In the Workshop

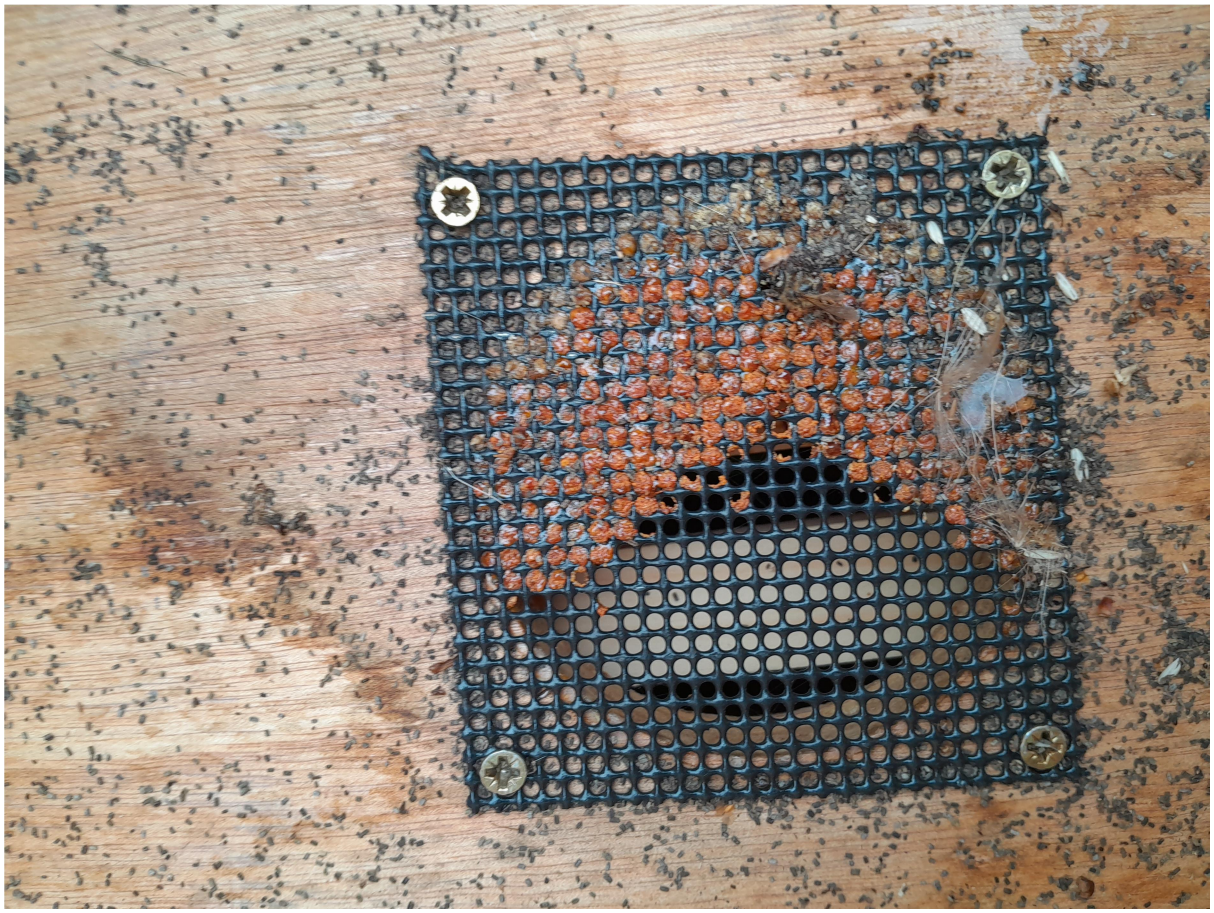
By Karl Colyer, Cheshire BKA

Making an entire hive can seem like a daunting prospect. We will go through the hive parts piece by piece so that you can explore self-build options if you wish. This month, we talk about floors.

