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Space Jam: Libby Drive Restoration Project

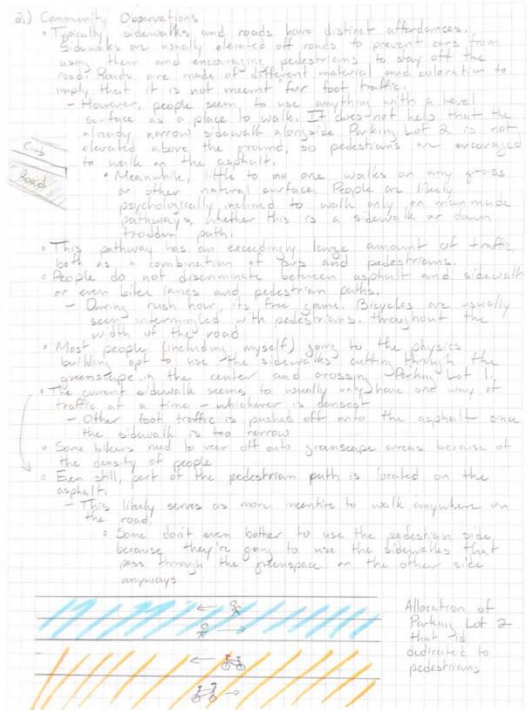
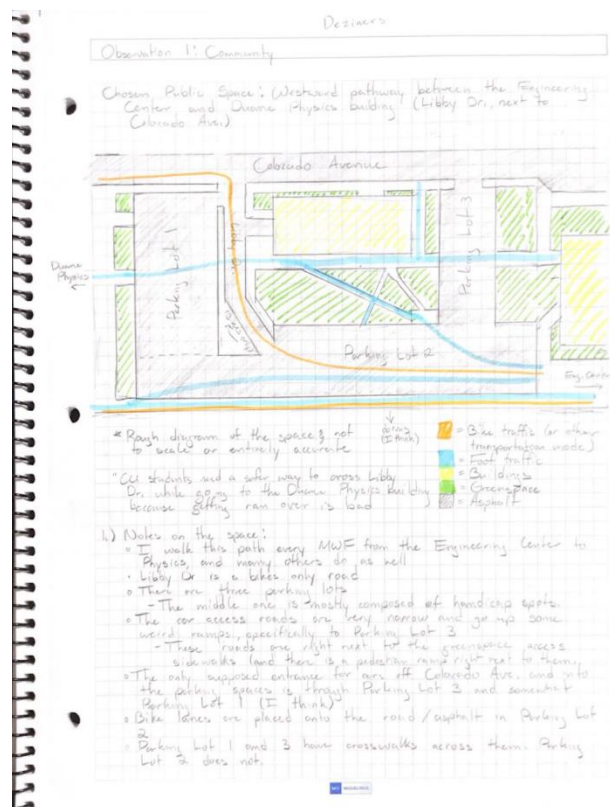
First Ideation – Looking at the part of Libby Drive between the physics and engineering buildings:

Libby Drive Pictures



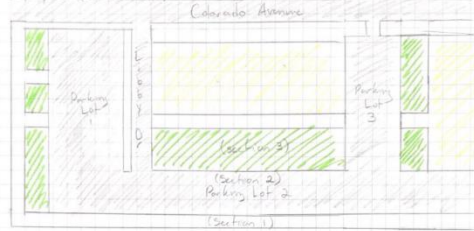


Initial observations/sketches:



- 2) Community Observations (cont.)
- People will occasionally use the greenspace to hang out, especially if there are trees
 - Most use the front of the building in the middle as a place to socialize. Maybe it's a common area building. Or maybe it's just because there are places to sit with shade.
 - I'm not even sure how many of the cars in Parking lot 2 (the one with majority handicap spaces) actually have a reason to use a handicap space (integrated foot-handicapped).
 - Most probably do, but some seem to use the space as convenience.
 - Another allocation of space issue comes when people are socializing and walking. Walls of people tend to form, straining the sidewalk.
 - (not a bad thing, just a sign the sidewalk is too small)
- 3) Affordances / Structural Incentives
- A ramp needs for bikers to go down onto the asphalt also signifies people to walk there, much like crosswalk ramps.
 - No clearance between the road and sidewalk makes the entire lot free canvas for foot traffic.
 - Alternate paths across from each other further spreads people out.
 - Fences keep people from cutting through the greenspace straight from the parking lot.
 - Lanes are not acknowledged (bike vs people).
 - Narrow ramps for cars cause difficult maneuvers that are only further complicated by foot traffic.
 - The car ramp and pedestrian ramp are next to each other, but the car ramp is closer to the engineering building, so most people use that one.
 - Odd little nook between greenspace and parking lot decently uses people from walking between cars and the fence (or water drainage).
- 4) Unused spaces
- For the most part, the space is used (almost a bit too much) but is not effective.
 - It's likely used for too much at once (cars, bicycles, people).
 - The center greenspace is normally left unused aside from the sidewalks so it being used as a shortcut.
 - Space could be cut down and a tree or two planted to provide shade/a place to rest.
 - Sidewalk would also probably be rearranged (the current diagonal-perpendicular layout is kind of weird).

5) Possible Solutions (Very rough ideas)



- Extend sidewalk into parking lot 2 (from asphalt pedestrian lane into sidewalk) and elevate above road.
 - At the west end of the path, the road suddenly ends. It's too narrow for a car, so it makes sense for it to be a sidewalk.
- Create a new course / new way for cars to pass through.
 - Remove Parking lot 2 to remove any incentive to "cut" there (parking) and establish a new road that connects College Ave / to Lobby Drive or Saker Drive.
 - This will establish a solid crosswalk system, which is much safer than cars pulling out of parking trying to maneuver around pedestrians.
 - Turn Parking lot 2 into actual road?
- Switch Section 3 with Section 2.
 - Extends pedestrian pathways by utilizing greenspace real estate.
 - Also provides a barrier between pedestrians and cars, and gives car better access to Lot 1 and 3 and roads.
- Remove sections of greenspace.
 - Decreases pedestrians from walking in road to get over to shortcut paths.
 - They can instead take the intended route or use the path in front of the middle building.

Affinity Map:

Speculations	Observations	People/Emotions	Solutions
Paths in the greenspace work better because there are less cars	Space is well used but not in an effective/efficient way	Parking lot acts more like a road/pathway	Underground tunnel leading engineering students to related buildings
Some students drive to class they leave when other students are walking	Multiple classes get out at the same time in the area	Sidewalk and road are level (incentive to walk anywhere, i.e. the road)	Add underground parking in more areas
No more bike lane paint; likely causes more confusion	Narrow sidewalk	People don't discriminate between pedestrian and bike paths	Take away a street in that area; there are parking lots on the sides
	Room for only one way of foot traffic	Too many types of travel; gets confusing and stressful	Have sidewalk, bike lane, and street on different levels
	Greenspace is use more than it should be for foot traffic	Bikers have trouble traversing the road during passing period because of the crowd density	Raising the sidewalk prevents cars and bikes from getting up to it from the road
	Not organized at all	Small space packed with a lot of people (claustrophobic)	Add fences or dividers between bike lanes and pedestrian lanes
	3 parking lots in the pathway	Street, bike lane, pedestrian lane are all treated the same	Adding raiseable blockers during busy hours (time sensors)
		Students all walk in the same direction to get to other places/classes	
		People that use the east parking garage/parking lot are more likely to use this space	

Empathy Map:

Does

- Bikes
- walks
- drives
- going to class
- stress
- talk
- Study in the green area

Feels /thinks

- stressed
- trying not to hit people (biker)
- "its busy"
- "avoid the cars"
- frustration during passing period
- tired
- overwhelmed

User

See

- lots of people, bikes, & cars
- limited signage
- chipped paint for bike lanes
- alternative paths
- their phone
- other people

Hear

- music
- car honks
- signals from bikers & drivers
- people talking

Pains:

- no direct path
- 3 parking lots in the path
- too many types of travel & no clear paths for any
- too many people /overwhelming
- narrow path ways
- no trees

Gains:

- its outside
- shortcut to classes
- way for students to park near their classes or dorm on campus.
- accessible to handicapped people

How Might We Statements:

How might we convert the space to promote better pedestrian traffic?

