

Instructions for 16 foot Burnet Chimney Swift Towers

Edits by A J Sebrosky

Note: I built the first tower using the Kyle instructions. I discovered I wanted to make the instructions easier to follow as one builds. I also wanted to include the modifications that Scott Burnet developed. My thanks to Scott Burnet, Lehigh Valley Audubon, who designed the tower in these instructions. Scott builds his towers 16 feet tall. These instructions are for a 12 foot tower. These instructions are adapted from the tower designed by Paul and Georgan Kyle. ~ *Amanda Sebrosky*.

Safe Locations:

At least 10 feet from surrounding branches to keep predators from jumping in but more is better.

Tower attached to a structure should extend at least 4 feet above it and have a predator guard.

If possible, locate the tower north and east of trees/structures to provide shade.

Place where people cannot get too close such as in a garden without a path to the tower - a kiosk helps but can make cleaning difficult.

Other safety consideration:

Use a predator guard to keep climbing predators out (explained below).

Keep vegetation around the tower low. Use tanglefoot or petroleum jelly around the bottom 6" to keep out crawling insects.

Full list of Materials:

- 4 x 8 ft x 5/8 inch T1-11 (4" OC is best) (4 sheets)
- 3/4 inch pressure-treated exterior plywood (less than 1 whole one)
- 1-1/4 inch exterior deck screws (4 pounds)
- 2 inch deck screws (60)
- 3 inch deck screws (60)
- 2 x 10 in x 8 ft construction lumber (2)
- 2 x 4 in x 8 ft construction lumber (2)
- stakes -- scrap lumber
- 1-1/2 x 1-1/2 in x 10ft pressure treated lumber
- 4x4 inch pressure treated lumber for legs

1 x 4 in x 8 ft pressure-treated lumber (12)
 3/4 inch foil backed rigid foam insulation (3 sheets)
 flashing 24" wide by about 8.5 feet
 exterior siding (3/8" T1-11 cut long-wise, cement-board cut lengthwise or siding) 3
 sheets
 80 # bags gravel mix concrete (about 20)
 40 inch long pieces 3/8 in rebar (16) and tie wire
 12 inch pieces 3/8 inch rebar (8)

Foundation form for cement:

Note:

Consult your building department for more info and get permits if needed.

We use 4x4 pressure treated lumber that extends 3 feet into the ground and is then encased in quickcrete.

2 x 10 in x 8 ft construction lumber (2) each cut in half numbered 1-4.
 3 inch deck screws
 2 x 4 x 18 in stakes (4)

Steps:

- 1) Excavate the area where you will place the tower about 3'x3' and 3' deep with a flat bottom.
- 2) When you cement in the tower, you will fill it only about 2' then use the form to give a finished look to the top.
- 3) once the cement is dry, excavate the top about 5'x5' feet.
- 4) Construct the form making sure that pieces #1 is opposite #2, #3 is opposite #4 sandwiching #1 and #2 between #3 and #4 such that you screw into #1, 2. The form will not quite be square but this way saves cuts.
- 5) Secure the form in the hole with 4 stakes and 2 inch deck screws.
- 6) Fill the rest of the way with cement.

Interior tower sections;

1- 1/4 inch deck screws

4 x 8 ft x 5/8 inch T1-11 (4 inch OC) (4 sheets)

NOTE: If you use T1-11 with big OC, make shallow scores every 3-4 inches.

Cutting the T1-11

You will cut so that the piece that is **24 inches** wide has the grooves running parallel to the ground to allow the birds to grasp the grooves.

Sheets 1 and 2

24 inch wide	24 inch wide	24 inch wide	24 inch wide

<-----8 foot----->

Sheet 3 and 4 (22.75 in sections with some waste)

22.75 in	22.75 in	22.75 in	22.75 in	

On the un-grooved (ie the outer) side, mark an arrow pointing toward the notched edge on each of the 16 pieces. Mark a large 'N' on the 22.75 inch pieces and a 'W' on the 24 inch pieces.

Constructing the sections:

ENSURE THAT NO SCREWS PROTRUDE INTO THE TOWER after constructing each section.

1) Using 1-1/4 inch deck screws, assemble each section -- to do this, sandwich the 22.75" sides between the 24" sides. The final exterior size will be boxes measuring 24x 24 X 48".

Bottom plate preparation

- 1) Choose one section to be the bottom.
- 2) Ensure that all the arrows are pointing up.
- 3) Trim off the rabbeted edge on the bottom section (the edge will now measure 5/8 inch).
- 4) Using the 1-1/2 " x 1-1/2" lumber, make the ledge on the inside where you just removed the rabbeting. (The bottom, removal grid will be attached to this ledge for easy removal for cleaning). The method varies by material used for legs.

If using angle-iron legs: cut 2 pieces that are about 23.5 inches inch long and 2 pieces that are about 20 inch long.

