

Lunch + Learn

# UX for AR & VR

**1** Basics of  
AR/VR

**2** Walkthrough  
Projects

**3** Reflective  
Evaluation



# AR vs. VR





# The Basics



## Augmented Reality

**Adds** digital elements to a live video capture based elements in the real environment.

Requires device with video capture such as computers, smart phones, tablets.



## Virtual Reality

**Immerses** users into new environments, shutting out the physical world.

Requires VR devices such as HTC Vive, Oculus Rift or Google Cardboard

**Banfield VR**



An aerial photograph of a coastal scene. On the left, a dark, forested hillside slopes down to a paved road that curves along the water's edge. A small, white, conical lighthouse with a red band is situated on the road. Several people are visible walking along the path. The water is a deep blue-grey, and in the distance, a small boat is visible on the surface. The sun is low on the horizon, creating a warm, golden glow on the right side of the image.

# BANFIELD VR

[https://youtu.be/cG4oV9IGF\\_A](https://youtu.be/cG4oV9IGF_A)



# Brief

## Goal

Provide mental stimulation for residences in Banfield Pavillion, a long-term care facility

## Challenges

Many of the users have cognitive impairments (i.e. dementia)

## User Group



150 residents in Banfield Pavillion  
Limited knowledge of technology  
60% has dementia  
Limited mobility



**UX  
Media**



**UX  
Developer**

# Why VR?



[Harv Rev Psychiatry](#). Author manuscript; available in PMC 2018 May 1. PMCID: PMC5421394  
NIHMSID: NIHMS829162  
Published in final edited form as:  
Harv Rev Psychiatry. 2017 May-Jun; 25(3): 103–113.  
doi: [10.1097/HRP.0000000000000138](https://doi.org/10.1097/HRP.0000000000000138) PMID: [28475502](https://pubmed.ncbi.nlm.nih.gov/28475502/)

## The use of virtual reality technology in the treatment of anxiety and other psychiatric disorders

[Jessica L. Maples-Keller](#), PhD,<sup>1</sup> [Brian E. Bunnell](#), PhD,<sup>2</sup> [Sae-Jin Kim](#), BA,<sup>1</sup> and [Barbara O. Rothbaum](#), PhD<sup>1</sup>

► Author information ► Copyright and License information [Disclaimer](#)

See other articles in PMC that [cite](#) the published article.

## Abstract

Go to: ☐

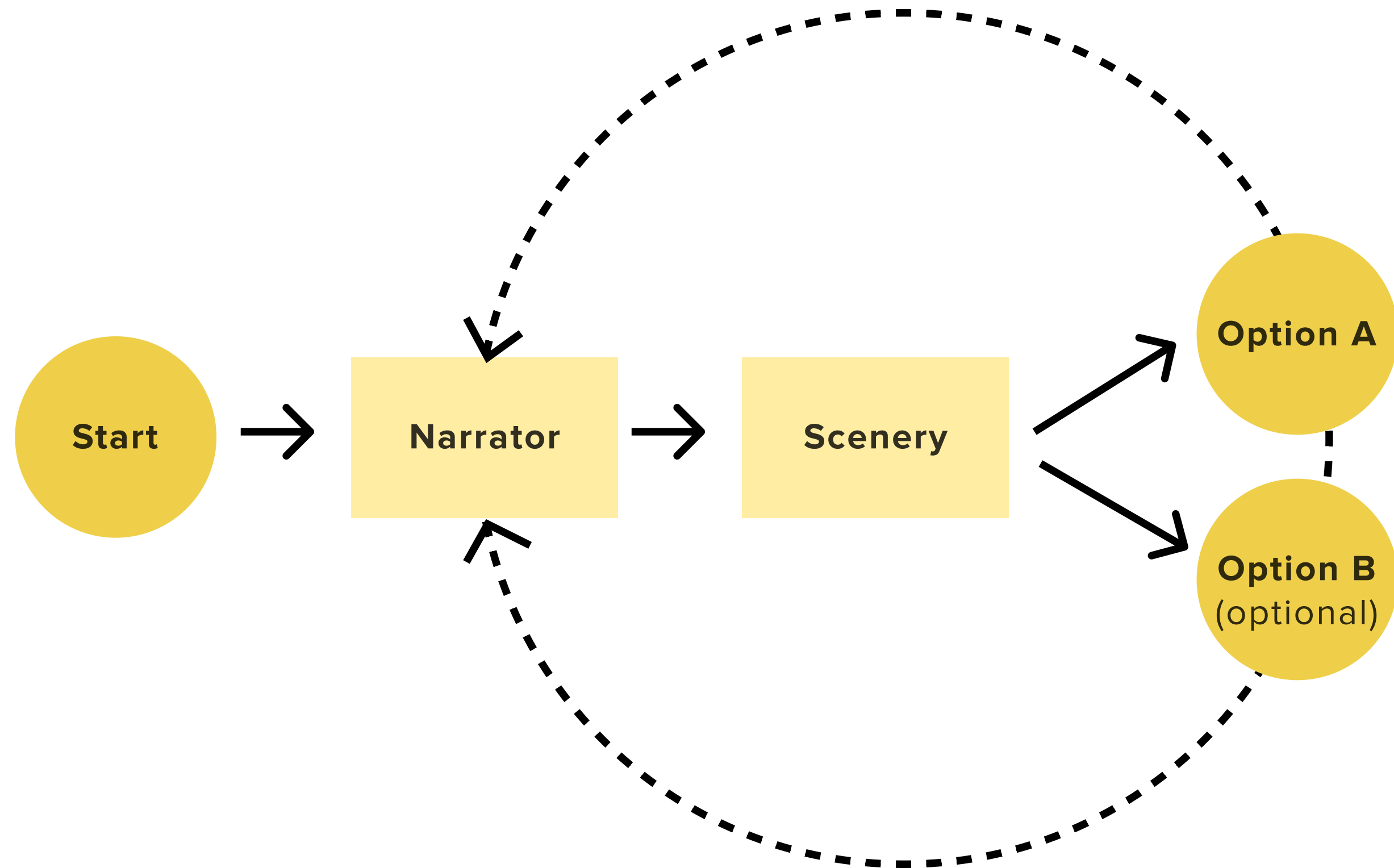
Virtual reality, or VR, allows users to experience a sense of presence in a computer-generated three-dimensional environment. Sensory information is delivered through a head mounted display and specialized interface devices. These devices track head movements so that the movements and images change in a natural way with head motion, allowing for a sense of immersion. VR allows for controlled delivery of sensory stimulation via the therapist and is a convenient and cost-effective treatment. The primary focus of this article is to review the



