Revealing Edges:
Connecting Rutgers Gardens to Cook Campus at a Pedestrian Scale

Jim Taranto
Master of Landscape Architecture
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Rutgers University
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Abstract

Rutgers Gardens, located on the eastern edge of Cook Campus, has been impacted by both the gradual expansion of Rutgers University as well as the alignment and widening of major roadways in New Jersey. The result is a severed connection between Rutgers Gardens and the rest of campus. This design project explores creating a pedestrian connection between the heart of Cook Campus and Rutgers Gardens. The design process involved site observation, a student experiential exercise survey, and mapping and diagramming. Based on the analysis of 'imageability' from Kevin Lynch's book *The Image of the City*, the concept of district, edge and path have been applied to this project to better understand the organization of Cook Campus. Through analysis and the design process it was learned that the experience of walking through and along the edges of the farm were equally as enjoyable as being able to reach Rutgers Gardens on foot. By revealing and enhancing existing edges a pedestrian connection can be realized that allows the university community to experience Cook Campus in its entirety.

I would sincerely like to thank everyone who helped me throughout this final graduate project. Particularly my Chair and Committee for their guidance and support, as well as the first year students in the 2015 MLA class for aiding me with an important process in this design project.

Chair

Dr. Laura Lawson

Committee

Kate John-Alder

Pippa Brashear

Holly Grace Nelson

Master of Landscape Architecture Class of 2015

Jacqueline Abeltin

Jenny Burkhalter

Justin Hyde

Kara Lugar

Miloni Mody

Tekla Pontius-Courtney

Jack Skirkanich

Xiaoxia Wang

Han Yan

WXY Architecture + Urban Planning

Director of Rutgers Gardens

Bruce Crawford

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The appearance of the campus is, by far, the most influential characteristic during campus visits, and we gained the distinct impression that when it comes to recruiting students, the director of buildings and grounds may be more important than the academic dean.

--- Ernest Boyer, College: The Undergraduate Experience in America

Introduction

In 2003, Rutgers University released a physical master plan projecting to 2012 for the New Brunswick/Piscataway Campus.[1] Since then, the University has committed to growth through the construction of new buildings and redesign of existing campus spaces. The creation of the master plan and planning for the future is no easy task and is explicitly expressed in the text of the master plan which states, "The greatest challenge to planning at the New Brunswick/ Piscataway Campus is the comprehension and illustration of the University in its entirety. The primary objective of the plan and its implementation is to unify the University's numerous centers into a cohesive educational environment. Themes of identity, community, and connectivity have continually guided the process" (Rutgers Master Plan 2003).

The idea of connectivity and cohesiveness piqued my interest for this graduate project. Before enrolling as a graduate student, I found maneuvering through the campuses to be disorienting. While increased familiarity with circulation on campus has lessened my feelings of disorientation, it has enabled me to evaluate connectivity at a much finer scale. In addition to a lack of connectivity between the New Brunswick/ Piscataway campuses at a larger scale, I believe there are smaller scale connectivity issues that should be addressed on each of the campuses individually.

These smaller scale connectivity issues impact students' abilities to navigate the campus and explore all of its amenities. Improving pedestrian circulation within the smaller campuses can activate and enhance community and student life. Key amenities of the campus can be celebrated by providing connections to a variety of campus experiences.

In 1864, Rutgers Scientific School[2] was established as New Jersey's land grant institution. Through funds provided by the Morrill Act that expanded the area added to agricultural

1 Ayers Saint Gross Architects + Planners completed the master plan for Rutgers University as a whole, which consists of three main campuses: New Brunswick/Piscataway, Newark and Camden. The New Brunswick/ Piscataway campus is subdivided into four smaller campuses: Cook/Douglass, College Ave, Livingston and Busch.

2 Rutgers Scientific School over the last 150 years has undergone several name changes, mergers, and land acquisition and is now referred to as The School of Environmental and Biological Sciences (SEBS) located on Cook Campus.

colleges, over the years, the footprint has evolved organically whenever new land or funds became available. Cook Campus originally housed the Agricultural Experiment Station and would later become the College of Agriculture. The campus has incrementally transformed as an experimental farm and a more traditional university classroom oriented heart. What exists today is a campus with three distinct identities: a campus core, an experimental farm, and a botanical garden. Because the majority of Cook Campus was created as a functioning farm, a large portion of Cook Campus was originally designed and arranged for livestock and crops, not the pedestrian. Over time, the paving, widening and rerouting of major roads impacted the experimental farm. The landscape was further manipulated to accommodate automobiles instead of the pedestrian. This led to the situation today: an existing campus with a fragmented circulation system, disconnected identities and an awkward pedestrian experience.

On August 7th, 2012, the New York City based architecture firm WXY architecture + urban design was tasked with putting together a feasibility study for a new visitor center located at Rutgers Gardens. Rutgers Gardens is a botanical garden that sits at the eastern edge of Cook Campus and is separated by US Highway 1 and Ryders Lane from the rest of the campus.

Fig. 1. View looking North on Ryders Lane at the Entrance of Rutgers Gardens.

Currently, the only way to safely access Rutgers Gardens is by automobile. The closest university bus stop is three quarters of a mile north on Ryders Lane. The closest NJ Transit bus stop is almost two miles away. Walking down Ryders Lane is perilous, because there are no defined sidewalks as you approach the entrance to Rutgers gardens in either direction (fig. 1). Bicycling is difficult as well as there are no shoulders or bicycle paths on Ryders Lane.

This graduate master project focuses on Cook Campus and the circulation issues it possesses. Specifically, it aims to connect the academic heart of Cook Campus to Rutgers Gardens for pedestrians. This new connection will create a guided experience through the three identities of Cook Campus while limiting overly designed elements; instead it will reveal the existing character of each area. This experience will create a richer opportunity for students, faculty and

visitors by allowing them, as pedestrians, to experience the full extents of the campus as well as connect the heart of the Cook Campus with the botanical garden amenity.

The process and methods for this project include: personal observation and exploration of site, a student participation study referred to as the “Experiential Exercise” and analysis through mapping exercises and design exploration.

The conceptual design seeks to merge parts of Kevin Lynch‘s discoveries on imageability and how people perceive their surroundings with George Descombes writing and ideas about revealing an existing character, history and sense of place.

It is my belief that through this process of observation, student involvement, mapping and design, a better campus experience, identity and connectivity can be established. It is critical, therefore, that both the opportunities resulting from the physical connection and the pedestrian experience of that connection are not overlooked in the future planning of Cook Campus and Rutgers Gardens.

Fig. 2. View of the college farm in 1923.

Fig. 3. Fragmentation of Rutgers New Brunswick/Piscataway.

Fragmentation

On July 2nd, 1862 President Abraham Lincoln, in the midst the Civil War, signed into law the Morrill Act. Each eligible state would be provided 30,000 acres of public lands with the objective of teaching, military tactics, agriculture, and mechanical arts. Through the work of Professor George Cook and Professor David Murray, Rutgers became the land grant institution of New Jersey (McCormick 1966). Due to the land grant status of the College, the growth and development of Rutgers, the State University of New Jersey, as it is referred to now, occurred over several centuries and was influenced by many events both inside the campuses and outside the college.

In 1946 and 1950, Rutgers, as the state university, adopted several smaller educational institutions in Newark and Camden respectively. This spread out the university system to three main campuses in three major cities across the state of New Jersey, roughly 80 miles apart, connected by both rail and road (fig. 4).

Rutgers New Brunswick/Piscataway, encompassing the original Rutgers College, has grown and spread throughout New Brunswick and North Brunswick, as well as across the Raritan River into Piscataway, Edison and Highland Park. More important than municipal and political boundaries are the major roadway corridors, train lines, and rivers that dissect the campuses. These infrastructural and natural elements carve Rutgers New Brunswick into smaller campuses: College Avenue, Cook/Douglas, Busch, and Livingston (fig. 3). While the infrastructural corridors simultaneously connect the campuses through the use of automobiles and a bus system, circulation between the campuses is difficult and at times unsafe for pedestrians and bicyclists (fig. 5).

Fig. 4. Fragmentation of Rutgers Univeristy.

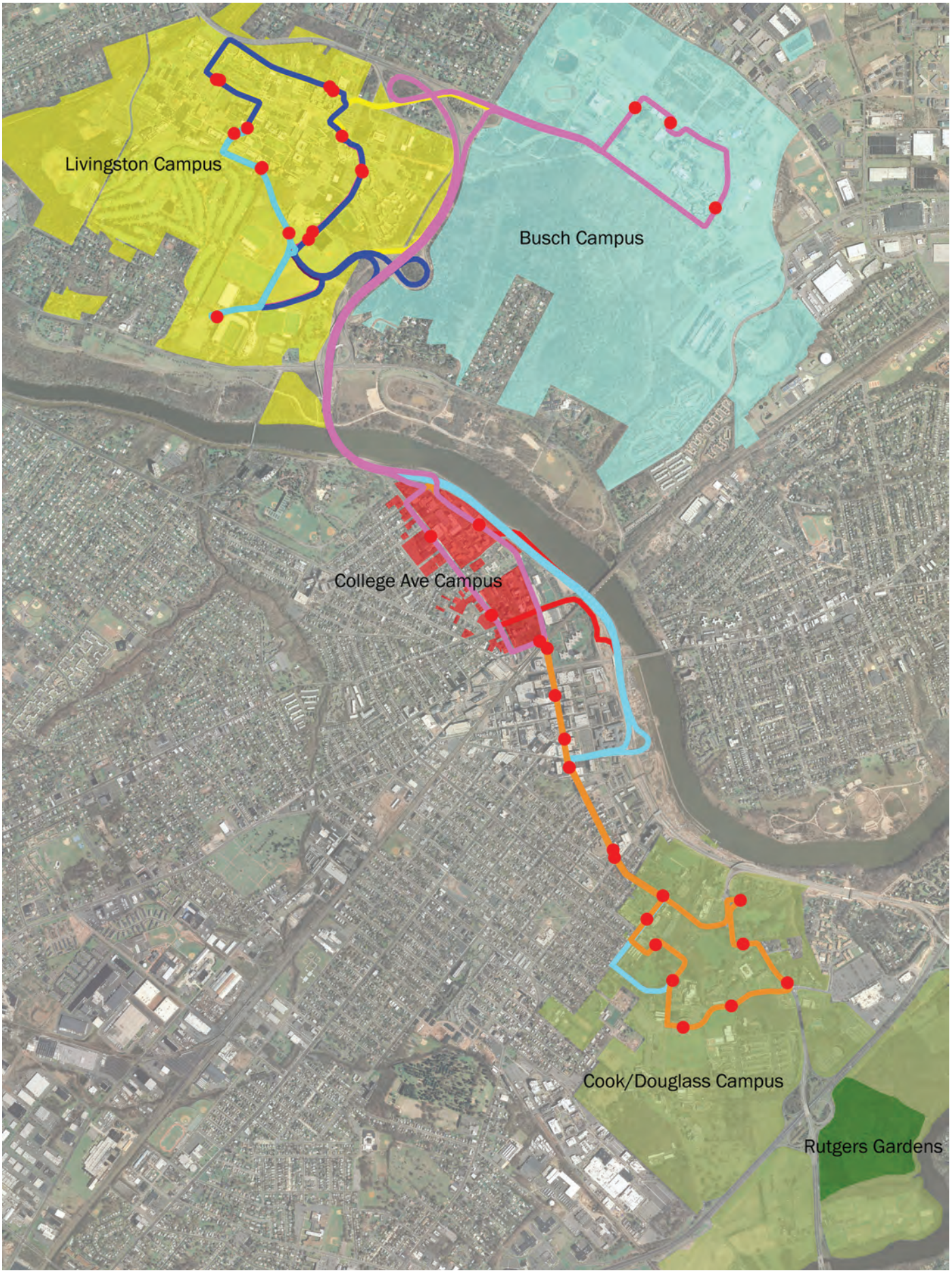


Fig. 5. Rutgers New Brunswick/Piscataway bus system. Comprised of nine diferent bus lines, three reach the heart of Cook Campus and none reach Ruthgers Gardens.

Rutgers Gardens is situated on the eastern edge of Cook Campus. It is bordered on the east and south by the Lawrence Brook, the west by Ryders Lane, and the north by Highway 1 and a power line easement. Isolated yet connected through these existing corridors, the relationship of Rutgers Gardens and Cook Campus is a small microcosm of what Rutgers, the State University of New Jersey is as a whole - fragmented (fig. 6).

Fig. 6. Fragmentation of Cook Campus.

Land Development Time Line

The land development time line is a representation of the history of Cook Campus from a single point of view. It by no means expresses the full history of the place, nor does it cover all of the factors that have created the campus today. Instead it aims to illustrate the major social, political and cultural influences that impacted the growth and fragmentation of land uses over time. It also offers an introduction to major roadways though the area. The images[3] and text of the time line have been selected to simplify a complicated narrative of development. Thus, the time line is abstracted in order to highlight key moments in history that impact this design project.

The land development time line was created as a tool to understand the evolution of the existing conditions. The time line expresses the growth of a land grant institution and many of the factors shaped the land in and around it.

3 Time line Image Sources:

Lane, Wheaton J. From Indian Trail to Iron Horse. Princeton: Princeton University Press, 1939.

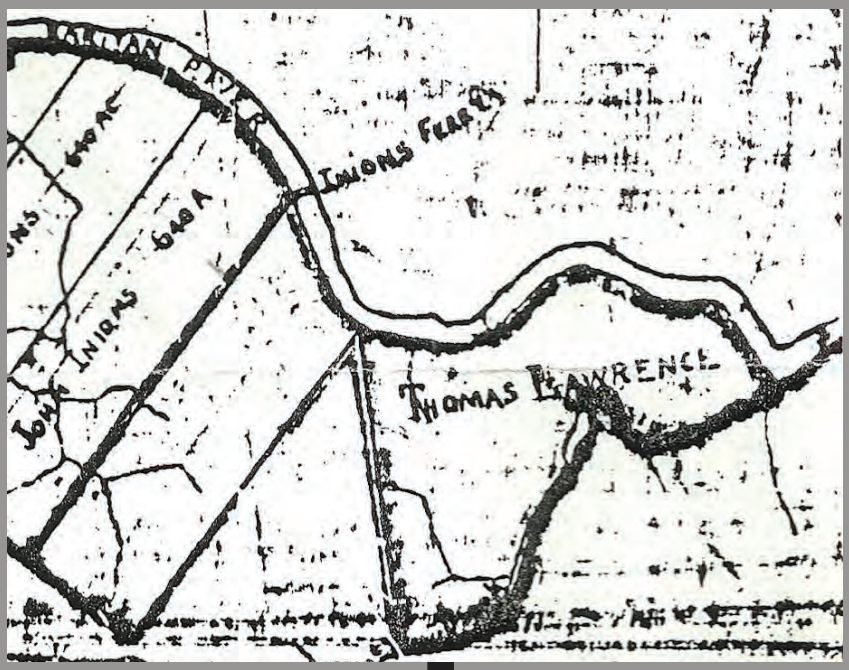
Mccormick, Richard P. Rutgers a Bicentennial History. New Brunswick: Rutgers University Press, 1966.

