# Berkeley: City's rocks and strolls

- Harriet Chiang, Chronicle Staff Writer
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Volcanoes evoke images of black, bubbling lava in Hawaii or steaming hot springs in California's Lassen Volcanic National Park.

But volcanic rock in the Berkeley hills? Yup, and plenty of it.

The creamy-yellowish rock, known as Northbrae rhyolite, is scattered throughout a quiet residential area called Thousand Oaks, adding a geological touch to private gardens and corner parks.

Some of the rocks are the size of a bread box, neatly layered to create a sidewalk retaining wall or a set of front steps. Others are at least a story high, some with pathways running through, inviting to kids who want to scramble up as well as climbers breaking in new equipment.

The largest formations are the centerpieces for a number of small parks that dot the area. But perhaps the most intriguing are those that have been incorporated into people's homes -- in the foundation, walls and gardens.

"People either buy the houses because of the rocks or they learn to live with them," said Jonathan Chester, a photographer who is working on a book about the volcanic rock called "Berkeley Rocks." He estimates that hundreds of homes in the area have Northbrae rhyolite on the premises. One homeowner even used it as material for a shower wall.

The bedrock outcrops are the result of eruptions 11.5 million years agofrom volcanoes south of San Jose, most likely related to a volcanic field northeast of Hollister. "Exactly how many it's hard to say, but it's probably more than one volcano," said Steve Edwards, director of Regional Parks Botanic Garden who, as a UC Berkeley graduate student, did field mapping of Round Top, a volcano in Sibley Volcanic Regional Preserve in the Oakland hills.

He called the volcanic rock in the Berkeley Hills fascinating, transported to its current location by movement along the Hayward and Calaveras fault lines.

Lin Murphy, who researched Northbrae rhyolite while earning her master's degree at Cal State Hayward, concluded that Northbrae rhyolite is distinct from volcanic rock found in

Sibley and in Richmond, identifiable by its rounded and polished surfaces and white flow bands that show how the lava erupted.

Because of its apparent movement along the fault lines, the rock is rich with silica, creating an especially hard substance.

"That's my explanation for why Indian Rock is so much better to climb on because it has so much in it and it keeps it from falling apart," said Murphy, who now lives in Colorado, referring to one of the largest outcroppings.

In 1914, Andrew Lawson, a geology professor at UC Berkeley who mapped the San Andreas and Hayward faults, discovered the rhyolite while training his students to do geological field mapping.

He named it Northbrae rhyolite after the surrounding neighborhood.

"It's there and it's beautiful, and you don't have to go to the mountains," said Barbara Robben, who recently led a walk through the volcanic rock for the Berkeley Path Wanderers Association, one of several groups that offer tours of volcanic rock in the area.

Four hikers recently went on an exploration of the area, led by Robert Johnson, a Berkeley resident and volunteer tour leader for Greenbelt Alliance, a conservation group that offers free hikes year-round.

The walk began at the Great Stone Face Park, which occupies a corner of a quiet residential area that overlooks the bay. On the edge of a gentle slope of grass is a volcanic formation about 15 feet high with just enough crevices and indentations to make it perfect for climbing. Smaller boulders nearby create unexpected pathways.

The park is one of a handful that were donated to the city of Berkeley by real estate developer Duncan McDuffie in the early 1900s when he was designing the Northbrae neighborhood.

McDuffie practiced a philosophy of linking natural features of the area with architectural designs, whether it meant mapping circles around trees, setting aside public parks, or sprinkling developments among multi-story volcanic rocks.

The area was developed during Berkeley's architectural renaissance when Bernard Maybeck, Julia Morgan and others designers trained in the Beaux Arts tradition followed the "building with nature" style, creating rustic buildings and natural materials that blended in with the environment.

"Instead of shying away from it, they embraced the natural features and made it part of the excitement of the house and the drama of the architecture," said Lesley Emmington of the Berkeley Architectural Heritage Foundation. "It was just a wonderful time of creativity and embracing the East Bay and the hillsides."

A short walk from Great Stone Face Park is a home that illustrates the easy blend of architecture and rock. At the entrance of a shady Julie Morgan home, large outcroppings loom on either side of the front steps, adding a dramatic dimension to the landscape.

The area is brimming with rocks. Retaining walls made of volcanic formations stretch on for blocks, a buffer for an array of California Craftsman homes, English Tudors and those influenced by European styles.

As the walkers made their way along Yosemite Road, they occasionally would peek through the front gates and spot a large volcanic rock on the side of a garden surrounded by grass, shrubs and colorful perennials.

On the Alameda, they stoped in front of a driveway that wound its way up and around a huge volcanic mass. The rock occupied almost the entire front yard, surrounded by ferns, cypress shrubs, and Japanese maples.

"We called it the boulder home," said the new homeowner who was just moving in. The owner, who didn't want to give her name, said that the rock was definitely part of the attraction of the house, adding that her son likes to climb through a path that runs through the middle of the formation. "They're magnificent, solid, timeless."

As Johnson led the group farther down the Alameda, they spied a variety of volcanic rocks, some no more than a hump, others tall enough to mingle with the trees. One house was built in an L-shape around a huge outcropping, while another had used it to create a steaming sauna. Several street sign pillars were made of the ubiquitous rock.

"To see what people do with them is quite fascinating," Johnson said, pointing out a home with a chimney made out of stacks of rocks.

Johnson led the group to Contra Costa Rock Park, an area dominated by a large outcropping big enough to climb on with a postage-stamp lawn in the back. Bruce Simon of Berkeley and his dog, Tessie, were perched on the top, savoring the shimmering view of the bay. "It's just part of our regular neighborhood walk with no crowds," he said.

The walkers made their way up Indian Rock Path, one of hundreds of paths that wind their way through the hills, until they arrived at Indian Rock. The largest of the Northbrae rhyolite, it was donated to the city of Berkeley in 1917 by McDuffie and is steeped with rock climbing lore. Dick Leonard, regarded as the father of modern rock climbing, and noted environmentalist David Brower developed their rock climbing skills here.

Winding steps are chiseled on the sides, leading climbers up to one of the best views of the Bay Area.

A short distance away is Mortar Rock Park, a smaller shadier version of rhyolite surrounded by California buckeye and live oak trees. Holes still remain where Ohlone Indians ground acorns, a remnant of the area's rich history

"They're amazing natural, architectural features," said Nancy Shapiro, a longtime Berkeley resident, as she watched her dog, Cookie, scramble up on one of the rock formations.

"Visually and tactically, they give a great texture to the neighborhood," she said. "They're just great surprises."

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Rock on

Berkeley Path Wanderers puts out a map showing the volcanic rock parks as well as pedestrian paths to reach them. The group also occasionally offers tours of the volcanic rocks. www.berkeleypaths.org. Greenbelt Alliance also offers tours of the rocks. www.greenbelt.org.

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