

RE-IMAGINING URBAN DWELLING:

Active Family Living in the City

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Thesis submitted to the faculty of the Virginia Polytechnic
Institute and State University in partial fulfillment of the
requirements for the degree of

Master of Architecture
in
Architecture

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ABSTRACT

Housing is one of the most critical design challenges of the 21st century. Sparked by increased urbanization, issues around affordability, density, development, and displacement create stress on people and the urban environment. In Washington D.C., an inadequate supply of housing for families forces them to leave the city in search of more comfortable and affordable options. However, families are essential dwellers in a healthy urban fabric. This thesis explores how architecture and empathic design-thinking can begin to address these issues and contribute to the health of the family unit and a healthy community. My thesis asks the question... what lifestyles are we encouraging by the way we design?

Dwelling is a more appropriate, personal, and empathic term for housing. Dwelling should meet the needs of its inhabitants and support three vital organs of urban life: social activity, peaceful refuge, and theatrical celebrations. A healthy city and a healthy dwelling should include all three. My goal is to re-imagine urban dwelling for families living in the city and how architecture can create intentional moments of connection between people and the city they are a part of – especially how ideas of transparency and movement or air, light and people can be agents of a healthier urban dwelling.

A new mid-rise multi-family dwelling in Adams Morgan, a colorful, diverse, artistic, and eclectic neighborhood in Washington D.C., creates a home that enhances the experience of dwelling for families. My thesis project supports the primary functions of dwelling and secondary functions of food creation through a kitchen incubator. The intention of the building is that it will serve as a space for growth, for individuals and for growing families, that it will be successful as both a well-designed home and a food lab that fosters collaboration and community for chefs and entrepreneurs who are growing their businesses and connections in the city. The building aims to incorporate living elements with nature integrated into the architecture in various ways. This home will be a space that understands the needs of its inhabitants, respects the context of the neighborhood, and supports a healthier framework of the larger city of Washington D.C.

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GENERAL AUDIENCE ABSTRACT

Housing is one of the most critical challenges of the 21st century facing the architecture, engineering and construction industry.

A lack of suitable housing is a result of increased urbanization and issues around affordability, density, development, and displacement. These challenges create stress on people and specifically the structures where they live. In Washington D.C., an inadequate supply of housing for families forces them to leave the city in search of more comfortable and affordable options.

However, families are essential dwellers in the city - they should be supported in the modern urban environment. This thesis explores how architecture and empathic design-thinking, a deep understanding of the problems and realities of the people being designing for, can begin to address these issues and contribute to the health of the family unit and a healthy community.

My thesis asks the question...what lifestyles are we encouraging by the way we design?

Dwelling, the way and act of living, is a more appropriate, personal, and empathic term for housing. In the architect's mind, dwelling should meet the needs of its inhabitants and support three important facets of urban life: social activity, peaceful refuge, and theatrical celebrations. A healthy city and a healthy dwelling should include all three. The goal of this thesis is to re-imagine what urban dwelling feels and looks like for families living in the city and how architecture can be designed to create intentional moments of connection between people and the community they are a part of.

A new mid-rise multi-family dwelling in Adams Morgan, a colorful, diverse, artistic, and eclectic neighborhood in Washington D.C., creates a home that enhances the experience of dwelling for families. My thesis project is foremost a dwelling, a space for living, but also a space for food creation through a community kitchen incubator. This thesis seeks to discover how architecture can empower families and communities to have healthier, more inclusive and celebrated urban city lives.

This thesis is dedicated to my incredible support system, my family, and especially my husband John.
Thank you all for your endless love, support, encouragement and part in this journey!

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“There are 3 vital organs of urban life:

social, extroverted activity;
quiet, peaceful refuge from city crowds;
and ceremonial, theatrical celebration.

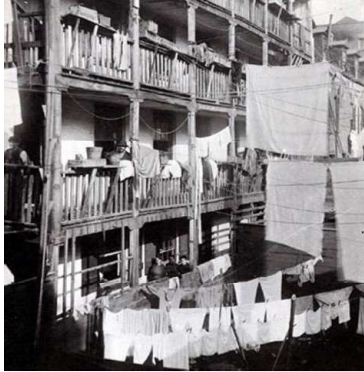
A healthy city is a matrix of all 3 activities.”

An aerial architectural rendering of a building complex. The central focus is a large, dark grey building with a complex, angular footprint. To its right is a courtyard area featuring a green lawn, a curved walkway, and several circular structures. The building is surrounded by streets with crosswalks and sidewalks. In the top left, there is a red brick area, possibly a tennis court or parking lot, with some trees. The overall style is a detailed architectural illustration.

RESEARCH
RESEARCH
RESEARCH
RESEARCH
RESEARCH

HISTORY OF PUBLIC HOUSING

Fig. 1



Mid-Late 1800's
Industrialization, foreign immigration and migration into urban areas, high-density living dominated American cities

Late 19th - Early 20th
Housing reform and design focused on safety and health

1901

Tenement House Act (The New Law) set new standards for housing and created a new government department

"Sun, Air, and House for All!"

1933-39
Roosevelt's New Deal enacted programs to build new model communities, rural assistance programs and urban slum clearance

Fig. 3



1850's

1900's

"Public Housing"

"Social Housing"

"Subsidized Housing"

"Design, Health and Safety"

1867

First Tenement House Act (NY) 1st housing law aimed at regular tenement/multi-family construction; required fire escapes as means of emergency exit and windows in each room for light and air

1890

Housing projects included courtyards for ventilation and light to units as well as children's play areas and shared social activities



Fig. 2

1920's

The Great Depression provoked government financial intervention into housing for reasons of increased need and economic stimulation

1937

Wagner-Steagall Housing Act of 1937 legitimized direct federal subsidies to housing

HISTORY OF PUBLIC HOUSING, CONT'D.



1950's

Today

"Social Housing"

"Affordable Housing"

"Supportive Housing"

1940s & 50s

Housing is viewed as a "public utility" - cost-container measures for federally funded projects became cornerstone of public housing



Fig. 4

"Towers in the Park"

1968

Johnson's Housing Act of 1968 encouraged new subsidized housing

1969

Jane Jacob's "Death and Life of Great American Cities" - criticism of inward facing high rise buildings

Late 1970s

Voucher system, non-profit housing developers become major providers

Housing and Community Development Act of 1974

2000s

Mid-rise urban developments, inclusionary zoning, "high opportunity" TOD development

HOUSING RESEARCH + DATA

DC's Comprehensive Plan is a 20 year framework that guides growth and development in the city. These maps highlight goals for distribution of affordable housing. The effort is focused on providing housing in transit-oriented development "opportunity zones."

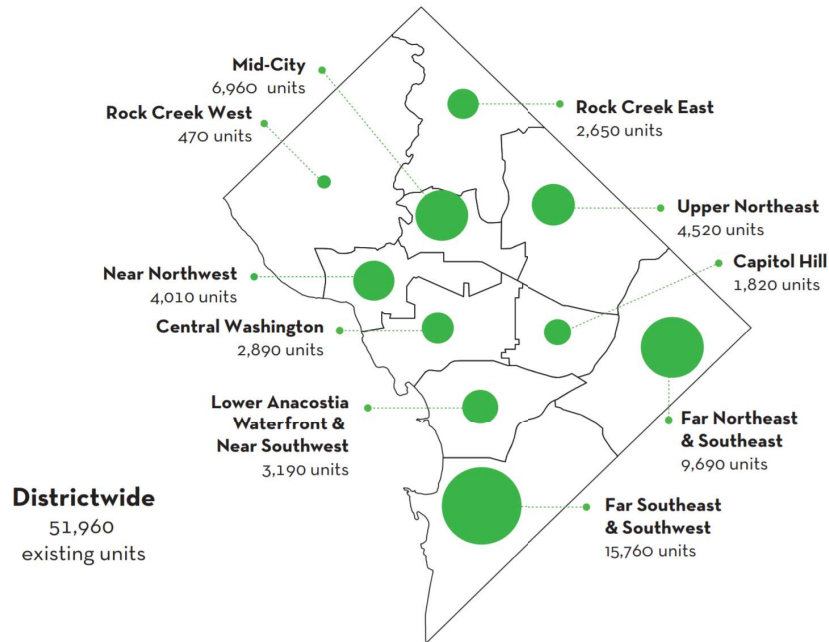


Fig. 6: 2018 Estimated Distribution of Dedicated Affordable Units

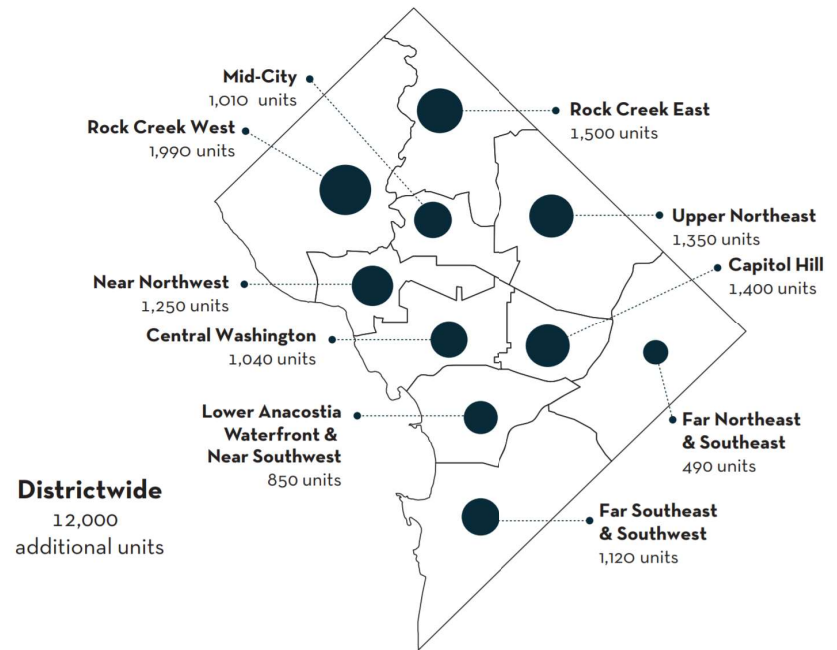


Fig. 7: 2025 Dedicated Affordable Housing Production Goals

"Washington, DC's current supply of dedicated affordable housing is concentrated in some areas of the city and almost non-existent in others, restricting low-income residents' choice and opportunities of where to live in the District."

-Muriel Bowser, DC's Health Equity Report

HOUSING RESEARCH + DATA

Housing data provided by the Urban Land Institute indicates a need for large renter households due to the gap in supply in the District. The stock of large affordable units to households falls short of the demand. Ward 1 has the highest share of large renter households who are under-housed reflecting the high demand for units in this central location. Ward 1 also has the second fewest number of large housing units.

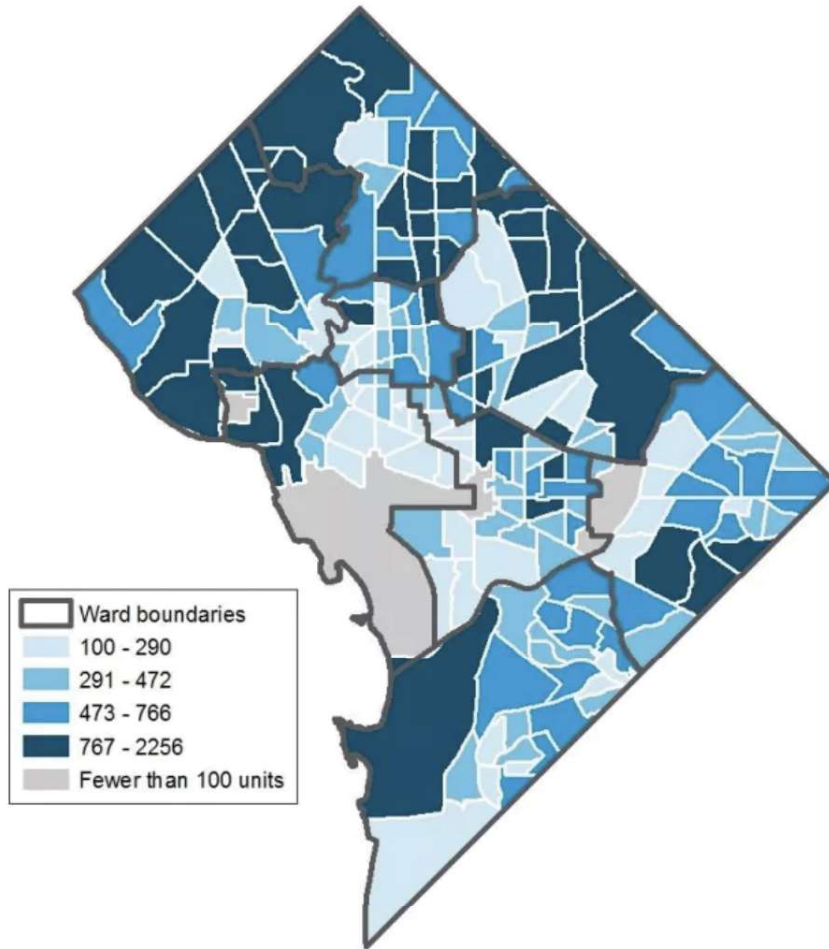


Fig. 8: Number of Housing Units with 3+ Bedrooms by Tract in D.C.

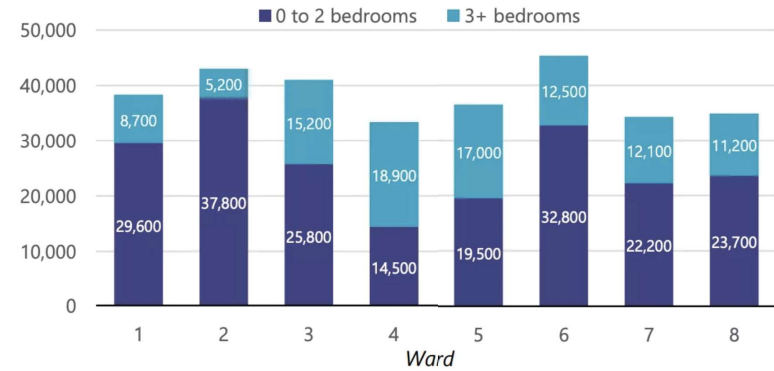


Fig. 9: Number of Housing Units by Ward in D.C.

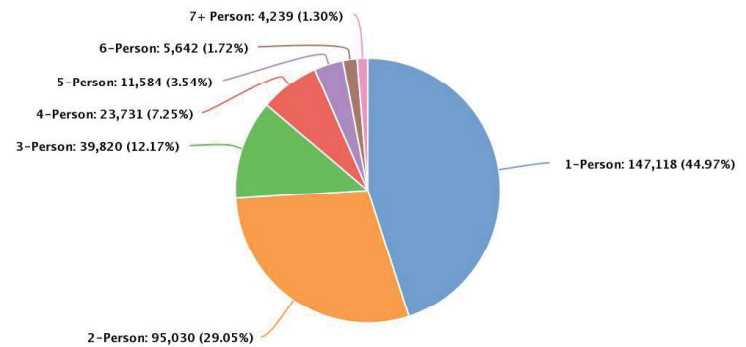


Fig. 10: Households by Number of People in Household in D.C.

DWELLING FACTORS

DESIGN ELEMENTS:

- + Courtyards
- + Safe Play Spaces
- + Individual Expression
- + Good Day Lighting
 - + Shade
- + Social Spaces
- + Proper Bike Storage

URBAN ELEMENTS:

- + Availability of Public Transit
- + Proximity to Quality Schools
- + Access to Employment Opportunities
 - + Neighborhood Amenities
 - + Grocery Stores
- + "Healthy" Neighborhood Identity

SOCIAL-BASED CHALLENGES:

- high demand + low supply of housing
- concentration/location is restrictive to low-income residents
 - housing isn't located in a healthy neighborhood
 - lack of social and community connections
- lack of economic opportunities / street engagement
- supply is concentrated in poor areas which restricts opportunities and choices

DESIGN-BASED CHALLENGES:

- space is not efficiently designed
- housing lacks opportunity for individual expression
- lack of outdoor green space and connection to nature
 - poor design + construction
- double-loaded corridors create harsh lighting conditions
 - safety (building entrances)
 - "porch clutter" (bikes + laundry)
- poor relationship to urban fabric/framework of city

POPULATION PROFILE



SINGLE-PARENT FAMILY
parent and child



THE NUCLEAR FAMILY
two parents and a child



THE EXTENDED FAMILY
grandparent, parent and child



THE COMPOSITE FAMILY
parent, partner or non-relative and children
or similar variation

CASE STUDIES: HOUSING

The Aya - Studio27 Architecture Washington D.C.

Affordable Short Term Family Housing: 53,000 SF - 2020

The apartment houses 50 families (7-10 housing units per floor). The program includes community rooms, laundry, facilities, monitoring station, private and family restrooms, outdoor play areas at each level. The ground floor has dining, computer room, exam and admin areas. The ziggurat form preserves tree canopies and allows for maximum daylighting and views. The building has no specific front or back and each elevation of the building is uniquely different:

- glassy north
- dynamic south facade
- calm east with screened outdoor play spaces
- stepped west creates a front lawn for each unit

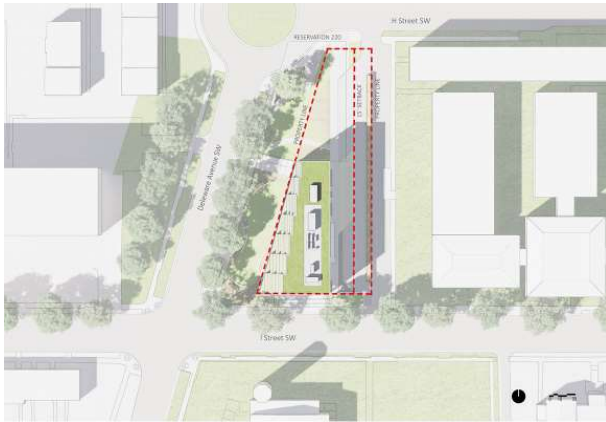


Fig. 11: Site Plan



Fig. 12: Building Exterior



Fig. 13: Building Exterior

CASE STUDIES: HOUSING

Dortheavej Residence - BIG Copenhagen

Affordable Housing - 73,000 SF - 2018

The complex has 66 units designed for a nonprofit organization and is built in a largely industrial area. It is a singular prefabricated structure curbed in the center to create public open plaza and an intimate green courtyard. Modular construction creates a repetitive facade where every-other unit punches out to create small balconies for the unit above. The checkerboard facade is made of glass and wood slats. The units range from 645-1,237 SF.



Fig. 14: Unit Interior



Fig. 15: Building Exterior (from interior courtyard)

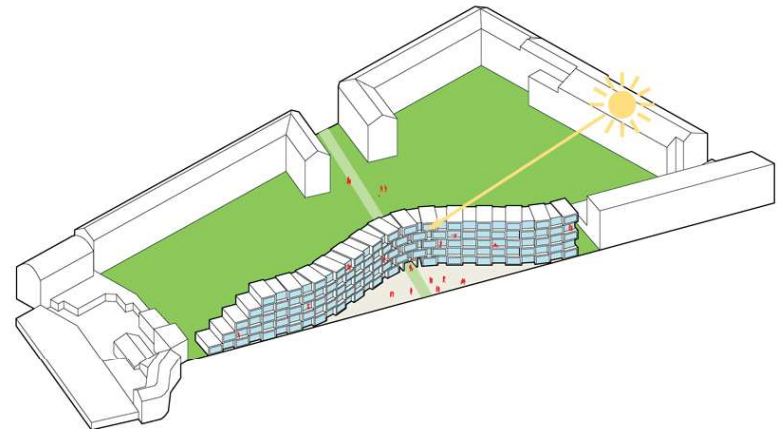


Fig. 16: The Social Realm: A system that combines valuable public space with housing

"The value of the domicile has to do with the sheer volume of space."

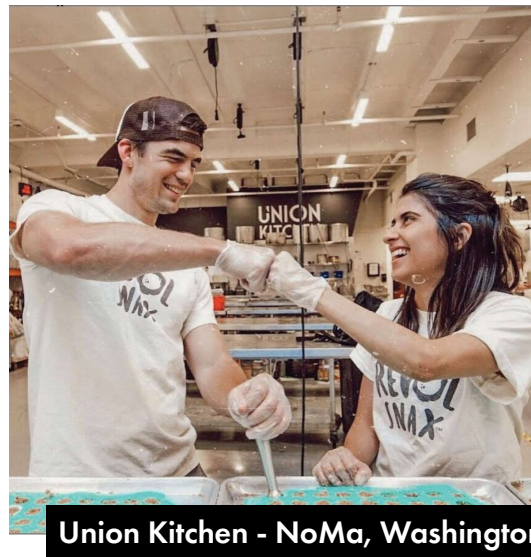


Fig. 17 (left), Fig. 18 (above): Eames Case Study House 8



While I was developing my program I knew I wanted to incorporate activities that would help foster community. I discovered urban gardening as an activity that can inspire healthy and sustainable living by empowering people with tools and training for urban agriculture. Community gardening can help people re-think how people use land and understand where their food comes from. With the opportunity for intergenerational families living in this building, gardening also serves as a collaborative activity that can foster connection and improve health for all residents.

CASE STUDIES: URBAN AGRICULTURE



There are many urban agricultural efforts in the District. Through my research, I learned that there is a need for low-cost kitchen space which led to the development of shared commercial kitchens and kitchen incubators to help support food business. In addition to incubating food businesses, shared kitchens act as economic clusters where food entrepreneurs can benefit from co-location and cooperation. This felt like a perfect supplementary program to include.

Food Incubators are primarily located in urban areas concentrated near major cities. They have a mission-based focus to strengthen the local food economy. Many shared use food facilities are small facilities, with almost half occupying less than 3,000 square feet.

