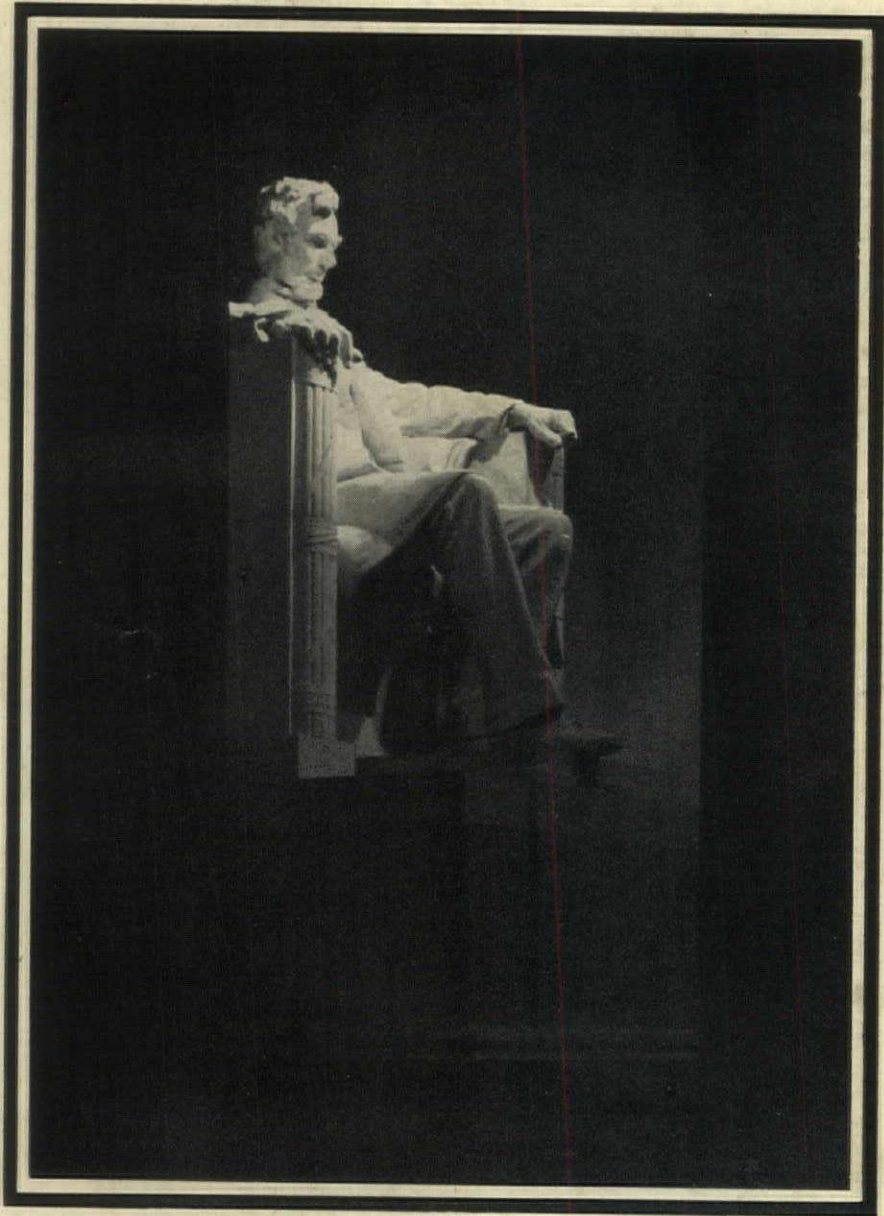


# THE FEDERAL ARCHITECT



FAIRS COME AND GO BUT THE WORLD CONTINUES TO VISIT HIM

*Elsner*

*Published for the Association  
of the Federal Architects*

*April, 1939  
Vol. 9, No. 4*

REPORT ON THE EXHIBITION OF ADVERTISING PAGES

# TOILETS

## MODERN, COLORFUL AND Sanitary



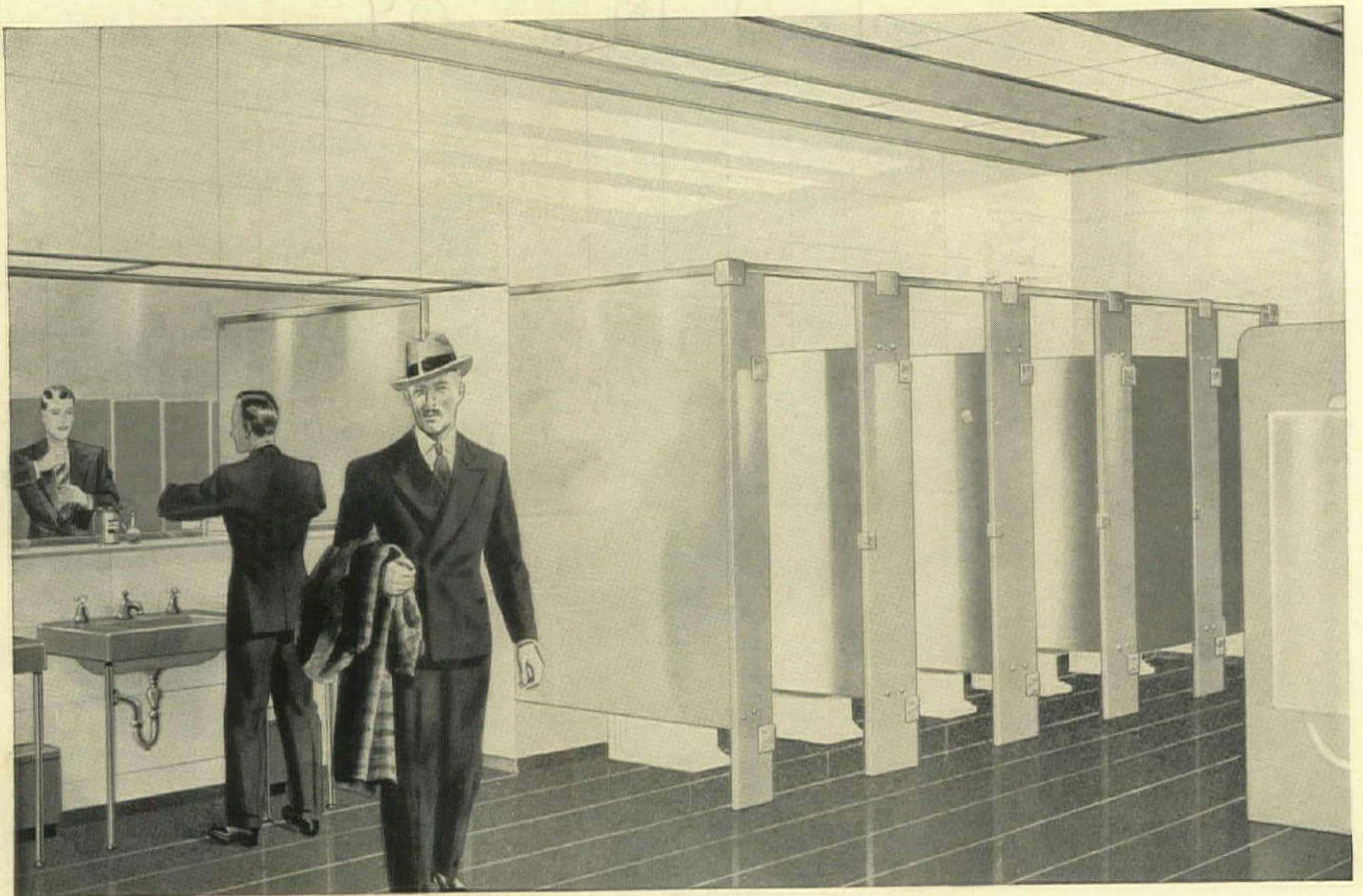
Vitrolite Structural Glass is a modern building material with which you may create the designs, the beauty, color, and immaculate cleanness that Today demands in public toilets and washrooms.

Lustrous Vitrolite walls, wainscots and toilet partitions are proof against water, steam, atmospheric and temperature changes. Being Glass, Vitrolite offers no foothold for dirt—will not harbor objectionable odors, and may be kept bright as new, for years to come, with plain soap and water.

Include Vitrolite Structural Glass in your plans and specifications for new construction or remodeling. We will gladly cooperate on unusual design problems. In the meantime write for latest Vitrolite Color Chart and any information you may require. Libbey-Owens-Ford Glass Company, 1319 Nicholas Building, Toledo, Ohio.

*(Member Producers' Council)*

*Make certain your Vitrolite installation is made by a Franchised L·O·F Dealer*



For mirrors, L·O·F Plate Glass, clear or in colors. For lighting, Vitrolux, the new color-fused, tempered plate glass.

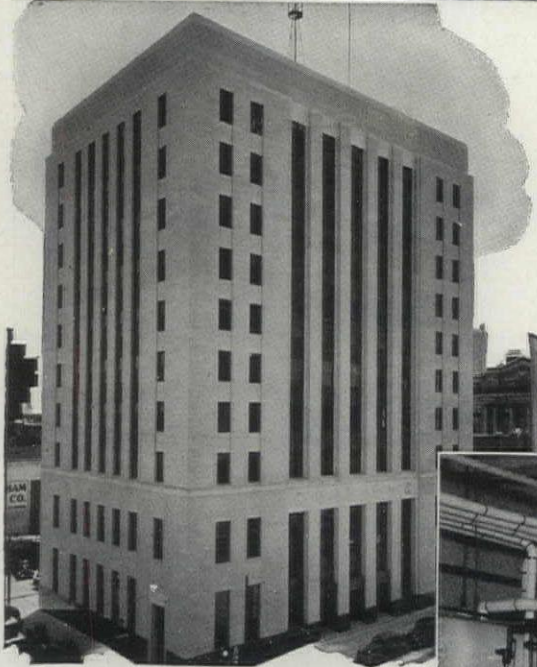
See "Miracles in Glass" at the Libbey-Owens-Ford GLASS Exhibit, 1939 Golden Gate International Exposition, on San Francisco Bay.

LIBBEY • OWENS • FORD

# VITROLITE

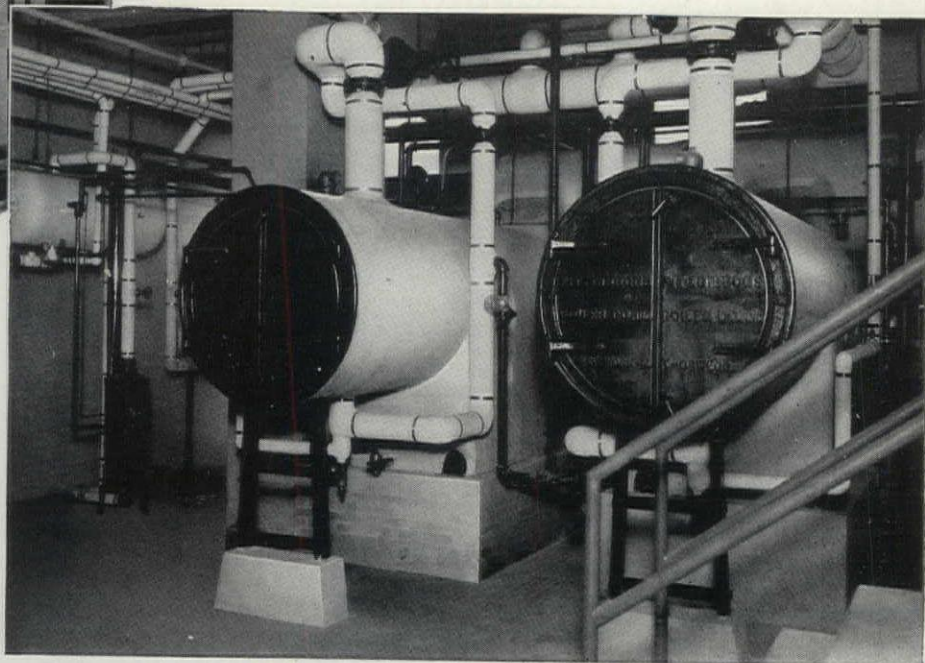
COLORFUL STRUCTURAL GLASS

## THE NEW FEDERAL OFFICE BUILDING AT HOUSTON, TEXAS



*The imposing and modernly beautiful Federal Office Building at Houston, Texas, was sponsored by the Treasury Department Procurement Division, Mr. C. J. Peoples, Director of Procurement. The Supervising Architect was Mr. Louis J. Simon, and the Supervising Engineer, Mr. Neal A. Nielick. Right in line with the character of the building, note the splendidly appointed boiler room. The entire heating job was installed by the National Company, heating contractors of Winston-Salem, North Carolina.*

# A building like this deserves its fine heating installation



# FITZGIBBONS BOILERS

*Fitzgibbons large boilers have maintained their high reputation for almost two generations. In capacities all the way from 1800 to 35,000 sq. ft. S.H.B.I. rating, and in types for all fuels, they provide a complete line in this field of heating. Specifications and full details upon request.*

were selected to heat the beautiful Federal Office Building at Houston, for the same reasons that controlled their selection in hundreds of other similar structures particularly since the inception of the new specifications May 1st, 1931. Broadly speaking, these reasons are Fitzgibbons service and dependability in furnishing and shipping products in accordance with specifications.

Cooperation to an exceptional degree has always characterized Fitzgibbons dealings. Architects depend upon it in working out heating systems — contractors and heating engineers value it in assuring thoroughly satisfactory installations. It is a vital factor in the heating economy records enjoyed by the many institutional and private buildings in which Fitzgibbons large boilers are operating.

**Fitzgibbons Boiler Company, Inc.**

*General Offices*

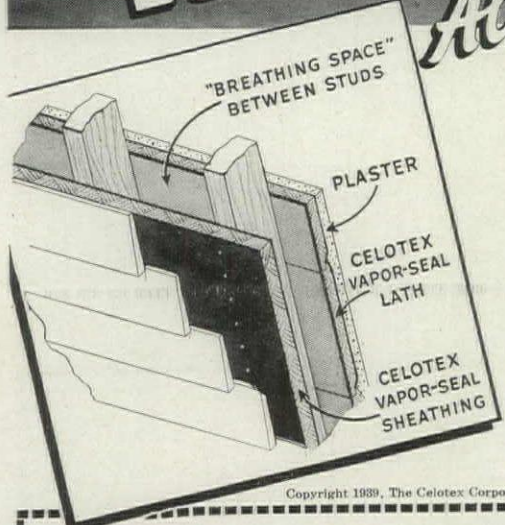
ARCHITECTS BUILDING, 101 Park Avenue, New York, N. Y.

*Works: Oswego, N. Y.*

*Branches and Representatives in Principal Cities*



Both Celotex Vapor-seal Sheathing and Celotex Lath were used in this attractive Springfield, Mass., home. Marsh Maloney, Architect.



Copyright 1939, The Celotex Corporation

THE CELOTEX CORPORATION  
919 N. Michigan Ave., Chicago, Ill. FA 4-39

Please send complete information on the use of Celotex Vapor-seal Products.

Name.....

Address.....

City.....

County..... State.....

MANY government projects call for the erection of residences. In these, as in privately built homes, permanent comfort of the occupants and heating economy are important considerations. Yet costs must be carefully watched.

Celotex Vapor-seal Insulating Sheathing, used in place of ordinary sheathing, provides (1) *insulation of proved efficiency*, (2) *a vapor seal to prevent harmful condensation within walls*, and (3) *needed structural strength*.

Celotex Vapor-seal Insulating Lath, used in place of other lath, provides (1) *good insulation*, (2) *a correct vapor seal*, and (3) *excellent plaster base*.

Both of these approved modern products are economical to use because they *replace* other materials—do three jobs at the price of one. Both are permanently protected against termites and dry rot by the exclusive, patented Ferox Process—and *guaranteed in writing for the life of the building*.\* Mail the coupon.

\*When issued, applies only within Continental United States.

The word Celotex is a brand name identifying a group of products marketed by The Celotex Corporation and is protected as a trade-mark shown elsewhere in this advertisement.

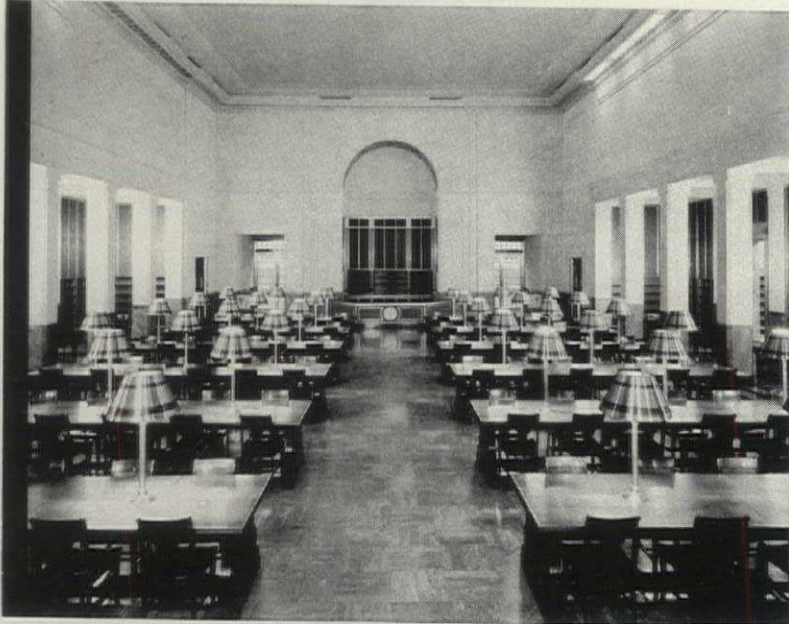
# CELOTEX

REG. U. S. PAT. OFF.

VAPOR-SEAL INSULATING SHEATHING  
VAPOR-SEAL INSULATING LATH

The FEDERAL ARCHITECT · APRIL, 1939

# ★ IN THE NEW LIBRARY OF CONGRESS ANNEX - *Formica finds many uses!*



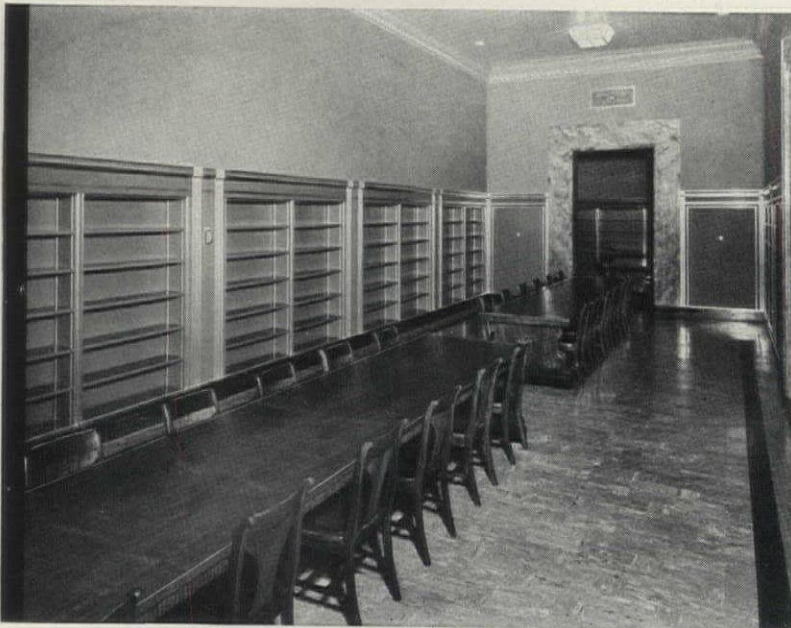
★ Formica Realwood table tops in the reading room. The entire desk and paneling with inlays at the rear are also Formica.

**F**ORMICA demonstrates its versatility in the Annex to the Library of Congress recently designed by Pierson & Wilson for the Architect of the Capitol.

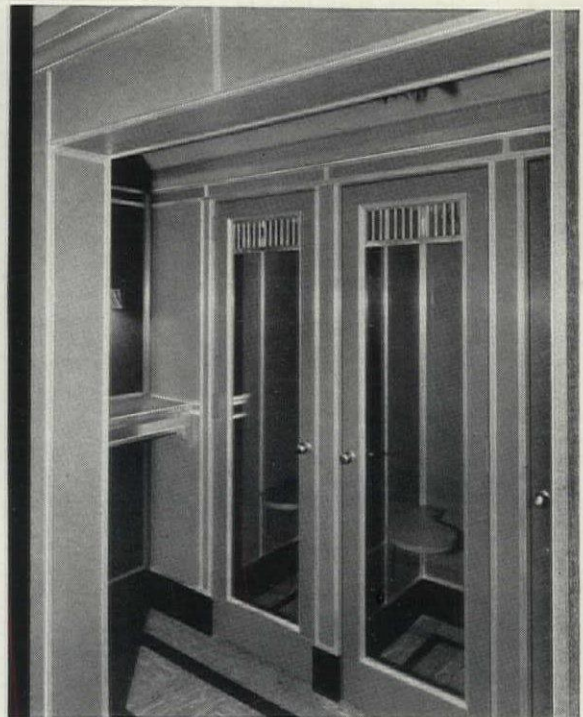
Chosen for its excellent appearance, its modernity, and its unusual durability and stability of color, it was employed for such diverse purposes as table and desk tops, book shelves, wainscot in corridors, telephone booths, doors, baseboard, chair rails, and fronts of card index cases.

Much of the material is in a subdued gray-green with a morocco surface—some of it has decorative inlays; some of it is realwood. Literature giving construction details is available. Ask for it.

**THE FORMICA INSULATION CO.**  
4620 Spring Grove Avenue  
Cincinnati, Ohio



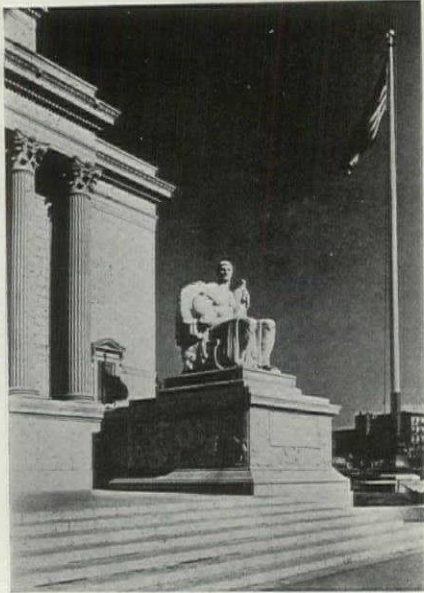
★ Formica Realwood table tops and Formica gray-green book shelves in a small reading room.



★ Formica doors, paneling, shelving and seats in telephone booths.

## FORMICA

### FOR BUILDING PURPOSES



# THE FEDERAL ARCHITECT

Published for the Association of Federal Architects, 1700 Eye St., Washington, D. C.

Address all communications  
to and make checks in favor  
of The FEDERAL ARCHITECT

Vol. 9  
No. 4

APRIL, 1939

EDWIN B. MORRIS, *Editor*

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# G-E BRINGS A NEW WEAPON TO THE WAR ON CANCER

*"Air Conditioning and Refrigeration News,"  
January 25, 1939.*

*G-E workers assembling  
the new million-volt  
X-ray therapy unit.*

THE SPLENDID development by Dr. E. E. Charlton under the direction of Dr. William D. Coolidge, Director of the Research Laboratories of the General Electric Company, has tremendous significance in cancer research. For the first time million-volt X-ray apparatus is made available at a comparatively low cost for conducting deep X-ray therapy, which holds so much promise in the treatment of cancer. The General Electric Company through its X-ray Corporation is placing a powerful weapon in the hands of those who are fighting to cure the dread cancer disease.

We are glad to have contributed to this development by synthesizing a score of the gases which were among the many tested by G-E Research.

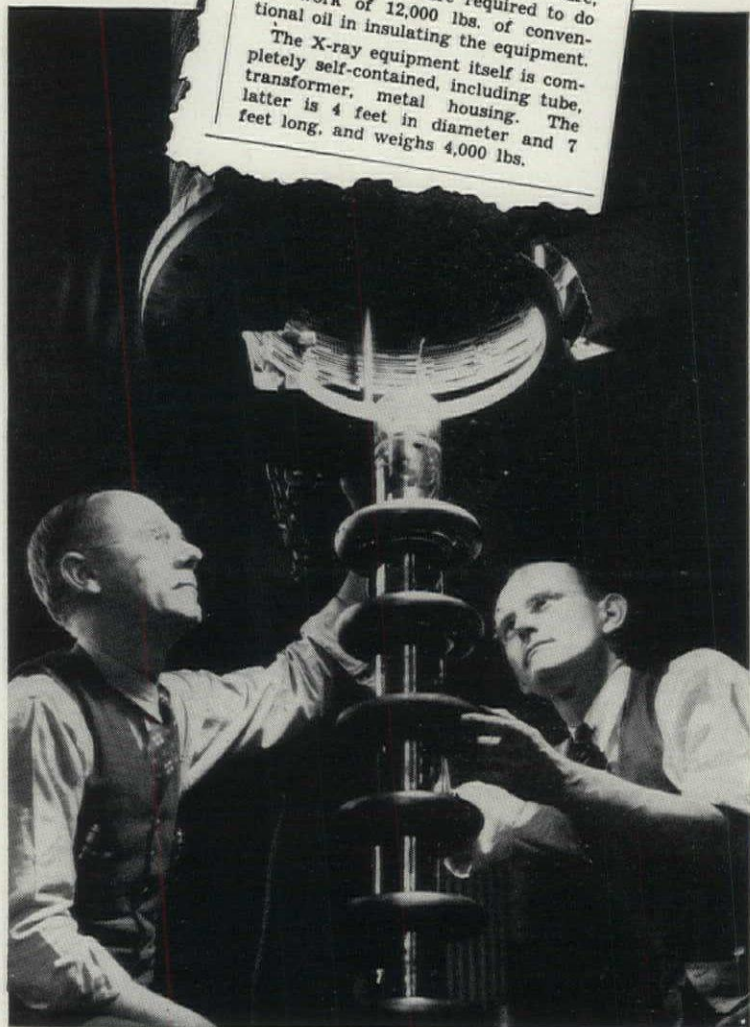
Although the safety properties of "Freon"\* gases had been determined, nothing was known of their electrical stability and insulating value. The evaluation of these properties by the engineers of General Electric is a brilliant piece of research work.



## FREON

REG. U. S. PAT. OFF.

