



The family handyman

SMART HOME IMPROVEMENT™



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ARTFUL
LAWNS

CREATE A
SPACE TO
ENTERTAIN
IN STYLE!

NO MAINTENANCE!
BUILT-IN BENCHES,
A BOARDWALK
& WALL PANELS

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OUTDOOR KITCHEN

- CABINET DESIGN
- COUNTERTOPS
- APPLIANCE INSERTS

DIY
STONE
WALLS &
PROPANE
FIRE PIT

**THE MOST CAPABLE SILVERADO HD EVER
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Silverado HD with the available six-function Multi-Flex Tailgate opens up a whole new world of possibilities. This tailgate converts into a cargo bed extender so you can easily haul extra-long items. It folds down to become a step so you can easily climb into the bed. It also transforms into a workspace for your laptop or blueprints. But best of all, it's attached to the Silverado HD — with heavy-duty power and more cargo volume than any other HD competitor.¹ Silverado HD and the Multi-Flex Tailgate: the dream team of capability.

FIND NEW ROADS™

¹Excludes other GM vehicles.



CHEVROLET



THE DIY LIFE IS STRONG

GET WHAT YOU WANT
BY DOING IT YOURSELF

My seventh-grade shop teacher opened the door to DIY in my mind. That year I attempted to make two things I just couldn't get any other way: The first was a life-size model of Voltron's sword; the second was an electric guitar. Mr. Westland gave me all the wood and moral support I needed without judgment.

One turned out magnificently—handcarved out of solid wood, painted with lacquer and embellished with chrome. The other was a guitar. Well, it was in the shape of a guitar; let's just leave it at that. But the spark in me was lit.

At 16 I had the opportunity to refurbish a strange-looking electric bass. I was told it was worthless; they just wanted it playable again. So, not knowing what I didn't know, I took on the project. It ranks among my earliest successes—but with a rather large caveat.

The instantaneous availability of information we enjoy today was a far-off dream in 1986. I couldn't click on a how-to video before I refurbished that bass guitar. If I could have, I may have discovered the rarity of this instrument—a very-not-worthless Vox Phantom IV bass built in 1964—before I devalued it with a basement workshop respray. Now, to my credit, I did bring this poor thing—handed to me in pieces—back to life, turning it into a beautiful, functioning instrument able to make music for the world.

This also marked the beginning of two journeys I'm still on: repairing and refinishing musical instruments and playing the bass.

I'm grateful for those open doors, for my successes and failures, and, most of all, for the people—Mr. Westland and all the craftspeople and artisans who have taken me under their wing and helped me find my way to *Family Handyman*. The DIY life is strong here, and when I think about opening doors and being an inspiration to others, I'm humbled by the possibility.

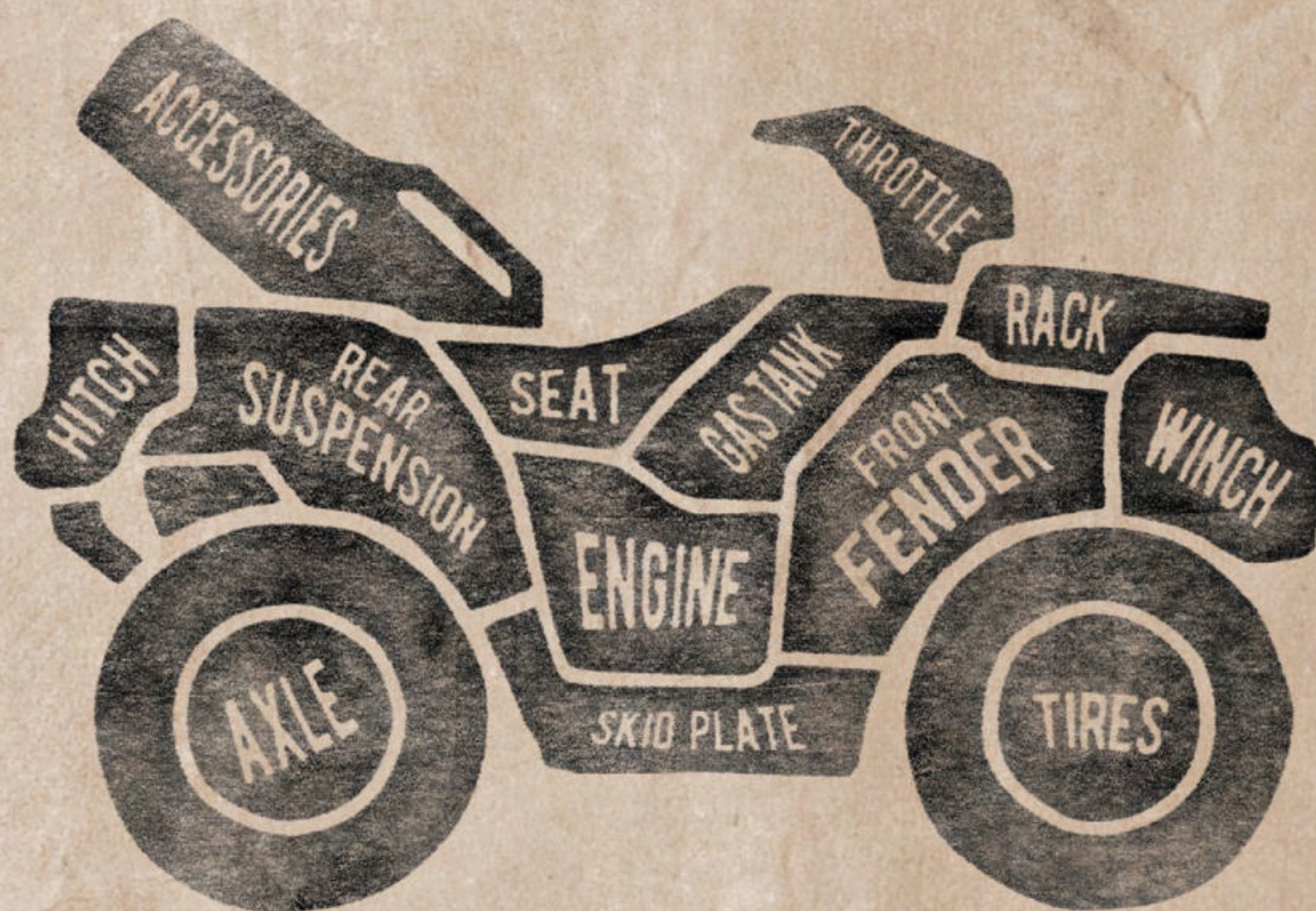
Who inspired you? Who opened a door for you? Tell 'em thanks! And share your story with us—we would love to hear it!

JAY CORK
ASSOCIATE EDITOR



BUTCHERED YOUR $\times$ ATV?

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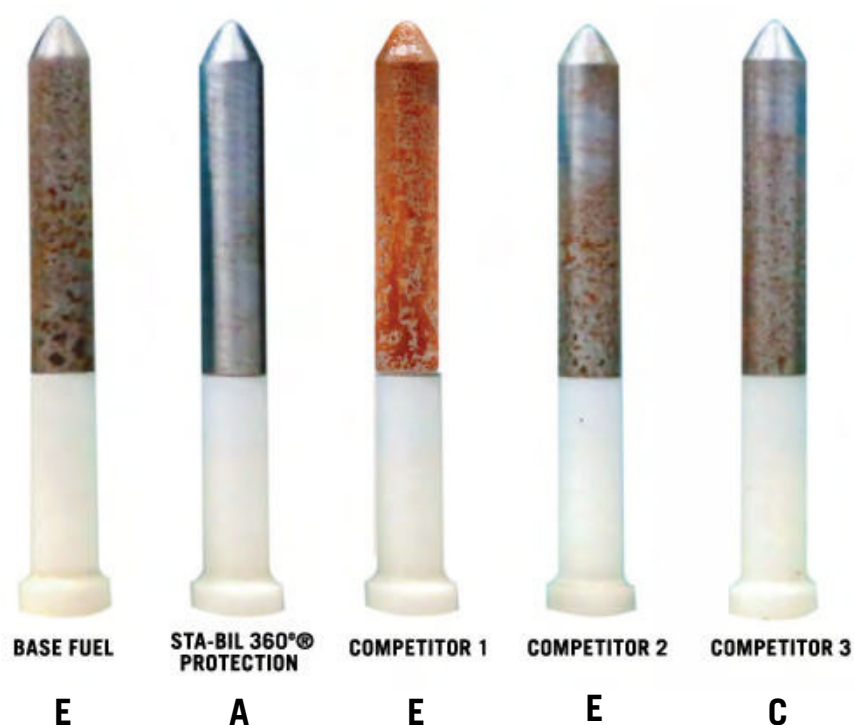
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READER PROJECT: QUICK & EASY PADDLEBOARD STAND

I needed a stand for my two paddleboards because they were getting stained and scuffed lying in the grass. I decided to build one myself with materials I found in my garage. Now when we're at the cabin, I set up the stand in the yard by the beach. At the end of each day I set the paddleboards on the stand for the night.

To build one, you'll need two swim noodles. Larger noodles work well because they have a larger diameter hole that fits nicely over a broom handle. You'll also need a snow shovel, a broom handle and a 3-ft. 2x4 (treated) for the base. For tools, round up a drill, a large bit the same diameter

as the shovel and broom handles, a saw and a sharp blade to cut the noodles.

Here are the steps:

1. Cut the broom handle into three poles of equal length.

2. Drill three holes the diameter of the broom handle into the 2x4 base, 7-1/2 in. apart (the distance may vary based on the thickness of your paddleboards). Insert the poles.

3. Drill a fourth hole near the center of the side of the base to accept the shovel handle. Offset the hole to avoid the center broom handle hole.

4. Cut one noodle (the green one shown) the length of the shovel blade, slice it partway through and slide it onto the top of the blade (photo left).

5. Take the cutoff piece

of that noodle and drill three holes—one in the center and one on each side 7-1/2 in. from the center. Slide it over the three poles.

6. Cut the second noodle (mine is orange) into three pieces corresponding to the length of the three cut poles, and then slip them over the tops of the poles.

7. Push the shovel handle into the side hole in the base.

8. Slide in your paddleboards.

The stand is light and portable. Because no glue is used, the shovel can be removed and used during the winter. The paddleboards go on a rack in the garage while I wait for summer to roll around again.

SCOTT SETZEPFANDT



THE ELEVEN PERCENT

When you have a minute, hop over to familyhandyman.com and meet Andrea Harris. She's featured in our series about the women who make up 11 percent of the construction workforce in the U.S. On our site we spotlight stories of their careers in the field.

Harris is the New York City Fire Department's first female cement mason. Now in her 26th year as a mason, she first worked on building bridges and high-rises. One of her most memorable projects was working on the rebuild of the first PATH train tunnel after 9/11.

See the rest of her great story, including a video, by searching for "Andrea Harris" at our site. We know you'll be impressed by her skill set, her spirit and her advice for women who want to work in the trades.

Know someone we should feature? Email us at feedback@familyhandyman.com.

WHAT ARE YOUR FUN PROJECTS?

We're all used to spending our time on the have-to projects—the toilet that won't stop running, the gutters that need cleaning *again*—but what projects do you tackle when you can follow your whims? Take a whole lot of photos and show us! Shoot us an email at editors@thefamilyhandyman.com.



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HANDS ON

fh TOOLS, GADGETS + GEAR WE RECOMMEND



MULTIPURPOSE SANDER

A few years ago, my shop partner picked up a Ridgid Oscillating Edge Belt/Spindle Sander, and it quickly became one of my workshop favorites because of its versatility. Having one compact tool that can do edge work in addition to spindle sanding is fantastic.

The tilting table—with detents at 0, 15, 22.5, 30 and 45 degrees—really makes it a slam dunk. You can quickly change the setup between edge and spindle work without any tools. With the sander hooked up to a shop vacuum, the dust collection is pretty good. The edge sander takes 4 x 24-in. sanding belts, and the unit takes five sanding drum diameters, ranging from 1/2 in. to 2 in. All accessories are stored right on the machine. The Ridgid EB4424 is about \$280 online and in home centers. 

BRAD HOLDEN SENIOR EDITOR



YARD CART TO GO APE FOR

Moving heavy stuff is an inescapable part of landscaping, so you'll need a way to do it efficiently, without breaking your back. Unlike a single-wheel wheelbarrow that wobbles over and around your yard's contours and obstacles, the dump cart from Gorilla Carts, with its zero-turn system, navigates with ease.

These dump carts are available in 4- and 7-cu.-ft. models. Made of a durable poly, the 35 x 22 x 8 in. 4-cu.-ft. version carries up to 600 lbs. of cargo. (The 7-cu.-ft. version carries twice that.) The steel frame rides high on four 10-in. pneumatic tires, giving good clearance.

Dumping cargo is easy: Just pull a spring-loaded handle on the frame and lift. A rear pivot point lets you dump even the heaviest load with one hand. Fully assembled (assembly takes about 20 minutes), the smaller cart weighs about 37 lbs. We used it to haul dirt, pea gravel and large, heavy stones for filling gabions, and at \$120, it's a great value.

(The 7-cu.-ft. model is \$190.) Gorilla dump carts are available online and at home centers. 

RYAN VAN BIBBER SENIOR DIGITAL EDITOR



JAPANESE RYOBA SAW

Japanese saws are available in many styles. I should know; I own almost all of them. But I reach for one more often than the rest—the Ryoba, which is easily recognizable with its double-sided blade. One side is designed for crosscutting, the opposite side is for ripping along the grain. Other Japanese saws are designed for more specific uses, but the Ryoba is much more versatile, which is why there's always one in my toolbox. Most Ryoba saws have replaceable blades, but you'll rarely need to change one. I bought my first Japanese Ryoba saw back in 1998; it's missing a few teeth in its old age, but it still cuts straight and clean. Find the saw shown at Woodcraft Supply for \$35. 

JAY CORK ASSOCIATE EDITOR



COMFORTABLE DUST MASK

Lots of people skip dust masks because they make breathing difficult, are too hot, fog up your glasses or are just plain uncomfortable. Last time I was at the home center, these N95 masks from Milwaukee were the only ones available, and I'm really glad I found 'em! These are the best disposable dust masks I've used.

To start with, there's a valve that opens when you exhale and closes when you inhale. This keeps the air inside the mask much cooler and helps prevent eyeglass fogging. The mask has structure, so it doesn't collapse on your face. And the two elastic straps are adjustable instead of "one size fits all," which is typical for most disposable masks. Grab a 10-pack online or at the home center for about \$27. 

MIKE BERNER EDITOR



TOOLS THAT LET YOU KEEP WORKING

I work outdoors a lot in the summer, from weekly lawn care to odd jobs around the yard. Even if I luck out with good weather, my days can be destroyed by mosquitoes, ticks and biting flies. Last summer I tested two Sawyer Insect Repellent products, and they kept me on the job outside without annoying bug bites.

The Picaridin insect repellent (\$8) is a topical spray-on alternative to DEET. It's as effective as DEET against flying and biting bugs without the smell or greasy feel. I used the Permethrin spray (\$12) on my work clothes and boots (good for camping gear too). It lasted a few washings to add another layer of protection. Find both online and at sports shops. 

GLENN HANSEN DEPUTY EDITOR



FULLY LOADED TAPE MEASURE

At first glance I thought the FastCap ProCarpenter Tape was gimmicky, then I started using it and changed my mind. If something is truly gimmicky, you never actually use the bells and whistles. What are the bells and whistles on this tape?

First, it's both right- and left-handed, meaning you can read it right-side-up from either edge. Second, it has a "whiteboard" on the body for writing down any notes you need or even for drawing a small sketch. It's an excellent way to remember a measurement on your way to the saw, and a wetted finger or eraser wipes it clean. Third, the hook has tiny barbs on its inside edge so it won't slip off the board you're measuring. Lastly—and this is my favorite—there's a pencil sharpener for standard-size pencils in the tape's heel. It won't sharpen flat carpenter's pencils, but most of my work is woodshop stuff, requiring just a standard pencil. Keeping a sharp point for accurate marking is paramount for fine work.

It comes in 12-, 16- and 25-ft. versions and a mini 6-ft. version (which doesn't include the pencil sharpener). It's available in either imperial or metric. Find FastCap ProCarpenter Tapes at home centers and online for \$10 to \$21, depending on the size. 

MIKE BERNER EDITOR



GOOD GOGGLES

I've always disliked wearing goggles in the shop. They're uncomfortable and they tend to fog up. I wear glasses, so I've just called that good-enough eye protection. There are two problems with that. First, it's not all that safe. Particles tend to find a way into your eyes even when you're wearing glasses. And second, a spare pair of glasses is needed because dusty shop work takes a toll on

lenses. I've been trying these over-glasses Safety Goggles from NoCry for a while now, and I like them a lot.

They're well vented so they don't easily fog up. The gasket that's against your face is rolled, not like the sharp edge on the goggles from high school science class, so they don't bite my face. The lenses are a tough polycarbonate with anti-fog and scratch-resistant coatings. But there may be a

downside: If, like me, you have large-framed glasses, these goggles might not actually fit over them. For comfort and eye safety, I've decided I can live with that and just not wear my glasses under my goggles.

NoCry goggles and safety equipment are available at nocry.com. These Safety Goggles with Vented Panoramic Lenses cost \$17.



BRAD HOLDEN SENIOR EDITOR



WE DIG DIRT

SOIL YOURSELF.

Well, that came out wrong.

CS SERIES

- ☐ 2 ALL-NEW MODELS
- ☐ LOADER WITH QUICK ATTACH BUCKET*
- ☐ DRIVE OVER MID-MOUNT MOWER OPTION
- ☐ 22-25 HP KIOTI DIESEL ENGINES

FLEXIBLE FUN FOR ALL YOUR DIRTY BUSINESS.



Pre-production model shown. Specifications, features, and available options subject to change. ©2022 KIOTI Tractor Division Daedong-USA, Inc. *Optional loader with standard quick attach bucket.



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HANDS ON



ULTRA-VERSATILE BIT SET

This new DeWalt titanium pilot point drill bit set includes 21 bits with sizes from 1/16 to 1/2 in., with doubles of 1/16, 5/64, 3/32 and 7/64 in. They're designed to perform well in a variety of materials, so I drilled numerous holes in plywood, hardwood, 1-in. acrylic and 1/4-in. brass stock.

In wood, these bits don't cut as cleanly as my fine woodworking brad point drill bits, but they're not meant to. Their strength lies in their versatility in a wide range of materials. I wouldn't drill brass with my brad point set, but I won't think twice about using these. In brass, the pilot point eliminates the need to predrill pilot holes for large-diameter bits. And instead of a long curl of waste metal, which can clog the flutes, the bits eject small chips, which is a primary reason these bits run as cool as they do.

When you're drilling in acrylic plastic, heat is the enemy. The plastic heats up and starts to clog the flutes, and suddenly you're melting things. These drill bits cut clean and cool. In plastic, the waste material was a stringy curl, but it ejected cleanly with no clogging or melting.

The anti-slip shank design did its job well in the drill press, even when I forgot to tighten the chuck! However, I would prefer to see a quick-release hex-shank design for use with my cordless drill kits.

This bit set comes in DeWalt's new well-designed Tough Case. Not only can the individual inserts of these cases be swapped out with other bit sets, but the case itself is part of a larger interconnectable and customizable system. At about \$25, these bit sets are a bargain. 

JAY CORK ASSOCIATE EDITOR

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⚠️ WARNING! †¹ : Cancer & Reproductive Harm

Some products we sell can expose you to chemicals known to the State of California to cause cancer and/or birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov/product

SAFETY-TOE BOOTS FOR ALL-AROUND WEAR

When it comes to work boots, I've always gone with the old-school plain leather, non-waterproof, non-safety-toe boots. I decided to go a different route this time around because I wanted a pair of boots to serve two purposes: working and wet-weather dog walking. I've had other waterproof hiking boots for dog walking, but the waterproof feature didn't last more than a few months at best. And hiking boots don't seem to hold up well as work boots, in my experience.

I've worn these Ryng boots from Brunt fall through spring, both while working in the shop and walking the dog. I'm happy to say they endure both tasks well. The boots are still completely waterproof, and the exterior seems to take any kind of beating. Durable, aggressive tread provides good traction on everything but ice.

My Ryng boots required a little break-in period, as the composite toe and shank added a stiff feel at the start. But several months in, they're as comfortable as, well, an old pair of boots. Ryng boots cost \$135 at bruntworkwear.com. 