Fig. 19 (Top Left): The Hatchery
Fig. 20 (Top Right): H Street Gardens
Fig. 21 (Bottom Left): Up Top Acres
Fig. 22 (Bottom Right): Union Kitchen



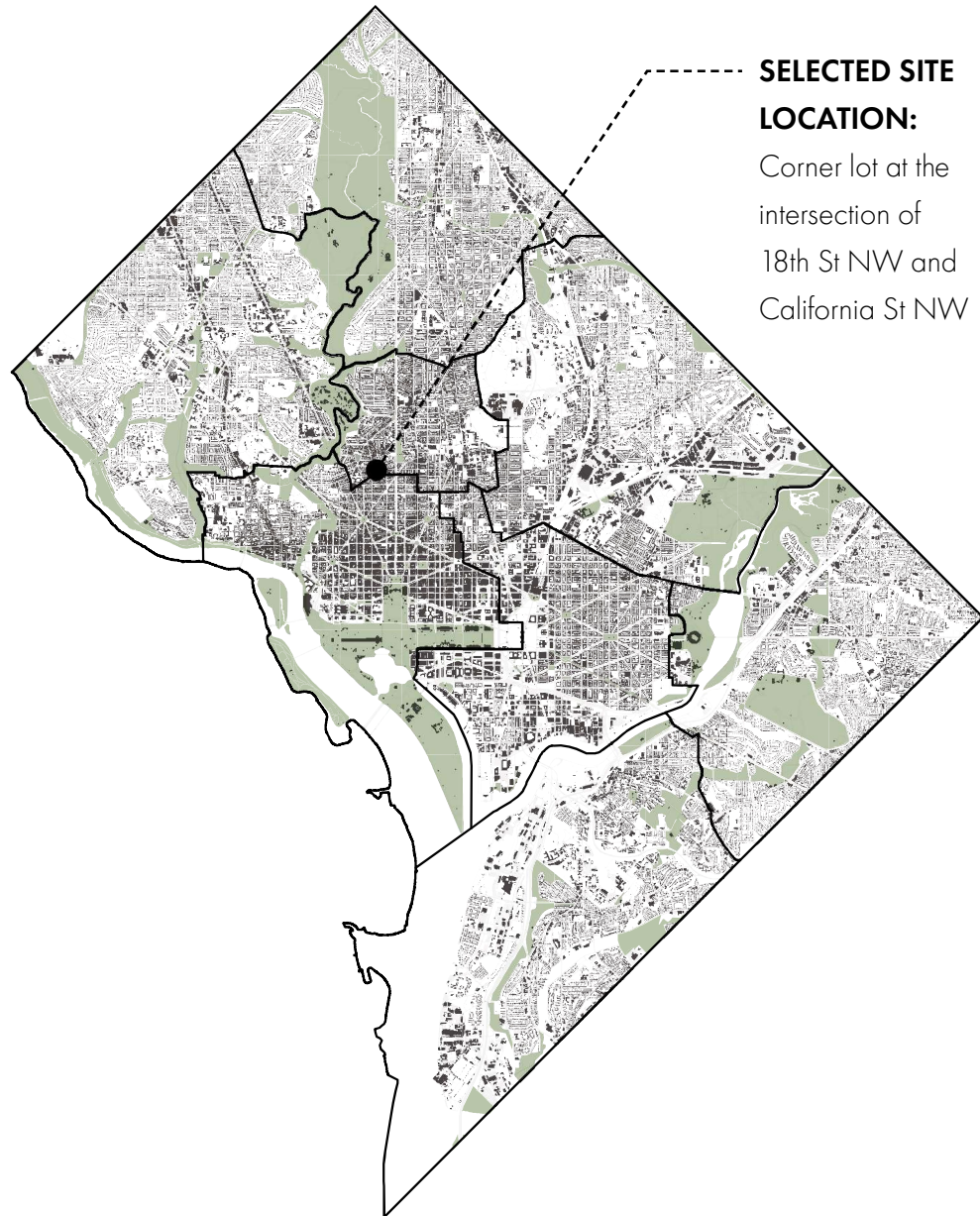
SITE ANALYSIS
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SITE ANALYSIS

SITE CRITERIA + OVERVIEW: WASHINGTON D.C.

WHAT MAKES A “GOOD” SITE?

In selecting my site, several parameters drove my process. First, I knew I wanted to identify an underutilized or vacant lot (if it existed) in the DC area. Since my program is centered around families and urban activity, I knew finding a family-friendly area with access to public transit and amenities would be important to best serve the residents and that a diverse and vibrant neighborhood would support the needs of growing families. My final criteria was to identify a site that is connected to a cultural district and had a strong sense of place with a family-friendly focus.

Specific characteristics that were important architecturally for design purposes would be ideally finding a corner lot to allow for multiple building fronts and street frontage, a zoned residential or mixed-use area with a lively and energetic streetscape and adequate lighting for a play area for children. Together, these criteria and characteristics would give my building the opportunity to create new urban space.

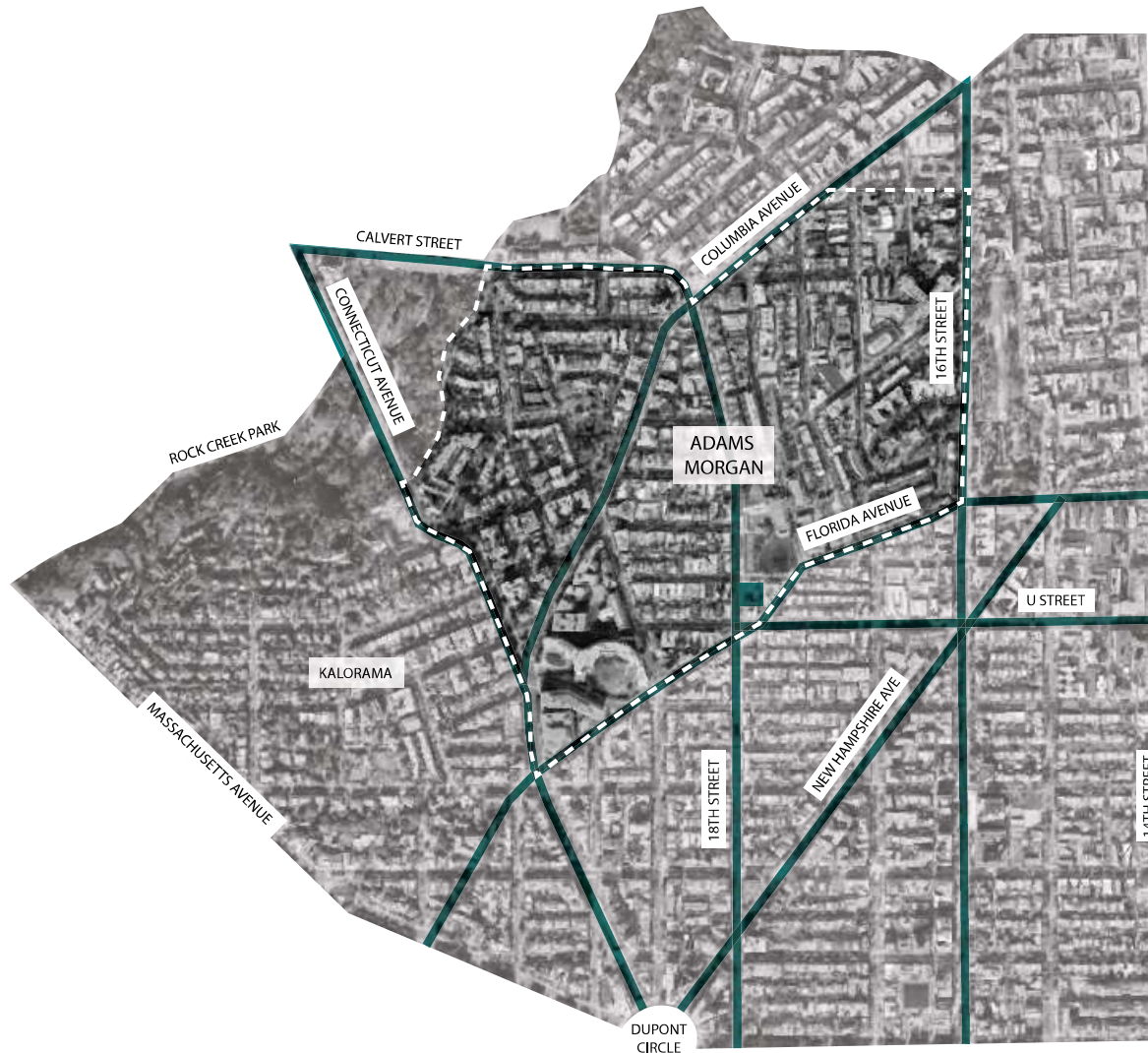


SELECTED SITE LOCATION:

Corner lot at the
intersection of
18th St NW and
California St NW

SITE LOCATION

After evaluating areas in DC, I landed on a site in the Adams Morgan neighborhood (shown in the white outline in the black and white map). My site is in Ward 1 and is located at the south east portion of the neighborhood, located near Marie Reed Elementary School at the intersection of 18th Street and California Street NW and is zoned for mixed-use. The lot for my site is shown in the teal square at the bottom right.



SITE ACCESSIBILITY + ZONING



TRANSPORTATION ACCESS

- 0.7 miles to U Street Metro
- 1.2 miles to Columbia Heights Metro
- 0.9 miles to Woodley Park/Adams Morgan Metro

OPEN GREEN SPACE ACCESS

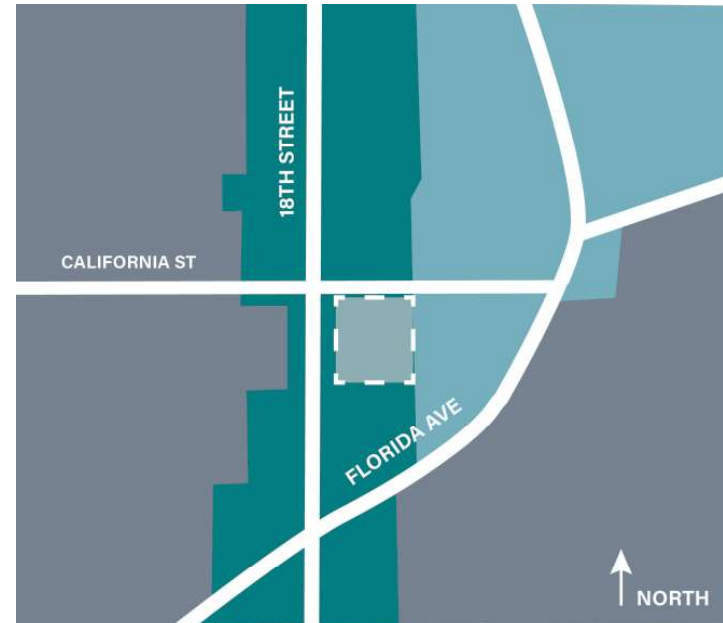
- 0.3 miles to Kalorama Park
- 0.4 miles to Meridian Hill Park
- 0.8 miles to Rock Creek Park (Exercise Course)

FOOD ACCESS

- 0.6 miles from Safeway
- 0.6 miles from Trader Joes

LIBRARY ACCESS

- 1.2 miles from Mt Pleasant Neighborhood Library



ZONING:

- RESIDENTIAL APARTMENT
- MIXED-USE
- SPECIAL PURPOSE

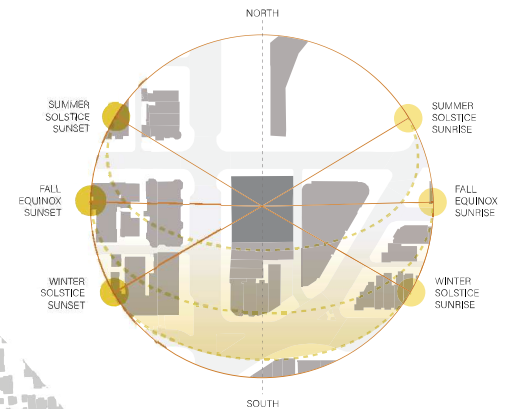
WARD ONE

- + N and W Street Frontage Exposure
- + Potential for good S Sun Exposure
- + Less active Commercial Zone
- + Mixed-use bordered by Residential

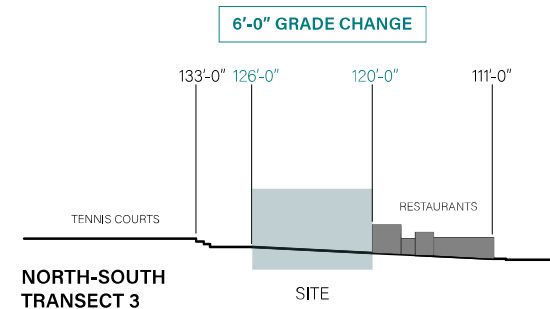
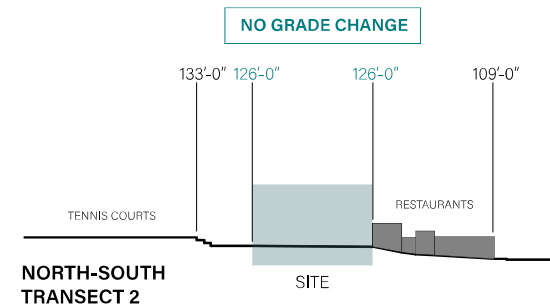
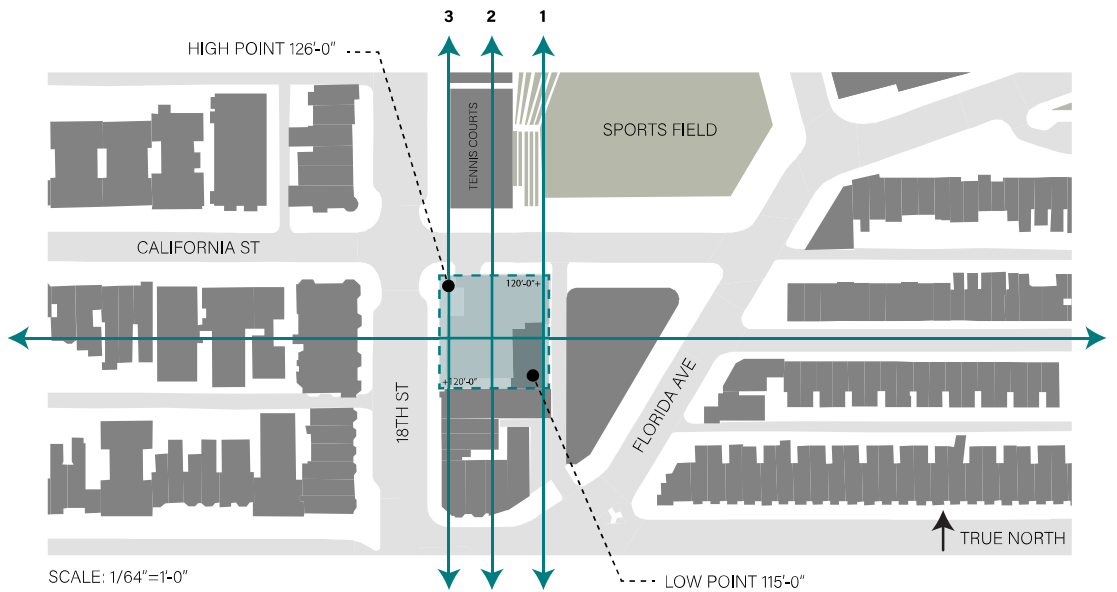
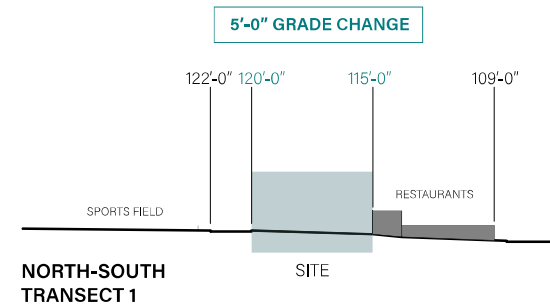
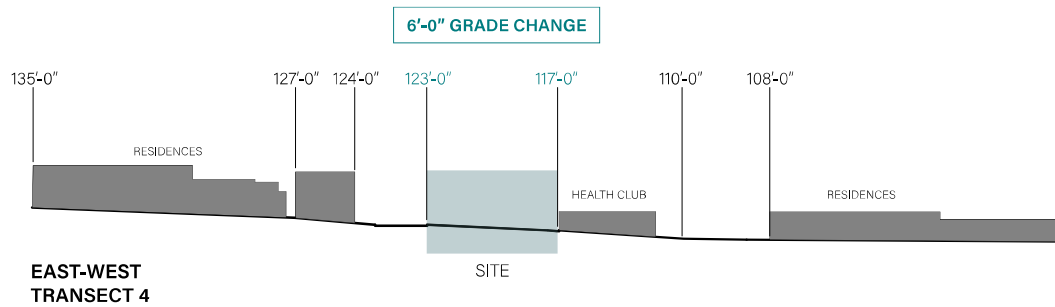
SITE AMENITIES + CONDITIONS

SITE MAP KEY

- Apartments
- Public Schools
- Places of Worship
- Food Distributors
- Medical Office/Pharmacy
- Public Transportation
- Public Parks
- Buildings
- Commercial Zone (Dining)
- Major Roadways



SITE TOPOGRAPHY



One of the interesting parts of my site besides its location and urban presence is the topography. You can see from the site transects above that there is a significant grade change over the site. The NW portion is the highest point and the SE portion is the lowest point with an overall 11'-0" grade change across on the diagonal. The site slopes down to the east and south.

SITE IMAGES



Existing Corner/Street Condition - Looking SE



Existing Structure + Parking Lot - Looking SE



Existing Structure and Edge Condition - Looking East



Sidewalk along 18th St - Looking South

SITE IMAGES



Marie Reed Soccer Field (across the street on California St)



The Ashley Apartments (directly across from site on 18th St)



Intersection of 18th St and California St - Looking NW



18th Street - Looking South

ADAMS MORGAN: HISTORY



Fig. 23: Intersection of 18th Street NW and Florida Ave.



Fig. 24: Adams Morgan Festival along 18th Street

Adams Morgan is located just outside the original city of Washington planned by Charles Pierre L'Enfant. In the late 19th and 20th centuries, the construction of two streetcar lines on Columbia Road and 18th Street greatly expanded the city and the area developed as an urban district.

The area was originally known as Lanier Heights and developed into a fashionable, middle-class neighborhood in the early 20th century. After a period of racial tensions and decline during and after the second World War, the current neighborhood name of Adams Morgan was adopted sometime between the 1950s and 1960s. The name Adams Morgan – once hyphenated – is derived from the names of two formerly segregated area elementary schools – the older, all-black Thomas P. Morgan Elementary School and the all-white John Quincy Adams Elementary School.

Today, Adams Morgan is a colorful, diverse, artistic, and eclectic neighborhood in Northwest DC. It is home to about 15,000 people and is just under .5 sq. miles. 18th Street is the economic center, historical heart, with active dining and nightlife streetfronts. The area is primarily a residential neighborhood filled with rowhouses. The neighborhood community has stood on behalf of social justice, political activism and inclusive, progressive values.

ADAMS MORGAN: CULTURE



PUBLIC ART + MURALS

In both English and Spanish, “demuralized” is a pun on “demoralized,” suggesting that the rise of public art expressing Latino life in Adams Morgan helped draw immigrants from many different homelands together into a single community. Shown on the left is Washington D.C.’s oldest street mural by Carlos Salazar. Murals helped to brighten up beleaguered and downtrodden city neighborhoods.



COMMUNITY ARCHITECTURE

At its height in the 1970s, the New Thing Art and Architecture Center occupied five buildings year-round, counted a staff of 55 and 350 students, all ages, all colors, all kinds, from street people to musicologists, from karate teachers to filmmakers, an incredible rainbow of talent that made Washington, almost overnight, a city of hope and happy promise. The original plan, when the New Thing opened its first storefront, was to promote “community architecture,” he said, an attempt to get some local input into neighborhood planning.



FESTIVALS + EVENTS

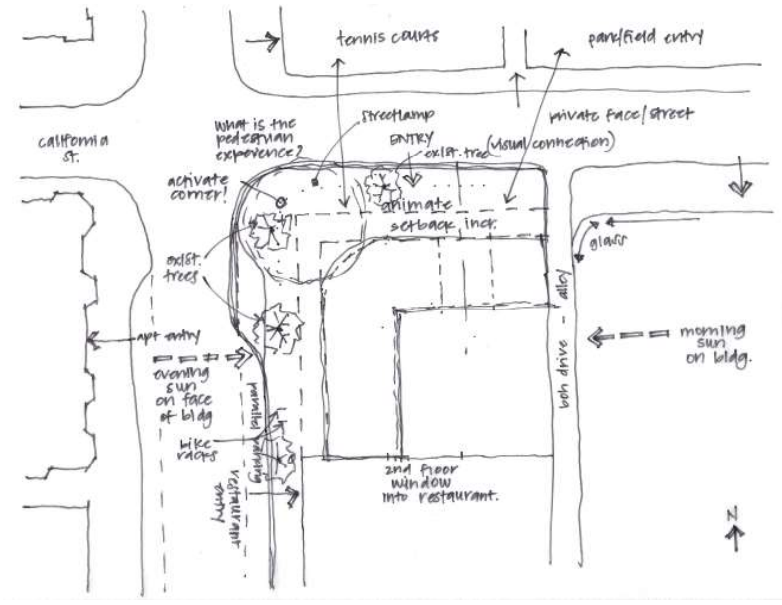
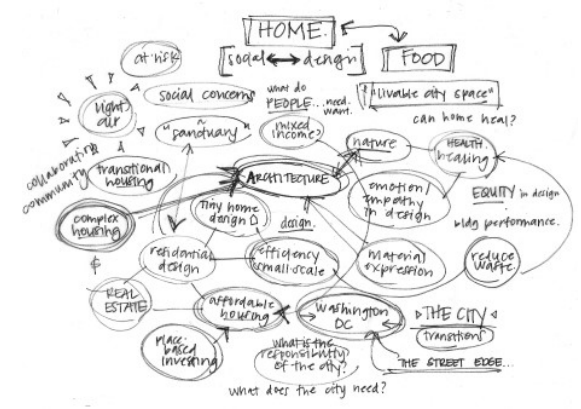
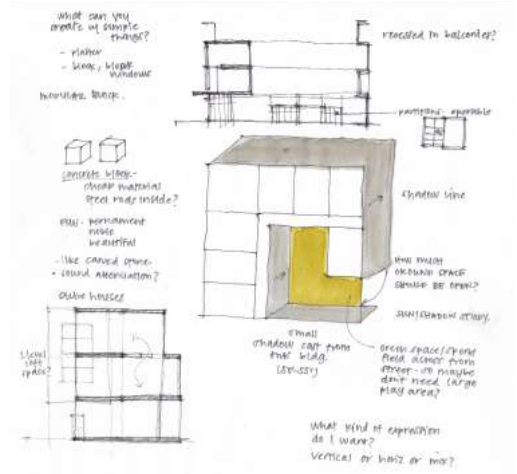
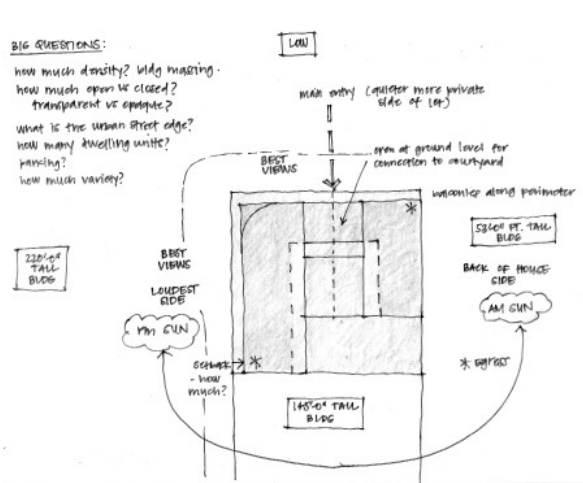
The Adams Morgan Day Festival features parades, cultural demonstrations, music, and dances.

