

# HYBRID SPACES IN CITY

A detailed architectural line drawing of a city block. The drawing shows various building footprints, some with internal room divisions. Several areas are filled with a dense pattern of small circles, representing trees or landscaping. The drawing is composed of thin black lines on a white background.

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A thesis submitted in partial fulfillment of the requirements for the Master of Landscape Architecture Degree in the Department of Landscape Architecture of the Rhode Island School of Design, Providence, Rhode Island.

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**Approved by Masters Examination Committee:**

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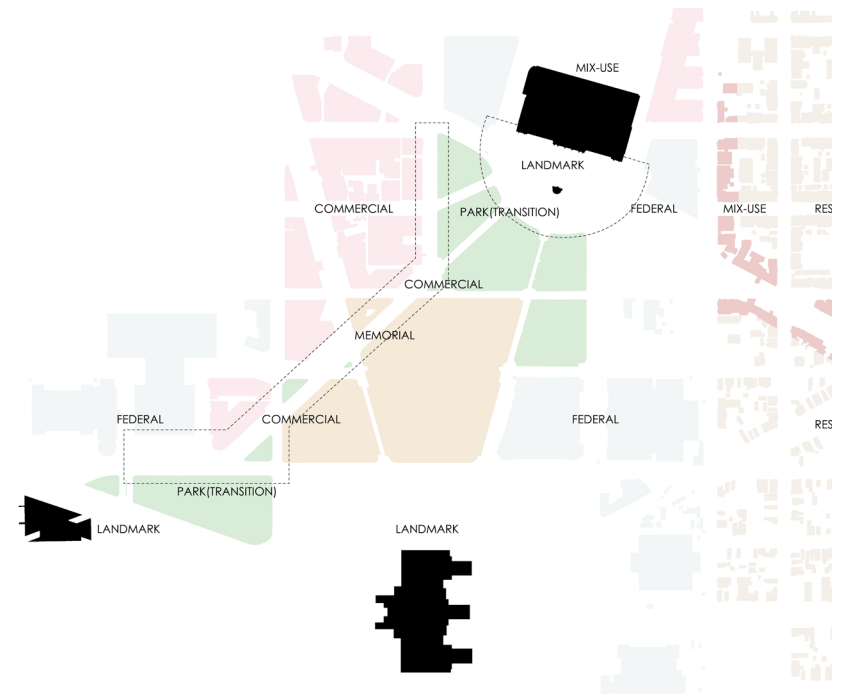
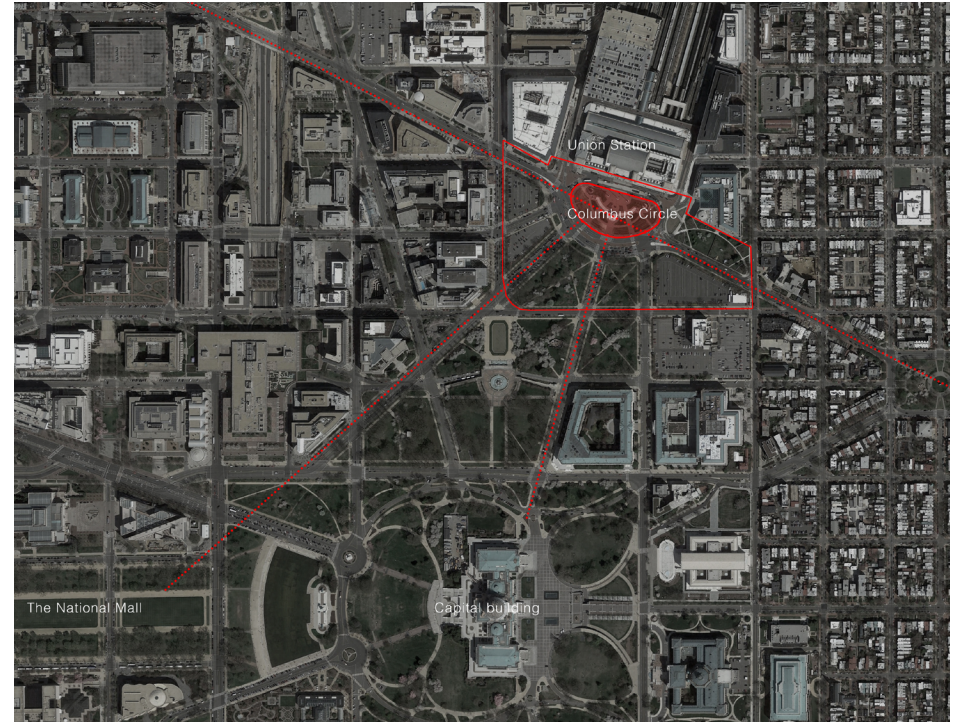
## Overview

This investigation is about the edge, hybrid space, and public engagement in the urban environment in Washington, DC. There are three phases of this research. In Phase 1, the investigation focuses on clarifying the definitions of terms such as edge, transition, vegetated, and constructed spaces. In Phase 2, the study explores methods of understanding urban fabric based on the experiential and physical analysis. In Phase 3, the investigation generates critiques of the site conditions between Union Station and Union Square in Washington, DC.

The film *The Social Life of Small Urban Spaces* by William Whyte, which shows people's different behaviors in a plaza in New York City, has inspired this study. In the urban environment, people prefer to stay in and use certain places. The edge is the primary place people prefer to occupy. The goal of this thesis is to find out what spatial factors contribute to encouraging public engagement.

## Site

The site is Columbus Circle and surrounding edges. Columbus Circle is known as Union Station Plaza or Columbus Plaza. It is a traffic circle at the intersection of Delaware, Louisiana, and Massachusetts Avenues and E and First Streets in Washington, DC. The plaza is in front of Union Station, which is the busiest train station in Washington, DC. It is facing the Capitol building with high directionality. There is a significant number of people flowing in and out of the station. However, there are few places for people to stay on the plaza and the surrounding open spaces. The square functions as a transitional space for pedestrians to pass through. There are edges and places that are more attractive for people to stay than the others. The site provides a dynamic and an active environment to start this study.





# **Phase 1 Investigation**

**Transitional Spaces between Vegetated and  
Constructed Edges**



## Abstract

In Phase 1, the investigation focuses on clarifying the definitions of terms such as edge, transition, vegetated, and constructed spaces. The main question is how to predict and visualize the growing force of vegetation in urban spaces by manipulating the existing edges. The main findings of this research are the existing edge conditions on the site, the types of growing forces of vegetation, and the successful utilization of case studies. The methods of this phase's investigation are concept map, site visit, case study, and site analysis.



The growing force of a flower in the crack of a sidewalk

Photo by:  
<http://deborahmorefield.com/>

## Introduction

This phase investigates the meaning and importance of the transitional space between vegetated and constructed edges. The site is the open spaces to the south of Union Station including the sidewalks, traffic islands, parking lots, and green spaces. The process includes the definitions and types of edges, the concept illustration, and the present conditions and future possibilities. The investigation will help people understand the force of growing and expanding vegetation in innovative ways, preventing the potential destruction of spaces, and will build the sequential transition from the artificial to the natural world.

## Methods

1. Term definition: edge, transition, vegetated and constructed spaces, force of expanding nature
2. Concept map: the structure of this investigation
3. Case study: present successful practices
4. Site analysis: site visit, land use map, sections, photo collage

# Transitional Spaces between Vegetated and Constructed Edges

## EDGE AND TRANSITION

"Edges as the linear elements not used or considered as paths by the observer."

-Kevin Lynch

The edge is the in-between space when two elements meet. The forms of edges are on different scales, such as the vegetated edge, the constructed edge, or the street.



figure 1

The transition is the process of changing from one state or condition to another. Usually, the process has a gradient with different densities.

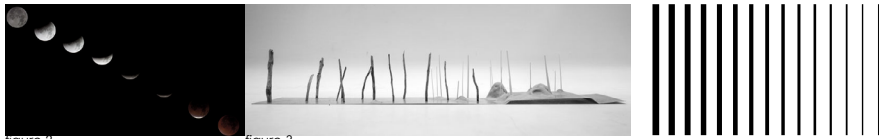


figure 2

figure 3

Transitional space is a place where boundaries dissolve a little, and we stand there, on the threshold, getting ourselves ready to move across the limits of what we were into what we are to be. Transition refers to the whole process of walking through the spaces, and people can get a continuous impression. The transitions can be short/sudden or long/gradual. Usually, it is easier for people to detect the sudden transition in the small scale than in the large scale.

resource:

figure 1. Lynch, Kevin, the image of the city, the MIT press, pp.47

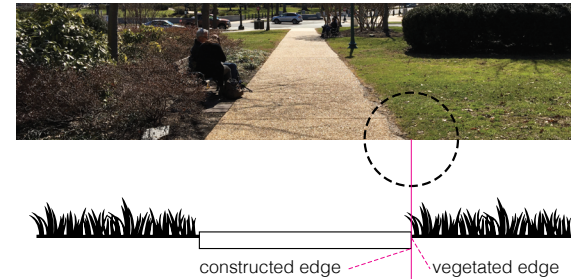
figure 2. <http://images.fineartamerica.com/>

figure 3. <http://archident.nl/een-landschap-voor-iedereen/>

figure 4. [http://www.liminalartsnetwork.co.uk/Resources/Liminal\\_definition.pdf](http://www.liminalartsnetwork.co.uk/Resources/Liminal_definition.pdf)

## VEGETATED EDGE

The edge where the vegetation stop spreading



## CONSTRUCTED EDGE

The edge of constructed materials, such as the concrete, brick, and stone pavers.

This type of edges is damaged and invaded by vegetated edges often. Some methods are preventing the edges from destruction. But most of them isolate constructed and vegetated edges.

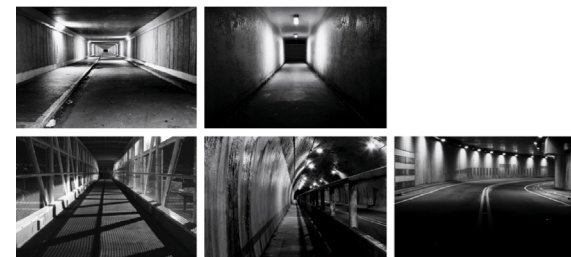


figure 4

## TRANSITION FROM THE WILD TO TAME NATURE

### GROWING/EXPANDING FORCE OF THE VEGETATION

Human are taking efforts to control and take advantage of the nature. Cities emerges for people to live. The appearance of city is artificial, even if the vegetation are planted by people with certain purposes. The distinct form of nature is the dynamic force like the rain, the light, and the growing plants. This investigation will be focusing on the growing and expanding power of vegetation, and finding out the best way to visualize the power in materials.



figure 1

Plants will grow wherever they can find a small crack of sunlight, a glimmer of hope. There is something that thrives on all living things, a force that drives us to want to live over anything else. Although plants don't have the brains to think on such a complex level about survival as we do, they undeniably want to live<sup>1</sup>.

resource:

1& figure 1. <http://www.earthporm.com/life-finds-way-25-plants-just-wont-give/>

figure 2. <http://imgur.com/gallery/D15dtiB>

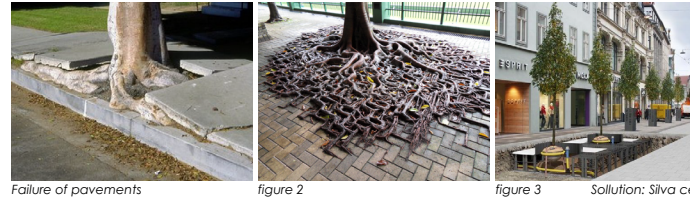
figure 3. <http://www.greenmax.eu/cms>

figure 4. <http://www.nycgovparks.org/parks/the-high-line>

## WHY IS IT IMPORTANT?

PRESENT - FUTURE

- Preventing the potential destruction of spaces



Failure of pavements

figure 2

figure 3

Sollution: Silva cell

- Manifesting the force of growing and expanding vegetation by innovative ways

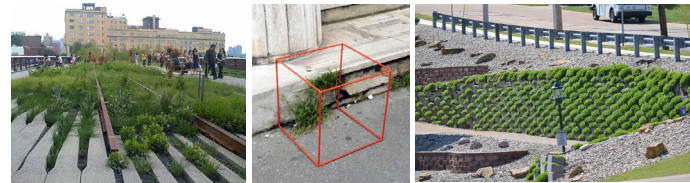


figure 4

figure 5

figure 6

- Building the sequential transition from the wild to the built environment

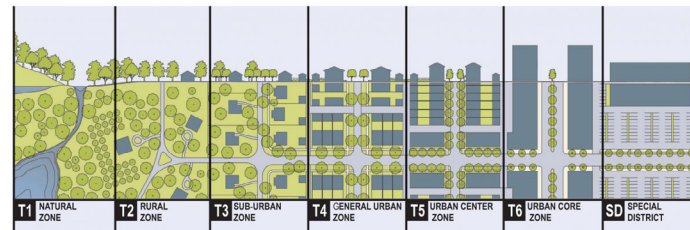


figure 7

PRESENT

Distinct

Opportunistic

Isolate

FUTURE

Integrated

Designed

Transitional

figure 5. <http://inhabitat.com/cute-urban-greenhouses-protect-wild-plants-that-spring-up-on-city-sidewalks/>

