



# Neighborhood Regeneration

Through New Patterns of Urban Public Space

*Ran Ran*

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# Acknowledgements

This book is written for a thesis which is based on an accumulation of research, knowledge and design tests gained over the past two years, completing the requirements of the master degree in Landscape Architecture at Auburn University. While this book might serve as the closing product of my MLA degree, it will always stand out as a highlight of my academic journey in the study of Landscape Architecture. To achieve this academic milestone, I got much support and help, without which I cannot stand here.

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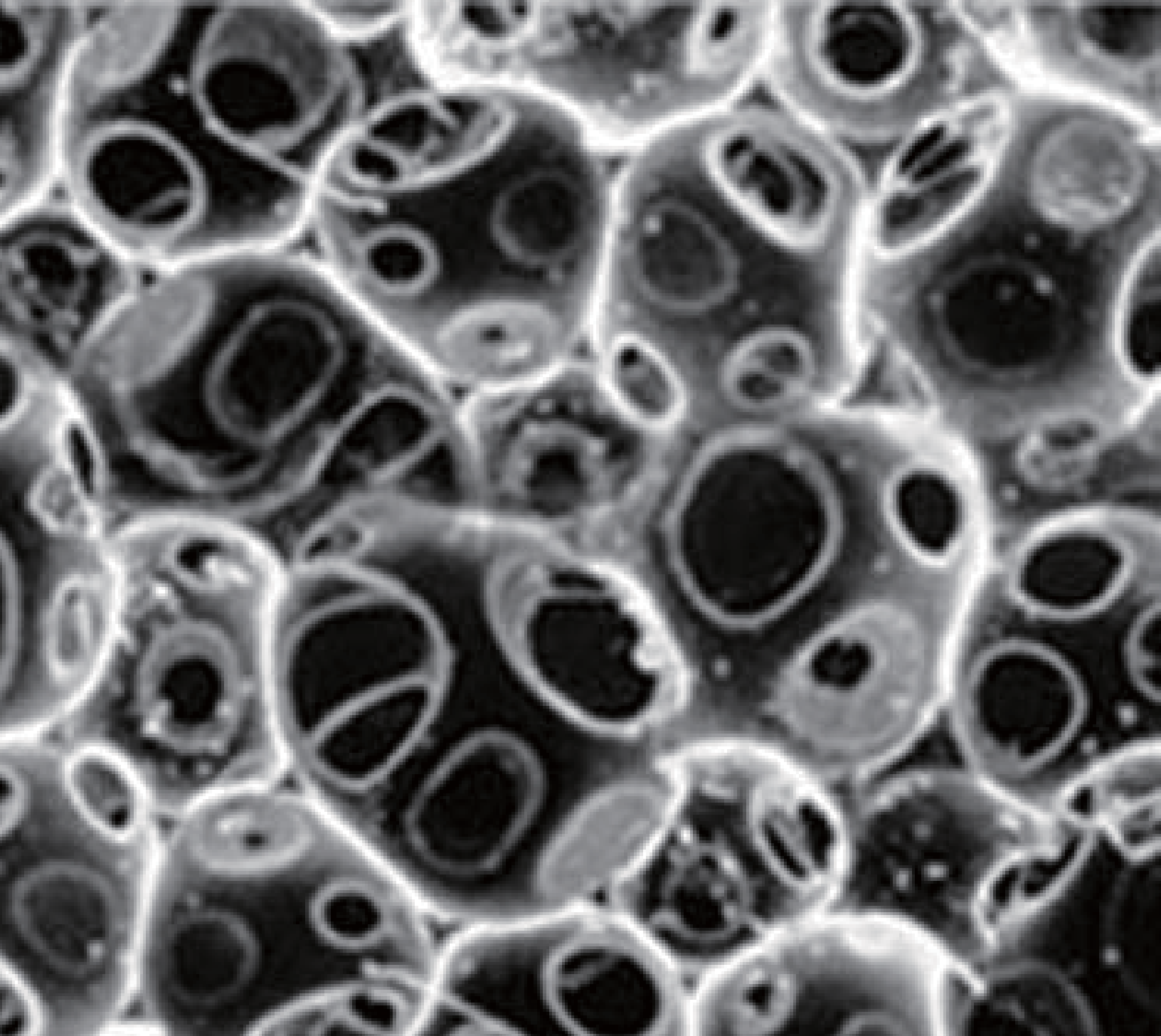
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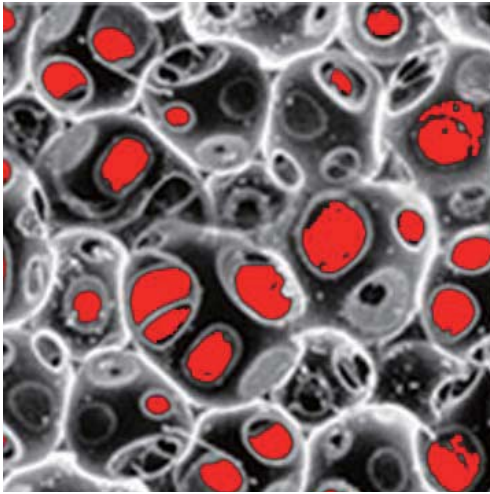
And last, I would thank all of my classmates and friends for their encouragement, care and support which helped make Auburn a home and a memory that will always make me smile.





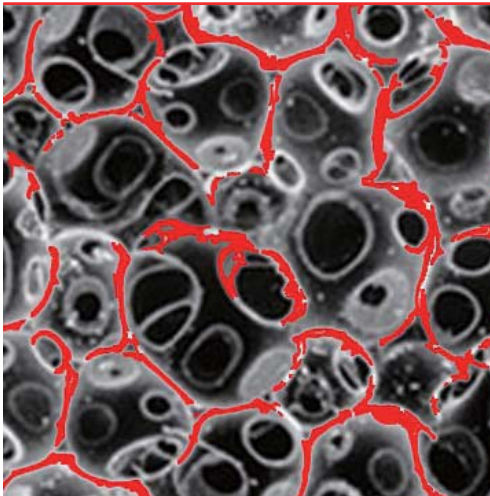


Urban Unit: Neighborhood



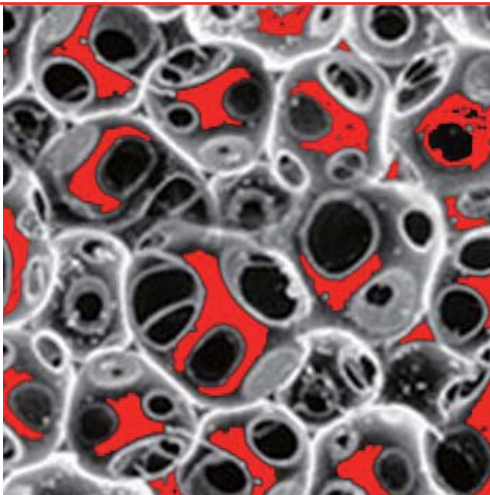
Nucleus

control and manage



Membrane

connect others, and transport



Substance

contain nutrition which

the growth

Building



nutrition from one to another

Pathway



refreshes the whole enviroment

Open Space









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# INTRODUCTION

Moving from China to the United States, the changing landscapes observed through the journey provided me a chance to discover the differences between these two large countries. One thing which is most interesting for me is the divergent feelings of living in different places. I began to think about why I need to stay at a place with a unique way of living. What are the factors that influence my living routines?

In Beijing, where I grew up, people are getting used to go to work on foot or by public transport systems every day. With the transformation of the wide and narrow roads, along which there are many stalls doing variety of trades, the city provides a rich repertoire of urban living to the public for watching on their ways. And in Atlanta, where I always went for visiting my aunt and buying foods imported from my hometown, almost all the people drive their own cars going through all kinds of high speed ways never stop until they arrived at the parking lot in front of their destinations. In addition to the differences both in cultures and the standards of livings, which are two important factors lead two divergent life styles of these two metropolitan areas, another strong factor is the varieties in their urban forms or the urban public space patterns.

I believe these patterns are taking a very important role of changing people's daily life and the world. Take a little change in my current apartment complex for instance, after the realty enclosed the community by using fences which pushed people living there had to go out of the complex only through the main entrance which is one hundred meters farer away from the public transit station than the former shortcuts, I began to more dependent on my own car to go to school. I also found many friends of mine living in the community are complaining about this change.

All the observations and interesting feelings stated above provided me a great passion in doing research on the urban public patterns, especially in the decaying downtown areas of United States, which had used to be the most vibrant urban public spaces for local citizens but due to the rise of personal automobiles are getting degraded. I proposed to find appropriate ways of influencing the existing patterns to provide a better living environment to people and to regenerate the places.

# Project Statement

## Neighborhood Regeneration

Through New Patterns of Urban Public Space

## Regeneration

In biology, regeneration is the process of renewal, restoration, and growth that makes genomes, cells, organs, organisms, and ecosystems resilient to natural fluctuations or events that cause disturbance or damage.

## Pattern

A pattern, from the French patron, is a type of theme of recurring events or objects, sometimes referred to as elements of a set of objects.

These elements repeat in a predictable manner. A pattern can be a template or model which can be used to generate things or parts of a thing.



# Abstract

Like many other decayed downtown areas in the U.S, the one in Montgomery, AL has a pedestrian framework which was provided for walking at the beginning of its settlement. However, most of the downtown neighborhood streets and roads are now used primarily for automobiles. Furthermore, numerous vacant spaces and degraded buildings and structures are left because of the rise of personal automobiles and the consequent urban sprawl. The limitation of life in Montgomery Alabama, where some people need to drive a long way for working or tourism and some people who have no cars have to go out for work and shopping, can be addressed through appropriate urban public pattern design.

This project attempts to find more options for people to use the downtown area and live a better life, drawing on existing physical and cultural conditions. It seeks to get rid of the limitation of the excessive automobile-based development and return to the city what people and the world really want and need. The project achieved this by establishing a new pattern system of green public spaces made up of existing overlooked spaces that connect with specific uses in the urban area. This new pedestrian network will provide more options for people to move around, and new patterns of living in the decayed downtown. The objective of the research is both to save an area which is going to die and reduce people's dependence on cars.



# Rationale

In current landscape architecture and urban design practice, there are many popular issues under exploration, such as natural drainage systems, urban public pathways and community regeneration. These issues are always talked about as the dependent topics. We can rarely find all of them combined in one project. This thesis project is intended to see if new connections and relationships between these elements of design can be opened up.

Design offers new solutions for both social effects and ecological issues.

This project draws attention to the patterns of urban public space in downtown Montgomery, Alabama by focusing on the issues of security in the neighborhood, sense of the community, economic development and sustainable development.

The project seeks to achieve the revitalization and regeneration of the community in downtown area by introducing nature to enrich the life in the city. A green framework, which integrates green space throughout and provide accessible, pleasant public spaces, as well as on-site water filtration and flood mitigation is the basic design element. The design tries to improve the environment solidly based on the existing conditions of



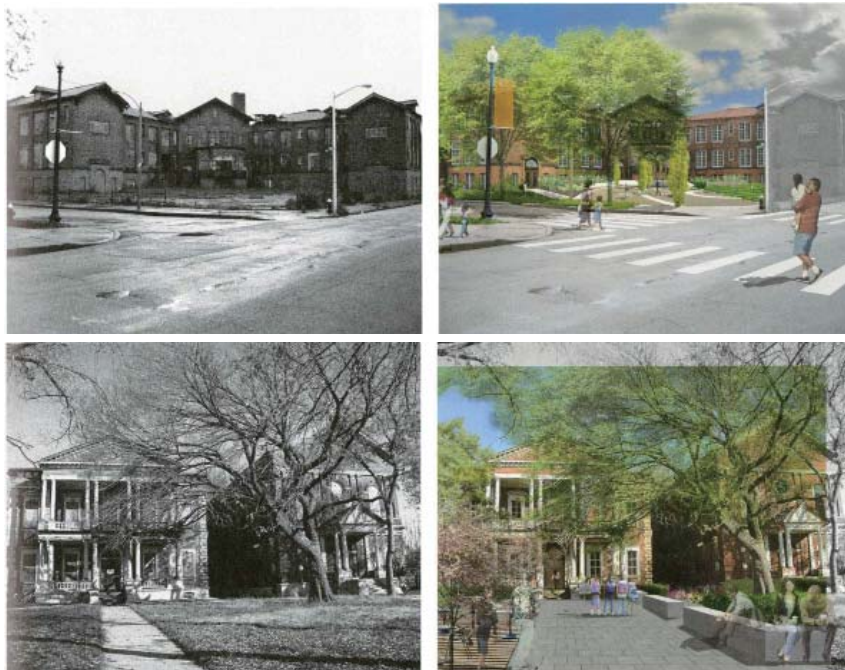
High Line Pathway, New York

the place, including its current public space network, drainage system, and land use. The updated plans of the area are also involved into this project to make it practical and feasible.

The interactions and enhancement will occur through the design of both human dwelling and nature habitat that allow for the reorganization of the relationship between local residents with each other, residents and visitors, urban life and the natural system to bring well beings to the community.



High Point Neighborhood Natural Drainage Infrastructure, Seattle

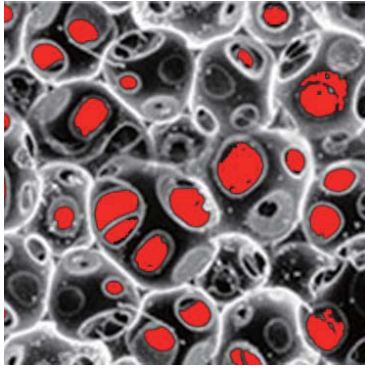


NorthSide Area Neighborhood Regeneration, St. Louis

# Methodology

Regeneration is a word which came from its biological meaning at first then has been used in other fields. In the biological meaning, regeneration occurs based on its basic unit: cells. Through a series of complex processes of break and copy in the original cell, more and more could be produced so that some of them which have certain functions could be considered as an organism. No matter for further growth, functions or communication with the outside, the operation of an organism is separated with its cell nucleus, cell membranes and the substance within or between cells. The function of each component contributes significantly to the whole organism; and the relationships between the three of them are close and indivisible. This project is trying to use the basic concept of the biological unit to inform the planning and design of the urban unit/ neighborhood so that the project could be clarified and the whole theory could be more complete.



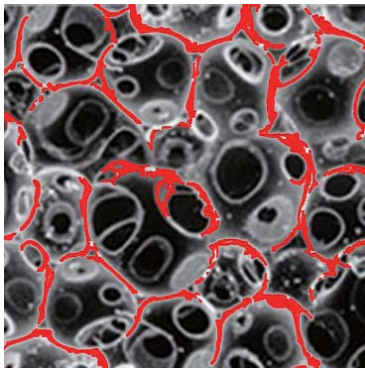


Nucleus

Building



control and manage the growth process

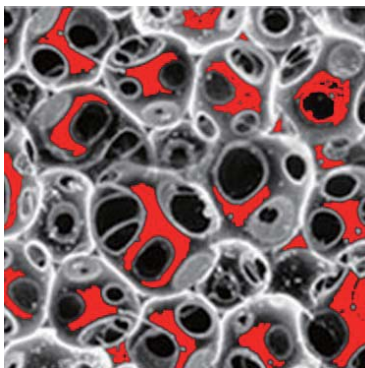


Membrane

Pathway

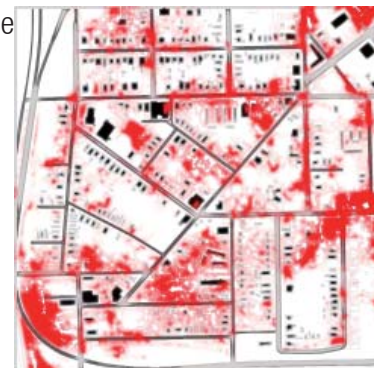


connect others, and transport nutrition from one to another



Substance

Open Space



contain nutrition which refreshes the whole enviroment



# Design Principles

## 1.Green Urban Public Space Framework

Nature can enrich life in the city

## 2.Sustainable development

Provide a clean, reliable green infrastructure system to treat water, energy, microclimate on site

## 3.Education

Provide a variety of public and private education opportunities for all ages

## 4.Economic Development

Preserve current jobs and create new ones while facilitating social equity and supporting growth opportunities

## 5.Transit Network

Design a safe transportation system that encourages walking, biking, and mass transit

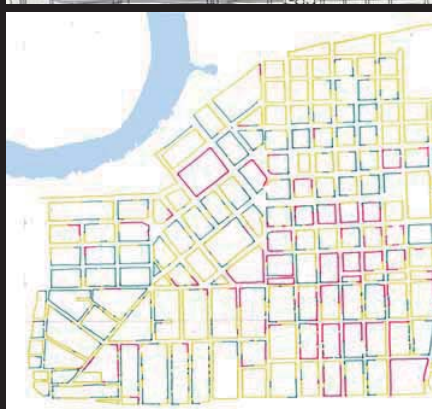
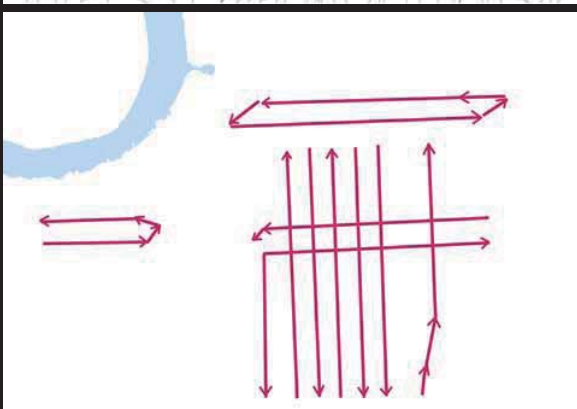
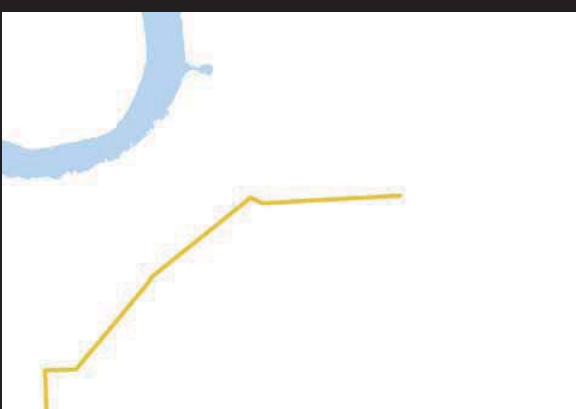
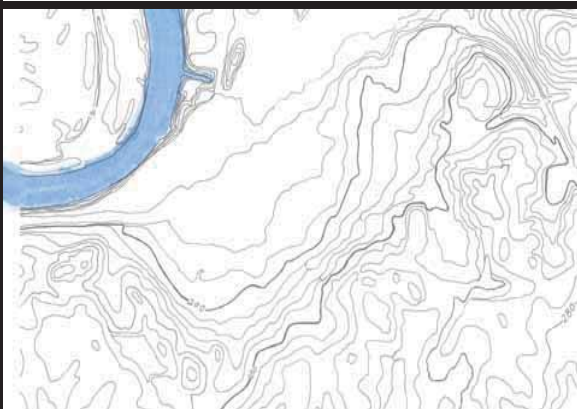
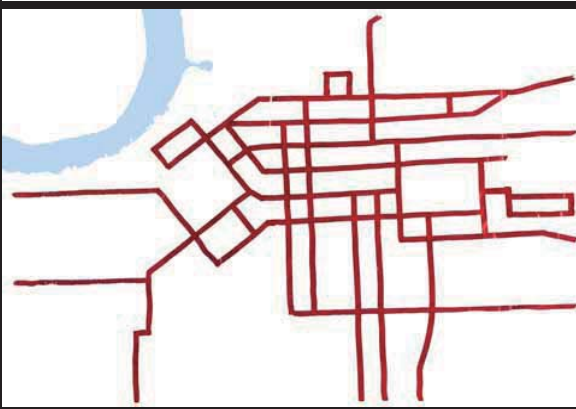
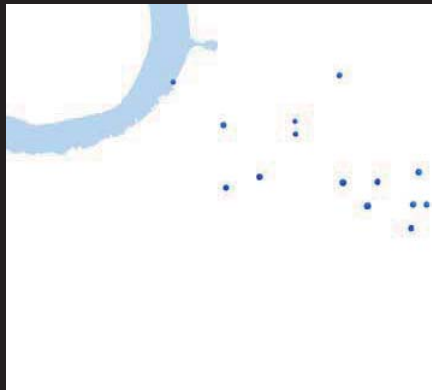
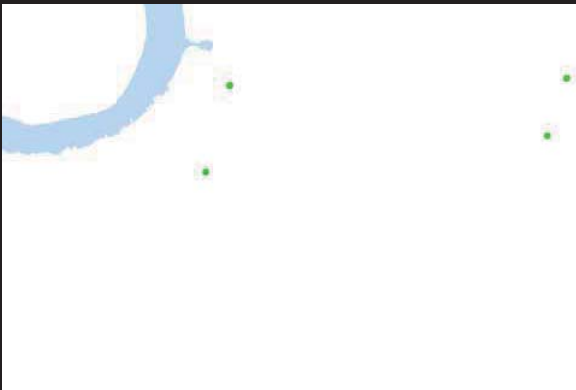
## 6.Healthy development

Foster a safer, healthier and integrated community that embodies the aspirations of both current and future residents