The main theme of the festival is the celebration of diversity and different cultures. You can buy lots of handmade souvenirs and crafts as well as great street food. It is a family-friendly celebration with music, art and activities for all ages. Adams Morgan Day is planned entirely by volunteers, and as Washington, DC’s longest running neighborhood festival.

An aerial architectural rendering of a building complex. The central focus is a large, dark grey rectangular building with a complex, multi-lobed footprint. To its right is a large, light-colored rectangular building. Between these buildings is a central courtyard area featuring a green lawn, a curved walkway, and several small structures or pavilions. The surrounding area includes a parking lot with white lines, a red brick tennis court, and various trees and landscaping elements. The overall style is a detailed architectural illustration.

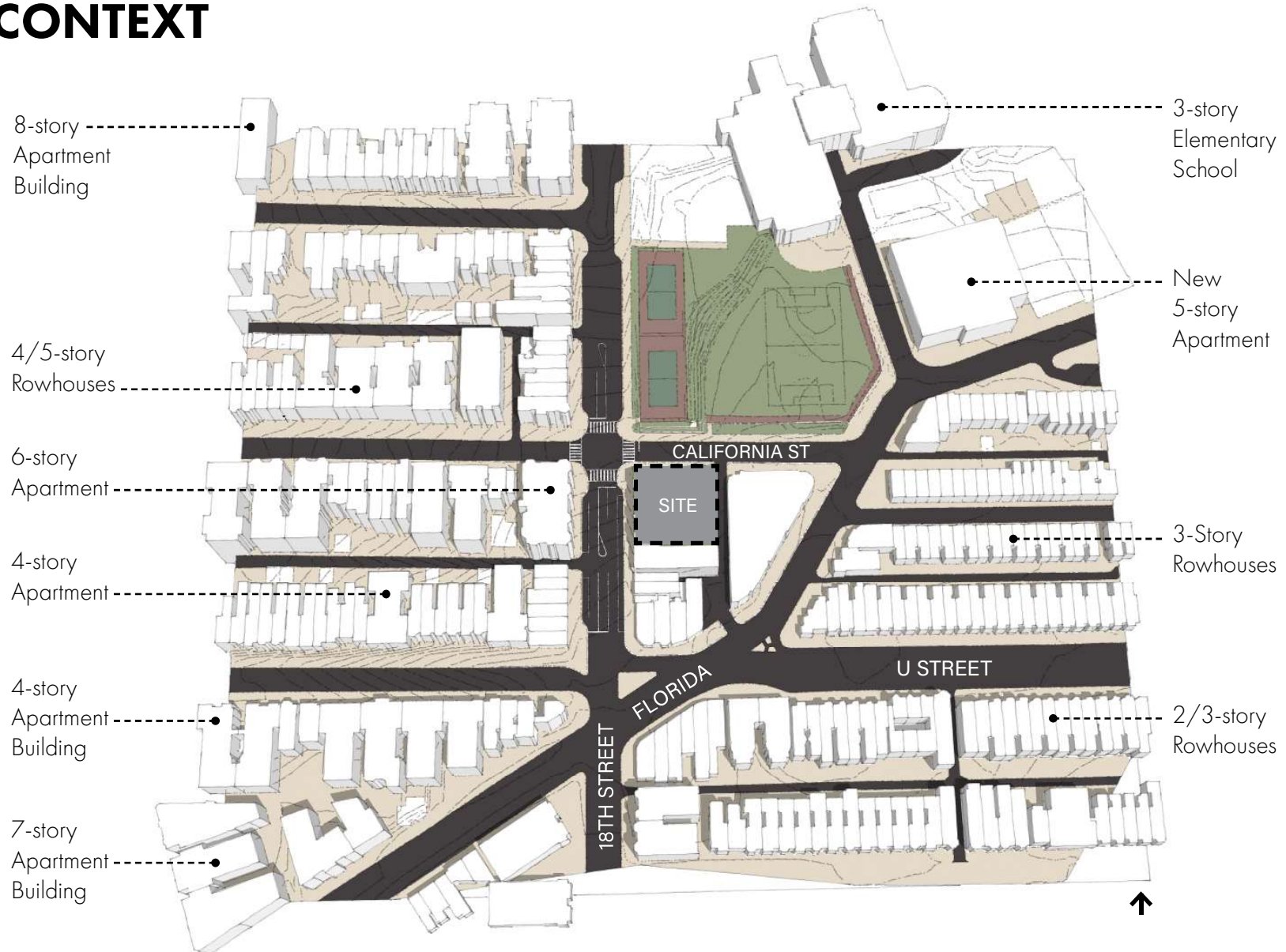
DESIGN PROCESS
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DESIGN PROCESS

SITE OBSERVATIONS



In my early design sketches, I identified key relationships around the site to other urban elements, views that were desirable, and connections that would lend themselves well to my selected program. I needed to understand how each of these would affect the functionality of my building and what challenges and opportunities were created from the existing built environment. A strong engagement with the urban street edge as well as solar orientation led me to create an L-shaped building at the site edges along 18th St and California St. This shape allowed me to create a private courtyard on the south-east portion of the site and provide moments of private outdoor activity to compliment the public outdoor activity across the street at the Marie Reed Fields and Elementary School.

SITE CONTEXT



The site is bordered to the east by low rise residential buildings and to the west by taller residential buildings with a 6-story apartment building directly across 18th street and a sports field and tennis courts directly across California St. The remaining structures on the block are 1 and 2-story restaurants to the south. Their low building height gives the advantage of southern light exposure to the dwellings and back of my building which can support backyard and rooftop gardens.

URBAN CHARACTER: 18th Street

The main roadway near my site is 18th street, a lively street with strong urban character and a repeated rhythm of old rowhomes with commercial shops on the street level and residences above.



↑
RHYTHM

Repeated Bay Width of ~20'-0"

- COLOR:**
- Earthy Browns + Greens
 - Clay Red
 - Sky Blue
 - Beige/Whites

- TEXTURE:**
- Rough Stone
 - Painted Brick

DATUM

- ← Floor to Floor ~10'-0"
- ← Floor to Floor ~10'-0"
- ← Floor to Floor Varies due to topography ~10'-0" - 15'-0"

MATERIALITY:

- Brick
- Stone
- Wood
- Concrete
- Metal

FORM:

- Rectangular (vertical)
- Triangles (roofs)
- Arches (windows, doors)



DESIGN PROGRAM

DWELLING UNITS:

STUDIO UNIT

1 BEDROOM UNIT

2 BEDROOM UNIT

3 BEDROOM UNIT

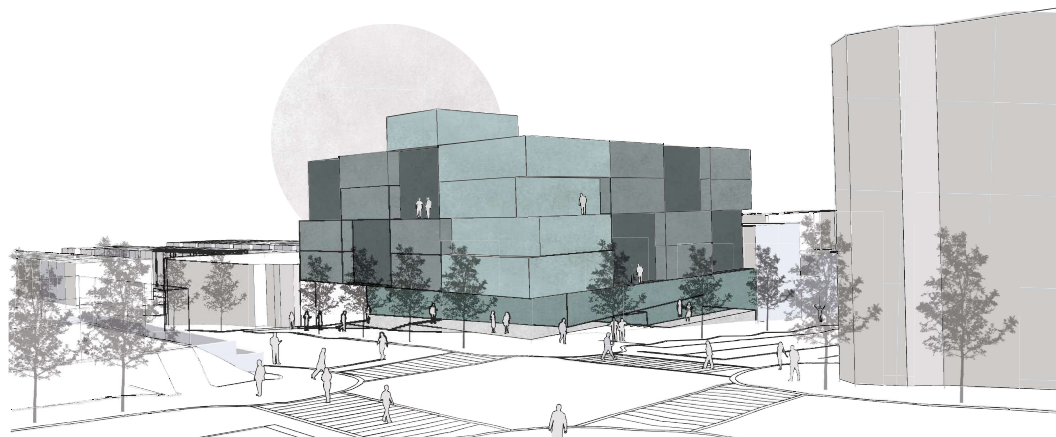
SHARED KITCHEN "INCUBATOR"

SHARED LAUNDRY

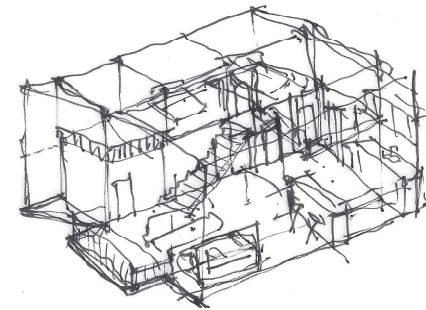
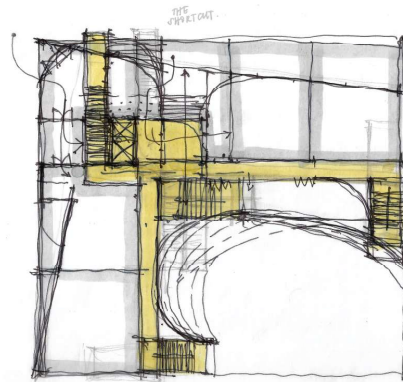
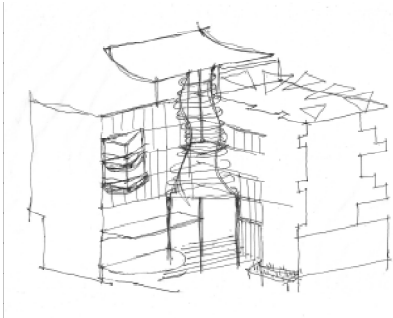
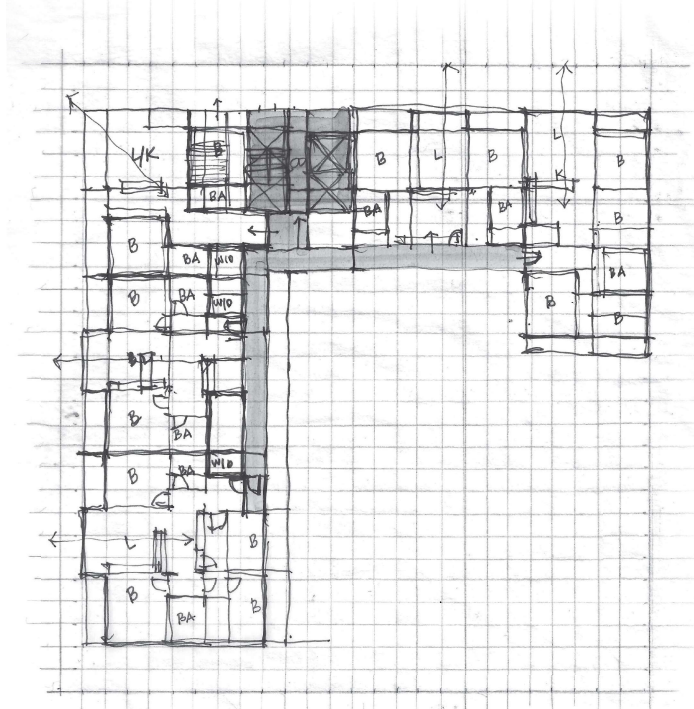
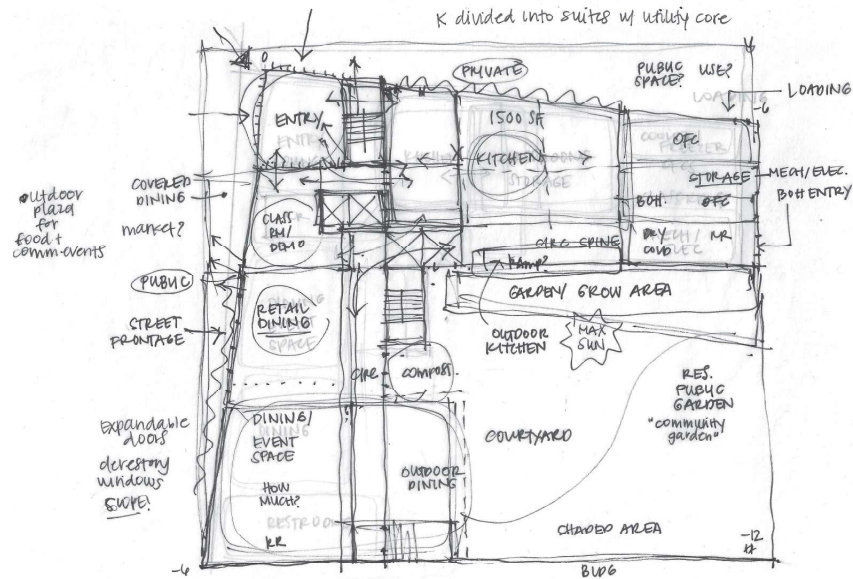
RESTAURANT/DINING

COURTYARD

GARDENS



DESIGN SKETCHES



These sketches show the beginning spatial and programmatic organization of the main floor, egress, and the process of starting with a grid to explore unit arrangements, sizes, and orientations. Ultimately, the design developed from numerous studies to find the appropriate volume that would be comfortable and functional and fit with my ideas of movement and transparency as key drivers for form and spatial arrangement in the building. I carved out semi-exterior and exterior spaces out of the total building volume to allow for light and air to penetrate the core of the building. In addition, I wanted to insert fragments of the landscape into the building and incorporate the most natural element of the urban fabric, the sky.

FLOOR PLAN Concept Diagrams



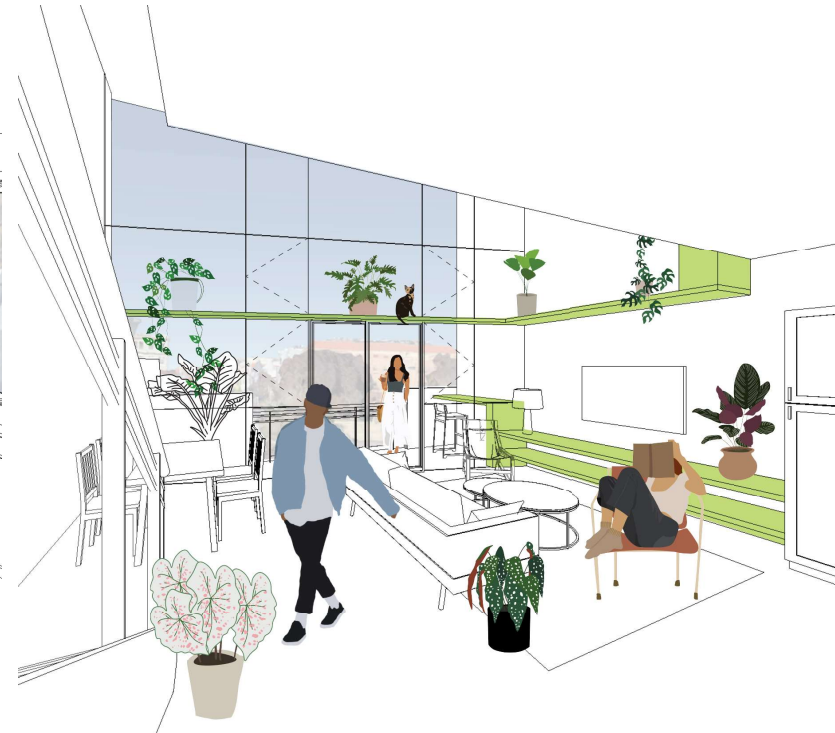
A driving concept for my building was to create double-height dwellings with a large volume of space. Deep dwellings would also allow for the main egress corridor to be pushed to the exterior of the building to create a light-filled passageway that would visually connect the residents to the city environment. In contrast to the traditional double-loaded corridor, this condition creates a healthier and more aesthetic experience.

DWELLING STUDIES + CONCEPT



1-STORY 3 BEDROOM

Interior Perspective + 3D Axon



2-STORY 2 BEDROOM

Interior Perspective + 3D Axon

Connection to natural elements and movement became a key theme and concept for my thesis I explored through the use of glass, stairs, porches, planters, gardens and volumetric living spaces. I wanted the architecture of the dwelling unit to express the idea of movement in the interior living zone by showing activity of the outside world. Primarily using lofted units and stairs, angled walls, operable windows and an architectural element I call the ribbon. These studies show the concept for a continuous ribbon (shown in lime green) that would move through the unit and provide opportunities for storage and display unique to the dweller. The interior ribbon moves through the interior and permeates through the exterior glass wall to become a work surface on the balcony.

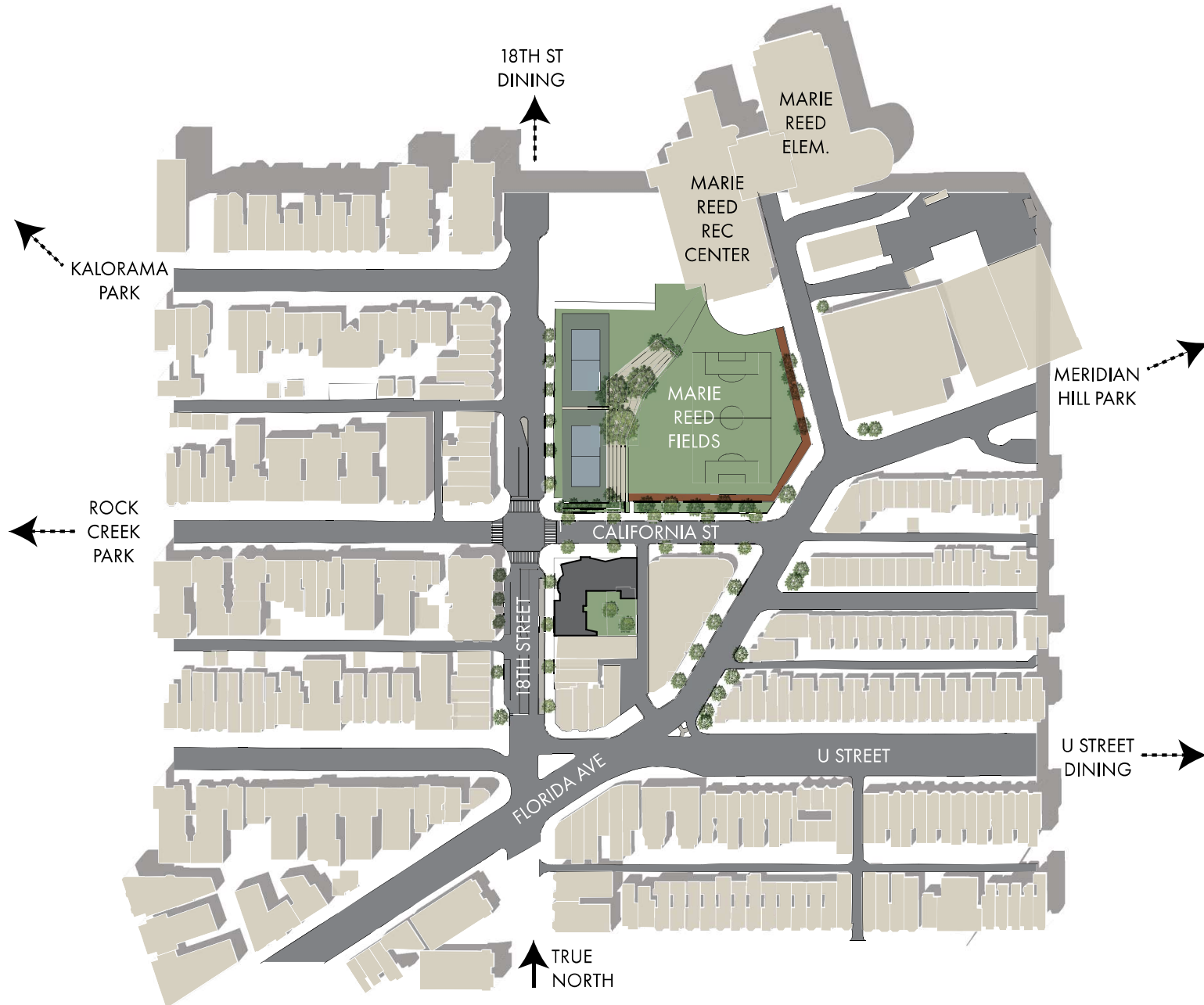
PHYSICAL STUDY MODEL



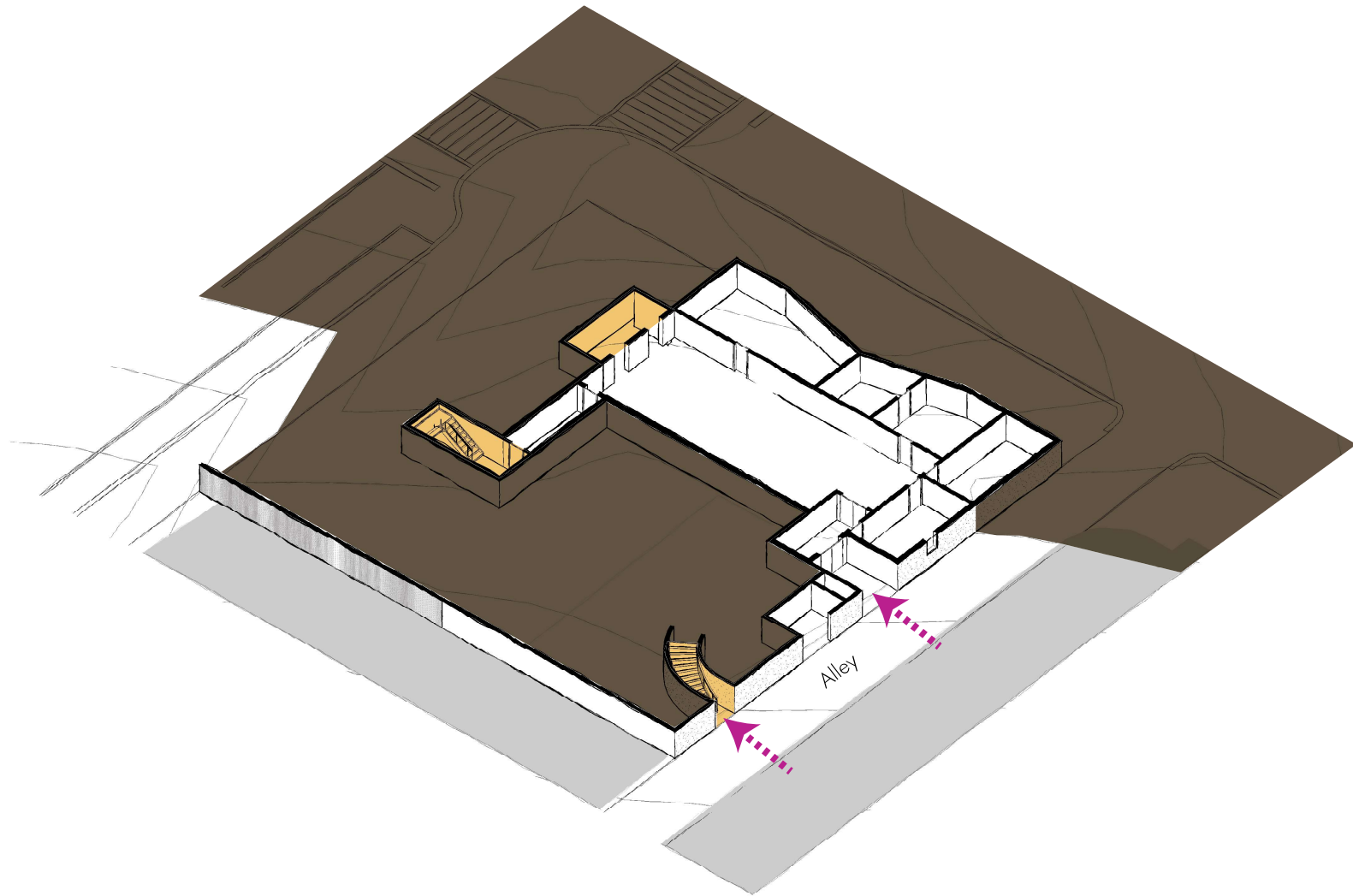
An aerial architectural rendering of a building complex. The central focus is a large, grey-roofed building with a complex, angular footprint. To its right is a courtyard area with a green lawn, a curved walkway, and some trees. Further right is a smaller building with a white roof. The entire scene is set against a background of a city street with a crosswalk and a red brick area. The text "DESIGN PROPOSAL" is repeated five times in a bold, black, sans-serif font, centered over the main building.