Author Images, 2013

Rutgers Logo. http://ur.rutgers.edu/RUlogoguide.pdf. Accessed March 4, 2013

University Growth

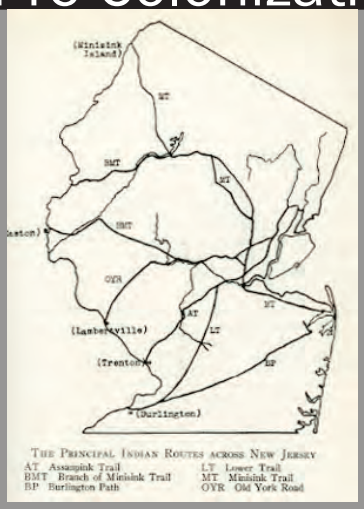
The Lenni Lenape Indians inhabited New Jersey prior to European colonization. The Unami, which translates to "people down the river," inhabited the central part of new jersey for the most part south of the Raritan River extending from the Lehigh valley to the Atlantic Ocean.



Pre-Colonization

1677

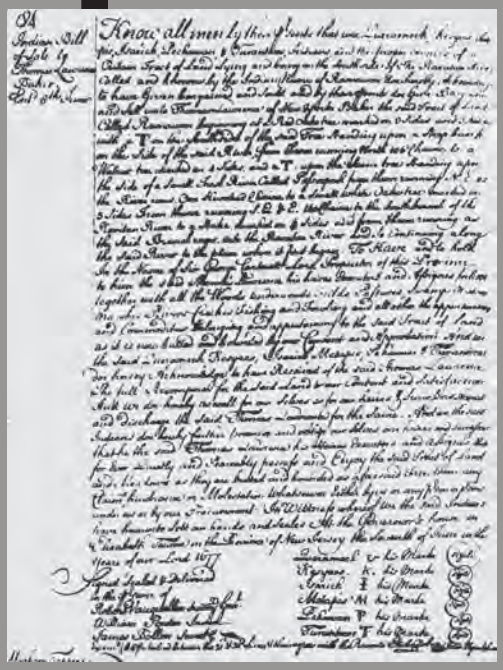
Road Development



The Lenni Lenape Indians created an extensive foot trail network across the state. Many of these trails would later be widened by the European settlers first for horses and carriages and later for the automobile. The Assunpink Trail and Lower Trail were precursors to many of roads throughout the history of this area.

Indian Bill of Sale

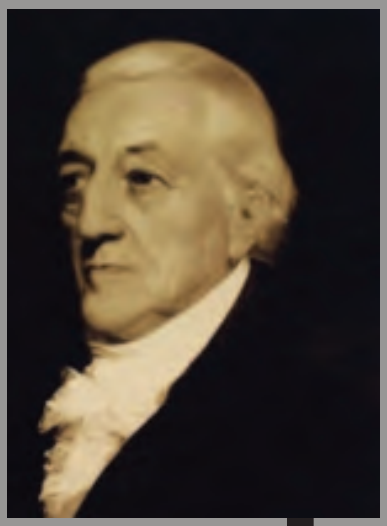
The Indian Bill of Sale states that Mr. Thomas Lawrence, a New York Baker, purchased land which included much of the current Cook Campus and Rutgers Gardens from several local Indians named Querameck, Kesyacs, Isarick, Metapis, Peckawan, and Turantecas. There is no indication that anything was given in exchange for the land. The local Indians referred the adjacent brook as the Piscopeek but it later appeared as Lawrence's Brook and then Lawrence Brook.



University Growth

Queen's College is chartered in New Brunswick as the 8th College in America.

1766



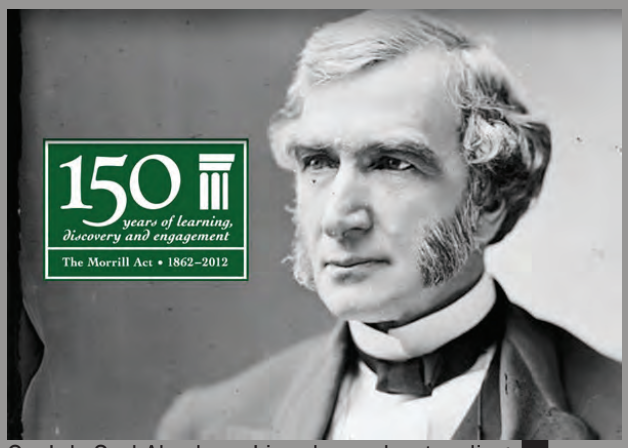
Queen's College is renamed Rutgers College after Colonel Henry Rutgers, a Revolutionary War officer and philanthropist, makes a $5000 donation to the struggling school.

1803

1825

Road Development

The Trenton and New Brunswick Turnpike is chartered. Portions of thie turnpike would be renamed and reallighend several times. A portion of the current allignment of Route 1 still runs along the original turnpike.



On July 2nd Abraham Lincoln, understanding the importance of education, signs the Morrill Act providing each eligible state with 30,00 acres of land for the purpose of teaching military tactics, agriculture and the mechanic arts.

1837

A double-deck bridge over the Raritan opens, with a road beneath the railroad, bringing the New Jersey Railroad to New Brunswick and connecting to the Camden and Amboy Branch Railroad.

1862

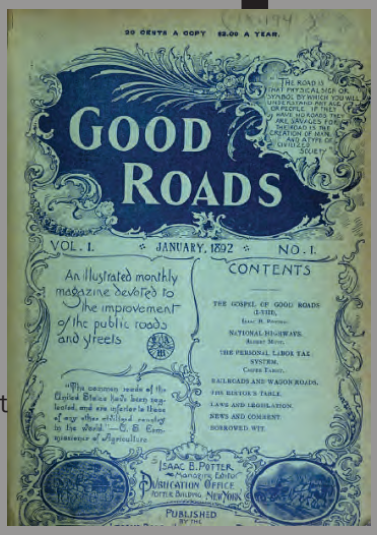
Map of the College Farm in 1868, Showing System of Underdrains (dotted lines)

The Rutgers Sceintific School is founded as New Jersey's land grant college with George H. Cook as the head. Roughly 100 acres of land are purchased from the estate of James Neilson to set up the schools experimental farm just outside the city of New Brunswick.

1864

By the 1890s roughly 4 million Americans owned bicycles. A national cyclist club The League of American Wheelmen evolved into a public pressure group for improving the country's road system. The League's in house publication, Good Roads, became the banner for the growing national movement. The Office of Road Inquiry, a precursor to the Federal Highway Administration, is established in 1893 seeking to build public support by deomonstrationing how paved roads could be maintained more cheaply than dirt roads. The first demonstration of this was a 660 foot section of road extending from the city center to the entrance of the New Jersey Agricultural College, which was paved with 6 inches of macadam.

1892



University Growth

View of the College Farm Grounds, About 1915

The College of Agriculture is moved from the College Ave Campus to the campus of the experimentation station. This would later be named Cook Campus.

The College Farm House and Barns in Dr. Cook's Time

Road Development

Carl Graham Fisher, owner of the Indianapolis Motor Speedway, paves the raceway with bricks to improve driving conditions for his annual race, the Indianapolis 500. He has a dream of a completing a highway across the country by the 1915 Pan-American Exposition, and begins enlisting automobile manufacturers to promote what he calls the Coast to Coast Rock Highway.

Carl Fisher, continues to lobby congress for help and his dream is realized with establishing the route for what is called the Lincoln Highway. Beginning in Manhattan's Times Square, it would traverse the country through New Jersey, Pennsylvania, Ohio, Indiana, Illinois, Iowa, Nebraska, Wyoming, Utah, Nevada, and California where it would end in San Francisco's Lincoln Park.

The first 36 acre tract of land of what is now Rutgers Gardens is purchased from the Wolpert Farm. It is believed the first purpose of this land was for peach tree propigation.

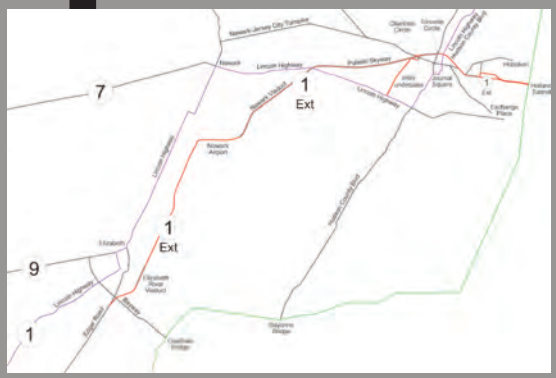
Caged Peach Trees for Control of Pollination in Peach Breeding Project

New Jersey legislature passes and act which states, “Rutgers Scientific School, being the State Agricultural College, the State College for the benefit of agriculture and the mechanic arts, maintained by the ‘Trustees of Rutgers College in New Jersey’” would now be designated “the State University of New Jersey.” This meant that “the State University of New Jersey was a division of Rutgers College which causes much confusion.

Rutgers College Assumes the name Rutgers University with the College of Agriculture remaining a distinct unit with in it.

The U.S. Army organizes a transcontinental military convoy via the Lincoln Highway during the summer. 81 vehicles leave Washington D.C and join the highway at Gettysburg. Among the soldiers on the trip was old Lieutenant Colonel Dwight D. Eisenhower.

The highway commission decides that a new route is to be created branching off of the Lincoln highway just south of Elizabeth, passing by the soon to be Newark Airport, and ending at the Holland Tunnel. Although not officially named yet in NJ, the Lincoln Highway had begun to be known as Route 1 in other states. This new route was deemed the Route 1 Extension and would be completed in 1932



University Growth

Distinguished planner Harland Bartholomew presents his final report on planning future facilities for Rutgers University. His data shows that The College Avenue site, could be made to serve a maximum of 5,000 students, provided lands for recreational purposes could be secured across the river or north of Buccleuch Park. Alternatively, an admirable site for a concentrated university of 10,000 or more students could be developed on the south side of the city in the area bounded roughly by Nichol Avenue, the Raritan River, and Lawrence Brook and incorporating the lands of the College for Women and the College Farm.

Although the plan seemed to be very attractive, at this same time the State Highway Department decided upon the route of a new highway, Route 25, which bisected the area that Bartholomew envisioned as the new University campus. The University was unsuccessful in altering the route.

The Log Cabin, located near the Lawrence Brook within Rutgers Gardens is completed.

Road Development

The US government institutes a system for numbering interstate highways and the old Lincoln Highway as the first highway to reach from coast to coast is appropriately designated US Route 1.

The New Jersey state highways are renumbered.

The alignment of US 1 (the Lincoln Highway) between Trenton and Newark becomes Route 27.

Route 25 is created following route 130 from Camden to new brunswick and connecting to the Route 1 extension that runs from Elizabth to the Holland Tunnel.

Route 26 is created following the Trenton – New Brunswick Turnpike up to the mile bound brook of New Brunswick where it then becomes Livingston Avenue.

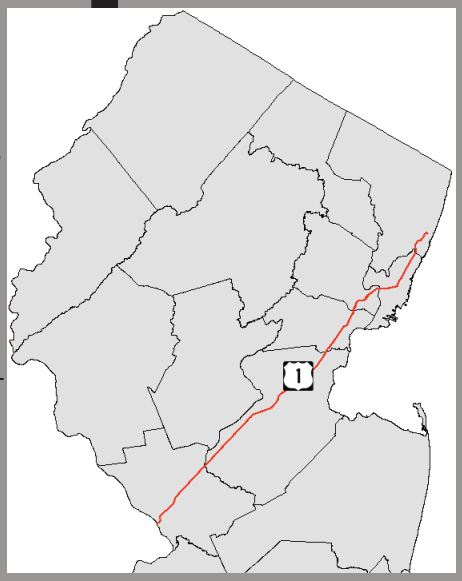
Public Service Electric & Gas Company constructs the Metuchen - Trenton Transmission Line which runs alongside of Route 25 through the College Farm.

1945

Rutgers University as a whole, through NJ legislation becomes the State University of New Jersey

1953

New Jersey State highway system goes through renumbering again. Route 1 is recreated by absorbing route 26 as it heads from the south towards New Brunswick. It then absorbs all of Route 25 as it passes through the college farm and connects to the Route 1 extensions as it moves further north



1965

College of Agriculture becomes the College of Agriculture and Environmental Sciences and is the first land grant institution to use the word environment in its title

1969

In 1969 the cloverleaf intersection between Route 1 and Ryders Lane is completed further fragmenting Rutgers Gardens from Cook Campus

1973

In 1971 the University Senate approved the renaming of the College of Agriculture and Environmental Sciences to Cook College in honor of George H. Cook and everything he did for the University. The first class of students for Cook College matriculate in 1973

University Growth

Cook College survives two major threats. The first was the proposal of developing land adjacent to Route 1 on the college farm. This would result in farmland for agriculture research being moved to more rural areas south of New Brunswick. The second proposal involved funding for the agricultural experimentation station. The university administration wanted all funding to go through the central administration. The entire Cook community and its constituency throughout New Jersey were outraged by these proposals and saw them as a direct threat to the future of Cook College and to the agricultural experiment station. Ultimately it was established that keeping the lands currently being used along Route 1 and in that vicinity were crucial to the mission of Cook College, and that the current funding methods had worked successfully for many years, and should not be changed

1986

As part of an eagle scout project the foot bridge and trail connecting the entrance plot of rutgers gardens to the bamboo forest is reconstructed creating a pleasant pedestrian entrance experience

2008

Road Development

Rutgers Gardens

Rutgers Gardens is located on the eastern most edge of Cook Campus and is bordered by Ryders Lane, Highway 1 and the Lawrence Brook. The first tract of the gardens was purchased in 1916 as the location of fruit, vegetable and ornamental plant research. Eventually, the gardens evolved into a place of display where scientists showed the results of their research. It is thought that the first public access was controlled through these field day events and it is likely the open public access that exists today evolved from these event based displays.

Fig. 7. Birdseye view of Rutgers Gardens taken in 1936.

The site now hosts farmers' markets, weddings, workshops, local clubs, guest speakers, university events and classes, as well as allowing free access to the community. Because of these many different uses of the site, there are various user groups that interact with Rutgers Gardens.

Fig. 8. Iris Collection Display Garden from 1939.

Of particular interest to this graduate project is the relationship of Rutgers Gardens to Cook Campus. Specifically, this project explores how an improved connection can aid faculty, students and staff access and use of Rutgers Gardens. In doing so, there are many user groups of Rutgers Gardens that do not fit into the scope of this project.

In order for the Gardens to get the most out of the investment of a new visitor center, it is believed that

establishing a pedestrian connection from the heart of Cook Campus to the entrance of Rutgers Gardens is essential.

