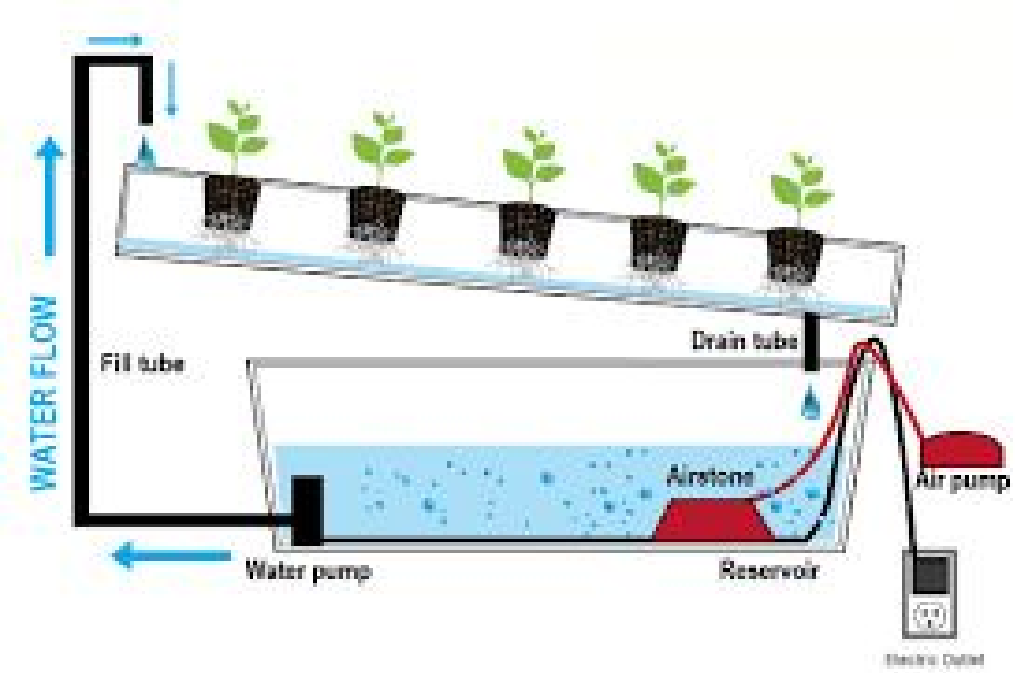
Prototype I and Customer Feedback

Deliverable F

Group 8



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25-02-2018
GNG1103 - Deliverable F

Test Plan

Why Are We Doing This Test:

The objective of this test is to learn how the design will work structurally. Our specific test objectives are to observe how the three different sections tri-fold with the pipes and the three reservoirs. From this prototype, we can have different types of results. We could see that the reservoirs and the plants are obstructing the sections while they are folded, it is not structurally sound or that the initial design works. The result we are trying achieve is the last one. Therefore, if we are not satisfied with the how our prototype works we will have to change some components to make it work. For example, we might have to move the tanks to allow it to fold. That being said, the criteria for a successful design would be room for three reservoirs and the pipes/plants while being compact and tri foldable.

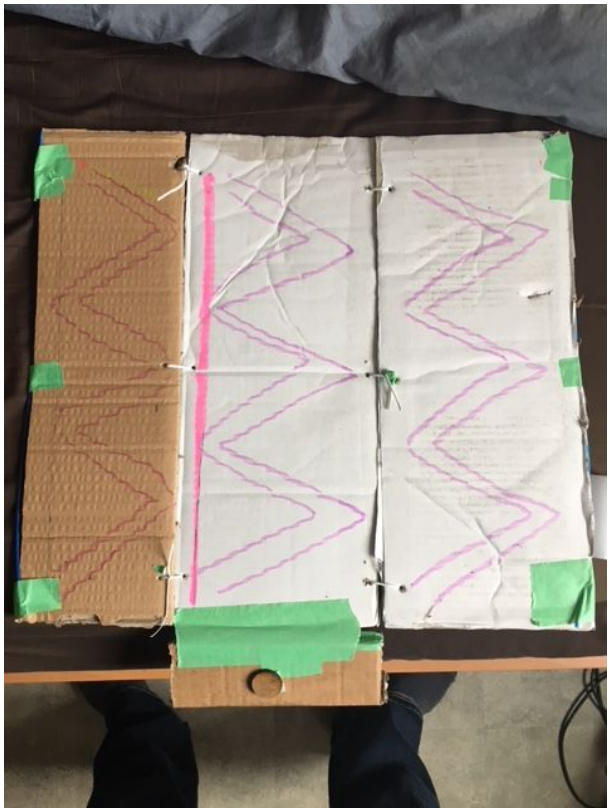
What/How We Will Test:

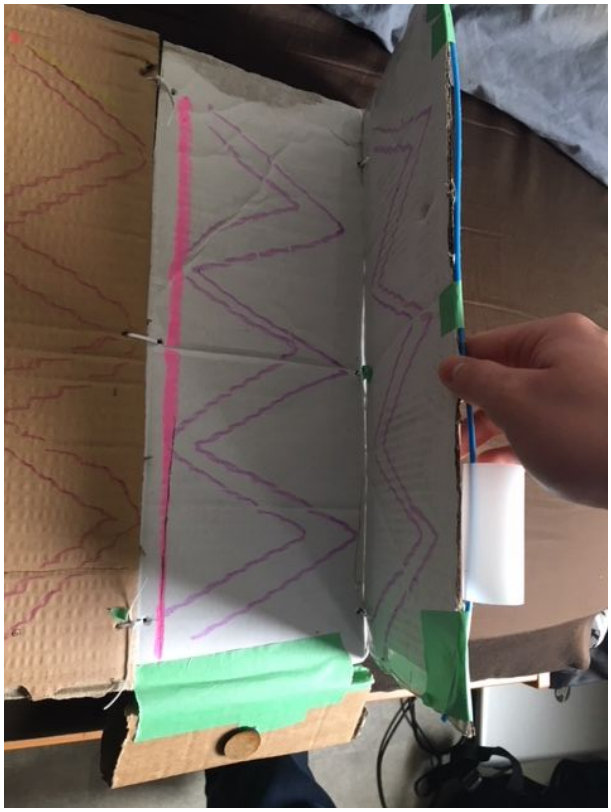
Our first prototype will be focused on the basic structural design of the green wall. Using materials that are found around the lab (free), we will make a smaller version of the wall. The back of each section and the reservoirs will be made of cardboard and we will use strings to represent the hinges connecting them. We will measure how compact the design is, the optimal shape and the placement of the reservoirs, pumps and plants to allow it to fold. This prototype will not test the functioning systems such as the water pump and the lighting system.

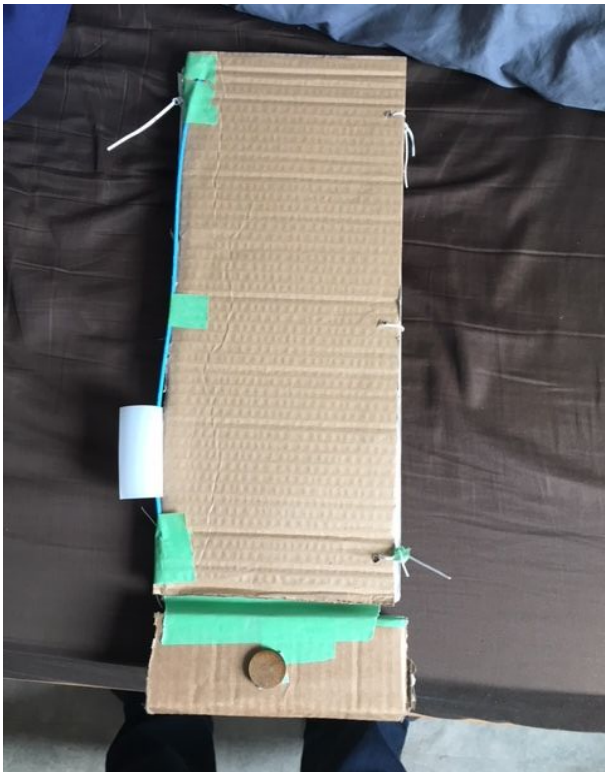
When Will We Test:

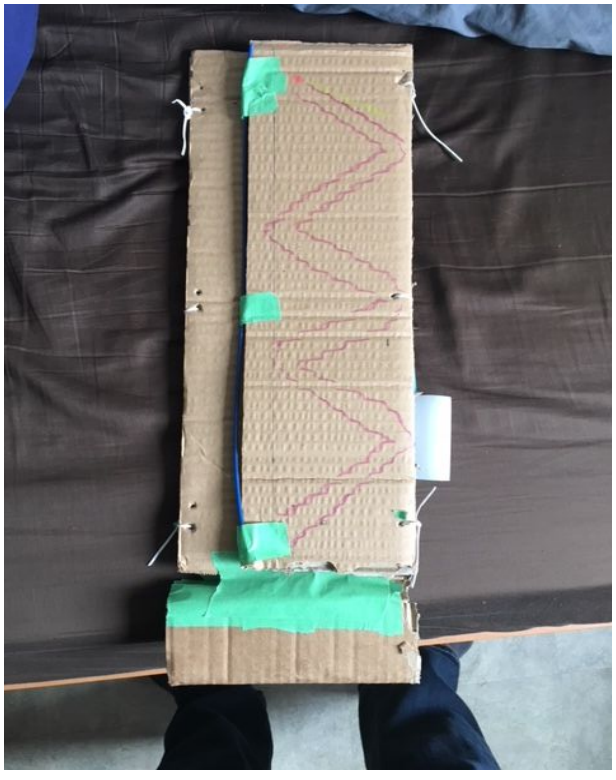
The project group will build and test during the three hour lab period. The first step is to review our design criteria and test plan to maximise the efficiency and results of the first prototype. After, we will gather the materials to be able to construct a smaller scale version of the final product. With the materials ready, we will construct the prototype including all the functional components required. Finally, we will analyse how the prototype functions and make the changes required.

Prototype I:









Analysis:

With the prototype made we analysed how it folds, the placement of the reservoirs and the placement of the pipes for the plants to maximise compatibility.

Results:

After making prototype 1, we found that we must put spacing in between each section to give room for the plants while the sections are folded. Also, as we were designing the model, we concluded that the reservoirs for sections 1 and 3 would have to be pipes on the side of the sections (represented by the blue wires). That would make the design more compact, give visual water levels and give room for company branding. The middle reservoir (main) would be located under the middle section and be on wheels to facilitate the process of filling it with water. After making these minor changes, the project team and the client are very satisfied with how the design will function. The next step is to test how the subsections will function.

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