



THE SUSPENDED-LOFT BEE

MOTEL

Salem Indie Katzman

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“Insects, worms, and other small animals that carry out vital functions for life on earth have declined by 45 percent average over 35 years, threatening human, water quality and food supplies...” – Steve Connor, “Vital invertebrates decline 45 percent, study finds,” independent.co.uk, July 2014



INITIAL PROPOSAL

I am proposing to create an insect motel to house and aid in solitary bee and multiple species of moth and butterfly species' rehabilitation. To me, moths and bees are quite different but extremely important to the maintenance of our ecosystems. I wanted to help them both. I plan to create a sort of tree. Instead of leaves, I plan to make the tree look like it's sprouting various sizes of berries- as the cylindrical shapes will be best for moth and bee entrances. Likewise, I think the organic shapes combined with the waves of the branches will be incredibly pleasing to the eye.



INITIAL RESEARCH

I have found conclusive evidence via the DNR that warns that the following butterfly, moth, and bee species are considered officially endangered (***an endangered plant or animal is one seen to likely become extinct in the future***): the Lake Huron Locust, the Phlox Moth, the Oarisma Poweshiek, the Northern Blue Butterfly, the Honey Bee, 500+ wild bee species, the Yellow-Banded Bumblebee, and the Rusty-Patched Bumblebee. Reasons contributing to their endangered status include but are not limited to- habitat destruction, pesticides, disease, invasive species, parasites, and climate change.

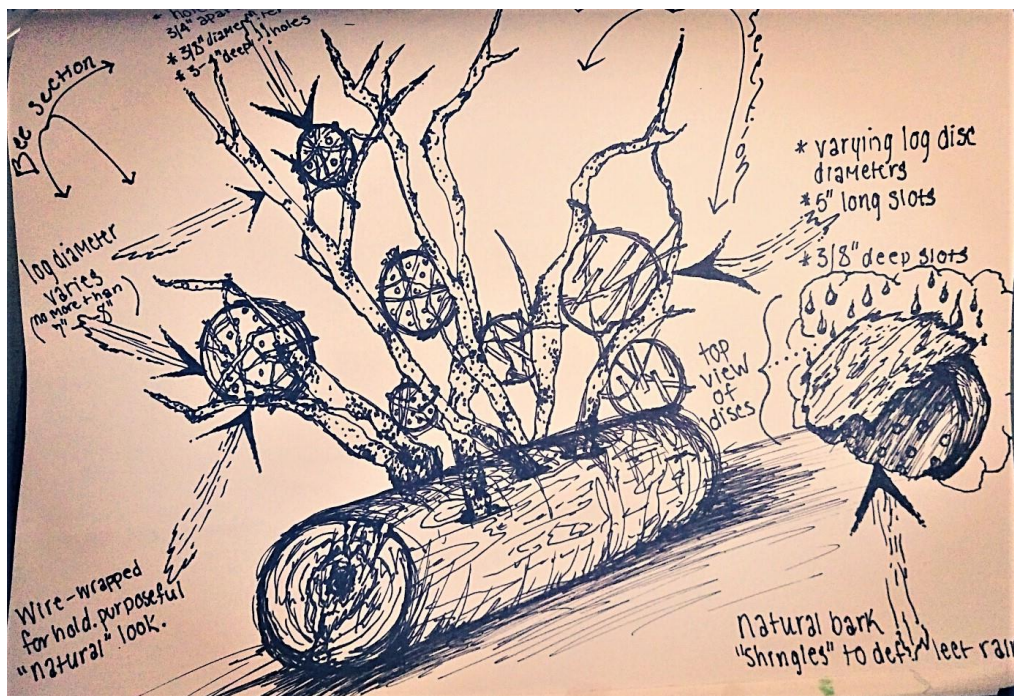
I have read that bees enjoy dry, closed-off burrows within wood, while slats work great for insects with large, flat wingspans. For bees, drill holes should be a minimum of 3/8" in diameter, a few inches in depth, and spaced 3/4" apart. Holes are best facing slightly downward, and east or southeast to counteract storms.

On the other hand, both moths and butterflies go through a "caterpillar stage" in developing, which makes them similar in many ways. Tree bark is part of their habitat, as well burrowing material such as soil and twigs- all of which can be placed into their slats (entrances).



My wooden berry tree habitat will suit the basic needs of all of the previously-mentioned species, and additional material specific to the individual insect can be added and altered as needed.

