U. S. H. A. Projects in Buffalo Demonstrate Economy of Highest Quality Plumbing Emphasizing Leadwork

BUILT under the United States Housing Authority program, the Lakeview and Willert Park Housing Projects in Buffalo, N. Y., are two concrete examples that high quality in plumbing installations need not be sacrificed in low cost housing. All soil and waste pipes were cast iron and lead, and all service pipe, closet bends, drum traps, roof flashings and vent connections were of lead.

An argument with which the building industry has in many cases been confronted is that low-cost housing is so necessary and desirable that it is worthwhile to sacrifice quality to some extent in order to attain supposed economy. That this argument is erroneous has now been proved by the Buffalo projects. In the recent bulletin Release No. 312 of the United States Housing Authority the rent schedules for the first five projects to be opened have been announced, those in Austin, Texas; Jacksonville, Florida; Buffalo, New York (2), and New York City. Explanation was made that the unusually low figure for Austin was due to very low material, labor, and maintenance costs. Regarding the others, "The average monthly shelter rents per family announced for the Jacksonville project are $10.58; for the two projects in Buffalo the average is $13.25; for the Red Hook project in Brooklyn it is about $17.00."

Here is true low cost housing. But, represented by these figures is a point of great importance to architects. In the Jacksonville project as well as in Buffalo, lead work was the keynote of the plumbing installation. Moreover, the average rents announced for these projects are lower than that of the Red Hook project in New York where screw pipe was used. Certainly, this is tangible proof that the quality of the plumbing does not have to be sacrificed to achieve low rents in housing projects regardless of size.

The Willert Park Housing Project consists of 10 units housing 176 families and was designed by Frederick C. Backus, architect, of Buffalo. Carl E. Grimm was the plumbing contractor and Samuel Fleisher the general contractor, both of Buffalo, also. In all, 182 extra heavy 4-in. lead bends were used, and each unit used 4½ ft. of 2-in. and 6 ft. of 1½-in. D (XL) weight lead waste pipe stamped with the Lead Industries Seal of Approval. The roof flashings were all hand made from 6-lb. sheet lead and all drum traps were 4 x 9 in. made of 8-lb. lead. The main sewer pipe was 18-in. extra heavy cast iron with 8-in. branches to each building. All joints in cast-iron sewer and soil pipe were calked with lead, with a total of 20 tons of calking lead used.

For the installation a work shop was set up in one of the cellars and nine journeymen, under Harvey Strumm, the supervisor of the job, were at work continuously on lead work, wiping up frames of wastes and vents, making roof flashings, and other lead work.

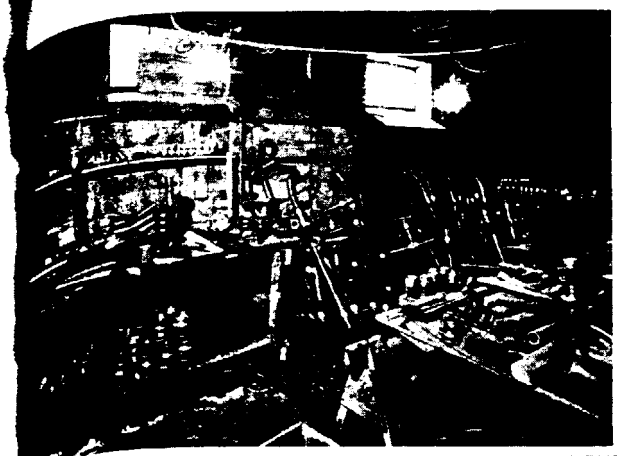
In this method of working is found the basic reason why lead plumbing can be used without increasing cost. In the natural characteristics of lead is found the basic reason why lead plumbing should be used. To render adequate health protection, the pipe material used in plumbing systems must have certain essential qualities. It must be flexible, absorbing building movement and settlement; it must be unaffected by the action of waste matter, which is highly corrosive due to such substances as hydrogen sulphide and ammonia; it must be free from sharp bends and changes of direction which retard flow or clog. It should have bonded joints that cannot leak. All of these fundamental requisites are found in lead, and in lead only. No other material combines them.

The only other factor entering into the matter is the question of cost. For many years the theory has been that it increases costs to increase the quality of materials or workmanship. In plumbing this theory is erroneous, because, as these housing projects show, a more durable and efficient lead installation need cost no more than any other type, and both the material used and the workmanship are of highest quality. As stated above, the reason is in the method of installation. With lead, whole frames of wastes and vents are wiped together on a workbench. The unit is then picked up and set in place. With well-planned work it is not necessary to wipe even one joint after the unit is in place. The result is faster, more organized, and better work with the decrease in cost and the increase in quality going to the owner, who, in the case of such projects as these, is the taxpayer. Moreover, the extra durability of lead means freedom from maintenance expense.

