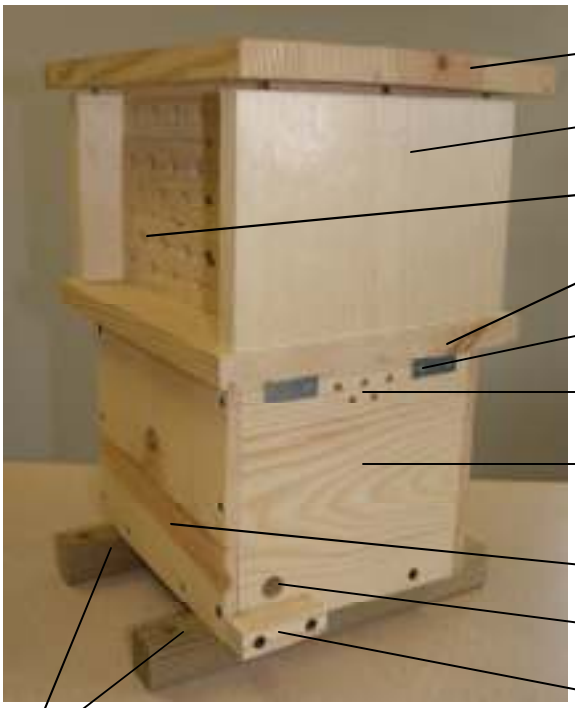
Instructions for building a Bee Box

By Alex Surcică, PSU Horticulture Program Ass't

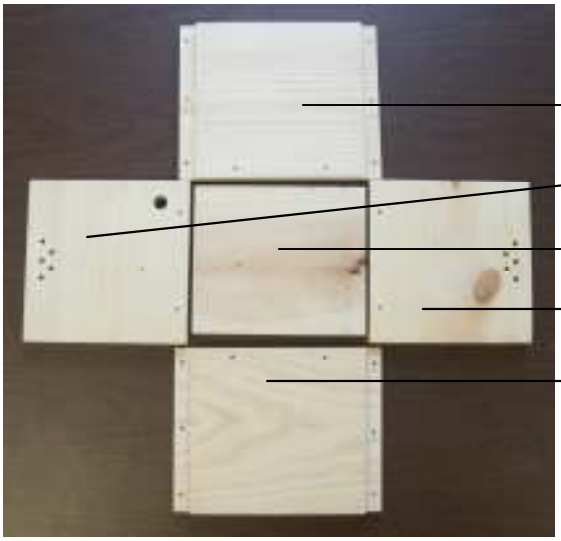
The Bee Box is comprised from two different bee nests, which are offering nesting habitat for solitary bees, such as mason bees (Osmia spp.), leafcutter bees (Megachile spp.), and bumblebees (Bombus spp.). The Bee Box is built entirely out of 1" thick boards of untreated pine wood.

Bee Box



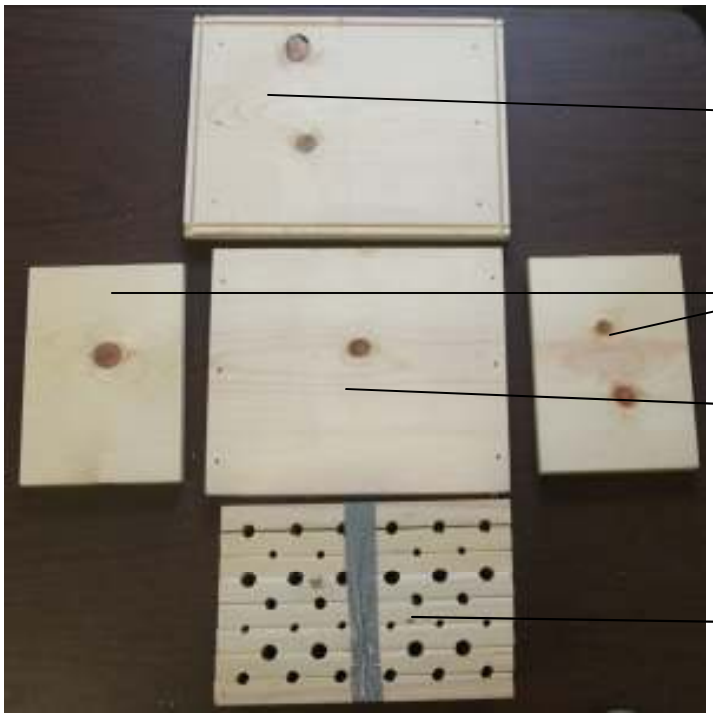
- Solitary Bee Box (SBB) roof
- SBB lateral wall (2 pcs)
- SBB nesting block (8 boards sandwiched & drilled)
- SBB bottom board
- Hinges (2 pcs) (hook & hoop on the opposite side)
- Ventilation holes (opposite side as well)
- BB front wall with bumblebee entrance (opposite side identical, but no bumblebee entrance)
- Lateral wall (2 pcs)
- Bumblebees entrance hole (5/8")
- Bumblebee landing area (porch)
- Bee box feet (2 pcs)

