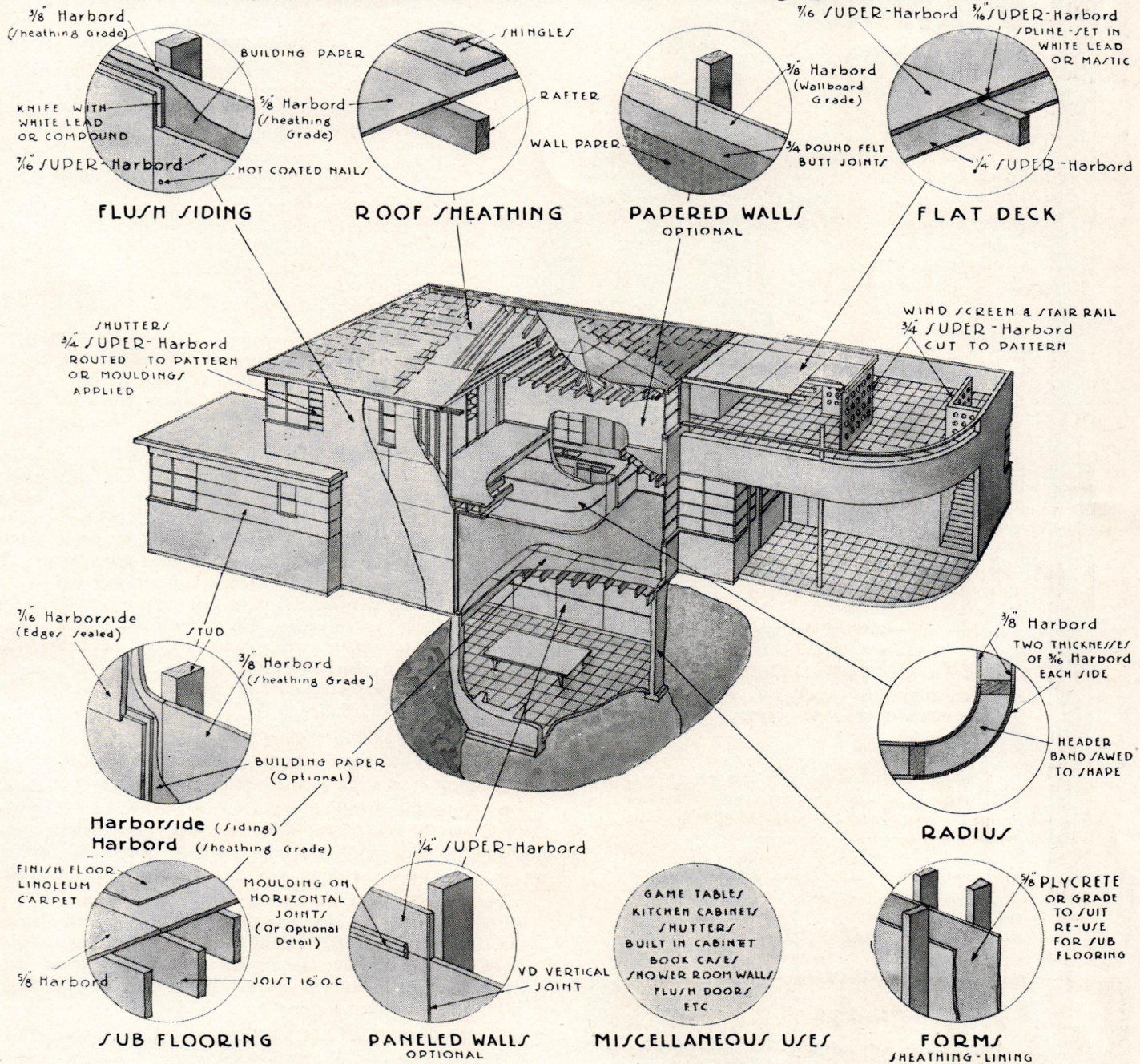
K & E ALBANENE STABILIZED TRACING PAPER.—Folder announcing and describing a new tracing paper, made of 100% long fibre pure white rags and treated with Albanite, a new crystal-clear synthetic solid. 4 pp. Keuffel & Esser Co., Hoboken, N. J.

ST. CHARLES STEEL KITCHEN CABINETS.—Brochure, just issued, illustrates and describes a complete line of steel kitchen cabinets and convenience accessories. 16 pp. 8½ x 11. St. Charles Mfg. Co., St. Charles, Ill.

TUBULAR LOCKS AND LATCHES BY CORBIN.—Folder announcing and describing the outstanding features of a new line of tubular locks and latches. P & F Corbin, New Britain, Conn.

(Continued on page 38, Advertising Section)

Tomorrow's Construction available TODAY with SUPER-Harbord



HARBORD PLYWOOD PRODUCTS

Harbord Plywood, Harbord Sheathing, Harbord Wallboard, Harbord Plycrete (For Concrete Forms), Harbord Industrial Plywood, Harbord Lauan Plywood, Harbord Sugar Pine Plywood.

SUPER-HARBORD PRODUCTS

Super-Harbord Plywood (In all grades—in panels as large as 8 x 16 feet), Super-Harbord Plycrete (For Concrete Forms), Super-Harbord Lauan Plywood, Super-Harbord Redwood Plywood, Harborside.

MANUFACTURED PRODUCTS

Super-Harbord Tennis Tables, Harbord Tennis Tables, Sag-Nott Doors (With Cotter-Keyed Joint)

Building with a single material—and that material, wood—has obvious advantages . . . homogeneous construction . . . the practical and aesthetic superiority of wood on wood frames. For the first time in construction history it is possible—WITH HARBORD PLYWOODS—to build with a material of great structural value as well as decorative surface—that offers the many advantages of building with large units: speed, labor economy, greater structural and insulation values, etc.—a material that may be pre-detailed to small tolerance.

Every panel of SUPER-Harbord is edge-branded with the trademark burned in on the edge. SUPER-Harbord and all Harbor plywood products are sold at retail by many progressive lumber and supply dealers, who are served by our strategically located distributing warehouses.

HARBOR PLYWOOD CORPORATION

Mills and General Offices: HOQUIAM, WASHINGTON

Distributing Warehouses: Atlanta, Baltimore, Chicago, Cincinnati, Cleveland, Columbus, Indianapolis, Jacksonville, Los Angeles, Miami, Milwaukee, New Orleans, Philadelphia, Pittsburgh, San Francisco, Tacoma, Tampa, Toledo, Washington, D. C., Watertown, Mass. Representatives: Billings, Denver, Kansas City, Omaha, Worcester.

IMPORTANT NEWS

to users of **"CASTELL"**

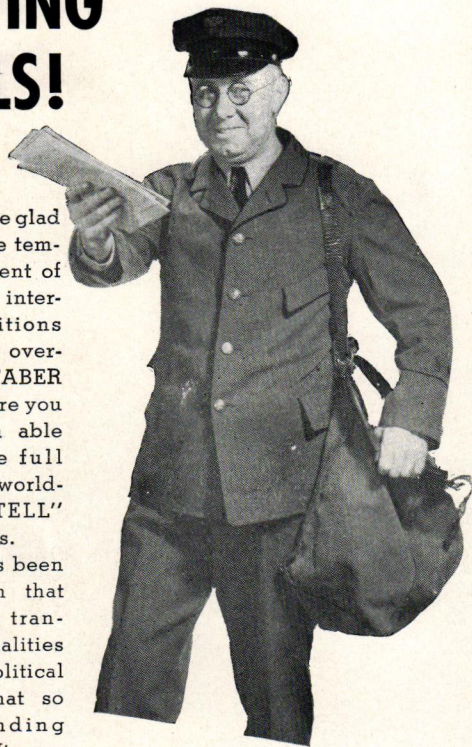
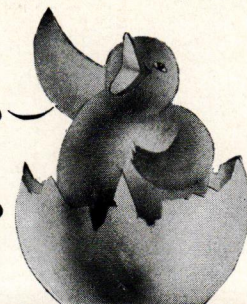
DRAWING PENCILS!

Craftsmen will be glad to know that the temporary curtailment of supply due to international conditions has now been overcome. A. W. FABER is happy to assure you that it is again able to furnish the full demand for the world-famous "CASTELL" Drawing Pencils.

We have always been of the opinion that a masterpiece transcends nationalities and current political differences. That so many outstanding American craftsmen are of the same opinion was evidenced by the rush to buy "CASTELL" when conflict began abroad. It proved to us that "CASTELL", backed by 178 years tradition, holds high rank with the builders and creators of all things that are good in expanding American life.

For the slight inconvenience and delay over which we had no control—our apologies! For your loyalty—our deepest gratitude.

*No Grit
No Scratch
No Smudge*



WORLD'S FINEST DRAWING PENCIL—NONE HIGHER PRICED IN AMERICA

**AW FABER-
CASTELL**

DRAWING PENCIL IN THE METAL BOX

15¢ each ★ \$1.50 per dozen

PUBLICATIONS ON MATERIALS AND EQUIPMENT

(Continued from page 36, Advertising Section)

SMART HOMES USE EDWARDS CHIMES.—Brochure printed in full colors shows a wide range of door signals equipped with musical chimes suitable for interiors of various periods. 16 pp. Edwards and Company, Inc., Norwalk, Conn.

BODIFORM—AVION THEATRE AND AUDITORIUM CHAIRS.—Illustrated folder in colors describing the Bodiform and Avion line of chairs for theatres and auditoriums. 4 pp. 8½ x 11. American Seating Co., Grand Rapids, Mich.

MODERN AIR CONDITIONING FOR THEATRES AROUND THE WORLD.—Profusely illustrated catalog showing a large number of theatres in which Worthington-Carbondale air conditioning systems have been installed. Included are blue print layouts of several typical theatre installations. 12 pp. 8½ x 11. Carbondale Division Worthington Pump and Machinery Corp., Harrison, N. J.

Published by the same firm, "Worthington-Carbondale Refrigeration Compressors." Bulletin C-1100-B5 presents detailed description of a line of vertical duplex double-acting enclosed compressors for large tonnage installations. 6 pp. 8½ x 11.

KEWANEE STEEL RIVETED UPDRAFT FIREBOX BOILERS.—A.I.A. File No. 30-c-1. Catalog No. 96 illustrates in color and describes with fully detailed tabulations and diagrams Kewanee 500 series high pressure firebox boilers. The smaller type K boiler specifications are condensed in one table illustrated with pair of cut-away views to show hand and stoker fired units respectively. 4 pp. 8½ x 11. Kewanee Boiler Corp., Kewanee, Ill.

Published by the same firm, "Kewanee Steel Welded Round R Boilers." A.I.A. File No. 30-c-1. Catalog No. C-92d describes and illustrates a type of steel welded coal-burning boiler especially suitable for heating and supplying hot water in small and moderate size homes or buildings. 4 pp. 8½ x 11.

NEW CARRIER HOME WEATHERMAKER.—Catalog illustrating and describing the principal features of the new Home Weathermaker, a gas burning winter air conditioning unit designed specifically for the smaller home. 8 pp. 8½ x 11. Carrier Corp., Syracuse, N. Y.

Published by the same firm, "New Improved Carrier Gas-Fired Unit Heaters." Folder announcing and describing a new line of self-contained gas-fired unit heaters for use in restaurants, stores, shops, offices, filling stations, etc. 4 pp. 8½ x 11.

ZURN CARRIER CATALOG.—A.I.A. File No. 29-c. Catalog No. 39, just issued, covers the Zurn line of carriers for supporting wall hung fixtures. It presents in detail the complete line of twenty-five different types of carriers cataloged into five main divisions for ready reference—carriers for water closets, urinals, lavatories, sinks, slabs, etc., and carriers (wall supported) for lavatories. Two pages are devoted to the illustrations, description and presentation of supplementary information on each type of Carrier. Also included is a working blue print of the carrier unit showing installation details, complete installation instructions, description of the unit, architectural specifications, and list prices. Looseleaf. 26 pp. 8½ x 11. J. A. Zurn Mfg. Co., Erie, Pa.

(Continued on page 40, Advertising Section)

THIS CEILING OF *Temlok De Luxe* ASSURES YEAR-ROUND COMFORT



This practical new interior finish
for walls and ceilings insulates,
quiets, and decorates

YEAR-ROUND COMFORT is assured in the locker room of the Old York Road Country Club, Jenkintown, Pa. The attractive ceiling of white Temlok De Luxe insulates against heat and cold, and also quiets noise. Planks 10" wide were used to create this pleasing effect. Architect: G. Harold Murphy, of Philadelphia, Pa.

NEXT time you plan an interior, whether for a residence, office, club house, store, or public building, consider the extra advantages of Temlok De Luxe. You'll increase the client's satisfaction... and solve three important problems with one efficient material!

Armstrong's Temlok De Luxe is an efficient *insulating* material for modern walls and ceilings. It reduces fuel bills, and adds to year-round room comfort. This smooth surfaced building board is also *decorative*. It comes in six attractive colors—ash, coral, cream, green,

walnut, and white—to blend with any interior scheme. Furthermore, Temlok De Luxe helps to make rooms more quiet.

The smooth, ironed-on surface also provides an exceptionally high light-reflection factor.

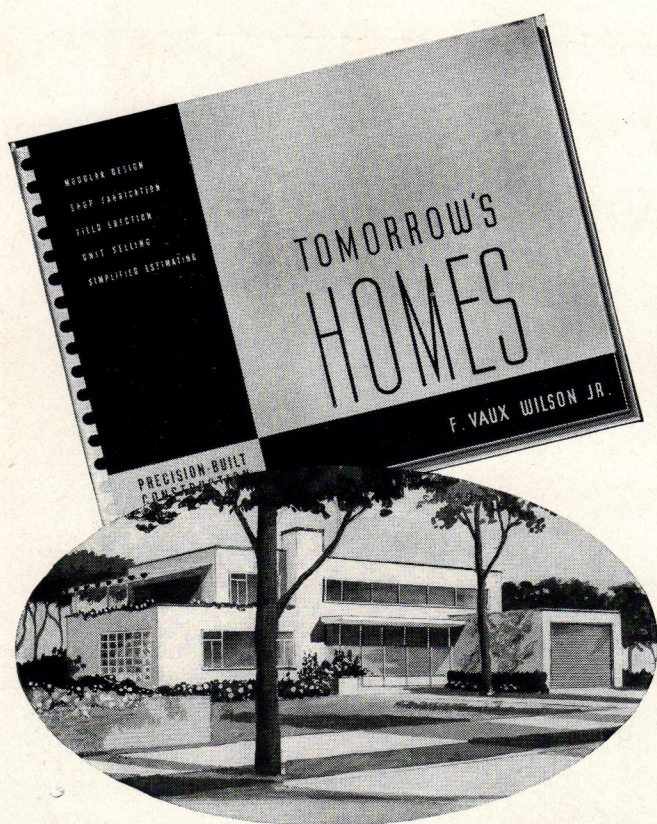
Armstrong's Temlok De Luxe is made in small and large panels, planks, and boards, which can be combined in effective patterns and

designs. It is easily and quickly installed over new or old ceilings and walls with special adhesives or the new Tem-Clips. Furthermore, this is a permanent material which will give years of satisfactory service.

Write today for samples and complete details. Armstrong Cork Company, Building Materials Division, 911 Concord Street, Lancaster, Pa.



