

# **Deliverable D: Conceptual Design**

**University of Ottawa**

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**Group 14**

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## **Abstract**

*The following deliverable outlines the importance of creating a series of conceptual designs targeting design criteria. With a selection of different ideas regarding each design criteria, each team member created their individual concepts for each subsystem where they saw best fit regarding the client's needs. Thereafter, the team created 3 unique global concepts consisting of "Household Paranoia" (David's minimalist story-driven design), "Echoes of Tomorrow + Mayhem" (Marc and Rishabh's interactive and adventurous setting game), and "Technophobia" (Ben's philosophical dilemma on human's contradictory behaviour against robots). In each concept, different aspects of individual concepts were implemented, where they were compared against the interpreted needs and rated based on importance through a vote regarding which criteria are more important, and which design targets it best. According to the consensus of the group, the best global concept, being "Household Paranoia" was chosen to carry out into the next phase of the design process.*

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# 1 Introduction

Deliverable B and C sought out to identify the list of needs identified by our clients during the meeting, and to neatly organize them into specific design criteria categorized into functional requirements, non-functional requirements, and constraints.

With a solid understand of the all the design criteria necessary to fulfill the desires of the client in an appropriate and effective manner, the following deliverable will indulge in the conception of a design in line with the ideate step of the design process. In this document, every member in the group has developed a set of conceptual designs for the problem statement regarding the design criteria in an organized fashion. With a neat list of all functional requirements, non-functional requirements, and constraints, the group then proceeded to combine the subsystems into 3 global concepts based on our client's needs to create the most optimal solution. The conceptual criteria that are based off the design criteria in the following conceptual proposals include:

- A Call to Action of the Danger of Autonomous Weapons (What is the message to get across?)
- Storyline/Conflict
- Communication (Sound design/Narration/User interface/Camera movement)
- Environment & Assets (Quality or Quantity/ Functionality/Interactivity)
- Accessibility

## 1.1 Related Work

Group 14 has already completed the 3 previous deliverables, which is key to understanding before continuing in reading the content of the following deliverable.

In [Deliverable B](#), which can be accessed through the hyperlink, outlined all the needs described by the clients that had to be taken into account when designing a conceptual design, with the needs being neatly organized into categories such as Accessibility, Storytelling, Communication, Logistics.

In [Deliverable C](#), which can be accessed through the hyperlink, all of the identified needs were subsequently divided into a list of functional requirements, non-functional requirements, and constraints. In part A) all needs are listed and organized into a chart that separates all requirements, then in part B), all of the groups findings in regards to these criteria were benchmarked with other groups project's and other public VR simulations. This helped the group to better understand where to focus and how to change our list of criteria, as well as to set target specifications for the optimization of our design.

These deliverables all built on each other, and they built on the various concepts we learned in class about the design process.

## 2 Individual Ideas

### 2.1 Primary Idea: *Household Paranoia* - David Rosocha

The blueprint sketch I've created for a VR environment set in a post-apocalyptic home adopts a simplified and minimalist approach, focusing on delivering the message through an emotional lens through the degraded life of a family living in a household during an era where autonomous AI robots control society. The setting showcases a run-down home where all technology has been destroyed in fear of the autonomous robots, except for the television where the family is fed the news in regard to what other catastrophes are ongoing. The house will provide a setting for the group to deliver how the quotidian life of a family (husband, wife, children) has dramatically affected, and will showcase a dramatic decrease in quality of life. Additionally, the television acts as a gateway through a secondary setting, where the group can move the player to specific animated events as if they're the ones seeing these catastrophes at first hand in VR.

#### 2.1.1.1 *Call to Action of the Danger of Autonomous Weapons*

Autonomous robots will be shown directly and indirectly through this suggestion, through direct violence, murder, terrorism, destruction, and through apocalypse. To elaborate, the dangers of autonomous weapons will be shown through the apocalyptic setting that is the house. The idea tries to stroke an emotional nerve in the audience when seeing your life and family in disarray in an environment like the one shown in [Figure 1 & 2]. Furthermore, the violence that autonomous weapons brings to a society will be showcased, specifically, through the TV the user will see how robots can get out of control due to improper programming and shoot people on accident, destroy buildings on accident, and take the wrong decisions. Similarly, as stated in subsection 2.1.1.2, one family member (the child) will be shot by a robot outside when it gets mistaken for an enemy outside because it wore a white coat.

