

UNEARTHED: RESILIENT COMMUNITIES FOR THE UNHOUSED IN LAS VEGAS

by

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Chapter 1: Las Vegas Homeless Populations

Research Question

This thesis aims to solve this problem by posing questions of:

How can an innovative architectural solution create a safe, livable space for unsheltered individuals who live in the tunnels of Las Vegas?

- How can the use of a new architectural solution allow individuals to exit homelessness?
- How might introducing new stormwater management technologies create a habitable space at the proposed location?

Introduction

Homelessness is seen as an individual without access to permanent housing options and stability. However, there are many different forms and levels of homelessness, ranging from unsheltered, sheltered, inconsistent, or at-risk. A sheltered homeless individual has temporary housing in a shelter or other emergency housing living arrangements. An individual who is at risk for homelessness does not have access to stable housing or the resources to obtain stable housing. An unsheltered homeless individual does not have access to temporary or permanent shelter and often uses other areas or spaces that are not meant for human habitation. With these varying forms, there are associated risks that impact individuals experiencing homelessness differently. Unsheltered homeless individuals are exposed to climate conditions and extreme weather situations since they do not have access to

a habitable shelter. Along with inadequate housing opportunities, they often do not have access to stable food supplies, medical care, and resources, and opportunities to educate and access services to exit homelessness through permanent and stable supportive housing. These conditions create a hostile, unhygienic, and ill-reputed environment that can expose individuals to toxins, diseases, and illnesses in their environment. This is true for the unsheltered homeless population of Las Vegas.



Figure 1. Flooding of the Las Vegas Tunnel Encampments

In the tunnels underneath the Las Vegas strip, there are ~2,000 homeless individuals who live there. The tunnel acts as a shelter, but it is not supposed to be inhabited by humans. Yet, with the decrease in shelter beds and services, this is one of the only areas providing a sense of shelter and community as a large population of individuals live here. However, the tunnel is a part of the stormwater management network for the city of Las Vegas, which connects to the Las Vegas River. When there is heavy rainfall, the tunnel begins to flood, forcing these individuals out of the shelter with their belongings (*figure 1*).¹ Since the overflow is from the Las Vegas

¹ Banghart, Robert. 2022a. Recent Heavy Rains Flooded Underground Living Spaces, Forcing Homeless to Scamper, with Shine A Light Volunteers Assisting. . 8newsnow.a

River, the river contains different contaminants that pose significant health risks when humans interact with the water. This is true for the unsheltered homeless population who live in the tunnel since they have direct contact with the water when the tunnel floors are flooded, and the leftover water when they create their homes again.

The current limited amount of shelter beds, resources, social services, policies, and ordinances do not favor these individuals but penalize them for being homeless in the city. While businesses, hotels, tourists, and daily life occur on the strip, the unsheltered population is physically, socially, and economically isolated from the general population.

Moving Forward

While there is no one solution to this challenge, including a multi-programmatic space focused on creating a supportive system can provide a pathway to permanently exit homelessness. A supportive campus that includes temporary and permanent housing opportunities, mental health services, food services and access, green spaces, community areas, job education, and social services can create an environment that provides resources and support through design and programmatic intervention. The services of this campus aim to provide a structured program of support for unsheltered homeless individuals who are experiencing chronic homelessness. This program will be in the form of 4 stages: Introductory Housing, Temporary Housing, Transitional Housing, and Permanent Housing. Each stage of the program will offer distinct tools and resources for each individual during their journey to exit homelessness. This program will be provided to individuals in the

same space to reduce the challenges of mobility and accessibility while providing equity and inclusivity for all homeless individuals involved.

The stormwater management portion of this project will be represented through gardens, which will raise awareness of the former shelter of unsheltered homeless individuals. The tunnel will be closed as to discourage its future use for sheltering homeless individuals. The exterior entrance of the tunnel will be transformed to include green technologies. An open garden in the stormwater management tunnel will be a part of the new infrastructure of the campus, creating a space for reflection and healing and a new environment that promotes the future and betterment of individuals. This system will use infrastructural advancements in water filtration and sustainable methods to capture and filter the water so individuals do not come into contact with contaminated water sources. The new biophilic designs and technologies will work with the campus to provide green areas for the population. This proposed supportive housing campus aims to include resources and skills provided by the community and professional workers to create a new environment that allows individuals to obtain the methods to exit homelessness

Chapter 2: What is Homelessness? : Causes, Consequences & Remedies

Introduction

Homelessness is a critical social, policy, and economic issue that affects diverse individuals in various geographical regions, yet is defined as a lack of stable, safe, and permanent housing. The situation's complexity is not relegated to one area or socio-economic group but can affect anyone. Homelessness poses significant challenges to those experiencing the problem and to the community, policymakers, local governments, and organizations wanting to help. The complexities and side effects of homelessness are made worse by environmental factors, mental illness, substance abuse, gambling addiction, and systemic barriers surrounding housing stability and healthcare services. This chapter acts as a literature review to synthesize the information, misconceptions, current challenges, and possible solutions to homelessness through 3 distinct themes: health impacts of homelessness, challenges faced by vulnerable populations, and interventions and strategies for housing stability. These themes will have subthemes throughout to provide context and explanation through scholarly sources. By exploring these themes, this review aims to provide the urgent need for action for the most vulnerable population among homeless individuals: unsheltered homelessness.

Theme One: Health Impacts of Homelessness

There are multiple health impacts that are caused by prolonged experiences with homelessness or are existing conditions that are exacerbated through experiences with homelessness. In major urban areas, individuals can be exposed to various illnesses

and diseases due to a lack of resources, hygiene standards, sanitation of the area, and environmental conditions. This is due to the process of homelessness, as it can be due to a variety of factors, such as addictions (i.e., shopping, gambling, drugs, substances, or alcohol), mental health illnesses, and housing instability.² In turn, this can impact physical, mental, social, and financial well-being from the uncertainty of having permanent housing or being homeless.³ Furthermore, the stressors of being homeless can create cognitive disrepair, causing individuals to have challenges finding the appropriate treatment methods.⁴ This theme will consider the physical, mental, and systemic barriers surrounding healthcare services and the stigmas associated with the homeless population.

1.1 Physical Health Consequences of Homelessness

The physical health of a homeless individual depends on various factors, such as access to shelter, healthcare, food, methods of hygiene, and exposure to illnesses and diseases. The lack of consistent, safe, and stable housing often impacts an individual exposure to such disease. This can affect the life expectancy of an individual experiencing homelessness. For example, inadequate access to safe

²Deutscher, K et al. (2023). The Prevalence of Problem Gambling and Gambling Disorder Among Homeless People: A Systematic Review And Meta-Analysis. *Journal of Gambling Studies*, 39(2), 467–482. <https://doi-org.proxy-um.researchport.umd.edu/10.1007/s10899-022-10140-8>

³ Bose, A., et al. (2023). Lost in the cityscape: Exploring urban homelessness, its societal imprints and policy suggestions. *Societal Impacts*, 1(1–2), 100026. <https://doi.org/10.1016/j.socimp.2023.100026> ;

Presnall, L et al. (2023). Predictors of self-reported general health status in people experiencing homelessness with serious mental illness. *Quality of Life Research*, 32(7), 2003–2011. <https://doi-org.proxy-um.researchport.umd.edu/10.1007/s11136-023-03370-9>

⁴ Depp, Colin A, et al. “A Quantitative Review of Cognitive Functioning in Homeless Adults.” *Journal of Nervous & Mental Disease* 203, no. 2 (February 2015): 126–31.

doi:10.1097/nmd.0000000000000248. ; Spence, Sean, Richard Stevens, and Randolph Parks.

“Cognitive Dysfunction in Homeless Adults: A Systematic Review.” *Journal of the Royal Society of Medicine* 97, no. 8 (August 2004): 375–79. doi:10.1177/014107680409700804.

running water can create hygiene problems and related illnesses, specifically for unsheltered homeless individuals.⁵ This can develop diseases that can be spread throughout the population and have long-lasting effects on an individual.

Furthermore, people with chronic diseases (i.e., diabetes, heart disease, asthma, HIV/AIDS) are at risk of developing into worse conditions due to the inaccessibility of a health clinic and consistent appointments to treat the disease.⁶ These health conditions can be categorized into chronic and contagious infectious diseases.

1.1.1 Contagious Infectious Diseases

Contagious diseases are a significant risk for homeless individuals since they often live in large community settings with minimal space between individuals. This can encourage the spread of these diseases, such as tuberculosis, HEP-C, and HIV, throughout the community setting since there are minimal health services and access to a clinic that can provide treatment, thus increasing the exposure and mortality rate among this population.⁷ While contagious diseases are a challenge in the homeless community, environmental factors that cause these illnesses are highly volatile and impact the population at large.

Unsheltered homeless individuals are often exposed to the elements since they do not have access to safe and hygienic sources of shelter and are forced to use unconventional structures to act as shelter locations. Homeless individuals are often

⁵ Anthonj, C., et al. (2024). Invisible struggles: Wash insecurity and implications of extreme weather among urban homeless in high-income countries - A systematic scoping review. *International Journal of Hygiene and Environmental Health*, 255, 114285. <https://doi.org/10.1016/j.ijheh.2023.114285>

⁶ Hwang, Stephen W. "Homelessness and Health." *Canadian Medical Association Journal* 164, no. 2 (January 23, 2001): 229–33. doi:PMC80688.

⁷ Beijer, Ulla, Achim Wolf, and Seena Fazel. "Prevalence of Tuberculosis, Hepatitis C Virus, and HIV in Homeless People: A Systematic Review and Meta-Analysis." *The Lancet Infectious Diseases* 12, no. 11 (November 2012): 859–70. doi:10.1016/s1473-3099(12)70177-9.

unsheltered in warmer climates since the weather is more tolerable than in colder climates, where shelter is needed.⁸ Furthermore, as individuals stay outside for extended periods, they can be exposed to illnesses from environmental factors such as contaminated water sources. This is similar to a research conclusion about the idea of warmer weather conditions and the number of unsheltered homeless individuals, specifically those who may have contact with water sources that may contain bacteria or fecal matter from such populations.⁹ This leaves the homeless population vulnerable and exposed to illnesses they have come into contact with from undefined and unregulated water sources, which can create life-threatening situations if left untreated or exposed to these sources consistently.

1.1.2 Chronic Diseases

Chronic illnesses can create more significant side effects in homeless individuals when the correct medications and health care are not in place. This is true as individuals with diabetes do not have access to drugs such as insulin and food diets to aid in mitigating the impacts of the disease, thus causing more harm to the individual.¹⁰ Irregular access to health care services creates challenges in managing these diseases. It exacerbates the problems, creating an environment where these diseases, such as asthma and hypertension, can flare due to surrounding

⁸ Corinth, K., & Lucas, D. S. (2018). When warm and cold don't mix: The implications of climate for the determinants of homelessness. *Journal of Housing Economics*, 41, 45–56. <https://doi.org/10.1016/j.jhe.2018.01.001>

⁹ Anthonj et al., Invisible struggles: Wash insecurity and implications of extreme weather among urban homeless in high-income countries - A systematic scoping review. *International Journal of Hygiene and Environmental Health*, 2024; Gerrity, D., et al. (2022). Characterizing the chemical and microbial fingerprint of unsheltered homelessness in an urban watershed. *Science of The Total Environment*, 840, 156714. <https://doi.org/10.1016/j.scitotenv.2022.156714>

¹⁰ Beijer et al., Prevalence of Tuberculosis, Hepatitis C Virus, and HIV in Homeless People: A Systematic Review and Meta-Analysis 2012.

environmental living situations, especially if the individual is homeless and does not have consistent shelter.¹¹ These health disparities are higher for homeless individuals, displaying a thread of a lack of health intervention that can provide the needed medical care for these individuals.

1.2 Mental Health Consequences of Homelessness

There are multiple impacts of health disparities among homeless individuals, including cognitive impairments and mental health illnesses, from prolonged exposure to homelessness. This is also true for different forms of addictions and abuse, as they can have varying effects on an individual's mental state, causing them to move further into homelessness or increasing challenges associated with trying to return to society. Furthermore, some shelters or social services provide housing assistance but not health-related care for individuals. For example, senior citizens who are homeless and experiencing mental health challenges that impact their cognition and behavior around others are often scared of being institutionalized due to the lack of resources associated with mental health solutions and treatment programs.¹² These challenges not only impact an individual's chance of exiting homelessness but also finding supportive housing that offers treatment for mental health or addictions.

1.2.1 Psychological Disorders and Cognitive Impairments

¹¹ Bensken, Wyatt P., et al. "Health Status and Chronic Disease Burden of the Homeless Population: An Analysis of Two Decades of Multi-Institutional Electronic Medical Records." *Journal of Health Care for the Poor and Underserved* 32, no. 3 (2021): 1619–34. doi:10.1353/hpu.2021.0153.

¹² Stergiopoulos, Vicky, and Nathan Herrmann. "Old and Homeless: A Review and Survey of Older Adults Who Use Shelters in an Urban Setting." *The Canadian Journal of Psychiatry* 48, no. 6 (July 2003): 374–80. doi:10.1177/070674370304800603.

Cognitive impairments and psychological disorders can be pre-existing in individuals before they become homeless. These conditions can be made worse through chronic exposure to homelessness and environmental factors that can influence a person's perception. This is also true for individuals who do not have any pre-existing conditions before becoming homeless. Long-term exposure to homelessness can diminish an individual's motor skills and be caused by a variety of traumas ranging from physical abuse to substance abuse.¹³ These cognitive impairments are caused by trauma to the brain, leading to a decline in mental state and functions. This is also true for individuals who have existing mental health illnesses such as schizophrenia, as such prolonged exposures create permanent situations where the brain cannot heal itself.¹⁴ This causes individuals with these conditions to require special care and housing. Since these are complex needs of the homeless population, many shelters do not offer services, causing a gap in services provided and creating a stigma surrounding this problem.¹⁵ This stigma can create barriers for individuals trying to gain the resources they need to achieve a stable housing option.

1.2.2 Addictions and Abuse

There are many types of abuse and addiction. Yet, the distinction between abuse and addiction is that abuse is the overconsumption of a vice to the point where it is detrimental to the user. In contrast, addiction is the dependence on a vice, as,

¹³ Depp et al., *A Quantitative Review of Cognitive Functioning in Homeless Adults*, 2015.

¹⁴ Spence, Sean, Richard Stevens, and Randolph Parks. "Cognitive Dysfunction in Homeless Adults: A Systematic Review. 2004

¹⁵ Dobson, R. (2022). Complex needs in homelessness practice: a review of "new markets of vulnerability." *Housing Studies*, 37(7), 1147–1173. <https://doi-org.proxy-um.researchport.umd.edu/10.1080/02673037.2018.1556784>

without overconsumption, there are withdrawal effects. The types are physical, mental, substance, gambling, and alcohol. One of the lesser-known additions is gambling, as it impacts the cognitive and economic state of individuals, causing them to become homeless. For example, Las Vegas encourages the act of gambling through signs and promotions to encourage patrons to enter the casino. This can be detrimental for an individual experiencing an addiction because the number of advertisements and access to gambling devices can lead to increased gambling problems or addictions.¹⁶ More specifically, in Las Vegas, gambling accounts for 25 per 10,000 inhabitants who are homeless.¹⁷

This can also apply to prolonged exposure to abuse and addiction for senior homeless individuals, as services can be geared toward individuals who have better mobility and mental health, as individuals with these challenges require more aid in their daily lives.¹⁸ Since these services are not offered on a larger scale, most individuals do not receive treatment for their addictions, leading to chronic diseases or cognitive challenges in the future. In addition, addiction and abuse are considered predictors in determining whether an individual will enter homelessness, as these factors can influence an individual's daily life.¹⁹ Without proper treatment and

¹⁶ Bramley, S., Norrie, C., & Jill, M. (2018). Gambling-related harms and homelessness: findings from a scoping review. *Housing, Care and Support*, 21(1), 26-39. <https://doi.org/10.1108/HCS-02-2018-0003>

¹⁷ Corinth, K., & Lucas, D. S. When warm and cold don't mix: The implications of climate for the determinants of homelessness. *Journal of Housing Economics*. 2018.

¹⁸ Crane, Maureen, and Louise Joly. "Older Homeless People: Increasing Numbers and Changing Needs." *Reviews in Clinical Gerontology* 24, no. 4 (October 31, 2014): 255–68. doi:10.1017/s095925981400015x.

¹⁹ Nilsson, Sandra Feodor, Merete Nordentoft, and Carsten Hjorthøj. "Individual-Level Predictors for Becoming Homeless and Exiting Homelessness: A Systematic Review and Meta-Analysis." *Journal of Urban Health* 96, no. 5 (August 6, 2019): 741–50. doi:10.1007/s11524-019-00377-x.

counseling services, the likelihood of an individual returning to homelessness is higher than if they can receive treatment and a supportive system.

Theme Two: Challenges Faced by Homeless Populations

There are multiple challenges that the homeless population faces daily that influence their ability to gain shelter, food, medical services, mental health care, and more. These systems are in place by policy recommendations, ordinances, racial inequalities, and preconceived notions about the lifestyle of the homeless community. This often characterizes media perceptions of homeless individuals. For example, in Brazil, there is a stigma surrounding creating effective care-related services for homeless individuals of all ages, as the media and society need to shift their understanding to represent a holistic understanding that these individuals deserve services and resources.²⁰ Furthermore, the lack of education about outreach and response creates a misguided attempt by social workers when providing these services to homeless individuals. This culminates in a material, resources, and skills gap, creating challenges with information and relationships.

2.1 Racial Biases and Systemic Inequalities

A challenge for homeless individuals is the racial biases and systematic inequalities that are present in resources, outreach, and recruitment efforts by organizations and local governmental policy initiatives. Historically, there has been discrimination and inequalities among African Americans, Hispanics, and Native

²⁰ Paiva, Irismar Karla, et al. "Homeless People's Right to Health: Reflections on the Problems and Components." *Ciência & Saúde Coletiva* 21, no. 8 (August 2016): 2595–2606. doi:10.1590/1413-81232015218.06892015.

Americans through economics, housing, and the response and outreach to homelessness, which have led to these demographics being largely represented in the homeless population.²¹ Thus, the racial biases between demographics create inequities in the services offered, life expectancy, and policing efforts.²² For example, the ‘racial mortality inversion’ theory explains that historically, white individuals have a higher life expectancy; yet when homelessness is inserted as a factor, the life expectancy of white individuals decreases while the life expectancy of black individuals increases.²³ This theory explains common misconceptions and stereotypes in society that are perpetuated through media outlets and hinder the services and resources provided to homeless individuals. These challenges are further encouraged through these individuals' demographics, outward appearances, attitudes, and willingness to change.

2.1.1 Policing Homeless Individuals

Through these misconceptions, there is research suggesting that there are social, physical, and mental challenges for homeless individuals; at the same time, some of the burden comes from society and its views of the population.²⁴ This also applies to the policing effort of the homeless population since research suggests that the police will either help, arrest, or assist homeless individuals based on the current

²¹ Fowle, Matthew Z. “Racialized Homelessness: A Review of Historical and Contemporary Causes of Racial Disparities in Homelessness.” *Housing Policy Debate* 32, no. 6 (March 30, 2022): 940–67. doi:10.1080/10511482.2022.2026995.

²² *Ibid*, 940-67.

²³ Fowle, Matthew, Jamie Chang, and Katherine Saxton. “‘Racial Mortality Inversion’: Black-White Disparities in Mortality among People Experiencing Homelessness in the United States.” *SSM - Population Health* 27 (September 2024): 101688. doi:10.1016/j.ssmph.2024.101688.

²⁴ Dobson, R. (2022). Complex needs in homelessness practice: a review of “new markets of vulnerability.” *Housing Studies*, 37(7), 1147–1173. <https://doi-org.proxy-um.researchport.umd.edu/10.1080/02673037.2018.1556784>

state of their mental health and not their physical features.²⁵ The police's biased and stereotyped approach can negatively impact homeless populations by enforcing laws they believe are correct, despite their supposed role in helping the population. For example, Las Vegas's current affordable housing opportunities are reduced, forcing and creating risks for more people to experience homelessness. The locality is encouraging the police to implement policies to keep the city "safe" and "clean" against unsheltered populations.²⁶ These preconceived notions can prohibit services offered and resources, as there are implicit biases in the way policing can influence the relationship between homeless individuals and local governmental forces. In addition, while the biases are not delegated to one demographic, they can negatively impact the associated population because of the harms associated with the group and not the individual.

2.2 Barriers to Treatment

Outreach is a challenging communication between homeless individuals, volunteers, and social workers at an organization. These challenges are due to the outreach location (e.g., sheltered or unsheltered setting), the tone of voice, the phrasing used, and the follow-up of the initial meeting. A study conducted displays that sheltered individuals are more likely to be responsive and speak with individuals who offer services for more permanent housing opportunities, while unsheltered

²⁵ Burkhardt, B. C., et al. (2023). Understanding Public Preferences for Policing Homeless Individuals in the United States: Results from a National Survey. *Deviant Behavior*, 44(10), 1462–1479. <https://doi-org.proxy-um.researchport.umd.edu/10.1080/01639625.2023.2209692>

²⁶ Shaulis, Dahn, Kathleen Fairchild, and Kurt Borchard. Rep. Housing Availability and Homelessness in Nevada Housing Availability and Homelessness in Nevada. *The Social Health of Nevada: Leading Indicators and Quality of Life in the Silver State*, 2012.

individuals would not, as most have had bad experiences in the past.²⁷ This suggests that the methods and principles used have caused traumas in the past, which makes these methods ineffective and warrants a change to encourage a more personal approach. Furthermore, speaking to homeless individuals about the services they want to see offered and ways to bring the services to the individual, as this creates and builds relationships among the population with nonprofit organizations, is critical in effectively engaging.²⁸ Without this source of engagement and support, individuals are not being engaged in a way that promotes a sense of community or efforts to provide them with stable living accommodations.

2.2.2 Minimal Service & Program Types

The services offered in distinct organizations provide specialized services, but require others to fill the gaps left behind. These services are often provided to individuals with mental health illnesses, behavioral challenges, senior citizen programs, and services for youth and families. Professors of the RAND organization explain that programs offered for homeless individuals are generic and do not reach the different demographics of the homeless population.²⁹ These services are often educational opportunities relating to permanent housing, job training, and counseling services.

²⁷ Weare, Christopher. "Housing Outcomes for Homeless Individuals in Street Outreach Compared to Shelter." *Journal of Poverty* 25, no. 6 (January 25, 2021): 543–61.

doi:10.1080/10875549.2020.1869664.

²⁸ : Olivet, Jeffrey., et al. "Outreach and Engagement in Homeless Services: A Review of the Literature." *The Open Health Services and Policy Journal* 4 (March 22, 2011): 53–70.

doi:10.2174/1874924001003010053].

²⁹ McDonald, Keisha., et al. "Perceptions from Emerging Adults with a History of Homelessness on Their Experiences with Housing, Health and Other Support Services." *Children and Youth Services Review* 160 (May 2024): 107555. doi:10.1016/j.childyouth.2024.107555.

This also applies to homeless families looking for programs to provide them with services and resources for a family unit. The distinct family homeless experiences (i.e., episodic, chronic, and transitional) create economic hardships, traumas, abusive situations, and housing insecurities that require a more nuanced and holistic approach that includes services related to food access, stable housing, counseling, and mental health services to remove them from a cycle of poverty and homelessness.³⁰ This creates challenges in outreach efforts and encourages individuals to use the resources and program being offered, as it may not apply to their specific situation, creating a deeper cycle of poverty and hardships in exiting homelessness.

2.3 Social Isolation and Stereotypes

In challenges faced by homeless individuals, society will place its personal biases and stereotypes of an individual and blame them for their circumstances. Society will try to suggest superficial solutions or ignore individuals who are in the cycle of homelessness. For example, the Las Vegas community is distinct from traditional ones as it serves as a tourist destination, housing permanent residents and a significant homeless population that lives in their spheres of influence.³¹ The Las Vegas residential community and local government aim to segregate and isolate these individuals, as it does not fit with their visual appearance and aesthetics. This type of isolation and social shame can make homeless individuals feel like their dignity is

³⁰ Culhane, Dennis P., et al. "Testing a Typology of Family Homelessness Based on Patterns of Public Shelter Utilization in Four U.S. Jurisdictions: Implications for Policy and Program Planning." *Housing Policy Debate* 18, no. 1 (January 2007): 1–28. doi:10.1080/10511482.2007.9521591.

³¹ Rowley, R. J. (2015). Multidimensional community and the Las Vegas experience. *GeoJournal*, 80(3), 393–410. <http://www.jstor.org/stable/24432626>

being lost due to the extreme measures taken to keep them away from the general public.³² While this impacts these individuals emotionally, there is a physical and mental impact, as there is no sense of community when being forcibly segregated through policy implementations and inaccurate public perceptions.

2.3.1 Ordinances and Policy Implementation

Several policies in place are forcing the isolation of homeless individuals and creating instances where homelessness can be considered illegal. For example, an ordinance in Las Vegas prohibits homeless individuals from asking for donations or receiving food in specific locations, creating challenges with receiving these needed resources.³³ Policies like this do not provide compassion or moral decency for unsheltered individuals but penalize them. The creation of this ordinance does not encourage an approach to services and solutions that are being provided, but shifts the blame to other entities. Personal anecdotes of these policies' impact on homeless individuals show that these policies aim only to help business owners and tourists who may come to the city. For example, the personal story of Joe, a homeless individual on the Las Vegas strip, discusses the visible and invisible segregation efforts of the city to create a barrier to keep homelessness from being visually seen.³⁴ These segregation efforts also encourage residents and visitors to ignore these individuals, creating a sense of social isolation and unworthiness. The barrier also

³² Gunn, Jennie A., Gulenia Rikabi, and Carroll Gunn Huebner. "Do You See Me? Ethical Considerations of the Homeless." *Online Journal of Health Ethics* 9 (July 23, 2013). doi:10.18785/ojhe.0901.04.