Armstrong's TEMLOK INSULATION
DE LUXE INTERIOR FINISHES
TEMSEAL SHEATHING - LATH - MONOWALL



RICHARD M. BENNETT, *Architect*

Simplify your design problems...with the BEMIS MODULE

Today's revolutionary method of building homes—Precision-Built construction—is developed on the Bemis 4" module.

This module is the smallest, nominal, structural dimension that occurs in the wood frame house which today is the predominant type of construction.

Use of this module in the Precision-Built method, means standardization. Yet it also means flexibility for most of the sizes and dimensions in housing. It means simplification of architects' designs, the saving of many hours in both drafting and detailing.

With the Precision-Built method, any frame house—of any size or design—can be completely built and ready for occupancy in 30 days or less! It is a house using standard materials and quality construction

throughout. It is doubly insulated, has one-piece permanently crack-proof walls, and is eligible for F.H.A. Insured Mortgage Loan. More than \$3,000,000-worth of architect-designed Precision-Built Homes have already been erected.

We invite you to write for a copy of 'TOMORROW'S HOMES' (which is *privileged* to architects *without charge*). This book describes the principles of Modular Design and Precision-Built construction. It is profusely illustrated with photographs, working details, rafter tables, area, lineal foot and cubic yard tables. It shows you how to simplify design, cut costs, save time, build low-cost houses at a *profit*. We invite you to write for your copy, using your firm's letterhead. Only one copy to a firm.

HOMASOTE COMPANY
TRENTON . . . NEW JERSEY

PUBLICATIONS ON MATERIALS AND EQUIPMENT

(Continued from page 38, Advertising Section)

HAUSMAN STEEL FORMS FOR CONCRETE CONSTRUCTION. — Profusely illustrated brochure describing the advantages of the Hausman line of removable steel forms for concrete joists and round columns. Blue print details, tabular matter, etc. 28 pp. 8½ x 11. The Hausman Steel Co., Toledo, O.

MANUFACTURERS' DATA WANTED

LLOYD N. F. SPICER, *Architect*, Box 152, Hanover, Mass.

CARL J. RUDINE, *Architect*, 1518 Drexel Road, Lansing, Michigan.

SIDNEY J. LEE, *Architect*, 4611 Bryce, Fort Worth, Texas. (Data for A. I. A. file.)

KONRAD F. WITTMANN, *Architect*, 118-09 83rd Avenue, Kew Gardens, New York. (Data for complete A. I. A. file and for interior architecture and furniture.)

LEON DESSER, *Architect*, 385 Ocean Parkway, Brooklyn, N. Y. (Data on interior design, decorations, and equipment.)

PIER L. CHERICI, *Architect*, Suite 1602, 277 Broadway, New York, N. Y. (Data for A. I. A. file.)

STEWART A. MARSHALL, JR., *Architect*, Rome, Ga. (Data for complete A. I. A. file.)

C. L. GUIDROZ, *Draftsman and Estimator*, Lockport, La. (All manufacturers' building material available in U. S. and foreign.)

NORMAN G. COULSON, *Designer*, Peoples Bank Building, Hanover, Pa. (Samples of building materials and accessories, and data for bars and restaurants, also data for complete A. I. A. file.)

FRANK E. MILLER, *Designer*, 814 Strong Avenue, Elkhart, Indiana.

HAROLD G. FOWLER, *Resident Landscape Architect*, National Park Service, Sequoia National Park, Calif.

LE ROY R. OMAN, *General Contractor*, 721 N. St. Louis Street, Los Angeles, Calif. (Data for use in drafting room and construction department, also for complete A. I. A. file.)

JUSTIN M. ELLIOTT, *Draftsman*, Rome, Ga. (Data for complete A. I. A. file.)

SOL S. RICHMOND, *Draftsman*, 85 Fairmont Street, Malden, Mass. (Data on homes, with plans and their equipment, also for complete A. I. A. file.)

J. E. MENKE, *Draftsman*, 2997 McKoon Avenue, Niagara Falls, N. Y. (Data on building materials and equipment, also for A. I. A. file.)

NATHAN S. LEVENSON, *Draftsman*, 220 Dinwiddie Street, Pittsburgh, Pa. (Catalogs and detail sheets of all products.)

L. G. ANDERSON, *Draftsman*, Yorkshire House, 20 Queen Street, Melbourne, C. 1, Australia. (Data for complete A. I. A. file.)

O. LEONARD SPLINTER, *Draftsman and Model Maker*, Hampton, Nebraska. (Catalogs, samples and technical data for A. I. A. file.)

SALVATORE G. CAMMAROTA, *Student*, 711 Logan Street, Brooklyn, N. Y.

JOHN WYCISLIK, *Student*, 3991 East 71st Street, Cleveland, Ohio. (Data for complete A. I. A. file.)

H. G. KAGAN, *Student*, 1153 52nd Street, Brooklyn, N. Y. (Data for complete A. I. A. file.)

BEN WEBER, *Student*, 687 Capitol Heights, St. Paul, Minn. (Data for complete A. I. A. file.)

WILL THE ROOF BE BOTHERED BY

ICE?



**Not if it's made with
THE VITAL ELEMENT**

(TRINIDAD NATIVE LAKE ASPHALT)

NATURE'S OWN WEATHERPROOFER—Barber Genasco Roofings are made with Trinidad Native Lake Asphalt, *The Vital Element*, the superb asphalt "tempered" by generations of exposure in the famous asphalt lake on the southern Caribbean Island of Trinidad.

ORIGINAL "SEALBAC" FEATURE—There is an extra coating of asphalt, made with *The Vital Element*, on the *under side* of each Barber Genasco Shingle. It seals the asphalt saturant in the base of the shingle . . . tends to make Barber Genasco Shingles lay flat and stay flat.

BEAUTY AND FIRE-SAFETY—Barber Genasco Roofings come in many beautiful, non-fading colors. And the granules that produce them render the roofings "fire-safe."

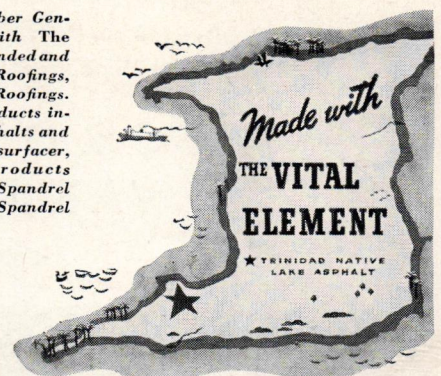
RIGHT OVER OLD ROOFS—In many instances it is possible to lay a new Barber Genasco Roof right over old roofing. An economy to remember in remodeling.

NO COMPROMISE WITH QUALITY—Barber has but one standard of quality — the best. And Barber sells at the fairest possible prices. This is Barber's guarantee to you, and to your clients. Free catalog and full details will be mailed on request. Address: Barber Asphalt Corporation, Barber, New Jersey.

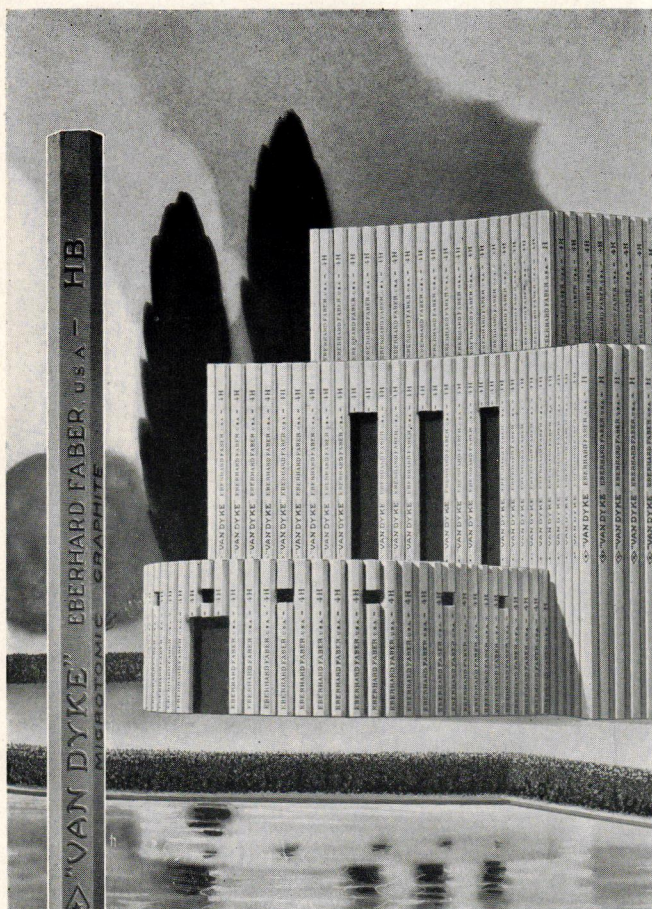
There's a charming rustic effect in the beautiful deep "shadow line" of the Barber Genasco Overlay Mas-Tab Strip Shingle, shown on the smart home above. It comes in three-tab strips, size 15" x 36" as illustrated. Also 12" x 36".

BARBER
Genasco
PRODUCTS

Nationally advertised Barber Genasco Products, made with The Vital Element, include: Bonded and other types of Built-up Roofings, Shingles, Sidings, Roll Roofings. Other Barber Asphalt Products include: Waterproofing Asphalts and Fabrics, Resaturator, Resurfacer, Asphalt Protective Products (Plastics and Liquids), Spandrel Beam Waterproofing (Spandrel Cloth and Cement).



From the Southern Caribbean Island of Trinidad'



This unique Model was constructed with MICROTOMIC VAN DYKE Drawing Pencils by A. G. Law, nationally known scale-model builder

127 Pencils Built this Model

Many an architect's commission from first sketch-to-finished-plans has been done with pencils, fewer in number. But with MICROTOMIC VAN DYKE Pencils, emphasis is not on quantity but on quality... Words are poor things with which to describe wherein the MICROTOMIC is different. It is, and enough so to command the preference of men who have "tried them all." If you haven't tried the MICROTOMIC, of late, suppose you renew acquaintance. You'll enjoy it—and so will EBERHARD FABER, *The Oldest Pencil Factory in America.*

**MICROTOMIC
VAN DYKE**



EBERHARD FABER

Fine Writing Materials Since 1849

18 DEGREES
7B to 9H



ALSO CHISEL
POINT LEADS
4B, 2B, HB
2H, 4H, 6H

FREE EMPLOYMENT SERVICE FOR READERS OF PENCIL POINTS

Replies to box numbers should be addressed care of PENCIL POINTS, 330 West 42nd Street, New York. 25 words or less in this Department FREE—over 25 words ten cents per word should accompany all notices. Copy must be in by 12th of month preceding date of issue.

OPPORTUNITY. Resigning member of long established Midwest firm designing large volume of Catholic institutional and ecclesiastical buildings, seeks qualified successor to purchase partnership. Part cash required, give full qualifications. Box No. 1119.

POSITIONS WANTED

YOUNG MAN, 25, desires position with architectural firm. Small home design. Four months training architectural drafting at Dunwoody Industrial Institute. Box No. 1100.

SPECIFICATION WRITER, construction superintendent, contract manager. 15 years' diversified building construction experience with chain stores, general contractors, etc. Highly recommended. Travel anywhere. Box No. 1101.

JUNIOR DRAFTSMAN. Hospitals, schools, churches, homes, etc. Carry working drawings to completion. Model maker. Worked on San Francisco's World's Fair. Typewrite. Age 29. Temporary or part time if educational facilities available. O. Leonard Splinter, Hampton, Nebraska.

YOUNG MAN, 28, studied architectural drafting and design in night school and college, handy with tools and also able to make alteration on small houses. Would like to work on construction or drafting work. Edward Jaeger, RD 3, Somerville, N. J.

SECRETARY-DESIGNER desires secretarial position architect's office. Display, personnel, secretarial experience. University and Art background. Age 24. Architectural devotee. Box No. 1102.

ARCHITECTURAL ENGINEER desires position with construction firm. 8 years' experience on heavy construction estimating, field work, etc. Excelling in concrete form design and layout. Box No. 1103.

ARCHITECTURAL DRAFTSMAN, age 30, desires position. Experienced on residential and industrial buildings. F.S. detailing, estimating, field supervision, etc. Box No. 1104.

ARCHITECTURAL DRAFTSMAN, 14 years' experience. Private dwellings, apartment houses, loft and business buildings. Familiar building code, multiple dwelling law, steel design. N. Y. C. and vicinity location preferred. Box No. 1105.

ARCHITECTURAL DRAFTING, color perspectives, project development, commercial interiors, ornamental detailing. Executive, corresponding experience; some typing. Thoroughly dependable. Small responsible office preferred. Box No. 1106.

TYPIST CLERK desires position with architect or builder. Experienced specification and department form typist. Eileen Gorman, 89-34 164th Street, Jamaica, L. I., Apt. 5G.

DRAFTSMAN-JOB CAPTAIN. 20 years' experience. Checker, schedule writer on schools, office buildings, banks, hospitals, stores, housing, etc. Columbia graduate. Registered in New Jersey. Box No. 1107.

ESTIMATOR—Experienced man desires position with architect. Box No. 1108.

(Continued on page 44, Advertising Section)

APPLAUSE
from every angle..

FITZGIBBONS DIRECTAIRE CONDITIONERS *have clicked*!

Everybody likes them. Architects find glowing response when they explain how the Directaire makes modern winter air conditioning practicable in any home. Owners enthuse over low fuel costs, air conditioned comfort, quiet operation. Heating contractors, burner and stoker dealers favor them for ease of installation and servicing. And now —

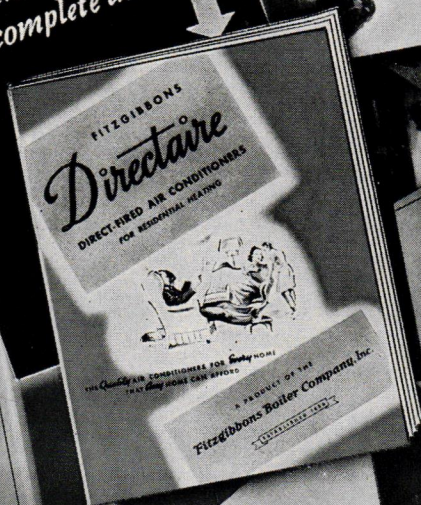
THE 1940 DIRECTAIRE hits a new high not only in air conditioning performance, but also in vastly broadening the field to include homes in the lower price bracket.

Keep informed of Air Conditioning developments
— write today for New Catalog PP, just off the press

Fitzgibbons Boiler Company, Inc.
101 PARK AVENUE, NEW YORK, N. Y.
Works: OSWEGO, N. Y.

Branches and Representatives in Principal Cities

WRITE-NOW
for this catalog
and complete data





The American Institute of Architects
The Octagon, 1741 New York Avenue
Washington, D. C.

THE STANDARD CONTRACT DOCUMENTS

These contract forms have stood the test of time. They have reduced to a minimum lawsuits and misunderstandings.

They make for good will between the Architect, the Owner, and the Contractor.

They eliminate worry. They reduce office overhead. They safeguard the position of the Architect. They expedite the business of building.

Is there any Architect who has not adopted these forms as his own?

TITLES AND PRICES

Agreement and General Conditions in Cover	\$0.50
General Conditions without Agreement	.35
Agreement without General Conditions	.15
Bond of Suretyship	.10
Form of Subcontract	.10
Letter of Acceptance of Subcontractor's Proposal	.10
Cover (heavy paper with valuable notes)	.02
Complete set in cover	.75
Review of the Standard Documents— by William Stanley Parker	1.00

Complete trial set in cover (75c) will be mailed from The Octagon the day the order is received or can be had from almost any dealer in Architect's supplies.

