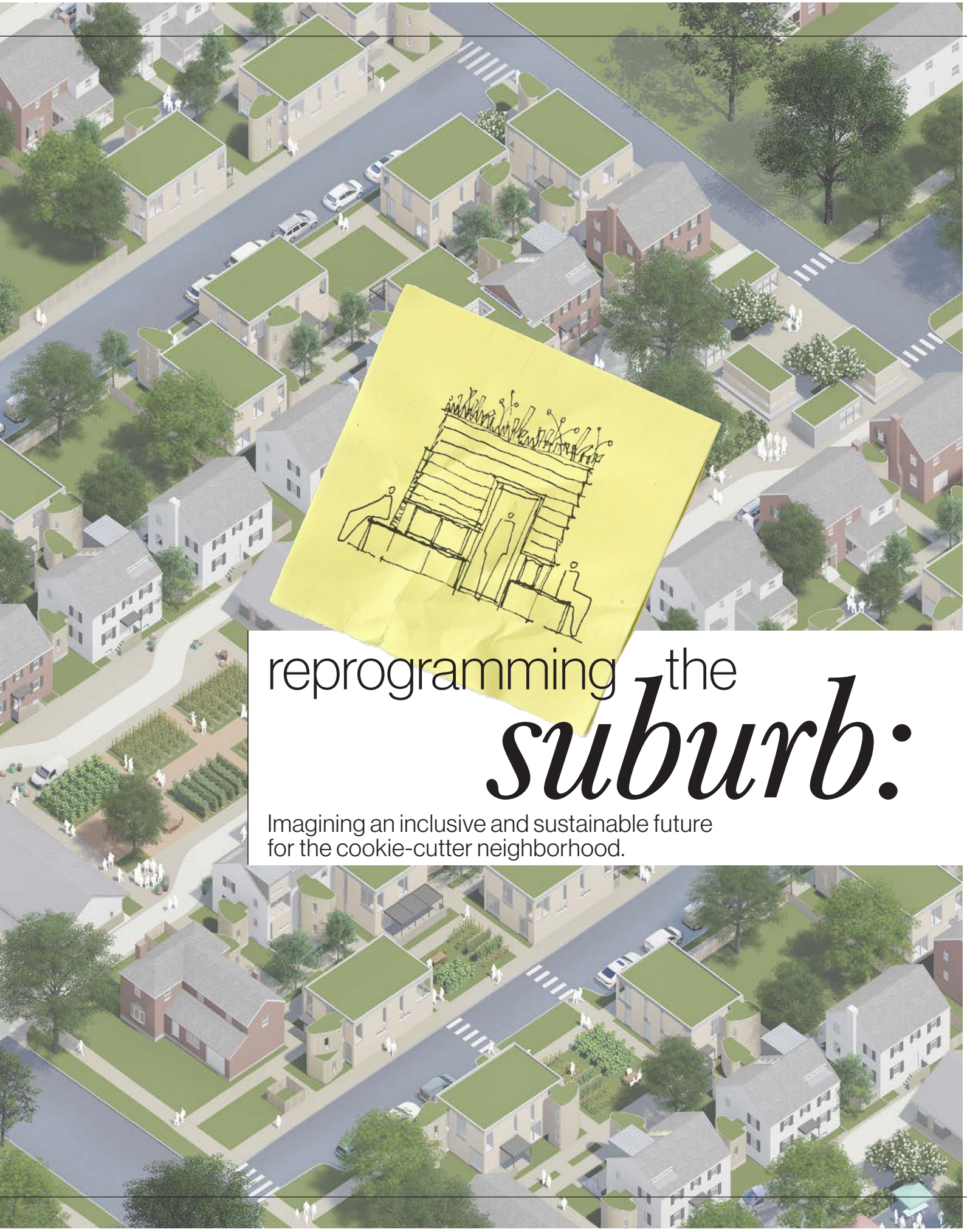

# reprogramming the *suburb:*

Imagining an inclusive and sustainable future for the cookie-cutter neighborhood.



# reprogramming the suburb:

## Imagining an inclusive and sustainable future for the cookie-cutter neighborhood.

Thomas Michael Mattson

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

_____
Kay Edge, Committee Chair

_____
Kathryn Clarke Albright, Committee Member

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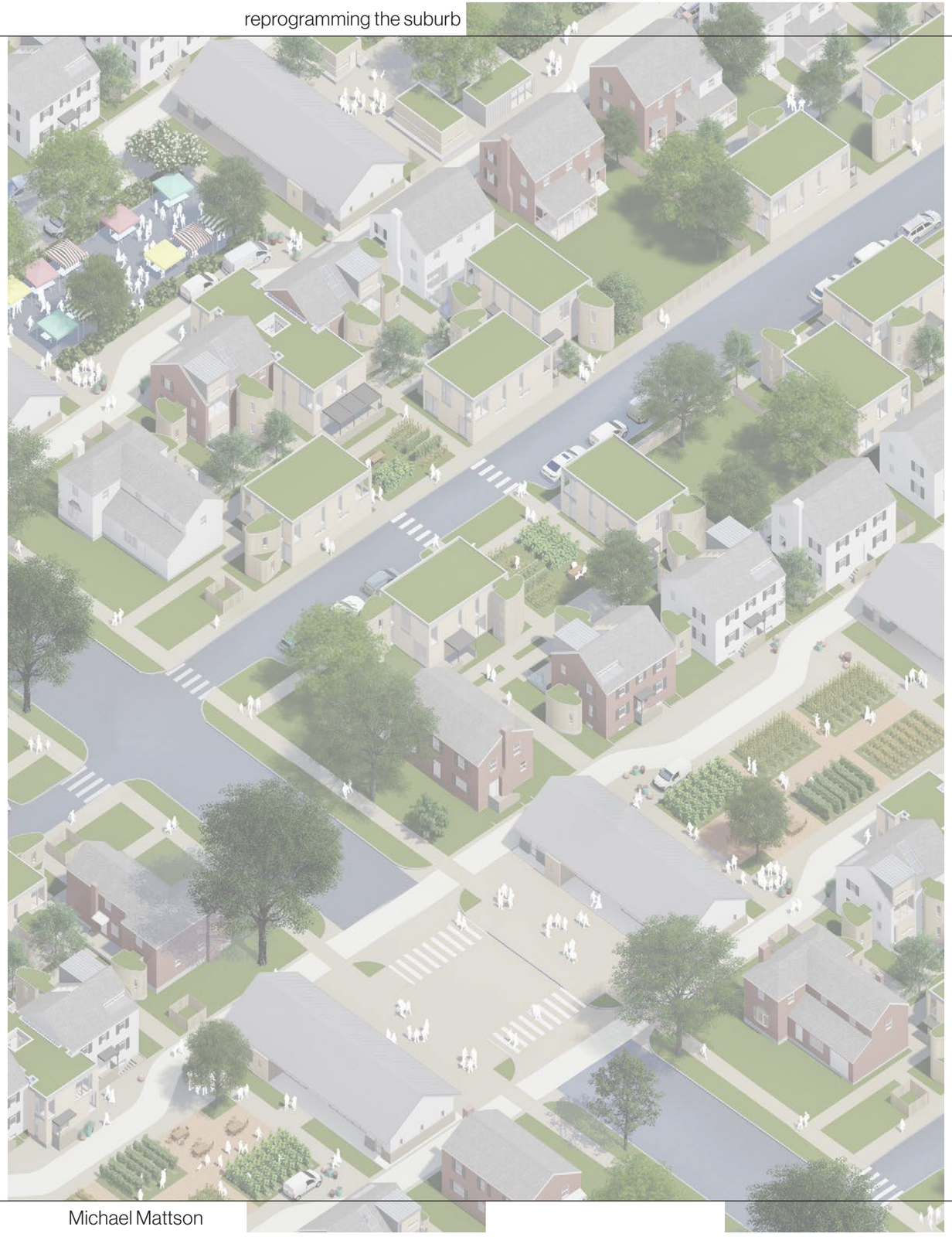
Sharone Tomer, Committee Member

