

Deliverable E

October 29, 2023

Group C-P1

Contents

Referenced Problem Statement 3

Design Drawings..... 3

 City Drawing..... 3

 City Feature Drawing 4

 Propaganda 5

Materials List..... 6

 Unity Assets from the Asset Store 6

 Software..... 7

 Hardware 7

Spending Budget 7

Equipment..... 9

Testing Plan..... 9

Project Risk..... 10

Contingency Plan 10

Referenced Problem Statement

Mine's Action Canada needs a VR experience that demonstrates the dangers of using killer robots in warfare, and the potential consequences that come with it. The experience needs to provide an emotional connection that displays fear, concern, and hope.

Design Drawings

City Drawing



As talked about in the client meeting, we are focusing on the environment for this project. We have chosen a city street environment. The picture above has a background of downtown Toronto, and the goal of this setting is for a sort of familiarity with Canadians. The environment is filled with posters and propaganda to set a change in what the people care about and how, the government is adapting to the change. In the drawing itself there are some notable features, including two stick figures labeled A and B, where person A is the user and person B is your friend. The friend will follow the user

City Feature Drawing



Wire mesh covered windows, uniquely show some protection against the drones. This adaption to buildings shows a definitive change that is not tremendously noticeable, but it could be an important modification to existing structures that protect the people Infront of the killer robots, while still providing the people with windows. Toronto building require more protection in this new environment.



One of the more noticeable environmental features is propaganda, created by a model, these posters and newspaper will show important visual information regarding several important aspects of life, one idea we have decided upon is a poster that says "Please Show your Face to the Drones, When Requested" and "Keep your identification bracelet on you at all times".

Materials List

NPC Character models

Building/Urban Centre Model

Unity Assets from the Asset Store

Free ambience

<https://assetstore.unity.com/packages/audio/ambient/urban/free-general-ambience-sounds-246000> 0\$

FBasic

<https://assetstore.unity.com/packages/tools/utilities/fbasic-assets-121782#content> 0\$

- Starter Assets - First Person Controller
<https://assetstore.unity.com/packages/essentials/starter-assets-first-person-character-controller-urp-196525>
- Low Poly Human
<https://assetstore.unity.com/packages/3d/characters/humanoids/fantasy/free-low-poly-human-rpg-character-219979> 0\$

City Package

<https://assetstore.unity.com/packages/3d/environments/urban/city-package-107224#content>

- Dumpster
<https://assetstore.unity.com/packages/3d/props/industrial/dumpster-655> 0\$
- Flying Drone
<https://assetstore.unity.com/packages/3d/vehicles/air/machine-gun-drone-96701> 5\$
- Ambient City Music
<https://assetstore.unity.com/packages/audio/ambient/urban/city-traffic-pack-4-morocco-181815> 5\$
- Low Poly Human
<https://assetstore.unity.com/packages/3d/characters/humanoids/character-pack-lowpoly-free-221766> 0\$

- NPC AI
<https://assetstore.unity.com/packages/tools/behavior-ai/ibrain-npc-character-a-i-116128> 0\$
- Droll Robot
<https://assetstore.unity.com/packages/3d/characters/robots/droll-robot-02-241268> 8\$

Animations

<https://assetstore.unity.com/packages/3d/animations/basic-motions-free-154271>

Fmod (audio)

<https://assetstore.unity.com/packages/tools/audio/fmod-for-unity-161631>

Software

- OnShape (Modeling Software)
- Unity (Simulation Backend)
- Wrike (project management)
- VR software details specified by client
- Tinkercad (Modeling Software)
- Blender (Graphic Design Software)

Hardware

- Meta Quest 2
- Laptops for each group member (personal computers, or optionally publicly operated school computers)

Spending Budget

- The Group gets a total of \$50.00 allocated to this project

| Item | Description | Usage | Cost to the Project | Location of Purchase |
|-----------|-----------------------------|--|---------------------|----------------------|
| Tinkercad | A 3d modelling software | Create 3d models to import to the simulation | \$0.00 | Account is free |
| Wrike | Project management software | Used to organize the group and manage roles | \$0.00 | Account is free |

| | | | | | |
|--|---|--|---|---|------------------------------------|
| OnShape | A 3d modelling software | | Create objects to import to the simulation | \$0.00 | Account provided by the university |
| Unity | A simulation backend | | Used to create the simulation, where we will import all our assets, program object behaviours and put the project together. | | |
| NPC AI | AI to give npc's behaviour | | Animate the npc's to make the background look more like a busy city that people can relate to. | \$0.00 | Unity Asset Store |
| Droll Robot | A little animated robot model | | Decorate the environment with these models to simulate autonomous robots. | \$8.00 | Unity Asset Store |
| Ambient City Music | City themed background noise | | Make the simulation sounds more like a city to increase immersion. | \$5.00 | Unity Asset Store |
| Starter Assets - First Person Controller | Simple first-person necessities | | used to make simple movements with first person games | \$0.00 | Free from the Unity Asset Store |
| Low Poly Human - RPG Character | Simple NPC character design | Used for image of NPCs. | \$0.00 | Free from Unity Asset Store | |
| Modular City Alley Pack | Design for simulation environment (urban cityscape) | Used as city environment for simulation. | \$25.00 | \$25.00 from Unity Asset Store On Sale | |
| Dumpster | Simple asset to add to environment. | Used as an asset to add to environment. | \$0.00 | Free from Unity Asset Store | |
| Flying Drone | Surveillance drone unity asset | Used in simulation for NPC surveillance. | \$5.00 | Unity Asset Store | |
| Meta Quest 2 | VR Headset | Playing the simulation with proper immersion | \$0.00 | Provided By the | |

| | | | | |
|---------|-------------------------|-------------------------------|--------|--|
| | | | | University of Ottawa |
| Laptops | Computer | Used to create the simulation | \$0.00 | Personal laptops in use, and can be provided by the University of Ottawa |
| Blender | Graphic Design Software | Used for city generation | \$0.00 | Personal account is free |

Equipment

- 🔗 Paper
- 🔗 Pens
- 🔗 Unity
- 🔗 Tinkercad
- 🔗 Onshape
- 🔗 Computers
- 🔗 VR headsets

Testing Plan

- Develop environment with alley assets **High Fidelity**
- Develop Personalized entities like propaganda poster **Low Fidelity**
- Test NPC AI pathways to follow walkways and not run into each other.
- Test robot AI pathways **Low Fidelity**
- Test ambient sound pack to work when running the sim **High Fidelity**
- Test running all Systems at once **High Fidelity**

Project Risk

- It doesn't reach the correct user/ the users in question are not convinced by this simulation.
- Time constraints may pose as too great of an issue for a substantial enough simulation.

Contingency Plan

- In the event that we run out of time to complete our plans, we can remove non-essential parts from the simulation to sacrifice quality for completion, we will begin by making the highest priority components and moving on to the next highest so that we can guarantee we have something to present our client