

# Designing for Health in the Suburbs



# Designing for Health in the Suburbs

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Thesis submitted to the faculty of the  
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in partial fulfillment of the requirements for the degree of

Master of Architecture  
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Design, Health, Suburbs

*“Suburbia contains many opportunities to be a more productive landscape than its current condition. As the largest form of new growth and settlement globally, it is a vast frontier awaiting innovation. Suburbia could be a test bed for new typological forms, environmental retrofitting, clean water, home-based employment, energy production, novel eco systems, social programs, and many other innovations yet imagined.”*

Introduction, *Infinite Suburbia*  
Alan M. Berger  
Joel Kotkin  
Celina Balderas Guzmán



# Designing for Health in the Suburbs

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## Academic Abstract

Suburbia in America was originally marketed as a society that offered an idyllic lifestyle in which “The American Dream” could be attained. The suburban lifestyle that the average American strived for was one that included a private home for each individual family with a lawn and a white picket fence. Over time, Americans began to shift toward preferences of urban living, where inherently healthy habits such as walking and biking to get around have been adapted out of convenience. But as cities become more expensive to live in, the shift back to the suburbs has begun. Today, 53% of Americans live in what they consider to be suburban areas according to a poll administered by the real estate company, Trulia<sup>1</sup>. Although the suburbs were successful in mass producing the original American dream, there were unforeseeable side effects that encouraged unhealthy lifestyles that have made unhealthy habits the norm.

Advancements in technology have essentially eliminated the public need to participate in any utilitarian physical activities. Thanks to innovations such as the riding lawn mower, leaf blowers and automobiles, tasks that were once necessary and that had positive health benefits are no longer required. Not only do these improvements in technology affect physical health, but also environmental and social health. Those who live in the suburbs, by default, live sedentary lifestyles and have no obligation to do any physical activity whatsoever. This, along with convenient fast food has had a drastic negative effect on personal health of Americans, and most dramatically, suburbanites.

This thesis is an attempt to reimagine the role of architects to address problems we have created for ourselves. As the guardians of the health, safety, and welfare of the general public, it is our responsibility to make sure we are designing for health in the suburbs and make necessary interventions to evolve the design of suburbia as our knowledge of health increases. As Alan Berger alluded to in his introduction to *Infinite Suburbia*, the necessary evolution and modification of suburban landscapes presents architects and designers with an exciting opportunity generate new typologies- taking cues from healthcare professionals in the process. The scope of this thesis involves studying and proposing interventions for an entire existing suburban landscape, down to the thoughtful design of private homes, where individuals’ habits are formed, and healthy lifestyles can realistically be developed.

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<sup>1</sup> “Trulia: Real Estate Listings, Homes For Sale, Housing Data.”

# Designing for Health in the Suburbs

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## General Audience Abstract

This thesis is a proposal on how architects and designers can begin to rethink our role in the development and design of the built environment to protect the health, safety and welfare of the general public. According to a statement issued by the American Institute of Architects, “the consensus in the health profession is that the health and wellness of the population has been dramatically degraded by the built environment”<sup>1</sup>. Changes can be made to take existing “unhealthy environments” and transform them into healthy, inclusive places that different types of people can genuinely enjoy living in. This thesis is an exploration of one of many ways that goal can be accomplished.

The differences in what we know now vs. what was known back when most suburbs were originally planned are drastic. Our knowledge and understanding of the consequences of certain design decisions are better understood today, so why haven’t American suburbs evolved to address the health issues we have created for ourselves? This thesis is an attempt to answer the question of how suburbs can be intervened in to encourage socially and environmentally healthy lifestyles, as well as improve public health. Design movements such as *Congress for New Urbanism* and *Smart Growth* have laid the groundwork for proposals found in this thesis. The largest criticisms of those movements are that they can be seen as forceful attempts to control peoples’ lifestyles. The intentions of the proposals made in this thesis are not to “trick” or “force” people to live a certain way through design. The intention is to offer residents the option to make healthy lifestyle changes if they wish; by intervening in areas where previous design has virtually prevented the opportunity for healthy lifestyles. The proposals made in this thesis aim to be very sensitive to the cultural differences of those who live in certain areas and to respect and preserve the successes of existing suburbs.

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<sup>1</sup> “Public Health, Safety, and Welfare: Reframing the Role of Architects and Design Professionals.” AIAU.

## Acknowledgements

I'd like to thank every member of my family who has supported my education in any way- either by casually asking how school has been going, or has directly aided in helping me learn. My grandparents- Pop Pop, Grumma Joyce and Grumma Thelma, have given me endless motivation to keep working hard. Knowing the sacrifices they made in their own lives and the leaps that (the majority of) society has made to give us the opportunity to be who we want to be has continued to push me to be the woman I am working toward becoming. I am honored to make you all so proud and the unconditional love you've always given me has played a larger role in my motivation to continue my education than you know.

To my parents- thank you so much for always doing what's been best for me and my sisters. You've raised three amazing children and I'll always love you for that. To my Mom, you probably don't remember this, but when I was very young and crying over a drawing I thought I'd ruined, you told me "You can fix anything that's been destroyed and make it good again". I'm sure you just said that to make me be quiet, but those words have helped mold how I view the world; with a healthy mixture of realism and optimism with a dash of creativity. And to my Dad, who (unintentionally, I think?) scared Janee and I into being math wizards- thank you for all you've done. I am forever grateful for all the sacrifices you've made for us, and all you've done to help me become the strong confident person I am today.

My sisters- Janee and Madison (and my unofficial sister, Quai), thank you for always being cool and laughing at my jokes and for taking the time to listen and discuss my architecture projects with me. You guys are the best, and I am extremely grateful for you three.

And last but not least, thank you to my committee members- Susan, Paul and Scott for always being available when I needed your help on this project. Having the opportunity to learn from all three of you throughout my time at the WAAC reminded me that enthusiasm for architecture is possible- despite how bland the "real world" can sometimes portray it. Susan- you are an inspiring strong female figure that I LOVED learning from these past couple years. Paul- you taught me the basics of landscape architecture and managed to make me excited to learn about stormwater management; which I never would have imagined could be as fascinating of a topic as you made it. Scott- your down to earth approach toward urban design and architecture and your constant enthusiasm was a great motivation to me throughout the thesis process. All three of you contributed greatly toward helping me finish my formal education with a project that I will continue to seek answers for throughout my career.

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# Identification of Types of Health

It is important to clearly define the types of health this thesis is striving to improve in the suburbs. Three categories of health- **social health**, **environmental health**, and **public health** have been selected as the health types for focus in this project.

Suburban layouts and the lifestyles they provide by default inherently contradict the beneficial tenets all three of these types of health. By designing to respond to past design decisions that have directly impacted the decline of these three health types, this thesis aims to reverse the unhealthy habits inflicted on suburbia.

*“The modern America of obesity, inactivity, depression, and loss of community has not “happened” to us; rather we legislated, subsidized, and planned it.”*<sup>1</sup> If we were able to plan and execute the degradation of health, we can contrarily plan and execute the reversal of that degradation and improve living conditions.



**SOCIAL HEALTH** (psychological sense of community) “is a feeling that members of a community have of belonging, a feeling that members matter to one another and to the group, and a shared faith that members’ needs will be met through their commitment to be together”<sup>1</sup>



**ENVIRONMENTAL HEALTH** “...addresses all the physical, chemical, and biological factors external to a person, and all the related factors impacting behaviours. It encompasses the assessment and control of those environmental factors that can potentially affect health. It is targeted toward preventing disease and creating health-supportive environments. This definition excludes behaviour not related to environment, as well as behaviour related to the social and cultural environment, as well as genetics.”<sup>2</sup>

*\*The author’s personal definition of environmental health does address the well being of humans, but stresses the importance of caring more for the environment just for the sake of keeping our home planet clean and to allow it to thrive for all future generations to enjoy indefinitely.*



**PUBLIC HEALTH** is “the science and art of preventing disease, prolonging life, and promoting health through the organized efforts and informed choices of society, organizations, public and private communities, and individuals.”<sup>3</sup>

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<sup>1</sup> Jackson, Richard. “Making Healthy Places: Designing and Building for Health, Well- Being, and Sustainability”. Preface, xvii.

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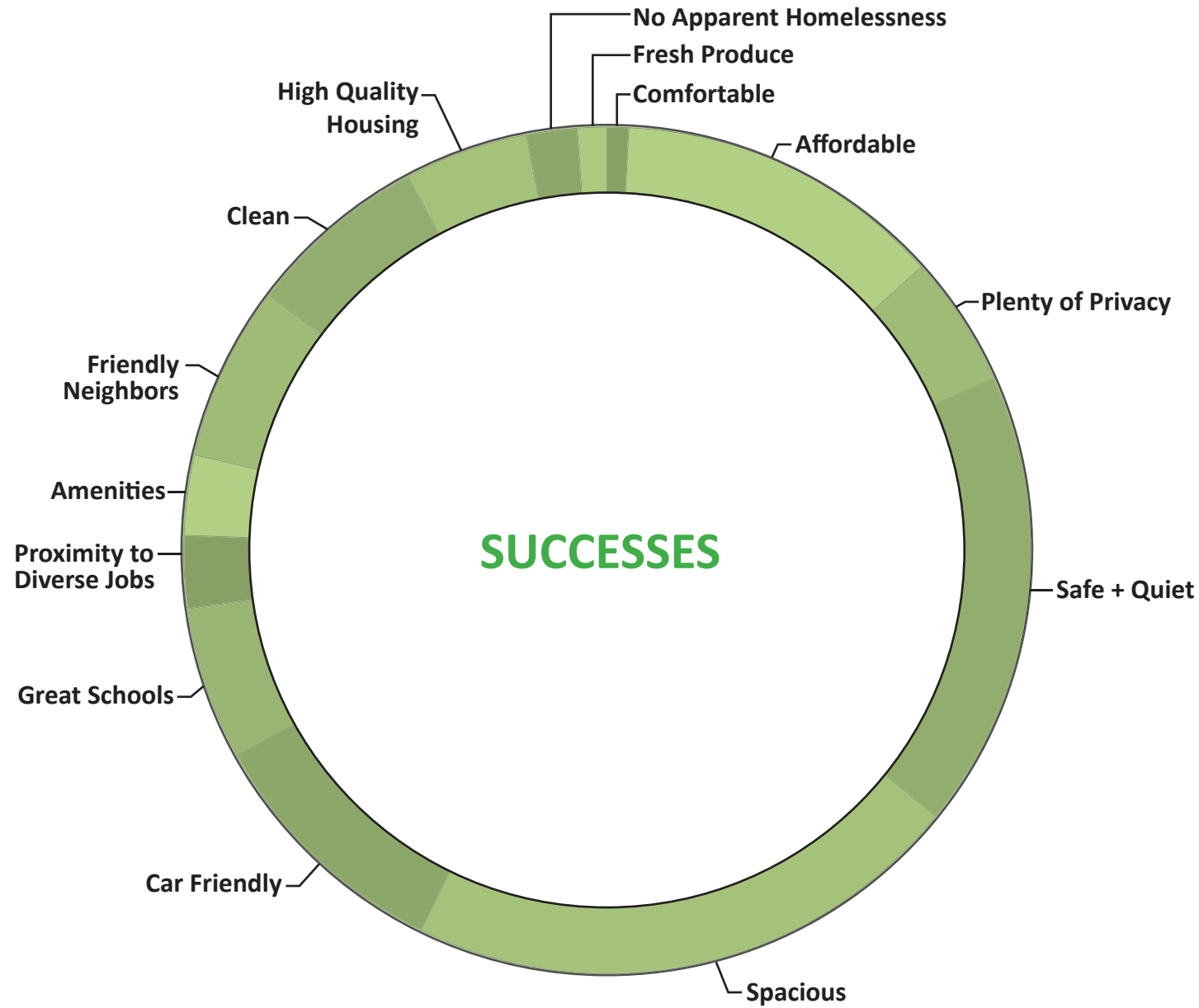
<sup>1</sup> Frumkin, *Urban Sprawl and Public Health: Designing, Planning, and Building for Healthy Communities*.

<sup>2</sup> World Health Organization, “*Public Health, Environmental and Social Determinants of Health*”.

<sup>3</sup> Centers for Disease Control and Prevention, “*Public Health 101 Series*”.

## Identification of Current Suburban Successes + Failures

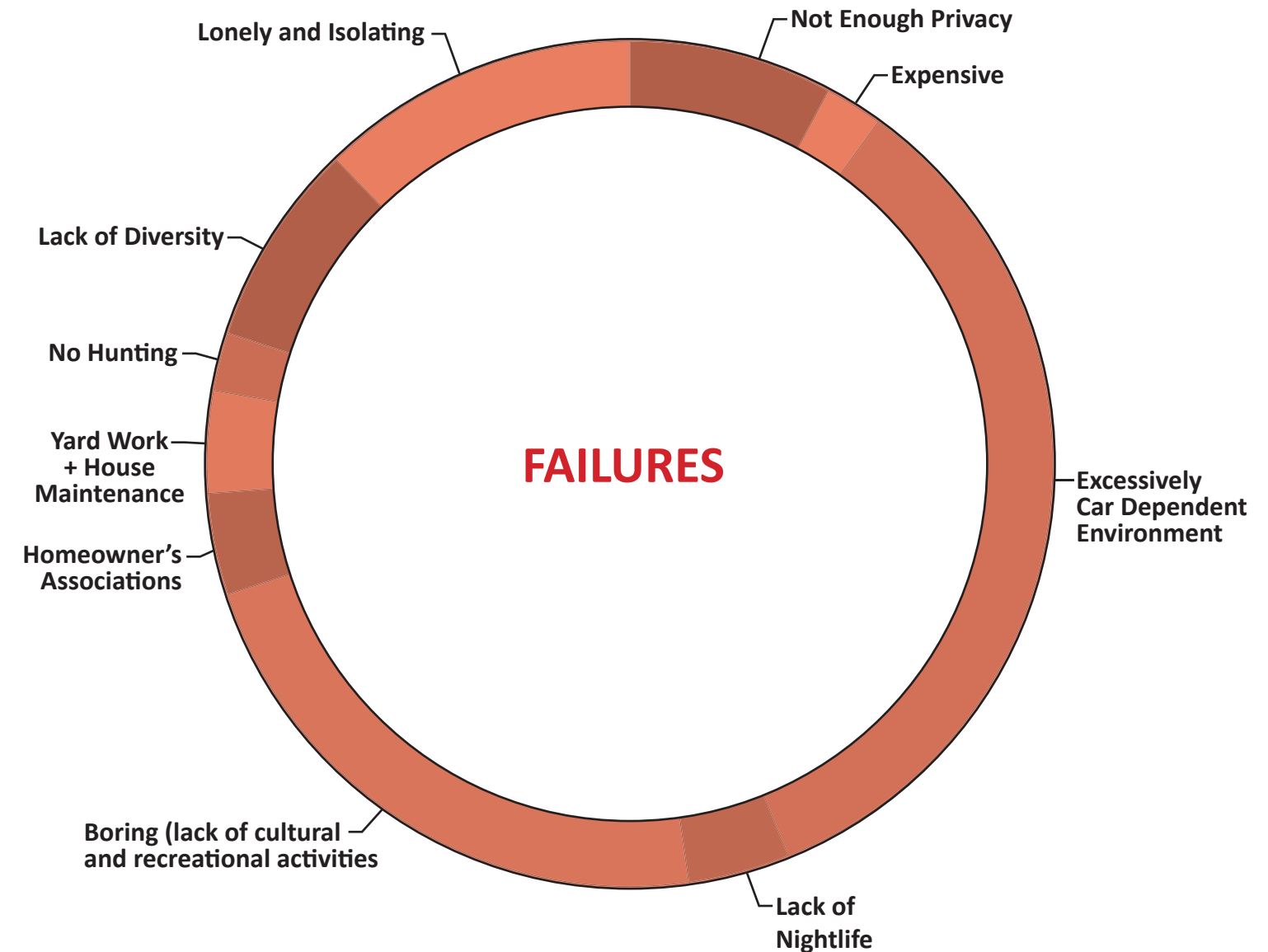
There are some qualities of the suburbs that are desirable and should remain. When questioned on an online survey, these were the answers given when asked *“What is your favorite thing about living in the suburbs?”*.



