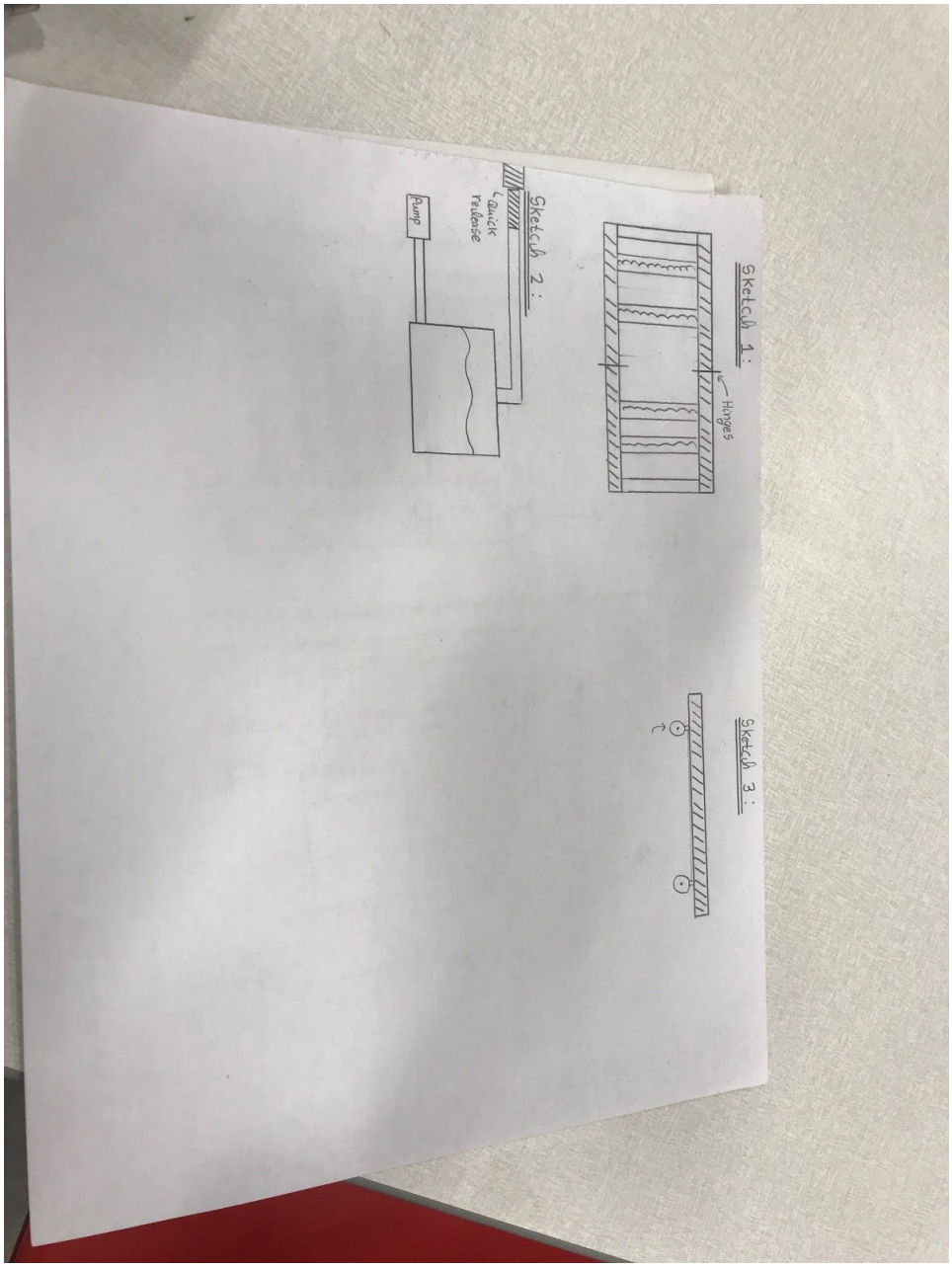
Introduction

This document shows the different design sketches drawn by each of the group members. It also outlines the design that would be done, the advantages and disadvantages of the designs created, and how they compare to each other. The design sketches of each team members demonstrates the various subcomponents of the system. From the previous deliverable, it was decided that the focus for this group was to look at the portability of the tower; so, the sketches show different methods of implementation on designing the growing farm wall to meet their specific needs regarding the portability of the tower.

