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## VITAL INVERTEBRATES HAVE DECLINE BY **45%** ON AVERAGE OVER THE LAST **35** YEARS.

- ~ “Insects, worms and other small animals that carry out vital functions for life on earth have declined by 45 per cent on average over 35 years, threatening human health, water quality and food supplies, a study has found.”
  - Steve Conner, “Vital invertebrates decline by 45%, stud finds,” independent.co.uk, July2014

Bees, butterflies, slugs, Insects, worms, spiders and many more other invertebrates are declining at a sharp rate due to factors such as climate change and **habitat loss**. We need these invertebrates for things such as “pollination, pest control, decomposition and ensuing soil remains packed with nutrients, as well as water filtration.”

- Steve Conner, “Vital invertebrates decline by 45%, stud finds,” independent.co.uk, July2014

**You can help!** Due to the alarming drop, efforts have already been started worldwide to rectify the drop in invertebrates.

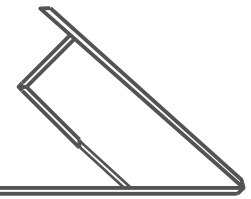
- ~ “A recent increase of monitoring efforts stems from the rise of “citizen science” projects, where lay people with an interest in the outdoors are trained to collect data. One such project is a butterfly monitoring program run in association with Butterfly Conservation Europe.”
  - Christian Schwagerl, “Vanishing act: Why insects are declining and why it matters, environment 360, July 6<sup>th</sup> 2016

With this Bug Hotel I hope to capture not only people’s attention, but people’s interest too. Because by spreading awareness or even making a habitat such as this one; anybody and everybody can help change the future for the better, and stop the decline in invertebrates.

### **What the arrow represents:**

- ~ The arrow is symbolic for “Moving forward”. It is up to us now to rehabilitate the invertebrates and their habitats. Everybody can make a change, you just have to go out and do it.

# The Momentum Arrow



By: Andrew Marszalkowski

- ~ This decline relates to me because I am a part of a generation that can do something about it. It us up to us now to make a change before it's too late, we will only benefit from making this progression back to health.
  - ~ Prior to receiving the project, I had no clue of the rate of decline and the damage being done. This project brought awareness to me, and I hope to pass that awareness on to you.
  - ~ LOVE THE BUGS. You might say you hate bugs, but when you look back, everybody has a memory involving bugs!
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- ~ The materials used were all natural recycled ash wood and metal tubing.
    - I set out to create a sculpture clashing the natural and the man-made; wood representing natural, and the metal tubing representing man made. I wanted to show how wood and metal can create something beautiful and support a single idea. We need to balance our relationship with nature and the species around us, so we and future generations can enjoy and flourish.
  - ~ The momentum arrow is meant to be elevated by a post. A hole should be cut the size of the pole in the bottom board, this is indicated in the diagram.
  - ~ One aspect of the momentum arrow is the built-in a watering area. The water is collected through a hole in the sculpture, I made this because of the amount of invertebrates that love moisture. I made my design so many different bugs could use it and adapt to their needs. I made sure to have dark spots, a place for water and tightly packed material.

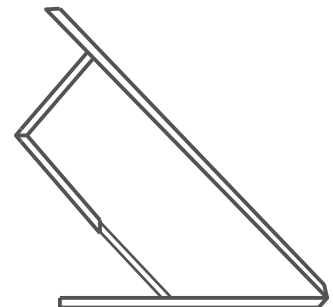
Here are plans to make your own bug hotel!

<http://gardentherapy.ca/build-a-bug-hotel/>

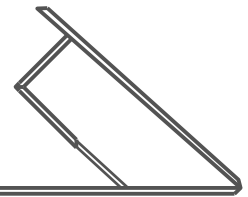
Read more!

