Simple Curved Corners

Bending plywood and joint compound make graceful curves in white walls

by Scott M. Carpenter

When my brother told me he wanted to convert his basement into a playroom for his children, I winced. I knew he needed the help of a professional builder and that he assumed I would render that help for the relatively modest payment of lunches and dinners (and the periodic use of his services as a master electrician).

He was looking for ideas, and I had two good ones. My first good idea was to let my brother and his wife clean out the basement. My next good idea had to do with the framing. If this space was to be a playroom, how could we make it more playful and less dangerous? Two words: curved corners (photo right).

Considering the options—Tight-radius curves (2 in. or *3* in.) are easy to make if you use a drywall product called Gypcove (distributed by Pioneer Materials, Inc., 9304 East 39th St. N, Wichita, Kan. 67226; 316-636-4343), but the larger-radius curves I had in mind for the walls and the window returns required something else. In the past, I framed curved corners with radius-cut plywood top and bottom plates that were ribbed with studs and skinned with two layers of ¼-in. drywall. This drywall was wetted down to make it pliable, yet it still didn't bend smoothly; it pleated and took time to finish.

Although I didn't want to hang around at my brother's longer than necessary, and despite the fact that my brother is, well, a cheapskate, we liked the idea of curved corners. Luckily, a material called bending plywood offered a solution that saved enough on construction time to make it more than worth the extra cost of materials.

Kid-friendly. **Curved corners add comfort and safety to a room for children. Bending plywood creates these corners, which are spackled, taped, skim-coated and painted exactly like drywall.**

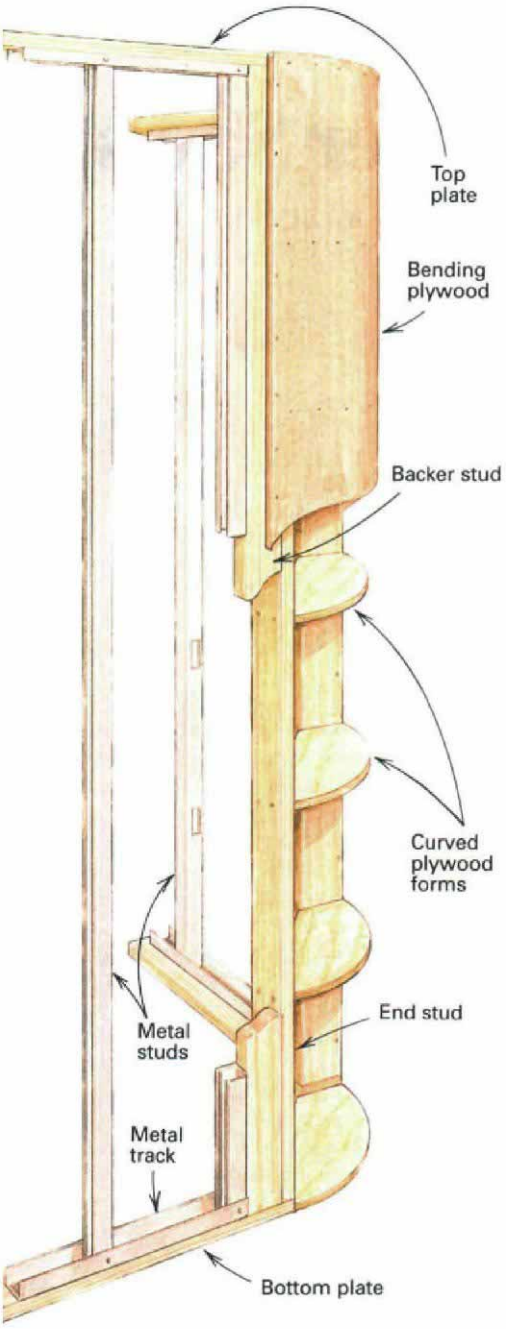
Bending plywood—I discovered bending plywood at my lumberyard, but it's more commonly obtained from suppliers of cabinet-making materials (see sidebar facing page). Several species and thicknesses are available; we chose ⅜-in. three-ply mahogany. It cost me $28 per 4x8 sheet, but that was several years ago, and I was able to buy directly from a distributor. What makes bending plywood different from standard plywood is that it has only three plies, and the inner ply is much thinner than the outer ones. This makes bending plywood flexible. The thinner middle ply has its grain running perpendicular to the outer layers, which gives the plywood its strength. Some sheets are laminated with the grain running in the 4-ft. direction, others in the 8-ft. direction. The direction of the grain determines the direction the sheet will bend. As an experiment, I bent an 8-ft. sheet in a 6-in. radius. The creaking noise it made warned me to run for cover, but it didn't break.

I calculated that a single sheet would yield two 8-ft. high corners with a 9-in. radius. We had three corners and four window returns, so we bought two 4x8 sheets (grain oriented in the 8-ft. direction) and one 8x4 sheet (grain oriented in the 4-ft. direction) for window-return corners.

Framing the curves—We began work on the basement by marking the layout of the walls on the floor. We drew all outside corners square, then we measured 9 in. in from each corner: the radius of each curved corner. When we framed, the straight walls stopped at the 9-in. marks.