Also, in this document, the analysis of different concepts of the design criteria would be seen, so benchmarking would be done based on the customers perception and also based on a comparison of the competitions' designs with those of this group's. Additionally, analysis would be done based on better specifications based than the customer needs, that has been stated in the previous deliverable. Lastly, a brief description of how the design would look like would be and also the different setbacks (disadvantages and advantages) that could occur with our design would also be stated in this deliverable.

Individual Design Sketches:
Ryan Fabek



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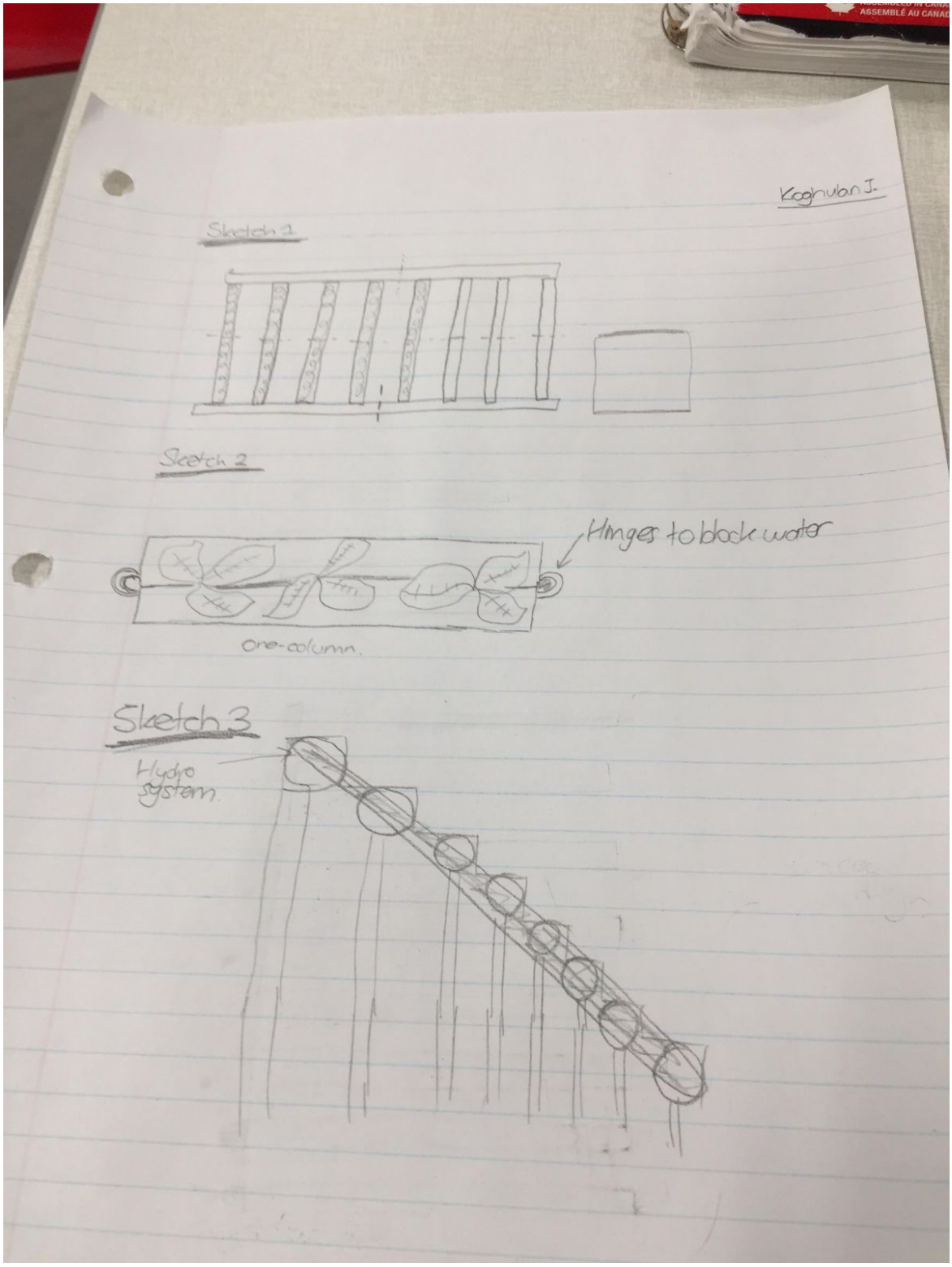
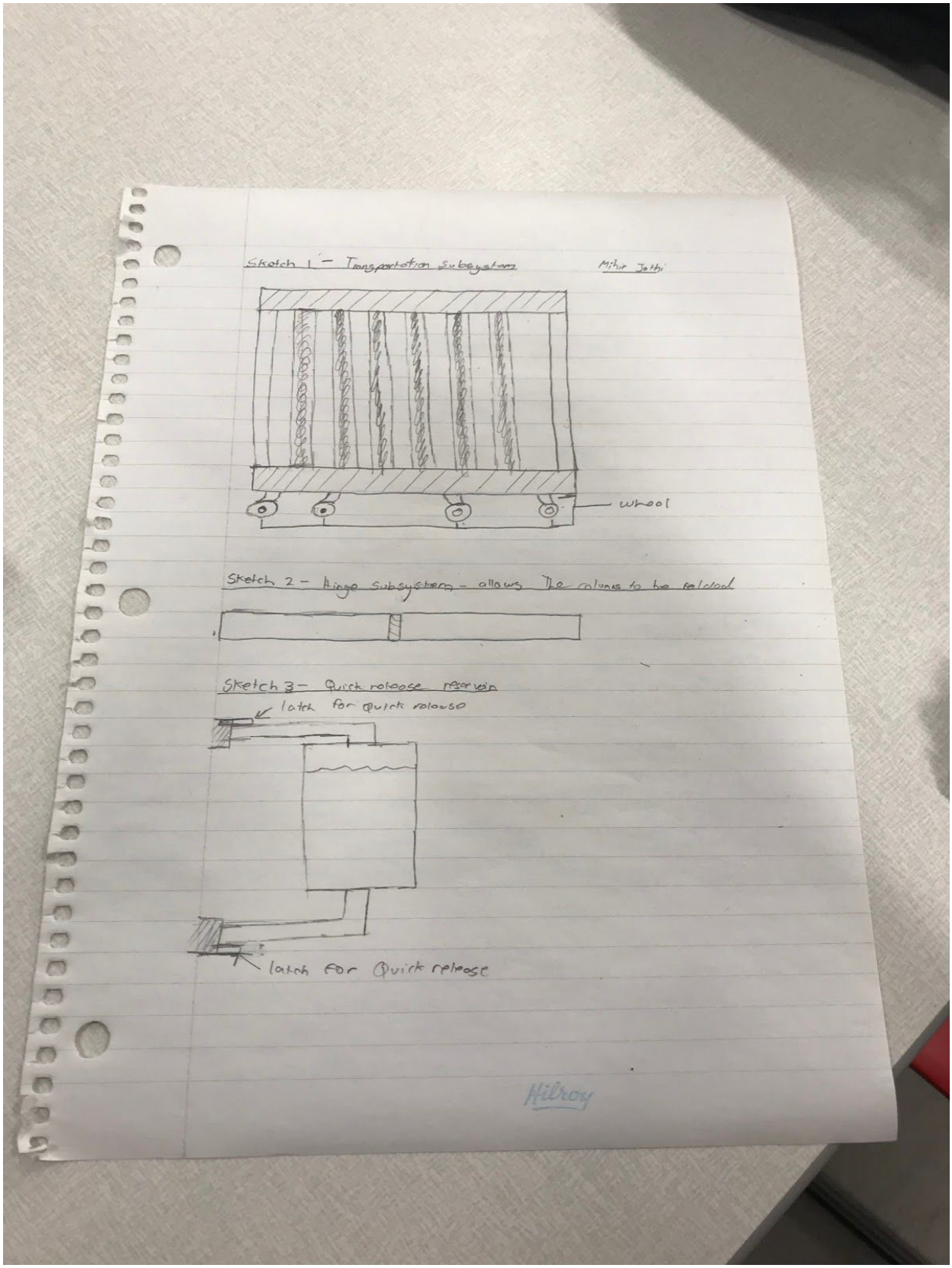
Victoria Ajulo

