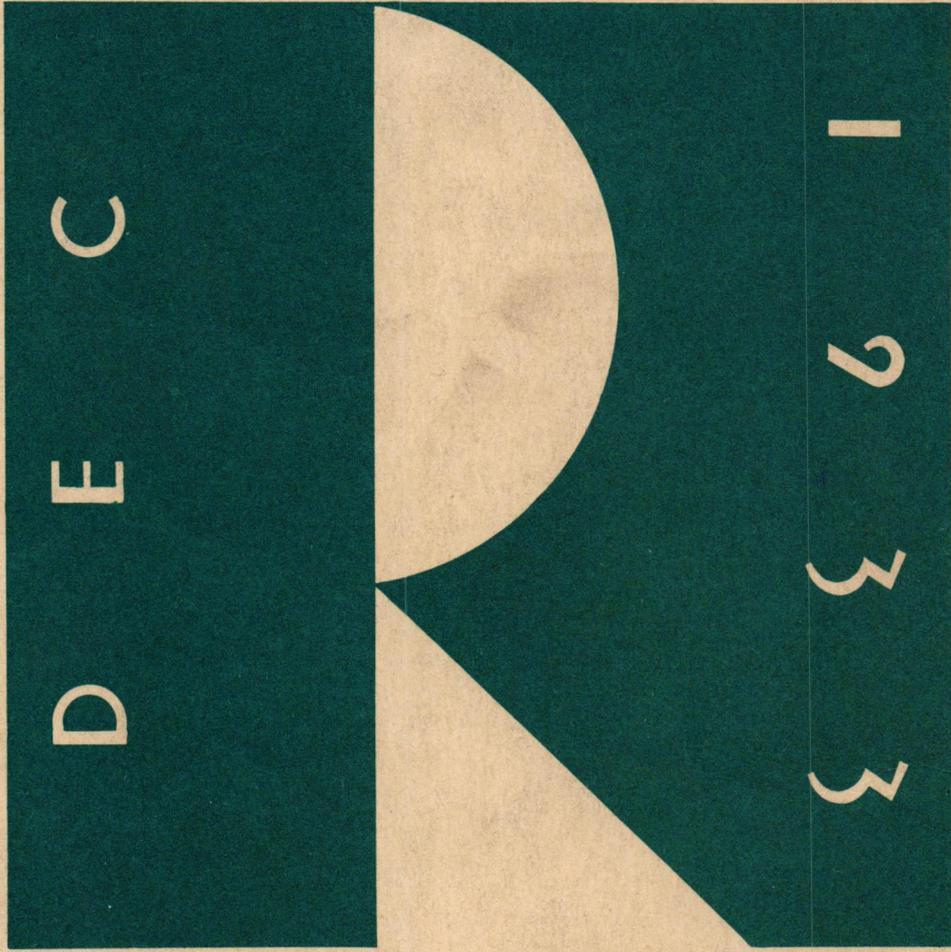
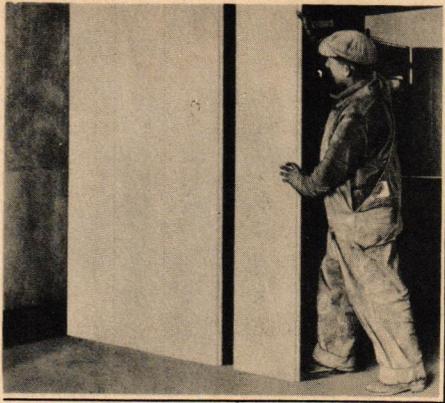


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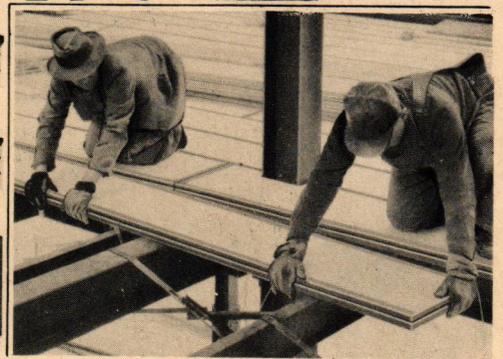


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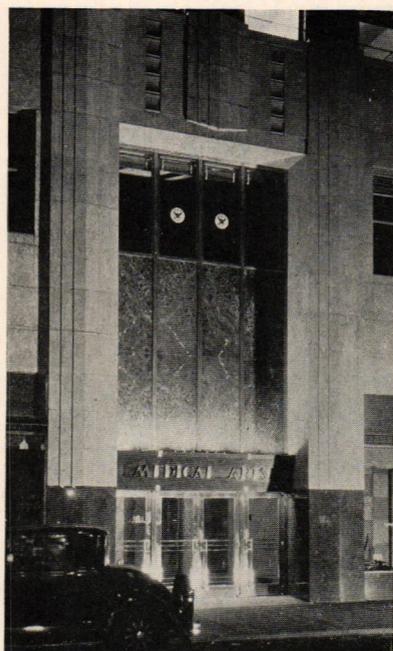
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*A Unit of American Cyanamid Company*

# THE ARCHITECTURAL RECORD

DECEMBER, 1933  
VOLUME 74  
NUMBER 6



Florman  
Medical Arts Building  
Duluth, Minnesota  
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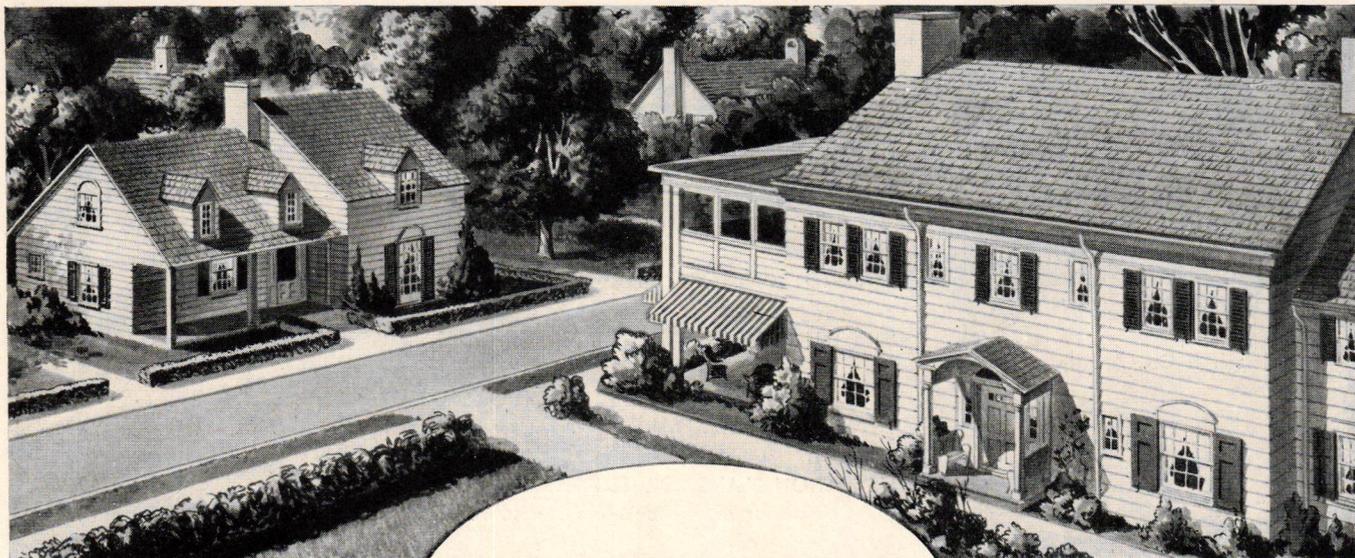
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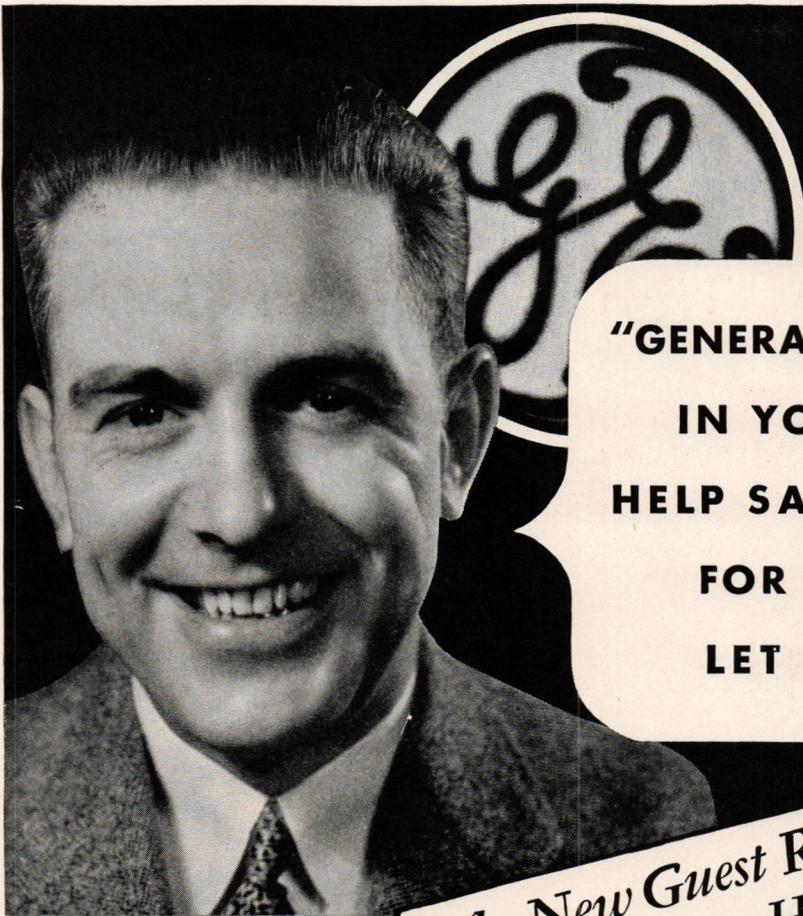
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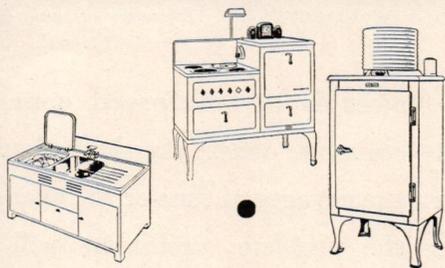
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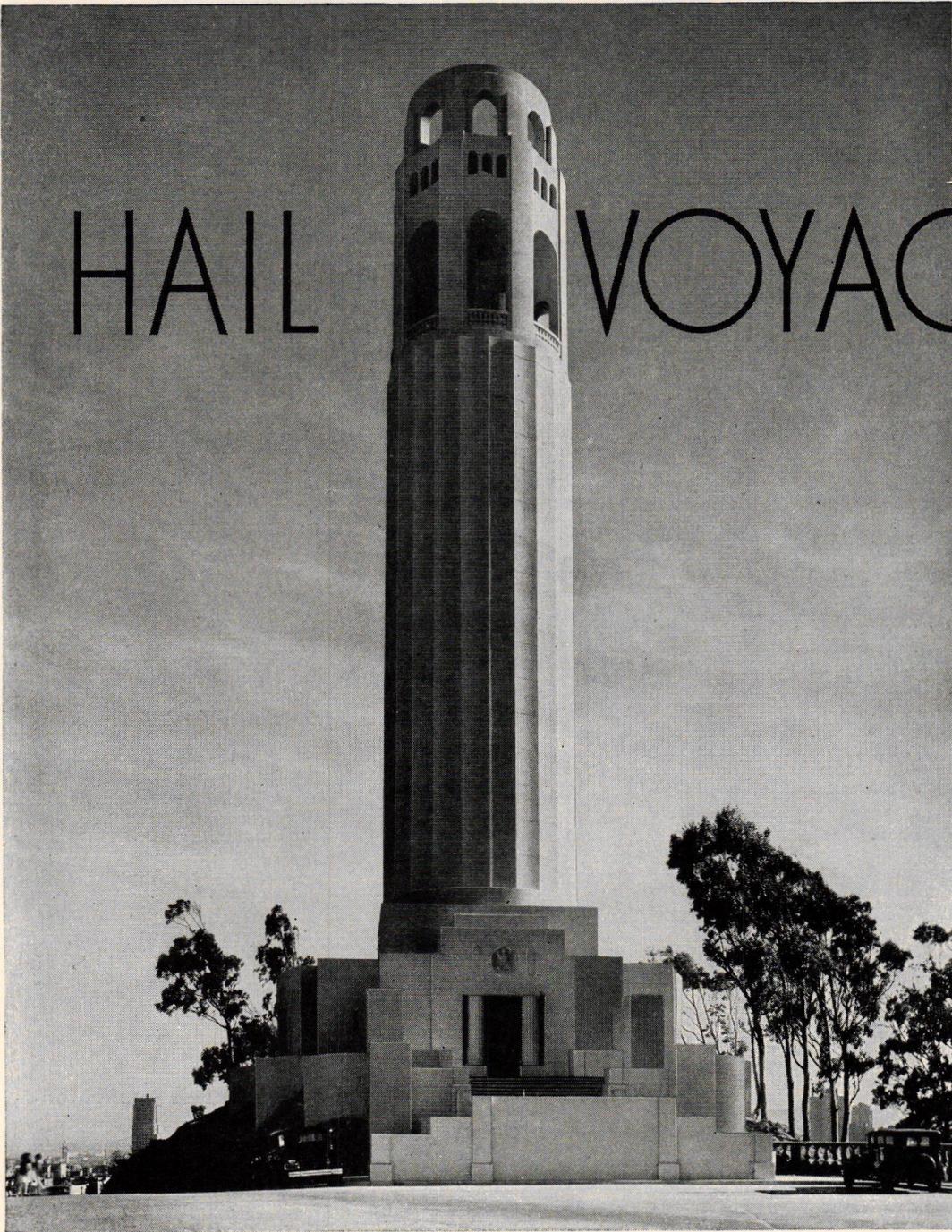


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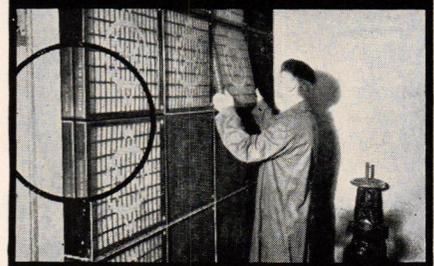
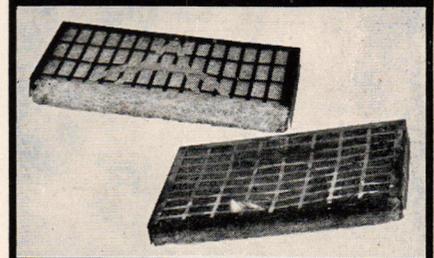
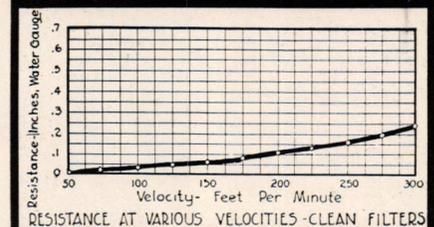
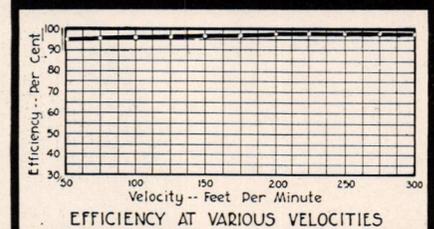
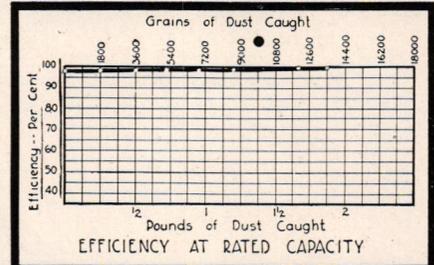
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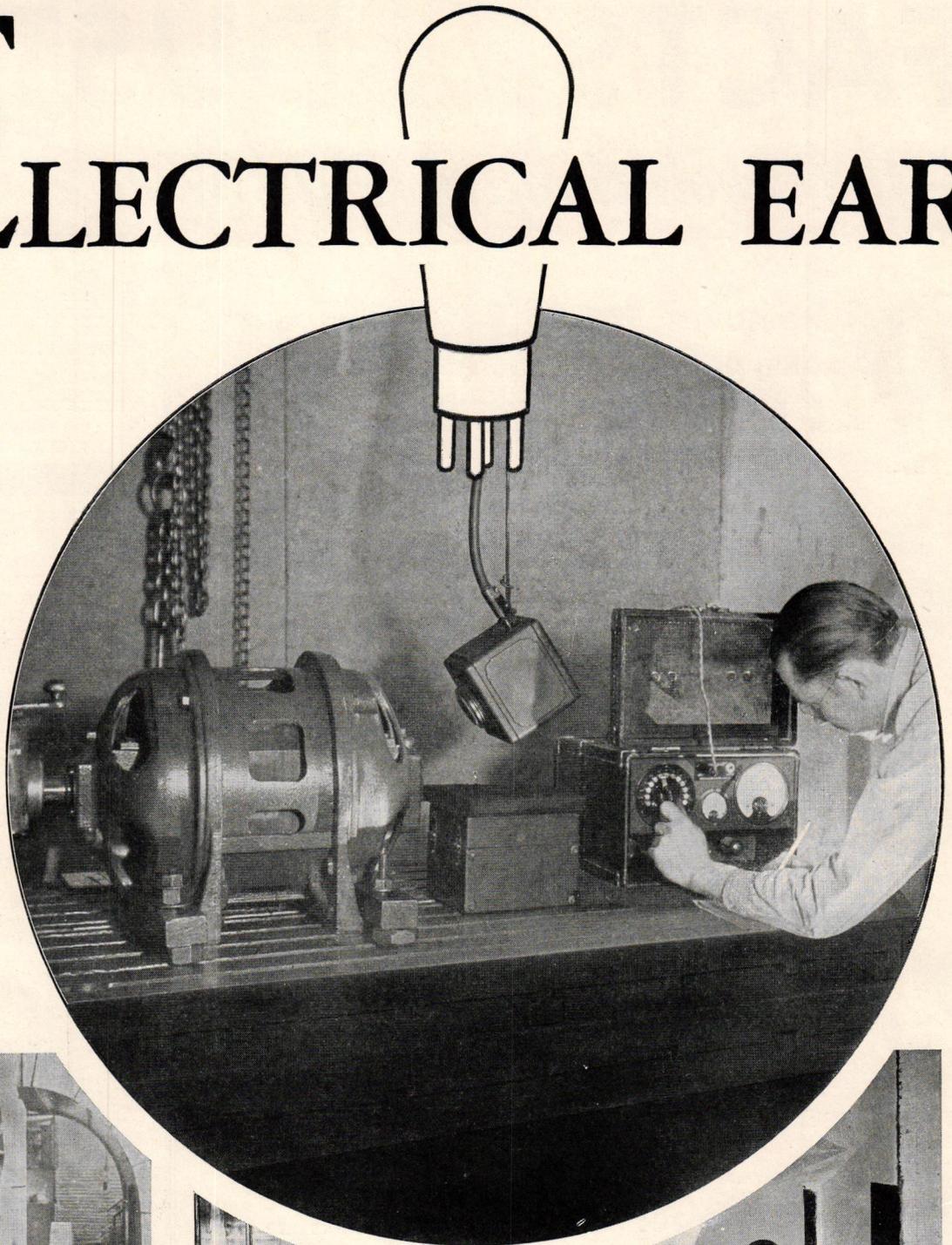
The "Dustop" filter cleans air at *lowest first cost* and *lowest upkeep expense*, and can be assembled in any number of units which may be required for home, commercial or industrial air filtration. Write today for complete information. Owens-Illinois Glass Company, Industrial Materials Division, Toledo, Ohio. ("Dustop" is assembled and installed in Canada by General Steel Wares, Ltd., Toronto, Ontario.)

# OWENS-ILLINOIS

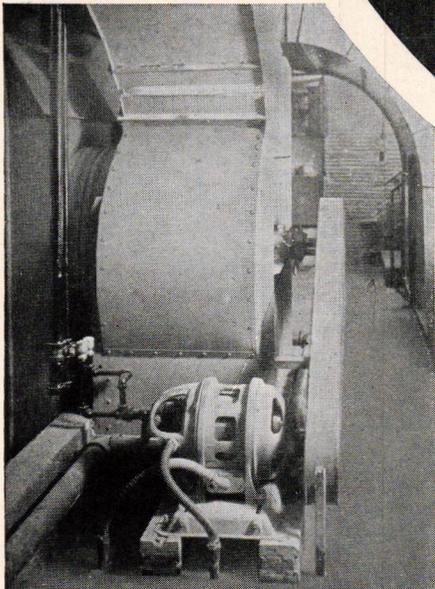
## DUSTOP AIR FILTERS



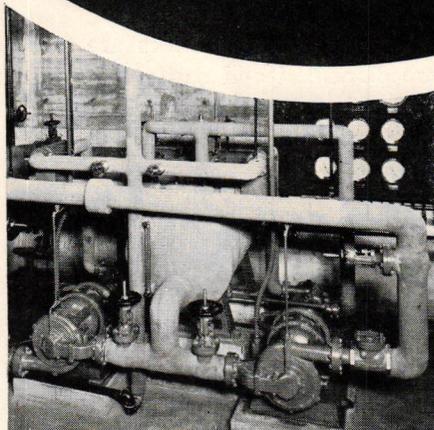
# AN ELECTRICAL EAR



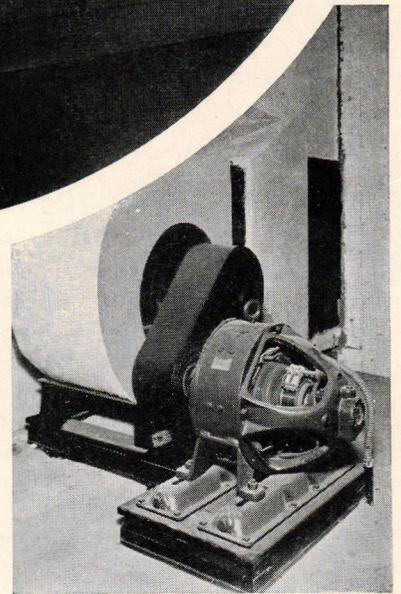
*This "electrical ear," that tests all Westinghouse Quiet Motors, eliminates guesswork in sound measurement. A definite record of noise output is made for each motor.*



*A Westinghouse quiet-operating, variable-speed blower Motor in the Palace Theatre, Albany, N. Y. Architect—John Eberson, New York.*



*Westinghouse quiet-operating pump Motors in the Gulf Building, Pittsburgh, Pa. Architects—Trowbridge and Livingston, New York.*



*One of 26 Westinghouse Blower Motors in the Waldorf-Astoria Hotel, New York. Architects—Schultze & Weaver, New York.*

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*for*

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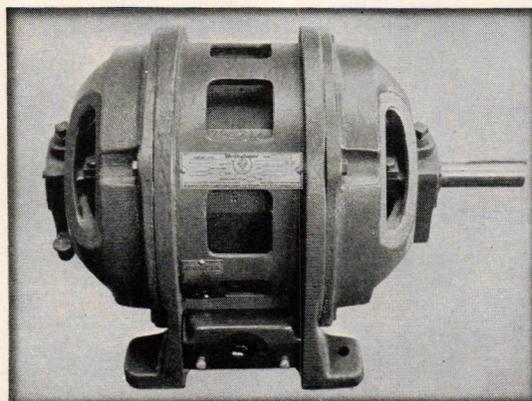
To eliminate *torsional vibrations*, every motor is subjected to accurate, painstaking tests on a dynamic balancer that reveal any fault in weight distribution, under actual rotating conditions. Any source of *humming* is eliminated by the design and balance of the magnetic circuits. And *permanence of alignment*, under the strain of year-in, year-out operating service, is assured by rigid, non-sag frames.

Finally, in a sound-proof room, and under load, every motor must pass the searching "electrical ear" test.

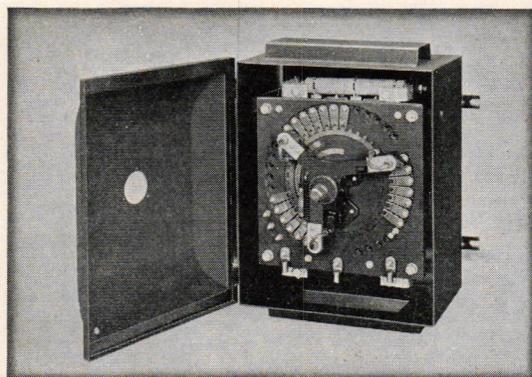
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●

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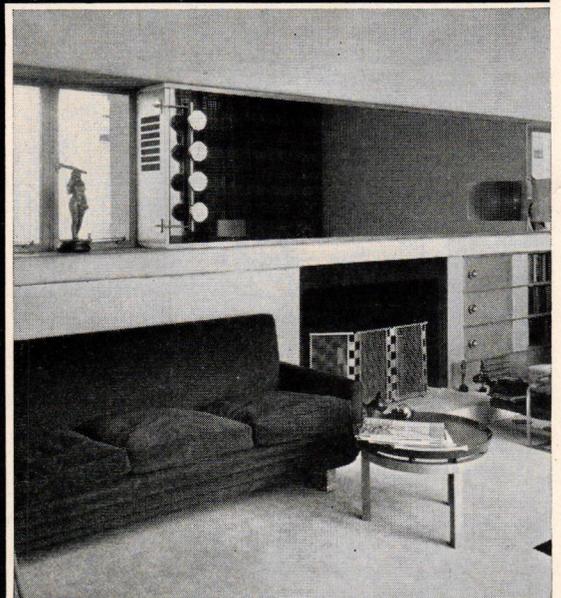
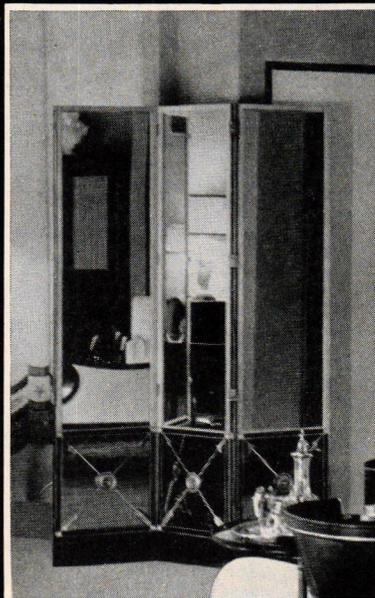
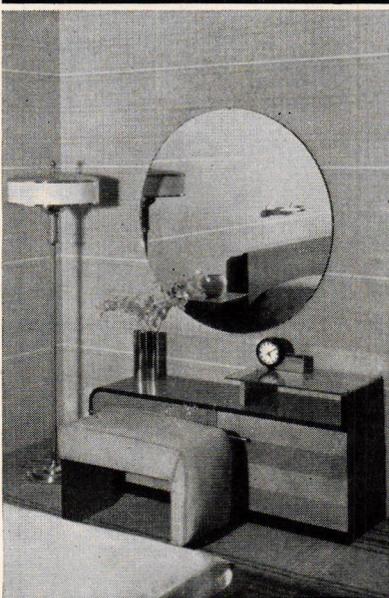
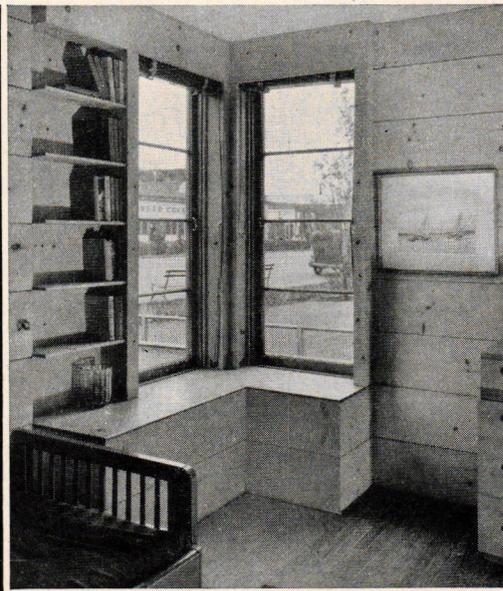
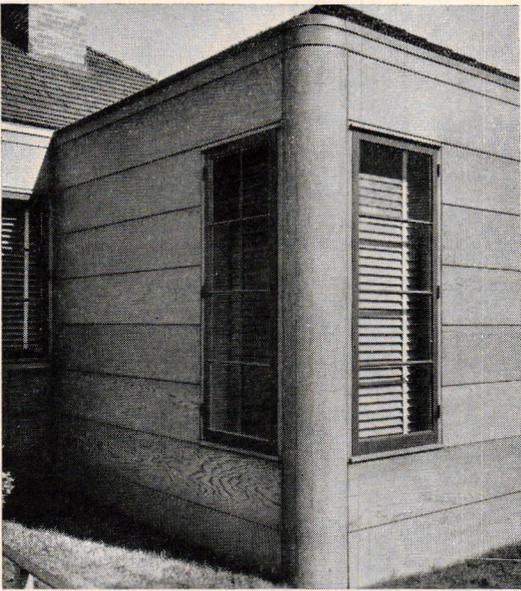
● Exterior view of a typical corner window in the Lumber Industries House at the World's Fair.

● The same window from the inside. With this type of window, room corners become usable and wall space is increased.

● Pleasing decorative use of mirror and glass topped dressing table in the Design for Living House.

● The living room of the W & J Sloane "Home of Today" derived much of its appeal from this period glass screen in modernized Empire style.

● A much admired feature of the living room of the Florida Tropical House was this decorative mirror panel with attractive bluish cast.



LIBBEY-OWENS-FORD GLASS COMPANY, TOLEDO, OHIO, manufacturers of Highest Quality Flat Drawn Window Glass, Polished Plate Glass and Safety Glass; also distributors of Figured and Wire Glass manufactured by the Blue Ridge Glass Corporation of Kingsport, Tennessee.



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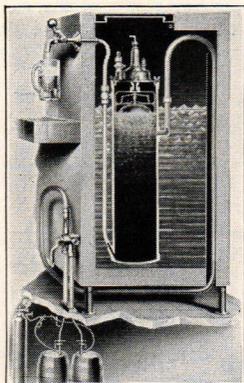


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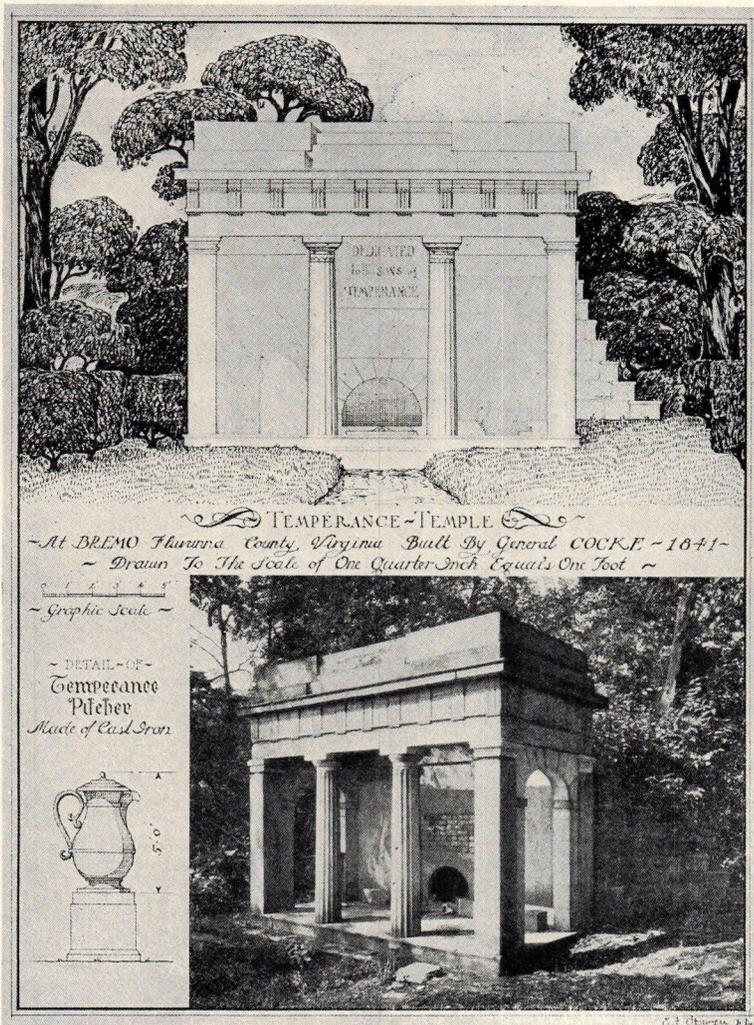
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**THE RECREATION MANUAL.** By V. K. Brown and James J. O'Rourke. The Fred J. Ringley Company: 621-631 Plymouth Court, Chicago, Ill. 47 charts. 75c.

This loose-leaf manual is composed of a series of graphic charts covering games, sports, and craft activities. There are drawings in connection with ice skating tracks, ice boating, ice sports accessories, ice hockey, curling and other winter sports.

Full information is given regarding lawn tennis, badminton and deck tennis courts and their construction and surfacing; illumination of courts; the ping pong table; typical golf courses with details of tees and greens and treatment of typical holes; swimming pool, wading pool, sand court and pergola details; athletic fields, track equipment and tables of starting points for races starting on circles and curves; baseball and lawn bowling; also shuffle board, box hockey and skiddle; horseshoe pitching, roque courts, rifle and trap shooting; handball and squash racquet courts; lacrosse and field hockey fields; football, soccer and beeball fields; and games using home-made equipment.

Additional charts of craft work, new games and puzzles are now in preparation, and may be procured from the publishers as issued.

## The ARCHITECT'S LIBRARY

**GREAT GEORGIAN HOUSES OF AMERICA.** Published for the Benefit of the Architects' Emergency Committee by the Editorial Committee: 112 East 55th Street, New York. 264 pages. Plate illustrations. \$20

Two hundred and sixty illustrations and drawings of some of the great Georgian houses of America which compose this volume tell part of the story of our eighteenth-century domestic architecture and give evidence of the cultural life of the times. The preparation of this book has employed about 50 men, highly trained and educated, from January until October 1.

The proceeds of the sale of the book will be used in the relief of needy architects and their families. The large list of subscribers is headed by the President of the United States. For these original subscribers, who may wish additional copies for Christmas or New Year presents, the price of the book will be \$15 until January 1, 1934; the order should be sent to the Chairman, William Lawrence Bottomley, 112 East 55th Street, New York City, with check made payable to C. J. White, Treasurer. To others, the price of the book is \$20 at any book store.

**THE PRACTICAL DESIGN OF WELDED STEEL STRUCTURES.** By H. M. Priest, American Welding Society: 33 West 39th Street, New York City. 22 pages. Illustrated. 35c.

The essentials of the design of welded steel construction are presented with a sufficient background of collateral information so that the reader may have a clearer understanding of structural welding. The subject of inspection is covered with specific information of value to the structural steel inspector. A digest is made also of the American Welding Society's Building Code and of the Structural Steel Welding Research Report.

Valuable information on the stress distribution in side fillet welds and end fillet welds is reviewed and correlated. The attachment of structural shapes and of angles is treated in an original manner with new information given on these subjects, as well as eccentric connections and general design considerations.

The detail design information and the data on plate girders, trusses, column bases, splices and beam connections will be of special interest to the structural steel engineer. The charts prepared by the author are of direct value to the designing engineer.

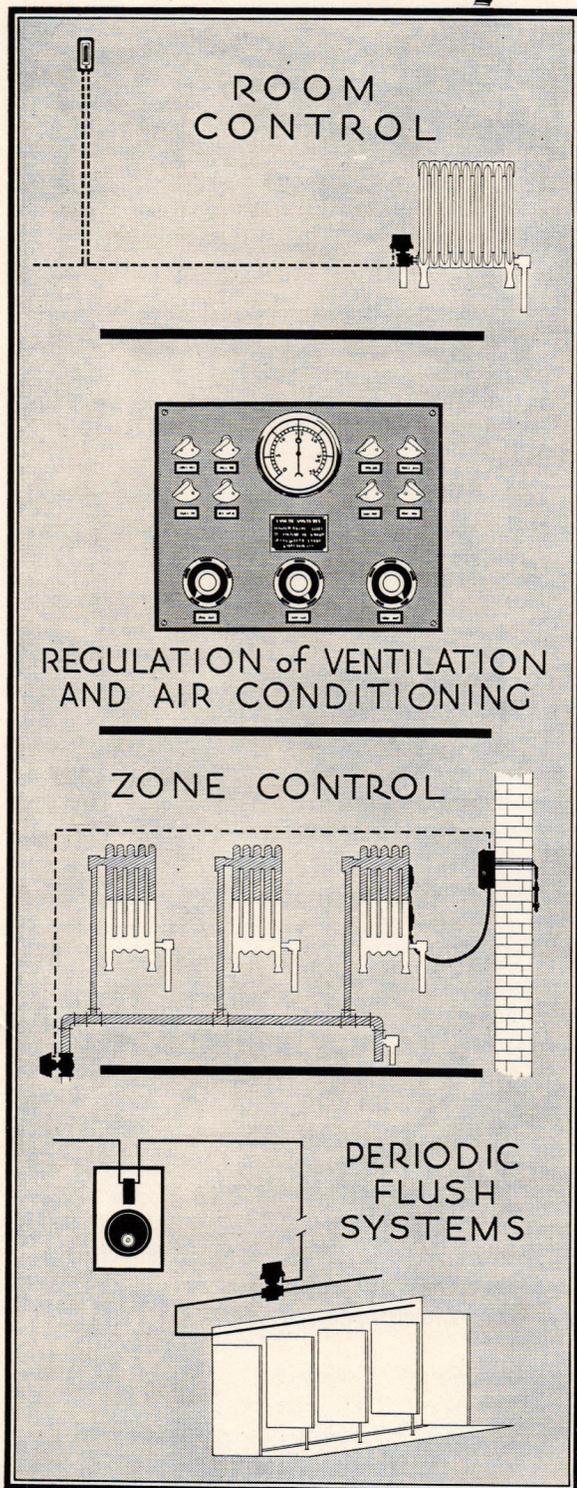
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# JOHNSON HEAT CONTROL

# ARCHITECTS' ANNOUNCEMENTS

Burnham Brothers, Inc., announce that Hubert Burnham and C. Herrick Hammond have joined together in the practice of architecture, and that the name of the firm has been changed to Burnham Brothers and Hammond, Inc. The firm will continue business in their present quarters in the Burnham Building, Chicago. The firm of Perkins, Chatten and Hammond has been dissolved. Melville Clarke Chatten is now associated with the new firm of Burnham Brothers and Hammond, Inc.

J. and G. Daverman and Chris Steketee, architects, announce the removal of their offices to 40-42-44 Porter Block, Grand Rapids, Michigan.

Ralph Bodman and Richard C. Murrell announce their association for the practice of architecture under the firm name of Bodman and Murrell, architects, with offices at 714 Reymond Building, Baton Rouge, Louisiana.

Walsh-Katonka and Miller, architects, announce the removal of their offices from 11623 Buckeye Road to 11408 Continental Avenue, Cleveland, Ohio.

Walter M. Macomber has opened an office for the practice of architecture at 12 North Second Street, Richmond, Virginia.

Albert Hart Hopkins, architect, announces the removal of his office from 296 Delaware Avenue to 2102 Liberty Bank Building, Buffalo, New York.

Julius Grozen announces the opening of an office at 339 South Main Street, Fall River, Massachusetts, for the practice of architectural engineering.

Stanley E. White, architect, has opened offices for the practice of architecture at 35 Main Street, Cold Spring, New York.

The office of Walter Thomas Williams, architect, has been moved from 41 East 42nd Street to Two Park Avenue, New York City.

The firm of Joseph Urban, Architect—Irvin L. Scott, associate, is being continued under the name of Joseph Urban Associates, 5 East 57th Street, New York City.

Robert S. Hale, consultant on the welding of steel structures and the remodeling and reinforcing of existing structures by welding, announces the removal of his office from the Old Colony Building to 1432 West Lake Street, Chicago, Illinois.

## CALENDAR OF EXHIBITIONS AND EVENTS

January 15	Closing date for Better Homes in America competition, 101 Park Avenue, New York City.
February 1	Closing date for entries for Rome Prize competition. Address Roscoe Guernsey, Executive Secretary, American Academy in Rome, 101 Park Avenue, New York City.
February 5-9	Third International Heating and Ventilating Exposition, to be held at Grand Central Palace, New York City.
March 3	Closing date for receiving designs for steel tower competition. American Institute of Steel Construction, 200 Madison Avenue, New York City.
Until June, 1934	Remodeling Competition, conducted by the Good Housekeeping Studio, 57th Street and Eighth Avenue, New York City.

George L. Walling, architect, has opened an office for the practice of architecture at 2136 Ashland Avenue, Toledo, Ohio.

Milton B. Weissman, architect, wishes to announce that he is now engaged in the general practice of architecture at 119 West 57th Street, New York City.

The New School of Social Research announces a course in Architectural Design under the direction of W. K. Harrison. Criticism Tuesdays and Fridays, 3-6, commencing November 3rd—Class limited and selected. Previous training in architectural or mechanical drawing is required. The fee for three months is Twenty-five Dollars.

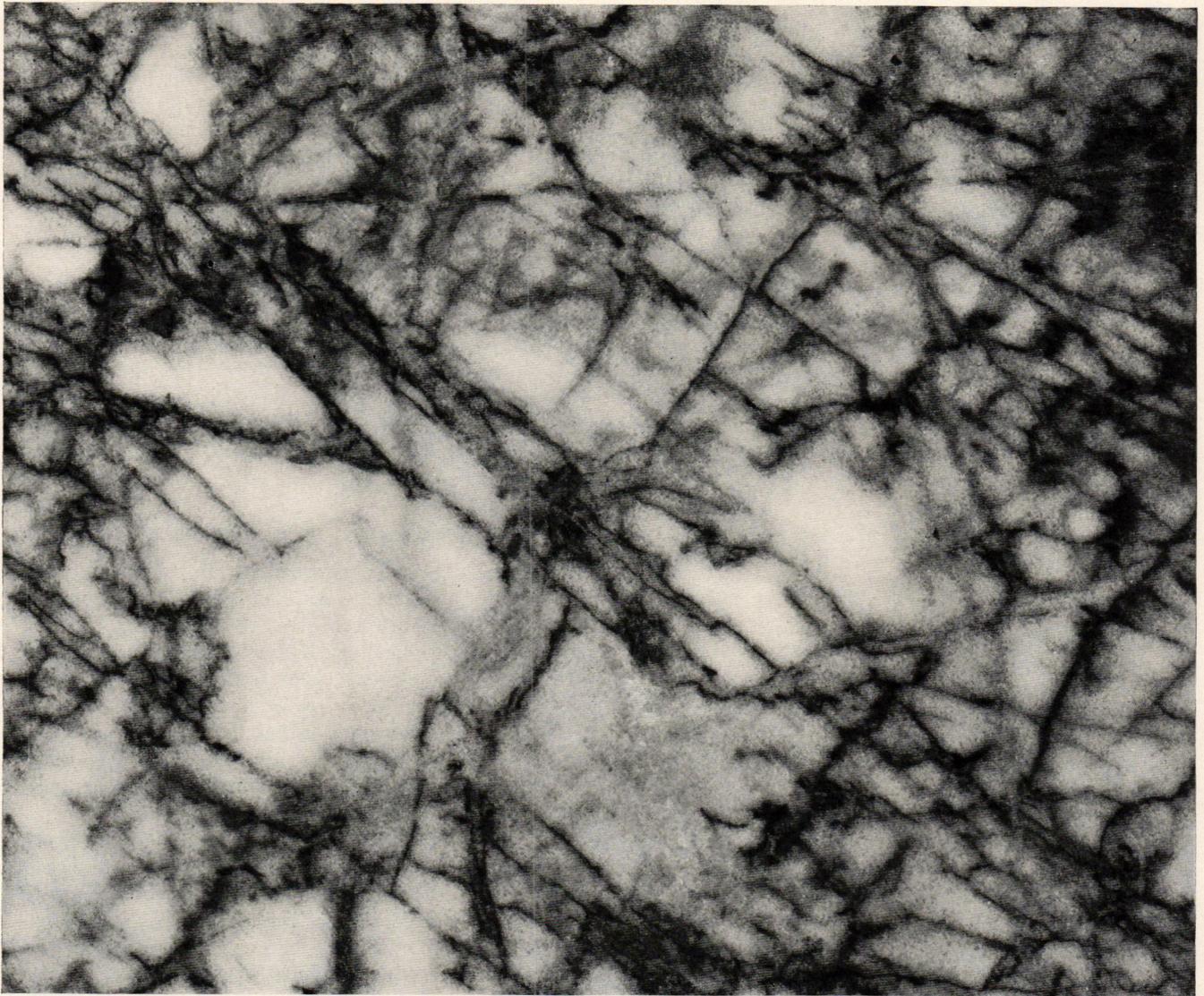
A free public exhibition by Claude Bragdon of designs for stage scenery, costumes and properties used in the New York productions given by Walter Hampden, is being held at the Museum of the City of New York, Fifth Avenue and 104th Street, daily from ten A. M. till five P. M., Tuesdays excepted.

The Kate Neal Kinley Memorial Fellowship Committee of the University of Illinois has appointed Mr. Arthur Bassin of 4613 North Kedzie Avenue, Chicago, as the Second Kinley Fellow. This award makes possible study abroad for one year for students in music, art or the aesthetic phases of architecture.

The Architects' Collective, a nonprofit study group, 127 West 22nd Street, New York City, announces a new course in Modern Industrial Design covering the interior, furniture and accessories and machines used in the house under the direction  
*(Continued on page 16)*

# Gravina

GRAVINA (pronounced *gra-vee-na*) is a marble quarried from the Vermont Marble properties in Alaska. Distinct in its veining from all other varieties, Gravina takes a brilliant polish, has a white to light pearl background interlaced with lines of dark gray or black. It imparts a rich grandeur to large wall surfaces and is finely adapted to smaller installations. Its use, with Verde Antique, in the main corridor of the Cleveland, Ohio, Auditorium (J. H. McDowell, Architect), is illustrated. Architects are invited to write for *Color Plates of Vermont Marble* to: Vermont Marble Company, Proctor, Vermont.



## VERMONT MARBLE

BEAUTIFUL • PRACTICAL • DURABLE

of Gilbert Rohde, assisted by Hilda Reiss of the recent Bauhaus School, Desau and Berlin. The Architectural group is conducted by Percival Goodman. There will be co-operation between the architectural and the interiors group on certain projects. First meeting is Wednesday, December 13th, 1933. Those interested in joining the group should communicate in writing with G. Rohde, 136 East 57th Street, New York City.

#### THE ARCHITECTURAL GUILD OF ST. LOUIS

Organized August 7, the Guild has rapidly grown to a membership now comprising the majority of the active draftsmen here. While the organization was precipitated by the National Recovery Act, its activities are planned to encompass a far larger field and to extend beyond the period of recovery.

A Code Committee is functioning to protect the Architects' Code and has submitted recommendations for its revision to the proper authorities.

A Public Works' Committee is now making a study and an analysis of Public Works measures for the purpose of obtaining a reasonable portion of such work for this vicinity, and to see that the work is properly apportioned among the architects and draftsmen. This committee had a profitable and encouraging interview with Miss Perkins, the Secretary of Labor, during her recent visit to this city.

A Statistics Committee is making a comprehensive and revealing compilation of facts relating to not only the draftsman and his condition, but to the profession as a whole and its relation to society.

A Professional Advancement Committee, using the data of the Statistics Committee, is formulating a program of such action as the name of this committee suggests.

ALFRED H. NORRISH, *Secretary*,  
5584 Maple Avenue,  
St. Louis, Mo.

#### FEDERATION OF ARCHITECTS, ENGINEERS, CHEMISTS AND TECHNICIANS

We have been organized as a national organization to promote the economic interests of the technical professional employees. We have submitted amendments to the various NRA Codes presented in Washington in order to provide fair and appropriate salaries, working hours, and conditions for this important section of the working population. We have appeared in Washington at the leading code hearings affecting technical men.

