Equitable, Ecological, Transit-Oriented Development

Greenbriar Mall and Campbelton Road

Spring 2019, Georgia Tech MSUD Studio: Arch 7012
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Proposals Inspired by the Atlanta City Design

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Can a struggling shopping mall, an underperforming arterial corridor, an unnecessary limited-access highway, and the suburban neighborhoods around them be retrofitted in ways that repair the damaged ecology and improve equitable access and opportunities for neighborhoods and businesses to thrive?
1970’s

Greenbriar is the aspirational neighborhood for Atlanta’s black middle class. Langford Parkway is sliced through the middle of it.

Today, incomes are half what they were then.
The Atlanta City Design designated Greenbriar and Campbellton Roads “growth areas” and an “Eco-Development Cluster.”
2018

Atlanta is the first city to conduct an “Urban Ecology Audit”. SW Atlanta’s old growth forests and creeks perform vital ecosystem services.
2018

A Livable Centers Initiative Update for the Greenbriar neighborhood was all but completed by Sizemore Group before the light rail was announced or the Urban Ecology Audit available.

- much community input
- constraints on scope
The More MARTA plan is adopted, calling for light rail on Campbellton Road and a transit hub at Greenbriar Mall
2018

Atlanta adopts a new transportation plan to “shift away from cars.”

Campbellton Road is one of many corridors not serving the community well.
2019

Can Greenbriar Mall, Campbellton Road, and Langford Parkway be retrofitted into Equitable and Ecological Transit-Oriented Development that are again aspirational neighborhoods?

WHAT IF?

- Space in the public r.o.w. and uses on underperforming private parcels were re-allocated according to a new set of questions? What if...
- Equity was the driver for change?
- Ecology was the driver for change?
- The existing roads were connected into a network of streets?
- The new transit hub connected to Mobility-As-A-Service, eliminating the need for private vehicles?
- Garden apartments had gardens and trails?
- Aging retail was replaced with new forms of public space offering experiences you can’t get online?

The following six proposals explore possible futures for the various parts of the Greenbriar neighborhood, Campbellton Road and Langford Parkway. They propose new ways to leverage the More MARTA plan to better promote equity, ecology, and experience. We hope they stimulate useful community discussions.
EQUITABLE URBANISM

What if equity was the principal driver

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What is Equitable Urbanism?

Quite simply, we propose that equitable urbanism provides everyone with equal access to the benefits that environment is designed to provide, regardless of their income.

What does this mean for Greenbriar? Many residents of Greenbriar enjoy the benefits of suburban living - such as the freedom to travel by car, enjoy a leafy backyard, and shop at an aging but well-maintained mall. However, a significant proportion of Greenbriar’s households do not get to enjoy those benefits. They live in an auto-dependent neighborhood but do not own a car. They live in an apartment complex without backyards or nearby parks. And their mall treats them with suspicion. Their lower incomes deprive them of equitable access to the good life that the design of the Greenbriar neighborhood originally promised.

As we will show in this report, these inequities are compounded when residents of Greenbriar are compared to the rest of Atlanta.

Urban design cannot itself solve all inequities and new investment must be wary of exacerbating inequities when rapid gentrification results in displacement. However, when vacancies are increasing and disinvestment threatens to further reduce a communities’ amenities, we feel that interventions are called for. The key to equitable urbanism, is insuring that all benefit from the improvements. Towards that goal, our proposal includes a range of big and small moves intended to serve old and new residents.

We envision Greenbriar evolving away from its suburban dependence on automobiles, chain stores, housing that is segregated by income, and a degraded public realm towards more diverse and accessible transportation modes, local incubator businesses, mixed income housing, and great public gathering spaces for all.
Greenbriar is a middle class neighborhood of southwestern, Atlanta. Campbellton Road, Langford Parkway and Perimeter (I-285) are the major connection for this zone. Atlanta’s southwest neighborhood across Langford Parkway towards north, Ben Hill Forest across the Perimeter to the west and East Point on the east and south are enclosing this area.

More than 95% residents are african american. Total population is 4800, where 1150 is the total number of the working people. Median Income is $20756 per year, which reduced $6905 during the past 15 years. Only 1% resident work in this area, rest needs to go outside of Greenbriar. Violent crime rate is relatively lower in this area. Youngest and oldest citizens are covering the major portion of greenbriar.

In average residents spend 45 minutes to reach the closest transit station. More than 16% use the public transportation and 30% of the population do not own a car. 30% of their income goes to the transit sector and 40% for housing.

The Urban Design Challenges

- Incomes & local Jobs are Low
- Low Accessibility & Walkability
- Lack of Quality Gathering Spaces
- Lack of Quality Street
Social Statistic Data

Change of Income (2000 - 2015)
Median income ($3,075) in Greenbrier reduced $6,905 during the past 15 years. At the same time, median income of Atlanta ($50,766) increased $28,051.

Mean Travel Time To Work (2016)
More than 16% people using public transit in Greenbrier. In Greenbrier, nearly 30% households don’t have cars.

Crime Rate Per 10000 Population (2016)
Although the overall crime rate is relatively higher in Greenbrier, violent crime rate is up to the average (173.6) (162.2).

Age (2016)
- 16.9% (0-19)
- 10.3% (20-24)
- 19.8% (25-34)
- 11.3% (35-44)
- 5.8% (45-54)
- 18.8% (55+)
- 53.0% (39-64)
- 64.1% (39-64)
Comparing with other district in Atlanta, Greenbrier has more children (<4.5%) and old people (>5.5%).

Job To Worker Ratio (2016)
The job to worker ratio is lower than average. Simultaneously, only 1% of people who lived in Greenbrier worked in Greenbrier.

Transit Analysis
- People spent most of their time on Walking & Transfer.