Keywords: architecture, suburbia, suburban, sprawl, residential, cookie-cutter, housing, program



# reprogramming the suburb:

## Imagining an inclusive and sustainable future for the cookie-cutter neighborhood.

Thomas Michael Mattson

Abstract:

Housing shortages have plagued many large North American cities and urban areas over the last several decades. In many such regions, less affluent areas are rapidly redeveloped and densified to keep up with housing demand. This frenetic development displaces lower income residents and tears apart community networks. Meanwhile, affluent areas resist development, maintaining low densities despite their relative proximities to jobs, schools, transportation networks, and other resources. Consequently, patterns of inequality which have persisted in American Cities for decades, if not centuries, remain intact. Furthermore, these low-density areas contribute to sprawl, car culture, habitat destruction, and other harmful social and environmental phenomena. *Additionally*, many of the low density urban and suburban residential neighborhoods which were developed en masse over the last century–so-called 'cookie-cutter' neighborhoods–fail to readily accommodate the diverse and ever-changing needs and circumstances of the people who currently inhabit them, having been built with outdated and inflexible notions of the 20th century ideal family in mind.

This thesis explores the redevelopment of a single family residential neighborhood in Washington, D.C. By exploring the densification of the neighborhood and the addition of new programs to the suburban landscape, the thesis seeks to identify strategies by which we might one day convert massive and sprawling cookie-cutter suburbs into denser, more sustainable, and more diverse neighborhoods which serve a wider array of residents better while contributing additional housing and other resources to the broader population.

# reprogramming the suburb:

## Imagining an inclusive and sustainable future for the cookie-cutter neighborhood.

Thomas Michael Mattson

General Audience Abstract:

The American obsession with single-family homeownership in the name of the 'American Dream' has led to the development of an unsustainable landscape characterized by the extreme stratification of land uses, widespread overdependence on the personal vehicle, and the continued issue of equal access to community assets and services, among many other issues. Furthermore, many extant suburban landscapes were designed with outdated and inflexible notions of the ideal family in mind, and thus they fail to meet the needs of families and individuals who don't conform to the typical family model of the 20th century.

The thesis takes the stance that the 'American Dream' is an outdated ideal, and that the American suburb is, by extension, an outdated model of living in the 21st century. The thesis investigates the reprogramming of an affluent single family residential neighborhood in Washington, D.C, proposing the densification of the housing stock and exploring new urban forms which aim to build density, diversity, sustainability, and community in an existing suburban-type neighborhood,

# Dedications:

To Nora, for your endless faith in my abilities and for all the confidence you've given me.

To Claire, for putting a smile on my face all the way from Milwaukee.

To David, for all the effort you've put into the Navy Greene Colleagues' weekly meetings.

To Lala, for your advice, feedback and support.

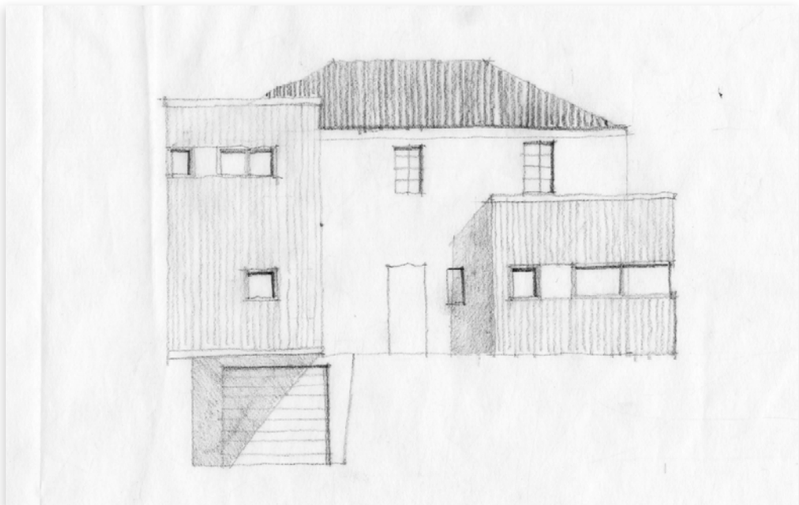
To Julia, for encouraging me to do right by myself.

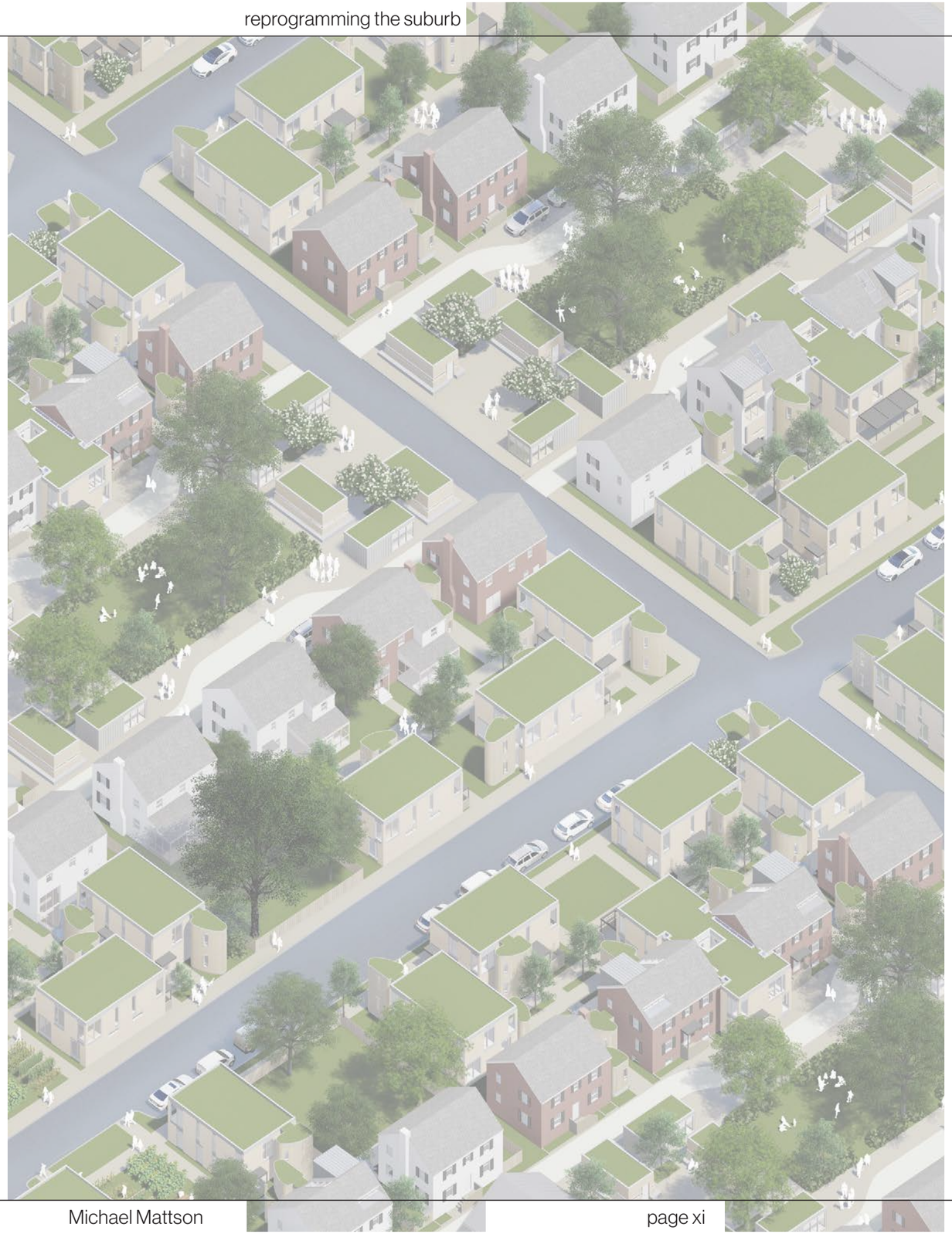
To Rick and Kathy, for your never-ending support and encouragement.

