

Appendix 2

Bat Box Construction Plans

Tools:

circular saw
jigsaw
screwdriver
hammer

Materials:

3/4" board or exterior grade plywood for front and back
3/4" board or 1/2" to 3/4" exterior grade plywood for roof
1/4" lightweight plywood for interior baffles
1" x 8" board for sides (actual width after planing: 7 3/4")
ten 1" x 1" x 10" wood strips for spacing interior baffles
latex siliconized caulk
dark brown latex paint or stain
black roofing paper
exterior grade wood screws
galvanized finishing nails

Small Bat Box (12" x 12" x 8") Assembly

Capacity: 50 Bats

This bat box should be useful when trying to attract bats to an area. It may be accepted by male bats or non-reproductive females. It is not large enough for most bat colonies.

Pieces: (height x width)

front: 12" x 12" exterior plywood or board
back/landing board: 18" x 12" exterior plywood or board
sides: 12" x ~7 3/4" board
baffles: 1/4" lightweight plywood
 three 10" x 10 1/2" (if using spacer strips)
 two 11" x 10 1/2"
 three 10" x 11" (if router)
 two 11" x 11"

spacer strips: ten 1" x 1" x 10" board strips

1. Cut out pieces.
2. Use a knife, saw, or router to roughen all interior surfaces with horizontal scratches or grooves 1/4" to 1/2" apart. Pay special attention to landing board at bottom of box. (The portion of the back that extends below the box will serve as the landing board.)

Note for router users: At this point, use a router to cut 1/4" vertical grooves in side pieces at 1 inch intervals, then skip the following instructions on installing spacer strips and baffles. Simply fit the baffles into the side piece grooves, then attach front, back, and roof.

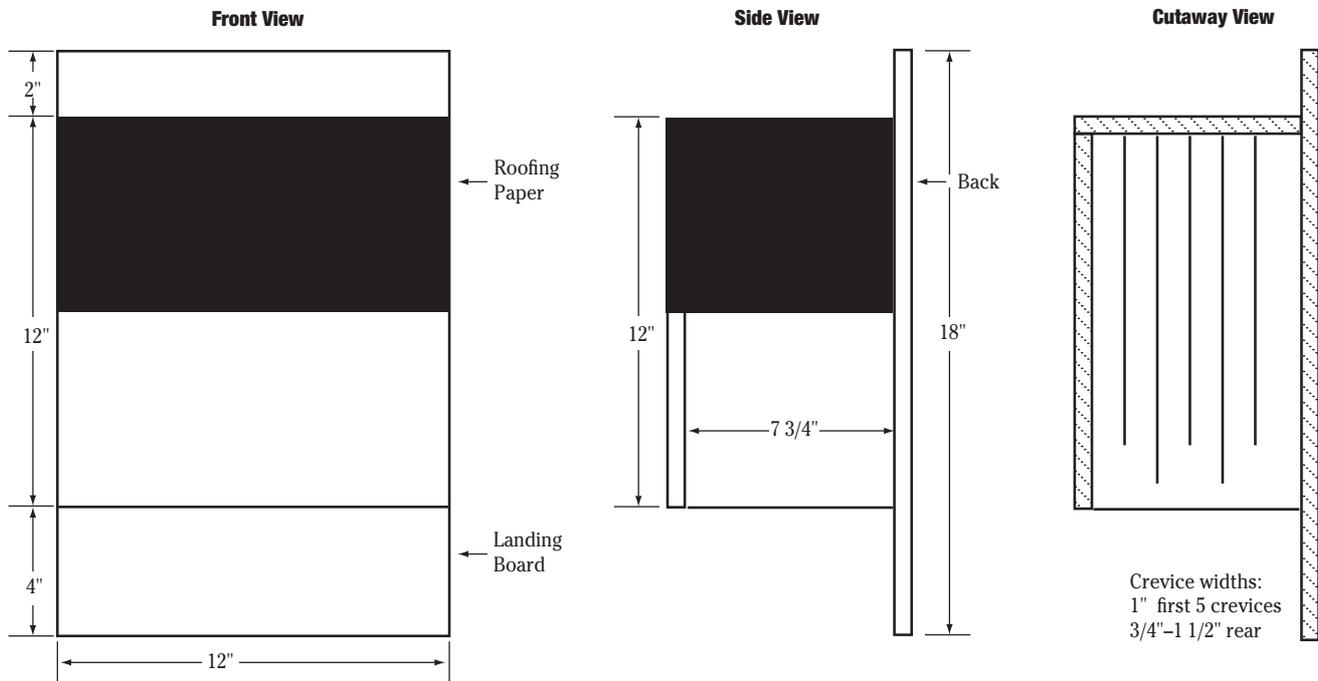
If not using a router:

3. Attach sides to front using wood screws. (Caulk the seams, but do not use wood glue on any part of the bat box.)
4. Attach roof to sides and front using wood screws (caulk the seams). Roof can be slightly slanted to promote water runoff.