*\*"Freon" is Kinetic's registered trademark  
for its fluorine refrigerants*



## G-E X-Ray Machine Uses 'F-12' as Insulator

SCHENECTADY, N. Y.—Using the refrigerant "Freon-12" (dichlorodifluoromethane) as an insulating medium, a new X-ray outfit designed to produce 1,000,000 volts peak at three milli-amperes or more and said to give 12 times as much radiation as all the radium possessed in this country has been constructed by General Electric Co. here for use in the Memorial hospital in New York City.

The apparatus is to be used in research work on the treatment of cancer. Heart of the system is a new X-ray tube designed by the G-E engineers. This tube is said to be equivalent in power to 8½ lbs. of radium (or \$90,000,000 worth). Radium is worth about \$700,000 an ounce, and there are but 11 ounces in the United States.

The "Freon-12" gas employed as an insulator was selected for being colorless, odorless, non-poisonous, non-corrosive, and chemically and electrically stable. In addition, it has high vapor pressure at ordinary room temperature.

At the pressure maintained in the new X-ray equipment, the gas has a dielectric strength several times that of nitrogen at atmospheric pressure, and only 100 lbs. are required to do the work of 12,000 lbs. of conventional oil in insulating the equipment.

The X-ray equipment itself is completely self-contained, including tube, transformer, metal housing. The latter is 4 feet in diameter and 7 feet long, and weighs 4,000 lbs.

**KINETIC CHEMICALS, INC., TENTH & MARKET STREETS . . . WILMINGTON, DEL.**

*The FEDERAL ARCHITECT · APRIL, 1939*

Page 5



## LETTER FROM JUDGE WETMORE

Coral Gables, Florida,  
April 20, 1939.

Dear Eddie:

When I last wrote you I said considerable about Christmas, from the effects of which we were then recovering slowly; but by the time my letter was printed its subject matter had gone stale. The season was drawing nigh when egg rolling at one end of the Avenue and log rolling at the other was in order.

It would be interesting to know when the Easter egg rolling festival at the White House grounds originated. To my knowledge it has been observed for more than fifty-odd years, except during the World War, I believe, when the gates to the grounds were kept closed a greater part of the time. A custom very similar to this has been observed at a small community in England for ages and is interestingly described in a little book entitled "The Scouring of the White Horse." But Eddie, the custom of log rolling is even more ancient. It doubtless goes back at least to a time when one cave dweller said to another: "You scratch my back and I'll scratch yours."

The wife of President Cleveland was a very lovely, very democratic and very popular First Lady of the Land, and she mingled freely with the Easter Monday crowd thronging the White House grounds.

In the first year of the second Cleveland administration "Dick" Wintersmith, a Southern Democrat and a "fellow of infinite jest" was an applicant for office. He spent most of his time at the Treasury Department besieging Secretary Carlisle who had sponsored him. As the days rolled by and his appoint-

ment was not forthcoming he became more and more discouraged, and one day, in a burst of disappointment and indignation, he remarked to Secretary Carlisle's son, Logan, who was then the Chief Clerk: "I don't believe Grover is going to do anything for me. I'm getting to a point where I hate him so bad that I don't even think his wife is good looking." However, Wintersmith had an opportunity to get his tastes back to normalcy, because as Wintersmith said, President Cleveland made him a frappe Collector of Customs in Alaska instead of a fricassee Consular Agent in Panama, for which latter position he had applied.

During the second Cleveland administration there was a Member of Congress from Texas named "Tom" Ocheltree. He was a veritable character. All sorts of stories were told about him. It was said he tried to set his watch by the fare register in a Herdic. One day Ocheltree said to Wintersmith: "Dick, the ladies in this town have been very hospitable to me, and I just don't know what to do. If there is anything in this world I like better than anything else it's onions. I can't give up onions and I can't go to receptions and teas with my breath smelling of onions." Wintersmith said: "Don't worry, Tom. I'll tell you how you can eat onions and not offend anybody. You go up to Chamberlain's restaurant and order yourself a nice big juicy beeksteak smothered with onions, and eat all you want to. When the waiter brings your bill it will take your breath away."

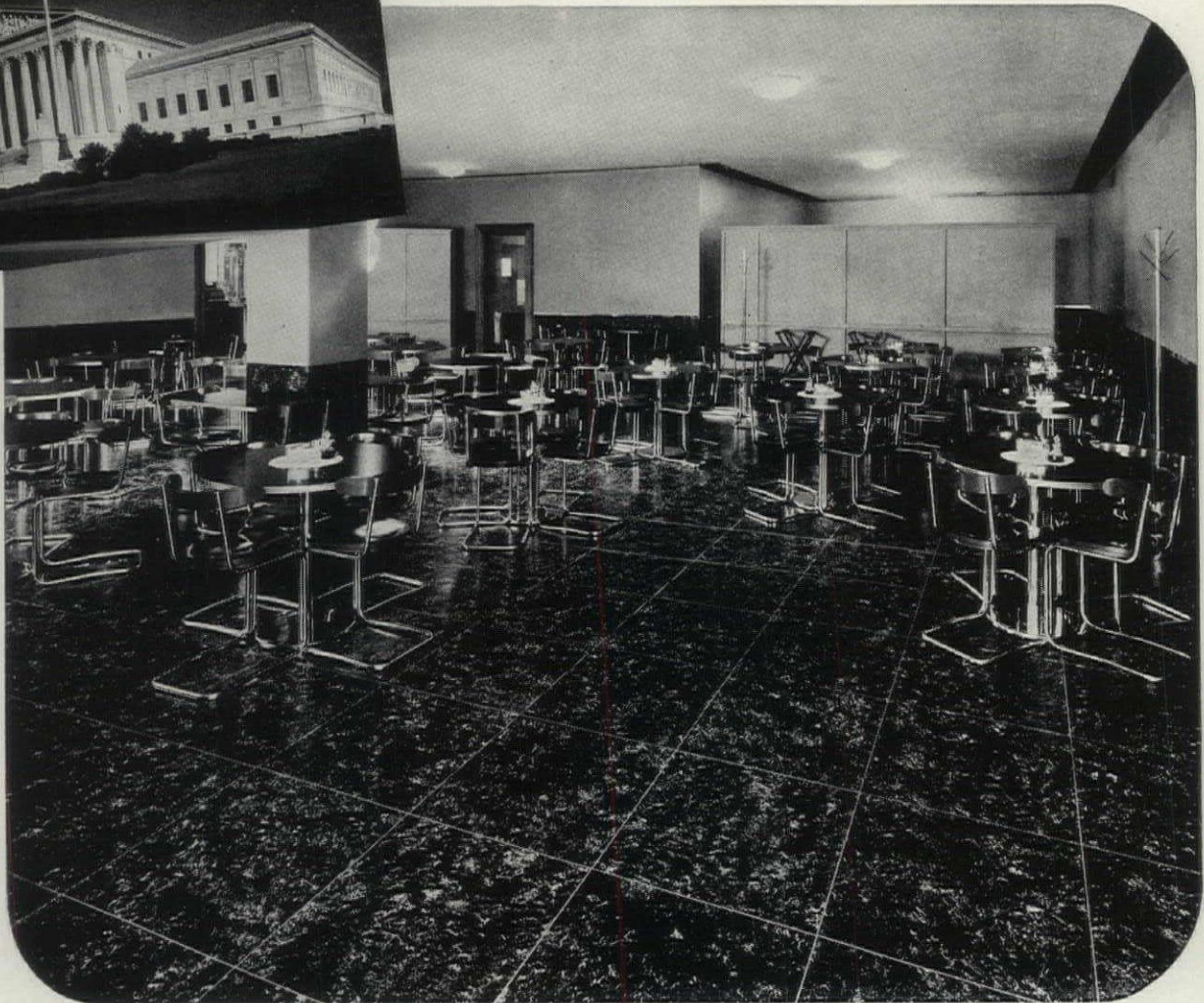
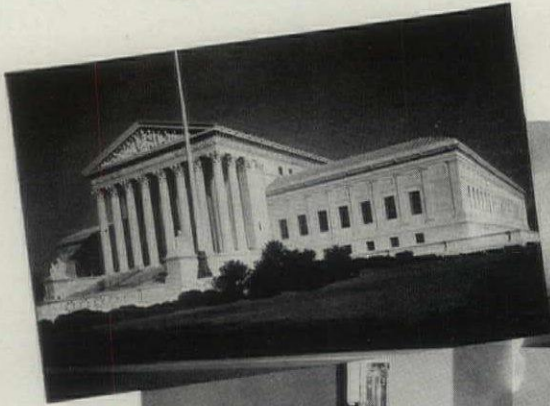
There may be no foundation for it but the impression seems to prevail among "oldsters" that along in the 80's there was a larger proportion of brilliant statesmen in Congress than at any later period. I don't know, Eddie, that playing poker and drinking hard liquor had anything to do with it but those two accomplishments seemed to stimulate the wits and stiffen the backbones of many of the outstanding ones. One bright moonlight morning—for it was long past midnight—a bunch of Senators were making their way home after a night of jackpots and highballs. They were coming down the middle of K Street, locked arm in arm, possibly to improve their equilibrium. As they neared the house of one of their number he said: "Gentlemen, here is where I live. Let's go in and have just one more before we part." "No," said another of the party, "It is pretty late, and I don't think Mrs. W. would like it." To this the first speaker drew himself up proudly and exclaimed: "This is my house, and I'm Caesar here." Alas that pride should go before a fall, but Mrs. W. was seated at the second story window awaiting the home coming of her belated spouse and called down: "Gentlemen, just put Caesar in the front door. I'll take care of Caesar."

It was after a night of this kind that the wife of one of the coterie remarked to the dignified old solon: "I think the vest you wore last night is the filthiest thing I ever saw. It is covered with tobacco juice. Couldn't you turn your head when you wanted to expectorate?" "No," replied the Senator, "not in that crowd." You see Eddie, don't you, how the subconscious mind operates even in our hours of pleasure?

(Continued on page 39)



# Floors OF LASTING BEAUTY FOR PUBLIC BUILDINGS



**N**AIRN Sealex Linoleum completely answers the floor demands of the U. S. Supreme Court Building cafeteria.

*Decoratively.* In the wide range of Nairn Sealex patterns, there's an appropriate design, standard or custom-cut, for any type of interior.

*Functionally.* This *resilient* floor is comfortable and quiet underfoot. Its perfectly smooth, sanitary surface is easy to keep spotlessly clean.

*Economically.* Nairn Sealex Linoleum lasts for years with a minimum of maintenance.

Installed by authorized contractors, Nairn Sealex Floors are backed by a guaranty bond. Write for free information and samples now!

CONGOLEUM-NAIRN INC., KEARNY, NEW JERSEY

The FEDERAL ARCHITECT · APRIL, 1939

*An attractive Nairn Sealex Floor graces the cafeteria in the U. S. Supreme Court Building. Note, too, the wainscoting is sanitary, washable, permanent Nairn Wall Linoleum.*

**NAIRN**  
TRADEMARK REGISTERED  
**LINOLEUM**  
**Floors and Walls**



# THE FEDERAL ARCHITECT

Published for the Association of Federal Architects  
1700 Eye St., Washington, D. C.



■ **T**HE Association of Federal Architects in conjunction with the FEDERAL ARCHITECT gave a party, built around an Exhibition of Advertising Pages of building materials. The exhibition was not expected to solve the vexing problem of advertising such materials, but it was along the line of thinking followed by most architects and engineers.

The problem was this. Salesmanship of building materials should, in the opinion of the users of such materials, be solely along the lines of service, rather than pressure.

The living salesman who is admitted to architect's offices is expected to offer explanation, advice and assistance—not persuasion or over-persuasion. The pressure-cooker type of salesman is generally not given the entre.

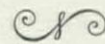
If it were practical and humanly possible it would be desirable to have all such useful and cooperative salesmen talk to all architects, engineers and draftsmen. Since it is not, these technical men get much of their education as to materials from the salesmanship as exemplified in Sweets and other printed advertising.

The thought, therefore, was to make advertising cooperative and useful, in the same way that the best type of salesman is cooperative and useful. This would be moving toward a goal of making the advertising pages of technical magazines as helpful in an educational way as the text pages.

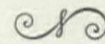
That is not a goal to be reached in one day. However, the discussion that resulted during the deliberations of a jury of two architects, one engineer and an advertising executive brought out divergent opinions which, while

at times appearing to confuse the issue, in the main definitely set the bounds of what could be done without destroying advertising value on the one hand and without destroying technical value on the other.

Statements in this issue give an idea of the matters that were discussed during the consideration of the three hundred advertising pages. Even if the exhibition results in no good at all and accomplishes nothing (which we hope will by no means be the case) it has at least resulted in statements of belief and of fact which are of absorbing interest.



■ **P**RECISION Planning Note. A report from a field man on a certain athletic stadium recently constructed contains the phrase "The stadium seats ten thousand persons and the toilets are arranged under the seats."



■ **T**HOSE of you who are interested in tales of mystery and excitement and especially in one which might turn out to have a most important historic and scientific importance would be interested in a pamphlet written by Miss Marie Bauer, which contains the possible solution of the famous Bacon-Shakespeare controversy.

To get the adventurous throb of this story you must first accept what, for obvious reasons, is not proved. It is the dramatic fact that in the Shakespearean plays as printed there is a code which furnishes proof as to authorship, and also furnishes information which would lead to the discovery of buried manuscripts of the plays so annotated, signed and presented as to establish once and forever the fact that no one else but Francis Bacon and his contemporary group could have written them. The code Miss Bauer claims to have been helpful in discovering through

Masonic sources (Bacon being a Mason) is naturally the secret of herself and certain others and, for the present at least, not for general dissemination.

In entering into the consideration of this story, if one accepts the fact that there is such a code without demand for proof and corroboration, the ensuing events take on a very exciting and rather breathless interest.

Let us suppose that the code gives the understanding person the information that Francis Bacon, a widely travelled man, had decided that America was the place to bury the key manuscripts of the plays and that no better place was available for the purpose in America than (register surprise at this one) the Bruton Church at Williamsburg, Virginia. The code states that a vault was constructed at a certain corner of the Bruton Church foundation.

The vestry of Bruton Church were persuaded of the plausibility of this and caused excavations in this location to be made. Nothing was found and the code idea received a set-back.

Nothing daunted, Miss Bauer persisted and presently found a tombstone with a curious and unusual inscription thereon obviously unsuited for the purpose. It was found to respond to the code and when decoded gave the information that the original Bruton Church foundation was of different shape than the present and also disclosed certain information that fixed the corner of the old foundation (containing the vault in question) as in the graveyard rather than under the present church.

A controversy, based on certain matters not very clear, now arose making further excavations extremely difficult. However, some excavations were made, resulting in the corner of the old foundation wall being discovered within three inches of the point where it was stated to be by the message of the tombstone.

A gentleman from Canada now interested himself in the matter and brought down instruments capable of locating sub-surface masonry. These instruments indicated that a large solid substance existed seventeen feet below the surface in the location where the vault containing the Bacon-Shakespeare secret was said by the code to exist.

Excavation, after much discussion, was begun at this spot. The results were

awaited with breathless interest until suddenly, contrary to Miss Bauer's hopes, digging was stopped at a level of seven or eight feet.

There the matter now rests. It is like Frank Stockton's unfinished story of the Lady or the Tiger. You are privileged in your imagination to end it any way. In fact perhaps the most palatable and diverting solution is to hold the exciting thought in one's mind that any time we want to dig down in old Bruton churchyard we can find the proof that Bacon wrote Shakespeare. Any time.



■ AN architect recently excused himself for sleeping late on Sunday morning by explaining that it was the triumph of mind over mattress to be a step behind the present.

That is the sort of advertisement the profession has had—and plenty of it.

By it the public has been convinced—to a greater extent than we all enjoy—that architecture up until the great awakening after the World War was wrong; and by inference that all fees paid architects previous to that time were doubtful investments.

The public mind—untutored but persistent—goes on to conclude that if architecture previous to 1919 was not so hot (and that covers a lot of territory) maybe it has not been so hot since that time.

At any rate advertising of architecture by architects has been detrimental. The illusion of aesthetic infallibility with which a trusting public once endowed the profession has been shattered. The public is not now averse to entrusting its commercial work to engineers, its residential to realtors.

Is it not now time to make our taunts in private and not permit a willing press to exploit our processes of smearing the profession?

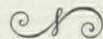
The profession of architecture long ago, in search of the highest principles to govern its behavior, adopted an attitude of isolation and strict professional ethics. This attitude has done much toward establishing its honesty and good motives, but little toward increasing its revenue.

Now, no art is healthy that does not have healthy financial returns. Since therefore the honesty of the profession has been established, it appears to be pertinent for its members to

give more persistent thought to the matter of selling its usefulness to the public.

Architecture has in recent years been done by argumentation between architects which has done little to improve its reputation. Architects have printed in conspicuous places the statement that their profession up to within a couple of decades of the present has been misguided, shackled by ancient formulae, stuffy and pointless. They have discovered that newspapers and magazines (smelling the delicious aroma of controversy) will publish all they will write sneering at the work of other architects which to them appears by belittling its traditions. Why not confine our public discussions as to whether architecture should be this or that to arguments erected in brick and stone.

Then we will be in a position to apply our forensic and literary abilities to the job of emphasizing the public service which the architectural profession is able to offer—for which there is no substitute.



**F**OLLOWING a pleasant banquet held recently in a large mid-western town, one of the guests on his way home in an uplifted and exhilarated frame of mind realized after a period of driving that he was having some unexplained difficulty in manipulating his car. This difficulty at length became so pronounced that he decided to stop and investigate.

What was his surprise and horror, on alighting, to discover that his bumper had by some mischance difficult to analyze become entangled with the bumper of a taxicab which he was towing home with him.

This was mildly embarrassing. However, refreshed and strengthened as he was by the events of the evening, he danced a while upon the bumpers until their embrace was broken, and leaving the taxicab in the street where it would be easy for any interested party to find it, proceeded on his way. He was considerably puzzled at the time as to whether he might have been at fault, since it would have been difficult for the taxicab coming from behind at an overtaking speed to accomplish the bumper-entangling. Then there was the further confusing factor that the taxicab had no

driver. He therefore decided that it came under the category of Mysterious Occurrences and drawing his car up to the curb where it would be free from the possibility of further barnacle attachment, composed himself to pleasant dreams.



**R**EFERENCE is made to a colored elevator boy in one of the apartment houses in Washington. It is understood that this boy, being by nature progressive and interested in the cultural side of things, felt the yearning for a watch which would not only be of use in indicating the time of day but would as well be an ornamental adjunct to add to his dignity and charm.

A quite expensive watch was needed for this purpose and it was found, such are the wonders of finance, that the expensive watch could be purchased more cheaply than the cheap one, due to the fact that the cheap one must be paid for in full, whereas the expensive one could be taken away in return for a small payment and a promise of further contributions at some pleasantly remote time.

It transpired that a friend of his, however, also yearning for something to enhance his dignity and charm, borrowed the watch, went out on a boat with it, fell overboard and was drowned, failing in the hurry of the circumstances surrounding his demise to make any arrangements for the return of the watch.

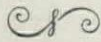
The elevator boy was very sorrowful about the loss of his watch—and naturally also about the loss of his friend. In regard to the watch, the loss consisted of the first payment which after a night's sleep he was prepared to accept philosophically and make no complaint concerning it to the jewelers who sold him the watch.

What was his indignation, therefore, after having accepted his loss with good grace and without murmurs of complaint, to have the jewelers adopt an entirely different attitude and come down upon him bitterly and without gracious approach demanding further payment. He explained that he no longer had the watch, that it was at the bottom of the Potomac attached to the valued corpse of his friend. He referred them repeatedly to this location, without avail.

At length it transpired, in spite of his clear

and logical explanations, that the jewelers were firm. In the end he had to give in and agree to continue, unjustly, payments for a watch which never again would indicate for him the time of day or add to his dignity and charm.

He bitterly ruminates now upon those who grind the faces of the poor.



■ **T**HERE were four or five of these architects. The event took place on a certain Saturday afternoon several years ago and colored the future lives of all of them. They were driving along a rural road. On all sides were the pleasant signs of innocence and unsophistication, so different from the smart city where one, steeped in knowledge, was always alert with the right answer and the knowing act. They came to a fork in the road beside which was a quaint store all a part of the native innocence of the scene.

To a man sitting on a box on the porch, they, unbending and genial, said, "Where does this road branching to the right go?" The man did not look up. "I've been living here twenty years," he said, "and it ain't gone nowhere yet."

The architects fell back one against another and got their car somehow into motion, tongue-tied, inarticulate and aghast. They wasted the remainder of the beautiful afternoon in bitterness, thinking what they might have said in return.

It was not only the afternoon that was poisoned. The ensuing months were soured for them. They went about experimentally mumbling crushing replies to the remark of the yokel. One of them, especially, began to build his life around the principle of training his tongue and brain to respond quickly and smartly to emergency and when bombed by a belittling remark to regain poise and dignity at once by a well-chosen and cutting retort.

Months passed by while he was training himself to meet imaginary emergencies with promptness and dispatch. He had the feeling that now after the long period of concentration upon the subject he would, in a crisis, not remain hopelessly dumb and inarticulate.

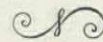
And then without warning the crisis arrived. He was riding in a bus with his wife discussing a matter of mild political im-

portance, or so he thought. After a time a woman sitting in front of them suddenly turned about, with a face lined with indignation. "I'll thank you," she shouted, "to keep your prejudices to yourself on public conveyances."

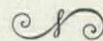
He eyed her calmly, surprised, but knowing that from his long and deep thought a victorious and fitting reply would arise to his lips. The seconds passed. He gazed helplessly at the back of the woman's neck, his coolness oozing from him. He moistened his lips hoping for words, but none came. The bus rolled on. The woman with the gleam of victory in her eye signalled for the bus to stop. Frantically he groped for retort. The vehicle stopped. With head heroically erect the woman arose and was gone from his life.

But her memory haunted him, worried him, tortured him. At length after weeks of study, consideration and discarding he came to a reply, which appeared to be the best. It was, to be exact, "Why don't you go pin your big ears on a donkey?"

It seemed very conclusive and final when he first thought of it. But when he mentioned it, in a glow of pride, to his friends, they did not appear to be impressed, as he had thought they would be.



■ **A**N old time printer found that someone had stolen all of the "s" types out of his type-case so he started off his lead article with—Thum louthy Thun of a gun thole all of the etheth in thith thop tho will have to uth th for them till we can get thum more etheth.



#### NEW NEWMAN NEWS

Congratulations are deserved by District Engineer Newman and his colleagues for their carefully compiled bulletin for their district. This bulletin contains gossip and solid fact concerning the happenings. The work and play. Typical shot—statement concerning the "Gold Star Building" at Caldwell, Idaho, which was found to be satisfactorily completed in accordance with the contract requirements *without any defects and omissions.*

# EXHIBITORS

## at First Annual Exhibition of Advertising Pages

*held by the ASSOCIATION of FEDERAL ARCHITECTS and the FEDERAL ARCHITECT  
on March 16, 1939.*

Aerofin Corporation  
 Alberene Stone Corp.  
 Aluminum Company of America  
 American Gas Association  
 American Lumber & Treating Co.  
 American Rolling Mill Company  
 American Walnut Manufacturers  
 Association  
 Anchor Post Fence Company  
 Anemostat Corporation of America  
 Arkansas Soft Pine Bureau  
 Armstrong Cork Company  
 The B & T Floor Company  
 Babcock-Davis Corporation  
 The Barrett Company  
 Bigelow-Sanford Carpet Co., Inc.  
 Bradley Washfountain Company  
 Brasco Manufacturing Company  
 Brisk Waterproofing Company  
 E. L. Bruce Company  
 The Brunswick-Balke-Collender Co.  
 Burnham Boiler Corporation  
 A. M. Byers Company  
 Byrne Doors, Inc.  
 Samuel Cabot, Inc.  
 Carrier Corporation  
 The Celotex Corporation  
 Columbus Coated Fabrics Corp.  
 Congoleum-Nairn, Inc.  
 Consolidated Expanded Metal Cos.  
 P. & F. Corbin  
 Corning Glass Works  
 T. R. Coughlan Company  
 Crane Company  
 Curtis Companies Service Bureau  
 Detroit Lubricator Company  
 Douglas Fir Plywood Association  
 C. A. Dunham Company  
 The Eagle-Picher Sales Company

The Electric Storage Battery Co.  
 A. W. Faber, Inc.  
 Fitzgibbons Boiler Company, Inc.  
 H. E. Fletcher Company  
 The Formica Insulation Company  
 Fulton Sylphon Company  
 R. Guastavino Company  
 Harbor Plywood Corporation  
 Chas. M. Higgins & Co., Inc.  
 Holland Furnace Company  
 Homasote Company  
 Hope's Windows, Inc.  
 Imperial Paper & Color Corporation  
 Ingersoll-Rand Company  
 The International Nickel Co., Inc.  
 Kawneer Company  
 Kimberly-Clark Corporation  
 Kinetic Chemicals, Inc.  
 Koppers Company  
 The Korfund Company  
 Kraftile Company  
 Lehigh Portland Cement Company  
 Libbey-Owens-Ford Glass Co.  
 Locher Brick Company  
 Lockwood Hardware Mfg. Co.  
 Lone Star Cement Corporation  
 Master Builders Co.  
 Mesker Brothers Iron Co.  
 Milcor Steel Company  
 Minneapolis-Honeywell Regulator  
 Company  
 Mohawk Carpet Mills, Inc.  
 National Building & Loan Asso.  
 National Chemical & Mfg. Co.  
 National Coal Association  
 National Lead Company  
 National Terrazzo & Mosaic Asso.  
 Norton Lasier Company  
 Otis Elevator Company

Overhead Door Corporation  
 The Paraffine Companies, Inc.  
 Payne Furnace & Supply Co., Inc.  
 Penn Metal Corp. of Pennsylvania  
 Portland Cement Association  
 Procter & Gamble Company  
 RCA Manufacturing Co.  
 The Reardon Company  
 Republic Steel Corporation  
 Rising & Nelson Slate Co.  
 A. E. Rittenhouse Co., Inc.  
 Robinson Clay Products Co.  
 Rolscreen Company  
 Royal Metal Manufacturing Co.  
 Samson Cordage Works  
 The Sherwin-Williams Co.  
 Simplon Products Corp.  
 Sloan Valve Co.  
 Sparta Ceramic Co.  
 The Spencer Turbine Co.  
 Steel & Tubes, Inc.  
 Thermo-Mix, Inc.  
 Todd Shipyards Corporation  
 The Trane Company  
 Truscon Steel Co.  
 United Clay Products Co.  
 United States Gypsum Co.  
 United States Quarry Tile Co.  
 U. S. Steel Company  
 Universal Atlas Cement Corp.  
 The John Van Range Co.  
 Vermont Marble Company  
 Virginia Greenstone Company  
 Vonnegut Hardware Company  
 Wagner Electric Corp.  
 The F. W. Wakefield Brass Co.  
 Winter & Company  
 Wood Conversion Co.



