

## CONSTRUCTION AND PLACEMENT OF BAT HOUSES

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### WHY BAT HOUSES?

As you have learned at this seminar bats are an important and welcome addition to our environment. Bats are not the carriers of disease and omens of ill fate that western folklore would make us believe. These small, innocuous, mammals are the most important predator of night-flying insects. Insects that are both damaging to crops, as well as annoying. Some bat species will eat up to 600 mosquitoes an hour. Let's see your bug zapper keep up with that! An evening picnic on the patio with bats helping to keep down the insect population is much more pleasant than the alternative. Just think, bats can make your party a success!

Beside the benefit to your local environment, you can feel the satisfaction of helping provide valuable roosting habitat to these fascinating creatures. You can experience the pleasure of watching their foraging in the night-sky over your back yard. You can take pride in helping conserve these important animals, and if that isn't enough, you can take pleasure in your neighbors' "horror" when you tell them what you are doing. They'll know you are crazy!

### WHAT BATS CAN I EXPECT TO ATTRACT?

In the Vancouver-Portland area, you are most likely to attract little brown bats (*Myotis lucifugus*) to your bat house. Little brown bats are attracted to house attics as sites for summer roosting and for use as maternity colonies, where the females rear their young in the early summer. This fondness of attics makes them the most likely candidates for bat house occupancy. They will tolerate attic temperatures as great as 129 °F. Bat houses on south and east facing exposures, where it is hot in the summer, are most successful.

Other species such as the big brown bat (*Eptesicus fuscus*) are occasional residents of bat houses. This species requires lower temperature for roosting and maternity sites, frequently relocating if the temperature exceeds 95°F. Little brown and big brown bats frequently share the same roosts. The big brown bats do require slightly wider roosting slots in bat houses, however.

### WHERE SHOULD BAT HOUSES BE LOCATED?

For the greatest chance of success bat houses should be located where they will receive maximum sun, especially in the morning. Bat houses should be mounted on the east or south faces of buildings, as far off the ground as possible. Heights of 10-15 feet, or higher, are recommended. The gable ends of houses and

buildings are ideal. Masonry walls, which radiate stored solar heat through the night, are best. Mounting on the outside face of chimneys is also good. The best sites are protected from prevailing winds and are not obstructed by tree branches or other vegetation. Open space for free flight while entering or leaving the bat house is important. Bat houses located near bodies of water (up to one mile away) tend to be most successful. Mounting more than one bat house on the same structure allows bats to move from one roosting site to another to meet their rather narrow temperature preferences. In Europe several bat houses are mounted on the same tree, facing in different directions. Bats are reported to move from one to another depending upon the season and their need to regulate temperature.

How long it will take bats to find their new home and move in is unknown. Bats have been reported to move into new bat houses within a few days. In other cases bat houses have remained unoccupied for several seasons before being used. A few may never be used. No one knows for sure why some are used and others are not. There are reports of bats not using the house but using a gap left between the bat house and building to which it was attached. Larger bat houses offer the greatest opportunity for temperature regulation and may be more successful in attracting colonies.

### **WHAT TIME OF YEAR SHOULD I PUT UP THE BAT HOUSE?**

One can expect local bats to be in hibernation between November 5th and April 15. During this time they use mines, caves, and cracks in cliffs. Some may migrate to warmer climates. It is unlikely you will find bats using attics or bat houses during this period. This is the best time to install your new bat house. You should make sure it is up and available when the bats come out of hibernation and start looking for summer roost sites.

Many species are loyal to their traditional roosts, and will return there year after year. If your bat house is next to an attic that is traditionally used, it may be difficult to attract bats to their new home. The old roost may be more appealing or offer better temperature and protection. Some people suggest placing bat houses on the outside of houses as alternate habitat if attic access openings have been screened off to exclude bats. Naturally if you decide to exclude bats from your attic you must do it during the season the attic is not in use. To do so during the summer months would cause undue cruelty to the bats who would be unable to escape the attic or able to return to feed their young.

### **HOW TO BUILD A SUCCESSFUL BAT HOUSE**

To start with, there is no "perfect" bat house. A wide variety of different designs and sizes have been tried, all with some success. Each species has its' preferred conditions for roosting. Some like it warmer, others cooler. Some species prefer large openings as opposed to small. The following are guidelines which should help you in building your own bat house. The important thing is to try a variety of designs, and see which are occupied and which are not.