MISCELLANEOUS DOCUMENTS

Accounting Forms and Binders	
<i>Prices furnished on request</i>	
Agenda for Architects	\$0.40
Standard Filing System and Alphabetical Index (combined)	1.00
Standard Filing System for Architectural Plates and Articles	1.00

BOOKS

Handbook of Architectural Practice	\$5.00
(Under revision—announcement later.)	
Manual of Accounting for Architects	5.00
The Autobiography of an Idea— Louis H. Sullivan	3.00
(Reprint pending—announcement later.)	
A System of Architectural Ornament— Louis H. Sullivan	15.00
Charleston, S. C. (Vol. I—Octagon Library of Early American Architecture)	20.00
Bertram Grosvenor Goodhue—Architect and Master of Many Arts	30.00

Transportation prepaid on orders amounting to \$1.00 or more net. Orders, communications and remittances (checks, money-orders, cash or stamps) should be sent to The American Institute of Architects, The Octagon, 1741 N. Y. Ave., N. W., Washington, D. C.

FREE EMPLOYMENT SERVICE FOR READERS OF PENCIL POINTS

(Continued from page 42, Advertising Section)

SECRETARY—Young man, technical stenographer. mechanical, structural and chemical dictation. 10 years' experience. Christian. Good appearance. Box No. 1109.

ARCHITECT'S SUPERINTENDENT. Senior all around architectural man, 24 years' experience, seeks position in architect's office or in charge of construction project of any size. Go anywhere. Box No. 1110.

DRAFTSMAN, 36, now employed, 16 years' experience in high grade residential work, schools, churches, commercial alterations, details and supervision. Southwest or western location preferred, but not essential. Box No. 1111.

DRAFTSMAN, 28, white, single, hold degree in architecture from recognized college. Two years' experience with private architects, one year experience with Town Planning Board and approximately one year experience in architectural department of the Bureau of Yards and Docks, Navy Department. Will accept position anywhere opportunity directs. Box No. 1112.

ARCHITECTURAL DESIGNER, 27 years' practical experience, drafting superintendence, specification, architectural engineering. Pratt Institute graduate, age 45, married. Box No. 1113.

DESIGNER-DRAFTSMAN, 32, thoroughly experienced in all phases of work on commercial, school and college buildings. Recently holder of a Langley award. Excellent delineator. Samples of work available. Highest references. Box No. 1114.

ARCHITECT of highest qualifications, many years of independent work in Vienna and London, all-round experience, specialist in interior design, good draftsman, is offering services to first-class office, preferably New York area. Box No. 1115.

DESIGNER, photographer, 25, three years' training under nationally known industrial designer. Knowledge of mechanical perspective. Rendering, air brush and other mediums. Clay modeling. Box No. 1117.

ARCHITECTURAL DRAFTSMAN, many years' experience in planning and designing. Interior and exterior perspective. Rendering in all mediums. Box No. 1118.

COLUMBIA UNIVERSITY SCHOOL OF ARCHITECTURE SPRING SESSION EVENING COURSES

Architectural and Industrial Design, Construction, Estimating, Structural Design, Specifications, Statics, Air Conditioning, Housing, Illumination, Interior Materials, also day and evening Drawing, Painting, Sculpture; day Landscape Architecture.

Write for catalogue to

Director of University Extension, 561 W. 116th Street, New York, N. Y.
 Spring Session classes begin February 7, 1940

ARCHITECTURAL ENGINEERING A Practical Course (HOME STUDY) by Mail Only

Prepares Architects and Draftsmen
for structural portion of

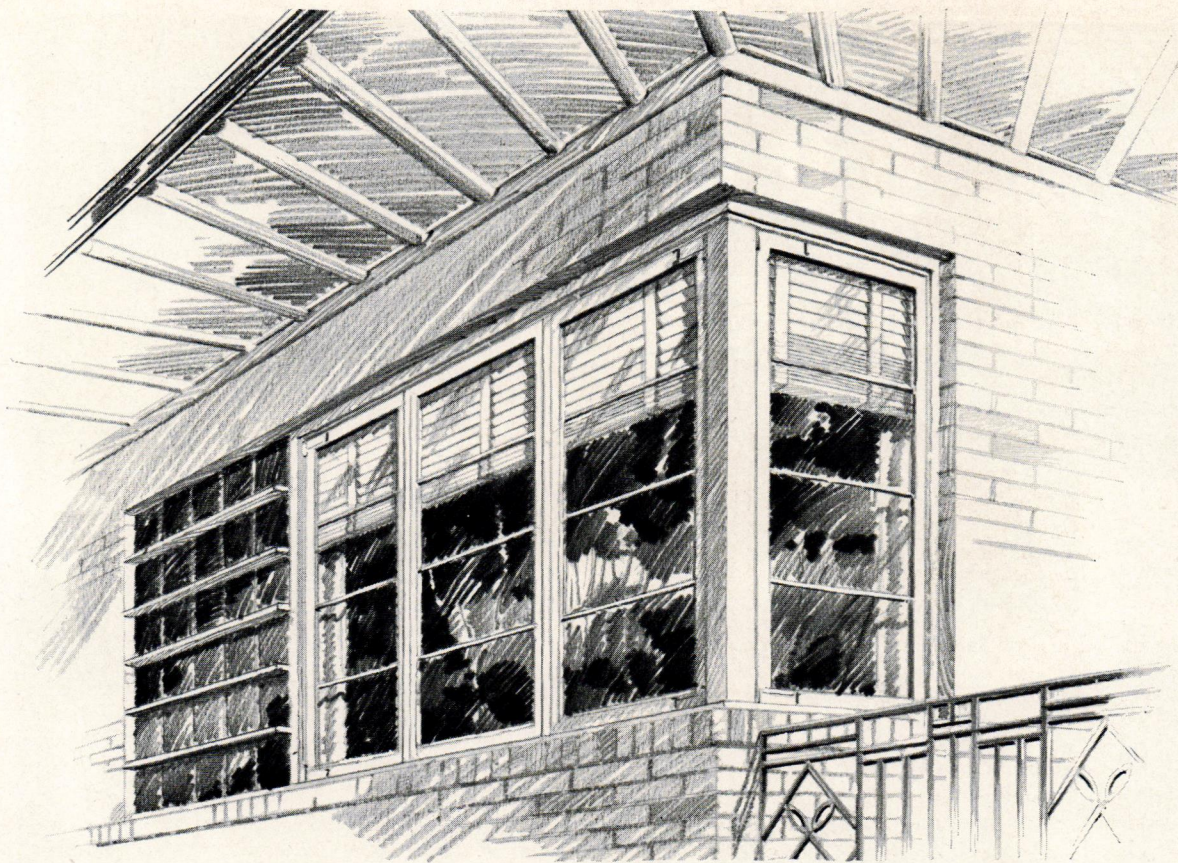
STATE BOARD EXAMINATIONS

For many this is the most difficult section of the examinations. Qualifies for designing structures in wood, concrete or steel. Successfully conducted for the past six years. Our complete Structural Engineering course well known for twenty-seven years.

Literature without obligation—write TODAY

WILSON ENGINEERING CORPORATION

College House Offices Harvard Square
 CAMBRIDGE, MASSACHUSETTS, U. S. A.



Pella Casements, the only complete window with a wood lined steel frame

Frames of Pella Casement Windows are made of heavy sixteen gauge rust-proof, galvanized (zinc impregnated) steel. These frames are full jamb width— $5\frac{1}{8}$ " wide and they are made to fit all types of wall construction. Clear, genuine white pine (other woods if desired) is used for lining Pella Casement frames.

Other Pella Casement Features

ROLSCREENED—famous Pella Rolscreens preserve the architectural beauty of clear, sparkling windows. Always in place—no putting up—no taking down. Guaranteed for 10 years.

DUAL GLASS—removable, single panel Libbey-Owens DSA glass protection against winter cold and summer heat. Practically invisible.

SPRING BRONZE WEATHERSTRIPPING—compression type—paint can't clog. Tension easily adjusted. Exclusive Pella design.

SASH—genuine white pine $1\frac{1}{4}$ " thick. Hung on non-extension, self-cleaning hinges. Underscreen, worm gear operator built in.

Saves Drafting Time

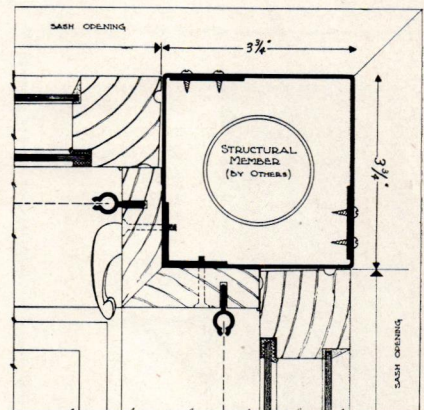
Pella Casement details can be drawn into your own plans, thus eliminating further drafting on window construction. Authentic designs are available to blend in with and emphasize the character of any style of architecture.

Saves on Wall Cost

Overall Casement dimensions are 20% over-size which saves materially on wall cost. Glass size 9" x 12"—admits $12\frac{1}{2}\%$ more light. Pella casement construction meets rigid requirements of modern heating, ventilating and air conditioning.

Cut Installation Costs

Pella Casements are 100% factory fitted and completely assembled. After uncrating, they are simply set into rough wall openings, caulked and locked in place by means of inside inter-locking fins. Weather-tight installations completed in about 20 minutes.



SMALL CORNER MULLION

Construction of the Corner Mullion is especially designed to give a slender effect—yet provide ample space for concealing structural members. This Small Corner Mullion is available for joining all sizes of PELLA Casement Units at a 90 degree angle. Easy to install.

WRITE TODAY FOR FREE BOOK

This interesting book shows progressive installation photos and complete data. It is file size. Get your FREE copy by writing at once to: ROLSCREEN COMPANY, Dept. P119, Pella, Iowa.



Pella CASEMENTS

VENETIAN BLINDS ★ ROLSCREENS

Where **QUIET** and **FIRE-SAFETY** are Imperative

Municipal Hospital,
Virginia, Minnesota.
Architect: E. H. Berg,
Eveleth, Minnesota



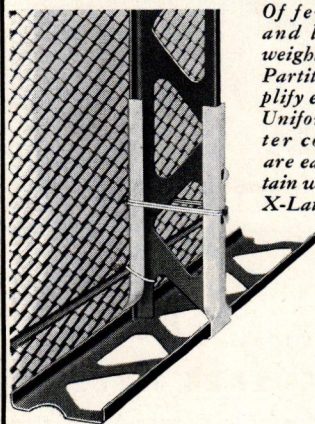
Architects Specify



BAR-Z-SYSTEM OF HOLLOW PLASTERED PARTITIONS

IN HOSPITALS where freedom from noise is a vital essential, the Bar-Z-System—the original system of hollow plastered partitions—offers adequate sound deadening qualities at a saving in floor loads.* Consisting of Bar-Z-Studs and Bar-X-Lath—the diamond mesh lath with twin welded reinforcing bars—the Steelcrete Bar-Z-System has no elements in it to burn. Tests by the Bureau of Standards, Washington, D. C. prove that Bar-Z-Partitions, plastered with $\frac{3}{4}$ " gypsum plaster provide one hour fire rating. This safer, more rigid construction also assures lasting protection for the beauty of plastering which it reinforces. Write the nearest office for full details.

"IT'S WHEELING STEEL"



Of few parts
and light in
weight, Bar-Z-
Partitions sim-
plify erection.
Uniform plas-
ter coatings
are easy to ob-
tain with Bar-
X-Lath.

*"A Bar-Z-Partition, weighing 16 lbs. per square foot, has the same sound insulating value as a clay or Gypsum wall weighing 22 lbs. to the square foot."

(Signed) Dr. Paul E. Sabine,
River Bank Laboratories.

The
CONSOLIDATED Expanded Metal
COMPANIES

WHEELING, WEST VIRGINIA

Branch Offices and Warehouses:

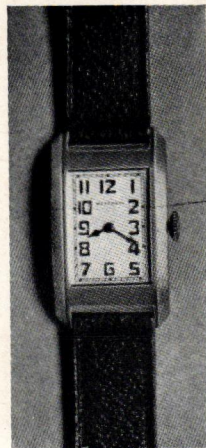
New York • Chicago • Cleveland • Pittsburgh
Philadelphia • Detroit • Boston • Buffalo • Houston • Atlanta

Export Office: 330 West 42nd St., New York, N. Y.

PENCIL POINTS DATA SHEETS

Prepared by DON GRAF, B.S., M.Arch.

DISREGARD OF THE OBVIOUS



The world is full of square things that ought to be round and round things that ought to be square. In determining the *shape of things to come*, there will have to be the same nice balance between strength, utility and beauty that Vitruvius suggested as the basis for good architecture.

Square watches, for instance, are in the class of things that Doc Holman used to describe as a Curse Before the Lord. The circular movement of watch hands should find expression in the case. Watch designers shun circular form like poison ivy and a round strap-watch is one of the most difficult things in the world to buy.

Then there are doughnuts. Some years ago a smart gent in Boston invented and patented the square doughnut and has made a nice thing out of it for himself. The idea of the

DOUGLAS FIR PLYWOOD

Index No.
A5n
MATERIALS

PENCIL POINTS DATA SHEETS PREPARED BY DON GRAF

Name and Function	Widths	Lengths	Thickness	FHA Acceptance
"PLYANEL" Casework & Paneling	From 1'-0" increasing by 2-in. units to 2'-6"; also 3'-0", 3'-6", and 4'-0"	4'-0", 5'-0", 6'-0", 7'-0", and 8'-0"	$\frac{3}{8}$ " (3-ply sanded 2 sides) increasing by $\frac{1}{8}$ " thicknesses to 1 $\frac{1}{8}$ " (7-ply)	Interior finish, both sides exposed
"EXTERIOR" Siding & Outside			$\frac{1}{2}$ " $\frac{3}{4}$ " $\frac{7}{8}$ " $\frac{1}{2}$ " $\frac{3}{4}$ " $\frac{7}{8}$ " $\frac{1}{2}$ " $\frac{3}{4}$ "	$\frac{3}{8}$ " or thicker for exterior, edges primed
"PLYFORM" Forms & Subfloors			$\frac{1}{2}$ " $\frac{3}{4}$ " $\frac{7}{8}$ " $\frac{1}{2}$ " $\frac{3}{4}$ " $\frac{7}{8}$ " $\frac{1}{2}$ " $\frac{3}{4}$ "	Interior finish, one side exposed
"PLYWALL" Walls & Ceilings	4'-0"	5'-0", 6'-0", 7'-0", and 8'-0"	$\frac{1}{2}$ " $\frac{3}{4}$ " $\frac{7}{8}$ " $\frac{1}{2}$ " $\frac{3}{4}$ " $\frac{7}{8}$ " $\frac{1}{2}$ " $\frac{3}{4}$ "	Interior finish, one side exposed
"PLYSCORD" Sheathing & Subfloors	2'-8", 4'-0"	8'-0"	$\frac{1}{2}$ " and $\frac{3}{4}$ " 3-ply un- sanded, and $\frac{1}{2}$ " 3-ply or 5-ply unsanded.	3-ply $\frac{3}{8}$ " for wall and roof sheathing; 5-ply $\frac{3}{8}$ " for sub- flooring.

document "Commercial Standards CS45-38." These rules require that Douglas Fir plywood bear the grade and trade mark of the Association. These marks are the user's assurance that an Association inspector has found the product to meet the established requirements.

