

CREATE A LUSH LAWN: SOLUTIONS TO 10 COMMON PROBLEMS

ADD A
BATH
WITHOUT
ADDING
ON

This Old House

JUNE 2006

Backyard Design Guide

- 6 Outdoor Kitchens
- 4 Smartest Layouts
- Stylish Materials
- Best New Grills

Using woodwork
to create charm
in your house
p. 112

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Cover photos by Colin Myles

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The Macallan Cherry that all parents desire that

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letter FROM THIS OLD HOUSE

A Guy and His Grill

WHEN I WAS A KID, our backyard barbecues were pretty low-key, except when an uncle would make friends with a dog and wrestle the dog into the pool to give it snorkeling lessons.

On the day I heard my mother yell the S-word three times, in increasing volume, as she sprinted toward our old gas grill. The rubber hose holding propane tank to burner had somehow caught fire, and Mom reasoned that she had a better chance of getting to the tank to turn the gas off than she did getting far enough away not to be killed before it exploded.

I don't know if that was the smarter choice, but Mom's will here to deny the story, which means it wasn't the worst, either. For my part, I decided to avoid such excessive slaughter, stuck with charcoal, and never owned the uncle ever.

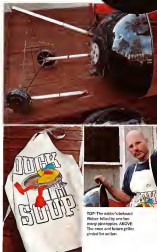
And then a few years ago, Steven Raablen, author of *The Barbecue Bible* and head of the PBS series *Barbecue University*, gave me a copy of his book. First thing I made was the grilled pineapple, which, believe it or not, pretty much tastes like the hot-hits party your mouth could ever have. In the years since that pineapple, I've grilled so much that earlier this spring I wrote the when-might-it-kill my Weber. As you can imagine, using such an old friend could make a guy throw down his tongs and tear off his Duck Soup apron in anguish.

But as we all know, out of pain comes the opportunity to spend money. In this case, on the arrival to his outdoor barbers at our corner store, beginning on page 38. Its pages should be a plow of inspiration, whether you go big time—the imported pizza oven that is today way out of my own price range—or stick to simpler things like an all-in-one mobile grill. I'm a fan of charcoal, so I'll probably spring for a new Weber and give the rest of my money into the rickety-but-maintenance-free cat. That way I can entertain the whole family on the Fourth. It holds plenty of liquor, but the *volery*—there's no spot for a leg, and I don't have a dog or a swimming pool.

Steve Chambers

SCOTT OLSHEANSKY
EDITOR

PS: Steven publishes a new book due soon, *Raablen on Ribs, Ribs, Grilling Ribs*. Of course you'll buy it. But in the meantime, he's adapted a recipe from it just for TCM readers. In secret, he says, is the marriage of sweet and salty. "and this smoky of *Asian* *herbs* *grapes* *garlic*, and so those that will cravily char on the grill." You'll find it on our website at doublehour.com/charcoal. Stop drinking and go grill a one.



TOP: The editor's barbecue. Below: Grilling one last thing: pineapples. ABOVE: The new and better grill, gridded for action.

Losing such an old friend could make a guy throw down his tongs and tear off his apron in anguish.

Making the Most of Minimalism

The finished remodel of George Mabry's house ("TOH TV Takes the CHILL Off Modern" April) is exquisitely done and extremely tasteful—amazing mechanicals, great use of stone, the floating staircase, the custom furniture, the walls of windows. We really enjoyed your coverage of this particular project, as our taste has changed from older homes to more modern ones. We thought it exemplified the whole point of *This Old House*: celebrating architecture and bringing new technologies to homeowners' attention. Please continue to feature such creative projects. *SAATCHI/CRAIG LONDON WYNDMOOR, PA.*

Rain Barrel Mosquito Eater

I needed to make a suggestion on your rain barrel article ("Tipping the Scales" April). I have used rain barrels for years (for watering), but I don't like putting chemicals like a "mosquito dunks" in there. I prefer a natural solution and

small goldfish per barrel. In winter I take the fish out and keep them inside. My kids used to have a great time feeding and caring for them. When summer came, we put them back into the barrels. And when the fish got too big, I would add them to my school's fish tank and



my students would have a contest to name them. Thanks for a great magazine! *NOBLESVILLE, IN* CHLOE

Bondo No Good for Wood

I have to protest one of the pieces of "10 Uses for Bondo" ("Around the House" April). Bondo should never be used for repairs on windows. I restore windows for a living and have dug out more than my share of rock-hard lumps of bondo that probably looked great when they went in, but caused further damage and rot to the window panes. Bondo cures rock hard and is

permeable. Wood expands and contracts with changes in the temperature and humidity and the bond with the Bondo cracks. Instead try epoxies that are designed to stay flexible and move with the wood, such as Flex Tec from Advanced Repair Technology.

AUBURN HARBOR, TOPSFIELD, MASS.

Crockpot Paint Stripping

Thank you for your very timely and helpful "Paint Off: Shine On" ("Upkeep" April). After having ordered a rusty barrel from a chemical supplier that had somehow found its way into my shipping gloves, I was looking for a better way to remove the layers of failed-as-quartzos all of the hardware in my 2003 home. I came across your article and was amazed by the crockpot method. The results were wonderful! With 14 more days and 15 more dunks, worth of hardware left to do, my crockpot will be giving more use than it has in many years!

HEATHER GARNES, MONROVIA, WASH.

Binge Readers

I couldn't believe it when I read the letter in Mail (April) about stacking *This Old House* issues. In order to read, I thought I was the only one who did this. I too, have read *TOH* winter and then as the snow disappears, not the grass reappears. Ianker down on my desk and back—built last spring with the great ideas I got from *TOH*—and get as excited as a kid on an amusement park. This year the periscope and water garden go in, but just like the other reader mentioned, I know I'm up and measuring for my next project. I would like to like to thank you all for the fantastic ideas, hints, and the way you are able to simplify what seems to be an impossible job into very workable ideas.

KEITH SHAFERMAN, OTTAWA, ONTARIO

Bulbs That Deter Squirrels

Re/Stage Cook's suggestions about squirrels digging up bulbs ("Ask This Old House" April). To keep squirrels at bay, I plant hundreds of bulbs

large bulbs (lilies, tulips, crocuses, and ranunculus) with the rest of my spring plantings of bulbs, crocuses, and ranunculus. They have dainty nodding flowers and come in a variety of colors. They're not sweet-smelling in bud as the larger *Hyacinth* (often recommended to deter deer and squirrels) and don't usually evoke skin-irritating reactions. There are many vendors available through online and catalog suppliers.

By planting a mix of these smaller varieties of bulbs, I'm happy to say that I have not lost a bulb to digging and hungry squirrels, and my spring garden now has a lot of flowers and color.

EDMUND, ILLINOIS EYE HALL

corrections

"Speeding of *House*" (around the House April). In "Blast Runner" the text should have read: "At full throttle, mower blades can spin at speeds approaching 13,000 rpm per minute."

GOING BACK TO REGULAR TOOLS GOING BACK TO

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FACT: VACUUMS DIRTY THE AIR INSIDE YOUR HOME WITH DUST, NOT EXACTLY NUTRITIOUS. In an attempt to improve indoor air, some vacuum cleaners blow dust into the air, filling your home with the stuff they're supposed to eliminate. Open to the only vacuum in the world that never leaves indoors while releasing fresh, clean air into your home. **VACUUMS DON'T MAKE EFFECTIVE. DYSON DOES.**



dyson

around the HOUSE

Single, Female, House-Proud

Unmarried women are buying houses in record numbers.

AWOMAN'S PLACE is definitely her own. That's right. A place that she bought with her—credit—hard-earned dollar. At least, that's what a recent survey from the National Association of Realtors is telling us.

Last year single women bought homes at a rate that more than twice the rate of single men and made up 21 percent of all buyers.

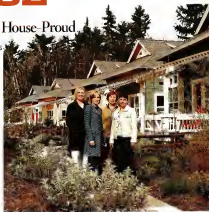
The explanations are simple. "Women carry more debt and make more money than they used to," says Yvonne Coffman, a Realtor with Coldwell Banker Swellley Hudson in Houston, Texas. Federal women-only agencies at home centers show they are also more comfortable with obtaining credit on government projects by themselves.

Such independence, coupled with low mortgage interest rates, makes real estate an attractive place to sock away savings. "I didn't want to wait until I got married to have a house," explains Debbie Childers, a 37-year-old oil industry executive, who bought a house through Coffman.

Linda Frost, a builder with the Cottage Company in Seattle, is moving the trend with designs based on what women want. Those who've got to master power tools and install a house are acquiring less enthusiasm, she says. Singles are also looking for safety in numbers. In one of Frost's new developments, which has beautiful clustered around a central courtyard, about 75 percent of the houses are owned by single women. "They like the sense of security and community in our design," she says.

Going it alone has never been easier, but that doesn't mean all these women plan to do it forever. "If I were to get married, my house would be big enough to move into it," says Childers. —LISA M. ARNOLD

EGG TO KNOW
The meal in a bite, Frank Lloyd Wright, dubbed "the greatest American architect" by the American Institute of Architects, was born.



Homeowners gather in the central courtyard of the "Cottage Company" development in Kentwood, Washington.

SPEAKING OF WOMEN HOMEBUYERS...



EASTING BARRIERS

In 1994, Congress awarded the Fair Housing Act, making it easier for single women to get mortgages and credit cards in their own names.



FAILURE TO LAUNCH

Of the 4.3 million Americans aged 25 to 34 who are still living at home with their parents, about 50% are men, according to the U.S. Census.



ALL BY HERSELF

About 55% of second-time home, are, or expect to be, single responsible for a house within their lifetime, according to a recent study.

SAW, SNIP AND SCREW WITH ONE
ROCKET-SIZED WELDER

[illegible]

OXFORD HISTORIC DISTRICT
OXFORD, MARYLAND

There are no souvenir shops in Oxford Maryland. No waterparks or mascot theme restaurants. It is the wilderness of a rural town. The

TOP: Alinei (left) and his wife, along with the author, at the signing of the Declaration of Independence. ABOVE: The Georgian-style Robert Morris Inn was once famous for its parties.

anti-Gelbberg. It's the kind of place where a vacation can provide exactly what it's supposed to: rest, relaxation, and for our purposes, restoration. In the form of dozens of superbly preserved Second Empire, Colonial, and Greek Revival houses.

The community rises from the irregular banks of the Trent and Ouse rivers and Town Creek, the two borders of water that made this town a bustling port in the 1800s, when British ships reported tobacco (the same grown on Oxford's fertile plantations). Oxford fell on hard times when the first cotton of the era, the Revolutionary War but rebounded in the mid 1800s, when it generously stocked up for both legal and illegal tobacco and cocaine plants.

Monday: Dedford is a real estate hubbed with week-enders and retirees from Baltimore, Washington, D.C., and New York grabbing up houses—most of which have better views—for between \$580,000 and \$4 million. The influx has created an interesting blend of the hard-louche and affluent residents. They all congregate in Dedford's half dozen restaurants, which tend to have a "Shore-like feel" to them. Go to see Dedford resident Bill McIsland, who runs the Dedford Museum.

Summer is the best time to visit Oglethorpe! That's when the bay is filled with boats, (a local sailing club hosts Friday night races) and twilight breezes provide a respite from the heat as you drink in Oglethorpe's architecture while walking along The Strand, a waterfront promenade that's a home to some of its most stately homes. —HOT's FAYDOL



Isn't it strange that your dry cleaning got you to a place where you don't even have to wear pants?



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REDESIGNED A BODY FRAME TO BE ANOTHER LIGHT WEIGHT AND STRENGTH. AND THE WAY
THEY DID WAS THROUGH THE POWER OF THE GMC ENGINEERING TEAM. GMC | SIERRA

{ CHRONICLE, Q&A }

Q Carpenter is an ancient Egypt plant/animal seed mixture to form a single hard that was stronger than the sum of its parts. It was so valuable that archaeologists have found remnants everywhere/inside. How can today's oil players use a lucrative use of the most ubiquitous building blocks in the history of civilization. John K. Hayes, who wrote the first American patent for plywood, was so limited in the potential, writing, "To cause profitable methods of the various uses which this substance may be applied."

A What year did Hayes patent his discovery?

A. 1909 B. 1905 C. 1911 D. 1899 (Source: *Science*)

A. 1803 B. 1845 C. 1853 D. 1879 *Check "Dates Around" on page 34.*

Waterproof leather. Coarsetexture-equiparts because of the leather and reinforced with available stitching. Warmth the nature and use a rug to rub the skin your work boots or shoes.

Thank you very much. Bye-bye.

THE TERMITES ARE COMING

WHAT YOU NEED TO KNOW TO KEEP THE BUGGERS FROM EATING YOU OUT OF HOUSE AND HOME

Century-long scary a pest that's been circulating. Termites aren't just living in bags of mulch at Home Depot and Lowes. But some scientists say the lower- and tree-branching bugs, which cause more than \$1 billion in damage each year, may still be spreading to an area you've never heard of. In fact, they're being clipped into mulch and bagged for sale. The reason, which proved as volatile as the bugs themselves, prompted Home Depot and Lowes to the back, saying they don't buy mulch from southern Louisiana vendors. Don't they did wall-to-wall long ago because a far more expensive to destroy, regular in the amount of 10 wood mulch from the city's 12-hour 100-year-old mulch.

When mulch is still used for mulch, Louisiana termites were introduced into Gulf Coast ports some 50 years ago on shipworm (East Asia). The invasive species, which forms larger colonies and is more pervasive, replaced their dwarfish counterparts, now less in 11 states, including Louisiana, Alabama, Florida, and Georgia. While they can multiply on their own, they've spread primarily through human transport, using rail cars and longshore piers, as their preferred vehicles.

These worst-weather bugs aren't likely to survive outdoors much north of the Carolinas, says Louisiana State University entomologist David King. But they can live for years in any warm, moist home.

To prevent an invasion, King recommends thoroughly inspecting wood, paper products, and potted plants. He tells of a Baton Rouge builder who, long before the termites, noticed a dampening infestation in a new cotton dollar house which installed a beam that he'd salvaged from another house. Had the builder hired an exterminator to fumigate the place before bringing it home, he would have avoided the disaster, says King.

When remodeling, use pressure-treated lumber. And don't mistake by repairing roof leaks and termite feeding. Check USAAGCenter.com for more safeguards that. That's protect you and just from termites, but wood chomping beetles and fungi, too. For more on this, please visit the site.

—JOHN McKEON



Smarty Clamps

New automatic locking pliers skip the pressure-setting screw to save you time and hassle

SO WHAT'S A GOOD TOOL, just get better. This, for instance, the smaller pair of locking pliers pictured above. They're indispensable for fixing slipped fasteners and loosening corroded garden-hose couplings, but adjusting the jaws requires you to fiddle with a little knurled pressure-setting screw in the handle. The new, larger pliers from Lockjaw, however, achieve the same in favor of a locking mechanism that clicks into action when you squeeze the handles to the jaws automatically adjust to the workpiece's thickness. The 6-inch Lockjaw costs \$16. Visit lockjaw.com for details. —KIMMY SIMON

FOR TOP

Draw Better Lines

When laying out lines along a straightedge, TOH technical editor Mark Powers draws the pencil toward his body while twisting it inward. That way the point stays sharp and rolls tight against the entire length of the edge.



PHOTO: GETTY IMAGES; PHOTOS: JEFFREY M. HARRIS FOR THE NEW YORK TIMES; PHOTOS: JEFFREY M. HARRIS FOR THE NEW YORK TIMES



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STURDY AND STYLISH GRILL COVERS

You wouldn't dress God but your garage bag to protect him from the sun and rain. So why should his beloved BBQ suffer too? That oil-basting black vinyl grill cover isn't doing much for the landscape, either. This Father's Day, why don't you get him a colorful new grill garment to replace that awful black bag. Covers from Pottery Barn come made out of the same water- and oil-free cotton. Beadlike details that conceal rivets and zippers, and they are guaranteed to withstand five years of harsh weather without ripping or fading. Just keep a rag and a little soapy water at the ready to take out ketchup and charcoal stains. The covers, which are machine designed to fit most charcoal burners, hold in stainless steel burners, and everything in between, start at \$250. Order at potterybarn.com.

—NICOLE RODRIGUEZ

Dawning of a New Bronze Age

An old-world metal regains popularity inside and outside the house

A COUPLE OF YEARS AGO we could have changed our name to The Old Shiny Stainless-Steel Future-Filled House and been more successful than ever. The microscopic metal was everywhere. Now, the trend is all rubbed away. And thanks to its handsomely tarnished, no-dam-freaks, stuff is creeping into just about every room in the house.

There are the statuesque faucets for the bath, such as the piece needed 'Nudge from Moen. Now for the kitchen are Jean-Air's line of escape appliances, including a refrigerator, dishwasher, and range for a warm and lived-in look in everybody's favorite gathering place. Bronze has even infiltrated the backyard with a propane-fueled patio heater from Dacia that's styled a little as an antique pagoda.

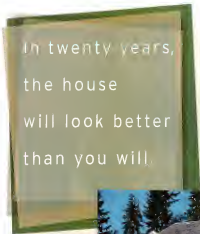
While bronze won't replace stainless, or copper, which has also gained up in popularity, the enduring look of the metal guarantees that trend won't look dated in a decade. —ASHLEY KIMBLE



GLOWING FROM ABOVE: Moen's Vintage faucet set, \$450. Moen.com. Jean-Air's Old-Bronze refrigerator, \$2,000. jean-air.com. Dacia's Light Pad patio heater, \$300. dacia.com.