Bumblebee Box materials



- Lateral wall (9" x 7 1/8")
- Front wall (7 1/4" x 7 1/8")
- Bottom board (6½" x 6½")
- Back wall (7 1/8" x 7 1/8")
- Lateral wall (9" x 7 1/8")

Solitary Bee Box materials



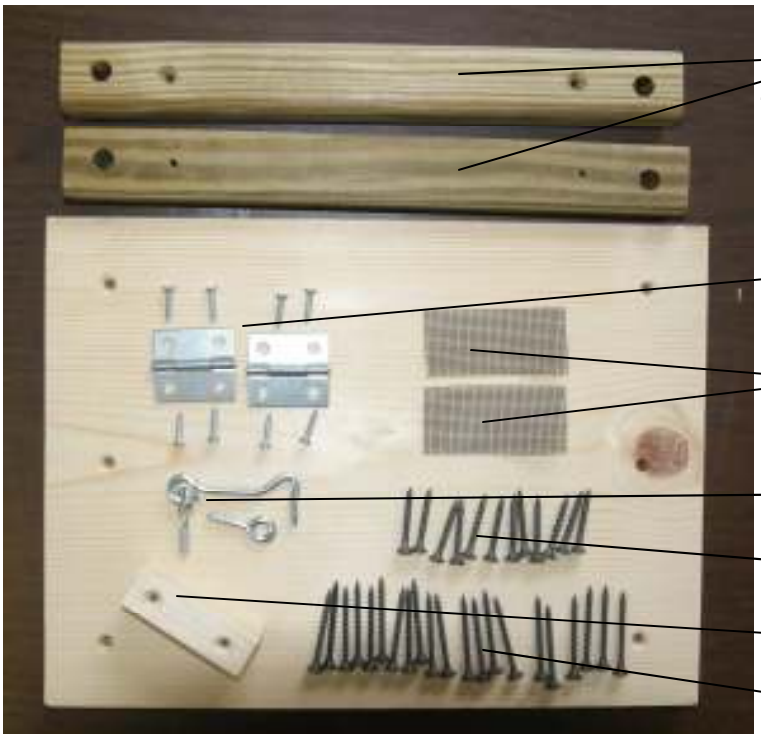
Solitary Bee Box (SBB) roof (12½" x 9¼")

SBB lateral walls (2 pcs) (8¼" x 5¾")

SBB bottom board; bumblebee box roof (11" x 9¼")

SBB nesting block (8 boards (9¼" x 5½") sandwiched & drilled with tunnels having diameters of ¼", ⅜" and ½" and lengths of 4¾")

Hardware and other accessories



Bee Box feet (11½ x 1" x 1" pressure treated wood (2 pcs)

Two hinges + 8 small screws

Screen (2 pcs)

