

Investigating + Educating about Sustainable Places in Charlottesville

Sustainability Analysis in Charlottesville: The Downtown Mall and Starr Hill

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Prof. Phoebe Crisman

Workshop Leader: Tom Gibbons

Team members: Evan Burch, Callie Jacobs, Jae Hyun Lee, Scott Levine, Kelsey Veazey

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ABSTRACT

For our project, our objectives were to focus on two areas in Charlottesville, Starr Hill and Downtown, and analyze what makes these spaces sustainable and successful. Our first step to accomplish this goal was to look at our past experiences and personal knowledge of those areas and categorize their advantages and disadvantages. We instantly recognized that Downtown is a popular commercial destination for residents, students, and tourists because of its many shops, dining options, and open mall for walking. Star Hill on the other hand is mainly a residential area with not much attraction for visitors other than residents.

Our team went through a series of ideas when deciding the best possible solution for bridging the gap between Starr Hill and Downtown. Through collaboration with our workshop leader Tom Gibbons, we ultimately decided that we wanted to focus on three factors in our analysis: accessibility/transportation, equality of spaces, and building typologies. Accessibility/transportation refers to the ability to sustainably access a variety of destinations, while minimizing the use of personal motor vehicles. Equality of spaces is defined as the equal opportunity for enjoyment regardless of socioeconomic status while maximizing livability and minimizing ecological impact. Lastly, building typologies is used to classify buildings that offer multiple functions within an efficient footprint to encourage density. These factors are explored throughout this report and will be documented through an assortment of photographs and diagrams. While the Downtown Mall is more sustainable in terms of efficient use of mixed-use properties/density, bus line accessibility, and environmentally sustainable practices, it does not promote equality of places based on socioeconomic status and equal opportunity.



INTRODUCTION

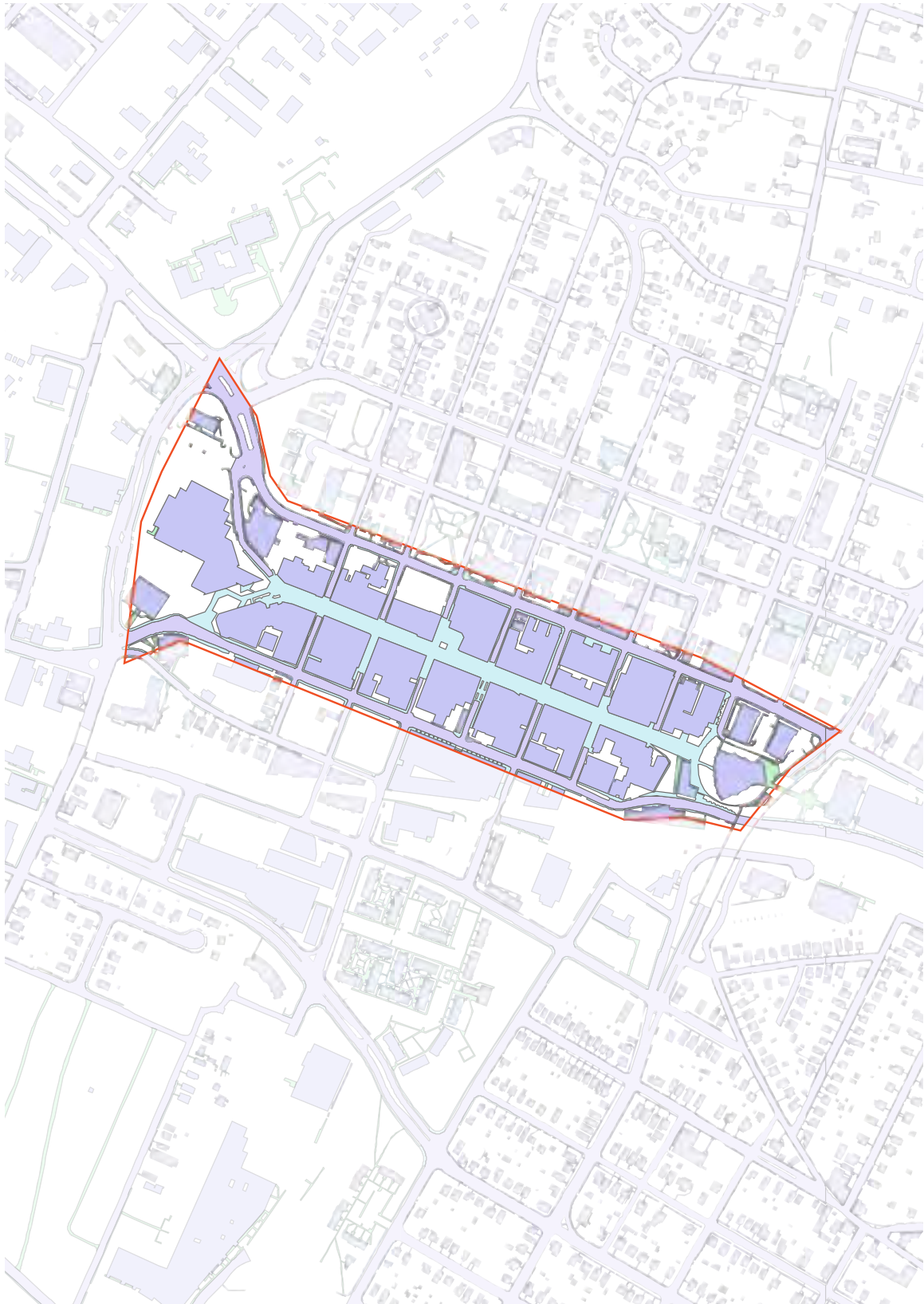
This project involves a thorough investigation of what constitutes “good” sustainable practices and “bad,” unsustainable ones. We studied metrics and explored examples to determine what these practices might be, and our final goal was to focus on these spaces within Charlottesville. By the end of the project, we had an extensive description of why a certain place is considered “sustainable” and how unsustainable places can be improved.

