

URBAN BIRD SANCTUARY

birds bees plants us

"The number of the house sparrow, starling and song thrush has gone down by more than half over the last 25 years. While some of this is because of changes in farming practices, in the cities and towns scientists think a loss of insect food could also be to blame. This means we need to make sure our gardens are full of insects for these birds to eat."

RSPB.org.uk

Concept

The Urban Bird Sanctuary is a direct response to the damaging impact that we as humans have had on our environment due to overdevelopment and urban sprawl.

The aspirations therefore are simple, to help contribute towards bringing a diverse range of birds, plants and insects back into our towns and cities utilising wall space that has otherwise been forgotten.

Design

The design is based on the beehive, or honeycomb structure. This structure, inspired by nature, is symbolic of what our towns represent; hard work, community, collectiveness. The design is biomimetic i.e. emulating nature for the purpose of solving human problems, or in this case, human 'caused' problems. It's nature helping nature to adapt to us - we are both the problem and the solution.

The hexagonal shape can tessellate into numerous patterns, suitable to its setting. The patterns depicted on this board are just some of the options.

The boxes have the same modular encasing, inside of which a removable tray is inserted to accommodate either the bird box, insect hotel or plants.

Bird Box

Depending on the types of birds one wishes to attract to a location, will dictate not only the size and scale of the bird box and access hole, but also the distance from the ground and also the proximity of each bird box to another. For example, some birds, like the sparrow, are colonial nesters and will nest alongside other sparrows.

Other birds, like the female blue tit will nest alone. The bird boxes should therefore be positioned accordingly.

The hole in the bird box can be adapted to suit different sized birds:

25 mm for coal tits, marsh tits and blue tits
28 mm for great tits and tree sparrows
32 mm for nuthatches and house sparrows

Each box can be scaled up to accommodate different birds, for example a starling box would need to be 25% larger with an entrance 45mm wide.

Plant Box

Care should be taken to position plant boxes so that at least one half of the top is exposed to rainfall. Additional watering may be required during dry spells. Mixing water retaining granules into the compost will improve the compost's ability to retain water for longer periods. When cleaning the bird boxes, the droppings can be used in the compost of the plant boxes as a natural fertiliser.

Drainage holes are positioned to ensure the tray does not become waterlogged, but allows for some water to be retained at the bottom to help establish deeper roots.

Bee / Insect Box

The bee box completes the sanctuary. It is essentially an insect hotel that will attract a variety of different insects, from ladybirds to solitary bees to butterflies to spiders.

The tubes or slots for the insects can be formed in different sizes to encourage biodiversity.

Summary

Each box relies on the presence of its neighbouring boxes. The birds rely on the plants for insects, shade and protection. The insects rely on the plants for sustenance. The plants rely on the birds for natural fertiliser and the insects for pollination. And the boxes rely on us to build and maintain them and in return we attract beautiful wildlife, greenery and biodiversity to our urban spaces.

Buildability

The box is made of two key elements:

- Encasing (the hexagon)
- Removable inserts (bird/bee/plants)

These can be made by hand or 3D printed, or a combination of the two.

Option 1 - 3D printer (recommended option)
3D files can be downloaded from a host website to print the encasing and removable inserts.

The models can be easily scaled to accommodate different requirements. It can be printed using standard 3D filament such as PLA or ABS.

It can be coloured to suit any urban environment. The image below shows a natural wood effect, but to add more colour and playfulness the 3D prints can be in greens/yellows/reds etc.

