

NÔTRE POTAGER: A TYPOLOGY OF EDIBLE LANDSCAPES IN MANHATTAN,
KANSAS

by

JEREMY MERRILL

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A REPORT

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KANSAS STATE UNIVERSITY
Manhattan, Kansas

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Approved by:

Major Professor
Stephanie Rolley

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Abstract

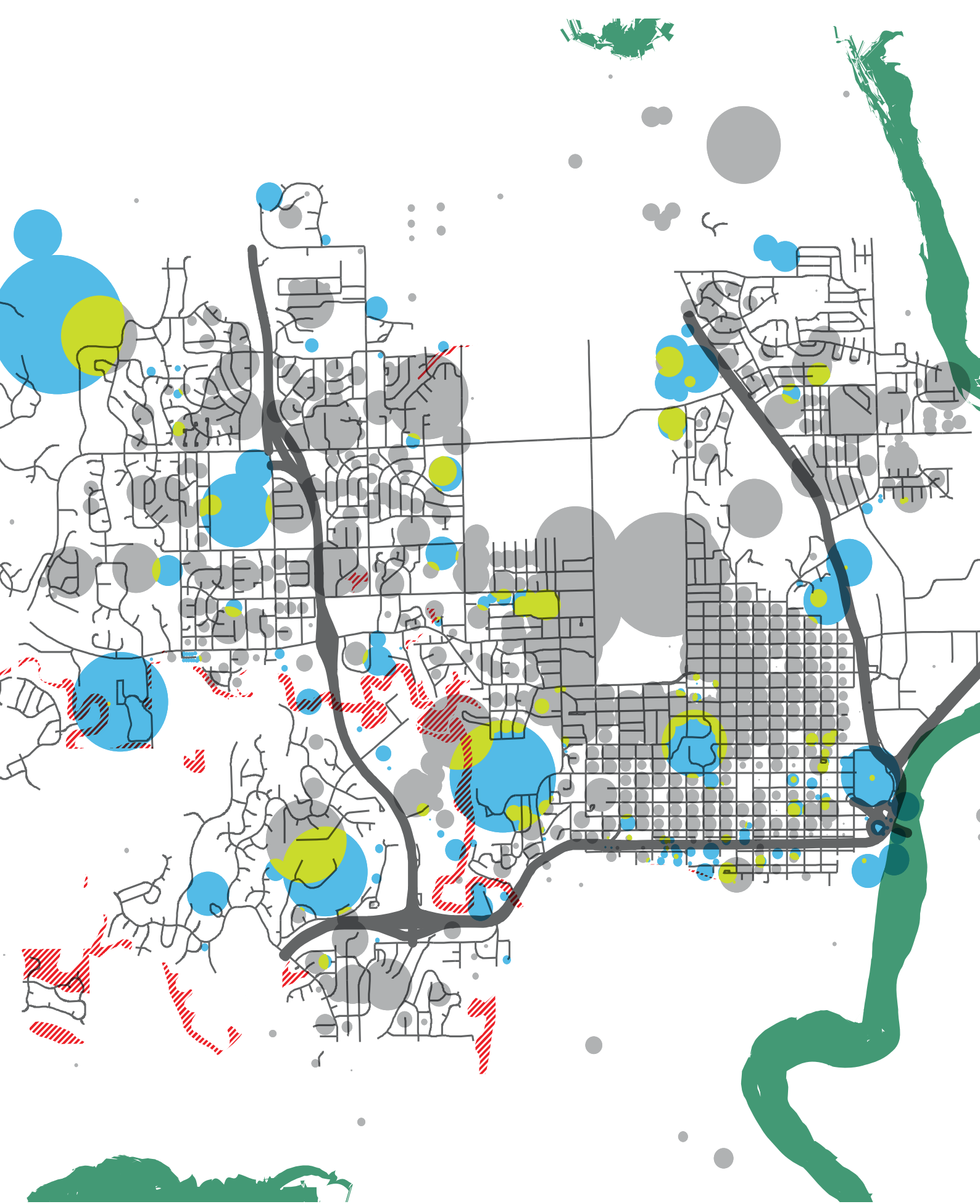
People living in urban and suburban areas are disconnected from agriculture. The food that we consume is grown many miles from our homes and we have little knowledge of how that food travels from seed to plate. Incorporating edible landscapes into public land in cities brings people in direct contact with the food they eat. Edible landscapes are neighborhood scale sites with the specific purpose of producing food.

Edible landscapes became popular in the late 1970s. Typically developed with a focus on food production and little attention to aesthetics, the general public often thinks of these landscapes as messy and farm-like. Through quality design edible landscapes can be productive and aesthetically pleasing. The combination of these ideals create exciting and unique solutions that differ from the edible landscapes of the past. Attention to site and community design principles as well as growing conditions results in a new type of public landscape that can enhance a community's appearance while feeding its residents.

A typology of edible landscapes was applied to Manhattan, Kansas to test the potential for a community-wide system of edible landscapes. The typology is based on: garden purpose, physical characteristics, visual characteristics, and potential user groups. The inventory of public land is based upon the Diggable City project in Portland, Oregon. Potential sites were evaluated on their physical characteristics, visual profile, and design potential to determine what garden type would be most appropriate. Further analysis of each site's design potential resulted in the selection of three sites for prototypical design development. The prototypical designs provide examples of how design principles and growing conditions can work together to create new edible landscapes and enrich the community.



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Nôtre Potager:

A typology of edible landscapes in
Manhattan, Kansas

Jeremy Merrill

Master's Project

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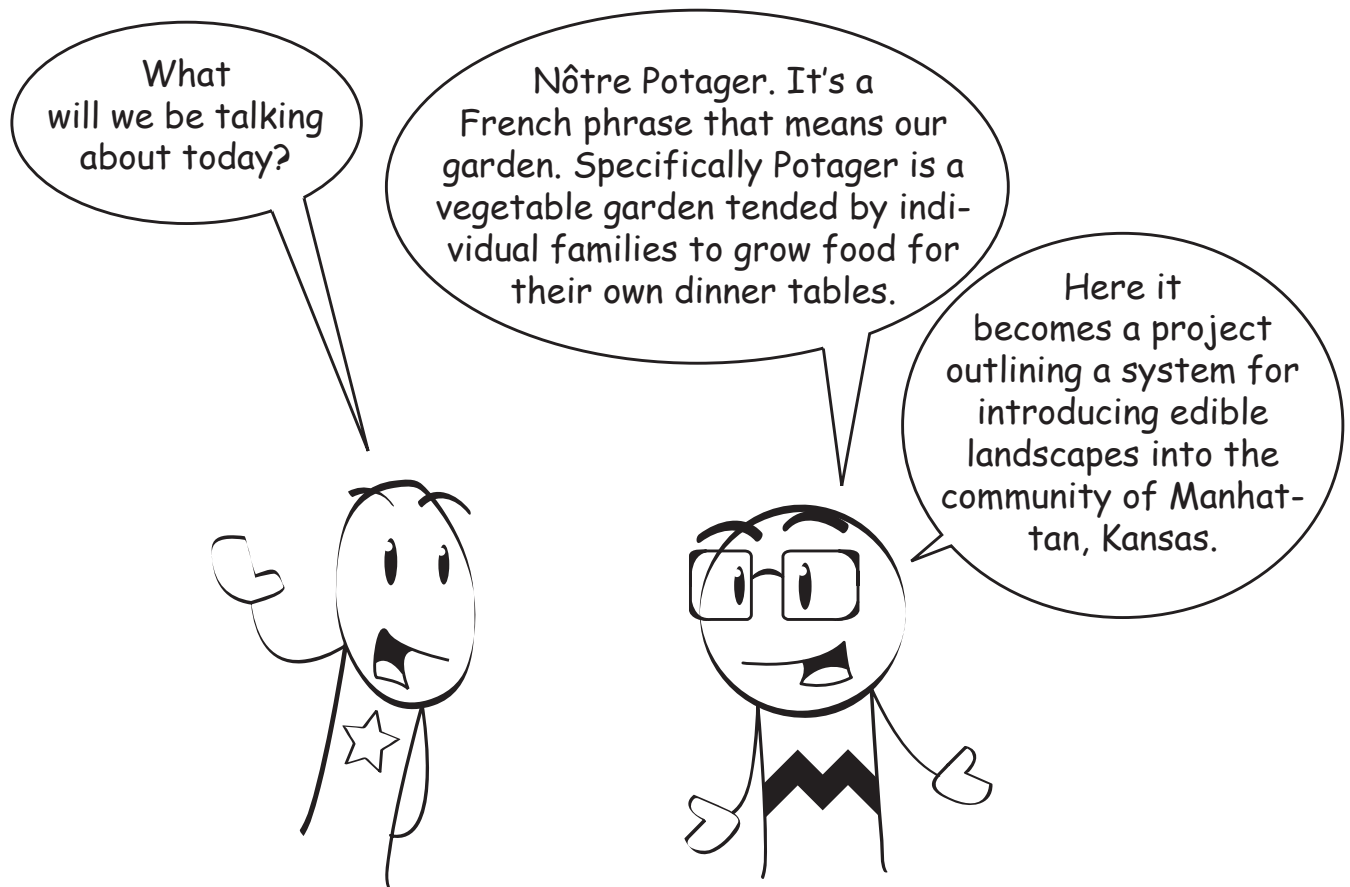
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Chapter One

Introduction to Project



Dilemma + Thesis

As urban and suburban dwellers we are disconnected from where our food is grown. In her presentation “The Future of Food in Kansas,” Rhonda Janke, Ph.D., addresses our current lack of connection with our food. She states, “The average food item travels 1,500 miles from farmer to consumer.” She also points out that the Kansas River Valley Region only produces 8% of the region’s current vegetable consumption [about 2 servings a day]” (OzNet). Kansas is considered by many to be an agricultural state, and yet the Kansas River Valley imports 92% of the vegetables the region eats.

Kansas River Valley currently has 2,114 vegetable acres, out of 2.3 million acres of total farmland in the region. The region needs 25,297 acres of dedicated farmland to be self sufficient. In the year 1910 there were 33,104 vegetable acres. There were more vegetable acres one hundred years ago than today and they had less people then living in the region to feed. There is agriculture land outside of our cities in this

region which could produce more of our needed vegetables, but we would still not be close enough for us to interact with food on a daily basis. One viable solution is locating land within our urban and suburban environment never before used –but adequately suited—for producing food.

As we bring food production into cities and neighborhoods through edible landscapes we can become more educated about our food; what it looks like, what it smells like, how it reacts to changing weather, how it ripens, what parts we eat, etc... “The intrinsic beauty of landscapes resides in its changeover time.” (Meyer, 2008) These edible landscapes are neighborhood scale sites with the specific purpose of producing food. Nôtre Potager has indentified 1,149.73 acres of public land in Manhattan that could potentially be used for edible landscapes. This is 4.5% of the land needed for the entire region.

We typically think that landscapes that provide food have to look

like a farm-messy with acres filled with rowed monoculture. Authors of many books on edible landscapes have emphasized the idea that edible landscapes can break the traditional mold. The *Urban Homestead* written by Kelly Coyne and Erik Knutzen urged readers to “break out of the mental box that makes you imagine a vegetable garden as a fenced off parcel of land with a scarecrow in it, you’ll start to see the possibilities.” In her book *Complete Book of Edible Landscaping* Rosalind Creasy blatantly confronts the standard of ugly edible landscapes. “I cannot overemphasize the potential for beauty that landscaping with edibles holds, since many people still have difficulty accepting this notion.”

Many people will dismiss the importance of beauty in an edible landscape, claiming as long as the site produces enough food then who cares what it looks like? A similar problem to faces sustainable designs, that focus more on the ecological performance of a site at the expense of beauty. Elizabeth Meyer, at the University of Virginia School of Architecture, addresses the conflict between performance and beauty in her essay, “Sustaining Beauty: The performance of appearance, A manifesto in three parts,” she argues that ecologically sustainable sites can employ Hyper Nature- an exaggerated version of constructed nature as a means for creating appreciation from the public. Meyer explains how hyper nature turns otherwise messy landscapes into publicly appreciated sites.

Attenuation of forms, densification of elements, juxtaposition of materials, intentional discontinuities, formal incongruities-- tactics associated with montage or collage- are deployed for several reasons; to make a courtyard, a park, a campus more capable of appearing, of being noticed, and of performing more robustly, more resiliently” (Meyer, 2008).

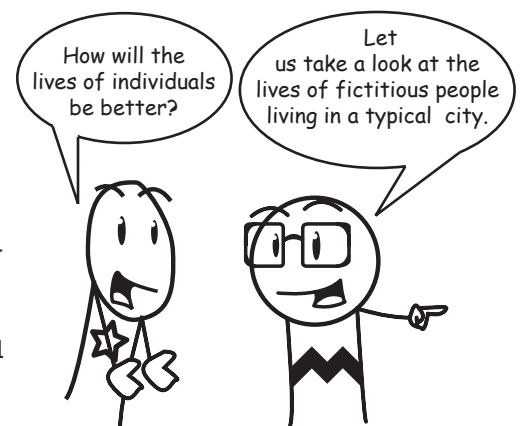
Sustainable landscape design should be form-full, evident and

palpable, so that it draws the attention of an urban audience distracted by daily concerns of work and family or the overstimulation of a the digital world. This requires a keen understanding of the medium of landscape, and the deployment of design tactics such as exaggeration amplification, distillation, condensation, juxtaposition, or transposition/displacement. (Meyer, 2008)

This hyper nature can easily be used in creating edible landscapes that break the traditional mold. Lorn Clement, at Kansas State University has argued that we can no longer simply say that we will create an aesthetic, but that we need to strive for beauty. This beauty can be achieved in very real tasks. In regard to Nôtre Potager he stated that the project can provide beauty and enrich the community with visual and spatial patterns and details, offering experiences in coherent but varied environments, with color texture, rhythm, repetition, contrast, hierarchy, etc...” (Clement, 2008). We need to adopt design principles that will help us create a new breed of edible landscapes that perform as beautiful public spaces, as well as productive gardens.

Through quality design new edible landscapes will be created. The combination of productivity and beauty creates exciting and unique solutions that differ from the edible landscapes of the past. Attention to site and community design principles as well as growing conditions results in a new type of public landscape that can enhance a community’s appearance while feeding its residents.

Our lives will be better because of the edible landscapes located in our communities. Many have argued that growing food is one of the ways that the suburbs can contribute to society. In the book *Resettling America*, Gary Coates suggests” Perhaps the most likely and valuable contribution the suburbs could make to a renewable-energy-based society would be through urban agriculture.”



Narratives



Tom and Mae

Tom and Mae are an elderly couple in their late 80s. They both grew up on farms and they have always kept a small garden. Mae is an excellent baker and Tom is an excellent gardener. As time has passed, the couple is not as mobile as they once were. They still keep a few pots full of flowers and tomatoes on their front porch but the garden plot behind their house no longer grows the bounty it used to boast. Now days they enjoy walking to a nearby park, sitting in the shade, and feeding the pigeons.



Jeanette

Jeanette is the mother of two boys in her mid-twenties. She enjoys baking, movies and playing the violin. Jeanette wants to provide quality food for her family and tries her best to provide her boys with a balanced diet. The easiest time for her to go grocery shopping is when her older boy is at preschool. After she drops him off she hurries to the store, gets everything on her list and then runs any other errands she needs to before preschool is over. She considers herself lucky that her boys love apples, broccoli, and peas.



Ryan

Ryan is a teenager who lives near a park where he and his friends meet to practice their martial arts. Usually after school his friends meet at his house, park their cars and walk to the park with their foam weapons. When they are done they will sit around Ryan's backyard eating potato chips and drinking sports drinks. In the evenings he will go to the park to hang out, play croquet with his girlfriend, Anne, or listen to his friends play the guitar.



Kara

Kara is a sixth grader who attends a public elementary school. She likes puppies, soccer, and music. She spends most of her day in class, then soccer practice, and finally her parents pick her up. During the car ride home she and her parents talk about her day.



Figure 1.1 Narratives Cast

Tom and Mae are an elderly couple in their late 80s. They both grew up on farms and they have always kept a small garden. Mae is an excellent baker and Tom is an excellent gardener. As time has passed, the couple is not as mobile as they once were. The garden plot behind their house no longer grows the bounty it used to boast, however they are able to have a raised garden bed at the nearby community garden where they grow flowers and vegetables. They enjoy being able to interact with other people at the garden. Tom is trying to teach a new gardener how to stake her peas and Mae enjoys exchanging zucchini for the roses her neighbor grows. They enjoy sitting in the shade after working their planter box, and feeding the chickens in the chicken run near the shelter.

Jeanette is the mother of two boys in her mid-twenties. She enjoys baking, movies and playing the violin. Jeanette wants to provide quality food for her family and tries her best to provide her boys with a balanced diet. The easiest time for her to go grocery shopping is when her older boy is at preschool. After she drops him off she hurries to the store, gets everything on her list and then runs any other errands she needs to before preschool is over. When she stops at the Post Office, she picks the herbs she needs for dinner that night from the herb garden out front. When she takes the boys to the Library for story time, she lets her older boy pick apples from the small orchard near the parking lot. In the fall she always takes her boys to the community orchard to harvest peaches to can. She considers herself lucky that her boys love apples, broccoli, and peas.

Ryan is a teenager who lives near a park where he and his friends meet to practice their martial arts. Usually after school his friends meet at his house, park

their cars and walk to the park with their foam weapons. When they are done they will sit around the park eating raspberries from the bushes, and drinking sports drinks. In the evenings he will go to the park to hang out, play croquet with his girlfriend, Anne, smell the herbs, or listen to his friends play the guitar.

Kara is a sixth grader who attends a public elementary school. She likes puppies, soccer, and music. She spends some part of every school day in the schoolyard garden. Here she and the other sixth graders are in charge of harvesting. After school she stays for soccer practice. She likes to chew on mint leaves during drills. Finally her parents pick her up. During the car ride home she tells her parents all about onions and mitosis. She announces that after today she is willing to eat her dad's French Onion soup.

Even though our cities are made up of individuals we must consider the city itself as a single entity. The sum of the individual parts.

Bird's Eye View



Figure 1.1 Bird's Eye Perspective

If we could shift our focus to a bird's eye perspective of that first city we would see scores of people walking down the streets lined with Japanese Zelkova trees and Honey locusts, lawns being tended with lawn-mowers and weed whips, and with the same assortment of ornamental trees sitting in mulched beds of perennials and ornamental vines. We would see cars winding the landscape, passing the same suburban cadence again and again-- big box, fast food, strip mall, big box, fast food, strip mall, car dealership, convenience store, big box. We would see children playing in any open space they could find. We hope that they are playing in the large expensive playgrounds the city has provided, or in the school yards, but always on a nice soft sea of grass. In those same parks we would see landscape crews irrigating, fertilizing, and tending the plants. In turn those trees, shrubs, vines, and grasses provide a backdrop for the drama of life that takes place in a park. We would see hungry people driving up to fast food windows, or walking into a building and leaving again with a bag a full of food. Taking that bag home and preparing the contents to eat. See Figure 1.3.

What if the trees were more than just shade providers, what if they were nature's vending machines? We would see people walking past trees that changed more dramatically with the passing months; flowery balls turning into leafy masses, small green globes ripening into brightly colored fruit. We would see cars

winding the landscape, passing the same suburban cadence again and again but punctuated with the varying trees. We would see children playing among plants that can feed them. Rolling on the grass, hiding behind the berry bushes, and watching the strange vines on the ground produce flowers that some how turn in to fleshy forms. The landscape crews would spend their time irrigating, fertilizing, and cultivating crops. Those same crops would provide a backdrop for the drama of life that takes place in a park. We would see hungry people driving up to fast food windows, walking into a building, or picking food from their surroundings and walking away with a bag full of food. Taking that bag home and preparing the contents to eat. Not a whole lot has changed by using edible plants in our everyday landscapes, but what has changed is significant. We have the opportunity to create a city dotted with food-producing spaces. See Figure 1.4.





Figure 1.3 The Typical Suburban Drama

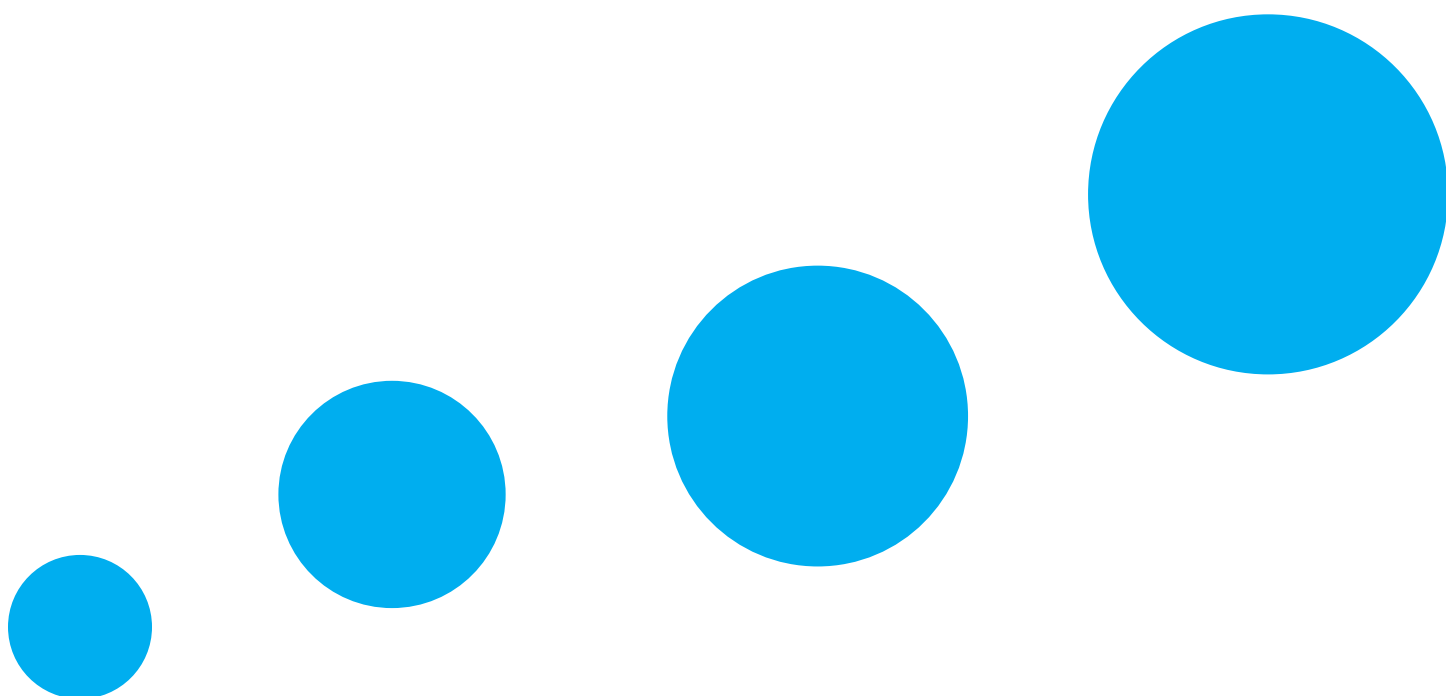
The typical suburban scene consists of objects and forms familiar to all of us. Paved streets and parking lots to service our cars, and plenty of stores to service our needs. We live and work in buildings of every shape and size and try our best to grow grass for our front lawns and trees to shade our walks.



Figure 1.4 An Edible Suburban Drama

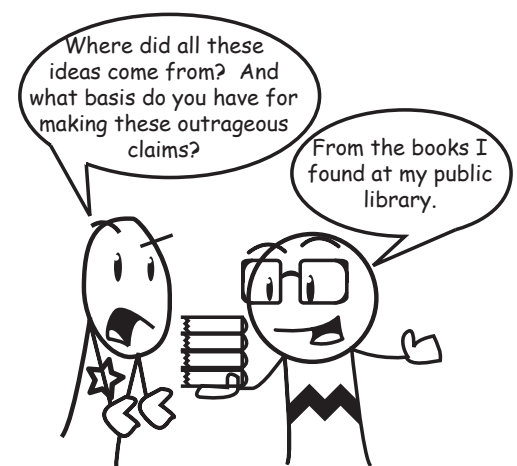
Edible landscapes would only augment our lives with shade trees that provide fruit, and front lawns that soak up our water and in return give us vegetables. We would still live and work in buildings of all shapes and sizes, our cars would still drive on streets but the spaces in between would yield food.

Design Philosophy



The design philosophy for the edible landscapes in Nôtre Potager consists of two parts—the designs must serve to reconnect people to the food they eat, and they must enhance the community's appearance. In order for the edible landscapes to be effective in reconnecting people with the food they eat they must be designed in a way that people are capable of and motivated to interact with them. The landscapes must be physically located near population centers and visually accessible along movement corridors. Then the designs must present edible landscapes in an innovative way challenging the way they are currently viewed by the urban and suburban population to create public interest.

