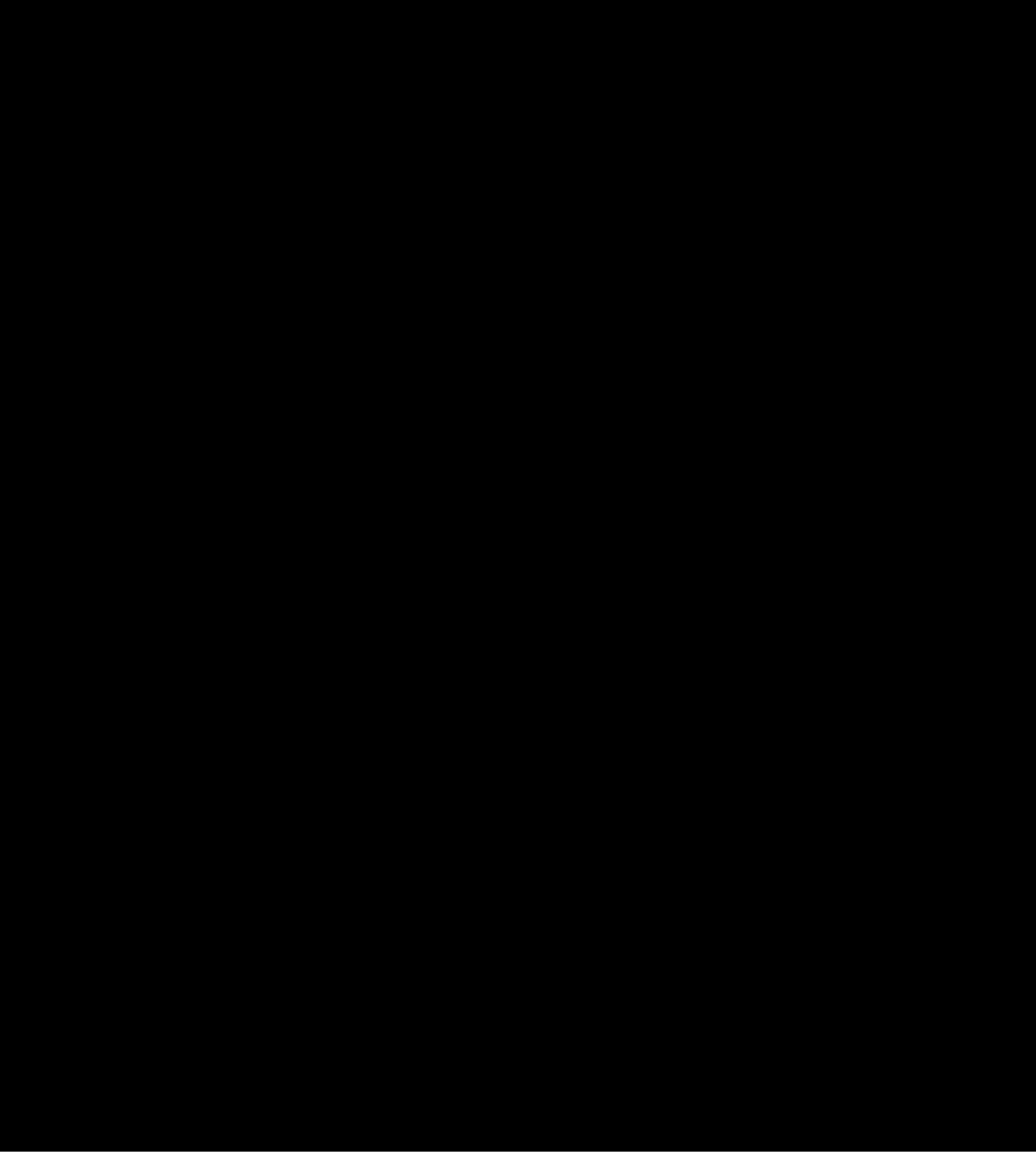




White Lead on Wood, Stucco, Plaster, Inside and Out



A. C. EUSTIS

A shingle and stucco exterior painted entirely with pure white lead paint. Interior painting was done with the same useful material.