# Devices



# User Flow



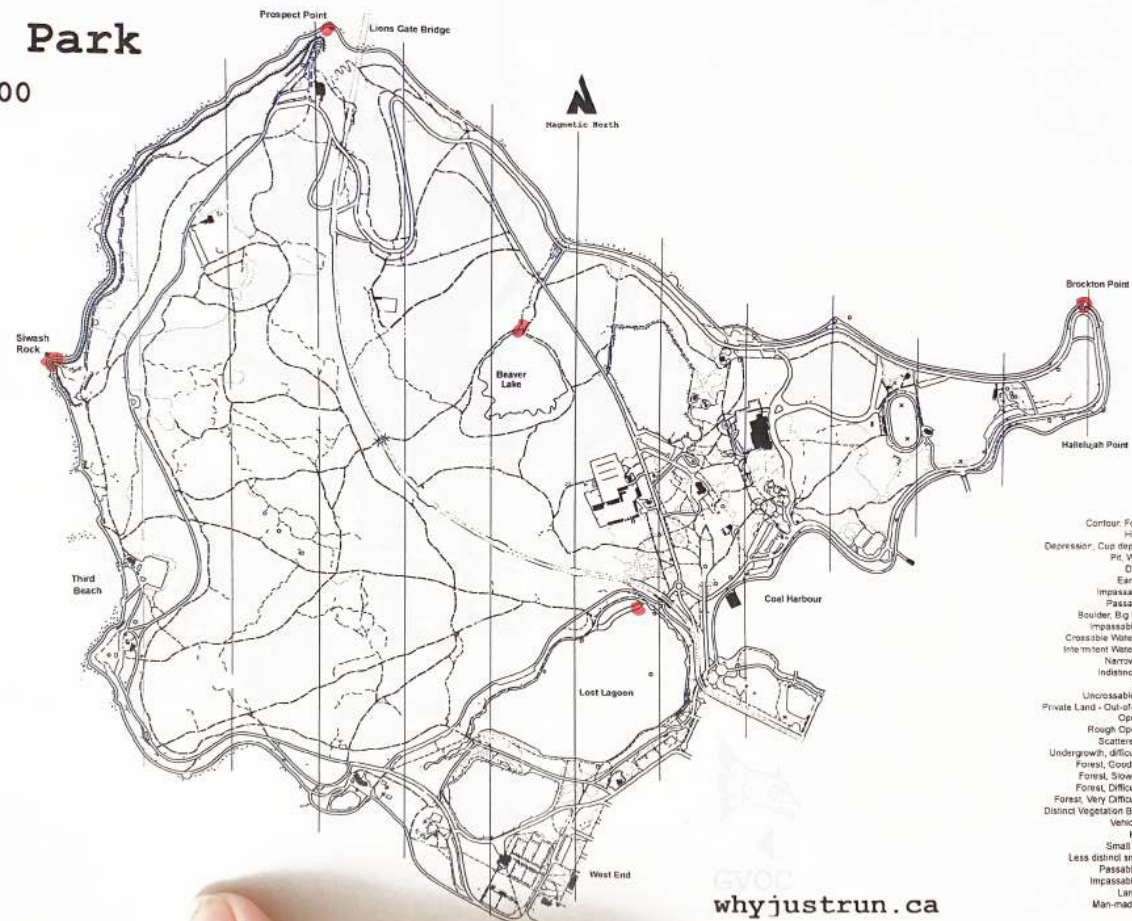


# Locations

Location	Information (voiceover)
Prospect Point (low)	Prospect Point is a point at the northern tip of Stanley Park, located on the south side of the First Narrows of Burrard Inlet. It is a viewpoint, landmark, and tourist attraction.
Prospect Point (high)	In the Squamish language, the location of the point means "high bank". According to Pauline Johnson, in Squamish tradition, inside the cliffs lived a spirit-being with the power to bring storms and rain.
Bench in trail	Forest trails in Stanley park offer more than 27 km of quiet refuge, far from the maddening crowd, on the park's more developed periphery. These oldest trees are known as 'monument trees' and can be discovered by park trail blazers in three distinct areas: off Siwash Rock Trail, Third Beach Trail and north of Beaver Lake on Lake Trail.
Seawall 1	Vancouver has the world's longest uninterrupted waterfront path. The 28 km Seaside Greenway is an uninterrupted pathway, including the Stanley Park Seawall, that extends from the Vancouver Convention Centre to Spanish Banks Park.
Seawall 2	Construction of the Seawall began in Stanley Park in 1917. Much of its incremental progress was overseen by Park Board master stone mason James Cunningham from the late 1920s until his retirement 35 years later. A plaque commemorating Cunningham's work can be seen in the rock face above the Seawall at Siwash Rock.
Seawall 3	On September 21, 1980, the entire Seawall loop around Stanley Park was declared officially completed with the final paving between Third Beach and Second Beach. Since 1980, the Seawall has been extended outside of Stanley Park.
Seawall 4	In 2010 and 2011, two portions of the Seawall, Stanley Park (near Second Beach) and English Bay (near Sunset Beach), were renewed to address ongoing concerns with erosion. With deep foundations and renewed surfacing, the new Seawall is built to withstand the tides for many years to come.
Empress of Japan Figurehead	The SS Empress of Japan Figurehead is a colourful and unique monument in Stanley Park. The SS Empress of Japan was also called the "Queen of the Pacific". It crossed the Pacific Ocean over 400 times. The figurehead was saved from being thrown away and restored by the The Province newspaper. It was put in Stanley Park in 1927. The original started to deteriorate so this is a fibreglass replica. The original restored figurehead is in the Vancouver Maritime Museum. This is probably the most colourful monument in Stanley Park and shows Vancouver's link to Asia began soon after the city was created.
Brockton Point	Brockton Point is a point and attached peninsula in Vancouver on the north side of Coal Harbour. Named after Francis Brockton, it is the most easterly part of Stanley Park and is home to a 100-year-old lighthouse and several hand-carved totem poles made in British Columbia. Part of the land at the point was first cleared in 1865 in order to construct a sawmill. However, due

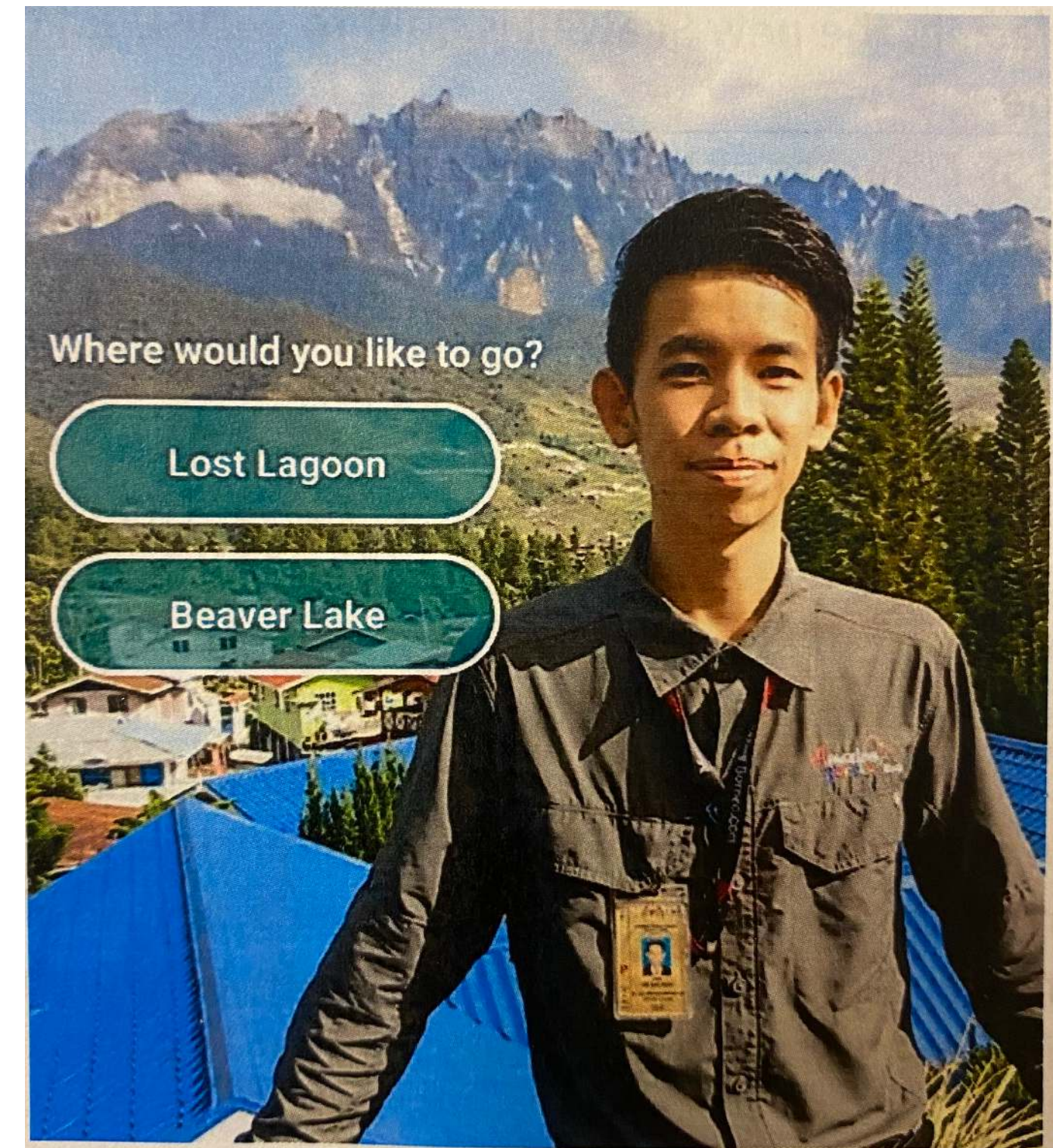
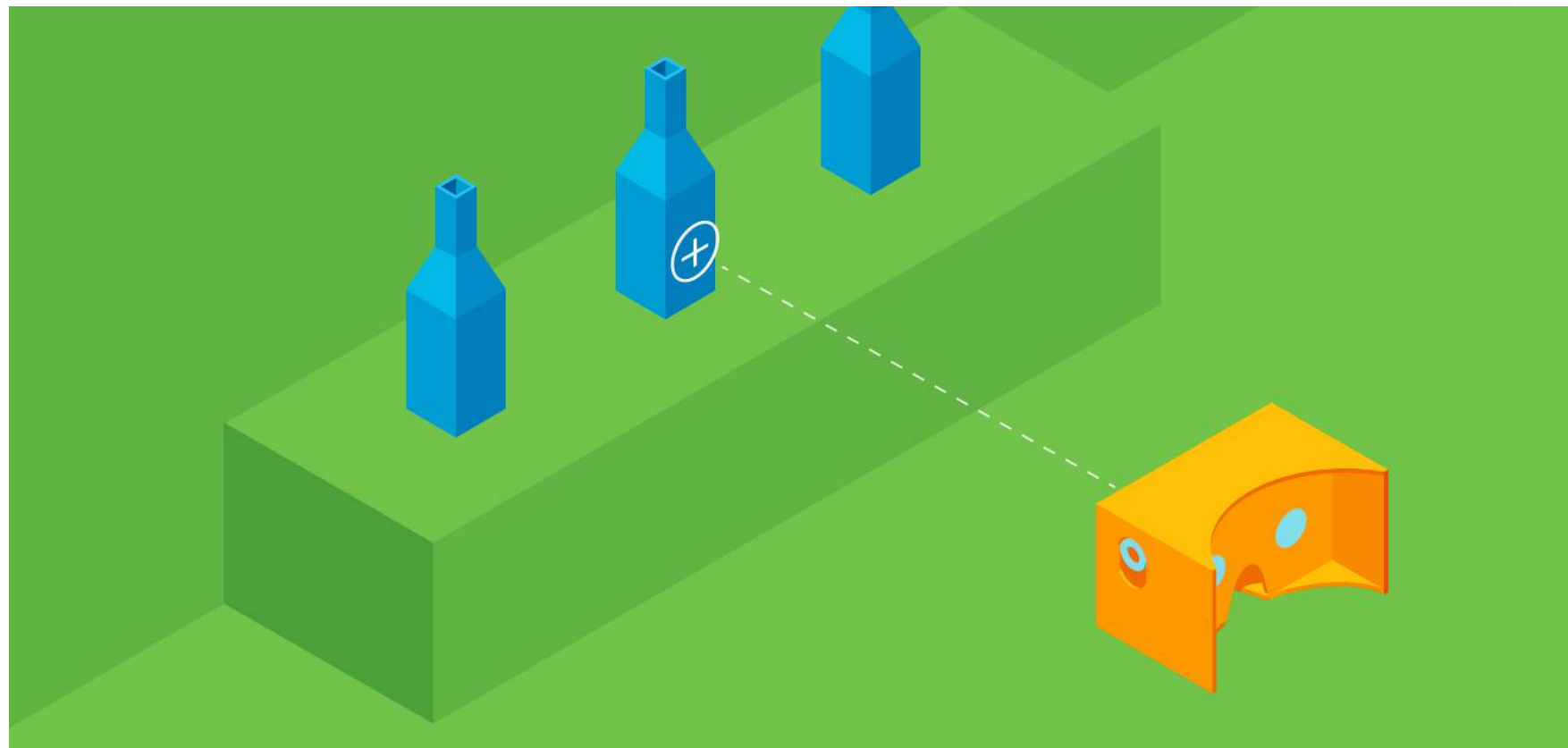
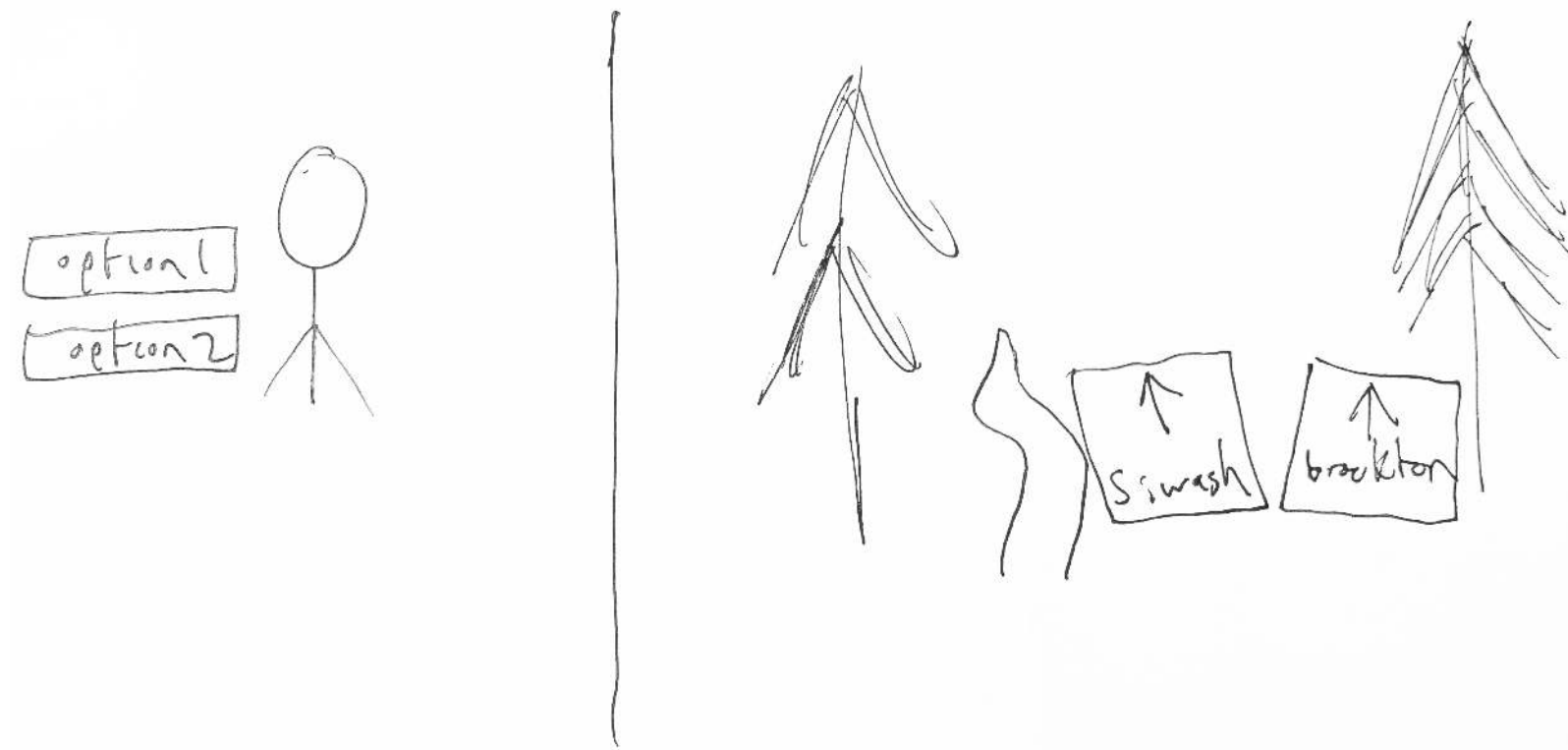
## Stanley Park