As highly visible landscapes, they must be designed to enhance the community's appearance. This involves presenting edible landscapes in new ways. The sites must be designed as functional public spaces not appearing or feeling farm-like. Design must focus on crafting designs that can be understood by the everyday user by using planting design as a way to compact the grandiose scope of nature into a visually accessible scale. Geometry must be used as a legible organizing framework.



Literature Map

A variety of texts served as sources of inspiration and information for this project. In order to quickly organize, explain, and visualize the nature of information they were organized into a literature map see Figure 1.3. The individual books and articles fall into broad categories that often overlap other categories. These overlapping areas are what binds the different categories together and allows smooth transition from one major topic into another. It is in these overlapping areas that one finds the hybridization of different forms, functions, and landscape types to create new landscapes and processes that are imperceptible to the public today.

The first section, Aesthetics: Why, deals with the question of the aesthetic and its role in developing edible landscapes. The aesthetic can not be denied. Elizabeth Meyer in her article “Sustaining Beauty” states:

Sustainable landscape design must do more than function or perform ecologically: it must perform socially and culturally. (Meyer, 2008)

It could also be easily said that, [Edible] landscape design must do more than function or perform [productively], it must perform socially and culturally.

The cultural function can be achieved by creating an aesthetic experience that enables people to take ownership in an edible landscape. Landscapes that produce food are for the more part kept out of the city limits. By creating aesthetic edible design, urban and suburban communities will more readily accept them. Joan Nassauer wrote in her essay, “Messy Ecosystems, Orderly Frames.” “In the everyday landscape, rather than simply designing to enhance the ecological quality or even to express ecological function as form, we must design to frame ecological function within a recognizable system of form” (Nassauer, 1995). Her intent was to frame ecologically healthy but otherwise messy

landscapes with elements that were recognizable to the everyday individual. The same principles apply to edible landscapes. Although a passerby might not have the foggiest idea about how peas grow and even what peas taste like, that individual can still appreciate “cues of care.” Cues of care are explained by Nassauer: “Cues that indicate human intentions are cultural symbols that can be used to frame more novel ecosystems in inhabitable landscapes.” (Nassauer, 1995) This appreciation can eventually lead to acceptance and ownership. Aesthetics are therefore critical to the design success of edible landscapes.

The second section, Aesthetics: How, deals with aesthetics in a more practical way. These books focus on the principles of planting design and serve as a reminder to any designer of the fundamental design principles inherent with using plants of any type. The use of fundamental planting design will make the landscapes more legible to users and will provide an additional layer of “cues of care.”

The third section, Art and Food, looks at who is working with edible landscapes today. We are seeing a resurgence of interest in the food that we eat for a variety of reasons. The literature cited in this section is a representation of the multiple disciplines and people that are involved with creating and presenting edible landscapes in a new light.

The fourth section, Edible Landscape: How, deals with the design, installation, and maintenance of edible landscapes.

The fifth section, Edible Landscape: Where, is the base information required for this project. It is a collection of data about Manhattan, Kansas, and serves as the starting point for the identification and suitability analysis of potential edible landscape sites within the city limits.

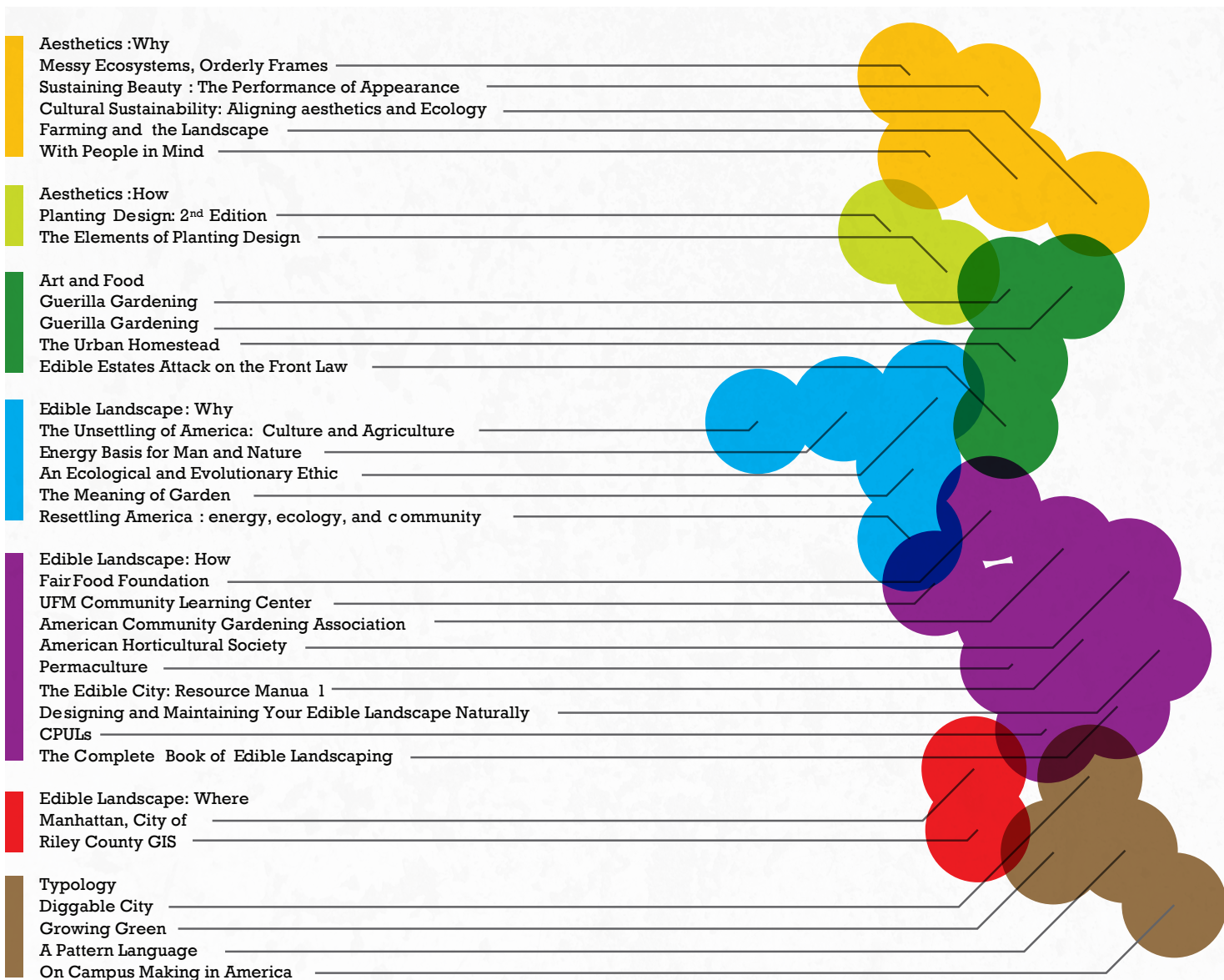


Figure 1.5 Literature Map

The sixth section, Typology, focuses on texts that address the creation of typologies and their uses. It also contains two similar projects that inventory public-held land in Portland, Oregon, and Seattle, Washington. These two inventories also rate the suitability for urban agricultural practices. The inventory methodology for this project was based on these inventories.

The Diggable City, a project completed by students in the Master of Urban and Regional Planning program at Portland State University, deserves special attention. The Diggable city is a

city-wide inventory of publicly held lands and their suitability for urban agriculture. The Diggable City Project identifies three different types of Urban Agriculture: Small Scale Urban Agriculture, Large Scale Urban Agriculture, and Community Gardens.

The literature map shows where the ideas from various literary works overlap. It is these overlapping areas of knowledge where we find the hybridization of new forms and functions. It is this hybridization that created Nôtre Potager.



Process

Inventory

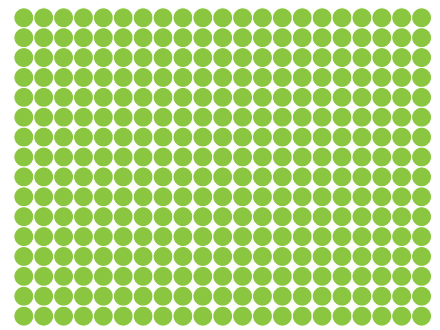
The first step was acquiring sites. Most of the site-selection process followed what other inventories have done. Nôtre Potager began by compiling data on Manhattan, Kansas,, from the Riley County GIS Department, see Figure 1.6. This data was used to identify potential sites in Manhattan, see Figure 1.6. These sites were then analyzed and ranked according to each site's physical attributes, proximity to population centers, and visual profile. Sites that ranked high in each of these categories were set aside for further development see Figure 1.6.

Typology

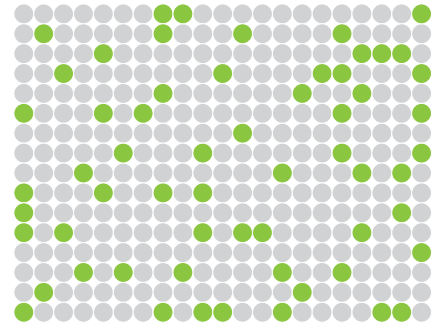
Nôtre Potager also set out to determine what forms these edible landscapes might take. A typology of different edible landscape types was completed. Nôtre Potager identified sixteen different edible landscape types. The typology categorized the types by: primary purpose, physical characteristics, visual profile, and intended user. Each type was then illustrated to better aid in the design of edible landscapes following that type. The typology was then ready to be applied to the potential sites identified in the Inventory, see Figure 1.6.

Design

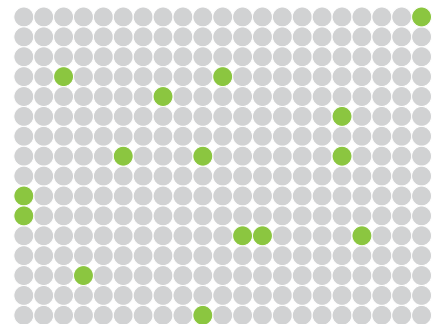
Each of the retained sites from Part A was assessed for their compatibility with the sixteen edible types of the Typology. For each type one site was selected. These sites were high-profile sites that could be used as showcase pieces for the entire city. These sites then entered the conceptual design phase. Sixteen conceptual designs were completed, see Figure 1.7 . From these conceptual designs three sites with the most promise were selected for the design development phase, see Figure 1.6. The design development phase resulted in three prototypical designs, see Figure 1.8. These designs illustrate the potential that edible landscapes have in the community.



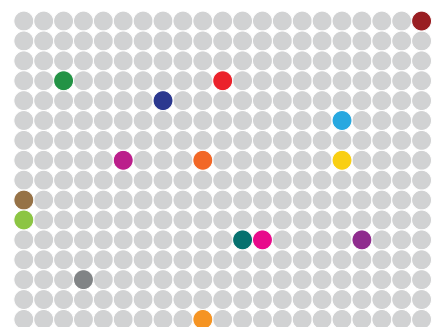
City Data



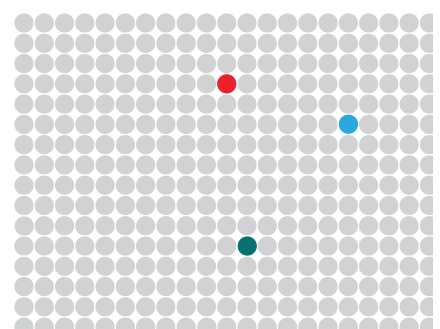
Potential Sites



Sites Selected for Conceptual Design



Sites Separated by Type



Sites Selected for Design Development

Figure 1.6 Site Selection Process

Sixteen different conceptual plans were created for potential edible landscape sites in Manhattan. After reviewing the conceptual plans for design potential, three were selected for further design development.

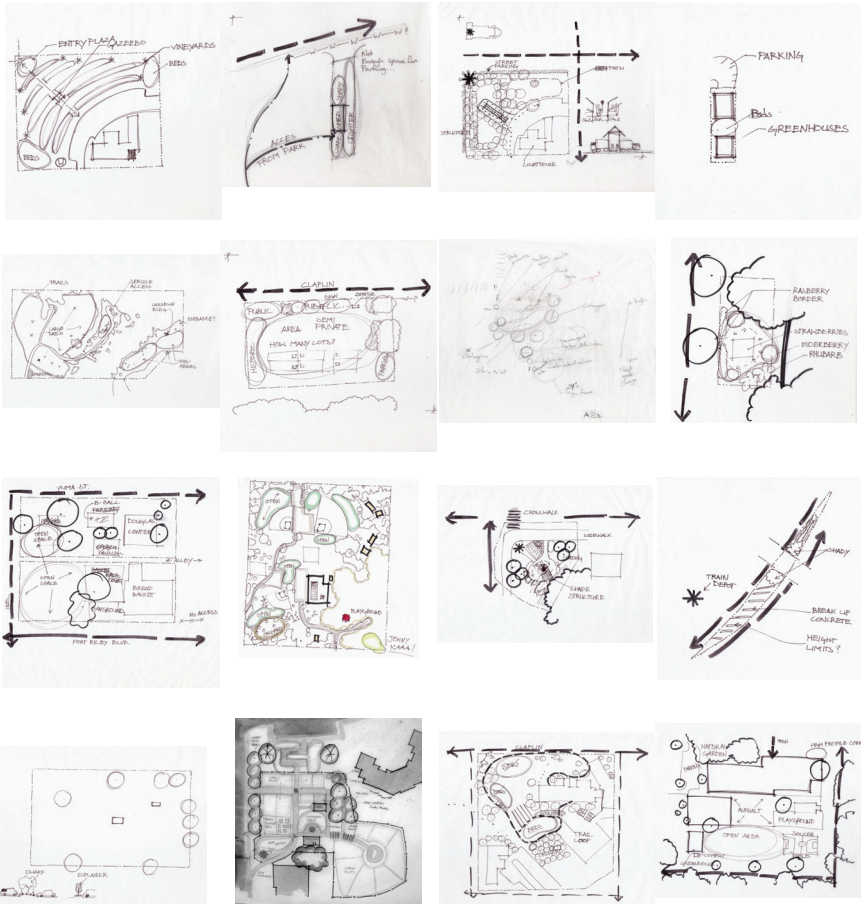


Figure 1.7 Conceptual Designs

The prototypical designs are an indicator of how well the inventory and typology can combine to realize the designing of good edible landscapes.



Figure 1.8 Prototypical Designs





Chapter Two

Inventory

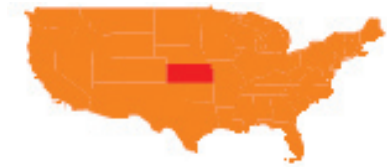
Where is Manhattan, Kansas,?

Location

Manhattan, Kansas, is known as the “Little Apple” and is located 120 miles west of Kansas City just off of Interstate 70. The community serves a three-county regional area, with a population of 200,000. The community houses a large land grant university. Manhattan is located in the Flint Hills, a region known for its flat-topped questas, flinty soil, and tall grass prairie. Manhattan is a traditional Jeffersonian Grid-oriented Midwestern town with a tendency for sprawl, see Figure 2.1 and 2.2.



Kansas is in the midwest region of the United States of America. Riley and Pottawatomie County are located in the northeast quadrant of Kansas. Manhattan is located in the southern half of the counties.



United States of America



State of Kansas



Riley and Pottawatomie Counties

Figure 2.1 Manhattan's Place in the World

Manhattan is a traditional Jeffersonian Grid oriented Midwest town with a tendency for sprawl. The city boundary is shown in red.

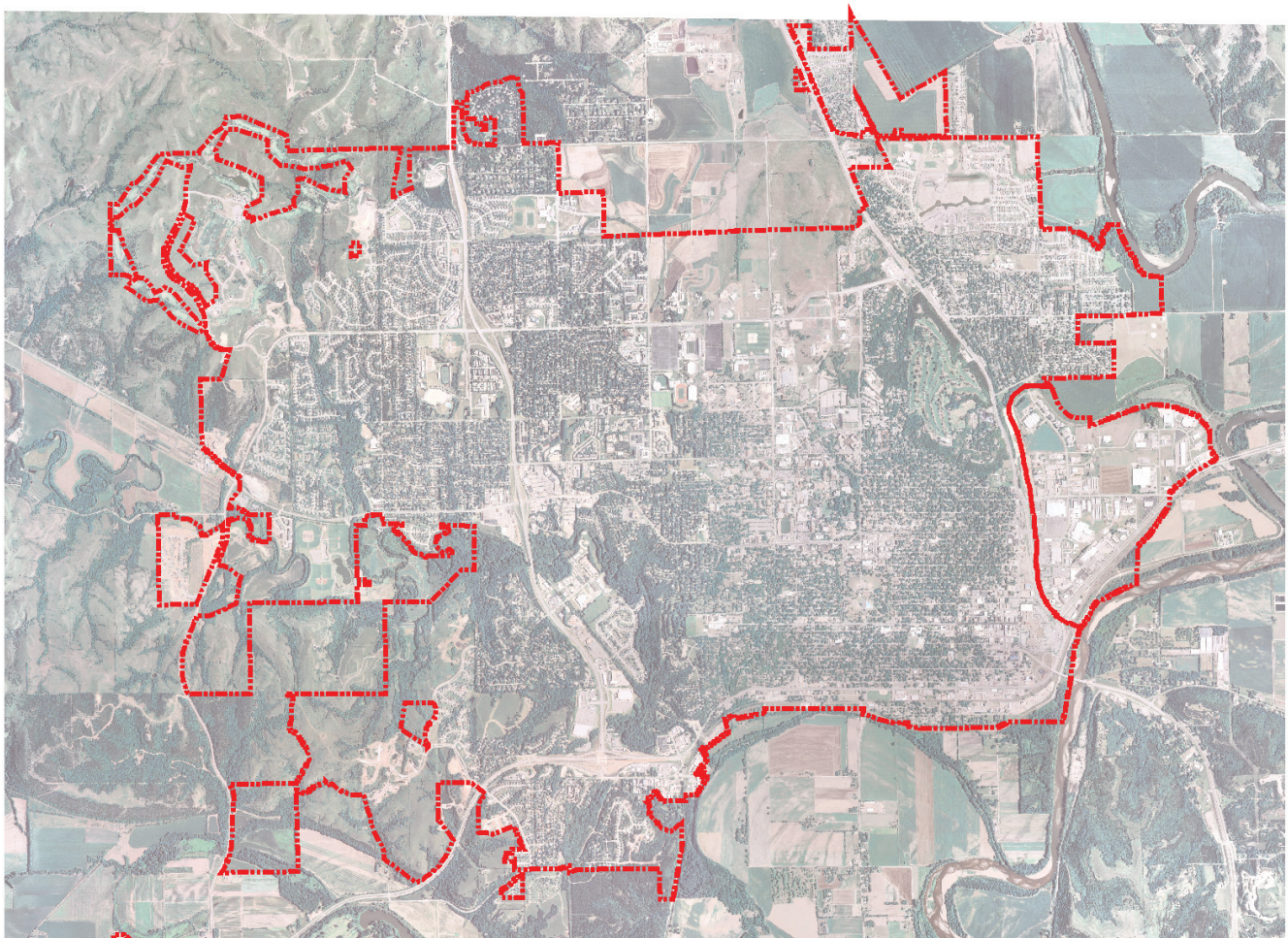


Figure 2.2 Manhattan, Kansas



Temperature Zone

Manhattan is located in the 5b United States Department of Agriculture (USNA, 2009) Plant Hardiness Zone, see figure 2.3, meaning that the average annual minimum temperature range for Manhattan, Kansas, is between -15 to -10 degrees Fahrenheit. This temperature greatly affects what plants can survive and thrive in Manhattan.

Rhonda Janke, an Associate Professor in the Horticulture, Forestry and Recreation Resources Department at Kansas State University has suggested that most plants other than tropical plants can grow in Manhattan. She specifically mentioned that the Asian pear does surprisingly well here. (Janke, 2008)

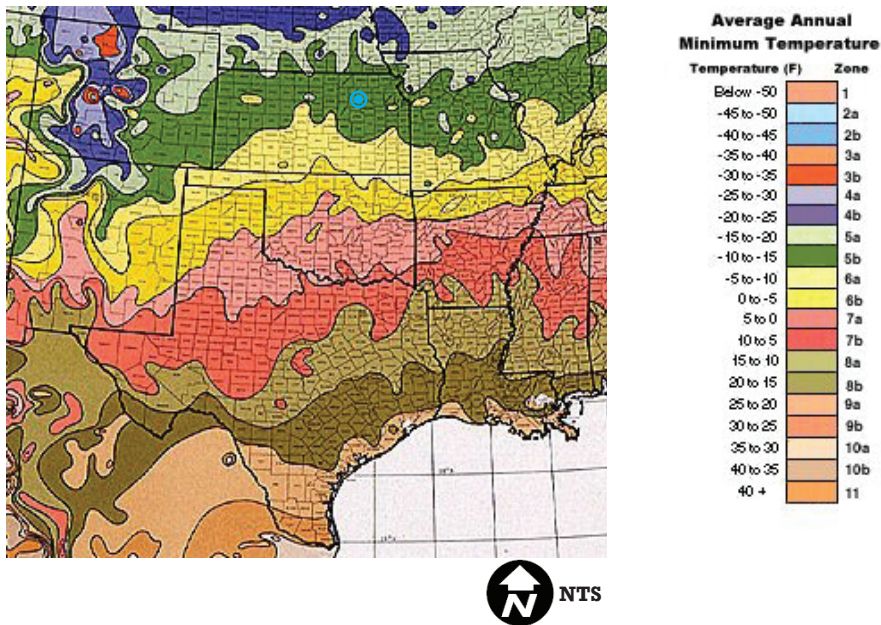


Figure 2.3 USDA Hardiness Zone Map for the Midwest Region

The map is divided into sections illustrating the lowest expected temperature during the year. Manhattan, Kansas is located in the 5b Zone.

Where are the Individual Sites?

Public Land

Nôtre Potager identified public land as potential sites due to availability of data and the presumed intended purpose of public land being compatible with the project. This followed the methodology established by the Diggable City. The potential sites identified were listed as being owned by the United States of America, Riley County, the City of Manhattan, or United School District 383 and are assumed to be available for public use, see Figure 2.4.

Exclusions

Immediately certain exclusions were made removing areas from the potential sites list. The first exclusions were Wetland and Environmental Protection Zones. All of the Environmental Protection Zones as defined by Riley County were excluded. The important role of the Wetland Environment Protection Zones in safeguarding ecological diversity was considered to outweigh the aims of this project, see Figure 2.5.

Another area of land immediately excluded was land surrounding the airport. Airport sites have special limitations regarding plant selection and security that are not compatible with the intent of this project.

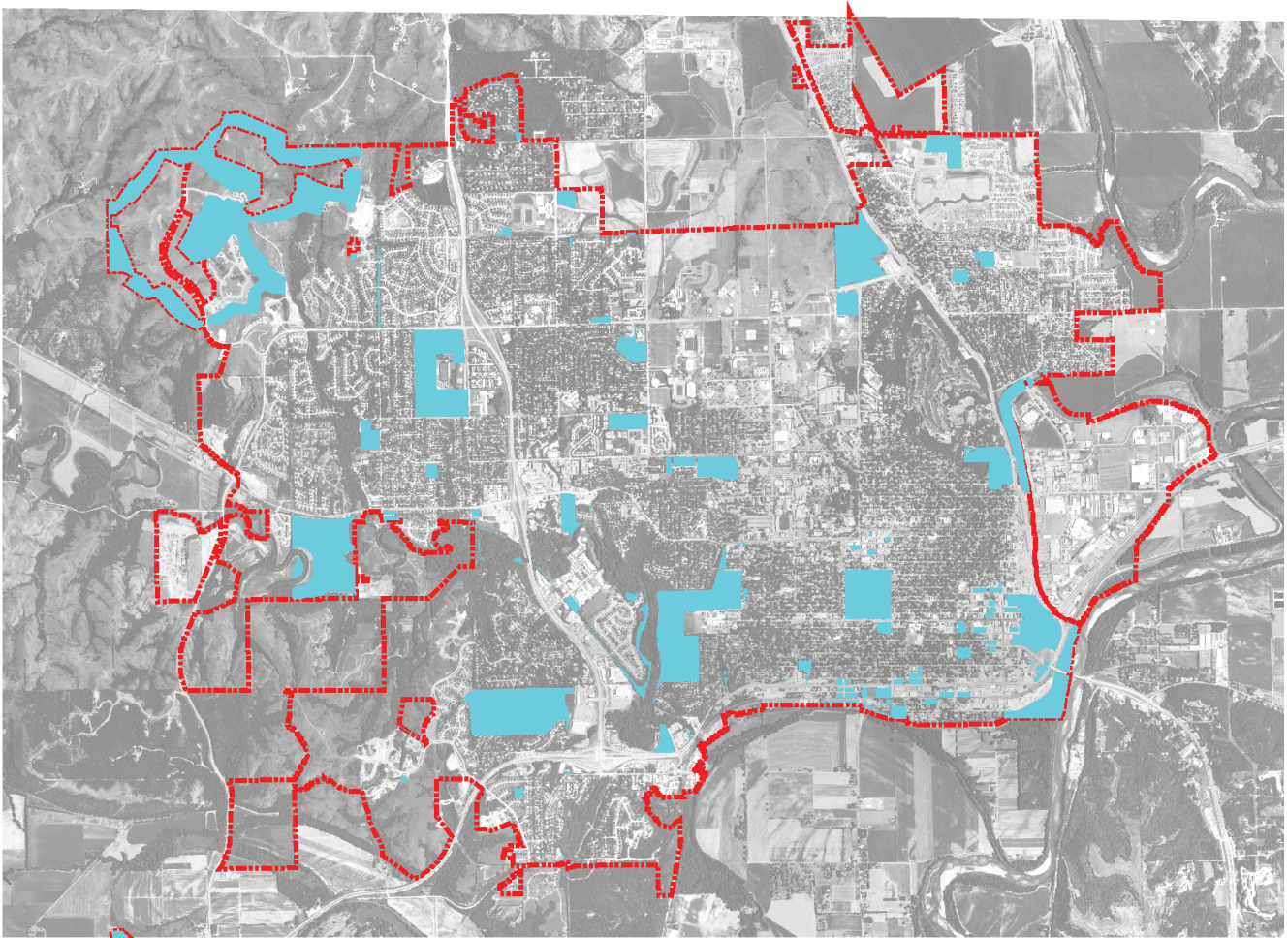


Figure 2.4 Public Land in Manhattan, Kansas



0 0.15 0.3 0.6 0.9 1.2 Miles

Nôtre Potager identified 161 potential sites on public land within Manhattan shown as blue polygons.