To aid us in the process, we worked with Councilwoman Kathy Galvin. With her, we communicated with the PLACE Design Task Force. To approach this issue, we went out into the community to look at various places first hand. In addition, we needed to look at existing maps, diagrams, and codes to determine the city council standards regarding the issues we focused on. Finally, we did research to learn about the differences between the Downtown Mall and Starr Hill.

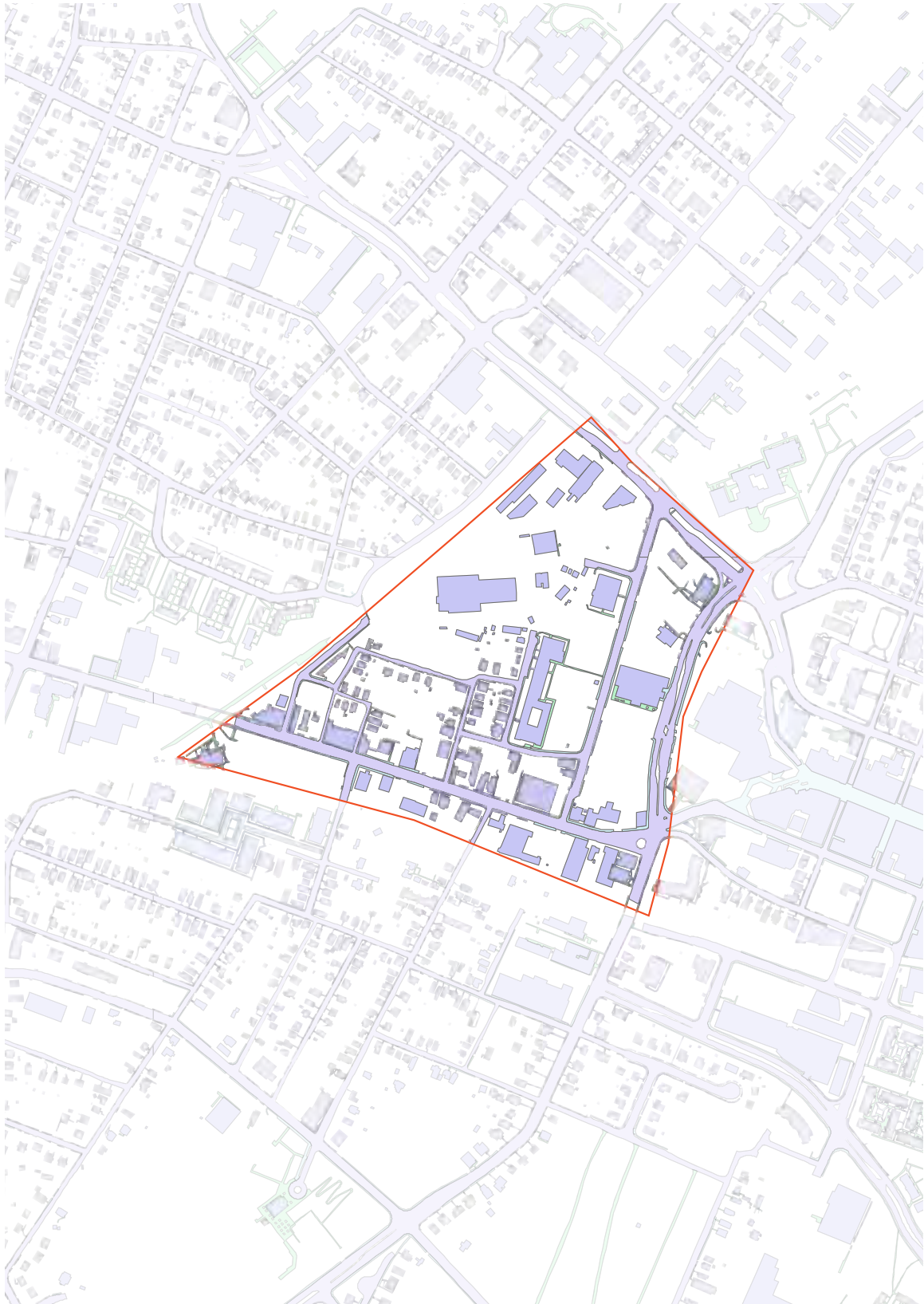
For this project, we will be focusing on three specific aspects that we believe can make both areas more sustainable and enjoyable for the community. The first aspect is accessibility. We must question whether the existing bus transportation system is adequate to deal with the desired growing city. In addition, we will focus on ways the transportation system as a whole can be improved to reduce greenhouse gas emissions per capita, while still maintaining a level of speed and efficiency for the rider. Furthermore, the walkability of our site must be investigated to discover whether that aspect of the space can be improved to increase carbon-free transportation. Our next topic hones in on the idea of building typologies. While it seems the Downtown Mall successfully mixes commercial and residential areas, Starr Hill separates the two. After our investigation, we hope to highlight a way in which these spaces can be connected to further bring people into community spaces instead of separating them at most times. Finally, we will analyze Starr Hill and the Downtown Mall according to the “equality of places” as determined and defined by the work of Tim Beatley. Currently, the Downtown Mall and Starr Hill are seen as two distinct regions in the Charlottesville community. We must look at both places and figure out the differences between them and the reasons for these differences. While variances are not always a bad thing, we hope to discover some positive aspects of each place that can be utilized to improve the other. In order to ensure a more sustainable setting for the future, it falls on us to come up with an analysis and plan to fix things that need to be fixed and celebrate things that should be celebrated.