*The two Bartons, Congressman Bruce Barton congratulating Acting Supervising Architect LeRoy Barton on the fact that he is not a Congressman and Acting Supervising Architect Barton congratulating the Congressman that he is not an Acting Supervising Architect. Ray Carter, of Otis Elevator Company, shyly but centrally in background. Back of him Branscomb. Back of the Congressman is W. C. Clark.*

## EXHIBITION OF ADVERTISING PAGES

FEDERAL ARCHITECT puts on a show to show showmen how to show; and is itself shown a thing or two

AN Exhibition of Advertising Pages was held by the Association of Federal Architects and its magazine, *THE FEDERAL ARCHITECT*, on March 16th at the National Press Club auditorium in Washington.

This exhibition was put on in a tentative and experimental manner. It turned out to be unexpectedly successful. Between noon and ten o'clock a thousand persons came to see it.

Six hundred assembled for lunch to see it, two hundred for dinner and during the afternoon came a steady stream of interested spectators.

The dinner which concluded the day was a gay and brilliant occasion. The leading architectural lights of the capital tucked festive napkins beneath the chin. Representatives of nationally known products grasped the silver knife. The olive rested in the erstwhile brimming glass. Ice tinkled. Fizz fizzed. Life was bright, hope increased, the world cuddled down into the palm of one's hand.

When the guests leaned back in their chairs, a genial glow spread over them, as Congressman Bruce Barton, captain of after-dinner speakers, bubbled forth with his spontaneous and delightfully contagious humor, kidding himself, twitting his audience, reversing his field at unexpected moments to sling serious thoughts into the pools of laughter he had created.

Those who were fortunate enough to be present heard the tops in after dinner speaking; heard a man whose keen insight into human nature, into life, into affairs makes him an interesting American.

Congressman Kent Keller, beloved representative from Illinois, disdained the loud-speaker and filled the room with his fine carrying voice. His understanding of architecture and construction problems made his talk of absorbing interest to everyone.

Leon Hansen, advertising expert, gave a supremely interesting talk concerned with the meat and bones of advertising. It is printed later in these pages.

Mr. Hansen makes the statement that architects are a peculiar breed of humans. That is true. Their training has made them so.

Why? Because appearance is so important to them. All of their adult life has been given to attuning their senses to the message on paper. To the average person the appearance of a message on paper is casual. "Rotten," he says. Or "Adequate" or "Very pretty indeed." His concentration does not at once rise full to the brim.

But the architect has spent his life making himself different in that respect. His eye is trained to make quick decision as to whether a drawing or a photograph or a building is good or bad or of negligible merit. The decisions must be quick or otherwise his



*Congressman Kent Keller at his genial best, which is good. Left to right, E. B. Morris, the Congressman, Harry Carter and Ray Bristol. Seeming to perch on Mr. Keller's shoulders are Charles Stratton of the Veteran's Administration and his wife.*

work would pile up on him and at seventy years of age he would just be deciding matters he should have cleared up at forty.

You cannot expect him therefore, when he turns from his drawings, to divest himself of his architectural nature, like taking off an overcoat.

Certainly not. Every piece of paper with marks on it passes before him as a technical and artistic person. His eye, trained through years for the purpose, automatically rejects or holds for further consideration.

You can bring forward all the testimony of advertising men you want to show that the standard rules of advertising hold for architect just as for everyone. That would be true over the radio, as sound is not the architect's specialty. But something printed on paper receives his expert attention—or disregard.

Some advertising pages which consist of a lot of type vomited on the page are actually painful to the architect—like sticking pins into him. Whereas the average non-technical person might simply read such a page, without being aware of the fact that it was spewed rather than designed.

On the other hand if the matter is attractively presented, the architect stops to look. And when he stops you have him.

#### JURY

The jury for the Exhibition consisted of Admiral Moreel, Chief of Bureau of Yards and Docks; L. M. Leisenring, Supervising Architect, War Department; W. C. Clark, Materials expert, Procurement Division; Arthur B. Heaton, President, Washington Building Congress, and Leon D. Hansen, Vice-President of Batton, Barton, Durstine and Osborne.

Admiral Moreel at the last moment was called to testify before the Naval Affairs Committee and was unable to be present. The Jury therefore consisted of two architects, Messrs. Leisenring and Heaton, one

engineer Mr. Clark, and one advertising man, Mr. Hansen.

The jury first had a period of prayerful consideration, during which each juror making the rounds of the 350 pages hung in the exhibit wrote on a pad the numbers of the pages which particularly appealed to him. They then assembled, compared notes and listed all of those pages which had caught the attention of two or more jurors. These pages were then removed from the exhibition line and hung together for further consideration.

There were twenty-five of these selected. They were advertisements covering materials of the following firms:

- Sloan Valve Company, of Chicago Illinois
- Hope's Windows, Inc., Jamestown, New York  
(2 pages)
- Vermont Marble Company, Proctor, Vermont
- Charles M. Higgins, Brooklyn, New York
- Armstrong Cork Company, Lancaster, Pennsylvania
- Electric Storage Battery Company, Philadelphia, Pennsylvania
- Libbey-Owens-Ford, Toledo, Ohio
- Todd Combustion Equipment, Inc., New York City
- Bigelow-Sanford Carpet Company, New York City
- Samson Cordage Works, Boston, Massachusetts
- Portland Cement Association, Chicago, Illinois  
(2 pages)
- Sparta Ceramic Company, East Sparta, Ohio
- United States Quarry Tile Company, Canton, Ohio
- National Lead Company, (Dutch Boy) New York City
- Alberene Stone Corporation, New York City
- Anemostat Corporation of America, New York City
- Minneapolis-Honeywell Regulator Corporation, Minneapolis, Minnesota
- Virginia Greenstone Company





*LeRoy Barton modestly stating that he is not smart like Congressman Barton (left background), in fact that he belonged to the Dumbarton family statement was overruled.*

Atlantic Terra Cotta Company, New York City  
 R. Guastavino Company, New York City (2 pages)  
 Rising and Nelson Slate Company, New York City (2 pages)

The jury then held a discussion of these top-flight entries. After each one had been given the works, several tentative elimination schemes were tried out. On the basis of these and the discussion, a poll of the jurors was taken. All these pages obtaining two votes or more were included in a home-stretch group. Eight pages survived this process.

A series of votes was then taken resulting in the following awards:

Sloan Valve Company	First Prize for General Excellence
Hope's Windows	Second Prize for General Excellence
Armstrong Cork Company	Third Prize for General Excellence
Electric Storage Battery Company	Award for Magnetic Quality
Chas. M. Higgins Company	Award for Clear and Simple Story

Rising and Nelson Slate Company Award for Artistic Appeal  
 R. Guastavino Company Award for Photographic Excellence

It is thought that it might not be out of place to give a very brief resume of the trend of the jury's discussion as to each page. Comments covering discussion of the twenty-four follow:

Sloan Valve Company: Advertisement at once makes clear what is being advertised, and with its fine silent-night picture simply and charmingly brings out the central idea.

Hope's Windows: Attractive composition, strong because of white printing on black background. Beautiful photograph, which however emphasized flowers more than windows.

Armstrong Cork Company: Striking photograph which together with headline definitely told story. Architectural jurors felt photograph was lacking in artistic appeal.

Electric Storage Battery Company: (Exide) This particularly interested the advertising juror, as its picture arrested attention and caused the reader to read further.

Chas. M. Higgins Company: All jurors agreed as to strong presentation of story. Story-telling black spot against white background very dramatic.

Rising and Nelson Slate Company: Very beautiful and well studied. Message not clear, because photographs show stone buildings and the word "stone" appears prominently in ad.

R. Guastavino Company: Created much discussion. Architectural jurors considered fine composition and excellent photograph. Other jurors felt not explained *what* Guastavino was.

Alberene Stone Company: (Virginia Black Serpentine) Good photographs of Erie County Jail and good arrangement. Photograph somewhat obscurely shows product.

Vermont Marble Company: Nice composition. Well-selected photograph of entrance motive of Charles Klauder's Princeton Post Office.

National Lead Company: Cleverly arranged photograph of a spiral colonial stair. Architectural jurors like it. Engineer and Advertising jurors felt it took too long to spot the name of the product.

United States Quarry Tile Company: Good selection of two very beautiful photographs of the Chapel at Fort Myer. Nice printing. Received much favorable comment.

Sparta Ceramic Company: Excellent photograph of Navy Hospital at Philadelphia combined with a nice composition of lettering. The diagrammatic drawing and the exterior photograph did not at once spell "tile."

Atlantic Terra Cotta Company: Given considerable attention by jury. Well selected photographs of the postoffice at Ridgewood, New Jersey, emphasized the subject Terra Cotta in an interesting way. The name of the company well placed across the two pages received favorable comment.

Virginia Greenstone: Good reproduction of the material.

Libbey-Owens-Ford: Interesting picture-plan of a house, with human-interest remark to head page. One has to read all the way through to get the idea "glass."

Bigelow-Sanford Carpet Company: The beautifully taken photograph looking down a stair at a wide hallway and extending out into the garden stirred up discussion. Architectural jurors felt other advertisements had more architectural and construction appeal.

Samson Cordage Works: The wreath-like circle of sash cord with infilling of white letters on a black background was felt to be a direct type of advertising. The quarter-page advertisement set in a full page made it quite impressive, a thought to be remembered in designing full-pages.

Portland Cement Association: Workmanlike photograph of a concrete school at Jackson, Mississippi with an emphatic use of the word "concrete." Ad showed expertness, somewhat lacking in appeal.

Todd Combustion Equipment, Inc.: A very clever merging drawing of buildings and an ocean liner. Material not clearly brought out.

Anemostat Corporation of America: Nice composition and clear story. A little lacking in distinction.

Minneapolis-Honeywell Regulator Company: Direct and arresting advertisement with good caption.

#### RESULTS

The exhibition may at first have been somewhat confusing, in its objectives, to many manufacturers of building materials and their representatives.

Those objectives became clearer when the exhibition was hung—on the Atlantic City principle that the only way to tell whether a girl is beautiful or not is to assemble her with a lot of others and see how they stack up one against another.

The ranging together of several hundred advertising pages brought to light the fact that there is advertising *and* advertising. Pages which in themselves appeared as fair statements of the case paled when hung beside others which for one reason or another had punch or a subtle appeal or both.

Men who had had experience in the marketing of materials commented on the fact, clearly brought out by the show, that advertising was concerned not only with the number of persons to whom you spoke but what you said to them.

One man stood before the advertising page of the company he represented. "That page cost my company plenty, which was paid on the basis that the ad would be read by a stated number of persons. After carefully going over the type of advertising against which it had to compete, I am of the opinion that



Warren Noll, of Procurement, searching for a match. Arthur Blakeslee, right, partially eclipses Roy Johnson. Half elevation of Fred Wilson at left. Other half similar.

the advertisement got into the hands of that many people but I doubt if a fifth of them read it."

Whether or not the exhibition had lasting and far reaching results, it was an extremely interesting occasion. Architects, engineers and the makers of materials assembled together and talked it all over, advertising received attention it seldom receives, materials were discussed. The world ironed out into an easy place to live and to do business in.

Long after midnight they were gathered about in groups, discussing the relation of building materials to architecture, to construction, to Pan-Germanism, to the Polish corridor, to Sally Rand, to this life and to the life hereafter.

## ADDRESS

by Leon D. Hansen

(Mr. Hansen eluded the candid camera)

Mr. Morris has asked me to speak briefly upon the psychology of advertising. I don't know just why, unless he wants to discover what goes on in the minds of advertising men that makes them write those "awful advertisements" that appear in architectural magazines . . . that is, awful to the architectural mind

. . . though we advertising men may disagree.

I think it might be more to the point if an architect would address a meeting of advertising men and tell us what goes on in your minds that makes you react to advertising so differently from your lay brethren. Then we might get somewhere. For you

*Continued on page 17*



## ... the electric supply failed just before two babies were born

**T**HE normal electric current supply was cut off from 3:00 A.M. to approximately 8:00 A.M., and with the Exide Emergency Lighting System in operation two babies were born in this hospital. The emergency system furnished light throughout the five hour period, and the Superintendent stated the performance of the Exide unit was entirely satisfactory."

The delivery rooms as well as the operating rooms of a hospital are points in which the light dare not fail. Not only must your emergency lighting system be able to take over its functions automatically, but it must operate instantaneously. In an emergency of this sort, it is usually *the first sixty seconds that count.*

An Exide System assures you of adequate, unflinching light — instantly and automatically — upon any interruption of the normal electric current supply. The

utility companies take every precaution, but cannot control the effects of storms, floods, fires and street accidents. Privately owned plants, no matter how carefully planned and operated, may also have interruptions that make an Exide System essential.

In addition to the larger, 115-volt Exide Systems, there is an Exide unit especially designed for smaller hospitals. The only attention they require is the addition of water four times a year. Write us for free bulletin.

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

**Exide**  
 Keepalite  
**EMERGENCY LIGHTING**  
**SYSTEMS**

To mark the fiftieth anniversary of Exide Batteries, a handsome souvenir booklet has been prepared, illustrating the essential part these batteries play in daily life. Write, and we will gladly send you a free copy.



Award For Magnetic Quality

PRINTED  
 IN U.S.A.





79th STREET  
GRADE CROSSING  
ELIMINATION

WEST SIDE  
EXPRESS  
HIGHWAY  
NEW YORK CITY

MADIGAN-HYLAND  
CONSULTING ENGINEERS

# GUASTAVINO CONSTRUCTION

FOR

BRIDGES • UNDERPASSES • TUNNELS  
PUMP • AND • POWER HOUSES  
AIRPLANE HANGARS • RAILROAD STATIONS  
INDUSTRIAL AND FACTORY BUILDINGS

500 FIFTH AVENUE  
NEW YORK, N. Y.

**R. GUASTAVINO COMPANY**

R. GUASTAVINO CO. OF CANADA, LTD.  
660 ST. CATHARINE STREET, WEST, MONTREAL

40 COURT STREET  
BOSTON, MASS.

AWARD FOR EXCELLENT PHOTOGRAPH



# BLACK AS THE ACE OF SPADES

THAT'S WHY ARTISTS LIKE TO USE HIGGINS INDIA INK



## BLACKS

## COLORS

### AMERICAN INDIA INKS

WATERPROOF

SOLUBLE

### ALL WATERPROOF

Yellow • Orange Yellow • Orange  
Orange Red (Vermilion) • Red (Scarlet) • Carmine Red  
Red Violet • Violet • Blue • Turquoise • Seagreen  
Green • Leaf • Neutral Tint • White  
Brick Red • Russet • Brown • Indigo



CHAS. M. HIGGINS & CO., INC. • 271 NINTH STREET, BROOKLYN, N. Y.

*Award for clear and simple story.*





do react differently. I learned that today—while acting as the lone advertising man on the Jury of Awards for the exhibits you see on these walls. There I was surrounded by Admirals, Architects, Engineers and other building experts—a veritable lamb among wolves. And, as you might expect, we didn't all agree on what was good and what was bad advertising.

The awards which were made naturally represent compromises . . . and there were many exhibits that might rate higher in some respects than the award winners . . . for the choices were very close in many instances. But, as a whole, I think the prize winners represent a fair choice from among many good advertisements.

But the results of the judging were extremely interesting to me as an advertising man. It showed how definitely the architectural mind—as represented by your jury—reacts to what I might term the artistic approach rather than the purely factual approach. Appealing headlines were distinctly secondary to the picture appeal. And much of this was in striking contrast to the advertising techniques that experience has proven to be most successful in advertising products of general use to the consuming public. There's no denying it—you are a different breed of mankind. Let me illustrate:—

For some months a group in our organization has been carefully studying the advertisements that our "Starch Reports of Magazine Readership" show to have been the "best read" advertisements in each of a number of popular weekly and monthly magazines. We have also been studying the advertisements that ranked lowest in readership in the same publications. The results of the study have been most interesting. For example, about 75% of all the "best read" advertisements have one factor in common—and less than 5% of the lowest ranking advertisements utilized this same factor. Now that's pretty conclusive evidence to indicate at least one important factor that *should* be present in one form or another, in the creation of successful advertising.

Yet, believe it or not, this factor was almost entirely missing in the group of 40 or 50 advertisements that finally reached the elimination contest to select the final awards.

So—architects are different . . . different, that is, in their reaction to advertising that features products about which they can be assumed to possess expert knowledge. I dare say, however, you would react to an advertisement of toothpaste or cigarettes much like the rest of us human beings.

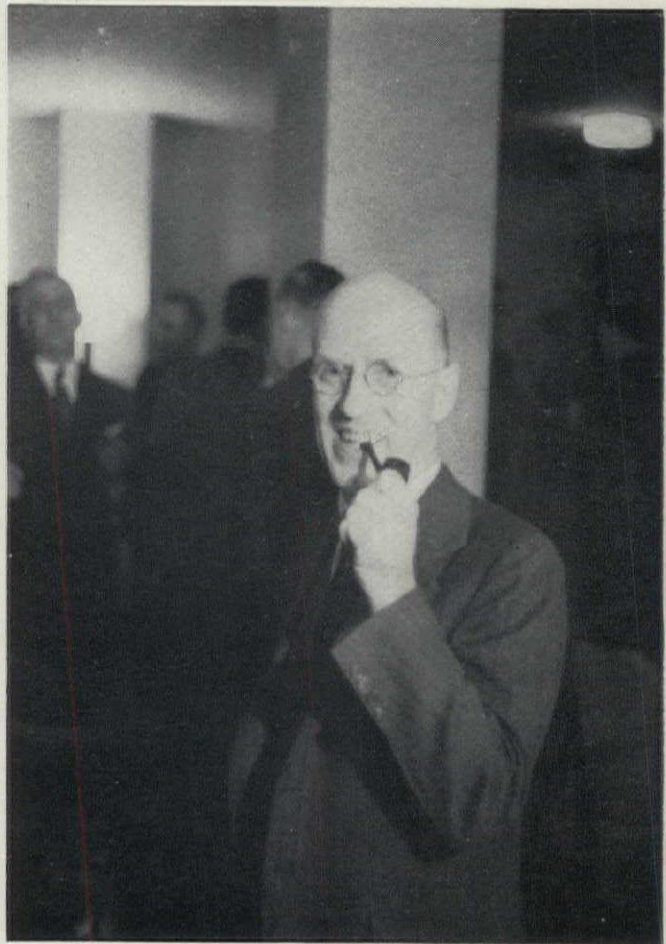
But, seriously, the important thing, from an advertising man's standpoint, is to discover how we can present the products about which we write in such a way as to gain your attention, interest and approval so that those products may be written into your specifications. And these awards may give us a clue.

In my own experience I have often prepared several different types of advertisements for a product and then taken those suggested advertisements to a large number of architects and frankly asked which type presented the product story most interestingly and most convincingly to them. The results of such tests have almost always checked closely with actual results when the chosen advertisements were run in

the publications. So you see we advertising men are trying to make our advertisements more interesting to you—and more effective for the manufacturers. Progress is being made.

And I may say that I was very much impressed with the generally high character of the advertisements exhibited here today. The attempts to be clever at the expense of good taste, which sometimes shocks us in the pages of general publications, is almost entirely lacking in these exhibits. There is little flamboyancy. As a whole the exhibits represent a straightforward attempt on the part of manufacturers to tell a simple and honest story of the merits of their products. And that is always a big step in the right direction. I only hope that more and more advertising may be written in accordance with that wise saying which is too infrequently quoted—"Few people recognize the value of *understatement*." There is such vitality in truth itself that it carries more conviction and power than all the adjectives man can use.

Truthful advertising is one of the world's most powerful tools for bringing about business progress and prosperity . . . let us have more of it. And if exhibits such as this will help to bring this about—let's have more of them too.



*William Dewey Foster, consulting architect and star constituent of Bruce Barton's has an inspiration about the new War Department building. In the pea-soup fog of the right background (take our word for it) is wavy-haired Mr. Meissner of U. S. Steel.*



Harris and Ewing



*Exterior view of "The Lindens," an experiment in the little-known art of house-transplanting. The house was built in Marblehead, Mass. in 1754 and was brought to Washington in 1936. It shows no ill-effects from the journey. Perhaps there is a tendency, as it whispers, to other houses, for it to say "Now when I was in Marblehead—"*



*The Hallway. The floors are painted and at the borders can be seen, faintly, the decorative pattern. On the walls is a beautiful Colonial mural wall-paper.*

*Harris and Ewing*

## THE LINDENS

*House of Mr. and Mrs. George Maurice Morris*

The neighborhood is very modern, carefully designed, carefully tended. Across the street is a house under construction designed by Paul Cret; nearby one of Lindeburg's. One feels leisurely, comfortable, in a scene representing the best of his era.

A curve in the street and this other house. It is also leisurely, comfortable, in the mood of the street, but less eager, more reminiscent, concerned with the events of many pasts.

Large in a stately, spacious way, its frame exterior speaking of an age generous with wood, it stands quaintly behind its wooden fence, smiling yet

not laughing, as one whom the years had taught to be pleased with the charming world as it passes but never too eagerly enthusiastic.

I am, I think, like the audiences of India, which willingly see the rope thrown aloft and the boy thereupon climbing, disappearing into the sky. The illusion seizes me. I am a perfect stooge for the messages from the past. This house, "The Lindens," parcel-posted to Washington from New England and carefully restored by Mr. Macomber of the Williamsburg coterie (by some miraculous identification system) caught me, carried me back.



*The Drawing Room. This woodwork is a replica, the original being in a museum at Kansas City.*

Fortunately there were few persons in the house. When one is batted back and forth between a group representing 1939 and a scene representing 1740, the quick changes of mood cause too much friction.

A maid showed me into the "Drawing Room." It was a square room, fireplaced, cupboarded, window-seated, panelled on the ceiling. The green tint of it did something for it, made it livable, kept it in its period, made one think he was remembering things long past.

Mrs. George Maurice Morris, my hostess, came. She was perfect as a guide and interpreter. In her attitude toward the house, she isn't modern at all. She goes with it. She touches the walls and the furniture with affectionate gestures.

I could not describe the house. It is the Georgian period, as if written and photographed in the eighteenth century. It is not a relic of the past, it is the past, carefully and conscientiously kept so.

It is the Williamsburg theme, made a little more real and human by the fact that it is lived in instead of being merely visited.

It has a quality, a mood that I caught on two occasions at Williamsburg. While something was being explained to the group to which I was attached, I found an old book on one of the tables and was lost in a vivid account of the trial of Captain Kidd, until someone touched me on the arm and asked me to keep with the party.

Again in the Governor's palace, I stood by a girl, who gently, softly played the harpsichord. A courier came to invite us to another portion of the house—from which locality, obviously, the harpsichord could not be played.

These incidents were unimportant, but they gave the faint conviction that the buildings were for showing and not for use. "The Lindens," however, is alive—historic, yet going on.

The idea that prompted the removal of this house from its habitat at Danvers, Massachusetts, and the setting of it up in Washington, is, or should be, of great civic value. All over the country we briskly destroy the memories of the past. It is expensive to preserve them. In Philadelphia they are struggling to prevent destruction of the old Custom House. The little town of Smithfield, Virginia, has manfully kept its ancient Court House. The Society for the Preservation of New England Antiques patiently acquires and restores valued historic houses.

One cannot but commend enthusiastically the action of Mr. and Mrs. Morris in preserving this house, which is such a lovely memory of the past. But it should not be commended merely as an isolated achievement, as something merely which two persons wished to do. It is, rather, a practical method of helping to save from destruction the evidences of former days—a fine civic example.

That is not pure sentimentality. As a practical thing, we must not permit links to the past, year by year, to be reduced. Culture isn't a thing that can be compressed into the absolute present.

After going through the house, one feels grateful to the Morrises for the pleasure in seeing it and for their action in preserving it. A building is so helpless, so at the mercy of the current generation. The service of Mr. and Mrs. Morris in saving it one likes to think of as being kind to the house and as well kind to all those who will see it and feel keen pleasure that its existence has been prolonged.



*Stone Church*

## ARCHITECTURE IN OTHER CLIMES

### RHODESIA, SOUTH AFRICA

by L. E. Tull who from 1921 to 1927 was construction engineer in that country for the Methodist Rhodesia Mission.

An engineer or builder working in South Africa, particularly in the less settled sections, finds much that is different from standard practice. And he usually has to solve his own problems, as technical help is not available. In spite of certain disadvantages however, it is interesting work and provides excellent experience for a young engineer.

Native buildings offer little inspiration to the architect, as they are of the crudest type. The walls are of poles set in a shallow circular trench and tied with strips of bark to hoops made of saplings. Roofs are conical and of poles and sticks thatched with grass to keep out the rain. One opening is provided to serve as a door, and the floor is made of stiff clay beaten smooth with paddles. The walls are plastered inside and out with clay, after which the final touch is put on by smearing the floor with fresh cow dung! However when dry this gives a smooth, polished, odorless surface that is vermin proof and easy to keep clean. Such a floor finish could hardly be recommended for public buildings, but does very well for a pole and mud hut.

Native churches are generally of the same construction but larger, with window openings in addition to the door, and rectangular rather than circular in plan. Other materials sometimes used are large sun-dried brick ("Kimberley" brick), burned brick, and field stone. Tamped earth (*pisé-de-terre*) has also been used, which requires forms of 2 inch material with ties of  $\frac{3}{4}$  inch threaded rods. A mixture of the proper proportions of sand and clay with only enough contained moisture to hold it together, is thrown into the forms and well tamped in six inch layers. When dried out it becomes almost as hard as concrete, and if protected from rain will last indefinitely.

Work under the supervision of the writer con-

sisted of a hydro-electric plant, some surveying and miscellaneous work, and a number of mission buildings, which usually were small units even when part of a hospital or school. The experience of the government and of other missions has shown that heathen natives are afraid of large buildings and will not use them.