BRAD HOLDEN SENIOR EDITOR



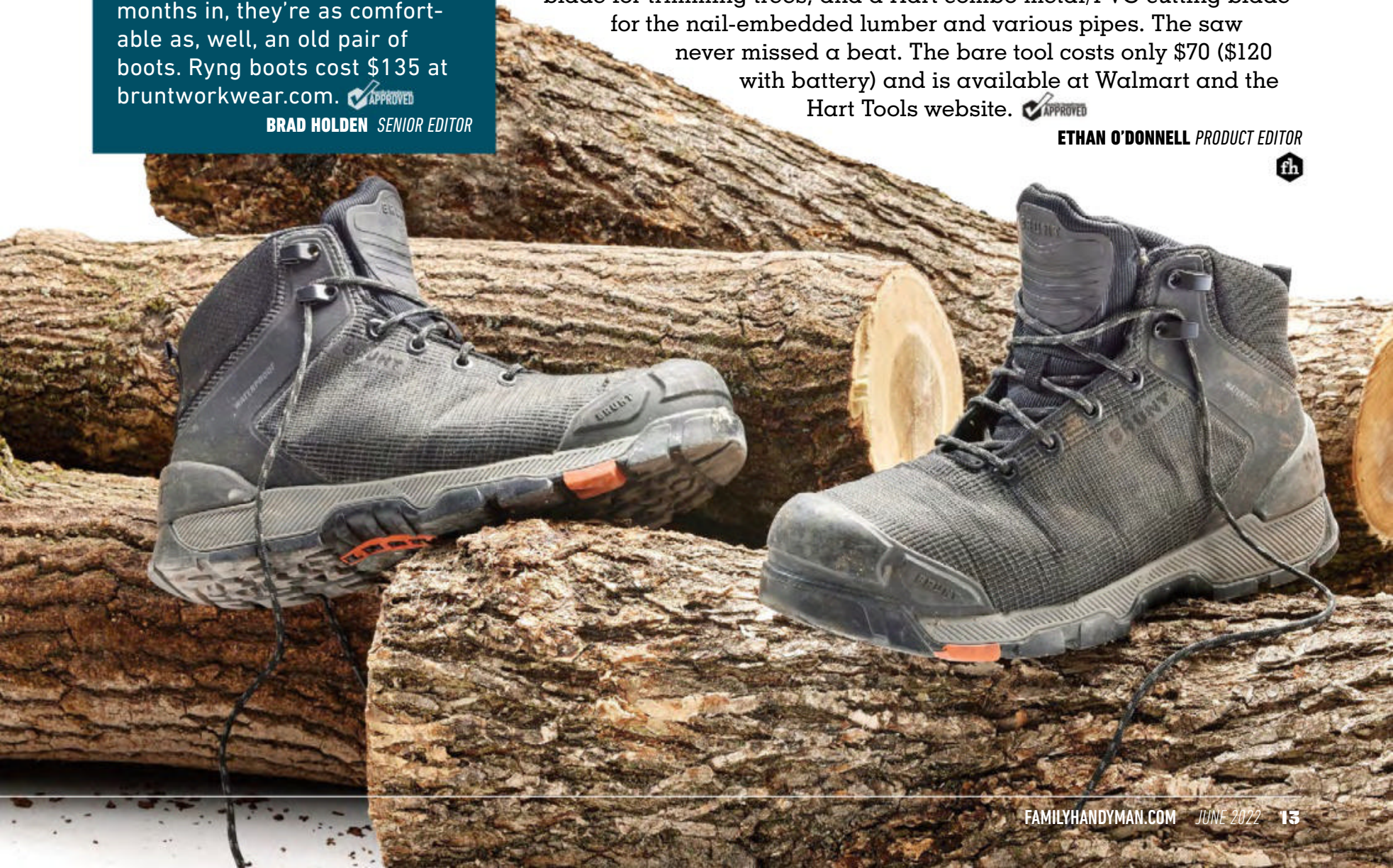
FULL-FEATURED RECIPROCATING SAW—AT A GREAT PRICE!

If you're about to knock down a wall in your kitchen, add a skylight to your home office or tackle the huge branch pile from a recent storm, a reciprocating saw is the tool you need, and this 20V brushless model from Hart is a good value. Tools with brushless motors offer more power, longer run-time, compact design and light weight, which led to Hart designing a product about 17 in. long weighing less than 6 lbs.

The Hart 20V saw has a 7/8-in. stroke length, which is ideal for aggressive cuts and heavy demolition, and it feels comfortable and secure thanks to the textured rubber covering. It's full of features, including a quick-change blade lever, a variable speed trigger with lock for better blade control, an LED project light and a self-adjusting shoe to maintain blade-to-material contact.

We tested the tool three ways: cutting nail-embedded lumber, steel and PVC pipe, and a pile of branches. The saw cut it all quickly and efficiently, and on a single charge. I used the included Hart wood blade for trimming trees, and a Hart combo metal/PVC cutting blade for the nail-embedded lumber and various pipes. The saw never missed a beat. The bare tool costs only \$70 (\$120 with battery) and is available at Walmart and the Hart Tools website. 

ETHAN O'DONNELL PRODUCT EDITOR





NUBEQA is a prescription medicine for men with prostate cancer that has not spread to other parts of the body and no longer responds to hormone therapy*

*Hormone therapy includes drug treatments or surgery that lowers testosterone.

Ask your doctor about NUBEQA

NUBEQA.com

INDICATION

NUBEQA® (darolutamide) is a prescription medicine used to treat men with prostate cancer that has not spread to other parts of the body and no longer responds to a medical or surgical treatment that lowers testosterone.

It is not known if NUBEQA is safe and effective in women and children.

IMPORTANT SAFETY INFORMATION

NUBEQA can harm unborn babies and cause loss of pregnancy. Men with female partners who may become pregnant should use effective birth control (contraception) during treatment and for 1 week after the last dose of NUBEQA.

Before taking NUBEQA, tell your healthcare provider about all your medical conditions, including if you:

- Have kidney or liver problems.
- Have a partner who may become pregnant. Males who have female partners who may become pregnant should use effective birth control (contraception) during treatment and for 1 week after the last dose of NUBEQA. Talk with your healthcare provider about birth control methods.
- For women, tell your healthcare provider if you are:
 - pregnant or plan to become pregnant. NUBEQA can cause harm to your unborn baby and loss of pregnancy (miscarriage)
 - breastfeeding or plan to breastfeed. It is not known if NUBEQA passes into breast milk.

Even with rising PSA on hormone therapy*

NUBEQA HELPS YOU LIVE FOR WHAT YOU LOVE



In a
clinical
trial,

**MEN LIVED
2X
LONGER**

without their prostate cancer spreading to other parts of the body when they added NUBEQA to hormone therapy (median† 3.4 years for NUBEQA + hormone therapy compared with 1.5 years for hormone therapy alone)

Adding NUBEQA also extended overall survival‡ by lowering the risk of death by 31% compared with hormone therapy alone

Tell your healthcare provider about all the medicines you take, including prescription and over-the-counter medicines, vitamins, and herbal supplements. NUBEQA may affect the way other medicines work and other medicines may affect how NUBEQA works. You should not start or stop any medicine without talking to your healthcare provider.

Most common side effects of NUBEQA include:

• Feeling more tired than usual • Arm, leg, hand, or foot pain • Rash • Decreased white blood cells (neutropenia) • Changes in tests that determine how your liver works (liver function tests)

NUBEQA may cause fertility problems in males, which may affect the ability to father children. Talk to your healthcare provider if you have concerns about fertility.

These are not all the possible side effects of NUBEQA. Call your doctor for medical advice about side effects. You may report side effects to the FDA at 1-800-FDA-1088 or www.fda.gov/medwatch.

†Median is the middle value in a set of numbers, not the average.

‡How long a person may live after diagnosis or starting a therapy.

Please see additional Important Safety Information on adjacent page and Important Facts About NUBEQA on next page.


NUBEQA®
(darolutamide) 300 mg tablets

IMPORTANT FACTS ABOUT NUBEQA® (darolutamide) tablets (new-BEH-Kah)

What is NUBEQA?

NUBEQA is a prescription medicine used to treat men with prostate cancer that has not spread to other parts of the body and no longer responds to a medical or surgical treatment that lowers testosterone. It is not known if NUBEQA is safe and effective in women and children.

What should I tell my healthcare provider before taking NUBEQA?

Tell your healthcare provider about all your medical conditions, including if you:

- Have kidney or liver problems
- Have a partner who may become pregnant. Males who have female partners who may become pregnant should use effective birth control (contraception) during treatment and for 1 week after the last dose of NUBEQA. Talk with your healthcare provider about birth control methods
- For women: tell your healthcare provider if you:
 - are pregnant or plan to become pregnant. NUBEQA can cause harm to your unborn baby and loss of pregnancy (miscarriage)
 - are breastfeeding or plan to breastfeed. It is not known if NUBEQA passes into breast milk

Tell your healthcare provider about all the medicines you take, including prescription and over-the-counter medicines, vitamins, and herbal supplements.

NUBEQA may affect the way other medicines work and other medicines may affect how NUBEQA works.

You should not start or stop any medicine before you talk with the healthcare provider that prescribed NUBEQA.

How should I take NUBEQA?

- Take NUBEQA exactly as your healthcare provider tells you.
- Your healthcare provider may change your dose if needed.
- Take your prescribed dose of NUBEQA 2 times a day with food.

- Swallow NUBEQA tablets whole.
- If you are receiving gonadotropin-releasing hormone (GnRH) analog therapy, you should continue with this treatment during your treatment with NUBEQA unless you have had a surgery to lower the amount of testosterone in your body (surgical castration).
- If you miss a dose of NUBEQA, take your normal dose as soon as possible before your next scheduled dose. **Do not take 2 doses together to make up for a missed dose.**
- If you take more NUBEQA than prescribed, call your healthcare provider right away.

What are the possible side effects of NUBEQA?

- Feeling more tired than usual
- Arm, leg, hand, or foot pain
- Rash
- Decreased white blood cells (neutropenia)
- Changes in tests that determine how your liver works (liver function tests)

NUBEQA may cause fertility problems in males, which may affect the ability to father children. Talk to your healthcare provider if you have concerns about fertility.

Tell your healthcare provider if you have any side effect that bothers you or that does not go away.

These are not all the possible side effects of NUBEQA. Call your doctor for medical advice about side effects.

How should I store NUBEQA?

- Store NUBEQA at room temperature between 68°F to 77°F (20°C to 25°C).
- Keep the bottle tightly closed after you first open it.

Keep NUBEQA and all medicines out of the reach of children.

The information provided here is not comprehensive.

To learn more about NUBEQA:

- Talk to your healthcare provider or pharmacist
- Visit www.nubeqa.com to obtain the FDA-approved product labeling
- Call 1-888-842-2937

You may report side effects or quality complaints of products to the FDA by visiting www.fda.gov/medwatch, or call 1-800-FDA-1088.



HANDY HINTS

fh CLEVER SOLUTIONS FROM OUR READERS



BUILD A BASEBALL ORGANIZER

If you have a future Major League Baseball star in your family, build this bat-and-ball holder to keep their equipment organized.

You'll need 3-in. PVC and a cap to fit the end, as well as a pair of shelf brackets. A piece of scrap plywood works well for the shelf. In the PVC, cut a 1-1/8-in. notch to fit the bat handles and a 1-1/2-in. notch to make the baseballs easy to grab. Then assemble the shelf and mount everything to your garage wall.

RANDY A. MICHEL



REUSE YOUR PAINT THINNER

Whenever I clean oil-based finishes from my paintbrushes, I always recycle the paint thinner. I clean the brushes and then let the solids settle to the bottom of the container. You can slowly pour the clear thinner back into the original container and reuse it. The solvent doesn't lose its cleaning strength.

STEVEN SMITH



EASY-OUT TRASH BAGS

The vacuum effect caused by a loaded trash bag in a bin tops my list of pet peeves in the kitchen and in my shop. Drilling a hole in the bottom to let the air escape is a common trick, but if there's a leak in the trash bag, I really don't want it getting out of the bin. Instead, slide in a piece of cardboard with the corrugations going from top to bottom to create a way for air to escape.

DAVID A. HARDY





CUTTING STRIPS FAST

When you need to cut lightweight material into strips, here's a cutter you can make in seconds. Stick a razor blade or utility knife into a piece of scrap wood (I used plywood) at a slight angle and secure a fence in place. Then, while keeping the material held against the fence, pull it through the blade. This cutter can handle cardboard, light plastic, rubber, leather, textiles and tape.

ANDY VENA



HANDY SOIL SIFTER

A large plastic milk crate with a grid-work bottom makes a great soil sifter. Weeds, roots and rocks stay in the crate. One crate costs a couple of bucks at home centers and discount stores. If the holes are too big to sift out the material, you can line the crate with 1/2-in. or 1/4-in. hardware cloth.

DON ALESI



SAFE BLADE STORAGE

My reciprocating saw and jigsaw blades used to get mixed up, and it was hard to quickly find the blades I needed. Now, to keep my blades sharp, safe and handy, I use travel toothbrush holders. I keep similar blades in each holder and mark the blade type with a permanent marker. These work great for blades 6 in. and smaller.

PHIL MESSINA 



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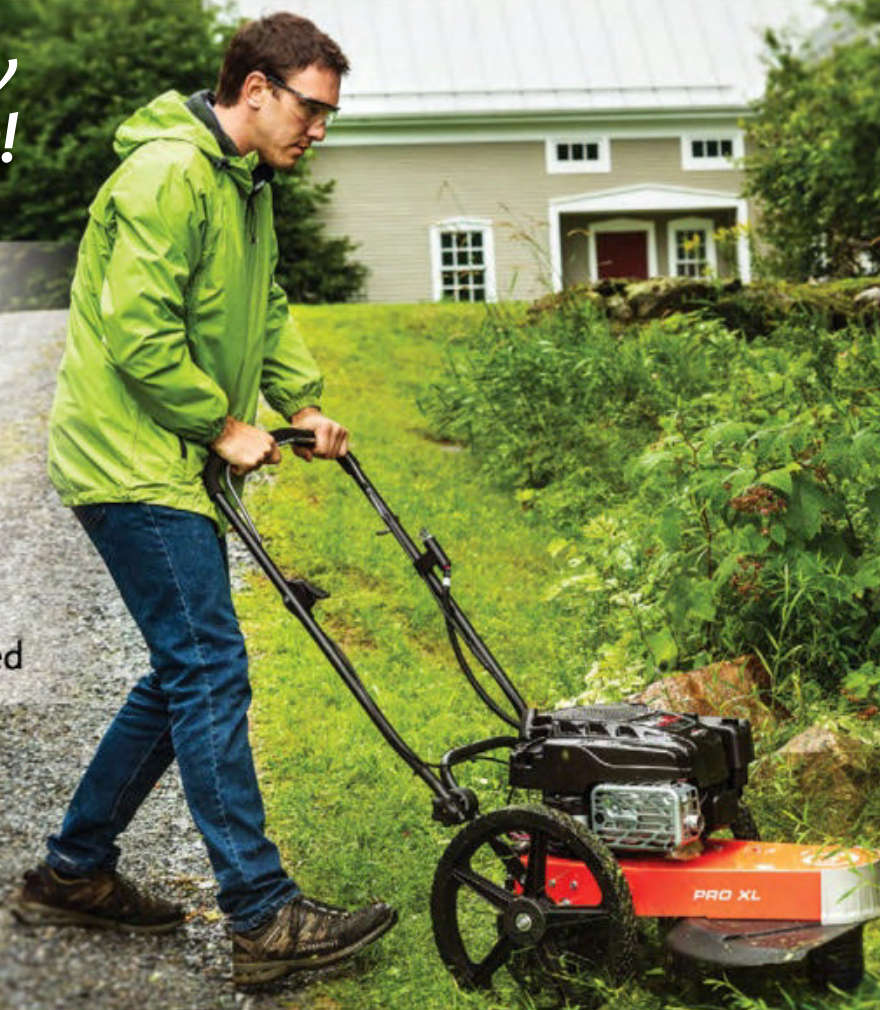
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POWER ARRANGERS

WHEN YOU WANNA BE STARTIN' SOMETHING



GOALZERO
YETI 1500X
POWER
STATION

BY GLENN HANSEN

Generators are becoming must-have tools for homeowners, whether for emergency backup or portable electricity. While shopping, you'll see a growing category of power packs that are versatile, affordable and easy to use. But they're not all the same, and finding the right one will require you to answer a few questions.

What can they do? Where will you use one? What will you plug in? How much should you spend? We looked at a few options and tested one on a job site to help you choose the right generator for your needs.

GENERATOR OR POWER STATION?

They all get called "generators," but that's not accurate. A generator uses a gas or diesel engine to make electricity. And noise. More power means more noise—that's fine on a work site but less so when you're camping or at home.

Then you have power inverters—portable tools that convert direct current (DC) from lithium-ion batteries into alternating current (AC). You recharge these tools—they don't generate power, they store it—by plugging them into a wall outlet, a solar panel or even your truck's DC outlet. The recharge time can be hours.

TESTED

We took a GoalZero Yeti 1500X power station on a two-week backyard build. We had access to one wall outlet on the site, but with many battery chargers, a plug-in table saw and miter saw, our lighting equipment, plus cell phones and laptops, that single outlet couldn't do it all. Throughout the build we would plug in the GoalZero at night to recharge, then unplug it during the day so it could be our power source for battery chargers, tools and phones. Charging cell phones is a nice convenience, especially with the USB outlets, but it's not much of a test of this unit's power.

We plugged in a photography strobe power pack, which draws more than the rated watts of the GoalZero but has a variable output depending on the photographer's needs. Our shooter had ample power for his strobes and flash.

When we needed to plug in the DeWalt 10-in. job site table saw, one skeptical builder said "No way." He was pleasantly surprised when the GoalZero powered his saw to rip through several sheets of OSB; this saw draws 1,800 watts. Leaving the job site, I kept the power station next to the driver's seat in the van and easily charged my phone during a two-day drive.

Outside for two weeks in a dusty, dirty and even snowy work environment, the GoalZero Yeti took some abuse. But its performance never wavered. With the solar charging

option, this power station would serve builders in new construction or power up campsites nearly anywhere.

The GoalZero Yeti 1500X is powered by lithium-ion batteries with a total capacity of 1,516 watt hours. Plugged into a regular wall outlet, the station will charge in about 14 hours, according to the manufacturer. Its run-time depends on what you plug into it. We started our 14-day project with the GoalZero at full charge. On some days we ran it down to about 30%. Plugged in at night (which we didn't always remember to do), the unit would get close to a 100% charge.

The unit's LED screen provides plenty of data, and the connected cell phone app does too, while also giving you individual power control of the device's outlets. Weighing about 45 lbs. and retailing for about \$2,000, the GoalZero Yeti 1500X is a heavyweight tool. After I used it on the job, I'd say it's worth its weight.

WHAT DO YOU NEED?

A generator or portable power station can keep your refrigerator and internet modem running for hours when a storm knocks out power at your house. It can power up the battery packs for your chain saw while you're out cutting firewood. It can run lights, a stereo and a smoker for your next tailgate party.

To know what a portable power pack can do (I'm including generators in the category from here on out), you need to know its power

output in watts; that rating is often in the unit's name or model number. This will help you determine which appliances or tools you can power.

A generator rated at 1,500 watts will power devices with combined watts ratings of 1,500. Buy a larger generator than you think you need; some will provide power at only about 85% of their stated total rating. You also need to know the "surge" or "max" output in watts. Some electric motors draw more power at startup than they do while running. Your fridge, for example, might have a starting wattage of 2,500 watts and a running wattage of 800. Make sure you buy a generator with a surge wattage of at least 2,500 to get that fridge started.

Look at the available port connection options on a portable power station. In addition to 120V AC outlets, you might want USB ports (both USB-A and USB-C) and a 12V connection. You also want to know your power generation options. Some generators run on gas; others, diesel. Some power inverters allow you to charge with a solar panel or two. And some use the same lithium-ion batteries as your power tools.

Finally, consider size and weight. If you need a generator for emergency home power, you want the largest generator you can afford, and portability is probably not a concern. But if you're looking for a power pack for job site use or for camping, you need that perfect blend of size and power capacity.