Downtown Mall



Starr Hill



ACCESSIBILITY

(d) the ability to sustainably access a variety of destinations, while minimizing the use of personal motor vehicles

Downtown Mall

Accessibility is critical to the success of any public space, particularly regarding sustainability. The existing public transportation system is more than adequate for the Downtown Mall, with eight bus lines including a free trolley running through the Downtown Mall area. From a purely transportation engineering standpoint, the Downtown Mall provides excellent options for visitors, with extensive parking, public transportation, and excellent walkability. The area is quite accessible by car; Route 250 Bypass makes the Downtown Mall accessible to visitors coming from far away, and Ridge McIntire Road is a busy local street leading into the area. One subject that we take issue with is the extensive use of surface land for parking lots, and the unsustainable practice of transportation via personal motor vehicles this promotes.



Starr Hill

Starr Hill is less sustainable than the Downtown Mall in terms of accessibility. Only two routes, Route 9 and the Free Trolley bus line, skim the edges of Starr Hill neighborhood. In terms of walkability, the sidewalks are plentiful, flanking one or both sides of almost every street. The city creates “sidewalk priorities” to plan sidewalks in places it deems important, like areas near schools. Unfortunately, no new sidewalks are planned for Starr Hill from now through 2016 (“Sidewalks”). Even if the sidewalks were improved, the loose grid layout of the neighborhood makes reliance on walking to your destinations within the area undesirable. Also, the speed limits and variability of street types—arterials, collectors, and local roads combined—help keep the traffic of Starr Hill in check while creating safety for pedestrians (“Traffic Engineering.”). However, Ridge Street and Preston remain difficult to cross.



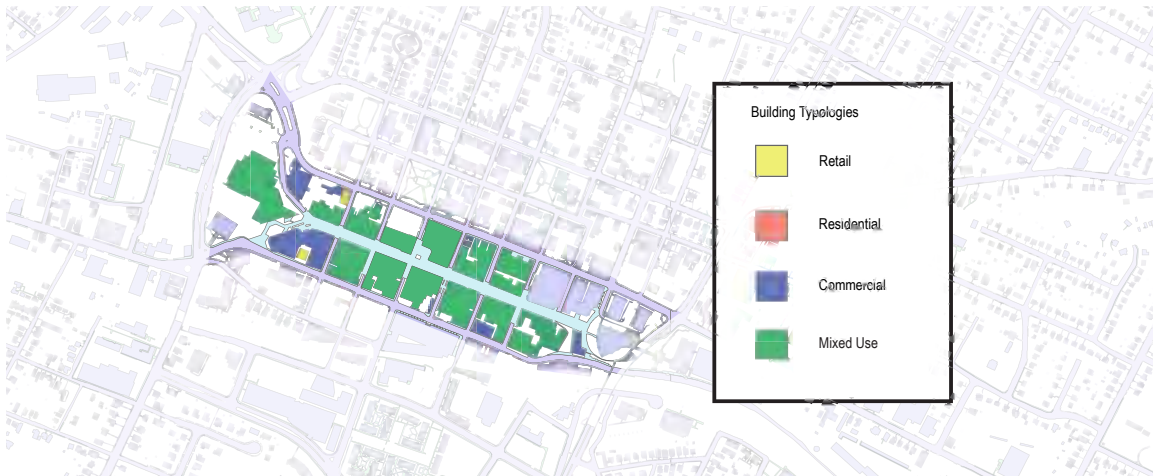
BUILDING TYPOLOGIES

(d) buildings that offer multiple functions within an efficient footprint will encourage density