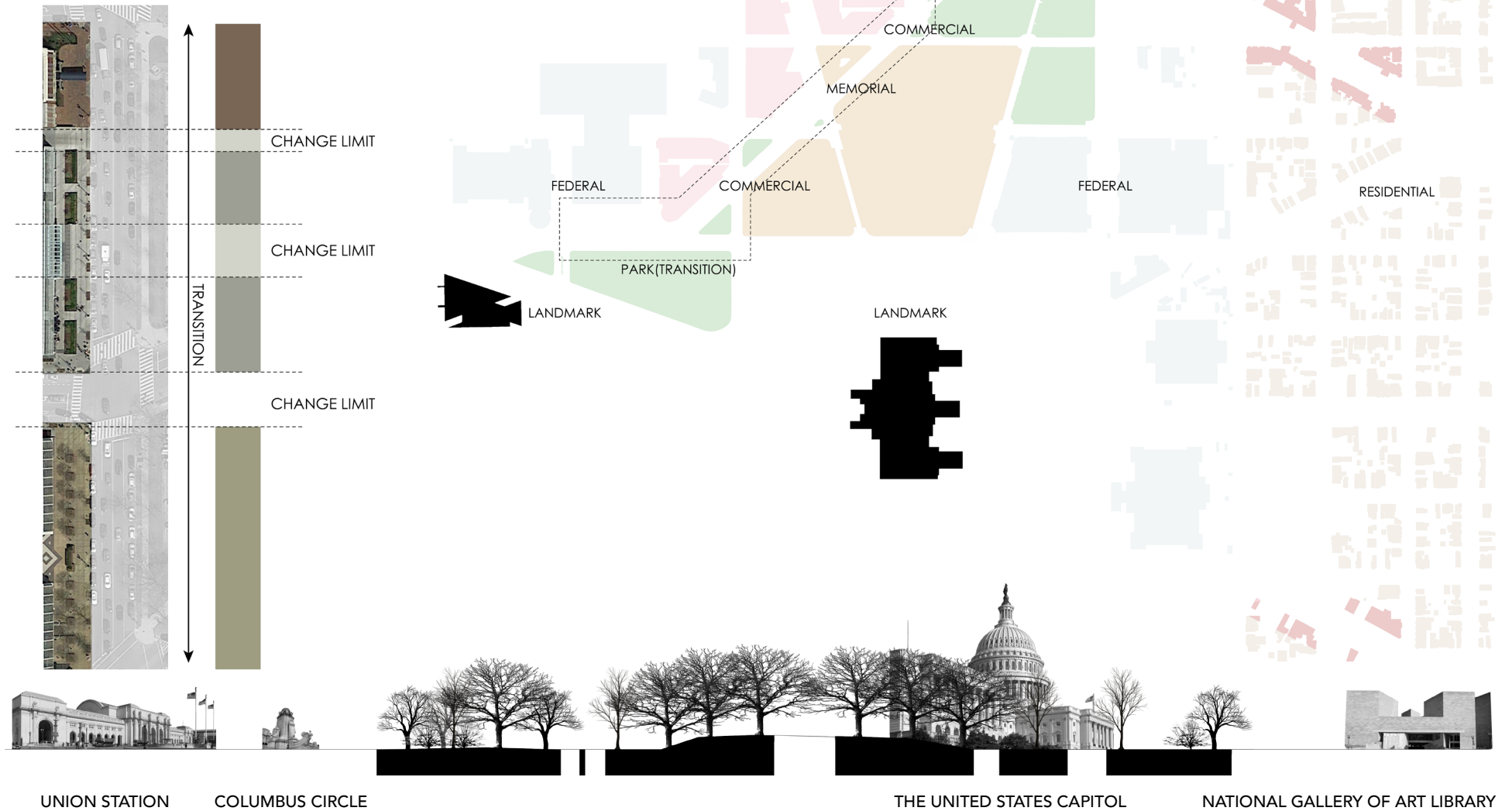
figure 6. <https://stewardsofearth.wordpress.com/tag/retaining-wall/>

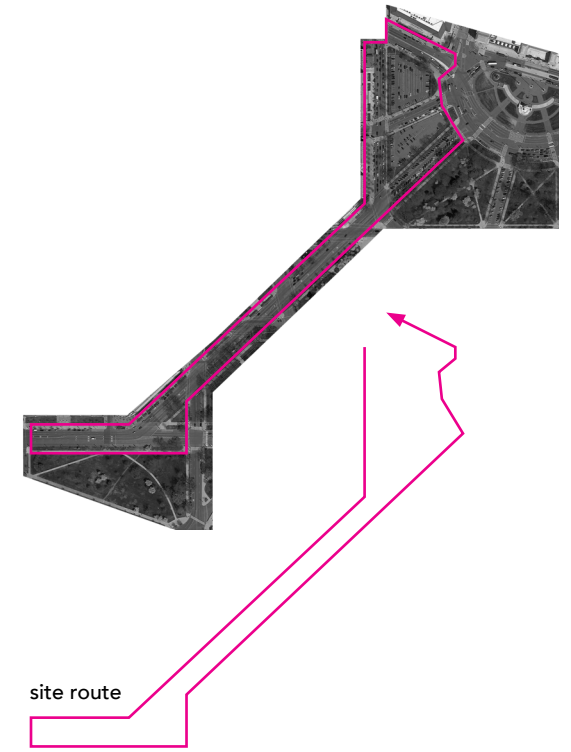
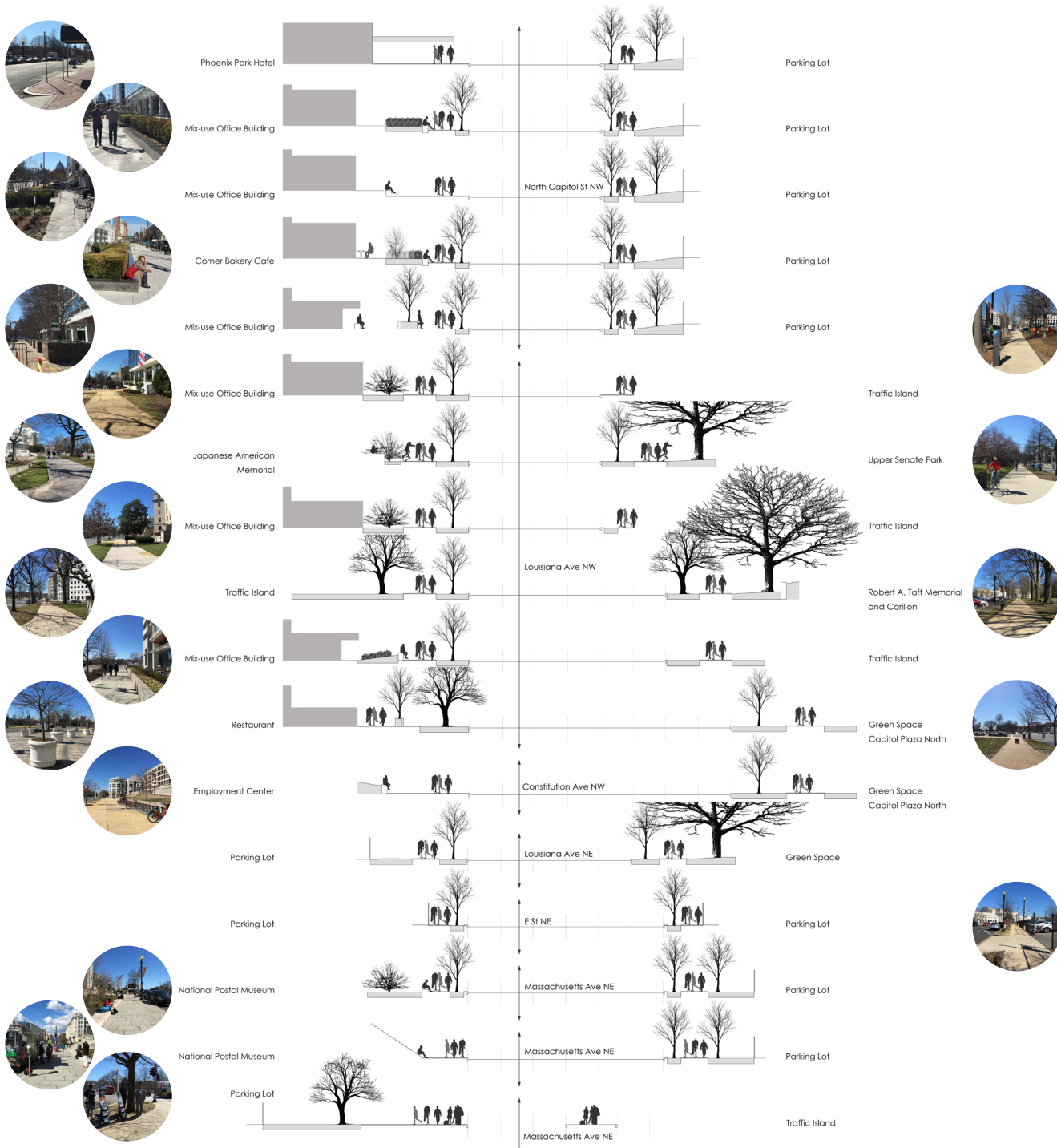
figure 7. <https://www.cnu.org/resources/tools>



# Transitional Spaces and Edges

The investigation will help build the identity of spaces on the site. In Phase 1, the study focuses on clarifying the definition of edge and transitional spaces and includes an inventory of the existing edge conditions based on a site visit. The transitions between spaces exist in different scales on the site.

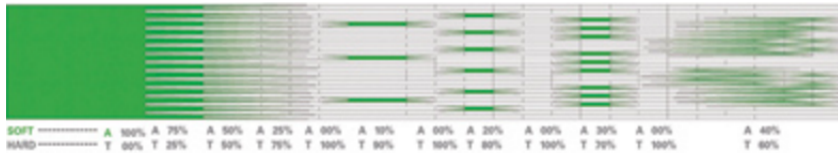
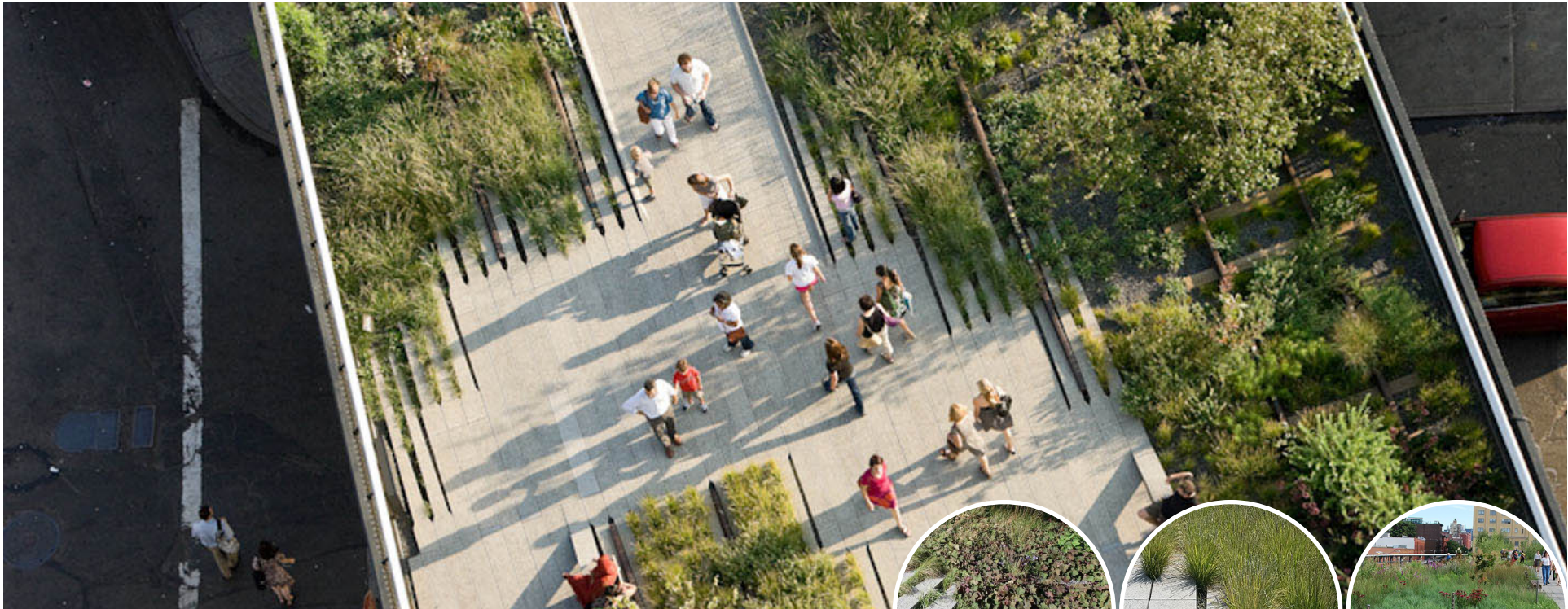




site route

The diagram shows the transition of the vegetated and the constructed edges during the site visit. The transitions between the two types of edges are distinct. People are making use of the constructed edges. More types of activities happen when there are more types of edges. Vegetation occupies the open spaces and functions as a canopy and barrier for people.



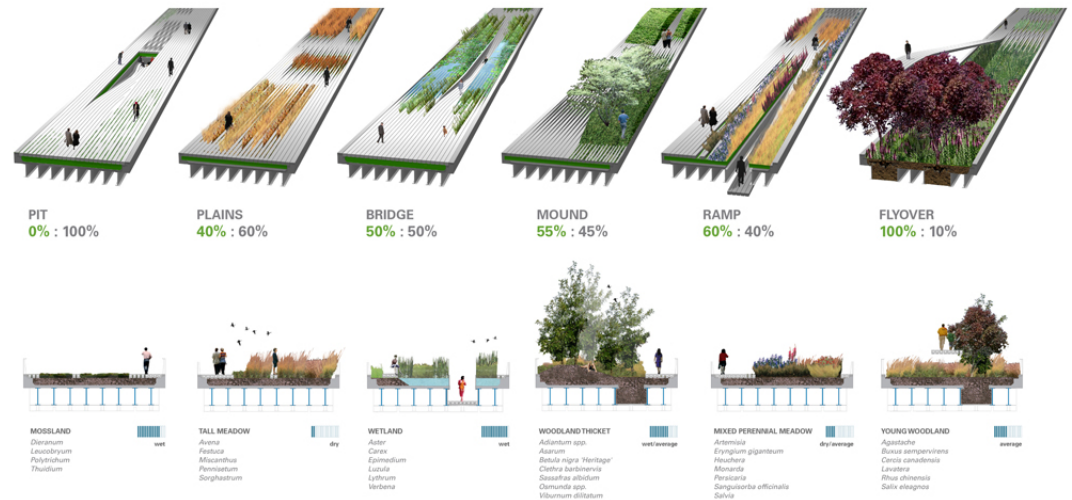


## Case Study: High Line Park, NYC

Designer: James Corner Field Operations, 2009

The high line park in New York City is a renovative way of inserting green spaces by recreating the abandoned railway. The invention of a new paving system allows for meandering movement along the High Line while maintaining minimum path widths. Plant types are easily reconfigured to construct hard surfaces that are materially consistent and spatially variable. The composition of the paving system helps to build the transition between vegetated edges and constructed edges.

resource:  
<https://www.asla.org/2010awards/173.html>





# Case Study: Paley Park

Designer: Zion & Breen, 1967

This is a pocket park in New York City. Measuring 4,200 square feet (390 m<sup>2</sup>), the park offers a quiet urban oasis in the midst of the bustling city by the careful use of falling water, airy trees, lightweight furniture and simple spatial organization. The waterfall creates a backdrop of gray noise to mask the sounds of the city. The park is surrounded by walls on three sides and is open to the street (with an ornamental gate) on the fourth side, facing the street. The honey locust trees function as a layer that integrates the street with the park. It gives an example of how to combine the vegetated and the constructed edges. The growing force of vegetation hide the distinct edges between the manmade and the natural elements.

resource:  
1. Great Public Spaces: Paley Park, Project for Public Spaces  
figure 1. [http://www.greatbuildings.com/buildings/Paley\\_Park.html](http://www.greatbuildings.com/buildings/Paley_Park.html)  
figure 2. <http://nabowes.wix.com/drawingthelandscape#!rendered-paley-park/gf6ez>