DESIGN PROPOSAL
DESIGN PROPOSAL
DESIGN PROPOSAL
DESIGN PROPOSAL
DESIGN PROPOSAL

SITE PLAN

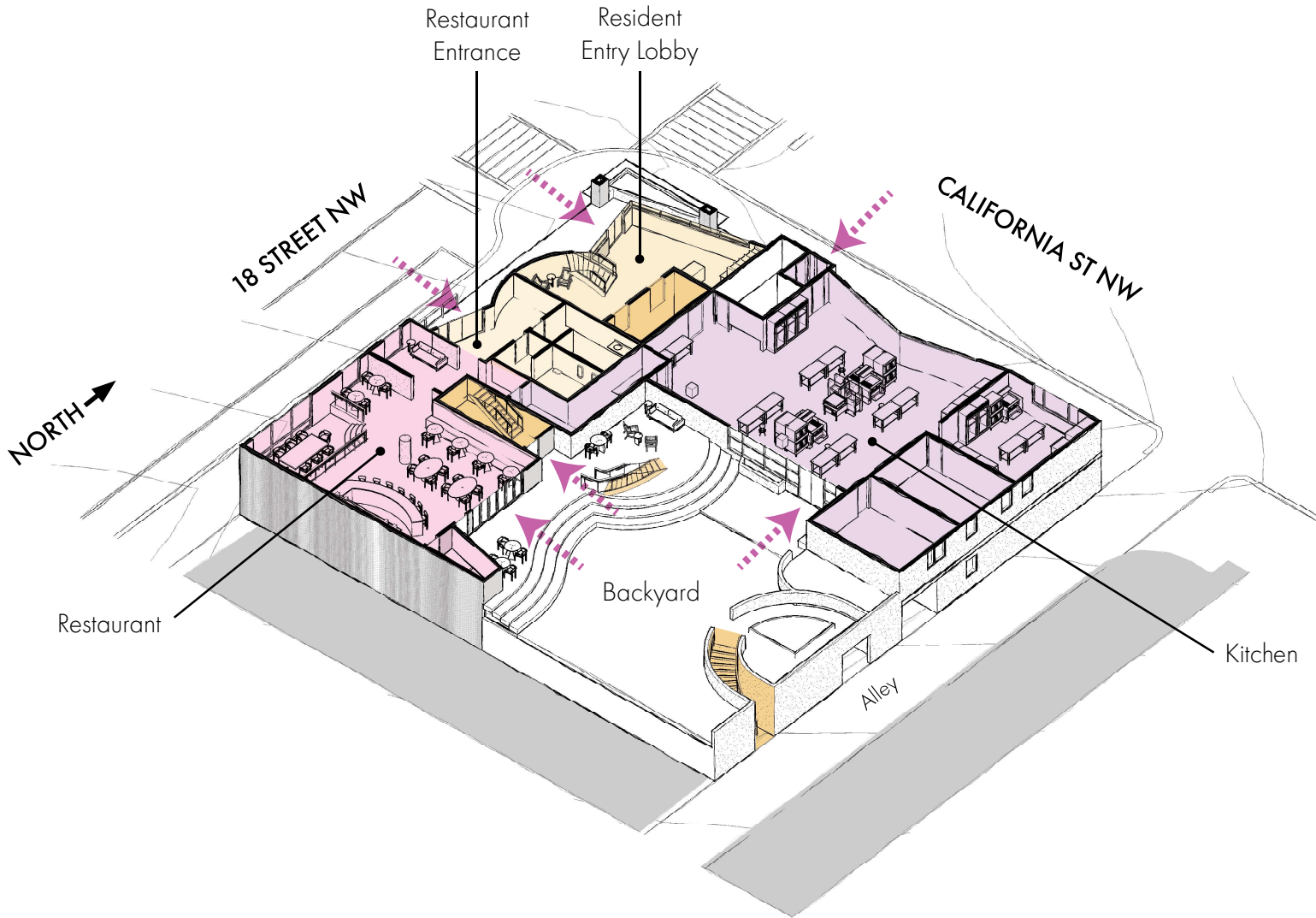


3D AXON: BASEMENT



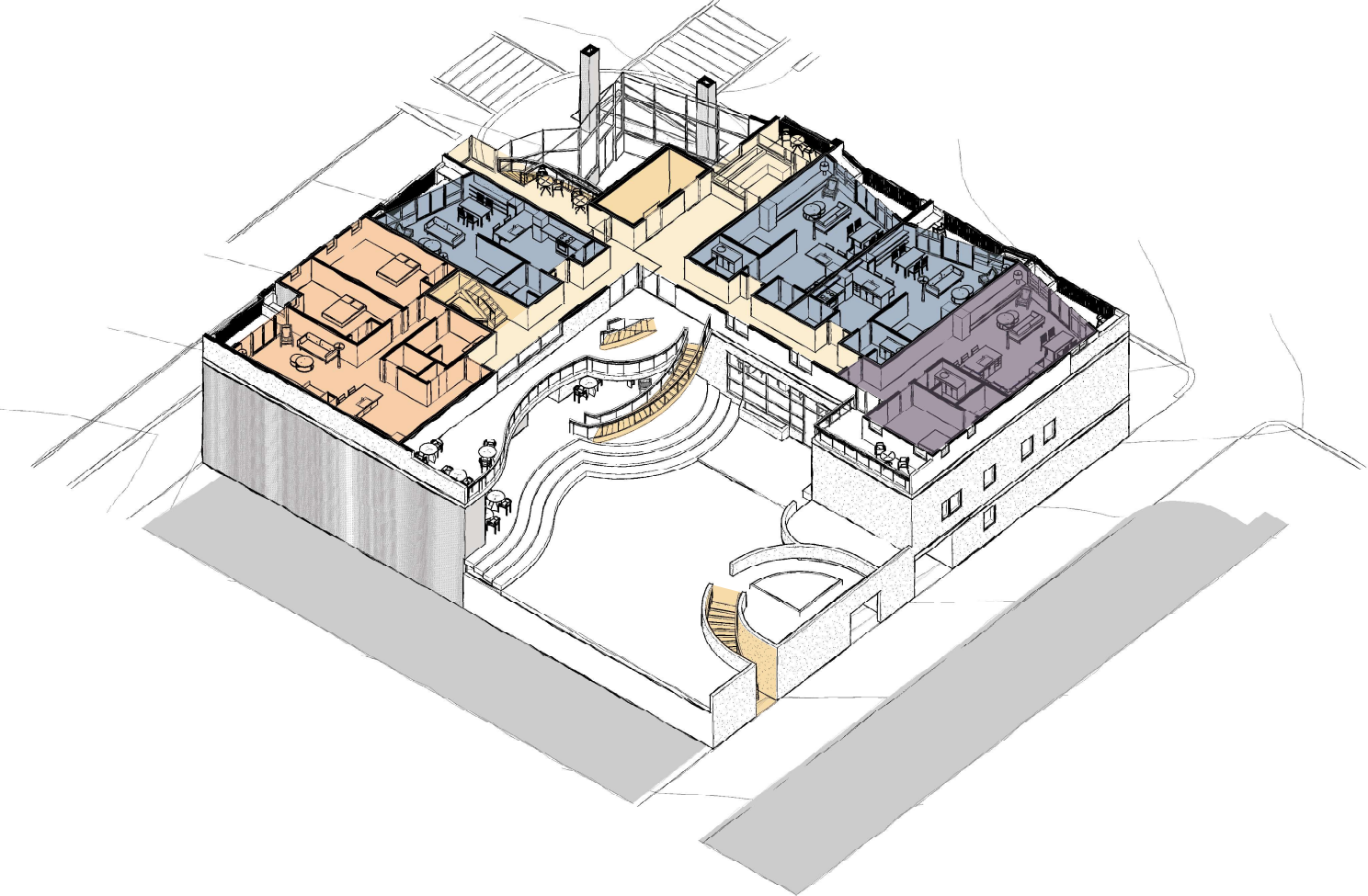
The basement is almost completely below grade, except where there is a ground level entry at the alley on the east side of the building. There is also a stair from the alley leading up to the backyard on the main level.

3D AXON: GROUND FLOOR

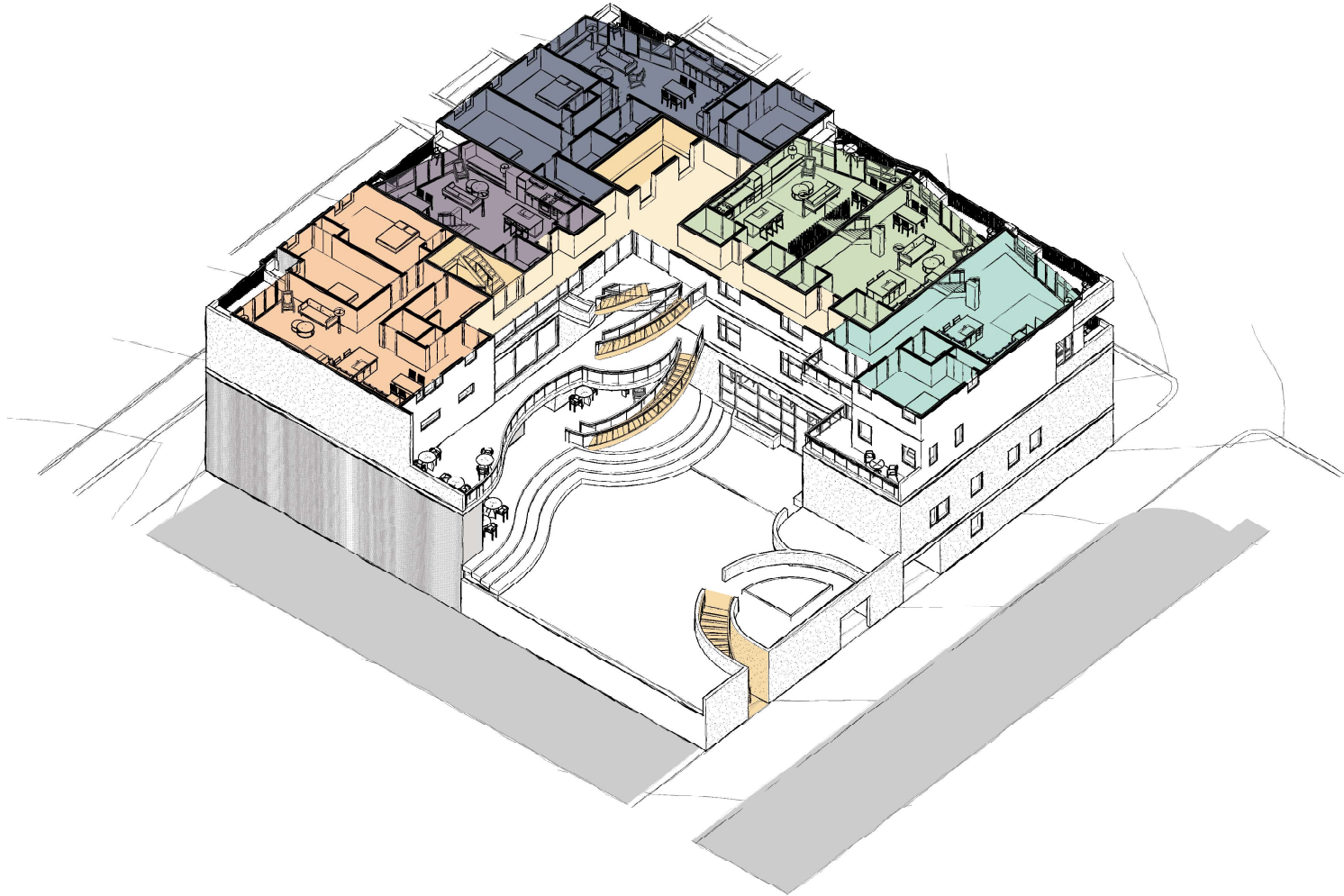


The ground floor has the resident entry lobby at the corner of 18th and California, the entry into the restaurant and a private entry into the kitchen. Both the restaurant and dining spaces feature glass for visibility from the street and rear folding glass doors to access and view the backyard.

3D AXON: LEVEL 2

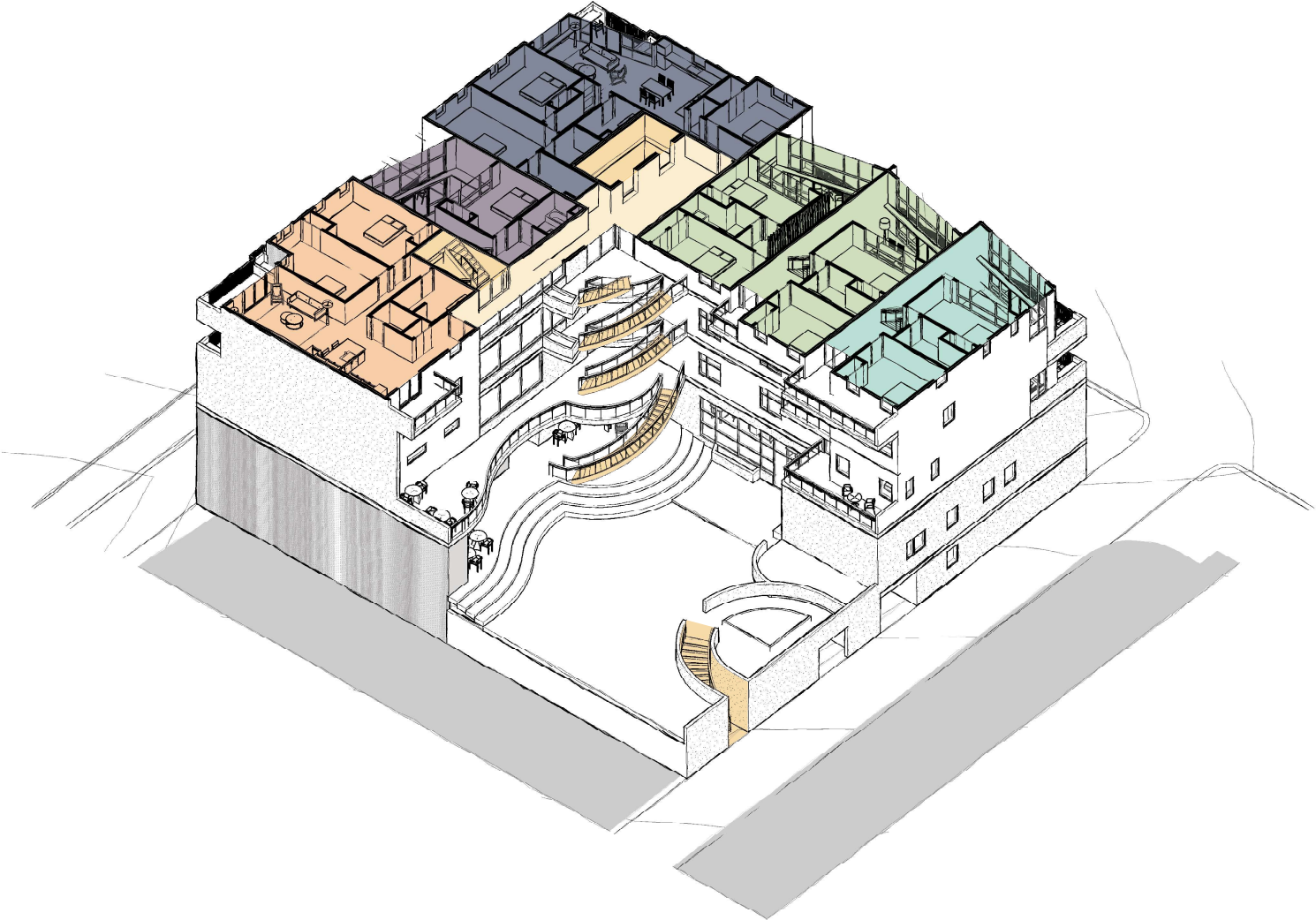


3D AXON: LEVEL 3



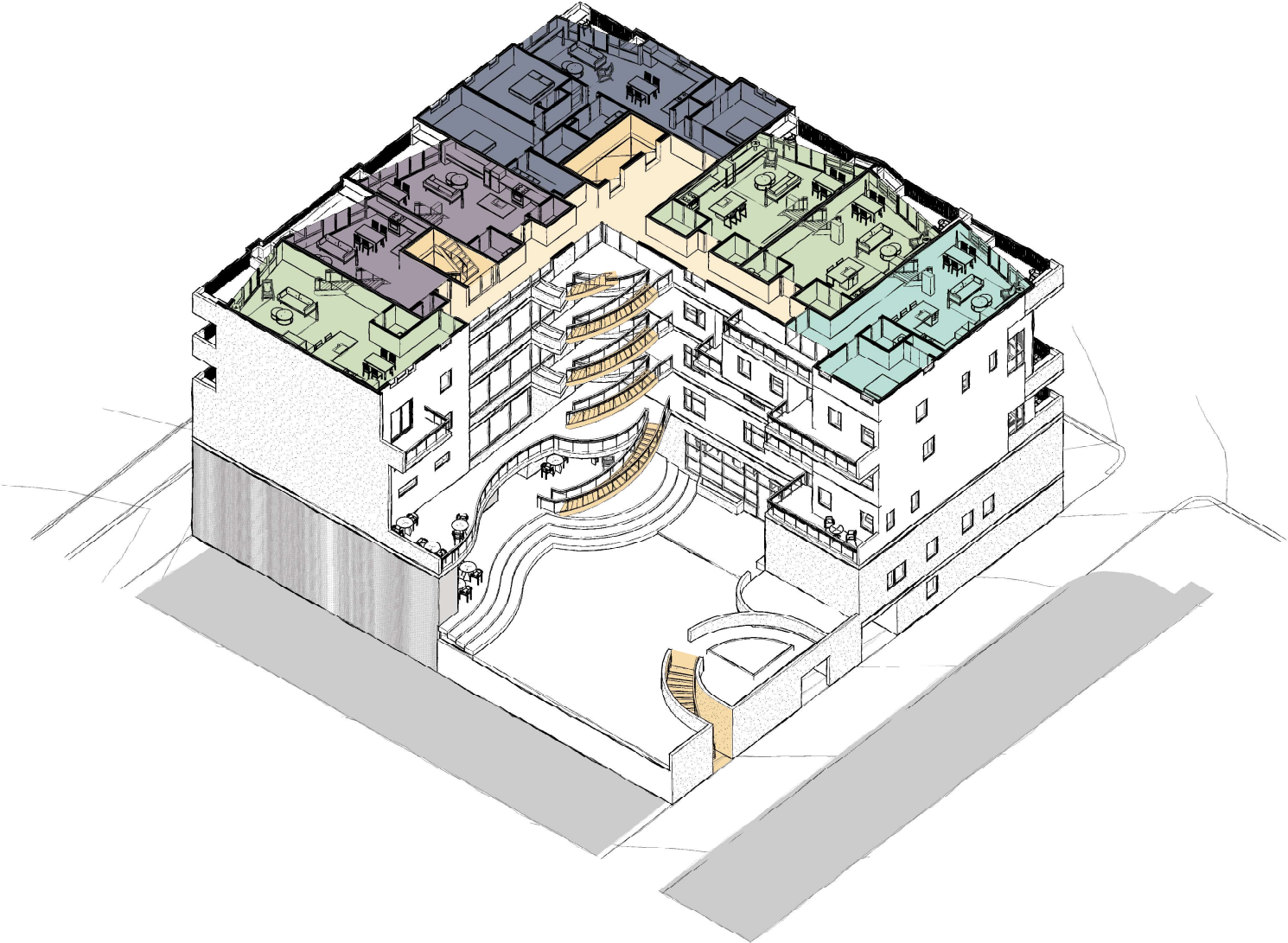
The third floor features only dwelling units. At the corner is the largest unit, 1 one-level 3 bedroom, shown in blue. Green are 2-level 2 bedrooms. Purple is a 2-level 1 bedroom. Teal is a 2-level 2 bedroom and orange is another 1-level 2 bedroom.

