MATCH: Memphis Alternative Transportation Community Hub

Jennifer Leigh Thompson

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MATCH
Memphis Alternative Transportation Community Hub
A Thesis
Presented for the
Master of Architecture
The University of Memphis

Jennifer L. Thompson
August 2010
To my thesis committee, I sincerely thank all of you for your patience and time. At times it was a love and hate relationship, but I kept going through it all because of the growing pains and accomplishments.

To my closest friends Alžbeta and Jennifer, I sincerely thank you for late nights and wonderful talks that had nothing to do with thesis or architecture for that matter. It is those moments that kept me going when I thought I could not stay another minute.

To Chris, my wonderful partner, who weathered his first experience with an architectural student and is still around to share the good times and bad.

Finally, I am truly grateful for the spiritual guidance from my mom and my dear friends Marcia and Teen.

And for my faith in a power greater than myself that carried me through when I could not.

This thesis is dedicated to all species, for we are connected through our great evolutionary story.

The objective of this thesis is to successfully design a transit community hub that reintroduces the importance of multi-modal transportation as a social and experiential process by which healthy integrated communities are created.

Can effective community hub design change perception of alternative transportation?

The design solution to this thesis question is not necessarily the only solution, however, it is the best solution based on the research conducted.

This thesis is dedicated to all species, for we are connected through our great evolutionary story.
On October 3rd of 2009, I participated in the 3rd Annual Summit for Neighborhood Leaders organized by the Coalition for Livable Communities (CLC), now called Livable Memphis. The theme of the event was "The Neighborhoods Shape the City." The purpose of the event was to encourage community leaders to work together to achieve a common goal: making communities stronger, safer, and healthier. The event was designed to educate the participants about the importance of neighborhood leadership and to provide them with tools and resources to effectively connect people not only to the surrounding area but also to the community.

The Zipper Zone concept was born with the community, first proposed based on the location of the southern edge of the Memphis-Rice-Era Historical Preservation District. If you look at a map of the southern edge of the city, you will see a "zip" or "zipper" formation along the corridor of the Norfolk Southern Railroad. The concept was developed to establish a connection between the northern and southern parts of the city. The goal was to create a corridor that would encourage economic development and improve the quality of life for residents.

Memphis is gearing up with programs such as Clean Memphis and Memphis City Beautiful that organize neighborhood cleanup, Transit Oriented Development and the Zipper Corridor Concept, Beyond the Car: WalkBike Memphis, and the Unified Development Code that provides the tools to get your neighborhood together so it can evolve effectively.

Along with Livable Memphis, The Memphis Metropolitan Planning Organization (MPO) has already announced it will present the 2035 Plan in 2012. The 2035 Plan proposes to "connect transportation and land use together, because one can't operate without the other," said MPO administrator Martha Lott.

The book, *A Pattern Language* (Alexander, Ishikawa, & Silverstein, 1977, p. 185), outlines the importance of interchanges (transit hubs) and three basic principles that must be followed in order to sustain a web of transportation:

1. Surround the interchange with workplaces and housing types.
2. Keep the interior of the interchange continuous with the exterior pedestrian network and maintain small shops and kiosks while keeping parking cleverly hidden within surrounding architecture.
3. Keep the transfer distance between different modes of transportation to 300 ft. with a maximum of 600 ft.

Memphis already has neighborhoods with the existing infrastructure to achieve the first principle. The transit hub synergies that spin off of the development will improve the bus stops, spur community economy and unite neighborhoods to a common goal.

The concept of a community transit hub is to develop hubs of activity that consistently bring people into the central area of the city. Each hub has its own specialized role and must be designed to work with public transportation. These neighborhoods would be connected to what ULI calls the "Zipper Zone" (Figure 2). The concept hypothesizes the potential of cultural and economic education writ large. The NorthShore's excellent view can be used as a commuter hub to connect Collierville to Downtown. There needs to be a better way to connect people not only to the surrounding area but also to the community.