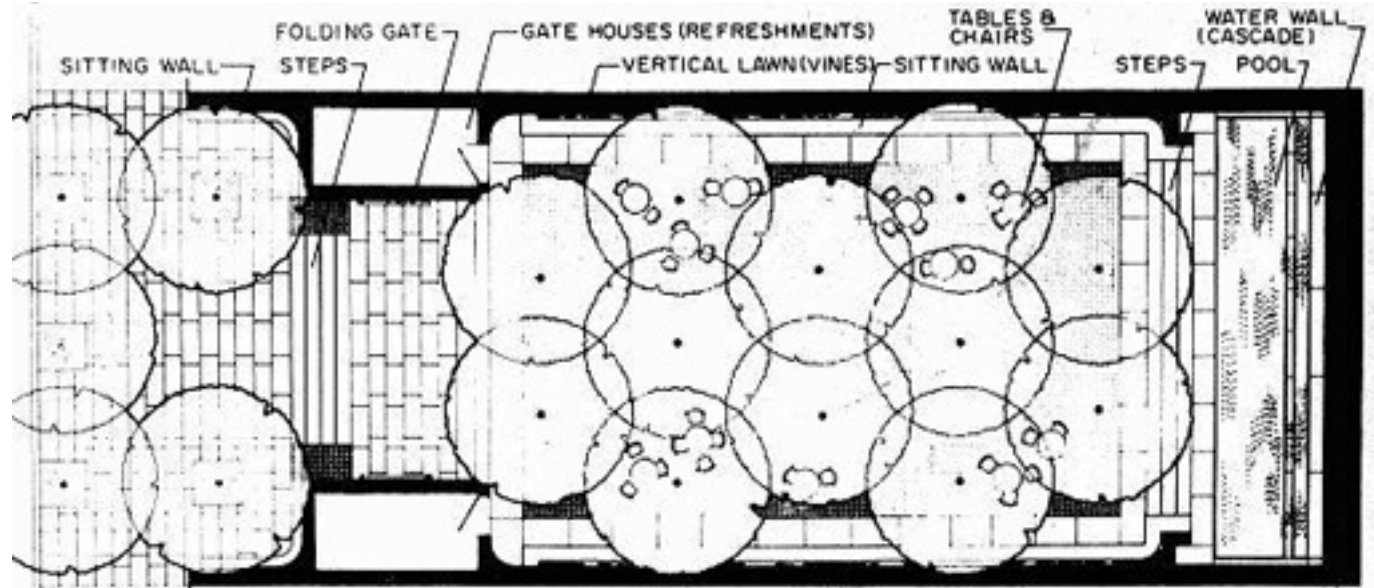


figure 1



figure 2



## Findings + Conclusions

The research in Phase 1 confirmed the subject, goal, and possible methods regarding the site visit, site analysis, and case studies. Edge is a broad term, and it covers the constructed edge, vegetated edge, ecological edge, and water edge. It is an important element in the field of landscape architecture that relates to people's activities. This investigation focuses on the transition between constructed edge and vegetated edge. There is a potential to expand the existing spatial qualities and make more meaningful spaces. The goal is to help people understand the force of growing and spreading vegetation in innovative ways, to prevent the future destruction of spaces, and to build the sequential transition from the artificial to the natural world.

During the process of research, different projects have challenged the role nature plays in the city. The composition of the city is artificial, even though the plants are natural. People plant trees, shrubs, and lawns intentionally. The existing form of nature is a force, and that force leaves traces on other materials. For example, the growing force of tree roots destroyed the surface of the asphalt path. Usually, the effect is not visible for a long time. The growing and spreading power of vegetation happen randomly. The seeding process allows the plant to occupy random places such as the gaps between bricks, the cracks in the asphalt, and the crevices of rocks. The possibilities of taking advantage of the growing and spreading force are the next step in this investigation.

In the case studies, nature exists in the projects in controlled ways. In High Line Park, the composition of the paving system helps build the transition between vegetated edges and constructed edges. The openings of the pavement resemble the shape of the railway, and they leave space for vegetation to spread. As time goes by, the distinct division between edges will be smoothed by vegetation. In Paley Park, the honey locusts function as a layer that combines the city and park. From these studies, it is possible to visualize the force of growing and spreading vegetation through spatial manipulations. Also, the series of small spaces help build the sequential transitions.

## Assessment

The methods in this phase are site-based observations, analysis, and case studies. They help answer some of the questions, such as the site situation, types of edges, examples of plants' growing forces, and practical projects. But they lack scientific research and knowledge. Therefore, the distinct types of the plants' growing and spreading forces are not yet clear. From the site observation, it is difficult to quantify people's activities on the site. They can only be qualified in gradations. The only clear conclusion is that more types of activities happen when there are more types of edges. This conclusion can make connections between the plants' growing force and people's perceptions. The study still needs to clarify people's needs that happen in the transitional spaces of these edges. The site study should progress to three-dimensional model-making, not only to represent the existing site but also to test more invisible spatial elements on the site. The schedule needs to be revised for Phase 2 because the subject of this investigation is more specific about the force and how it relates to materials and spaces.



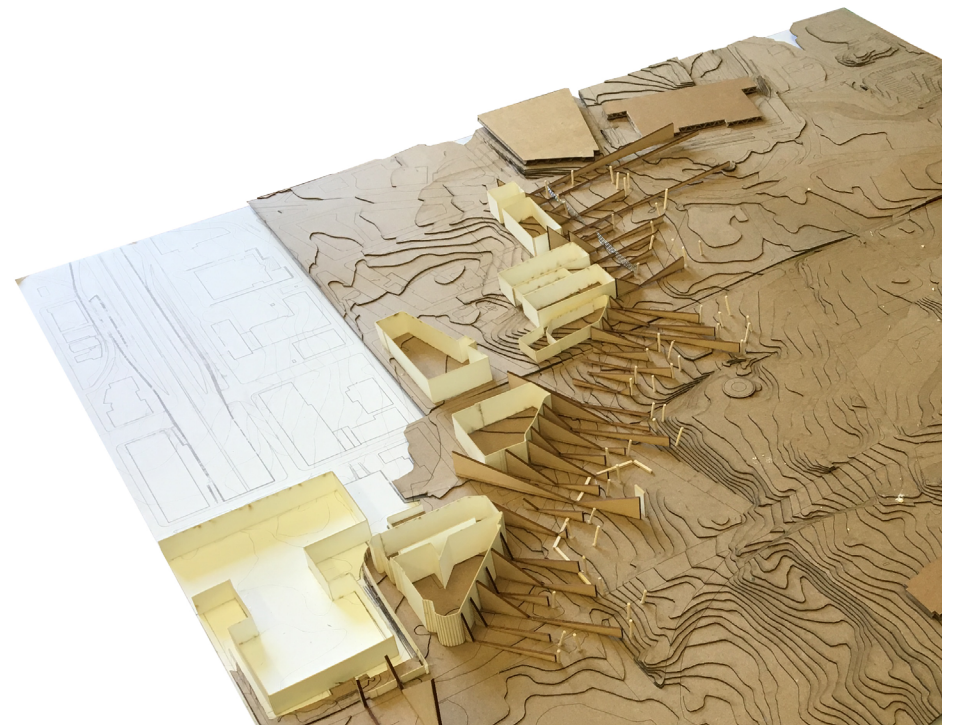
# **Phase 2 Investigation**

**Urban Hybrid Spaces**

**-Edge, Transition, and Perception**

## Abstract

In Phase 2, the investigation explores methods of understanding urban fabric based on the experiential and physical analysis. First, the study clarifies the terms and concepts including edge, transition, and hybrid space. Second, it describes the methods, which are field observation, analytical mapping, and edge typology study. Finally, the study evaluates the edge typologies by comparing potential programs with scales.



Perception of the edges  
30"X 24"

## Introduction

The intention is to develop methods of understanding edge and hybrid space and evaluate the effects on people's perceptions. The site is the streets and open spaces between Union Station and Union Square in Washington, DC. The process includes the site visit and the concept clarification. The forms of the analysis process are plans, photo collages, sections, axonometric drawings, and models. The investigation will seek to understand what types of edges are functional and directive to generate more urban hybrid spaces.

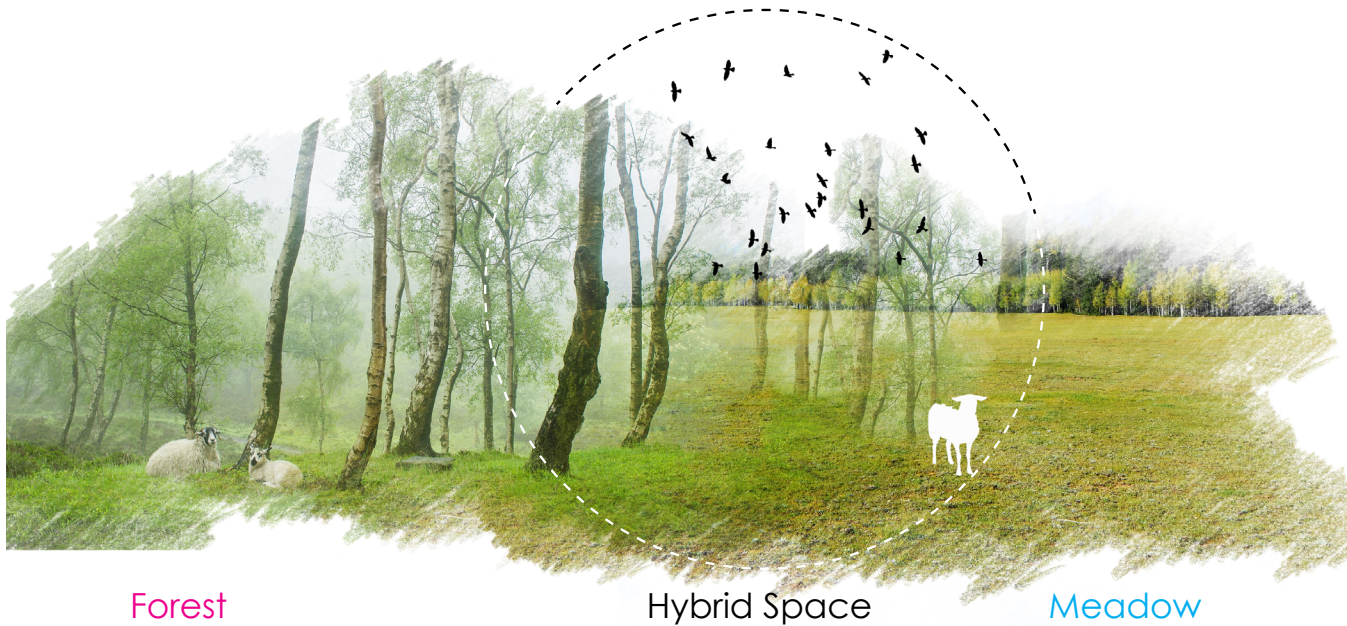
## Methods

1. Definition: edge, hybrid space
2. Concept diagram: the intention and goal of this investigation
3. Site analysis: site visit, view analysis, photo collage, mapping, axonometric drawings, site model, sectional model



# Urban Hybrid Spaces - Edge, Transition, and Perception

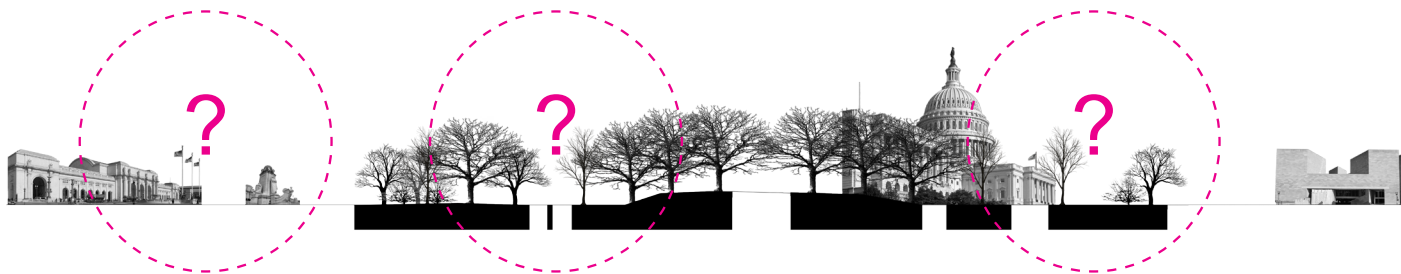
## WILD HYBRID SPACE - ECOTONE:



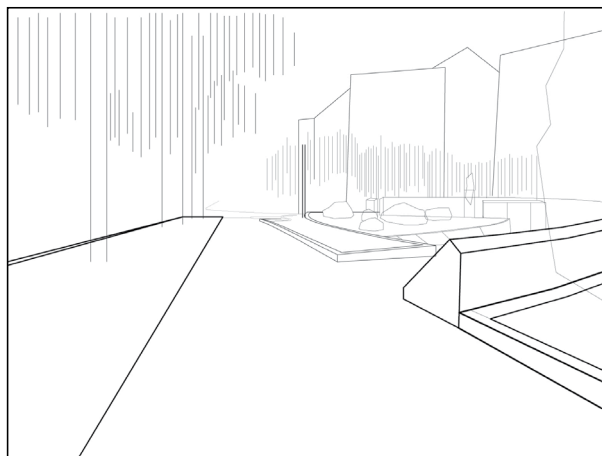
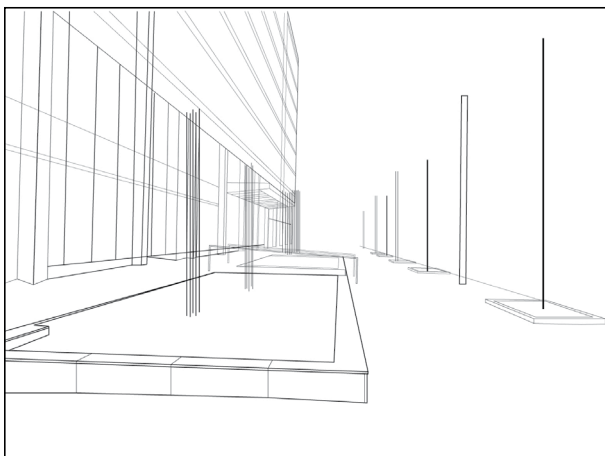
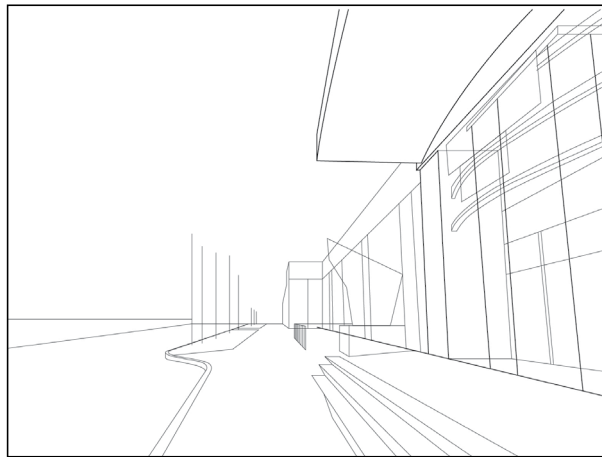
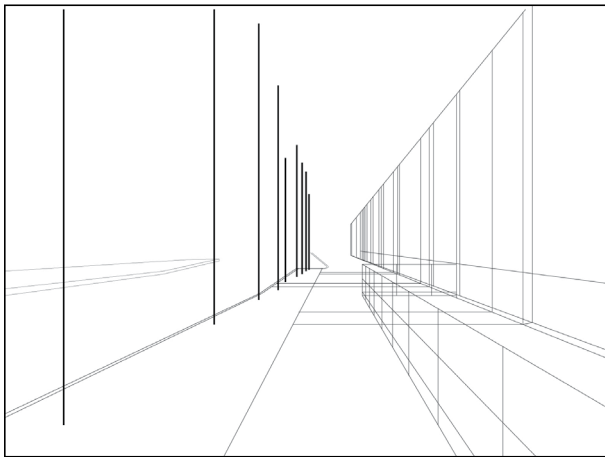
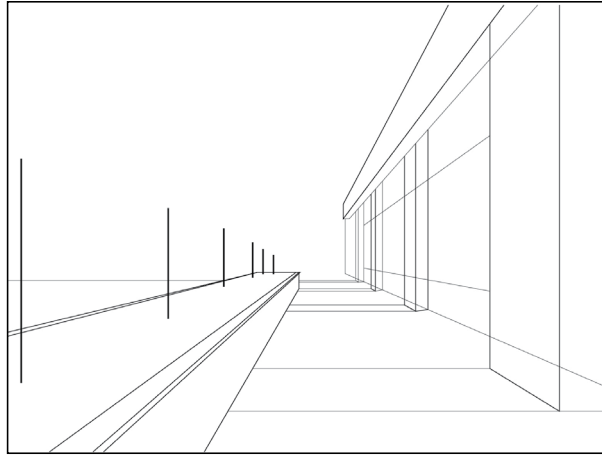
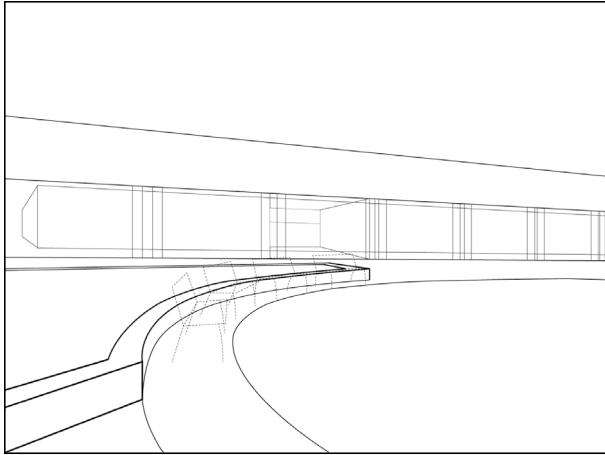
Hybrid space refers to the area where two or more spaces overlap. It incorporates the characteristics of all overlapping spaces. There are more potential and diverse programs happening in hybrid space than in any one of the overlapping spaces.