A FEW PORTABLE OPTIONS

BRAND	MODEL	TYPE	FUEL	WATTS (CONTINUOUS)	COST	WEIGHT	FEATURE
GENERAC	GP6500 49ST	Generator	Gasoline	6,500	\$859	172 lbs.	Huge Power
YAMAHA	EF2200IS	Generator	Gasoline	2,200	\$1,079	55 lbs.	CO Sensor
EGO	Power+ PST3042	Inverter	EGO Batteries	2,000	\$549 (tool)	30 lbs.	Multiple Ports
CHAMPION	2400 Dual Fuel	Generator	Gas or Propane	1,800	\$575	50 lbs.	Dual Fuel
GOALZERO	Yeti 1500X	Inverter	Internal Batteries	1,500	\$2,000	45 lbs.	See "Tested"

BOTTOM PHOTOS VIA AMAZON AND GENERAC



SIDE-MOUNT GARAGE DOOR OPENERS

When we built our Getaway vacation home for the September 2021 issue, we used a roll-up garage door in lieu of a sliding door to the deck. But we didn't want a traditional overhead opener track in our kitchen and living space, so we used a jackshaft opener (also called wall-mount or side-mount) that sits discreetly to the side of the door. Now, almost everyone on staff wants a similar opener at home. And why not? Our garage door on the loading dock at the workshop has one. But is a jackshaft opener right for your garage?

Surprisingly small and quiet, a jackshaft opener connects directly to the torsion bar above a garage door. No long chain or belt is needed, eliminating much of the noise you get with an overhead-mount opener. The side-mount opener also has no need for a trolley or track system running across the garage ceiling. That can be the biggest benefit of all, especially for a garage with a cathedral ceiling or otherwise high ceiling.

To install a jackshaft opener, you need at least 8 in. of wall space on one side of your garage door and 4 in. above the torsion bar; that's not a problem for most homeowners. To purchase one of these openers, you'll need about an extra \$150 compared to a standard overhead door. You decide if that additional expense is worth it, but consider lower maintenance as well. You'll also need a three-prong electrical outlet near the opener.

Jackshaft openers can feature all the niceties of newer overhead openers, including battery backup, Wi-Fi connectivity for smartphone use, safety reversal systems, emergency cord disengagement, LED lighting and more, depending on the manufacturer and model.

At our Getaway home, we installed a Genie 6170 Wall Mount opener. It uses a 24V DC motor and checks all the boxes we look for in an opener: smart connectivity, LED lighting, security features, wireless wall remote and a battery backup system.



BENEFITS OF A JACKSHAFT OPENER

- **THEY'RE QUIET.** *Jackshafts have fewer moving parts than an overhead opener.*
- **DIY FRIENDLY.** *Jackshafts are easier to DIY than an overhead operator.*
- **CEILING SPACE.** *If your garage has a high ceiling, you can use that space for storage.*
- **LOW MAINTENANCE.** *With fewer moving parts and no chain or belt, a side-mount opener is cleaner and requires less regular care.* 



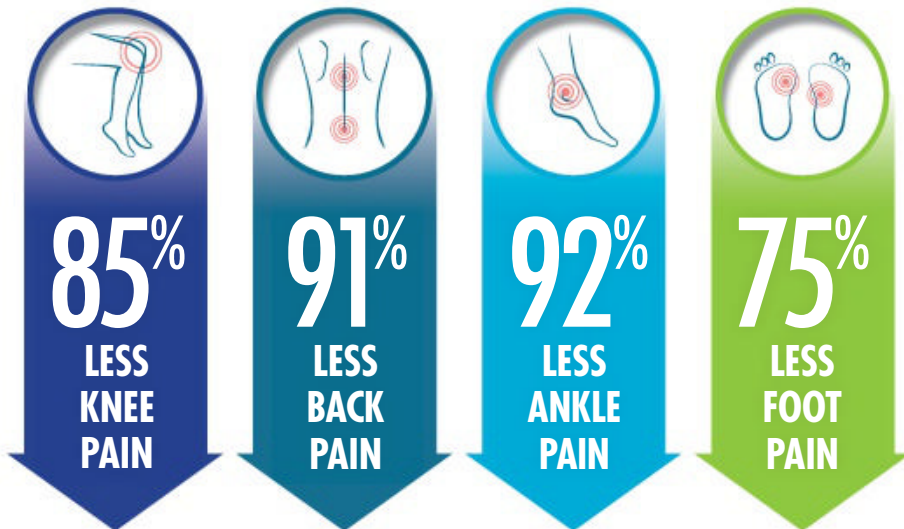
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STUCCO-LOOK WALL

Just frame it, sheathe it and add paint-ready panels.

P. 32

VERTICAL PANELS

We added composite decking panels to accent the boardwalk.

P. 43

GABION WALL

Stone-filled steel baskets—easy to build!

P. 28

BUILT-IN BENCHES

This attractive, durable seating can handle any weather.

P. 34



**SCAN THIS CODE
SEE A VIDEO
OF HOW WE
TRANSFORMED
THIS BACKYARD!**

BACKYARD LIVING

We knew we wanted to create a backyard living room, a spot where you could put up your feet and enjoy the company of family and friends around a fire.

Because we were stuck in the Midwest in late winter, we decided to take the project on the road—all the way to Santa Fe.

Your backyard may not look like this one, but you can adapt these stylish, low-maintenance options to suit any yard. Build one or all, and then sit back and relax, knowing there's little to no upkeep ahead.



BEFORE

We started with a walled, but undeveloped, backyard.

FIRE ON THE ROCKS

Relax in the glow of your backyard fire pit.

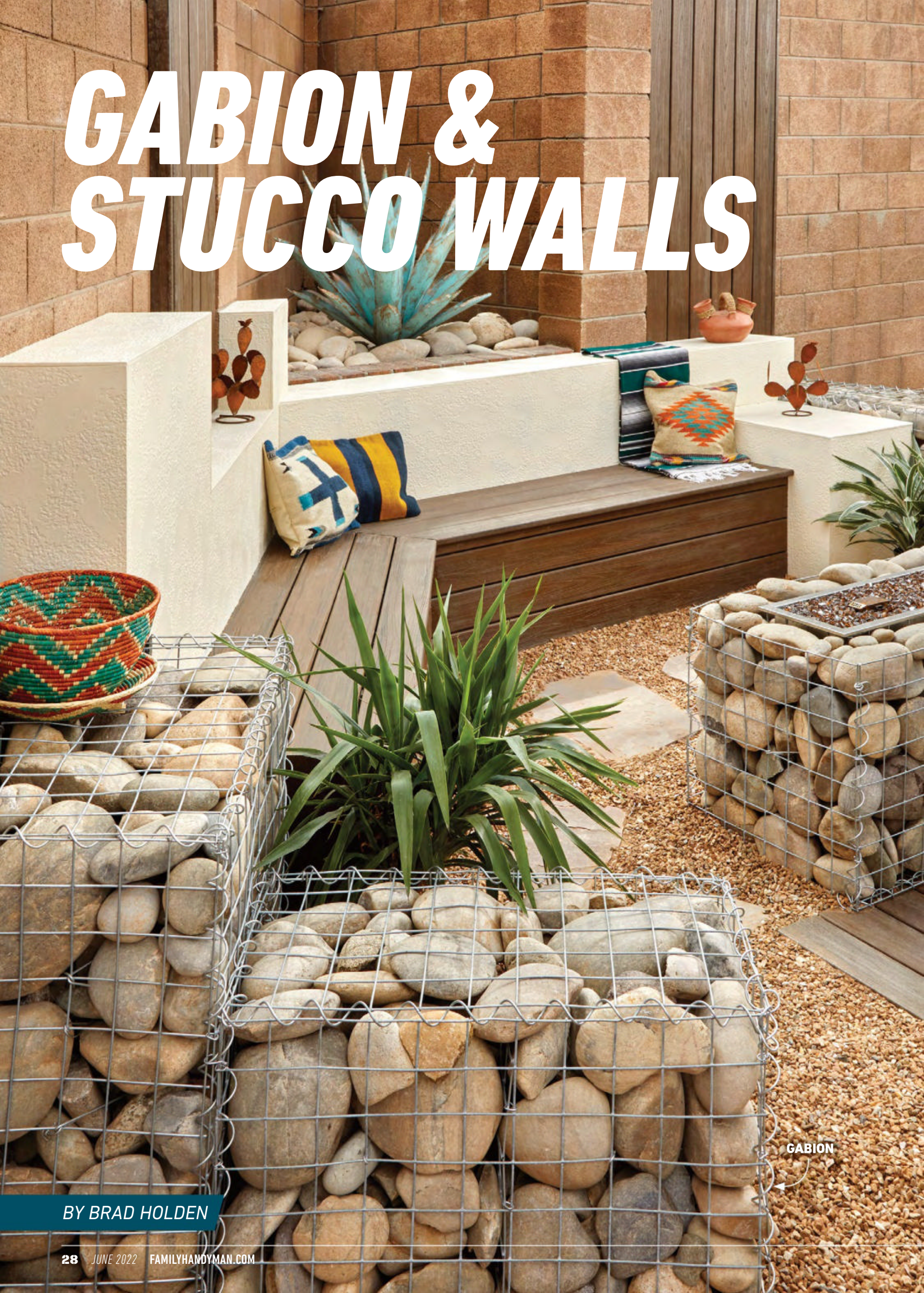
P. 44

COMPOSITE DECKING BOARDWALK

A path that's no-maintenance? We're on it!

P. 40

GABION & STUCCO WALLS



GABION

BY BRAD HOLDEN

EASY STYLES YOU CAN BUILD YOURSELF

You can add beautiful stone and stucco-look walls to your patio without being a skilled mason. Gabion baskets provide the structural support for stacking any type of stone. These steel baskets can be used as retaining walls, landscaping structure or decorative elements. James Hardie Architectural Panels over simple framing make quick work of adding the look of stucco.



WHAT IT TAKES

TIME	COST	SKILL LEVEL
4-5 days	\$250 per gabion*	Beginner

TOOLS

Pickaxe, shovel, level, rake, tamper, drill/driver, straightedge, tin snips, putty knife, ZIP tape roller, angle grinder with metal-cutting blade(s), circular saw with blade (for Hardie panels)

*\$55 per Hardie panel, \$55 per sheet of ZIP System sheathing



1

GABION BASKETS

1 PLOT GABION LOCATIONS

This step is important if you are setting several baskets in a line. You'll set stakes and masonry string to keep everything straight. We used single baskets in this installation, so alignment wasn't an issue.

2 ESTABLISH YOUR FOOTING

Level the area where your baskets will sit to keep the baskets from leaning. If you're placing the baskets on soft soil or clay, you'll need to dig down about 1 ft. and add a gravel base, or footing, to prevent the baskets from sinking. Our site in New Mexico was firm, so it needed only leveling and tamping.



TAMPER



3

3 ASSEMBLE THE BASKETS

Your gabion baskets may come partially assembled, with the sides already connected to the basket bottoms. You fold up the sides and secure them with special wire or easy-to-use spiral binders. Close the top to ensure the basket is level, but don't secure the top in place yet.



SPIRAL BINDER

4 FILL THE BASKETS

With your basket level and in place, add the center stretcher to keep the sides from bulging. There's more to filling a basket than just dumping in rocks. You'll want to "face" the basket, using the best-looking stones on the visible faces and filling in the center with smaller and/or less attractive stones. As you build up the faces, use the interior fill stones to support the face stones.



CENTER STRETCHER

4

5 CAP THE BASKETS

When you've filled the basket level with stones, set the top in place and fasten it using wire or the spiral binders. Crimp these tight at the corners and file or grind off sharp edges.



SPIRAL BINDER

5



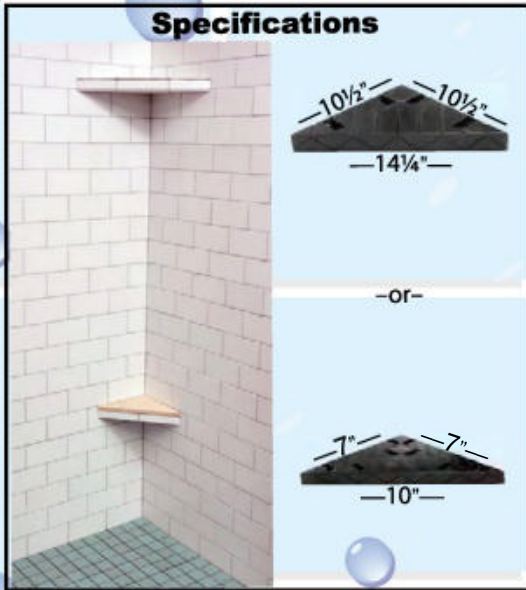
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Specifications



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STUCCO-LOOK WALLS

1 BUILD THE FRAMING

Assemble the wall framing to your specifications, using standard stud-wall construction to form rigid boxes. These are exterior installations; use either treated dimensional lumber or steel studs for the framing.

2 WRAP SHEATHING EDGES

You'll need sheathing that will hold up to the elements; we used ZIP System sheathing panels. The bottom edges of this sheathing will contact the ground, and the panels could wick moisture and swell. To prevent that, wrap the bottom edges of each panel with ZIP tape or another adhesive-backed moisture barrier after you cut the parts to size.

MATERIALS LIST

ITEM	QTY.
Gabions	4
Rocks	2 cu. yds.
2x4s	50
4' x 8' ZIP sheathing	8 sheets
ZIP tape	
4' x 8' Hardie Panels	10 sheets
Screws	

3 ATTACH THE SHEATHING

Fasten the sheathing using construction screws. Then tape all the seams—including corners—with ZIP tape. Be careful not to sink fasteners more than halfway through the thickness of the sheathing.

4 ATTACH THE HARDIE PANELS

With your box frames built and sheathed, cut your Hardie panels to fit. Attach the panel parts using approved fasteners, such as ring-shank nails. Fill any nail holes with an exterior putty. The manufacturer stipulates that the edges of Hardie panels need to be 6 in. above grade or 1 in. above hardscape. Because this isn't a dwelling, we were comfortable voiding the product warranty to get the look we wanted.

5 PAINT THE BOXES

These Hardie panels come primed and ready for paint. The only prep you'll need to do is to fill any nail holes and seams and give any sharp edges a slight round-over with a sanding block. Apply an exterior paint using a brush or 1/2-in. nap roller. 





BUILT-IN BENCHES

MAINTENANCE-FREE SEATING
FROM COMPOSITE DECKING

We all want to sit back and enjoy

the best weather in our backyards. That's why we chose to build this custom-fit bench with composite decking. No need to spend precious summer hours keeping up with its appearance—there will be no sanding, restaining, or replacing warped or splintered wood.

We built our bench to fit against an angled wall and between two gabion walls, but you can modify the plans to fit your own space. We designed the bench to have waterfall sides to hide the cut ends, but you could change this detail to simplify it further.

The bench can be built in just a couple of days, and the composite decking has the beautiful look of hardwood—without the hassles.

WHAT IT TAKES

TIME	COST	SKILL LEVEL
2 days	\$1,000	Beginner

TOOLS
Circular saw or miter saw, drill/driver, hidden fastener installation tool (recommended)

BY MIKE BERNER



TO SEE HOW
TO BUILD THESE
WALLS, SEE
PP. 32-33

2" GAP

1 LAY OUT YOUR BENCH WITH 2x4s

To determine where to place your bench and its approximate size, lay out 2x4s to outline the base. This will give you a good visual for the bench's placement and length. We left a 2-in. space between the framing and the abutting walls to allow room for decking and to make installation easier.

2 MARK THE PLATES

The top and bottom of the bench are identical, and each is built just like a very short wall. We started by marking the stretcher locations on the plates. With the plates cut to length (and miter angles cut), flush the end and mark stretcher locations 12 in. on-center with a Speed square. Repeat this for all four pairs.



12" ON-CENTER

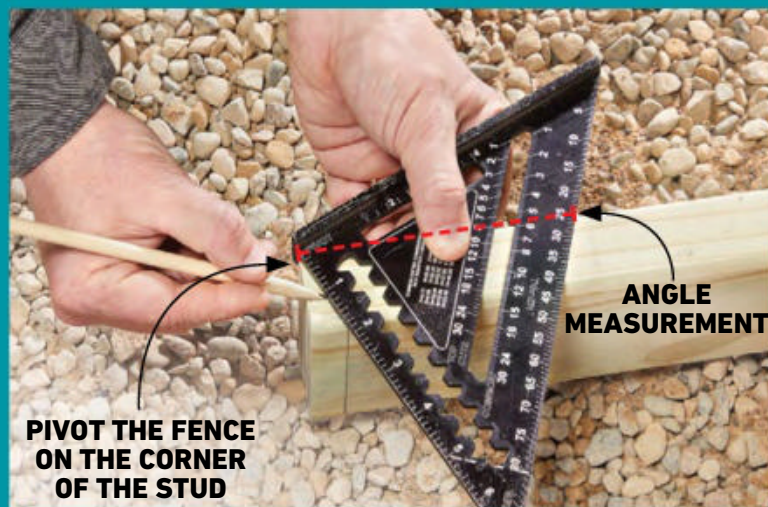
PLATES FLUSH AT THE END

HOW TO DETERMINE AN ODD MITER ANGLE



FIND THE INTERSECTION

Stack the 2x4s so their corners fit into the angled wall. With the boards pressed against the walls, hook the fence of a Speed square under the bottom board and slide it toward the corner until it contacts the adjacent board. Then trace a line on both faces.



PIVOT THE FENCE ON THE CORNER OF THE STUD

ANGLE MEASUREMENT

CONNECT THE DOTS

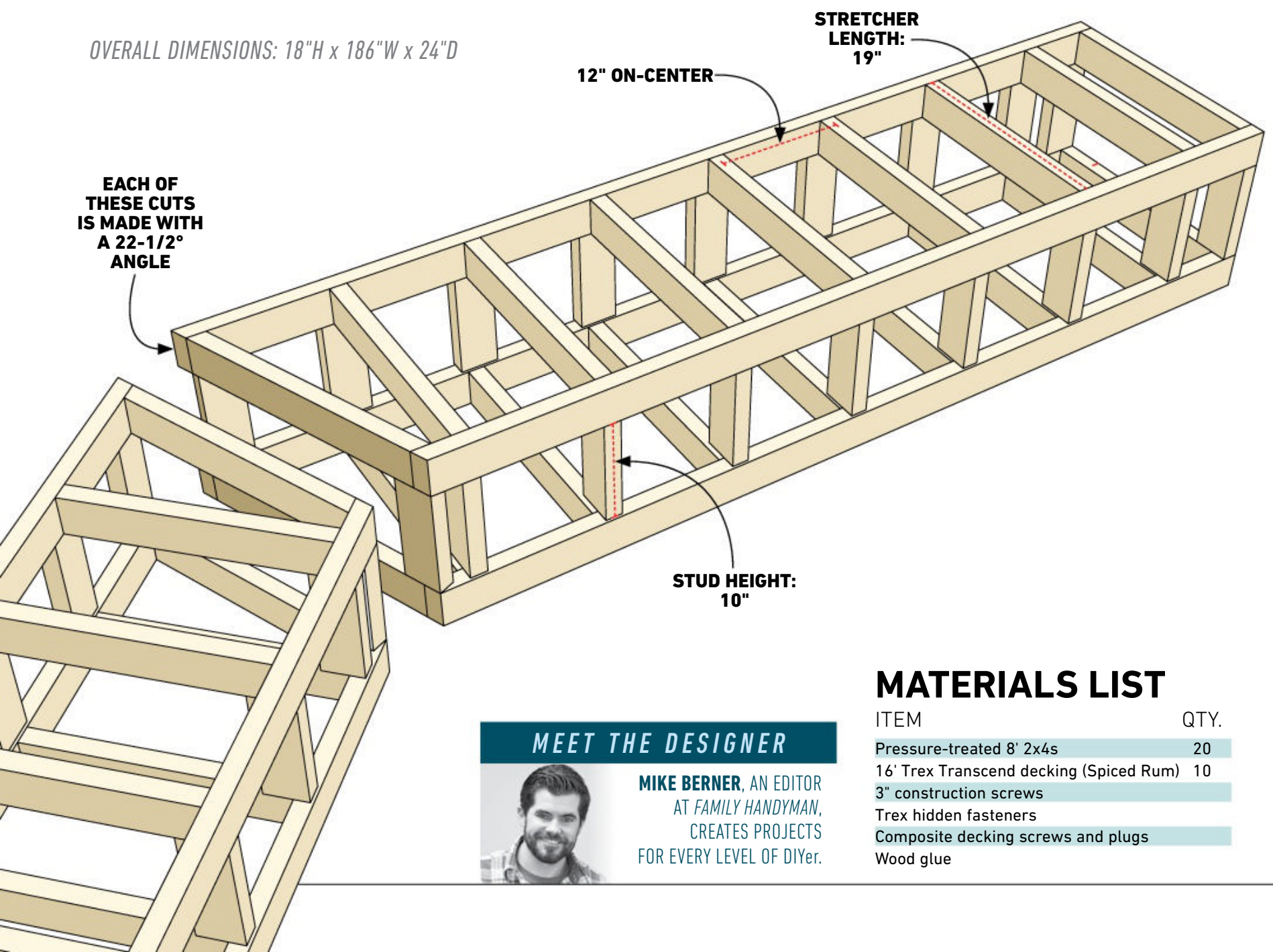
Remove one of the 2x4s from the corner and align the square's fence with the corner that was against the wall. Pivot the fence until the opposite edge of the square lines up with the mark, and then trace a line. The square works like a protractor to give you the angle measurement.



