

## **Deliverable H - Prototype 3**

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November 16th, 2023



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# Prototyping Test Plan Results

## Initial plan

Below is the test plan used to test our second prototype.

<b>Test ID</b>	<b>Test Objective</b>	<b>Prototype used and the test method</b>	<b>Results to be recorded and their function</b>	<b>Estimated test duration and start date</b>
Peer & Client Feedback	<ul style="list-style-type: none"><li>- Use people unfamiliar with the problem statement to gain an understanding of the design and functionality of the building from the public's eyes.</li><li>- Use the client feedback from the client meeting to compare our design to what they want changed.</li></ul>	Prototype 2	<ul style="list-style-type: none"><li>- People's opinions on different areas of the building, based on both aesthetic and functionality.</li><li>- The client's feedback and how it compares to our design.</li></ul>	Start date: Nov 12, 2023  Estimated duration: Until Nov 26, 2023

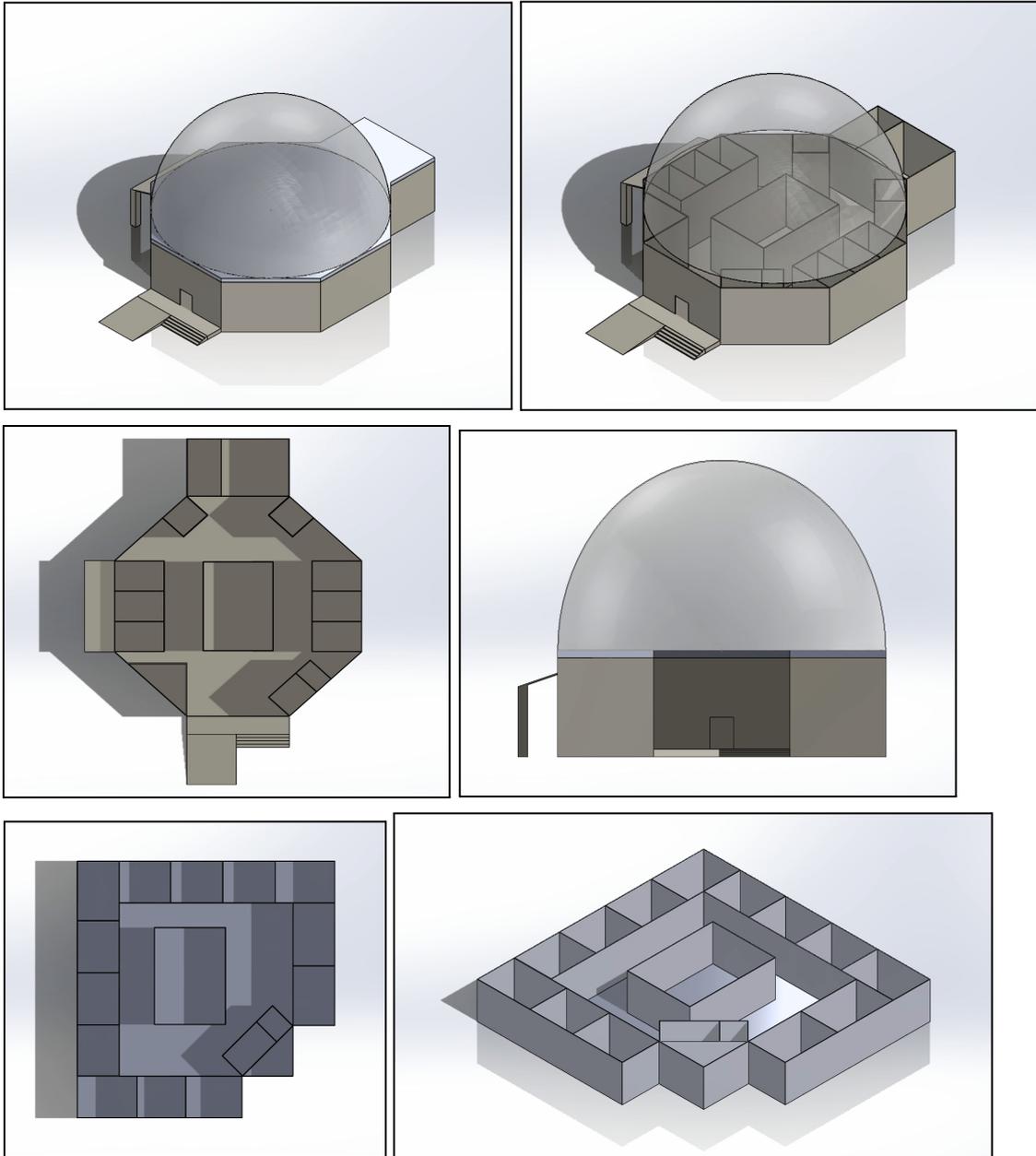
## Feedback given

After talking to our peers in GNG1103, we have received consistent feedback that the building requires a meeting room.

## Changes made to Prototype 2

For the third prototype, we have decided to add a meeting room to the basement. This is for employee use, and will house room for fifteen people to sit around a table, as well as space in the front of the room for any presentations that need to be given. The third prototype has been built off of the first and second, as we have taken functionality and realism into account for each step of the way.

## Prototype 3



Not pictured are windows and doorways. Each room of the first floor will feature a window to the outdoors. The lab will have windows lining its walls.

# 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	<a href="https://makerstore.ca/Materio3D-PLA-Filament-Diameter-2.85mm-Color-Tangerine-Boost">Materio3D PLA Filament (Diameter: 2.85mm, Color: Tangerine Boost) (makerstore.ca)</a>

## 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

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### Estimate Header Information

Building Category: Commercial New Construction

\* Estimate Name: GUARDIAN Program

State/Province: Ontario

Labor Type: Standard Union

Client Name:

City: Ottawa

Release: Year 2018

\* Folder: Current Estimates

Zip/Postal Code:

Location: OTTAWA (C21)

Estimate Address:

Notes:

300 characters max

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

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### Step 1: Building Type

Building Type: Office, 2-4 Story (Green)    Wall/Framing Type: Face Brick & Concrete Block / Steel Joists

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### Step 2: Building Parameters

\* Area (S.F.): **4250-9200**

8000

\* Perimeter (L.F.): 360

\* Stories: **2-4**

2

\* Story Height: **10-18**

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.

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### Step 3: Building Additives (optional)

Enter additive name:     Search     Show Selected   

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 RSMean, it was estimated that the cost of the building is estimated to be \$1 924 045.68. This does not vary from our original BOM, as the cost for a basement was added as a precaution in our original estimate.

# Updated Prototyping Test Plan

<b>Test ID</b>	<b>Test Objective</b>	<b>Prototype used and the test method</b>	<b>Results to be recorded and their function</b>	<b>Estimated test duration and start date</b>
Peer & Client Feedback	<ul style="list-style-type: none"><li>- Use people unfamiliar with the problem statement to gain an understanding of the design and functionality of the building from the public's eyes.</li><li>- Use the client feedback from the client meeting to compare our design to what they want changed.</li></ul>	Prototype 3	<ul style="list-style-type: none"><li>- People's opinions on different areas of the building, based on both aesthetic and functionality.</li><li>- The client's feedback and how it compares to our design.</li></ul>	Start date: November 26th  Estimated duration: November 29th