

## LEAD INDUSTRIES ASSOCIATION, INC.

202 MADISON AVENUE

NEW YORK 17, N. Y.

April 19, 1963

SUBJECT: BROCHURE ON  
POOLS AND PLANTERS

To Members of the Lead Industries Association, Inc.:

We are pleased to enclose a copy of our just published brochure entitled "Pools and Planters." In it are illustrated a number of lead lined reflecting pools and plant boxes of various sizes complete with construction details and specifications.

The brochure will be mailed to our list of over 12,000 architects, building contractors and others in the building field. It will also be used for distribution at our exhibit booths at the American Institute of Architects' meeting, National Association of Home Builders Show, and the National Plumbing-Heating-Cooling Exposition.

Additional copies are available free of charge in quantities up to 25 and at our cost of \$12.00 per hundred for larger quantities.

Sincerely yours,



Edwin D. Martin, A.I.A.  
Manager, Architectural Services

EDM:mee

Encl.



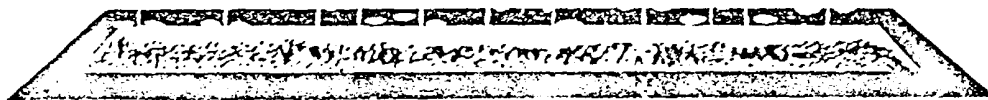
Look Ahead with Lead

A.I.A. 29-C

designs, details, and examples  
of lead-lined...

**POOLS**  
**BOOTS**

**PLANTERS**

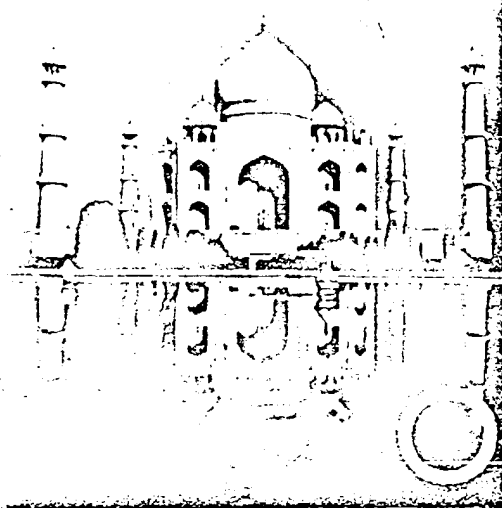


LEAD INDUSTRIES ASSOCIATION, INC.  
292 Madison Avenue • New York 17, N.Y.



*Look Ahead with Lead*

A.I.A. 29-C



## POOLS and PLANTERS

OF THE MOST BEAUTIFUL BUILDINGS in the world is the Taj Mahal in India. In the Persian language the name means: "Crown of Palaces"; in this case a particularly apt title since this building is a crowning architectural achievement. But no crown, no matter how artfully wrought, would be the same without the jewels which reflect its glory. Nor would this be any less true of the "Crown of Palaces" were it without its jewels—the reflecting pools which point the approaches and provide the setting for this architectural masterpiece. They do much to set the mood and catch the spirit of the building as the visitor approaches.

Today these devices—pools and planting boxes—are being used to as good advantage and with as much effect as their seventeenth century prototypes. Possibly with even greater effect since many of today's buildings with their flat reveals, rectilinear patterns and mechanically precise surfaces stand in need of the softening influence the shimmering surface of a pool provides. Relief from rigid lines can also be afforded by planting, in boxes strategically placed by the landscape architect. Both pools and plant boxes effectively break the monotony of crowded urban streets.

Modern designers in increasing numbers have also begun to bring these useful decorative features indoors where for many years the sole use for a pool was for aquatic sports or other swimming events. Even here the designer no longer feels constrained to place his pool in the basement but may put it on a penthouse level if he wishes. This may be done with perfect confidence if he knows he has provided positive and foolproof protection against water seepage into rentable areas which always exist nearby or under such installations.