Downtown Mall

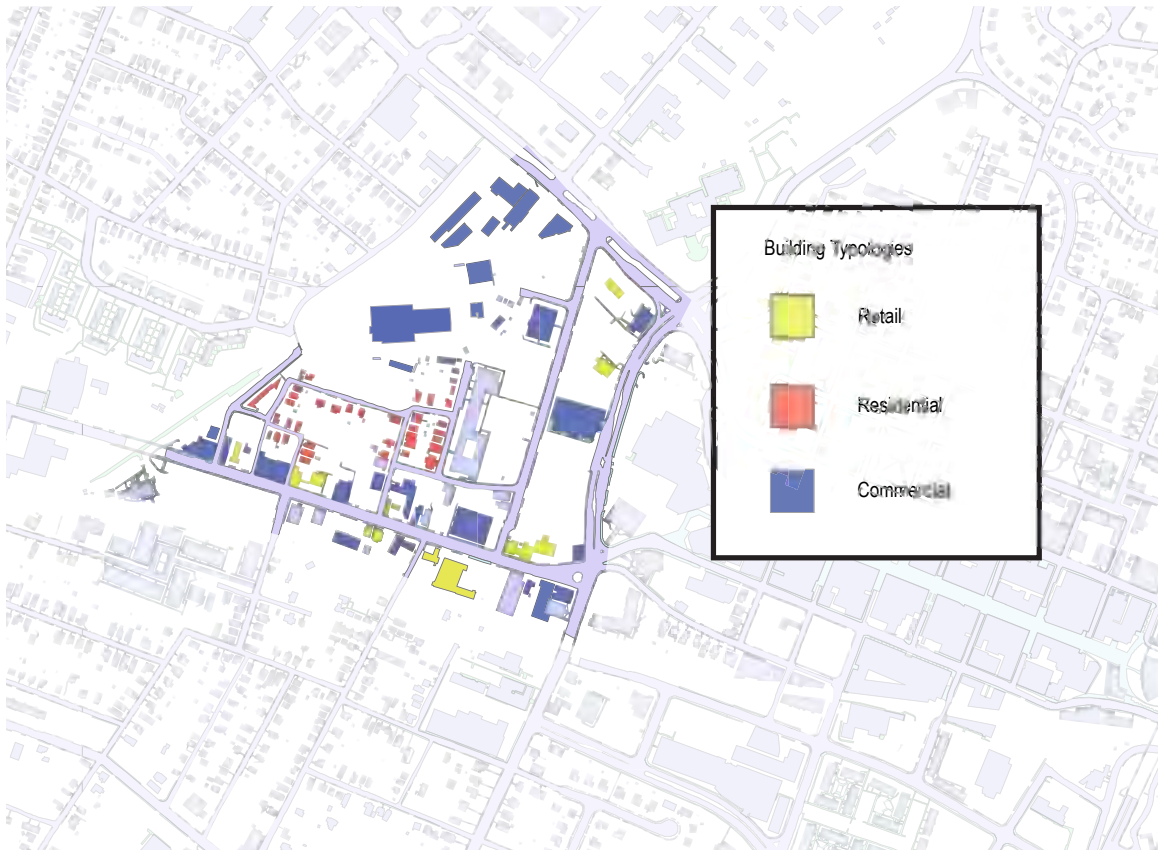
The Downtown Mall is praised for its sustainable utility of mixed used buildings. The height regulations are not incredibly restricting and allow for this practice. One section sets a 50-foot maximum, and another sets a 101-foot maximum building height. Street walls of one section of the Downtown Mall are required to be between 40 and 45 feet, accompanied by other buildings between 45 and 70 feet (“Code of Ordinances”). The Downtown Mall uses its relative height to its advantage, often incorporating retail, residences, and office space in single buildings. This is immensely useful for an urban neighborhood, condensing a multitude of building types in a small area, creating a tighter urban fabric that leads to advances in other areas such as public transportation or accessibility to resources. All of this makes daily life for residents more realistic and logical. The whole of the city of Charlottesville has an average density of 4,246.4 people per square mile. In comparison, the Downtown Mall has a larger density of nearly 30,000 people. So, this area has no need to improve its density of buildings and of population (“Charlottesville, Virginia.”).

The Downtown Mall falls short in its excessive establishment of areas dedicated to parking. There is enough street parking and garage parking to serve the mall with ease, yet there are huge surface parking lots which take up acres of what could become more mixed use real estate. This would promote use of its already available public bus system, a more sustainable option than driving personal motor vehicles.