Hook & hoop

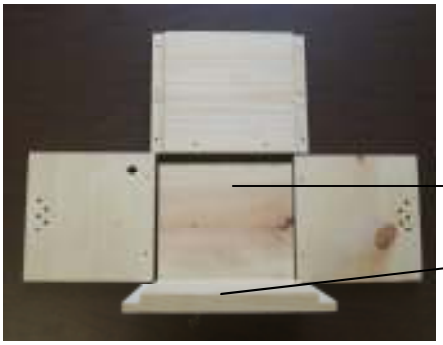
1¼ screws (12 pcs)

Bumblebee landing area (2½" x 1" x ¾")

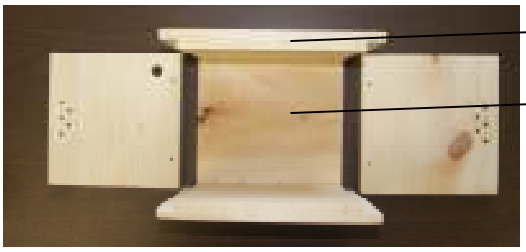
1½ screws (26 pcs)

Steps for Building the Bumblebee Box

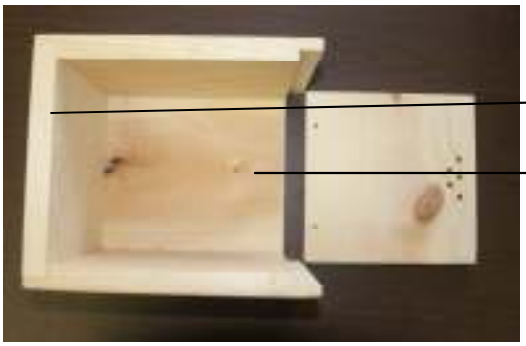
Step 1 - Secure the lateral wall to the bottom board by using two 1½" screws.



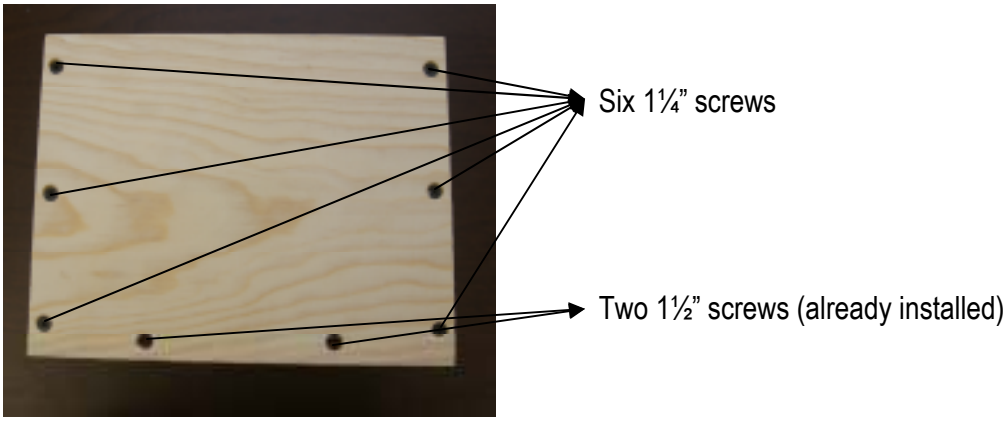
Step 2 - Secure the second lateral wall to the bottom board by using two 1½" screws.



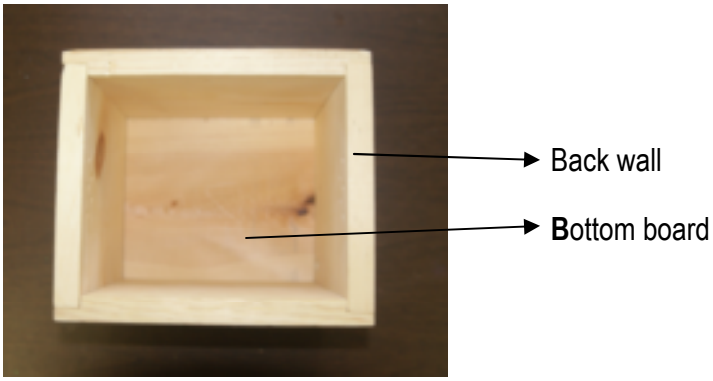
Step 3 - Secure the front wall to the bottom board by using two 1½" screws.



