

## Project Deliverable C

### **Introduction**

In this section we are attempting to interpret needs, benchmark products, and define our target specifications. For interpreting needs, we are looking at the needs found in Deliverable B and separating them into categories. We are also only including those that we decided are most important. There are not currently products that accomplish this task, therefore we decided to look at products that accomplish similar task. While this is the best option available, it is limited in the sense that we could not use these specific products for the task, and therefore the data they give are not as accurate. For our target specifications we will use both our benchmarks, as well as our client statements to decide on quantities we deem reasonable. In summation, the purpose of this deliverable is to dig deeper into what we need and how other products compare to what we would like our end product to be.

### **Interpreted Needs**

1. Prioritized Needs
  - Cleanliness
  - Reduced labour
  - Safe
  - Easy to use
  - Doesn't damage boards
  - Reliable
  - Cheap
2. Functional Requirements
  - Clean the boards
  - Reduce labour
3. Non-Functional Requirements
  - Safe
  - Easy to use
  - Cheap
  - Reliable
  - Compact
4. Constraints
  - Want to reduce time (time constraint)
  - Limited space
  - Limited water
  - Small budget
  - Limited power
  - Limited complexity
  - Only food safe chemicals, (Currently Sanitol)
  - Boards cannot be damaged

## **Benchmarking**

Criteria	Unit	Way of finding Unit	Block Washing System (Tree Nursey)	Industrial Dishwasher	Pressure Washer
Water Pressure	PSI	Looking at documentation	Waiting for data	20 PSI	1300-1700 PSI
			Ideally $\leq 30$		
Power Usage	Watts	Look at the manual	Not Available	11.5 kW	~1.5 kW
			Required $\leq 1.8\text{kW}$		
Time	Seconds/ Board	Seconds taken to clean equivalent surface area	5 seconds/ Board	1 minute	41 seconds (5.33 square ft / 0.13square ft/s)
			Ideally $\leq 3\text{-}4$ Hours (half of current time / 20 boards)		
Price	Cost	Price in Canadian Dollars	Waiting for data	\$9,407.00	\$90.00 - \$180.00 <sup>[1]</sup>
			Required $< \$100.00$		
Level of cleanliness	Yes or no	Is it visually dirty	no	no	no
			Required to be no		

## **Target Specifications**

Counter space available	24 Square ft
Table space available	20 Square ft
Water Pressure	30 PSI
Power Available	1.8 kW

## **Reflection**

In deliverable B, we chose to look at a conveyor belt and a dishwasher as potential benchmarks for the Growcer cleaning system; however, we have decided that a conveyor belt does not really fit into our benchmarking criteria, and so it'd therefore be useless to look further into it. We have also decided to not use a car wash a benchmark anymore for similar reasons as well as the fact that it is too much like an industrial dishwasher, which is being used as a benchmark.

Please note that we do not currently have the data for price and pressure used in the system, but we will add it when we receive it.

## References

- Restaurant Supply Inc. , K. A. T. O. M. (2022). *Centerline by Hobart CDH-1 high temp door type dishwasher w/ built-in ...* KATOM Resturaunt Supply INC. High Temp Door Type Dishwasher. Retrieved October 6, 2022, from <https://www.katom.com/617-CDH1.html>
- FIXR. (2022, January 17). *2022 cost to pressure wash house: Pressure washing prices.* Fixr.com. Retrieved October 6, 2022, from <https://www.fixr.com/costs/pressure-wash-house#:~:text=This%20depends%20on%20the%20type,between%20two%20and%20four%20hours.>
- Garden Tool Expert . (2020, February 15). *How much electricity do electric pressure washers use?* Garden Tool Expert. Retrieved October 6, 2022, from <https://www.gardentoolexpert.com/how-much-electricity-do-electric-pressure-washers-use/>
- Consumer Reports. (n.d.). *What to look for in a pressure washer - consumer reports.* What to Look for in a Pressure Washer . Retrieved October 7, 2022, from <https://www.consumerreports.org/cro/news/2015/05/pros-and-cons-of-gas-and-electric-pressure-washers/index.htm>