Re-urbanizing Downtown Los Angeles: Micro Housing Densifying the City's Core

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Abstract

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As people start to move back from the suburbs to urban city centers, downtowns are beginning to become more dense and more expensive to live in. This growing density requires a responsible response by designers and cities to provide a livable and affordable housing option for a new generation of city dwellers. Los Angeles is a city facing this change, and its downtown desires to shed its stigma of being an uninhabitable urban wasteland outside of the nine to five work day. This thesis proposes micro housing, sub-300 square foot dwellings, as a mid-income housing solution for young professionals that responds to the needs of its residents, as well as the larger context of the city.

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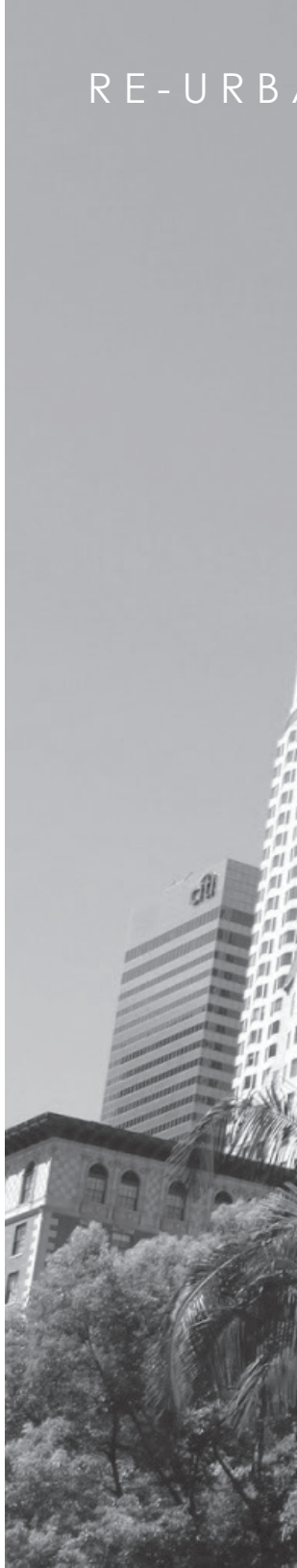
Introduction

As global population increases, more and more people are moving into the world's cities. According to Geoffrey West, a leading theorist on the scientific model of cities, one million people a week, from now until the year 2050, will move into these urban centers (West). Cities are the crucible of human creativity and productivity; they have mass appeal, in terms of social and economic prospects and these opportunities have spurred re-urbanization of once desolate downtowns.

Los Angeles is a prime example of a city facing this trend. Typically known for having an empty and uninhabitable downtown, Los Angeles has been slowly revitalizing. The real estate market in Southern California has shifted from the once booming suburbs, back into the city center, as real estate prices have considerably decreased since the economic bubble burst back in 2007. More importantly, this market shift is accompanied by a change in attitude, as people are beginning to prefer the ability to walk to work, shops, and restaurants instead of using the car, which has had a stranglehold over Southern California for decades (Quiad).

The city of Los Angeles has begun to respond to this shift, and in recent years, a huge effort has been put forth to rejuvenate Downtown Los Angeles as a viable and livable urban center (City of Los Angeles). Much of this revitalization hinges upon being able to increase the density of Downtown Los Angeles and attract young, talented minds to live in its neighborhoods. However, the cost of rent is increasing, leaving potential talent and brilliance to live elsewhere or in less ideal conditions.

Cities such as New York, San Francisco, and Seattle have been constructing micro housing as a reaction to this increase in rent. In order to attract more people to live and work in the city, I propose the idea of micro housing, compact living spaces that are sub-300 square feet, as a solution to re-urbanizing downtown Los Angeles as a measure to prevent rising ren. Micro housing would



ANIZING DOWNTOWN LOS ANGELES: micro HOUSING

DENSIFYING THE CITY'S CORE

CHRISTOPHER YEE

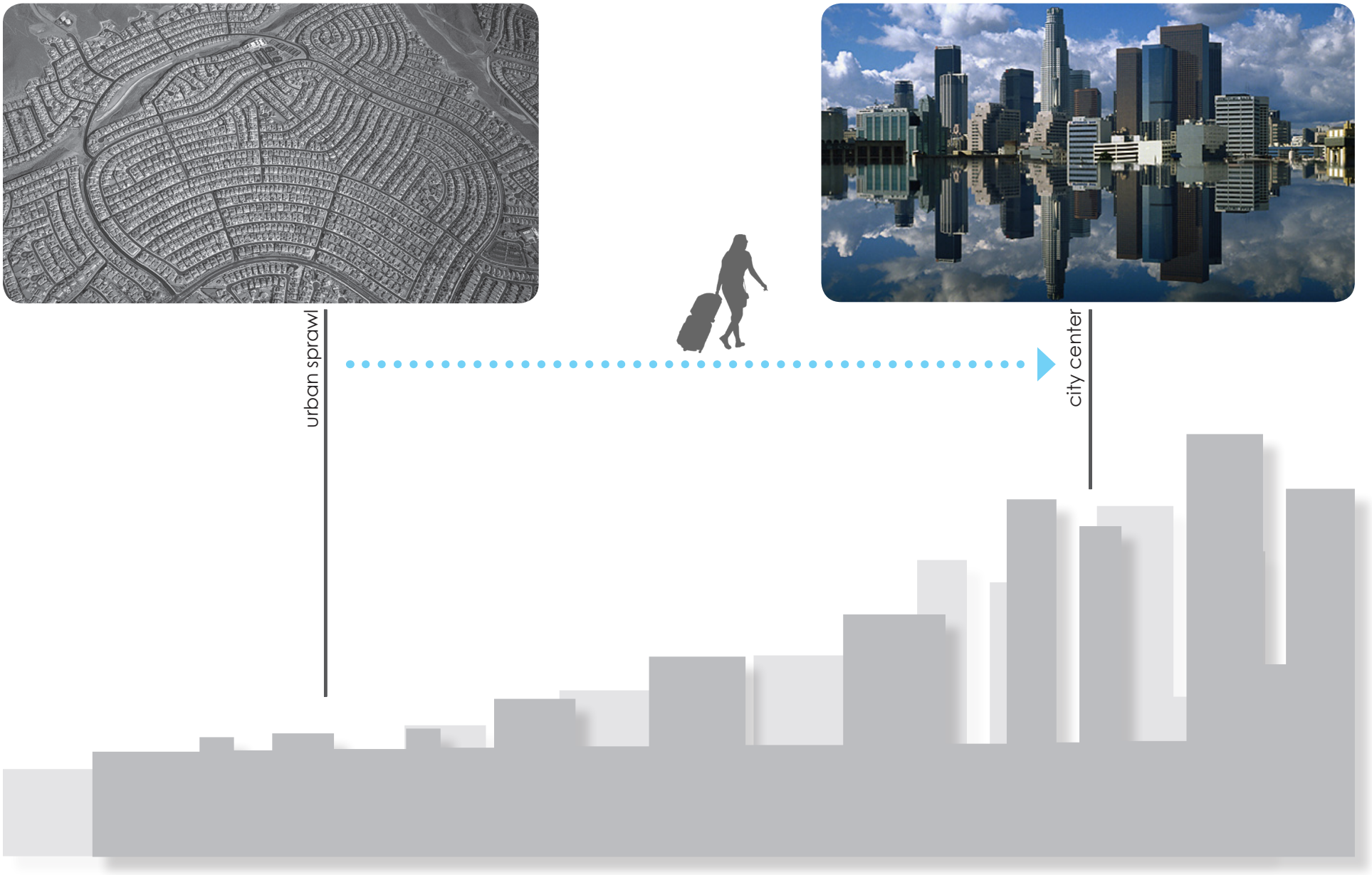


Figure 1: Moving back to the City

sharply increase density and provide quality living spaces for young professionals at an affordable price. The micro housing complex can also be an integral part of the revitalization of downtown and offer services that are currently lacking in the community.

However, it is also imperative to analyze and foresee the consequences of this building typology within a city center that has an already strained infrastructure. Macro-scale issues such as energy, water, and public transportation will be impacted with the introduction of highly dense micro dwellings. Therefore, design of micro housing finds its opportunities not only in terms of density, but also in the shape of its possible concerns. It is important then, to not only tailor design of micro housing for the individual, but to also address macro scale issues, namely transit, that will affect the city and its citizens.

This document will first explore the history of Downtown Los Angeles as it relates to its current bleak state and bring awareness to current initiatives aiming to revitalize downtown as an active and lively city center. The micro housing proposal will be veiled within this push for revitalization as a solution not only for the city, but also for young professionals seeking housing close to work and other social opportunities. Bringing this density to the city will have a positive impact on street life and activity, but raises many infrastructural and living quality concerns of the micro housing building typology.

The design will attempt to mitigate these concerns through tactful architecture that analyzes the bigger urban issues as well as localized design issues pertaining to the individual units. Through responsible design, micro housing can be a sustainable, comfortable, and succesful housing model for Downtown Los Angeles.

Theoretical Framework

2.1 History of Downtown Los Angeles

In order to understand the current state of downtown Los Angeles, we must first understand its history. In the late 1800's, Los Angeles experienced a huge population boom, growing from 11,000 people in 1880 to 97,000 by 1896 and establishing itself as a major city (Los Angeles Downtown Center Business Improvement District). Although the boom subsided, Los Angeles experienced steady growth throughout the early 1900's. National banks, glitzy hotels, and major department stores moved into downtown, creating a lively and bustling city center. In tandem, by the 1920's, Los Angeles boasted the world's largest trolley system, which connected downtown to neighboring districts and cities. With over 1100 miles of track and 900 trolley cars, the system produced a higher public usage rate than San Francisco does today on a per capita basis (LA Streetcar).

However, with the construction of motor highways and urban sprawl, focus began to shift more towards the suburbs instead of Downtown Los Angeles. Businesses and retail started to move out of the city center in favor of office parks and regional malls in neighboring cities (Los Angeles Downtown Center Business Improvement District). This shift in emphasis led to the abandonment of downtown, leaving parts of Los Angeles, especially the Old Bank District, blighted and deserted. Even today, despite revitalization efforts, Downtown Los Angeles is seldom called "home" to Southern California residents. According to the University of California Transportation Center, Downtown Los Angeles' daytime population is approximately 500,000, while its residential population is a mere 40,000, a ratio of twelve to one. For comparison, Manhattan has a ratio of about two to one, a number that Los Angeles can only hope to achieve (University of California Transportation Center).

1920 BROADWAY 2013

Figure 2: Broadway from 1920 to 2013

2.2 Revitalization of Downtown Los Angeles

Revitalization of Downtown Los Angeles has been an ongoing process throughout the second half of the 20th century, however the most notable catalyst began with the Adaptive Reuse Ordinance approved in 1999. The ordinance provided for an expedited permitting process and guaranteed that older, historical buildings did not have to follow the same zoning and code restrictions as new construction. Probably the most important exception was the ability to construct adaptive reuse housing units, without having to provide any additional parking. As a result, several thousand housing units were constructed in older, abandoned or dilapidated buildings (Los Angeles Department of City Planning).

In addition to this ordinance, a master plan has been drawn up for Los Angeles' civic center adding much needed swathes of green civic space. This plan connects the Financial and Old Bank districts to municipal buildings, Gehry's Disney Concert Hall, and Moneo's Cathedral of Our Lady Angels.