It is the intention of our Federation to place before Civil Service bodies and before private concerns such questions dealing with the economic status of professional technical employees.

We invite all employees to get in touch with our national office for further information and also to enable them to assist us in pushing such proposals

for the codes governing the technical professional men and women.

MARCEL SCHERER, *Chairman*,  
232 Seventh Avenue,  
New York, N. Y.

#### PRINCETON-McGILL HOCKEY TO AID ARCHITECTS' FUND

A subcommittee of the New York Architects Emergency Committee has arranged for a benefit hockey game to be played at the Madison Square Garden on Saturday, December 30, at nine o'clock, between Princeton and McGill Universities. In the Norse Grill of the Waldorf-Astoria Hotel, there has been arranged in connection with this game a gala dinner.

#### RESEARCH ON HEATING AT MELLON INSTITUTE

According to an announcement by Dr. Edward R. Weidlein, Director, Mellon Institute of Industrial Research, Pittsburgh, Pa., the Multiple Industrial Fellowship on heating, sustained in the Institute since 1929 by the National Radiator Corporation, Johnstown, Pa., is continuing actively a number of investigations of interest to heating specialists as well as users of heating equipment. In addition, the Fellowship, whose incumbents are Dr. J. L. Young and Mr. A. C. Jephson, has been lately according more and more research attention to certain problems in air conditioning and also to the development of new products.

After a thorough investigation of ferrous and nonferrous heating units, the Fellowship has found that cast iron is the most suitable metal for the construction of finned convectors. Results of work on impregnated wood foundry patterns, now fully patented, are likewise of interest to heating industrialists; this development is of broad application in the foundry field.

#### 1933 BETTER HOMES IN AMERICA COMPETITION

A medal is to be awarded to the practicing architect for the best design submitted for each type of house listed below—three medals in all:

Class (a) One-story house

Storage space but no living accommodations may occur in roof space.

Class (b) Story-and-a-half house

Living accommodations partly in a second story, actually a "half story."

Class (c) Two-story house.

The awards will be made by a jury of five architects appointed by the President of the American Institute of Architects. All awards will be made and announced about February 1, or as soon thereafter as practicable. The competition is open to all architects in the United States.

The exhibits, mounted, must be delivered to the office of Better Homes in America, 101 Park Avenue, New York City, on or before January 15 at 5 P. M. They will be handled as carefully as possible but must be sent at the risk of the competitor.

# Provide the "Climate" too

YOUR CLIENT expects you to provide the right "climate" indoors, the year 'round.

That means air conditioning—and we have specialized in this field for years. A Climator installation will do the work dependably, and keep the house up-to-date.

You will never have to justify a Climator installation. You and your client are invited to investigate—but you don't have to experiment. Climator passed that stage long ago.

Caliber of the residential jobs Climator-equipped, and of the architects who planned them, is the best evidence of Mueller standing in the air conditioning field.

## CLIMATOR

### AIR CONDITIONING SYSTEM

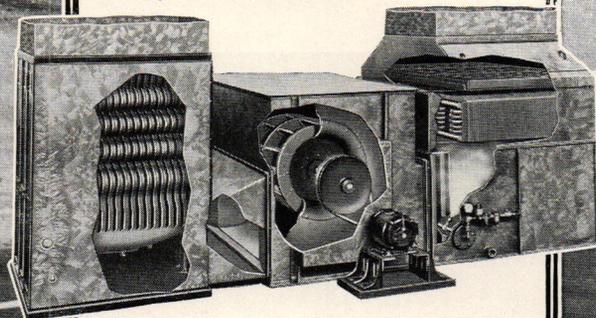
performs all the necessary functions. In winter it filters, circulates, washes, humidifies and warms — heating units for any fuel are available. In summer it filters, circulates, dehumidifies, and lowers temperature to any specified degree.

Refrigerating unit for dehumidifying and cooling may be added at a later date.

Write to us for further data on the Climator System, and Mueller-Frigidaire year-'round air conditioning.

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*Here is a cut-away of an all-year Climator installation, showing fan, washer, filters and Frigidaire cooler.*

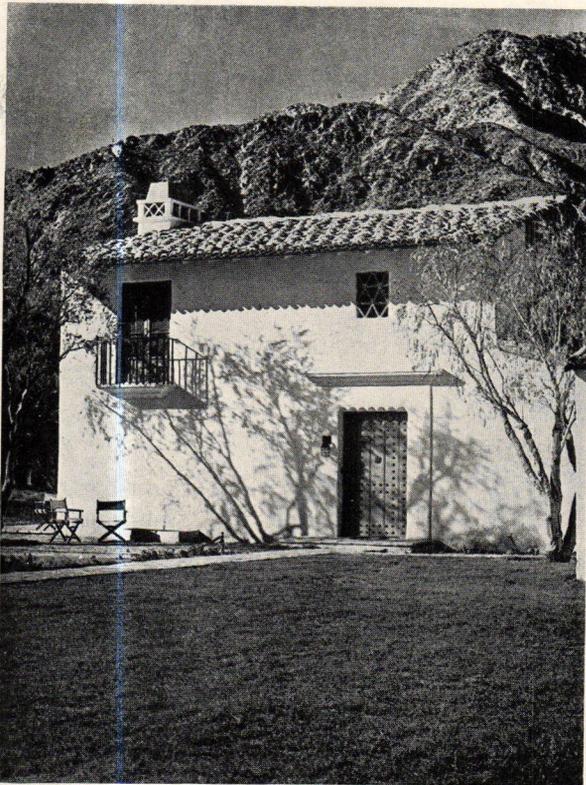


# MUELLER - MILWAUKEE

*A Baltimore, Md., residence,  
Climator-equipped. William  
Gordon Beecher, Architect.*

## PUBLISHER'S PAGE

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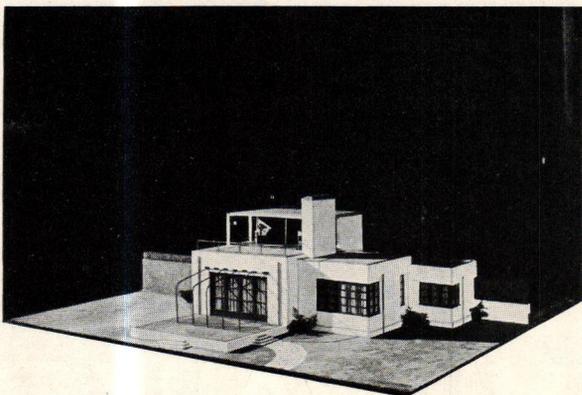


Wm. M. Clarke

RESIDENCE OF WALTER MORGAN  
LA QUINTA—INDIO, CALIFORNIA  
GORDON B. KAUFMANN, ARCHITECT



DRIVE-IN MARKET IN LOS ANGELES



ARCHITECTS' MODEL OF A MASONITE HOUSE

### This Month:

Proposed building construction is increasingly reflecting the need for facilities that serve leisure time. Parkways, recreation centers, provision for housing along our national highways and in national parks are instances of construction, largely architectural, that should be studied and understood by the architect. The importance of the subject influenced The Record to devote a large part of the December issue to this subject.

Progress is recorded in a widening of the scope of activities of the Public Works Administration. We list all of the projects to date with accompanying data, as comprehensive as it was possible for us to secure.

Distillery Planning is discussed by Joseph Douglas Weiss, a specialist in industrial planning, giving a workable method of designing the distillery.

Remodeling is featured with specific reference to making over rooms for dispensing spirituous liquors. In the preparation of this article and in selection of illustrations we had the assistance of J. O. Dahl, Editorial Director of Hotel Management and Restaurant Management.

### The Architectural Record for January:

New Housing Designs and Construction Systems

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Portfolio of Current Architecture

Mortgage Money Prospects

Panel Heating. By Alfred Roth, Zurich

Low-Cost Housing

Aetna Life Insurance Company Building, Hartford, Conn. James Gamble Rogers, Architect

Modernization and Alteration



## A VERSATILE ALLY IN BATHROOM DESIGN...

# *The New Residential Carrara*

**C**ARRARA Structural Glass, the decorative wall material which many architects have used so effectively in large buildings and pretentious homes, is now available for use in the bathrooms of average, modest residences. For Carrara can now be obtained in new thicknesses and new color tones exactly suitable to residential use.

What the introduction of this residential Carrara means to you in the planning of attractive bathrooms can scarcely be over-emphasized. Carrara has an exciting beauty all its own, which lends a distinctive personality to any room in which it is used. Its high surface polish, its reflectivity, its unusual depth and richness of beauty, its ability to create a feeling

of spaciousness, give Carrara a versatility which opens up new possibilities in bathroom design.

And Carrara is not only beautiful...it is practical. It will not fade or become old-looking. It will not check, craze or stain. It will not absorb bathroom odors. And it can be kept spotless and bright by an occasional wiping with a damp cloth.

You will find the new Carrara a versatile ally in obtaining effects impossible with other wall materials. And best of all, Carrara costs little, if any, more than inferior materials. Write for our new booklet containing full-colored illustrations of typical installations of Carrara Structural Glass. Pittsburgh Plate Glass Company, Grant Building, Pittsburgh, Pa.

## CARRARA

*→ The modern structural glass ←*

A PRODUCT OF THE PITTSBURGH PLATE GLASS COMPANY



# Design a New Kind of Kitchen

## AT VERY REASONABLE COST WITH CARRARA STRUCTURAL GLASS

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is therefore permanently beautiful. It is easily kept clean by merely wiping it occasionally with a damp cloth. It will not absorb cooking odors. And it remains impervious to the grease and grime which so quickly mar the beauty of ordinary kitchen walls.

But in spite of its superiority, Carrara Structural Glass costs little, if any, more than ordinary wall materials...and is, consequently, an ideal material to use in the modest home designed for the modest pocketbook.

**A PRODUCT OF THE PITTSBURGH PLATE GLASS COMPANY**



# THE ARCHITECTURAL RECORD

INDEX TO VOLUME 74  
JULY – DECEMBER, 1933

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PHOTOGRAPHS OF NEW YORK  
By SAMUEL H. GOTTSCHO

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R C A B U I L D I N G  
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Samuel H. Gottscho

## HOUSING CORPORATION TO HASTEN SLUM CLEARANCE

Formation of a Federal housing corporation as an adjunct to the Public Works Administration was announced October 29 by Administrator Harold L. Ickes when a certificate of incorporation was filed under the laws of the State of Delaware.

The corporation is to be known as the Public Works Emergency Housing Corporation. All of its stock will be owned by or held for the United States and it will be an executive arm of the PWA. The *incorporators* are Administrator Ickes, Secretary of Labor Frances Perkins and Robert D. Kohn, Director of the Housing Division of the Public Works Administration.

Officers have been selected as follows:

*President of the Corporation*, Secretary of the Interior Harold L. Ickes.

*Vice President*, Secretary of Labor Frances Perkins.

*Treasurer*, Assistant Secretary of Agriculture Rexford G. Tugwell.

*Secretary*, Lloyd H. Landau, Solicitor of the Public Works Administration.

*Comptroller*, George H. Parker, Chief Accountant of the Public Works Administration.

The following *directors* were selected by the incorporators:

Secretary Ickes, Secretary Perkins, Assistant Secretary Tugwell, Robert D. Kohn, Director of the Housing, Col. H. M. Waite, Deputy Administrator of Public Works.

With the announcement of the creation of this emergency housing corporation, Administrator Ickes issued the following statement:

"We have set up a housing corporation as an effective arm of the PWA to facilitate and expedite housing and slum-clearance projects authorized under the National Recovery Act. Through this corporation we hope to speed construction in localities where private enterprises or public bodies are encountering serious difficulties due to legal restrictions and other obstacles.

"The formation of this corporation is the outgrowth of our recent experiences in the PWA in attempting to increase building labor employment in the field of low-cost housing. Our experience of the last three months indicates clearly that we may

not depend upon private enterprises or limited dividend corporations to initiate comprehensive low-cost housing and slum-clearance projects.

"Relatively few of our cities realize that bad housing has a direct effect on their revenue. To meet this situation more is required than isolated action on the part of individuals. Movements to better conditions must be launched by a body of citizens who realize that action must eventually be guided by a State, County or Municipal Authority. The efforts of the Administrator and the corporation will be to encourage the creation of such authorities. Where the municipality lacks or cannot immediately obtain the necessary charter powers it is proposed to proceed along one or the other of the following courses:

"(1) Through some local group the immediate study of the local situation including the necessary investigation of available low-cost slum land will be encouraged. Therefore, the acquisition of the necessary land would be by private contract if possible, otherwise by eminent domain, which power is derived from the National Recovery Act.

"The success of this program depends upon the acquisition of low-cost land in contiguous blocks which will involve the destruction of slums. A single clearance and rehousing operation may involve the acquisition of other low-cost land than that cleared so as to reduce further land cost per unit and better distribute the new low-cost housing with respect to industrial employment. On three or four projects of slum clearance already approved by the Administrator the land covered with old houses has cost less than \$1 per square foot. Elsewhere in metropolitan areas more will have to be paid, but none will be approved on such high-priced land as has been proposed for certain projects in some of our largest cities. It is not proposed to standardize improvements; they will be designed to meet the needs of each particular city. If apartments be used, they will be confined to low-type structures; the building of skyscrapers will not be resorted to in any circumstances.

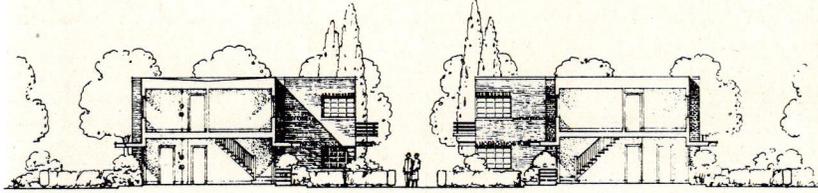
"(2) To make available to the State Legislature information on which they may act to create Housing Authorities in cities or counties so that such Authorities may cooperate with the Govern-

SEPTEMBER-1-1933

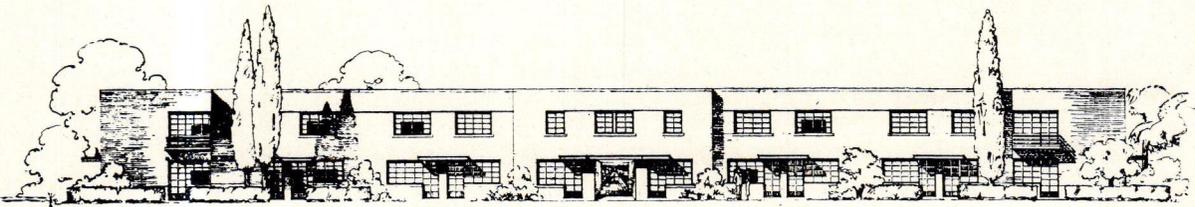
DETROIT  
CITY PLAN COMMISSION  
SLUM CLEARANCE PROJECT - EAST SIDE UNIT  
TYPICAL COMMUNITY QUADRANGLE



SERVICE COURT ELEVATION

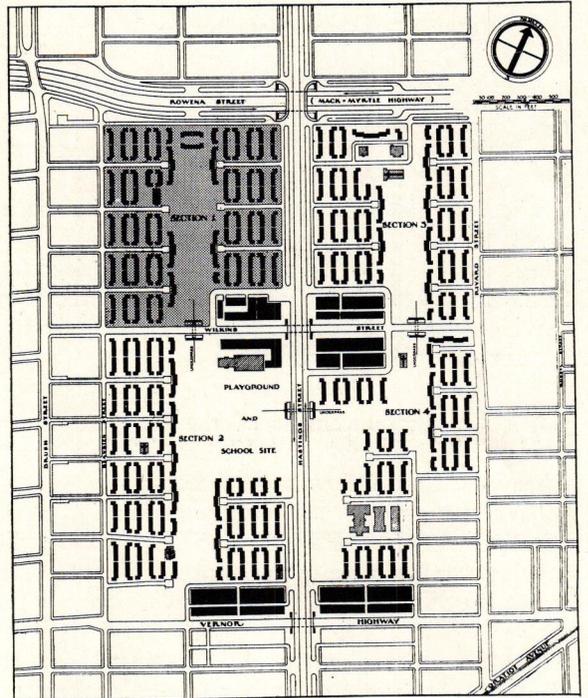
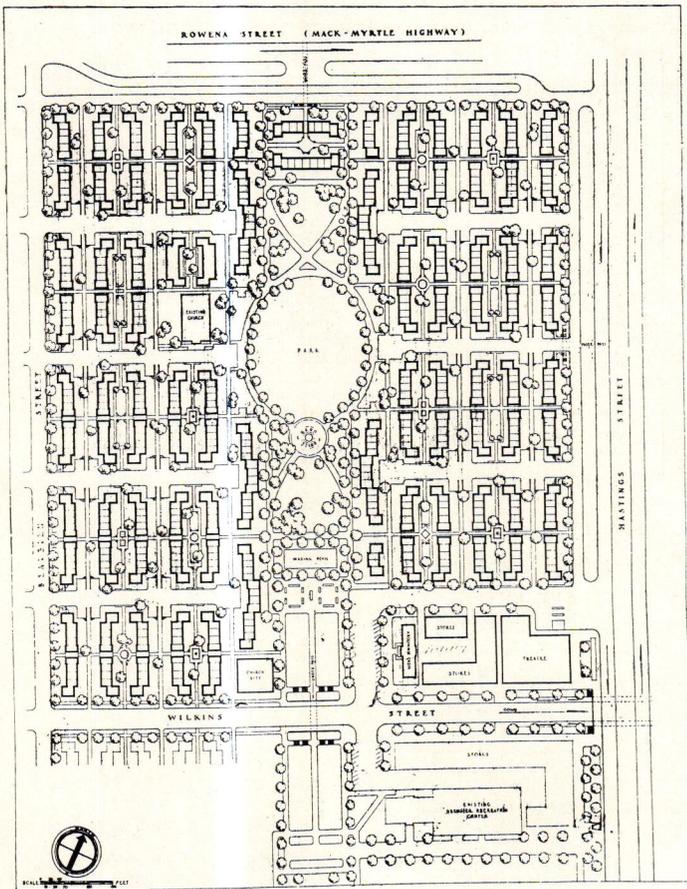


CROSS SECTION

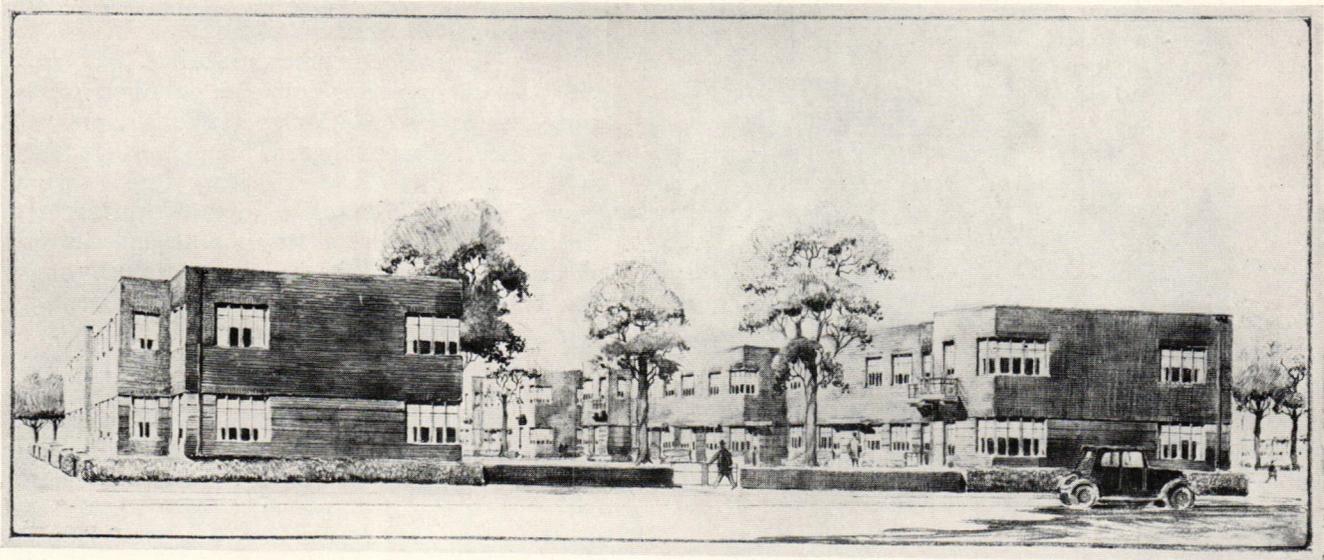


GARDEN COURT ELEVATION  
SCALE 1/8" = 1'-0"

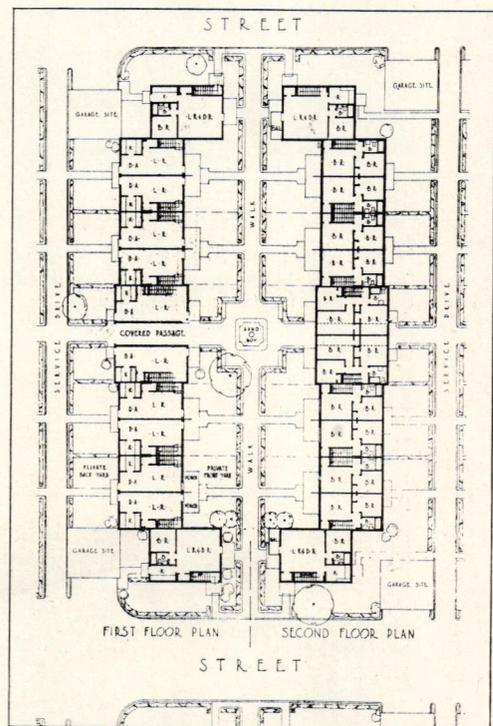
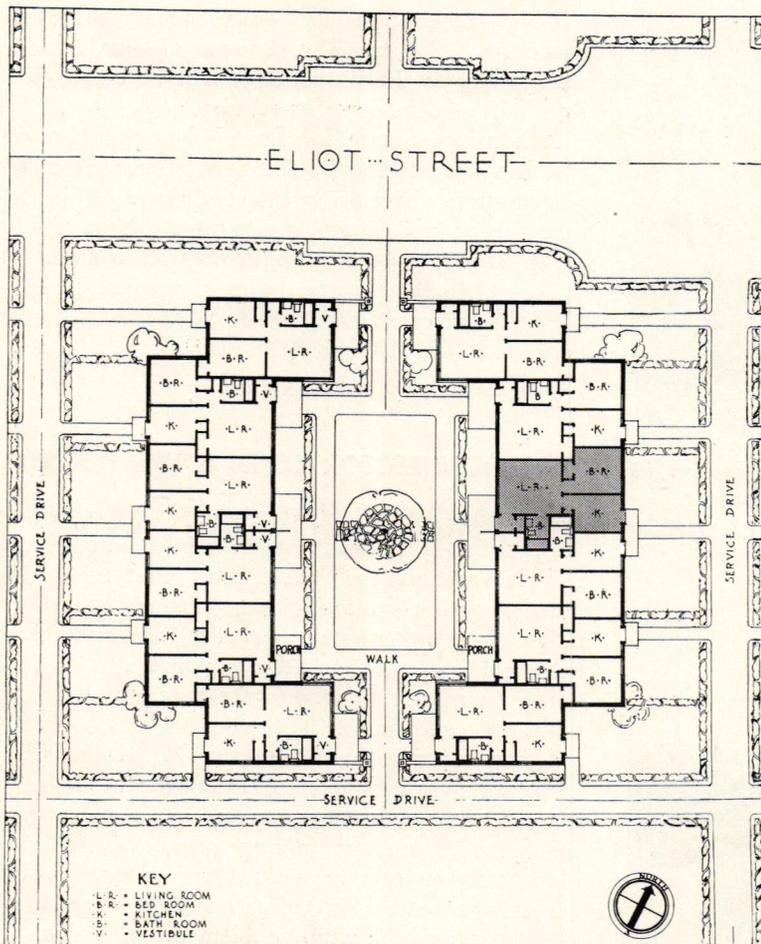
SECTION 1-748-B5



WALTER H. BLUCHER, CITY PLANNER AND SECRETARY  
TRACY B. AUGUR, CONSULTING CITY PLANNER  
G. FRANK CORDNER, CONSULTING ARCHITECT



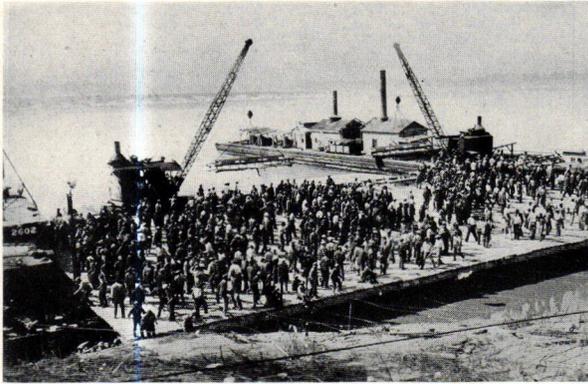
WALTER H. BLUCHER  
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G. FRANK CORDNER  
Consulting Architect



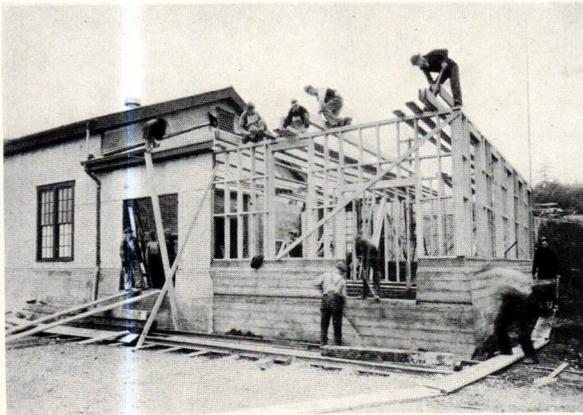
### DETROIT SLUM-CLEARANCE AND HOUSING PROJECT

Estimated total land cost is \$850,000, or \$.89 per square foot; total building cost will be \$2,100,000, or \$.39 per cubic foot on NRA wage scale. Land development cost will be \$136,000. The total number of families to be housed is 729, the number of rooms 2,940 and the average rent per room \$6.28.

The buildings are two-story fireproof group-houses with flat roofs and no basements. There are five types of houses ranging from 2½ to 6 rooms and two types of two-family small flats. Heating is to be by individual coal heaters in apartments.



PWA in action. Here are some of the men re-employed on Mississippi River flood-control work at Glen Allen, Mississippi.



Carpenters at work on new PWA construction at Naval Ammunition Depot, Puget Sound, Washington.



Public Works Administrator Harold L. Ickes handing a PWA pay envelope to a worker on a Federal Aid highway project.

ment, or may act as its agent in the management of the properties when completed.

"(3) To develop a procedure which will aid a city to work out a long-term plan on which to continue the process which the Federal Government has started. Eventually each State or large metropolitan area could have an agency empowered to engage in the rehabilitation of low-cost residence areas. Through such a body the Federal Government could continue its help and eventually, in a lesser and lesser degree, aid what must become a local function of government.

"This scheme of Federal aid should produce housing at rentals which have never before been attained. The assignment of these accommodations to families of low income must be closely guarded by the organization of agencies in a city to control their use so that those for whom they are built will really benefit. The housing thus provided will not be competitive with existing housing of good character.

"The corporation will have behind it the resources of PWA. The amount of funds to be transferred to the corporation will be determined by PWA as developments require."

A housing scheme for Detroit is reported to be the first undertaking by the new Federal Housing Corporation. The project is conditional on the acquisition of land at reasonable cost, so that rentals of \$6.30 per room per month may be offered. It will consist of two-story fireproof rowhouses sufficient to accommodate 2,550 families and will cost between \$3,000,000 and \$4,000,000.

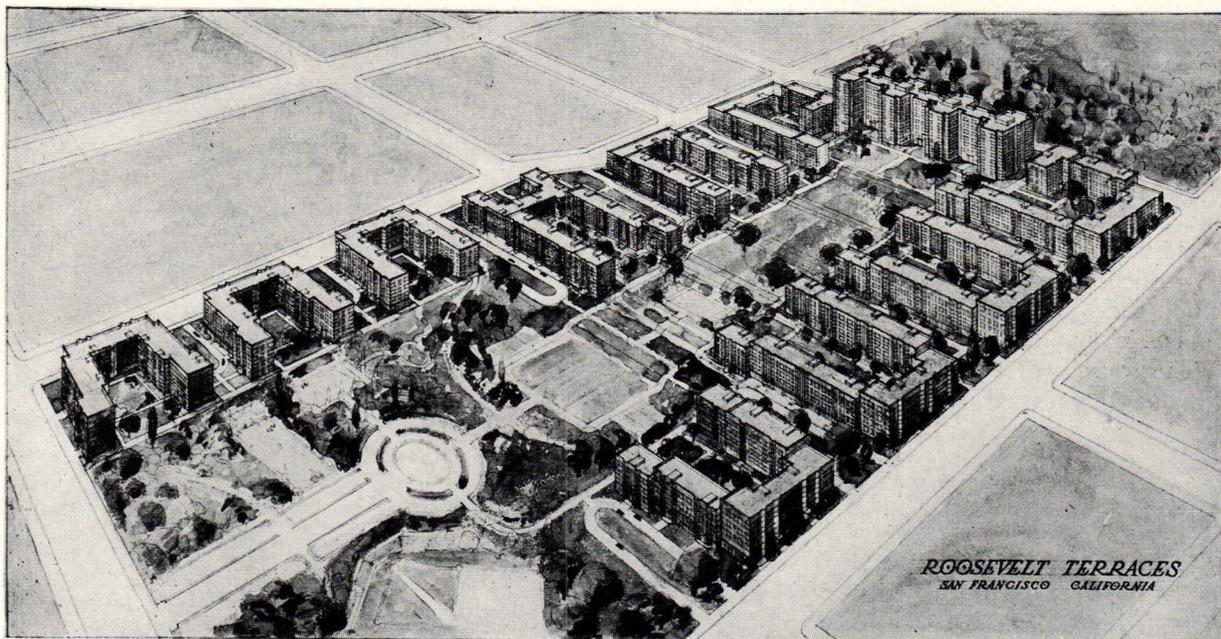
#### HOUSING DIRECTOR KOHN TOURS COUNTRY

Since the formation of the Federal Housing Corporation Mr. Kohn has made a tour of the Middle West and the Pacific Coast, conferring with housing authorities and citizens' committees in ten cities. Everywhere, he reported to Secretary Ickes, he found eagerness to cooperate with PWA and the housing corporation's plans to clear slum areas and build good self-liquidating low-cost housing.

Commenting on his experiences Mr. Kohn said:

"I went on this tour to find out what is being done by these cities to prepare comprehensive slum rehabilitation and rebuilding schemes. As previously announced by the Administrator, housing projects presented heretofore with few exceptions did not attack the slum problem directly. This is the problem of the gradual abandonment to progressive decay of the cores of our cities to build gradually expanding perimeters of new housing. As a consequence we have a continual increasing cost of development and operation of city services and the blighted areas left to more and more miserable living quarters for those who can not help themselves.

"In Cleveland, in addition to the project being studied by the Limited Dividend Corporation



Four-story walk-ups with 886 apartments, 3,048 rooms, to be rented at approximately \$11 per room.

**ROOSEVELT TERRACE HOUSING DEVELOPMENT, SAN FRANCISCO**

**MILLER & PFLUEGER, ARCHITECTS**

(Cleveland Homes), an official Housing Authority has been appointed under the Ohio Act. This Authority is making studies for a very low-cost slum-clearance project in no way conflicting with the class of accommodation to be provided by the Limited Dividend Corporation.

"In Toledo, Ohio, a volunteer Citizens' Committee is doing preparatory work pending the appointment of an official Housing Authority for Lucas County.

"In Detroit a well-conceived municipal project has been worked out and has been definitely submitted for action by the Housing Division in Washington.

"In Chicago a volunteer committee working in cooperation with the State Housing Board is studying certain areas available for a slum-clearance project and has promised to be ready with a report within ten days.

"In Omaha a committee appointed by Mayor Towl is doing excellent work in developing a number of housing projects to care for different economic groups. It is interesting to note here that some of the housing now located in one slum under consideration is worth saving. A certain percentage of fairly good housing in this area is therefore to be repaired under some arrangement with the present owners, and it is proposed to rebuild the balance of the area with new single homes with a very few two-story apartments.

"In Denver a committee appointed jointly by the Governor and Mayor is at work studying projects not only for Mexican workers and others but developing a scheme whereby this project can be co-related with one of Subsistence Homesteads in

the outskirts of the city. These projects if approved by the Administration could be managed by an advisory committee of socially minded workers with the intent to make this housing the instrument of the rehabilitation of families now hopelessly handicapped. In this particular city it appears undesirable to build the new housing in the present-time slum area. The Director of Housing, therefore, suggested that it would be permissible to present a project in which the new housing would go on now vacant land provided that as many slum dwellings were torn down in the bad bottom lands.

"Aside from a brief visit to Cheyenne, Wyoming, to examine a proposed low-cost housing project, I made a stop at San Francisco and there met with the old established San Francisco Housing Association. This Association is being reorganized to cooperate in a prompt study of the possibilities of a slum-clearance project in that city. I also inspected the local site of a project to which funds have been already allocated by the Special Board and made several examinations of proposed sites in Los Angeles, among them one of a rather extensive project for the rehabilitation of a run-down home area.

"These particular meetings with certain local authorities are the beginning of a series of educational conferences which I am planning to carry on in a number of the larger cities of the country. It is hoped that before long I can accept the invitations which have been received for similar conferences from New Orleans, Atlanta, Chattanooga, Nashville, Charleston, South Carolina, and other cities of the South, as well as a number of important centers in the Northwest and in the East."

## OTHER NEWS FROM WASHINGTON

An allotment of \$35,000 has been made to the National Planning Board to ascertain the extent to which planning researches and surveys are now being carried on throughout the country, and to study and correlate these surveys. The data to be collected will cover such subjects as natural resources, population distribution and trends, problems of health, local planning, and researches in any other field which has a direct bearing on national welfare.

The sources of this material, according to the National Planning Board, will be Federal agencies, foundations, universities, special research institutions and private sources.

As a safeguard against graft, waste and slipshod work, an Inspection Division has been organized by Secretary Ickes to check up on all non-Federal projects. The function of this Division, according to the Administrator, is "to see to it that the Government, citizens of cities, towns and counties get full value for every dollar that is borrowed and which they will have to repay; that the NRA codes of fair competition are observed on all PWA work,

that PWA regulations are obeyed, that there is no skimping on materials and that the maximum amount of unemployment relief is afforded by this money."

William M. Steele, a civil engineer of New York City, has been appointed head of the new division. Working under Mr. Steele's direction will be a staff of State engineer inspectors. They will work in cooperation with the State Engineers and State Advisory Boards, and will have headquarters in the offices of the latter. An engineer inspector will be appointed in each State where the number and magnitude of projects justify it. In States where the appointment of a State engineer inspector would not be justified, the State Engineer will also act as engineer inspector.

The Board of Public Land Commissions in Milwaukee has been directed by the local Common Council to prepare a program of low-cost housing or slum clearance for Milwaukee, and to secure its financing by the United States or any other public or private agency.

## CODIFYING THE CONSTRUCTION INDUSTRY

Hearings on the master code for the construction industry, with its supplemental codes for the contracting and subcontracting industry, began September 6. It became evident quite early that there would be a considerable difference in opposing viewpoints which could not be composed easily. On the one hand were those elements that make up the diversified combination of functions called the construction industry, brought together for the first time into a well-knit group under the guidance of the outstanding leaders of the field, and on the other hand, the most strongly organized division of the powerful American Federation of Labor, namely, the Building Trades Department.

The hearings on September 6 brought out the principal demands of labor, which were

- (1) a 30-hour week;
- (2) a wage scale equal to that adopted by the Public Works Administration, and
- (3) the right to a voice on the code authority in settling matters affecting labor. In addition, each group proposing a supplemental code was faced with equal and, in some instances, more rigid demands by labor.

The 30-hour week as a definite objective of labor was adopted at the American Federation of Labor Convention held in Washington during October. It was argued that the shorter week is necessary to absorb the large number of unemployed in the construction industry. Moreover,

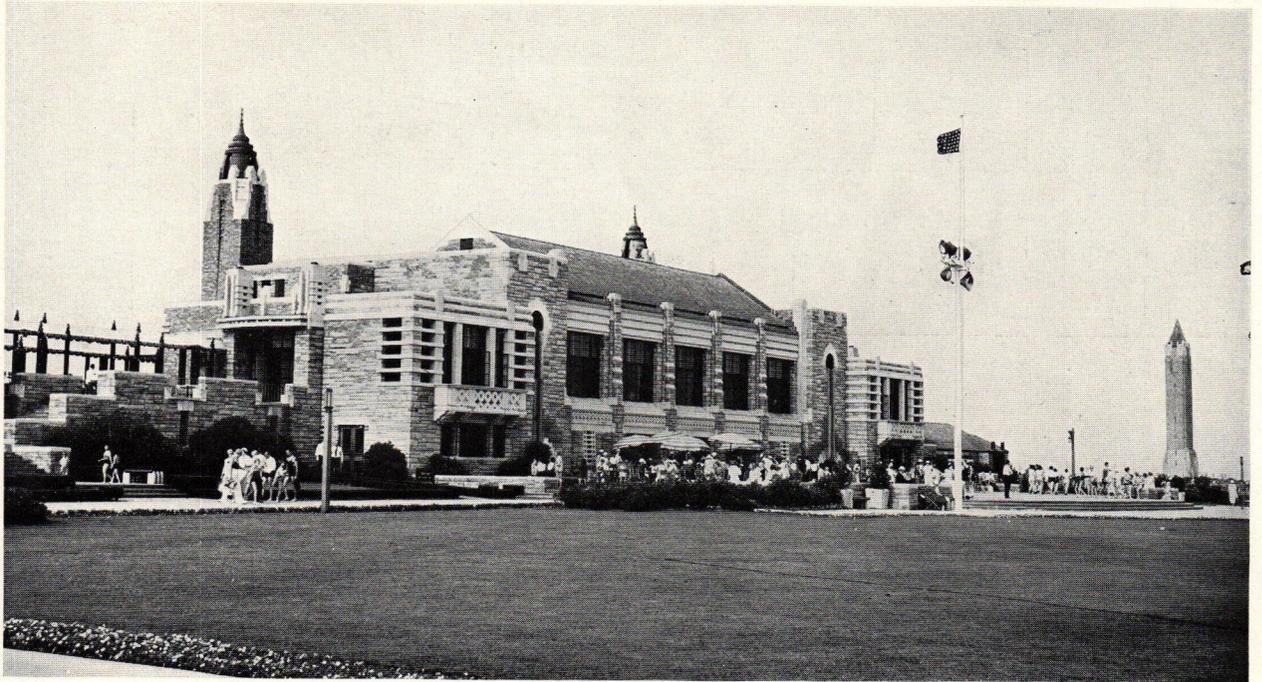
the construction industry in the past has provided a sort of shock absorber in that it has always been looked upon as the field where the unemployed of other industries might be absorbed.

The code as presented provides for a 40-hour week averaged over a six-months period with a maximum of 48 hours in any one week. This is necessary, say the contractors, to allow for the numerous open construction jobs where inclement weather will prevent work for as much as a week at a time and even longer. If the industry is to be limited to the 30-hour week, it would mean a larger number of men on such jobs, away from the metropolitan areas and in camps where they must pay board during such inclement weather. It is also believed that a 30-hour range would in many instances mean more overtime in the building trades since there are many operations of a more or less continuous nature which would be hampered by changing operators too often.

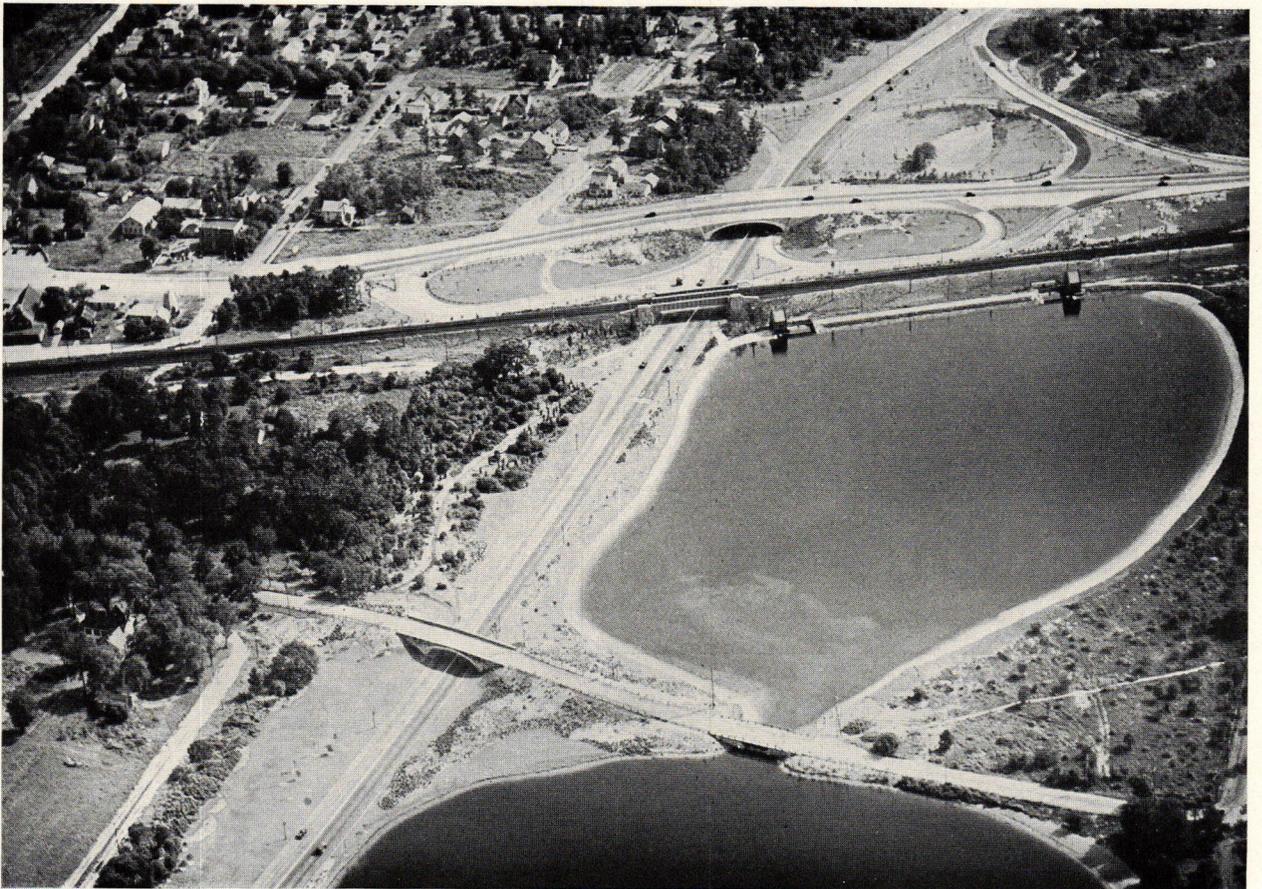
The question of wages is of even greater concern. Although the code does not provide any minimum for skilled labor, it does provide a minimum of 40 cents an hour for unskilled labor. Labor argues that since the Public Works Administration has already set a minimum for skilled labor of \$1 in the southern zone, \$1.10 in the central zone and \$1.20 in the northern zone, private construction can do no less. Moreover, since a 30-hour working week is necessary to absorb the

Location	Queens County New York	Indianapolis, Ind.	The Bronx, N. Y.	Cincinnati, Ohio	Richmond, Va.	Atlanta, Ga.	Atlanta, Ga.	Philadelphia, Pa.	San Francisco, Calif.	Chicago, Ill.
Promoter	Halletts Cove Garden Homes, Inc.	Indianapolis Chamber of Commerce	Hillside Housing Corporation	Lane Gardens Corporation	Sunshine Apartment Corporation	Techwood, Inc.	University Housing Corporation	Hillcreek Homes Corporation	Roosevelt Terrace Housing Development	Harms Park Housing Corporation
Architect	Fellheimer and Wagner	Merritt Harrison	Clarence S. Stein	Tietig & Lee	Carneal, Johnson & Wright	Burge & Stevens	Burge & Stevens	Thomas and Martin	Miller & Pflueger	Nimmons, Carr and Wright
Tentative Loan	\$2,965,000	\$4,460,000	\$5,184,000	\$1,980,000	\$663,000	\$2,600,000	\$1,212,500	\$1,290,000	\$3,230,000	\$1,333,000
Estimated Cost		\$5,250,000	\$6,084,000	2,380,000	\$780,000	\$2,975,000	\$1,400,000			\$1,569,400
Number of Buildings	31	200								
Number of Stories	6	1-2-3	4-6	3-4	2	2-3	3	1-3	4-6	4
Type of Buildings	Fireproof Apartments	Semi-fireproof Apartments	Fireproof Apartments	Fireproof Apartments	Nonfireproof Apartments	Fireproof Apartments	Fireproof Apartments	Houses and Apartments	Fireproof Apartments	Fireproof Apartments
Percentage Land Coverage	35		34	27		25			28	
Number of Units	680	200	1,435	572	296	557	800		886	450
Number of Rooms	3,000	600	5,740	2,120	1,184	1,965	2,880	1,620	3,048	1,440
Land Cost Per Sq. Ft.										
Bldg. Cost Per Cu. Ft. (Cents)										
Rentals Per Room	\$10.50	\$8.33	\$11	\$9	\$5.50	\$8	\$5	\$7.50	\$11	\$9.50

INFORMATION COMPILED BY REAL ESTATE RECORD AND BUILDERS' GUIDE, PUBLISHED BY F. W. DODGE CORPORATION



Bathing pavilion.



Air view of state parkway, showing intersections with other highways.

JONES BEACH STATE PARK ON LONG ISLAND  
HERBERT A. MAGOON, ARCHITECT—W. EARLE ANDREWS, ENGINEER

# THE NATION PLANS FOR RECREATION

Excerpts from an address by Harold L. Ickes, Secretary of the Interior and Administrator of Public Works, before the joint annual convention of the National Conference on City Planning and the American Civic Association, in Baltimore, Maryland, on October 9.

"If city planning has been worth while, why not go in for national planning? And that is precisely what we are doing in this progressive, forward-looking administration of President Roosevelt. . ."

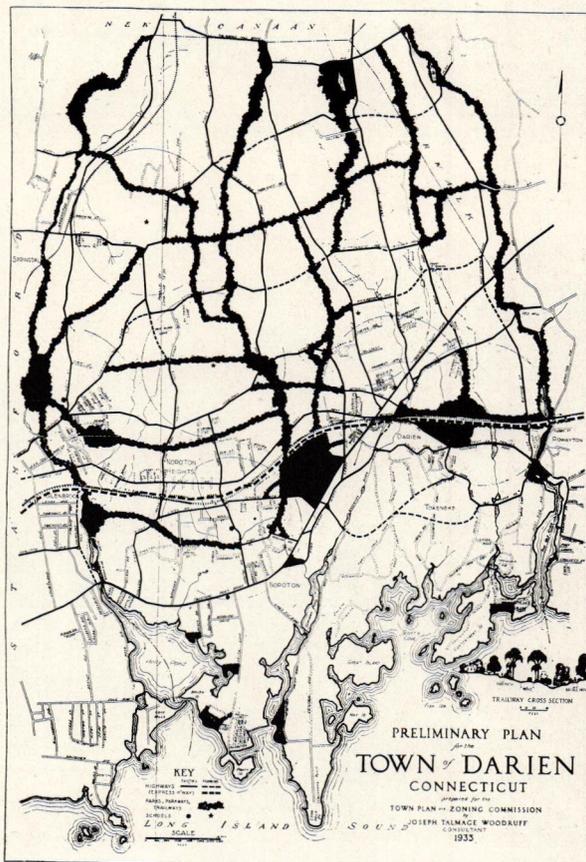
". . . We are seriously addressing ourselves to the matter of highways. Heretofore highways have been more or less of a crazy quilt affair. The politician with the strongest pull has been able to entice a concrete road into his community or past his farm even although from an engineering and a social standpoint the road should have run elsewhere. When we allocated \$400,000,000 out of the public works fund for roads in the various States we stipulated that primarily this money should not be used to build a little bit of road in this township and an unconnected mile of road in the adjoining township, but to join arterial highways, to connect up main roads already partly constructed, so as to work towards a comprehensive and logical network of roads throughout the country. There has been urged upon us for serious consideration from many quarters the building of at least one super highway all the way across the country from which branch roads at appropriate points could diverge. That at least such a trans-continental arterial highway will be built in the future there can be no doubt, thus presenting a problem that the National Planning Board should lose no time in studying.

