DEZIGNERS

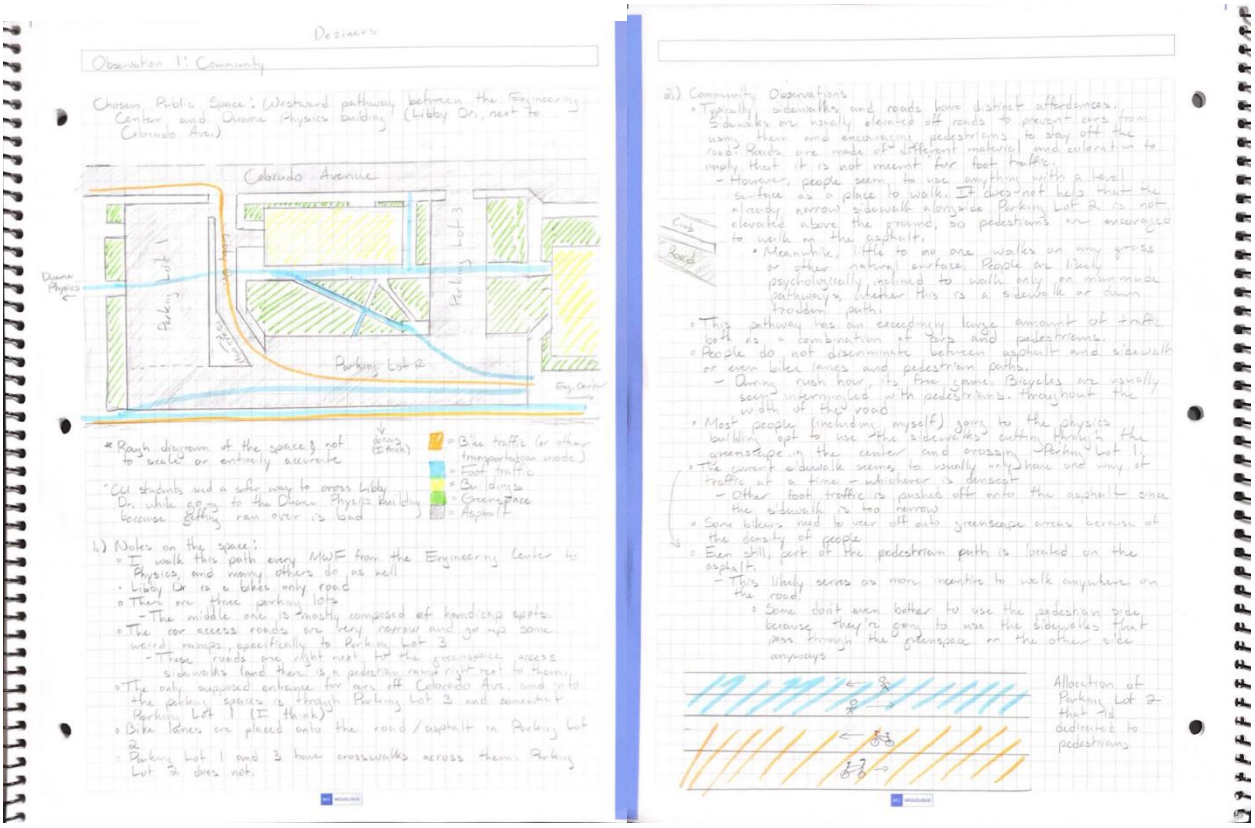
Lily Dykstra, Ava Knopping, Reilley Locke, Sawyer Reinig