The Zipper Zone concept can blossom with the community, first proposed based on the location of the southern edge of the Memphis-Rice-Era Historical Preservation District. If you look at a map of the southern edge of the city, you will see a "zip" or "zipper" formation along the corridor of the Norfolk Southern Railroad. The concept was developed to establish a connection between the northern and southern parts of the city. The goal was to create a corridor that would encourage economic development and improve the quality of life for residents.

Memphis is looking at transportation through the lens of the community in collaboration with Memphis and Shelby County government. However, these roles of the community and government will be more defined in the future as the city begins to implement the 2035 Plan.

The following thesis outlines a smart transit community hub concept that, if implemented with the help of the Memphis community and support of the local, state and federal governments, will help transform the city's current trend of unhealthy development into one of sustainable growth, equity and environmental stewardship.

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The concept of MATCH is to introduce modality capture, within a built environment, that promote environmentally friendly alternatives to vehicular transportation and cultivate community development. Can effective transit community hub design change perception of alternative transportation?

The thesis is structured around four elements; Evolution, Economy, Sustainability, and Perception. Each element has the ability to stand alone as an important part of a four part equation that creates a holistic community hub concept, yet the solution to a successful transit community hub can only exist when all of the parts are acting in harmonious integrity.

The following board series (Figures 3 - 6, pp. 3-10) outlines the initial investigation into these four elements and each describes briefly the thought process at the inception of the thesis research. This writing that corresponds with each board is the evolution of thought through further literature review and how this review influenced the design of MATCH.

Michael Dowd (2008), author of Thank God for Evolution, states the essence of this thesis eloquently with the following words:

"Nothing is more important, it seems to me, from a practical as well as spiritual perspective, than co-creating synergistic systems of governance at all levels – locally, regionally, internationally, and of course globally. Such systems need to be so integrated and balanced that they are both secure and efficient, means that our present social systems cannot be managed as separate specialties. System models of efficiency of logistics, materials and education, not to mention energy, cannot serve us as a whole. This is the heart of our great evolutionary work – our species' divine calling. (p. 255)"

It will take a web of healthy communities to fulfill Dowd's understanding of the importance of the existence of evolution. The holistic community hub empowers community-centered activities and the creation accountable, through awareness. The hub provides an invitation for connection of people to people, people to their community, and community to the world around us. This concept is a community that promote smart growth, equity and sustainable living that can ultimately have an impact on a global scale.

Introduction
The evolution of transportation, for the purposes of this thesis, is not about whether pedestrian safety gives way to the automobile or the bicycle. This is a result of the innovation of technology and how we respond to the aesthetics of daily life. Pedestrian safety has been a concern as walking and biking can be dangerous. This is due to the lack of sidewalks and designated bike lanes, which leads to unsafe conditions. As the world becomes more urbanized, the increase in the number of vehicles on the road has led to more accidents and fatalities. This is due to the lack of pedestrian crossing signs and lack of pedestrian crosswalks, which have caused an increase in the number of pedestrian accidents and fatalities. This is a result of the modern urban environment, which is designed for vehicles and not for pedestrians. This has caused a decline in the number of pedestrians walking or biking, which has led to a decrease in the number of pedestrian accidents and fatalities. This has resulted in the need for more pedestrian safety measures, such as crosswalks and traffic signals.

The evolution of transportation has also had an impact on visually and subtly shifting public surroundings through technological advancement. Pappano (2007) states that the desensitization of human experiences caused by the technologization of everyday life can result in the loss of personal time.
MATCH will provide a community of people who exist within a half mile radius opportunity for growth, empowerment, education, and networking. As discussed in the context of MATCH, it is clear that the site is at the intersection of two major roads. This location allowed for redevelopment of all road intersections, thus creating a strong sense of place and identity. The site is within easy walking distance of transit; residents use transit stations to access the hub of the city. The site is also located within a vibrant neighborhood, which has a strong sense of identity and community. The site is designed with learning facilities and local government offices, which will provide a strong sense of identity and community. The site is designed with learning facilities and local government offices, which will provide a strong sense of identity and community.