In the wild, ecotone happens where different conditions meet. This type of space can also be considered hybrid space. The scale of ecotone is usually small, but the habitat condition is more complicated than the surroundings.

## URBAN HYBRID SPACE:



The existence of ecotone in the wild leads to a reconsideration of urban space. This reconsideration will be meaningful if there are ways of finding and creating hybrid spaces in the city. The hybrid space has more potential functions than any single space.

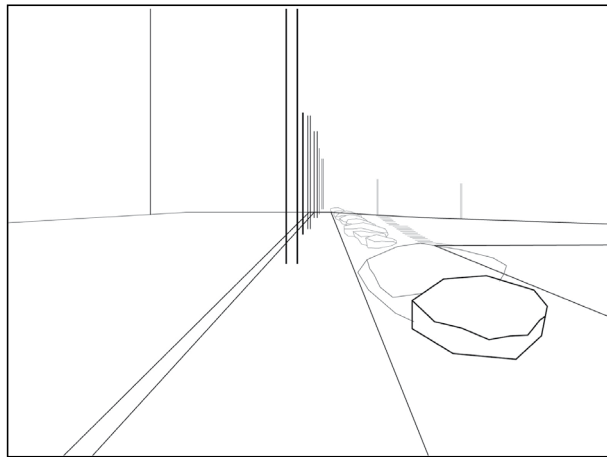
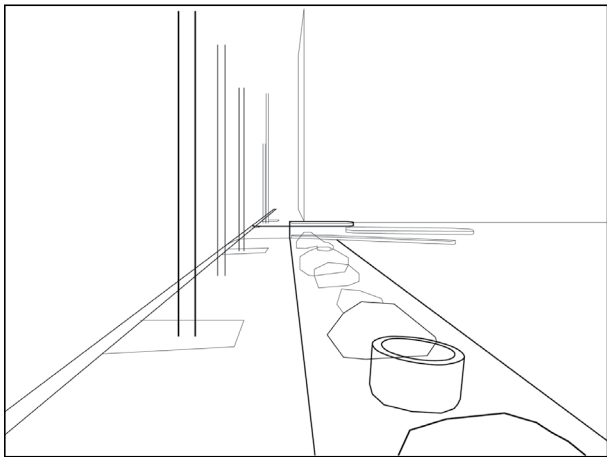
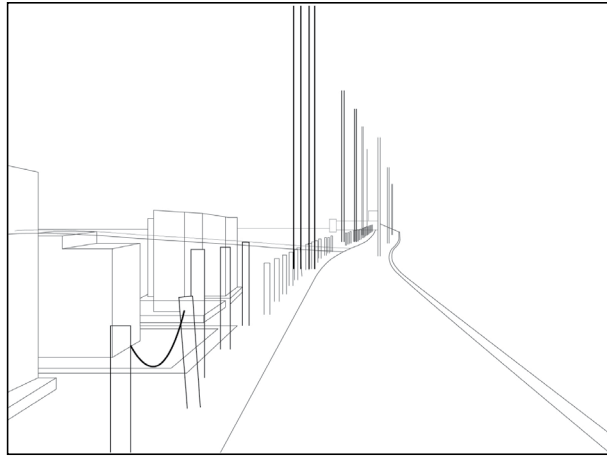
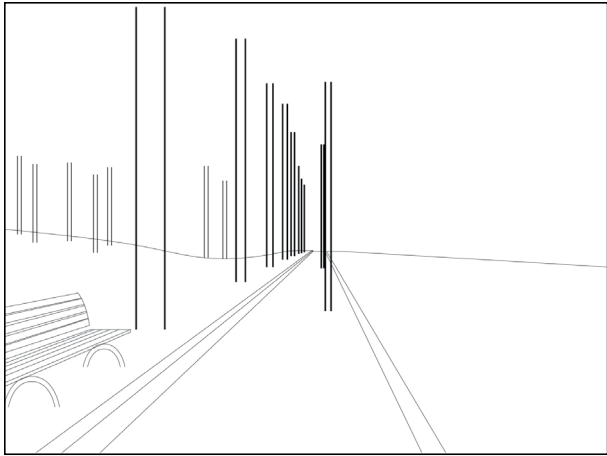


## BUILDING SPACES

The observations are abstract linework from Providence and the site in Washington DC. These drawings represent the edge conditions along the walk between transportation hubs, which are the Providence Amtrak Station to Kennedy Plaza and Union Station to Capitol Plaza. These places could have many similarities. The views shown in linework emphasize the way people understand these spaces. These drawings show the vertical and horizontal elements that build the edges and the different widths and depths of the edges. The dimensions of the edges influence people's perception and use of the space.

Providence

Washington DC

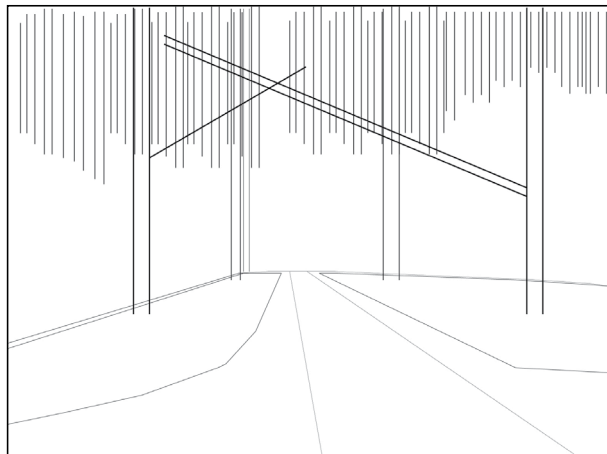
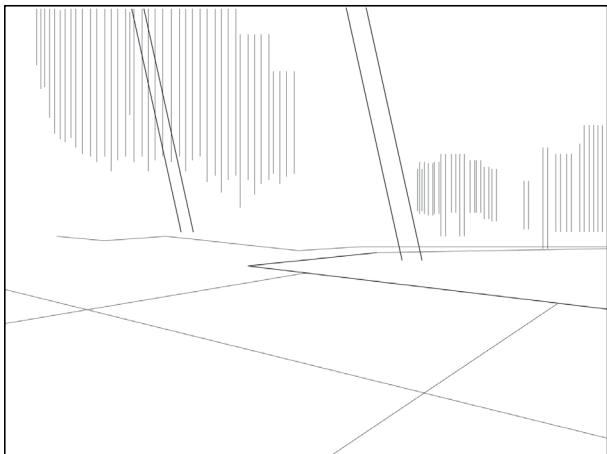


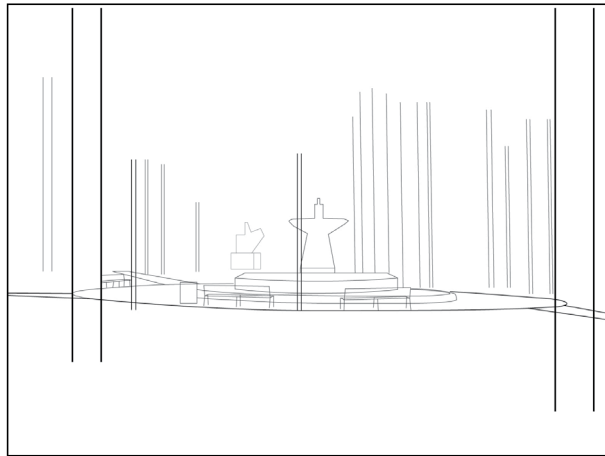
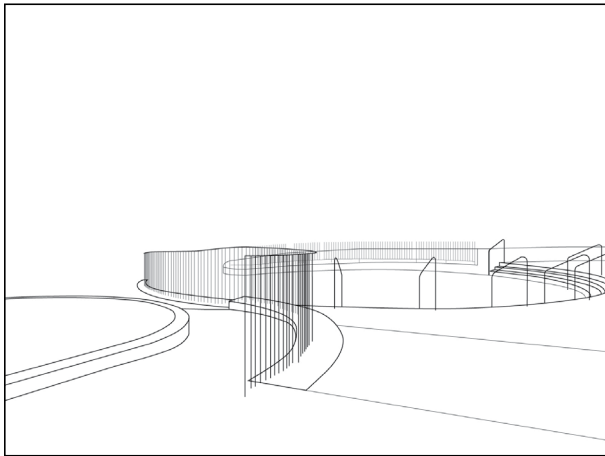
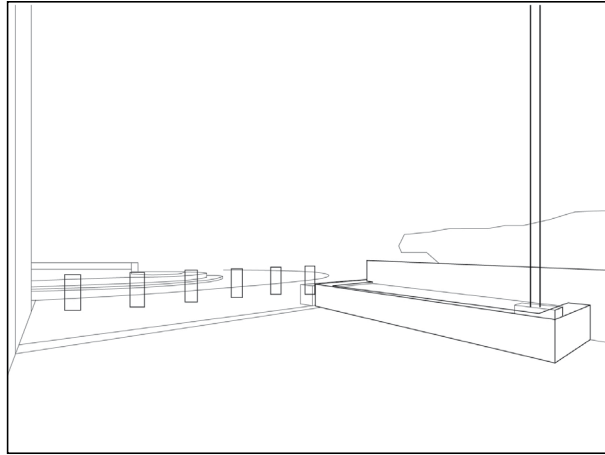
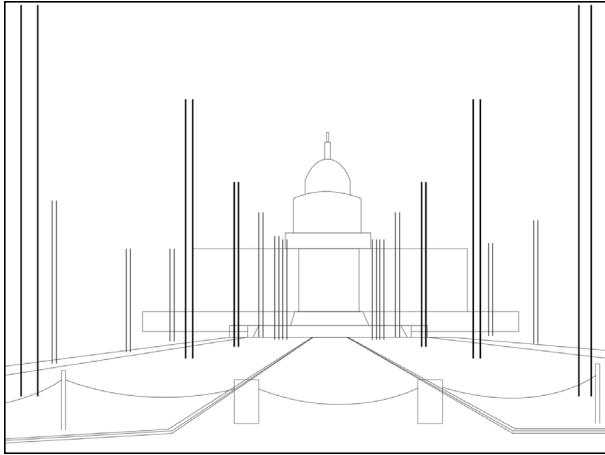
## OPEN SPACES

These drawings show the vertical and horizontal elements that build the edges and the different widths and depths of the edges. The dimensions of the edges influence people's perception and use of the space. The edge's existence is evident when the edge is narrow and abrupt. For example, the trees provide a visual connection between the sidewalk and the lawn and create a gradual transition.

Providence

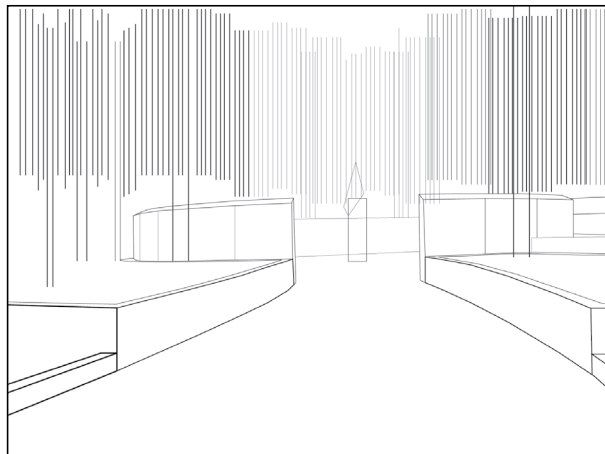
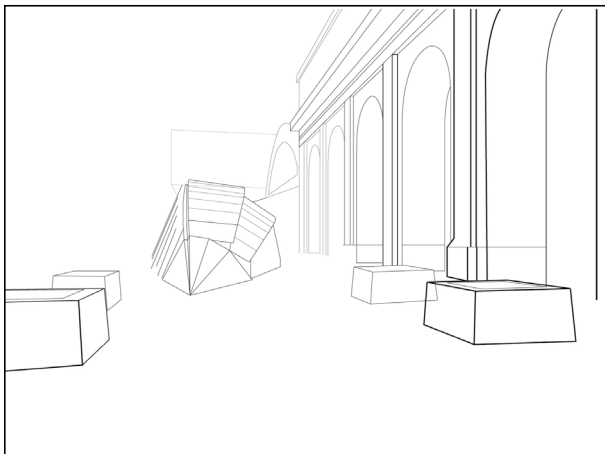
Washington DC





## THRESHOLD

The threshold is a unique part of the edge. It is the beginning of a new space and directive. There are usually foci at the end of the view. The foci and the depth of view are the main characters of the threshold.