THIS attractive home in exclusive Essex Fells, N. J., is a white lead job from top to bottom, inside and out. The exterior walls are shingles and stucco. Not only have the shingles been painted with pure white lead and oil, but the owner has also realized the desirability of protecting the stucco.

Stucco is somewhat porous. This permits dampness and cold to enter a house through unpainted stucco walls. Also frost forming in the pores of the stucco

may cause cracks and spalling. Pure white lead paint on stucco removes these drawbacks. It helps in heating the house and in keeping it dry, and protects the stucco from early deterioration.

This job is an excellent example of the economy a painter enjoys because of the all purpose nature of white lead. This painter did not have to buy and stock a wide variety of paints. White lead, properly mixed, served him for the gloss paint on the shingles, the flat paint on the stucco, for enamel undercoats and interior flat finishes. The dealer, too, who sold the paint to the contractor, profited through white lead. He was able to sell the material for practically the entire job by stocking only one paint, all purpose paste white lead, and the necessary vehicles to mix with it, instead of tying his money up in several slow-moving, space consuming lines.

White lead in this case, as in thousands of others, has helped everybody, the dealer, the painter and the homeowner, who is a satisfied customer of the painter. The work was done by Carl Gustafson, Montclair, N. J., painting contractor.

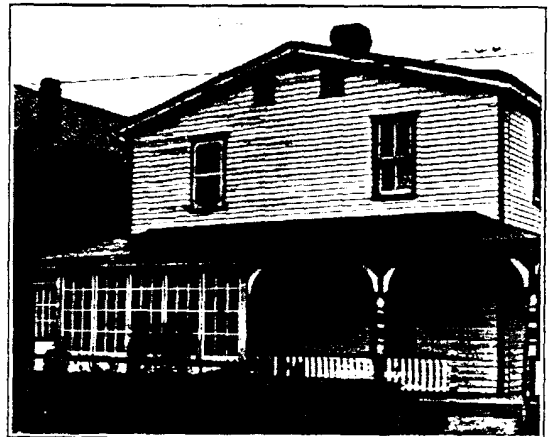
Formulas for mixing white lead paint for brick, stucco, and concrete were given in the May, 1935, issue of LEAD.

An Unusual Example of Superiority of Pure White Lead

RARELY is the difference between pure white lead paint and low grade paint so graphically illustrated as in the photograph on the cover of this issue of LEAD. This is a double house in a Philadelphia suburb. Both sides of the house were painted with white lead originally and both offered good repaint surfaces. Two years ago both sides of the house were repainted. The owner of the house on the right in the photograph stuck to white lead and the excellent condition of the paint two years later is readily visible. But the other owner decided to try cheap paint. The photograph tells the story.

Here is a case of white lead and cheap paint used on the same building under identical conditions. The white lead is in perfect shape after two years exposure, but the low grade paint has gone completely to pieces. The only way the owner of the house with low grade paint can get a successful job of repainting now, is to burn and scrape off the failed paint completely. This adds two expensive items to the cost of repainting, the cost of the burning operation and the cost of a new

priming coat, expenses which will never have to be borne by the owner who stuck to white lead. Likewise,



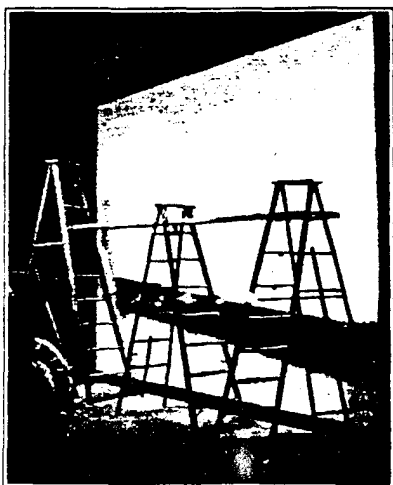
E. V. WENZEL

Pure white lead (right) and low grade paint (left) on a double house in a Philadelphia suburb show vividly the remarkable superiority of white lead.

though a few dollars may have been saved originally by using cheap paint, since its life is so short in comparison with white lead, the frequent repainting necessary will make the cost per year many times that of using white lead.