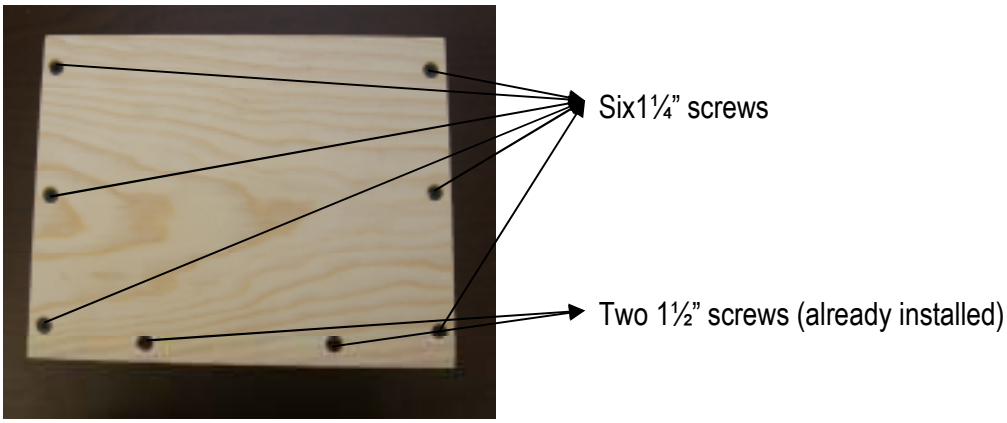
Step 4 - Secure the lateral walls to the front wall by using six 1¼" screws.



Step 5 - Secure the back wall to the bottom board by using two 1½" screws.

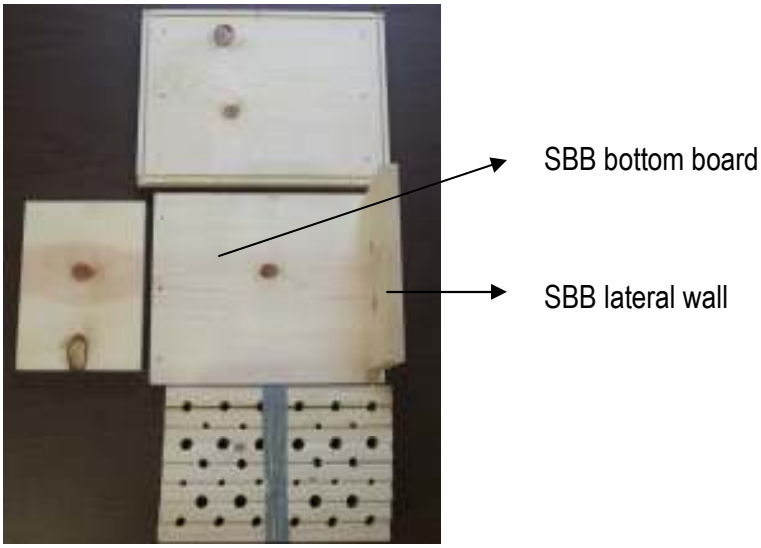


Step 6 - Secure the lateral walls to the front wall by using six 1¼" screws.

