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SKY GARDEN: Graduate Student Housing

by

MARIA PAULA SAAVEDRA RIOS

Under the Direction of Michael White

ABSTRACT

This thesis presents an on-campus graduate student housing project that aims to revitalize its Downtown Atlanta neighborhood, contribute to Georgia State University's academic goals and campus development plans, and address aspects of the housing problem that GSU's graduate students currently face in Atlanta, Georgia. The literature review and data collected from the graduate student survey informed the design process by understanding the urban context history and identifying graduate students' needs and preferences. The project aims to reposition a vacant office building located on-campus and convert it into student housing serving an age-diverse population offering common areas that contribute to students' academic and social life and restaurants/coffee shops to help generate a sense of neighborhood community. The "city in the woods" concept inspired expanded interventions with natural vegetation and greenery, a natural and neutral interior color palette, and literal open-air punctuations through the building.

INDEX WORDS: GSU, Graduate students, Housing, Community, Affordability, Interior design

SKY GARDEN
Graduate Student Housing

by

MARIA PAULA SAAVEDRA RIOS

A Thesis Submitted in Partial Fulfillment of the Requirements for the Degree of

Master of Fine Arts

in the College of the Arts

Georgia State University

2022

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2022

SKY GARDEN
Graduate Student Housing

by

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May 2022

DEDICATION

Para mi familia.

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1 INTRODUCTION

The lack of affordable housing has become a major problem in the United States. For the past 40 years, the construction of new residential buildings has not kept pace with the rapid US population growth. This gap has created a shortage in housing availability leading to increases in rental prices.¹ The definition of affordable housing is subjective, being its different interpretation between households. In this thesis affordable housing is defined as “housing in which the mortgage or rent payments, plus housing-related taxes, insurance, and utilities, do not exceed 30% of gross annual income.”² Across the country, more than 10 million renters pay more than half of their salary for rent, spending more than the recommended 30% of their income.³ The increase in rent has caused the displacement of less favorable populations, and has had a long-term impact on the economic growth and inequality of the American city.⁴ Since 2021, rent prices in Metro Atlanta have increased by 17%, requiring greater than 50% of renters to spend more than 30% of their monthly income on rent.⁵

The main Georgia State University (GSU) campus is located in Downtown Atlanta. The university’s urban and governmental- and business-driven location includes limited residential buildings. The shortage in housing, and the high demand driven by students

¹ “Alleviating Supply Constraints in the Housing Market.” The White House. November 05, 2021.
https://owl.purdue.edu/owl/research_and_citation/chicago_manual_17th_edition/cmos_formatting_and_style_guide/web_sources.html

² Carrie L Johnson, Brooke Hanson, David Evans, Jinhee kim, Andi Long, Julie Fife, “How Americans Define Affordable Housing,” *Family and Consumer Sciences Research Journal* 47, n. 4 (May 2019): 395.

³ “Alleviating Supply Constraints in the Housing Market.” The White House. November 05, 2021.
https://owl.purdue.edu/owl/research_and_citation/chicago_manual_17th_edition/cmos_formatting_and_style_guide/web_sources.html

⁴ “Alleviating Supply Constraints in the Housing Market.” The White House. November 05, 2021.
https://owl.purdue.edu/owl/research_and_citation/chicago_manual_17th_edition/cmos_formatting_and_style_guide/web_sources.html
_17th_edition/cmos_formatting_and_style_guide/web_sources.html
. August 10, 2021.

<https://www.ajc.com/ajcjobs/atlanta-home-rents-rising-faster-than-most-us-cities/6ED4G5ARRRGJXMRHLJTUH3QQ2A/>

wanting to live on-campus or near the university, further increases rental rates.⁶ GSU provides undergraduate on-campus housing for a small percentage of enrolled students, but the institution does not provide any type of on-campus housing for graduate students. The lack of affordable housing in this area forces many students to live off-campus and is one of the biggest challenges they encounter in student life.

GSU aims to support graduate students in the transition between academic and professional life with resources to guarantee their success. However, the lack of affordable graduate housing contributes to a feeling of disengagement among graduate students, unaware or unable to take advantage of the opportunities and resources offered by the university and its location. There is evidence that living on-campus is beneficial to graduate students' academic and social life. According to the U.S. Department of Housing and Urban Development, living on-campus motivates students to perform better academically, engage more with their studies and the university community, and create a positive peer effect.⁷ Therefore, offering affordable on-campus housing for graduate students would improve their academic performance and create a more advantageous and friendly graduate community. Furthermore, GSU's goal is to be a high-impact research-based university located in Atlanta's urban environment. To accomplish this goal, the university needs to attract a high rate of competitive graduate students. One of the strategic ways to attract them is by offering an affordable and livable on-campus housing experience.

⁷ "Barrier to Success: Housing Insecurity for U.S. College Students." Accessed December 06, 2021. https://www.huduser.gov/portal/periodicals/insight/insight_2.pdf

To address the challenges of graduate student housing while helping to accomplish one of GSU's strategic goals, this thesis presents a research-based and data-driven design project for affordable on-campus graduate student housing. Realizing this project would benefit graduate students, the GSU community, and the Downtown neighborhood. Graduate students would have housing security, meet new peers, and be able to take advantage of the university's facilities and resources. Additionally, increased numbers of housing units in the campus vicinity would create greater activity in the area, attracting even more housing, commercial and retail establishments. The newly constructed environment would further enhance a sense of community and belonging and contribute to a revitalized Downtown and GSU campus environment.

2 HISTORICAL CONTEXT

Located in the heart of the “city in a forest”, Downtown is known as the central business district of the city of Atlanta: a city that emerged from the ashes of the civil war. In the course of this post-war epoch, Atlanta was recognized as one of the fastest growing urban areas in the United States, sometimes nicknamed the “Capital of the New South.”⁸

During the 1960s and 70s, rapid population growth and an increase in job opportunities made Downtown Atlanta an attractive district in which to live, work and be entertained.⁹ The Five Points area was especially attractive for its mixed-use zoning, known as the “Time Squares, Hollywood, and Singapore of the South”¹⁰ according to anthropologist Charles Rutheiser. As accelerated city development continued, new residential neighborhoods on the north side of Downtown were created and affluent citizens migrated there, attracting more high-end retail and office spaces along with them.¹¹ This economic boost, along with the expansion of the territory, lead to a divided city in which the north area of metro-Atlanta attracted wealthy people while the south was relegated to impoverished populations.¹² As a result, in the 21st century the fractured city of Atlanta has suffered depreciation in its physical and social infrastructure. The depreciation is reflected in the high crime rate, abandoned buildings, unclean streets, lack of green areas, entertainment, and retail stores, all discouraging housing in Downtown.¹³ These issues discourage people to move in, or even visit the neighborhood.

⁸ “Atlanta: Capital of the New South,” Georgia Tech University, accessed December 11,2021.
<https://cse.gatech.edu/atlanta-capital-new-south>

⁹ “Downtown Atlanta Master Plan,” *Central Atlanta Progress*, accessed October 21, 2021,
<https://www.atlantadowntown.com/initiatives/plan-downtown-atl>

¹⁰ Charles Rutheiser, “Making Place In the Nonplace Urban Realm: Notes on the Revitalization of Downtown Atlanta,” *Urban Anthropology and Studies of Cultural Systems and World Economic Development* 26, no. 1 (1997): 11.

¹¹ Larry Keating, *Atlanta*, (Atlanta: Temple University Press, 2001), 7.

¹² Keating, *Atlanta*, 1.

¹³ Rutheiser, “Making Place in the Nonplace Urban Realm: Notes on the Revitalization of Downtown Atlanta, 9.

During the 1990s, multiple plans to revitalize downtown were attempted with little to no success. Example of these efforts were the redesign of the historic Fairlie-Poplar district and the Underground mall at Five Points. Urbanists and anthropologists believe that universities located in urban areas such as Downtown Atlanta can help develop and revitalize a city by attracting student housing, retail, and entertainment. Urban campuses also bring 24-hour activities that trigger urban life. Thus, Charles Rutheiser, considers Georgia State University's downtown campus a long-needed catalyst able to revitalize Downtown Atlanta.¹⁴ This chapter will elaborate on the history of Downtown Atlanta and Georgia State University to provide a better understanding of its development over time and how this symbiotic relationship might contribute to the future of a livable neighborhood.

2.1 Downtown Atlanta

In the early 19th century, the urban design of the city of Atlanta took shape following the natural trails created by Native Americans. The Creek and Cherokee nations formed paths that followed the natural landscape as travel routes to cross the country on a south-to-north axis. Some of these organic paths evolved into roads and helped establish the main Downtown arteries of Peachtree and Marietta Street which exist to this day.

By the mid-19th century, three railroad lines were developed to connect the states of Tennessee and Georgia, all intersecting at one point in the very center of Atlanta. The intersection was called Terminus, or The Zero-mile Post, because it was the last stop of the railroad and functioned as a business center where goods and materials were exchanged. This high-traffic

¹⁴ Rutheiser, "Making Place in the Nonplace Urban Realm: Notes on the Revitalization of Downtown Atlanta, 36.

center of commerce and transportation has characterized Downtown Atlanta's identity throughout its history.¹⁵

Atlanta's urban expansion was defined by the main railroads, especially around the Terminus train stop.¹⁶ Landowners arranged their land parcels according to the city's natural topography and along the railways. Soon, these routes turned into new streets and business districts, such as Five Points. The current confusing street grid and difficult navigation are consequences of a lack of urban planning due to business-interest-driven city development from this period. City development without an urban planning strategy had been replicated multiple times throughout the urban history of Downtown Atlanta and will be discussed later in this chapter. By the 1860s, the city expanded beyond the center and new residential areas were built, while Downtown remained the main business area housing the principal commercial activities of the city.¹⁷

The Civil War affected Atlanta more than any other city. Its strategic location and its role as a war supply manufacturing hub led the Union Forces to burn the city down. When the war ended, the devastated city went through an era of Reconstruction, rapidly recovering, creating new jobs and opportunities for residents in the process. At the same time, African American slaves were released, and many moved from the plantations to the city. However, they encountered work

¹⁵ "Downtown Atlanta Master Plan," *Central Atlanta Progress*, Accessed October 21, 2021, <https://www.atlantadowntown.com/initiatives/plan-downtown-atl>

¹⁶ Haynie, Dawn and John Peponis. "Atlanta: a morphological history," 7th International Space Syntax Symposium Proceedings, Ref. 087 (June 2009): 087:1
http://www.sss7.org/Proceedings/05%20Spatial%20Morphology%20and%20Urban%20Growth/087_Haynie_Peponis.pdf

¹⁷ "Downtown Atlanta Master Plan," *Central Atlanta Progress*, Accessed October 21, 2021, <https://www.atlantadowntown.com/initiatives/plan-downtown-atl>

and housing discrimination, forcing them to live in clusters of periphery neighborhoods south, east, and west of the city.¹⁸

By the end of 1860s, Atlanta had become a booming industrial and commercial hub, as well as being named Georgia's capital. The capitol was located Downtown, which according to historians, was a lively area, full of commerce and boasted a highly used public transportation system.¹⁹

At the start of the 20th century, Atlanta's continued to experience an economic boom and gained the image of a progressive city by attracting new businesses like Coca Cola and encouraging local companies to grow and expand. Between 1915 and 1935, Downtown had transformed into a commercial, white-collar area with increased congestion and city noise. This led affluent and middle-class residents to move to the north and southeast suburbs, taking advantage of the automobile manufacturing industry boom. Those who stayed, moved to new luxury apartment buildings north of the business district along Peachtree Street, West Peachtree Street, and Ponce de Leon Avenue. Meanwhile, the African American population remained close to the railroad in the densely populated west area, where black business and real estate dealers started developing and expanding their territory. At this point, the migration of residents to the outskirts of the business district was the first stage of Downtown's physical decline.²⁰

After 1950, the city built a modern highway system, more suburban housing, and applied a clearance program that demolished poor African American residential neighborhoods in the business core and relocated them to the south and west of the city. The areas that they formerly

¹⁸ Stephen W. Grable, "Applying History to City Planning: A Case Study in Atlanta," *The Public Historian* 1, no. 4 (1979): 54.

¹⁹ Dawn and Peponis. "Atlanta: a morphological history," 087:1.

²⁰ W. Grable, "Applying History to City Planning: A Case Study in Atlanta," 54 - 55.

occupied were adapted for commercial development, which did not work as expected.²¹ By the 1960s, the construction of interstate highways and suburban housing stimulated the development of perimeter commercial stores, further altering Downtown Atlanta's business function and target population.²² This created a disconnected, decentralized, and fragmented city, with no social interaction between neighborhoods.²³

During the mid-1960s, Downtown's development shifted focus to tourism and conventioners. The construction of new hotels, such as the Hyatt Regency, sports stadiums, and cultural and recreational spaces attracted visitors from around the country. However, Downtown's struggle for reinvention was undermined by the competition presented by suburban development, further impacting Downtown's employment rate and economic growth. The increase of white- and blue-collar populations along the highways, outside of the inner-city core, contributed to the decline of Downtown. As a solution, the city built additional parking areas near commercial establishments to compete with suburban stores. The result was a reduction in available space for commercial development, and therefore diminished job creation.²⁴

Until this point, the urban planning of Downtown Atlanta was business-driven rather than applying an urban master plan. One of the reasons was that Atlanta's leaders were more interested in creating an instantly positive image of the city, rather than implement long-range planning to stimulate economic development. In 1971, Central Atlanta Progress (CAP) designed the first master plan for the Downtown area. It included the expansion of the interstate highways and mass transit systems connecting the airport, Downtown and the suburbs. In spite of complaints from suburban neighborhoods, the project was developed in the following years with the goal of

²¹ Rutheiser, "Making Place In the Nonplace Urban Realm: Notes on the Revitalization of Downtown Atlanta, 16.

²² W. Grable, "Applying History to City Planning: A Case Study in Atlanta," 55-57.

²³ Dawn and Peponis. "Atlanta: a morphological history," 087:2.

²⁴ W. Grable, "Applying History to City Planning: A Case Study in Atlanta," 58.

revitalizing the city core. In the early 1970s, urban renewal occurred in and around the city. Multiple mixed-use developments were built in Downtown as a strategy to revitalize it. Some of them were successful and others were not. An example of success is Peachtree Center, designed by architect John Portman, to be the face of “a new Downtown.”²⁵ Up to this point, the downtown business center offered a concentration of convention hotels, office buildings, and commercial stores. Another mixed-use project was the Omni International complex, which frequently failed in its reinvention. Ted Turner eventually bought the complex in 1986 and turned it into the headquarters for his burgeoning Cable News Network (CNN). Today, it is known as the CNN Center and is a major tourist attraction.²⁶

Located in the heart of the Five Points district, Underground Atlanta repeatedly failed as a revitalization attempt. In the 1960s, the Underground was used as a subterranean entertainment venue, with bars, restaurants, and music concerts. During the 1970s, Atlanta’s rapidly growing African American population dominated the Downtown area and its entertainment businesses. Predominantly white suburban populations perceived Underground as a dangerous area, avoiding it and its businesses. At the same time, the development of Atlanta’s mass transit system led to significant noise and interferences with the entertainment around it. By 1982, Underground Atlanta went into bankruptcy after multiple failed attempts to redevelop it²⁷.

In the late 80s and early 90s, the Five Point business district entered a phase of commercial failure in which multiple business companies left the area, relocating to the new business zones north of the city.²⁸ In 1992, non-profit organizations continued efforts to revitalize Downtown in different ways. The National Trust for Historic Preservation’s Main Street Program proposed a

²⁵ Rutheiser, “Making Place In the Nonplace Urban Realm: Notes on the Revitalization of Downtown Atlanta, 17.

²⁶ W. Grable, “Applying History to City Planning: A Case Study in Atlanta,” 19

²⁷ W. Grable, “Applying History to City Planning: A Case Study in Atlanta,” 19

²⁸ W. Grable, “Applying History to City Planning: A Case Study in Atlanta,” 20.

plan to revitalize an area next to Five Points known as the Fairlie-Poplar district. The project consisted of introducing a cultural and art-focused area in order to attract retail and residential development. As a result, it also attracted Georgia State University's (GSU) Rialto Theater and the School of Music.²⁹ The arrival of the school of music and the theater to this area started a new chapter of hope for Downtown. According to urbanists and anthropologists, GSU now has a responsibility to help revitalize the Downtown district.

2.2 Georgia State University

Georgia State University is located in the heart of Downtown Atlanta, an urbanscape representing the history and evolution of the city of Atlanta. Downtown witnessed the history of Atlanta's social injustice, especially for those most marginalized by society. The lack of opportunities for less fortunate people in Atlanta is now the motor that inspires GSU growth as an urban university. GSU describes itself as "a community of faculty, staff, and students from varied racial, ethnic, socio-economic and lifestyle backgrounds."³⁰ With this statement, GSU wants to demonstrate to the academic world how diversity can be a catalyst for professional and community development. This chapter will look into GSU's institutional development, goals, and mission in relation to the academy and its urban setting, concentrating on the 2021 master plan³¹.

In 1969, Georgia State College achieved university status by adding multiple master and doctoral programs, eventually becoming Georgia State University³². With the university's new accreditation came new challenges. The university needed to have a clear

²⁹ W. Grable, "Applying History to City Planning: A Case Study in Atlanta," 36.

³⁰ Georgia State University, "Georgia State University Master Plan," Georgia State University, Accessed November 21, 2021, <https://services.gsu.edu/document/georgia-state-university-master-plan/>

³¹ Georgia State University, "Georgia State University Master Plan," Georgia State University, Accessed November 21, 2021, <https://services.gsu.edu/document/georgia-state-university-master-plan/>

³² Reed, *Educating the Urban New South*, XI.

direction for academic and physical growth. This led to the creation of the GSU's institutional mission, goals, and master plans, all of which would shape the university's future. Its first and most important goal was to become a research-based university.

By 1996, GSU accomplished its most important goal and earned an R1 designation by the Carnegie Foundation. This important certification placed the university within the nation's top research institutions. To get the R1 designation, GSU invested in renowned research faculty as well constructing a research infrastructure, innovative research centers, and advanced scientific laboratories. Having the R1 designation opened the doors to new possibilities and made GSU a leader in higher education. From 1996 to 2020, the university increased its research expenditure 10-fold, continuing to grow and stand out in the research community.³³

Since GSU's last strategic and master plan in 2015, additional transformational events have occurred at GSU. First, in 2016, GSU increased its enrollment to 52,000 students, becoming the largest institution of higher education in the state of Georgia. This rise resulted from a merger between Georgia Perimeter College and Georgia State University. Additionally, GSU acquired Turner Field, the flagship site of the 1996 Olympics, and multiple buildings within and surrounding the downtown campus.³⁴ These events incentivized an updated GSU master plan in 2021, furthering and enhancing the goals from its 2016 Strategic Plan, including the following:

- “Goal One: Become a national model for undergraduate education by demonstrating that students from all backgrounds can achieve academic and career success at high rates.”