The plumbing installation for the even larger Lakeview Project was done in a similar manner. Henry R. Dechert was the plumbing contractor, and J. W. Cowper, and Green and James, general contractor and architects, respectively, all of Buffalo. There are 72 units housing 668 families. Approximately 20 tons of lead pipe were used with almost 10,000 wiped joints, all of which were made up on the benches in the workshop. Lead calked joints were used exclusively for the 16,000 ft. of extra heavy cast-iron sewer pipe ranging from 6 to 15 in. in diameter, and using 40 tons of calking lead. Noteworthy is the fact that the contractor's bid was $8,300 less for the cast-iron sewer than for a substitute material. There was a total of 334 vent pipe flashings all hand made from 8-lb. sheet lead, 2 ft. square at the base and 16 in. high. Also, as on the Willert Park Project, all service pipe was of lead.

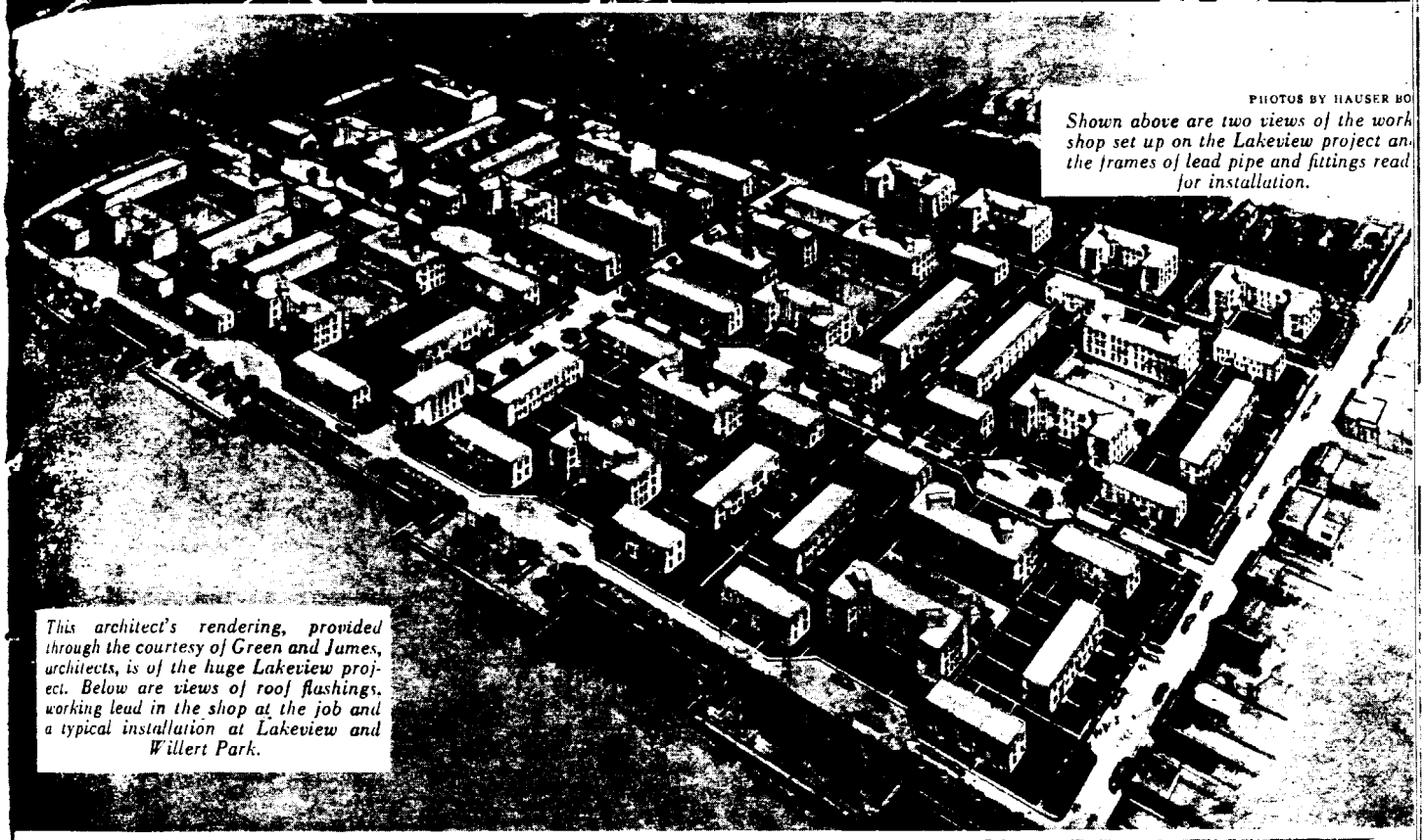
By the use of lead services for these projects, the authorities have taken a further judicious step toward assuring low maintenance cost, necessary if low rent schedules are to be maintained over a period of years, one more reason why durable lead is more satisfactory and economical.

