

David Wurtz Chalet, redesigned by Brian Naughton

1/28/2004

On the PM Clubhouse a few days ago, David Wurtz, of Faulkton, SD, posted a picture and details of individual martin houses that he had used last summer with great success. The concept of simulating the gourd rack environment that eliminated porch domination while providing warm wooden housing was eagerly sought after by the martins in preference to all other types that were being offered. The main drawback for most rack type applications was the increased weight over the gourds.

The front entrance/door combination fits very well with Andy Troyer's comments at Martinfest 2003 when he approved this configuration to prevent premature fledging if the more mature youngsters were startled at opening the cavity.

After corresponding with David, I made a sample that also turned out to be too heavy at 6.5 pounds. A second try was made with a concentration on weight reduction was able to produce a unit at 3 pounds 13 ounces.

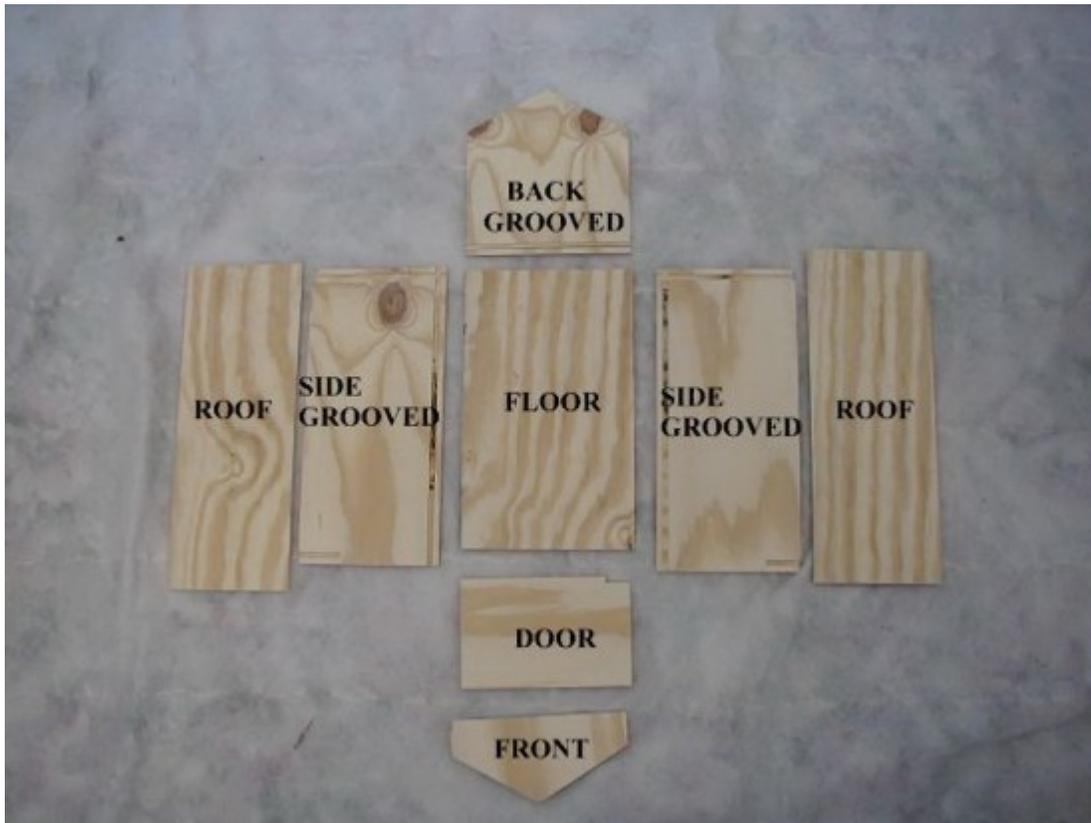
In further discussions on the Clubhouse, I was asked to document the details of this lighter weight construction, which incorporated the use of exterior plywood and PVC in place of heavier thicker woods and glued joints to provide strength while eliminating bulkier overlaps.

The latest floor size is 7" wide by 12" deep, a reduction from 13" on the previous units again to reduce weight. The gable ends are 7 1/2" from the floor.

I would like to first of all point out that one could not make a living from building these units as I have done, but I enjoy doing this sort of thing, so please bear that in mind when considering some of the methods and items used.

The following is a record of how a third identical unit was built.

Step 1 The Shell



This photo shows the plywood pieces involved. All of the plywood is 1/4 inch three ply exterior grade. Each house used 1/6 of a 4x8 sheet, i.e. approx. \$2.33

Plywood dimensions:

Floor 7 1/4" X 12 1/8"

Sides 6" X 13" with 1/4" wide x 1/8" deep grooves cut 1/4" from the edge along the bottom, rear edge, and 1 1/4" down on the front panel. The grooves were cut on a router table but, except for the short groove for the front panel, could also have been done on a table saw.

Back 8" to peak, 6" walls, 7 1/4" wide, 30 degree roof pitch and a groove across the bottom.

Door 7" X 4 1/2" The 1" X 1/4" notch in the lower right is for the clasp to be fitted later.

Front 3 1/2" to the peak, 1 1/2" walls and 7 1/4" wide with a 30 degree roof pitch. No grooves.

Roof panels 5 1/2" X 14 1/2" with a 30 degree bevel to the inside on the edge at the ridge.



At this time, all of these panels, except for the roof, are glued and clamped using PL premium polyurethane construction adhesive (PPCA) and allow to set for 24 hours.



