CONFERENCE REPORT

TIMBER FRAMERS CONFAB

by Paul Hanke

Last June almost 500 timber framers and their sympathizers gathered for their third annual get-together — which in my opinion continues to be one of the best little builders' conferences around. As in past years, participants came from all over the U.S., as well as from Canada, England, France, and even the San Juan Islands.

The conference began with a trade show displaying power tools, stress-skin panels, heavy machinery, portable saw-mills, pegs, heating systems, sealers, and finishes provided by 16 exhibitors. Workshops that day covered whole house design, the evolution of timber frame in the Northeast from 1740-1840, framing layout, pricing, and a traditional Amish house-raising. The day ended with a slide show where participants presented ten slides of their own work, reason enough to attend the annual event. Alas, I had to miss the foregoing, arriving only in time to hear the keynote speaker, Len Brackett, on Saturday morning.

Paying Your Dues

Strictly speaking, Len Brackett is not a timber framer. But Len Brackett was an apprentice temple builder in Japan for 5½ years before returning to the U.S. in 1976, where he now builds Japanese-style houses and room additions, and consults with the likes of N.Y. architect I.M. Pei.

The normal apprenticeship in Japan, according to Brackett, lasts 15 years, but he took what he calls a "crash course." The apprenticeship system has trained the present elite force of about 300 Japanese temple carpenters, including "less than ten" who are sufficiently qualified to work as lead carpenters on pagodas (multi-story roofed structures housing Buddhist relics) and the two or three entitled to be called "masters."

The system of carpentry used for temple building (and traditional house framing as well) came to Japan from China circa 650 A.D., says Brackett, where it was already perhaps 1,000 years old. Moreover, most Japanese temple building firms are 300 to 400 years old, and one has been around since 850 A.D., although the company Brackett worked for, Hosomi Gumi, is considered a relative upstart in this venerable field, having begun in 1972.

Brackett began his immersion in this august tradition in Kyoto, a city which he describes as cold in the winter, "uninhabitable" in the summer, and the home of some 2,500 Buddhist temples. His first experience, obtained through the influence of the Abbot of a Zen temple where he was studying, was working on a eight-story high temple gatehouse with a ½-acre roof. He arose at 5 a.m. to travel by car for 2 hours to reach the jobsite, worked a 12-hour day, and then made the return 2-hour trip home—six days per week.

On the very first day of his second job, he was told that out of special consideration for him there would be no power milling machines used—so that he could learn to do everything the traditional way, by hand. One result of this particular. kindness was that Brackett spent approximately 90 percent of the first two years of his training doing nothing but hand planing lumber. In fact he dimensioned "almost every piece of wood" on his first temple job by hand. During his talk, Brackett told an anecdote about his teacher sorting through boards he (Brackett) had planed, removing perhaps every other one as unacceptable—much to the student's dismay.

What was the problem with those boards? They had been planed on the wrong side. Couldn't Brackett tell the difference between 'the right side (outside of the tree) and the wrong side, his teacher wanted to know.

While we're on the subject of planing, Brackett described how a Japanese plane can remove long endgrain shavings so thin (0.003 inches) that you can actually read through them.

For now, you might ask, does Brackett use power tools today? "Anytime I can use a machine I will," he says, "if it doesn't reduce the quality." In fact, he wishes the Japanese tool manufacturers such as Makita would "realize that there are timber framers in the U.S." so that some of their specialized technology (such as an ultra-precise 30-inch wide by 35-foot long electronically controlled jointer that can "make a 60 to 80-foot long rafter from a tree") could start arriving on these shores.

What about the methods Brackett learned? Temple building is done completely by a complex and beautifully detailed system of wooden joinery. From the biggest timber to the smallest *shoji* divider, few or no nails are used. A traditional Japanese house (and presumably a temple) can theoretically be disassembled and moved to another site, although some joints would have to be sawed apart.

All framing is modular, based on the *ken* unit (roughly 6 feet, or the length of a straw *tatami* mat plus one-half the width of a post).

Construction drawings traditionally consist of brushed ink dots on a piece of wood showing post locations. This structural grid is based on a floorplan laid out by the family using a combination of full- (3x6 feet) or half-tatami modules. (Brackett uses dominoes with his clients.)

