

Project Tutorial

Featuring compatibility with nearly all CNC Machines

It is our pleasure to provide our customers with fun and useful projects to enjoy!

Vetric Project Tutorial
www.vetric.com

Ornithological Abode

Designed for Vetric™ by Michael Tyler

Compatible with:

VCarvePro 6.5
(or greater)

and

Aspire 3.5
(or greater)

Sample Carved with:

ShopBot Buddy
PRSalph BT48

ShopBot®
www.shopbottools.com

Nesting birds never had it so good! Treat them to this whimsical and unique Ornithological Abode (we just couldn't bring ourselves to call it a plain Bird House!).

The sample shown is finished with a faux 'aged metal' finish to emphasize the mechanical spirit of the design. The finished dimensions of the Ornithological Abode are 17" long x 11" tall x 9" deep.



Main items you will need:

1) The Project Files (included):

- Bracket Sides and Panel.crv
- Front and Back.crv
- Inside Hull Sections.crv
- Roof.crv
- Solid Bracket Hull Sections.crv

2) Boards with the following dimensions:

- Bracket Sides and Panel: .75" x 11" x 20"
- Front and Back: .75" x 11" x 16"
- Inside Hull Sections: .75" x 11" x 24"
- Roof: .75" x 9" x 20"
- Solid Bracket Hull Sections: .75" x 11" x 21"

3) 1/4" diameter dowels (scrap lengths and four lengths 5 1/4", four 3/4" washers, 144 button-head dowel caps, four 3" #10 screws, four 1 1/2" #7 or #8 screws, four 1 1/4" #6 screws, Bondo for adding texture if desired

4) Drill (or drill press) and bits, water-proof glue (TiteBond III), sandpaper (coarse 60- or 80-grit for shaping, blending parts, Med. and Fine for final sanding), stain or paint and clear finish

5) A Dremel-type rotary tool with assorted sanding wheels and bits to sand small details and speed up preparation for finishing.



CNC Bits used for the Sample:

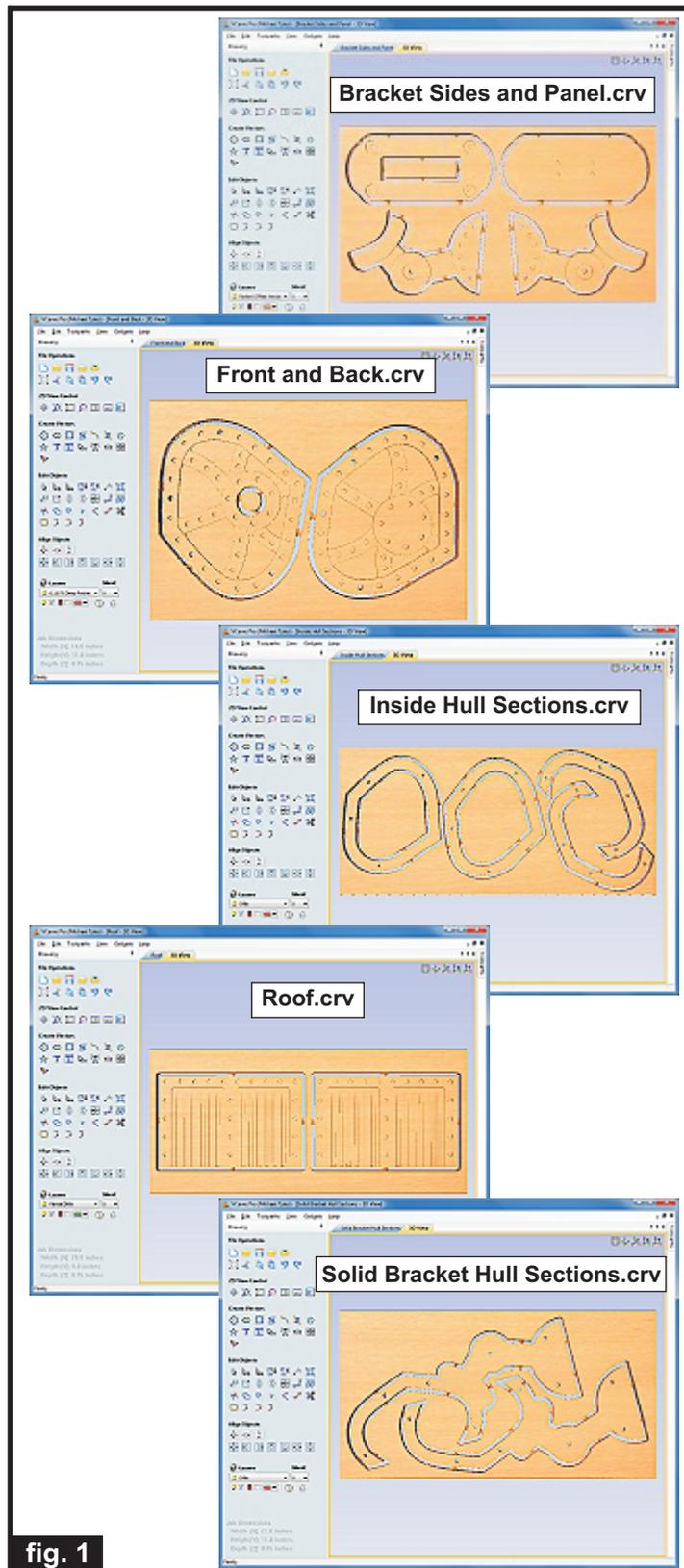
- 1/4" Up-Cut EM
- 1/4" Down-Cut EM

Ornithological Abode

(cont.)

STEP 1 - Open and Review the Project Files

Start your VCarve Pro or Aspire software and open the project files. (fig. 1)



Carefully review all the toolpaths and make any necessary changes to suit your particular bits and machine. The toolpaths are currently set with feeds, speeds and pass depths that were used in creating the original sample. Please don't use them directly until you review them for your own setup.

You can edit the tools and change the settings to your own preferences and requirements. **It is very important to recalculate all toolpaths after making any edits/changes.** Once you have recalculated for your own machine and bits, reset the preview, then preview all toolpaths again to visually verify the project outcome on-screen.

The project is designed with tabs to hold parts in place during the final part cut outs. You may delete the tabs if you use some other reliable hold-down method.

STEP 2 - Run the Project

When you are satisfied with your settings, save the toolpaths to the appropriate Post Processor for your machine, place your material on your machine bed and proceed to run the project. (fig. 2a, 2b)



fig. 2a



fig. 2b

(cont.)

Ornithological Abode

(cont.)

STEP 3 - Release and Sand Parts

Separate the parts from the material, then sand off any tab remnants. (fig. 3a, 3b)



fig. 3a



fig. 3b

STEP 4 - Glue-Ups and Part Assembly

Glue the two Solid Bracket Hull Sections together using scrap 1/4" diameter dowels to align during clamping - do NOT glue the dowels in place. (fig. 4a)



fig. 4a

Glue the attachment panel together (the plain side glues to the underside of the top pocketed piece). (fig. 4b)



fig. 4b

Glue the Inside Hull Sections to both sides of the Solid Bracket Hull assembly, again using dowel scraps to align while clamping/drying. (fig. 4c)



fig. 4c

Clamp until dry. (fig. 4d)



fig. 4d



After the assembly is dry, sand the inside with coarse sandpaper to blend the sections. (fig. 4e)

fig. 4e

Drill a 1/4" diameter hole through the bottom center of the hull (this is a drain hole). (fig. 4f)



fig. 4f

(cont.)

Ornithological Abode

(cont.)

STEP 4 - Glue-Ups and Part Assembly (cont.)

Drill pilot holes for the four 1½" #7 or #8 screws through the back of the attachment panel. (fig. 4g)



fig. 4g

Glue the Bracket Sides and Front Panel onto the main assembly. When gluing the front panel, glue in the four lengths of 5¼" long ¼" diameter dowels, so that the dowels protrude about ¼" on the backside of the hull. These dowel protrusions act as guide pins for the removable Back Panel. The dowels will be recessed on the front panel to allow for the dowel buttons to be installed. (fig. 4h) Clamp the assembly until dry.

NOTE: You can choose which side is the 'front' - the arm can extend from the left or right, depending upon your preference.