The challenge with any redevelopment focused on living conditions and revitalization are issues of gentrification and segregation. The site is at the intersection of two major roads. This location allowed for redevelopment of all road intersections, thus creating a strong sense of place and identity. The site is within easy walking distance of transit; residents use transit stations to access the hub of the city. The site is also located within a vibrant neighborhood, which has a strong sense of identity and community. The site is designed with learning facilities and local government offices, which will provide a strong sense of identity and community. The site is designed with learning facilities and local government offices, which will provide a strong sense of identity and community.

According to Alexander et al., the subcultures of MATCH need to be preserved. This means that the site is not only a physical location, but also a cultural and social location. The site is designed with learning facilities and local government offices, which will provide a strong sense of identity and community. The site is designed with learning facilities and local government offices, which will provide a strong sense of identity and community.
Spiritual Sustainability

The following section talks about spirituality and deeply rooted statements that may serve as a base for the scale of the park itself. It will satisfy enough needs and last it the end of the day and the potential for human evolution. In the book, This is the title of this section, we will highlight the major impact and urgency of a given park as a beautiful place. We will also open up the idea of spirituality and the impact on our society and environment. Our planet is not merely ours. Earth itself is a community. Our planet is the platform in which we are growing to now be a spiritual culture. The idea of parks and their natural beauty is something that every society needs. This idea is also very powerful and can improve air quality (Figure 44, pp. 27-28).

Sustainability through Green Space

Figures 45 and 46 (pp. 28-29): Hardscapes absorb sunlight as water is an aspect of our spiritual. The idea is to have spiritual and spiritual changes on, vice versa, parks on the ground and our environment, as well as the impact on our society and environment. (U.S. Green Screen Home, 2010).

Deteriorated air quality happens with increasing numbers of vehicles and industrial emissions. The green spaces help mitigate these emissions by taking pollutants out of the air (Dowd, 2008, p. 290).

Sustainability through Materials

Building materials have a direct impact on the internal and external of a building material. (p. 309). Wright’s concept is important to MATCH because it theorizes that healthy communities full of ownership will take care of the parts that make up that community. How?

Spirit of Transportation

The concept of using interactive architecture as a learning tool (Figure 42, p. 25) displays the following list of architectural elements. Each learning tower interactive zone, local grocery market, light rail administrative of office, learning pods on the floor (Figure 41, pp. 23-24).

Sustainability through Community Design

Work environments and community amenities. Each accompanied with a key plan and axonometric as a guide. It is also important to note the positives of the next 250 years surrounding interchange with workplaces and housing

Sustainability through Education

Figure 42 (p. 25) displays the following list of interactive architectural elements. Each...
by reinstituting the day care into a learning/daycare center for the children living within the MATCH community, the sounds of children comingle with the everyday activity generated from ... that the right cerebral cortex, which organizes emotional control, is "attuned" in both infant and mother.  This is signi

... reuse on the site which is audible to site visitors within proximity evoking a calming and cooling sensation.

Touch can also be referred to as interaction.  The learning tower is the prominent interactive architectural and educational feature to site visitors and children that use the tower as a playground. The learning pods are oriented south with a rooftop garden filters rainwater for their

Evolution_Economy_Sustainability_Perception

Sight of Site

A series of view diagram sketch exercises aided in the placement and proper design of the primary plaza and interactive display zone (Figure 49, p. 33).  MATCH is designed with... experience (Figures 50 - 52, pp. 34 - 35, 37).The site creatively uses green screens to shade, offer visual... scale to give the feeling of enclosure and intimacy (Figure 48, p. 32).

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The preceding pages have outlined the research and discussed the methodology for the design decisions of this thesis project. The next section examines the physical body of work that symbolizes the three-dimensional design of MATCH.

The following headings are a brief outline of the organization of this body of work and an opportunity to discuss items that were not explained in the previous text.

**Precedence:** Extensive research of Green Scapes, Building Materials and Methods, Transit Hub Design, and the Atlanta Beltline Concept.