<sup>1</sup> Reddit, “r/AskAnAmerican - What Are the Positives of Living in the Suburbs?”

These were the answers given when asked *“What is your least favorite thing about living in the suburbs?”*.

Note that several responses are in direct contradiction to the responses for favorite things about the suburbs. The assumption can be made that these differences are a result of people using urban vs. rural lifestyles as a point of reference.



*“If you stand on your front porch naked and nobody sees you, you live in a rural area.  
If you stand on your front porch naked and your neighbours call the cops on you, you live in the suburbs.  
If you stand on your front porch naked and your neighbours ignore you, you live in a city.”*

-Reddit User

<sup>1</sup> Reddit, “r/AskAnAmerican - People Who Hate Living in the Suburbs, Why?”



# Goals and Strategies to Design for Health (on 4 Scales)



URBAN STRATEGIES

*What can be done throughout the city to improve health?*

**SOCIAL HEALTH**  
Foster sense of community and inclusivity

- Create opportunities for public art
- More places for unplanned social interactions
- Give people opportunities to be exposed to different demographics
- Create human scale paths between neighborhoods
- Preserve perceived safety of burbs / increase actual safety

**ENVIRONMENTAL HEALTH**  
Minimize waste and pollutants

- More convenient public transportation
- Greenways + alternative paths
- Increase walkability
- More trees
- Composting
- Sharing Economy
- \*Reusable grocery bags

**PUBLIC HEALTH**  
Create opportunities for activity and healthier eating habits

- Locally grown foods
- Locally bought products
- Easy access to trails
- More natural environments to be active in
- Public parks



NEIGHBORHOOD STRATEGIES

*What can be done within individual neighborhoods to improve health?*

- Provide neighborhood gardens
- Provide **places** for gathering (*Not another cold, soul-less CMU Community Center!*)
- Increase density (must maintain privacy that suburbs currently offer!)
- Opportunities for participatory building projects to boost sense of ownership and community

- Non- automobile path improvements
- Walkable amenities
- Trees
- Connections to public transit

- Neighborhood gardens
- Sidewalks



DISTRICT STRATEGIES

*What role should suburban districts play to improve health?*

- Provide urban gardening space
- Provide **places** for gathering
- Increase density
- Opportunities for participatory building projects to boost sense of ownership and community

- Non- auto path improvements
- Walkable amenities
- Trees
- connections to public transit
- Walkable places of work

- Neighborhood gardens
- Sidewalks
- Places to play outside
- Connection to larger path network



BUILDING STRATEGIES

*What role should residential buildings play in improving health?*

- Provide family spaces
- Porches
- Treatment of thresholds between public and private as a significant place (ecotone).

- Passive heating / cooling
- Solar Panels + green technology (carbon capture?)
- More Plants
- Maximize natural lighting

- Food from gardens
- Convenience to paths



# Analysis of Suburb for Intervention | Manassas, VA

- Major threshold in VA (urban/ rural)
- Major threshold in the U.S. (nothern culture/ southern culture)
- Junction of extreme social and cultural differences
- Diversity in age, race and economic status reflective of U.S.

Potential for: A suburb that is designed to encourage social, environmental, and public health

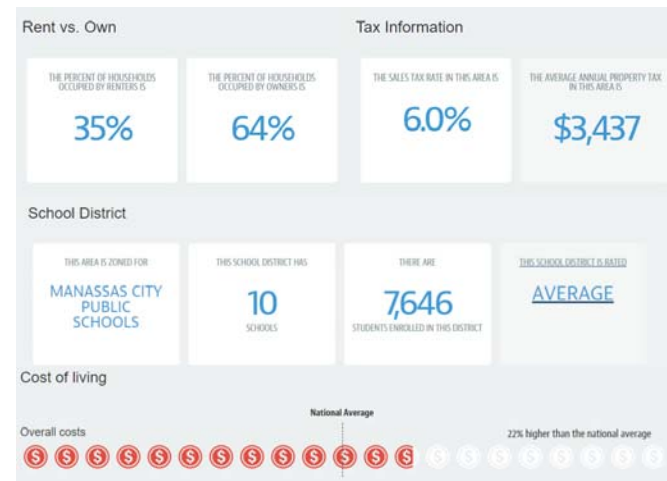
- Car dependent environment
- Separated land uses
- Disconnected / infrequent pedestrian paths

Result: Sedentary lifestyles and heavy reliance on cars that decreases enjoyable social interactions and increases pollution

**Walk Score 41** Manassas is a Car-Dependent city  
Most errands require a car.

**Transit Score 21** Manassas has Minimal Transit  
It is possible to get on a bus. [Find Manassas apartments for rent near public transit.](#)

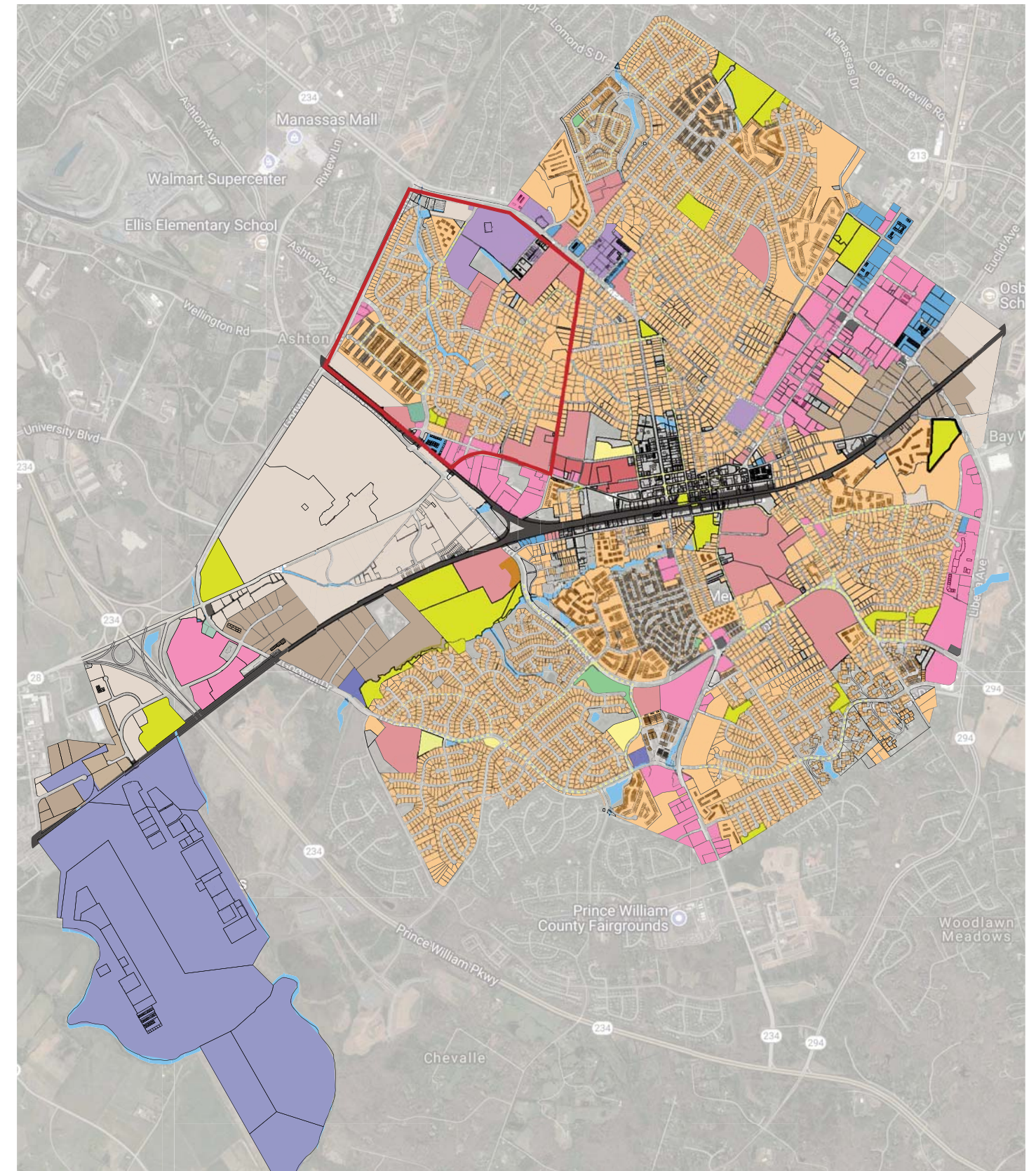
Source: Walkscore.com



Source: Addressreport.com

## Parcel Use Legend

- Schools and Churches
- Senior Citizen Home
- Parks and Rec (Public and Private)
- Residential
- Shopping Center/ Commercial
- Health Services
- Light Industrial
- Commuter Rail Stations + Airport
- Municipal Buildings
- Gas Station
- Undeveloped
- Agricultural
- Old Town/ Mixed Use
- Community Center (Private)
- Heavy Industrial
- Office Parks
- Railroad
- Biking/Walking Trail