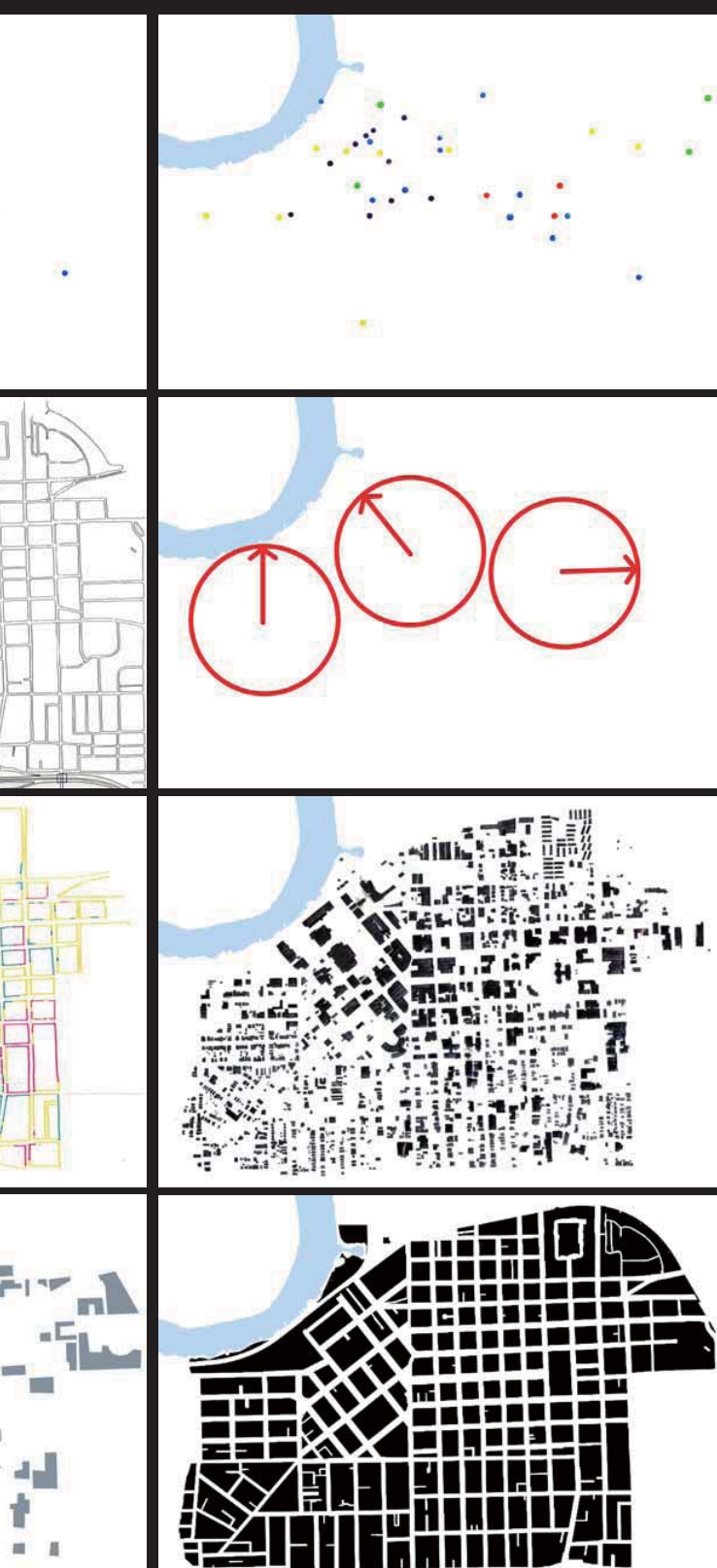


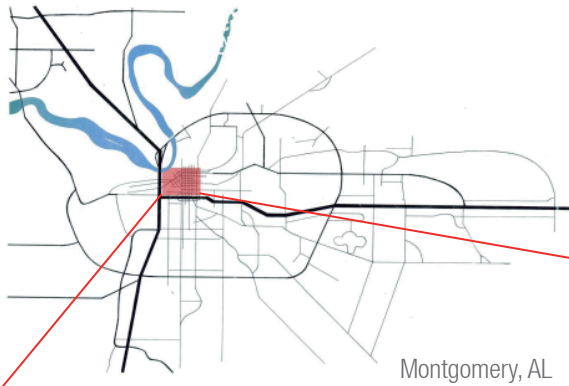






## SITE ANALYSIS





Montgomery, AL



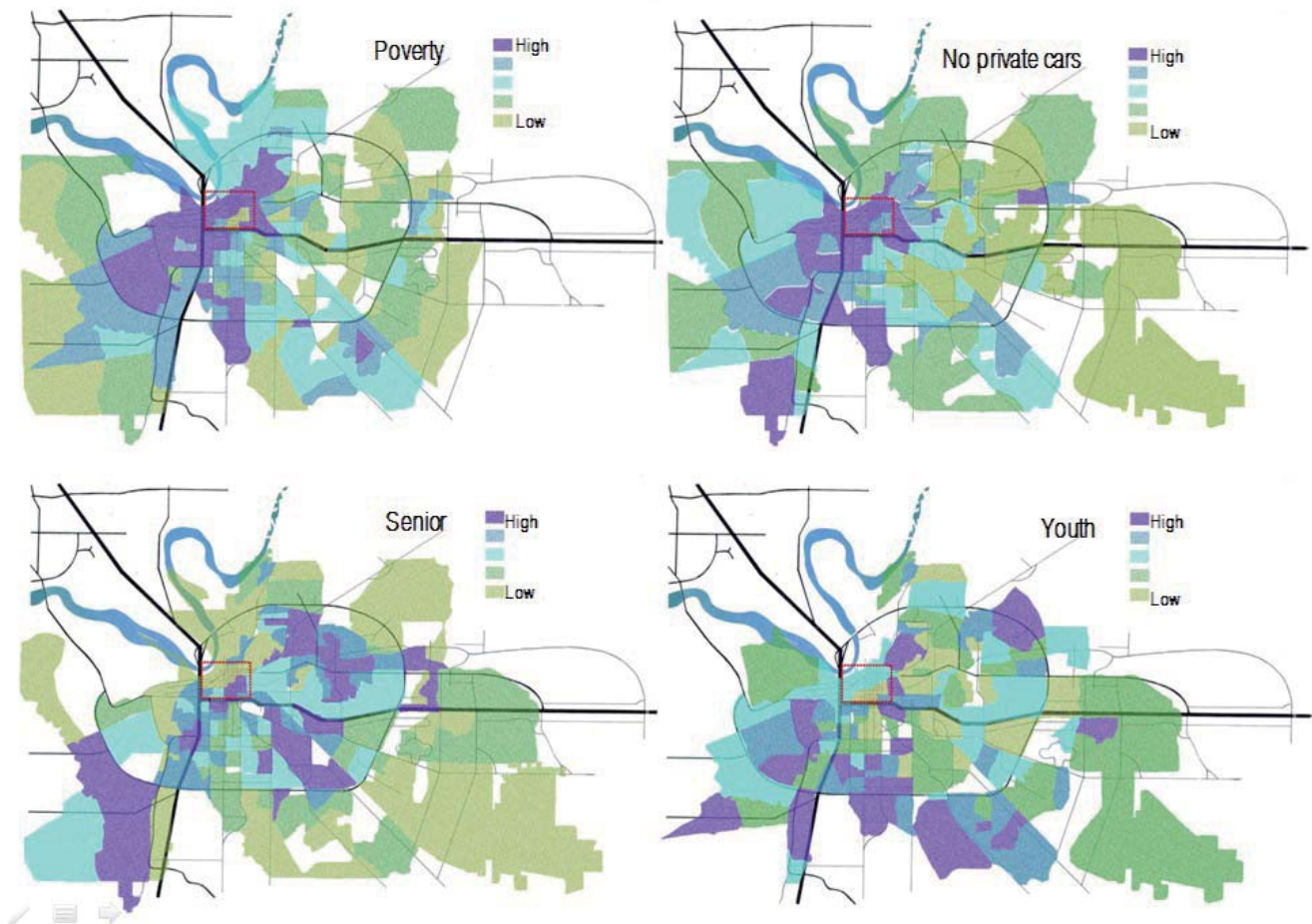
Project Site: Five Point Neighborhood, Montgomery, AL



## Site and Context

With the totally opposite situation in China, most cities' downtown areas in the United States are highly degraded and making homes for low income residents. This circumstance cannot be separated from the rise of personal automobiles and the subsequent urban sprawl beginning from the early 1900s. Fortunately, more and more people have started caring about this issue and proposed plans for downtown recovery. Montgomery,

AL is one of them. The city is trying to attract people, especially the young ones to come back to the downtown area and make their home there by developing all kinds of projects to accommodate them. Based on this background, the thesis project site-Five Point Neighborhood-is located at the important intersection between the downtown core and other neighborhoods.

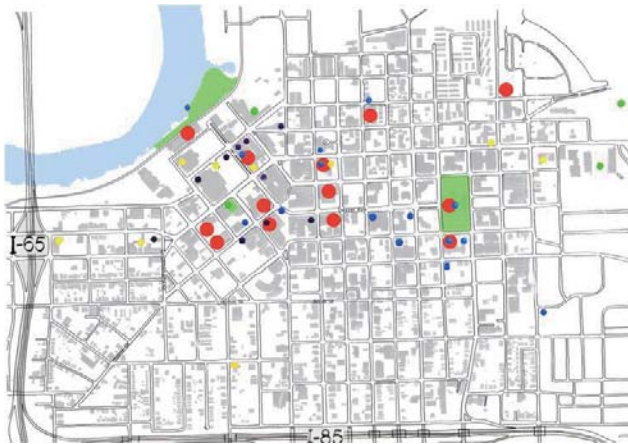


Population of Montgomery, AL



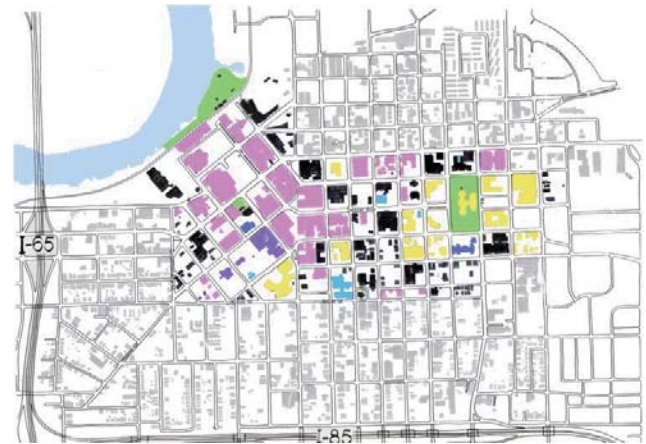
- Downtown Core

The current downtown core of Montgomery city is mainly for business. When meandering around the area, high-rise buildings and low store ones, modern style architectures and historic ones are all intertwined with each other to provide some certain functions. Because of the long history of the settlement and special status as the capital city of Alabama, there are many interesting places in downtown Montgomery, such as Alabama State Capital, Alabama Department of Archives & History, Old Alabama House, etc. Therefore, downtown core area is a place not only for business but also for tourism.



Important Places in Downtown Montgomery, AL

- Top interesting places for tourism
- Attractions
- Night life
- Accommodation
- Outdoor entertainment



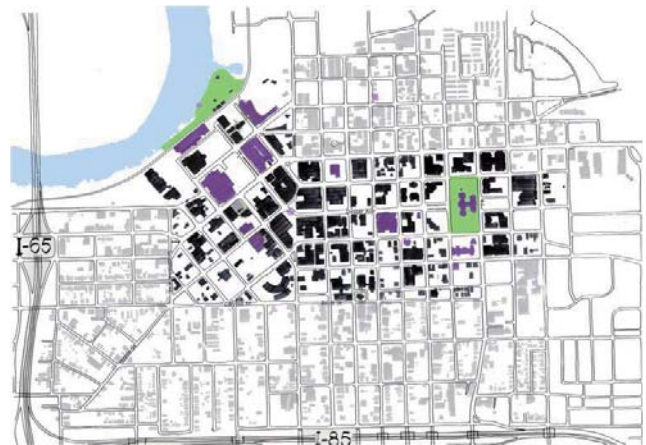
Landuse in Downtown Montgomery, AL

- Downtown Core Area
- Government
- Commercial
- College Campus
- Church
- Museum



Landuse in Downtown Montgomery, AL

- Business



Landuse in Downtown Montgomery, AL

- Tourism



Occupation Situations at Different Time in Downtown Montgomery,

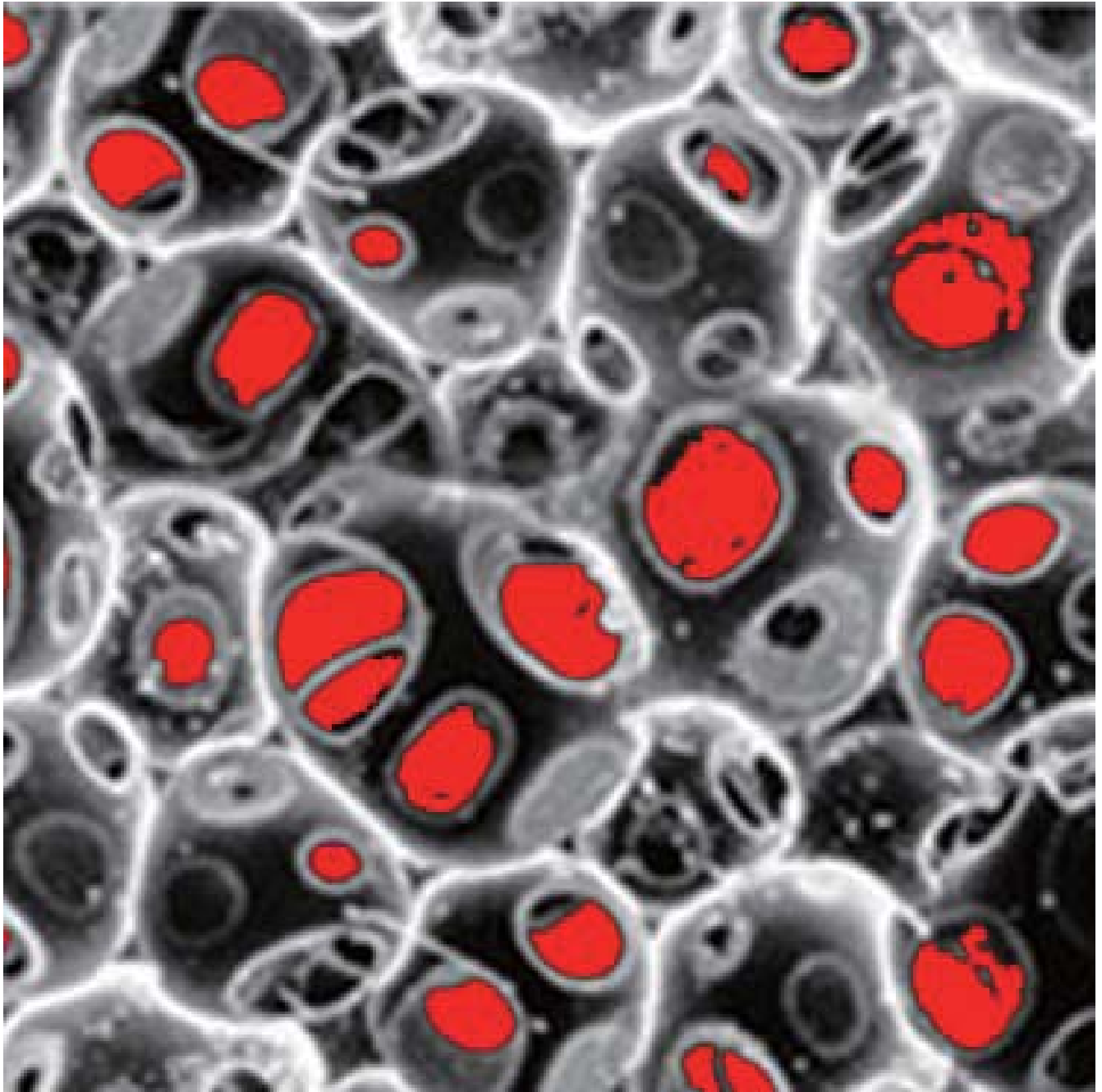
However, the problematic issue is that the people who work in or visit the downtown do not live there or in its surrounding neighborhoods. Therefore, only when it is business hours on weekdays the downtown core could be occupied well. But at other times, such as weekends or weekday evenings, in addition to some facilities for visitors others are all closed and there is nobody on the street. Actually, even though it is busy time during the weekdays, there are still few people outside because the whole traffic system is for automobiles and there is a lack of areas shaded by tree.

- Surrounding Neighborhoods

Surrounding neighborhoods in the downtown area have different physical structures and diverse social situations. For example, the warehouse District is full of warehouses due to the former railroad transport needs. With the development, some of the warehouses are no longer needed anymore, and have been used as loft units or other urban fabrics. And some neighborhoods still keep their historic feel and are used as warm homes for local residents because of their special status in the history and good location, such as Cottage Hill and Perry Street. However, for some unfortunate neighborhoods, with moving away of residents, are full of degraded building structures and construction trash. Although some of them connect to the downtown core directly, no one would like to come in through its main street. This project is focusing on one of them: Five Point Neighborhood to help with its regeneration and reconnect it to downtown core.



Surrounding Neighborhoods in Downtown, Montgomery, AL



Nucleus

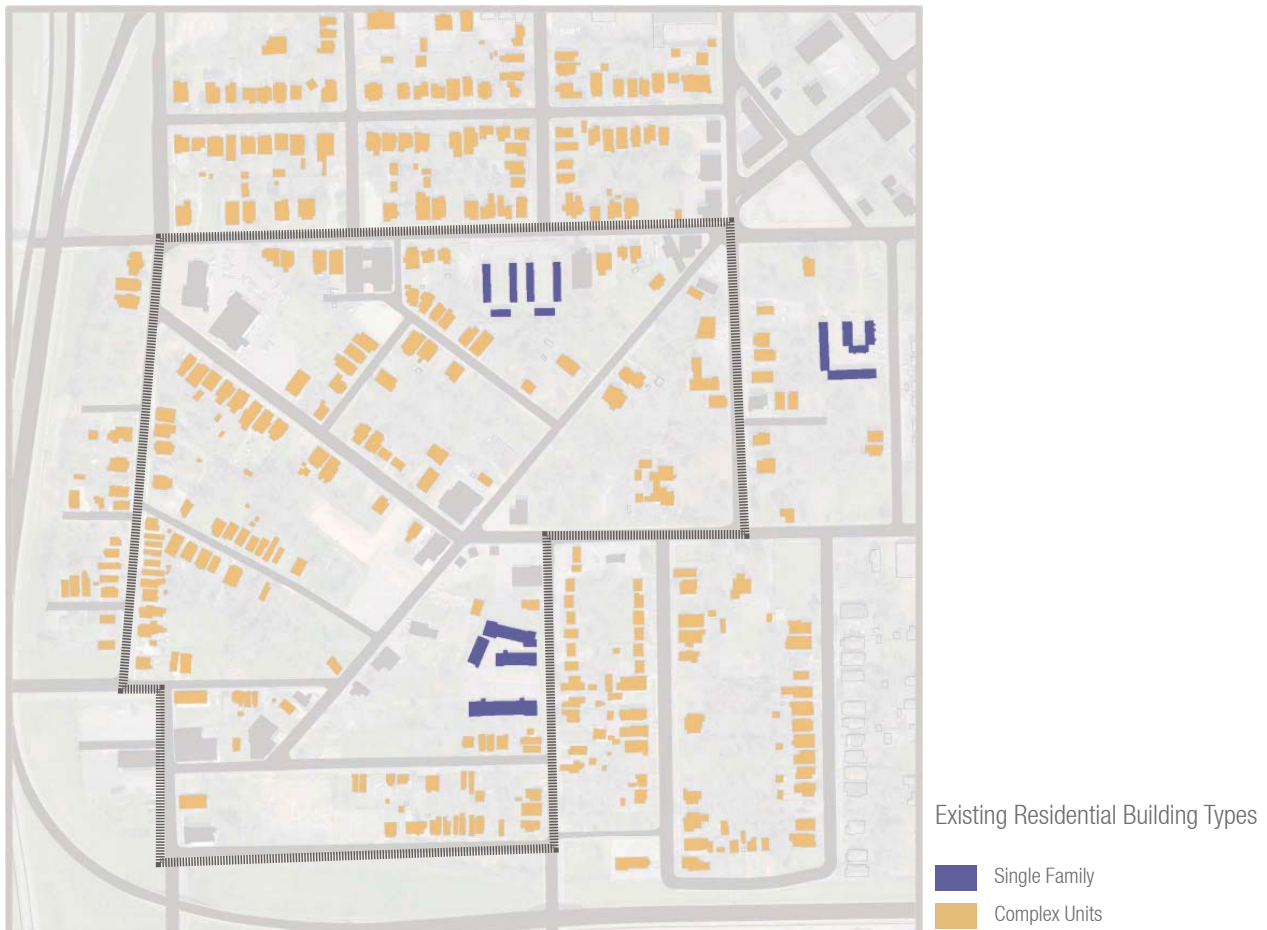




Building

# Nucleus: Building Analysis

- Residential Buildings



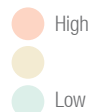


In the neighborhood, there are basically two types of residential building: single family buildings and complex units. Among those, single family houses almost take place of the whole residential building and there are only two complex units. Walking along the streets in the neighborhood, many styles of residential buildings can be recognized. Some of them are big and new with bricks as the outside ornamental wall and with both front yard and back yard; some are old and small independent buildings without any decoration outside the building, and some are totally vacant shaky structures.

Compared to its surrounding neighborhoods especially Cottage Hill on the north side, Five Point is a place in which the residents' income level is generally lower. Many people, having no cars, are dependent on public transit to move around. In addition, most of the existing residential buildings are located at surroundings of the neighborhood. Along the main street: Mobile Street, few residential buildings can be seen.



Existing Residential Income Situation





## Existing Residential Building Conditions



In order to better manage the growth of the residential area and provide positive suggestions for the existing structures, the quality of each residential building has been recorded as the map shows. The criteria are based on the following items:

1. Façade of the buildings facing street (10%)
2. Stable structures of the building (30%)
3. Occupation situation of the building (50%)
4. Outside yard of the building (10%)

The rating which is above 80% are excellent, between 50% to 80% are at risk and below 50% are poor.

## Suggestion



The project suggests keeping the excellent residential buildings, and repaired the ones which are at risk. Those which have been rated to be poor and vacant need to be replaced by other new residential buildings.



- Non-Residential Buildings

Types of non-residential buildings also have been recorded as the map shows so that the basic urban fabric and how surrounding residents use the place could be recognized and understood.





1. old fire house



2. new fire station



3. police academy



4. St Andrews Catholic Church



5. Rice Temple AOH church-God



6. Mt Zion AME



7. Allena's house of beauty



8. Beauty Salon



9. K&C Lounge restaurant



10. Jazz & Rab Club



11. LA BoutSque



12. Atmosphere of Jesus



13. B.J.'s Grocery



14. grocery



15. grocery



16. State liquor store



17. grocery



18. grocery



19. grocery



20. motor repair



21. New/Used Tires



22. car repair



23. old gas station



24. new gas station

## Existing Non-Residential Gathering Sites



- Neighborhood Centers
- Decayed Buildings



Through the investigation of non-residential building types, three main gathering sites in the neighborhood along the main street can be identified as shown on the map. However, most of the buildings at these three points are vacant right now. These important areas in the neighborhood which used to be the link tying the surroundings together have lost their power. The meaningless places along the main street and at its significant intersections keep its potential residents and users far away.

## Existing Non-Residential Building Conditions



In a similar way, to better manage the growth of the non-residential area and provide positive suggestions for the existing structures, the quality of each residential building has also been recorded as the map shows. The criteria are based on the following items:

1. Façade of the buildings facing street (10%)
2. Stable structures of the building (30%)
3. Occupation situation of the building (50%)
4. Surrounding environment of the building (10%)

The rating which is above 80% are excellent, between 50% to 80% are at risk and below 50% are poor.

