

“Every now and then one paints a picture
that seems to have opened a door and
serves as a stepping stone to other things.”

Pablo Picasso

THE LOOP:
Wilkesburg's Pedestrian Tunnels

INTRODUCTION TO THE SITE

WILKINSBURG

Located just east of downtown Pittsburgh, the borough of Wilkinsburg has undergone many changes since its birth in the 1850s. Booming in growth due to its close proximity and ease of access to the downtown area, the railroad has played a critical role in the many stages of the borough's past. Despite ever-changing economic circumstances that continue to shape Pittsburgh's cultural landscape, the transitory promises of the railroad continued to serve the community. However, in the early 1900s, despite the railroad's previously positive effects on the town, a singular decision changed the dynamic of Wilkinsburg in ways more profound and long-lasting than the town-planners could have imagined.

RAISING THE BUS WAY

With the rise of the automobile in full throttle for over a century, America began to make the critical paradigm shift in transportation from train to personal vehicle. An increase in automobile traffic in conjunction with the existing railroad activity provided the perfect circumstances for multi-traffic related accidents within Wilkinsburg. Though mostly minor in nature, the frequency of these small accidents alarmed the residents of Wilkinsburg who decided to take action to correct the problem. The solution set to raise the railroad approximately 12' while additionally lowering intersecting streets for an even higher underpass clearance. Three pedestrian tunnels, located on Ross Avenue, Franklin Avenue, and Whitney Avenue, were implemented to provide access beneath the bus way, intending to maintain the fluidity of pedestrian traffic across town. However, despite the well-intentioned implementation of the raised railway, which was successful in its own right, this decision's direct impacts could not outweigh the unforeseen indirect impacts that have since marred the character of the town completely. By implementing this raised bus way, which for all intents and purposes looks like a wall to the pedestrian, Wilkinsburg had been undoubtedly bisected, split into essentially two sub-boroughs that no longer shared a common nature. Over time the success and prosperity of either side of the bus way grew in indirect proportion to the other: the West maintained a more charming and wealthy character while the East side felt more strongly the sting of the vacancy and foreclosure.

AN OPENING

Later in that same century, the divide continued to polarize the town by sealing off the pedestrian tunnels, which limited access to cramped sidewalks along underpass intersections. It was not until 2002 that a plan was set in motion to reopen one of the tunnels. Through the combined efforts of the Wilkinsburg Council and Port Authority, Whitney Avenue Tunnel was set to be opened for the first time since 1987. Though met with mixed reviews from residents on either side of the tunnel, the project pressed forward and was completed in 2006. Since its opening, some of the fears of those against the tunnel's opening have been realized in some cases through limited amounts of crime and litter. However, the tunnel continues to be used on a daily basis by both commuter residents destined for a bus stop to take them into downtown and those who simply walk to work on the opposite side of the borough. Despite the varying experiences and opinions of the residents, the opening of Whitney Tunnel has become more than just a pedestrian underpass. It is an opening on a much grander scale that if replicated elsewhere in town, particularly the tunnels on Franklin and Ross Avenue, could be the remedy to the polarization of the borough. It holds the potential for the opening of two communities who could decide to once again become one.

Penn Avenue

Whitney Avenue



PENNSTATE



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INTRODUCTION TO THE TUNNELS

West of the Busway



Timed Tunnels

This diagram represents the time it currently takes to walk from one entrance of a tunnel to its counter-part. Although Whitney Avenue Tunnel is already open, one can see how much time has been saved since it has been open. Now, instead of a 10 minute route from the west entrance of Whitney Avenue Tunnel to the east entrance, the open tunnel allows a swift 20 second walk. How much time could be saved if the other two tunnels were to be opened as well?

East of the Busway



Tunnel 1 - Wilkinsburg Station Tunnel

Located on Ross Avenue, the Wilkinsburg Station Tunnel, though currently closed, connects the intersection of Ross Avenue and Pennwood Avenue (West side of bus way) directly to the former Wilkinsburg Train Station located on Hay Street (East side of bus way). The longest of the three tunnels, Wilkinsburg Station Tunnel spans a length of approximately 170 feet which according to Google Maps would take about 40 seconds to walk through from end to end. However, in contrast to the other tunnels, the ceiling clearance is also the highest of the three. Though the height of this space may not be physically occupied, this offers a spatial advantage as people tend to recognize the space as more accommodating. While the West entrance to the tunnel may not be much more than a gate attempting to conceal the entrance tunnel itself, the East entrance cannot be separated from the historical piece of architecture, the Wilkinsburg Train Station. Already in connection with a landmark, this tunnel has the potential to evolve from an unopened pedestrian tunnel to a link that connects past and present ages of Wilksburg.

Tunnel 2 - Franklin Avenue Tunnel

About 600 feet south of Wilkinsburg Station Tunnel and also closed is Franklin Tunnel which connects the intersection of Hay Street, Franklin Avenue and Pennwood Avenue (on the West side of the bus way) to a vest-pocket park on the East side of the bus way at the intersection of Wood Street and Franklin Avenue informally known as the Gazebo Park for its central gazebo structure. Approximately 100 feet in length, it would take an estimated 25 seconds to walk from end to end. While the West entrance is simply recessed with a small concrete area that slightly resembles a plaza, the East entrance of the tunnel is embedded in a cultural landmark which is informally home to STRENGTH, a local recovering alcoholics group, as well as murals commissioned by a grant and completed by artist Kyle Holbrook. This tunnel also has the potential to act as a vehicle towards cultural linkages.

Tunnel 3 - Whitney Avenue Tunnel

Approximately 1400 feet south of the Franklin Avenue tunnel is the only open pedestrian tunnel in Wilksburg, Whitney Tunnel. About 80 feet in length, walking through the tunnel takes about 20 seconds. With current dimensions offering a mere 8 foot width and height, this may be the shortest and therefore fastest of the three tunnels but it is also the least accommodating in terms of space. Lined every 6 feet with florescent ceiling lights, the tunnel is lit at all times, day as well as night. Additionally, safety mirrors (though damaged) as well as surveillance cameras are present within the tunnel. On either side of the tunnel are emergency buttons that contact the police station when utilized in the case of an emergency. Though somewhat equipped with lighting and safety features, the West side of the tunnel essentially leads pedestrians directly into the street, save for a small concrete landing and a stop sign.

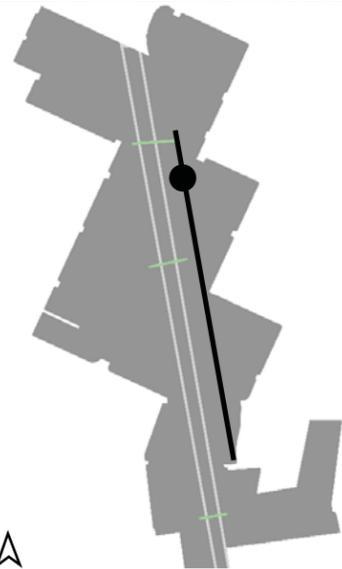
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INTRODUCTION TO THE LINEAR PARK

Featured: A view of the east side of the bus way, where a small, linear park exists.



Despite the each tunnel's specific needs, they also require a shared element that can connect them to one another and therefore create a larger network of spaces than can provide far more together than when they are in isolation. This image shows what is known as the Linear Park which was a project set to be completed in 2002. Designed to run on the East side of the bus way from South Avenue in Wilkinsburg to Hutchinson Street in Edgewood, the intention of the park aimed to connect the adjacent communities running from north to south. With direct pedestrian access to the Linear Park from three points (a slope leading from South Avenue, the stairs in Gazebo Park on Franklin Avenue and a ramp leading from the opened Whitney tunnel), the existing Linear Park has the potential to provide many things, but is mostly used as a route for commuters between

their homes and the bus stops. Incidentally, the Linear Park intersects with two of the three pedestrian tunnels. However, as two of the three means of access to the Park (South Avenue and Whitney Avenue) also provide access to the western side of the bus way. Although no mirror image of this Linear Park currently exists on the western side of the bus way, there is potential space for such a design. Despite its lack of existing continuity to the third tunnel (Wilkinsburg Station Tunnel), this Linear Park is the key element to the success of the three pedestrian tunnels in that it has the potential to not only become an unbroken physical connection between each tunnel and both side of the bus way but also a shared cultural connection to be occupied and treasured by residents from all parts of town.

