Team A22

Deliverable E - Project Schedule and Cost

Engineering Design - GNG1103

Team Members:

Plater, Jon (300255925)

Anzengruber, Neal (300132549)

Malench, Jordan (300246446)

Hammad, Abdullah (insert #)

Faculty of Engineering
October 23, 2022

Abstract

From our finalised conceptual design which was presented to the clients, we will be conducting a risk assessment and a cost estimate using an estimated bill of materials. These will be conducted in order to figure out how to best execute our design. The bill of materials was estimated to a total cost of $105CAD, which is not within our set budget. Overall, everything should turn out in time for the Design day.

Introduction

In this report a summary of our team's current design concept will be provided along with the anticipated list of required materials and their respective costs.In addition to that photos of what our product could potentially look like will be included to hopefully provide increased clarity regarding how the device will function and appear. Also included in this report is a section dedicated to the risks associated with our chosen concept as well as possible contingencies that could be pursued if need be.

Prototype Concept

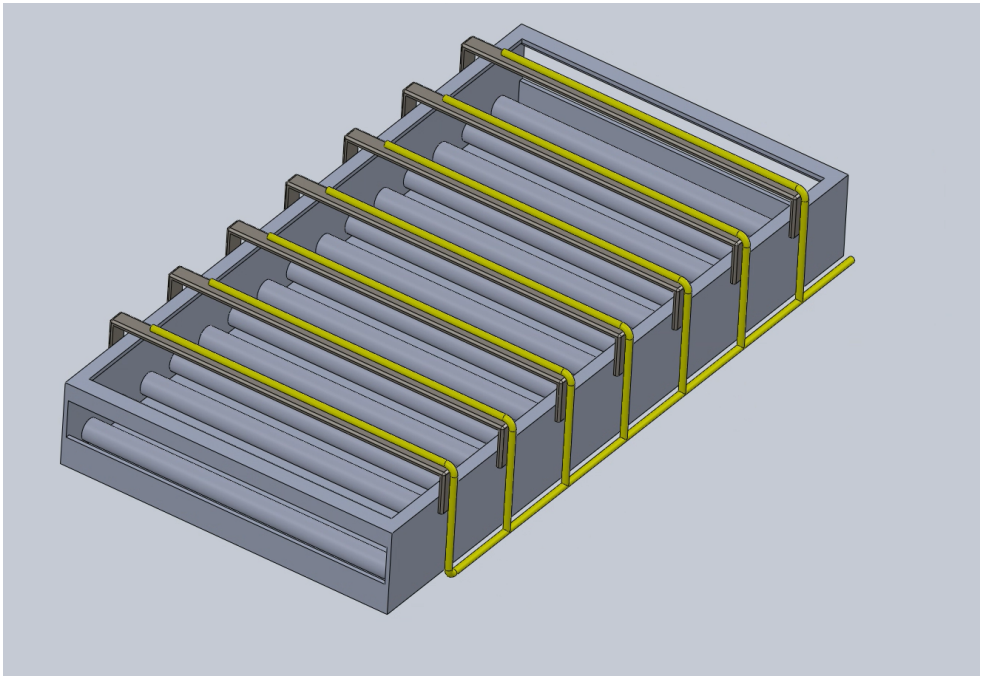
The design concept our team is pursuing at the moment is a device that will spray down the foam boards used to grow Greener Hydroponics produce. The boards will be sprayed down by jets of water emitted from several nozzles inside the device as the board is moved along rollers. The spray that will be used to wash the boards will be a mix of water and an eco friendly and food safe anti algae agent. The idea of this is that the jets of water will remove the actual build up of algae and other contaminants while the anti algae agent will help in preventing the build up of algae on the board after it is put back into use.

