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THESE WALLS CAN TALK

Brick facades are sturdy, but keeping them that way requires care

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As old as dirt, the sturdy brick is. Long before fairy tales with pigs and wolves came along, ancient peoples knew the strength, fire resistance and durability of the humble clay brick. Modern people know that it adds value and the aura of prestige to a home.

"Brick has housed humanity in its move from sticks, stones and caves," said Judith Capen, principal at Architrave P.C. Architects on Capitol Hill. "Even today, brick -- sun-dried or fired -- is the building material of choice for most of the world's population."

Capen keeps many aged examples of local brick, including one from an 1800 farmhouse in Frederick with a hoofprint impression likely made by a farm animal when bricks were lying out to dry before being fired in a wood kiln.

Decades ago, there were kilns on construction sites, and bricks were fired from whatever was dug from the ground, lending buildings the special colors of the earth below them, whether it was Milwaukee's cream-colored brick or the D.C. area's orange-red clay. During winters in the mid-Atlantic region, when no one was growing food, bricks were a cash crop for farmers, Capen said.

Care and repair

They might not demand a lot of routine attention from a homeowner, but if you want them to last, they're not quite care-free.

Brick structures can last only as long as their mortar allows. Sometimes a bad repointing job will cause mortar to crumble, or decades of weather or shaking from the rumble of passing trolleys damages the brick, masons say.

Russell Shearer, who lives with his wife, Michelle, in an early 19th century home in Old Town Alexandria, knew when they bought the house that they would have to do a lot of work on the exterior. Lintels, the horizontal pieces placed over windows and doors, needed to be repaired; mortar was crumbling or badly patched; and moisture was coming through their bedroom wall -- a sure sign that mortar joints were deteriorating.

They also discovered that a prior job of repointing, a process in which the old mortar is cut out and replaced, had been done poorly and with too much Portland cement. Mortar's composition must suit the brick's density, masons say.

Historic brick is softer, fired at lower temperatures, and calls for a different recipe of mortar, using lime and sand with only a little cement. Old mortar used on buildings on Capitol Hill often contains oyster shells, horsehair and other materials that were easy to access at that time and were added to harden the lime and sand mixture.

If the mortar is too hard, it expands and contracts at a different rate than the brick, which can cause the brick face to disintegrate and fall off. Modern brick, fired at higher temperatures, is tougher and can withstand harder, modern mortar.

The Shearers saw that mason Mark Vaughan of Vaughan Restoration was repointing Robert E. Lee's boyhood home in Alexandria, not far from their house, and Russell figured that meant he could take care of the myriad ailments of the brick at their home. The job included scraping off white lead-based paint, which had to be done by a company certified to handle the hazardous material.

"Alexandria masons had a vernacular tradition to how they made their mortar, using a recipe that was different, if not unique," Russell Shearer said. "Mark examined our house and was able to duplicate the recipe originally used.

He made up five or six different small batches so that we could check color to ensure they blended with the old mortar. When Mark and his team were done, the mortar -- new and old -- blended seamlessly in composition, texture and color, and it all looked like it had been there for 200 years."

Vaughan, who has worked on homes dating from the 1740s and a circa 1690s building in Culpeper, where the brick kiln was still right across the street, says his company usually follows the guidelines issued by the National Park Service on the care of masonry.

"Brick disrepair can make the foundation shift. Mortar joints are sacrificial. You do whatever you can to keep the bricks intact. Bricks are, in a matter of speaking, sacred," Vaughan said.

Winter's toll

Brick problems often start in winter, according to Capitol Hill mason Tom Michaliga, who has worked as head mason on the Senate side for the Architect of the Capitol.

"Once winter starts, [moisture] will start getting in, with mortar joints slowly receding until it gets really bad. Then water comes through the walls . . . the plaster starts bubbling -- it looks like cauliflower," he said.

To check the mortar on your home, take a key and scrape the joint to see if the mortar starts flaking out, or try to stick a butter knife in. If the knife starts going through, and the brick feels softer toward the middle, then the holes are getting bad, said Michaliga, who concocts his own mortar from old recipes.

For repointing, cost is usually determined by square footage, plus logistics such as whether scaffolding is required and whether the joints are tight or standard width. ("Butter joints," seen in pressed brick on fine Victorian facades, are only an eighth of an inch wide.)

For a standard 3/8 -inch joint and one level of scaffolding, assuming there are no other complications, cost runs about \$10 a square foot.

"It is a little bit easier to cut out the old mortar that has never been pointed," Vaughan said. "If it has been improperly pointed with harder mortar, it's more difficult to cut out, so it is more expensive."

Most typical townhouse facades are 450 to 550 square feet. An all-brick detached house on a corner lot recently cost about \$34,000 for an extensive repointing job, said owner Marie Spiro of Capitol Hill.

The Shearers paid about \$22,000 for all masonry, paint removal and lintel repair work, including the alley face and some light facade repointing. The front of a townhouse typically costs about \$5,000 to \$8,000, according to several price quotes.

The cost to remove lead paint from brick could reach \$16 a square foot. Removal of lead-free paint applied thinly costs about \$8 to \$10 a square foot. Costs vary depending on the hardness of the bricks, the number of paint layers and other details.



PHOTO SOURCE: POTOMAC VALLEY BRICK

Any cleaning should be done after the brick is repointed, Vaughan recommends.

Otherwise, the use of chemicals could cause efflorescence -- a process in which masonry leaches calcium hydroxide to the surface, where it mixes with moisture and carbon dioxide in the air to form calcium carbonate, which appears as white, ghostlike trails along the brick.

Classics still sell

Although there is a wide variety of brick sizes, types and colors -- including blues, greens and creams -- available today, such traditional colors as red and burgundy are still the most popular, according to Karli Simmons, marketing coordinator for Potomac Valley Brick and Supply in Rockville.

When it comes to texture, she said, many people want an antique-textured brick that gives a home more old-world charm.

"I sent a homeowner to one of the brick plants to look at bricks. They came back and said it was looking at wallpaper -- there are thousands to choose from," Vaughan said. "In this area, people like to use bricks that resemble the older colors and textures, even if the house was built in the 1950s." He said sometimes this is the longest part of the masonry process: trying to find a new brick that matches older ones.