Providence

Washington DC

# EXPERIENTIAL PLAN

The map is based on personal observation along one path from Union Station to Capitol Plaza. It shows the view foci and the elements that build the sense of edge. The darker lines show the higher possibility of stopping and having activities.





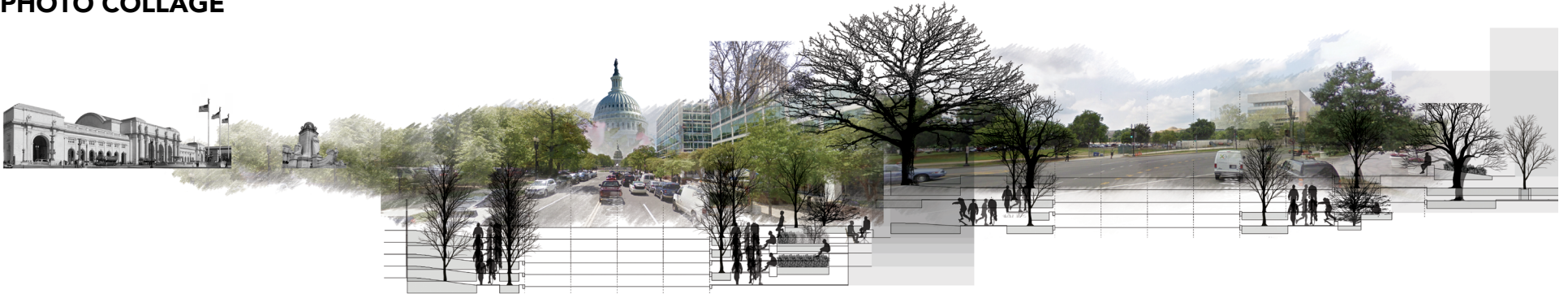
## PHYSICAL EDGE PLAN

The map shows the overall spatial condition of the site. The different line weights and types represent specific edges. For example, the thick lines signify the elevation of the building facade. The dashed lines denote the permeable constructed edges. The drawing helps understand the objective physical edge condition.

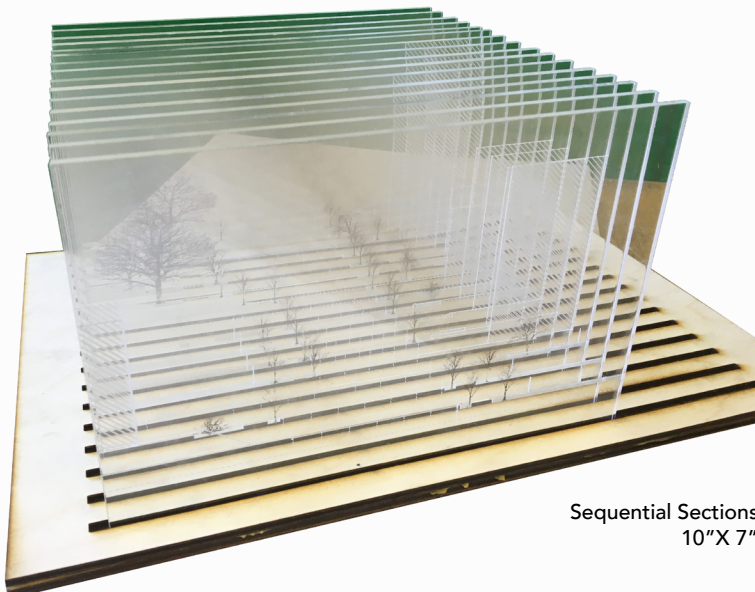




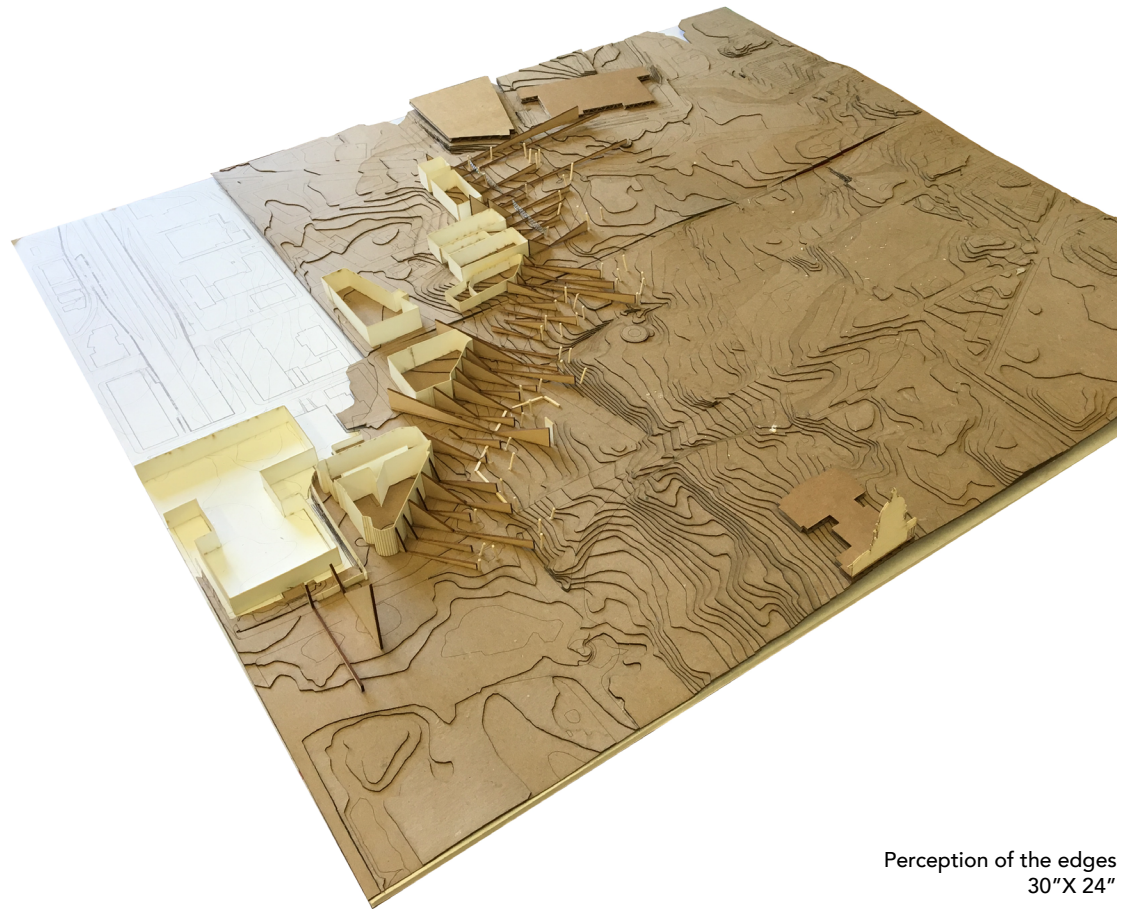
## PHOTO COLLAGE



The perspective intends to compress the views and sections along the tour from Union Station to Capitol Plaza. It combines subjective conditions with personal impressions and tries to uncover the way people perceive edges. For example, the landmarks function as attraction and the farther edges of people's views. The transitional sidewalks include continuous edges when people are walking.



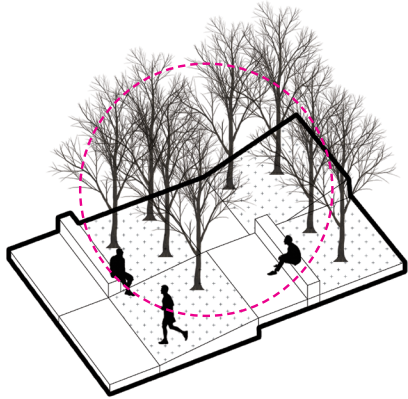
Sequential Sections  
10"X 7"



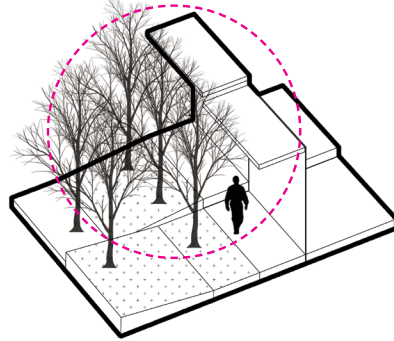
Perception of the edges  
30"X 24"



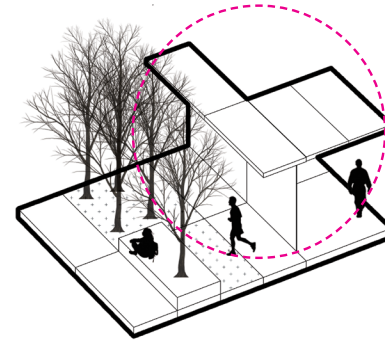
# EDGE CHARACTERS' STUDY



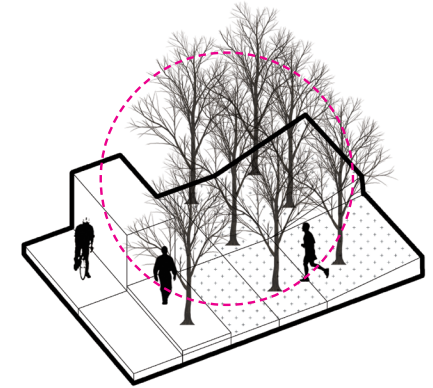
Elevating and depressing land



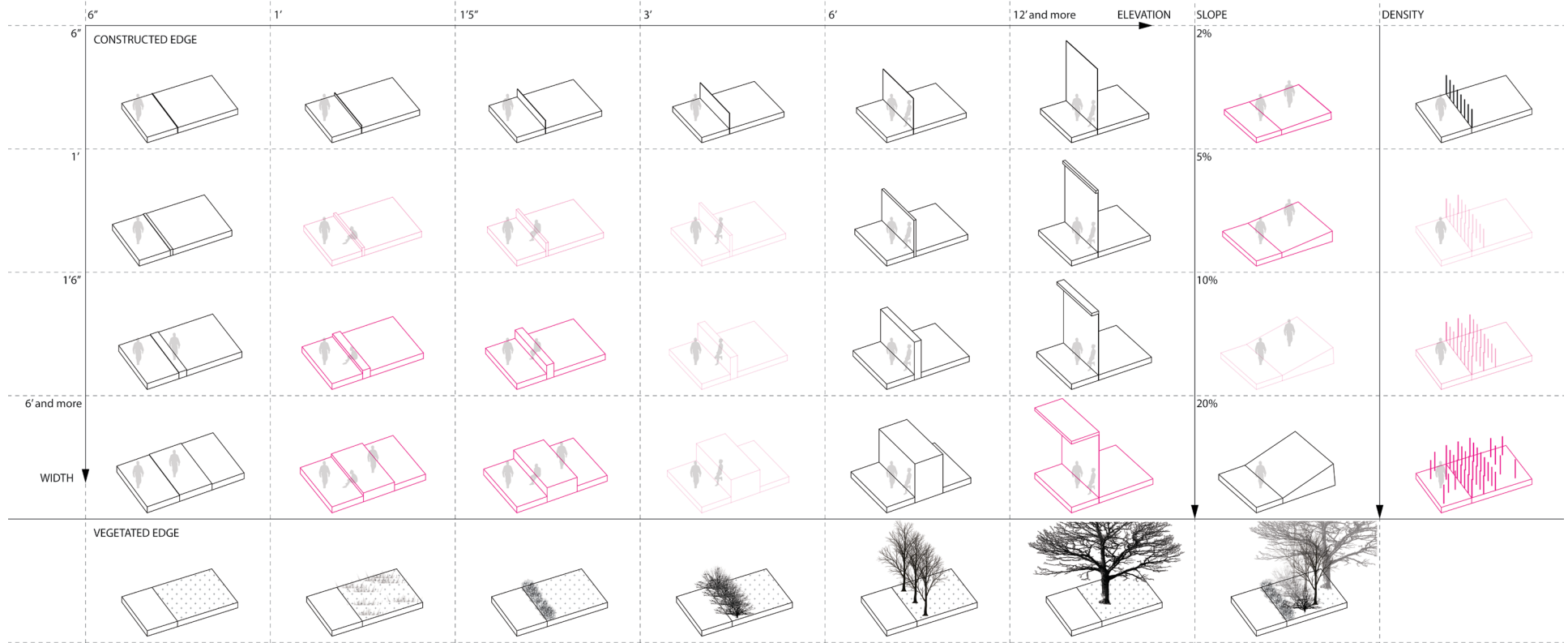
Connecting canopy and shelter



Mixing indoor and outdoor spaces



Extending vegetation



The diagram analyzes possible edge conditions in the streetscape. It compares the dimension of edges to human scale. The red colored types are active conditions that attract people to stay or use.

## Findings + Conclusions

The research in Phase 2 expands the subject from edge to hybrid space. The term hybrid space refers to the area where two or more spaces overlap. It incorporates the characteristics of all overlapping spaces. There are more potential and diverse programs happening in hybrid space than in any other simple spaces. Hybrid space originates in wild nature, and it is also called ecotone. In the wild, ecotone happens where different conditions meet. The scale of ecotone is usually small, but the habitat condition is more complicated than the surroundings. Ecotone contributes to the process of finding urban hybrid space.

The forms of investigation are view analysis, experiential plan, physical edge plan, photo collage, site model, and axonometric study. From the linework view analysis, the drawings show the vertical and horizontal elements that build the edges. The dimensions of edges influence people's perception and use. For example, people tend to sit on the planter edges that fit the human scale and stop at the enclosed building structures. In the drawing of the experiential plan, the factors that influence the sense of edges are represented by different symbols. The range of views is clearer in the three-dimensional site model than in the plan. The sequential change helps identify the factors that draw people's attention on the path.

The photo collage compresses the views and sections along the path from Union Station to Capitol Plaza. It combines subjective conditions with personal impressions and tries to uncover the way people perceive edges. For example, the landmarks function as attraction and the farther edges of people's views.

The edge character study analyzes possible edge conditions in the streetscape. It compares the dimension of edges to human scale. It uses different colors to indicate the active conditions that attract people to stay in or use the edges. The hybrid spaces emerge when the active types of edges are recombined.

## **Assessment**

The methods in this phase are site-based observations, analysis, and model study. They help answer some of the questions, such as the way people perceive edges, the existing edges on the site, and the character of edges. But the process lacks the main clue that connects different studies. Hybrid space is not only for people to sit or stay, but should also be considered on a larger scale. For example, the hybrid spaces are more complicated when different systems meet. The whole process requires a stronger argument to evaluate the successful edge conditions.

For the next phase, the study develops a method of evaluating edges and adds another layer of information to the existing diagrams. It requires a clear intention of what the hybrid space should be in the future and a critical argument about the existing conditions. The analysis will start with studying different systems on the site and will then provide a proposal for resolving the current defects.



# **Phase 3 Investigation**

**Proposing Hybrid Spaces and Activating Public Engagement in Washington DC**

## Abstract

In Phase 3, the investigation focuses on generating the critiques of the site condition between Union Station and Union Square in Washington, DC. The process uses different methods of spatial analysis including diagrams, sections, axonometric plans, models, and perspectival views. Based on the critiques, the goals of this phase are to reinforce the connectivity and to activate public engagement on the underused spaces.