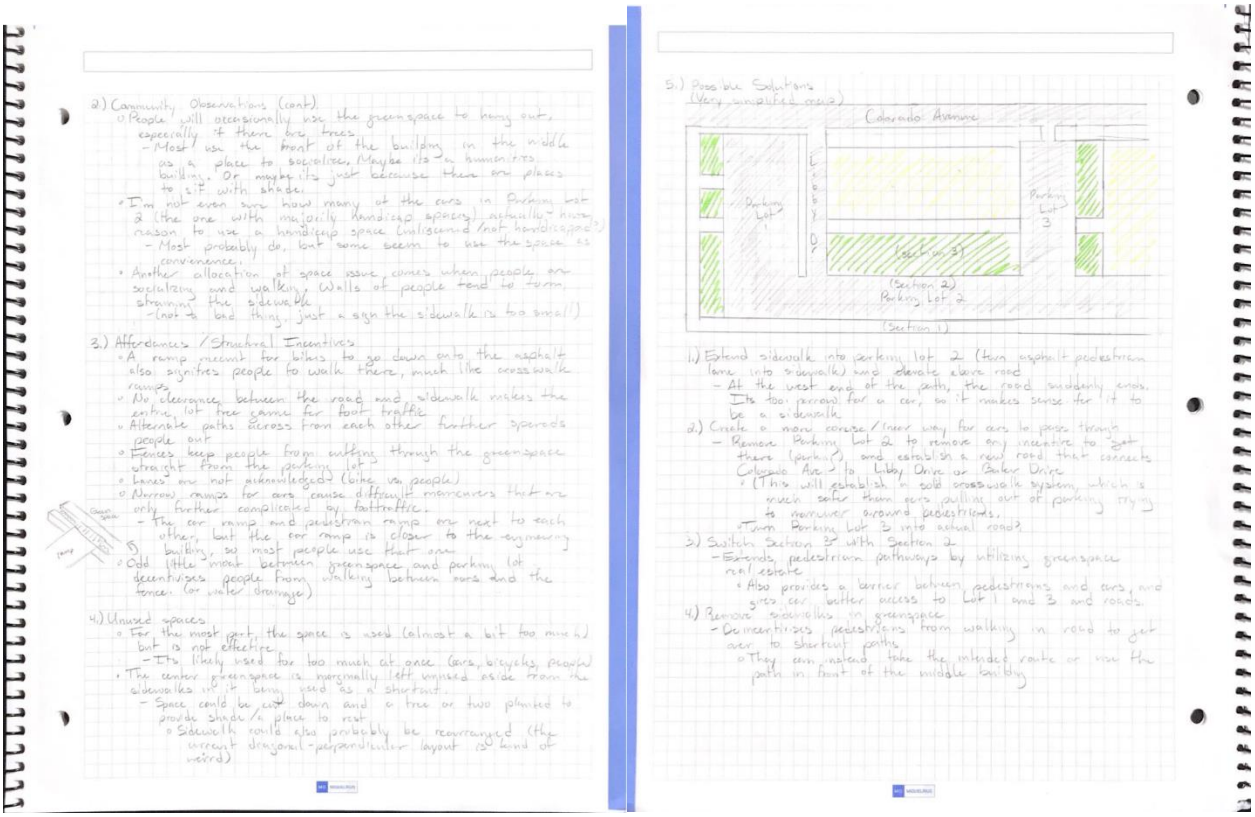
Space Jam: Libby Drive Restoration Project

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

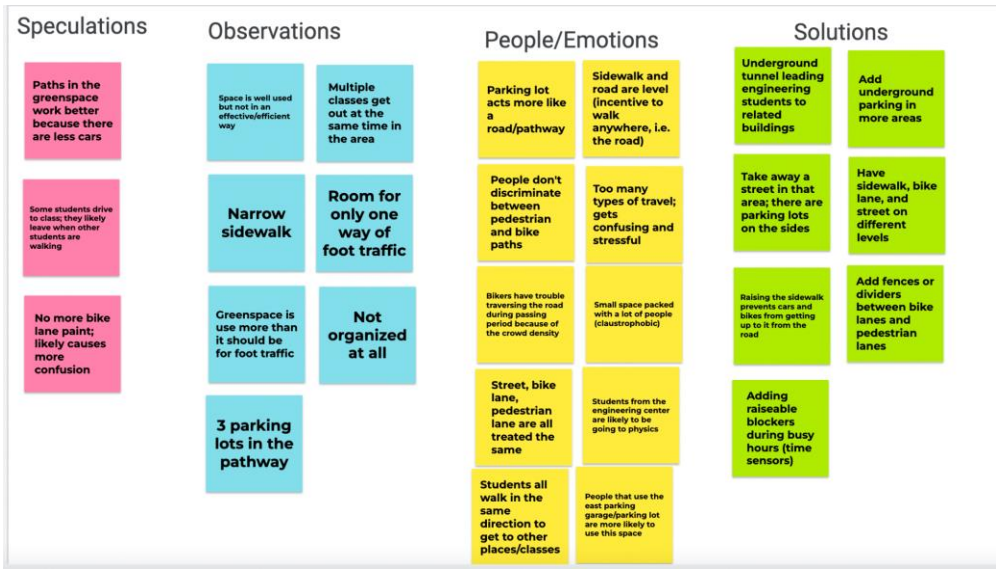
Libby Drive Pictures

Initial observations/sketches:

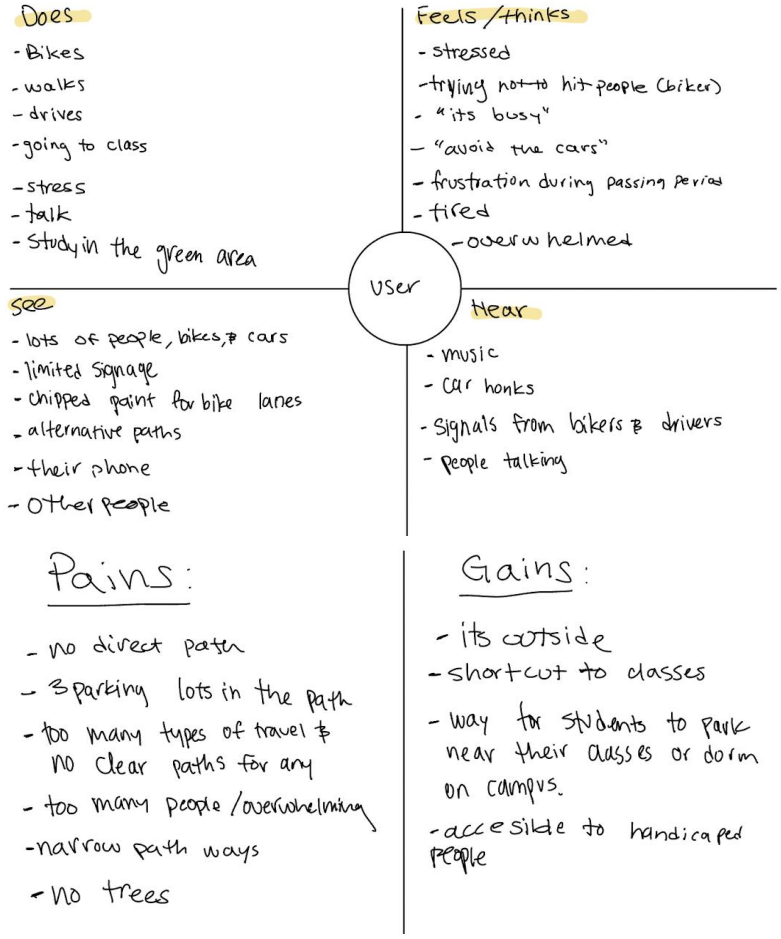




Affinity Map:



Empathy Map:



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	1.153846154	4	1.538461538	4	1.538461538	4	1.538461538
C5 - Uniqueness/Creativity	0.282051282	4	1.128205128	1	0.282051282	3	0.846153846	4	1.128205128	2	0.564102564
C3 - Budget/Cost	0.179487179	2	0.358974359	5	0.897435897	1	0.179487179	5	0.897435897	5	0.897435897
C1 - Ease of Use	0.128205128	4	0.512820513	5	0.641025641	2	0.256410256	5	0.641025641	5	0.641025641
C2 - Effectiveness	0.307692308	5	1.538461538	2	0.615384615	3	0.923076923	2	0.615384615	2	0.615384615
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.