Larger or odd size panels may be secured on special order. Nineteen companies manufacturing plywood from *Pseudotsuga taxifolia* comprise the membership of the Douglas Fir Plywood Association. The products of the member companies are available in five forms, as shown in the table above. Grading rules of the Association have been recognized and promulgated by the U. S. Department of Commerce in the

COLORS OF DECORATIVE PLYWOODS

Index No.
A5p
MATERIALS

PENCIL POINTS DATA SHEETS PREPARED BY DON GRAF

BROWN—Colors vary from light yellowish-brown to almost black.

Madrone Burl	Red Gum	Teak
Maidhu Burl	Quartered Red Gum	Redwood Burl
Locust	Carpinian Elm Burl	Amargosa
Circassian Walnut	Koko	Carretta
French Walnut	Brown Ash	Acacia
Claro Walnut	Tamo	Myrtle Burl
American Black	Bellinga	Indian Laurel
Walnut	Marnut	Pollard Oak
Turkish Walnut	Gonzalo Alves	Spicewood
Black Sea Walnut	Cocobola	Acle
English Walnut	Bosse	Chaplash
Olivewood	Thuya Burl	Collmar
Iroko	Orientalwood	Dao
Crotch Walnut	English Brown Oak	Ipil
Burl Walnut	Butternut	Peartree
Butt Walnut	Levoa	Yuba

RED—Colors vary from a pale pinkish-red to almost vermilion.

Macacahula	Citron	Curly Birch
Bloodwood	Rosadura	Redwood Crotch
Australian Maple	Western Laurel	Brazilian Rosewood
African Padouk	Tiama	Bubinga
Blackwood	Red Oak	Macca
East Indian Rosewood	Honduras Mahogany	Lauan
Apple	Cuban Mahogany	French Satine
Canaletta	Mexican Mahogany	Rosewood Crotch
Bataan	African Mahogany	Faux Rose
Spanish Cedar	Maple Burl	Congo Rosewood
Aromatic Red Cedar	African Cherry	Sabicu
Birch	Black Cherry	Fiddleback Mahogany
Curarie	Lacewood	Letterwood

YELLOW—Most of the woods listed under this color are on the dividing line between white, yellow and grey.

East Indian Satinwood	Ayous	Canary
Amarillo	Eucalyptus	Prima Vera
Aspen	German Oak	Palo Blanco
Aspen Crotch	Russian Oak	Elm
Maple Burl	French Oak	Avodire
Blistered Maple	American White Oak	English Ash
Curly Maple	Sycamore	Poplar
Birdseye Maple	Koa	Yellow Pine
Plain Maple	Tasmanian Oak	Italian Olive
Birch	Yellow Padouk	Douglas Fir
Harewood, Natural	San Domingo Satinwood	

WHITE—The woods in this group are as nearly white as it is possible to get.

White Birch	Basswood	Camphorwood, has fine
Boxwood	Tupelo	pink stripe
Holly	Lemonwood	White Pine

STRIPED—Woods carrying a prominent stripe of different color.

Zebra wood.	Tulipwood.
Cream and Brown	Cream and Pink
(Brown Stripe)	(Pink Stripe)

BLACK—Following are nearly clear black.

Macassar Ebony, has	Ebonized Maple,	Baboon Ebony,
light brown striped	Jet Black	Jet Black
in black		

PURPLE	GREEN	GREY
Purpleheart	Greenheart	English Harewood
East Indian Rosewood		Empirewood
		English Ash Burl

Courtesy American Plywood Corporation

square doughnut is that it will pack in lunch boxes with less wasted space than a round one. The resulting reduction in the carton size becomes a considerable item of saving to companies packing large quantities of box lunches for industrial plants.

People who make beer cans yap in their advertising about how easy they are to stack in the ice-box. If they really wanted to do something functional, they could make the cans square. Unless our geometry is cockeyed, a square can would have to be only .8862 times the diameter of a round can of equal content. A loss of over 11% in the length and breadth of shelf space, carton sizes, warehouse areas, not to mention the home ice-box, represents an economic waste.

A comparatively recent invention is the square

milk bottle made out of heavy paraffin paper. The inventor should be awarded a free trip to the New York World's Fair and a medal suitably inscribed for his daring.

It is our impression that city planners and landscape architects have found the traffic circle to be inefficient and dangerous. The only successful scheme for navigating one of these vehicular monstrosities is to keep on the outside lane. There have been cases in Westchester County where some timid and hapless motorist has entered the traffic circle on the inside lane and has tried for hours to break his way out again through the concentric merry-go-rounds of automobiles blocking his path to any exit road. The perils of left-turning at a rectangular intersection are mild by comparison.

R. C. SLAB

$f_c = 800, f_s = 18,000$

Index No.
B4n
STRUCTURAL

PENCIL POINTS DATA SHEETS PREPARED BY DON GRAF

TOTAL THICKNESS OF SLAB BELOW CENTER OF STEEL	RODS AND SPACING	MAXIMUM M IN INCH POUNDS	MAXIMUM V IN POUNDS	SAFE UNIFORMLY DISTRIBUTED SUPERIMPOSED LOAD IN POUNDS PER SQ. FT., SIMPLY SUPPORTED.							
				SPAN IN FEET							
				4	5	6	7	8	9	10	11
3"	3/4"	3/8"φ-5 1/2" o/c	8 425	936	3/3	187	118	77	50	31	
3 1/2"	3/4"	3/8"φ-4 1/2" o/c	12 600	1 143	481	292	189	127	87	59	40
4"	3/4"	1/2"φ-6" o/c	17 550	1 350	681	418	275	189	133	94	67
4 1/2"	1"	1/2"φ-5 1/2" o/c	20 350	1 455		486	319	220	155	111	79
5"	1"	1/2"φ-5 1/2" o/c	26 600	1 663		647	430	299	215	156	115
5 1/2"	1"	1/2"φ-4 1/2" o/c	33 600	1 870			553	368	281	207	155
6"	1 1/4"	1/2"φ-4 1/2" o/c	37 500	1 975			619	435	315	233	175
6 1/2"	1 1/4"	5/8"φ-6" o/c	45 800	2 180			541	396	295	223	170
7"	1 1/4"	5/8"φ-6" o/c	55 000	2 390				485	365	279	215
7 1/2"	1 1/4"	5/8"φ-5 1/2" o/c	65 000	2 600				583	441	339	264
8"	1 1/4"	5/8"φ-5" o/c	75 800	2 810					523	405	317

This table is based on $n=15, f_c=800, f_s=18,000, M=\frac{12wL^2}{8}, V=40$

Some states allow a higher concrete stress than that used in the preparation of the Data Sheet B4a. Therefore, this Data Sheet, prepared by Milton C. Herrmann, Architect, will be found useful.

The columns giving safe uniform loads are intended for use for single slabs such as occur under porch floors, residence garage roof slabs, etc.

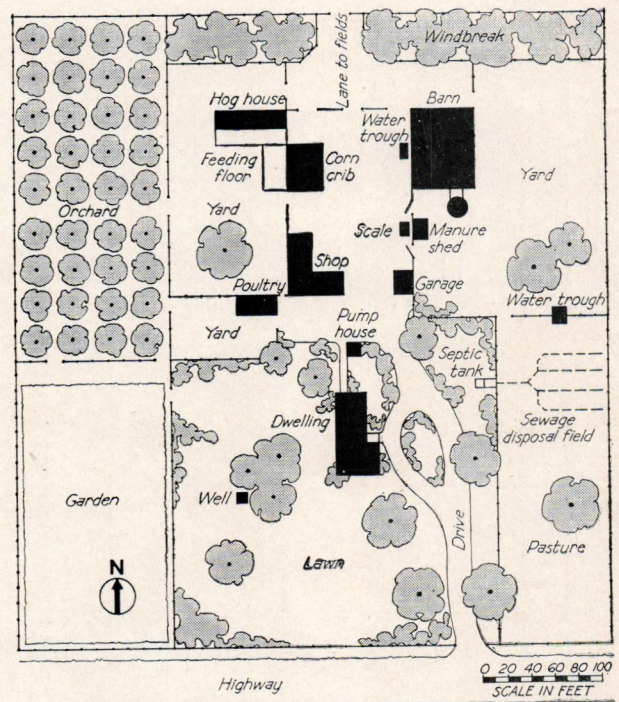
For other than simple spans, or for other than uniform loads, the moment should be calculated and the slab selected from the column giving the maximum moment values. Shear is not important in solid slabs, except for very heavy loads on short spans. Deflection calculations are unnecessary in all usual cases.

Use temperature rods 1/4" rounds—24" o/c at right angles to reinforcement.

PLANNING THE FARMSTEAD

Index No.
D21a
PLANNING

PENCIL POINTS DATA SHEETS PREPARED BY DON GRAF



THE FARMSTEAD. Planning comprises the creation of a practical business establishment in combination with a home. The arrangement of buildings, yards, lots, etc., with relation to each other, to the fields and the highway, should produce such a result that there will be no lost motion in executing the routine work of the farm. The home must be attractive and inspiring to its occupants if the best is to be had from farm life. Pleasing architectural effects, tempered with economy in materials and construction, should be sought.

FARMSTEAD LOCATION. Ease of access to the fields is highly desirable. Proximity to the highway permits the farm family to observe at close range or to hail those passing on the road, thus promoting social intercourse and participation in community affairs—a source of considerable interest to the average farm family. The direction in which lie the town, railroad, school and church will have a bearing on the farmstead location, especially on a large farm. Slope of land for good drainage, availability of public utilities, existence of a spring or well, direction of prevailing winds, should all be considered. See Farmer's Bulletin 1132, U. S. Dept. of Agriculture, entitled "Planning the Farmstead."

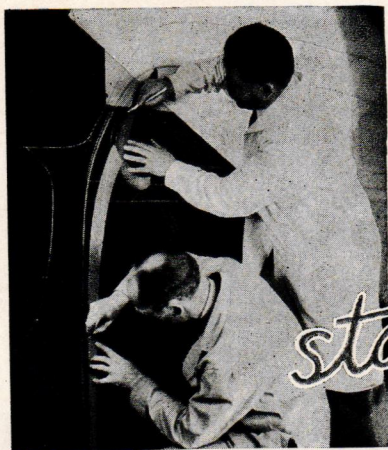
PENCIL POINTS DATA SHEETS

Prepared by DON GRAF, B.S., M.Arch.

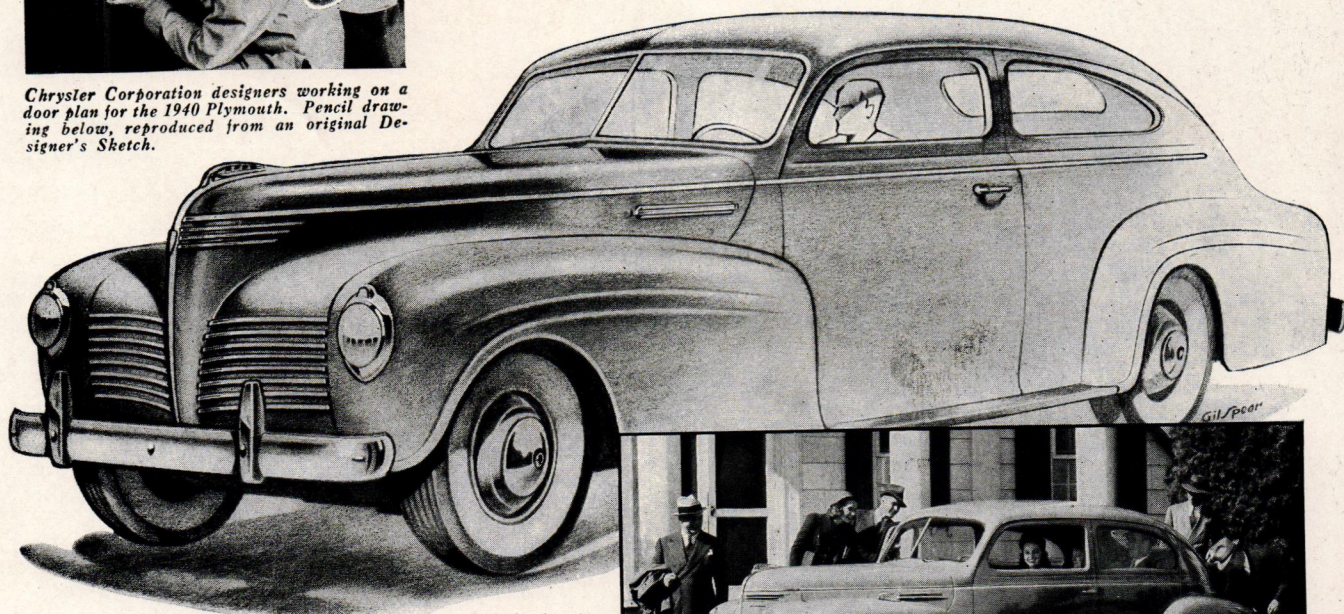
1940 PLYMOUTH

LUXURY RIDE

started with a pencil



Chrysler Corporation designers working on a door plan for the 1940 Plymouth. Pencil drawing below, reproduced from an original Designer's Sketch.



COMPARE the 1930 cars with today's sleek models. . . . Think how many millions of pencils have contributed to the tireless search for better design!

Wherever you find the quest for perfect design going most swiftly and efficiently, you also find Venus Drawing Pencils the choice.

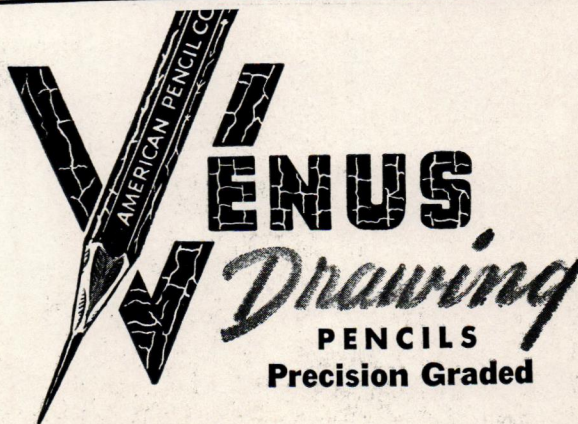
Draftsmen state their opinion in two words, "Precision grading!" They can depend on any Venus Drawing pencil to be precisely the same shade as any other Venus Drawing pencil of identical degree.

They also can depend on Venus Drawing for extra smoothness and strength—due to colloidal lead, an exclusive process developed by Venus technicians.

You too can enjoy these advantages. . . . Give Venus Drawing a try!



Beauty and utility were never brought into greater harmony! Here in this new 1940 Plymouth you not only have magnificent outward design, but spacious comfort and greater vision within. Here you have such engineering improvements as the new steering post gear shift and the new "sealed beam headlamps," giving 50%-65% more road light. For peak achievements in design look to America's motor-makers!