View of Monumental Promenade Plaza  
Delaware Ave NE, Washington DC

## Introduction

The site is the open space between Union Station and Union Square in Washington, DC. Phase 1 and Phase 2 clarified the definition and benefits of hybrid space or ecotone. These types of spaces allow for multiple programs to happen. Hybrid space refers to the intersection between two or more spaces without a distinct boundary. The investigation of Phase 3 begins with revising the analytical methods and goals based on the feedback of Phase 2. The critical analysis in Phase 3 clarifies the goal of this thesis: to encourage public engagement on the underused spaces by creating urban hybrid spaces. The methods of this phase are physical and spatial.

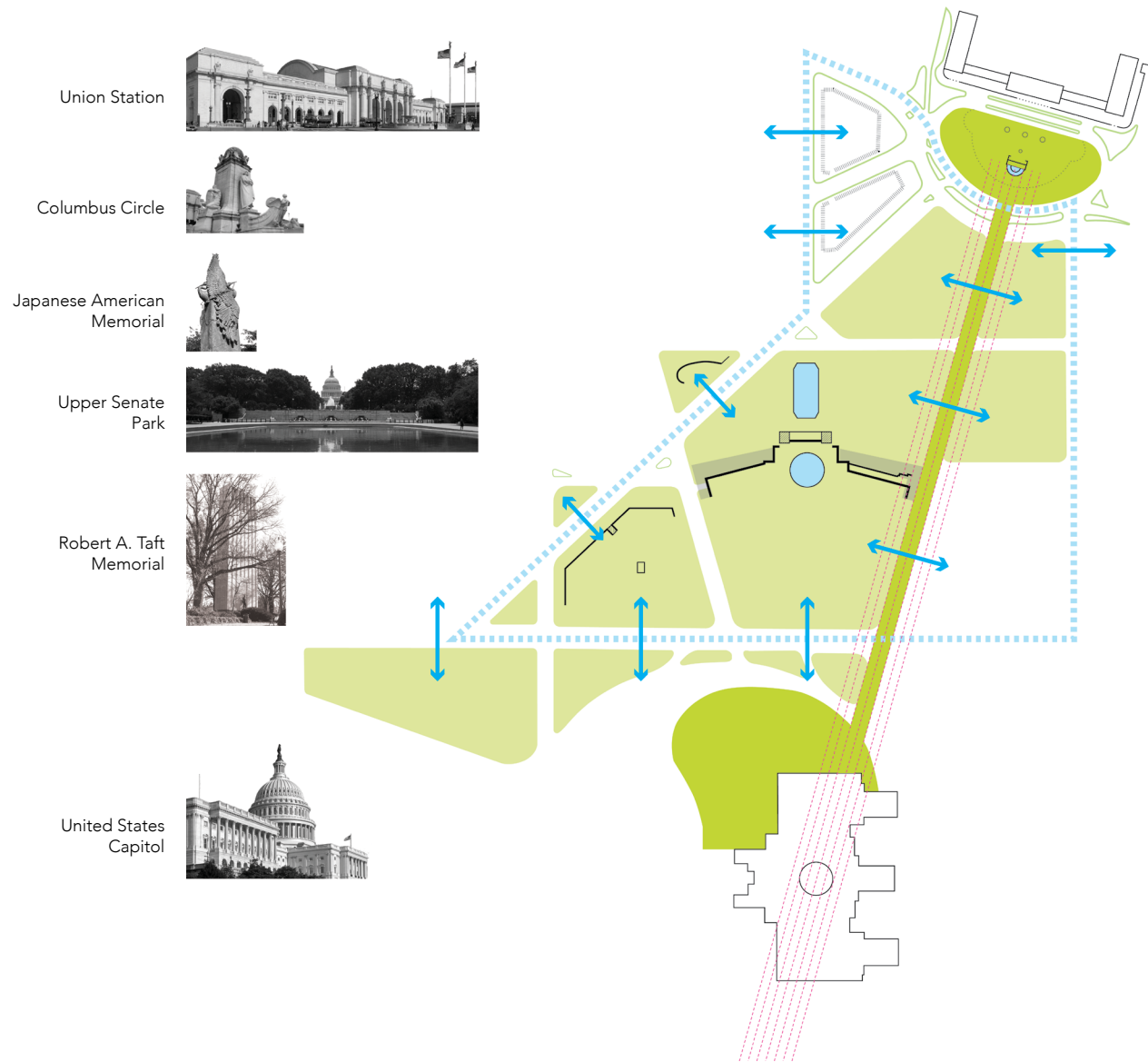
## Methods

1. Diagram and collage: identifying the goals and concepts
2. Axonometric plan: showing the spatial layers and systems
3. Sections: site critique and strategy
4. Site plan: views, flow, and accumulation of people
5. Perspective: views and activities

# Concept and Goal

## INTEGRATING THE MONUMENTAL VIEWS AND FLOWS

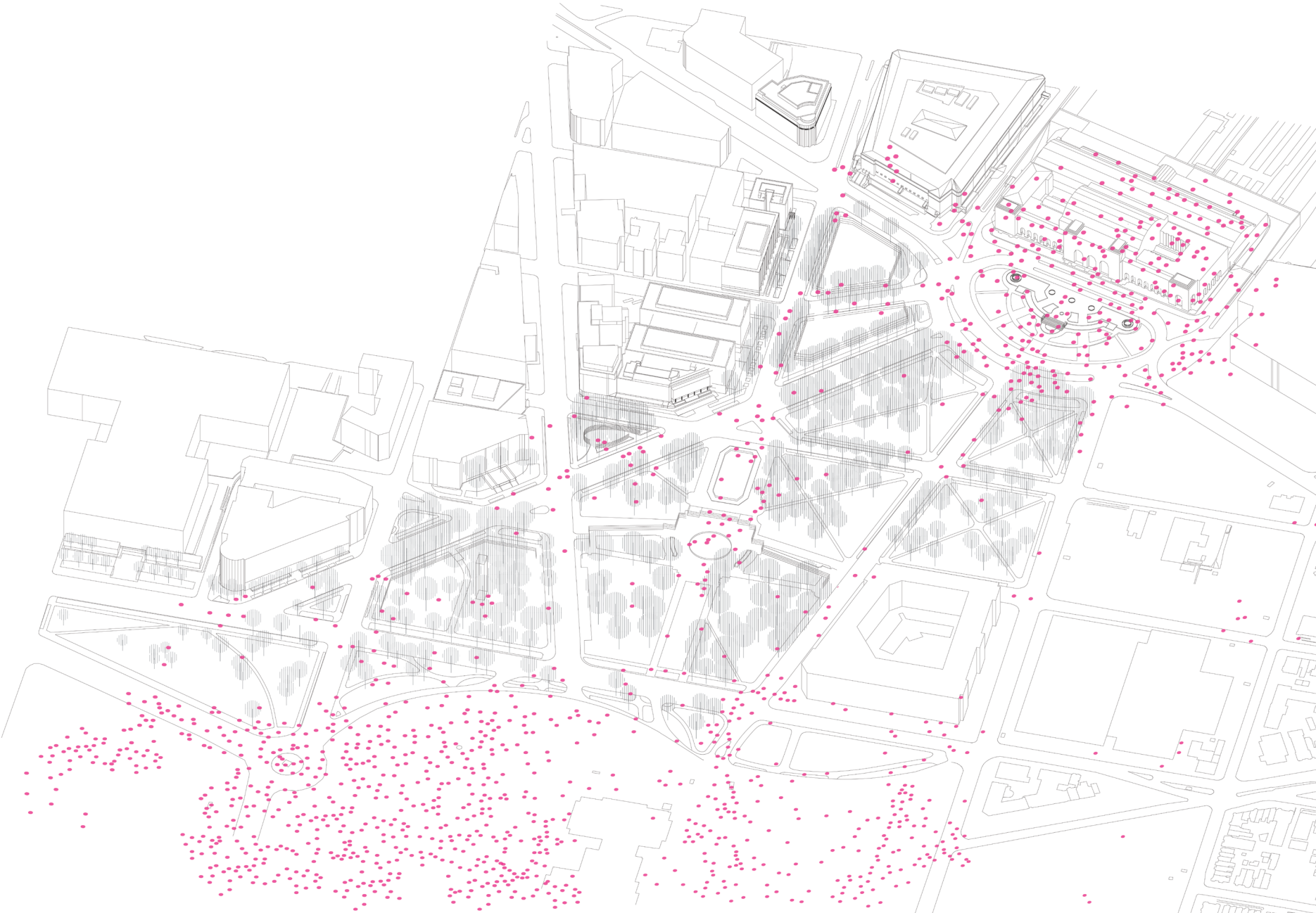
The goal of this proposal is to integrate the people's flow and to create a monumental corridor on the main axis between the Union Station and the Capitol Building. The concept is to make use of the study of hybrid space to create new spaces that allow for multiple activities to happen. The dark green area is the site of the monumental corridor proposal.





# Site Analysis

## ACCUMULATION OF PEOPLE - GEOTAGGER



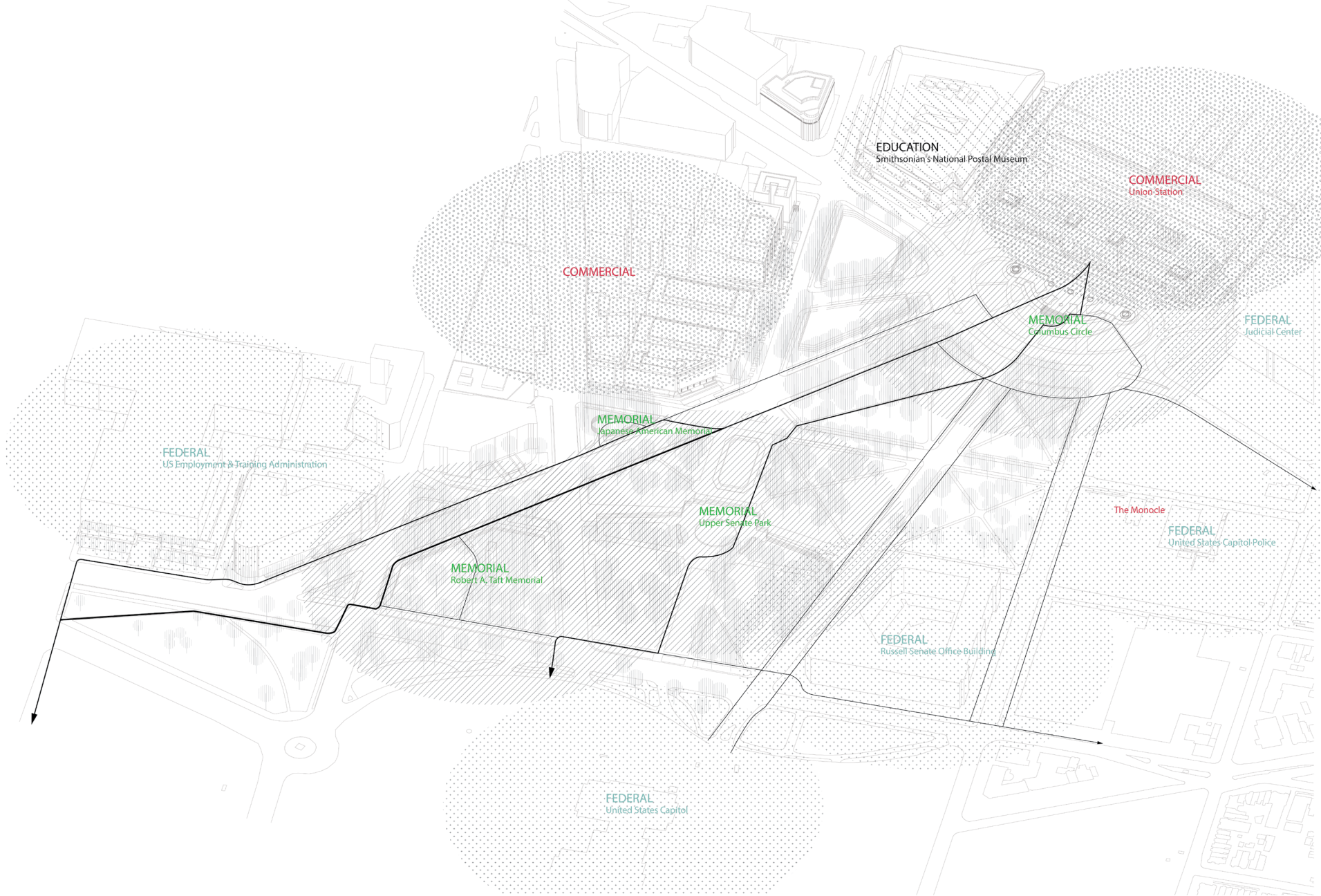
## FORTIFICATION LINE AND FOCUSES

The built edge divides the space into two parts. The focus of the Northern part is the Union Station, and people only have the view of the Capitol building on the main axis. The east of the open spaces is lack of the view connection to the main landmarks. The directionality is not effective.