3D AXON: LEVEL 4



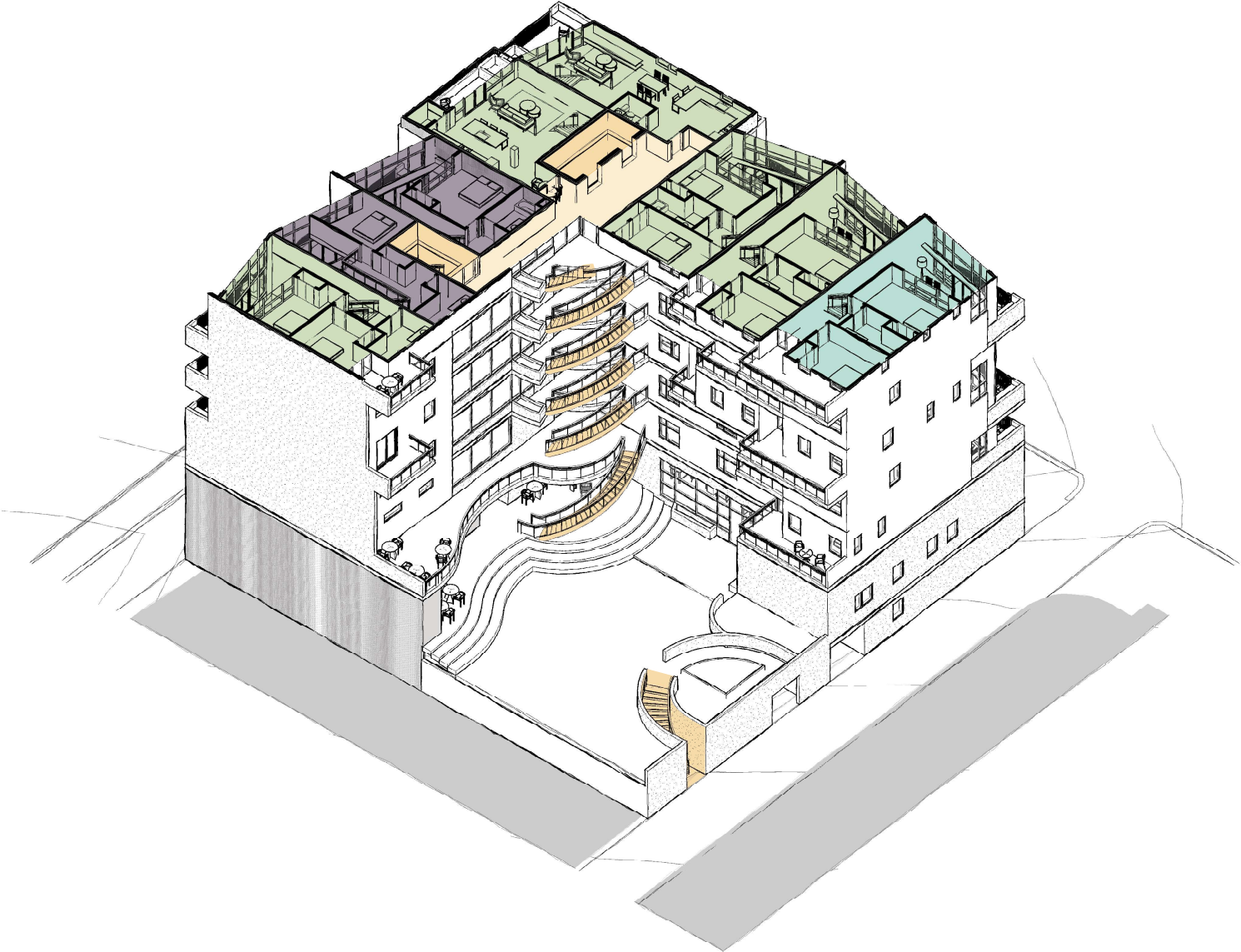
On this level, we see the upper lofted bedrooms and another 1-level 3 bedroom at the corner and 2 bedroom.

3D AXON: LEVEL 5



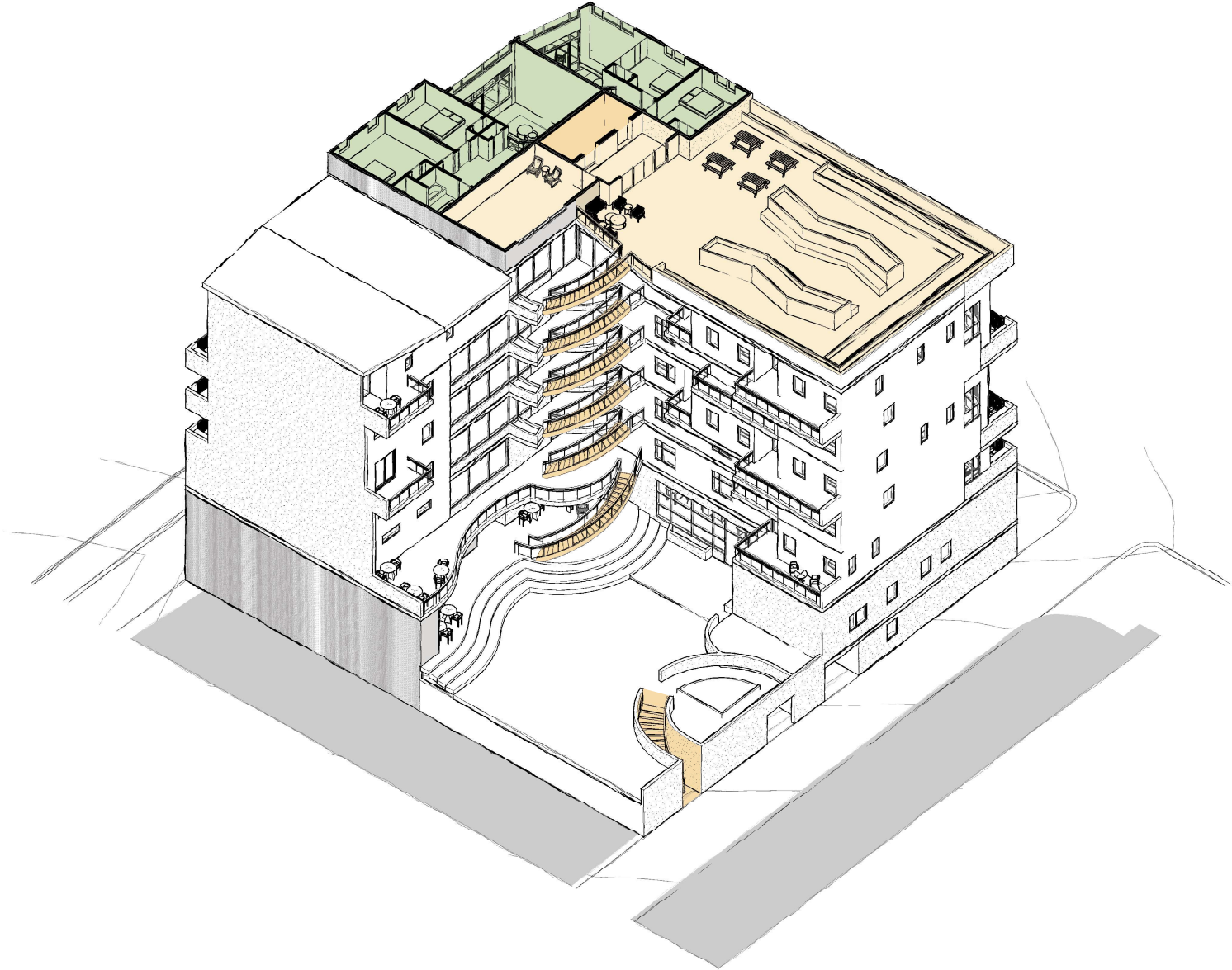
This level is similar to the 3rd however it features the 2-level lofted units.

3D AXON: LEVEL 6



On this level, we see the upper lofted bedrooms. At this level, the corner units become lofted.

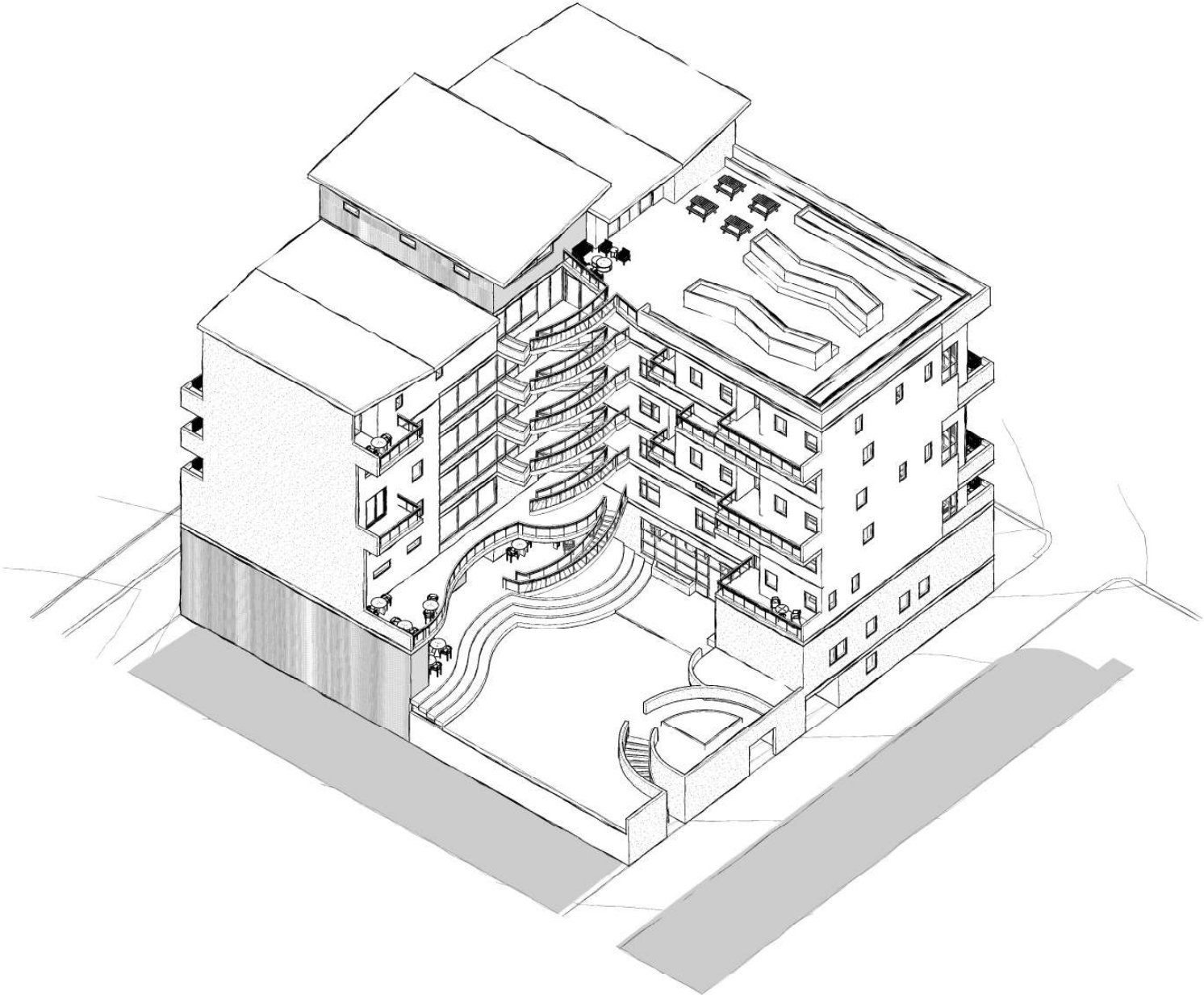
3D AXON: LEVEL 7



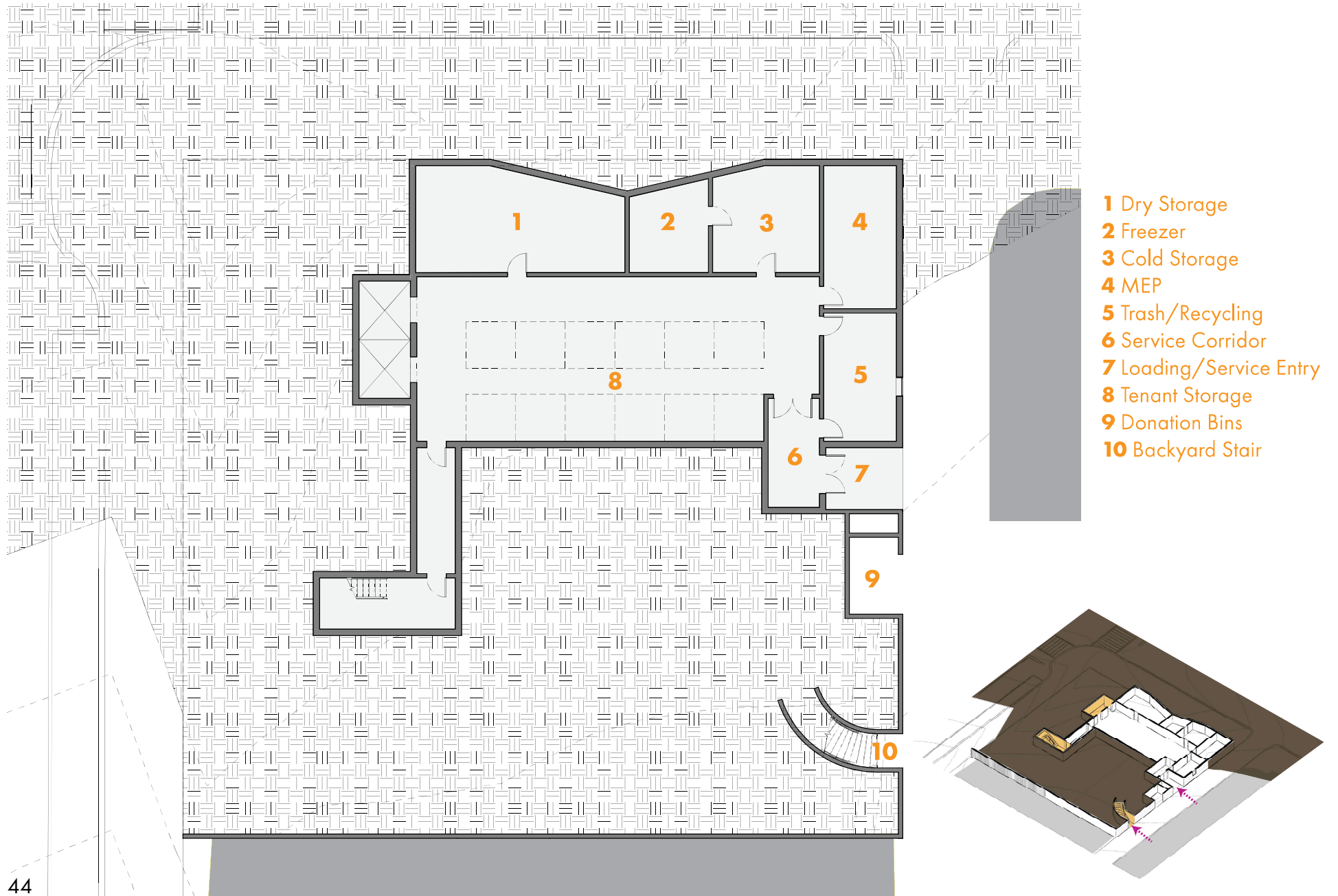
This level includes lofted bedrooms for the corner units, a public laundry room and a roof terrace with raised garden beds.

The roof as a place to connect with the city and nature.

3D AXON: ROOF



FLOOR PLAN: BASEMENT



FLOOR PLAN: GROUND FLOOR

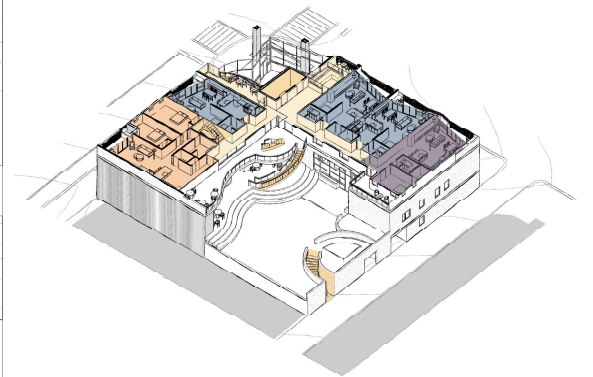


FLOOR PLAN: LEVEL 2

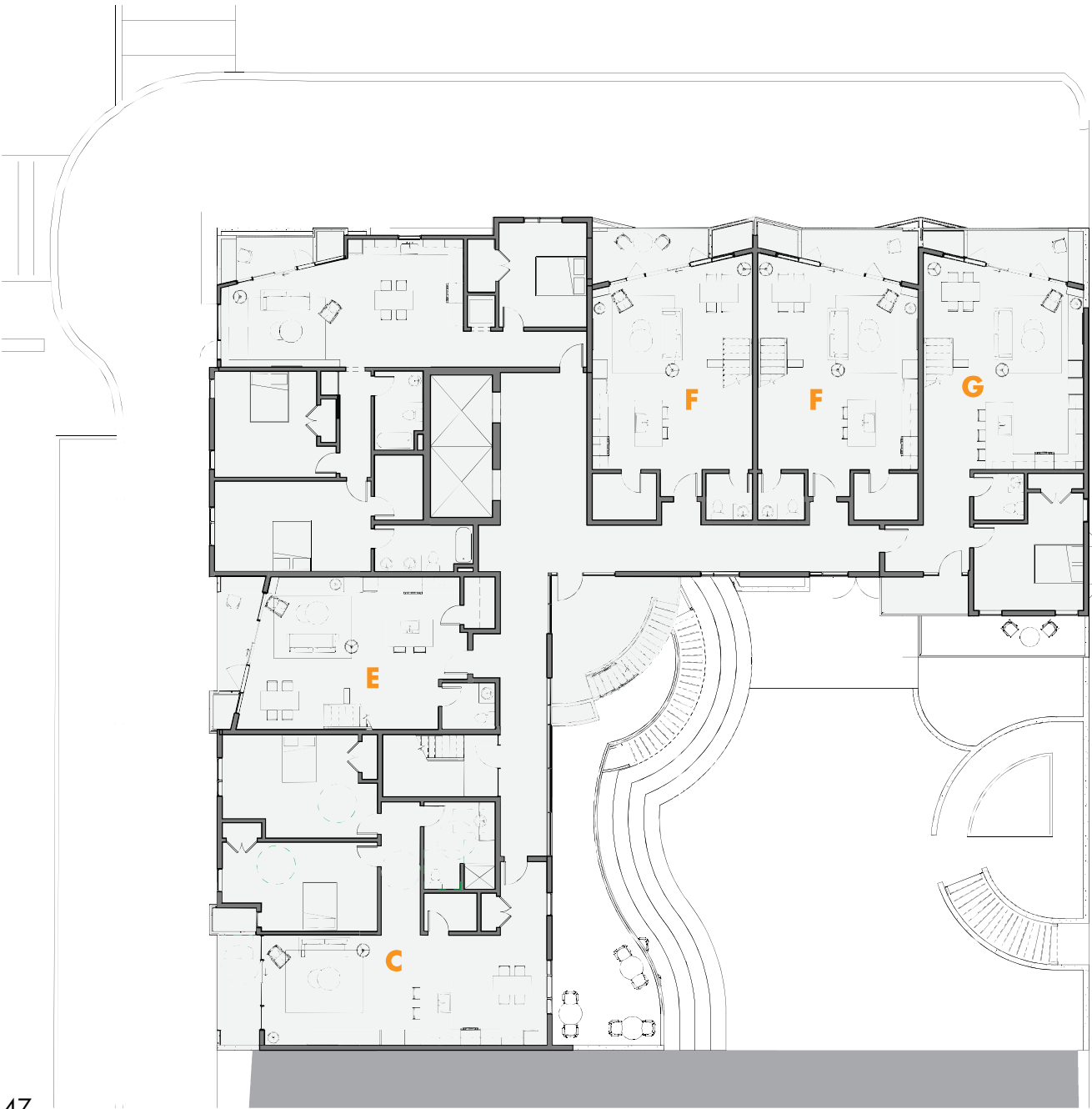


- 1** Entry Lobby (below)
- 2** Lobby Balcony
- 3** Indoor Garden
- 4** Balcony
- 5** Social Stair

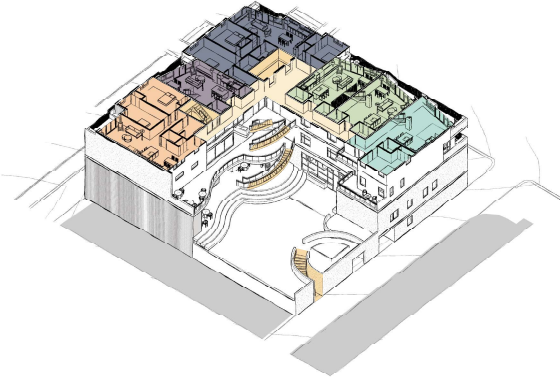
- A** Studio
- B** 1 Bedroom
- C** 2 Bedroom
- D** 3 Bedroom
- E** 1 Bedroom Lofted
- F** 2 Bedroom Lofted
- G** 3 Bedroom Lofted