"In addition to rivers and roads there is a wide range of subjects which the National Planning Board may properly consider. Questions of transportation and distribution and cost of electric current can well come within its purview as having an important bearing upon community life. Redistribution of population, the necessity and practicability of reclamation projects, harbor improvements, public buildings, the correction of soil erosion, all can be studied by this Board to the profit of the Nation. In fact, it is difficult to think of any domestic interest or activity in which the National Government is concerned which might not first be submitted to the careful scrutiny of the National Planning Board. . . ."

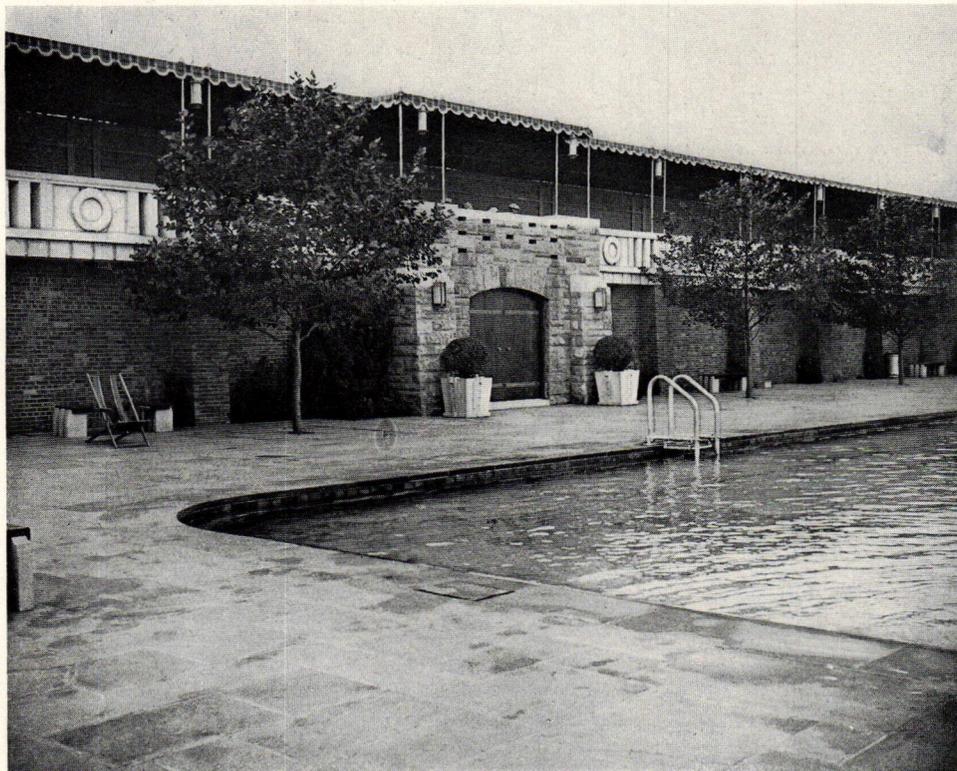
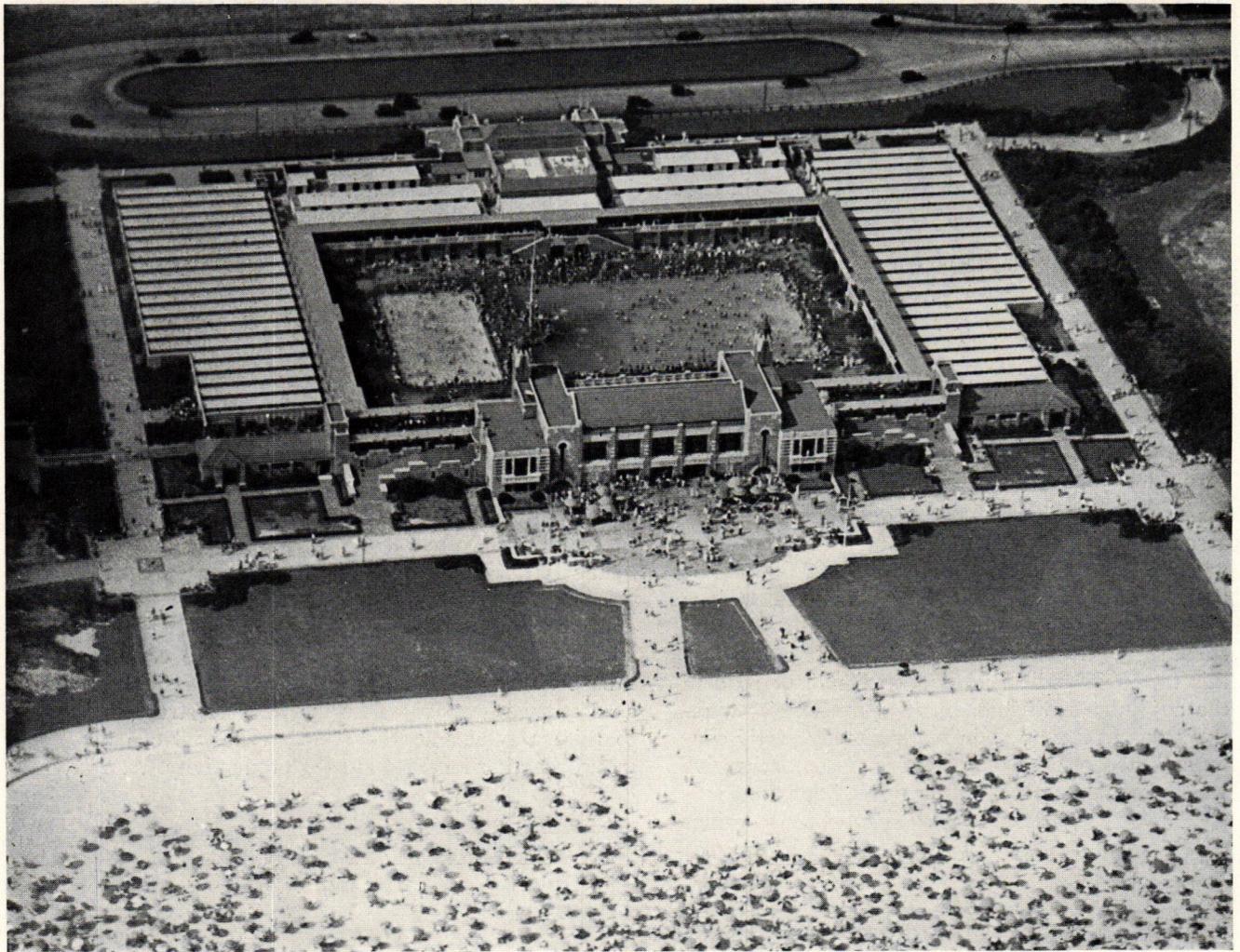
"We have boasted in the past of our illimitable resources in mines, in forests, in streams, thinking of all of these only in terms of possible profits. We have only incidentally appreciated the tremendous recreational, aesthetic and scenic treasures of the United States. . . ."

"But a new day is coming, a day of greater leisure for the average man and of more intelligent use of that leisure. The tremendous recreational, scenic and aesthetic resources that we have must

be put to their full use. First of all, we must preserve them for future generations. We have already made a notable beginning along this line. Our vast system of national parks and monuments and forests already assure for all time to future generations the preservation of the natural beauties and wonders and historic values that are contained in those areas. But we must create more national parks. We must set aside more national monuments. We must add to our national forests. In doing this we will be working along sound economic lines. Most of the areas that are adapted for national parks and monuments and forests are ill-adapted for agriculture. Submarginal lands on which people in vain have been trying to eke out a bare existence can be made to serve a social and an economic purpose, while the farmers struggling to raise a reluctant crop from sterile soil can be moved to other lands of greater productivity. . . ."



This plan of Darien, prepared by Joseph Talmage Woodruff, Superintendent of Highways and Bridges, features a network of parkways for motorists and trailways for pedestrians.

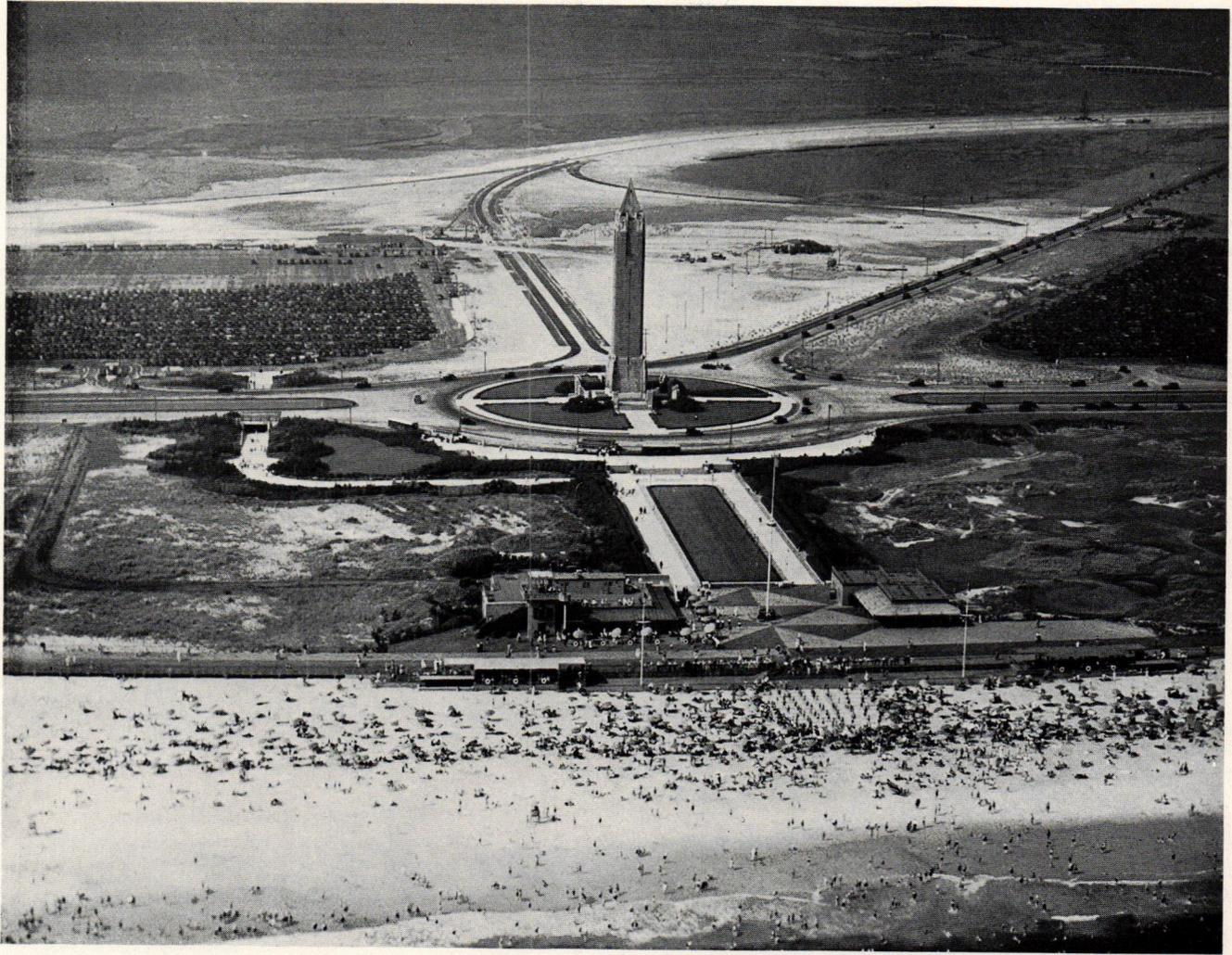


LONG ISLAND STATE  
PARKWAY COMMISSION

JONES BEACH  
STATE PARK

•

PLAYGROUND  
FOR THE MILLIONS  
WHO LIVE ON  
LONG ISLAND

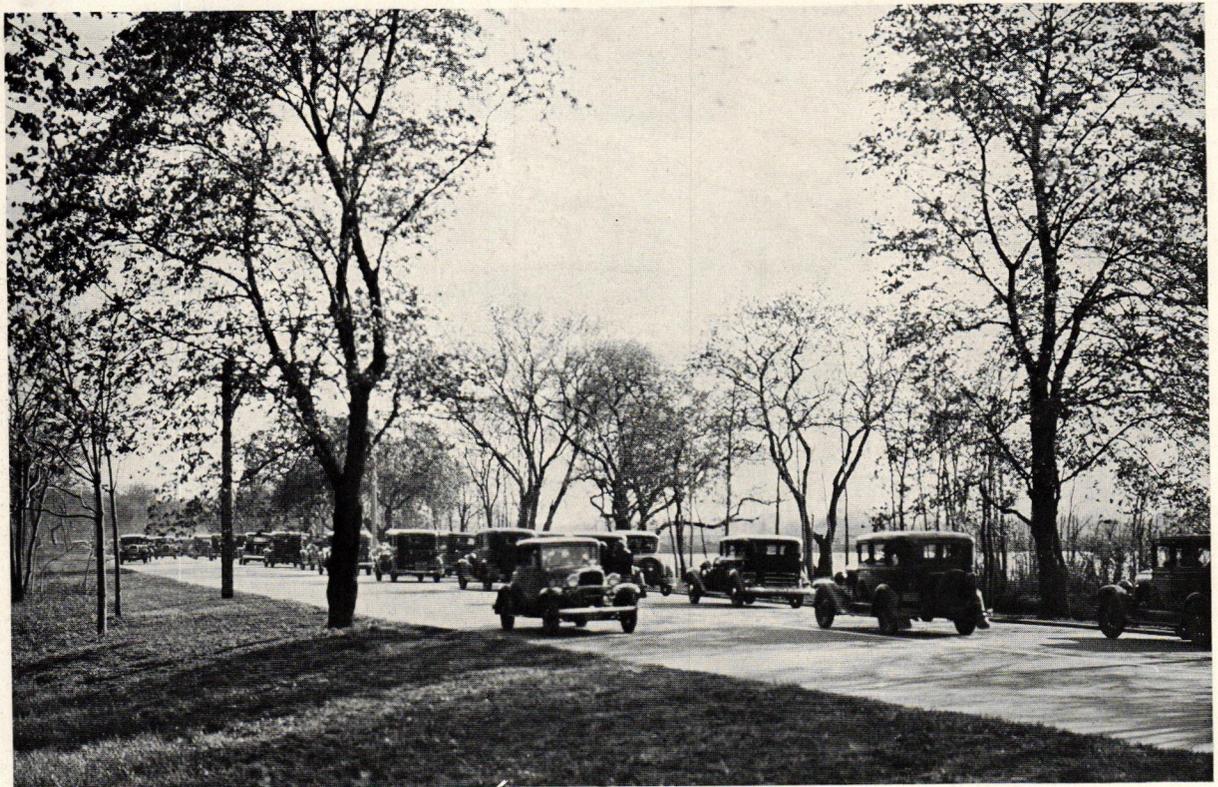


LONG ISLAND STATE  
PARKWAY COMMISSION

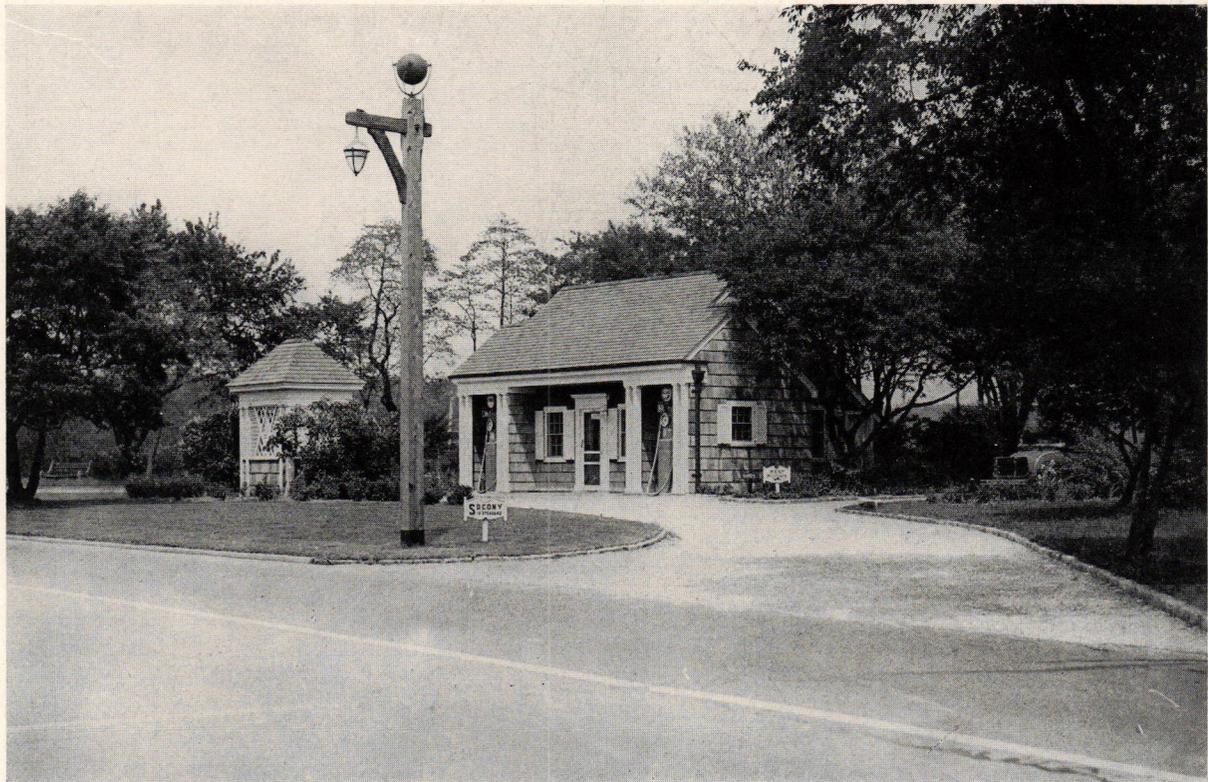
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W. EARLE ANDREWS  
ENGINEER

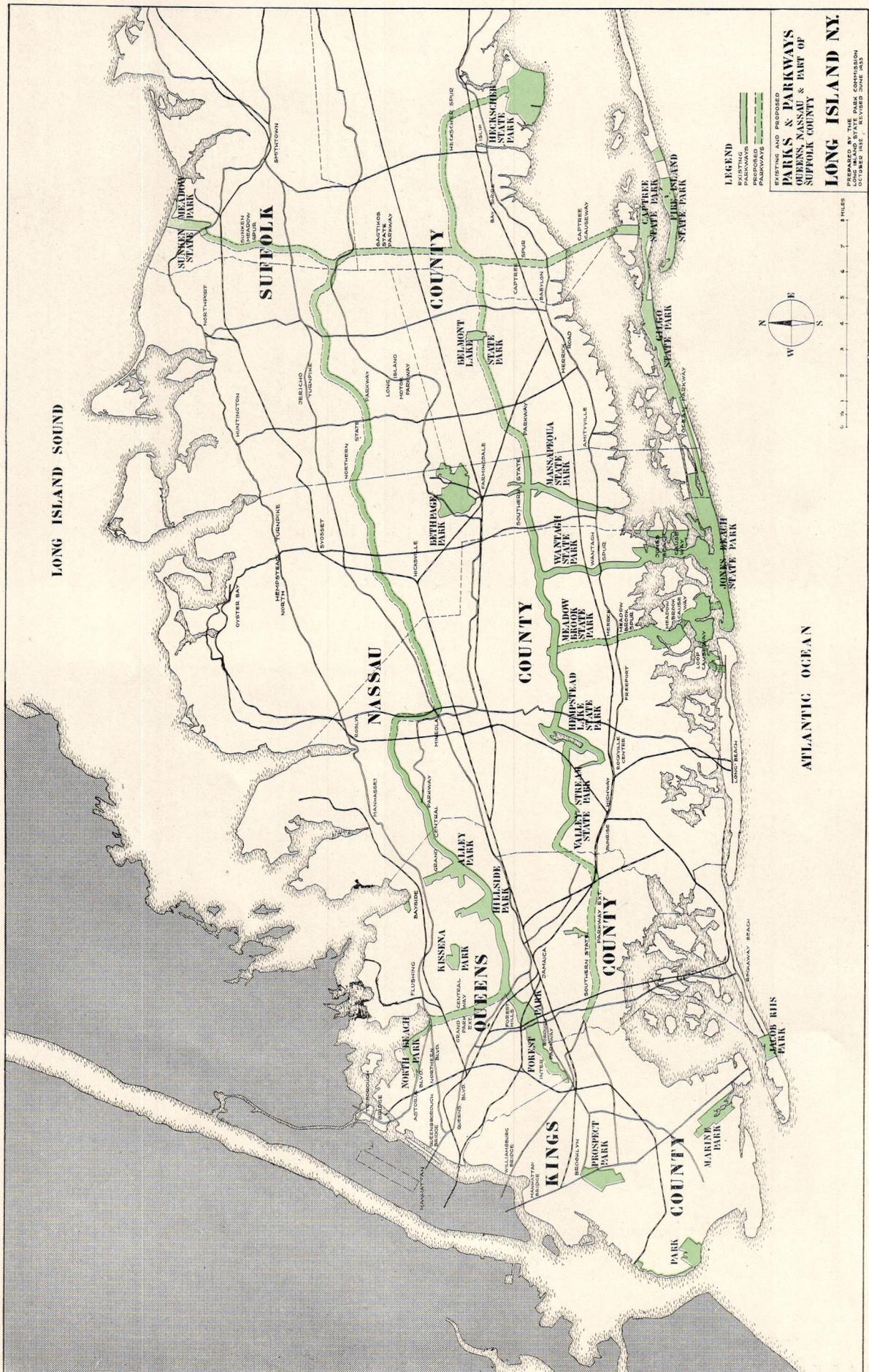


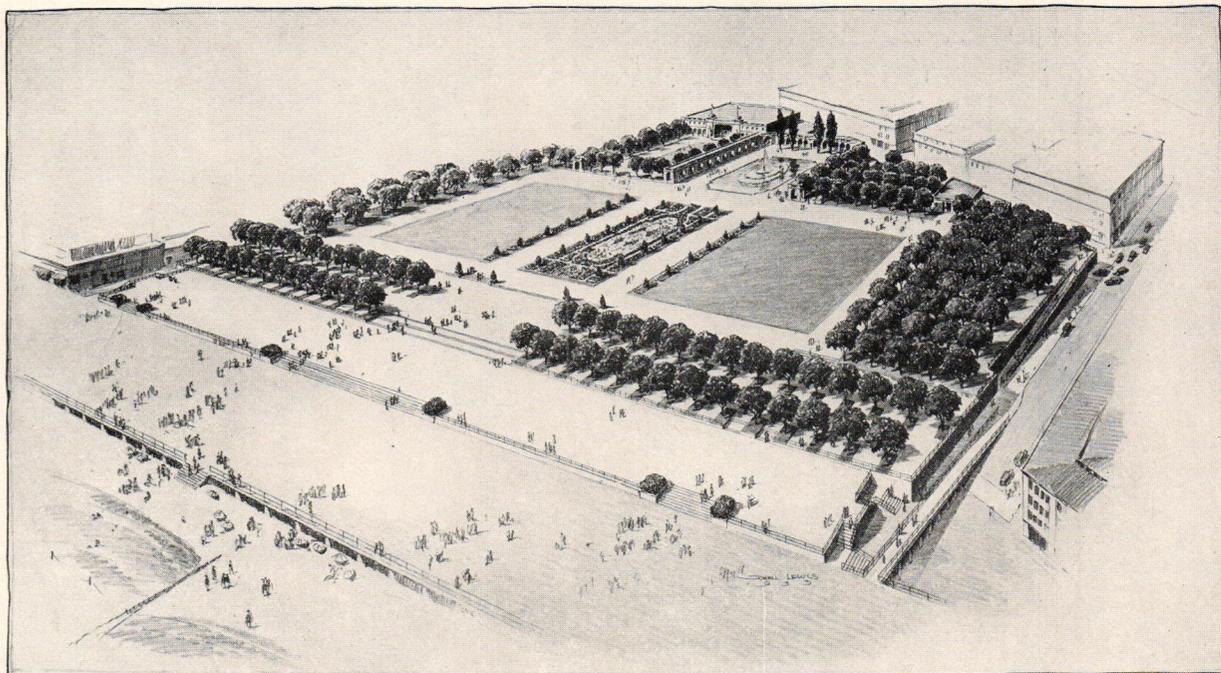


PARKWAY VIEWS—LONG ISLAND STATE PARKWAY COMMISSION



PARKWAY VIEWS—LONG ISLAND STATE PARKWAY COMMISSION





Garage with roof terrace used as a park. Designed by Charles Downing Lay, landscape architect.

## PARKS AND HIGHWAYS OF LONG ISLAND

An interview with B. L. VAN SCHAICK, Executive Secretary, Long Island State Park Commission

*What methods can be used to discourage speculative builders and others who wish to exploit injuriously vistas and sites along highways?* The only method used to discourage unsightly buildings adjacent to State parks and parkways is adequate zoning restrictions. In the case of the State parks and parkways on Long Island, zoning commissions have been established by the various municipalities in which the Park Commission is developing parks and parkways and most of these zoning commissions have adopted adequate rules and regulations by zoning the areas adjacent to all State parks and parkways for the highest class of residential development.

*How can the use of billboards be regulated?* The encroachment of billboards on areas adjacent to State parks and parkways has been handled in two ways:

- (1) By zoning restrictions.
- (2) By a campaign of education which has resulted in all of the larger outdoor advertising companies voluntarily removing all billboards that were adjacent to any park or parkway area and agreeing not to erect any new signs adjacent to the State parkways.

*What are the widths for highways and landscaped areas?* On all parkways a pavement 44 feet in width is laid out in the approximate center of a right of way which has a minimum width of 250 feet. The areas on each side of the road

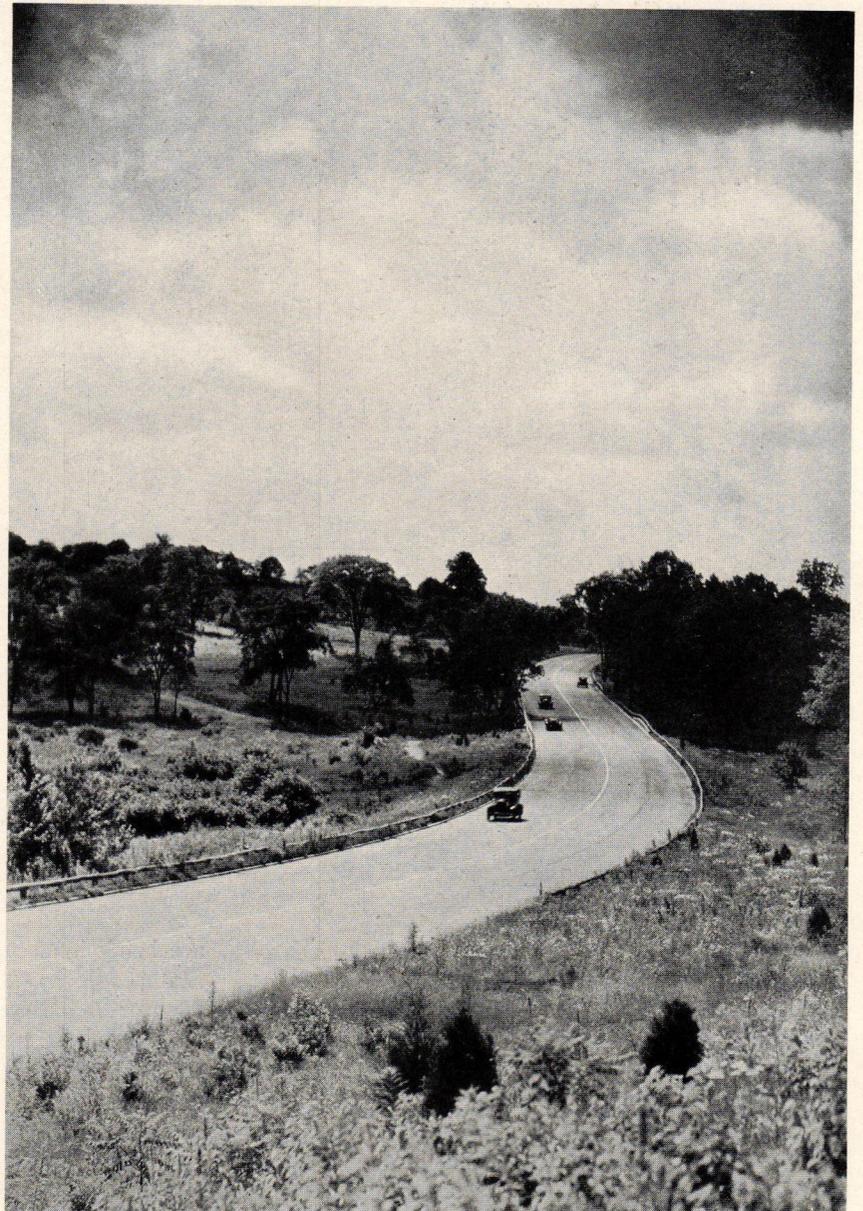
are being landscaped. The minimum width for a State highway is now 90 feet.

*How should highways be constructed in general?* This is a very hard question to answer as a whole volume could be written on this subject. Parkways are built with an 8" concrete pavement. In most cases concrete curbs are also provided. As a general policy, we prefer to run parkways in a cut rather than on a fill. In the former, we are able to landscape adequately while in the latter it is difficult to conceal any unsightly vistas. For the same reason we prefer, when constructing grade elimination, to run the parkway under the intersecting highway rather than over. All bridges are of reinforced concrete and stone-faced.

*What recreational facilities are most desirable for a bathing beach such as Jones Beach?* The recreational features for a bathing beach such as Jones Beach State Park are built around the main bathing attractions. At Jones Beach there are three types of bathing—ocean, bay and pool. The recreational facilities include handball, archery, shuffleboard, paddle tennis, sun bathing, etc.

*Are there any unusual features developed by your Commission that illustrate the progress made in relating facilities to objectives?* The only unusual feature is that we try to design and construct our facilities on a scale above that which might be expected by our usual run of patrons. Experience has proven that our patrons live up to the higher environment offered them.

Part of the drive near  
Kitchawan Road.



## MODERN MOTOR WAYS

The highway, as an artery for through traffic, must now be supplanted by the parkway and the freeway. Ever since the advent of the automobile, we have used roads which are the relics of horse and carriage days, except that we may have modified sharp curves and widened old rights-of-way at tremendous expense to rescue a doubtful measure of safety. The charm of many of our old highways has gone, never to return, and the reason may be attributed to a lack of intelligent planning for the increasing volume of motor traffic.

Not only have our highways been rendered ineffectual as far as through traffic is concerned, and the borders of these highways been despoiled, but in addition broad areas paralleling them have been blighted. Take any one of our famous "Post Roads," leading out of New York City, for example. The lands bordering the sides of long sections of these roads have been given over to the most tawdry type of building construction to house

hot dog emporiums, gas dispensaries and cheap shops, and to supply spaces for miles of billboards. There is little or no evidence of decent architectural development and land usage; instead this ribbon of blight has either precluded all development or encouraged an exceedingly poor type of development for a width of several blocks from the main artery. Architects should be vitally interested in preventing the spread of this wasteful process and in the rehabilitation of the areas that have already been despoiled. We have spent millions of dollars within the past twenty years for new highways and we have not received our money's worth. We must stop building arterial highways, as such, and instead construct parkways for passenger cars and freeways for trucks, busses, and passenger cars. By so doing, we will not only save money, but also protect the original purposes of our built-up streets and preserve the charm of our winding country roads.



Woodland Lakes  
section of the Saw  
Mill River Parkway.

By GILMORE D. CLARKE,  
Landscape Architect

WESTCHESTER COUNTY  
PARK SYSTEM

Goss

Before we go further, let me define "parkway" and "freeway." I cannot do better than to use the definitions of Mr. Edward M. Bassett. He defines a "parkway" as a "strip of public land dedicated to recreation, over which abutting owners have no right of light, air, or access," and a "freeway" as a "strip of public land dedicated to movement, over which the abutting owners have no right of light, air, or access." The parkway is usually built on a wider right-of-way than the freeway, and in the development of it, the designers aim to preserve the amenities of the landscape, or where the lands have been despoiled, to reclaim the area's former charm.

I have said that we can save money by building new roads for through traffic instead of widening old ones. A comparison between the cost of widening the Boston Post Road in Westchester County and that of constructing a parallel parkway a short distance away, but serving the same territory,

should prove my point. In 1929, it was estimated that the cost to widen the Boston Post Road from 66 to 166 feet would have cost over one million dollars a mile for the land alone, whereas to purchase lands for the Hutchinson River Parkway, having an average width of 500 feet, cost an average of \$264,000 a mile.

A still better example may be cited in the case of the Albany Post Road in the same County. To widen the Albany Post Road in 1929 from 66 to 166 feet was estimated to cost \$792,000 per mile. Lands for the Saw Mill River Parkway, averaging 500 feet in width and paralleling the Albany Post Road at a distance varying from one and two miles, cost at the rate of \$138,600 per mile. In other words, the cost to have widened the Albany Post Road would have been six times the entire cost of a 500-foot parkway.

One of the finest opportunities within the Metropolitan Region to have demonstrated the value of



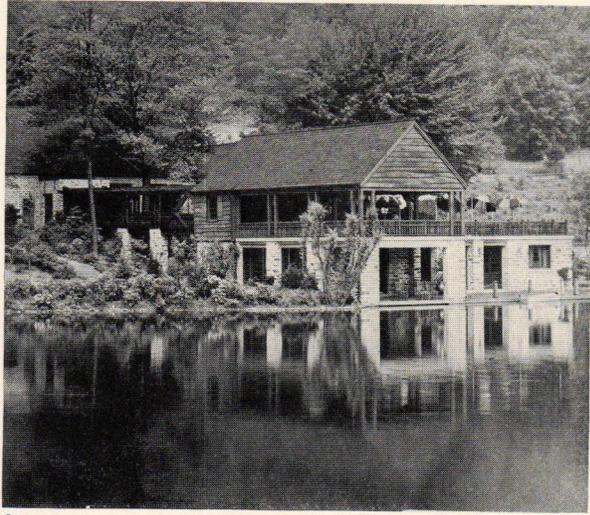
Fairchild Aerial Surveys

Airplane view of the Bronx River Parkway south of Scarsdale, New York. The Harlem Division of the New York Central Railroad forms the east border of the reservation. All lands bordering the parkway are zoned for residential use. Westchester County Park Commission.

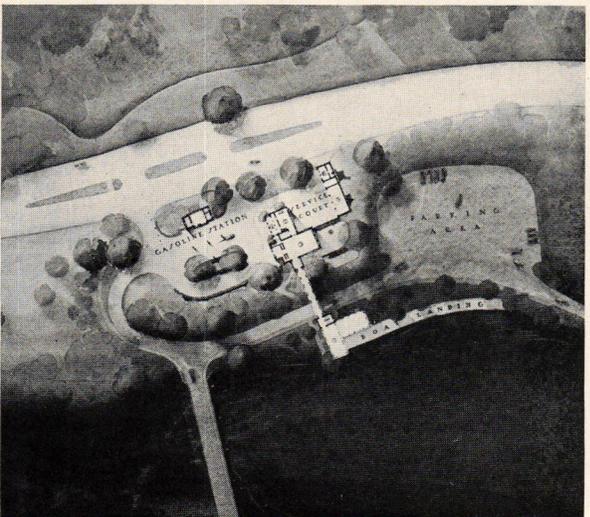
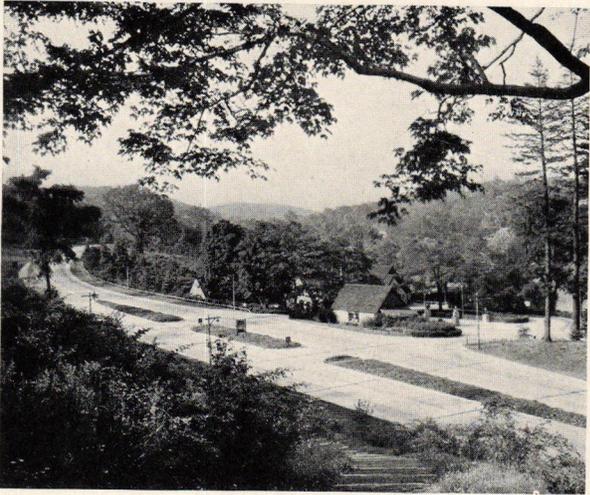


Fairchild Aerial Surveys

Airplane view of the Hutchinson River Parkway and the adjoining Maplemoor golf course near White Plains and Harrison, New York. The hilltops and broad hillsides adjoining the parkways provide fine sites for homes. Westchester County Park Commission.



Goss



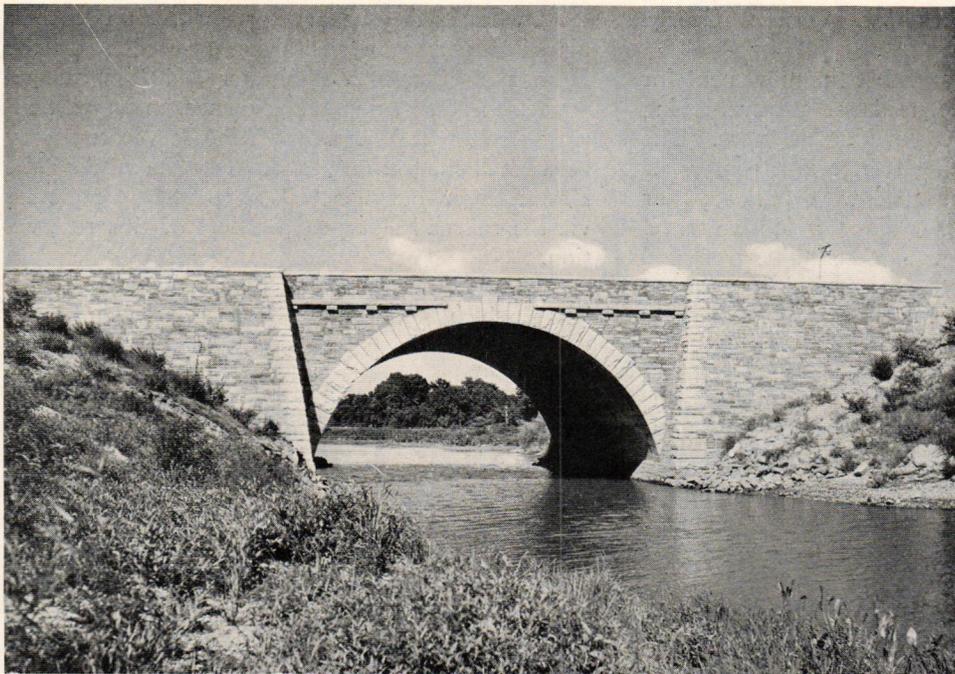
Gasoline station, restaurant and boathouse at Woodlands Lake on Saw Mill River Parkway, Westchester County Park System. Gilmore D. Clarke, landscape architect—C. F. Lloyd, designer.

the "freeway" was in connection with the New Jersey approaches to the George Washington Bridge. It is to be deplored that the State Highway Department of New Jersey lacked foresight in planning these approaches. The opportunity which was theirs to have planned notably beautiful and useful approaches to the great bridge has been lost. Instead of a roadway protected on each side by belts of parked lands, there is now an ordinary highway with private property frontage and the attendant problems of the parked car and haphazard access, the two primary causes of congestion.

It takes little imagination to visualize the results if the Jersey authorities had built "freeways," along which really fine housing might have developed, protected from the noise of traffic by wide marginal areas artistically planted with trees and shrubs. Such a development would have paid large dividends, whereas the present situation only tends to create blighted areas with depreciated land values.

The Bronx River Parkway in the upper part of New York City and in Westchester County was the first of its kind in the United States. It was the first time that a highway had been built entirely within the boundaries of an elongated park strip. The project was started in 1906 and not completed until 1925. During this period, the public, in general, and public officials, in particular, had to be educated before they were willing to approve of this new type of thoroughfare. Many severely criticized the scheme as being outrageously costly (the total cost of the land and construction was about \$16,000,000 for a 15-mile parkway) and unnecessary. They saw garbage dumps buried, hundreds of shacks and shanties demolished, swamps reclaimed, bridges built to eliminate the crossing at grade of all important highways, viaducts constructed to span the Bronx River Valley, and thousands of trees planted to complete the setting for a drive not only useful, but designed to take its place in an environment of unsurpassed beauty. This parkway became the forerunner of others in Westchester County and of several elsewhere, notably on Long Island. It was soon learned that property values increased rapidly along the borders of the Bronx Parkway Reservation, and that the project actually cost the taxpayers not one cent. Communities of fine homes have been more intensively developed along the route of the parkway at Bronxville, Crestwood, Scarsdale, Hartsdale and White Plains.

A survey was made recently to determine the rate of increase in the value of properties bordering the Bronx River Parkway compared with the value of other lands outside of the zone influenced by the development of this project. The results are spectacular. This survey, covering a period of twenty-two years (1910-1932), shows that the lands adjacent to the parkway have increased in value 1,178.13 per cent as contrasted with an increase of only 395.05 per cent for those proper-



Courtesy U. S. Bureau of Public Roads

Reinforced concrete arch bridge over Little Hunting Creek on Mt. Vernon Memorial Highway in Virginia.

J. V. McNary,  
Bridge Engineer

Gilmore D. Clarke,  
Consulting Landscape Architect



Courtesy U. S. Bureau of Public Roads

Bronx Parkway extension, looking toward Putnam County hills.

Westchester County  
Park Commission

Gilmore D. Clarke,  
Landscape Architect

ties outside of the area influenced by parkway development. This means that the lands directly influenced by the parkway gained over two hundred million dollars more in value than they would have had the parkway not been constructed. The survey further proved that more than the entire cost of the Bronx River Parkway has been returned to the County through the collection of almost twenty-three million dollars more in tax receipts from this affected area than would have been collected had the increase in the value of these lands been at the same rate as in the unaffected area.

The Westchester County Park Commission has developed a total of 88 miles of parkway and 10 miles of freeway since 1923, a period of ten years. The Long Island Park Commission has developed the Southern State Parkway, connecting the City of New York with the already famous Jones Beach, and begun development of the Northern State Parkway. The Grand Central Parkway is being developed in the Borough of Queens connecting the Long Island Northern State Parkway with the proposed Tri-Borough Bridge. In Virginia, the United States Bureau of Public Roads built the Mt. Vernon Memorial Highway con-

necting Washington with Mt. Vernon, George Washington's birthplace.

It would seem, therefore, that the movement for better roads to meet the needs of a travel-loving people is slowly but surely making progress. The time is not far off when all important centers of population will be connected with parkways or freeways and the old roads along which we travel now, between rows of gas stations, billboards, and all types of obtrusive structures, will be relieved of all through traffic. Mr. Thomas Adams has said that "Our houses have ceased to be our homes or our castles. It is now more true to say that a man's city, or his village, and all his good or bad environment that extends into its wide environs, is both his home and his castle. To give him more beauty in the wide surroundings of his home, and by giving it, to help him to love it, is true economy, because love of home lies at the root of an enduring civilization."

The many acres of vacant land bordering the parkways I have named, and others yet to be developed, are a challenge to the architect. The lands should first be intelligently subdivided by able landscape architects in collaboration with engineers and then homes of real distinction designed by archi-

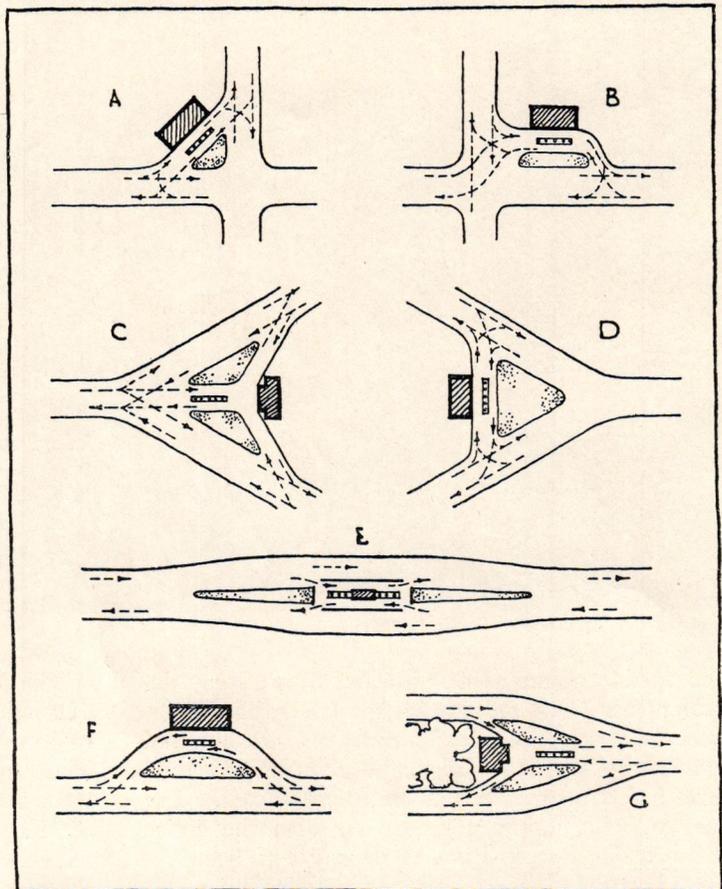
itects, whether they be large or small, will take their places as part of a well-ordered scheme. In the New York region, Westchester and Long Island attract the discerning home owner, more particularly because the parkways afford a pleasant way between home and city and, as in the case of the Bronx River Parkway, it is pleasant to commute via the railroad along the borders of this reservation.

Parkways have reclaimed and protected valley lands, which, under normal conditions, would have developed haphazardly with a mixture of industry, unplanned housing, and including, of course, gas stations, cheap food establishments, and the ever present sign boards. Where unnavigable river valleys include a railroad, the lands are, as a rule, zoned for industrial use, whereas their best use is for parkway or freeway purposes. The purchase of these valley lands by a public board assures the restoration and protection of this natural beauty and economically adds to the value of the adjoining lands desirable for human use and habitation. Parkways and freeways are designed to segregate motor traffic, so that it will not "blight" abutting lands as do most highways, but rather, to make them more susceptible of orderly development.