A few buildings were designed by architects, but ordinarily a committee of missionaries selected the general design and made rough floor plans. The writer designed the structural features, drew up plans and estimated costs. After completion of the preliminary work it was submitted to the committee for final approval.

Most mission buildings were of brick, which were made by the natives from clay puddled with their bare feet and moulded by hand. After drying and seasoning the brick were built into kilns and fired with wood. The clays in the eastern part of Southern Rhodesia produced brick ranging in color from yellow or light buff to a dark red.

Foundations were commonly of brick or field stone, although concrete was sometimes used. An essential feature of each foundation was the "ant course" for protection against the termites. This was a through course consisting of strips of sheet metal with the ends locked or soldered together, and extended about half an inch outside and two or three inches inside the face of the foundation wall. Space was provided under the floor for frequent inspections, so that there was no possibility of the sheet metal being bridged by the mud tunnels upon which the termites depend for the necessary contact with damp earth. Great pains were taken at steps and other connecting structures to see that no places were provided where the termites could gain access to the building, for a single weak place in the protection



Engineers "Residence." The animal head is that of a koodoo, shot for meat.



Tamping Pise-de-terre walls.

would result in the ultimate destruction of the building. Even concrete was not satisfactory, for in some cases the termites seemed to get into it while it was soft, and made tunnels for future use.

As imported materials were expensive, every effort was made to use local materials. It was found that an acceptable substitute for mortar for brick walls and stonework could be obtained from the hills made by termites. The clay contained a cementing material, and when mixed with enough sand to prevent cracking produced a satisfactory mortar for the small buildings required for mission use. The same material was used for plaster, and was found to set up fairly hard, and could be troweled to a reasonably good finish.

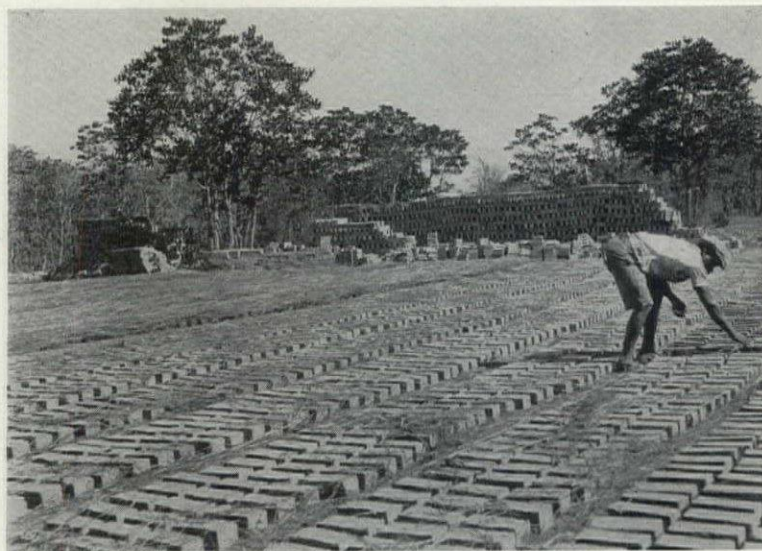
Other materials were generally imported—corrugated iron roofing from England, timber from Sweden, and portland cement from Belgium or Sweden. While there was some teak and mahogany in the country, most of it was too far from the towns to be of use, so most lumber was imported as 12" x 12" sticks, which were sawed into the desired sizes, the most common dimensions being: 1 x 3, 2 x 3, 2 x 6, 3 x 6, and 3 x 12. Portland cement was manufactured at Bulawayo in Southern Rhodesia, but the high freight rates made it more expensive than the imported cement, which had the advantage of a shorter haul by railroad.

Usually buildings were located some distance from the railroad, and it was necessary to ask for delivery of materials at the railhead from one to

four months in advance. Transportation was by ox wagons each pulled by sixteen oxen, and hauling normally from two to six tons. However, during the rainy season some of the roads became almost impassible, and even by lightening loads and doubling up the oxen it was hard to get materials through. As the rainy seasons are about three months long, it was found advisable to have on hand all material needed during that period before the rains came.

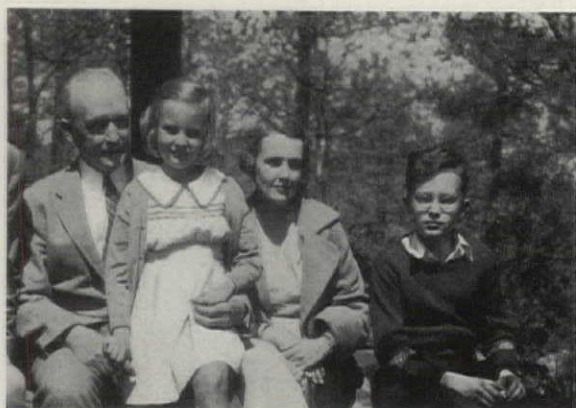
Labor was ordinarily abundant and cheap, although sometimes there was a shortage of native mechanics. Laborers received \$5 per month and mechanics from \$20 to \$30, all employees being boarded on the job at the expense of the employer. Government regulations prescribed the minimum kinds and amounts of food that had to be provided. Meat was required twice a week, and was provided either by buying oxen from the natives or by shooting some of the big game that was found in certain sections.

No experienced workmen nor really skilled mechanics were available, and careful supervision was necessary to obtain even a fair job. The natives found it hard to get accustomed to the white's man's insistence on having everything just so, and could not understand why the "baas" made such a fuss about a wall being an inch or two out of line, when in their opinion it might just as well be curved as straight. But considering their background, and the limited experience of most of the mechanics, they did very well, and under the right conditions very satisfactory work was turned out.



Drying brick. Brick piled for seasoning in background.

## OBITUARY



*Jack Bollenbacher and Family.*

### JOHN CARLISLE BOLLENBACHER

Born Feb. 17, 1884

Died Mar. 4, 1939

Graduate of Indiana University and of Mass. Inst. of Tech.

In the Air Service 1917-1919.

Firm of Lowe and Bollenbacher 1910-1924.

Firm of Granger and Bollenbacher 1924-1939.

Past President Chicago Chapter, A.I.A.

Past Vice-President Illinois Society of Architects.

Fellow of American Institute of Architects.

Member of various Professional and Civic Committees.

Architect of important Buildings for Indiana University, Northwestern University and the University of Illinois; of Buildings for the State of Illinois; of the County Court House at Oshkosh, Wisconsin; and of several Apartment Houses and Residences.

Consulting Architect with the Treasury Department 1934-1936.

These are the simple facts; but for those of us who had the good fortune to know Jack Bollenbacher intimately there was much more. His keen interest in architecture in all its phases made him a helpful friend and his kindly, quiet nature, with his nice sense of humor, made him a welcome companion at all times. Even and calm, he was sought for his counsel and respected for his judgments.

During the year and a half that he was in the Procurement Division he produced a number of fine buildings, notably the Post Office at Evanston, Illinois. While here he gained the respect of all those who came in contact with him and the loving regard of those who came to be better acquainted with him.

A fine architect, a loyal friend, a loving husband and father. Jack, we salute you!

W. D. F.



### ERNEST GEORGE SCHURIG

Ernest George Schurig died of pneumonia at his home in New Haven, Connecticut on February 12, 1939, after an illness of nearly a year.

Mr. Schurig was born in New Haven, February 18, 1874. He was graduated at Yale University in the class of 1895 as Ph. B. in Civil Engineering.

From 1895 to 1898 he was employed by the Union Bridge Company of Athens, Pennsylvania in their office, designing and detailing structural steel work for bridges and buildings; then was appointed Assistant Engineer on construction work in the field, and in 1898 was sent to Florida to supervise the erection of wharves and coaling stations, and marine foundation work at Key West, Florida.

At the outbreak of the yellow fever in 1900, which resulted in the death of Mr. MacDonald, the President of the Union Bridge Company, Mr. Schurig came North and obtained a position with the New York Central and Hudson River Railroad Company in their Bridge Engineering Department.

From 1902 to 1904 he was with the Navy Department in the Bureau of Yards and Docks at the Philadelphia Yard, and also at New London, Connecticut.

He prepared plans and designs for structural work, and checked other work for many projects including sewer systems, coal pockets, retaining walls, also architectural engineering.

On May 13, 1904, he entered the office of the Supervising Architect as a Structural Engineer, and remained in the Washington Office until 1910, when he was appointed a Superintendent of Construction at large, and was detailed to supervise the remodeling and enlargement of the U. S. Post Office and Court House at Peoria, Illinois. From that time until 1917 he was in charge of the supervision of various Federal Buildings at Rock Island, Illinois; Lincoln, Nebraska; Marshall, Missouri; Mexico, Missouri, and Lebanon, Pennsylvania.

While at Lincoln, Nebraska in 1916 he was elected a member of the American Association of Civil Engineers, and retained his membership up to the end of his life. He was also a member of the Yale Graduates Club, the Appalachian Club, and the Knights Templar of New Haven. His war service consisted in his being a member for two years of the Business Men's Training Camp under General Wood at Poughkeepsie, New York.

In 1917 he was appointed a Supervising Superintendent of Construction with headquarters at New Haven, Connecticut, and in 1924 was made a District Engineer. In 1933 his headquarters were moved from New Haven to Boston, succeeding Mr. Pearson, Supervising Engineer, who was retired about that time.

He was a charter member of the Society of Constructors of Federal Buildings, and in 1918 was elected President of that society, serving as such for two years.

Mr. Schurig retired from the service October 15, 1938, on account of ill health, and until his rather sudden death, his friends and family had hoped for

his ultimate recovery.

In the death of Ernest G. Schurig the office of the Supervising Architect lost one of its most capable and efficient engineers in its service, and the numerous Construction Engineers, District Engineers, and many of the personnel of the Washington Office, one of their most loyal and best friends. He was a man of unusually fine characteristics, combining a highly refined, sensitive nature with a broad tolerant human understanding. He was by nature and education refined and highly cultured and always willing to listen and sympathize with those with whom he came in contact, less fortunate than himself. He was possibly one of the best known and beloved of the District Engineers, a man with many friends but few intimates.

It was my privilege to be one of those few intimates, and although deeply sorrowed by his death I consider it a great favor to express in these few lines my appreciation of his high ideals. His whole life was an inspiration and a living expression of all that was true and upright.

My first acquaintance with Mr. Schurig occurred in 1910 at Peoria, Illinois, and we immediately struck up a friendship and fellowship which lasted to the very end. From that time on our contacts were not as frequent as desired, but we maintained a regular correspondence which was mutually beneficial.

Some years ago, Mr. Schurig, Mr. Richey and myself formed a sort of triumvirate, which our devoted friend, Miss Julia M. Foley, who passed away not long ago, styled "The Three Musketeers", whose motto, applied by Mr. Richey, was "one for all and all for one," similar to the original by Dumas. During the many years, nearly eighteen or twenty, of this combination, we established a sort of miniature roundrobin letter, which endured up to the time of Mr. Schurig's fatal illness.

This intimate contact was most helpful and beneficial, and formed a sort of esprit de corps which brought out the best thoughts, opinions on various problems, and experiences, and resulted in a very well balanced judgment, which we believe permeated farther than our immediate selves.

It may not be out of place here to state briefly that the present better financial condition of both the Office and the Field—by that is meant increase in compensation—was due primarily to the constant efforts and persistence of the Three Musketeers in presenting their case to the Appropriation Commission in 1920-21, with the result that the Supervising Superintendents' salaries were raised from \$2900—the top at that time—to \$3500, and for a year or more the six District Engineers were receiving more compensation than the boss, our good Judge Wetmore, who directed us. Later, as a result of this campaign, the office personnel came in for their proper reclassification. Mr. Schurig and Mr. Richey were very active in this campaign, Mr. Schurig having attained the title of "Chief Door Opener", while Mr. Richey and myself followed up the entry with stating our case and arguing same. Finally we succeeded in obtaining a hearing before the Appropriation Committee (an unheard of procedure), and with a very

elaborate presentation of our case by Admiral Fry and Mr. J. W. Roberts, who were members of our special committee, we finally convinced the sub-committee of the merits of our request and the start was made, which has resulted in the present status. Mr. Schurig was as zealous and as interested in this procedure as either Mr. Richey or myself, and deserved much credit for its success.

Besides Mr. Schurig's highly technical background he was unusually genial, full of fun, generous to a fault, and enjoyed a joke on himself as much as on others. He was religious but not sectarian, and while in Peoria was active in the Sunday School and in the Church choir; and in all his assignments he left a remarkably lasting favorable impression. He was given some very difficult assignments, and I am sure he measured up to the confidence that was placed in him by his superiors.

All those who knew him, I am sure, received a ray of sunshine from his presence, and his many friends will long remember his cheerful and sympathetic nature, and miss his happy and interested smile.

ALLYN A. PACKARD

Ernest Schurig was one of my dearest friends and his death leaves a vacancy which will never be filled. We have lost a true and tried friend and the Office has lost an employee whose replacement will be difficult.

While in close contact with him for many years in connection with the affairs of the Society of Constructors of Federal Buildings and our work of several years in obtaining a fair salary rating and classification for both the field and office employees of the Supervising Architect's Office, I found him to be an indefatigable worker, and one who never gave up until success was obtained.

Knowing, as I do, his devotion to the position he held, and laboring night and day to perform the many tasks imposed on him, I have no hesitation in saying that he gave his life to his work; it was this devotion and labor which brought about the illness which finally resulted in his death.

I am proud to have been one of his closest friends, for by contact with such men we absorb some of their personality and thus are our lives improved.

Our friend has gone, but the impressions made by him during his life will remain.

H. G. RICHEY

#### MRS. A. EARL PATTERSON

The news is received of the sudden death of Mrs. A. Earl Patterson, who passed away in the Lakeview hospital where she had been receiving treatment for a chronic ailment.

The sympathy of the community goes out to Mr. Patterson, who in the capacity of inspector of the Procurement Division of the Treasury has been in Lakeview since early last spring in connection with the new Federal building. The Pattersons came here

(Continued on page 25)



# OLD NEW YORK POST OFFICE IS TORN DOWN

Light of a new realty era dawned in the City Hall Park District as the result of the passing of the old General Postoffice, which for two generations cast its shadow over the southern extremity of that historic neighborhood.

The last of the ponderous walls of the grim and dingy building have just been battered down and the ruins have been scooped out and carried away as Spring approaches to prepare the site for beautification and restoration of land which once was a Colonial commons.

The demolished structure, which had been referred to many times as an "eye-sore" was once the pride of that section of New York City. The Federal Government had spent about \$7,000,000 on it. By courtesy its style was called a combination of Renaissance and Doric, whatever that strange mesalliance may have signified. In any case the design was far removed from this functional age.

The most frequent objection to the building was that little effort was made to keep it presentable. Its bulk and dinginess oppressed the whole neighborhood.

The building was called a five-story one, but most of the stories were twice normal height, the first being thirty feet in height. From curb to roof the main part was 112 feet high, but the Byzantine-like dome went fifty-six feet higher.

In favor of the vanished "G.P.O." it may be said that in solidity it probably surpassed any building in New York City, as the wrecking contractor found to his sorrow. It had been designed in the Eighteen-Sixties, and after long and tedious years in construction was opened in 1875 for postal and other Federal business.

This was before the debut of the steel-frame skyscraper, and the walls of the structure had to bear the weight of their upper portions as well as of beams sustaining the floors.

The outer walls of the venerable structure were found by careful measurement to have been ten feet six inches thick. At their bases their main part was brick of superior quality, and they were faced with excellent, closely compacted Maine granite once of a light gray hue. The brick was bound together with heavy iron rods and the materials were practically a solid mass, as they were united by a cement so strong it resisted attack even better than the substances they united.

The contractor who expected to raze a building found he had a fortress on his hands. The window frames were of plate armor, such as used for battle-ships, and the lower floors and basements had iron and steel girders, while the dome, a gigantic "bird cage" under its slate covering, was a combination of interlacing lengths of wrought iron. This citadel must have been planned with the prospect of resisting mob attacks such as those of the draft riots in the Civil War.

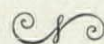
Demolition contractors ordinarily count on dismembering a building and selling some stone blocks and brick after they have been duly cleaned. This practice did not work out well here, because the cement held them in such a fast embrace that the walls had to be battered down by swinging iron balls against them from the cables attached to huge steel booms. The balls, called "skull crackers," weighed from 1,500 to 3,400 pounds each. So great was the resistance they found, however, that many of them were shattered against the ponderous battlements they assailed.

A perplexing problem was the protection of the pneumatic postal tubes in its basement. The tubes had been extended to the new downtown Church Street station in the Federal Office Building, and had been operated during all the turmoil of destruction. They will continue to function under the restored park area.

In anticipation of the passing of the building, realty owners have been making improvements. Several buildings have been modernized both outside and inside and thereby harmonizing with the recently cleaned Municipal Building and the Hall of Records.

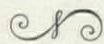
The City Hall Park Association and similar organizations are urging that no time be lost in the rehabilitation of the City Hall itself, much worn by time. Eventually it is hoped that the old Tweed County Court House will be razed, and the removal of the statue of Civic Virtue to Foley Square is already scheduled. The City Hall Park, as the execution of existing plans advance, will thus become the vestibule of the expanding Civic Center.

From the *New York Times* of March 12, 1939



## CELOTEX BOOKLET

Written especially for architects, contractors and laymen interested in modern heat and sound insulation materials valuable for concrete wall construction is a new twelve page folder, "Build Better Buildings with Pottscos Lightweight Concrete Units." Just issued by Pottscos Division of The Celotex Corporation, Chicago, Illinois, this distinctive folder describes the product and its uses in building construction with illustrations, facts and figures. Part of the folder is devoted to giving a clear, concise, semi-technical explanation of heat insulation and drawing an unusual distinction between sound absorption and sound transmission with suggestions for dealing with each. A valuable reference guide for all those interested in concrete wall construction for home, skyscraper or industrial plant, this folder is free for the asking by writing The Celotex Corporation, Chicago, Illinois.



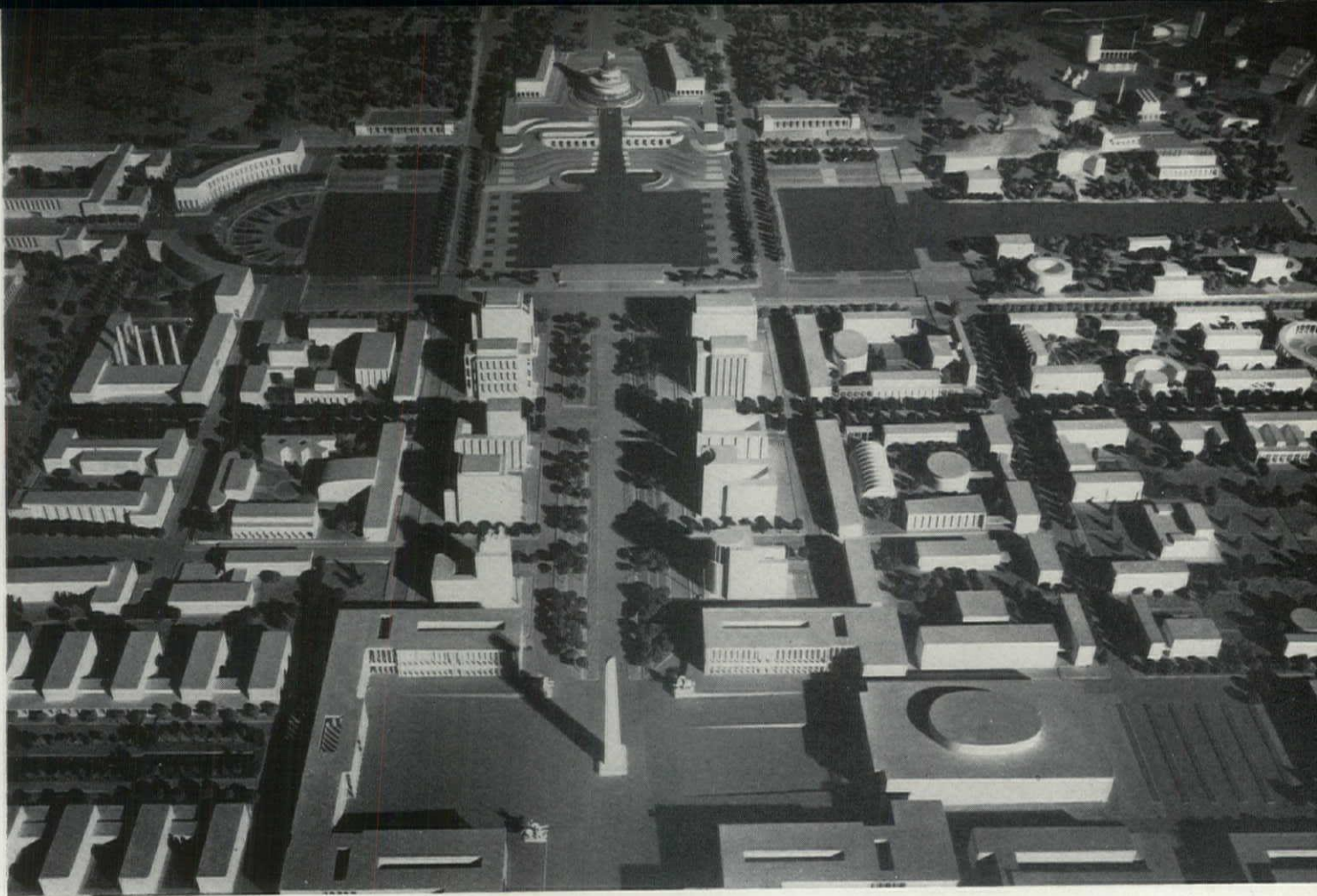
(Continued from page 24)

from Alaska, where he had been supervising a similar construction project.

Mrs. Minna Patterson was born in Christ Church, New Zealand, April 19, 1891. She is survived by her husband and by one son, Wade Patterson, who is attending Lakeview high school.

Services will be held from the Ousley chapel Rev. Frederick J. Moore officiating. Interment will be made in Sunset Park cemetery.

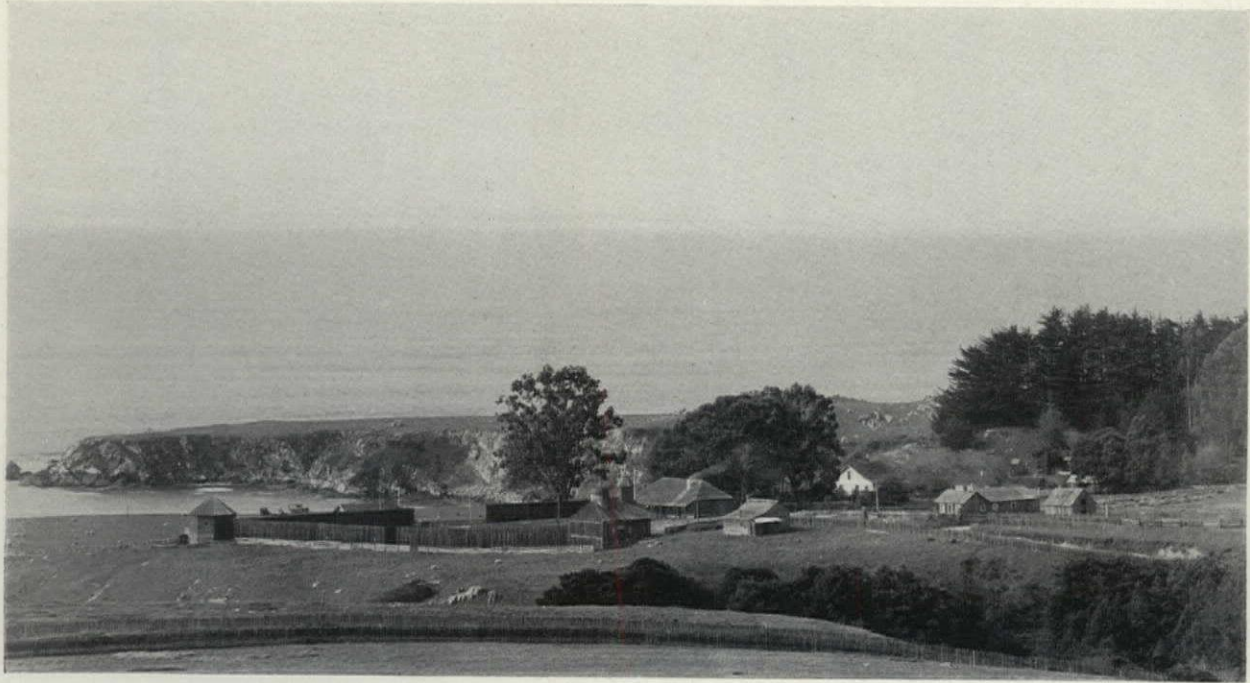
*Lake County Examiner, Lakeview, Oregon.*



ROME EXHIBITION. Herewith is a picture of a model of the exhibition to be held in Rome in 1942. The announcements state that it is to be held to celebrate the glorious and victorious Italian empire.



ROBERT MILLS, ARCHITECT. This building, at Camden, South Carolina, was designed by Robert Mills. It is now the headquarters of the Camden DAR Chapter.



*View of Fort Ross, as now in process of restoration.*

## WHERE RUSSIA COLONIZED CALIFORNIA

*By Clarence E. Clar*

September 11, 1812, was the birthday of the Czar Alexander, Emperor of all the Russias. In California, halfway around the world from St. Petersburg, on a hillside, flanked by rugged cliffs, rising above the ocean shore, a celebration in the Czar's honor was taking place. The occasion was the dedication in this new land of a Russian military outpost by Ivan Kuskof and his company of ninety-five Russians, eighty Aleut hunters, and a few timid, half naked California Indians. They named the settlement "Ross," the word having its origin in "Rossiia," or, in English, Russia.

One hundred miles to the south lay San Francisco, military headquarters of Spanish California. To the north, the British were claiming the wilderness of Puget Sound, comprising all the territory between the Columbia River and Alaska. And still farther north, lay the settlement of the Russian-American Fur Company at Sitka, or Nove-Arkhangelsk as it was then called.

Six months prior to the dedication of Fort Ross the site was purchased from the Indians for "three blankets, three pairs of breeches, two axes, three hoes and some beads."