Process

The methods for studying, exploring, and representing the experience of walking from Rutgers Gardens to Cook Campus consisted of personal exploration, an Experiential Exercise, and mapping and diagramming.

Exploration

I began my own walks from campus to Rutgers Gardens purely as exploration. I knew that between the campus heart and Rutgers Gardens I would cross farmland and two major roadways, but I had little idea of how the farm looked and its relationship to the major roadways. I also knew a general direction in which to walk but I did not have a specific route. My first walks were attempts to understand the quality and character of the place and establish a sense of direction.

As I began these exploratory walks I created two rules for myself. First, I would not cross the surface of Highway 1, for safety reasons. Second, I would avoid scaling fences unless absolutely necessary. Because of the second rule, I found that I was being guided to some extent by existing edges. I also found myself wandering and doubling back on my own route to simply make it from where I was to a point I could see in the distance.

Once I became familiar with the organization of the farm and roads, I began to look more closely at the finer qualities of the places that I was exploring. I noticed physical traces of where students did not follow the cement paths in search for quicker routes between two points creating desire paths.. I analyzed these desire paths with the goal of understanding what the stronger feature was that guided students walks other than the existing path system (fig. 9). As the desire path is used by more and more students, the grass becomes worn down, creating a change in material from grass to dirt, a subtle edge condition.

I also paid attention to natural processes, such as the way water moves across the site. Following the slope of the land led me to discover several drainage ditches that eventual grew into

Fig. 9. Desire path leading from a nearby bus stop to the temporary lecture hall.

Fig. 10. Drainage ditch with overgrown plant edge.

Fig. 11. Images of students during the experiential exercise.

small streams overgrown with invasive and unmanaged plants (fig. 10).

The Experiential Exercise

The experiential exercise was the second method used to understand the existing conditions and characteristics of the site. The exercise was developed as part of a student project in Kate John-Alder's professional graduate studio, comprised of first-year master of landscape architecture graduate students. The objective was an exploration and analysis of the experience of walking from somewhere on Cook Campus to Rutgers Gardens. Nine students with little prior experience of this area were divided into four groups and given basic directions of different pedestrian routes. They were also given different starting points on campus, and destinations within Rutgers Gardens. The starting points, and directions were descriptive enough to make opportunities for the students to experience different site characteristics. The directions were flexible enough to allow students to wander, and in certain places choose their own route.[4]

Students were asked to stop every four minutes and perform three tasks. First, students took a 360-degree panoramic photo of their position. Second, they took a photo of the ground plane around their feet.[5] Lastly, they answered three survey questions:

1. How safe do you feel at the current stop with 5 being very safe and 1 being very unsafe?
2. How well does the surrounding area of this stop make you feel like you are connected to the Rutgers Campus with 5 feeling very much a part of campus and 1 feeling very disconnected from campus?
3. Rank how visually pleasing the surrounding area is with 5 being very pleasing and 1 being very unpleasing?

At the end of the exercise students were asked to walk back from Rutgers Gardens to the campus heart, and complete an open ended survey with seven questions. These questions and

4 Complete instructions for the exercise can be found in the Appendices
5 A visual time line of these images can be found in the Appendices

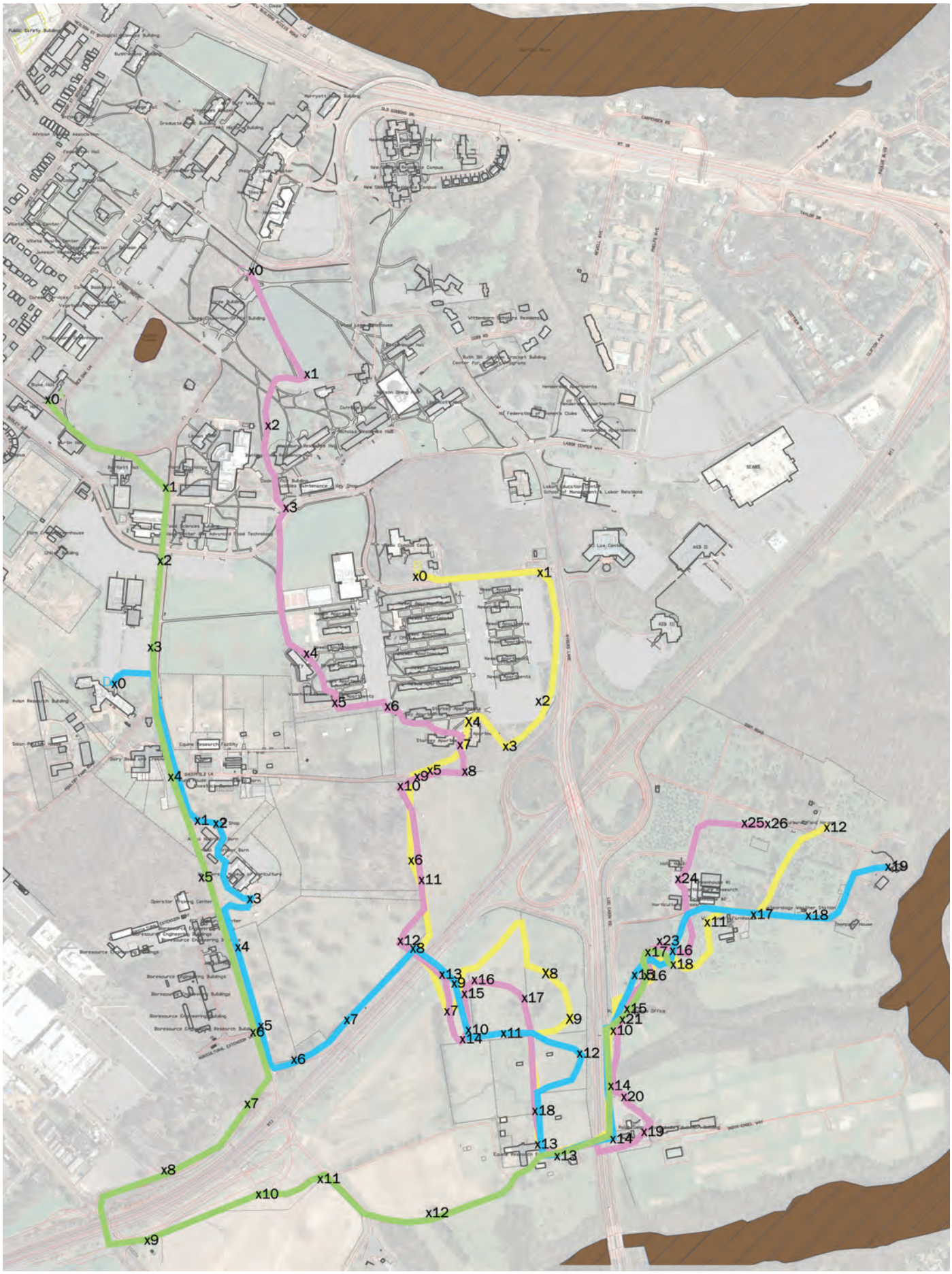


Fig. 12. Map of the four groups' routes and locations of their 4 minute stops.

general answers can be found in the appendices and a text map illustrating their answers can be found on page 31.

The diagrams on the adjacent page show the results of student responses to the three survey questions. The images across the top of the page represent locations where a student gave a ranking of 5. The images across the bottom of the page represent locations where a student gave a ranking of 1 for that particular category.

The question of 'campusness' aimed to understand students' perception of connectivity to campus as opposed to whether they felt they were on campus property or not. What is not surprising is that all of the stops where students felt very connected to campus closely related to their proximity to a campus building (fig. 14). What is more interesting is that on the majority of their walks, students felt disconnected to campus even though they technically were always on campus-owned property (fig. 15). This quality of 'getting away' from campus is one that students generally enjoyed about the walk. Rutgers Gardens shows up as both being very connected to campus and very disconnected. This is most likely because students last semester routinely visited Rutgers Gardens for a class. Another reason for both responses could be because the name Rutgers Gardens creates a connection with the University, but the appearance and character of the site is much more in line with a botanical garden than a tradition university campus.

What is interesting about visual quality is the majority of places that were felt to be very visually pleasing were located within the farm and the Gardens. Stops that were deemed very unpleasing often related closely with a view of Highway 1 or Ryders Lane. Some portions of the farm were also thought to be very unpleasing as well as the student housing area of the campus. Overall though the walk was considered by many to be more pleasing than it was unpleasing.

Fig. 13. Cow Tunnel under Highway 1

After doing the walk myself, I was curious to see how safe others would perceive the area. While on campus, after passing through the cow tunnel and within Rutgers Gardens, students felt very safe (fig. 16). Where students felt very unsafe directly related to their proximity to either Highway 1 or Ryders Lane (fig. 19). Some students also felt unsafe near the animals. The

Campusness

Fig. 14. Very connected to campus Rank 5

Fig. 17. Very disconnected to campus Rank 1

Visual Quality

Fig. 15. Very visually pleasing Rank 5

Fig. 18. Very visually unpleasing Rank 1

Safety

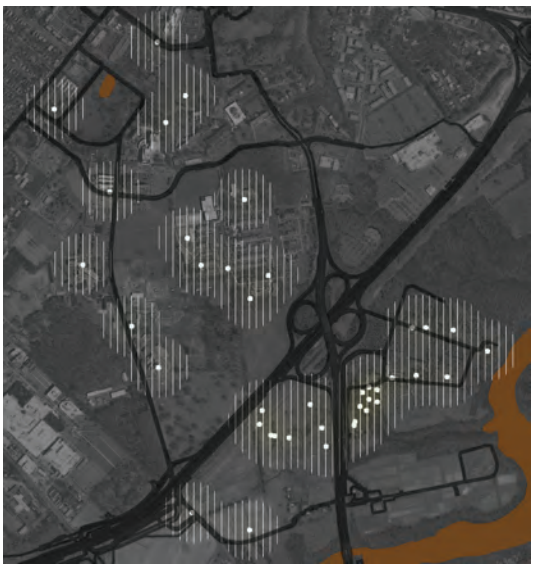


Fig. 16. Very safe Rank 5

Fig. 19. Very unsafe Rank 1

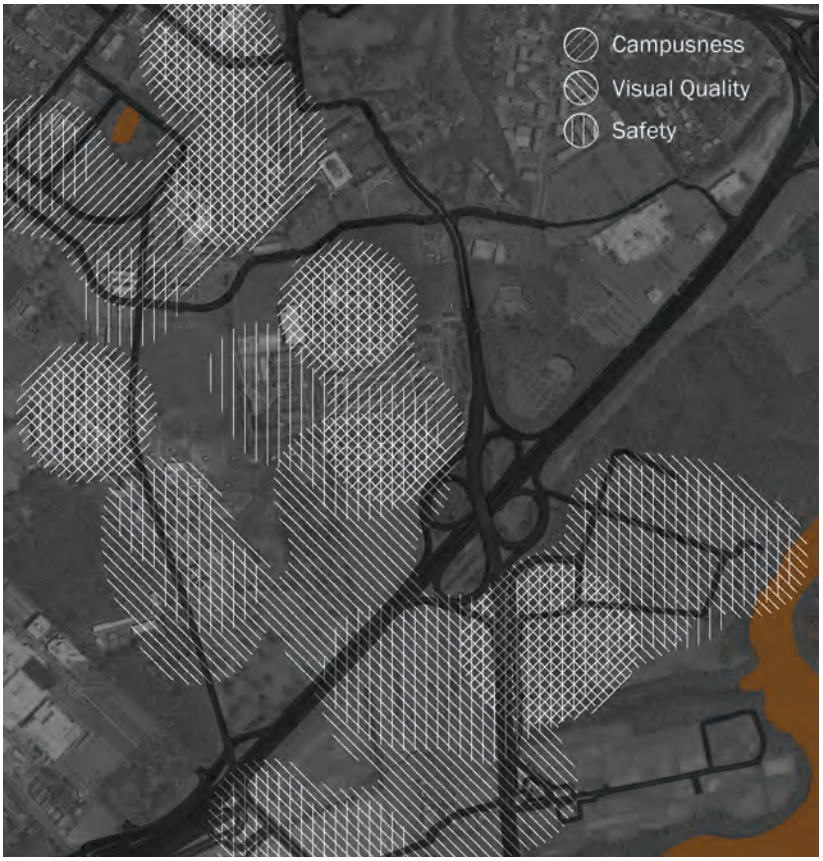


Fig. 20. Diagram Overlapping responses of 5 for Campusness, Visual Quality and Safety. This suggests positive feelings.

Fig. 21. Diagram Overlapping responses of 1 for Campusness, Visual Quality and Safety. This suggests negative feelings.

entrance to Ryders Lane is one of the most perilous portions of the walk, no matter what route is chosen, as it provides no sidewalk or pedestrian entrance. Redesigning circulation at the entrance to accommodate more than the automobile will be critical. The overlapping images begin to show some of the relationships between the three questions (fig. 20 and fig. 21).

Typically, students felt very safe when they also felt very connected to campus. The other areas where students felt safe were after passing through the cow tunnel and upon arriving at Rutgers Gardens. Both of those moments occur when Highway 1 and Ryders Lane respectively are figuratively and literally behind them. A strong disconnect from campus was the single most chosen answer in all of the survey (fig. 17), but interestingly when all of the answers are reviewed, students generally felt safe along the walk. While there is a great correlation to between campus and safety it doesn't necessarily work the other way.

Visual quality had little correlation to campusness but has some relationship with safety. Typically, the more unsafe a student felt, the closer they were to moving traffic. This could be related to an increased awareness of the urbanity of the site, whether that materialized in proximity to parking lots, major roads or power lines. The exciting aspect of this question was that students felt there were many locations along the entirety of the walk that they found to be very visually pleasing.

Several ideas can be taken away from this. First, to reduce the feeling of danger and other related unpleasant emotions, views and movement could be guided away from the major roadways toward elements that provide a better sense of the main character of the area. Also, students found much more beauty in the exploration of the farm, fields, and Gardens than they did walking through campus. I had initially thought that extending elements of the campus or Gardens into the farm would help to establish a connection between these two places, but I learned that farm as its own identity was valued. It is, therefore, important to maintain a separation in materiality between these three identities. By not bringing

Fig. 22. Safety when connected to campus.

Fig. 23. View upon exiting the cow tunnel.

Fig. 24. View of the pedestrian entrance of Rutgers Gardens.

elements of the campus or Gardens into the farm, it can be experienced in its purest form for what it is.

Another layer of analysis was performed with the responses from the experiential exercise. Each topic - campusness, visual quality, and safety - was further broken down into criteria that I believed to be influential. I then went through all of the images and ranked them using the following criteria.[6]

Campusness:

- Signage
- Proximity to Buildings
- Other Students

Visual Quality:

- Openness of Sight
- Urbanness
- Bucolicness
- Amount of Vegetation

Safety:

- Pedestrian Scale

6 A more detailed explanation of this process can be found in the Appendices

Fig. 25. Image showing other students.