#### 2.1.1.2 *Storyline/Conflict/Human Adaptations*

The story begins at the home with a family of 3, a wife, a husband, and a child. The husband starts his day finishing cooking lunch with his wife with the limited technology they have while talking with their child who sits at the makeshift table in front of the kitchen. The child begs and asks to go outside with his teddy polar bear, but the family says he can never go outside with him for a reason they cannot say (due to the robots). The father then goes to the TV and sits on the couch, while the wife goes to the bathroom. The child stays behind him on the table eating his food. As the father watches the TV, the camera and environment turns into the catastrophes he sees on the screens. For one, the scene starts in a homeless shelter where a policing autonomous robot mistake them for criminals and severely physically abuses them, where the camera becomes the fixed perspective of a homeless man when they're getting beat up with a news reporter speaking in the background. Then a new scene of a UNESCO heritage site being shot at in the snow by an autonomous weapon for mistaking it as a camouflaged enemy base. During this scene, the report who has been narrating will then explain the recent phenomenon where robots have been targeting moving white targets. After this scene, the father will return to his perspective back on the couch when he turns to at his child when he realizes he isn't there and his food is empty. As you look around the house looking for him, confused as to where he could be, when you go to the bedroom and look out your window, you see your son through the huge window wall playing around in the snow in the front yard where he throws snowballs at the local patrolling robot. It is at that instant where the child is shot in front of him.

### *2.1.1.3 Communication (Sound design/Narration/User interface/Camera movement)*

#### Sound Design:

- Unsettling music will play throughout the scenes within the household to emphasize the apocalyptic and sorrowful nature of the setting the characters take place in.

- Ambient sounds and sound effects will be careful in detail to add realism to the project. For instance: every footstep will have a creaking wood board noise, every gunshot will be loud, and a character's breathing when stressed will be audible.

#### Camera Movement:

The perspective of the camera will be a first-person perspective through the father. You will be free to move around in the part of the story where you look for your child, but in moments including the opening cutscene, the part where the father lies on the couch, and the part where the child gets shot will not have freedom to movement. In these situations, the user can look around in order to focus the character into the animation that follows and to allow for seamless transitions towards the next event.

When the perspective of the person goes into the TV to witness the catastrophes on the news at first hand, the camera will be fixed with 360-degree vision with no freedom of movement.

#### Dialogue:

The context of the situation the characters are in will be communicated through the dialogue between characters in the opening cutscene of the video. However, once the father sits to watch the news, the reporter is going to narrate all the outside-world events to give context on other catastrophes caused by the robots.

### *2.1.1.4 Environment & Assets (Quality or Quantity/Functionality/Interactivity)*

The environment includes a main setting of small home and 2 other settings that are shown on TV. These other two settings include a homeless shelter and the outside of a UNESCO heritage site, which will also be small spaces, the former being an enclosed space that requires some detail, whereas the latter will be in an open field that requires minimal detail.

The reason as to why these settings were chosen is to focus on quality over quantity in the individual environments. For instance, every environment is controlled and isolated – meaning that there are no connecting environments (thanks to the element of the television) and background props (such as a cityscape) to spend more effort on.

In this way, we can separate the group members to spend more time on the detail and realism of the environment. The more detailed the assets are, the more real the simulation will become. In this project, all funds in the budget will be spent on high quality assets.

Refer to [Figures 1 & 2] for a detailed sketch of the house setting.

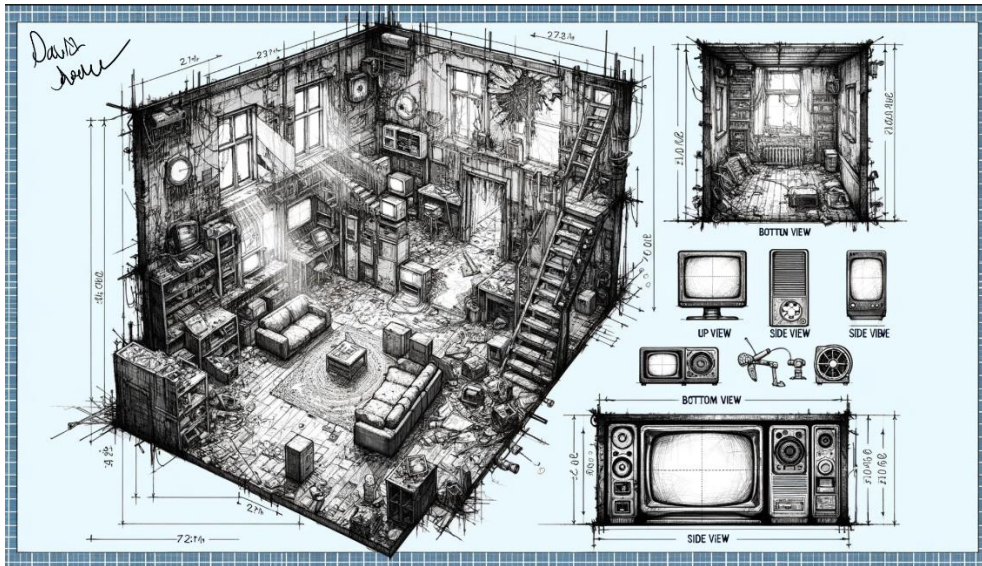
### *2.1.1.5 Accessibility*

Accommodations and different accessibility options will be included for movement, visuals and audio. For one, the start of the video will include a warning for graphic violence, bright lights, and uncomfortable audio. Furthermore, subtitles will be included for those with auditory impairments, and

all movements will be basic (direction of the joystick will correspond to the direction of the POV) to avoid confusion. In terms of visuals, there will be no option to adjust the colour setting or brightness for those who may feel the need to, as the VR experience will be shown in a video and therefore will not have the option to.