³³ Lay, Matthew D. "Do Not Feed the Homeless: One of the Meanest Cities for the Homeless Unconstitutionally Punishes the So-Called 'Enablers.'" *Nevada Law Journal*, 9, 8, no. 2 (2008): 740–64.

³⁴ Borchard, Kurt.. *Homeless in Las Vegas: Stories from the Street*. Reno, Nevada: University of Nevada Press, 2011.

applies to local nonprofit organizations providing materials and resources to these individuals.

2.3.2 Public Perceptions

There are multiple stereotypes and misconceptions surrounding homeless individuals that are perpetuated and spread by individuals who read inaccurate accounts of these individuals and spread the misinformation. Men who are experiencing homelessness often receive a negative connotation (i.e., fear and sympathy) through challenging experiences that are being broadcast and highlighted in the media, creating a false narrative that is applied to all in the demographic.³⁵ This creates an overall negative public perception of this population, which can influence how outreach, programs, and services are offered to individuals in a similar demographic.

Nevertheless, this perception can have dire consequences for homeless individuals. For example, homeless individuals in Las Vegas explain that their daily lives are more complex than what is portrayed through stereotypes. There is often a misrepresentation among the population and public as having a more “leisurely” lifestyle.³⁶ However, this lifestyle prohibits individuals from choosing to live how they wish or choosing a safe job, often leading to their exploitation as they perform dangerous jobs for menial to no benefits.³⁷ A true narrative such as this highlights the

³⁵ Borchard, Kurt. “Fear of and Sympathy toward Homeless Men in Las Vegas.” *Humanity & Society* 24, no. 1 (February 2000): 3–18. doi:10.1177/016059760002400102.

³⁶ Borchard, Kurt. “Between Poverty and a Lifestyle: The Leisure Activities of Homeless People in Las Vegas.” *Journal of Contemporary Ethnography* 39, no. 4 (December 1, 2009): 441–66. doi:10.1177/0891241609341640.

³⁷ *Ibid.*, 441–66.

dangers of being homeless, as individuals can be forced to perform a task in exchange for the materials they need to survive.

2.4 Domestic Abuse & Exposure to Violence

Domestic abuse from a relative or partner creates challenges in the daily lives of the individuals being abused, as prolonged exposure to violence can create social, economic, and housing instability. Data collected from a study aimed to determine if there was a relationship between higher levels of exposure to violence and higher chances of becoming homeless and housing instability. The result of the study determined that there is a relationship, and the chance of homelessness rises exponentially if an individual lives with the abuser.³⁸ While more data is needed to understand the relationship better, the data begins to portray a trend of domestic abuse leading to permanent traumas that can impact the mental wellness of the individual being abused, creating a cycle of abuse and homelessness. This also applies to single mothers who are in a violent relationship with their partners, as they have fewer resources to relocate or move from the situations they are in, creating a challenging choice for individuals wanting to remove themselves from an abusive situation.³⁹ Since there are minimal programs and services offered that directly target this demographic, family units are at a higher rate of entering homelessness, creating a problematic situation to remove themselves and gain housing and economic stability.

³⁸ Fitzpatrick, Kevin M., Mark E. LaGory, and Ferris J. Ritchey. "Dangerous Places: Exposure to Violence and Its Mental Health Consequences for the Homeless." *American Journal of Orthopsychiatry* 69, no. 4 (1999): 438–47. doi:10.1037/h0080392.

³⁹ Browne, Angela, and Shari S. Bassuk. "Intimate Violence in the Lives of Homeless and Poor Housed Women: Prevalence and Patterns in an Ethnically Diverse Sample." *American Journal of Orthopsychiatry* 67, no. 2 (1997): 261–78. doi:10.1037/h0080230.

2.5 Affordable Housing Opportunities

Affordable housing opportunities have been dwindling since the housing crash of 2008 and the COVID-19 pandemic; housing prices and rent were exorbitantly priced, creating housing instability for many. The use of governmental policies, public opinion, and media perception created a narrative around homelessness and housing instability. It was found that a cause of homelessness among men and minorities was a lack of affordable housing among low- to middle-income individuals, which created a fight for resources, thus reinforcing the cycle of poverty and homelessness.⁴⁰ This introduces the idea of homelessness being a multi-dimensional problem where a lack of affordable housing options and opportunities is central to the problem. The misconceptions made by the public and local governments influence policy recommendations that do not include housing-based solutions, but only encourage the use of social welfare programs.⁴¹ This reduces the chance of including effective solutions that do not base the solutions on research and data but on public emotions about the problem. For example, this is seen in Las Vegas, where the number and diversity of shelter beds and housing types do not help the entire homeless population, as the homeless population is increasing.⁴² This creates a challenge for local and state governments to increase the amount of housing being provided; however, determining the type of housing concerning services

⁴⁰ Lee, Barrett A., Kimberly A. Tyler, and James D. Wright. "The New Homelessness Revisited." *Annual Review of Sociology* 36, no. 1 (June 1, 2010): 501–21. doi:10.1146/annurev-soc-070308-115940.

⁴¹ Toro, Paul A. "Toward an International Understanding of Homelessness." *Journal of Social Issues* 63, no. 3 (August 13, 2007): 461–81. doi:10.1111/j.1540-4560.2007.00519.x.

⁴² Rep. 2024. Southern Nevada Homelessness Continuum of Care Census Report. Help Hope Homeless. <https://thenevadaglobe.com/wp-content/uploads/2024/09/2024-PIT-Count-Executive-Summary-Final-Report-090524.pdf>.

offered will require investigations into the current population, as well as having a personal account for what is needed.

Theme Three: Interventions and Strategies for Housing Stability

While there are multiple solutions for solving the problem of homelessness, there are few programmatic strategies that are effective and offer permanent change for individuals are varying demographics. Supportive housing programs, refining the outreach process, and implementing policy considerations and recommendations prioritizing local organizations and long-term aid are beneficial in providing lasting change for homeless populations. For example, inclusion and health-related services and counseling have a higher impact on individuals than traditional housing programs.⁴³ As well as policy recommendations that encourage the policy changes that require social workers and outreach organizations to educate homeless individuals about the risks of homelessness, especially unsheltered risks, and provide them with nearby shelters and services for rapid use.⁴⁴ These potential solutions use the existing framework and aim to update the current policies, techniques, and programs offered for the services and resources provided to apply to more individuals, leading to a higher rate of individuals exiting homelessness.

⁴³ Aubry, Tim., et al. “Effectiveness of Permanent Supportive Housing and Income Assistance Interventions for Homeless Individuals in High-Income Countries: A Systematic Review.” *The Lancet Public Health* 5, no. 6 (June 2020). doi:10.1016/s2468-2667(20)30055-4.

⁴⁴ Montauk, Susan Louisa. “The Homeless in America: Adapting Your Practice.” *American Family Physician*. Last modified October 1, 2006. <https://www.aafp.org/pubs/afp/issues/2006/1001/p1132.html>.

3.1 Supportive Housing Opportunities

Supportive housing opportunities create a support system that creates a holistic approach to providing the necessary resources and programs for individuals permanently exiting homelessness. This solution allows for the complexity of an individual's current state and works within a personalized program that aims to be effective, transparent, and provide long-lasting change. This solution includes a variety of programmatic types to encourage economic stability and independence, social skills, and housing stability to reenter society without the risk of being homeless again. For example, the intensity of the program and methods should be based on the individual's current physical, mental, and social state as an individualized point that can help achieve stability and independence.⁴⁵ This method could encourage more individuals to be receptive and partake in programs that improve their overall quality of life.

3.1.1 Housing First Strategy v. Permanent Supportive Housing

The Housing First strategy uses the supportive housing model to prioritize individuals who do not have a stable housing situation by first providing housing and then additional services such as counseling, mental health services, substance abuse, and job education. This program aims to help chronically homeless individuals who are not finding affordable housing opportunities. The Housing First approach does not offer all the services provided on one site, as they are scattered throughout the housing area. The Permanent Supportive Housing strategy focuses on simultaneously providing resources, aid, and housing. These resources and programs are provided all

⁴⁵ Rog, Debra J., et al. "Permanent Supportive Housing: Assessing the Evidence." *Psychiatric Services* 65, no. 3 (March 2014): 287–94. doi:10.1176/appi.ps.201300261.

on one site, increasing inclusivity and reducing mobility challenges as every aspect is closely connected. Porchak et al. explain the inherent harms of providing scattered site methods to vulnerable populations, as it is harder to provide accountability for an individual going to their needed services and transportation difficulties.⁴⁶ However, using a temporary and permanent supportive housing site that includes all of the necessary services on one site can reduce the cost of providing the program, increase positive community collaboration efforts, and promote the safety and well-being of the individual.⁴⁷

Approaches such as these are similar in their programs, yet the methods, location, and funding may cater to different demographics of homeless individuals. While the permanent supportive housing approach is an all-encompassing program, it does require a lot of funding to provide all of the resources in one centralized location, with the chance of recouping losses of a social project being undetermined.⁴⁸ However, the value of having both of these programs is that they provide various levels of support for individuals who need more support in social relations, health, wellness, or other aspects of exiting their homelessness journey.

3.1.2 Design Characteristics

The supportive housing design is essential as it conveys feelings, approval, and shows the program's effectiveness for homeless populations. Features such as

⁴⁶ Porchak, Emily., et al. "Permanent Supportive Housing for Those Experiencing Chronic Homelessness with High Health or Social Support Needs: A Scoping Review." *Journal of Health Care for the Poor and Underserved* 34, no. 4 (November 2023): 1178–1209. doi:10.1353/hpu.2023.a912712.

⁴⁷ Ibid, 1178–1209.

⁴⁸ Jacob, Verughese. Et al., "Permanent Supportive Housing with Housing First: Findings from a Community Guide Systematic Economic Review." *American Journal of Preventive Medicine* 62, no. 3 (March 2022). doi:10.1016/j.amepre.2021.08.009.

privacy, safety, and accessibility are rare and vital when designing a large-scale mixed-use site that includes programs relating to supporting homeless individuals.⁴⁹ For example, health-related programs should be tailored to the programs offered, such as clinical health, mental health, substance abuse, counseling, and so on.⁵⁰ These features highlight the importance of independence through not sharing dwelling units with unfamiliar individuals, the site's location, the quality of the spaces provided, and access to nearby amenities. As these individuals are reentering society, they should not be socially isolated but near a location that encourages positive social interactions. Positive design features and location choices can create positive memories and opportunities for the homeless population to connect with the surrounding community on a grander scale. The design features that focus on privacy, safety, and accessibility also begin to create independence and freedom of movement and space, which can significantly enhance the mood of the individuals, leading to a more effective program experience.⁵¹ These aspects are critical when moving a sheltered and unsheltered individual to a stable housing environment, as there needs to be a robust support system to guide them throughout the process.

3.2 Engagement and Outreach Strategies

Current engagement and outreach opportunities lack in the services they provide to homeless communities and often do not foster relationships, leading to

⁴⁹ Rollings, Kimberly A., and Christina S. Bollo. "Permanent Supportive Housing Design Characteristics Associated with the Mental Health of Formerly Homeless Adults in the U.S. and Canada: An Integrative Review." *International Journal of Environmental Research and Public Health* 18, no. 18 (September 12, 2021): 9588. doi:10.3390/ijerph18189588.

⁵⁰ Jago, Maeva., et al. "Improving Health Care Management in Primary Care for Homeless People: A Literature Review." *International Journal of Environmental Research and Public Health* 15, no. 2 (February 10, 2018): 309. doi:10.3390/ijerph15020309.

⁵¹ Jacob, Verughese. Et al., *Permanent Supportive Housing with Housing First: Findings from a Community Guide Systematic Economic Review*. 2022.

ineffective and uninformative conversations. Impersonalized approaches can create negative experiences as there is no follow-up with resources and services. However, offering services that encourage local programs, such as mental health and counseling, can encourage homeless individuals to use these services and start to bridge the gap.⁵² Yet, offering local services is not the only way to increase social workers' and organizations' reactivity, effectiveness, and content. Redefining homelessness in the current context, including the complexities of daily life and challenges, can encourage a more realistic approach and understanding of which outreach and case management efforts will positively influence individuals exiting homelessness.

3.2.1 Redefining Homelessness

Redefining homelessness and creating a universal understanding of the indicators, challenges, and consequences of being chronically homeless is the first step to changing the narrative. In addition to explaining how environmental factors can worsen their physical, social, and mental outlook. Changing the narrative and rhetoric used surrounding homeless individuals can start to create an understanding of the real issues and not the ones thought of by the public. As explained through case studies dealing with these perceptions, it criticizes an unrealistic representation of the daily lives of homeless individuals, creating a challenge in providing the appropriate resources needed.⁵³ Yet, casting aside judgment for the population and listening to

⁵² Fitzpatrick-Lewis, et al "Effectiveness of Interventions to Improve the Health and Housing Status of Homeless People: A Rapid Systematic Review." *BMC Public Health* 11, no. 1 (August 10, 2011). doi:10.1186/1471-2458-11-638.

⁵³ Somerville, Peter. "Understanding Homelessness." *Housing, Theory and Society* 30, no. 4 (December 2013): 384–415. doi:10.1080/14036096.2012.756096.

their stories and background can make a program that includes the current challenges they face in exiting homelessness while changing the narrative.⁵⁴ This creates a corrected narrative about the resources needed and allows for this to be implemented into policies and plans surrounding homeless interventions. Yet, only using three factoring conditions, such as turnover in shelters, personal characteristics, and the persistence of homeless individuals, leads to overgeneralizations, lifestyle biases, and forgetting to include environmental and location factors.⁵⁵ However, the introduction of the personalized study or record method by case workers and outreach participation to track their findings and supply them to publications in order to provide a more updated narrative.

3.2.2 Case Management Approaches

There are multiple case method approaches, which include differing levels of support and outreach to individuals. The four varying types are standard case management (SCM), intensive case management (ICM), assertive community treatment (ACT), and critical time intervention (CTI).⁵⁶ These case management types provide different benefits based on the level of support needed for an individual, yet not all approaches have the same effectiveness and quality of outreach. Vet et al. explain that a standard case management approach can provide and improve housing stability, reduce the amount of substance abuse, and encourage job training

⁵⁴ Somerville, Peter. *Understanding Homelessness*. 2003

⁵⁵ Phelan, J C, and B G Link. "Who Are 'the Homeless'?" *Reconsidering the Stability and Composition of the Homeless Population.* *American Journal of Public Health* 89, no. 9 (September 1999): 1334–38. doi:10.2105/ajph.89.9.1334.

⁵⁶ Vet, Renée de, et al. "Effectiveness of Case Management for Homeless Persons: A Systematic Review." *American Journal of Public Health* 103, no. 10 (October 2013). doi:10.2105/ajph.2013.301491.

and education for homeless individuals to be independent when leaving the program.⁵⁷ A standard approach could provide the most inline solution to a supportive housing framework, as case management programs can be included to have everything in one location. However, there is no data on how this approach and the supportive housing framework could provide an individual with permanent housing stability. A study suggests that there is no current correlation between casement management efforts and permanent supportive housing, as there are current biases and a lack of controls when performing the study, thus leading to a policy recommendation and further research to determine if these factors increase the chance of an individual exiting homelessness.⁵⁸ Yet, using this framework to conduct an experimental study using these factors in a location-based research setting can allow for a deeper understanding of how case management can be used effectively with housing options.

3.3 Policy Implementations

Policy implementations can set a precedent for developers and designers to create inclusive communities and spaces for homeless individuals and remove ordinances that create barriers and challenges for current homeless individuals. A policy or ordinance that improves the solutions and resources offered to homeless individuals can create a more equitable and inclusive process and program methods that can have long-lasting impacts. For example, some homeless individuals have

⁵⁷ Vet, Renée de, et al., 2013.

⁵⁸ Benston, Elizabeth A. "Housing Programs for Homeless Individuals with Mental Illness: Effects on Housing and Mental Health Outcomes." *Psychiatric Services* 66, no. 8 (August 1, 2015): 806–16. doi:10.1176/appi.ps.201400294.

mental, physical, or social disabilities that do not allow them to live independently with an aide. These individuals would require a supportive housing approach that provides them with a more personal supportive system. A housing-first policy method can be used to create permanent housing opportunities for individuals with these disabilities to provide permanent shelter, counseling, and clinical help.⁵⁹ However, these policies must be tailored so that funding is provided to keep the program operating and educate social workers, housing assistance, and other staff about the process, rules, and regulations required to ensure positive relationships and interactions.

Furthermore, providing the correct rhetoric surrounding these policy implementations is essential for creating a program that creates a supportive space. Tabol et al. encourage standardized policy and program requirements when creating supportive housing programs since the quality, quantity, and contents of care vary from organization to organization.⁶⁰ Through a standardized process, the program can be controlled, allowing for consistency across all program types. This process would need to be implemented as a policy recommendation to require these aspects to be followed. For example, a survey conducted in Las Vegas explains that local governments need to increase the amount of affordable housing by reducing the deficit in rentals to create tenant protections and multi-year leases to promote stable

⁵⁹ Durbin, Anna, Barry Isaacs, Dane Mauer-Vakil, Jo Connelly, Lorie Steer, Sylvain Roy, and Vicky Stergiopoulos. "Intellectual Disability and Homelessness: A Synthesis of the Literature and Discussion of How Supportive Housing Can Support Wellness for People with Intellectual Disability." *Current Developmental Disorders Reports* 5, no. 3 (June 21, 2018): 125–31. doi:10.1007/s40474-018-0141-6.

⁶⁰ Tabol, Charity, Charles Drebing, and Robert Rosenheck. "Studies of 'Supported' and 'Supportive' Housing: A Comprehensive Review of Model Descriptions and Measurement." *Evaluation and Program Planning* 33, no. 4 (November 2010): 446–56. doi:10.1016/j.evalprogplan.2009.12.002.

housing.⁶¹ However, the policy created should have feedback and include the solutions from organizations with successful programs and former homeless individuals to discover what services and resources work best for them when exiting homelessness.

Gaps in the Research:

While researching, synthesizing, and analyzing this data, several gaps in the research created questions requiring qualitative and quantitative data to find the answers and support further findings in the main themes highlighted above.

- **Integrative Approaches:** Researchers and policymakers must create models that encourage the use of various services provided to the homeless population to solve the complex consequences of homelessness.
- **Longitudinal Research:** Researchers should encourage organizations and partake in longer research times that study the most effective ways of providing services, outreach, design aesthetics, and locational standards to understand the program's effects on an individual.
- **Current Systemic Changes:** When reviewing case studies and precedent ideas, some researchers and authors did not include current policy implementations in urban environments. Including and tracking these policy ideas can help better understand how the policy can be tailored and changed to positively impact the homeless population significantly.

⁶¹ Parulkar, Ashwin. "Causes of Homelessness in Las Vegas: Findings from a Survey of a People Experiencing Homelessness at a Local Government Center That Serves the Unsheltered Population." HELP USA, Last modified January 5, 2024. <https://www.helpusa.org/causes-of-homelessness-in-las-vegas-findings-from-a-survey-of-a-people-experiencing-homelessness-at-a-local-government-center-that-serves-the-unsheltered-population/>.

Conclusion

Homelessness is a complex and multi-dimensional problem that includes various predictors and harmful challenges, and currently provides minimal solutions for exiting homelessness. The predictors of homelessness can be related to unemployment, unstable housing, abuse, and addictions, along with mental health illnesses that create situations where homelessness is an unintended outcome. This literature review highlighted the importance of thoughtful policies, design methods, and programs that promote stable housing, job education, and wellness services.

When homeless individuals are left without the support of the local government and encounter misinformation from the media and public, it creates challenges in providing aid as it promotes social isolation, minimal services, and reduced resources, which reinforces the cycle of homelessness and poverty. However, including more education for case management and social workers will enable them to provide and connect individuals with programs and organizations that use a supportive or housing-first approach. Also, job education, community and social interactions, counseling, clinical access, independent living near amenities, and access to nutritious food options can create a pathway and plan that can be diversified for individuals with diverse backgrounds and needs.

These studies and research exemplify the need for a supportive housing complex that includes temporary and permanent housing for individuals who do not qualify for other programs. These individuals need a solution and housing program that caters to their current needs and meets them where they are to provide the

support and security needed to exit homelessness. While the supportive housing complex would offer temporary housing, there is also permanent housing for individuals who cannot live alone and need more care. This allows the homeless population to feel safe and secure in their environment while pursuing opportunities for growth and change.

Chapter 3: Methodologies of Research & Design

Introduction

The research methods are an essential part of the research process for writing and designing an architectural project for this thesis. This thesis project will use deductive reasoning, ethnography, and aspects of grounded theory. These methods are essential to this thesis exploration since they allow for a wide variety of research into homelessness (e.g., causes, consequences, solutions, further research, and case studies) that can be synthesized into crucial objects to be implemented within the project. For example, the research explains that temporary housing opportunities are not the only housing type the homeless population needs, since individuals can have social, behavioral, or mental illnesses that require permanent supportive housing programs and opportunities. Along with this housing type, they need associative services (i.e., food, recreational, community, and counseling) that still allow them independence and freedom of movement within the space. Nevertheless, the research methods mentioned above allow for further exploration into the complexities of these interactions and relationships, leading to a concise solution for a supportive housing campus.

Research Methods

Within the research methods, deductive reasoning allows for the large amounts of research and data collected during the literature review process to be condensed and synthesized to create a strategic plan for finding a site, architectural typology, and further research and outreach strategies that will be needed.

Ethnography research allows for exploring and analyzing the homeless population

and their culture of habitation within the tunnels, allowing for their experiences and feedback to be implemented within the design and phasing operations of the project. Grounded theory allows for research into qualitative data sources, then analyzes the research into critical ideas or topics to be used during the thesis design. Furthermore, the research methods and data sources, such as quantitative and qualitative data sources (i.e., surveys, interviews, experiments, secondary data analysis, and observations), will inform the solutions and processes when creating a solution for a supportive housing campus for homelessness in Las Vegas.

Reasoning and grounded theory inform this thesis's current data collection and analysis portion. The collection of peer-reviewed journal entries, second-hand data analysis, and international data collection have informed the cause of homelessness (e.g., lack of affordable housing, experiencing addictions or abuse, exposure to physical violence, and the inability to have counseling for certain mental illnesses), and the overall lack of supportive housing programs that provide services on one site, as well as effective outreach and case management programs that encourage the use of services to exit homelessness. While there is still research in this area, the ethnographic portion of the thesis still needs to occur. Speaking to nonprofit organizations and the homeless population in the Las Vegas area is influential in determining possible programs and features that can be added to the supportive housing campus to enhance the urban and livable space. This method will also aid in selecting a site for the campus placement, as it will need to be contextually relevant to the targeted demographic and be large enough to accommodate the campus and allow for future growth of the site.

Furthermore, the selection of precedents is influenced by the research methods mentioned above, as they include feedback from the community about the space and aim to include habitable space with structured programs that allow for future growth or use. For example, Covenant House in New York City researched the needs of homeless youth aged 18-26 to inform their program in designing an architectural space where residents can change and use their feedback to create a more welcoming environment. This is similar to The Bridge Homeless Assistance Center in Dallas, Texas, which provides a campus selection to work within the existing urban context to inform the homeless population's needs. This center uses the research of other supportive housing structures and programs that were critically analyzed to create a space where the residents are provided practical tools for exiting homelessness and reentering society. The Chulalongkorn University Centenary Park uses more quantitative data sources to track the water flow of the park due to the abundance of stormwater methods implemented within the park and in the surrounding neighborhoods. This connects with using social commentary, historical information, and data collection to make an urban design choice that uses the existing infrastructure of a place to create a place of community and social gathering.

Use Within the Thesis

The use of research methods such as deductive reasoning, ethnography, and aspects of grounded theory has influenced the collection of research, categorizing, and analysis to create a supportive housing campus with programs related to typically homeless programs while also filling the gaps so all services are offered on-site, increasing the effectiveness and controlling the quality of resources provided to the

homeless population. The following steps concerning these methods will be researched in Las Vegas with nonprofit organizations and the homeless population to implement this research in the thesis project, gathering a complete picture of the consequences and needs of the homeless population in this location. This will allow this thesis to gain social and political insights into the area in a context that will be implemented into the overall research of the topic.

Chapter 4: Housing & Stormwater Management Precedents: Locally & Around the World

Introduction

The following precedents have been chosen due to their programmatic, cultural, social, environmental, and urban context approaches that enhance and positively impact the targeted audience when interacting with the services, site, and building. The five precedents are Karl Marx Hof, The Bridge Homeless Assistance Center, Chulalongkorn University Centenary Park, Night of Peace Family Shelter, and Covenant House. Each of these precedents is an integral portion of the design framework for creating a safe and habitable space with appropriate design features, equitable programming, and climate resiliency for unsheltered homeless populations to exit homelessness. Karl Marx Hof is a historical example of a supportive housing complex that focuses on low- to middle-income individuals and provides them with amenities close to their living conditions. This has led to the inclusive development of a city within a city idea through The Bridge Homeless Assistance Center, where the urban scale is similar. At the same time, Covenant House is an infill site that still includes the programmatic aspects, although vertically. These precedents also address the community's needs by promoting aspects of sustainability, incorporating cultural and historical information, and creating a space that can be made unique by the targeted audience. The Chulalongkorn University Centenary Park sees this since it uses various stormwater management methods to remove the risk of flooding within residential neighborhoods while adhering to cultural aspects. Furthermore, Night of

Peace Family Shelter uses the community's needs to provide highly needed services. These precedents highlight and guide this thesis through their problem-solving approaches and the creation of multiple-scale solutions for the surrounding community.

