University of Ottawa

Faculty of Engineering

GNG 1103

Deliverable G

Prototype II and Customer Feedback

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1) Client feedback on the prototype.

Up to this point, no client feedback has been received for this prototype from the in-class client meeting. No feedback can be provided at this point.

Benchmarking:

- Environmental Research Institute Singapore

Category	Benchmarking	Feedback to use
Sustainability	Energy efficient system, green technology and waste reduction initiatives	Incorporation of similar and improved features to the design
Collaborative Spaces	Promotes collaboration in layout with meeting spaces and common areas	Uses a lot of different spaces for team and community building
Technology	Use of data analysis in lab equipment and communication systems	Advanced user-friendly technologies as seen in the ERI
Adaptability	Design flows with adapting to different users need	Different accessibility options in different spaces within the lab
Community	Sharing research findings and promoting the community with the research and hosting events	Having space to continue and involve the community in the research.

2) Prototype II

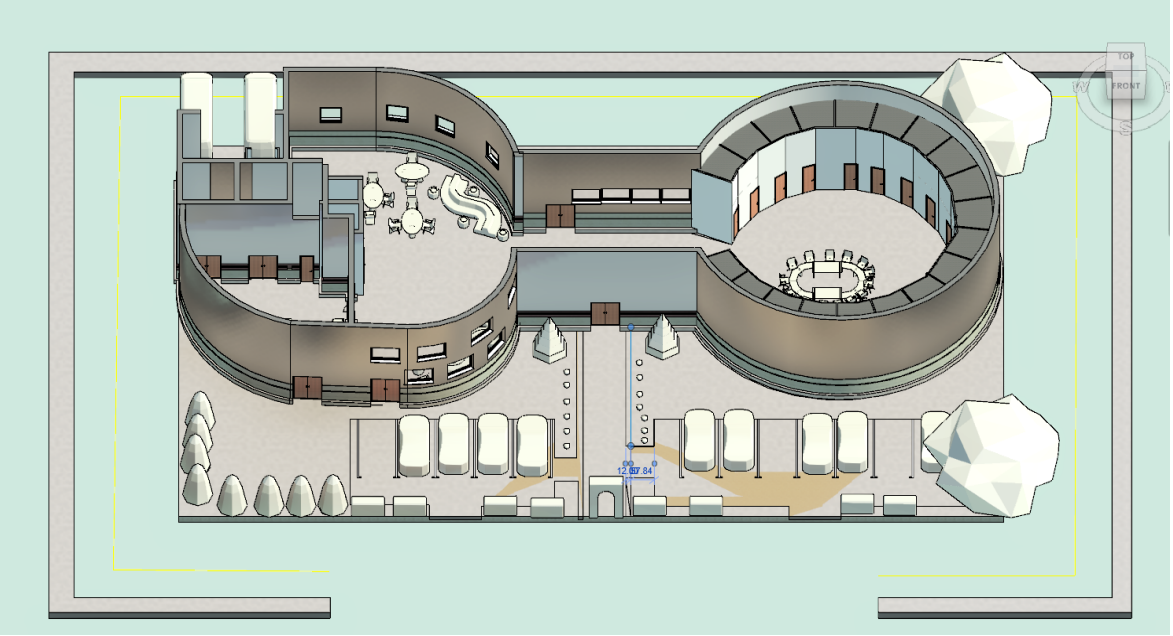
What? - Prototype type	What? - Test details	Why? - Reason for Using this test	Why? - How is the prototype used?	When?