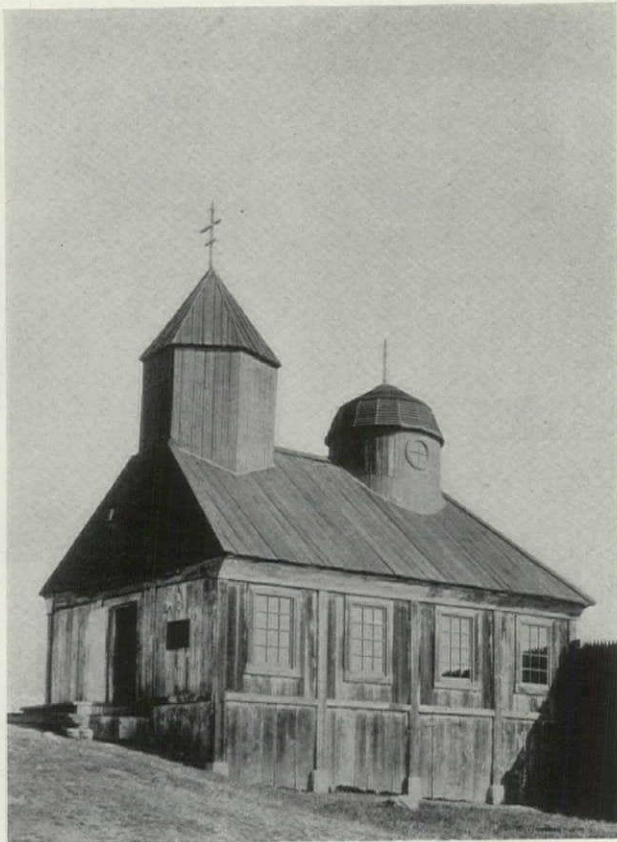
The idea that led to this occupation by the Russians dated back to much earlier circumstance. In 1728, Catherine of Russia had commissioned Vitus Bering to embark upon a cruise of discovery into the unknown Northern Pacific Ocean. Bering sailed along the shore of Kamchatka into the Arctic Sea and demonstrated that America was not a part of Asia as had been so long supposed.

The starving survivors of his expedition returned to Mongolian territory. Dressed of necessity in furs of the seal and sea otter, these men to their surprise, were paid a fortune by the Mandarins in exchange for their garments. This provided the impetus for the founding of the Russian-American Fur Company in St. Petersburg, and for the resulting activity in gathering furs which encompassed the Aleutian Islands, founded Alaska, and in time, extended to the coast of California.

Unlike the Spanish, the Russians were not religious missionaries. Their action in acquiring new territory was motivated entirely by the interest of industry.

To provide food for the fur settlements of the far North was the ever increasing problem of the Russians. Famine had often taken tragic toll. Wheat for Russian bread had to be transported thousands of miles across the steppes of Siberia and the Pacific Ocean, even to California during the early months of the settlement, situated as it was on the threshold of one of the world's richest granaries.

Soon after the beginning of the nineteenth century, the Russian Chamberlain, Count Nikolai Petrovich Rezanof, was commissioned to investigate and further the activities of the Russian-American Fur Company. Arriving at Sitka in 1806, he found that settlement in the throes of famine. He then sailed south in the ship "Juno," intending to found a colony at the mouth of the Columbia River and to wrest from Spain a large part of Northern California. However, he later decided to effect a conciliation if possible with the Spaniards. In this capacity he



*The chapel as restored after the earthquake of 1906.*

visited Commandant Arguello at the Presidio in San Francisco. Out of this a romantic love story developed. The Count and Dona Concepcion Arguello, sister of the commandant, fell in love. She was bored with the Indians and the never ending drab routine of the fort. The prospect of a brilliant society life in St. Petersburg no doubt appealed to this beautiful young girl. She accepted his proposal of marriage, much to the consternation of the Padres, her own family and the Spanish officials. The objections of Governor Arrilega were finally overcome. However, it remained to reconcile the difference existing between the Greek Catholic church and the Roman Catholic church.

As soon as the betrothal was announced, friendly trade relations were established. The Russian ship was loaded to capacity with provisions consisting chiefly of wheat, flour, and dried meat. The needful condition at Sitka was soon relieved by the successful voyage.

Count Resanof sailed away with the promise to return for Dona Concepcion as soon as he had obtained the Czar's consent to the marriage. The Padres were to refer the matter to the Pope, and pressure from St. Petersburg was also to be arranged in that direction. On his way to St. Petersburg during the next year, Count Resanof became ill and died. Senorita Dona Concepcion awaited his return for many years. Refusing many offers of marriage she remained constant to his memory. Bret Harte in his poem of the romantic story wrote the following lines:

"Long beside the deep embrasure, where  
the brazen cannon are,  
Did she wait her promised bridegroom  
and the answer of the Czar;  
Watched the harborhead with longing,  
half in faith and half in doubt,  
Every day some hope was kindled, flickered,  
faded, and went out."

Finally, despairing of his failure to return, Dona Concepcion entered the convent of St. Catherine in Benicia. It was thirty-six years after the departure of her lover that she learned of his death.

The Russian-American Fur Company was greatly elated by the success of Count Resanof in obtaining provisions from California. They requested the Russian government to obtain permission from the Spanish government at Madrid for them to continue trade with Spanish California. The Russian government was unable, however, to negotiate such an agreement, or even to obtain a satisfactory answer. They advised the Russian-American Fur Company to attempt trade relations regardless, and in the event of failure, to take steps toward establishment of a colony in Northern California.

During the next few years the Russians hunted sea otter along the northern coast of California. At the same time they explored to find a suitable place for a colony. Land adjoining Bodega Bay was considered suitable for raising wheat and vegetables. In 1809, a small settlement was started there which the Russians called Romanzoff. Due to the warehouses and the amount of provisions accumulated at this place, the Spanish called the settlement Bodega, meaning "storehouse." On the unforested strip of land eighteen miles north of Bodega, where a small cove in the coast line provided a partial shelter to ships from northerly gales, the site of Fort Ross was chosen.

The Spanish were soon advised of the founding of the Russian colony and of its activities. To the first Spanish party of investigation, which arrived at Fort Ross, the Russians explained the trade benefits which would be derived by the Spanish from the colony. The Spanish were encouraging.

Governor Arrillego was even friendly enough to permit trade, although Russian vessels were never allowed to enter San Francisco Bay.

In 1813, Arrillego died. The next Spanish governor, Jose de Arguello, was unfriendly toward the Russians and demanded that Kuskof, the Russian governor, evacuate the colony immediately. Pablo Vincente de Sola, who replaced Arguello in 1815, was even more hostile. General public opinion, however, had recognized the Russians as being not undesirable neighbors. The Spanish sent several deputations to Ft. Ross to protest against the illegal settlement, but the Russians employed a method of passive resistance to the demands to vacate. The Spanish officer would make his official demand. The Russian governor would reply that he could not act without the permission of his government and that the matter would be referred immediately to the Czar. This disposed of the business at hand. The visiting party would then settle down to enjoy the Russian hospitality.

In constructing Fort Ross, the Russians enclosed a rectangular plot of ground, containing about two acres, with a stockade. The length of the enclosure was 312 feet and the width 228 feet. The length followed the contour of the hillside and the angles of the stockade were placed very nearly on the cardinal points of the compass. The northern and eastern angles were on the uphill side and directly between them was the governor's house. It faced the large pair of swinging gates in the center of the downhill side of the stockade, which formed the only entrance to the enclosure. The edge of the ocean cliffs were a short distance away from this downhill wall.

The walls of the stockade were constructed of riven redwood timbers, eight inches thick and twelve feet high and provided with occasional openings for cannon. The timbers were securely bedded into the ground and braced from the inside. At the north and the south angles of the stockade were constructed octagonal bastions, each about twenty-five feet in diameter and two stories high, with conical roof and flagstaff. The walls of these bastions were formed of hewn redwood timbers, eight inches thick, and nicely mortised at the corners. They were each furnished with six cannon. The walls of the stockade connected with the bastions in such a way that three sides of the octagonal structure remained within the stockade enclosure. The eight walls of the bastions each had two loopholes, one for each story height. One loophole was placed in the heavy entrance doorway. They were thus arranged so as to be able to bring all within the stockade under the range of cannon and muskets. The pieces of artillery could easily be shifted from the outside embrasures to the ones on the inside walls in case it became necessary to quell a mutiny, or to withstand a treacherous attack by natives. The stockade was believed to be practically invulnerable against any implement of assault likely to be brought against it in those days.

It is an interesting fact that most of the cannon and muskets employed by the Russians in this fortification were French weapons abandoned by Napoleon's army in the retreat from Moscow, in 1813.

Near the stockade wall which connected the north and west corners of the enclosures were two buildings. One was a roughly constructed two story building, twenty-eight feet by eighty feet in plan. It was used as a barracks by the men of the garrison. The other was a one story building, twenty-nine by fifty feet in plan, very well constructed. It was used for officers' quarters. Along the lower side of the enclosure were other one story buildings. They were warehouses for provisions and supplies, the kitchen and well house, and the jail.

At the eastern corner of the stockade was constructed the chapel. It was twenty-five feet by thirty-one feet in plan, and strongly built. Two of the walls formed the corner of the stockade. These walls were pierced by loopholes for cannon. The entrance to the chapel faced the governor's house. There was a vestibule about ten feet by twenty-five in size; thus leaving the auditorium, twenty-one feet by twenty-five feet, where comfortable benches were placed for seats.

Directly over the entrance end of the building was

the belfry tower, hexagonal in plan, with the six sided peaked roof terminated by a Greek Catholic cross. In this were beautifully toned bells. Over the center of the auditorium occurred a cylindrical dome-like structure having a curiously shaped roof. Instead of a gable at the end of the chapel opposite the belfry, the roof sloped sharply back. The entire chapel was lighted by four large windows evenly spaced on the downhill side of the chapel.

Practically the entire building, including the roof, was made of long planks, either sawed or riven from redwood. A considerable degree of carpenters' skill was displayed. Mouldings were provided for the inner door and window casings; an attempt was made at a cornice around the exterior of the building.

Perhaps the most interesting characteristic of the chapel was the attempt of the Russians to create the forms of the traditional multiple domed church architecture of their homeland with the limitations imposed by the materials at hand. Their compromise with the use of straight splitting redwood resulted in the pair of curiously formed cupolas which crown the edifice.

Outside the confine of the stockade were about twenty-five small dwellings houses. These were mostly occupied by the Aleut hunters and their families, and by local natives who were employed by the Russians. Situated near the village was a windmill, which provided the motive power both for grinding grain and for a stamping machine used for grinding tan bark. This mill produced all the flour used here and at the Bodega Bay settlement and a considerable amount for the annual shipment to Sitka.

The rear portion of a large building, eighty feet by one hundred feet, located some distance away, was used as a tannery. The Russians were here able to manufacture a very good quality of leather, and did so in large quantities. The front half of the tannery, or that fronting the ocean, was used as a workshop for the construction of ships. Several sea-going vessels and fishing boats were built here. To the Russians must go the credit of launching the very first ship of any kind to be built in California. It appears that the vessels were not very successful due to their using redwood and other local woods.

Also forming a part of the settlement were the storehouses, the bakery, the blacksmith, cooper and carpenter shops, the pit and whip-saw, the well and the bath house.

The historian Hittell, in his History of California, makes the following comment: "Their commandante was more comfortably fixed at Ross than even the governor at Monterey. He had fine quarters, fine furniture, a fine library, a fine piano-forte, Mozart's music, and in fact nearly everything to make residence there pleasant. Subordinates, eight hundred in number, plied their vocations in every direction in utter indifference to what was said about them by their Spanish neighbors."

They were very successful in raising horses, cattle and sheep and accumulated a large number of each. They were able to ship to Sitka many tons of corned beef, butter and tallow, as well as to export much wool and leather.

Perhaps the best known remembrance of the Rus-

sian occupation of California is the beautiful Russian River, which they called the Slavianska, and which empties its waters into the ocean a few miles south of Ft. Ross.

With the passage of time, extraneous conditions developed which caused a discouraging outlook for the future of the Russian settlement. California came under the jurisdiction of Mexico in 1822, and the period from then on until the territory was finally claimed by the United States in 1846, was marked by the decline of the missions, general dissatisfaction with Mexican rule and by the increase of foreign influence. In 1822, the Czar attempted to close the North Pacific to all foreign ships. The famous Monroe Doctrine of 1823, was, in original intent, an answer to the Czar. In 1824 England and Russia signed an agreement that Russia would make no settlement south of forty-four north latitude. Rivalry between the United States and England in the region steadily increased. New England merchants were creating new markets for California trade. Both the United States and England maintained squadrons of war vessels to patrol the Pacific Coast and to await an opportunity to take over California.

In 1831, Baron Wrangell went to Mexico City in person to secure the sale of desired territory in California. He accomplished nothing, for the Mexicans would not bargain or trade on any terms.

It was realized by Russia that Ft. Ross had never been recognized by any world power and now there appeared little to be gained in the way of political significance. Spain had lost her hold on the new world and trade limitations were thereby largely removed. Therefore, a food base was no longer a necessity for the Russian-American Fur Company. So many fur bearing animals had been killed that the fur take was decreasing year by year. Finally, the failure of crops had caused Ft. Ross to become a liability in later years. When the Russians became convinced that their settlement was no longer remunerative, they decided to abandon it, and to apportion the population to other colonies. Consequently they began to look about for someone to purchase their holdings.

Alvarado, who was then governor of California, was greatly elated but offered no material assistance. The Russians, however, found someone to buy their possessions in the person of Captain John Sutter, who was creating a vast agricultural domain with headquarters at the site of the present city of Sacramento. They sold all of their possessions to Sutter in 1841 for \$30,000, and delivered overland their herds of horses and cattle and flocks of sheep.

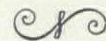
The final evacuation of Ft. Ross took place on January 1, 1842. Thus was removed another obstacle which might have complicated the conquest of California by the United States. Had the Russians remained until 1848, when gold was discovered and people from all nations of the world rushed to California, it is possible that the Ft. Ross settlement might have been expanded and retained by them indefinitely.

As years passed, the ownership of the Ft. Ross property passed through several hands. Most of the buildings were gradually removed by man or by the ravages of time. Some little attention, however, was

given to the preservation of the chapel. This, and the natural resistance of redwood to time and the elements, enabled the chapel to remain practically in its original state.

In 1906 the chapel and 3.01 acres of land were purchased by a fund of \$3,010 raised by the San Francisco Examiner. The property was then transferred to the State. On July 4, 1925, the first of the now annual services was held at Ft. Ross. In 1928, the Native Sons of the Golden West dedicated a bronze tablet to mark the chapel. In 1929, the property was placed under the care of the State Division of Parks. Under their able direction the restoration of the old fort has steadily progressed.

One is well repaid by a visit to this spot. The rugged grandeur of the ocean cliffs, the murmur of the breakers along the shore line, the many beautiful wildflowers carpeting the hillside, which slopes back to be crowned by the majestic forest, and Ft. Ross itself, all will tend to take you away from the present moment and to conjure up dreams of a romantic past.



## PROCUREMENT GOLF TOURNAMENT

K. M. Skaggs, registering a round of 77 yesterday at Kenwood Golf and Country Club, captured low gross honors in the annual Procurement Division of the Treasury tournament in which more than 125 golfers competed.

Low net award in class A went to H. J. Westenhaven with a gross score of 85, a handicap allowance of 15 strokes for a net total of 70. In class B the gross winner was Al Hart with an 86 while W. L. Woodward, shooting a round of 91 with a handicap of 20 strokes for a 71, was low net victor.

J. F. Purdum reeled off a round of 90 for the gross prize in class C. W. L. Bach, posting a gross of 93, and armed with the generous handicap of 30 strokes, won the net award with a 63. John Agur turned in scores of 85-14-71 to win the guest prize and Hixon compiled a score of 164 to win the high score prize.

In connection with the exhibition architects were invited to submit advertising pages to show how architects, if given the opportunity, would design such pages. These were judged by the jury, which awarded the first prize of \$75 to Joseph W. Rogers, Jr. of the Procurement Division, and the second prize of \$25 to Alan B. Jacobs of the Navy Department.

RECENT CONTRACTS AWARDED BY THE  
QUARTERMASTER GENERAL'S OFFICE,  
WAR DEPARTMENT

Barksdale Field, La.—Pipe Organ in Chapel, M. P. Moller Company, Inc., Hagerstown, Md. ....	\$3,485.00	Camp Dix, N. J.—Roofing, Sheet Metal Work for F. O. Quarters, Sub-Station, Transformer Vaults, Edwin R. Huddy and Sons, Lexington and Coates Streets, Trenton, N. J. ....	1,585.00
Fort Belvoir, Va.—Overhead Sliding Doors for Garage and Repair Shop, Overhead Door Sales Company, Inc., Washington, D. C. ....	997.00	Camp Dix, N. J.—Bake Ovens and Bakery Equipment, Read Manufacturing Company, York, Pa. ....	15,114.00
Fort Belvoir, Va.—Heating System in Garage and Repair Shop, Lee Engineering Company, 810 Union National Bank Building, Youngstown, Ohio .....	3,780.00	Fort Douglas, Utah—Asphalt Tile for 250-Man Barracks and 30-Man Med. Det. Barracks, Thomas Moulding Floor Company, 165 W. Wacker Drive, Chicago, Ill. ....	969.00
Fort Benning, Ga.—Water Filtration Plant, Raw Water Pumping Station, and Intake Structure on Upatoi Creek, Central Contracting Company, Dallas, Tex. ....	185,600.00	Fort Douglas, Utah—Marble, Soapstone and Tile Work for 30-Man Med. Det. Barracks, Elias Morris and Sons Company, Salt Lake City, Utah .....	1,664.00
Fort Benning, Ga.—Filter Equipment, Roberts Filter Manufacturing Company, Darby, Pa. ....	35,430.00	Fitzsimons General Hospital, Colo.—Hospital, Great Lakes Construction Company, 125 W. Madison Street, Chicago, Ill. ....	2,985,505.00
Fort Benning, Ga.—Wash Water Tank complete with foundations, valve chamber, and all valves, fittings, and piping, R. D. Cole Manufacturing Company, Newnan, Ga. ....	8,500.00	Fitzsimons General Hospital, Colo.—Elevators and Dumb Waiters in Hospital, Otis Elevator Company, 2301 Locust Street, Denver, Colo. ....	98,810.00
Fort Benning, Ga.—Three Centrifugal Pumps in Raw Water Pumping Station, Burford, Hall and Smith, Atlanta, Ga. ....	3,922.00	Fitzsimons General Hospital, Colo.—150,000 Gallon Elevated Steel Water Tank, Chicago Bridge and Iron Company, 37 W. Van Buren Street, Chicago, Ill. ....	18,780.00
Fort Benning, Ga.—Four Centrifugal Pumps in Filtration Plant, Worthington Pump and Machinery Company, Harrison, N. J. ....	17,129.00	Fitzsimons General Hospital, Colo.—Two Centrifugal Pumps for Installation in Booster Pumping Station, Dana E. Kepner, 1921 Blake Street, Denver, Colo. ....	1,047.75
Fort Bliss, Tex.—Entrance Gates, Superintendent's Lodge, and Utility Building for New National Cemetery, J. E. Morgan and Sons, 210 N. Campbell Street, El Paso, Tex. ....	33,231.00	Fitzsimons General Hospital, Colorado—Booster Pumping Station and Connections to Water Mains, Newstrom-Davis and Company, 2000 W. 8th Avenue, Denver, Colo. ....	4,170.00
Bolling Field, D. C.—Radio Transmitter Building, F. H. Martell Company, Inc., Room 413, 907 15th Street, N. W., Washington, D. C. ...	12,868.00	Hamilton Field, Calif.—Control Tower on A. C. Operations Building, Fred J. Early, Jr., 369 Pine Street, San Francisco, Calif. ....	3,940.00
Fort Brady, Mich.—Window Shades for Barracks, Cowan and Hunt, Sault Ste. Marie, Mich. ....	250.00	Hickam Field, T. H.—3200-Man A. C. Barracks, Robert E. McKee, Los Angeles, Calif. ....	1,158,720.00
Fort Brady, Mich.—Linoleum and Asphalt Tile in Barracks, Turner-Brooks, Inc., 9910-20 Dexter Boulevard, Detroit, Mich. ....	5,627.00	Hickam Field, T. H.—Signal Corps Wing of Administration Building, Robert E. McKee, Los Angeles, Calif. ....	18,250.00
Chanute Field, Ill.—Reinforced Concrete Paved Roads, Curbs, and Concrete Sidewalks, H. G. Goelitz Company, Oak Park, Ill. ....	155,670.00	Holabird QM Depot, Md.—600-Man Barracks, Consolidated Engineering Company, Inc., Baltimore, Md. ....	399,800.00
Chanute Field, Ill.—Hospital, Thorp and Rogoff Company, 306 S. Wabash Avenue, Chicago, Ill. ....	383,455.00	Fort Jay, N. Y.—375-Man Barracks, Two 18-Family N. C. O. Apartments, One 30-Family Addition to N. C. O. Apartment, Thomas J. Waters and Sons, Inc., 415 Lexington Avenue, New York City, N. Y. ....	824,500.00
Chanute Field, Ill.—Utilities, Floors, Metal Partitions, etc. in 2 Warehouses, T. S. Willis, Janesville, Wisc. ....	38,900.00	Kelly Field, Tex.—Northwest Flood Light Installation, Telotte Electric Company, 435 Main Avenue, San Antonio, Tex. ....	1,616.00
Chanute Field, Ill.—Central Heating Plant, Henry Brothers Company, Chicago, Ill. ....	484,770.00	Fort Knox, Ky.—75-Man Med. Det. Barracks, Struck Construction Company, Louisville, Ky. ....	76,400.00
Chanute Field, Ill.—A. C. Technical School No. 1, Standard Accident Insurance Company, Detroit, Mich. ....	244,200.00	Fort Knox, Ky.—30 Steel Canopy Doors for Shop Additions to First Cavalry Motor Park, The Kinnear Manufacturing Company, Columbus, Ohio .....	11,662.00
Chanute Field, Ill.—A. C. Technical School No. 2, Standard Accident Insurance Company, Detroit, Mich. ....	249,200.00	Langley Field, Va.—Extension of Runway Lighting, S. J. Watson, Jr., Box 443, Hampton, Va. ....	2,500.00
Chanute Field, Ill.—2200-Man A. C. Barracks, Lipman Construction Company, 3611 Normal Avenue, Chicago, Ill. ....	605,500.00	McChord Field, Wash.—Central Heating Plant, Walter S. Leland Company, San Francisco, Calif. ....	423,645.00
Chanute Field, Ill.—Two Deep Wells, Harris-Harmon Well Company, Inc., Mineola, N. Y. ....	5,940.00	McChord Field, Wash.—1285-Man A. C. Barracks, Ross B. Hammond Company, Portland, Ore. ....	768,000.00
Chanute Field, Ill.—Electric Distribution System, Street Lighting System, Switching Station and Transformer Vaults, John T. Maple, Fairbury, Ill. ....	76,500.00	McChord Field, Wash.—Cold Storage Room and Offices in S. E. AC Warehouse, Allen and Early, Tacoma, Wash. ....	19,300.00
Fort Clayton, Canal Zone—Five Barracks, Robert E. McKee, 1918 Texas Street, El Paso, Tex. ....	571,500.00	March Field, Calif.—Control Tower on Roof of Administration Building, Eric W. Emtman, Riverside, Calif. ....	3,200.00
Delaware Ordnance Depot, N. J.—Dispensary, Delmar Construction Company, 112 South 16th Street, Philadelphia, Pa. ....	32,604.00	Maxwell Field, Ala.—Construction of Towers, Roach Company, Inc., 40½ Commerce Street, Montgomery, Ala. ....	5,730.00
Delaware Ordnance Depot, N. J.—75-Man Barracks, Ehret-Day Company, Asbury Park Trust Building, Asbury Park, N. J. ....	79,371.00	Fort George G. Meade, Md.—250-Man and 300-Man Barracks, Wm. R. Goss, 435 N. Michigan Avenue, Chicago, Ill. ....	446,400.00
Lowry Field, Colo.—Five Double Sets C. O. Quarters, N. G. Petry, 214 Denham Building, Denver, Colo. ....	114,715.00	Fort Missoula, Mont.—Extension to Wings of	