To Courtney - for inspiring me to try my hardest; for being my role model over the last 24 years.

# Acknowledgments:

Sharone Tomer, Kathryn Clarke Albright, Kay Edge, and Margarita McGrath: Thank you so much for your guidance, support, and feedback over the course of this past year. When I first started this thesis, I imagined I might design a simple apartment complex. Thank you so much for helping me to expand my sights, and with it, the scope of this thesis. You've teased out new questions, given me countless new threads to explore, and helped me to make sense of my own drawings and ideas time and time again.





# Table of Contents

# introduction & *context*

*The exponential growth of the US single family home*

While the American suburbs are generally becoming denser, the average newly-built single family home has consistently gotten bigger since the development of the first modern suburbs in the interwar period of the 1920s, and the subsequent explosion of the suburbs in the post-war period of the 1940s. In 1950, the average newly-built suburban house contained two bedrooms and one bathroom in an area of 983 square feet, just meeting the minimum building standards prescribed by the Federal Housing Administration (Nicolaides & Wiese, 2017). As the post-war economy soared and the 'baby boom' of the 50s ramped up, increasingly-affluent American suburbanites expected–and perhaps, were primed to expect–more space for their growing families. And so, new-builds grew bigger and more complex in appearance. By end of the 50s, a typical new-build home might be as large as 1,400 square feet (1,283 square feet was the average), with three bedrooms and as many as two-and-a-half bathrooms (Hayden, 1984, 185). The enlargement trend continued each decade, until by 2015, the average newly-built single-family house was 2,657 square feet–nearly 300 percent larger than the post-war suburban houses of the 40s. Today, nearly half of new builds feature four or more bedrooms, and more than a third feature three or more full baths. (US Department of Commerce, 2016; Qualman, 2018).

*Below: Neighborhood-Scale Axon. Preview of final proposal*

*Who could benefit from a reprogramming of the suburbs?*

Nowadays, middle class suburban Americans have more living space per capita than ever before. Certainly, this abundance of living space serves many people well -- large families, entertainers, and those who work from home full or part time in the wake of the pandemic no doubt make good use of ad-hoc drawing room-turned-offices, multiple guest bedrooms, basement entertainment centers, and so on.

Of course, this abundance of space does not serve everyone so well. Elderly populations in particular have a troubled relationship to suburban landscapes and houses. As we age, and as our faculties, physical abilities, and mobilities diminish, carrying on living in the suburbs can become quite difficult. Especially in multi-story houses, like those which characterize much of American University Park, physical mobility can be an issue. In the typical American University Park house, for example, neither the bathrooms nor the sleeping quarters are located on the ground floor--thoroughly inaccessible to those with limited mobility. Furthermore, as the act of leaving the home and journeying into the public realm beyond the suburban neighborhood becomes more arduous, aging folks may also find themselves cut off from the outside world, heightening senses of isolation.

Elderly folks are not the only group who aren't always well served by suburbia. Other adults with older children may also find themselves with too much space on their hands once they become aptly-named 'empty nesters.' Single parents might also find the maintenance of a house and property to be an undue burden, having no one to share in the responsibility with, presuming they can pay the mortgage with one salary (Hayden, 1984). The list goes on.

Additionally, many people might benefit from the compartition of the single family home, and with the reprogramming of suburbia, from the opportunity to live, work, play, socialize, etc., in the suburbs. Especially in American University Park and other upper class inner-ring single family residential neighborhoods, which are unique in that they remain extremely low-density despite their close proximities to well-established resource networks, the reprogramming and densification of the neighborhood would offer more people access to the existing resource networks in these affluent neighborhoods. American University students might find rental opportunities within walking distance of school. Elderly folks desiring to age in place might benefit from the social aspect of multi-family living, and potentially from an additional income stream if their new neighbors pay them rent. Young or single-parent families would be able to send their children to the better-performing and best-funded schools in the city (Perez, 2020) while taking advantage of robust public transportation networks to get to and from work in the city center or even in Montgomery County.

# Precedents

*Past efforts to develop denser & more productive residential landscapes*

I am certainly not the first person to take issue with the American suburban landscape. Suburbia has, it would seem, been quite the controversial topic in American planning discourse over the course of the last half-century. Planners and activists opposed to sprawl have decried the suburb as a blight on American society - an unsustainable landscape which destroys local ecosystems, contributes disproportionately to global climate change, and perpetuates widespread class segregation and inequality. Indeed, as long as the modern suburb has existed, group of planners and architects have been advocating for denser, healthier, more sustainable alternatives. A small sample of projects and movements which have, in one way or another, contributed to this discourse (and inspired my own work) are discussed here.

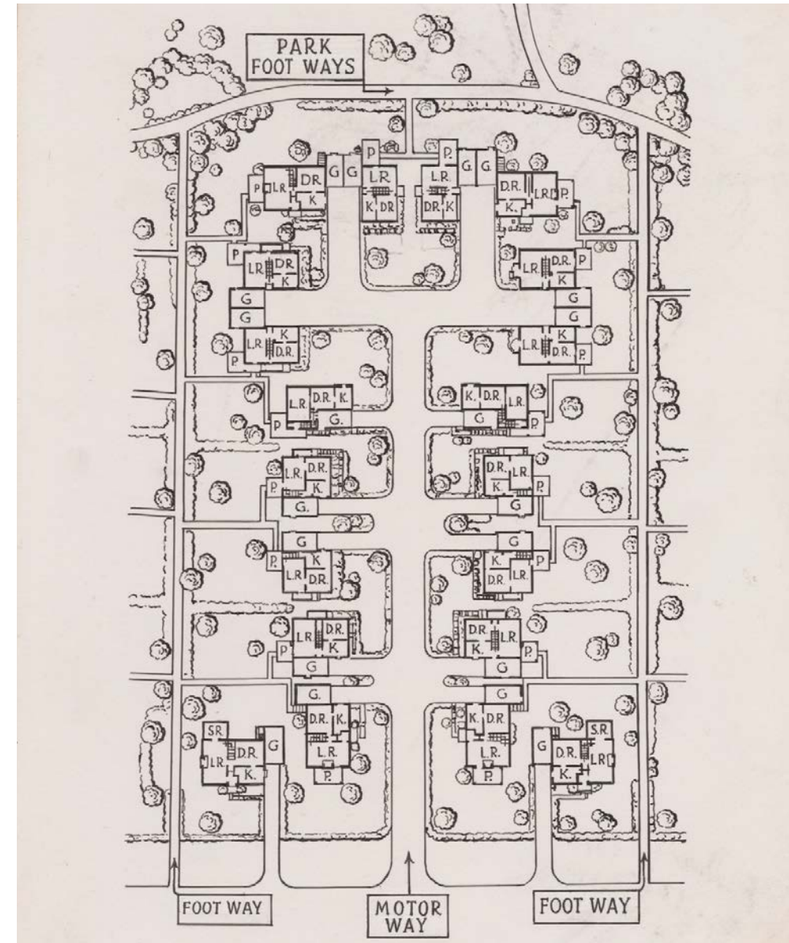



*Image 1*

# Radburn, NJ.

Radburn, New Jersey, designed by Clarence Stein and Henry Wright in the late 1920s, proposed novel patterns of pedestrian and automobile circulation. Cul-de-sac capped streets are proposed to eliminate through-traffic in neighborhoods, creating an explicit hierarchy of local and collector streets. (This development could be said to encourage sprawl, as collector streets with few intersections and interruptions were sized for increased traffic flow, encouraged fast car travel) (Rowe, 1991). Of real interest here is the integration of private outdoor spaces, semi-private shared walkways, semi-public pedestrian corridors, and public parklands into one coherent network of pedestrian-oriented space.