Environmental Protection Zones, show as green polygons, were not considered as potential sites.

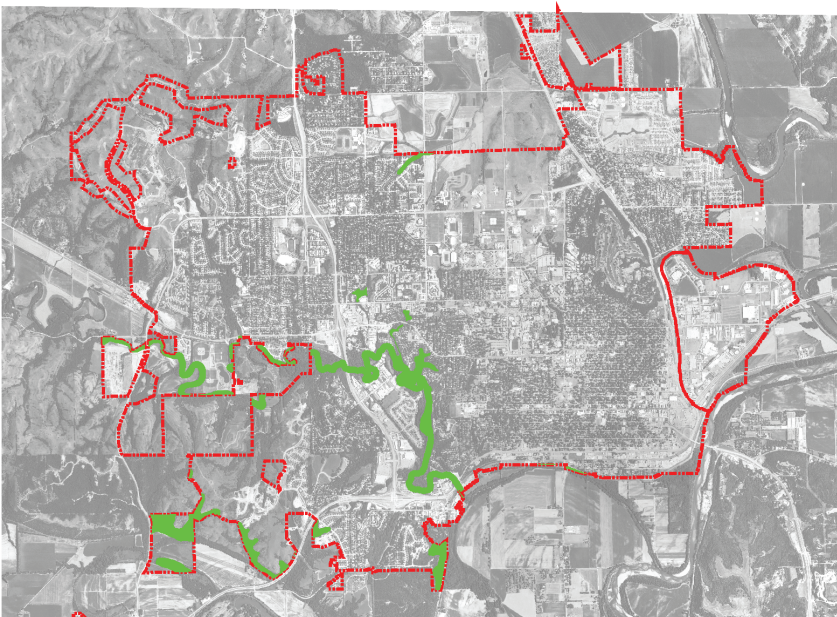


Figure 2.5 Environmental Protection Zones in Manhattan, Kansas



0 0.15 0.3 0.6 0.9 1.2 Miles

Environmental Factors

Elevation

Elevation differences in Manhattan were determined not to be great enough to significantly affect the plant-growing environment and necessitate any exclusions based on elevation, see Figure 2.5.

Slope

The Diggable City determined slopes greater than 4% as not suitable for general agriculture. (Diggable City, GIS-4) Most of Manhattan is within the 0- 4% Slope Range. Significant areas of slopes greater than 4% occur mainly along stream beds. All applicable streambeds were previously identified as a part of the Wetland Environmental Protection Zones and therefore were no longer considered as potential site locations, see Figure 2.6.

Soils

All sites identified are assumed to have urban soil types. The actual soil quality will be assessed on a site by site basis. It is assumed that most soils will need to be amended prior to planting.

The elevation change across Manhattan is not great enough to create different plant selection criteria. Five foot contours are shown in grey

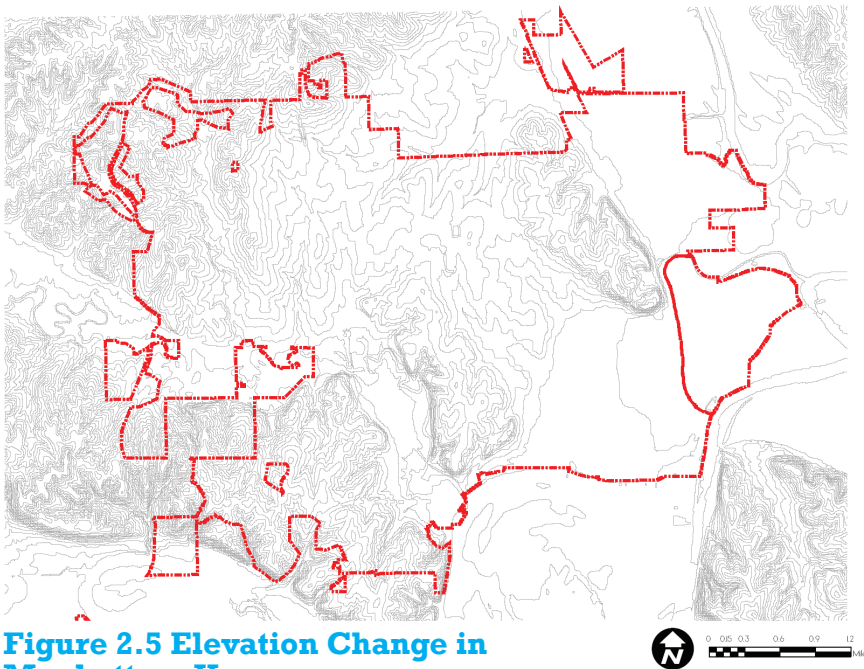


Figure 2.5 Elevation Change in Manhattan, Kansas

Most of Manhattan has a slope that is well suited for agriculture, these areas are shown in green. Areas that are less suitable for agriculture are shown in yellow. Areas that would require significant grading or terracing are shown in red. Public land is shown in white.

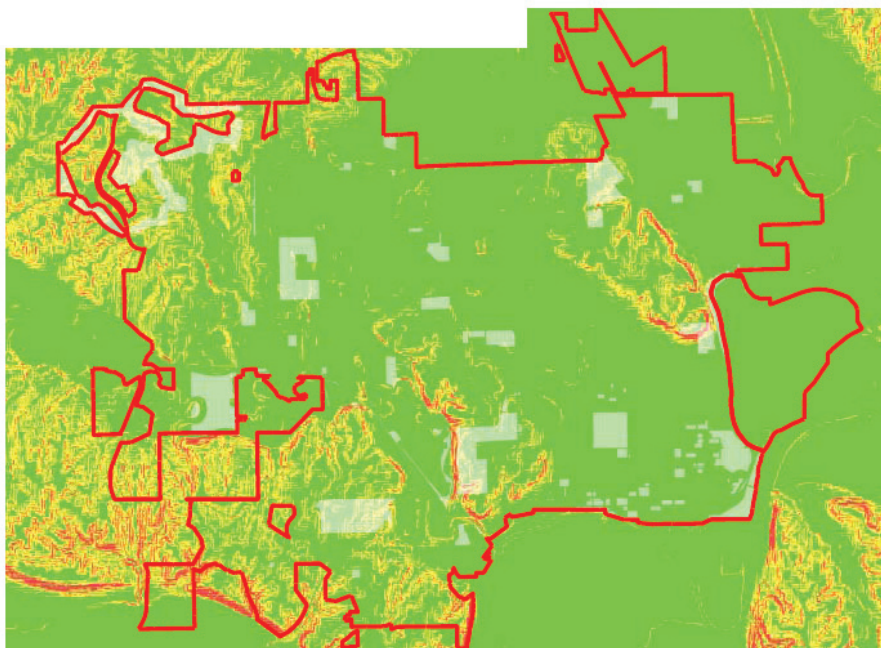


Figure 2.6 Slope by Percent in Manhattan, Kansas

Visual Profile

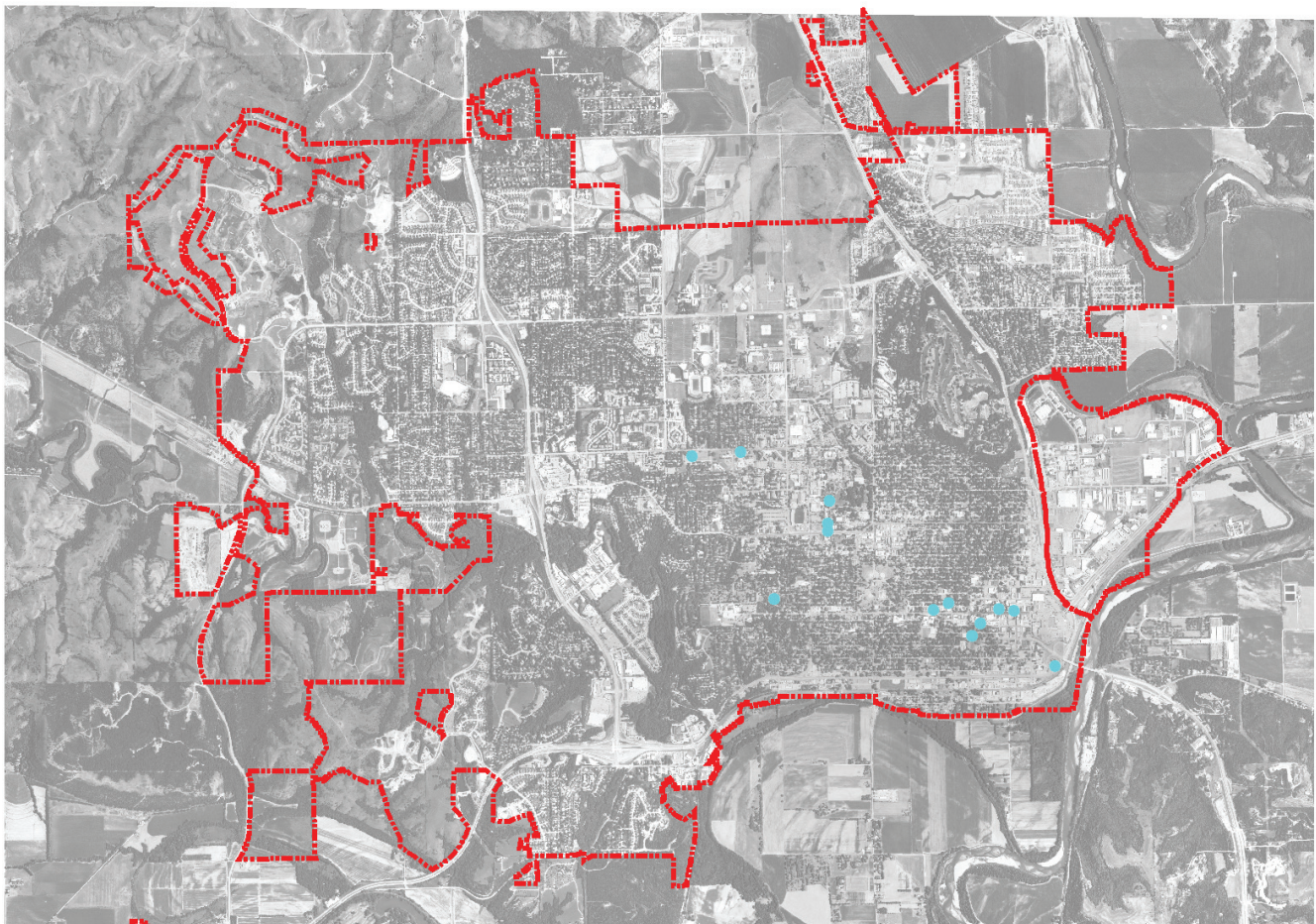
Historic Buildings

Sites near to historic buildings and historic landscapes deserve special attention. These sites have a higher visual profile owing to their proximity to historic sites. The design of such sites should also be in harmony with these historic sites.

Historic buildings in Manhattan, Kansas, include those sites on the National Register of Historic Places and those sites on the Register of Historic Kansas Places. see Figure 2.7.

Historic Landscapes

There are also a series of sites in Manhattan that are designated as historic public open spaces. These sites are intended to be permanent open spaces for the public. Most of these sites are current elementary schools, see Figure 2.8.

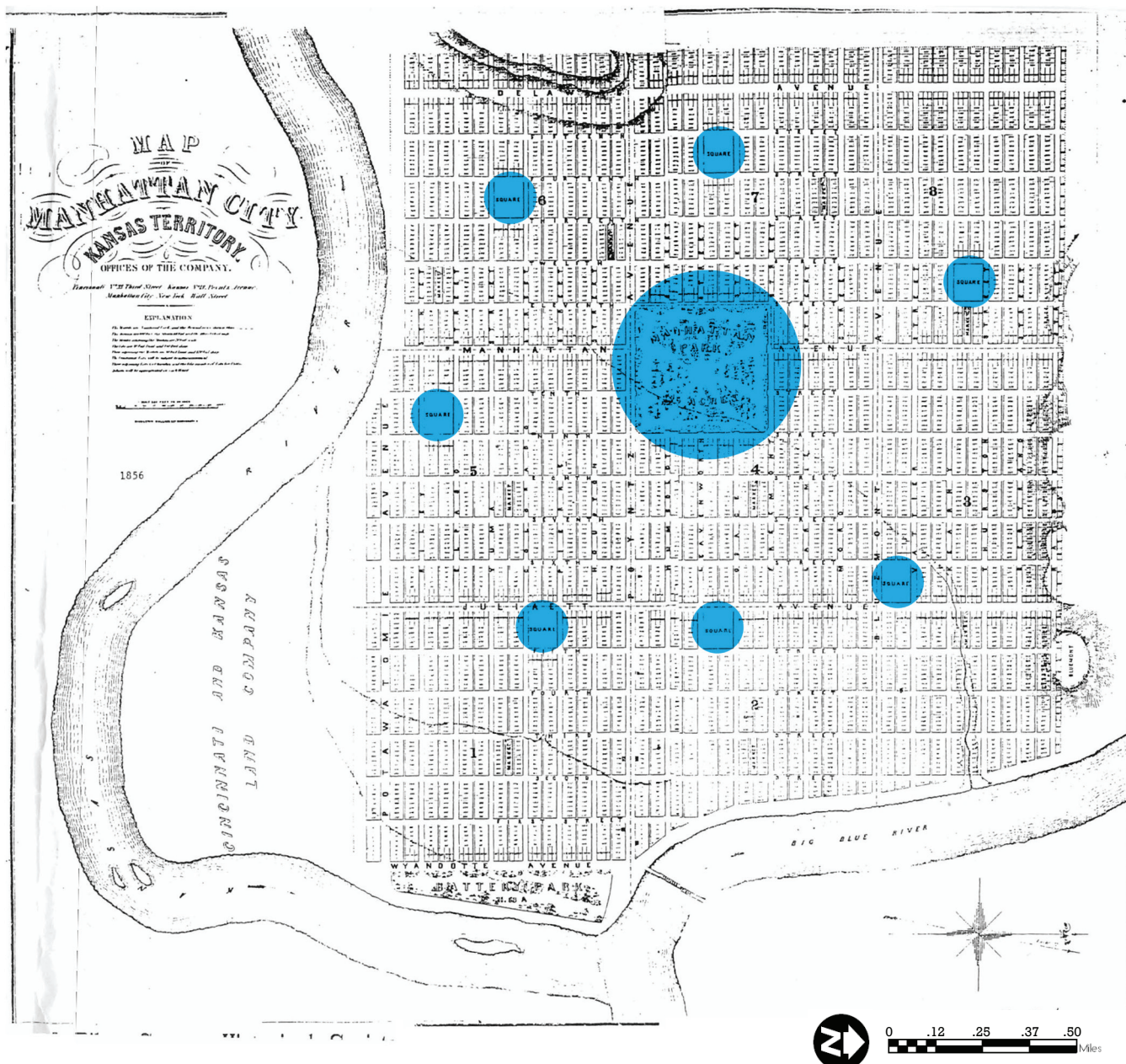


The location of a historic building is important to the potential of an edible landscape to have a significant visual impact. Historic buildings are shown in blue.



0 0.15 0.3 0.6 0.9 1.2 Miles

Figure 2.7 Historic Buildings in Manhattan Kansas



The location of a historic landscape is important to the potential of an edible landscape to have a significant visual impact. Historic landscapes are shown in blue.

Transportation

Major transportation routes divide the city and indicate places of potential visual interest. They also must be considered as potential barriers to pedestrian movement.

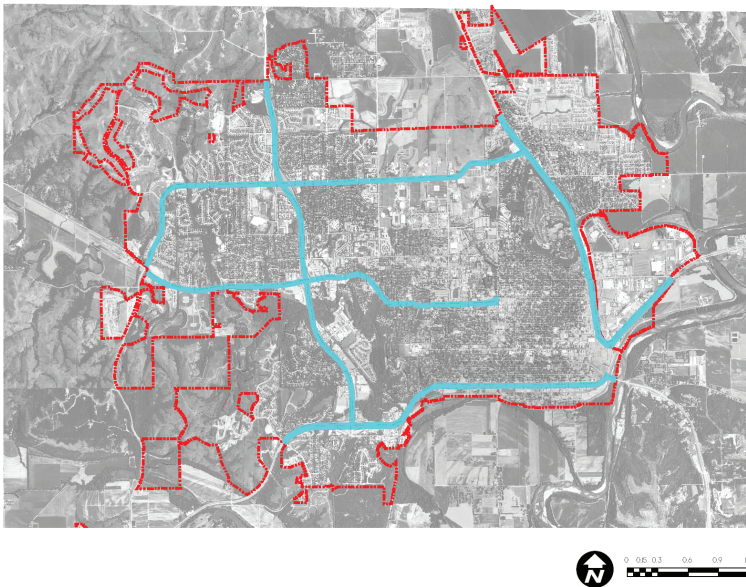
Highways offer visibility to certain sites and the opportunity to enrich people's experience as they arrive in or pass through Manhattan. Railways can be a source for potential sites as they provide abandoned or under-utilized areas. Manhattan also currently has a bike-trail system. It would be beneficial to connect the edible landscape sites to the trail system, allowing greater pedestrian access, see Figure 2.9.

Electrical Transmission Lines

Due to height and permanent structure restrictions, the space beneath electrical transmission lines can be used for vegetable plots, see Figure 2.10. However, due to the placement of transmission lines these sites will not be very high profile.

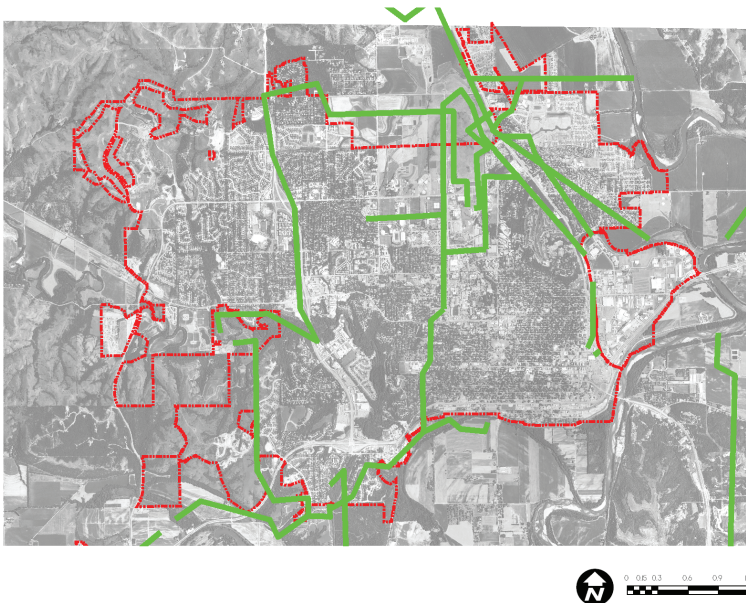
Civic Building Locations

Sites should be located near these buildings due to their higher visual profile. These sites include schools, fire stations, churches, and other public buildings, see Figure 2.11.



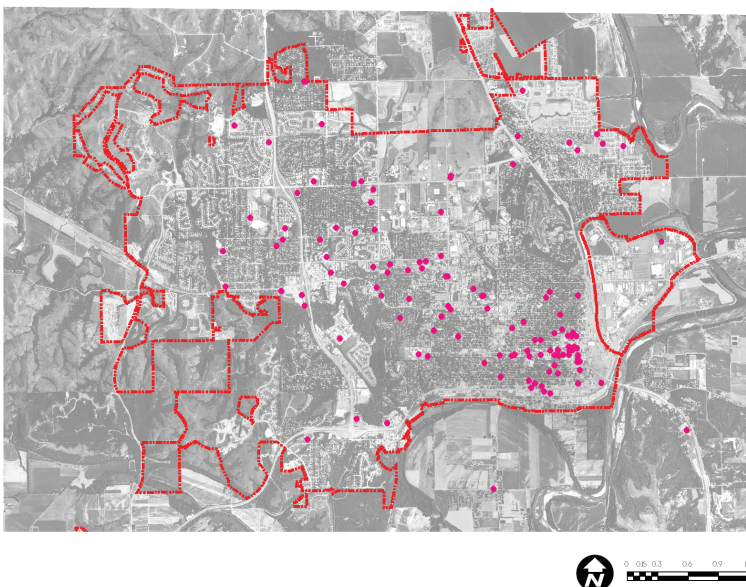
Major transportation routes can raise the visual profile of a site. Large impassable transportation routes hinder pedestrian movement if there is not a way to safely cross. Major highways and streets are shown in blue.

Figure 2.9 Major Transportation Routes in Manhattan, Kansas



Building and large trees can not be located under transmission lines. This space could be vegetable gardens instead of large mowed swaths of grass. Transmission lines are shown in green.

Figure 2.10 Electric Transmission Lines in Manhattan, Kansas



Civic buildings serve as gatherings places for the community. Any such building could greatly improve its service to the community by having an edible landscape nearby. Civic buildings are shown in pink.

Figure 2.11 Civic Building Locations in Manhattan, Kansas

The People

Population Density Proximity

Sites should be located close to population centers to promote interaction and pedestrian access. Figure 2.12 shows the population densities of Manhattan based on census tract.

Zoning

There is certain zoning that does not allow agriculture. This presents a significant factor to consider. Figure 2.13 shows sites where agriculture is an allowable use.

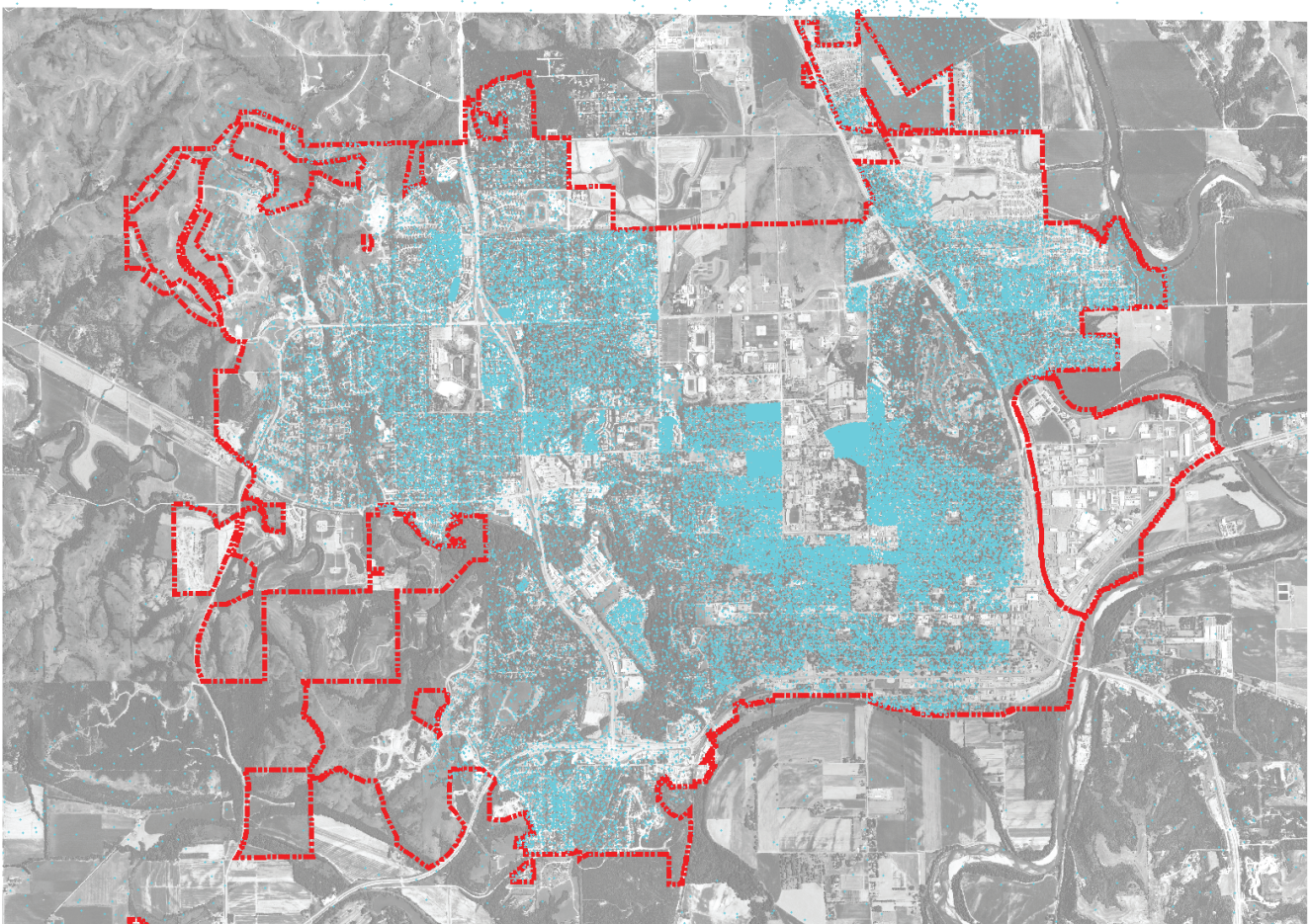
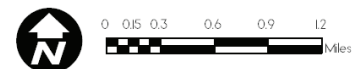


Figure 2.12 Population Density in Manhattan, Kansas



If the edible landscapes are not located close to the people they serve then they will fail. The edible landscapes will fall into the same category as modern agriculture, the very image edible landscapes are trying to combat. Each blue dot represents one person.