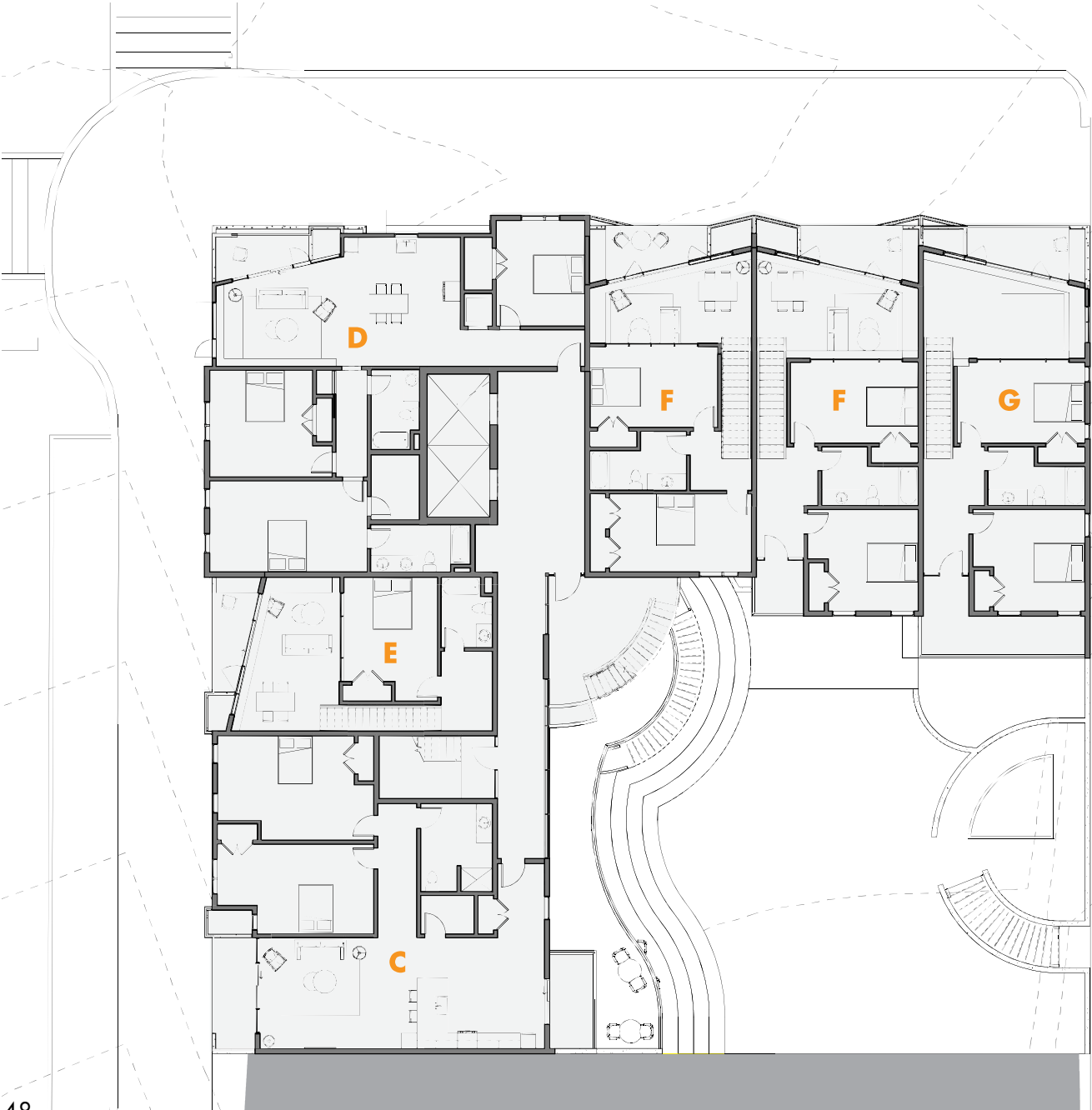
FLOOR PLAN: LEVEL 3



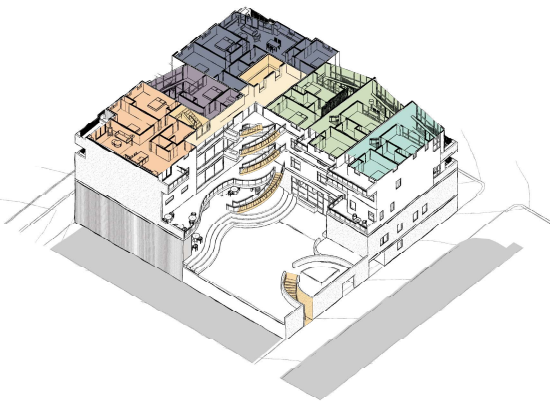
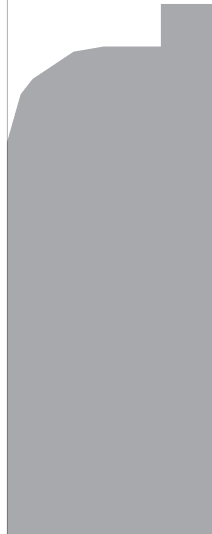
- A Studio
- B 1 Bedroom
- C 2 Bedroom
- D 3 Bedroom Unit
- E 1 Bedroom Lofted
- F 2 Bedroom Lofted
- G 3 Bedroom Lofted



FLOOR PLAN: LEVEL 4



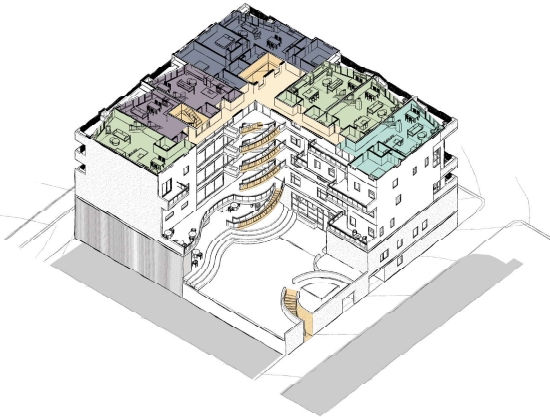
- A Studio
- B 1 Bedroom
- C 2 Bedroom
- D 3 Bedroom
- E 1 Bedroom Lofted
- F 2 Bedroom Lofted
- G 3 Bedroom Lofted



FLOOR PLAN: LEVEL 5



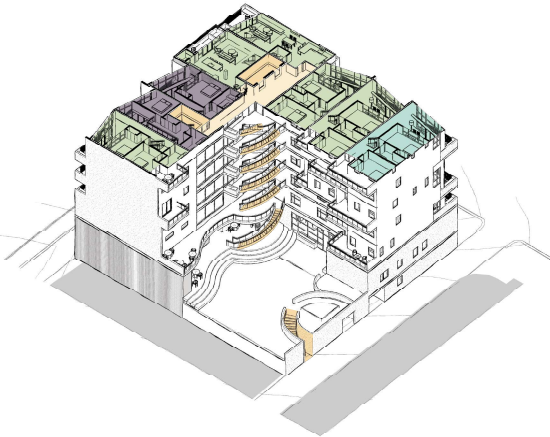
- A Studio
- B 1 Bedroom
- C 2 Bedroom
- D 3 Bedroom
- E 1 Bedroom Lofted
- F 2 Bedroom Lofted
- G 3 Bedroom Lofted



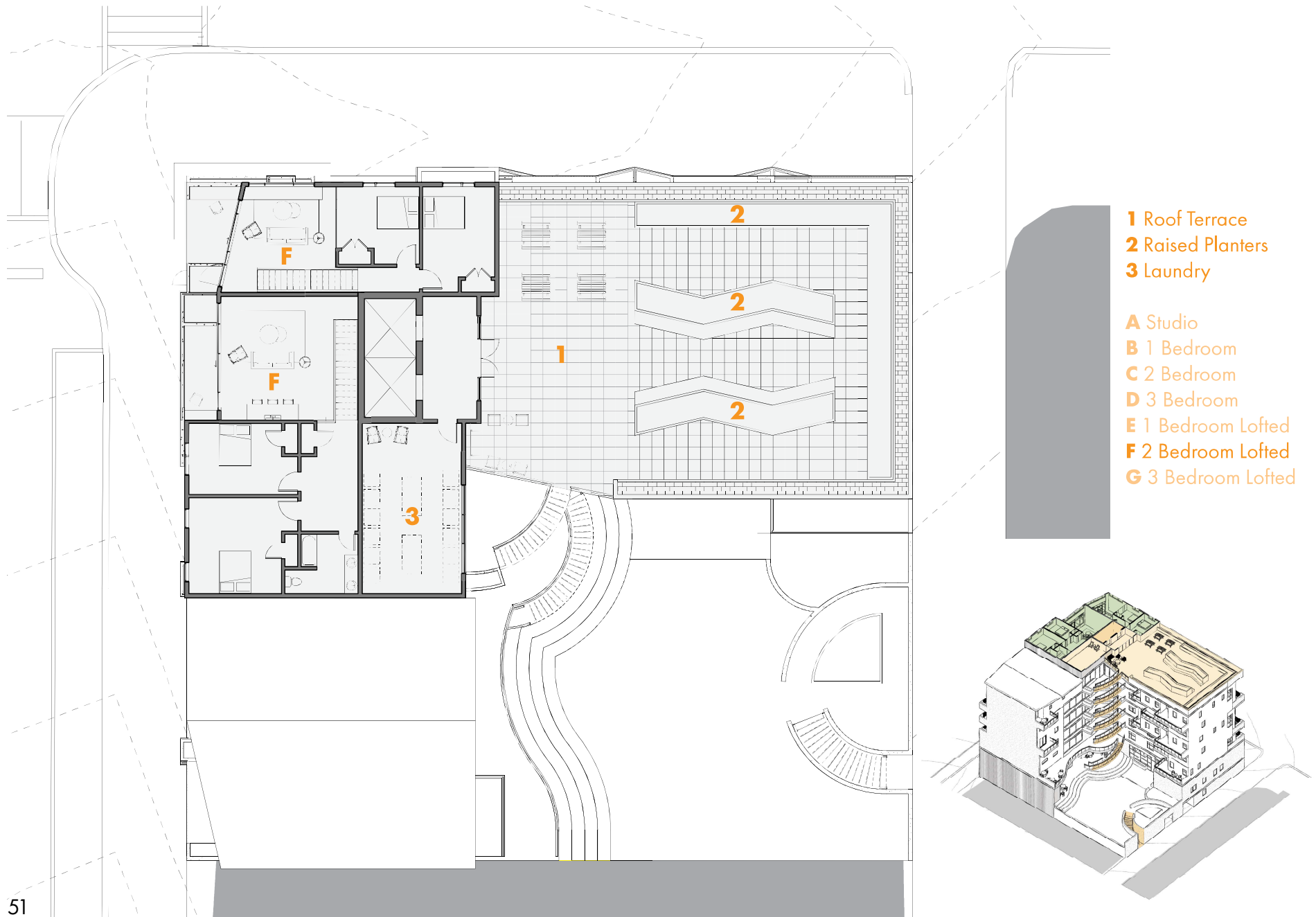
FLOOR PLAN: LEVEL 6



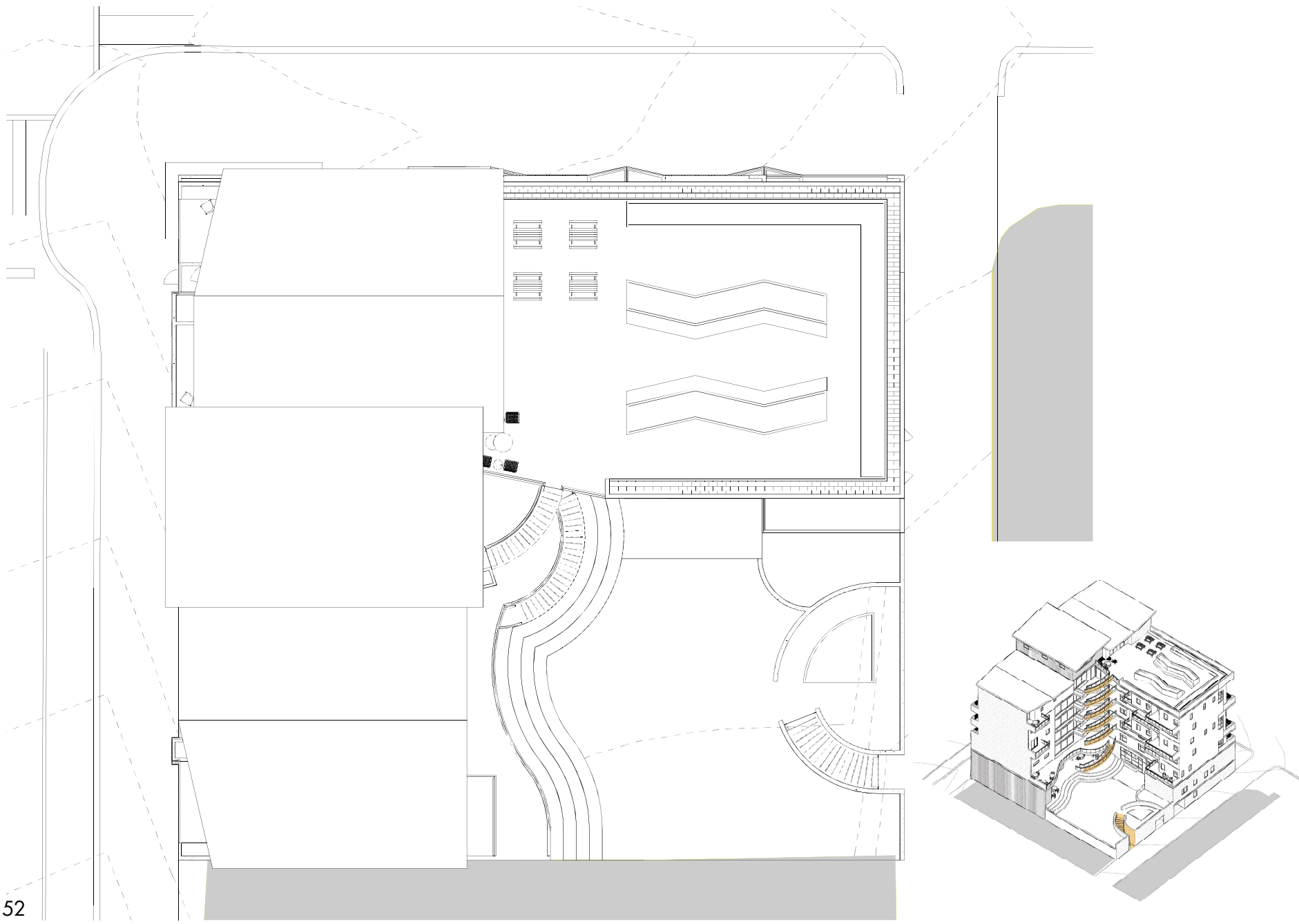
- A Studio
- B 1 Bedroom
- C 2 Bedroom
- D 3 Bedroom
- E 1 Bedroom Lofted
- F 2 Bedroom Lofted
- G 3 Bedroom Lofted



FLOOR PLAN: LEVEL 7



FLOOR PLAN: ROOF



ENTRY / STREET CORNER



The building façade is pulled back at an angle to create exterior space and invite the urban atmosphere to interact with the building. The angle of the wall mirrors that of the units throughout the entire building. Contemporary blue brick columns carry the load to the ground and invite the eye up the unit above. The outdoor entry space has a roof above and planter-bench that invites a moment of pause. The entry lobby is double-height to draw attention to the activity inside and create a spacious environment filled with light. When the main stair introduces a curve, the exterior wall responds and juxtaposes the orthogonal angles of the surrounding architecture and urban street edge. Follow this curve along the wall and you will be led to the restaurant entry.

ENTRY LOBBY



The Entry Lobby shows a semi-private half wall on the interior, and your first interaction with people. The entry desk is below a large window into the meditation room above. Adjacent to the entry desk are the elevators for easy access. The mail is located near the entry desk to encourage the residents to interact with the person working the desk and to be reminded of the meditation room above. To the right of this, is the main entry stair up to a second level balcony.

ENTRY STAIR



Taking the main entry stair will lead you to a balcony overlooking the lobby. As a resident, you continue through, you will arrive at a private key-access door to the core center of the building. At this point, you are provided with a view directly through the building to the sun-filled backyard. Curiosity may get the best of you, luring you outside to see the view and take this main stair up to your dwelling or down to the backyard. There is also a shared curved balcony on this level overlooking the gardens.

CORRIDOR: 2nd Floor



On the second level, after a resident passes through the private key-access door, they enter the core center of the building where they are provided a view directly through the building to the sun-filled backyard. This view may lure one outside to see the view or take this main stair up to their dwelling or down to the backyard. There is also a shared curved balcony on this level overlooking the gardens.

MEDITATION ROOM



This room is a plant-filled meditation room with a view overlooking California St, the calmer of the two streets. As one of the few interior public spaces for residents, this room is a sacred space for urban dwellers.

CORRIDOR: 3RD FLOOR



Deep units allowed the main egress corridor to be pushed to the exterior of the building to create a light-filled passageway that would visually connect the residents to the outside. This also allowed for the main social stair to be visible and encourage movement.

3-BEDROOM DWELLING INTERIOR



LOFTED DWELLING INTERIOR



LOFTED DWELLING INTERIOR



LOFTED DWELLING: STAIR TO LOFT LEVEL



ROOF TERRACE + LAUNDRY



The roof terrace features raised planter beds, space for outdoor dining and lounging. Off the elevator entry is the laundry room with a large window and a view outside overlooking the roof terrace and backyard.

2ND FLOOR BALCONY + SOCIAL STAIR



My earlier research into the cultural history of Adams Morgan, inspired me to think about the building and dwellings as a dance where there was lots of movement and playful forms. In a similar nature to music festivals and native dances of different cultures, this backyard central stair would serve as a social stair where movement and connection would be encouraged. The stair has a playful curved form, light and air-y feel, and planters with aromatic vegetation. This area is the heart of the life of the dwelling - the place where all people are connected.

OUTDOOR PATIO + BACKYARD



The main social stair meets the ground where there is a covered lounge area for the residents and a partial roof for covered outdoor dining.

BACKYARD GARDEN



The backyard incorporates an open grassy area for playing and several low curved concrete walls to protect gardens for the residents and chefs.

BACKYARD NIGHT



Because the backyard also sits next to an adjacent building with a blank wall, I imagine this wall to be perfect for outdoor movies.

KITCHEN OUTDOOR PATIO



This view shows the Kitchen with rear glass walls and an outdoor patio with adjacent gardens to grow herbs and other foods to be used by the chefs. An operable window above the concrete planter by the window allows for easy access during cooking and preparation.

18TH STREET EXTERIOR



This perspective shows the exterior of the building - a mix of 6 and 7 levels above grade, a large glass window with a view into the restaurant. This façade features playful sloped roofs along 18th street to reference topography change and to match the dynamic rhythm of the busy street. The solid concrete wall, which intentionally designed blank, because the neighboring building could be built up, is an opportunity for mural art (example shown is from the sacred bird series painted by a Brazilian artist L7m – birds that often symbolize freedom and transformation)

CALIFORNIA ST EXTERIOR



This perspective shows two levels of double-height lofted dwellings over single story dwellings and their exterior balconies. The Kitchen runs along the main ground level of California Street with a large window into the baking kitchen.

RENDERING: DWELLING EXTERIOR



A close-up view of the exterior of a lofted dwelling with 2-story glass wall. The balcony includes a built-in work surface, open space and a planter.

GARDEN SPACES



kitchen gardens



rooftop gardens



backyard gardens

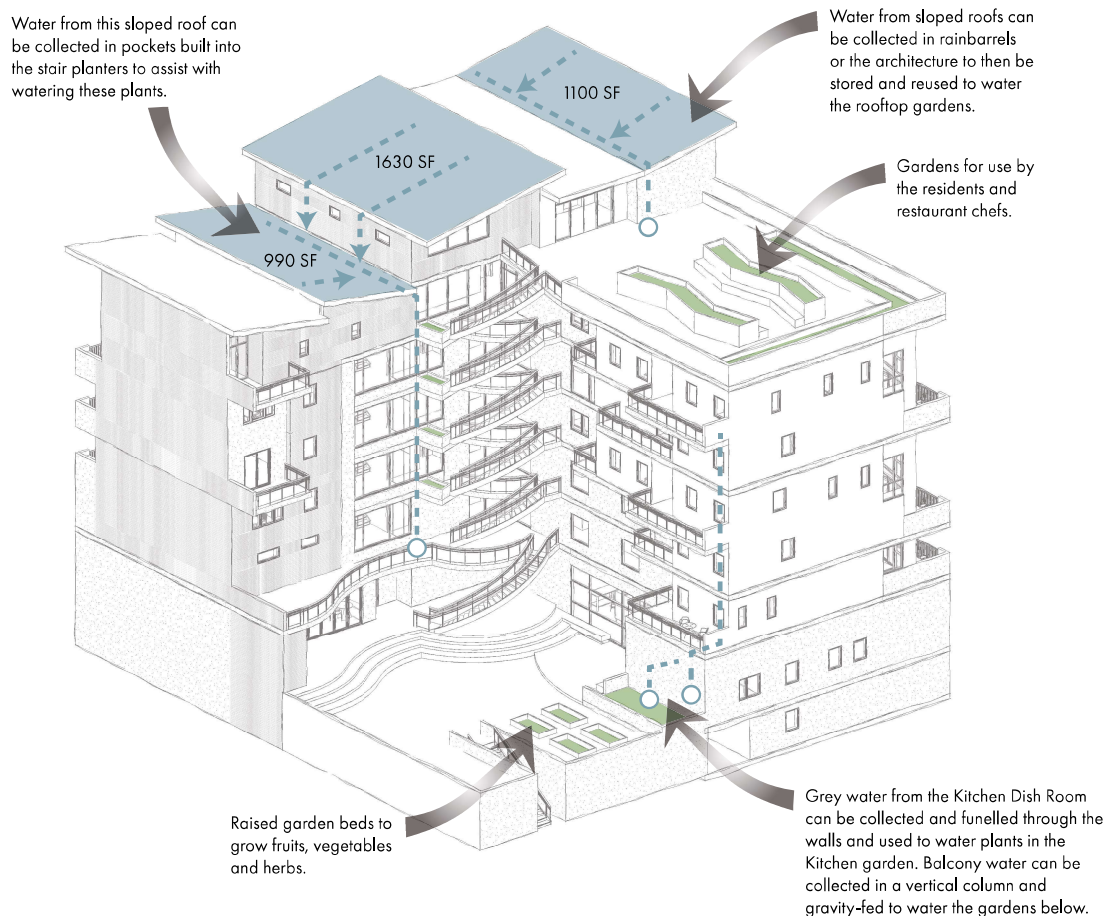


The building is like an urban food house where the roof and basement are the garden or green-focused spaces with dwelling in-between. Here you can see the rooftop garden with raised planter beds and dining and lounge space. The backyard of the building features several smaller more intimate areas for gardening, meditation, and an open lawn area for numerous activities.

WATER HARVESTING

$$\text{Catchment Area} \times \text{Monthly Rainfall} \times \text{Conversion factor (0.62)} \times \text{Collection factor (75-90\% to account for loss in the system)} = \text{Total Water Catchment}$$

(Equation from Federal Energy Management Program)



The angled roofs, while creating a dynamic top to my building and volumetric interior spaces, allow the opportunity to capture rainwater for irrigation or rainwater harvesting. It is a simple and sustainable way to capture, store and reuse roof water runoff. The process involves a method to collect, divert, store, filter and distribute water into the building landscape.

The total water collection from this building on average would be 3,000 gallons of water per year or roughly 250 gallons per month which would be prevented from becoming runoff.

Another sustainable strategy is to re-use greywater for irrigation. These methods reconnect urban residents and backyard gardens to the natural water cycle. The easiest way to use greywater is to pipe it directly outside and use it to water ornamental plants or fruit trees. I strategically located the kitchen dish room to the back exterior of the building so that it could share a wall with one of the backyard gardens.