Four Barracks, Alloway and Georg, 425 Hut- ton Building, Spokane, Wash. ....	124,913.00	Room to Nurses' Quarters, J. J. Fritch, Dal- las, Tex. ....	12,390.00
Mitchel Field, N. Y.—Radio Transmitter Building and Radio Beacon Range Building, Guthy Construction Corporation, 393 Sunrise Highway, Lynbrook, N. Y. ....	18,927.00	Fort Snelling, Minn.—Med. Det. Barracks, Field-Martin Company, Minneapolis, Minn. . .	32,713.00
Fort Monroe, Va.—Hospital Addition, Virginia Engineering Company, Newport News, Va. . .	235,300.00	Fort Snelling National Cemetery, Minn.—Main Road, Anderson and Sons, Inc., Minneapolis, Minn. ....	27,700.00
Fort Myer, Va.—Roofing and Sheet Metal at QM Barracks, Baileys Cross Roads, Benja- min A. Dove, Va. ....	1,481.00	Fort Francis E. Warren, Wyo.—Metal Weather- stripping in Med. Det. Barracks, Chamberlain Metal Weatherstrip Company, Detroit, Mich.	398.00
Fort Myer, Va.—Electric Wiring System in Warehouse, Central Armature Works, Inc., 625 D Street, N. W., Washington, D. C. ....	1,695.00	Fort Francis E. Warren, Wyo.—Structural Metal Work for Army Gymnasium, Des Moines Steel Company, Des Moines, Ia. ....	16,267.00
Fort Myer, Va.—Roofing and Sheet Metal Work in Cavalry Barracks, Dee Cee Roofing and In- sulating Company, 4414 Georgia Avenue, N. W., Washington, D. C. ....	6,628.60	CONTRACTS AWARDED BY THE BUREAU OF YARDS AND DOCKS, NAVY DEPARTMENT	
Fort Myer, Va.—Overhead Doors for Furniture Storage and Crating Warehouse, The Kinnear Manufacturing Company, Box 598, Columbus, Ohio ....	583.36	1 January through 31 March 1939	
New Cumberland General Depot, Pa.—Brick- work for 1 Single C. O. Quarters, Elstrodt and Scheib, 1415 Mt. Rose Avenue, York, Pa. ....	1,116.45	Alameda, Cal.—superstructure for assembly and repair shop, Naval Air Station—James I. Barnes Construction Co., Santa Monica, Calif. ....	\$788,200.00
The Worlds Fair Grounds, N. Y.—Temporary Buildings, Bowe Construction Company, 415 Lexington Avenue, N. Y. ....	83,100.00	Mare Island, Calif.—industrial storehouse, Navy Yard—MacDonald & Kahn Co., Ltd., San Francisco, Calif. ....	673,500.00
Plattsburg Barracks, N. Y.—Two 6-Family Row Houses for N. C. O. Quarters, Simon E. Fitzpatrick, 101 Bridge Street, Plattsburg, N. Y. ....	118,499.00	Mare Island, Calif.—structural steelwork for machine shop, Navy Yard—American Bridge Co., Baltimore, Md. ....	508,356.00
Presidio of San Francisco, Calif.—Interceptor Sewer, J. A. Fazio, M. J. McGuire, and M. Hester, 1483 Hopkins Street, Oakland, Calif.	69,636.00	Hawthorne, Nev.—buildings, roads and services, Naval Ammunition Depot—Wm. P. Neil Co., Ltd., Los Angeles, Calif. ....	452,000.00
Randolph Field, Tex.—Relocation of Northwest Floodlight Installation, Wright Brothers Elec- tric Company, 405 Main Avenue, San Anto- nio, Tex. ....	2,154.00	Mare Island, Calif.—superstructure for machine shop, Navy Yard—Barrett & Hilp, San Fran- cisco, Calif. ....	414,500.00
Sacramento Air Depot, Calif.—Two Water Storage Reservoirs, Eaton and Smith, P. O. Box 15, Sacramento, Calif. ....	28,607.00	Boston, Mass., Phila., Pa., Mare Island, Calif. —three 50-ton drydock cranes, Navy Yard— R. W. Kaltenbach Corp., Bedford, Ohio ....	324,750.00
Sacramento Air Depot, Calif.—River Dock, Warehouse, Derricks and Hoist on Sacra- mento River, Lord and Bishop, P. O. Box 812, Sacramento, Calif. ....	55,000.00	Pearl Harbor, T. H.—oil-fired boilers and ap- purtenances, Navy Yard—Industrial Piping & Engineering Co., Baltimore, Md. ....	297,590.00
Sacramento Air Depot, Calif.—Gasoline Fuel- ing System, Aqua Systems, Inc., N. Y. ....	15,552.00	Puget Sound, Wash.—pumping plant at Drydock No. 4, Navy Yard—University Plumbing & Heating Co., Seattle, Wash. ....	254,700.00
Sacramento Air Depot, Calif.—Traveling Bridge Crane, Harnischfeger Corporation, Milwau- kee, Wisc. ....	14,600.00	Portsmouth, N. H.—extension of shipbuilding ways, Navy Yard—Hughes-Foulkrod Co., Philadelphia, Pa. ....	248,700.00
Schofield Barracks, T. H.—11 F. A. Barracks, 258-Man and 453-Man Barracks, Robert E. McKee, Los Angeles, Calif. ....	479,100.00	Norfolk, Va.—boilers, coal-burning equipment, fans and accessories, Navy Yard—Indus- trial Piping & Engineering Co., Baltimore, Md. ....	242,395.00
Scott Field, Ill.—Electric Distribution and Street Lighting System, S. C. Sachs Company, St. Louis, Mo. ....	48,320.00	Mare Island, Calif.—superstructure for foundry, Navy Yard—K. E. Parker Co., San Francisco, Calif. ....	204,767.00
Scott Field, Ill.—General Headquarters and Post Headquarters Building, McCarthy Broth- ers, St. Louis, Mo. ....	173,905.00	Puget Sound, Wash.—boiler plant improve- ments, Navy Yard—C. C. Moore & Co., Engrs., San Francisco, Calif. ....	169,023.00
Scott Field, Ill.—3 Double C. O. Quarters, 7 Type 3 Row Houses for C. O. Quarters, 16 Double F. O. Quarters, 2 Single F. O. Quar- ters, Dickie Construction Company, St. Louis, Mo. ....	780,489.00	Puget Sound, Wash.—one 50-ton drydock crane, Navy Yard—Star Iron & Steel Co., Tacoma, Wash. ....	154,700.00
Scott Field, Ill.—Fire and Guard House, Brock- meyer Construction Company, 634 North Grand Boulevard, St. Louis, Mo. ....	48,421.00	Norfolk, Va.—superstructure of shop extension, Navy Yard—Rust Engineering Co., Pitts- burgh, Pa. ....	112,280.00
Scott Field, Ill.—Hospital, Kellermann Con- tracting Company, 625 Euclid Avenue, St. Louis, Mo. ....	178,536.00	Dahlgren, Va.—quarters for officers, Naval Proving Ground—John Young, Jr., Elmhurst, Long Island, N. Y. ....	93,445.00
Scott Field, Ill.—Railroad Tracks, Armond Cassil, Inc., Detroit, Mich. ....	16,980.00	New York, N. Y.—dredging, Navy Yard—Mor- ris & Cumings Dredging Co., Inc., New York, N. Y. ....	87,000.00
Scott Field, Ill.—200-Man Barracks, McDonald Construction Company, St. Louis, Mo. ....	186,317.00	Charleston, S. C.—boilers, stokers, fans and accessories, Navy Yard—M. H. Pagenhardt & Co., Washington, D. C. ....	80,100.00
Scott Field, Ill.—Heating Plant, MacDonald Constructing Company, St. Louis, Mo. ....	417,317.00	Philadelphia, Pa.—floor and equipment founda- tions for extension to machine shop, Navy Yard—Ralph S. Herzog, Philadelphia, Pa. . .	46,239.00
Fort Sill, Okla.—Kitchen Addition and Dining		Norfolk, Va.—seal and color coats for bitumi- nous pavement, Naval Air Station—F. D. Cline and Leon Ellis, Greensboro, N. C. ....	43,356.00
		Pensacola, Fla.—turbo-alternator, air compres- sor and accessories, Naval Air Station—Lorne Plumbing and Heating Co., Detroit, Mich. ....	43,295.00



Philadelphia, Pa.—mechanical and electrical work, extension to machine shop, Navy Yard—Phila. Piping and Equipment Co., Philadelphia, Pa. ....	42,300.00
Pearl Harbor, T. H.—condensers and auxiliary equipment, Navy Yard—C. F. Wheeler Mfg. Co., Philadelphia, Pa. ....	40,725.00
Washington, D. C.—tide bridge, Navy Yard—Diamond Construction Co., Washington, D. C. ....	32,940.00

RECENT CONTRACTS AWARDED BY PUBLIC BUILDINGS BRANCH, PROCUREMENT DIVISION—TREASURY DEPARTMENT

(March Contracts)

Fullerton, Calif., P. O.—construction, etc.—George Goodhart, 3323 Dwight Street, San Diego, Calif. ....	\$54,950.00
Honolulu, Territory of Hawaii, P. O., Schofield Barracks Station—E. E. Black, Ltd., Kawaiahao Street, Honolulu, Territory of Hawaii. . .	63,800.00
Shelton, Conn., P. O.—construction, etc.—Smith Construction Co., Inc., 101 Water Street, Derby, Conn. ....	52,175.00
Yerington, Nev., Agriculture and P. O. Bldg.—construction, etc.—L. F. Dow Company, 245 North Bundy Drive, Los Angeles, Calif. ....	61,461.00
Eufaula, Okla., P. O.—construction—J. J. Fritch, 504 Construction Building, Dallas, Tex. ....	44,230.00
Bryan, Tex., P. O.—extension and remodeling—Bell-Stafford Construction Co., East Navasota Street, Groesbeck, Tex. ....	63,900.00
Lexington, Ky., Public Health Service Hospital—construction of the shop building and material shed—J. Fred Beggs and Son, Austin, Ind. ....	48,860.00
Longview, Tex., P. O.—construction, etc.—A. Farnell Blair, Lake Charles, La. ....	138,993.00
St. Louis, Mo., Post Office Garage—construction—J. S. Alberici, 1719 Boatman's Bank Building, St. Louis, Mo. ....	640,000.00
Rockwell City, Ia., P. O.—construction, etc.—Busboom and Rauh, 153 S. Santa Fe Avenue, Salina, Kans. ....	50,750.00
Savannah, Tenn., P. O.—construction, etc.—Thos. L. Dawson Company, 2035 Washington Street, Kansas City, Mo. ....	60,400.00
Lake Geneva, Wisc., P. O.—construction, etc.—Henke Construction Company, 200 East Walton Street, Chicago, Ill. ....	49,713.00
Canton, Mo., P. O.—construction, etc.—Barnes Brothers, 314½ Fifth Street, Logansport, Ind. ....	50,863.00
Manchester, Ga., P. O.—construction, etc.—W. J. Pippin, Post Office Box 289, Moultrie, Ga. ....	48,340.00
Livermore, Calif., P. O.—construction, etc.—K. E. Parker Company, 135 South Park, San Francisco, Calif. ....	54,379.00
Carville, La., Marine Hospital—construction of the replacements, etc.—Raisler Corporation, 129 Amsterdam Avenue, New York, N. Y. ....	315,830.00
Milford, N. H., P. O.—construction, etc.—A. Farnell Blair, Lake Charles, La. ....	57,799.00
Venice, Calif., P. O.—construction, etc.—Campbell Construction Company, 5388 Alhambra Avenue, Los Angeles, Calif. ....	77,317.00
Caldwell, Kans., P. O.—construction, etc.—J. O. Boyd Construction Company, Post Office Box 1342, Dallas, Tex. ....	46,990.00
Chagrin Falls, Ohio, P. O.—construction, etc.—A. Farnell Blair, Lake Charles, La. ....	54,297.00
Durham, N. C., P. O.—extension and remodeling—Algernon Blair, 1209 First National Bank Bldg., Montgomery, Ala. ....	56,142.00
Knoxville, Ia., P. O.—construction, etc.—James Leck Co., 211 South 11th Street, Minneapolis, Minn. ....	59,800.00
Yakima, Wash., P. O. & CT. H.—extension and remodeling, etc.—Eivind Anderson, 517	

(Continued on page 38)



U. S. Post Office, Hartford, Conn. Maimfeldt, Adams & Prentice, Architects. Sup. Arch., Proc. Div. U. S. Treas. Dept. Vermont Neshobe Gray and Royal Red Marble.

## Buying = Not Selling

Marble has been used for building almost since building began. No one in the industry questions as to what it will do. Certainly the buyer doesn't need to be told what he already knows. He is more concerned about how the marbles are going to be combined, finished, delivered and installed.

It is along those lines that we offer a real service—the service which comes only through years of experience, extensive quarries and plants and nation-wide distribution. Our sales come through making it easier to buy . . . Vermont Marble Company, Proctor, Vermont . . . Branches in the following cities: Albany, 75 State St.; Boston, 44 School St.; Chicago, 5535 No. Wolcott Ave.; Cleveland, 4300 Euclid Ave.; Dallas, 1513 Wall St.; Houston, 310 Bringhurst St.; Los Angeles, 727 West 7th St.; New York, 101 Park Ave.; Philadelphia, 22nd & Westmoreland Sts.; San Francisco, 525 Market St.; Tacoma, 1120 East "D" St.; Canada, Ontario Marble Co., Ltd., 403 Manning Chambers, Toronto.

## VERMONT MARBLE

# STONE WORK

## PART I

### Prefatory

Stone, as a building material, is almost universally associated, in the minds of laymen and builders alike, with ideas of permanency, durability, stability, and, to a lesser degree, of beauty. Such associations may be readily traceable to the survival through the ages of structures and of ruins of structures which were constructed of stone. Respect and veneration for the efforts of mankind in ages long past augmented by sentiments inspired by the surviving works or ruins of antiquity tend to confirm the close relationship between stone and its ability to withstand the ravages of time.

In the early building activities of man presumably the desire for stability and solidity first prompted the use of stone when selection of alternate materials was offered. The widespread availability of usable building stone in practically all parts of the world which are or have been inhabited by man; the permanent character of stone in physical composition suitable for the needs of man; and the facility with which the material could be quarried and converted from its natural state into blocks of appropriate sizes and shapes through the utilization of human labor with primitive, simple tools placed at man's disposal the means to provide for himself the solid and stable structures required for his protection. Whether man's first structures were enclosures, bulwarks and barricades for protection against his enemies or were primitive shelters against the elements and marauding animals is immaterial—in either case the qualities of durability and stability were paramount.

Permanency was necessarily a subsequent consideration. As a matter of fact, permanency is a relative term. While it is true that the principal surviving structures of antiquity are of stone, it is equally clear that all early stone structures have not survived. Whether by violence, catastrophe, disintegration or collapse, the general run of early stone structures no longer stand. On the other hand, the relative permanency of stone in general, and of certain stones in particular, appears to have been known to early civilizations. Certainly permanency was the primary desideratum in the construction of the pyramids. The extent to which the builders went to attain it is revealed by the recent discovery of some of the quarries from which the stone was taken. After quarrying, the enormous blocks were transported overland for a distance in excess of one hundred miles to the Nile, down which they were carried by boats or floats from which, in turn, they were unloaded and again transported overland to the sites of the pyramids. Regardless of the reasons which prompted the selection of the particular sites of these structures, it may be significant that almost super-human measures were invoked to transport the stone blocks from particular quarries to structures which were located in a region where climatic conditions were ideal for the weathering qualities of the stone.

Beauty in stonework, as in all things, is primarily a matter of appeal to the personal taste of individual observers. It may arise out of elements of form, proportion, arrangement or workmanship taken either singly or in any combination. There is no such thing as abstract beauty. It exists in the minds of the respective observers and represents the favorable impressions, associations or reactions aroused in each individual by that which the eye registers. Beauty, then, from the very nature of that quality, became a consideration in building, closely related to the utilization of stone for purposes of stability and durability. After the elapse of such period of time as the mellowness of age revealed the enrichment of color, texture and feeling, in association with the forms and proportions employed, the structures indicated the possibilities of improvement in appearance by the adoption of rules of proportion. Thus, the recognition of the existence of characteristics of beauty must have been developed subsequent to the recognition of the elements of permanency. In consequence, the enduring nature of stone structures justified the expenditure of time, effort and money for the expansion of the elements of beauty.

Almost literally, the history of mankind through the ages is written in stone. There is ample justification for popular conceptions with respect to the characteristics of stonework.

Its reputation as the aristocrat of building materials is well deserved.

### Evolution of Stonework in America

Modern methods of design, production and manufacture have influenced the uses of stone, particularly in the United States, to such an extent as to revolutionize building practices with respect to that material during the last century. Types of construction that had remained firmly established for centuries prior to the modern era have been generally abandoned in favor of types evolved to meet the limitations imposed upon, and the facilities and methods available to, modern builders. The forces of economics, the advances of science and the changing of sociological balances have combined to transform building practices with respect to stonework to such an extent that, in general, the only characteristics common to the older and the newer practices are the continued use of stone and the exterior appearances of the structures.

The older practice utilized stonework in mass. Stability and strength were attained by reliance upon building elements in which the stresses were predominantly compressive and dead weight was essential. Such practice survives in the United States to a very limited extent in foundation walls for small buildings, in retaining walls and bridge abutments where suitable stone is more cheaply available than other suitable materials; in such small building units where local stone is the most economical available material and in structures of whatever sort where the desires of the owner are to be satisfied regardless of any other consideration.

Modern American practice has been developed from a combination of many factors. Among these may be cited the adoption of structural building frames of steel or reinforced concrete in which the weight of the building is carried by the frame, the development of reinforced concrete construction with economies in building costs, the necessity of obtaining the greatest amount of tenant space in order to utilize to the maximum expensive ground areas, the proportionately large percentage of freight charges in delivered prices of stone and the necessity of reducing the building weight as low as possible in order to save costs of the structural frame and of foundations. The collective effect of the operation of these factors has been to reduce the use of stone in building construction to practically that of a veneer for exposed surfaces in structures for which the appearance of stone construction is desired and to trim buildings principally constructed of other exposed materials.

The relative merits of the modern American practice as compared to earlier mass masonry over a great period of time may not be appraised until such time in the future as will reveal the permanent worth of the newer type of construction. Who is there to say that all stone structures of modern times should be expected to last for centuries? Present purposes will be served by restricting the following discussion to a consideration of current American practice.

### Selection of Stone

The selection of the stone or stones for use in a specific project and the determination of the manner and extent of such use are functions of the designing agency. Numerous factors and conditions, both general and specific, must be appraised and evaluated. The former embrace such matters as the characteristics of the proposed structure, whether monumental or utilitarian, the amount of funds available for building operations and the wishes of the owner. The latter embrace a consideration of the propriety of using stonework in the environment in which the structure is to be situated, the extent to which stonework may be used harmoniously with the local atmosphere, the study of readily available stones, the relative costs of various available stones of the same or different classes, the suitability of available stones for exposure to climatic conditions to which the structure will be exposed and the availability of stones in colors or combinations of color which appropriately convey the feeling that the completed building is intended to convey. The evaluation of the governing conditions and the designer's decisions regarding them are incorporated into the plans and specifications and, through them, transmitted to the field

engineer who is charged with their translation into the physical entity of the completed project.

The design may utilize stonework for interior and exterior work to any degree. Exterior uses may be limited to a few sills, a belt course or other minor decorative features of a building constructed principally of another material or they may be expanded to completely envelope the structure with elaborate carvings and ornamental features. Interior uses may be limited to a small amount of wainscot or wall base or they may be extended to embrace the entire finish of elaborate lobbies, stairs, corridors and rooms. However extensive the uses may be, the selection of the stone to be used and of its finish must be consistent with the service conditions to which it is to be subjected and with the characteristics of the particular stone to be employed.

Modern building practice has largely abandoned the use of rubble stonework except for special structures in which the appearance of informality or of harmony with peculiar surroundings is desired. The irregular shapes and sizes of the individual stones used in that class of work do not lend themselves readily to laying in the thin veneer walls which are almost universally used in modern structures. The use of dimension stone after the general character of ashlar is almost universal. The sizes of the individual stones are indicated upon the design drawings.

### Principal Building Stones and Their Characteristics

The building stones available in the United States are primarily granite, marble, limestone and sandstone, and to lesser degrees, slate, soapstone and greenstone. Probably no other country has such a wealth of stones in range of quality, varieties of color, or in quantity of material. Available literature dealing with the respective classes of stones is voluminous, and easily accessible. Present purposes will be served by brief outline descriptions of the several stones.

#### GRANITE

Granite is a hard rock of igneous origin and crystalline structure composed of a fused mixture principally of hornblende, feldspar, biotite and mica. Crystals vary in sizes as between the various granites so that their respective structures vary from coarse to fine grained. In the United States, granite appears in a wide range of colors which in each particular variety of stone derives principally from the variations in the feldspar content. Gabbro, which is commercially classed as a green or black granite, differs from true granite in its composition due to the presence of feldspar of the plagioclase variety. Diabase is a variety of gabbro in which plagioclase appears in lath-like crystals. Basalt has characteristics somewhat similar to gabbro. Gneiss, a metamorphic rock, has the same composition and generally the same colors as granite, but has considerable variations of texture, and the color bands are distorted.

Within the United States granite is found in practically all of the States and is quarried in 29 of them. To approximately 130 varieties of granites, trade names have been assigned.

The surface finishes most generally applicable are: seam face, rock face, picked face, bush hammered, sand sawn, shot sawn, planer, sand rubbed, carborundum rubbed, honed and polished.

Of all the building stones, granite is the strongest and probably the most durable. Variations of texture between the several varieties of granite range all the way from fine to coarse grained, and in color, all the way from very light gray through the principal colors of the spectrum to black. Finished surfaces may be of uniform texture or they may be enlivened by the presence of burls, knots, bands, and veins, which exert no effect upon the strength or durability of the stone, but the existence of which becomes more pronounced as the surface finish is more refined. In the use of the strongly figured and the highly colored granites, it is desirable that careful selection be employed to prevent the setting of stones of unharmonious coloring in close proximity with each other.

#### MARBLE

Marble is a crystalline limestone which is hard enough to take and retain a polish. It is composed entirely of car-

bonate of lime. The structure is uniformly fine grained. In the United States it appears in a wide range of colors which derive from the presence of various substances which modify the otherwise basically light color of the carbonate of lime. It is quarried in 27 of the States and in Alaska.

Serpentines are popularly classed as marbles, but the chemical composition is principally of hydrous carbonate of lime and carbonate of magnesium in nearly equal parts.

Surface finishes most generally applicable are: for exterior marble, tooled, bush hammered and rubbed; and for interior marble, fine rubbed, honed and polished.

Marble is utilized both as a structural and as a decorative material. The many varieties in which the stone is available offers facilities for obtaining desired effects involving wide ranges of color and pattern derived from the veining of the material. The highly colored and strongly figured marbles, however, are subject to inherent imperfections of structure which require correction by methods developed by the industry and generally recognized as acceptable practice. Such methods embrace such operations as, in the vernacular of the trade, sticking, filling, waxing and reinforcement either with marble or with iron rods.

In the interest of standardization marbles have been classified by the trade into four groups, A to D, inclusive. The classification reflects the physical characteristics of the several marbles as determined by their structural quality, their natural imperfections arising from geological flaws, voids, veins and lines of incipient fracture, and of the limitations to which these characteristics may be corrected by acceptable manufacturing processes.

#### LIMESTONE

Limestone is a sedimentary rock composed principally of carbonate of lime but always in combination with some additional materials, which may be quartz, feldspar, iron, dolomite, or clay. The structure varies from amorphous to crystalline. The principal colors embrace grays, blues, tans, pinks and variegated. Limestone is produced in about 22 of the States. Approximately 110 limestones have been assigned trade names. The surface finishes most generally applicable are shot sawn, chat sawn, sand sawn, planer, picked, tooled, bush hammered and broached. Limestone is probably more widely utilized than any of the other stones, particularly when of amorphous or oolitic structure. This arises from the fact that this stone is easily and cheaply manufactured. Because of its sedimentary origin, limestone may contain shells which have become part of the rock structure during the processes of its formation. The extent to which shells appear in the various varieties of limestone varies with the conditions under which the stone was formed. At one extreme is amorphous limestone in which the shells are present to such a degree as to form the most prominent apparent characteristic of the stone, while at the other are crystalline and oolitic limestones from which shells are almost entirely missing. Imperfections which are characteristic of limestone and which appear to greater or less extent in some of its varieties are pits, honeycomb, porous streaks and veins of incipient fracture. Some of these defects, however, contribute to the architectural value of the stone to the extent to which they are permissible. Their use in any particular structure is determined by the limitations which are placed upon their acceptability both as to extent and as to the areas in which they may be permitted by the requirements of the designing agency as incorporated into the plans or specifications.

Commercial classifications of limestone embrace four principal grades which are designated as statuary, select, standard and rustic or coarse.

#### SANDSTONE

Sandstone is a sedimentary rock composed of sand grains which are cemented together into a solid mass by the presence of other mineral matter of such nature that the general classes of sandstone are designated as calcareous, siliceous, ferruginous and argillaceous. Sandstones are available and produced in about 30 of the States. The structure is most generally granular. The principal colors in which it is available for building uses are light gray, buff, pink, red and brown.

The surface finishes most generally applicable are shot

sawn, sand sawn, tooled, crandalled and rubbed.

The physical characteristics of sandstone in general require that particular attention be given to the manner in which it is placed in the work. With the exception of a very few varieties of sandstone, permanently satisfactory results may be expected only when the stone is laid in the work upon its natural bed.

#### SLATE

Slate is a sedimentary rock caused by heavy pressure upon deposits of argillaceous silt. This stone is formed with well defined cleavage planes, parallel to which it is relatively easily split. The predominant colors in which it may be obtained are gray, red, green and black. Slate deposits are found in about 20 states, but commercial production is restricted to some six or seven. Surface finishes most generally applicable are; for exterior work, natural cleavage and planed, and for interior work, smooth rubbed and honed.

The structure of slate is such that the material lends itself readily to fabrication into slabs in which form it lends itself both to interior and exterior usages in buildings.

#### SOAPSTONE

Soapstone is a metamorphic rock composed principally of talc with which are mixed other minerals such as chlorite and mica. Its structure is generally homogeneously granular. It is found in commercial quantities in six of the States, but principally in Virginia. It varies in strength and hardness and is for commercial purposes divided into three grades designated as soft, regular and hard.

Due to its resistance to heat and to its immunity of attack by acids, soapstone finds its principal uses in building accessories in which such qualities are desirable.

#### GREENSTONE

Greenstone is a metamorphic rock closely related to soapstone but structurally hard enough to take a polish. Surfaces normal to the grain possess good abrasive qualities. Its principal uses are for ornamental work and for wearing surfaces. The principal source of production is Virginia.

Greenstone is generally of an ivy green color with light and medium gray crystals interspersed over the surfaces. Greenstone may be sawn with the rift or across the grain, depending upon the use to which it is to be put. For decorative purposes it is generally sawn with the rift, while for abrasive uses it is sawn across the grain.

#### Raw Stone for Stonework

The phenomena of Nature placed at man's disposal upon or near the surface of the Earth and accessible to him, strata and deposits of rock suitable for use in his construction operations. The processes of manufacture, for lack of a better word, of such rocks had been completed; the product had assumed substantially fixed physical and chemical properties which man has learned to regard as permanent. The existence of these stones in large masses left to man's ingenuity and resourcefulness only those problems involved in the removal of portions of the natural masses of stone in such quantities and in pieces of such sizes as would satisfy his needs and in the subsequent fabrication of the rough blocks so that each piece would serve the precise purpose which was desired to be served. In brief, primitive man, lacking knowledge and available means for the making of a comparable material out of which to build his structures, found that Nature had provided suitable materials that were his for the taking.

Most generally the characteristic appearance of stones in their natural masses is in layers. The principal stratum may consist of a single layer or of several layers separated by layers of other weaker materials. The top and bottom surfaces of the respective layers usually approximate the horizontal although considerable dip may be encountered. Thicknesses of the natural layer may be as little as a few inches or may be as much as one hundred feet or more. For stone setting operations, this characteristic of stone is reflected in trade parlance in such terms as the natural bed, cutting with the rift and across the grain. The first, usually applied to the way in which a piece of stone is to be incorporated into the work, refers to that surface of the piece

of stone which, in its original position, was parallel to the bottom of the layer from which it was taken. The rift and grain refer more particularly to the crystalline and igneous rocks the structures of which appear to have a more or less definite graining or integrated succession of layers. When cut across these apparent layers or bands, the stone is said to be cut across the grain. When it is split in a plane normal to the bed and longitudinally along the apparent layers or bands, it is said to be cut with the rift.