*Above: Plan view of a cul-de-sac street in the planned suburb of Radburn, New Jersey, designed by Clarence Stein and Henry Wright in 1928. A medley of duplexes and single family houses rest on private lots along a private drive. An extensive network of walkways connect private yards to semi-public walking trails, which let out into a public park system.*

Image 2

# Seaside, FL.

New Urbanism flourished in the 1980s. The movement's supporters rally against the hypersegregation of land uses which has come to characterize the suburban landscape as a result of decades of car-centric planning practices. The New Urbanists advocate for the development of denser mixed-use communities that rely upon low rise urban settlement patterns. An emphasis is placed on the development of walkable neighborhoods and the creation of public realms and spaces that lend themselves to fruitful social interactions between neighbors and other community members (Rowe, 1991). New Urbanist towns are often criticized for performing like standard suburban developments and failing to effect any major changes in the lifestyles or behaviors of residents when compared to residents of traditional suburban developments. Furthermore, though the new urbanists advocate for denser living, most of the land in New Urbanist towns like Seaside is given over to low density single-family housing, resulting in population densities not much higher than those in traditional suburban sprawl (Bruegmann, 2005).

*Above: Seaside, Florida, designed by Elizabeth Plater Zyberg and Andres Duany, is a classic example of New Urbanism.*

Image 3

# The Woonerf

The woonerf, originally developed across cities in the Netherlands, is a living street, where the traditional streetscape is redesigned to elevate the needs and comfort of the pedestrian over the demands of car travel. Specifically, woonerfs were developed to turn alleys and minor urban residential streets into social places, where children from the block could play safely and other residents could enjoy walking in. Typically installed in urban conditions like alleys, woonerfs are designed in order to slow down car traffic. Lanes of car travel in the woonerf are disrupted by platers and crosswalks, forcing cars to weave and keeping speeds low. The planters help in beautifying the streetscape, priming it for heavy pedestrian use. Changes in pavement color rather than elevated curbs distinguish areas suitable for car travel from areas reserved solely for pedestrian use (Royal Dutch Touring Club, 1978).

*Above: Woonerf in a Dutch city. The woonerf is designed to accommodate the pedestrian over the car.*

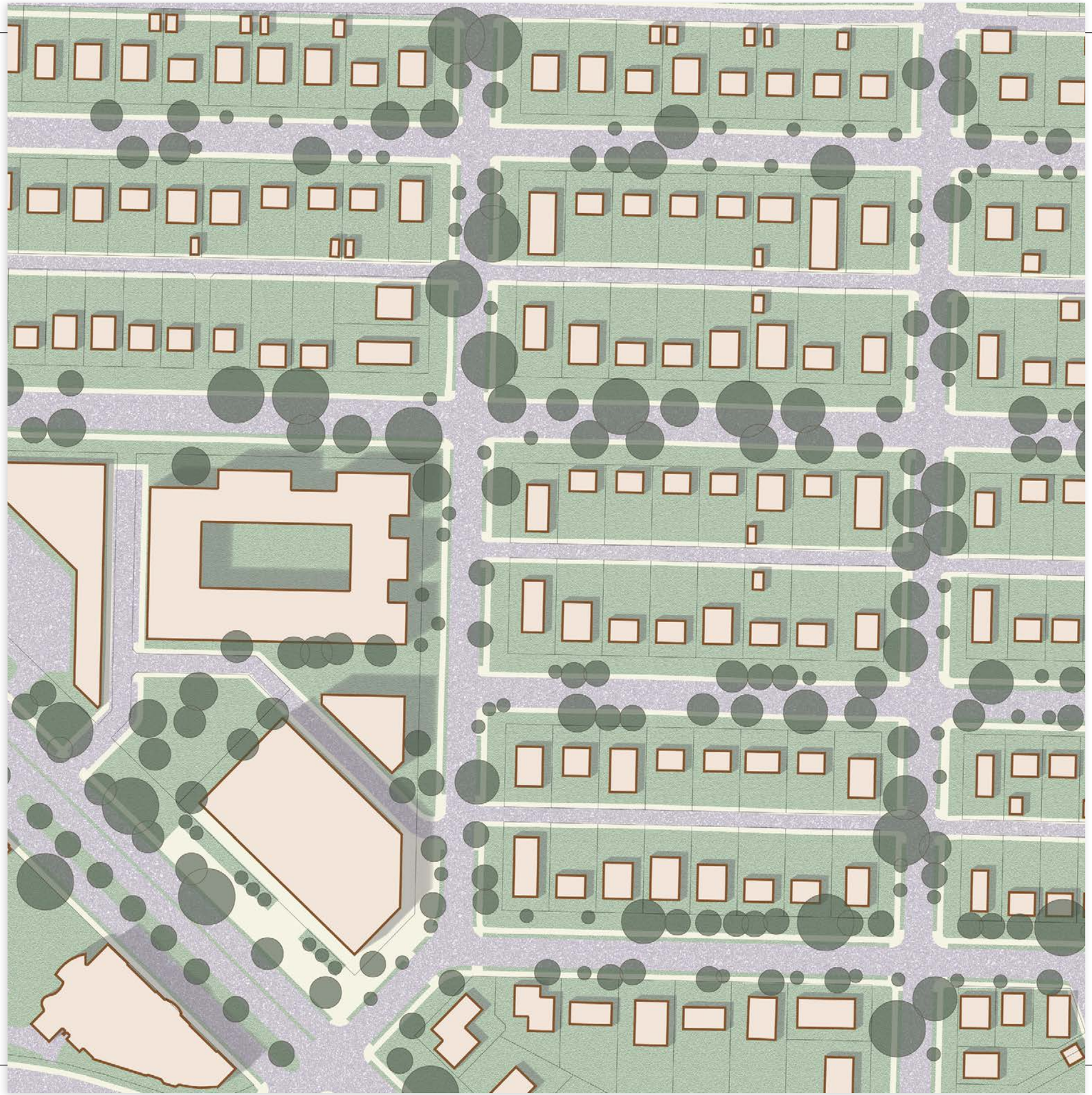
# site *analysis*

*History and urban character of American University Park*

Washington DC, like many of the land-constrained cities in the country, is in the midst of a housing shortage. In a few neighborhoods within the city's Southeast and Southwest quadrants, including Navy Yard, Southwest, Douglass, and Barry Farm, frenetic development efforts have attempted to satisfy the city's need for housing (and more critically, affordable housing). Though they provide critical additions to the city's housing stock, these developments are not enough - the city has only added a paltry 3,800 affordable housing units to its housing stock, a disappointing 30% of the 12,000 unit goal developed by the city's leaders in 2018. (Office of the Deputy Mayor, n.d.) Furthermore, the condemnation of large housing estates and the subsequent concentrated development of affordable housing in the southeastern region of the city - particularly in those communities east of the Anacostia river - is quietly sustaining the patterns of segregation which developed in the city toward the end of the 19th century (Goggin, 2019).

As lower-income neighborhoods and housing estates are supplanted by mixed-income developments in Southeast Washington, a very different picture prevails on the opposite side of the city. West of the Anacostia and north of the National Mall, the tree-lined streets and verdant blocks of Washington's affluent Northwest quadrant remain in near-total slumber. The neighborhoods of the Northwest quadrant - Chevy Chase, Palisades, and American University Park, among others - have remained virtually unchanged for nearly a century, since they first sprang up from the rolling fields that blanketed North Washington until the beginning of the 1900s. In these sprawling neighborhoods, generously-sized single family homes preside over lush lawns and wooded backyards, exemplifying the suburban American Dream.