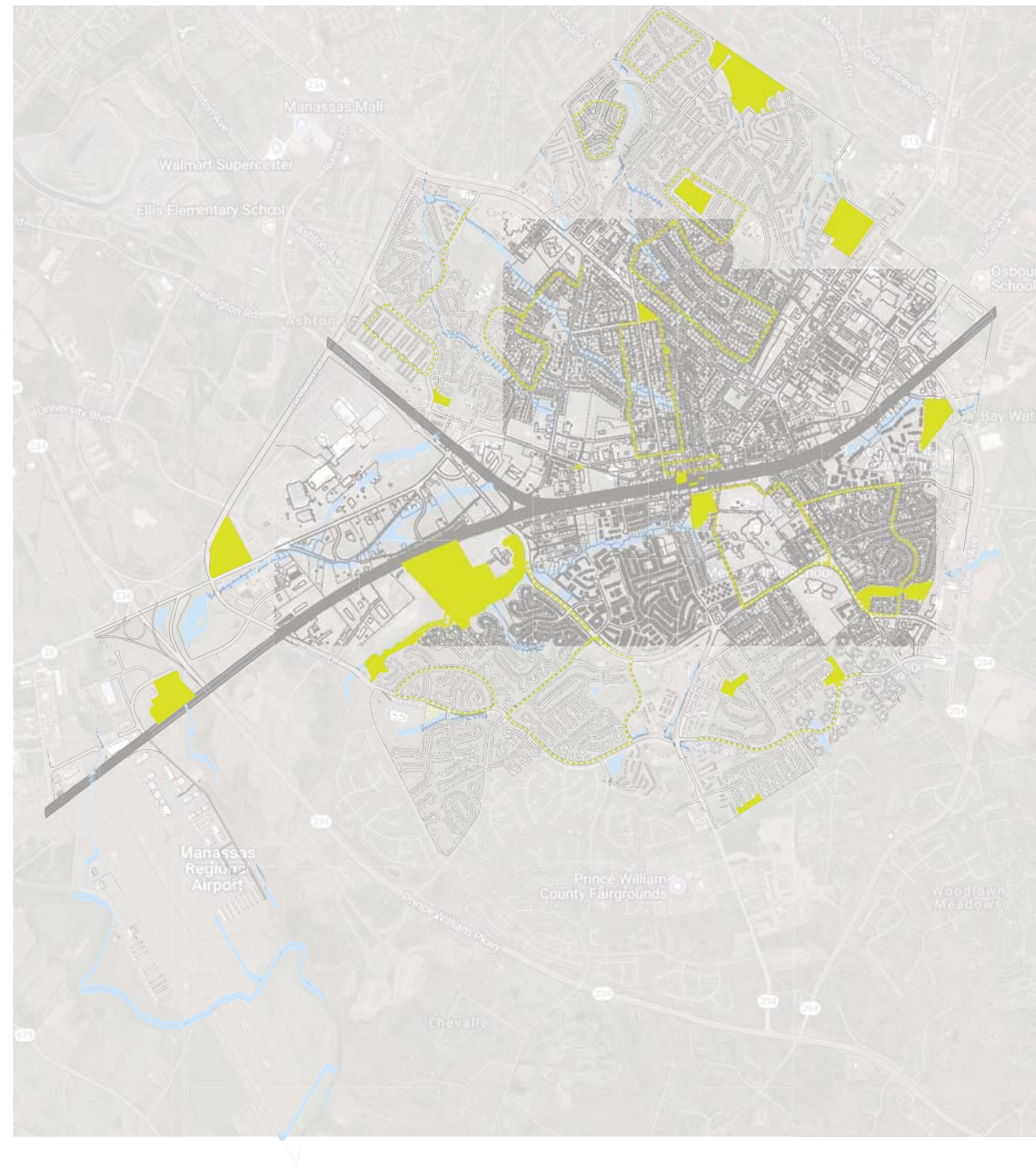


Map of Manassas, VA





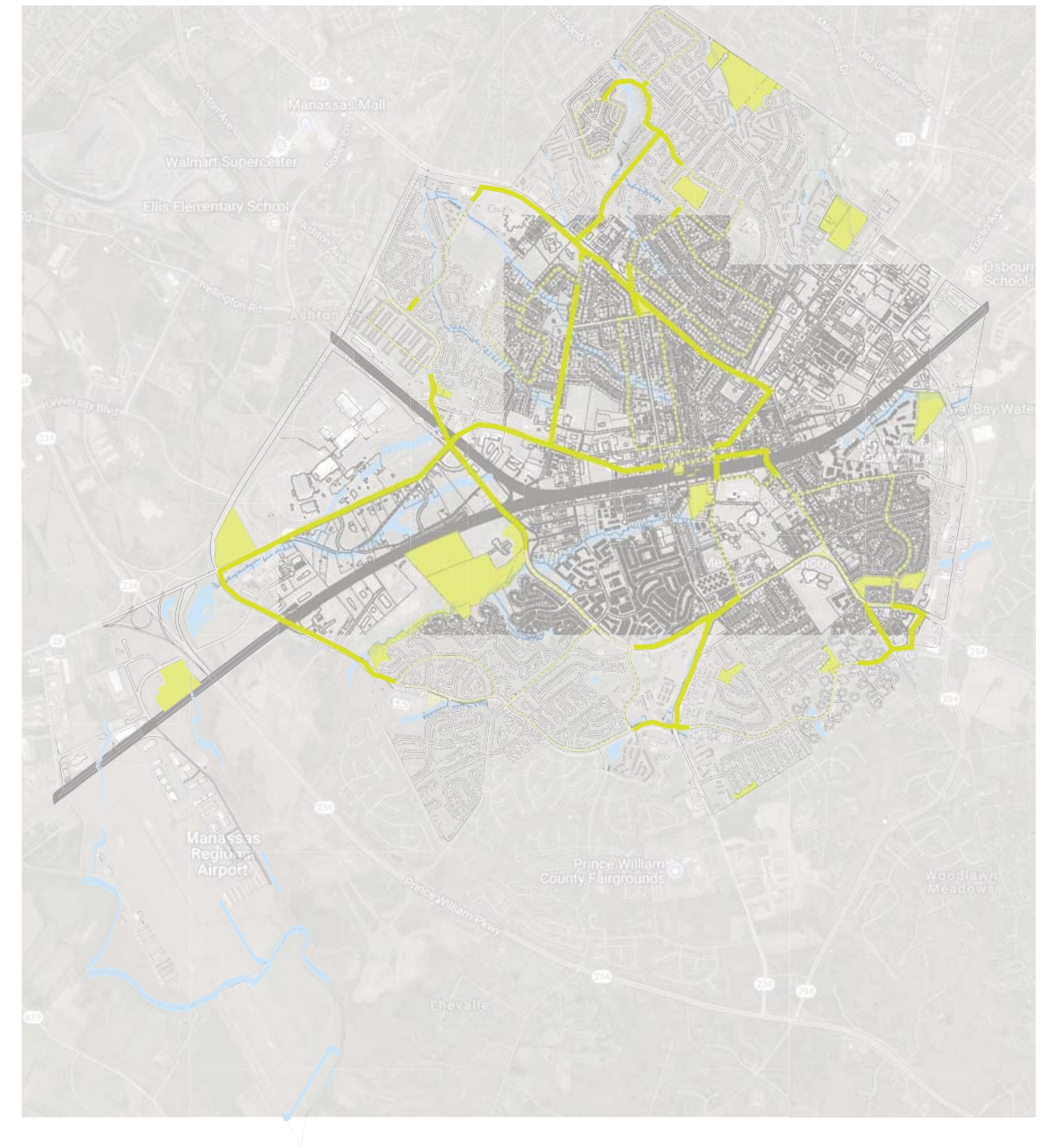
## Existing Path Layout



Don't connect neighborhoods  
Seemingly random terminations

## Proposed Path Layout

*A city-wide path for pedestrians to travel along and a network of districts along the path creating desirable destinations*



Connect neighborhoods  
Create opportunities for healthier modes of transport around the city and within neighborhoods



## Existing Path Perspectives + Section



Existing path at Cloverhill Road



Existing intersection at Cloverhill Road + Hastings Drive

Paths shared between cars and bikers - undesirable for pedestrians  
Excessive amount of space allotted to vehicles- minimum to people

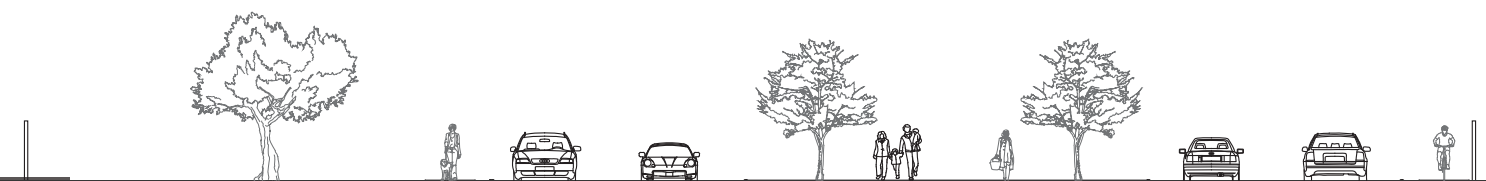


## Proposed Path Perspectives + Section

Improve existing paths to accommodate bikers and pedestrians and identify areas along path to provide public spaces



Trees provide shade and make paths more desirable to travel along  
Give space for cars back to people- provision of public spaces





# Manassas, VA Points of Interest

Manassas has many attractions- any of which are completely unique to the city due to its history. This section of the study is dedicated to mapping out where locals and out of towners head to when they visit the city to give a sense of the identity of the existing suburb.



① **Manassas Battlefield**  
Historic Battlefield where the Battle of Bull Run took place. Fun place for Civil War enthusiasts, runners and hikers. Approx. 7 miles of trails, visitor's center and museum.



② **Manassas Mall**  
Currently being marketed as "The 'New' Manassas Mall". A typical mall with all of the typical department stores, but they took Target away. One of the few existing social spaces in Manassas.



③ **2 Silos Brewing Co.**  
A new social space at the junction of Manassas and neighboring city- Bristow.



④ **Prince William County Fairgrounds**  
Site of the largest fair in Virginia held late August each year. People flock from all corners of Northern VA to attend. Also the site of Obama's final rally before the 2008 election. Rarely used social space.



⑤ **Splashdown Waterpark**  
Northern Virginia's largest waterpark. "It's like a day at the beach - without the drive!"



⑥ **Broad Run VRE Station**  
Situated next to Manassas Regional Airport- a commuter rail station that goes into Washington, DC.



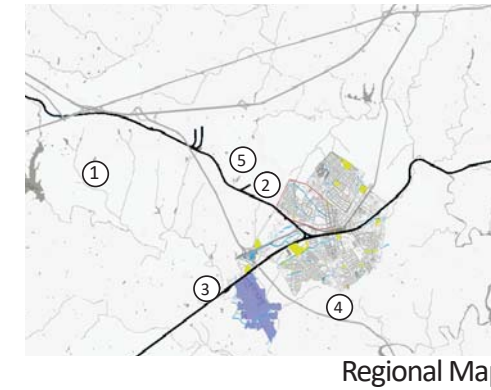
⑦ **Jennie Dean Park**  
The largest public park in Manassas. Named after Jennie Dean, a woman born into slavery and freed after the Civil War who founded the first co-ed industrial school for people of color in Northern Virginia.



⑧ **Old Town VRE Station**  
Situated in Old Town Manassas - a commuter rail station that gives access to the VRE train that goes into Washington, DC as well as a more far reaching, Amtrak train.



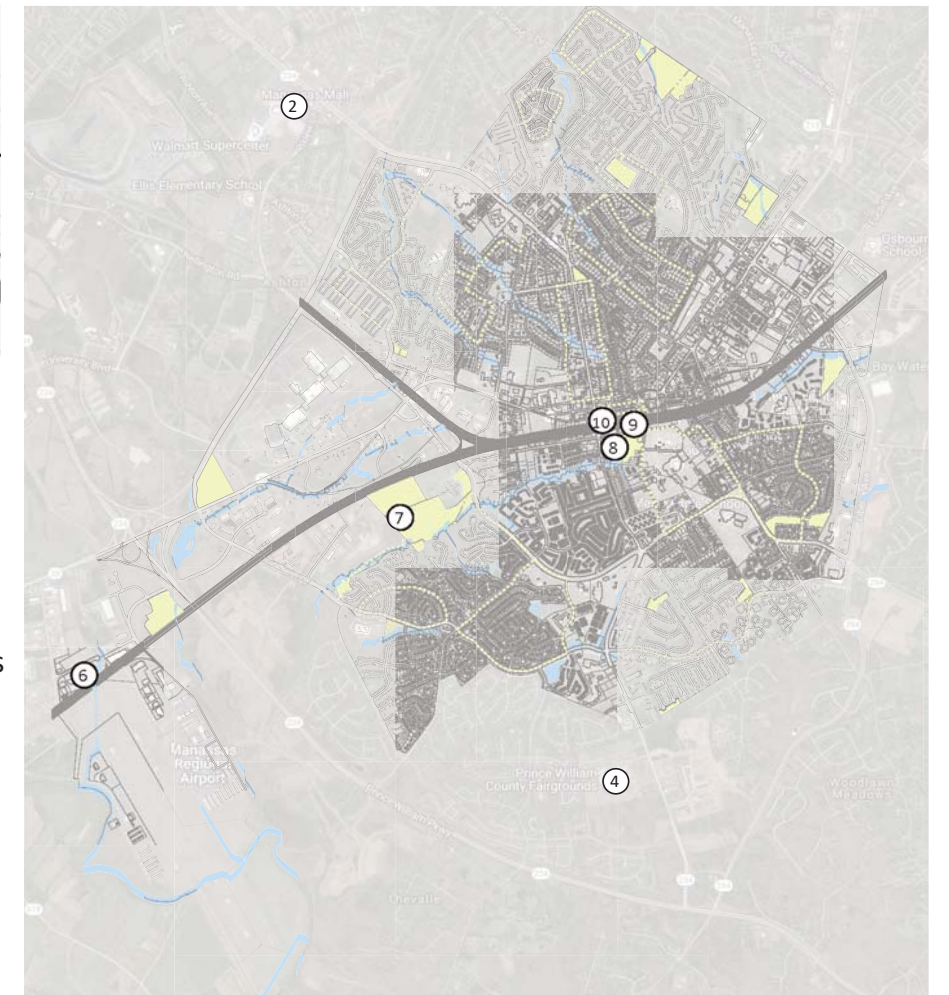
⑨ **The Candy Factory / Art Center**  
Local arts center in an old candy factory providing community programs, ranging from theater to music to art. The only art center in Old Town Manassas.



Regional Map

## Map Key

- ① Manassas Battlefield
- ② Manassas Mall
- ③ 2 Silos Brewing Co.
- ④ Prince William County Fairgrounds
- ⑤ Splashdown Waterpark
- ⑥ Broad Run VRE Station
- ⑦ Jennie Dean Park
- ⑧ Old Town VRE Station
- ⑨ The Candy Factory / Art Center
- ⑩ Old Town Manassas



City Map

Finding the locations of notable points of interest in Manassas helped to give a sense of identity to the city and informed the ideal neighborhood to propose interventions in. A neighborhood close to existing notable destinations, in walking distance of the VRE train station to maximize public transportation into Washington, DC was selected.



⑩ **Old Town Manassas**  
Social Center of Manassas with historic buildings, high density shops, restaurants and an ice skating rink / public pavilion for Farmer's Markets and festivals. The most prominent mixed use space in the city.



# Analysis of Neighborhood for Intervention

- Relatively close proximity to far reaching public transportation
- Close to many Manassas points of interest
- Diversity in demographic - reflective of diversity of Manassas
- Bound by 2 state routes

Potential for: A socially, environmentally healthy community that also has the resources to be a significantly beneficial to the city in terms of health and the economy.

- Few desirable destinations
- Unwelcoming public transportation
- Undesirable paths to existing destinations
- Undesirable paths to other neighborhoods
- Separated land uses
- Disconnected / infrequent pedestrian paths

Result: Sedentary lifestyles and heavy reliance on cars that decreases enjoyable social interactions and increases pollution

**Walk Score**  
**49**  
**Car-Dependent**  
Most errands require a car.

**Transit Score**  
**23**  
**Minimal Transit**  
It is possible to get on a bus.

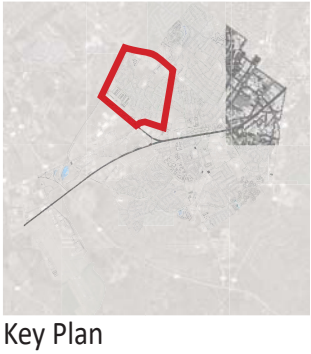
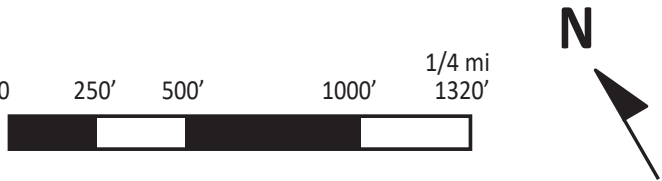
90-100	<b>Walker's Paradise</b> Daily errands do not require a car
70-89	<b>Very Walkable</b> Most errands can be accomplished on foot
50-69	<b>Somewhat Walkable</b> Some errands can be accomplished on foot
25-49	<b>Car-Dependent</b> Most errands require a car
0-24	<b>Car-Dependent</b> Almost all errands require a car

90-100	<b>Rider's Paradise</b> World-class public transportation
70-89	<b>Excellent Transit</b> Transit is convenient for most trips
50-69	<b>Good Transit</b> Many nearby public transportation options
25-49	<b>Some Transit</b> A few nearby public transportation options
0-24	<b>Minimal Transit</b> It is possible to get on a bus

Walkscore.com is a helpful tool to gauge how walkable an area is. The neighborhood selected for intervention is categorized as "car-dependent". Residents must rely on personal vehicles to get around and walking is often not a realistic option. Car dependency is inarguably detrimental for social, public and environmental health.