COOKING ANSWER

Q **R. BROS.** Playful suggest some ideas, including "rusting," "inking," and "tanks," but it was I used 20% when the use of water and oil-free metal played suitable for outdoor cleaning and maintenance. Today, Americans will have out 21.3 billion brand last each year for use in the construction of permanent every year house.



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HOT ON THE TRAIL OF THE PIRATE BLACKBEARD

Those studying the site are far more interested in the structure and what it can tell them about colonial life in the region. Underneath its modern stucco exterior is a well-preserved plank house

Waterschips recently donated the property to a nonprofit group that he set up to restore the house and turn it into a museum and field school.

Incidentally, closer examination of their gold deathmask revealed the scribe who taken its origin to inscription: Akkazu Akkazu, Akk Seltzer. But Akkazu has taken upon himself the further mission to turn up a real treasure—older material that I give back to the people who they themselves find it. (L. 1000, 1001, 1002, 1003, 1004, 1005, 1006, 1007, 1008, 1009, 1010, 1011, 1012, 1013, 1014, 1015, 1016, 1017, 1018, 1019, 1020, 1021, 1022, 1023, 1024, 1025, 1026, 1027, 1028, 1029, 1030, 1031, 1032, 1033, 1034, 1035, 1036, 1037, 1038, 1039, 1040, 1041, 1042, 1043, 1044, 1045, 1046, 1047, 1048, 1049, 1050, 1051, 1052, 1053, 1054, 1055, 1056, 1057, 1058, 1059, 1060, 1061, 1062, 1063, 1064, 1065, 1066, 1067, 1068, 1069, 1070, 1071, 1072, 1073, 1074, 1075, 1076, 1077, 1078, 1079, 1080, 1081, 1082, 1083, 1084, 1085, 1086, 1087, 1088, 1089, 1090, 1091, 1092, 1093, 1094, 1095, 1096, 1097, 1098, 1099, 1100, 1101, 1102, 1103, 1104, 1105, 1106, 1107, 1108, 1109, 1110, 1111, 1112, 1113, 1114, 1115, 1116, 1117, 1118, 1119, 1120, 1121, 1122, 1123, 1124, 1125, 1126, 1127, 1128, 1129, 1130, 1131, 1132, 1133, 1134, 1135, 1136, 1137, 1138, 1139, 1140, 1141, 1142, 1143, 1144, 1145, 1146, 1147, 1148, 1149, 1150, 1151, 1152, 1153, 1154, 1155, 1156, 1157, 1158, 1159, 1160, 1161, 1162, 1163, 1164, 1165, 1166, 1167, 1168, 1169, 1170, 1171, 1172, 1173, 1174, 1175, 1176, 1177, 1178, 1179, 1180, 1181, 1182, 1183, 1184, 1185, 1186, 1187, 1188, 1189, 1190, 1191, 1192, 1193, 1194, 1195, 1196, 1197, 1198, 1199, 1200, 1201, 1202, 1203, 1204, 1205, 1206, 1207, 1208, 1209, 1210, 1211, 1212, 1213, 1214, 1215, 1216, 1217, 1218, 1219, 1220, 1221, 1222, 1223, 1224, 1225, 1226, 1227, 1228, 1229, 1230, 1231, 1232, 1233, 1234, 1235, 1236, 1237, 1238, 1239, 1240, 1241, 1242, 1243, 1244, 1245, 1246, 1247, 1248, 1249, 1250, 1251, 1252, 1253, 1254, 1255, 1256, 1257, 1258, 1259, 1260, 1261, 1262, 1263, 1264, 1265, 1266, 1267, 1268, 1269, 1270, 1271, 1272, 1273, 1274, 1275, 1276, 1277, 1278, 1279, 1280, 1281, 1282, 1283, 1284, 1285, 1286, 1287, 1288, 1289, 1290, 1291, 1292, 1293, 1294, 1295, 1296, 1297, 1298, 1299, 1300, 1301, 1302, 1303, 1304, 1305, 1306, 1307, 1308, 1309, 1310, 1311, 1312, 1313, 1314, 1315, 1316, 1317, 1318, 1319, 1320, 1321, 1322, 1323, 1324, 1325, 1326, 1327, 1328, 1329, 1330, 1331, 1332, 1333, 1334, 1335, 1336, 1337, 1338, 1339, 1340, 1341, 1342, 1343, 1344, 1345, 1346, 1347, 1348, 1349, 1350, 1351, 1352, 1353, 1354, 1355, 1356, 1357, 1358, 1359, 1360, 1361, 1362, 1363, 1364, 1365, 1366, 1367, 1368, 1369, 1370, 1371, 1372, 1373, 1374, 1375, 1376, 1377, 1378, 1379, 1380, 1381, 1382, 1383, 1384, 1385, 1386, 1387, 1388, 1389, 1390, 1391, 1392, 1393, 1394, 1395, 1396, 1397, 1398, 1399, 1400, 1401, 1402, 1403, 1404, 1405, 1406, 1407, 1408, 1409, 1410, 1411, 1412, 1413, 1414, 1415, 1416, 1417, 1418, 1419, 1420, 1421, 1422, 1423, 1424, 1425, 1426, 1427, 1428, 1429, 1430, 1431, 1432, 1433, 1434, 1435, 1436, 1437, 1438, 1439, 1440, 1441, 1442, 1443, 1444, 1445, 1446, 1447, 1448, 1449, 1450, 1451, 1452, 1453, 1454, 1455, 1456, 1457, 1458, 1459, 1460, 1461, 1462, 1463, 1464, 1465, 1466, 1467, 1468, 1469, 1470, 1471, 1472, 1473, 1474, 1475, 1476, 1477, 1478, 1479, 1480, 1481, 1482, 1483, 1484, 1485, 1486, 1487, 1488, 1489, 1490, 1491, 1492, 1493, 1494, 1495, 1496, 1497, 1498, 1499, 1500, 1501, 1502, 1503, 1504, 1505, 1506, 1507, 1508, 1509, 1510, 1511, 1512, 1513, 1514, 1515, 1516, 1517, 1518, 1519, 1520, 1521, 1522, 1523, 1524, 1525, 1526, 1527, 1528, 1529, 1530, 1531, 1532, 1533, 1534, 1535, 1536, 1537, 1538, 1539, 1540, 1541, 1542, 1543, 1544, 1545, 1546, 1547, 1548, 1549, 1550, 1551, 1552, 1553, 1554, 1555, 1556, 1557, 1558, 1559, 1560, 1561, 1562, 1563, 1564, 1565, 1566, 1567, 1568, 1569, 1570, 1571, 1572, 1573, 1574, 1575, 1576, 1577, 1578, 1579, 1580, 1581, 1582, 1583, 1584, 1585, 1586, 1587, 1588, 1589, 1590, 1591, 1592, 1593, 1594, 1595, 1596, 1597, 1598, 1599, 1600, 1601, 1602, 1603, 1604, 1605, 1606, 1607, 1608, 1609, 1610, 1611, 1612, 1613, 1614, 1615, 1616, 1617, 1618, 1619, 1620, 1621, 1622, 1623, 1624, 1625, 1626, 1627, 1628, 1629, 1630, 1631, 1632, 1633, 1634, 1635, 1636, 1637, 1638, 1639, 1640, 1641, 1642, 1643, 1644, 1645, 1646, 1647, 1648, 1649, 1650, 1651, 1652, 1653, 1654, 1655, 1656, 1657, 1658, 1659, 1660, 1661, 1662, 1663, 1664, 1665, 1666, 1667, 1668, 1669, 167

Those studying the site are far more interested in the structure and what it can tell them about Tokelate life in the region. Underneath its modern stucco siding is a well-preserved plank house, an architectural style favored by early European settlers. The plank housing is hand-hewn and connected with dovetail joints. The gaps between the boards are stuffed with oakum, a tar-like prepared rope that shipbuilders used to make their vessels watertight.

Incidentally, closer examination of their gold medals revealed it was, indeed, taken to a gold coin inscription. Akkaso Akkason, Akk Saffar Bahkharancho has to give a speech that Subho moved him will turn up a real treasure—information that I give locally to jump into the way their answers (Safar, Akkhar Bahkhar, Akkhar).

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BATH DESIGN

The bath's vintage look—hexagonal black-and-white floor tile, Swainsboro Specialty porcelain faucets, cast-iron console sinks—is in keeping with the home's early 20th-century style. A 28-inch deep built-in linen storage cabinet allows for shower, tub, and shelf storage.

Adding a Bath Without Adding On

» How a young couple raised the roof to make room for a second-floor master bath

WITH THEIR LOW-ROOF LINES, recessed walls, and built-in window seats, Arts and Crafts bungalows are cozy—sometimes too cozy. Christopher DeVore and Emily Parker's 1914 Craftsman had three small bedrooms and one bath tucked into one and a half stories. A mezzanine stair led to the second floor, where ceilings topped out at 7 feet under the ridgepole, making the upstairs bedroom and den barely useable. "I had no duck everywhere," says 4-foot-3 Christopher.

With their sights on one expanding the family, the couple needed to turn that walk-in-for-meeting-appet story into a functional space, complete with a water main. So they called daughter David Root—who raised the roof 7 feet to the new master floor space. The resulting remodel features a two-part master bathroom that includes a half-bath accessed from the hall, so everyone won't have to converge at cleanup time. Now the couple's 11-year-old son Parker sleeps in the room next to theirs and they bathe him using the shower's hand spray. "The bath has worked out really well as our family has grown," says Christopher. And the house is still snug—has a lot more comfort.

BY ASHLEY WINKLE
PHOTOGRAPHY BY
MICHAEL JENSEN

The Plan

>> Make low-ceilinged second-story space functional

What They Did

1) RAISED THE ROOF Designer David Reed added another 7 feet of head clearance on the second floor. This made room for a new master bedroom and bathroom, while preserving the existing bedroom for the couple's young son.

2) CARVED OUT A BATH AND A HALL Tucked into an 8 1/2 by 17 foot section, the bath relies on built-in storage and freestanding sinks to preserve a feeling of openness. Content to live in the close first tub on the first floor, the homeowners opted for a large, walk-in shower that would have been the toilet room at the master bath because a half bath that opens onto the hallway so it can eventually be shared by both bedrooms.

3) CREATED OPEN SPACE Sliding doors on either the master suite which has a hall running through the middle of it. When open, the doorways create an unobstructed sight line from one room to the other.



ABOVE: To create multiple views from between the master bedrooms and bath, the homeowners replaced and installed two salvaged carriage doors with arched overhead track. ABOVE: A built-in cupboard is tucked out in the shower to store toiletries and avoid clutter.



ABOVE LEFT: The bath is a walk-in shower featuring built-in shelves that hold the shower with natural light, pendant fixtures by Rejuvenation hang from its peak. ABOVE: The shower features an array of arched and is lined with built-in subway tile finished with a grid for an antique look. The built-in bench is topped with granite. White-enriched built-in shelves for storing toiletries.



More bath designs: thisoldhouse.com/bathrooms



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Q I live in a newer development and my short driveway makes a straight shot to the garage from the street. How can I make the driveway and garage doors less of a focal point?



FILL OUT THE YARD
BELOW A landscape with no details draws focus to the driveway and garage door. LEFT Plants on a new path to the street, an arbor for home life, a trellis, and a garage door with some detail all make the car entrance less of a focal point.

A TWO CAR GARAGES FRAMED by street here become an all too common feature of contemporary houses. But there are many ways to fight their unwelcome prominence. Plant tracks, arched trellises, colorful plantings, and creative paving designs can do a lot to mitigate an overbearing garage and driveway while creating new focal points to attract the eye.

1 | Bring out the house

Start with some changes designed to shift attention away from the garage and put the focus where you want it—on the house and entry. Architectural structures, like a vine-covered trellis under the eaves, can soften the busy lines of the garage and make it fade into the background. You can also dramatically improve the look of the garage front by upgrading to doors with windows or ones with an interesting style, such as carriage doors or Craftsman panels.

Paint is another way to camouflage a garage. A dark color on the house and garage door will make them recede and appear less prominent. Add light-colored trim and an accent color to the front door (red, blue, green, or black), and you've

BEFORE



BY DARWIN WHEAT
Darwin Wheat is the founding principal of Darwin Wheat Landscape Architects and has been designing gardens and yards throughout the South and greater Puget Sound region for more than 20 years.

created a brighter entry to catch the eye. If you have a plan from close, consider switching it for one that showcases the house's style—say, with patch or nightlights—while drawing attention

2 | Rethink the look of the driveway

Most driveways are made of black asphalt or asphalt. Here in the Northwest, exposed aggregate is the choice for bolder homes. Here's a change at minimal cost: turn a driveway from a barren expanse into something with character and visual appeal.

For an inexpensive quick fix, edge the driveway with a band of brick, concrete pavers, or stamped concrete. You can also use those square tiles as walkways to tie in landscaping elements together. For a more dramatic change, upgrade the entire driveway. Concrete pavers come in a multitude of sizes, shapes, and colors and can be used to create all kinds of interesting patterns. If you're stuck in the budget, consider colored, one-in-place concrete with a pattern scored into the surface. Speak with a local artist, which would not do the same made or oil drops in much.

You can also make changes to the shape of the driveway to combat the cookie-cutter look. If there's room to add a curve or a more rounded area in front of the entry, then the driveway becomes part of the house's architecture and endurable in a new way, making it seem less awkward and more charming. Even when there isn't enough room to adjust the shape, offsetting the approach just a bit on one side will put planting areas in the line of sight to the garage, reducing its dominance from the street.

3 | Soften and highlight with plantings

Carefully placed plantings go a long way toward giving the in-place look of an unadorned driveway and garage. Small, no-maintenance trees along the edge will eventually overtake the driveway and partially screen the garage. Be wary of planting too close to hard surfaces, and choose trees without overly aggressive roots. You also want to steer clear of trees that drop sap, such as larches and alders, to avoid a mess on the car under there.

Garden elements in the front yard will also draw focus. Add a walk or a water feature, or frame the entry or walkway with flowering shrubs and perennials of different heights. If you choose evergreen and deciduous plants with special seasonal effects, such as colorful autumn foliage or winter berries, you'll provide color and interest at all times of the year. (Because planting comes very around the driveway, get suggestions from your local nursery.) Touch off with container plantings right around the front door to brighten it up and create a dramatic focal point.

Finally, consider walkway from the street to the front door, reducing the need to use the driveway and reducing the emphasis on the entry. This is a down-to-earth step before you, when the front yard and porch were considered part of the space meant for strolling and mingling with neighbors and passersby, and the carriage house was relegated to an alley out back.

In the end, while you're doing all this to make the garage disappear, you'll find you've created an engaging landscape. This emphasis will be off the entrance and onto the beauty of earth appeal you will be added to your home. ■



GREATEST DIVISION Some garages can't be ignored like the large bay that backs into this house. But a careful planting plan can focus a visitor's attention on the entry while steps of water in the driveway can contain the full of flowers on the second story terrace help. Most bay garages seem into the overall landscape.



ARCH DETAIL Changing the paving material of a driveway makes it an interesting focal point at each end. At the same time, architectural elements like a brick wall or a stone wall with large plants soften the lines and lead the eye to other parts of the house.

GOT A QUESTION FOR AN ARCHITECT?

Each month in this column an architect will answer a reader's home design query. If you want advice on anything from how to design a kitchen to the best layout for a bedroom to choosing the right window for your space, send your question, along with copies of photos or plans, to: *House Calls*, The Architect's Response, 1515 Howard St., Suite 100, San Francisco, CA 94103. If your question is selected, the answer will appear in an upcoming issue. Due to the volume of mail, we cannot answer every question.

For more garage door designs: thehouse.com/architects



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BY ANNE WOODS PHOTOGRAPHS BY GARY PRINCE

1- GLAZED CERAMIC
Hand-glazed, oversize ceramic vases like this pair make a statement in the dramatic displays of bamboo stalks, or add a pop of color when filled with 30 in. tall \$245 \$325
wellerandco.com

2- BIRCHWOODSTONE
Fill this rough-hewn granite stone trough with low-growing plants. Just don't pour it away! It once you've set the place off by \$4 in. about 120 \$120
clawson.com

COME ARE THE DAYS WHEN TERRA COTTA ruled the garden. Those ubiquitous red clay pots, long beloved by gardeners, make great showcases for plants of all kinds, but they have some limitations. The same porous quality that carries air to roots also causes the pots to crack in winter and dry out in the heat of summer. If you're looking for alternatives, you'll find plenty of containers, in materials from rugged stone to lightweight fiberglass, that look good, age gracefully, and can hold up your round in any climate.

Whether you're planning to use them in the form of a backyard container garden, to hold a pair of shrubs on either side of a front entry, or simply to add visual interest and color to your landscape—or even in your living room—there are three pages of options for your inspiration to grow on.