Place 4 scraps of wood in between the hull sections before clamping the front panel on



fig. 4h

Glue in the 5¼"-long dowels with ¼" protruding out backside



fig. 4i

When dry, remove the clamps and place the back panel onto the four guide pins. Drill pilot holes for the 1¼" #6 screws at the locations shown. (fig. 4j)

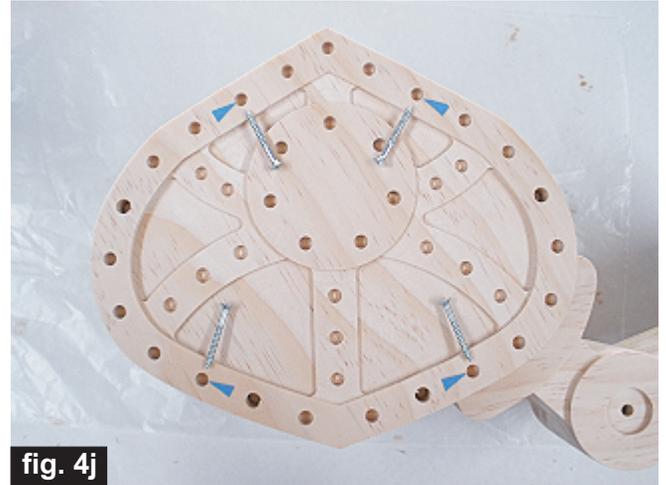


fig. 4j

Drive in the four screws, then sand the Back Panel to blend with the contours of the hull. (fig. 4k, 4l)



fig. 4k



fig. 4l

Cut a 30° miter on each roof half using a table saw or other suitable tool. (fig. 4m) Glue the roof together at the joint. You can use the triangle scraps (cut to 3 inches long) from the miter cut to glue into the center of the "V" joint of the roof, if you wish. (fig. 4n)

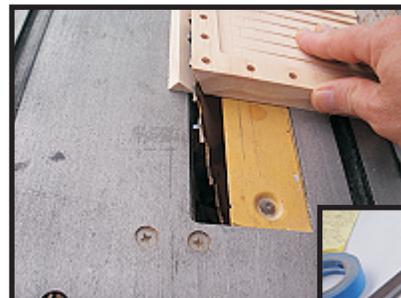


fig. 4m



fig. 4n

Ornithological Abode

(cont.)

STEP 5 - Finish Application

Remove the back panel, do any final sanding/filling to prepare parts for finishing. (fig. 5a)



fig. 5a

You can insert all the dowel buttons at this time, **or** wait until after the main finish is applied. I opted to brush on the finish, **then** insert the dowel plugs after that. I then “dabbed” the appropriate paint color on the dowel plugs to match.

Either approach has its advantages and disadvantages. I preferred the brush strokes to not be interrupted by the dowel plugs when applying the first coats, but this did require me to “ream out” the dowel holes using a 17/64" drill bit to remove paint drips that found their way inside the dowel hole recesses. It only took a few minutes to do this. TIP: Use a small paint brush to dab a spot of glue inside the holes before pushing/tapping the dowel plugs in place. Don't cover the four rear panel screw holes with plugs, of course. (fig. 5b, 5c)



fig. 5b

dab in glue
with small brush

no dowel plugs
at 4 screw areas
on back panel

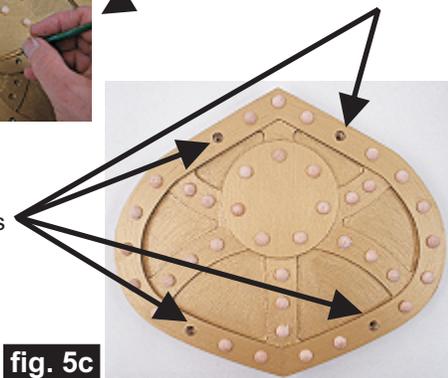


fig. 5c

Apply the finish of your choice. NOTE: Avoid applying a finish that might be harmful to birds on the interior portions of the enclosure - a food-safe sealer should be fine, if you wish to apply something on the interior. Here's what I used on my Ornithological Abode sample made from Select Pine:

- 2 coats of thinned Bullseye Sealcoat inside the hull enclosure and underside of roof
(2 parts sealer/3 parts Denatured alcohol)
- Used Bondo to create a rough texture on the attachment panel (fig. 5d)



fig. 5d

- Painted the parts with Sculpt Nouveau finishing products...