I once heard a beehive being described as “bugs in a box”. It may sound a little tongue-in-cheek but the simple takeaway here is that the box can come in all shapes and sizes, made of a variety of materials. This article will talk about making a basic but effective floor. It may not be wholly as recognisable as something you buy but it is easy to make, functional and interchangeable with other National kit.

Open mesh or solid floor?

The simple answer is “Yes”. Whichever way you choose to go, someone will have a different viewpoint. After careful consideration, I decided to make the floors mostly solid (free wood) but with some mesh for ventilation. Maybe it’s the best of both words or maybe it’s a compromise. So what do the bees think of it? No issues found with the solid floor; the bees tend to keep it fairly clean. Some pieces of wax, lumps of pollen and dead mites. Not much else.



Removable mesh in centre of floor area. No particular size

The mesh is of more interest. If they have a small hole (about the size of a Porter Bee Escape hole) with some mesh over, my bees frequently propolise around half of it to reduce the air flow. I’m sure you scientists out there have some theories about this. I try things out with my bees and they let me

know if it works for them or not. How much mesh? I cut an old mesh floor into 25 pieces and that seems to work well.

Keeping the design simple

Floors from ply and wood strips

With any DIY design, it is important to make the assembly as simple as possible. I tend to make hive parts in batches. With floors, it can be from a dozen to 50+ depending upon what material is available, how much time I've got and what the weather is like. This stack of wood shows a plywood base with a hole on the middle. A removable piece of floor mesh is screwed down in the middle. The wood strip around the edge is glued and screwed permanently in place. The entrance is part of the surround and cut out from one of the strips.

This same item is also used as a crown board. Why do this? Simple, I only have to carry this single design around rather than floors and crown boards. For the more adventurous around you, you can

put one of these parts on top as a crown board, put another brood box and crown board on top and have a second queen and colony in the stack. If you take the mesh out, the bees will store their nectar in the same supers as the colony at the bottom of the stack. Put a piece of queen excluder over the hole if you wish, it doesn't seem to make much difference as the queens are several boxes apart.

Where to get the wood from?

There are a few good sources for ply wood. Your aim is to find pieces which are at least 46cm square, an important dimension if you are making National hive items so that they are interchangeable. I get my ply from a plastics company who have them to protect the plastic from damage. Building sites are a good source of materials. They use OSB (oriented strand board) for cement shuttering and boundary fences. Most ply sheets end up in the skip. If you wish you can buy the stuff, the 11mm thick OSB is typically under £20 and can make 10 floors or crown boards from a single sheet.

Typical stack of timber with strips that can easily be pulled out

Spacer strips in the timber yard bin. Help yourself

As for the strips of wood around the edge, please have a look at your local timber yard. The larger pieces of wood are stacked and strips of wood are used to separate the wood for ventilation and for fork lift access. Most of the spacer wood is thrown away. I often find spacers in the waste skip on site as shown in the picture I took last month. The spacer wood can be of slightly different sizes depending upon the saleable wood supplier and the finish on the saleable wood. All you need is two similar pieces to make the four bits of wood for one floor. When I go to the timber yard, I can usually get around 20-40 pieces and they may of two or three different sizes overall.

What sized entrance?

There's a lot of interesting stuff on entrances and I'll cover the subject in some detail in another article later this year. All you really need to do is make a suitable entrance in the middle of one of the wood strips before your assemble it all together. Trust me on this one, it's harder to make an entrance hole after the wood is glued in place. The easiest way is to use a normal tin can as a shape template and for the tallest part of the entrance to be about two thirds of the way up the strip. Enough space for the bees to get in and enough wood remaining to stop it falling apart. The bees seem perfectly happy with this size hole all year round. There are sometimes queues at the entrance in the summer and early autumn but there are no wasps in the queue.