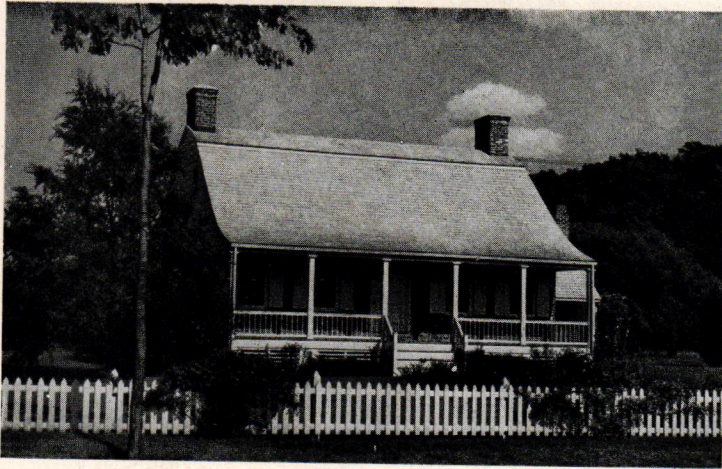


AMERICAN PENCIL CO. Hoboken, N. J.

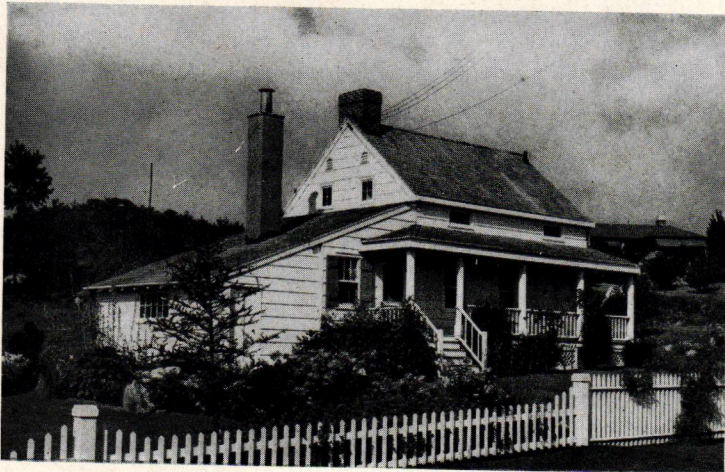
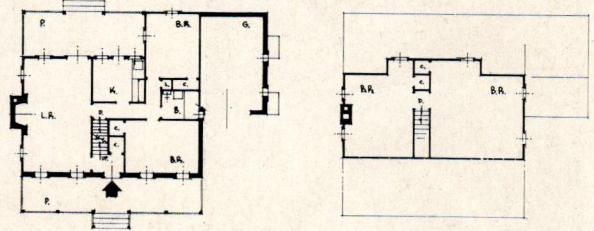
Colloidal Process U. S. Pat. No. 1,738,888

ALSO MADE

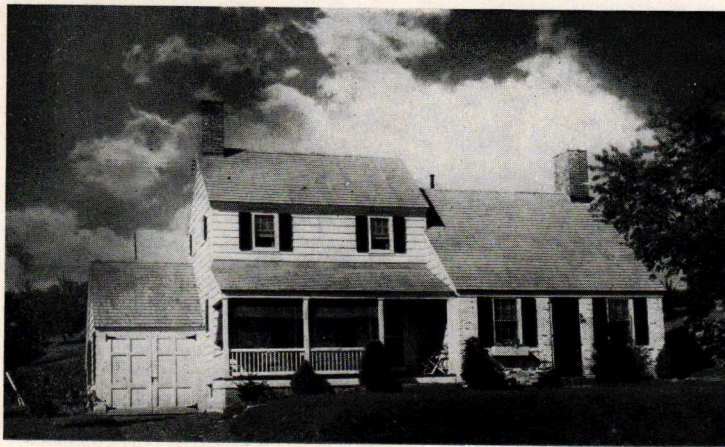
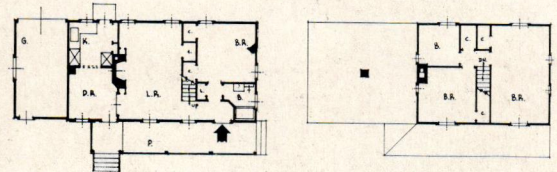
In Canada—by the Venus Pencil Company, Ltd., Toronto
In England—by the Venus Pencil Co. Limited, London



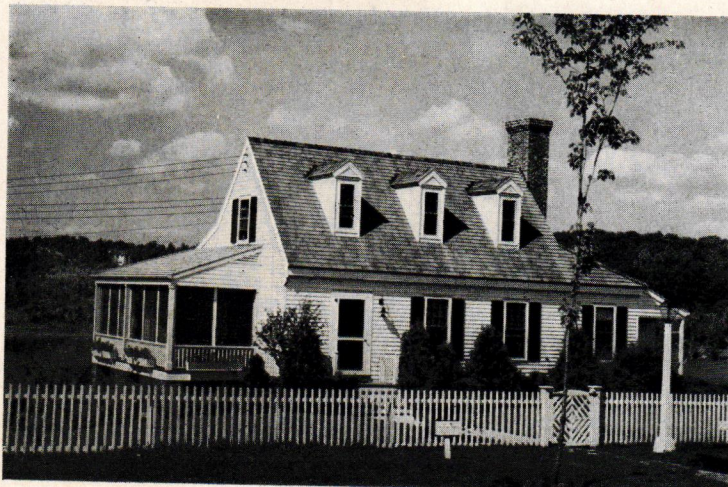
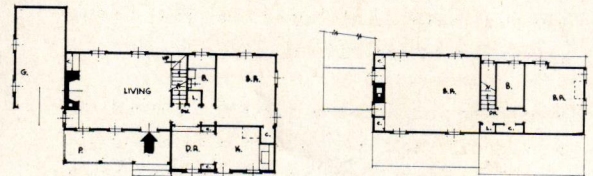
A reproduction of the Dyckman house (c. 1783) on Upper Broadway, New York City, by Robert T. Crane, Architect. To simulate the original, a false chimney was constructed on garage wing



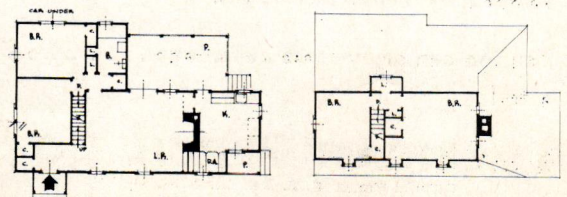
The home of Edgar Allan Poe (c. 1850) at Fordham Park, New York City, recreated by Edwin R. Closs, Architect. The original façade has been reproduced, by converting the wing into a garage

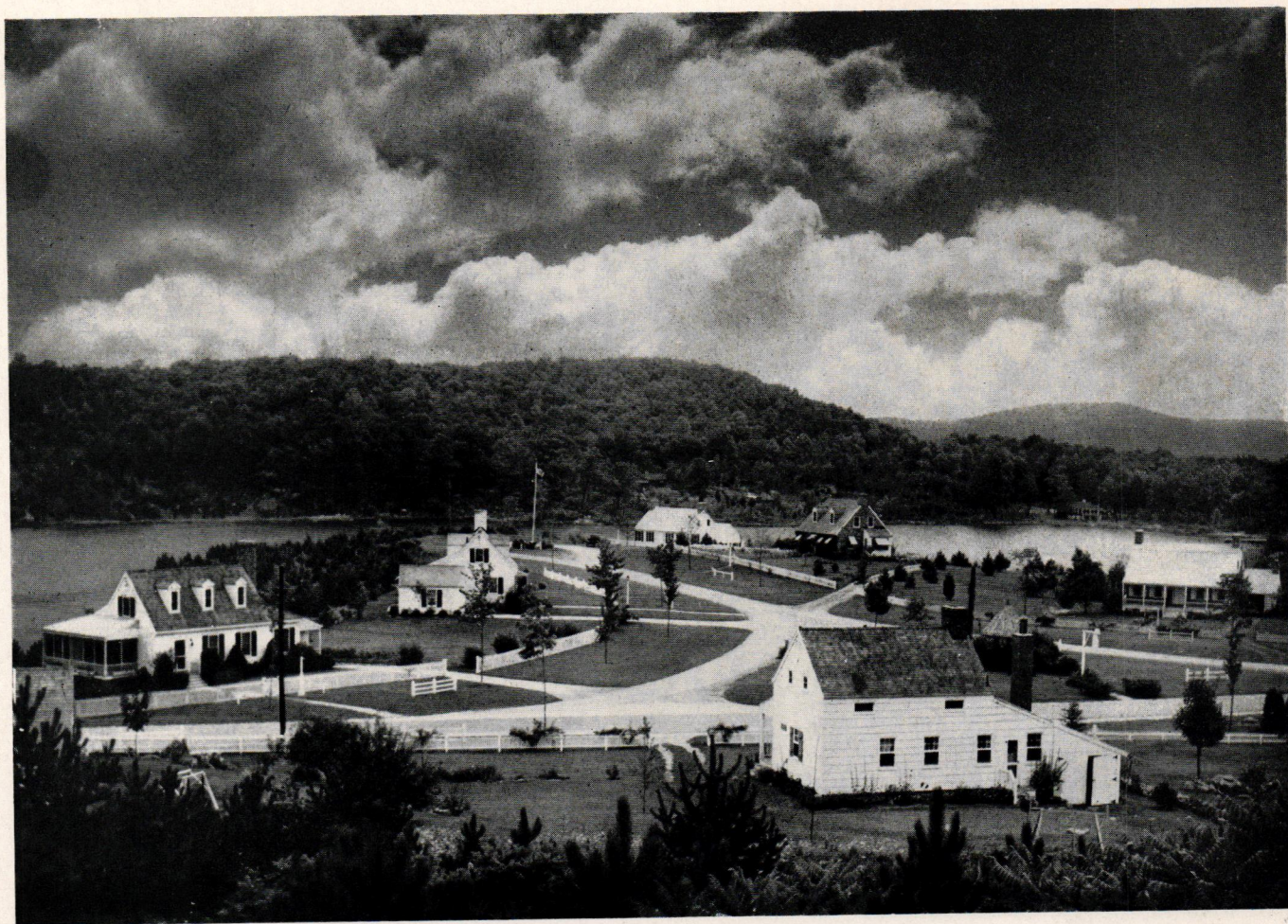


The Mary Ball Washington home (c. 1750) at Fredericksburg, Virginia, inspired this design, by Robert T. Crane, Architect. Minor exterior changes leave the character of the original unaltered



An attractive design taken from the James Galt house (c. 1770) restored by the Rockefeller Foundation at Williamsburg, Virginia. Details were faithfully retained. The porch was added by owner





ARCHITECT'S PRIDE

In creating a Colonial Village on the shore of Upper Lake Mohawk, New Jersey, Architect Robert T. Crane has deftly introduced the charm of pre-Revolutionary homes in a modern planned community. Seven Early American landmarks were the models for the houses of this hamlet, informally grouped around a pleasant Village Green.

The inspiration for the Village was found by Crane in Old Williamsburg, Virginia, when he visited the restored town several years ago. He sketched the James Galt and Catherine Rebecca houses there, and the following winter obtained drawings of the Barbara Fritchie and Mary Ball Washington homes, from the South.

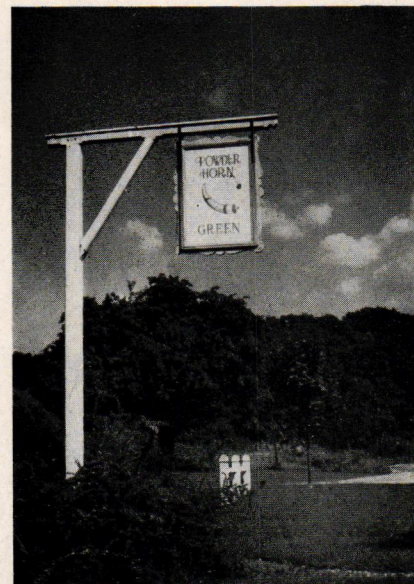
Selecting a delightful site adjacent to the 2,300-acre resort community of Lake Mohawk, in the hills of Sussex County, N. J., the architect then visited the old houses, photographed, sketched, and detailed them with the intention of recreating them. This has been done faithfully, the only modifications in plans and details being introduction of modern conven-

iences which make them attractive modern dwellings rather than mere museum reproductions. Even land contours similar to the original sites were found for these moderate-priced houses. And fireplaces, trim, accessories, and character of the originals have been carefully reproduced. A small sign before each house gives the name and location of the original, and the D.A.R. has unveiled a bronze tablet dedicating the Colonial Village.

The newest of the homes is a reconstruction of the farm cottage in which Martin Van Buren was born. The original Kinderhook dwelling had been demolished, but Crane studied available records and visited other ancient houses in the same neighborhood.

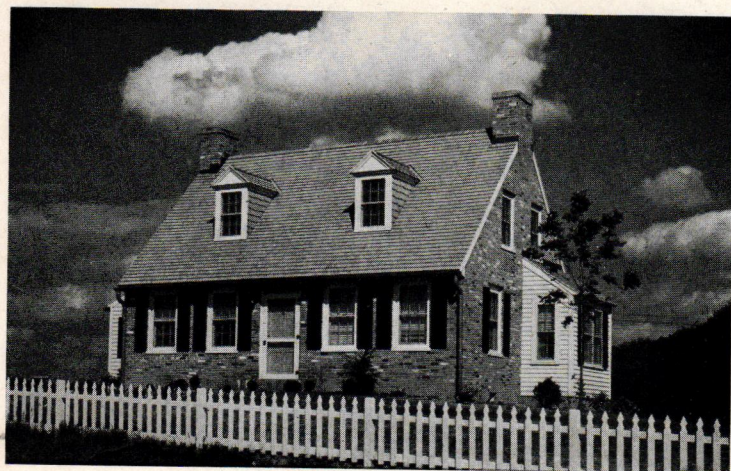
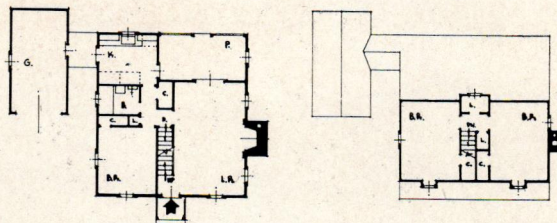
New York City's historic homes also provided inspiration for two of the Colonial Village houses: the reproduction of the famed Dyckman farmhouse by Crane, and an adaptation of the romantic Poe Cottage, by Edwin R. Closs, Architect, associated with Crane as designer for the Arthur D. Crane Company, developers of the Lake Mohawk properties.

