

Lunch + Learn

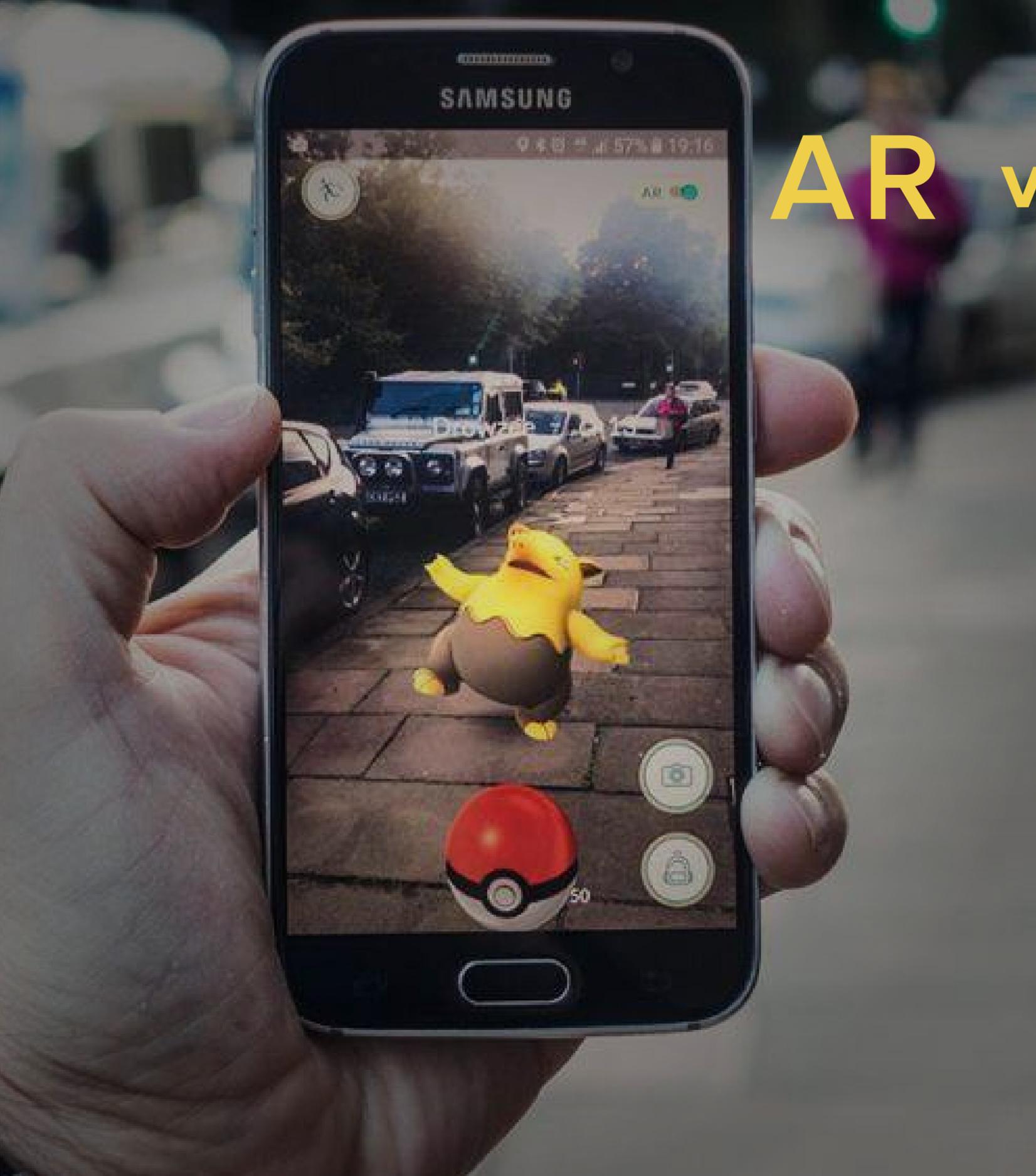
UX for AR & VR

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 road. The road is paved and curves along a dark, forested cliffside. At the bottom left, a white lighthouse with a red band is visible. The road leads down to a dark, calm body of water. In the upper right, a speedboat is moving across the water, leaving a white wake. The overall scene is captured in a cinematic, high-angle perspective.

BANFIELD VR

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?



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[Harv Rev Psychiatry](#). Author manuscript; available in PMC
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The use of virtual reality technology in the treatment of anxiety and other psychiatric disorders