Screws and glue

The screws used here are typically around 30mm long but can be up to about 38mm. Just make sure they don't poke right through the wood and have a sharp point protruding. With the glue, I would

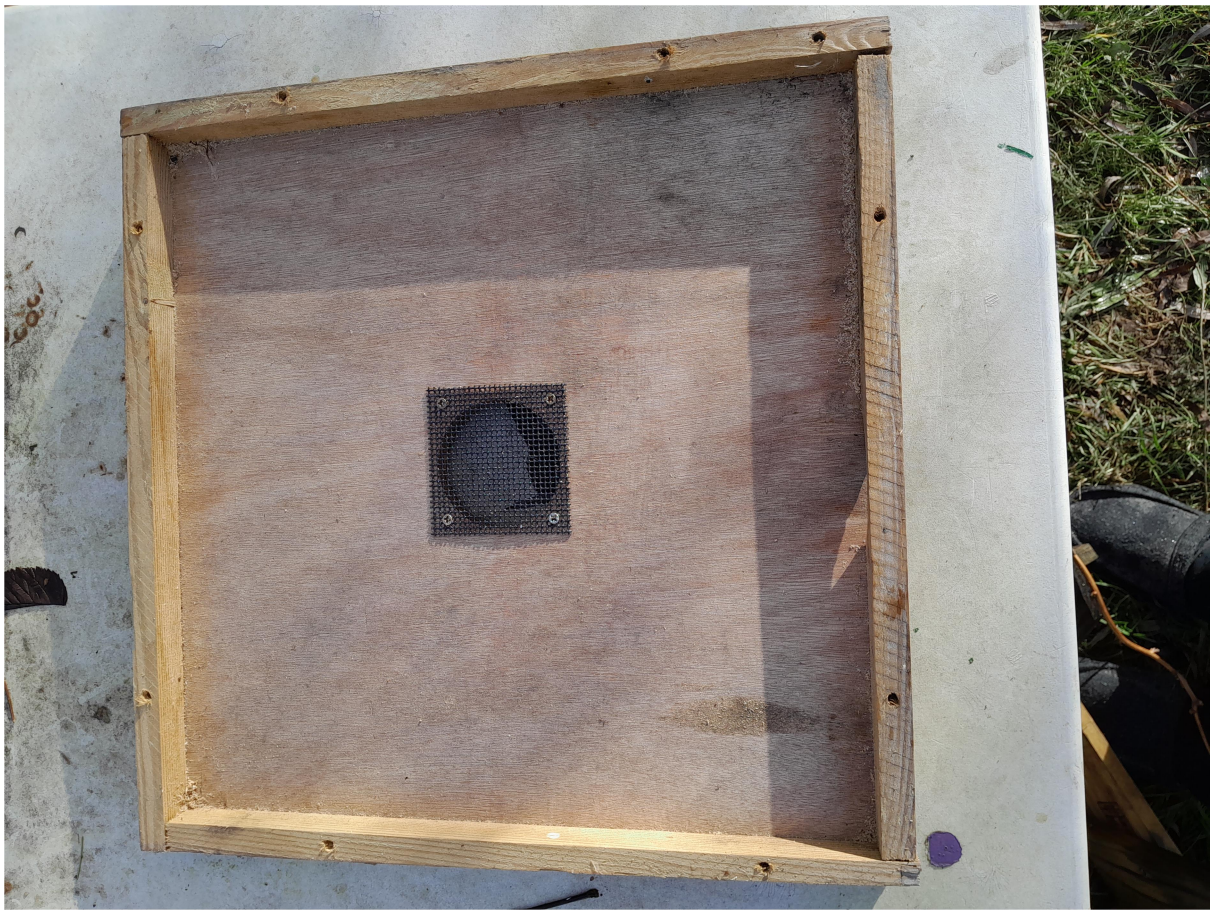
always suggest using waterproof PVA glue. This helps to protect the wood and it stops water seeping into the hive.

Free glue dispensers from old condiments bottles

Buy an initial container of glue with a suitable dispenser on it. I then buy glue in 5 litre tubs and decant it into the glue dispenser. If you want a free dispenser, use an empty sriracha, mustard or ketchup container.
You may also wish to brush waterproof glue over the external exposed sides of wood to protect plywood from potential water ingress and delamination and to generally allow water to run off rather than soak into the wood.