Furthermore, in keeping with the high quality of the installation, all lead pipe, traps, bends and calking lead was stamped with the Seal of Approval.



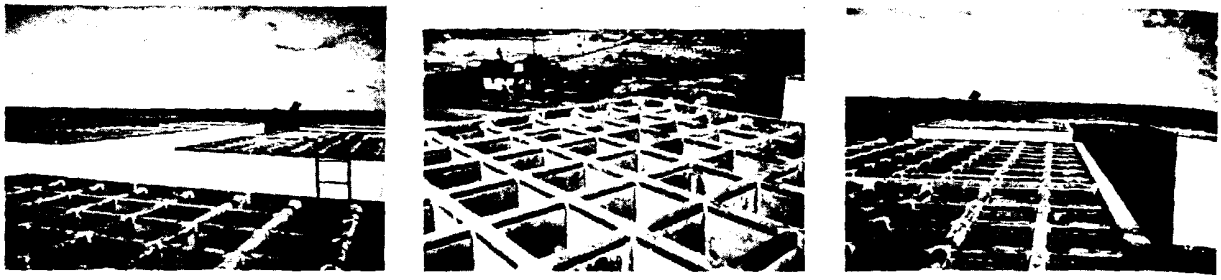
PHOTOS BY HAUSER BO

Shown above are two views of the work shop set up on the Lakeview project an the frames of lead pipe and fittings read for installation.



This architect's rendering, provided through the courtesy of Green and James, architects, is of the huge Lakeview project. Below are views of roof flashings, working lead in the shop at the job and a typical installation at Lakeview and Willert Park.

Corrosive Gases Afford a Flashing Problem Easily Solved by Use of Sheet Lead



Three views of the "honey comb" acoustical block towers with lead flashing and copings at the Engine Test Building of the Sacramento Air Depot.

SHEET lead, due to its combination of advantageous characteristics, recently solved an unusual flashing problem for the Engine Test Building of the Sacramento Air Depot, Sacramento, California.

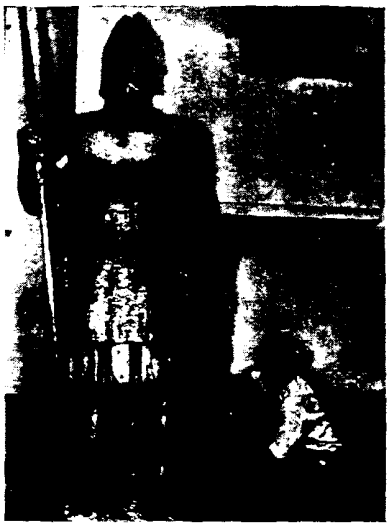
In order to test motors, air intake and exhaust ducts were desired. To provide these ducts, eight towers 20 ft. square and 18 ft. high were built of acoustical block, set above the roof line. The towers are connected in pairs, and, by the operation of the propellers of the test motors, air is first drawn in through the intake towers, and discharged out the exhaust towers. Also, each tower is of special "honeycomb" design to eliminate the tremendous amount of noise generated by the motors during testing operations.

However, since the acoustical blocks were porous they had to be protected against the weather by flashings. These covered the tower partitions, extending down inside the towers about 2 in., and the coping around the outside of the buildings.

In designing this work the Construction Department of the United States Army, and the McKune Metal Products Company, the sheet metal contractors, realized the necessity of selecting a material combining several qualifications. It should be unaffected by atmospheric corrosion, and, even more important, by the fumes and acids generated by the operation of the motors. Naturally, it should be weatherproof to protect the porous blocks, and it should be flexible to absorb the vibration caused by the motors. The flashing material had to be easily worked to allow economical fabrication for cutting, forming and fitting to the tops of the "honey-comb" towers. Also initial low-cost was desired.