## Suggestion



The project suggests that keep the excellent non-residential buildings, repaired the ones which are at risk. Those have been rated to be poor and vacant need to be replaced by other new land uses.



- New Buildings and Landuse Proposal



Residential Footprint



Non-Residential Footprint



All Building Footprint

New Buildings and Landuse Proposal



Existing Residential

Community Center

New Residential Area

Commercial Center

New Residential Area

Culture Center

Existing Residential

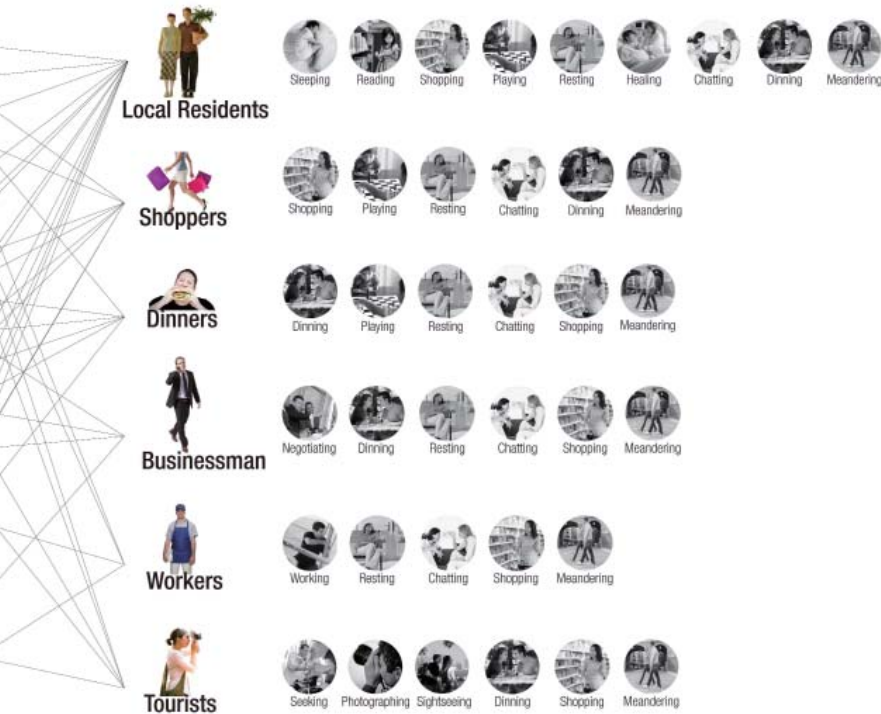
- ? Information Center
- Service Center
- Clinic
- Animal Hospital
- First-floor Working & Second-floor Living
- Shopping Store
- Theater
- Restaurant/ Café
- Bookstore
- Grocery/ Fresh market
- Complex Apartment
- Church
- Beauty Shop
- Fitting Room

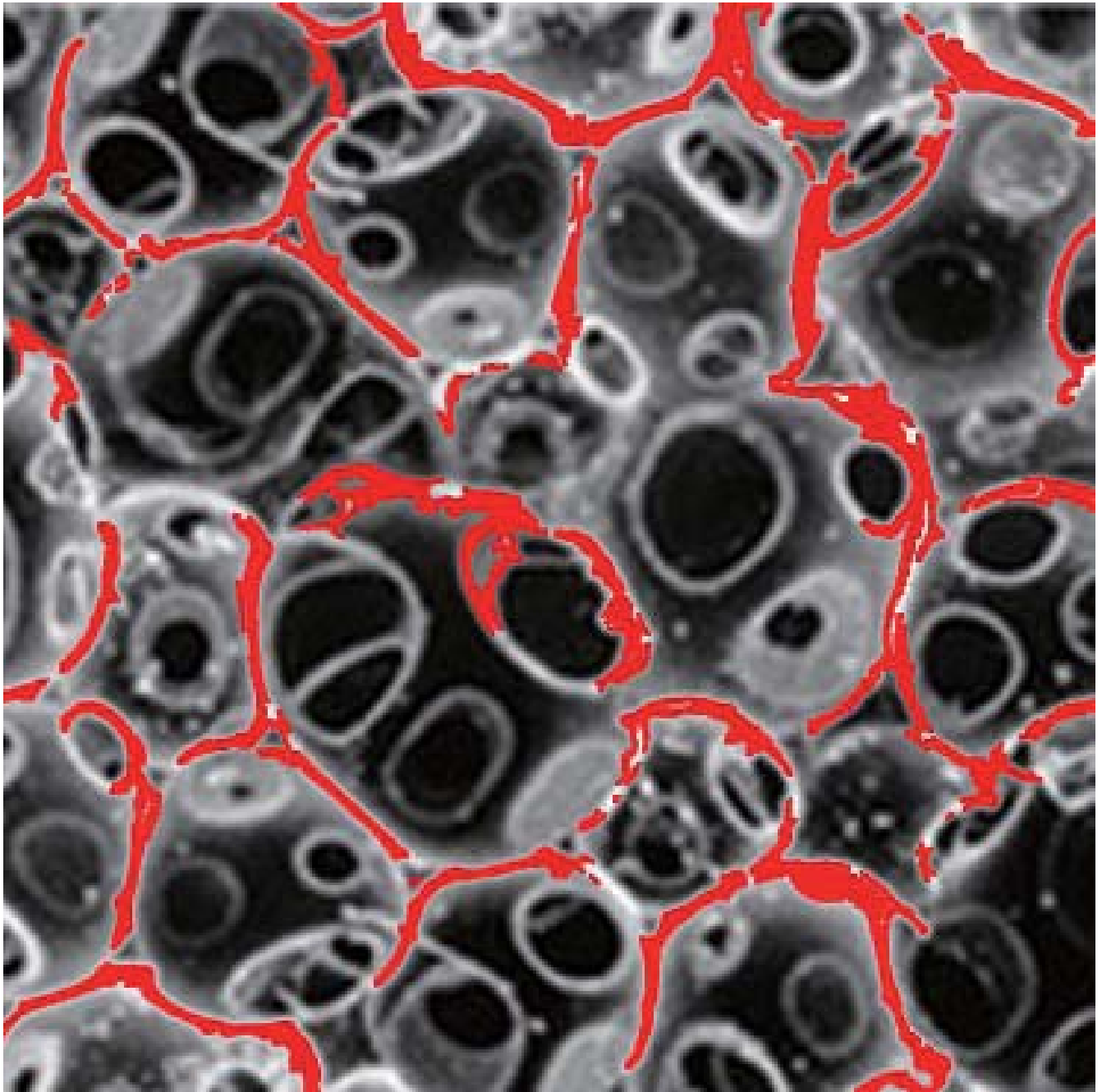
Through the analysis of both residential and non-residential buildings, several issues encountered need to be considered:

1. Provide the basic needs for existing residents within their five minutes walking distance
2. Help with the neighborhood's recovery of its complete urban fabrics
3. Increase new opportunities for the area to grow and attract new residents
4. Mix the current residents and the future residents well by certain links

5. Provide facilities for visitors from outside to better experience the neighborhood

Therefore, based on achieving the goals above, potential neighborhood users and land functions analysis, a proposal regarding land use and building types is provided as the map shows. The new spine on the main street is trying to tie the whole neighborhood and its surroundings together and to provide the possibility of further growth of the neighborhood.





Membrane



Pathway



# Membrane: Pathway Analysis

## • Site Survey

As a result of the site survey, three site components are taken into consideration carefully: existing streetscape, land parcels on the sides and the intersections along the main street.

The existing condition of the street is mainly for automobiles. Paved sidewalks are degraded by random constructions or covered by unattended grasses. Along the entire street there is no place for people to take a rest and shade trees are few.

Like many other traditional neighborhoods, most of the buildings at Five Point also take place along the side of the road, but some of the residents will drive their car into the backyard and make it as the parking area. Along the main street, there are many vacant land parcels, some of which are covered with construction trashes and some are full of ground cover plants.

At three important intersections along the main street, from the one between downtown and the neighborhood to the end of it, there are neither physical nor social connections, which make them meaningless places.

## On the Way



## On the Sides

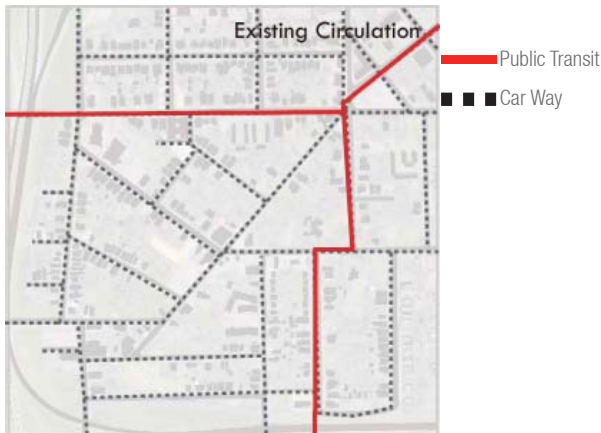


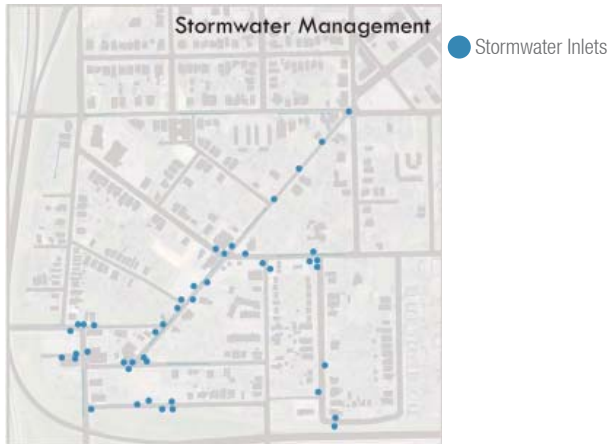
## Intersection & Knots



- Existing Circulation

The existing circulation is all along the roads which are basically for automobiles. The condition for pedestrians is not good and few people walk on the streets. There is no public transit route coming into this neighborhood but most of the residents are dependent on their feet and public transit system to get their living necessities.





### ● Stormwater Management

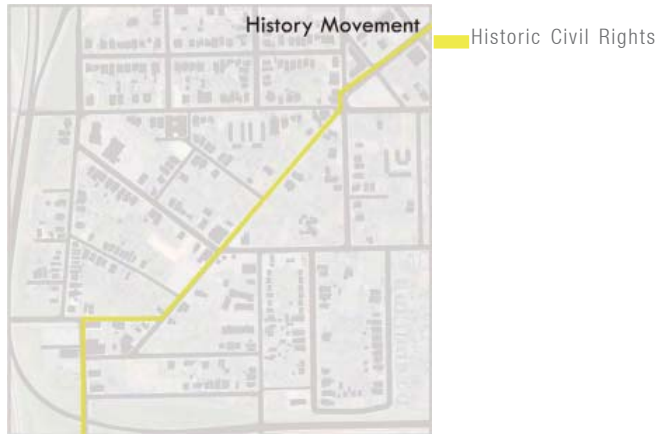
Walking along the existing street, old style stormwater inlets which are exposed in the air can be seen. These inlets, without enough filtration, collect rainwater running from the sidewalks and the streets directly and distribute it to the Alabama River.



### ● Existing Green Space

The most complete green open spaces in the neighborhood are located at the inner lot of each parcel. People use trees and shrubs as the property line limitation to protect their own land. This kind of green zone constitutes the big patch of green space. Although most families use the green space as their back yard, some pollution from automobiles, construction materials and living trash can be seen a lot.





### • Historic Civil Rights Route

One of the most honored things for the neighborhood is that the famous historic civil rights route from Selma to Montgomery moved along the main street: Mobile Street. Its destination is the Alabama Capital Building. This movement has also been memorialized by the Civil Rights Memorial Center in the downtown.



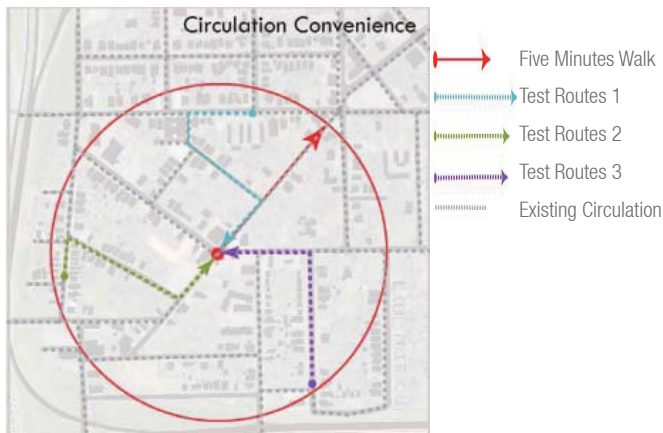
### • Street Edge Condition

The street edge condition evaluates the relationship of each building to the street, the street shading quality and the constancy and convenience of sidewalks. Good and poor conditions are categorized based on the criteria above. The results on the map show that some streets in the residential building area have good conditions but on the streets without residential buildings especially the main street, the street edges are getting degraded.



## • Landuse Proposal

A proposal regarding land use and building types is provided based on potential neighborhood users and land functions analysis. The new spine on the main street is trying to tie the whole neighborhood and its surroundings together and to provide the possibility of further growth of the neighborhood. Rebuilding the main street will also help to emphasize the historic route and provide facilities for visitors to experience it.



## • Circulation Convenience

For most circumstances, walking distance in five minutes is the best length for people from their home to the shopping areas. Three routes which are randomly chosen have been tested based on the existing circulation system. It shows that the existing layout of the streets from the historical settlements cannot meet the best walking distance well. Walking from some edge point of the neighborhood to the center of it takes more than ten minutes and the bad existing condition of the circulation will keep people from walking on it.

## New Moving Pattern Proposal



Plant Street Tree



Provide Public Transit Access



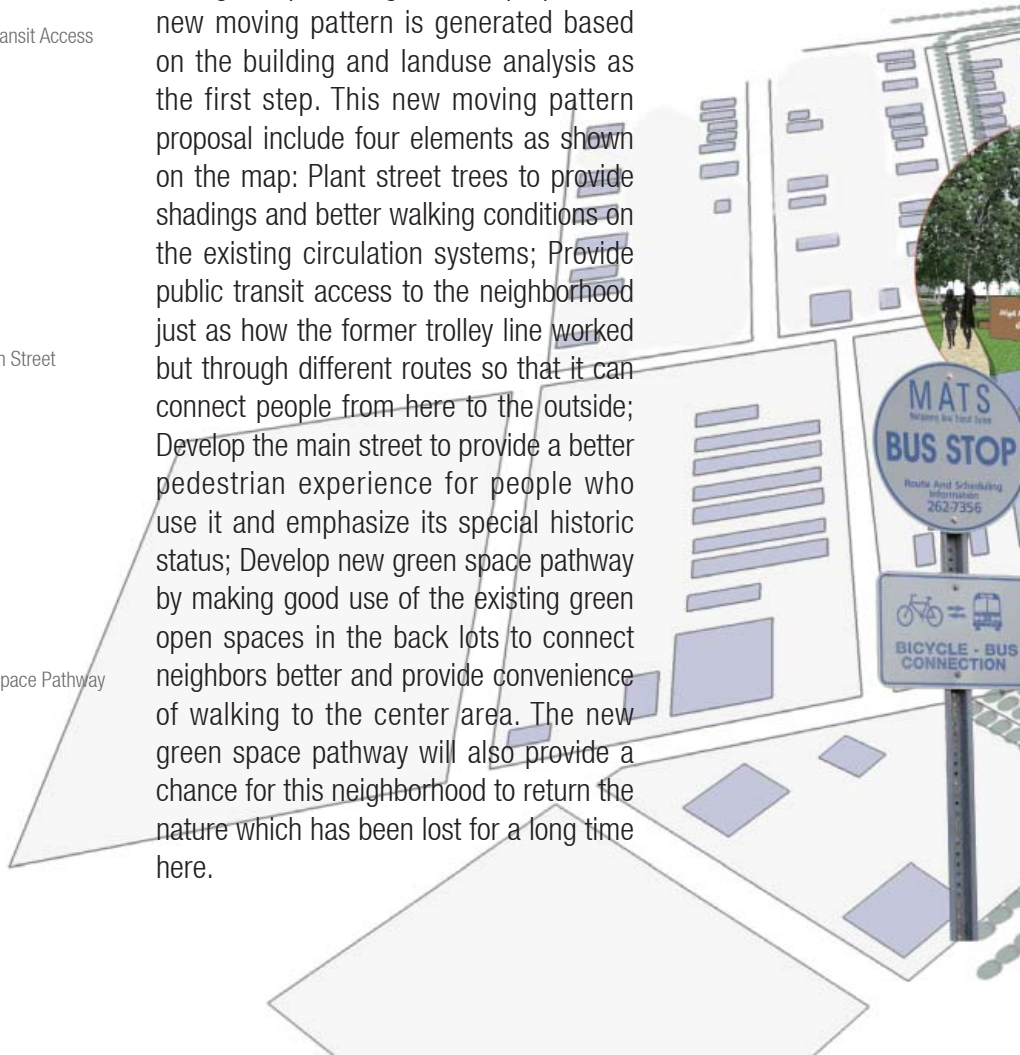
Develop the Main Street



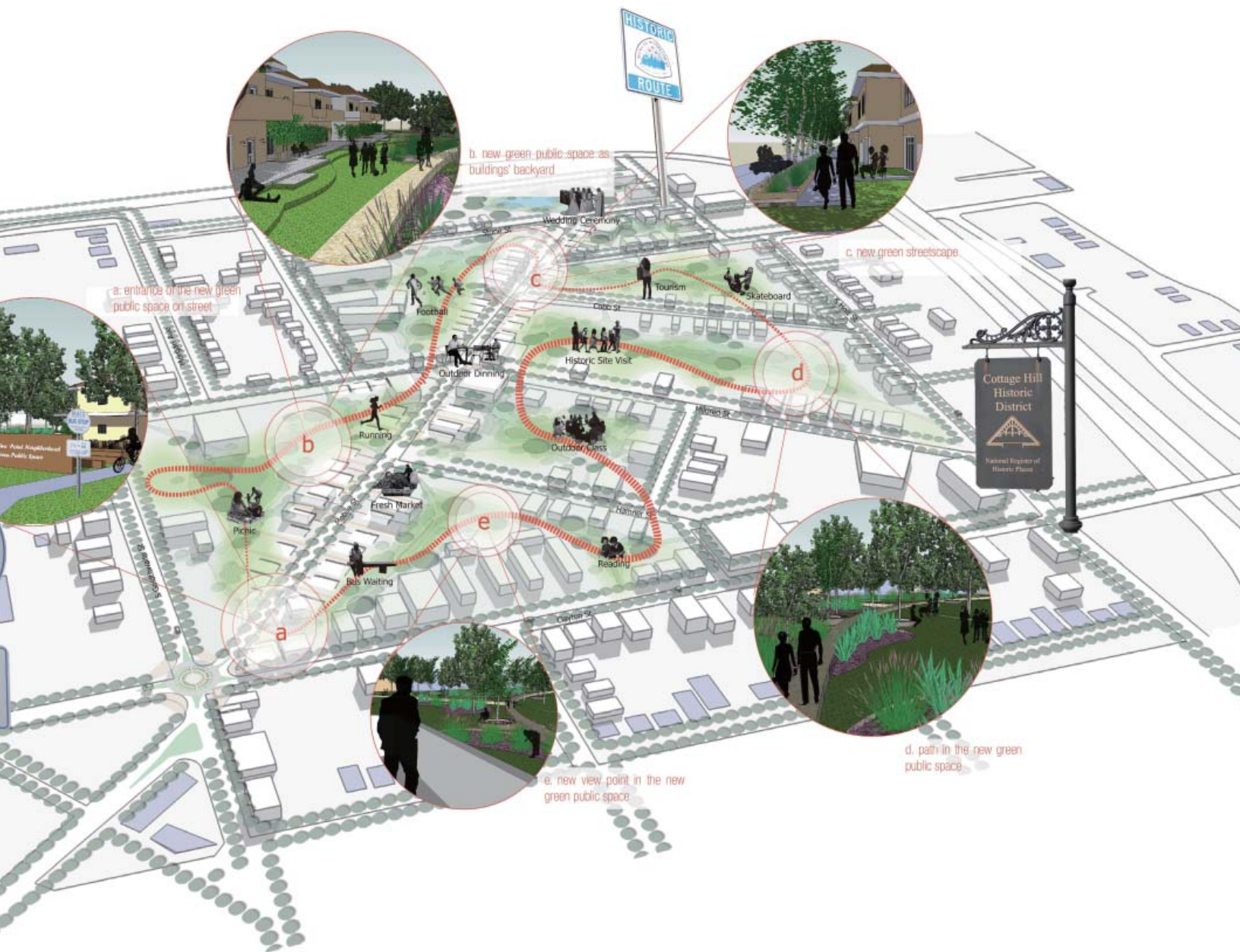
Develop Green Space Pathway

## • New Moving Pattern Proposal

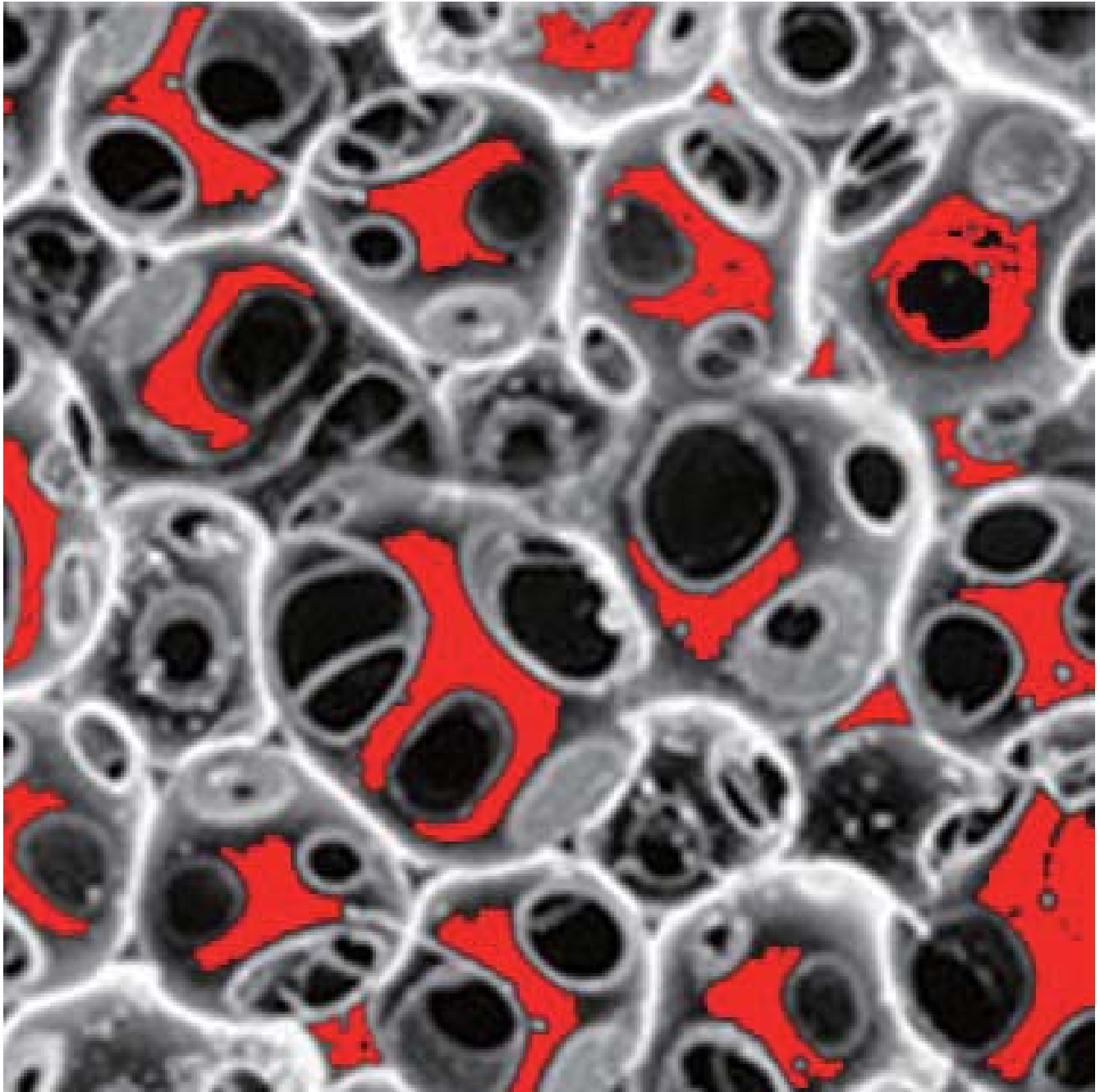
Based on what has been discovered above through map investigations, a proposal of new moving pattern is generated based on the building and landuse analysis as the first step. This new moving pattern proposal include four elements as shown on the map: Plant street trees to provide shadings and better walking conditions on the existing circulation systems; Provide public transit access to the neighborhood just as how the former trolley line worked but through different routes so that it can connect people from here to the outside; Develop the main street to provide a better pedestrian experience for people who use it and emphasize its special historic status; Develop new green space pathway by making good use of the existing green open spaces in the back lots to connect neighbors better and provide convenience of walking to the center area. The new green space pathway will also provide a chance for this neighborhood to return the nature which has been lost for a long time here.











