

LEAD

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DAYTON SNY

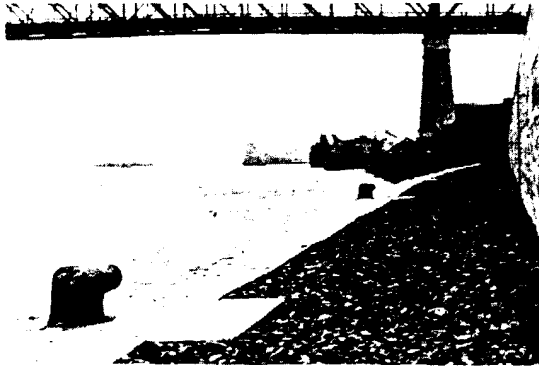
Painting a large greenhouse with pure white lead and oil to withstand severe conditions



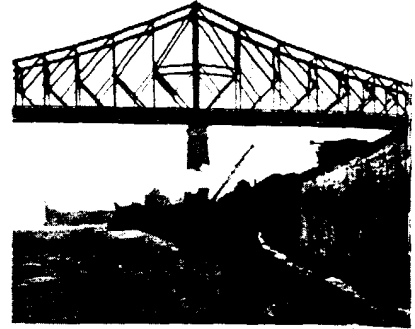
LEAD INDUSTRIES ASSOCIATION

Graybar Building • 420 Lexington Avenue • New York

Lead Alloy "Cinch" Anchors Provide Dependable Means of Anchoring Large Bollards



At left, the completed view of wharf No. 1, Montreal Harbor, Montreal, Canada, with mooring bollards anchored and, at right, before rebuilding the wharf



RECENTLY, by the use of lead alloy "Cinch" anchors, an unusual job of anchoring large bolts into concrete was satisfactorily completed for the No. 1 wharf of Montreal harbor, Montreal, Canada. The wharf had been rebuilt, necessitating the re-installation of seven mooring bollards at a new level on the existing wharf. This presented a difficult problem since the specifications called for two back bolts and two front bolts, set at two varying angles, to secure each bollard. Obviously, the bollard could not be placed in position over all four bolts at the same time. Some means, therefore, was necessary by which two of the bolts could be set after the bollard was placed in position over the first two. The solution was in the use of the lead "Cinch" anchors.

These anchors consist of two parts,

a cast-iron cone and a lead alloy cone, as shown in the pictures. This forms a single plain unit. The lead part fits over the cast-iron cone and then, by calking, is expanded to grip tightly the walls of the hole drilled for the bolt.

To set the bolts, holes were drilled 4 ft. deep into the concrete with a $4\frac{3}{8}$ in. diameter air drill bit. A $2\frac{1}{2}$ in. bolt of suitable length, threaded at each end, was placed in each hole carrying a special threaded steel male part. The lead alloy ring was then dropped over the bolt and, with a special calking tool, the entire first unit was calked to refusal. On top of this were placed alternately, two complete plain units, without threads, and calked in a similar manner. To prevent the threaded unit from turning in the hole the male member was made with notched sides into which the lead

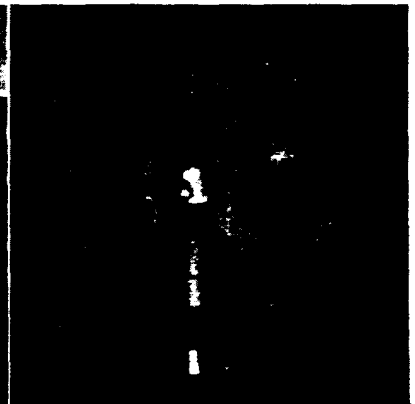
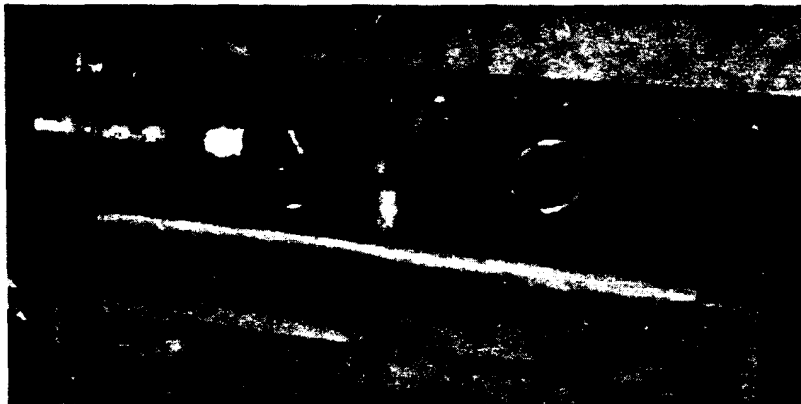
could flow to insure complete tightness.