³³ Georgia State University, “Learn More About Research THESTATEWAY,” University Research, December 20, 2021. <https://research.gsu.edu/about/#:~:text=Learn%20More%20About%20Research%20THESTATEWAY&text=In%201996%2C%20Georgia%20State,institutions%2C%20was%20a%20remarkable%20achievement>.

³⁴ “Georgia State University Master Plan”, Georgia State University, accessed on December 11, 2021. <https://services.gsu.edu/document/georgia-state-university-master-plan/>

- “Goal Two: Significantly strengthen and grow the base of distinctive graduate and professional programs to assure development of the next generation of researchers and societal leaders.”
- “Goal Three: Become a leading public research university addressing the most challenging issues of the 21st Century.”
- “Goal Four: Be a leader in understanding the complex challenges of cities and developing effective solutions.”
- “Goal Five: Achieve distinction in globalizing the university.”³⁵

Goal two and three are the most relevant for this thesis and according to the master plan, the following initiatives would help to accomplish them. For goal two, expand, grow, and strengthen graduate programs by nurturing a diverse pool of strong leaders moving into academic and professional careers. For goal three, embrace and implement initiatives that enhance the university’s research culture and offer adequate infrastructure that directly support researchers.

To accomplish these initiatives, one of the goals is to attract more graduate students from different backgrounds and cultures to enrich GSU’s academic community. As a solution, the 2021 master plan proposes to unify the GSU campus as a whole, where interconnected transportation systems, landscape, hardscape, and architecture are knit together to create a high-quality public realm that cultivate greater student academic achievement and social interaction. The master plan specifies different ways in which the university should tackle its physical development to accomplish its goals. One aim is to increase affordable on-campus housing for students and to create a campus identity by utilizing a common palette of materials, lighting, hardscape, and

³⁵ Cooper Robertson, “Georgia State University Master Plan,” Georgia State University, Accessed December 11, 2021, <https://services.gsu.edu/document/georgia>

landscape. This would create a greater sense of belonging, inclusion, and identity, for the university community. Another strategy would be to interconnect the campus and the city through the use of pedestrian paths, bike paths, and public transportation.³⁶

The impacts of these plans are three-fold: (1) attract prospective students; (2) create a livable neighborhood for the graduate student community at GSU; and (3) boost the revitalization of Downtown.

³⁶ Cooper Robertson, "Georgia State University Master Plan," Georgia State University, Accessed November 21, 2021, <https://services.gsu.edu/document/georgia-state-university-master-plan/>

3 STUDENT HOUSING

3.1 Graduate Student Housing

Housing is a basic necessity that allows students to perform efficiently while attending higher education. Existing research has documented that student living on-campus are likely to interact more with faculty, take advantage of institutional resources, and participate more in extracurricular activities as compared to those students living off-campus. This high level of student involvement improves students' critical thinking ability, improves the probability of graduation, and increases students' level of college satisfaction.³⁷ Additionally, on-campus housing helps shape students' behavior in the academic community and prepares them for real life.

Graduate students play an important role in higher education. Their contribution to the university is invaluable: they work as instructors of undergraduate students; perform research; attend classes; and are involved in various university activities. Their well-being and work affect the university's performance both directly and indirectly. It is important for the university to support graduate students so they may perform those functions efficiently and adequately. Research shows, however, that when universities -such as GSU- do not provide on-campus graduate student housing, students are negatively impacted.³⁸

3.1.1 Graduate Stipend vs Downtown Housing

As mentioned before, graduate students at GSU face two different problems in relation to housing. The first one is that the university does not provide on-campus graduate housing. The second one is that housing rental rates near campus are too high for students to afford, forcing

³⁷ Ruth N. Lopez Turley, Geoffrey Wodtke, "College Residence and Academic Performance: Who Benefits from Living on Campus?" *Urban Education*, (June 2010): 506 – 532, <https://doi.org/10.1177/0042085910372351>.

³⁸ Jienan Han, "House, Home, and Community: Good Models for Graduate Student Housing" (B.Arch., Tongji University, 2002), 29.

them to live outside the campus perimeter. This leads graduate students to feel disengaged with university life, increases their daily concerns in relation to housing, transportation, time management, and belonging to a community.

According to the J. Mack Robinson College of Business, graduate assistantships monthly stipends range between \$500.00 and \$3000.00 (Figure 3-1),³⁹ with an average monthly salary of \$2200.16 for the university as a whole.⁴⁰ This monthly gross salary needs to cover various expenditures such as federal, state, and local taxes, housing, health insurance, and university fees, among other living expenses. As already established, affordable housing should consume no more than 30% of a students' gross income, therefore, graduate students at GSU with an average monthly income of \$2200.16 would need to limit their monthly rent to approximately \$666.05.

Average stipend ranges per appointment, per term are as follows:

GA Level	Fall/Spring	Maymester	Summer	Maymester and Summer
Master's Students				
GRAI & GLAI	\$1K-\$2K	\$250-\$500	\$500-\$1K	\$750-\$1.5K
GRAII & GLAII	\$1,200-\$3K	\$300-\$750	\$600-\$1.5K	\$900-\$2,250
Ph.D. Students				
GRAIII & GLAIII	\$2K-\$5K	\$500-\$1,260	\$1K-\$2,520	\$1.5K-\$3,780
GTAIII	\$3,100 per course	\$3,100 per course	\$3,100 per course	\$3,100 per course
Work Hours per Appointment	Average: 136	Average: 40	Average: 72	Average: 112

Total stipends for graduate assistants should not exceed \$12,000 per semester and cannot exceed \$36,000 per academic year.

Figure 3.1 Average stipend ranges of graduate students

³⁹ "Graduate Assistantships," J. Mack Robinson College of Business, Georgia State University, accessed on December 13, 2021, https://robinson.gsu.edu/graduate-student-resources/graduate-assistantships/?__cf_chl_jschl_tk__=I9debKgC3Nh3yrxvAT7C8eE1oJqFRhRfTNmzOMPSBKY-1639407268-0-gaNycGzNDWU

⁴⁰ "Georgia State University Graduate Student Salary," Georgia State University, Glassdoor, last modified December 08, 2021, https://www.glassdoor.com/Salary/Georgia-State-University-Graduate-Student-Salaries-E130084_D_KO25,41.htm

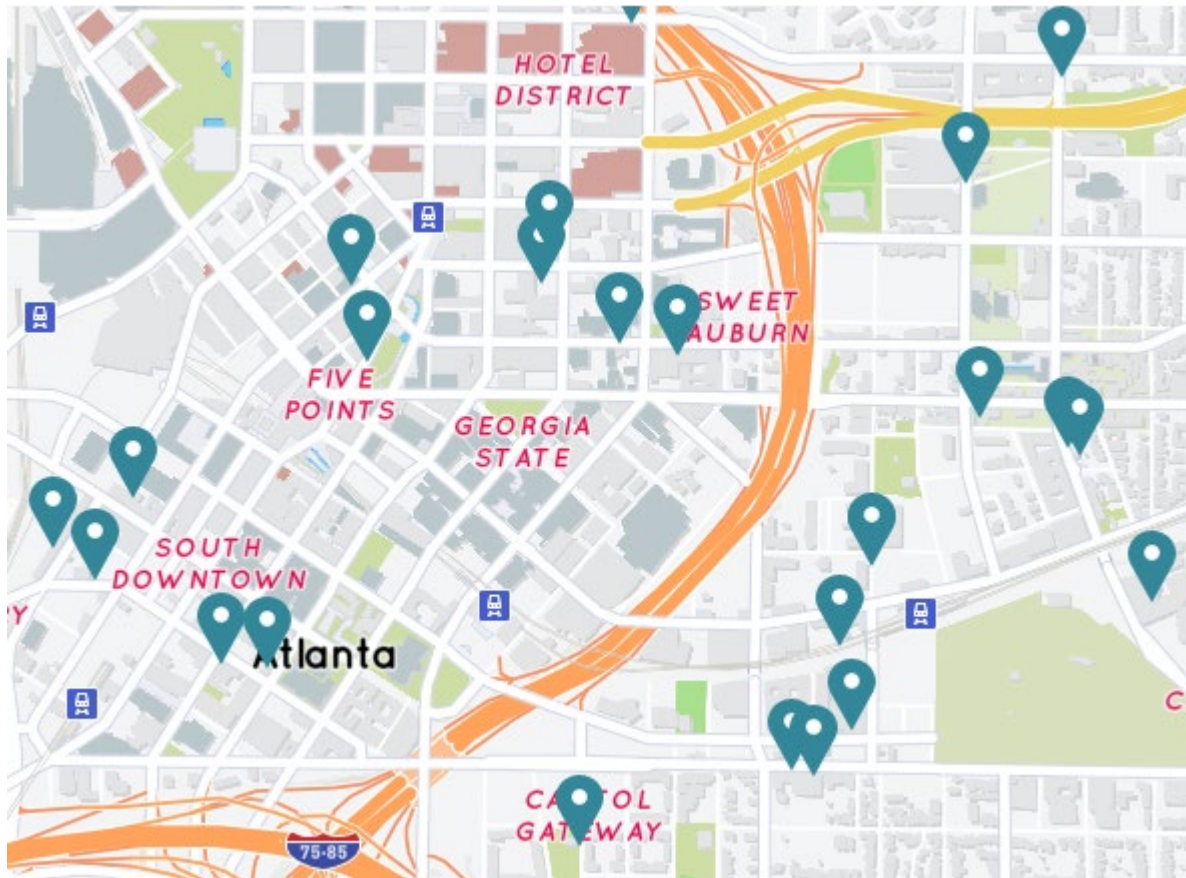


Figure 3.2 Rental housing availability

Downtown Atlanta is the only district within walkable distance of the main university campus. According to Jarret Walker, Ph.D., a consultant in transit network design and policy, a commonly accepted walkable distance for all situations in the United States is 0.25 miles (400 m), which is less than a 10-minute walk.⁴¹ This map (Figure 3-2) shows the housing opportunities within a 0.25 miles radius from campus as recommended in the GSU Graduate Student Relocation Guide.⁴²

⁴¹ "Basics: Walking Distance to Transit," Human Transit, last modified April 24, 2011, <https://humantransit.org/2011/04/basics-walking-distance-to-transit.html>

⁴² "Graduate Students Relocation Guide," Georgia State University, accessed December 13, 2021, https://cas.gsu.edu/files/2020/03/Relocation-Guide-v2020.pdf?__cf_chl_jschl_tk__=PpJNKL4j6zP45VL5vmFD5w23HnH5I3t2I9WnA2dDQZQ-1639418463-0-gaNycGzNDR0

From this map, four different housing buildings were chosen due to their (1) location in Downtown Atlanta, (2) their acceptable walking distance to GSU, and (3) their inclusion in GSU's Graduate Student Relocation Guide recommendations. Table 3-1 presents the distance to GSU campus from the different apartments, calculated with google maps and supplemented with a summary cost of each apartment unit calculated using their respective websites. The table shows that the monthly rate per bedroom varied between \$725.0 and \$1685.0, depending on apartment size.

Table 3.1 Housing rental rates.

Property Name	Miles from Campus	Studio	One bedroom	Two Bedroom	Three Bedroom	Price per bedroom
Loft at Muses	400 ft	X				\$ 1,250.00
Loft at Muses	400 ft		X			\$ 1,685.00
One 12 Courtland	0.2 mile	X				\$ 1,239.00
One 12 Courtland	0.2 mile			X		\$ 809.00
One 12 Courtland	0.2 mile				X	\$ 829.00
City Plaza Apartments	0.3 mile		X			\$ 1,170.00
City Plaza Apartments	0.3 mile			X		\$ 725.00
The George and The Leon	0.6 mile		X			\$ 1,447.00
The George and The Leon	0.6 mile			X		\$ 892.50

Taking into consideration the average student stipend, related housing expenditures, and the housing rates in Downtown, it can be observed that students have difficulties accessing affordable off-campus housing near GSU. As a result, graduate students look for housing options outside the campus perimeter.

3.1.2 Student Housing Building Typologies

Throughout recent history, student housing design has been evolving, with different building typologies being developed according to unique architectural programs and design

solutions. An appropriate design solution considers the site, sun orientation, circulation, ceiling height, user, and concept design.⁴³

The most common building type for student housing is the linear layout which can produce different spatial characteristics. The physical configuration of a linear layout can vary in the following ways: corridor length; width; narrowness; straightness; curved; double height; and so on. Additionally, the linear layout can be configured as a single-loaded corridor or as a double-loaded corridor (Figure 3-3). This illustrates the flexibility that a linear layout can provide to a building⁴⁴.

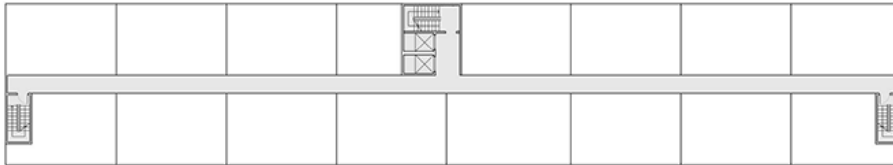


Figure 3.3 Double-loaded corridor example.

A second building type is a centralized system consisting of a central focal point as circulation, structure, or open area, around which spaces are arranged (Figure 3-4).

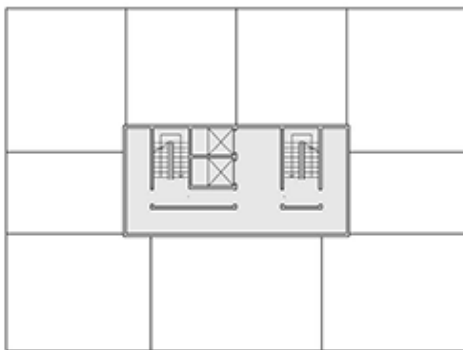


Figure 3.4 Centralized focal circulation example

⁴³ Han, "House, Home, and Community: Good Models for Graduate Student Housing," 39.

⁴⁴ Asya Natapov, Ruth Dalton, Saskia Kuliga, "Linking building-circulation typology and wayfinding: design, spatial analysis, and anticipated wayfinding difficulty of circulation types," *Architectural Science Review* 64, no. 5 (September 2019): 2. <https://doi.org/10.1080/00038628.2019.1675041>

A third building type is a grid-based or the network system where the repetition of a dominant pattern evolves into different scales. The unit's arrangement follows a coordinate system based on a grid, scatter-point, or hierarchical network (Figure 3-5).⁴⁵

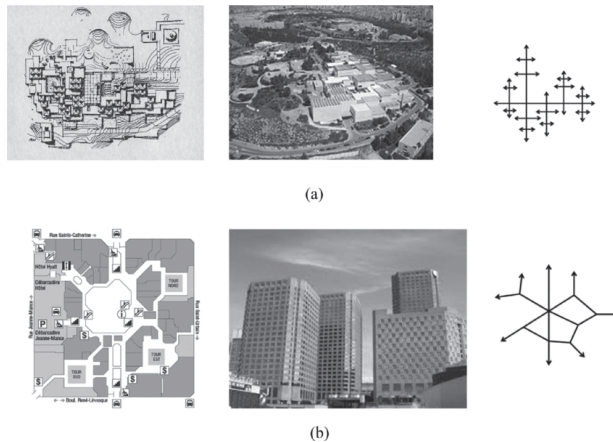


Figure 3.5 Grid-based circulation example.

Finally, a new typology based on community interaction is appearing in student housing. For example, architects Martin Tattara and Pier Vittorio Aureli have proposed a model featuring a shared living space that fosters community.⁴⁶

3.1.3 Unit Typologies

Student housing room units vary depending on the user. Some student housings are based on a traditional dormitory model. Other student housing present multiple designs that respond to specific student needs, such as studios, shared bedrooms, or traditional apartment units.⁴⁷

⁴⁵ Natapov, Dalton, Kuliga, Linking building-circulation typology and wayfinding: design, spatial analysis, and anticipated wayfinding difficulty of circulation types," 2-3.

⁴⁶ Martin Tattara, Pier Vittorio Aurelio, "Production/Reproduction: Housing beyond the Family," *Harvard Design Magazine*, Family Planning, no. 41. Accessed January 17, 2022.

<http://www.harvarddesignmagazine.org/issues/41/production-reproduction-housing-beyond-the-family>

⁴⁷ Rena Cheskis-Gold, Alexandra Delaney, "Trends in student housing: process and product," *Planning for Higher Education* 41, no. 1 (October - December 2012): 9.

The traditional dormitory or residence hall unit consists of a single or double-occupancy room with approximately 100 sq ft per bed. Furnishings include a single bed, a small desk, chair, and a closet or wardrobe. Bathrooms are typically placed in the center or corner of the building, are accessed via a common hallway, and typically provide fixtures shared between 4 or 5 students. This typology allows a higher concentration of students living in one place and encourages social interaction (Figure 3-6).⁴⁸

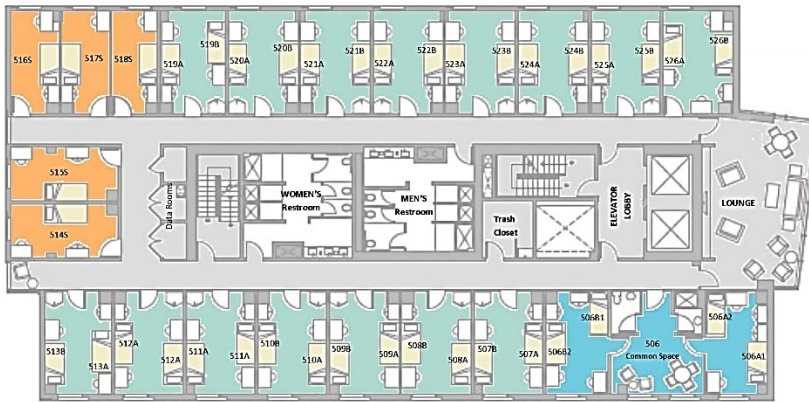


Figure 3.6 Residence Hall floor plan example

Two-room suites consist of a common living area, two single-occupancy bedrooms, and a single shared bathroom. This unit provides students with the option to use one space as a bedroom and the other as living or study room (Figure 3-7).⁴⁹

⁴⁸ John Ruble, Jeanne Chen, "Housing," in *Building types of College and University facilities*, ed. David J. Neuman (New Jersey: John Wiley & Sons, Inc), 231.