Karl Marx Hof

The Karl Marx Hof is a master-planned community established in 1930 in Vienna, Austria, by Karl Ehn (figure 2).⁶² This historical example aims



Figure 2. Exterior Image of Karl Marx Hof

to provide affordable living with amenities to encourage families to love an urban setting. As seen in the figure-ground diagram, the shape of the complex aligns with

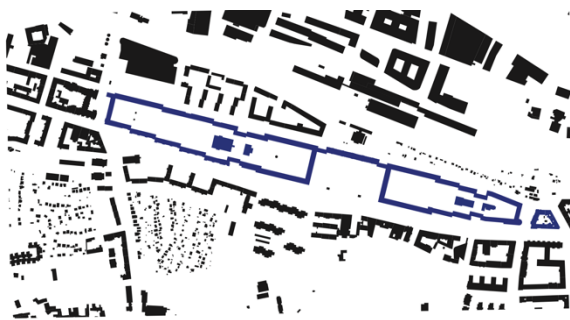


Figure 3. Figure Ground Diagram

the established grid and urban form, allowing for increased permeability through the site, giving the feeling of blocks rather than a large structure (figures 2 & 3). The site includes

⁶² Hatherley, Owen. "Vienna's Karl Marx Hof: Architecture as Politics and Ideology - a History of Cities in 50 Buildings, Day 24." The Guardian. Last modified April 27, 2015. <https://www.theguardian.com/cities/2015/apr/27/vienna-karl-marx-hof-architecture-politics-ideology-history-cities-50-buildings>.

essential services needed for daily living, such as a kindergarten, health facilities, recreational centers, and outdoor

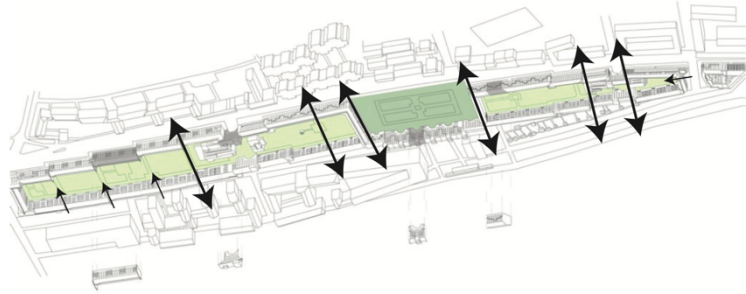


Figure 3. Permeability through the Structure Diagram

green areas. This improved the mobility and access to services for individuals living in urban environments. This social housing project improved the working class's living conditions after the First World War.

The programmatic aspects of the site are seen through the site plan programming diagram, which shows the residential portion of the site wrapping around and enclosing the amenities

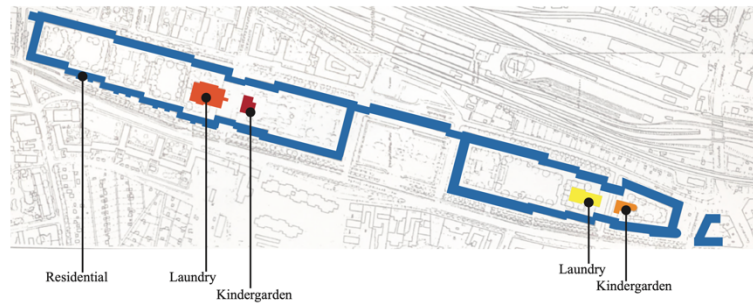


Figure 4. Site Programming Diagram

(figure 4). The 1300 dwelling units are a solution for the need for social housing and accompanying amenities for the individuals living there. Since there are many units on site, they are proportionate to each other, allowing for modularity and ample natural light and a simple circulation path (figures 5, 6, & 7). This allowed the site to be a city within the urban context by including these services

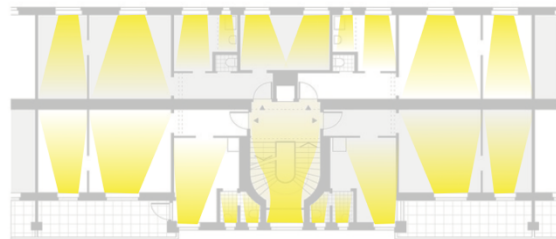


Figure 5. Daylight Diagram

along with green courtyards and permeability through the housing development.

Through this analysis, the complex provided solutions for addressing a community's social issues while providing amenities that enhance daily life and promote community within. This displays the preliminary model of supportive housing opportunities by including services that positively impact an individual's physical, mental, and social state while fostering independence and stability.⁶³ The long-standing functionality displays how this model can continue to positively impact individuals at different phases of their journey, serving as a model for a socially focused urban design.

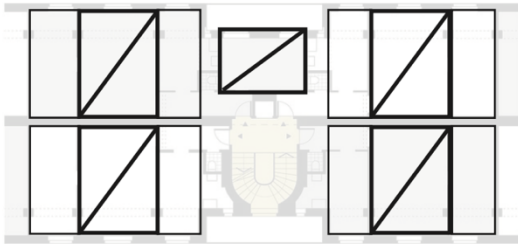
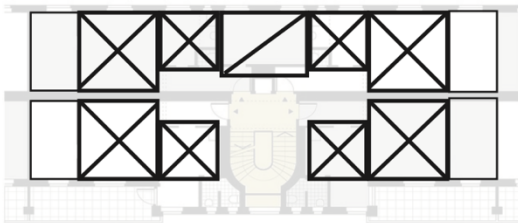


Figure 6. Proportions Diagram

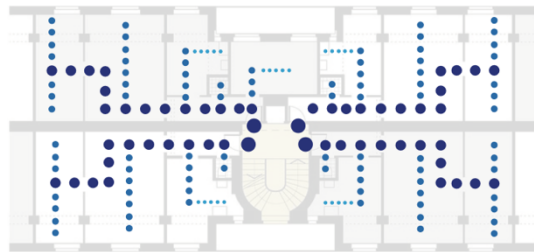
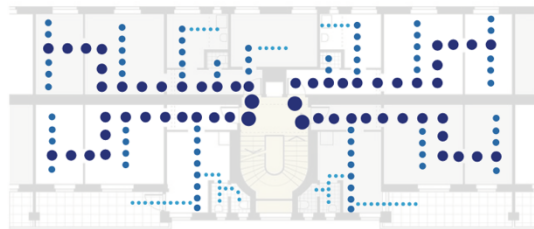


Figure 7. Circulation Diagram

The Bridge Homeless Assistance Center

The Bridge Homeless Assistance Center is a 3.41-acre supportive housing complex that provides services and opportunities to unsheltered homeless populations

⁶³ Rog, Debra J., Tina Marshall, Richard H. Dougherty, Preethy George, Allen S. Daniels, Sushmita Shoma Ghose, and Miriam E. Delphin-Rittmon. "Permanent Supportive Housing: Assessing the Evidence." *Psychiatric Services* 65, no. 3 (March 2014): 287–94. doi:10.1176/appi.ps.201300261.

to exit homelessness (*figure 8*).⁶⁴ This campus was established in 2010 in Dallas, Texas, and was designed by Overland Partners & CaCo Architecture. This campus aims to create a new narrative surrounding care and treatment



Figure 8. Courtyard Aerial Photo of the Campus

for homeless populations by including dining services, housing, job training, health care, and social services (*figure 9*).⁶⁵ Since this campus is located in an urban context, allowing all services to be in the same vicinity increases mobility and access while protecting the quality of services provided. As seen in the figure-ground diagram, the form of the building on campus aligns with the existing urban grid (*figure 10*).

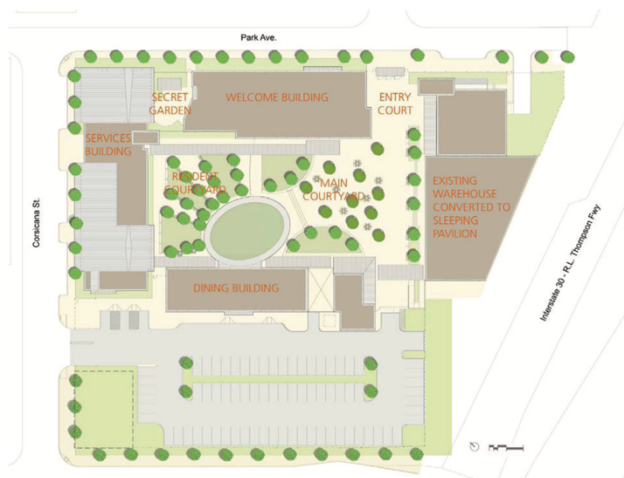


Figure 9. Site Plan Programming Diagram *Courtesy of ArchDaily

The programmatic aspects and organization of the building allude to a circular rotation around a central green space, as seen in the harmony and organization diagram (*figure 11*). This allows for a feeling of privacy and safety in an

⁶⁴ Rosenberg, Andrew. "The Bridge Homeless Assistance Center / Overland Partners." ArchDaily. Last modified March 1, 2011. <https://www.archdaily.com/115040/the-bridge-homeless-assistance-center-overland-partners>.

⁶⁵ Ibid, 2011.

urban environment, separating the public and private realms. Another way the site

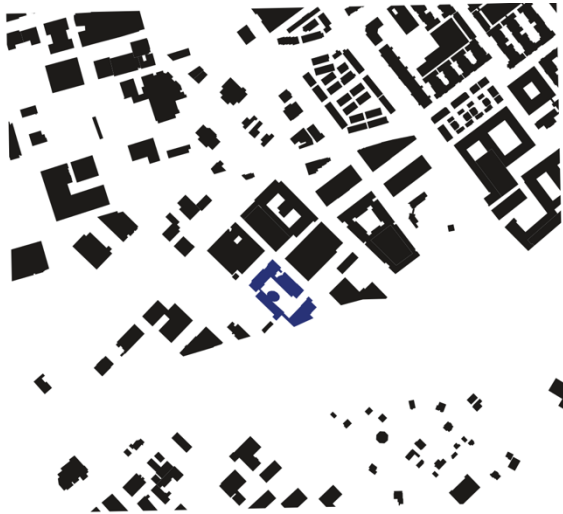


Figure 10. Figure Ground Diagram

conveys a barrier between these realms is through a tree barrier seen on the site's exterior, allowing for a physical noise and visibility barrier while then providing shading for pathways and seating areas for the community (figures 12 & 13).

This allows for three distinct programming zones from interior to

exterior, going from the building zone to the green zone and then the community zone in the center, as seen in the site section zone diagram (figure 14). The programmatic features and placements allow for community engagement at different levels, allowing homeless individuals to work toward being fully integrated back into society.

Through this analysis, the campus provides a comprehensive approach to individuals exiting homelessness while emphasizing sustainable efforts and committing to fostering community and social integration. This precedent provides an innovative architectural solution to an all-inclusive facility that focuses on independence, betterment, and freedom of space by distributing a program and structure revolving around a central

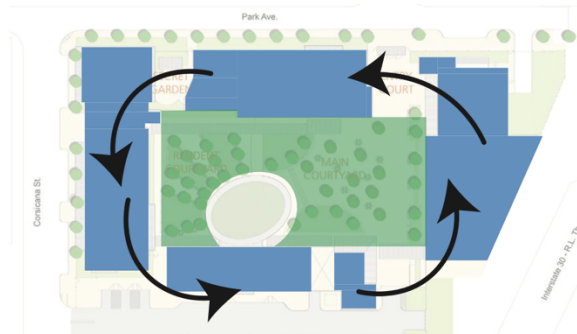


Figure 11. Harmony and Organization Diagram

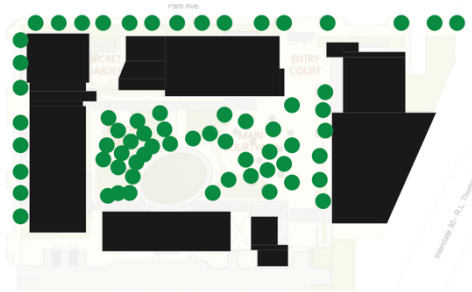


Figure 12. Tree Coverage Diagram

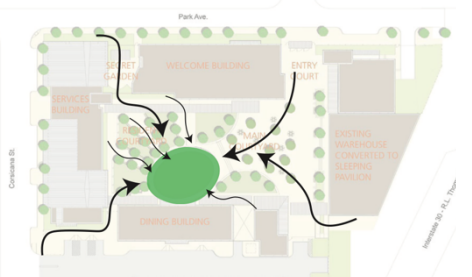


Figure 13. Pathways Diagram

green space. Rolling et al. describe the importance of creating a space that is accessible and offers safety and privacy, since it is not considered when designing large-scale mixed-use developments.⁶⁶ Including these features

in development through the building placement, proportions of the site, amenities, and circulation paths creates a quality environment allowing individuals to heal and create positive memories

and opportunities. The continuing dedication

of this site to providing successful programs and services to the homeless population displays the effect of the design on its targeted audience.

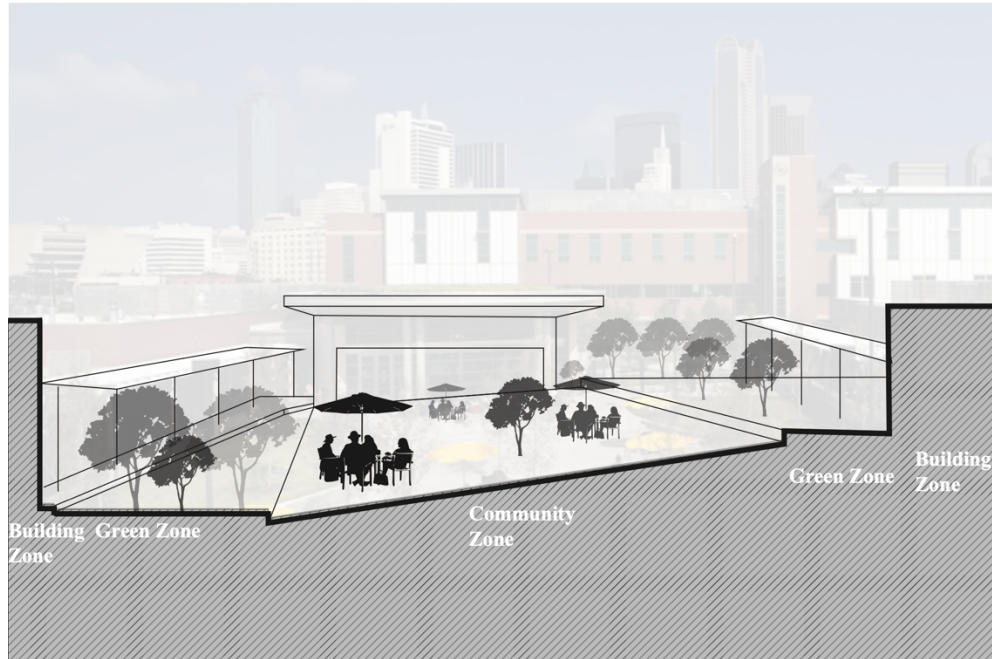


Figure 14. Site Selection Zone Diagram

⁶⁶ Rollings, Kimberly A., and Christina S. Bollo. "Permanent Supportive Housing Design Characteristics Associated with the Mental Health of Formerly Homeless Adults in the U.S. and Canada: An Integrative Review." *International Journal of Environmental Research and Public Health* 18, no. 18 (September 12, 2021): 9588. doi:10.3390/ijerph18189588.

Chulalongkorn University Centenary Park

Chulalongkorn University Centenary Park is an 11-acre park that focuses on solving the flooding issue at the location by providing visible stormwater management technologies, opportunities for community engagement, and a more pedestrian-focused approach in retail and residential



Figure 15. Site Selection Zone Diagram

neighborhoods (*figure 15*).⁶⁷ This park was established in 2017 in Bangkok, Thailand, by N7A architects and LANDPROCESS. This park provides green spaces for the community, as there were no parks in the vicinity prior to this one. The park includes sloped rain gardens, detention areas, wetland filtration, and a retention pond to aid with the flooding of the region by allowing for the park's systems to filter in the surrounding neighbors as seen in the permeability diagram, increasing the edge boundary of the park while still having a strong axial center as seen in the edge vs. center diagram (*figure 16*).

There are various programmatic elements of the park, such as seating areas, outdoor classrooms, main stages, and small breakout points to view the sustainable

⁶⁷ Landprocess.Co.Th. Accessed October 9, 2024.
http://www.landprocess.co.th/?utm_medium=website&utm_source=archdaily.com.

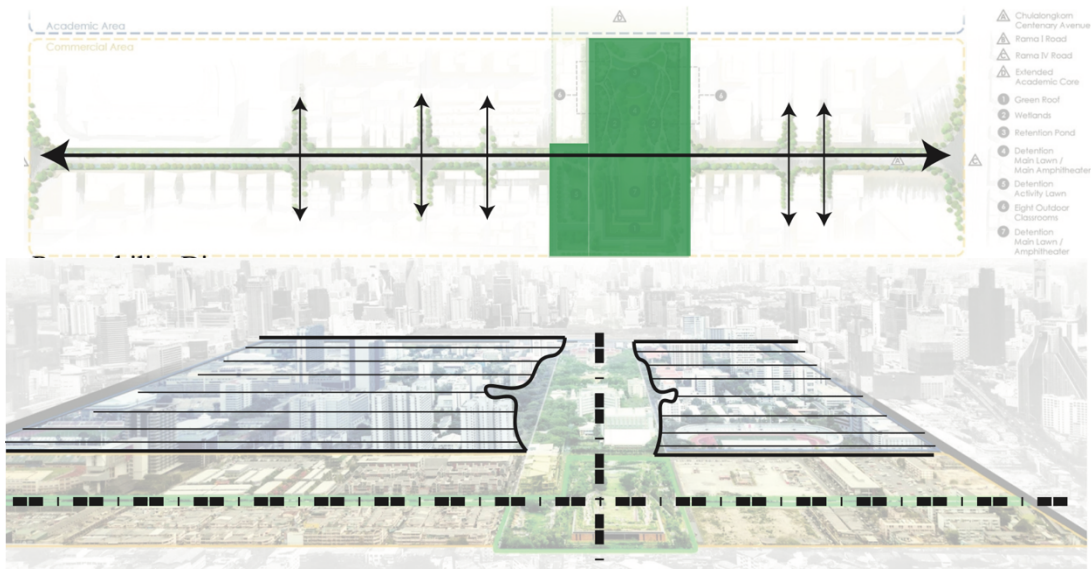


Figure 16. Permeability Diagram (top) & Edge vs. Center Diagram (bottom)

efforts in the park as an educational opportunity. This encourages individuals to learn about different systems and the positive benefits they can have on the community, as well as fostering community and green space. Furthermore, the park uses native plants and trees, supporting the local biodiversity and performing flood mitigation. In addition to stormwater management educational areas, areas are dedicated to promoting and educating park participants about local wildlife and habitat restoration, since it is at risk in an urban environment. These educational areas promote the importance of sustainable design, showing the interconnectedness of human and natural systems and displaying how urban parks can be sanctuaries for individuals.

Through this analysis, this park is an example of how cities can integrate multifunctional green spaces and enhance community life through sustainable practices. These practices encourage the residents to think critically about water use, flood mitigation practices, and community engagement opportunities within the space. Furthermore, it promotes implementing other sustainable practices, such as

shrinking of transportation zones to increase the number of pedestrians and green zones on the street (*figure 17*). This reinforces the idea that sustainable practices can positively impact a community’s way of life while promoting climate resiliency and environmentally conscious behaviors.

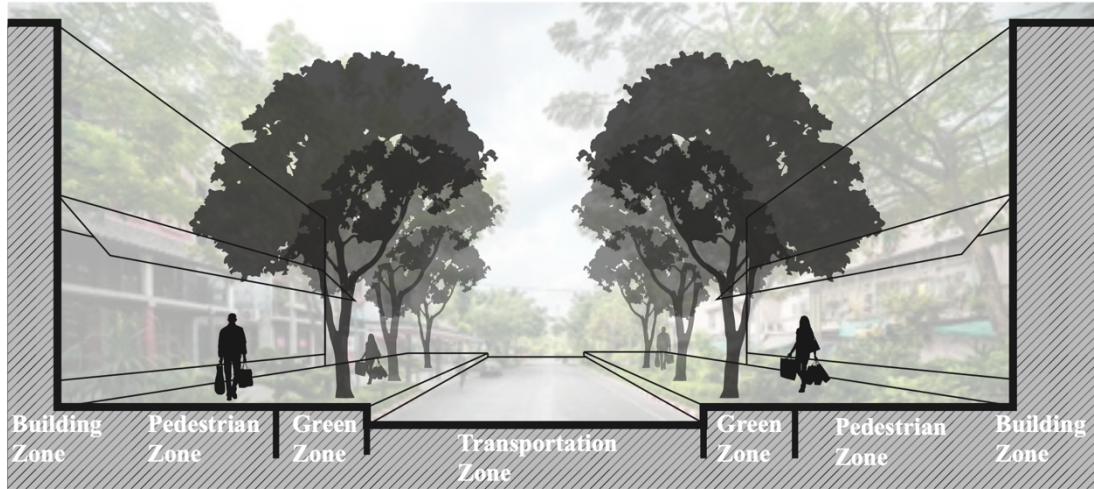


Figure 17. Site Selection Zone Diagram

Night of Peace Family Shelter

The Night of Peace Family Shelter is a community-oriented shelter focused on providing services and emergency shelter to families in need (*figure 18*).⁶⁸ This shelter was established in 2005 in Windsor Mill, Maryland. This program's target population is families and is based on a model of providing personalized support to encourage individuals positively. The services currently offered are case management, emergency shelter, laundry services, food services, and access to hygiene products (*figure 19*). While this shelter is small-scale, it has succeeded in helping over 1,500 individuals find stability, with over 300 individuals sheltered and

⁶⁸ Google Street View Image, 2024.

over 100 finding permanent housing solutions.⁶⁹ This provides essential insights into how architecture does not have to be the main driver for a successful program.



Figure 18. Google Street View of the Shelter

Yet, if the organization were to expand its services offered, including counseling services, community organizing and outreach, permanent housing assistance, a mentorship program, and job services and education, it could provide a better foundation for individuals striving for stability and permanent housing opportunities (*figure 20*). This would provide better opportunities for permanent housing rather than a housing-first strategy. Porchak et al. explain that using services on different sites to provide resources increases quality risk, mobility challenges, and reduces inclusivity, while including all services on one site can produce a more efficient form of quality control, while increasing positive community engagement efforts, and also increasing factors of safety.⁷⁰

⁶⁹ “Night of Peace Family Shelter, Inc.” Night of Peace Family Shelter, Inc. Accessed October 9, 2024. <http://www.nightofpeace.org/>.

⁷⁰ Porchak, Emily, Abe Oudshoorn, Shokoufeh Modanloo, Jason Gilliland, Sarah McLean, Natasha Thuemler, Olayinka Ariba, and Steven Rolfe. “Permanent Supportive Housing for Those Experiencing Chronic Homelessness with High Health or Social Support Needs: A Scoping Review.” *Journal of Health Care for the Poor and Underserved* 34, no. 4 (November 2023): 1178–1209. doi:10.1353/hpu.2023.a912712.

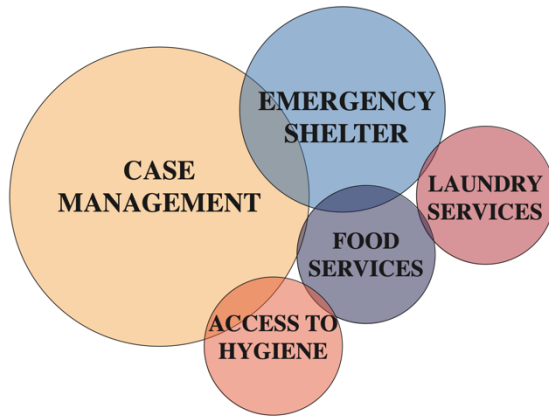


Figure 19. Existing Services Offered Bubble Diagram



Figure 20. Potential Services Offered Bubble Diagram

Through the analysis of this precedent, the shelter suggests that there is not always a need for a large-scale development to provide services and aid in a family going from crisis to stability.

While the design of the building is traditional, the services provided are invaluable resources for the community and vulnerable populations. This precedent focuses on a policy and

outreach approach to respond to the population's social needs by promoting independence, support, and safety when going into a stable environment. Fitzpatrick-Lewis et al. explain that offering services that encourage the target population and engage with them personally begins to bridge the gap in services, enrollment, and success with programs, along with taking the appropriate steps to ensure the information being provided is accurate and promotes stability.⁷¹ This encourages other organizations to take a similar policy and outreach approach.

⁷¹ Fitzpatrick-Lewis, Donna, Rebecca Ganann, Shari Krishnaratne, Donna Ciliska, Fiona Kouyoumdjian, and Stephen W Hwang. "Effectiveness of Interventions to Improve the Health and Housing Status of Homeless People: A Rapid Systematic Review." *BMC Public Health* 11, no. 1 (August 10, 2011). doi:10.1186/1471-2458-11-638.

Covenant House

Covenant House is a supportive housing site that provides services to homeless youths aged 18-26 to give them the skills and resources to become independent (*figure 21*).⁷² This site was established in 2021 in New York City by FXCollaborative. This building is an infill site that provides the programmatic features vertically and fits within the existing urban form, as seen in the Edge & Center Site Diagram (*figure 22*). Based on the building's façade rhythm and solid void principles, there is a clear



Figure 21. Exterior Image of the Building

separation of community and resources offered and residential areas (*figures 23 & 24*). This is determined by the length of the windows of the first four levels when

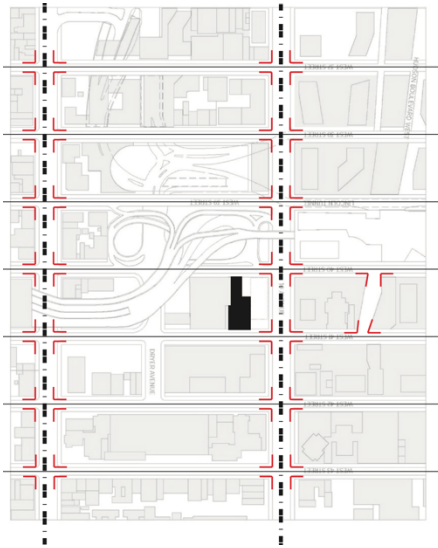


Figure 22. Edge & Center Site Diagram

going into punched openings for the dwelling units.