How might we help students have a safer/less frustrating walk from class to class across Libby Drive?

How might we improve the Libby Dr path for all types of travel while still being accessible?

POV Statement: CU students need a better way to get to class safely because Libby Drive has no clear pedestrian walkway or bike pathways while being a parking lot/street.

Second Ideation:

The problem: Libby Drive has way too much going on and students can't get from the engineering building to other classes across Libby Drive safely.

Ideas to solve the problem:

- Underground tunnels connecting buildings
- Elevated sidewalks so road does not merge with it
- Underground parking instead of above ground
- Mechanized traffic poles that go up and down depending on time of day to redirect traffic
- Fences

Ideated How Might We Statements:

- How might we gain traction for getting this space renovated?
- How might the type of renovation we decide affect how people support it?
- How might we make a direct path from the engineering building to classes near it that are blocked by the parking lot that is safe for students to bike or walk on?
- How might we make it more desirable during winter months?

Ideated POV Statement:

CU students need a way to get to class safely and efficiently because their sidewalks are being used by cars that pose a threat to their safety when commuting to class.

Student opinions on the current space:

- *"I think the foot and bike traffic mixes way too much and nobody stays in their lane, so it's hard to navigate it when a lot of people are on it"*
- *"It sucks because there isn't enough room in between classes for everybody to go places when some people walk, bike, skate, drive. People in cars have to wait for a large clearing. There needs to be a better divide for which people go where so there aren't people on bikes trying to weave in between all the walkers."*
- *"It needs a clear demarcation between bike and walking lanes from engineering all the way to either the Baker intersection or Jila since a lot of people ride there. Also the parking lot always seems to be an issue since people walk through there; there's a bike lane but people just drive through. I've nearly been hit by bikes while walking there"*

Collateral:

- Campaign for getting the space renovated - People can vote on what design they like best
- Flyer design that could be put up (Slogan: Make room for everyone)
- 3D rendering of the new space

New Observations:

- New construction is happening that diverts the cars into walking and bike lanes more

- It looks like more and more people are avoiding taking Libby Drive even if it is the more direct route (me included) because it is so chaotic

Third Ideation:

How Might We Statements:

- How might we make the idea of renovation more appealing to students?
- How might we make the design the most efficient for solving this problem?
- How do we make the heaters not problematic during the snow season?

Decided POV Statement:

Focus on safety:

CU students need a way to get to class safely and efficiently because their sidewalks are being used by cars that pose a threat to their safety when commuting to class.

Flushed out Ideas to solve:

- Underground tunnels connecting buildings
 - Leading out from the engineering building going to all the classes and dorm buildings that have parking lots and chaotic bike lanes in the way
 - Heaters for cold winter days and drains added to take care of the snow melt.
- Elevated sidewalks so road does not merge with it
 - Have sidewalks, bike lanes, and streets on different levels so people are less inclined to go between.
- Underground parking instead of above ground
 - Switch the parking to underground parking, so that all the current above ground parking becomes more walking and biking space with no car threat to pedestrians.
- Mechanized traffic poles that go up and down depending on time of day to redirect traffic
 - Poles that would come up and down from the ground to allow car traffic or block it depending on busy times between classes to allow students an easier commute.
- Fences
 - Bikers and cars don't want to run into fences so this would be a simple solution to keep everyone in their respective lanes and not interfere with other traffic.
- Renovation Design Decision:
 - Underground tunnels connecting the classes and dorms in the area of those parking lots
 - Split the tunnel into bike and walking so that the cars don't pose a threat to either.