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Abstract

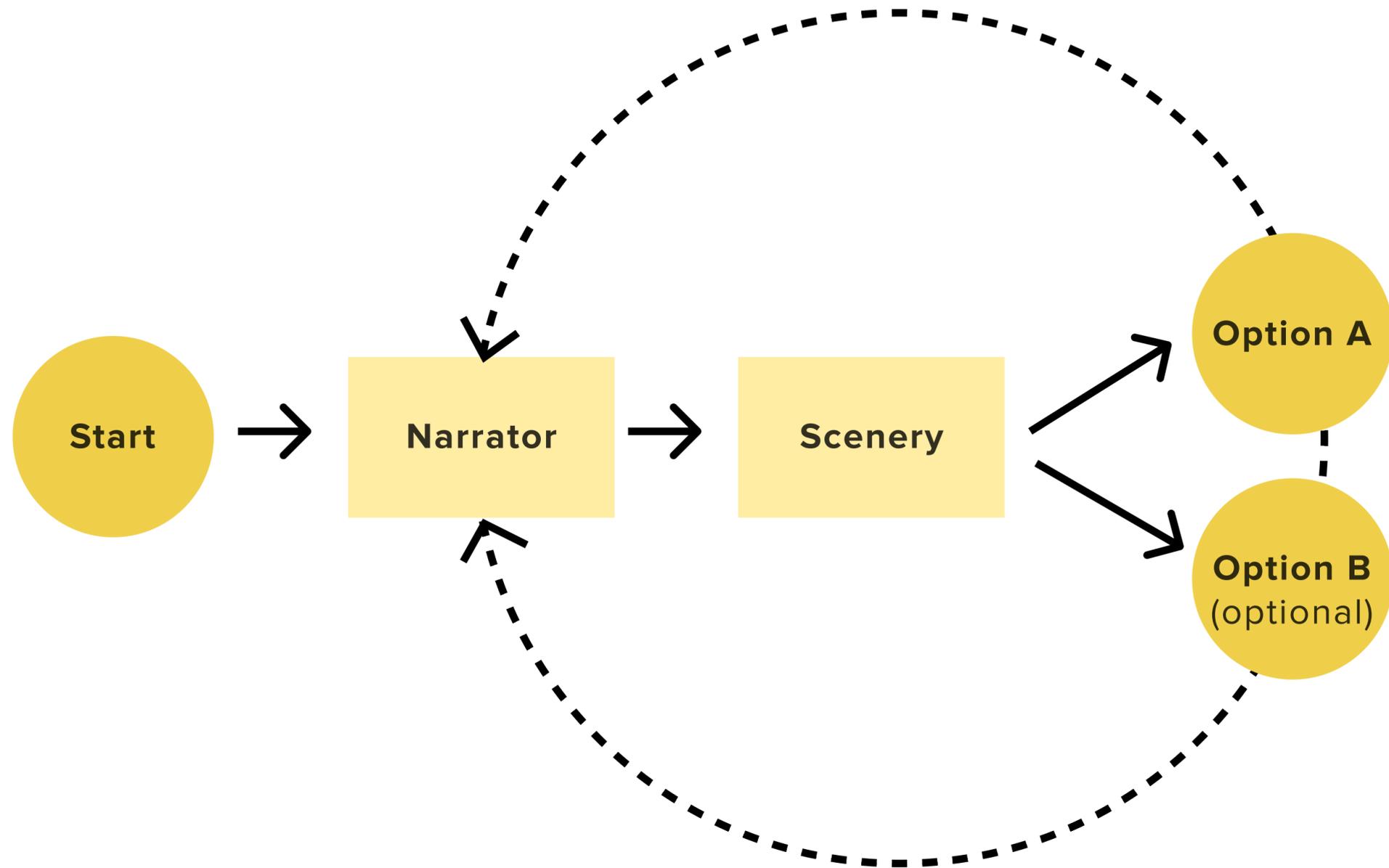
Go to:

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

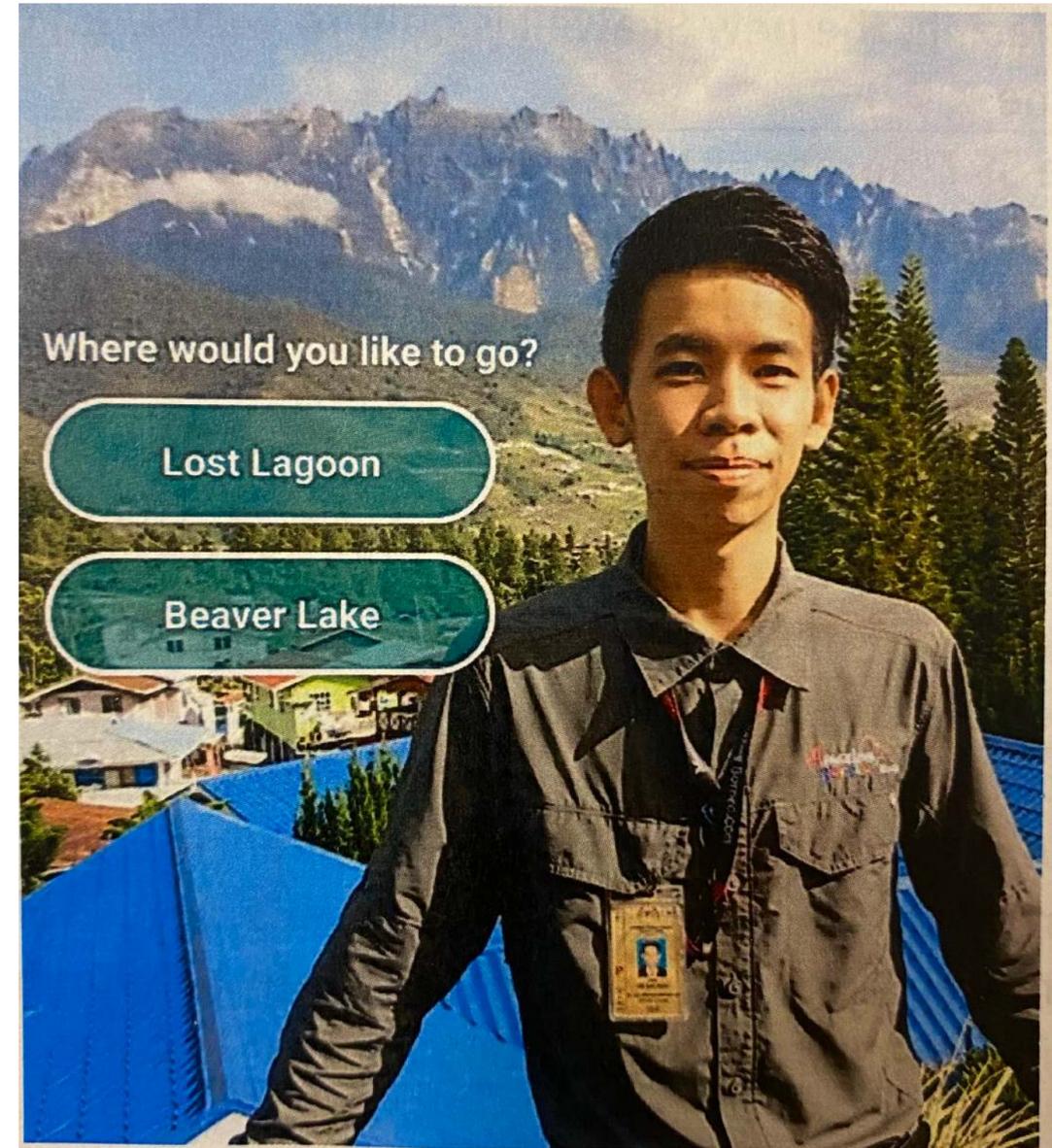
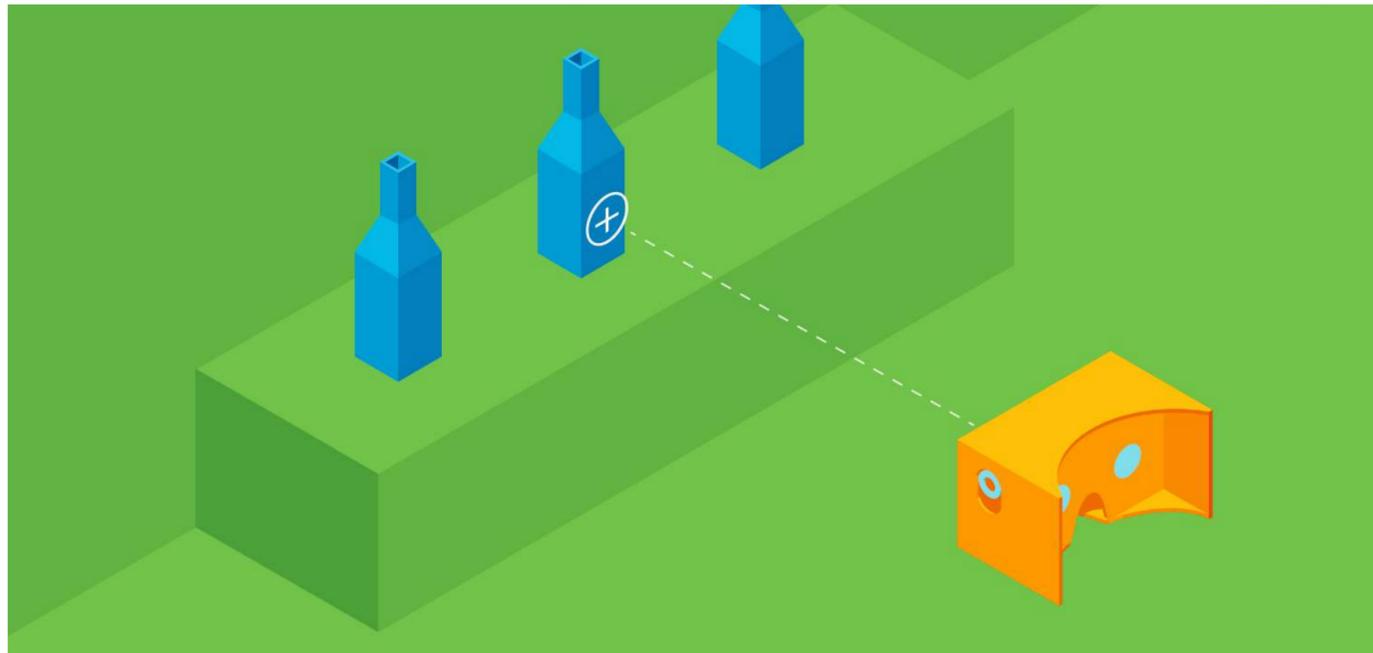
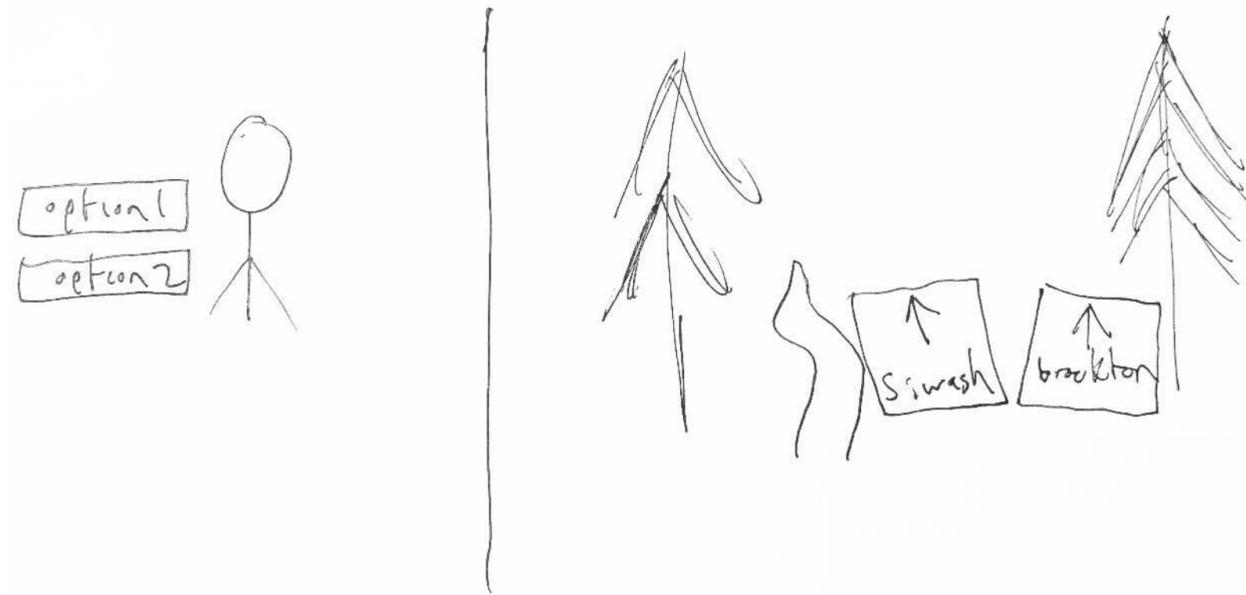


Locations

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



Interaction



Process



Demo



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



VCHBOARD
ORIENTATION
TOOL

Sign In

Remember Me

Log In

<https://youtu.be/CLOCOSyIFM>

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

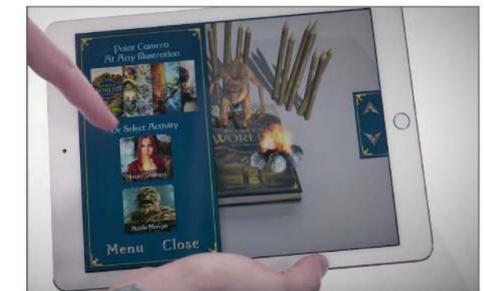
STEP 02
CLICK ON UI TRIGGERS

- 1. Expanded info

VGH reference below:

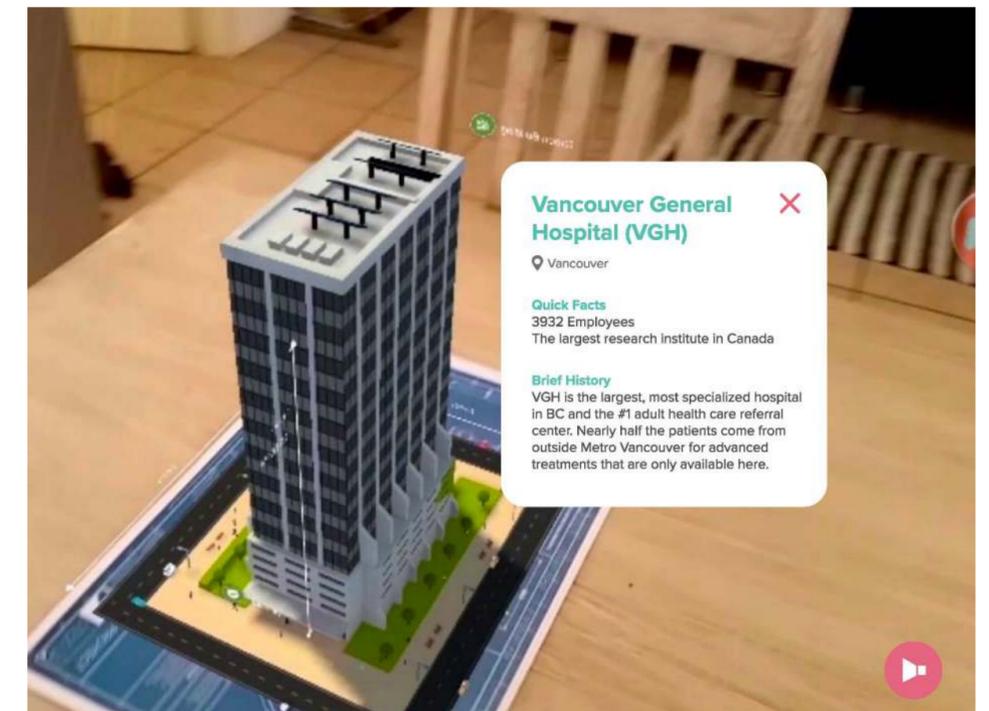
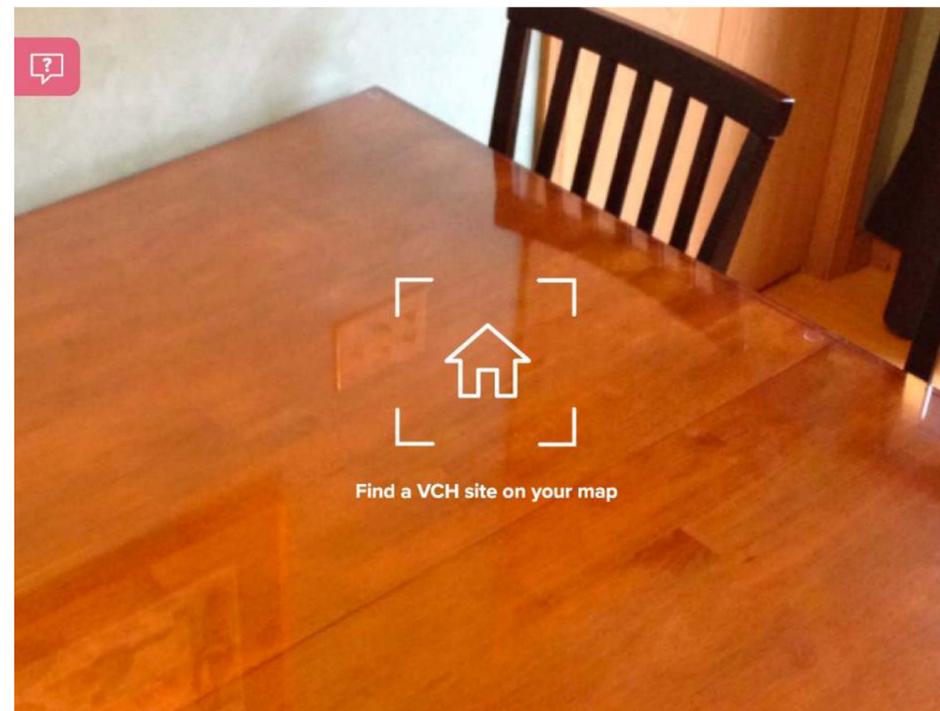
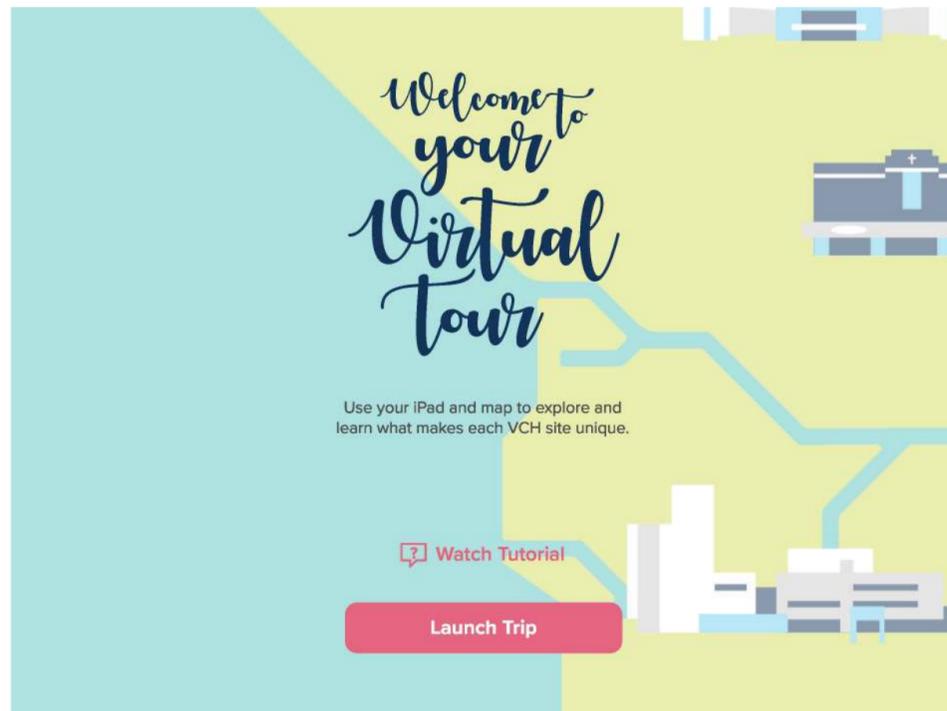
3932 Employees	Brief History VGH is the largest, most specialized hospital in BC and the number-one adult health care referral centre. Nearly half the patients come from outside Metro Vancouver for advanced treatments that are only available here.
Well Known For One of the largest research institutes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