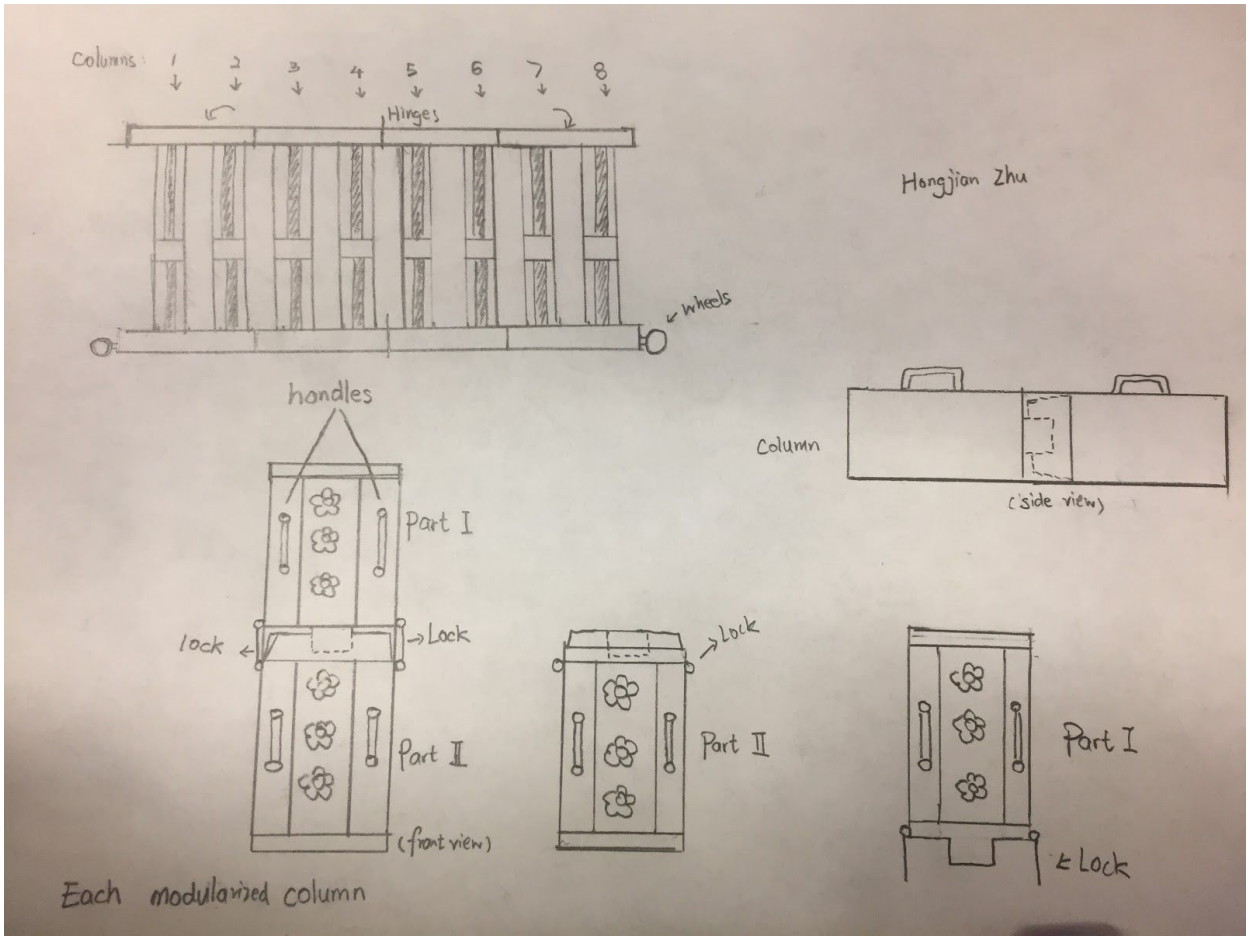
Koghulan Jeyapalasingham


Kaghuban J.
Sketch 1
Sketch 2
Hinges to block water
One-column.
Sketch 3
Hydro system.

Mihir Jakhi



Hongjian Zhu



Benchmarking:

Name	Mihir	Ryan Fabek	Victoria Ajulo	Koghulan	Hongjian Zhu
Wheels	Yes	Yes	Yes	Yes	Yes
Column Size	Medium size	Medium size	Medium size	Medium Size	Small Size
Reservoir Size	Large	Large	Small	Small	Small
