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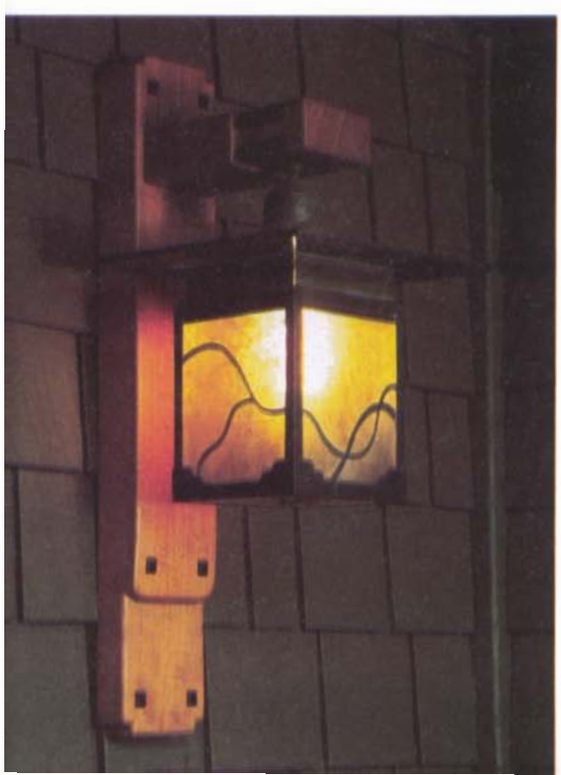
Resurrecting the Bolton House

There's more to restoring a Greene and Greene house than following the original plan

by Ken Ross



Black-and_white photos: Courtesy Charles Sumner Greene Collection (1959-1)
Environmental Design Archives, University of California, Berkeley

When I moved to Pasadena, Calif., in 1974, I saw for the first time several homes designed by Charles and Henry Greene. It was love at first sight. So when one of their houses came on the market in 1979, I bought it without so much as a backward glance.

To my eye, the Greene brothers' work is the ultimate expression of the American Craftsman movement in architecture. Their work brings together several design sources that I admire—oriental architecture, Art Nouveau and the Arts and Crafts movement. And they were able to unify these separate elements and a myriad of highly wrought details to produce cohesive designs in which line and form, texture and color work to make one thing out of many.

The house that I bought (photo facing page, top) was designed and built in 1906 for Dr. William T. Bolton, a Pasadena physician, who died before the house was completed. It was bought and sold many times in the following years. Among the early owners were the Culbertson sisters, for whom the Greenes had designed another home a couple of miles away. The Culbertsons' shrinking inheritance forced them to move from their 10,000-sq. ft. home in Pasadena's Oak Knoll area to the smaller Bolton house (about 5,000 sq. ft. at the time) in the Orange Grove area.

The Culbertson sisters commissioned the Greene brothers to make a number of changes in the house, which ultimately added about 1,000 sq. ft. and which considerably altered the interior. Some changes were good; others were not. The turret stairwell was added in the early 1920s by the Culbertson sisters. It was designed by Garrett Van Pelt, an architect who had earlier worked for the Greenes. The stairwell is similar to one of two that were part of the facade of an earlier house designed for the Culbertsons' father by the Greenes, and built a few blocks away on South Grand St. This addition was built by the original contractor, Peter Hall. The Culbertsons changed the entry hall and writing room, removing some interior brickwork because they thought it was too rustic. Even with all of these changes, the house remained representative of the Greenes' style during the long time the Culbertson sisters lived there.

Built in 1906, Greene and Greene's Bolton house suffered neglect and abuse before it was restored by the author, who was able to coordinate the efforts of local builders and craftsmen so that the work they did was equal in quality to the original woodwork, tilework and plastering. In the original entry (facing page, bottom right), the downspouts were made to look like structural elements, lending visual support to the wide overhangs. Missing here is the engaged half-turret to the right of the entry (facing page, top), a later addition designed for new owners by architect Garrett Van Pelt.