The studs at the 9-in. marks were wood 2x4s; the rest were metal studs. I use metal studs in basements partly because the quality of lumber is going downhill, and decent wood studs are hard to get, but mostly I use metal studs because they're easy to work with, especially for furring out block walls. A metal stud wall made of 1⅝-in. studs has many advantages over a wood stud wall, including the fact that it's not affected by basement moisture.

With each wall stopped 9 in. short of the square corner, I felt there should be something in the



Curved wall corner

Top and bottom plates stop 9 in. from the square corner; curved plywood forms fill the open corner. Alongside each end stud, a backer stud was placed on the flat, and the bending plywood was screwed to it

open corners to wrap the bending plywood around. So I made curved forms. I cut 9-in. radius circles from ¾-in. plywood, quartered the circles and trimmed the points at 45°. I nailed these curved forms into the open comers like shelves at 16 in. o. c. (drawing above), nailing through the end studs and into the forms.

Getting the bends—An additional stud was turned sideways and nailed to each end stud, on the straight side of the wall, to serve as a backer for the drywall. Lapping the bending plywood halfway over this backer stud made taping easier. Through trial and error we found that if the butt joint between the bending plywood and the drywall is made 3 in. away from the start of the radius, it is easier to feather the bulge of the tape line into the curve of the corner. Turning the backer stud sideways in the wall gave us room to lap the bending plywood 3 in. onto the wall framing with plenty of space left to fasten the drywall.

We also found it easier to cut the bending plywood after it was installed. By leaving it wide, we could use the extra width for leverage as we bent the plywood around a corner. Our system was to screw one edge of a full sheet to a backer stud, and then my brother bent the plywood around the corner while I screwed it to the curved forms every 2 in. with 1¼-in. drywall screws and finally to the adjacent stud. Then we marked and cut the bending plywood to width in place with a circular saw and finished the cut with a reciprocating saw. The job became physically more difficult when we were installing the last piece from each full sheet, which was only about 27 in. wide.

Having a moisture content between 6% and 10%, bending plywood takes tape and joint compound just as drywall does. The straight walls were skinned with ½-in. drywall that butts the ⅜-in. bending plywood. We feathered the thickness variance with joint compound, taped the seam, and then skim coated, or covered the entire corner with a layer of joint compound, to smooth out the bending plywood's rough texture. To check the transition from straight wall to curve, I examined the wall with a halogen lamp, a light that cruelly reveals imperfections.

Curved window returns—Typically in basement renovations the exterior walls are furred out to accommodate insulation and electrical wiring, and the windows end up set deep in the wall. We wanted to avoid this look, so we furred out the walls to create 9-in. radius window returns. These window returns turned out to be successful because they reflect more light into the room than square returns, making the basement brighter.

The fact that my brother decided to replace the old cellar windows with thermopane awning windows, which crank open at the bottom, gave us an opportunity to simplify the window returns. Before mortaring the new windows in place, we built out their frames with two layers of plywood glued on the flat (drawing right). The first layer is recessed back from the inside edge of the window frame; the outside layer of plywood is flush with the frame, making a pocket all the way around the window.

After installing the modified windows at the correct height, we slipped the drywall ceiling into the top pocket of each window frame. In the side pockets we squeezed a bead of construction adhesive and inserted bending plywood and screwed it to the wall studs (photo above). The tension created by bending the plywood forces it into the pocket and holds it firmly. No other backer or plywood bending forms were required. A drywall sill set into the bottom pocket completed the window return. □

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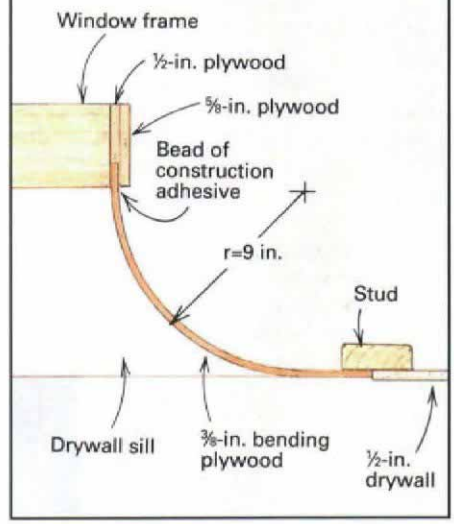
Window-return corners

Brightening the basement. **Bending plywood opens up window returns in furred-out walls. The window frame was built up with two layers of conventional plywood, creating pockets that hold the drywall sill and ceiling and the bending plywood returns.**



Finding bending plywood

Bending plywood, also known as wacky wood and wiggle wood, may be tough to track down in some areas. Check the Yellow Pages under "Plywood and Veneers," or you can call either Danville Plywood Corp. (P. O. Box 2249, Danville, Va. 24541; 804-793-4626) or North American Plywood (10309 Norwalk Blvd., Santa Fe Springs, Calif. 90670; 310-941-7575) for the names of local distributors.

***—Rich Ziegner, assistant editor at* Fine Homebuilding.**

Drawings: Bob Goodfellow