



Conserve O Gram

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Caring for Outdoor Bronze Plaques, Part I: Documentation and Inspection

Introduction

Outdoor bronze plaques identify significant places and provide recognition for people and events. Over time and without proper care, plaque surfaces can become discolored and pitted. To restore plaques—or to repair other damage—treatment by a conservator is required. Unfortunately, conservation work can be expensive. Until funds are available for this work, simple procedures may be carried out to protect plaques from the environment and retard the rate of deterioration.

This *Conserve O Gram* and *Conserve O Gram* 10/5 provide you with guidelines for taking care of outdoor bronze plaques until a conservator can carry out a full conservation treatment. These procedures are not meant for sculptures or interior plaques.

Documentation

Your first step in caring for an outdoor bronze plaque is gathering together all written documents and images of the plaque. Place all of these materials into a file folder that can be stored in a permanent location. These materials are important. They will give you a better understanding of the plaque's original appearance and its changes over time.

- Written documents include anything regarding the fabrication and installation

of the plaque: receipts from manufactures, newspaper articles, letters, and specifications. They may be the original documents or photocopies of the originals.

- Images include engravings, drawings, postcards, and photographs, and may also be original or photocopies of the originals.
- Make sure all clippings and photocopies are marked with their full bibliographic citations and collection information.
- Conservation reports, old maintenance records, and case incident reports regarding vandalism or other forms of damage should also be included in the plaque's file.

Photographs of the plaque are necessary to document its appearance and condition, especially if it is located in an area prone to vandalism or theft. Photographs will help with future repairs or replication if necessary. Use black-and-white print film as it is the longest lasting of all contemporary image-making processes. Store negatives in archival envelopes.

While it may be easy to scan documents and store everything electronically, don't throw the papers away. Electronic files require constant migration to a retrievable format. Paper documents are much more likely to survive over time. If you can't find any relevant documents, make a note of this and put it in the file.

Inspection

Carry out a careful inspection of the plaque. This will help you to identify the material(s) from which it was made and its condition, and better prepare you for the steps recommended in Part II of this *Conserve O Gram*. The inspection will also help you when discussing treatment options with a conservator.

Carry out your inspection in good light with a magnifying glass or jewelers' loupe. You will learn a surprising amount with close scrutiny, both about the original fabrication of the plaque and subsequent deterioration of both the bronze and possible coatings. As an aside, looking closely at other plaques (in your neighborhood, hometown, and far away when you are on vacation) will teach you a great deal about plaques in general.

Place all of your inspection notes in the plaque's file.

Plaque Material

- Prior to treating a bronze plaque, make sure that it actually is made of bronze. Green corrosion is a good indicator that the plaque is bronze.
- Brass also develops green corrosion products. While bronze and brass are different materials, the same protective procedures can be carried out for plaques made out of both these materials.
- If the corrosion is white or orange, or the surface is magnetic, the plaque is not bronze and the protection procedures outlined in Part II of this *Conserve O Gram* should not be carried out.

Bronze is an alloy (mixture of two or more metals) of copper (about 85%) and tin; zinc or lead may also be present. Brass is an alloy of copper and zinc, and like bronze, small amounts of other metals may be present.

Foundry

- Look for the foundry's name on the plaque; it may be stamped on the very edge. Stamps are often very small and you have to look closely to find them.

Surface Finish

- Depending on the extent of corrosion and later treatments, you may or may not be able to identify the original color of the patina. The most common chemical patinas for bronze are brown, black, and green.
- Patinas may not have been applied uniformly to the surface; borders, raised letters, and sculptural features may be lighter in color than the background.
- Sometimes (and more frequently for interior plaques), multicolored patinas were used.
- Following patination, plaques were often given a protective layer of wax.
- Modern plaques are frequently painted with baked-on enamels or coated with clear or pigmented lacquers; often borders and raised letters are polished and coated with a clear lacquer.

Traditionally, bronze plaques were chemically patinated in the foundry. This involves heating the plaque with a torch and applying one or more chemicals that react with the metal to form different colored surfaces.

Surface Alteration

- The most significant alteration to a bronze plaque (excluding vandalism or accidental damage) is corrosion, commencing once the protective layer of wax has worn away. Ranging from black to brown to green, bronze corrosion products will mar the appearance of the plaque.
- Small spots of powdery green corrosion products may be evidence of “bronze disease.” Bronze disease is a specific form of deterioration that is self-perpetuating and advances rapidly. This condition is usually only found on bronze plaques near the ocean or a fountain as it is induced by chlorides in water.
- Wax can turn a hazy white over time. Paints and lacquers can peel or flake. (**Note:** Some paints and lacquers may have been applied as a preservative treatment.)
- Other surface alterations include scratches and polished areas subject to repeated touching by visitors.

Corrosion is an electrochemical reaction between a metal and its environment that causes the metal to deteriorate.

Surface Accretions

- All kinds of deposits are found on plaques. Such deposits can include soil and greasy materials, gum, painted graffiti, and insect nests.

Mounting Mechanism

- Mechanisms for mounting plaques onto their substrate vary. The most common method is to use bolts and you may find that the decorative bolt heads are missing.
- Adhesives are sometimes employed or used in addition to bolts. You may discover mortar, caulk, or elastomeric sealants—or residue of these materials—around the edges of your plaque.

Some Final Notes on Inspection

Depending on the knowledge that you bring to your inspection, you may not be able to identify all of the materials and deterioration products you see. Do not make guesses. It is best to describe what you see in simple terms to avoid misunderstandings by others reading your notes in the future.

Bibliography

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