

CHAPTER 2.4: EXTERIOR PLASTER AND MASONRY

INTRODUCTION

Exterior masonry, including stucco, stone, and brick, is an integral component of a building's architectural style and character. Masonry walls give mass and depth to a building's façade. Functionally, exterior masonry is a principal element in the structural system, establishing a weather-tight enclosure providing protection from rain, wind, and sun.



Santa Barbara is famous for its white stucco historic resources, characteristic of the Spanish Colonial Revival, Mediterranean, and Mission Revival architectural styles.



Using true stucco rather than a synthetic stucco is recommended for repairing stucco on Santa Barbara historic resources.

STUCCO

Santa Barbara is distinguished by its white stucco historic resources. In California, where the Spanish Colonial Revival and Mission Revival architectural styles became popular, stucco was one of the most commonly used building materials. Traditional stucco, which has been used for centuries, consists of aggregate, a binder, and water. It is a hard, dense, thick, and non-insulating material, applied in two or three coats to brick, metal, or wood lath. Until the early twentieth century, when a variety of novelty finishes or textures were introduced, the last coat of stucco was traditionally hand-troweled to create a smooth finish with a subtle texture imparted by the trowel. Traditional stucco was never heavily textured or applied using a spraying technique. Originally, stucco was troweled over adobe and masonry walls, giving expression to the thick walls and heavy columns of the masonry construction. In new construction, wood frame and current construction methods using lighter and thinner materials are hidden by the plaster, so that the same architectural aesthetic can be achieved.

HISTORIC AND SYNTHETIC STUCCO

True stucco, or cement plaster, is a combination of sand, lime, Portland cement, water. In some cases, pigments were added to the mix to alter the finished color. True stucco coatings are recommended for historic structures. On the contrary, Exterior Insulation and Finish System, or EIFS, is a synthetic stucco system that includes an inner foam insulation board, a middle polymer, a cement base coat that is reinforced with fiberglass mesh, and an exterior textured finish coat. EIFS does not “breathe” and can trap moisture within the wall thickness which can cause mold and mildew to rot wood sills and framing. Because of its visual characteristics and the potential harm it can cause to a historic structure, synthetic stucco is not permitted by the Historic Landmarks Commission (HLC) on any contributing historic resources, Structures of Merit, or Landmarks.

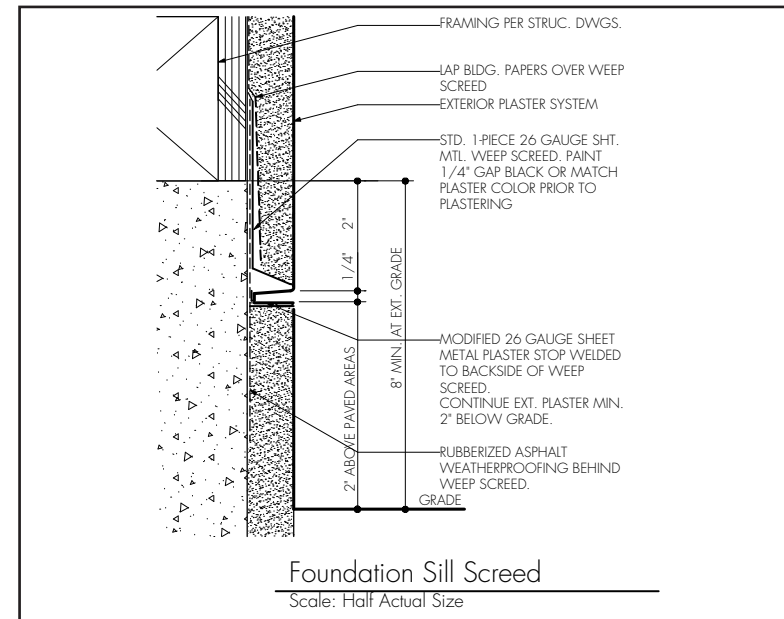
STUCCO REPAIR AND MAINTENANCE

Most stucco deterioration results from moisture infiltration and from water splashing up from the foundation. Other potential causes of deterioration include: ground settlement, lintel and door frame settlement, inadequate or leaking gutters and downspouts, intrusive vegetation, moisture migration within walls due to interior condensation and humidity, vapor drive problems caused by furnace, bathroom and kitchen vents, and rising damp resulting from excessive ground water and poor drainage around the foundation. Water infiltration will cause wood lath to rot, and metal lath and nails to rust, which eventually will cause stucco to lose its bond and pull away from its substrate. Traditionally, masonry went to the ground. In new construction, a stucco weep screed provides drainage for escape of excess moisture from the back of the stucco membrane (see detail to right). It provides a straight and true screed surface at the base of stucco walls.

- Small hairline cracks usually are not serious and may be sealed with a thin slurry coat consisting of the finish coat ingredients, or even with a coat of paint or whitewash.
- Commercially available caulking compounds are not suitable materials for patching larger cracks. Repairs made with caulking compounds are often highly visible and unsightly. Their consistency and texture is unlike that of stucco, and they tend to weather differently and attract more dirt. Larger cracks will have to be cut out in preparation for more extensive repairs.
- Only use breathable water-based paints on stucco. Elastomeric paints may seem to be low maintenance, but on true stucco they act as a barrier and trap water in the wall, which can cause peeling and serious damage to the interior walls of the building.



