

THE ART OF CRAFT: Stonemasons

Stones set for the ages

Masons' enthusiasm and commitment maintain an ancient craft

Dave Weinstein, Special to The Chronicle
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An occasional series shining a spotlight on Bay Area artisans who are masters of their craft.

George Gonzalez pilots his pickup truck up a mountain road in Mill Valley, avoiding the redwoods that burst through the pavement, while studying the stone walls to one side.

To stonemasons, the making of a stone wall is more than craft or art. It is a form of communication between man and rock -- a dialogue of balance and finesse. And, like all communication, it often goes awry.

Gonzalez, whose work is regarded as the ideal by many of his compatriots, points out wall after wall in trouble: walls that seek to defy gravity, rocks wedged together haphazardly, barely glued into place with mortar that is leaching out of the wall, and with cornerstones angled out of the wall instead of in.

"That one looks like it wants to jump out of the wall," Gonzalez says of one poorly placed stone.

"It's not a happy wall," he concludes. "It makes you nervous."

Stonework is one of the earliest arts, harking back to the pyramids and the 5,000-year-old dry stack walls of Great Britain. In the modern-day Bay Area, stonework has become increasingly popular, says Lou Truesdell, president of American Soil and Stone Products. Stonework's growing popularity is because of a greater availability of stones, increased interest in home beautification and new technologies that make cutting and fitting stone easier and cheaper. At the same time, some masons say, the craft is endangered by building codes that require concrete and steel, thus rendering structural stonework obsolete. And the same technologies that are making stonework easier are also threatening to end true craftsmanship.

The Bay Area, however, does have stonemasons who are determined to ensure that what they build today will be the Stonehenges of tomorrow.

"We find the right material for the job, and the design comes partly from that," Gonzalez says. Gonzalez specializes in dry stone walls -- built without mortar, held together by friction and gravity. Dry walls, masons agree, are the basis for all stonework, structurally, aesthetically -- even morally. How does morality figure in?

To Gonzalez and others, form and function are one. Using stone structurally is being true to the stone and to the function it plays as a structural element. Using it as a facade, or to make it appear that it is structural when it is not, is thus immoral. For Gonzalez, the best walls are "working walls," held together and given strength by the stones themselves.

"The goal is to be technically sound," he says. "The beauty comes of that. You use the shape the rock gives you in the most economical manner that makes a good wall. You get that interplay of balance, friction and gravity."



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Gonzalez, a former graphics designer who is largely self-taught as a mason, has been practicing his craft for 30 years, working from a home he built himself on the Bolinas Mesa. His crew of six includes two of his sons. Three members of his crew have worked with him 21 years.

Gonzalez got his start with a pair of stone pillars in Kentfield, built with his friend and teacher Tomas Lipps. He went on to build the Wave Organ, a stone sound sculpture on San Francisco Bay with artist Peter Richards; public art for the city of Santa Fe, N.M.; and stone walls, paths, benches and courtyards at homes throughout the Bay Area.

"We're taking all the principles of a well-crafted dry stack wall and then tooling it to make the wall attractive to our eye, playing with color and proportion and movement in the wall to give it a kind of character," he says.

"I like to say our walls sing."

For Ian Wilson, who lives in a reproduction of an 18th century traditional Japanese home on a hillside in Mill Valley, Gonzalez created steps of granite descending past natural rock outcrops, dry granite walls that retain a slippery hillside, a sea of river rock with a granite bridge and stone walls that are formal and clearly manmade near the house but grow wilder as they blend with the natural landscape. Gonzalez and Wilson selected the stone by hand from a quarry -- all 950 tons of it.

"It's really a pleasure to watch George and his team at work," Wilson says. "They have a pile of stone next to them, and they look at them, and they suddenly say, 'This one.' Then, plink, plink, plink, plink, plink, boom! They fit it in like that."

One worker wields hammer and chisel to "cut" a smidge of stone from a polygonal boulder so it will fall into the wall and not out of it. The plinking is from chisel striking stone.

Gonzalez is known for stones that are so closely spaced a feather can't pass between them.

"Salvador (Garcia) likes to do intricate fine fitting," Gonzalez says of one of his crew. "He's really good at it. He's really got my sense of balance down. He knows what I want to see, and in a color sense, too."

Jose Amezcua, who has worked with Gonzalez for 20 years, is expert at lining the wall up, which requires superb geometrical sense. Amezcua's brother, Baltha Amezcua, is great at setting the foundation stones, "a nice long course of stable stone," Gonzalez says. "And he does a nice job with curves."

Gonzalez, who also does some of the handwork himself, is on-site most of the time. After hours, he makes his wishes known by marking the wall in pink. "When they see pink they get really scared," he says of his men.

Gonzalez approaches a stone that needs to be cut like a martial artist approaching a brick. "You visualize the plane you want to fracture through the stone," he says. "Then when you hit it, you're driving right through the stone, you're not stopping on the surface."

The masons choose their stones carefully, often compete for choice stones, and do their best not to destroy them with errant cuts.

"You can tell how a stone's going to behave by the color of it," Gonzalez says.

You can also tell by the sound. "You can tell if it's got a nice ring to it, it's a good stone," a worker says. "If it's got more of a thud to it, then I have to be careful."

On days when one of the masons cuts poorly, the rule is to walk away, mix mortar for someone else, he says.

Gonzalez is a purist who prefers dry stone walls that really work and are not merely decorative. He avoids masonry with cut blocks running in regular courses. "It's a little boring for me to do that," he says. Nor is he fond of facades -- using stone to clad a wood- or steel-framed building. "It's mimicking real stone construction," he says. "It's cheating."