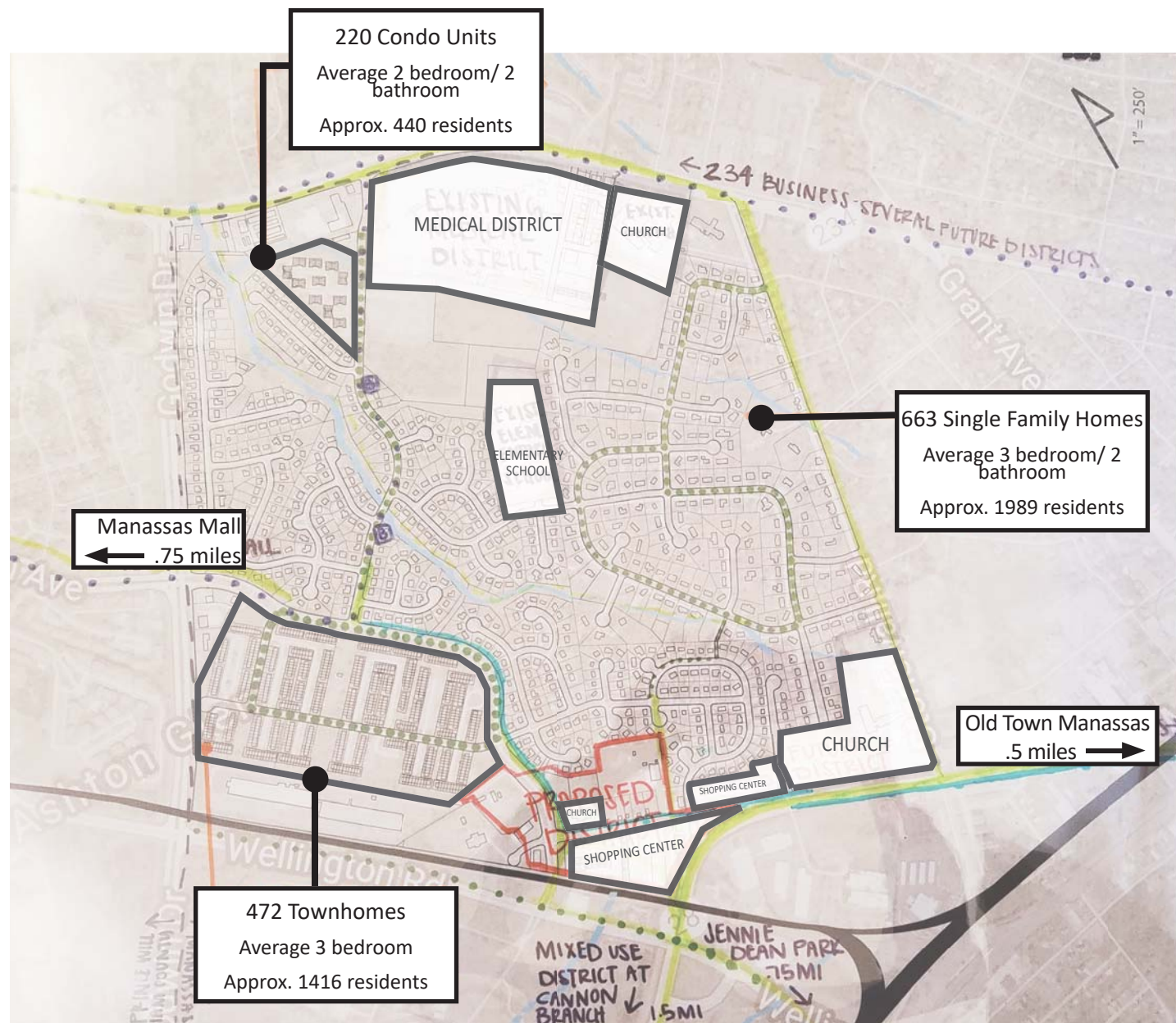
Existing Neighborhood Plan



Key Plan



## Existing Neighborhood



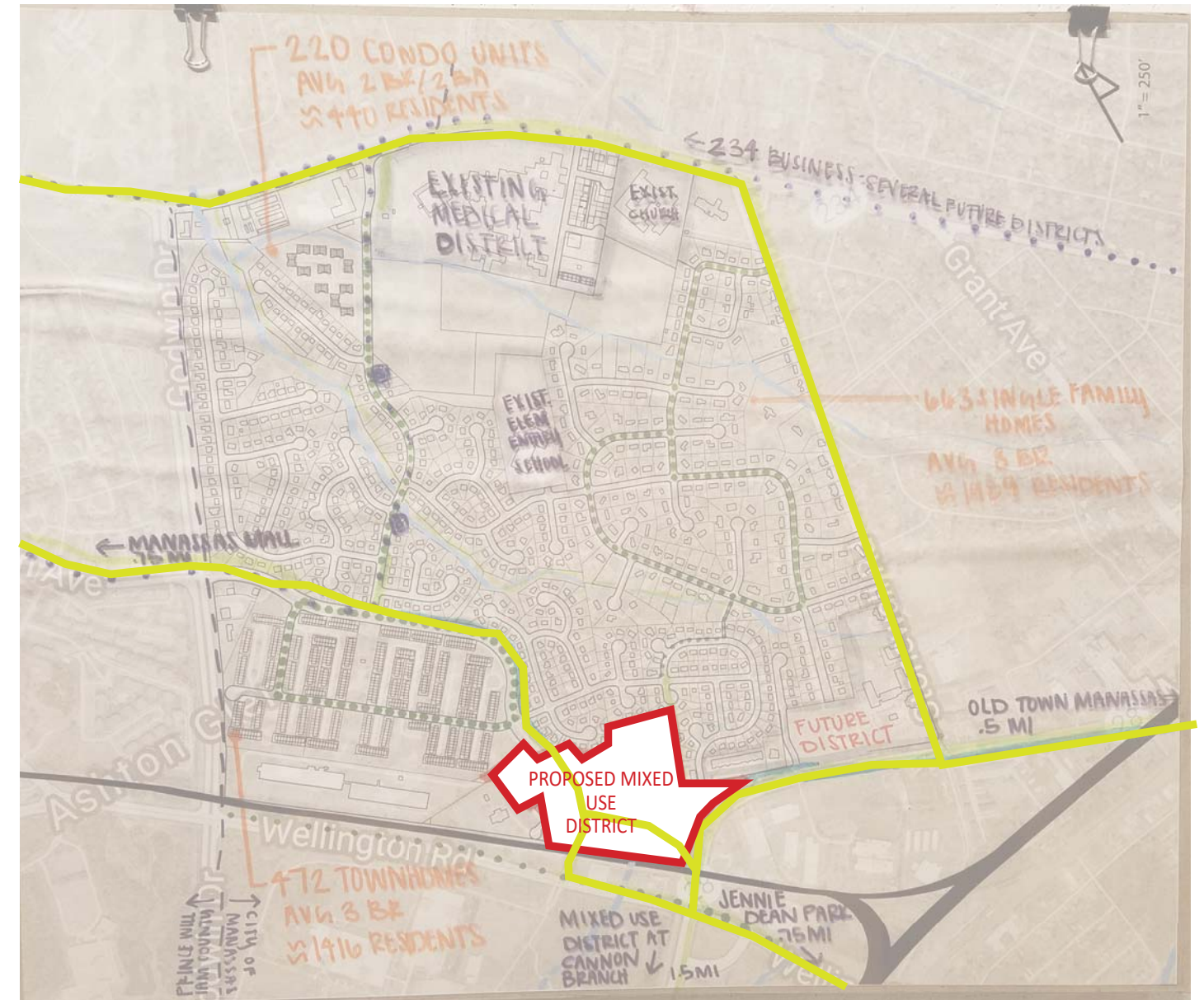
### Map Key

- Existing pedestrian/ bike path
- Existing bus route
- Proposed pedestrian/ bike path
- Proposed bus route
- Existing bus stop

Few desirable places to go  
 Few ways to get places without a car  
 Lack of housing for singles wanting to live alone

## Proposed Neighborhood

Improve access to city-wide path and add desirable neighborhood destinations within existing districts



### Map Key

- Proposed pedestrian/ bike path
- Proposed district for intervention

Integration of new and improved city-wide path  
 Renovation of existing shopping centers to mixed use districts



## Existing Cul de Sac

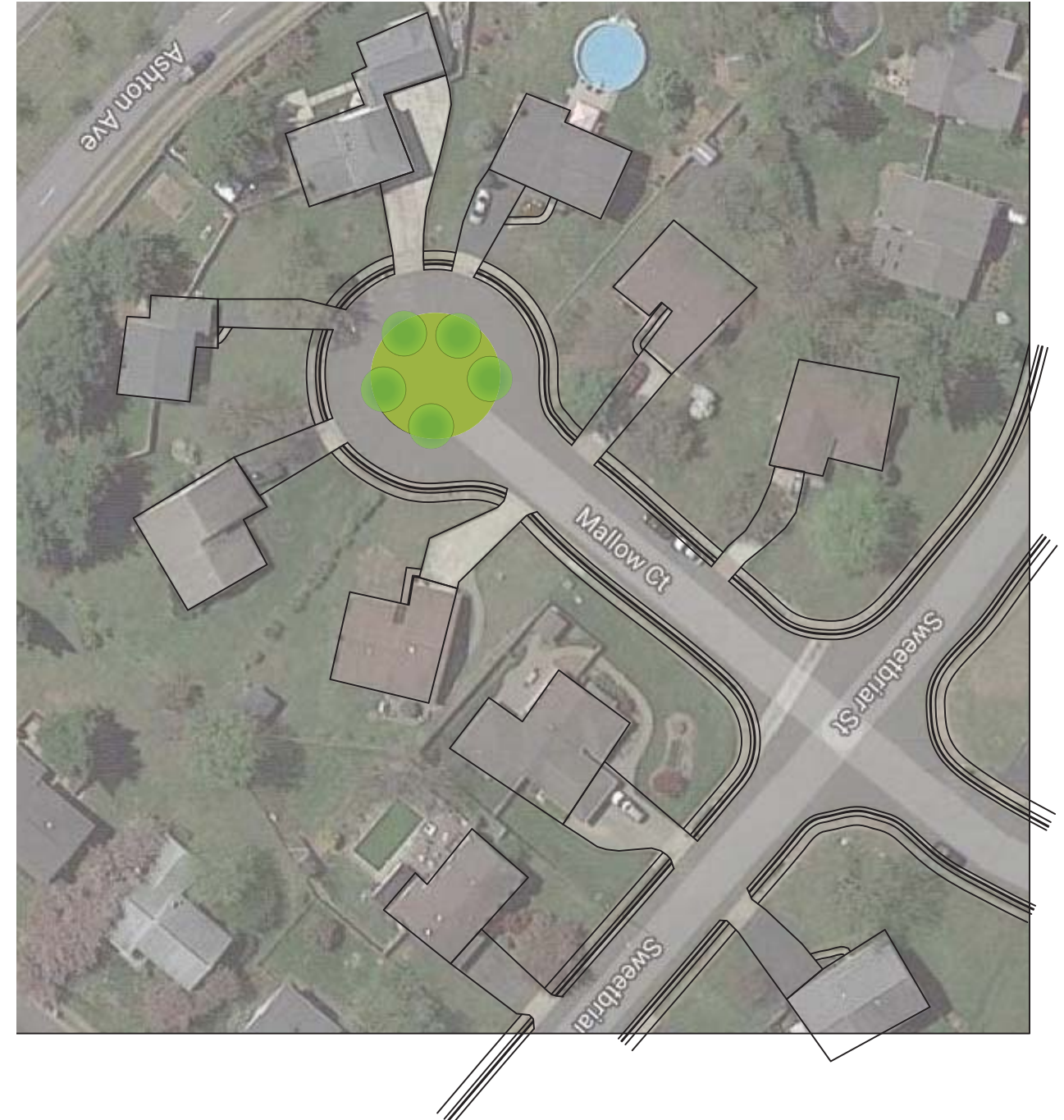


Designed for cars only  
Central "local" place with zero use



## Proposed Cul de Sac

*Treat cul- de sacs as nodes for people walking out of their homes. Provide a shared space within the neighborhood.*



"Local" public space for neighbors to gather  
Beneficial for social, environmental, and public health





# Analysis of District for Intervention








- Adjacent to major paths
- Existing infrastructure present to support healthy living
- Plenty of open space
- Comfortable walking / biking distance from neighborhood

Potential for: A neighborhood district along the city-wide path that provides desirable destinations for all residents and visitors of Manassas to participate in activities that are beneficial for social, environmental and public health

- Lack of desirable destinations
- No public transportation
- Undesirable pedestrian paths from neighborhoods
- Very niche destinations- no sense of connection with neighborhood
- No continuity in programming

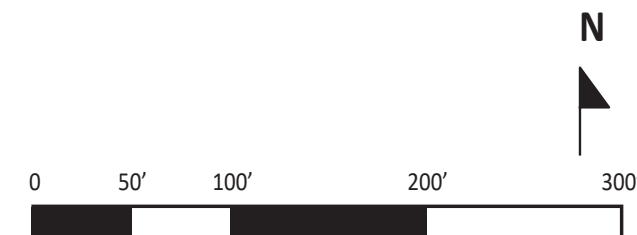
Result: Scarcely used space, not living up to its potential to be a beneficial part of a healthy suburban landscape

## Existing District Plan Legend

- 1 Ashton Plaza**  
 Centraamericana Deli  
 Ventura Grocery  
 Family Restaurant  
 Sonia Beauty Salon  

- 2 Ashton Professional Center**  
 Angel's Bail Bonds  
 House Doctors Handyman of Northern VA  
 Thunder Ridge Emu Products  
 B.W. Smith and Associates - Land Surveying  
 Rosenthal Wealth Management Group  
 Prince William Journal  
 Freedom Property Management  
 Chase & Associates CPA  
 Herff Jones (School Mementos)  
 Assurance Baptist Church  

- 3 Car Wash + Auto Body Shop**  

- 4 3 Scoops Ice Cream Shop, Kim's Deli, Perfect Pizza, Express Food Mart, Donut Island, 7-Eleven, Citibank, Shear N Dipity Salon, Blue Cleaners**  


- 5 Masonic Lodge Manasseh Lodge No. 182**  

- 6 Private Homes**
- 7 Kingdom Hall of Jehovah's Witnesses**  

- 8 Neighborhood Park**



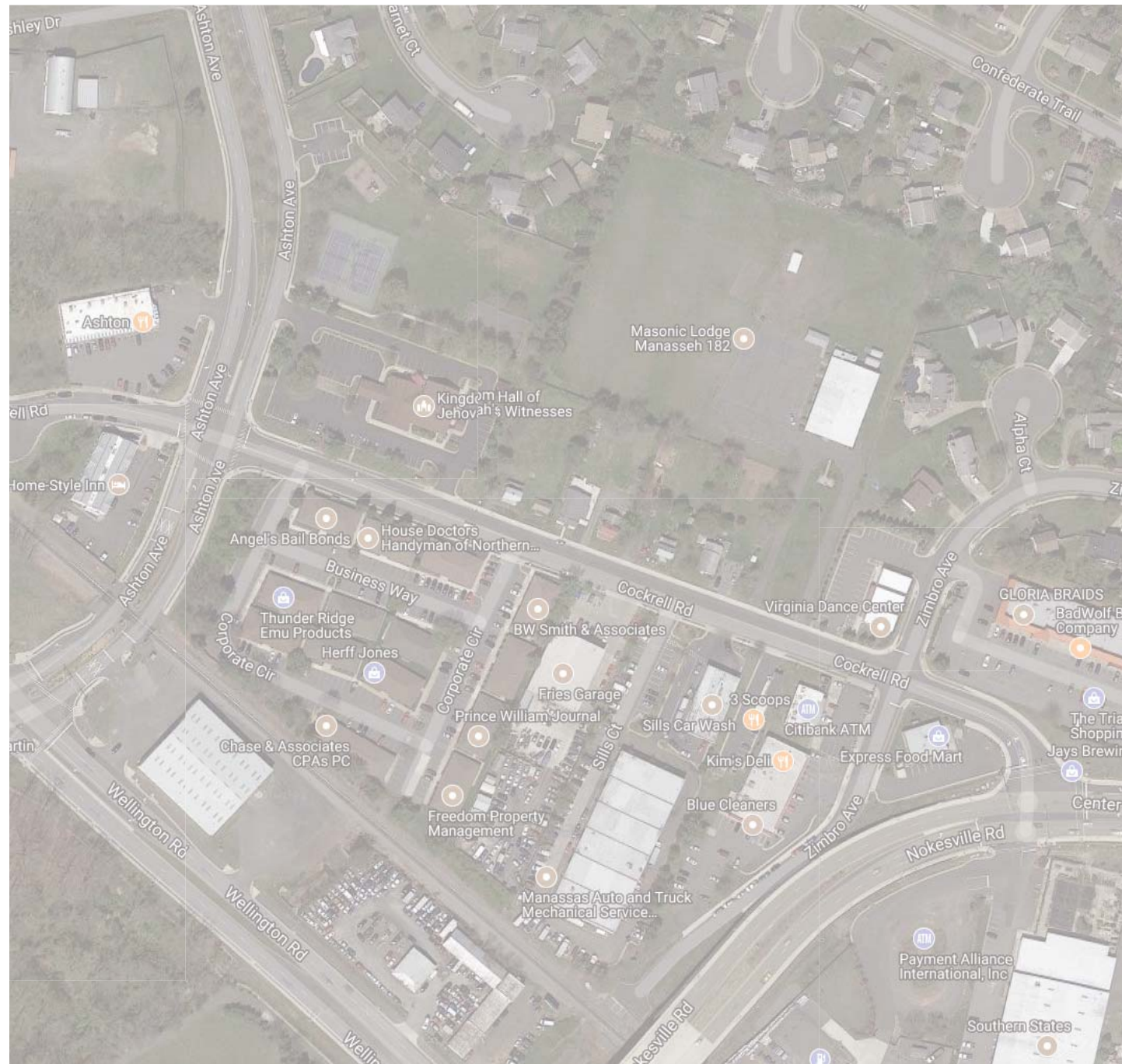
Existing District Plan



Key Plan



## Existing District Plan



Lack of desirable destinations  
Only realistically accessible by car

## Proposed District Plan

*A mixed use district that intersected by city-wide path with desirable destinations*