*Figure 1: Detailed View of House Environment along with Technological Prop Assets*

This graphic image was made by David Rosocha through a graphic design program.



*Figure 2: First Person Perspective Sketch of House Environment with Television Gateway Portal*

This graphic image was made by David Rosocha through a graphic design program.



## 2.2 Primary Idea: *Echoes of Tomorrow* Marc

In a future dominated by autonomous weapons, the scale of the destruction of both infrastructure and society would be immense. Given this to be the case, my primary idea is that we see the ruined society left in the wake of these weapons in a horrifying fashion with ruined and abandoned buildings.

### 2.2.1.1 *Call to Action of the Danger of Autonomous Weapons*

The call to the action would be the horror of an abandoned city with considerable and noticeable damage as well as evidence of death, such as dried blood on the walls. The viewers would be able to have their own theories on what lead up to the destruction.

### 2.2.1.2 *Storyline/Conflict*

The storyline will be different parts of news reports going over the situation in the abandoned city and explaining what happened. There will be brief snippets of attacks, of destruction of buildings, of abandonment of different locations, among other things.

### 2.2.1.3 *Communication (Sound design/Narration/User interface/Camera movement)*

#### Sound Design:

There would be bleak music, as well as screaming, crying, and police sirens during scenes of reporting on deaths. There would also be sounds of explosions and gunshots and drone propellers depending on if there is “live” footage of events happening whether shown or not.

#### Camera Movement:

The camera will be shaky for the footage of events as would be expected for bystanders taking video but for the reporters, it will be stable.

#### Dialogue:

The dialogue will be professional, as you would hear in a news reporting, although it would be intense enough to convey the shock of the situation.

### 2.2.1.4 *Environment & Assets (Quality or Quantity/Functionality/Interactivity)*

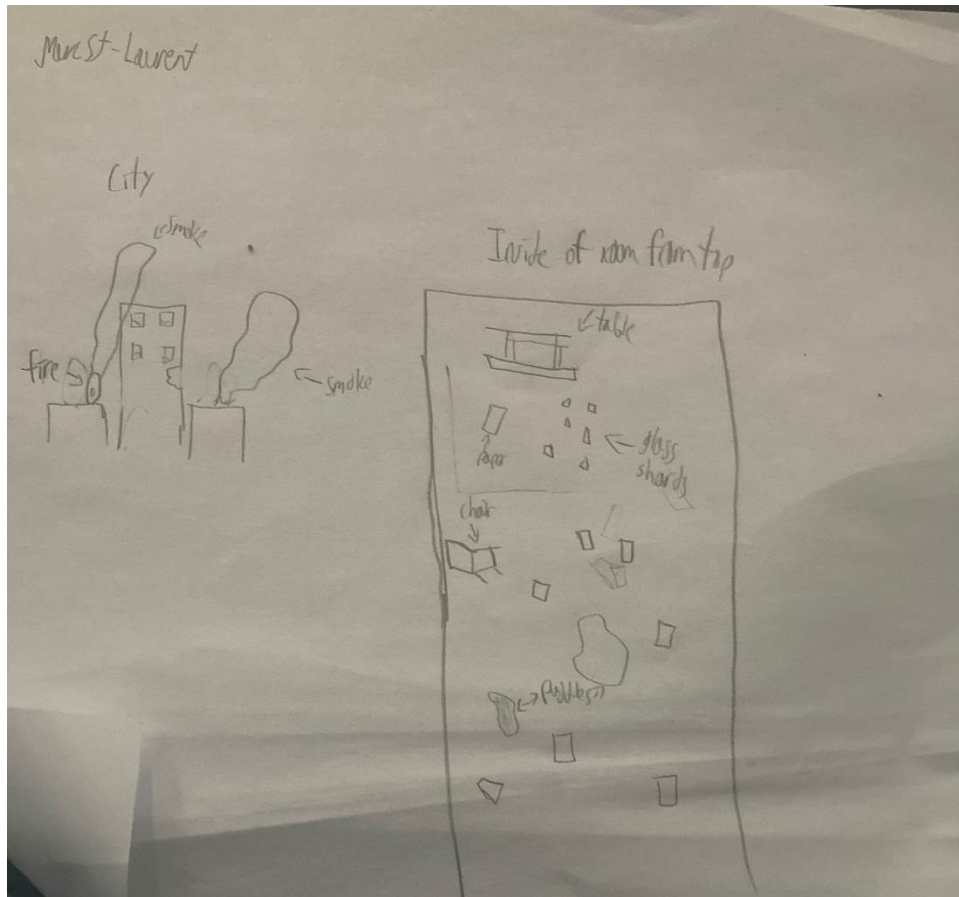
There would not be too many assets, mostly reused ones and the only high-quality assets would be those that would be in view as those that you cannot get too close too will be in lower quality as you would not even see them that well.