Local rock

In Berkeley, landscaper David Liu has built his reputation over the past 25 years as a stonemason working primarily with the local rock, including the Northbrae rhyolite that makes up Indian Rock, Mortar Rock and other well-known outcroppings that dot North Berkeley. "You don't want to go outside and introduce an element that's not compatible with the site," he says.

Liu, working on his own or with one or two assistants, has built dozens of dry or mortared stone walls, benches, patios and steps. Many of the rocks are 50 pounds, and some weigh much more. That's when he pulls out a plank. "We don't lift them," Liu says. "If it's too big, we roll them. A strong young man can pick up a 200-pound stone. You don't want to do that too often because it hurts your back."

Many of his jobs use rhyolite excavated from the site or found in the neighborhood. "Today," he says, "rhyolite is worth its weight in gold."

When it comes to laying each stone, Liu says, he does it himself. "Every rock, every single pebble I put in. It's my own fingerprint. If I gave it to somebody else it wouldn't come out the way I wanted."

Like Gonzalez, Liu is self-taught. He got into stone in the 1960s as part of the "back-to-the-land attitude," he says. Tired of working as an electrical engineer, he moved to the eastern Sierra and worked with a mason building footpath bridges in Yosemite.

Also like Gonzalez, Liu is something of a purist. "I'm using the tools that the builders of the pyramids used," he says. "It's a timeless thing."

Changed by technology

Stonework is changing, however, and **Martyn Peachey** -- by background a traditional stonemason -- is excited by some of the changes. He's a third-generation stonemason from the English Cotswolds who has built entire houses of stone. But in California, where **Peachey** moved five years ago after falling in love with Kerry Enright, an American who is now his wife and business partner, seismic codes rule out unreinforced masonry.

So he has built a new career with the firm James Enright Construction (named after his wife's father), working with a small crew on mortared walls with a dry stone look, patios and stone patio furniture. He has also done restoration work, installed cast concrete veneering on a condo complex in Burlingame and hopes to someday work with new, computerized stone-cutting machines that can turn his drawings into machine-cut stone windows, door surrounds and ogee arches.

On a recent job at Stinson Beach, **Peachey's** crew was laying Connecticut blue stone pavers in the front of a house, while Roberto Arriaga was cutting a fire pit in the drystone-faced barbecue with a diamond-blade grinder. Alongside the barbecue is a handmade stone bench, Connecticut blue stone atop basalt pedestals, dry stacked so it can be easily disassembled and moved.

Peachey is willing to do it all. "Some people won't touch cast stone -- that it's totally against the stone thing," he says. "But all manner of stone is exciting to me.

"Of course I'd prefer to come in here and build you a house like we build in England," he says.

Truesdell, whose stone yard sells raw fieldstones as well as stone pre-cut and pasted onto mesh or concrete backing for quick use as wall cladding or paving stones, says mechanization of stonework is allowing people to use stone who could otherwise never afford it. "It may not look like George Gonzalez's work, but it still looks better than a lot of things," Truesdell says. "There's nothing like stone."

Gonzalez has trained hundreds of apprentices and helped found the Stone Foundation to keep the craft alive. But he is not sanguine about its future. Stone walls are sprouting in front of shopping centers that are produced by stacking stones randomly in a form and pouring in cement. "I call it a shot-from-the gun style. Boom! There's no rhyme or reason why each stone is in its place."

Instead of building structural stonework, owners of new "pseudo Italian villas" prefer inch-thick veneers of pseudo stonework, he says. Since stone no longer needs to be structural, he says, "We're losing the ability to build real walls."

"I like to guarantee my walls for 500 years. There is a certain inherent beauty in a wall that is built like that. To me that's the most beautiful thing: to build something that's going to endure."

A well-built wall

A

working, dry stone wall -- built without mortar, concrete backing or steel support -- is the purest form of stone masonry. But even walls that are mortared or reinforced with concrete and steel follow (or should follow) basic principles of wall construction.

Walls are either freestanding (originally to contain cattle and sheep) or retaining to support or terrace hillsides.

Freestanding walls are generally faced on both sides with large and medium-size stones and carefully in-filled with rubble. Gravity and the friction of stone against stone are what keep the wall upright. Stones should be placed to work with these forces and not fight them.

Have a firm foundation. A strong wall won't last long on shaky topsoil, says David Liu, a Berkeley landscaper. A well-made wall can withstand earth movement, even earthquakes, mason George Gonzalez says, by moving with the earth.

Retaining walls should lean in toward the hillside. All walls benefit from some "batter," or slope.

Retaining walls require backfill between the rear of the wall and the hillside to relieve water pressure. Drainage pipes or holes are required in a mortared wall. A dry retaining wall provides natural drainage.

Good stonemasons choose stones that fit together naturally, cutting and chipping when necessary. "Throughstones" (Liu calls them "sleepers") that pass from one side of the wall to the other provide structural support.

Stones should be set horizontally to their "bedding plane" -- their grain. If the grain is vertical, water can seep in and cause the rock to fracture.

Corners must be strong, with interlocking stones that angle in toward the wall. Gonzalez enforces "the rule of the ball." Imagine a ball placed on one of the corner seams. "If it's going to roll outside of the wall, that's wrong because it feels like the stone could slide out of the wall," he says.

"Running seams" -- vertical joints between several rocks -- provide a weak point in the wall, and should be avoided.

Resources

George Gonzalez, (415) 868-1486, ebrogonzo@aol.com.

David Liu, (510) 435-3153.

Martyn Peachey, James Enright Construction, (415) 383-3301, www.jecstone.com.

American Soil and Stone Products, 2121 San Joaquin St., Richmond. (510) 292-3000.

The Stone Foundation, dedicated to preserving the craft of stonework, publishes Stonexus Magazine and can help consumers find masons; www.stonefoundation.org or call George Gonzalez, (415) 868-1486.

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