House Composition
- Lots of aged population and single parents family. They spend most of their money on transit (30%+) and housing (40%+).
To meet and provide the equity in Greenbriar, the whole area was divided and placed into mainly four division. The center, Greenbriar mall acts as the commercial hub, office area and opportunity for incubators; where west side of the area serve the educational district, community activity and recreational hub. Greenbriar Transit hub is placed at the North East, where office area, residential district user of greenbriar mall gets smooth access to their destination.
Regulating Plan Analysis
Illustrative Plan

Solutions

1. Local
   - Training
   - Jobs for Local
   - Supporting Local Commercial

2. Outsider
   - Attract Outsiders
   - Bring Money to the Community
   - Improving Living Condition

3. Small Scale Pocket Park
   - Encourage Local Business
   - Start Business

4. Density Around Transit Hub
   - Compiling Road Network
   - Change Street Scale
   - Divide Super Block
   - Trees for Defining The Street
   - Changing Layout of Parking Spaces

Office/ Commercial zone
Incubator retails
Mixed use
Educational district
Housing
Parking
Greenery
Civic building/ Community Center
Bird View
Sections

Intersection of Headland Dr and Greenbriar Pkwy

Transit Hub

Accessory Dwelling

Before and After A typical neighborhood road section
Before and After
A typical neighborhood section
(Photo Source: Google Earth, Piney Corridor, Greenbriar, GA)
Various activities makes the Greenbriar mall diverse and lively for every age group.
Picture showing proposed and renovated Greenbriar mall's activity in regular day.
At the North West side of the site, the interesting topography offers an excellent opportunity for trail, which will provide a better jogging place spot for the senior citizen and different activity on the trail for the kids.
What if the existing roads and fragmented neighborhoods were connected into a more walkable and micro-mobility friendly street network?
The Greenbriar LCI study area is located in Southwest Atlanta. This project focuses on the Greenbriar Mall, Campbellton Parkway, Langford Road and surrounding communities and neighborhoods to help envision strategic redevelopment in the area. This design fulfill its goal by three strategies: Repair the street networks; Connect people with trails, parks; Connect Greenbriar to the region by adding transit hub.
According to the MaaS Alliance, "Mobility as a Service (MaaS) puts users, both travelers and goods, at the core of transport services, offering them tailor-made mobility solutions based on their individual needs. This means that, for the first time, easy access to the most appropriate transport mode or service will be included in a bundle of flexible travel service options for end users." 1
Existing Street Analysis

Lack of connectivity near transit hub.

The street network of our site is fragmented.

The street network of surrounding area is relatively connected.
Existing Community Resources

Schools, Parks, Churches, etc. are dispersed and not on transit.

Existing Transit Analysis

Area is served by bus - but with long wait and route times.
Susceptibility to Change
Analysis of housing types and landuse to define parcels’ susceptibility to change.

Existing Typography & Water Analysis
Steep slop is a challenge for a connected street network.
Strategy 1 - New Street Network
Add new streets to the existing street network to make this area more connected.

Strategy 1 - Proposed Street Types
We propose the addition of various new streets, alleys, pedestrian paths, and trails.
Strategy 1 - Proposed Sidewalks
Add sidewalks to promote walkability of this area.

Strategy 2 - Connect Green Spaces
Connect green spaces to provide people with places to connect with each other.
Strategy 3 - Add Transit Hub and Circulatory Route

Add transit hub and circulatory route to prioritize public transit.

Place Making + Land Use

The transit hub is at the center of both new, denser development and green spaces and trails linking to the existing residents.
Regulating Plan

Land that is susceptible to change or made available for development is subdivided into parcels to encourage appropriate investment near the transit.
Building Types
Building Type varies according to the market situation.

Weak Market Scenario

Medium Market Scenario

Strong Market Scenario

Alley Future Development by Phases
Alley space in the blocks varies during future development

Short Term - Alley with Solid Parking

Middle Term - Parking with Permeable Pavement

Long Term - Park Instead of Parking
Illustrative Master Plan

Based on the previous regulating master plan, we are providing this illustrative master plan to offer one of the possibilities that could be generated from the framework.

The central transit hub is designed as a big gathering plaza with two round parks at the two ends. The transit dedicated lanes are directly adjacent to the Plaza and two bus stations sit opposite for buses at different directions. On the west side beside the powerline is the plaza for transferring to the micro mobility such as shared bikes and scooters. A big community sports park is right at the south of it with sports facilities and stormwater management infrastructures.

At the north vacant parcels, we propose a mixed residential housing beside the powerline park. Based on the topography and housing typology, single-family houses, and apartments are proposed. Trails in the park can link the neighborhood together and the main street to the transit hub have buses go along with newly added bicycle lanes and sidewalks.

At the Greenbriar mall area, we have several housing types to show how they can all fit into the relatively standardized block. All the new planned streets are pedestrian and bike friendly and have access to the main street with transit services.
Redesign of Campbellton Road and Langford Parkway

Since there is a height difference between the two roads, to differentiate their functions and provide a more pedestrian-friendly environment, we propose to cap some parts of the Langford and make it a rapid regional road. Thus the Campbellton will become a slow lane to carry local transit services. Some existing buildings along with the newly proposed two to three-story buildings with offices above and retail along the Campbellton streets to make this street more vibrant.

The existing car lanes could be cut off for the current redundancy and potential future reduction when autonomous vehicles and shared mobility grow, thus half of the lanes could be shifted to the green buffer, transit stop platforms, and transit lanes.
Intersection Design

Besides the main transit hub, the intersections along the Langford, Campbellton and Greenbriar Roads are also important space for transit system and pick-up and drop-off place for future mobility services.

We design these intersections as good potential public space as well. Small pocket parks just near the small pick-up and drop-off plazas. Pedestrian walkways make a continuous, friendly and lively walking atmosphere.
Transit Hub Design

The Central Transit Hub is targeted to be the main gathering space. The merging of the roads at this spot and powerline green space and trail besides give this area big advantages to be the connecting node to all the transportation and public space system.

In the vertical direction, people can get down to the below level to transfer from local transit to the regional MARTA BRT.

