MICROBAT

Habitat Box Designs

Lifestyle Capital of Victoria

Microbats are small insect-eating bats that feed on a variety of insects including mosquitoes, beetles and moths. They consume a substantial percentage of their body weight each night.

White-striped Freetail Bat (photo Credit DEPI (CC BY-NC 2.0)

There are seven species of Microbats in the Frankston area that may use habitat boxes – from Victoria's smallest Microbat, **the Little Forest Bat** weighing as little as 3 grams to one of the largest, the **White-striped Freetail Bat** at nearly 50 grams. These Microbats will naturally roost in tree hollows, caves, sheds and even in building cavities.

Microbat habitat boxes are different to other boxes as they do not have a traditional entrance hole and are narrow in comparison. There is also an internal partition as Microbats use their toes to hang upside down in the roost. The habitat box needs to be mounted in an area that is clear of branches and other obstructions so that the Microbats have a clear flyway to and from the box. It can take many months for Microbats to discover new tree hollows, so be patient!

General tips:

- Face away from prevailing winds
- Face them away from direct midday sun- north-east
- Ensure water proof with drainage an sealant
- Monitor your habitat box (without disturbing the bats)- this data is useful for council and Birdlife
- Be aware of unwanted visitors moving I, such as European honey bees and other invasive species
- Please do not feed your new neighbours as it creates a dependency on artificial food sources and can cause illness

Materials

Material	Quantity (per box)
Timber	1500mm x 200mm wide x 18mm **marine ply**
	450mm x 70mm x 35mm **treated pine**
Screws	20 x 40mm treated pine screws
Gap sealer	To seal box eg. Silastic
Cup head bolts	2 x bolts, nuts and washers, recommend M8 ≥60mm (for attaching box to mount)
Coach / screws	2 x coach screws M8 ≥90mm (for attaching box to tree). Can also use large treated pine screws of similar length (would need washers for TP screws)
Rubber Grommet	4 x grommets, 2 per screw- allows for tree growth
Butt Hinge	1 x butt hinge for lid of box
Gate hook and eye	1 gate hook and eye
Paint / timber seal	Acrylic paint or organic sealer to preserve box (eg Tung Oil)

Equipment

Bench Saw	To cut timber lengths
Cordless Drill	For construction and installation
Jig saw or similar	For entrance hole – drill pilot hole (8mm bit) so jig saw blade can fit in
8mm drill bit	For drainage holes, for jig saw, fixing cup head bolts to box mount and coach bolts
Screwdriver / screwdriver bit	For box construction
3mm drill bit	Pilot holes for screws
22mm Spade Bit	To countersink nuts and washers into box mount
Socket wrench	Helpful to tighten cup head bolts into box mount / coach screws into pole / tree

Assembly

Prepare the Pieces

1. Cut the timber to the dimensions provided to make the pieces. **See Diagram Insert.**
   N.B *Dimensions are for 18 mm ply and will need to be adjusted for other materials.*

2. Use the bench saw “mark” (shallow cuts) to the lower part of the back piece, and diagonal or straight cuts on both sides of the baffle. This gives the microbats a rough surface to climb over and hold on to.
3. To prepare for assembly- drill pilot holes (3mm drill bit) into ply to avoid splitting. 2 holes on short edge and 3 holes on long edge are recommended. Add an addition 2 pilot holes (3mm drill bit) along the middle of each side panel for the baffle piece.
4. Mark and drill 2 pilot hole (8mm drill bit) on the back piece and the box mount. Countersink 2 bolt holes with 22mm spade bit into box mount pilot hole for the washers and nut. Add another 2 pilot holes (3mm drill bit) to box mount 40mm from each end.

Construction

5. Bolt the box mount to the back panel (the opposite side to the shallow cuts) using cuphead bolts, nut and washer (cuphead on the inside of the box). Don’t tighten it until you have determined the positioning of the box on the tree.

6. Prepare the joints with Silastic or similar sealant.
7. Screw the box edges together. Ensure the bottom piece is attached to the front piece so to keep a gap for bats to enter.
8. Attach lid, allowing 40 mm overlap on each side, placing the butt hinge to be evenly positioned in the middle. The hinge needs to be on the opposite side to the entrance hole. Attach gate hook on lid and eye, on the other side of box to fit snugly.
9. You can now paint or coat the outside of the box.

Installation

Note: Your box can be installed professionally by an arborist or wildlife expert. If you are using a ladder to install, follow manufacturer's safety instructions.

Microbats like a habitat box that is easily accessible by flight and is 3 to 5 metres above the ground.

10. Select a suitable site for your habitat box. With the box mount against the tree, drill and mark the position of the holes on the tree.