Figure 3: Grand Park Master Plan

Figure 4: Bringing Back Broadway Initative Rendering

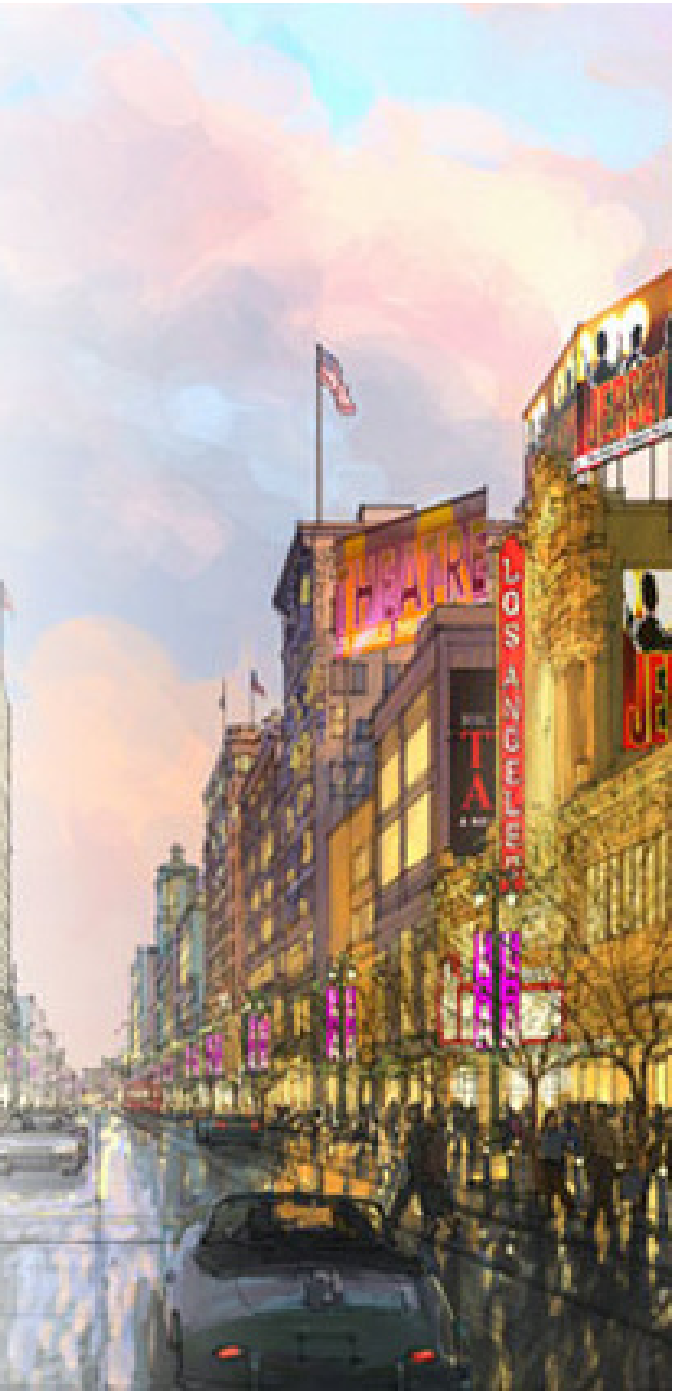


Figure 5: LA Live

Figure 6: City Target @ 7th & Fig

Commercially, new developments such as LA Live and the succesful 7th & Fig have added vibrancy to the public character that had been lost in Downtown Los Angeles. Amenities such as supermarkets and urban adapted big box retail stores such as City Target have improved the quality of life for downtown residents and make the city center more appealing to prospective citizens. In a study conducted by the Downtown Center Business Improvement District (DCBID), which polled downtown residents and visitors in 2011, a majority of respondents wanted more mid level restaurants, department stores, and book stores.

Along with policy changes and new developments, there is also a noticeable cultural shift within the public. The ability to walk to work, shops, and restaurants is becoming more important to a growing generation of young professionals seeking housing. This is also supported by the Downtown Center Business Improvement District, which indicated a population increase from 2008 to 2011 from 39,000 to 45,000 with a median age of 32.5 within the downtown area.

It is important to note, however, that due to the Adaptive Reuse Ordinance and its sweeping transformation of once abandoned or run-down buildings into new apartments and condos, land values have sharply increased in Downtown Los Angeles since 1999. Although this is good news for

the city and property owners, developers have lost interest in the ordinance due to the increasing cost of purchasing an existing building and now prefer new consruction (Kudler). Although future tweaks may be made to the ordinance, new construction within Downtown appears to be the most cost effective method to continue the positive trend of revitalization.

Clearly, downtown is becoming a more desirable place to live, but as old policies outlive their usefulness, considerations must be made to ensure that downtown has sufficient and affordable housing options.

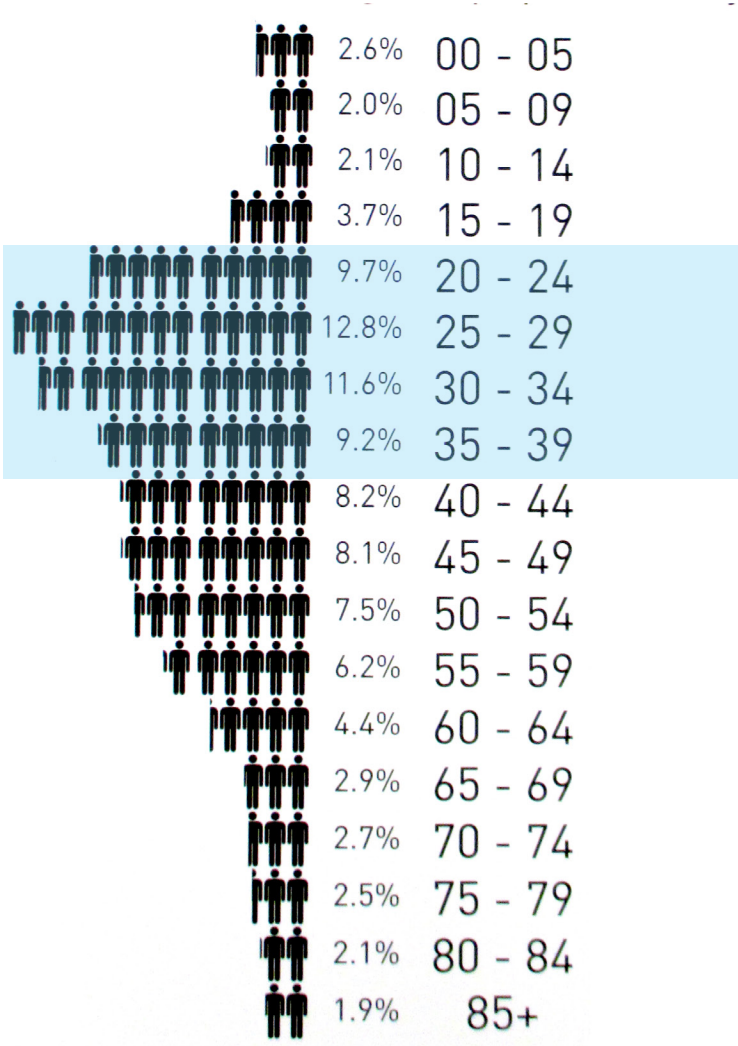
2.3 A New Option: Micro Housing

The current global definition of a micro uit is loose, but is essentially indicative of a compact dwelling unit, typically smaller than 300 square feet, that has all the basic components of a home and my share amenities such as a communal kitchen. Although not a new concept, micro housing has been gaining more traction, as real estate prices are on the rise and the need for more housing increases within cities. Often, these units are built in cities that do not currently have a legal definition of micro housing, often causing controversy.

Nevetheless, micro housing stands to combat the upward trend of rent costs within Los Angeles, whose average rent has been steadily increasing (Kudler, CurbedLA). By keeping overall rent costs lower, Los Angeles has the opportunity to attract the most talented and brilliant young professionals seeking residence in downtown.

However, this demographic does not currently have many housing options in Downtown Los Angeles. Young professionals do not qualify for existing low-income housing and most other options are too expensive. Young profesionals are being priced out from downtown, forcing them to the commute from neighborhoods which are more affordable. This leaves a large void in the housing

DOWNTOWN LA DEMOGRAPHICS



CURRENT HOUSING OPTIONS

low income

mid income housing

?

high income housing

Figure 7: Downtown Los Angeles demographics and their current housing options

market, one that can be affordably filled by micro housing.

Not only does it allow young professionals to rent in the neighborhood, it also makes it possible to live without roommate. Although living with roommates isn't necessarily a bad thing, current housing options make single living an impossibility. This can be an important selling factor for many young professionals who have most likely shared housing for a majority of their adult lives.

For these reasons, micro housing is a sound solution. Not only to prevent exorbitant rent, but to also engender an increased sense of independence.

average cost one bdrm	$3,140	$2,551	$1,636	$1,198
micro housing approved/legally defined	yes	yes	no	no

Figure 8: Average cost of one bedroom apartments in Los Angeles compared to New York, San Francisco, and Seattle

Figure 9: Render of NYC adAPT micro housing competition winner by nArchitects

2.4 Los Angeles Isn't The First

Los Angeles would not be the first city to allow for micro housing. Built precedent can be found in Hong Kong, Tokyo, and micro housing is currently being built stateside in New York City, San Francisco, and Seattle.

Michael Bloomberg, the current mayor of New York City, developed the adAPT NYC competition, a pilot program to develop a new housing model for New York's strained housing market. Similar to Los Angeles, New York is facing a shifting demographic from full families to young, single professionals. Waiving certain zoning regulations such as minimum dwelling square footage, Mayor Bloomberg called for request for proposals in developing micro housing in the Kips Bay neighborhood of Manhattan (Bederman).

The Mayor is quoted as saying "Developing housing that matches how New Yorkers live today is critical to the City's continued growth, future competitiveness and long-term economic success.

People from all over the world want to live in New York City, and we must develop a new, scalable housing model that is safe, affordable and innovative to meet their needs." Los Angeles unarguably has similar vision and aspirations of being able to compete within this worldwide market of growth.

2.5 Denser is Better

Dense cities such as New York are often looked at when planning for Downtown Los Angeles' future. However, density affects more than just a livelier more active experience of the city, but also plays an important role in economic growth. Density facilitates the sharing of ideas, goods, and productivity and the importance of density as an economic factor is widely accepted by planners (Florida).

Although the city of Los Angeles is ranked the 4th densest city in the United States at 70 people per acre, it is a far cry from 1st ranked New York City, tabulated at 560 people per acre. For further reference, San Francisco, ranked 2nd, has 275 people per acre. However, when surrounding cities that comprise the metropolitan area are included, Los Angeles ranks as the most dense region in the United States (University of California Transportation Center). This data suggests that the metropolitan area of Los Angeles has a relatively even density distribution as the cities neighboring Los Angeles are dense as well. Therefore, in the case of the city of Los Angeles, the location of where density potentially increases becomes of up-most importance. The introduction of hyper-dense housing units, such as the micro apartment, will focus density where it needs to be, in the heart of downtown. By concentrating our efforts within the city center, downtown will become the true center of activity and further its revitalization.

2.6 But There's a Catch

With increased density comes consequences, mainly in regards to city infrastructure. By densifying a neighborhood you are also increasing the amount of water and energy consumed, while generating more trash and traffic. Los Angeles already suffers from drought and widespread brownouts during summer months. Although each of these concerns are important, for Los Angeles, the issue of traffic and parking is a big one.

Current zoning regulations state that each dwelling unit requires one parking space. However, buildings constructed under the Adaptive Reuse Ordinance did not require developers to construct additional parking for their units, and although existing parking garages are able to accommodate the current need for parking, the introduction of micro housing may strain this fragile equilibrium.

Furthermore, transportation infrastructure within Los Angeles and the entire region is underdeveloped and, although improving, has done little to decrease the popularity of driving. Siting the proposed micro housing will have to be closely tied to the public transportation network of buses, taxis, and Los Angeles' Metro to effectively encourage alternate forms of transportation.

Figure 10: Illustration of the consequences of density

2.7 Is it right?

Beyond infrastructural concerns, micro housing has a garnered some negative opinion from the general public. Some critics believe it is inhumane to make an individual live in such a tiny box. Although these opinions are most likely a product of American culture, "bigger is better", micro dwellings are the norm in many other countries. This raises an important question about the livability of these bite-sized units.

Daylighting can play an important role in making a micro unit feel more comfortable and be an enjoyable dwelling to live in. A uniformly lit room can give the appearance and feel of a larger space even if square footage would indicate otherwise.

Functional and efficient furniture also maximizes the potential of the space. Tables and beds that can fold away and double as other functions make the small unit efficient. The micro unit adapts to the users needs.

Although there will undoubtedly be some sacrifices needed to live in a micro unit, sufficient daylight and efficiency can make a small space livable.

2.8 Sustainability within a Fast Paced Typology

There is one last concern regarding micro housing and that is in regards to the building typology and how sustainable it can possibly be. Typical micro housing projects have short lease terms as they expect a high rate of turnover due to the "stepping stone" nature of the unit (Seattle City Council). Building quality will degrade and with a structure comprised of many tiny units, the amount of material that will need to be repaired or replaced is substantial.

Figure 11: HDR Photo of a uniformly lit space

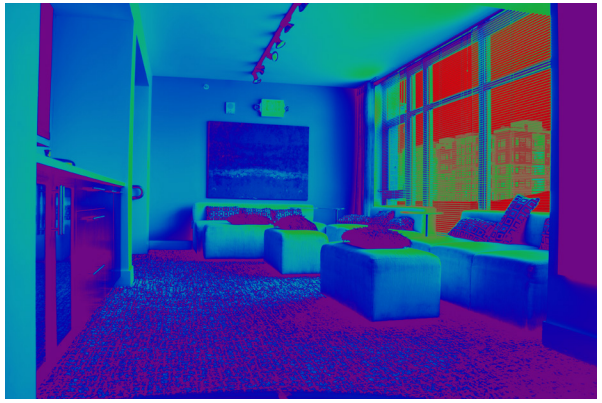


Figure 12: False color of a uniformly lit space

Figure 13: Foldable, efficient bed

Figure 14: Michael Maltzan Star Apartments

Furthermore, the need for cheaper, more abundant housing is real, but for how long? Is this influx of young professionals simply a trend? Once they move on and have families, who will take their place? These questions can not be easily answered, however through design we may be able to mitigate some of these concerns and prove that micro housing can be a succesful and sustainable building typology in Downtown Los Angeles.