ABOVE: Transit hub designed as a public space with MAaS installation.
ABOVE: Exploded axonometric drawing of newly planned Transit Hub showing connection between the upper ground level and the lower Langford Road.
Community Sports Park

The Community Sports Park is basically an extension of the transit hub providing active recreation and water management. It sits beside the main drainage line and between the high-density blocks. Sports facilities like basketball courts and tennis courts on the powerline, running path around and splash pads for children are scattered in the parks.

Place Making Summary

streets, public space, transit system

By providing the new system, we expect we could reduce the parking space from 6-8 per thousand square feet to 0.12-0.23, a reduction of around 95%. According to the research, for 95% of the time cars are just parking in the lots. Thus we are approaching to a car-free and parking-lot-free future.
Place Making Summary-housing development

Though the building layouts in our proposals are just one recommendation on our street networks frame, we do hope this area to go denser to support the transit hub and make a more enclosed and attractive public space.

Existing parcels and buildings that need to change

Divide area with new blocks and parcels

Add new streets, alleys and pedestrians

Add new buildings

ABOVE: The Placemaking Diagram for housing development showing the summary data for the final recommended masterplan. NEXT: The diagrams showing how new streets and alleys are adding to form the parcels and potential housing types.
Redesign of the Neighborhood Street

ABOVE Neighborhood street section BEFORE and AFTER. We add trails to deal with steep topography and provide residents with access to the park.

ABOVE Rendering of the Park opposite the newly designed neighborhood. We add sidewalks and trails and provide shared lanes to school bus and local transit.
Vision for the Future

The building footprints on our illustrative plan are more repetitive than they would likely be in reality. The density around the transit hub might be greater than we’ve shown. Regardless of the specific designs for the buildings, we believe our urban framework will help the Greenbriar area become more connected, walkable, and green. It is a vision that takes many moderate, affordable steps towards transforming Greenbriar into an equitable, ecological and transit-oriented place.
CARFREE GREENBRIAR

A Mobility-as-a-Service, Eco-Development

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The Idea
Residents utilize active transportation and micro-mobility options as well as autonomous and connected flex-shuttles, neighborhood electric vehicles, and shared ride options to traverse the neighborhood, while utilizing the MARTA train and local bus connections to explore greater Atlanta and the region. No personal vehicles will be allowed within the development, which will have a parking garage at the periphery to accommodate visitors. Micro-mobility hubs will be provided throughout the site, which will supply various, demand-based, pay-as-you-go options for getting around the neighborhood, which is the definition of mobility-as-a-service.
As Greenbriar moves toward a future of autonomy and mobility as a service, it is important to celebrate what Greenbriar is, was, and will be. The community will celebrate the past with the preservation of the Westgate Shopping Center with its murals and the Macy's building, which will become a component of the new medical center. With a predominately African American community, African culture will further be celebrated through African medicinal plants in the MARTA station’s botanical garden and the growing of local and cultural foods in the community garden. Public art will further be integrated into the community to create experiences between micro-mobility stations. Public art will acknowledge rap songs/films inspired by the area, murals by local artists, sculptural art, history of film and theater, native plant species and urban agriculture, and significant figures from Greenbriar’s history.

For the present, local foods and crafts will be grown/developed and served/sold in Greenbriar. Restaurants and farmers’ markets will utilize local food, while the Westgate Shopping Center will become a site for local craft development and sales. Further facilities for sharing tools and items people no longer need will be available within the community.

For the future, progress will be celebrated through a plaza in front of the district energy and living machine facility, which will utilize locally generated energy and cleaned water for a splash pad, phone charging and public Wi-Fi sites, and a visual display of energy usage and rankings.

Lastly, togetherness will be reinforced with community gardens that tie people together across the powerline trails and the opportunity for chance interactions as people slow down by utilizing walking, shuttles, and micromobility to get around.

**Past**
Preservation of Macy’s and Westgate Shopping Center

**Present**
Recognition of Greenbriar’s African American population and history through public art inspired by film, music, and historic figures

**Future**
Celebrate progress with District Energy plaza and Living Machine wetlands as well as facilitation of growth and sales of local foods and crafts

**Each Other**
Reinforce togetherness with chance interactions encourage through community gardens, the powerline trail, and walkable development
Essentials for Mobility-as-a-Service

Mobility-as-a-service is a move from personal mobility ownership to shared, on-demand service that allows community members to right size their mobility choices based on the trip need. In order to eliminate the need for personal vehicles and the embrace of mobility-as-a-service, mobility-as-a-service must be easy to use, have diverse options, create an experience, have supportive land uses, and provide supportive infrastructure.

Ease of use can be guaranteed through diverse mobility options such as autonomous shuttles, neighborhood electric vehicles, electric and man-powered micromobility options, MARTA train, and bus. These modes can be easily located and reserved through phone applications, wayfinding, and fixed mobility hubs. Moving between mobility options provides an experience of public art, trails, and plants shaped by the local African American culture to encourage walking and active mobility as primary mobility options. Land uses that support living, working, and recreating within a half-mile walk of the transit station will ensure the ability to meet all daily needs without having to leave the community.

Since the community is further embracing autonomous mobility, supportive infrastructure such as flexible curb space that accommodates diverse users throughout the day as well as pricing the curb space based on demand and a parking facility to support these autonomous vehicles and park private vehicles, will be key for fluidity and efficiency.
Essentials for Ecology

Greenbriar will realize its full potential as a unique and rich natural environment. Not only will compact development support regreening, but the natural topography will be celebrated, and the flow of rain water will become an amenity. Greenbriar’s landscape will support the treating and infiltration of rainwater on-site through green infrastructure. Further, urban agriculture will support bees and reduce the carbon footprint of residence as local produce can be bought at markets and restaurants.

District-wide energy utilizing solar, wind, and garnered heat energy from data centers and untreated wastewater will power Greenbriar, which will take the community off coal power and support renewable, zero-emission energy. As something to celebrate, energy usage and savings will be visualized in the public realm.