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MASTERPLAN



Wilkinsburg Station Tunnel



Tunnel Interiors



Franklin Avenue Tunnel



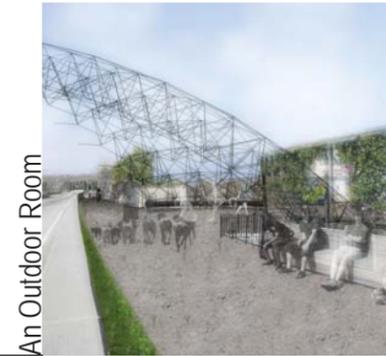
Whitney Avenue Tunnel



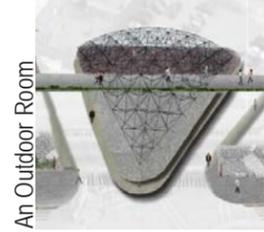
Pedestrian Sky Walk



Pedestrian Sky Walk

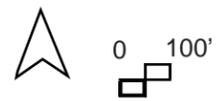


An Outdoor Room



An Outdoor Room

This master plan endorses the concept that both the Wilkinsburg Station Tunnel as well as Franklin Avenue Tunnel, like the Whitney Avenue Tunnel, should be opened for pedestrian use and linked by a single continuous greenway on either side of the tunnel, creating a Loop that runs from Penn Avenue to Whitney Avenue. With continuity, safety, and vegetation as the three dominant systems of this design, the Loop aims to encourage community unity by providing connections between all directions of the borough: North, South, East and West.



SYSTEMS

While these are the three main systems that drive the design of the Loop, they are also the phases in which to complete the design. By first providing continuity along the loop, residents will have a "complete" route to utilize that it will begin to take on its own identity as a whole. An additional perk of continuity is that it provides safety to its users as the previous conditions embodied broken linkages and disconnected

routes in the mist of vehicular traffic. Safety nearly goes hand in hand with continuity in that it is of utmost importance. However, the tunnels must first be opened before one can implement specific safety features (mirrors, cameras, etc.). Vegetation is the final phase as infrastructural means must first be managed before it can begin to support new life.

CONTINUITY

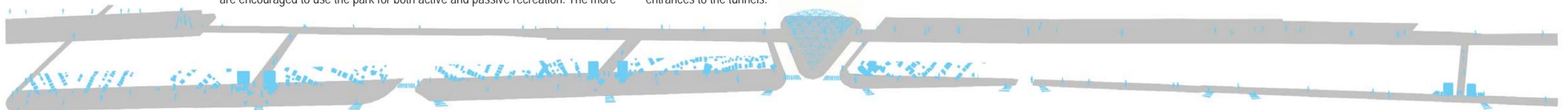
By providing a continuous loop that connects the North, South, East, and West parts of downtown Wilkinsburg, the Loop becomes a whole and begins to take on an identity. Through means of new walkway implementation, lessening the width of vehicular routes, and signage, the Loop provides physical continuity and even more importantly aims to encourage neighborly unity within the borough as a whole.



SAFETY

Safety is an incredibly important aspect of this design. While traditional means of safety will be utilized such as proper lighting, surveillance cameras, emergency boxes, and safety mirrors, an even more powerful tool will be employed and it does not cost a dime: neighbors. Endorsing the notion of "Eyes on the Street," people are encouraged to use the park for both active and passive recreation. The more

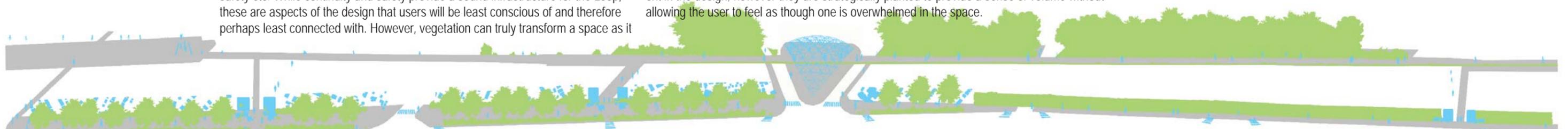
people milling about the park, the less room there is for crime to occur. People-watching, the most common form of public recreation, will greatly help to provide the safety that this park needs to survive, specifically in the areas that mark the entrances to the tunnels.



VEGETATION

The existing vegetation of the site is overgrown and minimally maintained. This could be for many reasons: inaccessibility, lack of proper maintenance knowledge, safety etc. While continuity and safety provide a sound infrastructure for the Loop, these are aspects of the design that users will be least conscious of and therefore perhaps least connected with. However, vegetation can truly transform a space as it

provides life, volume, and seasons of interest (change). This planting design utilizes safety as its driving force, using low-lying plants and shrubs to eliminate hiding places. Trees are also present in the design; however they are strategically planted to provide a sense of volume without allowing the user to feel as though one is overwhelmed in the space.



IN ACTION

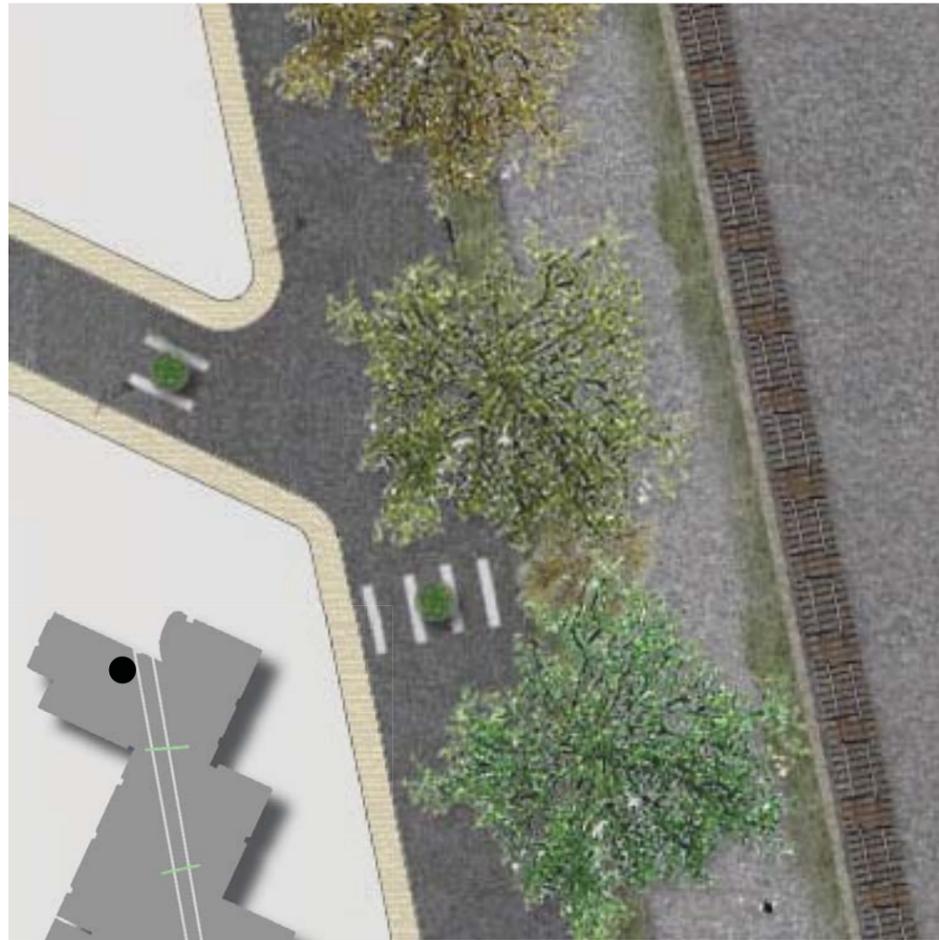
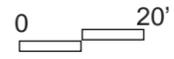
This bird's eye perspective offers a glimpse of how the Loop would spatial relate to its many parts. With Pennwood Avenue in the foreground (West side of the bus way) this image pieces together the many systems that work together to create a larger whole.