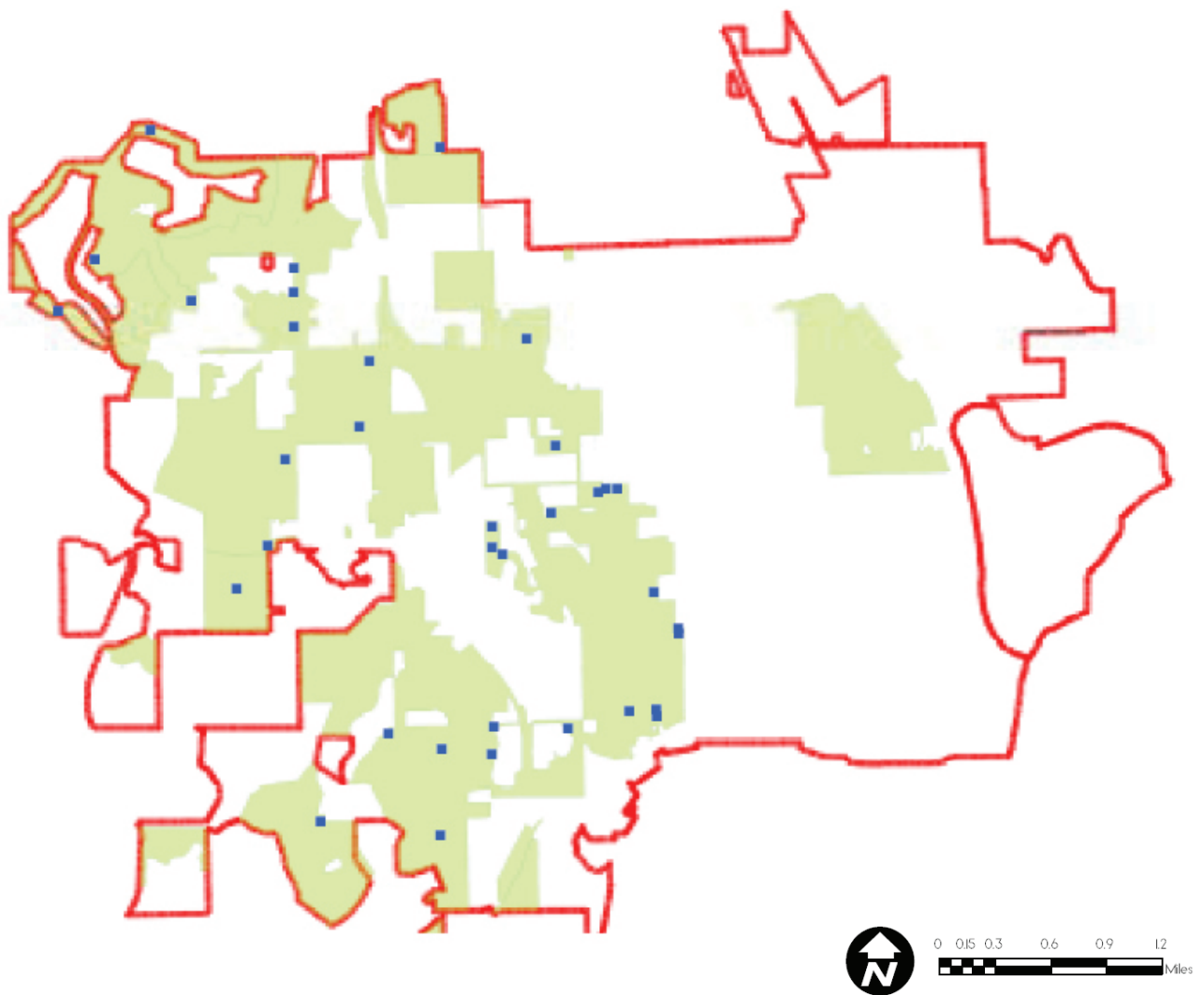
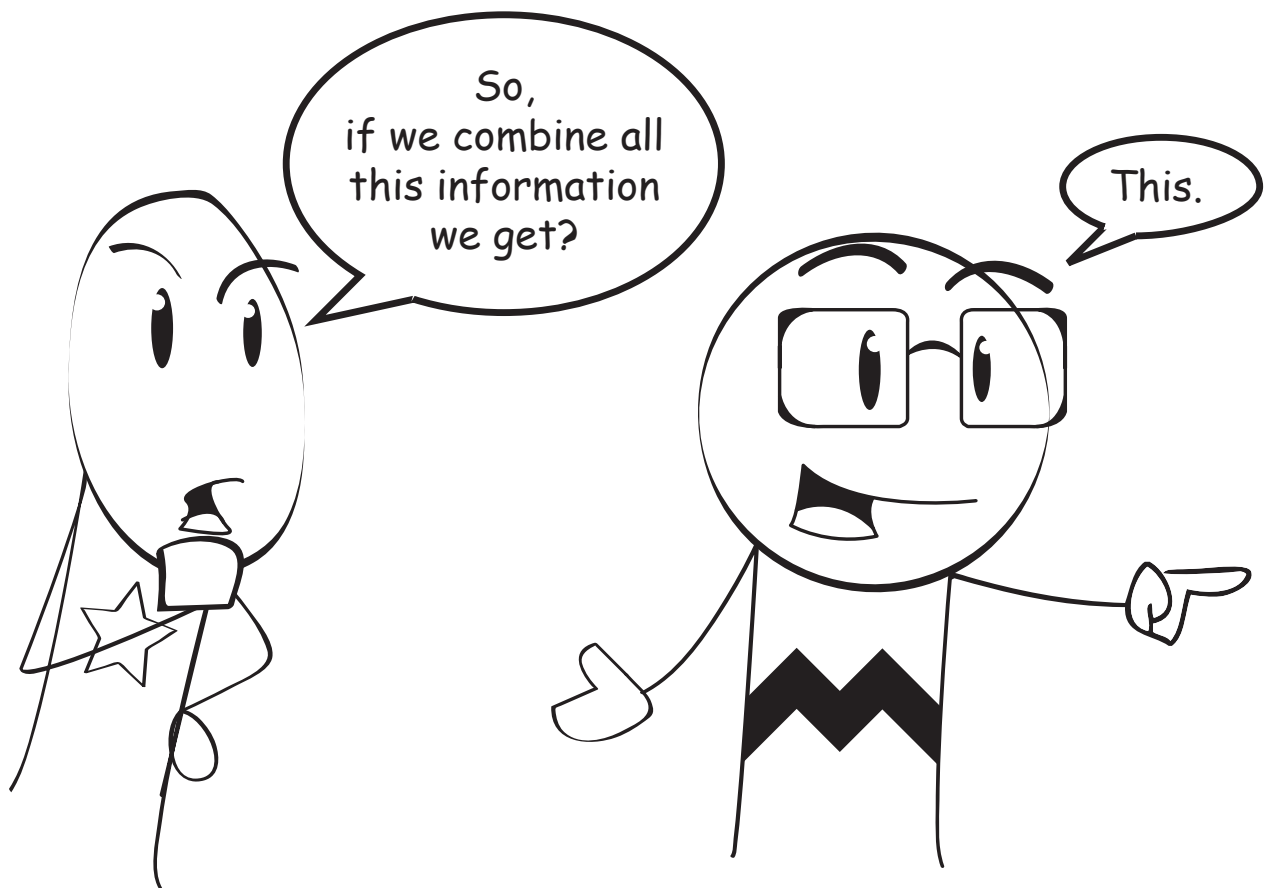


Figure 2.13 Sites Where Agriculture is Allowed

These sites are located in areas where zoning allows agriculture. Zoning areas are shown in green. Site locations are shown in blue squares.



Potential Sites Inventory Summary

Potential Sites

There are a total of 161 sites, represented by green dots in Figure 2.16. Now that we know where the potential sites are we can begin to asses what each site is best suited for.

This is a collection of photographs taken by the author at potential sites across Manhattan, Kansas. These images shown the variety of conditions that exist at different sites. All of these photographs were taken in January and represent winter site conditions.



Figure 2.14 Photographs of Potential Sites in Manhattan, Kansas

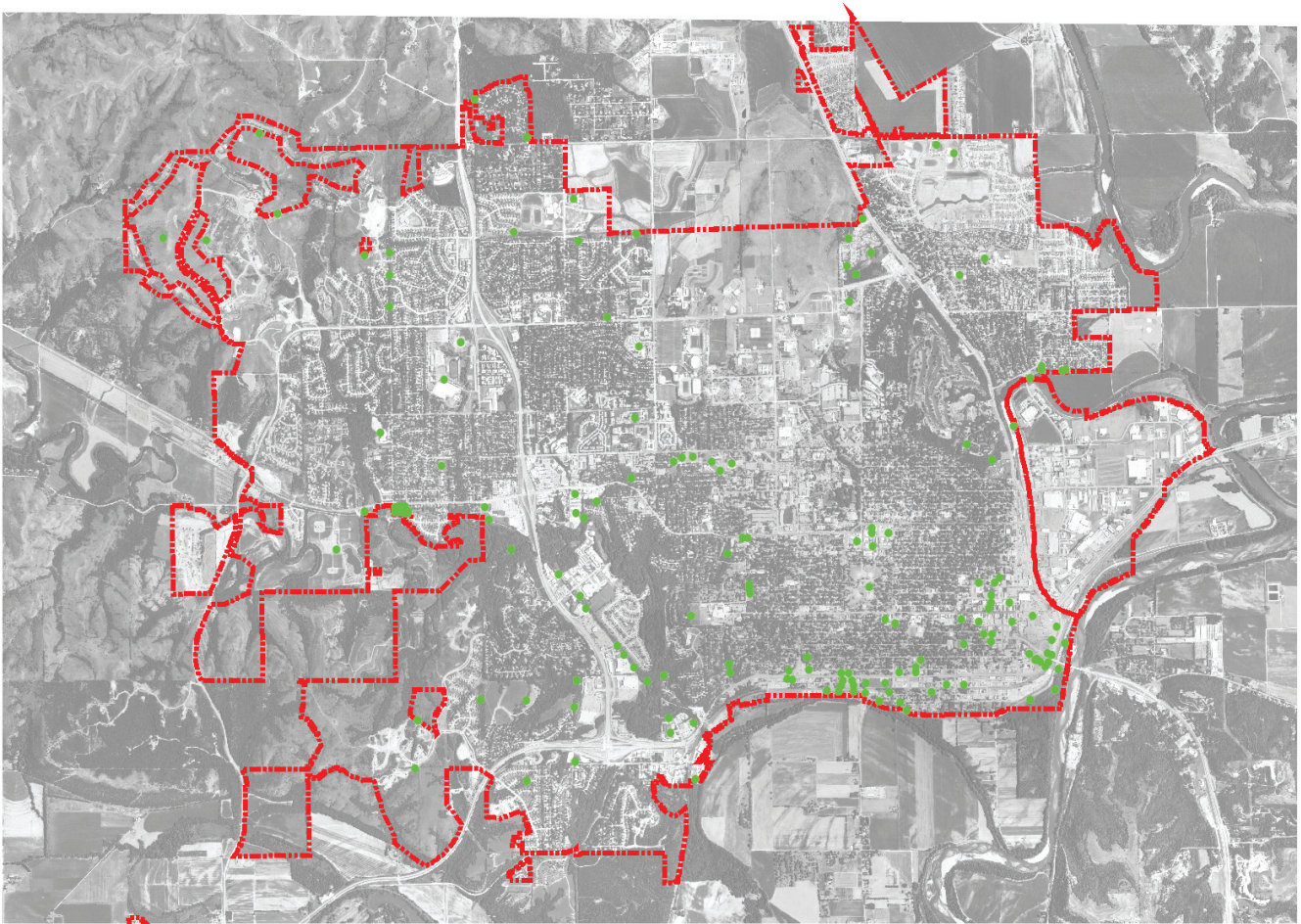


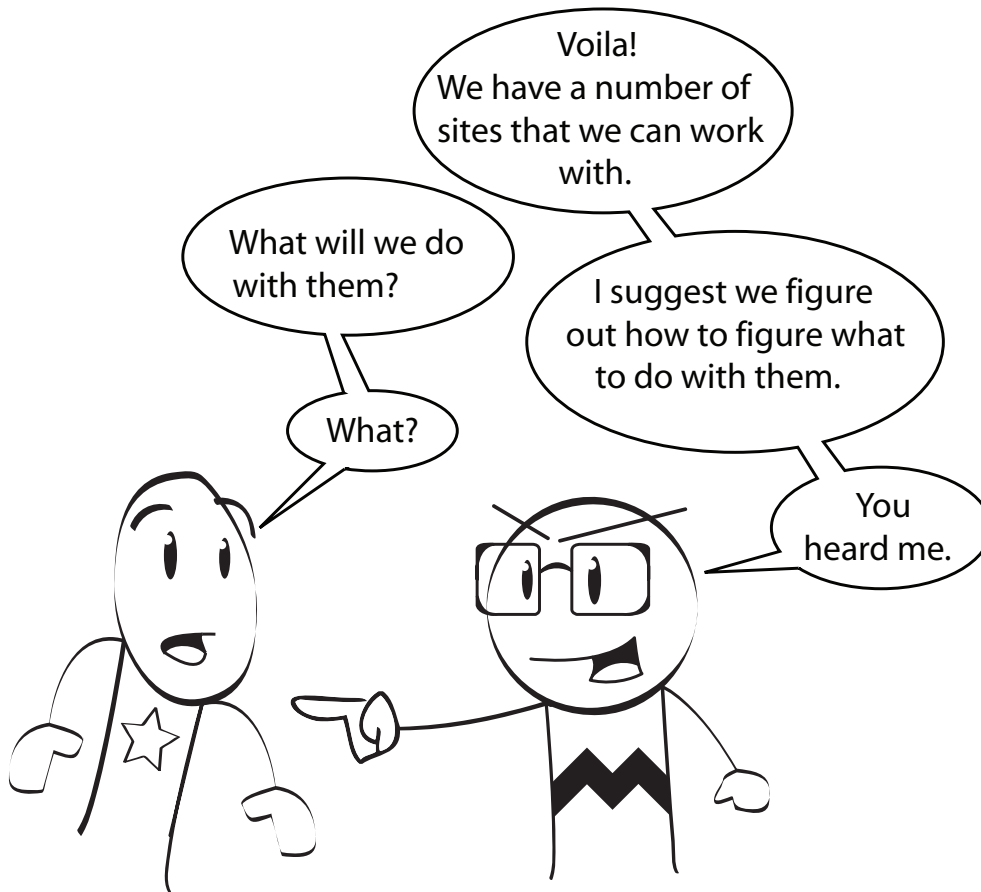
Figure 2.15 Potential Sites in Manhattan, Kansas





Chapter Three

Matrix



Matrix Development

The purpose of the typology is to provide a guide for determining a site's suitability as one of a variety of edible landscapes. A matrix was created to illustrate similarities and differences between the different types of edible landscapes identified by Nôtre Potager. The matrix was developed by listing each edible landscape type along the vertical axis. Important design criteria were listed along the horizontal axis. As a landscape type met each specific design criteria, a dot was added at the intersection. The design criteria were grouped according to primary purpose, physical characteristics, visual profile, and intended user, see Figure 3.1.

Intended Purpose

The intended purpose of each edible landscape is very important. Many times the intended purpose differentiates types with identical physical characteristics but radically different programs. The intended purpose of a site does not preclude the other two purposes; classification indicates the most important intended purpose

for that type. This classification will aid in design decisions as to what is the most important purpose for each type.

1. Provide Food- These types focus on growing edible plants at a high level of productivity.
2. Aesthetics- These types focus on the aesthetic quality of the area using edible plants.
3. Education- These types focus on the education of people about edibles plants.

Physical Characteristics

The physical characteristics were adopted from criteria identified by the Diggable City Project. (Diggable City, GIS-4) Physical Characteristics aid the designer in selecting different edible landscape types according to existing site conditions. It is important to note that there is an edible landscape types for each physical characteristic.

1. Rectilinear- These types are best served with sites typified by right angles and straight edges.
2. Irregular- These types are not limited to sites typified by right--

angles and straight edges.

3. Tiny- These types are located on sites with an area of less than .023 acres or 1000 square feet.

4. Small- These types are located on sites with an area between .023 acres and .25 acres.

5. Medium- These types are located on sites with an area between .25 acres and 2.0 acres.

6. Large- These types are located on sites with an area between 2.0 acres and 10.0 acres.

7. Extra Large- These types are located on sites with an area greater than 10.0 acres.

8. 50% Impervious Soils- These sites have 50% or more of the available area covered in impervious material such as pavement.

9. 50% Tree Cover- These sites have 50% or more of the available area covered by tree canopy, limiting the amount of sunlight the site receives and what plants can thrive.

Visual Profile

The Visual Profile characteristics help to identify what types are best suited for high profile sites and which types can be situated in less-prominent locations. Visual profile is dependent upon proximity to civic buildings and what type of roadways are adjacent to the site.

1. High- The site is located on a major roadway, and within 1/8th mile proximity to a civic building.
2. Medium- The site is located on a minor roadway, and within 1/2 mile proximity to a civic building.
3. Low- The site is located on a local roadway, and is within 1 mile proximity to a civic building.
4. Backlot- The site is not located on a roadway, and has no proximity to a civic building.

Intended User

The intended user will greatly affect design decisions. Site features may need to be

specifically designed to meet the different needs of different user groups. The different types will not exclude other users but decisions will be made with the preferential treatment towards the intended user.

1. General Public- The site will be designed in a way that promotes interaction from the general public.
2. Children- The site will be designed with a focus on children using the site.
3. Accessibility- The site will be designed with a focus on American Disability Act (ADA) accessibility.
4. Specific Community- The site will be designed with a focus on the interests and needs of a specific group.

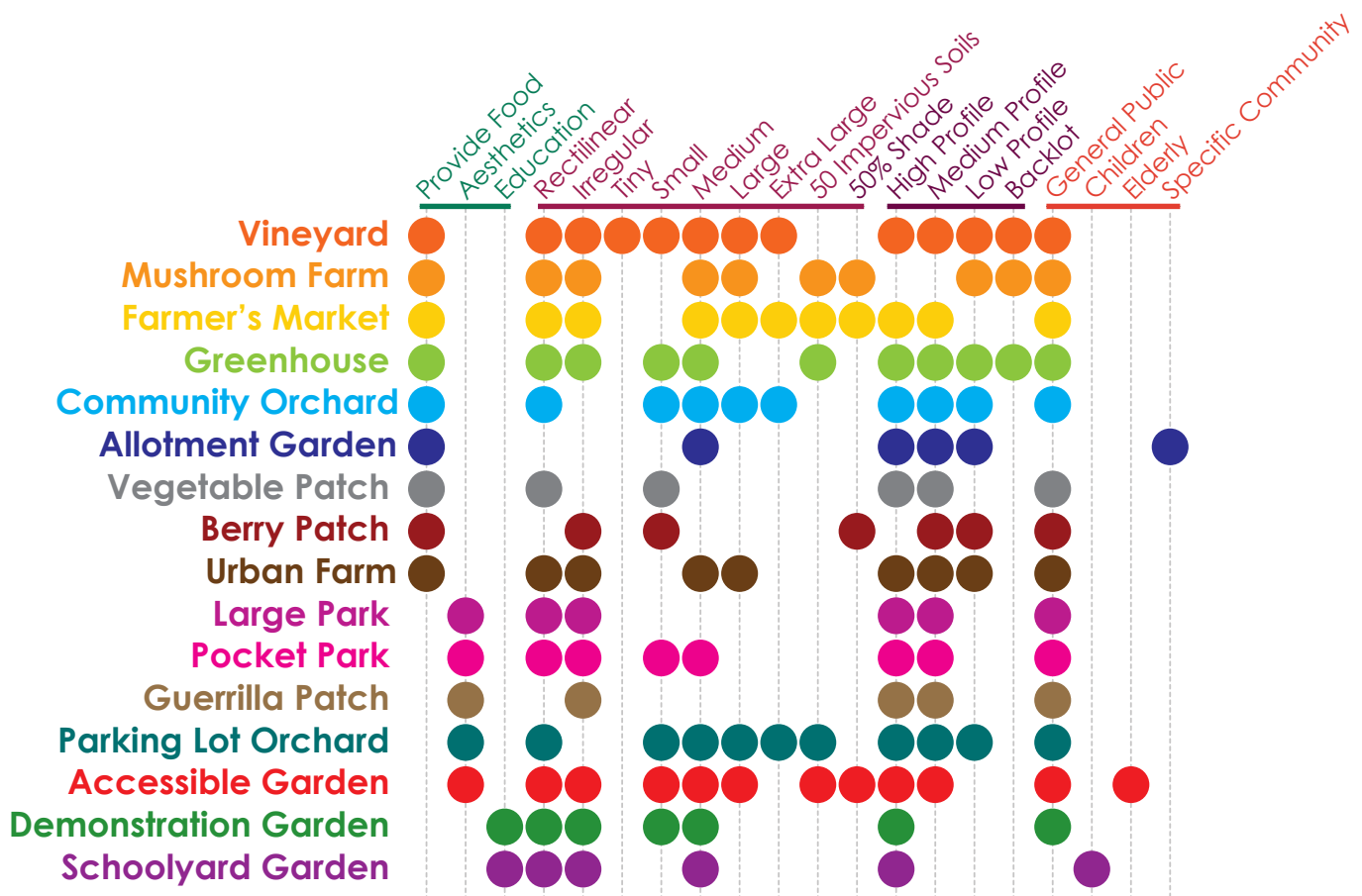
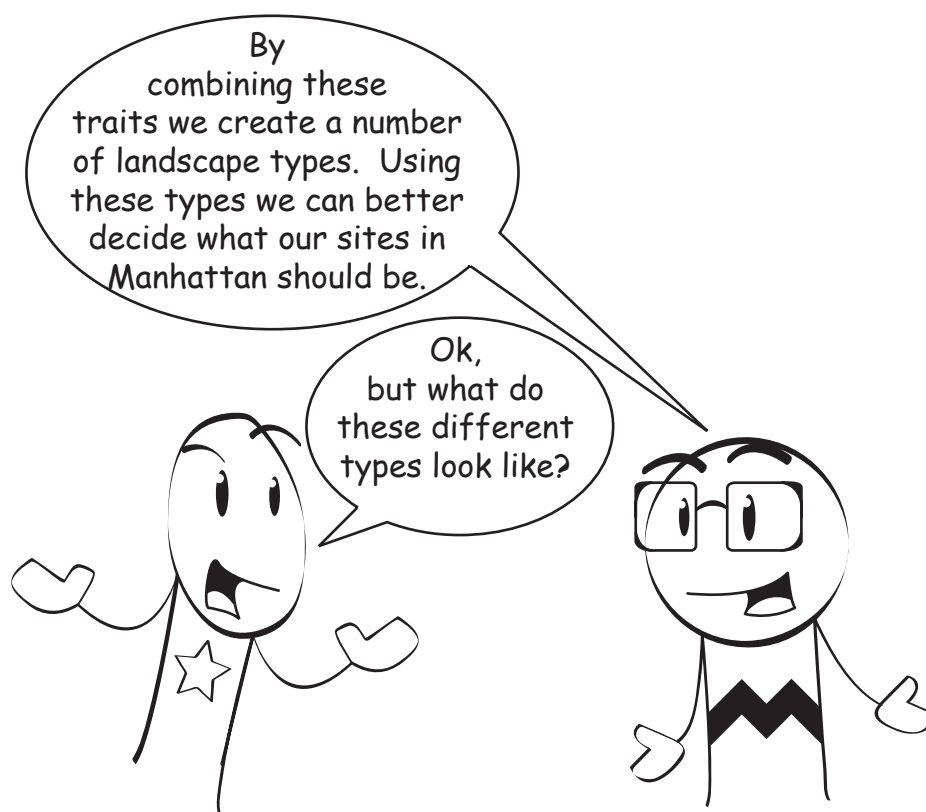


Fig 3.1 Typology Matrix



Chapter Four

Illustrated Typology



Illustrated Typology Purpose

The purpose of the typology is to provide a guide for determining a site's suitability as one of a variety of edible landscapes. The illustrated typology is intended to act as a visual guide to the different edible landscape types. Each edible landscape type will be presented in two formats. The first will be a written statement that describes the character of that type. The second format will be a collage that visually represents the character of that type.