The programs offered in this building are a health and wellness center, job training services, community areas (i.e., chapel, gym, art room, classrooms, and lounges), dining areas, green spaces, and residential areas, allowing for all services offered to be located on one site (*figure 25*). This increases the quality of services offered

⁷² Sagredo, Rayen. "Shelter for the Homeless / RKW Architektur +." ArchDaily. Last modified August 18, 2018. <https://www.archdaily.com/899620/shelter-for-the-homeless-rkw-architektur-plus>.

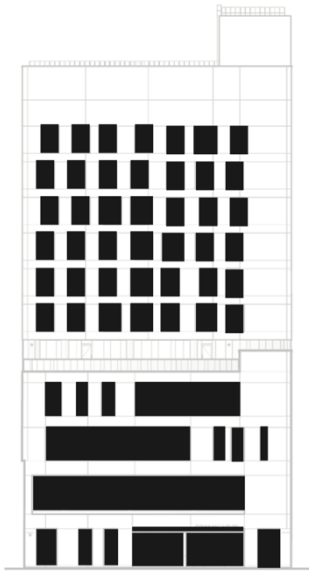
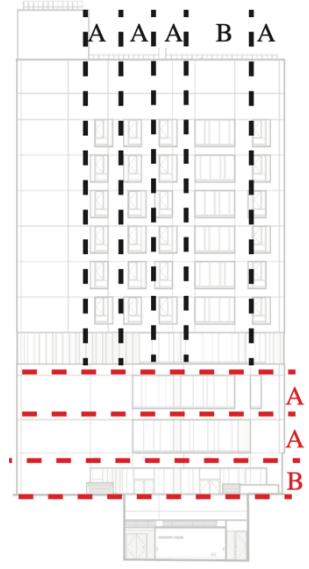


Figure 23. Solid & Void Diagram



Figure 24. Façade Rhythm Diagram



while increasing the inclusivity and equity of the aid being provided. Furthermore, the number of programs offered is larger and more complex, often leading to higher construction costs and longer build times. Yet, the dwelling units' proportions allow for modularity occurring on the upper floors, creating a solid vertical and horizontal axis and a more straightforward construction method, as seen in the proportions and axis diagrams (figures 26 & 27). This allows green spaces to be on multiple levels, creating a secondary healing environment and an educational value of green

spaces and mental wellness.

Through the analysis, this precedent uses a traditional supportive housing program to create an environment prioritizing growth, empowerment, community, and independence. Using a trauma-informed design and allowing current residents to change the space's interior to fit with their individual and community journey creates



Figure 26. Axis Diagram

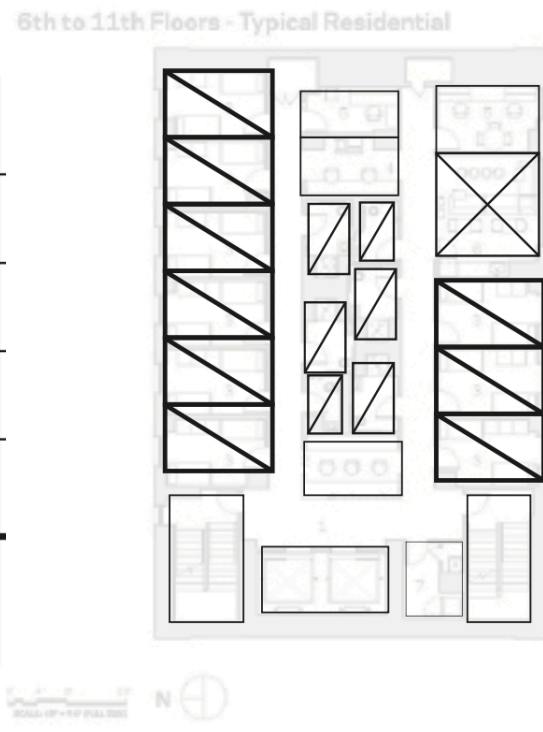


Figure 27. Proportion Diagram

contribute meaningfully to climate resiliency, quality services provided, and independence in allowing individuals to exit homelessness. This is relevant to the thesis question by providing an inclusive architectural example that uses a master planning effort to fit within the urban form by allowing permeability through the structure, modularity in proportions and axial connections, harmony through a central plaza, multiple green spaces and breakout areas for community and education of sustainable technologies used on the site, and including all service on-site allowing for quality control and increased mobility. This synthesis of precedent studies and analysis will guide the next steps in the research, informing design principles and strategies that address the multifaceted needs of unsheltered homeless individuals and act as a catalyst for positive change.

Chapter 5: Programming of a Supportive Housing Campus

Introduction

The initial program for the architectural solution is a supportive housing campus that includes temporary and permanent housing, health services (i.e., behavioral, mental, physical health, and counseling services), job education, social services, a dining hall, a community center (i.e., interior and exterior), and green spaces. The support services for homeless individuals often do not include all the necessary aspects for them to exit homelessness and successfully have the resources to support themselves or their families. The precedent examples, such as The Bridge to Homeless Assistance, Karl Marx Hof, and Covenant House, were found to display master planning efforts and programmatic examples that include similar services that impact sustainability in unsheltered homeless individuals. Other precedents, such as Chulalongkorn University Centenary Park, provide important design choices and stormwater management technologies that work to provide flood mitigation efforts, biodiversity, emphasize walkability and biking, and education efforts on sustainability. Lastly, Night of Peace Family Shelter provides highly needed services for the community, specifically families suffering from housing instability and needing emergency housing.

The programmatic aspect of the thesis aims to provide programs that are all on the same site. Placing programs and services on the same site increases mobility, equity, and access to quality services overseen by one organization rather than going off-site

to receive these services.⁷³ The proposed program consists of the crucial aspects of a safe, private, and hygienic dwelling unit with access to health care services and mental health, education courses, and resources focused on individuals exiting homelessness. The research on current housing services and services should influence the program, as there should be more complexes and campuses providing these resources, since policies and laws in areas with large homeless populations do not solve the root cause.⁷⁴ The proposed program is derived from the thesis question, precedent analysis, and research, which mentions that a housing first design does not include individuals from vulnerable populations, who often do not meet the requirements for these programs.⁷⁵ The program allows unsheltered homeless individuals to receive quality care, providing safety, privacy, and chances to foster independence while providing supportive services and housing conditions. Furthermore, the location of the thesis is prone to flooding and monsoon-like rainstorms, creating flooding challenges due to the need for more efficient stormwater management techniques. The program also proposes stormwater management interventions that provide a dry and climate-resilient site and building, allowing

⁷³ Porchak, Emily, Abe Oudshoorn, Shokoufeh Modanloo, Jason Gilliland, Sarah McLean, Natasha Thuemler, Olayinka Ariba, and Steven Rolfe. "Permanent Supportive Housing for Those Experiencing Chronic Homelessness with High Health or Social Support Needs: A Scoping Review." *Journal of Health Care for the Poor and Underserved* 34, no. 4 (November 2023): 1178–1209. doi:10.1353/hpu.2023.a912712.

⁷⁴ Culhane, Dennis P., Stephen Metraux, Jung Min Park, Maryanne Schretzman, and Jesse Valente. "Testing a Typology of Family Homelessness Based on Patterns of Public Shelter Utilization in Four U.S. Jurisdictions: Implications for Policy and Program Planning." *Housing Policy Debate* 18, no. 1 (January 2007): 1–28. doi:10.1080/10511482.2007.9521591.

⁷⁵ Jacob, Verughese, Sajal K. Chattopadhyay, Sharon Attipoe-Dorcoo, Yinan Peng, Robert A. Hahn, Ramona Finnie, Jamaica Cobb, Alison E. Cuellar, Karen M. Emmons, and Patrick L. Remington. "Permanent Supportive Housing with Housing First: Findings from a Community Guide Systematic Economic Review." *American Journal of Preventive Medicine* 62, no. 3 (March 2022). doi:10.1016/j.amepre.2021.08.009.

individuals in the area to learn about these technologies and set a precedent for technologies used in the area.

Zones to Concept Program

The proposed thesis solution is a master-planning effort that includes these services on one site. The proposed program zones are temporary and permanent housing, health services (i.e., behavioral, mental, physical health, and counseling), job education, social services, a dining hall, a community center (i.e., interior and exterior), and green spaces.

- **HAVEN HOMES:** Temporary and permanent housing
 - The dwelling units comprise studio, 1-, 2-, and 3-bedroom options, with a community area and services on each floor.
- **WELLNESS HUB:** Behavioral, mental, physical health, and counseling services
 - This will provide therapy and counseling services for different mental and behavioral conditions, including substance abuse, gambling addictions, and so forth. There would be a clinic that provides solutions for individuals dealing with illness and diseases and offers regular health checkups for these individuals. Furthermore, counseling services are where individuals can talk to a person to gain insight and knowledge about their current situation and path.
- **EMPOWERING FUTURES:** Job Education

- Focusing on building skills and experiences will enable individuals to obtain jobs to support themselves after the program. This aids in their gaining their independence.
- **CARE CONNECTIONS:** Social services
 - This is the administrative side of the program, where social workers can aid in the logistics and case management for the individuals who live on the campus.
- **NOURISHMENT NOOK:** Dining hall
 - This dining hall will provide fresh food to the residents so they can eat communally with each other and other campus workers. The residents will also help prepare the food on a rotational basis.
- **UNITY COMMONS:** A community center (interior and exterior)
 - There will be multiple areas on the campus for interaction and collaboration. There will be open areas in the community section of the main building, as well as a small section on each floor to facilitate interactions.
- **GARDEN OF RENEWAL:** Green spaces
 - There will be multiple green spaces throughout the campus. The main one will incorporate green systems and technologies on site. An existing infrastructure on the site (i.e., basin) for stormwater management will be transformed into a garden that includes stormwater management technologies and educational opportunities. This infrastructure will pay homage to the existing tunnel

encampments that are places of darkness and challenges. A garden provides an area where individuals can walk while still using the stormwater management technologies in the area. This will also be a feature of a community garden that allows the residents to participate in a community activity.

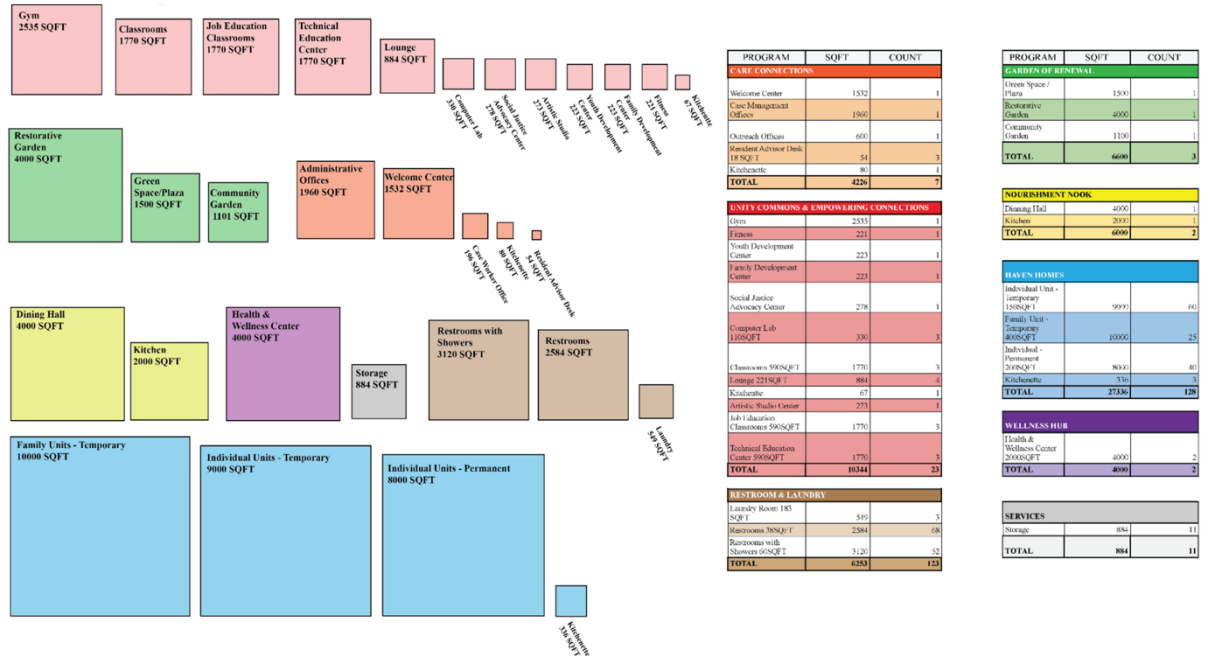


Figure 28. Square footage breakdown of Thesis Program

The graphic representation of this program can be found in *figure 28*. The scaling of these services is based on the precedent of Covenant House, as the site uses vertical instead of horizontal to create a space that includes the needed services for a supportive housing program. The dwelling units are the proposed program's most prominent programmatic feature, as this is a housing-focused, supportive program. A housing first model will not encompass all services needed to provide a well-rounded approach to homeless individuals exiting homeless in Las Vegas, as having mental

and substance abuse challenges are disqualifiers of the program.⁷⁶ Including programmatic aspects that address these challenges is essential in creating solutions that will allow these individuals to manage and overcome these challenges, as prolonged exposure can increase cognitive impairments.⁷⁷ This allows the supportive services of the program to come after the dwelling units, yet not by much. The ratio between services offered and dwelling units is almost 1:1, allowing for efficient, supportive services and personnel for the site's residents. Furthermore, this allows administrative individuals to provide better outreach and supportive services by following up and being educated on the approach needed when helping homeless individuals.⁷⁸

Reverse Engineered Precedent

This programmatic aspect is inspired by Covenant House, New York City, as discussed in the previous chapter. This precedent is an infill site that vertically includes all programs within one building. This allows for a vertically circulated building, with the first four levels dedicated to community, services, and administrative spaces. In contrast, the upper floors are devoted to dwelling units. The dwelling units and services of this precedent are a 1:1 ratio based on the square footage and programs offered that aim to include clinical, art, religious, physical,

⁷⁶ Dobson, R. (2022). Complex needs in homelessness practice: a review of “new markets of vulnerability.” *Housing Studies*, 37(7), 1147–1173. <https://doi-org.proxy-um.researchport.umd.edu/10.1080/02673037.2018.1556784>

⁷⁷ Spence, Sean, Richard Stevens, and Randolph Parks. “Cognitive Dysfunction in Homeless Adults: A Systematic Review.” *Journal of the Royal Society of Medicine* 97, no. 8 (August 2004): 375–79. doi:10.1177/014107680409700804.

⁷⁸ Vet, Renée de, Maurice J. A. van Luijtelaaar, Sonja N. Brilleslijper-Kater, Wouter Vanderplasschen, Mariëlle D. Beijersbergen, and Judith R. L. M. Wolf. “Effectiveness of Case Management for Homeless Persons: A Systematic Review.” *American Journal of Public Health* 103, no. 10 (October 2013). doi:10.2105/ajph.2013.301491.

social, dining, and community services that allow for individuals who live there to receive a higher quality of care (*figure 28*). This allows for all services to receive the same dedication, care, and quality assessments to ensure that the opportunities and education provided at this organization are equitable and accessible for all program residents.

Precedent Justification

As a precedent, Covenant House is an ideal model for this thesis due to the comprehensive design and integration of diverse services on a vertically oriented site. The targeted audience of youth aged 18-24 provides holistic services, which allow a balance between housing and supportive services. This programming style positively impacts these individuals and their understanding of the ratio needed to aid an individual out of homelessness through the provided resources. This creates a base understanding of how the targeted audiences need different programs than the targeted audience of the thesis (i.e., individuals and families suffering from mental health and substance abuse challenges) and how this program can be altered to tailor all services for the success of the thesis's targeted audience. Furthermore, this model informs a master planning effort by demonstrating the importance of organizing spaces and programs within the site to foster independence, safety, and privacy.

While the other precedents did have favorable features that will be incorporated into the design elements of the final thesis project, they often lacked a diversity of programs that could be used on a larger scale. For example, Chulalongkorn University Centenary Park and Night of Peace Family Shelter highlight a community-based program strategy to solve the problems of their area.

Yet, not all programmatic elements can be quantifiable, as it depends on the population since the services are open to all. This is also true for Karl Marx Hof and The Bridge to Homeless Assistance, as they address long-term solutions to affordable housing design, but the scale and in-depth services needed to be a holistic facility. This is why Covenant House is the chosen precedent, as the robust programmatic framework bridges the gap between the housing-first approach and supportive housing opportunities, aligning the organization's mission to provide programs and services to provide youth with the tools and resources to live independent and self-sufficient lives.

Chapter 6: Site Selection & Analysis

Introduction

There is a need for a supportive housing complex in the Las Vegas area that includes programs and services for unsheltered homeless individuals. This would remedy the loss of shelter beds and services and reduce exposure to environmental conditions such as extreme weather, hazardous situations, and social isolation. This thesis aims to create an environment where homeless individuals are not shunned from society but are visible and have opportunities to improve their current standing and reenter society. The primary site selection factors include visibility and location (i.e., a proximity to the tunnel encampments and less than one mile to the Las Vegas strip), the ability for future development (i.e., access to more than five acres of open space), inclusion of existing stormwater management infrastructure, accessibility, and light and air.

These criteria aim to create a new supportive campus close to the original encampment locations to provide individuals with an easy way to research services and be close to the Las Vegas strip to re-establish contact with different societal groups. This increases the visibility of the campus and aims to create a space within the urban sphere. The size of the site is vital as the campus should be able to be expanded for future development to accommodate the large population. This extensive site would have good access to light and air and accessibility (e.g., within the site, surrounding locations, and public transportation) to allow for movement within the space. Furthermore, including stormwater management infrastructure is essential since Las Vegas experiences monsoon-like rainstorms, which create

flooding problems on and around the strip. Including existing infrastructure provides a framework to enhance and strengthen the existing system, allowing individuals to experience green stormwater management technologies. These main criteria aim to establish a system where services are within reach with minimal disruption to the existing urban environment.

Site Selection Matrix and Scoring System

The site selection criteria of location, visibility, future growth, existing infrastructure, accessibility, and light and air are based on the site selection matrix (figure 29). This matrix focuses on using the regional to block & neighborhood and a programmatic to tailored

services scale. This allows over-arching concepts of safety, accessibility, growth, and security, and ideas such as opportunities for new developments, campus typology, mental health, affordable

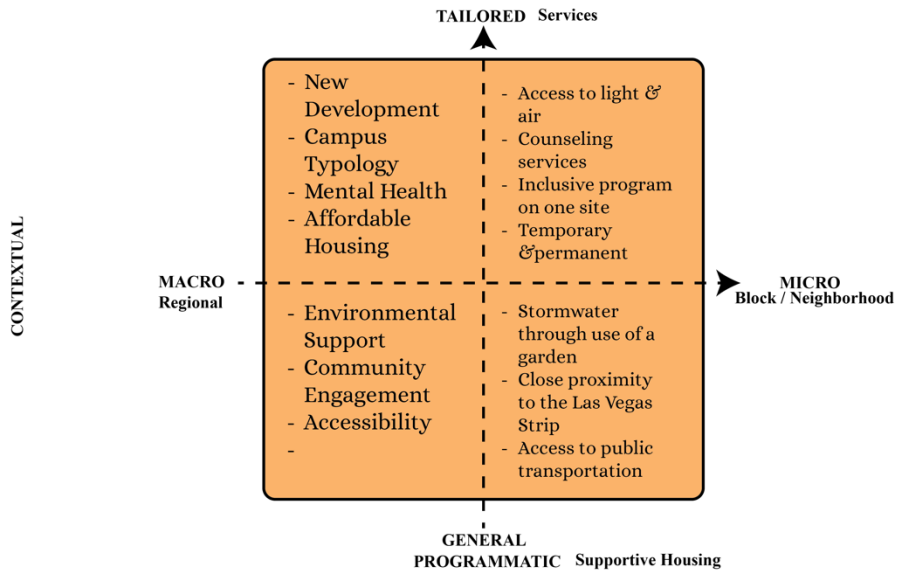
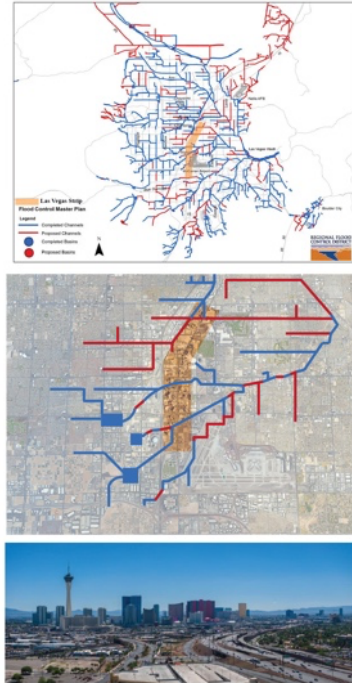


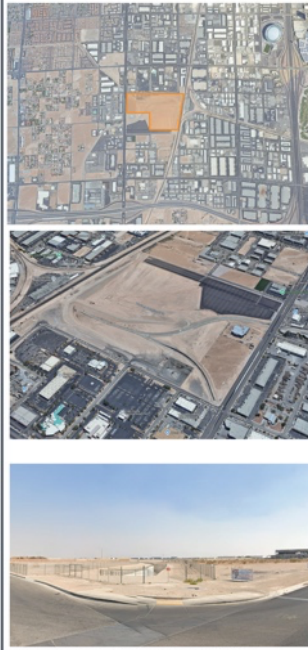
Figure 29. Site Selection Matrix

housing, environmental support, community engagement, and accessibility to be refined based on the location of Las Vegas and the demographics and factors of the area. For example, the stormwater management master planning map of the area is an essential map when viewing site locations and considerations since the climate

SITE IMAGES & MAPS

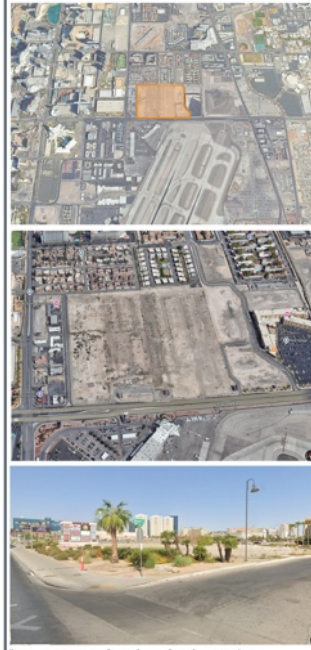


SITE 1



*Images Courtesy of Google Earth and Street View

SITE 2



*Images Courtesy of Google Earth and Street View

SITE 3



*Images Courtesy of Google Earth and Street View

Figure 30. Site Selection & Images of the Site

requires flood control and management of high rain situations with the existing infrastructure (*Appendix A – Figure 59 & 60*). This will be used along with demographic data from maps centered around the Las Vegas Strip.

Site Locations

The site locations for this thesis project include one site closer to the original unsheltered homeless encampment in the tunnels, the second site is located closer to the strip yet closer to the airport, and the third site is closer to the strip and surrounded by other commercial and residential properties (*figure 30*). These sites were founded using a site of important buildings and landmarks surrounding the site (*figure 31*), existing stormwater management infrastructure (*figure 32*), public transportation

Key of Buildings

1. Harry Reid International Airport
2. University of Nevada, Las Vegas
3. Las Vegas Strip*
4. Clark County Building Dept.
5. Bali Hai Gold Club
6. Clark County Fire Station
7. Wynn Golf Club
8. Las Vegas Country Club
9. Sunrise Hospital & Medical Cntr.
10. Las Vegas National Golf Course
11. St. Louis Medical Center
12. Sunset Park
13. Recreational Center & Park
14. Las Vegas Convention Center
15. John S. Park Elementary School
16. John C. Fremont Middle School
17. Global Community High School
18. Valley High School
19. Nevada Homeless Alliance
20. Nevada Partnership - Homeless
21. Golden Rainbow
22. Clark High School
23. Charlie Frias Park
24. Kenny C. Guinn Middle School
25. Community Parks**
26. Diskin Elementary School
27. Decker Elementary School
28. R Guild Gray Elementary School
29. Cashman Middle School

*The Las Vegas strip is comprised of multiple casinos, hotels, and entertainment opportunities, catering mainly to tourists. Yet, providing thousands of jobs for the surrounding community.

**These parks are "public" in terms but actually serve the surrounding community/neighborhoods. The insular fact of these parks make them private, in terms of location and socioeconomic statuses.

