Deliverable B:
Users/ Customers: Algonquins of Pikwakanagan Nayagada Wabandangaki Guardian Program and their various community members.

Information Gathered From The User: For this building question about the infrastructure needed, the specific design of the building, the uses of the building, the basic requirements needed, the desired final product, any limitations as well as all extra desired features in order to better understand the overall vision for the building and generate the best design.

How Information is Gathered: Information is gathered through to the client meeting.

Ranking is done from 1 - 5, where rank 1 has the highest priority and 5 has the lowest.

Raw Data	Interpreted	Priority	Justification
Sustainable	A building that doesn't deplete the world's natural resources but rather adds to it.	1	Our clients are committed to the long-term well-being of the environment, society, and economy, ensuring that the building becomes a responsible and sustainable asset for future generations.
Building Reflective of Who they are culturally	Culturally their philosophy is to take only what is needed, give in order to receive, recognize that you are an equal part of all that is and be thankful for everything that you get.	1	Their culture shapes the identity and goals of a community, cultivates a sense of belonging and shared values, and endows this structure with true meaning and significance.
4-5 small office spaces	The design can include 4-5 small offices used by monitors.	3	Interior design is only a part of architecture, and there are many alternative solutions available
Computer Lab	The building will include a lab type setup, with computers for employees to log information, and has 5 - 7 monitors.	2	A space open to the community and for research purposes.
Small scale harvesting space	A space to harvest medicine and take samples.	2	Most of the plants they are harvesting would be used as medicine. It is important for there to be a space with the necessary equipment where the harvested plants can be turned to medicine.
Covered outdoor space (enough for two ATVs)	A lean-to that is between 16 to 18 ft high and wide enough for a big truck.Made for cultural and community events.	1	With Canada's winters it is a top priority to have a storage space to keep the equipment safe from the weather.
Small kitchen for staff breaks	The building will include a comfortable common space for breaks which includes a kitchenette and dining set.	4	This is a non functional part of the design. The main function of the building is to conduct research.

Common board meeting room	A place for debriefing	4	A board meeting room is not a complex space we need to prioritize.
Small Freezer Space	A spot to install a freezer	5	There is no need for a designated space for the freezer, as it can be stored in the plant-processing workstation.
Plant processing station.	Space for the mobile plant processing workstation	2	It is crucial that there is a space for the plant processing workstation as it is where the testing of collected samples takes place.
Small Storage Space	Space to store hand held tools.	4	The design of this space does not greatly affect the project.
2 washrooms with 2 stalls each	Accessible washrooms	1	Washrooms are in constant use, and are essential in all buildings for visitors, and employees.
Loading dock with garage door	The building will include space large enough for easy access to harvest products and tools.	3	Convenient logistics can ease movements to and fro plant sites and the infrastructure.
Wheelchair accessibility	Would like the building to have accessibility ramps, doors and methods (including an elevator or other mechanism to go up stairs depending on the height of the building)	2	Ensures equal access for individuals with limited mobility, promotes social equity, meets with legal standards, expands the usability of the building for various users, ultimately benefiting the community and the functionality of the building.

Benchmark User Perception / User Benchmark:
This project will be a personal and custom design to meet the client's needs and expectations. As such, there is no prime example on the market to get a user benchmark. However, after meeting with the client, there are user perceptions to keep in mind throughout the design process, including the sustainability of our design, as it is imperative to the Algonquin people to protect and sustain the world's natural resources. The clients also have expectations for the overall functionality of the space. The center is expected to have 2-5 offices, a conference room for meetings, washrooms, kitchenette, a lab space, storage for tools, and so on. The center is also intended for community activities such as school field trips or volunteer work. Lastly, the Pikwakanagan Nayagada Wabandangaki Guardian Program is constantly expanding its number of members, so the designed space requires enough room for future offices.

Problem Statement: There is a need for a sustainably built all-weather infrastructure for the Pikwakanagan Nayagada Wabandangaki Guardian Program that enables them to serve their community by providing areas for cultural activities and harvesting plants and medicine.