If you will be using 4 x 4 lumber legs, you will need to cut the pieces about 8 inches shorter and place in the center of each side to accommodate).

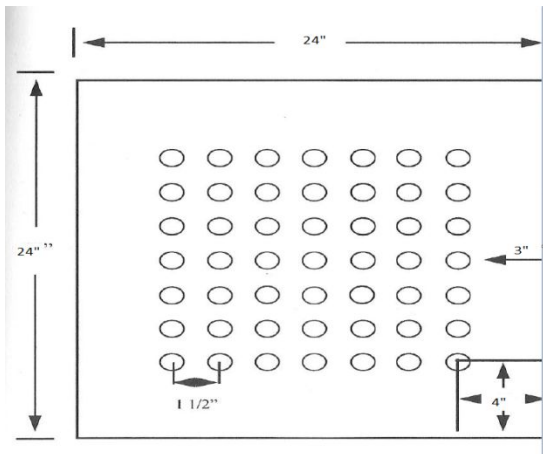
- 5) With 2 inch deck screws, install these as cleats on the inside of the tower even with the edge your just trimmed.
- 6) You will return to this 'ledge' to measure holes to place stainless steel screws that will allow easy access for cleaning.
- 7) Use scrap lumber (1 x 4 or 1 x 2) to place barrier strips along the bottom of this section to keep small animals from burrowing into the insulation.

Making the Bottom plate:

1) Cut a piece 24 inches x 24 inches from the 3/4 inch pressure-treated plywood. (If you will be using 4 x 4 inch lumber legs, you will need to cut out 4" x 4" squares at the corners to accommodate -- example of one such cut-out in picture below. For legs, 4 of these will be cutout on each corner)

2) Drill a grid of 3/8 inch holes 1-3/8 inches apart.

3) On the edges of the 24 X 24 inch piece, using a 3/8" bit, drill 4 holes 1 inch from the edge in the middle of each side (not shown) - paint the bottom grid section and allow to dry.



5) Invert the bottom box section and hold the gridded panel against the cleats. Using the gridded board as the guide, drill holes into the cleats you attached to the bottom section.

6) Remove the grid board and place the bolts through the holes of the cleat such that the threaded end faces up toward you. The hole should be snug enough that the bolts stay in place. If not, use hillman fasteners to hold the screws in.

7) Line up the gridded board with the stainless steel bolts and snug it up to the box section. Secure the gridded board using the wing nuts.

Prepare and place angle-iron legs (or 4" x 4" wood legs)

Angle Iron

1) Prime and paint the angle iron to prevent rust.

2) Install the angle iron such that 4 feet of steel extends beyond the bottom.

- 3) Using #10 x 3/4 inch hex washer self-drilling metal screws every 6 inches, screw the angle iron to the board on both sides of the corner.
- 4) Ensure no screws protrude into the tower section to avoid hurting birds.

If using wood:

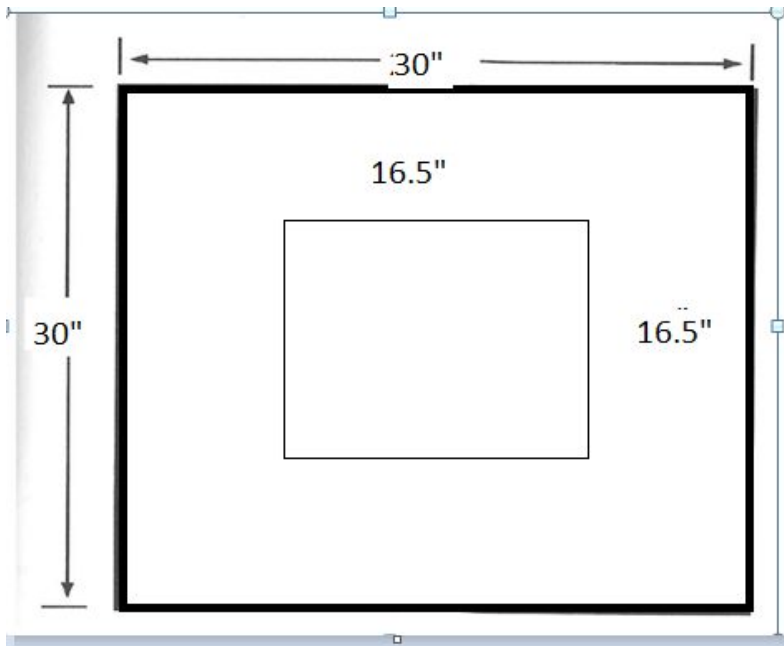
- 1) Use four 4"X4"x8' pressure-treated (ground contact) posts.
- 2) Bevel the top (with the slope headed down toward the bottom of the tower to keep detritus from collecting there and to protect the birds.
- 3) Affix the posts 36" into the bottom tower section on the inside using 3" wood screws (check not protruding).
- 4) This will leave 60" of post protruding from the bottom of the tower section. 36" of the remaining post will be dug into the ground as the footing - cement in the posts per local building codes.