For the ridge beam and eaves support, prepare two pieces of pine (I used pressure treated scrap) to be 1" wide and 5/8" thick and 14 1/2" long. Setting the saw at 30 degrees, trim off the shoulders to give the profile shown.

On one piece, notch 1/4" X 1/8" grooves on the sides and bottom at 1/4" from the end as shown in the picture.

Mark the rear panel gable with the end profile of the beam and cut a notch to be 1/8" inside of the marks such that the grooves in the beam allow it to fit in the notch. Mark and repeat the notches and grooves where the beam touches the front panel to leave a 1 1/2" overhang. Glue the ridge beam in place.



Cut the other piece to the length of the inside of the sides and saw down the middle to give two mirror image pieces. Glue and clamp these to the upper edges of the wall as shown to match the roof line.

Allow 24 hours for the glue to set, but this can be done concurrently with the shell above.

(Another reason this is a labor of love.)

Step 2 Door Preparation

The door is predrilled with 1/8" holes for the hinges and clasp. The enlarged hole will suffice for all types of entrance plates.



I like to prime and paint before attaching fixtures to give added weather protection in that area. The hinges and clasp are placed at the ends of the door to give maximum room for any prefabricated entrance holes. The holes could easily be cut directly in to the door, but this would reduce the flexibility of changing entrance types.

“T” nuts are installed in the back of the door to hold the screws of the entrance plates.



The hinges and clasp are attached with pop rivets and backing washers since the door is only 1/4" thick, it would not hold screws well. When setting the rivets, if the force needed to pop them appears to be too great and the rivet looks to be set well enough, release the pressure and drive out the pin in order to prevent splitting the edge of the door. A small amount of material may have to be removed from the door and shell edge under the hinge barrels to let the hinge lie flat.



The clasp and the porch have the heads of the rivets to the inside to prevent any interference with the fit of the door.

If the tip of the hook on the clasp is bent up a little, it acts as its own lock. The loop of the clasp has the heads of the rivets to the under side to let the plate fit correctly.

Cover the backs of the rivets with caulk or glue so that there are no sharp edges on the inside.

The porch could also be a prefabricated one, but I made these out of flattened (heated then clamped) 1/8" PVC sewer pipe. The porch is braced by 1/4" by 3/8" reinforcing ribs.

The grip surface on the porch and inside of the box is PPCA adhesive that has been raked with an old coarse toothed comb. This is most effective if the adhesive has been spread on the clean porch with a spatula and allowed to partially set for about 20 minutes - the peaks are better retained than raking with fresh adhesive.

It is best to leave this operation until all is finished to avoid a possible mess if the adhesive is touched before it has set.

Step 3 Perch, nest tray restraint and vent---(optional)



Recent nest cam video has shown birds clinging to the sides of gourds and inspection ports while sleeping. Since the roof is high for ventilation, there is enough room to attach a perch. This is located 4" back from the opening and 4" from the floor. A 1/8" hole is drilled in the walls and countersunk. The ends of a piece of 5/8" dowel are also predrilled. The perch is attached to the sides by a deck screw.



The mounting of the chalet will allow for a slight forward tilt to the horizontal to let any water that comes in through the entrance hole to flow to the front and escape. To prevent the nest trays, if used, from sliding forward due to the slope and vibration or rack movement, I glued a small 3/8" by 3/8" strip at 6 1/4" from the rear. A nest tray can easily be lifted over this strip for inspection.



The vent in the center of the rear panel is a 1/2" PVC "Street ell" from any good plumbing department. A feature of this is the shoulder on one leg that gives a good register against the wall of a house or gourd.



This leg length was cut to 1/4" to fit into a 5/8" hole in the plywood and glued in place. A small patch of scrap aluminum screen was glued to the vent opening to prevent insect invasion.

Step 4 Roof Attachment



The view of the back of the front panel shows the “T” nuts, perch and nest tray restrainer in place in place.

The roof attachment was left until last to permit easy access for the other operations.



Each roof panel should be marked with the location of the support beams to give a better guide when tacking the roof in place.



The contact area of the ridge, ends and walls were covered with adhesive.

The roof panels attached with galvanized brads using a brad/nailer. If regular small brad nails were to be used, I would suggest not driving them all the way in and removing them once the glue is set. This will prevent the chance of them rusting and staining the roof.



Step 5 Final paint and hangers

After a clean up, sanding, and then caulking of all the joint corners, the outside should be primed and painted with your individual preferences. I used BEHR Primer and Sealer and BEHR 100% acrylic high gloss latex.



The hangers are screw eyes. To prevent splitting, 1/8" holes were drilled at 1/2" in from the front and rear panels, not the roof edge, and then, the eyes screwed into the beam. A coat of caulking around the screw during insertion will help seal the hole in addition to the final coat of paint.

The final weight can be seen to be 3lbs 13ozs.

I waited until this point to apply the PPCA to the cleaned and lightly sanded porch to make the anti skid grooving on the porch and inside at the entrance.



NOW WHERE ARE THE BIRDS ????????????

I would like to thank David Wurtz for sharing this idea with the Martineering community. I would also like to thank Brian Naughton for taking this idea and working to make it lighter. Thanks Brian for documenting the procedure to make it simple for the rest of us. Also, I would like to thank both for allowing me to put it on this website to share with everyone.

From [Entrances by Sandy Bunn](#)