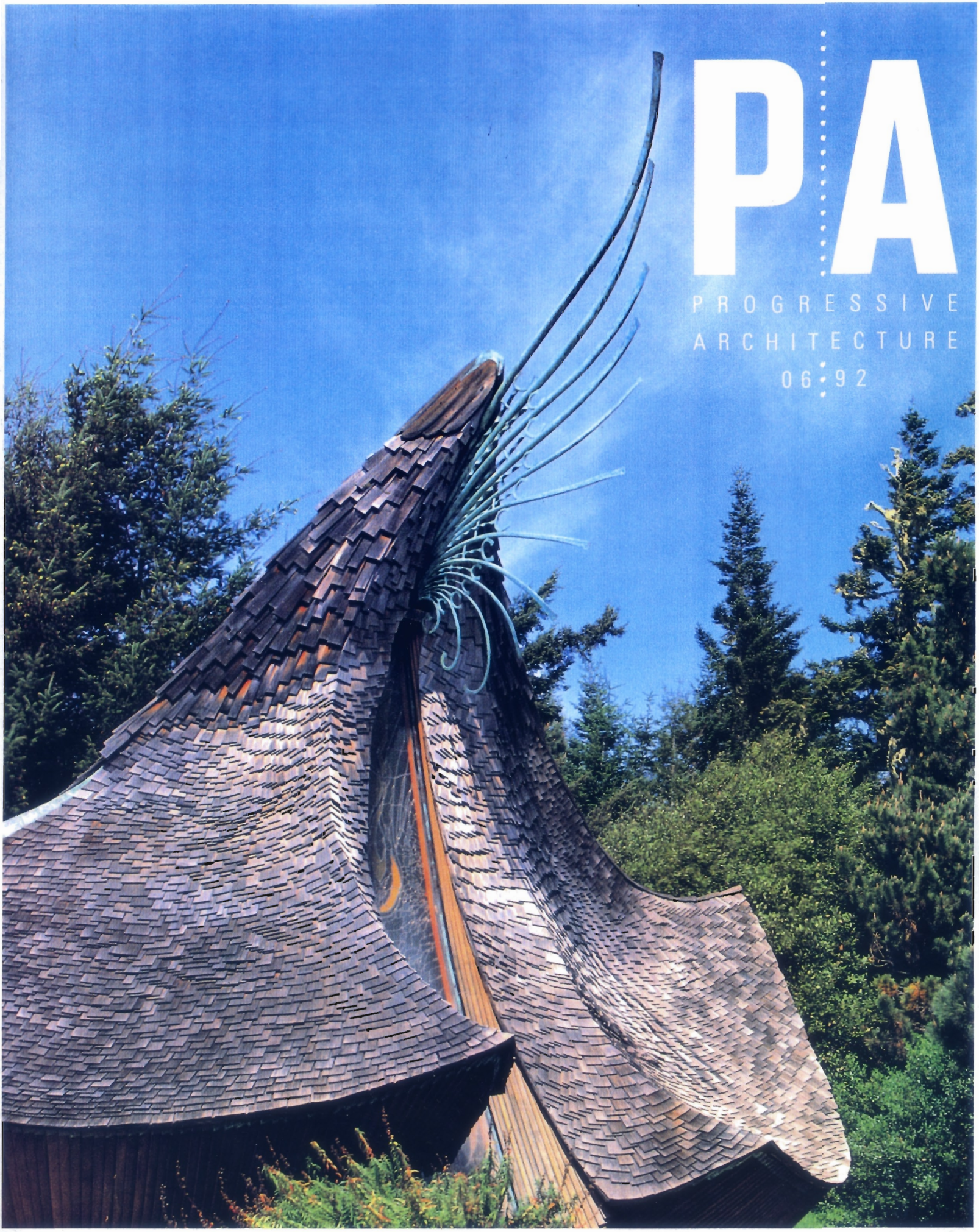

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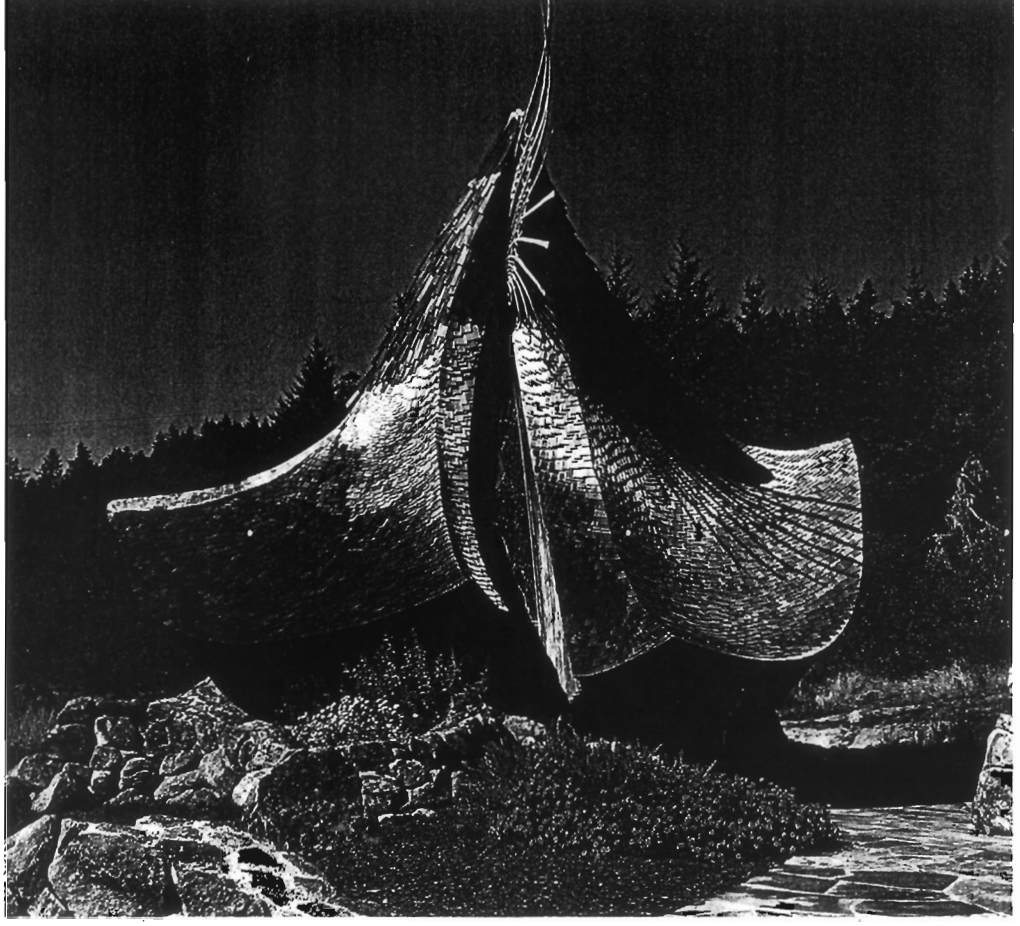


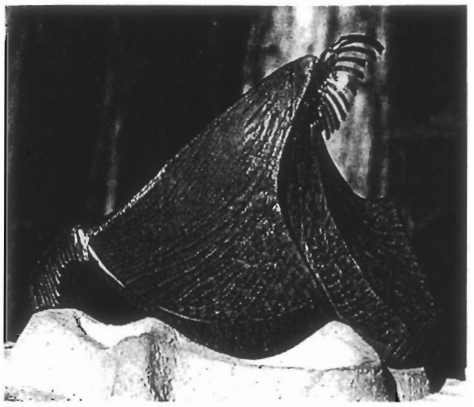
The Sea Ranch Chapel

Coaxing wood, copper and shingles into sculpture

by Timothy Carpenter

As travelers make their way along northern California's Highway 1, their attention is constantly diverted from one scenic wonder to the next. To the west of the highway, the Pacific Ocean surges in and out of rocky coves. To its east, forested headlands tilt (sometimes precipitously) toward the rugged coastline. But just south of the town of Gualala, in the middle of the development known as the Sea Ranch, many motorists find their eyes drawn toward a manmade wonder. Called the Sea Ranch Chapel, this little building is a non-denominational chapel designed by artist James Hubbell (photo above).