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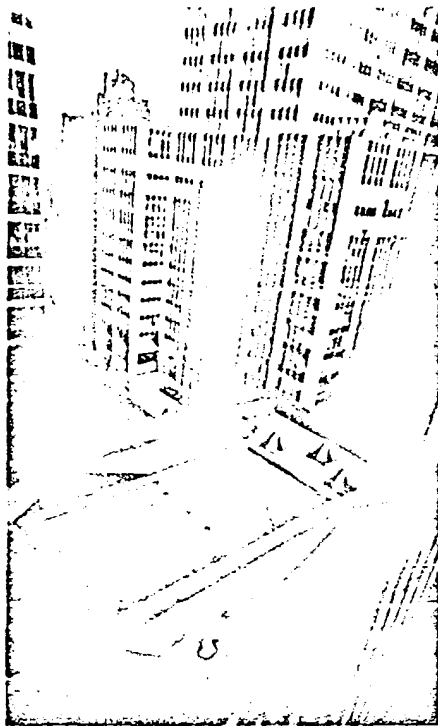
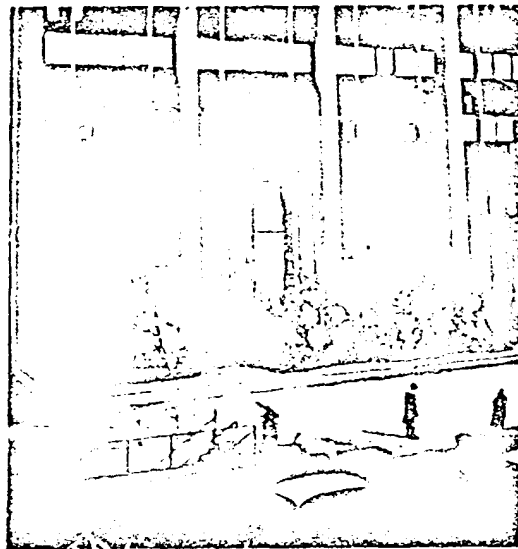
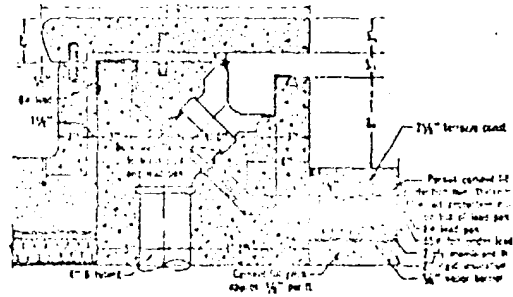


Photo: Margaret Norton, Time, Inc.



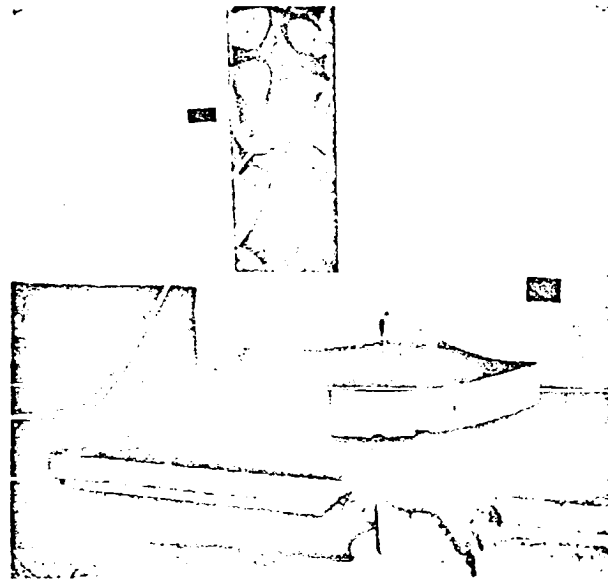
It is in these areas that sheet lead for waterproofing finds one of its most useful applications. No better illustration can be found than the eight lead lined pools which are a major design feature of the Time and Life Building in Rockefeller Center, New York City. One of these is atop a seven story portion of the main building, the remaining seven pools are at street level. All eight are over either income producing areas or underground passageways which dictated the selection of lead.

Detail sections show the use of eight pound lead protected with felt mopped on top and bottom for protection against fresh concrete or mortar. Flashings at pipe or conduit penetrations are of lead burned to both the lead pan and the pipe or other penetration in order to ensure continuous protection.