Installing spacer strips and baffles:

5. Position the box so that the front rests on a table top, and the sides and roof extend upwards.
6. Attach two 1" x 1" x 10" interior spacer strips to inside of front piece using finishing nails or wood screws. Make sure the strips fit tightly against the side pieces.
7. Attach first 1/4" x 10" x 10 1/2" baffle to the spacer strips using finishing nails.
8. Attach two 1" x 1" x 10" interior spacer strips onto the first baffle using finishing nails or wood screws. Make sure the strips fit tightly against the sides of box.
9. Attach 1/4" x 11" x 10 1/2" baffle to the spacer strips using finishing nails.
- 10–15. Continue attaching interior spacer strips and baffles as previously directed. This box should have a total of five baffles.

Small Bat Box (12" x 12" x 8")



16. Attach the back of box to the roof and sides (caulk the seams). The back piece should extend below the body of the box. (The portion that extends below the box will serve as the landing board.)
17. Paint or stain the exterior using a latex-based stain. (Do not stain the interior.)
18. Attach roofing paper to roof. Caulk the seam at the back where the roof attaches to the back panel.
19. Tack roofing paper onto the front and sides, extending it approximately six inches down from the top. This will help create differences in temperatures from the top of the box to the bottom. (This step is very important.)

Installation:

Orient the box towards the southeast or southwest. To attract a maternity colony, a box should be placed in a location that receives at least seven hours of sunlight. Box can be placed in a cooler

location to attract males or non-reproductive females.

Install the box at least ten feet high onto the side of a building or pole. Boxes can be placed on trees, but they must receive adequate sunlight.

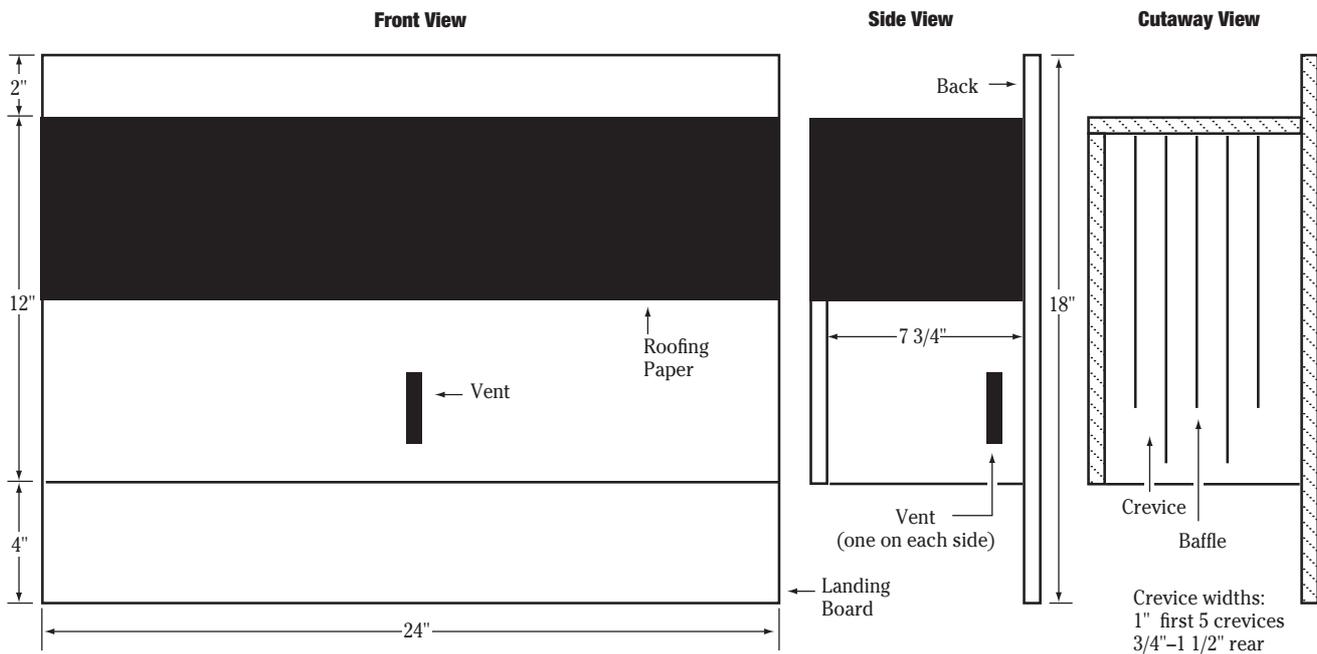
Do not install a box over a window sill, deck, porch, or any other area where droppings that fall from the box will be a nuisance.

