Emily Griffiths

Automatic Irrigation System

Submission Description

As apart of the HSC Design and Technology course every student is required to design a product, system or environment as their major work which is done over 10 months. My design brief states that an automatic watering system with a drainage system must be integrated in a product that is suitable for housing plants and material items. In turns, it will then save consumers on space, time, water and effort.

I designed and created a structure that focuses on aesthetic and functional elements.
My design was created to prove a concept.

- The structure is 1.8 x 1 m
- It can hold potted and hanging plants
- It has a facade back wall for design aesthetics
- A soil moisture meter, 12v battery and pump for the watering system
- 2 separate slots in each shelf for drainage
- Angled shelves to help the water flow
- Mild steel frame with black paint
- 3 different wood materials for the rest of the structure
- Oil coat to help with water resistance

The HSC requires a major work for certain subjects, design and technology are one of them. The major work consists of designing a product, system or environment and building it (if applicable). It also consists of a portfolio which is a maximum of 40 A3 pages or 80 A4 pages. My folio was 78 pages.

My design took approximately 10 months to research, design, experiment and build. I was inspired by the tiny house movement and rooftop gardens. With more apartments becoming increasingly popular, it means less space and time for people particularly as jobs are getting more consuming. In saying that, I decided to design a product to help people have plants while also having time for other things.

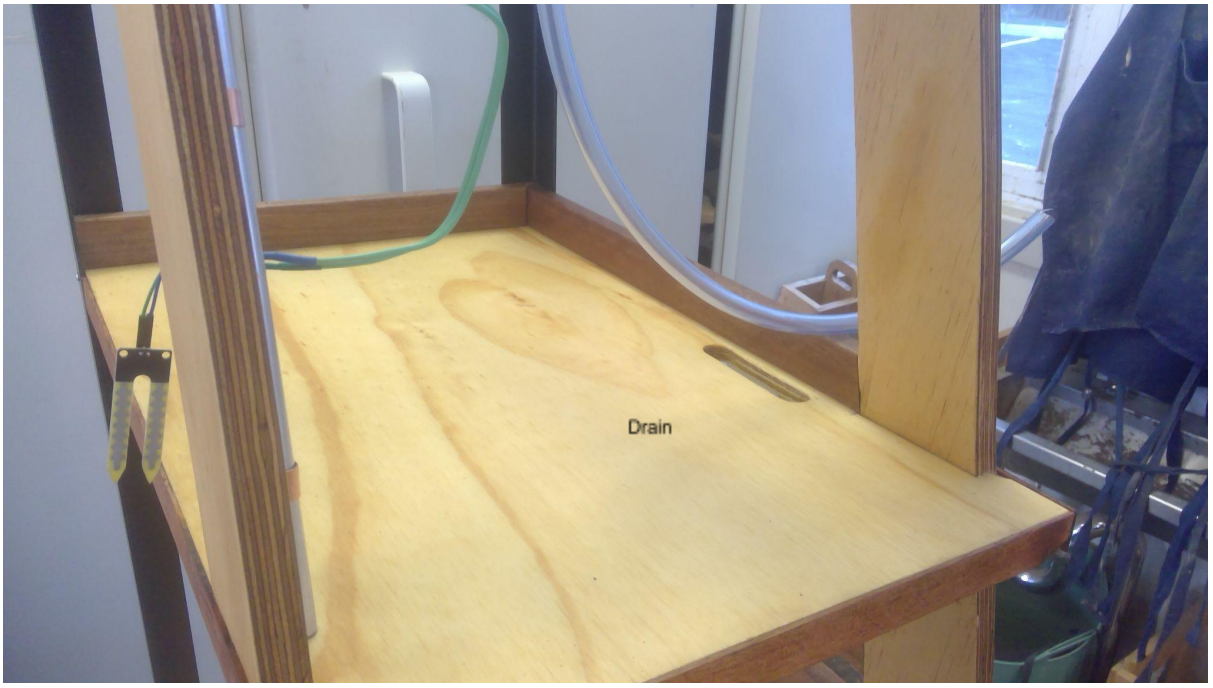
I conducted a survey and the majority of people complained about wanting plants but accidentally killing them as they have no time. Hence, I designed an automatic irrigation structure with a self-watering system and drainage system.

I used mild steel for the frame and 3 variations of plywood/wood for the rest of the build. This was to appeal to modern designs and contrast the different colours in the materials.

It has a water reservoir with a 12v battery and pump as the watering system. Attached is a soil moisture meter that reads the water level in the soil. When dry, the pump turns on and when wet the pump turns off. The shelves are angles with slits in them to act as drainage.


Soil Moisture Meter

Soil Moisture Meter



Out through tube and into plants

Goes through Pump

Water reservoir