The second view of the ground floor pools shows the use these versatile containers may be put to in the winter. Filled with white marble chips they become perfect fairs for the dark green foliage of the traditional ornamented Christmas tree.

The pool on the roof over the seventh floor serves as a welcome stopping place for a moment or two in the midst of a busy day. Architect Gio Ponti is responsible for the design of this pleasant retreat.

Architects were Harrison, Abramovitz and Harth, the lead was installed by the John F. Abernethy Co. under sub-contract with C. H. Cronin, Inc.; Mechanical Engineers, Syska & Hennessy, Inc. and the General Contract was a joint venture of Geo. A. Fuller and John Lowry, Inc., all of New York City.

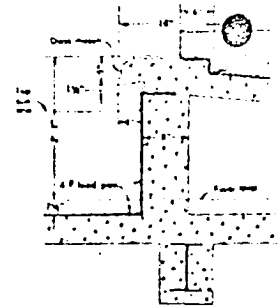
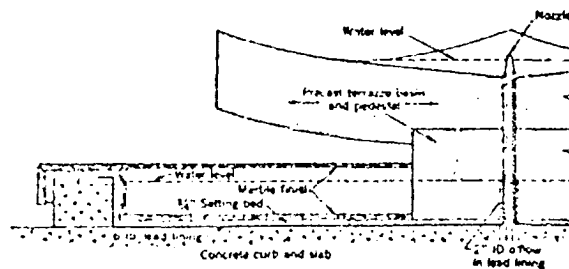


#### AMERICAN AIRLINES BUILDING

Bringing a small pool indoors presents no problem even when it is placed directly over a service area as is this pool in the American Airlines Building at Idlewild Airport, New York. Measuring 7'-9" x 6'-0" with an elevated square basin 3'-8" square, the waterproof lining under the marble finish is 6 lb. lead with both lead and

concrete interfaces coated with asphaltum and all joints burned. Water is re-used and the fountain is driven by a small 6 g.p.m. pump.

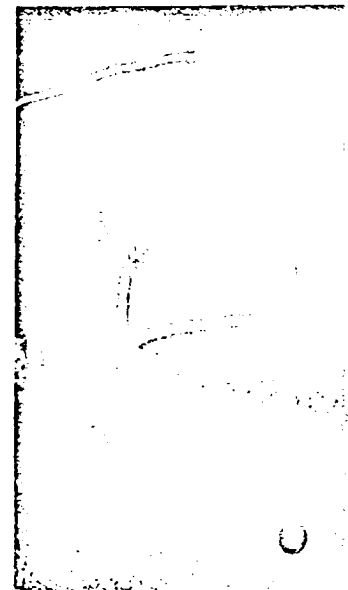
Architects were J. Gordon Carr & Associates, Turner Construction Co. were the General Contractors for whom the John F. Abernethy Co. of Brooklyn did the lead burning.



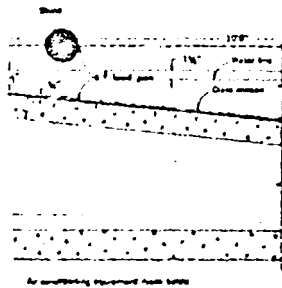
DETAIL SECTION OF

#### COBO HALL

In Cobo Hall, huge Detroit exhibition center, the designer has linked his pool and planter as a single unit. In this case interest is centered on the fact the lead sheet is exposed in the planter but in the pool it is used as an underlayment for a tile finish surface. The section at the intersection of plant box and pool shows the treatment of both in either part the function of the lead.