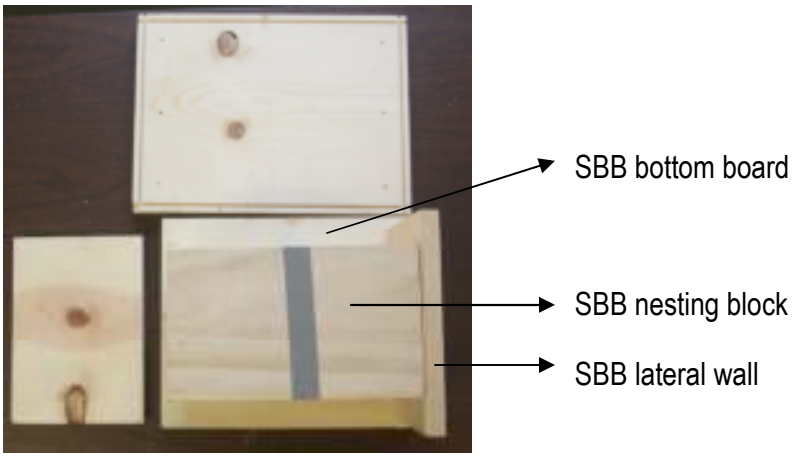


Steps for Building the Bumblebee Box

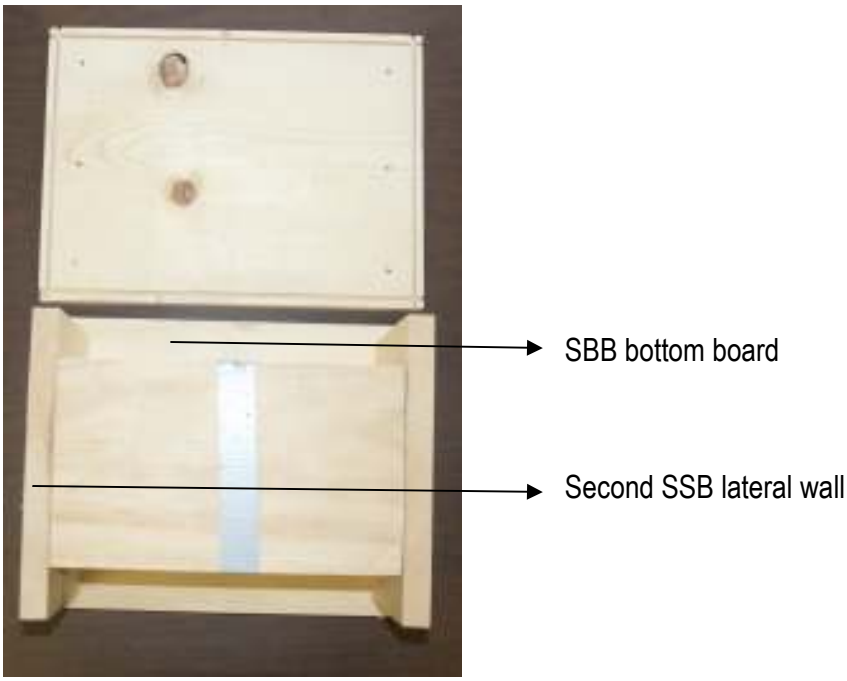
Step 1 - Secure the lateral wall to the bottom board by using three 1½" screws.



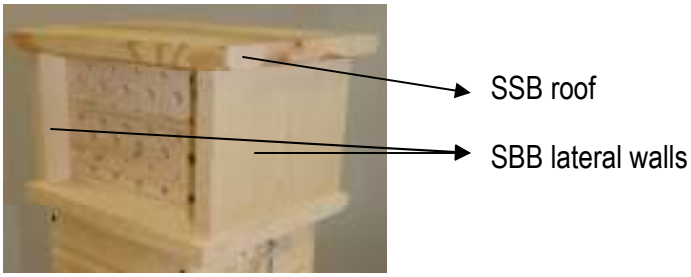
Step 2 - Determine the location of the second lateral wall by placing the SBB nesting block in its position.



Step 3 - Secure the second lateral wall to the bottom board by using three 1½" screws.



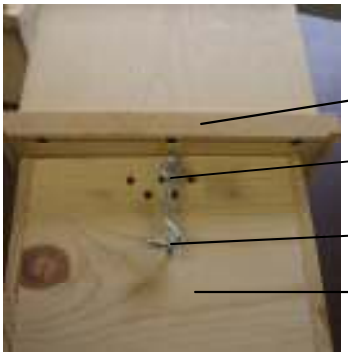
Step 4 - Secure the roof to the lateral walls using six 1½ screws.



Attaching the Solitary Bee Box to the Bumblebee Box

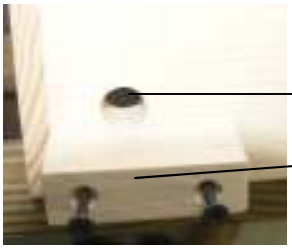
Step 1 - Turn upside down both the bumblebee and the solitary bee boxes, and place and center the bumblebee box on the bottom board of the solitary bee box - secure the two hinges to the SBB bottom board and the BB back wall using the eight small screws.