This procedure was used for the first two bolts, at the same angle, for each bollard. For the two other bolts, the threaded unit was placed in the hole and calked on the bolt. The other plain units followed and the bolts were withdrawn. Then, after placing the bollard in position, the bolts were inserted through the base of the bollard and rescrewed down into the anchorage.

All four holes were filled to concrete level with grout to prevent any possible side play on the bolts when in use.

L. B. Ogilvie & Company, Ltd., of Montreal were the contractors for this installation, supervised by Canadian "Cinch" Anchoring Systems, Ltd., also of Montreal, and Harbor Board Engineers.

At left, three $2\frac{1}{2}$ in. "Cinch" anchors are shown on a bolt, behind which is the special calking tool. At right, a close-up of a complete three unit anchor



White Lead Paint for Severe Greenhouse Conditions

BECAUSE paint on greenhouses must withstand particularly hard service due to constant high temperatures, excess humidity and a generally corrosive environment, it is essential to select paint of a quality that will resist these conditions and to see that it is applied properly. If the conditions the paint must meet are carefully examined and understood, it will be seen why white lead and red lead are so generally used for this kind of work and what precautions should be taken in greenhouse painting.

These structures are usually a combination of wood and metal. They are generally situated in open areas to obtain maximum sunlight. This very situation, however, exposes them likewise to the full force of wind and rain. Inside the greenhouse, temperature and humidity are high. Exterior conditions may vary greatly. Large expanses of glass with a minimum of structural support are subject to vibration and sway, placing a varying strain on the paint at many points.

Obviously, these factors all combine to make the job greenhouse paint must perform extremely difficult. At the same time, the actual painting of greenhouses is more than ordinarily difficult and expensive, making it necessary to avoid paint troubles and postpone repainting as much as possible. Surfaces to be painted are small and broken up, requiring comparatively slow and careful work, and damage to plants may occur during painting.

Pure white lead paint on wood and a red lead priming coat on metal fol-



PHOTOS BY DAYTON SNYDER

General interior view of a large greenhouse, painted with white lead, showing the scope of sash painting that must be done

lowed by white lead top coats have proved highly satisfactory and economical for greenhouse work. The stubborn weathering of white lead exteriors is well known. The unique elasticity of this paint enables it to stand the movement caused by widely varying conditions and sway in the building without cracking and scaling. Thus, its life is prolonged and the difficult, expensive job of preparing and repainting is simplified. By mixing white lead on the job, the formula can be adjusted to the humid interiors to give the maximum wear and freedom from fungus growth.

Putty used in greenhouse work is also important. Cracked or loose putty will admit drafts that increase heating costs and may injure plants. Pure white lead-whiting-linseed oil putty only should be used for its greater toughness and elasticity. Puttying should be done after the sash has been primed.

All the usual precautions should be

taken when preparing the surfaces for greenhouse painting. Paint on sash should lap about $\frac{1}{16}$ in. onto the glass.

Accumulation of an excessively thick paint film should be avoided, because of atmospheric conditions unfavorable to the drying of paint causing thick coats to remain soft and tacky. Consequently, when repainting, the old paint is usually scraped down to the priming coat, the latter touched up, and two coats of white lead then applied. The top coats are usually mixtures of equal parts of white lead paste and lead mixing or reducing oil. This gives a finish with good drying qualities and high light reflectivity.

The photographs are at Vertland, the large establishment of W. W. Vert, at Madison, N. J. Mr. Vert, from his thirty-five years experience with greenhouse paint, says that "pure white lead and oil is the one coating which has met all the requirements, assuring complete protection to my buildings, proving durable year in and year out."