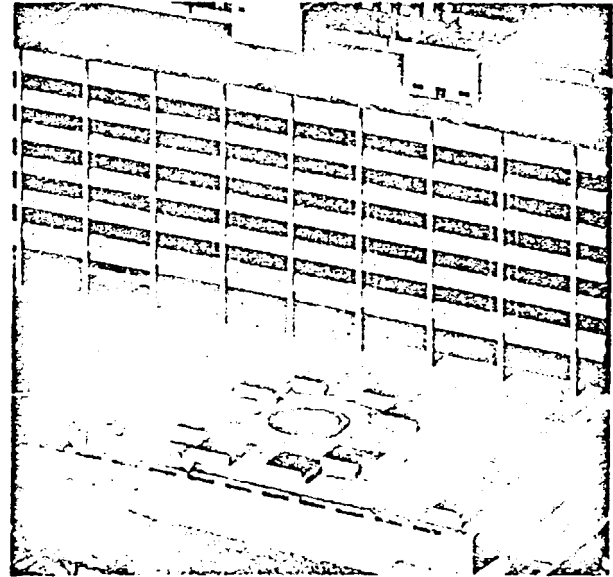
Lens Art Photo



PLANT BOX AND POOL

the same: protection of an air conditioning equipment room immediately below. Since the plant box will be filled with earth, no need was felt to cover the lead with supplementary material.

Architects were Giffels & Rossetti and lead work was under the direction of Ed Page, plumbing contractor on a sub-contract with the O. W. Burke Co. General Contractors—all of Detroit.

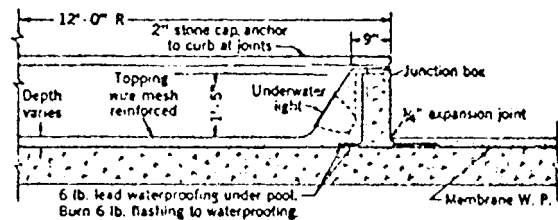


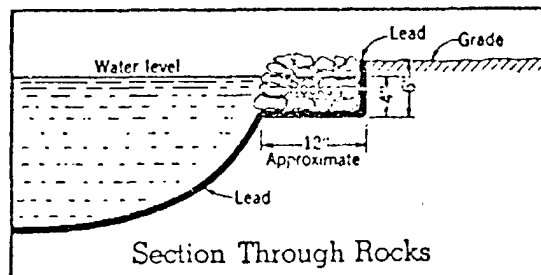
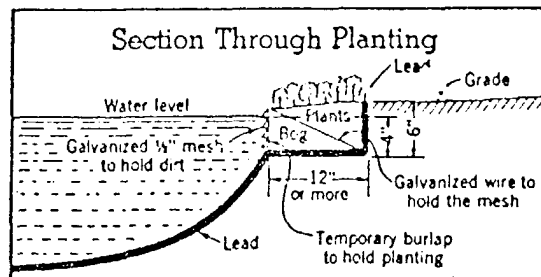
BLUE CROSS BUILDING

A fine example of a combination of pool and plant boxes is the Blue Cross Building courtyard in St. Louis, Missouri. Taking full advantage of the park-like plaza which it faces, the six-story building rises from an elevated open deck or terrace which is actually the roof of a below-grade parking area for ninety cars. As this aerial photograph shows, the pool and flanking plant boxes are arranged to re-

produce the Blue Cross insignia. To protect the parked cars beneath them, both the pool and planters are completely underlaid and flashed with 6 lb. sheet lead, a total of approximately 16 tons.

Architects for the Blue Cross were Hellmuth, Obata and Kassabaum, lead was installed by the Corrigan Co. under sub-contract to the Dickie Construction Co., all of St. Louis.