Behaviour reference below:



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

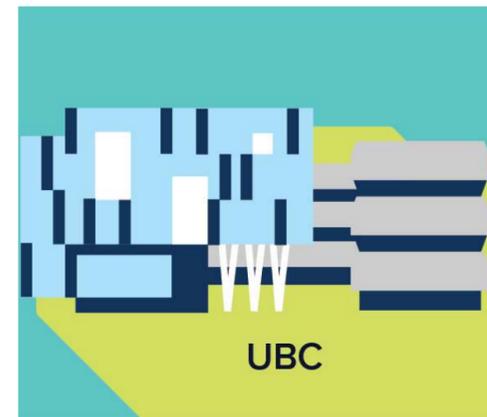
Mockups



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**

12 PRINCIPLES OF ANIMATION*

Squash and Stretch Squashing and stretching an object or character to give the illusion of weight	Timing and Motion Fewer drawings make an action faster and snappier while more drawings make an action slower and smoother	Anticipation Preparation for an action	Staging Presenting a scene in a way that makes it clear to the audience
Follow-Through and Overlapping Action Loose parts of the body continue moving after the character stops and eventually catch up	Straight Ahead and Pose-to-Pose Action Straight ahead is drawing a scene by starting out at the beginning and going to the end. Pose-to-pose draws out major actions then fills in the rest	Slow In and Out More drawings at the beginning and ending of a sequence to show acceleration and deceleration	Arcs Actions should follow an arc to give them a better flow
Exaggeration Making actions more extreme to increase excitement	Secondary Action A second action in the scene to complement the main action	Solid Drawing Understanding the basics of three-dimensional form when creating objects or characters	Appeal Giving a character personality to make them feel real and interesting

*Paraphrased from principles in *The Illusion of Life* by Ollie Johnston and Frank Thomas

LACHINA
DEVELOPING LIVING CONTENT

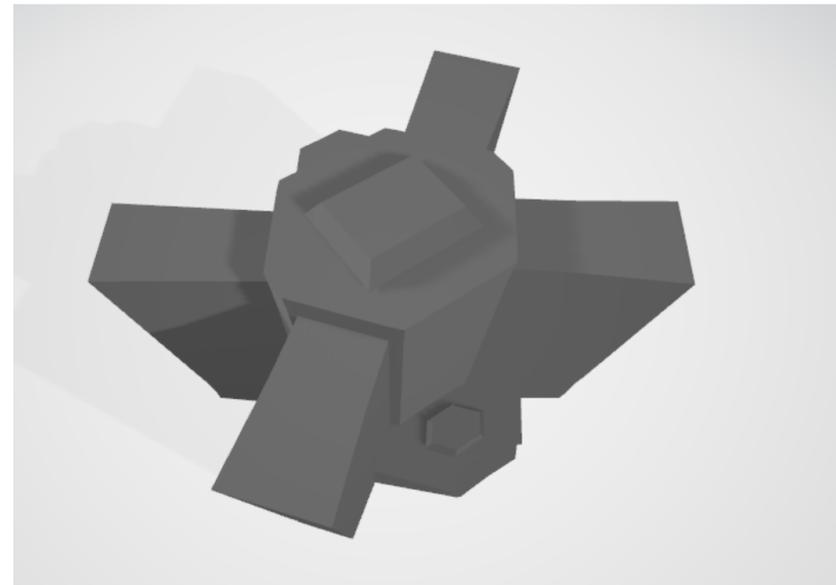
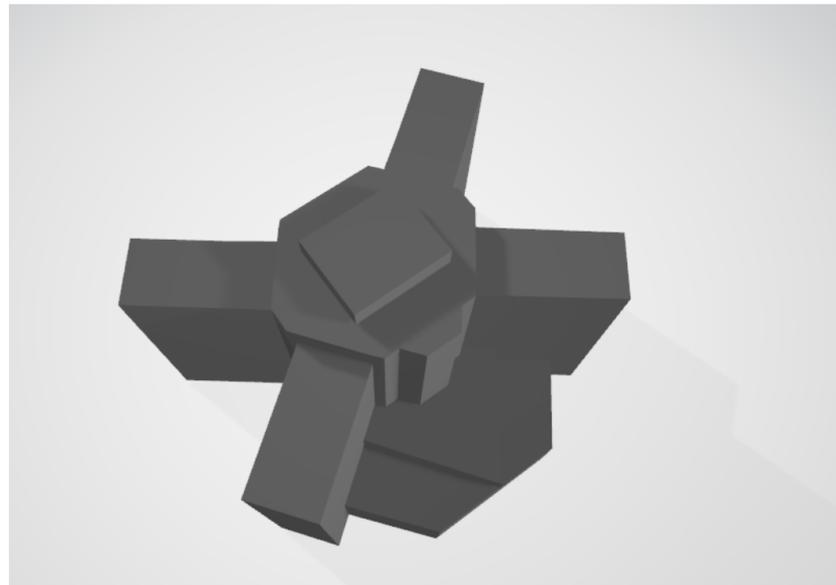
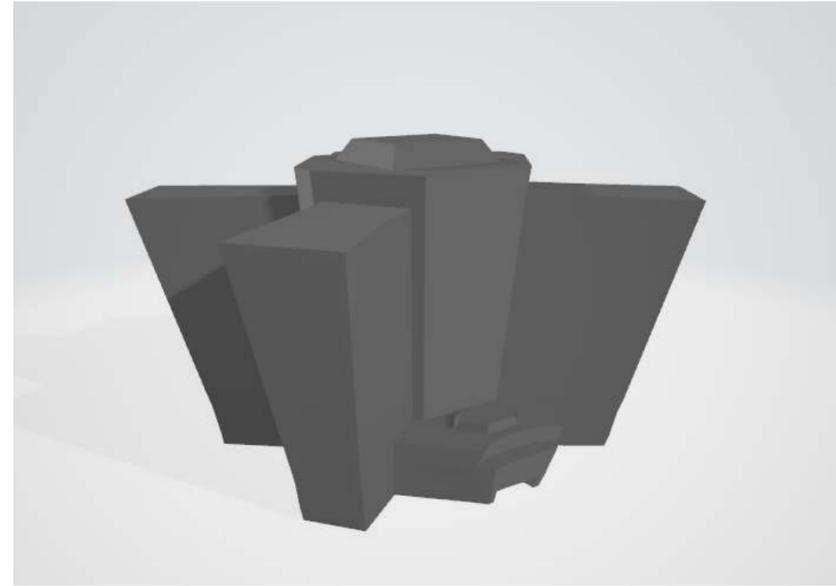
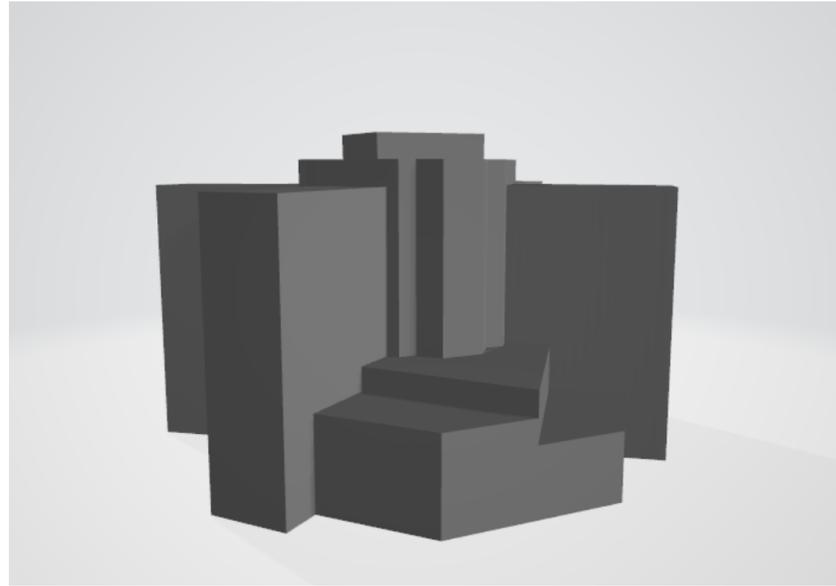
The 12 Principles of UX in Motion