SNAPSHOT:
https://www.wrike.com/frontend/ganttchart/index.html?snapshotId=gDvzPoOgeppser6jIPHcFb9uKxBcBOc7%7CIE2DSNZVHA2DELSTGIYA

Needs for Design Criteria

Number	Needs	Design Criteria
1	The building is sustainable	Sustainability
2	The building has comfortable rooms	Comfortability
3	The building contains equipment storage space	Indoor Storage Space (ft)
4	The building has a technologically advanced computer lab	High tech and user friendly
5	The building has an outside lean-to and parking space	Outdoor parking space (ft)
6	The building has a plant processing and harvesting station	Conducive for Medicine Creation

Design Requirements:

	Design Specification	Relation (=,> or <)	Value	Units	Verification Method
	Functional Requirements				
1	An outdoor lean-to	=	16-18	ft	Testing
2	A harvesting Space	=	1	room	Testing
3	Plant Processing Station	N/A	N/A	N/A	Testing
4	Computer Lab	=	5-7	workstations	Analysis
5	Small Offices	=	3-5	rooms	Analysis
6	Briefing room	=	1	room	Analysis
7	Washroom	>=	2	stalls	Testing
8	Kitchenette	=	1	room	Testing
	Non-functional Requirements				
1	Sustainability	>	50	N/A	A makeshift LEED checklist.

2	Aesthetics	=	yes	N/A	Testing
3	Well spaced layout and navigable	=	yes	N/A	Analysis
4	Accessibility	=	yes	N/A	Analysis
5	Comfortable	=	yes	N/A	Testing
	Constraint				
1	Cost	N/A	N/A	N/A	Benchmarking
2	Size	N/A	N/A	N/A	Analysis
3	Weight	N/A	N/A	N/A	Analysis

Technical Benchmarking:

https://www.canada.ca/en/environment-climate-change/services/science-technology/centres.html

Biosphere

https://www.parcjeandrapeau.com/en/biosphere-environment-museum-montreal/
https://www.thecanadianencyclopedia.ca/en/article/montreal-biosphere

The Biosphere is a museum located in Montreal, Quebec, whose goal is to educate the public about environmental issues. The building includes several factors that are similar to the client's interpreted needs:

- Architecturally interesting, the building has great aesthetics that draws the community in
- The building functions as both, a way to educate, and engage the community
- The museum has an interactive lab to gain interest in environmental research

Prairie and Northern Wildlife Research Centre

https://profils-profiles.science.gc.ca/en/research-centre/prairie-and-northern-wildlife-research-centre

This research centre located in Saskatoon, Saskatchewan, is a greatly expanded facility that focuses on many different environmental fields. This centre satisfies these needs:

- Already expanded facility that includes laboratories and freezer storage space for animal, plant, water, and soil samples processing
- Several offices for a variety of staff, including fellows, students, and visiting scientists
- Space to receive equipment and shipments

Awit Gati Longhouse and Cultural Centre

https://www.awitgati.ca/

The Awit Gati Longhouse and cultural centre is under construction, but has the important message of sustainability and is a building that reflects their communities philosophies.