Painting must be done promptly and carefully to insure satisfactory results. Greenhouse painting specifications should assure such care

W. W. Vert, in whose huge greenhouses only pure white lead is used as a result of his 35 years experience with greenhouse maintenance



Lead Plumbing Proves Economy on Another Housing Project

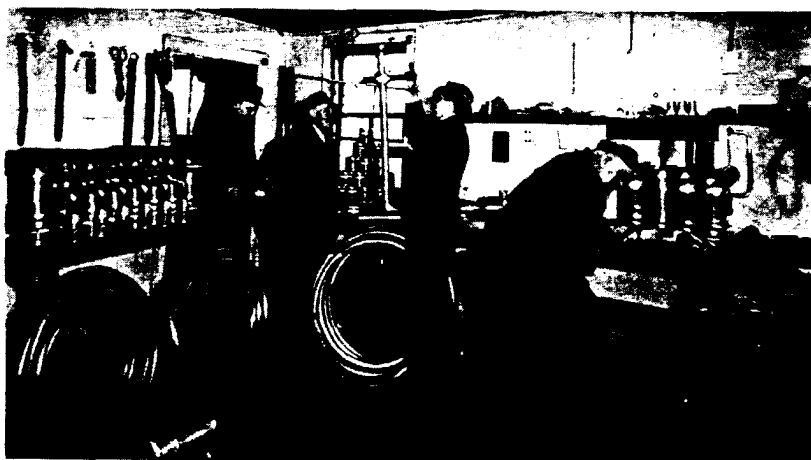
Experienced Contractor Again Finds Lead Better and Economical



Above, general view of the new Commodore Perry housing project, Buffalo, N. Y., where lead plumbing continues to serve Buffalo economically; below, air view of the entire project under construction



Below, preparing lead work in the temporary workshop and inspecting frames of wastes and vents ready to be installed



FOLLOWING the example of the Lakeview and Willert Park projects in Buffalo, N. Y. (LEAD, Sept. 1939), the Commodore Perry U.S.H.A. housing project, now being completed, is further evidence of how the Buffalo housing authorities rely on lead plumbing to obtain long-term economy and efficiency. This project consists of 50 buildings with a total of 772 apartments. All soil and waste pipe are cast iron and lead, and all joints in cast-iron sewer, soil, and waste pipe are calked with lead. Connections to water closets are made with 4-in. extra heavy lead bends and all vent and leader roof flashings are 6-lb. sheet lead. Lead P-traps are used for all bath tub connections. In all, 30,954 lb. of lead pipe, 802 lead bends, 35,374 lb. sheet lead, 772 lead P-traps, and a large tonnage of calking lead were used. Moreover, all lead pipe, traps, bends and calking lead was stamped with the Lead Industries' Seal of Approval, identification of highest quality lead products.

The question of long-term economy is an important consideration for housing authorities and, in the final analysis, the material with the longest life and no or minimum maintenance cost is the one with the truest long-term economy. The necessity for such economy was recently brought out in the weekly bulletin "Public Housing" published by the United States Housing Authority division of the Federal Works Agency. Under the heading of "First Cost Of Materials Should Be Weighed Against Durability" the article starts:

"In the effort to reduce operating expenses of projects, local housing authorities occasionally select materials or produce designs that add substantially to capital costs.

"Since maintenance charges are a vital factor in rent, it is often felt that construction economy should give way whenever it appears in conflict with reduced upkeep costs."

The article concludes:

"Good and sound materials can be obtained at relatively low prices and,



Close-ups of lead roughing; at left, lead bends and branch bath and lavatory wastes for double bathroom, and at right, similar roughing for a single bathroom. These frames were made up in the workshop and merely calked in place

if used wisely and in proper balance, these can be made to produce satisfactory projects at the low capital costs as well as the low rents which Congress intended and the public expects."

Experience has shown that where lead is used maintenance cost is reduced to a minimum. This fact in itself mandates its use. Double justification lies, however, in the fact that lead plumbing need not cost any more initially. As stated by Carl C. Grimm, of Buffalo, plumbing contractor for the Willert Park project as well as the Commodore Perry project:

"We are proud to have had the privilege of installing these jobs with lead waste, both from a sanitary and mechanical standpoint.