10 NOVEN

This weather-resistant copper finisher is the traditional water bucket as made with the finest treated leaves of the water hyacinth plant. Each water shell is made of a fine copper mesh. 14-in. diameter, 14-in. tall. \$50. [jacksoncopper.com](http://jacksoncopper.com/cu.htm)

11 METAL FORGED VERUGLASS

A metal finisher for the urban rooftop or terrace garden. The aluminum finisher has a bronze shell that will develop a greenish black patina over time. 20-in. wide, 22 in., \$120. dharma.com

12 PINK LONESTONE

This naturally found in a fossilized rock garden, pink stone and stone is a classic elegant finisher as only in one color. Limestone look. The finisher is lighter than the existing one and gives each top, heavy plants where they might be easily tipped. 24 in. tall, 7 in., \$55. www.hillcountry.com

13 TRILL

This stainless steel finisher is a weather-resistant and a weather-resistant material for enclosing plant roots. The finisher is not really not resistant. It will last even long as it is made for use with landscape fabric. 13 in. wide, 13 in., \$300. countrycountryside.com

14 BRISTLE COVER

Metal planters with a long, soft, and weather-resistant finish. This one made from soft to say, a copper finisher will turn a greenish black. The finisher is made of a metal. Set of two. 11 in. square by 12 in. high. 5 in. and 13 in. tall by 12 in. tall. 7 in., \$35. copper.com



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Planter Tips

The plants for a healthy and happy they need plenty of water, adequate drainage, and room to grow.

ASSOCIATION The more porous a container the more often it will need watering. Most planters come with drainage holes, but if not, drill them yourself. Place a layer of jutting slats or a piece of window screening over the holes to keep soil from washing out, then add 2 to 3 inches of gravel for proper drainage.

SOIL Container is require a lightweight potting mix, or soil mixed with perlite or peat for drainage. But no matter if it does every two to three weeks, water retention soil mix. Then add a slow-release fertilizer to the soil when planting, and plants can be obtained continue to be fertilized weekly.

SIZE It is common that a too small will eventually over their time keeps may reduce moisture and drain them. As a result, full plants should not be aware that twice the height of the container. Full plants no more than one and a half times width.



THE ANTIQUE CURVE
An ornate design, it is just the thing to hold an elegant about thinking its entrance is a lovely thing to see. Though the metal can be a bit strong, it is a good way to hold the soil and holding even frequent water. 25 in. x 25 in. x 25 in. \$200. antiquecurve.com

THE GULLY POND
Looks like wood, takes care like wood, but both these are larger because it is made with 100 percent recycled PVC. If you plan to plant it, make sure to use a window product to keep from burning plants. 24 in. x 24 in. x 24 in. \$100. gullypond.com

THE EAST STONE
Inspired by the art of the East, this is a modern English garden. This ornate stone planter features the best of both worlds: a modern design and a traditional style. 24 in. x 24 in. x 24 in. \$100. eaststone.com

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American Lung Association

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BY ANNELEY WINDLE



UNLESS YOU'RE A PERFECT GARDEN TAKER OF YOUR LAWN (and, really, who is?), prepare for another round in the turf wars this summer. You'll have to deal with a full frontal assault from the drought lions, of course. And an attack from the crabgrass. But you'll face some stealthy opponents, too: cool-clamping grubs and microscopic mildew that turn the grass from green to gray in hours.

TIP

If dogs regularly make a pit stop of your lawn, keep a hose or water bucket nearby. That water is high in nitrogen, which can "fertilize" turf, creating a good-sized yellow patch. The best fix is immediate action. Flush the area ASAP with water to dilute it, then fertilize, and, if necessary, overseed.

But as an insect battles, the best defense is a strong offense: doing everything right to cultivate healthy turf. That means giving it up to an inch and a half of water per week, aerating and dethatching annually so water and nutrients can get down to the roots, mowing with a sharp blade to the right height (ask your local garden center what's best where you live), and fertilizing in spring and fall.

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So promise yourself—and your turf—you'll do this this year. In the meantime, here's how to conquer the most common turf problems you're likely to encounter this summer.

FUNGAL DISEASE

Symptoms: Circular patches of yellow to brown grass or blades with tiny red patches.

Culprits: Powdery mildew, brown-rhiz, dollar spot and fusarium patch, or red thread. These fungal diseases can take hold of stressed turf.

Solutions: Though lawns will generally recover from small areas of infection, if a fungus is progressively attacking across your yard, look for a fungicide with the active ingredient thiophanate methyl and follow the directions. For an organic fix, search out a calcium gluconate that will cause brown patch and weaken root after large. Then nurse your lawn back to health by practicing good lawn care habits. Aerate occasionally, for example, to break up thatch and improve soil aeration. If necessary, use a fungicide with a systemic herbicide, or pesticides. Carefully monitor your turf's moisture intake and overwater in the evening.

WEEDS

Symptoms: Fast growing and/or invasive greenery that quickly overtakes surrounding grass.

Culprits: Crabgrass or broadleaf weeds such as dandelion, plantain, foxtail, and chickweed that commonly pop up where



soils compacted and grass hasn't completely taken root. To check for compacted soil, stick a screwdriver into the ground. It should slide in easily.

Solutions: The first step is to eradicate any foreign invaders. The best approach is to pull them out by hand using a weeder or a hoe. This will weaken the root in affected areas. Or use a liquid herbicide as a hand sprayer to spot-treat any new invaders. If weeds are too plentiful to pull, then your garden center for a "weed-and-feed" blend of granular fertilizer and herbicide that will kill weeds without harming turf types are nearby. Look for a weed-and-feed for granular fertilizer without a glut of. Be sure to follow the directions on the bag exactly as to how granules should be applied during a dry spell or feed a 24-hour barrier with no-till herbicide.

From here on out, row up to twice a week during the beginning of summer when grass grows swiftly and ease the mower blade much during hot or dry periods. Water well as the summer heats up and your turf will naturally overtake the weeds. In the fall, down your compacted soil—poke holes with a pitchfork over a small yard, or rent a power aerator for large yards—will help seed the lawn. You may want to follow up with a pre-emergent herbicide next spring.



INSECTS

Symptoms: Brown turf that becomes loose enough to lift like a mat.

Culprits: White grubs, a catch-all term for root-chewing grubs, including June bugs, Japanese beetles, and masked chafers. To be sure that's what you've got, cut a square foot of

infected turf and lift it back, looking for pale, half-inch to one-inch C-shaped grubs. If you find more than six, treat the turf. **Solutions:** Grubs are the biggest threat to lawns, and pesticides have mixed with mixed results. One proven defense, for an organic fix, spread powdered milky spore or by down broadcast nematodes—microscopic worms that will feed on the grubs if they're present. With nematodes, timing the application with their life cycle is critical. Side eyes to follow the directions on the bag exactly. Both milky spore and nematodes can be ordered from some garden centers or online (see page 100).

Symptoms: Irregular, sheared patches of brownish-yellow grass.

Culprits: Chinch bugs, gray-black quarter-inch long insects

More on dealing with weeds: bit.ly/1444444



that suck moisture from grass and are most likely to attack St. Augustine and zoysia grasses in the South and Kentucky bluegrass in the North. To spot them, bury an empty coffee can with both ends removed at the edge of the affected area and fill it with water. The bugs will seek out the moisture, then float to the top. If you see more than 30 after 20 minutes, you should address the problem.

Solutions: Chinch bugs live on the surface, among thatch, so detaching will reduce their numbers.

To eradicate them completely, look for an appropriate insecticide with a pyrethroid ingredient. (Long-term, overseed with chinch bug-resistant grasses.)

Symptoms: Patches of thin blades with blades chewed off at the base.

Culprits: Sod webworms and tropical sod webworms, hairless caterpillar-like grubs that feed on grass blades that grow into small, tuft-colored, non-flowering turf. The tropical species that these worms eat often die before the roots have a chance to develop. To check for webworms, make beds of sods of turf designed with two pillars

of water pour over the sods and turf. Any larvae will float to the top.

Solutions: You can try flooding your lawn to drown them. Or choose an appropriate insecticide, such as an organic product. Look for the ingredients azadirachtin or spinosad. With extreme cases of tropical sod webworm infestation, you may need to replace the turf with a resistant grasslike.

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AROUND MY HOUSE

Any Tool Will Do

►► That was pretty much my dad's home-repair motto. Of course, he knew child labor could accomplish a lot, too

BY JONICE BENTON ILLUSTRATIONS BY BERGE BLUCH

MY DAD AND HIS KIDS WORKED ALOT on our old house when I was growing up. I think he wanted to teach us the value of hard work. Or maybe he just wanted us to keep us busy and away from the television. We didn't know what we were doing most of the time, but there was always a home project to work on.

I hated it. All of us kids hated it. We were normal kids. We just wanted to sit around and watch TV or someone else's house. But unfortunately for us, Dad is from Minnesota.

The way I see it, if you're born and raised in the Mid West, you inherit a certain view of life. You understand that at any moment you could be struck dead by an angry bear or a rabid cow. Or you could suddenly run out of food because you didn't have the foresight to run enough beans. Or you could freeze to death one winter, steps from the outside house. Or be tragically crushed by a car. You know the only chance in hell you have of surviving another year is to work all the time, scraping and scraping and hoarding and always ensuring the worst. It's kind of a pessimistic attitude, but it is very productive.

He's a great guy, my dad, and you'd like him if you ever met him. If you stayed very long, though, he'd put you to



Dad thought tools were like dinner utensils. If you have venison for dinner, you don't use your "venison utensils," you big baby.

TOP: JONICE BENTON; ILLUSTRATION: BERGE BLUCH



The head of the pickaxe didn't quite fit tight on the wooden handle. So we learned a useful lesson of home repair: Watch out!

work. And you would soon find that that less-approached-to-house projects is somewhat different from *The Old House*.

Maybe the biggest difference is that *The Old House* always suggests the right tool for the job. It never suggests using a 2x4 in place of a mallet. It never says, "You can build this house with a screwdriver, some twine, and a box of acid rain." It doesn't do this because, apparently, using the right tool makes everything easier, longer, and safer.

We did not know that.

My dad, maybe had the right tool for the job.

My dad, maybe had the right tool for the job.

My dad, maybe had the right tool for the job.

My dad, maybe had the right tool for the job.

and two girls—got all our needs for free.)

Dad's tool box was huge. A hammer. Two screwdrivers, one flathead and one Phillips. One of those indispensable adjustable crescent wrenches, which could be used as a hammer if necessary. A level. Plus more. You could do almost anything if you had plans.

Dad considered tools like dinner utensils. If you have utensils for dinner, you don't use your "venison utensils," you big, baby. You just eat the deer with whatever you have on hand. Dad would probably just use his plans, and maybe a hammer.

Never saw my dad buy a tool, but Mom bought him a circular saw one Christmas. Just lying that purchase must have been tough on my dad. After all, we had a hand saw. It cut things. Of course, it had not been sharpened probably ever, because sharp tools were for lazy people. Any idiot could cut something with a sharp power saw. Breaks a real wood person to cut lumber with a hand saw that wasn't sharp. The had to will it through the wood. And we were young, we had time.

Eventually, he came to terms with the new circular saw. We kids used the hand saw, and he used the circular saw because, as he said, "it's dangerous." He was right, and clearly, the hand saw was not dangerous, even to the wood.

Another tool that deserves special mention is Dad's pickaxe. The head of this old pickaxe didn't quite fit tight on the wooden handle. If you weren't giving attention, or no one had warned you, or you just forgot, when you grabbed the ax and swung it up high, the head of the pickaxe—sharp on both ends—would come sliding down the length of the handle, crashing onto your hand, just missing your eye or your ear or your head on the way down. If you were lucky.

But we were never from some forested old pickaxe. After enough near-crashes we figured out that if you swung the ax fast enough over your head and then again down, even legal force or something would keep the ax head on the far end of the handle, safely away from your hands. So we learned a useful lesson of home repair: Watch out!

My dad's garage was kind of a home for made tools. Sawdust was always blowing up. Random, curious shavings. I have since learned that, in fact, different shavings are designed for different purposes. I did not know that. This is very clever and makes complete sense.

Tools should be used for whatever needed.

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● | AROUND MY HOUSE

big holes, put something in there, and filled them back up again. Sometimes we had to move sand from the pits that was in the front yard to the pits in the backyard.

In any case, you used the shovel you got. The worst one to go even the flat-end shovel. At some point, the end of its wooden handle split off like a baseball bat when the ball hits it just wrong. Baseball players throw away their useless, damaged bats too often. Baseball players, emergency workers, use cylinder-pronged shovels.

Anyways, the remaining shovel handle was much shorter with huge raw splinters forming a jaggedly irregular point. My dad did not seem to notice. If you were struggling to survive on a homestead on a barren prairie in the Midwest before the turn of the



If you were struggling to survive on a prairie in the Midwest before 1900, my dad figured, this shovel with a busted and lethal handle would have been a highly prized and much admired shovel.

last century, he'd have figured, this shovel with a busted and lethal handle would have been a highly prized and much admired shovel, and one would have considered himself blessed there it even had a handle at all.

Of course, eventually, through use, the jagged splinters embedded themselves in hand nicks, so the deepest edges of the handle became worn smooth, and once again, the sharp, away-swing knife managed to regain its rightful place in the dangerous realm of the shovel.

Accidentally, Dad managed to accomplish a lot with his years of angry, manual, underground labor and our variety of marginally functional tools. Maybe he was a great leader. Or maybe it was proof of the theory that enough monkeys seated in front of enough typewriters with enough time would eventually hammer out the words of Shakespeare.

Now, years later, Dad seems to be finally and happily to the slow march of real progress—perhaps because the unskilled labor pool dried up. These days when I visit, I don't recognize anything in his rockpile. "Where'd you get this, Dad? Looks new."

"That's new, son. It's a full set of modern wonders."

"What happened to the old adjustable one?"

"Hears, I think I gave it to your brother."

But the game is not over. There are no snowdrifts or red oaks at Moon and Dad's new suburban home in California, where they've retired. Still, every once in a while Filmore something at the house that's a normal value assumption would have put out of its misery long ago.

"Dad, what happened to the wheel-barrow?"

"Oh, I couldn't get that to work."

"And it works now?"

"Sure. Your mother wanted me to buy a new one. But I got some wire and a hammer and fixed those two-by-fours together and now it's working again... good is over."

"Wouldn't be a waste, Dad?"

"Yep. Works fine."

"Always seemed excessive having wheels on those things anyways, Dad, don't you think?"

Chuck Edwards, assistant director for Nike

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Traditional Tubs

» Before showers rushed the cleanup ritual, vintage soakers beckoned bathers to sit back and relax

BY AMY B. HUGHES PHOTOGRAPH BY ALLISON DINIEN

IN THE FIRST HALF OF THE 19th century, taking a bath usually meant filling a copper tub with water heated over an open fire. Sounds like a rustic luxury, except that the tub was really an oversized washbasin, and typically located near the hearth in the not-so-private kitchen.

It wasn't until the turn of the last century that tubs, toilets, and sinks were all located in the same room, and the "bathhouse," as such, was born. Hot and cold running water came from taps mounted on the wall or pipes extending through the floor, and you could stretch out in a large round built not just for scrubbing, but for soaking too.

Unlike the plain enameled fiberglass tubs popular today, some of the earliest bathtubs were intricately carved wooden columns lined with tin or copper. Next came mass-produced materials, like vitreous china, glazed earthenware, and porcelain-cement cast iron.

Enduring cast-iron tubs are the most common type you'll find at salvage yards today. Churn and cream-era tubs are less common and had at least one catch that was harder to remove without damaging them, says Don Skovpen, owner of Vintage Plumbing in Northridge, California. "You can't just grab the rim and lift it up like you do with a cast-iron tub," he says. "Many people take them out the easy way, with a sledgehammer and sledgehammer."

Typically supported by feet shaped like a rooster's talons, clacking a ball or like a ball's paw with drawn claws, cast-iron tubs had a functional-like look that appealed to Victorian-era America's appetite for decorative utilitarian objects. Companies such as J. L. Mott Iron Works



The varieties of old cast-iron clawfoot tubs often need to be stripped and repainted with an enamel finish.



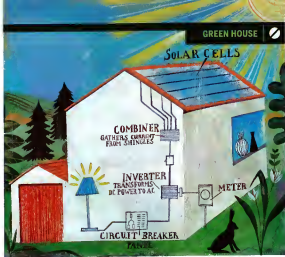
» Before an enameled tub fits in an available hole, be sure to level up the underlayment, joints before installation. Wet coating the water-thin tubs weighed 2,000 pounds, equipped with 200 pounds for cast-iron ones.

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Solar Shingles

» A seamless appearance—and generous tax breaks—make rooftop power plants more attractive than ever

AFTER A LONG ECLIPSE, solar energy is shining again. Its comeback is being fueled by an emerging constellation of federal and state tax incentives, the desire of hot-up homeowners to lower their utility bills, and increasing concerns over dwindling, scarce resources (not to mention presidential warnings to start U.S.-energy-overseas oil addiction to oil).

For one of the biggest reasons for solar's renewed popularity lies in its sleek, modern look. In the 1970s, going solar meant installing panels the size of parking tables in cumbersome racks on your roof. But in the past five years, the industry has become more and increasingly sleek, offering stylish, powered shingles that blend almost seamlessly with traditional roofing materials.

