Group 10
Deliverable C
GNG1103 Engineering Design
Due Sunday, October 8th, 2023

Project Deliverable C: **Design Criteria and Target Specifications**

Design Criteria

#	Need	Design Criteria
1	The building preserves culture and reflects the Guardian program's values	● Elements of first nations culture in the interior design ● Conveys pride in their Indigenous culture
2	The building is inspired by environment/sustainability	● Elements of environment in the interior design ● Nature inspired art and architecture ● Construction does not harm the environment around
3	The building and its facilities are accessible	Features that are: ● Wheelchair accessible ● Accessible to other disabilities ● Kid friendly, potentially stroller friendly ● Senior friendly
4	The building has a multi-functional workspace for cultural activities	● Converted indoor/outdoor space ● Space for harvest ● Used by many groups of people at a time
5	The building uses natural resources that strengthen the connection to identity and land	● Use of real natural resources (wood/rocks) ● Aesthetic adds to the nature around, does not take away/look out of place

Functional requirements

- Building entrance is accessible for people who have trouble walking or are in wheelchairs
- Not a lot of stairs (or features to make upper floors easy to access)
- Large, open, outdoor space to accommodate different types of cultural activities
- Elements of nature: exposed wood, stone, green spaces, etc
- Has offices for admin
- Multifunctional lab workspace with mobile tables and computer space for data analysis
- Freezer space for plant/wildlife samples and prevents bacteria growth
- Harvest space capable of containing large wildlife (moose)
- Multifunctional space has room for approximately a dozen people at once

Non-functional requirements

- Aesthetics - no concrete/steel look
- Natural light and air (functional windows)
- Building durability
- Logical building design (location of different rooms, bathrooms, lab, etc)
- Room for program expansion
- Community-friendly indoors (space away from the offices and labs)

Constraints

- Room sizes
- Building square footage
- Building Budget
- Operation condition: high-precipitation and low temperature months (needs to be functional year-round)
- Environment - preserving surrounding land

Technical Benchmarking

Buildings	223 MAIN ST WEST Street	6548 CARP Road	1319 HERON Way	26 KAYMAR Drive	5940 BROPHY Drive
Links	223 MAIN ST WEST Street	6548 CARP Road	1319 HERON Way	26 KAYMAR Drive	5940 BROPHY Drive
Area of building (squared feet)	3758	5378	5500	3106	9198
Area of total property (squared feet)	12,240.36	207,432.72	457,380	22,215.6	4,543,525.8
Symbolizes culture and value	None	None	None	None	None
Recreational outdoor area	No (could be if removed)	Yes	Yes	Yes	Yes
Cost (with tax)	$1399000 + $10,695 / yr	$2,25000 + $5,284 / yr	$2,450,000 + $11,354 / yr	$2,250,000 + $10,174 / yr	$3,890,000 + $10,161 / yr
Safety: environmental impacts	None	Beside a creek (flooding?)	None	None	None
Ability to expand	None	Yes	Yes	Yes	Yes

User Benchmarking: There are no reviews and feedbacks from any previous users.

Design Specifications

Design Specifications	**Relations (=, < or >)**	**Value**	**Units**	**Verification method**
Functional Requirements				
Symbolizes culture and value	=	yes	N/A	Test and research
Accessible	=	yes	N/A	Test and research
Recreational outdoor area	=	yes	N/A	Test
Spacious and versatile lab	=	yes	N/A	Research and analysis
Freezer	=	-80℃	degress	Test
office spaces	=	5-6	offices	analyze
Meeting room	≈	dozen	people	Test
Constraints				
Cost	>	1.5 million	Dollars	Estimate
Size of building	=<	12,000	Square feet	Analysis
Size of Lab	>=	30-35	feet	Analysis
Size of offices	=<	300	Square feet	Analysis
Size of recreational center	=<	100	Yards	Analysis
Size of freezer	=	10x8x8	feet	Analysis
Carbon footprint (sustainability)	=	yes	N/A	Test
Non-Functional				
Aesthetic	=	yes	N/A	Test
Building life	>	50	Years	Research
Safety: environmental impacts	=	yes	N/A	Research
safety : Natural disasters	=	yes	N/A	Test
Natural light	=	yes	N/A	Test
Ability to expand	=	yes	N/A	Test

Wrike snapshot:
https://www.wrike.com/frontend/ganttchart/index.html?snapshotId=JB2IFPkRBWaYPfUQgP64USzBA458TySQ%7CIE2DSNZVHA2DELSTGIYA