Starr Hill

Starr Hill has far less mixed-used buildings than the Downtown Mall. This is partially due to its more restrictive zoning height regulations on its buildings. However, these regulations should be used to their maximum. The 60-foot maximum on West Main Street and the 70-foot maximum with a “special use permit” allows for buildings that are several stories tall, which certainly would accommodate mixed use (“Code of Ordinances”). Additionally, there are big-box stores and accompanying surface parking lots taking up hugely valuable land. We will explore how this land might be better used and the positive results that would come from this and improvements to building typologies.



EQUALITY OF PLACES

- (d) maximizing livability while minimizing ecological impact
- (d) equal opportunity for enjoyment regardless of socioeconomic status

Downtown Mall

The “equality of places” concept is essentially defined by Tim Beatley as maximizing livability while minimizing ecological impact. The Downtown Mall accomplishes this to a much higher degree than many areas around the country, and is a model for comparable areas everywhere. Combining a very thorough public transportation system with semi hardscape, restaurants emphasizing local, organic food, and walkability, the Downtown Mall features the majority of the key components mentioned in Beatley’s lecture on the equality of places. Despite the old infrastructure of the city, the Downtown Mall has taken advantage of utilizing sustainable energy sources. The Downtown Transit Station on the east end of the Mall was reconstructed in 2008 following Leadership in Energy & Environmental Design certification (LEED). The Transit Station received the LEED Gold designation because of its geothermal cooling and heating system, recycled and local building materials, water and energy efficient features, and extensive use of natural lighting (“Environmental Sustainability”). In addition, the Charlottesville City Hall and Police Building underwent green roofing projects in 2008. These projects included the planting of over 18,000 plants on the rooftops that help reduce stormwater runoff and cooling costs during the warm seasons (“Environmental Sustainability,” Green). However there is always room for improvement in terms of renewable energy use to enhance the ecological footprint of the neighborhood.

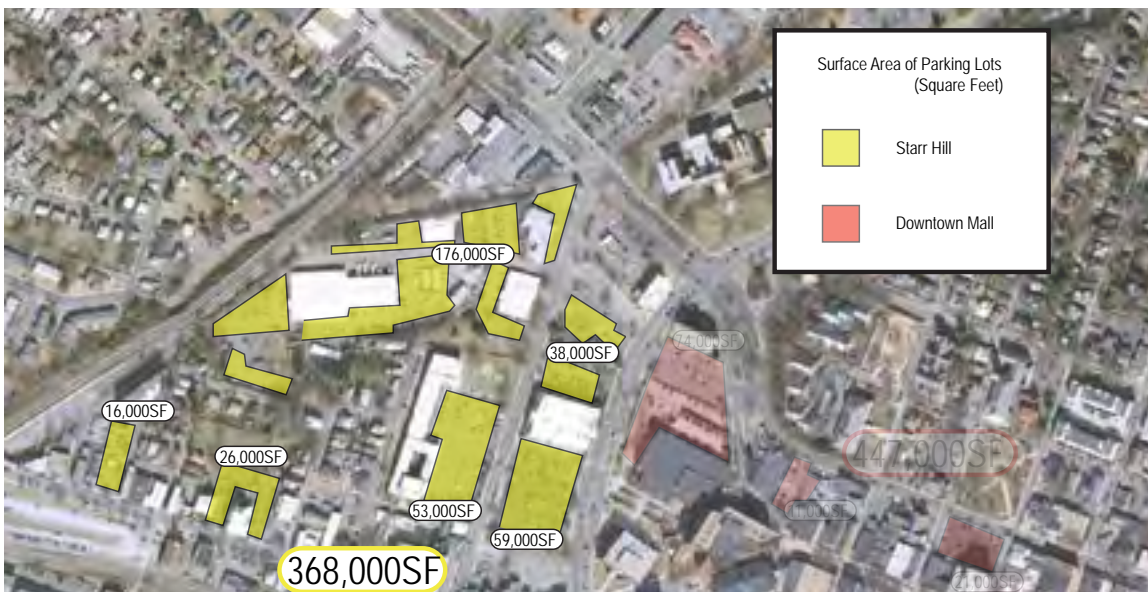
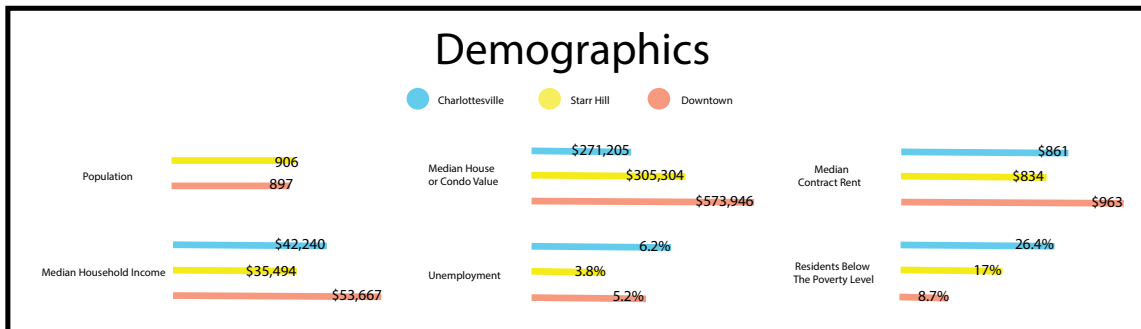
However, in terms of socioeconomic sustainability, the Downtown Mall is failing. As stated earlier, the Downtown Mall is very attractive for commercial purposes and generally people do not frequent the Mall unless they are interested in consuming something. This poses a significant barrier between the Downtown Mall and the rest of the community that can’t afford to spend time and money there.