*Right, Neighborhood plan, American University Park, existing conditions*



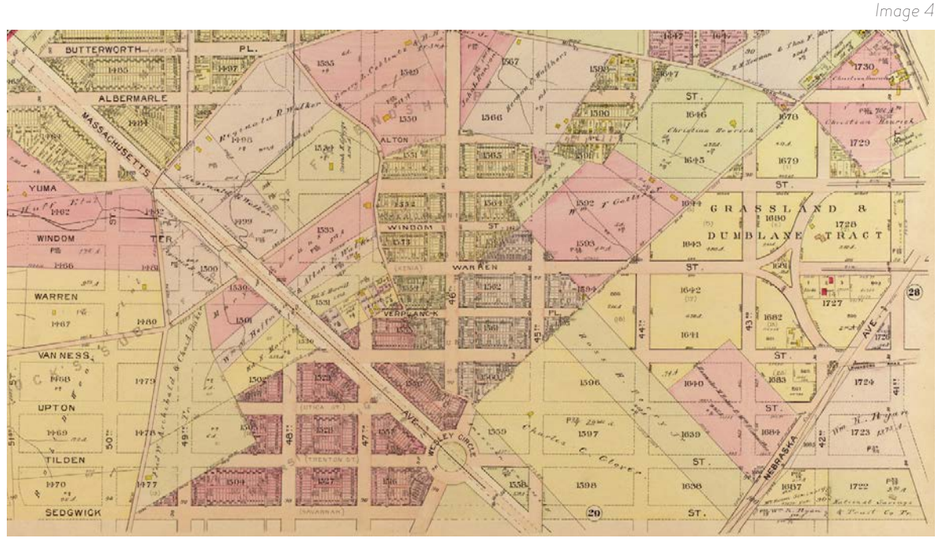
# Development of AUP

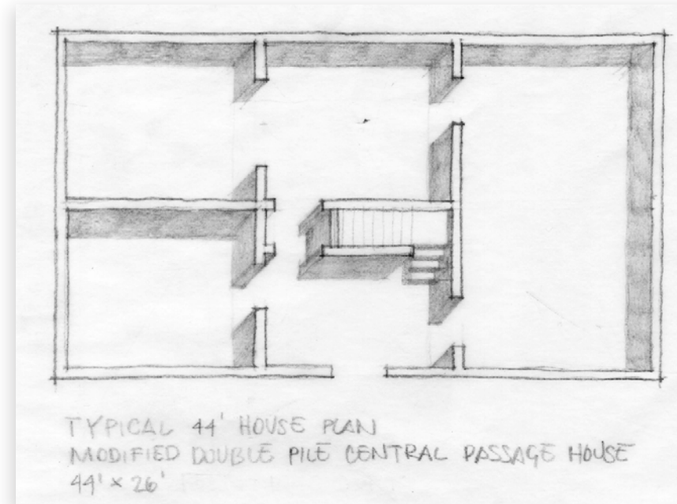
*Change (or lack thereof) over time*

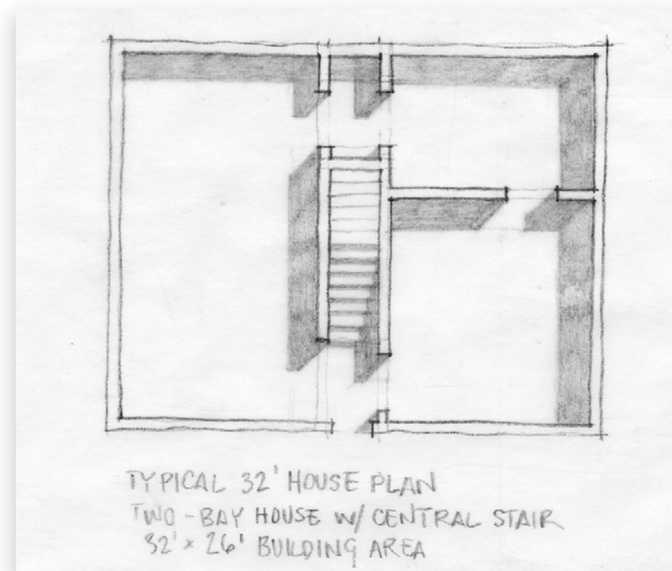
American University Park was platted at the turn of the 19th century. However, significant development did not occur until the 1920s and 30s, during the interwar period. Single family houses built during this time period were generally much smaller than contemporary single family houses, but the houses of American University Park are an exception: the earliest-built mass produced colonial models, which are still present in the neighborhood today, generally appear to fall between 1,850 and 2,650 square feet - 70% to 100% of the size of the average newly-built single family home in 2015 (US Department of Commerce, 2016), and no less than double the size of the average single family home constructed in 1950. The neighborhood looks virtually the same today as it would have in 1930, although probably the housing stock is slightly less uniform today as houses have been replaced and as empty lots have been filled in over the years. The fringes of the neighborhood - around the commercial corridors - have been built up substantially, but development within the neighborhood occurs in very small increments - typically as expansions to primary residences - as affluent homeowners decide to expand their own two- and three-thousand square foot homes.

*Below: The 1903 Baist Map of American University Park reveals how the neighborhood was stitched together from large tracts of sparsely populated or vacant land. The plan depicted in this map - existing roads and lots drawn in single strokes and planned roads shown with dotted lines - remains virtually the same today.*

*Image 4*

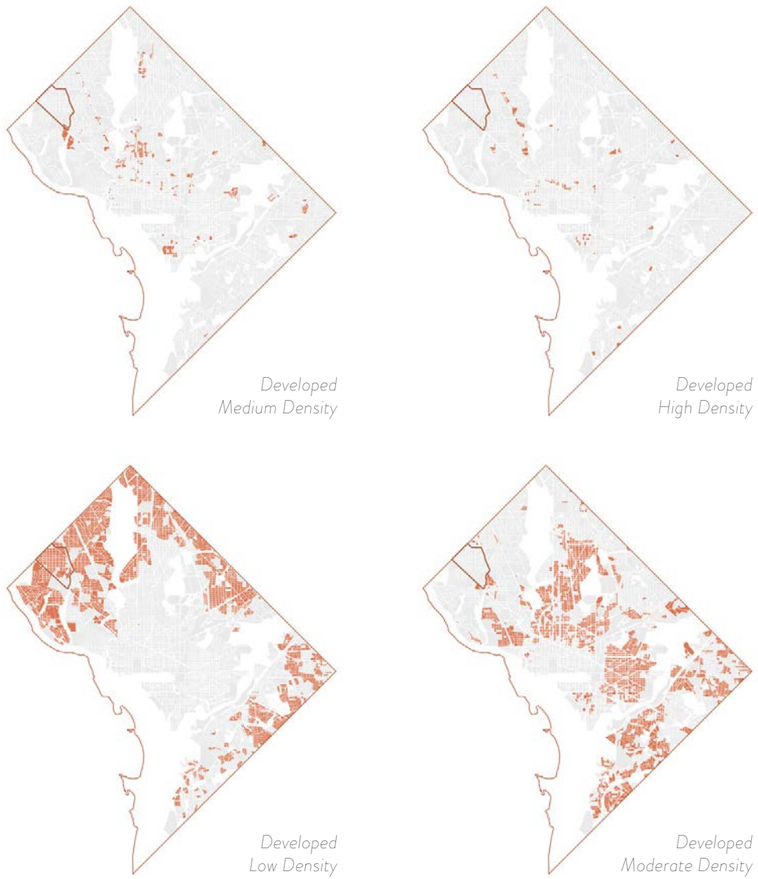



The majority of the houses in American University Park feature Georgian plans. Two common forms found in the neighborhood are diagrammed above. The larger of the two variations is double-pile and three full bays, with a spacious front stair hall and five rooms per floor (the rear half of the center bay being given over to a dining room on the ground floor). The smaller of the two schemes, which appears to be more common than the larger, is a double-pile house with a central stair but no passage forming a diminished center bay.