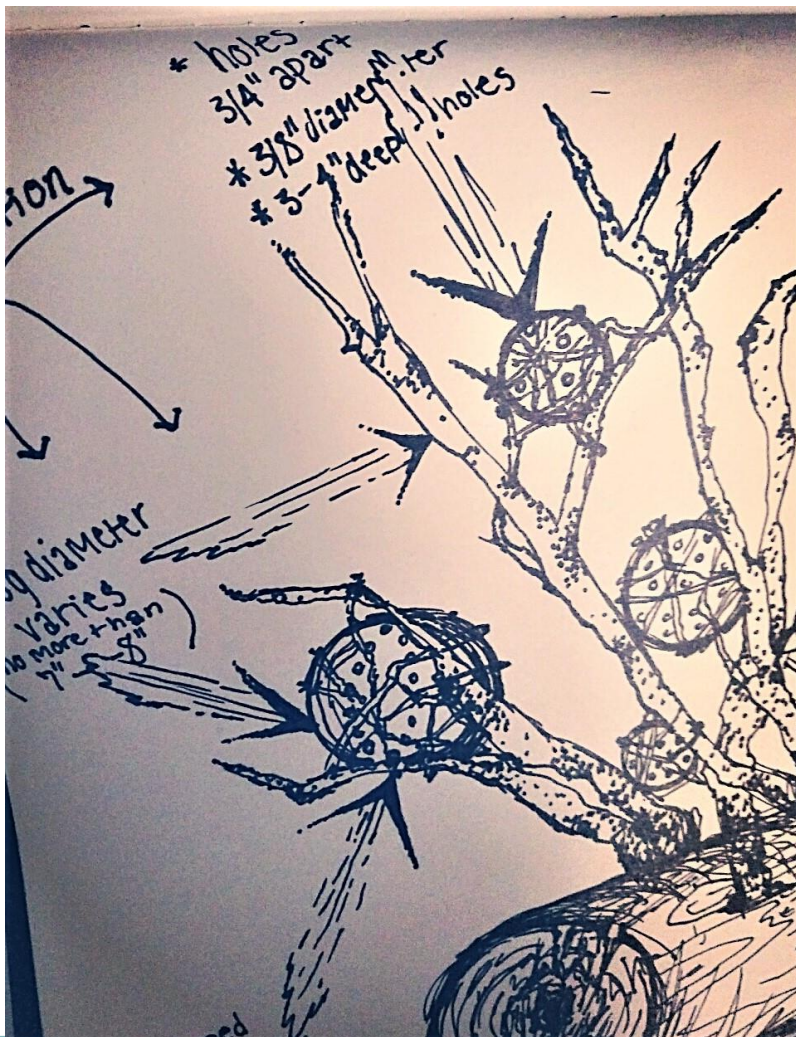
INITIAL, FIRST DETAILED DRAFT OF MODEL



WITH MEASUREMENTS AND MATERIALS



At this point I had the idea that I would create a structure of winding branches from a log as a base- mainly from a stability standpoint. For the housing, I planned to chop a birch log into discs which would individually be manipulated for bee or moth



homes. The 3 & 1/4" (depth) discs will be secured and suspended in between branches with heavy-duty sculpture wire.



PARTS AND MATERIALS COMPLETE LIST

One wood log (base)

