

# Balsa Wood Model House

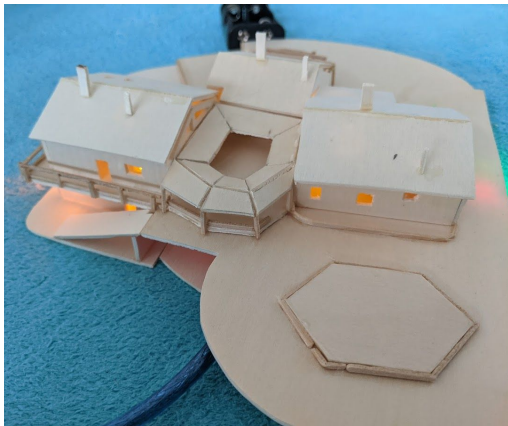
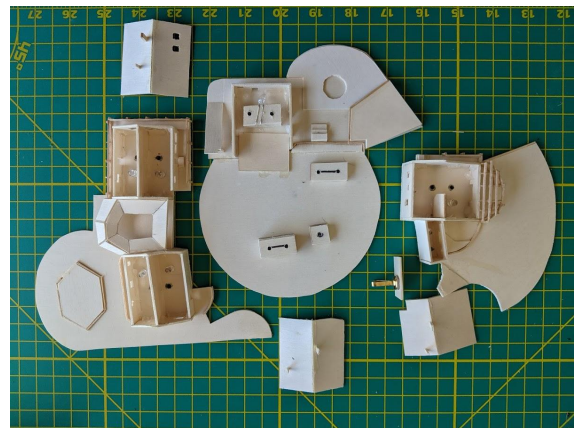
## A Scale Model of My Childhood Home

I grew up in a remote part of Portugal, where we own a great house. As a christmas gift, I decided to recreate this house out of balsa wood.

The overall goal of the project was to recreate the house with as much accuracy as possible in a small compact model that could be displayed on a shelf. I also wanted to add internal lighting and make it modular for easy maintenance and improvements.

Fortunately, I had previously mapped the property with an aerial drone survey (using Pix4d photogrammetry software) so I had a detailed top down map to work with.

I sectioned out the important lines of the house, and printed out paper templates for each section that were then overlaid on thin balsa wood and cut with an exacto knife



The sections were then assembled with superglue and hot glue, and threaded with M3 holes to attach each section together. Initially I planned to attach the rooves permanently, but I figured out a way to use brass clips to friction fit the rooves onto the internal cross pieces.

This has the advantage of making the electronics and screws accessible, at the cost of creating a slight gap between wall and roof.

Finally, the electrical system was set up. 4 AA batteries were wired to an Arduino Nano, that processed input from an ambient light sensor. The Arduino then switches on/off leds in 4 separate locations in the house. The lights activate when the ambient light is low enough that they can be seen, and deactivate if it is completely dark or too light. The system is completely portable and can be placed on a turntable for best effect!