Vineyard



Mushroom Farm



Farmer's Market



Greenhouse



Community Orchard



Allotment Garden



Vegetable Patch



Berry Patch



Urban Farm



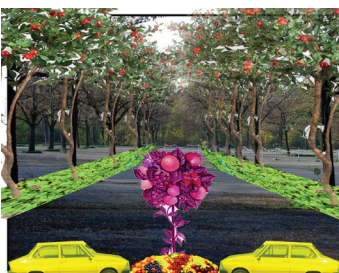
Large Park



Pocket Park



Guerrilla Patch



Parking Lot Orchard



Accessible Garden



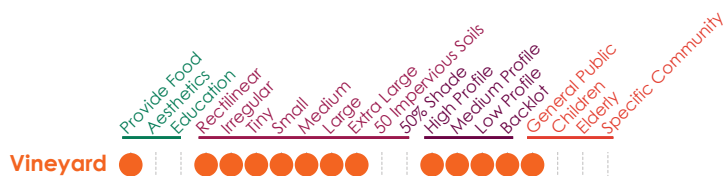
Demonstration Garden



Schoolyard Garden

Figure 4.1 Illustrated Typology Condensed

Vineyard



The vineyard is usually limited to the cultivation of grapes. These grapes can be used for table grapes, raisins, or wine. Vineyards are typified by the long, trellised grape vines. These trellises should be sturdily built. The row orientations depend upon three different factors; light, slope orientation and wind speed. There will be plenty of room left at the end of rows for equipment maneuvering. The vineyard will be surrounded by a barrier to discourage animals from foraging within the vineyard. Scares, netting, and other devices will need to be integrated into the design to ensure birds do not eat all of the grapes. Sunflowers and other complementary edible plants should be planned in the design of the vineyard. Windbreaks may be necessary in especially windy conditions. Additional structures should be designed to fit in with the character of the surrounding region, See Figure 4.2.

Mushroom Farm



The mushroom farm is one of the only edible types that can tolerate a large amount of shade. The mushroom farm is best sited amongst the trees, where the sheds and mushroom-growing logs will seem in harmony with the surrounding woodland. The mushroom farm should be located away from homes and other inhabitable structures since mushrooms are often grown on manure. A closely located supply of manure would be beneficial. The mushroom farm will be contained within an enclosure that will prevent animals from foraging within the farm. All structures, sheds or buildings, should be designed to fit in with the character of the surrounding region. See Figure 4.3.



Figure 4.2 Vineyard Collage



Figure 4.3 Mushroom Farm Collage

Farmer's Market

The farmer's market main purpose is to connect urban and suburban dwellers with fresh, locally-grown produce. Although the food purchased is not grown on site, the farmer's market is an important site for people to link with agriculture. Vendors should operate one day a week during the spring and summer months. The site must be easily accessible and adhere to ADA standards. The site should be located in an area served by public transportation and within close proximity of civic buildings. This will provide easily identifiable landmarks for the farmer's market, both for those within the market and those trying to find the market. The design of the site will include spaces for vendor stalls, foot traffic, shade trees or structures, and any other elements needed for the function of the market. Shade trees and any aesthetic plant material should be edible to serve as a constant reminder of the site's purpose. These elements should blend in with the surrounding neighborhood, reflecting the material or style of the area and region. Electricity, water hookups, adequate parking, and restrooms should be available. (Bachman, 2008)

See Figure 4.4

Greenhouse

The greenhouse is mainly a structure that can be placed on impervious soils as all of the soil needed for the beds will need to be imported from off site. The greenhouse is an opportunity to cultivate exotic species that do not tolerate the regional climate, as well as provide a space for year-long cultivation. The greenhouse will be designed in such a way that will complement the greenhouse's environs. See Figure 4.5



Figure 4.4 Farmer's Market Collage



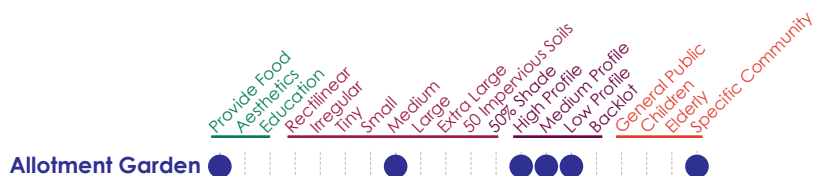
Figure 4.5 Greenhouse Collage

Community Orchard



The community orchard is a collection of at least nine edible trees massed together in orderly rows. Two trees would simply be a pair, three trees a group, four trees a square, six trees are an alley, but when nine trees are together the trees are perceived as an orchard. Depending on the size of the site more trees may be introduced. The trees will be organized in groups of the same species. Larger grouping of the same species will create masses of similar trees which will strengthen the overall orchard experience. The species selected should be consistent with the character of the site. The community orchard ground plane will be covered in turf or other suitable ground cover. The borders of the orchard are well maintained and are indicators that the patch is not out of place but indeed cared for. See Figure 4.6.

Allotment Garden



An allotment garden is a large space that is divided into a number of smaller allotments that are tended by individuals. The main purpose of the allotment garden is to provide people in an urban or suburban area access to agriculture. Each individual allotment may vary in size but will be large enough to hold a small shed for storage and enough room for several crops. The individuals cultivating the land are organized into an allotment organization that oversees the logistics of the allotment garden, such as: rules and regulations, membership, fines, and other duties. This organization requires that the garden be secure. An allotment Garden is therefore a semipublic space. The allotment Garden will be surrounded by a barrier that prevents physical entry but that is visually permeable. There will be central entry space and a corridor that allows carts and wheelbarrows access to each individual plot. Vehicular circulation will not be allowed. The sheds within the allotment garden will be of a similar shape and size but will allow different colors and embellishments added by the individual gardener. See Figure 4.7.



Figure 4.6 Community Orchard Collage



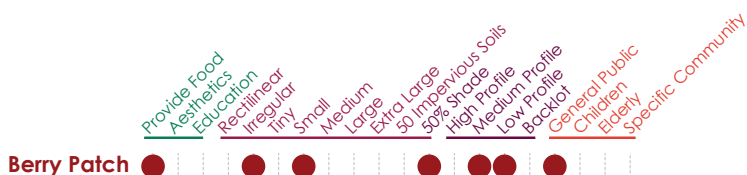
Figure 4.7 Allotment Garden Collage

Vegetable Patch



A vegetable patch is a small piece of land that can be surveyed entirely from the street. The borders of the patch are well maintained and are indicators that the patch is not out of place but indeed cared for. One of the most important defining characteristics of a patch is that it resembles a backyard garden. Most of the plants are planted in rows with paths in between the beds. There will be a certain element of whimsy or decorative devices such as wind chimes, fences, statues and bird houses. These elements should blend in with the surrounding neighborhood, reflecting the material or style of the area. The difference separating the subtypes is the dominate crop being grown. This is entirely contingent on existing site conditions. See Figure 4.8.

Berry Patch



A berry patch is a small piece of land that can be surveyed entirely from the street. The berry patch can tolerate partial shade and is best suited near trees or other shade-giving structures. The type of berries grown is entirely contingent on existing site conditions. The borders of the patch are well maintained and are indicators that the patch is not out of place but indeed cared for. One of the most important defining characteristics of a patch is that it resembles a backyard garden. Most of the plants are planted in rows with paths in between the beds. There will be a certain element of whimsy or decorative devices such as wind chimes, fences, statues and bird houses. These elements should blend in with the surrounding neighborhood, reflecting the material or style of the area. See Figure 4.9.

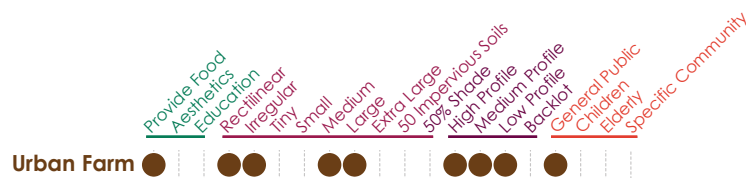


Figure 4.8 Vegetable Patch Collage Collage



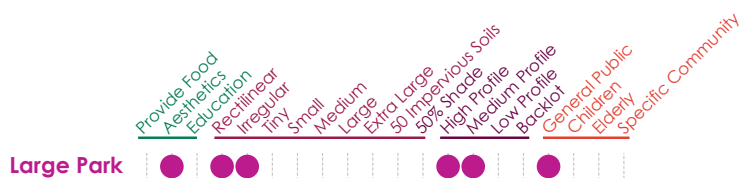
Figure 4.9 Berry Patch Collage

Urban Farm



An urban farm is an enclosed piece of land that has the primary purpose of providing food in an urban or suburban context. The crops that are grown on the urban farm are contingent on site conditions and the needs of the surrounding neighborhoods which the urban farm serves. The urban farm will have all the necessary buildings to complete operations. These buildings will be designed to fit into the context of the surrounding neighborhood. This does not mean that new forms and materials cannot be used to create visual interest. Public access to the urban farm will need to be limited in the interest of food security. People served by the urban farm will need to be allowed entrance to connect with their food as it grows. See Figure 4.10.

Large Park



A large park is identified as a piece of ground in or near a city or town kept for ornament and recreation or an area maintained in its natural state as a public property (Merriam-Webster, 2008). The large park will retain all of the program elements of a traditional park with edible plants replacing purely ornamental species. The existing park will be analyzed for areas that are not used, or under utilized, such as the areas around play areas and sports fields, that could be utilized as garden plots. With such a large amount of space there can be many different structures to cultivate edibles: trellises, small sheds, sculptural pieces, parterres, covered benches, fences etc. These structures should be designed in harmony with the character of the park and the surrounding neighborhoods. The large park can also serve as a meeting place for events. The park can be seen as a collection of patches within the boundaries of the park. The design of these patches should include similar elements, colors, and or materials to visually unify them. The borders of these patches are well maintained and are indicators that area is cared for. See Figure 4.11.



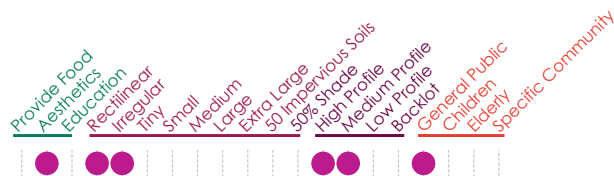
Figure 4.10 Urban Farm Collage



Figure 4.11 Large Park Collage

Pocket Park

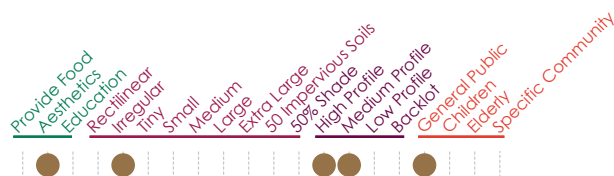
Large Park



The pocket park will serve as a green oasis. “a small area of relaxation and play... [with] no greater purpose than to be comfortable spots in which to relax and play.” (Iwashita, 1991) The pocket park will be a semi-public space that is discreet in its design but with high visual profile, for safety. The pocket park is versatile in its location, between buildings, along corners, and on previously empty lots. The ideal location of a pocket park is at an intersection of people and activities. The pocket park will face vehicular and pedestrian traffic to ensure its use. The plants selected for the pocket park will depend on individual site conditions. Edible pocket parks will be places where people can pause from the day, reach up and pick something to eat from the trees during a lunch break, or pause and snip some herbs for dinner on the way home. See Figure 4.12.

Guerilla Patch

Guerilla Patch



A guerilla patch is a very small piece of land that can be surveyed entirely from the street. The ideal location for a guerilla patch is where it will be highly visible; neglected patches by the side of roads, empty planter boxes, or even street medians. The Guerilla patch is meant to challenge the conventional edible landscape location. It is meant to illustrate that edible plants can be grown in almost any location, no matter how removed from traditional agricultural areas. These patches of edible landscape should also serve to enhance the surrounding area. Guerilla patches offer a great amount of design freedom. The design includes elements that will grab the passerby’s attention. These elements will have to be bold as many of those passing by will be in cars. See Figure 4.13.



Figure 4.12 Pocket Park Collage



Figure 4.13 Guerilla Patch Collage

Parking Lot Orchard

Parking Lot Orchard



The parking lot orchard is a parking lot that has tree crops planted in between the parking lanes in vegetated swales. The swales should be large enough to allow the fruit to fall on the ground and not parked cars. These swales will not collect the runoff from the parking lot, unless the trees are able to tolerate the nature of the runoff. The species selected should be consistent with the character of the site. The parking lot orchard ground plane will be covered in turf or other suitable ground cover. There could also be masses of edible shrubs planted beneath the trees. See Figure 4.14.

Accessible Garden

Accessible Garden



The accessible garden is designed especially for the use of elderly individuals. It should be located near retirement homes, special communities, etc., to allow easy access for potential users. The accessible garden will be appropriately scaled and designed for the variable abilities of the intended elderly users. Additional elements in the garden will include sheds for storage, a green house for year-round growing, a composting area, and various other structures that will be designed to blend in with the surrounding architectural style as well as the surrounding neighborhood. See Figure 4.15.



Figure 4.14 Parking Lot Orchard Collage



Figure 4.15 Accessible Garden Collage

Demonstration Garden

Demonstration Garden

Provide Food
Aesthetics
Education
Rectilinear
Irregular
Tiny
Small
Medium
Large
Extra Large
50% Impervious Soils
50% Shade
High Profile
Medium Profile
Low Profile
Backlot
General Public
Children
Elderly
Specific Community



The demonstration garden's main purpose is to educate the general public about edible landscapes and what they can do in their own homes. It is meant to contain a large number of different varieties of edible shrubs, trees and plants that are appropriate for the region. The demonstration garden will be designed to facilitate the demonstration of techniques. The garden will be divided into any number of different demonstration areas. These areas will differ in function but the use of materials and colors should unify the garden as a whole, not a piece meal science fair. The demonstration garden will also provide areas that can be used for relaxation and provide the same amenities as a pocket park. Necessary structures will complement the surrounding area. See Figure 4.16.

Schoolyard Garden

Schoolyard Garden

Provide Food
Aesthetics
Education
Rectilinear
Irregular
Tiny
Small
Medium
Large
Extra Large
50% Impervious Soils
50% Shade
High Profile
Medium Profile
Low Profile
Backlot
General Public
Children
Elderly
Specific Community



The schoolyard garden is found on school grounds, occupying a space that is within a short walking distance, so that children can readily access the gardens. The garden will be a centerpiece for the schoolyard and not relegated to a far back corner. The principal purpose for the schoolyard garden is educating children about the life cycle of food; how it is propagated, grown, harvested, and prepared for our tables. It is also the intention of the schoolyard garden to introduce a variety of edible plants to children: tree crops, vines, berries, vegetables, herbs, and as many varieties that site conditions will allow. The schoolyard garden will be appropriately scaled to the children users. Additional elements in the schoolyard garden will include sheds for storage, a green house for year long growing, a composting area, and various other structures that will be designed to blend in with the school's architectural style as well as the surrounding neighborhood. See Figure 4.17.



Figure 4.16 Demonstration Garden Collage



Figure 4.17 Schoolyard Garden Collage



Chapter Five

Prototypical Design



Review of Site Selection Process

We began by identifying 161 potential sites in Manhattan, Kansas, based on; physical characteristics that benefit edible landscapes, visual profile, and proximity to population centers. After a suitability analysis of the sites we selected sixteen for conceptual design. The sixteen conceptual designs were created using the typology as a guide. Three of the sixteen conceptual designs were selected to be developed further. These three sites are: Fairview Terrace-Pocket Park, Meadowlark Hills--Accessible Garden, and Riley County Health Center--Demonstration Garden, see Figure 5.1.

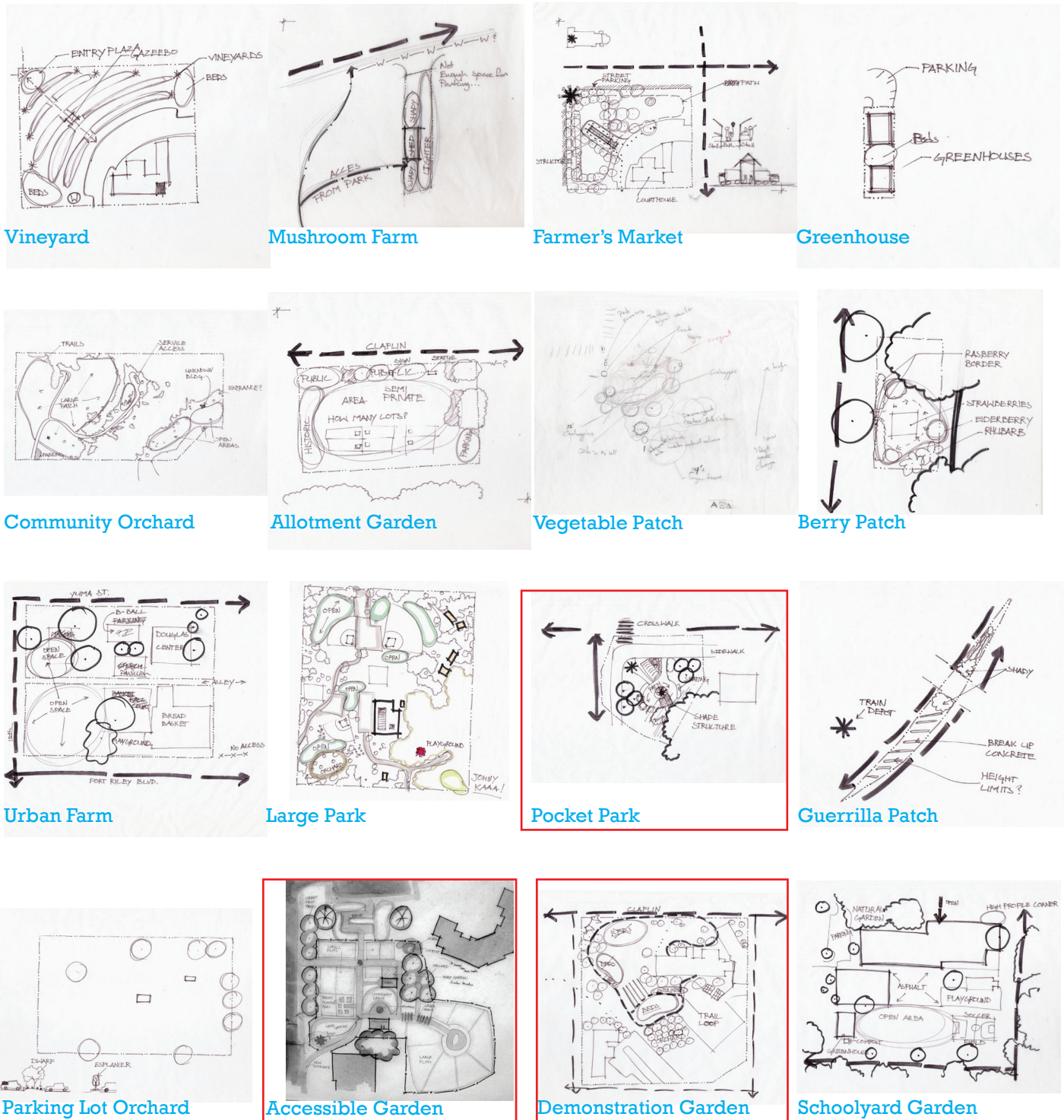


Figure 5.1 Conceptual Designs Selected for Prototypical Design Development

Pocket Park

Site Analysis

The site is located at the corner of the intersection of two major roadways, see Figure 5.2. It is also within walking distance of Kansas State University and St. Isidore's church. It is surrounded by residential neighborhoods. These major roadways and proximity to civic buildings give the site a high profile. The site is small, only 0.18 acres in size and irregularly shaped. The location of the site makes it ideal for an aesthetic purpose as it can be seen by both vehicles and pedestrians. This site best fits the "Pocket Park" type.

The Pocket Park site is small, and irregular in shape. It has a high visual profile and would serve as an excellent site for an aesthetically driven park for the general public.

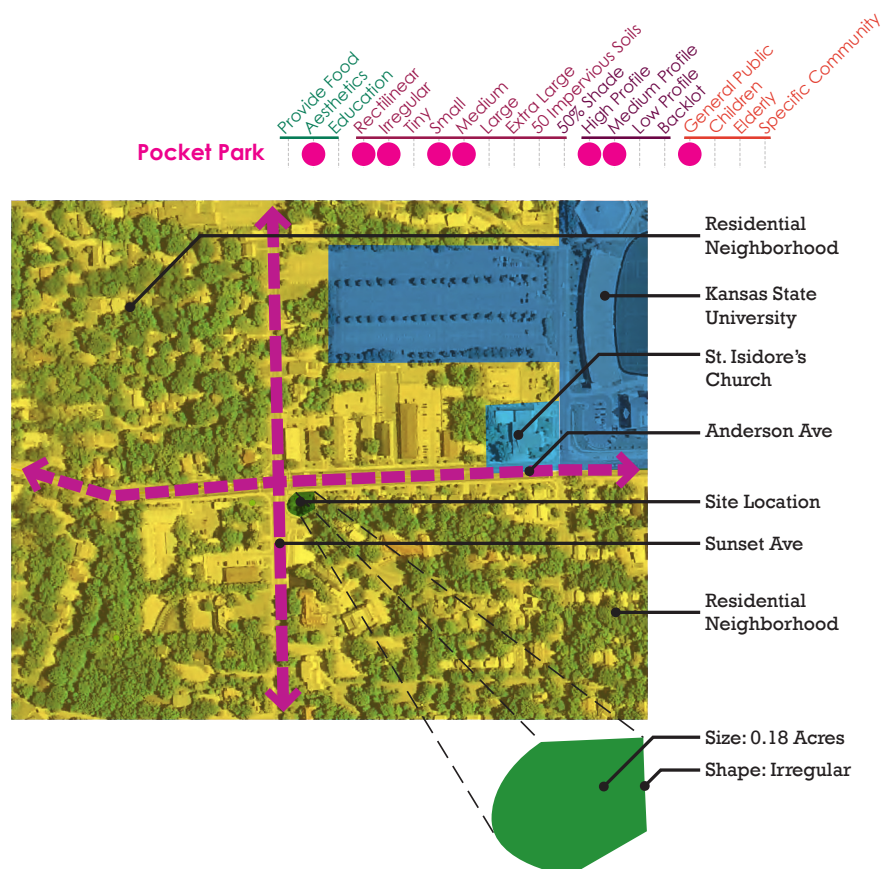
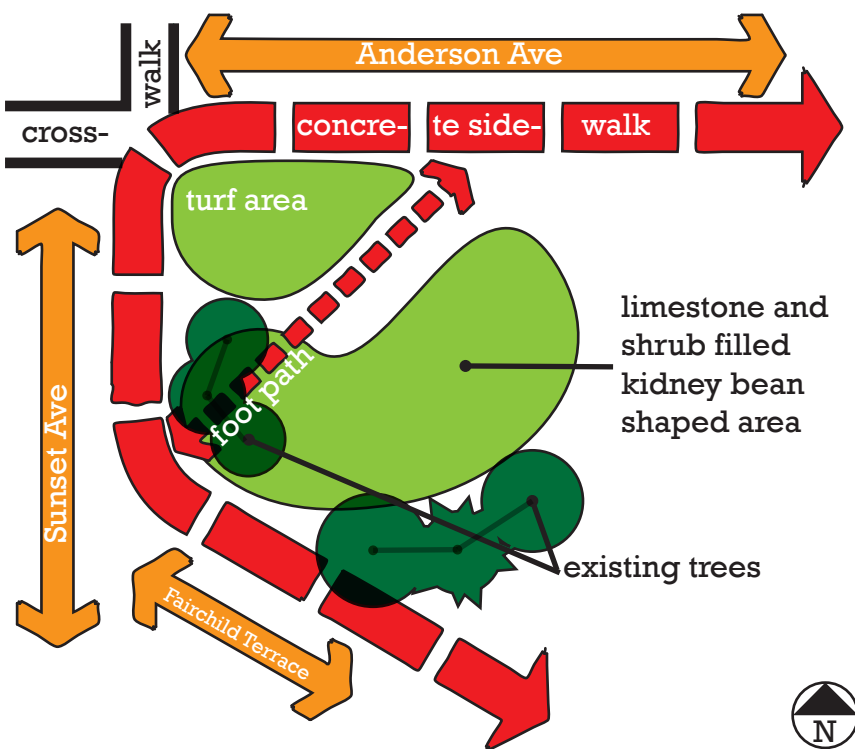


Figure 5.2 Site Analysis of Pocket Park Site Based on Matrix

Existing Conditions

Currently the pocket park site is dominated by a kidney-shaped, concrete-lined planting bed filled with shrubs and limestone boulders. There are a few crabapples on the perimeter, and some larger trees along the back of the site. People mainly use the park as a shortcut between the university and the residential neighborhoods. There is currently a worn foot path cutting diagonally through the park, see Figure 5.3.