**Site Selection:** Map studies, anthropological site and amenities investigations.

**Schematic Design:** The initial schematic sketches illustrate the language of designing for a community based on the concepts of evolution, economy, sustainability, and perception (Figure 37, pp. 20-21). The design elements advanced throughout this book are substantiated from a series of view diagrams. The field of vision was investigated approaching the site from the cardinal directions (Figure 36, pp. 20-21). Three viewpoints were then layered to determine probable locations for community and/or education zones (Figure 37, Image 5, p. 20).

**Schematic Sustainable Design:** This is included to bring attention to the importance of understanding the forms generated in the schematic design phase and their implications on the environment. After the basic forms of the site were developed, the sustainable principles embedded in the design thought process were then studied through axonometric and section sketches. These were then translated into the final three-dimensional models in facilitating more detailed design characteristics of the site.

**MATCH Design Project:** This is the language of the design understood through three-dimensional representations utilizing REVIT software. After the program was finalized, the project was presented through hand sketches that bring a sense of life to the hard edges of the computer renderings.
This series of green screens presents the versatility of the installation options. Figure 7 is an example of the MATCH plaza design. Figure 8 demonstrates the feeling achieved when implementing the screen along the pedestrian sidewalk. Figure 9 is an example of the MATCH plaza design. Figure 10 is an example of utilizing the green screen to shield views to various site functions such as garbage dumpsters and parking structures. Figure 11 demonstrates places as art. Figure 12 demonstrates places as gathering space. Figure 13 demonstrates places as evoking memories. The Holocaust Museum is used to illustrate the power of architecture to conjure memories of a certain time and place and not to indicate the MATCH plaza as a place to remember historical events.

Figure 14 shows landscaping creatively embedded in the architectural design. Figure 15 is an example of indigenous planting that will be used throughout the site of MATCH, especially along the rail line boundary.

Sustainable Materials
- Wood: Wood is used in the design of the learning pods south shading device. It is used to introduce a soft material palate in the "front porch" play area. The wood used is harvested from FSC forests or reclaimed (Figure 16).
- Metals: Metals can be resurfaced, melted down and reformed and are highly recycled. Metals were primarily used as lightweight screening devices for east and west sun exposure (Figure 18). Ground face concrete blocks are an elegant use of a simple building material turned into a beautiful structural feature (Figure 23).
- Concrete: Concrete is the primary material used in the design of MATCH. The qualities of strength, flexibility, and the ability to be recycled prompted the selection of this material (Figure 20). Ground face concrete block is an elegant use of a simple building material turned into a beautiful structural feature (Figure 23).

Sustainable Methods
- Concrete and metal louvers for all south shading (Figure 19).
- Recycled rubble rock wall which maximizes water infiltration system for reuse in graywater function such as toilet flushing, janitorial activities and landscaping (Figure 17).
- Architectural screening elements typically made of metal are used for east and west shading (Figure 18).
- Smart glazing for solar shading utilizes low-e coating while maximizing daylight (Figure 22).
Precedence :: Transit Hubs

The Alicante tram stop is a project designed to give a blighted pedestrian space new life. The project is used as a precedence study to demonstrate the lighting design for MATCH.

The Congleton interchange station is used as an example of a “parkway” shelters such as corrugated metal used in this station. The interchange station office is designed with a similar language to the first image in this precedence series.

The Craigieburn interchange station is used as an example of “everyday” materials such as corrugated metal used in this station. The MATCH transit administration office is designed with a similar language to the first image in this precedence series.

The Nordpark Railway demonstrates the use of form within the design of the MATCH train platform. MATCH uses concrete to achieve the curvilinear forms. The forms create a flow that takes the roof plane down which then transforms into the seating.

Precedence :: Case Study

The Atlanta Beltline

The Atlanta Beltline’s inception was delivered in 1999 by a forward-thinking graduate student from Georgia Tech University. Ryan Gravel conceived the idea of resurrecting the old rail system for community revitalization. The Beltline is a 22-mile corridor for transit, green space, and community development and was first conceived by the City of Atlanta in 1998. The project was initiated in 2003, with the BeltLine partners creating a vision for what the corridor could be.