Fig. 26. Close proximity to a campus building.

Fig. 27. Example of campus signage.

Fig. 28. Image with a high openness of sight.

Fig. 29. Image very urban dominant.

Fig. 30. Image very bucolic.

Fig. 31. Image of heavily vegitated area.

Fig. 32. Image realting to the pedestrian scale.

Fig. 33. Image with high proximity to traffic.

- Proximity to Traffic
- Ground Condition

The last portion of the experiential exercise was a short open ended survey consisting of seven questions.[7] The text map highlights the most common statements made by the students aligned to the corresponding location (fig. 34). Reading the map without the context of the surrounding area shows the most dominant emotions and feelings expressed by the students during their walks. It shows how students typically expressed both positive feelings - enjoyment and relaxation - as well as negative feelings such as frustration. The design should highlight the pleasant portions of the

7 A more detailed description and responses can be found in the appendices

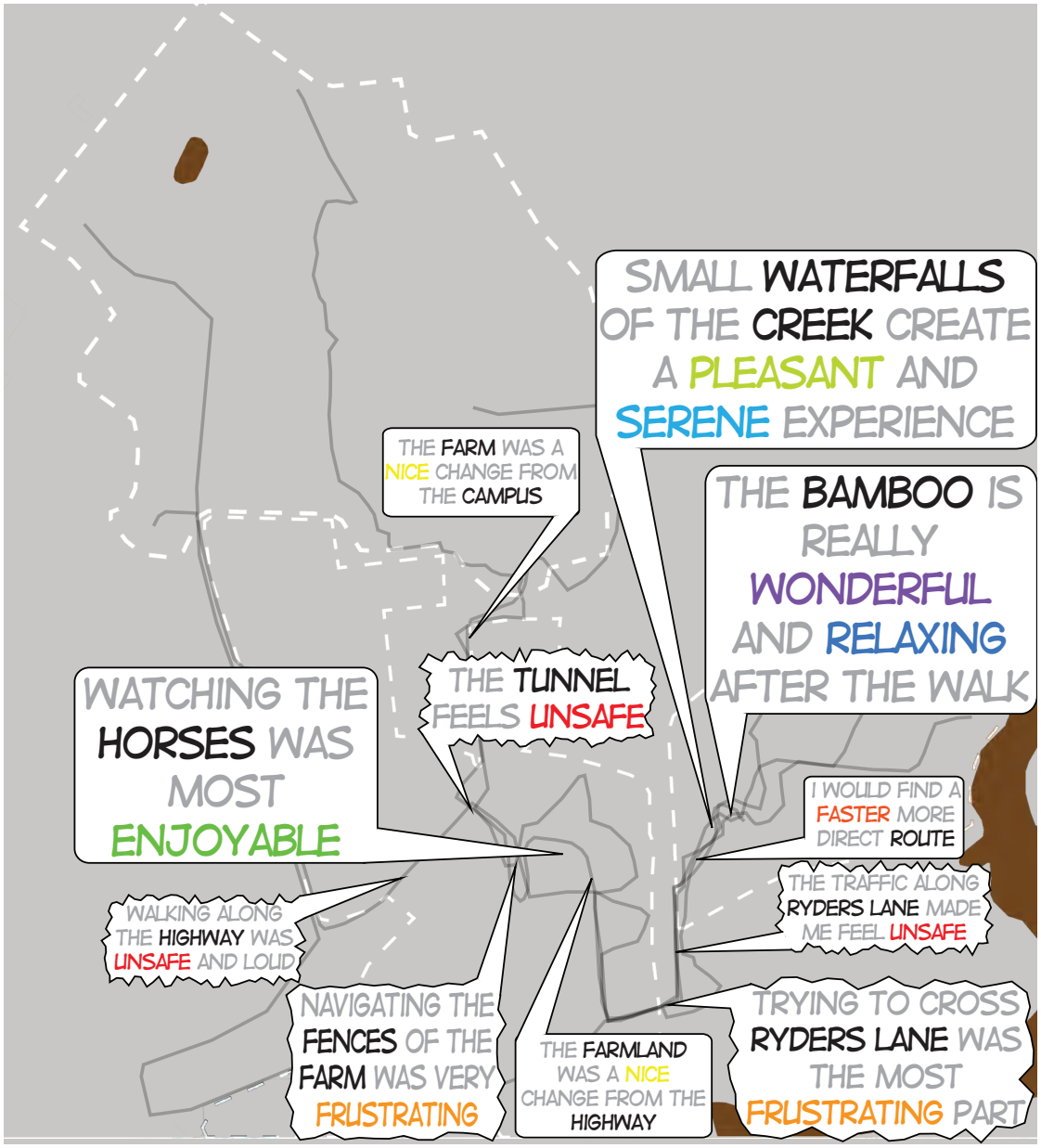


Fig. 34.Text map showing the most common responses both positive and negative from the open ended survey.

journey and aide to ease passage and safety through the difficult parts.

The “heat map” highlights where the different experiential routes overlapped (fig. 35). Some of these intersections are the products of the directions that were given. Other intersections, like the entrance to the bamboo forest, were situations where each group made similar choices in their route. Through my exploration of the site and the design

Fig. 35. Heat map showing areas where different routes meet.

process, more of these key areas have emerged but the ones shown here should be considered in the final design.

Conceptual Design

Kevin Lynch, in his book *The Image of the City*, writes about 'legibility' as the mental image that people have about their surroundings. Specifically, the way people break down their surroundings into recognizable parts that can be read as a coherent pattern (Lynch 1960, 2). Lynch uses the American city for his exploration in legibility but his principals can be applied to a campus as well. Throughout this project I use Lynch's ideas about district, path and edge to aid in organizing and conceptually designing the whole of Cook Campus.

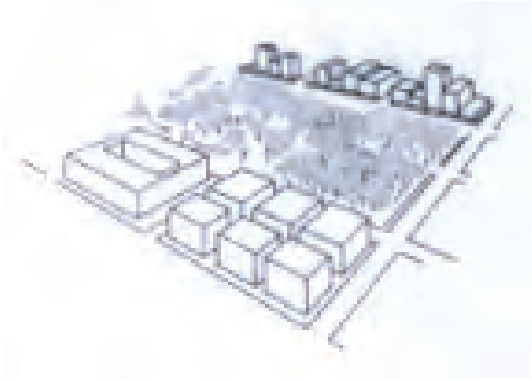


Fig. 36. Lynch Diagram of Districts.

Lynch provides a definition of districts (fig. 36). "Districts are the medium-to-large sections of the city, conceived of as having two-dimensional extent, which the observer mentally enters 'inside of,' and which are recognizable as having some common identifying character. Always identifiable from the inside, they are also used for exterior reference if visible from the outside" (Lynch 1960, 47). With this definition it is easy to understand Cook Campus as being comprised of three districts: the campus, the farm and the Gardens.

Lynch defines a path as, "...the channels along which the observer customarily, occasionally, or potentially moves. They may be streets, walkways, transit lines, canals, railroads. For many people, these are the predominant elements in their image. People observe the city while moving through it, and along these paths the other environmental elements are arranged and related" (Lynch 1960, 47).

Fig. 37. Hardvary Yard path system.

The organization of the academic portion of Cook Campus, similar to many campuses, is heavily based on interconnecting systems of well defined pathways. Harvard Yard, one of the most prestigious universities in the United States, exemplifies this idea with its pathways (fig. 37). Usually, these path systems that guide walking are simply a change in the material of the ground plane that lets the pedestrian know they should follow this path (fig. 38). Without knowledge

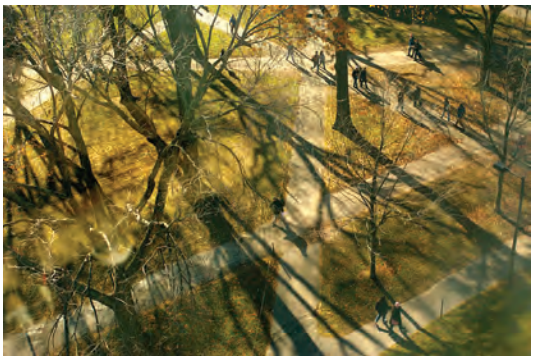


Fig. 38. Cement Pathways through grass.

of the area a connecting system of pathways can potentially be disorienting.

For this reason, I did not want to think of the connection between the heart of Cook Campus and Rutgers Gardens as another path to be added to the existing campus network. I did not want to create this connection by simply changing the ground plane. Instead, I wanted to think of this as a three dimensional series of edges, that could be understood as creating its own sense of connection that does not interfere with the existing pathway system.

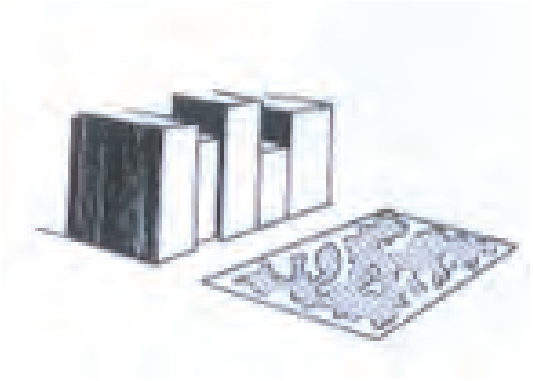


Fig. 39. Lynch Diagram of Edges.

Lynch defines edges as, "...the linear elements not considered as paths by the observer. They are boundaries between two phases, linear breaks in continuity: shores, railroad cuts, edges of development, walls. They are lateral references rather than coordinate axes. Such edges may be barriers, more or less penetrable, which close one region off from another; or they me be seams, lines along which two regions are related and joined together. These edge features, although probably not as dominant as paths, are for many people important organizing features, particularly in holding together generalized areas..." (fig. 39) (Lynch 1960, 47).

I am particularly interested in the ability of edges, as opposed to paths, as guiding features because of the different characteristics of Cook Campus as a campus, farm and garden. As a result, I sought to explore the idea of moving people along these edges that will unify and connect the different districts of Cook Campus together into one pedestrian experience.

Fig. 40. Descombes image of the Swiss Way.

George Descombes is a contemporary French landscape architect, and the designer of "The Swiss Way." His project created a path system through the Swiss Alps, and was an inspiration for me (fig. 40). He writes about his overall philosophy of design when he states, "My attitude toward intervening in the landscape circles around paying attention to that which one would like to be present where no one expects it any more. Thus, for me, to recover something – a site, a place, a history, or an idea – entails a shift in expectation and point of view" (Descombes 1999, 79).

Similar to Descombes this project seeks to recover the

history and sense of place of Cook Campus as a whole that at an earlier time was better connected for pedestrians. By creating the opportunity for people to freely move through the campus, farm and gardens, with minimal barriers, and experience the three different districts as one whole is how I aim to recover this site.

Descombes goes on to say that he wanted to"respect the nature of the site and its history, but without nostalgia, without sentimentality." He describes his process when he states, "Thus, we decided not to put anything on the path that was not already there. We wanted to emphasize its inherent qualities while revealing hidden ones. A typical architectural assumption is that one always adds something to a place. We choose to do exactly the opposite; we took things away. We took away all that was wrong - picturesque frames, bad kitsch constructions, and overgrown areas. Everything we needed was already there, and it was our job simply to find and re-present these features through a discreet architecture. Thus, we sought to clarify the landscape, to amplify its character through subtraction and modest - though highly calculated - intervention" (Descombes 1999, 82).

This project uses Lynch's ideas of legibility as the lens through which the campus will be explored. Descombes ideas of revealing processes and recovering a sense of place through subtraction and modest intervention are woven throughout. The conceptual design focuses on the guiding and unifying power of edges, either through revealing existing

Fig. 41. Three Districts of Cook Campus.

ones or enhancing and designing stronger ones.

Districts

The significance of districts grew out of the experiential exercise. The enlightening moment was learning how much students enjoyed the farm and the fields. It was described by some as an “escape from campus life,” or an “unexpected surprise.” Overall, the farm represented something that was different and enjoyable within a very short walking distance of campus, and many of the students weren’t fully aware of its existence. The farm, which at times can be muddy and smell of animals, was still an enjoyable experience for almost all of the students. This enjoyment is most likely heightened because of the contrast between the farm and the campus adjacent to it. From this exercise, it was understood that Cook Campus is comprised of three separate districts with three distinct characteristics: the campus, the farm, and the gardens (fig. 41).

Cook Campus can easily be understood as being organized into different areas by three districts. Understanding the

Fig. 42. Photo collage of the three districts and major corridors.

inherent character and quality of each district as well as the relationships between them is important.

The CAMPUS signifies the heart of the student community. Although the weather was cold and damp while the experiential exercise was in progress, on a nice spring day you might find the area teeming with students. The campus is constructed of cement sidewalks, paved roads, multiple story brick buildings and scattered vegetation. The area is highly maintained and thus kept in good condition. This district is where students feel safest and also where they spend most of their time. There are many designed paths and areas that relate to the pedestrian scale to help guide and provide ease of circulation to students throughout this district.

The FARM and fields historically are where Cook Campus began and represent over a century of agriculture research. The main purpose for this area is the functionality of the farm, thus, very little relates to the pedestrian and rarely are there designed paths. The district is primarily bucolic in nature but is divided by the Highway 1 corridor. Materials of the farm consist of wood fences and wood buildings with a grass or dirt ground plane. Vegetation in this area varies in density, but is typically not maintained. Openness of sight is an important feature of this area and should be emphasized in key areas. Fences, as opposed to paths on the campus, are the guiding features for animals and could be utilized for pedestrians as well in the design.

The GARDENS, similar to the farm, has been the place of agriculture for many years. The Gardens, however, has evolved primarily as a place for plant display and public interaction. The Gardens has suffered the most from its proximity to Highway 1 and Ryders Lane, which have completely severed it from the rest of the campus. The only way to arrive is by car and the current entrance provides no sense of arrival. The Gardens is constructed of varying materials but features different display gardens and plant collections. The vegetation is the key feature in this district and should be emphasized, but creating a sense of arrival should be the most important addition. The program of the gardens to most students, if they even know it exists, is a place where they can go to relax and

Fig. 43 Car entrance to Cook Campus.

Fig. 44. Stairs over george street.

Fig. 45. College Farm Road.

Fig. 46. Gated entrance to the farm.

Fig. 47. Gated entrance to the fields.

Fig. 48. Images and locations of entrances and exits of the 3 districts.

sit, stroll, or jog. It also has several transgressional spaces where students or groups can go to be alone and find privacy.

With three distinct districts it is important to look at the entrances and exits between each district as these become important transitional spaces as well as edges between the different districts.

The wood farm fencing acts as the only clear distinction of where the campus ends and the farm begins. The entrances and exits of the campus are tricky because they are not intended to be accessed by foot. In a sense, the bus stops and parking lots become entrance points for people visiting campus. Students living in the housing area on campus could possibly access the farm area via a trail through the woods. Clarifying or expressing the transitional pedestrian spaces between the campus and the farm is going to be important in the design.

