

Deliverable E - Project Plan and Cost Estimate

Ella Bigney

Yvens Estime

Atique Aqtab

Grace Wan

Jonah Philip

November 3rd, 2023

Table of Contents

Problem Statement.....	4
Final Design.....	4
Hand-drawn Design.....	4
Software Design.....	4
List of Equipment.....	5
Bill of Materials.....	5
Significant Risks.....	6
Risk 1: Going out of budget.....	6
Contingency plans.....	6
Risk 2: Project not being completed by deadline.....	7
Contingency Plans.....	7
Risk 3: Client is not satisfied with final result.....	7
Contingency Plans.....	7
Prototyping Test Plan.....	7

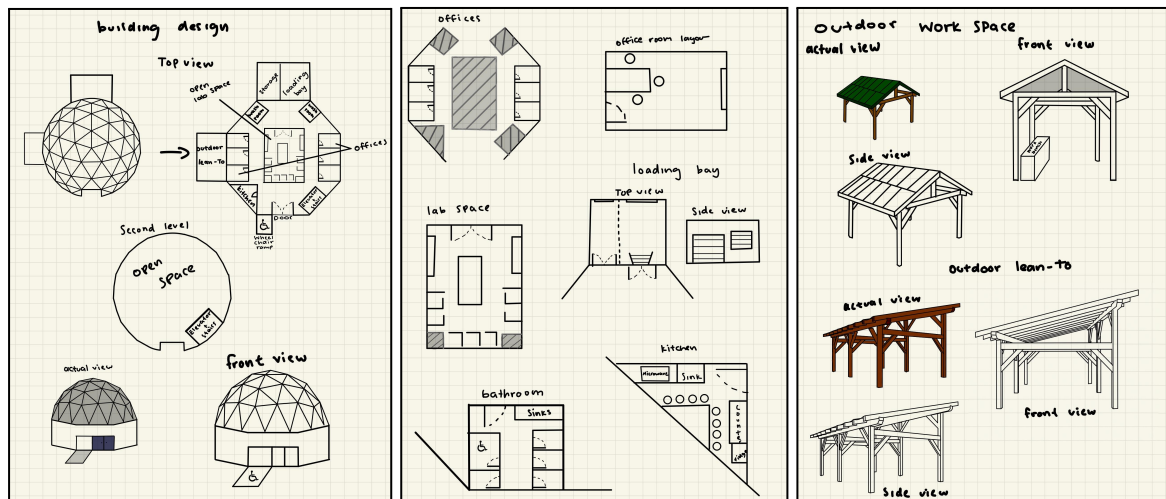
Problem Statement

There exists a need for infrastructure to represent the culture of the Algonquins of Pikwàkanagàn First Nations, and aid the Neya Waban Guardians in their work by giving them an office space, and a place to practice cultural activities and medicine harvesting.

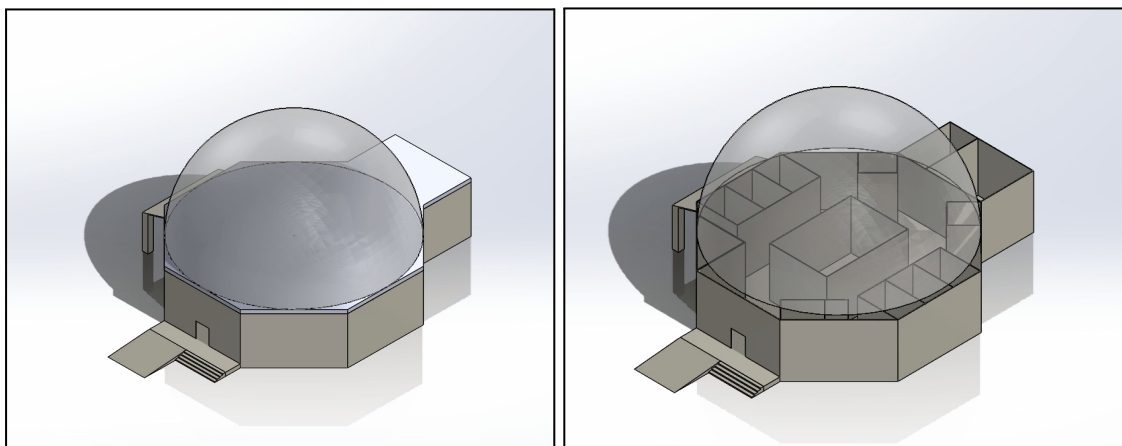
This deliverable is to provide the team and client with an estimated cost for the current design, as well as plans for testing and reducing associated risks.

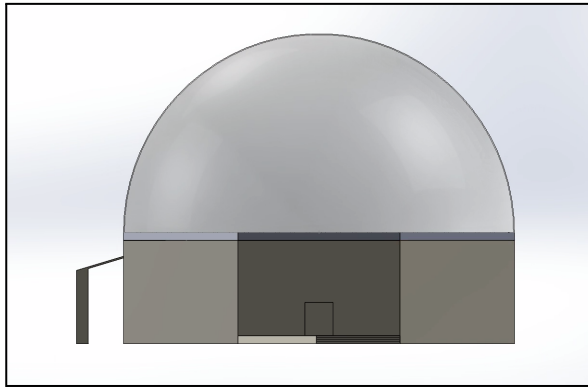
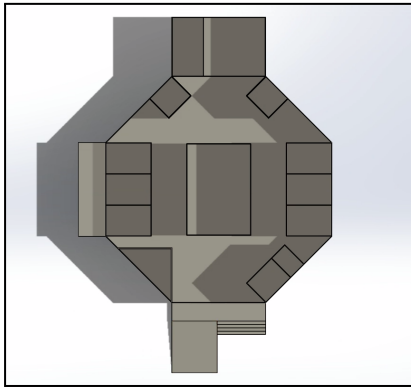
Final Design

Hand-drawn Design



Software Design





List of Equipment

Below is a list of equipment necessary for the construction of our prototypes.