The Atlanta Beltline is a $5 billion dollar project that includes an extensive array of benefits and revitalization procedures. There are eleven efforts embodied in the plan including: Affordable Workforce Housing, Atlanta Beltline Arboretum, Community Benefits, Economic Development, Funding, Land use, Park and Greenspace, Planning, Public Art, Streets and Sidewalks, Trails and Transit.

In 2004, Alexander Garvin, a recognized greenspace designer, determined the concept developed by Gravel was worth realizing, and he subsequently developed a revitalization plan to include a park-like and transit system called the BeltLine Resilience Project. The plan includes a series of Greenways, Bikeways, and pedestrian-oriented streets. The project is divided into phases, with a major goal of raising $5 billion over a 30-year period.

In 2006, MARTA’s board approved the $5 billion bond referendum. In January of 2007, MARTA’s board approved the 22-mile corridor.

The implementation plan includes an extensive array of benefits and revitalization procedures. There are eleven efforts embodied in the plan including: Affordable Workforce Housing, Atlanta Beltline Arboretum, Community Benefits, Economic Development, Funding, Land use, Park and Greenspace, Planning, Public Art, Streets and Sidewalks, Trails and Transit.

Public/Private Partnerships are critical for Atlanta redevelopment initiatives. In 2005, Mayor Franklin put together the Beltline Partnership that fused the private and public sectors of the project. The partnership continues to ensure community engagement, the Atlanta BeltLine, Inc. (ABI) was subsequently formed in 2006.

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Successful spatial experiences require changing visual interest as the pedestrian moves along a path. Strolling from one view to another.

Creating the "non-tourist" tourist site: Views seduce, through sights to destinations, the pedestrian into experiencing where they are going and where they came from (Urry, 2007).

Connection Gap: Expresses the decay of the "human experience" through the evolution of technology, globalization, and cars. (Pappano, 2001)

MATCH: Changing perception of multi-modal transit through community engagement, enhanced human experience, and sustainable design.

Anthropological Investigation

Schematic Sketches

1. Early Concept Sketches
   Figure 37. Schematic Sketches

2. Early Revit Sketch
   Figure 38. Sustainable Sketches

3. View Sketch
   Figure 39. Sustainable Site Axon

Sustainable Site Axon

4. Kid Zone Experience
   Figure 36. Sustainable Site Section

5. Activity Zone Diagram

Sustainable Site Section: Tower Study

1. Early Concept Sketches
2. Early Revit Sketch
3. View Sketch
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5. Activity Zone Diagram

MPO Bike Plan: Bike Share

The far left image is the interactive bike plan map which illustrates the proposed bike lane improvements. A more detailed image can be found on the MPO Bike Share website or the Memphis & Shelby County (MPO) website. The next image is an example of a bike-lane station within the built environment. The remaining two images are examples of people riding their bikes within the MPO bike lanes.

Improvements - Green Streets

The image to the far left is a diagram created to illustrate the potential streets that are viable candidates for street improvement projects. The next image is an example of a street improvement option and indigenous planting selections.

MATA - Bus Experience

The adjacent series describes the MATA experience. One of the thesis methodology exercises was to experience a typical journey on the MATA system. This included investigating the map, understanding the scheduling system and then documenting the trip through photography.

http://matatransit.com:83/hiwire

Sustainable Site Axon

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2. Early Revit Sketch
3. View Sketch
4. Kid Zone Experience
5. Activity Zone Diagram

Figure 36. Anthropological Investigation
Source: by author

Figure 37. Schematic Sketches

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The image numbers correspond with the view being experienced by the viewer as physically being at the site. The following explains architectural concepts in further detail.

1. Pedestrian view looking northwest and juxtaposed against the existing site conditions. The building is color-coded as a finding system to designate the multiple functions of the facility which include, Mini Bus Services, Local Government Office, Community Resource Center for Sustainable Practices. The facility is designed with shared shower services for employees and pedestrians accessing the site.