There are clear boundaries between the farm and Rutgers Gardens as Ryders Lane passes between them not only creating an edge for both but also a barrier to movement for pedestrians. Designing ways to cross Ryders Lane is going to be a key design challenge and probably the most crucial component that needs to be addressed to implement a pedestrian experience from campus to Rutgers Gardens. The entrance into the Gardens also needs clarification.

Lastly, the existing entrance to Rutgers Gardens is primarily designed for the automobile, and provides no sense of arrival. For the students who arrived by foot, the bamboo forest may be considered the moment of arrival to Rutgers Gardens. The twig arbor acts as a visual gateway through which pedestrians arrival at Rutgers Gardens.

The placement and addition of a visitor center needs to be handled in order to organize the entrance to Rutgers Gardens and provide a sense of arrival worthy of a botanical garden. Along with the entrances and exits, there are key areas within each district that can be highlighted because they represent

Fig. 49. Cow tunnel under Highway 1.

Fig. 50. Entrance off of Ryders Lane.

Fig. 51. Entrance to the bamboo forest.

Fig. 52. entrance to Hort Farm II.

Fig. 53. Exit from the equestrian farm.

Fig. 54. Edges around passion puddle.

Fig. 55. Passion puddle as an edge.

Fig. 56. Broken edges around passion puddle.

Fig. 57. Edges that influence desire path through a campus quad area.

Fig. 58. Trees between athletic fields and basketball court.

an important junction or key view.

Edges

The most notable edges or boundaries are Highway 1 and Ryders Lane. In addition, however, I sought to understand movement along edges within Cook Campus. The easiest way for me to become familiar with these edges was to walk the site while carefully observing them. I have highlighted some of the edges from the walk with bright yellow in the images on these two pages.

Passion puddle, was the original college farm pond and the bus stops around passion puddle act as entrances to the campus for students. The puddle and lawn area is bordered by a road, curb, path, and row of red oak trees (fig. 54). The trees act as an edge that one passes through to enter the lawn area. I believe it to be the strongest edge element in this area and along with the puddle best defines the place (fig. 55).

The campus buildings throughout provide edges themselves that form landscape spaces such as a campus quad. Within the quad an existing network of paths can be found but the edges such as trees and shrubs provide a stronger guiding feature over where students walk (fig. 57). The quad area is interesting because the layout of the buildings define the area but there is a smaller garden and seating area within the quad that have little existing edges but can be understood as different areas with different purposes

As you move towards the athletic fields, and the beginning of the farm, we begin to pick up the fencing of the farm as a clear edge. There is also a planting of small trees that provide an edge for a portion of the path (fig. 58). These trees also provide a permeable edge between the openness of the athletic fields and the nearby active recreational area. The small trees provide the sense of an edge but are not optimal

for this area because they do not create any usable spaces for people but instead just act as a blocker of vision.

The fencing of the farm is easily understood as an edge but is not easily accessible (fig. 59). The plants surrounding the exterior of the farm are overgrown and grow right up with the fence making it difficult for pedestrians to visually see the farm through the plants.

In the middle of this overgrown plant area is a small stream which collects of the runoff of the farm and athletic fields (fig. 60). The stream itself is another edge which is not easily accessible. It is most likely the reason for the organization of the farm fences as they follow the general direction of the stream. Similar to the fence the stream is an edge condition that prevents movement across it but can be revealed and by providing movement along it, can create a richer experience.

The cow tunnel under Highway 1 is made up of cement path, but also edges that extend out of the tunnel to hold back the earth under Highway 1 (fig. 61). These cement walls are important because they can be seen from a distance and create a strong edge feature. They visually also hint at the idea of a connection under Highway 1 and can draw peoples attention by inviting people to come explore the area. Visually enhancing the walls can make them even more powerful.

The horse farm on the other side of Highway 1 is mainly comprised of a series of fences and in places overgrown tree and shrub areas. Here another aesthetically under utilized stream corridor can be found (fig. 63). In this instance, the stream corridor meanders right through the middle of the farm instead of running along the exterior like before.

Fig. 59. Fencing of the farm.

Fig. 60. Stream corridor as an edge.

Fig. 61. The cow tunnel and road barrier of Highway 1.

Fig. 62. Edges upon exiting the cow tunnel.

Path

The reality of the project is that although expanding, connecting, and adding edges is a great way to guide pedestrians, the ground plane cannot be ignored totally. The image on the following page calls out some key areas where the ground plane must be altered to create a more enjoyable pedestrian experience (fig. 64).

Fig. 63. Stream corridor through the horse farm.

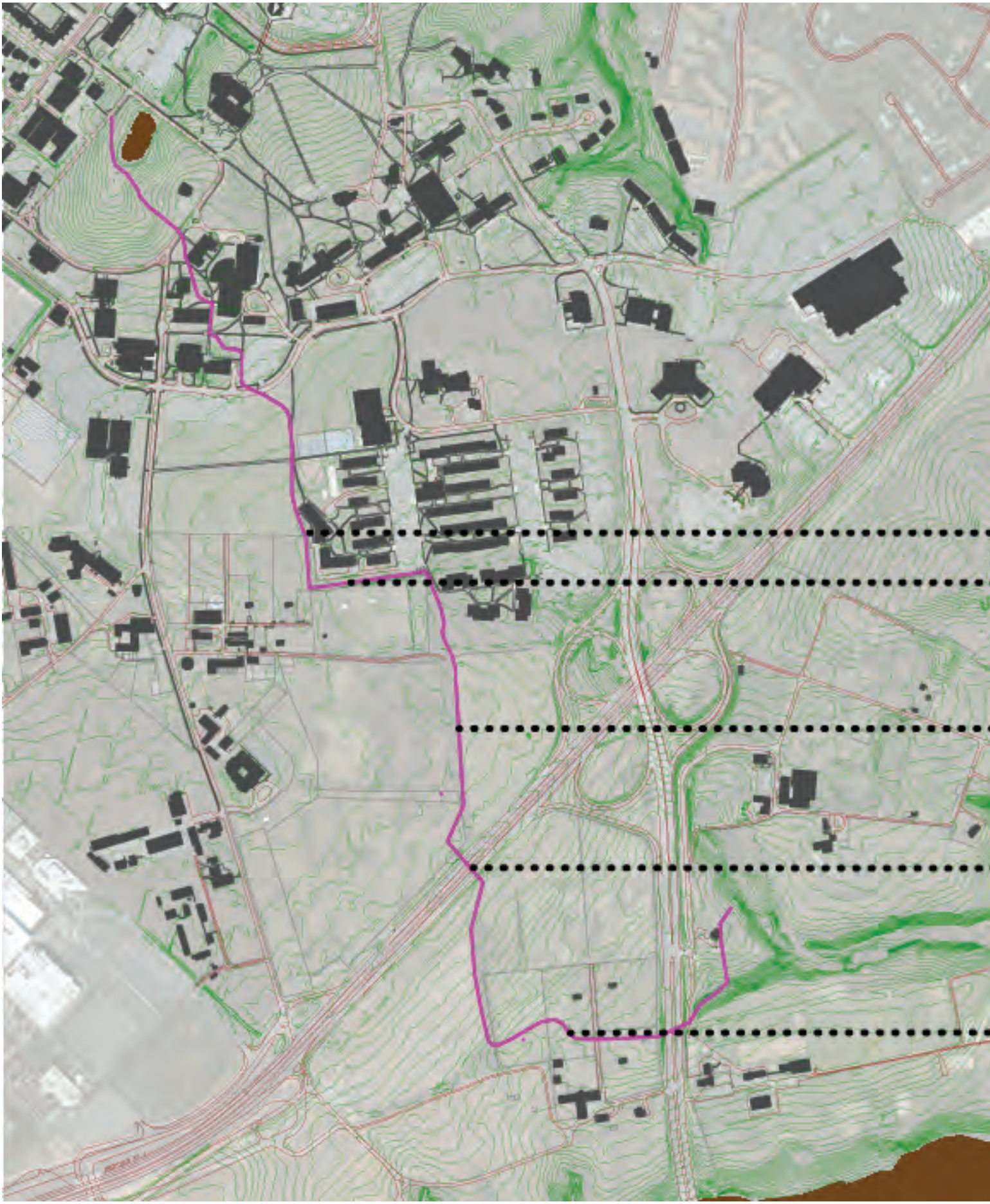
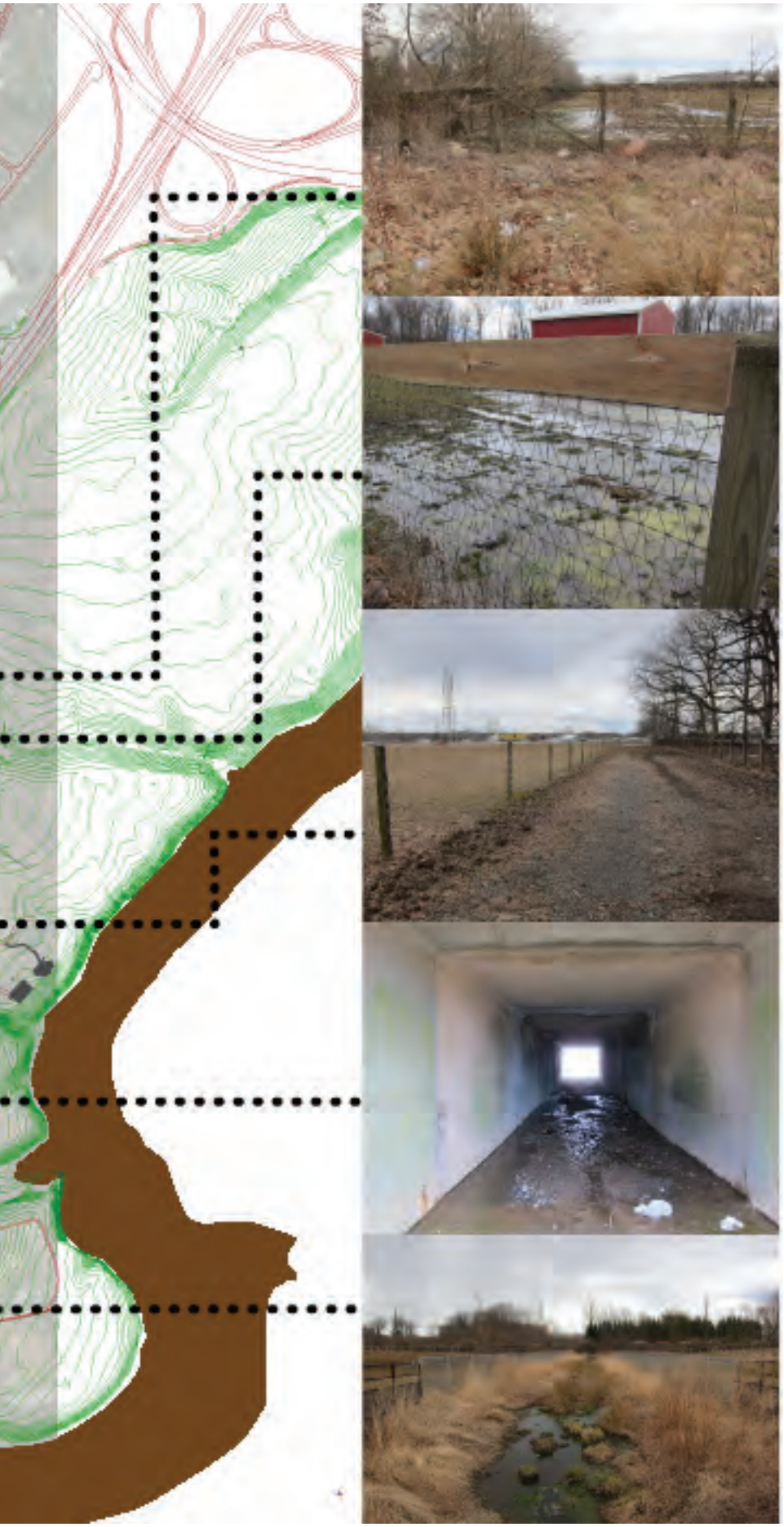


Fig. 64. Plan and images calling out the areas where the ground plane needs to be altered so pedestrians can easily walk.



This location collects a majority of the water from the athletic fields and farm. After a heavy rain, water pools in this area until it eventually makes its way into the stream. Grading the ground to control the flow of water, or building a small foot bridge would alleviate the having to walk through this important transition space between the campus and the farm.

Another portion of the farm drains towards the area in the image and pools before it makes it to the stream. Grading the area to have the water flow into the stream quicker and adding another foot bridge over this area would allow for pedestrians to walk through here.

One of the main paths used by the farm to move cows and horses around could potentially present a great area for the movement of pedestrians, except that it is often muddy. Adding a layer of gravel or creating an elevated pedestrian path along the edge of the field would make pedestrian movement more pleasant.

The cow tunnel is a low point under Highway 1. In the middle of the tunnel a swere grate collects water, via an outlet, pipe that drains off of Highway 1. Because of this, the ground plane of the tunnel is often wet and muddy. Adding a boardwalk raised above the cement floor of the tunnel would still allow water to flow while elevating pedestrians out of the mud.

The stream through the farm could be a great place to walk, but it is overgrown and muddy. Adding a boardwalk on one side of the stream and planting native grasses on the other could present a pleasant area for walking and experiencing the farm.

Fig. 65. Image of first bus stop around passion puddle and the lawn area.

Fig. 66. Image of second bus stop around passion puddle and lawn area.

Fig. 67. Image of passion puddle and lawn area.

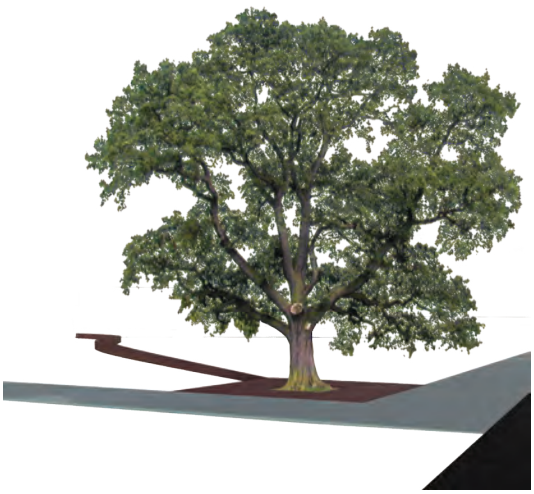


Fig. 68. Beginning of brick wall.

Designing with District, Path and Edges

The designed edge begins around passion puddle and ends at the entrance to Ruters Gardens. Students who arrive at Cook Campus either begin walking from a bus stop or one of the many parking lots. Passion puddle has two bus stops around it (fig. 65 and fig. 66), and historically was the original plot of land for Cook Campus. Because of those two reasons it is a good place to begin designing a connection to Rutgers Gardens.