2.9 Precedent

Micro housing already exist in Downtown Los Angeles, however the current target demographic are low income or formerly homeless residents, not young professionals. Although differing in type of user, the goal is the same, to provide more affordable housing for individuals who would normally be priced out of the neighborhood.

Michael Maltzan's Star apartments is a great example of what the micro housing can give back to the community. Located at 6th and Maple in Skidrow, just adjacent to Downtown Los Angeles, Maltzan transforms an existing one-story commercial building into a mixed-use micro apartment complex. When completed in Fall of 2013, a 95,000 SF, six story structure will house 102 micro living units and provide community spaces and retail (Maltzan).

A "community-focused pad" will house a track and basketball court, while other indoor functions will include counseling, social, and community services (Kudler, CurbedLA). Combined with ground floor retail, programattically, Maltzan's vision is a building that can give back to it's residents and community while also providing a comfortable and safe environment to live in.

3.10 Summary

Providing affordable housing for young professionals is critical to the revitalization of Downtown Los Angeles. Los Angeles should learn from it's denser sister cities of San Francisco and New York and prevent the conundrum these cities currently reside in to provide affordable housing for its young professionals. Micro aparments have the ability to densify the city's core and provide functions and services that are lacking within Downtown Los Angeles. By aiming to design for it's occupants and it's community surrounding it, micro apartments can become an integral piece of Downtown Los Angeles.

Methods

The revitalization of downtown Los Angeles has been a long and strenuous effort that has only recently seen improvement. The slow progress of revitalization only heightens the fragility of the situation. Thus, the introduction of a new building typology or more specifically, micro housing must be critically analyzed as to not hinder downtown's recovery. This is where architecture plays an important role in minimizing micro housing's load on city infrastructure and maximizing its positive impact on the neighborhood and its users.

In order to do this, it is necessary for the architect to constantly broaden and focus his/her design lens, as it is crucial to visualize and understand the cause and effect chain of design decisions. If a macro design goal is over-emphasized it may do so at the expense of a micro one and vice versa. Therefore, a balance between both scales becomes paramount in order to create a building that is harmonious with the city, the neighborhood, and its users.

Site selection is the first opportunity to begin thinking about harmony with the proposal's context. Finding a suitable site in Downtown Los Angeles is relatively easy thanks to the numerous parking lots that surfaced as a result of urban sprawl and the automobile. Dispersed throughout the city's center, a potential site could be placed in one of the many neighborhoods or districts downtown has to offer. The interjection of a building acts much like a stone thrown into still water. The affect ripples outward, but as it projects, the source of energy can be traced back to the origin. Therefore, the approach to site selection should be opposite and iterative, first identifying a neighborhood, an area within that neighborhood, and finally the site itself.

On the neighborhood scale, consideration of the site must take into account the revitalization efforts of Downtown Los Angeles. Not all of downtown is in a need of repair, with some areas worse than others, effectively identifying where there is the most potential for impact. Within this

neighborhood, one can identify and locate what amenities are available and lacking within the community, narrowing the selection down further. From here, one can identify who lives in the area, and who would potentially live on this specific site. For this project, the proposal will target young professionals, a demographic which has been increasing within downtown.

In its most basic form, micro housing is simply an efficient and economical box. A compact space with the basic amenities one needs to live. It is the inclusion of the resident when micro housing becomes something much more, a home. How architecture can define the home lies within its ability to correctly address its users needs on an individual and communal basis.

Preliminary Findings

4.1 The Greater Los Angeles Region

The greater region of Los Angeles is the densest metropolis in the world. However, this density is evenly spread throughout the multitude of cities that neighbor Los Angeles as result of urban sprawl. Dominated by the automobile and a culture of driving, the greater Los Angeles region relies heavily on road infrastructure for transportation.

This urban metropolis enjoys an abundance of sunshine with only 35 days of measurable precipitation annually (Weatherbase). In part, this temperate weather contributes to the relaxed and upbeat attitude of the general culture in Southern California.

4.2 Downtown Los Angeles

Downtown Los Angeles is predominantly identified as a place to work. Many large corporations are headquartered in the high-rises of the Downtown Los Angeles skyline. Occupants of downtown are typically commuters who live in outlying suburbs of Los Angeles. Although the city center is beginning to change, the general image of Downtown Los Angeles is bleak and is perceived as an urban ghost town past normal work hours.

Because of this abandonment, many areas of downtown are considered unsafe at night, especially Skid Row, which is located east of the financial district with a homeless population that hovers around 5000. In terms of occupants, downtown is a polarized area, professional by day, transient by night.

Figure 15: Diagram of Los Angeles neighborhoods

4.3 Choosing the Site

The micro housing project will be sited within Downtown Los Angeles along Hill street, near the intersection of 5th and Hill. Additionally, it is sited across the street from Pershing Square, one of Downtown Los Angele's most prominent outdoor spaces.

The site is only one block away from Broadway, a street that has garnered a lot of Los Angeles' commercial revitalization efforts, and is walking distance to the financial district to the northwest. Active solely during business hours, the financial district is just what you'd expect, filled with business men and women who predominantly commute from outer suburbs. Many of the shops and restaurants in this district close shortly after business hours, leaving the financial district as a urban wasteland at night.

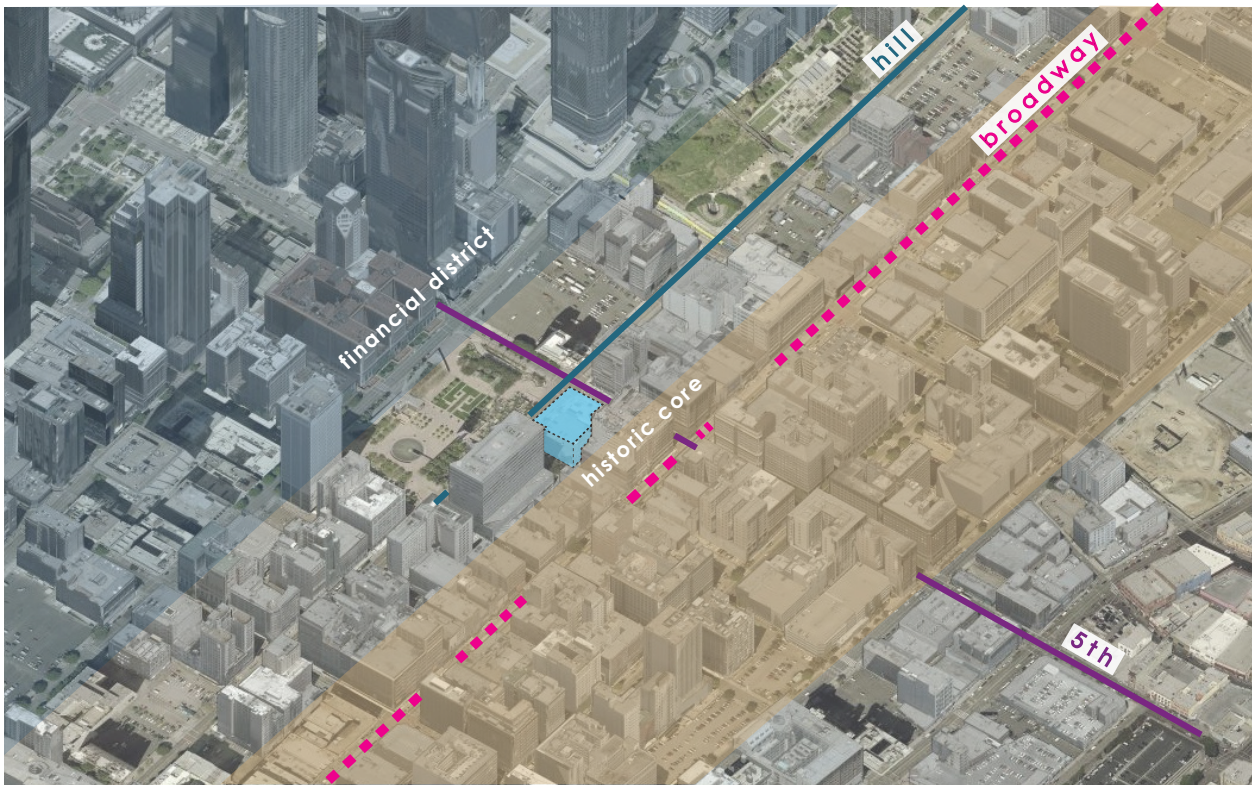


Figure 16: Project site in relation to surrouhavnding streets and neighborhoods

In contrast, restaurants, nightlife, and other amenities that are open late are just two blocks south-east of the site, in the Old Bank District. This can be attributed to the plentiful amount of housing as a result of the Adaptive Reuse Ordinance. The predominant demographic for this neighborhood are young professionals, many of whom work in downtown and enjoy the convenience of being able to walk to the office. Boasting a fairly lively street life throughout the entire day, the Old Bank District appears to be the growing seed of revitalization of Downtown Los Angeles.

The chosen site essentially bridges the gap between the financial and Old Bank districts. Placing the site at this crossing encourages some of the energy from the Old Bank District to spread outward towards the Financial District creating a link between the neighborhoods.

4.4 Existing Site

Currently, the site is an on-grade 120 space parking lot that sees regular use throughout the day. It is bounded by neighboring residential and commercial mid-rises to the southwest and southeast. Due to alley conditions within the block, the proposed micro housing project will have no party walls. Just north of the site, at the corner of 5th and Hill, is an existing LA Metro subway entrance which consists of a set of escalators and a stairway that lead to the station.

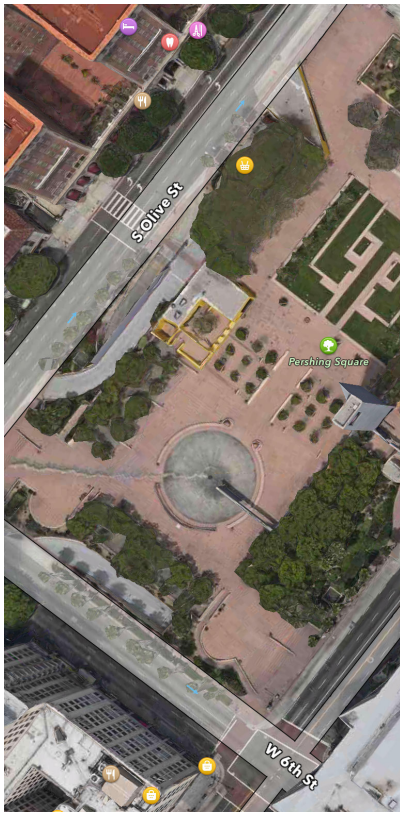
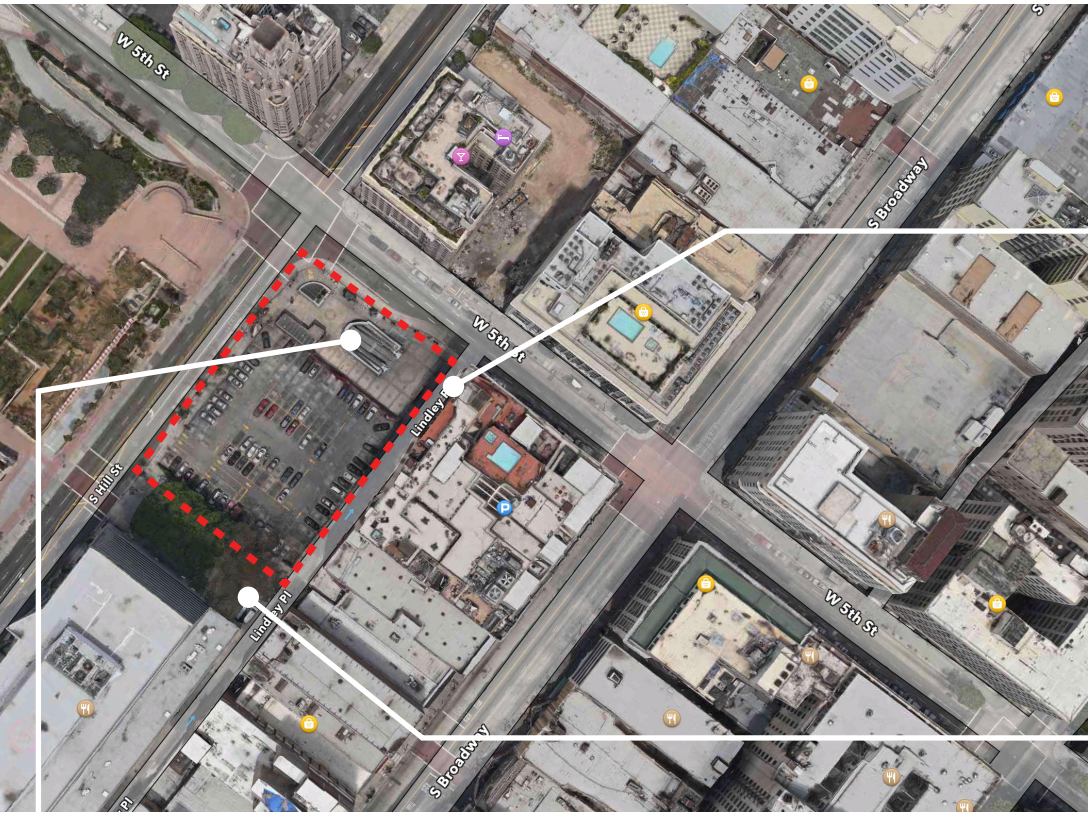