Step 2 - Turn the Bee Box right side up and attach first the hook (screw it on the SBB bottom board only three quarters of the thread in; that will allow adjustments to be made after the hoop is attached), attach the hoop on the BB front wall and make sure that the hook will put some tension when the box is closed.

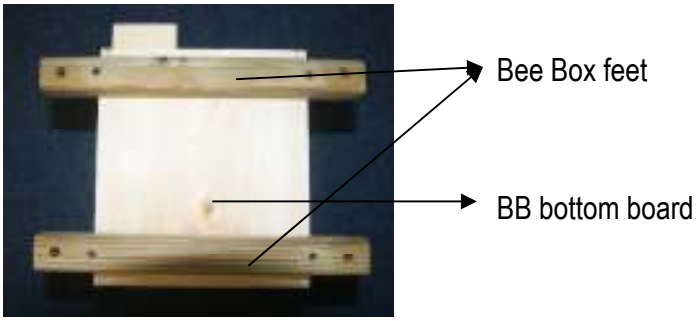


Finishing up

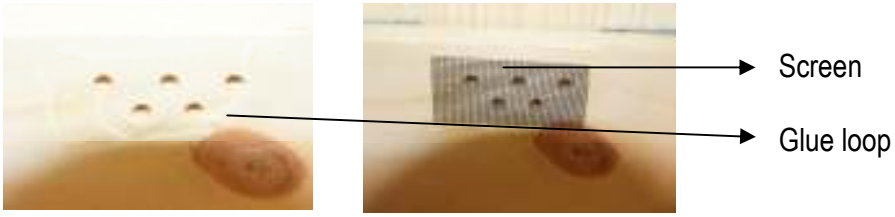
Step 1 - Secure the Bumblebee landing area just below the bumblebee entrance hole using two 1½ screws.



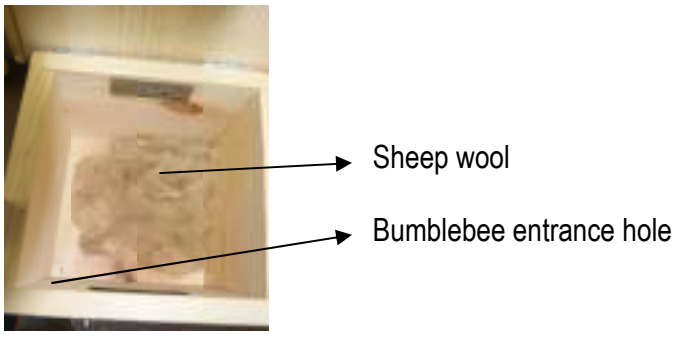
Step 2 - Secure the Bee Box's pressure treated wood on the BB bottom board, using four 1½ screws, try to put them as far apart is possible without putting the screws through the thinner part of the lateral boards. In location with a lot of varmint activity the Bee Box can be secured by driving four constructions spikes (huge nails) through the holes in the feet of the Bee Box.



Step 3 - Install the screens by making a loop of glue in the Bumblebee Box around the ventilation holes located on the front and back wall.



Step 4 - Line the interior bottom of the Bumblebee Box with a handful of insulating material, such as upholsterer's cotton, wool, moss, or dry grass, making sure to not obstruct the access to the bumblebee entrance hole.



Bee Box Maintenance

The Solitary Bee Nest can be cleaned in the spring after the adults have emerged. This can be done by removing SBB roof, and taking apart the nesting block. The tunnels can be cleaned off by scraping the debris and washing them with chlorinated water. It is important to know that the sealed tunnels host brood during the winter. Using similar treatment, the bumblebee box can be cleaned in the winter. For a longer Bee Box life expectancy, the roof can be varnished.

If you have further questions, please email them to me at **Alex.Surcica@psu.edu**. Thank you!