Painters who apply such low grade paint naturally ruin their customers' confidence in them and can not expect repeat business. Conversely the painter who sticks to white lead and oil knows that he will have satisfied customers always.

Mural in New Planetarium Hung with White Lead



(Left) Wall coated with white lead-varnish paste. (Right) Rolling the mural smooth over the wall coated with white lead and varnish. Mr. Charles Knight, who painted the mural, is viewing the work. (Below) New Hayden Planetarium, New York City. Trowbridge and Livingston, Architects.

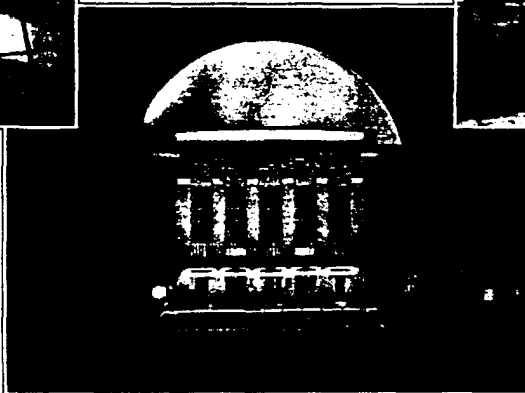
PHOTOS BY WURTS BROS.



AS ONE enters the portals of New York's new Hayden Planetarium, he is greeted by a lovely, richly colored mural on the opposite wall. This mural, in common with most such large scale work, is painted on heavy canvas. Ordinary

pastes used for hanging wall paper are insufficiently strong for holding the weight of a mural of this kind. In consequence, the mural at the Planetarium, like others of its kind (those at Rockefeller Center were described in LEAD, March, 1934), is secured to the wall by means of a white lead paste of high strength.

This adhesive usually consists of paste white lead mixed with varnish to a heavy brushing or troweling consistency. After the wall pores have been sealed by a coat of white lead paint as a primer, this thick mixture is brushed or troweled on. Before it sets, the painted canvas is hung and rolled to smoothness. The operation is well shown in the pictures, which show the wall coated with the paste mixture, and ready to receive the mural and the final operation of rolling the canvas.



Mr. Charles Knight, who is famous for his work at the American Museum of Natural History, painted the mural, which is well lighted and adds distinction to the attractive halls of the Planetarium. Trowbridge and Livingston of New York were

architects for the building.

The mixture used to mount murals is a highly useful one for many other adhesive purposes. It can also be tinted to many colors if used where it can be seen. In this way it may be made to match the materials joined together and thus form an invisible joint.

It is often employed by marble setters in fine marble work, particularly where narrow joints are desirable. Another use is to fasten porcelain lettering to glass windows for signs on store fronts. It may be used for setting toilet fixtures and for pointing up surface defects before painting. Another extensive application is in covering canoes with canvas or in cementing canvas decking in place on boats. In fact, the use of this white lead-varnish cement would probably be much more extensive if its virtues were more widely known.

Lead for Services in New Aurora, Ill. Plumbing Code

IN September, 1935, the City Council of Aurora, Illinois, passed a strong new plumbing ordinance. In addition to the provisions for licensing both master and journeyman plumbers imposed by the Illinois state licensing law, the new code contains provisions which should produce good, sanitary plumbing in Aurora. Requirement of lead for certain purposes is prominent among these provisions.

In the section dealing with water services the requirement is made that "Water service must be of lead or cast iron from corporation cock to inside of building, all water pipe under cement floors to be lead or cast iron, with proper shut off." Experience has taught that this is a wise provision. Under pavement and lawns, which are expensive to tear up for repairs and replacements, the only sound economic policy is to use materials of proved durability. The many lead services in use all over the country for a half century and more prove lead's longevity. Furthermore, under modern conditions, when electrolysis in the ground is of ever increasing importance, the greater wall thickness of lead and its higher resistance to electrolytic corrosion make the use of lead even more necessary to assure long life for services.