Substance



Open Space

## Substance: Open Space Analysis

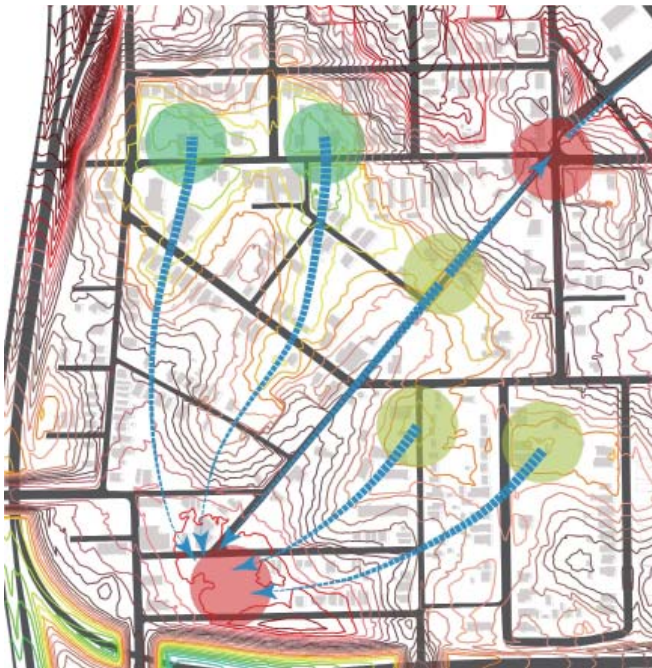
- Contour Analysis and Elevation Studies

To better understanding the terrain which holds the neighborhood and the relationship between the existing streets and parcels, contours of the site and elevations on several important crosses have been made.

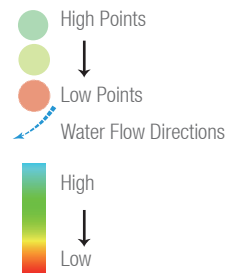
According to the contour analysis map, there are two low points in the neighborhood. One of them is the intersection between downtown core and different neighbors, which is also an important point to connect all of them together. The other one is at the end of the neighborhood. Therefore, these two points become the sites which have the most potential to collect rainwater

from its surroundings. On the main street, there is a relatively high point from which rainwater will be discharged along the road to the two lowest points.

Based on the elevation studies, the general relationship between streets and their connecting parcels can be seen clearly. For most of the streets in the neighborhood, all the parcel lands are higher than the street. This means that when there is heavy rain all the water will be rushing to the street which becomes the main channel to discharge the rainwater.

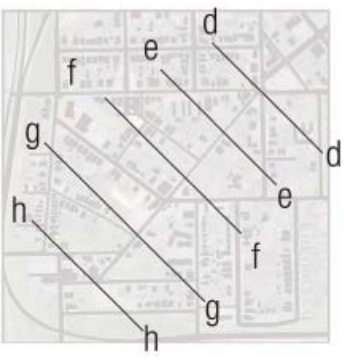
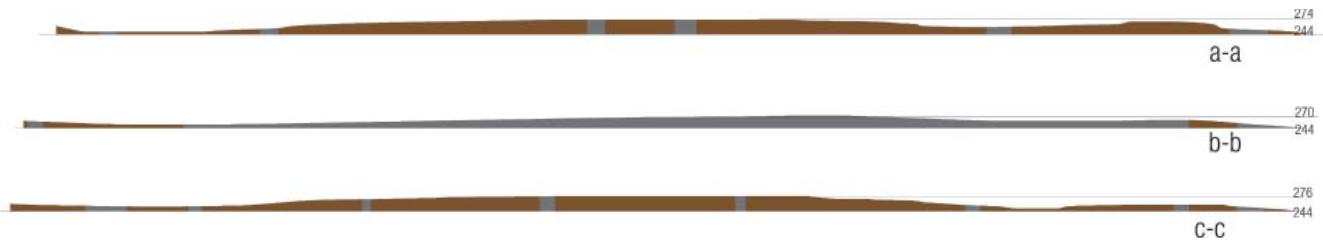
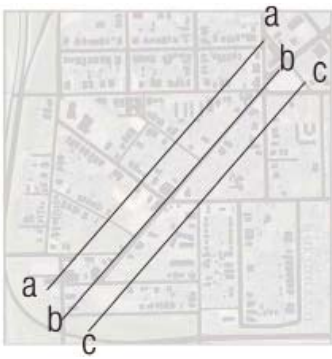


Contour Analysis Map



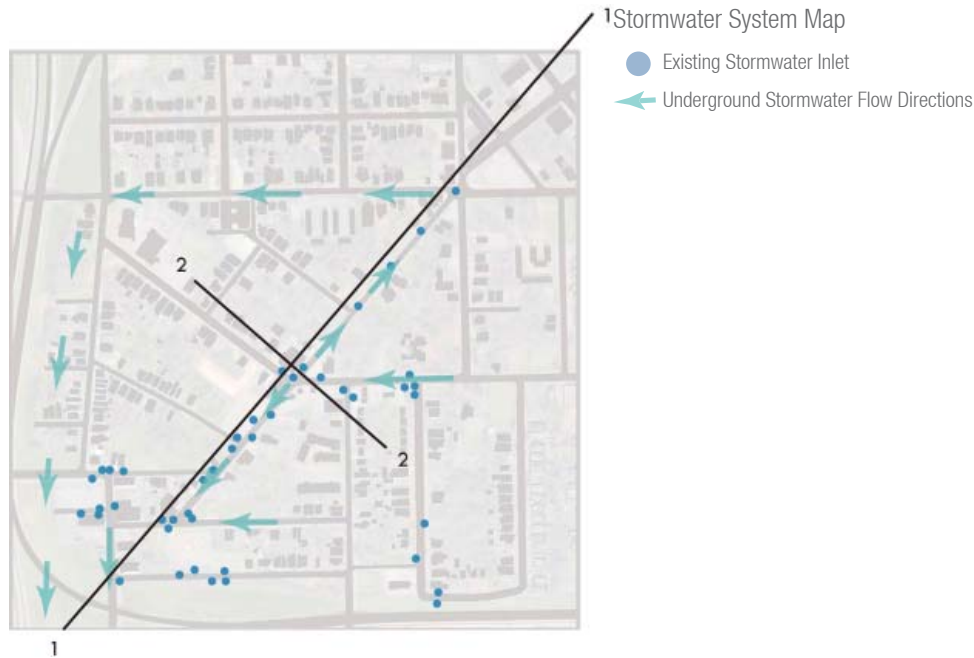
Elevation Studies

- Parcel
- Street





- Existing Stormwater System



The existing stormwater system in the neighborhood is old type, part of which was built in 1960s and part was built in 1940s. The stormwater inlets which are exposed in the air can be seen when walking along the streets. These inlets without enough filtration steps collect rainwater running from the sidewalks and the streets directly and distribute them to the Alabama River.

Existing Stormwater Inlets



## Stormwater Pollution Sources



Gas for Car



Living Trash

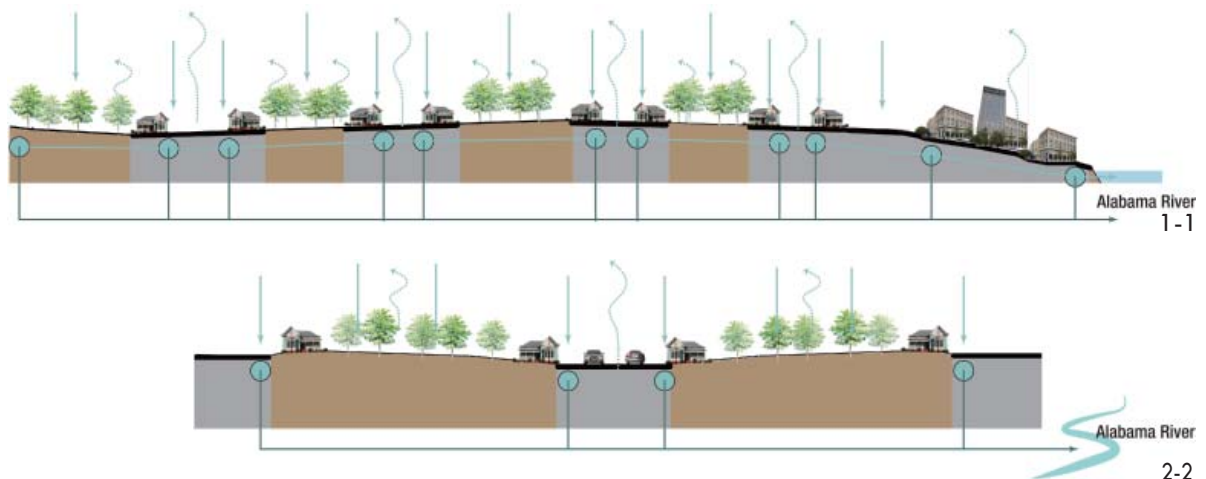


Construction Trash

However, there are many sources of stormwater pollution in the existing neighborhood, such as gas released from the car, living trash and construction trash. If there is further development of constructed areas which might occupy the existing green spaces, more and more non-point pollution will influence the whole water system in the area.

Right now, the separated situation between green spaces and urban street spaces is also another barrier for water to be cleaned. If there is a way for surface water running from the paved spaces to be filtrated by the natural drainage system before going through the underground pipes, or introduce another walking system into the green open spaces, an innovative way of using the land and cleaning the urban pollutions could be found.

## Existing Stormwater System Operation



## • New Stormwater System Proposal

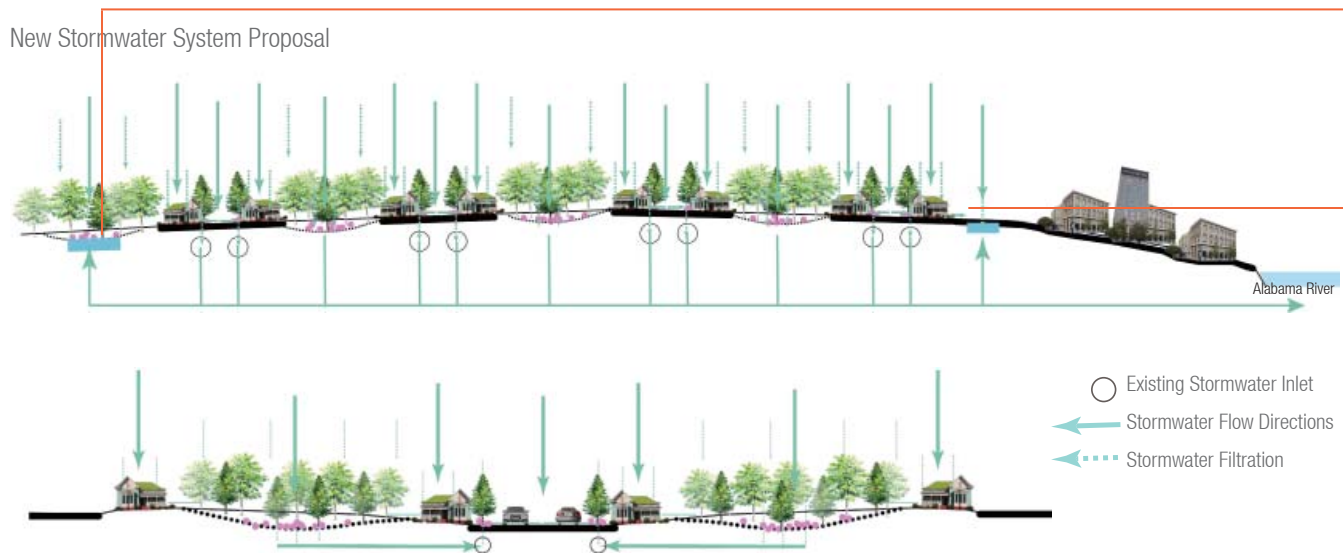
Based on the analysis above, the project develops a new stormwater system in which there are several basic elements:

1. Rain gardens on the sides of streets: using the natural drainage system to collect, filtrate and discharge the surface runoff and providing shading area and a green space for good environment of pedestrians.
2. Rain gardens along the green space pathways in the contoured back lots: further collecting, filtrating and discharging the surface runoff, functioning as stormwater retention when there is heavy rain, and providing more species to the area in which people could live with nature.

3. Urban water feature at the intersection between the downtown core and neighborhood: collecting, filtration and discharging the surface runoff, connecting its surroundings as a link, providing a place for people to stay and watch in the urban area.

4. Constructed wetland at the end of the neighborhood: collecting, filtration and discharging the surface runoff, providing a nice public access to the historic church and providing an open natural space for people to get together and generate their own cultures.

5. Existing and new underground pipe lines: containing discharged water from the natural drainage sites, distributing rainwater to the river and functioning as an important stormwater controlling system.





There is another reason for setting up two water features at the two lowest points of the neighborhood in addition to their stormwater drainage functions. As two important locations along the historic civil rights route, there should be something to emphasize and connect the route as links working with other two existing important sites: Capital hall and historic fountain. Adding these two sites will make the route more complete and provide facilities for people to experience it better.



- New Stormwater System Functions

The new stormwater system has different functions at various situations.

When the event of rainfall is regular, the natural drainage sites collect, filtrates and distributes the rainwater to the underground pipes and regulates the microclimate of surroundings through the natural water cycle process.

When rainfall becomes heavy, the natural drainage sites will help to retain large volumes of rainwater to keep flooding from the urban areas.

#### Functions at Different Situations

Regular rainfall



Before



After



Once every 3 years



Before



After



Before



After

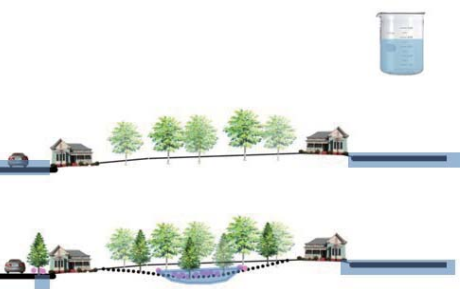


Before



After





Once every 10 years



Before



After



Before



After

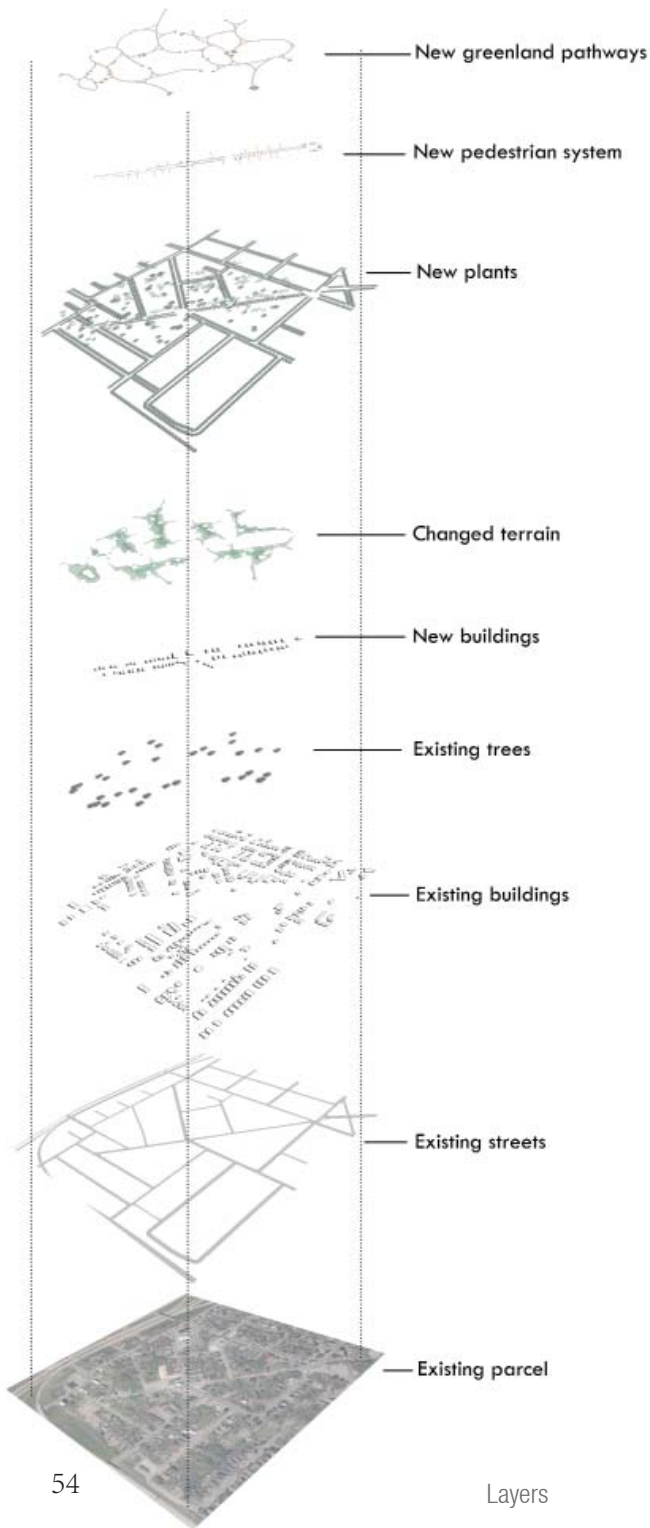




## DESIGN: CONCEPT Site Plan







## - Site Plan

Based on the analysis of three important aspects of the neighborhood---buildings, pathway system and open spaces and their subsequent proposals-the site has been regenerated as shown on the master plan. The regeneration of the neighborhood is not from the outside; it is based on the existing conditions. The new landscape of the neighborhoods can be seen as a combination of different layers working together. The relationships between these layers are complex and indivisible. Only as they work together, can the neighborhood be regenerated.







Master Plan

- Design Sections

According to the land use proposal the design of the project will be explained further in four sections: community center, new residential, commercial center and cultural center. Although the idea of design is based on the general concept, each section of the site has its own special issues and situations. There will be some more detailed consideration further than the main concept to adapt the sites and make the space dynamic.

