

Cooperative Craftsmanship

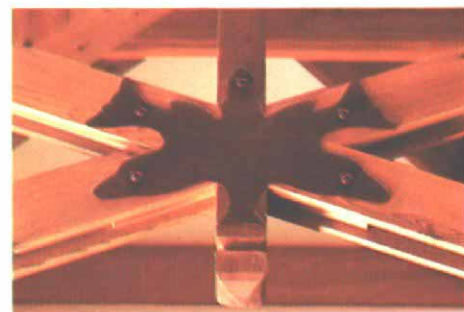
Distinctive wood detailing, tile work, stained glass and carving in a California living room

by Ben Tarcher



Berkeley, California at the turn of the century was a carpenter's dream come true. An American hybrid design, the Craftsman style, had evolved, and hundreds of practitioners (affectionately dubbed "carpitects") took to the hills to fashion a community of peak-roofed houses out of seemingly limitless first-growth redwood and fir. Innovators like Bernard Maybeck (see *FHB* #2, p. 18) and the Greene brothers in Southern California turned away from ornate Victorian designs, finding inspiration in such diverse styles as Japanese farmhouses and Swiss chalets. Houses became showcases for the warm and rustic tones of natural materials—stone, brick, tile and most of all, wood. Each project was a chance for artisans to display their talents. Woodworkers fashioned carefully detailed elements, from beams to staircases. Masons built massive fireplaces of stone, brick or concrete. Stained glass studios turned out leaded windows, and original lighting fixtures were created for the finest homes.

Today, the few empty homesites scattered about this rich architectural landscape offer a first-rate aesthetic challenge to designers and builders. My partner, Ed Hazzard, and I found such a site and on it built a modern home in the Craftsman tradition, employing talented artisans in a cooperative work atmosphere. Because



Exposed structural members, hallmarks of the Craftsman style, give the living room, left, a feeling of openness and warmth. The 4x12 cedar ridge beam is supported by three major trusses with king posts. Above is one of three crossed fish truss plates that were custom-made from 12-ga. steel. The plates tie the crossing chords of the trusses to the king post.

the home was a speculative venture on a difficult site, artistic considerations had to be tempered with practicality. The cheap land, labor and materials of the past that had allowed vast rooms and high ceilings no longer exist. To retain the sense of spaciousness found in earlier houses, we designed a soaring living room as a focal point. In the Craftsman spirit, simple, elegant detailing would distinguish this room.

Custom-built roof trusses—After we constructed 2x4 stud walls, a crane hoisted the 4x12 cedar ridge beam into place. We bolted pre-shaped cedar brackets to the beam where each truss would eventually go. We bolted 4x4 cedar king posts between the brackets and set 2x6 cedar rafters on either side of the posts. The rafters sandwich 1x6 cedar chords that pass through X-shaped, $\frac{3}{4}$ -in. deep dadoes on opposite sides of the king posts. One chord on each side is continuous, the other is mitered and butted to its companion. The area between the chords contains spacers that stiffen the structure and serve as mounts for a light-track system.