Connected to neighborhoods by city-wide path  
Cohesive programming with desirable destinations



# Proposal for a New District | Ashton District

Proposal for a new, mixed use district to accommodate shopping, dining, living, working and recreation that is easily accessible by multiple forms of transportation

- Provision of public spaces for unplanned social interactions
- Walkable desirable destinations for the neighborhood
- Urban agriculture
- Sharing economy
- "DIY" / educational culture
- Accessible and inclusive - economically and physically
- One in a city-wide network of accessible and inclusive districts
- Increased density for environmental health
- Improved access to regional transportation
- Infrastructure that supports all forms of health
- Result: Improved social, environmental, and public health

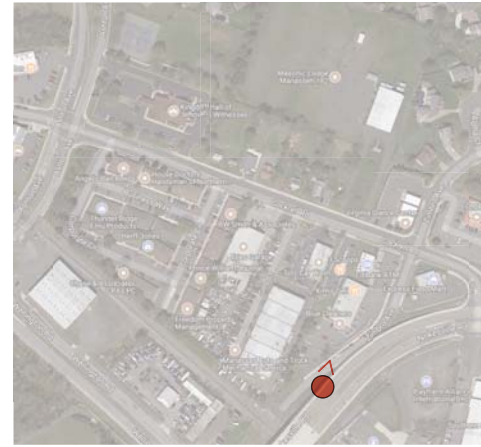
## Proposed District Plan Legend

- |   |   |
|---|---|
| <ul style="list-style-type: none"> <li>1 The Seed<br/>Retail, Restaurant, Teaching Kitchen<br/>Greenhouse, Residential</li> <li>2 The Plaza<br/>Grove, Social Space</li> <li>3 The Garage<br/>Automated Parking, Retail, Rooftop park</li> <li>4 Dining</li> <li>5 6 Traditional Urban Buildings<br/>Retail, Dining, Residential</li> <li>7 8 Renovated Offices<br/>Existing buildings renovated and consolidated<br/>into larger building with shared spaces</li> <li>9 The Market<br/>Renovation of existing structure for market<br/>with locally sourced food</li> <li>10 Interfaith Campus<br/>Campus shared by multiple religions</li> <li>11 Neighborhood Park</li> <li>12 The Lab<br/>Light Workshop, Coworking Space,<br/>Residential</li> </ul> | <ul style="list-style-type: none"> <li>13 Tool Library<br/>Public Library for tools</li> <li>14 The Workshop<br/>Heavy Duty Workshop</li> <li>15 Existing Masonic Society<br/>Manasseh Lodge No. 182</li> </ul> |
|---|---|
- 
- |  |
|--|
| <ul style="list-style-type: none"> <li>A Community Garden</li> <li>B Playground</li> <li>C Tennis Courts</li> <li>D Basketball Court</li> <li>E Dog Park</li> <li>F Work Plaza</li> <li>G Parklet - Typical at neighborhood<br/>cul de sacs</li> <li>H Bus Stop</li> <li>I Rock Climbing Wall</li> </ul> |
|--|

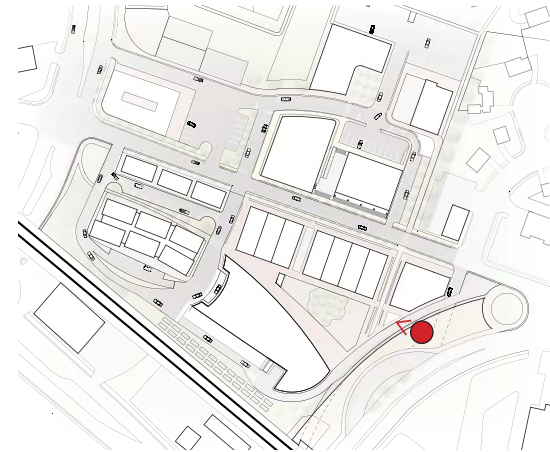




## Existing District View from 28 N Ramp



Existing View Key Plan



Proposed View Key Plan



Existing District Edge

Uncomfortable path close to fast moving cars  
Uninteresting view

## Proposed District View from 28 N Ramp

Take advantage of existing infrastructure to create more user-friendly ditrict edges



Proposed District

Distance from cars for people to walk comfortably  
More public park space

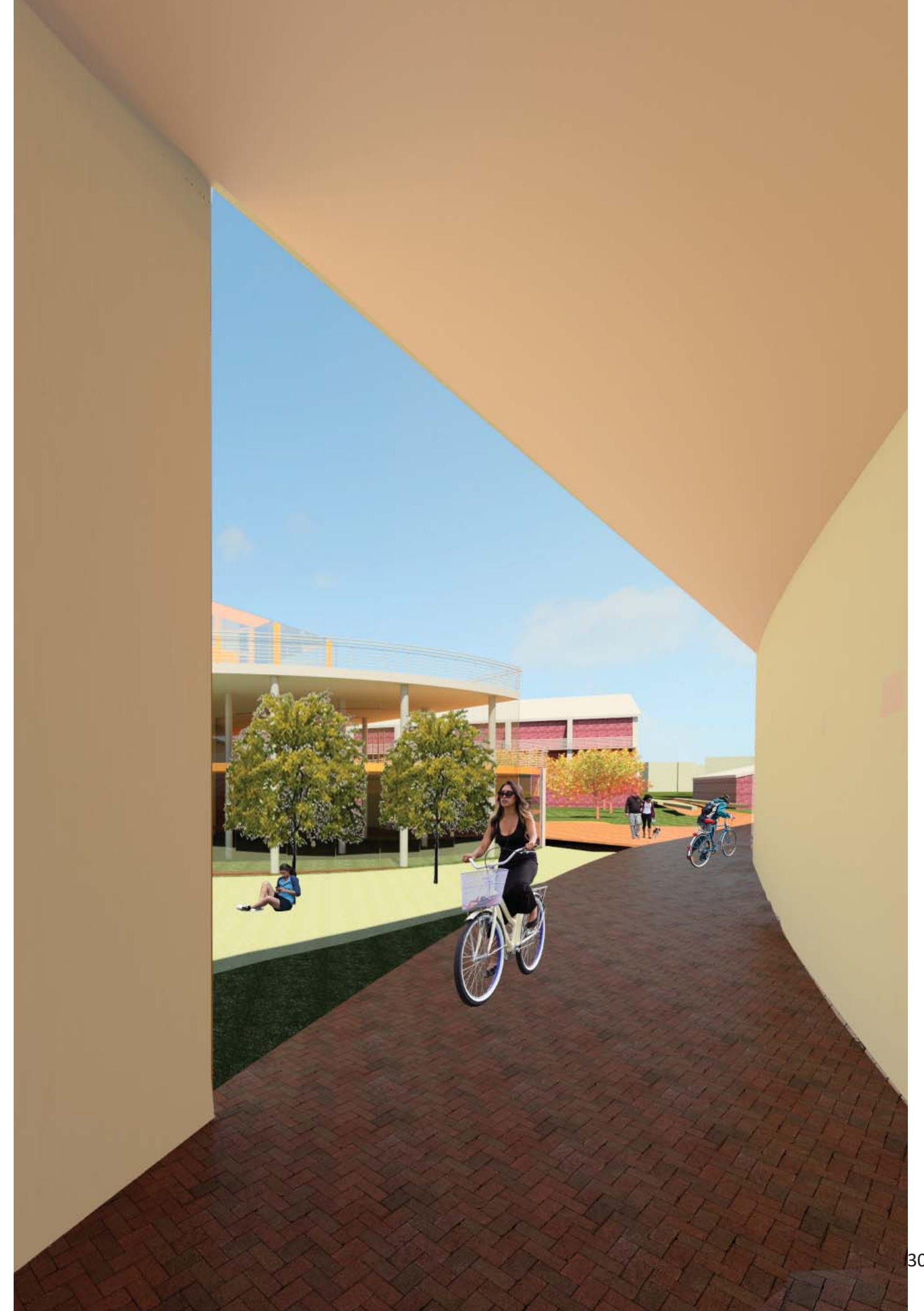


## District Entrance at City-Wide Path

The extension of the existing bridge over Wellington Road provides an opportunity to design a compelling entrance to the district when it is entered along the city-wide path. Unique spaces like this increase the desirability to travel along the healthy pedestrian / bike paths rather than travel via car.



Key Plan





# Proposal for a New Building | The Seed

A mixed use building whose form is derived from the efficient layout of the city-wide path where healthy lifestyles are encouraged and incorporated into the design of the building

Provision of public spaces for social interactions

Urban agriculture

“DIY” / educational culture

Accessible and inclusive - economically and physically

Easy access to city-wide path

Increased density for environmental health

Environmentally conscious building materials (cross laminated timber)

Biophilic design to offset carbon footprint and improve health

Infrastructure that supports all forms of health



Balconies act as “backyards” for apartment dwellers, where opportunities are offered for gardening, interacting with neighbors and enjoying views of the community garden for humans and pets alike.

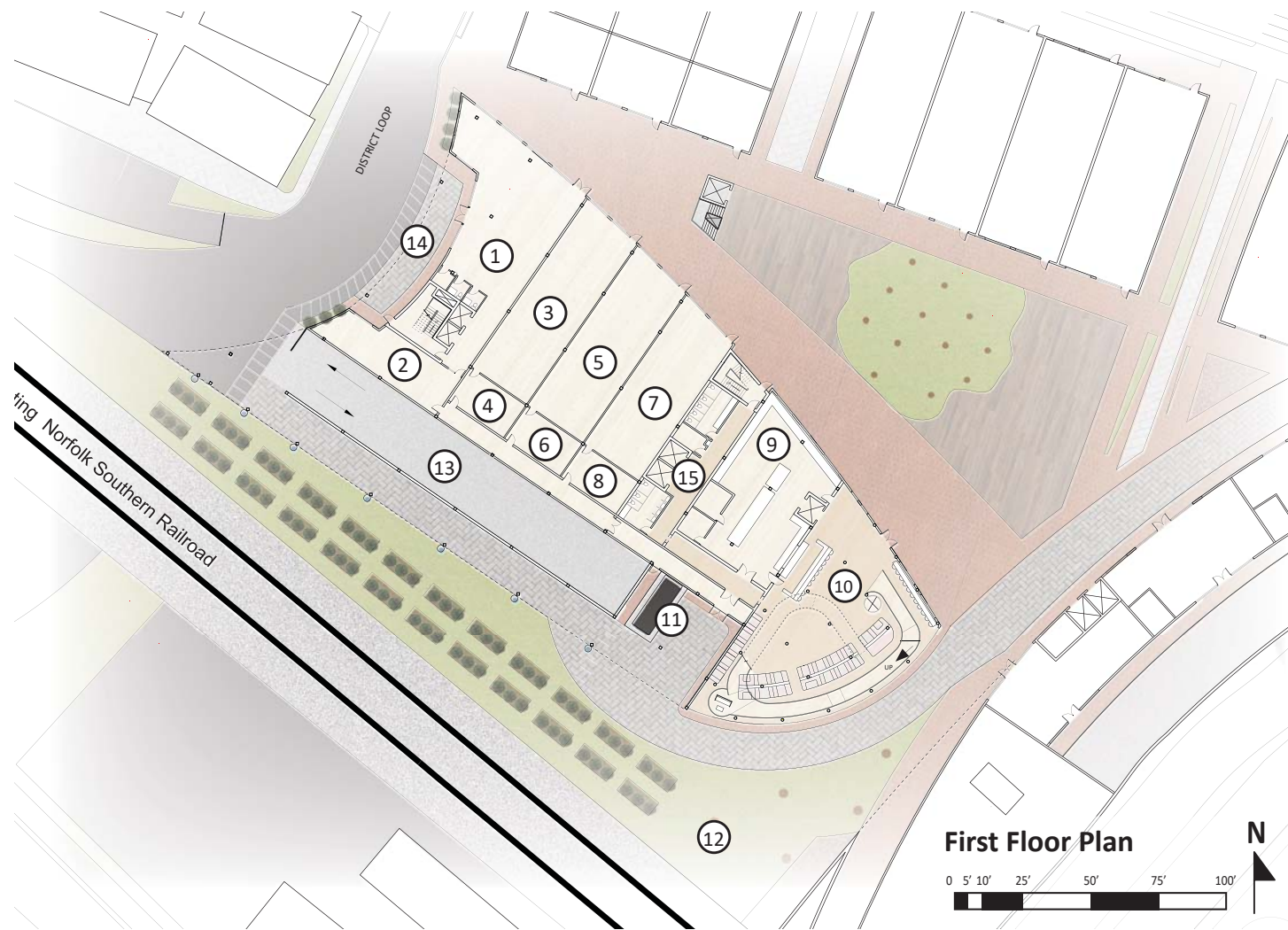


Food harvested from the community garden to use in kitchens cuts down on environmental impact of delivering food from afar. Rain barrels catch rainwater to be reused to water plants in garden.



The Greenhouse acts as a direct connection between the healthy outdoor realm to a healthy interior space, where food for the teaching kitchen can be grown and community members can participate in the entire process of the creation of their meals- from seed to plate.