These systems—called “building-integrated photovoltaics,” or BIPVs—combine solar cells with shingles, tiles, fiber-optics, even asphalt roofing. Electricity is generated when the sun strikes a semiconductor layer, typically crystalline silicon, bonded to the shingle’s surface. One shingle by itself doesn’t produce a whole lot of power—between 50 and 300 watts, enough to run a window fan—but because hundreds of square feet of them together, you can generate enough electricity to power a whole house. The shingles get installed over new or existing

BY KEITH PANDOLFI
ILLUSTRATION BY OLAF RAAB

roof shingles, then an electrician (or trained roofer) has to wire the wires together and tie them in to your home's electrical system.

Going solar doesn't mean cutting ties to your local supply grid. Most MPV systems work in concert with existing power lines, which kick back into service after sundown and on sunny days, when the shingles don't produce much juice. And if you generate more power when the sun is shining than you actually need, just auction it in places like California and Arizona, at least 39 states let you sell unused windback to the local utility for a credit, thus making your electric meter do something really nice (shades up) backward.

That's what Shari Gage discovered when she and her husband bought their Erie Oak, California, home earlier this year. They opted for a 3-kilowatt MPV system integrated into the six-year-old roof (general guidelines call for 1 kilowatt, or 1,000 watts, per 1,000 square feet of house area). The system cost \$15,000, which they rolled into their mortgage, adding about \$100 to the monthly bill. Come next year, they'll receive a generous federal tax break thanks to the Energy Policy Act of 2005, which gives homeowners a credit of 30 percent, or up to \$2,000, toward the cost of a system. Gage has no worries about the new roof peeling for itself: Her last electrical bill was a paltry \$3.92. "I am now a little bolder in the power of the sun," she says.

Even before new federal and state tax incentives, "the cost of generating solar electricity has fallen 95 percent since the 1970s," says Noah Kaye, of the Washington, D.C.-based Solar Energy Industries Association. But that doesn't mean it's cheap. Financing in equipment and installation costs, the price of a kilowatt-hour of solar energy (the amount required to power an 180-watt lightbulb for an hour) is about 25 cents, versus around 10 cents for a kilowatt-hour of natural gas or coal-generated electricity from the grid.

The economics of whether to not to install a system depend heavily on where you live. While homes in sunnier states can collect more solar power than those in northern climes, solar payoffs are strongly affected by local electric rates. "If you have a 2-kilowatt PV system in Albuquerque, New Mexico, it produces 25 percent more electricity than the same system in Boston," says Kaye. "But the savings are greater in Boston, since electricity there costs so much more."

Sell, at the high end: when it's time to change your solar, you won't have long to wait before increased demand and advances in PV efficiency make those systems more affordable. "As electric rates continue to rise, solar power will come down," Kaye predicts. "We think it's possible to make solar cost competitive with retail prices, without subsidies, within the next decade." Manufacturers are already working on products that are even better-looking and simpler to install. For example, Atlanta Energy Systems has figured out how to sandwich PV cells inside corrugated plastic glass panels, a technology that could someday show up on the residential market as super-powered skylights. Just a glimpse of what's to come as the solar industry heats up again. ■

To find out more about solar tax incentives and rebates in your area: noidhouse.com/taxtools



The latest solar shingles, the Atlanta Energy System's SolarShingles (TSP) and PowerLight 2 SolarShingles (LSP2) blend almost seamlessly with traditional roofing materials. Expect to pay around \$40 per square foot for building integrated photovoltaic shingles, versus about \$4 per square foot for an asphalt roof and \$2 per square foot for solar. **RELOAD** Give Solar a flexible photovoltaic laminate can be peeled off and stuck to recent roofing.

At least 39 states let you sell unused solar power back to the utility, thus making your electric meter spin in reverse.

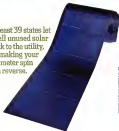


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PAPERWORK

Q My property-tax assessment just shot up about 15 percent. How do I go about disputing the bill?

BY KEITH FANGOLFI | ILLUSTRATION BY CHRISTOPHER ELIAS NEAL



A YOU WANT TO FIGHT THE POWER, EH? You're not alone. With property taxes continuing to rise nationwide, many homeowners are starting to challenge what they see as exorbitantly high demands made on them by their local assessor's office. Follow their lead, and you have a 39 percent chance of succeeding, says Eric Sepp, a spokesperson for the National Taxpayers Union.

First, a primer: The amount of property tax you pay is determined by multiplying your city's tax rate by the assessed value of your property and all of the structures on it. The value of those structures can change dramatically if you make improvements, like putting on a new family-room addition. Most homeowners pay property taxes once or twice a year; they can also be converted into monthly mortgage payments.

To determine the value of your house, assessors will either

STRATEGIES FOR REDUCING YOUR ASSESSMENT

Threatened property tax bill is not worth chase. Before you write the check, here's some good advice.

- ★ Make sure all the deductions you are entitled to were granted.
- ★ If something looks off about the assessment, read over the description of your property. Sometimes the problem is simple: a house under the microscope again because of an incorrect number of bedrooms.
- ★ Check the assessments of at least five comparable properties.
- ★ Make adjustments for differences between your property and the averages.
- ★ If your assessment is unfair, make an informal appeal to the assessor first. If that doesn't work, file a formal appeal.
- ★ Attend an appeals board hearing to get a ruling for the grounds.
- ★ Prepare a written summary of your case to introduce to your presentation.

step by for a detailed inspection during the town's assessment period, or simply check and enter documents on how much you paid for the property. In some cases, they'll just look at the median price paid for homes in your area and base their calculations on that.

Reasons for disputing assessments vary. Maybe you suspect that the assessed value of your property exceeds its true market value. Or you might discover that your neighbors, who live in an identical four-bedroom Colonial down the block, are paying less in taxes than you are. There's also the possibility that you're entitled to exemptions that weren't taken into account. In some jurisdictions, for example, homeowners renovating historic properties can get a partial property-tax reduction.

You don't typically need a lawyer, since most municipalities are more than willing to walk you through the appeals process. So where do you start?

"The first thing you need to do is call and talk about the review process" of your local assessor's office, says Geoffrey White, an attorney with Verry, Siano, Seymour and Pines, in Cincinnati. "Find out what the important timing points are. Since you might only have 60 days [from the time you receive the assessment or the month] to do this, you don't want to sit on it."

Most municipalities include dispute forms for you to send back if you question the assessment. After that, the process varies, but usually you'll be asked to attend an informal hearing at the assessor's office, where you can state your case. If your argument is strong enough, you might be able to resolve the problem right then and there. For example, if the assessed value of the house you just bought is higher than what you paid for it, producing the contract of sale could be enough to get the tax reduced.

If not, you may be asked to attend a second, formal hearing, during which you'll have to convince a review board made up of local assessors that their findings are incorrect. Be prepared! If, for example, you think the assessment of your home is not in line with other similar properties in your area—think comparable square footage and other features like swimming pools, additions, etc.—gathered descriptions of those properties from a local real estate agent to bolster your case. You should also bring along tax records, which you can usually find by researching property rolls at the assessor's office. Photos are a good idea, too.

If you do succeed in getting the tax reduced, great. If not, officials will have cut you a few bucks for your time and possibly a \$1 to \$30 filing fee.



Q Five years ago, I thought a great old house in a neighborhood on the verge of a turnaround. But the tide hasn't turned yet, and I'm wondering whether to sell the house or hold out a little longer. Is there any way to predict an upswing?

A YOUR DILEMMA IS the one I find that happens a lot, says William Bruchick, a Denver attorney who specializes in real estate law. "It looks like a neighborhood is starting to happen; a couple of people move in and start fixing up their homes, then it never picks up. It's always a risky move." On the one hand, you can be a pioneer and a brave community that may one day build your city's best neighborhoods. On the other, you can end up with a beautifully renovated house in a marginal neighborhood.

"Always buy where there's a Starbucks moving in," says Bruchick. "It's a sure sign that things are improving."

What's the best way to steadily gauge that a neighborhood will take off (or tank), then, are there signs to watch out for? Make a careful study of the surrounding neighborhoods. Are there a lot

of renovations in progress? How are the tax scores at the local schools? Is the crime rate in the area declining substantially?

You can also do your part to pump-start a neighborhood. Maintaining your home's curb appeal should be a priority. Even if you're about to hang out the "For Sale" sign, dropping a nice coat of paint on the exterior, planting some flowers, and keeping the lawn mowed may encourage neighbors to follow suit. You can also look into starting a neighborhood watch group or a local residents' project.

Finally, see if your neighborhood could qualify as a designated historic district, which can increase the value of your house. ■

To find out more about property taxes in your area, visit taxes.state.mn.us/taxnotes

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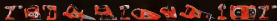
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As the saying is, "There's nothing more to a hole than the hole itself." But there is.

By David H. H. H.

HANGING A TOWEL BAR on a tiled wall? Puncturing the hard ceramic with a spear-tipped glass bit? Worried about splitting a delicate strip of hardwood molding? Make a pilot hole with a hand power bit to ease the way for a finish nail. Drilling wiring in new flooring? Grab a spade bit and show an inch-wide pathway through the studs.

For every phase you need to drill a hole, there's a bit to help you do it. The sheer variety of shapes and sizes—near countless the array of exotic alloys and coatings—may seem overwhelming at first glance. But most homeowners need only a half-dozen, or so, different types, each in a range of diameters that will fit in a household drill. On the following pages we'll show you a working lineup, as well as some more specialized bits that come in handy for occasional projects around the house.

And whether your collection indicates six bits or 66, be sure to treat all that steel with respect. When they aren't being used, store them in a dry case, or encase their shafts in holes drilled into a block of wood. Throwing them willy-nilly into a makeshift grab-box runs sharp edges dull and keeps you from quickly finding the one you need. And that one made drilling, well, a lot of pain.

VERSATILE WORKHORSE

The familiar hand bit is used for drilling holes up to half an inch in diameter in most any material. Tough titanium nitride coats this high-speed steel bit, and means that, when used with low torque, and held on edge longer than angled or flat bits, it can drill about \$3.50 for the 1/2-inch version, or more than \$10 for 1/2-inch, storingbits.com

**EDITOR'S
CHOICE**

Basic Bits

From the breadth of choices, these are the six types you need

1 | DRILL POINT (for wood, laminates, plastic)
The point keeps the bit centered until the cutting flutes engage with the surface. The beautifully machined bit shaves new drills more quickly and cleanly than run-of-the-mill bits because its steel-edge tip forms its own flutes. \$25 for the 1/2-inch shank, 1/4 to 1/2 inch working flutes

2 | TWISTED (for wood)
This workhorse bit slowly bores full-bottomed holes with even sides. Just the thing for inserting door hinges or installing a soft lead when framing a deck. Use low pressure and a slow speed if the wood starts to smoke the bit's exposing too fast. \$242 for the 3/4-inch shank, 1/4 to 2 1/4 inch working flutes



3 | SPACE (for wood)
These are good for making rough, angled holes in framing for plumbing and electrical lines, but most require constant pressure as they skip along. This space bit is different: With its three-cut tip and angled spurs it pulls dust through wood, you just pull the drill's trigger. About \$3 for the 1/2-inch shank, 1/4 inch to 2 1/4 inch working flutes

4 | DOUBLE TWIST (for stainless steel, cast iron)
Most twist bits can drill into mild steel and other thin metals, but you'll need this alloy to pierce through many stainless materials. Drilling into steel can push a bit's temperature to 1,300 degrees, so it's important to use a coolant. About \$4 for the 1/2-inch shank, 1/4 to 1 1/4 inch working flutes

5 | HAMMER (for stone, brick, plaster, masonry)
The signature winged tip—a piece of solid tungsten carbide—can penetrate concrete blocks, firebricks, and stone. The shaft is made with durable spring steel to withstand shocks when drilling hard. \$14 for the 1/2-inch shank, 1/4 to 1 1/4 inch working flutes

6 | SPEAR POINT (for glass, tile)
A strong, stainless-steel carbide spearhead is best on ceramic or glass. To stop it from skidding across the surface when you start, press the chisel bit against the glass or tile until it makes a ring. Then, then start the drill and proceed at a slow pace. \$4 for the 1/2-inch shank, 1/4 to 1 1/4 inch working flutes

TOOL TIPS
A useful carpenter's square for drilling holes in masonry. www.homedepot.com

Learn more about the tools in this article at www.homedepot.com

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UPKEEP

Patching Wood Siding

>> For great results, handle those fragile clapboards with care

BY JASON CARPENTER
PHOTOGRAPH BY NEER CHAPPELL

EASY DOES IT
This Old House general contractor Tom Silva slips a new clapboard into place underneath the siding above. For quietest siding, use boards that have been primed and are all sizes, which stabilizes the wood and improves the longevity of the latex paint job.

WHETHER IT'S CRACKED-ROTTED or the victim of a woodpecker's bill, a damaged strip of wood siding is no open invitation for water to leak in and wreak havoc on a house. So when a piece needs fixing, it's a task that merits a big red flag on the "To-do" list.

Replacing a broken clapboard isn't that difficult, but as This Old House general contractor Tom Silva shows on the next two pages, it's a delicate process that takes patience and precision. "If you're not careful, it's easy to break the surrounding clapboards," he says, "and then you'll end up installing much more new siding than you intended."

Power tools are out for this job; so much vibration. Siding repair is best done with hand tools—with one exception: "Forget the tape measure," Tom says. Instead, you can use the replacement using the old clapboard as a template, a simple technique that virtually guarantees a tight fit on the first try.

Matching Up

The clearest you can see a patch should blend seamlessly with your existing siding. Here's how to make sure you have a patch that's a perfect match before you begin.

CLEAR VERTICAL GRAIN



Sizing: Measure the butt edge thickness and the width of the exposed face of a few courses on the wall. Add six inch to the butt width to account for the overlap at the patch above. (These measurements will be slightly smaller than the "nominal" dimensions that lumberyards and home centers use. A nominal 1/2-inch actually 3/8-inch by 5/8 inches.) If you're not sure what size you need, ask the store to translate your measurements.

Texture: A rustic, rough-textured board will look out of place in a field of smooth siding or vice versa. Fortunately, wood boards are smooth on one side and rough on the other. **Grain:** Don't pay extra for clear (knock-out) vertical-grain (quarter-sawn) siding because it's easier to paint and lasts longer than cheaper flat-sawn boards. It's also easier to install because the point of the joint is longer and the end joints remain sealed. Cut a GVS doesn't match the rest of the siding. Then go with a grade that does.



REMOVE THE WOOD, THEN THE NAILS

1) **CUT** Using a utility knife, score the entire length of the damaged cleatboard from end to end about halfway up from its bottom or butt edge. Don't follow all the way through the board or you may cut the board's left under nail.

2) **PRY** To break loose the lower half of the damaged piece, start at one end and gently tap a metal pry bar under nearly the butt edge next to a nail. Pull the bar toward you don't push it, so you don't crack the neighboring cleatboards.

3) **SNAP** Work the pry bar along the butt edge until the lower butt breaks off, preferably its full length. (It may take even three or four prys.) If this piece remains intact, insert it in a temporary way the replacement. Leave the upper piece in place for now. Then the exposed sheathing to see if it's sound. If not, cut out and patching out spots before continuing.

4) **REMOVE THE BOTTOM NAILS** Use a hammer claw or pry bar to pull any of the butt edge nail that remain embedded in the wall. As you pull each nail, keep the hammer head or pry bar horizontal to avoid cracking the siding below.

5) **POP THE TOP NAILS** The butt edge nails are the siding above the undamaged siding to come out. Tap the pry bar up under the undamaged siding at each nailhead, then push the bar gently. With luck, the nails will pull out a bit so that when you tap the board back the nails will pop out just enough to get the pry bar under them. The top half of the damaged piece will fall out when all these nails are pulled.

6) **CUT THE STUBBORN NAILS** If the top half won't budge, tap it back with a block under the siding next to the nail. Push with the sheathing. Grasp the blade of the block and cut the nail's shank to reduce vibration and the risk of breaking the wood.



PHOTOS BY JEFFREY M. HARRIS

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"Siding is a raincoat for your house. If you've got a hole in the raincoat, you've got problems."

—TOM SILVA
KONIGSBERG CON FACTORY



The Nail You Need

While there are many varieties of clippers to choose from (see "Watching 90¢" page 70), only one kind of nail will do: a stainless steel ring-shank nail for siding. Stainless steel doesn't rust or stain the paint or leave black streaks on the wood and the rings on the shank cut the bark, keeping the skin of the hole to prevent the nail from popping out.

For the best guarantee, opt for a 7d or 8d (2½ or 3½ inches long) nail, and drive them into the sheetrock. The longest way with hammering, but 2½-inch nails just into the sheetrock as long as it's ½-inch (or thicker) and made of plywood (OSB) or solid wood. To find out how thick your sheetrock is, remove a piece of siding and poke a drill bit into a vertical crease between two sheetrock panels. Be

BUILD YOUR SKILL Here's a simple diagram of a ring-shank nail. It will tell you the sheetrock's thickness.

Learn how to get an underlayment nail with a hammer.
Email: howto@konigsberg.com

REPLACE THE SIDING

1) MARK AND CUT Place a full-length piece of the damaged siding on the face of the replacement. Line up the ends, and, using the old piece as a guide, mark the new piece with a utility knife. Score the cut line with the utility knife, guided by a square. (Squaring prevents the wood from chipping when you cut.) With a hand saw, cut the new piece of siding on the inside side of the line. Angle the blade slightly to cut it level toward the side that will be against the house. This leaves a little extra space for caulk.