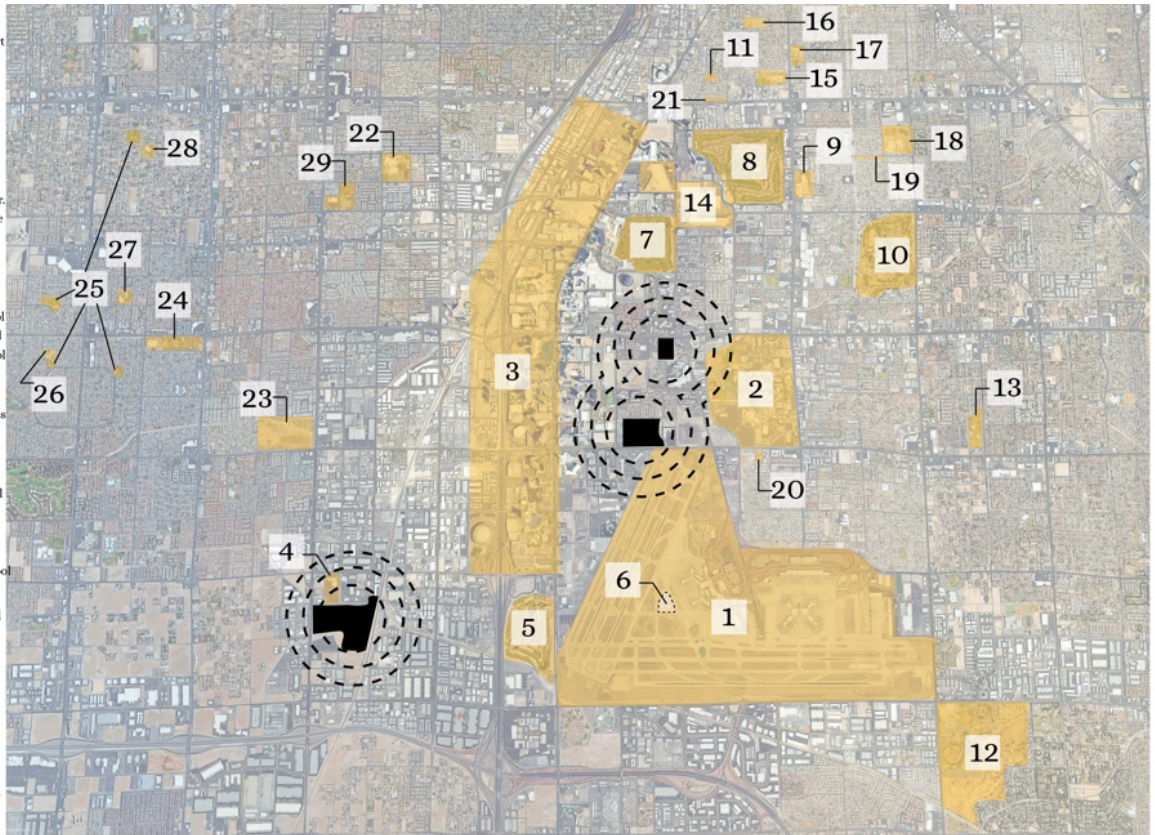


Figure 31. Site Selection Options & Landmarks with Walkability Radii of 15-, 22.5-, and 30- minutes

maps (i.e., bus routes) (figure 33), and ArcGIS maps (Appendix B) to provide more context to the site analysis and ranking system.⁷⁹

These maps include (appendixes follow this map order):

- Male vs. Female
- Population by Age
- Population by Race
- Housing Affordability & Total Housing Units
- Household Income
- Owner vs. Renter Housing

⁷⁹ "Maps & Guides – Ways to Travel." RTC, Last modified 2024. <https://www.rtcnv.com/ways-to-travel/schedules-maps/maps-guides/>.

- Owner by Race
- Renter by Race
- Higher Education
- At-Risk Population
- Renter vs. Owner by Race
- Household Income by Race
- Higher Education by Race
- Renter vs. Owner by Household Income
- At-Risk Population by Race
- At-Risk Population by Household Income

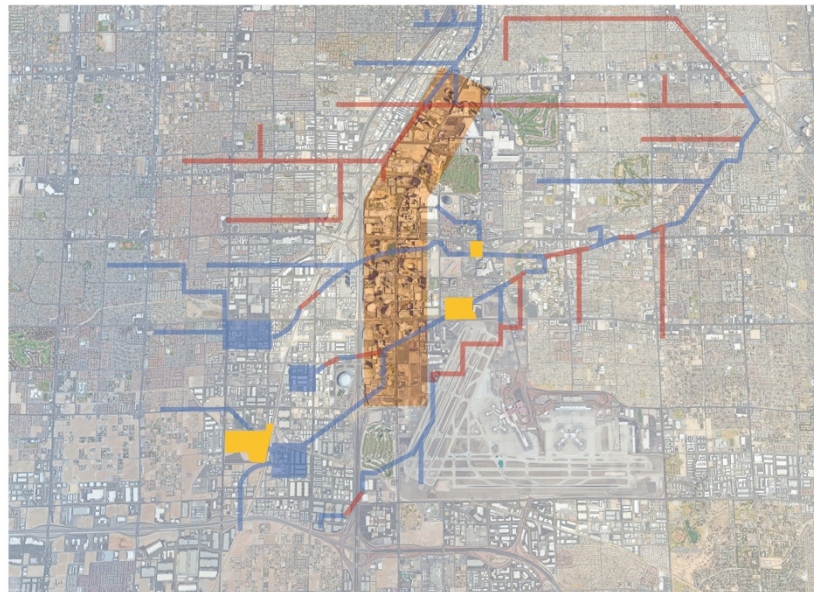


Figure 32. Site Selection Options Existing Stormwater Management Infrastructure

The research and analysis of these maps' vital takeaways have been determined by viewing these maps. The predominant racial groups in this area are White, Hispanic, and Black, with extreme racial divides and segregation among themselves. A mixed demographic between ages and males vs. females allows for a diverse population with those factors. However, when viewing owners vs. renters, there are more owners when moving away from the urban center, while there is a majority of renters. This correlates with housing type by race, as most individuals in

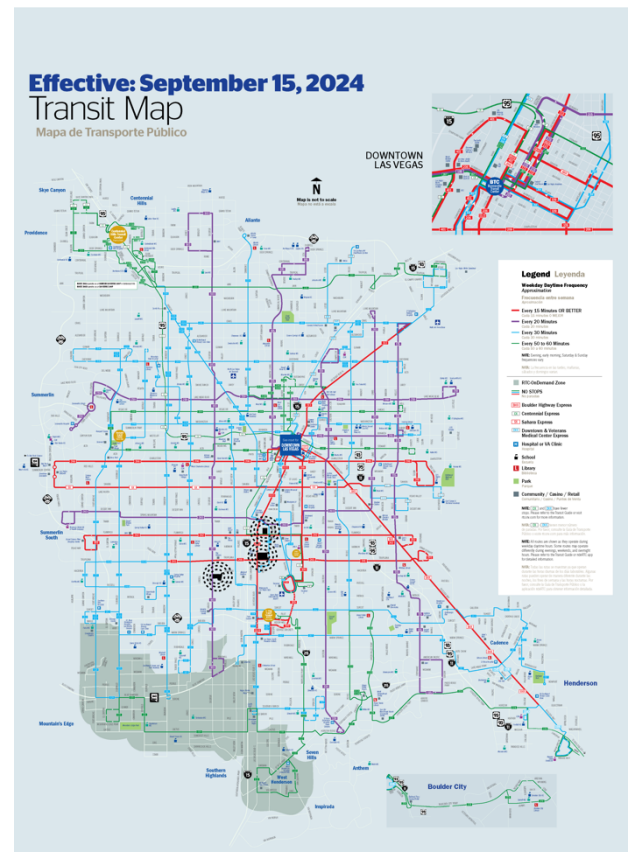


Figure 33. Public Transportation Map with Sites and Walking Radii

the area are renters, and few own unless they are in the suburban areas of the area. This also leads to low homeownership among black and Hispanic individuals.

When viewing housing affordability, there are low amounts of truly affordable homes in the urban center and the surrounding suburban areas. However, the housing, while limited, is more affordable in suburban regions than around the urban center. This connects to household income as it is relatively low around the urban center and only begins to increase when going to the constraints of the maps. Through these factors and individuals on food assistance programs and those below the poverty level through household income, higher at-risk populations are in the area's top right and middle portions. High concentrations are in the area's top right and middle portion, with a higher population of Hispanic and black individuals. These are some of the preliminary factors of at-risk or homeless populations. Furthermore, while these maps provide information about the general population, they exclude unsheltered homeless individuals since they do not have a permanent address. So, when considering these factors, primarily location and surrounding opportunities for growth, the three chosen 3 locations provide vital opportunities and locations for individuals to receive services based on the chosen criteria.

However, there are many advantages and disadvantages to the chosen sites. Site 1 has the advantage of being near encampments and having strategic visibility from the strip. Along with the existing infrastructure, it allows for stormwater management and flood control. The site does not have many developed sites near the proposed site, allowing for potential growth and development that promotes the economy and aids the progression and success of programs for individuals exiting homelessness. Yet,

one disadvantage of the site is the proximity of public transportation, which requires walking to the bus stop or external transit.

Site 2 offers a low density near the site, allowing for an abundance of natural light, yet it is located near the airport, which can impact the air quality and noise level of the site, in addition to increased opportunities for future growth. However, it does not have adequate infrastructure for stormwater management, and the location will provide large amounts of visibility, which can hinder the healing process and make it appear as if the individuals in the program are on display. The last site is only a block and a half away from the strip, providing ample retail, commercial, and job opportunities. The site is located near public transportation and is walkable to many

CRITERIA	SITE 1	SITE 2	SITE 3
Location	<ul style="list-style-type: none"> Near the existing location of the tunnel encampments Further away from the strip to provide privacy when receiving care 	<ul style="list-style-type: none"> Near the airport, Las Vegas Strip, and the University of Nevada Semi-private site since it is not in direct proximity to the terminal 	<ul style="list-style-type: none"> Near residential and commercial opportunities Located closely to the Las Vegas Strip Near a major roadway
Visibility	<ul style="list-style-type: none"> The site is near the air port and has surrounding low density allowing for development of the area While this is a low travels route there is some retail activity increasing visibility 	<ul style="list-style-type: none"> This site is adjacent to the airport, allowing for the site and individuals to be seen 	<ul style="list-style-type: none"> This site is along a main street with access to residential and retail populations The Las Vegas strip is two blocks away, allowing for the site to be seen by others
Future Growth	<ul style="list-style-type: none"> The site is large enough to account for a controlled growth, yet, there is no surrounding space for expansion of housing or services ~83 Acres 	<ul style="list-style-type: none"> The site is large enough to account for future growth There are empty land spaces that are close to this site, to allow for future expansion ~46.5 Acres 	<ul style="list-style-type: none"> The site is surrounded by fully developed sites, not allowing for close future growth ~18 Acres
Existing Infrastructure	<ul style="list-style-type: none"> Site is on an existing stormwater management tunnel that comes to the surface then goes below ground The above ground portion has an open basin system 	<ul style="list-style-type: none"> Site is above an existing stormwater management tunnel Will help to control the flooding of the area 	<ul style="list-style-type: none"> Site is above an existing stormwater management tunnel Will help to control the flooding of the area
Light & Air	<ul style="list-style-type: none"> Surrounded by low density buildings, allowing for an abundance and natural light and clean air 	<ul style="list-style-type: none"> Surrounded by low density, allowing for an abundance of light. Near an airport which could cause air quality problems. 	<ul style="list-style-type: none"> Surrounded by low density and small areas of existing greenery, allowing for fresh air and natural light with shading opportunities
Accessibility	<ul style="list-style-type: none"> Near public transportation, but further away from public transportation Not accessible to other retail and job opportunities 	<ul style="list-style-type: none"> Near public transportation Walkable area to the Las Vegas Strip Improved mobility to retail, job, and educational opportunities 	<ul style="list-style-type: none"> Near public transportation Walkable area to the Las Vegas Strip Near residential, job, and educational opportunities

Figure 34. Site Selection Criteria Breakdown

CRITERIA	SITE 1	SITE 2	SITE 3
Location	1	3	2
Visibility	1	2	3
Future Growth	2	1	3
Existing Infrastructure	1	3	2
Light & Air	1	3	2
Accessibility	3	2	1

Figure 35. Site Selection Ranking

local stores, providing equal access to resources. However, building height and traffic of the area do not provide visibility of the site or adequate light and air, and the acreage and density do not allow for future growth of the site or adjacent spaces.

Preferred Site

The preferred location is site 1 based on the criteria selection information chart and ranking chart (figures 34 & 35). The site is located near the existing tunnel encampments, allowing for better proximity compared to the other locations and providing privacy for treatments away from the Las Vegas strip. This location is also further away from higher-density areas, yet retail and commercial spaces surround the site, allowing for a slow reintroduction to society. The site has increased visibility since the surrounding buildings are low-density and one-story, promoting abundant natural light and air. Site 1 is around 106 acres, allowing for a significant master

planning effort and future growth and expansion of the program. However, the site is not near a bus stop for public transportation, which requires walking. Furthermore, the site is not within walking distance of retail or job opportunities, but would need external transit.

This selection of site 1 is also influenced by the programmatic aspects of the thesis. The quantity and sizing of the programs (i.e., temporary and permanent housing, health services, job education, social services, a dining hall, a community center, and green spaces) require a large site with the capabilities of growth and development, yet also with the feelings of privacy and independence. The first site allows the existing infrastructure to be used to create green spaces and creates a foundation for on-site stormwater management infrastructure. Furthermore, the location for allowing every service to be provided on-site encourages the equity and inclusion of all the services provided as well as acts as a quality control measurement.

Chapter 7: Conceptual Ideas of the Thesis

Introduction

The chosen site allows for the placement of a supportive housing complex for homeless individuals in Las Vegas. Throughout this paper, the introduction and literature review explain the challenges of being homeless in an unsheltered environment. Contagious diseases and existing conditions become exacerbated when an individual is homeless for a prolonged time, which can lead to diminished motor functions and cognitive abilities.⁸⁰ There is also the threat of ordinances, laws, and police presence, which criminalize individuals who are sleeping on public land or trying to obtain food through monetary penalization and jail time.⁸¹ This causes individuals to stay out of sight by habitually inhabiting tunnels. This creates challenges in their overall health and safety and does not allow for access to resources or services to exit homelessness.

A supportive housing complex, as seen in precedents such as the Covenant House and the Bridges Homeless Assistance Center, provides a model program that allows homeless individuals to obtain the resources and skills needed, which are located on one site. This allows for a quality control measure to ensure everyone receives the best care. This led to the introduction of a scalable program model that

⁸⁰ Beijer, Ulla, Achim Wolf, and Seena Fazel. "Prevalence of Tuberculosis, Hepatitis C Virus, and HIV in Homeless People: A Systematic Review and Meta-Analysis." *The Lancet Infectious Diseases* 12, no. 11 (November 2012): 859–70. doi:10.1016/s1473-3099(12)70177-9. ; ⁸⁰ Bensken, Wyatt P., et al. "Health Status and Chronic Disease Burden of the Homeless Population: An Analysis of Two Decades of Multi-Institutional Electronic Medical Records." *Journal of Health Care for the Poor and Underserved* 32, no. 3 (2021): 1619–34. doi:10.1353/hpu.2021.0153.

⁸¹ Lay, Matthew D. "Do Not Feed the Homeless: One of the Meanest Cities for the Homeless Unconstitutionally Punishes the So-Called 'Enablers.'" *Nevada Law Journal*, 9, 8, no. 2 (2008): 740–64.

allows the program to be flexible according to the size of the site. This influenced not only the criteria for selecting sites but also the site selection process, which is close to the existing encampments, allows for future growth around the site, access to light and air, and has existing infrastructure on-site, limiting the amount of site work needed to be conducted. These schematic explorations use the criteria outlined in the previous chapters on the selected site to begin to design an equitable space that is safe and secure and provides freedom to the individuals who will be living on this site, encouraging and providing individuals the skills to exit homelessness.

Connections to Precedent

The precedents referred to in the previous chapters include informative aspects that lead to the design and program development of the schematic design. Overall, each precedent allowed for exploring new themes and examples not seen in the current thesis location. Bridges Homeless Assistance Center provides a model example for holistic care that is adjacent to an urban center that uses the campus typology to create a site where all services and resources are located on one site. Chulalongkorn University Centenary Park uses innovative stormwater management technologies and greenery to create multi-functional spaces that impact the site and surrounding areas, creating a central point for individuals to experience nature and relax. Covenant House focuses on creating a space for teens and young adults experiencing homelessness to receive the resources and skills they need to exit homelessness through a supportive housing complex model.

All of the previous precedents and these three highlight the holistic nature of design and provide key models for why it is important to include housing and

resources as a part of the program process. This allows for the quality of the resources to be controlled and provided in a unified and equitable manner. The precedents also cater to the local demographics and needs of the community to provide services that directly impact the targeted audience, such as the Night of Peace Family Shelter. This model caters to families who are at risk or suffering from homelessness and provides them with the resources to exit homelessness and stay local within the community. Furthermore, using green spaces as a community organization point and stormwater management design aspect allows for there to be dual uses in the space, allowing for the individuals staying in the surrounding area of the site to interact with others and minimize the flooding risk on the site, as seen in the Chulalongkorn University Centenary Park. These precedents serve as models for programmatic inspiration as they encourage the design qualities of creating a supportive housing complex that uses modularity and resilient materials to create a response to the challenges endured by homeless individuals and aimed at creating a better environment focused on their growth.

Site Analysis

The site analysis from site 1 informs the site's design process and buildable areas to ensure that the proposed developments enhance the urban environment while allowing for growth at the site and surrounding community. The site selection uses site 1 as the basis for the schematic design process as it is close to the existing encampments, proposes a resilient area against flooding and other extreme environmental conditions, is located close to retail and commercial properties, and is

near an area of growth, allowing for individuals to move to a surrounding area or further away when finished with treatment (figure 36).

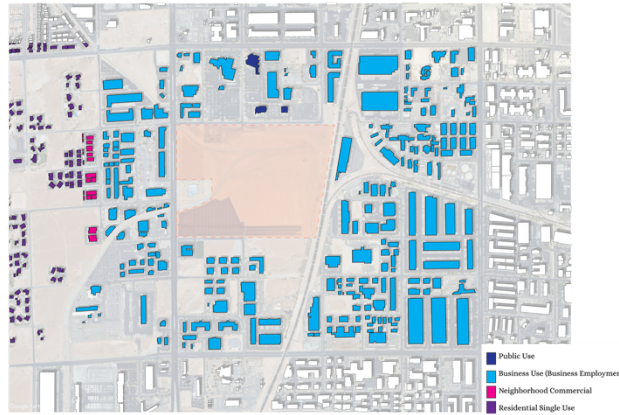


Figure 36. Surrounding Site Conditions

The climate and geography of the site are factors in determining the

buildability as well. The site is mostly sunny and partly cloudy throughout the year,

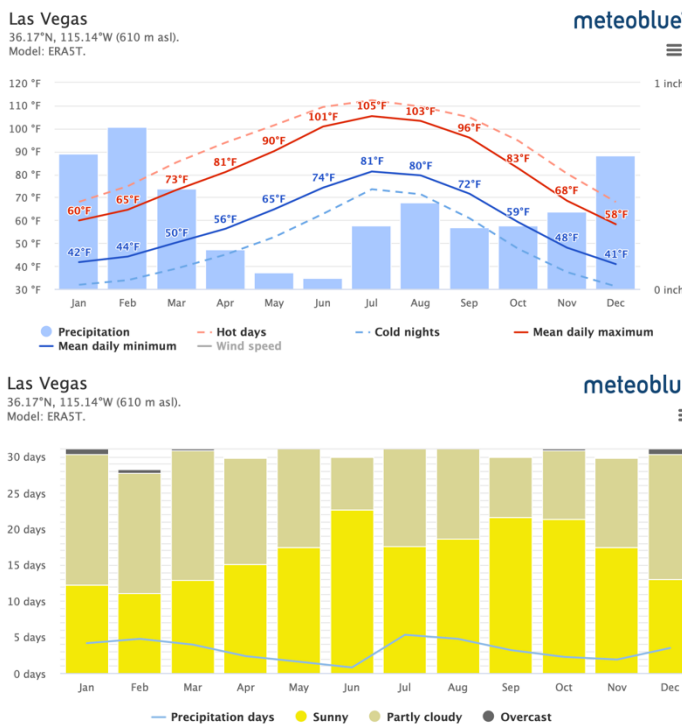


Figure 37. Mean temperatures with highs and lows of each month (top) & Calculation of sunny, overcast, and partly cloudy days with mean precipitation days (bottom)

with the temperature never

going below 50 degrees

(figures 37).⁸² This

encourages the design of

shady areas and shading

devices on the building, as

the summer season can

create unbearable heat. Las

Vegas also has a monsoon

season which causes flash

flooding and many areas

of standing water, since Las

⁸² “Simulated Historical Climate & Weather Data for Las Vegas.” Meteoblue. Accessed December 17, 2024. https://www.meteoblue.com/en/weather/historyclimate/climatemodelled/las-vegas_united-states_5475433.

Vegas is mostly impervious.

Furthermore, the wind rose displays that high wind speeds are coming from the southwest direction, and lighter wind speeds are coming from the northwest direction (figure 37).⁸³ While there is minimal rain on site, it is important to design with the thought of monsoon

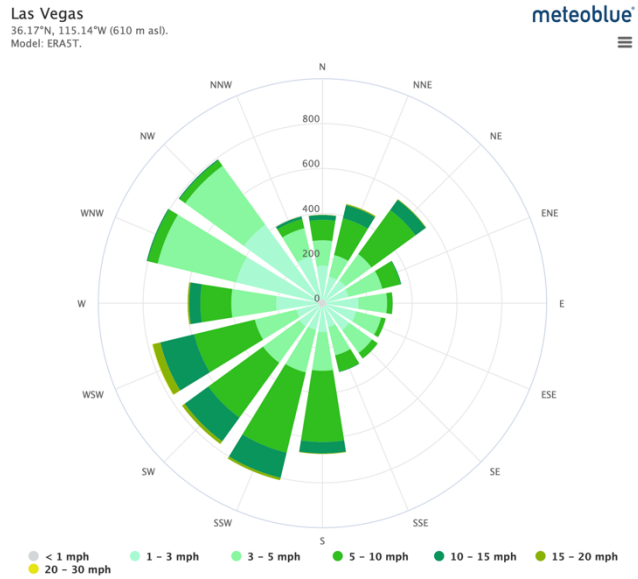


Figure 37. Wind Rose of the Site

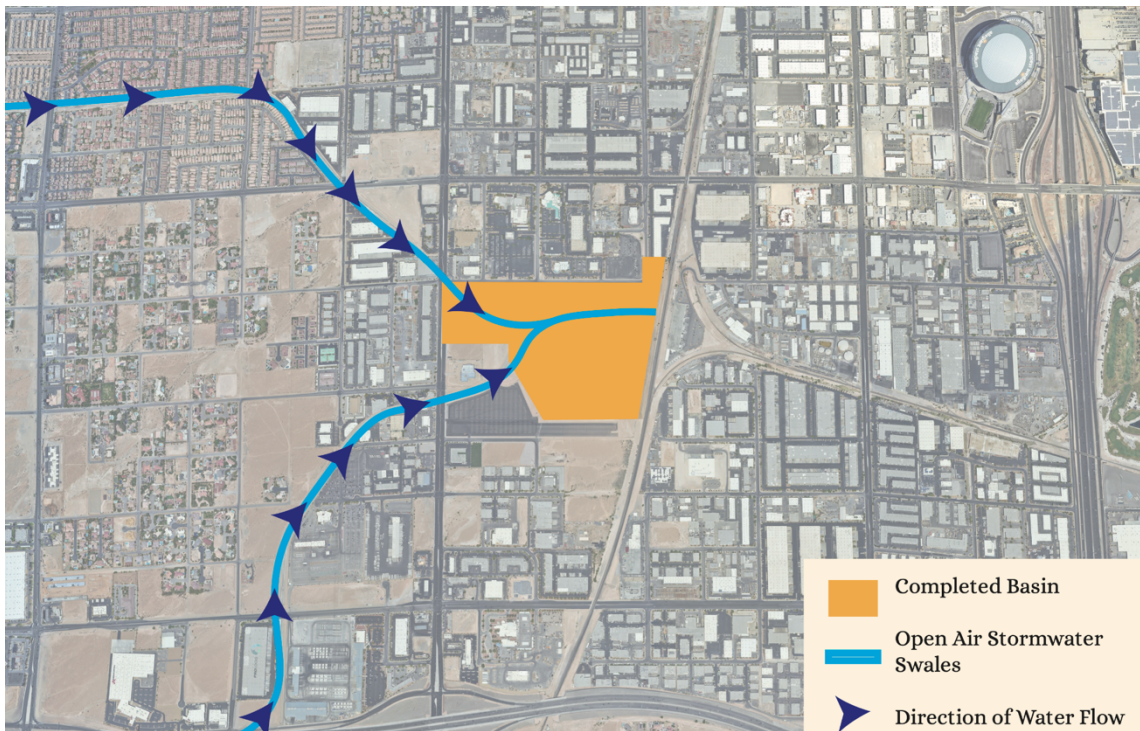


Figure 38. Rainwater Runoff Directionality of the Site Diagram

⁸³ “Simulated Historical Climate & Weather Data for Las Vegas.” Meteoblue. Accessed December 17, 2024. https://www.meteoblue.com/en/weather/historyclimate/climatemodelled/las-vegas_united-states_5475433.



Figure 39. Street Hierarchy Diagram

season, as this occurs from June to mid-September, creating flash floods damaging infrastructure and endangering individuals.

The site is currently a basin, as water flows from the

northern and southern locations of

Las Vegas, collecting in the basin for 3-5 days until the water dissipates (figure 38).

This is an important factor when determining the buildability of the site, as there will need to be infrastructure that handles the water flow and creates a dry and safe environment for the inhabitants of the site. This also dictates the movement of the site, as shown in the streets diagram (figure 39), since the site only has access to two main streets, creating a challenge for accessibility and mobility around the site.