*Above: Ground floor plans for two types of cookie-cutter houses found in great quantities in American University Park.*




*Distribution of Low, Moderate, Medium, and High Density R-Zoned areas in Washington DC. (Map data provided by the DC Office of Zoning).*


*Distribution of developed land by coverage intensity for R-zoned areas of Washington DC [Map data provided by the Multi-Resolution Land Characteristics (MRLC) Consortium].*

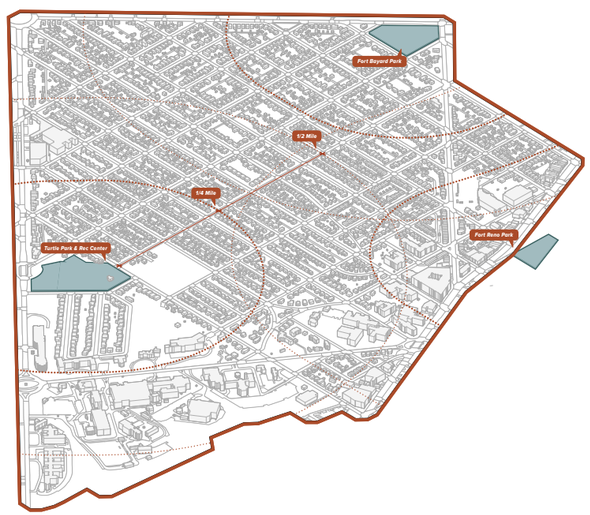
# Land Cover / Zoning

*Discrepancies in residential development densities across-Washington, D.C.*

Many of the neighborhoods which make up Northwestern DC were platted at the turn of the 20th century, but were not built up until the interwar period of the 20s and 30s. These neighborhoods were intended to be among the finest in the city, and for the first half of the 20th century, they were racially exclusive (Goggin, 2019; Shoenfeld, 2019). Exclusivity, though no longer overtly racist in nature, is still effected through current zoning regulations (Goggin, 2019). Most of the R-zoned areas of Northwest DC are R-1-A or R-1-B, or some other specialty R-zone. These are the lowest-density zones, and they are designed to preserve the existing character and density of the city's most spacious single family neighborhoods, in order to "promote a suitable environment for family life" (DC Office of Zoning, 2020). These protections have kept large swathes of Northwest DC safe from any development, and therefore the Northwest remains, by far, the least dense of the four quadrants. The maps above illustrate this condition - regions of low density development fall disproportionately in Northwest DC, while residential areas of Northeast and Southeast are comprised more substantially of moderate density development. Predictably, maps of land coverage and zoning tell similar stories, with the zoning maps confirming that most of the R-zoned land in DC is given over to low density R-zones, while the East quadrants are a medley of low and moderate density R-zones.

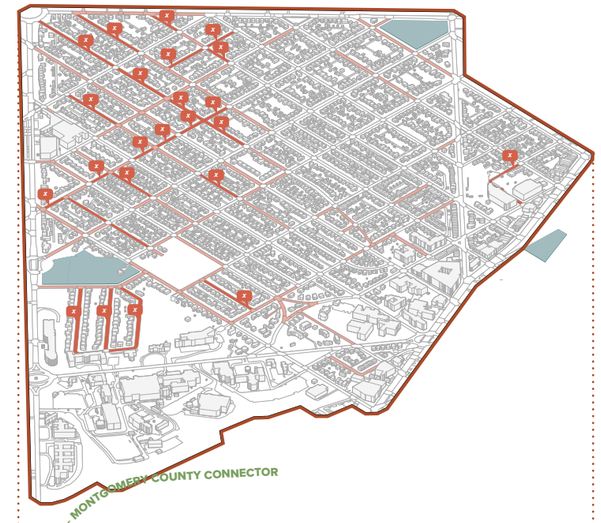

*American University Park*
*Resources - Grocery Stores*

*There are three full service grocery stores and three specialty or limited service grocery stores serving American University Park. Four are located along Wisconsin Avenue, while two - a specialty and a full service grocery store - are located adjacent to the site in West American University Park, along Massachusetts Avenue. While only 33% of American University Park lies within a quarter-mile of at least one grocery store, more than 90% of the houses in American University Park lie within half a mile of a grocery store*




*American University Park*
*Resources - Public Parks*

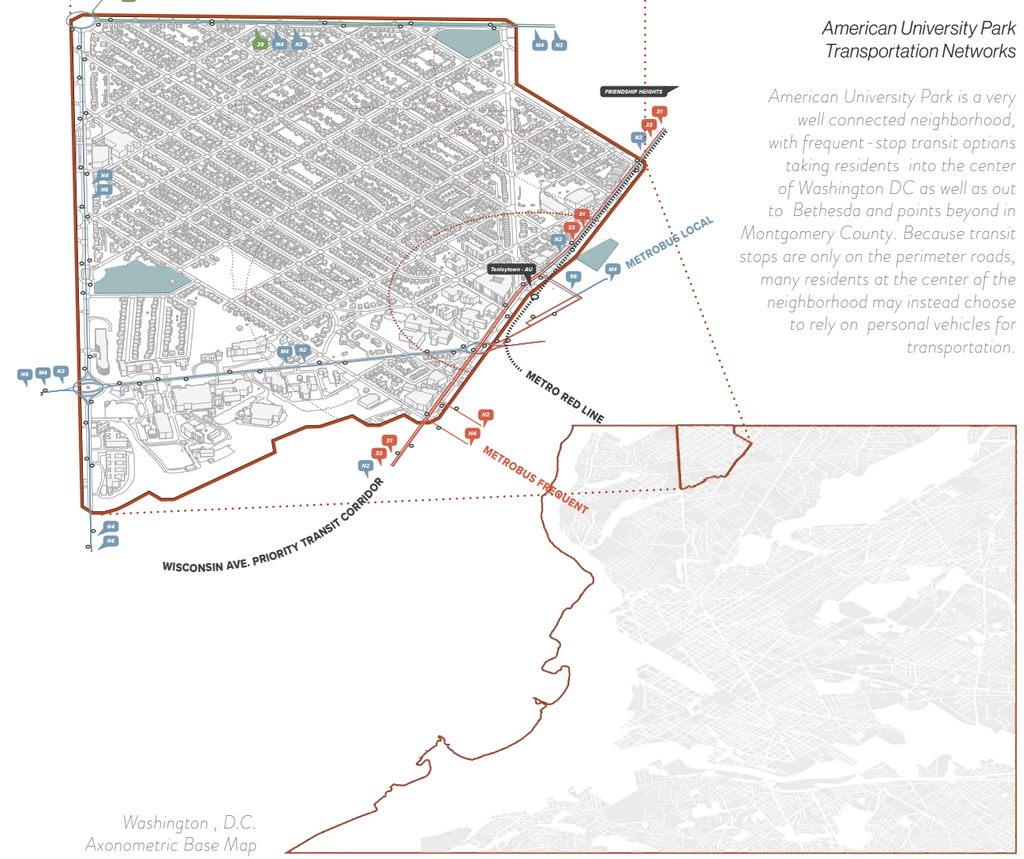
*There are three public parks within walking distance of American University Park - Turtle Park, Fort Reno Park, and Fort Bayard Park. These are also located along the peripheries of the neighborhood - well outside of a quarter-mile walking distance of many of the residences at the center of American University Park.*



*American University Park*
*Continuity of Pedestrian Infrastructure*

*In the typical neighborhood, pedestrian activity is relegated to the sidewalk; otherwise, pedestrians occupy the automobile-oriented street at their own risk.*

*Pedestrian infrastructure in American University Park is lacking - a symptom of an automobile-dependent community. In many places-especially in western American University Park- sidewalks on both side of the street are discontinuous. In order to walk through, into, or out of the neighborhood, pedestrians are required to navigate curbs and crosswalk-less intersections, and weave among parked cars on the shoulder where sidewalks are*




*American University Park*
*Transportation Networks*

*American University Park is a very well connected neighborhood, with frequent-stop transit options taking residents into the center of Washington DC as well as out to Bethesda and points beyond in Montgomery County. Because transit stops are only on the perimeter roads, many residents at the center of the neighborhood may instead choose to rely on personal vehicles for transportation.*

*Washington , D.C.*
*Axonometric Base Map*

# Resources & Networks

*Accessibility of transit networks and other community assets*

American University Park is occupied by a large gridded residential development bounded by Massachusetts and Wisconsin Avenues to the South and North, and Western and Western and Nebraska Avenues to the West and East. Commercial corridors along these major roads contain myriad resources that are easily accessible to residents of American University Park. These built-up corridors stand in stark contrast to the green lawns and tree lined streets that characterize the inner blocks of the neighborhood.