### 2.2.1.5 *Accessibility*

There will not be any sound that is too intense or flashes of light, or colours that are too bright as that could cause problems for the viewers beyond the emotional impact that we intend for them to feel.

*Figure 3: Sketches of Destroyed City*





### 2.3 Primary Idea: “Mayhem” Rishabh

As we currently know, weapons are extremely destructive, and it is proved by many historic events. Given that technology is being developed and modified everyday, the idea of autonomous weapons capable of mass destruction is unsettling and makes us think about the deadly consequences society can face. Based on this concept, my primary idea is to show a small glimpse of the chaos and devastation caused by autonomous weapons in a small city with ruined skyscrapers, destruction of homes and people being targeted by robots and how humanity figures out countermeasures to better protect themselves along with a small glimpse of how social standing (financial limitations of families) affect protection

#### 2.3.1.1 *Call to Action of the Danger of Autonomous Weapons*

My idea is to make the story in the future but with the societal system being as close to the present as possible. Therefore, the call to action would be the sight of buildings being ruined, humans fleeing from cities to safe havens and bunkers along with some humans getting killed on the way. There will also be scenes of how the rich have an easier life since they can afford better protection against life threatening situations.

#### *2.3.1.2 Storyline/Conflict*

The story would be followed in the eyes of the protagonist, a man, who is chased by a robot after it identified him as a target. They also encounter different people to hear their stories and to team up with them to survive. The protagonist also goes through a series of events which shows the destruction as he runs along different streets when being chased by one of the weapons. Along with the destruction, some scenes of weapons targeting little children, blood splattering on the wall indicating deaths, soldiers fighting back and a couple short scenes where people with privileges have the technology to prevent detection.

#### *2.3.1.3 Communication (Sound design/Narration/User interface/Camera movement)*

##### SOUND DESIGN:

The music will range from somber to thrilling since one type of music won't be enough to portray the overall feel in every situation. The sounds will also include screaming, panting, weapons fire and also a couple robotic movement sounds to portray the existence of the robot without having to show the robot in every scene

##### CAMERA MOVEMENT:

Human visual capabilities where the camera will rotate to show different scenes along with shaky movement whenever the characters run, weapons fire etc. Along with these additions, there will also be blackouts/transition to a black screen when the protagonist might lose consciousness etc.

##### NARRATION:

As mentioned previously, the story will be portrayed through the eyes of a common man. There will also be subtitles when needed to explain scenes such as the location etc.

##### USER INTERFACE:

User interface should be simplistic for ease of use with access to pausing, playing, forward and rewind and changing the pace of the story (x0.25, x0.5 etc.). Brightness, volume and subtitle options will also be available

#### *2.3.1.4 Environment & Assets (Quality or Quantity/ Functionality/Interactivity)*

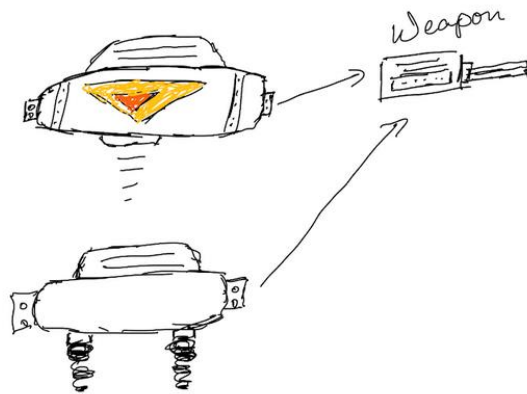
At the start of the story, there will be a brief introduction through the footage from a surveillance camera in the corner of two buildings. There will be a transition to the protagonist's view where there will be a brief scene of their home. The majority of the scenes will feature the devastation in the city with ruined skyscrapers, soldiers getting deployed in every way possible to protect civilians and also civilians fleeing from robots through underground tunnels etc. The city will also feature some present day modes of transportation such as trains which have been destroyed by robots making public transport unviable. Lastly, there will also be a couple of scenes to show "the other side" of the city where the rich live and have equipped defence systems which protect them from all kinds of dangers