But the house did not fare so well with subsequent owners. In 1952, it was purchased by people who began a series of transformations that all but effaced the original appearance and character of the house. The new owners went to great lengths to turn a California bungalow into a French Provincial mansion. Their alterations included painting white the cedar and mahogany woodwork, painting over the doors and bookmatched mahogany paneling, removing and discarding all of the Tiffany glass lanterns and oriental-style box beams, and walling over two fireplaces that featured Grueby tiles.

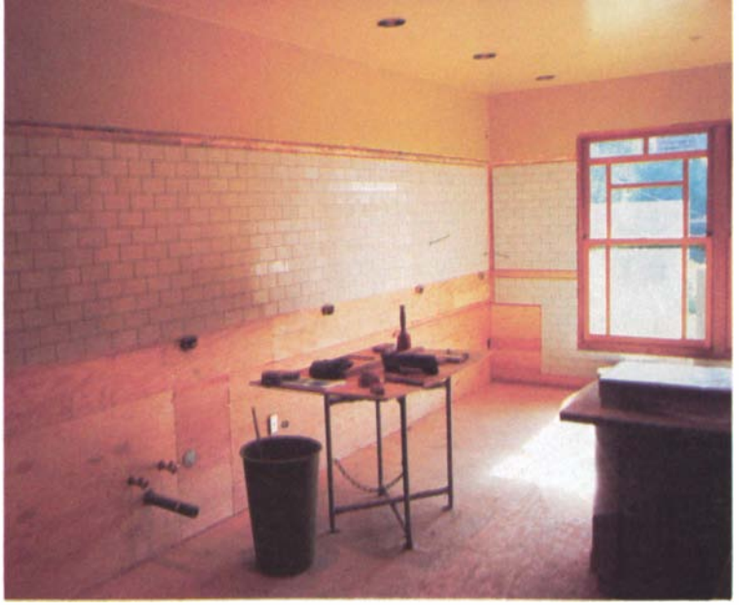
When I bought the house, it had not been used as a residence for many years. After suffering the indignities of French Provincialization, the house had been bought by a local college and used as a warehouse and book depository. Bad things happened inside and out during its sentence as a storage depot. The roof went without maintenance and was allowed to leak. The plumbing wasn't repaired and leaked so profusely that water had rotted large holes through which one could gaze from floor to floor. Carelessly operated hand trucks and forklifts left hundreds of dents, scratches and gouges in floors, walls and trim. Most realtors would have classified it as a "fixer-upper." Indeed, the process that followed is better described as a resurrection than a restoration. Only a dedicated preservationist or a damn fool would tackle such a project. I qualified on both counts.

Restoring the Bolton house was a challenge and an opportunity. Our principal challenge lay in the fact that most of the original interior features had been entirely stripped away. This left us with the task of determining what the original rooms looked like, and having done that, reproducing their various architectural features. Our principal opportunity was to be found in the freedom to reinterpret creatively and fill in gaps with our own designs.

We were fortunate in finding that several people were interested in the rebirth of the Bolton house. The most recent owner, who had held it for only a few months, had tracked down several sheets of the original blueprints at the Avery Library at Columbia University in New York, as well as copies of all the building permits for the house and its many remodelings. The Greene and Greene library at Gamble House (4 Westmoreland Place, Pasadena, Calif. 91103) provided us with several 1908-vintage photos—both exterior and interior shots like the one of the original dining room below. Other people volunteered bits and pieces of information. All in all, we had quite a lot to go on.

However, having a lot of information is not the same thing as knowing what to do with it. None of us who worked on the project had been involved in a restoration project of this scale before, and restoration is infinitely more time-consuming and difficult than either renovation or new construction. You have to undo all of the old accretions before you can do anything new. You are faced with having to solve innumerable small mysteries before the big jobs can begin. You have to map the electrical, water, sewerage and gas systems before you can do anything with them. You have to reconcile the original blueprints with a structure that has been substantially altered, sometimes in baffling ways. You have to decide which of the original features are worth reproducing and which are not, while still remain-

The original dining room, with its now long-lost custom furniture, was paneled with wide pieces of Honduras mahogany plywood. Unable to find good-quality mahogany plywood in these widths, Ross used standard 4-ft. wide panels and trimmed between with battens.