Starr Hill

Unlike the other two metrics, Starr Hill surpasses the Downtown Mall in equality of places. The Starr Hill neighborhood features Starr Hill Park, an element that is lacking from the Downtown Mall. The park is an area residents of any socioeconomic background could enjoy on a daily basis. However, this 0.4 acre park could certainly be improved upon as it is currently sandwiched between residential and big-box stores.

Part of Starr Hill is found in Tract 10, the wealthiest census tract in Charlottesville, and the rest is found in Tract 2.02, the poorest census tract in Charlottesville. As a result, there is a strong socioeconomic divide within Charlottesville and even within the Starr Hill area. Interestingly, the City of Charlottesville has invested significantly in making Starr Hill an affordable destination for tourists and place of employment for residents. In October of 2012, the City agreed to invest significantly in the creation of the Jefferson City School City Center project on the basis of alignment with the City Council's Vision and Priority Areas of "increasing sustainable employment among less skilled and educated residents" (Beauregard). In addition, Starr Hill offers low-income housing for residents. Midway Manor, lying on the perimeter of Starr Hill and the Downtown Mall, is low-income apartments that offers subsidized government low-income rates for seniors as well with rent is based 30% off a resident's adjusted gross income (LowIncomeHousing). In addition, The Crossings at 4th Street and Preston Avenue offers 60 studio apartments that serve homeless and low-income clients. Thirty units are reserved for homeless clients and thirty units are open to individuals who earn less than 50% of the area's median income. On the other hand, there is no low-income housing on the Downtown Mall or really anywhere near it. The Haven located at 112 West Market Street provides service to the homeless and very poor such "breakfast meal, short-term storage, showers, laundry facilities, computer access..." it does not provide overnight shelter (The Haven).



CONCLUSION

Accessibility

The accessibility of the Downtown Mall is sufficient with room for improvement. At the Downtown Mall, public transit is readily available. We should seek ways to encourage residents to use it to the utmost. Public transit use decreases the number of personal motor vehicles used, thus lowering greenhouse gas emissions and improving air quality. Ideally, Charlottesville should have a much lower air quality index than the United States average, but now it is only slightly lower—28.1 compared to 32 for the entire country's average (“Charlottesville, Virginia”).

On the other hand, Starr Hill has only two bus lines serving its perimeter. Realistically, some bus lines could be added to enter the neighborhood if the demand for them existed. Once bus routes were modified to accommodate the higher passenger volume, this would decrease traffic congestion created by so many personal motor vehicles, as well as decrease greenhouse gas emissions by decreasing the number of cars on the roads.

The Downtown Mall is largely accessible to outside visitors. There is an understood necessity for tourists from outside the city to visit to shop and eat. However, it is desirable that the residents regularly using the mall have excellent access into it through bus lines and walking or bike paths, so that they are not using their personal automobiles to enjoy the mall's attractions. It is important that there is plenty of connectivity developed and maintained between the Downtown Mall and its adjacent neighborhood, Starr Hill, as residents from nearby should have access to it and could contribute to its profits and success. While they are considered to be a luxury, and an attraction by some, the surface parking lots are counterproductive for sustainability, utilizing valuable real estate to accommodate the unsustainable practice of avoiding public transportation. Such parking areas could easily be converted to better satisfy the needs of the community at large.

Starr Hill, too, needs to cut back on its surface parking lots. While the walkability within Starr Hill is adequate, it could be improved once other elements (many having to do with building typologies & zoning) were adjusted. Once its currently excessive building scale, loose grid of side streets, and scarcity of attractions for visitors were made better, the neighborhood would have a demand for more bus lines and would start to form simpler methods of reaching the Downtown Mall.

Building Typologies

When it comes to building typologies, the Downtown Mall is more successful and sustainable than Starr Hill by incorporating plenty of mixed use buildings. It would be ideal for the Downtown Mall to develop more low-income housing options within its mixed used buildings that already exist. Both areas have the potential to gain a lot from their expansive parking surfaces being turned into sites for new mixed use buildings or even recreational areas, such as parks. Many of the parking lots in Starr Hill are accompanied by big box buildings, such as the Staples parking lot on Ridge McIntire Road. This section could potentially hold buildings that are several stories high and contain many amenities.