Greenbriar will embrace a Living Machine to recycle grey and black wastewater on-site. This system will be made visible through wetlands, especially the one featured in the botanical garden of the transit hub.
The Heart of Greenbriar

**Celebration of Culture & Ecology through Transit**
with African medicinal plant botanical garden, living machine wetland, & grand station

**Powerline Trail**
to tie communities together through community gardens, local food, & trail experiences

**Community Oriented Development with Medical Center**

**Diversity of Micromobility Options & Amenities**

**Experience with Wayfinding & Public Art**

**Connected Community with Gardens & Trails**

Diagram representing the key elements that make Greenbriar a success in a culturally-focused, mobility-as-a-service, eco-development.
Concerns as Opportunity
Passage of the Federal Aid Highway Act in 1956 led to the completion of I-285 and Langford Parkway, which were the foundation for the auto-oriented development of Greenbriar. Greenbriar Mall, completed in 1965, further inspired the framework of meandering connections with little regard for the ecology and culture of the neighborhood.

This plan proposes a compact, culturally inspired, eco-development to support a thriving community and restore local ecology.
30 percent of households do not own an automobile.

Greenbriar will provide enhanced connectivity and culturally inspired environments and experiences to support mobility-as-a-service and make not owning a personal vehicle the way to live.
On average it takes 30 to 50 minutes to get from Greenbriar to Five Points Station via the 83 bus from Campbellton Road. In sharp contrast, the average trip length utilizing a vehicle is 15 - 30 minutes.

The new Greenbriar Transit Station will not only serve the 30 percent of households without a car, but provide a faster alternative to both car and bus travel, by cutting down the commute time to Central Atlanta to about 15 minutes.
In 2017, data from the U.S. Energy Information Administration showed that for the first time in 40 years, the largest contributor of greenhouse gas pollution in the U.S. was, and still is, transportation, which outpaced electricity production.

Greenbriar’s new, culturally experiential, eco-development will encourage walking and the utilization of electric mobility options powered by the district energy facility, which will utilize waste heat energy, solar, and wind to power the community and reduce emissions.
The Site
The study area for Greenbriar as an autonomous and active, mobility-as-a-service, eco-development is based on the ability to walk a half-mile or five minutes to the proposed rail station. The study area includes a diverse array of existing uses such as single- and multi-family housing and commercial development such as the Greenbriar Mall, Westgate Shopping Center, and Greenbriar Discount Mall. Further, some undeveloped portions of the community are included in the study area. This diversity provides an opportunity to create recommendations for the various existing conditions that can be applied to the greater community if desired.
Vacant and underutilized sites provide strategic opportunities to create higher density uses near transit, public realm enhancements and connections, and community and recreational uses. Potential opportunity sites include vacant or undeveloped land; commercial sites where the ratio of building value to land value is less than one; and commercial centers with a floor area ratio of .75 or below.

As can be seen in the map, most of the focus area either has a low or medium assessed value, a low or medium floor area ratio, or both. The commercial area surrounding and including Greenbriar Mall is prime for redevelopment into a compact, walkable, transit-oriented community that supports local culture, ecology, and mobility-as-a-service.
Sam walks to his local micromobility hub to grab a scooter. He is off to the MARTA station to catch the train to the West End where he will eat at one of his favorite vegetarian restaurants.

The Young Family passes through the experiential art along the Powerline Trail, which pays tribute to local theater and film.

The Young Family walks from their apartment to the Powerline Trail to tend their community garden.

Sam rides through the music corridor, which recognizes music inspired by the Greenbriar area through wayfinding as well as aural and visual art.
Looking at the current transit situation of the site, Greenbriar is connected to the nearest MARTA station, Oakland City Station, only through the 83 bus route on Campbellton. There is a high dependency rate on the three MARTA bus lines running through the site.
The location of Greenbriar along Route 285 holds the potential for it to become an anchor MARTA Station, connecting to the existing MARTA lines from Little Five Points, all the way to Hartsfield-Jackson Airport, as part of MARTA’s future regional expansion.
The Masterplan
The base framework for developing the masterplan is centered on celebrating Greenbriar’s culture, through preserving parts of the mall, which centers the main civic-ecological spine. Its proposed retrofitting to a medical hub serves one of Greenbriar’s main community needs.

The Transit Station is located along the main spine to serve as one of the main destinations in the midst of dense, diverse uses and development.

Restaurants and retail serving local food and good will stretch along the central spine to the celebration of the district energy facility at the end of the corridor. Wetlands of the Living Machine will also be featured along this spine providing significant importance to each focus on ecology, culture, and mobility.
Illustrative masterplan, key features & block types

- District Energy Living Machine
- Regreening
- Multiplicity of Mobility options
- Peripheral Parking and Mobility Repair
- Health and Medical Center
- Botanical Garden
- Powerline Trail and Community Gardens
- Transit Hub with Indoor Botanical Garden
Regulating Masterplan

Legend
- Existing Topography
- Modified Topography
- Existing Tax Parcels
- Modified Tax Parcels
- Existing Streets
- Proposed Streets
- Lakes and Streams
- Existing Green Spaces
- Proposed Green Spaces
Taste of Africa Market Street

Left: Current picture through the corridor of Greenbriar mall [Before]

Right: An illustration showing the future of the Greenbriar Mall's main corridor as a shared street featuring a civic-ecological spine
Mobility
The plan for Campbellton Road SW is to designate it as a micro-mobility and autonomous shuttle only street. The experience will become one that is more pedestrian oriented encouraging walking, active mobility, and micro-mobility options. Excess right-of-way will be utilized for pop-up markets, cafes, art, and seating to experience the newly transformed Campbellton Road.

As for Langford Parkway, with the addition of the Marta Station at Greenbriar Mall and utilization of autonomous vehicles, there is less demand for a six-lane highway. Langford has now been reduced to four lanes with the incorporation of photovoltaics, green infrastructure, and a trail connecting micro-mobility users and pedestrians to the powerline trail.

Campbellton will culminate in a roundabout before crossing a new bridge over Langford to access Greenbriar Mall. Further, Langford will slow and mingle with the Greenbriar community as it and Campbellton serve as a one-way couplet to remove complicated ramps and provide an opportunity to regreen these areas of right-of-way.
Shared Streets Diagrams

Recommendations

1. Emphasize local culture through public art and wayfinding to include murals, sculptures, and aural experiences to celebrate local music, historic figures, film making, and the African American culture in general.