## FILLING STATIONS

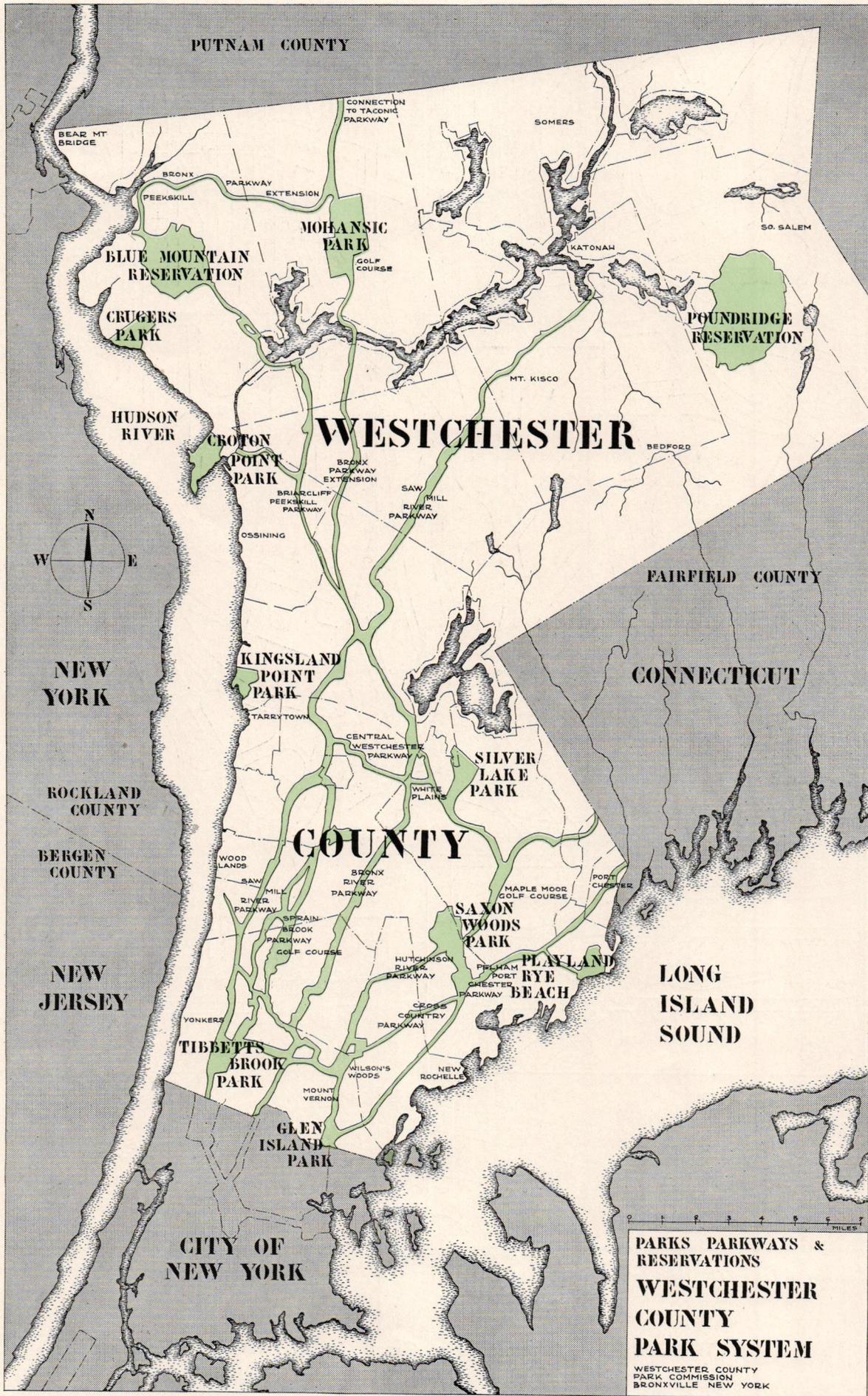
From TOWN AND COUNTRYSIDE\*:

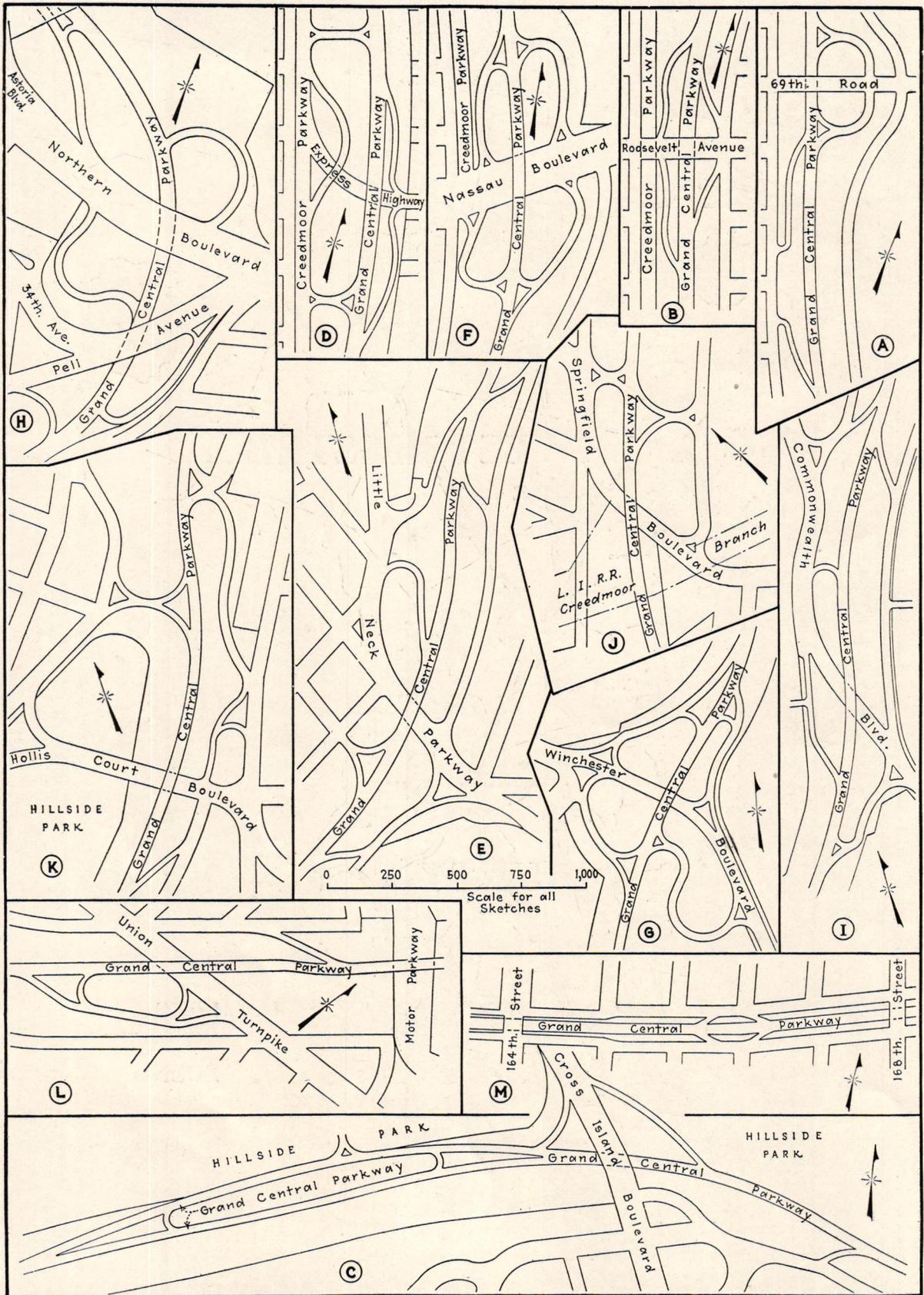
"It is obviously desirable that the pumps should not be erected on the roadside but on an island on premises off the road, so that vehicles may pass in each direction, and, standing to receive attention, will not interfere with other traffic on the road. Probably the ideal site for a station, from the point of view of traffic, would be in the center of a road as shown in Fig. E, the road widening out on either side to accommodate one-way traffic. The next ideal site is that shown in Fig. G, where a station is established at the point where a road splits into two carriageways, as it may sometimes do when it is widened, to save a belt of old trees. In both these cases there is no interference whatever with any other traffic on the road. In all other cases there must be, to some degree or other. Quite the worst site is at a cross roads, as is shown in Figs. A and B. Here the traffic to and from the garage adds considerably to the number of collision points which already exists, and if the crossing is a busy one the garage is likely to introduce a highly dangerous state of confusion. A site at a junction of roads as shown in Figs. C and D is also dangerous. A position away from the cross roads is the most nearly ideal, after the positions in E and G. Here, as shown in Fig. F, the station introduces only two collision points, occasioned by traffic belonging



to the opposite side of the road entering and leaving it. Even the danger from these two points could be reduced to practically nothing if garages were deliberately arranged on alternative sides of the road."

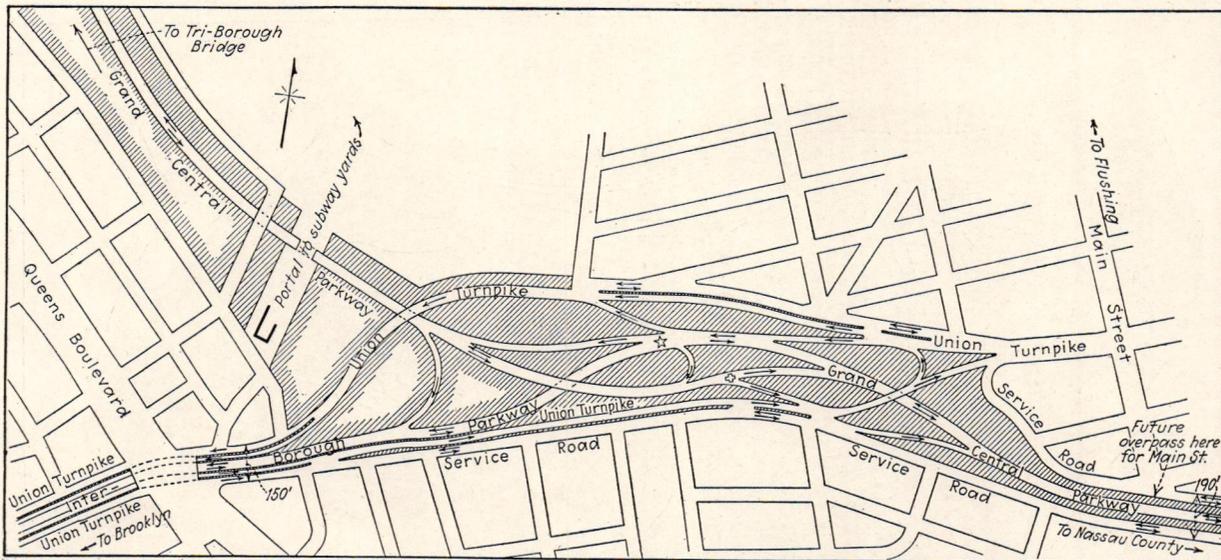
\* By Thomas Sharp. Published by Oxford University Press, London, 1932.





Courtesy of Engineering News-Record

Thirteen intricate intersections on Grand Central Parkway, in Queens Borough, New York City. Each is planned to fit local conditions.



Courtesy of Engineering News-Record

A series of intersections of five thoroughfares accomplished with only four bridges and with complete interchange of traffic on Grand Central Parkway near Kew Gardens on Long Island.

## PARK RECREATION AREAS IN THE UNITED STATES: 1930\*

An excellent summary of findings resulting from a study of municipal and county parks conducted cooperatively by the United States Bureau of Labor Statistics and the National Recreation Association in 1930 is available in a bulletin bearing the above title.\* The report, which was prepared by George D. Butler of the National Recreation Association, contains much detailed information supplied by park authorities concerning park areas, facilities, expenditures and developments in nearly 1,000 municipalities. Highlights of this fund of information are given by the following quotations:

### Parks and Leisure

"Land permanently dedicated to park use is essential to a well-balanced outdoor community recreation program."

"The first parks were for passive and semipassive forms of recreation: today they are also used for a limitless variety of active recreation. The early attempts to provide active play facilities were to meet the needs of children; today a large percentage of these facilities are for young people and adults. Little or no attempt was formerly made to encourage or organize groups to use the parks, whereas today many of the clubs, leagues, and other groups using the parks are organized by the park department. In the early days recreational leadership in the parks was unknown; today it is the basis for most of the organized recreation service. Formerly the park offered landscape beauty, band concerts, floral displays, and other attractions; today it offers these and in addition opportunities for participation—singing, playing baseball or golf, dancing, skating, painting, swimming, etc. Not so many years ago the park season lasted only a few months; in recent years the park has become a year-round recreation center."

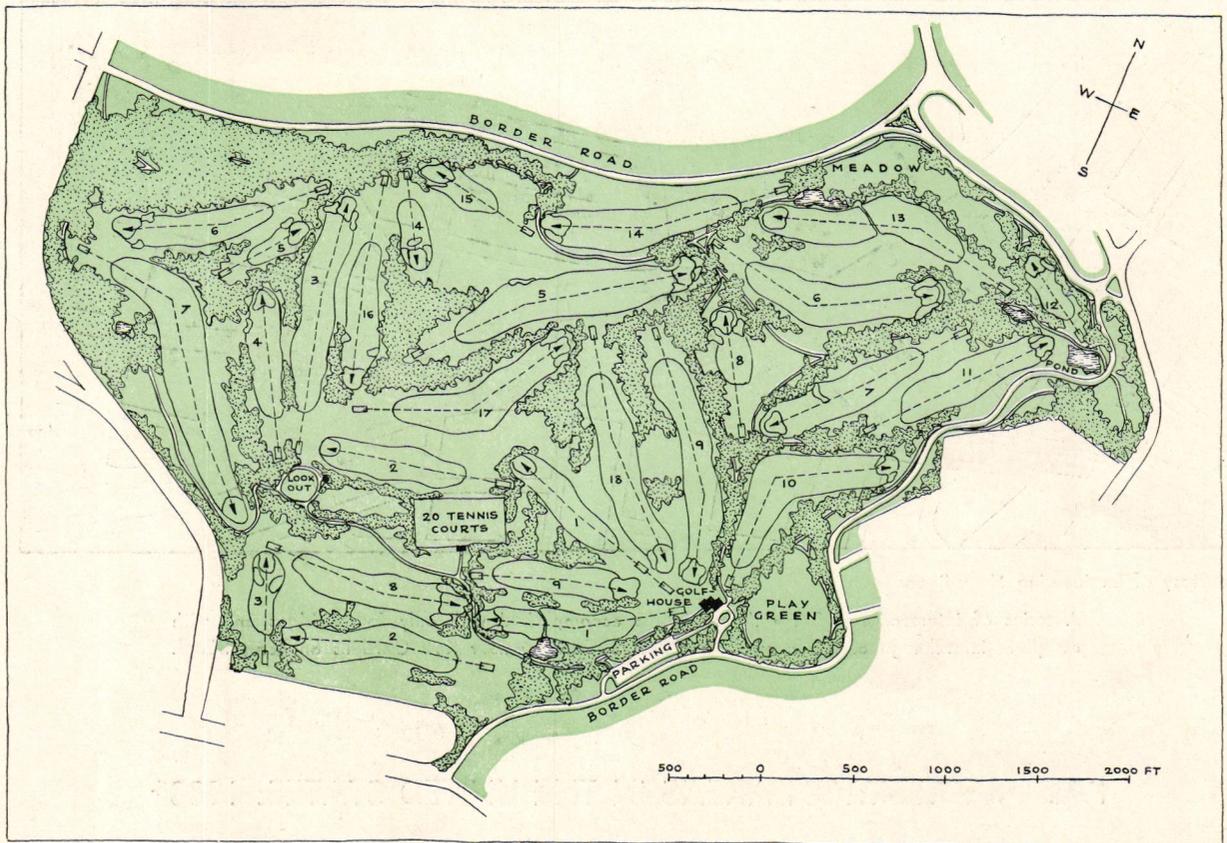
### Municipal Park Acreage, 1930

"Perhaps the most commonly accepted standard of park and recreation space for a city is that of 1 acre to each 100 population. Because of the high cost of land in densely settled neighborhoods, many of which were built up before the importance of providing parks was recognized, most large cities fall far short of this standard."

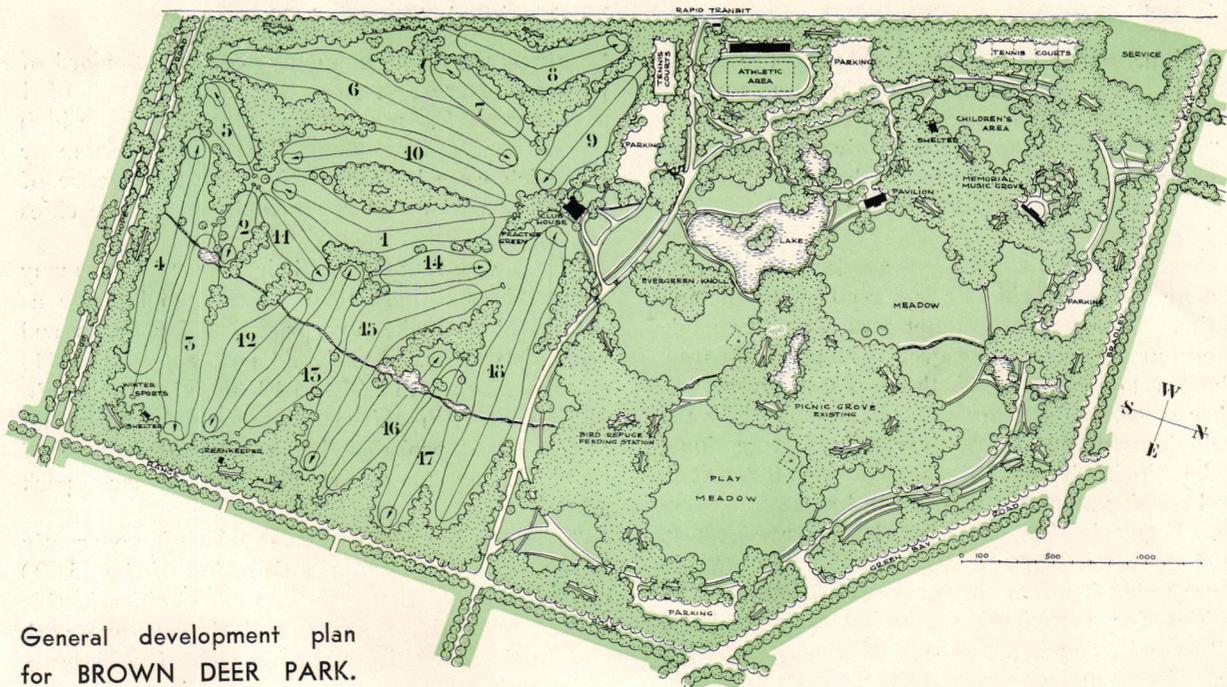
"It is apparent from their reports that many communities of less than 10,000 people have as yet failed to make any provision for parks and recreation areas. Nearly 28 per cent of the 448 municipalities with 5,000 to 10,000 inhabitants submitting data in this study reported having no parks. It is probable that a large percentage of those failing to report also totally lack park areas."

"There is no group of cities which is apparently better provided with parks than that of the 25,000 to 50,000 population group. Only 3 cities in this group reported no parks, and the average park area in the 124 cities reporting parks is 335 acres."

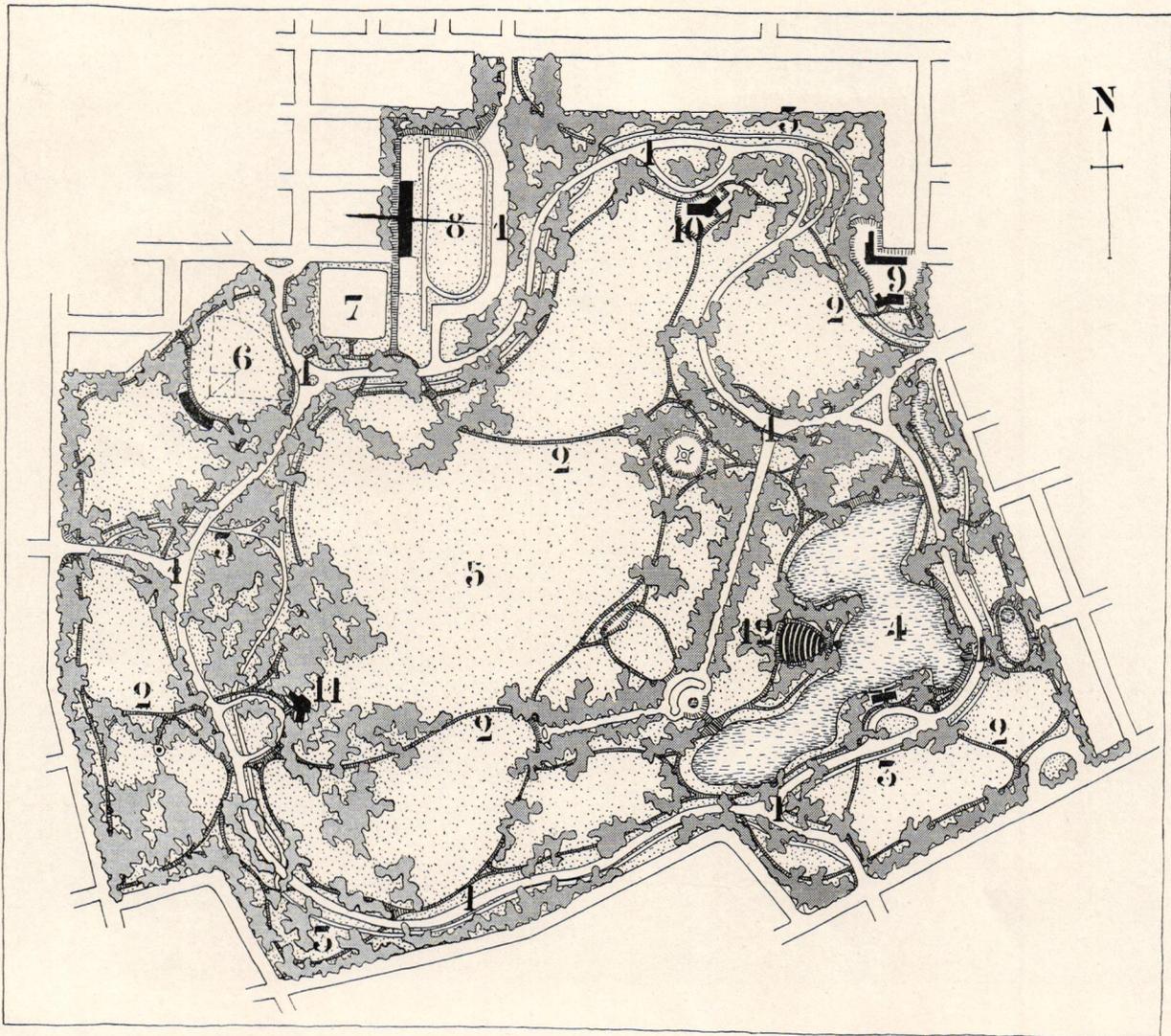
\*For sale at 25 cents a copy by the Superintendent of Documents, Washington, D. C. Refer to Bulletin No. 565 of the U. S. Bureau of Labor Statistics.



**GALLOPING HILL PARK** — Union County Park Commission, New Jersey.  
 Two golf courses are provided for the first 9 holes, which are usually the more crowded,  
 and one course only for the second 9 holes. Olmsted Brothers, landscape architects.



**General development plan  
 for BROWN DEER PARK.**  
 Milwaukee County Park Commission.  
 A. L. Boerner, landscape architect.



**WARINANCO PARK** in Elizabeth, New Jersey—Union County Park Commission.

(1) Drive; (2) walk; (3) bridle path; (4) lake; (5) playfield; (6) baseball diamond; (7) tennis courts; (8) football and track games; (9) garage and shops; (10) refectory; (11) field house; (12) music grove. Olmsted Brothers, landscape architects.

The most marked progress in the acquisition of parks during the last five years is found in this group."

"A study of the ratio of parks to population in cities of various sizes reveals that the greatest shortage of park space is in the largest centers. There is, however, no definite relationship between the size of a city and the ratio of its park acreage to population."

"Even though some cities are amply provided with parks, there are few which are not lacking in both number of parks and in park acreage. Often in the cities well provided with parks a major part of the acreage is in large outlying properties and many of the densely settled neighborhoods have no outdoor facilities for either active or passive recreation. This need has been recognized in many cities during the last five years, and many neighborhood areas have been acquired, often at great expense."

#### Growth in Park Acreage

"One of the most striking and encouraging facts revealed in the present study is the tremendous increase in municipal park acreage since 1925."

"An analysis of the recent acquisition of park lands shows that the greatest progress has been in cities of from 25,000 to 50,000 population, which group more than doubled its park acreage during the last five years. The group of cities having from 10,000 to 25,000 inhabitants showed a remarkable increase of 63 per cent. The smallest gain in park acquisition was in the cities of from 500,000 to 1,000,000 and from 5,000 to 10,000, each of which groups added only 15 per cent.

#### Types of Park Properties

"A well-balanced system requires not only ample park area but also a sufficient number of properly located parks of various types providing a variety

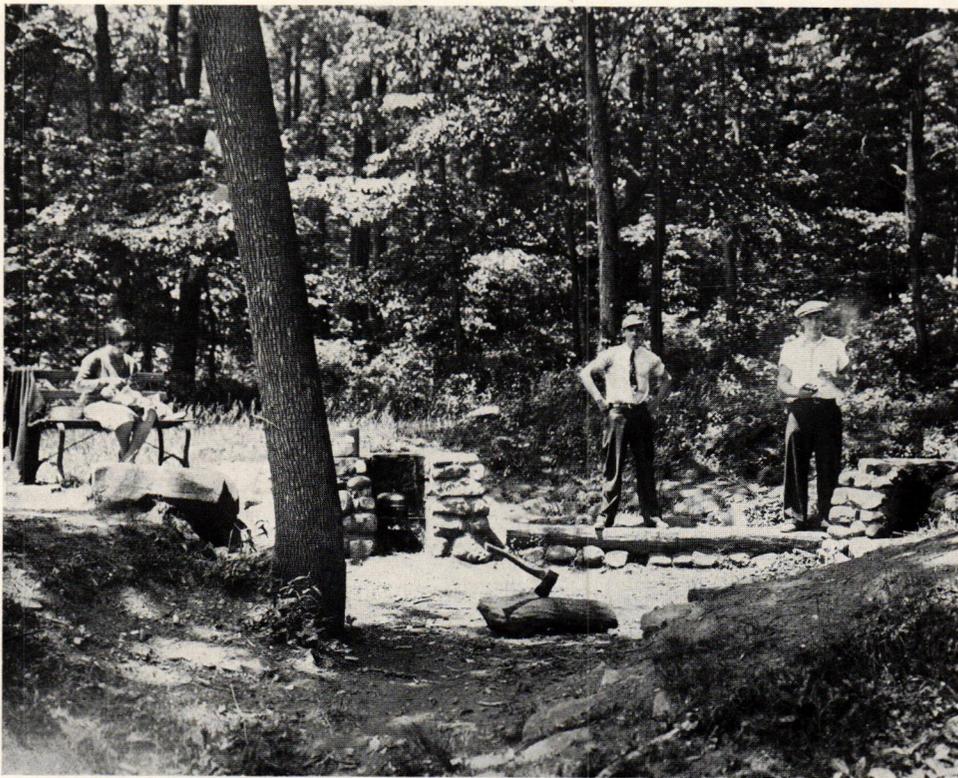


Keystone

(Above) Flowering dog-wood fringing Lake Surprise, Watchung Reservation, Mountainside. (Right) Mountainside cabin and hiking trails along Lake Surprise.



PLAY AREAS DEVELOPED  
BY UNION COUNTY  
PARK COMMISSION  
ELIZABETH  
NEW JERSEY



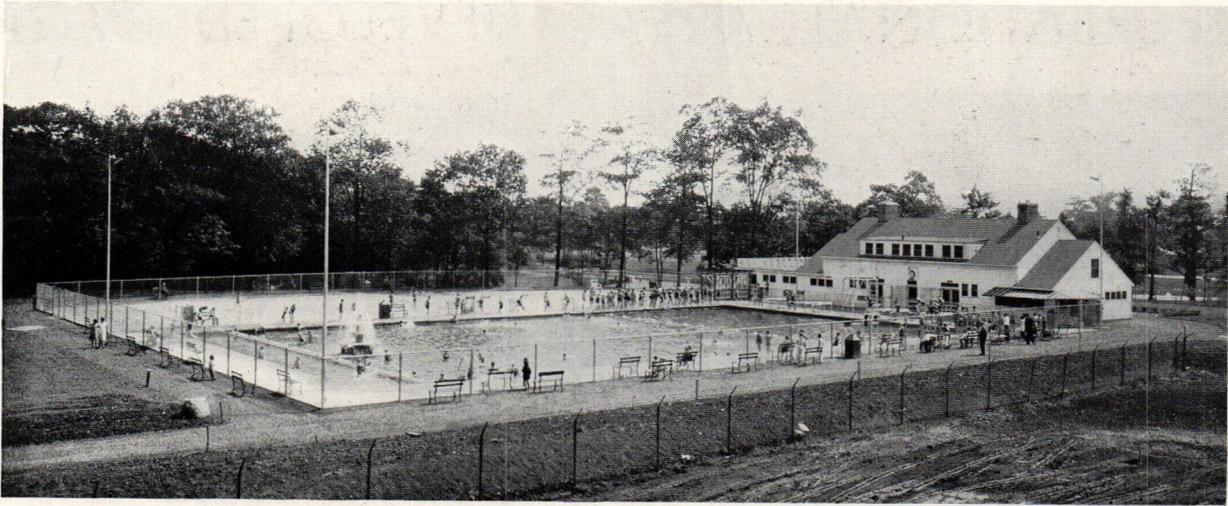
(Above) Wooded mountainside bordering Lake Surprise, Watchung Reservation, Mountainside. (Left) Open fireplace for hikers and campers on Watchung Reservation, Mountainside.

PLAY AREAS DEVELOPED  
BY UNION COUNTY  
PARK COMMISSION  
ELIZABETH  
NEW JERSEY

PLAY AREAS DEVELOPED  
BY UNION COUNTY  
PARK COMMISSION  
ELIZABETH  
NEW JERSEY



Bridle trails in  
Watchung Reserva-  
tion, Mountainside.



Eric J. Baker

Swimming pool in Wheeler Park, Linden, New Jersey.

of uses. Among the types of properties included in a well-balanced park system are small in-town parks, children's playgrounds, neighborhood parks, neighborhood playfields, large parks, and parkways. Unless provided by State or county authorities, outlying reservations are needed. Swimming centers, golf courses, zoological gardens, and other special types of recreation areas are sometimes provided in the properties mentioned above, but if not it may be necessary to establish special centers."

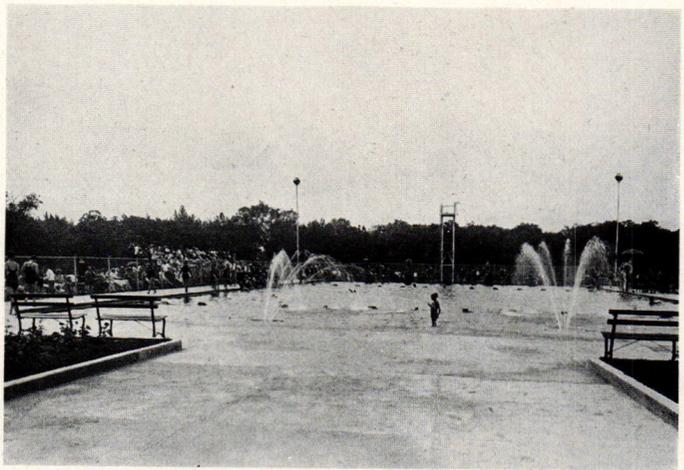
"Authorities differ in their opinion as to the number, size, and distribution of the various types of areas comprising an adequate park and recreation system. There is considerable agreement, however, that a greater number of children's playgrounds are needed than of any other type, the next in number needed being the neighborhood park and the neighborhood playfield."

"It is interesting to note that the average area of the children's playgrounds reported is nearly 4 acres and that of the neighborhood playfield 13.3 acres. These figures indicate that park authorities are approaching or equaling the recommended standards for these two property types."

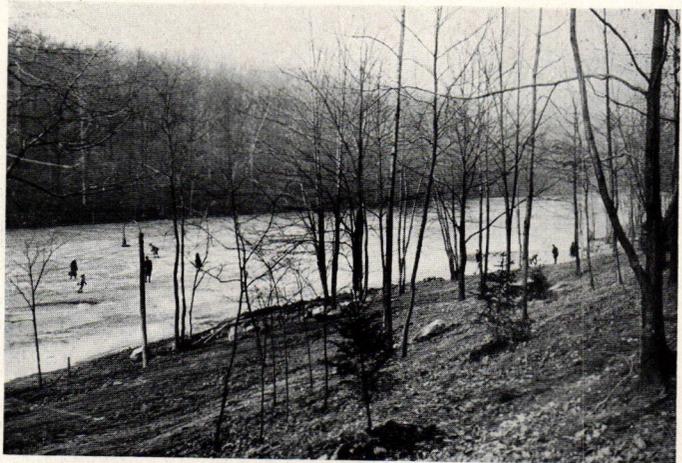
#### Municipal Parks Outside the City Limits

"The past five years have seen a great increase in the number of cities providing parks outside their city limits. One hundred and eighty-six cities report a total of 381 such parks as compared with 109 cities and 245 parks in 1925-26."

"The average area of these parks is 232 acres, indicating that many of them are large properties. They are frequently designed to provide areas near the city where such activities as hiking, camping, nature study, picnicking, winter and water sports may be carried on. Not only are some of these activities more enjoyable when carried on away from the city, but the land is generally much cheaper."



Swimming pool in Rahway  
River Park, Rahway, New Jersey.



Keystone

Winter skating on Lake Surprise.  
Watchung Reservation, Mountainside.

# RECREATIONAL AREAS DEVELOPED BY UNION



Keystone

Fishing and boating on Lake Surprise.



Canoeing on Lake Surprise.



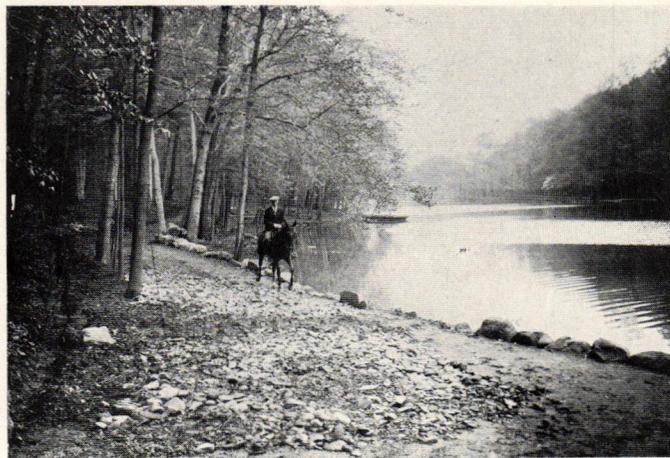
Eric J. Baker

Model yacht contest at Cedar Brook Park, Plainfield.



Eric J. Baker

Yachting at Echo Lake Park, Mountainside.



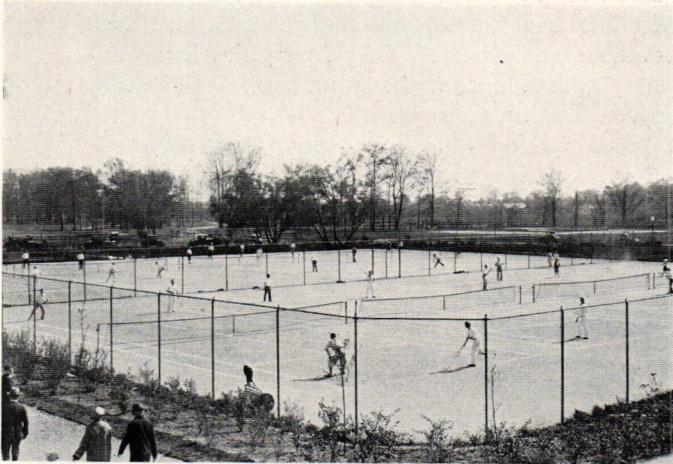
Equestrian trail along Lake Surprise.



Keystone

Swimming in Lake Surprise.

# COUNTY PARK COMMISSION IN NEW JERSEY



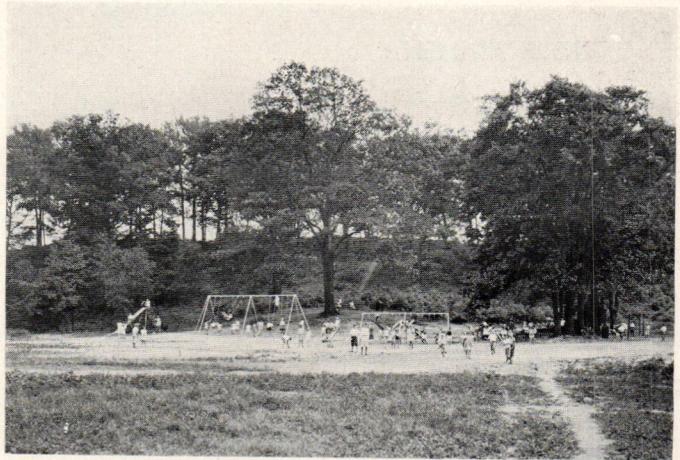
Eric J. Baker  
Tennis at Warinanco Park, Elizabeth.



Eric J. Baker  
Trap shooting at Nomahegan Park, Cranford.



Model plane contest at Warinanco Park.



Children's playground at Union.



Cricket at Green Brook Park, Plainfield.



Eric J. Baker  
Soccer game in Warinanco Park, Elizabeth.

### Park Buildings

"Since parks attract large numbers of visitors, many of whom come a considerable distance, it is necessary for park authorities to erect suitable buildings for their comfort and convenience."

"Park authorities are realizing more and more the recreational possibilities of their buildings, many of which were not designed especially for recreational use."

### Zoological Parks

"One of the greatest centers of attraction to old and young alike is the zoo, a feature which was reported in this study by 138 cities."

"Recently constructed zoos are characterized by splendid well-lighted, heated and ventilated buildings and large outdoor barless inclosures in which an attempt is made to provide a naturalistic environment for the animals suggestive of their natural habitat."

### Recreation Facilities in Parks

"Not only do the parks provide facilities for games, athletics, and other forms of active recreation but also for various cultural activities, such as music and drama. Fifty-four cities have outdoor theaters, most of them in a naturalistic setting appropriate to their park locations."

"Participation in winter sports has been encouraged during the last few years by many park authorities through the provision and maintenance of suitable facilities."

"A marked increase in the number of park recreation facilities is noted during the last five years. There is, however, a decrease in the number of tourist camps, indicating a tendency on the part of park departments, also noted in reports from several cities, to abandon this type of facility. In cities under 25,000, however, many such camps were reported, suggesting that there is greater need for municipal tourist camps in the small cities."

## CHECKLIST OF PARK FACILITIES

### ENTERTAINMENT:

Outdoor festivals: Easter, May Day, July Fourth, Labor Day, Mardi Gras, Christmas celebrations.

Neighborhood programs: assembly hall; club rooms, reading rooms.

Public services: motion picture theaters. Rosstrum, sound amplifiers, seats.

Concerts: bandstand.

Open-air opera.

Dramatics and pageants.

Boy Scouts' and Girl Scouts' activities.

Winter sports carnivals.

Gymnastics and sports: stadium, lockers.

Race tracks, whippet tracks.

Beach expositions.

Amusement park concessions.

Rowing regattas.

Outboard motor regattas.

Model yacht regattas.

Model airplane contests.

Kite flying.

Playground contests: marbles, jacks, hopscotch, soap bubbles, etc.

Table games: billiards, bagatelle, chess, checkers, peg board baseball, etc.

Hobby shows: dogs, poultry, pets.

Nature study: zoo, aquarium, aviary.

Gardening: greenhouses.

Punch and Judy shows, puppet shows.

Doll parades.

Playground circuses, stunt contests.

Outdoor story hours.

Dancing pavilions, refectories.

Clam bakes and picnics: fireplaces, benches, tables, incinerators.

### PLAY AND EXERCISE:

Bridle paths, riding stables.

Hiking, camping.

Streams and lakes: fishing, yachting, canoeing, boating, ice boating.

Casting pools.

Swimming: ocean, bay, outdoor pools, indoor pools.

Wading pools.

Ice skating ponds, curling rinks.

Roller skating rinks.

Coasting areas.

Bicycle tracks.

Golf courses, practice fairways and cages, putting greens.

Gymnasiums: indoor, outdoor.

Playfields.

Athletic fields: track and field events.

Baseball diamonds, cages.

Football gridirons, soccer and beeball fields.

Cricket fields.

Hockey rinks.

Box hockey and skiddle.

Hurling fields.

Tennis courts.

Paddle tennis courts and ping pong tables.

Badminton.

Shuffleboard.

Basket ball courts.

Handball courts.

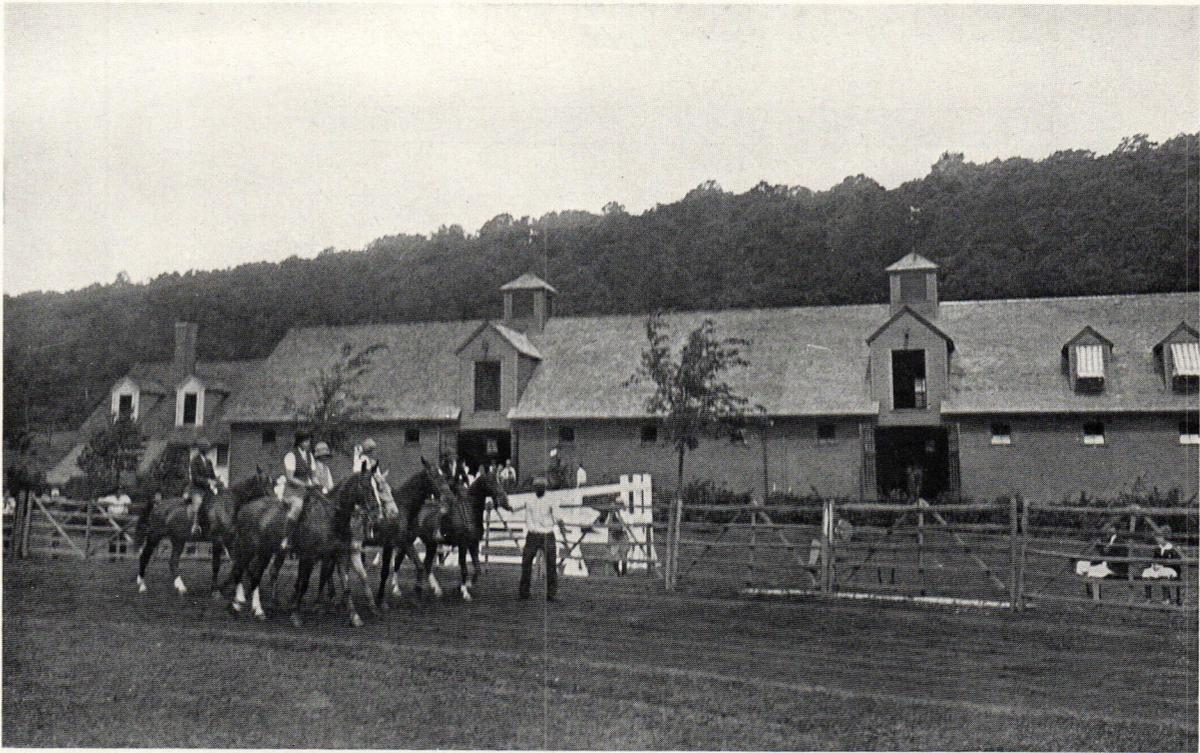
Horseshoe pits.

Bowling greens, croquet courts, roque courts.

Archery greens, trapshooting ranges.

Children's playgrounds: swings, slides, rings, hopscotch, jungle-gyms, sand courts, etc.

Doll's villages.

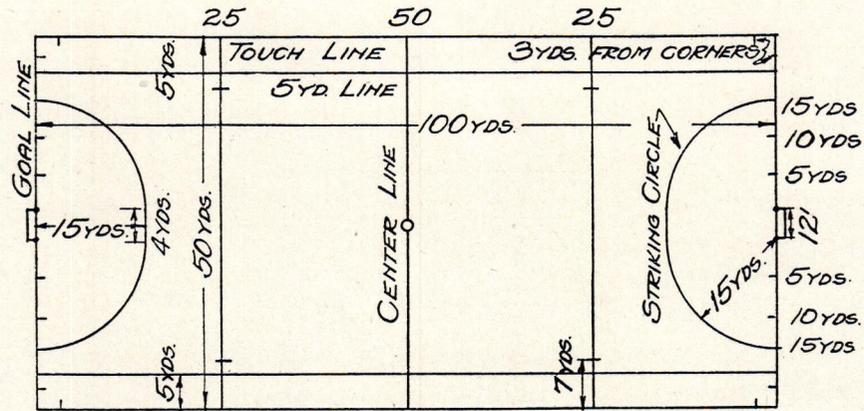


Leading out the horses for the annual show at the Watchung Stables, Watchung Reservation, Summit, New Jersey.

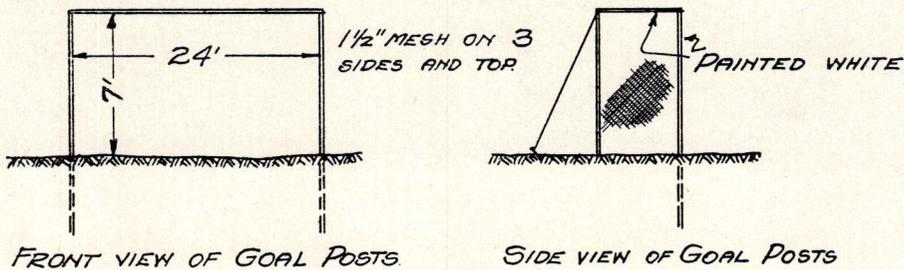


Riding rink at Watchung Stables, Watchung Reservation, Summit, New Jersey.

# FIELD HOCKEY AND LACROSSE

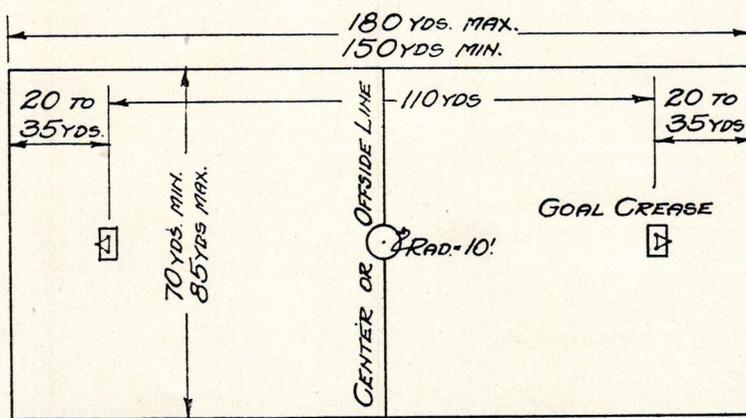


OFFICIAL DIMENSIONS OF A FIELD HOCKEY FIELD.

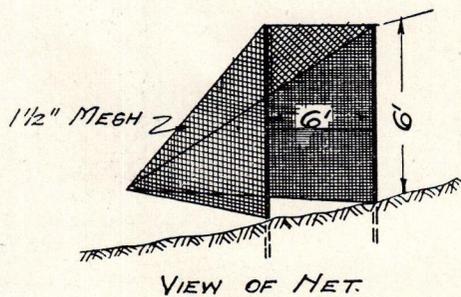


FRONT VIEW OF GOAL POSTS

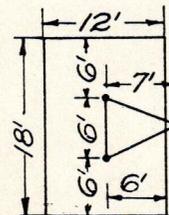
SIDE VIEW OF GOAL POSTS



OFFICIAL DIMENSIONS OF A LACROSSE FIELD



VIEW OF NET.