Scale 1:10000





# Interaction





# Process



# Demo



[https://youtu.be/cG4oV9IGF\\_A](https://youtu.be/cG4oV9IGF_A)



# Challenges

## User Group

Vulnerable, extreme user group  
which required extra consideration

## New Technology

A few months was spent on R&D  
alone to understand the new media

## Sanitation

How do you clean a VR headset?

**VCH BOT AR**





## Sign In

☐ Remember Me

Log In

<https://youtu.be/CLOCOSYyIFM>

# Brief

## Goal

To display the different VCH sites to new board members

## Challenges

Uses AR  
Accessible to anyone

## User Group



VCH Board members  
All users have access to iPads  
New board members have large amount of VCH facilities across Lower Mainland to familiarize with.



**UX/UI  
Developer**



Developer  
(Contractor)



Modeler  
(Contractor)



# The New Yorker AR Covers



<https://www.newyorker.com/video/watch/introducing-christoph-niemann-augmented-reality-covers>

# User Flow



## STEP 01 CLICK ON **MAP** TRIGGERS

1. Animation
2. Audio
3. UI

## STEP 02 CLICK ON **UI** TRIGGERS

1. Expanded info

VGH reference below:

<b>3932</b> Employees	<b>Brief History</b> VGH is the largest, most specialized hospital in BC and the number-one adult health care referral centre. Nearly half the patients come from outside Metro Vancouver for advanced treatments that are only available here.
<b>Well Known For</b> One of the largest research institutes in Canada	
<b>COO</b> Name here	
<b>COO</b> Name goes here	treatments that are only available here.