<http://www.endangeredspeciesinternational.org/insects8.html>

<http://www.independent.co.uk/environment/nature/how-to-save-a-bugs-life-2326331.html>



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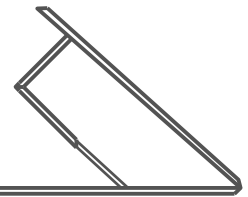
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## DNR REPORT:

- ~ Replace decomposed material with new downfall and natural materials from the area. Anything like sticks, leaves, moss, rocks @ can be put in the compartments. This is great for attracting a great number of different species.
  
- ~ Remove ONLY the ONE GOLD screw with the rubber washer from each compartment (Other two screws are grey and use locks instead of washers) and then bend wire mesh up to stuff in material.
  - o Repeat on other side



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Renderings of Bug Hotel done in RHINO:

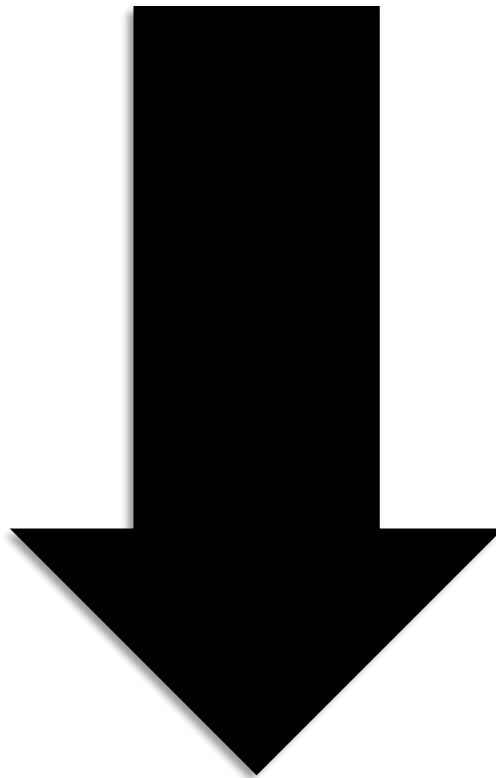
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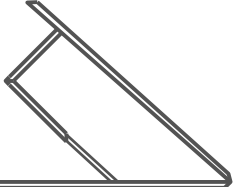
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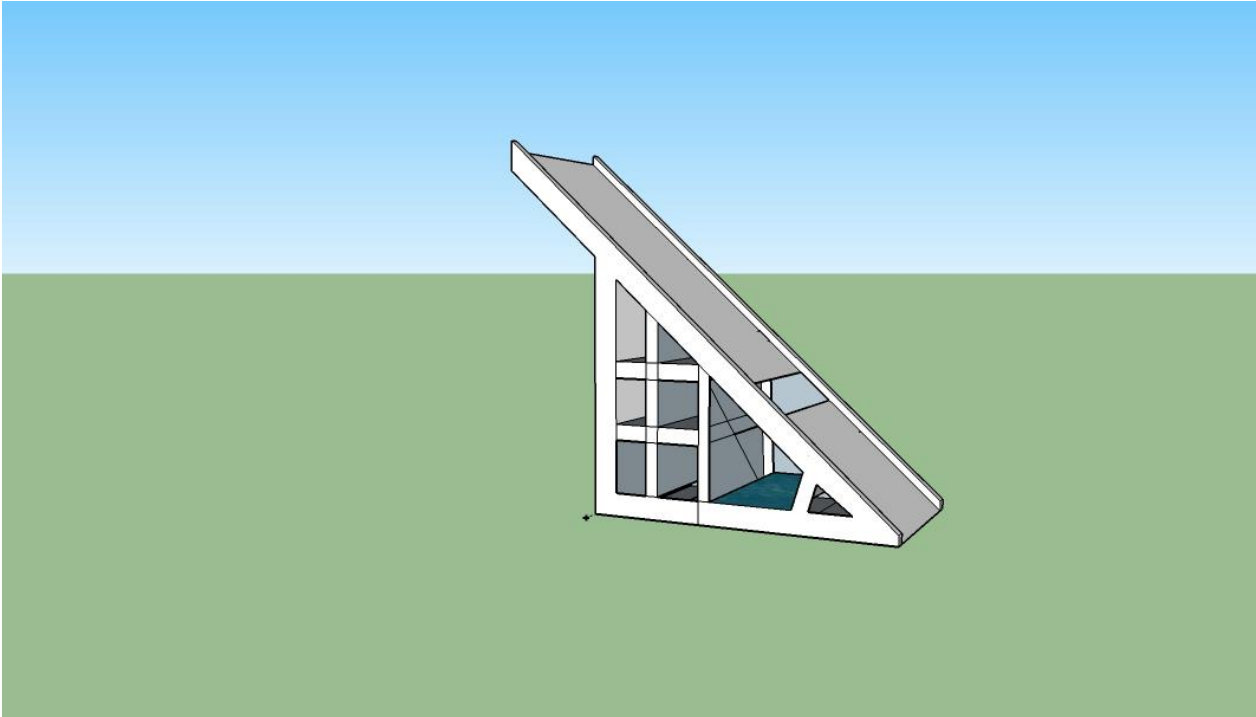