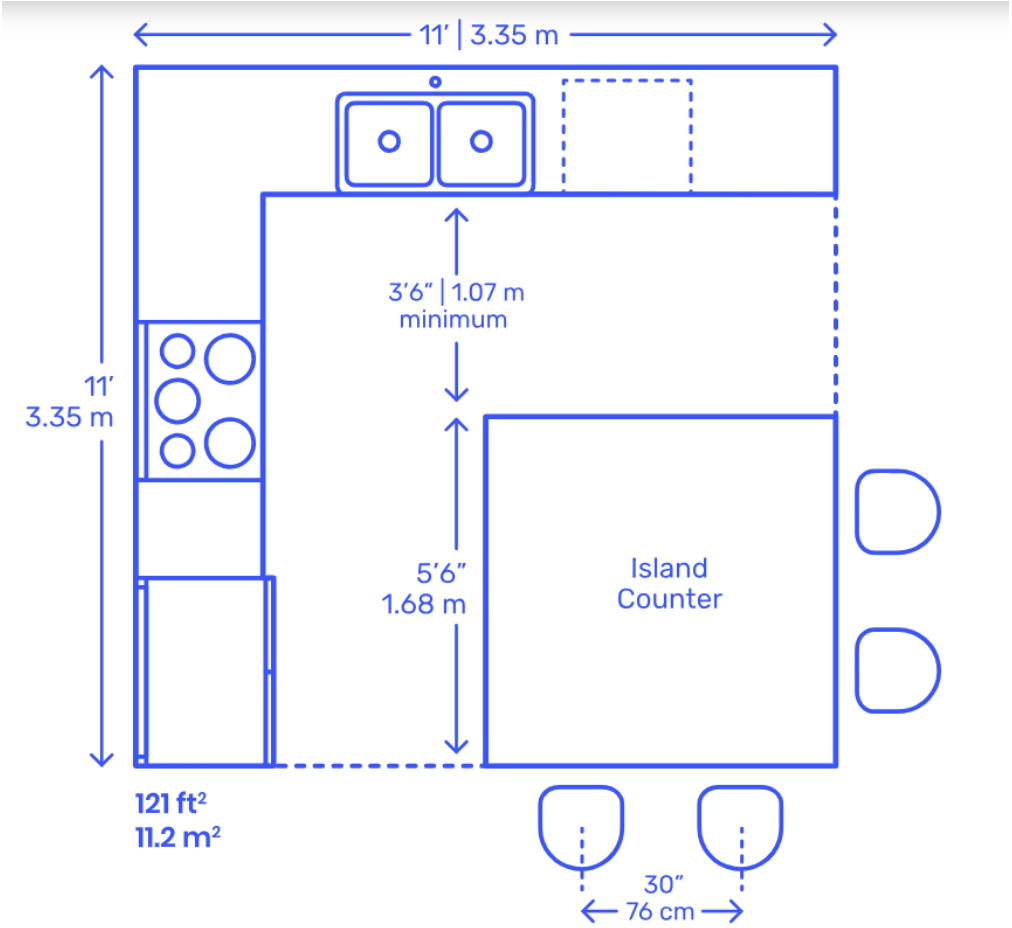
- Is a community centre that celebrates and welcomes all indigenous peoples and cultures
- Reflects their culture in a more modern take, innovating their traditions to another generation
- Plans to be a net-zero-carbon community building with sustainable features such as a geothermal heat exchange system
- Is open to the general public and will be Accessibility Certified Gold
- Architectural designs relate to their culture (ex. Building shape is in form of turtle shell, which represents turtle island)

User Benchmarking:

After researching, there is still no definite structure that reflects the entirety of the clients needs. These three facilities reflect several different interpreted needs the client is seeking, and as a whole, roughly cover the required criteria. We now have a better idea of how to include sustainable tech innovations, and how to incorporate cultural values into architecture. We also have a benchmark for how large a research facility is needed for future expansions, and how a successful building operates.

Target Specifications

- **Standard private offices:**
- Range from 150 - 350 square feet
- Alternatives:
    - Cubicles are around 80 to 100 square feet per person
    - Open-plan workstations approximately 60 square feet.
        - https://www.yarooms.com/blog/average-office-size-how-much-office-space-do-you-need#:~:text=Standard%20private%20offices%20range%20from,type%20of%20work%20being%20done.
- **Accessibility dimensions:**
- A slope for ramps of 8.3% or less
- A clearance of 900mm - 950mm for crutches clearance
- 1500mm radius minimum for turn radius of wheelchairs (i.e on the ramps or room to turn into rooms)
- Door handles or accessibility buttons at 400mm minimum or 1200mm maximum
    - https://novascotia.ca/accessibility/interim-accessibility-guidelines-for-indoor-and-outdoor-spaces/documents/interim-accessibility-guidelines-for-indoor-and-outdoor-spaces-full-document.pdf
- **Kitchen specifications:**
- Diagram:



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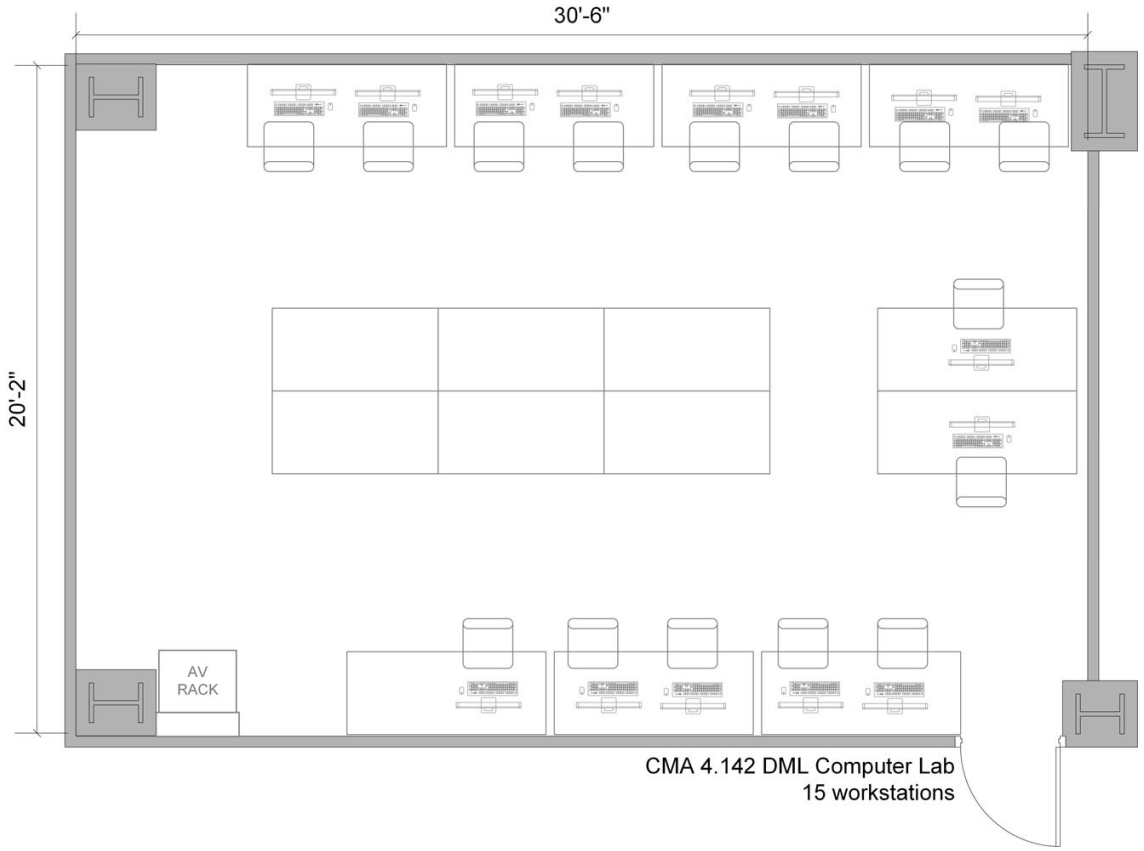
- 11 x 11 inches or 3.35 x 3.35 m
- The L shape provides for additional space for a table setting to be used.
- Also features standard appliances such as a sink, fridge and stove top
    - https://www.dimensions.com/collection/kitchen-layouts
- **Washroom Specifications:**
- Standard cubicle washroom with a 800mm width and 1500mm depth
- Accessibility cubicle 900mm clearance on door and at least 2200mm depth
- Featuring at least one standard and one accessible cubicle in each washroom, one female, one male, and one additional individual accessibility washroom that is gender neutral per floor.
    - https://www.excelsior-cubicles.co.uk/toilet-cubicle-standard-sizing/#:~:text=The%20go%2Dto%20toilet%20cubicle,width%20of%20roughly%20665mm.
- **Meeting Room Specification:**
    - The room allows for 10 - 12 people
    - The room size 21′ L x 12′ W allows for a conference table of size 150″ W x 48″ D
        - https://clearchoiceos.com/conference-tables-size-seating/

- **Computer Lab:**
    - Allows for 15 people to work in the lab at a time



    -
    - 20’ 2” W 30’ 6” L
    - Unconstrained wheelchair seating
        - https://moody.utexas.edu/about/facilities/room/cma-4142-digital-media-lab-dml-computer-lab
    - **Small Storage room:**
    - Room size 8’ X 10’ X 7’ 9”, similar to a small shed to store small hand held tools
        - https://buildblueprint.com/8-x-10-garden-shed-plans/
    - **The Building:**
    - 12 000 - 19 000 square feet
    - A wide floor space to allow for just on floor and for essay accessibility.
        - https://www.millenniumomaha.com/the-average-united-states-office-building-size/
    - **Sustainability:**
    - According to the Toronto sustainability guide ensuring the use of:
        - Wood products
        - Recycled materials
        - And locally sourced materials (within 800 km of project site)

