



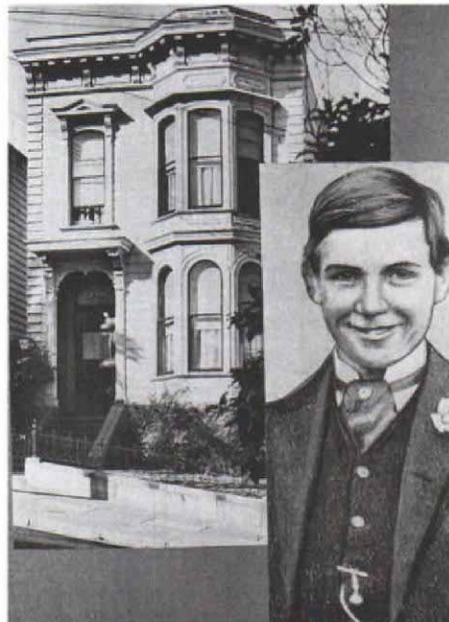
# Building an Ornate Cornice

Cabinet-grade trim meets detective work when a carpenter restores a Victorian facade

by Terry Murphy



**Tiled and defiled.** By the 1950s, many San Franciscans had stripped their houses and stuccoed them. This Italianate Victorian had been further disfigured with a barrel-tile roof.



**Sunny Jim's house.** While researching its history, the owner of this house hit paydirt when she found its photo in a book about one of its inhabitants: California Gov. James Rolf.



**Putting it back.** Guided by an old photo of the house, the author extended the parapet and the bay window to their original heights, then began work on the restored cornice (top).

**F**rank Lloyd Wright didn't care for Victorian houses. He thought their abundant decoration was overdone, and their tall double-hung windows reminded him of guillotines. But I think the Victorian houses built in San Francisco, California, during the late 19th century are among the world's most beautiful wooden structures. Newly minted, these houses bristled with layers of machine-tooled decoration, meticulously assembled by the carpenters of the Industrial Age.

Then in the mid-20th century, the city started to lose its Victorian legacy. Many of the new owners of the houses, inspired by the streamlined look of the 40s and the 50s (and tired of the upkeep required to maintain a Victorian house), decided to strip their homes of embellishment. They ripped off the brackets, the columns, the window hoods and the intricate moldings to get down to the siding. The houses then were covered with a layer of asbestos shingles or a cocoon of stucco. All over the city, houses began to take on an anonymous, gray-flannel look.

This depressing trend began to reverse itself about 20 years ago, when some visionary owners of stripped-down Victorian houses decided to pull off the stucco and restore the original detailing. These folks regarded themselves as trustees of San Francisco's architectural heritage. They weren't content to Victorianize their homes by adding a bracket here and some gingerbread there. Instead, they wanted to re-create as faithfully as possible the original look of their homes. Pam Whitehead joined the ranks of these Victorian-house liberators a couple of years ago.

**Architectural archaeology**—I first met Pam in 1987, when I was restoring a small, flat-front Victorian down the hill from her house in San Francisco's Mission District. She was impressed with the transformation she saw taking place in her neighborhood, and she started to see the potential hidden behind the stucco that cloaked her house (bottom left photo, facing page). By 1989 she was ready to get started. I teamed up with contractor John Hornor and carpenter Bryan Kelly and started tracking down the leads that would tell us what the house originally looked like.

A good place to search for leads is the local historical society, which typically maintains an archive of old photos. Another good place to search is the neighborhood itself. Occasionally a longtime resident will have a scrapbook with photos of the surrounding houses.

We were lucky. Pam had learned that her house was the boyhood home of one of California's governors—"Sunny" Jim Rolf (Rolf had also presided over the city's rebuilding as mayor after the 1906 quake, along with some less-lofty activities). In a biography of Rolf, Pam found a small photo of his boyhood home (bottom middle photo, facing page). It showed that what had become a squat, flesh-colored mass of stucco with aluminum windows was once a restrained Victorian house of the Italianate style. When new, its octagonal bay had arched first-floor windows topped by what's called a belt cornice and a generous main cornice with a mansard roof.