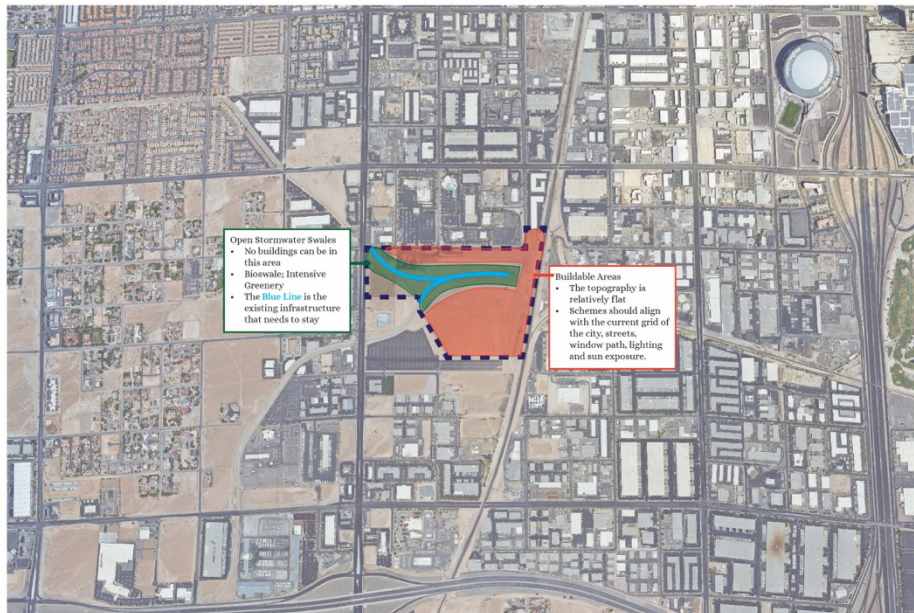


Figure 40. Buildability Diagram

These factors influence the buildability of the site, as seen in figure 40. The green portion of the diagram displays that nothing can be built in this area, as the blue line represents the existing infrastructure on-site, and removing these aspects or changing the grading can create flooding on-site, posing risks to the future site. The red areas of the site are buildable as they are away from the flooding area. Introducing stormwater management devices such as an above-ground buffer zone, underground cisterns, and intensive rain gardens and bioswales on site will account for the previous use of a basin and prep the site for a new use.

Schematic Design Explorations

Through the exploration of the site analysis and precedents, three schematic design explorations include all of the programs on one site and encourage the thought of resiliency, equity, and inclusion of the program and services offered on-site. Each design uses the existing topography and infrastructure to build upon and strengthen the site's stormwater management. The site also uses the existing urban environment and street grid to create a campus setting that provides safety and privacy for those getting treatment, but also gives accessibility to the surrounding environment. These design explorations are Sanctuary, Gradient, and Bridges.

Sanctuary

Sanctuary is a design exploration that uses the proposed buildings on site to create an enclosed zone for privacy and safety, including punched openings for

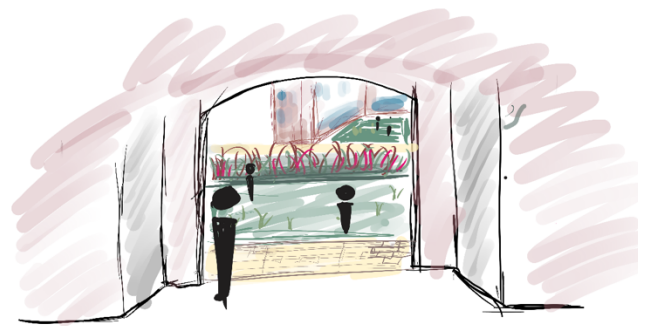


Figure 41. Concept Sketch for Schematic Design Exploration Sanctuary

walkability to the surrounding environment (figure 41). The design scheme focuses on building on the site's exterior, with infill in the bottom center, creating the feel of a campus setting. The green spaces of the site use the existing infrastructure and provide green zones for collaboration and congregation of the site's residents (figure 42). Since the rain garden splits the site into two portions, using bridges allows individuals to move from one part of the site to another. This is seen through the concept sketch of the site, allowing an individual to see the totality of the site from within the campus (figure 41). The spatial diagram of the site organizes the zones into the specified program zones, allowing for ease of movement and a clear understanding of where things will be located on the site (figure 42). This also allows

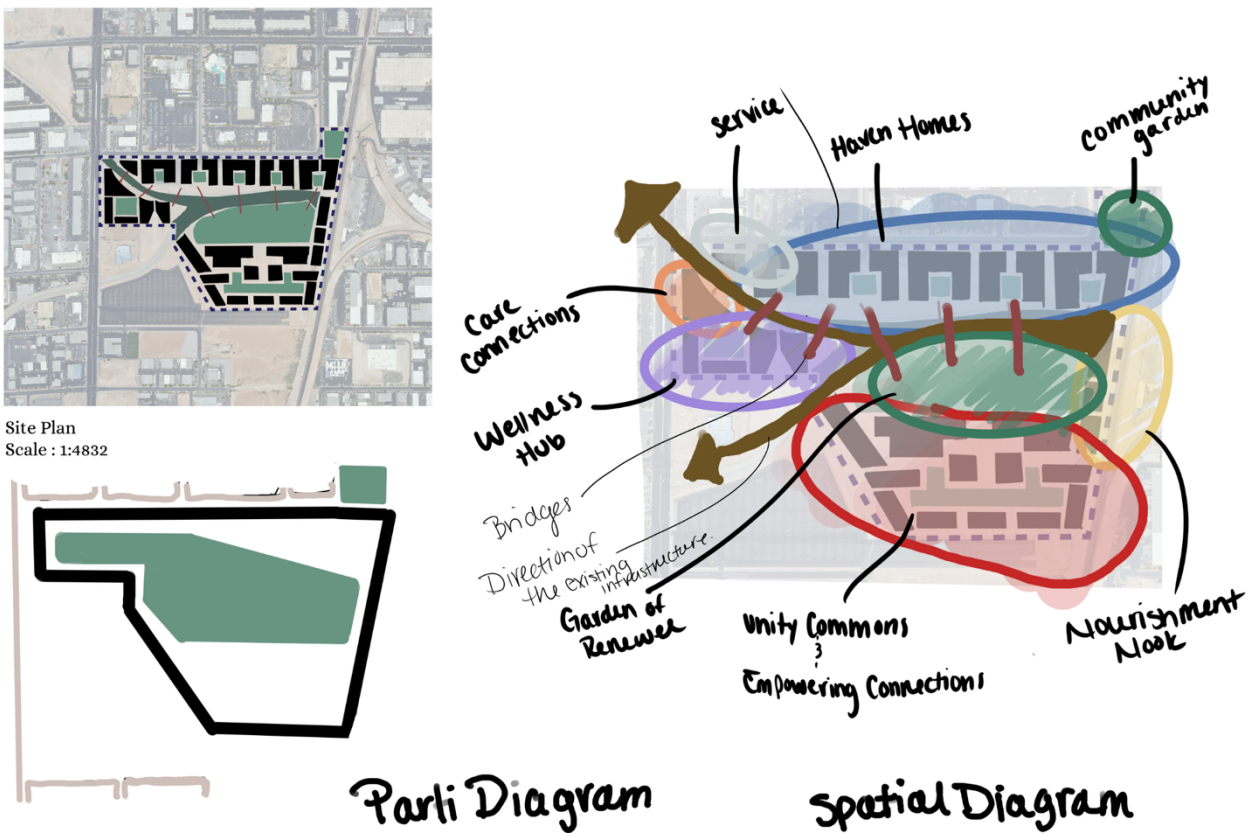


Figure 42. Master Plan, Parti Diagram, and Spatial Diagram of Sanctuary

for a clear representation of the green spaces, and they would interact on-site and with the building, as seen on the massing axon (figure 43). The axon begins to represent a hierarchy of building heights, displaying the residential buildings as the tallest buildings on site. In contrast, the surrounding buildings are stepped down, and interior buildings are lower to provide light and air to the green spaces, but also natural shading due to the climate and limited shading of the site.

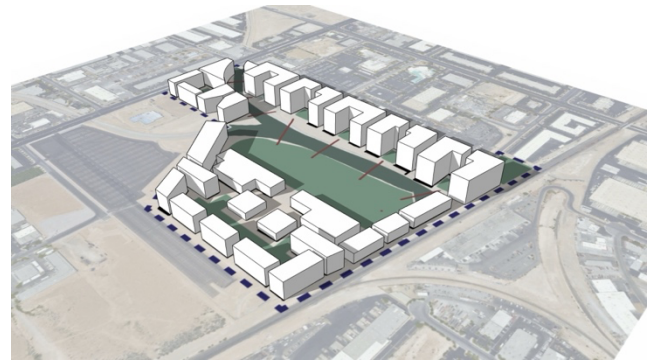


Figure 43. Axon of Sanctuary Schematic Design Scheme

Gradient

The gradient is the second design exploration that uses a gradient of spaces to act as a transition from a private to semi-private to a public space, encouraging individuals in



Figure 44. Axon of Gradient Schematic Design Scheme

the surrounding environment to use the public spaces. The programmatic integration of green spaces and program zones encourages access to green spaces and allows connections

to the surrounding environments. The two distinct areas above and below the proposed rain garden act as a 'sandwich' in the green space by surrounding it with buildings and programming (figure 44). The design scheme focuses on creating these distinct zones that encourage movement throughout the site through a direct axis and encourage the surrounding community to use the provided green spaces (figure 45).

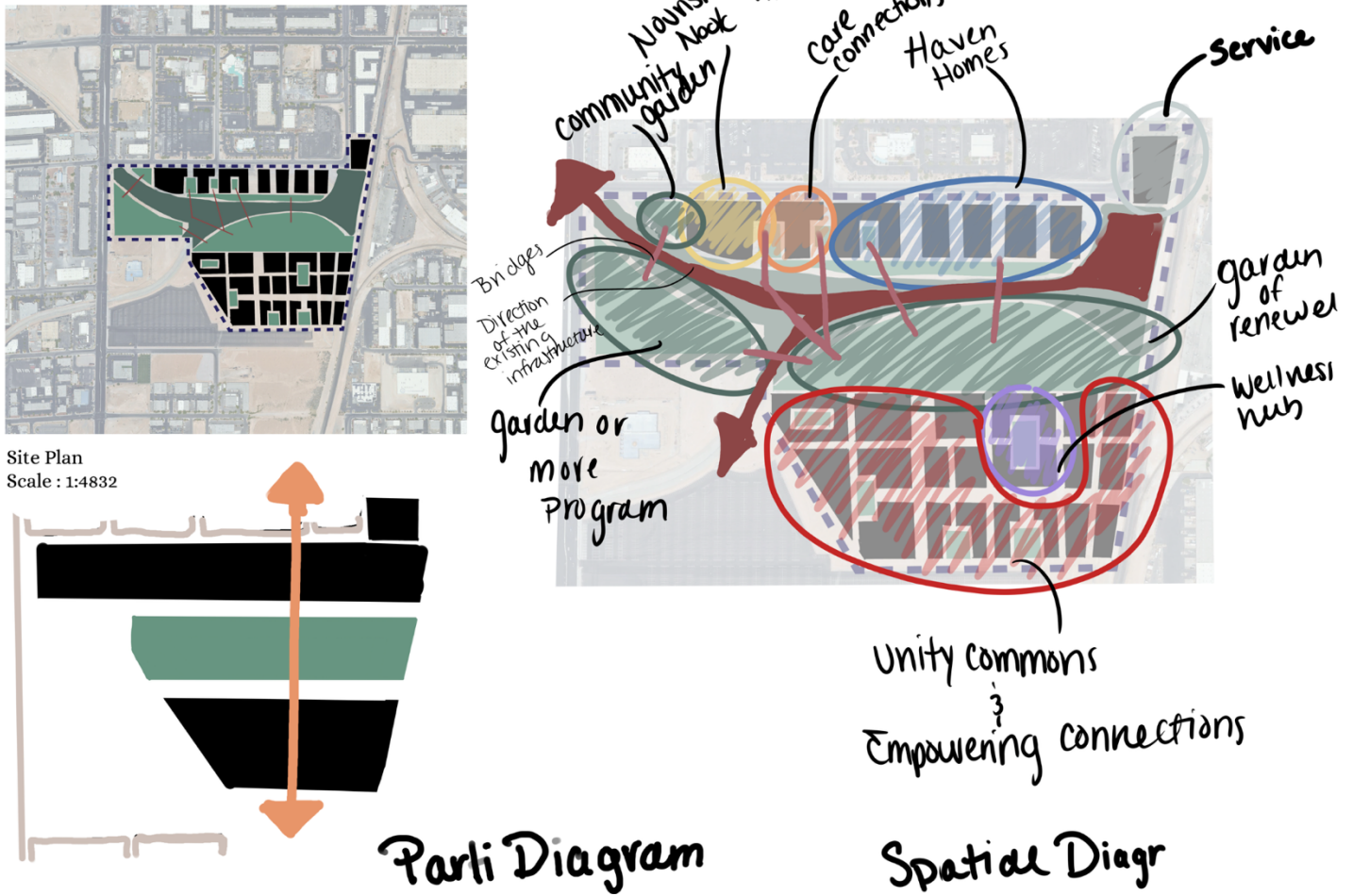


Figure 45. Master Plan, Parti Diagram, and Spatial Diagram of Gradient

As previously stated, the existing infrastructure will be used on the site by introducing new technologies to make the site habitable and buildable. The spatial diagram introduces directionality within the site by introducing residential buildings on a north-south axis, allowing for maximum light and air (figure 45). The north section of the site includes residential, food, and administrative connections, while the activity and wellness-based activity will be in the south portion of the site, creating a gradient of uses and accessibility (figure 45).

Bridges

Bridges are the third design scheme that uses the building as a physical design aspect to bridge the two sections of the site while also including actual bridges for ease of mobility

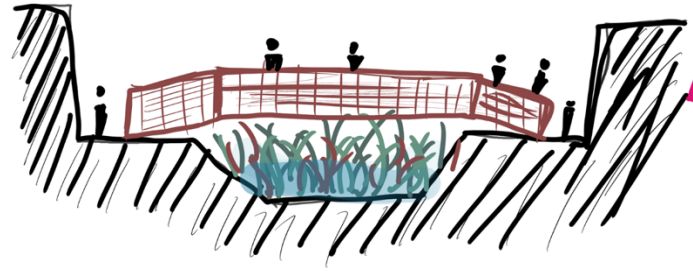
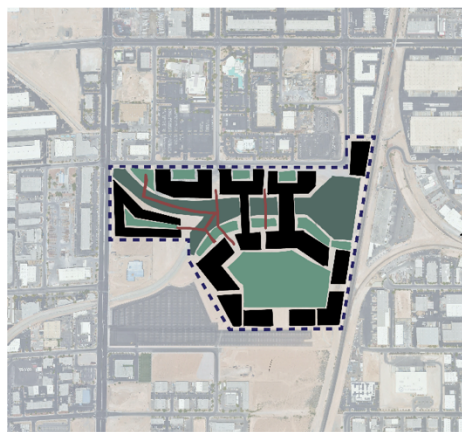
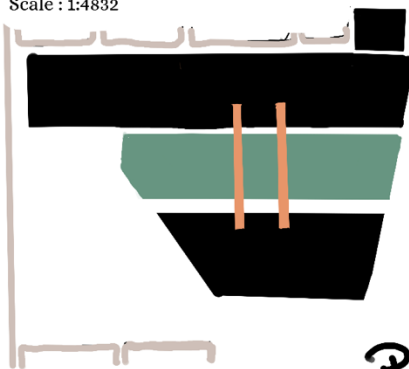


Figure 46. Concept Sketches of the Bridges for the Bridges Schematic Design Scheme

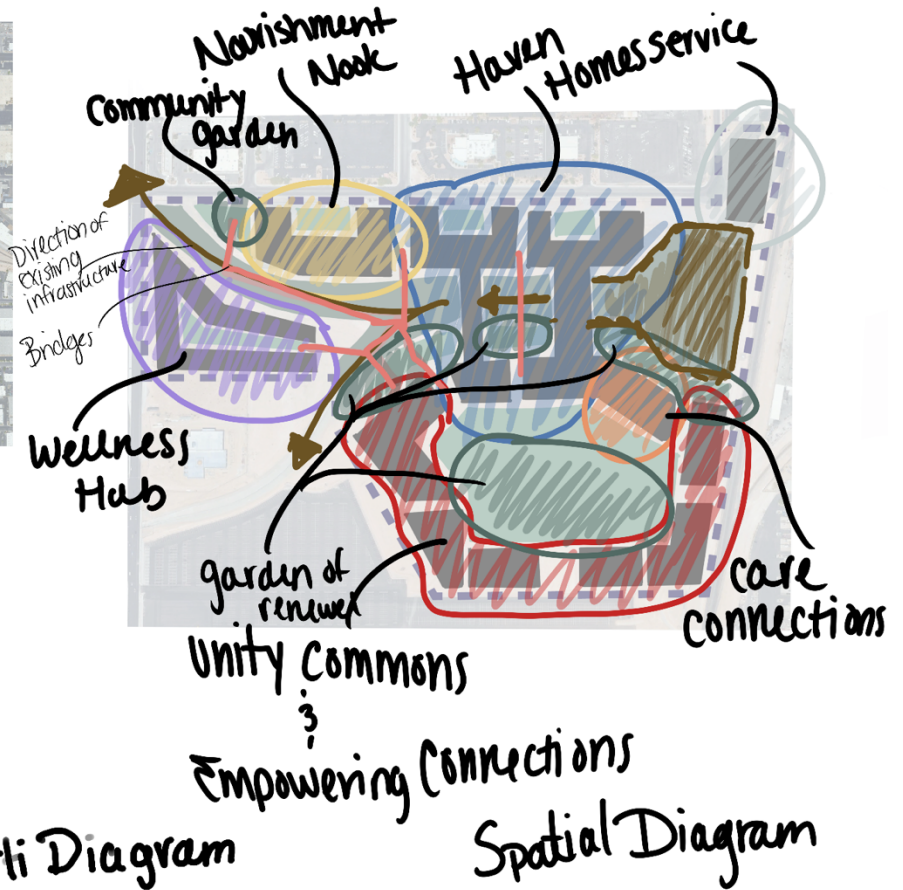
(figure 46). The site's two main buildings go between the buildable areas, creating unity and connectivity of the public and private realms, allowing for accessibility of moving between the sites without going outside (figure 47). The design scheme uses



Site Plan
Scale : 1:4832



Parti Diagram



Spatial Diagram

Figure 47. Master Plan, Parti Diagram, and Spatial Diagram of Bridges

the building as a connecting piece and allows for the other programmatic elements, such as dining, administration, and wellness, to be centered around the residential aspects (figure 47). This allows for community engagement and congregation of the

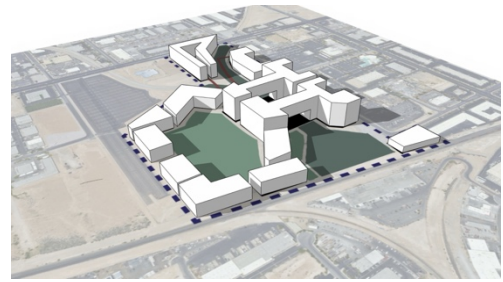


Figure 48. Axon of Bridges Schematic Design Scheme

green spaces, allowing for a straightforward residential connection to green spaces.

The axon shows that the Haven Homes would be the most prominent buildings on site, with the accompanying buildings stepping down and emphasizing those buildings (figure 48). The organization of the buildings allows for an open design plan that balances freedom and access with safety and privacy, encouraging a broader connection to the urban environment.

Constructional Ideas

Thinking about the constructional aspects of the site is essential in determining the site's plausibility, phasing, and buildability. Referring to precedents and buildings in the surrounding area allows for phasing the master-plan design since the exploration uses the scale of a campus. Since no work is being done to change the existing topography of the site, site prep work would be around creating a buildable base for the buildings. However, three critical aspects to consider when considering the schematic design are stormwater management approaches (i.e., environmental considerations), how the residential portion of the design will work with the proposed stages to exit homelessness, and building placement and creating spaces on site to illicit safety, privacy, independence, and community. Creating a modular-based system is essential for the reduction of waste and programmatic integrity of the site.

Yet, there is still research and work on this topic. Reviewing this and including more information in the following semester is important. More to come next semester and in the following chapter.

Conclusion

The three proposed schematic designs aim to address the challenges and current conditions of the homeless population of Las Vegas. The schemes aim to encourage feelings of safety, security, and privacy, allowing for freedom of movement and independence for site residents while building community through a shared experience and end goal. The site's ideas also include encouraging interactions with the surrounding community and the use of public spaces, allowing for the integration of homeless individuals back into society. While there is no decision for the most viable scheme currently, taking time to document, sketch, and further iterate on the site will develop the ideas further, allowing for deeper exploration into the research question.

Chapter 8: The Thesis Idealized and Presented

Design Changes

The idea of building a safe, secure, and private safe that facilitates community and independence through a staged program to exit homelessness is ever evolving. As the site location has stayed the same, the site boundaries have expanded to include new programmatic ideas such as a retail and security portion,



Figure 49. Updated site boundaries of the thesis

with parking (figure 49). This allows for a phasing process of the master plan of the site and the inclusion of the surrounding community as an intended audience. In addition to the site

conditions and updated boundaries, the buildable areas have been modified to include a space on the site that's flat and goes with the existing axis of the site (figure 50). Furthermore, the additional analysis and iterations of the site allowed

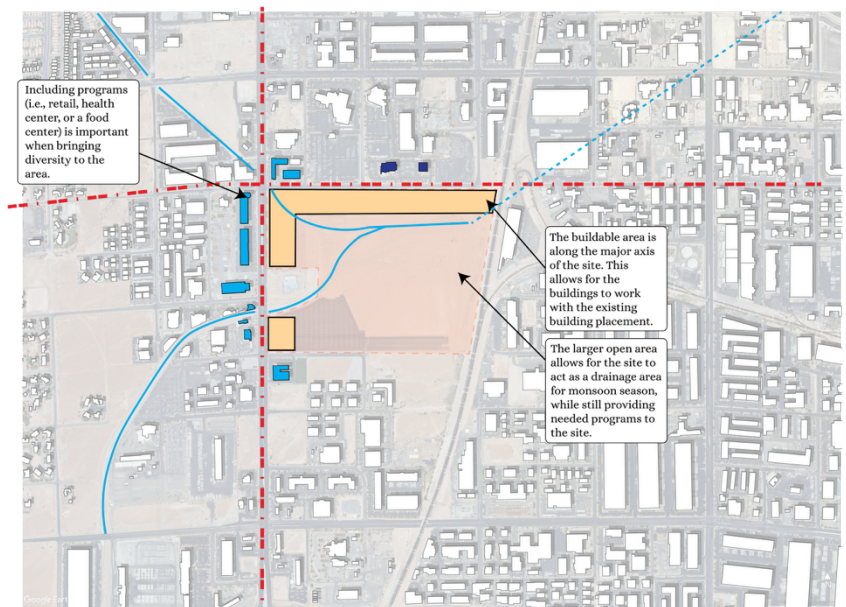


Figure 50. Updated Buildable Area and Site Factors of the Thesis

for a focus on each building type being unique to the intended program. This created

hierarchy on the site and created an opportunity for the further development of the residential portion of the site. Since the program is focused on the four stages of individuals exiting homelessness, the Housing First strategy with accompanying program is essential to implement on the site.

While the design schemes from the previous chapter were not used, the ideas and methodologies are included in the final iteration, allowing for the design solution to evolve and provide the targeted audience with a supportive housing campus.

Final Iteration

Master Plan

The final iteration of the site's master plan uses distinct buildings for each programmatic need while paying close attention to the residential portion. The



Figure 51. Master Plan of the Site

residences are further away from the busy street intersection and primary thoroughfare, providing privacy for these individuals going through the process. This is seen in figures 51 and 52, as the site uses the top

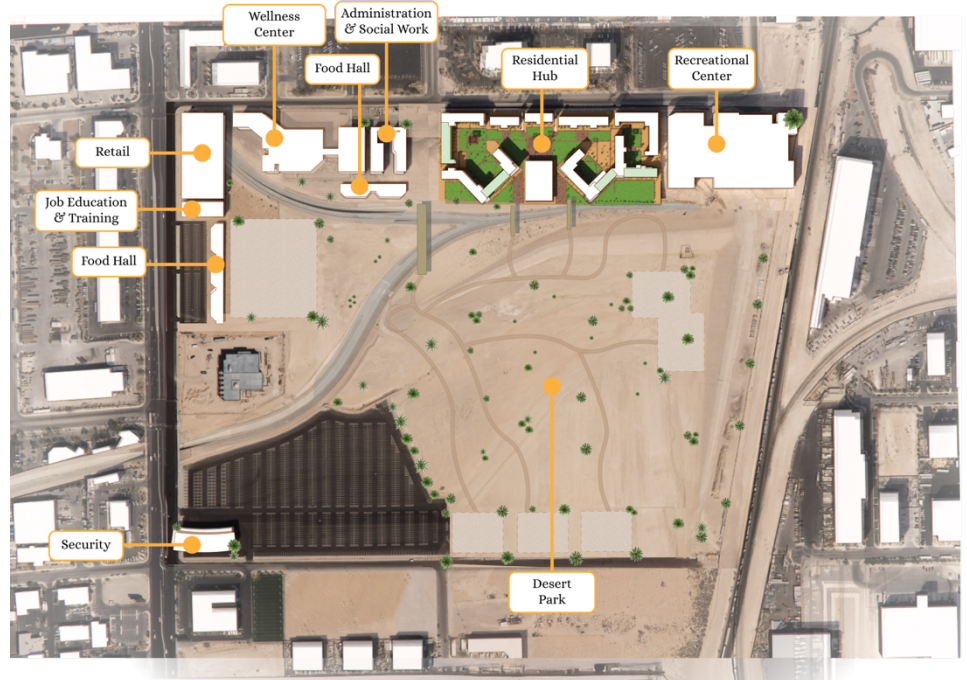


Figure 52. Program Breakdown of the Site

and left portion of the site for the buildings while including a desert park in the center, with courtyards and trails that allow visitors to walk with the typography and experience a new setting.