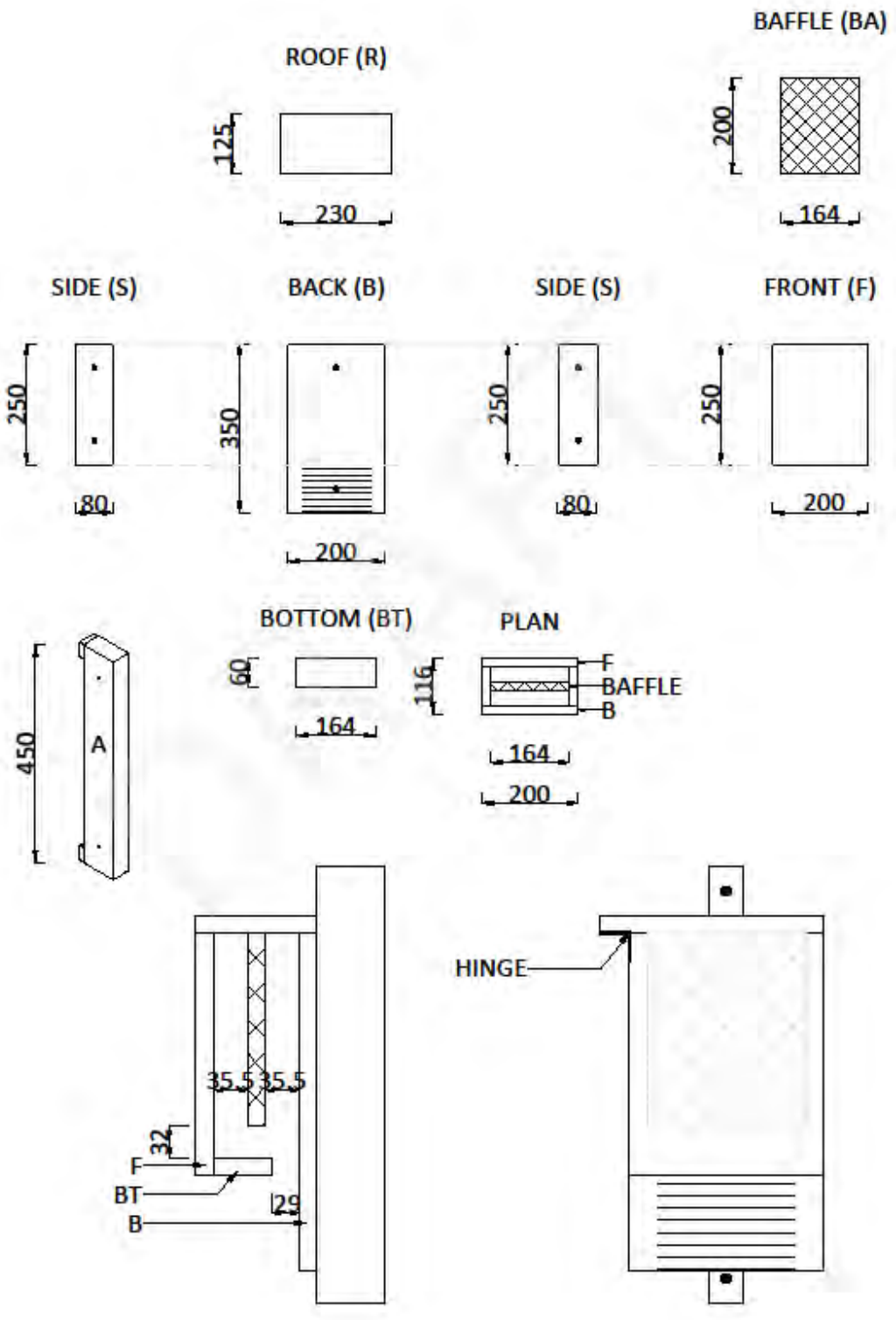
11. Return box to the ground and drill 2 holes (8mm drill bit) for coach screws / timber screws (3mm bit) into the tree.

12. Attach box to tree with coach screws using the socket wrench (put grommets on screws before screwing into place). If using timber screws, place a washer between the screw head and the two grommets to ensure screw doesn't go through the grommets while drilling into the tree.

13. Congratulations- your nest box is ready for use!

Microbat habitat boxes (photo credit: Australasian Bat Society- Robert Bender)

Diagram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200
164
SIDE (S)
BACK (B)
SIDE (S)
FRONT (F)
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350
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250
80
200
80
200
BOTTOM (BT)
PLAN
60
164
116
F
BAFFLE
B
164
200
450
A
HINGE
35.5
35.5
32
F
BT
B
29