

COPS WEARING CAMERAS

THE NEW SURVEILLANCE TECHNOLOGY. BUT WILL IT WORK?

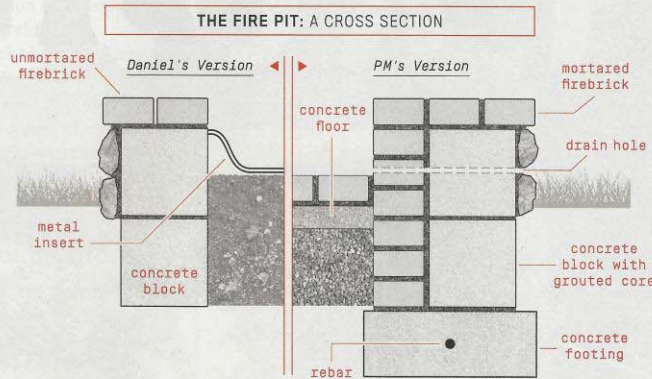


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Popular Mechanics

HOW YOUR WORLD WORKS

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WHEN A GROUP OF FRIENDS SIT AROUND A TABLE PLAYING CARDS or drinking beer, not one of them will spend hours gazing into the table itself, thinking about cowboys and friendship and human prehistory. A table does not have this power. A fire, with its meandering sparks and flame animals and depthless colors, does. An outdoor fire adds ancestral depth to a weekend in the country. In the case of the table, you have a pretty good time. In the case of the fire, you wear the same shirt to work on Monday so you can still smell the wood smoke.

My point here is that when I built a weekend cottage in Lumberland, New York, in 2009, I wanted a fire pit. I wanted to have a place where I could spend the evening sitting under the stars actually enjoying the setting in which I was paying to own a home. I also wanted more space for friends visiting from New York City, who tend to come upstate in groups, overwhelming my small house. I imagined I could construct a fire pit in a couple of weekends. In a way, I was right: Within a month we were all sitting around my new pit, watching the fire lick the sky. But then everything fell apart.

Like most weekend do-it-yourselfers, I began my research online. I looked at scores of designs, finally settling on a classic square. I also learned the first rule of fire-pit safety: choose a spot ten to thirty feet from your house, with level ground, away from overhanging trees

or power lines. I picked a location about twenty feet from my porch and the same distance from the trees. With a friend's help, I excavated a hole for the foundation. The soil on my property is as much rock as dirt, but we eventually chipped

out a 4 x 4-foot hole, about a foot deep. Daunted by the prospect of pouring concrete, I used sixteen standard concrete blocks to build the foundation.

After leveling and tamping down the dirt in the hole, we arranged eight blocks in a square, which we joined with general-purpose (Type N) mortar. We laid a second level of blocks on top, mortaring as we went, then topped the foundation with one-foot-square pavers, four per side.

Over the next few weekends I applied faux stone veneer to the exterior of the blocks where they stuck up above the ground, using stone veneer mortar. The veneer I used was left over from con-

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ILLUSTRATION BY HAISAM HUSSEIN

Fire Pit

struction of the cottage, but most large hardware stores sell it. When the mortar was dry, I backfilled earth around the outside walls, leaving between seven and ten inches of wall above grade.

Building the Pit

Inside the square I laid down a two-to three-inch-thick layer of multipurpose sand, then covered that with a similar layer of small rocks. Heat can deteriorate concrete blocks, so I found a local masonry supply yard that sold firebricks. I carted a couple dozen home but ran out of motivation to mortar them, so I temporarily stacked them against the inner walls.

The Problems Begin

My pride in a job well done was tempered by the next heavy rain. I had failed to take into account my yard's water absorbency, and the pit's sand-and-stone floor became completely submerged, as did the heavy octagonal grate I'd bought online. Friends teased that I'd built the world's smallest swimming pool.

After a trip to the store for more rocks to raise the floor, the pit was operational. But raising the grate brought the fire high enough to send sparks into my guests' faces. I decided I needed a mesh cover to place over the fire when it was lit. At an end-of-season sale, I discovered a premade fire pit with a black metal stand, square steel insert, and square screen cover just the right size. The cover went on the pit, and the rest of the set went into the basement.

These refinements got me through that first summer. But then I read anecdotal reports of overheated pavers in fire pits exploding. So the next spring, out came the crowbar and off came the pavers. For the rest of year two my fire pit sat unfinished, the open-topped concrete blocks filling up with rain.

During year three I bought more firebricks, experimenting with configurations to cover the tops of the blocks but never committing to any of them. Friends often kicked the bricks out of alignment (or into the fire), but I

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still resisted the necessary mortaring.

This past summer, year four, I removed all the firebricks from the interior of the pit, and retrieved that square metal insert I had purchased with the lid from the basement. In a rare spot of luck, the insert fit the opening perfectly. I drilled several drainage holes through the metal, used high-heat rust-proofing spray paint to protect the holes, then made a makeshift rim of unmortared firebricks around the top.

The Cavalry Arrives

Nick Blohowiak, the eastern regional manager of Spec Mix, the bulk mortar division of Quikrete, agreed to review my project and give me suggestions for a rescue mission. Blohowiak comes from generations of masons and has worked in masonry himself since he was 10 years old. The first problem he noted was drainage. "I'd say you've been really lucky," he said. "Water's the most destructive force in nature, and it works against masonry when it's in contact with the ground. Eventually the water sitting in the pit and in the blocks is going to freeze, thaw, pop—and then it'll fall apart."

Blohowiak recommended filling in the blocks with masonry grout to solidify the structure, then using a core saw or large masonry bit to drill several holes, one or two inches wide, through at least two of the side walls. He said I'd probably have to rent the tools to do it. "What you're doing is allowing the water to escape," he said, "but you're also allowing cold air to roll in from the bottom—so your fires burn better." Next, he said, pour a concrete floor inside the pit, coming up to the outside ground level but below the drainage holes. And for the lining? "The right way to do this would be to use those firebricks to line the inside and the floor using a refractory mortar," Blohowiak said. "Eventually you're going to have problems with the foundation, but this'll probably help you save this thing for quite a while."

Now that it's spring, I can begin my work again. I intend to take the master mason's advice.