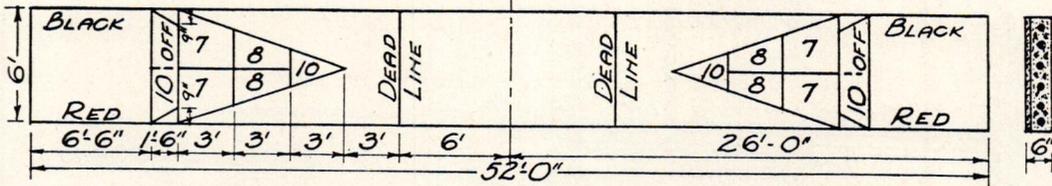


PLAN OF GOAL CREASE  
TO BE MARKED ON GROUND

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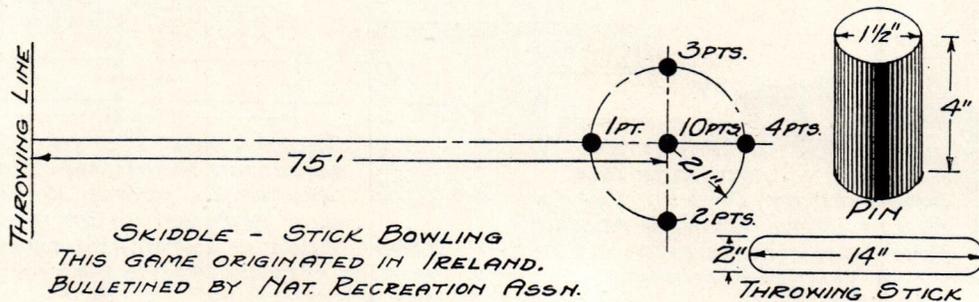
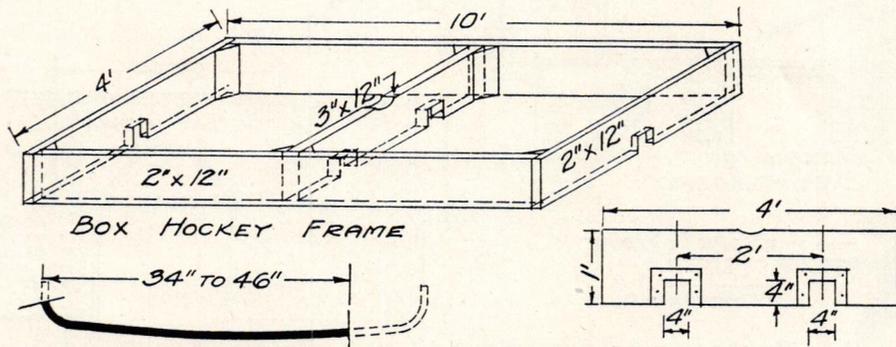
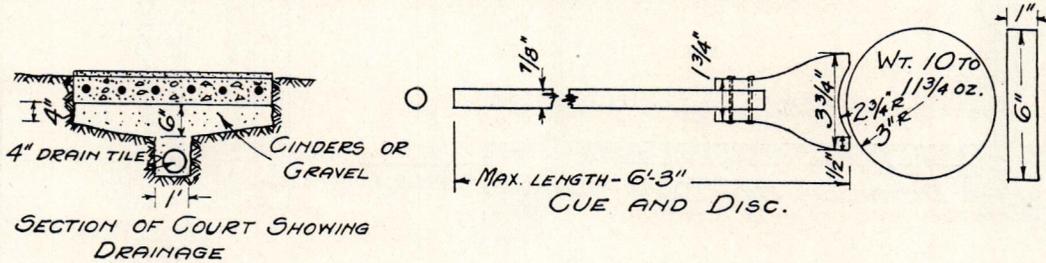
## DIMENSION DIAGRAMS: FIELD HOCKEY AND LACROSSE

# SHUFFLE BOARD, BOX HOCKEY AND SKIDDLE.



STANDARD SHUFFLE BOARD COURT ADOPTED BY THE FLORIDA SHUFFLE BOARD ASSN. - ST. PETERSBURG SHUFFLE BOARD CLUB.

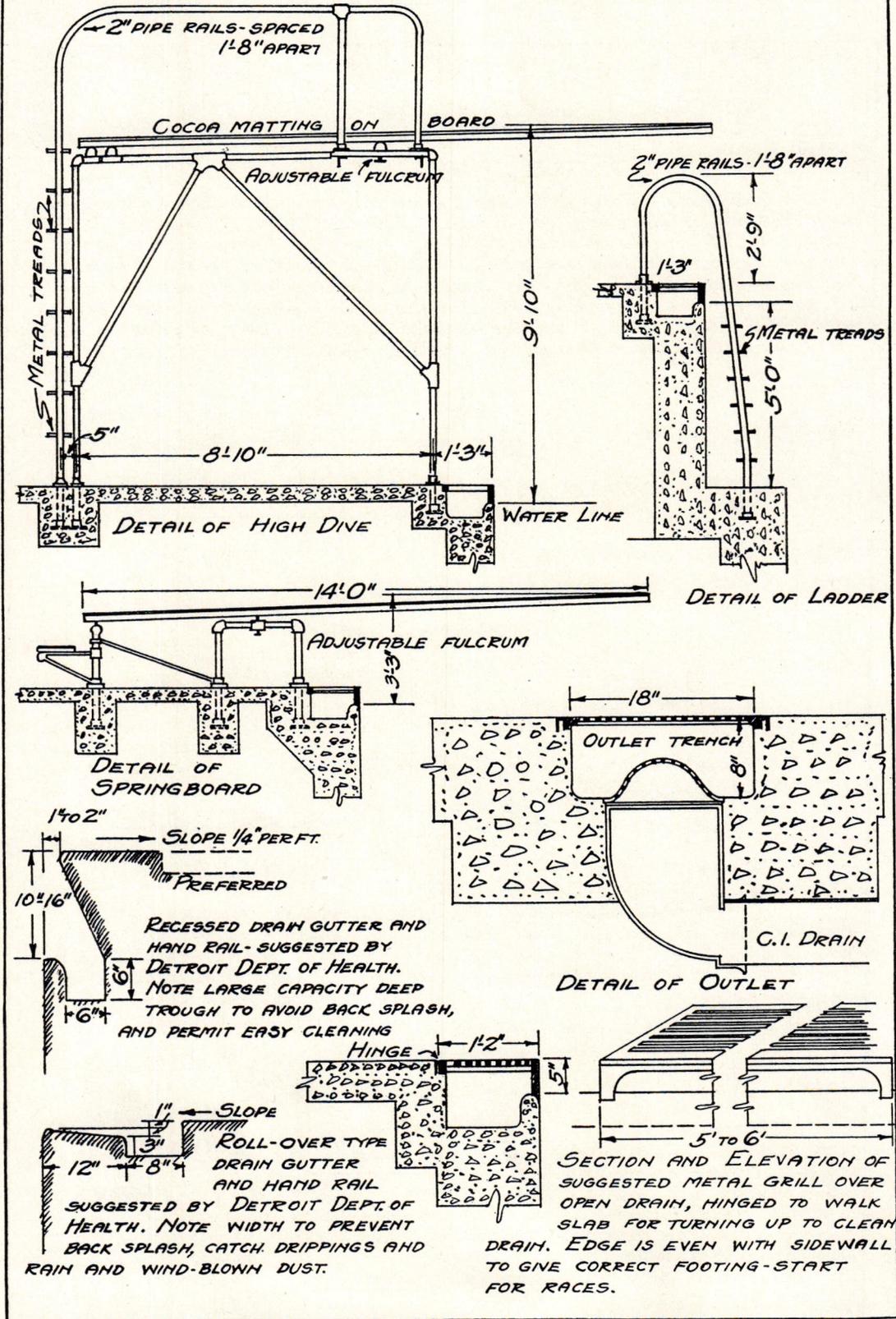
CONCRETE MIX. - THE CONCRETE SHOULD BE PLACED IN 2 LAYERS ON A BED OF CINDERS OR GRAVEL. THE BASE SHOULD BE 5" THICK, 1 PART CEMENT, 2 PARTS SHARP SAND, 4 PARTS STONE OR GRAVEL. THE 1" TOP SHOULD BE PLACED BEFORE BASE HAS SET AND CONSIST OF 1 PART CEMENT AND 2 PARTS SHARP SAND AND TROWELED SMOOTH. FOR BLACK SURFACE USE 2 LBS. LAMP BLACK TO 1 SACK OF CEMENT. PLACE 6- 1/2" REINFORCING RODS AS SHOWN FOR WHOLE LENGTH OF COURT.



Drawings prepared by V. K. Brown and James O'Rourke

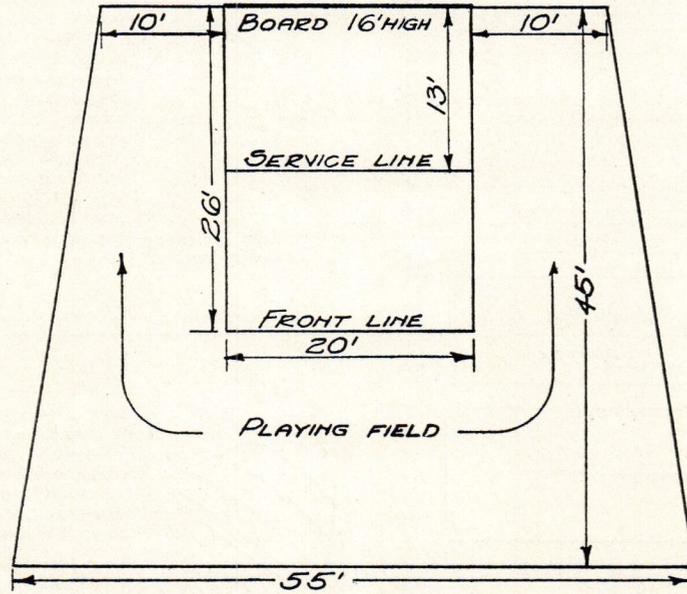
## DIMENSION DIAGRAMS: SHUFFLE BOARD, BOX HOCKEY AND SKIDDLE

# SWIMMING POOL DETAILS

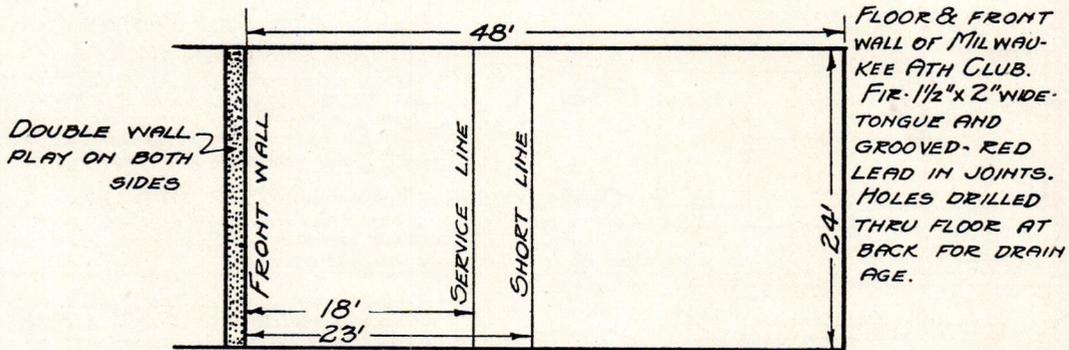


DIMENSION DIAGRAMS: SWIMMING POOL DETAILS

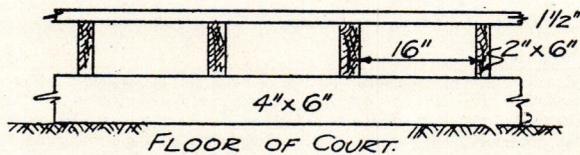
# HANDBALL COURTS



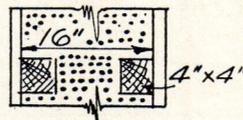
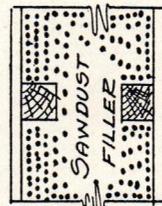
PLAN OF A 1 WALL AMERICAN HANDBALL COURT



PLAN OF AN OFFICIAL 4 WALL COURT- NO ROOF. THE FRONT WALL IS 22' HIGH; THE SIDE AND BACK WALLS ARE WOODEN UP TO 7 FT., THENCE HEAVY WIRE SCREEN UP TO 22 FT.



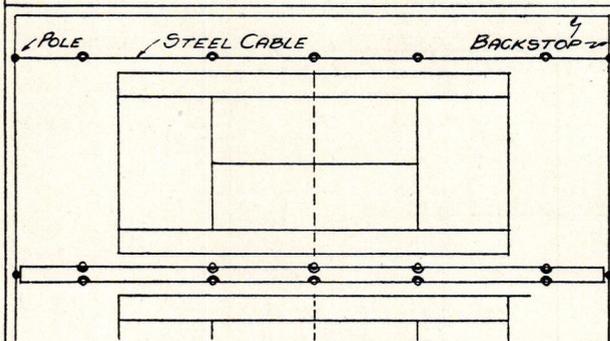
FLOOR OF COURT.  
DOUGLAS FIR, GRADE B, LAID EDGEWISE, 100% HEART. DIP THE ENTIRE FLOOR BOARDS IN FLOOR OIL. APPLY 1 COAT OF PARRAFIN EVERY FALL & REMOVE IT WITH A SANDING MACHINE IN THE SPRING. PITCH ABOUT 3 IN. LENGTHWISE AWAY FROM FRONT WALL FOR DRAINAGE. RECOMMENDED BY THE CHICAGO LUMBER MENS ASSN.



PLAN OF FRONT WALL OF MILWAUKEE ATH CLUB; SAME MATERIAL AS FLOOR AND ROOFED OVER, SO SANDUST WILL STAY DRY.

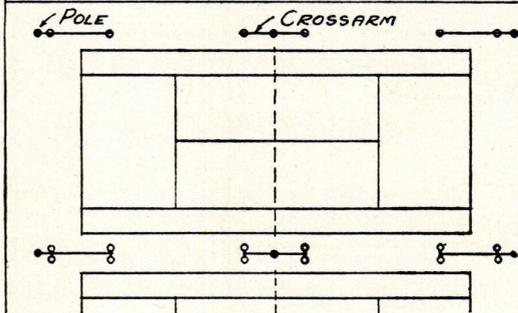
## DIMENSION DIAGRAMS: HANDBALL COURTS

## TENNIS COURT ILLUMINATION SYSTEMS



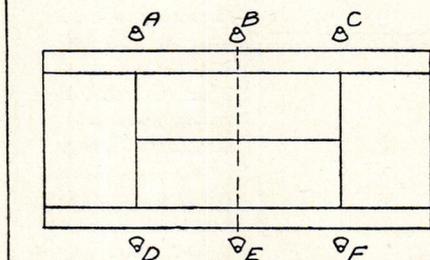
EACH COURT LIGHTED BY 10-1000 WATT-115 VOLT MAZDA TYPE C LAMPS-INDIVIDUAL ALUMINUM REFLECTORS-IVANHOE #865 WITH #1095 SKIRT-SUSPENDED BETWEEN COURTS 30' ABOVE GRADE FROM STEEL POLES AT BACKSTOPS, ON STEEL CABLES, LOWERED FOR SERVICE BY FLETCHER WINDLASS PULLEYS OR SERVICED BY A FRAME LADDERS, WIRED FOR 1500-2000 WATT LAMPS FOR TOURNAMENTS. 2 POLES AND 2 CABLES FOR EACH ADDITIONAL ADJACENT COURT.

NORTHERN STATES POWER CO. - MINNEAPOLIS, MINN.



EACH COURT LIGHTED BY 12-1000 WATT BOWLENAMELED MAZDA LAMPS IN 12 NOVALUX PORCELAIN ENAMELLED OPEN REFLECTORS SUSPENDED 30' ABOVE GRADE, ON 6 TUBULAR STEEL 35' POLES (3 ADDITIONAL FOR EACH ADJACENT COURT).

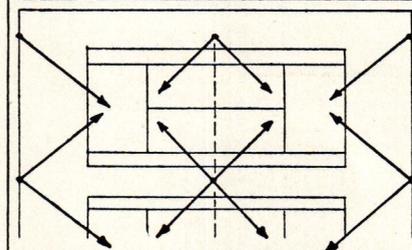
GENERAL ELECTRIC CO.  
ILLUMINATING ENGINEERING LAB.  
SCHENECTADY, N. Y.



GIANT MFG. CO. - TRENTON, N. J.  
OAKLAND, CAL. - COUNCIL B'LFS., IA.

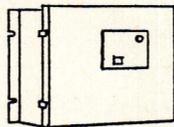
EACH COURT LIGHTED BY 4-1500 WATT RS. 52 MAZDA C BULBS IN 2 #2510 GIANT REFLECTORS, MOUNTED AT ENDS OF NET ON POLES 40 TO 45' ABOVE GRADE, AT B AND E. 1 POLE FOR EACH ADD'L ADJ'T. COURT.

CAHILL BROS. - 519 W. 45<sup>TH</sup> ST. NEW YORK  
LIGHTS MOUNTED ON 2 POLES AS ABOVE OR ON 4 POLES AT OPPOSITE ENDS OF SERVICE LINES, AT A, C, D AND F. 2 POLES FOR EACH ADDITIONAL ADJACENT COURT.



EACH COURT LIGHTED BY 4-1500 WATT RS. STANDARD LAMPS IN 4 BDL-105 OR 105E OPEN DIFFUSING FLOODLIGHTS ON 4 POLES AT BACKSTOPS, 20' ABOVE GRADE OR 2 LIGHTS ADDITIONAL ON 2 POLES OPPOSITE NETS IF DESIRED. 2 (OR 3) POLES FOR EACH ADDITIONAL ADJACENT COURT.

PYLE - NATIONAL CO. - CHICAGO, NEW YORK, DETROIT,  
ST. LOUIS, SAN FRANCISCO, ST. PAUL, TULSA, BOSTON, PITTSBURG.



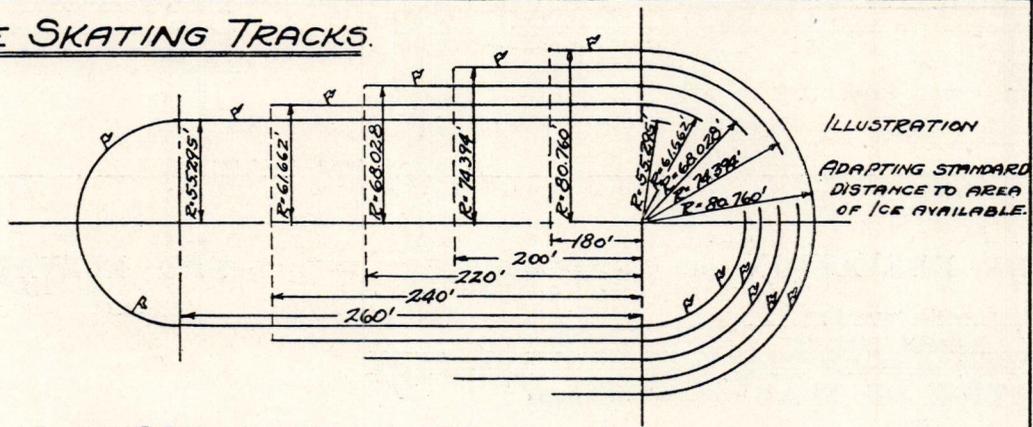
A PREPAYMENT TIME SWITCH TO OPERATE ON ANY ONE OF SEVERAL DIFFERENT TIME CYCLES, ACTUATED BY DIMES OR QUARTERS, SUGGESTED AS A PRACTICAL FEATURE TO CONTROL TENNIS COURT LIGHTING SYSTEMS. THE SWITCH TO BE INCLUDED IN THE CONTROL CIRCUIT OF A MAGNETIC CONTACTOR. WITH THIS PLAYERS WOULD PAY FOR THE USE OF LIGHTED TENNIS COURTS AFTER DARK, AND THE LIGHTS WOULD BURN ONLY AT SUCH TIMES AS PAID FOR BY THE ACTUAL USER. IT IS SIMPLE TO INSTALL AND REQUIRES LITTLE ATTENTION. IT IS PROTECTED FROM THE WEATHER BY A SMALL WATER PROOF ENCLOSURE MOUNTED NEAR THE COURT.

GENERAL ELECTRIC CO., SCHENECTADY, N. Y.

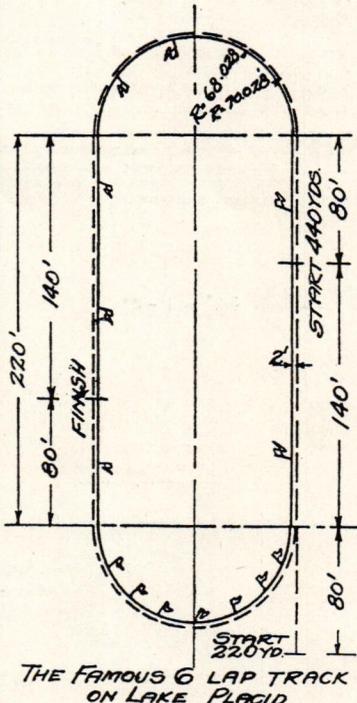
NOTE - TO BE SOUGHT IN LIGHTING: 1, ILLUMINATION OF COURT AND BALL ON THE SIDE APPROACHING PLAYER; 2, NO GLARE IN THE EYES OF PLAYER WHEREVER STATIONED; 3, NO OBSTRUCTIONS TO PLAY ABOVE OR NEAR COURT, WIRING UNDERGROUND; 4, LIGHT CONTROL BY COIN BOX OR SWITCH, SEPARATE FOR EACH COURT; 5, SIGHTLINESS, DURABILITY AND ACCESSIBILITY OF INSTALLATION.

### DIMENSION DIAGRAMS: TENNIS COURT ILLUMINATION

# ICE SKATING TRACKS.



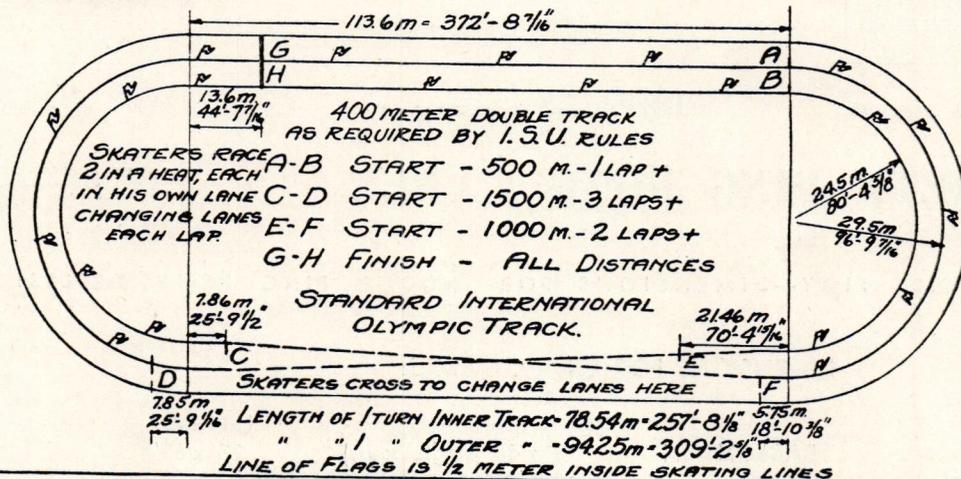
880 FOOT SKATING COURSE - 6 LAPS = 1 MILE.



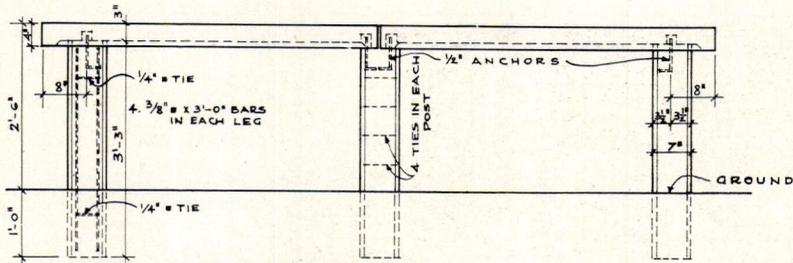
THE FAMOUS 6 LAP TRACK ON LAKE PLACID

DIMENSIONS		
8 LAPS = 1 MILE - 220 YDS		
STRAIGHTAWAY	RADIUS OF END SEMICIRCLES	
NONE	103.042 FT.	- 103'-0 9/16"
25 FT.	95.084	- 95'-1 1/16"
50 "	87.126	- 87'-1 9/16"
75 "	79.168	- 79'-2 1/16"
100 "	71.211	- 71'-2 3/16"
125 "	63.253	- 63'-3 1/16"
141.5 "	58.000	- 58'-0" (STANDARD A.S.U.)
150 "	55.295	- 55'-3 9/16"
175 "	47.338	- 47'-4 1/16"
6 LAPS = 1 MILE - 880 FT.		
180 FT.	80.760	- 80'-9 1/8"
200 "	74.394	- 74'-4 3/4"
204'-4 1/2"	73.000	- 73'-0" (STANDARD A.S.U.)
220 "	68.028	- 68'-0 3/8"
240 "	61.662	- 61'-8"
260 "	55.295	- 55'-3 9/16"
16 LAPS = 1 MILE - 110 YDS.		
NONE	50.5'	- 50'-6"
25 FT.	42.5'	- 42'-6"
50 "	34.5'	- 34'-6"
75 "	26.5'	- 26'-6"

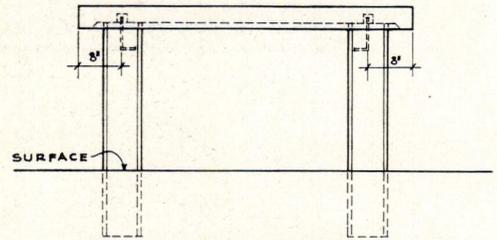
NOTE - ALL DISTANCES ARE TO LINES OF FLAGS WHICH ARE 2 FEET INSIDE SKATING LINES



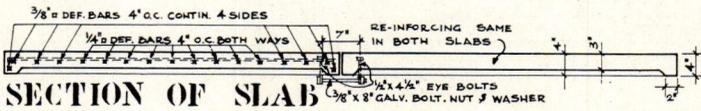
DIMENSION DIAGRAMS: ICE SKATING TRACKS



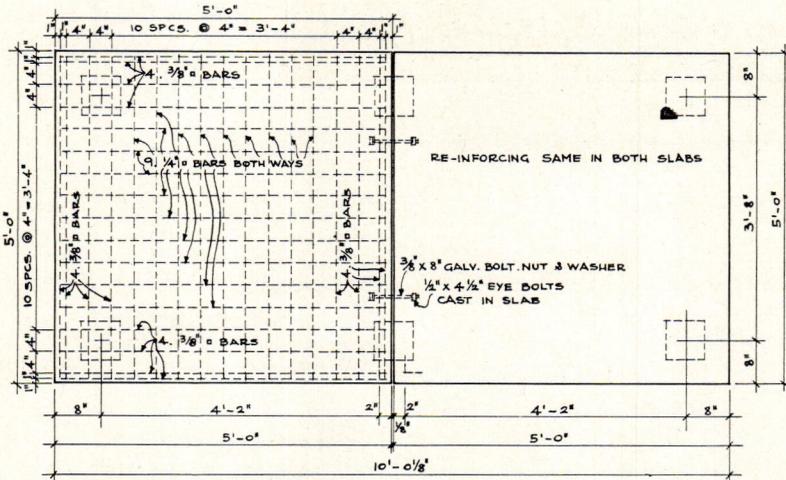
**SIDE ELEVATION**



**END ELEVATION**



**SECTION OF SLAB**



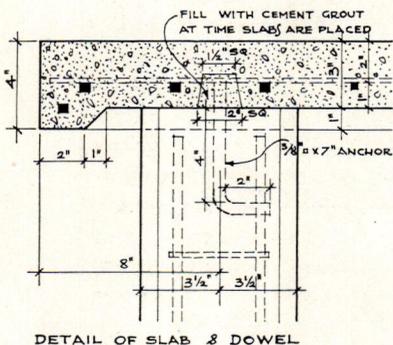
**PLAN OF SLABS**

**MATERIAL LIST**

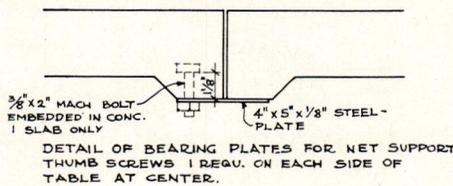
- ANCHORS 8 - 3/8" x 0'-7"
  - LEG BARS 24 - 3/8" x 3'-0"
  - SLAB " 32 - 3/8" x 4'-11"
  - " " 36 - 1/4" x 4'-11"
  - TIES 12 - 1/4" x 1'-6"
  - 4 - 1/2" x 4 1/2" EYE BOLTS
  - 2 - 3/8" x 8" GALV. BOLTS, NUTS & WASHERS
  - CONCRETE - 19.6 CU. FT. MIX. 1:1 1/2:3 1/2
- ORDER 6 - 3/8" x 40'-0"  
 " 1 3/8" x 5'-0"  
 ORDER 4 - 1/4" x 40'-0"  
 " 1 1/4" x 24'-0"

**NOTE** TOP SURFACE & EDGES OF SLABS TO HAVE CEMENT HARDENER & TO BE STEEL TROWELED TO A SMOOTH PLANE SURFACE.

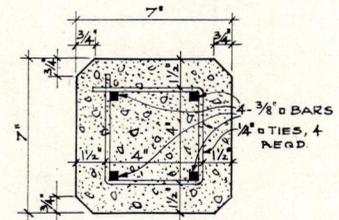
**SCALE** 3/4" = 1'-0"



**DETAIL OF SLAB & DOWEL**



**DETAIL OF BEARING PLATES FOR NET SUPPORT**  
 THUMB SCREWS 1 REQU. ON EACH SIDE OF TABLE AT CENTER.



**DETAIL PLAN OF LEGS**

**DETAILS** SCALE 3" = 1'-0"

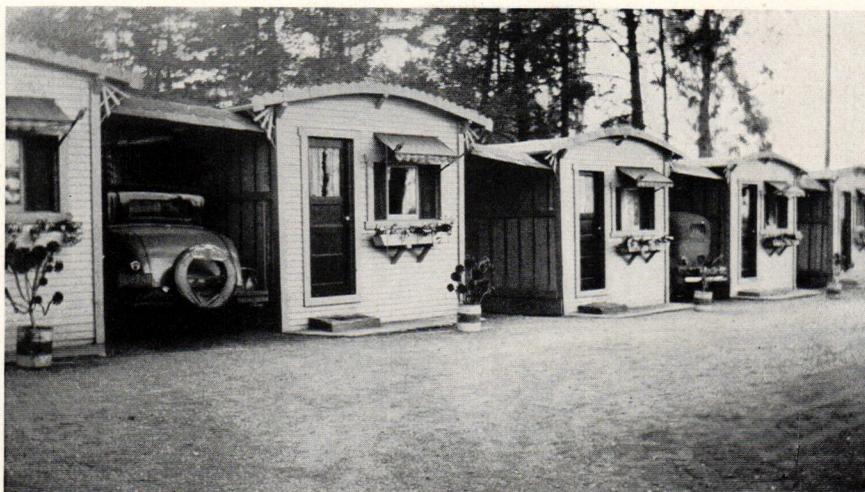
**CONCRETE PING PONG TABLE**

COURTESY, DEPARTMENT OF PLAY-GROUND & RECREATION CITY OF LOS ANGELES

FOR OUTSIDE PLAY—DIMENSIONS FOR INDOOR PING PONG TABLES: 5' x 9'

**DIMENSIONS FOR OTHER GAMES:**

	Game Area	Use Area
BADMINTON	17' x 44' (single court)	25' x 60'
	20' x 44' (double court)	30' x 60'
RING TENNIS	15' x 40' (single)	21' x 50'
	20' x 40' (double)	30' x 50'
SHUFFLE BOARD	6' x 52'	12' x 60'



Moro Bay, California. The cabins and car-shelters being of uniform type permit enlargement of camp for growing demands.

## ROADSIDE CABINS FOR TOURISTS

The construction of "shacks" for autoists has been the single growing and highly active division of the building industry during the depression years.

A new and rapidly enlarging field of building construction has been developing in the United States in response to a need for convenient overnight shelters for auto travelers. Our vast network of highways has become bordered with cabins located at the outskirts of cities and towns or at locations with special scenic advantages.

It has been estimated that more than 400,000 "shacks" for autoists have been erected in these locations during the past four years. The building of these cabins represents an investment for buildings alone of over \$60,000,000. The construction of "shacks" has been the single growing and highly active division of the building industry during the depression years. So attractive have these cabins become to the autoist that hotels have tried to adjust their city accommodations to the wants of travelers. Free garage accommodations are offered by many of the modified hotels. One town hotel in Indiana advertises along the roadway "accommodations similar to auto camps." Another hotel near Des Moines advertises "Free Garage. Come as you are."

The advantage of the auto cabins is flexibility. One or many more cabins can be erected according to the demand for overnight lodging. The cross-country traveler also finds it desirable to "skirt" a town avoiding heavier traffic, and to stop in a wooded grove near the highway.

The comforts offered by the roadside auto camp are by no means unattractive. Clean beds and fresh bed linen and blankets are the rule. Travelers may provide their own linen and blankets at a

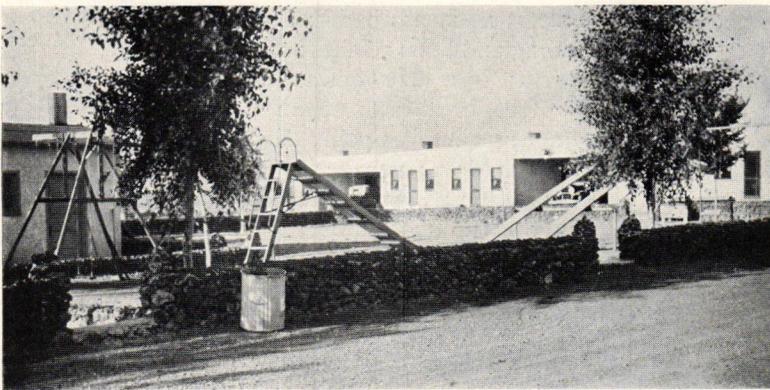
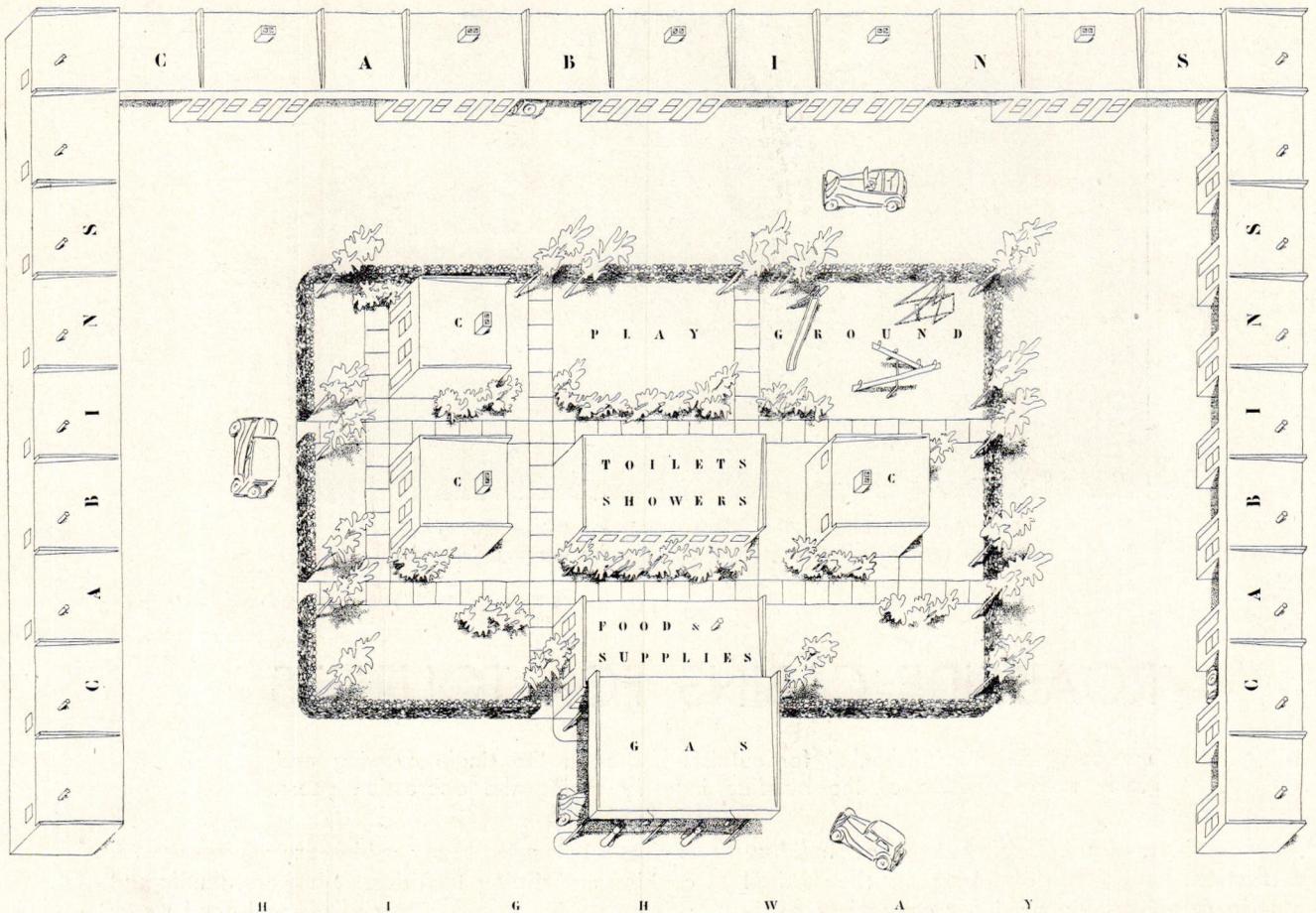
saving in charge. Many cabins are equipped with cooking and dining facilities. Showers, public and private washrooms, sanitary toilets and good water are customarily included as conveniences.

The following are advertised features of camps: shower; toilets; kitchens; baths; running water in cabins; bedding and linen; dishes; cooking utensils; electric stoves; gas, 25c extra; dining rooms; lunchroom; free breakfast; steam heat; writing rooms; garage; swimming pool; dancing pavilion; play space for children; menagerie; picnic grounds; golf course; bathing beach; electric lights; community laundry; no mosquitos; Simmons spring and inner spring mattresses; beauty rest mattresses.

The American Automobile Association publishes an "Official Directory of Cottages, Camps, Courts and Inns." There are over 4,000 separate camps in the 1933 listing, covering only the approved camps inspected by the Association.

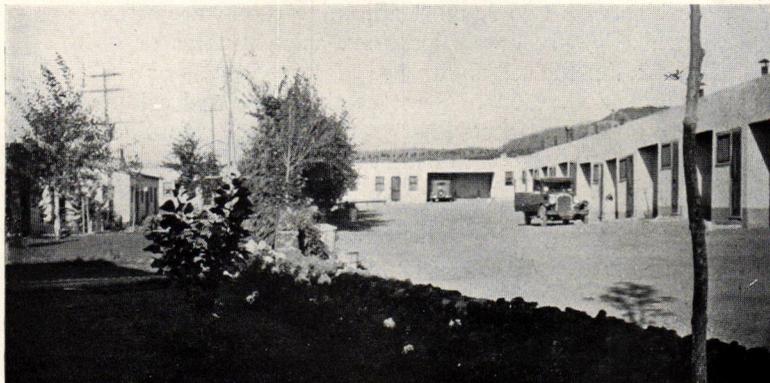
Many of these camps are used by families since cabins with two or more adjoining rooms are often available. In scenic locations, in mountains or at seashore, the cabins are used for week-ends or for summer vacations. Some of these minimal cabins are now being occupied the year round by families who cannot afford to live in towns.

The charge for overnight accommodation ranges from 75 cents a night to as high as \$3.50 a night in de luxe bungalows. In most instances the charge for use of a cabin by two persons or parents with a child is identical with the charge for an individual. Bedding and linen are usually 25 cents extra.



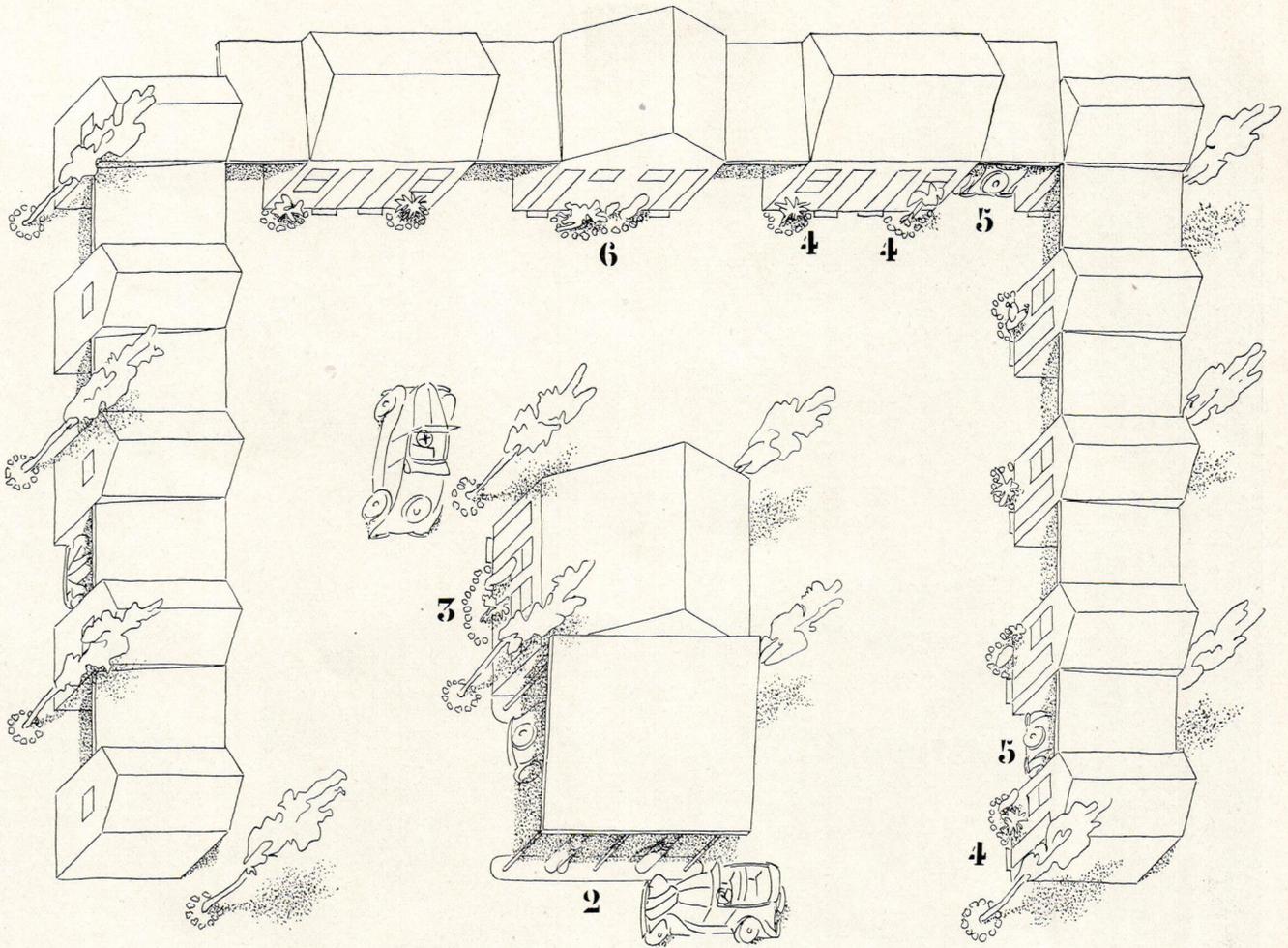
**MOTOR CAMP AT RATON, NEW MEXICO**

Air view of auto camp with facilities (playground) for families with children at Raton, New Mexico. Construction: wood frame; lath and plaster outside; insulation board inside; roofing, asphalt paper. Sound architectural treatment without wasteful and unnecessary decorations. The arrangement of the cabins around the centrally located service buildings for common use makes supervision easy and creates a quiet outdoor space off the main highway.



View of playground and motor camp court at Raton, New Mexico. Many motor camps have as great a room accommodation as the entire town where located.

Albert Frey

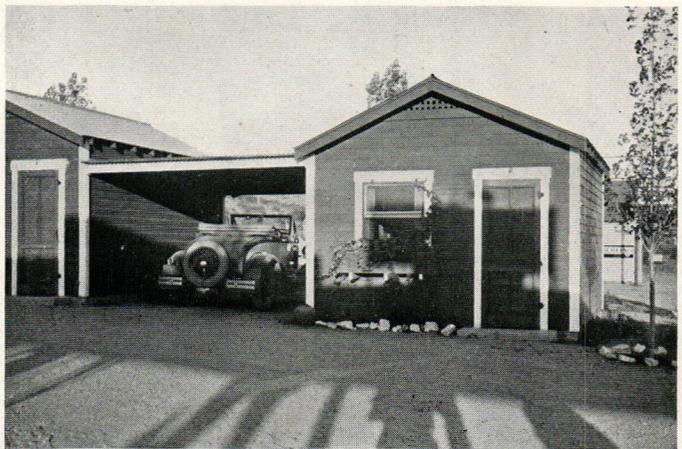
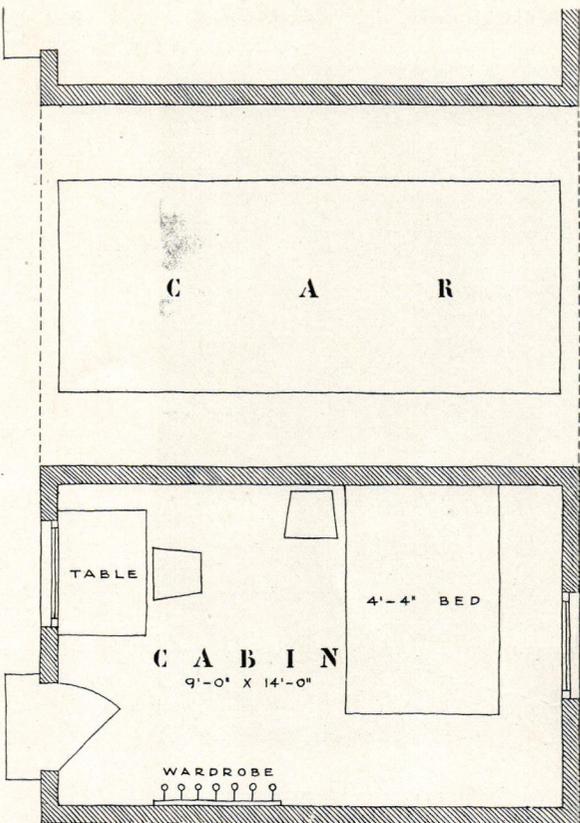


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**MOTOR CAMP AT KINGMAN, ARIZONA**

Air view of typical roadside motor camp; (1) highway; (2) gas station; (3) proprietor's quarters and general store for sale of food and auto supplies; (4) one-room cabins; (5) car shelter; (6) showers and toilets. The well disposed buildings are both practical and inoffensive in appearance. Planting attracts the motorist, especially in a desert country.

(At left): Plan of one-room cabin of camp at Kingman, Arizona. Simplest type of cabin for one person or couple. Clapboard covered wood frame. Roofing, corrugated steel sheets, painted.



Albert Frey



Rainier National Park Company

HOUSEKEEPING CABINS AT PARADISE, RAINIER NATIONAL PARK, IN WASHINGTON



National Park Service

Dining, sleeping, transportation. Healthful outdoor living with comfort and convenience and with lightweight, movable shelter has been made possible by automobile and highways.



Rainier National Park Company

**SUNRISE LODGE AND CABINS IN YAKIMA PARK, RAINIER NATIONAL PARK**

**A well organized arrangement of cabins does not detract from the natural setting.**

Everything possible is done by the Forest Service of the United States Department of Agriculture and by the United States Department of the Interior, to facilitate the full use of National parks for the erection of summer homes. Individuals and associations may secure special use-permits. These are usually granted for an indefinite period but where the proposed development involves a considerable investment by a permittee, the permit may be granted for a period of not more than 30 years. In most cases it has been found that the indefinite period permit is entirely satisfactory to the permittee. Not more than 5 acres may be allowed to any single person or association.

"In order that as many people as practicable may be accommodated, tracts for summer-home-site purposes, except in unusual instances, are limited to 1 acre or less in area, and term permits run for period of from 5 to 15 years, with privilege of renewal. Undue crowding between permittees is avoided, and provision is made for those who seek isolation and privacy. The annual rental charge for lands occupied for summer homes varies from \$5 to \$25, depending upon the location. Where permits are issued for as low a rate as \$5 per year, the privilege is given for an indefinite period.