2) BACK-CALK THE JOINTS Lay a thick bead of caulk on both ends of the space where the new board will go. The bead should cover the end grain of the neighboring clapped end and the gap between its back side and the sheetrock. In this application, Tom favors a paintable acrylic latex caulk.

3) FASTEN THE NEW PIECE Push the first end of the new clapped end up at least an inch underneath the boards above. Then line up its top edge flush with its neighbors. Start nailing at the ends; each nail should be about ½ inch apart from the butt edge and line up vertically with those on either clapped end (to prevent splits). Keep nails at least 1½ inches from the end and joint. Drive each nail in at a slight angle so it doesn't pierce an old nail hole in the sheetrock. Pound nailheads flush with the face of the clapped end, or the last couple of hits so you can't dent the wood. Do the same to the old boards above the replacement (below). Finish by driving caulk into the nail holes and wiping away any caulk that comes from the joint. The new piece is now ready for paint.



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Hanging an Interior Door

BY ALEXANDRA RANDON
PHOTOGRAPH BY KALIN SMITH

A DOOR THAT'S GOOD FOR SLAMMING has got to have some bulk to it. Not a hollow core, filled with cardboard, 5-on-punch-any-hand-through-a-kind-of-foam. A real door, made of solid wood or MDF or at least a nice veneer with a core of thick wood planks.

Unfortunately, the land is rife with hollow-core doors. The darling of the developer and the bane of the homeowner, these lightweight guarantees don't do much more than block the light. Sound echoes off their rinky shafts and seems to seep right through them.

Lucky for you, we have the fix. In a weekend, you can order one of these impostors and replace it with a genuine door, the way *This Old House* technical editor Mark Powers does here. Not only will it look better—upping the class factor in your house—but it will sound better, too, muffling all manner of intrusive noise. And, oh, the way it feels—heavy, sturdy, and ready to give that with a resounding thud.

COST:

\$125 to \$1,500 for the door, depending on size and materials; \$50 to \$250 for a new lockset and knob set, depending on quality

TIME:

3-5 hours (plus time to prep)

DIFFICULTY:

Difficult Requires mechanical skills in a steady hand, and (oh-oh) a little math

Measure six-panel pine doors from *The Home Depot*, \$399; Jet Doors Inc. and capacious in-painted brass, 1700 Chesser City Hardware, \$170; brass marine lock, \$10, or brass lockset, \$21 (see list), both from Van Dyke's Hardware

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Dark Grey



Butt Chest



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{ overview }

A DOOR THAT'S INSTALLED WELL closes tightly and quietly and doesn't swing open on its own. That means it's been trimmed to allow a very small gap next to the jamb.

As in this Old House panel-and-core style, Wendt explains, "about the width of a nickel." What he means is: Make it just under 1/16 inch. Be measuring and trimming the door before installation must be done carefully and properly.

In the same vein, the various mortises on the door—the recesses in which the hinges sit or the lockset's slides—must be carefully cut out. Too deep and the door won't close properly and might spring open. Too shallow and you'll get cracks and stresses every time you move the thing. This step is a good mortise is a sharp drill and a steady but light hand. This is not the time to bang and dig with all your strength.

The good thing about doors these days is that you don't have to spend for the expense of solid wood to get its look and feel. Many doors are made from solid medium-density fiberboard (MDF) or an so-called "solid-core" door, which means they have a veneer of wood or MDF over a core of particleboard or woodpieces. They're not only better at soundproofing than hollow-core doors but more resistant to warping than solid wood. In fact, MDF is one of the most stable materials you can choose. However, if you intend to use a stain or clear finish on your door instead of painting it, you'll want to get one with solid wood or wood veneer.

shopping list

1 | DOOR Measure the width of your opening (between jamb or trim pieces) and width (addition) in the height (between jamb or trim pieces). Note the largest obstruction from inside to buy the door. Doors come in standard sizes; the next common size is 36 inches high and 30 inches wide. Most solid-core doors can't be trimmed more than an inch in which part they show or less. So if your door size isn't close to standard, you may need to make order or buy a solid-wood door.

2 | KNOBSET A set for a cylinder lock should include two knobs, a spindle and two screws. Some plans for a modern lock with a ball, two screws and a keyhole. A set with a keyhole may be required.

3 | LOCKSET Choose between cylinder lock or ball set. Cylinder lock set with a ball set is most stable. A ball set is rectangular set with a ball and a ball set. (You can't set an outside lock, but a new mortise lock set might be worth the cost. (See also 120) Get for the mortise lock template that comes with it.

Before buying a mortise lock set, make sure the distance between the spindle hole for the knob matches the size of the lock body and the hole for the spindle hole for the knob.

4 | HINGES You will likely need three to handle the weight of a solid-wood or solid-core door. Many doors come with built-in hinges that include the size and number needed.

5 | LOCK INSTALLATION KIT It's necessary for drilling for a cylinder lock. The kit includes a set of bits, which come with two different ball sizes that attach to a drill. The kit also includes a set of bits for the lock set. Some kits also include a set of bits for the lock set. Some kits also include a set of bits for the lock set.

6 | WOOD SHIMS To set the door in its opening in place, use the shims to level the door.

{ step by step }

Trim the door to fit

Subtract 1/16 inch from the width and height of your door opening. This will determine the door size, leaving a 1/16-inch gap between it and the jamb. Measure the door to see if it needs trimming. If the amount to be trimmed is less than 1/16 inch, you can plane it down. More than that, and you'll need to use a circular saw. If you need to trim the height, take down the bottom of the door (the thicker end). To trim the width, take evenly from both sides.

To cut the door with a circular saw, roll out painter's tape at the cut line. Mark the line on the tape and score it with a utility knife. This will keep the saw blade from chipping the wood. With the saw blade on the cutting guide and its side on the waste side of the line, slowly trim the door (p. 17).

Place the door in the opening and check until it's centered in the opening. Check for tight spots. Plane or cut it as needed.

When cutting or planing the door's sides, level the edges about 2 or 3 degrees where it hits the stop so the door will close the jamb smoothly.



2



Mark the hardware location

Return the door to its opening and check it evenly all around. Mark the door where it meets the existing hinge mortises on the jamb (left).

Also mark the door at the lockhole for the mortise, strike plate. This will show you how high to place the door lock. About 36 inches up from the floor, but most people. You can adjust this measurement a foot in in either direction to center the knob on the door handle if it's long.

Chisel out mortises for the hinges

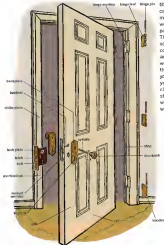
Once again, remove the door and set things aside facing up.

Disassemble hinge. Take half and line it up at the hinge mortise. Knock the bottom of the hinge out of the door and its straight side 1/16 inch from the edge. Then the hinge is parallel under the door. Then hold the edge of the hinge up to the face of the door under the outline and draw a line under it. This will be a depth guide for your chisel.

Score through the layout lines with a utility knife. Use a chisel to break down the hinge line. Carefully make a series of cuts, or bents, between your scored lines with a chisel and mallet. Chisel the steel from the door face lightly until each cut is at the depth of the guideline.

Hold the chisel bevel side down, and plane out the stock between the mortise (right). Use the chisel over the edge of the mortise. Check its depth and smoothness with a hinge level. It should sit squarely in the mortise and flush with the door edge. Make the other mortises in the same way.

To hold the door upright on its edge, put "bat" on it—screw long, wide strips of wood to the top and bottom ends, resting tight against the floor.



BUILD YOUR SKILL
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ILLUSTRATION BY
GREGORY NEMEC



4 Drill for the lockset

To make a pocket for a mortise lock, you need to drill a series of deep holes. Then chisel out between them to square off the mortise. These holes must be perfectly straight, so you'll need a guide to keep the drill as true as the door as you push down on it. Since the drill's body is wider than the door, the best way to hold the drill is to use planks as a reference to match the drill's alignment with the door's.

Turn the door over to expose the latch side edge. Using a level, make sure the door is perfectly plumb. Reposition the scrap wood feet to secure it.

Make a guide for your drill with scraps of wood. Plac enough pressure against the guide from the door and rear the drill body when it hits the guide (check it is aligned). Clamp the guide to the door between the drill's body and the door.

Position the template (last shown) with the lock and mark for the center of mortise holes with a nail or pencil. Drill the holes with an auger bit. Chisel out between and around the holes to square off the mortise. Then chisel a larger, shallow mortise for the lockplate around the deeper one.

If you have a cylinder lock, use a hole-saw bit to cut the necessary holes (ABOVE, RIGHT). Be sure to set the jig for the right lockset for your lock.



5 Locate the spindle hole

Mortise locks require holes for the spindle and keyhole. New locks come with the plates to locate these, but be sure you use the holes spaced for your lock's lockset (distance from spindle to door edge).

Lay up the template and tape it in place. Use a centering punch, a hammer and nail to make a starting hole for your drill bit at the spindle location (9/16\"/>

Remove the template. Using a drill driver fitted with a 3/4\"/>

To keep the face of the door from splitting as you drill, hold or clamp a scrap block of wood against the door where the drill bit will exit.



5

6 Hang the door and attach the hardware

Once all the holes and mortises are finished, prime and paint or stain and finish the door. Make sure to cover all six sides with finish so it's completely sealed and won't swell in high humidity.

Position one half of shims (with the inner knuckle) into mortise on the door. Use a centering punch to make starting holes for the screws. Some the hinge leaf to the door. Repeat on the other half of hinges. Secure the other halves of the hinges to the door and JLETT.

Hang the door, holding the hinges together and tapping in the pins. Install the lockset. Attach the backplate (or escutcheon) and door handle. Don't secure the knob onto the spindle too tightly or you won't be able to turn them. Screw the new strike plate to the jamb.



► If the door swings open or shut on its own, then it's not plumb. Open the door to 90 degrees, and shim the door on its inner edge. If it's not plumb, you'll need to move one of the hinges closer to the stop to fix it.

Put together knob at your door. Visit www.howtohangdoors.com for more info.

buying guide

Many door companies make their products in a variety of materials, so you can choose a design/finish/option between solid wood, solid core, or MDF (choose which also varies affects the price). Here is a range of interior door styles to suit any taste.



A. DENNIS GRANIER A heavy door the 20th-century era is built in solid-core with a high-swinging, slender, modernist, and lots of white, curly trim. Style EG225, from John Allen. Solid mahogany, shown: \$1,250*. MDF: \$600.

E. EVIDENCE This style reflects the long, arched windows on the inside and Second Empire houses. Style TS4032, from TruStone. Solid mahogany, shown: \$1,200. MDF: \$600.

F. STANDARD (SUE) A heavy door will be of home among the classical details at Federal. Classic Revival, or Colonial Revival houses. Four-panel traditional, from Woodward. Solid oak, shown: \$450. Solid core: \$340.

F. FIRM FIRM The style is a mix of the 19th-century of the 19th-century (display simple forms, like this single-panel form). Traditional one-panel, from Woodward. Solid oak, shown: \$220. Solid core: \$180. MDF: \$120.

G. SHAKER (SUE) A heavy door will be of home among the classical details at Federal. Classic Revival, or Colonial Revival houses. Four-panel traditional, from Woodward. Solid oak, shown: \$450. Solid core: \$340.

H. EVIDENCE This style reflects the long, arched windows on the inside and Second Empire houses. Style TS4032, from TruStone. Solid mahogany, shown: \$1,200. MDF: \$600.

*All prices are approximate, for doors 80 to 90 in. high by 20 to 30 in. wide.

D. FIT FOR A QUEEN ANNE This three-panel design, with a central glass panel, is a classic of the late 18th century. Three-panel, from Woodward. Solid oak, shown: \$220. Solid core: \$180. MDF: \$120.

I. FIRM FIRM The style is a mix of the 19th-century of the 19th-century (display simple forms, like this single-panel form). Traditional one-panel, from Woodward. Solid oak, shown: \$220. Solid core: \$180. MDF: \$120.

INSIDE THE OUTDOOR KITCHEN

From design ideas to materials choices, here's how to build one from scratch

IF YOU GRILL IT, THEY WILL COME. This simple wisdom lies at the heart of the best summer gatherings. It's also driving a trend that has been growing for several years: outdoor kitchens. Today, these open-air spots range from simple prefabricated islands on patios to fully equipped pastels cooking centers with custom countertops, planked tops, pizza ovens, sinks, dishwashers, ice machines, and beer taps—you name it. "People are creating the ultimate outdoor paradise," says Campbell, California, landscape architect Jesse Rowman. "Given a few years ago, an outdoor kitchen was basically a big grill. Now there are so many new products available to homeowners, you can create an outdoor great room—part cooking area, part living room, part dining room—that is the center of your outdoor life."

John and Maureen Macchia's kitchen, shown opposite, which Rowman designed, plays just such a role. Built near the pool at their Los Gatos, California, home, the kitchen comprises a freestanding stone-clad pizza oven and an L-shaped stone-and-wood island that holds a built-in gas grill and a stainless steel sink. Maureen, a trained chef, has made the wood-burning pizza oven the hub of many

BY JILL CONNORS | PHOTOGRAPHS BY CARIN ALPERT



NEW MEETS OLD
In John and Maureen Macchia's outdoor kitchen in Los Gatos, California, a built-in gas grill shares space with a wood-burning pizza oven that was imported from Italy by Andrea Muscarelli (opposite) of Muscarelli Imports.

FIRE IT UP The prefab pizza oven was installed in a custom earth made of a Mesa Valley technique called Spitalino projecting steel and steel over opening. The oven storage enclosure is made of local Santa Rosa stone.



ON TAP The Machucos use their painted stainless steel sink for dining table surface and minor plates. An underground fire extending from the house supports grid heating water for a nearby copper faucet.



gatherings—from birthday parties for her teenage daughters, Emily and Hilary, to cooking classes with friends. “We do whole meals out here,” says Marston.

Design Essentials

The Machucos’ setup is definitely deluxe, but all you really need for an outdoor kitchen is a grill and counter top. You might start with a gas BBQ or charcoal kettle on wheels, plus an inexpensive cork cutting board with drawers to store utensils and open shelving for stacking plates, glasses, and serving trays. More elaborate outdoor kitchens provide ample counter space for such necessities as sinks, plus safe burners for warming pots of chili or serving dips, as well as enclosed storage underneath for cooking gear. Available well-designed indoor kitchens, they typically have a U-shaped or L-shaped layout that lets the cook move easily between prep, grill, cooking, serving, and cleaning sites.

When deciding where to sit an outdoor kitchen, convenience is key. “The further away from the house, the less likely you are to leave,” says Rowman, who advises placing an outdoor kitchen near an entry screen—midway between house and pool, for example, or on a deck or patio off the

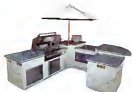
main indoor living areas. Before you build, check local zoning laws, which may restrict the size and location of your structure. You have also discuss clearance requirements between a grill’s open flame and a combustible surface, which could be a problem if an outdoor kitchen is to share a wall with a wood-sided house.

Though many outdoor kitchens are open to the sky, adding an overhead structure, such as a canvas awning, porch roof, or slat topped pergola, helps define the space and creates a welcome feeling of enclosure. A cool idea has practical benefits, shading the cook (and guests) from too much sun, regardless of the kitchen’s location on the south or west side of the house, or where the weather is frequently wet. It also provides a place from which to hang all-weather cooking hats, overhead task lighting, and lanterns.

Materials Choices

An outdoor kitchen can be built on wood or composite decking, as well as on any masonry surface. The Machucos chose poured-concrete floors, which can be heated down—like the rest of the kitchen—for quick and easy cleanup after family meals and large parties with friends.

For ground-floor installations where weight isn’t an issue, a canvas island or peninsula that extends from the house is typically made of concrete block that’s finished in a hand-wearing, flameproof material such as stone, brick, or stone.



MAKE IT MODULAR Seven prefab sections made of stainless-steel aluminum built together to create this L-shaped outdoor kitchen with 22 linear feet of workspace. The quarter-counter, which accommodates the grill, is designed to be counter for built-in functionality. A 30-inch deep in stainless steel grill. Under-counter are two storage cabinets, one closed drawer, and two open shelves (the grill). The whole kitchen by Outdoor Living Products is assembled on site and costs about \$30,000 including hot utilities and appliances. Inglewood.



COCKTAIL CADDY

This stainless-steel caddy on wheels includes sink, faucet, built-in grill, and storage. It’s designed to be counter for built-in functionality. A 30-inch deep in stainless steel grill. Under-counter are two storage cabinets, one closed drawer, and two open shelves (the grill). The whole kitchen by Outdoor Living Products is assembled on site and costs about \$30,000 including hot utilities and appliances. Inglewood.

Alfresco Extras

From a well-waxed bar cart to a convenient food pump, these are the latest in alfresco luxuries guaranteed to turn any outdoor kitchen into happen central.



1

GRILLING, BIG TIME With its 13,000-Btu burners, an infrared grilling zone for searing meat quickly at 20,000 Btu, and an extra side burner on the side, this stainless-steel BBQ offers an whopping 1,300 square inches of cooking surface. That means you can make burgers, steaks, and more. The whole thing is built on a side for built-in use. Two sliding shelves extend the grill’s overall length to 79 inches and provide a place for plates and condiments. Reiter is a modern outdoor kitchen, serving drinks and storage cabinets, and you’ve got an all-in-one outdoor kitchen. Available in stainless steel or black. The Electric Home Tools about \$4,300, electric home.