*View toward Alley from 47th Street*

*The alley is 12' wide, and is presently only utilized as a trash receptacle. Fences around yards encroach upon the alley from both sides. Although a handful of houses have single-car garages in the back yards which open onto the alley, these garages are rarely used for car storage. Instead, most people park along the street.*


*View towards Back Yards from Alley*

*A view of two backyards in the center of the 1600 block of Yuma Street reveals that some members of the community are inclined to share spaces. In this case, there is no fence between the two yards in question, and the two houses appear to be sharing a wooden children's playground.*


*View towards Front Yards from Yuma Street*

*The front yards of the houses in this view are totally wasted spaces; they serve only to buffer the houses from the street. Save for a number of individualized touches, including paint colors and porticoe styles, the houses are nearly identical inside and out.*


*View toward Block from corner of Windom & 47th*

*The intersection of Windom and 47th streets. Windom, slightly larger than 47th, can accomodate parking on both sides of the street. 47th, meanwhile, only accomodates parking on the westbound side. The streets here lack road markings. Could 47th street be repurposed as a four-lane local road?*


*View toward AU Law Library from Windom Pl*

*The transitions between the residential area of American University Park and the higher density developments along Massachusetts avenue are extremely abrupt.*


*View along Residential Edge from corner of Warren & 48th*

*Single family houses share a street with American University's Spring Valley Building and a new mixed use development which has brought two hundred apartments and a new full service grocery store to the neighborhood. Could we build density around this new resource to create a transitional density zone near the edge of the neighborhood and to position more residents within walking distance of the resources along Mass Ave?*

# Site Snapshots

*Selected snapshots of American University Park*

The snapshots above document the urban character of American University Park in and around the site, which is circled with orange. The selected site - the 4600 block of Windom Place and Yuma Street - is taken as a representative block because it generally conforms to one of two block formations commonly found throughout American University Park.

As seen in the images above, the site, like all of American University park, is largely characterized by grassy lawns, tree-lined streets, and cookie-cutter colonial houses. The alleyway appears to be underutilized - Many lots no longer have rear garages, and of those left standing, many appear to be disused. The fences which delineate private lots encroach directly upon the alley, preventing it from being utilized as parking. Therefore, the alley is used primarily as a place to put out the trash.

The selected block is one block away from the Ladybird development and the American University Law School building. Neither building is visible from the site in summer, so thick is the tree cover along Windom and Yuma Streets, but the change in urban conditions at this location is quite drastic, with four story offices and mixed use buildings standing directly across the street from single family houses on grassy lawns.

# reprogramming the *block*

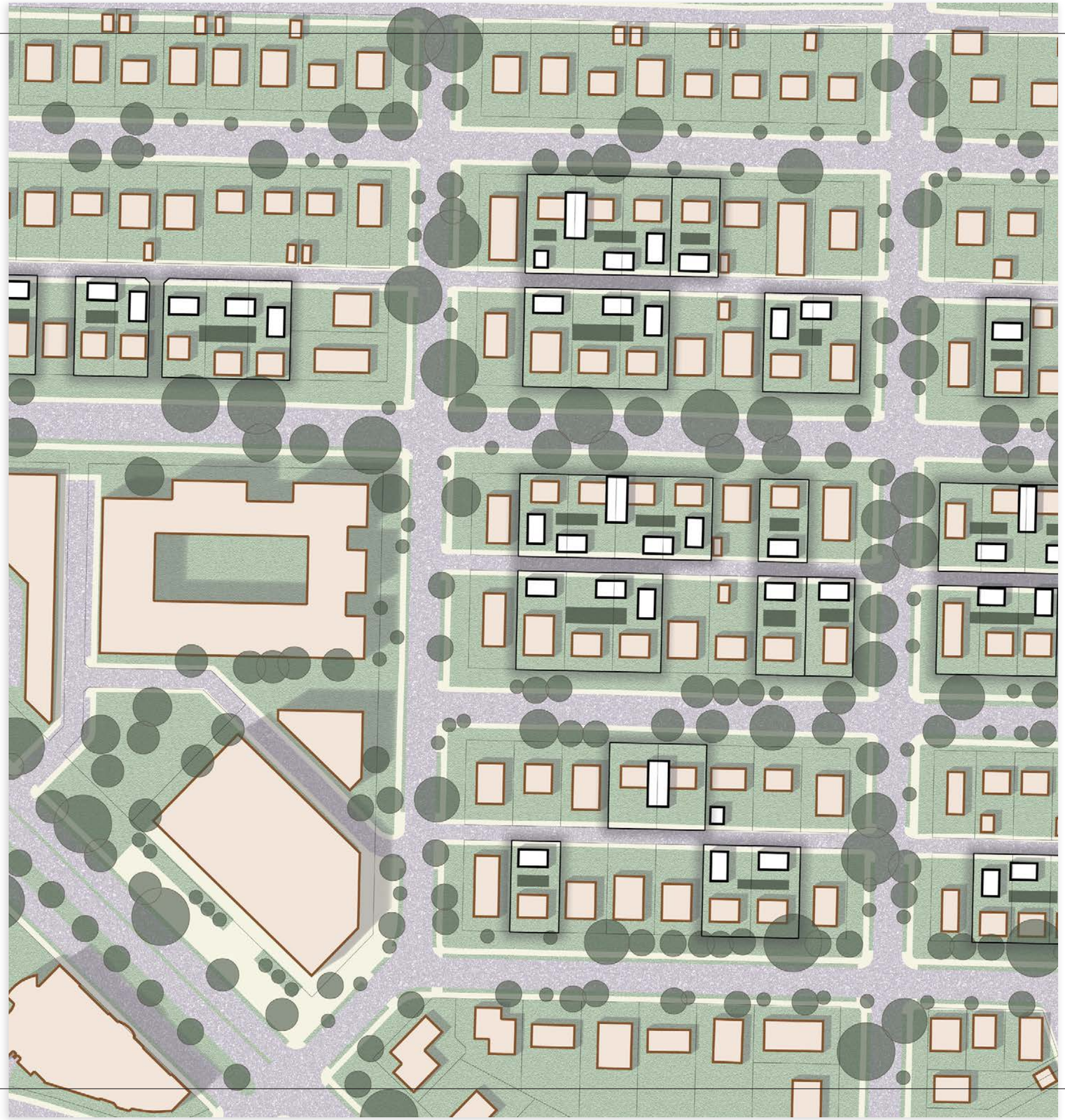
*Building density and variety into existing residential blocks:*

