

# **Deliverable G – Prototype II & Client Feedback**

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## **Abstract**

*This deliverable will display our second prototype of our design for Mines Action Canada. The prototype follows the structure outlined in the previous deliverable and builds on our design sketches. Additionally, this prototype includes the feedback we gathered from our last client meeting. Lastly, this document outlines the plan for our third and final prototype as well as an analysis of prototype testing.*



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## Client Feedback, Interpretations, and Implementations

Feedback	Interpretation	Implementation
Ensure all tasks can be completed within the time frame	Focus on completing the main tasks to the best of our ability before moving onto secondary tasks	We will develop a strategic plan that will ensure an acceptable final product even if time runs out (i.e. decide which components will be left out if needed)
Avoid triggering the audience.	Avoid fear or panic inducing content.	We will not show guns, robots, explicit gore etc.
Focus on quality over quantity	Make sure the main scenes are fully complete	We will complete designing the rooms in a specific order to ensure the most important are done well
Do not pull “all-nighters.”	Reduce the amount of content.	We will focus first on the main story and video, and secondly on detailing.

## Prototype II (information)

### Why?

The purpose of this prototype is to create the completed environment and ensure each room within the video is acceptable. We will focus on the settings and developing environments that will imply our narrative to the users. This prototype will be the foundation for our project as the scene must be equipped with different aspects that will convey emotion, portray defense strategies, support our ethical issues, and aesthetically please viewers.

### What?

Prototype 2 is the completed VR environment. All rooms and hallways will be designed and decorated. This prototype will not include any interactive features, as the goal for this prototype is to set up our environment. Non-functional aspects that will be designed in prototype 2 include boarded up windows, crawl spaces, holes in walls, and propaganda materials.

## When?

This prototype is currently being developed and most of the rooms have been completed. By accomplishing a large number of tasks within prototype 2 our team will have the chance to focus the rest of our time on interactive aspects of the environment. With the setting complete we can also begin to work on the audio features of our video.

## Prototype II (results)

To analyze the progress of prototype 2 we need to recall our testing plan from the last deliverable.

Why?	The purpose of this prototype is to test how much progress we can make on one scene in four days. We will also be testing the duration of the scene itself as well as basic and more complicated VR functionality.
What?	We will create our first scene in VR using Unity. We will then playtest it and time how long it takes to get through the main objective (Receiving call, grabbing medication, and leaving.) as well as if we can comfortably move around the room (appropriate movement speed). And if the objectives and scene progress properly.
When?	We hope to have mostly produced this prototype in four days by the time of our first client meeting. With the development of the level happening in the first two days and the testing and playtesting happening in the last two.

Duration of Scene	Time (s)	~ 60
Basic VR Functionality	N/A	Ability to move around the apartment and not clip through walls and furniture.
Complex VR Functionality	N/A	Ability to interact with story objects (answering phone, opening closet).

The test plan above outlines how we developed prototype 2 and ensured it met the design criteria. The main goal for prototype 2 was to get the surroundings of the environment designed and ensure that our plan was reasonable. We definitely accomplished the goals for prototype 2 and this is proven in the pictures below.

After completing tests, we have confirmed that the character in our environment can move around the apartment and not clip through walls and furniture. Moreover, tests confirmed that the progression of the character throughout the environment can be completed within the desired time frame of approximately 1 minute.

The full prototype can be seen below.

### Apartment:



This is the apartment. The windows are boarded to help protect from detection and potential gunfire. The room is dimly lit not only to create a depressing atmosphere but also because the assets are mismatched, and it is harder to tell this way. The TV will be playing video in the next prototype.