#### Legend

- ① Community Center
- ② New Residential
- ③ Comercial Center
- ④ Cultural Center

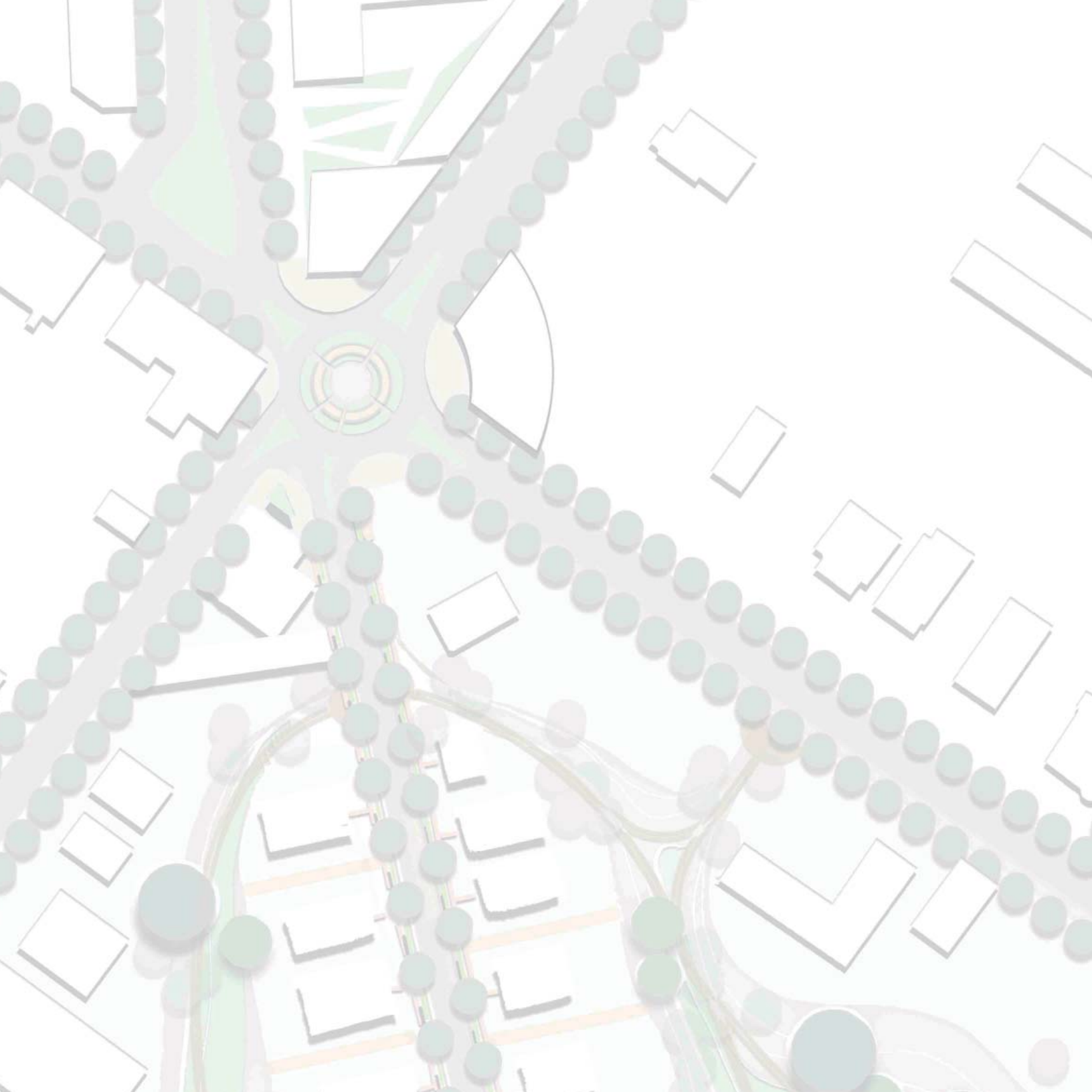






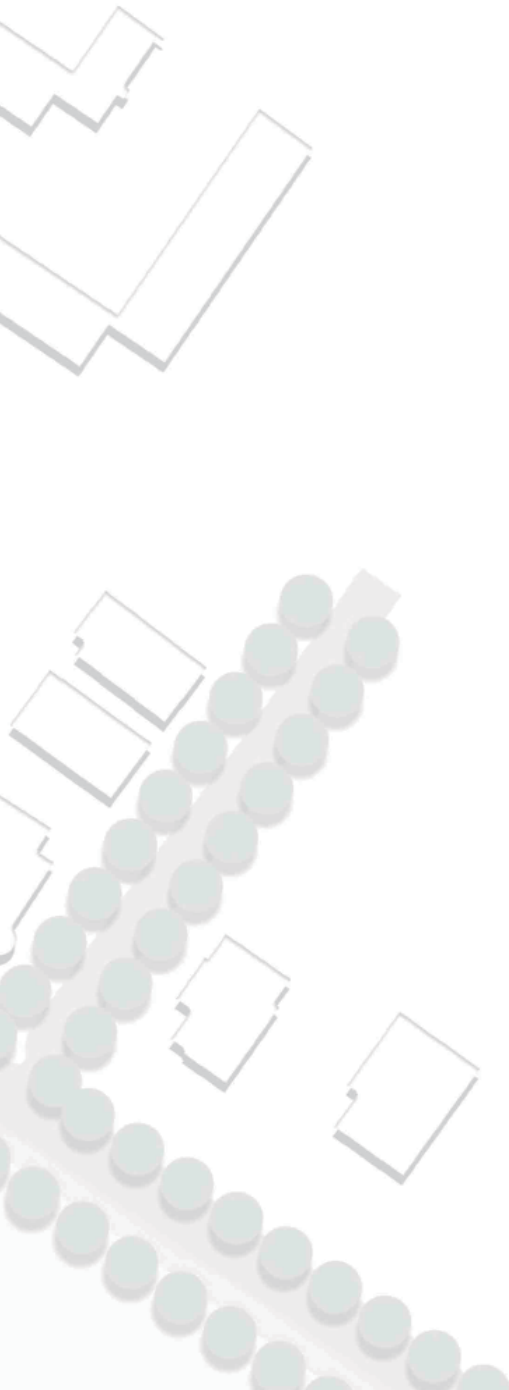
Birdseye View





# DESIGN: SECTION 1

## Community Center: Connecting Downtown Core







Location of the Section

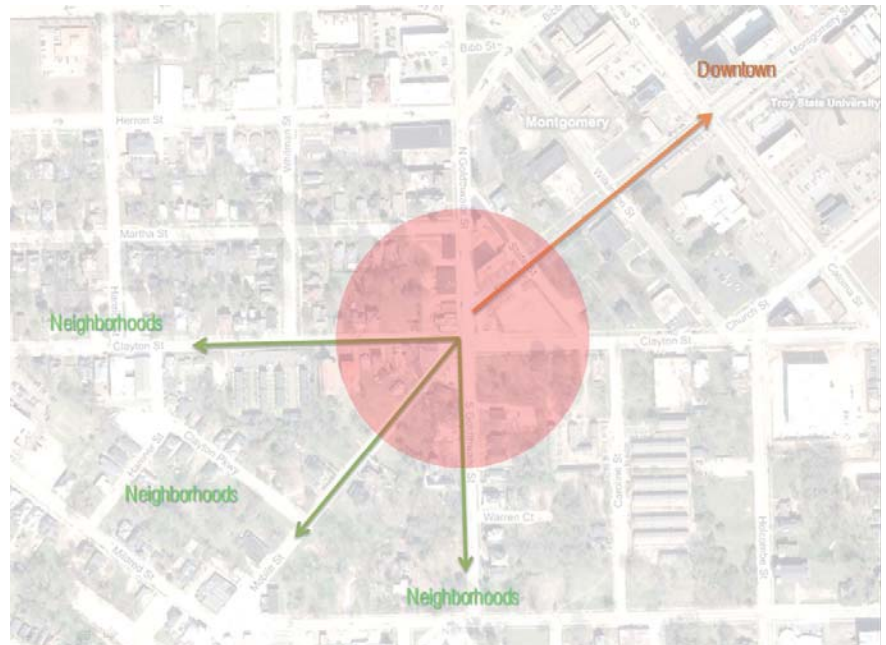
## • Site Background

The location of the site is between the downtown core and its surrounding neighborhoods, which is an important space that connects the environments together. However, the existing condition does not work in this way. Surrounding vacant lots and unorganized traffic are the significant issues that need to be figured out.

In addition, as the beginning of the neighborhood and one of the critical nodes on the historic civil rights route, the site needs a function to get people together and provide directions where they go. The basic facilities for neighbors and visitors should be provided.

Panorama of the Site

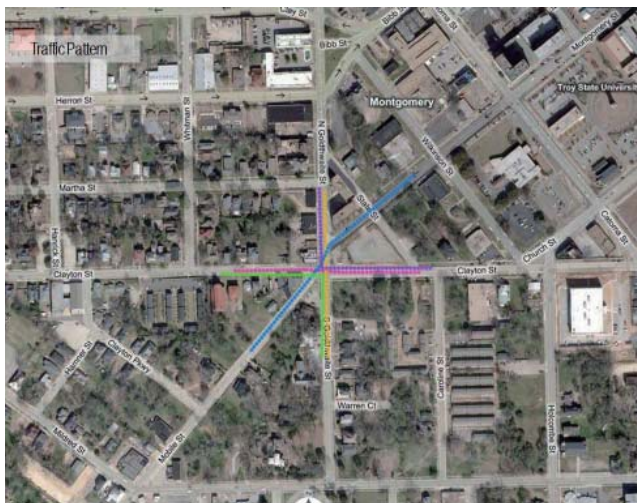




Site as an Important Intersection

- Traffic Issue

The traffic issue of the site is the most significant one. It needs a plan to organize the traffic flows of car and people. Even though it is a place with small scale, the existing misleading spaces still block the way for people to come into the site and better use the intersection in the future. The concept to change the pattern of traffic is to use the circle route taking place the existing disorder one so that car could move along the circle and pedestrians could be provided safely under this control.

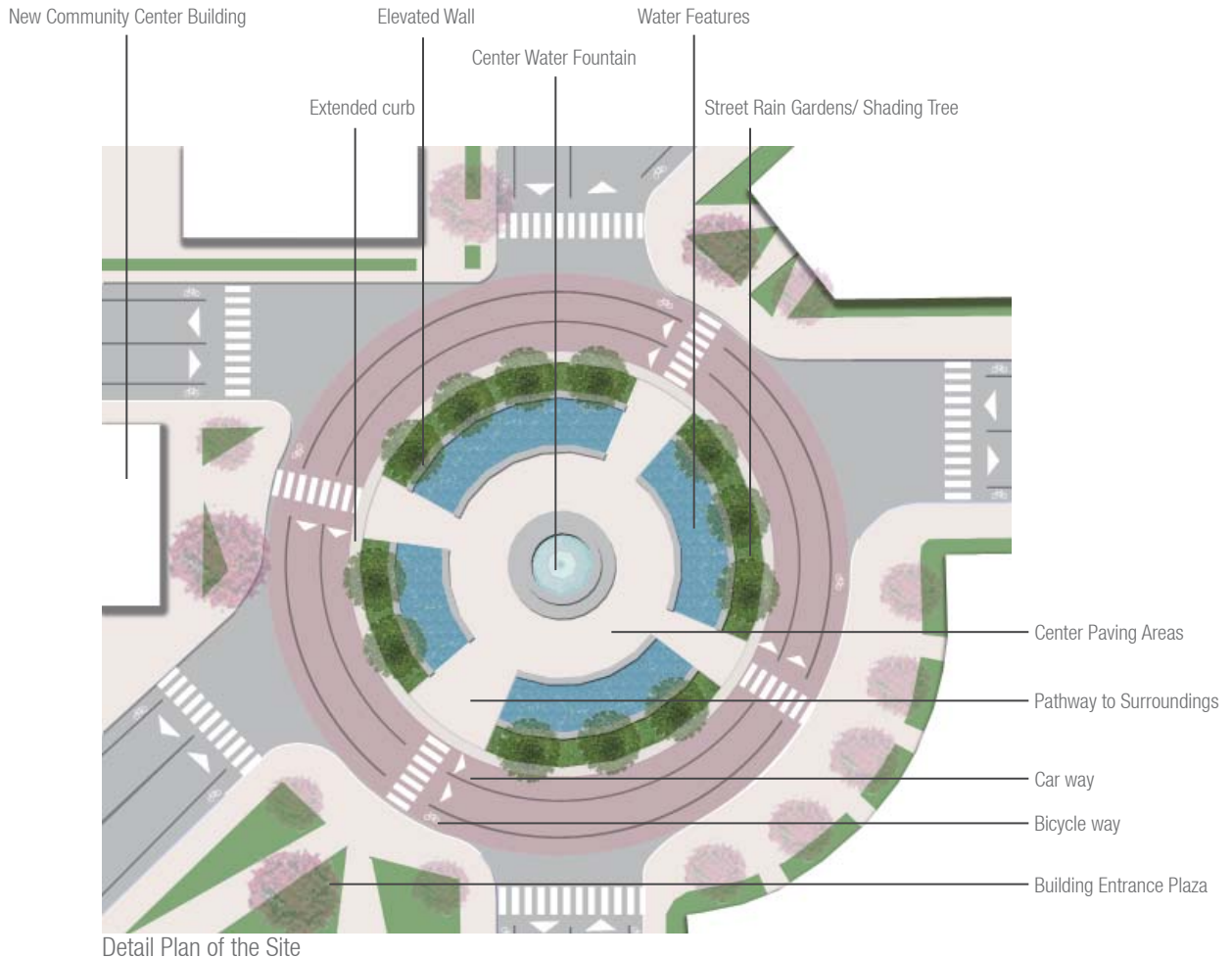


Existing Traffic Patterns



Proposed Traffic Patterns

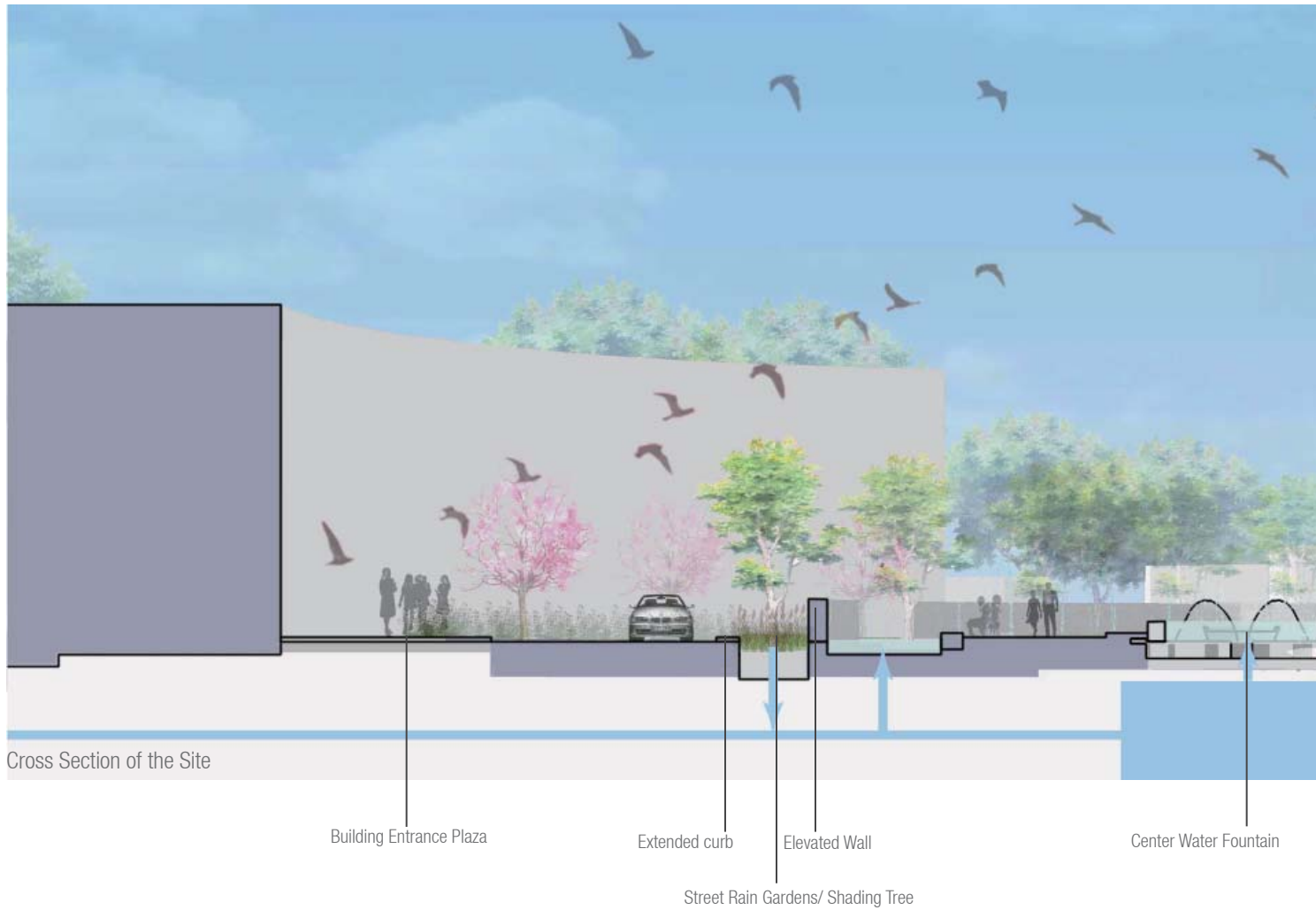




## - Site Plan

In addition to solving the traffic issue, the concept also includes how to connect the traffic pattern to its surroundings and provide a sense of access for people to go and spaces for them to take a rest. Based on this goal, an urban water feature space in the center of the traffic circles and front plazas of the surrounding buildings is provided. This space functions as a green island for people walking through the site to slow down their pace and take a rest having some fun.





### • Cross Section of the Site

From an evaluation of the elevations, some details of design have been considered into the site development. The design uses several elements to separate spaces and provide a sense of safety in each place. For example, in order to reduce the influence of traffic on the inner resting space in the center of the traffic circles, plantings with different height are used to block the eyesight and absorb the dust from the road. Elevated walls and water features



are also placed to reduce the volume of sound from the outside road. The extended curbs are designed to provide a safe space for people to stand when there is some emergent issues happening on the road. In front of the some surrounding buildings, there is a plaza with plantings, outdoor furniture and shade trees to provide both an access and a space to stay.

Detail Section 1



Detail Section 2





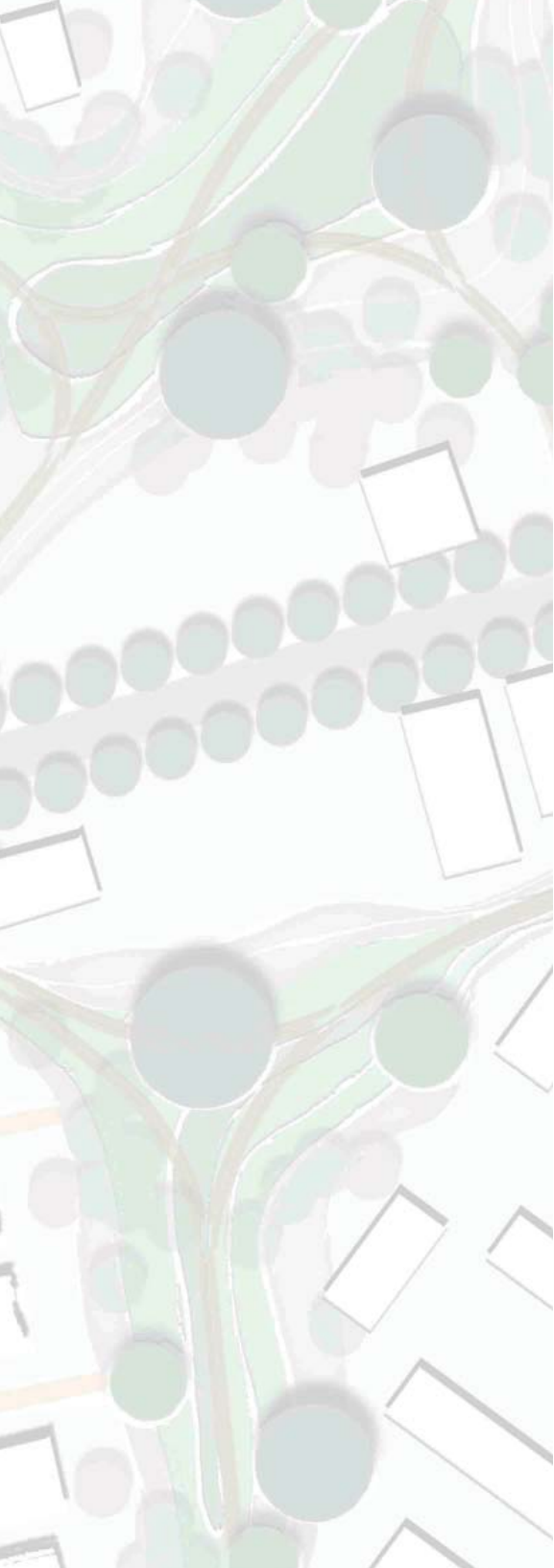


Perspective 1: From Downtown to Community Center



Perspective 2: From Community Center to the Neighborhood





## DESIGN: SECTION 2

### New Residential: Living with Nature





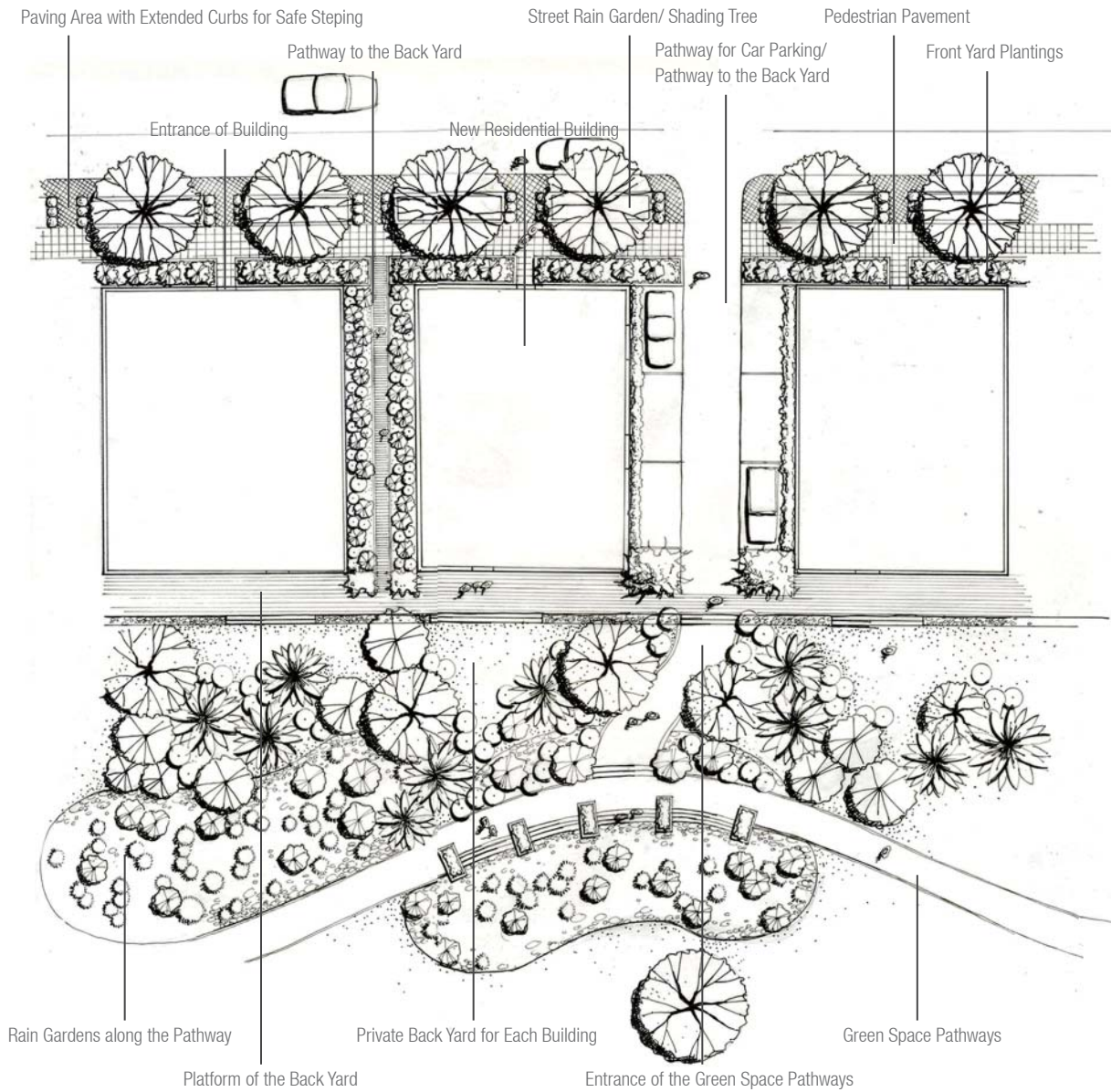
Location of the Section



Vacant Lots

- Site Background

Along the main street of the neighborhood: Mobile Street, few residential buildings can be seen. There are only three residential buildings and several groceries most of which have been closed. Therefore, the project proposes to take good use of the vacant and degraded lands on the main street to provide homes for future residents. Bringing people back to the neighborhood will help with its growth and improving its reputation.