Figure 17: Project site in relation to surro


Figure 18: Existing Metro Station on site



ounding spaces

Figure 19: Lindley Place alley

Figure 20: Adjacent green space

Figure 21: View of Pershing Square from the corner of 5th and Hill

4.5 Zoning and Codes

The site's dimensions are approximately 175ft by 155ft for a total of 27,000 square feet. Although classified as a commercial C5-4D zone, the city permits multi-family residential uses and densities associated with the R4 Zone on such parcels. Additionally, the site is under the 4D height District limitation, which has an unlimited height requirement, but is controlled by a floor area ratio of 6:1 or a maximum of 162,000 square feet.

Currently, the city of Los Angeles has does not have a legal definition of a micro unit. The proposed micro housing project conflicts with code in two categories. First, the minimum square footage for each dwelling unit is 400 square feet, much larger than the proposed sub 300 SF units. Second, code calls for one parking spot per dwelling unit, including one spot per guest room. The proposed complex will eliminate parking completely and offer alternate forms of transportation.

Zone	Use	Maximum Height		Required yards			Minimum Area		Min. Lot Width	Parking Req'd.
		Stories	Feet	Front	Side	Rear	Per Lot	Per D.U.		
R4	**Multiple Dwelling** R3 Uses, Churches, Schools, Child Care, Homeless Shelter	Unlimited (8)		15 ft; 10 ft. for key lots	10% lot width < 50 ft.; 5 ft.; 3 ft. min.; + 1 ft. for each story over 2nd, not to exceed 16 ft.	15 ft. + 1 ft. for each story over 3rd; 20 ft. max.		400 sq. ft.; 200 sq. ft. per guest room		

Figure 22: Los Angeles zoning codes for the proposed site

4.6 Demographics and Users

In a 2011 demographics study conducted by the Downtown Center Business Improvement District, the median age of Downtown Los Angeles is 32.5 years. Of that same pool, the young professional age group (23-29 years) was the largest percentage, 32.6%, of downtown residents.

Today's young professionals are lively and social individuals who have distinct needs based on their busy lives. Their time is split between long work hours and group gatherings, following the mantra of "work hard, play hard". This lifestyle is supported by long work hours, and disposable income at the expense of free time. This demographic has increased in Downtown Los Angeles, especially in the Old Bank District, due to the Adaptive Reuse Ordinance that made housing more affordable and appealing.

Although social, young professionals also need their own personal space, a place to relax and unwind. Especially in the fast pace lifestyle of Los Angeles, having access to a space that they can call their own and feel comfortable is important. For these reasons micro housing for young professionals should do its best at creating efficiencies and convenience, while maintaining a sense of privacy and ownership.

It is also important to note that today's young professionals live with less, especially when it comes to media. With the advent of cloud computing and digital media, the need for physical storage space has reduced making micro units viable as the needs of the generation change.

4.7 Program: Living Unit

Each unit of micro housing will include a living space, compact kitchenette, and restroom within 300 square feet. The living space will have direct access to a window and serve as a relaxation space during the day and a bedroom at night. The kitchenette will provide a small electric stove, sink, fridge, and counter space for everyday meals and be able to double up as a dining space. Lastly, the restroom tucked into the deepest reach of the unit, will have a compact shower, sink, and toilet.

Each of these elements will be designed with space savings in mind. However being spatially economical may lead to a static design by limiting the resident's options. In order to prevent this, the design will accommodate for flexible room configurations utilizing foldaway furniture and creative storage solutions, allowing for increased functionality.

Although each unit will have all the essentials for living on one's own, due to the compact size of the unit, communal spaces become very important. Each unit will have access to a nearby communal lounge. These lounges will be large volumes giving space for residents to socialize and partake in activities that build a strong community.

4.8 Program: Communal Space

Programming the communal spaces is closely tied with the user and their needs. As young professionals, they will need a space to play, work, rest, and keep fit. Each one of these spaces will offer a unique experience and provide access to daylight and fresh air. Although access to these lounges is private for residents, visual connections will be established to the surrounding city, highlighting the urban setting.

Figure 23: NYC adAPT micro housing layout

4.9 Program: Back of House

Back of house program will include 300 square foot laundry rooms located on every floor, as well as trash chutes that lead down to a centralized trash and recycling room. The building lobby will have a 24 hour concierge that can receive packages while residents are away and handle other delivery services such as dry cleaning and food. The lobby will also include a leasing office and mail room.

4.10 Program: Neighborhood

The ground level will be programmed with a large rentable retail space that can includea small grocery store, café, bike tuning shop, and other retail lacking within the area of Downtown Los Angeles. In addition a bike storage area will provide a place to safely store personal bikes for the residents and users of the metro. As the interface with the general public, these program elements are key to engaging the residents with the neighborhood.

Additionally, the ground floor will provide a car share parking lot for services such as Zipcar or Car-2Go as well as bike share kiosks.

Site selection as well as the programmatic elements aim to cater to all the needs of the young professional, in addition to providing lacking amenities within the community. By adddressing these issues, the micro housing project can become an integral part of the city on a variety of

Living	Communal	Neighborhood	Back of House
Micro Units	Game Room	Rentable Retail Space	Lobby
Storage Rooms	Work Space	Bike Share	Concierge
	Fitness Center	Car Share	Leasing Office
	Resting lounge	Outdoor Seating Area	Laundry Rooms
	Rooftop Terrace	Bike Storage	Trash Room

Figure 24: Table of Program elements

Initial Response

5.1 Feel

The design process kick started with three main explorations that varied in scale. The first was a perspective of one of the main lounges, which began to inform the overall feel of the project as well as suggest a certain type of micro housing lifestyle.

Although preliminary, this exploration set up a few guiding principles for the design. The lounges should be open and free to access, in order to bolster a sense of community. They would also include spaces to rest, socialize, play and provide great views of the city. In addition, the lounge would provide access to fresh air and daylight, offering a zone of relief for residents who might, from time to time, feel cramped inside their micro unit.


801
802
803
804

5.2 Massing

The second exploration involved massing the site. In a residential project, massing is an extremely important aspect of the design and it is imperative to investigate the close relationship between each individual unit size and overall mass.

In a preliminary lighting analysis a micro unit, it was found that the standard 25' length x 10' width micro unit found in precedents experienced disuniform lighting conditions as daylight is unable to penetrate deep enough into the space. A disuniform lighting condition may cause high visual contrast, straining the eyes and make the space appear smaller than it actually is. A more shallow configuration, such as 17' length x 15' width was much more effective in achieving a uniform lighting condition, making the space feel larger and open.

Using a shallow configuration based on this analysis, the micro units are arranged in a donut configuration, creating a courtyard and providing light to inner units. In addition, the southern side of the mass lowers in order to allow light to further penetrate into the courtyard.

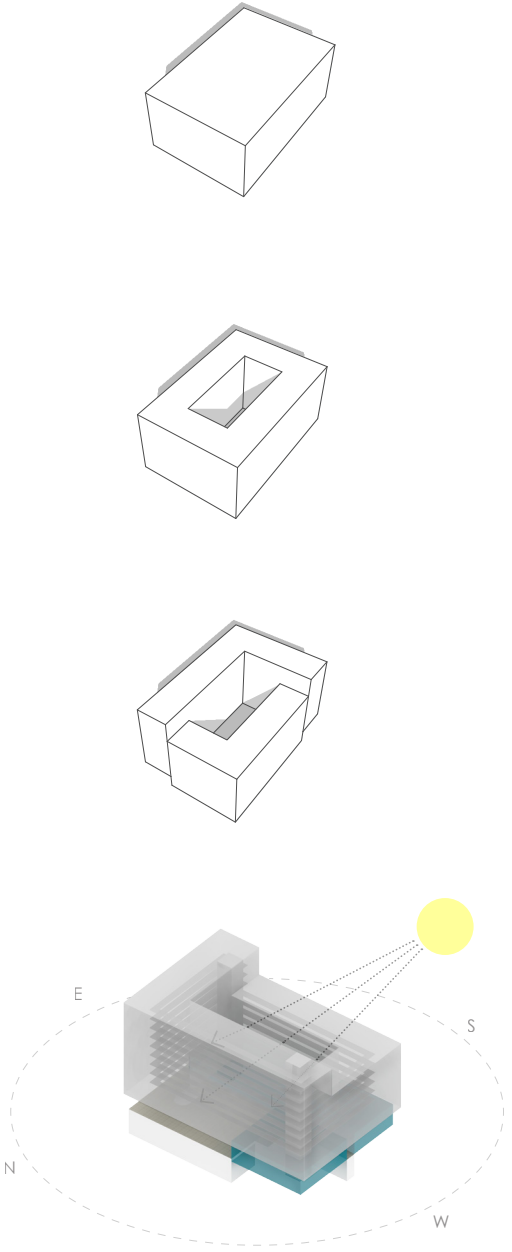


Figure 25: Daylight and massing

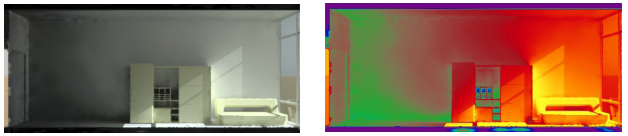
STANDARD

25' x 10'

SHALLOW

15' x 17'

DECEMBER 21



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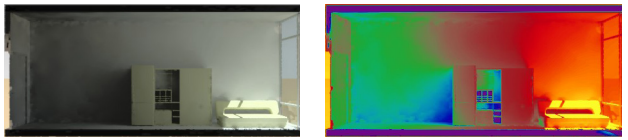

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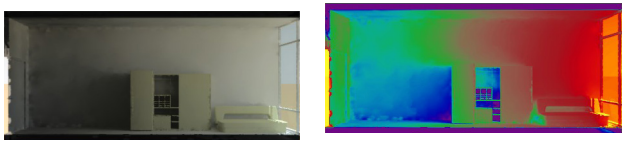
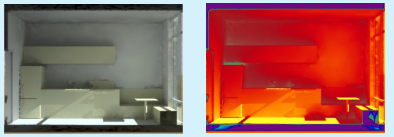
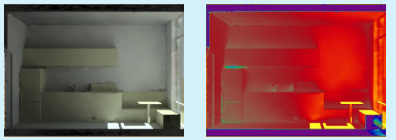






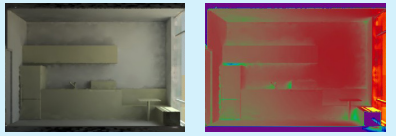


Figure 26: Radiance analysis of micro standard and shallow micro units

5.3 Impact

The last phase was to zoom the lens out and analyze the site within its context. Los Angeles is very much so a product of its freeway systems. Although public transportation is gaining popularity, the car still dominates the region and because the site sits atop an existing metro station, the notion of transit became an interesting launching point for investigation.

Los Angeles building code states that each dwelling unit within new construction must be provided one parking spot. The site is currently a one hundred and twenty space parking lot and creating a micro housing project on this site would potentially increase the amount of parking on the site by hundreds, causing more congestion in the United States' most congested city. The decision was to eliminate parking completely by either encouraging existing infrastructure such as the metro, or by providing alternate forms of transportation such as bike share, car share, and increasing pedestrian amenities and access. In order to accomplish this, the initial concept involved lifting the living spaces above the ground floor, allowing ground level to become an open civic space that lends itself to the existing transportation network through its various forms of alternative transportation.

From here, the project sets out to complete three main design objectives...