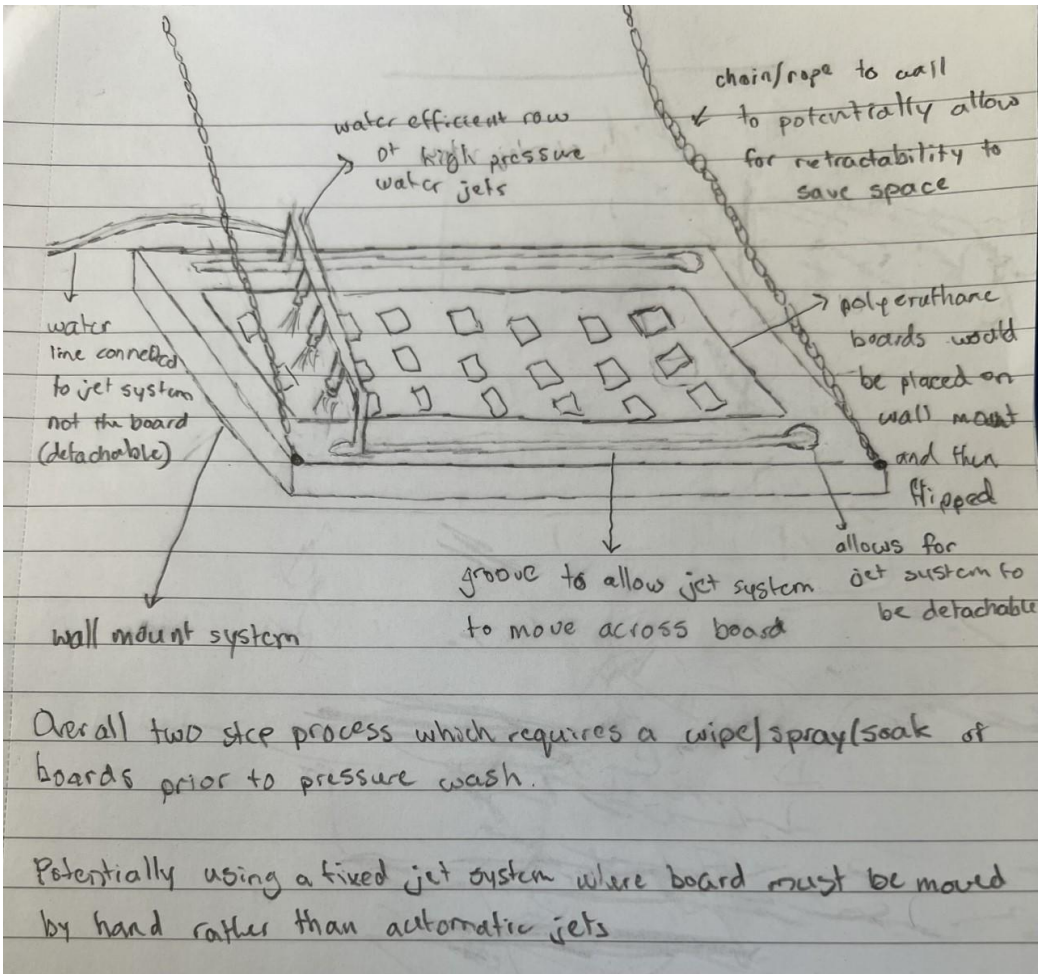
Bill of Materials & Cost

In this section an estimated bill of materials will be compiled for our last conceptual design which was presented to our clients at Greener Hydroponics. This BOM is not finalised and could be altered depending on future design/material choice changes.

Part #	Part Name	Description/Function	Quantity	Cost (CAD)
1	Pressure Nozzle (Lowes)	Nozzle that creates enough water pressure to allow for pressure cleaning	4	10 per (40 total)
2	Flex Hose splitter (Amazon)	Allows for water stream to be split into 4 different stream for each pressure washer	1	28
3	PVC Tubing (Lowes)	10ft roll of tubing used for water flow	1	10
4	Hose Thread (Lowes)	To connect PVC tubing to splitter and splitter to nozzles	1	6
5	Plywood	48” x 96” board to serve as a base for our system	1	15
6	2x2x8ft Lumber	Framing to keep the splitter for the pressure washer in place	1	6
			Total Cost:	105$

Photos




water efficient row of high pressure water jets
chain/rope to wall to potentially allow for retractability to save space
water line connected to jet system not the board (detachable)
polyerathane boards would be placed on wall mount and then flipped
wall mount system
groove to allow jet system to move across board
allows for jet system to be detachable
Overall two step process which requires a wipe/spray/soak of boards prior to pressure wash.
Potentially using a fixed jet system where board must be moved by hand rather than automatic jets

Project Risks & Contingencies

Risk	Impact	Probability	Contingency
Members made unable to finish tasks	Extreme	Low	Group members will need to inform others before potential scheduling errors in order to maintain peak efficiency. Allows us to plan divvying up the required tasks.
Intergroup Conflict	High	Low	A mediated discussion will be held to allow us to work together as a group to resolve the conflict.
Data loss/corruption	Very High	Low	Build files on google drives and save copies on external hardware to mitigate possibilities of data loss.

Conclusion

In conclusion, this deliverable allowed us to discuss our project plans. The bill of materials has been estimated to cost $105CAD, which exceeds our budget for our project. As such, we are going to look into design changes for our system and other cost saving methods like using materials from home or DIY creating some of the pieces like the hose splitter. We were able to evaluate risks, and plan contingencies around them as well. Overall, a great base has been put together for our project, and it should all be prepared for Design day so long as we stick to our plan.