⁴⁹ John Ruble, Jeanne Chen, "Housing," 232.

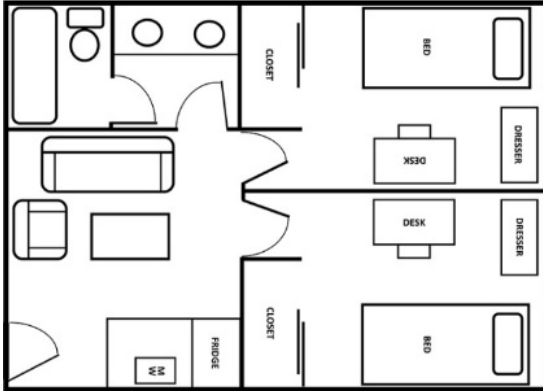


Figure 3.7 Two single-occupancy rooms floor plan example

The apartment style unit offers students a variety of styles ranging from studios up to three- or four-bedroom apartments. This type offers more flexibility to students and can be occupied by single students, married-couples, partners, roommates, or even families with children. The interiors of these units offer more living spaces, such as a living room, dining room, bathroom, and kitchen (Figure 3-8).⁵⁰

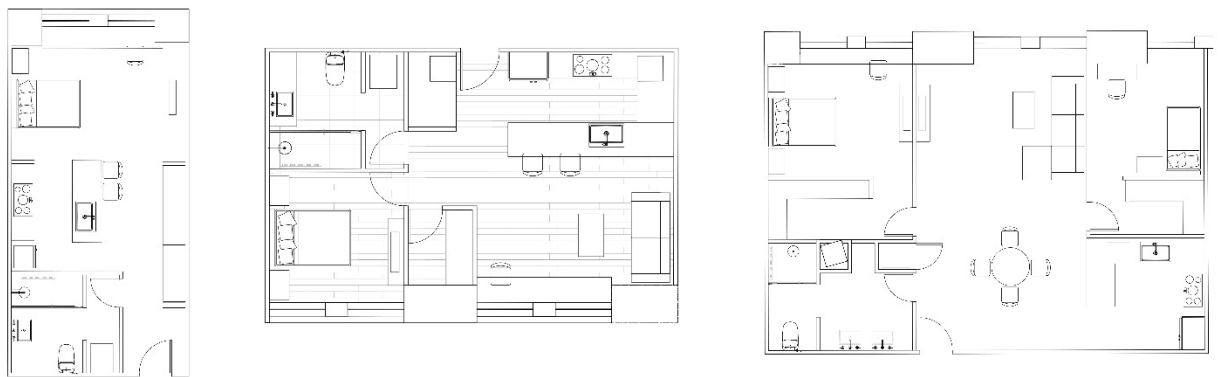


Figure 3.8 Apartments units' examples

3.2 Case Studies

Four different student housing solutions located in urban campus scenarios in the United State were analyzed to further understand these building types. These case studies illustrate how

⁵⁰ John Ruble, Jeanne Chen, "Housing," 232.

different design criteria are applied to student housing solutions, such as its design concept, building type, individual unit floor plans, types of furniture and materials, services offered, location, common areas, and housing rates.⁵¹ Each case study is unique and include: linear graduate student housing example; a contemporary student housing example; and an affordable student housing example, all located in downtown districts.

3.2.1 Harvard Peabody Terrace, Harvard University, Boston, 1964

The Harvard Peabody Terrace is an iconic graduate student housing complex designed in 1964 by architect and Dean of the Harvard Graduate School of Design, Josep Lluís Sert. Sert's design concept envisioned an ideal neighborhood, and included elements such as a mixed-use program, shared open spaces, and different building scales all focused on graduate student needs. The project received the prestigious Harleston Parker Medal from the Harvard Board of Student Advisers (BSA) and an American Institute of Architects (AIA) Gold Medal.

In 1996, the architectural firm of Bruner and Cott renovated the building, repairing the cast-in-place concrete, updating the windows, expanding the kitchens, and improving overall building accessibility and building systems. In 2013, the common areas and terraces were also renovated, giving a new look to the neighborhood.⁵²

3.2.1.1 Location

Peabody Terrace is located in the Riverside neighborhood, an urban district that offers a diverse assortment of restaurants, bars, coffee shops, grocery stores, and parks. The main

⁵¹ John Ruble, Jeanne Chen, "Housing," 221-222.

⁵² Michelle Miller, "AD Classics: Peabody Terrace / Sert, Jackson & Gourley," *Archdaily*, accessed in January 24th, 2022, <https://www.archdaily.com/486015/ad-classics-peabody-terrace-sert-jackson-and-gourley>.

commercial area known as Harvard Square is within 10 minutes walking distance, and Downtown Boston is within 1-hour walking distance, 28-minutes by train, or 15 minutes by car.⁵³



Figure 3.9 Peabody Terrace, Harvard University, Boston.

3.2.1.2 Building

Peabody Terrace consists of multiple low-rise and high-rise building that are connected through vertical and horizontal circulation paths with public spaces in-between. The apartment complex contains 492 apartments for 1500 people, a playground, roof terraces, three nurseries, a drugstore, a laundry room, a meeting room with kitchen, two seminar rooms, storage, and parking.⁵⁴

⁵³ Michelle Miller, "AD Classics: Peabody Terrace / Sert, Jackson & Gourley," *Archdaily*, accessed in January 24th, 2022, <https://www.archdaily.com/486015/ad-classics-peabody-terrace-sert-jackson-and-gourley>

⁵⁴ Michelle Miller, "AD Classics: Peabody Terrace / Sert, Jackson & Gourley," *Archdaily*, accessed in January 24th, 2022, <https://www.archdaily.com/486015/ad-classics-peabody-terrace-sert-jackson-and-gourley>

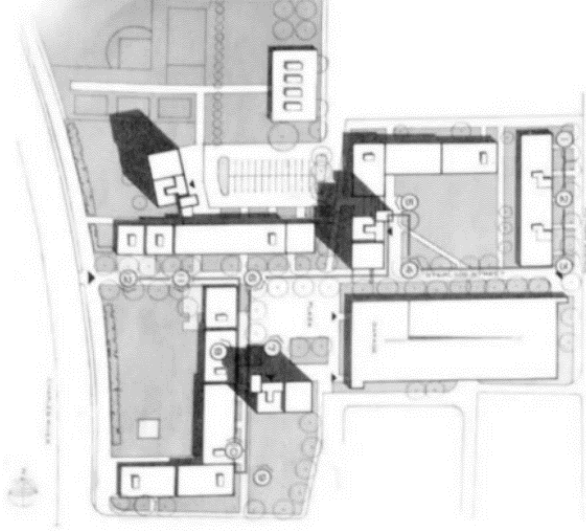


Figure 3.10 Site Plan, Peabody Terrace.

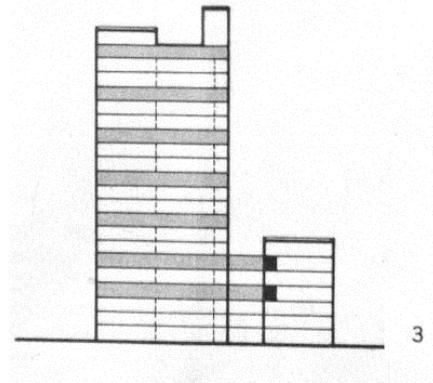
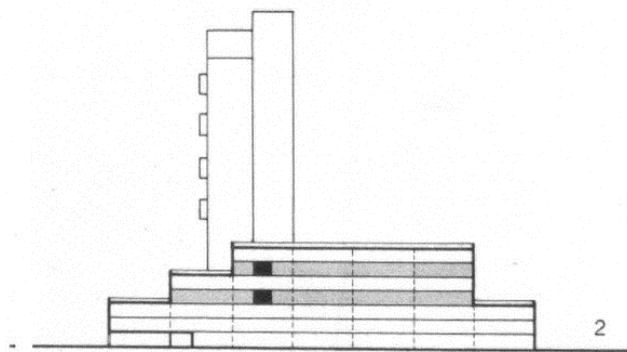


Figure 3.11 Section, Peabody Terrace.

Peabody Terrace's building typology is linear, and the building height varies between 3 and 23 stories.



Figure 3.12 High-rise Tower Floor Plan, Peabody Terrace.

3.2.1.3 Units

The Peabody Terrace residential complex has different unit types corresponding to different graduate student's needs. Students can choose between a studio (Figure 3-13), a one-bedroom (Figure 3-14), a two-bedroom (Figure 3-15), or a three-bedroom apartment (Figure 3-16).⁵⁵

⁵⁵ 2020 The President and Fellows of Harvard College, "Harvard University Housing," *Harvard University*, access in January 28th, https://www.huhousing.harvard.edu/our-properties/peabody-terrace-apartments?pricing_floor_plans.

The studio apartment is 531.33 sq. ft. and can be occupied by one or two people.



Space	Sq. ft.
Living/Bedroom	275.14
Bathroom	37.62
Kitchen	95.04
Balcony	61.17

Figure 3.13 Studio Apartment Floor Plan, Harvard University.

The One-bedroom apartment is 629.37 sq. ft. and can be occupied by one or two people.



Space	Sq. ft.
Living	231.23
Bedroom	149.36
Bathroom	39.04
Kitchen	50.49
Balcony	107.54

Figure 3.14 One-bedroom Apartment Floor Plan, Harvard University.

The two-bedroom apartment is 957.53 sq. ft. and can be occupied by two to four people.



Space	Sq. ft.
Living	282.27
Bedroom One	146.86
Bedroom Two	133.37
Bathroom	38.81
Kitchen	139.36
Balcony	109.9

Figure 3.15 Two-bedroom Apartment Floor Plan, Harvard University.

The three-bedroom apartment is 1101.47 sq. ft. and can be occupied between three to six people.



Space	Sq. ft.
Living	263.23
Bedroom One	149.64
Bedroom Two	144.69
Bedroom Three	149.79
Bathroom One	38.8
Bathroom Two	27.97
Kitchen	161.44
Balcony	60.17

Figure 3.16 Three-bedroom Apartment Floor Plan, Harvard University.

3.2.1.4 Materiality

The materials used in the building include reinforced concrete for the structure and exterior façade painted red and blue. The façade also features white balconies and clear glass.

Interior walls are white-painted brick with dark gray tile flooring and white kitchen walls and cabinets.⁵⁶

3.2.1.5 Housing Rates

The rental rates of the apartments vary depending on size.⁵⁷

Units				
Bedroom	Units	Sq. Ft. Range	Rent Ranges*	Sample Floor Plan**
Studio	84	271 to 467	\$1,890 to \$2,448	
1 Bedroom	221	429 to 642	\$2,244 to \$2,670	
2 Bedroom	153	594 to 1016	\$2,538 to \$3,018	
3 Bedroom	23	918 to 1283	\$3,858 to \$4,206	

Figure 3.17 Housing rates per apartment, Harvard University.

3.2.1.6 Conclusion

Peabody Terrace is an historic, iconic student housing solution focused on typical graduate student's living requirements where the building concept of community is reflected in every part of the design.

⁵⁶ "Peabody Terrace Complex," Wikiarquitectura, access in January 31st, 2022, <https://en.wikiarquitectura.com/building/peabody-terrace-complex>.

⁵⁷ 2020 The President and Fellows of Harvard College, "Harvard University Housing," *Harvard University*, access in January 28th, https://www.huhousing.harvard.edu/our-properties/peabody-terrace-apartments?pricing_floor_plans

On the ground floor, Peabody Terrace offers multiple common areas that facilitate graduate students' daily life and creates opportunities for community engagement, such as playgrounds, seminar rooms, a drugstore, parks, and laundry rooms, among others. The interior vertical and horizontal circulation design allow residents to encounter each other, encouraging interaction between neighbors.

The diversity of unit types at Peabody Terrace corresponds to the different necessities of graduate student life. Graduate students can choose to live with their families, to live alone, or with their partners. This diversity of unit type generates a more flexible housing solution.

Finally, the design of the apartments at Peabody Terrace features a cross-ventilation system, allowing natural air to circulate in the interior and natural light to penetrate the building. The bathrooms and kitchens are organized next to each other for efficient electrical and plumbing connections.

3.2.2 Blumel Building, Portland State University, Portland, Oregon

Portland State University is a public research university located in the heart of Downtown Portland. It has a total of 23,979 students, of which 5,132 are graduate students.⁵⁸ The university offers eight on-campus student housing options for 3,000 undergraduate and graduate students.

3.2.2.1 Location

The Blumel Building is located on-campus in Downtown, Portland, an urban, walkable district that offers a diversity of offices, restaurants, bars, parks, and coffee shops.

⁵⁸ Portland State University, "Facts: PSU by the Numbers," *Portland State University*, accessed in January 31st, 2022, <https://www.pdx.edu/portland-state-university-facts>.



Figure 3.18 Blumel Building, Downtown Portland

3.2.2.2 Building

The Blumel Building was built in 1986 and was renovated in 2012. The L-shaped building has a centralized corridor with apartments on either side and vertical circulation (stairways) at each end. The nine story building has lounge space near parking on the ground floor. The upper eight floors offer one-bedroom apartments with communal laundry and trash rooms.⁵⁹

⁵⁹ Portland State University, "Transfer & Continuing Student Buildings," *Portland State University*, access in February 01, 2022, <https://www.pdx.edu/housing/transfer-upperclassmen-buildings>.

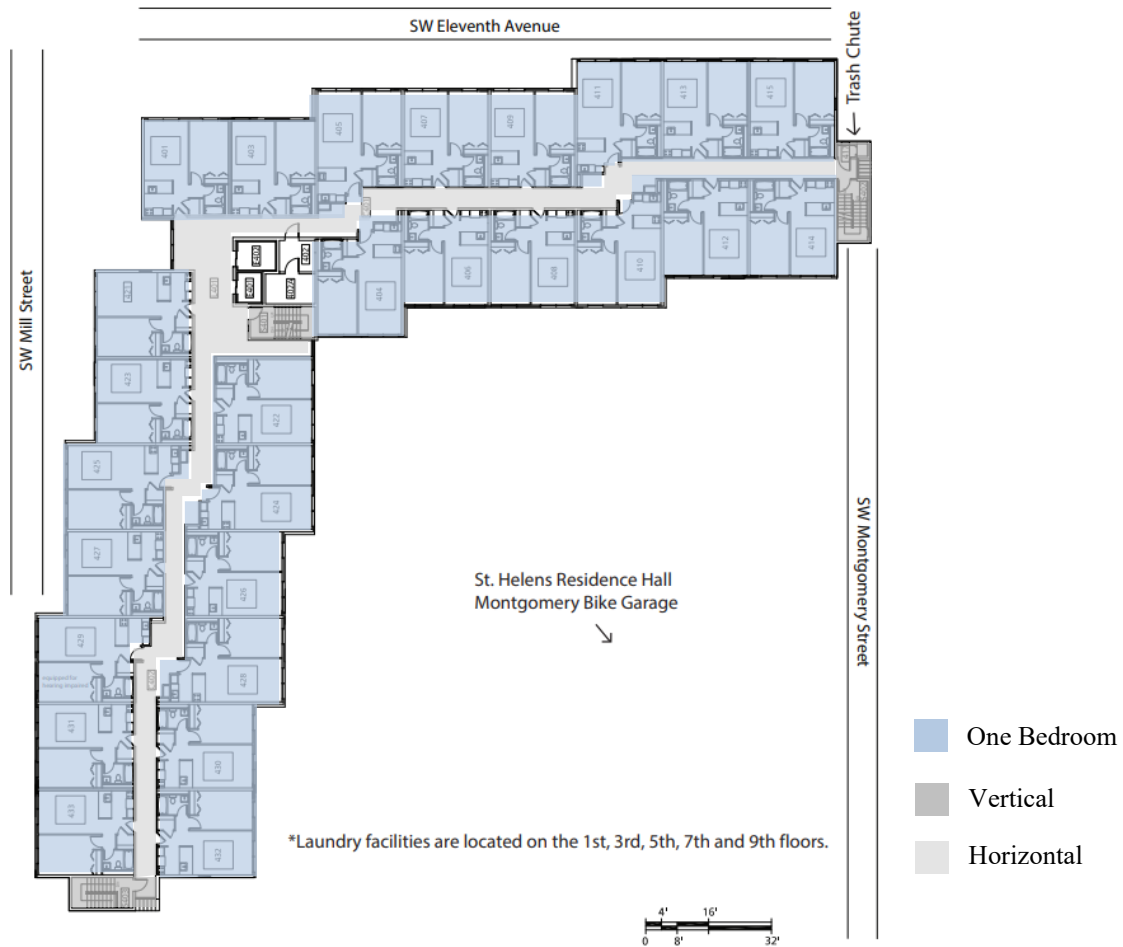


Figure 3.19 Blumel Building Floor Plan, Portland State University.

3.2.2.3 Units

The Blumel Building offers students a typical furnished one-bedroom apartment (Figure 3-19) of 575 sq. ft., with a private bathroom and a fully equipped kitchen. Students are allowed to live with a partner or small family.⁶⁰

⁶⁰ Portland State University, "Transfer & Continuing Student Buildings," *Portland State University*, access in February 02, 2022, <https://www.pdx.edu/housing/transfer-upperclassmen-buildings>.



Space	Sq. ft.
Living	250.6
Bedroom	195
Bathroom	59.14
Kitchen	70.27

Figure 3.20 One-Bedroom Apartment Floor Plan, Portland State University.

3.2.2.4 Materiality

The building's façade consists of exposed brick with black frame windows that complement the neighborhood (Figure 3-21). The interior of the apartment has yellow and green walls. The kitchen and bathroom floors have tiles, and the rest of the apartment is carpeted.



Figure 3.21 One-Bedroom Apartment Floor Plan, Portland State University.

3.2.2.5 Housing rates

Figure 3-21 shows the one-bedroom apartment monthly cost. The price includes all utilities, internet, and furniture such as bed, desk, chairs, and a dresser.⁶¹ A one-bedroom apartment off-campus near Portland State University has an average monthly rate of \$1667.00 without furniture, services, transportation, and utilities.⁶²

Room Type	Building	Term Rate	Monthly Rate*	Amenities
One-Bedroom	Blumel	Double	Double	Full kitchen and full private bath (tub, shower)
		\$2775	\$925	
		Single	Single	
		\$4525	\$1508	

Figure 3.22 One-Bedroom Apartment Rates, Portland State University.

