DEVELOPMENT OF A COMPREHENSIVE SITE DESIGN FOR THE UVA IVY CORRIDOR PHASE II PROJECT

ADDRESSING INCLUSIVITY IN PUBLIC SPACES

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On my honor as a University student, I have neither given nor received unauthorized aid on this assignment as defined by the Honor Guidelines for Thesis-Related Assignments.

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Introduction

In response to a growing student and faculty population, a need to maintain infrastructure, a desire to maintain prestige, and a goal to develop contemporary yet classic sites that suitably compliment the historic roots of this institution, the University of Virginia (UVA) has undertaken roughly $2.8 billion worth of construction projects under the 2022 Major Capital Plan (Knott, 2022). Such projects include the Brandon Avenue Project, the renovations of the Alderman Library, and the remodeling of various research labs in the science academic buildings (Knott, 2022).

One ongoing multi-phase construction project known as the Ivy Corridor project intends to transform the currently underutilized existing conditions of the Emmet and Ivy intersection into an active community space for students, staff, and visitors. The technical project will involve a redesign of stormwater management systems, utility lines, transportation routes, and a building layout for the Phase II section of the Ivy Corridor. The Science, Technology, and Society (STS) project focuses on the inclusivity of urbanizing public spaces through an analogous case study on the High Line project in New York city, which showcases a contrast between the project's technical feats and its social consequences, such as gentrification, on local communities.

In order to recreate the Ivy Corridor site, design specifications must be examined so that the site functions properly and remains compliant under Charlottesville zoning regulations, design standards, and applied calculations. However, this project also reflects the greater and costly ambitions of the University, who hope to portray itself as a welcoming and leading institution through these projects. In order to successfully achieve this goal, UVA must create public spaces that are not only modernized, but inclusive and accessible as well. Thus, the site design must address both its technical components and the social biases that it may exude.

Below, I will elaborate on the civil engineering disciplines involved in analyzing the Ivy Corridor Phase II site, as well as apply the STS framework of Technological Politics when examining the inclusivity of public spaces in the High Line project.

Technical Project Proposal

The University of Virginia's Ivy Corridor, zoned as Urban Corridor (URB) and an entrance corridor overlay district, is under the jurisdiction of the City of Charlottesville. Per the City's code, this site should serve as a mixed-use center that encourages pedestrian travel, provides appealing street fronts, and fosters economic development (City of Charlottesville, 2022). Its prime location along the intersection of two major roads of access, Emmet Street and Ivy Road, along with its proximity to Central, Arts, West, and North Grounds, makes this site a key attraction for both UVA affiliates and the greater Charlottesville community (VHB, n.d.).

Shown in Figure 1, Phase II is approximately five acres in coverage and is bounded by Ivy Road, Copeley Road, railroad tracks, and Phase 1, which is already under construction with the addition of the School of Data Science building and hotel (VHB, n.d.). Currently, Phase II holds apartment complexes, a 7-Eleven building, and academic institution buildings. Water, stormwater, sewer, and all other utility lines appropriately run throughout the site given the existing conditions. Furthermore, buildings are isolated from one another, minimal green space exists through parking islands and small sections of turf, and very little to no non-vehicular travel means, such as sitewide sidewalks, have been implemented.

Figure 1. Aerial view of the Ivy Corridor Project with Phase II outlined on the left. Image was captured via Google Earth.

Although Phase II already serves as a multi-use site, its current layout and features are not on par with the expectations outlined by the zoning code and University, who envisioned this space as an inviting and bustling hub. First, the current layout is unaesthetic due to its disjointed features and misplacement of structures, such as the lack of screening for the parking lots visible along Ivy Road. These factors inhibit the growth of a vibrant community and make the site visually unappealing, despite it being one of the first sites that visitors pass by when touring UVA. Although the site is situated at a low point of a watershed, there are minimal best management practices (BMPs) in place, increasing the probability of flooding during large storm events (VHB, n.d.). Additionally, statistics show that the total student population has been increasing steadily over the past five years (University of Virginia, n.d.). However, the existing multifamily units are sporadically situated and do not take advantage of building height for maximum residency, making this an underused space that does not reflect the growing demands of rising enrollment. Redesigning the site as a blank slate will increase the functionality of the space and improve its aesthetic attraction, cultivating a positive environment and maximizing the economic value of this land.

The aim of this project is to design a new layout for the Phase II site that reflects the visions of the University, satisfies the expectations of stakeholders, and seamlessly blends with adjoining sites. The design will be adopted by integrating roughly 300,000 gross square feet (GSF) of residential space, 50,000 GSF of dining space, and 100,000 GSF of academic space. An interactive stormwater management feature and an amphitheater or outdoor classroom element will also be included to make the space more unique and attractive (Marshall Agee, 2022).