As the master plan provides an overall vision and intention for the area, housing and primary resources are important aspects of this thesis's research, exploration, and development. The focus now shifts to the residential portion and the stages of recovery for individuals who want to exit homelessness.

Stages of Recovery for Exiting Homelessness

Introductory Housing is the first step of the process that focuses on the individual's basic needs, safety, and immediate shelter. This stage is 3-24 months, allowing individuals entering this building to become aware and familiar with their



Figure 53. Ground Floor of the Residential Portion of the site with Staging Callouts and IDs

surroundings. This primary building includes all of the amenities in a controlled environment on the ground floor, prohibiting movement that may cause challenges to the individual. This building is enclosed, allowing for enhanced security measures and a feeling of privacy and safety for individuals coming from being unsheltered to inside a building.

The next step is Temporary Housing, which encourages interactions, stabilization, and trust building. This stage is from 3-9 months, allowing individuals to move around the site more and become familiar with their new environment. In these buildings, there is a community space on each level with laundry services, allowing for these services to be accessible and creating another level of community on each floor. The building on the far left of the site starts to include ideas of a rooftop garden space for residents of this phase, allowing them to begin to make connections between the building stage and what is occurring on the ground level. Furthermore,

this stage and the next stage have open corridors enabling individuals to see and interact with individuals at the ground level, creating another level of community. The third stage is Transitional Housing, which focuses on building life skills, employment, and community. This stage lasts 9-24 months. Similar to the previous phases, there is a community space on each level, which can be an interior space on the corner or a rooftop garden space. This phase works on creating long-lasting relationships that were started and developed in the previous phases. This sets up these individuals to re-enter society with the skills and resources they need to be successful.

Permanent Housing is the last stage of the process, which focuses on mentorship, perseverance, and community upliftment. This stage takes all of the valuable skills learned previously and creates a space for these individuals to use these skills to give back to the community and act as role models. This stage is 24 months. This stage does not hinder or restrict the movement of the residents. This building is fully enclosed like the first-stage building, allowing individuals to have their own privacy and independence. Since each phase is distinct, all rendering can be found in Appendix C: Figures 61 – 67.

Unit Types

In each stage, there are distinct unit types that help to develop and foster the idea of moving through the four stages to exit homelessness and reenter society. The first

and second stages (i.e, introductory and temporary housing) would include studio and one-bedroom units, as formerly homeless individuals are becoming used to living in a community, and providing a roommate may create a hostile environment. The unit would be customizable to their needs and wants at this stage.

When moving into stage three (i.e., transitional housing), introducing a two-bedroom unit in the building is meant to prompt community ideals and

skills learned in the previous 2 phases. While it is still reserved for a special case, there is an option for there to be roommates. In the fourth phase (i.e., permanent

Unit Breakdown per Stage		
Introductory Housing		
Studio	14	54%
1-Bedroom	12	46%
TOTAL	26 Units	
Temporary Housing		
Studio	31	53%
1-Bedroom	27	47%
TOTAL	58 Units	
Transitional Housing		
Studio	21	38%
1-Bedroom	19	35%
2-Bedroom	15	27%
TOTAL	55 Units	
Permanent Housing		
Studio	26	42%
1-Bedroom	26	42%
2-Bedroom	5	8%
3-Bedroom	5	8%
TOTAL	62 Units	

Figure 54. Unit Breakdown per Stage

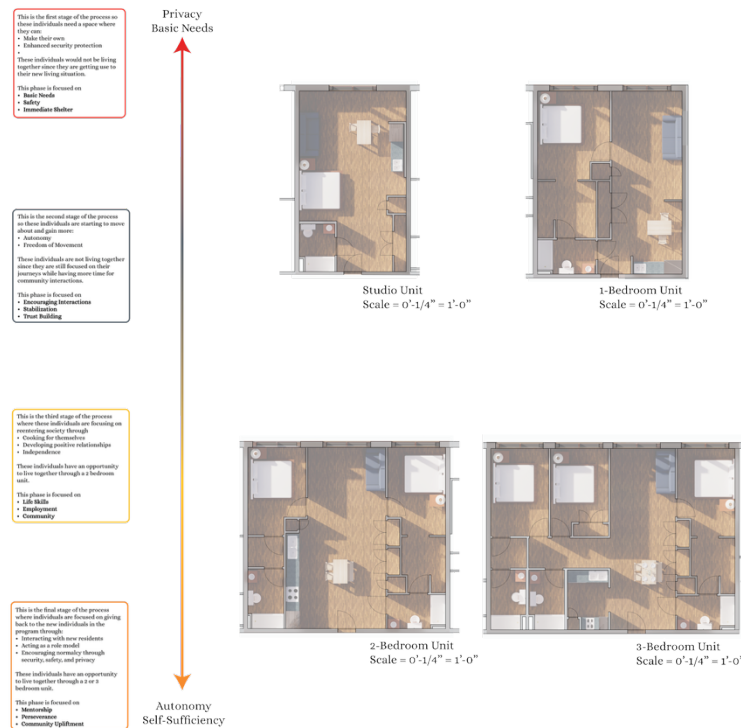


Figure 55. Unit Configuration per stage

housing), there is an option for a two or three-bedroom dwelling unit, as these units act more as traditional apartment living. These units are moving from a more basic and functional aspect of living to becoming more self-sufficient and

autonomous (figure 55). However, the main unit type of the residential portion of the site is studio and one-bedroom units, as most individuals will want to live separately, as seen in figure 54, which is the breakdown of units and unit types per stage.

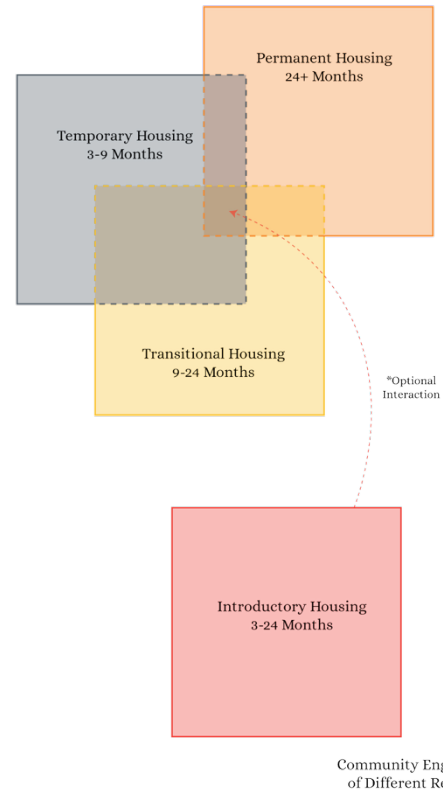


Figure 56. Community Engagement of Different Residents

Courtyard and Environmental Enhancements

The courtyard is an essential aspect of the thesis design as the ground level includes distinct courtyards for each phase that can be shared amongst different buildings or used by only one building (figure 57). The composition of these

buildings and the courtyard allows individuals at different phases to interact and encourage each other to do better in their journey. This is why the circulation of the

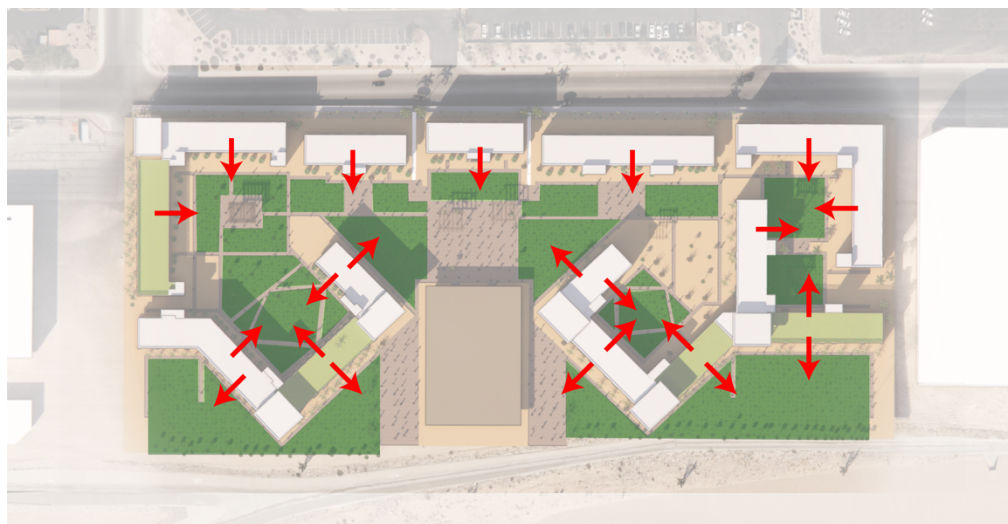


Figure 57. Courtyard Interaction Diagram

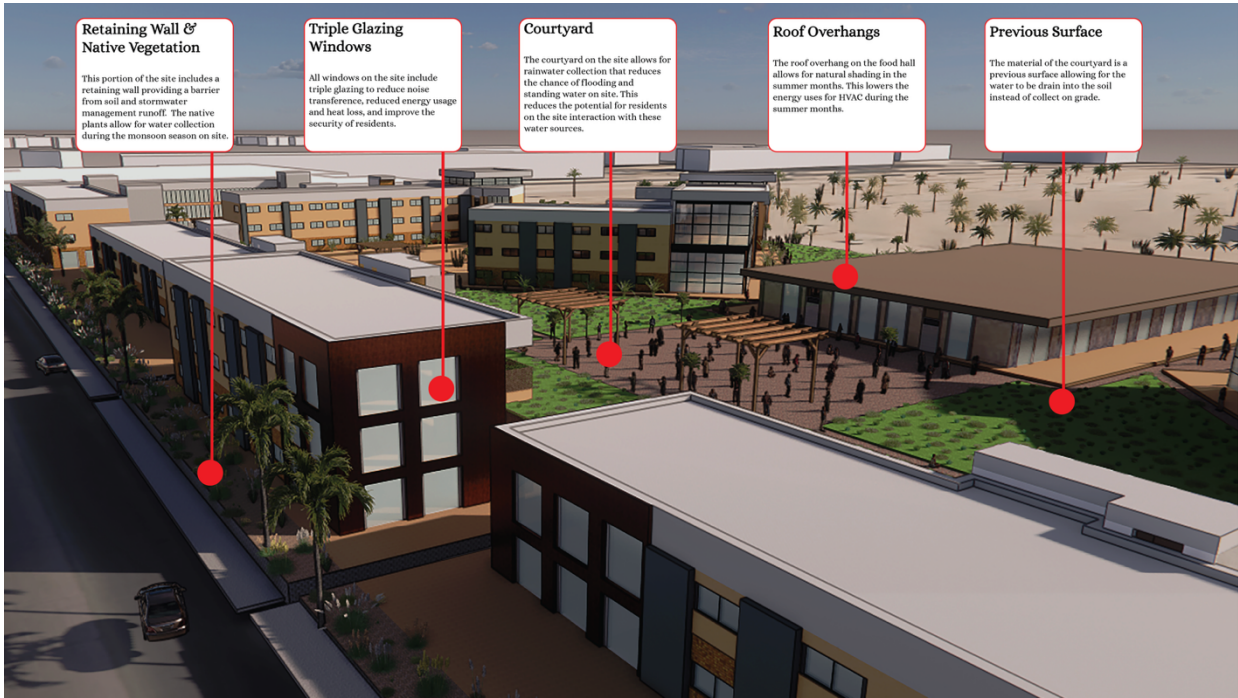


Figure 58. Environmental Site Diagram

building facing the courtyards is essential for developing relationships. This not only encourages interactions but also encourages different amounts of community and interaction time that is held among the different stages, as seen in the community engagement of other residents (*figure 56*).

While the courtyard provides various levels of community engagement and interaction, it also adds sustainable metrics to the residential portion of the site. The residential portion of the site includes:

- Retaining Wall & Native Vegetation
- Triple Glazing Windows
- Courtyard
- Roof Overhangs
- Pervious Surfaces

These features of the site allow it to be self-sufficient in its drainage of water on the site. If there is a collection of water or standing water on the site, this can increase an

individual's risk of being exposed to traumatic and harmful situations that can put their mental and physical health at risk. The inclusion of native vegetation and pervious surfaces creates opportunities for stormwater to drain during monsoon season and reduces the chance of these traumatic events, as well as provides some aspects of greenery to the site for the residents.

Conclusion

Overall, this supportive housing complex and the residential portion aim to bring a modern housing-first approach to unsheltered homeless individuals who live in the Las Vegas stormwater management tunnels. While the city of Las Vegas continues to criminalize homelessness and remove affordable housing opportunities, creative ideas and solutions have to be considered and implemented in order to help the individuals in this situation and prevent more from becoming homeless. This is the vision and potential future of this site. This site is for individuals trying to exit homelessness through a program that meets them where they are and allows them to move at their own pace.

Appendices

Appendix A : Stormwater Management Maps for the Area of Las Vegas

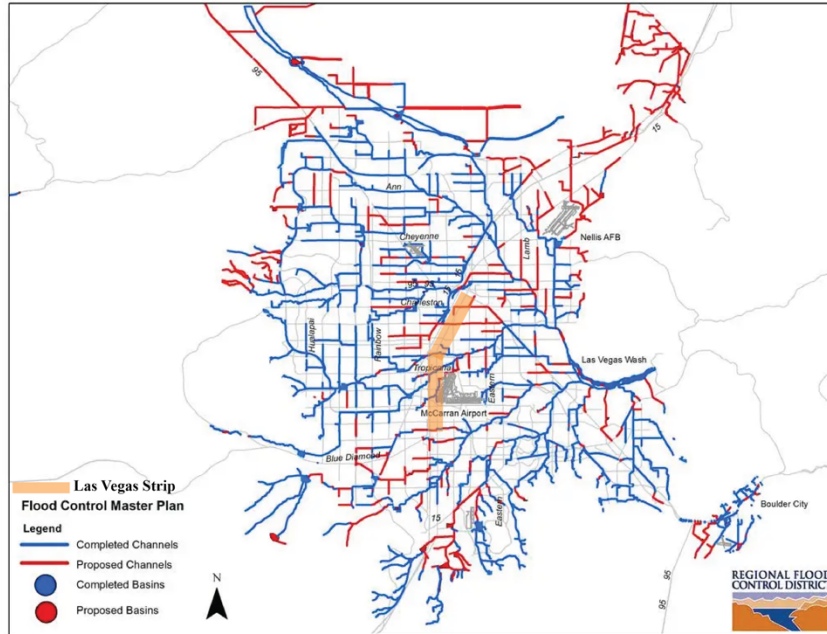


Figure 59. Flood Control Master Plan Map

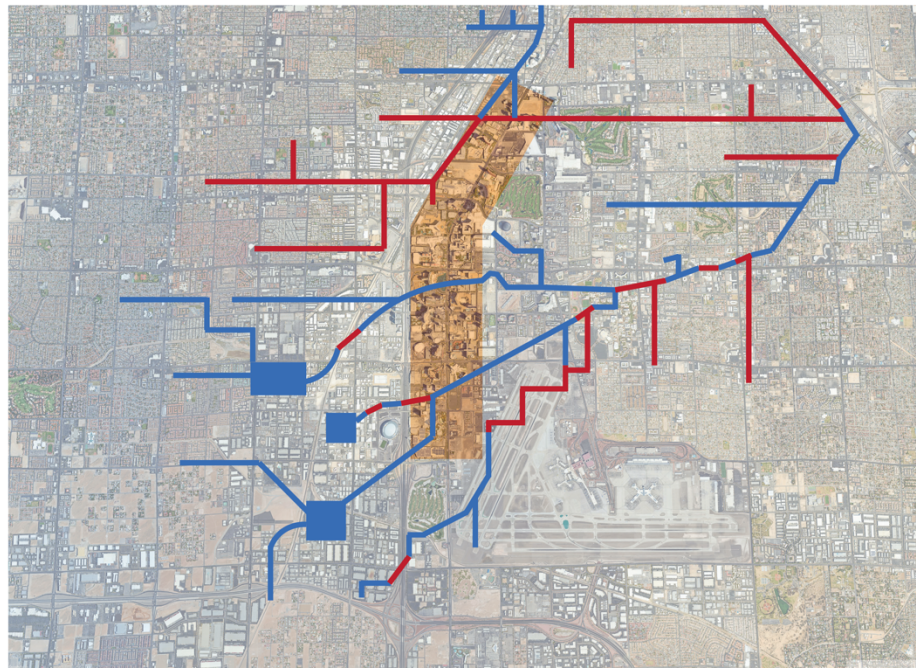
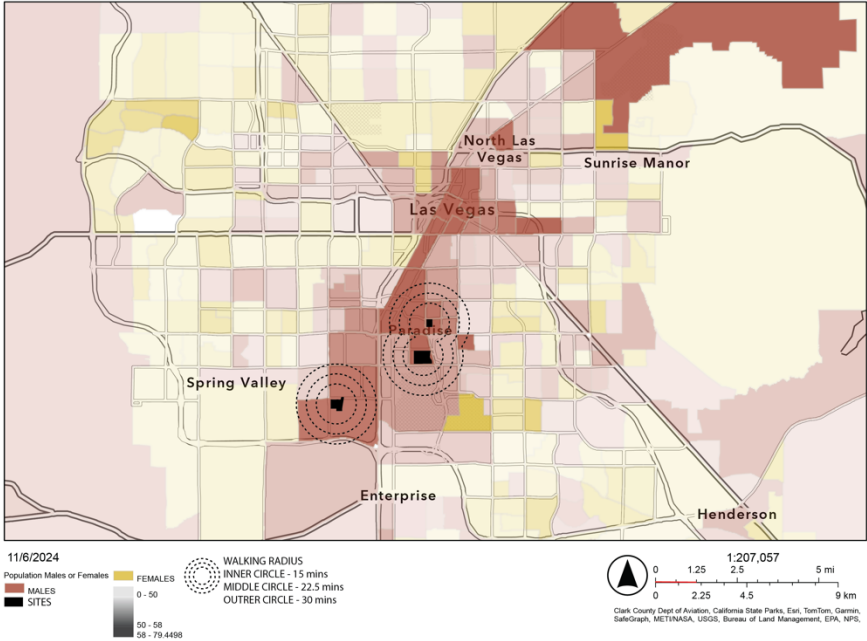


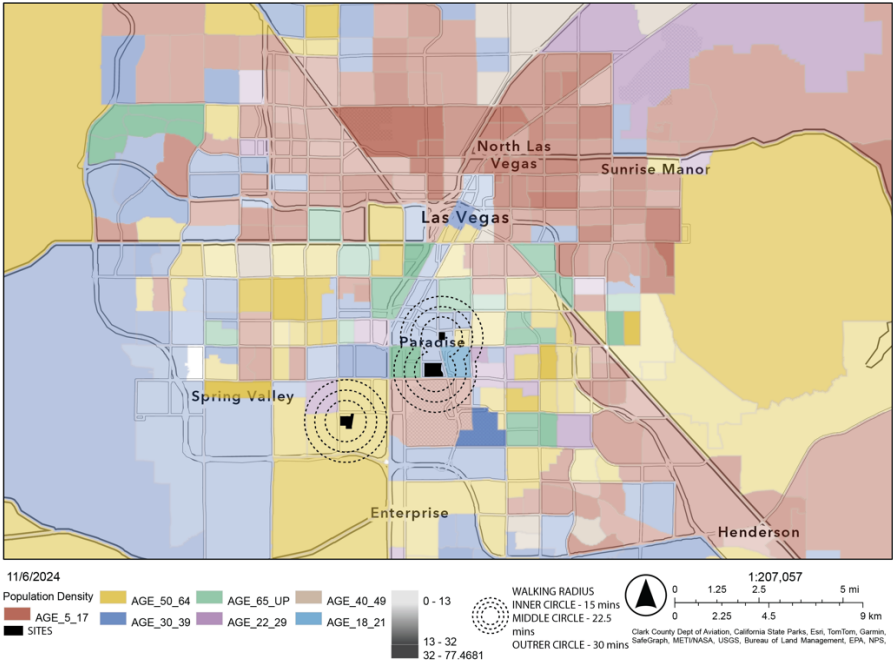
Figure 60. Existing Infrastructure Map with Las Vegas Strip Highlighted