Most bats seem to prefer houses constructed with vertical slots, open at the bottom. As previously

mentioned the size, particularly height, of the house is important. A small house should have slots 24-26 inches high. A width of 1 1/2 inches is adequate. Internal roosting slots must be constructed (see attached drawings) of rough-faced boards spaced 3/4 to one inch apart. Smaller bat species will use the narrow openings while the larger species will use the bigger openings. A variety of slot sizes and configurations increase the chances of success. An "attic" in the bat house provides opportunity for additional temperature regulation and roost variety.

The bottom of the house can be left open or partly closed with a sloping baffle. Bat droppings are dry and will fall out of the bottom of the bat house, making it self cleaning. The bottom opening should be a least one inch wide. Horizontal openings invite bird nesting.

All internal faces of the bat house should be constructed of unsurfaced, rough lumber. This is necessary for the bats to get a grip with their claws for climbing and roosting. The lumber should not be treated with wood preservatives, and should remain unpainted. Painted lumber is said to discourage use. Most "rough" lumber available at lumber yards is planed on three sides. These rough faces should be turned to the inside of the house leaving the smooth surfaces facing to the outside. Any smooth faces on the internal baffles should be grooved horizontally to allow the bats to hang on. This can be done by cutting shallow grooves on the table saw or making repeated shallow cuts with a Skillsaw.

Bat houses have been insulated with 3/8 inch closed-cell foam which has been then covered with cedar shingles. This allows body heat to be trapped at the top of the roosting slots. The bats can move up or down the slots to find the optimum temperature. Other designs have been wrapped with tarpaper to absorb heat from the sun. Depending upon the climatic temperature of your area, one of these modifications may be worth a try.

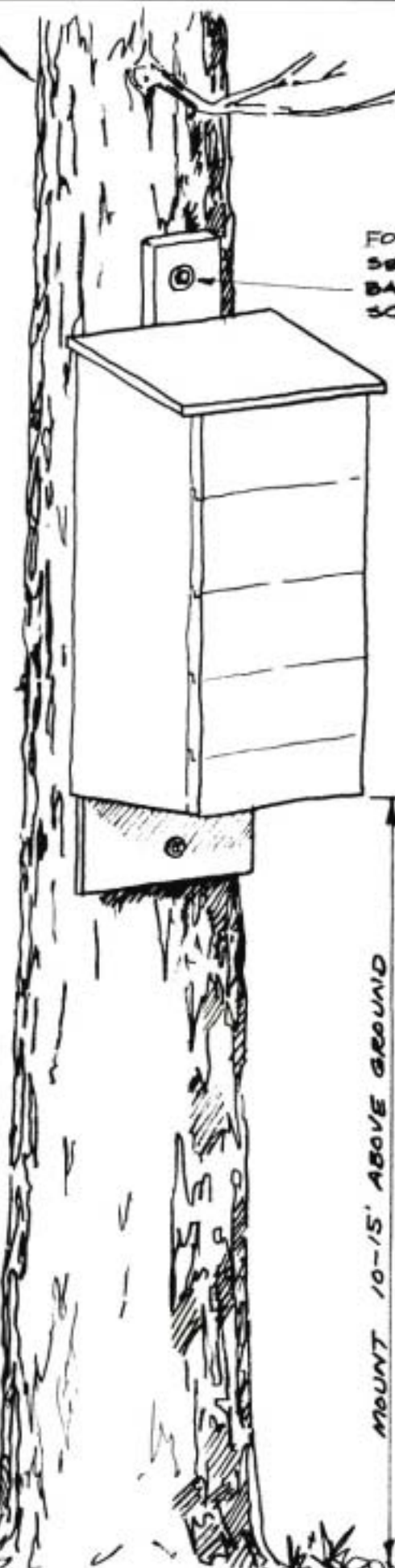
A wide variety of suitable bat houses can be constructed using a little creativity. Use your imagination and don't be afraid of experimentation.

### **IS THE BAT HOUSE BEING USED?**

There are several ways to tell if your bat house is in use. The easiest is to spread a tarp or cloth on the ground under the house and check it in a few days for droppings. If droppings are present, so are the bats. Another way is to shine a flashlight up into the slots to see if bats are using the house. This should be done with as little disturbance as possible, and done infrequently. It is possible to drive bats away from the roost, especially before they are well settled in. The last way is to watch for bat emergence about dusk. This requires a little more patience but is the least disturbing.