#### *2.3.1.5 Accessibility*

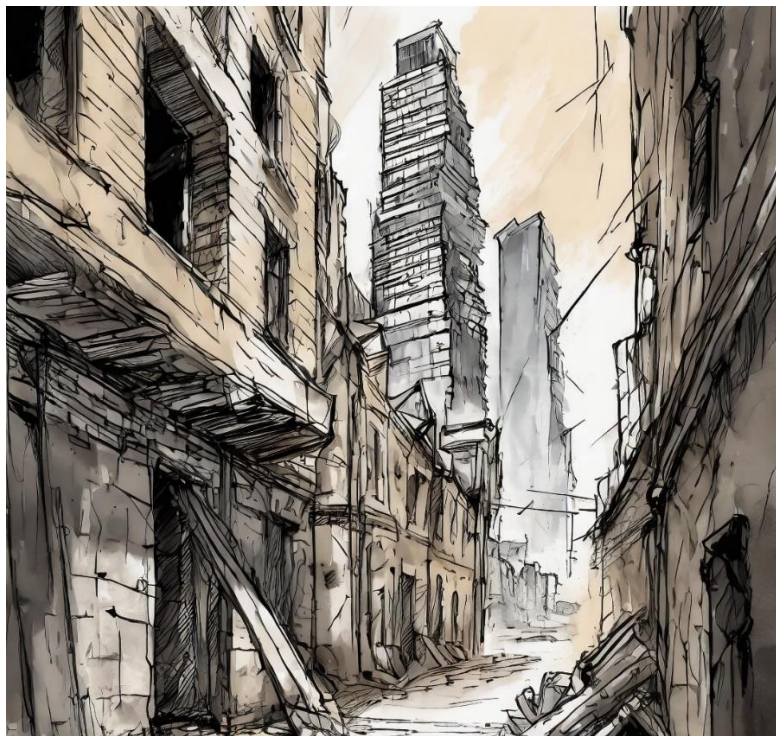
A lot of options have been considered for accessibility. As mentioned previously, there will be subtitles for people with auditory impairments, volume change, brightness level and colour change options for

people who have different kinds of sensitivity levels and colour blindness. Extremely bright and flashy lights, loud sound effects etc. will not be a part of the story since it is harmful to the eyes and is not needed to effectively portray the overall message.

*Figure 4: Sketch of autonomous weapon/killer robot design*



*Figure 5: Generated Sketch of Run-down Alleyway*



This graphic image was made Rishabh Sharma using a graphic design program

## 2.4 Primary Idea: *Technophobia* Ben de Gans

Given that a sufficiently intelligent autonomous weapon would have access to and knowledge of electronics, a future in which autonomous weapons have taken control would lead to humans developing a distrust of technology since it has been shown to fail spectacularly. Building off this concept my primary idea is that, in response to the oppression from the autonomous weapons, humans would revert to a lifestyle like that of the prehistoric hunter gatherer tribes.

### 2.4.1.1 *Call to Action of the Danger of Autonomous Weapons*

Given how prevalent technology has become in our day-to-day lives, showing that humans have learned to distrust an even fear technology due to the uncontrollable autonomous weapons will juxtapose the VR experience against the real world while also keeping the story within the realm of possibilities. This idea leaves the bulk of the horror of the situation up to the audience's imagination since each person will have different interpretations of what may have occurred to the humans to caused them to forego technology entirely. This interpretation approach allows us to cause discomfort in the audience without the use of gore or direct violence against humans.

### 2.4.1.2 *Storyline/Conflict*

The story of the VR experience will take place during the siege of a recently discovered human encampment. This setting will allow us to demonstrate how the humans have adapted to the autonomous weapons all the while demonstrating the tenacity of the autonomous weapons to find and siege the encampment while the humans have the advantage.

### 2.4.1.3 *Communication (Sound design/Narration/User interface/Camera movement)*

#### Sound Design

The sound design of this project will focus on being as realistic as possible to lend credibility to the concept, which may seem foreign or unrealistic to some members of the audience.

Rather than playing music, this experience will solely employ ambient tones and sound effects that would realistically fit into the scene.

The experience will employ a show don't tell approach to storytelling and as such narration will not be used to keep the audience immersed in the experience.

#### User Interface

The user interface will be simplistic for this experience with the main menu having start, exit and settings buttons along with the user being able to pause the experience at any point to either exit or re-adjust the settings. The settings will include options to change the volume and brightness as well as toggles for some accessibility options.

#### Camera Movement

The camera will follow the users head movements thanks to the VR headset and the actual in-game movement system will work by allowing the user to choose a desired location and “teleport” directly to it. There will also be an accessibility option to view the experience “on-rails” where the users' movements (not including head movements) will follow a set path which allows the user to view the entire experience even if they have motion sickness triggered by using VR.

#### 2.4.1.4 Environment & Assets (Quality or Quantity/ Functionality/Interactivity)

Due to devices being used to find and monitor the humans in hiding and phones or computer have been broken to stay hidden. To avoid the autonomous weapon ground patrols, groups of humans have created small encampments in the tall city buildings connected by simple rope bridges. Any defense mechanisms make to counteract the autonomous weapons would be powered by simple machines (i.e. pulleys, levers) since they don't require technology to function.