**First Floor Plan**

**First Floor Plan Legend**

- ① Apartment Lobby
- ② Leasing Office
- ③ Retail 1
- ④ Retail 1 Office + Storage
- ⑤ Retail 2
- ⑥ Retail 2 Office + Storage
- ⑦ Retail 3
- ⑧ Retail 3 Office + Storage
- ⑨ Professional Kitchen
- ⑩ Casual Cafe/ Dining
- ⑪ Dumpster/ Loading
- ⑫ Community Garden
- ⑬ Ramp to underground Parking
- ⑭ Pick Up / Drop Off
- ⑮ Core  
Restrooms, Elevators, Stairs,  
Mechanical Rooms + Storage



Public spaces give larger community a sense of ownership



Elimination of surface parking and use of cross laminated timber sequester carbon rather than creating bubble of emission + a heat island



Convenience of public spaces to easily accessible path and public transportation reduce need for sedentary auto-centric travel



**Second Floor Plan**

**Second Floor Plan Legend**

- ① Apartment Atrium
- ② Greenhouse
- ③ Teaching Kitchen
- ④ Cafe/ Dining
- ⑤ Outdoor Balcony Dining
- ⑥ Core  
Restrooms, Elevators, Stairs,  
Mechanical Rooms + Storage



Semi public teaching kitchen and greenhouse gives apartment tenants easy access to the general public to socialize



Increasing density of suburban residential area results in overall lower energy usage



Planters along apartment balconies and the building greenhouse provide quick, easy access to fresh, homegrown food





**Third Floor Plan**  
 0 5' 10' 25' 50' 75' 100'



**Fourth Floor Plan**  
 0 5' 10' 25' 50' 75' 100'

**Third Floor Plan Legend**

- ① Apartment Atrium
- ② Greenhouse
- ③ Core Elevators, Stairs, Community Room
- ④ Apartment Core Elevators, Stairs, Mechanical Room

**Fourth Floor Plan Legend**

- ① Apartment Atrium
- ② Greenhouse
- ③ Green Roof
- ④ Core Elevators, Stairs, Community Room
- ⑤ Apartment Core Elevators, Stairs, Mechanical Room

**Roof Plan Legend**

- Solar Panel
- Skylight
- ① Apartment Core Elevators, Stairs, Mechanical Room



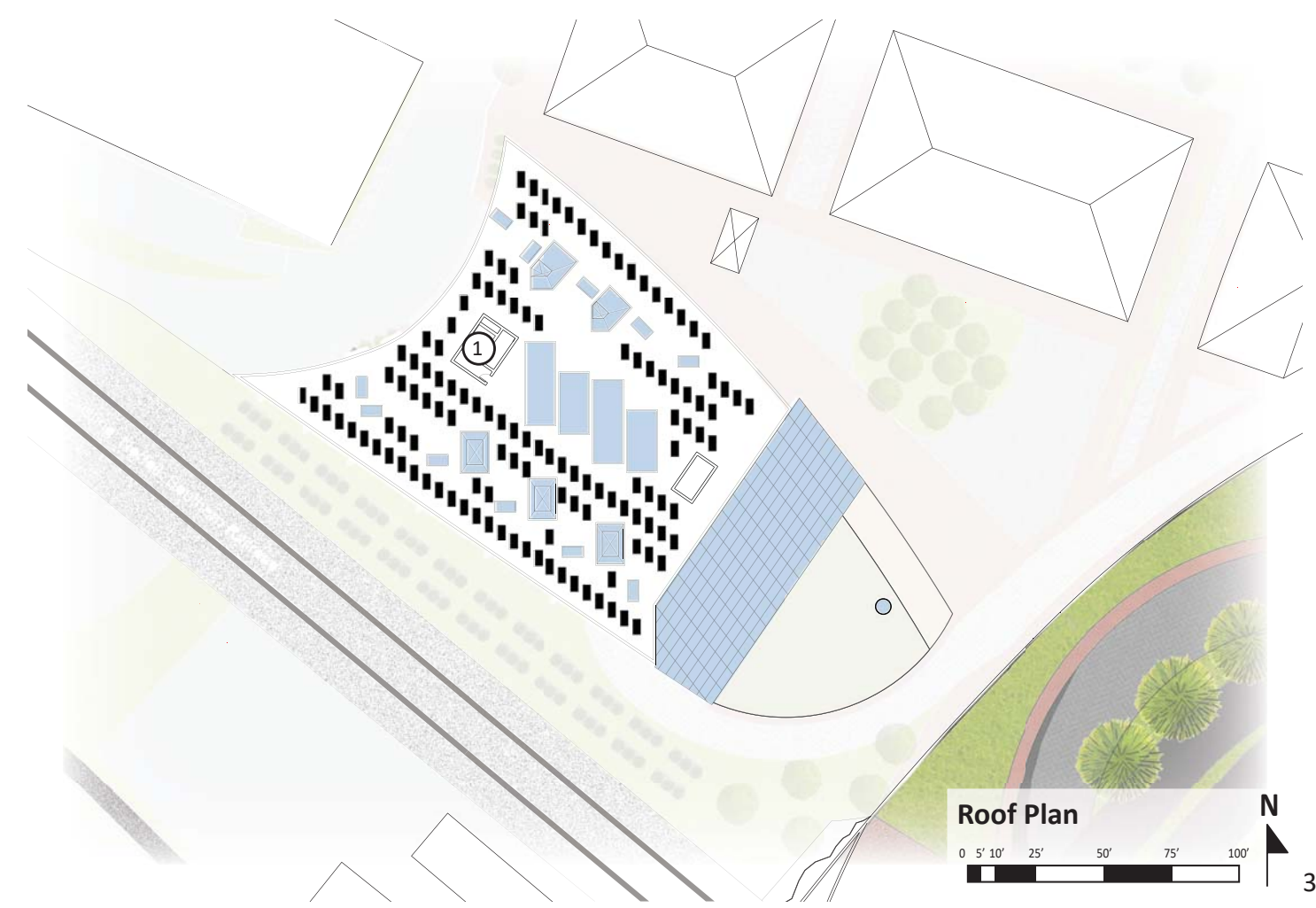
Community room, greenhouse, personal porches and balconies as well as apartment atrium provide a range of social spaces for tenants to enjoy



Green roof and solar panels take advantage of renewable resources for energy and capture rainwater to reduce runoff



Visual access to paths and physical activities from apartments and greenhouse encourage residents to engage in healthy activities



**Roof Plan**  
 0 5' 10' 25' 50' 75' 100'



# Building Sections

0 5' 10' 25' 50'

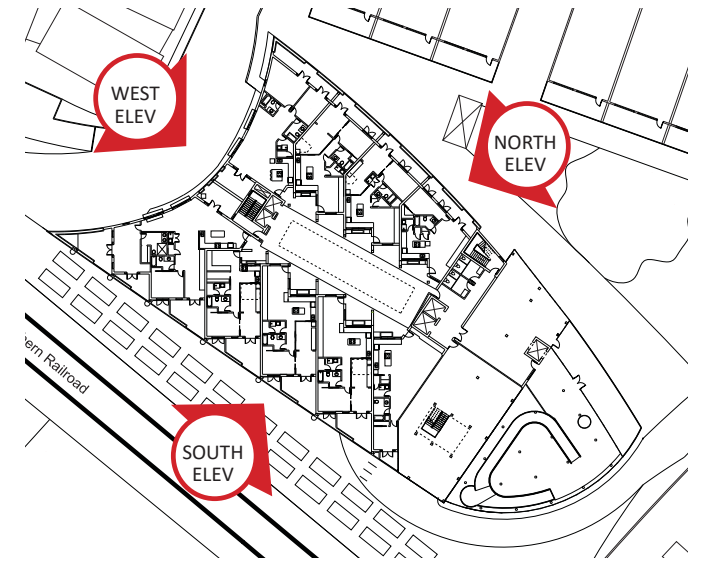


Key Plan



Key Plan

# Building Elevations



Key Plan



West Elevation



North Elevation



South Elevation



# The Apartments

On the upper floors of the building, apartments designed to be flooded with natural light and maximum natural ventilation are organized around a central atrium where neighbors can interact. Different apartment styles offer a range of advantages.

Provision of public atrium and porches for social interactions

Urban agriculture

“DIY” / educational culture

Accessible and inclusive - economically and physically

Easy accessibility to city-wide path

Increased density for environmental health

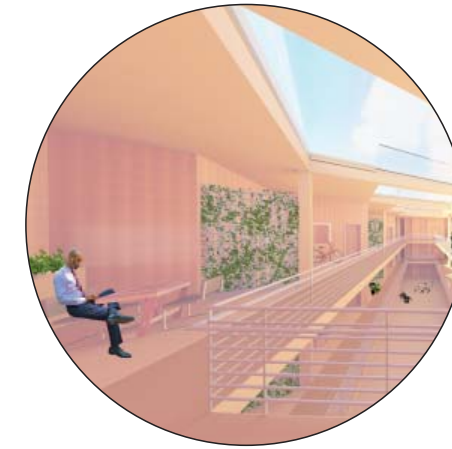
Environmentally conscious building materials

Biophilic design to offset carbon footprint and improve health

Introduction of 1 bedroom living options to diversify neighborhood demographic



Apartments surround a central space where neighbors can take ownership of their own personal porch and enjoy a shared atrium



Each apartment has a “front porch” space where neighbors can have easy access to one another. A quasi public/ private space provides opportunity for random interactions that are essential for improved social capital.



Passive systems, including natural lighting (sourced from light wells, skylights, and the central atrium) and ventilation are made available in each apartment- cutting down on the unnecessary uses of electricity.



All apartments are given opportunities for indoor gardening, where healthy meals can be grown right in one’s home. The location of the apartment right along the city-wide path makes healthier forms of transportation more intuitive and obvious.

## Apartment Types

Despite the variation in apartment layouts, each apartment was designed with social, environmental and public health in mind

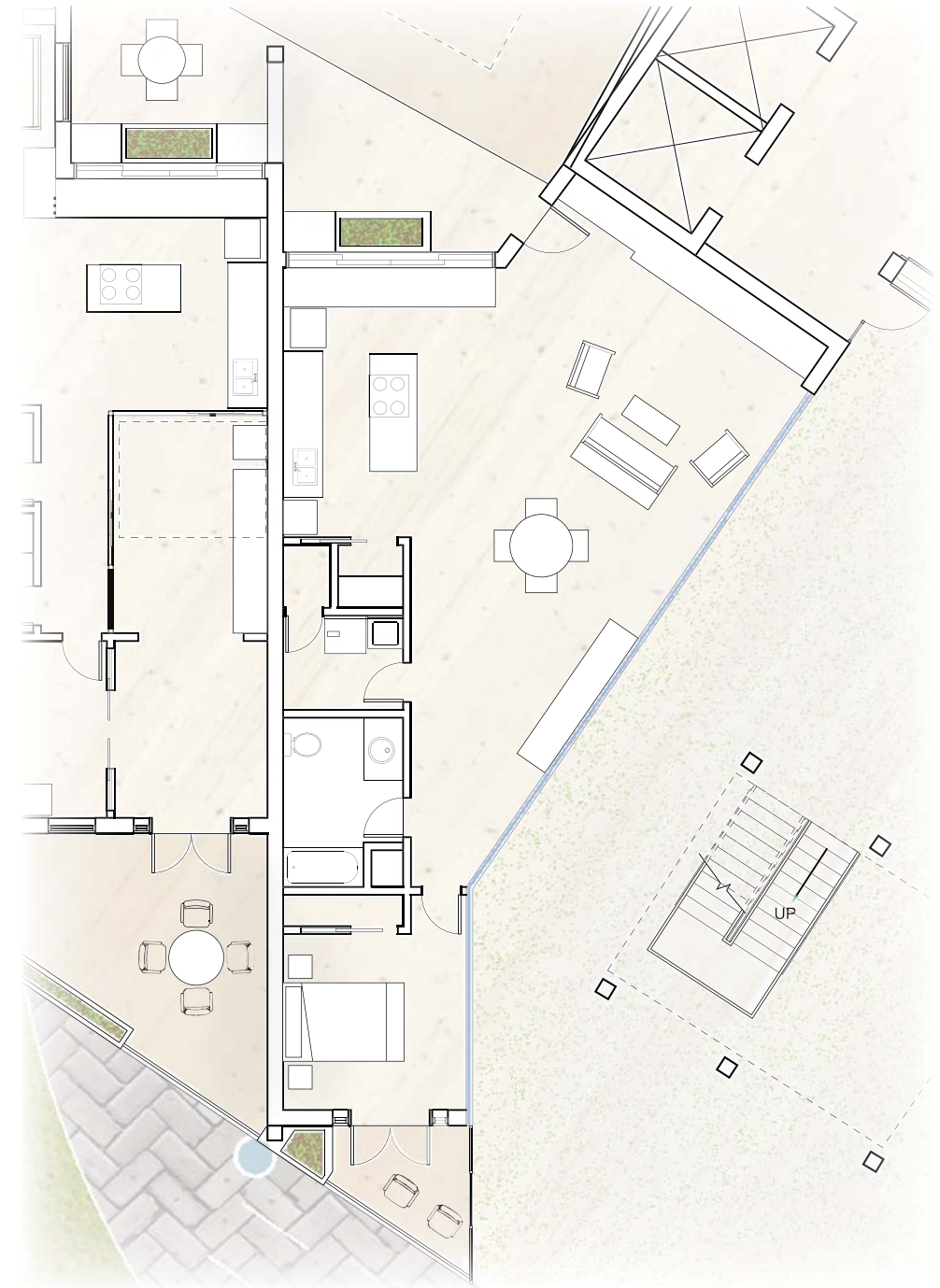
- 43 Greenhouse Adjacent Apartments
- 45 Southern Apartments
- 47 Northern Apartments

# Greenhouse Adjacent Apartments

Apartments adjacent to the greenhouse benefit from plenty of natural light, and privacy with glass block walls separating apartment dwellers' private realm from the semi-public greenhouse space. There is no variation in the layout of these apartments from floor to floor.