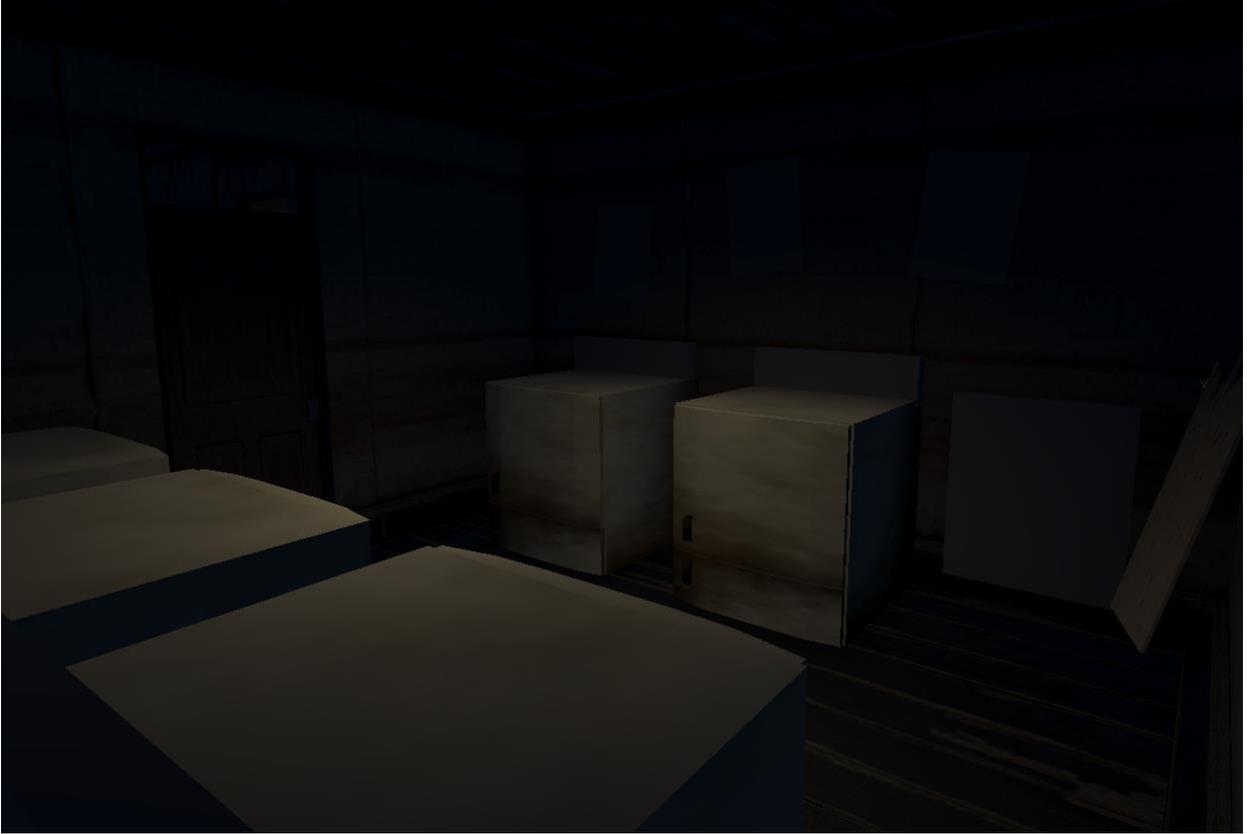


Here is the "phone" (now walkie-talkie) the user will receive a call from. The player will also get a good look at the mayhem outside during this scene.