Fortunately, sheet lead possessed all these requisites to the highest extent. Approximately 20,000 lb. of 4-lb. soft sheet lead were used, the material being furnished to exact specifications, cut to size at the mill and packed in paper wrapping to insure perfect delivery to the job.

The entire method of installation was carefully planned and carried out with completely satisfactory results. Walter Fagent, general superintendent of the McKune Metal Products Company, supervised this installation.



Artistic Sheet Lead Statue at New York World's Fair

AN interesting application of ornamental lead work is found in the heroic size statue of Norway's great King, Olav Trygvason, now shown at the Norwegian Pavilion at the New York World's Fair. The statue is the work of Wilhelm Rasmussen, Professor of Sculpture in the Academy of Arts at the University of Oslo. The figure is 12 ft. high, weighing three tons, and is made of a wood core covered with plaster and overlaid with sheet lead. In the photograph the statue is receiving a final burnishing with steel wool to bring out the rich highlights in the lead coating.

For centuries lead has been widely employed for ornamental and artistic work. Whether cast, hand beaten or finished by other ornamental processes its ease of working, durability, and attractive color have made lead a favorite material for ornamental artisans. The statue of King Olav is an excellent modern adaptation of lead's age-old tradition.

A New Simplified White Lead Painting Guide

OFFERED free of charge to architects, engineers, contractors and others. "What to Expect from White Lead Paint" is both a valuable reference book and a simplified analysis of painting and its problems. In this booklet, whose cover is reproduced at the right, an attempt has been made to take the mystery out of painting and to show clearly and simply, with a minimum of technical language, the functions of paint and the qualities a paint must possess to serve its purpose best.

The booklet tells exactly what pure white lead paint is, and what service may be expected from it. The importance of proper paint application and selecting a good painting contractor are clearly shown, and cleverly depicted drawings demonstrate the numerous points that make up proper application, and how a good painter will perform them.

Featured in this booklet are numerous charts and tabular material to assist in preparing specifications, estimating and purchasing materials, and other problems. The table for figuring material quantities, reproduced full size below, and the center spread on the next two pages, which gives complete formulas for mixing white lead for every surface, are typical examples of the wealth of useful and informative material in this booklet.

Interior painting as well as exterior receives thorough attention and the reader is shown how white lead is tinted to any desired shade or color.

"What to Expect from White Lead Paint" is a simplified painting explanation and guide offered free of charge to architects, engineers, contractors, builders, and others. Write for a free copy.

QUANTITY OF MATERIALS

For painting 1000 sq. ft. of surface

REPAINTING (Figures are totals for two coats)

KIND OF SURFACE	GALLONS PAINT	WHITE LEAD	LINSEED OIL	LEAD MIXING OR REDUCING OIL	TURPENTINE	LIQUID DRIER
Exterior Wood	3	45 lb.	1⅛ gal.	.....	3 pt.	¾ pt.
Wood Shingles	3¾	55 lb.	1⅜ gal.	.....	½ gal.	1 pt.
Interior Wood, Plaster and Wallboard	2½	40 lb.	.....	1¼ gal.	.....	.....
Exterior Stucco, Concrete, Stone and Brick	5	70 lb.	3 qt.	2 gal.	.....	.....

NEW WORK (Figures are totals for three coats)

KIND OF SURFACE	GALLONS PAINT	WHITE LEAD	LINSEED OIL	LEAD MIXING OR REDUCING OIL	TURPENTINE	LIQUID DRIER
Exterior Wood	4¾	62 lb.	1⅞ gal.	.....	3 qt.	1¼ pt.
Wood Shingles	8⅝	105 lb.	3⅝ gal.	.....	1⅝ gal.	2¼ pt.
Interior Wood	4	56 lb.	2 qt.	1¼ gal.	3 pt.	¼ pt.
Interior Plaster and Wallboard	3¾	57 lb.	.....	2 gal.	.....	.....
Exterior Stucco, Concrete and Stone	10	135 lb.	2¼ gal.	3½ gal.	.....	.....
Exterior Brick	10	120 lb.	3½ gal.	2 gal.	⅝ gal.	1¼ pt.