The kitchen (above), which had been Early-Americanized in the 1950s—knotty-pine cabinets and trim, scalloped copper work and an island range—had to be completely gutted. The window area where the sink stood was removed and the wall there filled in (right), and treated between the tops of the cabinets and the header strip with subway tiles.

ing faithful to your perception of the architects' vision. And, not least important, you have to stay solvent.

Working to high standards—I began the project in a fit of organizational energy. I made flow charts, job descriptions, checklists, spec sheets and budget estimates. I had a wonderful time, but none of these devices seemed to make the job go more smoothly.

There was so much to do that one of my first temptations was to tackle too many tasks at once. We had crews stripping paint, removing the old roof, clearing off the yard, and doing rough carpentry. We had plumbers plumbing, electricians wiring, and dozens of tourists getting in the way and asking questions. Keeping everyone organized, supervised, supplied and paid was tough—at times it was impossible. In the first few months, we went through more than 60 gallons of commercial paint stripper and two heat guns; we used up reams of sandpaper, innumerable other supplies, and lots of patience and goodwill.

In retrospect, I know we'd have been better off with a smaller and more tightly organized crew. Large crews can get work done faster, but they make mistakes faster, too, and sometimes the net result is not positive. Through natural attrition and the outright firing of some workers, our crew gradually shrank to a manageable size, and the overall quality of our work steadily improved.

Certain styles of architecture and interior detailing can be duplicated, more or less, using standard materials, conventional construction techniques and competent workmanship. Not so with Greene and Greene designs. The effect of the whole depends entirely on the near-flawless execution of seemingly insignificant details. Meticulous attention must be paid to wood joinery, to the finish and texture of the expansive wood and plaster surfaces, to the correctly done stained-glass panels, and to many other carefully wrought minutiae. And all these little things, taken together, create the Craftsman look and feel. There's just no such thing as an uncraftsmanly Craftsman house. So it became my responsibility to encourage the highest possible standards of craftwork, within the constraints of my budget and schedule. I think this is the most important role among the many that an owner-builder can perform.

Encouraging quality is different from demanding it. This kind of encouragement involves making a milieu in which craftsmanship will be the natural result of creative freedom, commitment to an ideal, adequate time and a spirit of cooperation. What this means in practical terms is finding bright, talented people who take pride in their work, and who have the right "chemistry" with each other. Further, it means insisting that such people work on a time-and-materials basis. This last point is an important one. Many trade and craftspeople are capable of much better work than they ordinarily do. But they are so accustomed to competitive bidding and the need to work quickly that they simply won't believe it when you tell them you want a job done right, even if doing it right takes longer and costs more.

Even accomplished craftspeople sometimes need to be convinced that it's okay to do the best work they can. The best way I know of to do this is to insist that they work on a time-and-materials basis, and then to work beside them as much as possible. Working with the crew does three things. It protects you by allowing you to oversee work directly—you don't have to wonder about how something was done, or if it was done. It gives you a chance to communicate your standards, and it establishes a bond of friendship and trust, which is a key ingredient of craftsmanship.

Doing things this way lets you experiment. Time invested experimenting pays dividends in the long run. Our skim-coat technique saved us a bundle. We did several patches right on the wall, varying the formula until we got it right and then proceeding from there. By experimenting we found we could mate old plaster to new drywall and blend them invisibly with a skim coat. This was especially helpful when replacing old ceilings. We also tried various wood finishes and techniques until we arrived at a compromise between ease of application and a good end result.

However, ordinary techniques that work well in new construction don't always work so well in restoration. The freedom to experiment helped us to solve problems in innovative ways, and saved money in the long run.

In the first several months of work on the house, we reroofed it, rebuilt the mechanical systems and dealt with structural problems. Some previous modifications had left walls with insufficient shear strength, and some modified openings were over-spanned.

The kitchen—The first room in the house to get intense attention was the kitchen. There was general agreement among the crew members that this room transcended bad taste and was better described as an example of "anti-taste," a deliberate, demonic effort to make a pretty thing ugly. It was incomprehensible to us that it had been featured in a 1952 issue of Los Angeles' *Home Magazine* with descriptions of its maple and knotty-pine woodwork, its quilted and scalloped copperwork, early American light fixtures and hardware, cork-tile floor and steel casement windows (photo above left). We promptly gutted the room.