PENNSTATE

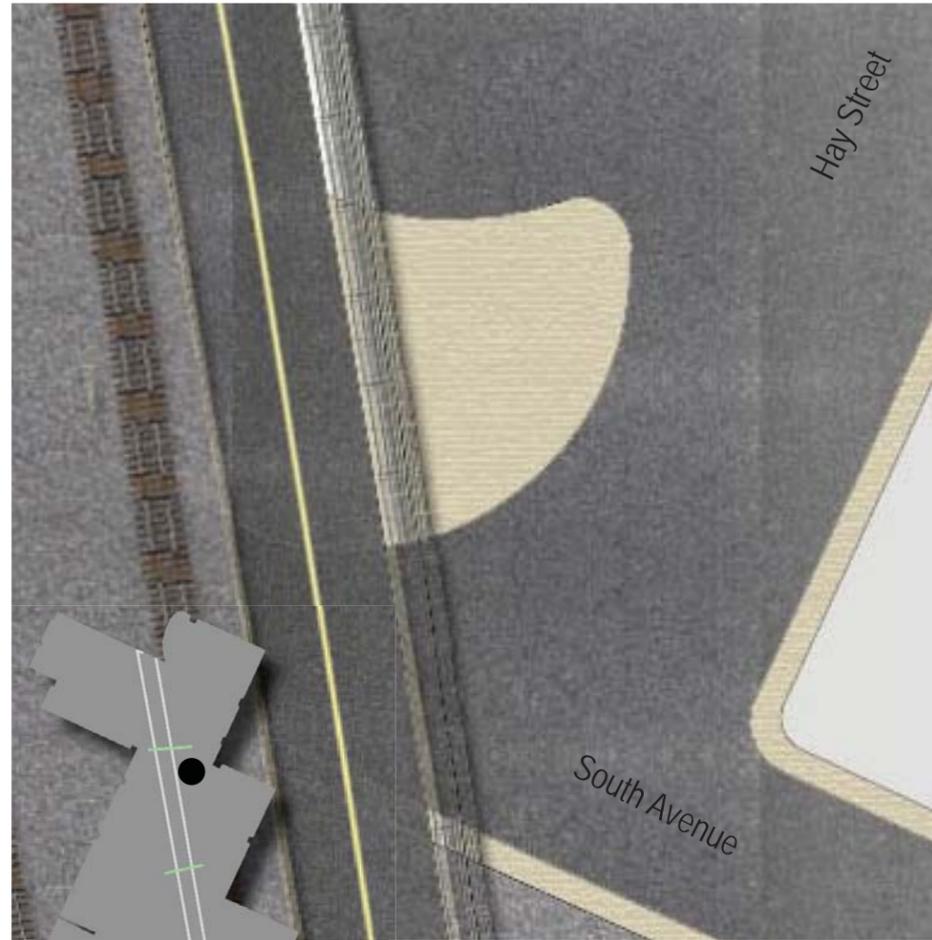
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SYSTEMS: CONTINUITY



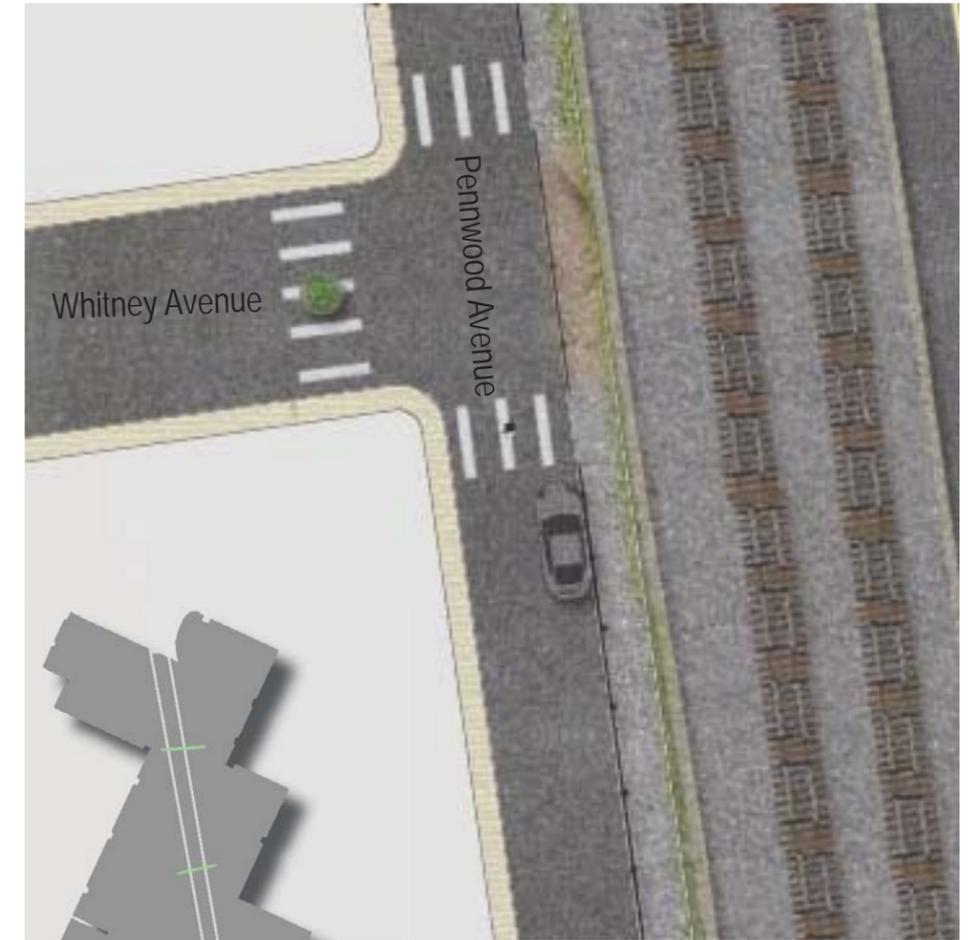
Traffic Calming
While pedestrian crosswalks are effective in putting the emphasis on the safety of pedestrians, additional street planters slow down traffic, thus reducing the risk of vehicular accidents.

A



Sky Walk
South Avenue and Hay Street is one of the busiest intersections in the borough. By implementing a pedestrian Sky Walk, pedestrians can safely cross the street. Additionally, it provides an excellent view of the streets below.

A



On-Street Parking
By removing on-street parking and adding a sidewalk directly adjacent to the busway causes the width of the street to shrink, thus forcing traffic to be more cautious in proceeding with their route.

A



SYSTEMS: SAFETY



Neighbors

People are the most valuable resource when it comes to enforcing safety in the neighborhood. "Eyes on the street" promotes the notion that the more populated a public space is, the more eyes there are report suspicious activity.



Crosswalks

Crosswalks provide a sense of continuity as well as safety in that they provide a very specific avenue for pedestrians to use that is backed by the law.



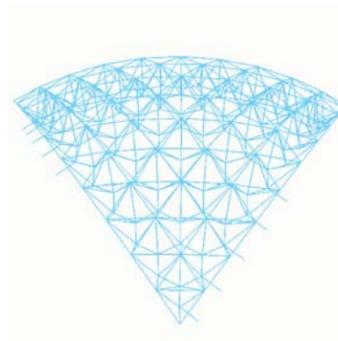
Basemap Lights

As an alternative to traditional street lamps, these mounted LED lights, which are in the shapes of local building footprints in within the borough, are a motif that is repeated throughout the site.



Up Lighting

Often times traditional street lamps shine down, limiting the area that can be lit to only the foreground. Up lighting shines upon the vegetation to provide a more well-lit, visually interesting, and safe night time experience.



Seeing In and Out

While most people associate safety with only being able to see, being able to be seen allows the "Eyes on the Street" to act as local security.



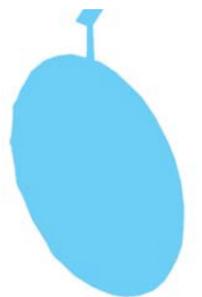
Emergency Boxes

Located at each tunnel of the 6 tunnel entrances and nearly all of the street corners within the Loop, emergency boxes are equipped with a button that alerts the police station immediately.



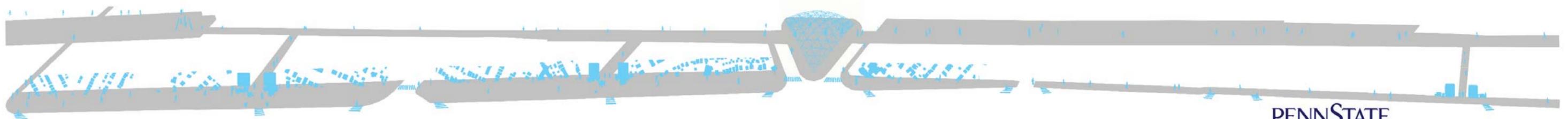
Surveillance Cameras

While each of the other safety measures is designed to proactively address criminal incidents, two surveillance cameras will be installed in each tunnel in the even that an incident should occur.