"Double Lifetime" Lead Plumbing an Economical Reality

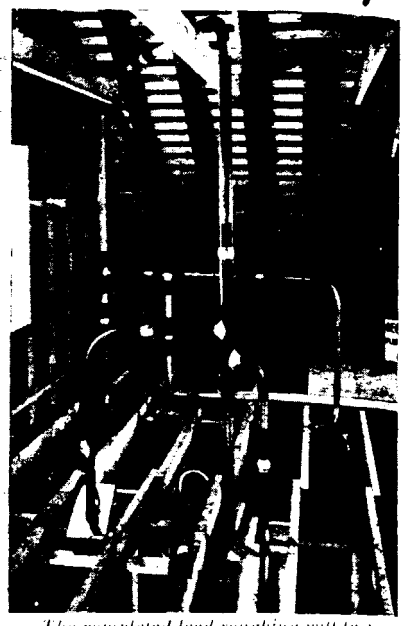
Entire Lead Plumbing System Justifies Stamford Home Title

NO TRUER title could be given the small New England home, whose sheet lead flashings and white lead painting were described in the May and July issues of LEAD, than the "Double Lifetime" home. So outstanding was the construction that the American Builder Magazine, well known building journal, in its detailed description of the methods and materials employed in this house, decided on "Double Lifetime" as best describing its merits.

Moreover, just as this title aptly describes durable sheet lead work and pure white lead and oil paint, so is it applicable to the plumbing installation in this home. From the house drain right through the roof, every soil, waste, and vent pipe was of lead, specified to be stamped with the Lead Industries Seal of Approval. No higher quality installation could possibly be used. Lead plumbing is corrosion resistant, flexible, free from clogging and sharp bends which retard flow. It retains its desirable combination of characteristics throughout the life of the building. Once installed, lead plumbing is in to stay, and without maintenance or repair expense. Nevertheless, despite its recognized superiority, such a plumbing system need not cost a premium.

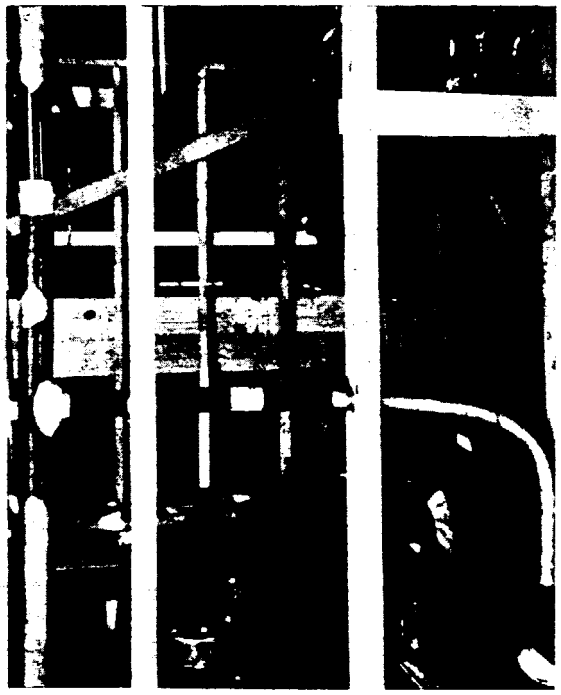
Of unusual interest is the use of a 3-in. lead stack. Several advantages were obtained thereby. In the first place, since lead does not clog or lose diameter by corrosion, the 3-in. diameter will be ample for the discharge from the small number of fixtures attached. Secondly, by using lead, a 4-in. stud partition could be used, thus saving space and material. Also, lead has excellent sound-deadening properties and it was felt that this method of installation would be quieter, a distinct advantage in a small, compact home.

In relation to the structural parts of the building, the plumbing installation is exemplary. Where runs of pipe passed across joists or studs, they were run through holes in these members. Joists and studs were not notched. Consequently, the strength of the structural parts was conserved, preventing sagging floors, creaking boards or cracked tile and plaster.

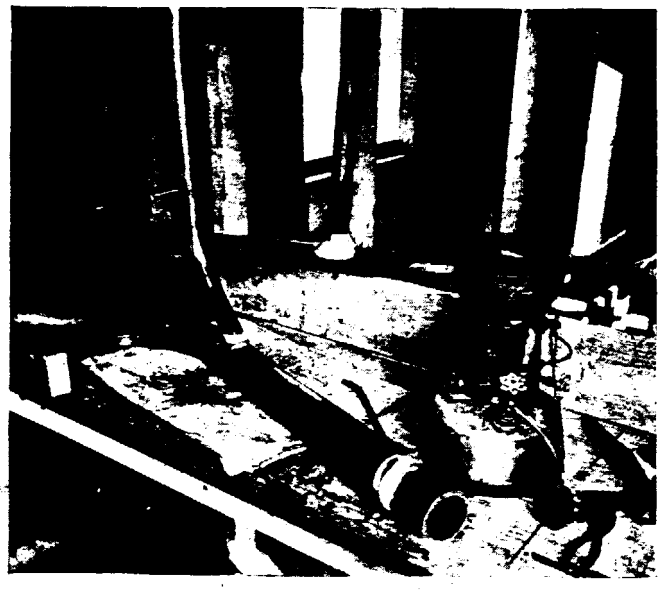


The completed lead roughing will last almost forever, is sleek in appearance with the maximum in efficient performance.