People currently use the site as a short-cut and sometimes as a croquet pitch.

Figure 5.3 Existing Conditions at the Pocket Park Site

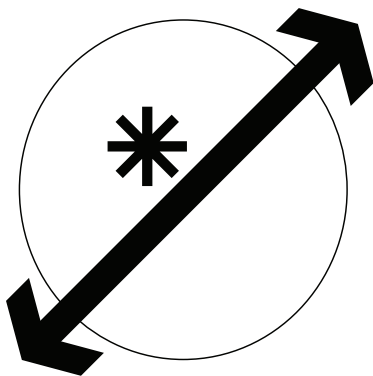


Figure 5.4 Pocket Park Parti Diagram

Pocket Park Design

The main goal of the “Pocket Park” design is to be a showcase for edible plants, in essence this park is meant to be a billboard for edible landscapes. The site is meant to display a juxtaposition of the edible plants growing and the grocery store experience. The site will be divided into two distinct sections, the pedestrian experience and the vehicular experience. Both sections share a common focal point. This focal point is a giant “On Sale” sign. Pedestrians will experience the sign as the backdrop for a “shopping aisle” of growing edible plants. Walking past the aisle will be akin to walking down the produce aisle and seeing the whole plant as it grows and not just the part that we eat. The adjacent open space and seating offer a place to sit among the herbs and vegetable terraces. Fruit or nut trees to the southeast of the site also provide a shady spot to sit and watch the people or cars go by.

Vehicles will see the sign as an advertisement, like the ones they experience every day. The sign sits in a mass of edible plants that will illustrate the size and shape of our food as it grows. The sign facing the road will also be equipped with marquee telling the cars what is planted in the large bed. This allows the plants to be rotated and a number of edibles to be showcased such as onions in the spring, broccoli in the summer, wheat in the fall, and kale in the winter.

PROGRAM

1. Mass Planting
2. Showcase Plant
3. On Sale Sign
4. Bin Vegetables
5. Shopping Aisle Planter
6. Turf Area
7. Turf Seating Bench
8. Herb Planters
9. Vine Planter
10. Berry Area
11. Fruit Trees

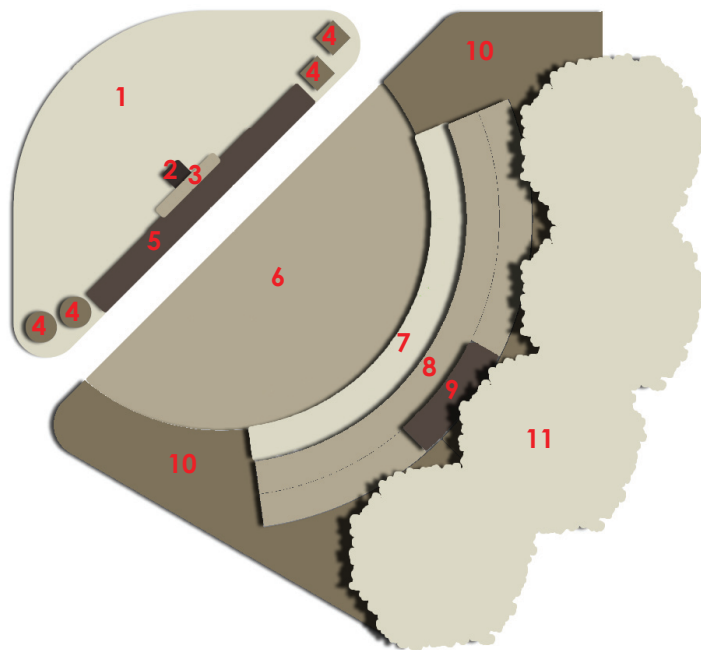
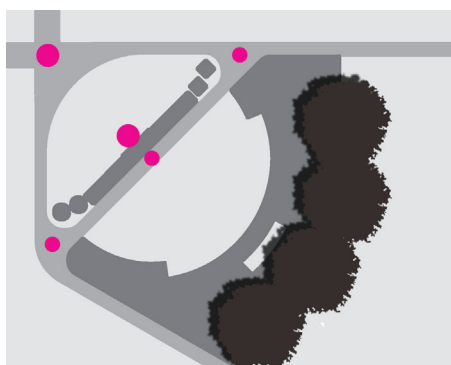


Figure 5.5 Pocket Park Program Diagram



LEGEND

- Space
- Path
- Edge
- Node
- Figure

Figure 5.6 Pocket Park Organization Diagram



Figure 5.7 Pocket Park Plan View

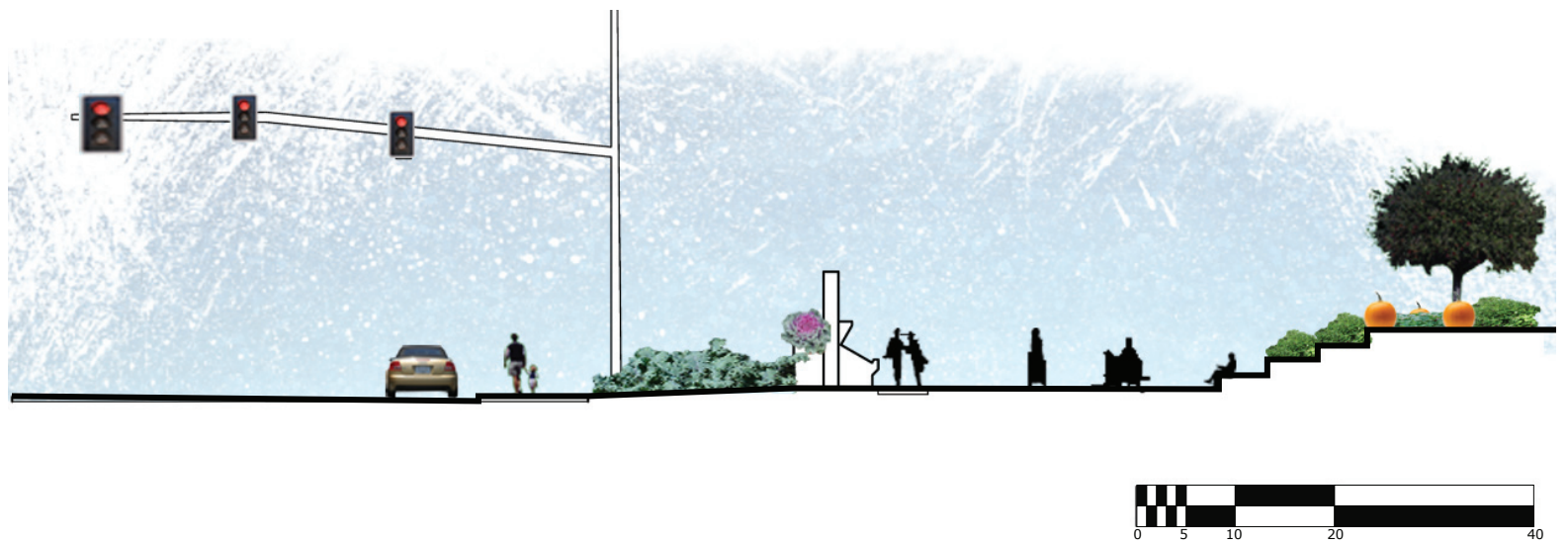


Figure 5.8 Pocket Park Section A'-AA' Looking Northeast

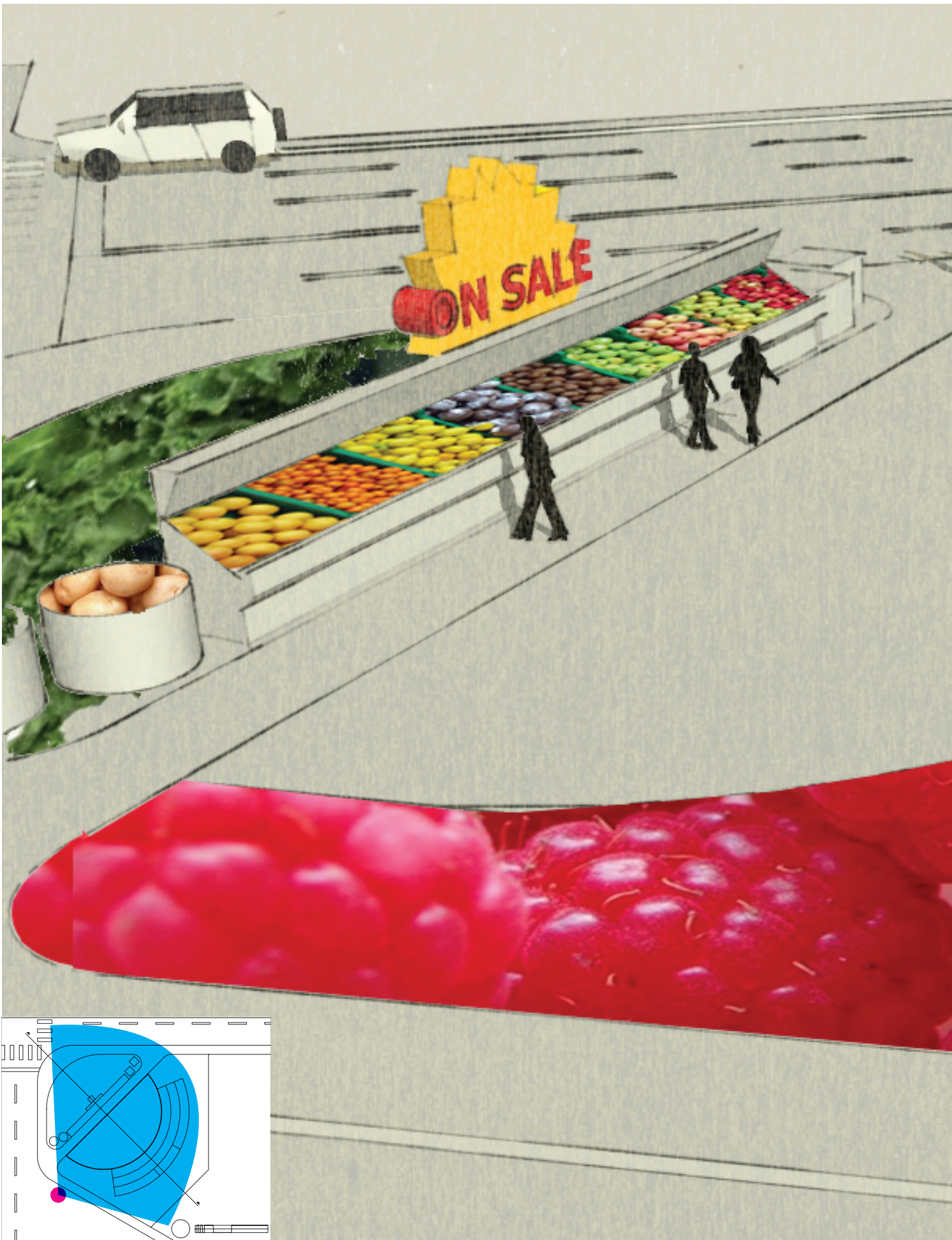
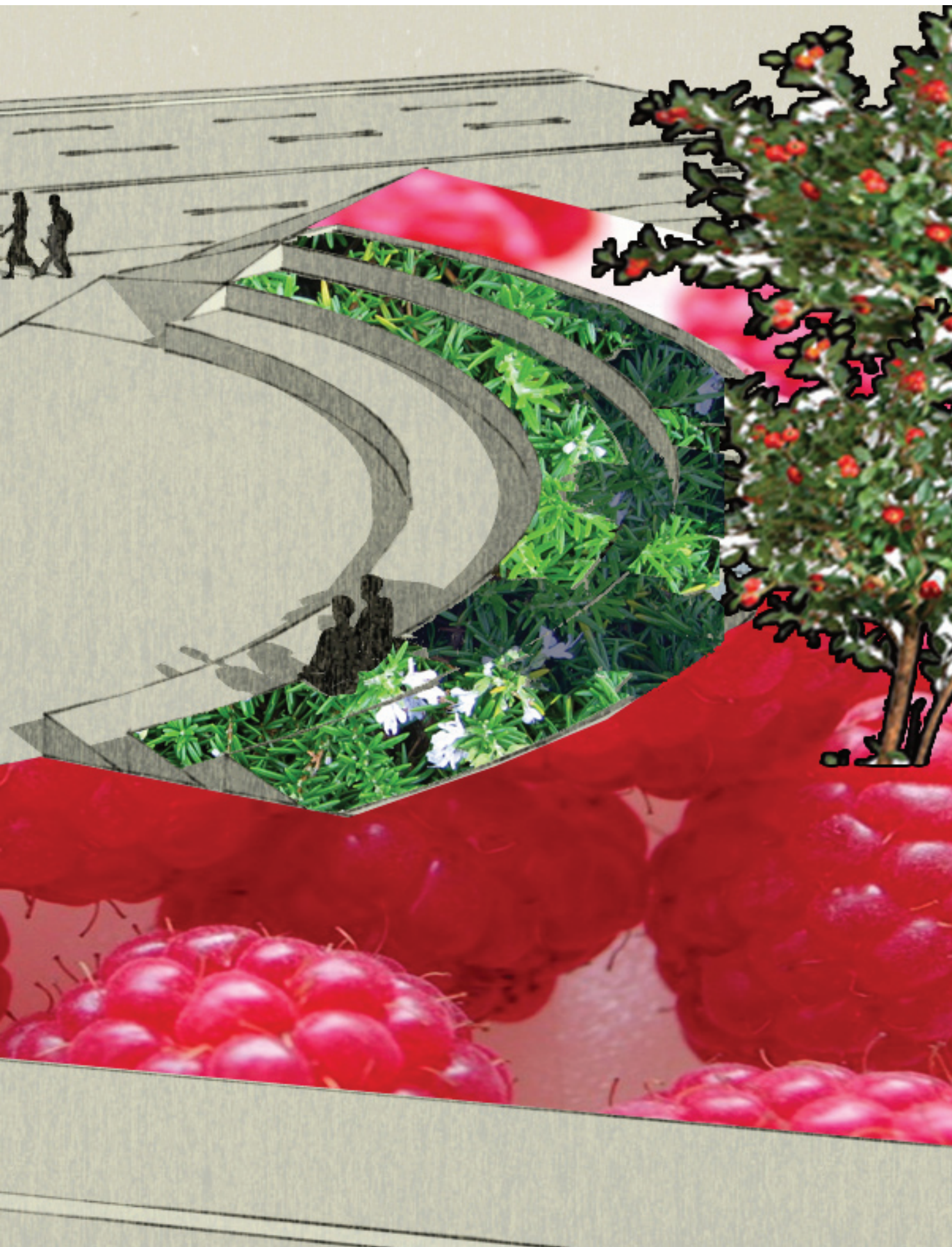


Figure 5.9 Pocket Perspective Looking Northeast



Accessible Garden

Site Analysis

The site is located within Meadowlark Hills, a local retirement community, see Figure 5.9. The site is situated near the community building and along a minor roadway. A highway and business district is nearby. The site is 0.50 acres and is regular in shape. Due to the site's location and history it is best suited for the "Accessible Garden" type.

The Accessible Garden site is medium sized, and regular in shape. It has a high visual profile and would serve as an excellent site for an aesthetically driven accessible community space for the surrounding retirement community.

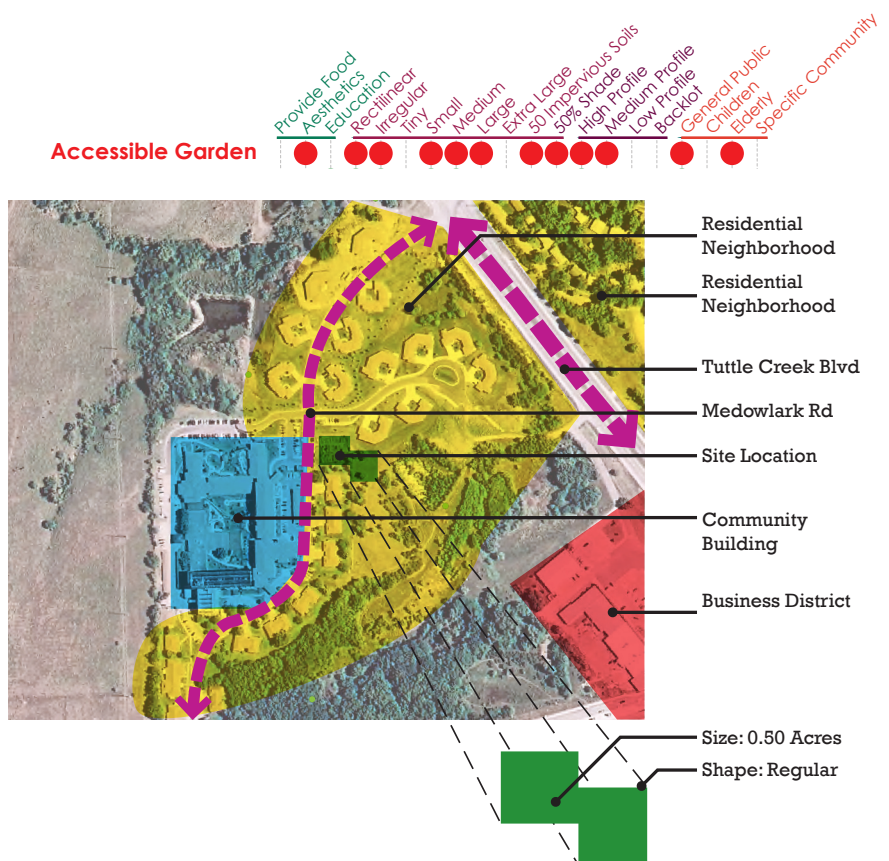
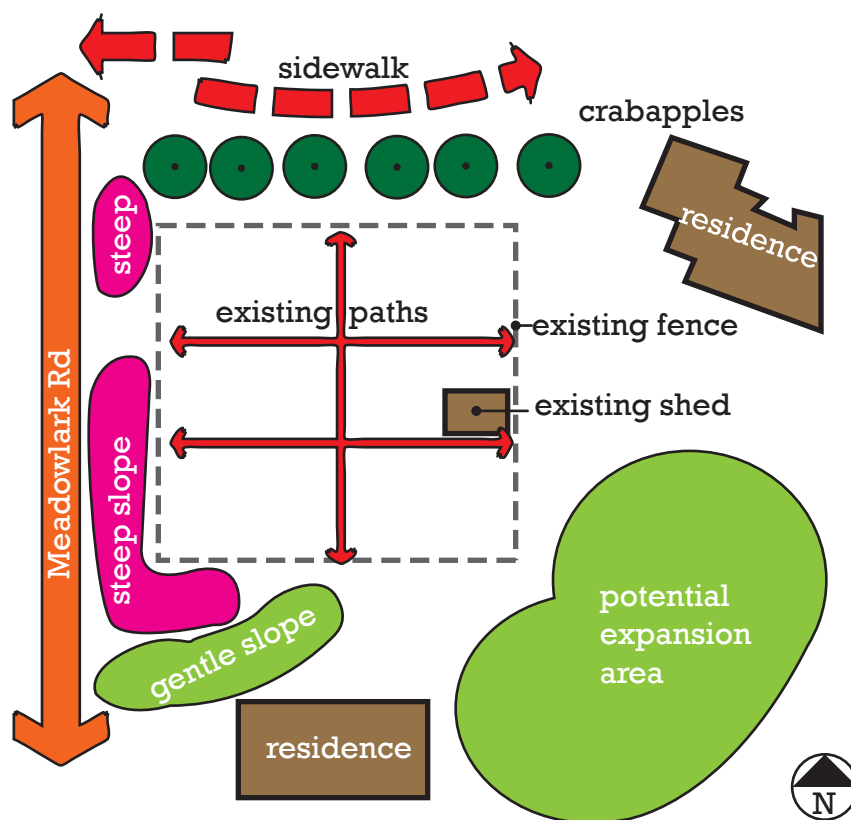


Figure 5.10 Site Analysis of Accessible Garden Site Based on Matrix

Existing Conditions

The community garden is currently composed of a number of beds surrounded by bark paths. There is a shed on the site that houses gardener's tools. The entrance to the garden can be reached by going up a number of stairs, or up a grassy slope. Neither of these routes is easily accessible to wheelchairs or walkers. There is also no community space where people without garden plots can come and enjoy the garden, see Figure 5.10.



The community garden is currently divided among several different users. The soft surfaces and lack of accessibility limit who can easily use the garden.

Figure 5.11 Existing Conditions at the Accessible Garden Site

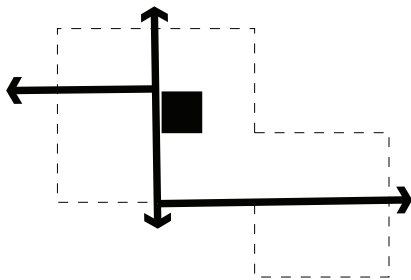


Figure 5.12 Accessible Garden Parti Diagram

Accessible Garden Design

The intent of the “Accessible Garden” is to solve the accessibility problem for the gardeners as well as creating a space that everyone in the neighborhood can use. The accessibility problems were answered by adding two additional entrances. Wheelchairs and walkers will easily be able to navigate the ramps located on the north and south of the site, without dissuading the use of stairs for those who are able. The ramp at the north end incorporates stairs.

As people enter the site from the north and south they will immediately be able to experience edible plants. Raised planting beds filled with vegetable and herbs will be located in the space between the sidewalk, staircase, and ramps. After passing through the surrounding hedge, through distinct gates, people will arrive in the garden space of the site. Planting beds will be edged with concrete allowing free access to all parts of the garden, and not only for wheelchairs but barrows and wagons as well. When the gardener or visitor alike is tired or hot they can take refuge in the shade structure next to the existing shed. A new restroom is conveniently located for other pressing needs. Around the restroom, away from the gardening beds, is a small orchard providing fruit and nuts for anybody willing to pick them. When it is time to head home, or over to the community building the site offers exits at each of the cardinal directions to allow people coming from all directions to pass through the garden instead of merely by it.

- PROGRAM**
1. Ramp/ Stair Combination
 2. Herb Garden
 3. Hedge
 4. Garden Plots
 5. Fountain
 6. Planter Box Seats
 7. Orchard
 8. Shed with Shade Structure and Restroom

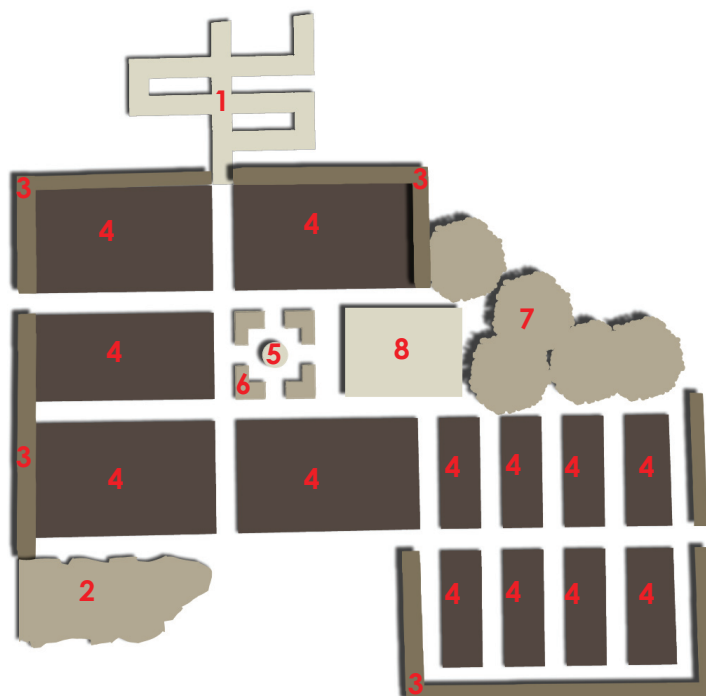


Figure 5.13 Accessible Garden Program Diagram



- LEGEND**
- Space
 - Path
 - Edge
 - Node
 - Figure

Figure 5.14 Accessible Garden Organization Diagram



Figure 5.15 Accessible Garden Plan View



Figure 5.16 Accessible Garden Section B'-BB' Looking East



Figure 5.17 Accessible Garden Perspective Looking Northeast



Demonstration Garden

Site Analysis

The site is located along a major roadway and in between the Riley County Health Department and Pioneer Park, see Figure 5.16 It is also within close proximity to Kansas State University and the Mercy Regional Health Center. These factors give the site a high visual profile. The site is also surrounded by residential neighborhoods. The site is 7.6 acres and irregular in its overall shape, although there are areas within the site that are rectilinear in nature. The nature of the activities in the adjacent Health Department and the high visual profile of the site make it best suited for the Demonstration Garden type.