General view of Colonial Village in its beautiful setting at Upper Lake Mohawk, Sussex County, New Jersey. The seven houses, with appropriate fences, lamp-posts, etc., are around a triangular park. The quaint sign on the Village Green, below, is typical of the accessories. All photographs made by C. E. Engelbrecht

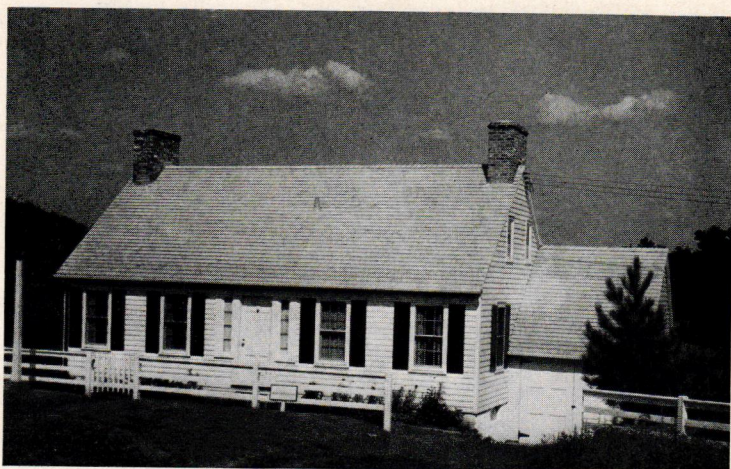
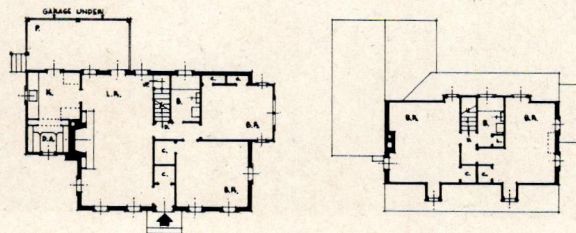




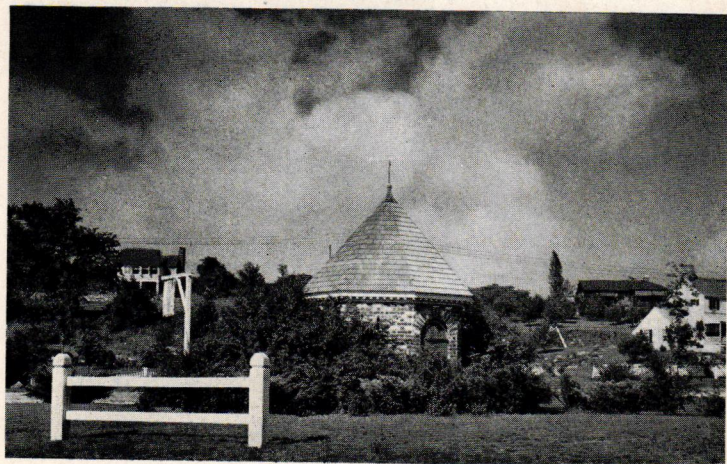
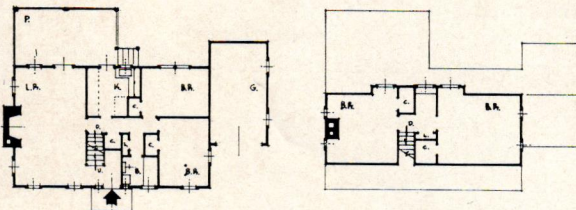
The Catherine Rebecca cottage (c. 1780), restored in Williamsburg, is reproduced here. The wing was originally a kitchen, but was enlarged, for a garage, and connected to the house by a small open porch



This pleasant copy of Barbara Fritchie's home (c. 1790) at Frederick, Maryland, recalls Civil War days. Some changes were made in the plan, including the addition of a small lean-to at the left

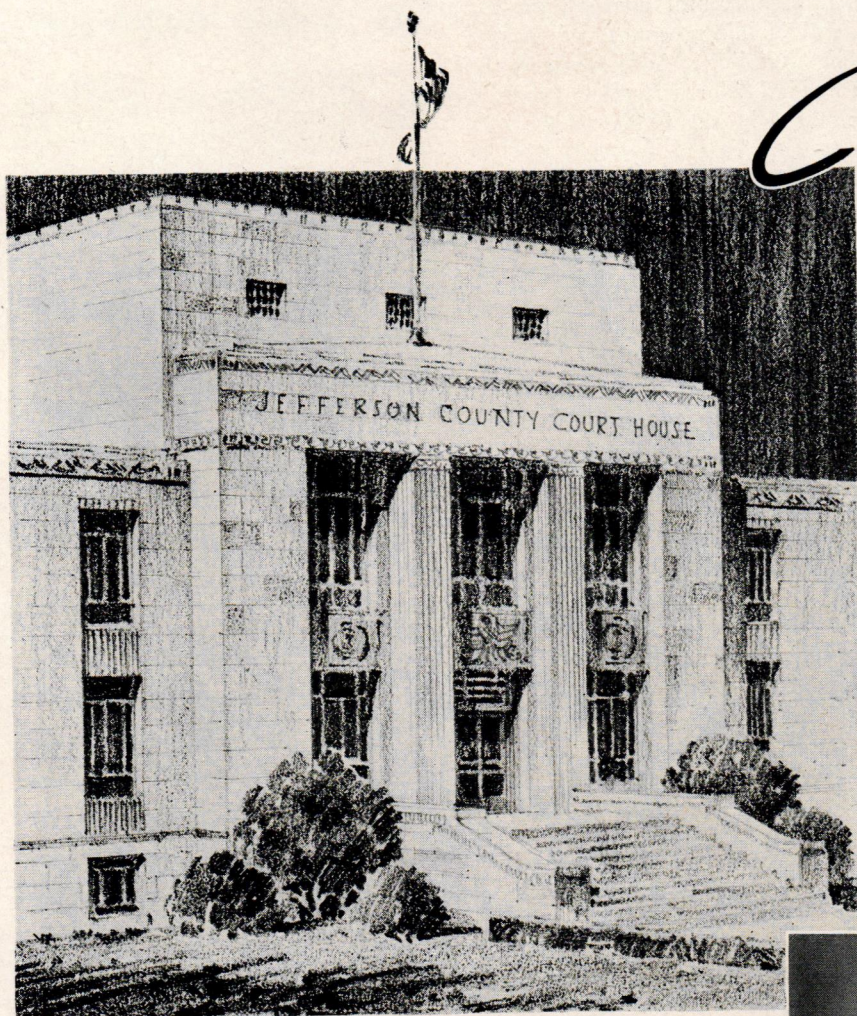


After a study of typical buildings in the Kinderhook Region, New York, supplemented by existing sketches and records, this copy of the birthplace of Martin Van Buren (c. 1775) was constructed



Adding to the historical flavor of the architecture of Colonial Village is the red brick Powder Horn illustrated here. It is modeled after the old powder magazine restored at Williamsburg, Virginia

THE NEW JEFFERSON COUNTY COURT HOUSE



*Jefferson County Court House to be erected in Mount Vernon, Ill.
Wm. R. McCoy and D. C. Wilson, Mount Vernon, Architects.*

As in hundreds of other monumental buildings the Architects in cooperation with county authorities, chose lasting materials to assure a court house that would remain a permanent monument to Jefferson County, Illinois for the years to come. Just as the stone protects the outside of the building, Genuine Wrought Iron sills protect that part of the window which is responsible for over 90% of window deterioration.

GW

**INDUSTRIAL WINDOWS
MONUMENTAL WINDOWS
DETENTION WINDOWS**

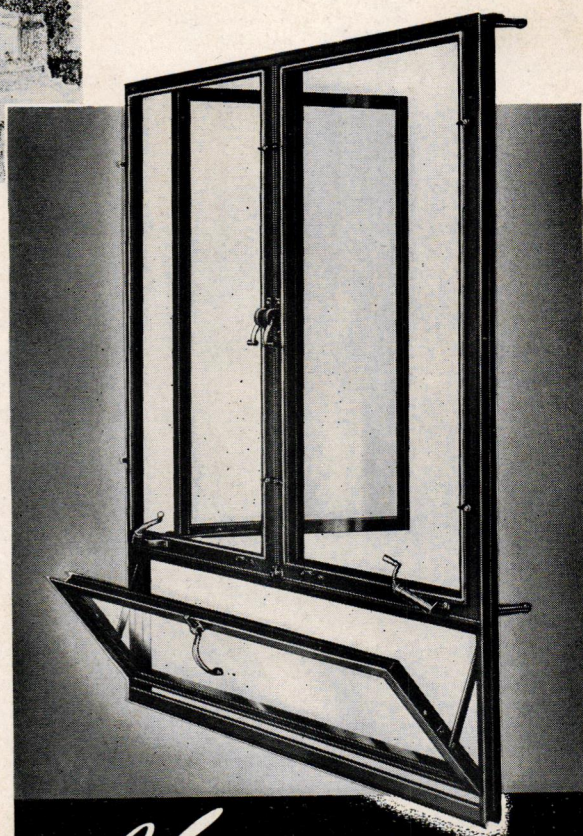
**CASEMENT WINDOWS
METAL SCREENS
INDUSTRIAL DOORS**

will have
Mesker

**STEEL
WINDOWS**

with
**GENUINE
WROUGHT IRON
SILLS**

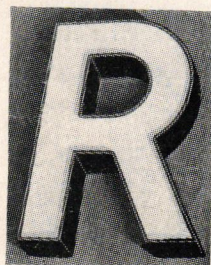
for permanent protection
against corrosion



Mesker
SINCE 1879

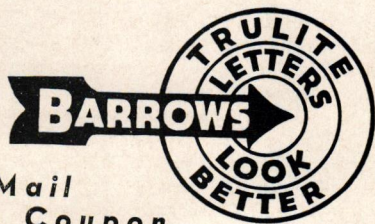
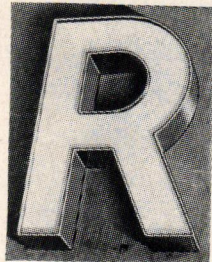
MESKER BROTHERS • SAINT LOUIS, MISSOURI

Announcing Set-of-Four Don Graf Data Sheets on BARROWS Tru-lite Letters for Building Identification



Here's the Barrows all-porcelain Tru-Lite letter with the exclusive featured rolled bead edge. Made to order in any color or combinations; any size. Fully explained in Data Sheets, including info on illuminating and installation.

Here's the Barrows stainless steel letter with color porcelain inlay. Data Sheets show its construction, how to illuminate, how to install. Available in any size or shape with or without illumination.



Mail Coupon

Just clip the coupon below, paste it on a penny postcard and your set of these new Don Graf Data Sheets will come your way — pronto.

THE W. A. BARROWS
PORCELAIN ENAMEL CO.,
Box 126 — Pleasant Ridge Station,
Cincinnati, Ohio.

Send me set-of-four Don Graf Data Sheets on Barrows Tru-Lite letters.

NAME.....

FIRM.....

CITY.....STATE.....

COMPETITIONS

The fifth of the series of eleven regional architectural competitions for Federal buildings, conducted by the Public Buildings Administration of the Federal Works Agency, has been announced by the Office of the Administrator. The project calls for the design of a \$500,000 Post Office and Court House for Jamestown, New York. Qualified architects of Region 3, comprising the greater part of New York State (excluding New York City, Long Island, Westchester, Rockland, Putnam, Orange, and Sullivan Counties, and the southern half of Ulster and Dutchess Counties), are invited to participate.

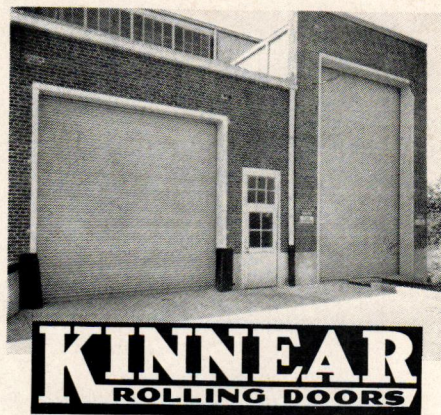
The jury selected to judge the designs submitted will be drawn from districts in the vicinity of Region No. 3, in order that all architects within the region may have the opportunity to enter the competition. The official program will be available on or about the fifteenth of November and must be applied for by letter or telegram addressed to the Commissioner of Public Buildings, Public Buildings Administration, Federal Works Agency, Washington, D. C.

SPECIALTY SHOP

Students of Class A grade in architectural schools, and architectural draftsmen, are invited to participate in the 9th Annual Prize Competition of the Illuminating Engineering Society, conducted in conjunction with the Department of Architecture of the Beaux-Arts Institute of Design. Prizes totalling \$1,000 are offered, including first and second prizes of \$300 and \$200 respectively, and ten mention prizes of \$50 each.

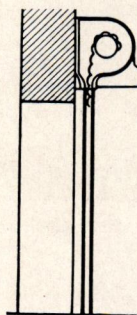
The program is for "A Specialty Shop," and will be issued November 18, 1939. Drawings must be received not later than January 15, 1940, in order to be eligible for judgment on or about February 3, 1940, in Cleveland. Students or draftsmen interested in competing should send their names and registration fee of \$2.50 to the Beaux-Arts Institute of Design, 304 East 44th Street, New York. (Practicing architects are not eligible.) By special arrangement this year, the Beaux-Arts Institute has made it possible for students to sign up for any one problem of the year; and it is hoped that through this new ruling a large number of participants may be attracted.

ADAPTABLE to any opening



Kinnear Rolling Doors fit more efficiently into your building plans. Their advanced design and space-saving, vertical operation conform readily to any opening condition — for either face-of-wall or between-the-jambs mounting. And when you permit Kinnear to work with you while a job is still "on the board," it is often possible to conceal all door mechanism — so that only the neat, steel-slat curtain is visible. This adaptability, plus other *proved* advantages make Kinnear Doors the right answer to every door requirement, for both you and your clients.

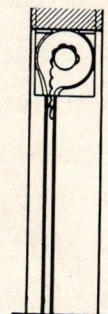
BETWEEN-JAMBS MOUNTING



When doors are mounted within the opening, brackets and coil are located either on the jambs or on reveals provided in the jambs. Edges of curtain are secured in rigid, structural-steel guides mounted on face of jamb. In new building, coil mechanism can be concealed within masonry or with other types of ornamental facia.

FACE-OF-WALL MOUNTING

When curtain coil is mounted on face of wall, brackets and coil are entirely above bottom of lintel, and edges of guides are flush with face of opening jambs. Edges of doors are secured in heavy steel jamb guides mounted on face of wall. Neat metal hood encloses coil. Decorative hoods also available.



Consult with Kinnear engineers (*they're door specialists*) on any door problem, at any time — without obligation. Refer to Sweet's for specifications, or write today for your copy of the Kinnear catalog.

The KINNEAR Mfg. Co.

Offices & Agents in all principal cities
1900-20 Fields Ave.
Columbus, Ohio
Factories: Columbus, Ohio; San Francisco, Cal.

CLUB SCHOLARSHIP

A new scholarship for members of the Boston Architectural Club was announced recently at the Program Dinner, which opened the school year. A three months' trip through the Eastern states to study the best examples of architecture from Colonial times to the present will be offered each year to the one or two members of the Classes who seem best suited to profit by such an informal tour.

James Ford Clapp has consented to act as Patron and with the advice of the Education Committee will nominate the candidates. No formal competition will be held. In general anyone enrolled in the present classes at the Club is eligible, but this year, as it is thought that the selection will be made in December or January, students of the last two years may also be considered.

RADIO CABINETS

A competition for the design of a Radio Cabinet, sponsored by the General Electric Company in conjunction with *Interior Design and Decoration*, has been announced. The purpose of the competition is to obtain original ideas for radio cabinets, and the winning designs will be awarded cash prizes totaling \$1,550 or more.

The entries submitted will be judged by a group of designers well known to the architectural profession.