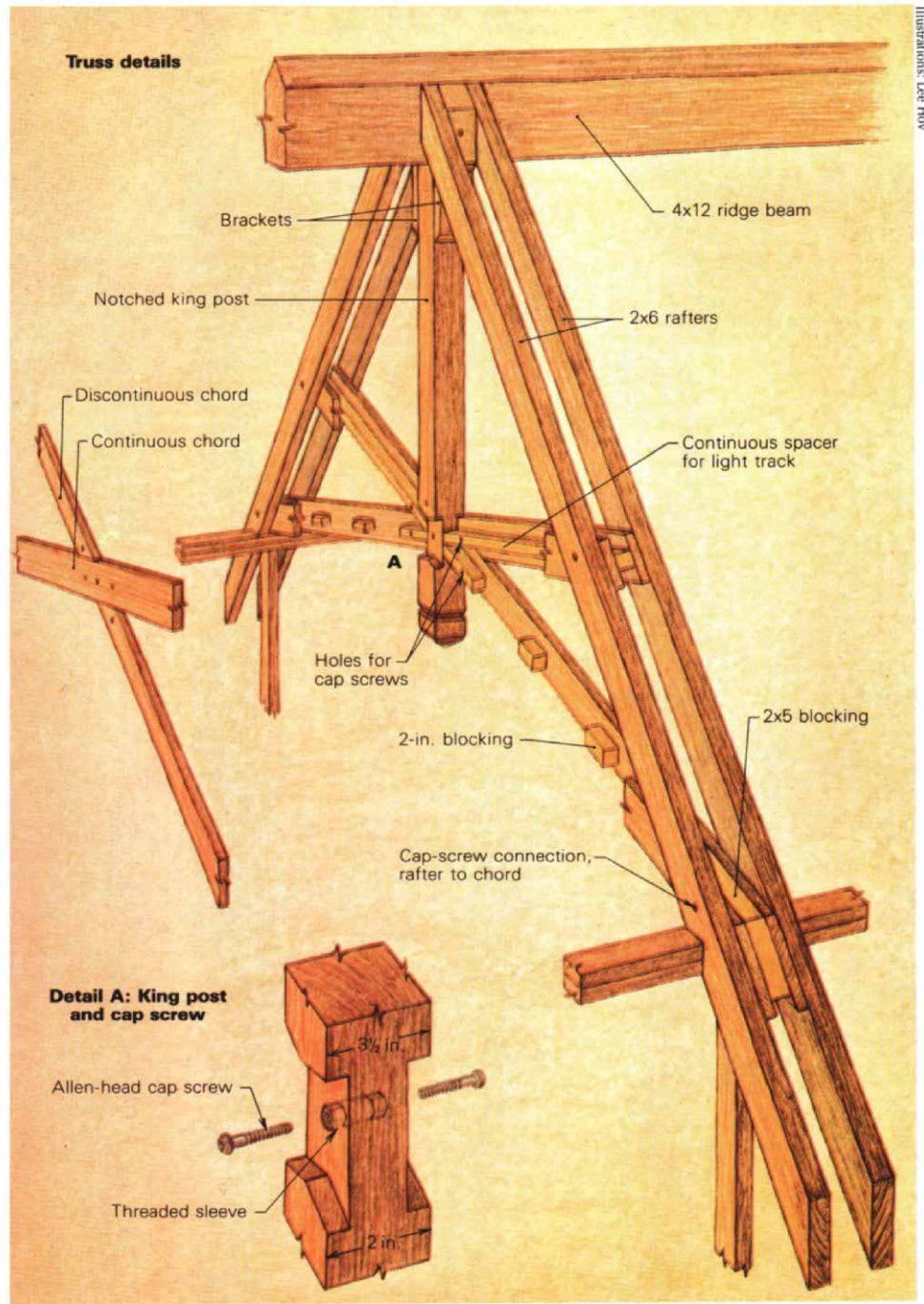
We left the chords long, overhanging the wall plates. This way we could tension and straighten the long rafters by pulling on the chords. With the rafters straight, we temporarily nailed the chords to the rafters where they both cross the top wall plate. Finally we bolted them together and cut the chord ends flush with the rafter tops.

To connect the chords and the king posts, we used 12-ga. mild steel plates in the shape of crossing fish (detail photo, facing page) made by a local metal sculptor, Tatachook. To make them she first cut a template for the design pattern and made soapstone tracings on the sheet metal. She then cut the metal with a sheet-metal nibbler, leaving a margin to allow for grinding and finishing. She finally bored the holes for cap screws. We sandblasted the fish down to clean metal and then treated them with cold liquid gun-metal bluing to get a dark patina.

To achieve the strength of through-bolting and get a finished look without nuts showing on either side, we joined the king posts, chords, and brackets with $\frac{1}{2}$ -in. by 2-in. Allen-head cap screws. The king posts and spacers were pre-drilled to accept tapped steel sleeves (threaded from each end). The cap screws were then driven in from opposite sides until snug. The same method was used to hang the king posts from the cedar brackets on the ridge beam.

Interior finishes—The finished ceiling is 1x6 cedar shiplap siding nailed to the rafter tops. Wall surfaces are $\frac{1}{2}$ -in. drywall taped with taping compound troweled smooth over joints and nail holes. Pat Malley, a local plasterer, made the coved ceilings in the foyer. Ribs were cut from 2x12s to form the cove radius that joins the wall studs to the ceiling rafters. Where walls meet, we chamfered the corner ribs and covered the entire rib structure with expanded wire lath (drawing, right). Pat applied three coats of plaster over the lath on three consecutive days and tapered the plaster at the edges for the tape and compound to join plaster and drywall. We then sprayed walls and ceilings white.