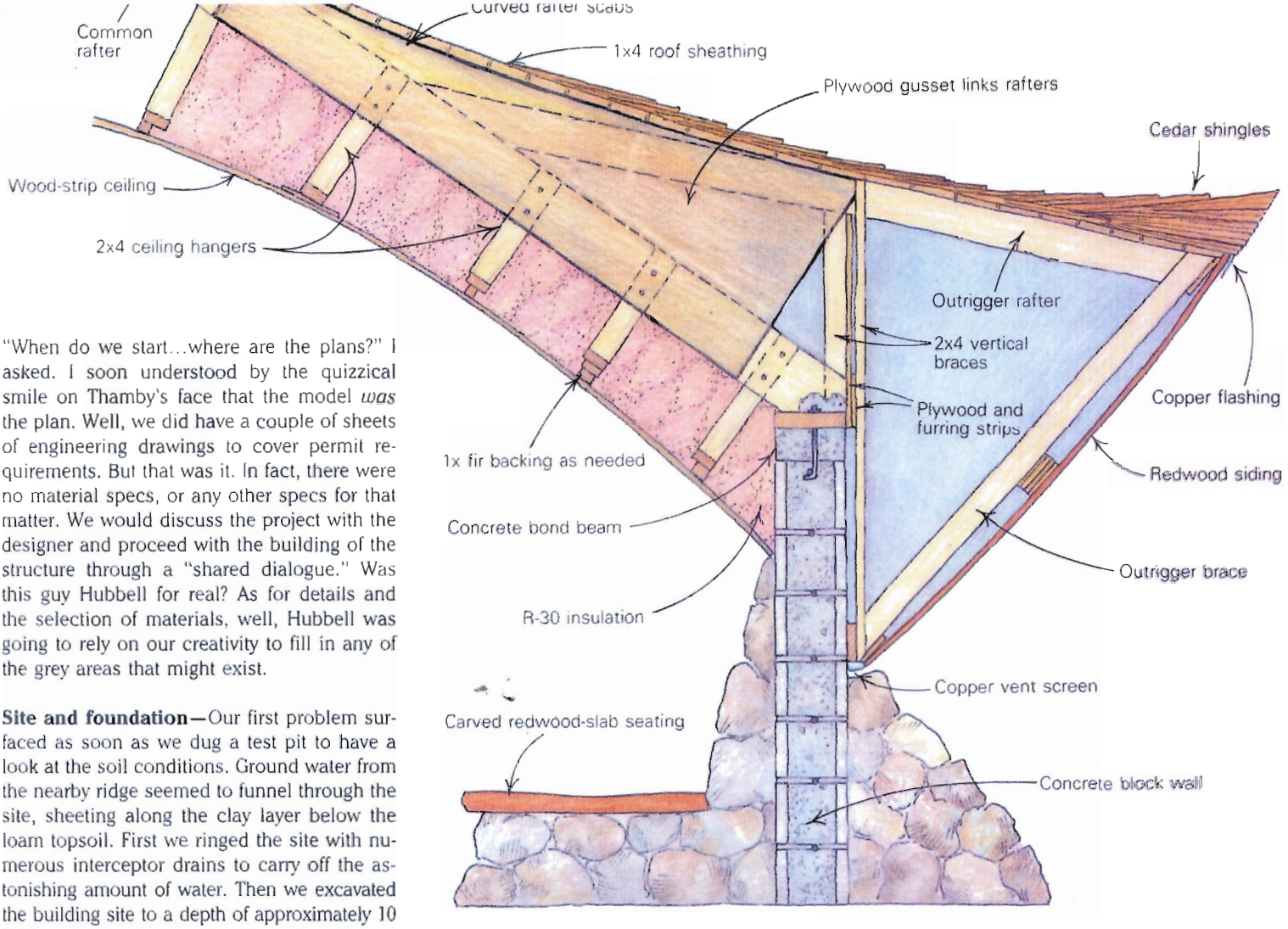
The chapel was donated by Betty and Robert Buffum and dedicated to the memory of their young friend, Kirk Ditzler. Ditzler was an artist and a naturalist who had done many drawings of the local plants, animals and geological forms. When Hubbell began his work on the chapel's design, he carefully studied Ditzler's sketches, using them as points of departure to develop a building that would reflect the unique character of the site.



Designed by artist James Hubbell, the Sea Ranch Chapel (top photo) beckons to passersby on the nearby highway to come have a look. The crew referred to this ceramic and teak model (photo above) for guidance during the construction of the chapel.

Enough to get started—Before I signed on to help build the chapel, I had been involved in many challenging and rewarding construction projects with custom-builder Thamby Kumaran. But none was rehearsal enough for that fall day in 1984 when I visited him in the company office to discuss his newest project. Hubbell's diminutive ceramic and wood model of the chapel (photo left), with its delicately carved teak roof, made an immediate and lasting impression on me as it sat so unnaturally alongside the company computer. Thamby's excitement with the project was contagious.