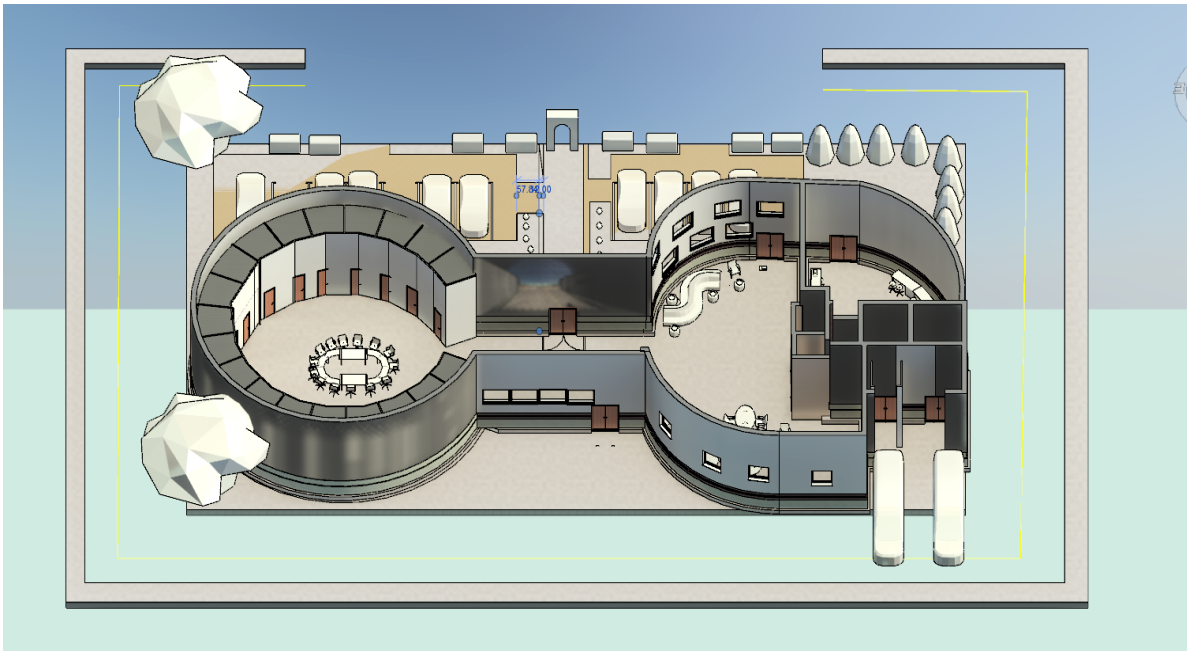
Analytical prototype - Ergonomics of the boardroom	Identification of ergonomically suitable dimensions of the boardroom which would follow the standards of the province of Ontario.	Dimensions of the board room would be identified. To conduct a test of the maximum capacity of people in the boardroom.	All prototypes should be tested for this requirement. An analytical prototype would be used to bring the final product up to scale.	This test is not dependent on any other test. Appr: 2h.
Analytical prototype - Ergonomics of the hallways	To test how many people can freely move in hallways. The width of the hallway would be compared to the average person's shoulder width, the width of a wheelchair and minimum requirements Building code (Corridor & Hallway Layouts; THE ONTARIO BUILDING CODE | CORRIDORS)	The dimensions of the hallways would be identified. To conduct a test of the maximum capacity of people in the hallways.	All prototypes should be tested for this requirement. An analytical prototype would be used to bring the final product up to scale	This test is not dependent on any other test. Appr: 1h.
Analytical prototype - Ergonomics of each office space	To identify the dimensions of offices and how many people can work comfortably in each office. Used standards: Ontario Public Service: Modern Office Space.	Dimensions of the office space would be identified. To conduct a test of the maximum capacity of offices in the building	All prototypes should be tested for this requirement. An analytical prototype would be used to bring the final product up to scale.	This test is dependent on the Ergonomics of the boardroom test. Appr: 2h.

3) Model of the prototype.

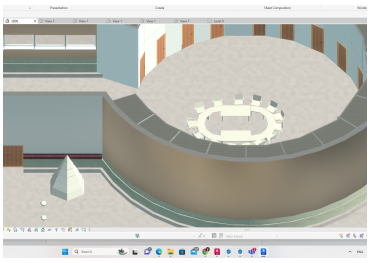
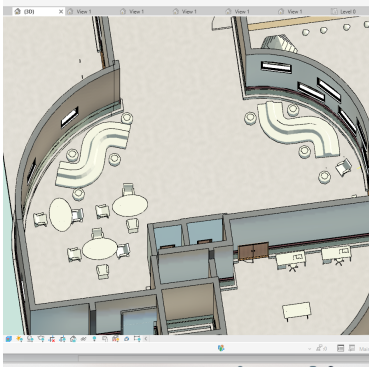
The whole Sketch has been changed from using Autocad into using Revit application (for more realistic 3D view) in addition to enscape(for providing furniture into the whole

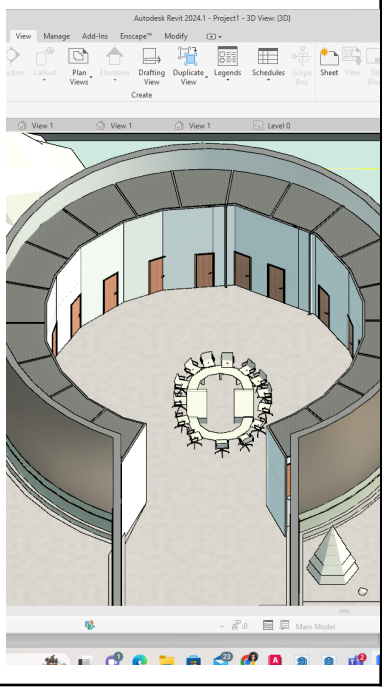
sketch. Door, Windows, Common area furniture, lab equipment, ceiling, vehicles, trucks, and some outdoor decoration specially trees and green space have been provided to the design.