3.2.2.6 Conclusion

The Blumel Building was chosen because it is an on-campus graduate student housing complex located in a neighborhood not unlike that of Georgia State University.

The location of the Blumel Building offers students the opportunity to live on-campus in Downtown Portland. This allows students to be near other university buildings, as well as the district's business and commercial areas. The location generates opportunities for students to succeed academically, socially, and professionally. The Blumel Building has one unit type which

⁶¹ Portland State University, "Transfer & Continuing Student Buildings," *Portland State University*, access in February 02nd, 2022, <https://www.pdx.edu/housing/rates-payment-2020-2021>.

⁶² Rent Café, "Portland, OR Rental Market Trends," *RentCafe*, access in February, 03rd, 2022, <https://www.rentcafe.com/average-rent-market-trends/us/or/portland/>.

includes furniture, utilities, and services. This facilitates student' life by including furniture and offering a fixed monthly rate at the end of the month.

3.2.3 10 and Home & Graduate Living Center, Georgia Institute of Technology, Atlanta

The Georgia Institute of Technology is a public research university located in Midtown, Atlanta. It has a total of 36,489 students, of which 20,330 are graduate students.⁶³ The university offers two on-campus housing options for graduate students.⁶⁴

3.2.3.1 Location

The Graduate Living Center is located on-campus in Midtown Atlanta, an urban district offering a diversity of restaurants, bars, offices, and grocery stores. The main commercial area known as Tech Square is located within 15 minutes walking distance, and the closest mass transit train station, Midtown, is within 12 minutes walking distance.

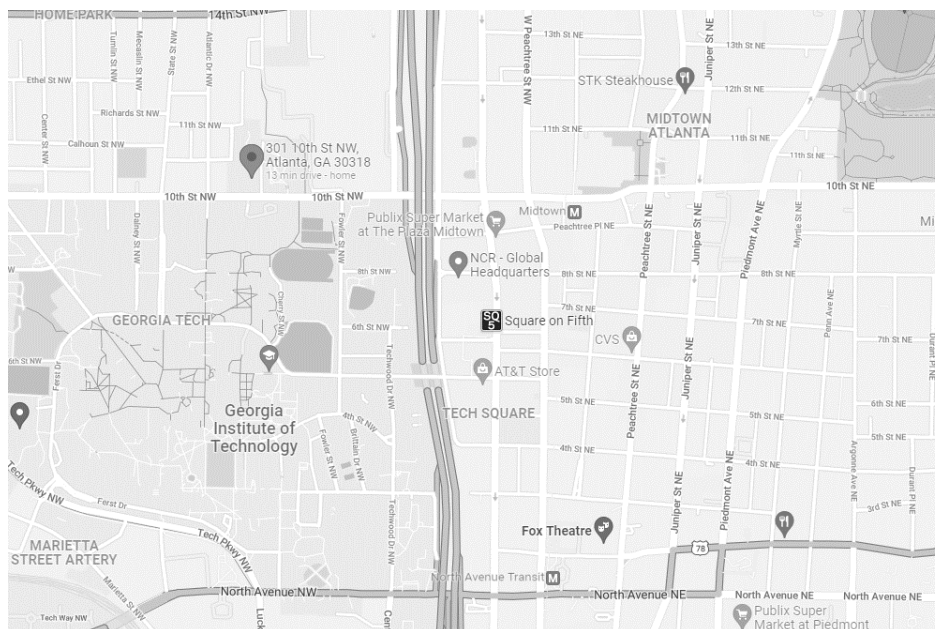


Figure 3.23 Graduate Living Center, Georgia Institute of Technology, Atlanta

⁶³ Georgia Tech, "Georgia Tech Enrollment Reaches All-Time High," *Georgia Tech Institute of Technology*, access in February 04th, 2022, <https://news.gatech.edu/news/2019/11/12/georgia-tech-enrollment-reaches-all-time-high>.

⁶⁴ Georgia Tech, "Graduate Living Center," *Georgia Tech Institute of Technology*, access in February 04th, 2022, <https://housing.gatech.edu/building/graduate-living-center>.

3.2.3.2 Buildings

The Graduate Living Center was built in 1992 and renovated in 2009. The L-shaped building presents a middle corridor with apartments on either side and vertical circulation at each end. The six story building has a lounge space, offices, laundry, bike parking, common kitchennette, game area, nursery, and gym on the ground floor and four-bedroom apartments, study rooms, and trash rooms on the upper five floors. The Graduate Living Center can accommodate 347 students.⁶⁵

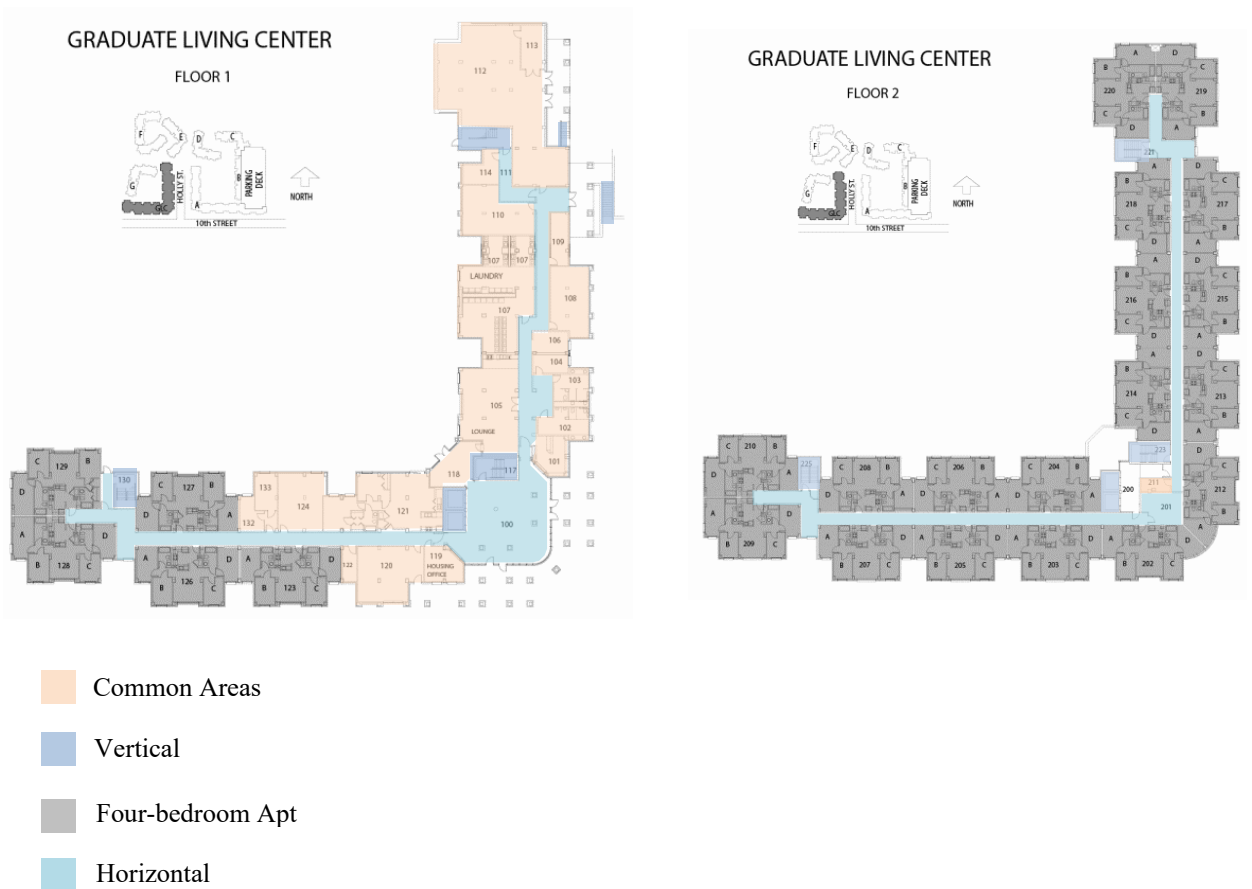


Figure 3.24 Ground and Typical Floor Plan, Graduate Living Center, Georgia Tech

⁶⁵ Georgia Tech, "Graduate Living Center," *Georgia Tech Institute of Technology*, access in February 04th, 2022, <https://housing.gatech.edu/building/graduate-living-center>.

The Tenth and Home building was built in 2005. The L-shaped building has a middle corridor with apartments at either side and vertical circulations at each end. The seven story building has a lounge space on the ground floor and individual apartment units on floors 2-6. Tenth and Home has 153 beds.⁶⁶

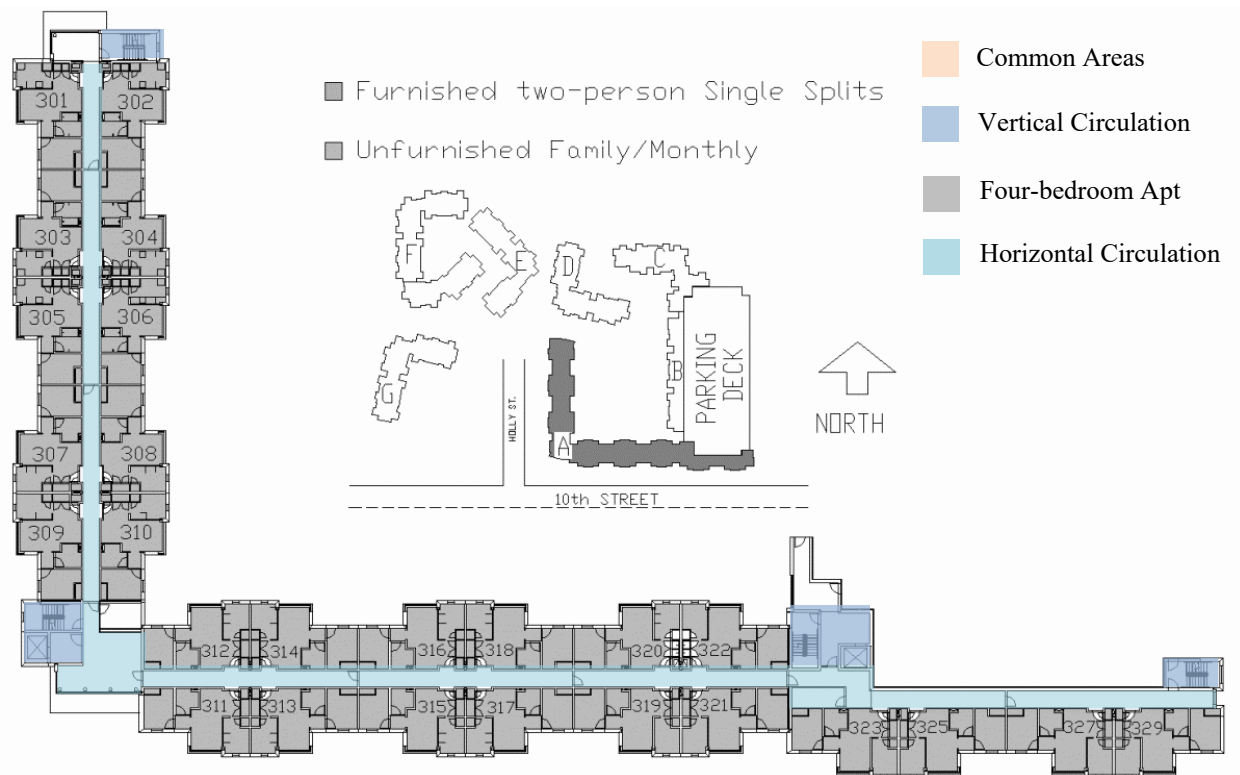


Figure 3.25 Typical Floor Plan, Tenth and Home Bldg A, Georgia Tech

3.2.3.3 Units

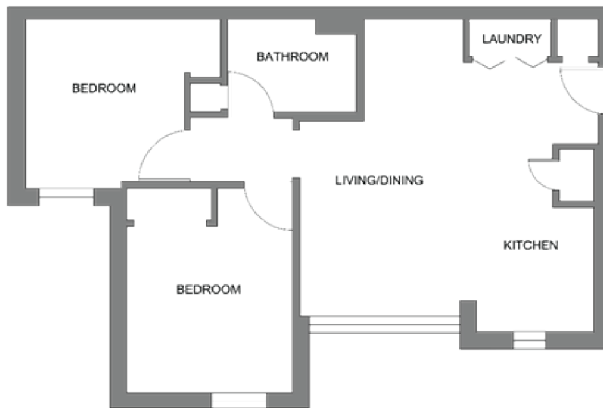
Georgia Tech's Graduate Living Center and Tenth and Home offer students a diversity of floor plan layouts that correspond to their distinct needs. Students can rent a furnished or unfurnished apartment of one, two, or four bedrooms. Students are allowed to live alone, with a partner/roommate, family, or a pet.

⁶⁶ Georgia Tech, "Tenth and Home Bldg A," *Georgia Tech Institute of Technology*, access in February 04th, 2022, <https://housing.gatech.edu/building/tenth-and-home-bldg-a>.



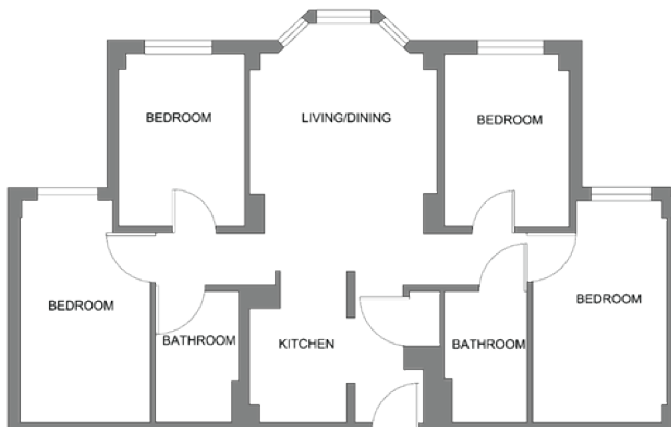
Space	Sq. ft.
Living	245.23
Bedroom One	126.59
Bathroom	53.59
Kitchen	60.42
Laundry	14.77
Bathroom	27.97
HVAC	7.79

Figure 3.26 One-Bedroom Floor Plan, Georgia Tech



Space	Sq. ft.
Living	314.56
Bedroom One	129.8
Bedroom Two	153.57
Bathroom	56.81
Kitchen	66.13
Laundry	15.76
Bathroom	27.97
HVAC	7.96

Figure 3.27 Two-Bedroom Floor Plan, Georgia Tech



Space	Sq. ft.
Living	276
Bedroom One	123.18
Bedroom Two	95.59
Bedroom Three	124.23
Bedroom Four	94.31
Bathroom One	47.4
Bathroom Two	46.93
Kitchen	60.66
Bathroom Two	46.93

Figure 3.28 Four-Bedroom Floor Plan, Georgia Tech

3.2.3.4 Materiality

The buildings present an exposed brick façade that blends with the university's architectural style. The interiors feature yellow painted walls, a white false ceiling, and carpeted floors. The blue and yellow carpet colors mimic the official colors of the university.



Figure 3.29 Common Area Picture, Georgia Tech Graduate Housing

The interior of the apartments features white painted walls and ceiling, tiles for the bathroom and kitchen flooring, and carpeted living and bedroom spaces. The kitchen has natural wood cabinets, and all appliances are white.



Figure 3.30 Interior of Apartment, Georgia Tech Graduate Housing

3.2.3.5 Housing rates

The rental rates for Georgia Tech’s graduate housing vary depending on how many students are sharing the apartment. The rates include services, utilities, appliances, and in some cases, furniture. According to the “Rent” website, the average rate of a one-bedroom apartment in this area is approximately \$1655.0.⁶⁷

Table 3.2 Georgia Institute of Technology Graduate Housing Rates

Unit Type

Rate per Month

⁶⁷ Rent, “The cost of living in Atlanta in 2021,” *Rent Blog*, accessed in February 07th, 2022, <https://www.rent.com/blog/cost-of-living-in-atlanta/>.

Four-bedroom with two shared bathroom – Furnished	\$1207.25
One-bedroom apartment with private bathroom – Unfurnished	\$1324.0
Two-bedroom apartment with shared bathroom – Unfurnished	\$1252.0

3.2.3.6 *Conclusion*

I chose to analyze this graduate student housing project because it is located in the Atlanta urban area, near GSU. The housing is located on-campus and is close to the neighborhood's commercial and business area, surrounded by restaurants, bars, grocery stores, parks, offices, and other residential buildings.

A highlight of this housing solution is its family-oriented design which offers two different types of units for families, a playground, and nursery where children can stay or entertain themselves while the parent studies or works. The building also offers common areas with an academic and social purpose to encourage a sense of community between graduate students.

The interior design of the spaces is traditional and simple. The common area design is branding with university colors, while the apartments use neutral colors and materials, such as white, beige, brown, natural wood, and tiles. In this way, students can personalize their space and make it feel like home. The apartments present natural light and ventilation in all spaces.

The housing rates are expensive for graduate students under a university stipend or working part-time, but the advantage of living on-campus and in an urban neighborhood is valuable.

4 DETERMINING THE NEEDS OF GSU GRADUATE STUDENTS

4.1 Methodology

The objective of this thesis is to design a building for affordable graduate student housing on Georgia State University's downtown campus. To achieve a design based on Georgia State University's students' needs and housing preferences, a survey was conducted using the Qualtrics online platform (Qualtrics, Provo, UT). A cross-sectional research approach was utilized. Data collection was conducted using an online questionnaire which provided descriptive statistics to guide the design process. The survey's objective was to find the prevalence of graduate students' housing needs and preferences.⁶⁸ The questionnaire quantified the existing housing conditions, needs, and preferences of graduate students at GSU (see questionnaire in Appendix A).

An invitation to complete the survey was sent randomly to 20% of registered graduate students enrolled at GSU in the current semester (1448 graduate students), as recommended by the GSU Research Institutional Office. It was expected that at least 5 % of the invited students would answer the survey. The GSU Institutional Research Office invited the potential responders via e-mail. The e-mail described the study and contained a link to the anonymous survey. Students had two weeks to complete the survey and an e-mail reminder was sent after the first week. Participants provided informed consent prior to completing the survey and there was no direct contact with the graduate students in order to reduce bias. The participation in the survey was voluntary.⁶⁹

⁶⁸ Kate Ann Levin, "Study design III: Cross-sectional studies," *Evid Based Dent* 7, (March 2006): 24.

⁶⁹ Priscilla A. Glasgow, *Fundamentals of Survey Research Methodology*, 2-2.