3 BUILD THE BASE AND TOP
Space the two plates apart and nail or screw the stretchers through the plates. With our angled bench design, we built two matching pairs and then placed them against the corner to make sure they fit. If the miter is tight when the two sides are against the wall, cutting the deck boards to fit will be much easier.

FIGURE A ANGLED OUTDOOR BENCH

OVERALL DIMENSIONS: 18"H x 186"W x 24"D



MATERIALS LIST

ITEM	QTY.
Pressure-treated 8' 2x4s	20
16' Trex Transcend decking (Spiced Rum)	10
3" construction screws	
Trex hidden fasteners	
Composite decking screws and plugs	
Wood glue	

MEET THE DESIGNER



MIKE BERNER, AN EDITOR
AT *FAMILY HANDYMAN*,
CREATES PROJECTS
FOR EVERY LEVEL OF DIYer.



4 ATTACH THE STUDS

Place one of the top sections on a work surface, and then align the studs with the stretchers and flush with the edge. Toe-screw each stud into the top/bottom with 3-in. construction screws. Once the studs are attached to the top, align the bottom with the studs and toe-screw the bottom to the studs. When the section is flipped upright, all the screws will face upward, preventing water from entering and rotting the wood.

5 MITER-FOLD THE END

For this bench, we wanted to avoid three things: a picture frame design; ugly cut ends; and gaps at a mitered edge, which would collect debris over time. We decided to try a folded-miter technique to create a waterfall look on the sides. We traced a line 17-3/4 in. from the end of the decking and lined up the point of a large 2-in. V-groove bit with the line.

With several passes, cutting with a Speed square guide, we made a deep groove on the underside of the board, leaving just under 1/8 in. of thickness at the deepest part of the groove. You can also achieve this with a circular saw with two precise, opposing 45-degree bevel cuts.

6 HEAT UP AND FOLD THE CORNER

Hold the board over the edge of the bench, and slowly heat the surface until it folds by itself. Don't overheat it; the cap of the decking will melt or break while folding. Once we got the board to bend, we applied wood glue and then installed the deck boards.





7 PROPER FASTENERS ARE THE KEY

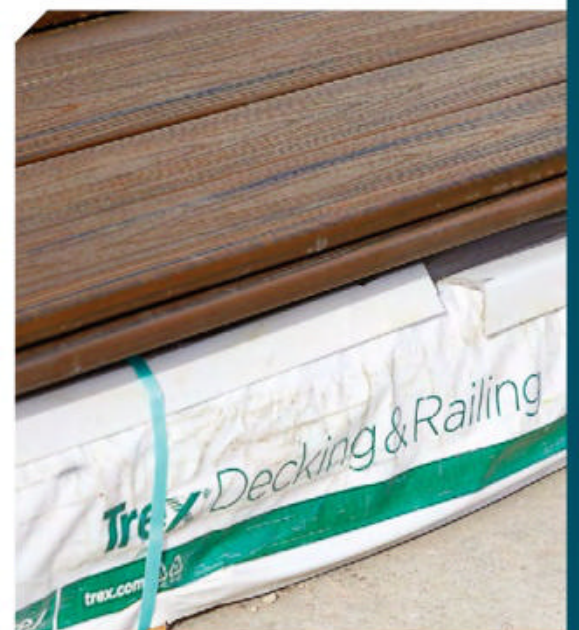
To clad the bench with decking, start with the top and fasten a solid-edge (no groove) board, having it overhang the front framing by 2 in. Solid-edge deck boards are fastened with composite screws and matching plugs through the faces of the boards. The next board is grooved and slides into a J-shaped clip fastened to the framing to maintain a 3/16-in. gap. The boards “in the field” are held down with T-shaped hidden fasteners.

8 TRIM THE ANGLE

We left the boards on the bench top long until the entire top was fastened. Then we set up a straight-edge and cut the boards flush with the framing using a circular saw.

9 FINISH THE FRONT

Once both sides of our bench were built, we dropped them into place, joined them with a few construction screws, then attached the deck boards on the front. We placed starter clips 1/4 in. from the bottom of the framing to fit the bottom course of decking and worked our way up the front.



WORRY-FREE CLADDING

To clad the bench, we chose the Transcend line of decking by Trex. It's a wood/plastic composite that doesn't have a scalloped bottom. The solid bottom makes it easy to secure composite fasteners through the face. It also allows us to achieve a small overhang along the edge of the decking. 



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BOARDWALK & WALL PANELS

HOW TO CREATE A WALKWAY
AND ACCENT WALLS, STEP BY STEP



WHAT IT TAKES

TIME	COST	SKILL LEVEL
3 days	\$3,500	Beginner

TOOLS

Circular saw/miter saw, drill/driver, hidden fastener installation tool (recommended), landscaping tools



**SCAN THIS CODE
GET MORE TIPS
AND SEE HOW
WE BUILT THIS
BACKYARD
BOARDWALK.**

BY MIKE BERNER

An inviting boardwalk and unique wall accent panels are the finishing touches to this backyard. The boardwalk provides an elegant path, and the accent walls tie it all together. Best of all, they're built with composite decking, which is easy to clean and will look good for years to come.

The boardwalk is a quick and easy build. The flexible composite decking will follow slight contours in your yard and can span roots and rocks that would otherwise require excavation. You may have to do a little digging to make the boardwalk flush with the ground and create a seamless walkway through your yard.

The walls surrounding this backyard were bland, so to liven them up and match the rest of the new space, we used extra deck boards to outline the new seating area. These two projects take just a few days to build, but they can have a big impact.



Lead friends and family into your backyard with a simple, beautiful, maintenance-free boardwalk.

1 PREP THE GROUND

To build the boardwalk at ground level, dig a trench along the path. We needed to fill our trench with drainage rock to keep the pressure-treated lumber dry, so we dug out 6 in. of soil to fit a 2-in. layer of rock topped with our 2x4 frames. Tamping the area before and after laying the rock gave us a solid foundation.

MATERIALS LIST

ITEM	QTY.
16' pressure-treated 2x4s	16
16' composite decking boards	30
3" No. 10 construction screws	
Hidden fasteners	
Deck joist tape	
Drainage rock	



MEET THE DESIGNER



MIKE BERNER, AN EDITOR AT *FAMILY HANDYMAN*, LOVES A GOOD DESIGN CHALLENGE.

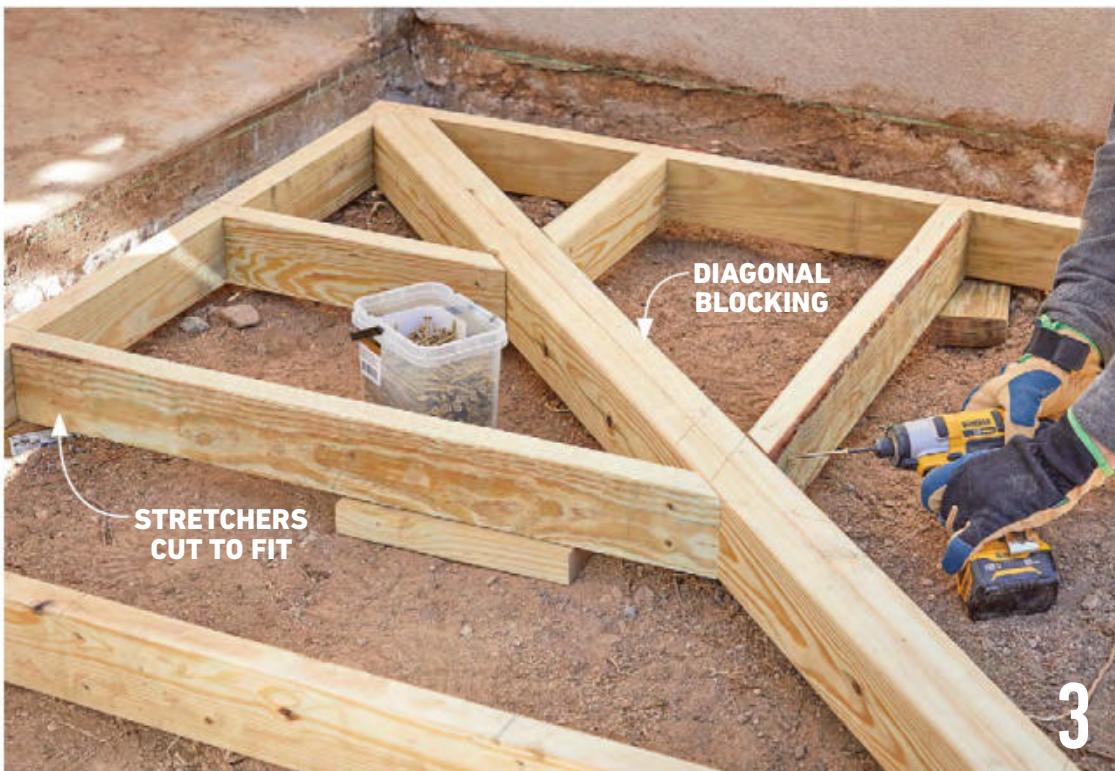


2 BUILD THE BOARDWALK FRAMES

The frames of the boardwalk are simple boxes made from pressure-treated 2x4s. Place two long 2x4s along the edge of the boardwalk to determine their length. Then fasten the stretchers between them 12 in. on-center with construction screws.

3 ADD BLOCKING AT THE MITERS

To turn the boardwalk with a miter, as shown in our design, both ends of the mitered boards need to be supported and fastened. We added two 2x4 stretchers at a 45-degree angle from the corners and cut stretchers to fit.

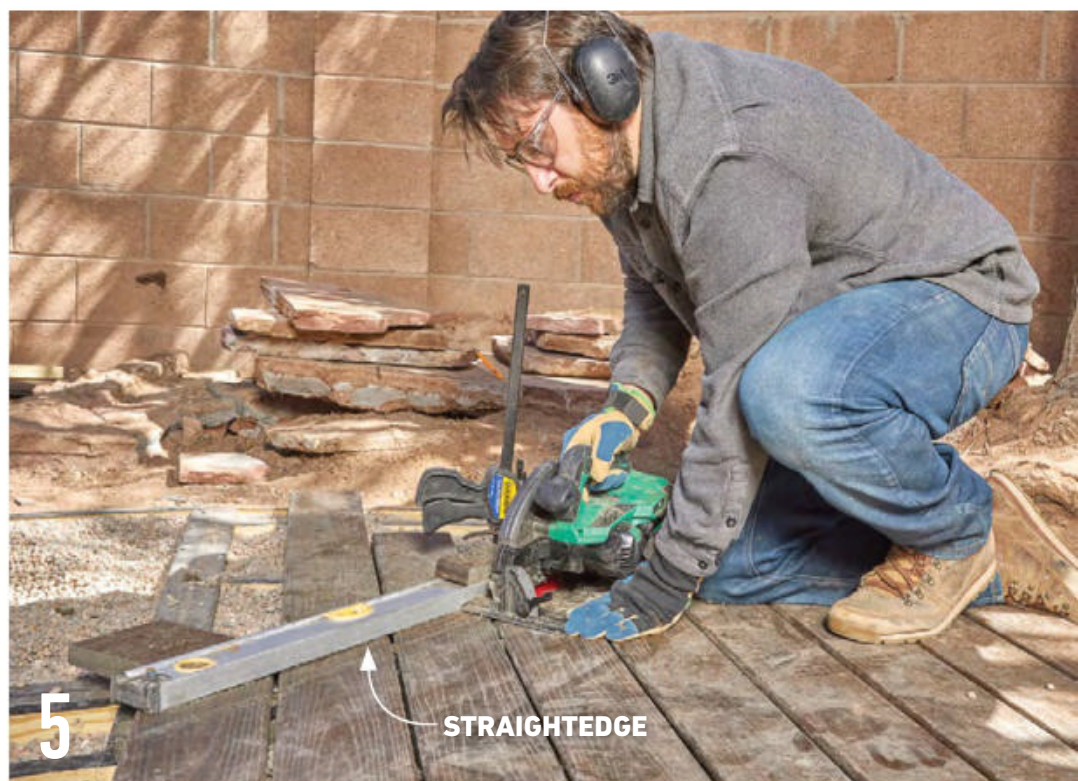
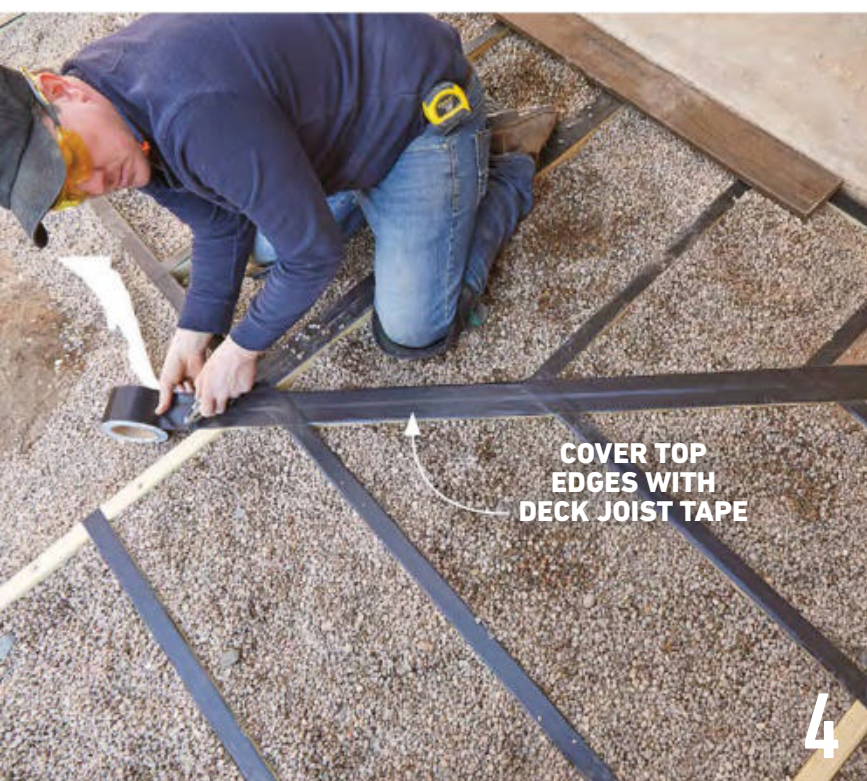


4 PROTECT THE WOOD FRAME

To further protect the framing members, I used Trex Protect, a butyl tape that comes in convenient widths (1-5/8 in. and 3-1/8 in.) to fit on the edges of 2-by lumber. The tape can be applied to vertical and horizontal surfaces, making it perfect for these projects.

5 LET THE DECK BOARDS RUN LONG

Running the deck boards past the miter allows us to make one clean cut using a circular saw and a straightedge. Cut the same angle in the adjacent boards and repeat the process.



VERTICAL WALL PANELS



To tie the space together and to hide some of the plain block wall, we installed two wall panels.



1 FASTEN LEDGER BOARDS

The wall panels are attached to the block wall on 2x4 ledger boards. The 2x4s are cut about 2 in. short of the total width of the wall and installed with concrete anchors. Put the ledger in position and drill through it and into the block with a hammer drill outfitted with the correct-size bit. The hole should be deep enough to seat the anchor completely.

2 FASTEN DECK BOARDS

Fasten a solid-edge deck board vertically with composite screws and matching plugs, making sure it's plumb. Then attach the grooved deck boards with starter clips and hidden fasteners, and finish with a final solid-edge board on the end. 



FIRE ON THE ROCKS

////////////////////
A PROPANE FIRE PIT
YOU CAN BUILD IN
A WEEKEND

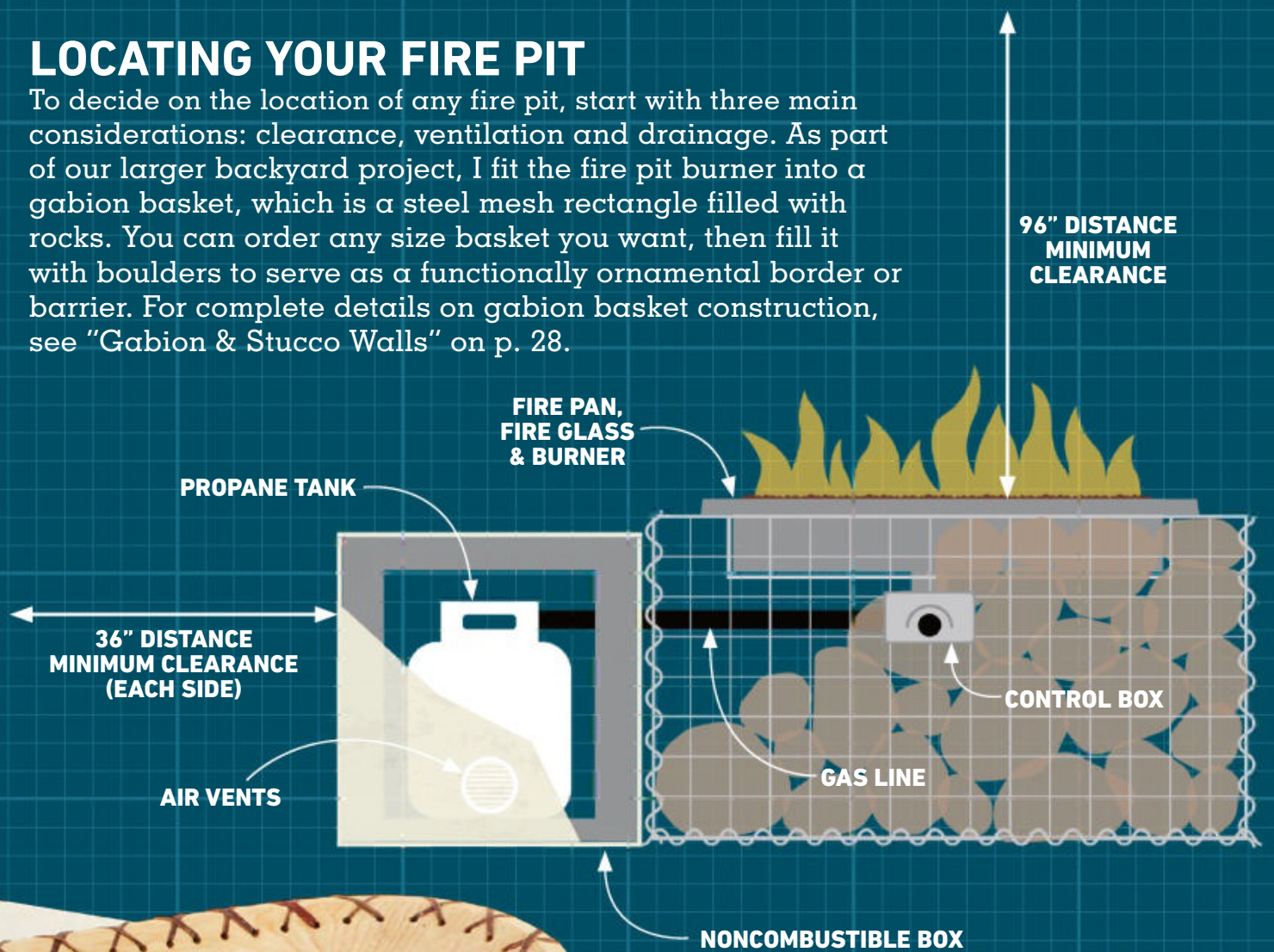
BY GLENN HANSEN

I use propane often at my house to cook on my gas grill. I'm careful with propane tanks, especially when transporting them, and I trust that the manufacturer of my grill considered my safety when designing this enclosure of gas and flames.