4) Analysis and results of the prototyping test plan.

Test plan/subsystem	Analysis	Result	Detailed image
1 - Boardroom (Ergonomics) (Revit)	The size of the boardroom and the size of the table can comfortably fit 18 people. The radius of the room will be 10 ft	The prototype passed the test. No changes were implemented	
2 - Common area, Hallway (Ergonomics) (Revit + Enscape)	The approximate width of the hallway is 10 ft. So based on the test results, people, including, but not limited to, the elderly and people with accessibility needs can move freely in the hallways in both directions at once.	The prototype passed the test. No changes were implemented Just added some furnitures using Enscape(For more realistic View)	

3 - Office (Ergonomics) (Revit+Enscape)	In the previous prototype, it was established that 19 offices would be placed on the circumference of the ~3500 ft^2 building. However, considering sample designs provided by the Ontario Public Service, the dimensions of the single office room were increased up to L12'0" - W10'0" (120 feet^2)	The test was not passed. Modifications were implemented: The office room area was increased to 120 feet^2. Thus, to keep the same room configuration with a meeting room in the middle and 19 offices. In addition, Wall and door een added to the sketch	

5) Feedback and comments from potential clients/users.

You must gather feedback and comments on your ideas and prototype from potential clients/users that you have sought out and identified on your own.

Design Aesthetic: The circular design with indigenous reflection murals and wood design is accurate to that of the expectations. Concern may occur that it affects the functionality and the accessibility of the building

Functionality: The circular layout of the office enhances the communication and collaboration amongst teams and researchers. Concern may occur when there is movement of equipment and other logistical challenges in the workspace

Sustainability: The wood design is highly effective for sustainability. Concern: Potentially implementing things such as solar panels or water conservation methods, using things like windows and light sources as heating.

Natural light and Ventilation: The circular design creates lots of opportunities for natural lighting, which is beneficial for a healthy work environment. Concern: Ensuring all workspaces have proper natural light and ventilation for comfort.

Technology: Cutting-edge technology for data collection, and analysis and lots of space to be able to do this. Concern: User-friendly space and accessibility to all researchers (keeping in mind inclusivity).

Accessibility: Good options for accessibility doors and enough space is provided for elderly people (for example) to move around the facility. Concern for the mobility barrier in the lab space and washrooms.

6) Updated target specifications, detailed design and BOM

The target Specification,and bill of material are still the same. Since both apps are used by student accounts and fees were 0 CAD, However overall sketch and design have been

changed by adding real furniture and equipment as mentioned above in Number 3. However the main subsystems like kitchen, common area, offices and lab space are still the same size and design just upgraded into another app.

7) Prototyping test plan

Test #	Test Objective (Why?)	Description of Prototype used and of Basic Test Method (What?)	Description of Results to be Recorded and how these results will be used (How?)	Estimated Test duration and planned start date (When?)
1	The objective of this test is to analyze and verify the integration of the system into the product.	Analytical model of the board room. Test method:	Get feedback from TA's, PM and other professional on the updated prototype and tested design	During lab hours or class time period which usually will be Tuesday and Friday
2	The objective of this test was to verify feasibility and reduce the risk of not meeting the client criteria	Analytical model of the hallway in the common area. Correspond scaled-up measurements of the hallway with stopping criteria for the hallway: more than 48 inches in width.	Through benchmarking, comparing the size and shape of the main hall with other designs that have been built before, in addition to having the same weather condition and materials. Or can be	During class time or by scheduling a meeting through office hours

			tested by a feedback from professor about the dimensions and materials will be used	
3	The objective of this test was to get measurable feedback on the feasibility of the critical subsystem. Through this, we planned to reduce the uncertainty of the final product.	Analytical model of the office room. Test method: Correspond scaled-up measurements with stopping criteria for office room: equal or more than 120 ft^2.	First with professional peers then by confirming with the client or TA about the dimensions been used	Sending an email or waiting till the next lab meeting which usually occurs on Saturday morning.

8. Updated Wrike Link

https://www.wrike.com/frontend/ganttchart/index.html?snapshotId=jOUAdV0WMbx5MZ70FVL2g0XjOCjC4xzV%7CIE2DSNZVHA2DELSTGIYA