For soil stacks and wastes in buildings of two

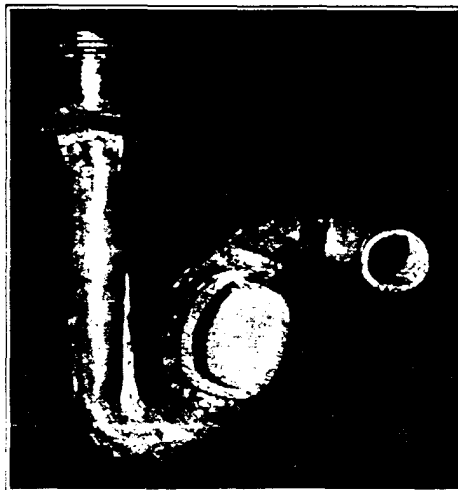
stories or less, the new Aurora code requires the use of soil pipe stack with soil or lead wastes. This, too, has been proved a sound requirement, for these pipes are almost entirely concealed and expensive to repair or replace. Concealed piping may also lead to unsanitary conditions long before the conditions are discovered. It is, therefore, essential to use the most durable, trouble-free materials. Since it is also necessary to make plumbing flexible enough to provide for ever-present settlement and movement in buildings, the flexibility of lead and cast iron with lead joints is essential.

Wiped joints are required by the code for all lead work and all roof flashings must be sheet lead.

The following Code Committee, of whom the first five represented the Master Plumbers Association and the last four represented the Journeymen, is to be congratulated on the results of its constructive efforts for the betterment of plumbing in Aurora, which will indirectly benefit the plumbing business: Messrs. Ed. Farrell, chairman; Peter Schuster, secretary; Clarence Ruddy, chairman of the State Plumbing Examiners Board; Frank Ruddy, William Frazier, Harry Herbert, George Weber, James Switzer, and Leo A. Hagerty, plumbing inspector.

Self-Cleansing of Lead Shown by Old Anti-Siphon Trap

WHILE doing a remodeling job recently in South Orange, N. J., Mr. Albert F. Ruehl, Newark master plumber and a trustee of the New Jersey State Association of Master Plumbers, found a hand-made lead anti-siphon trap apparently installed about 1918. Since many authorities have condemned anti-siphon traps on the ground that they will become clogged, Mr. Ruehl's curiosity led him to cut a section out of the enlarged chamber of this trap. He found it to be absolutely clean without a single particle of waste matter lodged in the interior of the trap, despite the fact that the trap was



WURTS BROS.

Hand made lead anti-siphon trap, perfectly clean after 18 years use, shows the exceptional ability of lead plumbing to keep internally clean.

not provided with a clean-out plug and therefore could not have been cleaned out during its 18 years of use.

This is remarkable evidence of the freedom of lead wastes and fittings from clogging. Here was a frequently condemned type of fitting said to promote clogging, yet when made of lead it showed no tendency to clog in 18 years of service. It offers one more good reason for using lead for waste pipes, traps and bends. The smooth bore and oily nature of lead prevent adherence of hair, lint and other solids and, since lead can not rust, no clogging with rust can result. Further-

more, the interior of wiped joints made by skilled plumbers offer less chance for solids to catch in the joints.

The lead waste line in which this trap occurred was

also found to be in perfect condition. All closet bends and concealed traps are required to be lead in South Orange, N. J. Mr. J. J. Turner is plumbing inspector of South Orange.

All Lead Wastes and Vents in Fireproof Apartment

WIPING 1,727 joints on lead pipe and fittings meant a lot of work to the skilled plumbers who installed the plumbing in the Marqueen Apartments in Seattle, Wash., and a job like that merits the envy of real plumbers everywhere. In this building of fireproof construction erected in 1925, lead pipe was used for all waste and vent pipes, and cast iron with lead calked joints for all stacks except the vent stacks. Lead drum traps were used under all