"The operation costs no more than screw pipe. As a matter of fact I would say less and with a greater benefit to the owner in the time to come. It also saved us considerable cutting or weakening of any structural construc-

tion." This should be proof enough.

An added factor in reduced construction costs, applicable to lead plumbing, is brought out in Release No. 422 of the U.S.H.A. which states that one of the more important reasons why construction costs for U.S.H.A. projects have been lowered is "complete local jurisdiction over them with all contracts and construction procedures carried out in accordance with local practice." This latter point is undoubtedly one of the reasons for the low rents in the Buffalo and other housing projects. It is the practice of experienced plumbers to use lead, and from their experience and knowledge they are best able to utilize lead's advantages to produce highest quality plumbing at reduced cost. The life, efficiency and maintenance-free advantages of lead are well known. The advantages leading to reduced cost are due to the unique working properties and methods of lead plumbing. Lead

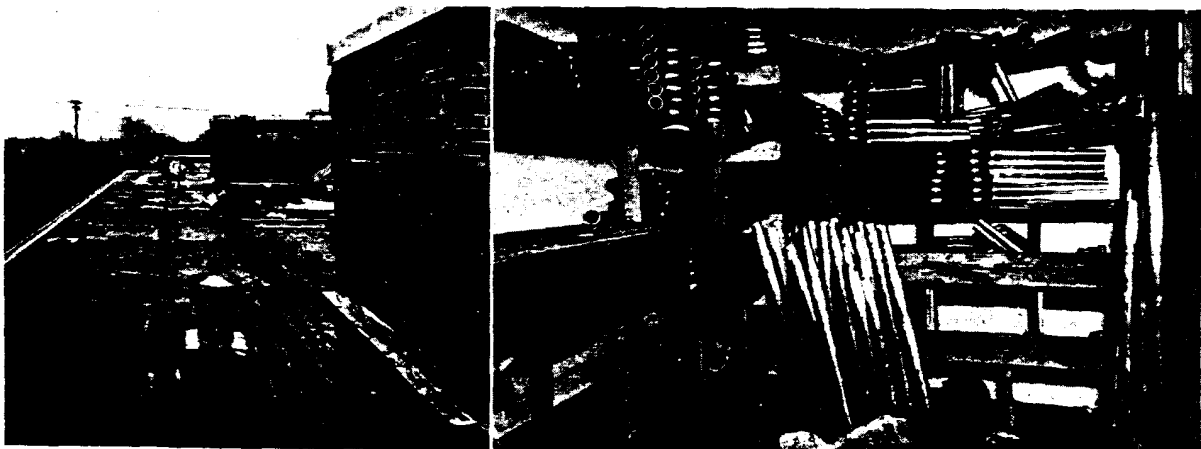
work is done on a bench set up in a temporary workshop on the job. The various frames of wastes and vents are all wiped up with the ferrules and are merely calked into place. Working places are less crowded and better lighted resulting in more efficient and speedier work. Since lead pipe is flexible and easily bent, many fittings and joints are eliminated. In the Commodore Perry project only 12 joints were necessary for roughing in a double bathroom.

Bearing in mind all these advantages it is small wonder that so many U.S.H.A. projects have relied on lead plumbing and so many more are planning its use. No other system offers its combination of benefits.

Green and James, of Buffalo, were the architects for the Commodore Perry project. Carl C. Grimm was the plumbing contractor, and John W. Cowper Co., of the same city, was the general contractor.

At left, sheet lead roof flashing for vent pipes and roof drains. At right, part of the lead pipe and fittings used on the Commodore Perry housing project