CREATING USABILITY WITH MOTION

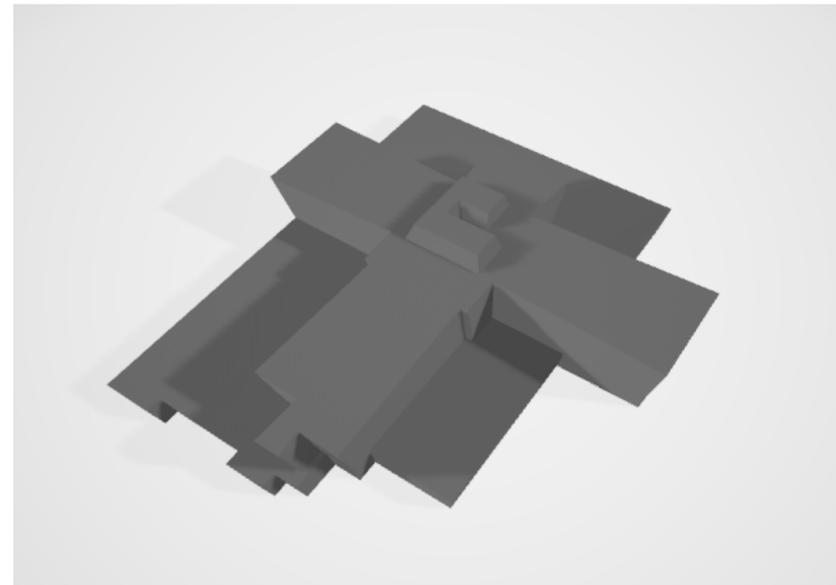
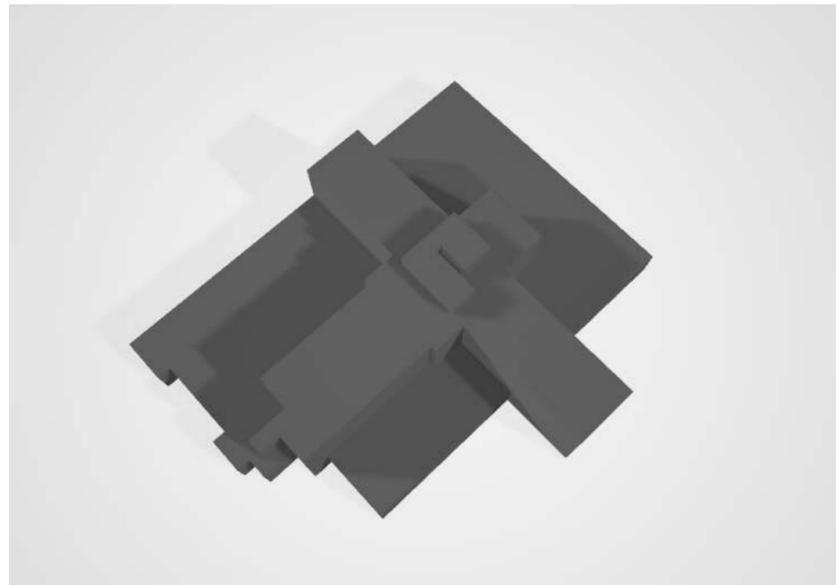
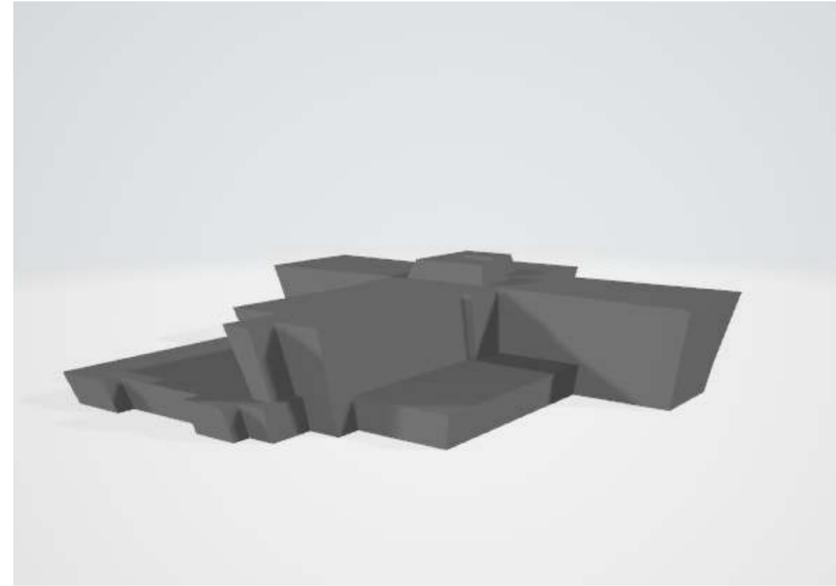
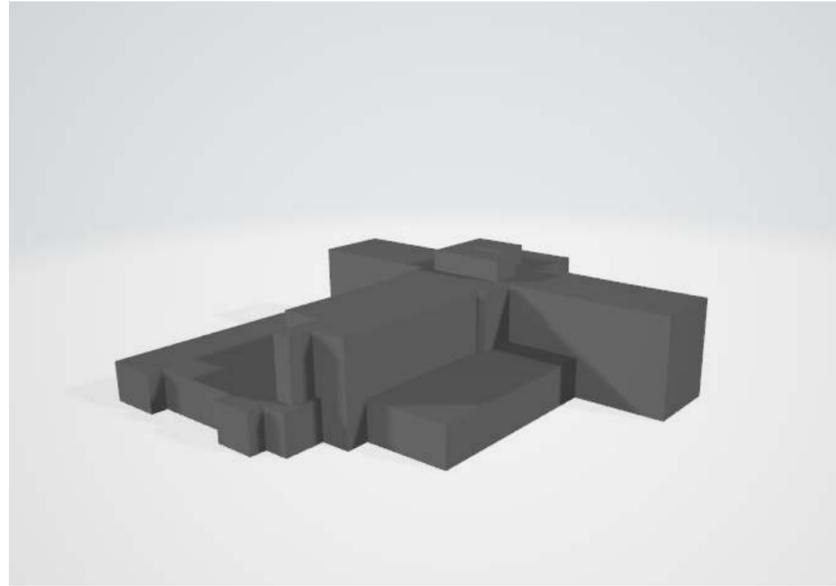
 Easing	 Offset & Delay	 Parenting	 Transformation	 Value change	 Masking
 Overlay	 Cloning	 Obscuration	 Parallax	 Dimensionality	 Dolly & Zoom