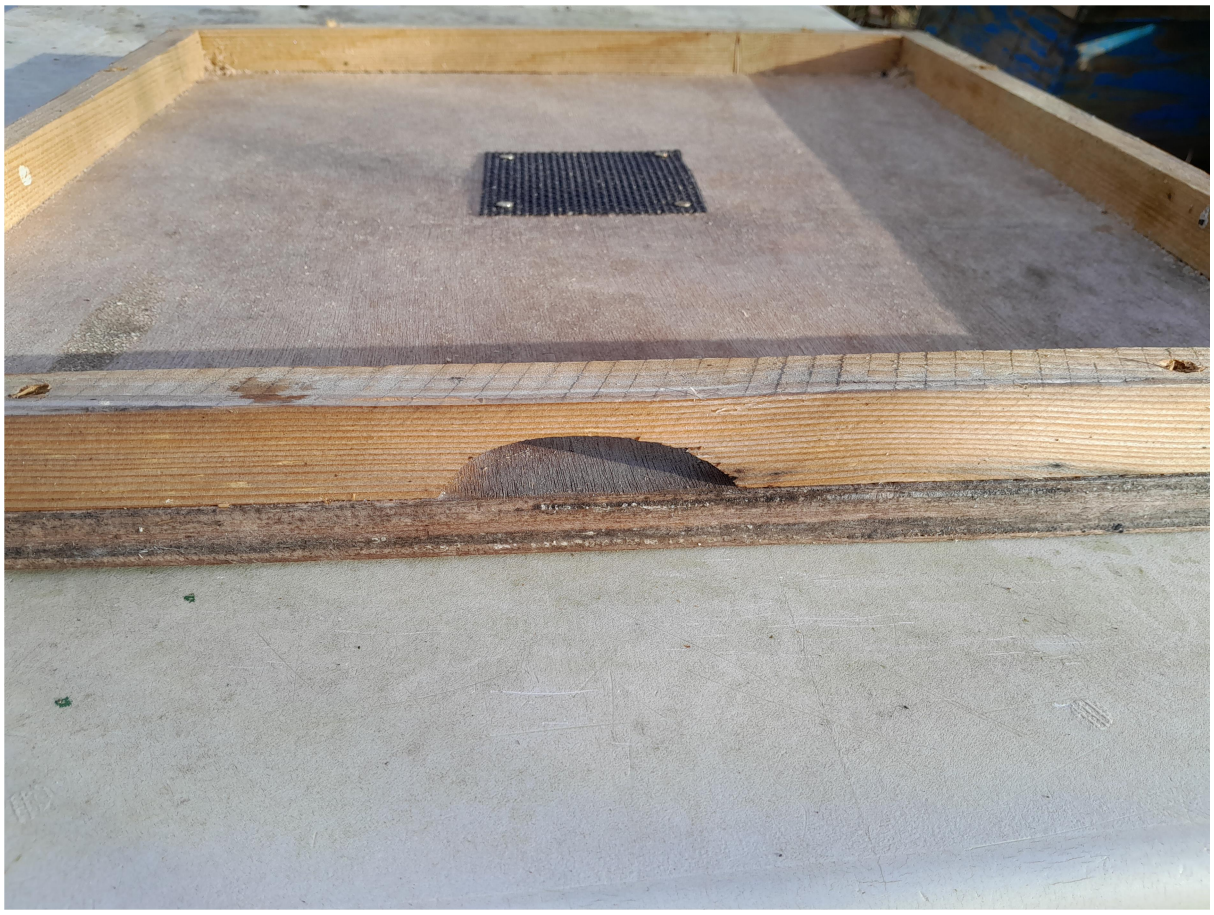
Additional information (not in magazine article)

The BBKA magazine has limited space to get information across. The following pictures give a little more detail to help you feel comfortable having a go at making your own equipment.



Looking at the floor from above. The hole and mesh in the middle can be as big or small as you wish and in any position you wish. What made me choose this size? The hole was in the piece of plywood in the first place!

Note that the corner joins aren't always perfect. Where there are gaps, just make sure they are too small for a bee or wasp to get through. If they are a little on the large side, mix up some sawdust with glue and blob it into the gap.