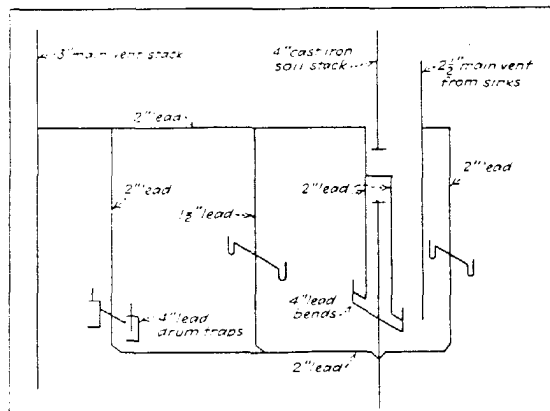
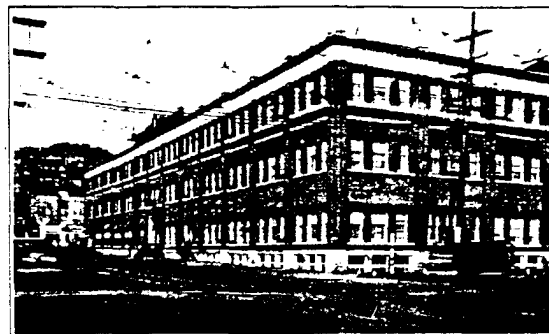


Diagram of typical plumbing layout for two bathrooms in the Marqueen Apartments, Seattle.

bathtubs and lead bends for all water closet connections.

Mr. V. W. Voorhees, Seattle architect who designed this building, deserves credit for specifying a material for the plumbing that he knew would give the best and longest protection to health and property. He specifies lead for plumbing in all his buildings wherever he possibly can and is a great believer in it. The plumbing contractors, the Rautman Plumbing and Heating Co., and its highly skilled mechanics should also be commended for installing a real plumber's job throughout.

The Marqueen Apartments contain 70 complete apartments, each with bathroom and kitchen. Bathrooms are of double unit construction, the accompanying drawing showing how the piping is laid out and how lead pipe was used for all wastes and vents from stack to stack.



Marqueen Apartments, Seattle, in which all wastes, vents, drum traps and bends are lead. V. W. Voorhees, Architect.

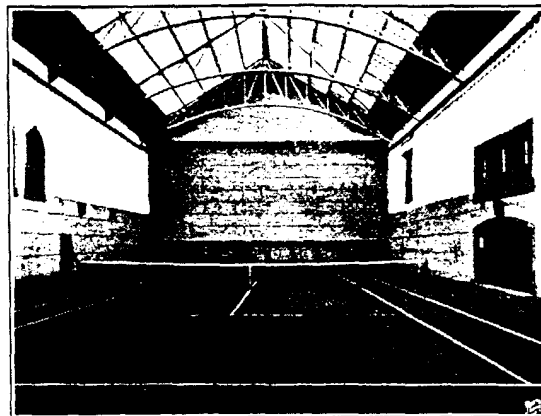
This type of installation offers numerous advantages to the building owner and tenant. Because lead is durable, rust proof, and sufficiently flexible to allow for building settlement, the plumbing is permanent. Walls and floors do not have to be torn out to make repairs or replacements and leaks will not create unsanitary conditions or ruin decorated walls and ceilings. Solid matter or rust will not clog the lead wastes, permitting waste matter to be conducted away promptly and removing any tendency for trap siphonage as a result of clogging. Since the vents also are lead, rust can not form in them and drop down into the wastes to cause clogging, and vents, themselves, will always be clean and open, permitting proper venting at all times. Vibration can not shake loose the 1,727 plumber's wiped joints in this building because wiped joints are bonded joints.

The job of course was a fine one from the plumber's standpoint to start with and any alterations or remodeling will have to be a plumber's job, too. A condition often seen wherein the building janitor changes partitions, resets fixtures and does all plumbing alterations in connection therewith can not exist here, because only a plumber can handle lead pipe. Furthermore, this plumbing contractor has certainly established himself with the owner and architect as one who produces the best kind of work and whose mechanics are thoroughly skilled and capable. This is invaluable to the plumber in securing new business.