1. Provide ground level space for amenities, alternate transportation, and maximize surrounding public spaces.
2. Bolster sense of community within the building
3. Create an efficient and livable micro unit

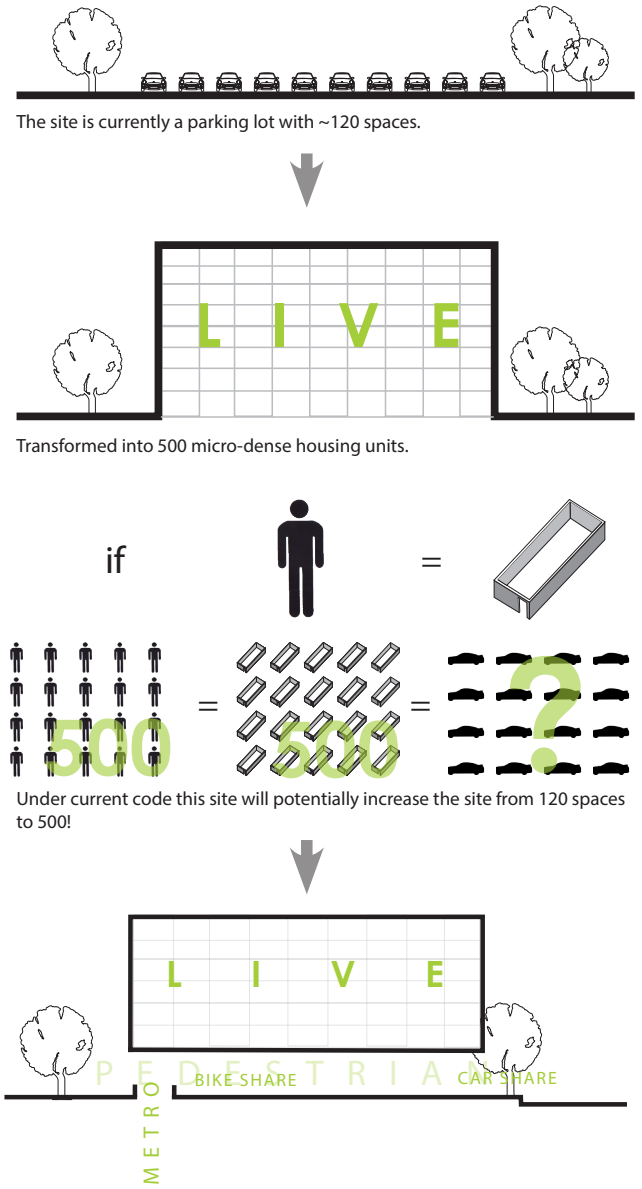


Figure 27: Conceptual infographic

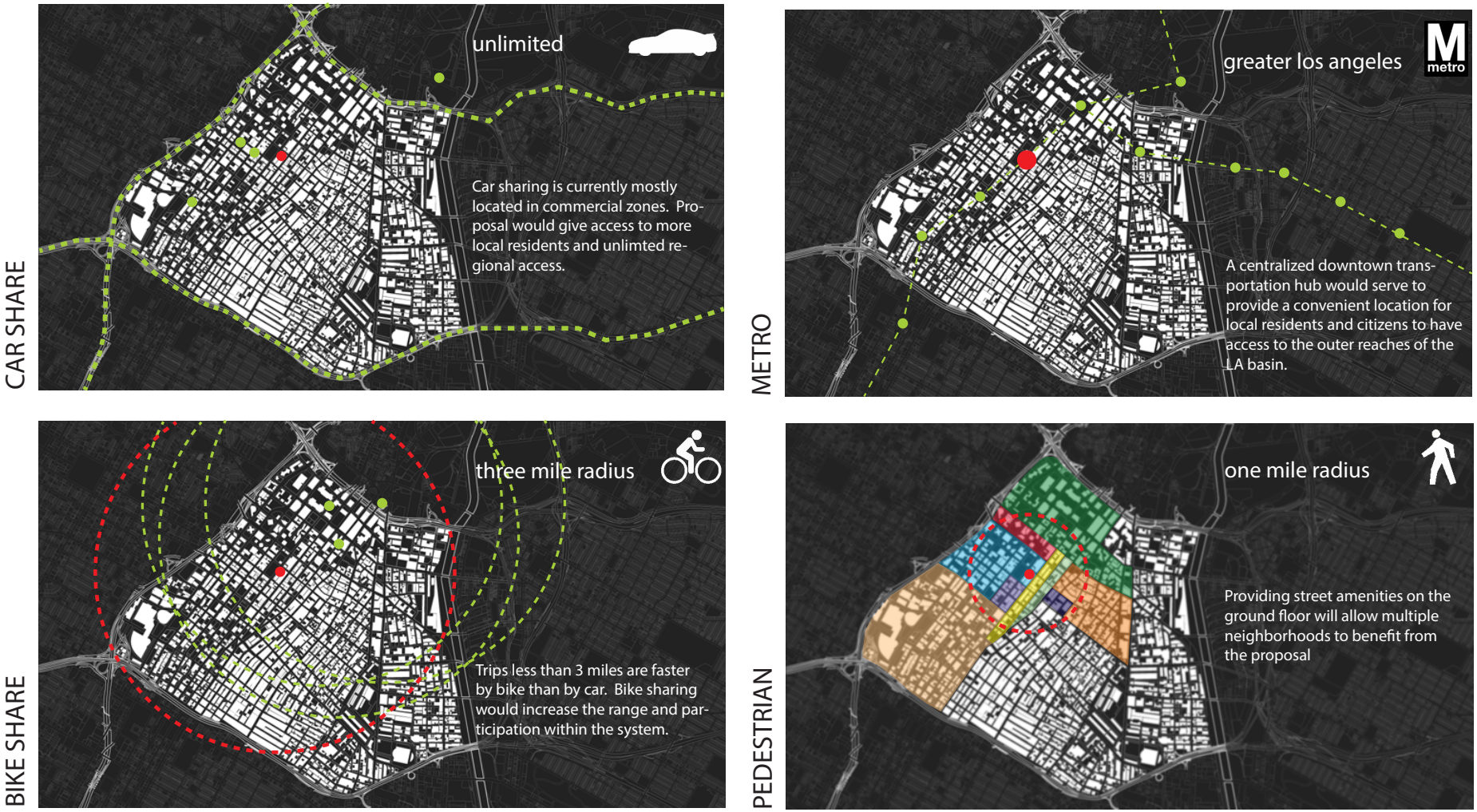


Figure 28: Impact on Los Angeles transportation networks

Final Response

The micro housing project sits at an unique intersection of transit, park, and city life. It responds to these conditions by maintaining a civic gesture, filling in one of the empty lots around Pershing Square. Standing at the forefront of one of Downtown Los Angeles' most important parks, and built atop an existing metro station, the design becomes an integral piece of city infrastructure.

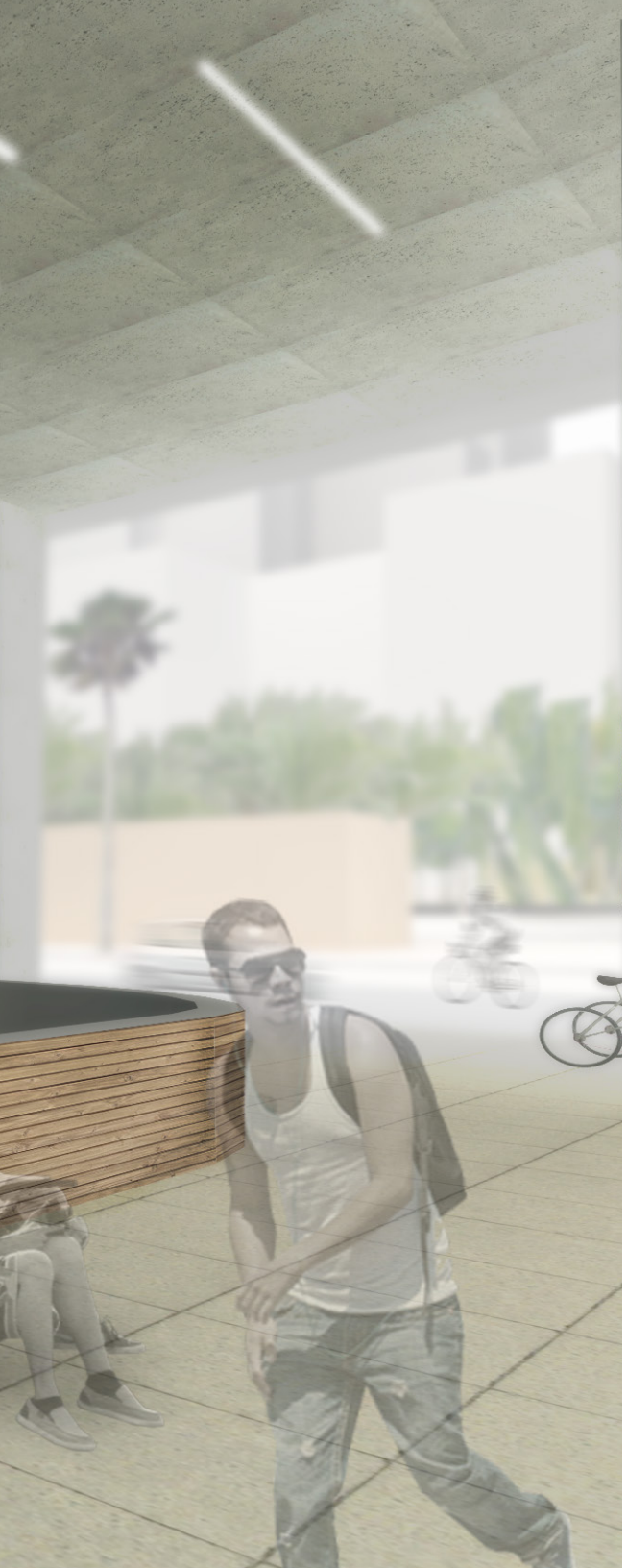
6.1 You Are Now in the City

Due to the projects unique site, it was imperative to appropriately scale the building to fit in with the context. Sited across the street from the park and filling in one of the missing edges of Pershing Square, the mass of the building along Hill street is amplified. Large voids, programmed with communal lounge space along its outer preimeter, gesture towards the civic park. This begins to start a dialogue between resident life within the building and city life within the park.

On the ground floor, the building lifts up at the corner, further opening up the courtyard space, providing a visual cue to passersby of the metro station just underneath its cover. It also exposes the courtyard to the city, drawing people into the space.

Figure 29: Section of the site and its context.


FLOUR + CO
Metro
Fifth/
Hill



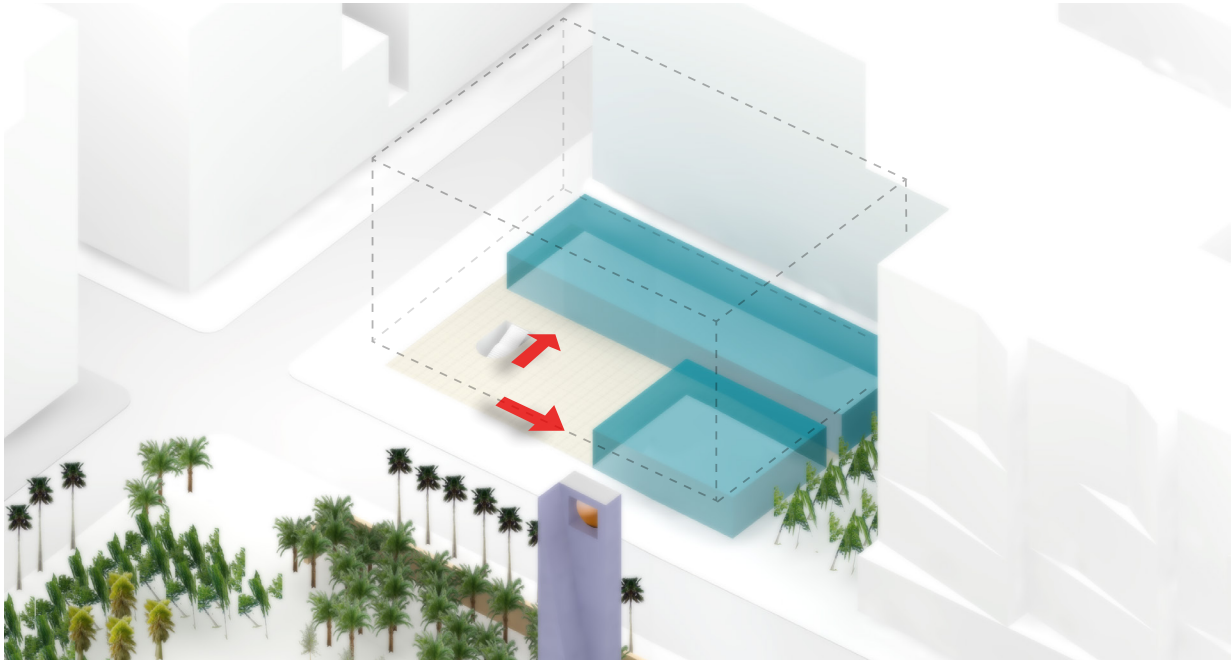


Figure 30: Ground floor massing making space for Metro entrance

6.2 City Life: A Space for All

Lifting the living spaces above, the ground floor is left to be an open volume. This volume is pushed back from the 5th and Hill Street corner, creating a plaza that has access to daylight from the courtyard above. This plaza serves as the grand entrance to the existing metro station, creating a feel that is more civic. Retail will face and activate the plaza, which can become a stage for events, a place for outdoor seating, and other public gatherings.