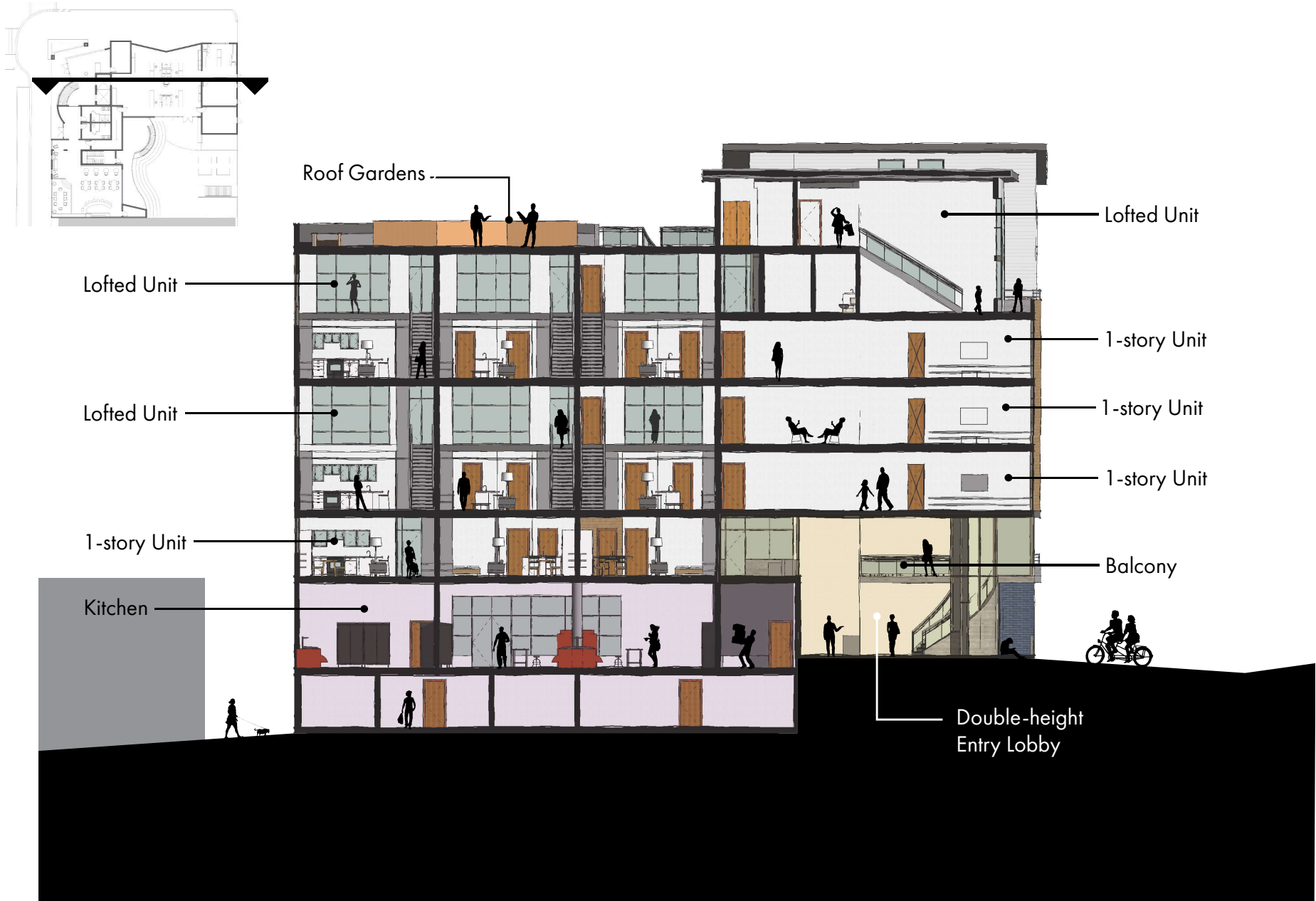
BUILDING SECTION 2: *through building along 18th St (looking W)*



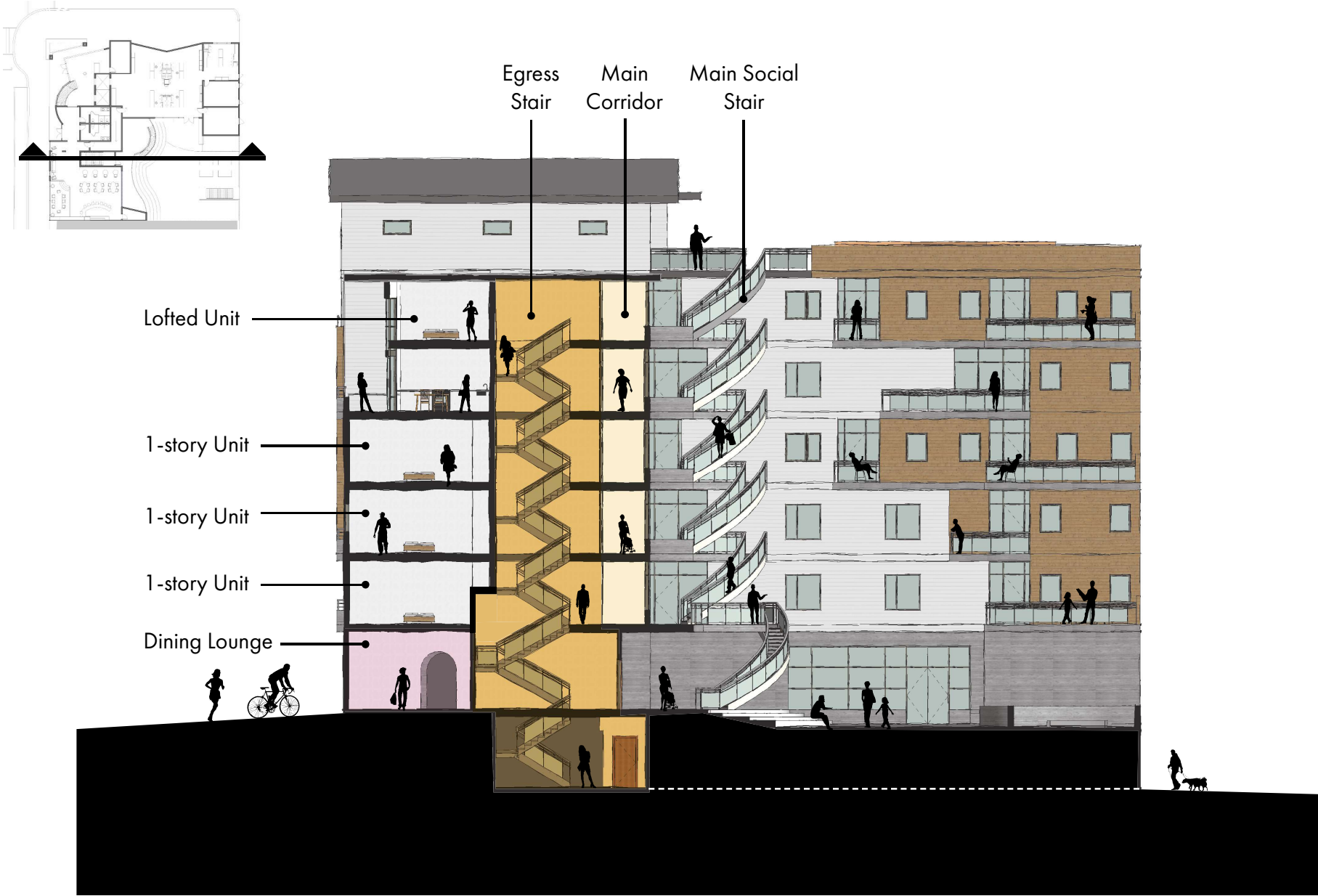
BUILDING SECTION 3: *through building along 18th St (looking W)*



BUILDING SECTION 4: *through building along California St (looking S)*



BUILDING SECTION 5: *through building along California St (looking N)*



NORTH ELEVATION



SOUTH ELEVATION



EAST ELEVATION



WEST ELEVATION



DWELLING TYPES

	Type	Count
A	Studio	3
B	1 Bedroom	1
C	2 Bedroom (Accessible)	3
D	3 Bedroom	3
E	1 Bedroom Lofted	3
F	2 Bedroom Lofted	7
G	3 Bedroom Lofted	2

22 Total

Mix

Studio: 14%

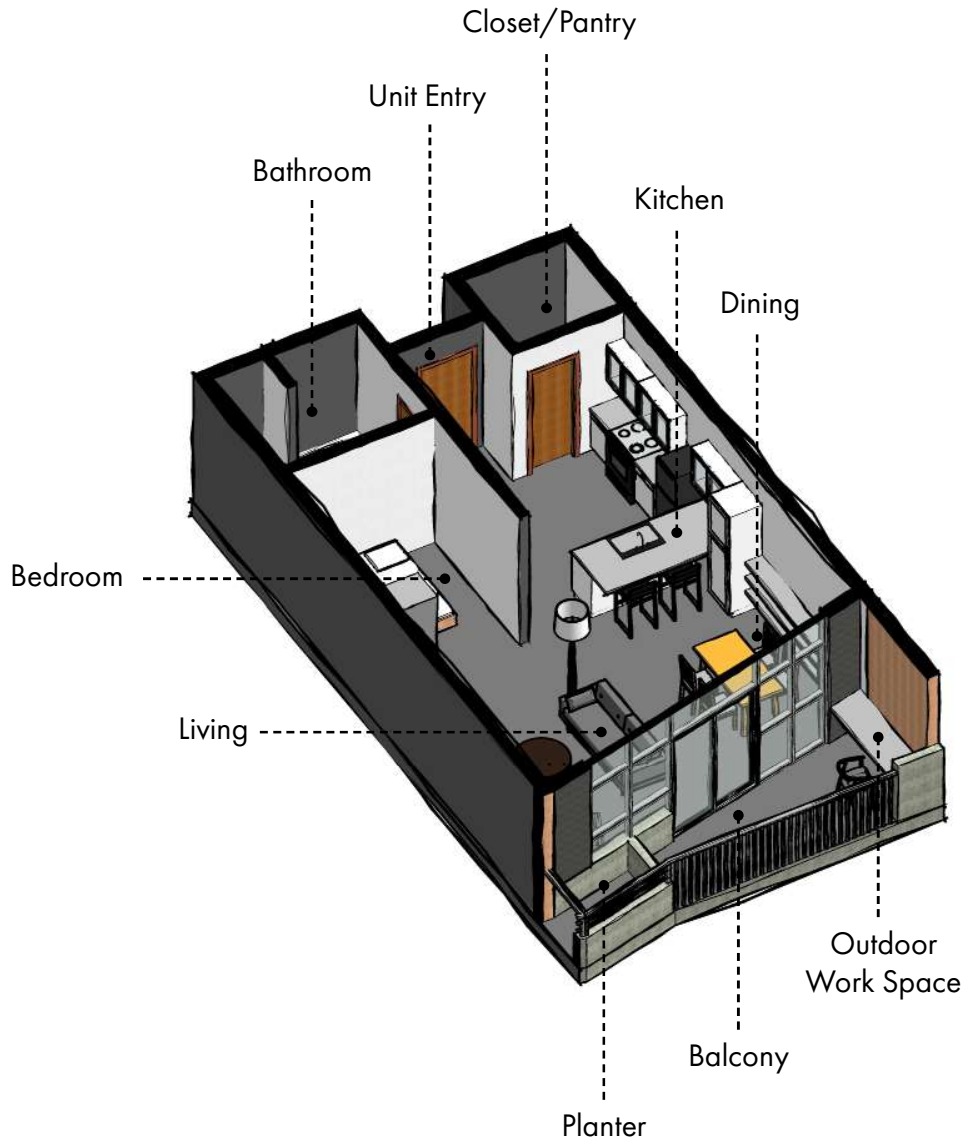
1 Bedroom: 18%

2 Bedroom: 45%

3 Bedroom: 23%

DWELLING A: STUDIO

3D Axonometric

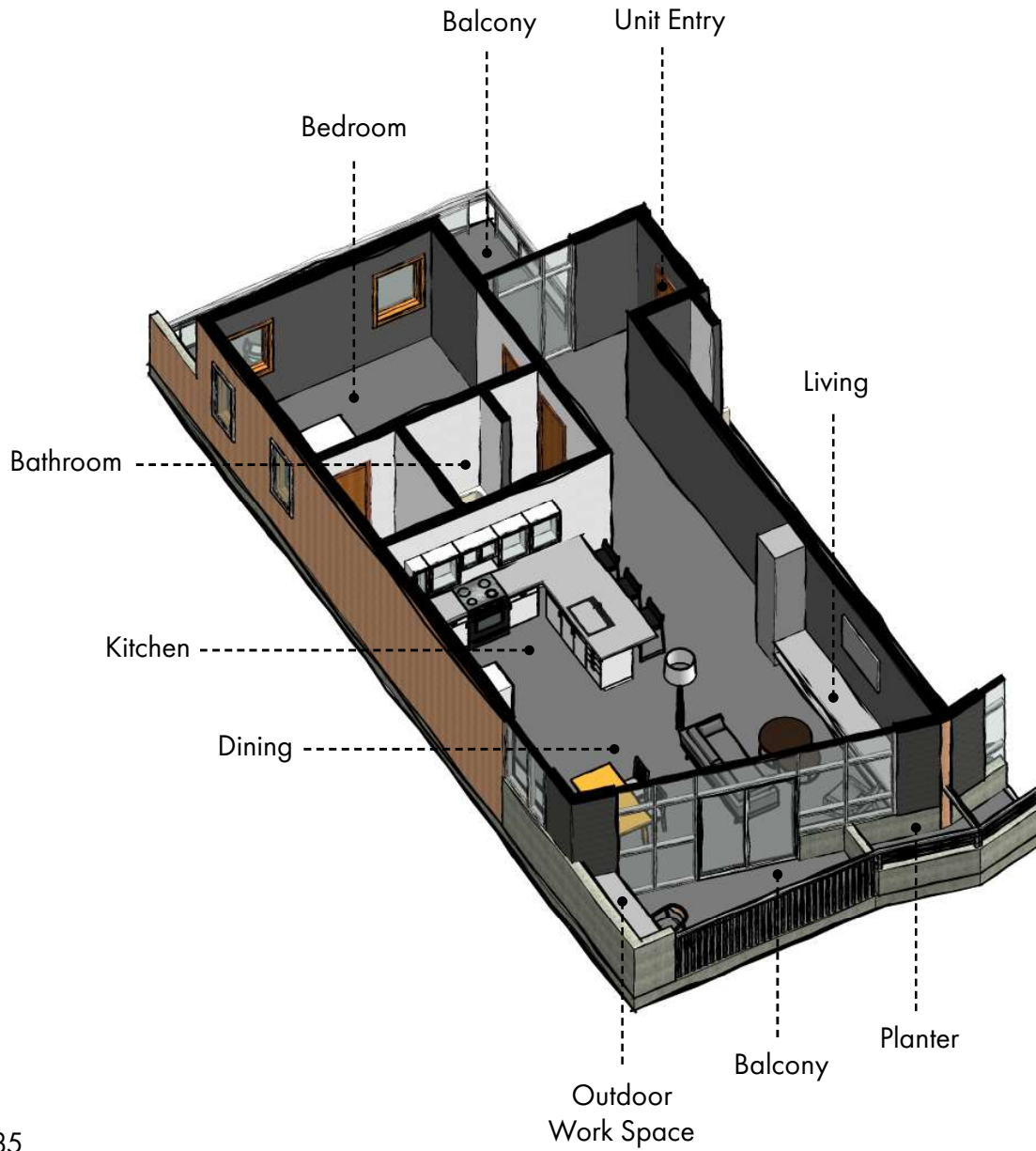


Interior Perspective



DWELLING B: 1 BEDROOM

3D Axonometric

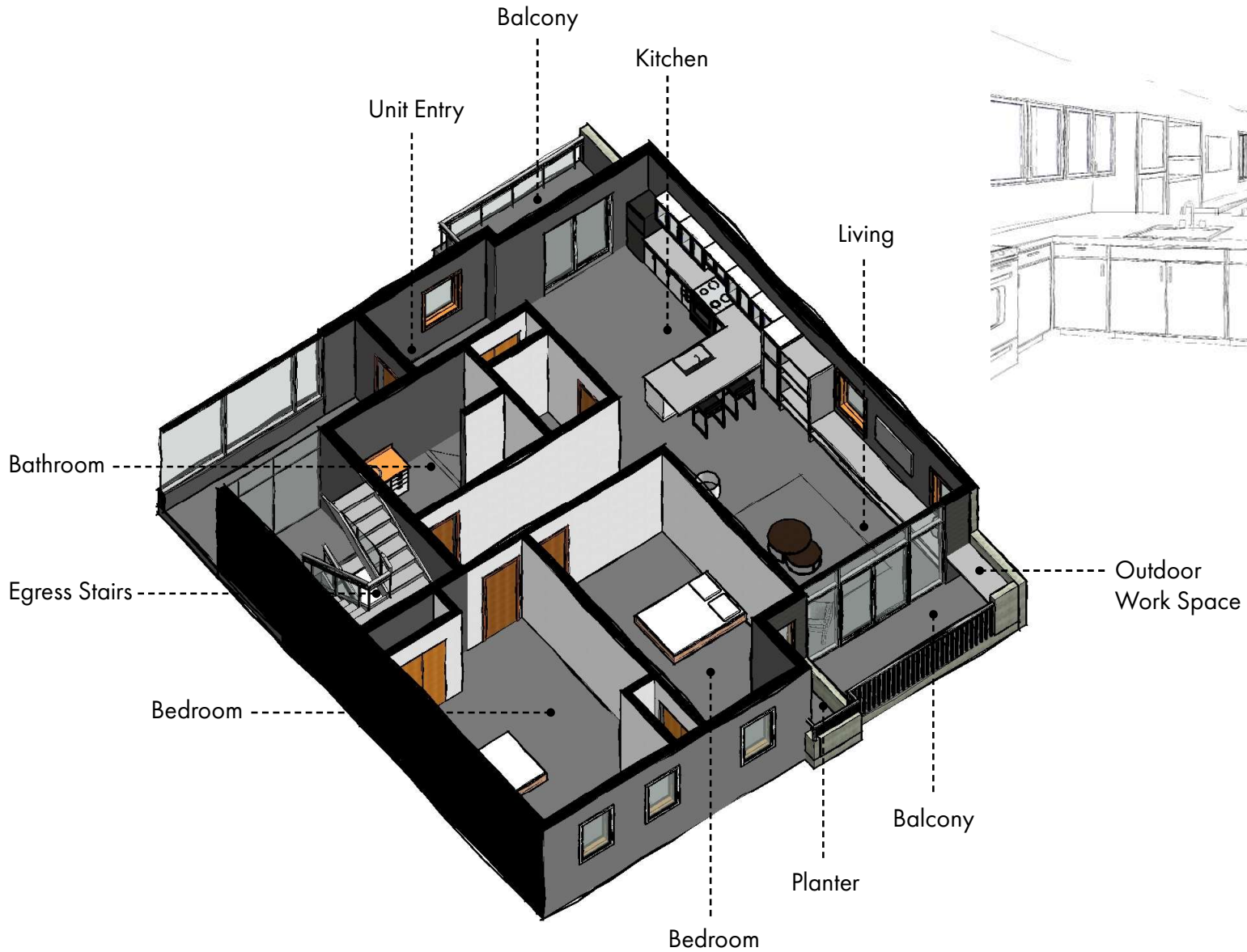


Interior Perspective

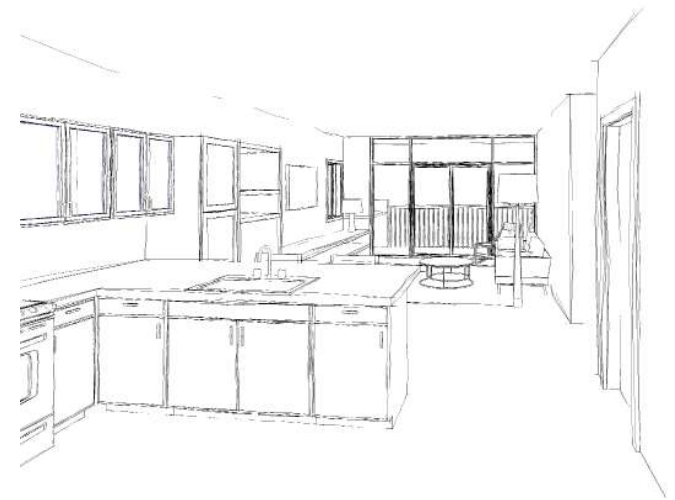


DWELLING C: 2 BEDROOM (Accessible)