"No summer-home permits are granted in the White Mountain Forest in New Hampshire and Maine, or the Wichita in Oklahoma, all sites adaptable to recreational development being held open for public or semipublic use.

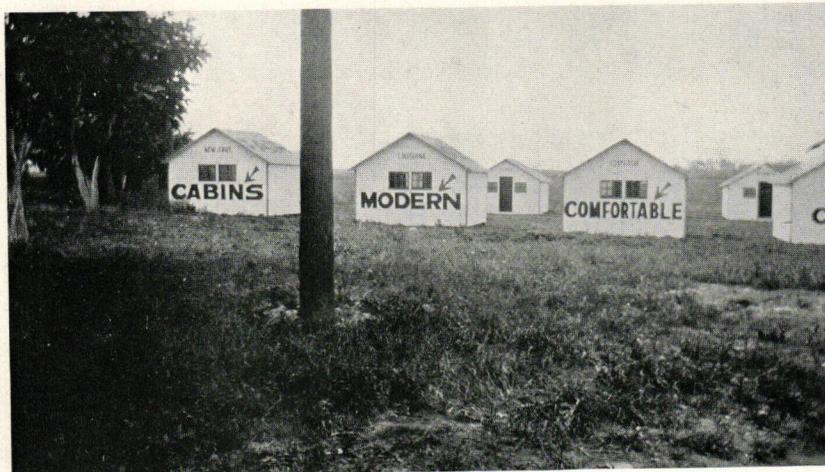
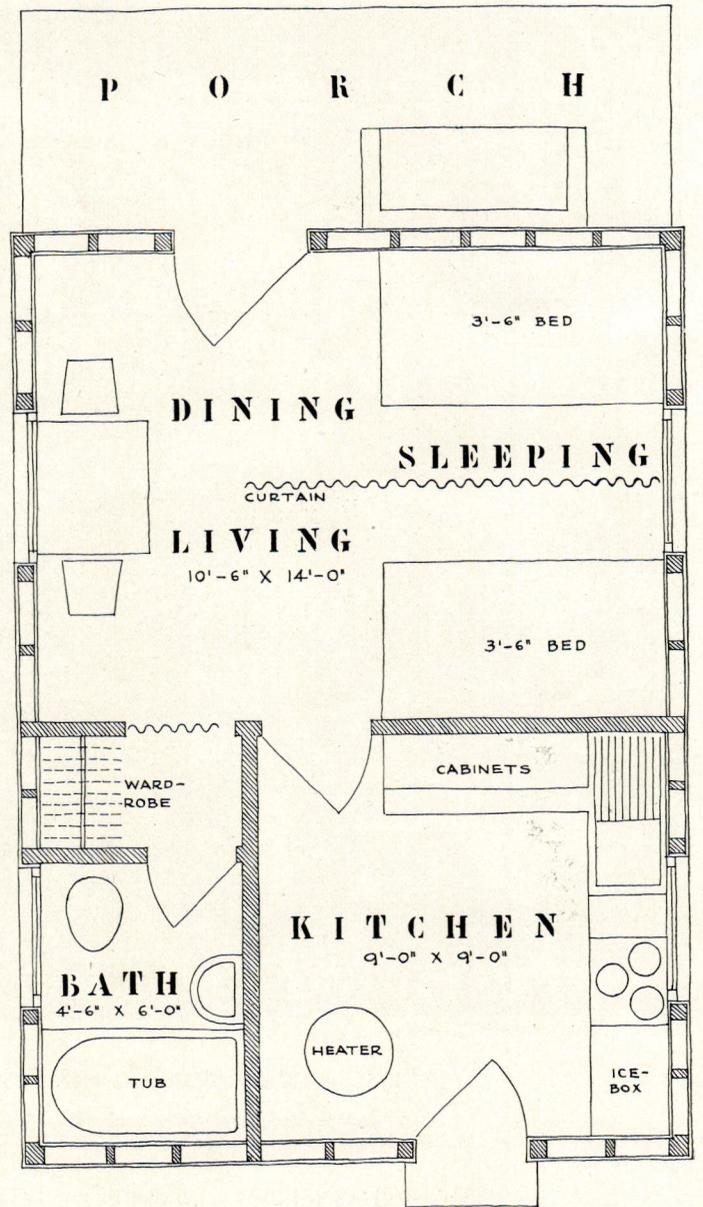
"Detailed information respecting any particular locality or Forest may be obtained by addressing the forest supervisors or the regional foresters."\*

\* *Vacation in the National Forests.* Forest Service. United States Department of Agriculture.



Albert Frey

Plan of family cabin at Coronado Tent City, Coronado Beach, California. Light wood frame construction covered with clapboards on the outside, insulation board inside. Continuous ribbon of canvas at window height provides desirable cross ventilation. These cabins are fully equipped for day and week use. Food and ice service can be obtained. Note pleasant tree shade for outdoor sitting.



Cabins erected at Chicago periphery to accommodate auto tourists at A Century of Progress Exposition.

# MEDICAL ARTS BUILDING

DULUTH, MINNESOTA



Kurt B. Florman

ERICKSON AND COMPANY, ARCHITECTS AND ENGINEERS



Kurt B. Florman

Typical physician's waiting room.

MEDICAL ARTS BUILDING IN DULUTH, MINNESOTA  
ERICKSON AND COMPANY, ARCHITECTS-ENGINEERS



Kurt B. Florman

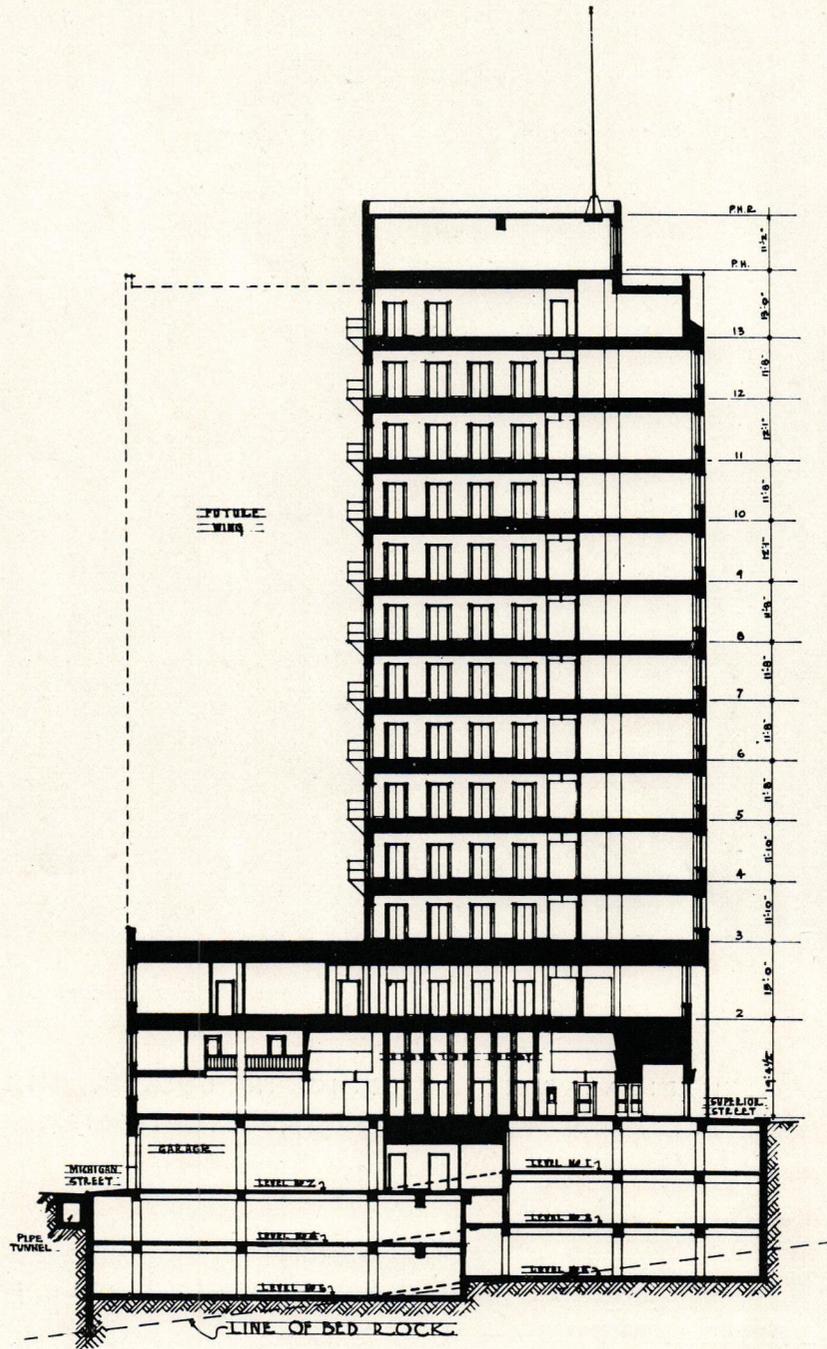
Exterior view of building at night.

MEDICAL ARTS BUILDING IN DULUTH, MINNESOTA  
ERICKSON AND COMPANY, ARCHITECTS-ENGINEERS



MEDICAL ARTS BUILDING  
DULUTH, MINNESOTA

ERICKSON AND COMPANY  
ARCHITECTS-ENGINEERS



The building occupies the entire depth of an interior lot in the center of the business district and has a commanding view to the south over Lake Superior and the harbor. The site fronts on Superior Street which is the main artery in the city for transit lines and motor traffic. It is only two blocks distant from rail and bus terminals.

Features of the building:

Garage with staggered floor ramps in substructure.

Stores and shops on first floor.

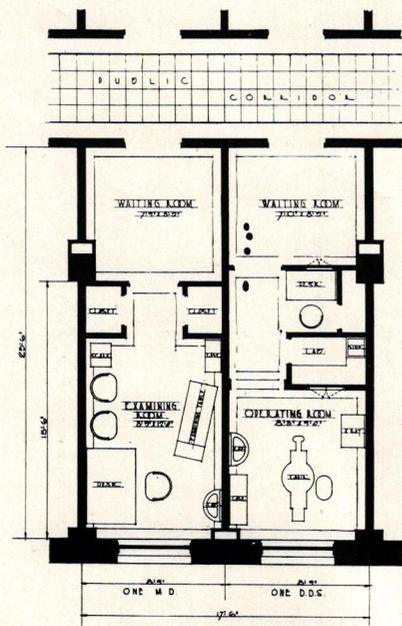
Office space in upper floors.



Kurt B. Florman

Main lobby looking toward street entrance.

MEDICAL ARTS BUILDING IN DULUTH, MINNESOTA  
ERICKSON AND COMPANY, ARCHITECTS-ENGINEERS



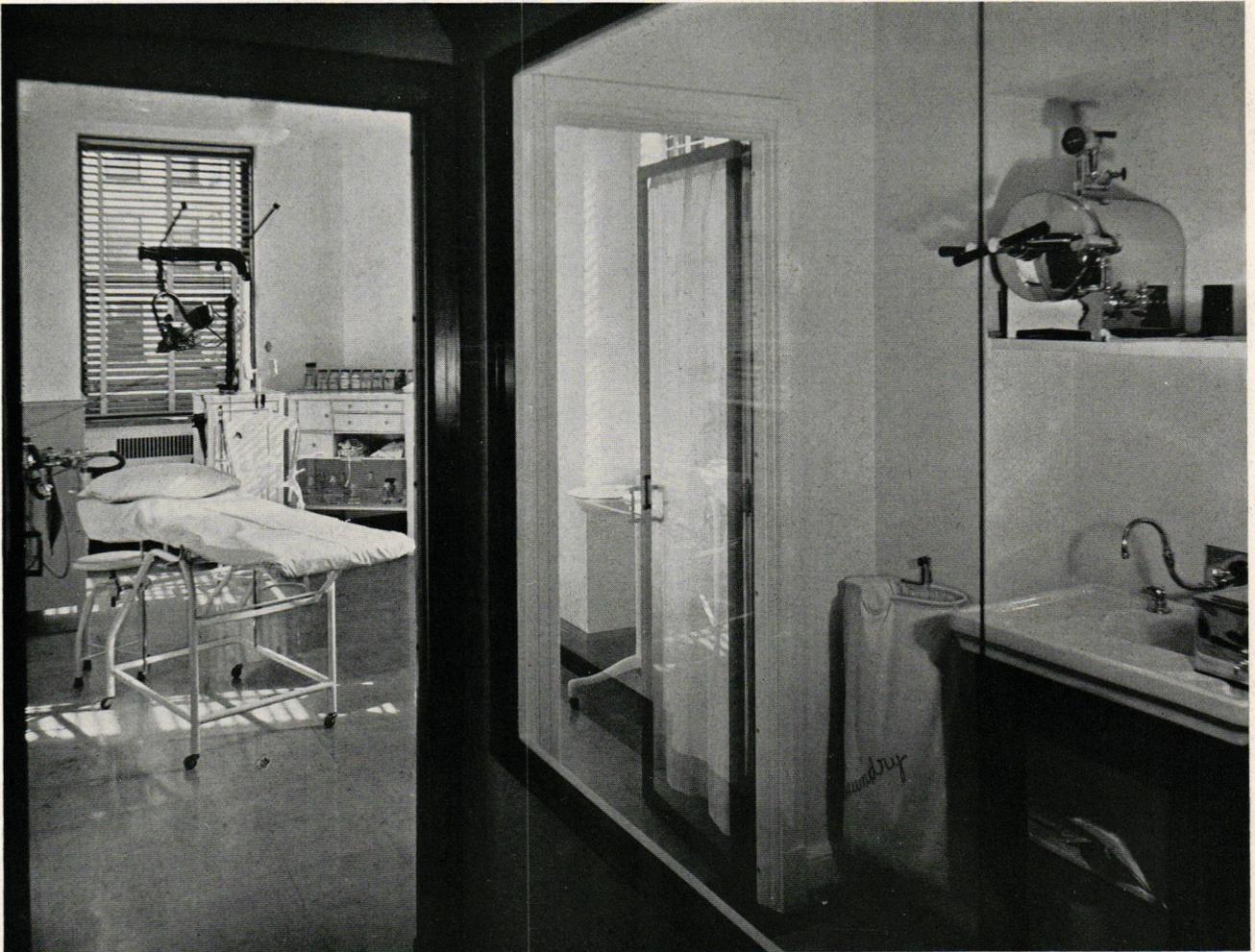
Bay dimensions: width is 17'6" center to center of columns; depth is 23'6" clear between exterior wall and corridor wall.

The minimum physician's suite consists of a waiting room, closets and examining room accommodated in a half bay.

The minimum dental suite consists of a waiting room, business office, laboratory and operating room, accommodated in a half bay.

Room dimensions: physician's examining room is 8'3" wide by 12' deep; dental operating room 8'3" wide by 9' deep; dental laboratory 3'4" by 4'8". Typical ceiling height is 9 feet. Windows are 4 feet wide and extend to ceiling.

Rubber floors throughout except in public corridors and lobbies where terrazzo is used. Plaster walls are painted a grayish buff except in waiting rooms which are treated in Tekko and Salubra washable fabrics. Ceilings are plaster, painted; acoustical materials are used where required. Doors and trim throughout are American walnut.



Kurt B. Florman

View of minor operating room and sterilizing room.

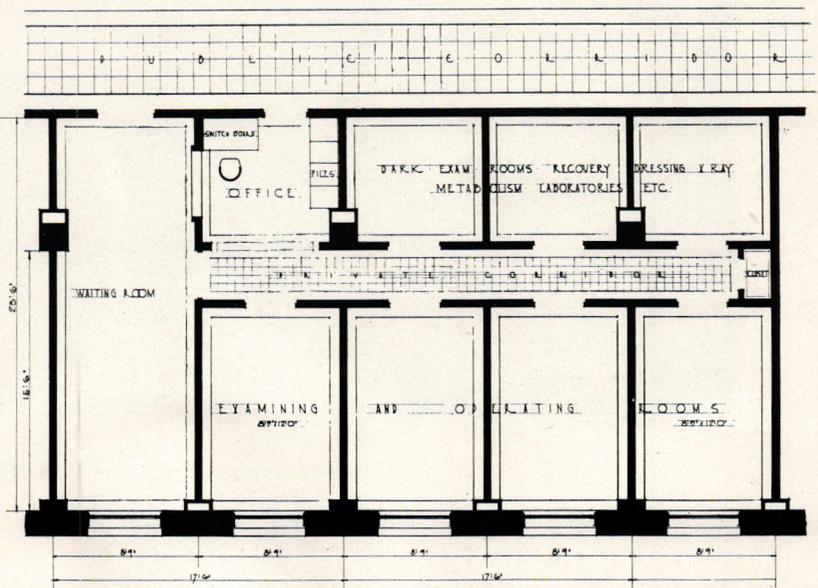
MEDICAL ARTS BUILDING IN DULUTH, MINNESOTA  
ERICKSON AND COMPANY, ARCHITECTS-ENGINEERS

Heating: convention type radiators recessed under windows.

Ventilation: washed air supply and exhaust ducts in suspended ceiling space.

Electrical system: conduits in suspended ceiling space branch out from a central pull box in each bay, feed down in wall to room switch and continue to removable baseboard.

Plumbing: hot and cold water, waste, gas and compressed air piping are carried through aerocrete floor fill.





Kurt B. Florman

Dental operating room for children.

MEDICAL ARTS BUILDING IN DULUTH, MINNESOTA  
ERICKSON AND COMPANY, ARCHITECTS-ENGINEERS

# WHEN BIDS AND BUDGET DO NOT BALANCE

## HOW TO REDUCE CONSTRUCTION COSTS

By HAROLD R. SLEEPER, Architect  
Office of Frederick L. Ackerman

### PART ONE

The architect today is faced more than ever with the fact that incoming bids may exceed the owner's budget. Costs may have dropped 15 or 20 per cent below normal, but the owner's expectancy has dropped as much as 50 per cent. People expect the impossible, and unless the architect has overruled insistent demands at every stage during preparation of drawings and specifications, he probably will have to consider ways and means to produce savings after receiving bids in order to have the work proceed.

#### INTRODUCTION

There are many other reasons why architects are faced with the necessity of trimming the cost of an operation before the owner will proceed with the work. Some of these causes have no relation to the ability or far-sightedness of the architect but some of them definitely involve his professional qualifications. In the latter case his only escape from lasting condemnation by the owner is immediately to find ways and means to correct the situation.

1. *Changes in the building cost index during the preparation of drawings.* In cases when a budget has been set up and both the architect and owner have worked with this in mind, and the architect has knowledge of costs and cubage rates, the fluctuation of the building index between the time work was started and the bids become due may result in a wide discrepancy between costs and budget. In extreme cases of this sort no amount of shaving or changes will bring about a balance. For instance, a case occurred in this office in which the drawings were started in 1919 when the index was about 80. Bids were called for some 18 months later when the index had jumped to a new high of 120 or an advance of 50 per cent in the cost of the building. In the near future we may face changes of this magnitude.

2. *Change in the owner's financial status during preparation of the drawings.* In times of building index stability, when both the architect and owner have performed well and functioned harmoniously, there exists the possibility that the owner's financial status may suddenly change overnight. In other words his budget no longer has any relation to his possible expenditure. Cuts in construction costs suddenly become imperative.

3. *Architects who are not qualified to build to a budget.* The breaking-up of large offices has forced

many inexperienced architects to secure any jobs that were in sight. In good times the architect who planned too loosely and found his costs high was often able to surmount the impasse without much criticism. Today the owners' pocket-books are seldom so elastic as to stretch the required amount. The architect must suggest drastic cuts to rectify the condition or else bear the owner's ill-will.

4. *Owners who fail to set up a budget, or architects who fail to require such an arrangement.* There are owners who refuse to state their budget and maintain a discreet silence in this regard. It is hard to say why they feel that such lack of cooperation is of benefit. Perhaps their changing assets and income make them feel that there is no definite basis, or perhaps they feel that they may get more for their money by such a policy. Of course, the type that lack the business sense to think through their problem or who are too careless to do so are encountered now and then.

If the architect has lacked the acumen or courage to demand a budget, then the responsibility is mostly his. In either case the architect is likely to be blamed for the difference between the estimates and the owner's unspoken hope.

5. *Architects who fail to check changes and additions or to demand a higher budget.* To keep to a budget the architect must have the force to dominate the situation and to refuse to incorporate additions or changes that are suggested by the optimism or enthusiasm of the client and which will increase the cost. Strange to say, many owners approach the problem of sweetening a job in a bargaining spirit, weeding and begging the architect to give them "just this and that," as if the architect had to pay for it. If the architect softens to these entreaties too often he runs grave risks. A frank facing of facts with the possibilities of a row is to be preferred. If such changes are required by the owner then it is the architect's function to demand an increased budget and at least to go on record to that effect. If he has so gone on record then the task of slicing the bid is one that he can attack with some enthusiasm.

6. *Architects who intentionally mislead the client in the matter of cost.* Whether architects who mislead the clients are doing so from the viewpoint of producing a better piece of architecture or in hopes of feathering their own nest, the results are equally dangerous. The records are full of court cases that

have been brought by owners against architects on this account and not all of them have resulted in dismissals of the suit. If rebids can be immediately taken and can produce favorable results, then the architect may be spared all but the ill-will that such practice produces!

Savings may be accomplished through elimination, substitution of materials or methods, or by a change in design. Design changes, except in minor points, are not easy to accomplish after the contract documents are complete. So the list hereafter given mentions only design changes that are possible without major drawing revisions. Eliminations are often too obvious to need discussion, so the list considers for the most part, those changes that are in the nature of substitutions. Addenda to the specifications may care for the majority of changes discussed.

Suggestions are made with the idea of saving without undue sacrifice of strength, durability or appearance. However, it must be understood that seldom are compromises possible without some loss, one way or another.

The architect's function is to initiate wisely changes that result in savings but that do not materially damage the final results, artistically or practically, and that make it possible for the re-bid to fit the budget.

The ramifications of building are so vast that to offer suggestions for saving in all classes of work is impossible in one article. Therefore, this article is intended to cover country and suburban residential work and other small buildings in towns or country.

## CONDITIONS

Architects become so accustomed to providing long and involved supplementary conditions for large work that often on small work they fail to simplify this section of the specifications. It will pay to discuss these headings with the contractor in detail for all jobs and see whether or not certain requirements are not unnecessary under the local conditions.

### *Temporary Office:*

For small work, this building may be reduced to a very small shack, lighted and heated, without more than a table for drawings. Such requirements as shelves, closets, drawers, toilets may be omitted.

### *Photographs:*

Progress photographs on work of moderate size become a financial burden and can be dispensed with.

### *Telephone Service:*

This service should be installed by the contractor, but where local calls are charged for, the service may be made self-supporting by the installation of a coin-box telephone.

### *Temporary Heat:*

When the exact months of contemplated construction are known, temporary heat requirements can be figured more exactly. Possibly it may be arranged that the owner will provide fuel and attendance before he moves in, a scheme which may result in a sizable saving. If the conditions were written some time in advance, possibly the calendar has advanced so as to not require temporary set-up of radiators for temporary heating; or perhaps provision for winter foundation construction will no longer be needed.

### *Cleaning:*

Investigate the possibility of allowing the owner to do final cleaning of glass. He may be able to do so with his permanent staff at no extra cost.

### *Samples and Models:*

Models and samples are expensive, and if the architect gives further study to these items, he may find it possible to furnish full sizes for certain items that will make it unnecessary to require models. Also he may find samples of work adjacent to the job, or a building which can be referred to in lieu of samples erected at the job. This has been found practical in cases of brickwork, stonework, and the like.

## GRADING

Savings in respect to grading are so dependent on each operation that suggestions are limited to hints that may enable the architect to find definite items susceptible of revision.

When spreading of top soil is included in the contract, it may be possible to omit the work so that the owner's gardener may do it after the building operation has been completed. In most cases the owner has to procure and spread more top soil than is available after the completion of the building operation, so this work can easily be cared for by him.

Construction of garden retaining walls may offset grading.

Omission of garden retaining walls and use of natural terraces may result in saving.

Except for boiler room, basement floor level may be raised to provide a minimum head room.

Sections of basement may be unexcavated and first floor built on grade, or only crawling space excavated.

Omit basement steps and provide inside basement stairs only. This is practical with oil or gas-fired boiler.

## CONCRETE

### *Footings and Foundations:*

Retaining walls specified of mass masonry should be estimated in reinforced concrete. To retain the architectural character, such walls may have 4" brick veneer faces above grade or 6" stone veneered faces where exposed.

Check all wall footings. Often footings are shown on dwarf walls, porch walls, area walls, entrance step foundations where the load does not actually require more than the bearing presented by the wall itself.

Many building codes require 12" deep footings. Check loads to see if on light construction these may not be reduced to 8" with a spread of 4" on each side. Check actual load bearing capacity of soil.

Check location of bottom of footings with grades to discover possibilities of saving concrete where footings are now shown below frost line. Check up with local conditions as to local frost line. Some very sandy soil never allows frost down to the level anticipated in the usual loam or clay.

Footings may be stepped to save concrete in foundation or retaining walls.

In soil free from water, with good drainage, consider substitution of concrete block for poured concrete foundation walls and bearing walls.

Examine thickness of all foundation walls. Where shallow basements exist, these may be reduced from the usual 12" to 10" or even 8", if lengths of wall are short. In small house work 10" foundation walls have become quite general.

Cheaper foundations by use of Lally columns and steel girders to support first floor beams in place of bearing walls of brick or concrete; or by the use of piers and girders in place of bearing walls.

If brick interior bearing walls and chimney foundations are specified, get alternate on use of mass concrete instead.

If local stone is available, sometimes it may be substituted advantageously for foundation walls in place of concrete.

#### *Floor Slabs:*

Construction and head room difficulties may preclude any substitution on slab construction but these may have to be considered.

Reinforced concrete, tin pan or catenary type slabs may be changed to light rolled steel joists or open websteel joist types with 2" slab over same. In such substitutions the extra insurance premium should be considered. The above system should be braced thoroughly to prevent slabs that are not sufficiently stiff. A large saving may be made by changing slabs to wood construction. One-hour fire resistance battle-deck slabs may be more economical for certain classes of construction. Where labor costs are low, consider types of slabs that employ reinforced concrete rather than steel.

Areas may be cheapened by changing stone or flag caps to concrete. Omit slab floor and pave with brick or gravel.

For porch floors where specified face brick, flag, tile or slate, use colored cement.

Omit fireproof slabs over basement. Use stucco for basement ceilings instead.

Check all live loads to see whether they can be reduced.

#### *Concrete Specification Changes:*

Investigate local conditions as to availability of bank sand and gravel, ready mixed. Tests may prove that this is satisfactory, at least for mass concrete, at less cost than that mixed on the job.

Where Ottawa or Cow Bay sand is definitely specified, look into possibility of use of local sand.

Where 1-2-4 concrete or better has been specified, make tests with local sand, rock or gravel to see whether 1-3-5 mix is not sufficient for such items as mass wall, footings or machine foundations.

Omit all waterproofing compounds from concrete mix.

Omit all accelerators from concrete mix.

#### *Forms for Concrete*

Get alternate on using steel forms in place of wood, as in some locations where these are commonly used, the wall cost can be reduced very materially. Slightly less regular walls should be the only unfavorable result.

See floors for cement finish.

#### **HOLLOW TILE**

##### *Basement:*

Hollow tile basement partitions may be changed to wood studs with plaster board finishes. Use asbestos board near boiler.

Hollow concrete block walls may save over hollow tile walls.

Omit tile walls for stucco and use frame walls.

Where loads will allow, concrete hollow blocks may be used for foundation and bearing walls.

Omit chimney pots; carry flue linings above chimney caps.

Omit all basement partitions or change to frame with boards except around boiler.

Faience tile walls on hollow tile blocks may be omitted and structural glazed machine-made blocks with a glazed facing substituted. This construction supplies both facing and partition in one material.

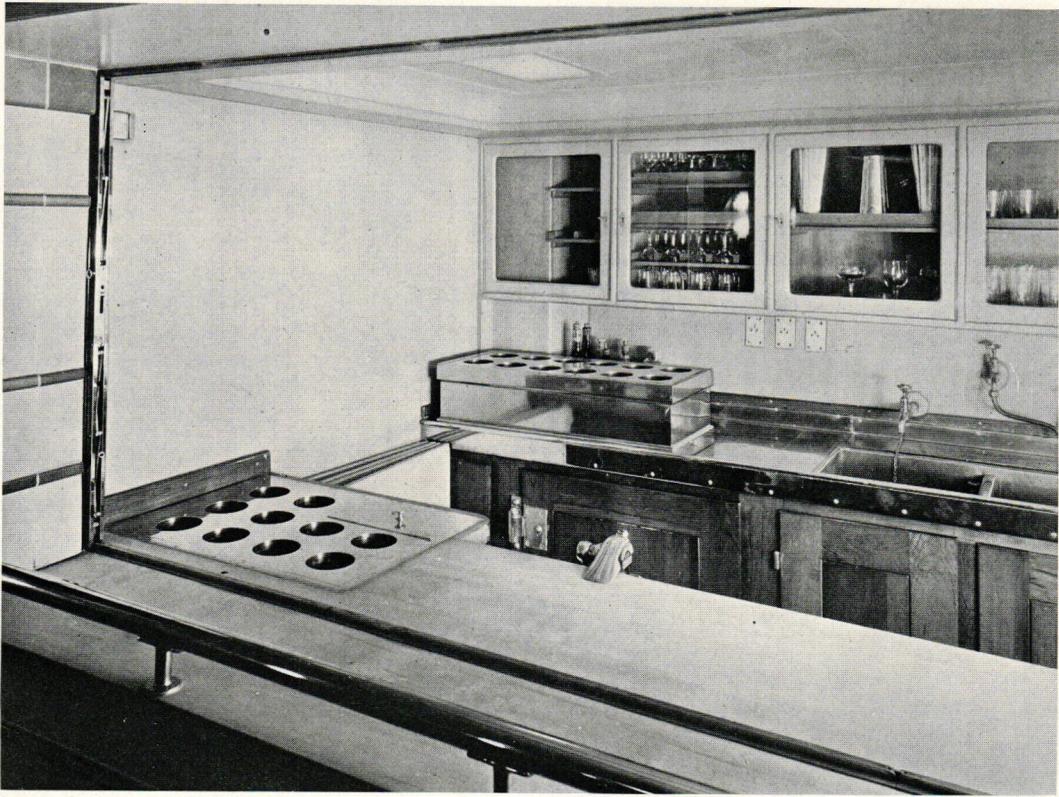
Concrete blocks may be used instead of brick for whitewashed exterior walls.

Get comparative costs of clay tile blocks and gypsum tile blocks.

#### **BRICK**

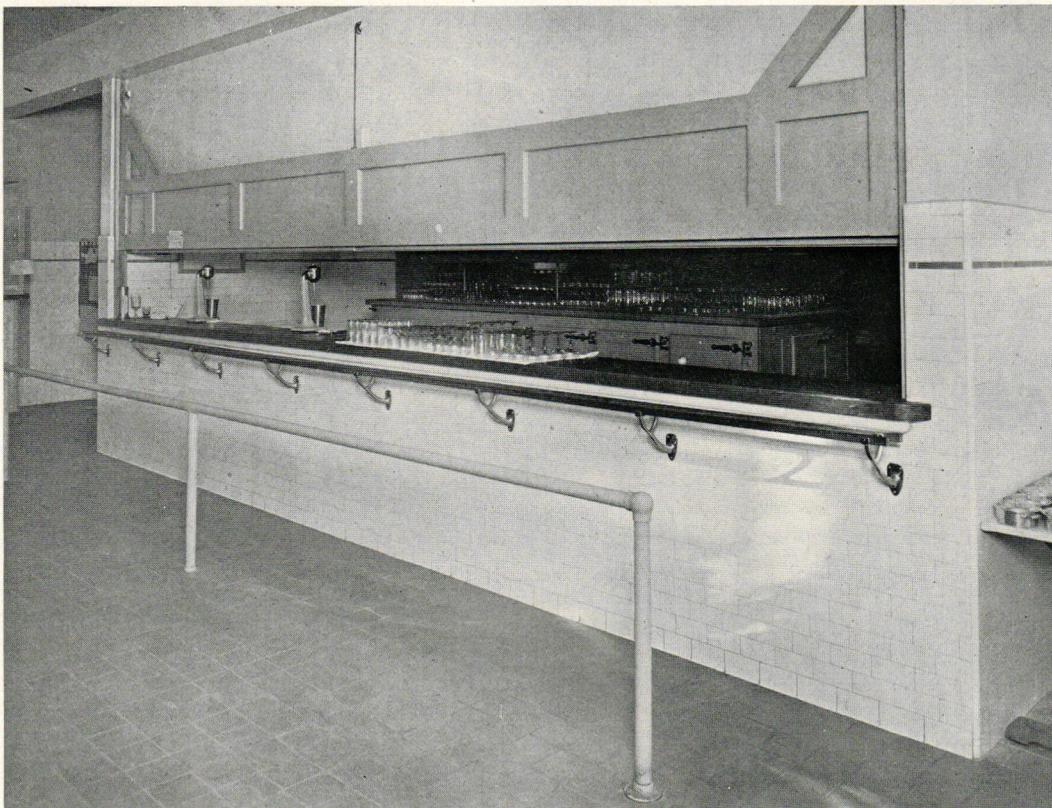
Brick exterior walls may be made of second-hand or common brick and whitewashed, resulting in an economy over face brick. If brick backing for exterior wall is specified, it may be changed to hollow tile backing or double brick backing. Double brick has the strength of common brick with the advantage of lightness and speed of erection. Also, concrete block back may prove an economy in certain localities.

*(To be continued in a following issue)*



Peyser & Patzig

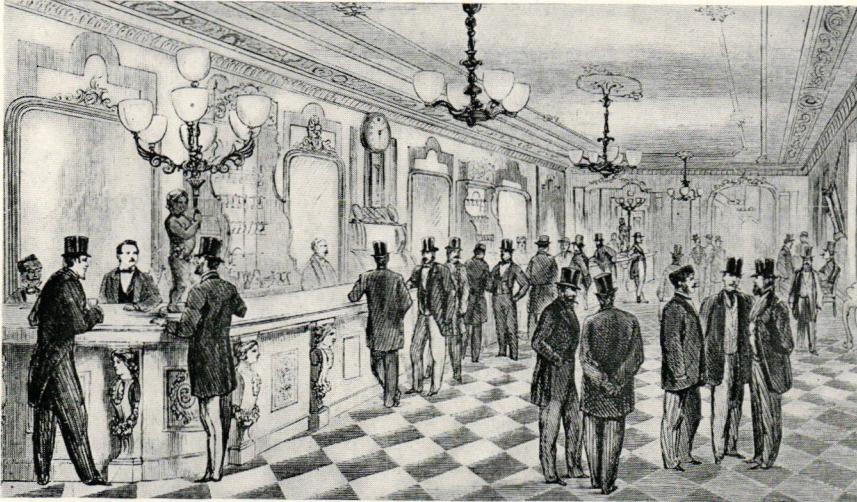
Swimming pool bar on steamship "Europa."



McDonough

Back bar of the Casino at Agua Caliente, Mexico.

## MODERNIZATION AND ALTERATION



The old marble bar room of Thomas Brothers in New York City.

## REPEAL OFFERS NEW OPPORTUNITIES

By J. O. DAHL, Editorial Director, "Hotel Management and Restaurant Management"

Executives in 7,500 hotels, about 25,000 worthwhile restaurants and some 4,000 recognized clubs plan to sell wines or cocktails and other alcoholic beverages when they become legal. Representative members of these groups, when questioned recently, stated that repeal would increase their business from 25 to 50 per cent, and that the profits from beverages would put them in the black for the first time in three years.

It has been estimated that over half of these hotels, 90 per cent of the restaurants and 40 per cent of the clubs have been built during the past eighteen years—after prohibition. Most of them were designed for a dry era.

The legalization of alcoholic beverages brings new problems. There is a new age of drinkers. Women cast a decisive vote that can make or break a business. Their entry into business on a large scale has compelled business to (a) establish high standards of sanitation, (b) create more cheerful, artistic and luxurious surroundings, (c) provide better ventilation and air conditioning, (d) install lighting that glorifies the face, figure and costume, (e) maintain beautiful and convenient toilet facilities, (f) provide comfortable chairs and lounges, (g) furnish stimulating entertainment in modern surroundings.

I am stressing the feminine appeal because the past few months' experience with beer sales have proved my contention that generally beer is a man's drink. As such, it can be and usually is served in old-fashioned and plain surroundings. Two of the principal reasons are that men like this kind of an atmosphere and that profit from beer is so low that

elaborate surroundings cannot be justified on a dollar and cents basis.

The architect's job in this connection is not an easy one. To do a really fine piece of work he should have complete supervision of decorations, furnishings, signs, menu color schemes, layouts, selection of uniforms, advertising art work and even billboards and exterior landscaping. In the rare instances where this has been done, the architect and owner have been able to show results that have been profitable even in depression.

An architect's responsibilities on a repeal remodeling job might logically be segregated into six general groups: Construction, Engineering, Decoration, Furnishing, Outdoor and Gardening. Many of the subjects must be considered under several headings, but in most instances these are so obvious that no reference will be made to them.

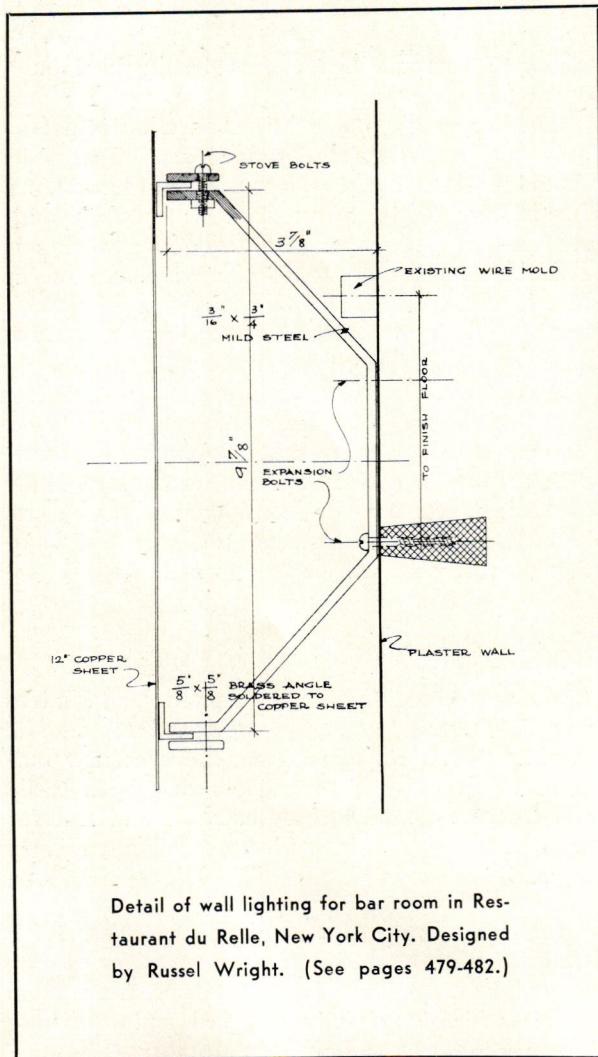
### CONSTRUCTION

*Exterior* should radiate hospitality. Modern marquee, attractive signs; new front; colorful awnings; windows that attract the eye; new outdoor hardware on doors; doors that open easily and that permit quick, easy entrance and exit for groups; use of revolving doors to eliminate entry ways.

*Interior*: Dance floor (small); added toilet facilities with decorative powder room for women (spend lavishly for this); abundant check room space; wide, long, fully carpeted and brilliantly lighted stairs to upper or lower restaurant; flowers,

pictures, tapestries, and the like, on stair landings. Remove large pillars from dining rooms, but provide assortment of private dining rooms that can be opened into main restaurant. Use soundproof, folding doors between these rooms. Provide cozy corner nooks as often as possible. Comfortable waiting foyer; reception apartments for party and banquet business, consisting of private toilet, living room adjoining private dining room. The Waldorf-Astoria has several excellent examples of such layouts. Possible use of cellar space for night club or novelty restaurant. Roof gardens for some hotels, restaurants or clubs may be advisable. Acoustical treatment in busy restaurants is essential, even when fully carpeted floors are used.

*Food service:* Rearrangement of kitchen, store rooms, and so on, may speed up service. Dumb-waiters may solve the problems for store rooms, bakeries, wine rooms, which are on floors above or below the restaurant. Adequate storage space for wines and liquors. Storage space for empty bottles. Heavier meals may require more refrigeration space. Loading platform for bringing in kegs and cases. Space for service and public bar.



## ENGINEERING

*Air conditioning:* Of great importance, owing to more women smokers and higher standards of atmospheric comfort in theaters, department stores, schools, trains, and elsewhere. Repeal should make air conditioning necessary in every public restaurant.

*Elevators:* Room service will be greatly stimulated. Passenger elevators must be modern, quiet, speedy and well designed. Dumb-waiters should be used from bars to store rooms so that cases and kegs will not have to be brought up in public view. Service elevators must be adequate and speedy for quick room service.

*Lighting:* Lighting effects for dance floors and orchestras. Table lights are coming back. Cozy, reflected illumination, tricky lighting will be used for bars.

*Telephone:* Handy telephone booths that are well ventilated. Longer luncheon hours mean more telephone calls. Novelty booths for women.

*Radio:* Provision for reception or broadcast. Wire for television.

*Talkies:* Wire for talking pictures. Provide suitable screen.

*Laundry:* With return of linen service, more hotels and restaurants can profit from laundry operation.

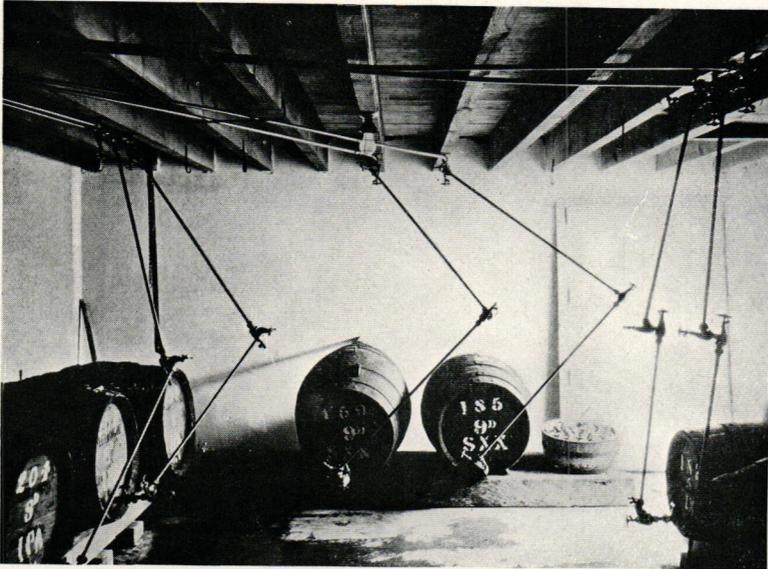
## OUTDOORS

*Outdoor gardens for summer service,* attractive signs and billboards. If possible, arrange for attractive display windows.

## DECORATION AND FURNISHINGS

More carpeted areas in dining rooms. Comfortable, colorful furniture, draperies and curtains. Decorative lamp shades. Use of more mirrors and decorative plants. Spot lights for dancing. Metal bars, aluminum chairs and composition table tops for novelty bar rooms and modern dining rooms. Provide larger tables for silver service. Less crowded rooms are needed so that heavy silver service and waiter service will not make dining rooms seem congested.

These are the high lights. Augment them with ideas from people who know local conditions. Question people who are potential patrons of the hotel, restaurant or club you are working on. Then make every effort to convince the client that you should have complete charge of architecture, construction, engineering, decoration, furnishing and the countless little things which make for a complete architectural symphony. Then all concerned will profit.



American Studio

Cellar of British tavern, showing swivel joint Monel metal piping.

Here are more typical questions and answers:

*What height is desirable for a bar?* 42 inches.

*What is the size and height of a table for dining when liquors are served?* A 30' x 30" is quite generally used for two-seaters; 36" x 36" for three- and four-seaters. Correct height is 30 inches.

*What proportion of tables to serve two persons, four persons and for larger groups?* It is very difficult to answer this question without going through the circumstances in each case. A typical example is 50 per cent for two persons, 30 per cent for four persons, 20 per cent for larger groups. Among the larger groups should be a few round tables.

*Are alcoves desirable for the café?* The tendency following repeal was away from booths and alcoves, but the speakeasy has proved that they are very popular and unquestionably they will come back. This is especially true in the room in which the bar is located.

*Should bottled liquors be displayed in rooms where beer, wines and other drinks are served?* In popular priced places, yes—in high class hotels, no.

*What location, in relation to the lobby of a hotel, is most desirable for dispensing liquors? Also relation to dining room?* In order to be popular, dining rooms should have two entrances, one from the lobby as close to the elevators and stairway as possible, and the other from the street. This makes it possible for parties and women to enter the dining room without having to pass people who are seated in lobbies and lounges. In some instances it is desirable to have a special room in which wines and beverages can be served. Most hotels agree that coffee shops and popular priced restaurants are not ideal for this service.



Cocktail bar on the steamship "Monarch of Bermuda."



Folger

"Ye Old Tavern" in the Lankersheim Hotel in Los Angeles. After being successively a barber shop, a billiard room and then just storage space, it has now reverted to its original purpose.



Morris Rosenfeld

Tap room of the Hotel Lexington in New York City. Treanor and Fatio, architects.

*Should facilities for entertainment be provided in hotel room? Only radio.*

*What are the possibilities for the sidewalk café?* This is limited to cities in which the climate and sanitary conditions locally permit. It is almost impossible to keep a sidewalk café clean unless streets are kept exceptionally clean, smoke ordinances are in effect and general city conditions sanitary. In Pittsburgh one of the large plate glass companies has been making arrangements with hotels to take out the complete plate glass front during the summer so that in effect the hotel has a sidewalk café. In the winter the plate glass is put in place again.

*Would you provide a cocktail bar separate from the bar in the café?* This would be possible in a district where there is heavy sidewalk traffic or an exceptionally large hotel. In many cases this will be advisable in connection with ballrooms, convention floors, etc.

*How can incidentals, such as tables for games, be developed in the bar room?* It is expected that there will be a minimum of this, in that it decreases the amount of turnover per table. Rentals are too high in most hotels to permit this.

*How do hotel men feel about the desirability of sitting or standing at the bar?* If the law permits, hotel men believe that it is a good policy to have both sitting and standing at the bar.

*What should be the proportion of space provided at a bar for standing or sitting?* This depends entirely on the type of service. Seating space would have to be arranged so that it doesn't interfere with service to the waiters at the bar, either at the center or at both ends. Generally people like to stand around the middle of a bar. This would permit service to waiters from the ends of the bar.

*How should the bar and room be illuminated?* Indirect lighting, with the use of color permitting women's costumes and complexions to show up to the best advantage. The best colors, I understand, are buff, orange and peach.

*What is the best type of floor behind and in front of bar?* Several types of floors are used behind the bar: a good, hardwood floor, a hardwood floor with a heavy corrugated rubber or leather mat, and in some cases a hardwood floor with a low slatted platform. In front of the bar—linoleum, cork or rubber.



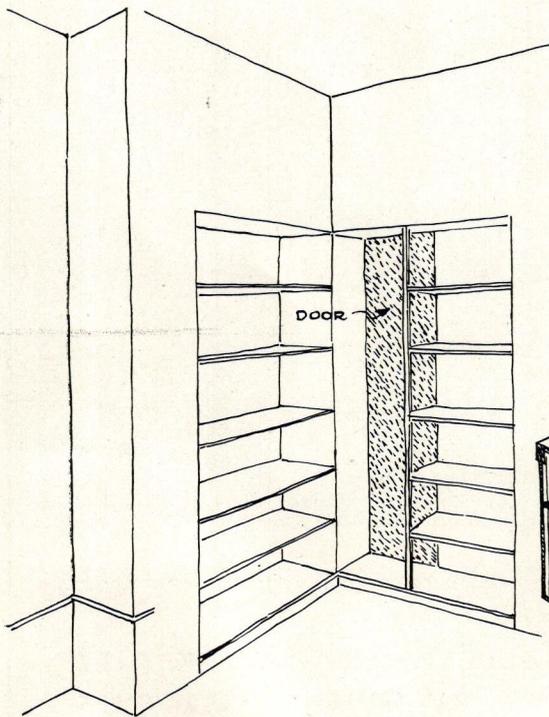
Rotan

The space, previously used as an office, has been remodeled to serve new needs.