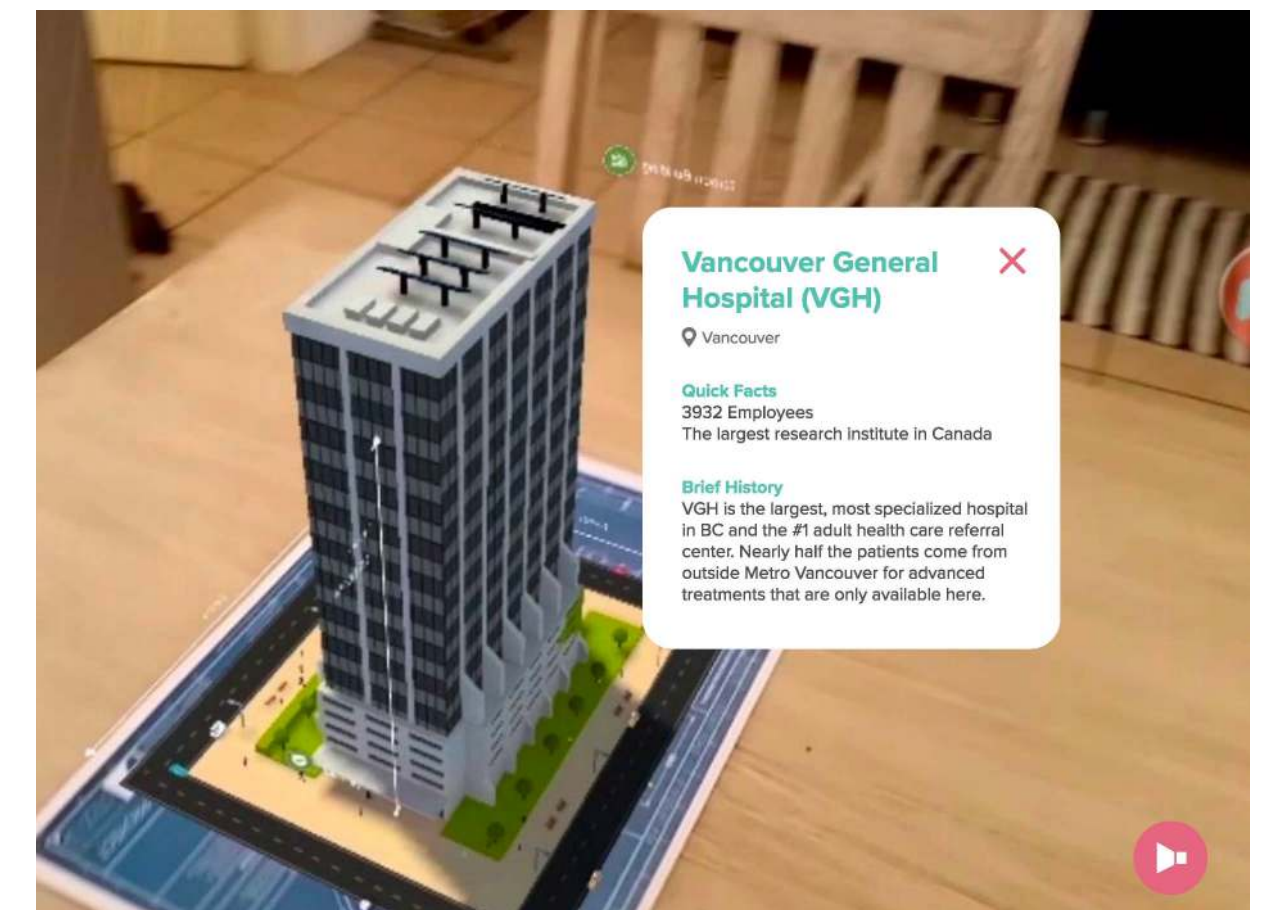
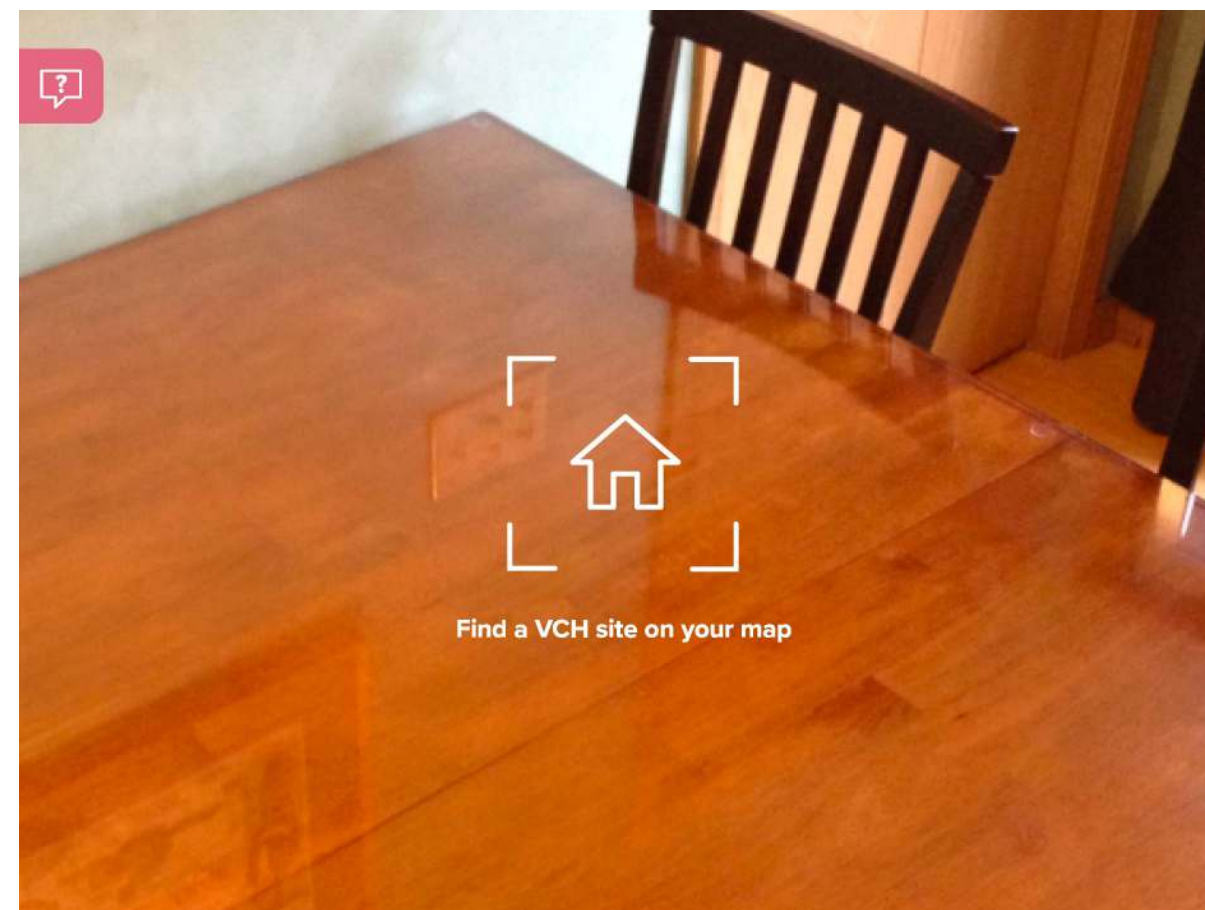
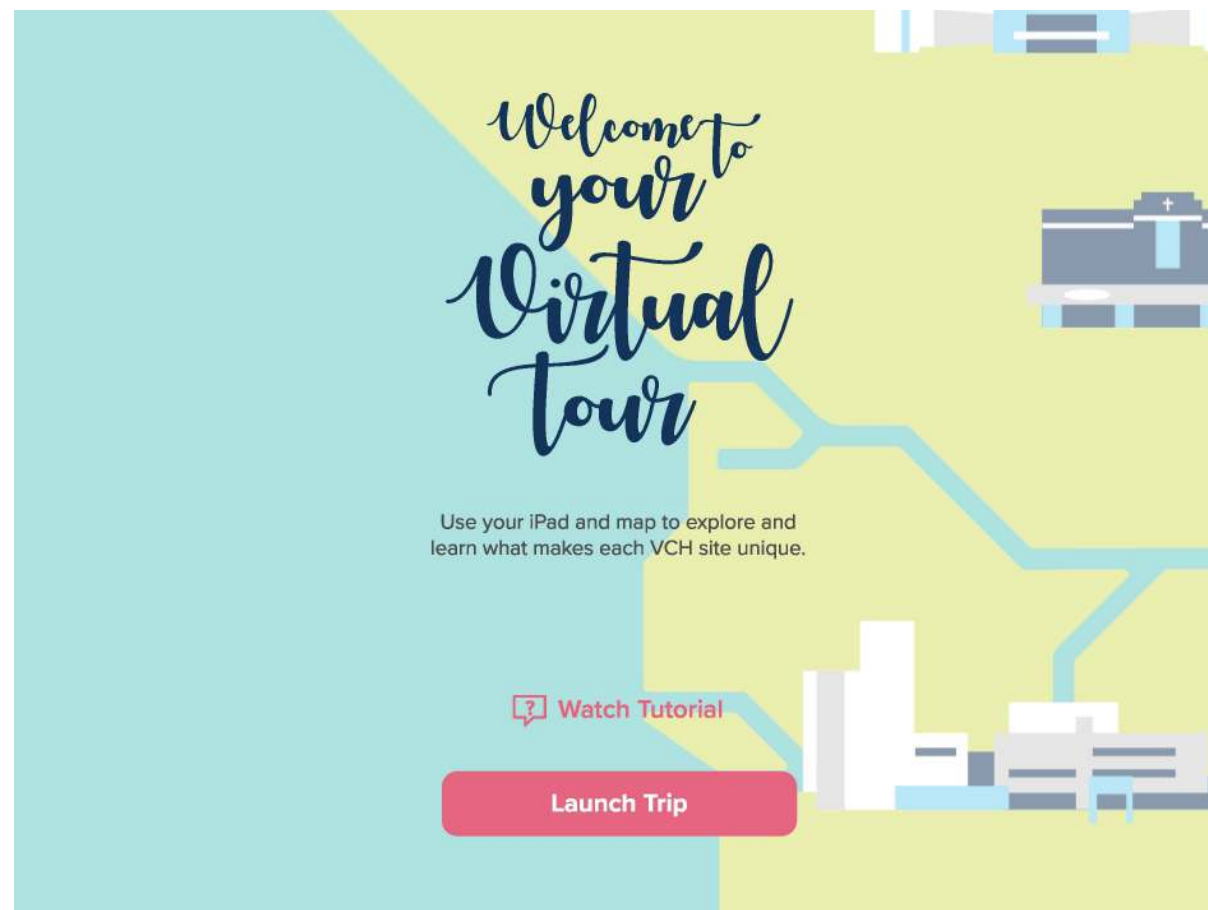
Behaviour reference below:



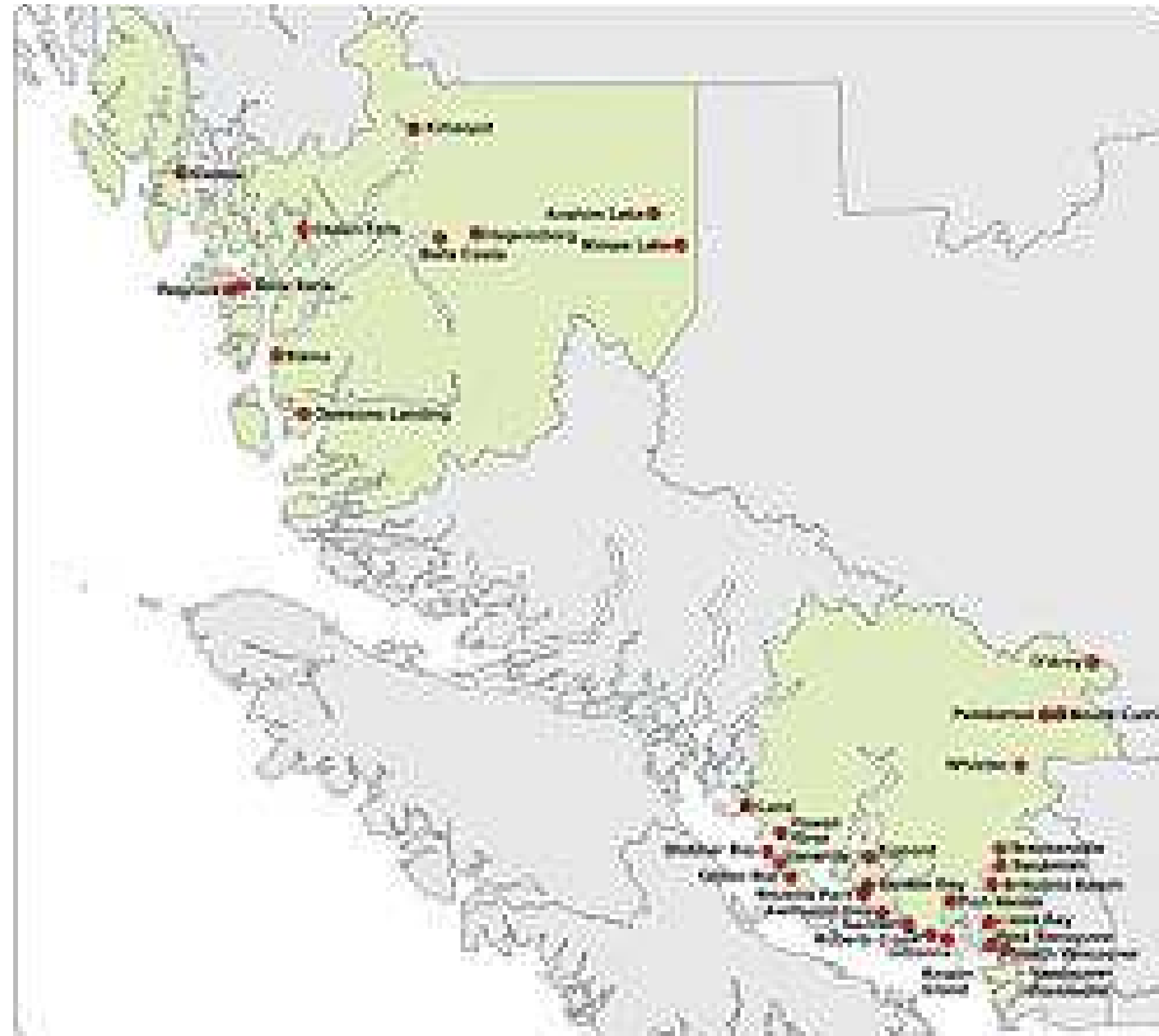
**\* N.B.**  
UX demonstrates behaviour  
NOT indicative UI or layout