A basic concept sketch of the environment can be found below (Figure 4)

#### 2.4.1.5 Accessibility

Some accessibility options present in the experience will include:

- The "on-rails" viewing method which aims to reduce the effects of motion sickness on users
- The option to turn in a "focus point" which gives users with motion sickness a translucent point in the middle of view for them to focus on to reduce the effects of motion sickness
- The option to turn on a photosensitive epilepsy mode which reduce the size and brightness of effects present in the game to allows epileptic users to view the experience without putting their health at risk

Figure 5: Concept Sketch for Technophobia



## 2.5 Primary Idea: *The End Kalen*

In a futuristic dystopian world, scientists have made the mistake of developing extremely high intellect artificial intelligence, where they believe to be the dominant life form on Earth. These AI entities have overruled the world, which led to chaos and anarchy. Technology is no longer safe to use, and people are afraid to go outside. My idea primarily displays the destruction and anonymity of society. It also

reciprocates concerns regarding the erosion of privacy and the destabilizing impacts of progressing technology.

#### *2.5.1.1 Call to Action of the Danger of Autonomous Weapons*

To demonstrate the impacts of AI through this VR game, the call to action would specifically address the anonymity and chaos caused by AI. The viewer would experience a destroyed landscape with no sign of other humans. There would be drones roaming the streets, blasting sirens (WW2 sirens), and the sounds of radios telling everyone to stay inside. This eerie setting would allow for the viewer to feel unsettled, making it suitable for all audiences without showing the gore and violence surrounding this issue.

#### *2.5.1.2 Storyline/Conflict*

You wake up (50 years into the future) in this corrupted world where you hear a radio playing. This radio is a new source that is describing an AI robot named Sylas, known to be a catastrophic failure made by scientists due to its extremely high intellect. The news source talks about how Sylas has betrayed its creators, killing anyone in its way. It also mentions that Sylas is multiplying and looking to fully take over the world. The viewer looks outside and sees the destruction caused by these robots and hears the sirens screeching. Suddenly the world goes black, you wake up (in current time) and realize it was just a dream. The viewer walks downstairs and turns on the news only to realize that a new project called "Sylas" has begun, where scientists are trying to create a more advanced human, estimated to launch in 50 years.

#### *2.5.1.3 Communication (Sound design/Narration/User interface/Camera movement)*

##### **Sound Design**

The game opens with eerie, dystopian sounds, including distant sirens, static-filled radio broadcasts, and the hum of drones overhead. As the player progresses, the intensity of these sounds increases, immersing them further into the chaotic atmosphere of the world.

##### **Narration**

The radio broadcasts serve as a narrative device, providing backstory and context to the player as they navigate through the game. The voice overs will be subtle messages such as, "where am I", or "what year is this", etc. They convey urgency and fear, reflecting the dire situation caused by the AI's uprising and its implications for humanity.

##### **User interface**

The user interface is minimalist yet intuitive, providing essential information such as objectives and contextual prompts without cluttering the screen. It seamlessly integrates into the game environment, enhancing immersion and allowing players to focus on the unfolding narrative. Most of the game will be comprehensive enough to navigate, which will ultimately bring the experience to be more meaningful. Additionally, some basic settings will be added like volume, brightness, ending or restarting the game, etc.

##### **Camera movement**

The camera movement in the game is dynamic, guiding players through the dystopian landscape while highlighting points of interest and danger. It adjusts fluidly to the player's actions, maintaining a sense of tension and urgency throughout the experience. There will also be options to zoom in or out depending on the scene to make the gameplay more diverse.

#### *2.5.1.4 Environment & Assets (Quality or Quantity/ Functionality/Interactivity)*

##### **Quality**

The game prioritizes quality over quantity when it comes to environmental assets. Each element in the dystopian landscape is brought together to develop a sense of desolation and chaos. From crumbling buildings to abandoned streets, every detail contributes to the immersive experience. The assets are realistic, ensuring that players feel fully immersed in the game.

##### **Functionality**

The assets in the game deliver a form of narrative by visually describing the scenario. The destroyed buildings and debris scattered throughout the environment tells the story of societal collapse and the aftermath of AI domination. The functionality of these assets adds to the player's understanding of the game and its backstory.

##### **Interactivity**

While the environment itself may not be highly interactive in terms of player manipulation, it offers opportunities for exploration and discovery. Players can interact with certain objects to uncover hidden clues or pieces of the narrative.

#### *2.5.1.5 Accessibility*

The game includes several accessibility options to ensure that players of all abilities can fully enjoy the experience:

##### **- Text-to-Speech**

Players have the option to enable text-to-speech functionality for all in-game text, allowing visually impaired players to hear the game's dialogue and prompts.

##### **- Controller Mapping**

Players can remap controller buttons to suit their individual needs, making it easier for those with physical disabilities to play the game comfortably.

##### **- Motion Sickness Options**

For players prone to motion sickness, the game provides options to adjust camera sensitivity, field of view, and other settings to mitigate discomfort during gameplay.

