



## PROJECT

**I**F YOU WANT to get serious about getting your household recycling act together, this is the project for you. It takes awkward municipal blue boxes off the floor and even includes an optional workshop blackboard feature. It's inexpensive, easy to build in one afternoon, and it frees up a ton of floor space!

# recycling centre

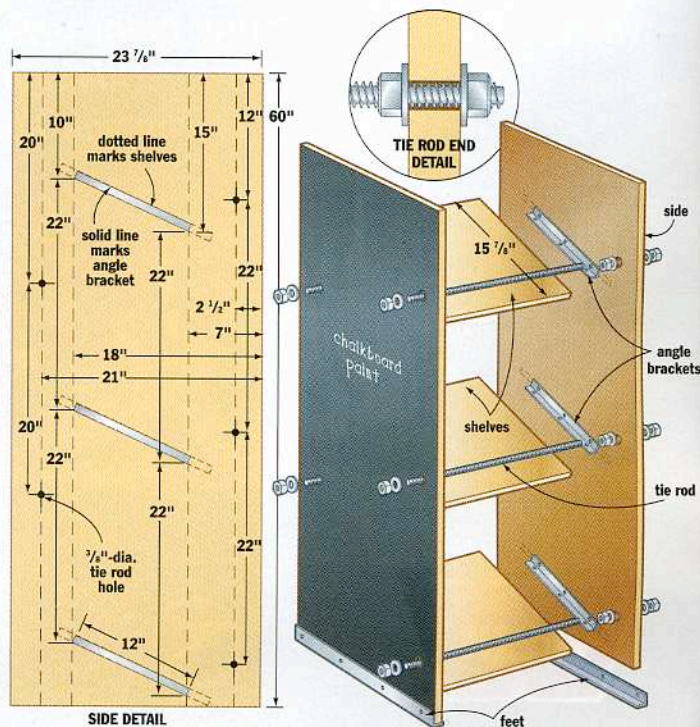
*Stop wasting space: build a project that gets recycling off the ground*

BY IAN MILNE

BEGIN BY CUTTING all necessary parts, both wood and metal. The steel angle brackets are easily cut with a hacksaw, but take the time now to clean up the cut edges with a file. Forget this step and all the jagged edges are likely to bite back later. You need six 12"-long brackets in all. Next, cut the two plywood side pieces and the three shelves. The 15 7/8"-deep x 18"-wide shelves should support most blue boxes, but if they need to be adjusted for wider boxes, remember to adjust the length of the threaded rods.

Grab your two side pieces and mark layout lines along their length at 2 1/2", 7", 18" and 21" distances back from the front edge. The plans show the details. These lines are crucial for getting the project's geometry right, so draw carefully. The next step is to mark the location of the tie rod holes. On the 2 1/2" line, mark a point 12" down from the top of the sides, then again at 34" and 56". On the 21" line, mark points at 20" and 40" down from the top. Drill these with a 3/8" bit for the tie rods that bind the project together.

Next, mark the angle bracket locations. On the 7" line, place marks at the 15", 37" and 59" points from the top. On the 18" line, make marks at the 10", 32", and 54" locations. These particular locations aren't drill points; they mark the



## YOU WILL NEED

PART	MATERIAL	SIZE	QTY.
Sides	plywood	3/4" x 23 7/8" x 60"	2
Shelves	plywood	3/4" x 15 7/8" x 18"	3
Shelf supports	steel angle bracket	1 1/2" x 1 1/2" x 12"	6
Feet	steel angle bracket	1 1/2" x 1 1/2" x 23 7/8"	2
Tie rods	threaded rod	3/8"-dia. 20 1/2"	5
Tie rod nuts/washers	steel	3/8"-dia.	20
Shelf screws	steel	#10 x 3/4"	18
Shelf washers	flat	#10	18
Shelf support bolts/nuts	steel	1/4" x 1 1/4"	18
Shelf support washers	steel	1/4"-dia.	36

lower corners of your steel support brackets. Using one of the brackets you cut earlier, hold it against the 10" and 15" marks, centred on these two points.

Next, find the holes in the brackets that are closest to the vertical lines, mark these locations, then drill them for 1/4" bolts. While you're at it, make note of this particular angle bracket's location so it can be returned to its place. Since mounting hole patterns aren't necessarily the same from bracket to bracket (depending on where they were cut relative to their factory-punched holes), you'll need to install them in their original layout positions on both sides.

Repeat the marking and drilling process for each of the six brackets and the threaded rod locations, following the details shown on the plans. When you're done, loosely bolt each angle bracket in place. Position the nuts on the inside to tidy the project's looks.

Lengths of 3/8"-dia. threaded rod bind this project together, so cut the six pieces you'll need using a hacksaw. Before you begin, thread a nut on the good side of each cut. That way you can spin the nut off afterward, restoring the original thread pattern that's inevitably damaged during the cutting process.

Next up, fit the shelves. The steel angle brackets you so carefully put in place don't allow enough room for both 3/4"-thick plywood and the bolts that secure the brackets. That's why you need to lightly notch the ends of the shelves to accommodate the bolt ends. Each shelf is set back five inches from the front edges of the sides, so that's where they need to go for marking bolt locations. Also, since exact bolt locations

are unique on each bracket, you'll need to mark the home location for each shelf end. Dry-fit the shelves in place one at a time, allowing you to mark the location of the bolts for the brackets. Cut little V notches with a saw to make room for the bolts. (The hacksaw will do the job well and you already have it

out.) Clean up the groove with a file, and test the fit.

Attaching the feet is easy. Cut and position pieces of angle bracket along the lower edges of the uprights so the overhang is inside. Insert a spacer between the bottom end of the ply sides and the steel (I used a metal ruler), and mark off three evenly spaced holes for drilling. Avoid marking a

hole five to six inches in from the front, as this is where the bottom shelf ends. The spacer lifts the wood off the steel and floor a bit, protecting the project from rot in damp locations.

Now it's time for final assembly. Lay one side on your bench, inside face up. Attach the three shelves to the angle brackets using #10 wood screws and washers. Fit the five threaded rods into their holes and lock them in place with a nut and washer on each side of the ply. Lay the other side in place, with shelf brackets and threaded rods aligned with their marked and drilled locations. Tighten the threaded rods and screw the shelf ends down.

I finished my recycling station with polyurethane on the inside surfaces and outer edges. On the outside faces of the sides, I applied primer and a coat of chalkboard paint with a small foam roller brush. The chalkboard helps solve another organization problem: at last I have a notepad in my shop that won't go missing. 🛠️



**THREADED STEEL rods hold the plywood sides together**