Item	Description	Type	Prototype #	Source
Solidworks	To build design	Software	1,2,3	Solidworks
Tinkercad	To format for 3D printing	Software	3	Tinkercad
Ultimaker 2+	To 3D print the design	Equipment	3	Makerspace

Bill of Materials

Item Name	Description	Unit of measure	Quantity	Unit Cost (\$)	Link
PLA Filament	2.85mm diameter 3D printer filament in colour Tangerine Boost	Unit	1	40.00	<u>Materio3D PLA Filament (Diameter: 2.85mm, Color: Tangerine Boost)</u>

Square Foot Estimator

Calculate Building Cost

Quick View

Save Estimate

Customize/View Report

Clear All

Life Cycle Cost

Model: Office, 2-4 Story (Green) with Face Brick & Concrete Block / Steel Joists

Default Building Image

\$1,924,045.68

Building Cost

OTTAWA, ON

Location

2

Stories (Ea.)

Yes

Basement

\$240.51

Cost per S.F.

8,000

Floor Area

12.00

Story Height

\$201,897.13

Additive Cost

Estimate Header Information

Building Category

Commercial New Construction

Labor Type

Standard Union

Release

Year 2018

Location

OTTAWA (C21)

*Estimate Name

GUARDIAN Program

Client Name

*Folder

Current Estimates

Estimate Address

State/Province

Ontario

City

Ottawa

Zip/Postal Code

Notes

Please contact customer support on 1-800-334-3509 / RSMeanData@gordian.com to get access to Predictive data analysis.

Step 1: Building Type

Building Type

Office, 2-4 Story (Green)

Wall/Framing Type

Face Brick & Concrete Block / Steel Joists

Step 2: Building Parameters

*Area (S.F.)

4250 - 9290

8000

*Perimeter (L.F.)

360

*Stories

2 - 4

2

*Story Height

13 - 18

12.00

*Contractor Fees

0 %

*Architectural Fees

0 %

*User Fees

0 %

Include Basement

☒ Yes
 ☐ No

Note: Modification of building parameter may reset custom assembly changes.

Step 3: Building Additives (optional)

Enter additive name

Search

Show Selected

Clear Additives

Total 4 records found

Description	Cost	Unit	Quantity	Total
Directory boards, building directory, electronic display, aluminum frame, wall mounted	\$5,647.13	S.F.	1.00	\$5,647.13
Moving stairs, escalator type, 10FT ht, 32" width, glass balustrade	\$182,972.00	Ea.	1.00	\$182,972.00
Building commissioning, sustainable/green commercial construction, minimum	\$0.26	S.F.	5000.00	\$1,300.00
Energy modeling, fee, office buildings to 10,000 SF	\$11,968.00	Ea.	1.00	\$11,968.00

Calculate Building Cost

Quick View

Save Estimate

Customize/View Report

Clear All

Life Cycle Cost

Using RSMeans, it was estimated that the cost of the building is estimated to be \$1 924 045.68.

Significant Risks

Below is a list of risks associated with the project as the deadline is approaching.

Risk 1: Going out of budget

Severity of risk: 3/5

Likelihood of risk: 3/5

Contingency plans

- 1) Re-evaluate budget allocation and see if there are places to cut down while still maintaining quality (best contingency plan).

- 2) If there are no places to reduce cost, consider eliminating certain plans related to budget (acceptable contingency plan).
- 3) If there is no way to eliminate any plans or cut down, communicate with the client about expanding the budget (last resort contingency plan).

Risk 2: Project not being completed by deadline

Severity of risk: 3/5

Likelihood of risk 2/5

Contingency Plans

- 1) If the project's time restraint allows some leeway, we will re-plan our project based on the time left. Depending on the amount of time left, some processes may be rushed, but they will be completed by deadline (best contingency plan).
- 2) If there is no leeway, we will look to see which tasks may be omitted to save time without sacrificing important parts of the project (acceptable contingency plan).
- 3) Communicate with the client about extending the timeline (last resort contingency plan).

Risk 3: Client is not satisfied with final result

Severity of risk: 4/5

Likelihood of risk: 1/5

Contingency Plans

- 1) Communicate with the client and come up with possible changes we can make to the building to improve client satisfaction.

Prototyping Test Plan

Test ID	Test Objective	Prototype used and the test method	Results to be recorded and their function	Estimated test duration and start date
Customer Feedback	<ul style="list-style-type: none"> - Gain an understanding of the client's suggestions on the prototype and what we should improve on. - Emphasizing the uses and their opinion on the circular learning centre/glass dome. - The last client meeting indeed with the client needing answers from their boss. Definitive answers will be provided this meeting. 	Prototype 1	<p>The results recorded will be the answer to these questions...</p> <ul style="list-style-type: none"> - What is the capacity of the learning centre? - Is the glass design to their liking? - Would they like to put the space to specific use? Or keep it an open concept? - Any other questions about the rest of the building. 	<p>Start date: Nov 7, 2023</p> <p>Estimated time: 2-5mins</p>