# Mockups

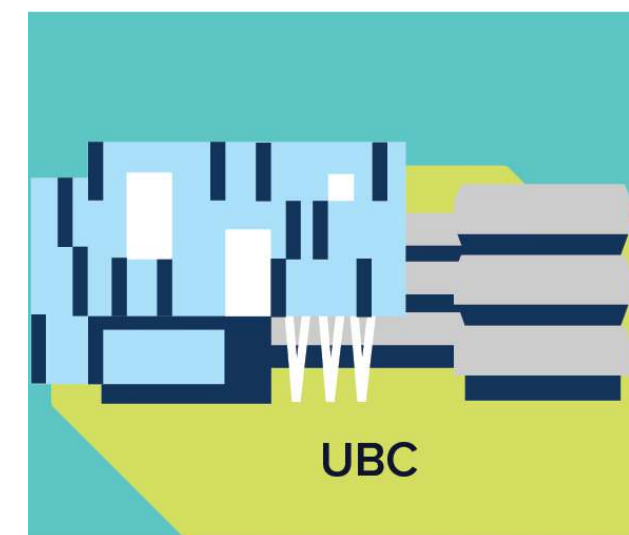
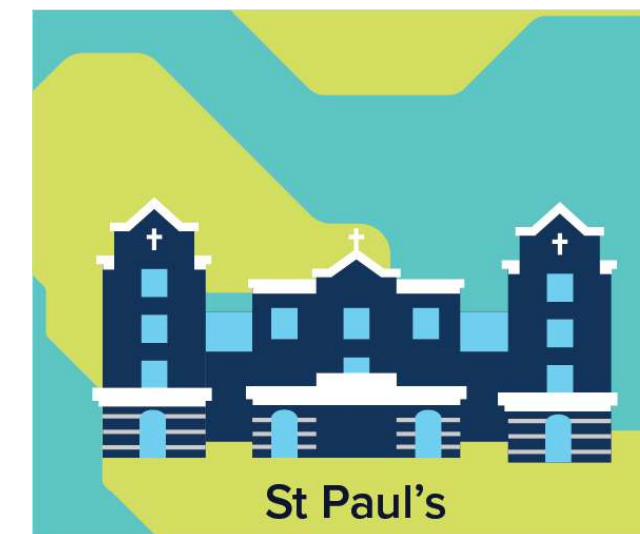


# Map





# Map



# Demo



<https://youtu.be/CLOCOSYyIFM>



# Iterating

## Goal

Improve recognizability of buildings, ease of successful interaction, and enhance liveliness of buildings.

UX in motion inspired us to incorporate deliberate, detailed animation in UX/UI design.