Option 2 - by hand

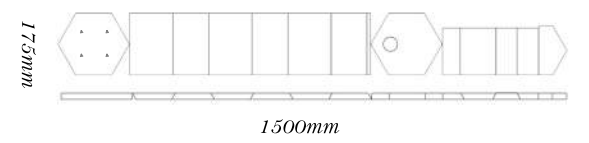
Eco friendly wood glue; Natural oil woodstain; 175mm x 1500mm timber; Saw; Mitre box; Drill with drill bit to size suitable for birds (25-45mm);

Bee box insert made from bamboo canes

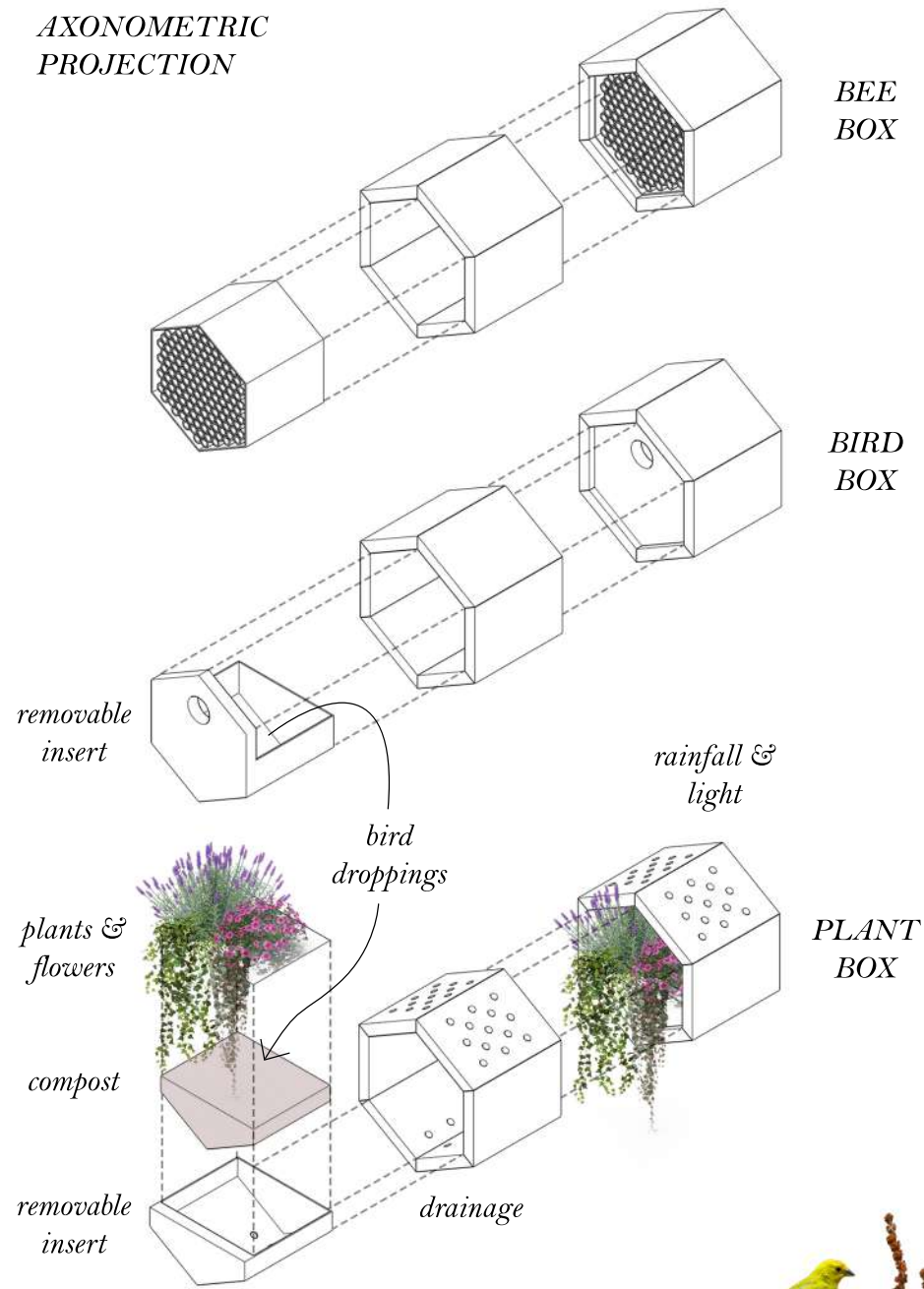
A simple tack to the front of the encasing will ensure that the insert does not move.

The encasing is fixed back to the wall using wall plugs appropriate to the substrate i.e. brick/stone/concrete etc.