Safety Mirrors

Being aware of one's surroundings is a critical tool in protecting oneself. Two safety mirrors will be installed in each of the tunnels so that users will be able to see behind them at nearly all times.



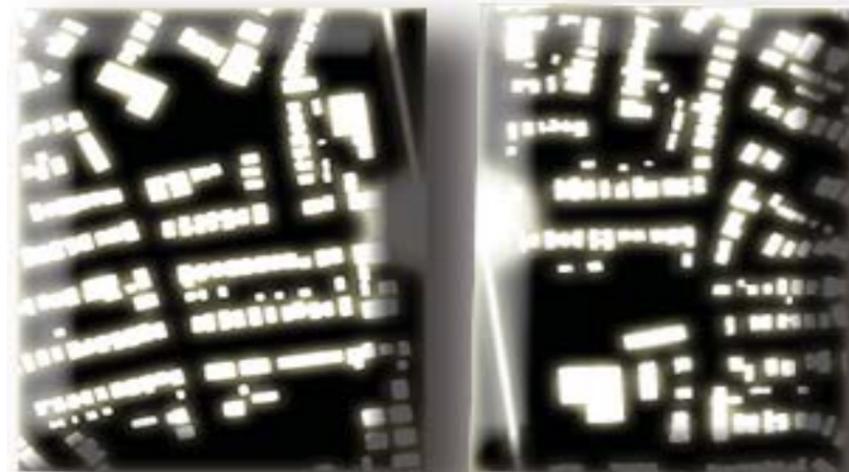
SAFETY: LIGHTING MOTIF

While lighting is a highly critical aspect of safety, this chosen motif serves a higher purpose. Despite the borough's currently divided nature, the hope of this lighting motif, which features various glimpses of the town's building footprints, is that it will encourage the residents to think of themselves not from one side of town, but as a resident of Wilkinsburg. Creating a commonality between people can often be the first step in creating unity among previously segregated groups. The intent of this motif is to remind the residents that they are of one town and that to support one another is to support themselves.



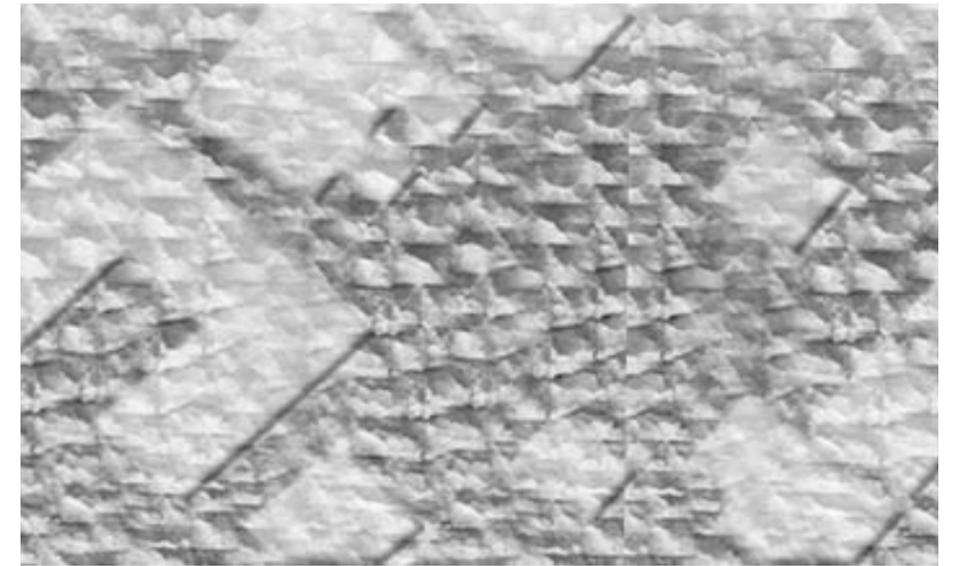
Tunnel Interiors

Translucent concrete is a light-transmitting building material that is not typically found as a major structural material and therefore will be used in the interior tunnel design as a veneer mounted onto the existing walls. With a diffused light behind the concrete veneer the light will be well-lit without using to harsh a light source.



Tunnel Entrances

Before entering each tunnel, pedestrians have the opportunity to use the two panels that flank the entrances as maps. The left panel bears the building footprints of that west side of the bus way while the right panel bears the east side of the busway. When set directly next to one another, they complete one another. Furthermore, when together, a circle of light is also completed, which acts as a "You are Here" symbol. These panels bear the motif in the smallest scale of the three.

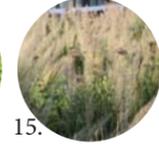
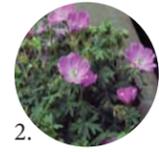


Tunnel Exteriors

These LED powered light pieces are to be mounted on the stone veneer which has been implemented against the existing bus way walls. Indeed this is the largest scale in which the lighting motif appears on site.

SYSTEMS: VEGETATION

The plant palette for this design was inspired by the native plant collection of Mt. Cuba Center in Hockessin, DE as well as the Highline in New York City. Relatively low-maintenance, these mostly low-lying plants will accompany a variety of trees such as *Acer rubrum*, *Liriodendron tulipifera*, *Platanus occidentalis*, and *Quercus alba*. Stormwater from the bus way will fuel a small linear rain garden, located towards the east entrance of Whitney Avenue Tunnel and continuing to Franklin Avenue Tunnel. Additionally *Hedera helix* (English ivy) will climb the arms of the trellis closer to Whitney Avenue Tunnel. As mentioned in the SYSTEMS page, structural soil is to be installed where vegetation is intended. (All images belong to Mt. Cuba Center and the Highline).



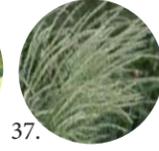
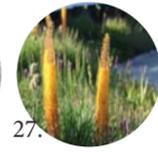
1. *Lathyrus vernus*
2. *Geranium sanguineum*
3. *Carex bromiodes*
4. *Brunnera macrophylla*
5. *Astrantia major roma*
6. *Aronia melanocarpa*
7. *Amsonia tabernaemontana*
8. *Iris fulva*
9. *Heuchera 'amethyst mist'*
10. *Adiantum pedatum*
11. *Viburnum nudum*
12. *Chasmanthium latifolium*
13. *Amsonia hubrichtii*
14. *Tricyrtis 'Sinonme'*
15. *Calamagrostis brachytifida*
16. *Ilex glabra*
17. *Ilex verticillata*
18. *Ilex verticillata 'Southern Gentleman'*
19. *Viburnum x bodnantense*

SPRING

SUMMER

FALL

WINTER



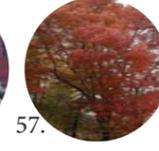
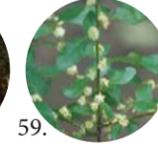
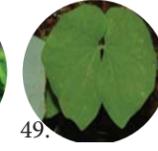
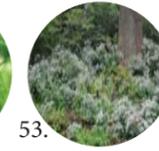
SPRING

SUMMER

FALL

WINTER

20. *Salvia pratensis*
21. *Nassella tenuissima*
22. *Erythronium 'pagoda'*
23. *Amelanchier laevis*
24. *Allium sphaerocephalon*
25. *Allium 'Mount Everest'*
26. *Helenium rubinzwy*
27. *Eremurus stenophyllus*
28. *Echinacea purpurea*
29. *Dalea purpurea*
30. *Coreopsis 'Full Moon'*
31. *Aster laevis 'Blue Bird'*
32. *Achillea filipendula 'Parker's variety'*
33. *Viburnum x bodnantense*
34. *Sporobolus heterolepis*
35. *Pycnanthemum muticum*
36. *Lespedeza thunbergii*
37. *Bouteloua curtipendula*
38. *Aster oblongifolia*
39. *Amsonia hubrichtii*
40. *Ilex verticillata*
41. *Mahonia x media 'Winter Sun'*
42. *Ilex verticillata*