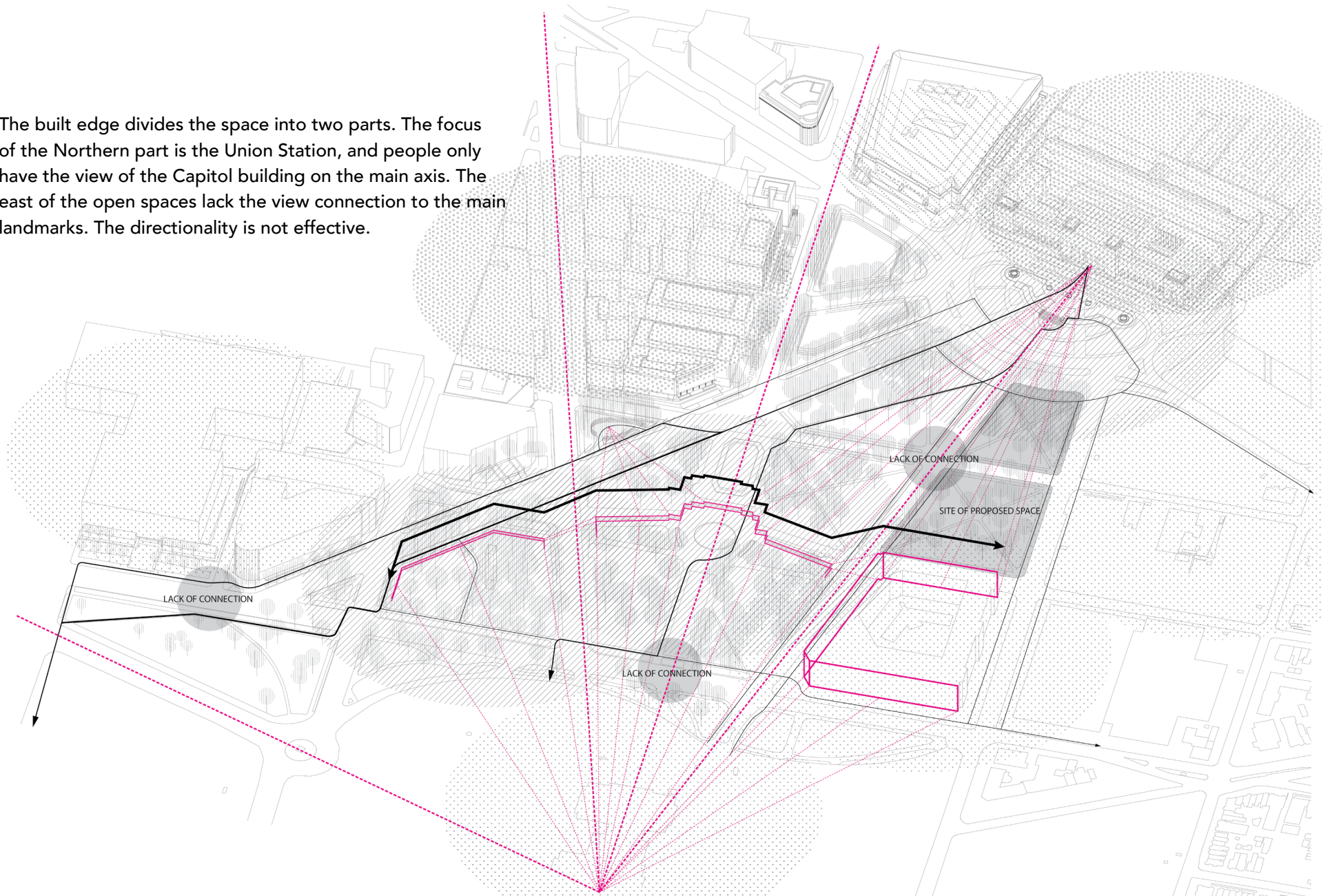
# PROGRAMS AND HIERARCHY OF THE CIRCULATION



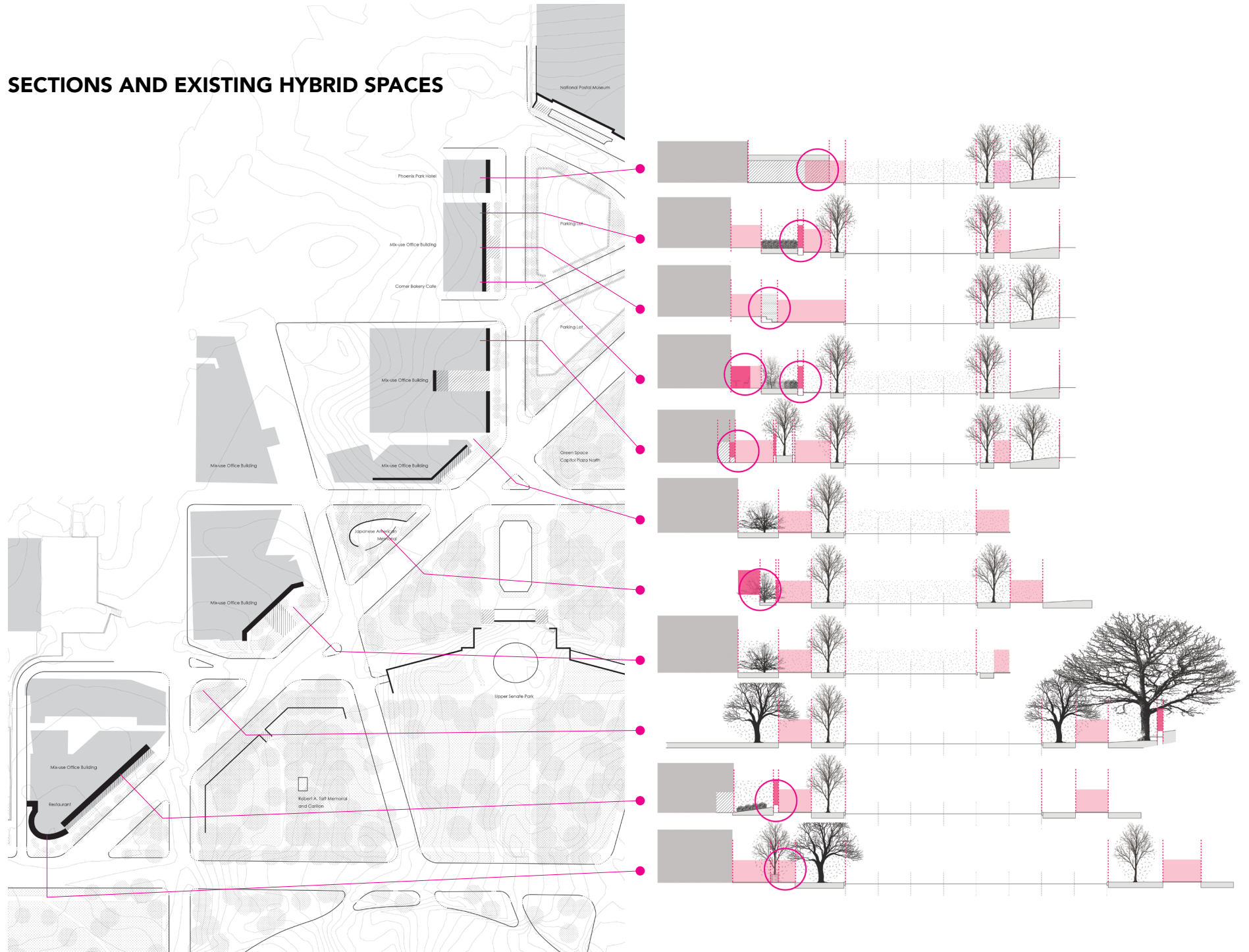


## LAYERED SYSTEMS

The built edge divides the space into two parts. The focus of the Northern part is the Union Station, and people only have the view of the Capitol building on the main axis. The east of the open spaces lack the view connection to the main landmarks. The directionality is not effective.