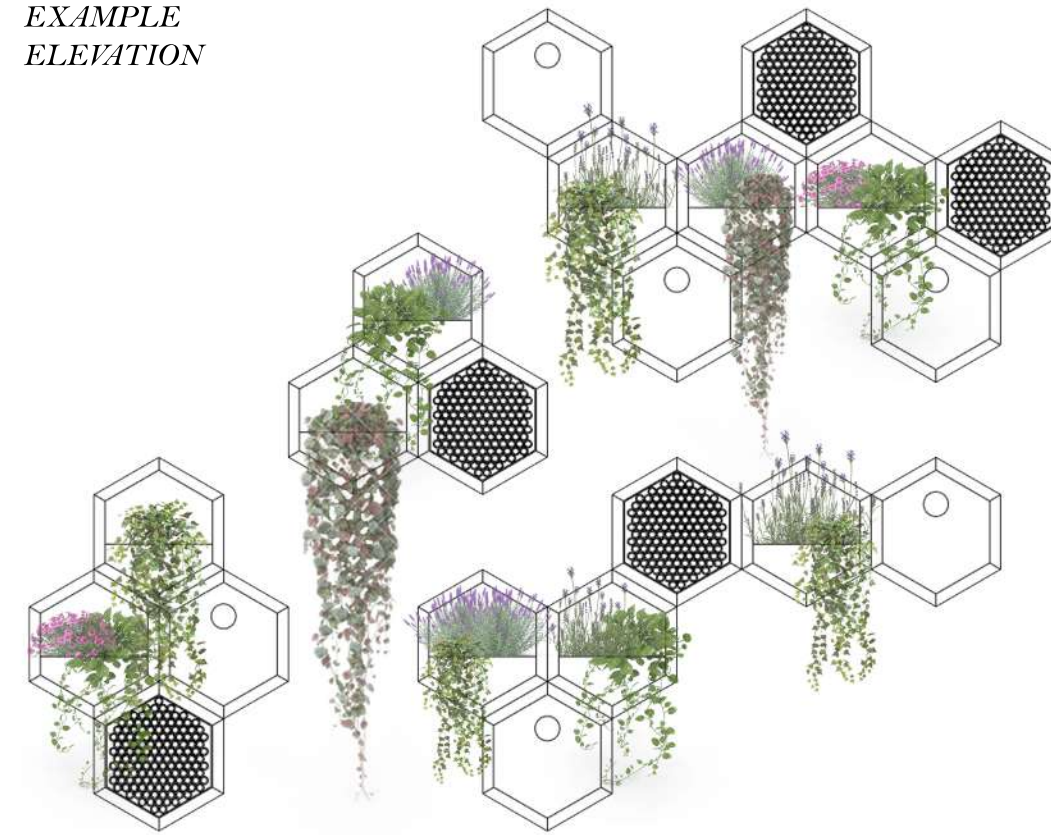
Template:



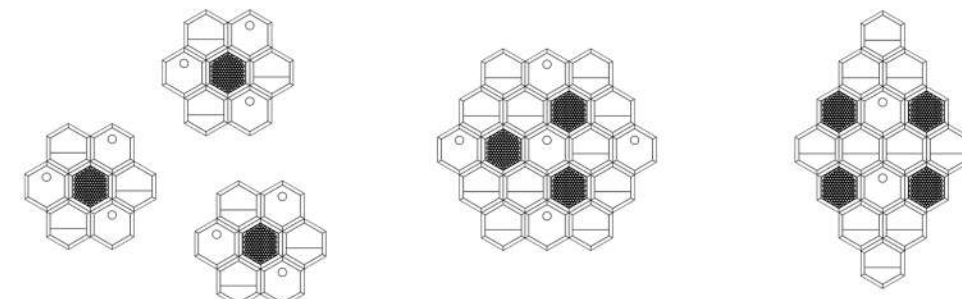
AXONOMETRIC PROJECTION



EXAMPLE ELEVATION



EXAMPLE OF TESSELLATING PATTERNS



3D VISUAL