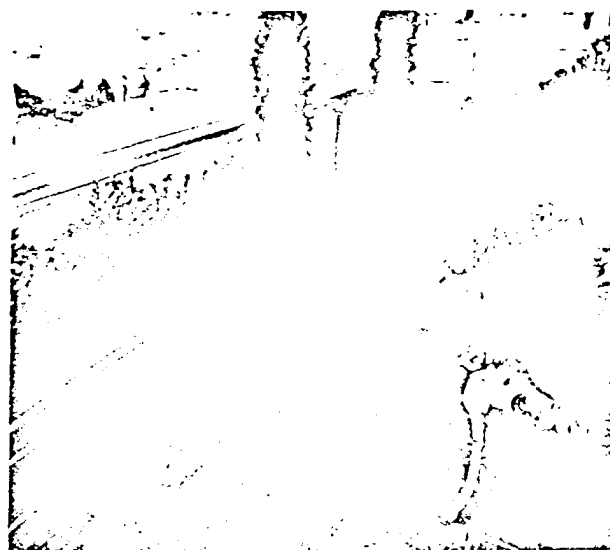




### WOODLAND POOLS

Lead's complete versatility is never more evident than in the woodland type pool where no form or container is used. Sheet lead is laid directly on the ground in a free form in a shallow excavation. Seams are soldered and the pliable four pound lead is simply made to conform to the surface of the excavation. Around the edges a shelf twelve inches wide and about six inches deep is created as shown in the accompanying sections. In this shelf rocks, rock plants or other wood plants are placed.

Pools such as this, if well done, look exactly like natural pools because, although the lead itself does not show at any point, it makes the water appear naturally dark thereby creating an illusion of depth. In addition lead lined pools are not subject to the hazards of settling or freezing as concrete pools are and, if damaged, may be repaired easily by soldering.



### ROOFTOP PLANTERS

Although lead's usefulness as a waterproofing material is pre-eminent, its value as a protective material is followed closely, if not equalled by its decorative possibilities. A better example of this capability could not be found than the balcony plant boxes in this San Francisco apartment. 1" x 6" redwood planks formed the boxes which were covered with 2 1/2 lb. lead. Simply lapping the edges, top and bottom, by about 2 1/2", concealed the fastening. The decorative feature is the 1/2" diameter half round extruded lead rod fastened through the sheet to form panels. More elaborate designs can be obtained quite easily by stamping, overlaying, matting or creating relief patterns by soldering accessory pieces or strips.

### ADVANTAGES OF LEAD LININGS FOR POOLS AND PLANTERS

1. Ability to move with the structure as the pool is filled with water and the structure settles or contours change.
2. Freedom from problems of maintenance through the use of a non-corrodible material in areas which cannot be reached for painting or patching.
3. Absence of joints. Lead sheets, when burned together, present a continuous unbroken surface with no possibility of leakage at riveted or badly formed joints.
4. Decorative capabilities. Lead can be worked as a finishing material in addition to its practical function as a waterproofing membrane. In certain plant box installations, lead can be combined to serve both functions at the same time.
5. Workability. Lead will accommodate itself to any desired shape or contour as in shallow excavations for woodland pools, etc.
6. Cost. Lower cost is an important item in favor of lead lined pools or plant boxes. Experience has shown that installed costs for lead linings are competitive with all other permanent waterproofing membranes. Non-Staining. The patina or protective surface film formed on lead is stable and adherent. Since it is insoluble, it cannot cause staining of adjacent surfaces.
7. Freedom from frost damage or heaving common to concrete pools. Ease of repair by soldering if damage does occur.
8. Saving in weight. Lead linings weigh from four to eight pounds per square foot and need correspondingly light framework sufficient only to support the leads expected. Four inch thick concrete, on the other hand, weighs fifty pounds per square foot exclusive of the load to be carried.
9. Full thickness. Lead is a homogeneous material full thick, not a coating to protect a more vulnerable material.
10. Non-Staining. Since the corrosion products of lead approach the composition of the surface minerals they are insoluble and no staining of adjacent materials by the lead is possible.

### A FEW OUTSTANDING BUILDINGS FEATURING POOLS AND PLANTERS LINED WITH LEAD

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|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <ol style="list-style-type: none"> <li>1. United Nations Library (pool)<br/>New York City<br/>Architects: Harrison &amp; Abramovitz</li> <li>2. Opera House, Lincoln Center (pools)<br/>New York City<br/>Architects: Harrison &amp; Abramovitz</li> <li>3. Cobo Hall (pool and plant box)<br/>Detroit, Mich.<br/>Architects: Giffels &amp; Rossetti</li> <li>4. Blue Cross Building (pool and plant boxes)<br/>St. Louis, Missouri<br/>Architects: Hellmuth, Obata and Kassabaum</li> </ol> | <ol style="list-style-type: none"> <li>5. Time and Life Building (pools, sidewalk and rooftop)<br/>New York City<br/>Architects: Harrison &amp; Abramovitz</li> <li>6. American Airlines Building (pool)<br/>Idlewild Airport, New York<br/>Architects: J. Gordon Carr, Associates</li> <li>7. American Embassy, San Salvador<br/>Architects: Hellmuth, Obata and Kassabaum</li> <li>8. Phoenix Mutual Life Building<br/>Hartford, Connecticut<br/>Architects: Harrison &amp; Abramovitz</li> </ol> |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

## SPECIFICATIONS

**GENERAL:** The Contractor shall read the general conditions and special conditions of the General Specifications which are hereby made a part of this specification and shall be binding as if repeated in this section.