Main Enclosure - Brass B

Arm & Attachment Panel - Silver B, Copper B, Iron B & Vista Rust dabbed on panel & hull 'attach' point

Roof - Copper B

Dowel Buttons - Silver B, Copper B, Brass B

I “aged” all the parts by applying Sculpt Nouveau Black Oxide Stain via brushing and stippling it on with a disposable chip brush, then wiping and “dry-brushing” it off to create variation in highlights and dark areas. (fig. 5e)

- 2 coats Krylon clear Acrylic spray as topcoat (fig. 5f)

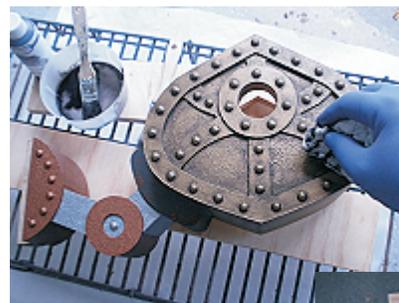


fig. 5e



fig. 5f

Ornithological Abode

(cont.)

STEP 6 - Final Assembly and Mounting

Place the Back Panel over the guide pins, then glue the Roof on using quick-set epoxy. Make sure the panel has enough clearance from the roof to be removable, and be careful not to glue the panel to the roof. (fig. 6a)



fig.6a

After glue is set, drive in the four 1 1/4" #6 screws. (fig. 6b)

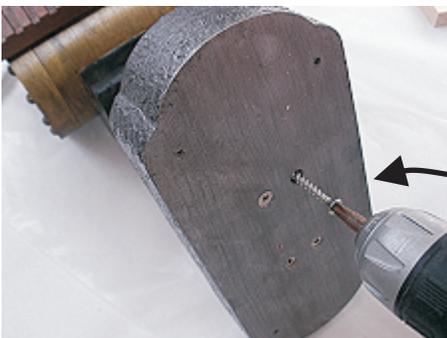


fig.6b

Insert the arm into the attachment panel. Drill pilot holes from the backside of the panel and into the arm assembly. (fig. 6c)



fig.6c



Then drive in the four 1 1/2" #7 or #8 screws. (fig. 6d)

fig.6d

IN CONCLUSION

Mount your Ornithological Abode at the desired location (a tree, post, or wall). Drill pilot holes for the 3" screws. Place washers in the recesses on the panel before driving in the screws. (fig. 6e)



fig.6e

I hope you enjoy the Ornithological Abode project and make nesting birds happy with their new home!
Happy Carving!

Michael



Materials Source Page

- **3M Radial Bristle Discs** from www.mcmaster.com
(stack 3 discs at a time on your rotary tool mandrel)
 - 80-grit: part # 4494A19
 - 220-grit: part # 4494A18



Krylon Clear Gloss Acrylic from WalMart™

Items Purchased from Woodworks Ltd. at www.craftparts.com

- **Wooden (maple) 1/4-inch dowel “buttons”**

Miscellaneous Items Purchased at Home Depot™

- **Bullseye SealCoat and Denatured Alcohol**
- **3/4" washers, 3" #10 screws, 1 1/2" #7 screws, 1/4" #6 screws**

Miscellaneous Items Purchased at Lowes™

- **1/4-inch Diameter Dowels**
- **Sandpaper**
- **Disposable Brushes and Paint Rags**

Metallic Paint & Finishing supplies
ordered from www.sculptnouveau.com



Additional Resources

RESOURCES...

There are numerous resources for Vectric software owners to make their experience with their products more enjoyable. The Vectric website includes videos and tutorials to provide a good overview of the software products and how to use them. (http://www.vectric.com/WebSite/Vectric/support/support_vew_tutorials.htm)

As well as the resources available from the Tutorial page, please also visit the 'FAQ' and 'How To' pages for more support information...

'How To' webpage

http://www.vectric.com/WebSite/Vectric/support/support_how_to.htm

'FAQ' webpage

http://www.vectric.com/WebSite/Vectric/support/support_faq.htm

Vectric User Forum

Every Vectric software owner should join the Vectric User Forum (<http://www.vectric.com/forum/>) where fellow users share their experience and knowledge on a daily basis. It is a FREE service that you will surely appreciate. A handy Search Feature helps you find answers to any questions you may have. There are Gallery sections as well, where you can post and view photos of projects created with Vectric software.

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