3D Axonometric

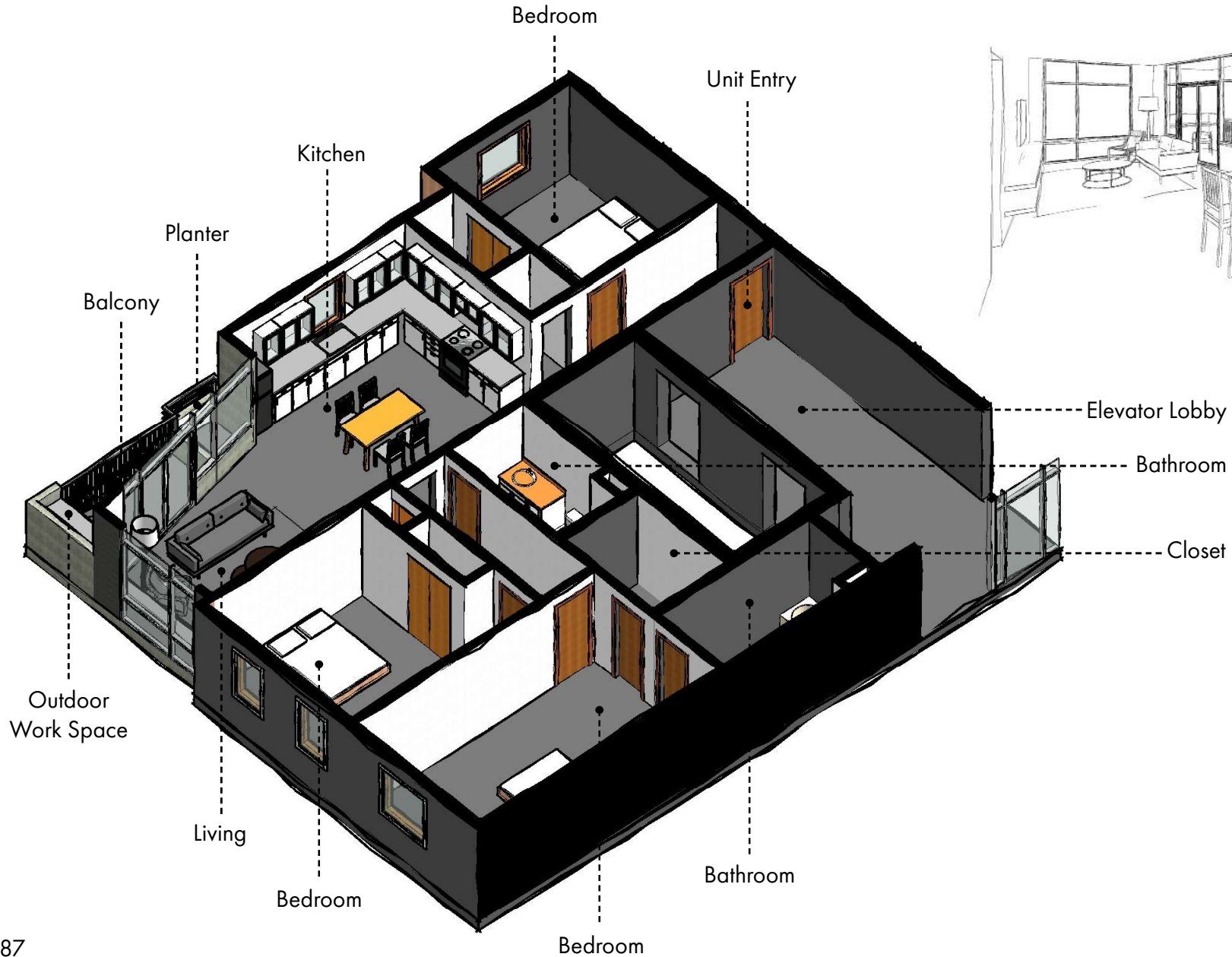


Interior Perspective



DWELLING D: 3 BEDROOM

3D Axonometric

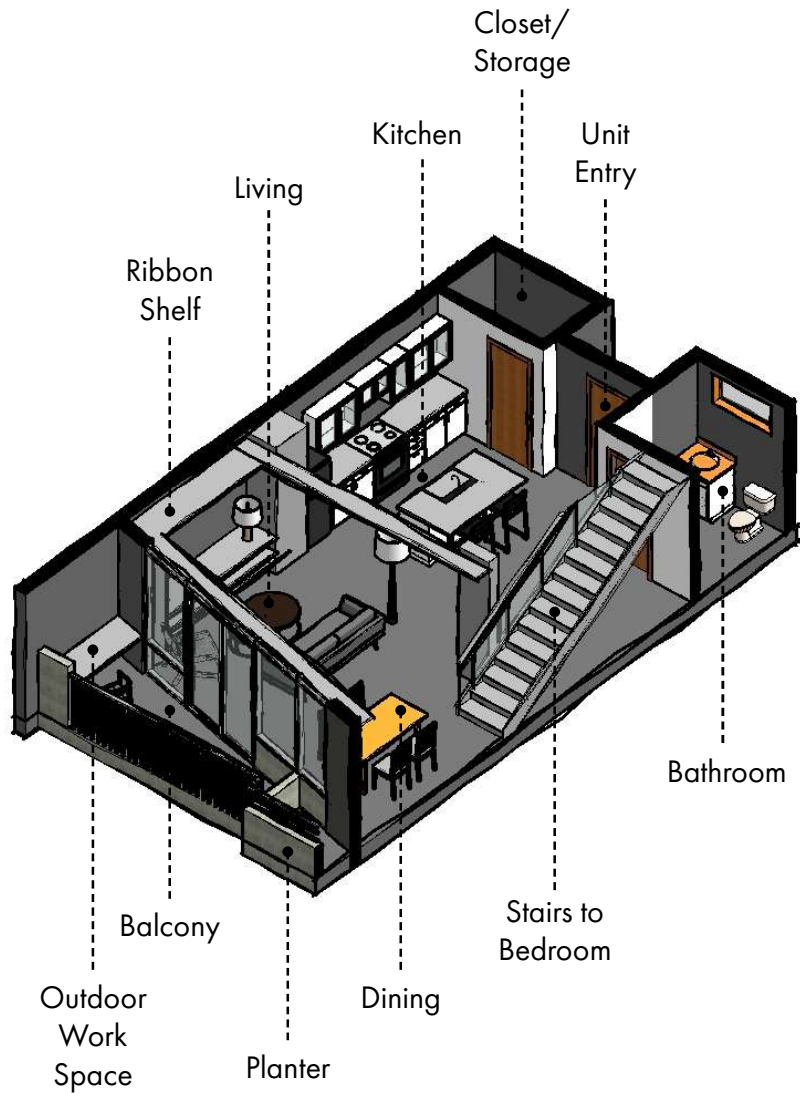


Interior Perspective

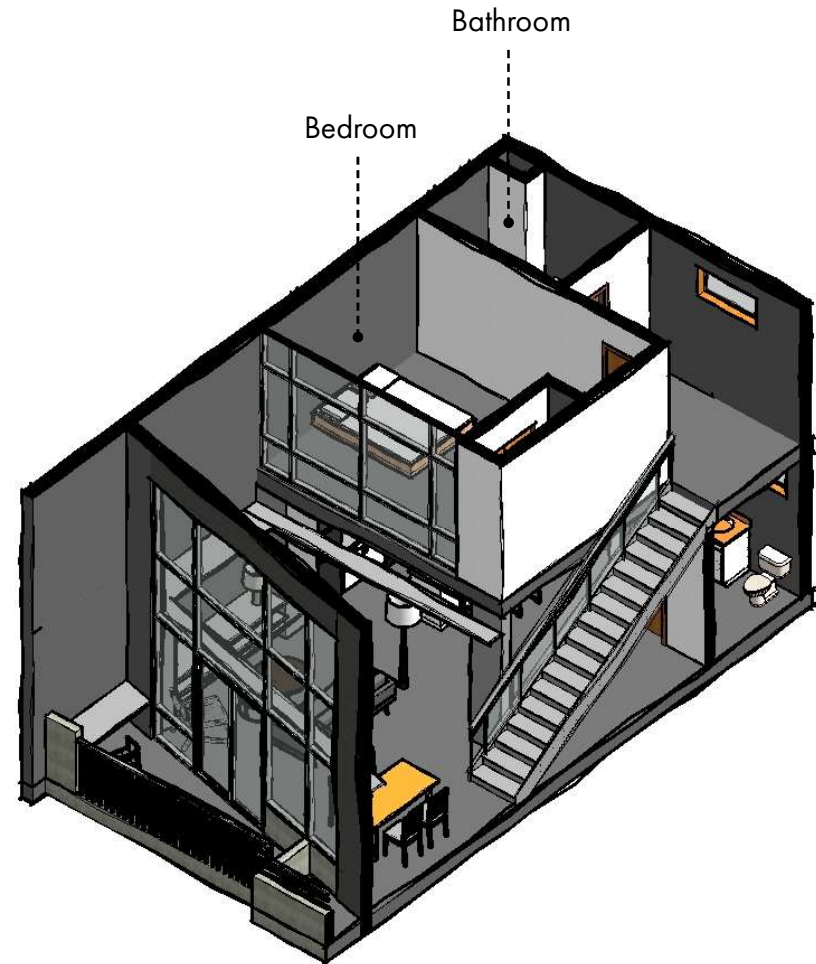


DWELLING E: 1 BEDROOM LOFTED

3D Axonometric - Lower Level

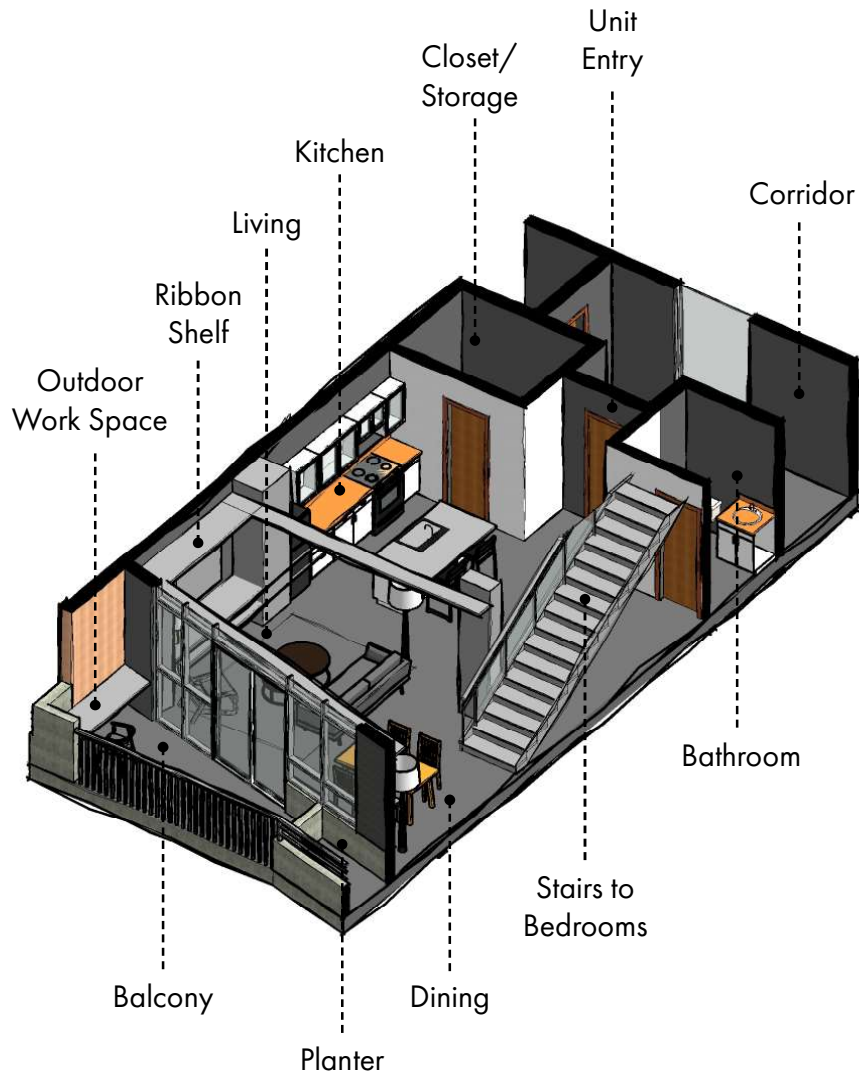


3D Axonometric - Upper Level

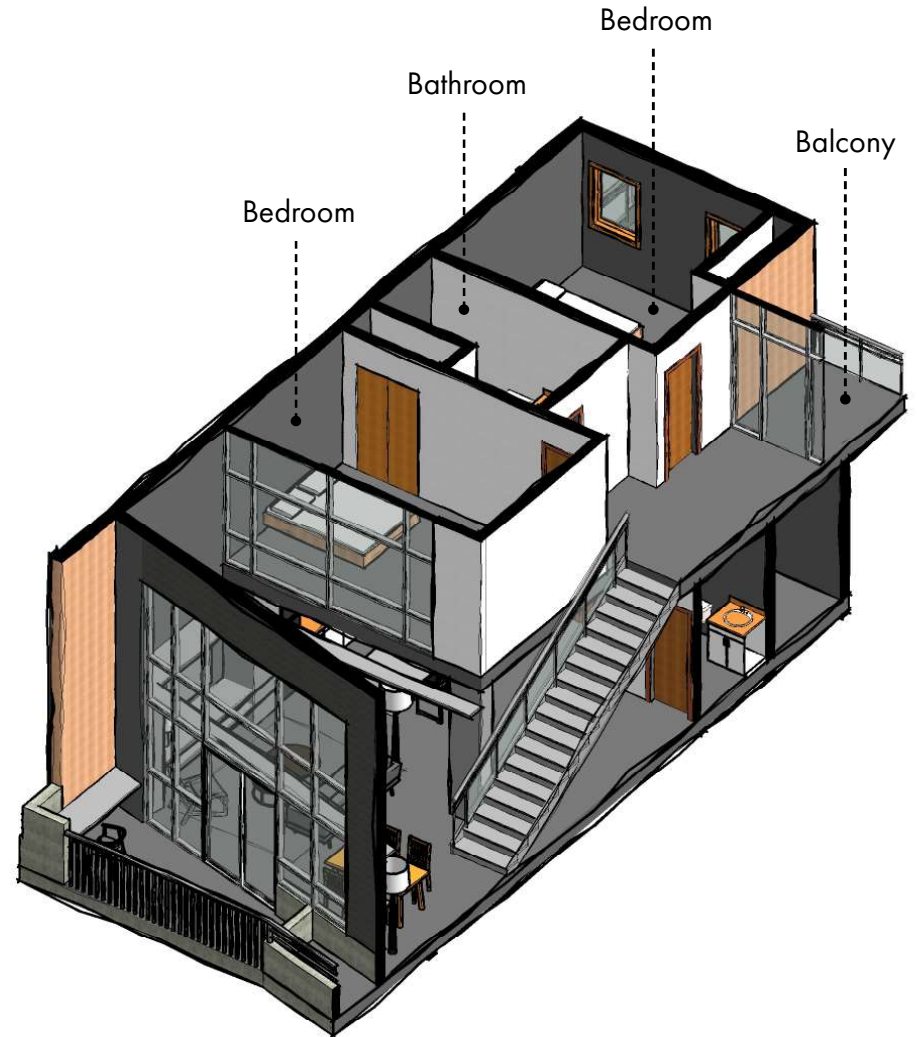


DWELLING F: 2 BEDROOM LOFTED

3D Axonometric - Lower Level

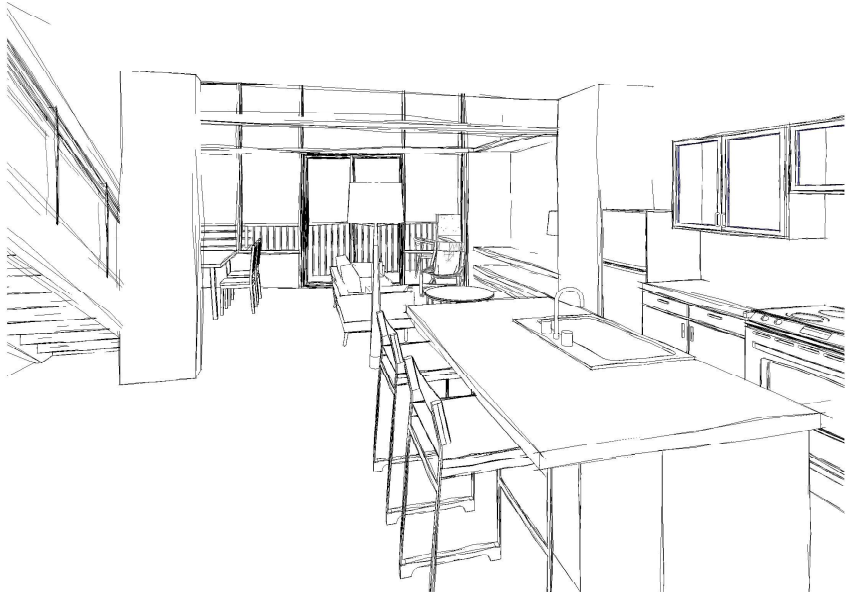


3D Axonometric - Upper Level



LOFTED UNITS

Interior Perspective

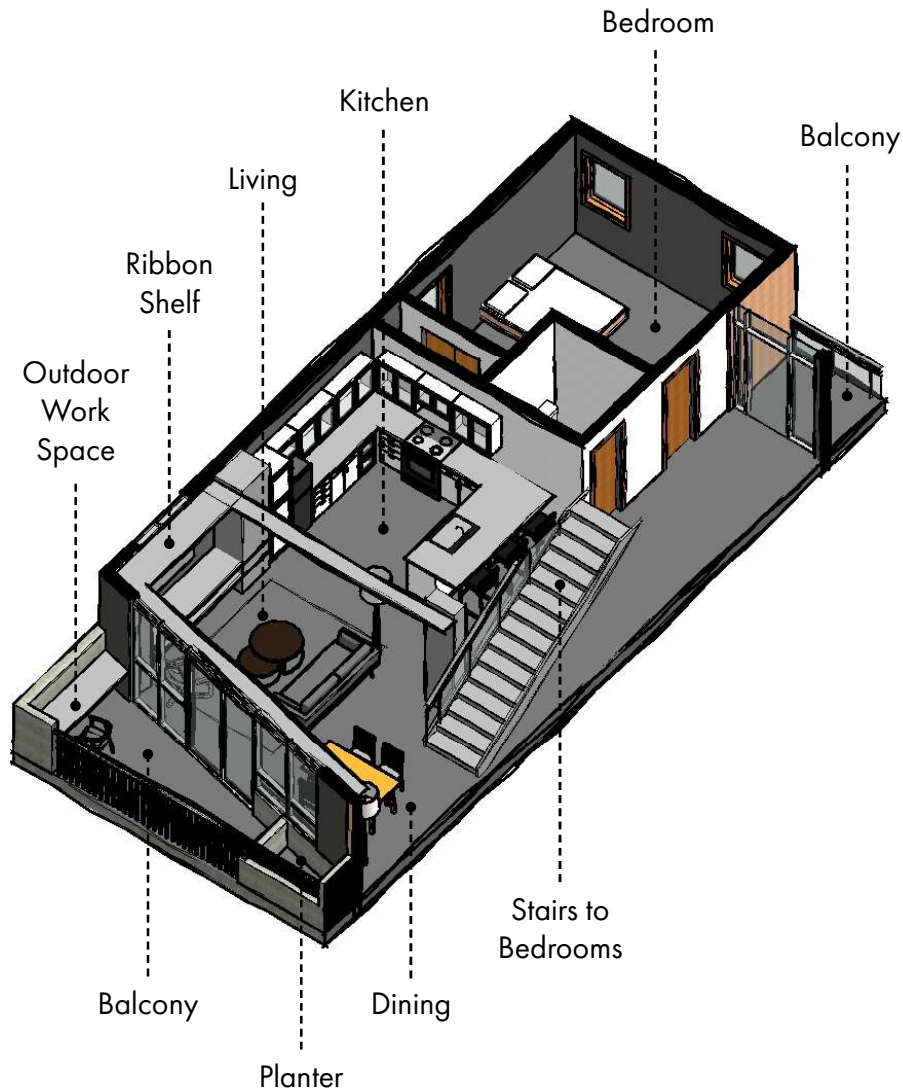


Unit Section

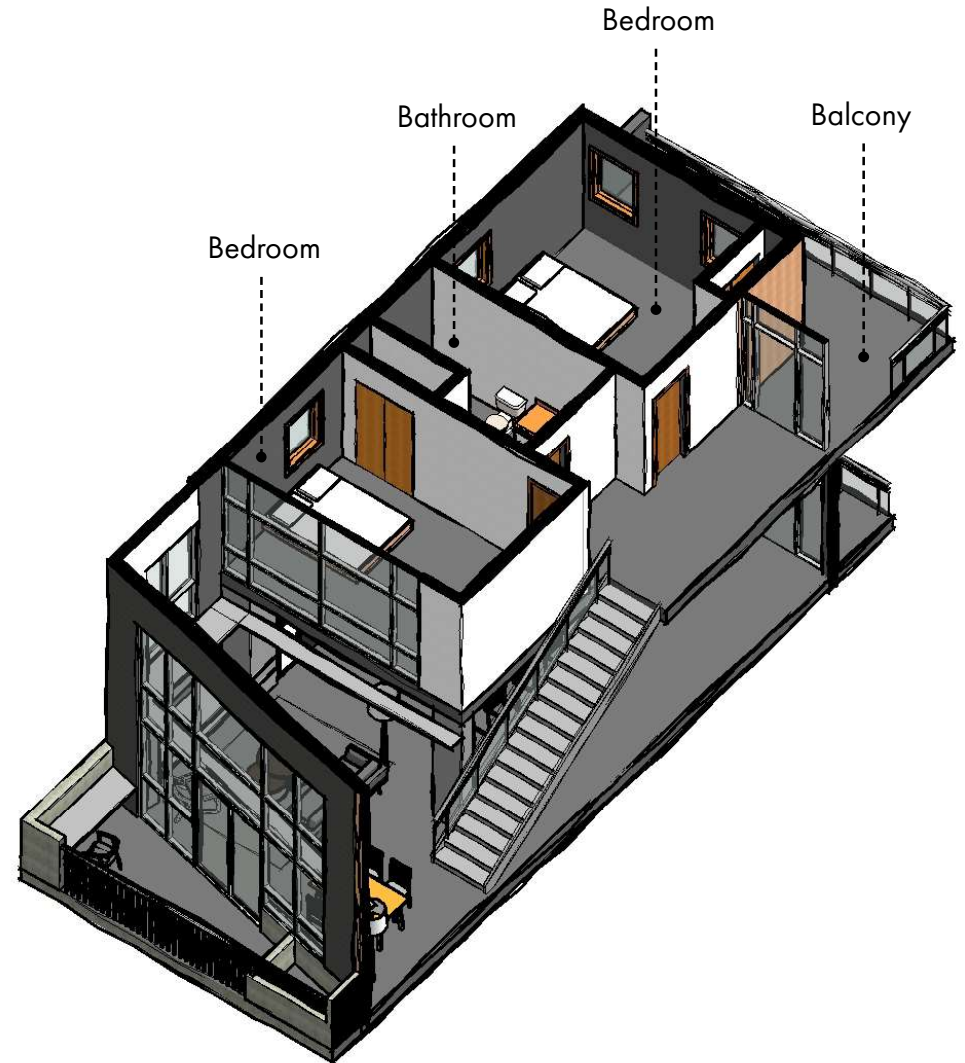


DWELLING G: 3 BEDROOM LOFTED

3D Axonometric (Lower Level Only)



3D Axonometric (Both Levels)



REFERENCES: Image Credits

Fig. 1: <https://www.history.com/topics/immigration/tenements>

Fig. 2: <https://www.timetoast.com/timelines/housing-and-related-legislation>

Fig. 3: <https://calisphere.org/item/ark:/28722/bk0000n7h0q/>

Fig. 4: <https://archeyes.com/crawford-manor-housing-elderly-paul-rudolph/>

Fig. 5: <https://washington.org/dc-neighborhoods/adams-morgan>

Fig. 6, 7: https://housing.dc.gov/sites/default/files/dc/sites/housingdc/page_content/attachments/Housing%20Equity%20Report%2010-15-19.pdf

Fig. 8, 9, 10: https://www.urban.org/sites/default/files/publication/100946/meeting_the_washington_regions_future_housing_needs.pdf

Fig. 11, 12, 13: <https://www.studio27arch.com/news/2020/05/07/7910/>

Fig. 14, 15, 16: <https://www.dezeen.com/2018/10/09/big-bjarke-ingels-affordable-housing-dortheavej-residence-copenhagen/>

Fig. 17, 18: <https://www.archilovers.com/stories/26927/iconic-houses-the-eames-house.html>

Fig. 19: <https://chicago.curbed.com/2017/10/25/16537730/hatchery-food-incubator-east-garfield-park>

Fig. 20: <https://www.cultivatethecity.com/h-st-farms-ws-jenks-son/>

Fig. 21: <https://uptopacres.com/index.html>

Fig. 22: <https://unionkitchen.com/>

Fig. 23: <https://admodc.org/history-of-adams-morgan/>

Fig. 24: <https://www.flickr.com/photos/22526649@N03/15054527037/>

Fig. 25: <https://www.holacultura.com/beforeafter-d-c-latino-history-in-photos/>

Fig. 26: <https://admodc.org/murals-in-adams-morgan/>

Fig. 27: <https://www.admoday.com/>

All other photos are taken or created by author.

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