        - https://www.toronto.ca/city-government/planning-development/official-plan-guidelines/toronto-green-standard/toronto-green-standard-version-4/city-agency-corporation-division-owned-facilities-version-4/waste-and-the-circular-economy/
    - Net Zero according to the canadian home builders association:
        - “CHBA Qualified Net Zero Homes are defined as homes that produce as much clean energy as they consume annually, using on-site renewable energy systems… Net Zero Homes are extremely well built with extra insulation, high-performance windows, and excellent airtightness to minimize heating and cooling needs. Appliances, lighting, and mechanical systems are all as energy efficient as possible.” https://www.chba.ca/CHBA/HousingCanada/Net_Zero_Energy_Program/CHBA/Housing_in_Canada/Net_Zero_Energy_Program/NZE_Program_Landing_Page.aspx?hkey=4af3da17-b4da-42ef-bf20-261a9cfbe39f
        - Therefore generating on site as much energy (renewably) as would be consumed allows for the building to be considered net zero.
            - Proposed methods include; geothermal and solar.
    - **Outdoor Space:**
    - Larger parking space of approximately 10 x 20 ft
    - Including at least two parking spaces
        - https://www.preciseparklink.com/parking-industry-insights/the-average-size-of-parking-spaces-in-canada#:~:text=While%20the%20standard%20size%20of,wide%20and%2020%20feet%20long.

1. Reflect on how the client meeting impacted the development of your design criteria and specifications, when deciding on the relative importance of your criteria and explicitly state any updated needs that have changed from deliverable B.

Although the second client meeting has yet to occur, the first client meeting has allowed us to revisit our needs from criteria B and form design criteria and specifications. Firstly, the most important change from deliverable B was the shift in focus. We were designing this project as a whole with both the plant and the building in mind instead of focusing on the chosen design, the building. So this shift in focus has allowed us to reevaluate the needs to only the relevant information and requirements, thus aspects like the freezer, which are to be found in the plant processing are not necessary to be considered and thus the group was able to generate more precise requirements. Initially, we have set needs for the building however we had yet to truly indicate the necessary design criteria, where we set the requirements that are functional, non-functional and the constraints that impact the design and generate the metrics that will be used to evaluate the design. Whilst generating the design criteria the constraints and functional requirements became clear and were thus able to be more so prioritized in the research benchmarking and

the target specifications, such as (example). Once we are actually able to have the client meeting then our design can be criticized where certain needs will be emphasized and certain specifications are not fit. This will allow us to re-evaluate the design criteria to better fit the client's vision thus updating the target specifications in order to fit these requirements. Needs that may change include: dimensions of the desired rooms such as the kitchen, choices of sustainable energy methods and any additional requirements not previously identified by the client.

5. Make sketch of building (Note this is for client meet not deliverable)

Task Plan Update: (Wrike)

1. Update your Wrike task boards to include any changes in estimated task duration, missing tasks, task responsibilities, milestones, or dependencies, based on your better understanding of the project or based on feedback that you have received from your PM/TA.
2. Include more detailed sub-tasks for the tasks that will need to be completed over the next few weeks.
    - *Important note*: It should be possible for ONE person to complete each identified task or sub-task in the allotted time. The allotted time should also be *reasonable*, based on the task owner's availability. Everyone should be doing their fair share of the work.
3. Verify and update the task start dates and end dates for each task, based on your project progress.
4. Ensure that you have taken into account each team member's *actual* availability over the next two weeks, as well as significant events, such as particularly high course loads, exams or travel, which might be going to limit actual project work progress.
5. For *each* person in your group, it should be possible to determine:
    - What was completed last week (i.e. "**Completed**" tasks),
    - What will be done next (i.e. "**In Progress**" tasks)
    - If tasks are going to be put "**On Hold**" or "**Cancelled**" altogether
6. Any and all group "Issues" should be discussed and dealt with, ideally with the assistance of your Project Manager (PM). This should happen during **each** of your lab sessions or can happen earlier, using your defined communication methods. As already explained, it is essential to keep your PM/TA "*in the loop*" throughout the term. It is usually *not* a good idea to ignore conflicts between team members. Instead, you should deal with them in a constructive way.

Gant chart snap shot:

https://www.wrike.com/frontend/ganttchart/index.html?snapshotId=NfEcQkF3ExWjzm4qhNj49pyFnrSmU0CG%7CIE2DSNZVHA2DELSTGIYA