We installed a maple floor, one similar to the original. New wood-frame windows were put in place, and we laid up tile on the walls from the floor to a continuous header trim (photo above right). These tiled walls are serviceable, and they're characteristic of the Greenes' kitchens.

In rebuilding the kitchen, our goal was to recreate the style and feel of the original, while at the same time creating a new and functional space with modern amenities. We worked toward this goal in several ways. First, we used a cabinet design patterned after the original but in a different (and expanded) configuration. Both the upper and lower cabinets were modifications of the original design, but close enough to capture their look (photo facing page). This original look was maintained through the faithful retention of many details both large and small: the use of wooden countertops, the elimination of under-the-counter toe space and the use of Craftsman-style joinery (dovetails, finger joints and pegged tenons).

All of the appliances were carefully selected

Construction photos: Ken Ross

The woodwork in the restored kitchen is mostly redwood, and the cabinets are done in a style consonant with the Greene brothers' sense of scale and detailing. The fronts of the dishwasher and refrigerator are paneled, and the countertops are solid wood. Recessed lighting above the work areas concentrates light where it's needed, instead of flooding the whole kitchen with excessive illumination.

and installed to work visually with the overall design. The dishwasher, compacter and refrigerator were wood-paneled in a way that wouldn't attract too much attention to themselves. The refrigerator was flush mounted into a wall. A microwave oven was concealed behind a tambour door. We chose a commercial range for its appropriate scale and for its functional appearance.

The lighting was carefully thought out so as *not* to provide uniform illumination, with the idea that all work and eating areas would be brightly lit, while other non-work areas would be less so. This adds a degree of drama to the lighting, and also avoids the uniformly bright illumination of most modern kitchens. The cumulative effect of all this attention to detail is a kitchen that is modern and functional, yet entirely in character with the original style and intent of the Greenes' design.

In reworking the kitchen, we used a variety of modern techniques rather than slavishly adhering to old ways. We finished our countertops, for example, with a high-quality, solvent-based polyurethane, and we used a variety of modern sealers and preservatives. We did the ceiling and upper walls with gypboard, double sheeted and attached with screws. We laid up the wall tile on a plywood base rather than on a cement bed. For this base we used ⅝-in. exterior plywood, secured to the studs with panel cement and ring-shank nails. Instead of using thin-set, we set the tile with type A mastic, a high-quality mastic that's much easier to use and very strong.

For lights, we used a combination of leaded-glass lanterns in the style of the originals, and discreet modern fixtures. Our 2x12 (net dimensions) ceiling joists allowed us to install

The living room, which had been French Provincialized by the same people who remodeled the kitchen, is here being stripped of wallpaper and other accretions. By a stroke of luck, the locations of the original box beams, lanterns, header trim and other features were clearly outlined under the wall coverings. These worked almost like templates for constructing these elements anew.

deeply recessed, museum-style down lights. Equipped with a ribbed black baffle and bezels painted to match the ceiling color, these fixtures faded into the background while at the same time putting light just where we wanted it. Although some preservationists would frown on these techniques, we felt that in almost every case we realized substantial benefits, we saved money and we kept from vitiating the spirit of the Greene brothers' original design.