Bottom photo: AMTA



"When do we start...where are the plans?" I asked. I soon understood by the quizzical smile on Thamby's face that the model *was* the plan. Well, we did have a couple of sheets of engineering drawings to cover permit requirements. But that was it. In fact, there were no material specs, or any other specs for that matter. We would discuss the project with the designer and proceed with the building of the structure through a "shared dialogue." Was this guy Hubbell for real? As for details and the selection of materials, well, Hubbell was going to rely on our creativity to fill in any of the grey areas that might exist.

Site and foundation—Our first problem surfaced as soon as we dug a test pit to have a look at the soil conditions. Ground water from the nearby ridge seemed to funnel through the site, sheeting along the clay layer below the loam topsoil. First we ringed the site with numerous interceptor drains to carry off the astonishing amount of water. Then we excavated the building site to a depth of approximately 10 ft. For solid bearing, we filled the hole with 6-in. layers of compacted roadbase aggregate until we reached the right elevation.

The chapel's foundation is a 6-in. thick concrete slab. It extends beyond the building line to provide a solid base for the extensive rock work that would eventually "flow" out from the structure. Atop the slab we built foundation walls of 12-in. filled concrete block with a concrete bond beam (drawing above).

The building frame—From 3-in. redwood slabs, we cut curved sill plates and attached them to the block walls using ⅝-in. foundation bolts. Following the brief set of engineering plans, we quickly constructed the basic frame of the chapel. It consisted of an intersecting series of posts and beams that resembled some type of tepee-like hoisting apparatus. Next we hung common rafters off the main ridge beam, securing them to the sill plate with joist hangers. This concluded what we might call the "paper" part of the project. From this point on we would be relying on the model for guidance.

After completing the frame, we roughed in the openings that would eventually become the windows and entry. Then we tacked outrigger rafters to the chapel's primary framework. They extended several feet beyond the block wall, and we raised or lowered them as necessary until a curve that seemed to match the model emerged. Where the outriggers meet the common rafters we affixed ¾-in. plywood gussets. Later, these gussets would be trimmed to follow the curve of the concave roof decks.

We used rope and ⅜-in. rebar to sketch potential rooflines across the plane of the rafters. Then we'd retreat to several vantage points about 50 yards away from the building, and hold aloft the chapel model. After exchanging suggestions and opinions about the line, we would return to make small adjustments. None of us mastered this activity quite to the extent that Bruce Johnson did. While Bruce is an accomplished carpenter, he is also a sculptor and he possesses an uncanny ability to look into blank space and see a shape. He became the "Svengali" of the curve. To this day, I can recall nothing but vacant sky.

Once we had satisfied ourselves that the line was established, we added vertical 2x4s below each rafter outrigger at the building line and sheathed them with plywood. We then set out to establish the baseline of the outrigger braces. Following the model, we simply drew lines along the blockwall and attached a redwood sill for the bottoms of the braces to bear against (bottom photo, next page). Another row of vertical 2x4s was affixed to the outside of the block wall. They extend from the outriggers to the sill that anchors the braces. Once we made these connections permanent, we trimmed the rafter ends and got ready to shape the roof.

There are four major planes to the roof, each with its own undulating surface. Working the rough frame to make these surfaces produce smooth curves was a study in patience. We built up some of the rafters with thin strips of wood, or by adding whole new rafter elements that were scabbed onto the main rafters and then chainsawed or planed to the desired shape. Often after working long hours on a section, we would retreat to study the shape from a distance only to return in disgust, forced to rip out sections because we had failed to keep the necessary line. All in all, the roof frame was a difficult and taxing affair. At this stage of the project, none of us had any idea of the struggles that would be waiting with the finish roofing material, but we were all beginning to experience a real sense of joy as Hubbell's design began to emerge at full scale.