The availability of such a plumbing system in a small low-cost home was made possible by the careful planning of the installation and the time-saving



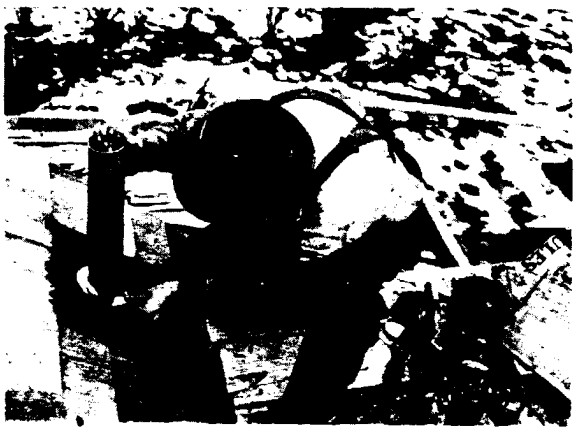
At left, lead pipe reeved through bored holes protects the building's structural strength. Below, preparing the installation on a bench means better workmanship at less cost.



factor of doing the majority of the work on the work bench.

Provoost and Everett, of Stamford, Conn., were the architects. Joseph LiVolsi was the general contractor and George C. O'Neill plumbing contractor, both of the same city.

Copies of the American Builder's complete analysis of the plywood, lead, and Certigrade red cedar shingle features of this home may be had upon request. Reprints are also available of the sheet lead work as described by the Sheet Metal Worker magazine.



The lead roof flashing, wiped to the lead stack, will make this joint permanently water-tight and will never produce unsightly staining.

Excellent Service Pipe Practice in Jersey City, N. J.

SERVICE pipe practice in Jersey City, N. J., as in many other important cities, is based largely on the use of lead. Under the Jersey City Water Department regulations all service pipes 2-in. and under, must be AA (XS) or AAA (XXS) lead, galvanized lead-lined or extra heavy brass seamless pipe with a lead gooseneck.

In the installation of service pipes, a licensed plumber after obtaining a permit opens the street and the Water Department then installs the tap. At the completion of the service installation the Bureau of Water installs the meter. Also, in accordance with good practice, the Water Department regulates the method of installation from the length of the gooseneck, as formed either integrally with the lead service or separately with rigid services, to the minimum depth of the trench and other installation factors.

This selection of material and installation practice demonstrates the emphasis that water works engineers place on two service pipe factors, flexibility and wall thickness. Concerning the first point, service pipes wherever installed are subject to ground movement, either from natural sources or, where laid under streets and highways, from the vibration caused by traffic, railroads, or even heavy machinery. Consequently, to absorb this ever present movement the service pipe must be flexible and have permanent "give-and-take." In Jersey City this flexibility is provided, of course, by the entire length of the lead service and the integral gooseneck, or, where rigid pipe is used, by the lead gooseneck at the main.

Secondly, it should be noted that only thick-walled services are allowed in Jersey City. Where service pipes are subject to corrosive attack, the ultimate life of the pipe is governed by the pipes resistance to corrosion, and how long it will continue resistance. With lead, for example, which is naturally resistant to ordinary corrosive influences, the extra thickness of the walls is double assurance of permanent corrosion resistance and trouble-free service. Moreover, lead does not clog or corrode inside the pipe to reduce the diameter and retard the flow. Lead pipe is non-staining as well, an important advantage, since staining and discoloration of fixtures or laundry is often a source of trouble and complaint for water works.

Actually lead is the only service pipe material that combines not only flexibility and wall thickness, but also the other necessary characteristics of durable metal, non-clogging and non-staining.

It is estimated that there are approximately 25,000 lead services in Jersey City.

Harold M. Ohland, is the Chief Engineer of the Water Department, Jersey City, N. J.