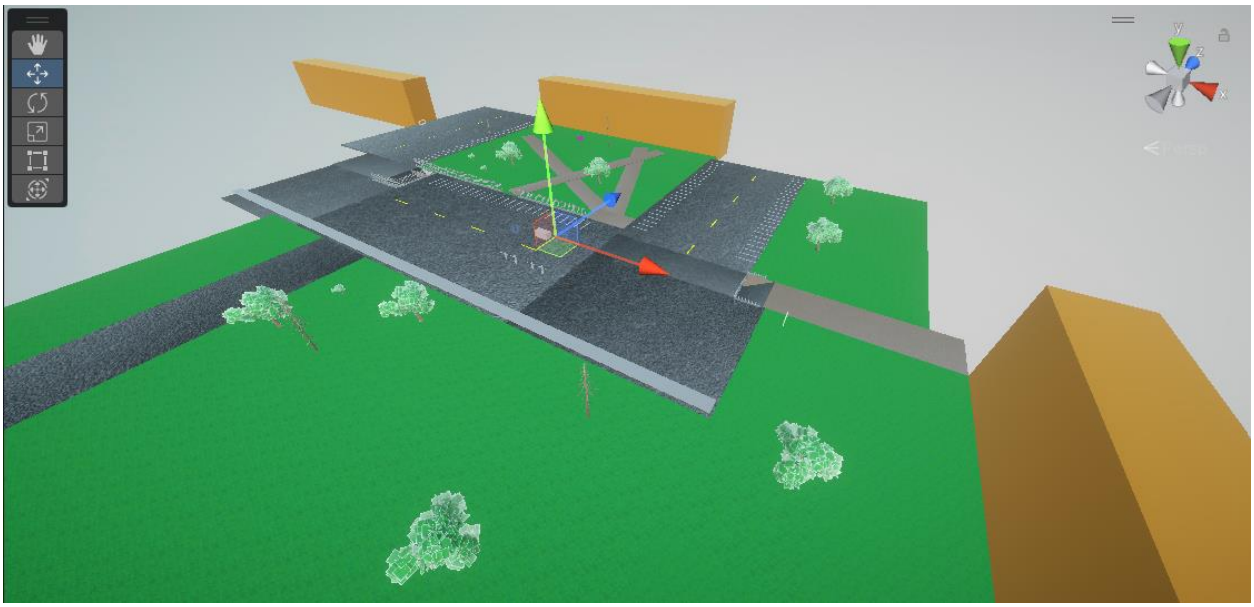
If you struggle with walking on the Libby Drive pathway, we want to hear your opinion.

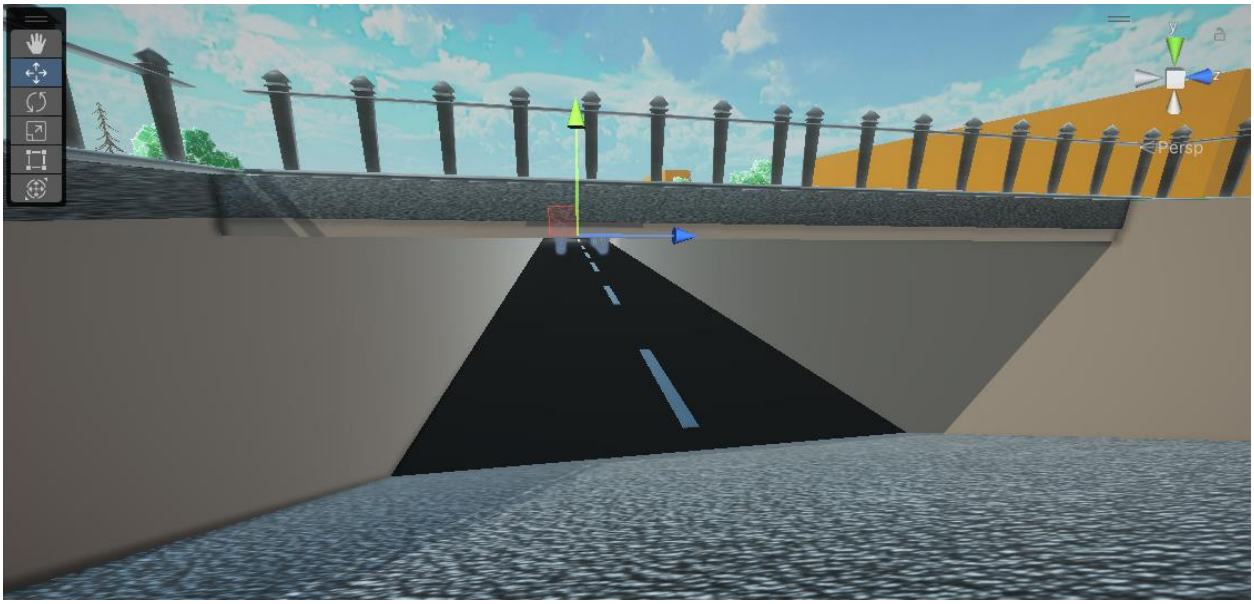

Construction beginning Summer 2023...
Libby Drive Restoration Project
Be Boulder.
Featuring:
A heated underground tunnel to safely commute to class