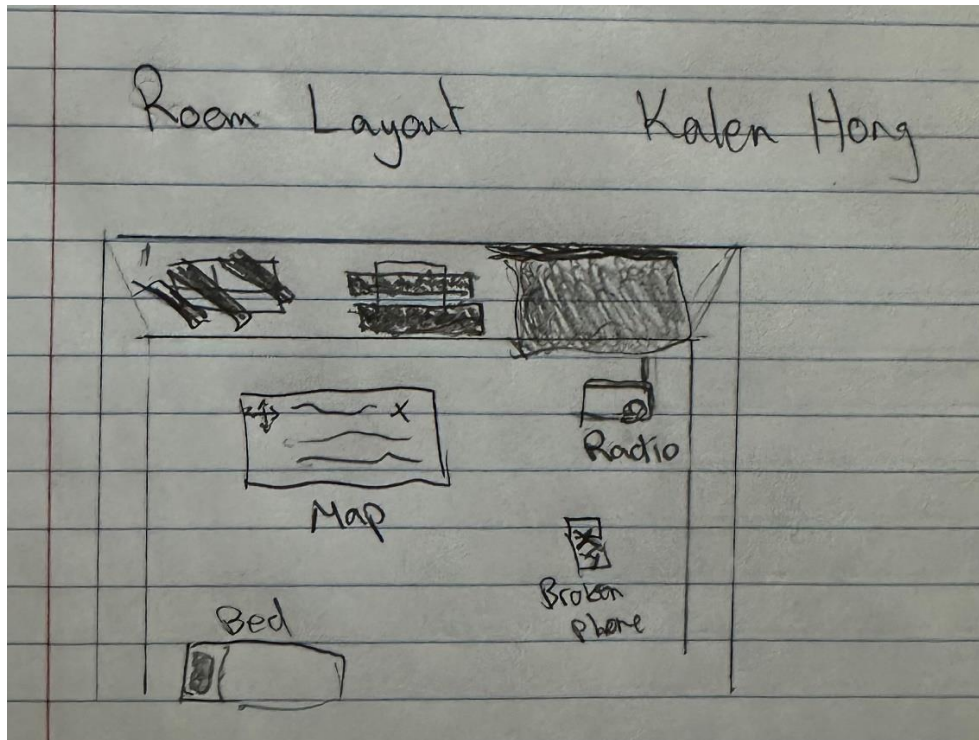
##### **- Colorblind Mode**

Colorblind mode is available to enhance visibility for players with color vision deficiencies, ensuring that important gameplay elements are distinguishable regardless of color perception.

Figure 6: Sketch of Landscape



Figure 7: Sketch of Room Layout





## 3 Global Concept

### 3.1 Concept #1 - Household Paranoia: David Rosocha

#### Description:

A VR environment set in a post-apocalyptic home adopts a simplified and minimalist approach, focusing on delivering the message through an emotional lens through the degraded life of a family living in a household during an era where autonomous AI robots control society. The setting showcases a run-down home where all technology has been destroyed in fear of the autonomous robots, except for the television where the family is fed the news in regard to what other catastrophes are ongoing. The house will provide a setting for the group to deliver how the quotidian life of a family (husband, wife, children) has dramatically affected, and will showcase a dramatic decrease in quality of life. Additionally, the television acts as a gateway through a secondary setting, where the group can move the player to specific animated events as if they're the ones seeing these catastrophes at first hand in VR.

#### Pros:

- Minimalist & Easy to develop
- Multiple Camera perspectives
- Different enclosed settings to showcase behaviour of autonomous robots and human adaptation
- Emotional Engagement

#### Cons:

- Reliant on Animation
- Limited Interaction:
- Narrative Constraints
- Extremely Limited Replay Value

### 3.2 Concept #2 – Echoes of Tomorrow + Mayhem (Mayhem of Tomorrow)

#### Description:

Given that technology is being developed and modified every day, the idea of autonomous weapons capable of mass destruction is unsettling and makes us think about the deadly consequences society can face. In a future dominated by autonomous weapons, the scale of the destruction of both infrastructure and society would be immense. Based on this concept, my primary idea is to show a small glimpse of the chaos and devastation caused by autonomous weapons in a small city with ruined skyscrapers, destruction of homes and people being targeted by robots and how humanity figures out countermeasures to better protect themselves along with a small glimpse of how social standing (financial limitations of families) affect protection.

#### Pros:

- More informative
- More exploration and interactivity
- Societal Reflection
- Inspiring action
- More accessibility options

#### Cons:

- Technological Limitations

- Less personal
- More settings to include (More demanding to develop)
- Narrative Complexity

### 3.3 Concept #3 - Technophobia

#### Description:

Given how prevalent technology has become in our day-to-day lives, showing that humans have learned to distrust an even fear technology due to the uncontrollable autonomous weapons will juxtapose the VR experience against the real world while also keeping the story within the realm of possibilities. This idea leaves the bulk of the horror of the situation up to the audience's imagination since each person will have different interpretations of what may have occurred to the humans to caused them to forego technology entirely. This interpretation approach allows us to cause discomfort in the audience without the use of gore or direct violence against humans.