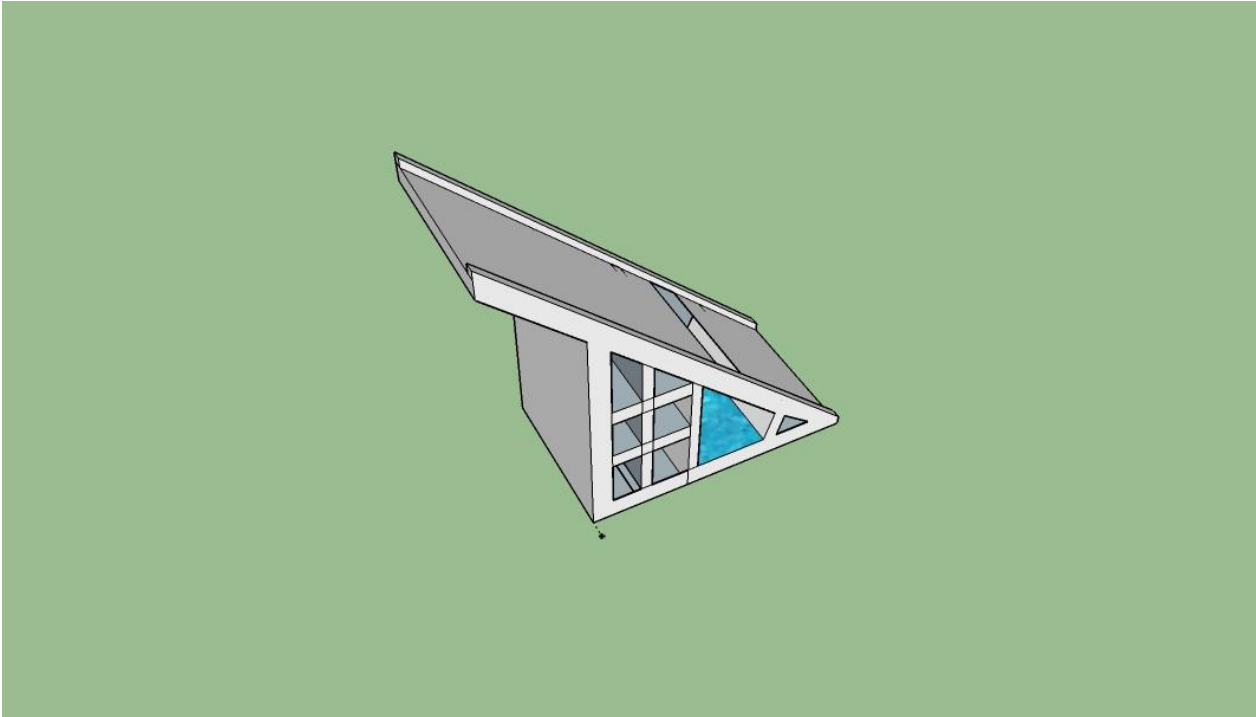
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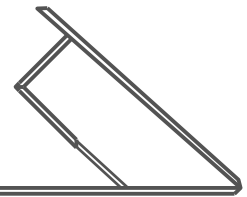
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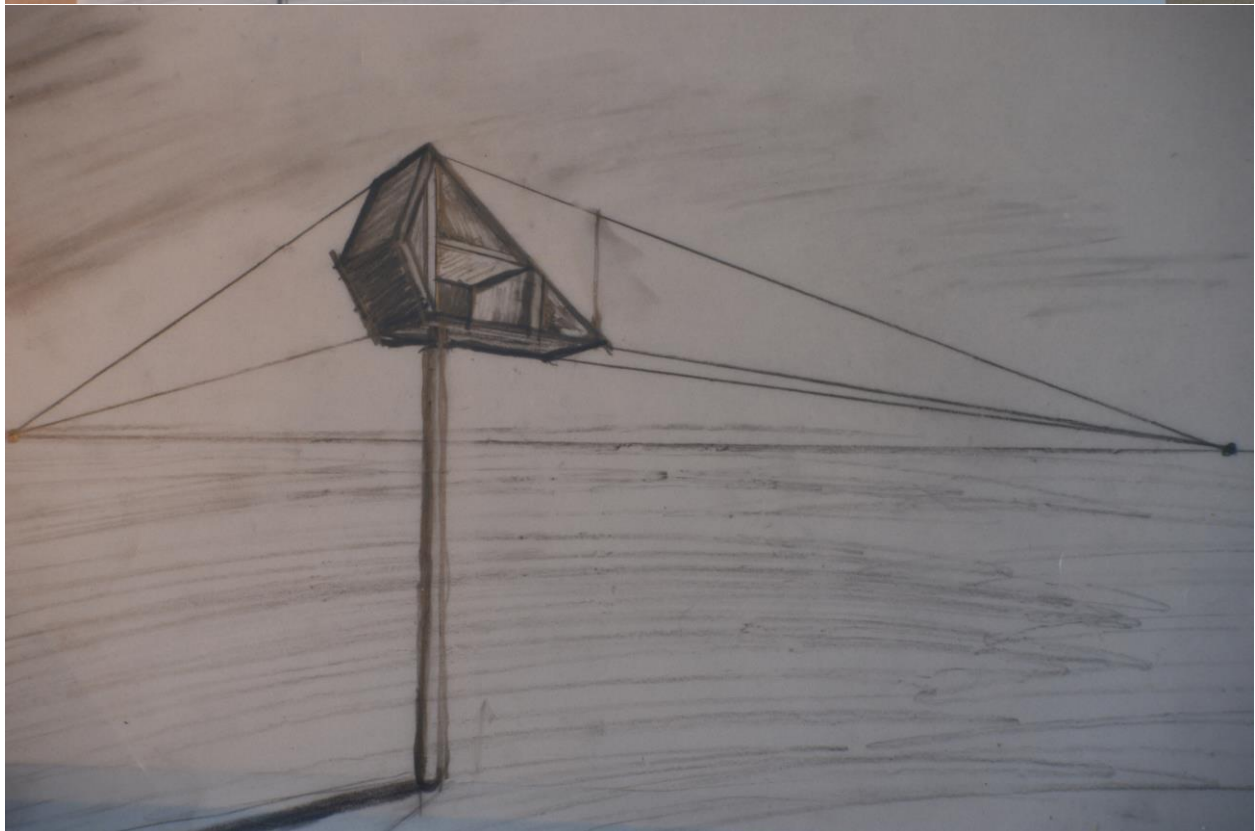
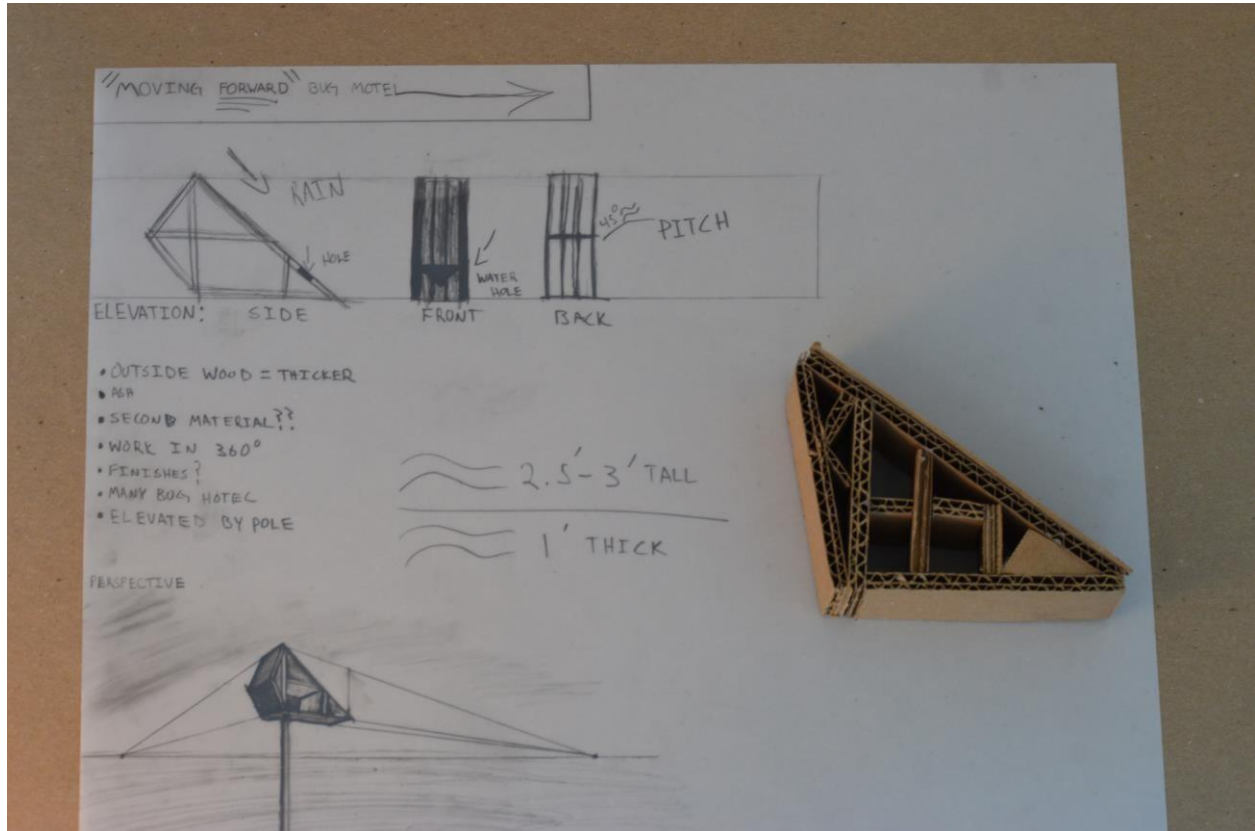
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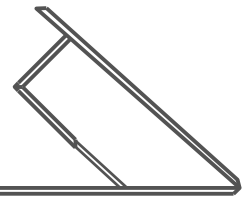