12-17 various-sized branches

One birch tree log

Sandpaper of varying grit

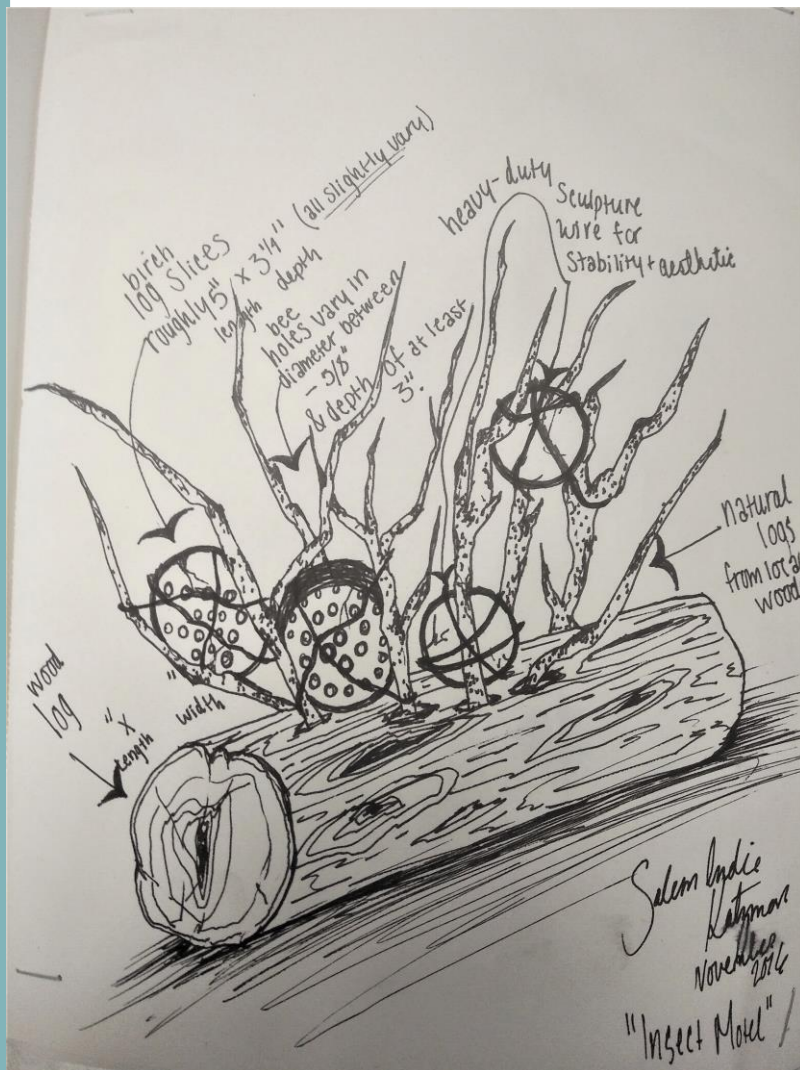
Wood glue

Clamp

Ruler, X-Acto knife

Hand saw

Sculpture wire, wire cutter



Pre-final sketch with altered "moth and butterfly" section taken out and replaced with more bee housing. This change came about due to two reasons. One being that bees, in the last few years, seem increasingly obsolete and in danger more so than moths and butterflies. Secondly, in order to create my original concept for 5" slots, it would require cutting all the way through the wood which wasn't plausible due to its inhabitable nature.



GOOGLE SKETCHUP PRO MODEL



FINAL CARDBOARD MODEL



I began with a basic silhouette of a bunch of branches and its log base. I used varying numbers of toilet paper rolls to represent the varying sizes of log discs in between the branches. I then glued real wood chips upon the surface of my model to reflect a more realistic texture.





FINAL PHYSICAL PIECE







When I began to suspend the discs between the branches, I ultimately cut my number of anticipated discs in half from 6 to 3. This was due to awkward weight distribution and added bulk. I added little additional things such as extra, wrapped sculpture wire around branches for an organic, winding type of aesthetic. Likewise, each disc has its own shape or design with three different diameters in drill holes, all spaced roughly $\frac{1}{2}$ " to $\frac{3}{4}$ " apart.

MAINTENANCE

Though this is the first time my motel will receive inhabitation and a wide variation in weather over the coming years, I expect a few things to happen. With time, the wire will rust, the wood will continue to expand and crack, and the wood glue will wear away and become less stable. For the purposes of this project, I have decided against stain or chemical treatment of the wood due to its use as an animal habitat.



FINAL THOUGHTS

I sincerely cherish this project for a number of reasons. Sculpture, and woodwork in particular, was never something I had much experience in or knowledge of. Additionally, I (like many others) was generally uninformed regarding bee, moth, and other populations' endangered status. I was considerably unsure and worried with the initial task proposed to me. Aesthetically, I chose to stick with one my favorite motifs of organic shapes and wirey, winding branches. I aimed for a product that looked natural and utilized wood gathered from local wooded areas. Though I had a general idea of my planned-model from the beginning, I ended up altering the size due to increased weight and removed the butterfly and moth section of my model due to tool restrictions. I worked my way through this project utilizing tools and design logic I hadn't previously experienced. I also gained a wealth of knowledge regarding endangerment and renewal of many native Wisconsin species.

Upon final critique of my piece, I received solid feedback regarding its design and functionality. Both aspects were sincerely important to me, as I wanted to make this a livable structure to as many creatures as possible. Most people seemed to understand my organic aesthetic, and some thought my use of untreated wood and hole-size variation made my structure more appealing to insects and therefore functional. I was able to accomplish a steady balance through the use of an uneven number of "hanging motels" and packed in as many entries per disc as possible to maximize space. My hope is that my piece will



become a home to many creatures in the coming years and passers-by will enjoy its presence as much as I did creating it.