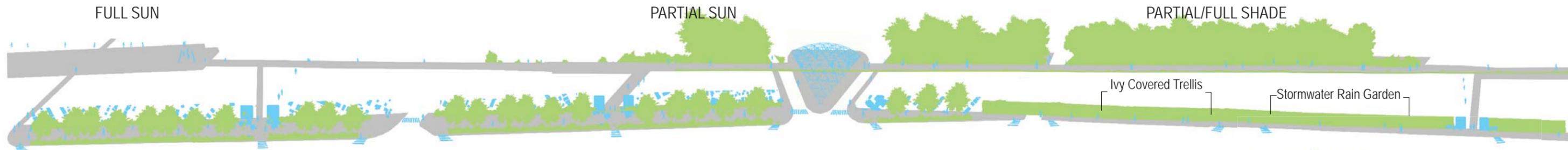
SPRING

SUMMER

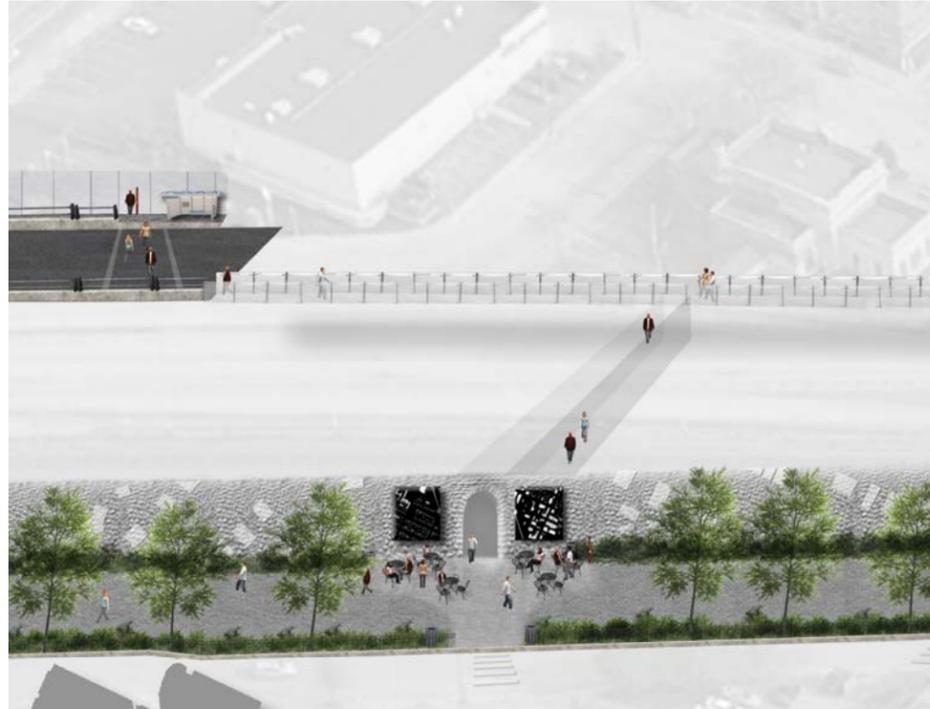
FALL

WINTER

43. *Phlox stolonifera*
44. *Kalmia latifolia*
45. *Tricyrtis 'Sinonme'*
46. *Epimedium grandiflorum*
47. *Actea racemosa*
48. *Acer pensylvanica*
49. *Jeffersonia diphylla*
50. *Heuchera villosa 'Brownies'*
51. *Astilbe chinensis*
52. *Aesculus parviflora*
53. *Eurybia divaricata*
54. *Andropogon virginicus*
55. *Eupatorium hyssopifolium*
56. *Actea pachypoda*
57. *Acer rubrum*
58. *Mahonia x media 'Winter Sun'*
59. *Ilex verticillata 'Southern Gentleman'*
60. *Ilex verticillata*



SYSTEMS: IN ACTION



Wilkinsburg Station Tunnel

Connections are made as people move between either side of the bus way with ease. Note the access to the bus stop which protects users with a crosswalk. (This view gives a glimpse of what the Loop would look like from the bird's eye perspective of looking at the west side (foreground) to the east side (background).)



Franklin Avenue Tunnel

Here we are able to view another seating area that mirrors the adjacent Gazebo Park in terms of passive programming. (This view gives a glimpse of what the Loop would look like from the bird's eye perspective of looking at the west side (foreground) to the east side (background).)



Whitney Avenue Tunnel

While the sidewalk on Pennwood Avenue has become smaller spatially, it continues to support traffic without compromising vegetative appeal. (This view gives a glimpse of what the Loop would look like from the bird's eye perspective of looking at the west side (foreground) to the east side (background).)



PENN AVENUE

SOUTH AVENUE

PENNWOOD AVENUE

ROWLAND CONNECTOR

PENNWOOD AVENUE

WHITNEY AVENUE

PENNSTATE

TUNNEL 1: WILKINSBURG STATION TUNNEL



0 30'

West Side of the Bus Way



The existing conditions do provide a sidewalk for pedestrians; however, the width is limited and not accommodating for more than two persons at a time. The existing earth berm serves no purpose other than being a home to overgrown vegetation. It is not structurally needed to hold up the bus way.



After removing the existing soil, implementing structural soil beneath grade, and planting low-lying vegetation with the occasional street tree as a visual barrier from the road, the space available to the pedestrian has more than doubled in size. This space is now occupied by 10 feet of neat vegetation, 20 feet of free pedestrian use, and 10 more feet of tame vegetation.

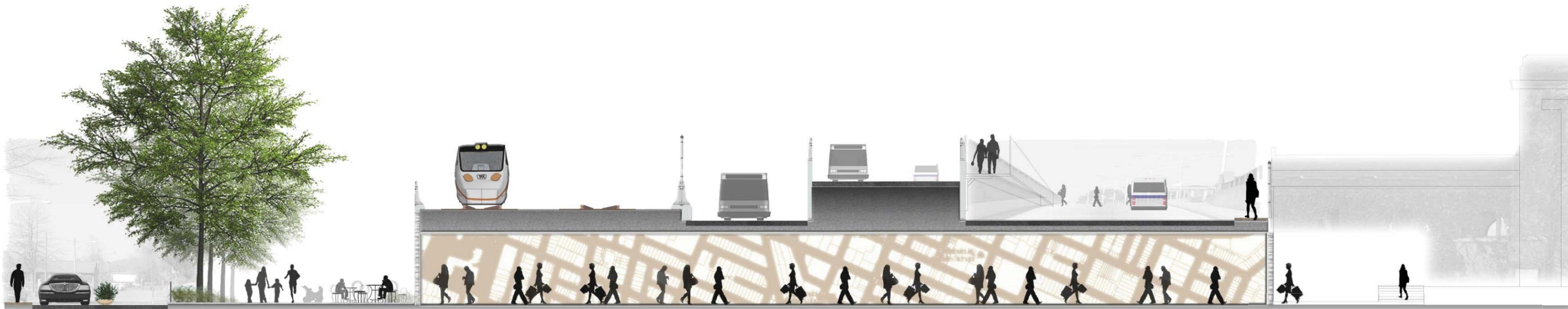
East Side of the Bus Way



After dodging traffic from nearby intersections, a pedestrian is finally able to access the bus stop, but they are without protection along the street.



An elevated pedestrian Sky Walk carries users above traffic, away from the dangers of the busy street. This enclosed, yet comfortable space of about 8x5' provides a barrier between users and existing buses.



WEST 0 10'

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EAST

TUNNEL 2: FRANKLIN AVENUE TUNNEL



0 30'



The existing conditions do provide a sidewalk for pedestrians; however, there is also a "blank" area of concrete that has potential to be a seating area to provide "Eyes on the Street" that has not yet been tapped into.