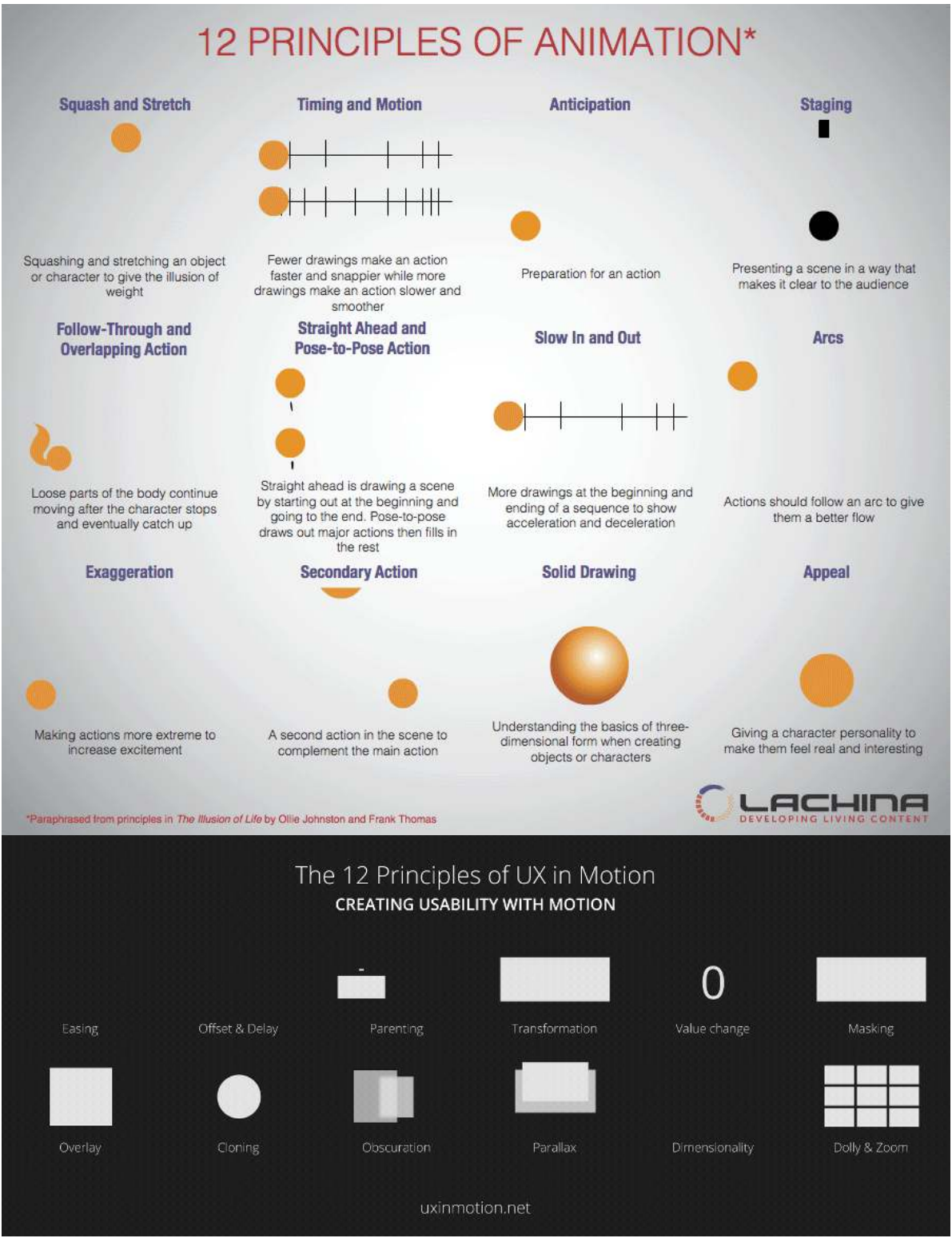
**UX/UI  
Designer**



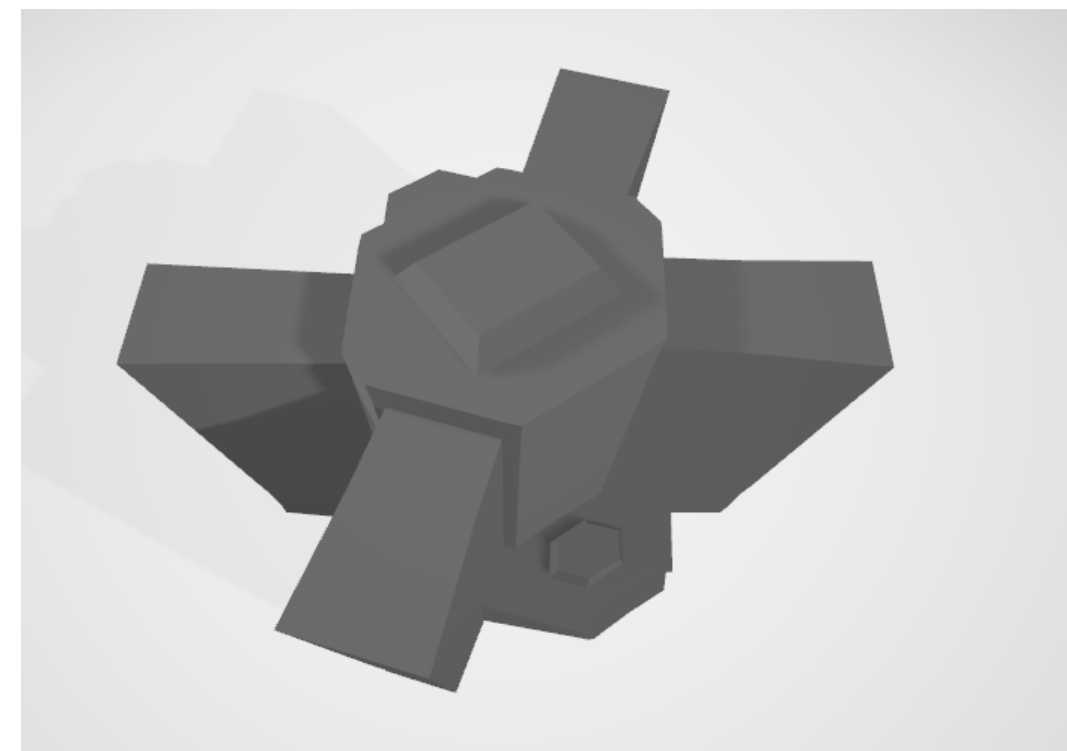
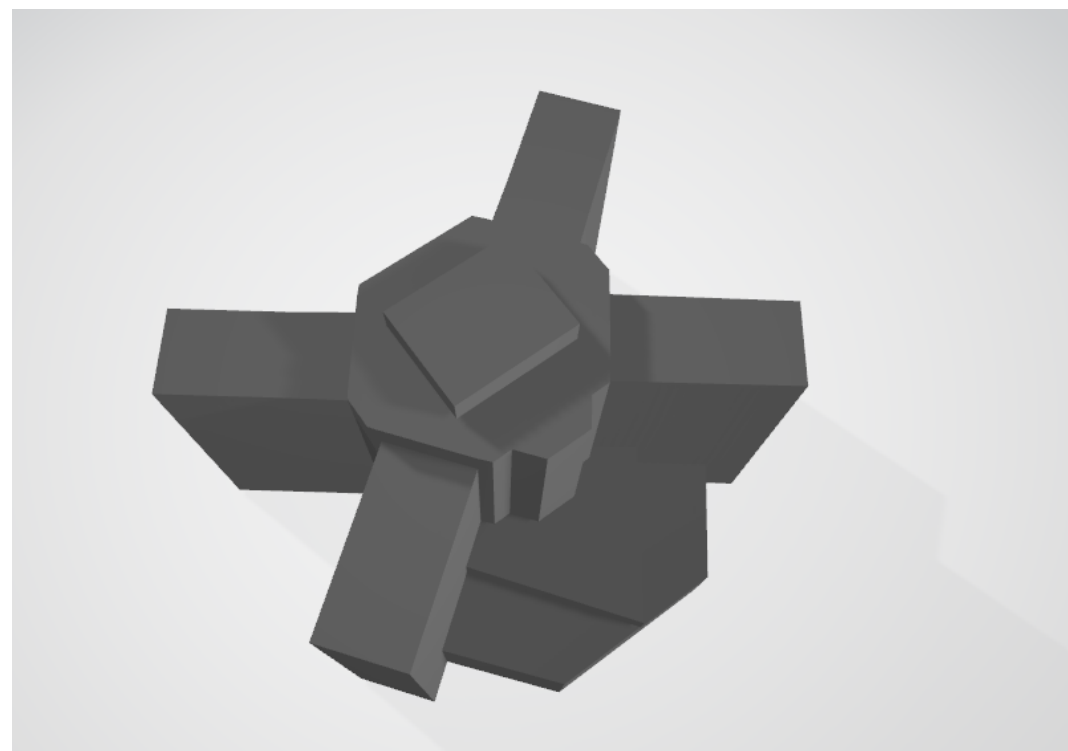
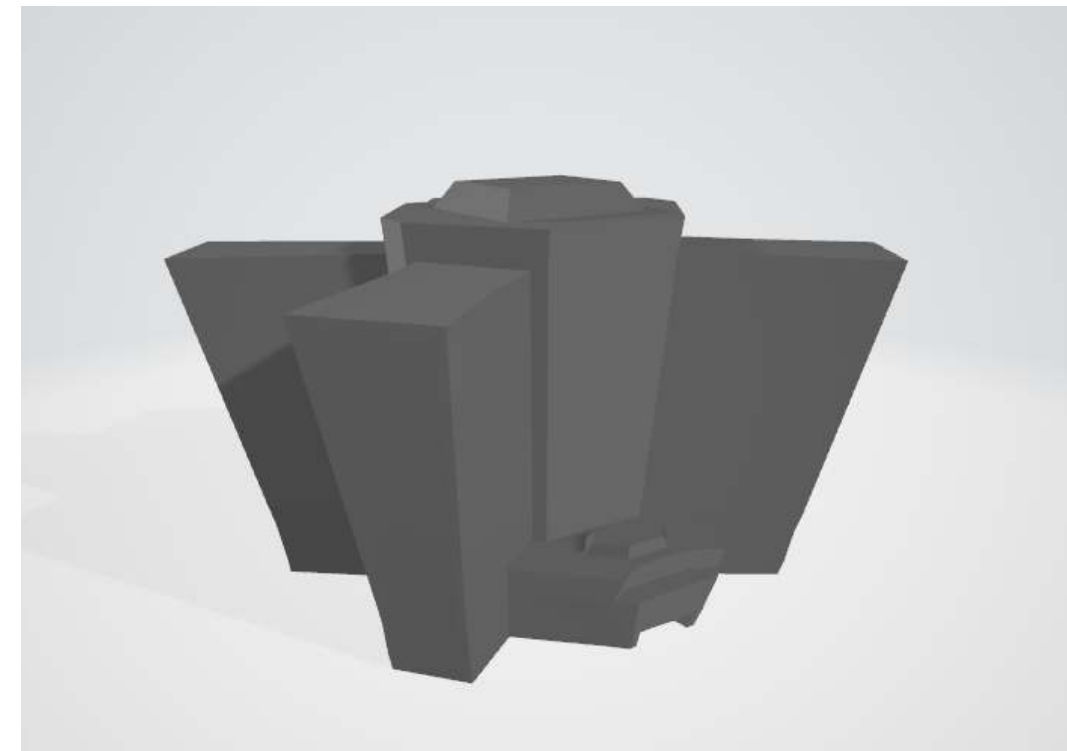
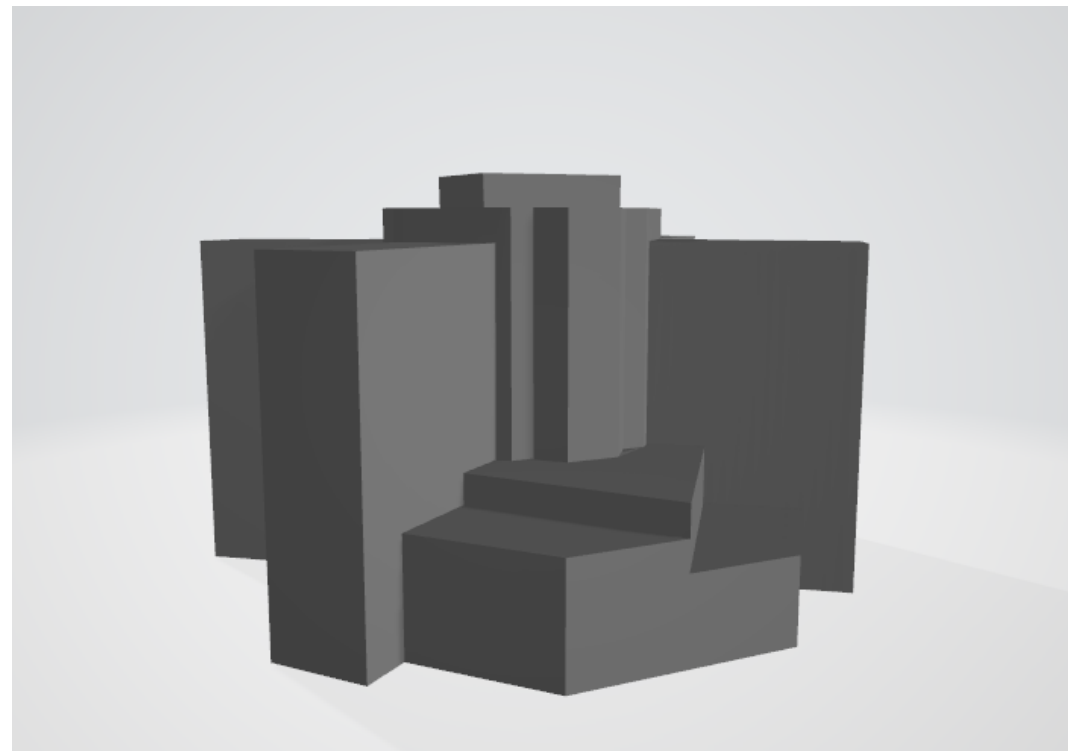
**UX/UI  
Developer**