**BAR AT RESTAURANT DURELLE IN NEW YORK CITY  
PLANNED AND DECORATED BY RUSSEL WRIGHT**

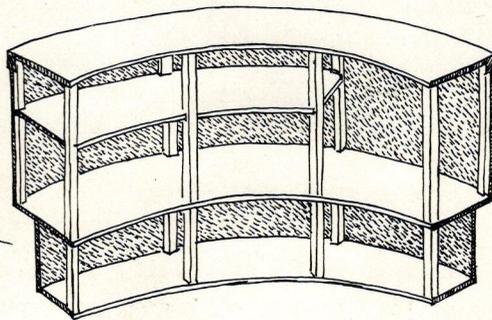


Rotan



REMODELED BAR ON SECOND FLOOR  
OF RESTAURANT DU RELLE, NEW YORK

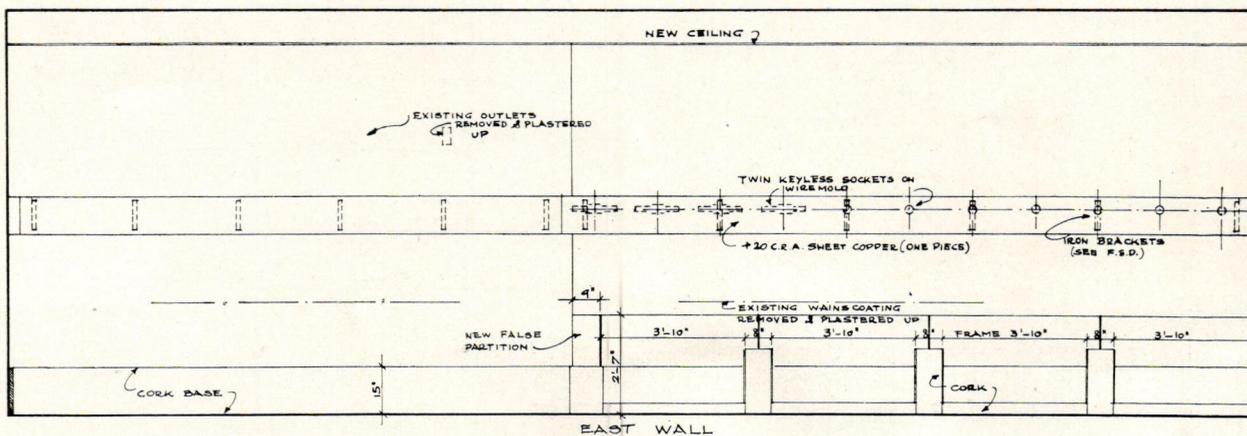
PART OF RESTAURANT INTERIOR PLANNED  
AND DECORATED BY RUSSEL WRIGHT



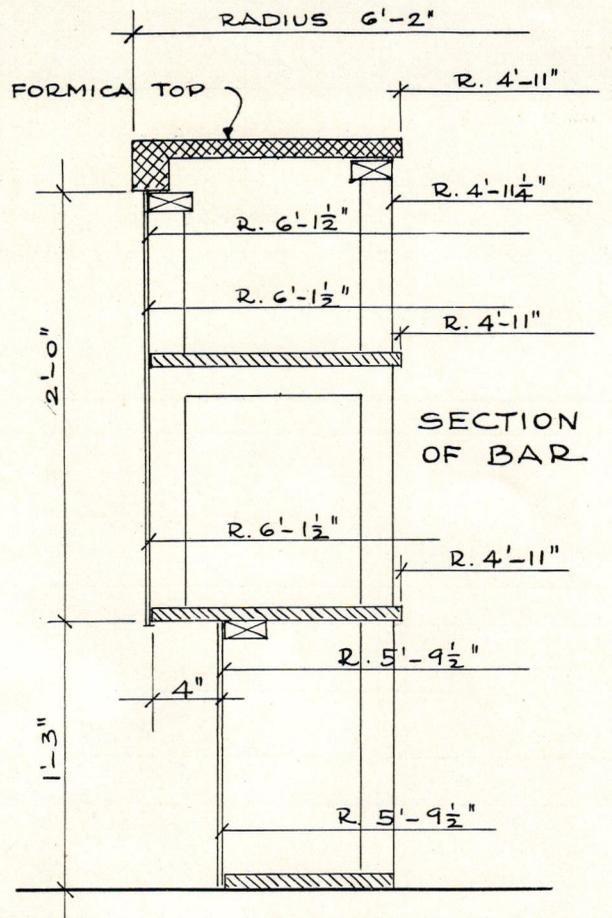
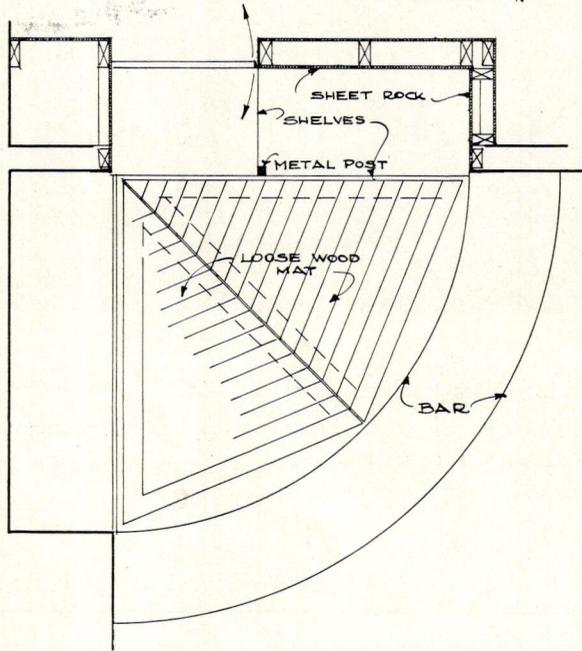
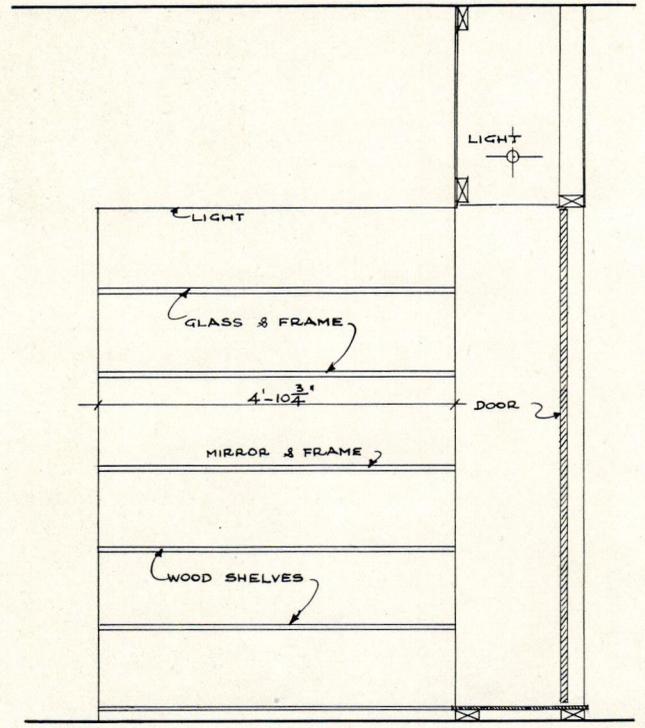
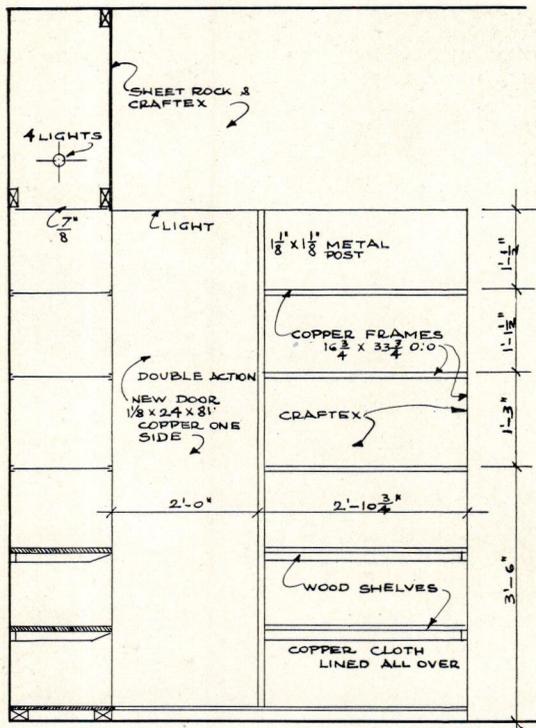


Rotan

Walls: rough white plaster. Bar: copper and white micarta; glass shelves. Tubular stools bound with cane—red leather tops. Collapsible tables with removable tops of cork. Sides of chairs, baseboard, sides and bottoms of benches also of cork. Illumination concealed behind continuous band of copper.



BAR AT RESTAURANT DU RELLE, NEW YORK CITY — DESIGNED BY RUSSEL WRIGHT



WORKING DRAWINGS OF BAR ROOM  
 RESTAURANT DU RELLE, NEW YORK CITY  
 DESIGNED BY RUSSEL WRIGHT



The great wine market—Halles aux Vins—in Paris, with its reserves of wine and champagne.

Burton Holmes from Ewing Galloway

## DISTILLERY AND RECTIFYING-PLANT DESIGN

By JOSEPH D. WEISS, Architect\*

Fourteen years of idleness have reduced most existing plants for producing alcohol for beverage purposes to an obsolete conglomeration of buildings and machinery. Some distilleries have been demolished, others have been converted to different uses and a very few continued their existence through manufacturing liquors for medicinal purposes.

A recent survey estimates the total present capacity of plants originally built for whisky production at about 20 million gallons per year. Some grain alcohol plants manufacturing commercial alcohol have a potential capacity for whisky, as well as alcohol for other beverages of about 20 million gallons per year, making a total capacity of 40 million gallons. Work now in progress and on the boards will raise the capacity of these plants to 150 million gallons per year within six months. It is interesting to know that in 1917, 167 million gallons will be at least 110 million gallons the first year and gradually work up to 200 million gallons. It is interesting to know that in 1917, 167 million gallons of alcohol were used in some form or other for beverage purposes.

It is true that most of the work around distilleries will probably go to the engineering profession; yet no distillery of important size will proceed with-

out consulting an architect, partly because some of the buildings do not require special engineering knowledge and partly because of the experience architects have gained in other industries in space engineering and modern construction methods.

The architectural and engineering work may be divided into four main classifications:

1. Enlarging the present *distillery plants*, the storage capacities and adding bottling departments. Reconstruction and alteration of present plants.
2. Design and construction of *new plants*.
3. Alteration of present buildings or erection of new structures for *rectifying and blending plants*.
4. *Branch warehouses, wholesale and retail distribution buildings*.

Before prohibition there was a tendency to abolish smaller plants and concentrate in larger distilleries. Probably this tendency will continue. In 1901 there were 1,258 grain distilleries and 2,478 brandy plants; in 1915 this number was reduced to 249 grain distilleries and 240 brandy plants. These figures show clearly the tendency towards larger plants.

\*Appreciation is expressed to Stephen J. Kochor, Ph.D., chemical engineer, for his assistance in the preparation of this article.

## GENERAL DATA

Before explaining the process of manufacturing alcohol for beverage purposes, it is desirable to explain the terms constantly used in distillery and rectifying-plant design.

<i>Gallon</i>	1 U. S. liquid gallon has 231 cu. in.		
<i>Imperial gallon</i>	The Imperial liquid gallon contains 277.27 cu. in.		
<i>Wine gallon</i>	The wine gallon contains 231 cu. in.		
<i>Tax gallon</i>	The tax gallon is a term used by the Government in collecting taxes. It represents one gallon of whisky, brandy, etc., 100 proof.		
<i>Proof gallon</i>	One gallon of liquid containing one-half gallon of alcohol is called 100 proof. For instance, a whisky containing fifty per cent alcohol by volume is called 100 proof.	<i>Medicinal Whisky</i>	Whisky used for medicinal purposes is required to have 47 to 53 per cent of alcohol and has to be matured for a minimum of four years.
<i>Barrel</i>	The barrel in which alcohol is stored will hold 50 gallons, but it is necessary to know that when whisky is stored for maturing, evaporation and absorption takes place and that no exact allowance is made by the Government for these losses. The Government arbitrarily has set the contents of a barrel of whisky, after legal storage in a Government supervised warehouse, at 40 gallons per barrel.	<i>Sweet Mash Method</i>	Sweet mash method is a term used when fresh water and yeast are used with the mash to start fermentation.
<i>Dimensions of a barrel</i>	The customary wooden barrel used for the storage of whisky is 34" high, the diameter is from 20" to 25" and its weight is from 85 to 92 pounds empty.	<i>Sour Mash Method</i>	Sour mash method uses slop instead of fresh water to start fermentation.
<i>Weights</i>	A gallon of whisky weighs approximately 7.8 lb. A barrel of whisky, when put in storage for maturing, weighs approximately 480 lb., including the barrel.	<i>Slop</i>	The mash which is discharged from the bottom of the still after the alcohol is evaporated from it is called slop.
<i>Scotch Whisky</i>	Scotch whisky is a product made from barley and malt. It gets its smoky flavor from peat smoke used in curing the malt.	<i>Beer</i>	The grain mash which after fermentation contains approximately 6% alcohol is called beer.
<i>Rye Whisky</i>	Rye whisky is made of rye with malt added.	<i>High Wine</i>	The product of the first distillation through a modern distillery apparatus. It contains approximately 50% alcohol, 100 proof.
<i>Irish Whisky</i>	Irish whisky is made mostly from a mixture of barley, rye and other cereals with addition of some malt. It is not peat cured, therefore it has no smoky flavor.	<i>Low Wine</i>	This term is used in old distilleries where a pre-distilling process was used, the result of which was a low alcoholic content liquor, called low wine.
<i>Bourbon Whisky</i>	Bourbon whisky is made of corn with malt added.	<i>Bonded Warehouse</i>	A storage building where whisky is stored for maturing under Government supervision.
<i>Brandies</i>	These are distilled fruit juices such as apple juice, apricot, peach or wine.	<i>Cistern</i>	This term is used in Government regulations to denote the vessel in which the high wine is collected. This vessel is under constant Government supervision.
<i>Rum</i>	Rum is a distillate of sugar cane juice or molasses.	<i>Rectifying</i>	Rectifying is a process of re-distillation or filtration of alcoholic spirits in order to blend them with flavoring.
<i>Gin</i>	There are three main classifications:	<i>Blending</i>	This is a term used in connection with whisky meaning the mixing of straight whiskies with spirits and distilled water.
		<i>Compounding</i>	This term means the mixing of straight whisky with alcohol and flavoring or coloring compounds

and distilled water. This is the same process commonly known as cutting.

#### *Imitation*

This process, with reference to whisky, is the mixing of grain alcohol with distilled water, coloring and flavoring extract to imitate whisky.

#### *Definition of Whisky*

According to existing Government regulations no whisky can be marked Bonded or Bottled in Bond unless it has been matured for at least four years. It seems, however, that the term whisky may be applied to blended or compounded whisky which is made of grain alcohol.

#### ALTERATION OF PRESENT PLANTS

To answer the technical problems involved in changing the machinery of an old distillery into a modern one is not within the field of endeavor of most architects. It will be of value, however, to know that the plants which are now devoted to producing industrial alcohol are in most cases molasses alcohol plants. These require much altering and cannot be readily converted into whisky plants.

The pre-prohibition whisky plants, which have not been in continuous use, will most likely require, outside of general repairs, a rehabilitation of their boiler plant and bottling department and additional storage facilities.

The process diagram prepared for this article shows an outline of the main processes used in distilleries and rectifying plants. As most of the work which may be expected with repeal of the 18th Amendment will be in connection with whisky production, rectifying and blending plants, we will treat only these two types of plants.

#### WHISKY MANUFACTURING PROCESS

Whisky is manufactured by crushing different grain (rye, barley and corn) and malt, mixing the product with hot water to form a mash, then fermenting this mash by adding yeast to it. The fermented mash, which is now called beer, is then distilled and condensed into a liquid called high wine. This high wine, which is impure alcohol, is then stored in charred wooden barrels for a period of four years or more and the product is whisky.

#### LOCATION OF PLANT

A whisky distillery has to be near the grain producing centers. It should have a railroad siding and an adequate supply of well water. The colder the water, the better. Furthermore, the chemical quality of the water has a definite relation to the quality of the whisky which may be produced with it.

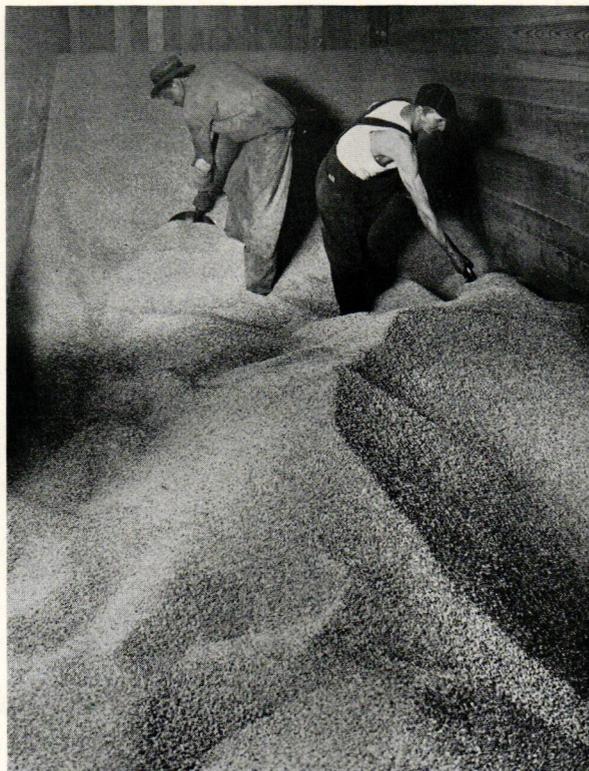
#### BOILER ROOM AND POWER PLANT

In making whisky a great deal of steam is used. It is one of the major manufacturing costs. It is essential, therefore, to have a modern steam generating plant. To establish a proper heat balance is one of the most important problems in a distillery. Usually in old distilleries there is too much exhaust steam left over which can not be utilized. This is caused by the use of old-fashioned steam pumps and driving gear which should be replaced by electric equipment. The electric generating plant is usually located next to the boiler house. All modern distillery machinery is driven by electricity, generated by a steam engine and the exhaust steam is used for heating water, fermenters, yeast tub, drying, evaporating slop and for other various processes in the plant.

Pulverized coal, oil or natural gas will probably be the fuels of the modern distillery. The design of the power house and boiler room will not present any special problems to the architect.

#### GRAIN STORAGE AND PREPARATION

The grain received in railroad cars is conveyed either by bucket elevators or pneumatic suction pipes into silos which may be built of reinforced concrete or steel. The prime consideration here is to keep the contents waterproof. The grain silos are usually cylindrical in form and grouped along the railroad siding. They may be inclosed in a building, but this is not necessary as the silo walls



Ewing Galloway

Grain received in carload lots is shoveled into grain elevators at the Baltimore plant of the American Medicinal Spirits Company.



are usually of weatherproof construction. The most ideal arrangement, of course, would be to put the silos at such a high level that the grain can travel by gravity to the crushers and from there to the cooker. In most of the plants, however, it will be found too expensive to follow this arrangement and the process diagram, therefore, shows the most conventional type of construction. Some distilleries use drop tubs with agitators and steam cookers; others, specially constructed mash tubs equipped with steam coils, for mixing the crushed grain with hot water and preparing it for fermentation.

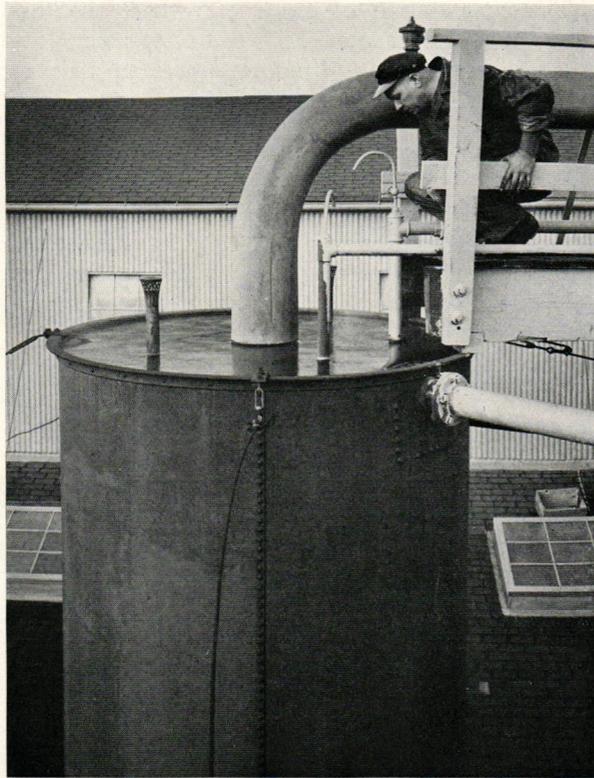
#### FERMENTATION BUILDING

This part of the plant contains vats in which fermentation takes place and it usually houses the yeast culture room. The yeast culture room is where the pure yeast is kept and propagated. It has to be of the most sanitary construction. It should have filtered air ventilation or an air conditioning system; sanitary base, hard surfaced walls and ceiling are essential. All surfaces have to be washable throughout.

Fermentation takes place in the large vats into which the mash is pumped and yeast added. The time of fermentation varies according to the process used. The Government regulations allow for one fermentation in a sweet mash distillery, 72 hours; in a sour mash distillery, 96 hours; in a rum distillery, 44 hours. The fermentation tanks in modern plants will be concrete or steel, lined with special surfacing materials. Other materials may be found for vats, but the old-time wooden vats will probably not be used in new plants. These tanks will be closed fermenters in most cases in order to avoid infection from wild yeast. In fermentation the temperature of the liquid rises a few degrees, but if it reaches 100° F. the yeast is killed and no fermentation takes place. For this reason old-time distilleries stopped operation during the summer months.

Modern distilleries will have air conditioning systems which will keep the temperature around 70° to 72° F. at all times. It will also supply clean fresh screened air to these rooms where utmost cleanliness is essential. Sanitary base, concrete, asphalt covered floors, smooth walls and ceilings are most important. The carrying capacity of the floor depends on the size of the tanks. It usually varies between 400 to 700 pounds per square foot.

It should be remarked at this point that a new system has been developed in Europe during the last decade for building concrete fermentation tanks. This system uses reinforced concrete as its material and the tanks are constructed in such a way that the walls of the tanks are part of the carrying frame. There is a saving in story height and a most economical and sanitary construction all around. Some breweries in this country use this new type tankage already and undoubtedly distilleries will use it.



Ewing Galloway

The condenser converts the vapors from the still into whisky. Photograph taken in the Baltimore plant of the American Medicinal Spirits Company.

#### DISTILLING APPARATUS

Next to the fermentation building should be located the distilling equipment which in a modern distillery consists of a series of continuous column stills. Steam enters on the bottom of the column and mash enters near the top; as the mash trickles down through perforated iron plates it meets the steam, evaporation takes place and the alcohol passes out of the top of the distilling column; the mash devoid of alcohol will pass out at the bottom of the column.

These distilling columns, which look like steel cylinders, are from 35 feet to 55 feet high and require, therefore, a building which is 50 to 65 feet in height and has only galleries at different levels where required for manufacturing purposes. The distilling columns are usually placed side by side, they are of considerable weight and, therefore, will have to be placed on direct foundations in buildings without basements.

After the distillate passes the columns and goes through the various purifying and condensing apparatus it is conveyed through a meter and control box from which the whole process of distillation is adjusted. No open pipes or faucets are permitted from the time the mash enters the still. The entire system is closed and under Government supervision. From here the distilled high wine passes into tanks called "cisterns" located in a separate building.

The construction of the room where the distillery apparatus is located has to follow strict Government regulations. Windows and doors have to be equipped with approved locks, grilles and shutters.

#### **CISTERN BUILDING**

The receiving cisterns, which are under Government control, have to take care of at least two days' production. The building housing the cisterns can only have one door and the lock on this door is a Government lock which cannot be opened by any one except the Government "storekeeper." The construction of the walls, ceilings and floors is described in detail in the Government regulations. Modern distilleries will have concrete floors in these rooms and brick walls. All windows have to be equipped with iron bars and shutters which lock from the inside. Even the hinges have to be fastened from the inside as provided in Regulation 8, issued by the Bureau of Prohibition. The construction of the "cistern" itself is also governed by these regulations; it has to be securely covered. Any opening on the cistern has to be equipped with a door and lock. Every faucet has to have a Government lock. The construction of the building under such strict Government regulations will leave very little freedom to the designer. This room has to be large enough to provide for a barrel filling machine as the high wine is put in barrels in here before it is taken to the bonded warehouse for maturing.

#### **BONDED WAREHOUSE**

This part of the plant will not present any special problem to an architect accustomed to industrial construction. It is usually a building with galleries only and racks on which barrels are stacked. These racks may be of wood, steel or concrete. They have to be constructed in such a way that there should be free circulation of air around the barrels and that they should not damage the barrels. Sharp corners are to be avoided. Constant temperature and humidity are desirable. It is most likely that air conditioning will be resorted to in modern bonded warehouses where a constant temperature of between 85° to 90° F. will be maintained. The weight can easily be computed from the data in the first part of this article. The barrels are usually stored one on top of the other with an aisle in between. The height of this warehouse is immaterial, but, of course, necessary hoisting apparatus or elevators have to be provided.

The design of this building is also governed by Federal regulations. It has to be separate from the distillery. Windows, doors or openings have to be equipped with Government locks. More than any other part of a distillery this building should be provided with an automatic sprinkler system as its contents are very highly inflammable.

#### **BOTTLING DEPARTMENT**

After the whisky leaves the Government warehouse it will be transferred in barrels to the bottling de-

partment where automatic machinery will wash the empty bottles, fill them, cork or crown them and label them. A cartoning machine will seal the cartons in which the bottles are placed. Some distilleries, of course, will use wooden cases. The bottling department should be a multi-storied building fully conveyerized and laid out so that handling may be reduced to the minimum. The shipping department should be a part of this building.

#### **AUXILIARY BUILDINGS**

Outside of the manufacturing buildings enumerated above, there are other adjuncts to a modern distillery which require architectural service.

#### **SLOP EVAPORATOR AND PRESS BUILDING**

Slop is a by-product which formerly was of little value, but now is treated by modern evaporation processes and pressed to produce a valuable cattle food. The mechanical equipment of this building will govern the architectural features.

#### **COOPERAGE SHOP**

Not only is a large portion of the whisky shipped out in barrels, but all of it is stored for a number of years in barrels; therefore a great quantity of barrels are needed. Some distilleries will make their own barrels, and every one will repair its stock. A cooperage shop is just an ordinary factory. In the case of repair work, hand labor is employed almost exclusively, outside of small machines, such as a hoop driver, branding machines, etc., which are of no consequence. A floor load of 150 pounds is adequate in this department.

#### **COST OF BUILDING DISTILLERIES**

It is very difficult to give any cost approximation of distilleries. In general it may be said that an average of \$100 to \$150 per proof gallon capacity per day would be a safe figure for the entire distillery plant including buildings and machinery without land, railroad siding, well, etc. The buildings may be approximated as follows: warehouse buildings 22 cents per cubic foot, all other buildings 25 cents per cubic foot without equipment.

#### **BRANDY PRODUCTION PLANT**

These plants, as shown on the process diagram, use only a part of the processes of the whisky distillery. The details of the machinery are different and Government regulations limit the design of the buildings. All the essential parts of a whisky distillery are a part of a brandy plant with the exception of the grain storage and preparation equipment. The raw materials with which a brandy plant starts are usually fruit juices.

#### **RECTIFYING PLANT**

A rectifying plant gets its alcohol from a distillery and in some cases purifies it by a re-distilling or



Ewing Galloway

View of bottling operation. Metal tanks on left hold the whisky to be bottled. In foreground bottles are washed and dried. After being filled, the bottles are labeled. Photograph taken in Baltimore plant of the American Medicinal Spirits Company.

filtering process. It usually makes its own extracts for the manufacturing of high-class liqueurs or gin which are made by re-distilling the alcohol with flavoring. The Government regulations require that such a plant has to be at least 600 feet away from a distillery; otherwise the Government regulations are not so strict as in the case of a distillery.

Architectural considerations for such a plant are about the same as for distilleries. It should have fireproof construction and be located near a railroad siding. The stills used in rectifying plants are usually small and, therefore, it is not necessary to have high buildings.

#### BLENDING AND COMPOUNDING PLANTS

These plants are usually smaller in dimension and they are not allowed to have any distillery apparatus. They have to get their alcohol material from distilleries under Government supervision and are not allowed to re-distill the alcohol or filter it in such a way that the process would change the chemical stability of the material. The buildings should be fireproof. Since blending plants are usually smaller they probably will not use the high-speed bottling machinery which the other two types of plants require. Rectifying, blending and com-

pounding is sometimes done in the same plant, in which case the Government classifies it as a rectifying plant for license tax purposes.

#### GENERAL NOTES

It is essential to know that whisky contains tannic acid. Only materials which are neutral to tannic acid should be considered for containers, pipe lines or parts of any handling equipment, such as pumps and valves, etc.

All plants handling alcohol are potentially very great fire hazards. They have to be equipped with sprinkler protection. Large plants should be divided into fireproof sections by the erection of division walls with fireproof doors.

Any plant which produces alcohol for consumption as beverage should be considered as a high-class food factory. It is not necessary to enumerate the principles of designing a sanitary building except to remark that the use of wood in any form should be avoided as much as possible unless economic considerations require it.

In laying out a building, it should be borne in mind that a gravity system of handling materials is most essential and for this reason a multi-storied building is usually preferable.

# STATISTICAL REVIEW OF PWA ALLOTMENTS

By L. SETH SCHNITMAN, Chief Statistician, F. W. Dodge Corporation

Herewith is presented a table of allotments made by PWA to November 26, 1933, bringing up to date the tabulation given in the November issue. It will be seen on comparison between the two tables that in the period from October 21 to November 26 an increase in allotments amounted to about \$780,000,000 so that by the latter date total allotments aggregated \$2,827,989,538 out of the authorized total of \$3,300,000,000 leaving only \$472,010,462 to be allotted.

Of the allotments to November 26, something more than 20 per cent was for building construction and if deductions be made for the statutory allotments to the Farm Credit Bureau and for naval construction, almost 25 per cent of the remaining allotments were for buildings as apart from civil engineering projects.

It is of significance to note that though less than half a billion dollars remain to be allotted under the original authorization, applications on file for all types of projects at the PWA, as yet unacted upon, approximate \$3,000,000,000. The recent announcement from Warm Springs concerning the Administration's desires for increased appropriations from the incoming Congress for a further extension of the Public Works Program is of interest, too, for it is probable that should such authority be granted a relatively larger proportion of new allotments may go for building purposes than was the case in recent allotments. Should the program be extended by Congress, there is every indication that housing projects of the low-cost and slum-clearance variety will receive increased attention; it is this class of building for which large social and economic demand exists.

## FEDERAL PROJECTS

Farm Credit Bureau (Statutory) ..	\$100,000,000
Tennessee Valley Authority .....	50,000,000
Naval Construction (Statutory) ..	238,000,000
Civilian Conservation Corps (Land purchase) .....	20,000,000
Civilian Conservation Corps (Improvement) .....	301,037,315
Subsistence Homesteads (Statutory) .....	25,000,000
Army Housing .....	57,240,216
Coast Guard .....	24,833,535
Sea Coast Defense .....	7,000,000
Naval Yards & Docks .....	22,810,552
Civil Works Administration .....	400,000,000
Administrative Expenses (PWA; NRA; etc.) .....	8,910,731
Highways, Secondary Highways, Forest Roads and Trails, Street Improvements .....	454,680,650

Irrigation .....	\$33,488,688
Dams and Flood Controls .....	71,660,000
Rivers and Harbors .....	230,366,308
Federal Departments (physical improvements not specified) .....	59,826,514
Federal Departments (physical improvements specified) .....	98,245,517
Alaska and Insular Possessions ..	3,020,858
Hospitals and Institutions .....	3,275,000
Schools and Colleges .....	2,407,656
White House .....	6,000
Storm Damage .....	883,785
Libraries .....	2,800,000
	<hr/>
	\$2,215,493,325*

## NON-FEDERAL PROJECTS

Waterworks (167 projects) .....	\$42,924,648
Sewers (140 projects) .....	45,305,245
Streets and highways (133 projects) .....	38,476,316
Schools (101 projects) .....	16,415,662
Other buildings (64 projects) .....	8,053,920
Hospitals (37 projects) .....	5,989,150
Bridges and structures (31 projects)	92,923,751
Housing (20 projects) .....	48,512,958
Power (18 projects) .....	20,957,400
Recreation (7 projects) .....	515,700
Miscellaneous improvements (33 projects) .....	9,173,505
	<hr/>
TOTAL (751 projects) .....	\$329,248,255*

## LOW-COST HOUSING AND SLUM CLEARANCE

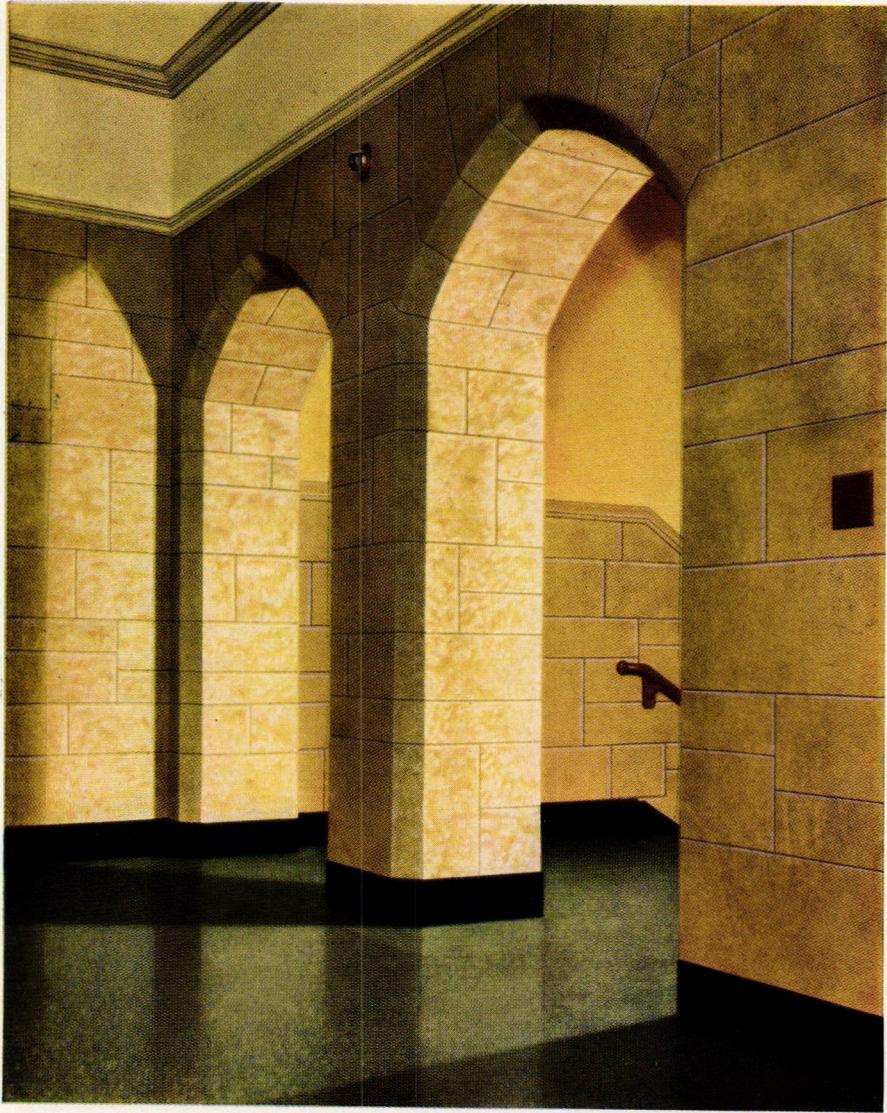
Low-Cost Housing .....	\$48,247,958
Federal Housing Corp. (Slum Clearance) .....	100,000,000
	<hr/>
	\$148,247,958

## RAILROAD PROJECTS

Total Allotments .....	\$135,000,000
------------------------	---------------

## RECAPITULATION

Federal .....	\$2,215,493,325
Non-Federal .....	329,248,255
Housing (low-cost and slum clearance) .....	148,247,958
Railroads .....	135,000,000
	<hr/>
Total to Nov. 26, 1933 .....	\$2,827,989,538
Total yet to be allotted .....	472,010,462
	<hr/>
Total Authorized .....	\$3,300,000,000



*Zenitherm Walls—  
Dwight Morrow High  
School, Englewood,  
N. J. • Lawrence C.  
Licht, Architect,  
Englewood, N. J.*

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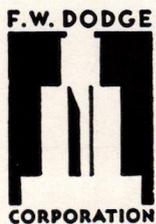
Then, too, you'll know that his firm has gone far to eliminate the costs and bothers

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Also it is reasonable to suppose that the company which reduces its cost of unsuccessful calls to a minimum usually has a better product for the same money or the same quality for less money.

It is a matter of interest to know what goes into the making of a price—wasteful sales practice always means too little quality or too high a price.

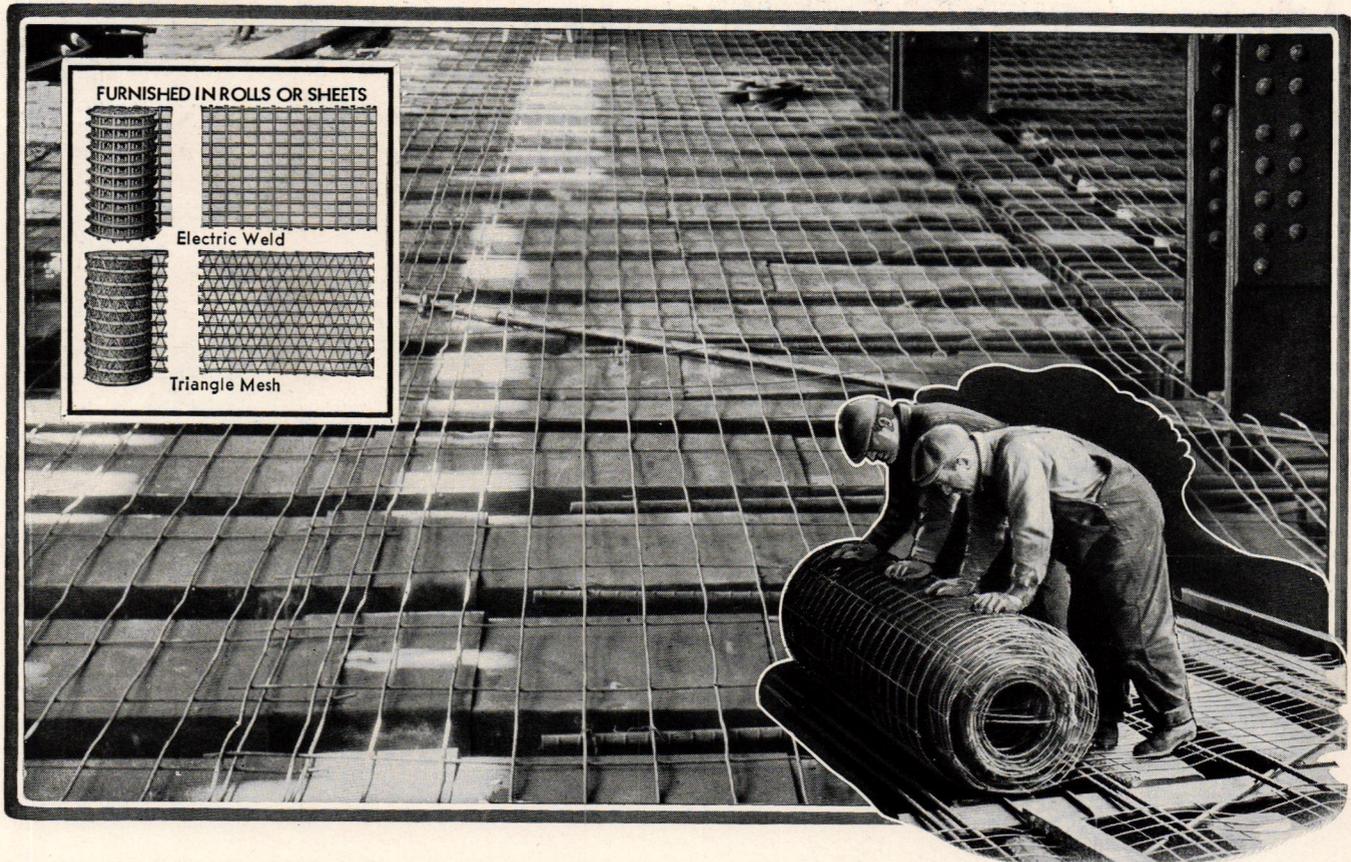
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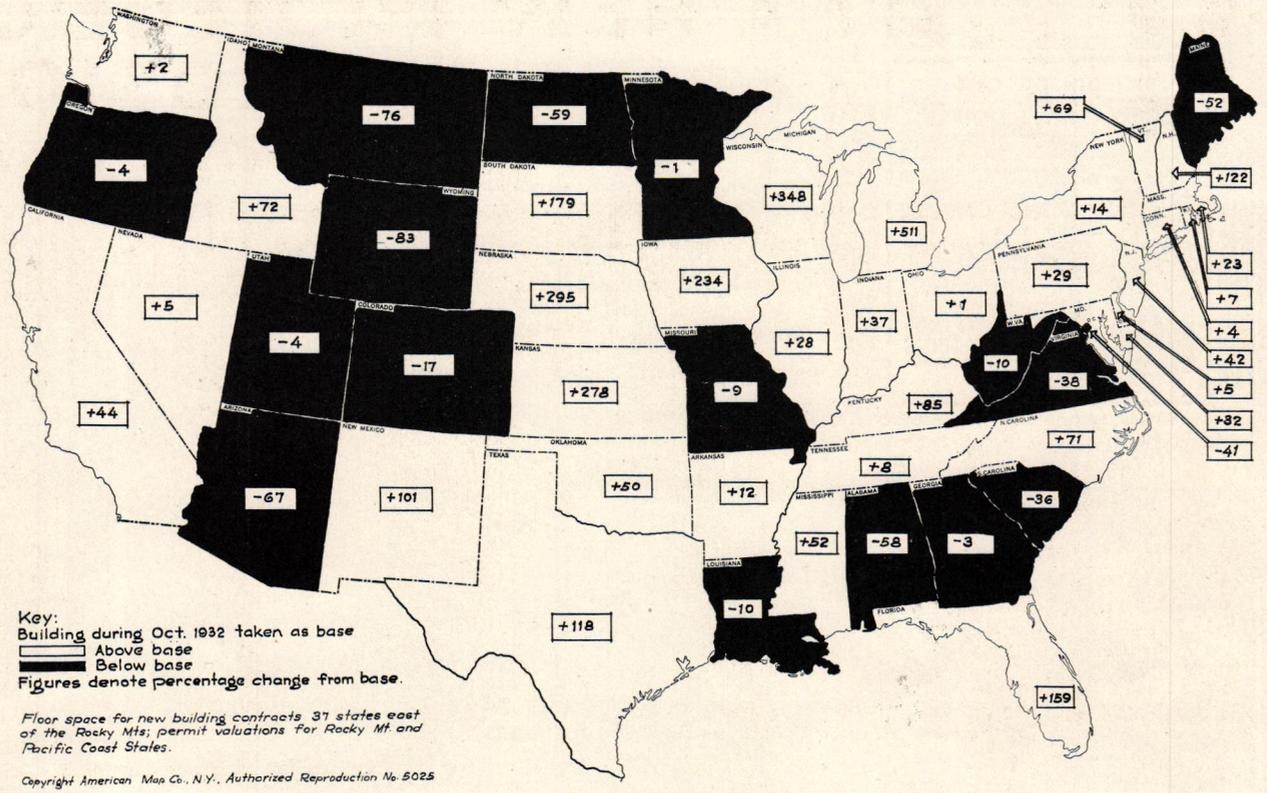
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# BUILDING TRENDS AND OUTLOOK

By L. SETH SCHNITMAN, Chief Statistician

The Federal program to stimulate construction has brought sizable results in recent months. Since April of this year, almost without interruption, publicly-financed contracts for almost every conceivable type of construction, have increased progressively. For October this class of work, i.e., publicly-financed construction, totaled \$100,561,300 in the 37 eastern states. This was a gain of about \$27,000,000 over September and was almost six times as large as the total of such work reported in April of this year, when publicly-financed construction was at its lowest ebb.

For all classes of construction, both publicly-financed and privately-financed, the October contract record in the 37 eastern states amounted to \$145,367,200. This is a larger volume than has been reported in any month since November, 1931, with the single exception of the May, 1932, total, which exceeded the October, 1933, total by less than \$1,000,000. It is of equal interest to note that the October total was 35 per cent greater than the figure of \$107,273,900 reported during October, 1932, and was about 18 per cent ahead of the total of \$122,549,400 recorded in September of this year.

Contemplated construction of all descriptions reported during October for the 37 states amounted to \$886,627,300 as compared with \$846,726,700 in September and only \$132,802,400 in October of last year. This large increase in newly-planned construction portends an increase in contracts.

## MATERIAL PRICE MEASURING ROD\*

The prices in this tabulation enable one to visualize at a glance the main trend of the material market. Their significance does not extend beyond that point, and the explanation below should be read carefully.