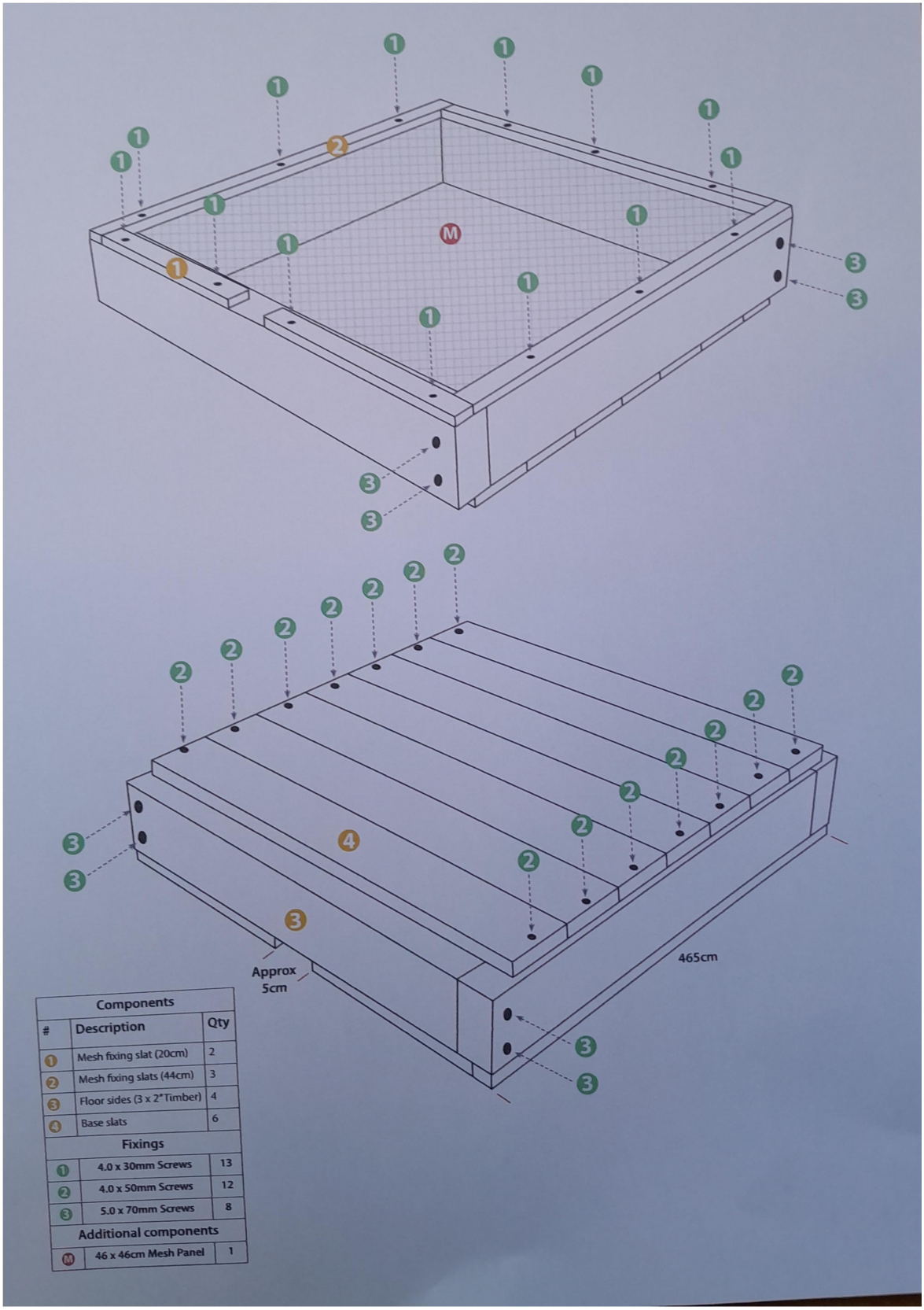


Closer look at the entrance. Approximately 5cm wide and just over 1cm tall in the middle.