Several civil engineering fields will need to be covered to create a successful design. In order to improve mobility and the cohesiveness of the site, multimodal transit, which includes car, bike, pedestrian, and public transportation, will be mapped using design standards from the Virginia Department of Transportation (VDOT), the Federal Highway Administration (FHWA), and the American with Disabilities Act (ADA). To appropriately address stormwater management, runoff and storage volume quantities will be calculated based on changes in land cover, and stormwater quality will be in compliance with calculations obtained from the Virginia Runoff Reduction Method (VRRM). Additionally, the topographic elevations of the site will be readjusted through surface grading via Autodesk Civil 3D software, existing utility lines will be rerouted or extended to accommodate the new structures, and erosion and sediment control procedures will be enacted. Finally, sustainability will be a key factor in producing a modern and prestigious design, which will be accomplished using the Leadership in Energy and Environmental Design (LEED) guidelines under the Neighborhood Development rating system (U.S. Green Building Council, n.d.). Weekly team meetings will be held with land development project manager Marshall Agee and faculty advisor Teresa Culver for valuable feedback on the design process.

STS Project Proposal

Given the projection that "two-thirds of the world will be living in urban areas" by 2050, the United Nations has adopted the Sustainable Development Goal (SDG) to work towards building cities that are "inclusive, safe, resilient, and sustainable" (United Nations, n.d.). In order to address these changes, the urbanization of public spaces must be considered. Public spaces are broadly defined as areas that are open for the public to use, such as parks and squares (Mitchell & Staeheli, 2009). Depending on their level of inclusivity, these spaces affect the sense of community in a region, which in turn impacts the well-being and health of the individuals living there (Ouf & El Zafarany, 2018). Many groups of people on the basis of race, ethnicity, gender, income, and disability may be included or excluded from a public space (Mitchell & Staeheli, 2009). A case study of The High Line in New York City will be conducted to better understand inclusivity in public spaces.

According to the non-profit creators of the park, the Friends of the High Line, the High Line is an approximately 1.5-mile-long linear park located in Manhattan at the site of an elevated railroad dating as far back as the 1930's. Over time, dependence on rail transportation declined, pushing this rail line to disservice. The structure was not properly maintained and consequently became a highly unattractive feature within this community. Rather than demolishing the site, they instead transformed this site into a public space in 2009 for use by local communities. The distinguishing feature of this park is its immense amount of green space yielding 110,000 plant species and over 15 garden spaces. Native and durable plants were intentionally selected to create a sustainable landscape. This space also features multiple modern amenities, such as contemporary artwork, amphitheater seating, and overlooks, as well as walkway connections that improve site accessibility and walkability (Friends of the High Line, n.d.).

The High Line has often been championed as a leading example of innovative public spaces and reuse. The annual attraction of 300,000 tourists, grand sustainability measures, site aesthetics, and "rags to riches" backstory help to reinforce this belief (Bliss, 2017). However, this perspective fails to adequately address the impact that the High Line has had on the immediate local community surrounding it. Despite neighboring communities being composed of a considerable population of people of color, the High Line is known to be "overwhelmingly white," suggesting that local residents do not access the park; reasons for this trend include a lack of representation and an oversight of their needs (Bliss, 2017; Jo Black & Richards, 2020). Zoning regulations were intentionally adjusted by city officials to allow developers to build taller infrastructure adjacent to the park in exchange for contributions towards the High Line project, leading to an economic boom near the site and gentrification in the area (Jacobs, 2017). Furthermore, local lower income residents also have to combat rising housing prices and costs of living as a result of the opening of nearby high-end shops and restaurants (Jo Black & Richards, 2020). Such changes were made to attract tourists and new higher income residents, resulting in the neglect of the original community.

If left unresolved, current residents would have to constantly live with the fear of displacement or actually become displaced if economic burdens become too extreme; in either case, the issue would take a huge toll on their mental health, and the community itself would become increasingly financially segregated (Bliss, 2017; Ouf & El Zafarany, 2018). On the other hand, by addressing concerns of gentrification at the High Line, there exists opportunities for the true needs of residents to be heard and for measures to be enacted in order to raise job and housing securities, rebuild spaces so that they are safe and equitable, and regulate changes in

zoning (Bliss, 2017). Doing so would provide lessons learned that may be applied to other future adaptive reuse projects (Bliss, 2017).

I argue that the High Line marginalizes local communities, many of whom are minority groups and working class citizens, in exchange for economic proliferation and prestigious site recognition. Technological Politics will be the STS framework that I implement in order to analyze this case (Winner, 1980). This framework analyzes the way in which technology has politics, or the ability to shape power dynamics, causing different groups of people to be marginalized or privileged; these imbalances are due to biases that are either explicitly or implicitly exuded towards these groups (Winner, 1980). This study blends implicit bias, as exhibited by the Friends of the High Line's genuine attempt to repurpose an unused public space, and explicit bias, as seen with city officials supporting gentrification through intentional code updates. Evidence will be gathered from news articles, testimony from site visitors, and statistical data comparing pre and post park conditions.

Conclusion

The technical portion of this project will yield a holistic and functional Ivy Corridor design that balances the needs of access, mobility, required square footage, and sustainability. The STS portion will draw from Technological Politics to better understand the inequity that is embedded in the High Line after its transformation into an urban public space, conveying the factors at play when bias influences the design of a project. Together, these projects address ways in which an underutilized space could be transformed into a purposeful and valuable site, all while considering the social consequences that may emerge as a result of these technical decisions. The lessons learned from the High Line project will be used to guide necessary design revisions to the Ivy Corridor Phase II site.

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