If you've replaced burner elements in a gas grill, you know it's a fairly simple appliance. A 20-lb. propane tank feeds burner tubes made of steel, brass or even ceramic or porcelain through a thermo-plastic hose with a pressure regulator. Those burner tubes are perforated with small holes or slits where gas exits to be burned. Fuel, delivery, ignition. A backyard fire pit is even simpler than your gas grill—there's no device to hold food over the flames—but you still need to consider safety with such a unit.

LOCATING YOUR FIRE PIT

To decide on the location of any fire pit, start with three main considerations: clearance, ventilation and drainage. As part of our larger backyard project, I fit the fire pit burner into a gabion basket, which is a steel mesh rectangle filled with rocks. You can order any size basket you want, then fill it with boulders to serve as a functionally ornamental border or barrier. For complete details on gabion basket construction, see "Gabion & Stucco Walls" on p. 28.



WHAT IT TAKES

TIME	COST	SKILL LEVEL
1 weekend	\$1,000	Intermediate

TOOLS

Table saw, hole saw, caulk gun, drill/driver, hand tools, tin snips

MATERIALS

Metal studs, boulders, gabion baskets, treated lumber 2x4s, fiber cement panels, 1/2-in. cement board, fire pit components, vent covers

IS THIS DIY-ABLE?

I look at most projects and ask, "Can I do this myself?" (I like to answer, "Of course," and my wife then says, "Really?") So I looked at fire pit kits, then asked and answered, "Of course." But just because you *can* DIY something doesn't mean you *should*.

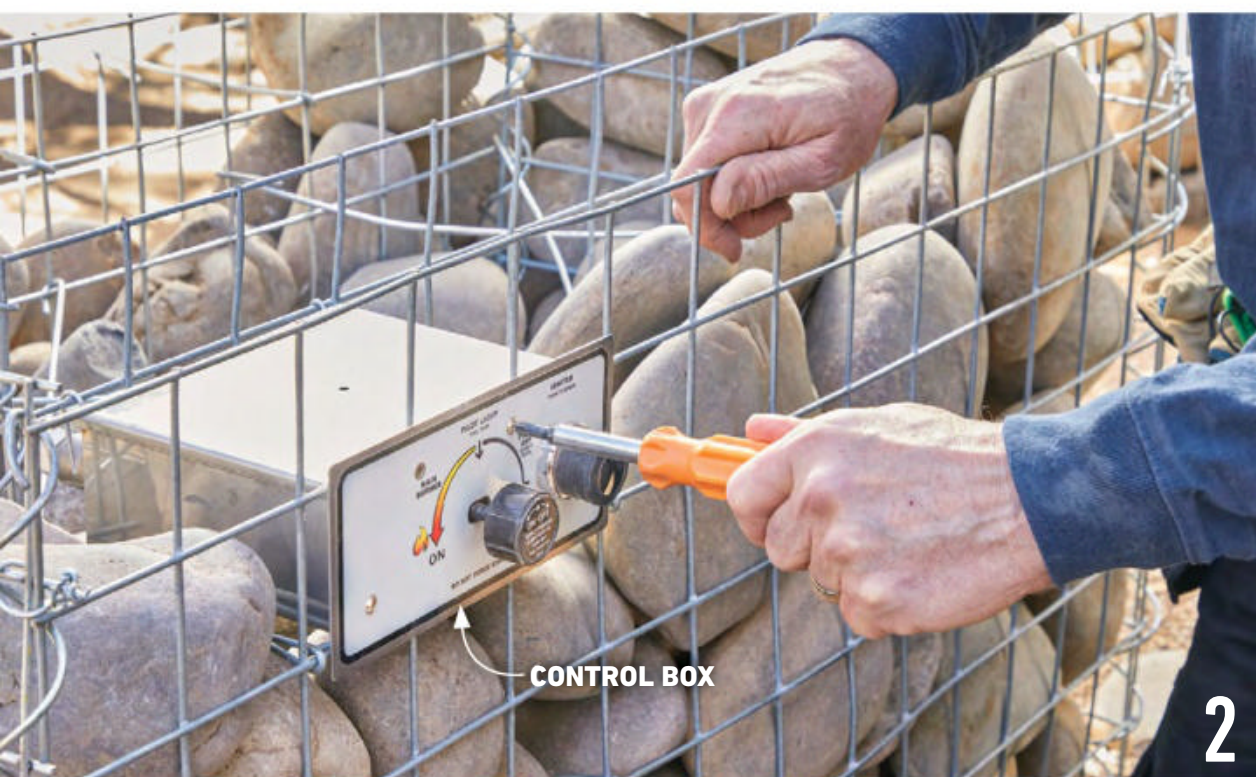
My original plan involved making my own fire burner pipes from either black steel or stainless steel pipe. I thought I'd then buy all the necessary connections, drill holes, assemble it and light the fire. I wanted the freedom to create a shape and size for my pit. And I hoped to test the different pipe types to see which would look better. But the more I discussed this with coworkers, the worse the idea sounded. We're talking about gas and fire here. While many "experts" have shared similar projects online, we want to be more careful. Follow along as I build a propane-fueled fire pit and show you how to do it safely.



INNER
GABION
BASKET

1 FILL THE BASKETS

Inside a larger rectangular gabion basket, I placed a 30 x 10-in. basket that would support my fire pit pan-and-burner combo. I filled the larger outer basket with rocks, and then I filled the inner basket about halfway, adding just enough rocks to help hold its shape. The boulders in this fire pit are large enough to allow air spaces around all sides. And it's all noncombustible.

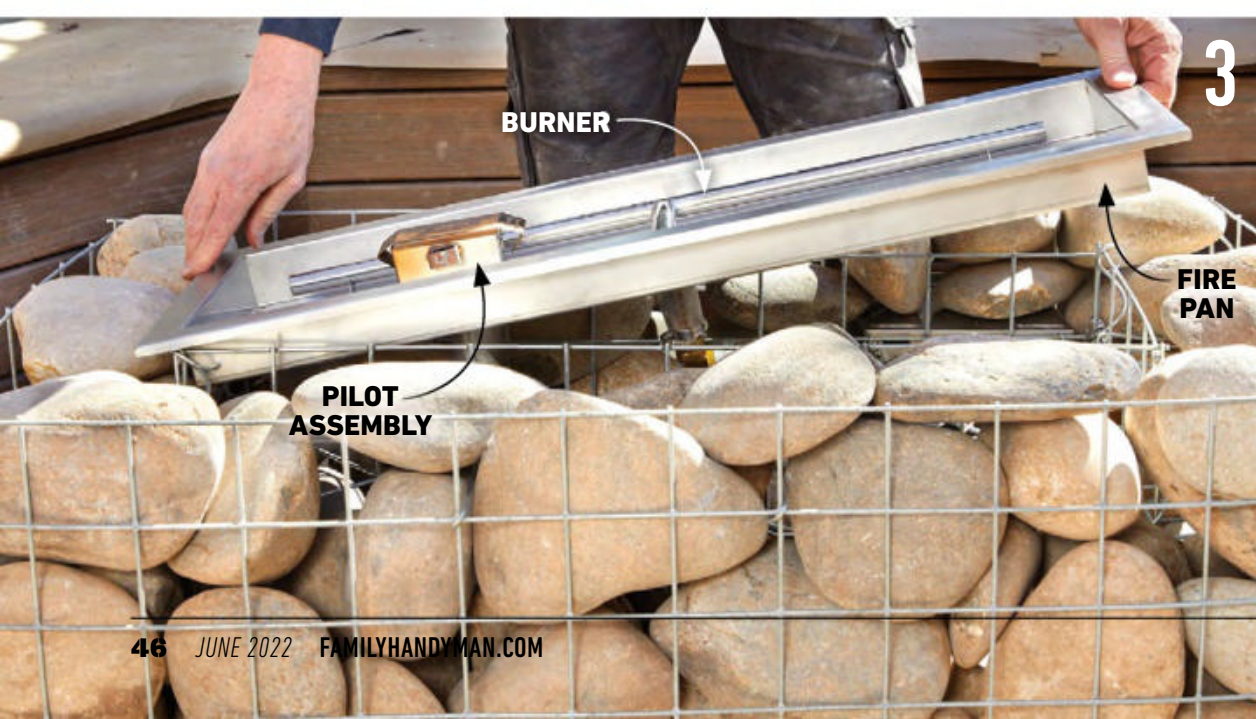


CONTROL BOX

2 SECURE THE CONTROLS

The fire pit control box fit neatly after a simple modification to the gabion basket. I cut away a couple of metal pieces to fit the wide box, then I added metal struts below and above the control box to hold it securely in place and to support one layer of rocks above it. This box includes gas flow control, a pilot switch, on/off control and a battery-operated igniter button.

I purchased this UL-listed device separate from my fire pit burner, but the control box included the igniter element that mounts alongside the burner in the fire pit pan. It's the most expensive part of this whole fire pit, and it's worth it. Find one online or from a local fireplace store, then follow the instructions to connect the propane line and the gas out to the fire pit. I used PTFE gas-ready thread tape on all connections and tested them all with a leak detector spray before use.



BURNER

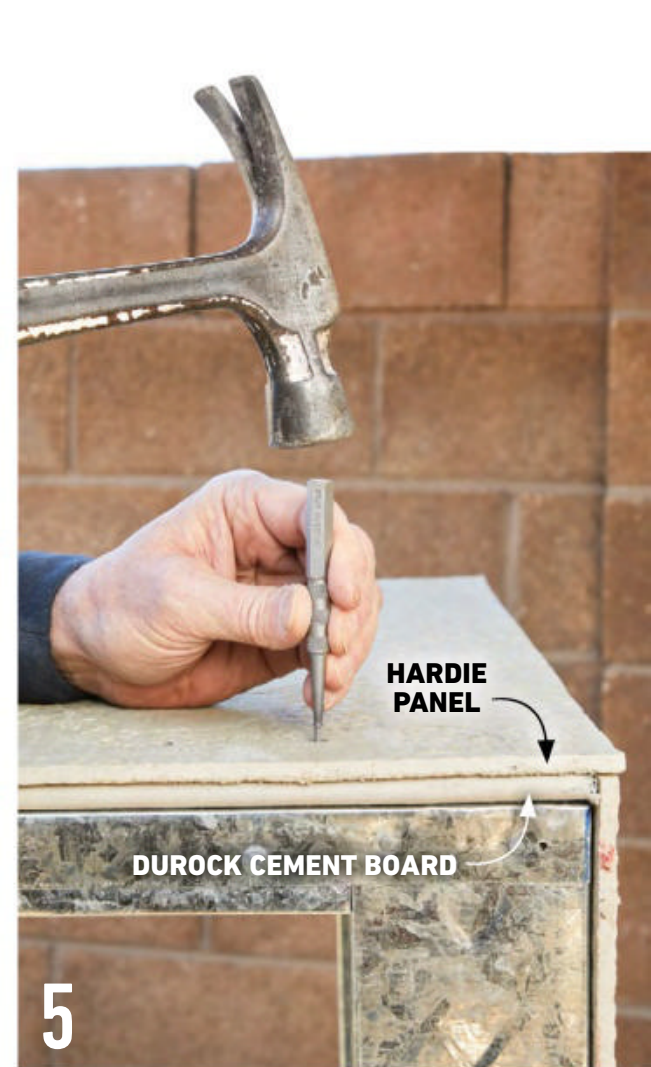
PILOT
ASSEMBLY

FIRE
PAN

3 DROP IN THE PAN

Fire pit burners and pans come in all shapes and sizes. So do gabion baskets. I started with a 30 x 10-in. fire pit pan and ordered a gabion basket of the same size—a perfect fit. Make sure your burner pan has weep holes to let water escape.

NOTE: You can use natural gas for this fire pit. If you go that route, you'll need to hire a licensed pro to run the gas line.



4 FRAME THE BOX

To enclose the propane tank and its gas hose, I built a noncombustible box to sit adjacent to the gabion box. I wrapped pressure-treated 2x4s inside metal studs and nailed the structure together.

5 FINISH THE BOX

To cover the box, I chose fiber cement siding, aka "Hardie Panel," using the same material Brad used for his project on p. 28. These sturdy panels are normally used as siding for houses. Because I wanted the top of this box to be even stronger, I first layered 1/2-in. Durock cement board there. Then I covered that and the rest of the box with the 1/3-in.-thick Hardie panels. I nailed the panels on, setting each nail just below the surface, then caulked all the holes and joints before painting.

6 ADD AIR VENTS

I added two 5-in.-diameter air vents to the enclosure, even though I left the back of the box open on the fire pit side. It's vital to keep good airflow around that propane tank. Drilling the vent holes is slow going—you can count on burning through a hole saw—and you need a proper respirator mask when you cut or drill the fiber cement board.

MEET THE BUILDER

GLENN HANSEN, DEPUTY EDITOR, THINKS HE CAN DIY LOTS OF THINGS, AND HE ALWAYS MEASURES TWICE.





7 INSTALL A DOOR

You could skip the vents and forgo the door on your box, but I like having the door in place. I built a simple doorframe using square aluminum tubing, sized to nest inside the door opening. Add a couple of hinges, a door latch or a heavy magnetic closure, and a handle.

8 POUR IN THE GLASS

I purchased fire glass to surround my fire burner pipes; lava rocks work too. Whatever you choose, just make sure it's tempered to withstand the fire. Regular glass would smoke, melt or even explode. I chose reflective fire glass (instead of nonreflective) because it acts like many tiny mirrors to enhance the look of the fire. Fill the pan with enough glass or rocks just to cover the burner holes. Especially when you use propane, too much fire glass can trap the gas and be dangerous upon ignition.



SAFETY & MAINTENANCE

- Follow the manufacturer's operating instructions for any fire pit components you purchase.
- Establish a kid-free zone and maintain adult supervision while children are near the fire.
- Insects and rodents could nest in your fire pit or near the propane tank enclosure. Check before using.
- Clean the fire glass periodically with a vinegar-and-water mix. 

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BY JAY CORK

MEET THE BUILDER



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INDOORS AND OUT.

WHAT IT TAKES

TIME	COST	SKILL LEVEL
4 days	\$2,300	Intermediate

TOOLS

Miter saw, circular saw, drill/
driver, basic carpentry tools

BACKYARD: GMC3101/GETTY IMAGES



Some centers and garden centers alike offer an array of prefabricated outdoor kitchen kits. But they can be expensive, and they're not designed to fit your unique space. I'll show you how to design and make an outdoor kitchen using modular elements that fit your space—and your taste—while saving a ton of money.



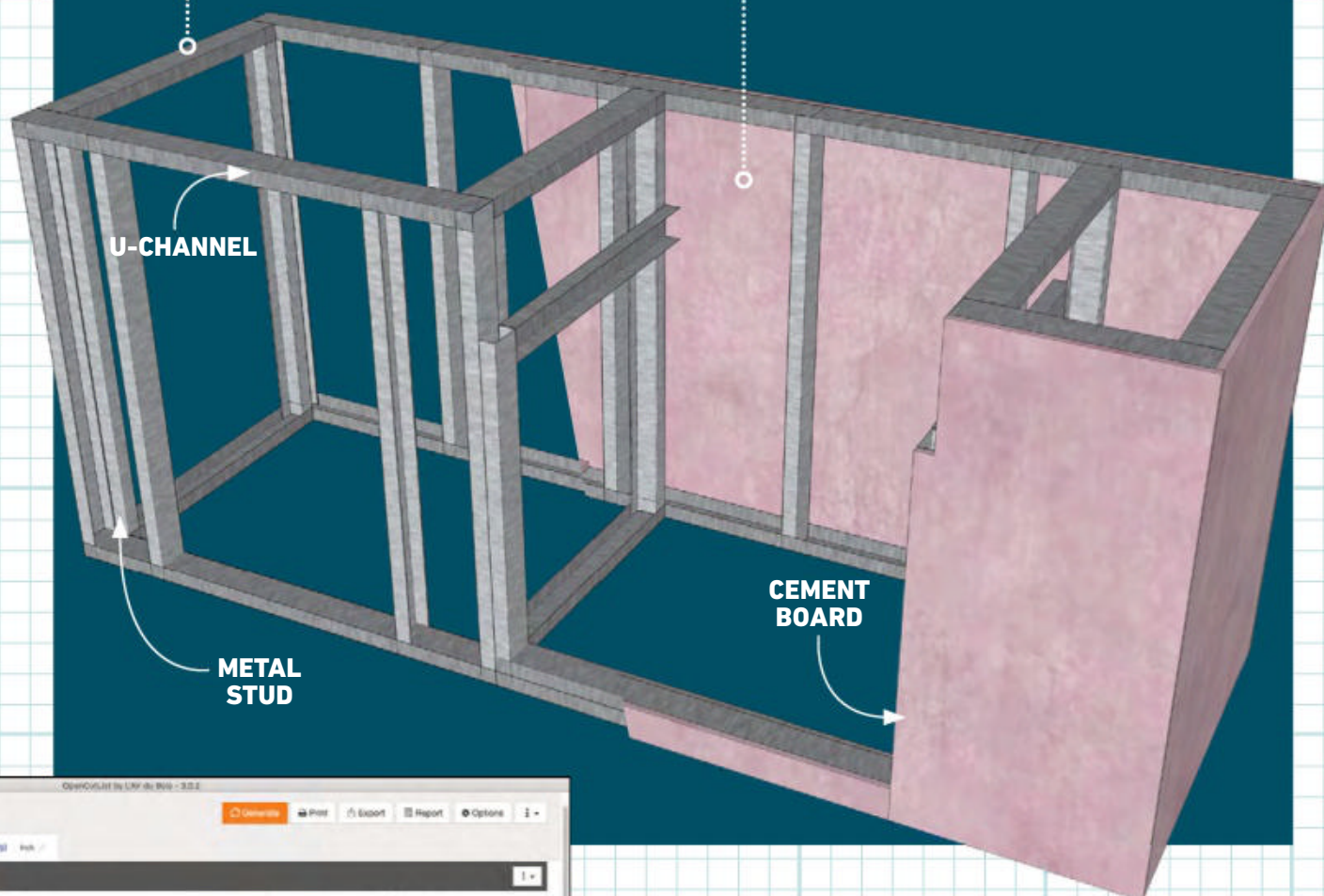
**SCAN THIS CODE
WATCH A VIDEO
OF THE BUILD!**

DESIGN, THE EASY WAY

Whether I'm designing a simple jig or an entire kitchen, I always lay out my designs in SketchUp first. This free 3D modeling program is easy to learn and an essential part of my tool kit.

First, I transferred all my measurements into SketchUp. My next step was to create the skeleton of the island; I modeled the steel studs and U-channels, then created the frame.

Next, I created a shell over the frame, representing the cement board, to determine my surface area requirements. This gave me the total square footage for both the cement board and tile.



MAKE A CUTTING LIST

I use an extension in SketchUp that generates a cutting list for me. It labels each part with a key letter and calls out quantity, and you can use it to forecast the project's material costs. If you're using SketchUp, go to the extensions warehouse and search for Cutlist Pro—you'll get accurate cutting lists quickly.

Type	Material / Thickness	Quantity	Length	Area	Volume
Metal Stud	2.500" x 1.250"	22	64.458'	-	1.399 TP
Metal U-Channel	2.561" x 1.250"	17	49.841'	-	1.108 TP

No.	Designation	Qty	Finished L
Stud - Full ...		20	35.950'
Stud - Cripple ...		2	27.250'

No.	Designation	Qty	Finished L
U-Channel A ...		3	64.050'
U-Channel C		1	37.900'
U-Channel D		1	31.300'
U-Channel E ...		2	24.072'
U-Channel G ...		8	24.039'
U-Channel I		1	21.462'

TIPS ON BUILDING



Always wear full protective gear when cutting steel: gloves, face and eye protection, and earplugs.

1 CUTTING METAL STUDS

Metal studs and U-channels are readily available, easy to work with and inexpensive. This is a perfect combination for building an outdoor kitchen from scratch. Unlike wood frames, metal studs create a light frame that's easy to move around, and it's also fireproof. When you cut metal studs, use a metal-cutting blade and appropriate PPE. I used self-tapping metal screws with low-profile heads to assemble the frame.