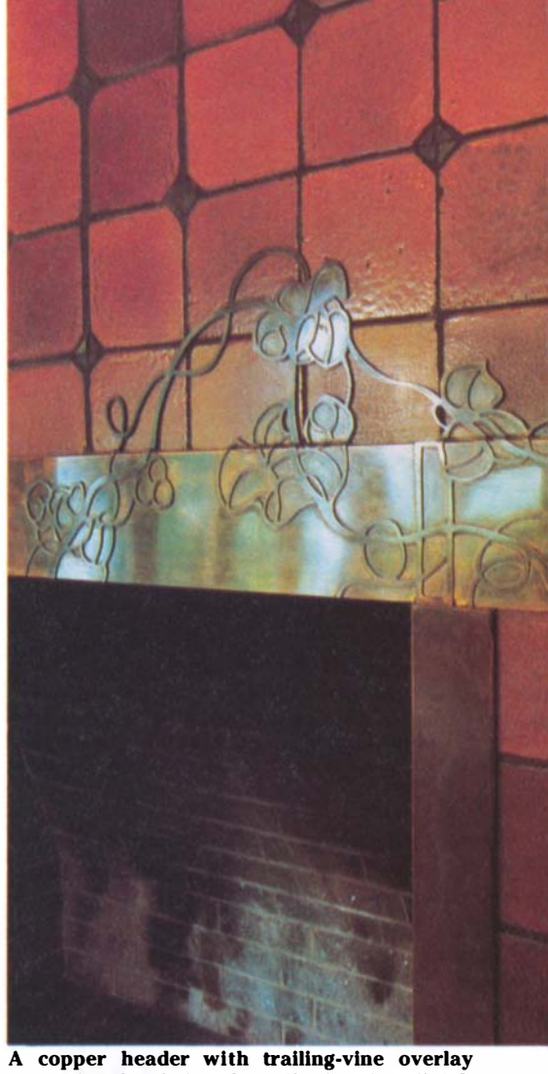
The living room—After we finished rebuilding the kitchen, we concentrated our efforts on the living room. About the only things left over from the original room were the windows. All of the architectural features had been stripped away in the same remodeling wave that created the early American kitchen. This room, though, had been redone in a French Provincial style. Even the original sand-finish plaster walls had been covered with canvas, and then papered with a floral print. To our delight, when this canvas was pulled down, it revealed not only the original surface and colors underneath but also the white, unpainted silhouettes of all the original box beams, header trim and other ornamentation, as seen in the photo above left. This allowed us to verify dimensions and details that were unclear from our incomplete set of blueprints. But, our most exciting discovery came when we removed the reproduction French Provincial mantelpiece and chipped a small hole through the plaster behind it. There, covered over for nearly 30 years, was the original fireplace, with its handmade Grueby tiles still in place. Apparently these 1-in. thick tiles had been too hard to remove, so the 1950s remodeling contractor just covered them over with wire lath and plaster.

After photographing the room and carefully measuring the silhouettes, we pulled down the plaster ceiling because it was unsound and unsafe. We renailed the original wood lath with blue nails and covered it with wire lath, which we attached with heavy-gauge ⅝-in. staples and a pneumatic gun. Then we replastered the ceiling and finished it to get a sand-finish texture. The walls were extensively patched, and then the entire room was skim-coated (except for the new ceiling).

This skim-coating technique (see *FHB* #15, pp. 72-74) worked very well, and we used it extensively throughout the house. This saved us the considerable expense of completely replastering walls that were unsightly but basically sound. Instead of applying commercially prepared skimcoat, we used ordinary premixed latex joint compound and sand, with a little extra water added to help speed troweling. Conventional plaster doesn't work well for skim coating and should not be used. Our joint-compound formula hasn't shown a single crack in the entire house, and it's been in place for about three years now.

We finished the skim-coated walls with one coat of oil-base sealer and one coat of exterior oil-base primer before applying two coats of high-quality latex paint. We modified the oil-base paints with Penetrol and the latex with Floetrol, both made by Flood Co. (Hudson, Ohio 44236). These additives retard the drying time, minimizing lap and roller marks, and give the dried paint a very slight sheen. We painted the room before installing any of the woodwork, thereby avoiding the necessity of cutting in with a brush around innumerable edges and corners.

Restoring the living-room fireplace and hearth turned out to be a major undertaking in itself. Uncovering the original fireplace tiles was really good news. The bad news was that they were covered with mortar and plaster and pierced by two rebar studs, which had been inserted in the masonry to support the plaster. The hearth was missing all its tiles, which had been thrown out and replaced with



A copper header with trailing-vine overlay conceals rebar holes above the fireplace lintel.

marble, and the original copper firebox header was gone.

Then, in another fantastic stroke of luck, a local collector told me he had enough matching Grueby tiles from a demolished house to replace my hearth. Again, this was the good news. The bad news was that these sturdy tiles were still attached, in one monolithic piece, to 8 in. of well-cured concrete.