Secondly, a slice is cut through the volume to create a connection from the plaza to the neighboring green space, effectively changing the green space from a dead end zone, to a space that you can circulate and inhabit. This also furthers access to Pershing Square as crosswalks are located at the corner of 5th and Hill and at mid block connected to the green space.

Figure 31: Ground floor plan 1/32" = 1'

6.3 City Life: Ground Floor

The ground floor is primarily programmed with open retail space which address es the street, courtyard, and adjacent green space. It is highly unusual for a building sited in downtown to have no party walls and the organization of the ground floor aims to maximize the use of the existing spaces around it, as well as the courtyard.

Although the retail programming shown is only suggested, they are organized primarily by thinking of the non-resident user. Near the metro entrance are new-stands, and quick convenience shops. The courtyard can be utilized by the cafe and market as an outdoor seating area. The bike tuning shop is sited near the car share at the alley side of the green space, activating the zone.

For residents, two lobbies sit at opposite corners of the site, with the main lobby accessed from the green space off Hill Street. This lobby would house mailboxes, concierge, and leasing office. The second lobby located along 5th is simply a control point for residents.

Figure 32: Lounge 1 to 2 plan 1/32" = 1'

Figure 33: Longitudinal section

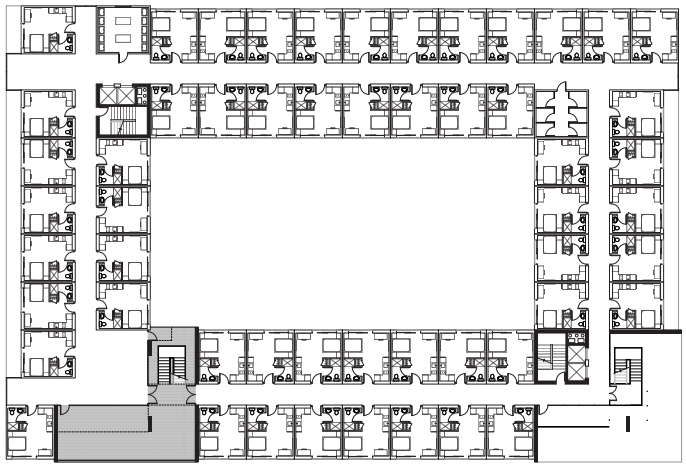


Figure 34: Lounge 2 to 3 plan 1/32" = 1'

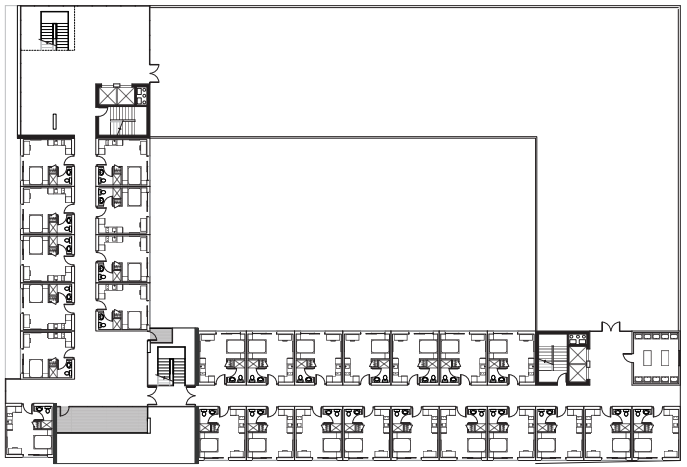


Figure 35: Lounge 3 to 4 plan 1/32" = 1'

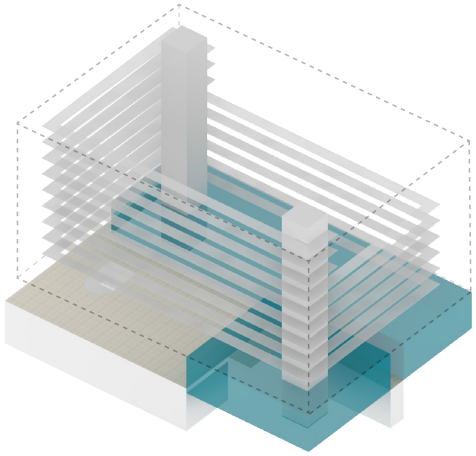


Figure 36: Circulation diagram

6.4 Resident Life: Upper Floors

The upper floors are simply double loaded corridors, with prefabricated micro units on either side. In total there are, 470 modular units. Corners are addressed by either housing vertical circulation cores, laundry rooms, storage rooms, or communal lounges.

The lounges are large multi-story spaces that provide different key pieces of communal program such as the game room, a place to play, the living room, a place to rest, the den, a place to work, and the fitness center. Each lounge vertically overlaps with a different lounge, tying the functions as well as the users into a cohesive whole.

Figure 37: Section Perspective of courtyard space

6.5 Resident Life: Building a Sense of Community

In any residential project, communal spaces are a key selling point of the building. These amenities, shared by all residents, become focal points of the design and are an important factor in a person's decision to live within the community. Often times, residents are relegated to only meeting their neighbors on their own floor. This floor isolation, leads to a situation where community is only built horizontally within floors rather than the entire building. In response, lounge spaces are arranged to connect residents vertically.

Figure 38: Rendering of the rest lounge

There are four lounges located at each of the corners of the building. By placing the lounges at the corners, the lounges become destinations at the ends of the double loaded corridor. Offering visual and physical relief, each lounge has access to daylight, fresh air, and provides the best views of Downtown Los Angeles. Additionally, each lounge holds a different piece of communal program. At the Southwest corner on micro unit floors one to three is the Game room, the Northwest corner on floors three to five is the Living room, the Northeast corner on floors five to eight is the Den, and finally the Southeast Corner on floors eight to ten is the fitness lounge.

Each lounge has vertical circulation separate from that of the two main cores, thereby creating an alternative way to vertically circulate the building. By stratifying the different lounges and spiraling them up the building, residents will have a sense of ownership of the entire building and have the opportunity to meet their neighbors no matter what floor they live on. This spiral ultimately ends on the rooftop terrace, which has a great deal of sunlight located on the Southern end.

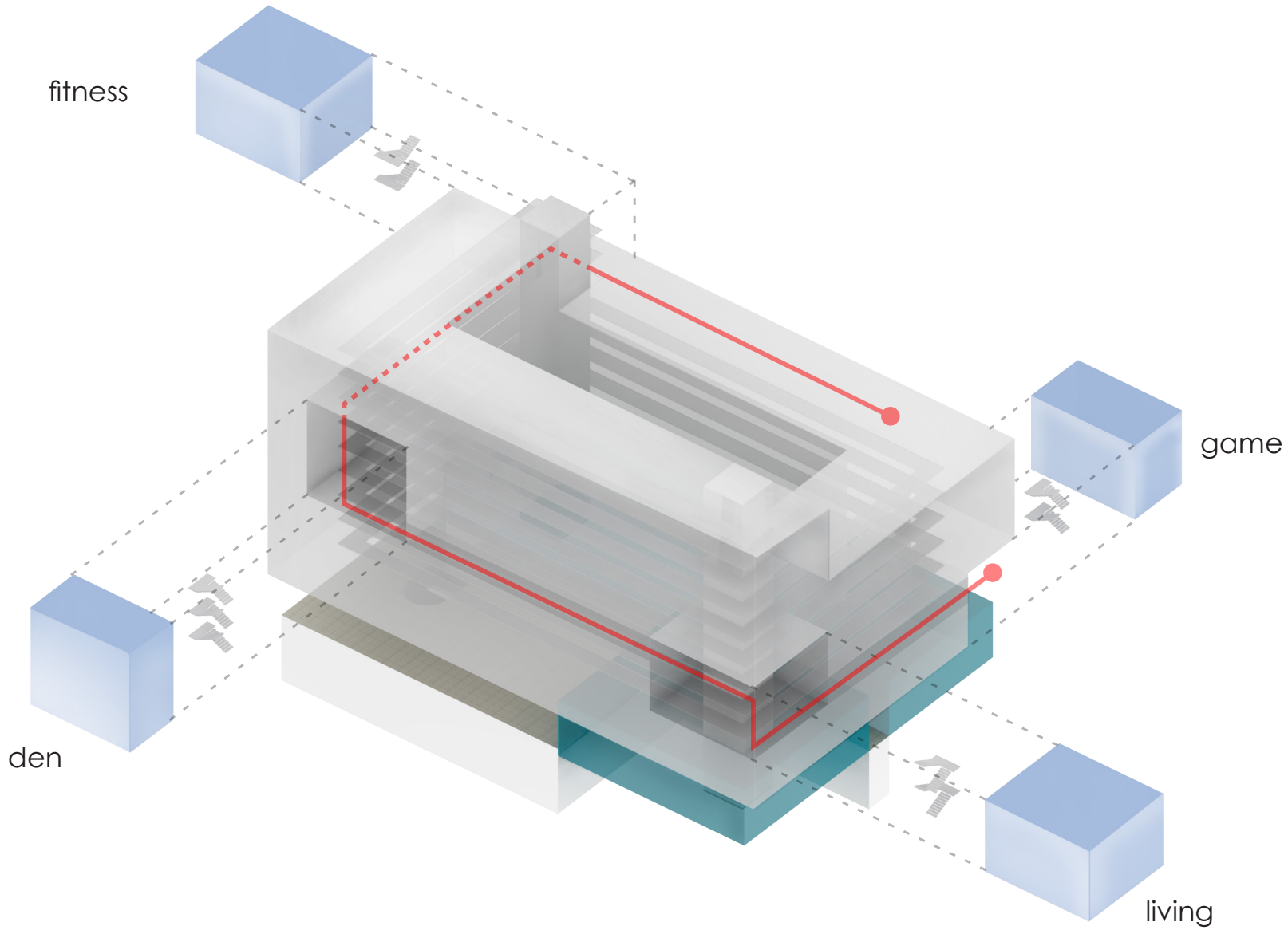
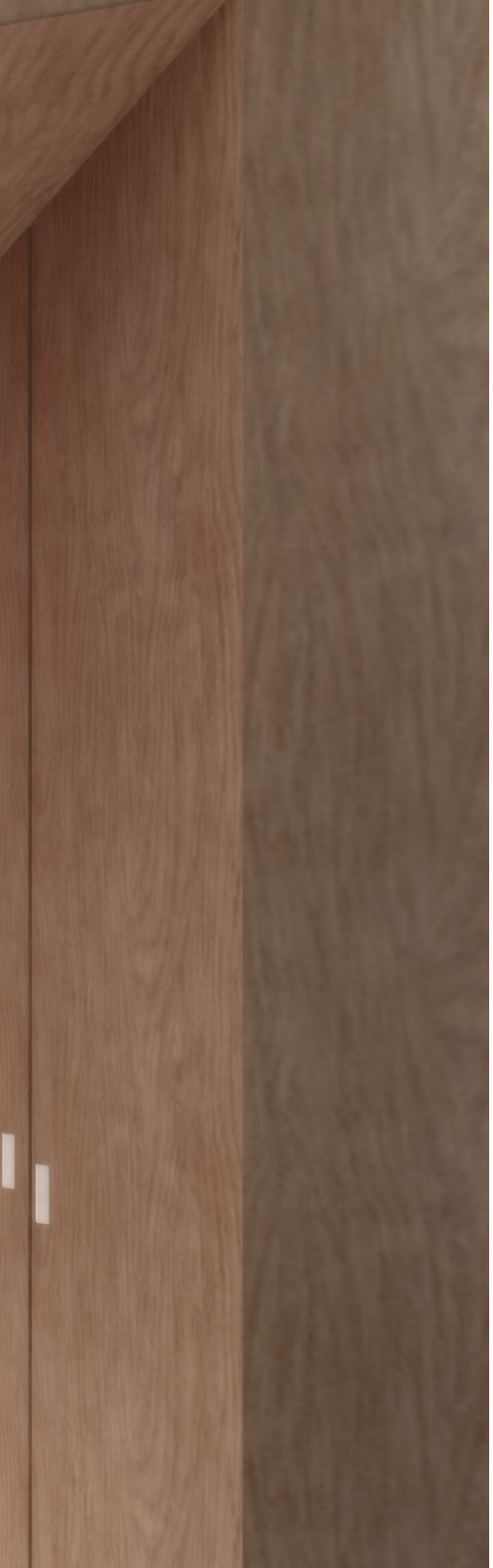


Figure 39: Diagram of lounge arrangement and circulation through the building



6.6 Living Small

Each micro unit is a prefabricated module, manufactured off site, and is constructed with a light steel frame with cement board paneling. Due to this, the dimensions of the micro unit were influenced by the maximum length and width of transport in addition to the daylighting goals previously stated. The outer dimensions of the micro unit are 16' width x 18' length, as 16' is the maximum size which may be transported by truck to the site. The inner dimensions are 15' width x 17' length or approximately 255 square feet.