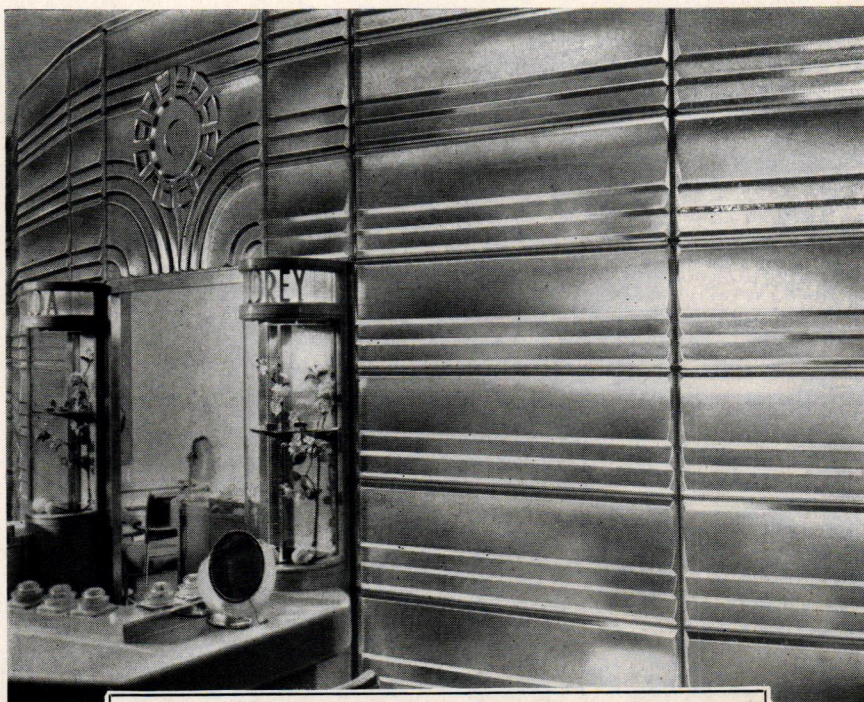
The competition will close at midnight, December 15. Entry blanks and full instructions may be obtained from *Interior Design and Decoration*, 30 Rockefeller Plaza, New York.

PLASTICS EXHIBITION

An exhibition of nearly 1,000 entries in the Fourth Annual Modern Plastics Competition is on display daily from 10 A. M. to 4 P. M., except Saturdays, and will continue until December 15th, at the offices of *Modern Plastics Magazine*, Channin Building, New York. As predicted in the announcement on page 64 of our September issue, a record number of designs were submitted, revealing an unusual variety of new uses for plastic materials in the decorative arts and modern industry.

Awards in the competition are to be made at a Presentation Dinner on November 14 at the Waldorf Astoria Hotel, New York, and an announcement of the winners is to appear in *Modern Plastics*.

ACHIEVE NEW ARCHITECTURAL *Beauty* WITH THIS NEW ARCHITECTURAL *Glass!*



A lovely installation of PC Architectural Glass in the beauty salon of a famous Hartford, Conn., department store. Note the distinguished panel of sculptured glass above the entrance door.

HAVEN'T you often wished that it was possible to model a piece of glass? . . . to reproduce in crystal beauty the designs you modeled in clay or plaster? PC Architectural Glass makes this wish a reality. For PC Architectural Glass can now be produced in large, sculptured panels, which faithfully follow your original designs. In a number of surface finishes, and in either crystal or sea water glass, PC Architectural Glass panels as large as 4 feet by 4 feet can be used to reproduce a single design . . . or larger sculptured glass areas may be made up of panels 4 feet square or smaller.

PC Architectural Glass is also available in a wide variety of standard shapes, beautifully designed and styled to meet every need. These stock shapes are now made in larger sizes than ever before and the joining of individual pieces can now conform to usual architectural practice.

With this lovely new medium, you can achieve new architectural beauty. Send the coupon . . . now . . . for additional information about this modern, versatile material. It is yours for the asking. PC Architectural Glass is manufactured by Pittsburgh Corning Corporation.

Distributed by

PITTSBURGH PLATE GLASS COMPANY

and by W. P. Fuller & Co. on the Pacific Coast



Pittsburgh Corning Corporation
2035-9 Grant Bldg., Pittsburgh, Pa.

Please send me, without obligation, your literature on PC Architectural Glass.

Name _____

Street _____

City _____

State _____

SINCE JANUARY 1932 the *Data Sheets* have been a regular feature of PENCIL POINTS. In this time they have attracted more than 12,000 users in all parts of the world! The *Data Sheet Library* is the standard architectural saver of time and temper in furnishing you brief, telegraphic facts for quick fingertip reference.

Hundreds of sheets crammed with that hard-to-locate information — to speed up working drawings and specifications. Don't be without these indispensable data any longer — fill out the coupon and mail it now for the most useful reference work you ever saw. Available at this special price for a short time only.



fact

OVER 375 USEFUL SHEETS

THE DATA SHEETS are filed in four attractive black fiber ring books with the covers stamped in silver colored metallic ink. A new feature of the *Notebooks* is the label holder on the backbone of each book, allowing you to re-apportion the sheets as the *Library* continues to grow—or to add more books for your own notes if you wish. The four loose-leaf books are housed in a permanent desk box. Manila index guides speed up location of facts. A subject index appears on the inside front cover of each book and an alphabetical index appears on the inside back cover of each book.

Hundreds of valuable facts have been ferreted out from their hiding places in text books, catalogs, handbooks, and from countless other sources. Useful information has been separated from the bewildering mass of irrelevant detail in which it is so often buried.

packed!

Drafting Room Reference

\$ **6⁵⁰**

(Offer expires December 31st, 1939)

GET YOUR LIBRARY NOW

This special price is for a short time only. Don't be without a complete *Data Sheet Library* any longer. Don Graf has done your hunting for you — this highly concentrated information in convenient form will save you countless hours of searching. Find out how simple it is to locate the important data that you repeatedly need.

KEEP UP TO DATE

Each month PENCIL POINTS prints 4 new *Data Sheets*. Your *Data Sheet Library* will grow in value and usefulness every month — all you have to do is to cut these new *Data Sheets* out of PENCIL POINTS each month and file them in your *Data Sheet Library*.

HUNDREDS OF DATA SHEETS FREE

Dozens of prominent manufacturers have had their products *data-ized*. Manufacturers' free sets of *Data Sheets* are identical in format and presentation with the PENCIL POINTS series. Several direct-reading Slide Rules are available. Check coupon for folder giving complete list and how to obtain them free.

JUST A FEW OF THE SUBJECTS

Freight Train Clearance
Area per Seat for Theaters
Movie Projection Room Areas
Projection Room Plan
Projection Room Elevation
Projection Room Section
First Row Seat Location
Main Floor Slope
Conventional vs. Ideal Slope
Side Seat Limits
Theater Chairs for Main Floor
Determining the Balcony Slope
Theater Chairs for Balcony
Screen-to-Seating Proportions
Stage Height and Grid Location
Lunch Counters
Café Floors, Walls, Etc.
Café Lavatories, Toilets
Café Doors, Windows, Etc.
Café Equipment, Etc.
Barber Shop Plan
Average Show Window Depths
Average Show Window Floor Heights
Store Front Lighting
Show Window Lighting
Lighted Store Window Attraction
Typical Office Building Unit
Bookshelves
Library Stacks
School Seating Schemes
Elementary School Classroom
Elevations of Classroom
Junior or Senior Classroom
Planning Classrooms

Spell It Right
Indication of Materials
Lettering for Drawings
Dimensioning Pitfalls
How to Draw an Ellipse
Entasis of Columns
Blue Print Inks and Fixatif
Mutuled Doric Order
Slope of Inclines
Three-Centered Arch
Drawing Materials
Roman Numerals
Four-Centered Arch
Dividing a Circumference
Perspective Layout Made Easy
Colonial Lettering
A Modern Alphabet
Old English Lettering

**USE THIS
HANDY
ORDER**

PENCIL POINTS, Dept. G, 330 W. 42nd St., New York

☐ I enclose \$6.50 for the Data Sheet Library. (Orders for delivery in New York City must be accompanied by 13c cash extra for sales tax.)

☐ Send folder on how to get manufacturers' free Data Sheets.

Name

Street

City State

☐ Architect

☐ Draftsman

or

NEW PRODUCTS

PLYWOOD FINISHING ACCESSORIES

Further extending the usefulness of Douglas Fir Plywood, I. F. Laucks, Inc., Seattle, Wash., manufacturers of glues, has developed a complete line of finishing accessories, including paints, primers, a self-bonding glue; joint fillers, etc., all laboratory developed and field tested, especially for use on plywood.

Of prime importance in this line of plywood accessories is the clear synthetic resin sealer, Rez, which serves to stop grain raise and moisture absorption in the plywood panel, and provides, it is claimed, a perfect base for any kind of paint or stain which may be desired.

Two new paints, of the plastic variety, both of which simulate plaster, stucco or concrete finish, are included in this plywood accessory line. They are known as Rezitex and Plasterez, and are for exterior and interior plywood walls, respectively. They have as their binder a special combination of synthetic resins, which assures perfect adhesion to the plywood, and a surface that is durable and non-brittle. Both paints are heavy-bodied, give a beautiful textured surface that covers up minor imperfections, joints and cracks in the plywood surface. Both paints offer fire-resistance, as well.

NEW DIRECT-INDIRECT LUMINAIRE

Announcement of the introduction of a new lighting fixture, the Alzak-Brascolite, is made by the Edwin F. Guth Co., St. Louis, Mo. The new unit embodies similar lighting principles as the old Brascolite plus modern design, new features and refinements.

The Alzak-Brascolite delivers efficient direct-indirect illumination with standard mazda lamps giving 33 1/3% downward light and 66 2/3% upward component. This method of illumination without glare is said to provide excellent lighting for retail stores of all classes and for offices.

The new unit is made of 18-gauge aluminum and processed with Alzak, a non-tarnishing permanent finish for aluminum, which does not chip, peel or discolor. The fixture is made for 300 watt maximum capacity.



ALBANENE TRACING PAPER

An entirely new type of tracing paper which combines, it is stated, the transparency of oil treated sheets with the permanence of natural 100% rag papers is a recent development of the Keuffel & Esser Co., of Hoboken, N. J. The new paper is named Albanene. It is made of 100% long fiber clean white rags, and it is treated with a new crystal clear synthetic solid called Albanite, developed in the K&E laboratories. Because this new transparentizing agent is free from oil and wax and both chemically and physically inert, it is claimed that Albanene will not oxidize, turn yellow, become brittle, or lose transparency with age.

It is further claimed that the use of this new type

transparentizing agent permits a fine toothed, smooth drawing surface that takes strong pencil lines with a minimum wear on the point. On Albanene all lines are held by the fine hard tooth and do not become embedded in the paper structure, making Albanene extremely easy to erase or correct.

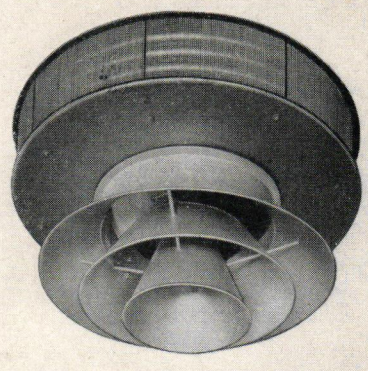
Albanene is offered in three weights—light, medium, and heavy. An illustrated brochure and a generous working sample of this new paper can be secured by writing to the manufacturer.

TRANE PROJECTION UNIT HEATER

AVAILABLE WITH ANEMOSTAT

Unit heating advanced into new fields with the announcement by The Trane Co., La Crosse, Wisc., that the Trane projection unit heater is now available with an Anemostat.

Many months of experimentation have resulted in the adaptation of the Anemostat, originally designed for duct applications, to the Trane four-blade propeller fan incorporated in Trane projection unit heaters. The vertical air stream projected straight downward by Trane projection unit heaters, is said to be ideal for Anemostat distribution. With such distribution, this air stream is absolutely draftless and blastless, and people may sit directly under the unit in perfect comfort even on low ceiling installations. This fact, of course, overcomes the waste floor space objection to ordinary unit heating which is important in certain types of industrial applications where people are working at benches.



This new achievement in heated air distribution is said to open a new unit heater market in offices, stores, greenhouses, fine shops—in fact, everywhere where evenly distributed warmth is required. It is felt a Trane projection unit heater with Anemostat is extremely applicable for industrial plants and textile mills where low velocity air currents, which are absolutely dustless, are essential to particular manufacturing processes.

NEW TYPE ROOFING MATERIAL

The Ferro Enamel Corporation, Cleveland, O., manufacturer of porcelain enamel, has just completed a new factory, that is unique, in that it makes the first use, in the factory-building field, of porcelain enamel as an exterior as well as interior finish. The roof, stack, gables, trim, gutters, window-sash and door are finished in Ferro porcelain enamel and inside the building, partitions, separating the offices, laboratory and plant, are also in porcelain enamel.

The Kor-Lok system, developed by the Kor-Lok Co., Cleveland, was used for the roof. Primarily for the purpose of eliminating holes for application in corrugated galvanized roofs, this system makes use of a patented interlocking formation. All bolt heads are concealed and protected by the overlapping sheet.

This type of sheet permits the erection of the main portion of a roof, or siding area, with standard-size sheets. No punching of holes is required. For the balance of a roof or siding area, the sheets can be cut to size prior to porcelain enameling. It is also practical to ship

standard sized sheets to a job and then do any necessary cutting to size with a small power saw. Since only a thin coating of porcelain enamel is used, no serious chipping of the enamel along such cut edges results. A toe-clip was used to fasten the roofing sheets in place.

The steel partitions in the plant are finished in a rich shade of brown porcelain enamel and were made by the E. F. Hauserman Company, Cleveland, O.

All of the industrial window-sash are porcelain enameled, using a black ground coat with a black overspray, to produce a fine textured, tight enamel finish, resistant to action of the most severe weather. The flanges buried in the wall also have this permanent protection against corrosion from the dampness that often collects there.

Around the edge of the porcelain enameled roof, patented porcelain enameled metal solderless gutter will be used. The gutter is the development of the Wheeling Corrugating Co., Wheeling, W. Va.

NEW TYPE ALL-WELDED FIREPROOFED SPACE-SAVING FURNITURE

A new type of all-welded, fire-resistant, space-saving furniture, made of a new rust-resisting alloy or steel tubing, has just been designed by Thomas E. Smith, industrial engineer of the Swan Engineering Co., Inc., 410 Frelinghuysen Ave., Newark, N. J. This furniture is especially adapted for use in auditoriums, restaurants, automotive and aeronautical fields, hospitals, schools, homes, clubs, apartments, shops, broadcasting studios and similar places.

In the manufacture of these chairs, steel or a new rust-resisting alloy tubing of from $\frac{3}{8}$ " to 1" diameter is bent into a special framework that telescopes compactly. The all-welded construction of the chairs seals all openings against moisture and oxidation, eliminates squeaks and prevents parts becoming loose or lost. The chairs are economical in price; they are very light, weighing approximately $8\frac{1}{4}$ lbs., and are fire resistant due to their metal construction.

The thinness of the seat and back design of the chairs permits close stacking.

One hundred chairs can be stacked in approximately 10 sq. ft. of floor space. The chair frames can be furnished in satin finish bronze, pewter, chrome, baked enamel or stainless steel.

No wood whatever is used for either seat or back. The chairs can be equipped with a covering of Fabrikoid or the new Cavalon, produced by E. I. du Pont de Nemours Co. They are also made with $1\frac{1}{2}$ " to 2" sponge rubber seat and back. All seats and backs are readily removed for cleaning and easily replaced. The back slips off and the seat is held in place by a lacing through copper grommets. The seat and back adjust themselves automatically to the most comfortable sitting position.

The company also offers for use with these chairs a new patented space-saving table which will nest in the same way as the chairs. It has a blister-proof and alcohol-proof Formica top and is manufactured in enamel finish, pewter, chrome, or stainless steel.



Keep Your RED CROSS Always Ready



RED CROSS ROLL CALL

Nov. 11-30, 1939

Your memberships given NOW assure aid to war sufferers, disaster relief, care for disabled veterans, Braille for the blind, training in First Aid and Life Saving.