2. As indicated in the research, successive views and experiences provide “chance encounter” square walking pathways. The entrance to the Community Center is shaded and the scale is broken up with the rhythmic exterior canopy.

3. The interior lobby is designed with contemporary technological advancements in sustainable design. There are computer controlled operable windows that use smart technologies to read human activity and respond accordingly. The interior orientation of the building is set to maximize the predominant south west winds.

4. The only parking on site is located behind the Community Center. It is available to the center workers that do not live within the half mile MATCH community. The carbon emissions are offset with the green screens that create a pollution filtering canopy, shading and visual interest.

5. View of Community Center walkway coming from the north.

6. Roof garden exclusively for the Community Center employees. The roof captures rainwater and reuses it in graywater functions. The seating is screened with custom perforated metal panels that allow for visibility and intimacy while shading.

7. Mini bus service for half mile community shuttle service with wrapping concrete structure to carry train platform language through the design. The exterior waiting zone is enhanced with the rock and concrete, shaping system and cooling pond.
MATCH Project Design

1. Aerial view of southeast corner learning tower: learning paths, social核查, a local administration and protection place, positioned against the existing site conditions.

2. View from pedestrian bridge of learning pods and learning tower playground. This is the access bridge from the light rail platform. Parents that bring their children to the learning pods will cross the pedestrian bridge then cross the site corridor to the main floor of the learning tower. In the existing area is the secured facility to pick up or drop off children. This area considers an attraction for displaying the children’s work. The pods have salvage wood louvers that act as southern shading devices.

3. This is the public access lobby for the learning tower. Here site visitors can interact with the exposed rock wall that filters rain water from a height of 35 feet down the wall into the reflecting pond in the lobby which serves as an evaporative cooling feature. The water is ultimately stored in storage tanks under the site for use in greywater activities such as landscape watering, toilet flushing and janitorial needs. The audible experience is also enhanced with the sounds of the water cascading down the wall.

4. The MATCH transit administration office utilizes the eastern most boundary of the site as the private office corridor and restroom facility. To create a space that allowed light to filter in and still enable the entire east wall in a natural way, a rock wall with an embedded reed wall filters to enhance the view.

5. The site includes a local market that provides basic needs to the community. This results in retail space being more vibrant and engaging as a healthy alternative to normal convenience store foods.

6. This is the view to the exterior plaza from the transit administration office. It is in close proximity to the primary pedestrian walkway. The design is highly transparent, inviting and approachable for those visitors desiring to know more about their local transit system or to ask for basic information.

Figure 41. Sustainability through Community - Learning Tower Center
MATCH Project Design

**Sustainable Technologies**

- Permeable paver system to filter stormwater prior to entering the drainage system.
- Green screen parking canopy for carbon cleaning, shading and screening.
- E-fueling station for electric car plug-in accessible to Community Center employees.
- Roof garden graywater filtration system for reuse in restroom, janitorial and garden irrigation as necessary.
- Smart Wall with environmental sensors for human and environmental condition.
- Smart windows controlled by smart wall sensoring to exhaust carbon or excess heat from the building.
- Green screen canopy for Community Center entry shading and visual interest.
- Exterior perforated metal for learning tower shading and visual interest, greeting zone perforated metal canopy for shading.
- Operable window system to allow south west winds to engage the rubble rock wall passive evaporative cooling system.
- Water collection system for graywater reuse.
- Rock wall as filtration system and sustainable educational tool.

**Indigenous Planting**

- Indigenous planting with rock bed for transit administration of office corridor.
The aerial view exhibits the sustainable features embedded in the design of the transit interchange. There are wind powered generators that extend to the east along with the surrounding indigenous landscaping. The open air platform is shaded with green screens that also serve as air purifiers along with the surrounding indigenous landscaping. This view also displays the connection of the transit to the overall MATCH site by having open air portals shaded with green screens so that passengers can wait in a comfortable setting and still interact with other site visitors.

