

## HOW TO MAKE A SMALL BUTTERFLY FLIGHT HOUSE

Captive butterflies are happiest if they have room to fly freely, even in a restricted area. They are more likely to breed, if an environment is created where they can live as naturally as possible.

We have a butterfly garden where many butterflies can visit in season. We collect eggs that have been laid on host plants in the garden, and breed the caterpillars in cages. We usually release the butterflies into the garden, however, there are times when we have rare insects that we want to observe more closely, especially when breeding. These need to be kept in a flight house.

### THE HOUSE

Flight houses can cost many thousands, even millions, of dollars to construct, but we needed a low-budget, economy version. We have limited funds to purchase material, limited space to erect a flight house, and limited availability for physical labour. The flight house was also rather urgent as we had been given two large pupae that were due to emerge, and if they were to breed successfully they needed a flight house.

### LOCATION

A flight house needs to be located where it has some protection from prevailing winds. Our flight house is between two parallel greenhouses, with a 2m high fence at the rear. The space is 3m long, and 2m wide. There are no overhanging buildings near the space.



Butterflies will head for the highest point, so the roof needs to be curved, with a soft net covering, to limit damage to wings. White (50%) shade cloth was chosen as the main covering.

Butterflies need shade for some part of the day, especially in hot weather. The entry needs to be darkest so that the butterflies will not attempt to leave when someone enters. Black shade cloth was chosen for the entry area.

Air flow needs to be unrestricted, to prevent a build up of aerial infections.

Humidity must be controlled, to keep plants and butterflies healthy. A water supply is essential.

## **CONSTRUCTION**

The shade cloth needs a supporting framework.

White PVC electrical conduit was chosen for its flexibility. Various diameters of tubing were tested at the hardware store to find one that was suitable for bending into a u-shape to fit the space. The lengths chosen were 2cm in diameter and 6m long. Five lengths were selected, so that the arches were approximately 60 cm apart. The conduit was tested for size by bending some of the pipes between the greenhouses to prove suitability.

Four more 6m long lengths of conduit were cut in half to join the arches, and provide support.

Conduit can be safely drilled through with an electrical drill. 5cm long nuts, and bolts, were used to join the conduit tubes to make the framework.

Shade cloth comes in 1.8m wide lengths. Two 6m long lengths (1x white and 1x black ) were sewn together with a sewing machine. Another 3m length of white shade cloth was selected for the rear wall. And another 2m length of black shade cloth was kept to make a curtain at the entry.

The front wall, was a 2m wide steel second hand fly screen frame with a door. A length of metal fence capping was recycled to make a firm base for the frame. A wall could have been constructed from more substantial PVC pipe, and a fly screen door.

The floor is compressed rock, covered in black plastic weed mat. These are held down with tent pegs.

The anchors for the shade house are steel fencing pickets/stakes that were driven into the ground using a sledgehammer. We have no soil on the property as it was an industrial site on former gold mine tailings. This framework has recently withstood gale force winds 100km/hr.

Electric cabling can be added later through a join in the front wall if necessary.



My son James banging in steel pickets for the anchor points of the frame. These could not be exactly lined up with the greenhouses as they have cement foundations at the corners, so the flight house is slightly set back.

#### **MAKING THE FRAMEWORK**

Five lengths of conduit were laid on an open area .



Conduit tubing with cross supports for bracing.



Framework complete, with central brace still to be positioned.



My daughter Jean sewing shade cloth lengths together with a sewing machine.

The completed frame was then turned over so that shade cloth could be attached using cable ties.



Shade cloth being partly attached.



Cable ties protruding before being trimmed.

The shade cloth was not trimmed, as the overlapping cloth would be used to attach the front and back walls. Cable ties were used for all joins.



The framework was then carried to the garden.

The shade cloth for the highest part of the flight house was only attached to the frame at this stage, as the main labour had to be completed while I had help.

The garden is packed with plants so the framework had to be manoeuvred into position.

James, who is much taller than I am was at the rear end while I worked at the front.



The framework was curved on site, with dark shade cloth, for the entry, on the bottom.



The framework was gradually lowered into the space between the existing greenhouses.



Framework in position.



Rear wall attached, with overlap from roof yet to be sewn on. Late in the day!



Back wall viewed from outside. An extra, vertical length of conduit was added for strength.

A board will be laid along the ground at the base of the wall, for additional strength and to help keep predators out.

Open ends of conduit were filled with “expanda foam” to prevent spiders making nests in the tube.



Rear wall from the inside showing misting tubes attached to the frame by cable ties.



Plastic "weed mat" was used on the floor. It was attached to shade cloth lower edge using tent pegs.



A friend, Barry Robertson, installed this heavy section.

The steel second hand door frame was attached to the frame work, with an additional metal length of fence capping used as a strong base.

The overlapping shade cloth at the front was attached with cable ties and wire to the door frame.

An extra layer of flyscreen was added to the door and frame for added darkness at the entry.



An extra length of loose hanging black shade cloth was attached over the inside of the door frame to make a curtain, to prevent butterflies from escaping.



Metal butterfly decorations were added to the door frame to show that it is a butterfly house.

Nectar and host plants in pots were placed on second hand tables.

Some taller flowering trees in pots were added for shade, as well as an extra length of shade cloth over the hottest section.

Other items include a thermometer, and a stool for sitting on while taking photos.

A radio is in the greenhouse next door.

This will be a very pleasant place to spend a few hours, in the coming butterfly breeding season.



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