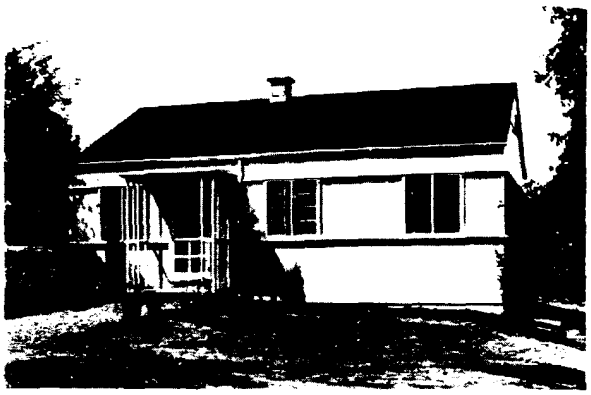
—UNDERWOOD AND UNDERWOOD

Famous Journal Square and a part of the huge railway terminal section of Jersey City, a metropolis of more than 300,000 people.

Lead Products Aid in Pierce Foundation Experimental Home

Low Cost House Styled with White Lead and Flashed with Sheet Lead

REGARDLESS of the style, size, or cost of any home or structure, pure white lead and oil paint and sheet lead flashing are two quality products that meet any building budget. This is true even in the lowest cost house, and is thoroughly demonstrated by construction methods of an experimental house at Lebanon, N. J., erected by the John B. Pierce Foundation. This unusual home cost approximately $2,000 but can, it is estimated, be built for $1,750, or less, in quantity, and is designed for large families with weekly incomes of about $20. There are five rooms, with single wall partitions.



Painted with pure white lead and oil and color styled, this small home is designed to be built for as little as $1,750.

All sections were cut to size in a workshop set up on the job and the actual shell of the house assembled by four men in one eight-hour day. Also, almost all of the furniture was built in. For the sleeping quarters, accommodating eight, there are two children's bedrooms, each with two built-in bunks, a master bedroom with a double bed built in, and a studio couch in the living room. In addition, there is a modern bathroom and a spacious kitchen.

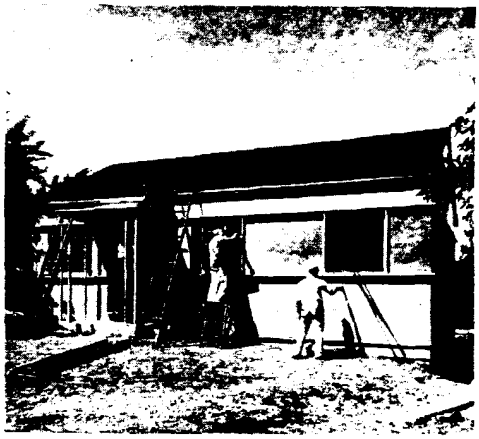
The entire exterior was of 5/8-in., phenol plywood and the interior wall sections and the roof sheathing were of 1/2-in. and 3/8-in. plywood, respectively. A specially constructed asbestos-cement chimney was used. Hard sheet lead was deemed most satisfactory for the flashing since its pliability allowed it to be dressed snugly against the somewhat rough sides of the chimney. Moreover, speed is a major factor in houses of this type and the ease of cutting, shaping and fitting sheet lead is a distinct advantage, and the material cost is also low.

All exterior walls and interior walls and ceilings received two coats of pure white lead and oil, mixed on the job and tinted to the desired shades and colors. It was felt that two coats would be sufficient since the phenol treatment of the plywood panels, applied in the shop, would act as a sealer and priming coat.

In painting the interior and exterior, careful attention was given to the selection of colors and color combinations to "color-style" the home to its best advantage. This treatment of the decorative factor of a low-cost home is one of the basic principles in the Pierce Foundation theory. The mere fact that a house can be built for $1,750 to $2,000 does not, in their opinion, fully solve the low-cost housing problem. Such homes may take ill-housed people from slum dwellings, but this is only one phase of slum clearance housing. The social and morale standpoint is fully as important. People living in the squalor of slums have come to regard their miserable dwelling in the purely material sense of a place in which to sleep. Just giving them another place to sleep does not alter their mode of living. The new abode must be attractive to create a feeling of pride and a realization of what home really is.

To a large extent, painting and styling with paint are the solution to this problem, even more so as styling does not add to the cost. Moreover, paint serves a dual purpose, providing pro-

Phenol plywood was used for interior and exterior walls and roof sheathing. Hard sheet lead formed the chimney flashing.



Two views of the living room showing the attractive and practical layout and design. Color styling with tinted white lead makes the room even more livable and decorative.

tection for the structure as well as decoration. By using paint, the appearance of the small home may be changed with an apparent effect of increased height or length. The selection of interior colors is important to obtain the best dispersion of light, or, as with many dining alcoves, to produce a combination of colors, the effect of two separate rooms where, in actuality, only one exists.