uxinmotion.net

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

Carrall St

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

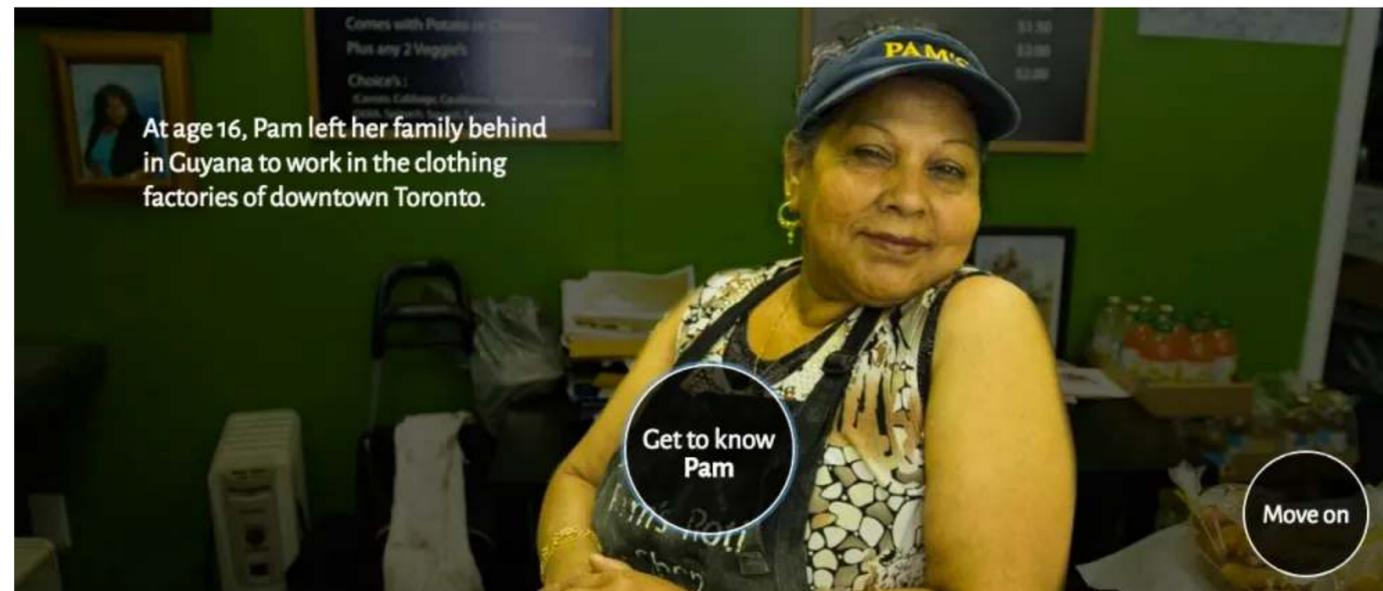


Media Designer

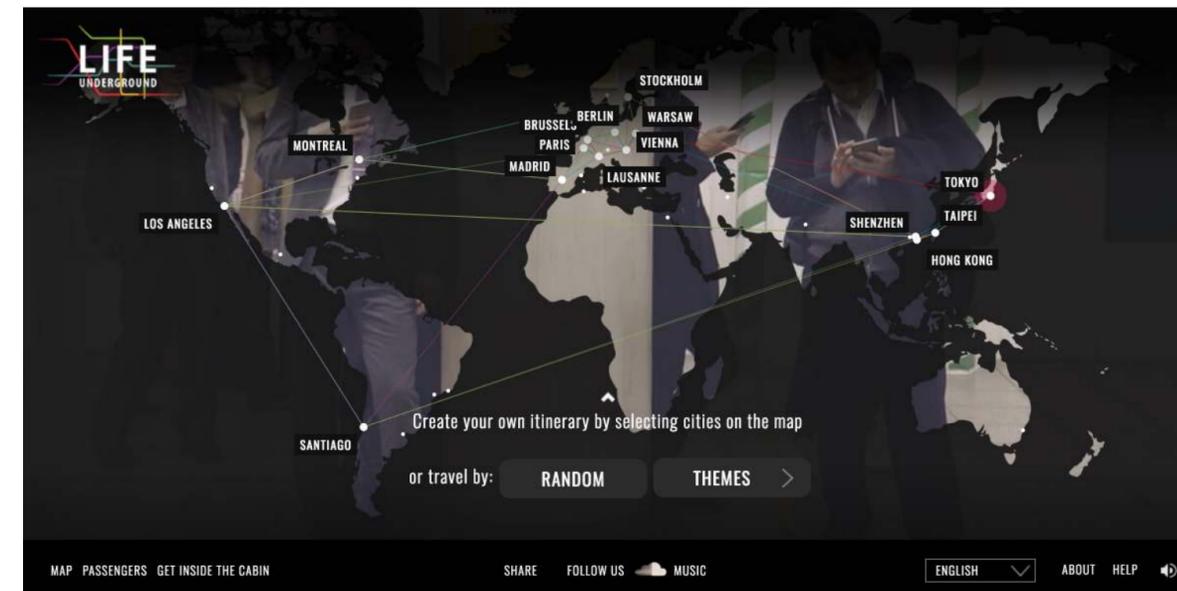