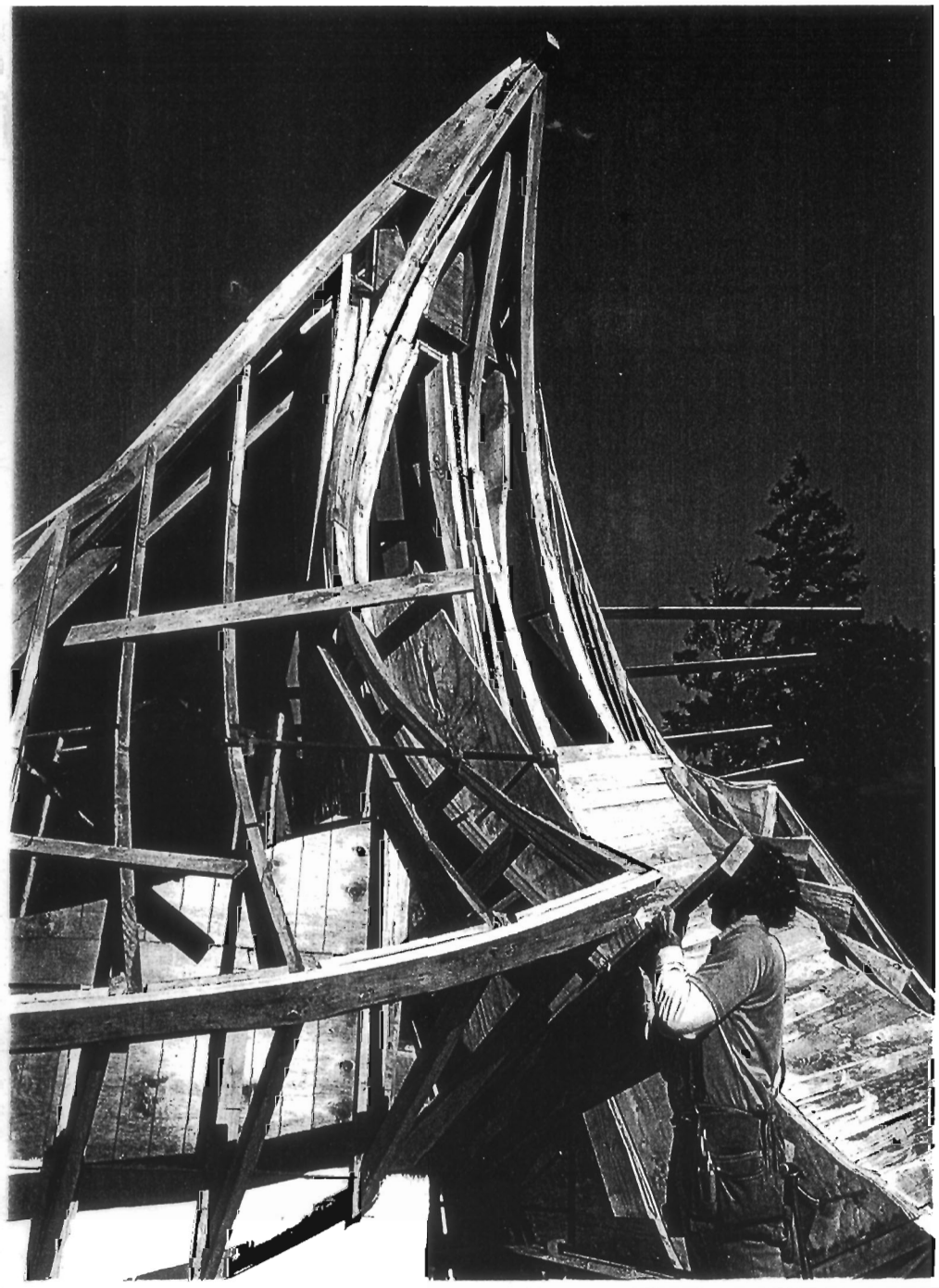
About this time we started getting reactions from the public. Local children, passing daily in school buses, waved excitedly and named

Drawings: Christopher Clapp

At the eave line, siding boards made of redwood 2x4s ripped diagonally are capped with copper flashings, a single-ply roofing membrane and layers of cedar shingles.

the project the "Smurf Hat." People began to stop by and offer encouragement and comments. One comment came from an unusual source. Building inspectors in Sonoma County aren't known for their over-abundance of humor. In fact, they've caused more than one builder in this area to consider taking up dentistry as an alternative occupation. So it was with a certain amount of trepidation that we all watched inspector Chris Christenson enter the chapel early one afternoon. A formidable (6-ft. 3 in., 220-lb.) man with many years of inspection and trade work behind him, Christenson wandered slowly about the site in his hard hat. Finally entering the interior he held everyone's attention with his steely gaze. In a slow, thundering voice he proclaimed rhetorically, "Now what the hell has this architect been packing his pipe with?"