Appendix B: Content Maps for the Area of Las Vegas

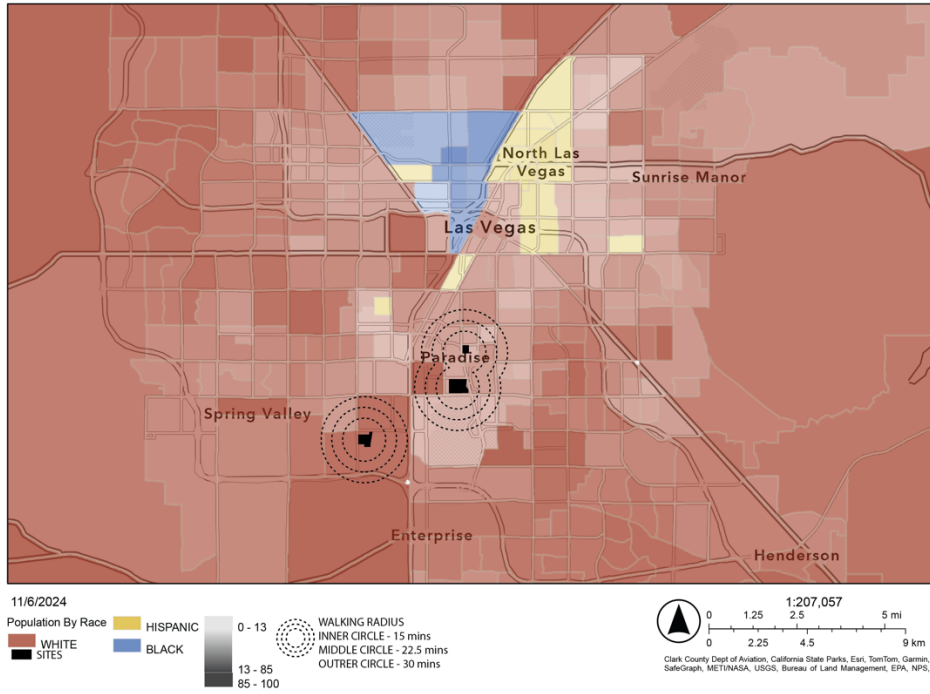
Las Vegas Map : Male and Female



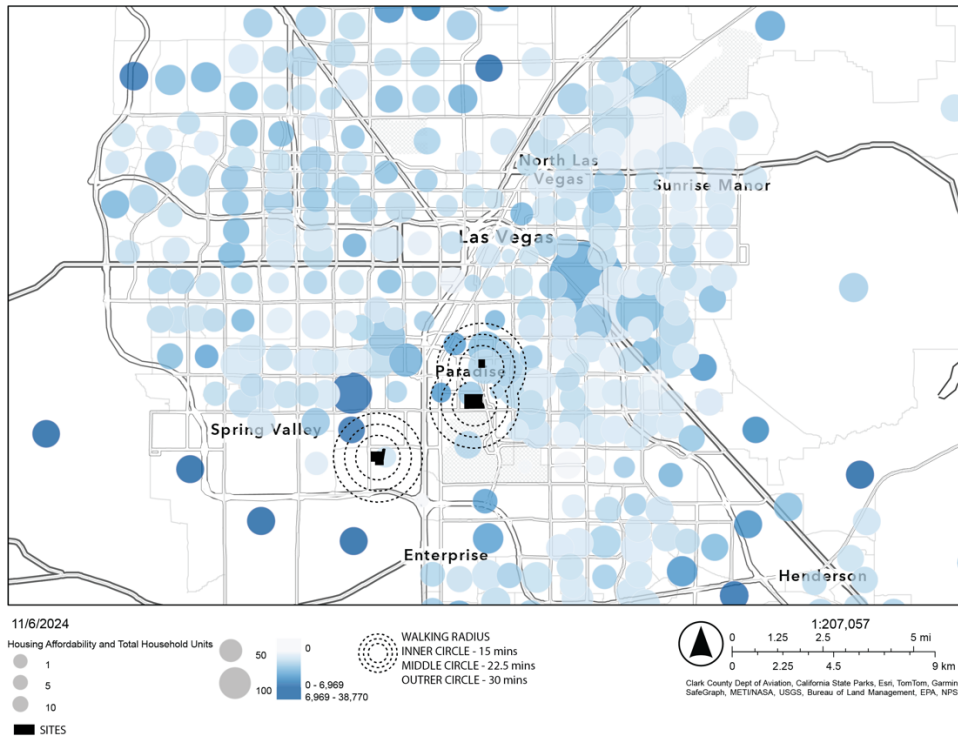
Las Vegas Map - Age Distribution



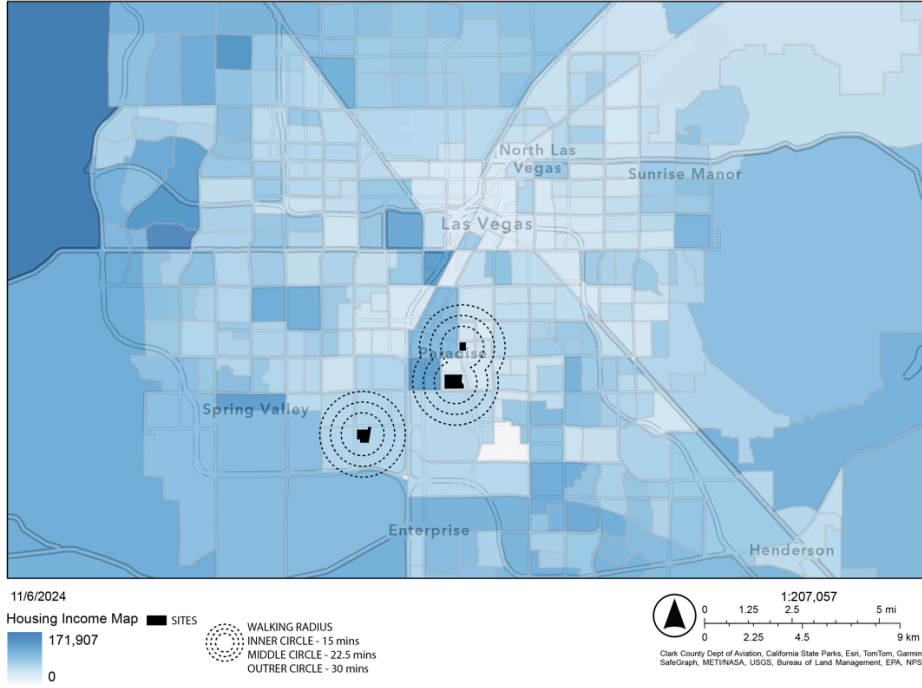
Las Vegas Map : Race Distribution



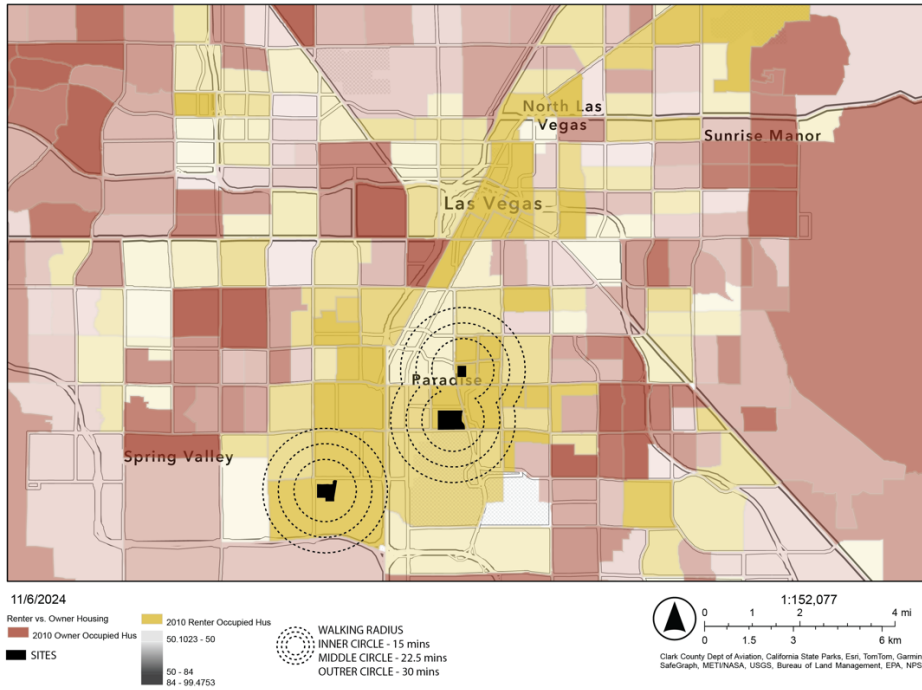
Las Vegas Map : Housing Affordability



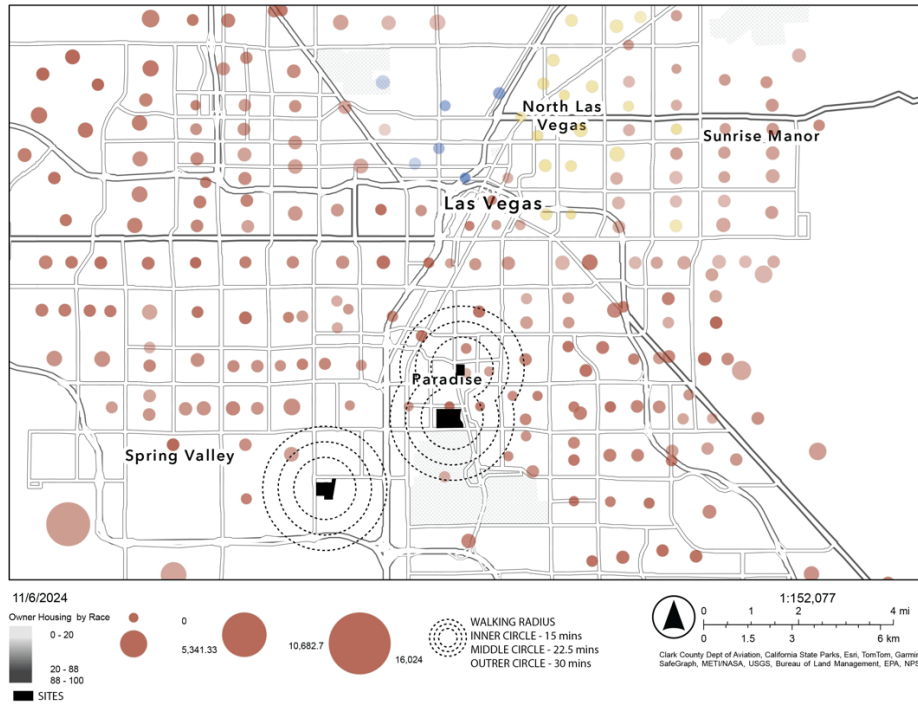
Las Vegas Map : Housing Income



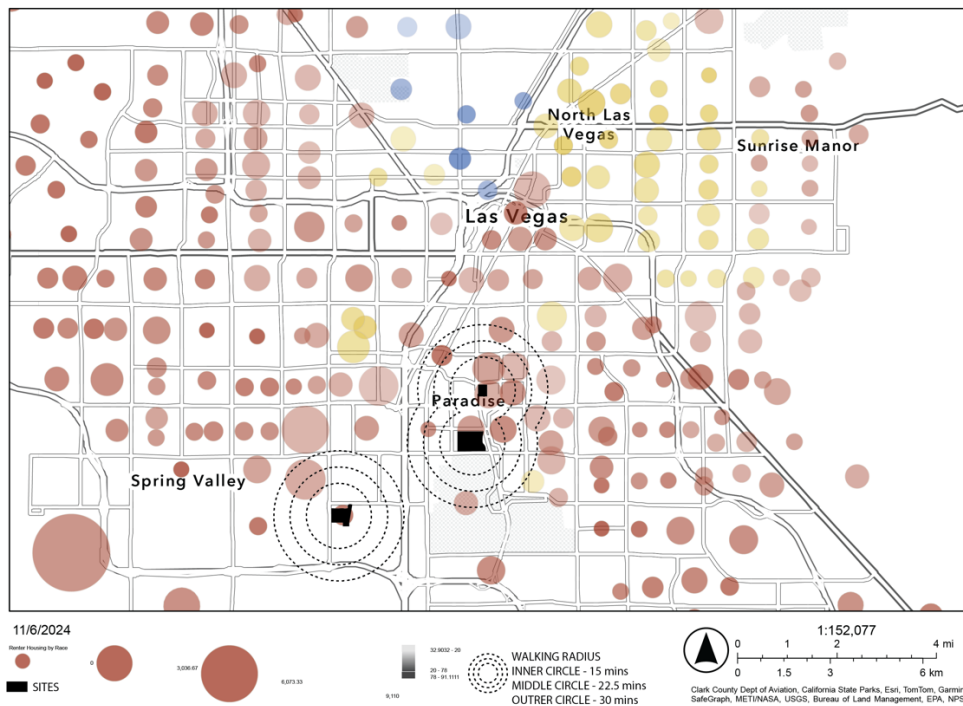
Las Vegas Map : Renter vs. Owner Housing



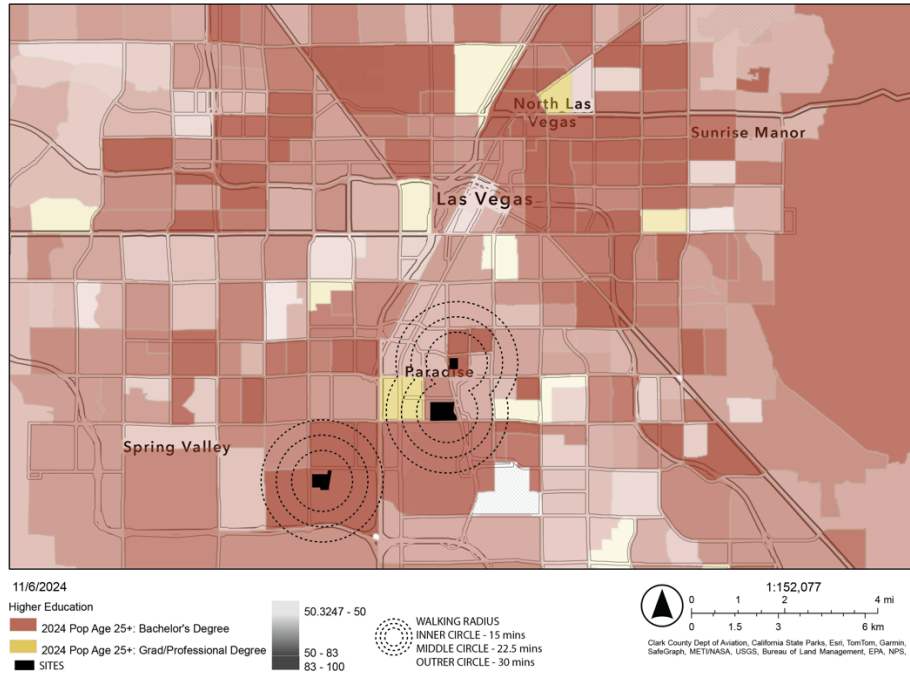
Las Vegas Map : Owner Housing by Race



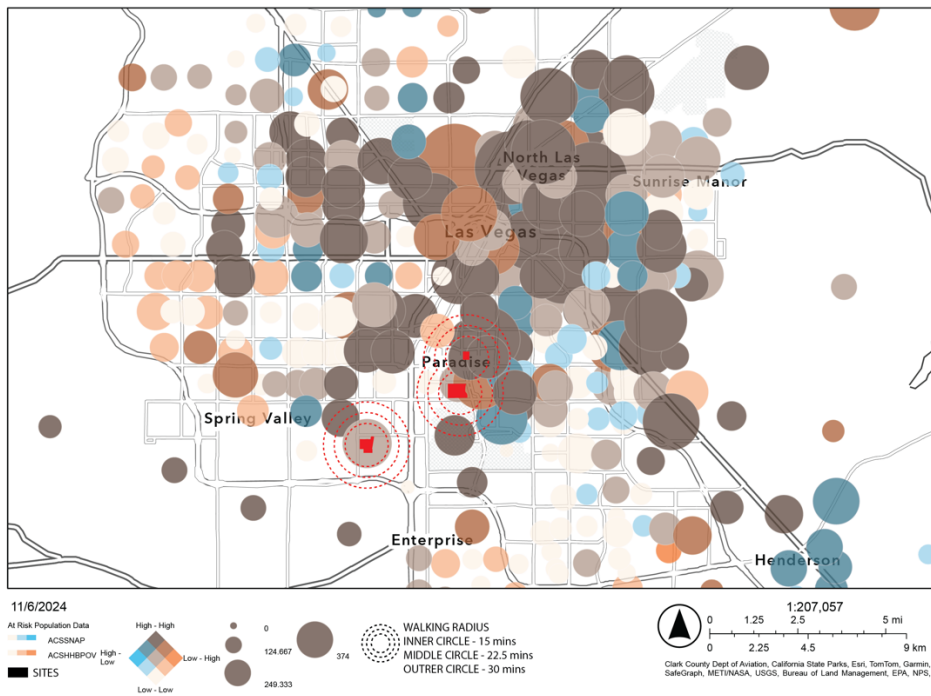
Las Vegas Map : Renter Housing by Race



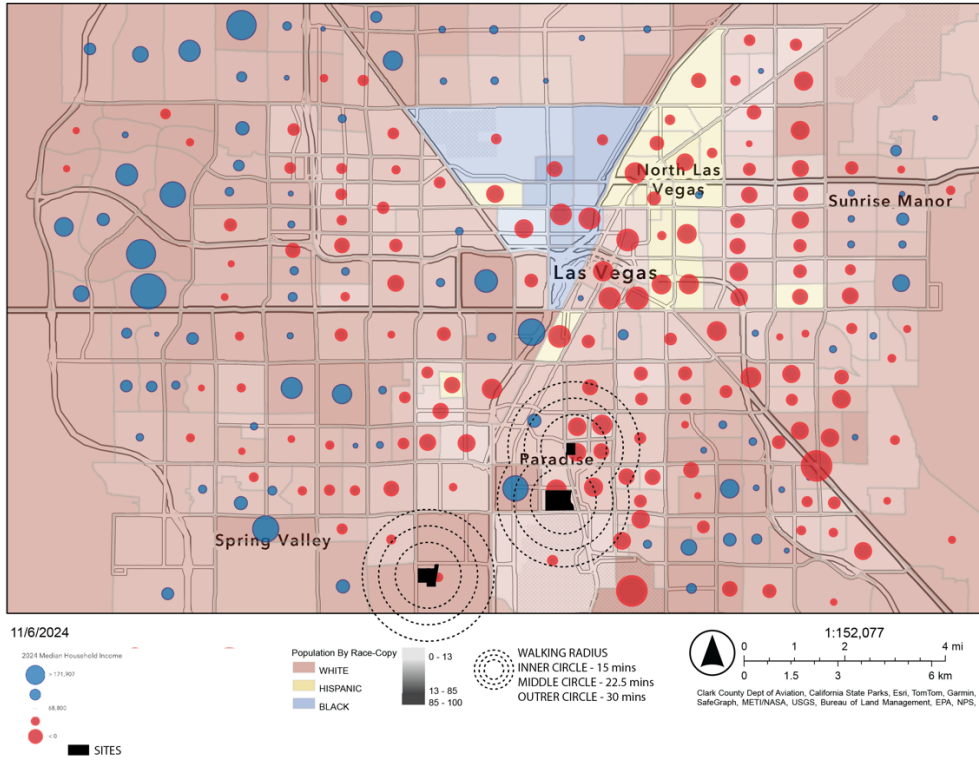
Las Vegas Zoning Map : Higher Education



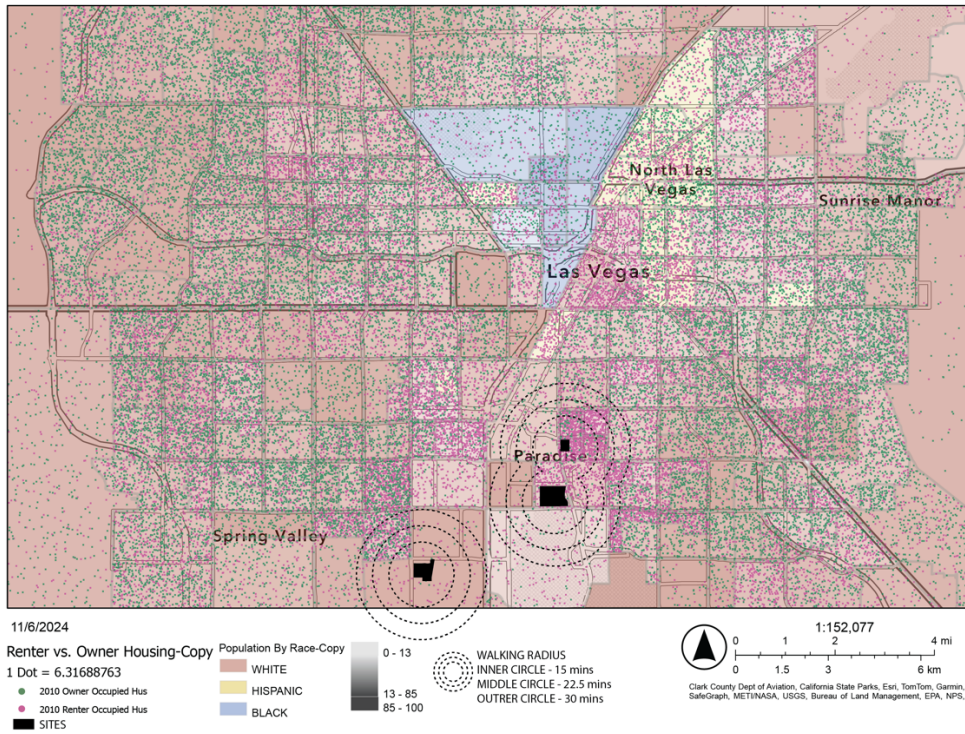
Las Vegas Map : At Risk Population



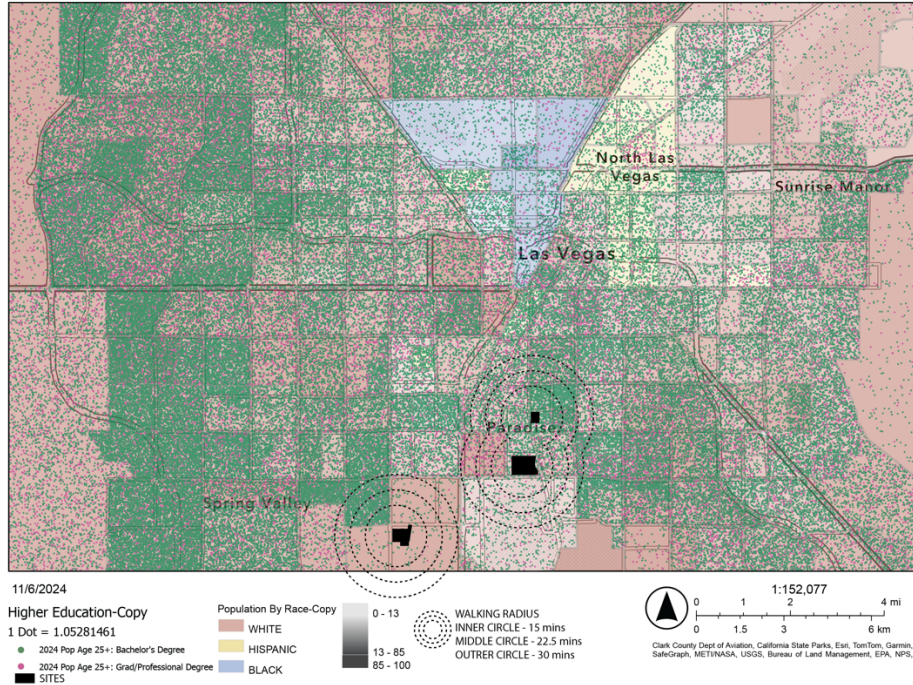
Las Vegas Map : Household Distribution by Race



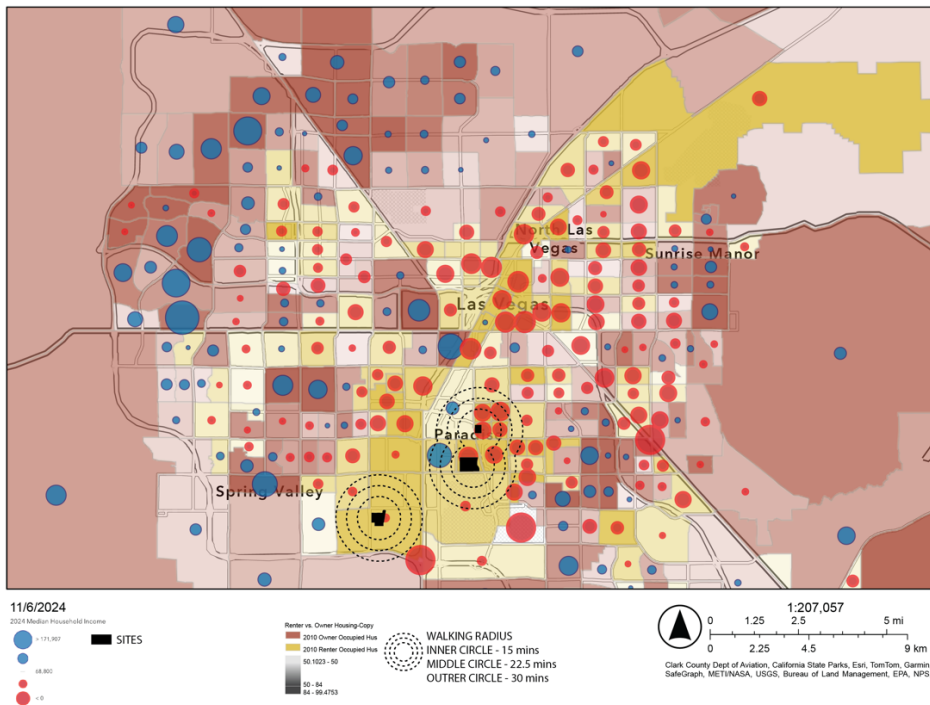
Las Vegas Map : Renter vs Owner by Race



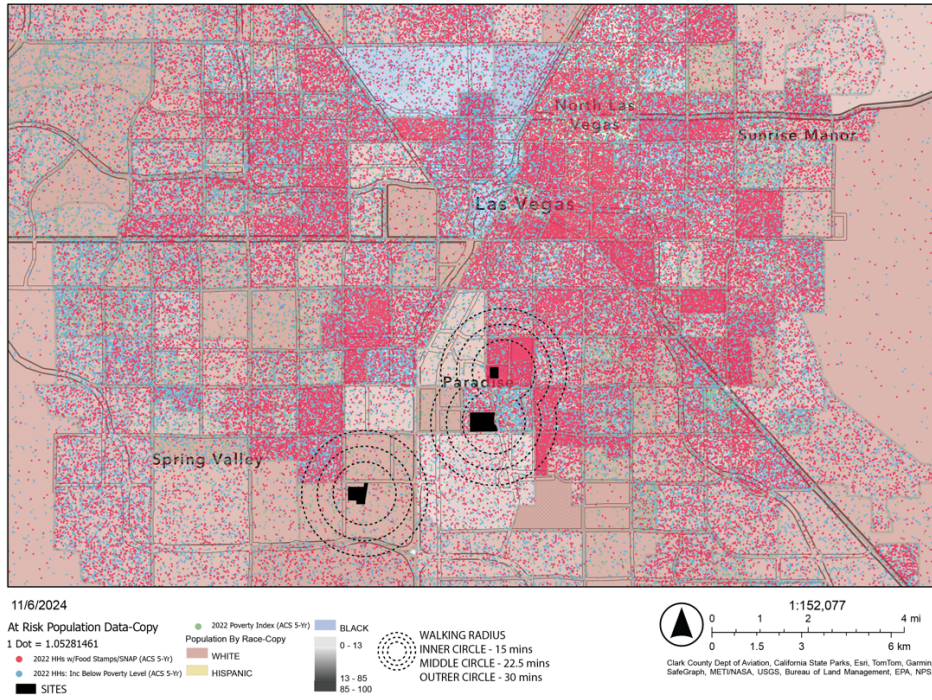
Las Vegas Map : Higher Education by Race



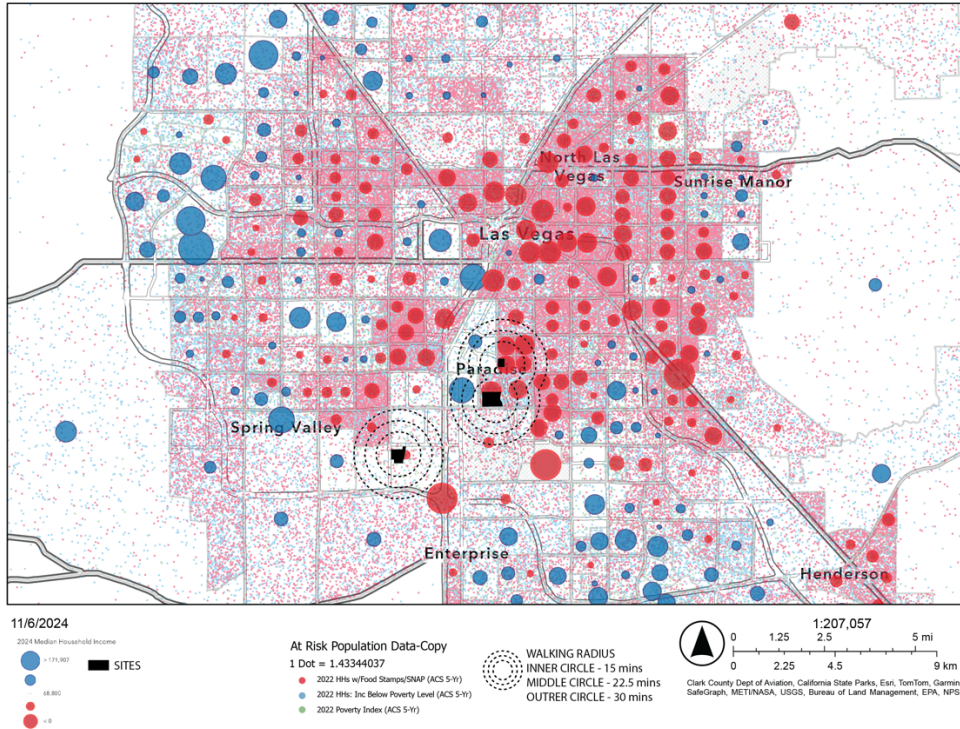
Las Vegas Map : Renter and Owner by Household Income



Las Vegas Map: At Risk Population by Race



Las Vegas Map : At Risk Population by Household Income



Appendix C: Renderings of the Residential Portion of the Site



Figure 61. Stage 1 & 4 Courtyard Perspective.



Figure 62. Stage 2 Corridor Perspective



Figure 63. Roof Top Garden for Stage 3 Perspective



Figure 64. Stage 4 Courtyard Perspective



Figure 65. Perspective Looking at the Site



Figure 66. Perspective Looking at Stage 3 and Food Hall



Figure 67. Main Courtyard Perspective

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