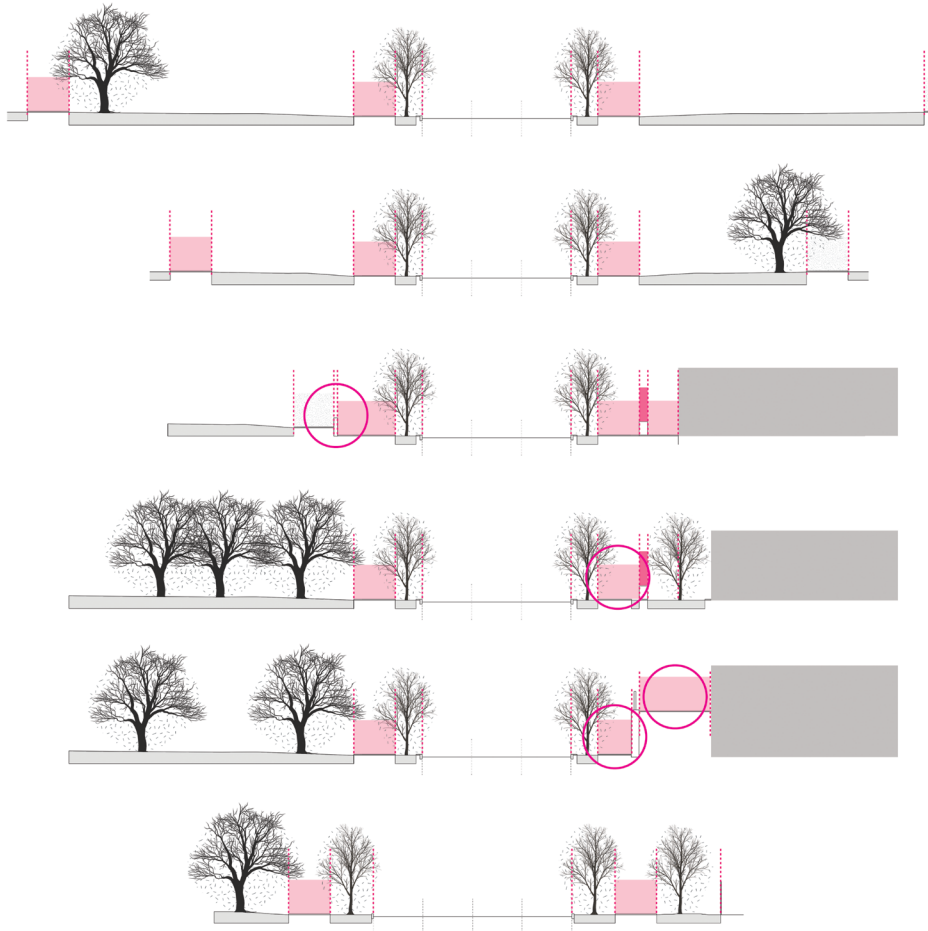
# SECTIONS AND EXISTING HYBRID SPACES



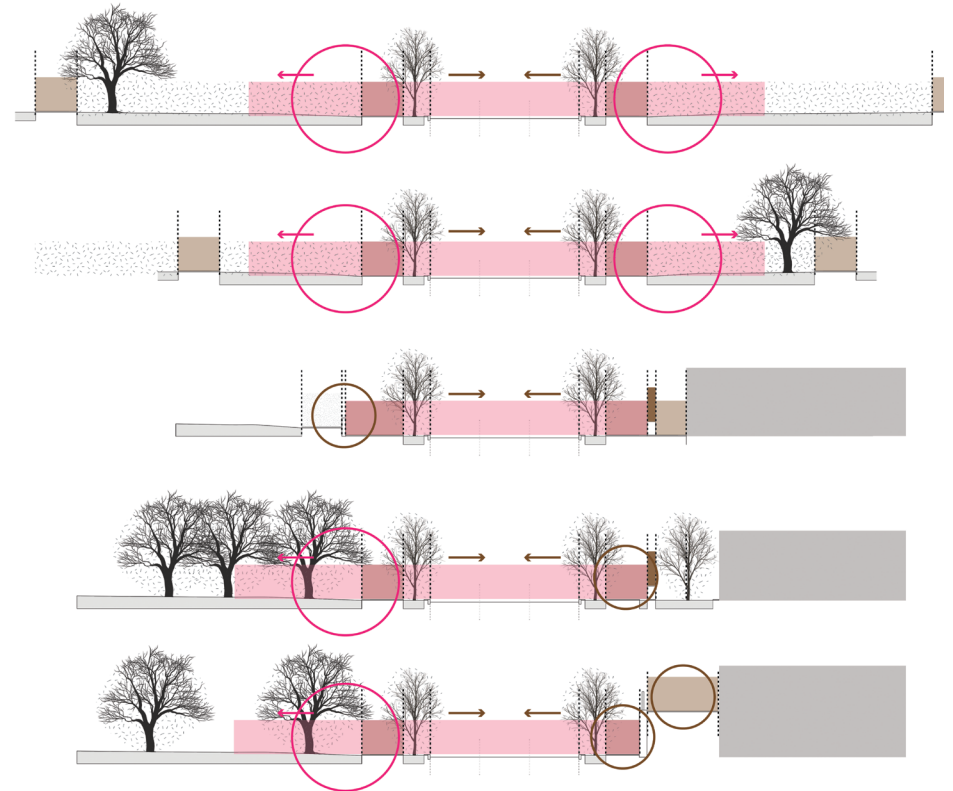


## SECTIONS AND STRATEGY OF THE HYBRID SPACE

before

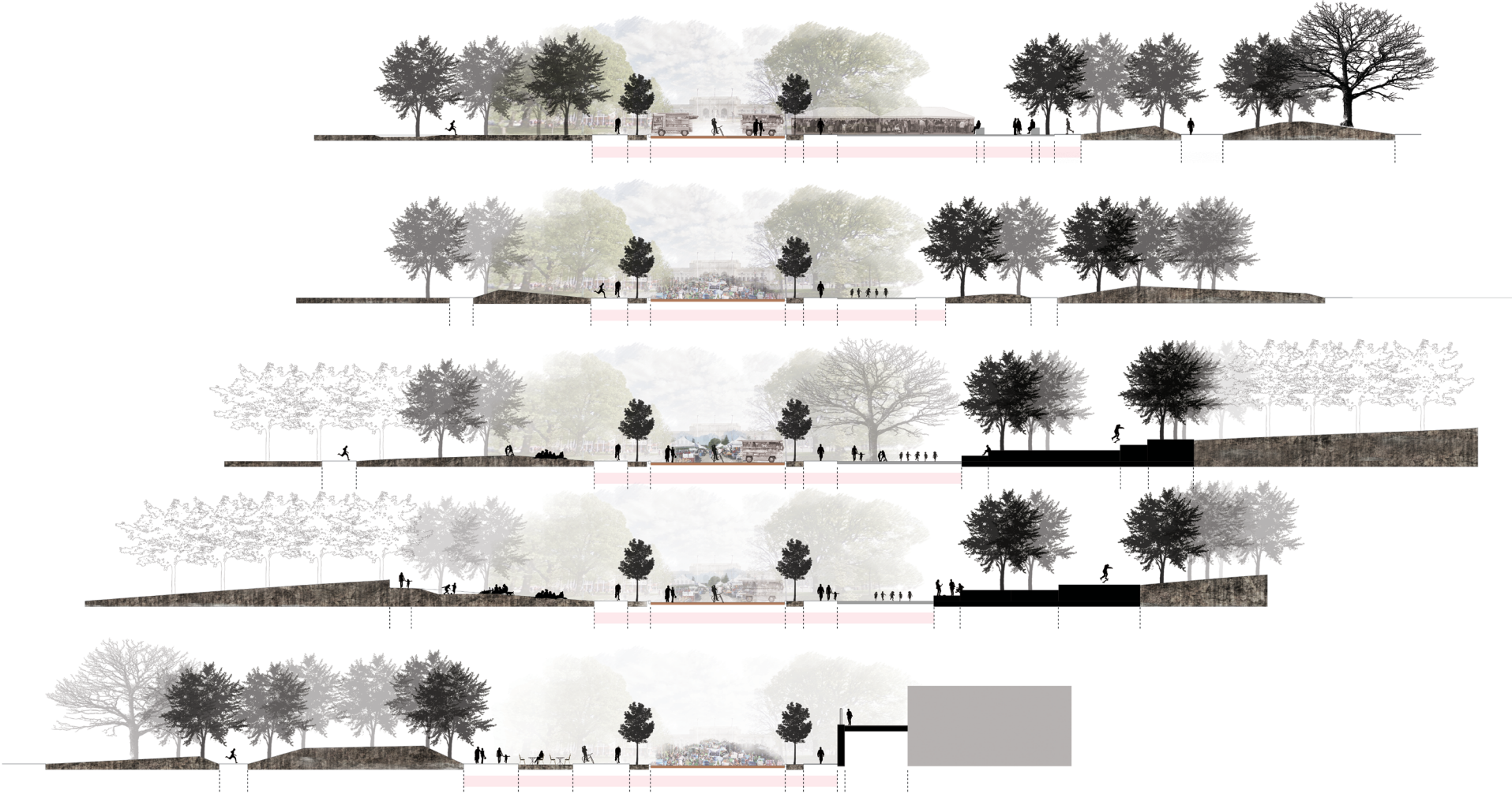


after



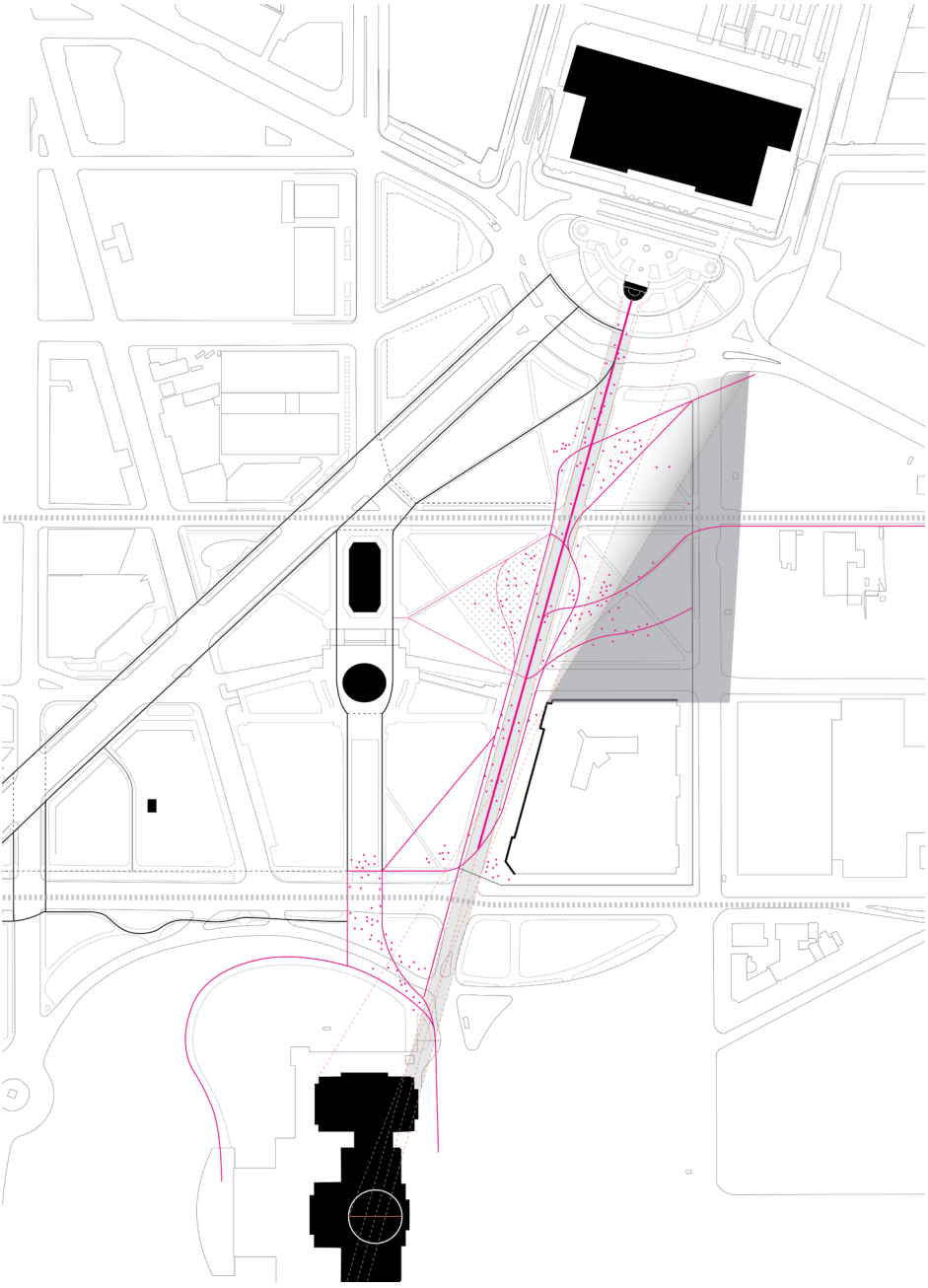
# Site Proposal

## SECTIONS OF THE PROPOSAL





**PLAN OF THE PROPOSAL**





**VIEW OF THE MONUMENTAL CORRIDOR**





**VIEW OF THE MONUMENTAL CORRIDOR**





## Findings + Conclusions

The works in Phase 3 show the process of generating site critique and applying the critique to an initial proposal. In Phase 2, the study focused on mapping and showing the sequential sections of the site. But those studies lack the analytical layers that help locate and show the advantages of hybrid spaces. There are multiple types of hybrid spaces in an urban area, depending on the way spaces overlap.

The Phase 3 research expands the methods of analysis to locate the existing hybrid spaces. First, the study takes advantage of the online Geo-tagger in Google Earth. This system is an interactive platform allowing people to upload photos and tag the locations. The locations in Geo-tagger reflect the places in which people are interested. From the map, the main places where people accumulate are Columbus Circle and Union Square. The least popular places are the green spaces to the east of the site. Second, to understand the hierarchy of the open spaces, the research compares the factors of dimensions and facilities with the accumulation of people. But this study is not conducive to understanding the whole site without considering the connections between spaces.

To achieve an overall vision of the site, the following analysis overlays the different systems such as the spatial focuses, boundaries, circulation, and programs. The most encouraging finding is the invisible fortification line dividing the site into the Northern and Southern parts. The fortification line emerges when outlining the constructed edges on the site. The facade of the Russell Senate Office Building, the barriers of the Upper Senate Park, and the retaining wall of the Robert A. Taft Memorial create the fortification line. Affected by the boundary, the focuses on the Northern part lead to Union Station and the focuses on the Southern area lead to Union Square.

As a result, people only see the view of the Capitol building on the central axis. The areas to the east of the open spaces are covered with vegetation, so they lack view connections to the main landmarks and are separated from the popular circulation. These spaces are the potential sites to be activated.

The diagrammatic plan begins with analyzing the views on the site and identifying the areas without a view of the Capitol building. Then, the goal of this design is to amplify monumental view and activate the surrounding spaces by directing people walking through the main axis between Union Station and Union Square. The strategy of proposing the new hybrid spaces is to extend and overlap the areas of different spaces. At the intersections of spaces, there are more opportunities for programs to happen. The proposed spaces have shared functions. For example, after integrating Delaware Avenue on the main axis, the connection between the two landmarks is clear and directive. By extending the pedestrian surface on the park, people can use the surface for an outdoor event site. The proposal provides a flexible platform for events such as a weekly market, protest marching, and a recreational party.

## Assessment

The methods of the analysis need more critical discussions and improvements. The Geo-tagger map only reflects the groups of people who know this tool, so the data does not reflect the focuses of the entire group of users. Most of the individuals who use the Geo-tagger are tourists, and the residents have focuses other than the landmarks.

The typology of successful hybrid space and its criteria are not clear from the physical analysis. This study raises a discussion of considering the urban space as an entity. In the essay "Programming the Urban Surface," the author Alex argues that the universal urban typologies of square, park and district are less useful or significant than the infrastructure, network flows, ambiguous spaces, and other polymorphous conditions that constitute the contemporary metropolis.<sup>1</sup> Alex insists on treating the urban spaces as an entire and complex system instead of separate parcels. This seems to contradict to the urban theory by Kevin Lynch that divides the urban system into the *path, edge, district, node, and landmark*.<sup>2</sup> But the contradiction starts a challenge to the programming methods that focus on either the distinct spaces or the entire systems. The center of the complex system is people's activities. The daily lives of people constitute the flows, traffic, groups, and connections. That is to say, the study needs to upgrade to a non-spatial level and further consider people's lives in the city. Finally, the findings will be more inspiring and reliable by combining the spatial and non-spatial analysis.

The sectional analysis on Capitol Street does not reflect the situation on Delaware Avenue effectively. On Capitol Street, the hybrid spaces exist between the building and the sidewalks. On Delaware Avenue, most of the spaces are vegetated surfaces. By comparing two different conditions, it is not critical to proving the successful hybrid spaces will be transferred to

Delaware Avenue directly. It is not accurate to say all kinds of hybrid spaces are successful. There is hybrid space that does not encourage public engagement based on its location in the entire spatial system.

To further develop this topic in the future, the investigation will go back to the hybrid space or the ecotone in nature. The ecotone in nature is a complicated system that can inform the system of urban condition because the city is the habitat for humans. The next step is to set up clear criteria for successful and unsuccessful hybrid spaces. Finally, based on those criteria, the project will be critical and practical in the urban study.

resource:

1. Wall, Alex, Programming the Urban Surface, Recovering Landscape, Chapter 15, pp 3
2. Lynch, Kevin, The Image of the City the MIT press, pp.47



# Overall Assessment



## Final Conclusions

The overall investigations are helpful to understand the site conditions. Phase 1 is a process of defining the terms and ideas. There are different types of edges including constructed edge, vegetated edge, ecological edge, and water edge. The study in this phase is about the interactions between the constructed edge and the vegetated edge. Vegetation is a natural element in the city, compared to the constructed structures. The growing force of the vegetation is destructive to the built structures. The overlap or mutual relationship between different conditions is the main idea of the study. Examples from the case studies amplify the force of nature in the city. For example, in the High Line, the railway formed paving system composes the transition between the vegetated edges and the constructed edges. After many years, the distinct boundary between edges will disappear and be covered with grass. The findings in this phase lead to the topic of the hybrid space, or the ecotone, in Phase 2.

Phase 2 expands the subject from the edge of the hybrid space. The term hybrid space refers to the area where two or more spaces overlap. There are more potential and diverse programs happening in hybrid spaces than in other simple spaces. This phase includes a field trip, which contributes to the experiential drawings and studies. During the site visit in spring, more people are occupying the site than in winter. This reflects the influence of the seasonal blossoming cherry trees. The most inspiring findings in this phase are the framework drawings of the views. From these views, the composition and structure of the edges are very informative. They help clarify why people prefer occupying a specific edge condition. The main activity of people in this study is sitting during a long walk. So the height, width, direction, and

composition are the critical characteristics of the edges. As a result, the series of axonometric diagrams illustrates the gradient of the comfort level of sitting based on the dimensions.

Phase 3 focuses on the overall site critique and proposal rather than providing a comfortable place for people to sit. The studies are more critical than Phase 2, and they show the benefit of the hybrid spaces on the site. There are different systems included in this investigation such as the online Geo-tagger, circulation, viewpoints, and zones. The overlaid map of different systems generates the overall assessment of the site and eventually identifies the testing sites. The issues of the site are clear, which are a lack of the connections between different programs. The diagrammatic plan helps confirm the intention of creating a monumental corridor on Delaware Avenue by analyzing the views and the directions of circulation. The site now is a generic form based on the axis. There are opportunities under the canopy and in the open spaces for more programs to happen. For example, Union Station is a transportation hub as well as a commercial center. It is possible to make a connection between the indoor and outdoor area by new programming on the site. Both the indoor and outdoor spaces of Union Station and the parks can share the functions and can benefit one another.

## Final Assessment

The topic of this thesis changed a little from Phase 1 to the following phases. The main reason is that the Phase 1 investigation does not have a clear intention. The study of Phase 1 is only in the form of a two-dimensional graphic. The growing force of nature and the influence of the constructed environment are interesting topics. But the larger idea of this thesis is humans' activities and the related spatial elements. The Phase 1 work appears to deviate from the main thread.

When the topic is expanded to study spatial experiences and hybrid spaces, the work in Phase 2 is encouraging. The result will not be clear until the work is started. For example, by abstracting the photos of the site visit to a linework drawing, the structure of the edges and hybrid spaces is clearer than in the pictures. For the experiential map, it is inspiring to learn how Kevin Lynch works to come up with ideas of analyzing spatial experiences. Space can be both physical and experiential. The form of the axonometric drawings does not work well because it is too isolated and lacks an overall connection to the site.

During Phase 3, the work method changes from mapping to analytical drawings. The drawings begin with an axonometric linework drawing of the whole site, which is more informative than the aerial photo. From several critics, the study makes use of different media—from the online Geo-tagging app to the critical diagrams. This phase requires a clear intention of improving the condition of the site to push the project. The sectional analysis of Capitol Street does not reflect the situation on Delaware Avenue effectively. On Capitol Street, the hybrid spaces exist between the building and the sidewalks. On

Delaware Avenue, most of the spaces are vegetated surfaces. By comparing two different conditions, it is not critical to prove the successful hybrid spaces will be transferred to Delaware Avenue directly.

The schedule worked efficiently and helped accomplish this investigation in a limited time. There were some minor changes during the working process, but the main direction was always clear on the schedule. The next step is to set up clear criteria for successful and unsuccessful hybrid spaces. The topic of hybrid space and edge is complicated, and there is not a single way to find a solution. There are other ways to approach the findings, such as considering the cultural and psychological aspects. Based on those criteria, the project will be critical to and practical in urban studies.

## Bibliography

01. Higgins, Timothy, *Resuscitating the edge*, 2008.
02. Giedion, Sigfried, *Architecture and the phenomena of transition: the three space conceptions in architecture, 1888-1968*.
03. Feichtner, Thomas, *Edge to edge: experimental design, 1970-*
04. Augsberger, Damian, *Activating the edge*, 2005.
05. Kunstler, James Howard, *The city in mind: meditations on the urban condition*, New York : Free Press, c2001.
06. Vannelli, Christina, *Mining the edge: quarry as interface*, 2013.
07. Lindenmayer, Richard J. Hobbs, *Managing and designing landscapes for conservation: moving from perspectives to principles*, edited by David B
08. Campo, Daniel, *The accidental playground: Brooklyn waterfront narratives of the undesigned and unplanned*, New York : Alfred A. Knopf, 2016.
09. Ding, Zhilin, *The edge of event: redefining adjacent circulation*, 2014.
10. Orvell, Miles and Meikle, Jeffrey, *Public space and the ideology of place in American culture*, Amsterdam ; New York, NY : Rodopi, 2009.
11. Mariani, Manuela and Barron, Patrick, *Terrain vague : interstices at the edge of the pale*, New York : Routledge, 2014.
12. Lowenthal, David. *Economic Geography* 42, no. 3 (1966): 276-77.
13. Lynch, Kevin, *the image of the city*, the MIT press, pp.47
14. Wall, Alex, *Programming the Urban Surface, Recovering Landscape*, Chapter 15, pp 3
15. Girot, Christophe, and Fred Truniger. 2012. *Landscape vision motion : visual thinking in landscape culture*. n.p.: Berlin : Jovis Verlag GmbH, [2012], 2012.
16. Merriman, Peter, *Architecture/dance: choreographing and inhabiting spaces with Anna and Lawrence Halprin*
17. Careri, Francesco. 2002. *Walkscapes : el andar como práctica estética = Walking as an aesthetic practice*. n.p.: Barcelona : Gili, c2002.
18. Richley H. Crapo, *More on Art, Behavior, and the Anthropologist*, *Current Anthropology*. Vol. 19, No. 3 (Sep., 1978), pp. 628-631.
19. Chee-Onn Wong, Keechul Jung, Joonsung Yoon, *Interactive Art: The Art That Communicates*, *Leonardo*, Vol. 42, No. 2 (2009), pp. 180-181