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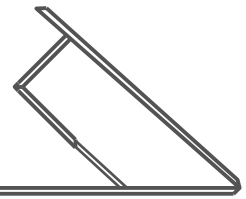
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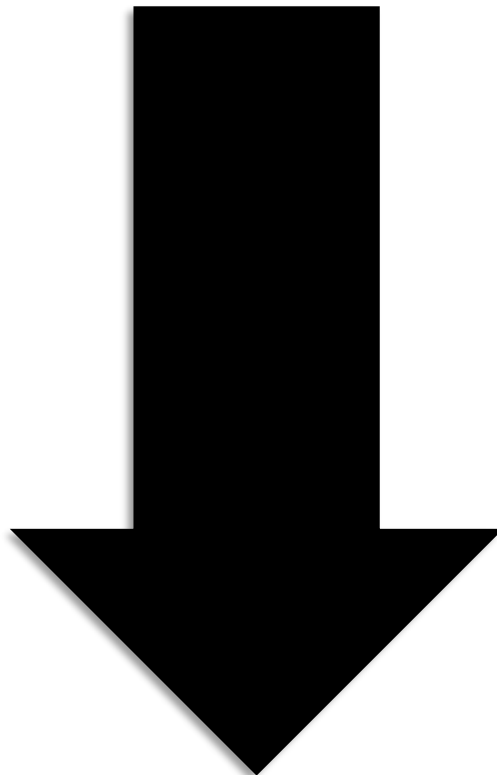
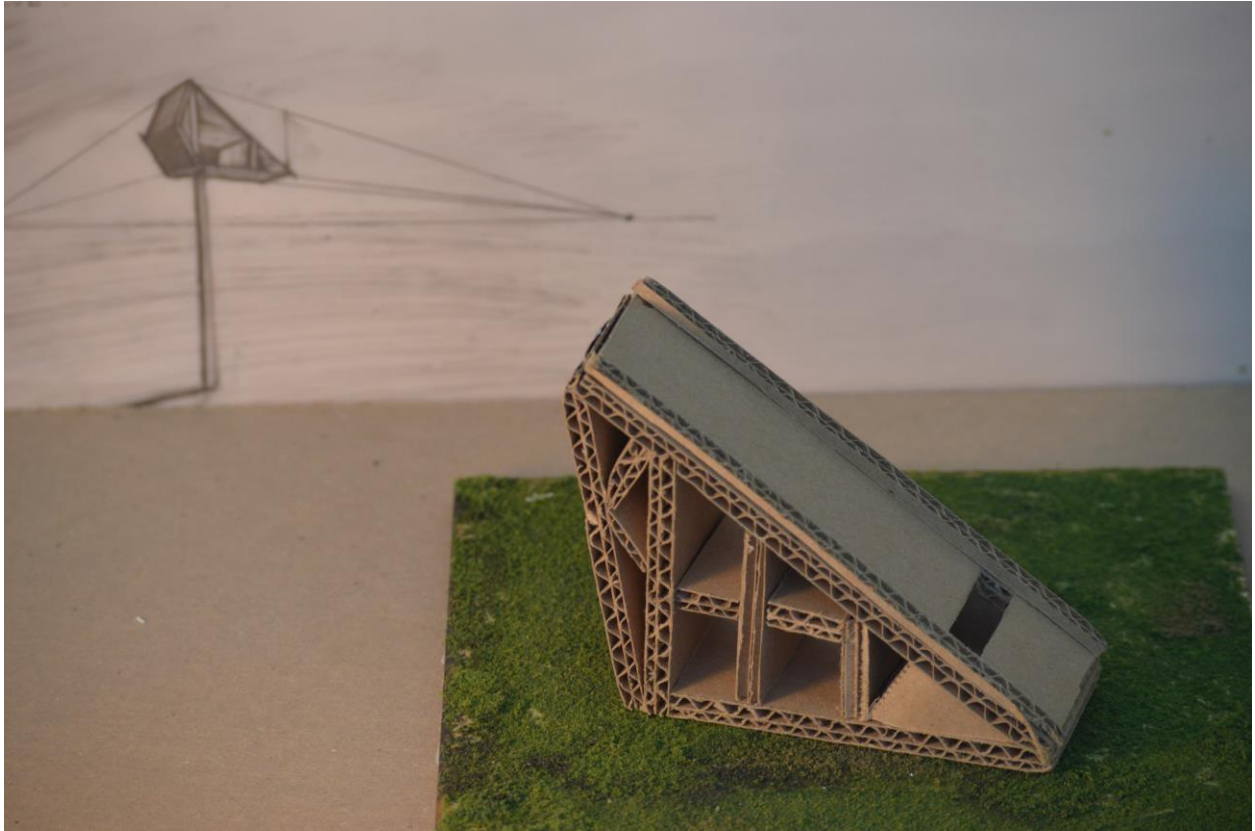
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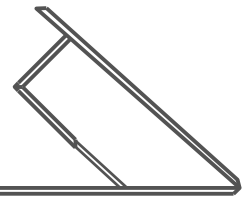