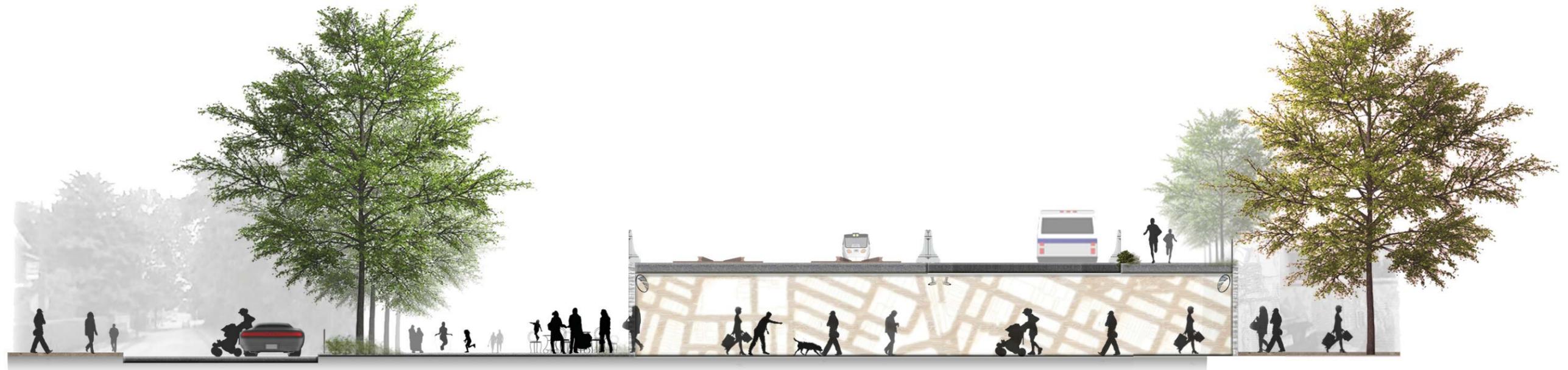
Like the Wilkesburg Station Tunnel, after removing the existing soil, similar amenities have been provided such as a seating area, vegetation with proper soil construction and a sense of place.



Overgrown vegetation intimidates the pedestrian and therefore lessens the inclination to use the space.



A specific planting plan is devised to plant only smaller plants directly adjacent to the path. The plant choices have taller heights as the space deepens, giving an open effect.



WEST 0 10'

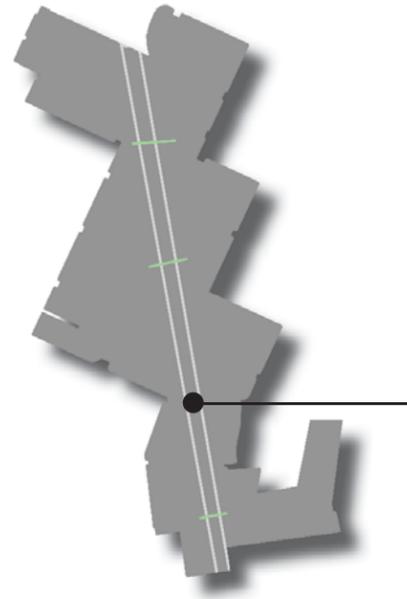
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EAST

TUNNEL 3 WHITNEY TUNNEL



With only a small 2.5' cement area to stand on after exiting the tunnel, the pedestrian almost steps directly into traffic's way.



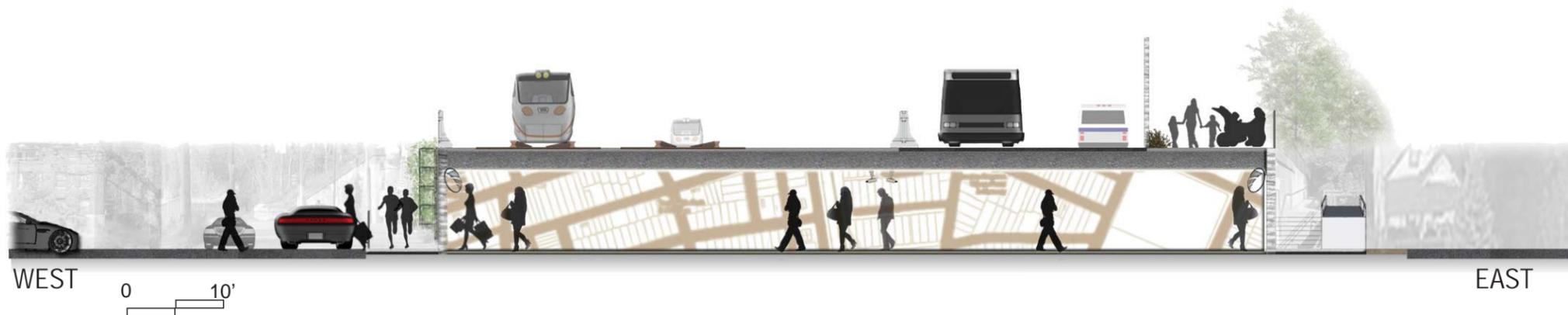
By removing on-street parking and instead implementing a sidewalk on the same side of the road as the tunnel entrance, continuity and safety are both enforced. While this pedestrian space is not nearly as wide as the other west tunnel entrances, vegetation comes into play here as well.



Here vegetation overwhelms the pedestrian and encroaches on the width of the path. These cramped, dark conditions discourage users from taking this route.



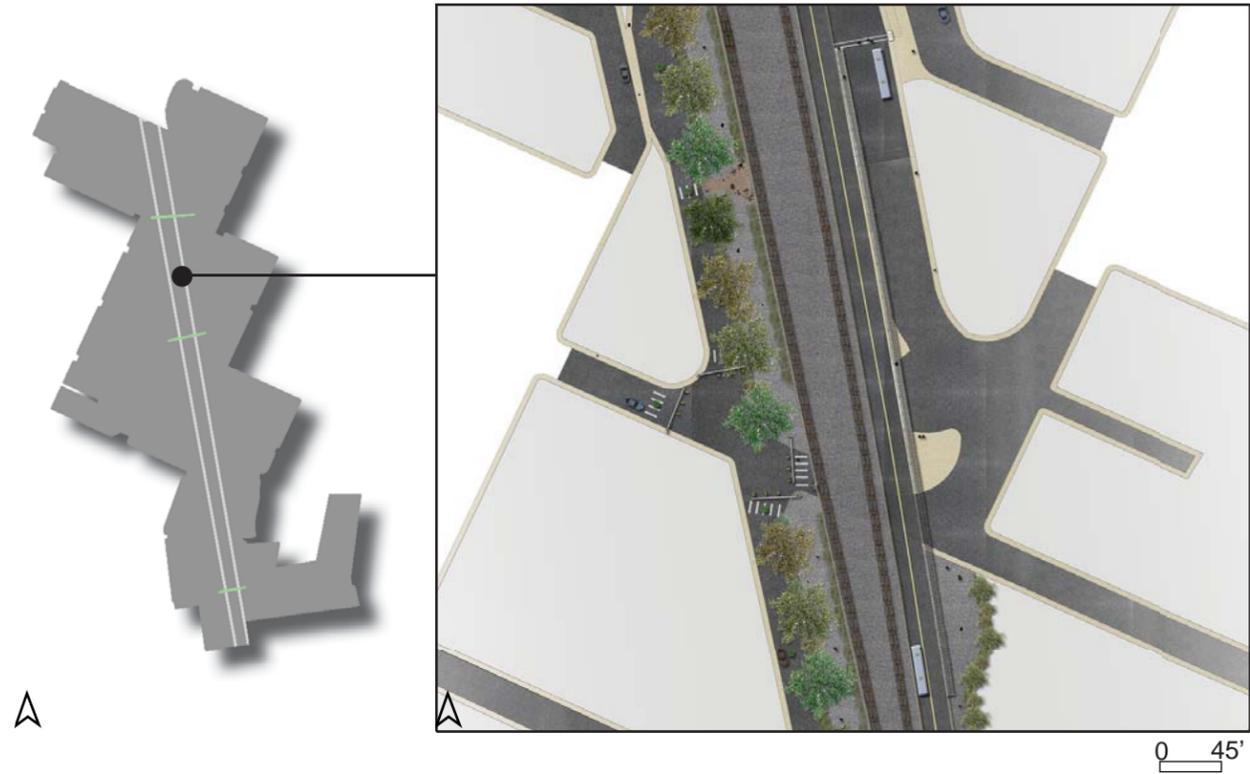
While the barrier between the path and bus way is taller in this instance, a similar strategy is used. Additionally, as the space progresses further back, the slope also drops gradually. Taller trees will be planted here to maintain a visual barrier for the privacy of the surrounding homes.