### **FURTHER READING**

If you are interested in learning more about bats in our area an excellent reference is *America's Neighborhood Bats* by Merlin D. Tuttle, University of Texas Press, PO Box 7819, Austin, Texas 78713.



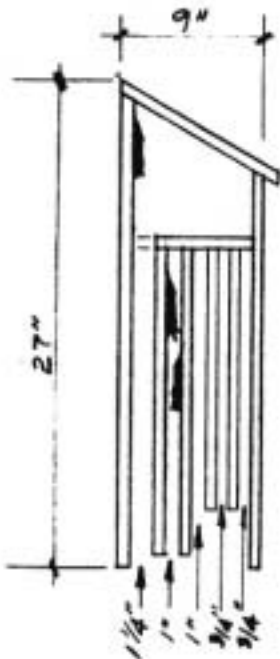
FOR TREE MOUNTING  
SECURELY SCREW IN TO  
BACK OF HOUSE THEN LAG  
SCREW TO TREE

MOUNT SO BAT HOUSE  
FACES EAST OR SOUTH,  
AND IS NOT OBSTRUCTED  
BY TREES OR BUSHES

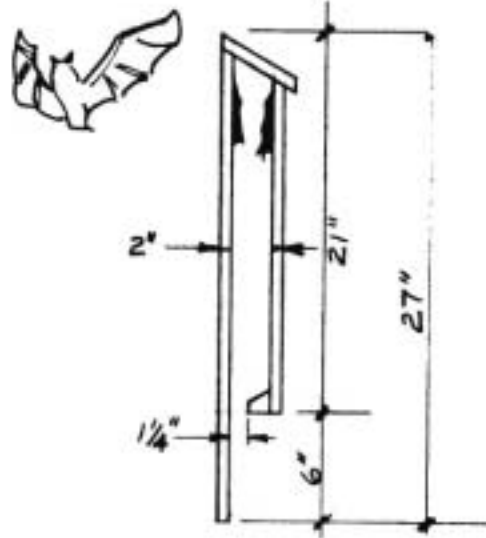
ONCE IN PLACE GUARD  
AGAINST DISTURBANCE,  
IT MAY TAKE 1-4 YEARS  
FOR BATS TO START  
USING BATHOUSE.

MOUNT 10-15' ABOVE GROUND

MOUNTING YOUR  
BATHOUSE



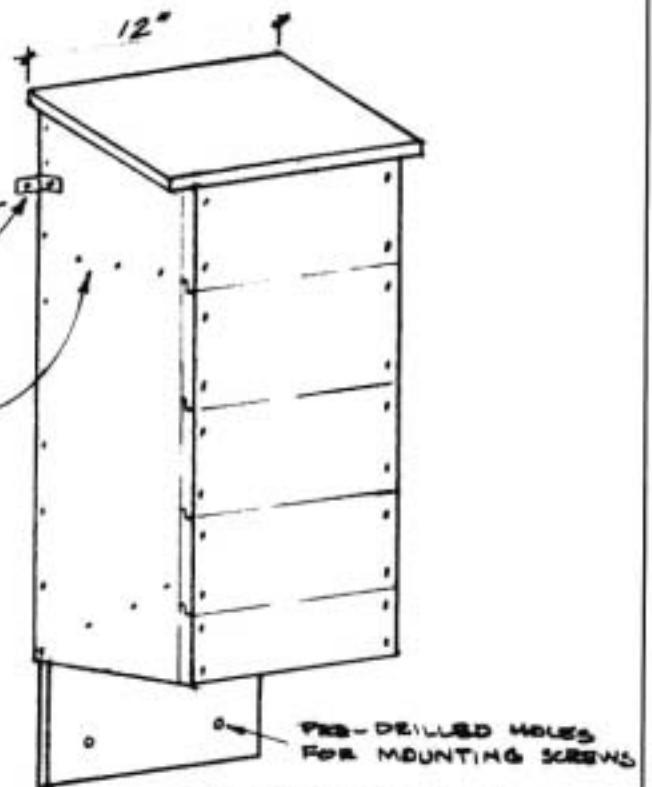
BCI BAT HOUSE  
AVAILABLE IN KIT  
FORM FROM BCI



EUROPEAN STYLE  
BAT HOUSE



NORTHWEST BAT  
CONDOMINIUM



CONFIGURATION FOR  
SURFACE MOUNTING ON  
BUILDINGS OR FLAT SURFACES.