PHOTOS BY HAUSER BOB

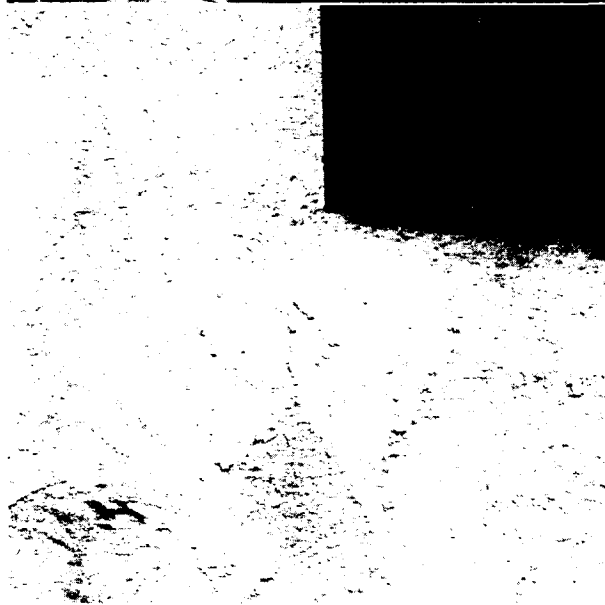




A general view of Parkland Terrace housing project in Hessville, Hammond, Ind., painted with white lead



Two views of the imitation stucco finish obtained with white lead and oil and sand on the Walsh farm development



A general view of another Walsh subdivision on the far northwest side of Chicago, where pure lead and oil was also used

More Builders Find Value for Development

HUNDREDS of homes, in low-priced groups, built and sold with great success, and all painted with white lead! No complaints from owners or work to be redone; no unsightly paint jobs to drive away future clients! That's the story of how excellently white lead is performing for four large mid-western developments.

In Hessville, a suburb of Hammond, Ind., and located in the heart of Chicago's workshop, is Parkland Terrace, now embracing 70 homes and growing at a rapid pace. Designed for low incomes, the homes draw from the surrounding industrial district of steel mills, oil refineries, shipping, chemical plants, and other industries. In this highly industrialized territory paint failures have not been uncommon, but white lead has proved itself most satisfactory.

In Markham, on the far southwest side of Chicago, work is now booming on the farm project of Fred J. Walsh. On almost one acre of land apiece 750 homes will be built in all, at the top price of \$2,850 including land. Even at this amazingly low price no chances are taken with the painting. White lead is used, for it has proved best. An interesting painting style demonstrated in this project is the use of a



White Lead Paint the Answer Development Building

sand paint exterior finish to simulate stucco. The exterior wallboard panels were first primed with white lead and oil and then finished with the following mixture: 30 lb. of white lead paste to 20 lb. of sand mixed with just enough linseed oil and gum turpentine to make a paste that is stiff and yet brushable. The effect is an attractive imitation of stucco.

Two other developments showing this continued reliance on white lead, due to highly satisfactory results, great economy and complete consumer satisfaction are the Robert Bartlett project at Palos Heights and another F. J. Walsh project on the far northwest side of Chicago. Homes in these projects are in a slightly higher income bracket, selling up to about \$8,000 at the top. Architectural details are carefully studied to meet the needs of the individual clients and the entire home planned to satisfy in every respect and to give lasting and maintenance-free service.

Regardless of the cost of the home, white lead and oil is adaptable to all conditions of development work. Very economical in its own cost white lead is used for all types of surfaces and for all decorative effects on all classes of buildings.

Another view of Hessville, painted with pure white lead, in the industrial section at Hammond, Ind.

Painters applying pure white lead paint on a house at one of the Walsh developments (top) and Hessville (bottom)

Another view of the big development of moderate priced homes near Hammond, Ind., all painted with white lead



White Lead—Seventh "White Point" in Berkshire Breeding

Pomeroy Farms, One of Leading Berkshire Breeders, Maintains Buildings with White Lead



A view of Pomeroy Farms, Barrington, Ill., where fine Berkshire hogs are bred and where buildings, pens and wood fences are painted with pure white lead

EVERY true purebred Berkshire has the pleasure of displaying those six ornaments of dress which are so becoming to his appearance in the kingdom of swine. Two erect ears and that somewhat brief and slightly upturned face, splashed with white, distinguishes him from all other breeds. Dressed in a shiny black suit, white shoes and socks, and a white tipped curl in his tail, Mr. Berkshire is ready to bring home the bacon and ham in anybody's feed lot.

But besides these six white points of distinction, Mr. Schillo, manager at the Pomeroy Farm, takes into consideration another important "white point." These Berkshires at the Pomeroy Farms, Barrington, Ill., can boast of well-kept white painted barns and white painted pens and fences as their home.