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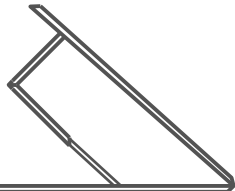
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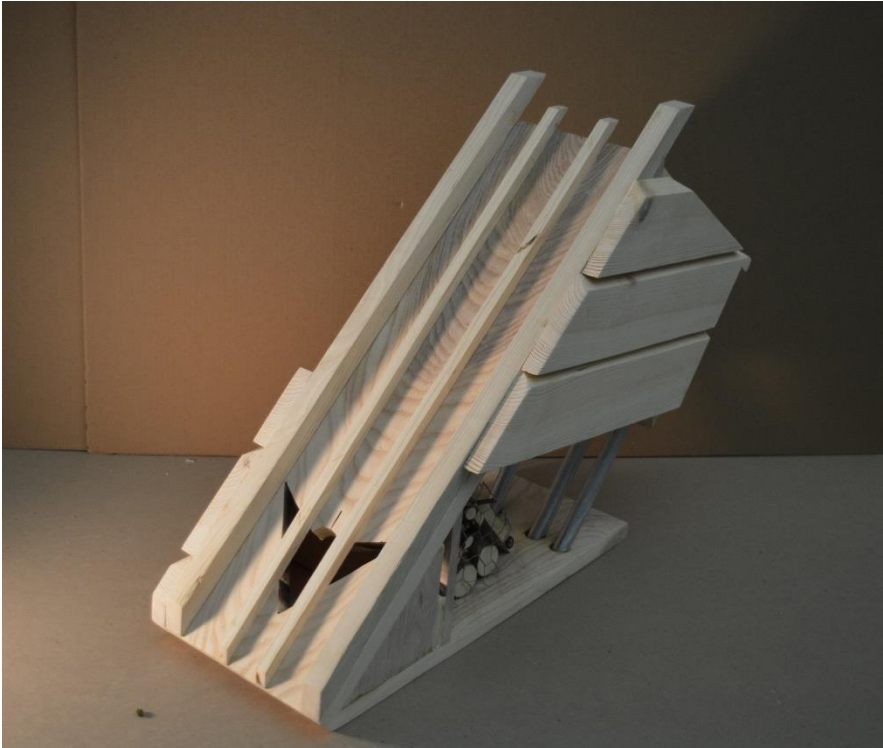
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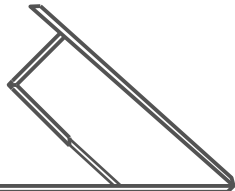
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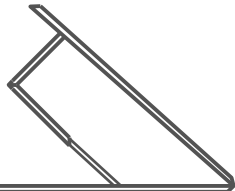


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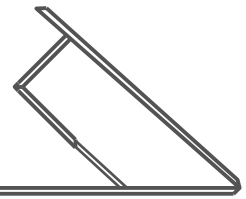
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