In Starr Hill, while parks and other spaces that have the potential to attract visitors are compacted into tiny areas and seem like afterthoughts, these big box buildings and their excessive parking spaces take over. Also, if it was made easier to cross Ridge McIntire Road, the connectivity between the Downtown Mall and Starr Hill would improve. The more types of space is grouped in one building, the more accessible and equal that place is. All three metrics are interconnected. To translate the success of the Downtown Mall to the Starr Hill neighborhood, much of the area must be redeveloped to emphasize the adjacency to the mall and to provide a similar experience to that of the Downtown Mall—one that features eating, shopping, living, and a number of other activities. Currently, the population density of Starr Hill is lower than that of the Downtown Mall, at 20,635 versus the Downtown Mall's 30,000 people per square mile. The more mixed used buildings developed and the more apartments including within these, the greater the density will be.

Equality of Places

In terms of equality of places, the main design goals for the two neighborhoods focus on integration and equality. The analysis of Starr Hill and the Downtown Mall revealed that there is a significant discrepancy between the two areas. As such, the main goal will be substantiating a connection between the two; they are currently interpreted as being almost entirely independent despite their proximity to one another. One method of connecting the two areas that was considered but ultimately discarded, was to create a pedestrian bridge crossing the busy street which joins Starr Hill and the Downtown Mall. This would maximize walkability between the two and create the opportunity for sharing of resources such as parks, retail, and entertainment areas for both neighborhoods. Unfortunately, it was determined that a bridge would be fiscally prohibitive, and difficult to incorporate into the current fabric of Charlottesville.

The second primary design goal would be to improve the Starr Hill neighborhood to incorporate many of the environmental and livable elements which can be found in the Downtown Mall, such as walkability and biophilic elements such as green roofs and LEED certified buildings. The Starr Hill park has a lot of potential to increase the environmental sustainability of the neighborhood. The park does not have much to offer with 0.4 acres. However, it is ample space for the creation of a community garden. Tanya Denckla Cobb, Director of the Institute for Environmental Negotiation Conversely, demonstrated in lecture the power a garden has to transform a community economically and socially. On the other hand, the Downtown Mall should focus on eliminating some of the unsustainable features that inhibit socioeconomic equality with the creation of affordable places to dine, purchase goods, and ultimately live. Both neighborhoods would benefit from the incorporation of these two spaces by bringing together two different communities.

Conclusion

Since January we have studied Starr Hill and the Downtown Mall with three main areas of focus: accessibility/transportation, building typologies, and the equality of spaces. Our group has studied both Starr Hill and the Downtown Mall through various sources of data, statistics, and maps in order to effectively research our three areas of concentration. Through this research and site visits to study the physical environment and atmosphere of the spaces, we were able to analyze and identify potential options of proper and applicable sustainable developments. Not only we have come up with possible solutions in shaping Starr Hill and the Downtown Mall to become more sustainable places, but we have also become more knowledgeable of our own community.

The question that guided our analysis throughout the project was, "What should we do to make the best use out of pre-existing elements in the area?" Creating new sustainable places is important, but what is more important is modifying, expanding, and strengthening unsustainable elements already existing in the area. Another condition we would like to consider and gather more data on is demographic diversity of the area. To furnish the most suitable sustainable development in Starr Hill and Downtown Mall that is both equitable and just to the people living in the area, we should understand the people as well as the area itself. If we could find a way to access to the specific data we are interested in, our design could be filled with more details and precision.

We assessed our work through a variety of diagrams and maps to depict bus routes, demographic statistics, the perimeters of Starr Hill and the Downtown Mall, and different building typologies of the two areas. We also included photographs to help the reader visualize both the Downtown Mall and Starr Hill. Our goal to integrate and improve two currently distinctive neighborhoods through socially, environmentally, and economically sustainable practices was highlighted by our three benchmarks. Ultimately, we concluded that the Downtown Mall surpasses Starr Hill in terms of environmentally sustainable practices through equality of places, building typologies, and accessibility but lacks Starr Hill's commitment to providing a sustainable location for all to enjoy regardless of their socioeconomic status.

Lessons Learned

One barrier we came across while creating our project was generally “biting off more than we could chew.” First, we were trying to form elaborate designs that, realistically, were out of our hands. While the bridge reaching from the Downtown Mall to the isolated portion of Starr Hill close to its city center is a good idea, we finally realized we should only use it as a concept of the means for analysis of sustainable places. We did not need to conduct trifling processes such as making surveys for pedestrians we come across, because these could produce responses consisting of any range of knowledge about the topic of sustainability. We should not depend on their being reliable.

Additionally, we tried to split focus on too many themes. We resolved this issue by narrowing our focus onto three broad themes: building typologies, accessibility, and equality of places. We were influenced by our teaching assistant Tom’s suggestion of three themes; his examples were block size, building density, and transportation. He also thought that the ideas our group already had could be tied to Tim Beatley’s teachings about equality of places, especially in our early elaboration about the downtown demographics. All six of these themes are interrelated, and the titles are umbrellas over many aspects of a sustainable society.