Pumping System	Yes	Yes	No	Yes	Yes
Compacted Size	Half of the original size	Half of the original size	Smaller in size	Half of original size	Half of the original size

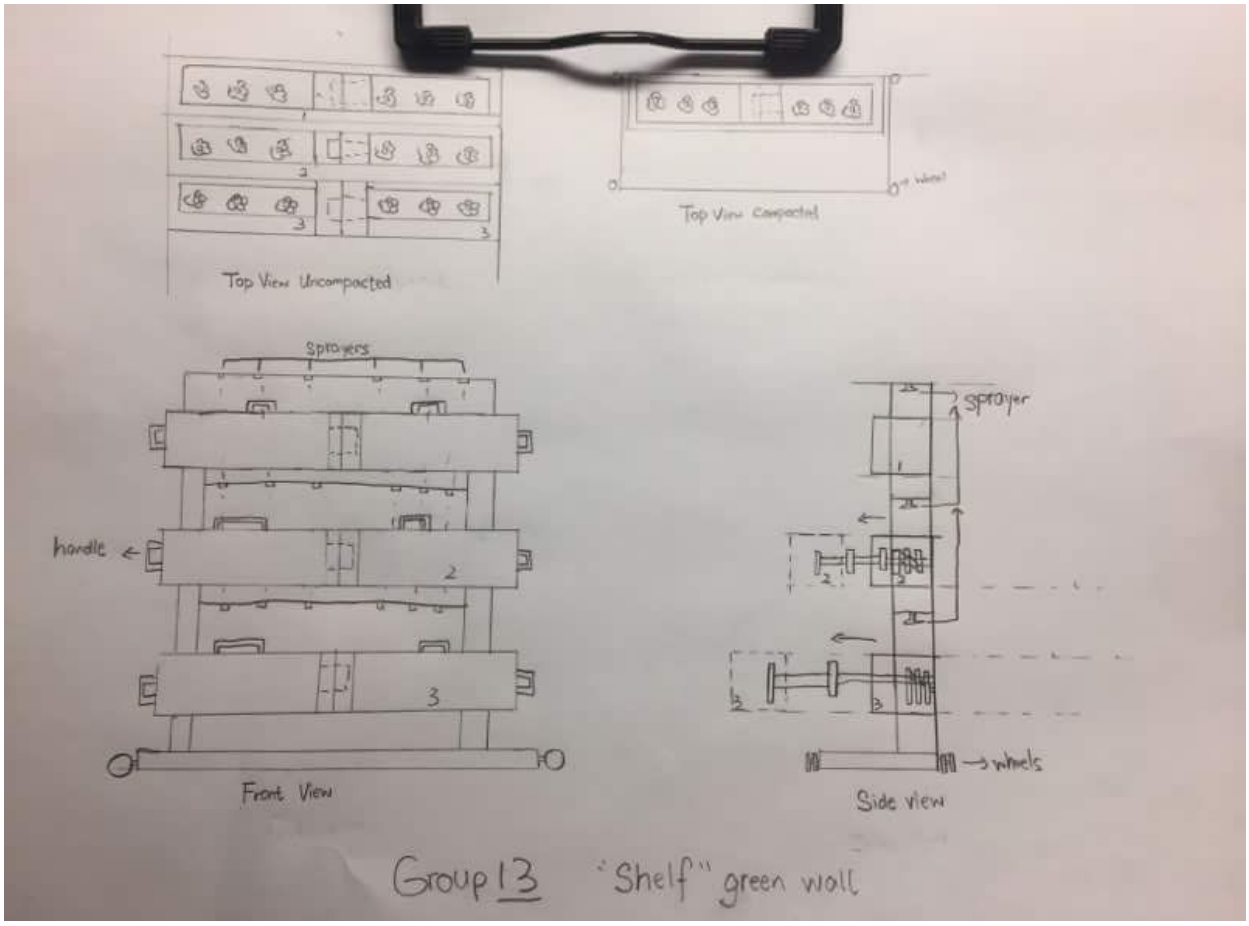
Compact Method	Foldable midsections on each wall component	Foldable wall with hinges	Can be foldable	Foldable wall hinges	Foldable wall with a hinge in the middle
Handles	Yes	Yes	No	Yes	Yes
Number of Columns	8	4	7	8	8