Maintenance:

Bat boxes require no maintenance when bats are present in the spring and summer. Inspect the box every winter to identify areas in need of repair.

Wasps: Use a long thin stick to remove old wasp nests in the fall or winter. New nests can be knocked out in May or early June during cool mornings or evenings when wasps are less active. *Do not disturb the box if bats are present.*

Small Maternity Colony Bat Box (12" x 24" x 8")



Small Maternity Colony Bat Box (12" x 24" x 8") Assembly

Capacity: 150 Bats

This bat box is suitable for small to medium-sized summer maternity colonies (up to 150 bats). This box should be installed in the spring before the colony is evicted from the building.

Tools/Materials:

See Small Bat Box Instructions

Pieces: (height x width)

front: 12" x 24" exterior plywood or board

back/landing board: 18" x 24" exterior plywood or board

sides: 12" x 7 3/4" board

baffles: 1/4" lightweight plywood

three 10" x 22 1/2" (if using spacer strips)

two 11" x 22 1/2"

three 10" x 23" (if router)

two 11" x 23"

spacer strips: ten 1" x 1" x 10" board strips

1. Cut out pieces. Cut vents (3" x 1/2") into front and sides using jigsaw.
- 2-4. Follow steps 2 through 4 in the Small Bat Box Assembly instructions.

Installing spacer strips and baffles:

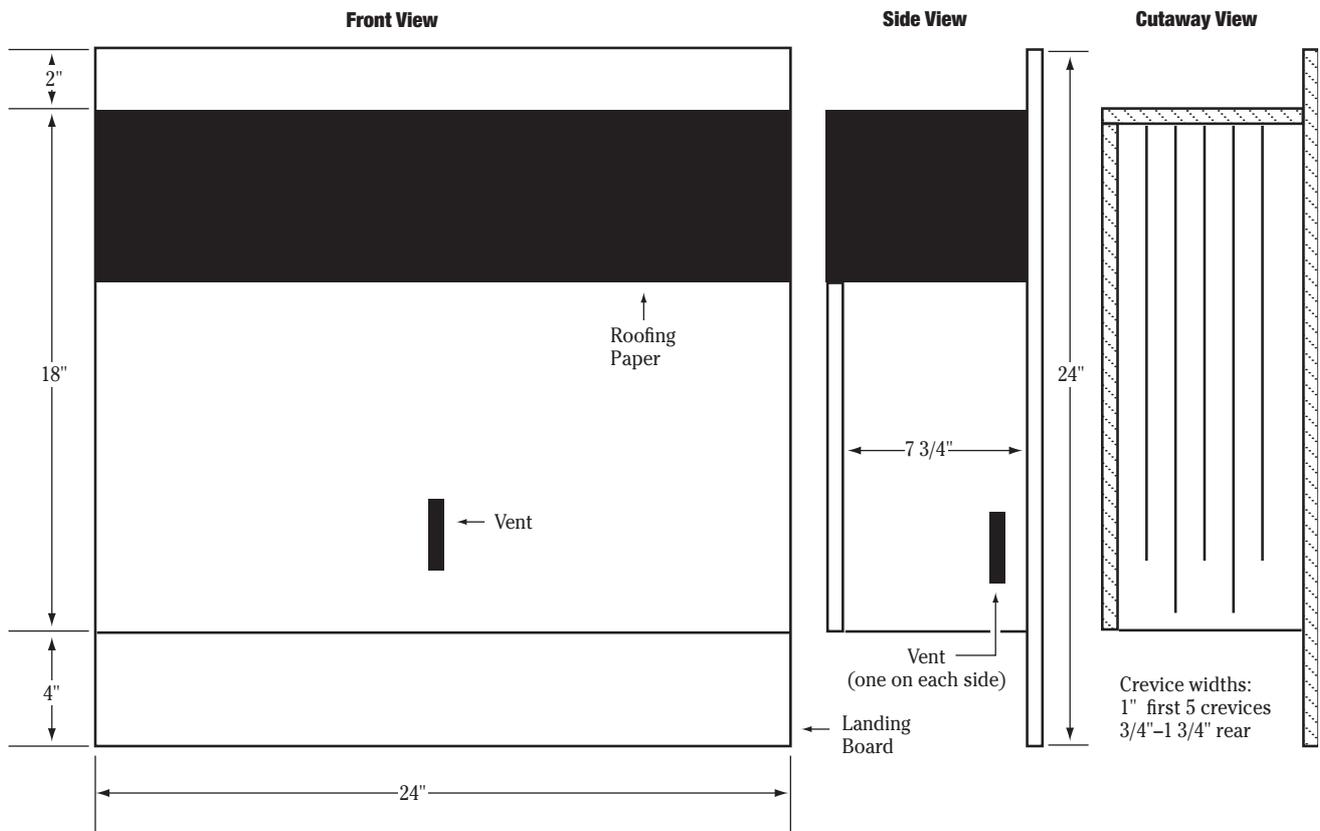
5. Position the box so that the front rests on a table top, and the sides and roof extend upwards.
6. Attach two 1" x 1" x 10" interior spacer strips to the inside of the front piece using finishing nails or wood screws. Make sure the strips fit tight against the side pieces.
7. Attach first 1/4" x 10" x 22 1/2" baffle to the spacer strips using finishing nails.
8. Attach two 1" x 1" x 10" interior spacer strips onto the first baffle using finishing nails or wood screws. Make sure the strips fit tight against the sides of the box.
9. Attach 1/4" x 11" x 22 1/2" baffle to the spacer strips using finishing nails.
- 10-15. Continue attaching interior spacer strips and baffles as previously directed. This box should have a total of five baffles.
- 16-19. Follow steps 16 through 19 in the Small Bat Box Assembly instructions.