The platform is fully engaged with the rest of the MATCH site by having open air portals shaded with green screens so that passengers can wait in a comfortable setting and still interact with other site visitors.

The interior perspective shows the built-in seating accommodated by the selection of concrete which wraps as one continuous piece from canopy to platform. This detail simplifies the structure by removing extraneous parts ultimately lessening the embodied energy.

The bike sharing facilities define a pedestrian scale entrance when approaching the site from the east. The bikes will be purchased with a swipe card and returned at other bike sharing facilities when returning. The bikes are purchased with a swipe card and returned at other bike sharing facilities when returning.

The sloping entrance to the light rail platform signifies an elegant procession that welcomes users from the south regardless of their entrance. This further strengthens the notion that users of this facility are important and their choice to use this transit is appreciated.

1. The aerial view exhibits the sustainable features embedded in the design of the transit interchange. There are wind powered generators that extend to the east along with the surrounding indigenous landscaping. The open air platform is shaded with green screens that also serve as air purifiers along with the surrounding indigenous landscaping. This view also displays the connection of the transit to the overall MATCH site by having open air portals shaded with green screens so that passengers can wait in a comfortable setting and still interact with other site visitors.

2. The platform is fully engaged with the rest of the MATCH site by having open air portals shaded with green screens so that passengers can wait in a comfortable setting and still interact with other site visitors.

3. The interior perspective shows the built-in seating accommodated by the selection of concrete which wraps as one continuous piece from canopy to platform. This detail simplifies the structure by removing extraneous parts ultimately lessening the embodied energy.

4. The bike sharing facilities define a pedestrian scale entrance when approaching the site from the east. The bikes will be purchased with a swipe card and returned at other bike sharing facilities when returning. The bikes are purchased with a swipe card and returned at other bike sharing facilities when returning.

5. The sloping entrance to the light rail platform signifies an elegant procession that welcomes users from the south regardless of their entrance. This further strengthens the notion that users of this facility are important and their choice to use this transit is appreciated.
These four solstice diagrams focus on the peak traveling times, 8am and 6pm, during the summer which is the most critical time of the year for Memphis. The summer solstice was used because it signifies the time of the year when the sun has reached its highest point in the sky before it begins to descend as the months progress towards winter. It is the hottest time of the summer season for the Memphis region. However, further investigation into all of the critical seasonal attributes of Memphis is the most prudent approach.

The summer solstice happens on June 21 of every year. It signifies the time of the year when the sun has reached its highest point in the sky before it begins to descend as the months progress towards winter. Something to note is that the summer solstice is not the hottest time of the summer season for the Memphis region.

**Sustainability through Green Scapes**

**Figure 45.** Learning Pods:
- **Green roof for heat island reduction, water filtration and reuse for graywater systems.**
- **Green Screen roof system that creates a shading canopy to reduce heat island effects and provide healthier breathing air.**
- **Community garden concept adds learning benefits and healthy alternatives to traditional fruits and vegetables that are normally shipped from long distances and widely processed. There is a heat island reduction as well.**
- **Protection Plan, Light Rail Platform and Community Center-Matching:** Green Screens are implemented over much of the site to create outdoor rooms for more intimate seating options. They also help with heat island reduction and provide healthier breathing air.

**Figure 46.** MATCH Site:
- The site is landscaped with indigenous planting that typically will not need additional watering and soil is retained in native ranges. The landscaping coordinates with the peak traveling times and the overall aesthetic appeal of the site and sequence of approach.
1. This image illustrates the “Behavior Zones” and is juxtaposed against the existing conditions of the southwest corner of the site. The existence of open space is vital as it can act as a buffer to the identity of certain cultures. By defining these into a well-structured site the desire to display oneself in a negative way is diminished.

2. The pedestrian bridge is fully engaged on the streetlevel and yet has the appearance of being semi-private. The green screens help create a loose enclosure and the tall planting acts as privacy screens without blocking views or air circulation.