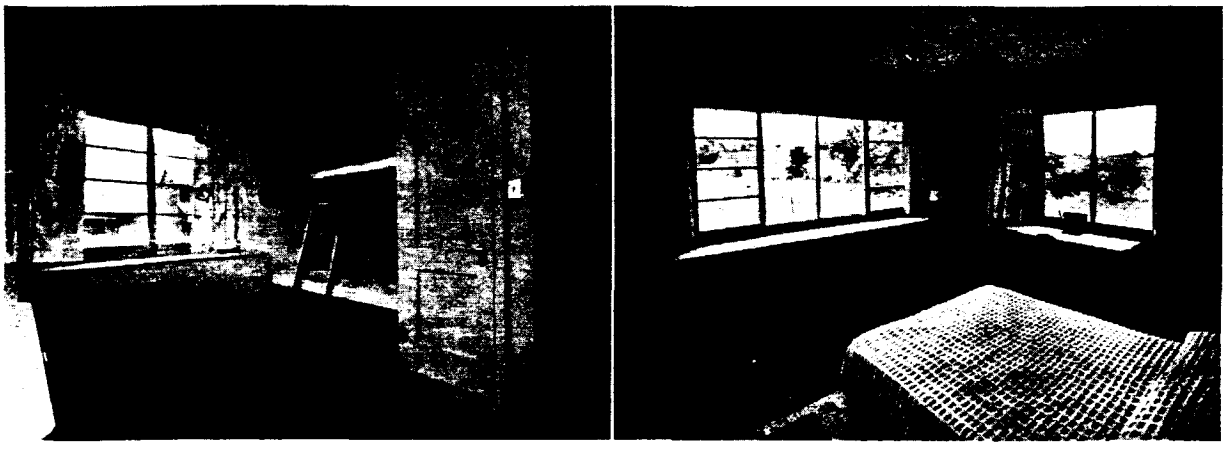
In the Lebanon experimental home, these principles of styling have been skillfully utilized. In the exterior, there are three horizontal panels running completely around the building. The bottom and top panels are separated from the middle one which encloses the windows, by horizontal structural members. The effect desired by painting was to increase the apparent size of the home. The exterior panels, therefore, were painted by using two shades of one dominant color. The bottom and the top panels were painted in a medium tan. By using a lighter shade of the same color for the middle panel, the apparent height of the home was increased. Next, by painting the trim and horizontal members a still lighter shade, the house was apparently increased in length.

For the interiors, the same general principles were applied, using a wide variety of colors and shades, selected with careful thought as to the exposure, size and purpose of the rooms.

With all these factors and advantages in mind, there is still one more important point, and that is the matter of cost. Although it is very necessary to obtain these protective and decorative advantages of paint, its use must not increase the cost of production beyond a certain point or the homes may no longer be in the low cost group.

In this respect, the solution is in the use of pure white lead and oil paint. White lead not only possesses the necessary qualities of excellent paint protection, but is the most economical and facile medium for paint styling. Where white lead is employed, there is no limit to the number and range of shades and colors easily obtained by tinting. No material is wasted since the white lead is tinted only to the quantity needed for each color. Moreover, as far as the material itself is concerned, pure white lead and oil costs less than any other painting material approaching its combination of advantageous qualities.

By building much of the furniture against the walls, space was saved in the bedrooms and additional insulation afforded at the floor level. Various decorative shades and colors were used to paint the walls and ceilings with a wholly modern and artistic effect.



My job is mining lead

but that tells me a lot about PAINT

ANYBODY who's ever worked with lead knows it's a grand metal.

If you could cover a house with lead, it would just about last forever.

And it's not far wrong to say that the next best thing to a metal coating when it comes to protection, is white lead.

Fact is, white lead is made from lead.

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

What I mean is, white lead paint gives a tough, elastic coat — a coat that never brittles up or flakes away.

Don't take my say-so. Ask any painter who's been at his job long enough to time the life of white lead. Ask him what he'd paint his own house with.

Any way you look at it, you're money ahead when you paint with white lead.

• • •

You'll learn a lot of helpful facts about paint if you read, "What to expect from White Lead Paint." Write for your copy today.

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

A good painter is always a good investment. For example, pointing up open joints and cracks on wood trim — filling them properly with white lead putty so they will stay watertight — is one of the dozens of things that a real painter knows how to do.

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