Using the edges that already exist around passion puddle we can rethink the two bus stops. Altering the arrangement and walls of the actual area can create a space that allows people to gather comfortably while capturing views of passion puddle instead of the road. Along with redesigning the two bus stops, planting a row of trees that begins and terminates in each space will connect the two bus stops. The trees provide a similar language of materials that already exists around the lawn area and would not ruing the function of the area as an open lawn. They would create a permeable edge than can be understood as a seam across the lawn but also prevent no barrier of movement in the area. This row of trees that curves across the lawn around the puddle can be understood as a permeable edge that begins to lead or guide pedestrians somewhere..

Across Lipman drive from the bus stop students have created a desire path, arriving at the stop and taking the fastest route to the classrooms. There are existing materials in that area, such as small shrubs, a couple of trees, and buildings that influence the direction of this desire path.

The addition of a three dimensional edge such as a low brick wall, will enhance the boundaries of existing spaces with in this campus quad area (fig. 69). The wall will not only guide students along a desire path, but will also curve around a seating area and along the backside of a memorial garden to better define these areas. It will provide more seating and invite the gathering of students in this area enhancing the possibility for community and interaction. Extending the wall through the area can connect the edge both to the row of trees by the puddle as well as the next campus space (fig. 68).

Fig. 69. Perspective of brick wall through campus quad area.

Fig. 70. Image of existing trees between basketball court and athletic fields.

Fig. 71. Apple tree near stream beginning to bloom.

Fig. 72. Apple tree near stream beginning to bloom.

Fig. 73. Image of existing conditions near farm fence.

After passing through the campus heart, we arrive at the edge of Biel Road and the athletic fields with the first view of the college farm off in the distance.

Across Biel Road are several small trees that create an edge between the athletic field and the basketball and tennis courts (fig. 70). Moving these trees to a different part of campus allows for the opportunity to create places for people to gather and sit who aren't playing on the field or the courts. By changing the edge from small trees to a gently graded slope, students may on the grass. Adding a low wall with lighting on the top of that slope provides another place for people to sit and watch. Larger trees planted at the bottom of this slope will partially provide shade and enhance this linear feature (fig. 74).

This slope alters the flow of water slightly and can be used advantageously to aide in moving the water towards the nearby stream. Bringing this low wall and slope into the edge of the fencing begins to connect the campus and the farm.

Because of the need to enclose the movement of animals, the farm already has a system of edges that are fences. These fences are both a bounding edge of the farm as well as the divider between two different areas such as the farm and campus or the farm and woods. Moving the fence five to ten more feet in towards the farm provides room for pedestrians to move along the outer edge.

In the same area there exists a small stream corridor that collects a majority of the water from the farm and the fields. The stream is difficult to find and could be revealed by removing plants that are invasive species or have dies and are laying on the ground. By cleaning up the understory in this area the stream is revealed and turned it into an amenity for pedestrians by making visible the natural process of water drainage (fig. 75).

In the book Gray World Green Heart, Robert Thayer writes, "In many formal research studies and common cultural manifestations, landscapes that include water, open clearings, or meadows with grazing animals and distant vistas are considered among the most beautiful and desirable" (Thayer 1994, 12). By revealing the stream corridor and

Fig. 74. Perspective of graded slope, low wall, and shade trees as edge between athletic fields and basketball court.

Fig. 75. Perspective of pedestrians moving along the edge of the farm fence.

Fig. 76. Perspective of turnsitle exiting the woods and looking down the animal path.

Fig. 77. Perspective of woods entrance.

providing pedestrians with the opportunity to explore the edge and openness of the farm, such an image as the one describe by Thayer can be recaptured.

The fence as the edge of the farm can be followed around the exterior of the farm leading towards the student housing area. Through connecting to this area, the opportunity for students to walk out of their dorms and immediately have an accessible connection Rutgers Gardens is created.

Along the backside of the dorms, there is an existing wooded edge with the beginnings of a path that suggests student exploration. Enhancing this entrance through the use of cut fallen trees provides a space for people to gather at the edge between campus and the woods, as well as invite exploration into the woods (fig. 77). The tree pieces provide a direction edge while allowing for students to wander through the woods in any direction they please.

Fig. 78. Image of woods understory.

On the other side of the woods is a crop field and an animal pathway. A turnstile placed at a corner of the path will allow pedestrians to scan the area for cows and horses before entering (fig. 76). This path is still used by the animals of the farm, and so upon entering the path another turnstile allow students to get back into a wooded region and safely behind a fence. If there are no animals present, students can then choose to walk down the path with open views of the fields on one side and a woodlot on the other. As another option, the animal path could also be altered by creating an elevated path and low shrub edge that would allow for pedestrians to move on side and animals to move on the other.

Fig. 79. Image of Trout Lilly growing in the woods.

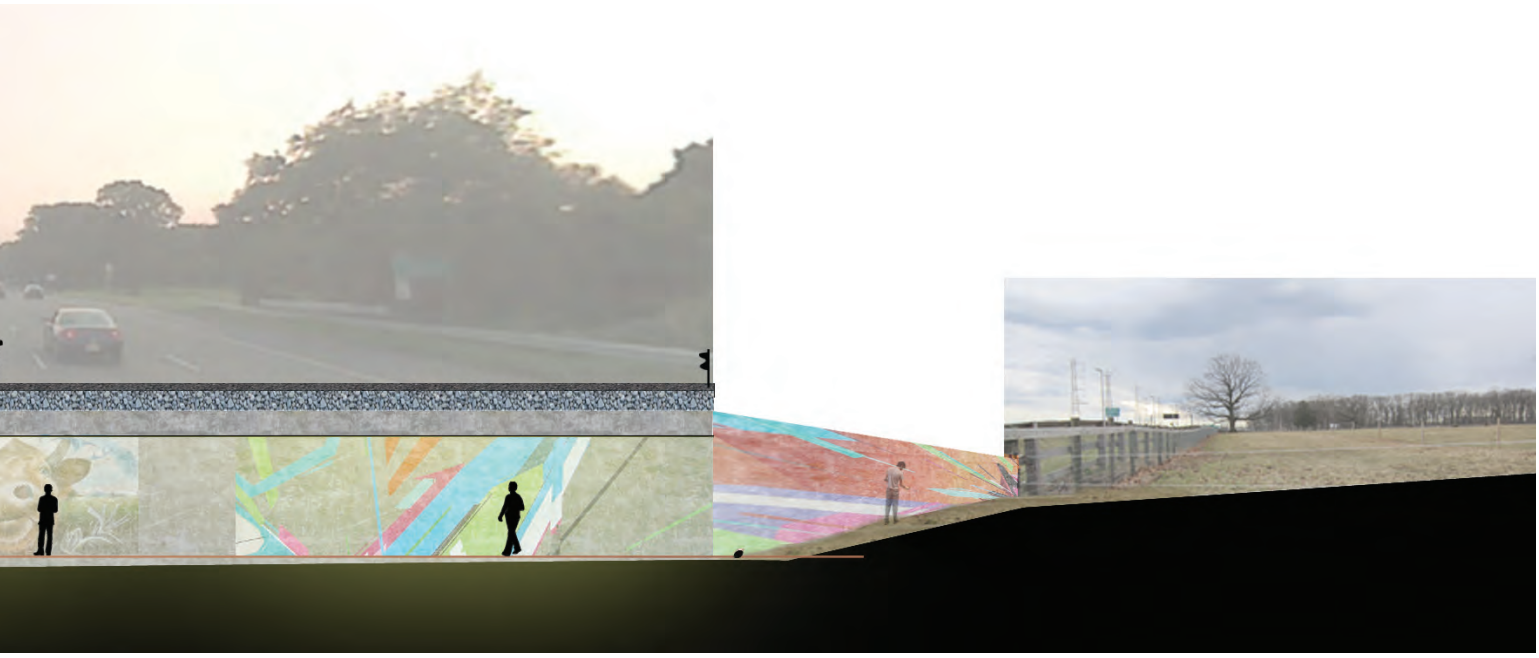
Fig. 80. Section cut through the cow tunnel under highway 1 showing an elevated boardwalk and extended art walls.

As you move further down this animal path or along the fence within the woods, noise and views of Highway 1 become more prevalent. Strategically planting smaller trees blocks some of the views of Highway 1 and increases the sense of safety.

Fig. 81. Image of graffiti on cow tunnel walls.

At the end of the path is the cow tunnel that leads under highway 1. The inside walls of the tunnel are places where people have come to paint graffiti (fig. 81). The tunnel evoked mixed feelings between students depending on whether they thought it was safe or not. Adding lighting into the interior of the tunnel will enhance the walls and make the place feel more safe. Extending the edges of the tunnel further into the farm and playing off of the existing graffiti, in the form of art walls will help to make the tunnel feel like it is more connected to the farm on both sides and less a part of Highway 1. Artists at Rutgers could be invited to paint these walls every year. Instead of causing mixed feelings, the cow tunnel, could be a place of display and enjoyment and an important connection between the campus and the Gardens (fig. 80)

This are can also present a unique opportunity, through a designed intervention, for pedestrians to stand at a level in which they can see over Highway 1. From this point pedestrians can see and get a sense of the size of the college farm as well as the road corridor which fragments it.



Exiting the cow tunnel puts the walker on the other side of Highway 1 and amidst the horse farm where he or she may be confused as to which direction to go. Through the experiential exercise it was learned that students enjoyed exploring the horse farm, but found navigating the fences to be frustrating. Extending a swath of grasses from the tunnel around a row of trees could potentially provide guidance and lead the pedestrian to a better entrance into the farm.

Walking around this row of trees eventually bring the pesetrian to a point where another stream emerges (fig. 82). Currently, it is difficult to find because it is covered up by overgrown plant material (fig. 83). Similar to what was suggested earlier, revealing this stream and showing where the water comes from will enhance the visual character of this area. Providing pedestrians with the opportunity to walk along the stream's edge will bring them right into the middle of the horse farm. This stream corridor is already fenced off and not used by the farm, and so it presents a great opportunity for people to move right through the middle of the farm without interfering with the functions of it.

Fig. 82. Image taken while walking along the edge of the trees.

Fig. 83. Image of overgrown stream.

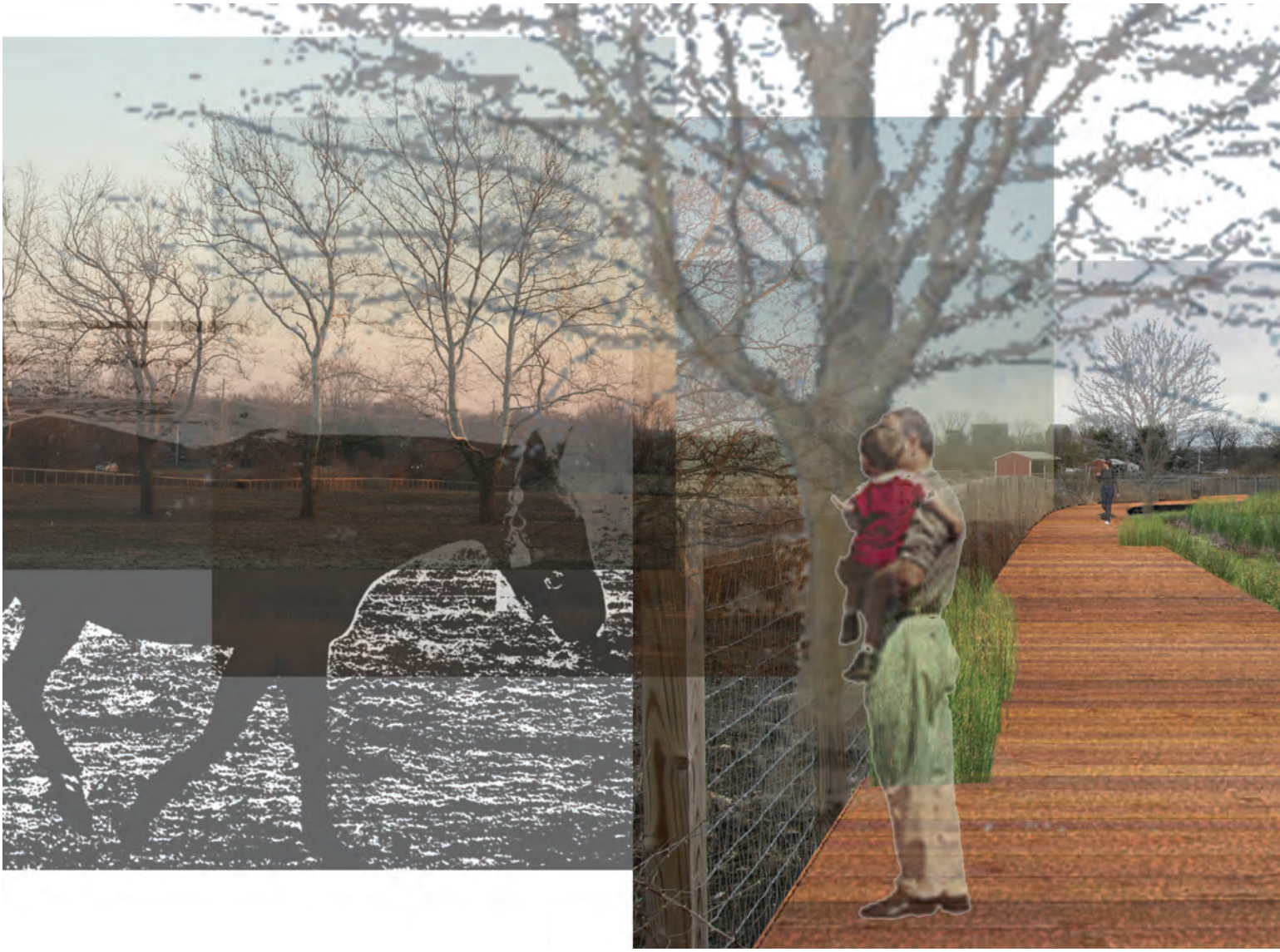


Fig. 84. Perspective of boardwalk through the stream corridor in the horse farm.

Fig. 85. Perspective of possible foot bridge connecting the horse farm to Rutgers Gardens over Ryders Lane

Adding a boardwalk that runs along the side of the fencing and passes over the stream, at times, is a great way for people to get close to the animals while still feeling safe (fig. 84). Cleaning up the plants with in this corridor and planting native grasses will also greatly aid in enhancing the visual quality and experience of exploring and moving through the horse farm.

The last and most difficult hurdle is Ryders Lane. There is no easy or cheap solution to getting across Ryders Lane but the optimal one for this experience would be to bridge over it (fig. 85). This allows pedestrians to enter Rutgers Gardens without having to deal with the circulation of automobiles. Re-routing the driveways of the horse farm and Rutgers Gardens is a second option, but this is all apart of the larger issue of circulation with the entrance to Rutgers Gardens and is an entire project in itself.