The survey was divided into six categories: (i) graduate students' demographics, (ii) housing needs and preferences, (iii) university experience, (iv) financial status, (v) transportation, and (vi) Downtown neighborhood. The survey used open-, and close-ended questions.⁷⁰ Closed-ended questions used the Likert and ranking scales. The Likert scale is a psychometric scale which, in this case, measures students' assignments of level of importance and unimportance for housing spaces. For this questionnaire, the Likert scale had a scale from 1 to 5 (1=Very Unimportant, 2=Unimportant, 3=Neutral, 4=Important, and 5=Very Important).⁷¹ The ranking scale consisted of ranking items in order of importance. In this case, the scale ranged between 1 and 7, with 7 being the least important item in the list and 1 the most important. The ranking scale reveals students' most important needs and differentiates them from superficial preferences.

Data was collected and stored on Qualtrics and exported to R v.4.1.0 (R Core Team, 2021) for statistical analysis to calculate descriptive statistics. The mean and standard deviations were reported for quantitative variables, while frequencies and percentages reported for categorical variables.

The results obtained from the survey will help to understand graduate students' actual housing status and provide new information to develop adequate housing design. The survey also allows us to understand the rationale behind graduate students' choices of neighborhood and housing, while establishing baselines for future student housing design projects on the GSU campus.⁷² For example, this study will provide information of students' perceptions about living on GSU campus. This will help future projects to choose the correct locations for housing buildings. The results will

⁷⁰ Priscilla A. Glasgow, *Fundamentals of Survey Research Methodology*, 2-6.

⁷¹ Zahid Hussain, "Methods for Decision-Making in Survey Questionnaires Based on Likert Scale" *Journal of Asian Scientific Research*, no. 3 (2013): 35.

⁷² Priscilla A. Glasgow, *Fundamentals of Survey Research Methodology*, 1-1.

also manifest students' financial status and how much they are willing to pay for an ideal housing unit. The interior amenities results will provide information about what type of social areas and workspaces should be included in future housing buildings, what materials and furnishings should be included, and how important natural ventilation and light is perceived. The outdoor spaces results will lead to an understanding of what type of retail and green areas should be included to fulfil students' daily life demands. This information will help to build an ideal graduate student housing design that contributes to students' quality of life and encourages them to succeed academically and professionally.

4.2 Results

The following graphics were produced in Excel. The survey was completely answered by 131 graduate students (9% of the invited students) from which 67% were female, 28% men, and less than 5% non-binary, trans, or preferred not to disclose. Graduate student ages varied between 20 and 60 years old, with the most frequent bracket range being between 20 and 30 years old (70%). The results showed that 78.6% of graduate students live with other people, such as roommates, spouse, partner, or family. The most common answer between students showed that they live in two-person households (Figure 4.1).

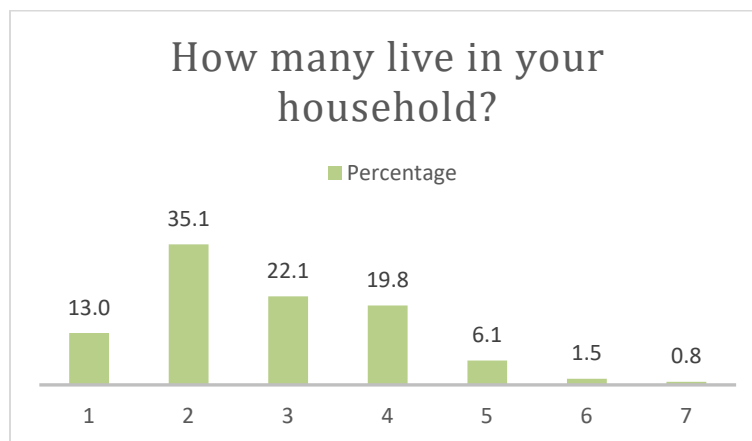


Figure 4.1 Graduate students household sizes

It is important to acknowledge that 18.3% of graduate students have at least one child, of which 45.5% have one child, 40.9% have two children, and the rest have three children.

Studying graduate student current housing status, we found that 92.4% of graduate students have not lived at any GSU on-campus housing and 62.6% of graduate students have trouble finding dwelling. This means that the university does not offer any housing for graduate students, leaving them adrift.

Because GSU does not offer graduate student housing, students need to look for housing in a commercial-business area, with low housing availability, high demand and therefore, high housing prices. Thus, 64.1% of graduate students select affordability as the most important factor affecting their housing selection, followed by safety and location. Since there is a lack of affordable housing in Downtown Atlanta, 36.6% of graduate students live 15 miles or more away from campus, where housing prices are more accessible. Due to most of them living far from campus, 48.1% of graduate students primarily commute to the university by car followed by public transportation at 17.6%, and only a minimum number of students, 3.9%, walking or biking to the university (Figure 4-2).

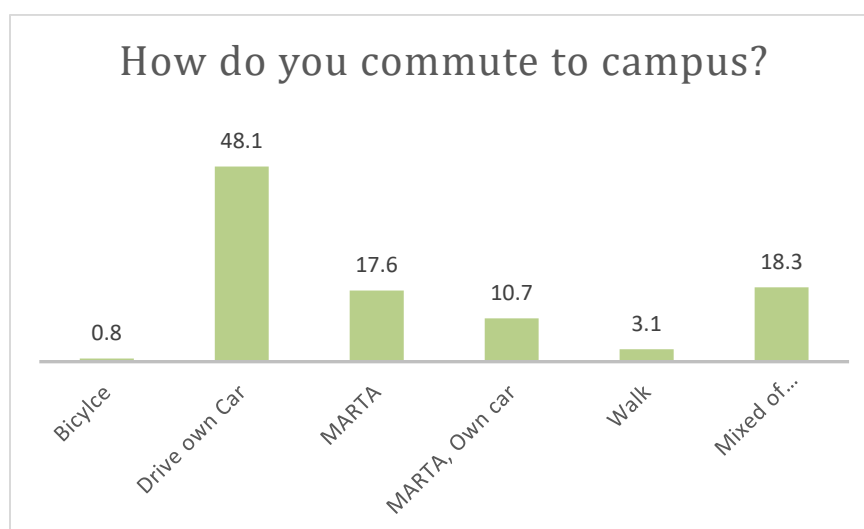


Figure 4.2 Graduate student commuting modes

The majority of graduate students receive a university stipend, followed by family help, or a part-time job (Figure 4-3). Most students work and study at the university, spending most of their time on the GSU campus. Studying their current dwelling situation, 77.9% of graduate students pay a monthly rent with an average cost ranging from \$400.00 to \$1416.00 (Figure 4-4).

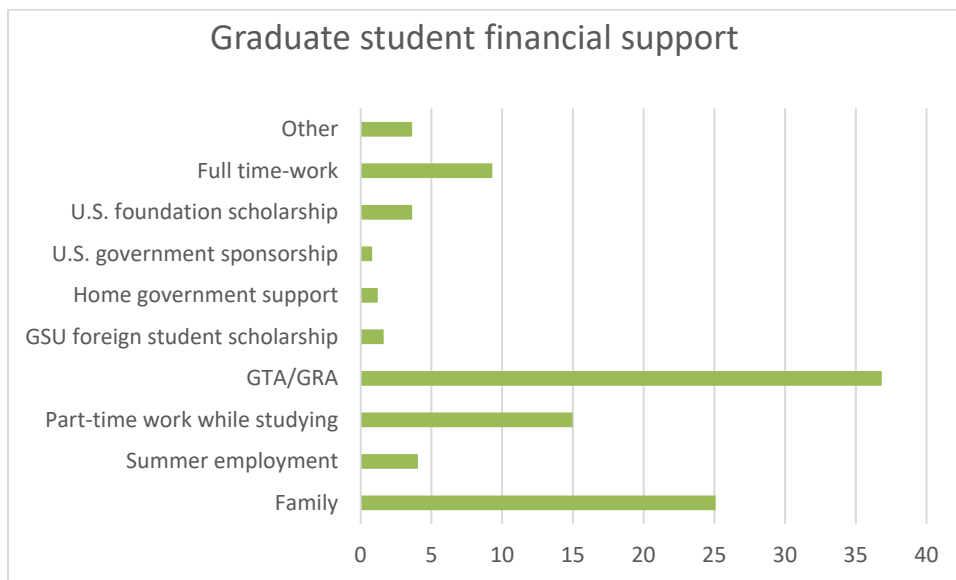


Figure 4.3 Graduate student financial support

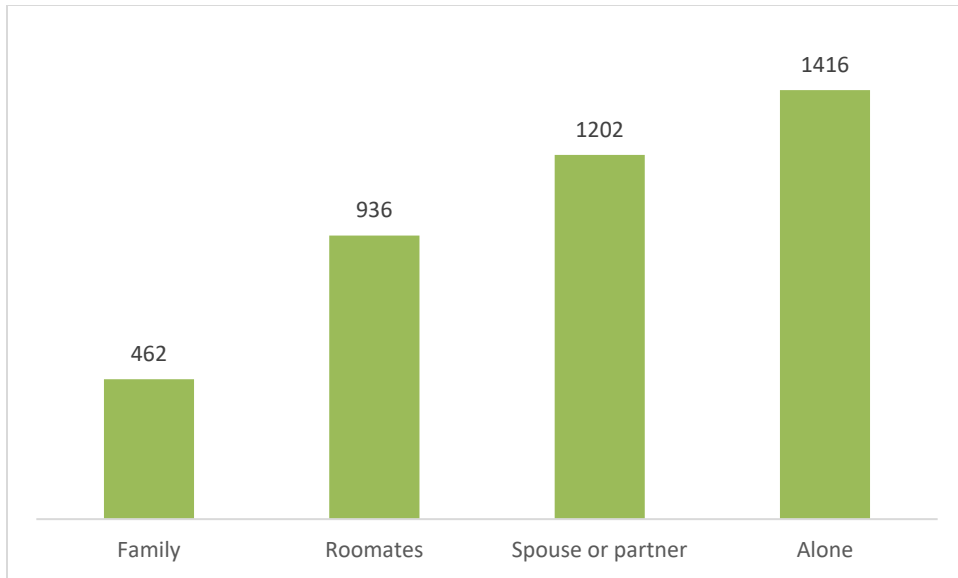


Figure 4.4 Graduate student monthly housing rates

Investigating students housing needs and preferences we found that graduate students are more interested in basic and functional factors that will make their daily life easier, such as AC/Heat, natural light and ventilation, private bathroom with shower, washer and dryer, microwave, among others. Surprisingly, luxurious appliances, pools, social areas, granite countertops, and bathtubs are features in which there is little interest (Table 4-5).

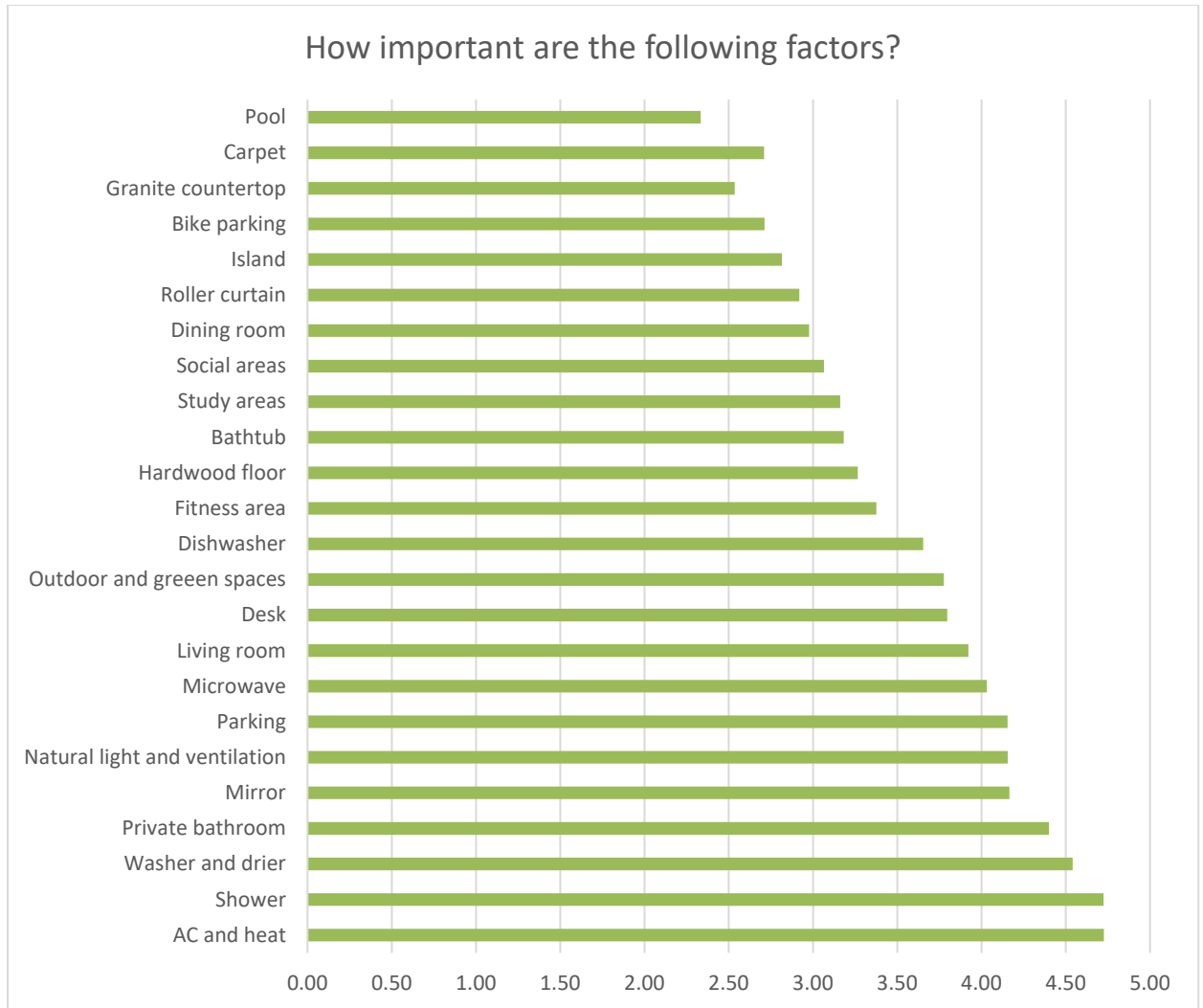


Figure 4.5 Graduate student housing preferences

The majority of students (72.1%) answered that they see themselves living in Downtown Atlanta. Students that did not consider living in Downtown, were concerned about safety and cost. Graduate students also answered that to attract more students to live in Downtown, the neighborhood needs to enhance their safety measures, implement a community-based district, and enhance cleanliness. Graduate students highly recommend that GSU offer graduate housing that is affordable, family- and pet-friendly, and to enhance safety and cleanliness (Figure 4-6).

cleanliness sustainable safety
Affordable Graduate
 walkable **Student Housing**
 family accessible pet friendly
 GSU spirit commercial

Figure 4.6 Graphic representing graduate student's housing recommendations

Finally, graduate students were asked if they were willing to pay a monthly rate of \$1150 to \$1600 for a studio, one-bedroom, and a two-bedroom apartment and 31.3% of graduate students answered they were not able to pay that amount under the university stipend. Specifying that they would spend a maximum of \$800 to \$1000.

In conclusion the results indicate that graduate students need GSU to offer graduate student housing near the university that is primarily affordable, family oriented, with enhanced safety and cleanliness in the neighborhood, and to not prioritize luxurious amenities. Graduate students' interior design preferences included natural light and ventilation, private bathrooms with showers, hard wood flooring, kitchen and laundry appliances, and a desk.

5 DESIGN PROPOSAL

How can an on-campus graduate housing building contribute to the development of the Downtown neighborhood, aid GSU in meeting its academic and campus goals, and support graduate students?

The project design for on-campus graduate student housing aims to help revitalize the Downtown neighborhood, connect the GSU campus to its Downtown location, contribute to the academic goals of GSU, and solve the housing problem experienced by graduate students.

The literature review and data collected from the survey helped to guide the project objective and the ensuing design process of the graduate student housing solution. Finding an appropriate location, understanding the housing needs and preferences of students, understanding the history of the city, and understanding the needs of the GSU campus and the Downtown neighborhood was primary for the development of this design solution.

5.1 Urban Context

The main GSU campus is located in Downtown Atlanta (Figure 5-1). The university campus has easy access through the Metropolitan Atlanta Rapid Transit Authority train, streetcar, and bus systems (Atlanta public transportation), or car using the I-20, and I-75/I-85 interstate highways. The university campus is surrounded primarily by office buildings and hotels, a few commercial establishments, and public outdoor parks.