Key Plan



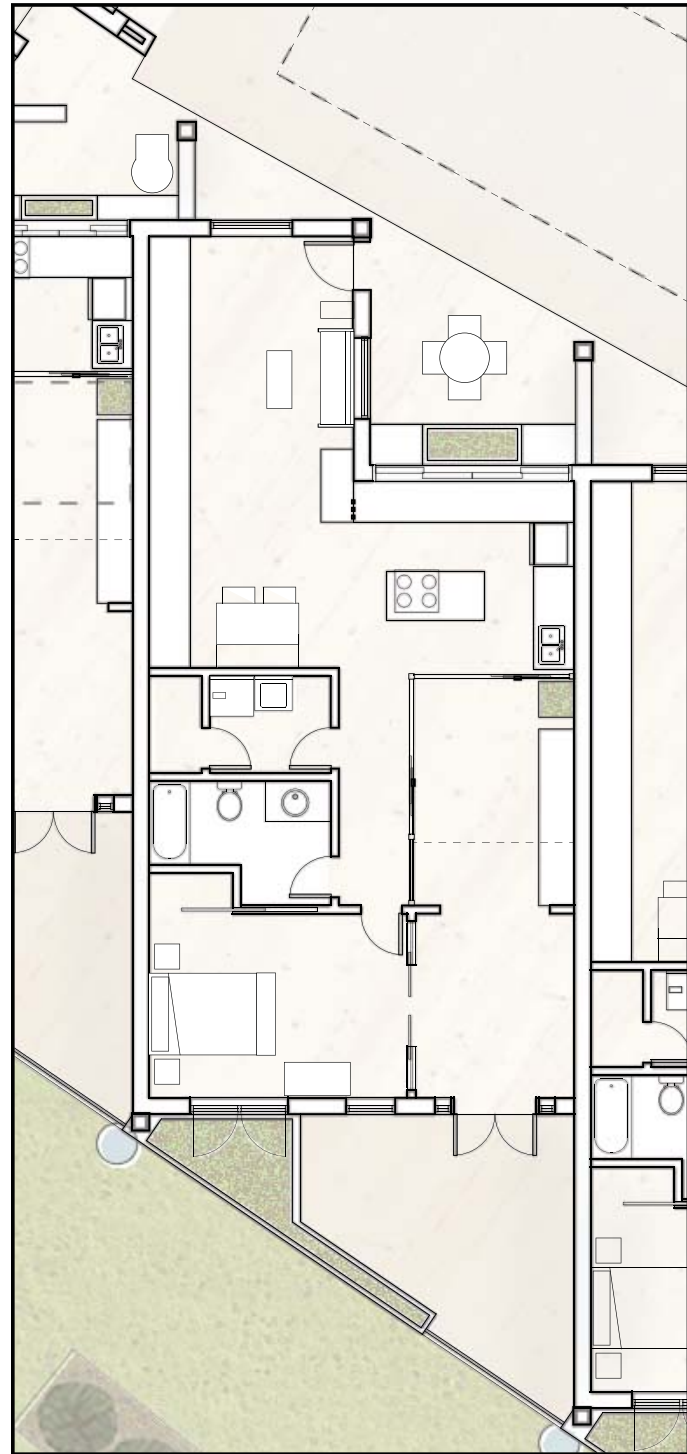
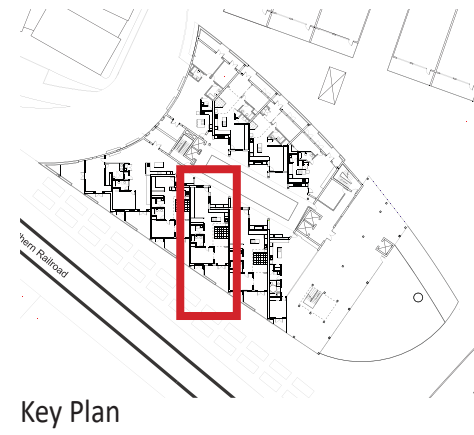
Plan



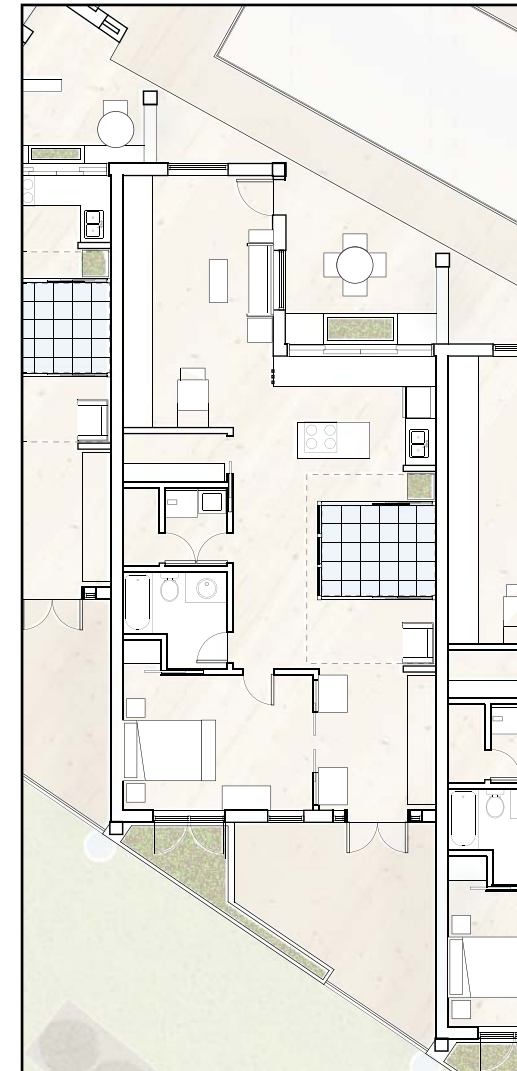


# Southern Apartments

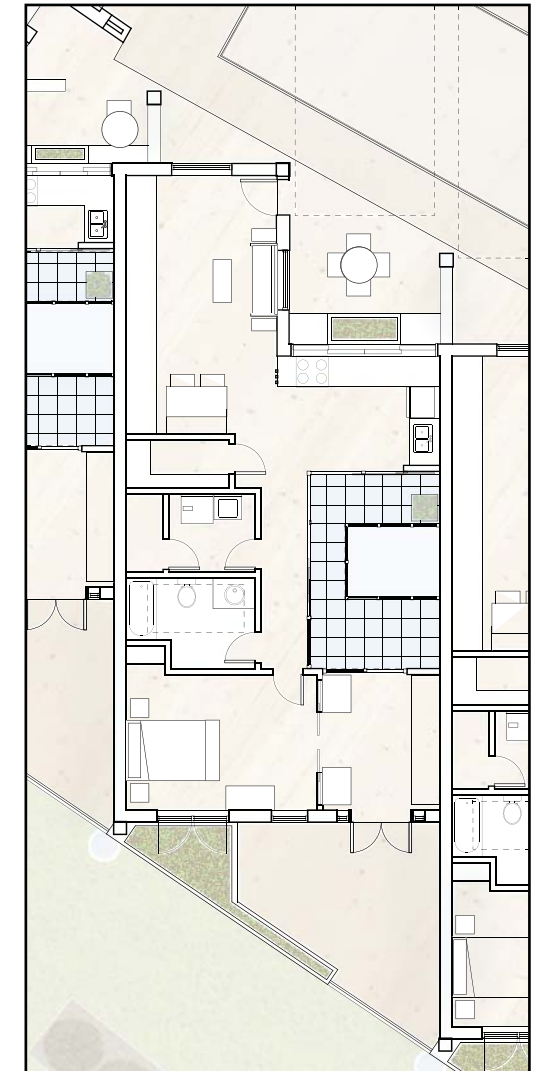
Apartments along the south side of the building all benefit from plenty of natural light and natural ventilation as a result of light wells designed to provide spaces for indoor gardening that not only makes the air cleaner, but encourages a cleaner diet for apartment dwellers as well.



Second Floor



Third Floor

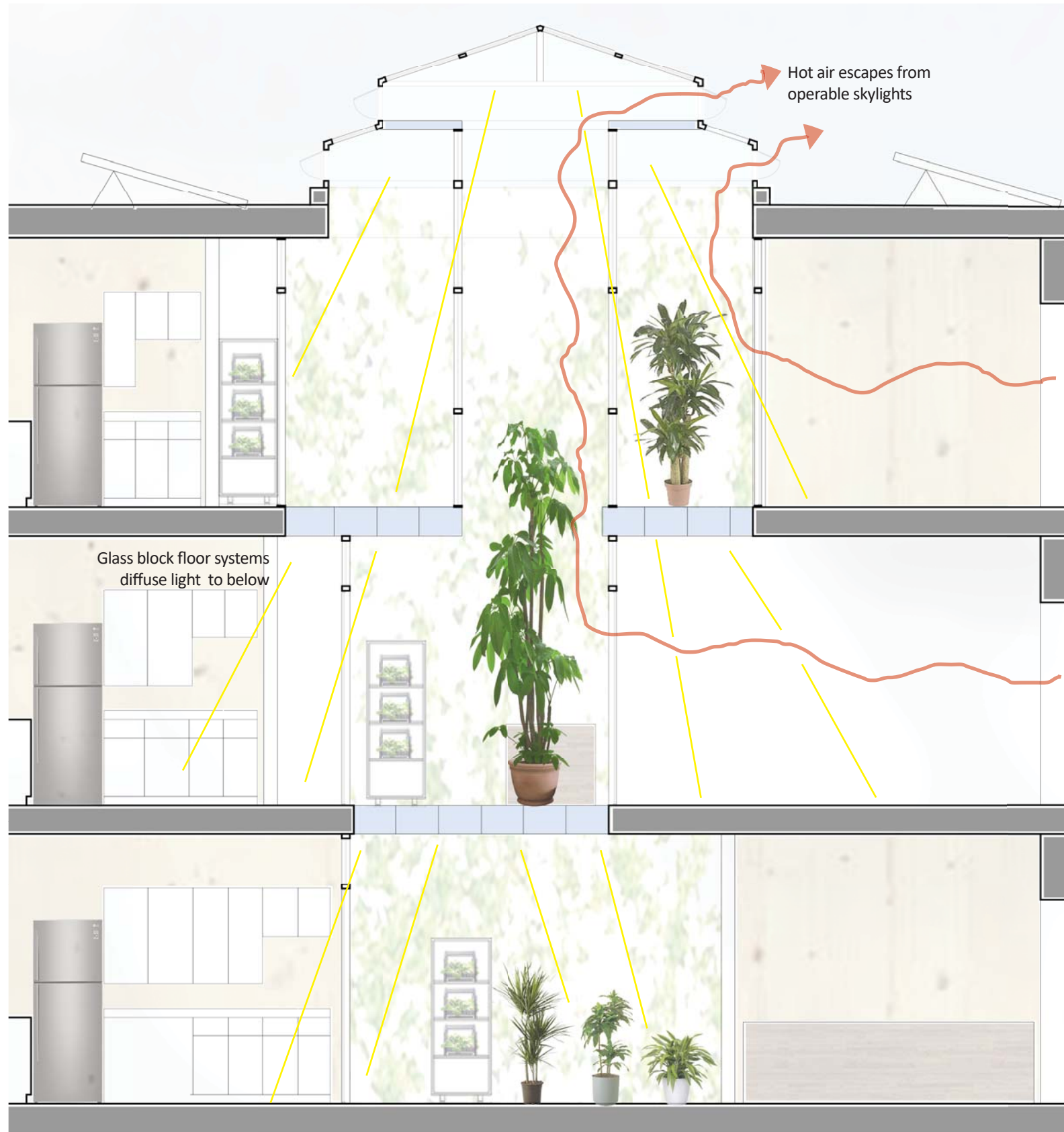


Fourth Floor



# Southern Apartments

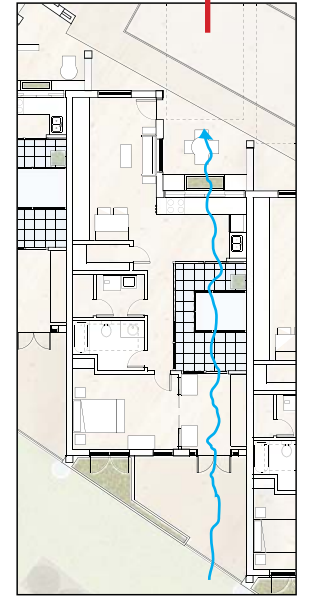
Variation in floor plans from one level to the next provide a range of advantages where the light well fluctuates to maximize light access. Glass block floors aid in the diffusion of light to lower levels.



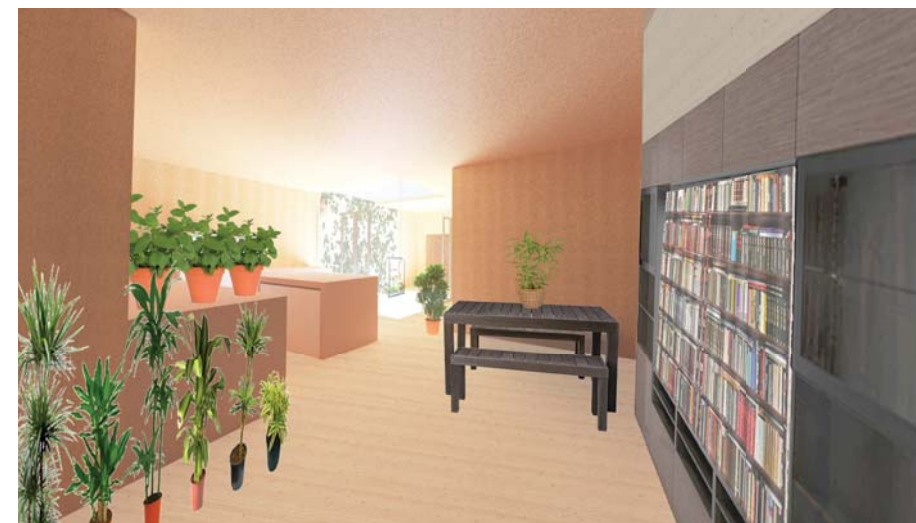
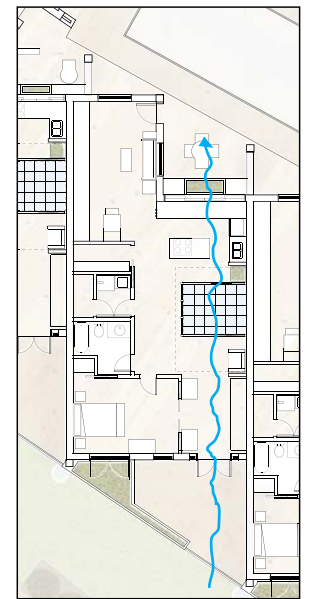
## Section Cut



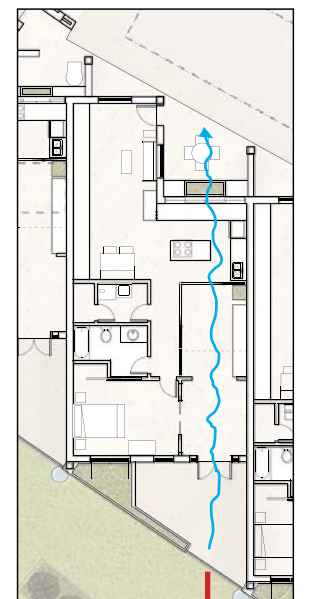
**Fourth Floor** Apartments offer maximum daylighting and an interior “atrium”. Natural ventilation is featured in these units as well.



**Third Floor** Apartments offer ample daylighting and a direct connection to the outdoors above for natural ventilation. Glass block floors diffuse light below.



**Second Floor** Apartments offer ample daylighting from above and plenty of space for indoor gardening with the extension of the balcony into the indoor space.