ON THE SIDE

The Pro Center Grill, with an infrared grilling zone, infrared grilling, and two gas burners, is a perfect fit for grill for “hangar top” cooking outdoors. For built-in use only, about \$1,700. The 30-inch wide ProCenter Grill (bottom) offers a larger hot infrared heat for searing steaks, as well as a heat for warming a steak. For built-in use with an electrical outlet, only about \$2,300. Both from Lynx, Lynx Outdoor.



NEVER-ENDING ICE

This 25-inch-wide stainless-steel ice maker produces up to 35 pounds of ice a day. It’s a perfect fit for built-in use only, about \$2,000. The whole thing is built on a side for built-in use. Two sliding shelves extend the grill’s overall length to 79 inches and provide a place for plates and condiments. Reiter is a modern outdoor kitchen, serving drinks and storage cabinets, and you’ve got an all-in-one outdoor kitchen. Available in stainless steel or black. The Electric Home Tools about \$4,300, electric home.

RUSTIC CHARM The concrete patio deck, shaped to mimic the island of the Machados' kitchen, was also designed for an open look. Cabinets with painted shaker doors provide access to gas and plumbing lines as well as storage space.



Lightweight wood or metal frames clad in cement board and filled with stone veneer or stucco are better suited for elevated decks. Countertops are usually poured concrete, tile, or granite. Just remember that, like the concrete and natural stone surfaces inside your home, outdoor counters must be sealed every year to keep oils from staining them. Also, make sure the counter is tilted forward slightly—usually 1/8 inch per foot of depth—so rainwater doesn't puddle on top.

Stainless steel cabinets and sinks emphasize the outdoors well (look for 304 grade, 18 gauge steel) and complement most built-in grillbars (sink and sealed back). Stainless rare-earrings, copper mugs and faucets develop a patina over time and make a nice complement to wood cabinets like the painted plank ones used in the Machados' kitchen. Chiseled patio or work cabinets have an equally warm appearance, and wear well and resist rot in most climates.

Prefab outdoor kitchen, which can be ordered from in-line dealers as well as through your local home center, are typically constructed of galvanized steel or reinforced concrete models that are raised or bolted together. These are typically finished with flameproof enamel and laminate tile or stone coverings, as well as stainless cabinetry.

Standard finishes and configurations tend to make such prefab barbecue islands less expensive than their custom counterparts. A 7-ft.-long unit with a drop-in grill, sink, fridge, and under-counter storage, for instance, costs \$4,000 at The Home Depot. A similar-size kitchen built by a contractor or mason will run about \$6,000, or between \$250 and \$900 per linear foot, not including appliances.

Building Considerations

In deciding how simple or elaborate an outdoor kitchen to build, think first about plumbing, electrical, and fuel needs. You can avoid hassles altogether by choosing a grill that's fed by a propane tank instead by opting for a dry sink rather than a plumbed one. Filled with ice, these basins are great for chilling beverages.

But for an outdoor kitchen that's loaded with amenities, such as an electric wok, infrared side burners, and a fridge, you'll need multiple GFCI outlets. For ice makers, dishwashers, and plumbed sinks, water supply and waste lines have to be run out from the house or the street. And if you don't want the hassle of replacing propane tanks, you'll have to tie your grill to the gas line that fuels your indoor range. Just make sure the existing line can handle both; a separate gas feed for the grill might be necessary.

Constructing a patio area typically starts with a dammed, preframed concrete or masonry system over a lot, which costs about \$3,000. Next, you'll need a custom stone or brick enclosure, adding another \$1,000 to \$3,000 to the tab. At 8 feet tall, including its chimney, and 4 to 5 feet wide, a patio oven also requires lots of space, so think carefully about how much site area you really need.

Building in hutz is also something more homeowners—particularly those in colder climates—are doing to extend the outdoor dining season. A portable copper fire bowl or stucco-coated charcoal or propane option at about \$100, though both provide more outdoor time warmth. A large, built-in wood-burning pit circled by a low stone wall, for example, can set you back as much as \$2,000, but it offers more firepower. Alternatively, freestanding electric and gas-fired patio heaters that cost about \$300 have kept from outdoor seasons very to indoor coziness.

The Machados family and a growing number of like-minded folks across the country are discovering that by socializing themselves with nature once relegated to the indoors, they can achieve all the comforts of home—only outside. ■



Eating Out

An outdoor kitchen can be configured many ways, depending on built-in amenities and space constraints. Here are three options, from grill-only to fully equipped.



- PORCH PENINSULA** Its offshoot the grill in this rustic construction kitchen peninsula extending from the back of house in Austin, Texas. Limestone faces the outdoors and is anchored in the floor. Because this outdoor kitchen, designed by architect Kolagen Ltd., is just steps from the main kitchen indoors, there was no need for a separate sink or refrigerator.
- COOKING PAVILION** This granite-like outdoor kitchen, set a short distance from a house in Mendocino, California, was built to be completely self-sufficient. The stone-topped island houses a stainless steel grill, refrigerator, sink, and dishwasher. The stone fireplace warms the dining area when it's cool. An exposed timber ceiling provides shelter as well as a place for running electrical wires within a conduit to power a chandelier. The fireplace floor, installed by architect Robert Smith, extends to the edge of a tree-made pond on one side of the pavilion; on another side, it continues for a possible public restroom for the house.
- OLDSIDE GRILL CENTER** An angled island faced linoleum and topped with granite makes an efficient outdoor kitchen on this stepped-down composite deck behind a Tahoe. One gas burner built by Barbeque Grill the kitchen is reinforced with a stainless steel sink, grill, and refrigerator (shown far right). A large, freestanding metal umbrella provides the cook with shade from the sun and a measure of protection from the rain.

More on enjoying the perfect grill: www.houzz.com/outdoorkitchens

Your pet probably spends more time in your house than you do. So make life at home more comfortable for both of you with a few of these convenient built-ins.

see spot shower.

Living with your best friend can be tricky—especially when that friend is of the four-legged variety. “People are always looking for unique ways to solve the whole issue of pets living with the family and the realities of that,” says Stephen Holt, a Massachusetts architect who has worked with homeowners to come up with a number of solutions to pet-related problems. Seeing as Americans spent about \$30 billion on their pets last year, shelling out some cash to deal with stopped-over dog bowls, 40-pound bags of kibble, muddy paw prints, or scattered squeaky toys isn’t all that unusual. To get you on your way, we asked Holt and several other architects and designers for some clever ideas on how to make cohabiting with Sir Flank-a-lot and Ms. Whiskers a bit easier.

By Keith Pridemore
Photography by Bob Senko

oh, you dirty dog

Even a normally good animal can get a little grumpy and grumpy. And you have some idea of how your mutt feels this dog shower is a creative alternative to taking down in the water. The dog is gently held in the shower. The shower is a fine grid to keep the dog from getting too high. The walls are lined with easy to clean ceramic tiles and a beautiful flower makes looking a good job. A good look is under there a little bit of a dog in a dog to fill the house.



dogs.

Sure, a handful of our canine comrades will work their hides off as guide dogs and sheepherders, but most spend their days in less arduous pursuits, namely eating and sleeping. So to accommodate them, and make life as easy as possible for everyone concerned, we are forced to carve out discreet spots for their hefty sacks of kibble, maneuver around them as they lie comatose in the middle of the kitchen floor while we prepare the Sunday roast, and clean up after them when, tossing Eclair Poo to the wind, they gleefully splash their sloppy water bowls all over the floor.

Of course, just as every dog has its day, every one of these problems has a solution.



slide-out supper

Keeping set bowls conveniently within reach but also out of sight can be challenging. For the remodelled bar shown here, Norwalk, Connecticut, designers Matt Gardner and Richard Loughton started by carving out the needed space above and to the right. Then, after looking down some matching maple and the right place, they designed a 22-in.-wide bar to contain the starting standing bowls. Thanks to a series of small, flat pieces glued to the bottom, the bowls easily glide out for downtime, again, without ever leaving view.



classic diner

designer Dana Jones used the inverted-bottom shell of the kitchen island's columns made stainless steel, creating an easy-to-clean, dishwasher-proof

For dog food storage, Jones installed the 60% inch-wide 28 inch-tall base cabinet drawer (photo, the island) that holds two standard recycling bins—now up to 40 pounds of stuff (7).



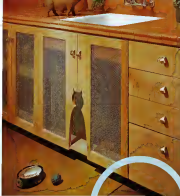
cabinet cabb

cabinet caddy Pets like to peek your sides through thick and thin. Unfortunately, that sort of surreptitious snooping becomes a visual nuisance, especially when it's in your kitchen. TopGuarder is a simple, unobtrusive but effective under-foot stool that he couldn't get a peek of the action—and inspiration to bury his steady state—in an Alamo cabinetmaker designed this custom stool. It's big enough to hold Red Ranger's crate, but could as easily be equipped with a dog bed. Get into the cabinet-maker's world again, on our site.



big gulp When clients grow weary of filling their Labrador's heavy bowls with water, they can try to fill their pet's bowl with cold water designed by Deth Drinking and Holzer. Terry suggested adding this under the counter portable drinking dispenser bath. The unit has a high architectural for head clearance and is made of stainless steel. It is mounted on the ground for easy maintenance. A dog's head and neck. A large black plastic keeps the entire container attractive and easy to clean.

a cut above: Albuquerque designer Kathy Jackson came up with the under-the-sink solution as a creative way to conceal a tall clearing filter backwashable at pet stores. The red-shaped entry was cut out with a jigsaw—and later required waiting when the sink's cut put on a few pounds. Here, mesh door panels provide ventilation. The out-of-sight solution sits in the pantry's scratch-proof concrete floor.



cats.

Like dogs, cats present their own unique challenges: those insatiable feline scroungers that destroy our most cherished upholstered furniture, their steadfast refusal to drink water that's been standing in the bowl for more than five minutes, and their tendency to suddenly decide that what you've been feeding them for the past two years no longer passes muster.

While we're just as baffled as you are about the peculiar compel-
sions of our cat companions, here are some unique category solutions that help alleviate those feline frustrations.

kitty complex: When David and Janet McCue wanted to expand their mudroom to accommodate the family cat (and dog), Manchester, New Hampshire architect Stephen Hips designed this self-contained assembly, which has enough storage space for food, water and cat box. One standard cabinet base and furniture provide entrance with a rubber door flap (1) big enough to allow a healthy 20-pound tabby to come in and out. The cabinet hides away the litter box and holds brushes, toys and flea medication in a slide-out drawer next door (2). An open cabinet cabinet the sink (3) holds a water filter water jug with a bowl (described in last month's issue) so the McCues don't have to lift the feed mess around but every time it needs to be refilled, and an adjacent sliding drawer contains plenty of room for pet food.

3 pet projects.

Pets love messing with our furniture. So maybe it's time to build them some furniture of their own.

a One Joffe's knows it's well that owning a dog means giving up some personal space. But in sharing his home with his Great Dane, David, the Bucks County, Pennsylvania, building contractor grew tired of scooting over every time the pooch wanted to join him on the sofa to watch a little TV (he wasn't thrilled by the dog's the bag left behind, either.) "Dogs want to be just like you," he says. After hearing similar sentiments from one of his clients, Joffe came up with problem-solving furniture that's attractive enough for him and loved alike. Equally appealing, each piece can be built with materials from a home center for well under \$300. For more info on how to build these pet-friendly furnishings, visit thefurniture.com/shortcuts.



doggie daybed: Joffe designed the round bed to give his son dogs people height (each complete with a set of stairs) for chow dogs and maybe better. To get the height right, Joffe made the Great Dane's dog bed chair which was 15 inches off the ground. Then he made the 36 by 36 inch square horse using pine for the legs and plywood for the board bottom. MOP (bedroom) gives a nice finish and the dog bed is also pet-friendly. MOP (most pet shops) provides a nice finish for the bed.



cat box bench: Using more pine, Joffe built a bench and bedboard. Joffe built a bench in a little box, built a bench that looked like a wooden chair, as a bench in a little box. There's a nice design on the side for the cat to enter and a glass-paned top for the cat to look out. Cat box helps keep the clumps of dirt that often get stuck in the cat's paws.

More builds do more than help for your pets? thefurniture.com/shortcuts



pet steps: When one of his clients complained her dog was having a hard time hopping up on his bed, Joffe came up with these multi-functional dog steps. The 24-inch-wide, 30-inch-high stand is made of plywood cut into strips and glue. Joffe brought pine boards. Both of the boards—which he also covered in his own's bed—smoothed out well, and the dog can hop up and sit on the bed. The dog can sit on the bed, or the bed can be used as a bed.

{STONE, STEP BY STEP}

Rough-hewn
slabs of native
rock make a
stunningly stark
footing at
home in the
landscape.

BY HARRY S. AMYERS
PHOTOGRAPHY BY KATHLEEN L. LEE

Overlaid decking above
the outdoor dining area
blends with the stone
steps and the landscape.

You don't have to own waterfront property to want a patio in harmony with the natural elements of your backyard. The best outdoor spaces are a seamless blend between the man-made and the existing landscape. That's why The Old House landscape contractor Roger Cook chose native Goshen stone for this patio, nestled along the craggy Massachusetts coast in Manchester-by-the-Sea.

Using homegrown material can make even a new project look like it's been in place for years. And going native has other benefits. Because shipping costs account for the bulk of a stone patio's pricing, staying local usually makes economic as well as aesthetic sense. Fortunately, these stones—some of which weighed more than 1,000 pounds—didn't have far to travel. They've been near the job site for about 400 million years.

► Ideal for patios, Goshen slabs are actually layers of metamorphosed rocks that typically form large, flat rocks a few inches thick. The layers make the stone easy to split and shape, and the mica gives it its characteristic sparkle. But just about any stone will add an elegant touch to a backyard whether it's smooth bluestone squares or rough slate flags.

► For this project, Roger designed and built a 25-by-25-foot waterfront patio plus a flight of stone steps leading up to an existing brick landing. Close enough to dip a toe in at high tide, the seaside perch offers panoramic views of the inlet and boulder-strewn cliffs. Here's a look at Roger's method.

LAYING THE PATIO

To create the tightly grained stone surface, Roger Cook aligned the pieces' edges and used a forklift to tighten together with yellow-pine board joists.



1 Lay out the site.

For a natural look, the patio follows the contours of the site, with stones cut into the shallow hollows and the patio surface level ground below. Because of its water-front location, the area is surrounded by a stone "fence" barrier called a wall, which prevents construction debris from washing off into the inlet.

Excavate the area.

After clearing the site, Roger removed the topsoil and then the dirt, then excavated 8 inches of heavy soil. The 4-inch-thick stone slabs will sit on a base of 4 inches of fine gravel, gravel. Lighter stone slabs, such as blue stone, often require a base of stone dust mixed with gravel to set them firmly in place. "There are a lot of options," Roger says.



3 Set the base.

After the subsoil is compacted to make a solid base, Roger dumps the gravel layer. Gravel must be a few inches thick between stones, regardless of the stone's position. The gentle slope keeps rain from pooling on the stones.



4 Tamp the gravel.

A tamper machine compresses the gravel base with a plate compactor. When the tamping is finished, the base will be perfectly flat and ready for the stones.

Place the stones together.

Before a single stone is set, the patio site is the same as the one you see in the photo. Roger is looking for edges that fit up to 1 foot long and 12 inches wide. He is looking for stones that fit together from a foot to four inches. Roger is looking for stones that fit together from a foot to four inches. Roger is looking for stones that fit together from a foot to four inches.

5



OLD HOUSE
SOLUTION
If you can't find
the right stone,
ask your neighbor
for a sample.
Workshop 110

Set the stones.

The best of both worlds: a pool or deck. The builder keeps the wooden forms from disturbing the base and allows the time to position the stone into its final position. Once it's in place, the job helps a corner on the deck can be removed.



Check the fit.

With a lift to cushion the blow, the side gets into the hole. The builder uses a sledgehammer to ensure that it's snug against the base with no movement. And shifting the stones when the patio is finished a layering of stone dust will fill the joints.

SETTING THE STAIRS

To connect the new patio to an existing brick landing above, thicker pieces of Geshen stone nestle into a niche to make a rugged staircase.

Count out the steps.

Figures a lower level and a gentle slope for the steps will be easy. If the high stone steps will be needed to keep the 22-foot-wide stone patio from the existing brick landing, the steps will be a perfect "transition" with the lower level projected from the planned height of the low stone then checked for 6 to 10 inches of 24 steps.



Cut the trends.

A circular saw with a 14-inch diamond bit could cut through the 4-inch-thick stone, but the stone would not fully follow the curve. A track saw with a 14-inch diamond bit, using a sledgehammer and splitting wedges, is the best way to cut a hole in the first stone with the stone.



The best of both worlds: a pool or deck. The builder keeps the wooden forms from disturbing the base and allows the time to position the stone into its final position. Once it's in place, the job helps a corner on the deck can be removed.

Set the stone in place.

Use the patio below the deck as a guide. The stone was already set in a gravel base installed. Each step will rest partially on compacted gravel and partially on the previous step. Once in place, the stone could damage the stair with the 14-inch gap. The stone should be set with a sledgehammer and splitting wedges. After the stone is set, the stone should be set with a sledgehammer and splitting wedges. After the stone is set, the stone should be set with a sledgehammer and splitting wedges.