**SCOPE OF THE WORK:** This section of the Specification is intended to cover all lead sheet metal work in connection with the installation of a complete lead membrane lining for all pools-(planters)-(plant boxes)-as detailed and as may be required to complete a sound, durable and water-tight job. This Contractor shall supply all labor, materials and tools and equipment necessary to complete the work in accordance with this Specification.

**MATERIALS:** Unless otherwise noted, sheet lead shall weigh not less than 4 lb. (6 lb.)-(8 lb.)-per square foot and be made from lead meeting ASTM Specification = B29-55, Pig Lead.

a) All portions of new concrete slabs or other masonry surfaces over which lead is to be laid shall be covered with 30 lb. asphalt impregnated felt.

—or—

b) Lower surface of lead to be in contact with new concrete slabs or other masonry surfaces shall be protected with a heavy brush coat of black asphaltum as made by

Where fresh or green cement is to be placed over lead, the upper surface of the lead sheet shall be protected by a heavy brush coat of black asphaltum as made by

**EXAMINATION OF SURFACES:** If defects are found in surfaces upon which this contractor's work is to be placed, he shall report them to the architect who shall cause them to be remedied. Starting of work shall constitute acceptance of such surfaces.

**PREPARATION OF SURFACES:** All surfaces to receive lead shall be smooth and even, free from sharp projections. Concrete shall be screeded and floated to a smooth surface without projecting stones or other aggregate. Brick or other masonry surfaces against which lead is to be laid shall be true and straight with joints struck flush or tooled with half round tool. Any angle or edge over which lead must be

turned shall be chamfered or eased. All surfaces to receive lead shall be dry, sound and clean when lead is laid.

**JOINTS:** All joints shall be lapped joints and burned\*. Sheets shall be lapped one inch minimum before burning. All burning rod shall be of the same composition as sheet lead to be burned. All sections of lead that are to become a part of the joint shall be perfectly cleaned by a shave hook or wire brush. Only the smallest sizes of tips shall be used on the burning torch and extreme care shall be taken to avoid burning through or reducing the thickness of the lead sheet being joined.

\*Lead "burning" is made heretofore for a time and burning is preferred over soldering.

—or—

All joints shall be lapped and soldered. Before soldering all areas to be soldered, including the underside of the overlapping sheet and the area of the bottom sheet directly under the lap and extending at least 1/4 inch beyond the edge of the lap, shall be shaved clean with a shave hook after which plumbers' candle should be rubbed immediately over all shaved parts in a very thin coat to prevent oxidation. Powdered rosin shall be sprinkled over all shaved areas. After sheets have been solder tacked together at suitable intervals, 50-50 solder shall be fed to the joint by a clean, well tinned soldering iron at the proper temperature.

**LAYING AND WORKMANSHIP:** All tools, brakes, tongs, etc. shall be adjusted to bend and work lead to easy curves and to prevent scoring or bruising the material. Use mallet or wood dresser in place of hammer where possible. Allow room for expansion between rigid members.

**LEAD PROTECTION:** This Contractor shall protect his material and work in place from damage by his or other workmen and shall be responsible for and shall repair any damage which may occur before final completion. All work shall be left in completed condition, sound and clean.

**TEST AND INSPECTION:** A hydrostatic test, satisfactory to the architect, shall be required for a period of twenty four hours prior to final inspection and acceptance.

### ARCHITECTURAL DEPARTMENT

Lead Industries Association, Incorporated  
292 Madison Avenue, New York 17, N. Y.