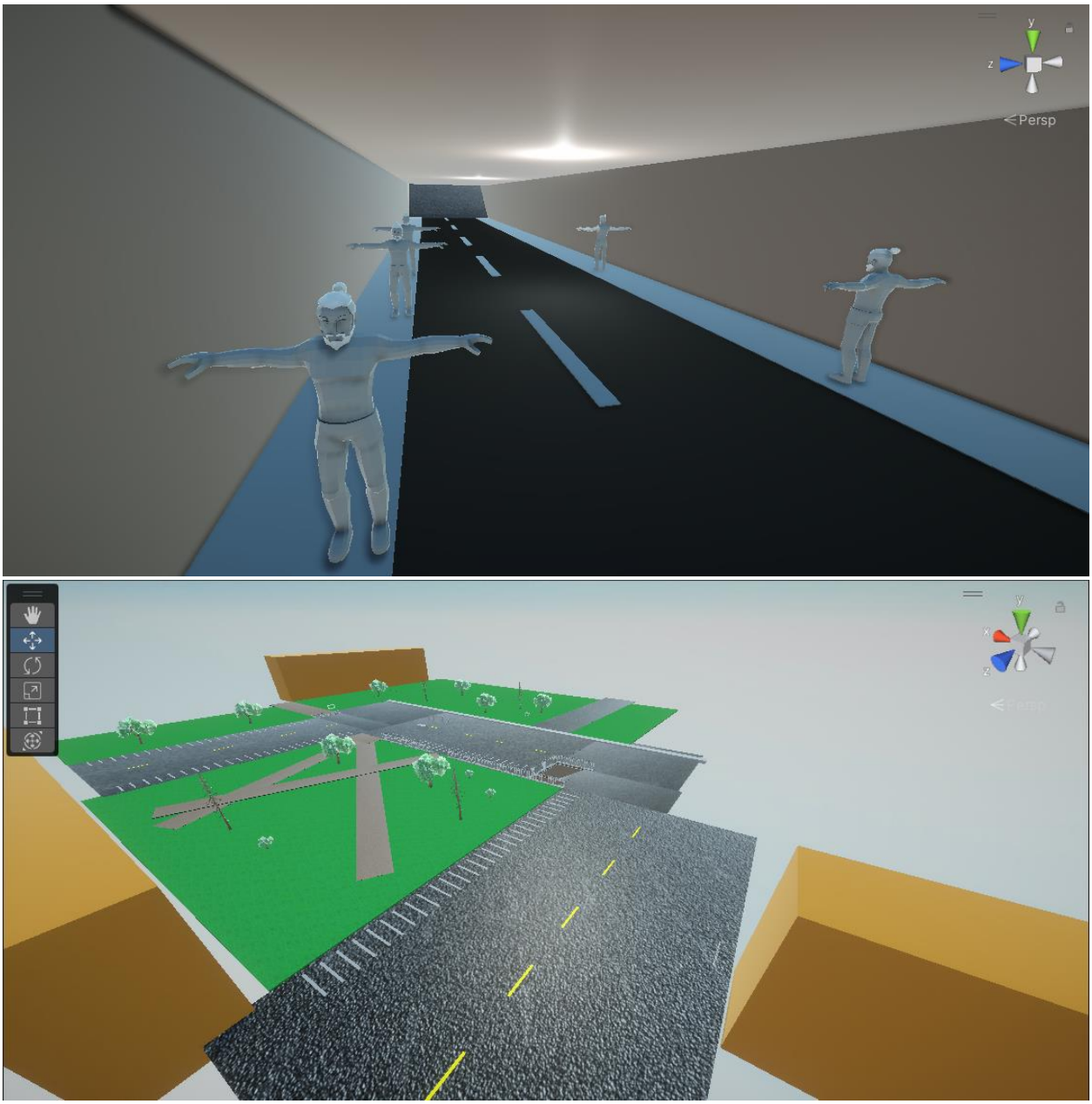
3D Model of our design:

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.