In nature, a single rock stratum often contains material which, while of the same class, varies markedly in the colors and textures. While these variations may appear at the same level, it is the more general rule that they appear at different levels. In other instances, more than one stratum of different characteristics and encountered at different levels may be worked as one quarry. Under these conditions, it is recognized good quarrying practice to work the respective levels so that a working face of each of the various kinds of stone may be obtained as demand requires.

Preservation of the integrity of the finished product precludes the extensive use of heavy explosives in quarrying operations. For the removal of the large quarry blocks from which finished product is to be fabricated, recourse is had to channeling, drilling and plugging and band sawing operations, none of which is harmful to the stone.

#### Finishes for Stone Surfaces

The determination of the surface finish that is to be applied to stones entering into the various parts of a structure is a function of the designing agency. Within the limitations imposed by the physical characteristics of the particular variety of stone to be used, the finish may take whatever form and degree of refinement that the designer may select. The cost of obtaining comparable finishes is somewhat proportional to the hardness of the stone. As between different finishes applied to the same stone, the more refined are proportionately more expensive to produce.

A peculiarity of stones is that their true colors are revealed more and more intensely with increasingly greater refinement of finish. In polished surfaces, depths and variety of colors will appear that may not be remotely suggested in the coarser finishes. The true color of a roughly finished stone will be revealed only by thoroughly wetting the surface.

Without attempting to enter into an enumeration of all the finishes applicable to stonework, designation of those finishes in more common usage and enumeration of their respective principal characteristics will suffice for present purposes.

*Seam face*—Applicable only to granite. When quarried into blocks and further into dimension stock, the natural seam face is retained and set so as to be the exposed surface when placed in wall. It usually has variety of color tones.

*Split face*—Applicable to any stone. The natural surface obtained by hand splitting or mechanical means is retained and set as the exposed face. The beds and joints are roughly squared with the face. The amount of variation from the true plane of the face will vary about three-quarters of an inch plus or minus.

*Rock face*—Applicable to any stone. Obtained by pitching a line, chisel draft, or margin around the face edges in a plane, leaving the face in very irregular fractures or indentations. The amount of projection may be from three-quarters of an inch upwards or as desired for character of work desired. Rock face finish is a preliminary to the formation of picked and bush hammered finishes which are secured by following with proper sequence of cutting tools.

*Peen-hammered*—Applicable only to granite. The coarsest of axed finishes and is obtained by means of a peen hammer or double edged axe. Usually applied to curbs, treads of steps and platforms.

*Pixed or Pointed face*—Applicable mostly to granite. The surface is first roughly levelled then finished as coarse, medium or fine with a tool having diamond shaped points. The exposed face is usually finished with a chisel draft around the edges. A somewhat similar finish is obtained by crandall, a similar tool which has smaller teeth or points.

*Bush-hammered*—Applicable to granite and some of the marbles. The surface is obtained by machine or hand tools having multiple parallel blades set to produce parallel cuts

or indentations of four, six, eight or more cuts in one inch. This finish is sometimes known as patent-hammer or tooled.

*Shot-sawn*—Applicable to all stones. The surface results from sawing with steel blades and steel shot. The surface is somewhat irregular and is characterized by almost parallel corrugations of varying depth and width depending upon the size of the shot used. The surface tends to be slightly in wind.

*Chat-sawn*—Applicable principally to limestone. The surface results from sawing with steel blades and flinty quartz particles used as the cutting medium. It may be obtained in fine, medium and coarse textures dependent upon the gauge of chat used.

*Sand-sawn*—Applicable to all stones. An almost smooth surface secured by a process similar to that employed for chat-sawn except that steel blades and sharp sand are used for the cutting medium.

*Sand-rubbed*—Applicable principally to marble, limestone and sandstone. After roughing out by one of the sawing processes, the surface is produced by rubbing with coarse or fine sand and water after which it is finished with coarse grit stone.

*Planer finish*—Applicable to all stones. After roughing down by one of the sawing processes, the flat surfaces are finished on a planer by steel tools and special profiles formed by abrasive wheels shaped to form the desired profiles.

*Honed finish*—Applicable to hard stones. After roughing down by the more robust methods a very smooth surface approaching a polish is obtained by successive rubbings with the flat faces of abrasive wheels of progressively increasing fineness.

*Polished finish*—Applicable to all stones of crystalline structure. Following the formation of a honed finish, the surface is brought to the desired perfection of polish by means of felt buffing wheels and appropriate abrasive powders. The selection of the abrasive is determined by the natural structure and texture of the stone.

#### Usual Imperfections of Finished Stone

Within the limitations of available space, it is impossible to treat in any extensive manner all of the variations and refinements incidental to an exhaustive consideration of imperfections in finished stone either as to the variations in the extensive degrees to which the imperfections may appear in stones of any one general class or as to the relative detrimental effects of defects of the same category upon stones of the several general classes. Inflexible standards by which appraisal of the seriousness of defects of marginal magnitude may be made are impractical and undesirable because of the varied nature of considerations that may enter into every case. It is possible that a defect that might be serious in a stone which is intended for use for one purpose might be highly desirable to produce the result desired when intended for use for another purpose. With no intention of establishing a criterion for use in appraising the value of particular stones for the purposes they are designed to serve, but rather as a guide for the recognition of the principal defects that are encountered, an enumeration of the most common imperfections is made.

Crowsfeet or crowfoot veins are zig-zag markings characteristic of some of the marbles and crystalline limestones. Such markings are usually parallel to the bed. They are usually from one-tenth inch to one inch wide in marble and from one-tenth to one-quarter inch wide in limestone. To the extent permitted by the specifications, they are permissible. In limestone, it is usual to restrict their presence to definite limits both as to extent and as to the areas in which they may appear. If such markings appear normal to the bed, they are indications of weakness and are undesirable for structural reasons.

Fossils and shells are characteristic of some of the limestones. As a general rule they are not detrimental to the strength of the stone. Except for obtaining specific effects, fossil and shell areas should be restricted to the principal areas of the stone. Their presence in edges and mouldings invites spalling, disintegration and possible local weakening under the action of tooling.

Pyrites are impurities of some form of sulphate of iron. When exposed to the weather, oxidation will be expected to

ensue, probably accompanied by surface staining.

Bands are particularly characteristic of some of the granites. These consist of broad areas of solid material of a color strongly contrasting with the principal color of the stone. When the variation from the principal color is too pronounced, the use of banded stones is undesirable for architectural reasons.

Ribbons are peculiar to slate. They are thin or narrow bands which may vary in width up to several inches. They are permissible as may be consistent with the grading requirements for the particular quality of slate under consideration.

Stuns are defects resulting from physical mistreatment of the surface either by bruising or burning of the surface during the processes of manufacture. As a general rule, when such defects appear upon unexposed surfaces they are unobjectionable.

Pits, holes, honeycomb and coarse texture are imperfections which appear principally in oolitic limestones. Their presence is undesirable except in instances where the designing agency shall have permitted them for the accomplishment of specific results.

Mud seams, dry seams and porous streaks are all evidences of structural weakness and are potential sources of disintegration and penetration by moisture. The presence of any of these faults is always objectionable.

In practice, the field engineer is often confronted with the determination of the proper action to be taken when imperfect stones are discovered. There is always the theoretically available course of rejection of the material. On the other hand, practical considerations often modify conditions—possible replacement may be expensive both in time and in money to the extent that an unwarranted burden would be placed upon the contractor. Under these circumstances the engineer must determine upon that course of action which is equitable and fair to all parties at interest and not detrimental to the character and permanence of the structure into which the stone is to be incorporated. A stone already in place, if it shall be damaged to such a limited extent that repair by established methods is possible, may be repaired with less detriment to the completed project than would result from removal from the work and subsequent replacement by another stone. Under such conditions, there is no substitute for the sound judgment and common sense of the field engineer.

Patching of stone is not permissible except under unavoidable conditions and is entirely inadmissible in the exposed face of a stone not already set in the work. On the other hand there are a few varieties of stone which have characteristic imperfections. When such stones are used and the imperfections are desired to be removed, there is no alternative to a consistent amount of patching. If and when it shall be necessary to resort to patching, certain fundamental principles must be observed. First, because of the structure of the stone, patching is applicable only to oolitic limestones and to sandstones, and then only to areas removed from edges and corners. Second, the area to be patched should be carefully prepared so that the patch, when applied, will be positively locked and keyed into position. Third, the patch should be taken from a piece of stone which matches the patched stone in color, texture and marking. If the patch is of the nature of a filling of a small cavity removed from edges and corners of the damaged stones, a paste consisting of the dust prepared from a stone of matching color mixed with litharge should be prepared and firmly pressed into the cavity. The face of the patch should project slightly beyond the finished surface. After it shall have thoroughly hardened the excess material should be dressed down flush with the principal plane of the stone and left with a final finish which matches that of the original stone.

#### Contract Drawings and Specifications

The extent to which stone is to be utilized in any structure is indicated upon the drawings and in the specifications prepared by the designing agency. Its use may be restricted to a few members of plain or molded trims, to a belt or a few other courses or to special features in combination with other masonry materials or, on the other hand, the entire structure may be faced with stone, either plain or elaborate, as required

by the design and character of the architectural motif. The arrangement of coursings, jointing and details of typical or special features are depicted upon the drawings or in the specifications which also indicate the extent of work to be carved. The structural factors concerning the design of wall facing, the depths and thicknesses of the stones, their bond and backup, and the general method and means to be utilized in the setting of stones, together with data respecting the kind and characteristics of the stone desired, its surface finish and other details of design are habitually fully treated in the plans and specifications.

Before stone from any available source is acceptable for incorporation into a structure, the contractor is required to submit for the approval of the designing agency, samples of the stone which he desires to furnish. The samples must be truly representative of the stone as to surface finish or finishes, and as to structural, textural and physical characteristics within permissible limitations as to the extent of imperfections. On approval by the designing agency, the samples are marked and sent to the Construction Engineer for his guidance in the checking of material as it is received at the site.

Almost without exception, the contractor is required to submit complete shop and setting drawings which show the dimensions of each stone in detail and which indicate clearly the specific location of each stone in the structure. All stones are numbered so that, when set in compliance with the drawings, the completed structure will comply with all details of coursings, jointing, bond, build-up of trims and special features. If a first-class job of stonework is to be obtained, it is mandatory that the checking of shop drawings embrace verification of all dimensions and determination that proper allowances have been made for the sizes of joints and for the relationships which all stones will bear to each other in the finished work.

The field engineer may often expedite and benefit the operations under his jurisdiction if he will require the submission of shop drawings in conformity with an orderly system so that the checking of them by the design agency can be facilitated. Due allowances must be made for the time required to make corrections, revisions and for re-submission of such drawings as may be necessary to obtain their final approval. In the interest of economy, the work of cutting and fabrication of the stone should not proceed prior to approval and acceptance of shop drawings.

#### Delivery, Unloading and Storage of Stone Material

While the contractor is responsible for the condition of the stone work at all times prior to its delivery to and final acceptance by the owner, the field engineer may contribute to the elimination of delays in completion by calling attention to the existence of conditions, or the employment of practices that are known sources of damage.

The method and means of unloading, delivery and storage of cut and fabricated stone are matters of concern at all times. Much damage can be done to surfaces and finished edges of cut stone by improper handling. Inexperienced workmen, use of insufficient or unsuitable equipment, misuse of devices and improper placement of stone in piles are frequent sources of damage.

The size of the project, the means of delivery, and the size and area of possible storage spaces, all must be considered in the determination of the program for the satisfactory conduct and progress of the work. On arrival at the site, all material should be carefully checked and inspected for breakage and disfiguration. All irreparably damaged and all unacceptable material should be rejected and removed from the site. Prompt action should be taken to obtain replacement stones in time to prevent delay in the setting schedule.

For jobs requiring numerous large shipments, material should be scheduled for delivery in the order of sequence in which it is to be placed in the building and in quantities for which suitable storage space is available.

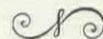
The matter of storing and piling material in storage involves experience with and knowledge of the best methods to be employed and of the precautions to be taken to protect the stone. The stones should be placed in the piles in such a manner as to avoid rehandling or to reduce it to a minimum.

Finished surfaces and exposed corners should be adequately protected by suitable planking and guards. A suitable level plank platform should be provided so that no stone will contact the ground; successive tiers should be kept level and be separated by strips of non-staining wood or by padding composed of material which will neither be a fire hazard nor stain the stone after being wet. When the stored stone is in thin sections, the separating blocks between successive tiers should be carried up in nearly vertical rows in order to eliminate excessive bending action in the thin stone slabs and minimize the dangers of breakage by dead weight of superimposed stones. Adequate covering and protection should be provided for storage piles to eliminate the possibility of snow and rain washing over and causing discoloration of the faces of the stones and during severe weather subjecting them to freezing and thawing conditions. Material which has been frozen while in storage, if not properly thawed out previous to placement in the work, may later develop serious defects.

Stone in storage must also be protected against damage caused by workmen engaged in its handling and of the materials of other trades. The placing of small parts, nails and wire of corrodible materials and of paint on piles of stone often causes serious staining or disfiguration of stone surfaces.

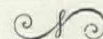
#### Shop Inspection

Inspection of cut and fabricated stone at the plant before shipment is not generally, though sometimes may be, a specific requirement by the designing agency. It is presumed that the material will be manufactured in compliance with the approved shop drawings and samples of material submitted. The subsequent selection and assembly of material at the plant for color, markings and matching of adjoining and adjacent stones or slabs is, under usual conditions, a function of the contractor.



(Continued from page 33)

North I. Street, Tacoma, Wash. ....	202,840.00
Los Angeles, Calif., P. O. & CT. H.—construction of two additional stories, etc.—Baruch Corporation, 625 South Olive Street, Los Angeles, Calif. ....	461,500.00
Ipswich, Mass., P. O.—construction—Bergen Essex Construction Co., 194-196 Sylvan Avenue, Newark, N. J. ....	63,375.00
Ford City, Penna., P. O.—construction, etc.—A. Farnell Blair, Lake Charles, La. ....	50,372.00
Vivian, La., P. O.—construction, etc.—Barnes Brothers, 314½ Fifth Street, Logansport, Ind. ....	43,172.00
Fresno, Calif., P. O. & CT. H.—construction, etc.—James I. Barnes Construction Co., Builders Exchange Building, Santa Monica, Calif. ....	565,700.00



Cassville, Missouri.  
February 6, 1939.

THE FEDERAL ARCHITECT,  
1700 Eye Street,  
Washington, D. C.  
Gentlemen:

Here is one dollar and fifty cents to brighten up your day and to ease my mind for two years from some date to another date, I do not know when.

You are the tops for low pressure collection and for the best periodical in the U. S. Mails for the Construction Engineer. I read it from cover to cover and like all your articles, especially those on building materials.

I would like to see the roster of all construction engineers when and if you have the space available.

Very truly yours,  
WALTER E. PERKINS,  
Construction Engineer.

## JUDGE WETMORE'S LETTER

(Continued from page 6)

We didn't know anything about totalitarian forms of government in those days, nor of teetotalarian forms of government either, for that matter, and an out and out White Ribboner would have felt as much out of place among certain Members of Congress as a prune in a cocktail. Those were the days when, as some one has said, the Speaker rapped with his gavel to call the House to order, and the Chaplain arose, looked over the assemblage, and *prayed for the country.*

I am rejoicing today at the advent of some rain, a thing we haven't seen much of for three months. It just looks like a case of discrimination. To the south, west and north of us the service has been somewhat better in spots. But generally speaking things were getting parched. There is a female rain-maker down here in Florida. Early this month a lot of citrus growers, who must be real optimists or they wouldn't be engaged in that business expecting to get rich, chipped in and got her to do her stunt. She brought a camp chair and sat down by a lake under an umbrella. Presently it began to cloud up. After a couple of hours it started in with what the newspapers referred to as a million dollar rain. I don't know whether or not Jupiter Pluvios, like the Captain of the "Pinafore," has sisters and cousins whom he reckons up by dozens, and aunts, but if he has, then this female Florida rain-maker must be one of them. I understand she makes no charge for her services but is in a receptive mood as to donations. The expectant beneficiaries — citrus growers and truck farmers—chipped in as I have said, and the plunder, I am told, amounted to a number of hundred dollars. For the amount of capital investment the business seems to pay a pretty satisfactory return. The fact that there are people who believe that a human being can control the laws of Nature goes to prove that Barnum was right when he said that there was a sucker born every minute but he was all wet when he limited the birth rate to one per minute, which is "too less" as an interpreter I once had in Holland would have expressed it.

The so-called Reorganization bill has become a law as I understand it, and that means that the construction branch of the Treasury Department will have to change cars again. Hope they get a lower berth this time, and that they will not be looked upon as an Orphan Annie, and I also hope its importance will be recognized sufficiently in the Congressional Directory so that it will get more than a three line statement that it lets construction contracts.

Retirements, transfers, resignations and the scythe of the Grim Reaper have taken a heavy toll from the personnel of the old office. The last to leave by transfer is Fred P. Trott, for years my secretary, competent, faithful, as inseparable from me as my shadow, a lovable companion in fair weather or in foul, endowed to an unusual degree with common sense—a faculty which someone has said is not so common after all—and while always cooperative he was by no means a "yes man," but did his own thinking, and had the courage of his convictions. As I once

**Elsie N. SAYS:**

**MEET  
ME IN  
SWEETS**

"To save your time, we've put our full catalog of LCN Door Closers in Sweet's for 1939: Section 16/26. But if you don't find there exactly what you want, or if there is any question on door control to be answered, we'll be delighted to hear from you. Call the nearest LCN representative, or write us direct."—*Elsie N.*

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**DOOR CLOSERS**  
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70th ANNIVERSARY

1939



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Modern Shop Methods*

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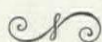
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Oregon Avenue and Swanson Street  
PHILADELPHIA, PENNA.

MANUFACTURERS OF  
STEEL SHELVING, LOCKERS,  
STORAGE AND WARDROBE CABINETS

told the Chairman of the Committee on Appropriations of the House, the only employee in the old office who was indispensable was the messenger, and yet I am going to find it difficult to adjust my mind to the realization of the fact that Fred Trott is no longer one of the gears of the old machine—what is left of it.

With kind regards and best wishes to all the good fellows—male and female—in the office, I am,

Sincerely,  
"THE JUDGE."



New Orleans, La.  
Jan. 30, 1939

Mr. Edwin B. Morris,  
Washington, D. C.

My Dear Eddie:

Your letter of November 11, 1938 has remained unanswered until this late date, but when I explain the cause, no doubt you will overlook the delay. Your kind advice relative to my settling down and leading an upright and exemplary life, regardless of how painful it might be, has had its effect and caused me to stop and ponder. Others have advised, however, to keep going and settle up. In looking back over days past I can see where I have associated too much with such as Hot Air Artists, especially those who were so hot they had to carry a refrigerating plant with them; so I have decided to turn over a new leaf (the old one being full), and mend my ways, or at least put on a few patches. Referring again to your advice, please read St. John, VIII, 7th.

I have decided to embark in some kind of business, and have been busy of late in trying to decide just what business to take up, to keep me out of deviltry (also out of jail). First I thought I would go into the not raising hog business, as I had heard the Government was paying a good price per head for hogs not raised, and this price could be multiplied into a large income, depending entirely on the number of hogs not raised. After considerable study I gave up this idea, as I concluded the not raising of hogs was not a suitable business for a retired Gentleman Engineer, (an Engineer who can still act as a gentleman). Then I gave some thought to not raising cotton, but this would take me away from the "bright lights" and the pitfalls of that dear "NuLeans"; so I gave up this idea.

After due thought and investigation, I have decided to go into what might be known as "The No Business Business." The trend of the Government being to pay stated amounts for not doing things,—such as not raising hogs, cotton, etc. It will be but a short time until it will be paying for not operating a business. Being a construction man I am figuring on not building houses. In view of the number of housing projects and houses now under construction by the Government it will be but a question of time until the Government will have to pay private individuals not to build, so there will be a continued demand for government construction projects and houses. I figure, Eddie, there will be great possibilities in this business

of not building houses, and which will bring in big revenue, depending on the number of houses not built.

I am now engaged in gathering drawings and preparing specifications for the houses I will not build, and also looking over sites I will not buy; then just as soon as the Government reaches a point where it will pay for houses not built, I will then branch out in this business of "Not Building Houses". I have my office and equipment all in readiness.

I was amused when reading the letter from C. H. Kain, in your issue of July 1938, FEDERAL ARCHITECT, relative to the extermination of Cockroaches. Here in the South we are not so cruel, and live and let live. We have cultivated Cockroaches until they now grow to a size of three to four inches in length, and with a wing spread of four to six inches. In prehistoric times, having been crossed with some night bird, such as owl, or possibly a bat, they now soar through the air like a bird, and at night when flying through the house they are very companionable, and the hum of their wings tends to sooth an accusing conscience and promotes slumber.

The following ode appeared in a publication several years ago, and it shows that Man emulates the habits of the Cockroach, or the Cockroach emulates Man, I do not know which. This poem, however, evidently referred to the northern Cockroach, which has not yet become domesticated and tame, like the southern variety.

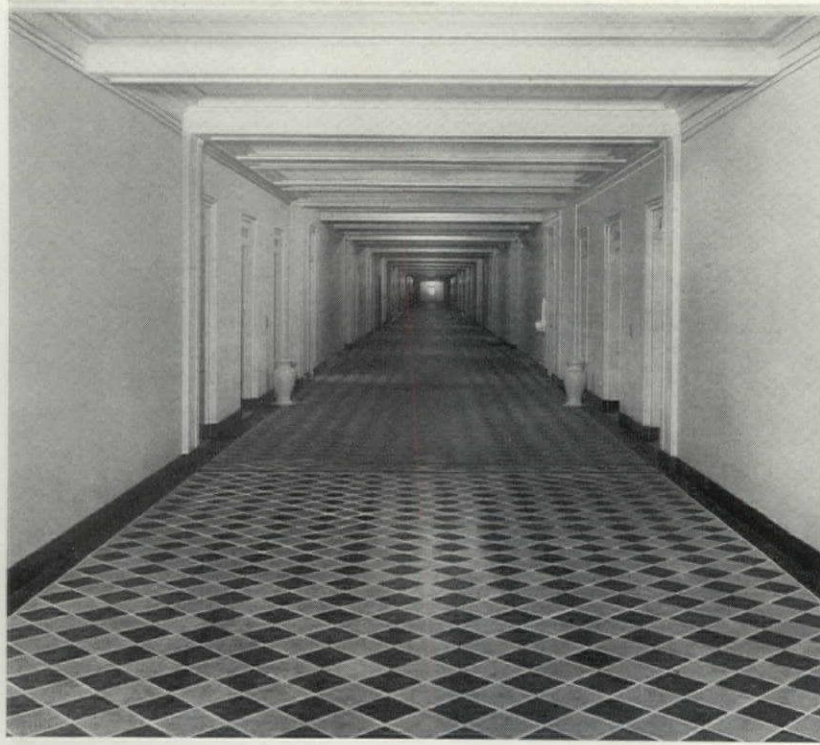
BROTHERS,—UNDER THE SKIN

"Scuttle, scuttle, little roach,  
How you run when I approach.  
Up above the pantry shelf,  
Hastening to conceal yourself.  
Most adventurous of vermine,  
How I wish I could determine  
How you spend your hours of ease—  
Perhaps reclining on the cheese.  
When we've gone and all is dark,  
Then the kitchen is your park.  
Do you banquet on tea leaves,  
Or swing in webs the spider weaves?  
How delightful to suspect  
All the places you have trekked!  
Does your long antenna whisk its  
Gentle tip across the biscuits?  
Do you linger, little soul  
Drowzing in the sugar bowl?  
Or—abandonment most utter—  
Do you fox-trot on the butter?  
Do you chant your simple tunes  
Swimming in the baby prunes?  
Then when dawn comes, do you slink  
Homeward down the kitchen sink?  
Timid roach, why be so sly?  
We are brothers, you and I,  
For after midnight, like yourself,  
I explore the pantry shelf."

I understand that representatives of the Portland Cement Association, assisted by C. H. Branscombe, Chief Field Engineer of the Public Building Branch of the Procurement Division, are visiting the field

(Continued on page 42)





*New Interior Department Building—Architect Supervising Architects Office  
Associate Architect, Waddy B. Wood—8"x8" Black and Grey quarry tile*

## *Countless Years of Service Assured*

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Low initial costs and low maintenance make quarry tile an ideal durable floor material.

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**CANTON, OHIO**

district offices, to give instructions, or suggestions relative to the use of concrete. This is very good, but I believe such education should start in the Supervising Architect's division of the Building Branch, and designers, draftsmen, and specification writers given advice as to how to design buildings and prepare specifications suitable for concrete as the building material. Do not try to imitate a stone building with concrete, by following stone block design, with rustications, etc., but turn out a design and construction detail which will show the material used is concrete. Also when contracts must be given to the lowest bidder, and competent and trained contractors can not be selected, perfect work in architectural concrete is difficult to obtain. Neither can perfect work be expected from inexperienced workmen, and when the Public Buildings Branch advises contractors that,—“While the contract does not specifically require such, it is the desire of the Office that local labor be employed so far as possible.” Then, as soon as the building is constructed and the concrete not yet seasoned and dry, do not coat it with an oil paint and expect the paint to adhere.

In 1909, when the question of the use of concrete by the Supervising Architect's office first came up, J. K. Taylor, then Supervising Architect, in a letter to the Concrete Publishing Company stated that:

“My position in regard to concrete has always been the same, that is, one of belief in the material if properly constituted and installed, but I cannot see that there is any half-way point to its installation: it is either good or bad. The material is peculiar in that sense, and differs from others as a somewhat indifferent piece of brick work could be allowed to stand without endangering the structural strength of the building, but an indifferent piece of concrete is a menace to the lives of the occupants.

“Again, whether concrete is good or bad depends largely on the manner in which it is installed, and a contractor without knowledge, even though he may honestly intend to give a good piece of work, may through ignorance fail to do so; and if he is not thoroughly conscientious the loop-holes for defective work are innumerable.