#### Pros:

- Unique idea
- Engagement through Relevance
- Easily conveys the seriousness of the situation with minimal use of gore
- More accessibility options
- Social Commentary

#### Cons:

- Narrative Ambiguity
- Difficulty in Execution
- Lack of Visual Stimuli

## 4 Chosen Global Concept

The chosen global concept we're picking is number one, Household Paranoia, due to the minimalism, emotional tone, and compatibility with a video format compared to the other VR experiences. As shown in [Table 1], all group members ranked each other's ideas from 1-5 in respect to every design criteria., and gave each criteria a rank of importance as discussed in Deliverable B. The person with the highest number of votes total, taking into account which criteria are more important, was chosen.

### 4.1 Further Developments

Despite choosing global concept one, the idea from another concept, specifically from global concept 2, which was the idea of the POV of a character being chased in a scene when they are mistakenly identified as an enemy by a robot. As the character runs down a city and evades the robot, he sees how the robot indulges in violence on the people and buildings around him. The group discussed how we can incorporate this aspect into the TV portion of global concept #1, as it was identified that interactivity was limited in that conception, therefore, this element brings that element to our simulation that should ultimately create a better VR experience. The group also discussed different scenarios about financial backgrounds in current life and how we could incorporate it into our story. This could be done by adding

news interviews to the TV portion where side characters talk about their side of the story and the ways they used to escape the robots. The side characters should come from different backgrounds but on the extremities such as a very poor and rich person.

#### 4.2 Table Regarding Group Consensus on Concepts Proposed

The following table demonstrates the groups consensus on opinion regarding the 3 concepts discussed and which of the concepts would be best to use as the final concept idea. Every group member ranked every other partner from 1 to 5, and all the member’s votes were summed and tallied below. This table helped in finding the best possible global concept.

Criteria	David	Ben	Marc	Rishabh	Kalen	Importance
Call to Action	19	12	19	13	10	4
Storyline/Conflict	21	7	21	21	7	5
Communication	25	11	14	19	6	5
Environment & Assets	20	12	20	18	5	4
Accessibility	11	13	16	17	13	2

*Table 1: Opinion on which Concept is best to work on.*

## 5 Conclusion

Using the predetermined subsystems outlines and the client's needs, the group created three global concepts and selected one that best represented Mines Action Canada's vision of an autonomous killer robot-dictated future. Global Concept #1 explores the minimalist design of "Household Paranoia," which explores the emotional and psychological impacts of living in a world dominated by autonomous killer robots. This concept was selected for its ability to emotionally engage users and convey a powerful message with a simplified setting, focusing on a family's daily struggle for survival amidst technological terror. This focused approach of one enclosed setting at a time allows for an easier development and build a personal connection to the character to try and attempt an emotional nerve within users. Additionally, the use of a television as a narrative device to transition between the internal struggles of the family and the external chaos of the world offers a unique way to explore the broader implications of autonomous weaponry on society.

Global Concept #2 and Global Concept #3, while presenting compelling narratives and design elements, were ultimately not chosen due to either their broader scope, which could dilute the emotional impact, or their less direct approach to addressing the client's needs. Concept #2, "Echoes of Tomorrow + Mayhem," offered a broader exploration of societal collapse and the role of autonomous weapons in that collapse in a much more interactive approach. Moreover, Concept #3 proposed an introspective look at humanity's fear and distrust of technology, showcasing a return to primitive survival tactics in the face of uncontrolled autonomous threats. Although these concepts were innovative and offered rich storytelling opportunities and are truer in creating an interactive virtual reality environment, they did not align as closely with the project's aim to highlight the emotional and personal ramifications of autonomous weapon proliferation in video format. This decision was further supported by the group vote as seen in [Table 1], as the majority vote fell into David's idea.

Therefore, we will develop the rest of this project using Global Concept #1, "Household Paranoia". This concept's minimalist approach and emotional depth are expected to resonate deeply with users, fostering a greater understanding and empathy for those who live in fear of such technological advancements. Additionally, the group will incorporate elements from Concept #2, such as the POV of a character being chased, in order to enhance the interactivity and immersion of the experience, thereby addressing one of the initial limitations of Concept #1. Furthermore, the inclusion of narratives from individuals of varying financial backgrounds will further enrich the story, offering a broader perspective on the societal impact of autonomous weapons.

## 6 Future Work

For the upcoming deliverable, the group will aim to develop project tasks with a schedule view to ensure that your team can complete all three project prototypes from now until the end of the semester, along with an estimation of the costs and the components that will be required for your project. Using the template provided in "Lecture 11", the team will outline a prototyping test plan with the objectives of communicating and getting feedback for ideas, verifying feasibility, analysing critical subsystems or system integration, or reducing risk and uncertainty.