Send Your Memberships to:

ARCHITECTS GROUP
NEW YORK CHAPTER
AMERICAN RED CROSS

315 Lexington Ave., New York, N. Y.

or

Your Local Chapter

INDEX TO ADVERTISERS

Advertising Offices: 330 West 42nd Street, New York, N. Y.
Philip H. Hubbard, Vice-President and Advertising Manager.
District Offices: 1133 Leader Building, Cleveland, Roger W. Patterson; 310 South Michigan Avenue, Chicago, John G. Belcher.

Alberene Stone Corporation of Virginia	6
Aluminum Company of America	2, 3
American Institute of Architects	44
American Pencil Company	51
American Red Cross	61
Anemostat Corporation of America	4
Armstrong Cork Company	5, 39
Barber Asphalt Corporation	41
Barrows, W. A., Porcelain Enamel Company	56
Burnham Boiler Corporation	16
Cambridge Tile Manufacturing Company	9
Celotex Corporation, The	Back Cover
Columbia University	44
Concrete Reinforcing Steel Institute	13
Consolidated Expanded Metal Companies	46
Crane Company	26
Dixon, Joseph, Crucible Company	33
Eagle Pencil Company	25
Eberhard Faber Pencil Company	42
Edwards & Company, Inc.	20
Electric Storage Battery Company	8
Elkay Manufacturing Company	36
Faber, A. W., Inc.	38
Fitzgibbons Boiler Company, Inc.	43
Harbor Plywood Corporation	37
Hillyard Sales Company	22
Homasote Company	40

International Nickel Company	10
Jamison Cold Storage Door Company	18
Kinnear Manufacturing Company, The	56
Laux Sales Company	16
Libbey-Owens-Ford Glass Company	28
Lone Star Cement Corporation	14
Louisville Cement Company	21
Mesker Brothers Iron Company	55
Milcor Steel Company	64
Minnesota Mining & Manufacturing Company	23
National Terrazzo and Mosaic Association	12
National Tube Company	2nd Cover
Overhead Door Corporation	17
Owens-Illinois Glass Company	11
Pecora Paint Company, Inc.	62
Pittsburgh Corning Corporation	57
Pittsburgh Plate Glass Company	7
Portland Cement Association	19
Post, Frederick, Company	24
Rolscreen Company	45
Sturtevant, B. F., Company	3rd Cover
U. S. Steel Corporation Subsidiaries	2nd Cover, 27
Universal Atlas Cement Company	27
Weber, F., Company	63
Westinghouse Electric & Manufacturing Company	18
Whitney, Vincent, Company	20
Wiley, John, & Sons, Inc.	63
Wilson Engineering Corporation	44
Youngstown Sheet & Tube Company	35



Mt. Union Theatre, Alliance, Ohio. Architect, R. Graham, Cleveland. Contractor, Walter Scott, Alliance. One of a number of glass fronts installed by John J. Kroth Glass Shop of Canton, where PECOMASTICS were used for dependable results.

Write for set of Don Graf's Data Sheets

ALSO MORTAR STAINS • SASH PUTTIES • ROOF COATING • PECOMASTICS FOR STRUCTURAL GLASS INSTALLATION

THE registered name PECOMASTICS identifies all Pecora Mastics in the structural glass field. For every practical need. Many exclusive advantages.

PECOMASTICS
REGISTERED
for
STRUCTURAL GLASS INSTALLATIONS

PECOMASTIC-BLACK: A heavy body asphaltic mastic for EXTERIOR use.

PECOMASTIC-PUTTY TYPE: A clean mastic in natural color for INTERIOR use.

PECOMASTIC-TROWELING TYPE: A clean mastic in natural color for INTERIOR use.

PECORA BONDKOTE: A black asphaltic priming paint for priming surfaces before structural glass is set in place.

PECORA WALSEAL: A clean priming liquid for interior or exterior use.

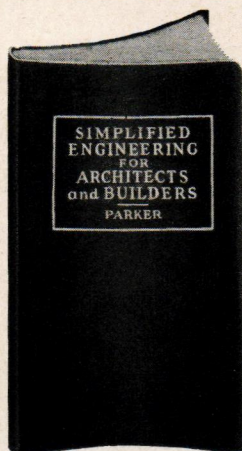
PECORA POINTING COMPOUND: For pointing joints of structural glass after installing is completed. (Colors black and white.)

Pecora Paint Company, Inc.

Member of Producers' Council, Inc.
Established 1862 by Smith Bowen

SEDGLEY AVE. & VENANGO ST., PHILADELPHIA





*An easy way to acquire
a knowledge of the
design of structural
members in building
construction*

**SIMPLIFIED
ENGINEERING
FOR
ARCHITECTS
AND BUILDERS**

By **HARRY PARKER**, *Professor of Architectural Construction, University of Pennsylvania; Editor, Kidder's "Handbook" (18th Edition)*

Here at last is a book which presents the design of beams, columns, slabs, etc., so simply, so concisely, that you can readily follow the explanations without previous training in the subject. Now you can have at your fingertips the important terms and basic principles employed in the design of structural members in building construction, and a host of examples with their solutions, illustrating just the sort of problems that must be faced in practice. Timber construction, steel construction, reinforced concrete, and roof trusses all receive treatment. This book is a real time-saver.

Send for an "on approval" copy

214 Pages 96 Illustrations 5 by 7 3/4 Flexible binding, \$2.75
JOHN WILEY & SONS, INC., 440 Fourth Ave., New York

**STATEMENT OF THE OWNERSHIP, MANAGEMENT,
CIRCULATION, ETC., REQUIRED BY THE ACT OF
CONGRESS OF AUGUST 24, 1912.**

Of PENCIL POINTS published monthly at Stamford, Conn., for
October 1, 1939.

State of New York } ss.
County of New York }

Before me, a Notary Public in and for the State and County aforesaid, personally appeared Philip H. Hubbard, who, having been duly sworn according to law, deposes and says that he is the Business Manager of the Corporation publishing PENCIL POINTS and that the following is, to the best of his knowledge and belief, a true statement of the ownership, management, of the aforesaid publication for the date shown in the above caption, required by the Act of August 24, 1912, as amended by the Act of March 3, 1933, embodied in section 537, Postal Laws and Regulations, to wit:

1. That the names and addresses of the publisher, editor, associate editor, and business manager are:

Publisher, Reinhold Publishing Corporation, 330 W. 42nd St., New York City.

Editor, Kenneth Reid, 330 W. 42nd St., New York City.

Associate Editor, Charles Magruder.

Business Manager, Philip H. Hubbard, 330 W. 42nd St., New York City.

2. That the owner is: Reinhold Publishing Corporation, 330 W. 42nd St., New York City; Ralph Reinhold, 330 W. 42nd St., New York City, and L. N. Thompson, 330 W. 42nd St., New York City, stockholders.

3. That the known bondholders, mortgagees, and other security holders owning or holding 1 per cent or more of total amount of bonds, mortgages, or other securities are: (If there are none, so state.) None.

4. That the two paragraphs next above, giving the names of the owners, stockholders, and security holders, if any, contain not only the list of stockholders and security holders as they appear upon the books of the company but also, in cases where the stockholder or security holder appears upon the books of the company as trustee or in any other fiduciary relation, the name of the person or corporation for whom such trustee is acting, is given; also that the said two paragraphs contain statements embracing affiant's full knowledge and belief as to the circumstances and conditions under which stockholders and security holders who do not appear upon the books of the company as trustees, hold stock and securities in a capacity other than that of a bona fide owner, and this affiant has no reason to believe that any other person, association, or corporation has any interest direct or indirect in the said stock, bonds, or other securities than as so stated by him.

PHILIP H. HUBBARD,
Business Manager

Sworn to and subscribed before me this 28th day of September, 1939.

CURVILLE C. ROBINSON,
Notary Public.

(My commission expires March 30, 1940.)

**For OPAQUE Renderings of
SUNLIGHT BRILLIANCE USE . . .**

WEBER

**WATERPROOF
PIGMENT
DRAWING INK**



**OPAQUE in COLORS
and BLACK AND WHITE**

Weber PIGMENT Drawing Ink is the ideal medium for achieving impressive modern visualization in the popular opaque rendering technique. Made in a wide range of 14 opaque PIGMENT colors and black and white. For use with brush, ruling pen, lettering pen, crowquill pen, or airbrush.

Color Card on Request

F. WEBER CO.

Manufacturing Artists' Colormen Since 1853
PHILADELPHIA, PA.

St. Louis, Mo. Baltimore, Md.
Patronize Your Nearest Weber Dealer

THIS LITTLE GIRL WILL HAVE

**A
HAPPY
CHRISTMAS**
but



Tuberculosis is still the greatest killer of youth . . . and takes fifty per cent more girls than boys between the ages of 15 and 25!

Two modern aids that help the physician detect tuberculosis in its earliest, curable stage are the tuberculin test and the chest X-ray.

Your purchases of Christmas Seals make it possible, not only to teach people that tuberculosis is preventable and curable, but to look for early stages of this dread disease among children who seem to be in good health.

So from now 'til Christmas, mail no letter—send no package—unless it is decorated with the Christmas symbol that saves lives!

The National, State and Local Tuberculosis Associations in the United States



**BUY
CHRISTMAS
SEALS**

Free!

Don Graf Data Sheets

to simplify
your work in preparing designs
and specifications on low-cost, safe

MILCOR Fireproof Partition Systems

Here, in compact form, is helpful information you need, to satisfy your clients with the fire-safety, space savings, and amazingly low cost of Milcor Partition Systems.

Six pages of valuable facts and detailed structural drawings, prepared by the famous architectural designer, Don Graf. Sized and punched to fit your Data Sheet Binder.

This material helps you see why the Milcor Solid Partition and Furring System has set a new low-cost standard for this type of construction, on large-scale housing projects like the Ten Eyck (Williamsburg) job.

It illustrates how the Milcor Solid Partition gives your clients all the advantages of a solid plaster wall, on an interlocking web of steel that makes it practically a one-piece construction.

It also demonstrates the improved, mechanical efficiency of erecting fireproof hollow plaster partitions with the Milcor Steel Stud.

Enjoy the convenience of these Don Graf Data Sheets in your drafting room, as a quick aid in developing drawings, making calculations, etc. Send for them now.

**Tear out coupon
and mail today!**

MILCOR STEEL COMPANY
S. 41st and W. Burnham St.
Milwaukee, Wisconsin

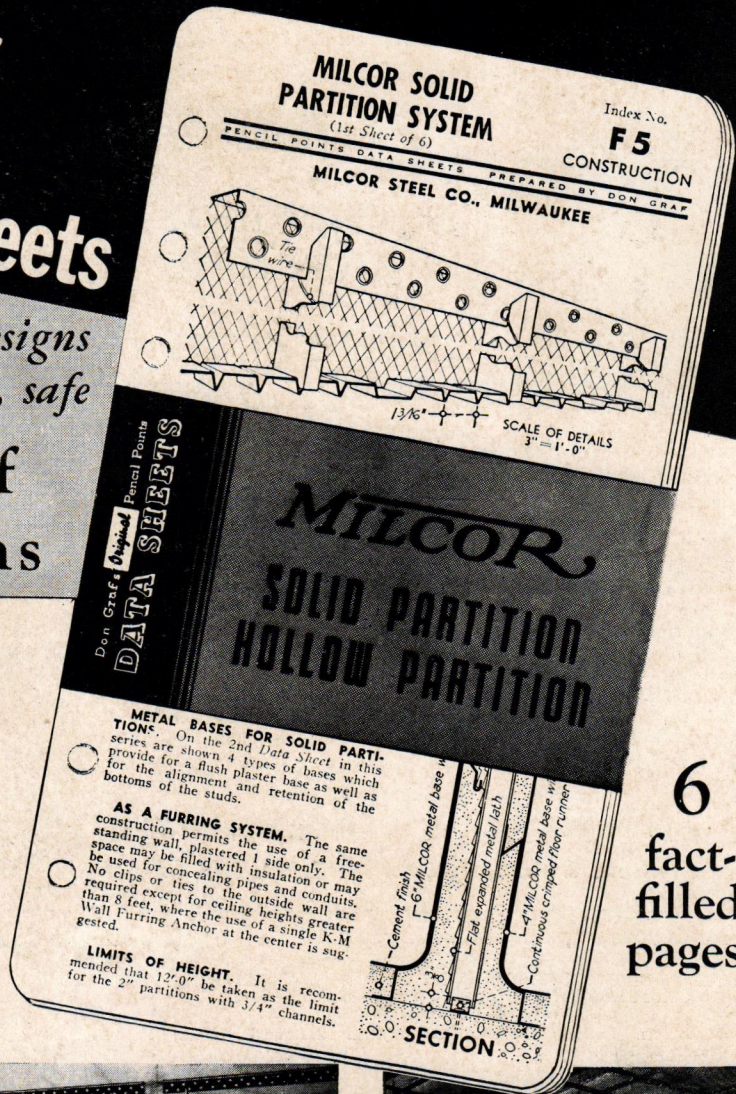
Please send me the free Don Graf
Data Sheets on Milcor Partition Systems.

Name.....

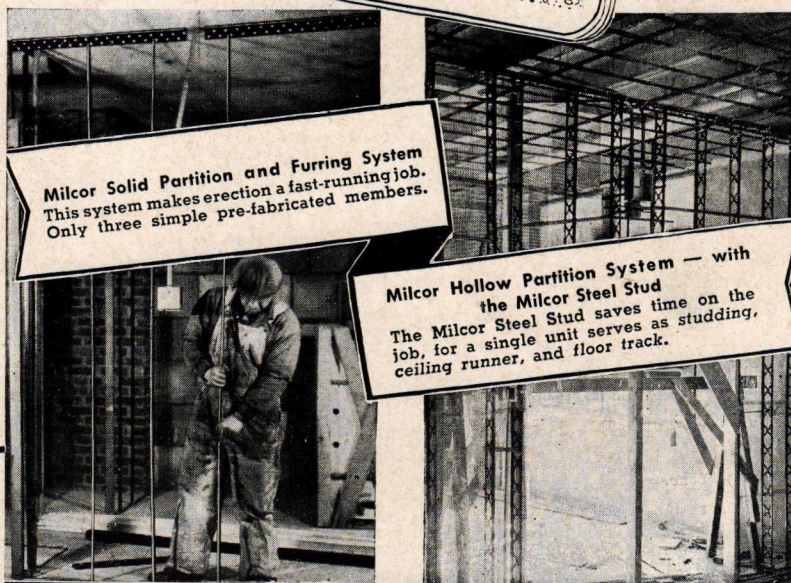
Company.....

Address.....

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



**6
fact-
filled
pages!**



Milcor Solid Partition and Furring System
This system makes erection a fast-running job.
Only three simple pre-fabricated members.

**Milcor Hollow Partition System — with
the Milcor Steel Stud**
The Milcor Steel Stud saves time on the
job, for a single unit serves as studding,
ceiling runner, and floor track.

MILCOR STEEL COMPANY

MILWAUKEE, WISCONSIN

CANTON, OHIO

CHICAGO, ILL. KANSAS CITY, MO. • LA CROSSE, WIS. • ATLANTA, GA.
• NEW YORK, N. Y. • ROCHESTER, N. Y. • BALTIMORE, MD.

Sales Offices: Minneapolis, Minn., Little Rock, Ark., Dallas, Tex., Denver, Colo.,
Washington, D. C., Boston, Mass.