I think the real character of these houses comes from their cornices—the three-dimensional projections, especially at the bays, that provide the texture and signature of the house. One of our primary challenges in restoring Pam's house was deciding what the main cornice and the belt cornice used to look like. Figuring that out, then building them, are the subjects of this article.

**Reading the paint scars**—After the crew stripped the stucco from Pam's house, an ugly patchwork of siding, sheathing and chopped-up pieces of the original trim boards was revealed. The main cornice was gone. The stucco crew had torn it down to make room for the hideous tile hat that crowned the house when Pam bought it.

With a photo of Sunny Jim's house in hand, I went up the scaffolding to take some measurements and to study the ghostly images of the detailing left on the original siding. Pam's house was rich with clues. The paint scars revealed the traces of arched frames around panels, a hood over the portico and the profile of the belt cornice over the first-floor windows (photo below). I photographed each piece of evidence. In some cases I pinned pieces of paper over the paint scars and rubbed a pencil on them to capture the profile of some long-lost molding.

With the tracings in my bag, I searched for pieces of the original trim. Typically the crew that stripped a house to prepare it for the stucco work would use the larger trim pieces such as window casings—nailed flatside out—to fill in areas that needed sheathing. These pieces can be invaluable when it's time to mill the new moldings.

With the information gleaned from the tracings, the Sunny Jim photo and the silhouettes of moldings, I prepared some drawings for the Landmarks Board. My drawings included a section of the belt cornice based on the paint scar (drawing below). For the mysterious main cornice, I relied on the Sunny Jim photo to get the proportions

right. Unfortunately, some of the main-cornice details were lost in the shadows. We'd have to figure these out as we went along.

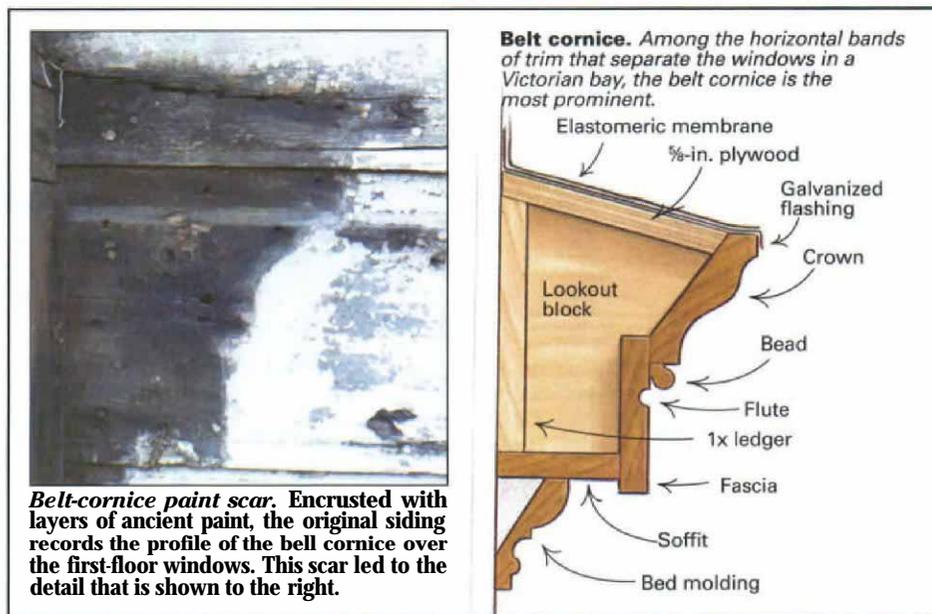
**Preparing for trim**—I matched the drawings of the paint scars with the molding catalog from San Francisco Victoriana, Inc. (2070 Newcomb Ave., San Francisco, Calif. 94124; 415-648-0313), a company that specializes in hard-to-find Victorian trim pieces. Sure enough, I found many of the patterns we needed, so I placed an order for redwood molding stock.