2 FRAME WITH METAL STUDS

Assembling metal studs and U-channels is easy with the right screws. I used 1/2-in. self-tapping stainless steel screws. A jig helped me keep the parts square to each other, and I used locking pliers with a flat jaw face to keep the two layers of steel together as the screws were driven through.

3 INSTALL ELECTRICAL CONDUIT

Once the frame is built, it's time to run the utilities. Both the refrigerator and grill need electricity, so I hid that receptacle inside the island. If you want to install outlets on the exterior, use outdoor-rated outlet boxes.



4 USE FIBER CEMENT BACKER BOARD

Using 1-in. self-tapping screws, attach the backer board to the steel frame. I used water-proof cement Hardie Backer Board (\$25 for a 3 x 5-ft. sheet). You can cut this material easily on your circular saw with a fiber cement blade, but you'll make a ton of unhealthy dust—wear a respirator! For a dust-free method, score it on both sides with a utility knife and snap it. This eats up blades but saves your lungs.

5 CHOOSE DURABLE CLADDING

Woods such as cedar are well suited for outdoor use but still require maintenance. To keep this island fireproof, I chose tile that emulates weathered wood grain. Installation was a bit more work, but the tile is maintenance free and will last a lifetime.

6 INSTALL VENTS

When you enclose gas—whether an LP tank or a natural gas line—in any structure, you need proper venting to avoid a dangerous buildup of gas fumes. I cut two vent holes on each end of the island and installed vent louvers with stainless steel screws.

Learn from my mistake: I forgot to cut the vent holes before tiling the exterior. Instead of getting nice, clean cuts with a tile saw, I had to use an angle grinder to cut through the tile, mortar and cement board all at once—talk about making more dusty work for myself!



DESIGNING YOUR OUTDOOR SPACE

TAKE MEASUREMENTS

Decide where your outdoor kitchen needs to be, and then grab a measuring tape, a notepad and a helper. When determining the size of your kitchen, give yourself enough room for entertaining too, not just cooking!

ELIMINATE MISTAKES

Whether or not you have SketchUp, making a cutting list and a materials list is an important exercise; it helps estimate costs and minimize mistakes.

TALK TO THE MANUFACTURER

When installing gas grills, mistakes can be costly. If you have any questions or concerns, call the manufacturer before you start your project.

CONSIDER YOUR PLUMBING AND ELECTRICAL NEEDS

If you think you may install a sink and dishwasher, or other appliances that require electricity or plumbing, talk to a pro to make sure everything is considered before you start building.

PROPANE OR NATURAL GAS?

If you're running natural gas, now is the time to get that line installed and ready to go. Check your local building codes to see if you need a licensed professional to run the gas line.

COUNTERTOP OPTIONS

■ **WOOD.** While beautiful, wood is probably the worst choice for outdoor countertops. It will require yearly upkeep—best to just avoid this one.

■ **CEMENT.** Making your own cement countertop is a ton of fun, but it's a heavyweight project. If done right, cement can produce a long-lasting, beautiful countertop. If done poorly, it can crack, crumble and deteriorate within a single season.

■ **NATURAL STONE.** Natural stone is by far the most durable and longest-lasting outdoor countertop choice, and this is what we chose. I thought I could find a stone countertop remnant and cut it myself, but the process isn't as DIY-friendly as I thought. It's risky and messy, and creates hazardous dust. Instead, I gave my SketchUp file to the artisans at StoneSourceUSA.com, picked out a beautiful piece of granite and had them cut it for me.

ELEMENTS TO CONSIDER

KEGERATOR

Some would call this a necessity, and maybe it is. Your guests may appreciate the readily available cold beer.

SIDE BURNER

Perfect for the rice or pasta pot.

GRILL

Available in two-, four- or six-burner configurations to fit any outdoor kitchen.

SINK

A sink increases the complexity of your build, but a sink nearby is much better than a garden hose.

FRIDGE

Keep those veggies fresh and close at hand.

STORAGE

Always needed, storage cabinets and drawers help keep your outdoor kitchen space neat and organized.

DISHWASHER

If you have plumbing for a sink, why not add a dishwasher? 



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EASY-CARE LAWNS

/////////
ATTRACTIVE ALTERNATIVES
TO TRADITIONAL TURF



BY LUKE MILLER

We have a cultural love of lawns in this country. It's "part of being a good neighbor and being someone who cares for your property," says Mary Meyer, PhD, professor emeritus and extension specialist for the University of Minnesota.

A lawn makes a great play area for children and dogs while keeping mud from being tracked into the house. It's invaluable for both sports and lawn games. And it's a nice way to visually frame a house and garden. But some homeowners are rethinking grass.

"Especially in the last 10 years, we see a lot more interest in the function of the lawn rather than

just aesthetic appearance," Meyer notes. "If we're not playing soccer on it or using it for recreational purposes, why are we putting so much time and effort into a lawn?"

The lion's share of that time and effort goes to mowing—perhaps a couple of times a week during peak seasons, but other things factor into lawn care. "If you want a pristine lawn, it takes a lot of

maintenance and a lot of input. It's the mower, fertilizer, irrigation, and maybe pest and weed control," says Meyer. "Those are a lot of environmental inputs; most of them are really negative."

Homeowners looking for more eco-friendly alternatives have plenty of options. Here are some that require less work, water and chemicals than traditional sod.

LEAD PHOTO: CONSTANTGARDENER/GETTY IMAGES



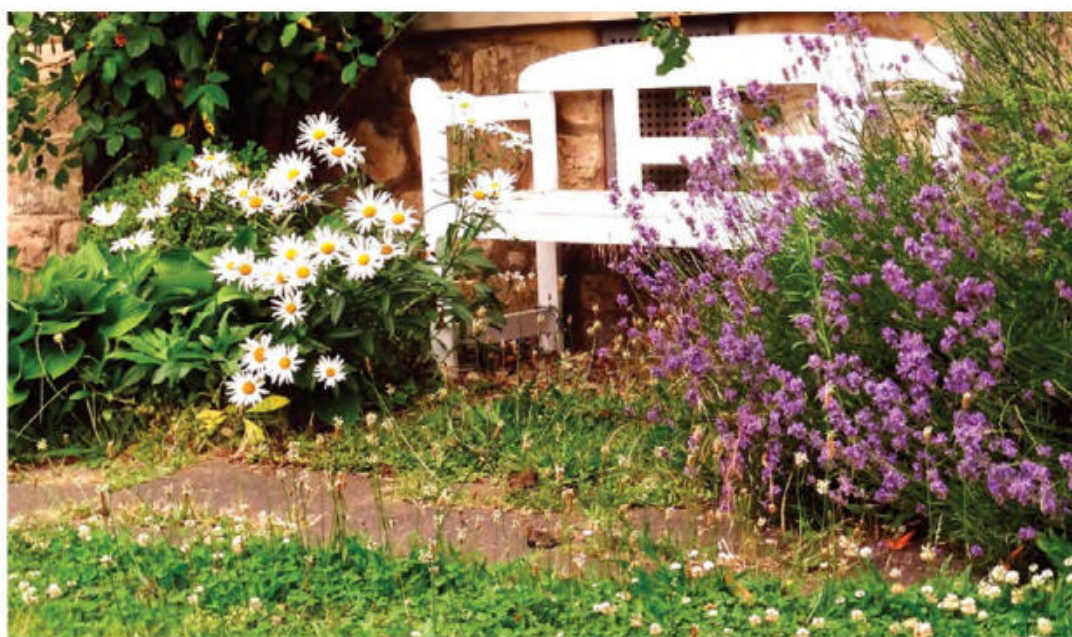
GRASSES

LOW-MAINTENANCE grass is an option for those who wish to keep a more traditional-looking lawn. Often labeled **NO-MOW**, “most mixes are a combo of four to seven fine fescues,” says Meyer. “No-mow is great. At the arboretum, we cut it maybe twice a year. It’s a good choice for areas you don’t want to cut very often.”

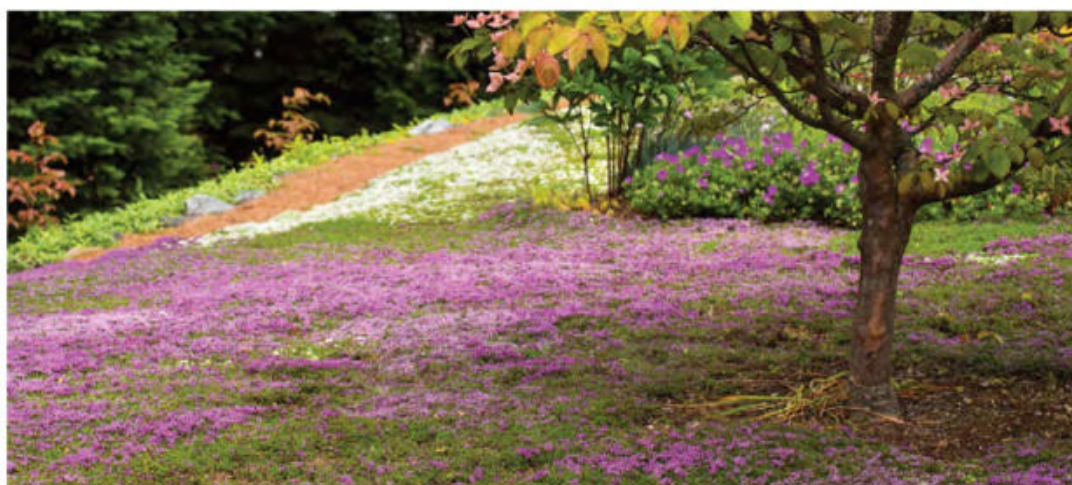
Prairie Nursery (prairienursery.com) is one national retailer of no-mow and native plant and seed mixes, including mixtures for erosion-prone areas.



DROUGHT TOLERANT GRASSES are another option. **BLUE GRAMA GRASS** (*Bouteloua gracilis*) is a prairie bunch-grass often used as an ornamental but capable of handling lawn duties as well. Grown from seed or plugs, it needs minimal mowing, watering and fertilizing. **BUFFALOGRASS** (*Buchloe dactyloides*) is one of the few native grasses that can be grown as turf-grass and has less moisture and nutrient requirements than most other grasses. **ZOYSIAGRASS** (*Zoysia japonica*) is a dense, weed-snuffing turf that’s drought tolerant. It’s a good candidate for warm regions of the country.



POLLINATOR-FRIENDLY GRASS mixes have developed a following, due in part to concern about the health of our pollinators. **FLEUR DE LAWN**, developed with the help of Oregon State University, includes ryegrass, fescue, clover, white yarrow, English daisy, sweet alyssum and baby blue eyes (*Nemophila*). This grass can be kept at 3 in. for a more manicured look or 5 in. for a mini-meadow effect.



Minnesota has its own take, the **BEE LAWN**, which includes lower-maintenance fine fescue plus three low-growing flowering plants: white clover, self-heal (*Prunella vulgaris*) and thyme (*Thymus serpyllum*). “The fine fescues have a low nutrient requirement and a low water requirement, so it’s not high maintenance,” Meyer says. But, she cautions, “you have to be tolerant of these forbs or flowers in your lawn. So many people who have a really pristine idea of a lawn have no tolerance for anything other than grass.”



WILDFLOWERS

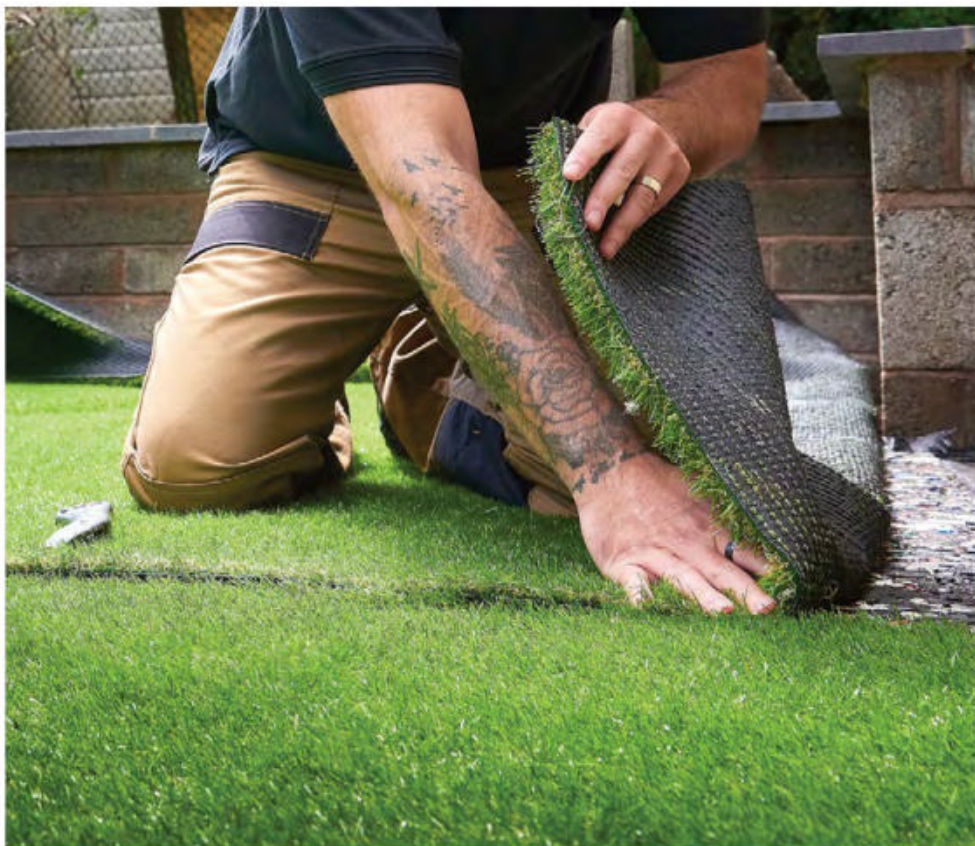
WILDFLOWER MEADOWS are a beautiful sight when in bloom. And they're cost-efficient to install, too. "It can be done exclusively from seed, which from a cost standpoint makes it bearable," says Larry Weaner, of Larry Weaner Associates, an ecology-based landscape design firm in Pennsylvania featuring native species. Also, "it is a landscape you can see around if you want to preserve open space but don't want to mow your lawn every week."

An established wildflower garden doesn't need a lot of attention, with a weeding session once per season—spring, summer and fall—and an annual mowing at the end of winter, Weaner says. "That schedule is very realistic if you pick the right plants; it is very unrealistic if you pick the wrong plants."

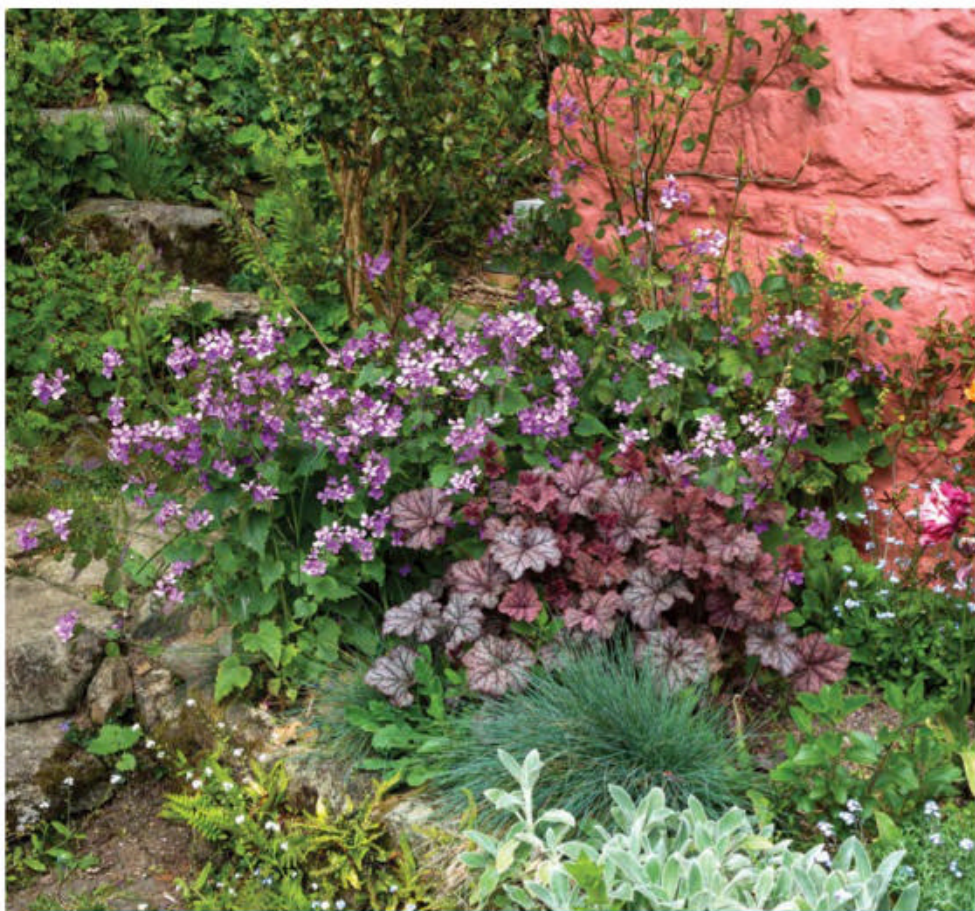
With a mix of short-lived annuals, you may eventually end up with a big patch of weeds. Instead, choose a mix that fits the conditions (sun vs. shade, moist vs. dry) and look for perennials, which will outcompete weeds once they are established in two to three years. "It's not about picking out the flowers that look pretty or picking out the cheapest mix, which is likely short-lived plants," Weaner says. "This is really about understanding the environmental conditions you have and determining what are the native species to your area that grow in those environmental conditions."

A big bonus is the meadow's ecological impact. "Native species that occur in meadows are the most rapidly declining species of all types of native plants," Weaner says. "Consequently, the insects and birds that depend on those particular native species are also rapidly declining. From a wildlife habitat standpoint, when you plant a meadow, you are planting a combination that is in part reversing the decline of two very important elements of nature: native plants and native fauna."

MORE ALTERNATIVES



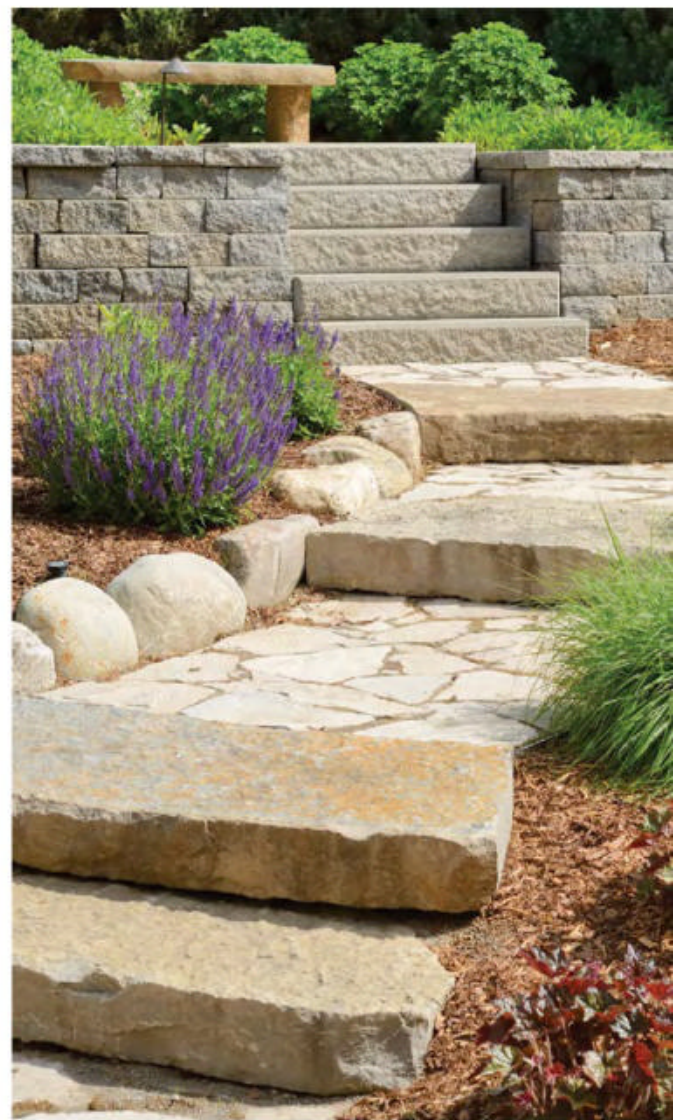
ARTIFICIAL TURF is the Jekyll and Hyde alternative: While fossil fuel is used to manufacture artificial turf, none is needed to maintain it. And while it offers no wildlife value, it does withstand heavy foot traffic and stay green during drought. Its best use may be in small pockets that would be difficult to mow.