To make a long story short, we used a hammer and chisel, a water-cooled diamond saw and a lot of sweat to liberate the tiles intact. The tiles were cleaned by repeated scrubbings with a mild muriatic-acid solution and brought back to their original patina with a rubdown using diluted tung oil. We solved the problem of the two stud holes made by the rebar by designing a new copper header with an Art Nouveau trailing-vine overlay (also of copper), which extended up over the tile at the appropriate places and simply covered up the holes (photo above right). We borrowed the trailing-vine motif from the leaded-glass transom light over our front door.

In restoring the living room, we used Port Orford cedar for all the trim, doors, box beams and windows (photo facing page). This wood was a favorite of the Greenes', who selected it for its durability, workability and its clear grain. The wood was kiln dried at the mill and air dried inside the house for several months. Port Orford cedar is durable and rot resistant because of its high resin content, but

The restored living room, with its Grueby tile fireplace, stained-glass lanterns and built-in inglenook bench, is almost a copy of the original Greene and Greene living room. The only significant change is the built-in audio cabinet to the right of the fireplace.

it can exude this resin for a long time and did so, right through our meticulously applied finish, in spite of all our precautions.

We used Honduras mahogany, also a Greene and Greene favorite, for cabinets, benches and lanterns. This wood was a pleasure to work, and yielded exceptionally beautiful results.

We began reproducing the woodwork for the living room by building the box beams. These were large heavy structures of various sizes, with radiused edges, arranged in an overlapping oriental design. We built our larger beams with interior ribs, much like a canoe, and attached all of them to the ceiling by nailing them to cleats affixed to the joists with drywall screws. The beams were nailed from the side with a pneumatic gun, firing 2-in. finishing nails. The nail gun was invaluable because it enabled us to do high-quality finish work in close quarters without nicking the plaster on the ceiling or denting the wood.

Before nailing the beams in place, we scribed them to the ceiling, a tedious, time-consuming operation that required us to take them up and down numerous times. The beams had to be brought in through a window, lifted up, held in place using pads and 1-in. by 2-in. braces (used like go-bars), then marked, taken down, planed, sanded and put back up again. Ugh.

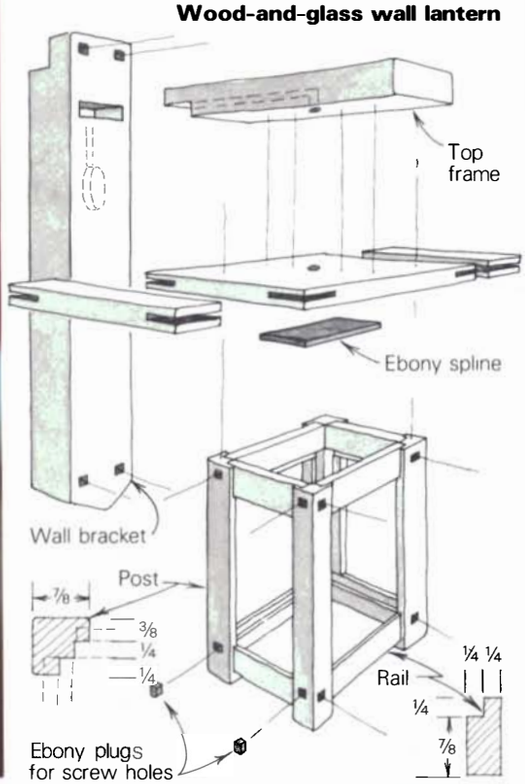
One design feature that's truly a Greene and Greene trademark is a continuous wood header circling the room and joined at intervals with a pegged scarf joint, like the one in the center photo on the next page. The header joins all the windows and doors, and organizes them into one plane. It also visually lowers the ceiling to a comfortable height. In addition, the header serves as an attachment point for the light fixtures (usually lanterns) and as a picture molding. We installed continuous headers in the living room (and throughout the house), and mortised all the upright trim members—door and window cases—to receive them. Indeed, wherever two pieces of wood came together in this room they were either scarf joined, finger joined, mortised and tenoned or lap joined.