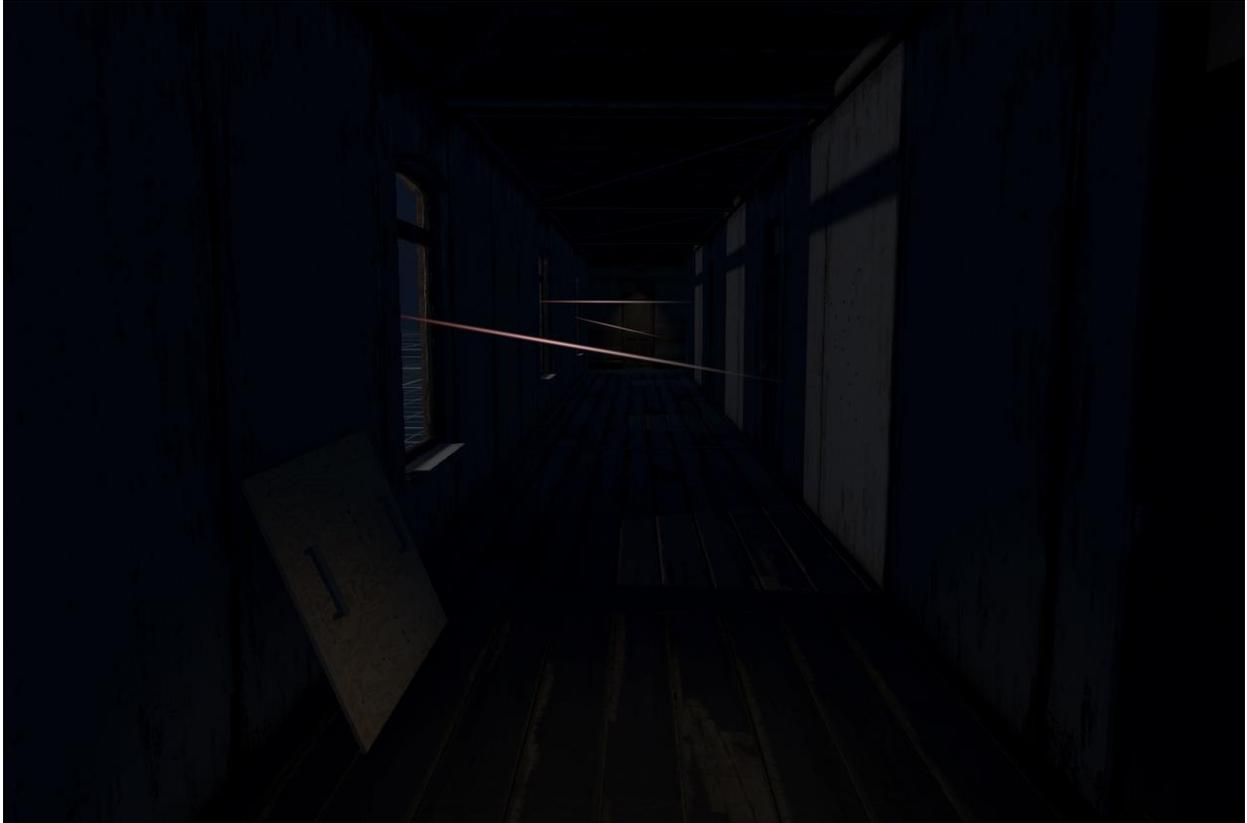
The grey box in the closet is the hole leading to the next room (laundry room). This will be fully detailed in the third prototype.

## Laundry Room:



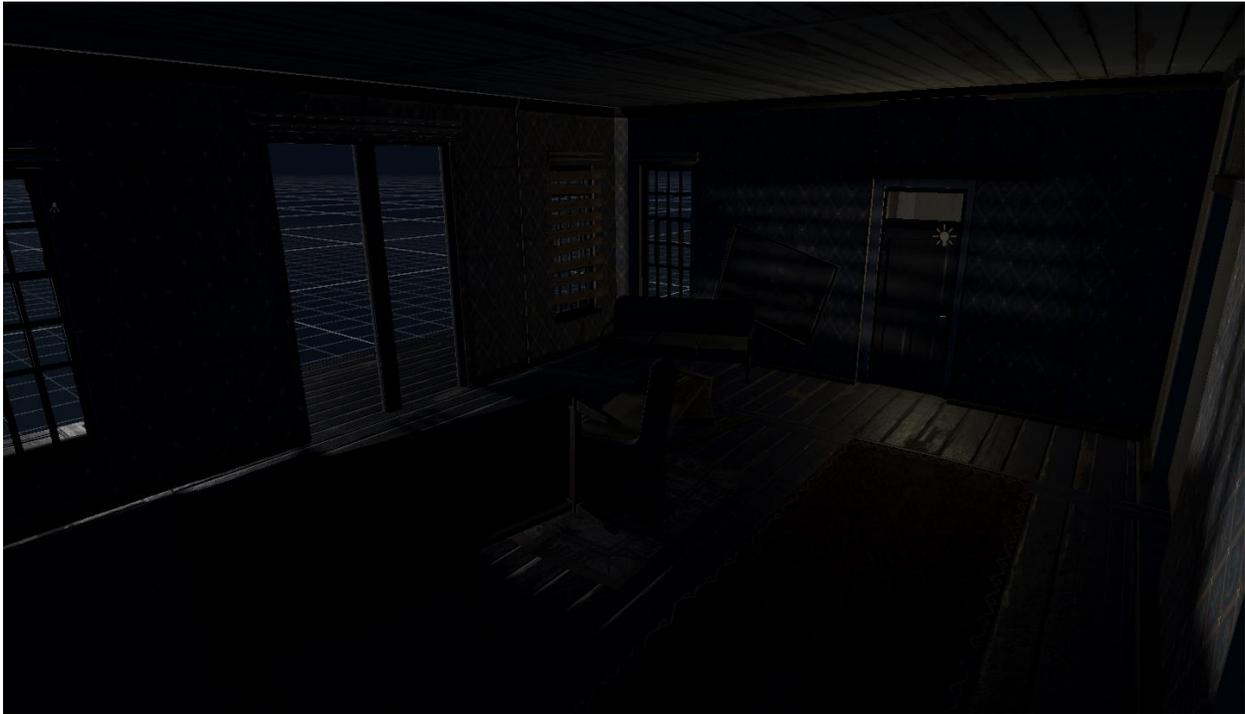
This is the laundry room where the player exists after leaving the apartment. There is not much to do in this room. The grey boxes will be converted to propaganda posters and other graphics providing more information about the world. The gray box beside the plywood will be the hole the player exits from. As of right now, cutting a hole into mesh is not working.