The Demonstration Garden site is large, and irregular in shape. It has a high visual profile and would serve as an excellent site for an educationally driven demonstration garden.

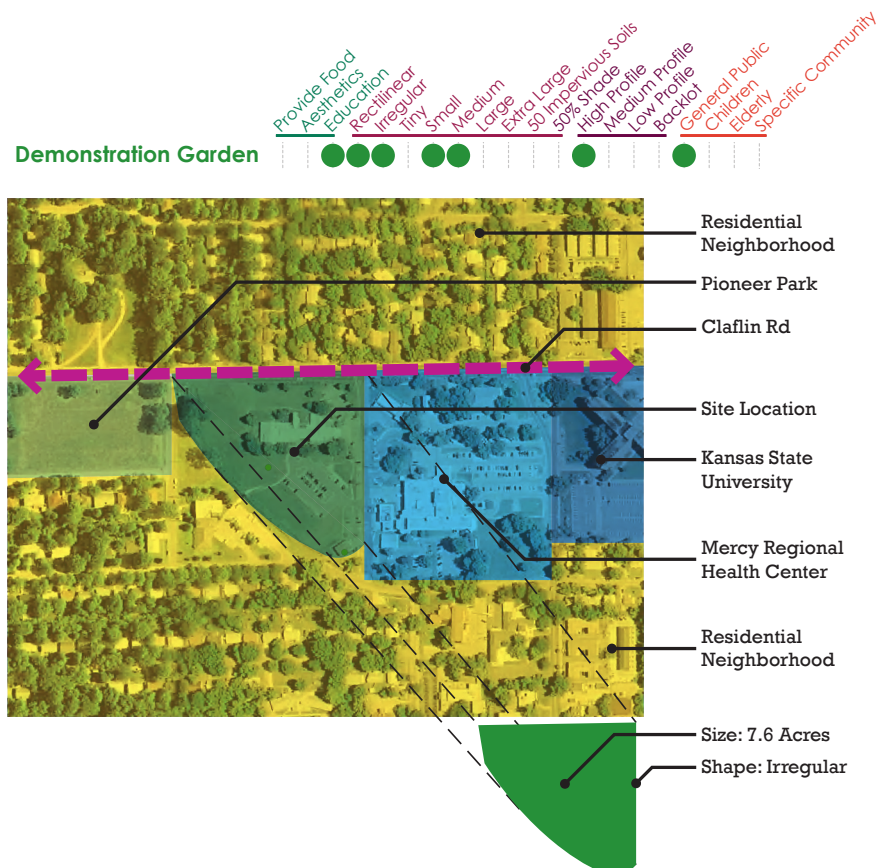
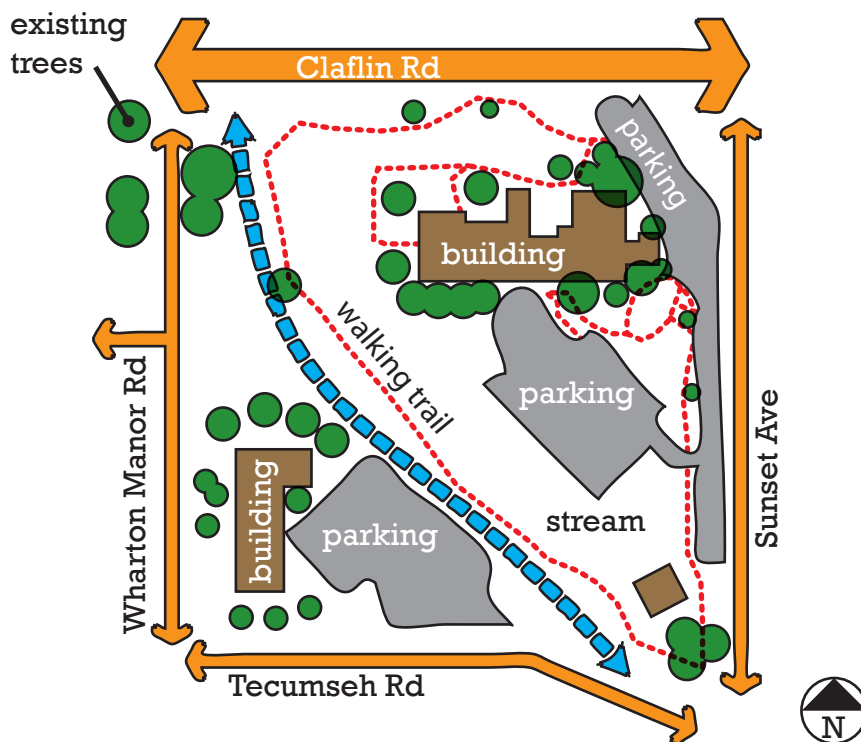


Figure 5.18 Site Analysis of Demonstration Garden Site Based on Matrix

Existing Conditions

The community garden is currently composed of a number of beds surrounded by bark paths. There is a shed on the site that houses gardener's tools. The entrance to the garden can be reached by going up a number of stairs, or up a grassy slope. Neither of these routes is easily accessible to wheelchairs or walkers. There is also no community space where people without garden plots can come and enjoy the garden, see Figure 5.17.



The Demonstration Garden site has a walking trail, a small creek bed, and fields of mowed grass.

Figure 5.19 Existing Conditions at the Accessible Garden Site

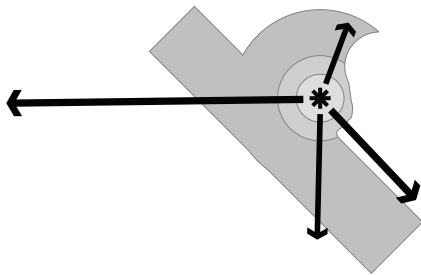


Figure 5.20 Demonstration Garden Parti Diagram

PROGRAM

1. Container Garden
2. Medium Difficulty Techniques
3. Espalier Area
4. Difficult Techniques
5. Shelter
6. Bridges
7. Orchard

Demonstration Garden Design

The primary goal of the demonstration garden is to display different gardening techniques that visitors can use at their homes. The techniques area arranged according to their difficulty. The central space will be house the easiest planting methods and will consists mainly of container gardens. All sort of containers, tin cans, ceramic pots, oil drums, bath tubs all to illustrate the fact that we can grow edible plants in anywhere we can put soil. This center spaces is also the starting point for navigating at the garden, visitors can check the mosaic map of the garden which is laid out in the middle of the container garden. From here visitors can venture out into the garden and see planting beds illustrating irrigation techniques, more efficient planting arrangements, heirloom vegetables and more.

Tree crops are also presented in a small orchard where visitors can check on the flowers and fruit, reading panels that explain tree maintenance, harvesting times, and even a few recipes. The orchard will not be limited to fruit trees but will include nut and spice trees as well. If visitors do not have the space for a fully grown tree, an espalier garden will showcase the various methods of training trees to grow in tight quarters. Visitors are encouraged to explore until they feel as if the technique they are looking at is too difficult, too large, or too time consuming for them. Then visitors should retreat towards the central space until they feel comfortable with the scale of edible landscaping around them. As they master the easier techniques they will be able return year after year to the demonstration garden until they have mastered all the most difficult methods of edible landscaping.

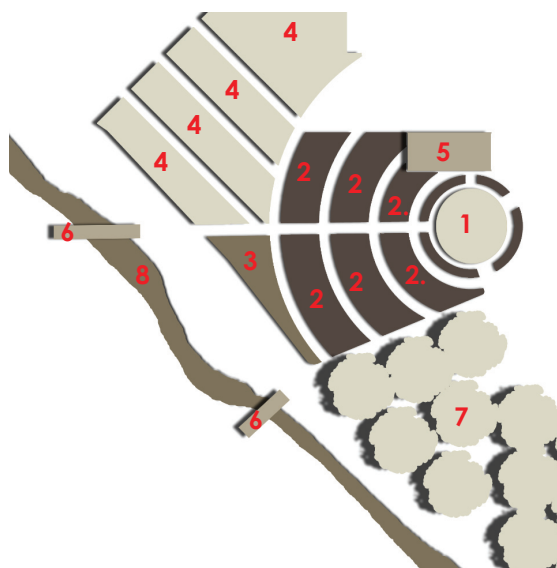
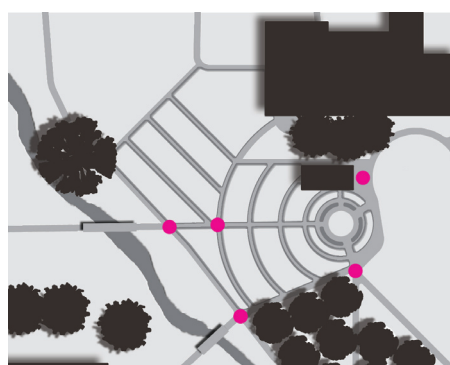


Figure 5.21 Demonstration Garden Program Diagram



LEGEND

- Space
- Path
- Edge
- Node
- Figure

Figure 5.22 Demonstration Garden Organization Diagram

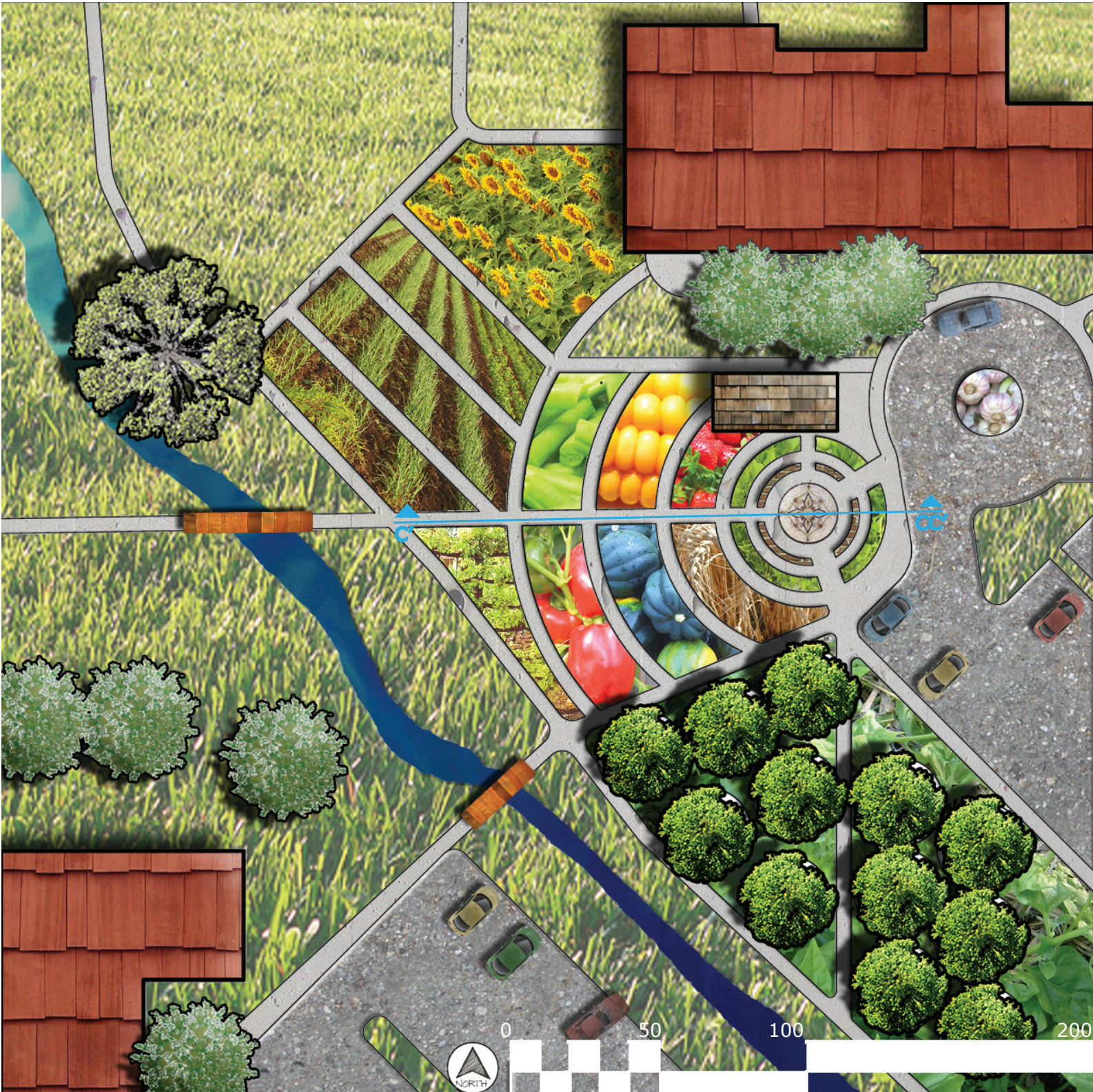


Figure 5.23 Demonstration Garden Plan View

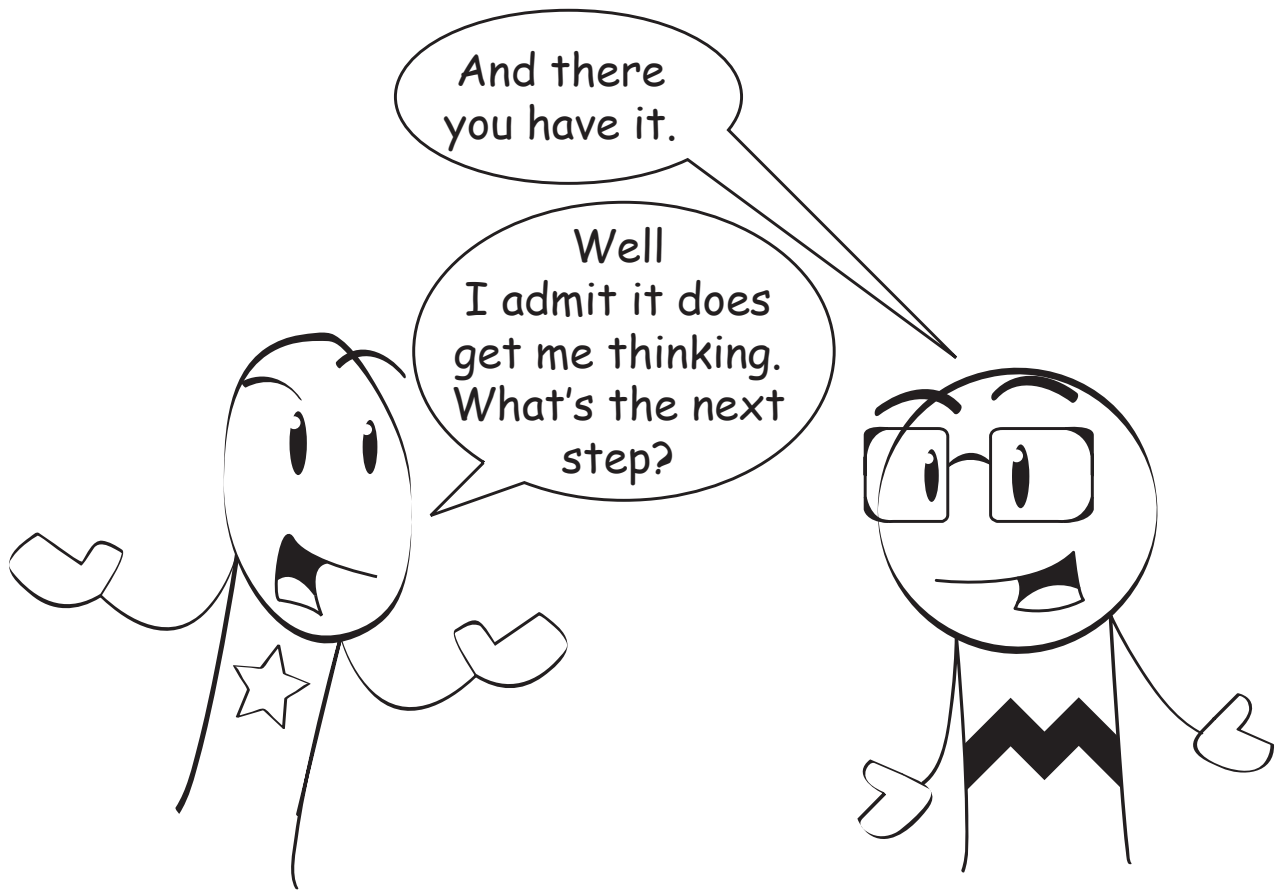


Figure 5.24 Demonstration Garden Section A'-AA' Looking Northeast



Figure 5.25 Demonstration Garden Perspective Looking East





Conclusion

The urban and suburban public has for too long shunted edible landscapes to the outskirts of town, labeling the productive landscape with names such as ugly, messy, and uninteresting. *Nôtre Potager* presents an organized process for identifying sites within the urban and suburban landscape to be used as edible landscapes, applying a matrix to help organize the sites into categories, and finally using the typology to guide the design process. The three resulting prototypical designs illustrate how effective adding beautiful edible landscapes to our community can be.

The United States Green Building Council and the Sustainable Sites Initiative have both cited food production as an important part of creating sustainable communities (USGBC) (Sustainable Sites Initiative). Edible landscapes are going to be an important part of neighborhoods all across the United States. Then why should we settle for mundane, uni-tasking spaces? Returning edible landscapes to within the view of the general public will help people reconnect with the food they eat. They will also connect

with the seasons and growing cycles of plants. Their lives will be enhanced and their cities will be beatified.

Nôtre Potager is a starting point from which we can begin to value the source of our food as an essential and aesthetic component of our communities. There is still a significant amount of work that needs to be done before edible landscapes can freely dot our urban and suburban landscape. New city policies allowing and encouraging edible landscapes would have to be adopted. Many of these policies would require the revision of current city codes. Communities would need to retrain their maintenance staff. These civic employees would be more than landscapers; they would become an integral link in the human food chain. We would need the collaboration of many people working together to realize *Nôtre Potager*. However, with so many people working together this idea could harvest much more than a master's project. In each family, each community, each city--we could have our garden, *nôtre potager*.

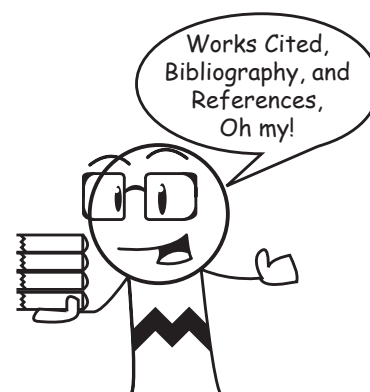
This project was meant to be an exercise in conceptual design. Nôtre Potager used a photomontage as a representational style as it reflects the conceptual nature of the project. This decision was made in part from Elizabeth Meyer's work about creating landscapes that are recognizable as art.

Attenuation of form, densification of elements, juxtaposition of materials, intentional discontinuities, formal incongruities-- tactics associated with montage or collage—are deployed for several reasons: to make a courtyard, a park, a campus more capable of appearing, of being noticed, and of performing more robustly, more resiliently.

As an introduction to the concept of edible design Nôtre Potager can excite others about the idea of edible landscapes. By not being too literal it allows the viewer to realize that there is room for change, and no final design decisions are being proposed. While the lack of realism and the level of abstraction may be confusing to people not familiar with the project, this style is intended to communicate the conceptual nature of the prototypical designs. The photomontage style also does not show how the plants themselves will affect the space where they are placed.

Further work on the concept of Nôtre Potager will need to address these issues of representation as it becomes applicable in further situations. The prototypical designs would need to enter into a stage of intense design where materials would be selected and more rigorous grading and site preparation applied. A crucial next step would be to work with horticulturists to select detailed plant material for each site. It would also be interesting to know how edible plant selection in public space affects the user's perception of the site. Further research in the topic of edible landscapes should be encouraged and how landscape architecture can lead in this exciting field.

A Final Note



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References



Appendices

Supplemental Materials

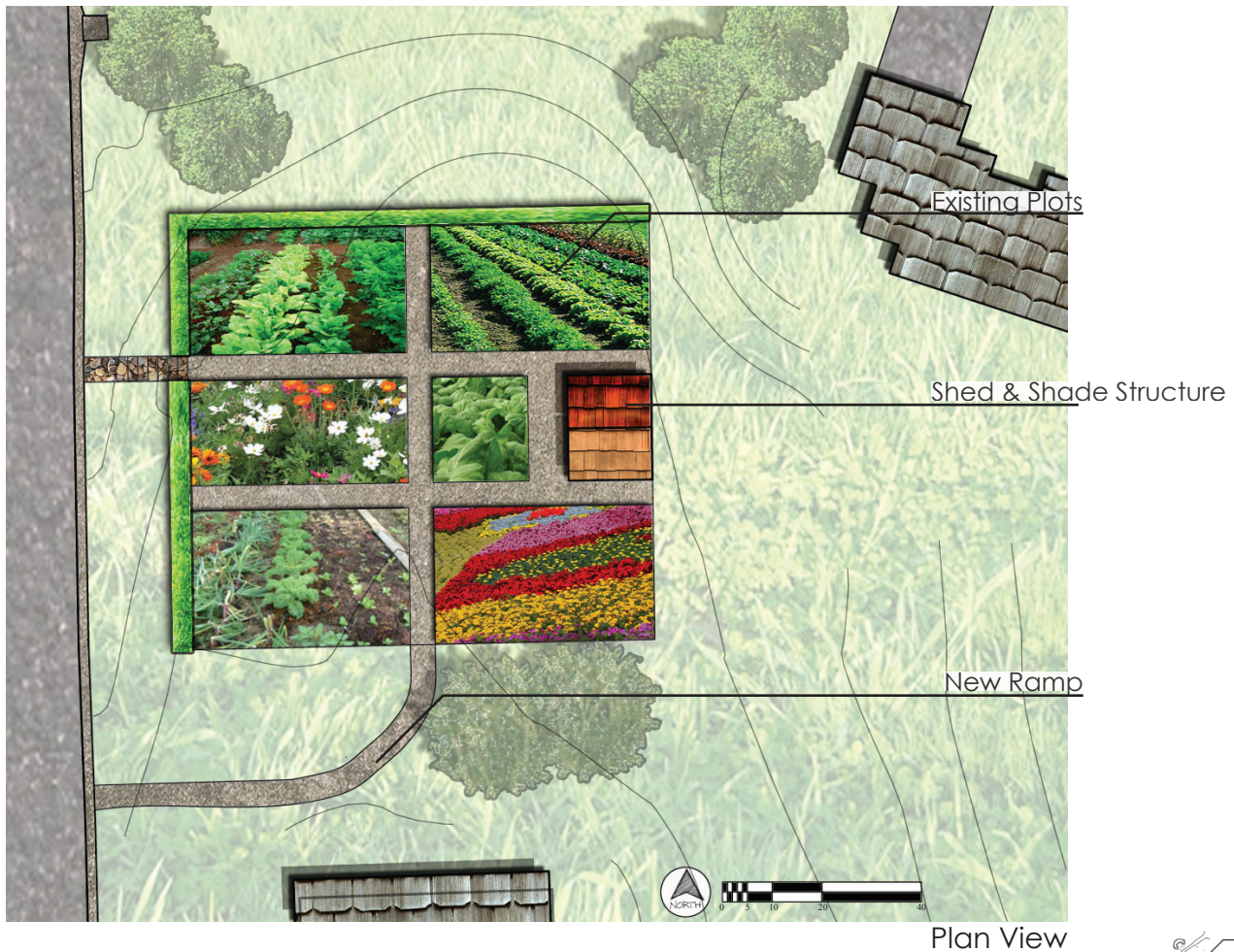
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Table of Contents

Appendix A

Meadowlark Hills

The Accessible Garden prototype was part of a larger project that dealt with the redesign of the Meadowlark Hills Community Garden. Several presentations were made to the grounds committee of Meadowlark hills, and the feedback from each one of these meetings guided the design process. Many of the programming elements and design decisions were made in response to concerns and opinions of the grounds committee. The following pages contain the final presentation boards made to the grounds committee as well as an opinion of probable cost provided by the author.