“Therefore, while I would like very much to use more concrete in the work under my charge, from the methods of letting our contracts, as dictated by law, we have very little choice in selecting the contractors, and cannot depend on securing one who will have both the knowledge and honest intention to install the work properly, and so we refrain from its use in many instances where it could advantageously be adopted—not because of any prejudice against it, but simply from the fear of disastrous results from faulty or dishonest workmanship.”

The above had reference to reinforced concrete construction, as at that time architectural concrete was in its infancy. The statements of Mr. Taylor, however, can well be applied today to work under the Public Building Branch, and so long as there can be no choice in the selection of contractors.

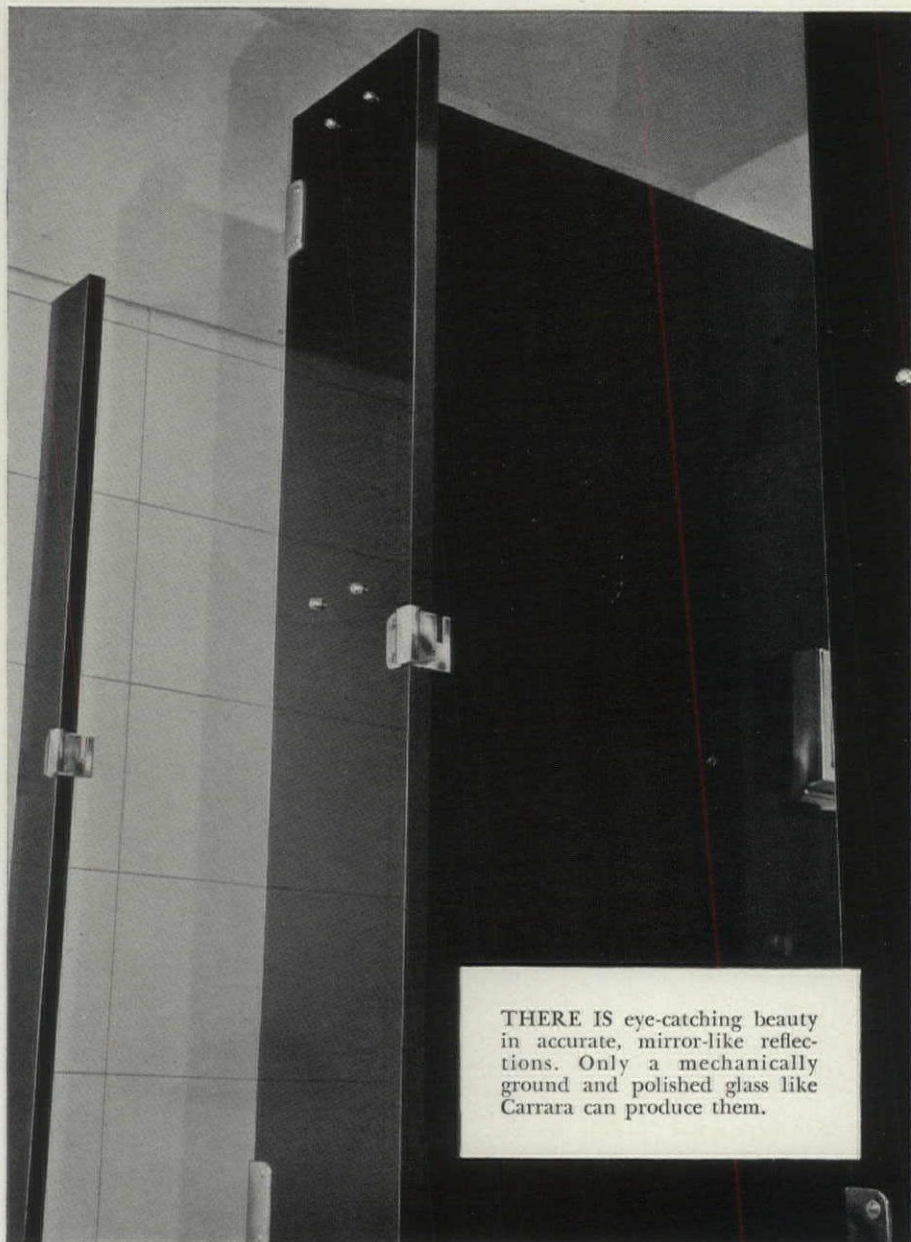
Yours Sincerely,

H. G. RICHEY.

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The FEDERAL ARCHITECT · APRIL, 1939



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stone, produced in  
color shades of

**GRAY, CREAM,  
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in the New York City Park Bath Houses presents a sturdy colorful floor. The illustration above shows a typical installation in the Astoria Park Bath House.

*Architect*

*Aymar Embury II*

**THE SPARTA CERAMIC COMPANY**



NEW YORK CITY BUILDING, WORLD'S FAIR, N. Y. 1939  
 AYMAR EMBURY II, *Architect*                      PSATY & FUHRMAN, INC., *Builders.*

**T**HE only permanent building in the heart of the fair grounds; a huge rectangle 215' by 422'. ATLANTIC TERRA COTTA used for the mottled green spandrels under the large windows and for the lustrous black capitals to the columns; a strikingly successful relief for the rigid gray of the limestone by the use of colored glazed smooth surfaces.

The penthouse is faced on all elevations with ATLANTIC TERRA COTTA. The ashlar has a very light gray background with subdued buff spots and superimposed small black spots. The triglyphs and the disks in the metopes are mottled green and the field white with faint yellowish tinge. The coping is lustrous black. These glazed Abbochrome colors all fired at standard Atlantic temperature 2400° F.

2' 0" diameter disks in the stone parapet are brilliantly gold glazed (twice fired).

The ashlar units in the penthouse field are 2' 5" wide by 2' 10" high. The triglyph and metopes 2' 6" high and the pieces carrying the green disk 2' 6" wide.

Every piece made with closed back providing excellent structural stability and eliminating expensive filling.

All flat surfaces face planed in dry state before firing insuring level face.

Each piece machine ground to accurate dimensions on all sides after firing to provide *uniform* 1/4" joints, and wrapped in heavy paper containers for safe delivery.

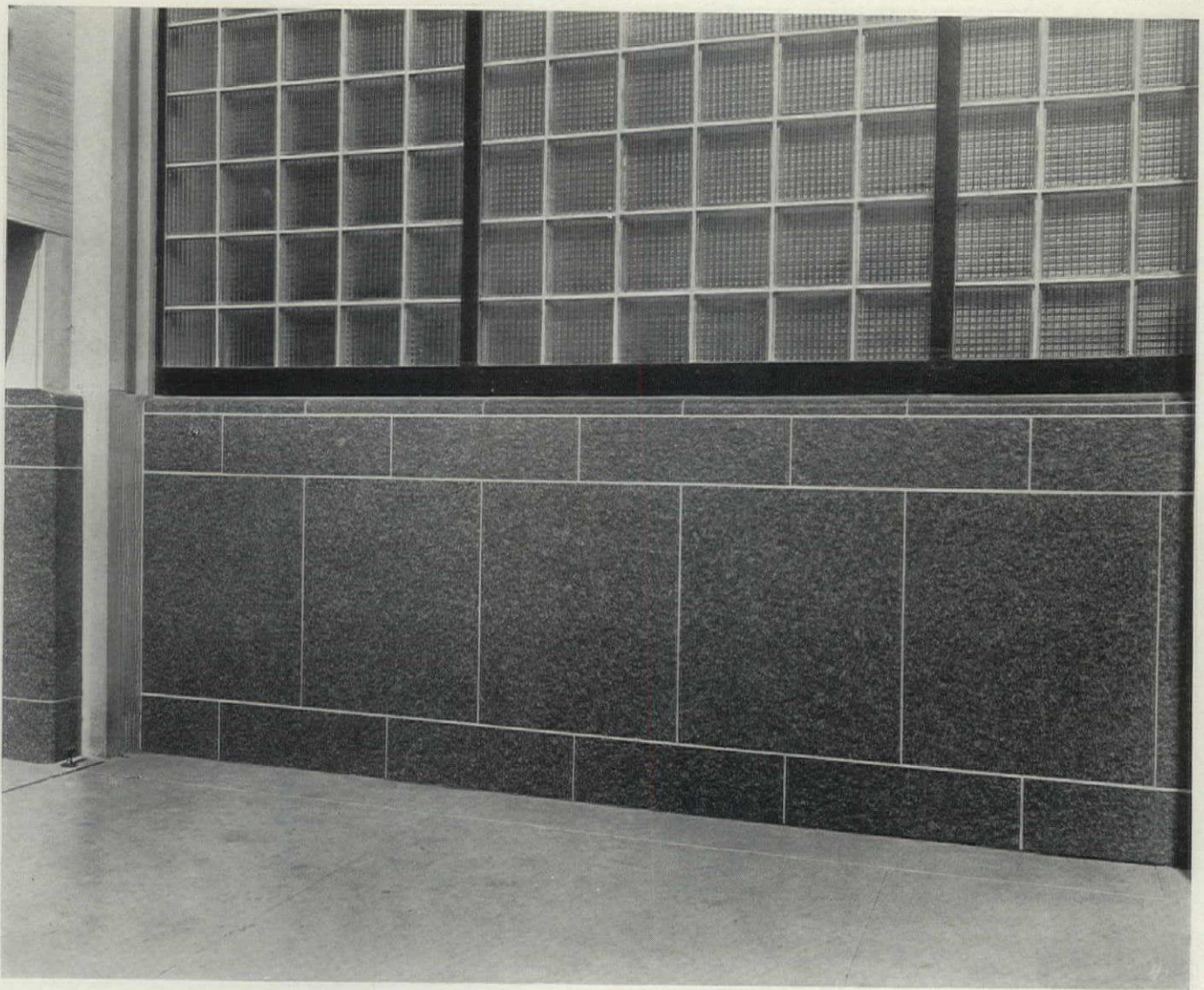
Great technological progress in the last few years has made ATLANTIC TERRA COTTA the modern high quality building material.

# ATLANTIC TERRA

MAKERS OF AMERICA'S BEST KNOWN TERRA COTTA

101 Park Avenue, New York City

Southern Branch: ATLANTA TERRA COTTA CO., East Point, Ga.



NEW YORK CITY BUILDING, WORLD'S FAIR, N. Y. 1939

Detail of spandrels under large windows, first floor, in lustrous mottled green glaze. The pieces are 2' 8 $\frac{5}{8}$ " wide and 3' 1 $\frac{1}{2}$ " high.

### THE INTERIOR

The great room in the interior 160' by 370' is lined on four sides, including the six stairhalls, with a wainscot five feet high. The field is in units 1' 3 $\frac{1}{2}$ " high by 1' 5 $\frac{1}{2}$ " long, closed back (planed in dry state to insure level face and machine ground after firing to accurate dimensions for *uniform* setting joint of 3/16") in lustrous Scotch blue glaze.

The diamonds in the pattern cap to this wainscot alternate in oyster white and scarlet vermilion (twice fired) glazes.

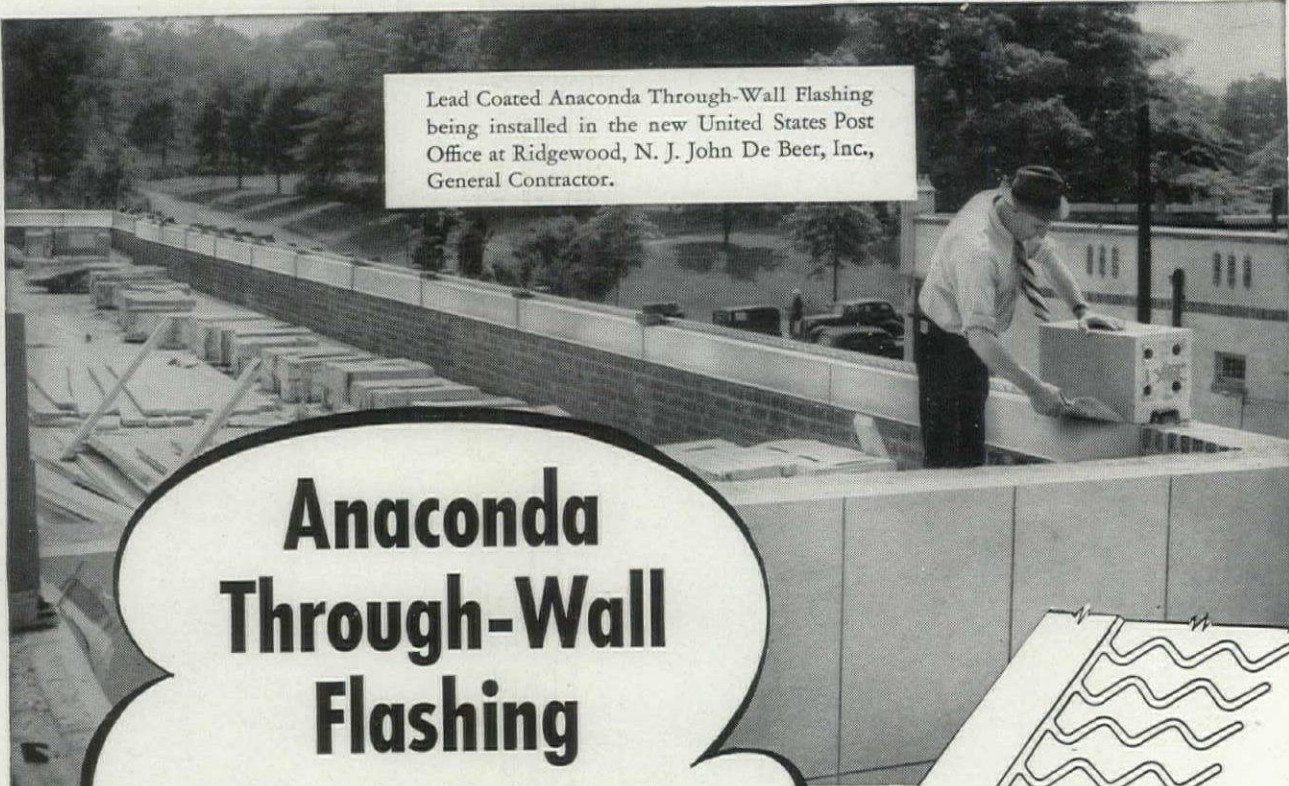
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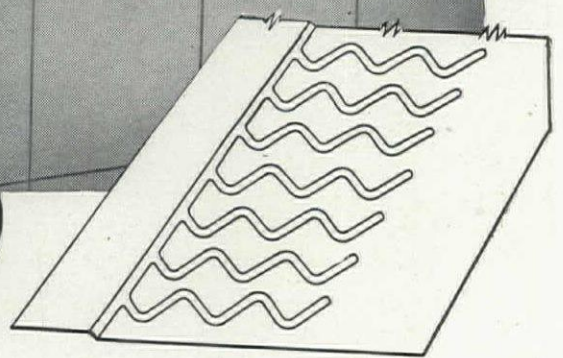
Southern Branch: ATLANTA TERRA COTTA CO., East Point, Ga.

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*Efficient, durable, inexpensive, adaptable to almost every masonry or brick condition*



## Anaconda Through-Wall Flashing\* has these worthwhile features:

1. Zig-zag corrugations, 7/32" high, provide complete mortar bond in all lateral directions.
2. An integral die-stamped dam, also 7/32" high, gives complete drainage in the desired direction. Flashing drains itself dry on a level bed, reducing possibility of wet walls and heaving by frost.
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4. Flashing is easily locked endwise by nesting corrugations. Such joints are water-tight, but, if desired, are

easily soldered because of adjoining flat surfaces.

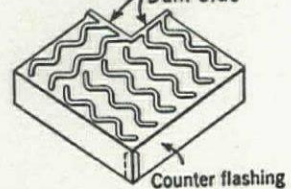
5. Tongue of dam is so designed that it may be placed within 1/4" of face of wall, protecting more of the wet portion of the wall, and still providing ample bed for efficiently pointing the mortar.

Anaconda Through-Wall Flashing, readily obtainable from Anaconda wholesalers, is made of 16-oz. copper—either plain or lead-coated. It is furnished in 5' and 8' lengths, in standard and special widths with various selvages, and corner flashing as illustrated for 8" and 12" walls.

Anaconda Publication C-28 contains complete description of and suggested specification for Anaconda Through-Wall Flashing.

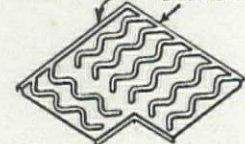
\*Patent No. 1,906,674

### INSIDE CORNER FLASHING



Standard inside corner flashing unit. Dam on inside; drains out.

### OUTSIDE CORNER FLASHING



Standard outside corner flashing unit. Dam on outside; drains in.

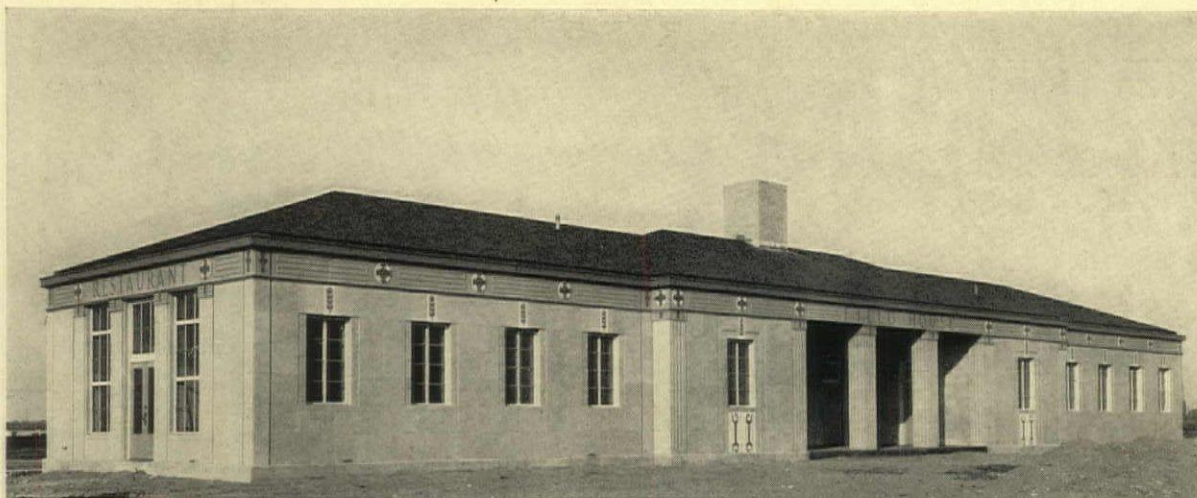
38116



# Anaconda Copper

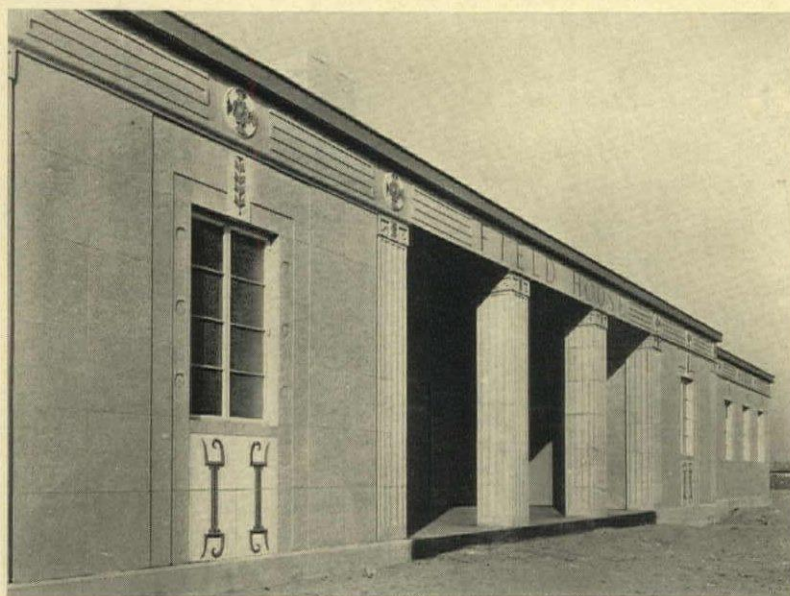
THE AMERICAN BRASS COMPANY • GENERAL OFFICES: WATERBURY, CONNECTICUT  
 In Canada: Anaconda American Brass Ltd., New Toronto, Ont. • Subsidiary of Anaconda Copper Mining Company





PERMANENT FIELD  
HOUSE,  
WORLD'S FAIR SITE,  
N. Y.

*Designed by*  
AYMAR EMBURY II.



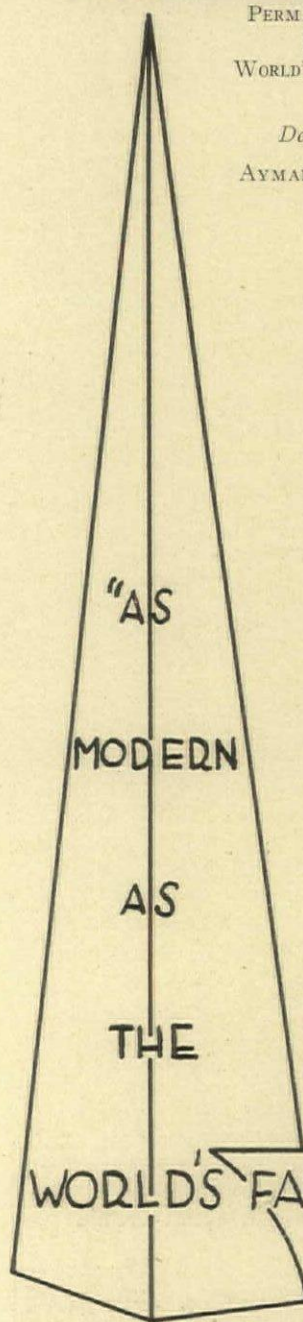
The Field House, a modern Sports Building at the New York World's Fair, is done in solid back Federal Seaboard Terra Cotta, both exterior and interior. The general ashlar size is 2'0 by 2'0 while the cornice pieces measure up to 4'8" in length—sizes unheard of in Terra Cotta a few years ago.

The modern extrusion process permits the production of these large ashlars while surface planing of the ashlar, before firing, insures a flat, straight surface without waviness.

Newly developed processes assure controlled color—hard surfaced single or blended glazes with shade variation as the architect wishes.

The Field House is a soft buff mottled multichrome glaze with polychrome in white, grey and blue-green lustrous glazes.

*Let's send you all the facts about the new Terra Cotta. Write our New York office for form #20.*



*... an architect's  
description of the  
**NEW** Federal Seaboard  
Architectural  
Terra Cotta*

**FEDERAL SEABOARD TERRA COTTA CORPORATION**

10 East 40th Street, New York City

Perth Amboy, N. J.

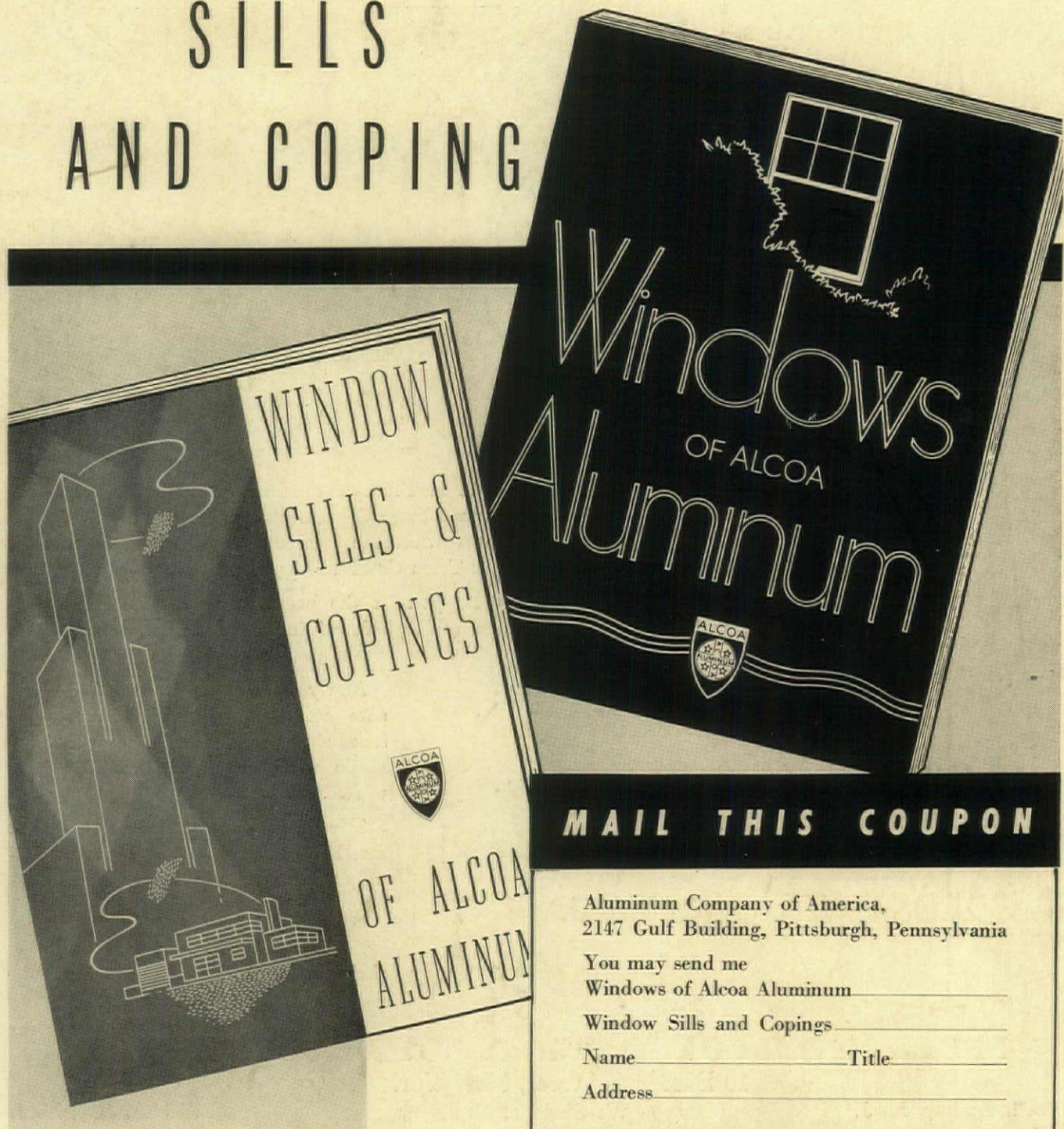
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