Design of the micro unit began with thinking about how the occupant would use the space in terms of storage. Although mundane, storage space becomes especially crucial when living in such small quarters.

A main storage bar zig-zags its way through the unit, dividing the living space from the kitchen and bathroom. This built in unit provides the cabinetry for the kitchen, a shelf for the bathroom, a storage loft, a vertical closet, and a clothes closet for the living space. Additionally, the built in unit includes a fold-down table in the kitchen for added counter space, which doubles as a dining table. In the living space, the same unit accommodates a murphy bed, which doubles as a couch when the bed is stored away. This storage bar is the main interface between user and unit, providing a functional, compact, and efficient means of living.

In terms of pragmatics, the kitchen and bathroom share a common plumbing wall. By combining the plumbing for both of these wet utilities, it allows the micro units to be mirrored, breaking up some of the homogeneity in the building facade. Furthermore, there are three different accent colors which highlight each juliet balcony, adding individual character that creates a visual pattern across the building facade.

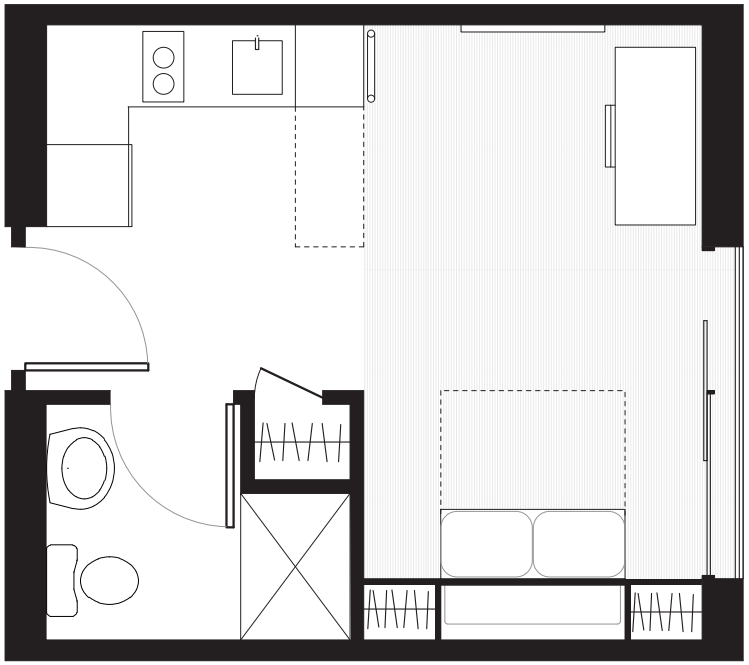
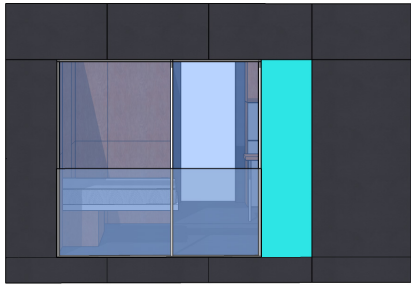
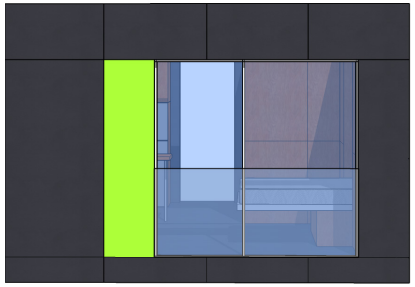


Figure 40: Micro unit plan

Figure 41: Micro unit section





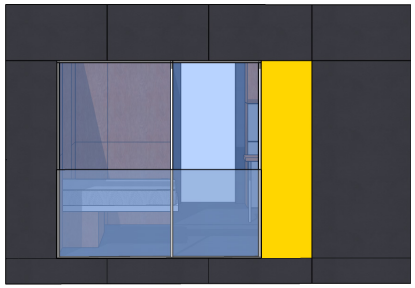


Figure 42: Micro unit elevations

STORAGE BAR

117 ft³ storage

11'-3" w x 1'-4" h x 3'-0" d
horizontal loft

3'-0" w x 8'-0" h x 3'-0" d
vertical closet

BATHROOM

Fully accesible bathroom with
stand up shower

KITCHEN

120 ft³ storage

Efficient kitchenette with 2 stove
burner, sink, refridgerator, and
fold out table

MURPHY BED

fold down bed/couch system with
storage cabinets

JULIET BALCONY

9'-0" w x 8'-0" h

sliding glass door and laminated
glass gaurd rail

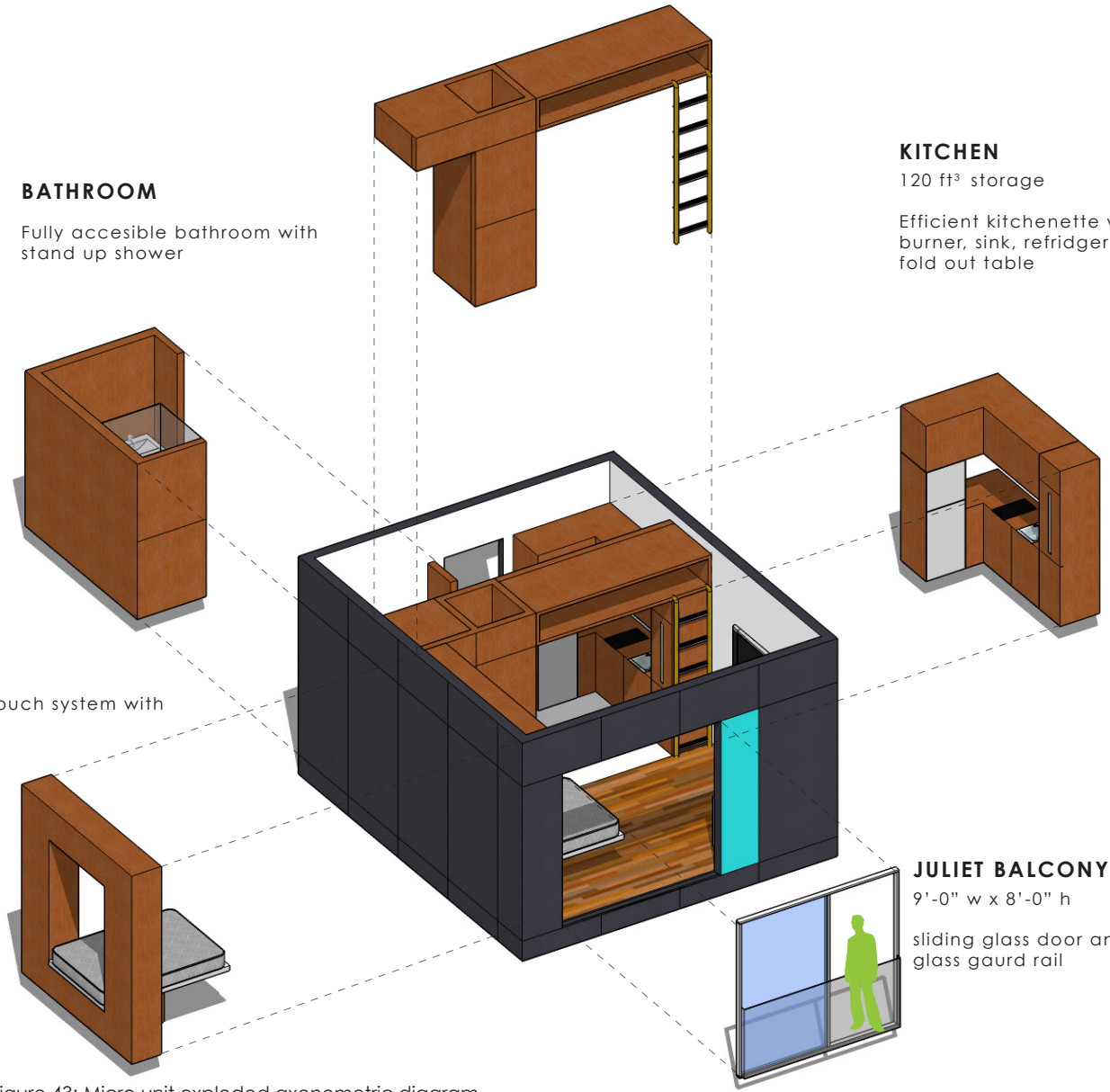


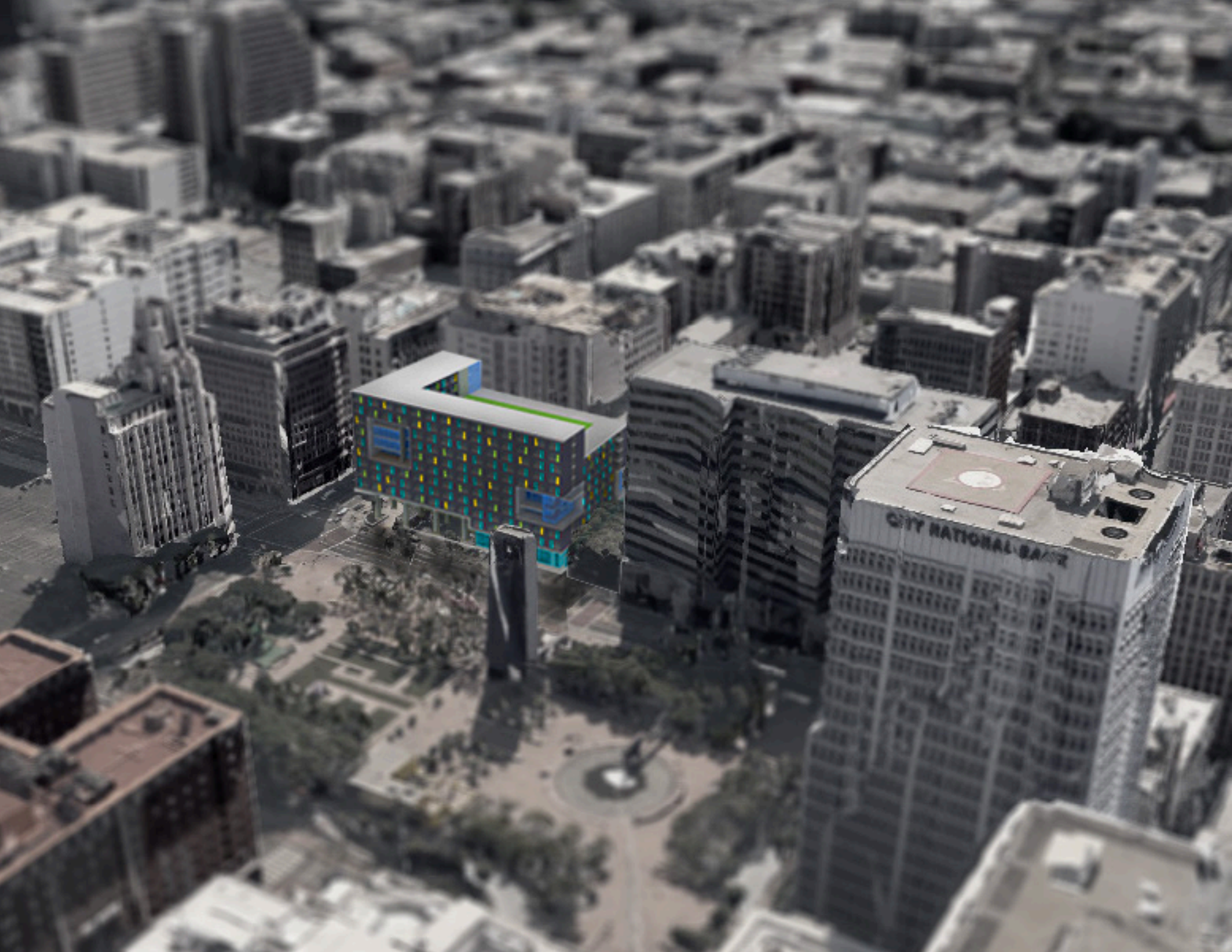
Figure 43: Micro unit exploded axonometric diagram

Conclusion

This thesis was prompted by wanting to know more about living small. Living in an American society, holding strong to belief that "bigger is better", I began noticing seeds of change in the social, economic, and political attitudes of the Gen Y generation. Young professionals are rejecting their baby boomer parents' dream of a owning a large house in the suburbs and instead, want to live more modestly and efficiently in the city, living close to where they work and play. Through my research, I found that micro housing was becoming a popular solution for highly dense cities that had an immense need for affordable housing for this age group. Los Angeles is a prime location for micro housing due to the lack of existing micro housing projects, higher rent costs, and desire to reinvent its downtown.