Collateral:

- An advertisement and flyer for the restoration of Libby Drive

- Includes a QR code with questions about Libby Dr and if they feel it is inefficient and unsafe
- Shows what the problem is how we plan to fix it
- Additional 3D rendering of our design idea

Decision Matrix:

Priority Values (1-5)							
Criteria	C1 - Ease of Use	C2 - Effectiveness	C3 - Budget/Cost	C4 - Safety	C5 - Uniqueness/Creativity	Row Total	Normalized Value
C1 - Ease of Use		2	2	0	1	5	0.128205128
C2 - Effectiveness	3		4	2	3	12	0.307692308
C3 - Budget/Cost	3	1		1	2	7	0.179487179
C4 - Safety	5	3	4		3	15	0.384615385
C5 - Uniqueness/Creativity	4	2	3	2		11	0.282051282
Column Total						50	

Decision Matrix								
Criteria	Normalized Priority	Idea 1: Underground tunnels	Idea 2: Elevated Sidewalks	Idea 3: Underground parking	Idea 4: Traffic poles	Idea 5: Fences		
C4 - Safety	0.384615385	5	1.923076923	3	1.538461538	4	1.538461538	4
C5 - Uniqueness/Creativity	0.282051282	4	1.128205128	1	0.846153846	4	1.128205128	2
C3 - Budget/Cost	0.179487179	2	0.358974359	5	0.897435897	1	0.179487179	5
C1 - Ease of Use	0.128205128	4	0.512820513	5	0.641025641	2	0.256410256	5
C2 - Effectiveness	0.307692308	5	1.538461538	2	0.615384615	3	0.923076923	2
Totals			5.461538462		3.58974359		3.743589744	
							4.820512821	
								4.256410256

Note: This decision matrix uses a normalized priority value, which is calculated by rating the importance of selected criteria in relation to other criteria. Safety was one of the most important, along with the solution's effectiveness and uniqueness.

This normalized value was then used to calculate how ideas compared to one another based on how they scored on those criteria. The underground tunnel idea won by a good margin.

Fourth Ideation:**Logo:****Collateral:**

Flyer and Advertisement for the Renovation:

- Done with CU font and colors to get students to feel connected with and supportive of the renovation.
- Uses words like restoration instead of renovation to make it feel like less of an imposition on the student

At CU Boulder we want to...

Make Room for Everyone.



**If you struggle with
walking on the
Libby Drive
pathway, we want
to hear your
opinion.**

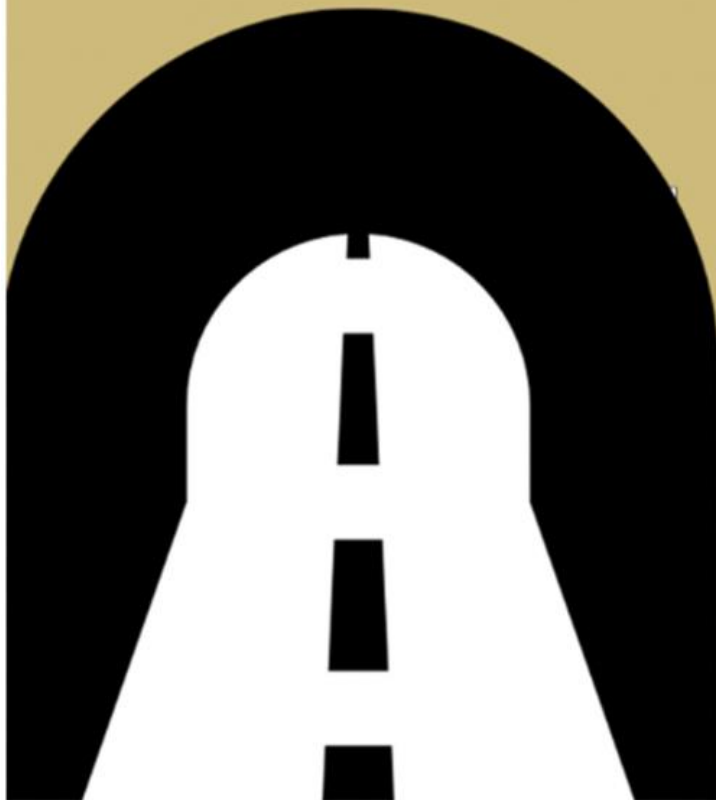


**Construction
beginning
Summer
2023...**

**Libby Drive
Restoration
Project**



Be Boulder.