GROUND COVERS are low-growing plants that spread by underground rhizomes to quickly cover a lot of territory. They make a fine lawn substitute as long as you're not walking on them regularly. Most are sold in flats, so you can plant in clumps and see them fill the gaps within one or two growing seasons. Popular ground covers include vinca vine, ajuga, lamium, dichondra, sedum and Boston ivy. There are ground covers for sun and shade, so you can grow them alone or incorporate them into a mixed shrub bed.



XERISCAPING isn't so much a landscape style as it is a landscape *lifestyle*. While the goal is to minimize irrigation, it goes beyond simply choosing drought-tolerant plants. In fact, some xeriscapes have plants that are not drought tolerant but instead grouped together to make watering more efficient. They're also located strategically where soil moisture is more abundant—near a drainpipe or at the bottom of a swale. Amending the soil with compost and topping it with mulch are other water-conserving strategies of a xeriscape.



HARDSCAPING includes paths, pavement and seating areas that require no watering, fertilizing or mowing. Options include laying down wood chips, pea gravel or decomposed granite, or installing permeable pavers that allow water to percolate back into the soil rather than running off. You can even leave planting pockets to fill with low-growing ground covers.



MIXED-SHRUB BEDS allow homeowners to test the waters by replacing a portion of their lawn. You can extend an existing bed into the lawn until the size and appearance meet your end goals. If you do it right, a mixed bed can save you time down the road.

The trick is to choose low-maintenance shrubs that won't outgrow their space or need constant pruning or watering. Fill the gaps with similarly well-behaved perennials for more color. Finally, lay down landscape fabric and 2 to 4 in. of mulch to thwart weeds. Spreading a pre-emergent weed preventer, such as Preen, also keeps weeds from sprouting.

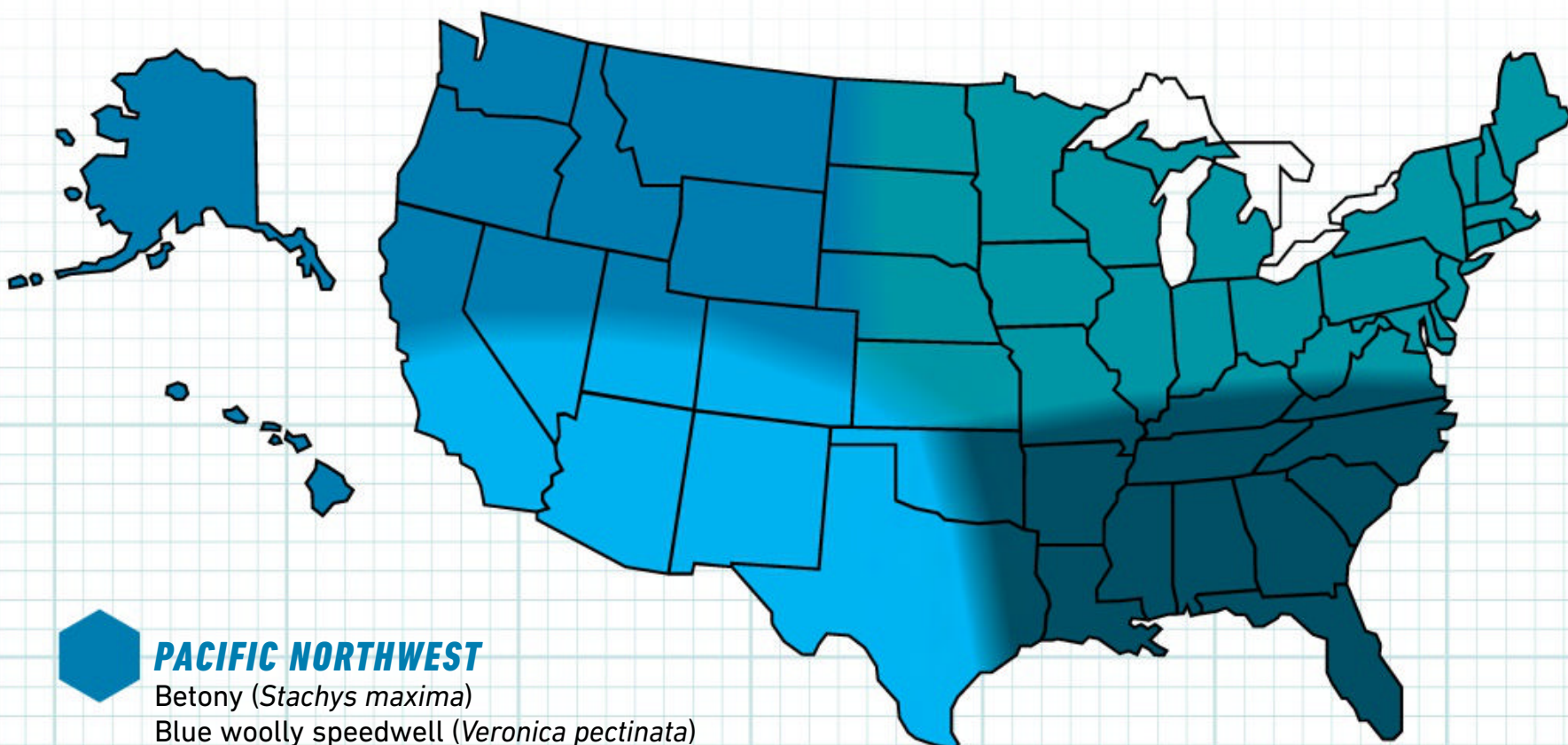
GETTING STARTED

First, consider how a lawn alternative would fit your neighborhood. Bear in mind that homeowners' associations and local codes may prohibit certain types of front-yard landscaping. Also consider neighbors. "In your backyard, whatever pleases you and the wildlife, go after it," says Weaner. "I would take a different approach in the front yard, where all the neighbors see it. In the front yard, it may be shorter, it may have mowed areas that define it as a planting as opposed to something that grew up because you stopped mowing your lawn."

Second, prepare the area.

- To turn an existing lawn into an eco-friendly one, scalp the grass, then dethatch and aerate before seeding.
- To replace a lawn with meadow, rent a sod remover, loosen the soil to a depth of 3 to 4 in. with a tiller, then rake the soil level and spread seed.
- To plant a mixed bed, mow turf short, plant in pockets, then smother surrounding area with wet cardboard topped with 4 in. of organic mulch, such as wood chips. 

REGIONAL PLANTS FOR A WILDFLOWER GARDEN



PACIFIC NORTHWEST

Betony (*Stachys maxima*)
Blue woolly speedwell (*Veronica pectinata*)
Candytuft (*Iberis sempervirens*)
Cooper's hardy ice plant (*Delosperma cooperi*)
Creeping gold buttons (*Cotula tiffindell*)
Creeping thyme (*Thymus serpyllum*)
Juniper leaf thyme (*Thymus neiceffii*)
Mossy sandwort (*Arenaria 'Wallowa Mountains'*)
Partridge feather (*Tanacetum densum*)
Poppy mallow (*Callirhoe involucrata*)
Self-heal (*Prunella grandiflora*)
Snow-in-summer (*Cerastium tomentosum*)
Soapwort (*Saponaria lempergii*)
Thyme-leaf speedwell (*Veronica oltensis*)
Woolly thyme (*Thymus lanuginosus*)

NORTH & MIDWEST

Candytuft (*Iberis sempervirens*)
Cooper's hardy ice plant (*Delosperma cooperi*)
Creeping gold buttons (*Cotula tiffindell*)
Creeping thyme (*Thymus serpyllum*)
Lamb's ears (*Stachys byzantina*)
Poppy mallow (*Callirhoe involucrata*)
Self-heal (*Prunella grandiflora*)
Snow-in-summer (*Cerastium tomentosum*)
Soapwort (*Saponaria lempergii*)
Thyme-leaf speedwell (*Veronica oltensis*)
Woolly thyme (*Thymus lanuginosus*)

DESERT SOUTHWEST

Candytuft (*Iberis sempervirens*)
Cooper's hardy ice plant (*Delosperma cooperi*)
Creeping germander (*Teucrium*)
Creeping shrubby ice plant (*Ruschia pulvinaris*)
Evening primrose (*Oenothera speciosa*)
Lamb's ears (*Stachys byzantina*)
Self-heal (*Prunella grandiflora*)
Wild zinnia (*Zinnia grandiflora*)

SOUTHEAST

Betony (*Stachys maxima*)
Bugleweed (*Ajuga reptans*)
Candytuft (*Iberis sempervirens*)
Cooper's hardy ice plant (*Delosperma cooperi*)
Evening primrose (*Oenothera speciosa*)
Self-heal (*Prunella grandiflora*)
Spotted dead nettle (*Lamium maculatum*)

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BEST PRO TIPS



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UP YOUR DRYWALL GAME

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FASTER!

Drywall may be intimidating, but it doesn't have to be. With a better understanding of the tools and materials, you can confidently transform heavy sheets and mud into lovely walls. I reviewed some fundamentals with our resident drywall expert and discovered some new tips and methods along the way.

BY JAY CORK



UNDERSTANDING JOINT COMPOUND

DRYING TYPE

Most folks are familiar with drying compounds—they come in a bucket or a box, and they dry as the water content evaporates.

■ ALL-PURPOSE

All-purpose compound (1) is the strongest type of drying compound. It has the highest glue content. Use it as a first coat to embed paper tape.

■ DUST CONTROL

A relative newcomer, dust control compound (2) is aimed at the DIYer. Perfect for repairs, it greatly reduces the mess involved with sanding drywall compound.

■ PLUS 3 LIGHTWEIGHT

Use this lightweight all-purpose joint compound (3) for second coats and as a topping compound. It has good open time and sands easily.

SETTING TYPE

Think of setting-type compounds like cement—just add water and they set. Unlike the drying type, these set through a chemical reaction. The setting times vary and are called out in the names: DuraBond 90 or Easy Sand 45, for example.

■ REGULAR SETTING COMPOUND

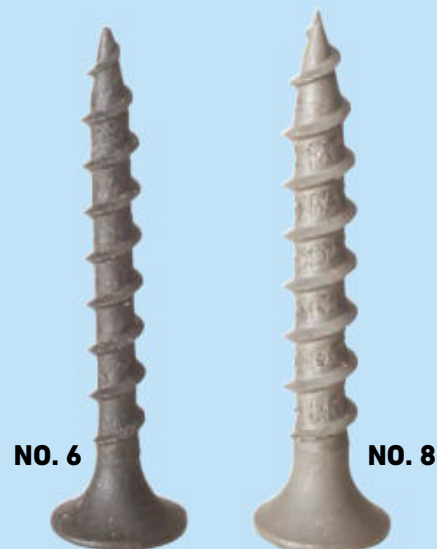
This compound (4) dries fast and hard. It's difficult to sand, too, so this is where your skill with a blade can make a big difference. Get it on right and leave it alone. It's not the best choice for beginners, but skilled drywall pros appreciate the rapid drying time so they can quickly apply a second coat.

■ LIGHTWEIGHT

Trading a little toughness for sandability, lightweight setting compound (5) is perfect for DIYers.

USE THE RIGHT FASTENERS

Always use drywall screws, not nails. Drywall screws typically come in two sizes—No. 6 and No. 8. Choose the smaller No. 6 screws; they won't blow out the edge of the drywall. Length is determined by sheet thickness plus 3/4 in. Use coarse-thread screws for wood stud walls and fine-thread for metal studs.



MEET THE EXPERT



JOSH RISBERG, LEAD CARPENTER, HAS 20 YEARS OF HOME-BUILDING EXPERIENCE.

THE TOP TAPE TYPES

PAPER TAPE

Paper drywall tape is the most common type, yet it's not the easiest to use and you need practice to become proficient. But paper tape does offer advantages: It's inexpensive; it's actually stronger than fiberglass mesh; and most paper tape comes creased so you can easily bend it into a corner. Some paper tapes have micro perforations to help prevent blistering.

FIBERGLASS MESH

Fiberglass mesh might be the easiest drywall tape to use. Simply stick it to the wall, and trowel on your mud. The ease of use, however, comes with a caveat: The first coat of mud must be setting type—its higher glue content will create a strong base. Drying-type compound is prone to cracking when used as a first coat over mesh tape.

CORNER TAPE

Designed for inside corners and wall-to-ceiling joints, corner tape has plastic or metal strips on the back. This doesn't make the joint stronger, but it provides a stiff guide for your knife to make a straight corner joint.

1/2"

FIRE
RESISTANT

1/4"

TYPES OF DRYWALL SHEETS

1/2-IN. DRYWALL

Half-inch drywall is the standard thickness for most applications. When possible, choose lightweight or "ultralight" drywall. It's about 25% lighter than standard 1/2-in. sheets, easier to handle and stiffer too. It can even span ceiling joists 24 in. on center.

FIRE-RESISTANT SHEETS

Standard gypsum board is naturally fire resistant, but Type X is actually fire rated. The core includes additives designed to

slow the spread of fire. It's often required on garage ceilings and walls that adjoin living areas.

1/4-IN. SHEETS

You won't often need 1/4-in. drywall, but it's great for arches and curved walls. Josh suggests skipping the screws with this thin material. Use construction adhesive instead. Tack it with a few nails until the glue sets and apply one more layer to reach 1/2-in. thickness.

DRYWALL LIKE A PRO



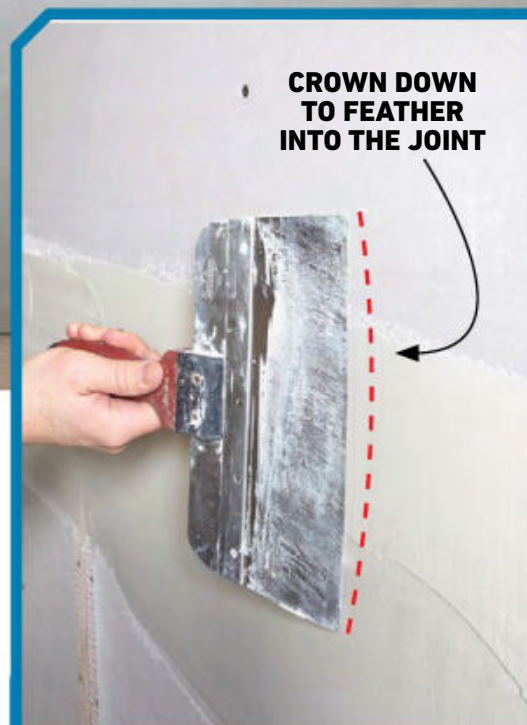
BUTT JOINTS MADE EASY

Drywall sheets have depressed edges that account for the thicknesses of tape and mud. When you cut a sheet, you lose that edge. On a piece of pine, Josh cuts a concave shape on one side with the table saw blade set to 2 degrees. This helps pull the edges of drywall in, forming a valley for tape and mud. This creates seamless joints between studs.



MIX THE COMPOUND

You've got a brand new bucket of joint compound and you're ready to start mudding, right? Wrong. Before you start, remove enough compound to make room for 2 to 3 cups of water. Mix this thoroughly using a paddle mixer and a 1/2-in. drill until you have the consistency of yogurt. Now you're ready to go!



BEND YOUR BLADE

You don't want your blade to be perfectly flat. Bend your blade so it has a slight curve, and mark the concave side so you always know which side is which. Josh will use the convex side to feather out the edge of the joint, and the concave side to float over the joint.

MUD UP
TO THE TAB

TEARAWAY BEAD FOR EXPOSED EDGES

Whenever drywall meets another surface like stone, brick or paneling, you need a way to neatly finish the edge. Tearaway bead gets you pro results with minimal effort. It attaches just like corner bead, but the compound is applied just up to the back edge. Once it dries, the tear-away strip easily pulls off, leaving a nice, finished edge.

CHECK FOR CLICKERS

Before spreading an ounce of mud, check your wall for “clickers.” These are the screws you didn’t sink quite deep enough. It’s best to find all of these now, before you have a hawk full of mud in one hand and a blade in the other.



STAPLE YOUR CORNER BEAD

Attach corner bead in a better way that’s easy, strong and won’t mess up the profile—with staples. A pneumatic stapler is faster than screws, is easier than nails and is much less likely to push the corner bead out of shape—something that’s easy to do with other methods.



TAPE YOUR METAL CORNER BEAD

Strengthen corners by taping your corner bead. It’ll take a little extra time but you’ll thank yourself later. A taped corner joint will last a lifetime.

PULL THE BLADE—
DON’T PUSH!



JOSH'S TOOLBOX

Josh's collection is huge. Here are some of his essential tools for doing drywall.



MUD MIXER

Use this with a power drill to mix compound. About \$15 at home centers.



6- AND 10-IN. BLADES

These sizes will cover most every need.

MUD HAWK

Load this with mud as you work. A 12-in. hawk will cost about \$15.



PNEUMATIC STAPLER

Attaching corner bead with a hand-powered stapler is hard work. A pneumatic stapler makes this job easy.



UTILITY KNIFE

Used to score gypsum board and tape alike, you can't drywall without one!



AUTOMATIC DRYWALL DRILL

With automatic depth setting and a continuous feed of screws, an automatic drywall drill takes your drywall game to a whole new level. Fast and accurate, this drill is often longer than a regular cordless drill so it can reach the ceiling with less effort on your part.



CORDLESS DRILL

A lightweight cordless drill makes screwing drywall sheets much easier than by hand.

HOME CARE



MAINTENANCE & REPAIR | STORAGE & ORGANIZATION | HEALTH

*ARE YOU
ALLERGIC
TO YOUR
HOME?*



BY GLENN HANSEN

Dust blows from flowering plants, trees and grasses, sending tiny pollen seeds directly into your nose and eyes. This is allergy season—a time when you and some 50 million other American allergy sufferers stay inside, hoping to avoid an allergic reaction to pollen, for weeks or maybe months at a time. Problem is, sources of your discomfort can be indoors too, causing coughing, sneezing, itchy eyes and more.

LEAD PHOTO: MOYO STUDIO/GETTY IMAGES

Pollen, whether from grasses or flowering trees, is the most convenient scapegoat for allergy sufferers whose immune systems react to the airborne dust. But indoor dust—with a high presence of dust mites—is equally to blame. And it can cause problems for people with asthma too.

In guidelines for those with asthma and allergies, the National Institutes of Health (NIH) recommends multiple strategies to reduce allergens, such as using pillow and mattress covers that prevent dust mites from passing through and using high-efficiency particulate air (HEPA) filtration vacuum cleaners.

Dust mites—microscopic arthropods—can be anywhere and everywhere. With the exception of Antarctica, every continent reports dust mites. And here's the scary part: According to the Asthma and

Allergy Foundation of America (aafa.org) website, dust mites “feed mainly on the tiny flakes of human skin that people shed each day. These flakes work their way deep into the inner layers of furniture, carpets, bedding and even stuffed toys. An average adult person may shed up to 1.5 grams of skin in a day. This is enough to feed one million dust mites!”