3. This pedestrian seating is directly adjacent to the market and transit office. The concept is to utilize the shading devices for the southern and western exposed facades as a soft enclosure for seating. Each space under this canopy is designed to have a different feel through the use of pavers, grass, landscape and structure variability.

4. The pedestrian bridge leading to and from the light rail service is designed to function as a place to pause and absorb the surroundings. The integrated seating is part of the structure and shading device yet does not obstruct views or air circulation to maximize the predominant southwest wind.

Something to note is that the seating is not only a mixture of public and private spaces, it is also varied in its integration of the design. In most cases the seating is built into the structure but there are opportunities to locate pieces of furniture. These options increase the sense of ownership due to being able to modify to one’s personal needs and also personalize spaces for specific uses. The majority of seating is public but there are also opportunities to have private areas.

5. Perception of Economy :: Seating

Figure 47. Perception of Economy :: 1. Behavior Zone Southwest View

Figure 48. Perception of Economy :: Seating

2. Plaza Intimate Pedestrian Seating

3. Plaza intimate Pedestrian Seating

4. Light Rail Bridge Public Pedestrian Seating
The pedestrian walkway is designed to move people through the space while granting them the capability to pause and engage in their surroundings either through social human interaction or open nature and observation.

The pedestrian walkway begins or ends at the "Smart Technology" screen. The screen and people gathered hold the street edge. According to Sucher (2003) the street edge is a service or screen that is physically removed by height and division.

The community center roof garden is designed for center employees. The view demonstrates how site features can enhance the experience of another space that is physically removed by height and division.

An example of visual interest through anticipated architecture is seen in the pedestrian experience of the bridge. From this perspective, viewers can experience both the community center and the learning tower as a destination point and a sense of views they will experience.

Images 5 – 8 show the site which is a very important aspect to this thesis. The southeast introduction is about activity and the immediate introduction of both modes of transportation without obstructing views to maintain a sense of safety and inclusion.

Approaching from the southeast, the viewer is engaged in the "behavior zone", landscaping and a bus stop.

The approach from the southwest is held with the community center. However, there are openings to add variance to the structure and a secondary walking path establishes the architectural connection of the plaza and learning tower across the street.
While researching the transit community hub concept an
obvious question kept coming to the surface. Which comes first: the community that can help change perception of alternative transportation or an efficient system of transportation that shifts perception? The thesis question which asks, “Can effective community hub design change perception of alternative transportation?” sways on the side of community involved design can change perception.

The answer to the dichotomy lies in an assumption that if the stars are aligned and government policy makers, community leaders and organizations, plus financial gains all come to the same redevelopment effort and leave having heard the same information with a shared vision for a new experience, then both community and transportation come together. The design profession alone cannot solve the problems with perception and alternative modes of transportation. The research shows that if the systems are not more efficient, clean, safe, accessible and above all, better than the sense of identity achieved through owning a car, good design will not be the answer to solving ridership. The issues of capitalistic growth, social inequalities and environmental concerns make the concepts of public transit stagnant before they leave the drawing board.

There are conclusions that may be drawn however. First, good design for a community should be centered on creating spaces of involvement and interactions. It is the act of engagement with the community that will make good design successful. The research shows that good design will only work if the design is most successful when successful design happens and people are interested and involved in the place they inhabit. Urry (2007) expressed that successful spatial experiences require changing visual interest as the pedestrian moves along a path; strolling from one view to another. This revelation is a fundamental first step to creating the community that can in effect change perception of alternative transportation. If there is a collective community ownership of a common space, whether created from nature or human intervention, stands to reason that by ownership, the space will be honored and respected. This deep sense of wanting to get out of every pedestrian walk will occur. It starts deep and small within a town and with encouragement and support can grow into many, affecting a change in the way we see, hear, and do life.


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Figure 52. Perception of Site: 10. Approaching South

Coming from the north, which is considered the critical gateway to the site due to the cultural difference between the south and north neighborhoods, the approach of entering the site is up to the transit platform and behavior zones is a statement of invitation and investigation. The threshold signifies an important step is being made.