Conclusion / Key Findings

What was learned through my process is that the experience of walking to Rutgers Gardens is not about getting from one place to the other as quickly and efficiently as possible. Instead, it is about exploration, enjoyment and the experience of the different characteristics of Cook Campus. Simply connecting the campus and the Gardens for pedestrians is a great idea, but, making this connection a memorable experience and allowing for exploration and discovery is much more valuable.

Designing an enjoyable experience can only add to the richness of the campus and provide better opportunities for the University Community and the outside user groups that frequently use Rutgers Gardens.

The presentation of the project brought about an interesting discussion among the critics in the room. In doing a graduate project focused almost entirely on university property I struggled with what exactly is the meaning and role of a campus. Should all of Cook Campus, the academic portion, the farm and the gardens, constantly remind you that this is Rutgers University? Or, is the ability to still safely be on Rutgers property but not feel like you are at Rutgers more valuable? In fact, through meetings with my committee we still were not entirely sure and ended up creating the word 'campusness' to begin to understand this question.

Through what was revealed in the experiential exercise and the unique characteristics of Cook Campus I believe that the inherent character of the district should be in the forefront of a pedestrians perception and the character of Rutgers should come second to that. The experience should be about moving through a campus, farm and garden as opposed to a campus comprised of academic buildings a farm and a garden.

I believe the experiential exercise to be a successful way of engaging the student community in the process of campus design. It would be interesting to see what people would have thought if non landscape architecture or undergraduate

students participated. This most likely would have changed the data collected, but I am confident that the experience of exploration and discovery of the farm would have been enjoyable to most.

Lastly, the whole of Rutgers New Brunswick could be more integrated if the area was made more walkable between the smaller campuses. This project created a pedestrian connection throughout Cook Campus and some of the ideas used here could be applied to connecting the four campuses, College Ave, Livingston, Busch and Cook, on a pedestrian level through a series of districts, paths and revealing and strengthening edges.

Bibliography

Boyer, Ernest L. College: The Undergraduate Experience in America. New York: Harper & Row, 1987.

Descombes, George. 1999. “Shifting Sites: The Swiss Way, Geneva,” in Recovering Landscapes: Essays in Contemporary Landscape Architetcure, ed. James Coroner (New York: Princeton Architectural Press), 78-85.

Hart, Steven. The Last Three Miles: Politics, Murder, and the Construction of America’s First Superhighway. New York: The New Press, 2007.

Lane, Wheaton J. From Indian Trail to Iron Horse. Princeton: Princeton University Press, 1939.

Lynch, Kevin. The Image of the City. Cambridge Massachusetts: The MIT Press, 1960

Mccormick, Richard P. Rutgers a Bicentennial History. New Brunswick: Rutgers University Press, 1966.

Figure Source List

Appendices

Experiential Exercise Instructions

Overall Objective

The goal of this experiential exercise is to reach Rutgers Gardens on foot from cook campus while documenting your walk.

Instructions.

Split into 4 groups of 2 or 3 students each. Each group will be given a different starting point on cook campus as well as a different route to take.

Follow the route described for your particular group on your group instruction sheet.

Every person in each group will be the photographer but only one person will fill out the data sheet and basemap.

Every 4 minutes along your walk you are to stop and take a 360 degree panoramic photograph of what is in front of you, as well as a photograph of your feet. Every person will also answer 3 simple questions at EVERY stop.

The location of the photographs should be documented on the base map with an X and the number of your stop. For example your starting point will be (X0) and your first stop after 4 minutes will be (X1). Your second stop after 8 minutes will be (X2) and so on.

When you reach the Rutgers Gardens Office Building, mark the End Time on the Data Sheet.

Continue on to your final destination with in Rutgers Gardens.

Walk back to Blake the same way you came without stopping but please keep track of how long the walk takes.

Photographer responsibilities

- Keep track of the time
- Every 4 minutes take a panorama photograph of what's in front of you.
- Every 4 minutes take a photograph of your feet
- Answer 3 the questions

Recorder responsibilities

- Keep track of route on the basemap
- Every 4 minutes document current location on the basemap
- Every 4 minutes record photo numbers and add topography comments on the data sheet
- Answer 3 the questions

Restrictions

- DO NOT CROSS ROUTE 1
- Do not jump over fences unless absolutely necessary
- You may walk through an open gate but you must mark it on your map.
- Do not stop the watch for any reason.

The Directions for each group are as follows:

Group A Directions

- Start at Blake Hall
- Make your way to College Farm Road
- Walk south down College Farm Road
- Make a right at the end and walk under Route 1 overpass
- Follow roads / paths to Ryders Lane
- Reach Rutgers Gardens Office Building
- End in the middle of the bamboo thicket inside Rutgers Gardens

Group B Directions

- Start Point: Cook Campus Center
- Avoid walking Down College Farm road
- Find the cow tunnel under Route 1
- Make your way to Ryders Lane
- Reach Rutgers Gardens Office Building
- End Point: The big chair inside Rutgers Gardens

Group C Directions

- Start at the foot bridge on the north side of the Loree Building
- Walk through campus towards Biel Road
- Take route you believe to be most efficient
- Reach Rutgers Gardens Office Building
- End at he small square pond in the center of the annual garden inside Rutgers Gardens

Group D Directions

- Start at Environmental and Natural Resources Science Building
- Head south down College Farm Road
- Find the cow tunnel under Route 1
- Make your way to Ryders Lane
- Reach Rutgers Gardens Office Building
- End at the Log Cabin inside Rutgers Gardens

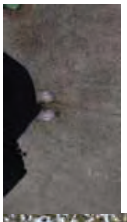
Experiential Exercise
Image Timeline

0:00

A

B

C



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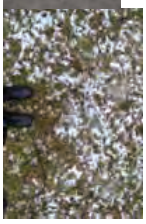
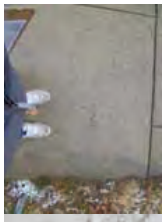


0:04

A



B

C

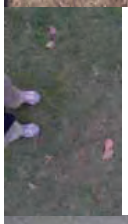
D

0:08

A

B

C



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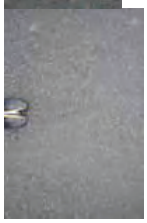


0:12

A

B

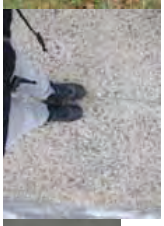
C

D

0:16

A

B



C

D

0:20

A

B

C

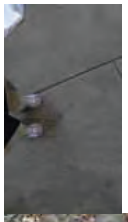
D

0:24

A

B

C



D

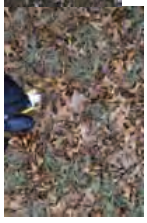
0:28

A

B

C

D



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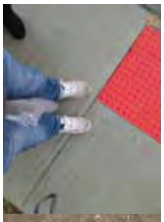
A



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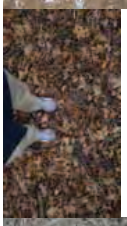
C



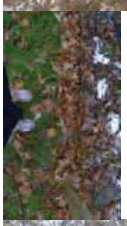
D

0:36

A

B

C



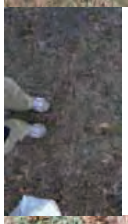
D

0:40

A

B

C



D

0:44

A

B

C

D

0:48

A

B

C

D

0:52

A

B

C

D

0:56

A

B

C

D

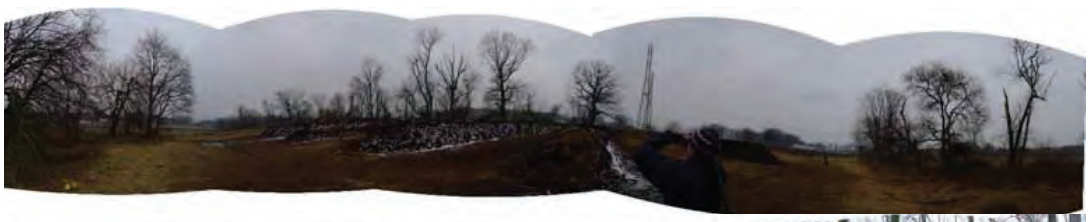
1:00

A

B

C

D



1:04

A

B

C

D

1:08

A

B

C

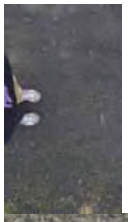
D

1:12

A

B

C



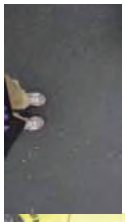
D

1:16

A

B

C



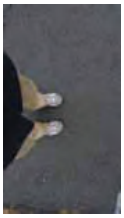
D

1:20

A

B

C



D

1:24

A

B

C

D

1:28

A

B

C  

D

1:32

A

B

C  

D

1:36

A

B

C

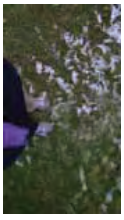
D

1:40

A

B

C



D

1:44

A

B

C 

D

Criteria Analysis

In order to further analyze the experience of the walk, criteria was developed to explore specifically what characteristics of safety, campusness, and visual quality lead to positive or negative feelings.

Campusness

- Signage – Is there signage related to Rutgers University visual in the images of the stop
- Proximity to Building – How close to a Rutgers Building is the photographer
- Other Students – Are there other students, not participating in the exercise, visible in the image

Visual Quality

- Openness of sight – How far can be seen in all directions
- Urbanness – How much infrastructure, such as roads, buildings, power lines, parking lots are visible in the image
- Bucolicness – How much of the photograph relates to the pleasant aspects of the countryside and country life
- Vegetation – How much vegetation is present in the photo within 100 feet of the photographer

	Criteria	Description	Ax0	Ax1	Ax2	Ax3	Ax4	Ax5	Ax6	Ax7	Ax8	Ax9	Ax10	Ax11	Ax12	Ax13	A
Safety	Pedestrian Scale	How well does the photograph relate to the pedestrian scale. 1 = no 3 = yes	0	3 12	3 15	3 9	3 6	2 4	1 1	1 1	1 1	1 2	1 1	1 4	1 5	2 8	1
	Proximity to Traffic	How close does the photographer appear to be to moving traffic. 1 = not close, 3 = close	5 0	1 4 4	3 5 15	1 3 3	3 2 6	1 2 2	2 1 1	1 3 1	3 2 1	2 3 2	6 3 1	3 2 4	8 1 5	5 1 4	4 3
	Ground Condition	Is there a sidewalk or designed path suitable for walking. 1 = no 3 = yes	0	3 12	3 15	3 9	3 6	3 6	1 1	3 3	3 3	3 6	3 3	3 12	2 10	2 8	1
Campusness	Signage	Is there signage relating to Rutgers visual in the panoramic photograph. 1 = no, 3 = yes	0	3 15	3 12	3 9	3 6	3 6	3 3	1 1	1 1	3 3	3 3	1 1	1 1	2 4	3
	Proximity to Building	How close to a Rutgers building is the photographer 0. 300ft+, 0-300ft	5 0	3 5 15	3 4 12	3 3 9	3 2 6	3 2 6	1 1 1	1 1 1	1 1 1	1 1 1	1 1 1	1 1 1	1 1 1	3 2 6	3
	Students	Is there a presence of other students (outside of exercise) in the photograph. 1 = no, 3 = yes	0	1 5	3 12	1 3	1 2	1 2	1 1	1 1	1 1	1 1	1 1	1 1	1 1	1 2	1
Visually Pleasing	Openness of sight	How open is the field of vision	0	2 4	3 9	3 12	2 6	1 5	2 6	2 6	1 3	2 4	3 6	3 15	3 15	3 15	2
	Urbaness	How much urban infrastructure is present in the photograph	4 0	3 6 2	3 9 3	3 12 4	3 9 3	2 10 5	2 6 3	3 9 3	3 9 3	3 6 2	3 6 2	3 6 5	1 15 5	2 10 5	3
	Bucolicness	How much of the photograph relate to the pleasant aspects of the countryside and country life	0	1 2	1 3	3 12	3 9	2 10	3 9	1 3	1 3	1 2	2 4	3 15	3 15	3 15	3
	Vegetation	How much vegetation is present with in 100 feet of the photographer. 1 = less than 10 plants, 3 = 20+	0	1 2	1 3	3 12	3 9	3 15	3 9	3 9	3 9	1 2	1 2	2 10	3 15	3 15	3

	Criteria	Description	Bx0	Bx1	Bx2	Bx3	Bx4	Bx5	Bx6	Bx7	Bx8
Safety	Pedestrian Scale	How well does the photograph relate to the pedestrian scale. 1 = no 3 = yes	3 15 15	1 2 4	1 1 2	1 1 3	3 15 15	2 2 10	0 0	1 2 5	1
	Proximity to Traffic	How close does the photographer appear to be to moving traffic. 1 = not close, 3 = close	1 5 5 5 5	3 2 4 6 12	3 1 2 3 6	1 1 3 1 3	1 5 5 5 5	1 1 5 1 5	1 1 0 0	1 2 5 2 5	1 2 5
	Ground Condition	Is there a sidewalk or designed path suitable for walking. 1 = no 3 = yes	3 15 15	1 2 4	1 1 2	1 1 3	3 15 15	1 1 5	0 0	1 2 5	1
Campusness	Signage	Is there signage relating to Rutgers visual in the panoramic photograph. 1 = no, 3 = yes	3 15 12	3 3 3	1 1 1	1 1 3	3 15 12	1 1 1	0 0	1 1 1	1
	Proximity to Building	How close to a Rutgers building is the photographer 0. 300ft+, 0-300ft	3 5 4 15 12	2 1 1 2 2	3 1 1 3 3	3 1 1 3 3	3 5 4 15 12	1 1 1 1 1	1 1 0 0	1 1 1 1 1	1 1 1
	Students	Is there a presence of other students (outside of exercise) in the photograph. 1 = no, 3 = yes	3 15 12	1 1 1	1 1 1	1 1 1	3 15 12	1 1 1	0 0	1 1 1	1
Visually Pleasing	Openness of sight	How open is the field of vision	1 5 4	2 4 4	1 1 2	1 1 3	2 8 6	3 6 9	0 0	3 6 6	3
	Urbaness	How much urban infrastructure is present in the photograph	3 15 12 5 4	1 2 2	3 3 6	1 1 3	3 12 9	1 2 3	0 0	3 6 6	1 3 3
	Bucolicness	How much of the photograph relate to the pleasant aspects of the countryside and country life	1 5 4	1 2 2	1 1 2	3 3 9	1 4 3	3 6 9	0 0	3 2 2 6 6	3
	Vegetation	How much vegetation is present with in 100 feet of the photographer. 1 = less than 10 plants, 3 = 20+	3 15 12	3 6 6	3 3 6	3 3 9	3 12 9	3 6 9	0 0	3 6 6	1