Lead Tapes on a Fine New York Club Tennis Court

AMONG the largest and finest indoor tennis courts in the world is that in the Court-House, one of Manhattan's most exclusive clubs. It has recently been resurfaced with Rigmac Red Top fast drying surfacing, using lead tapes for markers. From Nov. 4, 1935, to Jan. 17, 1936, this court was in play for approximately 1,000 hours, which would be about equivalent to the hours of use given the average outdoor court in a period of two years. In addition two dances have been held on the court after covering it with building paper, nailing carpet down to the court surface and constructing a portable dance floor over the carpet. Yet no attention to the court surface or lead tapes was necessary in that period despite this hard service.

Some of the world's greatest tennis exponents have played on this court and praised it highly. Since the lead tapes are perfectly flush with the court surface,



WURTS BROS.

Tennis court with lead tapes in the Court-House, New York, on which Mrs. Helen Wills Moody, Vincent Richards and other stars have recently played.

they did not believe lead tapes were there until they examined the surface closely.

The court and lead tapes were installed by Mr. M. McDermott of College Point, Long Island, N. Y., who has installed many of the best club, commercial and private courts. He uses lead tapes exclusively and fastens them down with rust-proof nails. Lead tapes eliminate all uncertainty in tennis court lines. They are always straight and true and never become obliterated. They do not necessitate new marking after rain on outdoor courts and thus shorten the time courts must be out of use after bad weather. And they are, of course, permanent.

A circular of Mr. McDermott's, addressed to clubs, private estates and commercial tennis courts, shows the importance with which he regards lead tapes. One of the eight points he brings out emphasizing the advantages of his courts is, "These courts are installed with lead tapes and rust-proof nails".



WURTS BROS.

Beautiful living-room in the Court-House, New York club, James W. O'Connor, Architect.

Litharge Usually Advisable in Putty for Steel Sash

PUTTIES for glazing steel sash offer a slightly different problem, as a rule, from those used for glazing wood sash and may therefore differ in composition. The familiar white lead, linseed oil and whiting putties used on wood sash have a relatively slow rate of hardening. This is often undesirable where steel sash is used, particularly on industrial buildings, for vibration or other causes may result in movement before the putty sets.

Therefore, litharge is often added to putty for steel sash as it greatly increases the rate of hardening. Putty for steel sash may be white lead, linseed oil and whiting to which several pounds, often 6 to 8 lb., of litharge to each 100 lb. of white lead paste is added. The amount of added litharge depends on the drying rate desired.

More often, probably, putty for steel sash is made of red lead, linseed oil and whiting. In this case,

it may or may not be desirable to add litharge depending on the kind of red lead employed. If the red lead is one containing only 85 or 90 per cent true red lead, it is usually unnecessary to add litharge as the red lead already contains 10 or 15 per cent of litharge not converted to red lead in the manufacturing process. This is sufficient to promote hardening.

If, however, red lead containing 95 to 98 per cent true red lead is used, the addition of some litharge is advisable, for such red lead contains relatively little unconverted litharge.

Putties containing appreciable amounts of litharge should be used shortly after mixing or they may become hard before application.

Lead for Exacting Calking in New Hudson River Tunnel

THE new \$37,500,000 Midtown Hudson Vehicular Tunnel now under construction under the Hudson River to join New York City and Weehawken, New Jersey, has been aptly described as a huge "pipe". It is much like pipe lines with which we are familiar, only of course of gigantic proportions, made up in



NEW YORK HERALD TRIBUNE PHOTO

Calking lead wire into joints of iron casing by means of pneumatic hammers in new Midtown Hudson Vehicular Tunnel under construction by the Port of New York Authority.

bility and will be unaffected by the water for a longer time than the materials with which it is used, even though the water is salt. Lead is noted for its resistance to corrosion by salt water. Furthermore lead is sufficiently flexible to adjust itself to any slight settlement or shifting of the tunnel structure that might occur and still not permit the joints to leak. Lead has been used for calking for centuries and its reliability for the purpose is thus well established.

Of course this iron "pipe" with lead calked joints will not constitute the finished tunnel, but merely the outer shell. Inside will be concrete and tile walls, a paved roadway, electrical wiring, a duct under the road for incoming fresh air, and an exhaust duct above the ceiling of the roadway to remove air polluted by automobile exhaust gases. But around this elaborate structure will be the protective shell of iron with joints calked watertight with lead.