The building selected for the graduate student housing project is an existing structure known as “100 Edgewood” and is located at the intersection of Edgewood Ave and Peachtree Center Ave. This building was chosen for the following reasons:

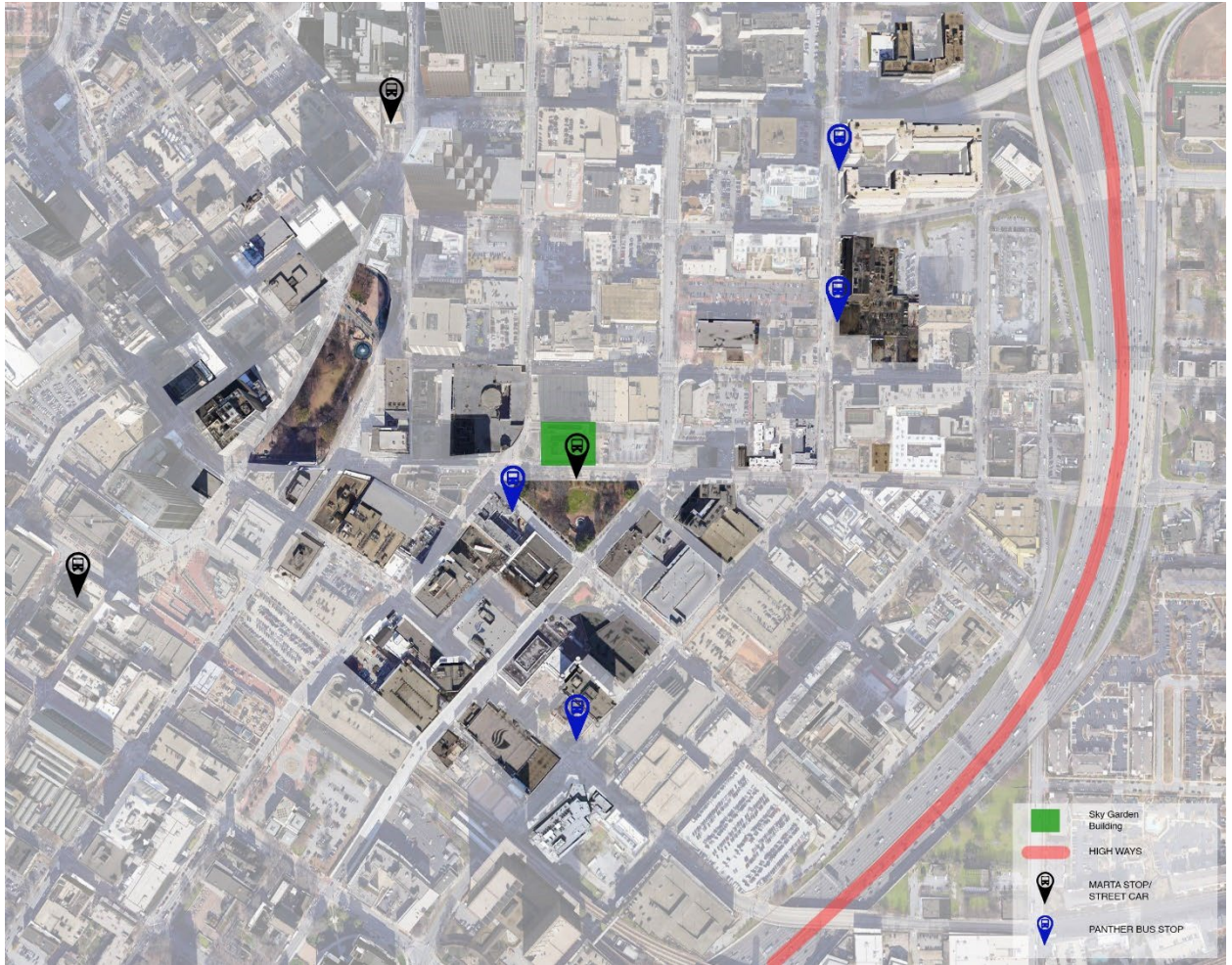


Figure 5.1 Georgia State University Map

In first place, in the interest of sustainable building practices, I prioritized choosing a building that was in disuse for years, to repurpose it for a new use. Currently, 100 Edgewood is a vacant office building recently emptied to facilitate extensive interior asbestos abatement and energy-efficient window replacement. 100 Edgewood offers a strategic location between the main GSU campus and the Downtown business area. Creating housing between these two worlds would help to link them in an urban way and foster additional housing development in the neighborhood.

The location is also convenient for students because it offers easy access to MARTA, highways, the Panther bus routes, the Atlanta streetcar, and is within walking distance to the university campus or the neighborhood business area. It also has two public parks nearby that impact positively on student daily life.



Figure 5.2 Downtown Photos

5.2 User

The potential users of the building were defined by the survey answers. The data collected showed a graduate student age range of between 20 and 60 years old, and that graduate students live alone, share housing with roommates, partners, spouses, family, and/or children. Therefore, the units developed in the sky garden need to fulfill the needs of various graduate student user profiles.

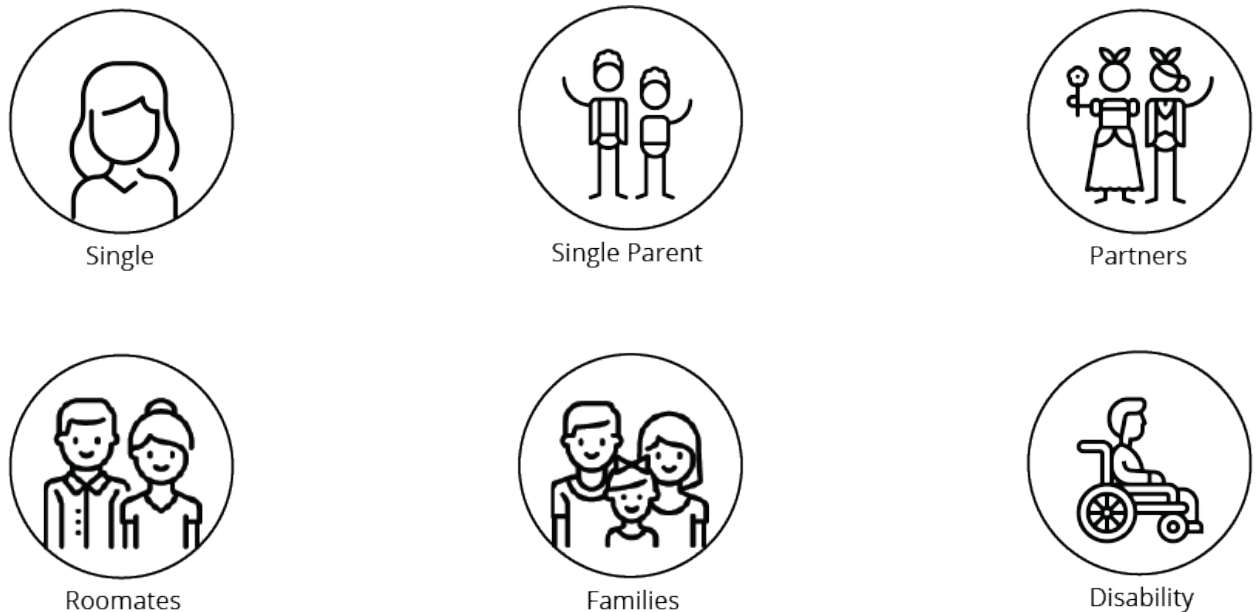


Figure 5.3 Sky Garden Building Users

5.3 Design Process

The design process consisted of multiple steps (Figure 5-4). In first place, I analyzed the actual structure of the building to understand how it could be modified and adapted to a new design. The next step consisted of creating different unit typologies that corresponded to the diverse user needs. This input was used to create a configuration that matched the shape of the building and would efficiently fit within its structural grid. Afterwards, the sun path was analyzed in summer and winter to understand how the light hits the building and how it can be used for the design. An

important element to consider in this building is the plumbing system. All apartments share a common plumbing wall with its neighboring apartment, decreasing potential costs of construction. Finally, the design concept was inspired by the city of Atlanta, which is known as “the city in the woods”. Graduate students’ survey responses also prioritized natural light and ventilation. This concept inspired the expansive use of natural vegetation and greenery and introduced literal openness in the design of the building intervention.

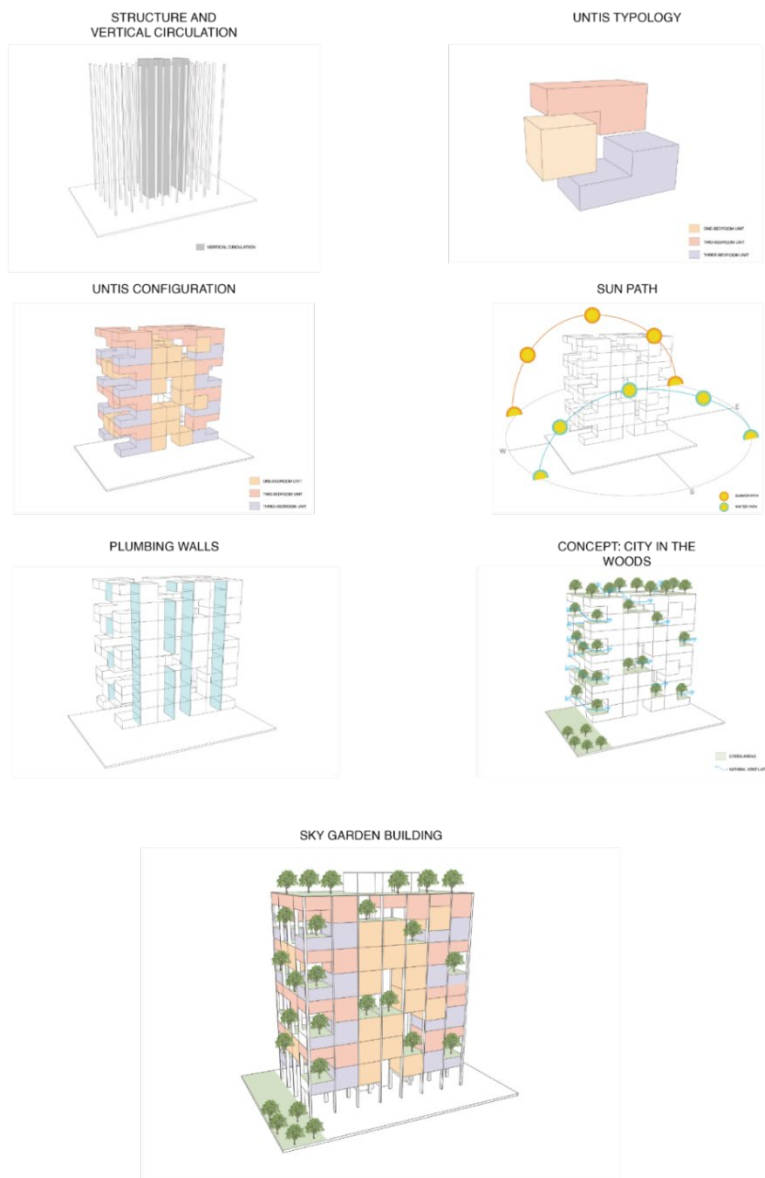


Figure 5.4 Design process diagrams

5.4 Sky Garden Graduate Student Housing

Sky Garden has 84 apartment units. Those 84 units are made up of 38 one-bedroom units, 26 two-bedroom units, and 20 three-bedroom units. These numbers were derived using the graduate student housing at the Georgia Institute of Technology as a reference, and from the answers provided in the pre-design survey.

The architecture program was developed from the graduate student's needs (Figure 5-5). The building has public space, apartment units, social areas, study areas, a playground, and a park.

PROGRAM	SQFT
Public bathroom	861.58
Sitting srea	8036.98
Restaurants/Coffee shops	1871.59
Outdoor area	8271.86
One-bedroom unit	1260.16
Two-bedroom unit	1683.88
Three-bedroom unit	2011.74
Social areas	5466.34
Study areas	3553.94
Sky garden	17160.8
Playground	1776.97

Figure 5.5 Sky Garden Architecture Program

The case study projects helped to shape the architectural and interior program and final allocation of individual unit square footage. The apartment units in Sky Garden are bigger than the case study examples in order to provide a better quality of daily life. Having more expansive spaces will allow students to use them for different activities and to have more privacy when sharing housing.

5.4.1.1 Building floor plans

The site/ground plan presents an outdoor area with a welcoming stair that connects the Downtown business corridor along Peachtree Center Avenue with the ground floor building plaza to the west. The outdoor area offers flexible seating that allows different activities for students or businesspeople. The interior public space includes a food court with six different restaurant/coffee shops with flexible seating for socializing, eating and/ or studying. Both spaces were designed to connect graduate and undergraduate students with workers around GSU and the Downtown area.

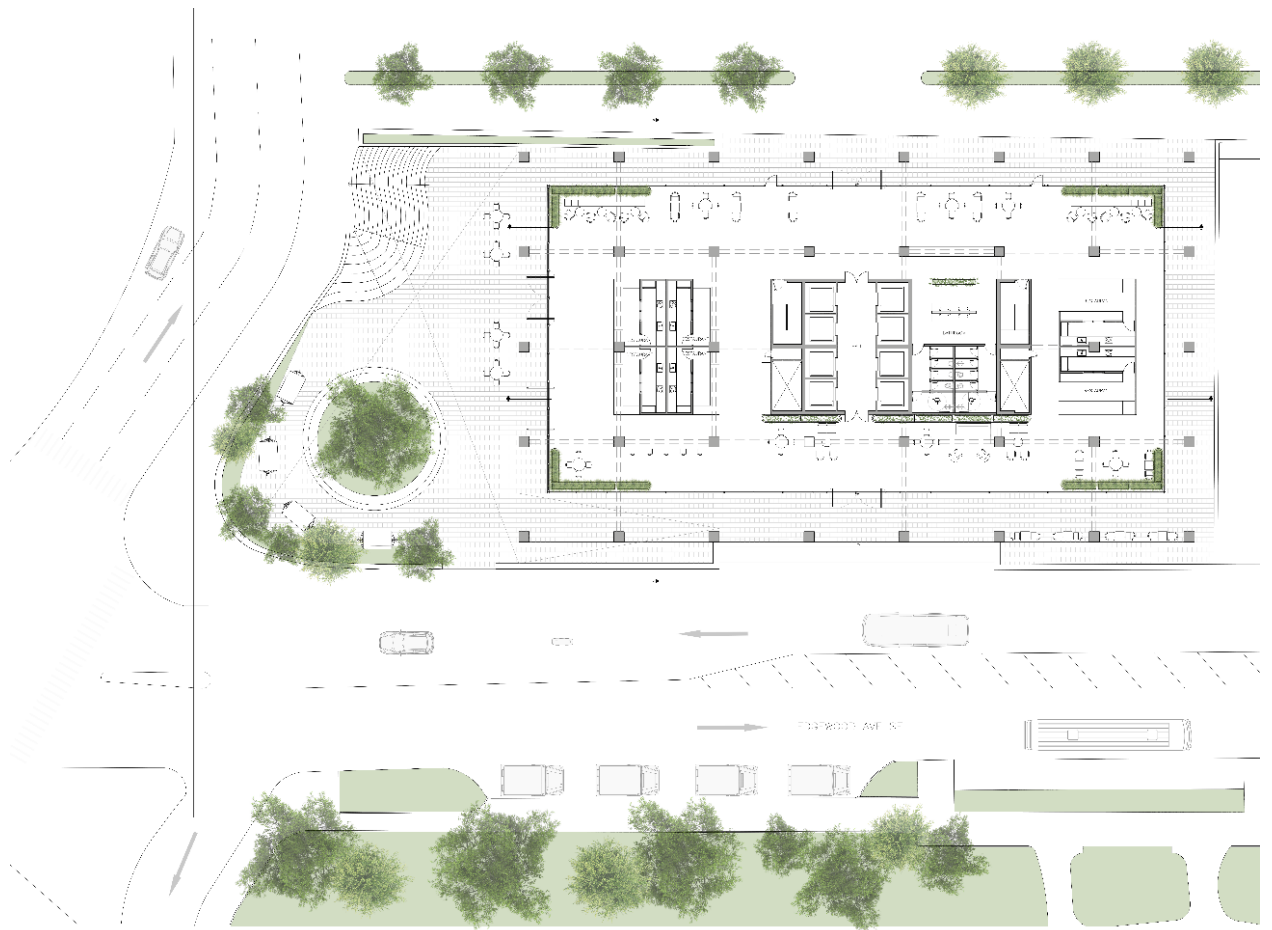


Figure 5.6 Sky Garden: Site Plan

From the second floor up to the eighteenth floor, the building is private with resident-only access. The second floor includes apartment units, open green areas, social, and study spaces.



Figure 5.7 Sky Garden: Second Floor Plan

The third floor includes apartment units, social areas, open green spaces, and a playground area. According to the survey results, graduate students who are parents need a place where kids can stay or play while they are studying or working.

The remaining floors offer similar space configurations. Each floor has apartment units, open green areas, and social or study areas.

The eighteenth and top floor of the building is a roof garden and park. Here student residents and guests will be able to accommodate different activities such as, BBQs, yoga classes,

running, walking their pets, resting, and studying, all while enjoying the spectacular view of the historic neighborhood and Downtown Atlanta.



