



Project 16992EZ: Contemporary Shelving Unit

Incorporating a pair of hinged triangular towers, this impressive shelving system folds flat for easy moving and storage - an appealing feature for college students and those who move on a regular basis. Ours is made with 6' long shelves, but the towers can be moved apart for 8' shelves as well. The stiles and rails are made from birch solid stock, with edged birch plywood serving for the shelves. Oak, no doubt, would also look very attractive.

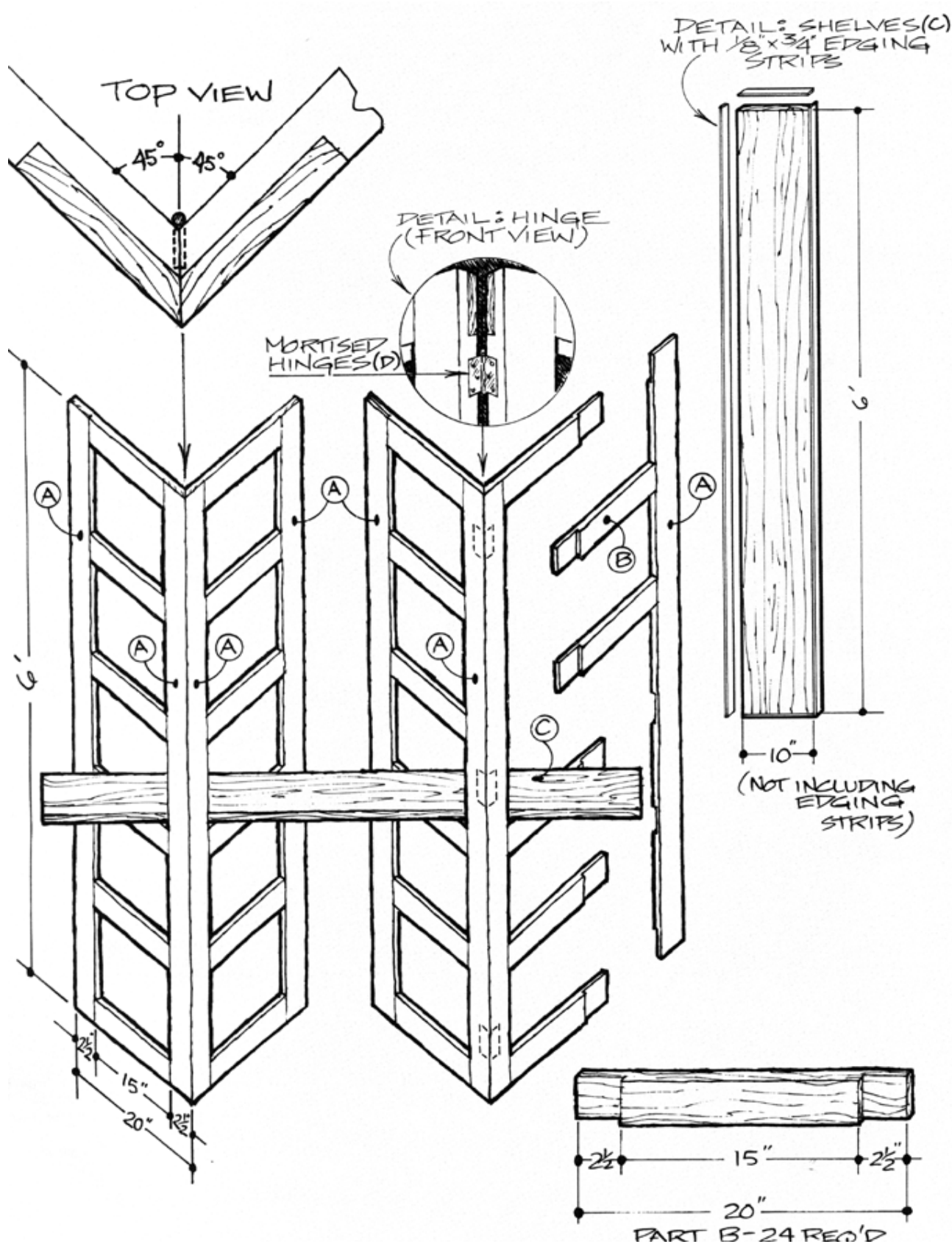
It's most important that the stiles (A) and rails (B) be made from flat stock. If you can't get satisfactory solid stock, you may want to consider birch plywood with edging strips for these parts.

Although the joinery is reasonably basic, there are a lot of joints to cut (and sand), so there's a fair amount of time needed to build this unit. It's a good idea to plan your building schedule accordingly.

Contemporary Shelving Unit Materials List

Part	Description	Size	No. Req'd
A	Stile	3/4" x 2-1/2" x 72"	4/tower
B	Rail	3/4" x 2-1/2" x 20"	12/tower
C	Shelf	3/4" x 10-1/4" x 72"	6
D	Hinge	2-1/2"	3/tower

Contemporary Shelving Unit Complete Schematic



Contemporary Shelving Unit Step-by-Step Instructions

1. Cut the rails (B) for each tower to 2-1/2" wide x 20" long.
2. Check each rail for straightness and flatness.
3. Join the rails to the stiles with half-lap joints.
4. Obtain the exact thickness of the rail stock. This will be the depth of the two rabbets in each rail needed to make the half-lap joints to join them to the stiles.
5. Set your table or radial arm saw to make multiple cuts so you can quickly make the 24 rabbet cuts in each of the stiles required to make one tower.
6. Use a dado head cutter on a table saw and attach a stop block—set up so the cut establishes the correct rabbet width—to the rip fence. **NOTE: When attaching the stop block, make sure the block is far enough in front of the dado cutter so that once you start cutting, the rail will be free and clear of the stop block. This eliminates any chance of binding which could cause kickback.**
7. Hold the edge of the rail against the miter gauge and butt the end of the rail against the stop block.
8. Use the miter gauge to pass the rail over the dado cutter.
9. Make two or three more passes to clean out the remaining stock.
10. Attach a stop block to the guide fence to set up the radial arm saw for cutting the rabbet.
11. Cut stiles for each tower to 2-1/2" wide x 72" long.
12. Check each stile for straightness and flatness.
13. Use a stop block again to cut the rabbet on one end of a stile, then move the rip fence to cut the dado.
14. Repeat the previous step on the opposite end of the stile.
15. Set aside the stop block and cut the two inner dados on each end of the stile.
16. Repeat the process to cut the rabbets and dados on the rest of the stiles.
17. Sand the inside edges and adjusting the rails for a good fit.
18. Glue the frames together.
19. Use pipe clamps to pull the stiles together, one frame at a time. the frames one Use C-clamps to squeeze each half-lap joint.
20. Check the frame for squareness.
21. Set the frame aside to dry overnight.
22. Use a belt sander to sand all parts thoroughly and all joints for a smooth fit, taking care to remove all cross-grain scratches.

23. Use the table or radial-arm saw to rip the 45-degree bevel on the front edge of the frame pieces.
24. Mortise the three hinges as shown to join each pair of frames.
25. Rip the edging strips from solid stock to a thickness of about 1/8", slightly thicker than necessary.
26. Cut the strips a little wider than the shelf thickness.
27. Use glue to attach the edging strips to the shelf edges.
28. Plane the edging thickness so the shelves fit well in the frames.
29. Plane or sand flush the ends of the edging so they are flush with the shelf surface.
30. Apply a coat of Deft Danish Oil to complete the project.

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