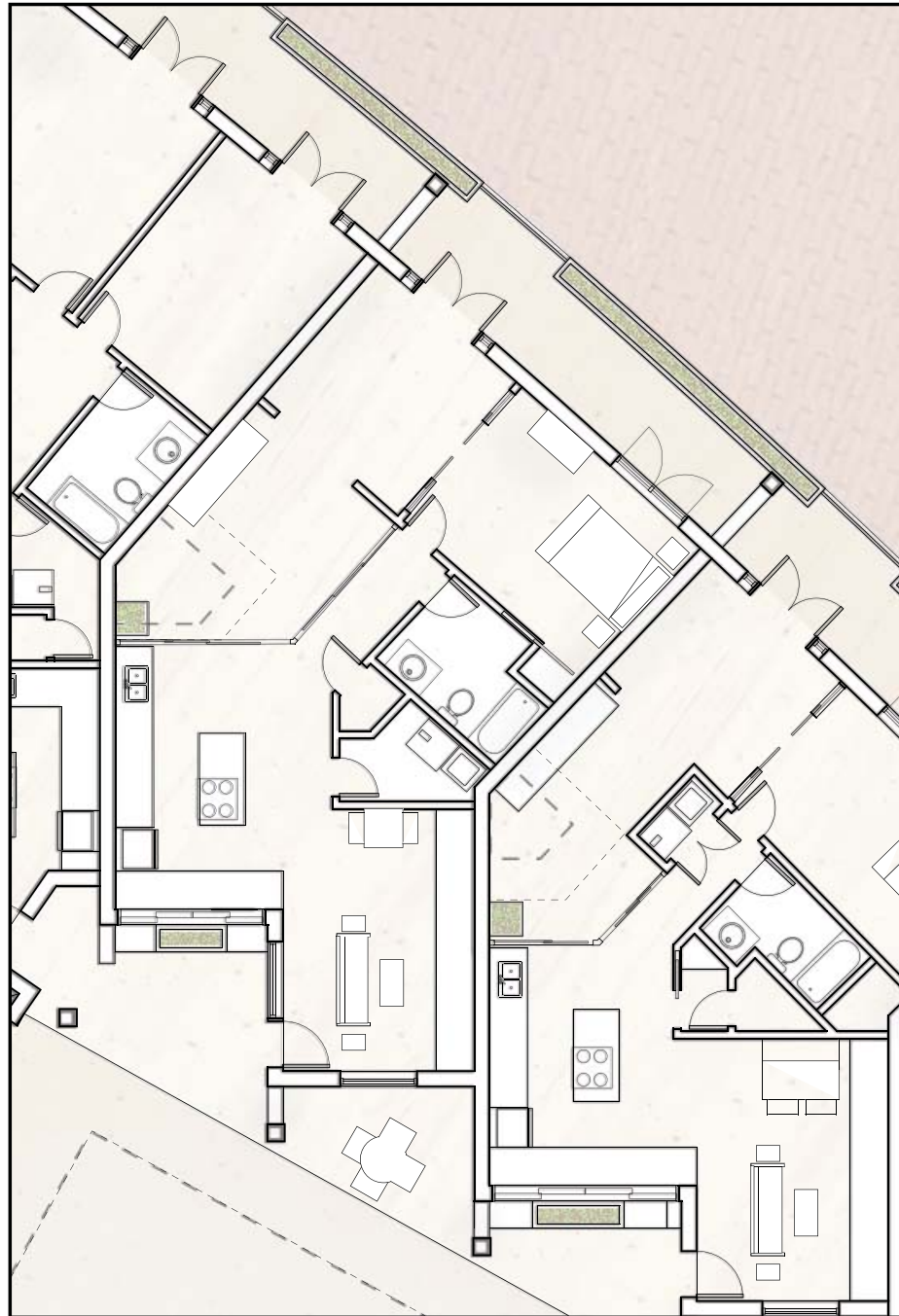


# Northern Apartments

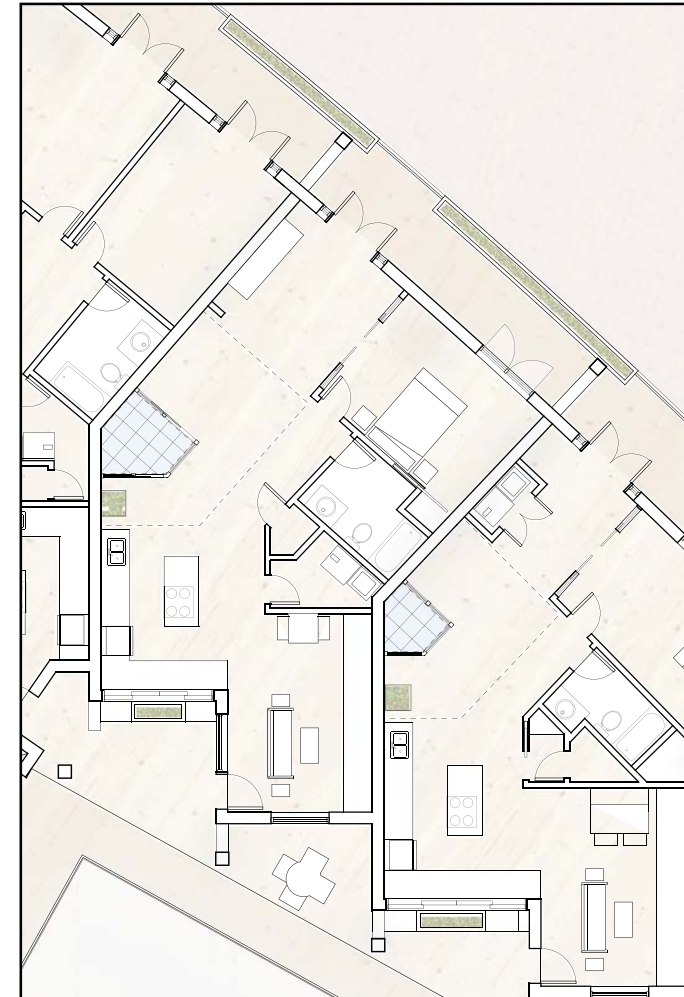
Similar to apartments along the south side of the building, northern apartments benefit from the natural lighting and ventilation benefits offered by the light well. Smaller, more urban balconies that overlook the plaza are offered in these apartments as opposed to the more isolated “backyard” feel of the southern apartment balconies.



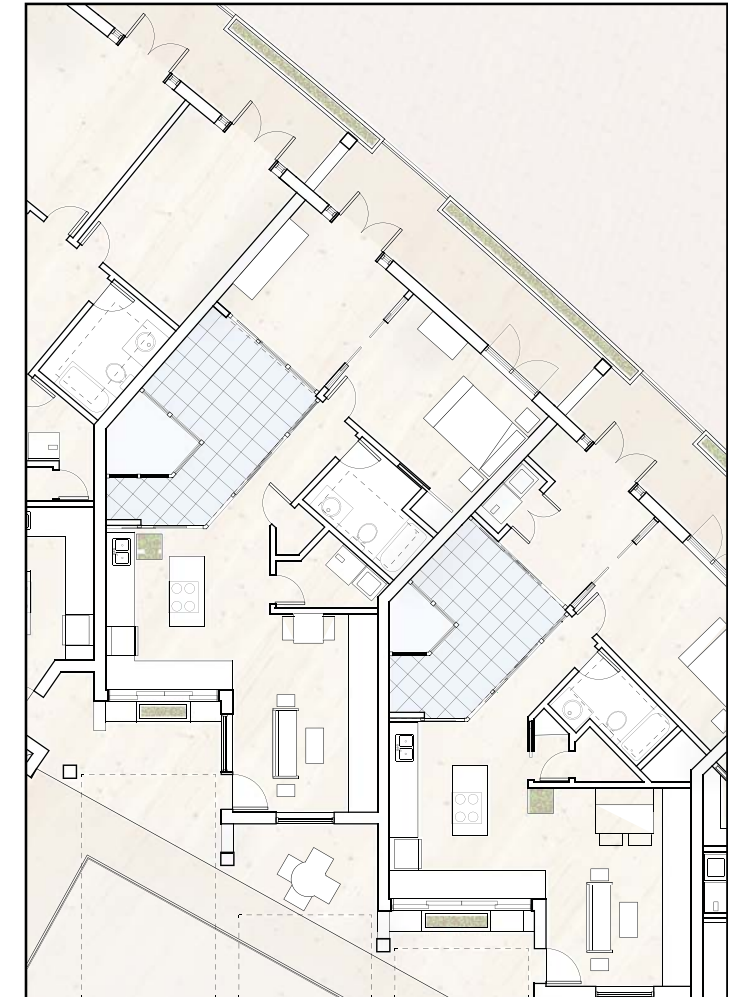
Key Plan



Second Floor



Third Floor

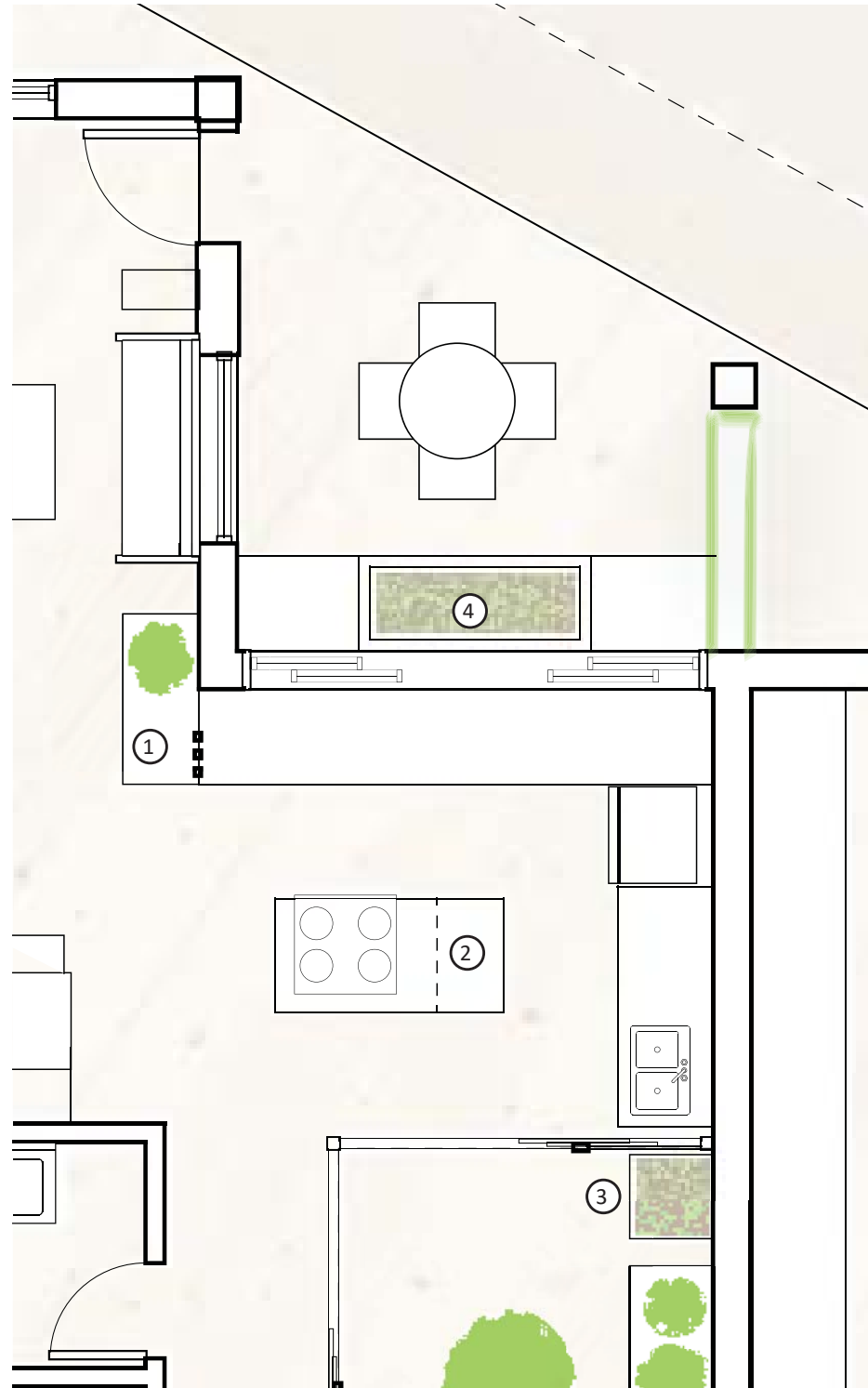


Fourth Floor



## The Apartment Kitchens

Apartment kitchens are designed to allow the benefits of exterior spaces to flow into the apartment and directly into the food that fuels the tenants' healthy lifestyles

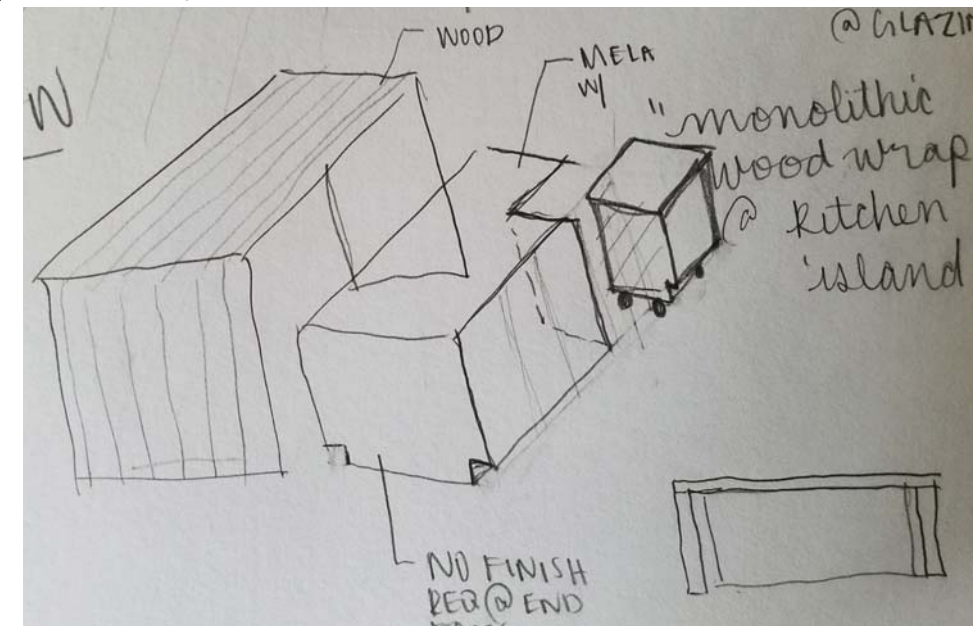


## The Kitchen Appliances

Along with refrigerators and dishwashers offered as "typical" kitchen appliances, compost bins and home growing kits similar to Ikea's VÅXER™ are given designated spaces in the kitchen and are integrated into the layout.

① Hooks for reusable grocery bags

② Built in compost bin



③ Indoor growing kit



④ Indoor planters

Fig. 1

# Designing for Health in the Suburbs

Jasmine McNeil

## Conclusion

This thesis aimed to answer the question “*how can we as architects design for health in the suburbs?*”.

The holistic approach I chose to take- beginning with a focus on interventions at the urban scale and zooming in to the scale of an enlarged detail to manifest health into individual living spaces- yielded a new set of design standards meant to foster healthy living habits in what has become a generally unhealthy environment. The fundamental guideline of providing maximum natural lighting and ventilation in individual apartments not only decreases the strain on the planet, but drastically improves public and social health as well. The provision of public spaces to further improve social health, in addition to biophilic design which improves environmental health, offer realistic opportunities for non-vehicular travel. The addition of suburban districts offer anyone from any neighborhood the opportunity to walk or bike to a place where all forms of health can be improved in a fun, intuitive way that will also yield a stronger sense of social capital.

This thesis did leave me with a new set of questions, though. Primarily-

*as architects, we are responsible for protecting the health, safety and welfare of the general public through design. With evolving technologies and increased understanding of the consequences of our design decisions, how can we realistically raise the bar for building requirements in a manner that allows for the implementation of healthy design that will be accessible to **all**- regardless of economic limitations.*





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Aerial Maps courtesy of Google Maps

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| Old Town Manassas     | pg. 14 | < <a href="https://commons.wikimedia.org/wiki/File:Citystreet1.jpg">https://commons.wikimedia.org/wiki/File:Citystreet1.jpg</a> >  |
| Fig. 1                | pg. 52 | “From Seed to Plate with KRYDDA/VÄXER.” IKEA US/EN, <a href="http://www.ikea.com/gb/en/products/indoor-gardening/">www.ikea.com/gb/en/products/indoor-gardening/</a> .   |