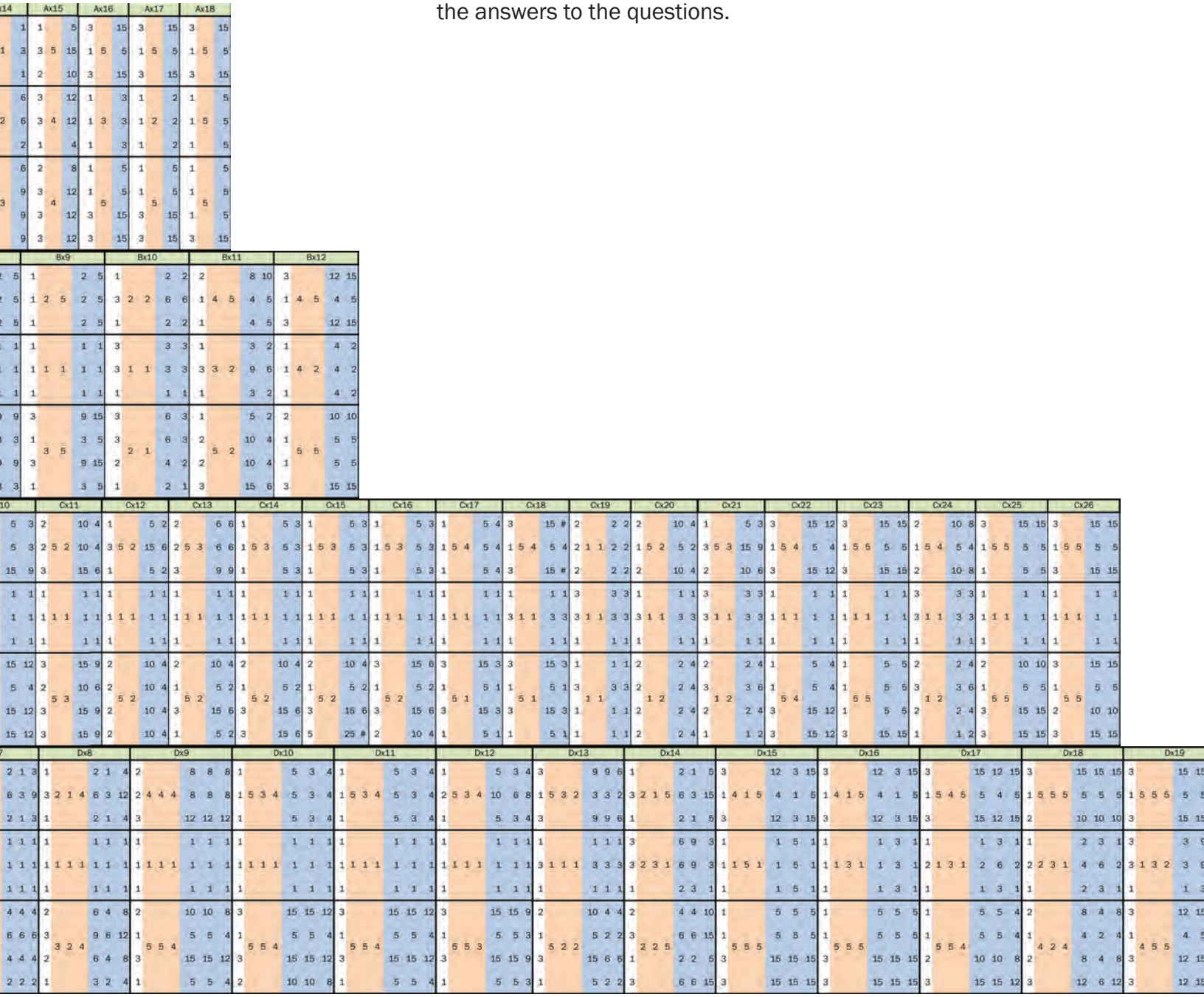
	Criteria	Description	Cx0	Cx1	Cx2	Cx3	Cx4	Cx5	Cx6	Cx7	Cx8	Cx9	Cx
Safety	Pedestrian Scale	How well does the photograph relate to the pedestrian scale. 1 = no 3 = yes	3 15 12	2 10 10	3 15 15	2 8 4	3 15 12	3 15 15	2 10 6	3 15 9	1 5 2	1 5 3	1
	Proximity to Traffic	How close does the photographer appear to be to moving traffic. 1 = not close, 3 = close	3 5 4 15 12	1 5 5 5 5	1 5 5 5 5	3 4 2 12 6	1 5 4 5 4	1 5 5 5 5	1 5 3 5 3	1 5 3 5 3	1 5 2 5 2	1 5 3 5 3	1 5 3
	Ground Condition	Is there a sidewalk or designed path suitable for walking. 1 = no 3 = yes	3 15 12	1 5 5	1 5 5	3 12 6	3 15 12	3 15 15	3 15 9	3 15 9	1 5 2	1 5 3	3
Campusness	Signage	Is there signage relating to Rutgers visual in the panoramic photograph. 1 = no, 3 = yes	1 5 5	3 15 12	3 15 15	3 9 9	3 9 6	3 9 9	3 9 9	3 3 12	3 3 3	1 1 1	1
	Proximity to Building	How close to a Rutgers building is the photographer 0. 300ft+, 0-300ft	3 5 5 15 15	3 5 4 15 12	3 5 5 15 15	3 3 3 9 9	3 3 2 9 6	3 3 3 9 9	3 3 3 9 9	3 1 4 3 12	3 1 1 3 3	1 1 1 1 1	1 1 1
	Students	Is there a presence of other students (outside of exercise) in the photograph. 1 = no, 3 = yes	3 15 15	3 15 12	3 15 15	1 3 3	3 9 6	3 9 9	3 9 9	1 1 4	1 1 1	1 1 1	
Visually Pleasing	Openness of sight	How open is the field of vision	2 10 4	3 12 9	3 15 12	3 6 3	2 2 6	1 1 3	3 1 1 2	2 2 6	1 5 2	3 15 9	3
	Urbaness	How much urban infrastructure is present in the photograph	2 10 4 5 2	3 12 9 4 3	2 10 8 5 4	3 6 3 2 1	2 6 1 3	3 9 3 1 3	3 6 1 1 2	1 3 1 3	5 2 1 5 3	5 3 1 15 9	1 5 4
	Bucolicness	How much of the photograph relate to the pleasant aspects of the countryside and country life	1 5 2	3 12 9	2 10 8	2 4 2	2 2 6	1 1 3	1 2 2	2 6 3	15 6 3	15 9 3	
	Vegetation	How much vegetation is present with in 100 feet of the photographer. 1 = less than 10 plants, 3 = 20+	3 15 6	3 12 9	3 15 12	1 2 1	3 3 9	2 2 6	3 3 6	2 2 6	15 6 3	15 9 3	

	Criteria	Description	Dx0	Dx1	Dx2	Dx3	Dx4	Dx5	Dx6	Dx
Safety	Pedestrian Scale	How well does the photograph relate to the pedestrian scale. 1 = no 3 = yes	2 10 10 10	3 15 6 12	2 8 4 8	2 10 8 8	1 4 2 3	1 4 2 3	1 2 1 3	1
	Proximity to Traffic	How close does the photographer appear to be to moving traffic. 1 = not close, 3 = close	1 5 5 5 5 5 5	1 5 2 4 5 2 4	1 4 2 4 4 2 4	1 5 4 4 5 4 4	3 4 2 3 12 6 9	3 4 2 3 12 6 9	3 2 1 3 6 3 9	3 2 1 3
	Ground Condition	Is there a sidewalk or designed path suitable for walking. 1 = no 3 = yes	2 10 10 10	3 15 6 12	1 4 2 4	1 5 4 4	1 4 2 3	1 4 2 3	1 2 1 3	1
Campusness	Signage	Is there signage relating to Rutgers visual in the panoramic photograph. 1 = no, 3 = yes	3 15 15 12	1 3 1 2	1 3 1 2	3 9 3 3	3 6 3 3	1 2 1 1	1 1 1 1	1
	Proximity to Building	How close to a Rutgers building is the photographer 0. 300ft+, 0-300ft	3 5 5 4 15 15 12	3 3 1 2 9 3 6	3 3 1 2 9 3 6	3 3 1 1 9 3 3	2 2 1 1 4 2 2	1 2 1 1 2 1 1	1 1 1 1 1 1 1	1 1 1 1
	Students	Is there a presence of other students (outside of exercise) in the photograph. 1 = no, 3 = yes	1 5 5 4	1 3 1 2	1 3 1 2	1 3 1 1	3 6 3 3	1 2 1 1	1 1 1 1	1
Visually Pleasing	Openness of sight	How open is the field of vision	2 10 6 6	3 15 12 12	1 3 3 3	3 15 15 15	1 3 5 3	3 9 12 6	3 6 12 6	2
	Urbaness	How much urban infrastructure is present in the photograph	3 15 9 9 5 3 3	1 5 4 4 5 4 4	3 9 9 9 3 3 3	1 5 5 5 5 5 5	1 3 5 3 3 5 3	3 9 12 6 3 4 2	6 12 6 3 2 2 2	
	Bucolicness	How much of the photograph relate to the pleasant aspects of the countryside and country life	1 5 3 3	3 15 12 12	1 3 3 3	3 15 15 15	2 6 10 6	2 6 8 4	4 8 4 2	
	Vegetation	How much vegetation is present with in 100 feet of the photographer. 1 = less than 10 plants, 3 = 20+	1 5 3 3	1 5 4 4	1 3 3 3	2 10 10 10	2 6 10 6	2 6 8 4	1 2 4 2	1

Safety

- Pedestrian scale – How well the space and objects of each stop related to the size of a human figure and the speed of walking
- Proximity to traffic – How close the photographer appeared to be to moving traffic in the image
- Ground condition – Whether or not the ground condition was a designed path suitable for walking

Using this criteria, the panoramic and ground images relating to all of the stops were analyzed and assessed a ranking of 1 to 3 depending on how well they fit the criteria. Comparing the criteria analyses with the rankings of safety, campusness, visual character provided by the students would give a better understanding of specifically what factors had the most influence in the answers to the questions.



Criteria Analysis Continued

What has been extracted from the previous analysis is as follows:

Safety was mostly related to the relationship of the student to moving traffic.

- Areas where the surrounding landscape related well to the pedestrian scale also seemed to be more safe than those that did not with only a few exceptions.
- Lastly walking on a designed path for the most part correlated to the level of safety except when the designed path was extremely close to high speed traffic, in which case students still felt unsafe even if standing on a sidewalk.
- Much of the routes were spent walking on areas that were not designed paths.

Campusness was interesting because the three criteria were not very straight forward. In terms of Rutgers property a vast majority of all of the walks were spent actually on Rutgers campus.

- A vast majority of all of the buildings seen in pictures are Rutgers owned buildings. What the buildings looked like was the biggest factor. Typical brick academic buildings provided a much greater sense of campusness than did buildings suitable for farming. The presence of any type of building though did seem to provide a higher sense of campussness
- Overall very little students outside of the exercise were seen in the images anywhere. Interesting because the students participating in the exercise very quickly reached areas where they were for the most part completely alone. This could also be a factor of the weather on the particular day when this exercise was performed.
- Signage didn't seem to have that much of an impact on campussness. Typically signage was found in the same images that campus buildings were seen. I believed the surrounding landscape played more of a role in determining campusness than signs.
- Rutgers gardens received very high campusness rankings even though it didn't really fit in with the other high campussness rankings. I believe this to be due to the fact that it is called "Rutgers Gardens," and all of these students have been there for a class prior to this exercise.

Visual quality was interesting because it was very polarizing in terms of areas along the route but also between individuals who were walking together.

- The areas that the majority of the students found to be visually pleasing were the start and end of the walk

particularly when they felt like they were on campus or at Rutgers Gardens. Many students also found the farm to be a nice change from campus.

- Urbanness typically had a negative effect except when on campus. In general though, the more infrastructure (parking lots, telephone poles, power lines, roads) that existed in the picture the less pleasing it was.
- Bucolicness seemed to correlate pretty well with visual quality. The more the images related to pleasant qualities of the country side, the more visually pleasing students found it. Interestingly when images showed both high aspects of urbanness and bucolicness students seemed to disagree with each other. Some of the students seemed to accept the urban as part of the landscape and didn't find it to be that detrimental while other students were immediately turned off by the slightest bit of urban.
- Vegetation didn't seem to have much of an effect relating to image quality. Generally the more vegetation there was the more pleasant the area but again this was not always the case as vegetation around the edges of the farm seemed to be in poor condition and I believe took away from some of the nicer qualities.

Survey Questions and Answers

Students were asked to answer 6 questions upon completion of the walk. They were:

1. What was your favorite stop along the walk and what did you enjoy the most about it?
2. What was your least favorite stop along the walk and what did you dislike the most about it?
3. If you were asked to walk to Rutgers Gardens again but could take any route you choose, would you take the same route you were given?
4. Was there a single feature or landmark that you found to be exceptionally enjoyable along the walk? If so what was it?
5. What was the most frustrating part of walking to Rutgers Gardens?
6. How was the experience of walking from Rutgers Gardens back to campus different?

The results of the survey provided some beneficial information for the next steps moving forward. The general answers are as follows

1. The creek at Rutgers Gardens, in front of the bamboo forest and the horse farm were the only answers given for favorite areas. Some students noted that the farm was so nice because they had no idea it was there and it was a nice change from typical campus

2. Least favorite spot had some varied answers.

- The majority of students said when they were forced to walk along the side of Ryders Lane and Route 1 mainly because there was no sidewalk and the fast moving traffic. The cow tunnel also had multiple responses as students noted it was wet and claustrophobic. One student noted that the campus dorms were his/her least favorite spot.

3. This question received very different answers.

- Some students flat out said no.
- Others said they would look for a more direct route
- Others said yes if they didn't have to navigate the confusing fences of the farm.
- Others said yes just to walk through the farm again.
- Others said yes if they could avoid the part of walking along the sides of the roads.

4. The single landmark question received very similar responses to the first question.

- The two main “landmarks” were the horses and the bamboo forest.
- One student noted that the bamboo forest was great because you would miss it if arriving by car or on bike.
- Again students pointed out the nostalgia of the barns and farms.

5. The most frustrating part received different responses as well.

- Unfortunately people wrote weather as an answers
- Being attacked by cows was another response.
- The highway cutting the connection between campus and the gardens.
- Indirectness of the route taken
- Walking through forests without a path and muddy fields
- Navigating the fences throughout the research and farm area
- Having to jump fences
- Amount of paved areas (roads and parking lots)
- Crossing Ryders Lane

6. Some of the answers for this question are as follows:

- Felt like I was walking to campus instead of away from it
- Easier because we knew the route came up several times.
- More aware of surroundings and less worried about the exercise. Surprised at how much that part of the campus looked nothing like Rutgers and had “no college feel”
- Was faster but would have chosen a different route if allowed.
- Paid less attention to details, and would have liked to stay longer in the fields of the farm
- No adventure because knew the route. Much quicker trying to get back as soon as possible