Section View



Meadowlark Hills Community Garden : Phase 1

Jeremy Merrill
Katie Kingery-Page
LAR 741 Problems in Landscape Architecture
Department of Landscape Architecture, Regional &
Community Planning
Kansas State University





First Phase Perspective

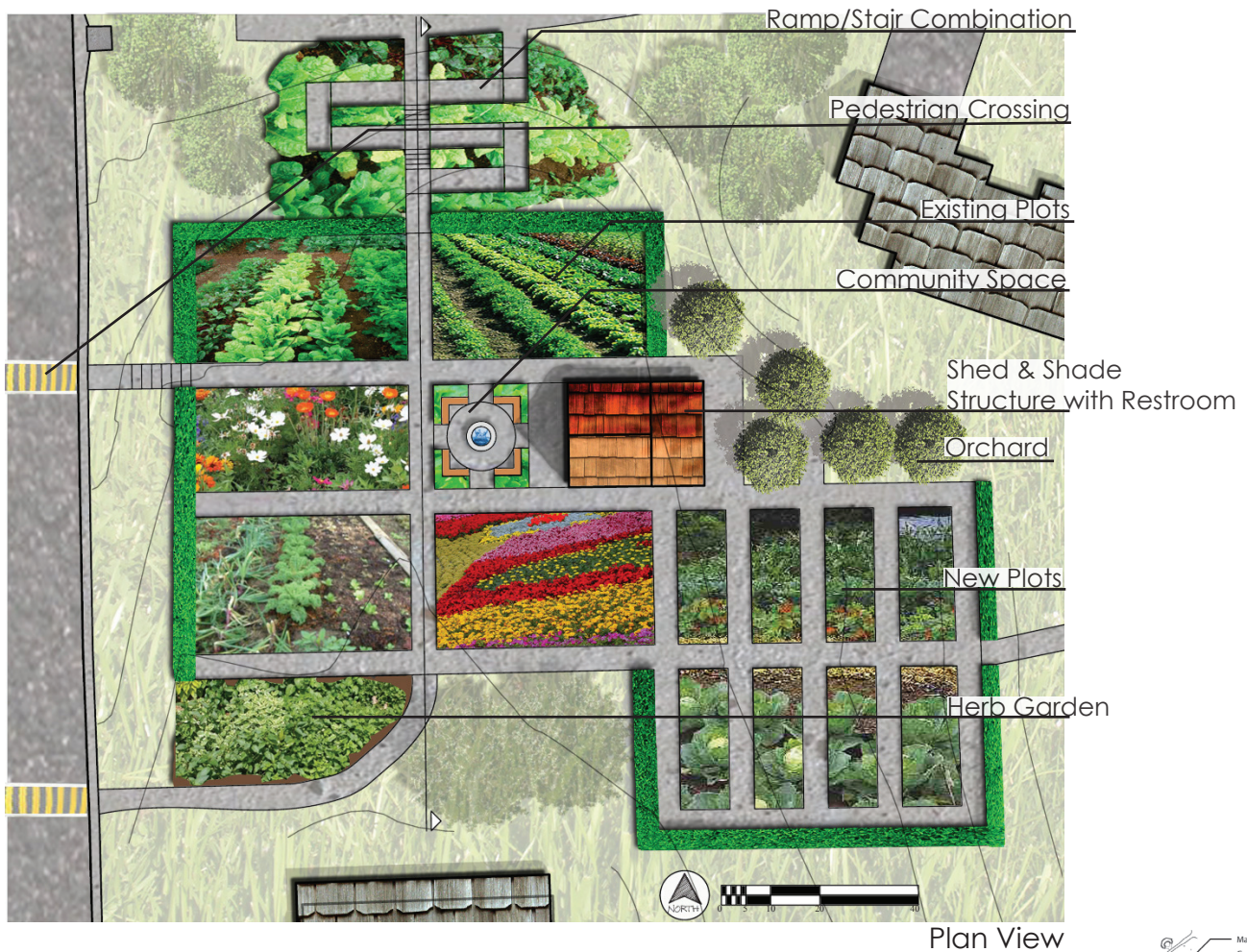


First Phase Perspective

Meadowlark Hills Community Garden : Phase 1

Jeremy Merrill
Katie Kingerly-Page
LAR 741 Problems in Landscape Architecture
Department of Landscape Architecture, Regional &
Community Planning
Kansas State University

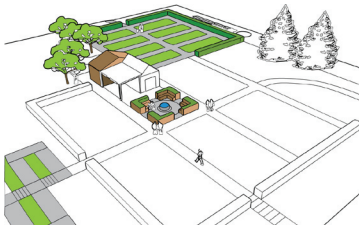




Meadowlark Hills Community Garden : Phase 2

Jeremy Merrill
Katie Kingery-Page
LAR 741 Problems in Landscape Architecture
Department of Landscape Architecture, Regional &
Community Planning
Kansas State University





Second Phase Perspective



Second Phase Perspective (Phase 1 in Blue)

Meadowlark Hills Community Garden : Phase 2

Jeremy Merrill
Katie Kingerly-Page
LAR 741 Problems in Landscape Architecture
Department of Landscape Architecture, Regional &
Community Planning
Kansas State University



Appendices

Probable Opinion of Cost 04.07.2009

Meadowlark Hills Community Garden

Phase One

Item	Cost/unit	Quantity	Cost
Ground Surfaces			
1. Concrete sidewalk (cost per linear Ft.)	\$ 45.00	303.00	\$ 13,635.00
2. Graded concrete sidewalk (cost per linear Ft.)	\$ 78.00	84.00	\$ 6,552.00
Structure			
3. Breeze Pergola (estimated cost by Home depot for 12ft x 16ft size)	\$ 4,000.00	1.00	\$ 4,000.00
Shrubs			
4. High bush Cranberry	\$ 10.00	70.00	\$ 700.00
Subtotal			\$ 24,887.00
5% contingency			\$ 1,244.35
TOTAL			\$ 26,131.35

Other

5. Vertical Platform Lift	\$ 11,071.00		\$ -
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Phase Two

Item	Cost/unit	Quantity	Cost
Ground Surfaces			
1. Concrete sidewalk (cost per linear Ft.)	\$ 45.00	470.00	\$ 21,150.00
2. Stairs (cost per riser)	\$ 45.00	8.00	\$ 360.00
2. Concrete ramp (cost per linear Ft.)	\$ 428.00	85.00	\$ 36,380.00
Structure			
3. Single User Accessible Toilet	\$ 9,358.00	1.00	\$ 9,358.00
Plants			
4x8 Raised vegetable Garden	\$ 219.00	4.00	\$ 876.00
4. High bush Cranberry	\$ 10.00	48.00	\$ 480.00
4. Apple Tree	\$ 35.00	5.00	\$ 175.00
Other			
Fountain	\$ 150.00	1.00	\$ 150.00
Rotating Composter (estimated cost by Home Depot)	\$ 179.00	1.00	\$ 179.00
Subtotal			\$ 69,108.00
5% contingency			\$ 3,455.40
TOTAL			\$ 72,563.40
Grand Total			\$ 98,694.75

Appendix B Precedents

There were a number of interesting sites that served as precedents and inspiration for **Nôtre Potager**. Here are three of them that deserve special mention because of their uniqueness.

Appendices

Name: The Edible Schoolyard
Location: 2134 Martin Luther King Jr. Way Berkeley, California
Berkeley, CA 94704-1180
Date Designed: 1994-2002
Size: one acre
Designers: Alice Waters,
Client: King Middle School
Managed by: Susie Walsh Daloz,
Garden Manager

Context: Located on a lot adjacent to King Middle School in a suburban neighborhood.

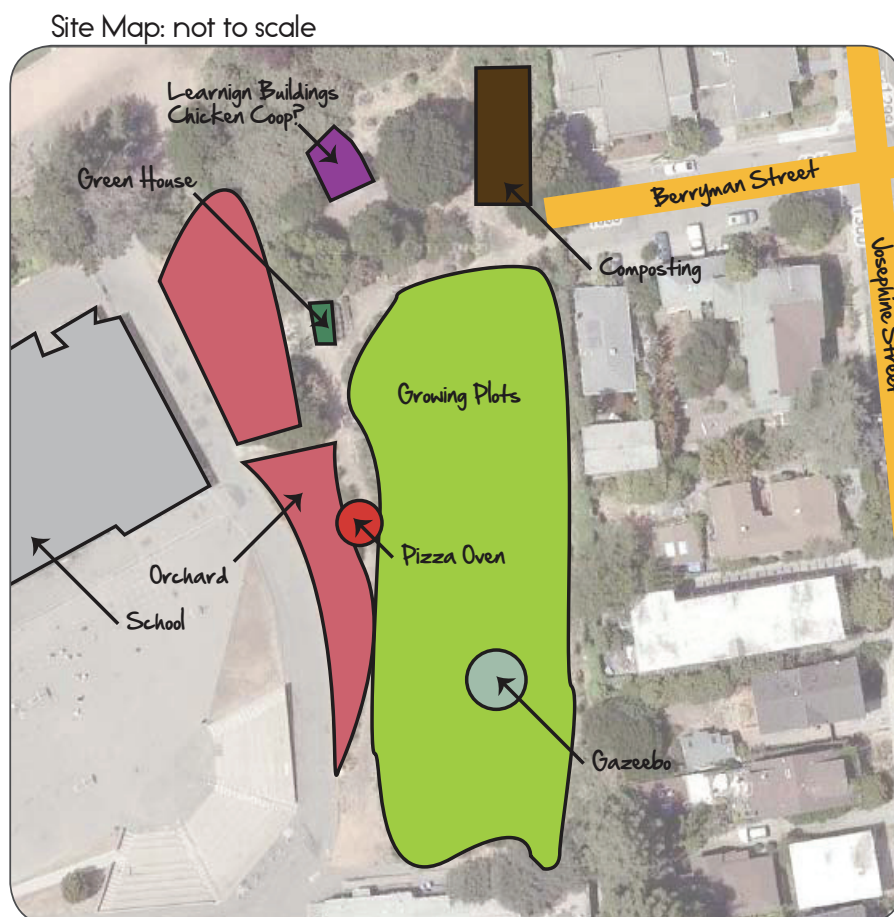
Background: In 1994 Chef Alice Waters collaborated with King Middle School to create a cooking and gardening program that reconnected student to the food that they eat everyday. The program has grown over the years and now a portion of the food served in the cafeteria is grown, harvested, and prepared by the students. The Edible Schoolyard also incorporates a number of different garden elements including: vegetable beds, flowers, fruit trees, berries, composting, a chicken coop, an outdoor classroom, a tool shed, and a pizza oven

Significance: The Edible Schoolyard is an example that shows just how successful an edible landscape school partnership can be.

Links: <http://www.edibleschoolyard.org/>
Contacts: The Edible Schoolyard
Martin Luther King Jr. Middle School
1781 Rose Street Berkeley, CA 94703
510.558.1335 510.558.1334 fax
info@edibleschoolyard.org



Map from Google Maps <http://maps.google.com/>



Map from Google Maps <http://maps.google.com/>

Name: Zenger Farms
Location: 11741 SE Foster Road
Portland, Oregon

Date Designed: 1998
Size: sixteen acres: 10 acres of wetland and 6 acres of organic farming operation
Designers: Friends of Zenger Farms
Client: Friends of Zenger Farms

Context: Zenger Farm is located in a suburban neighborhood in Southern Portland where it operates as a farm and a wetland for the Bureau of Environmental Services

Background: Zenger Farm was purchased by the Bureau of Environmental Services from the late Ulrich Zenger Jr., in order to preserve the land from commercial development. It served as a storm water management area until 1995 when Marc Boucher-Colbert leased the land and started actively farming the land again through his Urban Bounty Farm. The Urban Bounty Farm worked with local schools and Universities to make it an agricultural education center. In 1999, The Friends of Zenger Farm was created to manage and maintain the Zenger farm. They obtained a 50 year lease from the Bureau of Environmental Services and continue to provide education and food to

Significance: The Zenger farm is a great example of an edible landscape in an urban setting on public land. It also has a great potential for aesthetic design that would enrich the educational programs of a non-profit farm.

Links:

Contacts:

11741 SE Foster Road Portland,
Oregon 97266 Tel.503.282.4245
info@zengerfarm.org



Map from Google Maps <http://maps.google.com/>

Appendices

Name: Ferdinand P-patch #15
Location: 4913-23 Columbia Drive
S Seattle, Washington

Date Designed: Established 1982
Size: 44,000 sq ft
Designers:
Client: Seattle City Light

Context: The Ferdinand P-patch Garden is located underneath Seattle City Light electric transmission lines. It is within a suburban neighborhood in South Seattle.

Background: The Ferdinand P-patch Garden is now mainly tended by local immigrants from Laos and Thailand. These gardeners grow crops that are indigenous to their homelands which they provide to the local immigrant community. There is current one year waitlist for garden plots.

Significance: This edible landscape is an example of using the land underneath transmission lines as edible landscapes. These transmission line right of ways are more often than not, empty swaths of mowed grass.

Links: <http://www.cityofseattle.net/neighborhoods/ppatch/locations/15.htm>

Contacts:

P-Patch Program

700 5th Avenue, Suite 1700

PO Box 94649

Seattle, WA 98124-4649

(206) 684-0264, fax 233-5142

Email: p-patch.don@seattle.gov

P-Patch Trust

PO Box 19748, Seattle, WA 98109

Voice mail, 425-329-1601

City of Seattle Department of
Neighborhoods

700 5th Avenue, Suite 1700

PO Box 94649

Seattle, WA 98124-4649

(206) 684-0464 | (206) 733-9595

TDD



Map from Google Maps <http://maps.google.com/>

Appendix C

Literature Review

Much of the literature reviewed for this Project did not make it into the final product. The Literature review is organized by the source type. Each title is named and a short explanation of the text is given. This is meant to help others interested in edible landscapes another starting point in their own reading.

Books

Alexander, C. and Ishikawa S. and Silverstein, M. 1977. *A Pattern Language: Towns Buildings Construction*. New York: Oxford University Press.

This book is an example of how typologies can be organized and also how to articulate a typology's purpose.

Berry, W.T. 1977. *The Unsettling of America: Culture and Agriculture*. New York: Avon Books.

This book serves as the philosophical and cultural backbone to redefining how Americans view agriculture and how food production has transformed and our perception of that change.

Britz, R. 1981. *The Edible City: Resource Manual*. Los Altos, CA: William Kaufman Publishing.

This book acts as an educational resource manual for ideas on how to teach from edible landscapes. It contains many graphic representations and analyzes of built works and conceptual designs. This book will serve as a basis of what to look for in case studies as well as offering a basis for analysis. There is also a good deal of practical information regarding the planning and installation of edible landscapes along with community involvement.

Francis, M. and Hester, R. 1990. *The Meaning of Gardens*. Cambridge: The MIT Press.

This book is a collection of articles all dealing with our culture perspective of gardens. There are six different sections: Faith, Power, Ordering, Cultural Expression, Personal Expression, and Healing. The essays, *United we Sprout: A Chicago community Garden Story* by Rebecca Severson, *Social Meaning of Residential Gardens*, by Christopher Gramopp, and *Shared Backyard Gardening* by Deborah D. Giraud are especially relevant to my research.

Christopher, B. and Cole, T. 2002. *American Horticultural Society: Encyclopedia of Plants and Flowers*. New York, New York: DK Publishing, Inc.

This book contains the Plant Heat Zone Map used in the selection of potential plant materials.

Coates, G. 1981. *Resettling America: energy, ecology, and community*. Andover, Brick House Publishing Company.

This book addresses what cities might become if we rethink their development. There are two chapters of particular interest that deal specifically with urban agriculture. The Cheyenne Community greenhouse is offered as a good example of a community garden that is particularly productive. A brief history of the French Intensive / Bio-Dynamic Method is given as well as major researchers.

Corona_Martinez, A. 2003. *The Architectural Project*. College Station, TX: Texas A&M University Press.

This book contains a chapter dealing with architectural typologies and how they are created.

Coyne, K. and Knutzen, E. 2008. *The Urban Homestead*. Port Townsend, WA: Process Media.

This book contains a number of projects and texts to help people start farming at home. Many of the projects are equally applicable in a public garden setting.

Creasy, R. 1982. *The Complete Book of Edible Landscaping*. San Francisco: Sierra Club Books.

This book starts off with a number of chapters arguing the value of edible landscaping, design principles for designing with edible plants. Later chapters deal with small area landscaping and maintenance. The bulk of the book is devoted to an encyclopedia of edible plants: noting each plants hardiness zone, growing requirements, etc...

This book is a collection of projects where the participants removed their front lawns and replaced them with edible landscapes.

Iwashita, H. and T. Watanabe, and M. Tanaka, and H. Shimaki. Pocket Park. Tokyo, Japan: Process Architectural Publishing Co., Ltd., 1991.

This book provides in-depth coverage of what pocket parks are, their history and design guidelines.

Kaplan, R. and Kaplan, S. and Ryan, R. 1998. With People in Mind: Design and Management of Everyday Nature. Washington D.C.: Island Press.

This book is a treatise on aesthetics and the landscape. It provides a theoretical background for assessing the aesthetics of a landscape, as well as offering a basis for design guidelines.

Kolzlowsky, D. 1974. An Ecological and Evolutionary Ethic. Englewood Cliffs, NJ: Prentice-Hall, Inc.

This book contains a collection of notes about the authors thoughts and reactions to various ecological questions and concerns. Of particular interest is his essay on reconciling our dual natures, part human part animal. He states that we need to create environments that satisfy both of these natures.

Kourick, R. 1986. Designing and Maintaining Your Edible Landscape Naturally. Santa Rosa, CA: Metamorphic Press.

This book is a guide to time saving strategies, organic pest control, soil building, and methods in maintaining the edible landscape. It contains an annotated bibliography according to subject at the end of each chapter. It also includes the root profiles and birds eye views of major edible trees and edible plants. This book will help with the nuts and bolts of specifying what plants can fit in certain spaces.

Mollison, B. 1988. Permaculture: A Designer's Manual. Brisbane, Australia: Glob Press.

This book contains a philosophical background for creating sustainable edible landscapes as well as providing strategies in different climate conditions. These strategies are illustrated and will serve as a source book for potential program elements.

Nassauer, J. 1997. Cultural Sustainability: Aligning aesthetics and Ecology. In Placing Nature: Culture and Landscape Ecology, edited by J. I. Nassauer, 67-83. Washington D.C.: Island Press.

This Chapter addresses the issue of creating landscapes that can be sustained culturally. If a landscape is sustainable in its organic nature it may still be replaced by the will of the local people, whereas if it can be designed to be culturally significant than people will take ownership of that landscape. The landscape therefore becomes better able to endure.

Odum H. T. and Odum E. C. 1976. Energy Basis for Man and Nature. New York: McGraw Hill Book Company.

This book serves as a basis for mapping energy flows in any system. A garden energy flow is included. The understanding of energy flows is critical to the design of any sustainable landscape.

Polyzoides, S. 1997. On Campus Making in America, edited by O. R. Ojeda, J. M, O'Conner, and W. Kohn, 11-17. Hong Kong: Regent Publishing Services Limited.

This essay is an example of a clear typology, and shows how simple the typology need be to communicate the intent of the typology.

Richard, R. and Law, D. 1975. The Elements of Planting Design. Manhattan, KS: Interiors-Exteriors.

This book details the process of planting design. It will be used as a reference for creating design guidelines.

Appendices

Smiley, J. 1997. Farming and the Landscape. In *Placing Nature: Culture and Landscape Ecology*, edited by J. I. Nassauer, 35-43. Washington D.C.: Island Press.

This chapter focuses on our cultural connection to the landscape and agriculture. It also addresses the visual expectations we have for productive edible landscapes. Although the article focuses on open farmland, it still pertains to designing edible landscapes in an urban context.

Tracy, D. 2007. *Guerilla Gardening*. British Columbia: New Society Publishers.

This book contains a philosophical framework for growing food in the public sphere. It also contains a chapter on sighting, designing, and managing a community garden. Another chapter addresses dealing with public officials and what to say if you are ever caught planting on property that does not belong to you.

Viljoen, A. and Bohn, K. and Howe, J. 2005. *CPULs: Continuous Productive Urban Landscapes*. Oxford: Architectural Press

This book is a collection of essays about the future shape of cities and the role that urban agriculture plays in urban form. The essays range across a number of topics but are all related to urban food production.

Walker, T. 1991. *Planting Design: Second Edition*. New York: Van Nostrand Reinhold.

This book details the process of planting design. It will be used as a reference for creating design guidelines.

Websites

1990 USDA Plant Hardiness Zone Map, "South Midwest US," United States National Arboretum, <http://www.usna.usda.gov/Hardzone/hzm-sm1.html>

This website provided the USDA Hardiness Zone for Manhattan, KS.

American Community Gardening Association, "What is a Community Garden?," The American Community Gardening Association, <http://www.communitygarden.org/learn/>.

The American Community Gardening Association's website contains resources on starting community gardens and a feature allowing one to find community gardens across the US.

Bachman, J. ATTRA-National Sustainable Agriculture Information Services "Farmer's Markets" NCAT National Center for Appropriate Technology, <http://attra.ncat.org/attra-pub/farmmrkt.html#fures>.

This article contains Information regarding starting a new Farmer's Market.

City-Data, "Manhattan, Kansas," City-Data.com, <http://www.city-data.com/city/Manhattan-Kansas.html>

This website was used to locate climate data about Manhattan, Kansas.

Diggable City, "Diggable City: Reports and Publications," City of Portland, Oregon Office of Sustainable Development, <http://www.portlandonline.com/osd/index.cfm?c=42793>.

This website contains a study done analyzing the city of Portland, Oregon for public land that would be available and suitable for urban agriculture. It includes their GIS methodology, potential policy changes to remove the most common barriers to urban agriculture, and a list of recommendations to help with the implementation of urban agriculture.

Fair Food Foundation, "About Us," Fair Food Foundation,
<http://www.fairfoodnetwork.org>.

The website also contains a news section with a selection of recent community projects, and a grant program for those needing funding for their projects. This site is a wealth of potential case studies and information. Mission Statement: The Fair Food Foundation seeks to work with historically-excluded urban communities to design a food system that upholds the fundamental right to healthy, fresh and sustainably-grown food. We partner with individuals, groups within communities, community-based organizations, government leaders and others to discuss, develop, and implement a variety of strategies. We encourage local selection, ownership and control of food sources that are environmentally sound, socially just, and economically viable. We support communities to imagine and realize opportunities that fit their needs.

Guerilla Gardening, "Bloom Time," Guerilla Gardening,
<http://www.guerrillagardening.org>

A website devoted to a London gardener who uses small plots of neglected public land to grow flowers and ornamental plants. The concept is easily translated into using the space for edibles.

Kansas Weather, "Manhattan, KS Weather," IDcide,
<http://www.idcide.com/weather/ks/manhattan.htm>

This website was used to locate climate data about Manhattan, Kansas.

Manhattan, Kansas, "Welcome to Manahattan," City of Manhattan, Kansas,
<http://www.ci.manhattan.ks.us/index.asp?NID=127>.

This website was used to acquire general information about Manhattan, Kansas.

Omlet USA, Eglu, <http://www.omlet.us/store/store.php?cat=Eglu>

This website contains basic chicken rearing information and products that fit the new edible aesthetic this project is striving for.

Riley County, "What buildings in Riley County are on the Historic Register?," Riley County, Kansas, <http://www.rileycountyks.gov/FAQ.ASP?QID=313>.

This website was used to acquire what buildings in Manhattan are considered historic buildings. These historic buildings would raise the visual accessibility of potential sites.

UFM Community Learning Center, "The Manhattan Community Gardens," UFM Community Learning Center, http://www.tryufm.org/community_garden.htm.

Provides contact information and history of the Manhattan Community Garden.

http://www.weather.com/weather/wxclimatology/monthly/graph/USKS0358?from=36hr_bottomnav_undeclared.

This website was used to locate climate data about Manhattan, Kansas.

Articles

Meyer, E. 2008. Sustaining Beauty: The Performance of Appearance. *Journal of Landscape Architecture* 1 (2008) :6-23.

This essay provides an argument for the creation of landscapes that are based on the aesthetics and not solely on performance. Many of the landscapes in this project could be configured and designed to produce the maximum yield possible from the site, but that is not enough. It is important that the sights be designed with beauty in mind. This will boost their importance and is more fitting for landscapes within the public realm.

Nassauer, J. 1995. Messy Ecosystems, Orderly Frames. *Journal of Landscape Architecture* 14 (2) :161-170.

This essay describes ways that one can contain messy looking landscapes in such a way that they remain intact and able to fulfill its organic goals but also to be appreciated aesthetically. Nassauer makes many suggestions of how to frame un designed naturalistic landscapes. These principles may also apply to edible, working landscapes.