TUNNEL INTERIOR



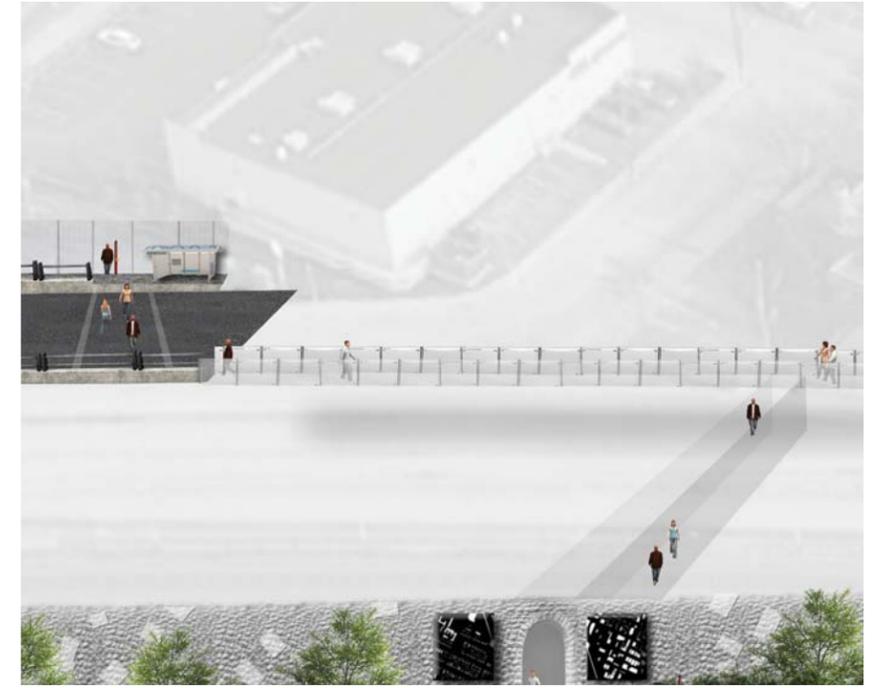
PEDESTRIAN SKY WALK



The intersection of South Avenue and Penn Avenue is one of the busiest in town. While there are currently crosswalks in place, they are not linearly aligned with one another which can be confusing to users.



Providing an elevated pedestrian pathway is a nod towards the past planners who thought to elevate the bus way to alleviate traffic accidents. However, hopefully the role this elevated walkway plays in the large scheme of the Loop, which is one of continuity, will not encourage the division of the borough but rather aid in the unifying of Wilkesburg.



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PEDESTRIAN SKY WALK

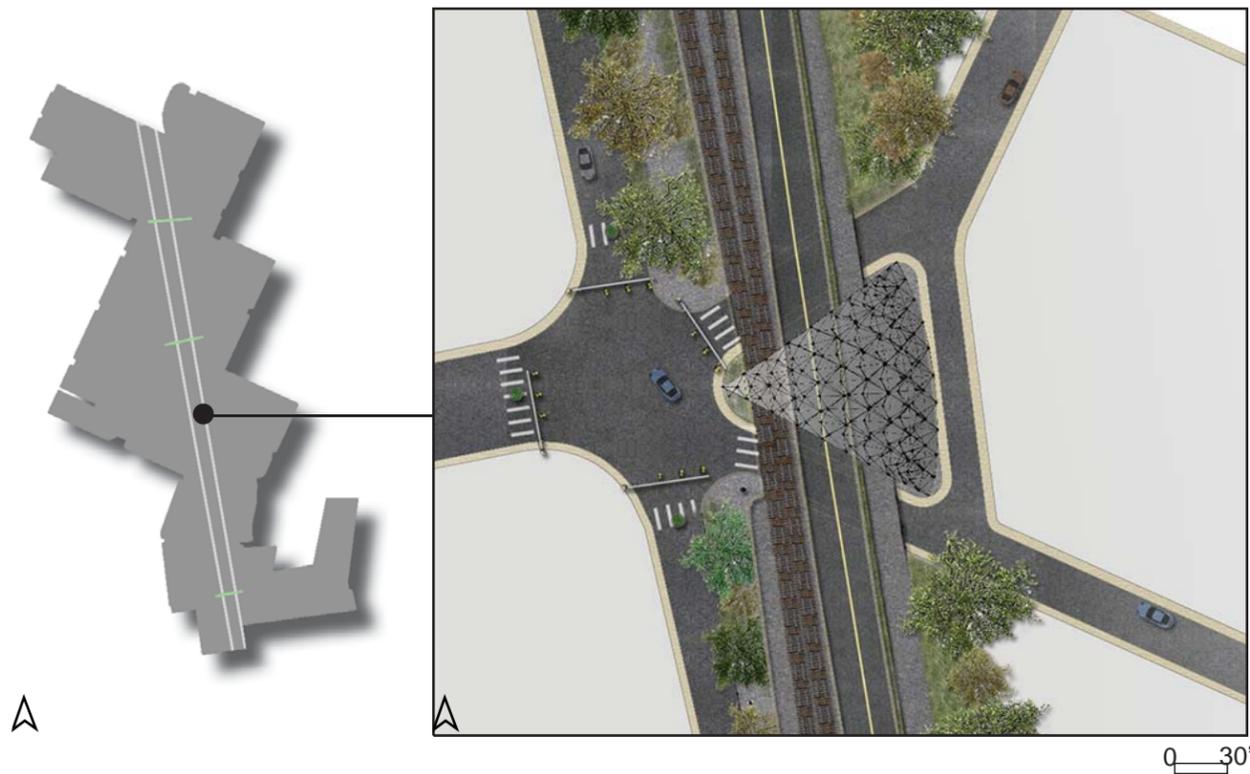


PENNSSTATE

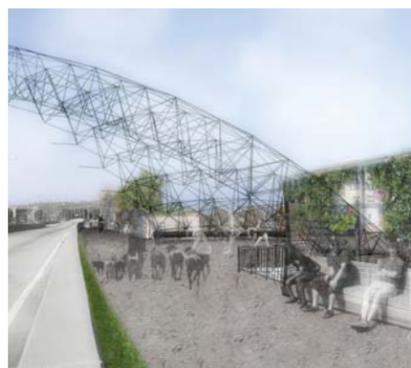


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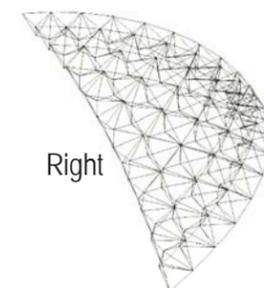
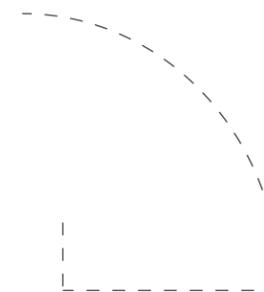
AN OUTDOOR ROOM



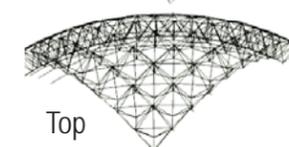
Due to its elevation, the existing linear park has some of the best views of Wilkinsburg. However, many of the residents of Wilkinsburg are unaware that it exists. This is probably due in part to the lack of visible landmarks on the site. Additionally, according to residents in a Town Charette, this space is too open and therefore uncomfortable.



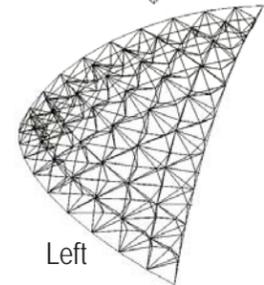
This geotensile structure that stretches from one side of the bus way to the other provides many things. First, it provides a sub-space along the route of the Loop which is less common on the east side of the bus way. Second, because it is made of an essentially transparent material, one can see and be seen inside the space. Third, it can be seen from a distance and from either side of the bus way, inciting curiosity and interest.