Detail Plan

- Site Plan

In order to accommodate those people who are willing to move back to downtown Montgomery and make a home, the city is developing many projects throughout the whole area. This neighborhood is trying to support some young people who are going to both make a home and do some business here. Therefore, the type of buildings provides two stories. First floor is for commercial use, such as art work shop or design studios, and the second floor is for living. The project is trying to encourage people using the public transit system or walking, but there is still space for families to park their cars.

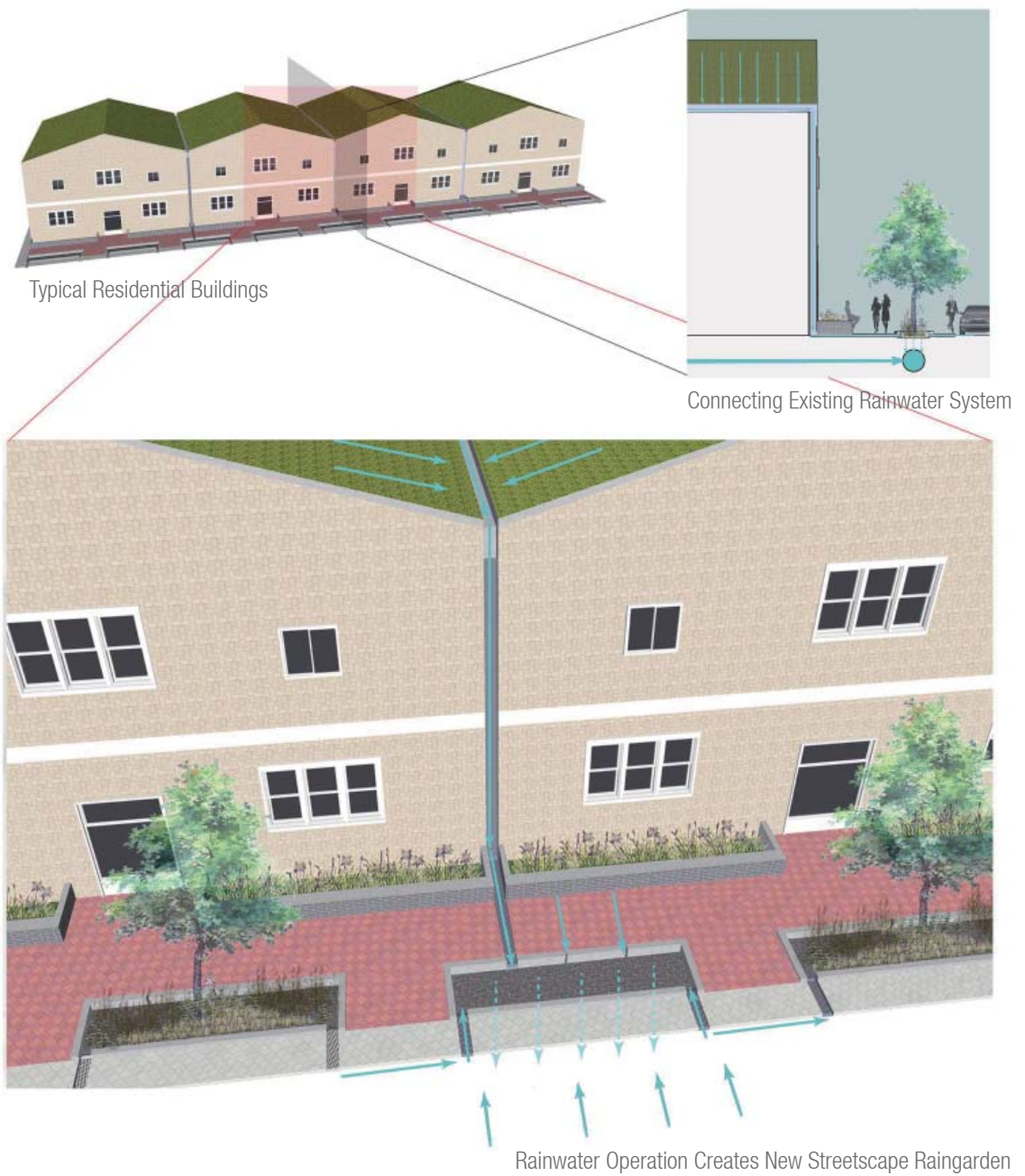
Based on the analysis of new pathways system in the green space and new stormwater system, the new residential areas will include these two elements into the context to make them as a whole provide a space for residents living with nature.



- Streetscape

The basic goals of streetscape in residential area are 1) to provide a safe and comfortable walking experience 2) to collect, filtrate and distribute rainwater efficiently and 3) to emphasize the function for business of the first floor.

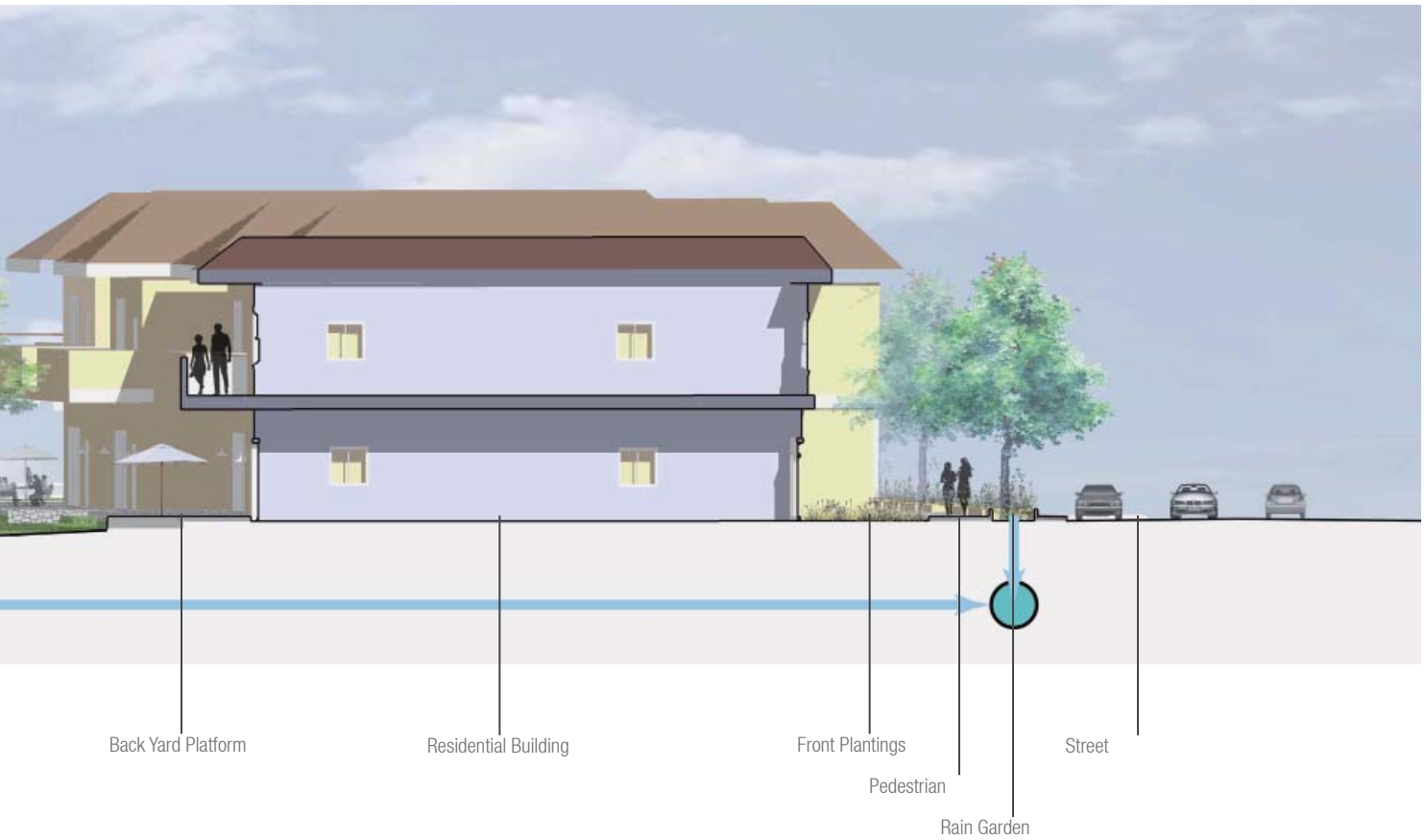
Therefore, considering these objectives the design chooses different edges and provides street trees to further define the street to make it safe and comfortable. A complete rainwater drainage system from the top of the roof to the rain gardens along the street has been designed carefully. In order to make the first floor more commercial the distance between buildings and pedestrians has been shortened.





### • Cross Section of the Site

This cross section shows the whole view of residential area from the streetscape, residential buildings to the back yard green spaces. It also shows how the underground pipe line connected. When the volume of rain overflows the back yard rain gardens the excess water will come into the pipe and to be distributed to the existing underground pipeline at the street. Due to the fact that the rain gardens in the back yard need enough slope to collect water, the terrain of the green space has been contoured to satisfy the requirements.



Therefore, some existing trees need to be protected by using constructions to preserve the soil for its root system. The pathway system in the back yard provides a space for people to get close to nature and explore some new activities. The rainwater drainage system working with other plants together will also serve as the landscape view or the background of back yard for the residents.





Detail Section 1  
Rain Garden as the Landscape View for the Back Yard

Detail Section 2  
Rain Garden and Plantings on the Streetscape







Detail Section 3  
Green Open Space and New Pathway within It



Perspective 1: Entrance of the Green Public Space from the Street

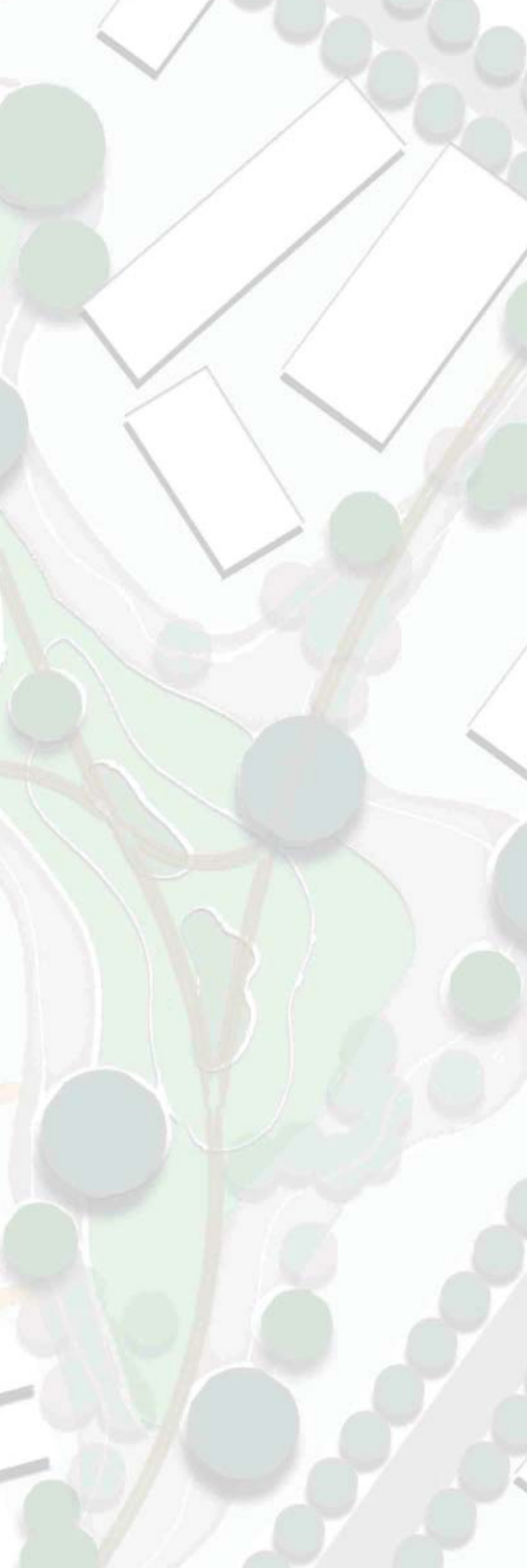




Perspective 2: Green Public Space Pathway







## **DESIGN: SECTION 3**

### **Commercial Center: Tying the Surroundings Together**



Location of the Section

Panorama of the Site



- Site Background

This site used to be the important commercial center for the neighborhood. There are still some vacant commercial buildings on the site, such restaurant and groceries. Because there has been no one use in this area for a long time, the appearance of the buildings and the relationship between streets and their frontage has been blurred.

Therefore, how to reuse this area as the new commercial space for the neighborhood becomes an important issue. In addition, how to let the development of this area become involved with the basic concept of the project and make the neighborhood complete is another critical problem.





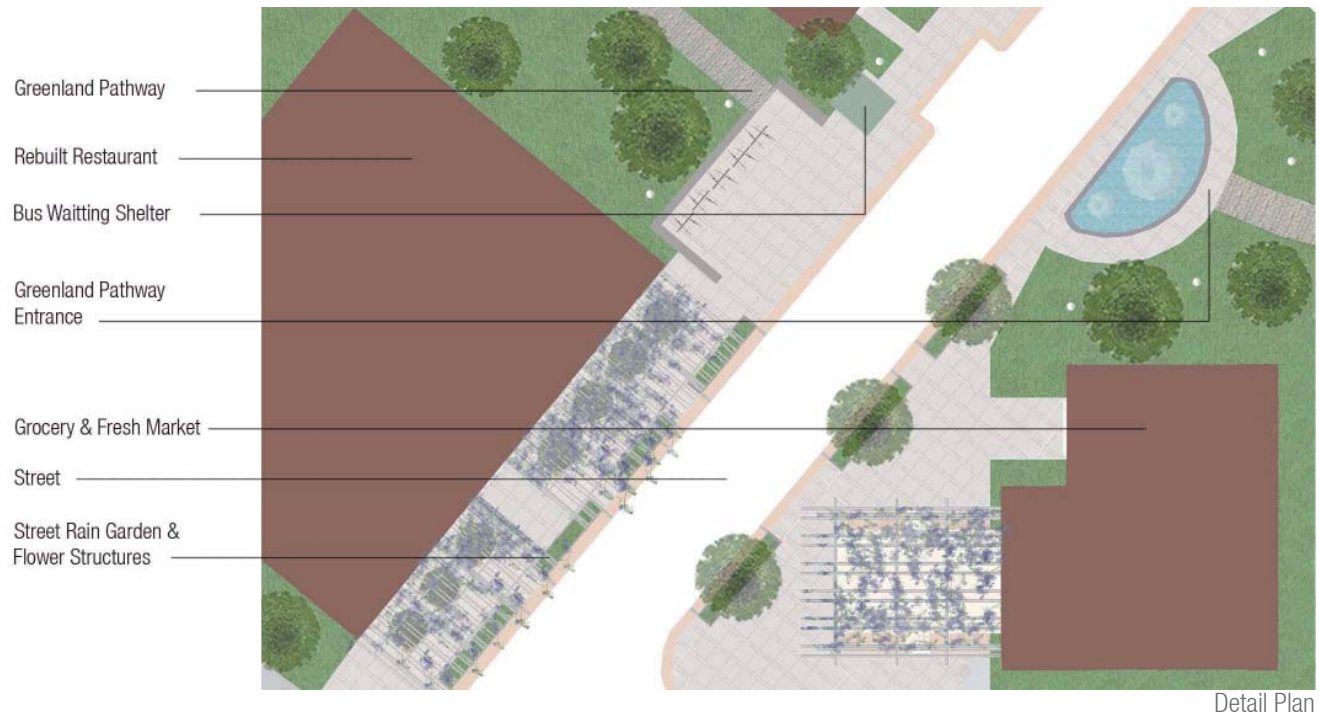
- Site Plan



Existing Grocery



Existing Restaurant



Many important elements need to be considered in the design of this section. The first decision is to keep the existing buildings and restore them so that they can be reused and let local residents feel familiar and recognizable. In order to provide a space for people to better use these buildings, restoration and some new structures are included in the design with them.

Because it is a site for people to get together a public transit station is provided by taking use of the entrance of the green space pathway. The entrance of the inner land path also functions as an urban plaza to slow people's walking pace and provide landscape views on this busy site.



### • Cross Section of the Site

This cross section shows the defined streetscape in front of the commercial building and the open green space at the back of it. To provide a threshold and a comfortable environment for people to walk along the commercial area, new corridor structures are built connecting the commercial buildings. With the climbing plants, the structure functions as a shade area



for people to engage in outdoor activities, such as dining and fresh marketing to make the atmosphere in the neighborhood more vivid and closed. The back space of the commercial buildings has similar functions and design elements to the one at the residential area.





Detail Section 1  
Streetscape of the Commercial Center

Detail Section 2  
Rain Gardens at the Back Yard of Commercial Center





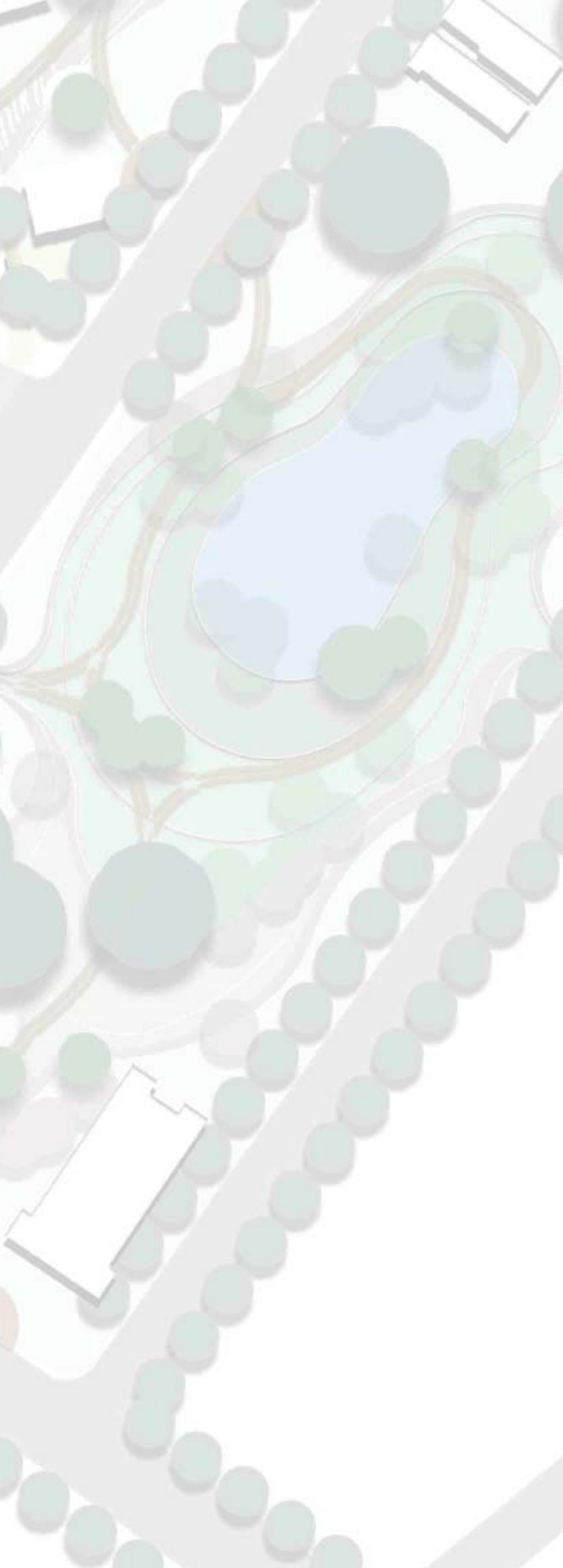


Perspective 1: Restored Commercial Buildings with New Structures



Perspective 2: Entrances of Green Public Space as Bus Station and Community Gathering Spaces in the Commercial Area





**DESIGN: SECTION 4**  
**Cultural Center: Leading Nature to Culture**





Location of the Section

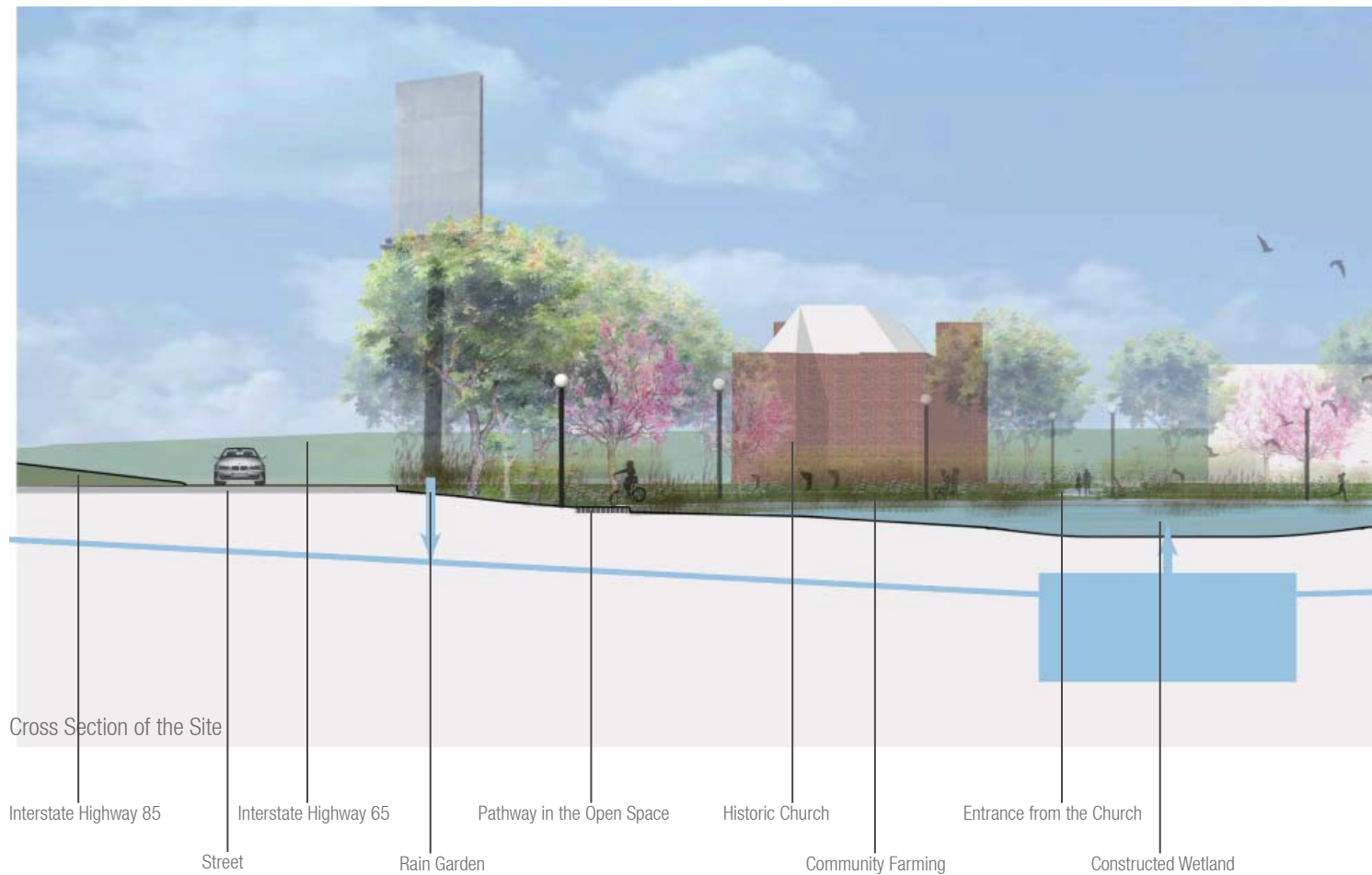
Panorama of the Site



- Site Background

The location of this site is at the end of the neighborhood, which connects to interstate highway 65 and 85. The most important building on the site is the historic church; Mount Zion AME Zion Church, which has been closed for a long time, but there is a plan to rebuilt it and open to the neighbors. At the back of the church the whole parcel is vacant with degraded construction paving on it. The only way to the church is along the existing street which is not convenient for neighbors to get close to the historic site. Therefore, how to take use of the vacant space which is the lowest point and also the termination of the neighborhood becomes a critical issue.