Developer

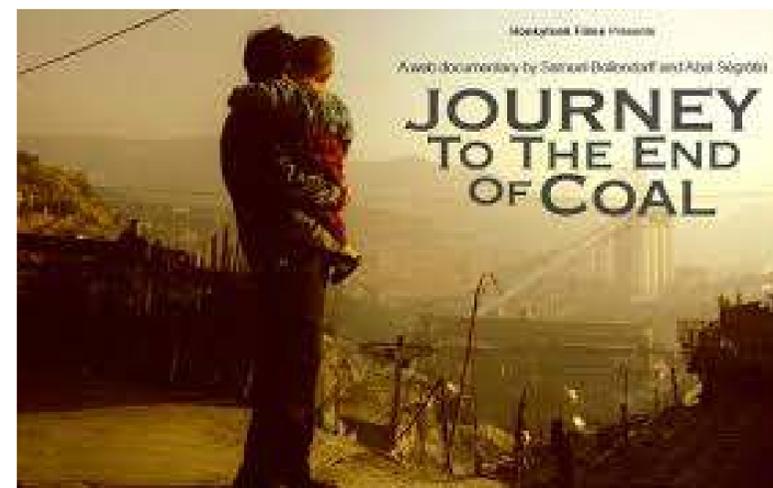
Research



Word Within 10 Blocks

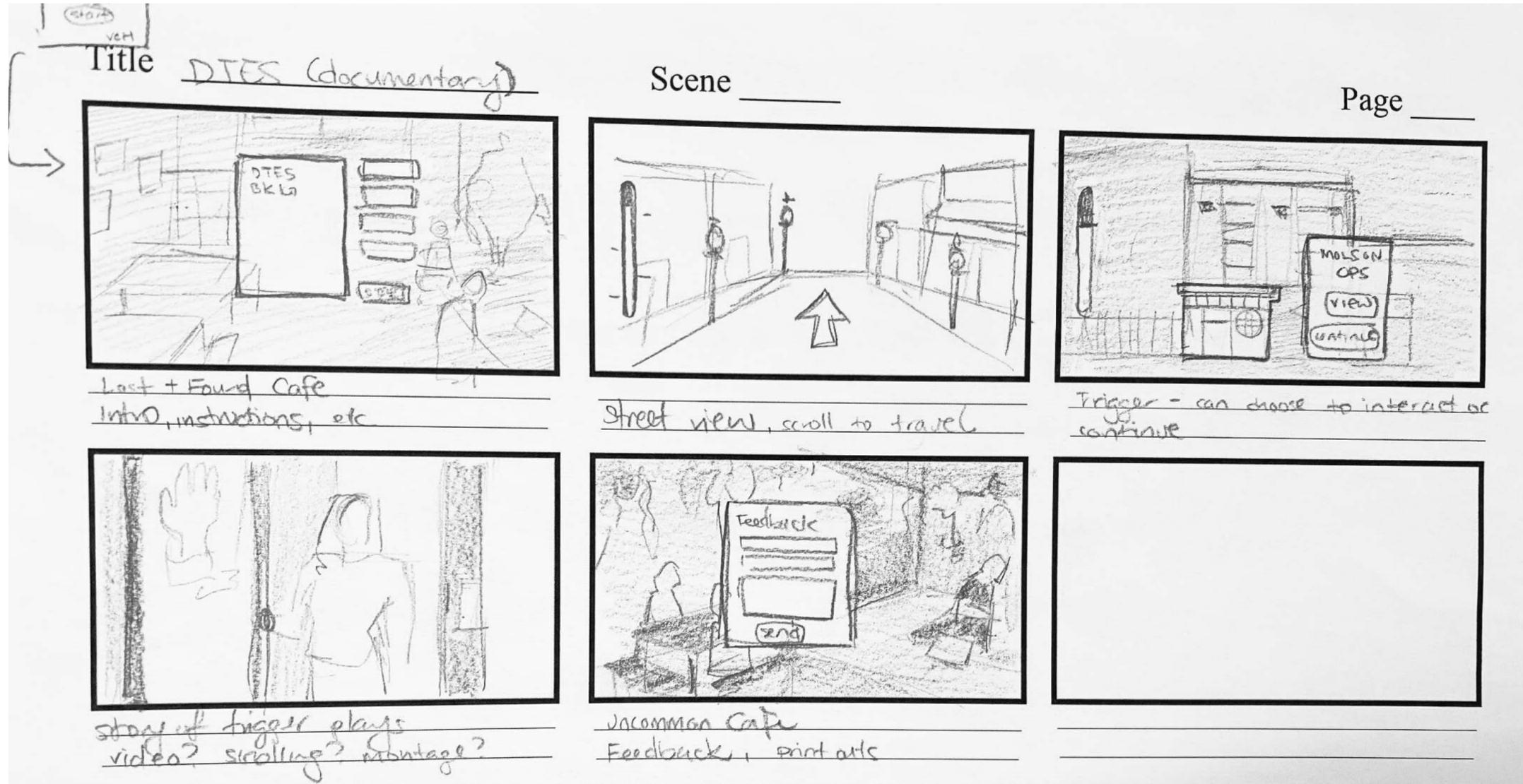


Life Underground



Journey to the End of Coal

Storyboard



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?