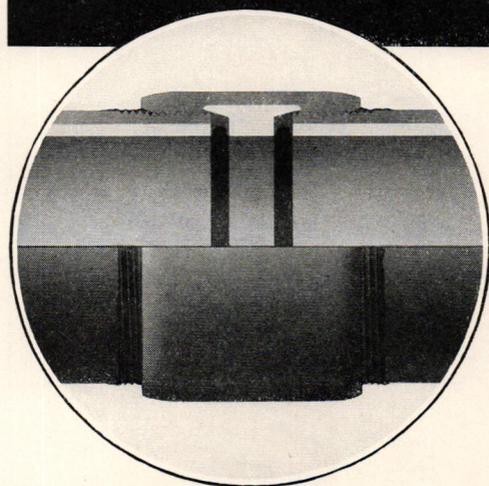
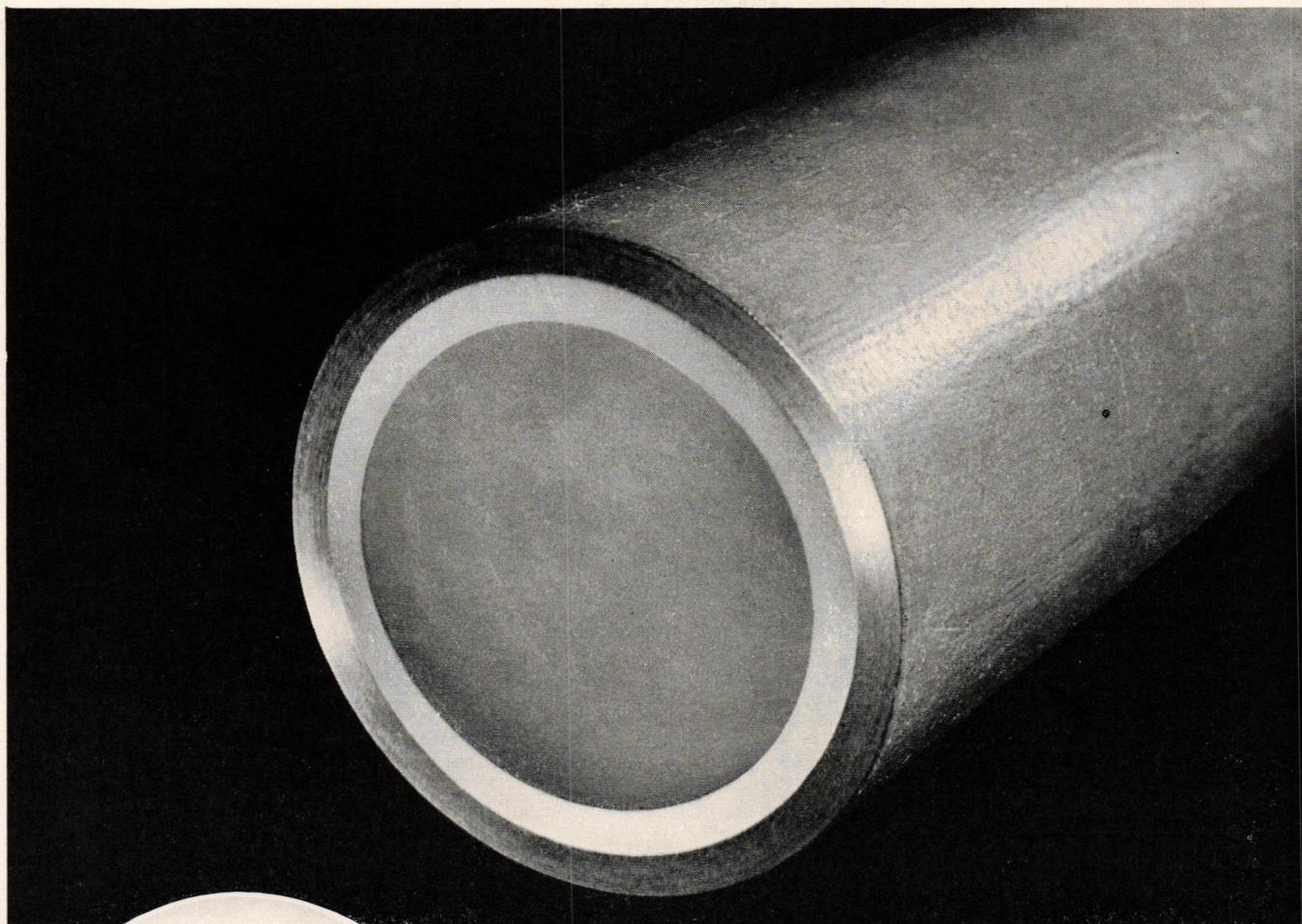
### F. W. Dodge Corporation Composite Prices as Indicated in Explanation—

Material	This Month	Month Ago	Year Ago
Portland Cement..	\$2.20	\$2.15	\$2.03
Common Brick....	12.34	12.30	11.75
Structural Steel...	1.65	1.60	1.60
Lumber .....	16.37	16.35	15.50

Prices given in this comparison are composite and do not in all cases refer to one item. For instance, the price of structural steel is the composite of prices of shapes and plates f.o.b. Pittsburgh; the price of lumber is a composite of five items of Southern pine and five items of Douglas fir f.o.b. mill; the price of cement is a composite of prices in fourteen different cities per barrel, carload lots, to contractors; price of brick is composite in fourteen cities per M, delivered on the job.

\*As previously published in *General Building Contractor*.

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DUROLINE Pipe, therefore, combines exceptional resistance to corrosion and tuberculation, with the strength, convenient joints, and other desirable features of steel pipe — and at a price that offers no handicap to its general use. It is particularly suitable for hot- and cold-water supply lines in office and public buildings, hospitals, schools, and residences; and for underground mains and distribution lines, salt water and drainage lines, and similar services where corrosion is unusually severe. A new bulletin describes in detail the development and proved serviceability of DUROLINE Pipe. . . . Write for it!

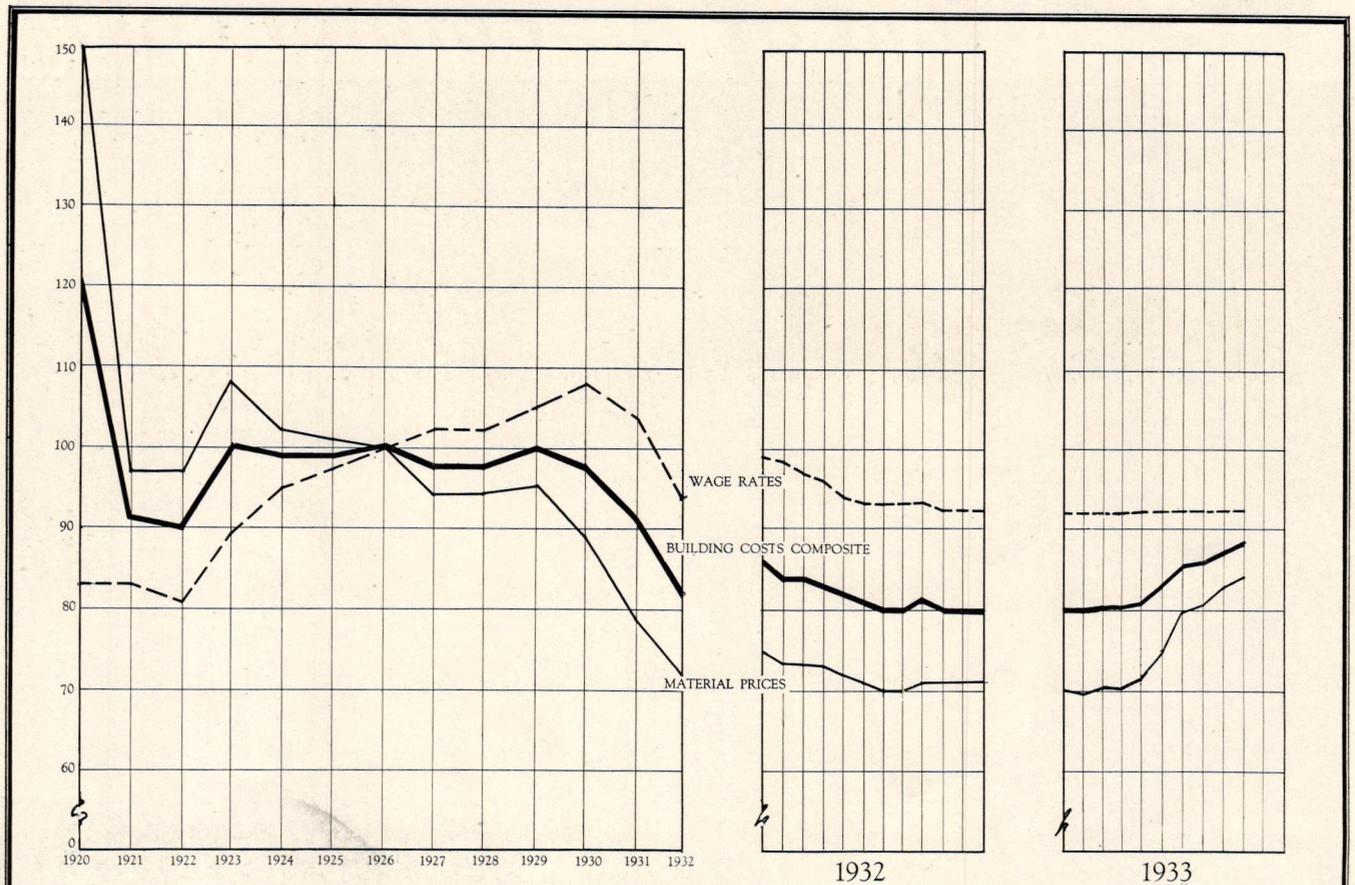
NATIONAL TUBE COMPANY • Pittsburgh, Pa.

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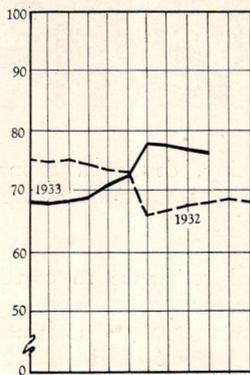
# NATIONAL DUROLINE PIPE

# MATERIAL PRICES, BUILDING WAGE RATES AND BUILDING COSTS COMPARED

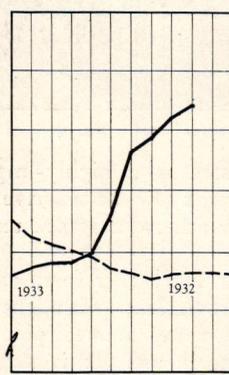
1926 Monthly Average = 100



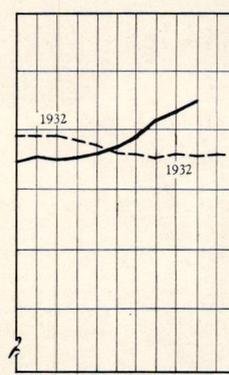
## WHOLESALE PRICE INDEXES



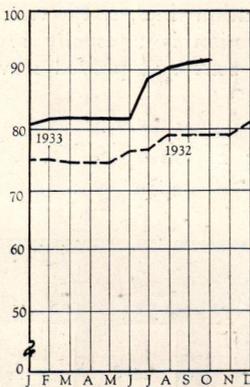
PAINT MATERIALS



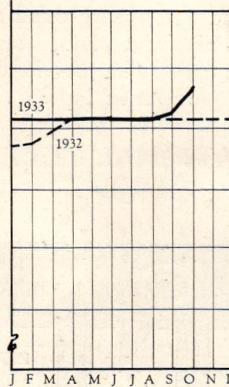
LUMBER



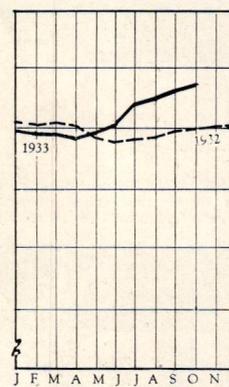
BRICK AND TILE



CEMENT



STEEL



OTHER MATERIALS

To: Architect-users of Sweet's  
From: Sweet's Catalogue Service  
Subject: Change in name

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Why, then, the change of name?

Sweet's has frequently announced its ultimate aim to furnish you with a complete file in which you may find full information on the products of every reputable manufacturer. The progress being made in that direction will be hastened, we believe, by stating our objective in every way possible; and not the least important is an adequately descriptive name.

We give you then, a catalogue file — not Sweet's Catalogue, but Sweet's Catalogue FILE. It is a good file and a very useful one. Although many architects have said it is more useful than any other file in their offices, we know that its real development has just started. This development will come more quickly if we all think of it and speak of it as Sweet's Catalogue File.

With the season's best wishes, we are

Yours truly,

SWEET'S CATALOGUE SERVICE

# ALL SPECIFICATIONS THE SAME



... but are they?

**Y**ou can specify details up to a certain point. You can tabulate and compare quantities, capacities and sizes... and prove to yourself that all specifications are equal. But can you tabulate "beneath-the-surface" workmanship and materials? Can you tabulate years of experience and intensive research? Can you tabulate lower maintenance expense, longer life, greater dependability, and overall plant efficiency? Can you tabulate a factory trained field organization in which you can concentrate full responsibility for sound engineering, correct installation and proper functioning of the completed plant in the years to come? If you can... you will arrive at the true measure of value.



YORK ICE MACHINERY CORPORATION • YORK • PENNSYLVANIA

**REFRIGERATION • AIR CONDITIONING  
MILK & ICE CREAM PLANT EQUIPMENT**

## 12-6 SOUND-PROOF DOOR

The Hamlinized Folding Partition is made in two forms: first, hinged in pairs to be pushed across the opening, each pair independently of the others but linked together by tongue and groove joints; second, in the "accordion door" manner, hinged together, the one next to the jamb being a half-door. Internal mechanism serving to hermetically seal the cracks at floor and head are operated in each door independently by a

lever handle. Folding partitions equipped with the Topping "Easy-fold" Hardware are suspended from above, carried on an overhead track attached to the header by heavy brackets. The header, a part of the building construction, is securely bolted to the overhead steelwork or framing. Asbestos millboard and sheet steel comprise the internal insulation against sound and fire. A new catalogue released by the manufacturer, Irving Hamlin of Evanston, Illinois, is available on request.

## 12-7 WATERPROOF LIME

Water repellence and absence of efflorescence are claimed for waterproof lime produced by the Rockland & Rockport Lime Corporation of New York City. The new product consists of pulverized quick lime with addition of waterproof ingredients. It is slaked into putty before use and aged at least forty-eight hours. Mixed in proportions of one part of cement, one part of water-proof lime putty and six parts of sand, the resultant mortar is very plastic and highly water repellent. The addition of waterproof lime to the cement in proportions recommended by the Bureau of Standards seems to have definitely solved the question of leaky walls. Tests show, according to the manufacturer, that its bonding ability to brick is superior to anything yet developed.

## 12-8 WEATHERPROOF OUTLET

A weatherproof outlet that will facilitate the use of outdoor lighting fixtures and appliances has been added to the line of General Electric wiring devices. Made of cadmium coated brass, the new outlet resists rust and corrosion. The flush plate has a solid rubber pad mounted on the back, insuring a snug fit when the device is screwed in place. A cap slips over the cord plug and screws onto the device, assuring a weatherproof connection. Another rubber insulated cap screws tightly over the outlet when not in use.

## 12-9 ENDURO 4-6% CHROMIUM STEELS

A booklet released by Republic Steel Corporation contains information on Enduro 4-6% Chromium Steels. Resistance to corrosion, to acid attack and to scaling at elevated temperatures are principal qualities of these steels. They can be rolled, formed, drawn, forged, welded or riveted into almost any shape desired if certain precautions are observed during handling. They are available in all the usual forms, such as sheets, plates, hot and cold rolled strip, bars, etc. Copies of this booklet will be furnished on request.

# The Morning After

• After an economic storm the survivors cast their eyes over the business landscape to discover who is *standing* and who has *fallen*. There comes a feeling, as familiar sound businesses are found intact, that "we might have known."

We hope that, seeing the familiar name below, many an architect will say, "Yes, we could have expected Rixson to weather the storm."

Thankfully we can add that this name not only still stands, but stands for the same high quality it always represented.

**THE OSCAR C. RIXSON CO.**

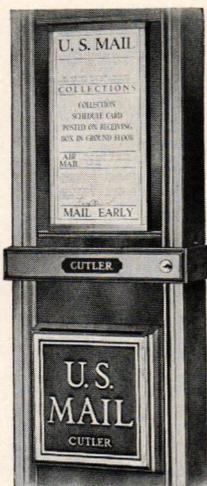
4450 CARROLL AVENUE, CHICAGO, ILL.

NEW YORK OFFICE: 2034 WEBSTER AVE.

Philadelphia Atlanta New Orleans San Francisco

**RIXSON**  
HARDWARE SPECIALTIES

## MODERNIZE with a CUTLER MAIL CHUTE



Expected as a matter of course in the modern office building or apartment.

It guarantees to the tenant up-to-date service and saves the owner its cost in reduced elevator operation.

Full information, details, specifications and estimates on request.

**CUTLER MAIL CHUTE CO.**

General Offices and Factory  
ROCHESTER, N.Y.

# THE *PASSING* OF THE *WINDOW*

The old coal scuttle has joined the bed-warming pan on the scrap heap of obsolescence, and now many a window is headed for the same resting place.

Modern places in which mankind lives and plays and works have been emancipated from the need for nature's help in heating, cooling, humidifying, drying, ventilating.

Modern manufacturing has eliminated the vagaries and delays due to uncontrollable atmospheric changes.

Modern heating, ventilating, air conditioning are coming into their own—shouldering tasks impossible yesterday, easy to-day.

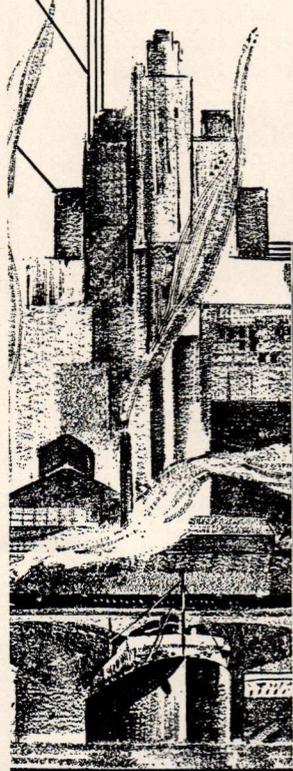
The greatest opportunity to bring yourself at once thoroughly up-to-date in this field is to visit the

## International Heating and Ventilating Exposition

at Grand Central Palace,  
New York

February 5-9, 1934

It's two years since the previous Exposition. It's two more before the next. You cannot readily hold your own in this rapidly advancing industry if you leave a four-year gap between your visits.



SEE OUR EXHIBIT



**THIRD  
INTERNATIONAL HEATING &  
VENTILATING EXPOSITION**

GRAND CENTRAL PALACE  
NEW YORK, N.Y.

February 5-9-1934

**Get This Valuable  
Reference Book at one  
half the former price**

THE  
**AMERICAN HOSPITAL**  
of the  
**TWENTIETH CENTURY**

by  
**EDWARD F. STEVENS, Architect**

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**NOW ONLY \$7.50**

**T**HIS standard reference book is the recognized authority on Hospital Planning and Equipment. Every architect who designs a hospital will find it an invaluable source of information.

The author, a Fellow of The American Institute of Architects and a Member of The American Hospital Association, has himself planned more than 150 hospitals and institutions and is known both in this country and abroad as a leading architectural authority on buildings of this type.

He has approached his subject from the most practical standpoint, selecting with discrimination and discussing in full detail all the problems involved.

He takes up every ward and department of a modern hospital, including the Kitchen and Laundry, and devotes special chapters to Heating, Ventilation and Plumbing, Details of Construction and Finish Equipment, Landscape Architecture as applied to Hospitals, etc., etc.

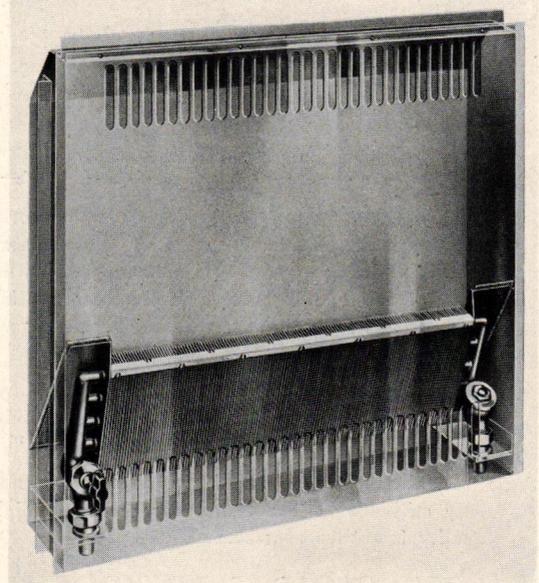
550 pages—with 660 illustrations and floor plans.

**Special Price—for a Limited Period  
\$7.50**

THE ARCHITECTURAL RECORD A.R. 12-33  
119 W. 40th St., New York

In accordance with your special offer, send me one copy of Stevens' American Hospital of the Twentieth Century, for which I enclose \$7.50.

Name.....  
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City and State..... Date.....



**12-10  
WEBSTER SYSTEM RADIATION**

Warren Webster and Company of Camden, New Jersey, announces a new product known as Webster System Radiation. It is a light-weight, concealed convection type unit embodying a heating element consisting of aluminum fins on copper tubing with an orificed radiator supply valve and union connection built integrally into one header and a thermostatic return trap and union connection in the other header. The combination of these elements in a single unit is said to reduce the cost of installation by simplifying piping connections. The heating element, instead of being horizontal or vertical, is inclined at an angle, a feature which the manufacturer claims provides maximum heat output per unit of space occupied.

**12-11  
BASTIAN-MORLEY WATER HEATER**

The Kero, a new kerosene-burning water heater, is said to supply instant hot water service at a cost equal to that of low-priced natural gas. The Kero is entirely kerosene operated, no gas, no electricity, no motors being required. Manufacturer states that it is completely automatic, odorless, quiet in operation. Fuel conductor is an especially molded wear-resisting ceramic. All controls are of the simplest construction requiring a minimum of attention. The Kero thermostat is constructed entirely of metal and maintains any water temperature desired from 80° to 180°. Equipped with convenient temperature dial and indicator. A constant level valve is employed automatically maintaining a constant kerosene level for the main burner. Fuel conductor carries kerosene through fuel channels of burner where it is vaporized and rises to burn at top of burner. A tiny kerosene pilot is located on each side of burner for ignition. Heatseal insulation forms a complete covering of inert air spaces around sides, top and combustion chamber.

# L USTRAGLASS

*the ultra violet ray window glass*

*best  
under the sun*

Unquestionably the value of a window glass lies in its transparency . . . Whether Lustraglass is new or has been used for years, it's still the whitest of all glass made for windows . . . It's a clearer, flatter, more lustrous product, superior in every respect, transmitting more daylight and a substantial amount of the shorter ultra-violet rays of sunlight . . . Lustraglass costs no more than ordinary window glass . . . It always gives you maximum sunlight per dollar.

**AMERICAN WINDOW GLASS CO.**  
PITTSBURGH • PENNSYLVANIA

Also makers of Lustrawhite Picture Glass, Armor-Lite Safety and Bullet-Proof Glass, Photographic Dry Plate Glass,  $\frac{3}{16}$ " and  $\frac{1}{32}$ " Crystal Sheet Glass, Ground Glass, Chipped Glass, and Bulb Edge Glass.



## A Symbol

**T**HE Yule log—symbol of Christmas through the ages. On the great holiday the lord of the manor threw wide the doors, and misery and squalor were forgotten in the cheer of the boar's head and wassail.

Customs change, but the Christmas spirit is ageless. Today millions express it by

the purchase of Christmas Seals—the penny stickers that fight tuberculosis—still the greatest public health problem. Your pennies will help pay for free clinics, nursing service, preventoria, tuberculin testing,

X-rays, rehabilitation and other important work such as medical and social research.



THE NATIONAL, STATE AND LOCAL  
TUBERCULOSIS ASSOCIATIONS  
OF THE UNITED STATES

**BUY CHRISTMAS SEALS**

The Architectural Record, December, 1933

**For new jobs  
or  
remodeling the old**



*In this Scottish Rite Cathedral architect George F. Schreiber, of Indianapolis, found Acousti-Celotex desirable both from the standpoint of acoustical efficiency and beauty of design.*

PAINTABLE PERMANENT  
**ACOUSTI-CELOTEX**  
TRADE MARK REGISTERED U. S. PATENT OFFICE

is the practical, permanent,  
paintable *sound-absorbing* tile

More than 6,000 installations of Acousti-Celotex Sound-Absorbing Tile in business offices, banking chambers, schools, churches, hospitals and auditoriums testify to both the general acceptance and the satisfactory performance of this highly efficient Celotex product.

One of its many vitally important advantages is its *Paintability*.

Without this quality there can be no *Permanence*.

Acousti-Celotex may be painted, stenciled, or decorated seasonally in any manner to harmonize with architectural design.

These practical advantages are

exclusive. A patented method is employed—providing deep holes in which sound is absorbed in the material itself. The high sound-absorbing efficiency is predetermined and fixed.

The complete factory-built tile units are applied directly to any ceiling or wall.

### *No Structural Changes*

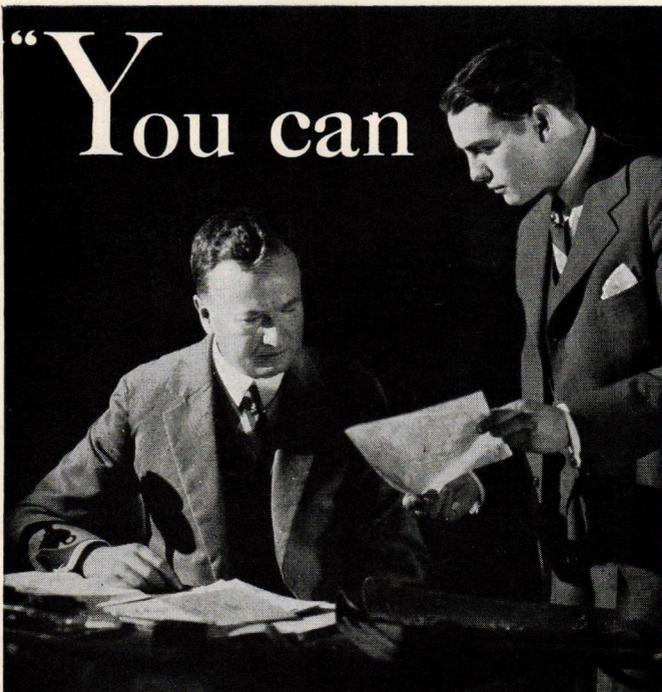
Acousti-Celotex can be applied easily and effectively to *existing* walls and ceilings. No structural changes are required. It can be specified for any remodeling job.

Acousti-Celotex is sold and installed by Acousti-Celotex contracting engineers. Write for full information.

THE CELOTEX COMPANY, CHICAGO, ILLINOIS

**PLANS and INSTRUCTIONS**

*Technical data and design suggestions gladly supplied on request.*



**“You can**

**cut costs . . . on that  
cold-weather concrete job!”**

**“You can speed up the work  
with greater safety and still  
save money!”**

“The saving effected by the use of Calcium Chloride,” says a construction manager, the veteran of several big cold-weather jobs, “consists of less time of cement finishers, less amount of canvas necessary, less burning of coke in salamanders,—lower cost of forms, steel and concrete on account of earlier stripping. And it increases the efficiency of the cement.”

**Easy to Use — Cost Low**

Solvay Calcium Chloride is easy to use. Only a small amount is needed and its cost is amazingly low. Years of successful use in the field afford convincing evidence of its practical value.

The use of Calcium Chloride is approved and recommended by unquestioned authorities including the Portland Cement Association and the Investigating Committee of Architects and Engineers.

Write today for full information. Ask for booklet 1653

**SOLVAY SALES CORPORATION**

*Alkalies and Chemical Products Manufactured by  
The Solvay Process Company*

**61 BROADWAY**

**NEW YORK**

**SOLVAY**

TRADE MARK REG. U. S. PAT. OFF.

**Calcium Chloride**

**12-12**

**ALUMINUM FOIL INSULATION**

Alfol, aluminum foil .0003 inch in thickness and weighing 3 oz. per cubic foot of insulation, is produced by Alfol Insulation Company, Inc., of New York City. This foil reflects about 95 per cent of the radiant heat which falls upon its surface and retains its high reflectivity after long exposure to the atmosphere even at high temperatures. The insulation is built up of successive layers of aluminum foil at intervals of approximately  $\frac{3}{8}$ -inch. With plain sheets this spacing is obtained by means of strips or corrugated sheets of other insulating material. Generally, however, crumpled foil is used, providing its own spacing with a minimum of contacts. The foil is protected by sheathing of heavier aluminum or other material. Low heat storage: Important in insulation of equipment and spaces which are intermittently operated, since it saves time in attaining the desired temperature and reduces energy losses occurring in heating up and cooling off. Incombustible: Aluminum foil melts above 1,200 F. Verminproof, resistant to most industrial fumes and vapors. Impermeable to moisture. Can be treated with lacquer to increase its resistance to corrosive gases and salt water. Easily assembled and applied without causing dust. Present uses include insulation of pipe lines, tank cars, household refrigerators, etc. Metal houses built in Germany have outer walls of copper and sheet steel with 2" Alfol insulation.

**TRADE ANNOUNCEMENTS**

**STEEL AND TUBES, INC.**

Mr. A. V. Grove has been transferred from the Cleveland office to the Chicago office in the Sales Department. Mr. R. E. Doyle is now sales correspondent in the Cleveland office. Mr. J. F. Keeler is now sales engineer with headquarters at the Cleveland office.

**INLAND STEEL COMPANY**

Fred E. Bynum of Oklahoma City, Oklahoma, has been employed by the Inland Steel Company, Chicago. He will be affiliated with the St. Louis office of the Inland Steel Company, and will sell the Company's products in states of Oklahoma and Arkansas. Mr. Bynum was formerly associated with the Gulf Steel Company.

**WESTINGHOUSE APPOINTS S. G. HIBBEN**

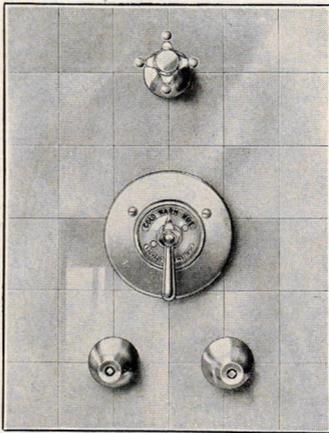
Samuel G. Hibben, Manager of the Commercial Engineering Department of the Westinghouse Lamp Company for the past 15 years, has been appointed Director of Lighting, as announced by A. E. Allen, Vice President, in accordance with an expanding program of illumination progress. In the new position he will function as an ambassador-at-large on all lighting activities, keeping in close touch with new lighting developments as they take shape in the research laboratories and following them through to their final application in the field. New light sources and their practical adaptations will be under the direct supervision and guidance of Mr. Hibben.

MIXING

**LEONARD**

VALVES

THERMOSTATIC



A NEW LINE of Leonard Valves for every type of house is now available. The new series of Leonard Mixing Valves for Shower, Tub, and other Hot Water outlets, are low in cost—also upkeep—and are simple and rugged in construction for both exposed and concealed piping. Capacity range from 5 to 15 gallons of water per minute. They are small and will fit into any 3" partition. All replacements are made from the front.

Literature giving full installation dimensions will be sent upon request.

IN SWEET'S CATALOGUES

Manufactured by

**LEONARD-ROOKE CO.**

INCORPORATED

Providence, Rhode Island

We Will Pay 25 Cents Each and Postage Charges for These Numbers of THE ARCHITECTURAL RECORD if Sent before January 1st, 1934

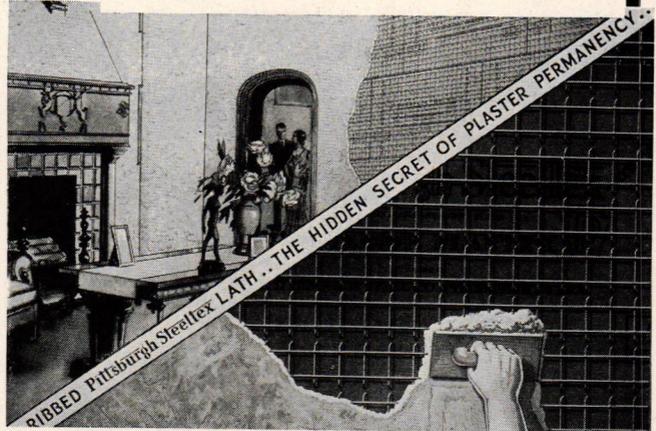
AUGUST, 1933

SEPTEMBER, 1933

OCTOBER, 1933

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

THIS MODERN  
PLASTER LATH  
*can be specified  
for any type of  
home or building*



Ribbed Pittsburgh Steeltex Lath for Plaster is equally suitable for the elaborate residence and the modest cottage, the modern office building and the one-story store room. Wherever plaster is used for interior finish, Pittsburgh Steeltex is the ideal base. Its network of steel wires, electrically welded at the joints, reinforces and protects the walls, minimizing the hazard of cracking. It is economical, easy to handle and quickly erected. For more complete information send in the coupon below.

**Pittsburgh  
Steeltex**

PITTSBURGH STEEL CO. • Pittsburgh, Penna.

Gentlemen: Please send me:  Information  Prices on

Pittsburgh Steeltex:  Interior Lath  Exterior Stucco Base

Floor Lath  Have your representative call

Name .....

Address .....



EVANS  
"Vanishing  
Door"  
WARDROBE

**CLASSROOM WARDROBES**

*High in Quality—Low in Cost*

Made to set in a recess flush with the wall. Plaster back, ends and ceiling. No partitions, but with mullions between pairs of doors. Blackboards if required. Five-shelf bookcase instead of clothing equipment at no extra charge when desired.

The "Vanishing Door" hinges on which the doors are hung are made with double pivoted arms and swing the doors back into the wardrobe entirely out of the way. Simple—trouble-proof—and last as long as the building.

Wardrobes are furnished complete in the knock-down, with all woodwork cut to size, and only need to be nailed in place. The hinges are easier to put on than common butt hinges. The entire cost of installation is small.

*We make many other types of school wardrobes, fully illustrated and described in 1933 Sweet's, Volume C, pages 774-781.*

Class X  
equipped with either "Jamb" type (as illustrated) or "Floor" type hinges. This is Class P wardrobe if made with flush doors.

**W. L. EVANS**  
WASHINGTON, INDIANA, U. S. A.

**AMERICAN** *USS*  
**STAINLESS**  
AND HEAT RESISTING ALLOY STEEL  
**SHEETS**  
AND LIGHT PLATES



**In the Building Field**

Insist upon U S S STAINLESS Steel Sheets—produced in a number of grades and finishes, and adapted to a wide range of applications. Write for literature and full information on the following alloys—

USS CHROMIUM-NICKEL Steels, *Austenitic*: 18-8; 18-12; 25-12  
USS CHROMIUM-ALLOY Steels, *Ferritic*: 12; 17; 27

*USS Chromium-Nickel Alloy Steels produced under licenses of Chemical Foundation, Inc., New York; and Fried. Krupp A. G. of Germany.*

This Company manufactures a full line of Galvanized Sheets, Galvanized Sheets, AMERICAN Black Sheets, Keystone Rust Formed Roofing and Siding Products, Resisting Copper Steel Sheets, Apollo Best mobile Sheets, Special Sheets, Tin and Terne Bloom Galvanized Sheets, Heavy-Coated Plates, etc. Write for further information.

**AMERICAN SHEET AND TIN PLATE COMPANY, Pittsburgh, Pa.**

(SUBSIDIARY of UNITED STATES STEEL CORPORATION)



**NOW  
READY**

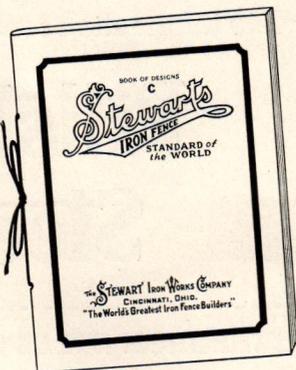
**for ARCHITECTS**

Within the pages of the two catalogs shown herewith Architects will find interesting and helpful designs of Stewart Fences for all types of property.

Stewart's 47 years of fence building has placed them in a position to serve the Architects to a very definite advantage.

*If these two catalogs are not in your files, write for them at once.*

**The STEWART IRON WORKS CO., Inc.**  
919 Stewart Block, Cincinnati, Ohio

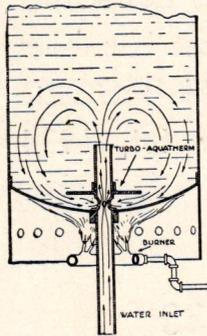


**Hot Water Boiler or**

**Sediment Trap?**

**DAHLQUIST-TURBO**

**Stops Sediment from Ever Forming in the Hot Water Boiler**



**THE TURBO**

*The new Dahlquist patent which prevents mud from accumulating in the hot water boiler.*

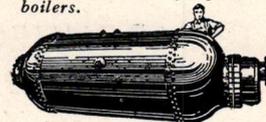
**SAVES GAS**

Copper is nature's own material for storing hot water; never rusts or deteriorates. But regardless of the metal used, sediment in the water will form a coating of mud on the bottom of the boiler unless it is equipped with Theodore W. Dahlquist's latest invention—the TURBO.

The TURBO is Theodore W. Dahlquist's latest invention. It prevents sediment from forming on the boiler bottom—reduces cost of gas—prevents costly burnouts—and keeps hot

water clean. The patented Turbo placed in all Dahlquist boilers uses 50% less gas, and gives a continuous supply of clean, fresh sediment-free hot water day and night.

**Write for Particulars**  
*Architects and heating engineers may rely entirely on Dahlquist workmanship and experience, whether for range boilers, automatic storage boilers or heavy pressure boilers.*



Turbo Super  
Aquatherm  
Gas  
Underfire

**DAHLQUIST MFG. COMPANY**

50 West 3rd St.

So. Boston, Mass.

# SPECIFY MONEL METAL

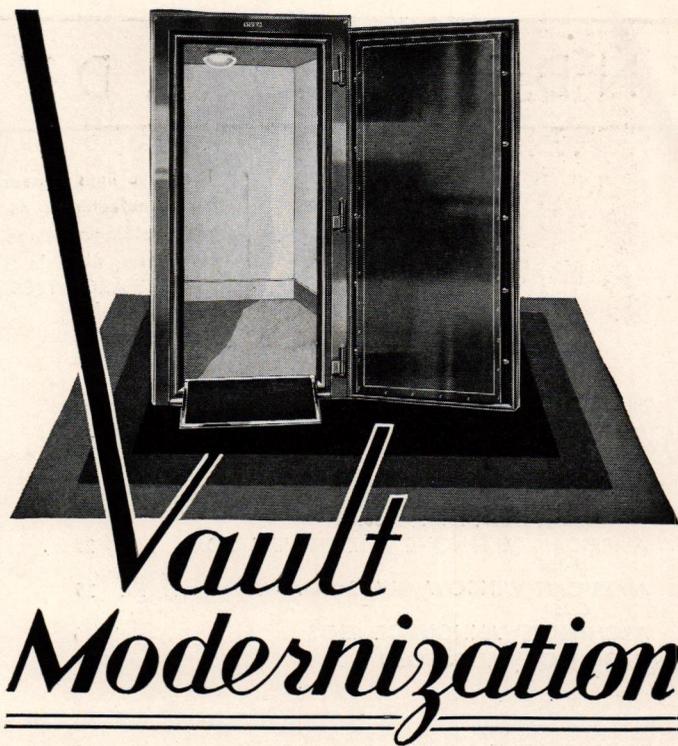
*...it assures the high quality of  
Hospital Equipment*

● Whenever you specify that hospital equipment be made of Monel Metal, you can rest assured that it will have quality built right into it. The presence of silvery Monel Metal is your assurance of inherent cleanliness and lasting durability. ● Whether you are building a new hospital or remodeling an old one, be sure to specify Monel Metal for food service, laundry, clinical and built-in cabinet equipment. Send for literature.

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



Monel Metal is a registered trade-mark applied to an alloy containing approximately two-thirds Nickel and one-third copper. Monel Metal is mined, smelted, refined, rolled and marketed solely by International Nickel.



## A Service That Clients Appreciate

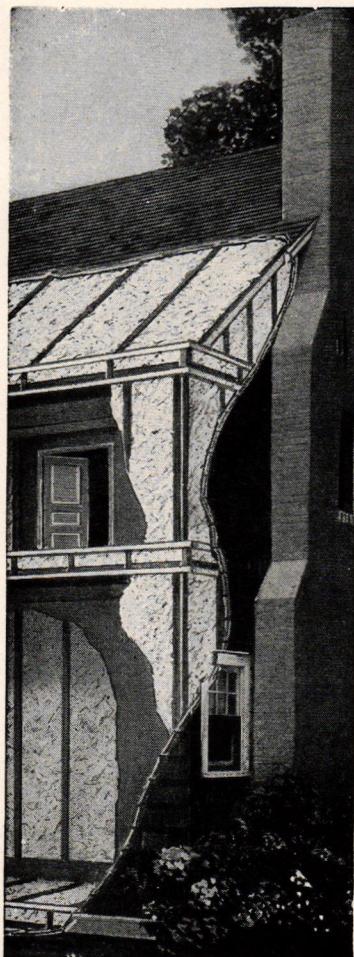
**R**ECORD vault modernization offers greater possibilities than new construction. Improved protection standards should be applied to vaults now in use. Your clients will appreciate a modern check up of their present vaults.

Thousands of present old style vault doors would be rated at "ten minutes" by the Underwriters' Laboratories, Inc. They afford their owners uncertain protection for vital records. They should be changed to meet improved protection standards.

The fire protection of both the vault door and walls must balance. Are present vaults structurally correct? For example — basement and first floor vaults commonly suffer far more heat than upper floor vaults, and should be planned accordingly.



The best protection standards for all vault problems, based on N. F. P. A. reports, are provided on pages C-844 to C-846 of our catalogue in Sweets' 1933 edition. The complete catalogue on pages C-843 to C-856 illustrates our complete line of vault, record room and bank vault doors. Write for additional information.



## INSULATE WITH U. S. MINERAL WOOL

The maximum of insulating effectiveness is assured when you use U. S. Mineral Wool.

It is the best protection possible in an insulating material.

Heat or cold cannot penetrate it and sound is thoroughly deadened.

Being entirely mineral, it resists fire like solid stone and vermin cannot live in it.

It is easy to apply and economical in cost.

Sample and folder on request, address nearest office.

U. S. MINERAL  
WOOL COMPANY

280 Madison Avenue  
New York

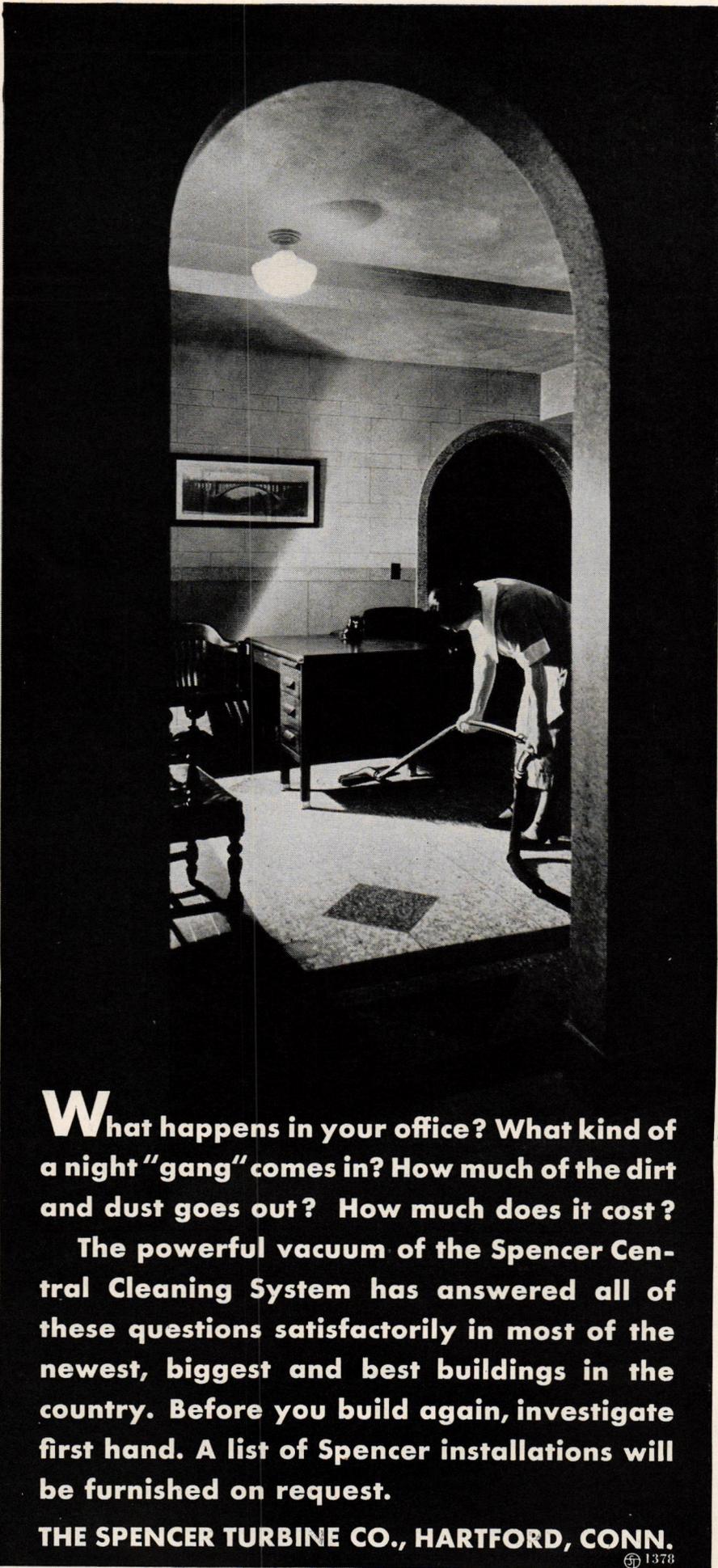
Western Connection  
Columbia Mineral Wool Co.  
South Milwaukee, Wisc.

**DIEBOLD**  
SAFE & LOCK CO., Canton, Ohio  
Over Seventy Years of Protection Service

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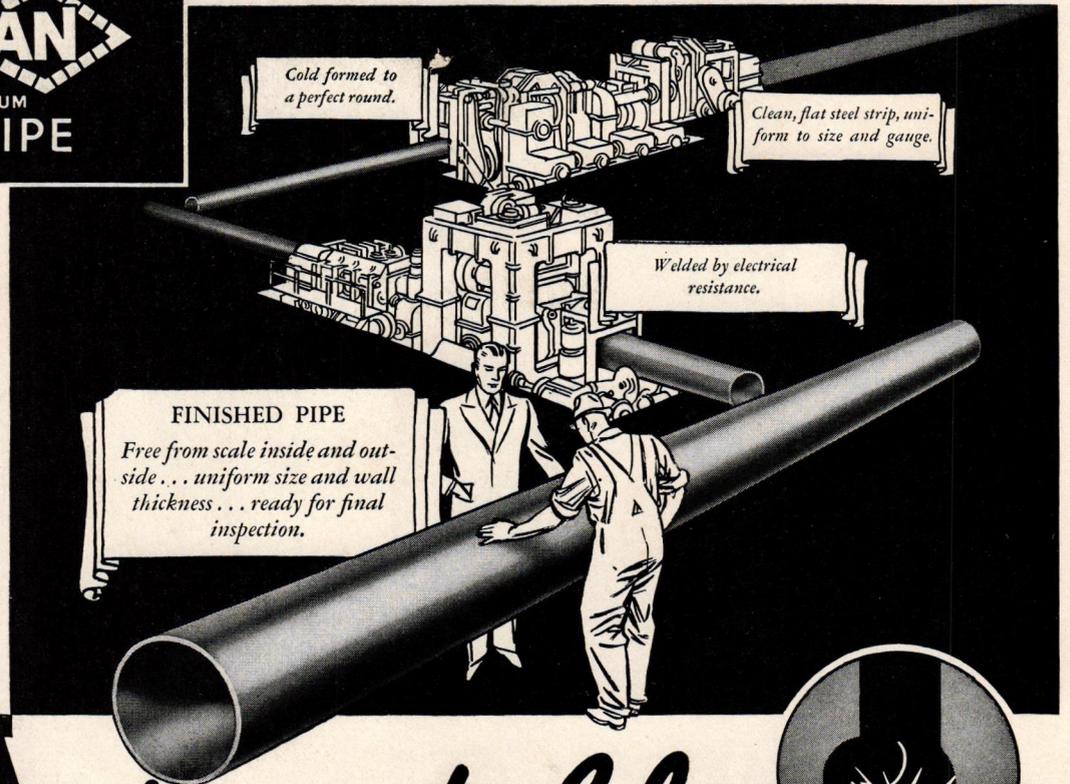
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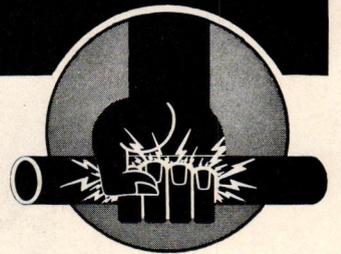
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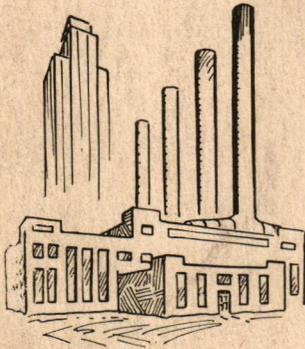
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