**3D Modeller/  
Animator**

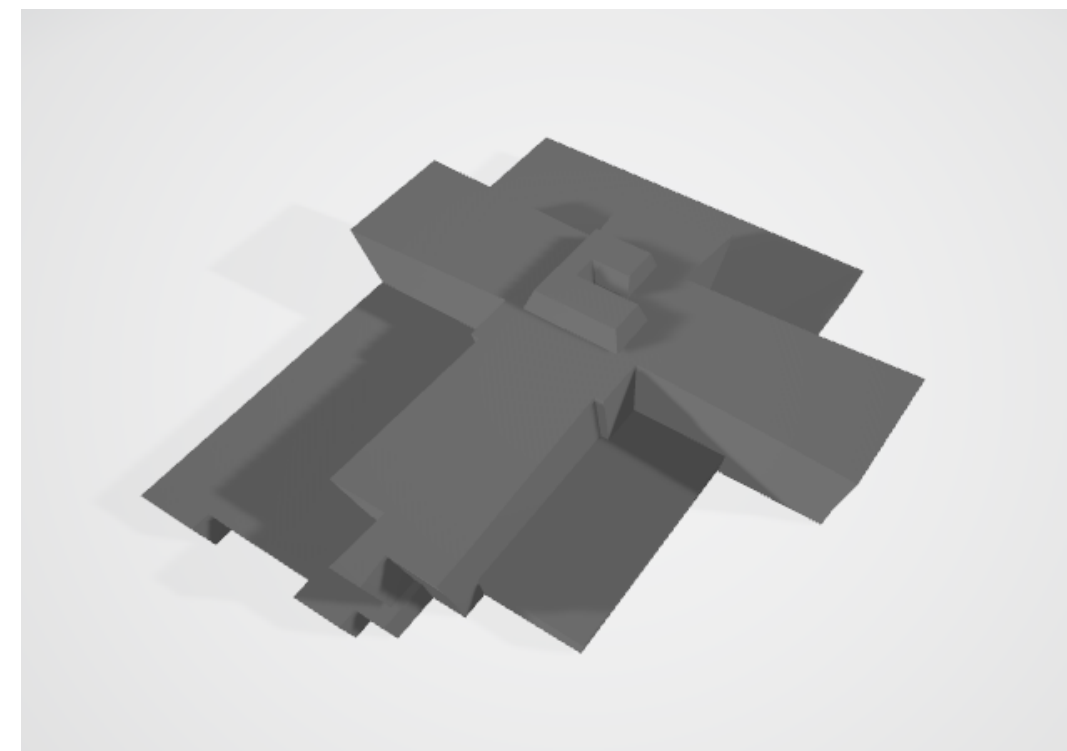
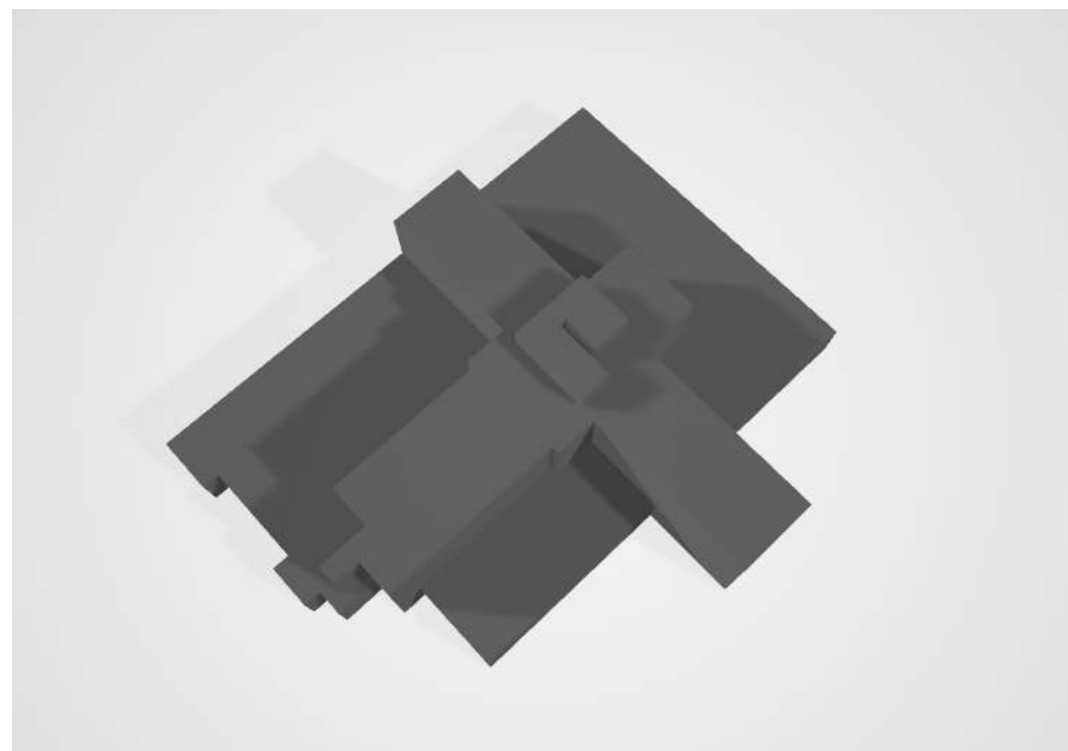
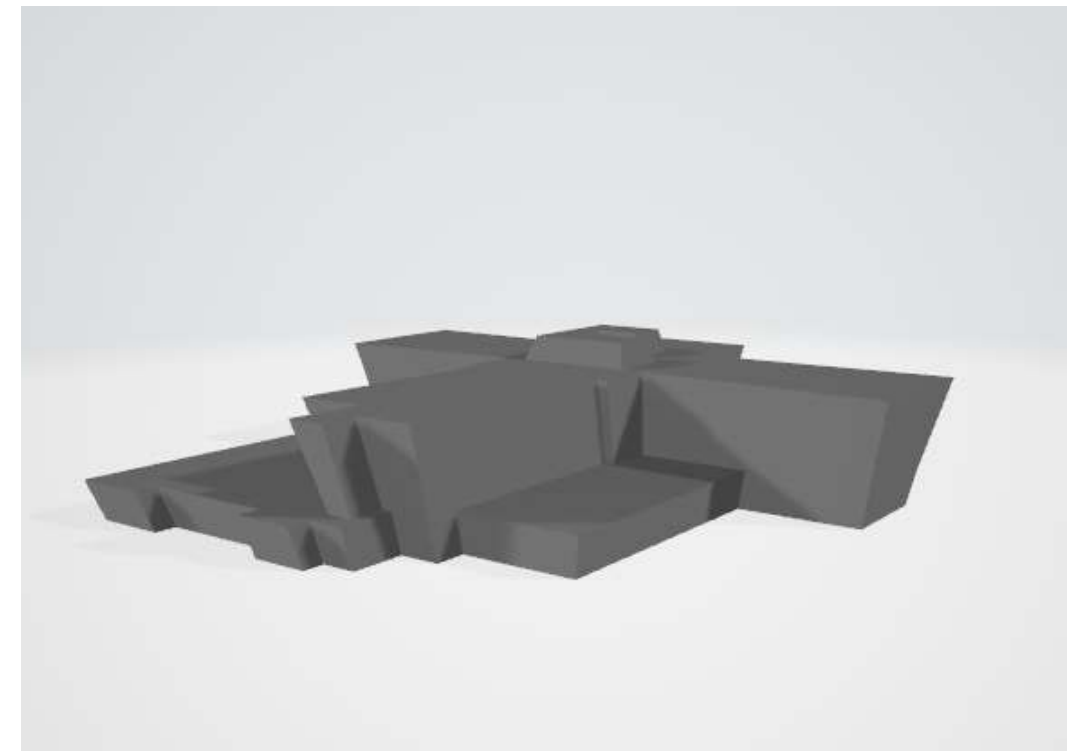
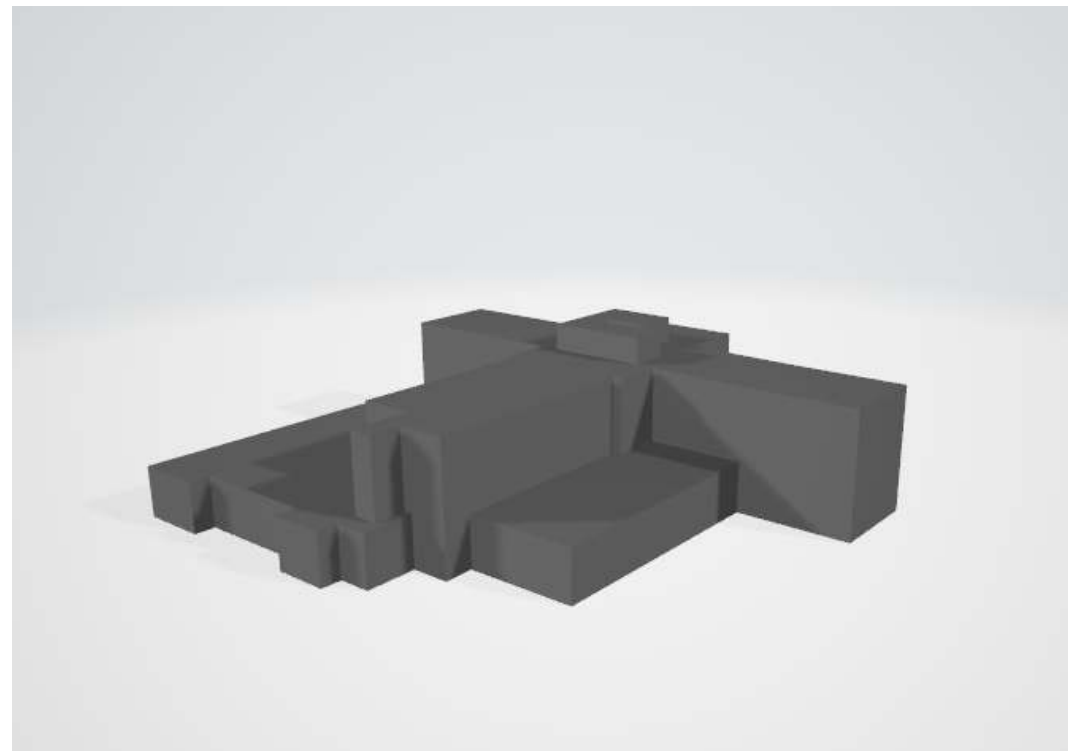


# Exagerrating Models





# Exagerrating Models



# Challenges

## Contractors

Collaborating with two separate contractors added complexity to communicating ideas and getting all assets together.

## User Group

User needs were less prioritized because of the nature of this as an R&D proof of concept project. Board members are also specific but busy.

## New Technology

Large learning curve to get familiar with Unity3D and Maya workflow as well as the C# programming language.



**DTES**

# RESISTING STIGMA

Begin



<https://dtes.vchlearn.ca>



# Brief

## Goal

Break down the stigma around people who live in the downtown east side.

## Challenges

Respectful handling of sensitive subject matter and the safety of learners the pandemic emergency.

## User Group



VCH staff working in the DTES or any one else who may interact with homeless and other stigmatized groups near their workplace.