2. Provide slow lanes to accommodate active and electric mobility users.

3. Designate space for various users through differentiation of pavement colors and materials, but maintain a level, shared surface. In the age of autonomy, vehicles will be responsive to the crossing of pedestrians and cyclists at any point.

4. Provide versatile curb space and curb managements that allows for deliveries, pick-up and drop-off, cafes, seating, farmers markets, and other diverse uses depending on the time of day and curb space demand.

The use of murals creates a level of interaction with surroundings, while simultaneously celebrating the history of the Greenbriar area.

Installation of vertical bike racks promotes the functionality of mobility-as-a-service as bike accessibility and storage are provided.

Low impact designs such as storm water planters can be found along shared streets, as they add both an aesthetic and ecological value.

Providing a car-free environment allows for streets to be shared with many forms of micromobility, reintegrating the pedestrian with the street.

Pick up drop off curb locations are still present so small electric forms of micromobility can drop off riders.
The focal point of the community is now the MARTA transit station, which features a botanical garden with living machine and Africa medicinal plants. From the station, residents can easily get home with micro-mobility options such as electric scooters.

The trip home could involve a trip down a residential shared street with a café or accessory dwelling units as well as components such as bus shelters, wayfinding, community gardens, and micromobility options.

Without private vehicles, garages can now also be used for a variety of uses like growing food or additional living space.
Ecology
The powerline right-of-way going through Greenbriar will be utilized as a space to collect solar energy, provide community gardens, and create pedestrian pathways through and between neighborhoods. The opportunity to create mobility at a regional scale presents itself by allowing other communities along the powerline to explore beyond the communities. Not only does the trail provide access to residents, it provides a corridor for animals to move through.

Left Atlanta Powerline Trails diagram
The power line trails would not only serve as a series of pathways that offer pedestrian connectivity, but create the opportunity for community gardens that empowers residents to take control of what is growing in their backyards. Further, the powerline gardens strengthen the bonds of community as the produce grown in the gardens can be sold in farmers markets that take place in the botanical transit station and at local restaurants.
The 2014 Assessing Urban Tree Canopy in the City of Atlanta: A Baseline Canopy Study, states that the Greenbriar neighborhood has 45 percent tree coverage, which is below the overall City of Atlanta average of 47.9 percent. Further, the study noted that Greenbriar consists of approximately 35 percent impervious surface (buildings and pavement) coverage of which, 14 percent consists solely of parking lots and driveways, which would become obsolete with mobility-as-a-service. This 14 percent provides a unique opportunity for those surfaces to be regreened as the dependence on cars will be replaced with efficient public transportation and multiple forms of micro-mobility.
Greenbriar falls within Utoy Creek and Camp Creek Watersheds. 41% of river banks within Utoy Creek show varying degrees of erosion, negatively impacting water quality within the watersheds.

- City of Atlanta Department of Watershed Management

By utilizing water management strategies to keep as much water on site, Greenbriar can reduce excess water flowing into the creeks, reducing strain on the Watersheds.
The diagram shows the two levels of the botanical garden, which also leads down to the proposed underground MARTA Greenbriar station, which will run under Langford Parkway.
When the United States Geological Survey conducted their survey in 1954, the site at the time was a golf course with rolling topography. However, when the mall was completed in 1965, the topography was flattened and all the water from the site was then drained into a tributary creek that flows into Camp Creek. The proposed design aims to slow and reduce the runoff into the tributary creek, which will reduce the strain currently placed on Camp Creek Watershed.
Living Machines

An ethical reuse of water – Leads to a sustainable Eco-development

A living machine works by collecting gray and black water that first comes in from municipal water when using sinks, showering, washing clothes, and flushing toilets. The water is then collected in tanks which takes the waste water through a series of filtration processes and simulated wetlands, ending with sediment filtration and ultraviolet disinfection. Many living machines are housed in greenhouses, similar in form to the indoor portions of the transit station and botanical garden, which allows the community to appreciate the integration of ecological infrastructure. Further, the living machine brings the water back to a quality that can then be cycled through Greenbriar, reducing the community's dependence on water and heat as extracted heat from wastewater is utilized to power the community via the District Energy center, which will be discussed later.
A carfree environment allows the excess impervious concrete surfaces to be removed, which in turn creates more green spaces. These spaces can be filled with edible plants that not only support the community of Greenbriar but the resident wildlife as well. Providing pollinator plants give bees and other pollinators species a chance to re-establish themselves as well as support the life cycle of plants.

One in every three bites of food we eat depends on pollination services from bees and other animals, and about 90% of all flowering plants require pollinators to reproduce.

-Center for Food Safety
African Wormwood  *Artemisia afra*
Widely used plant in Africa and is used to treat a variety of ailments such as colds, fevers, intestinal worms, malaria, etc. Different parts of the plant are used to treat different ailments.

Buchu  *Agathosma betulina*
The leaves can be ingested as a diuretic and topically as an antiseptic. Historically it has been used to treat urinary tract infections.

Wildemalva  *Pelargonium culantium*
Traditionally used to treat colic, kidney ailments, coughs and fevers. However when chewed up the plant can be used as a poultice for bruises, stings, and abscesses.

African Geranium  *Pelargonium sidoides*
The roots were used in South Africa to treat tuberculosis. The roots can be used to treat coughs, sore throats, and other respiratory ailments.

Wild Ginger  *Siphonochilus aethiopicus*
The Zulu people use the roots to treat colds, asthma, and coughs. The Swati people use the roots to treat malaria, as well as to relieve cramps from intestinal worms.

Society Garlic  *Tulbaghia violacea*
Herb can be used in foods, crushing leaves can be used to relieve sinus headaches. The plant acts as an antibacterial and can be used to get rid of intestinal worms.
Living Machine Locations

To better serve the site area there are four living machines spread out around the redesigned Greenbriar area. These four living machines work by engaging with the topography of the site as well as gravity to carry waste into these recycling wetlands. This allows for more water to be recycled on site, which reduces the need for the community to depend heavily on city water.