## Hallway:



The user enters the hallway. There are lasers and lights coming through the window, bullet holes can be scene at the ends of the lasers on the walls. At the end of the hallway there is a dimly lit door. To the immediate left of the user there is a plywood board with handles; the user will use it to cover himself and trick the guns into thinking he is a wall.

Foyer:



This is the foyer scene; attempts have been made to barricade it but most failed. There is an intense light shining in and a soft light leading the player to the final hallway.

## Prototype II Analysis & Explanation of Results

Analyzing prototype II involves the evaluation of the design criteria of the project and its relation to prototype II. While some of the specification will not apply given the current stage of the prototype.

	Design Specification	Relation (>, <, =)	Value	Units	Verification
1	Create a real-world environment where lethal autonomous weapons rule.	=	yes	N/A	Testing Final Product

2	Produce a video demonstrating the final product that can be shown to lawmakers	=	yes	N/A	Testing Final Product
3	Emotionally move audience	=	yes	N/A	Testing
4	Demonstrate how civilians would adapt or lives would change under this law.	=	yes	N/A	Testing
5	Tell a story	=	yes	N/A	Testing

Recalling our design criteria, we can now analyze the second prototype and determine whether it is meeting our client’s needs.

1. Create a real-world environment where lethal autonomous weapons rule.
  - We have created a complete environment that portrays civilians stripped of their basic human rights like freedom of movement and completely controlled by autonomous weapons.
  - This is portrayed in the environment by the different tools like boarded up windows, crawl spaces used by our character to conform to the city-wide curfews despite his mother's dire circumstances.
  - This was tested in client meeting number 1 when Mines Action Canada agreed that the storyline illustrated an environment ruled by autonomous weapons
  
2. Produce a video demonstrating the final product that can be shown to lawmakers
  - Not applicable currently.
  
3. Emotionally move audience
  - By providing context about the dire circumstances our character’s mother life is in and the effort and measures that our character must take to get her medication to her, we hope to emotionally move the audience to act.
  - The storyline evoked emotions like unease and empathy
  - This was tested in client meeting number 2 when Mines Action Canada agreed that the storyline evoked emotions from its audience

4. Demonstrate how civilians would adapt or lives would change under this law.
  - We have demonstrated the way civilian would adapt to protect themselves from autonomous weapon through the environment of the VR
  - The crawl holes, protective shield would be used to demonstrate the drastic change in the routines of civilians when moving around their homes to protect themselves from surveillance of autonomous weapons and conforming to the new law
  - These measures have been tested in client meeting number 2 when Mines Action Canada agreed that the measures demonstrate civilian's adaption under this law.
  