FROM THE TON TV JOB SITE

CAPITAL IMPROVEMENT

This Old House television follows the rebirth of a down-and-out row house in Washington, D.C.

By Alexandra Brandon
Photographs by Erik Johnson

Any one person might have said "disaster area" if asked to describe the condition of this rundown rowhouse that was TON television's most recent project. But "urban ruin" would better do it justice. From the outside it looked like a casualty of war, with peeling paint on the bricks and plywood patches at the windows. On the inside, it was a mere shell—cracks in plaster off the walls,

searched ceilings from a decade-old fire, and mildew everywhere.

Out now after a three-month renovation—a collaborative effort among TON's non-profit group, McCasa Inc., and a team of hard-working contractors and restoration experts—the reborn 3029 Bakerdale is a true beauty. It's had a top-to-bottom, inside-and-out transformation. The repaired bricks look as if they'd just been laid a week ago. A restored turret with a copper barrel pats a crowning touch on the rooftop. The grand curved staircase anchors the entry hallway. And all the rooms—swash in rich colors—sport elegant new fixtures.

The house feels like a home again, a 19th-century gem in town for a 21st-century life. Not just because it's a part of the rejuvenation of a city on its way back from decades of inner-city blight, but because in February McCasa sold the house to the Velasquez family—Mara, Francisco, and their three small children—and they've just moved in.



ABOVE: The Washington rowhouse, located in the Shwermer neighborhood, stood abandoned for more than a decade, losing its windows, roof, and many exterior details in the process. OPPOSITE: After a three-month renovation, the house looks as good as new, with repaired bricks, replaced windows, and fresh, restored interiors, which aren't spared from a broken photo.



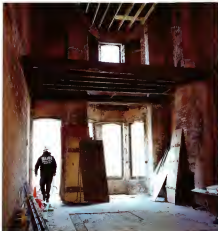
Historic Face-Lift

On a block lined with renovated townhouses, the TQAF project was a relic of a past worth forgetting. Peeling blue paint and brick-and-plaster windows made it look like an ugly dream street. At the corner, repairs had created a mess of stepped curbs and left behind a blank face.

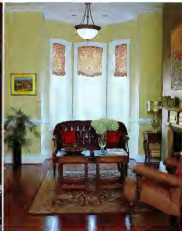
The paint came off as easy as the project started, but it was clear that the whole town would need a makeover. Moritz was determining between the bricks and the windows if it were coming apart. But Casey Polonsky, the preservation maven, knew how to respect this 135-year-old facade. Rather than pack in modern cement mortar, which is too hard for the soft bricks and causes them to pop out (jacking during freeze-thaw cycles), he opted for the original mortar for its lime and sand content. After weighing in samples, he gave it an acid reduction test, using hydrochloric acid to dissolve the lime and leave the sand. "Not only can I see what color the sand needs to be," says Polonsky, "but I can see how much of it there is as proportion to the lime." Using this formula, he mixed a replacement mortar that would merge with the bricks, instead of against them.

Repointing isn't usually a job for the dead of winter (the masonry can't cure properly in the cold), but Polonsky didn't have a choice given the project's timing. So he heated the facade as much as he could, using a powerful gas burner for the duration, keeping the temperature a constant 45 degrees. "It was warmer inside the next than it was outside the house," he says. Then he and his crew carefully ground out the joints and filled them with his historic mix. They also repaired the corbel and sill. At the same time, the carpenters framed out a new porch, which the masons finished with low-slate tiles (made from synthetic rubber) and a copper fascia.

Just a week before the project finished, Polonsky and his crew took down the tarp. And like a butterfly emerging from its cocoon, the restored facade revealed a face from another century, with clean red bricks and straight lime-mortar joints.



ABOVE LEFT AND RIGHT: For most of the project, the house sat wrapped in a tent of white canvas, insulating the masonry work to protect the bricks and mortar from the winter cold while they repaired the facade with a historically appropriate lime mortar.



ABOVE LEFT AND ABOVE: From wreck to wonder, the living room came back to life, with new floors, windows, and needed sunlight. **RIGHT:** The only hallway here is larger with the exposed brick and brightened windows. The arches of the space is the saved columns. **TOP RIGHT:** To shape the finished, carpenters laminated this layer of oak, then bent it in place to follow the walls' curves, clamping it until the plaster.

Total Gut Job

When you're dealing with a house as a small job, as well as a very tight budget, you don't have the luxury of changing things up too much. That's what project architect Geoff Anderson, and his colleague Jessa Ruddy, kept in mind as they drew plans for the interior. "We had to respect the space of the row house or become frustrated designers," says Anderson. So rather than blow out walls (and blow the budget), they tried to preserve the layout while adding storage and modern conveniences.

They faced fire-damaged floors and parts, crumbling walls, rotten wood trim, and no first-floor powder room—many of the spaces would need to be gained and reformed. Even so, they got some walls back right where they'd been. Like the one along the long entry hall, a common regional feature. In fact, they re-created almost all of the first floor except where they squeezed in a coat closet—and a powder room underneath stairs—and opened up a wall to the kitchen to make a larger family room.

The big changes came upstairs, where they assumed they saw designs for a family. "It's working, but a developer, not had to imagine a customer," explains Anderson. There would still be three bedrooms and two baths, but the bedrooms were more judiciously divided and one of the bedrooms gained a ensuite suite. The ensuite bedroom itself acquired a dramatic vaulted ceiling, opened into attic space. And there was even room to squeeze in a laundry room—an essential feature for any family abode.



ABOVE: A peninsula sits where a wall used to divide the kitchen from the family room. The new layout blends the areas together. FAR RIGHT: The master bedroom is light and airy thanks to natural ceilings and whiteboard on the exposed brick. NEAR RIGHT: A master master bath completes the suite.



For more home photography of the Washington, D.C. project, see www.fox.com or visit www.fox.com.



Backyard Oasis

It was a tight squeeze making big things: a 25-foot drop yard behind an 18-foot-wide house—one tiny patch of real estate that needed to transform into a lush patch of bliss.

Garden designer Kevin Cordell first impressed the pair with "dinner area." But, he says, "the center where we did it, was going to look a million times better." The years of experience in D.C. and 100 small-acre projects under his belt informed his thinking. With a limited budget he made the space both aesthetically pleasing and practical for a family.

First things first: defining the space. A tall privacy fence from Walpole Woodworks enclosed the area, with a gate for access from the short driveway. Walpole also provided a small shed to store garden tools.

For the rest of the yard, Cordell created curvy plant beds along the fence to build a variety of interest: shrubs and trees—Pine's billy, crape myrtle, and nandinas—that would need little maintenance but would provide color and texture year-round. He also used blooming flowers such as white-colored hydrangeas and lilies to fill in the beds and give the space more sparkle. Then, after defining the planting areas in soil, he filled in the field with pea gravel, creating a minimalist appearance that wouldn't require a lot of upkeep. With a coat of soft green paint on the house that reflects into the calm space, Cordell's garden provides the perfect escape from the daily stresses of the big city.



ABOVE: The house had never been garden in the back, which was more serious why this secondary TOP. The new white brick lawn made it easy for Cordell to create a big, soft, and the help of Cordell's team. RIGHT: The completed garden has a full privacy fence, a small shed for storage, a pea gravel surface, and plants that provide color and interest in every season.



House Doctors

This Washington, D.C., project brought TOP's new kind of heroism: the House Doctor, a nonprofit developer that helps and helps up-derelict houses. The group was founded in 2002 by Patricia Lewis (shown above, with the left side staff), a native of Chicago with a background in architecture, who saw a need for single-family houses suitable for larger families. "The housing gap is tremendous," he says. "In the inner city you have luxury condos right next to overcrowded buildings with bedrooms that don't work."

At Casa make the houses available to low- and moderate-income families, selling them at or below cost while helping the families get affordable mortgages. They sometimes sell a property at market value for private income, but they focus on growing families in big urban areas that are out of their own neighborhood. (The project house sold for \$237,000—\$60,000 less than it cost to renovate—but its market value is near \$700,000.)

Once TOP's exodus about the house began to fill, Lewis and prospective homeowners contacted the Casa as an old conversation at Casa North Carolina, and other states looking to start similar programs there. "For me that got me into the need for housing in this country—is the world," says Lewis. "Sometimes we build for comfort or status. But where do we live this line on comfort versus human need? Because maybe we can help see our money to help other people."

Traditional millwork and
cabinetry details distinguish a
NEW OLD HOUSE that's fit
for generations to come

Traditional millwork and
cabinetry details distinguish a
NEW OLD HOUSE that's fit
for generations to come

The upper cabinets, made of bookshelves, is a double advantage: more than the standard 12, it's more handy openers, with large shelves and shelves.

>A

NICE PIECE OF LAND NEVER seems to appeal, but sometimes the house that's arrayed as it falls into denied obsolescence. That's precisely what architect Jay Haverson found when he checked out a job on the market: a lake-side property in his hometown of Greenwich, Connecticut. By far the best thing about it was the site, 1½ acres across beautiful Frye Lake, a mere 10 minutes from town. The worst thing was the house, a disintegrating 1940s builder's Colonial with zero architectural merit. "It was truly ugly," says Haverson. "But a historic commissioning feature: the foundation."

What made the house's humble underpinnings beautiful to the architect was the way they begged the question: The original structure was configured in a Y shape, with three wings that came as close as 13 feet to the water. The foundation had weathered well, and the local architectural conservation agency would allow for a new house to rise over the old footprint. "I look at lots of properties," says Haverson. "But I fall in love with this one right away."

Of course, whenever a house is demolished, it's always missing if its replacement is architecturally sophisticated enough to be worth the sacrifice. Knowing that his new house had to be deserving of such a special site, Haverson, an architect for more than 25 years, knew he got that lake-side assignment that of Shingle style would fit the place perfectly. "It's a casual, open style of architecture, very picturesque and full of character with elements like steep gables, flared walls, towers, porches, and decks," he says. "A Shingle style could flow with the site and really be married to it."

To get from love to marriage, Haverson also had to think about how to fit such a house into the way people live today. "This used to be a center hall Colonial with a formal room to the left and a formal room to the right," he says of the new four-bedroom home, which has a great room kitchen and plenty of casual seating areas inside and out from which to enjoy the view. "I envisioned a place that felt like a weekend house all week long."

Designing for casual living led to a largely open plan with hallways



ACWE House with flared walls, a steeply pitched gable dormer, and a porch with square columns topped by a flaring balustrade are some of the many elements that make the house embody a modern-day interpretation of 19th-century Shingle-style architecture.

relegated to the house's backside. Each leg of the Y is one room deep, ensuring that all main living areas look out onto the water. "It's like you're in a boat sailing out onto the lake," says Haverson of the view out the living room windows.

Yet for every great outdoor view there's an equally engaging view going on inside. One scene-maker: cedar-wrapped beams, some of them arched, all of them carefully finished to show off the wood's light, straight grain and medium-brown hue. They visually raise the ceilings, which already range from 10 to 12 feet high, and the arched beams create a sense that the ceiling isn't in the way. They also painted wall-to-wall like the rest that spans the opening between the kitchen and family room to intentionally connect the two spaces.

The cedar dressing up the beams also covers the three fireplace mantels. At first glance, these mantels might look the same, but to avoid an off-the-shelf appearance, chief finish carpenter Al Snr incorporated



A corner of the ACWE House dining room is a different way to see the living room in the living room. The mantel is made of cedar and is made from the same material as the mantel in the living room. The mantel is made of cedar and is made from the same material as the mantel in the living room.

FLOOR PLANS

The first floor of the Y-shaped plot flows easily from family room to kitchen to dining room to living room, with all of them enjoying a view of the water. On the second floor, hallways run along the side away from the lake with each bedroom connecting to a common bath.



RIGHT The living room cannot closed for five kids, taking it all in the rough is small of visitors. Coverage on both sides lead to bedrooms with equally fine views.

BELOW One step from the kitchen, the wide-open family room shows off the cedar-beamed ceiling and fireplace mantel.



whole variations in their details, like the arc and shape of the support brackets or the profile of a molded edge. "We did that to give each room a slightly different flavor," says Ser, who with his two sons and additions crew modified thousands of feet of molding.

Steeper and less pronounced than the beams and moldings, the moldings are no less distinctive, as much because of what they don't contain as what they do. Hermon's windows and door casings, crowns, chair rails, and baseboard moldings stick too consistently geometric: theme of wide, flat planes bounded by crisply stepped and sharply beveled edges. Above are the fancier rails and curves that typically soften a molding's profile. "We deliberately created a palette of moldings that reinforced the master architecture, which is a series of angles and planes coming together," says Hermon. "We also wanted to give the rooms their typology by showing people moldings they hadn't seen before."

Winningly, she says many of the walls in Hermon's design, formed by a grid of flat rails and rails flanked over flat, oiled panels. They're made either of poplar, painted white, or natural, clear-coated.

OPENING To the master bath, it's all about one wood: natural cherry, which is used on the ceiling, the walls, the floors, and even as brackets on the floor. Recently the wood is not the best as the floor covering itself but adds the child and guest room warm tone.





▲ ABOVE: The master bedroom. But the living room directly below it, in just yards away from the lake, is dark and the occupants were dissatisfied when nighttime falls, a big dilemma of the opposite end of the same bedroom. The focal point.

clarity. To keep the space light and flat for decades, says Syt, it's best to go with a neutral color palette and light. However, the walls are white, the floors are light, and the furniture is dark. The living room is a mix of light and dark, and the walls are white. The living room is a mix of light and dark, and the walls are white. The living room is a mix of light and dark, and the walls are white.

Simplicity and continuity are the hallmarks of the cabin design for the kitchen, bedrooms, and living rooms. The cabin owners who live with the peaceful mountain views. They were built by Hoffman McGraw, which was led by Carol McGraw. At just 36, McGraw has been working with wood for more than 25 years. Like Al Syt, a contractor who works, McGraw's rule is

making shows the craft at its best. It's just all but disappear under paint, and with his natural wood, it's a carefully chosen material for both value and grain-matching.

The room's simplicity of the form and colors helps when it really needs to get the job done. However, the two best colors painted in place and the natural wood hand finished in a technique called a Fitch pull. The wood was rubbed and buffed with pads dipped in a combination of low sheen lacquer and stain, producing a clean finish. "We wanted to give the wood a sheen," says Hoffman, "as though it had become burnished over the years."

McGraw has worked with Hoffman for more than 10 years. "After all this time," he says, "I know what he's trying to achieve." This kind of familiarity fosters better teamwork, which is key to getting quality results on time and on budget. Steady communication, coordination, give-and-take, and early error correction among the several different teams are all paramount, and for those that job fell to Al Syt. "When Al came on, he threw a wide blanket over the whole project and made sure that everything went right," says Hoffman. "There's so much complexity, five or six things going on at once, it takes someone who really cares about the big picture."

As the new old house moved completion, it was wrapped up by a couple who fell for Hoffman's vision of an open, light-filled, low-key house that is a family-friendly. "What else was new was the light and the 270-degree view of the lake," says one of the new owners. "And when you look at the whole package, the room proportions, the woodwork, the layout are all so well done. And so, after, Hoffman's added to the architecture, the house that we built. The design, he says, "has a very strong and open, and so the house because a piece of our environment that will live on beyond all our years. Being able to produce something like that gives you a great feeling. It's why architects are architects."

So You Want to Build a NEW OLD HOUSE?

Building a new home with historic character means looking back to the past while thinking toward the future. If you're looking to work with your architect to design a classic, here are a few tips, gleaned from Jay Rosenblatt's *Shoreline*, a project that will add to your new house's timelessness and craftsmanship.

- 1. **If you're tearing down an old house, be sure it's replaced with a worth the sacrifice.** Keep up the architectural details, and decide on a style—new, old, or a mix of the neighborhood and style.
- 2. **Define spaces with beams or subflooring.** New houses can feel awkward and impersonal. Wood ceiling beams or paneling connect large, open spaces and make rooms feel more intimate.
- 3. **Keep a few long sight lines that make the most of natural daylight and call attention to the flow of your floor plan.**
- 4. **Make the most of the interior doorways.** Frame each room and make spaces with high ceilings seem cozy. To add warmth, match finishes to show off the wood's natural grain and knots. Give one or two rooms a slightly different flavor by using different woods, stains, and subtle variations in style.
- 5. **Make small details count.** Colored interior door pulls, a fern vase with an old-fashioned faucet suggest age.
- 6. **Employ contractors and subcontractors who have worked together before.** It'll make the jobs go a lot easier.



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Ask This Old House

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Blowfill by blowfill. Tom Silva makes a stump puller by filling a tubular paper form with wet concrete.

con, then set the form for the footing and pour on slabs. Once the slab is placed, leveled, and backfilled, fill it and the footing form with concrete. Before the concrete hardens, put a metal framing anchor in the top of each post; local codes will also specify the size and type of anchor to use.

Miter or Coped?

How do you cut crown molding to fit an inside corner that is greater than 90 degrees? Is there a way to cope such a joint, or should it just be mitered?

DIANE HART, RAINIER ISLAND, D.C.

Waterlogged Piers

I am planning to build a 12-by-16-foot timber-frame shed on concrete piers. The soil here is heavy clay, and when I dig down below the frost line, groundwater seeps into the hole. My neighbor says I should put some gravel in the hole, then pour concrete directly on top to displace the water. Does this make sense?