Bearing against a hidden A-frame of primary rafters and beams, the wavelike forms of the chapel's roofs begin to take shape. Note how the outrigger braces are affixed to curving sill plates anchored to the face of the block walls.



Roof deck and siding—To create a base for the roofing, we used construction-grade D fir. But where to begin? One major order that Hubbell had given was that we should not attempt to force the materials into a preconceived location. Each placement should be a process of trial and error until the proper spot was located. So after a few abortive attempts, we pushed the first piece of 1x4 sheathing into place and continued up and around the entire shape until the roof was a solid plane of 1x4s. The 1x4s were nailed, stapled or screwed into place. We then carefully planed and sanded the rough areas until we had defined the various individual roof planes and edges. The result was a beautiful, pristine shape.

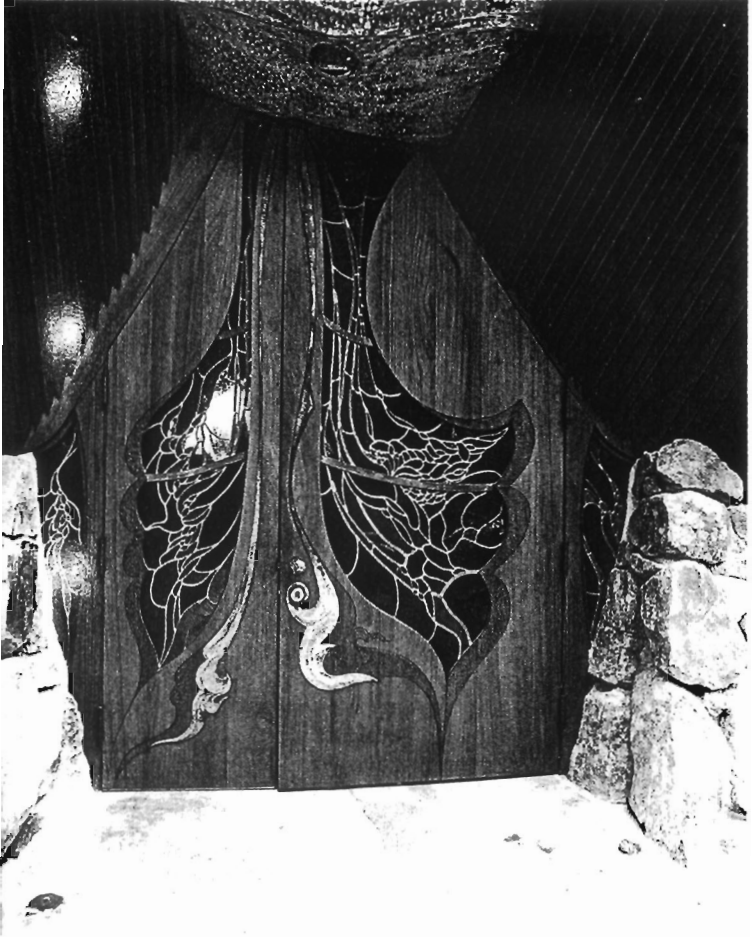
During the early stages of the project, it had been decided that vertical siding would be used as the finish surface between roof and rock. In order to have the backing necessary to apply the material over the curved plane of the outrigger braces, we attached 1x4s to the braces. The strips were furred out in places where we wanted to accentuate the curve. The curve of the outrigger braces changes in both length and diameter as it flows around the building. This presented a problem in choosing the proper style of siding. After a little experimentation, we took green clearheart redwood 2x4s and milled them diagonally into a beveled shape. This gave us a good quality siding that was bendable and had a resawn face. The bevel made the bending and uniform fitting of each successive piece of siding go smoothly by avoiding the tendency of flat material to bend unevenly. The siding would then dry in place, leaving a permanently molded shell of individual boards. We trimmed the ends to the contour of the roof and carefully planed each piece to soften the sharp edges.

Stainless-steel staples and nails secure the siding to the walls. Each piece of siding helped to hold the prior piece in place. As the angle of the curve increased in various places, we had to use considerable force to position and nail the boards.