**Instructional  
Designer**



**Media  
Designer**

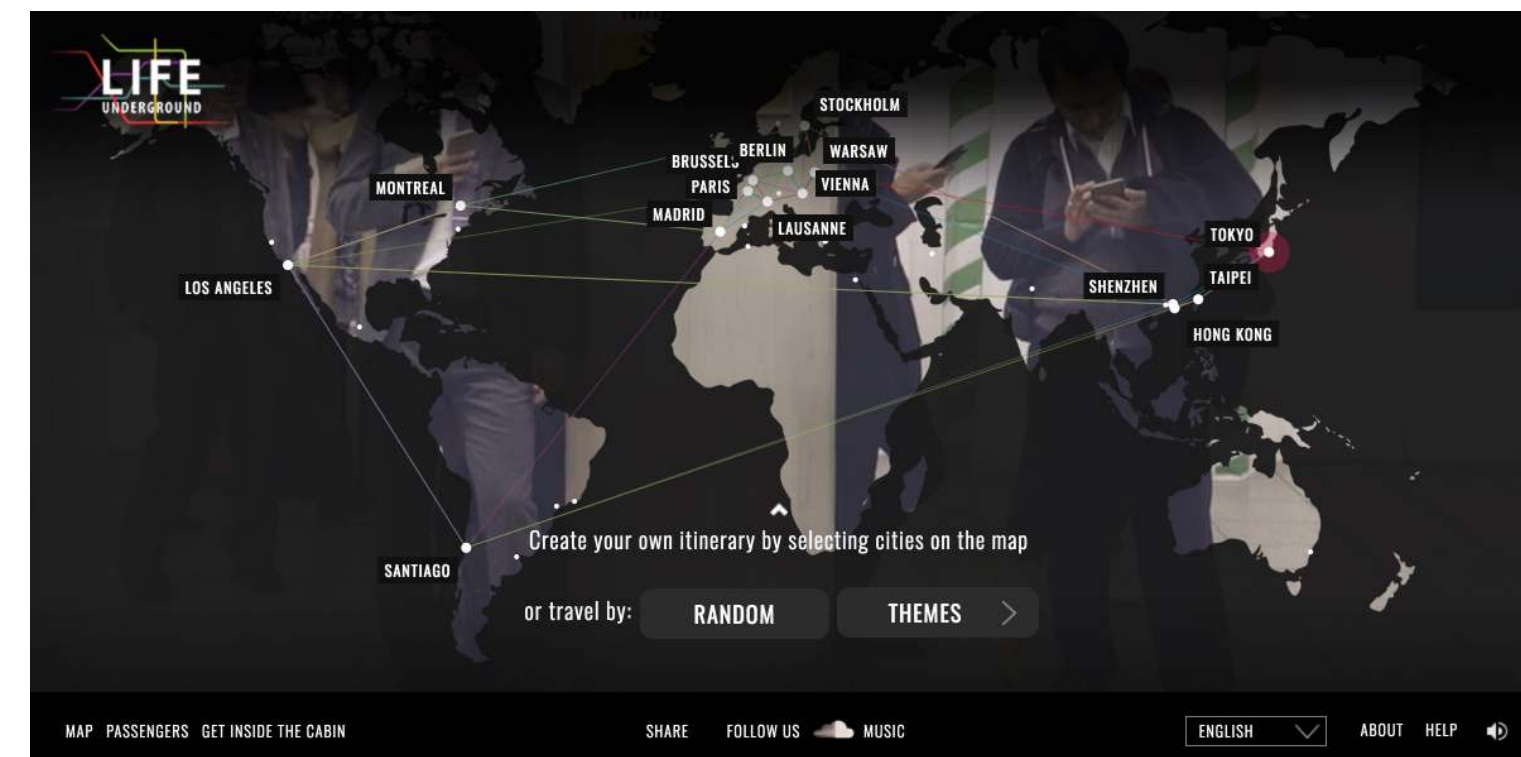


**Developer**

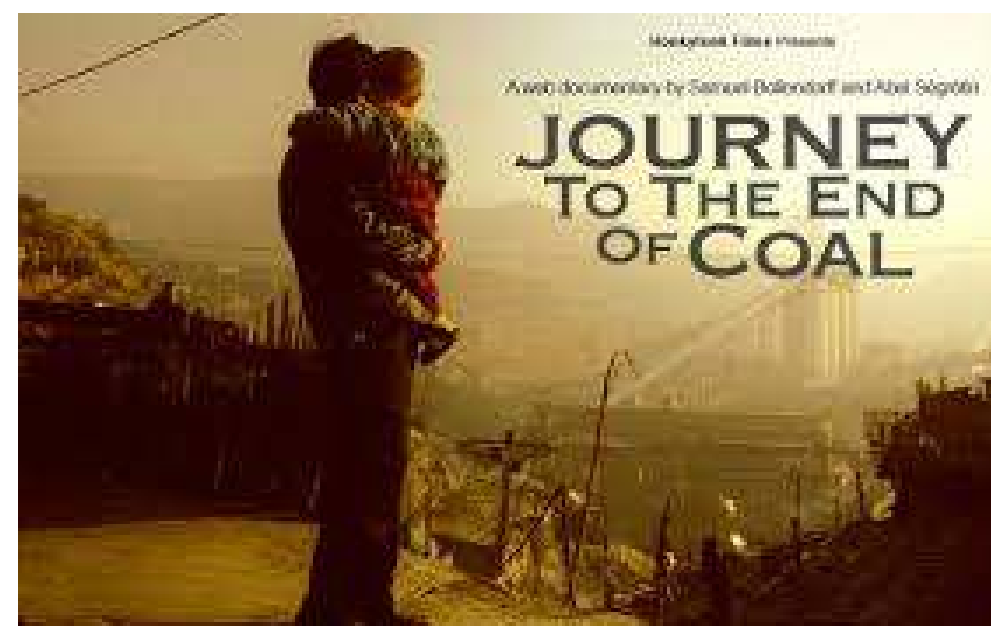
# Research



**Word Within 10 Blocks**



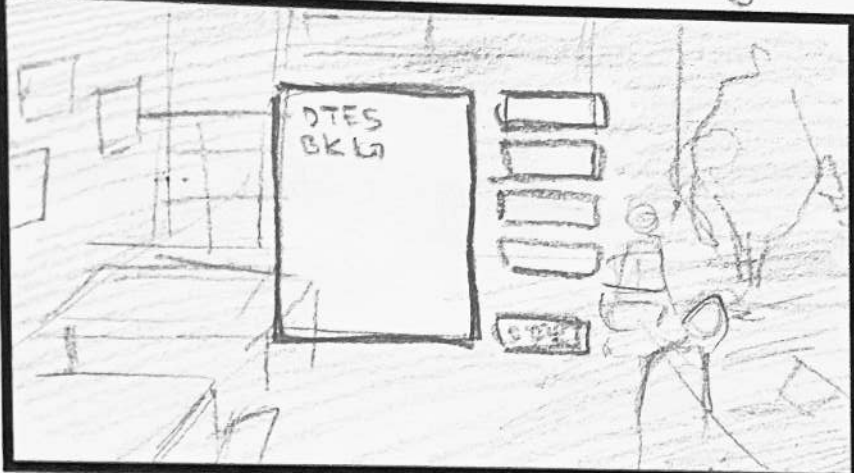
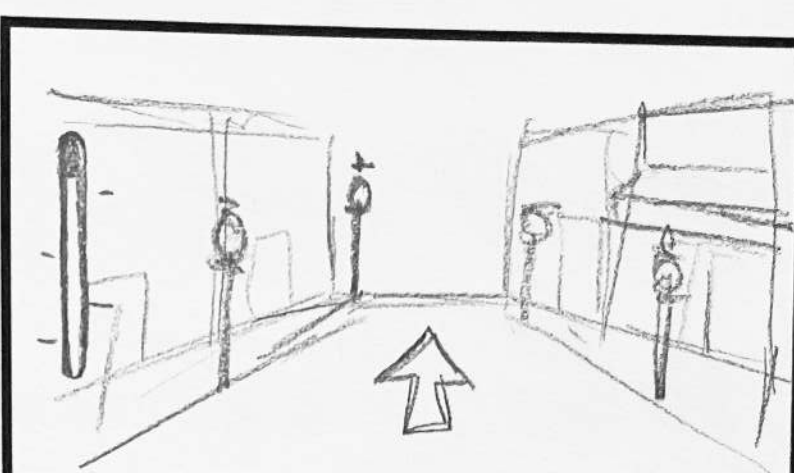
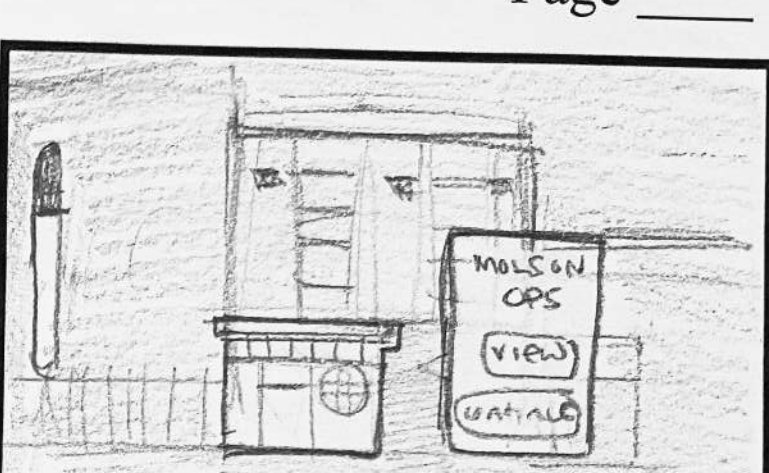


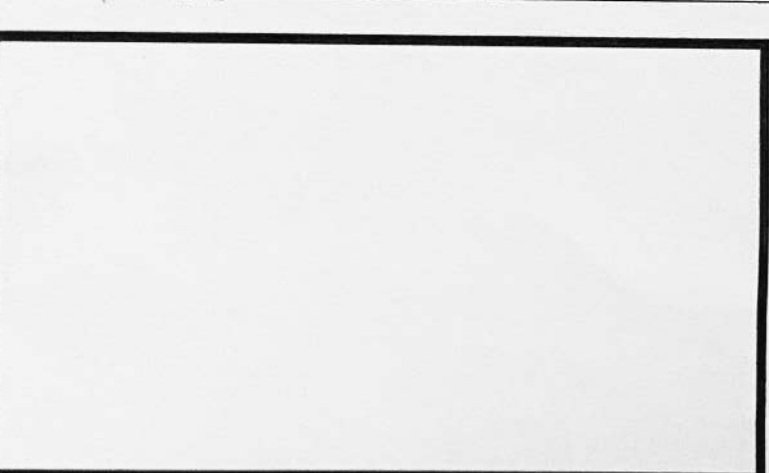
**Life Underground**



**Journey to the End of Coal**



# Storyboard

Title <u>DTES (documentary)</u>	Scene _____	Page _____
 <p><u>Last + Found Cafe</u> <u>Intro, instructions, etc</u></p>	 <p><u>Street view, scroll to travel</u></p>	 <p><u>Trigger - can choose to interact or continue</u></p>
 <p><u>story of trigger plays</u> <u>video? scrolling? montage?</u></p>	 <p><u>Jacobsen Cafe</u> <u>Feedback, print arts</u></p>	 <p></p>

# Challenges

## Sensitive Issues

Filming people's stories in a respectful way, and to avoid capturing anyone who hasn't given consent

## Many Participants

Liasoning with not only the client's team but also the interviewees to arrange and approve the videos

## COVID-19

Extra considerations when going out to film and also restricting our bandwidth all around



# Reflective Evaluation

# Evaluation

## What design elements work well?

Affect on users learning?

How would you test and measure effectiveness?

What handled new complexities of AR/VR well?

## UX that could be improved?

Ways to improve intuitiveness?

Other approaches to challenges?