The first design decision by the head carpenter (no architect is involved) is to select the post size. From there on virtually all other framing is predetermined, and known to any traditionally trained carpenter. One-half post becomes a door lintel, one-sixth post becomes molding stock, and so forth. This extremely careful system produces very little waste in a country where high quality cedar can cost as much as $200 per board foot.

Since returning to the U.S., Brackett has built a 1,300-square-foot Japanese style house for his own family in the Sierra's, and recently completed a house in Tiburon, California, which was presented in detail at the conference and will be the subject of a forthcoming article and possibly a book.

The Tiburon House took a full two years to complete, with the assistance of 50 people, some of whom came from Japan. The house became a spec house in midproject, and is now on the market getting a great deal of favorable attention.

And Now, the Rest of the Story...

Brackett's story was the high point of the conference for me, but there were other interesting workshops and I managed to look in on several of them.

I had a hard time deciding between Terry Turney's talk on the Craftsman work of Greene and Greene and John Morrill's talk on "Are Energy-Efficient Homes Hazardous to Your Health?" I opted for the talk on Greene and Greene. I learned that the Greenes attended a manual training high school which emphasized function without unecessary embellishment. They continued training at MIT, where Charles

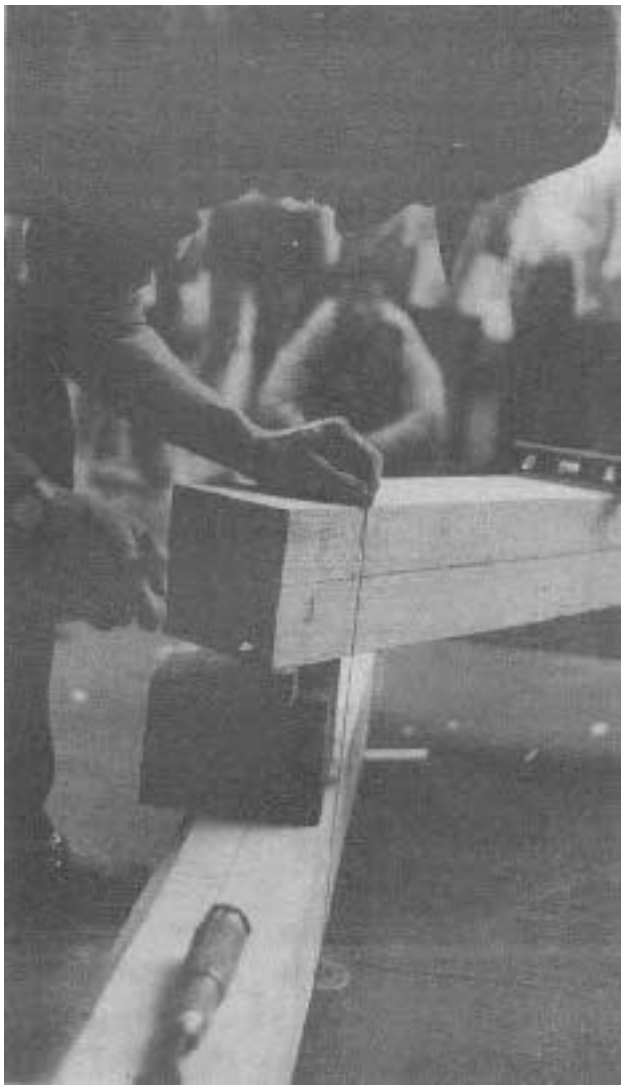
Greene felt stifled by the atmosphere and yearned to find his own niche. Later, enroute to California, the brothers saw an authentic Japanese Temple at the Chicago World's Fair and were very impressed—and this proved to be a major influence on their work. Turney followed his talk with badly-made slides of the Greene's work, so I left. But I was sorry to miss seeing a set of blueprints made from Greene and Greene originals. As Turney put it, the prints reflected the "unlimited budgets" of the brothers' clients. Their working drawings sometimes ran to 100 pages.