MICHAEL PHILLIPS, DAVIS, IOWA

Bob Silvers says: Your neighbor's right: Concrete will displace water, and will even cure underwater. But you're better off filling the bottom of the hole with low-expansion water-proofing rock, the tough, angular material often used for draining water systems. Earth over should rest on a solid footing below the frost line. A 3-foot diameter footing should be almost right for this project, but check your local codes to be sure.

Fill the bottom of the hole with rock up to the water level, compact the rock to form your

Norm Adams replies: Generally, those joints are mitered by dividing the corner angle in half. For instance, if the walls are 120 degrees to each other, each molding would be cut at 60 degrees. To make a 45-degree miter joint, set the saw blade at 30 degrees and lean the crown against the fence with its bottom edge facing up.

It's possible to cope the joints—cut out the profile in the end of one piece as it would appear in the adjacent piece—but the harder it is to make the joint tight. Sometimes a corner is jointed, then, say, 115 degrees, go with a miter joint.

Lowering a Chandelier

We've been in our house for over a year and have not yet chosen a large chandelier hanging almost 17 feet from the floor. The prospect of climbing a ladder to get up there is too intimidating. Is there any way to make this process easier and safer?

ELLEN'S HOP, PRINCETON, MARYLAND

Kenie O'Connell replies: If you won't go to the chandelier, bring the chandelier to you. Several companies make cable-and-winch systems that



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can lower even a heavy fixture to floor level for easy cleaning or to replace bulbs, then roll it back up to the ceiling. The cable is concealed in wall and ceiling cavities. In some systems, the switch is a hand-cranked, in-ceiling, air-operated by an electric motor connected to a control switch. Some use coiled lengths of wire so the bulbs come on after the chandelier is lowered, while others disconnect the power when the fixture is lowered and automatically reconnect it when it's raised.

The cost of a lift depends on how difficult it is to get into the ceiling, the size of the fixture, and the distance it has to travel. But considering that you'll spend a few hundred bucks on a lift, sturdy step ladder, a chandelier lift may end up being a pretty good deal. Ask a carpenter to suspend your bulb.

Sliding Stoop

The back steps leading to our front porch have begun to lean to one side and pull away from the house. Can we fix this ourselves?

NAVIN HOWELL, COVINGTON, LA



Threatened tilt at these stairs steps indicates that the base (right) needs, but providing enough support. That's not the only problem by itself, a stair of four or more steps requires a handrail.

Two fixes require: That depends on how good your masonry skills are. It looks like the steps are sinking because of an inadequate or non-existent footing, and that means they should be replaced. I don't know of a way to just push them back into place.

You should take care of this soon. The growing gap between the steps and your porch will

eventually make the steps unsafe to use, and the tilt isn't good, either. Rebuilding them with a proper footing will be a substantial job, but think of it as an opportunity to take a liability into an asset. You could make your staircase safer and more pleasing by widening the steps and adding a handrail, which is made up of cast-in-place concrete with four or more rails. If you do a re-construction, you might save some money by doing the demolition yourself and donating the existing blocks for reuse.

Water-Pipe Corrosion

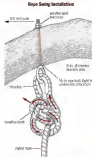
It won't long after a second visit our newly constructed house that the copper water supply pipes started to leak. This has happened four separate times since then. The leaks tend to occur in the pipes at or near soldered fittings. Neither my builder nor my plumber has been able to figure out what's causing the leaks, and none of my neighbors are having problems with their pipes. Our water comes from a municipal source, not a well. What's going on?

CARMEYLA, MANVELLE, OHIO

Robert Trefrey replies: Generally, leaks in copper pipe can be traced back to problems with the way the pipes were installed or to the water itself. For instance, flux—the acidic paste used in soldering—can react with copper if the pipes stand still for a long period after installation. The kind of trouble typically crops up near fittings and in cold-water pipes because hot water is better at washing flux away. Also, if a pipe wasn't cleaned after being cut, the burr on the inside will cause turbulence—any swirls of water so vigorous that they actually wear away the metal. Too much velocity, either from undersized pipes or excessive water pressure, can have the same effect.

Then there's the water itself. Anything abrasive, such as bits of rust or any other contaminants, will cause the inside of the pipe and its solder the effects of turbulence and velocity. So-called "aggressive," or acidic, water with a pH of 6.5 or less will eat through copper. Water loaded with dissolved minerals can generate copper-dissolving electrical charges.

Since your neighbors aren't having the same problem, I'd rule out water chemistry for now. The only way to determine exactly what's causing the leaks is a laboratory test.



Start by contacting the Copper Development Association (copper.org). With your best pipe installer, that expert may be able to uncover the source of the problem or help you find a forensic engineering firm that specializes in corrosion analysis.

Hanging a Tree Swing

I'd like to hang a swing from a gusty oak tree in my yard, but don't want to harm the tree in any way. What should we do?

MARY JANE ROBERTS, SUITE 214

Roger Cook replies: The main thing is to find a sturdy branch at least 6 inches in diameter, where the swing can hang at least 2 feet from the trunk, but not so far out that it overreaches the branch. The worst thing for the tree—would be for the swing to pull on the trunk, so it shows any signs of weakness or damage, and another one. Consult a forester about it if you're in any doubt. I typically use 1/2-inch to 1-inch eye bolts to

support a swing. They should be galvanized or, better yet, stainless steel. To install them, first drill holes through the limb that are slightly larger than the bolt's diameter. Then insert the bolts all the way, eye tight against the bark, and secure each one with a large flat washer and two nuts. The second nut locks the first one into place.

A hole that size won't harm your tree. In fact, a healthy branch will eventually grow over the metal. It's a far better approach than trying ropes around the branch because as it grows in diameter, the ropes will cut into it, leaving scars and kill it. ■

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Danger Zones: Windows and Doors Keeping the Water Out



Water infiltration and the damage it causes is one of the most serious threats to maintaining a home. Water intrusion problems can be difficult to find and expensive to address. Once water gets inside the walls, it can cause the structure to rot, it can degrade the quality of the insulation, and create a favorable environment for mold. The best way to deal with water problems and the resulting headache and expense is, of course, to prevent them occurring in the first place. The good news is that prevention is neither difficult nor expensive.

Windows and Doors are major danger zones for leaks into any home

Windows and doors may look beautiful from the outside, but, prior to installation, they were nothing more than holes in the frame of your house. During installation, it is important to ensure that any gaps around the windows and doors are sealed properly to prevent air, water and moisture from getting in and any energy used to heat or cool your home from escaping. The product that ensures this seal between the window/door and your home's structure is called **finishing**. While finishing itself is important, it is even more important to choose the right product, and ensure that it is properly installed. You should always consult a licensed contractor with questions about proper materials and installation techniques.

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There are many types of finishing materials on the market. Contractors have used metal flashings, caulk, sealants, building paper and housewraps with variable levels of success. The state of the art in window and door finishing today is a self-adhesive flexible membrane that adheres to both the wood sheathing of the house and the window flange

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Cutting Mortises With a Drill

Save door-shaking time with a faster bit

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Here's a way to quickly make hinge mortises using a faster bit and a cordless drill. You need a drill with torque settings that let you use it easily. Select a bit diameter that's about two-thirds the width of the mortise. Anything smaller takes too much time, and anything bigger requires more chiseling.



1. **Mark the hinge mortise.** Place the hinge on the edge of the door and mark around its perimeter with a pencil. Score the line deeply with a sharp utility knife.
2. **Mark the mortise depth.** Hold the edge of the hinge against the bit's square end. Take a felt tip marker and mark the bit's along the edge of the hinge as a guide. This will show how deep to drill. Repeat from the bit's opposite side.
3. **Drill the mortise.** Place the bit square to the edge of the door and just make the hinge wider. Drill slowly until the bit is 1/2 inch outside the far back of the door. Stop and drill again on its opposite end. Work methodically across and along the length of the mortise always keeping part of the bit next to an untouched surface. Without that reference, there's no way to know when to stop drilling.
4. **Trim the waste.** Holding a chisel bevel-side up with one hand on the blade and one on the handle, slice away any wood that the bit couldn't reach. Work from the inside edges until the mortise base is flat.
5. **Test the fit.** Place the hinge in its mortise. If it's a flush exterior surface, if not, drill or chisel until it is. Then you can tighten the hinge and prove on it. **DENNIS COE**

When Lawn Mowers Won't Start

(Same) on the fuel-air levers at it

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YOUR TIPS**

How often are more frustrating than a lawn mower that refuses to turn over no matter how hard you pull on its cord or crank its starter? More likely than not, your faulty repair is suffering from fuel troubles—either too much, too little or too old. Before you haul it to a shop to be fixed, try troubleshooting the problem yourself.

1. **Make sure there's gas in the tank.** It's not obvious. (We've said it.)
2. **Give it a rest.** An engine that's getting gas and not starting properly has a flooded carburetor or throttle stuck with gasoline. Often you can make the diagnosis. If the engine goes out of unburned fuel, Park the mower on level ground and push the dead throttle for the gas to evaporate. Then try starting it again with the choke off.
3. **Pushes the fuel.** If the engine starts and quickly stalls out, the gas may have gone bad. Use fuel sitting around for long. Siphoned out the tank and add new gas. Take the old stuff to a store that recycles liquid dumping, if you have access to it. **—HARRIS MINTZ**



THE TIP

To reduce the chance of gas going bad, store it in a 1- or 2-gallon container so you'll have to replenish it frequently.

PRO TIP

TIP TIP
To reduce the friction between stones and the ground, load them on a sheet of plywood, then pull or pry this makeshift "skid."



Moving Large Rocks

Yes, you can shift a ton of stone without heavy machinery.

RELATED STORY ► **10 STYLISH STEP-BY-STEP**

A skid stone loader—the generic name for the small, multipurpose wheelbarrow-like tools that landscapers use—is the fastest, easiest way to move a back-breaking rock from point A to point B. Out of the menu of your budget-prohibitive mechanical methods, there are some simpler, albeit slower, ways to get stones rolling.

1. **Pry it.** With a long piece of steel or a small, flat skid loader, use a 4-foot pry bar to pull or push a big stone into a little over a foot or two—no less—in your arms and patience hold out.
2. **Roll it.** Lay a plank across several short lengths of iron pipe placed parallel to each other on the ground. A rock loaded onto the plank will slide forward as smoothly as if it were on a conveyor, as long as you move the rear pipe to the front as the plank advances.
3. **Roll it.** By exerting up to 4,000 pounds of pulling force, a ratcheting lever holds or "come-along" can portside many previously stuck in the road stones to roll, come along. Winners if scorable and to the stone with 4-inch nylon straps, which give the singular use before than chain or rope. Attach the other end to an immovable object, such as a tree or a trailer hitch on a car or truck. Then start crawling — H.S.

ILLUSTRATION: JAMES HARRIS

Repairing Vinyl Siding

You need a special unlatching tool to do this job right.

RELATED STORY ► **7 FIXING WOOD SIDING**

Unlike wood lapboards, vinyl siding is neither as brittle nor as easy to work with. It's also not as forgiving as wood siding. So when a piece of vinyl breaks, the "key" to restoring the repair is a special, aluminum-curved pry bar with a metal hook at its tip to unlock the siding. Here's how to use it.

1. **Snag out the old piece.** Wedge the tip tool up into the horizontal joint where the "hook" at the bottom edge of the damaged piece fits into the "lock" of the piece below. Pull the tool down and out as you work, sliding the part until the hook pops free. Do the same along the joint above the damaged piece. Then sawing pry bar, remove the nails from the damaged piece.
2. **Swap the new piece in.** Cut a replacement piece to length with a sharp utility knife pulled by a square. It should be at least 2 inches longer than the space it's covering. Hold the piece horizontally so that each end overlaps the neighboring siding by at least one inch. Hook the replacement's bottom edge into the lock at the top edge of the piece below. Push the replacement up, under the piece above.
3. **Hold it.** Use the working joint as a fulcrum, then slide the new piece up into place with 1 1/2- to 2 1/2-inch aluminum siding nails. Drive each

TIP TIP

Because of all the bending required, the best time to repair damaged vinyl siding is in winter, when the plastic is warmest and more flexible.



- every 16 inches, starting for the center of the predrilled holes along the siding flange at the top. The nails should catch the siding, vinyl needs to be secured and sealed.
4. **Zip it.** Hook your zip tool onto the lock at the top of the replacement siding and pull it slightly outward and down. At the same time, push the lower edge of the existing siding toward the house until you feel it and unlatching against the replacement piece's groove, as demonstrated above. Slide the zip tool horizontally until all the siding above snaps into the lock's groove. —MADH CARPENTER

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Norm's Notebook

► MASTER CARPENTER NORM ARMSTRONG'S TECHNIQUES FOR USING THE DRILL BITS FEATURED IN TOOLBOX, P. 64

► DRILL BITS



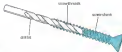
There's more than one way to drill a hole perfectly square perpendicular to a surface (see Homeowner's Handbook, page 80). But here's the one I've used: Take four wood scraps as a guide. Cut one end of the scraps square, then, using a combination square, draw a line on that end perpendicular to one face. Just rest the flat flush against the cut end and align it with the line. Now remove the block and drill away.

The same technique also works when drilling holes at an angle. Cut the angle you want into the end of the setup piece and align the bit with it before you start drilling.

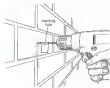


If you start drilling into wood at too shallow an angle, the bit will just rip and slide across the surface. The solution? Start by drilling perpendicular to the surface (1), then when the bit gets about 1/4 inch into the wood, stop drilling and bend the drill over to the angle you want (2). Start it a few centimeters, then increase it as the bit bites into the wood.

When you drill the hole, the ends of a wire for a shackle support are visible to ensure a fit. Use the wire, you don't want to go too deep. Then drill along the hole. The wire is visible. Now, if you're drilling along the hole, but for only a few you can use making tape. Use a piece of wire and a hole bit. At the desired depth, and stop drilling when the edge of the tape just touches the surface. Keep your eye on the tape a portion. And it can be visible adhesive and ensure the hole. The tape is visible. Work that well in space bits and other side bits. For those, use a permanent marker, draw into the hole the metal at the intended depth point.



To stop a bit from skittering over metal, dangle the surface first with a center punch. Then add a drop of oil to the dangle to lubricate the bit and keep it cool.



Drilling a pilot hole for a screw is always a good idea. It keeps wood from splitting, increases the screw's holding power, and makes it easier to drive. You still have to make sure that the pilot hole is the right size for the screw. Here's how to find it out: Lay a corner, straight shank screw (for screws that have tapered shanks, drill the pilot hole with a tapered bit like the one shown in *Toolbox*, page 69)

Line up the lid and screen with the lid closer to you. Hold them up to the light. The bits the right side if it just covers the start of screen and the screen structure is visible on both sides. For pine and similar softwoods, I use a lid bit diameter slightly narrower than the screen stock. For hardwoods, I sometimes give a bit wider (particularly if it is planned to use long screws or drive them in hand).



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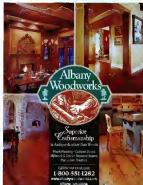
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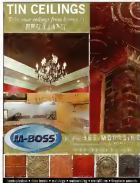
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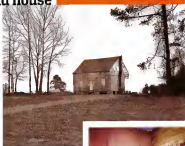
SOMETIMES BUILDING PROJECTS take a little longer than expected. A latch is a model ingeniously stalled by a lack of cash or a delayed supply since delivery. Drywall hangs in a family room addition waiting for paint—just sort of thing. But a place that's just unfinished for 250 years?

That's not all: the entire wall this Dupont County North Carolina farmhouse known as Point of View for its sweeping rural vistas. So the downturn of the 1960s house, built by Belmont Carter (a distant relative of former President Jimmy Carter), was fested with George's style: stained-panel woodwork and Colonial style claw nails. But the two lightest bedrooms remain largely incomplete. The walls covered with 18th-century stoneware plaques or exposed half oaks like New Southland's historic Proctorville a nonprofit based in Raleigh is working with the house's owner to find the right person to finish the job.

Point of View originally had a columned second-story porch overlooking 760 acres of farmland. But for unknown reasons, the roof was lowered in the early 1800s and extended over the apse's front facade, which now sits almost beneath the metal roof.

The house is shudily constructed with several level beams and retains 10 four panel doors with their original hardware, three fireplace mantels and wide plank pine floors through out. Port of View comes with a nine-year price guarantee. Though the current owner is willing to make more land available to the right buyer.

Many of North Carolina's early firmhouses have fallen into disrepair, been burned down or been dismantled by farmers deeming land So Point of View offers an opportunity to help save what is increasingly an endangered species in these parts. The new owner will have to do a little work, along with updated electrical and mechanical systems. Supplement will attach components to the house (yet to be determined) to ensure that the owner gets Point of View the completion and full restoration it's been waiting for all these years. —MICHAEL WOOD



100% built in 1948, the house is located at 1800's drive from Southville and Raleigh, North Carolina.

ABOVE LEFT It's still a displaced front porch and two chimneys. **ABOVE** It's moved, drywall, stained original painted w/ boards. **BELOW LEFT** Original baroque, 16th-century-style mantle. **BELOW** A 19th-century French Chateau house shows what Polak's view would look like after a proper restoration.

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