Figure 5.8 Sky Garden: Third Floor Plan



Figure 5.9 Sky Garden: Fourth Floor Plan

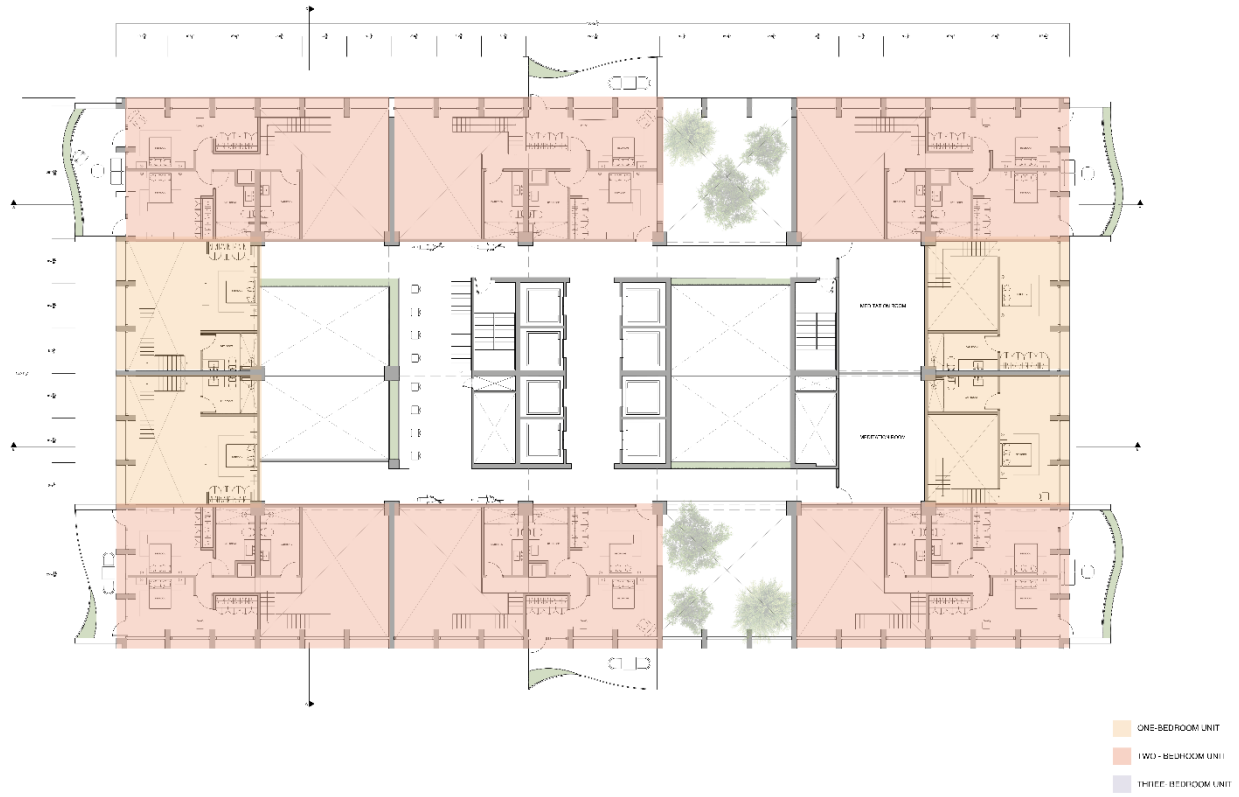


Figure 5.10 Sky Garden: Fifth Floor Plan

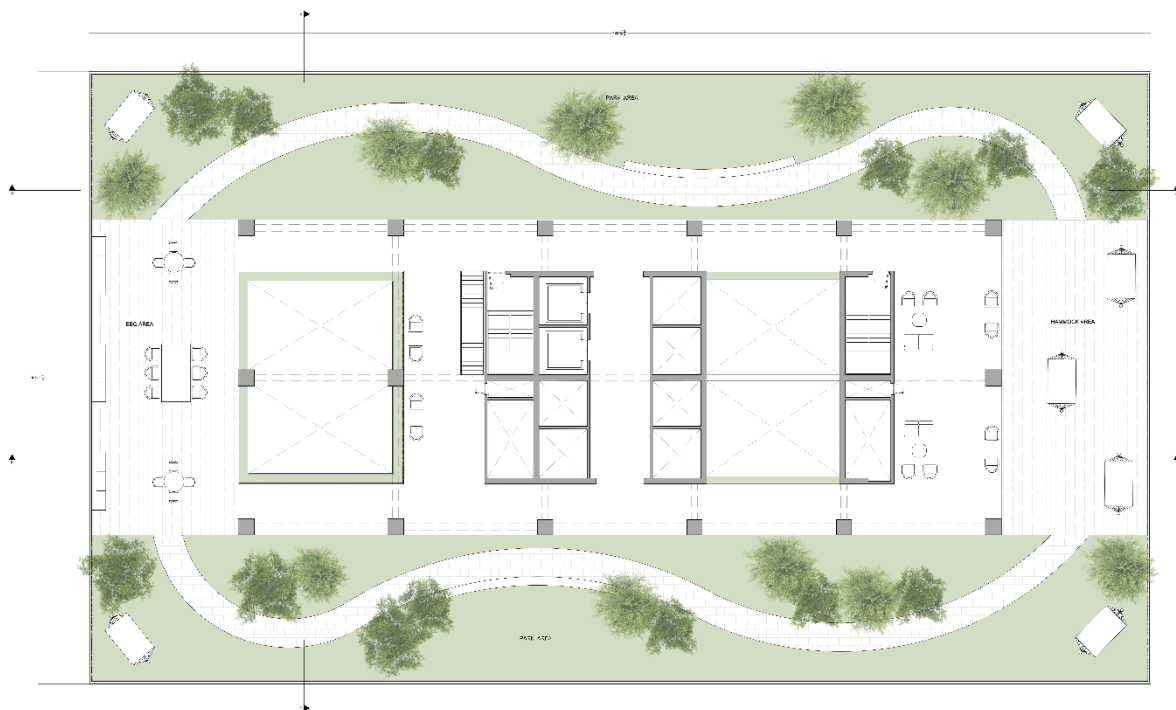


Figure 5.11 Sky Garden: Eighteenth Floor Plan

5.4.1.2 Apartments floor plans

The following plans show the interior spaces and materials used for each apartment unit. Each apartment, regardless of size, features an identical standardized kitchen, a living and dining room, a desk, a balcony, a bedroom with closet, and bathroom. Some apartments include laundry, and for those that do not include them, the building offers shared laundry rooms.



Figure 5.12 Sky Garden: One-Bedroom Unit Typologies



Figure 5.13 Sky Garden: Two-Bedroom Unit



Figure 5.14 Sky Garden: Three-Bedroom Unit

5.4.1.3 Common area floor plan

The following floor plan shows a typical shared study space located in the building common area outside of the private apartments. The plan arrangement is divided into a private study area, a printer area, an exterior balcony, a bathroom, and an open collaborative study space with different seating options, such as individual high tables, collaborative high tables, and standard high tables.



Figure 5.15 Sky Garden: Study Area Floor Plan

5.4.1.4 Sections

The following image presents a longitudinal section of the building (Figure 5-16). The section shows the various units, color-coded by type. Orange represents one-bedroom apartments, pink represents two-bedroom apartments, and purple represents three-bedroom apartments. Open green spaces are located throughout the building and provide open air tunnels from end to end and side to side, allowing for natural daylight and ventilation to penetrate the building at every level.



Figure 5.16 Sky Garden: Section A-A, Units configuration

The following image is also a longitudinal section of the building and shows the interior spaces and the materiality (Figure 5-17). The green open spaces do not have windows allowing natural air to come into the building.



Figure 5.17 Sky Garden: Section A-A, Materiality

The next image consists of a transverse section of the building (Figure 5-18). It illustrates two vertical shafts/openings that extend from the second floor to the eighteenth floor which

connects the building occupants both visually and audibly generating a sense of safety for residents

The center core of the building consists of vertical circulation, such as elevators, stairs, and fire escape stairs. Apartment units and common areas are shown on either end. Common area walls along the corridors can be used to hang up bicycles, providing a functional aesthetic along the connecting

connecting corridors.



Figure 5.18 Sky Garden: Section B-B, Materiality

5.4.1.5 Kitchen detail

The kitchen design is the same in all apartment units. It consists of a kitchen with all appliances and an island. The cabinets have finishes in natural wood with black hardware. The backsplash wall features white rectangular tiles, and countertops are concrete and granite. The island cabinets are painted green, and the false suspended slat ceiling is made of wood.

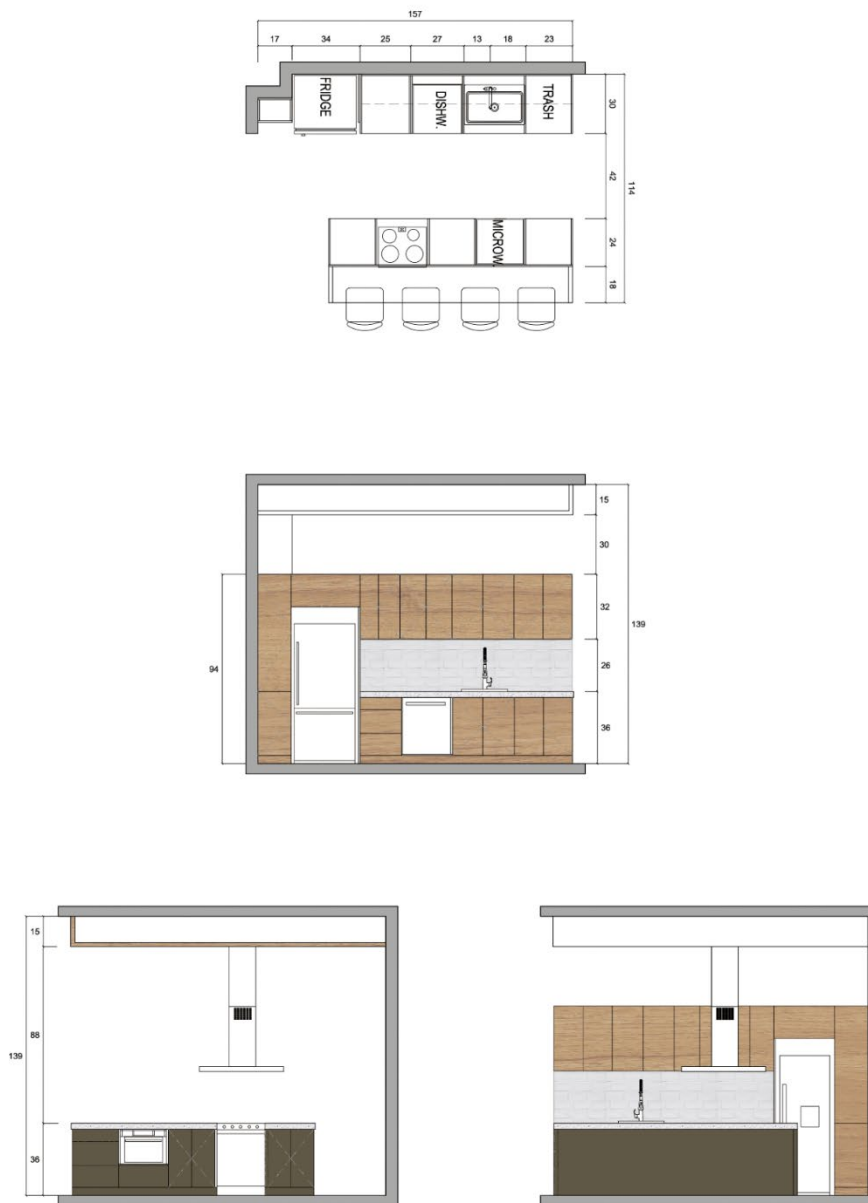


Figure 5.19 Sky Garden: Kitchen Detail Plan and Elevations

5.4.1.6 Materials

The materials chosen for the building have a natural or neutral palette. The idea behind this is to highlight the green and natural elements of the building. Suitable interior colors and finishes include neutral tones and materials such as, light wood, raw black steel, concrete, clear glass, and white and green paint.,. Also, neutral tones encourage the users to personalize their apartments in their own way and create their own unique home palette with furniture, artwork, and other decor items.

The raw black steel is the second most important material in the project. It is used on both exterior and interior balconies, stairs, and planters. This material was chosen to give a modern and industrial personality to the building. Residents will see how the raw steel adapts to the different weather seasons and will change the look of the building over time.



Figure 5.20 Sky Garden: Apartment Unit Materials

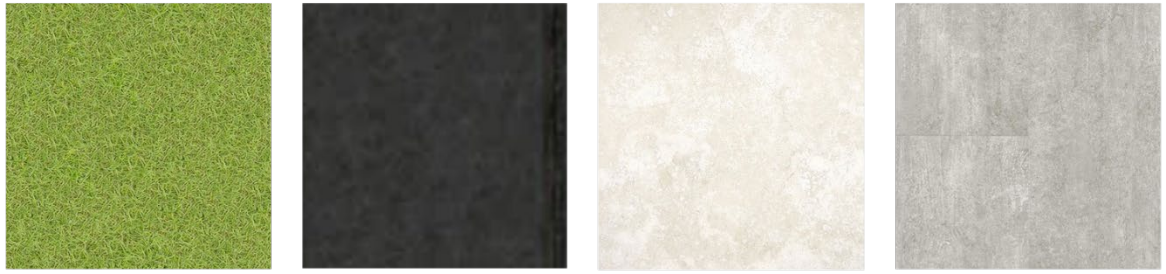


Figure 5.21 Sky Garden: Facade Materials



Figure 5.22 Sky Garden: Green Space Materials

5.4.1.7 Views

The façade view shows how the sky garden building would look in its urban context (Figure 5-23). The design tries to intervene as little as possible on the façade, keeping the terrazzo cladding in order to retain the identity of the building and place. It accentuates the open spaces and greenery interventions to the building.



Figure 5.23 Sky Garden: Facade View

The following views show the interior of a typical one-bedroom unit (Figure 5-24 to Figure 5-27). The design of each 2-floor unit features a double height stair made of raw black steel and wood, which is connected to a wood desk beneath the stair. The standardized kitchen design as utilized in every unit is also illustrated.

The final views show the open green spaces. The idea behind these spaces is to connect the residents with each other and to create an enhanced sense of community (Figure 5-28 to 5-29).



Figure 5.24 Sky Garden: One-bedroom Unit Interior View



Figure 5.25 Sky Garden: One-bedroom Unit Interior View



Figure 5.26 Sky Garden: Kitchen Interior View



Figure 5.27 Sky Garden: Desk and Stair Interior View



Figure 5.28 Sky Garden: Playground Green Area View



Figure 0.1 Sky Garden: Green Area View

6 EXHIBITION

The design exhibition was located in the small gallery in the Ernest G. Welch School of Art & Design Galleries. The exhibition consisted of six parts: i. the project objective; ii. the research data; iii. the design process; iv. a photographic projection showing the building location and surroundings; the design part exhibiting floor plans, sections, rendered views, and materials; and vi. a virtual reality component where visitors experienced the interiors of an apartment unit accessed via a QR code and viewed on their mobile phones.

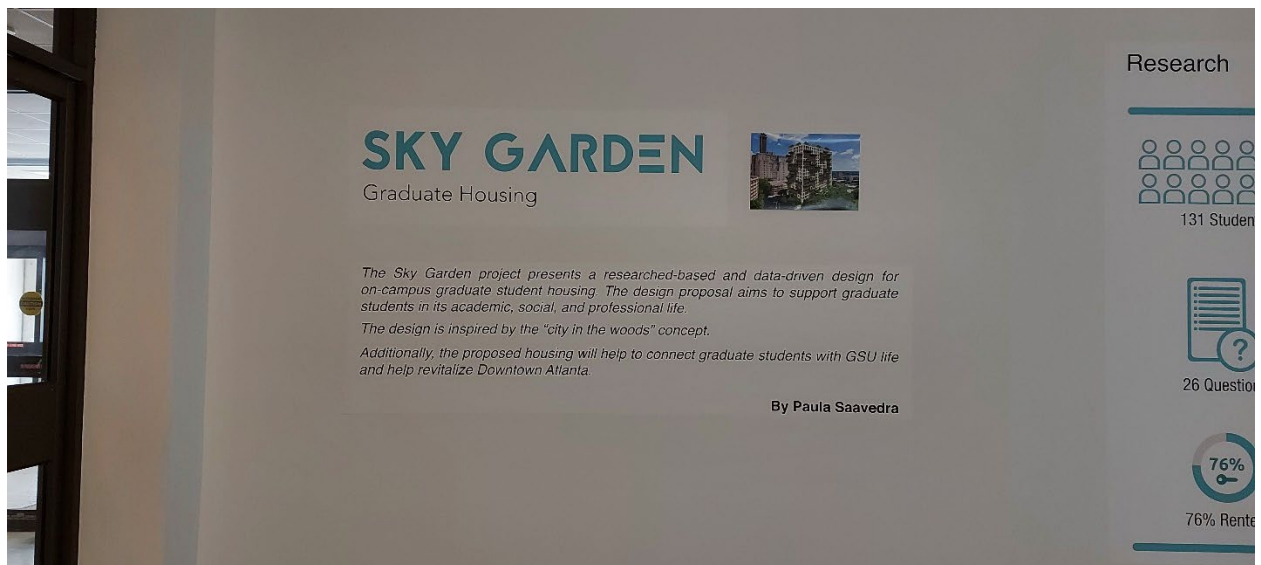


Figure 6.1 Exhibition Photography - Project objective

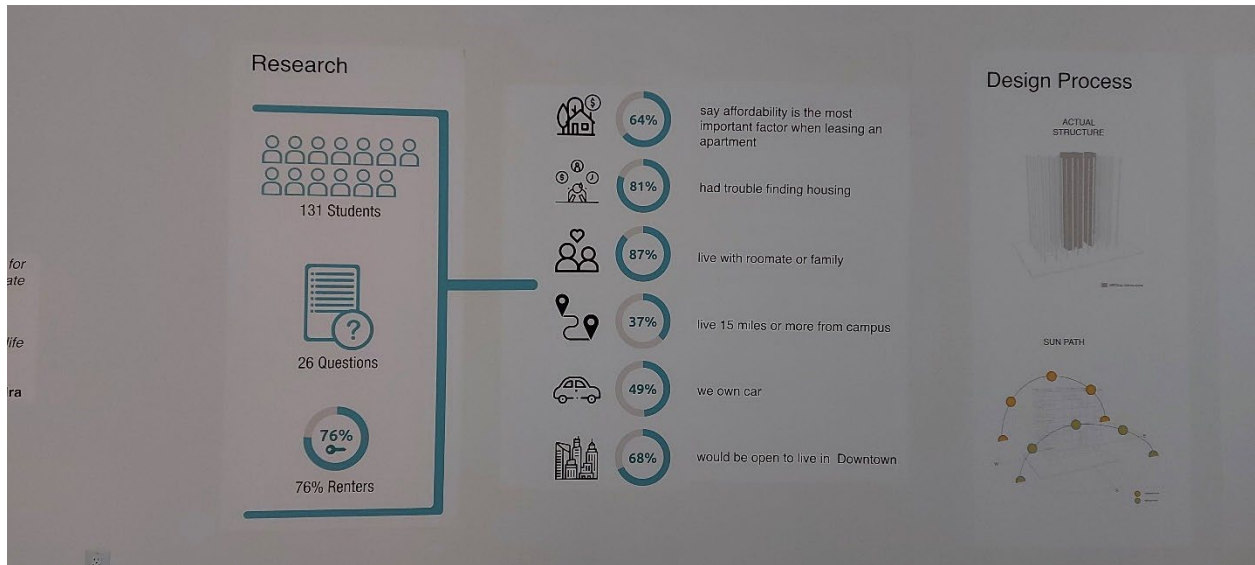


Figure 6.2 Exhibition Photography - Research data

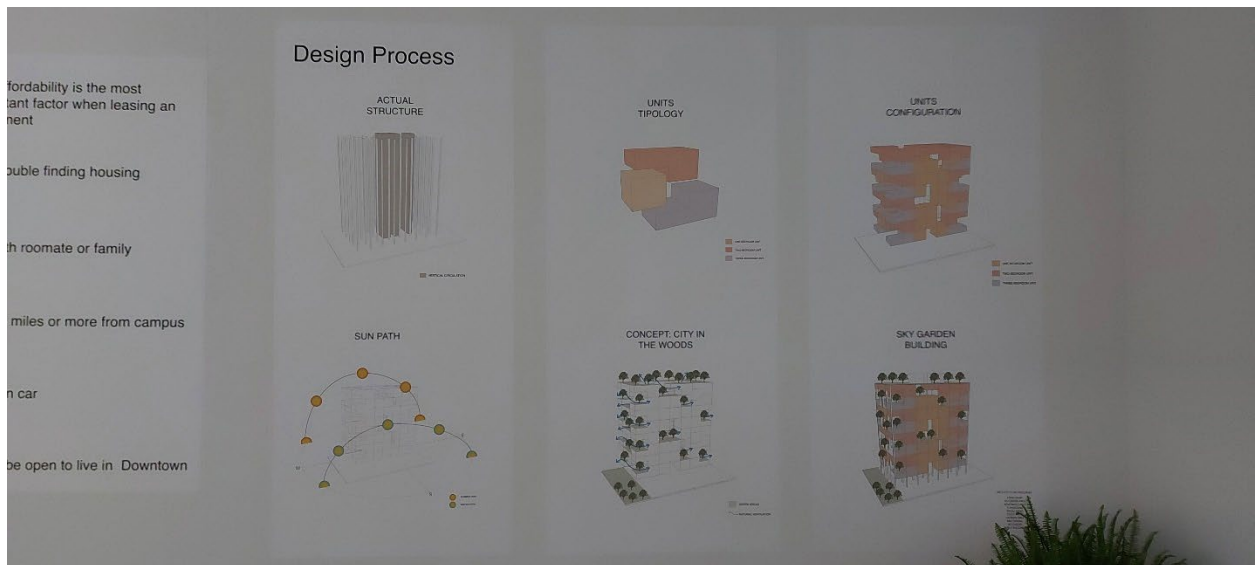


Figure 6.3 Exhibition Photography - Design process



Figure 6.4 Exhibition photography - Downtown photos projection



Figure 6.5 Exhibition Photography - Floor plans and sections



Figure 6.6 Exhibition Photography - Rendering views, VR experience, and materials