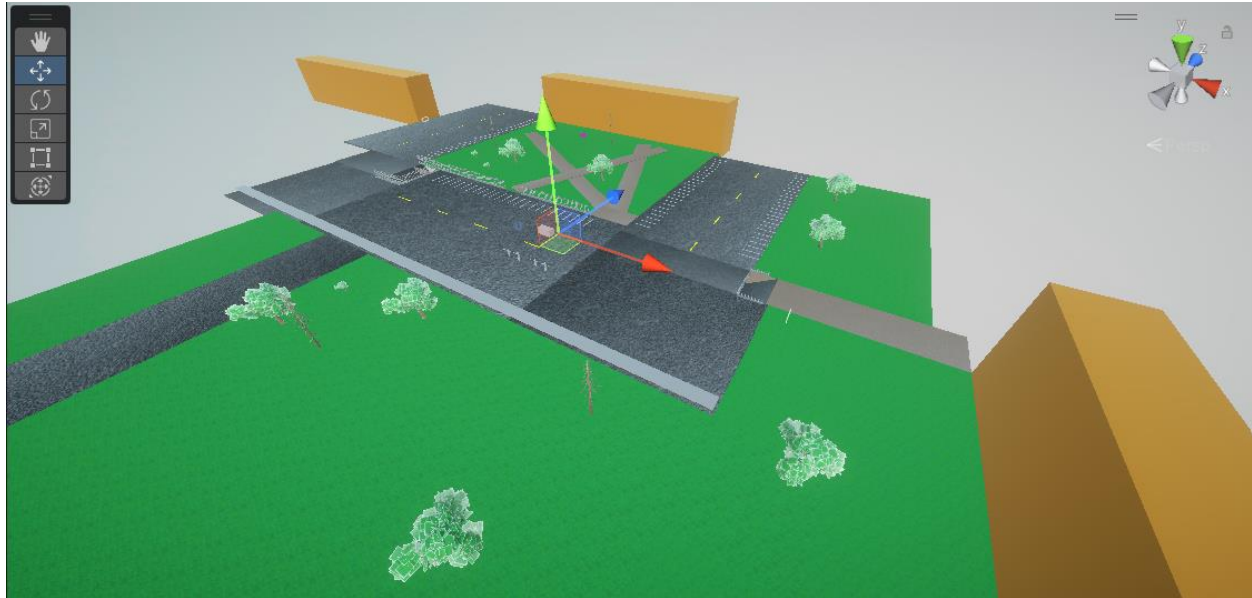


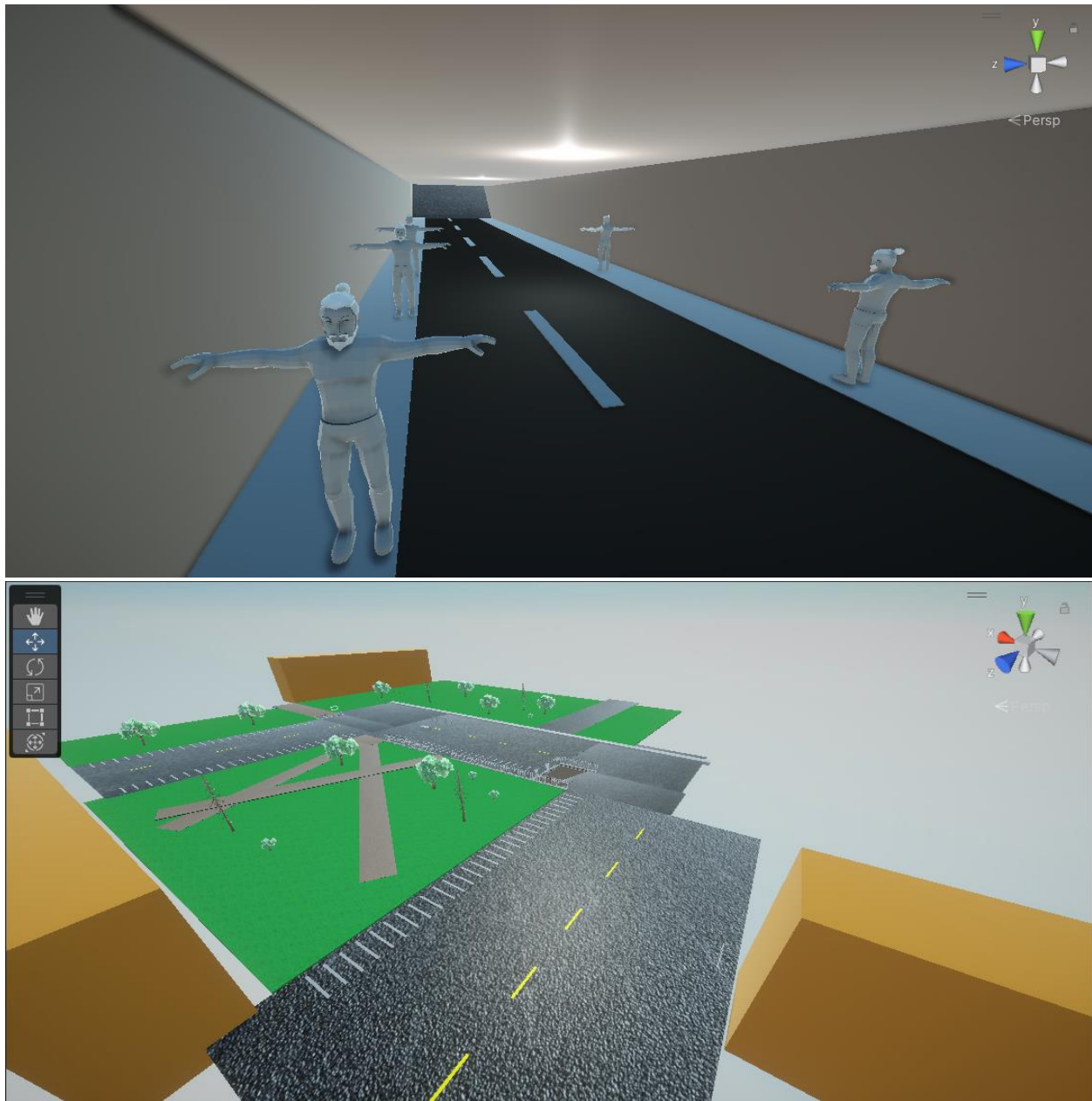
**Featuring:
A heated
underground
tunnel to
safely
commute to
class**

3D Model of our design:

<https://youtu.be/U8OxF7tj8Vk>

Youtube Video we made going over our virtual reality representation of our solution.





Notes: Though it is hard to discern in the 3D models, the pathways in the tunnel would be heated and lights would go across the ceiling (much like how other underpasses have in Boulder). Furthermore, there would be drains to clear away melted snow or rain, so it doesn't flood. The walkways would also move to and from the buildings, much like an airport's.

Written Summary:

When we first met up in our recitation, we wanted to choose a location that everybody was familiar with. Two of our group members had done Libby Drive between engineering and physics. As soon as it was mentioned, we all knew what the problem was.

A lot of engineering students have classes in the Engineering Center as well as the Duane Physics building; however, the walk to get from one to the other is insanely difficult. To get from one to the other, students must cross three parking lots, unclear bike lanes, and, as of now, construction sites. We decided it was not a safe space for students to constantly maneuver in.

Our first brainstorm session gave us a few ideas. Some were as simple as putting up a fence to make the lanes clear and adding new signs, but the one that stuck with us was the underground tunnel. Next time, we went through all the ideas again and really talked them through with a decision matrix, but it was still the tunnel that was best with its heaters. We all liked the idea because it would drastically change the vehicle traffic in the area and, as a bonus, the winter snow would not be as bad trekking from class to class if you are in a warm tunnel.

Next, we thought about how we wanted to design this and make our collateral. The first thing we did was make some posters that would: one, get the students opinion on how bad the crossing is to get firsthand knowledge, and two, would advertise exactly when it was happening and what exactly would be happening. There is a bit of construction throughout campus right now. We have no idea what it is doing so we wanted to share as much information as possible through our flyers for this project. Lastly, we decided to make a 3D model of what the tunnel would look like if implemented.

We used all our information of observations, student opinions, our own experience to try and create a long-term solution. Combining these, we designed the heated tunnel solution.