Assemble Sun-collar

- 1) using the 3/4 plywood, cut
 - 15 inch pieces (2)
 - 16-1/4 inch pieces (2)
- 2) Using 2 inch deck screws, assemble into a box. The 15 inch pieces will be sandwiched between the 16-1/2 pieces to create a box of outer dimensions 16.5 inches square and 15 inches square interior.
- 3) SAND EDGES TO PROTECT the BIRDS FROM INJURY

Top cover to attach the sun-collar

- 1) Cut a piece of 3/4 plywood -30 X 30"
- 2) Cut the opening (in the center) 16.25 inches square by tracing the **outside** of the collar (see picture below)



- 3) Drill 1" holes in the 4 corners of the hole (**inside** the lines).
- 4) Using a saber saw, saw out the hole.
- 5) Sand any the edges well that may be in contact with the birds.
- 6) If there is any chance you will want a camera, cut a hole to use for a camera mount and cover with a piece of lumber until the camera is mounted (not shown).

Attach sun-collar to top cover:

- 1) The hole cut in the top plate is 16.25"x16.25". The sun collar drops directly into this cutout.
- 2) Use 2 inch exterior deck screws (2 per side) screwed horizontally into the edge of the cutout.
- 3) Check that no screws are exposed.
- 4) Caulk around the join between the collar and the top piece.
- 5) Paint the outside with acrylic paint to increase life.
- 6) Allow to dry.

Complete the nesting chamber

1) While on the ground, assemble the 4 sections. Make sure that ALL ARROWS are pointing in the SAME direction, and narrow is lined-up with narrow sides --You may need to tap the sections into place.

If using angle iron legs:

1) cut 8 of the 1 x 4 inch lumber in half (you will have 16 - 6 foot pieces)

2) Notch 8 of the 6 ft pieces so they fit around the angle iron (2 ft X 1-1/4 inches notch)

3) Use 1-1/4 inch deck screws ONLY to secure 8 notched 1 x 4 in lumber over the corners of the bottom and middle sections.

- Be sure the notches are over the angle iron
- **Be sure no screws protrude into the nest chamber**
- The edge of the chamber will be even with the edge of the 1 x 4 lumber

4) Install the remaining (un-notched) 1 x 4s along the edges to attach the sections to each other.

If using 4" x 4" legs

1) Screw the 12 foot 1 x 4's along the length of the edges of the assembled nesting chamber to stabilize the sections and keep them together.

Place the cover with the sun-collar on the top section

1) Center the cover piece with the sun collar (now attached).

2) Secure with 8 - 2 inch deck screws.

3) Ensure the screws do not protrude into the chamber.

Place insulation

1) Make certain you have added barrier strips of scrap wood at the bottom of the lowest section to keep out critters.

2) Cut pieces of foil-backed 3/4 inch rigid foam (about 16" wide X 8 ft (6))

3) Place in spaces between the 1 x 4 inch boards (foil side out)

4) Staples **ONLY** if needed to secure -- **ENSURE THEY DO NOT ENTER THE CHAMBER**

Sheathing and trimming the tower

- Any covering can be used but should be **LIGHT IN COLOR** to avoid overheating the tower.
- Cement board is one option that is hardy and too slick for predators to climb so no predator guard is needed.
- Vinyl siding is too slick to climb so no predator guard is needed.
- Wood paneling needs a predator guard - you can use the 5/8 inch T1-11 with the gooves running (up-and-down). Since T1-11 comes in 8 foot lengths, you will need partial pieces for the whole 12 foot height so be sure to match the grooves to make it look nice.

Install the predator guard if needed 24 inch piece of flashing wrapped around tower top.

Placing the completed tower:

Tilt the completed tower into the hole and secure with 2 x4 x 8ft brace boards, 18 inch stakes and 3 inch deck screws to keep it vertical for cementing.

Cementing in the completed tower into the prepared holes

Make sure that the tower has one side exactly facing NORTH.

FOR ANGLE IRON LEGS

- 1) Install a 40" rebar in a 2 layer grid of spacing 10-12 inches apart.
- 2) Drive the 12" pieces of rebar into the ground 6" from the sides -- 2 to a side spaced evenly. Rebar should be 1" below the top of the boards.
- 3) Use the wire to tie the rebar horizontally inside the box.
- 4) Tie the legs to the rebar.
- 5) Dampen the soil in the box and fill with cement.
- 6) Recheck that the tower is level and fix if needed.
- 7) Once set, cover the cement and allow to cure for 48 hours.

FOR 4 x 4 lumber legs:

- 1) Dig holes 3 foot deep large enough to accommodate the legs plus cement.
- 2) Place the tower in the holes as above.
- 3) Cement around the legs per local building codes.

Last updated: July 16, 2020