Company	**Zipgrow Farm wall**	**Nutritower**	**Juice Plus**	**Project Sucseed**
Cost (CAN $)	$1199.00	$1225.00	$617.00	$349.99
Weight	230+ lbs (Full unit)	68 lbs (Full unit)	N/A	N/A
Height	103 in	89 in	62 in	20 in
Width	0.47 in	25in	30 in	15 in
Length	80 in	N/A	30 in	29 in
Maximum Reservoir capacity	3.25 Gal	3.5Gal-13.2L (Main bucket)	N/A	102 Ll.

LED System	Yes	Yes	YES (Not include in the fees)	YES
Maximum number of plants	N/A	N/A	20	N/A
Number of net pods	N/A	24	20	12
pH check	Manual	Manual	Manual	Manual
Materials	Plastic	Base (Mild steel construction) Columns (Aluminum Construction)	Plastic	Plastic
Handles	No	No	No	No
Wheels	No	No	Accessible (Not include in the fees)	No

Analysis

Based on the specifications listed above and the analysis of the individual specifications, the needs of the customers were considered to focus on the portability of the system. The individual sketches allowed for certain aspects of the design to be considered and then, added to the group the design; these particular modifications include incorporating wheels to transport the wall, having modularize and lighter column, and making the wall foldable to save space. All of these specifications match with clients' expectations of wanting an apparatus that be taken down easily, moved from one residing location to another, and be transportable from classroom to classroom. Compared to specifications from other companies, the designs created today demonstrate to be a better fit since the competing designs lack what the customers are actually looking for; customers want the wall to be portable, be able to fit into the elevator, and to have a lighter weight.

Group Design: The modifications made to the farm wall were made with portability in mind. Alterations such as adding wheels to the wall are made to purely make the wall more maneuverable and easier to relocate. Other changes, such as adding hinges and carrying handles to the excessively long portions of the wall, are made to make it easier for the clients to carry the individual pieces of the farm wall.

Conclusion