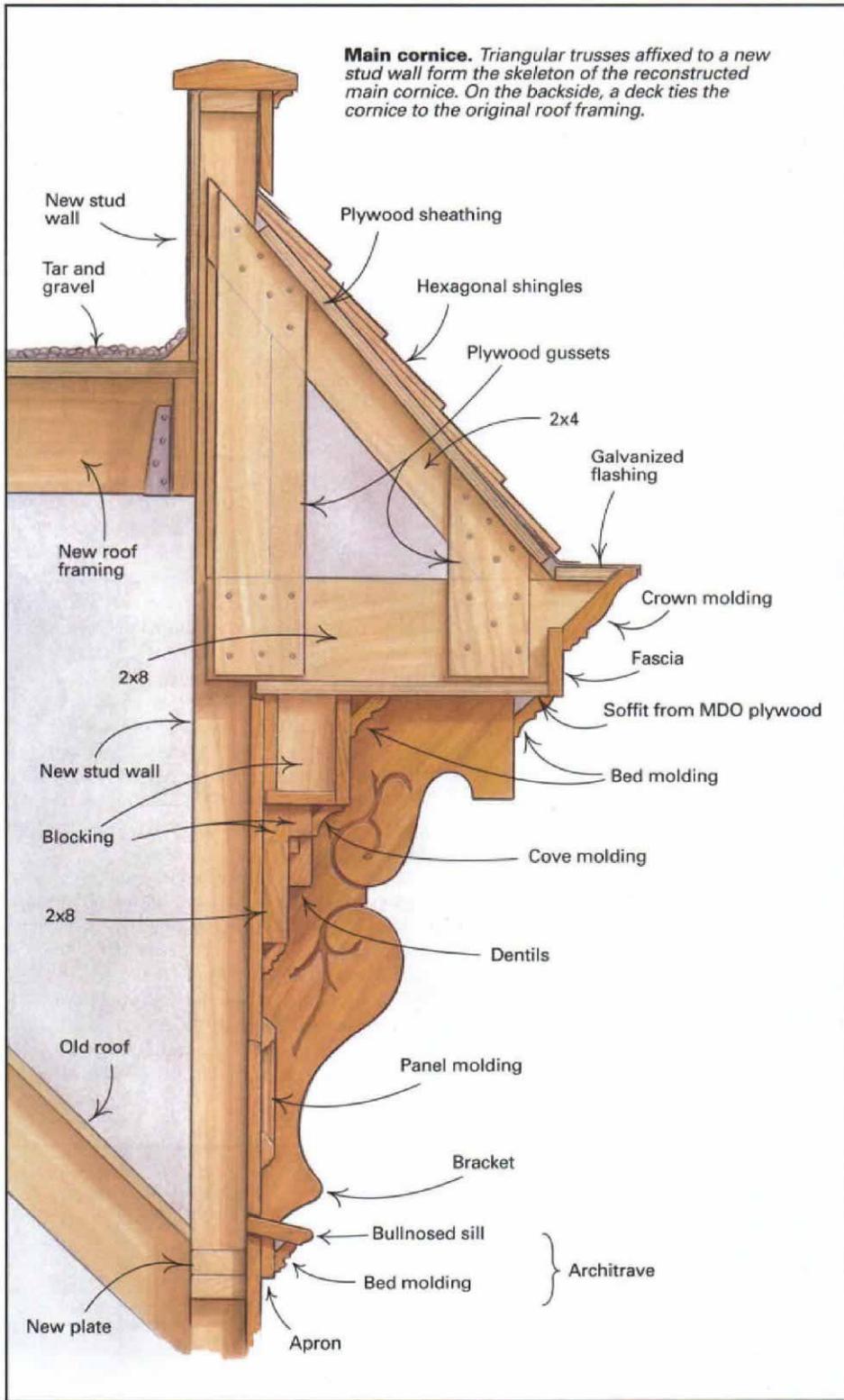
With thousands of dollars worth of precious moldings soon to arrive, John and I focused on getting the siding ready for its new trim. Then we had to make a tough call. It's almost always a good idea to use the original material. However, the channel rustic siding left on this house was badly gouged and split from all the nails that had been driven into it. Despite a desire to use the original stock and the information attached to it, we couldn't bear to put all that new redwood on such a bad surface. We stripped the old skin and renailed the diagonal sheathing beneath it. Then we hung the new 1x10 channel rustic siding on the body, like a canvas waiting for paint.