As designed, the project addresses a specific type of user at the present time. During final review, the jurors focused on pushing the project further, especially thinking about the changing needs of users over time. This notion of temporality is a relevant question for a new typology, especially when the target demographic begins to age. Taking the idea of prefabrication and modularity, the jurors suggested the ability to expand and combine units to adapt to the user's needs as they grow older. This ability for the building to adapt will allow for a diversity of users and their units, as well as extend the usefulness of the design.

Additionally, the jurors seemed interested in further articulation of the communal spaces. The lounges, although programmed differently, appeared to be the same. How can architecture inform these different pieces of program and provide unique experiences that would further the experiential procession from lounge to lounge. Furthermore, the rooftop terrace, although envisioned as a desirable outdoor space, needed further exploration. Perhaps amenities such as a rooftop pool and patio would create more spaces where residents can make more meaningful connections with their neighbors.

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Although micro housing is a new, sometimes controversial, building typology, it has the potential to greatly densify our city centers, especially Los Angeles, with livable and affordable housing for young professionals. Consciously thinking about the relationship between micro housing's impact on its context as well as its residents will produce a more responsible design. This relationship is informed by the attitude that the city is literally the resident's backyard. It is their kitchen, their dining room, and living room. It is what micro housing can not provide that is key in activating its context and ultimately, the city. It is my belief that the micro housing typology, and this project, can be a successful housing model for young professionals in urban areas suffering from rising rent or lack of density.

Appendix

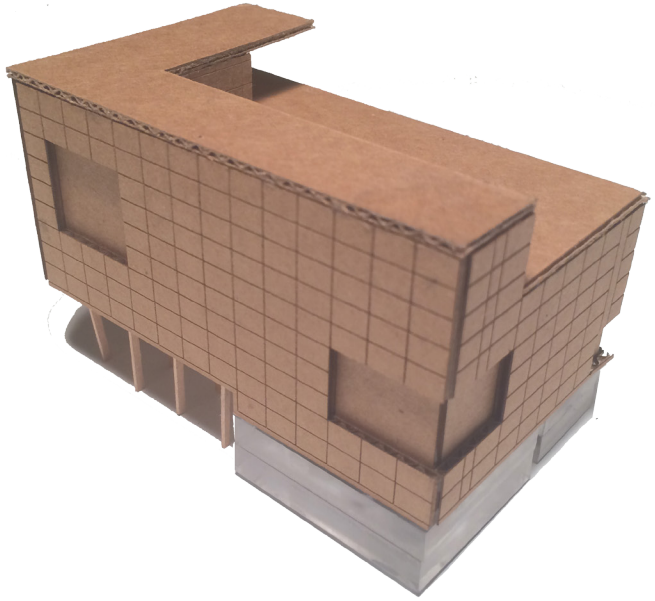


Photo of massing model

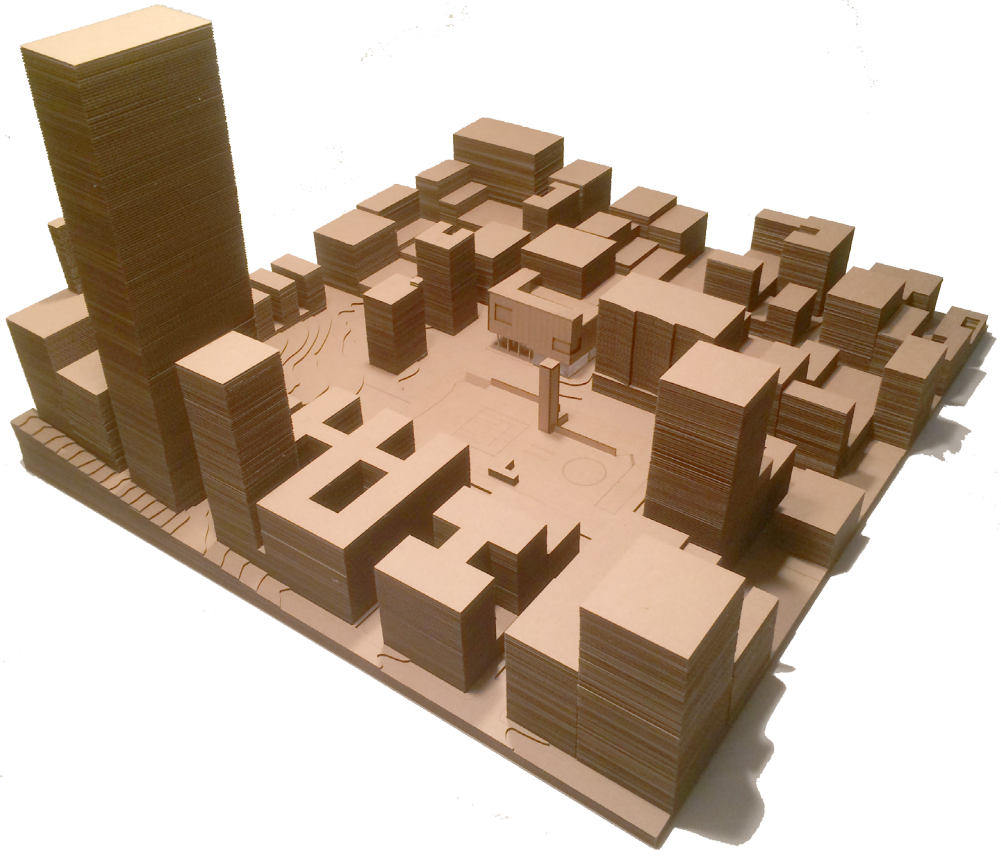
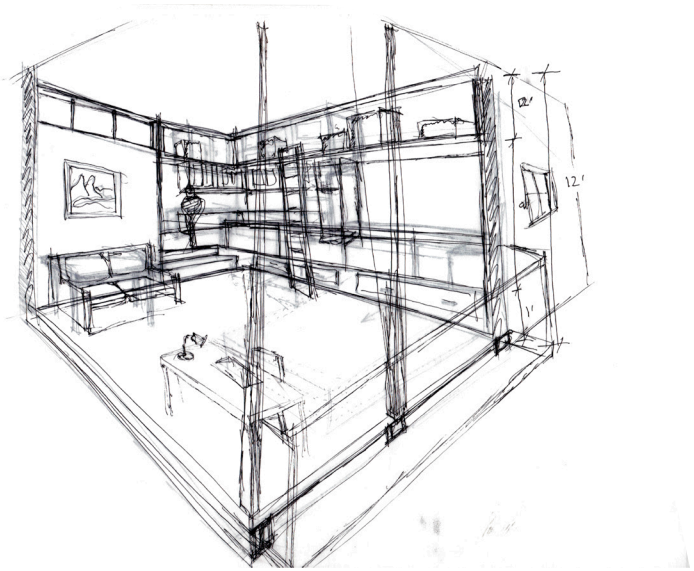


Photo of site model

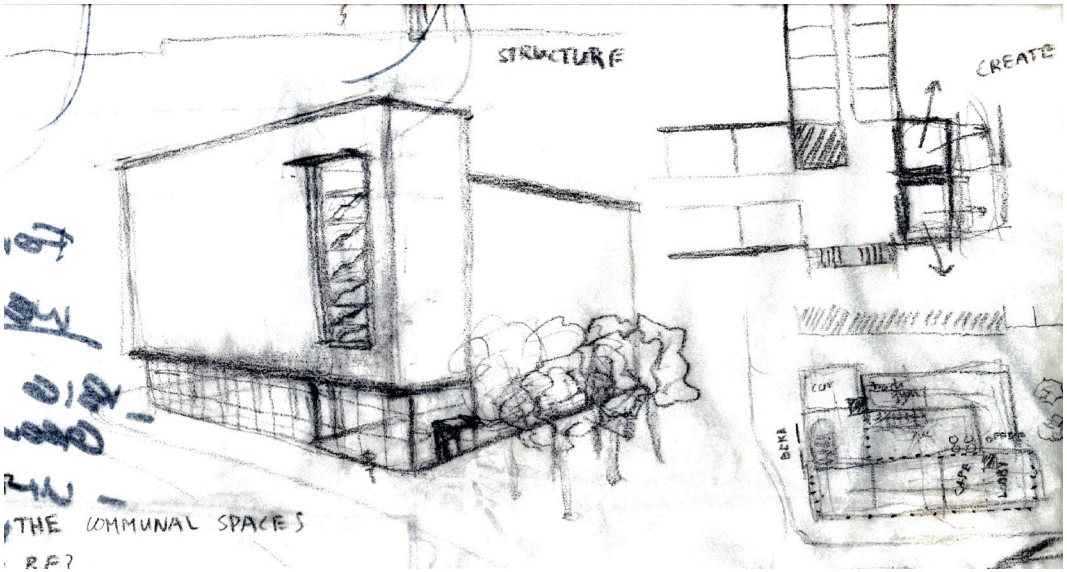
Photo of building section model and communal lounge space

Photo of building section model

Conceptual building section



Early sketch of micro unit



Early sketch of massing and communal voids

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Image References

Introduction Image	*http://www.traveltodo.com/tn/images-hp/re-Los-angeles.jpg*
Figure 1: Moving back to the City	*http://www.christophgielen.com/newsite/wp-content/uploads/2012/01/row10_C_small.jpg*
	http://www.tomistravel.ro/upload/oferte/4820.jpg
Figure 2: Broadway from 1920 to 2013	*http://www.photographium.com/sites/default/files/styles/sidebar_336_total/public/broadway_at_8th_street._los_angeles_california._1920.jpg?itok=RZ2QlDrl*
Figure 3: Grand Park Master Plan	*http://latimesblogs.latimes.com/photos/uncategorized/2008/06/26/grand_avenue_park_project.jpg*
Figure 4: Bringing Back Broadway Initative Rendering	*http://www.bringingbackbroadway.com/stellent/groups/electedofficials/@bbb_contributor/documents/contributor_web_content/lacityp_023120.jpg*
Figure 5: LA Live	*http://media.expedia.com/hotels/3000000/2880000/2877400/2877393/2877393_110_z.jpg*
Figure 6: City Target @ 7th & Fig	*http://i2.wp.com/brighamyen.com/wp-content/uploads/2012/10/DSC05225.jpg?resize=495%2C329*
Figure 7: Downtown Los Angeles demographics and their current housing options	*http://www.michaelmaltzan.com* *http://s3-media3.ak.yelpcdn.com/bphoto/ukB8luG92oYDxEDRlhZcfg/o.jpg* *http://www.extravaganzi.com/wp-content/uploads/2010/04/Ritz-Carlton-Los-Angeles-4.jpg* *http://martinezcutri.com/wp-content/uploads/2012/10/888-Olive-Rendering.jpg*
Figure 9: Render of NYC adAPT micro housing competition winner by nArchitects	*http://actorsfund.files.wordpress.com/2013/01/adaptnyc_mir_rendering_evening_dance_120910.jpg*
Figure 13: Foldable, efficient bed	*http://www.reachnyc.com/wp-content/uploads/2013/08/rsz_mcny.jpg*
Figure 14: Michael Maltzan Star Apartments	*http://www.michaelmaltzan.com*
Figure 15: Diagram of Los Angeles neighborhoods	*http://www.orkposters.com*
Figure 21: View of Pershing Square from the corner of 5th and Hill	*http://you-are-here.com/panorama/pershing.jpg*
Figure 23: NYC adAPT micro housing layout	*http://blog.archpaper.com/wordpress/wp-content/uploads/2012/08/micro_apts_04-500x288.jpg*
Figure 28: Impact on Los Angeles transportation networks	*http://tamthientran.com/wp-content/uploads/2011/04/01_figureGround.png*