

How to: Create and look after a solitary bee hotel



An easy and effective way to provide nesting sites for some solitary bee species but must be sited correctly. Solitary bee hotels are not to be confused with “[bug hotels](#)” which are structures full of sticks and other material in which insects can seek shelter and overwinter.



By Josef Hána – via Wikimedia commons



Photo: Adrian Thomas



Leafcutter bee Photo Mary Morgan

A solitary bee hotel is either an open-fronted box packed with hollow stems, or a log or piece of timber drilled with holes or containing natural holes, that offer nesting tunnels for a few of our 240 or so solitary bee species.

Here, female solitary bees will create a series of nesting chambers, laying an egg in each and provisioning them with nectar and pollen. The female then dies, and the eggs hatch unattended later that or the following year, grow, and emerge as the next generation of adults.

Bee hotels will definitely attract solitary bees (and other insects) but can have possible but avoidable negative effects.

Target species:

The species you are likely to attract will depend on where you are in the country and the diameter of nesting tunnels you offer, but typically include the red mason bee *Osmia bicornis* and some closely related species of *Osmia*, and various species of leaf-cutter bee in the *Megachile* genus. See our page on [solitary bees](#) for some pictures.

The hotels may also be visited by some cuckoo bee species that parasitise the solitary bees, and by some [solitary wasp](#) species.

How to do it

- The easiest solution is to get hold of a log or untreated piece of timber and drill lots of holes in it.
- Alternatively, you can make a simple wooden box and cram it with hollow tubes. We recommend Marc Carlton's [website](#) for very full advice on how to make a bee hotel

- Site your hotel in a sunny, sheltered, unobstructed, south to south-east facing position, preferably 1 metre off the ground, and protected from rain
- The box should be securely fixed, not swinging freely.
- When in position, the holes should be horizontal, or angled slightly downwards (from back to front) so that they don't fill with rainwater.



Photos: Adrian Thomas

Keeping them clean

- The hotel will need managing every year. At the end of the summer identify any cells that remain in a walled-up condition from the previous year because no young bees emerged. The contents of these cells will be dead and should be removed
- Some commercial bee hotels can be taken apart to the nesting holes can be properly cleaned
- Replace drilled blocks with brand new ones every two years. This is done in the summer, after the young bees have emerged. It will help to prevent the build-up of fungus moulds, mites and other pests and parasites.



Cleaning out the tubes

Photos: Rosi Rollings

How easy is it to do?

It's very easy to buy and set up a commercial bee hotel, and fairly easy to make one yourself .

How much will it cost?

- Many products are widely available to buy from wildlife organisations and garden centres.

- Commercial bee hotels cost from between about £12 to over £30. The more expensive ones are designed to make cleaning the cavities easy.
- Home-made bee hotels cost next to nothing if you have suitable untreated timber offcuts or large bits of dead wood

Golden rules – what the science tells us.

- The holes should be 2mm-10mm wide, and without jagged edges. Avoid commercial boxes where the tubes are greater than 10mm diameter, and if drilling your own holes, sandpaper the entrances so that the female bees don't snag their wings.
- The holes should be a minimum of 10cm deep and sealed at the far end. Avoid commercial boxes where the nesting tubes are not deep enough.
- If using nesting tubes, you can use hollow plant stems or bamboo canes but don't use plastic straws or glass which, as well as the environmental issues, aren't permeable and the moist conditions lead to high mortality of young.
- Never use treated timber, because it will poison the very animals you are encouraging!
- Never use plastic or glass tubes because they hold moisture and encourage mould



This box follows all the golden rules: deep tubes of different sizes, fixed securely about a metre off the ground, in a warm, sunny location. The green roof is a nice extra touch

Photo: Adrian Thomas

Be aware that...

- It is safer for the bees to have several smaller hotels in different locations around the garden than one large one.
- The number of bee species you are likely to attract will increase the further south in the British Isles you are.
- The bees will need a nectar-rich flower supply nearby, suited to each species.
- Most of our solitary bee species need nesting sites other than Bee Hotels, such as sandy banks or bare patches in lawns.
- Hotels may get plundered by tits or Great Spotted Woodpeckers. Wire mesh over the front may help stop these birds pulling nesting tubes out.
- Each bee has a very typical flight season so don't expect non-stop activity; some species have two flight seasons in a calendar year.

- Each hotel is likely to become less effective over time and we recommend that you put up a new box every couple of years, leaving the old one in place in case it is still in use.
- Ideal plant stems to collect include garden bamboos, teasel, raspberry and common reed.

What will you see?

The easiest way to see if your box is being used is if nesting tunnels have been sealed up with chewed or rolled leaves or mud. However, with patience on sunny days in spring and summer you will see single bees visiting the hotel, investigating the tunnels, and even bringing nesting material to the hotel.

Recommended products (we try to list suppliers whose profits go to nature conservation)

[Solitary bee hotel](#) made from FSC timber that can be opened for inspection and cleaning
[Replacement tubes](#)

Further information

Bee hotels: what does [recent science](#) tell us? www.wlgf.org/bee_hotels_issues.pdf

Marc Carlton's [website](#) advice www.foxleas.com/make-a-bee-hotel.asp

How to: Improve your garden for [bees and other pollinators](#) www.wlgf.org/ht_improve_pollinators.pdf

Our page on [solitary bees](#) www.wlgf.org/solitary_bees.html

Our page on [solitary wasps](#) www.wlgf.org/solitary_wasps.html

Commercial [bee box](#) www.wildlifeworld.co.uk/products/solitary-bee-hive

Commercial [bee tubes](#) www.wildlifeworld.co.uk/product/eco-bee-nesting-tubes-pk-30/

How to: Create a [bug hotel](#) www.wlgf.org/ht_bug_hotel.pdf