**Raising the bay**—Before we could finish the siding, we had to add several feet to the height of the building (bottom right photo, facing page). But we weren't sure exactly how tall the building had to be. We decided to frame it higher than we thought necessary, then cut it back based on the Sunny Jim photo.

We began by framing an 8-ft. wall atop the existing plate above the bay window and the adjacent plates atop the straight walls. These were the plates that had been lowered when the house had been remodeled in the 50s. The new wall is tied to the old, sloping roof by way of a new, flat roof (drawing p. 80).

With the new wall in place, I took a photograph of the house from exactly the same spot as the





Sunny Jim photo was taken. Then I figured out a scale for each photo based on the known dimensions of the details, and I drew a grid on each one. By comparing the two photos, I was able to pinpoint the top of the facade, and we lowered the new wall accordingly to that height.

Based on the proportions of the siding, I made plywood cutouts that approximated the profile of the main cornice. Then I tacked the cutouts to the framing and went back to the street to see

how they looked. I fiddled with the slope and the depth of the cutouts until I had them about right. Next I made a section drawing of the main cornice to capture the proportions and to figure out the structure (drawing above).

My design uses a series of small triangular trusses to support the structure of the main cornice. The trusses are made of Douglas fir 2xs held in the same plane by plywood gussets. The profile of the trusses defines the soffit, the fascia and the

mansard roof over the cornice while the beaks on the ends of the lower cords are backing for the crown molding (top photo, facing page). John and I nailed the trusses to the new stud wall and then locked them together with a soffit of medium-density overlay (MDO) plywood, a redwood fascia and a roof of  $\frac{5}{8}$ in. CDX plywood.

Affixing the trusses to the bay and then sheathing them established the shape of the main cornice—a shape that would be tough to change if it didn't look right. So as soon as John and I had tacked the sheathing in place, I clambered down the scaffolding for the moment of truth. I held up the Sunny Jim photo and compared it to the house. The shadows looked the same, and I breathed easier.

**Installing the belt cornice**—The belt cornice over Pam's first-floor windows is a typical detail of the Victorian era. It is composed of a fascia, a crown and a soffit, all of which are topped with a narrow roof. Installation began with the lookout blocks, which provided nailing surface.

We used a template to lay out the lookout blocks, which we cut out of rough-sawn 1x redwood. Then we affixed the blocks on 1-ft. centers to 1x ledgers. Nailing the blocks to the ledgers before hanging them on the wall makes it easy to get the blocks aligned. Because they're often going on buildings that are sagging from age, I can't always install the blocks level. But I sure try to keep things plumb, square and level if possible. To do otherwise starts a string of costly out-of-square trim carpentry that will require shims, asymmetrical miters and scribed cuts.

The belt cornice went together starting with the soffit. The fascia was applied next. It ends  $\frac{3}{8}$  in. below the soffit to create a drip edge. Next came the crown, which is the most fun because it's the most dramatic part of the assembly. Where these pieces met at the miters, they were cross-nailed and glued with yellow glue. To finish the crown, I nailed on the beading to approximate the profile of the crown in the paint scar.

The  $\frac{5}{8}$ in. plywood lid came next. We beveled its leading edge to match the angle formed by the back of the crown. This narrow lid is covered with galvanized flashing and a strip of elastomeric membrane called Gacoflex (Gaco Western, Inc., 18700 S. Center Parkway, Tukwila, Wash. 98188; 206-575-0450) that tucks under the counterflashing above. The last element in the belt cornice is the bed molding, which flares out from the wall to engage the cornice's soffit.

