



HOW TO MAKE NEST BLOCKS FOR RESIN BEES

by Les Dollin

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AUSTRALIAN native resin bees (*Megachile*) will nest enthusiastically in small wooden blocks with drilled holes. Leafcutter bees, wasp mimic bees and some types of masked bees will also use these blocks. Follow these step by step instructions and make your own drilled timber nest blocks to support your local native bees.

Back in 1998, I spotted some native resin bees building nests in tiny holes in our ironbark timber fence posts ([read article](#)). These holes were abandoned burrows about 6 mm wide made by borer insects. I wondered what would happen if I drilled some extra holes for the bees.

So I got out a long drill and drilled a set of new holes into the fence post. Quite soon, native resin bees started bringing in pollen and building tiny nest cells in the drilled holes. Once each nest was complete, the end of the hole was sealed with a shiny red-brown plug of resin. What a great way to encourage native bees, I thought!

Inspired by this success, I started making small wooden blocks with drilled holes for the resin bees. I noticed that several different sized bees were attracted to the holes. So I began drilling holes ranging from 3 to 10 mm diameter for them. In the following months I set up 120 nest blocks, providing over 1600 holes for the local bees.

Over the summer, 62% of these blocks were used by at least four species of resin bees, as well as wasp mimic bees (*Hyleoides*) and a masked bee (*Hylaeus*). Over 800 individual nests were built by the bees! We were surprised by this strong response, as in previous summers we had seen few resin bees on the property. Just because you don't see them does not mean they are not there!

Today more and more people are supporting their local native bees by providing nest sites for them in their gardens. These nest blocks, or *Bee Hotels*, have become very popular and can be made from clay blocks, bamboo canes and pithy stems, as well as the drilled timber blocks described in this article.

Would you like to make some drilled timber nest blocks for your local native bees? Here's how the blocks are made.

Top: Les Dollin, in 1998, with one of his original nest block designs for resin bees.

Right: Now in 2017, Les demonstrates his latest methods for making nest blocks for resin bees.



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Making a Basic Drilled Block

1 Select some timber for the basic blocks:

– A wide range of timber sizes will work but I use dressed timber that is a shade under 150 mm wide x 50 mm high. I cut this into blocks that are 140 mm deep.

– I like to use hardwood timber as it is durable and the drilled holes have nice smooth surfaces. You can use any type of hardwood but softwood such as pine will also work. Always choose non-toxic materials and avoid chemically treated timbers such as treated pine. For sustainability, try to use recycled or scrap timber. Resin bees like the smell of the Australian hardwood, especially just after it is drilled.

– If possible, ask your local hardware shop to cut up the blocks for you on their large electric pull saw. You could also cut up softwood blocks in your home workshop with an electric circular saw, using clamps to hold the wood in position. Of course, when handling power tools always use appropriate safety equipment such as eye goggles.

2 Use an electric drill with a reverse switch to drill a variety of different sized holes (3 mm up to 10 mm diameter) into the face of each block, preferably across the grain. Space the holes out randomly. It is better not to put the holes in straight rows as the bees can get confused trying to find the right hole. Best to mix it up a bit!

The holes need to be 100 to 150 mm deep. Otherwise the bees may lay unequal numbers of males and females in the nests and this may cause bee numbers to drop off after a while. I usually put a piece of insulation tape around the depth that I want to use – normally 130 mm.

I prefer to use high speed wood spade bits (see the three bits closest to the drill in photograph 2b) because the shavings don't clog these bits up as much. I use 10 mm, 8 mm, 6 mm and 3 mm diameter bits. However, you can also use long auger bits or a normal steel drill bits.

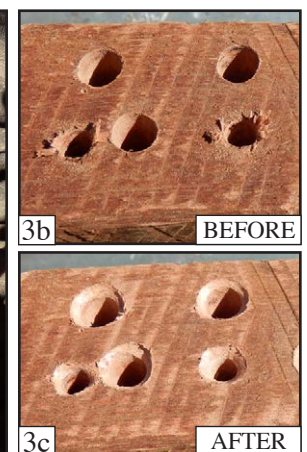
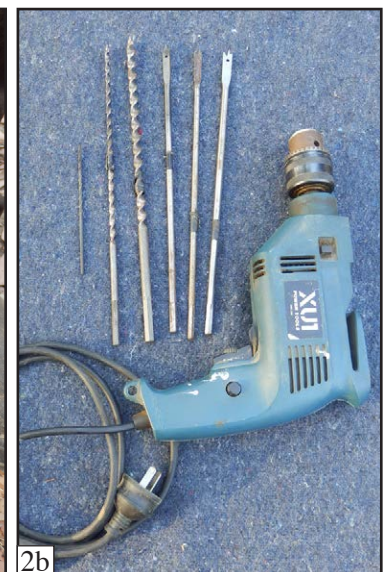
Only drill about a quarter of the hole depth at a time. Then pull the bit out to clear the wood shavings from the hole, before drilling the next quarter of the hole.