Those who would like to know more about the work of Greene and Greene might enjoy *Greene & Greene* by William Current (1974, Morgan, $10.95), *Greene & Greene: Architecture as Fine Art* by Randall Makinson (Peregrine Smith, $19.95), or the exquisitely beautiful *Global Architecture* issue #66 on the Greenes' Gamble House (circa $35, available through the Boston Society of Architect's Bookstore, 617/262-2727).

Next on my agenda was John Morrill of the American Council for an Energy-Efficient Economy (ACEEE). Morrill's talk was dry, and supplemented by graphics of the worst kind. He had some interesting things to say though. I arrived midway in his presentation and took a seat near the hack of the room between a sleeping baby and an enormous black Labrador dog. Morrill was describing how the air exchange *rate* is only #4 on the list of factors affecting indoor air pollution (after source emission rate, house volume, and outdoor concentration). Interestingly, he noted that actual field tests have *not* validated a direct connection between reduced infiltration and increased indoor air pollution. He explained this as being due to wide variation in the strength of pollution sources (such as radon) between the houses studied (some of which were loosely constructed, others tight). Consequently you might he able to build a very tight house that actually had less indoor pollution than another less-tight specimen. He noted that "liability questions" may be on the horizon for builders of tight houses, in an "age of lawyers who are looking for work." What's next?

The discussion then turned to insulation products, and to the effect of CFC gas foaming agents on the protective ozone layer in the earth's upper atmosphere. Merrill also discussed urea formaldehyde foam (which he described as the "first slap in the face for conservation"). He felt that formaldehyde (also found in particle board, carpets, and other common building materials) may "boil-off" more slowly in a tight house because the indoor concentration is increased. But a tight house may reduce the "chimney effect" of infiltration/exfiltration that draws pollutants such as radon out of the ground, thereby *slowing* the rate of source emission. Hence, tightening a house by 20 percent won't necessarily result in a 20 percent increase in pollution. Morrill also noted that alternative blowing agents are available—at somewhat greater cost and slightly lower R-value—if the current generation are restricted as a result of current EPA investigations.

One final point worth note that came up during Morrill's talk was the question of why build a tight house in the first place? Morrill's answer was that "average" (natural) infiltration rates (governing the supply of fresh air) may be the result of widely varying extremes—i.e. high venting in severe weather, and low or none in mild weather. Mechanical ventilation keeps a steady rate without a penalty in terms of heat loss. A point well taken, despite the added cost and potential headaches (figuratively speaking) associated with ventilation equipment. Morrill distributed copies of his paper to the audience and a few might still be available from ACEEE (1001 Connecticut N.W., Suite 535, Washington, D.C. 20036; 202/429-8873).



Frederic Brilliant came all the way from France to demonstrate the French method of timber layout, which uses neither the square nor the scribe rule.

For my next workshop, I selected Jack Sobon's presentation on "The Scribe Rule vs. the Square Rule" (as timber frame layout methods). Many of the fine points of this discussion were lost on me, as I have no practical experience with cutting a timber frame, but you might contact the Timber Framers Guild about the availability of Sobon's 17-page research paper on the subject if you have any further curiosity.

The interesting feature of this workshop, however, was the unexpected international flavor provided by two other speakers. First was Englishman Peter McCurdy, who was last year's keynote speaker, and who appeared to have more working knowledge of the scribe rule than Sobon, due to McCurdy's historic preservation experience.

Next came Frederic Brilliant, a young man in a 1940's fedora hat, who came all the way from France to attend the conference. He had been trained in the French apprenticeship system of timber framing, where much to Sobon's surprise, they use neither the square nor the scribe rule, but have a unique layout system all their own, which apparently employs no square at all. After brief talks, we adjourned outside for a demonstration by Sobon and Brilliant. A large crowd gathered around Brilliant, who amicably carried forth on the French method.

As one of the heaviest downpours I have ever experienced suddenly burst forth from the sky, I hurriedly headed for my car and then for home. Sadly, I had to miss Len Brackett's slides and in-depth look at the Tiburon House (or an alternative Raising and Rigging workshop), and the membership meetings of Saturday night and Sunday morning which rounded out the event, but if this conference is held anywhere near me next June, you can bet I'll he there. (For more information on next year's conference, contact the Timber Framer's Guild of North America at Box 1046, Keene, NH03431; 603/357-1706.) ■

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