The "white point" is the result of recently repainting all the buildings and wood fences and pens with white

lead and oil paint. The buildings have always been maintained with lead and oil; however, repainting of these buildings had been postponed for the last ten years. This last summer when repainting began, some of the old paint was well worn but the surface was still in fine condition for a good repaint job. The house was painted first and is now finished with two coats of white lead and linseed oil paint mixed according to the standard formulas. Some of the other buildings, up to this time, have only received one coat and since it was getting into winter, they will be finished next spring when the weather is more favorable. But, as Mr. Schillo says, and as can be seen by the pictures, even this one coat of paint covered very well and made a big difference in the appearance of the auction barn and hog houses that are visited by hundreds of hog raisers annually when Berkshires are being offered for sale there.

The white lead and oil paint was mixed according to the correct proportion formulas for repaint work and brought out to the job in barrels. On the large wall surfaces, the paint was put on with a spray outfit which was reported to be very easy to operate and saved much time. The painter used the regular brushing method for trim and where spray application was not practical.

Pomeroy Farms, Inc., is owned by H. T. Roberts of Chicago, who raises purebred Berkshire hogs as a hobby and sells them for breeding purposes. Past and present show-ring records of these Berkshires have earned for the Pomeroy Farms a top place among the Berkshire breeders of the United States. With undefeated champions, such as Pomeroy Falcon and other prize winners, Pomeroy Farms expects to gain increasing fame with Berkshire swine. The American Berkshire breed has been making outstand-



One of the farm buildings at Pomeroy Farms receiving a freshening coat of pure white lead paint which gives the establishment a neat, well kept, substantial appearance

Painted ten years ago with pure white lead, this house at Pomeroy Farms was recently given two coats of the same material, which had stood up so well and had left the surface in excellent condition for repainting



ing records in the international and state livestock shows.

In order to keep this popularity growing for the Berkshire breed and to help make Pomeroy Farms the most attractive and up-to-date Berkshire farm, Mr. Roberts believes good equipment and neat appearing buildings are very important. When visitors or prospective customers come to a prominent breeder with the idea of purchasing breeding stock, which usually commands premium prices, the first glance at the farm buildings and

fences tells him a lot about the standards used in operating that particular farm. Everyone agrees that properly maintained buildings and equipment go a long way in promoting the confidence and favorable impressions so necessary in any successful business. In the eyes of many, maintenance and appearances are indications of the care and management used in breeding and feeding operations. Since these two things are so important to anyone who raises hogs, first impressions may either help or

hinder a sale. The owner and manager of Pomeroy Farms believe that neat appearing buildings and equipment help them sell their products where poor equipment and appearance would not. They have found that white lead and oil, mixed to fit the job, meets this maintenance problem at a lower cost for a long period of years better than any other paint. Therefore, Mr. Schillo combines this seventh important "white point" with all the other six white pointed Berkshires for a more successful business.



Two of Pomeroy Farms' prize-winning herd of Berkshire swine

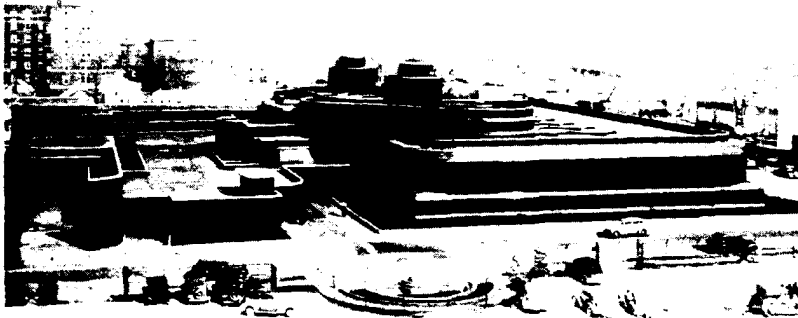
CORRECTION

In the November, 1939, issue of Lead, the lead gutters and leaders on the Cotswold house at Dearborn, Mich., were erroneously stated to be the original lead work several hundred years old, in accordance with the in-

formation provided us. We are now informed that this lead work is comparatively modern and wish to correct our previous statement. Because there is so much lead work of great age in existence abroad and some on buildings in this country brought from Europe, we, therefore, accepted the

statement given us without further checking. Of course, there are also a number of fabricators of fine modern lead work in this country, and many new buildings are graced with its beauty and charm. They have been described in numerous past issues of LEAD.