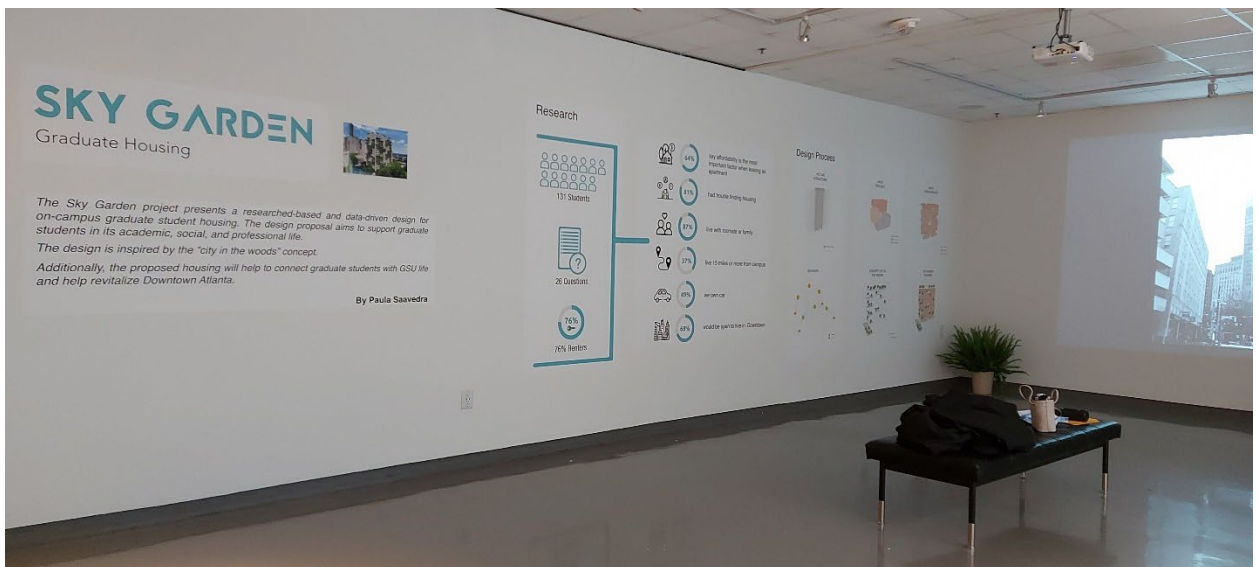


Figure 6.7 Exhibition Photography



Figure 6.8 Exhibition Photography

7 CONCLUSION

Affordability is a sensitive topic that can be interpreted in different ways. In this thesis affordable housing is defined as housing for which residents spend less than 30% of their monthly salary on rent. Housing rentals near the GSU campus is not accessible for graduate students, forcing them to live further away. Because of this, this thesis proposes the Sky Garden, a reimagined graduate student housing complex located on-campus. Sky Garden will be part of the university and will offer affordable housing to graduate students.

For GSU to accomplish its academic goals, become the largest urban research university in the US, and keep developing its campus; it is important to attract more graduate students to study and work at the university. One way to attract them is by offering decent housing that fulfills their needs and preferences at an affordable price, located near their place of work.

The data collected from the survey completed by 131 graduate students at GSU identified their housing needs and preferences. In the current real estate development market, investors are building student housing with luxury finishes but the data shows that graduate students would prefer apartments with more modest features, amenities, and finishes. Graduate students want to have different unit arrangements that correspond to their needs, such as living with a partner, roommates, or their children. Having common areas for children is important for graduate students' parents.

Another relevant survey result that directly impacted the design is the high preference for natural ventilation and illumination in each apartment. This is reflected in the apartment design, with each interior space having windows and many of them with balconies. This requirement is also reflected in the openness of the building design, in which natural light and ventilation is allowed to literally flow through the openings in the building façade that span side-to-side and

end-to-end on select floors and from the 2nd floor to the roof garden. The next high value requirement was that the apartment units should include a desk. Graduate student design requirements were more basic than luxurious; therefore, the building design and the material finishes were chosen to express that modest request.

The Sky Garden building design was inspired by the “city in the woods” concept and seeks to adapt the modified building in a harmonious and green way with its urban context. This concept attracts vegetation, fauna, and people that want to live in a more natural space in the middle of the city.

Furthermore, in the context of a post-Covid paradigm shift, the Sky Garden student housing project repositions a vacant office building located between the university and the Downtown business area in a new and dynamic use. In this way, the building connects these two worlds to create a professional and social bond.

Finally, the project seeks to provide a housing solution that impacts positively upon graduate student life in an academic, social, and professional way.

8 BIBLIOGRAPHY

- Asya Natapov, Saskia Kuliga, Ruth Conroy Dalton & Christoph Hölscher. 2019. "Linking building-circulation typology and wayfinding: design, spatial analysis, and anticipated wayfinding difficulty of circulation types." *Architectural Science Review* 1-13.
- Carrie L Johnson, Brooke Hanson, David Evans, Jinhee kim, Andi Long, Julie Fife. 2019. "How Americans Define Affordable Housing." *Family and Consumer Sciences Research Journal* n.4: 395-409.
- Central Atlanta Progress. n.d. "Downtown Atlanta Master Plan." *Atlanta Downtown*. Accessed October 21, 2021. <https://www.atlantadowntown.com/initiatives/plan-downtown-atl> .
- Choi, Hye Jung. 1971. ". Housing Selection and Satisfaction Associated with Housing Expenditures for Off-campus Living as Stated by Asian Graduate Students at Oregon State University." Oregon State University.
- Dawn, Haynie and Peponis, John. 2007. "Atlanta: a morphological history." *7th International Space Syntax Symposium Proceedings, Ref. 087 087:1 – 087:13*. .
- Ericson, Steven Paul. 2014. "The Impact of an Urban University and Its Neighborhood: A case study of Georgia State University and Downtown Atlanta." *Oklahoma State University*.
- Geoffrey Wodtke, Ruth N. Lopez Turley. June, 2010. "College Residence and Academic Performance: Who Benefits from Living on Campus?" *Urban Education* 506 - 532.
- Georgia State University. n.d. *Graduate Students Relocation Guide*. Accessed December 13, 2021. https://cas.gsu.edu/files/2020/03/Relocation-Guide-v2020.pdf?_cf_chl_jschl_tk__=PpJNKL4j6zP45VL5vmFD5w23HnH5I3t219WnA2dDQZQ-1639418463-0-gaNycGzNDR0.
- . n.d. *University research*. Accessed November 20, 2021. <https://research.gsu.edu/about/#:~:text=Learn%20More%20About%20Research%20THE%20STATEWAY&text=In%201996%2C%20Georgia%20State,institutions%2C%20was%20a%20remarkable%20achievement>.
- Georgia Tech University. n.d. *Georgia Tech Enrollment Reaches All-Time High*. Accessed February 04, 2022. <https://news.gatech.edu/news/2019/11/12/georgia-tech-enrollment-reaches-all-time-high>.
- . n.d. *Graduate Living Center*. Accessed February 04, 2022. <https://housing.gatech.edu/building/graduate-living-center>.
- . n.d. *Tenth and Home Bldg A*. Accessed February 04, 2022. <https://housing.gatech.edu/building/tenth-and-home-bldg-a>.
- Glasow, Priscilla A. 2005. "Fundamentals of Survey Research Methodology." 1-27.
- Glassdoor. n.d. *Georgia State University Graduate Student Salary*. Accessed December 08, 2021. https://www.glassdoor.com/Salary/Georgia-State-University-Graduate-Student-Salaries-E130084_D_KO25,41.htm .
- . n.d. *Georgia State University Graduate Student Salary*. Accessed December 08, 2021. https://www.glassdoor.com/Salary/Georgia-State-University-Graduate-Student-Salaries-E130084_D_KO25,41.htm.
- Han, Jienan. 2022. "House, Home, and Community: Good Models for Graduate Student Housing." *Tongji University*.

- Harvard. n.d. *Harvard University Housing*. Accessed January 12, 2022. https://www.huhousing.harvard.edu/our-properties/peabody-terrace-apartments?pricing_floor_plans.
- Harvard University. n.d. *Harvard University Housing*. Accessed January 12, 2022. <https://www.huhousing.harvard.edu/our-properties/peabody-terrace-apartments>.
- Human Transit. 2011. "Basics: Waking Distance to Transit." *Human Transit*. April 24. Accessed December 08, 2021. <https://humantransit.org/2011/04/basics-walking-distance-to-transit.html>.
- Hussain, Zahid. 2013. "Methods for Decision-Making in Survey Questionnaires Based on Likert Scale." *Journal of Asian Scientific Research* 35.
- J. Mack Robinson College of Business, Georgia State University. n.d. *Graduate Assistantships*. Accessed December 13, 2021. https://robinson.gsu.edu/graduate-student-resources/graduate-assistantships/?__cf_chl_jschl_tk__=I9debKgC3Nh3yrxvAT7C8eE1oJqFRhRfTNmzOMPSBKY-1639407268-0-gaNycGzNDWU.
- Jeffes Mills, Errin J. 2006. "Graduate Students: Are they Our Forgotten Residents." *The journal of college and university student housing* 34 24-25.
- Jessica Holzberg, Renee Ellis, Matt Virgile, Dawn Nelson. 2017. "ASSESSING THE FEASIBILITY OF ASKING ABOUT GENDER IDENTITY." *U.S. Bureau of Labors Statistics*. September 29. <https://www.bls.gov/osmr/research-papers/2017/pdf/st170200.pdf>.
- John Ruble, Jeanne Chen. 2013. "Housing." In *Building types of College and University facilities*, by David J Neuman. John Wiley & Sons, Inc.
- Keating, Larry. 2001. *Atlanta*. Atlanta: emple University Press.
- Levin, Kate Ann. 2006. "Study design III: Cross-sectional studies." *Evid based dent* 7 24-25.
- Martin Tattara, Pier Vittorio Aurelio. n.d. "Production/Reproduction: Housing beyond the Family." *Family Planning*.
- Miller, Michael. 2014. *AD Classics: Peabody Terrace / Sert, Jackson & Gourley*. 13 March. Accessed January 13, 2022. <https://www.archdaily.com/486015/ad-classics-peabody-terrace-sert-jackson-and-gourley>.
- Pamela Charbonneau, Laura C. Johnson, Jean Andrey. 2006. "Characteristics of University Student Housing and Implications for Urban Development in Mid-sized Cities." *Journal of Urban Research* 278-300.
- Portland State University. n.d. *FACTS : PSU BY THE NUMBERS*. Accessed January 15, 2022. <https://www.pdx.edu/portland-state-university-facts>.
- . n.d. *Transfer & Continuing Student Buildings*. Accessed February 02, 2022. <https://www.pdx.edu/housing/rates-payment-2020-2021>.
- Qualtrics. 2011. *Security Statement*. www.qualtrics.com/security-statement/.
- Reed, Merl E. 2009. *Educating the Urban New South: Atlanta and the Rise of Georgia State University, 1913-1969*. Georgia: Mercer University.
- Rena Cheskis-Gold, Alexandra Delaney. 2012. "Trends in student housing: process and product." *Planning for Higher Education* 41 1-20.
- Rena Cheskis-Gold, Alexandra Delaney. 2012. "Trends in student housing: process and product," . *Planning for Higher Education* 9.
- Rent. 2022. *The cost of living in Atlanta in 2021*. Accessed February 2022, 2022. <https://www.rent.com/blog/cost-of-living-in-atlanta/>.

- Robertson, Copper. n.d. "Georgia State University Master Plan." *Georgia State University*. Accessed 21 November, 2021. <https://services.gsu.edu/document/georgia-state-university-master-plan/>.
- Rutheiser, Charles. 1997. "Rutheiser, Charles. "Making Place In The Nonplace Urban Realm: Notes On The Revitalization Of Downtown Atlanta." *Urban Anthropology and Studies of Cultural Systems and World Economic Development* 26 (1997): 9-42." *Rutheiser, Charles. "Making Place In The Nonplace Urban Realm: Notes On The Revitalization Of Downtown Atlanta." Urban Anthropology and Studies of Cultural Systems and World Economic Development* 26 (1997): 9-42. 9-42.
- Sasaki Associates/Robert and Company. 2012. "Georgia State University Master Plan Update." Atlanta: Georgia State University.
- W. Grable, Stephen. 1979. "Applying History to City Planning: A Case Study in Atlanta." *The Public Historian* 1 45-49.
- Yanni, Carla. 2019. *Living on Campus: An Architectural History of the American Dormitory*. Minneapolis: Univ Of Minnesota Pres.

APPENDICES

Appendix A: Questionnaire

Demographics

1. How do you identify?
 - a. Male
 - b. Female
 - c. Trans male/ Trans man
 - d. Trans female/ Trans woman
 - e. Genderqueer/ gender non-conforming/ non-binary
 - f. Different identity (Please specify):
 - g. Prefer not to disclose
2. Are you Hispanic, Latino, or Spanish origin?
 - a. No, not of Hispanic, Latino, or Spanish origin
 - b. Yes
 - c. Prefer not to disclose
3. What is your race? (Select all that apply)
 - a. White
 - b. Black
 - c. American Indian or Alaska Native
 - d. Asian
 - e. Prefer not to disclose
4. What is your age?
5. With whom do you currently live? (Select all that apply)
 - a. Family
 - b. Spouse or partner
 - c. Roommates
 - d. Other
6. Do any children live in your home? If yes, how many?
7. How many people (including you) live in your home?

Housing Preference and Needs

8. Please check your present housing. (Select all that apply)
 - a. Single-family house converted into apartments
 - b. Room in a private house with cooking facilities
 - c. Apartment complex
 - d. Townhouse
 - e. Single-family home
 - f. Other:
9. What was the most important reason for selecting your present housing?
 - a. Location

- b. Affordability
 - c. Amenities
 - d. Other (specify):
10. Please rank the following factors in selecting housing (From 7 as less important to 1 as most important):
- a. Cost
 - b. Safety
 - c. Distance from campus
 - d. Access to public transportation
 - e. Distance from a grocery store
 - f. Distance to outdoor areas
 - g. Distance to commercial business
11. How important are the following factors in selecting housing? (In a scale of, 1 = Very unimportant, 2 = Unimportant, 3 = Neutral, 4 = Important, and 5=Very important)
- a. Private bathroom
 - b. Natural light
 - c. Natural ventilation
 - d. Bathroom Facilities:
 - i. Shower
 - ii. Bathtub
 - iii. Mirror
 - e. Dining room
 - f. Living room
 - g. Kitchen with island
 - h. Kitchen facilities:
 - i. Dishwasher
 - ii. Microwave
 - iii. Granite countertop
 - i. Furnished:
 - i. Desk
 - ii. Roller curtain
 - iii. Carpet
 - iv. Hardwood floor
 - j. Equipment:
 - i. Washer and drier
 - ii. Ac and heat
 - k. Common areas:
 - i. Parking
 - ii. Pool
 - iii. Study areas
 - iv. Social areas
 - v. Gym
 - vi. Bike parking
 - vii. Outdoor and green spaces

University Experience

12. What School are you enrolled in?
- Andrew Young School of Policy Studies
 - Byrdine F. Lewis College of Nursing and Health Professions
 - College of the Arts & Sciences
 - College of Education & Human Development
 - College of Law
 - College of the Arts
 - Institute for Biomedical Sciences
 - Perimeter College
 - Robinson College of Business
 - School of Public Health
13. Have you ever lived in any Georgia State University Housing?
- Yes
 - No
14. Where do you like to study?
- In your home
 - In Georgia State University library
 - In your office in your department
 - In a graduate room in your department
 - Other (please specify)

Financial Status

15. How are you supported now? (Please check all that apply)
- My family
 - Summer employment
 - Part-time work during the school year
 - Teaching or research assistantship
 - Georgia State University foreign student scholarship
 - Support from my home government support
 - U. S. government sponsorship
 - Foundation or association scholarship in the USA
 - Other (Please specify)
16. For your present housing do you:
- Rent
 - Own
17. If you rent answer the following question (17 and 18)
18. How much rent do you pay per month?
19. Did you have trouble locating a dwelling within your budget?
- Yes
 - No
20. What recommendation do you have for student housing at Georgia State University?

Transportation

21. How far do you live from Georgia State University campus?
- On-campus

- b. Less than 5 miles
 - c. From 5 to 10 miles
 - d. From 10 to 15 miles
 - e. 15 miles or more
22. How do you get to school?
- a. Walk
 - b. Bicycle
 - c. MARTA, Public transportation
 - d. Drive your own car
 - e. Uber, Lyft, Scooter rental
 - f. Share a ride

Downtown Neighborhood

23. Could you see yourself living in downtown Atlanta?
- a. Yes
 - b. No
24. If you answer no, why? (Select all that apply)
- a. Safety
 - b. Cost
 - c. Lack of entertainment
 - d. Lack of commercial business
 - e. Lack of clean
 - f. Lack of green outdoor areas
 - g. Other (Please specify)
25. I will now list some specific factors that could be implemented to attract students to live in downtown Atlanta. (Please rank the following factors from 7 as least important to 1 as most important):
- a. Community-based
 - b. Restaurants and retail options
 - c. Supermarket
 - d. Entertainment options
 - e. Enhanced safety measures
 - f. Enhanced cleanliness
 - g. Outdoor spaces
26. If you were moving to on-campus housing, which unit do you prefer, assuming it has everything you would want (e.g., nice neighborhood, On-campus, nice amenities, etc.)?
- a. Unit A: 1-bedroom, 1 bathroom at \$1600
 - b. Unit B: Studio, 1 bathroom at \$1450
 - c. Unit C: 2-bedroom, 2 bathrooms at \$1300
 - d. Unit D: 2-bedroom, 1 bathroom (shared) at \$1150
 - e. None of these units (Please specify)

Appendix B: QR Code