When it comes to creating change, we learned about developing a “pattern language” and using this to apply our ideas of extending the sustainability of the downtown mall into the Starr Hill area of Charlottesville. A “pattern language” describes physical spaces that are desirable, and it replaces missing features in the city area of focus. We discovered that referring to precedents near and far helps us to catalog, map, analyze, and make adjustments to local sustainable places. We could analyze our idea of the connecting bridge using this pattern language.

Councilwoman Kathy Galvin spoke a lot about creating change, specifically in Charlottesville. In 2000, members of her Place-Design Task Force had to ask themselves: “How do we grow upward and increase density in these ten square miles of our city without hurting its quality of life?” They knew that development could not sprawl into the protected natural lands of Albemarle County. Currently, the density is about five dwelling-units per acre, but a minimum of seven dwelling-units per acre is preferred for an efficient bus system. The current public transit does not extend to industrial work locations where poor citizens could potentially be employed. Some solutions the Task Force advocates are mixed-used zoning and urban designs of blocks with sidewalks that encourage biking and walking. There is too much sprawl here; 77% of the city government and around 65% of education staff live outside of the city, according to Galvin. Water quality, air quality, business sustainability, equitable resources, and job diversity are all aspects that must be considered in forming a sustainable city. Visitors entering from far-stretching interstates to shop sustain the downtown mall economically. It would not thrive with support from only Charlottesville residents. People today have to change their way of thinking in order to transform their hometowns into sustainable places. New zoning should place every necessity in close proximity for less reliance on automobiles. Charlottesville is not generally equity-oriented, with high unemployment in its poor sections, and jobs being occupied by eligible employees who drive in from outside of the city daily to work. Another consideration is the coexistence of human habitat and environmental protection.

If we did this assignment again, we would not get too wrapped up in the impracticality of creating a final product. The “product” of this project is our evaluation of sustainable places. We understood, gradually, what to look for in Starr Hill and how to draw from lessons in class, like those from Tim Beatley, and lessons in discussion to examine the sustainability of a place and to decide what sustainability means.

BIBLIOGRAPHY

- Beauregard, Leslie. "City of Charlottesville, Virginia City Council Agenda ." 2012.Web. 21 Apr. 2013.<http://charlottesville.granicus.com/DocumentViewer.php?file=charlottesville_2a8923ab16251ae059e90fe0813bf0e2.pdf&view=&showpdf=1>.
- "Census Tract 001000 in Charlottesville City County, Virginia." USA.com : Location information of the United States. World Media Group, n.d. Web. 21 Apr. 2013. <<http://www.usa.com/VA540001000.html>>.
- "Charlottesville city QuickFacts from the US Census Bureau." State and County QuickFacts. United States Census Bureau, 11 Mar. 2013. Web. 21 Apr. 2013. <<http://quickfacts.census.gov/qfd/states/51/51540.html>>.
- "Charlottesville: Starr Hill Park." Charlottesville: Home. City of Charlottesville, n.d. Web. 21 Apr. 2013. <<http://www.charlottesville.org/index.aspx?page=403>>.
- "Charlottesville, Virginia" City-Data. Advameg, Inc, 2012. Web. 21 Apr. 2013. <<http://www.city-data.com/city/Charlottesville-Virginia.html>>
- "Code of Ordinances." Municode. The Municipality, 17 Dec. 2012. Web. 21 Apr. 2013. <library.municode.com/index.aspx?clientID=12078&stateID=46&statename=Virginia>.
- "Environmental Sustainability." City of Charlottesville. 2011.Web. 28 Apr. 2013. <<http://www.charlottesville.org/Index.aspx?page=554>>.
- "Green Roofs." 2011.Web. 02 May 2013. <<http://www.charlottesville.org/Index.aspx?page=2270>>.
- LowIncomeHousing.US. "Low Income Housing." 2013.Web. 02 May 2013 <http://www.lowincomehousing.us/det/22902-5562-midway_manor>.
- "Sidewalks." City of Charlottesville. 2011.Web. 02 May 2013 <<http://www.charlottesville.org/index.aspx?page=3009>>.
- "The Haven."Web. <<http://www.thehavenatfirststandmarket.org/the-haven/>>.
- Timothy Beatley and Kristy Manning, "Envisioning Sustainable Places," *The Ecology of Place: Planning for Environment, Economy, and Community*, pp.27-39 Copyright © 1997 by Island Press. Reprinted in Phoebe Crisman and Mark White, *Global Sustainability: Preliminary Edition*, pp.177-183 Copyright © 2013 by Cognella Academic Publishing
- "Traffic Engineering" City of Charlottesville. 2011.Web. 02 May 2013 <<http://www.charlottesville.org/Index.aspx?page=1421>>