5. Tell a story
  - This prototype tells a story through the adaptation in VR environment, and it is different from what a normal apartment building would look like when the city is not under the control of autonomous weapons.
  - It also provides background information for the story through a television news program and a phone call received by our character.
  - These components have been approved in client meeting number 2 when Mines Action Canada

## Measurable Results

- Adherence to client's restraints.
  - We will find out if the content is too graphic, includes content the client does not want.
- Emotional Impact
  - Positive feedback on the emotional aspect of the design.
- The client satisfaction and feedback regarding the project
- Feedback from team members regarding the design
- The cost effectiveness of the prototype
  - This is in terms of the time and money spent on the prototype

# Prototype III Test Plan

The purpose of prototype III will be to make the environment interactive.

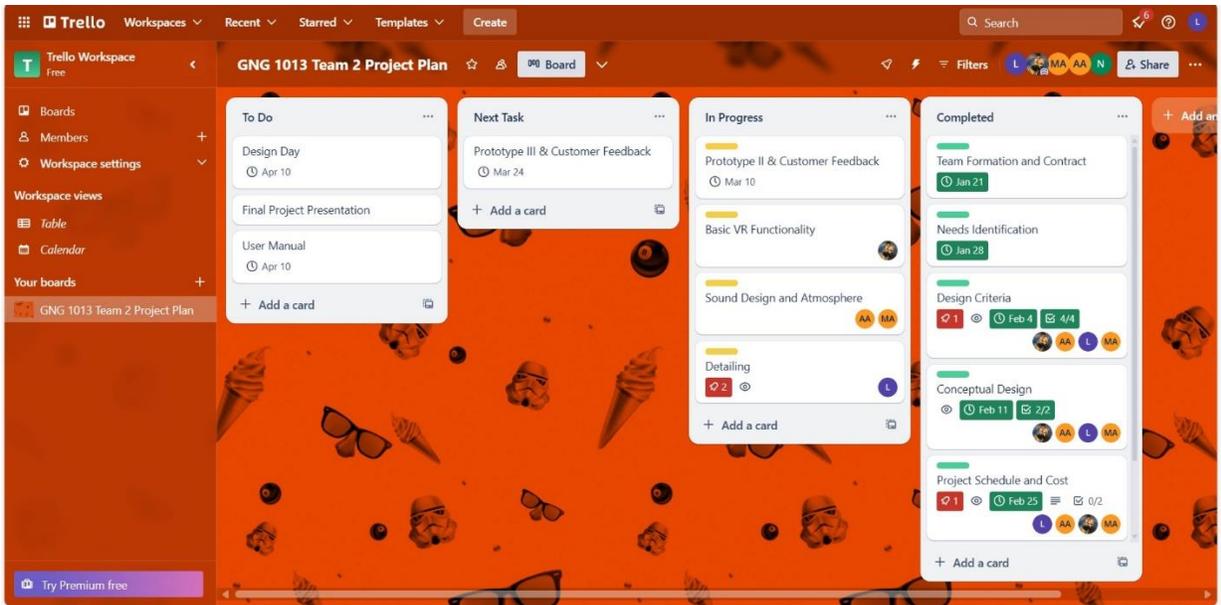
Why?	This prototype's purpose is to test interactive functions and identify potential issues that might occur while interacting with the environment.
What?	We will create object control in response to our character's actions, navigation control and include graphics like news posters, light and audios to immerse our audience.
When?	We hope to have produced this prototype in five days by the time of our next presentation. With the creation of the interaction happening in the first three days and the testing and playtesting happening in the last two.

## Conclusion

With the completion of our second prototype our team is now most definitely on track to accomplish all our goals for the design before design day. The plan we developed originally put us behind schedule but in the end, it has paid off. Our team chose to use the first prototype as an opportunity to really develop a strong storyboard that conveyed our central message of the loss of freedom under autonomous rule (our ethical issue). From there we were faced with a tall task of developing so much in unity over the span of a week for prototype 2, but with a finished storyboard the designing was finished on time for this deliverable. With the setting now designed we can now focus our remaining time on the interactions our character will make within the environment. After having developed 2 effective prototypes our team is now very confident that our design concept is reasonable and will be very pleasing for our client, Mines Action Canada.

**Note: Design specifications and BOM have not been influenced with the development of either prototype.**

## Trello Task Board Update



Link: <https://trello.com/b/A9O6vj6r/gng-1013-team-2-project-plan>