uOttawa

University of Ottawa

GNG 1103

Deliverable D

Conceptual Design

Participants:

Assyl Irgebay

Aya Ali

Yvonne Polinski

Mish Bogomolov

Liam Hunt

Professor:

Muslim Majeed

Oct 20,2023

1) Subsystems

Subsystem	Boundaries
Office space	Area for at least one person to work with enough space to place a computer table, small cabinet for documents
Board Room	Meeting room for at least 15-20 people, plus enough space to fit more visitors
Common area	Should include extra
Lab	Computer lab with enough space for 5-7 people to work simultaneously. There should be a table and mobile workstation to prepare samples.
Storage	Small area enough for one person to unload and store material
Freezer	Space to keep samples at a temperature of at least -4C
Dryer area	Space to dry out materials
Unloading area / Leon-on	Covered by a shed from the wall. Enough space to fit the half-ton truck and some other equipment
Kitchenette	Small kitchenette
Toilet	For every 15 workers at least one toilet space (https://iatse411.ca/workplace-washroom-facility-requirements/)
Outside Activity area	An area that can be used for external activities when necessary.
Parking Lot	According to Ontario parking requirements Light Industrial buildings with Research & Development Services/Laboratories use require 1 space per 500 SF (Square Feet) of GFA (Gross Floor Area) (https://www.ontarioca.gov/sites/default/files/Ontario-Files/Planning/current-planning/parking_standards.pdf)
Building shape/form	Need to reflect indigenous ways through shapes, forms and etc.

2) Individual Concepts

(separate document)

3) Concepts vs. Design Criteria

All of the team members have participated in the evaluation process. At the end, there will be a total of five evaluative perspectives for each subsystem relating to various concepts that each individual member has generated. Moving on to the next step, which is judging how reliable each evaluation is in order to promote openness and honesty in all designs, and finally choosing the best option based on which team members gave it the highest rating. This method will sufficiently address all the concepts presented. In the event that two designs or concepts exhibit a near-equivalent score, it may be possible to consider combining them as a means of resolution.

Specification	**Scale Rating**	**Concept #1**	**Concept #2**	**Concept #3**	**Concept #4**	**Concept #5**
Indigenous reflection	5	2-3-2-2-3 **(2)**	2-2-2-2-2 **(2)**	3-3-2-3-3 **(3)**	3-3-3-2-3 **(3)**	1-1-1-2-1 **(1)**
Material used	3	2-2-3-2-2 **(2)**	2-3-2-2-2 **(2)**	2-3-3-3-2 **(3)**	2-2-2-2-2 **(2)**	2-2-2-2-2 **(2)**
Meeting and office spaces	3	3-3-2-3-3 **(3)**	2-2-2-2-3 **(2)**	1-1-1-1-1 **(1)**	3-3-2-3-3 **(3)**	2-2-3-3-3 **(3)**
Common areas	4	3-1-2-2-2 **(2)**	3-3-3-3-3 **(3)**	2-2-2-1-1 **(2)**	3-2-2-3-3 **(3)**	3-3-3-3-3 **(3)**
Lab space/use	5	3-2-2-1-2 **(2)**	3-3-2-3-3 **(3)**	3-2-1-1-2 **(2)**	3-3-2-3-3 **(3)**	2-3-2-2-2 **(2)**
Outdoor space	4	1-2-1-1-2 **(1)**	3-1-1-3-2 **(2)**	3-2-2-1-3 **(2)**	2-1-1-1-2 **(1)**	2-2-3-2-2 **(2)**

Sustainability	3	2-3-3-3-3 **(3)**	1-3-2-2-2 **(2)**	1-2-2-1-2 **(2)**	2-2-1-3-3 **(2)**	1-2-1-1-2 **(1)**
Harvesting space	3	2-3-3-3-3 **(3)**	3-3-3-3-3 **(3)**	3-3-2-3-2 **(3)**	3-3-2-1-2 **(2)**	2-2-2-2-2 **(2)**
Cost	1	2	1	1	2	2
Total scoring:		**(67)**	**(73)**	**(69)**	**(75)**	**(61)**

4) Best global concept

Concept:

Based on our evaluation of every concept, the best concept chosen by collecting the data is Concept #4. However, the concept can be improved and developed in the direction of providing outdoor areas for guests and employees and maintaining the sustainability of the actual building.

	Concept#1	Concept#2	Concept#3	Concept#5
Benefits	Circular shape for lab bench Good organization and space provided for meeting and offices. Provides accessible and comfortable harvesting space	Enough and perfect space for lab and working area Storage perfectly spotted between lab and lean on Circular shape for lab and ellipse building shape Provide accessible and comfortable harvesting space	Using sustainable materials Design that strongly reflects the indigenous culture Provides a more accessible and comfortable harvesting space.	Lots of offices Large storage room Easy to get from room to room Wheelchair accessible Good break room or kitchenette for workers
Drawbacks	There is no specific spot or location for outside activity area The lab is not connected to freezer, dryer or storage space directly	Lack in reflection to indigenous culture Large occupied area	There is not enough space for lab area, which may make it harder to work easily in Offices are so close to each other and also not have enough space	Not very sustainable Lacks reflection of indigenous culture

Justification:

Due to Concept #4 and its sketch meeting the design criterion with the highest value (75), the team has approved it. Concept #4, in particular, excelled in providing indigenous culture reflection, spacious common areas, and functional lab spaces in a relatively small area. Concept #1, despite its strong sides, was declined due to an undeveloped outside area, a non-ideal lab, and a common area configuration. Concept #2, despite its strong sides, was declined due to the inadequate provision of indigenous culture and office spaces on its large footprint. Concept #3, despite its strong sides, was declined due to a lack of office and meeting spaces, non-deal common, and lab area configuration. Concept #5, despite its strong sides, was declined due to the insufficiency of representation of indigenous ways and the idea of sustainability, a non-ideal lab, and harvesting space configuration.

Wrike Snapshot Link:

https://www.wrike.com/frontend/ganttchart/index.html?snapshotId=vl91M1zsBWGCc3y13B4ItbhIIjKuLQsy%7CIE2DSNZVHA2DELSTGIYA