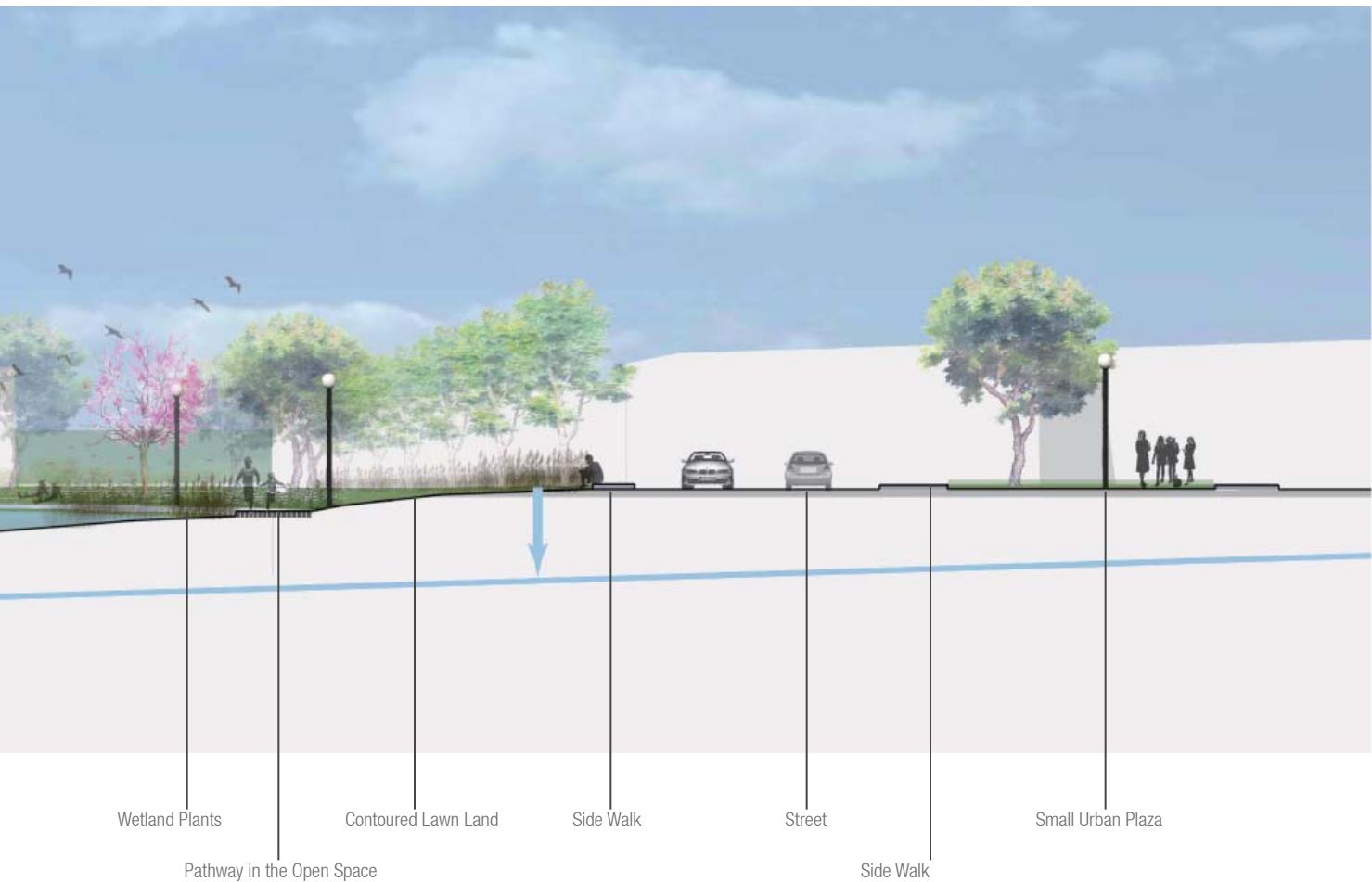


### ● Cross Section of the Site

As the end of the neighborhood and the termination of the natural stormwater drainage system on the site, a constructed wetland is designed to take the place of the existing vacant land and provide rainwater filtration and retention.

The new green open space also functions as a garden for the historic church which will be rebuilt and reopened to the public. Some native wetland plants will be planted on site





to further clean and filtrate the rainwater. By making use of the water resource on the site, community farms could be involved in it. The concept of community farm could utilize the social network of the reopening historic church to bring people here working together and share a green piece of land. The main concept of designing this constructed wetland is to lead nature to culture.





Detail Section 1  
The Relationship between the Street and the Constructed Wetland Space











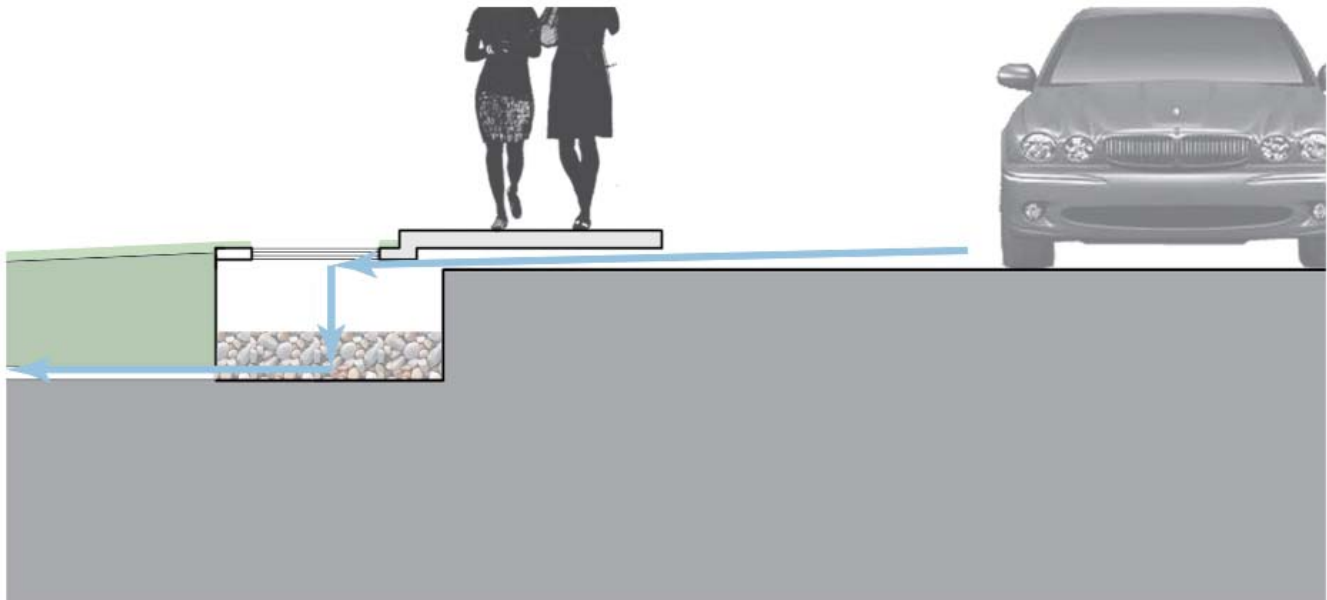
Detail Section 3  
The Relationship between the Interstate Highway and the Constructed Wetland Space

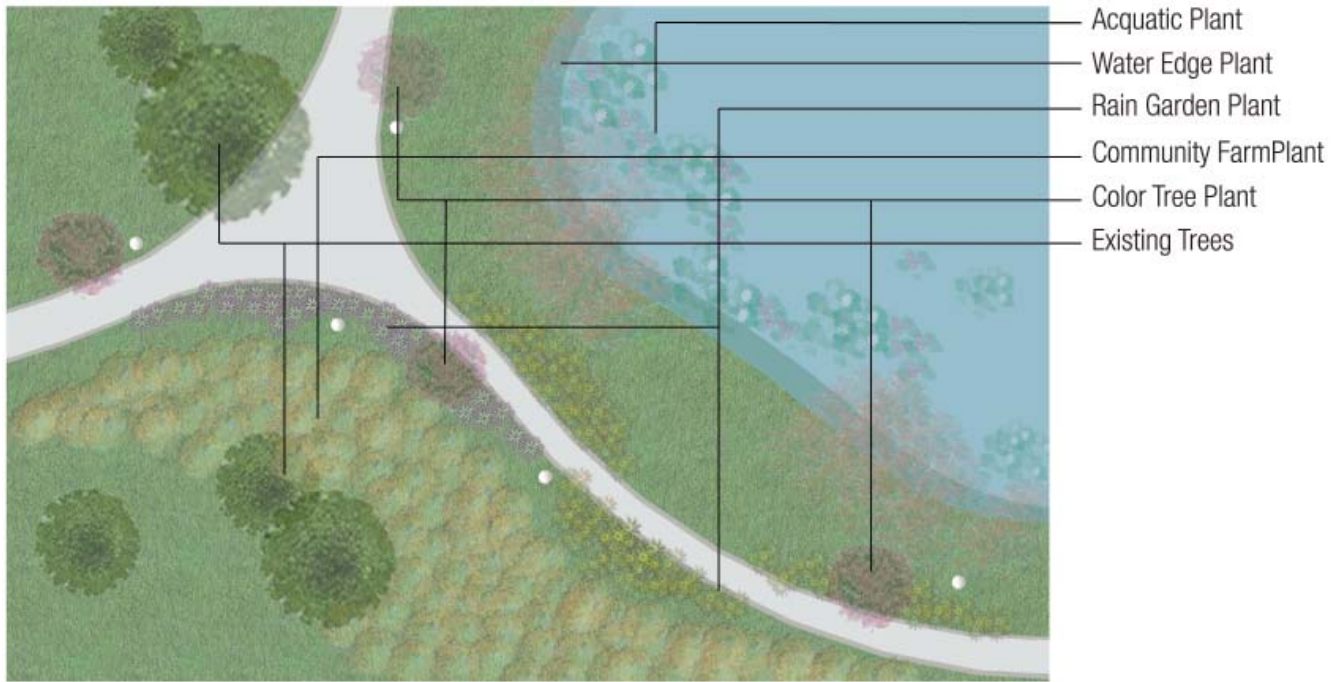
- Design Details

The design concerns two details on the site, including the construction detail of the water collection system on street and the plant types for its social benefits at the constructed wetland area.

There are two main resources of water for the new constructed wetland, one of which is precipitation and another is the surface runoff from the street. Therefore, the design concerns how rainwater could be collected from the street. As is shown below, the rainwater will be directed into an underground concrete box through the space between street surface and the elevated side walk. Some stones will be put into it to further filtrate water leaving large trash out of the stone layer. There is a manhole above the concrete box for people to get in and clean out the trash for certain times. Collected Rainwater will be distributed through the pipeline into the constructed wetland.

Construction Detail of Rainwater Collection System on Street





Detail Plan

For the plant consideration in this open space, the design combines social and ecological effect together to develop a strategy. In order to provide a rich landscape view for people experiencing the site and more layers to clean and filtrate the rainwater for bringing a better environment of the constructed wetland, series of plants areas are designed into the site, as the image shows.





Mount Zion AME Zion Church



Perspective1: Restored Historic Church and its New Surrounding Landscapes

Perspective2:  
New Green Public Space Leading to the Historic Church







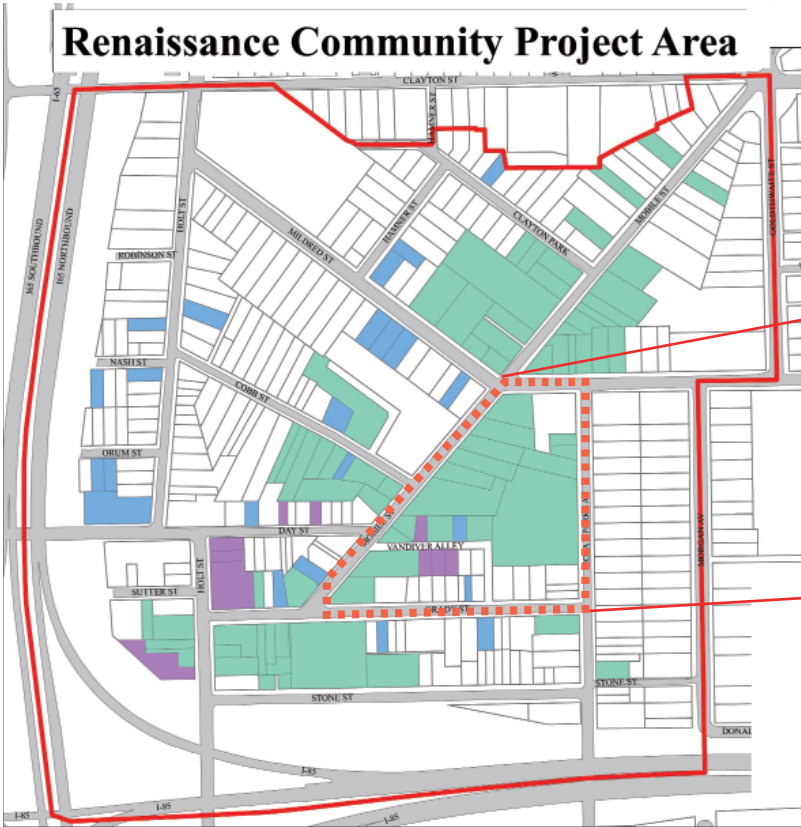




PROJECT REFLECTIONS



# Feasibility of the Project



## Legend

- Under Negotiation
- Tax Property
- Acquired Property
- Other Parcel
- Renaissance Project Area

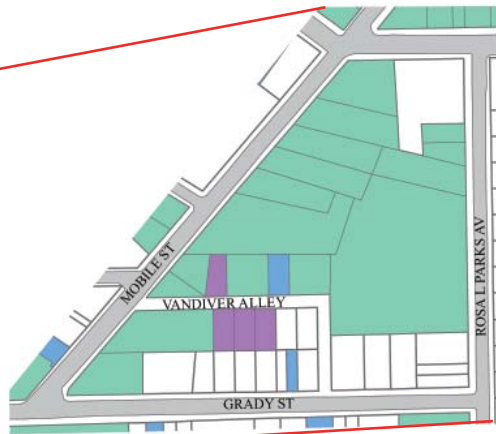
0 125 250 375 500 Feet



MAP FOR REFERENCE ONLY. NOT A LEGAL DOCUMENT.  
This map is created from a subset of data from the City of Montgomery  
Geographic Information System (GIS) database. The City of Montgomery makes no claims, no representations, and no  
warranties, express or implied, concerning the validity, the reliability, or the accuracy of this map.

1 inch = 250 feet

Map Created by Anderson Brooks  
February 1, 2011  
J:\Anderson\Gary\Renaissance\_Comm\_Area



Acquired Land by City

The new moving patterns of the project need to take part of the land in the existing parcels which have certain ownerships. The project explores a way to achieve the feasibility of using the land in realistic world. According to the map for Renaissance Community Project of the neighborhood, there are many properties have been acquired by the city as were shown in blue color. Therefore, the original property lines on the acquired lands could be reduced and the whole piece of land could be re-planned. In order to introduce the new public pathway system in the open green space, the city could take the easement of the pathway area according to the design of this project. Then new properties could be divided further and sold out to its future users.



Consider It as a Whole Piece



Add New City Easement



Re-allocate the Property Land



# Plant Consideration

Suggestion for Rain Garden



Vine Maple



Redbud



River Birch

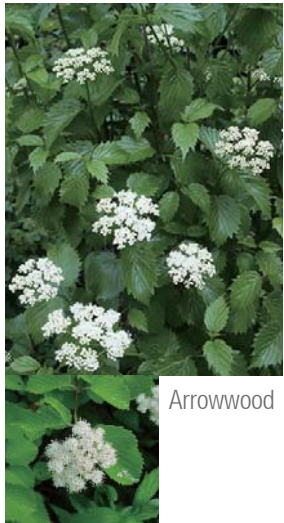
Trees



Sweet Pepperbush



Oakleaf Hydrangea



Arrowwood

Shrubs





Cardinal Flower



Butterfly Weed



Indigo

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Herbs

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Prairie Dropseed



Marsh Marigold



Crested Fern

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Herbs

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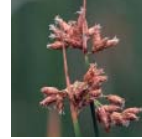
## Suggestion for Constructed Wetland



Broadleaf Cattail



Wild Iris



Hardstem Bulrush



Duck Potato



River Bulrush





Black Eyed Susan



Tall Blazing Star



Switch Grass



In addition to preserving the existing trees and important plants, the design also considers introducing new plantings to the site according to the soil and terrain conditions to increase the species diversity. Native plants are the first choice on site so that the maintenance could be much easier. Colorful plants are another consideration. The design is trying to create a various view for the site and let residents feel the color change of the site through the whole year. Based on the design concept of rain gardens and wetland area which functions as rainwater drainage and clean system, the species are also chosen according to the practical functions.



# Landscape Changes in Different Situations

Celebrate Rainy Day



Streetscape in the Rain







Backyard in the Rain



Constructed Wetland in the Rain



## Celebrate Four Seasons

Spring





Summer





Autumn



Winter





# Conclusions

The project explores a new way for the degraded neighborhood regeneration in downtown Montgomery, Alabama. It combines natural drainage system, new moving pathways and restoration of existing significant urban fabrics to achieve the recovery of the downtown neighborhood area.

The restoration of the existing urban fabric includes keeping some important functions and structures of the current buildings then reconstructed them and putting some new buildings and structures into the existing urban layout. Through this implementation, the site can grow with the historic inspiration to make the environment recognizable and specific for the existing residents. Preserving the existing buildings which are honored by residents will also help to save the historic significance for the future generations. In addition, protecting the old buildings and setting up new ones can attract different group of people come to the site and make it vivid.

Adding new moving pathway system in the existing overlooked green open space in the neighborhood can bring nature back to the highly degraded down town area which has been far away from nature for a long time. New pathways will lead people into the natural lands which are also part of their living habitat. The new pathways system also work with the existing streets to connect the neighborhood and its surroundings better so that a more convenient and comfortable moving environment for walking and biking are provided. This concept helps people to get rid of automobiles and have a healthier way of life.