Beyond simply sharing the creepy truth about dust mites, the AAFA certifies several indoor household items as Asthma and Allergy Friendly. Many product manufacturers make marketing claims about “hypoallergenic” or “allergy-friendly” products, but no federal standard or regulation governs the use of those terms. The Asthma and Allergy Friendly Certification Program is a partnership between the Asthma and Allergy Foundation of America



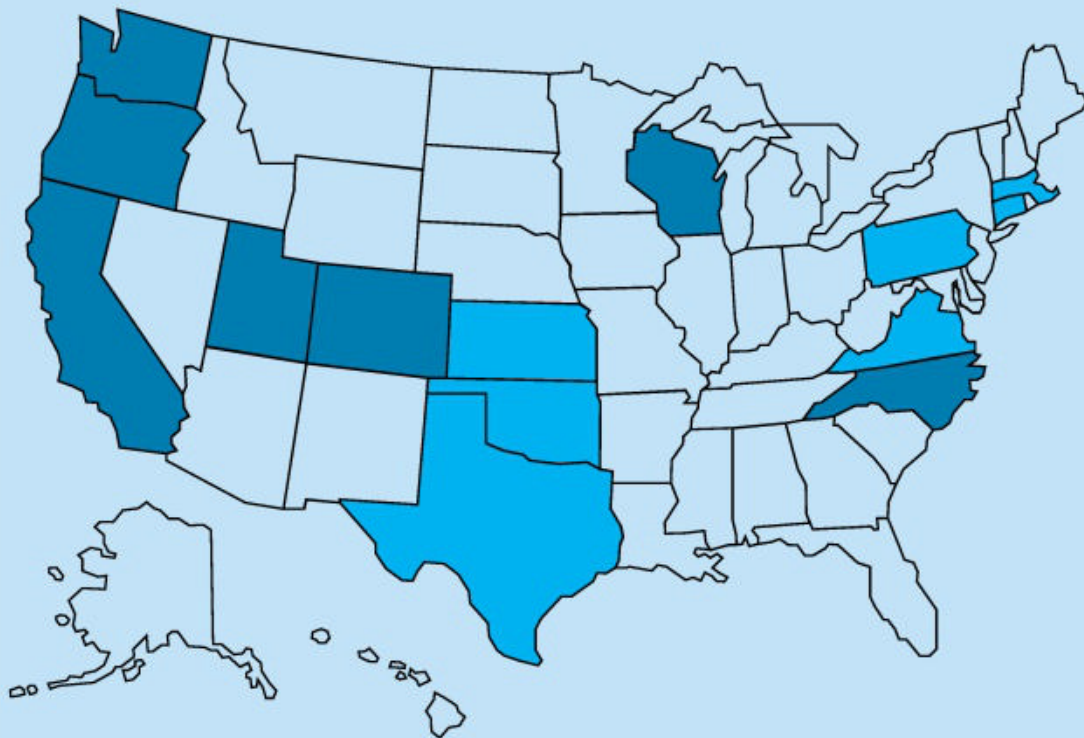
and Allergy Standards Limited (ASL). Together these groups test products and will certify those they deem can “improve the air quality and health of homes.”

A wide range of home products have earned the Asthma and Allergy Friendly certification, including:

- **HANDHELD DUSTERS:** Guardsman Dusting Cloths
- **LAUNDRY DETERGENT:** Sweat-X Free & Clear
- **INSULATION:** Owens Corning Pure Safety High Performance, and Knauf Insulation Performance Plus R15
- **FURNACE FILTERS:** 3M Filtrete Healthy Living
- **SHEETS & PILLOW CASES:** Wicked Sheets Moisture-Wicking Bedding
- **PAINT:** True Value EasyCare, and Benjamin Moore Eco Spec
- **RESIDENTIAL FLOORING:** Tarkett Moxie FiberFloor, and several other products



TOP 10 MOST AND LEAST CHALLENGING PLACES TO LIVE WITH **SEASONAL ALLERGIES** IN THE UNITED STATES



MOST CHALLENGING:

- Scranton, Pennsylvania
- Richmond, Virginia
- Wichita, Kansas
- McAllen, Texas
- Pittsburgh, Pennsylvania
- Hartford, Connecticut
- Springfield, Massachusetts
- New Haven, Connecticut
- Oklahoma City, Oklahoma
- Bridgeport, Connecticut

LEAST CHALLENGING:

- Denver, Colorado
- Fresno, California
- Portland, Oregon
- Milwaukee, Wisconsin
- Stockton, California
- San Jose, California
- Salt Lake City, Utah
- Provo, Utah
- Seattle, Washington
- Durham, North Carolina

For the complete list, visit www.asthmaandallergyfriendly.com

STORING PESTICIDES SAFELY

If you use home and garden pesticides for weed and pest control, here's what you need to know to store them safely. It may seem like a lot of rules, but these products pose significant risks.

Included in this category are products for repelling and eliminating pests, weed killers, nitrogen stabilizers and other plant regulators. If you're unsure about a product, check the label for signal words like *danger*, *poison*, *warning* and *caution*, and for the presence of an EPA registration number.

Proper storage prolongs the chemical shelf life of a product and—more importantly—it protects the health of people, animals and the environment. Here are some general storage requirements, but refer to your pesticide labels for specific information about the products you've purchased.

- The EPA recommends keeping pesticides in a locked cabinet in a well-ventilated utility area or garden shed. They should not be stored with or near food, animal feed or medical supplies.
- Store in original containers with the labels so you'll have the directions, ingredients and first aid steps in case of poisoning. Keep the tops tightly closed. Never store pesticides in the application equipment, where they are more likely to spill and to be accessed by children.
- Keep out of reach of children and pets. These products should be 5 ft. above the ground in that locked (preferably metal) cabinet.
- Locate your cabinet where there is no chance of flooding and where pesticides will not leak or spill into a floor drain. From there, they would enter the sewer and cause toxic pollution.
- The temperature in the storage area should not get below 40 degrees or over 100 degrees F. Very high or low temps can cause a pesticide to deteriorate and become ineffective. High humidity and direct sunlight will also cause pesticides to break down. Cool and dry is the goal.
- Flammable liquids should be stored outside your living area and far away from an ignition source such as a furnace, car, grill or lawn mower.
- Keep emergency numbers near your storage area and/or on your phone. The National Poison Center number is 800-222-1222.
- When you need to throw away chemicals, follow the instructions on the labels. Empty pesticide containers should not simply be thrown into the trash or recycling bin. Thoroughly rinse them before disposal, and the diluted rinse water should be disposed of by applying it to the same areas you sprayed. If you have unwanted leftover pesticide, drop it off with a local program; search online for

"household hazardous waste disposal near me."

- Don't buy more pesticide than you will need soon—think in terms of what you'll need for one year or less to avoid the need to store it. To help prevent stocking up, keep your storage cabinet as small as possible.
- Finally, and best of all, choose nontoxic alternatives whenever you can.

DONNA BIERBACH SENIOR EDITOR



THE DIY ADVICE WE ALL NEED

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PHOTOS COURTESY OF HOME DEPOT



WHAT'S IN YOUR ATTIC?

You go up there seasonally to retrieve, and then replace, the holiday decorations. But it's a grab-and-go trip since the attic is cold, dark and mysterious. Should you visit this space more often? What should you look for if you do—besides that tree skirt you can never find?

If your home has an attic and you haven't looked in there yet this year, go right now. Oh, wait, read this first! You should inspect your home's attic regularly, perhaps seasonally. The more often you look up there, the more likely you will notice changes and prevent problems. Here's what you should look at and for:



ROOF LEAKS

In most attics, you can get a good view of the underside of your roof. Inspect that roofing material for signs of leaks or other damage. This is where frequent inspections pay off. Take photos and compare each time you visit. If you see new water spots or significant color changes, have a roof expert take a closer look.



INSULATION

With this inspection, you're also looking for changes. If your attic has blown-in or loose insulation, make sure its thickness is consistent across the attic space. Look for wind-washing, which is the effect of ventilation in your attic moving the insulation and reducing its effectiveness.



CREATURES

Even though your attic might be cold in the winter and hot in the summer, some creatures still find it a refuge from rain, wind and predators. Look for droppings, and check for nests, trails or even teeth marks. You can set traps, but it's better to seal any obvious entry points around vents and ducts.



DUCTWORK

Bathroom fan ductwork can come loose in your attic and simply exhaust moist bathroom air into your attic space—and moist air in your attic is as bad as it sounds. Also, if a chimney runs through your attic, keep your eye on the brickwork and the chimney's overall structure.



STORED ITEMS

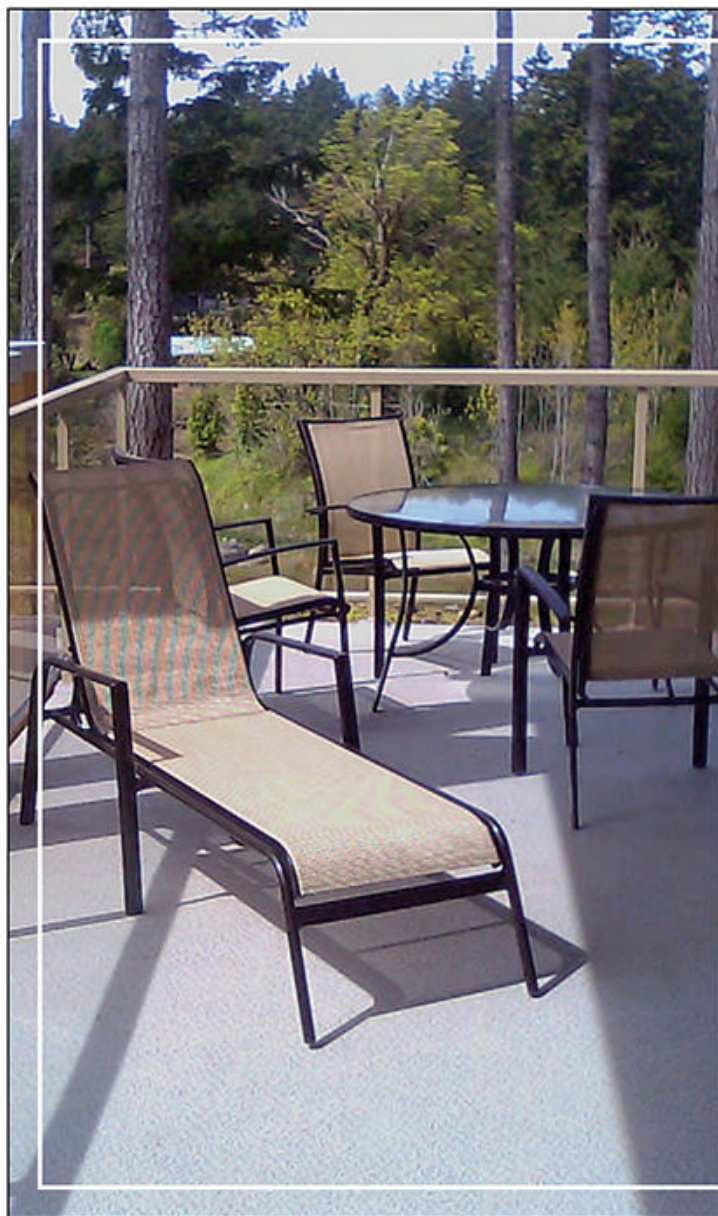
Your attic environment is different from other rooms in your home. Sure, it might be roomy, but it's not an ideal storage place. Do not keep paint or chemicals in your attic. And do not use it to store natural fibers like wool, which can be attractive to rodents and insects. Also, monitor leather goods, artwork or other valuables that can be affected by temperature and humidity swings.

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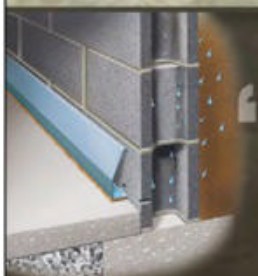


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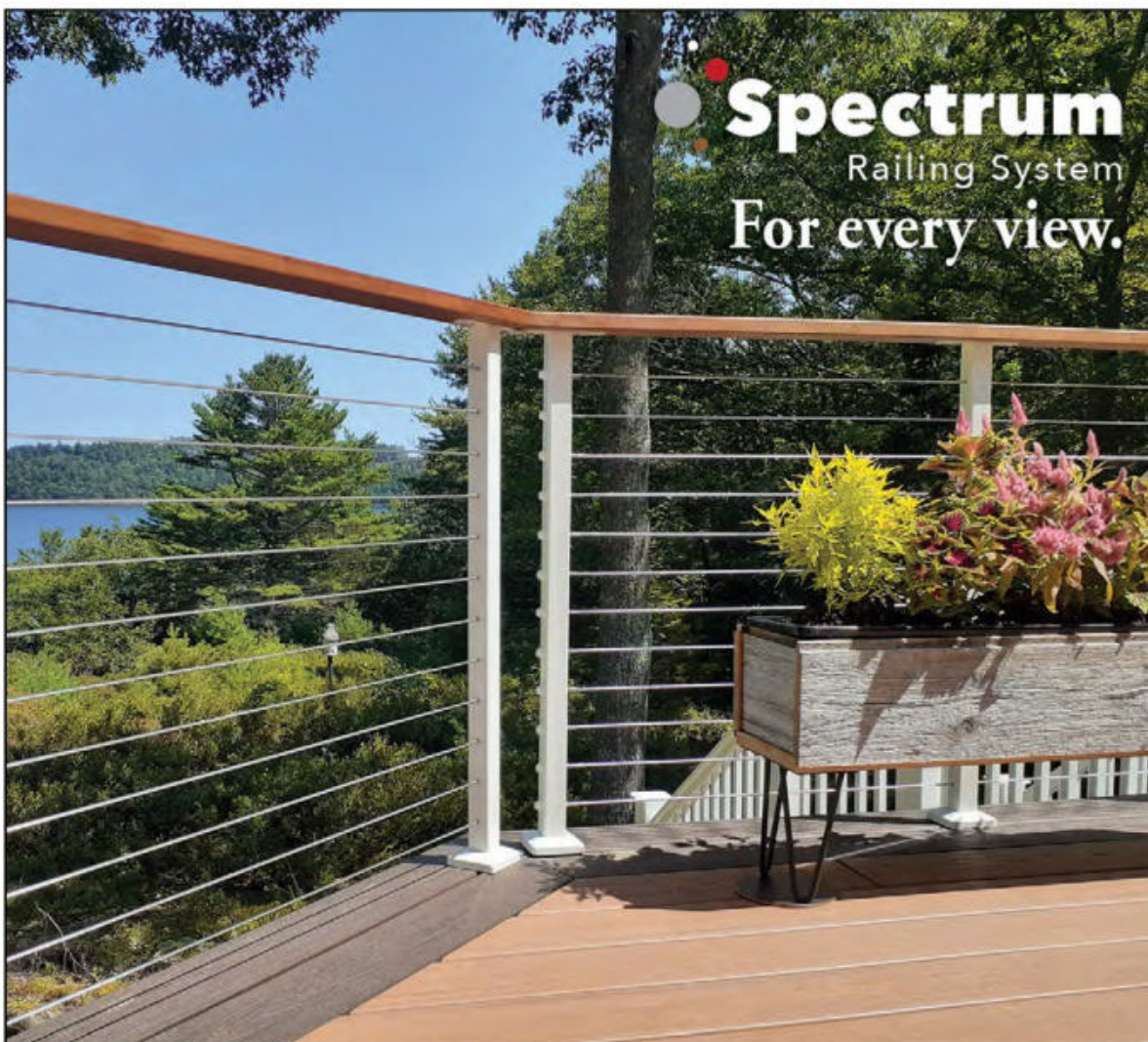
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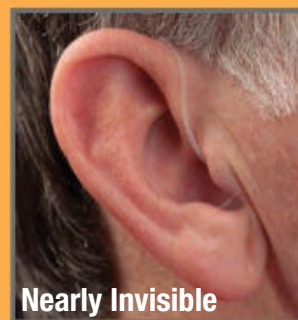
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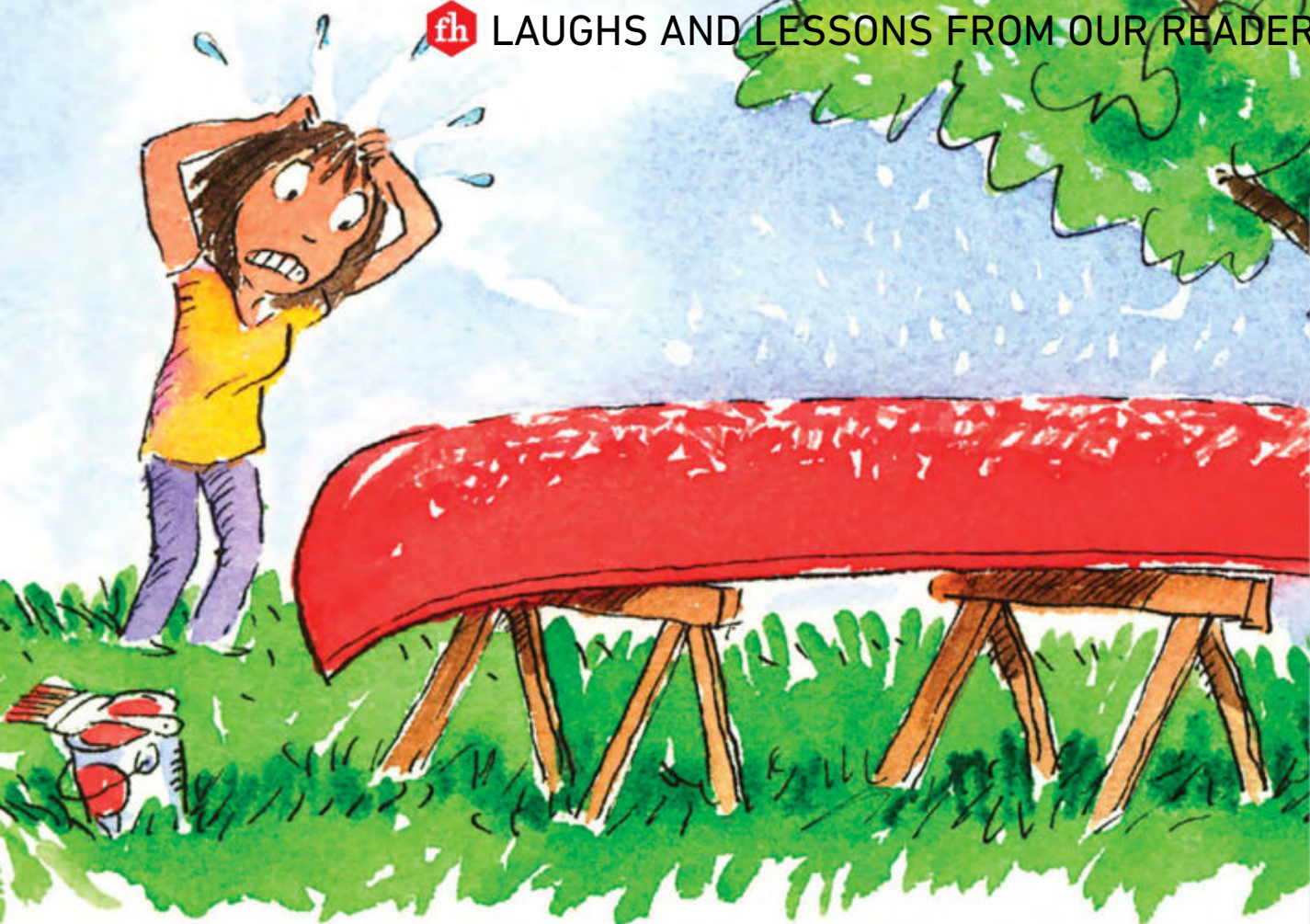


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fh LAUGHS AND LESSONS FROM OUR READERS



NOT “SEE” WORTHY

I bought a used canoe at a garage sale. The canoe was seaworthy, but I figured I'd renew it with a fresh coat of marine paint. I waited for a sunny day, perched the canoe upside down on two sawhorses and painted the entire canoe in short order. After several hours, I returned to admire my handiwork, only to find the entire canoe covered in a coat of white fuzz! The wind had come up, causing a nearby cottonwood tree to shed its cotton, which then turned my canoe into a giant fluffy slipper.

STACY GIBSON

FURNITURE FLAMBE

I decided to strip my old kitchen chairs using a gel paint stripper. After working on the first chair for hours and making slow progress, I decided that a little heat from my propane torch might loosen the stain in hard-to-reach places.

It definitely moved things along—until suddenly I saw that the chair was on fire! I ran with the burning chair to the backyard and



smothered the flames before the fire did any serious damage. I decided to pay a furniture stripper to do the remaining three chairs.

I'm still planning to stain and refinish the chairs, but now I'll be using an “ebony” wood stain to hide the burn marks.

JIM SCANLAN

AND NOW, FOR MY NEXT TRICK...

I needed to add a desk in my spare bedroom, and I decided to build it into the window seat. The desk wasn't going to be fancy—just a top surface built out to fit a chair under the edge.

After framing the top, I needed to determine the height above the seat. I thought the plastic file box nearby would be a good guide. I rested the back-ledge 2x4 on the box while I screwed the piece into the wall. Brilliant!

After the project was glued and screwed, I realized the box could not be removed. I had three choices:

- 1. Leave it there forever, along with all my papers.*
- 2. Cut a big notch in the 2x4 across the front, weakening the desk.*
- 3. Cut the box in half, ruining it but salvaging the paperwork and removing the evidence of my blunder.*

My cordless jigsaw made quick work of sawing the box in half!

CHUCK MONNINGER



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