Lead Flashing for an Ultra-Modern Office Building



Striking modern headquarters of S. C. Johnson & Son, Inc., Racine, Ill. All flashing is sheet lead. Frank Lloyd Wright, architect

THE new office building designed by Architect Frank Lloyd Wright for S. C. Johnson & Son, Inc., at Racine, Wis., has received wide attention because of its striking appearance, numerous structural innovations, and unusual equipment. It is distinctly the "office building of the future," yet, with all its modern innovations, the ever-present problem of flashing and waterproofing remained. To solve this problem, Mr. Wright, who is noted for his progressiveness and ingenuity, fell back on one of the oldest of metals, sheet lead. For this important function, a time-tested, durable material was used in one of the most modern structures of this day.

A total of 30 tons of 4-lb. sheet lead was employed for wall flashing, through wall flashing under the joints in the stone copings, and linings for flower boxes and pools. Flower boxes, incidentally, have been used quite extensively, a large one extending overhead from one side of the reception lobby to the other.

Lead flashing has maintained its

prominent position in architecture for many centuries because it has proved itself durable, works easily to meet all sorts of conditions, is attractive in appearance and does not stain other materials. Because of its great resistance to chemical corrosion, it is most necessary in industrial atmospheres.

However, lead flashing, like any

other material, must be used properly to get the best results. Lead is a soft metal and should be handled carefully during installation to prevent mechanical damage to it. Yet this very softness is what makes it work so easily and fit irregular surfaces or unusual conditions so well. Above all, it must be remembered that lead expands and contracts with temperature changes like other building materials, and provision must be made for this just as provision is made for expansion in steel or concrete work. Long runs of lead flashing should be broken up into a series of sheets joined together by loose-locked joints, no sheet exceeding 8 ft. in length. This minimizes expansion by not making it cumulative over a long distance.

If lead is properly installed it has shown that it will give unexcelled service from every angle. That is why such an old material is found in the best modern construction.

Striking interior of the Johnson office building, showing the unique column design and glass tubing ceiling behind which the lights are concealed



Educational Plumbing Exhibit at Utah State Fair

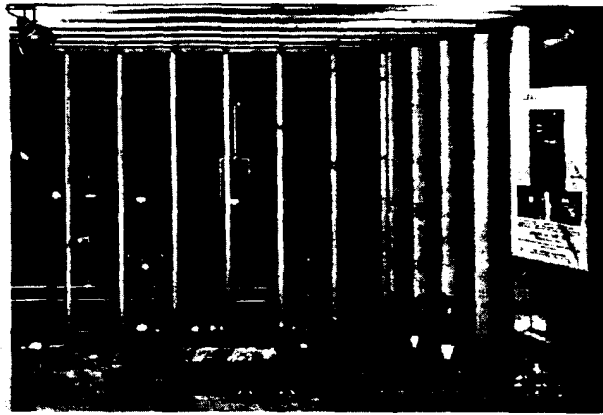
WHAT makes it work is a question which, when applied to plumbing, could not be answered by many people, with the exception of those in the construction professions. The public, in general, thinks of plumbing in terms of attractive fixtures only, and has little or no conception of what goes on behind the walls

and why good plumbing is a vital part of health protection. For this reason the plumbing and allied industries have endeavored in many parts of the country to educate the public and take the mystery out of plumbing.

A recent and highly successful undertaking in this respect was a plumbing exhibit demonstrated at the

Utah State Fair by the Utah Chapter of the American Mining Congress and Local 19 of the United Association of Journeymen Plumbers.

The exhibit consisted of two parts, one showing an attractive modern bathroom complete with fixtures, and the other showing the complete piping that would be installed to make this



Educational plumbing display at the Utah State Fair. Finished bathroom at left, and the necessary piping and lead shower pan for this bathroom at right. All branch wastes and vents are lead

same bathroom function properly. Moreover, the exhibit demonstrated not only the correct installation practice necessary for adequate health protection, but also highest quality materials whose long life maintains such protection for the longest time. Quality plumbing of this type does not need to increase costs if properly planned.