In addition, the use of renewable energy sources such as solar, wind, extracted waste heat, and natural gas will reduce the energy dependence of Greenbriar. All provide opportunity for Greenbriar to become a sustainable, eco-development.
Perspective of a farmer’s market at the botanical garden where local foods grown from the powerlines and backyards can be sold.
Solar panels will be installed in the street right-of-way, wind turbines will be installed on buildings and new developments, and heat will be captured from the medical and business buildings, which can then be used to heat and cool buildings within Greenbriar. During peak energy demand, natural gas will be used as a backup energy source.

Greenbriar will be energy independent as it will capitalize on the installation of devices to capture energy from renewable sources.
Greenbriar’s district energy building will provide a tangible symbol for the community to become more energy conscious as the building itself change displays of how much energy is consumed within a period of time. Not only that it will be a site for a living machine, further making residents aware of how water is treated and used within the community.
VILLAGE + FOREST

Greenbriar Mall and Campbellton Road

Jennifer Johnson and Yeinn "Grace" Oh
Master of Science in Urban Design
Georgia Institute of Technology
Spring 2019
What if Ecology was the driver?

Inspired by the *Atlanta City Design: Aspring to the Beloved Community*, the team wanted to connect people to nature. The strategy to achieve the goal of connecting people and nature with ecology as the driver can be summarized in 3 steps:

1. Restore the ecological function of the Greenbriar Mall site with an urban tree farm.

2. Restore the past retail and office spaces on Campbellton Road and Langford Parkway with infill development to promote a walkable community.

3. Create connections between the new greenspace and the new development on Campbellton Road and Langford Parkway through green streets with rainwater management techniques.

These three moves are intended to counteract suburbia's tendency to fragment both natural ecosystems and human interaction. While maintaining connections between people and nature, our proposal seeks to cluster human activities in a tree-lined village centered on Campbellton while establishing a trail-infused forest at the mall site. Both strategies are in keeping with current market dynamics. Malls are dying while Main Streets are coming back. Campbellton Road and Langford Parkway allow for a finer grain of ownership through small scale infill development. The proposed solution consolidates existing development to revitalize the Greenbriar area from an underutilized district to a thriving local community.
Analysis

Original + Legacy Nature
Atlanta is well known for being the city in the trees. The urban tree canopy expands over all corners of the city with the primary exceptions being the three central business districts. When looking at a full map of the original and legacy nature, courtesy of the Atlanta City Design, we can see the majority of the urban tree canopy is located in the southwestern part of the city. However, when we zoom into the Campbellton Road, Langford Highway, and Greenbriar Mall site, we can see the site is lacking the expansive tree canopy this area is known for. The lack of tree canopy leads to heat islands and poor air quality later on, making it even more important to re-populate this area with a tree canopy.

Park Desert
The City of Atlanta has many parks across the city, however there are still many areas that are park deserts, meaning that these areas are not easily accessible to public parks. Areas with minorities and lower income populations are known to be forgotten when it comes to public amenities and public parks. As part of the efforts to re-populate the area with an urban tree canopy, it was also important to reinvest in public parks for the community. The site is in a 4 and 5 level park desert, so by addressing this community need we will be able to reinvest in the community.
From Impervious

From Divisive Utility

From Asphalt

To Porus

To Public Amenity

To Rainwater Park

From Separated

From a Distributed Development

From a Disconnected District

To Integrated

To a Dense Mixed Use Development

To a Reconnected Community
The master plan was developed to condense and densify development along Campbellton Road and Langford Parkway. By densifying development, we were able to create a walkable and bikeable neighborhood. By retrofitting the powerlines to include a walking trail, we were able to integrate nature into our plan, and thus, connect people to nature. Along the trail are several retention ponds where we’re able to store runoff water from the dense development along Campbellton Road and Langford Parkway. The desolate asphalt of the Greenbriar Mall site has been retrofitted into a rainwater park, urban tree farm, and urban nursery, were retrofitted from deselate asphalt to a thriving ecological asset. We also included a solar farm so energy could be produced and used on the site by the trackless tram. On the north east part of the development, another water management park and agriculture farm allow for residents to be actively engaged with the site. The farms and rainwater parks allow new and existing residents to have access to nature and community gardens. As an amenity for urban lifestyles, these parks could trigger future additional densification around their edges.
Public Spaces

The site has three main public spaces including the MARTA station, a new walking trail below the powerlines, and an active streetscape.

**MARTA Station**
The MARTA Station was designed to incorporate both people and nature, at the exact point where the two meet in this development. This open aired MARTA station will allow for visitors to see both the dense development along Campbellton Road and Langford Parkway as well as the powerline trail.

**Powerline Trail**
This new walking trail is a 3 mile trail that extends from an intersecting point with I-285 and extends into the neighborhoods south of the site. This trail intersects Campbellton Road and Langford Parkway at the MARTA station. The trail is home of many native species and large trees to extend the tree canopy.

**Streetscape**
The streetscape was designed with both people and nature in mind. The streets are green streets to allow for a natural connection between the two parks and green spaces on either end of the site. The integrated green infrastructure in the streets allow for stormwater to travel from the dense development to the parks so it can naturally be absorbed. There are also many spaces for people to enjoy the street at local restaurants and small park spaces between buildings.
Ecological Strategies

The site is located on a ridgeline along Campbellton Road. These two water basins flow into Utoy Creek to the north and Camp Creek to the south, which eventually feed into the Chattahoochee River. It was important to situate the new development on the ridgeline so drainage could positively affect the more natural sites downhill. By incorporating elements such as water regulation, air quality regulation, raw materials, recreation, aesthetic values, soil formation, pollination, and water purification, the area is able to capture, store, and clean rainwater. The stored rainwater is then used to water the plants in the nursery and tree farm.
Habitat: Pignut is common on upland sites in association with oaks and other hickories. It grows best on moist alluvial river and valley soils and on adjacent slopes and ridges. Location: Lower areas of the site.