Note: If a greater capacity is needed, additional boxes can be placed side-by-side, or a larger maternity box can be built.

Installation and Maintenance:

See installation and maintenance notes for Small Bat Box.

Large Maternity Colony Bat Box (18" x 24" x 8")



Large Maternity Colony Bat Box (18" x 24" x 8")

Capacity: 150-300 Bats

This bat box is suitable for large summer maternity colonies of 150-300 bats. It should be installed in the spring before the colony is evicted. If a colony larger than 300 bats is to be evicted, two boxes can be installed side by side or a larger bat box can be used. Contact the Pennsylvania Game Commission or Penn State for further information on larger bat box designs.

Tools:

circular saw
jigsaw
hammer
screwdriver

Materials:

3/4" board or exterior grade plywood for front and back
3/4" board or 1/2" to 3/4" exterior grade plywood for roof
1" x 8" board for sides (actual width after planing ~7 3/4")
1/4" lightweight plywood for interior baffles
ten 1" x 1" x 22" wood strips for spacing interior baffles
latex siliconized caulk
dark brown latex paint or stain
black roofing paper
exterior grade wood screws
galvanized finishing nails

Pieces: (height x width)

front: 24" x 24" exterior plywood or board

back/landing board: 30" x 24" exterior plywood or board

sides: 24" x 7 3/4" board

baffles: 1/4" lightweight plywood

three 22" x 22 1/2" (if using spacer strips)

two 23" x 22 1/2"

three 22" x 23" (if using router)

two 23" x 23"

spacer strips: ten 1" x 1" x 22" board strips

Assembly:

1. Cut out pieces.
2. Use a knife, saw, or router to roughen all interior surfaces with horizontal scratches or grooves 1/4" to 1/2" apart. Pay special attention to landing board at bottom of box. (The portion of the back that extends below the box will serve as the landing board.)

Note for router users: At this point, use a router to cut 1/4" vertical grooves in side pieces at 1 inch intervals, then skip the following instructions on installing spacer strips and baffles. Simply fit the baffles into the side piece grooves, then attach front, back, and roof.

If not using a router:

3. Attach sides to front using wood screws. (Caulk the seams, but do not use wood glue on any part of the bat box.)
4. Attach roof to sides and front using wood screws (caulk the seams). Roof can be slightly slanted to promote water runoff.

Installing spacer strips and baffles:

5. Position the box so that the front rests on a table top, and the sides and roof extend upwards.
6. Attach two 1" x 1" x 22" interior spacer strips to the inside of the front piece using finishing nails or wood screws. Make sure the strips fit tightly against the side pieces.
7. Attach the first 1/4" x 22" x 22 1/2" baffle to the spacer strips using finishing nails.
8. Attach two 1" x 1" x 22" interior spacer strips to that baffle using finishing nails or wood screws. Make sure the strips fit tightly against the side pieces.

9. Attach the 1/4" x 23" x 22 1/2" baffle to spacer strips using finishing nails.

10–15. Continue attaching interior spacer strips and baffles as previously directed. This box should have a total of five baffles.

16. Attach the back of box to the roof and sides (caulk the seams). The back piece should extend below the body of the box. (The portion that extends below the box will serve as the landing board.)

17. Paint or stain the exterior using a latex-based stain. (Do not stain the interior.)

18. Attach roofing paper to roof. Caulk the seam at the back where the roof attaches to the back panel.

19. Tack roofing paper onto the front and sides, extending it approximately six inches down from the top. This will help create differences in temperatures from the top of the box to the bottom. (This step is very important.)

Note: If more capacity is needed, additional boxes can be placed side by side.

Installation and Maintenance: See installation and maintenance notes for Small Bat Box.