Extra-heavy cast-iron pipe, with

lead-calked joints, was used for the soil stack. From this all waste and vent pipes to the shower, lavatory, tub, and water closet were of lead. Extra-heavy lead drum traps were used for the bath and shower stall, the latter being fitted with a 6-lb. sheet lead shower pan. The pan is shown without the coating of asphaltum which would be applied to each side when actually

installed for use. The water supply pipes to the fixtures were of red brass.

During the Fair, A. M. Scott, Chairman of the Utah State Plumbers Examining Board, under whose supervision the exhibit was constructed, and members of Local 19 were on hand to explain to visitors what part in health protection the hidden part of plumbing plays.



The following articles and reprints contain information, drawings and specifications on the use of lead products helpful to architects, engineers and others in the construction industry. They are available, free of charge, upon request to the Lead Industries Association, 420 Lexington Avenue, New York City.

WHAT TO EXPECT FROM WHITE LEAD PAINT

An attractive 28-page booklet with charts, formulas, and mixing instructions covering some of the problems of painting and how white lead meets these problems.

PAINTING YOUR HOME by Dr. F. L. Browne, Senior Chemist, Forests Products Laboratory, Madison, Wisc.

A discussion of house painting reprinted from American Forests, May, 1939.

SOME PAINTING PROBLEMS AND THE ANSWERS by Dr. F. L. Browne, Senior Chemist, Forests Products Laboratory, Madison, Wisc.

Reprinted from the National Real Estate Journal, Sept., 1939.

WHITE LEAD PAINT FOR MUNICIPAL, COUNTY AND STATE GOVERNMENTS

Specifications and information covering the purchase, use, and application of white lead paint.

STAMFORD'S DOUBLE LIFETIME HOME

A complete analysis of hard lead flashing, white lead paint, lead plumbing, plywood and red cedar Certigrade shingle details and installation methods. Reprinted from the American Builder, July, 1939.

SHEET LEAD INSTALLATION DETAILS

A detailed analysis of the principles and application of lead flashing and sheet lead work for small homes. Reprinted from Sheet Metal Worker, June, 1939.

SUMMARY OF NOTES ON LEAD ROOFING

Reprinted from Sheet Metal Worker.

SHEET LEAD SHIELDING X-RAY ROOMS

A discussion of X-ray protection and installation methods reprinted from Sheet Metal Worker.

PLUMBING CODES—AN ANALYSIS AND SURVEY

By Robert Dick, Member, Research Committee, American Society of Sanitary Engineering.

A detailed study of modern plumbing ordinances, their purpose, deficiencies, proposed remedies and future outlook.

LASTING LEADWORK IN MODERN PLUMBING

By T. N. Thomson, Technical Editor, Plumbing and Heating Journal.

Reprinted from Plumbing and Heating Journal, Feb., 1939.

LEAD PUT IN AT SCREW PIPE COST ON COMMODORE PERRY PROJECT

Reprinted from Plumbing and Heating Business, Jan., 1940.

I hope the lead I'm
mining will be used
in your paint



LEAD is a metal that handles a lot of tough jobs. You know that. You know how it stands up against time and weather.

Well, paint has to stand up against such punishment too.

So it's only natural that good paint is made from lead.

And that's a fact. "White lead" is what they call it. It isn't the metal of course. But white lead is made straight from the pure metal, lead.

You can't use any other metal for making paint and get the same result.

White lead puts a tough, elastic coat on your house that sure can take it.

That's not just my idea. You can find out the same thing from any painter who knows his business. Most of

them won't paint their own houses with anything else.

It's gospel truth that you're money ahead when you paint with white lead.

"What to expect from white lead paint" is the name of a book you ought to have if you're thinking of painting. Write for your copy today.

LEAD INDUSTRIES ASSOCIATION
420 Lexington Avenue, New York, N. Y.



A good painter knows dozens of things that go to make up a good painting job. For instance, to be sure your windows are waterproof, he checks them over, applies new white lead putty where needed to exclude weather and make a smooth, even surface over which to paint.



UPON REQUEST, THE LEAD INDUSTRIES ASSOCIATION WILL BE GLAD TO MAIL "LEAD" REGULARLY, FREE OF CHARGE, TO THOSE INTERESTED, AND WILL COOPERATE, WITHOUT OBLIGATION, IN THE SOLUTION OF YOUR LEAD PROBLEMS

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