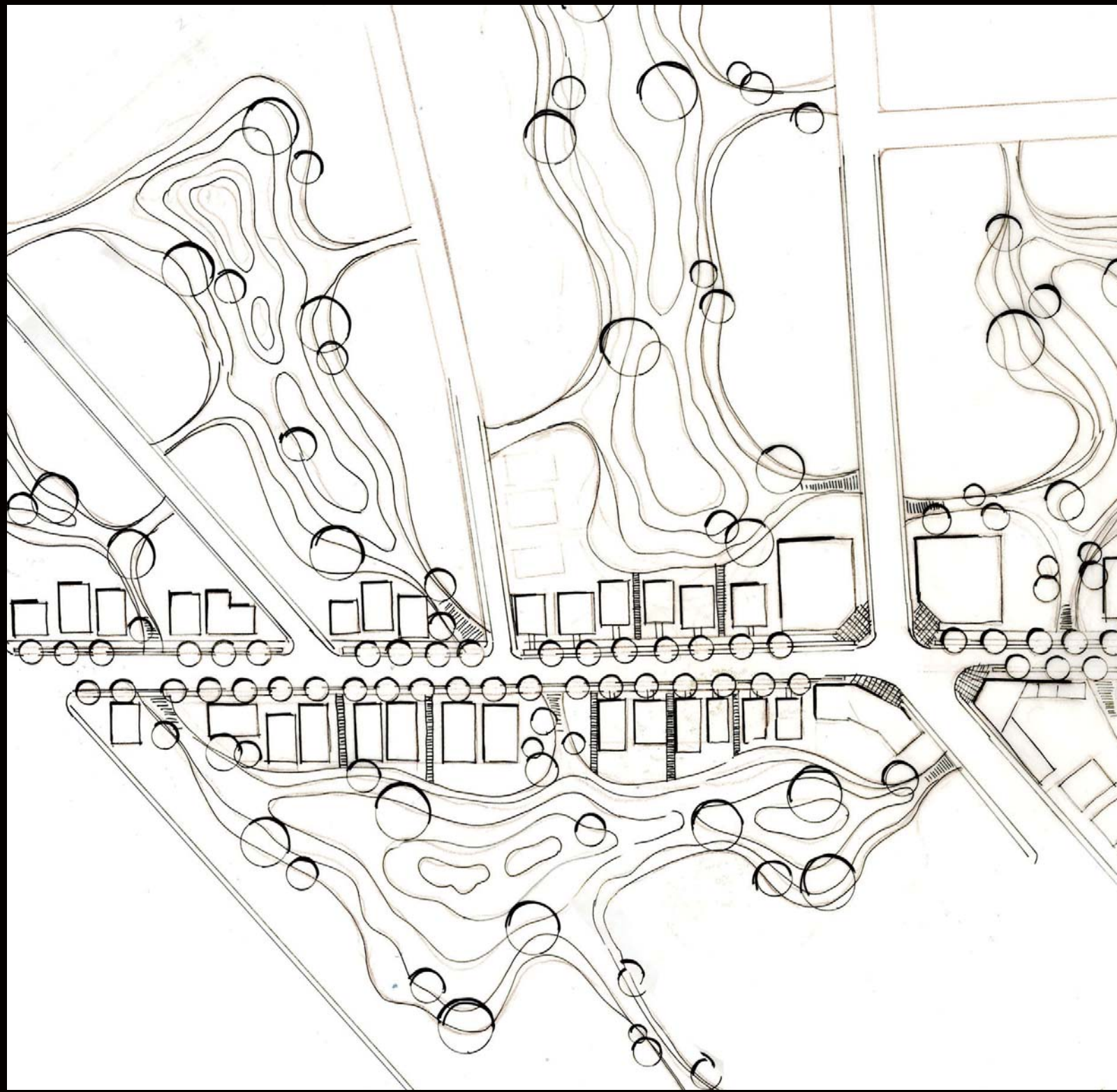
The new natural drainage system is also important for the growth of the neighborhood because it can help the growing urban area to control flooding and use ecological effect to enrich the site. Setting up rain gardens on both main street and in the back green open spaces not only provide a way to collect, infiltrate and distribute rainwater but also increase the biodiversity on the site. Using

rainwater system to decorate the existing urban fabric gives residents a chance to be educated and have a sense of community.

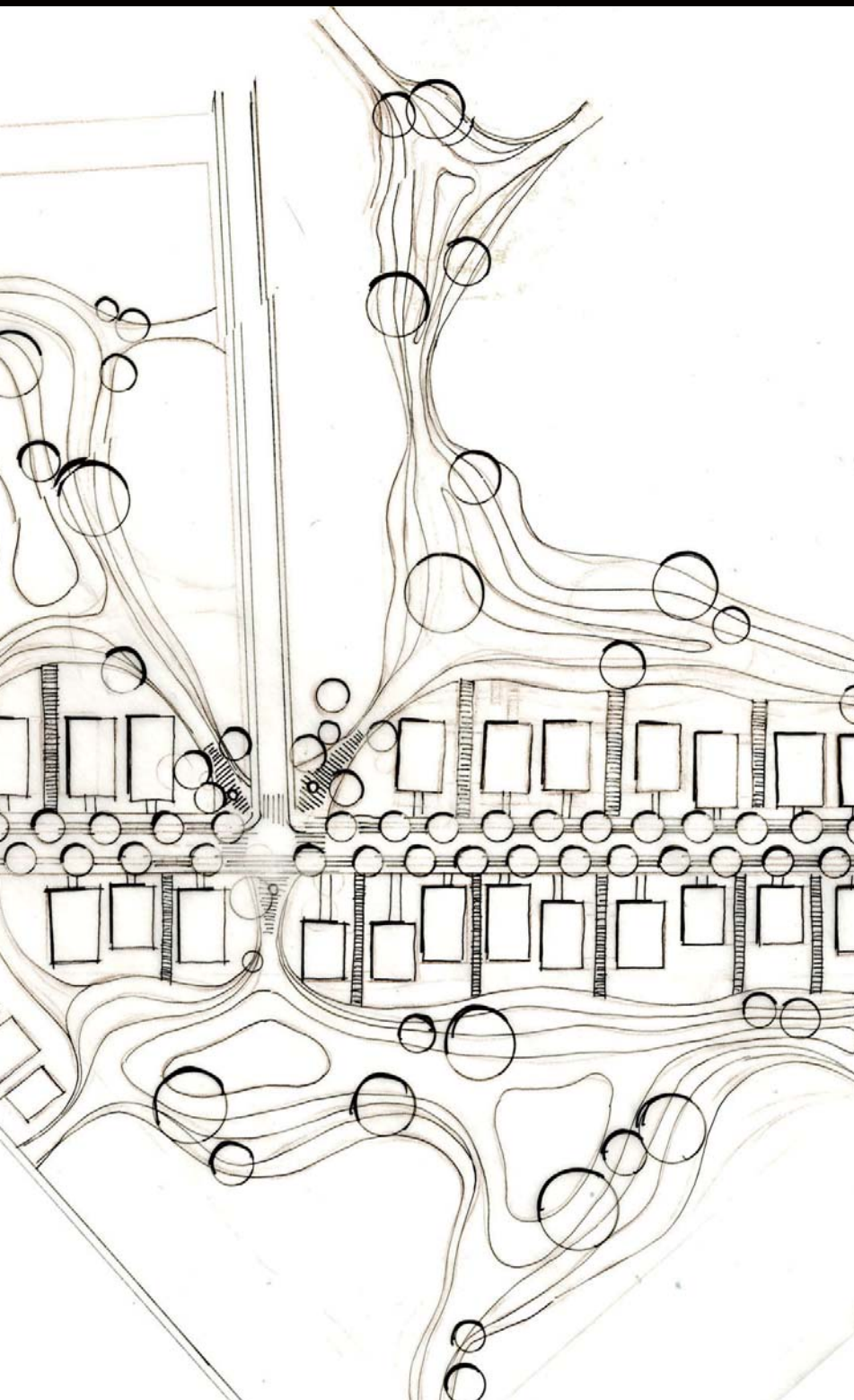
The analysis and the design tests shows that if these three design elements work together supporting with each other there will be many benefits for the site.

Some limitation of the project still exists. For example, to achieve completing the whole pathway system going through the neighborhood needs the city to acquire more lands by spending a huge sum of money. There could be a phased process to manage the project or there could be some other ways of taking use the inner parcels in addition to acquiring the whole piece of land. Also, the project is trying to provide a complete way and concept to regenerate the neighborhood, there is still space for some sparkling detail ideas of design happening on this site. Overall, the regeneration of the neighborhood will always be a popular issue for urban designers and

landscape architects to explore more. This project is stepping in the middle of the whole movement, which need more thoughts and works to be testified to help with the existing and future neighborhoods regeneration.



## APPENDIX





# Case Study

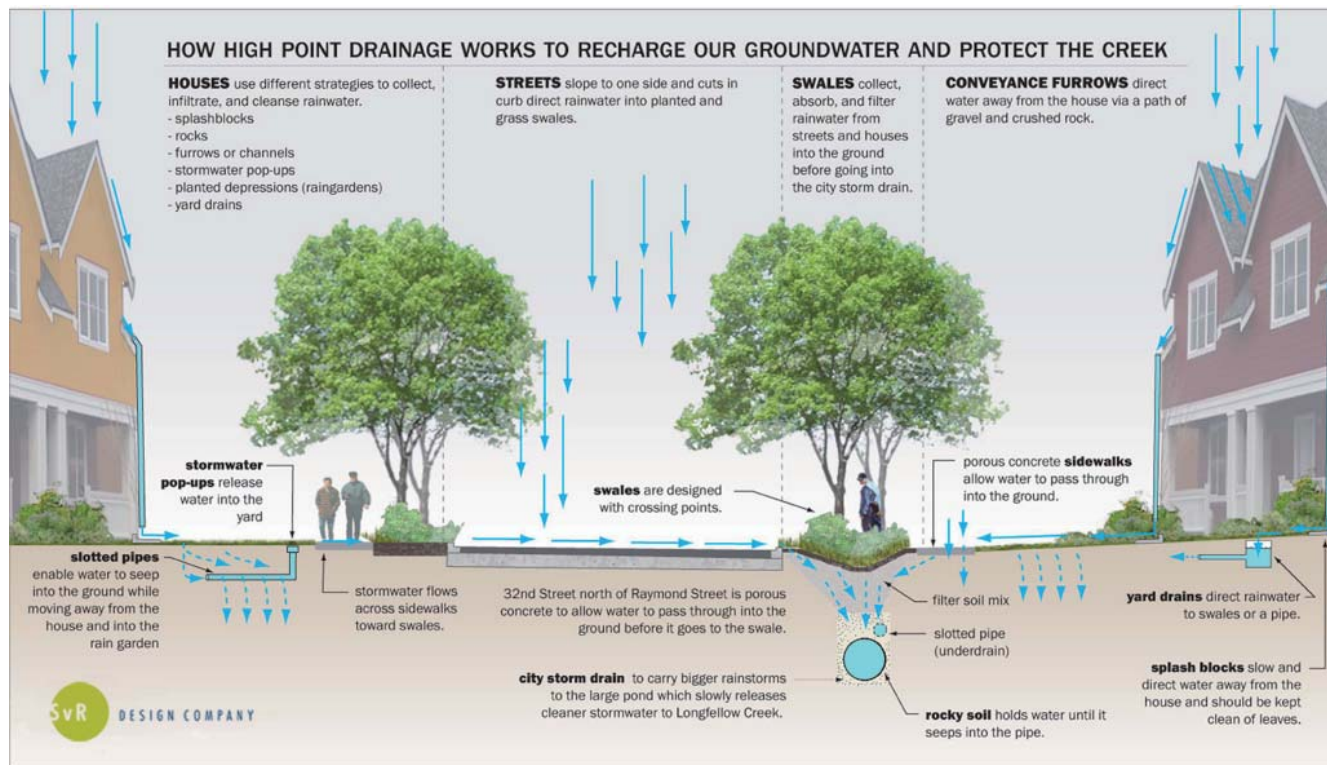
## ● High Point Natural Drainage System

Natural drainage system (NDS) Strategies was started in 2002 under the partnership of Seattle Housing Authority and Seattle Public Utilities. During the design charrette with city departments, several design components were decided to be used into the construction:

- 1) Vegetated, shallow grass and grass conveyance swales along streets
- 2) Traditional storm drain conveyance pipe for large storm events
- 3) Storm pond for flood control
- 4) Reduce impervious surfacing
- 5) Disperse runoff at source



High Point Neighborhood Natural Drainage Infrastructure, Seattle



The cross section for the NDS swales were developed through discussions with various City of Seattle departments:

- 1) Street widths: 25'/56' right of way; 28 feet/ 56' right of way; 32'/60' right of way
- 2) Curb height, swale width, street tree locations, berm locations, side slopes, bottom width, etc.
- 3) Porous sidewalks on the swale side

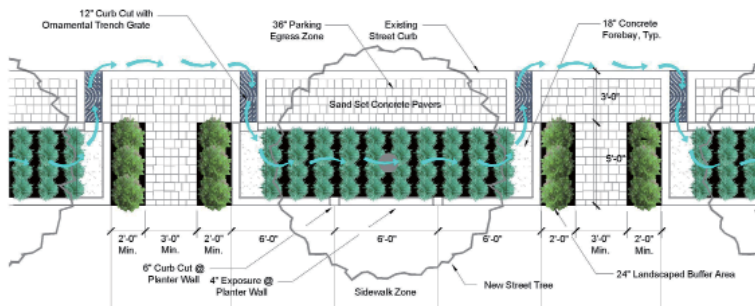
- SW 12th Avenue Green Street

The SW 12th Avenue Green Street project, located adjacent to Portland State University in downtown Portland, is unique to Portland and the United States in the way the pedestrian zone of this street has been transformed to sustainably manage street stormwater runoff. As part of the City of Portland's commitment to promote a more natural approach to urban storm water management, this "green street" project converts the previously underutilized landscape area between the sidewalk and street curb into a series of landscaped stormwater planters designed to capture, slow, cleanse, and infiltrate street runoff.

## SW 12<sup>th</sup> Avenue Green Street



SW 12<sup>th</sup> Avenue Stormwater Planter ~ Plan View N.T.S.



SW 12<sup>th</sup> Avenue Stormwater Planter ~ Enlarged Plan N.T.S.

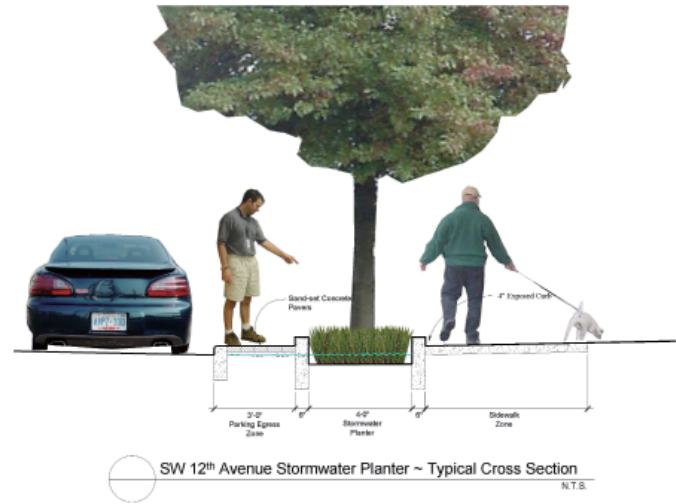


Master Plan



## SW 12<sup>th</sup> Avenue Green Street

Built in the summer of 2005, this street retrofit project demonstrates how new and existing streets in downtown or highly urbanized areas can be designed to provide direct environmental benefits and be aesthetically integrated into the urban streetscape. Though this green street project maintains a strong functional component, it is the ability of the landscaped stormwater planters to be integrated into the urban fabric that has the design community, developers, policy makers, and local citizens excited about the SW 12th Avenue Green Street.



Detail Section



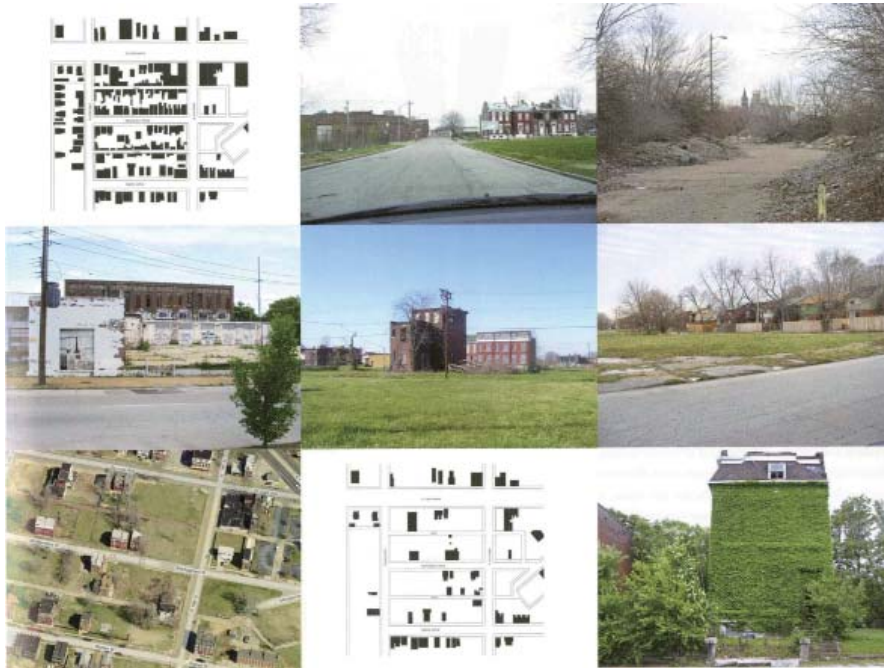
Raingarden Set Up Before



Raingarden Set Up After



- Large Scale Inner City Regeneration in St. Louis



Drastic Changes from Early 1900s to Present

Since the early 1900s drastic changes in density have transformed NorthSide from the residential heart of St. Louis into a poignant example of inner city neglect in the USA. The plan at top left illustrates density in 1909 and contrasts sharply with the 2003 delineation.

As ecostructure of streets, neighborhood parks, bike lanes, stormwater retention, and bioswales will provide a framework for regeneration. The existing street grid is retained and sometimes restored for redevelopment. The plan also reduces street widths to accommodate a proposed trolley within a network of pedestrian and bicycle routes. On-site renewable energy sources such as biomass, solar, wind and hydro will unite with a cogeneration network and smart grid to make NorthSide one of the most efficient and sustainable redevelopments of its kind. The design strategy bases neighborhood centers in key locations where job development, green space and active mixed uses will contribute to the reestablishment of the community.

Neighborhood Regeneration Plan

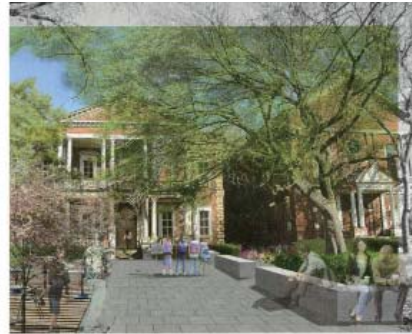


Existing Conditions

Green Framework

Clean Energy

Economic Development



NorthSide Area Neighborhood Regeneration, St. Louis

Creating job centers is a high priority for the regeneration of this low-income neighborhood. Narrower streets, wider sidewalks and mid-rise buildings will provide an environment that is attractive to business and a new workforce.

Essential social principles of the regeneration plan include the presentation and renovation of existing buildings and grounds. The old Clemens Chapel and the Cass School are two of the few significant landmarks in the area.

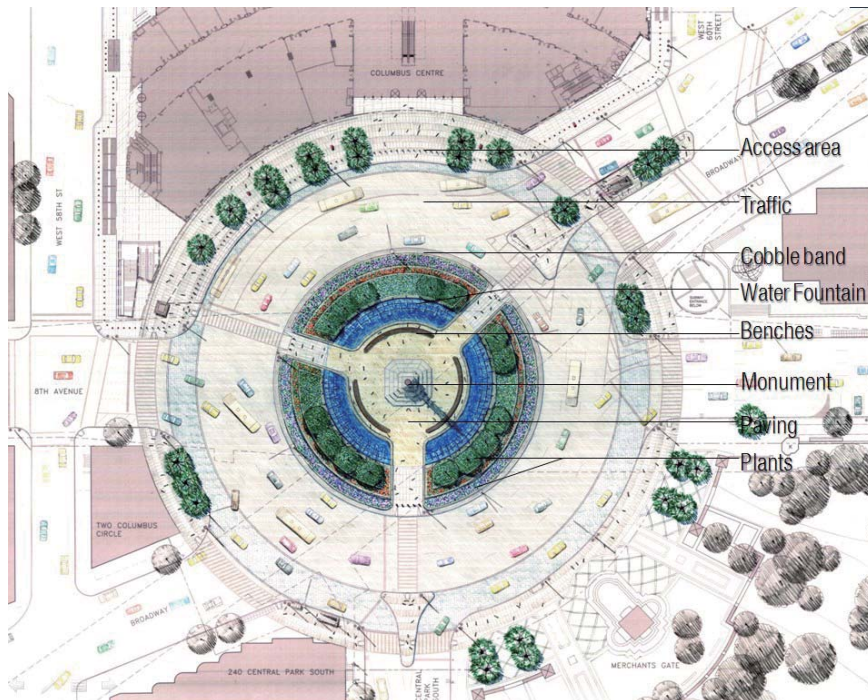


## ● Large Scale Inner City Regeneration in St. Louis

New Columbus Circle is a traffic island which is accentuated by series circle layers. From its center to the outer areas, the following layers come in the order: historic monument with its base stairs exposed on the surface, paving area which leads three accesses of the center area, wooden benches, terrace-style water fountain, series of planting circles with tall trees, shrubs and flowers, cobble area, traffic lanes. At last, the circle finishes with the circle access areas to its surrounding spaces and roads.

As a whole, the New Columbus Circle project by Olin Partnership reorganized the traffic routes and people's movements on the site. Although the traffic areas has been reduced to give place to the center circle area,

the vehicles' movements becomes efficient. Drivers just come into the circle and make turns within it by changing the lanes at right time. There is no conflict at all. For walking people, the design also provides them with the comfortable and convenient environment. There is a circle pedestrian lane which connects surrounding places. People can move easily across the crossing. Other three pedestrian lanes which connect to the center area provide the shortcuts for people who want to cross the whole center plaza. And these lanes work well together with the entrances of the surrounding places, which as a whole provide people a clear and flowing body of moving environment.



Water Feature in the Center



Night View

Master Plan

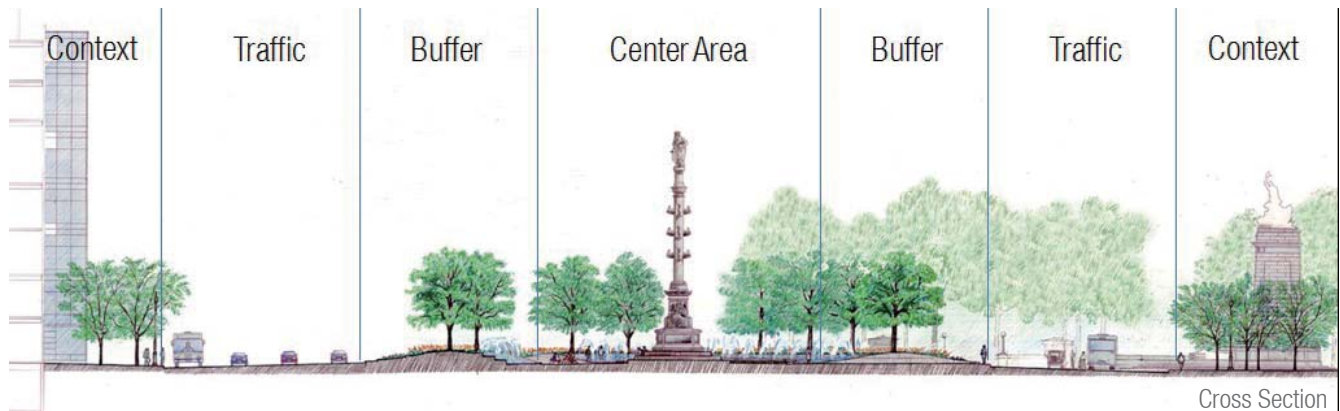


Columbus Circle in 1970s



Aerial view looking down (East) 59th Street

In addition to solving the traffic issues, the redesign work also provides an innovative way of reusing this center area. From the center monument to the outside plants, designers put a lot design details to form this space into the one which can slow down people's moving speed even attract them to stay there for a longer time.





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