Mockernut Hickory

Habitat: Moist, well-drained, acid soils, usually along streams. Found predominantly in the Piedmont. Location: Along the creek by the powerlines.

Oakleaf Hydrangea

Habitat: Moist, well-drained uplands and rich, moist slopes. Location: On the ridges and high areas of the site.

White Oak
Regulating Master Plan

The plan is divided into five primary zones based on zone based codes. Primary zones based on zone based codes with transect zones with codes regulating building forms and street types from the more urban T-5 to the more rural T-1. This system provides for a diversity of natural and built habitats. The most dense development is along the Campbellton Road and Langford Parkway Corridors. It was important to scatter all 5 transect zones throughout the plan to show how this plan can incorporate all five zones and have a balance between them.
Proposed street network

Campbellton Road
Langford Parkway

Existing street network
Proposed street network
New Neighborhood Connections

Restoring the Street Grid

Reconnecting Neighborhoods

Southwest Neighborhood
Greenbriar Neighborhood

Public Parks
Urban tree farm
Park Connection

Restoring Ecology

Forest
Urban tree farm
Public Parks
Lakes and streams
Green Streets

Connecting New Amenities

The Greenbriar Couplet

Detailed Couplet Intersection

Low-Rise Retail
Mid-Rise Apartment

Mixed-Use Residential
Townhomes
Towards a Green Future

By concentrating development along Campbellton Road and Langford Parkway and focusing on the incorporation of more ecology throughout the site, the community is predicted to have improved performance results. We examined two key performance indicators from the Urban Ecology Framework from the Atlanta City Design including the ecological assets and challenges and heat island. We were able to predict the before and after results at both the Atlanta and site scale. The site improved the heat island effect as the asphalt parking lot and Greenbriar Mall was removed and the urban tree farm helped to naturally cool the area.

OPPOSITE Maps of the City of Atlanta and the Village + Forest site depicting the heat island affect before and after.
Conclusions

The site drastically improved as it went from an ecologically challenged area to an ecological asset with the increased green space, water management strategies, and more dense ecology.
Regreening Greenbriar with Urban Agriculture
Regreening Greenbriar with Urban Agriculture

Green as Verb used to create urbanism by intensifying an urban-agro district

Team: Rajhasurya Ashok, Debmalaya Ghosh

Project Description

We propose that multi-scaled urban agriculture investments can have a transformative impact on the Greenbriar area. They have the potential to leverage excess capacity in the struggling mall, the aging garden apartments, and the high numbers of under-employed youth and elderly in the neighborhood while reviving the community as an actively engaged, healthy, green, regional destination.

Design Approach

The design revolves around 3 big moves:

1. Converting the mall into an open-air market topped with hydroponic food production and anchored by the transit station and a public harvest space at either end.
2. Converting Langford Parkway where it parallels Campbellton Road into a linear farm and greenway while reviving Campbellton Road with transit, infill development, and edible landscaping.
3. Adding community-scale gardens at existing garden apartments and at the center of new residential development where each resident is encouraged to live with garden as a verb.
Transit Analysis  
Interms of Walking Circles

The site is in the ideal location and is well connected to different forms of transit. The presence of airport also make the site accessible.

Farming Analysis  
Interms of Farm Availability

The analysis shows that the existing farms are mostly centred towards the city instead of the suburbs.

Excess Capacities  
Langford-Garden Apartments-Mall Impervious Areas

Impervious Parking

Garden Apartments

Excess Lanes in Roadways

Existing Network

The main intent to untangle the congestion at the junction and the purpose the location of new transit hub

Existing Drainage

Being on the top of the watershed the initial water flow from the rain was of more importance, and reducing the velocity by capturing the water early is crucial.

Proposed Network

Langford Parkway traffic is diverted to Campbellton Road to support local businesses there. Transit continues to a hub close to park-n-ride garages facing the 285 Intersection and to a new transit loop.

Proposed Drainage

The neighborhood is located on the top of the two watersheds and the water captured from Langford is nowonnnected and diverted in to central agricultural spine and stored in small lakes.
Illustrative Masterplan Showing the desired building footprints, farms, streets

Urban agriculture has been chosen as the driver to engage different communities, ages

Regreened Mall
Pedestrian Market St.
Transit Hub
Public Space Grand

Garden as a Verb
Terraced Farmlands

Farming Organisation, Scales and Sizes

The mall is imagined to be retrofitted and converted into an indoor farming facility with the ground floor retail, forming a market street.

The main agricultural spine connects the entire community and the cultivation is managed by the community. The plots can be leased and the revenue will be used for the maintenance and labor.

The individual and roof top garden provides an excellent activity for the kids and the elderly and also a potential source of stable income.

The peripheral structures along the highway are mostly high rises mixed use while the garden apartments side are mostly residential developments.

Industrial Scale
Total: 30 acres

Community Scale
Total: 35 acres 1000 sq.ft/family-160 families

Individual Scale
Total: 18 acres 1000 sq.ft/family-750 families

Urban agriculture has been chosen as the driver to engage different communities, ages
Garden as a Verb  Regreening the existing garden apartments

Conceptual Flow Anchors, Drivers

Greenbriar Parkway to Farmway Orchards, Medians, Shared Farms

Campbellton Road to Street Transit stops, orchard median, streetcars
Proposed Development: Urban Agriculture as a Driver for new office and residences

- High end garden apartments facing green median
- The sidewalk and mall used as extended agriculture space
- Premium office and residence around the water body

Public Harvest Space: Celebration of Food

Mosaic Parks: Smaller Recreation Areas
Water Network Diagram Access of water to Langford Greenway

- Water tower - symbolic
- Civic square - water filtration
- Multi family new apartments
- Transit Stop
- Single family existing
- Water from existing pond

Campbellton Road to Street: Active street, retail, restaurants, transit

- Langford Greenway: Industrial Scale Farming
  - Sidewalk
  - 4' Parking
  - 10'
  - Median
  - 11'
  - 10' Parking
  - Sidewalk
  - Bike lane

- Langford + Campbellton: Complementary Streets
  - Sidewalk
  - 10'
  - Farmway
  - 10' Street Car
  - Sidewalk-shared 20'
  - 10' Service lane
  - Orchard
  - Courtyard facing
  - 16 feet level change

- Langford Greenway 145 feet
- Campbellton Street
Transit - Public Space Link  Connecting pedestrian market street linking

Market Street  Different kind of activities only pedestrian

Regreened Mall  Hydroponics and Urban farming

Connecting pedestrian street

Transit Hub

Public Space

45 feet wide

Shared pedestrian + cars
Greenbriar Movie District

What if Greenbriar became a film-oriented complete neighborhood with experiential and sustainable economy.
Identifying the Problem

What is Thriving in Atlanta?