The most time-consuming and difficult woodworking jobs in the living room were the construction of nine wood-and-glass lanterns, an enclosed bookcase, and an inglenook bench. The Japanese-inspired lanterns averaged over 30 separate parts each, and required much meticulous care in construction (photo and drawing, top of next page). These characteristic Greene and Greene style lanterns were attached to an inverted L-shaped bracket, which notched over the header trim and was screwed to both it and the wall below. The screws were recessed in square holes and then hidden behind ebony pegs. This attachment detail is used throughout the house. We don't know exactly how Peter Hall, the Greenes' craftsman builder, executed this detail. We did it by cutting the holes with a square, hollow-chisel mortiser and then tapping in a tapered oversized peg. The pegs were made from a long stick of ebony, milled to the proper size and then sliced like bread; then each one was tapered on a belt sander. Numerous small details like these pegs give a restoration job the stamp of authenticity.

The enclosed bookcase and inglenook bench are two of my favorite pieces. They were both designed along the general lines of the originals (we did not have details) and built out of Honduras mahogany. The framing members in both are joined with mortise and tenon. Panels are allowed to float free in their frames, so that wood movement across the grain of wide pieces wouldn't break the frame joints open. Some of the finger joints and tenons were locked with a screw, which in turn was set in a counterbore and hidden behind a peg. Since there is a gap under the peg, allowance is provided for the screw to move with the wood.

The dining room—By the time we finished the living room, we were really getting good at the kind of joinery and detailing that were such an integral part of Craftsman architecture. Work in the dining room, which was our next focus, went smoothly and quickly in spite of the many details. We had reached our stride. The original dining room had been paneled in Honduras mahogany veneer. In-

Wood-and-glass wall lantern



stead of trying to reproduce the veneer or buy high-quality mahogany plywood in these widths, we borrowed a pattern from the entry hall that used narrower sections of paneling separated by battens. For the panel sections we used ⅝-in. plywood with a Honduras mahogany face veneer. This was made to order for us by a local company and was surprisingly economical. This paneling was used with solid mahogany trim. We nailed the panels directly to the studs, being careful to align all nails so that they would be covered by the battens. The baseboard and continuous header were mortised to receive the battens, which were then finish-nailed to the panels. After filling, these nail holes were virtually invisible. In this fashion we achieved a tight batten-to-panel fit and also were assured that we would never have an open joint where the battens met the header and baseboard.

We also built a nook complete with window seats for this room. And we made nine more lanterns. The overhead lantern in this room is another one of my favorite pieces. It took almost two weeks to make. Even without the glass this lantern ended up weighing close to 50 lb. We attached it to the ceiling with four lag bolts screwed into the joists.

We achieved a beautiful color and patina on the paneling and other mahogany in this room and throughout the house by means of a technique we developed through experimentation. This technique involved first rubbing in a paste filler (if you don't use this, it will end up looking like lauan), followed by an application of clear sealer. Next came a pure green stain which we mixed ourselves. This stain, when applied over the reddish mahogany, produces a beautiful brown color. After the stain had dried, we applied three coats of a tung-oil base finish, rubbing between coats with 4-0 steel wool. The process is not as time-consuming as it sounds, and produces beautiful results. We used a tung-oil product throughout the house, except on areas that were subject to wear or friction of any kind. In these places we used polyurethane varnish and rubbed it out with steel wool or 3M pads until we got the desired patina. □

Made by Glen Stewart, a Pasadena woodworker, the Greene and Greene style wall lantern, top left, consists of over 30 parts, and is accented by ebony splines and square ebony plugs. The inverted L-shape mounting bracket is notched over the header strip and screwed to the wall, as shown in the drawing.

A signature of Greene and Greene detailing is the double-keyed scarf joint. It is sometimes used structurally, as in the beams, and sometimes used decoratively, as in the header trim, shown in the photo center left. To articulate the connection, the edges of the joining pieces are chamfered, and the keys are left standing proud. The header strip is mortised to house tenons on the vertical battens, and rabbeted to accept the paneling.

Far left, a pegged and chamfered finger joint connects pieces of header trim. Left, detail of the inglenook bench shows how the post is through-tenoned into the arm.