**Making the brackets**—A dozen big brackets and seven small ones, called modillions, march across the main cornice, appearing as if they hold up the mansard roof (middle photo, facing page). These brackets have five layers—three 1xs sandwiching two 2xs—for a total thickness of  $5\frac{1}{4}$  in. The 2xs are recessed along most of their exposed edges, creating a shadow that emphasizes their curves. I built the brackets and modillions, including the fretwork incisions in the outer layers, on site with templates and a router.

I began by spray-gluing a full-size drawing of the bracket to a piece of  $\frac{1}{2}$ in. plywood. Cut out with a jigsaw, this pattern became the template

that I used to guide my router as I cut out the bracket pieces (right photo, below). I have a long-shanked  $\frac{1}{2}$ -in. bit that plowed through redwood in a hurry, so I used it to cut out the bracket profiles. Then I switched to a  $\frac{1}{4}$ -in. bit and collar (left photo, below) to rout the fretwork pattern in the exposed side of the brackets.

To save on materials, the 12 big brackets are hollow. After sanding the rough edges, I assembled the bracket parts from the inside out with glue, nails and screws. Then I set them aside until we were ready for them on the high wall. I made the modillions, which fit between the brackets, using exactly the same tools and materials.

**Main cornice**—John and I knew trimming the main cornice would take a couple weeks, so we began by making a place to work. John placed some scaffolding planks on the top tier and built a workbench that was large enough for our sliding compound-miter saw. If you've ever scrambled around on narrow scaffolds 30 ft. above the sidewalk, you can appreciate the importance of a generous workspace on the top step.

First we assembled the architrave—the lowest part of the cornice—from a bullnose sill, a 1x6 apron and a bed molding. The tails of the brackets bear on the top of the architrave (middle photo, right). We fastened the brackets plumb and square under the soffit, using a pneumatic nailer to position them and angled screws to anchor them. A box made of 1x6s tucks under the soffit, running between the brackets and bracing their sides. The box appears to run continuously across the front of the house, filling out the cornice and providing anchorage for the modillions.

After extending the 1x6 box across the cornice and placing the modillions, John began to cope and miter the dozens of pieces of 2-in. bed molding that wrap the perimeters of these features. Meanwhile, I attached a 2x8 ground for my favorite feature in the cornice, the dentils.

The dentil is an antiquarian motif resembling a string of tiny rectangles. Perhaps its most famous application occurred at the Acropolis. Typically paired with a bed molding above, dentils appear to be a series of alternating small and large blocks. In reality, the Victorian builder created the dentils by spacing the notched larger block over a continuous smaller strip. We used the same method. We ran a  $\frac{3}{4}$ -in. by 1 $\frac{1}{4}$ -in. strip of redwood under the bed molding. Over this strip we nailed notched blocks cut from ripped and rabbeted 2x6 stock.

As I figured out the spacing of the dentils on my solar-powered calculator, I couldn't help but muse over the irony of laying out trim from antiquity with solid-circuit technology. But it works.

The dentils turned out to be just the right touch for the smaller-scale layer of detailing in the cornice. They may very well have been the detail hidden in the shadows of the Sunny Jim photo. We nailed on the panel moldings to frame the frieze areas between the brackets, which completed the main cornice (top photo, p. 78). □

*Terry Murphy is a designer/builder specializing in Victorian restoration. Photos by the author except where noted.*



**Supporting the main cornice.** Triangular trusses made of Douglas-fir 2x4s fan out from the wall framing to serve as backing for the cornice roof and soffit. The trusses are held in the same plane by plywood gussets. The beaks on the bottom cords of the trusses anchor the crown molding.



**Cabinet-grade trim at 30 ft.** Curvy brackets and modillions (smaller brackets), which are laminated from alternating layers of 1x and 2x redwood, detail the cornice's soffit and frieze. The dentils provide a secondary level of texture. On top of the architrave, two dentils await installation.



**Making the brackets.** Over a hundred pieces went into the brackets and modillions, making their fabrication perfect for template routing. In the photo to die right, the author routs the profile of an outer lamination. The next pass, with a  $\frac{1}{4}$ -in. bit and collet (above) will mill the fretwork pattern in its face.