You can make the entrance whatever size and shape you wish. I use a battery operated jigsaw to cut the wood and the shape means that it's just one cut to get the entrance.

Corner of floor / crown board showing two screws in place to hold things down.

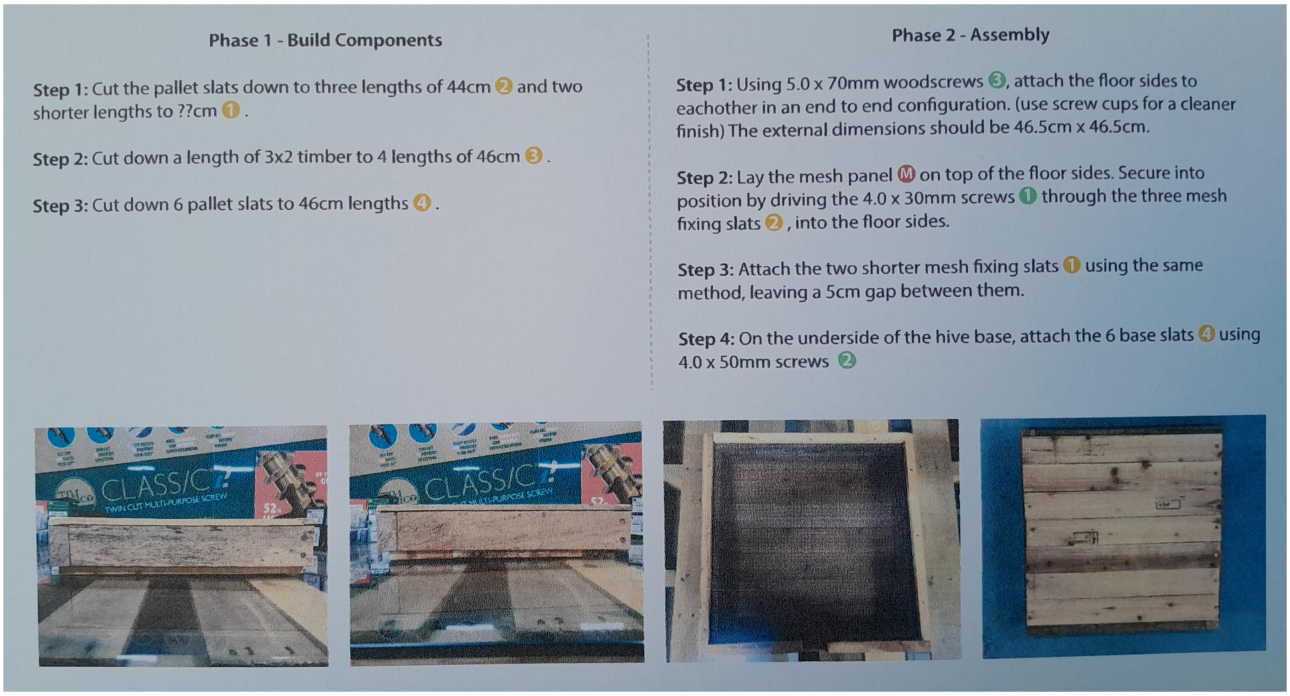
Screw and glue everything in place. These screws have been driven in a long way as they were only 25mm long. Just doing the best with what I've got to hand.



Components		
#	Description	Qty
1	Mesh fixing slat (20cm)	2
2	Mesh fixing slats (44cm)	3
3	Floor sides (3 x 2"Timber)	4
4	Base slats	6
Fixings		
1	4.0 x 30mm Screws	13
2	4.0 x 50mm Screws	12
3	5.0 x 70mm Screws	8
Additional components		
M	46 x 46cm Mesh Panel	1

Floor variant, entirely from pallet parts.

This is a previous version of a floor that I used to make. Free wood but a lot more work involved.



Some more photos and details around the floor variant.

Good luck with your attempts.

Download

To download some free of charge sketches, parts list, dimensions and additional information, please visit www.beesinourcommunity.org.uk/resources