To vary the natural colors in the living room



An inside corner of the coved ceiling. Curved ribs were cut from 2x12s, as at left. These ribs were covered with expanded metal lath, the base for three coats of plaster.

we worked a dark border into the oak strip floor, a design feature found in most Craftsman-style homes in this area. After painting the walls and installing the floors, we nailed up custom-milled, straight-grain redwood trim for windows, picture moldings, doors and baseboards. Before installing them, we sanded the pieces and oiled them with two coats of Varathane Plastic Oil, wiped dry after each coat.

Stair-rail construction—Woodworker Rick Magadan made the handrail at his shop from detailed drawings. He assembled it on the site. The finished stair is shown below; for construction details, see the drawing on the facing page. The channel-shaped handrail is a composite of three pieces—two sides and a top rail, which was shaped from 2x4 red oak. Its top edges were

rounded over with a router, and two grooves were plowed along the underside of the rail to house the two sides. Rick coved the outer faces of the side pieces on the table saw, clamping a pair of auxiliary fences atop the table to feed the work over the blade at about 60° (see *FHB* #2, p. 48).

Rick bandsawed the curved sections for the landing handrail from solid blocks of red oak, then sanded them to shape with a 3-in. spindle sander. He steam-bent the side pieces to conform to the rail, and slotted the curved parts of the handrail by attaching a router to a pair of trammels. He joined the handrail section to the lower shaped section with two standard $\frac{3}{8}$ -in. by $3\frac{1}{2}$ -in. dowels at each union.

The square-headed balusters were ripped from 2x cedar stock and shaped on a jointer with stops on the infeed and outfeed tables. The cen-

ter areas were relieved by carefully lowering the material over the rotating cutterhead and running it through to the outfeed stop. Each side of all three different-length balusters went through the jointer twice, with a $\frac{1}{8}$ -in. wood shim under the balusters for the first pass to avoid possible kickback, and to remove only $\frac{1}{8}$ in. on the final pass, a light enough cut to eliminate tear-out and chipping. Sandpaper is glued on top of the shims so the shims won't slide; for an extra measure of safety, the shims could be taped to the balusters.

Rick jointer-shaped the newel posts from 6x6 cedar timbers, then notched and faceted them with a radial arm saw. With the newels nailed and bolted in place, he plugged the remaining holes. He then glued and screwed a maple ledger block to each newel. These blocks fit into a hollow in the end of the handrail and tie the rail and newel together once the balusters are set in place. When the newel was ready to receive the rail, Rick secured the balusters to the stair treads with dowels, using slow-drying glue. There are two balusters, one longer than the other, on each tread. In all there are three lengths of balusters, two for each tread and one for the horizontal landing sections of the rail.

In preparation for joining the rail to the balusters, Rick cut spacer blocks, which he nailed and glued to the underside of the railing at intervals to match the spacing of the balusters already in place on the treads and landing. An extra $\frac{1}{8}$ in. was left between the blocks for maneuvering the balusters into place. He then applied glue to the contact points on the underside of the rail, slipped the rail over the maple block on the newel, and one by one worried the balusters into place under the rail. Then he glued the other coved handrail side into place and clamped the sides together. Finally, he glued and nailed oak cover blocks between each pair of balusters, and the balustrade was complete except for finishing—a sanding with 400-grit paper and two coats of Watco oil. It took Rick and our head carpenter, John Palms, 230 hours to build and install the stair.

To complete the Craftsman theme we hired tilemaker Jeff Bickner to make the tiles surrounding the fireplace and cabinetmaker Miles Karpilow to design, build and carve the fireplace mantle. My partner and I had already decided on the dolphin theme when we first talked with Miles. The dolphins, an ancient symbol of intelligence, freedom and the collective spirit of man, seemed perfect for our house.

And the collective spirit emerged intact at the project's conclusion. These craftsmen brought their experience and enthusiasm into this home and proved that the exemplary workmanship of the past can still thrive in the present. □

Ben Tarcher is a graduate architect and contractor in Berkeley, Calif.



It took two men 230 hours to build and install the stair. The handrail is red oak; its side pieces were coved out on a table saw, and the balusters were shaped from 2x cedar stock.

Windows, as at right, are bordered with leaded glass with a horizontal, undulating strip of colored glass at the top. Each piece of trim was custom-milled from straight-grain redwood and finished with Varathane Plastic Oil. The stained glass is the work of Bruce McLean. The fireplace, far right, features tiles by Jeff Bickner and a dolphin mantle by Miles Karpilow.