Lead as a calking material has been proved in use for a great many years. The confidence placed in it by engineers is exemplified by this installation where conditions, such as exceptionally high water pressures, are unusually rigorous.

sections with joints calked with lead to prevent leakage at those points.

Sections of this pipe consist of iron rings. Each ring is composed of a number of webbed iron plates fastened together, each plate being an arc of the ring circumference. These rings are then joined together to form the "pipe" or tunnel. Naturally, this means there are many joints through which leakage might occur. These joints are calked tight with lead to prevent leakage.

Lead is used in the form of oval shaped wire and is calked into calking recesses in the joints with the aid of pneumatic hammers. Lead is well suited to the purpose because it is soft and calks in well to fill every possible crevice. It has proved its great dura-



WURTS BROS.

Hard lead flashing, gutters, leader-heads and leaders were used on this Gate House, Greenwood Cemetery, Brooklyn, N. Y. Warren and Wetmore, Architects.

Old Lead Figure in the Art Institute, Chicago

A RECENT addition to the Howard Van Doren Shaw Memorial that has been installed in the famed Art Institute of Chicago is the lead figure of "The Slave" illustrated here. The following interesting description of the figure is quoted from an article by Bessie Bennett in the December, 1935, issue of the Bulletin of the Art Institute of Chicago:

"This object (the lead figure) formerly occupied a place in the memorial garden of Taplow Court, a residence occupied by the Hampson family in the seventeenth century and in the eighteenth by the Earl of Orkney. The garden itself was part of a park, described as 'richly studded with umbrageous and noble timber trees' on slopes extending to the banks of the Thames. There could have been no more appropriate decoration in this landscape than such a sundial, made of lead which is easily the most harmonious material for sculpture in a formal garden, particularly when weather adds to its peculiar charm a patina not matched on any other metal.

"Lead was employed in this period for a variety of ornamental and utilitarian objects, the most successful being architectural details and ornaments for the garden. Though rather inadequate, the records of the seventeenth century show a growing appreciation for objects in lead, and in the eighteenth century the founding of lead garden statues became a special industry in London, Picadilly in particular being filled with 'leaden figure yards'. Jan van Nost, a Dutch sculptor who came to England with William III, is credited with establishing the first lead yard for supplying garden figures in London. In 1739, his relative, John Cheere, is known to have taken over van Nost's business. The products of this

firm included figures of two slaves, one African, named 'The Black-a Moor', the other Asiatic, called 'The Slave'. These appear to have been the most popular subjects for garden statues and are possibly from the patterns of van Nost though they appear to have been sold by John Cheere in St. Martin's Lane.

"The present sundial is composed of a square stone plinth on which kneels the figure of the slave, bearing, with uplifted hands, on his head a stone disk which in turn supports a metal dial. The figure is nearly life size and wears a turban and loin cloth of striped India material, the latter modeled with considerable style and accented with long, slim feathers.

"The dial itself is attractively engraved and signed: 'Tho. Wilks Fecit 1701'. The circular plate is inscribed with the usual series of circles and meridians

interrupted by an ornate fleur-de-lys and a crest displaying three boars' heads, and includes the days, hour points and the following fascinating list of place names: 'Dublin, Cape Verde, Olinda, Ca.a., Barbadoes, Boston, Jamaica, Lima in Peru, Mexico, Alcapulca, Pekin, Batavia, Agra, Goa, Spaniola (?), Babylone, Jerusalem, Cayro, Candia, Messina, Frankford'.

"... One notes also on both sides of the gnomon a tabulation of zodiac signs, sun place, rising and setting.

"As one stands before this sundial, contemplating 'The Slave' and visualizing its past setting, a passage in Gray's letter from Pembroke (1769) is brought to mind: 'How charming it must be to walk in one's own garden, and sit on a bench in the open air, with a fountain, a leaden statue and a rolling stone and an arbour!'"



COURTESY THE ART INSTITUTE OF CHICAGO

Old English lead figure, "The Slave", recently added to the Howard Van Doren Shaw Memorial installed in Chicago's Art Institute.

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