It is important to keep cleaning out the shavings as you go. Otherwise the bit may jam in the hole and could break.

3 Finally smooth the entrance of each hole using a larger sized drill or a file, to get rid of burrs.

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Making an 'Apartment Block' Frame

I like to make a wooden frame to hold a small group of nest blocks – like a bee 'apartment block'. This makes it easier to set them up and protects them from the rain.

Here is how to make a timber frame for a for three-block apartment:

1 Select some timber:

I use ordinary untreated pine (140 mm wide x 45 mm thick) for the top, bottom and sides of the frame but any suitable material can be used. I prefer to use 45 mm thick timber to give the nests more insulation and I find that thicker timber tends to warp less.

To make a frame holding three nest blocks, I cut pine to the following sizes using a saw and appropriate safety equipment:

- Top plate – 240 mm long
- Bottom plate – 240 mm long
- Two side boards – 148 mm long

Note: To discourage spiders from building inside the frame, there should be no large gaps between the sides or top of the blocks and the frame. So measure the dimensions of your group of nest blocks. Then cut your frame pieces so that they will fit around your nest blocks, leaving just a small gap to allow the blocks to be inserted and removed easily.

If you wish to add a backing board, cut a thinner sheet of pine to size.

2 Attach the pieces of the frame together with tech-shield coach screws or nails.

3 The drilled blocks simply slide into the frame.

4 If you wish to hang your apartment block in a tree in the garden with a decorative chain, add two hooks to the top of the frame.

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Making an Observation Nest Block

As an alternative, if you would like to see what the bees are doing inside the tunnels, you can make a resin bee observation block using a router tool.

- 1 Use untreated pine that is dressed and has very smooth flat surfaces. Cut two pieces 90 mm wide x 35 mm high and about 250 mm long.
 - 2 On the upper side of one piece, use a 6 mm to 10 mm router to engrave parallel grooves, about 150 mm long, along the length of the timber.
 - 3 Cut a piece of stiff transparent plastic (e.g. overhead projector film) to size and lay it over the engraved grooves. Hold it in place with some tape at the far end.
- Then cut a piece of thin black felt to size and attach it to the underside of the other piece of timber with double sided sticky tape.
- 4 Fit the two pieces of timber together, with the grooves and felt in the middle. Clamp the pieces together securely with tie wire or wood screws.
 - 5 After the resin bees have finished their nests and sealed off the entrances with resin, you can open up the observation nest and see the completed cells inside.

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Setting Up Your Resin Bee Nest Blocks

1 Decorate the your completed resin bee nest blocks, if you wish. Then set the blocks up in different parts of your garden, preferably facing the morning sun. They can work well out in the open or under shelter. We particularly enjoy having an apartment block on our window sill so we can watch, through the window, as the bees come and go. They make a great conversation piece too on your decking or verandah.

These nest blocks need little maintenance but you should regularly check that spiders don't build their webs across the nest entrances.

Depending on how many native bees visit your garden, it may take some time for bees to begin using your apartment blocks. So please be patient. You can attract bee visitors to your apartment blocks by surrounding them with nectar and pollen-rich plants, such as those described in [Aussie Bee's list of bee-friendly plants](#).

Making timber nest blocks for your garden will bring many benefits. You will have hours of enjoyment, watching the bees come and go; your garden and vegie patch will benefit from the excellent pollination service provided by these bees; and importantly, you will help preserve your local native bee species by providing nest sites for them. Thank you for caring for your local native bees!



Further Reading

Native blue banded bees like to dig their nest burrows in clay soils. To make clay nest blocks for these beautiful bees, read [Aussie Bee Online article 8: How to Make Nest Blocks for Blue Banded Bees](#).

To see other designs for Bee Hotels, take a look at [Aussie Bee's Comprehensive Guide to Bee Hotels: \[www.aussiebee.com.au/bee-hotel-aussie-bee-guide.html\]\(http://www.aussiebee.com.au/bee-hotel-aussie-bee-guide.html\)](#)

A variety of native bee species, as well as some types of native solitary wasps may take up residence in your apartment blocks. For help in identifying your insect visitors, visit: www.aussiebee.com.au/bee-hotel-native-bee-visitors.html

Also visit Megan Halcroft's website and download her great booklet, *The Bee Hotel ID Guide*: www.beesbusiness.com.au/article.php

For tips on protecting the nests from pest and predators, visit: www.aussiebee.com.au/bee-hotel-manage-pests.html

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