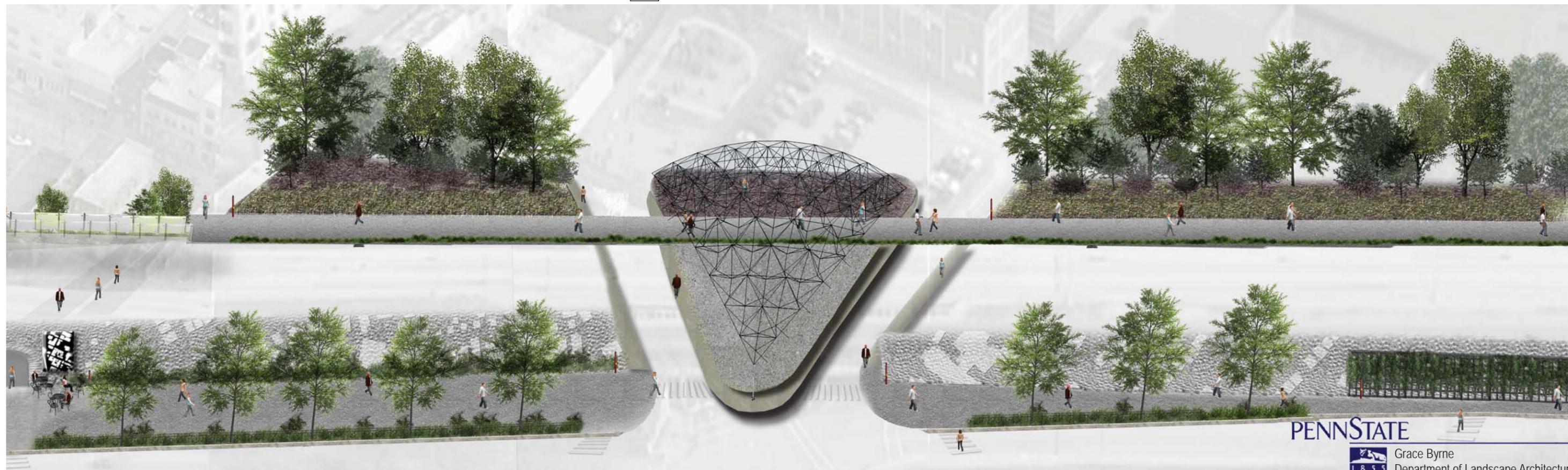
Right



Top



Left

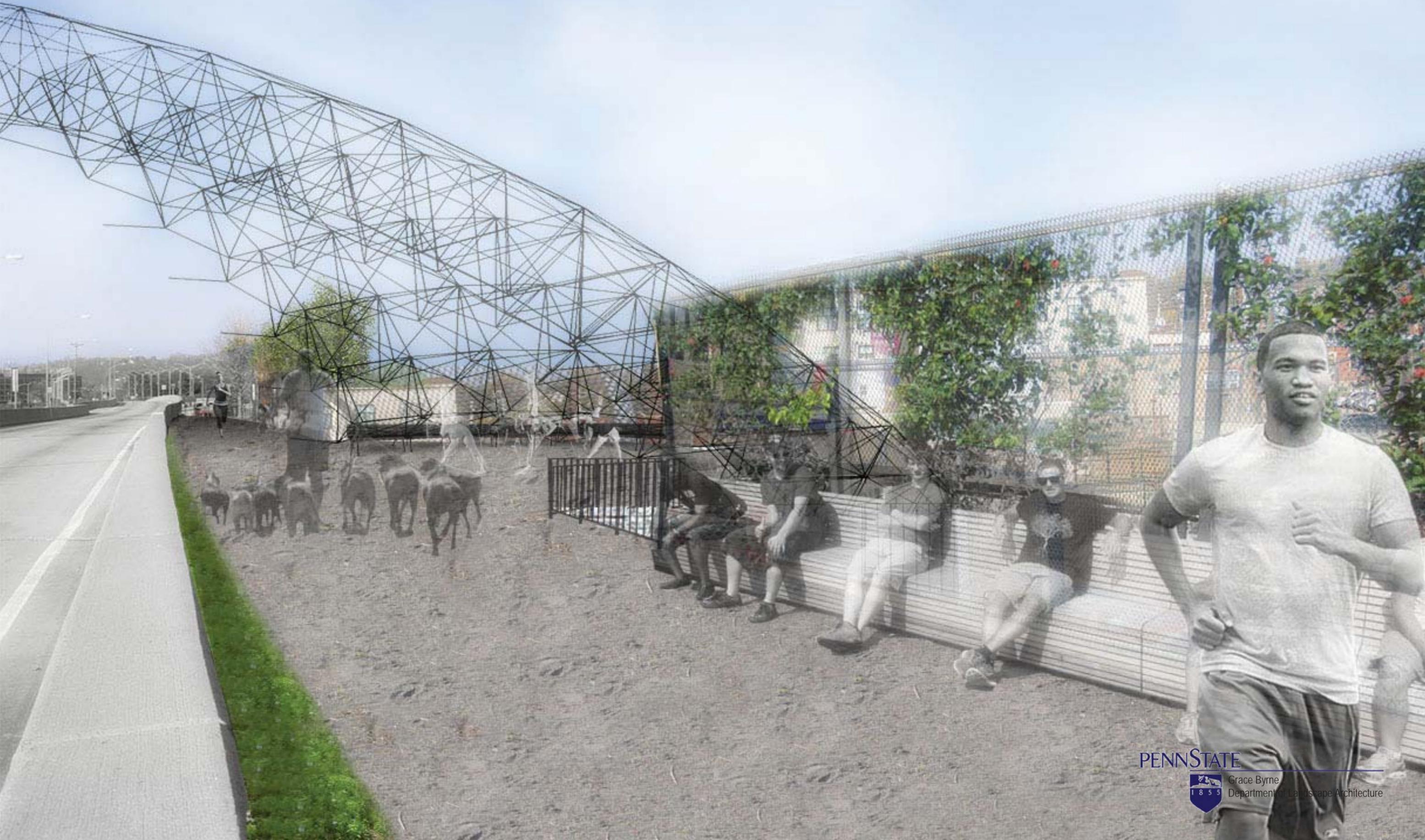


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AN OUTDOOR ROOM



MATERIALS



Crushed Asphalt

After interviewing a handful of runners, the consensus was that crushed gravel is by far the most price efficient material to run on without sacrificing comfort on knees. While the Loop is not necessarily intended only for runners, the crushed gravel can also be easily tread on for other activities such as walking, playing, even stretching or sitting. Additionally, crushed limestone gravel is already being used as the dominant ground material in the existing Linear Park.



White Stone

White stone is recommended to be mounted on the existing bus way as a veneer. This is not only to give the otherwise dis-uniformed wall a sense of cohesion in terms of material, but also to reflect light more easily. This will brighten the space as a whole, during the day as well as at night.



Trellis

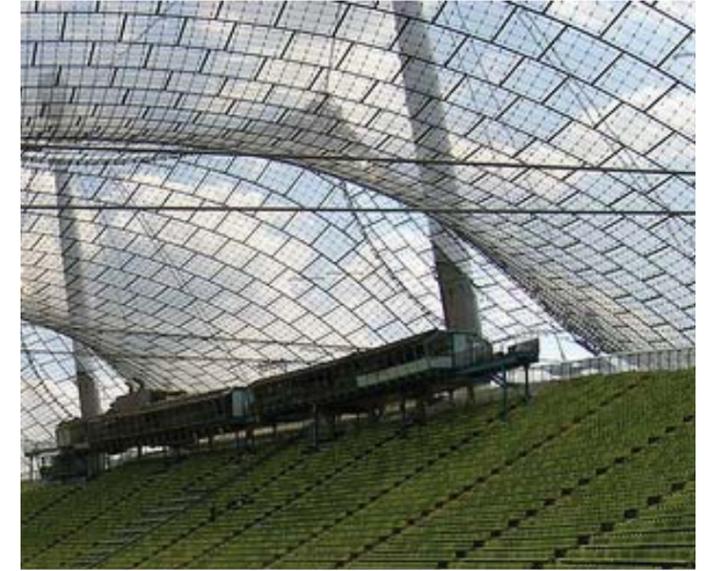
A wooden trellis treated with waterproof stain will be mounted onto the stone veneer wall in areas where the sidewalk is of too small a width for vegetation to be planted on the ground plane. Ivy is the selected plant of choice as is it low maintenance and grows rapidly. Additionally, as the Wilkesburg Train Station (located on the opposite end of the Loop) is also covered in ivy, repeating this plant choice provides a sense of continuity in vegetation.



Glass

Double-paned glass will serve as the railings of the Sky Walk. The intention is to provide strength to structure, without blocking the elevated views of the borough that the Walk provides.

Metal Grates with small openings serve as the walking surface for the Sky Walk in order to allow snow to melt and pass through for easy maintenance.



Acrylic glass

Acrylic glass stabilized by steel cables will be used for the geotensile structure that will serve as a resting point along the Loop. This transparent material allows users to take advantage of hard to find views of the streets below as well as to be seen by neighbors.

ACKNOWLEDGEMENTS

A very special thanks to all who were involved in the development of this project. As a student of participatory design I am proud and very grateful to the following participants who assisted in the co-authoring of this design:

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The members and volunteers of Fostering skills for Urban kids through Social-emotional & literacy Education (FUSE)
Chad Chalmers, Wilkesburg resident
Ken Tamminga, Professor at Pennsylvania State University

All of the Wilkesburg residents who welcomed myself and the rest of the students from Penn State into their community.

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