Well maintained stucco can last hundreds of years.



An example of a weep screed detail that can help drain the base of a stucco wall.



Cut stone walls are common throughout Santa Barbara's historic neighborhoods.



Poor maintenance and improper repointing can damage stone walls.

CLEANING STUCCO

Historic stucco historic resources often exhibit multiple layers of paint or lime wash. Although some stucco surfaces may be cleaned by water washing, the relative success of this procedure depends on two factors: the surface texture of the stucco and the type of dirt to be removed. If simply removing airborne dirt, smooth unpainted stucco and heavily textured painted stucco may sometimes be cleaned using a low-pressure water wash, supplemented by scrubbing with soft natural bristle brushes and non-ionic detergents.

MASONRY

Masonry comprises brick and stone. Brick construction is not common in Santa Barbara and is used mainly for important commercial historic resources and as an accent of to a home especially seen in chimneys and porches. Santa Barbara contains many examples of stone construction, often in exterior retaining walls. Between 1875 and 1940, Santa Barbara had an extraordinary explosion of stone construction due to the endless supply of a variety of sandstone, expert artisans, and financing by private citizens. Stone construction included bridges, walls, stairs, fountains, churches, houses, schools, and even the curbs that line Santa Barbara's streets. If a stone element needs to be reinforced or rebuilt, photograph the existing wall so that it can be reconstructed to match the original. Salvage and reuse the original stones. Match the replacement mortar with the color, texture, pattern, joint size, and tooling of the historic mortar. Repair or replace original stone retaining walls to match existing. If reinforcement is required, finish materials should match the original in materials and design.

REPAIRING MORTAR JOINTS

Replacing damaged mortar with compatible mortar is called repointing. Check the mortar between the stone or brick regularly. Mortar that has worn away from the brick or stone face or has vertical cracks should be replaced. The compatible mortar mixture must be the correct composition or it can cause damage and spalling to the stone or brick. A professional mason with experience in historic masonry may be required to do the work.

CLEANING MASONRY

It is critical to use proper cleaning methods that will not accelerate the deterioration of stone walls. Many procedures can actually result in accelerated deterioration or may damage materials beyond repair. Use a chemical cleaning or low-pressure water wash (no more than 300 psi). Abrasive methods such as sandblasting are not appropriate, as they permanently erode building materials and finishes and accelerate deterioration.

PAINT AND WATERPROOF COATINGS

Do not use paint or any other waterproof coatings on stone or brick. These treatments may claim they are maintenance-free, but they trap water in the masonry that can cause serious damage to the interior walls of the building. Many water repellent coatings are transparent or clear when applied and discolor over time.

REMOVING PAINT

If masonry has been painted, use chemical paint strippers that are developed specifically to remove paint from historic resources. Many historic resources have lead paint, so make sure to have a professional remove the hazardous paint safely.



Cobblestone chimney and piers are an important design feature of this Craftsman Style residence in the Bungalow Haven Neighborhood.



GUIDELINES



Before: The wood sided Craftsman style bungalow was inappropriately covered with stucco. Photo from the eastsidela.com web site.



After: The wood sided bungalow after the stucco was removed and the character-defining wood siding restored. Photo from the eastsidela.com web site.

- 2.4.1 Preserve as much of the historic stucco as possible.
- 2.4.2 Repair water leaks and direct water runoff away from the historic resources.
- 2.4.3 Seal hairline cracks with a thin slurry coat (the finish coat of the stucco mixture.) Avoid use of commercial caulk to patch cracks in stucco.
- 2.4.4 Repair stucco to match the existing in composition, texture, and color.
- 2.4.5 Repair brick, stone, and mortar to match the existing in color, composition, texture and pattern.
- 2.4.6 Replace damaged stone or masonry by patching in new materials that match the original.
- 2.4.7 Avoid replacement of stucco with an alternative (synthetic) material.
- 2.4.8 Avoid covering original stucco with other historic resources materials such as wood, brick, or stone veneer.
- 2.4.9 Avoid alteration of the stucco's original texture and finish.
- 2.4.10 Avoid addition of brick or stone veneer on a historic structure.
- 2.4.11 Avoid painting previously unpainted brick or stone.
- 2.4.12 Avoid covering brick or stone with an another material.
- 2.4.13 Avoid sandblasting masonry.
- 2.4.14 Avoid coating stucco, brick, or stone with waterproof coatings.
- 2.4.15 Avoid application of stucco over a traditionally wood-sided structure.

For in-depth technical recommendations on restoration of stucco, masonry and adobe, the National Park Service, The Secretary of the Interior has published "Preservation Briefs" to help historic building owners recognize and resolve common problems prior to project start. Please see Preservation Briefs 1, 2, 5, 22, 42 at <http://www.nps.gov/tps/how-to-preserve/briefs.htm>