Goal 1: Bring together Film Training & Production to develop a Sustainable Economy

Goal 2: Build a setting for the larger public to celebrate and engage with the movies through tours, cosplay & allied creative business

Fact: Film production companies are given a 20% tax credit for filming in Georgia.
What is Missing in Atlanta?

Ranks #1 in Film Making in 2017 of 17 major movies and 245 TV production, providing more than 4000 jobs, after Full Time Equivalent, especially in VFX. See ranking chart and spending proportion.
Atlanta City Design is proposing extending the existing MARTA route to Greenbriar Neighborhood, as well as a BRT route forming a Hashtag in the city.

- Capping part of the Langford parkway to enhance North-South Connection.
- Proposing private street and campus arcade with public access to motivate creative business like cosplay and movie tour.

Trying to connect with the existing movie studios, at the same time provide professional support for the movie industry.
Network

- Campbellton Road
- MARTA
- County Club Dr SW
- Greenbrier Pkwy SW
- Tyner Perry Studio
- Airport
- Tyner Perry Expressway

Bus Route

- Connecting Downtown and Airport

Landuse

- Commercial Use
- Community Services
- Hotel
- High Income Residence
- Neighborhood Mixed Use
- Residential
- Existing Green Areas
- New Green Areas
- Outdoor Public Spaces
- Education
- Sound Stages
- Pool and Creek
- Parking
- Recreation + Commercial
- Education + Commercial
- Transit + Commercial
- Existing Buildings

Neighborhood Route

- Movie Route
- Institution Avenue
- Living Street
Transit Center & Cosplay

The three blocks proposes an experiential cosplay street to connect the transit hub, movie industry, and creative offices.

**Transit types in the hub**

**BUS Oriented Street**

**Share Car Street**

**Music Square**

**MARTA Station**

- Regional Connection + Portal + Landmark
- Cosplay Street: Experiential Economy + Creative Business
- Central Square: Tourists + Residents, Pavilion + Inner Street
- Wetland Traffic Circle: Water Management + Slowing Traffic + Shaping Parcels

**The three blocks proposes an experiential cosplay street to connect the transit hub, movie industry, and creative offices.**
The structure is a combination of spot light, street light and ladders for photographer.

Each building has a 15' setback requirement to provide space for cosplay setup.

The 7' gap between two buildings provides the space for drainage, trash and hydrant.
The central square exhibits dual characteristics:

Vibrant square as a local landmark + Peaceful street separated by lines of trees

The dual characteristic makes the central square a shared connection between tourism and neighborhood.

Finally a WETLAND!
Movie Campus

* Dividing the Movie District into Public Campus and Gated Filming Set to increase job opportunities and revenue.

* Proposing an experiential Movie Campus to achieve professional training, public education and temporary events.

The mall is horizontally divided with a center corridor for potential redevelopment. Vertically it is built on top without destroying the existing structure.

Mall Retrofit Strategy

Existing Structure

Before

After
Trees are placed alongside the retail facing southwest to provide with most shading.

GMD-made Movies will be engraved on the tiles on the Shared Street.

The film set is gated from the public and only opens at certain time of a day to keep secure.

The shared street provides with a wider and safer public space where people can visit, parade, walk kids and dogs, wine and dine and feel the movie atmosphere.

Awwww, I grew up with this movie, how come this is the last Madea!! Better get to Briar Green for a nice place to enjoy and LMAO.

The shared street provides with a wider and safer public space where people can visit, parade, walk kids and dogs, wine and dine and feel the movie atmosphere.

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Awwww, I grew up with this movie, how come this is the last Madea!! Better get to Briar Green for a nice place to enjoy and LMAO.
The Complete Neighborhood

Mix-Use, Mid Density Living

Retail Peel
Food Retail + Fashion Retail + Community Retail

Powerline Promenade
Greenbriar Stroll and Bike Trail

Creative Commercial
Hotspot for professionals aiming to serve the movie industry

Urban Blocks
Walkable
Bikeable

300’ x 300’ Urban Blocks with mixed-use purpose

Next stop gonna be Greenbriar Mall. Let’s hit the damm where all the beavers go chill.

Present

Future

A step towards socially, culturally and ecologically balanced urban design

Street Room

Fashion Retail & Creative Commercial

Flexible Workspaces for Young Creative Professionals

Workplaces for Young Creative Professionals

Housing & Retail

Creative Commercial

Community Retail

Wide Sidewalk
Bike Lane

Mixed Mobility Lane
Street Parking

Green Streets

Community Retail

Wide Sidewalk
Bike Lane

Mixed Mobility Lane
Street Parking

Green Alleys

Stacked Townhouse

Semi Basement

Apartment

Community Retail

Retail Spillout space

Centralized parking deck

Urban apartment

Medical facility

Garden apartment

The location of my Experimental Yoga Studio is perfect! I get to teach Hollywood celebrities!
The Climax of the Show
Surface parking is reduced while overall parking is increased in retrofittable parking garages.

Parking

Check out these before and afters - 5000 parking spaces on less land!

Public Space

Connect greenspace and develop public space for different purposes and people. Convert powerline into a major water management facility.

Commercial & Retail

Retail Centralized and Transit-oriented as a vibrant commercial district between movie campus and residents.

Shopping Anytime!

+16 Acres

3000 more neighbors!

Anytime!