In 1986 I attended a ceremony in San Francisco where the chapel received an award from the North Coast Builders Conference. The prestigious Golden Nugget Award was given to the chapel "... for its successful marriage of art and technology." As the award was announced I found myself recalling the times when I had lain on my back, legs extended and straining as I pushed the siding into position while Willy Cooper madly nailed each quivering board into place, desperately hoping that we could work our way around the curve before being beaten to death by an explosion of siding boards. So much for technology.

Finish roofing—Using a variety of tools such as ball-peen hammers, tiny Japanese hammers and homemade wooden punches, we pushed and hammered 16-oz. copper sheeting to fit the contours of the siding where it merges with the edge of the roof (top left photo). Along this part of the coast the salt air eats other metals mercilessly, so we're all familiar

Photos this page: Alan Ta



Framed by rock and redwood, Hubbell's teak and glass entry doors are sheltered by a copper canopy gone to verdigris.

The curving interior walls of the chapel are covered with thin strips of redwood and swirling folds of hand-tooled plaster.

with the material. But we'd never worked with copper in quite this manner. Each bend was attached to the siding, using brass boat nails.

Hubbell insisted on using shingles as the main covering for the roof. The undulating and concave roof plane made us all shiver when we considered the driving rains, common along the coast. To complicate matters further, the shingles could not be placed in the typical overlapping manner, which sheds water.

In order to ensure a waterproof roof, we decided to cover the entire roof decking with a monolithic membrane. We did a little research and came up with a product called "Brai" (U. S. Intec, Inc., 1212 Brai Dr., Port Arthur, Tex. 77640; 800-624-6832). It's used primarily for roll-roofing applications, but its ability to seal to itself at edges (a propane torch is used to heat the bonding surfaces) made it the perfect material for waterproofing this complex shape. It will stick to virtually anything, and it's pliable enough to trim easily.

It was a coin toss as to where to start the roofing. We did, in fact, start in several places. Testing the slopes of each side of the structure we couldn't arrive at any standard to follow in applying the material. We had to tear out a lot of those first starts before we felt as though we had a real beginning. We built up the edges of the roof with thick layers of shingles to convey a sense of strength. Then we arranged the shingles to reflect the curve of the roof. We had no idea what the pattern of these roof areas would be until we did them, but as we worked our way up the slope, certain patterns developed of their own accord. Sometimes the shingles would rise up in a mound and then quickly fall away into another pattern. The unsettling nature of not knowing exactly where the shingles were headed caused us to eye one another constantly to check progress on the other side of the roof. Time after time we would climb down to check the results. And more than once we had to return and tear off areas where the pattern had become hopelessly jumbled.

One afternoon, in the throes of tearing off an errant series of shingles, we looked around to see a couple of elderly men looking at us. They were retired roofing contractors from Montana, and they had noticed the unusual roofline from the highway. As they left, one commented to the other, "They must be paid by the bundle."

After many squares, we finally reached the point where the roofing materials were to change. To duplicate the ruffled nature on the top third of the model's roof, we had to manufacture the rest of the roof boards. We took stock 2x redwood materials and cut them into tapered boards of various widths and lengths. Easing the edges, the boards were randomly applied over redwood plywood to form the texture that Hubbell wanted.

Finish details—Again using the model as our guide, we set out with lengths of rebar to define the boundaries of the extensive rock work. The same care and attention that was lavished on the selection and placement of each wooden element was taken with every stone. Without it, the nestling character of the chapel could not have been achieved.

Using Arizona flagstone, we paved a curving patio that leads to the entry. Hubbell built the entry doors, and they are a showpiece of his masterful blending of leaded glass, metal and wood (photo above left).

The plaster and redwood strips of the chapel's interior walls and ceilings reflect the shape of the building's exterior (photo above right). Their muted tones are a quiet background for the intense pure colors in the many leaded-glass windows designed and built by Hubbell. Other Hubbell-built details include a privacy screen that is a twisting metal web embellished with an inlay of highly polished stones at its center, and a flowing chandelier above a hand-shaped redwood altar. A glass mosaic star is the focus of the chapel floor.

The chapel is open daily to the public and has a steady stream of visitors. Recently, during a visit to refresh my own memory about the various construction details, I was reminded of an old adage. It's said that a fish doesn't know that he swims in water until he is removed from the water. The wonderful process that began for us that fall in 1984, has changed all who were participants. It was a transforming and an uplifting experience that will be hard to repeat. □

Timothy Carpenter is a general contractor living at the Sea Ranch. He was foreman during the construction of the Sea Ranch Chapel.