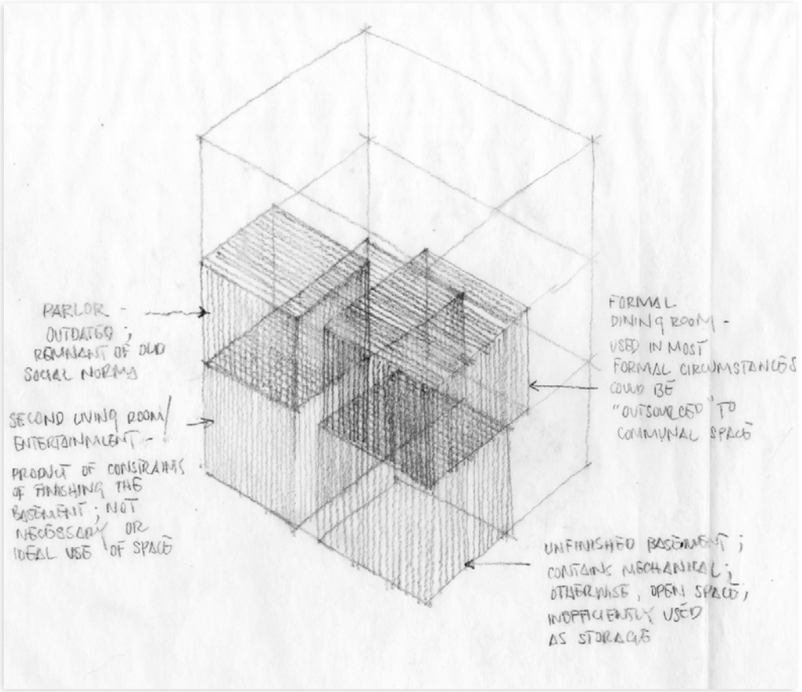
A major component of the proposal is the intensification of residential density and the creation of additional housing typologies within the single-family fabric of American University Park. These goals can be achieved through several means, three of which are explored in this proposal to varying degrees: the division of existing houses into multiple units, the merging of existing structures, and the imposition of new structures onto unoccupied areas of the site.

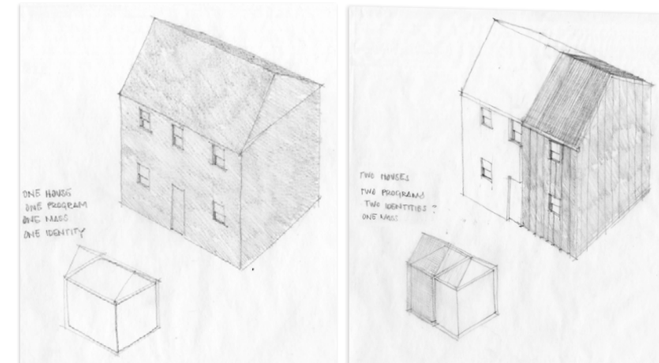
The compartition of the single family house is the first and most intimate line of investigation in this study. The single family house can be regarded as the nucleus of the suburb in that it is the central and most important built feature of the suburban landscape, serving as the primary hub of private life and domestic activity for the resident of the suburbs. The subdivision of the single family house breaks the one-family-in-one-house-on-one-lot paradigm of the suburbs, paving the way to a denser suburb.

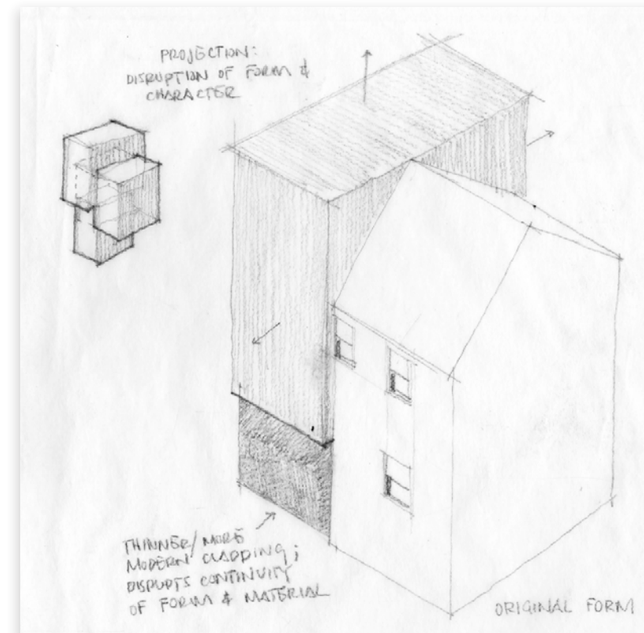
*Right, Neighborhood plan, American University Park, featuring several reprogrammed blocks in various configurations, which will be fleshed out later in the chapter.*

*Below: Second floor living room in a 1 bedroom, 1 bathroom upstairs unit. The unit has views out to the common courtyard.*





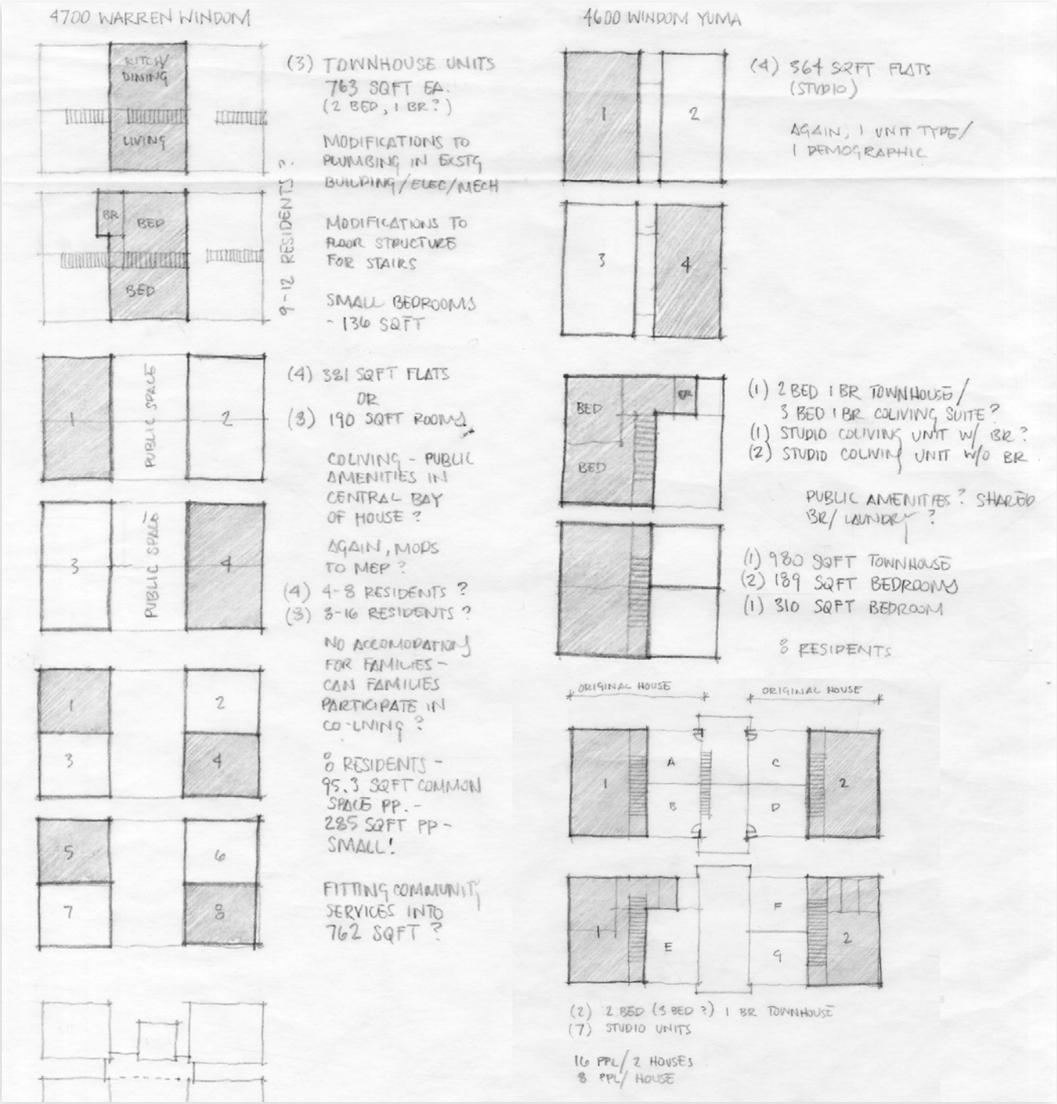

# Concept

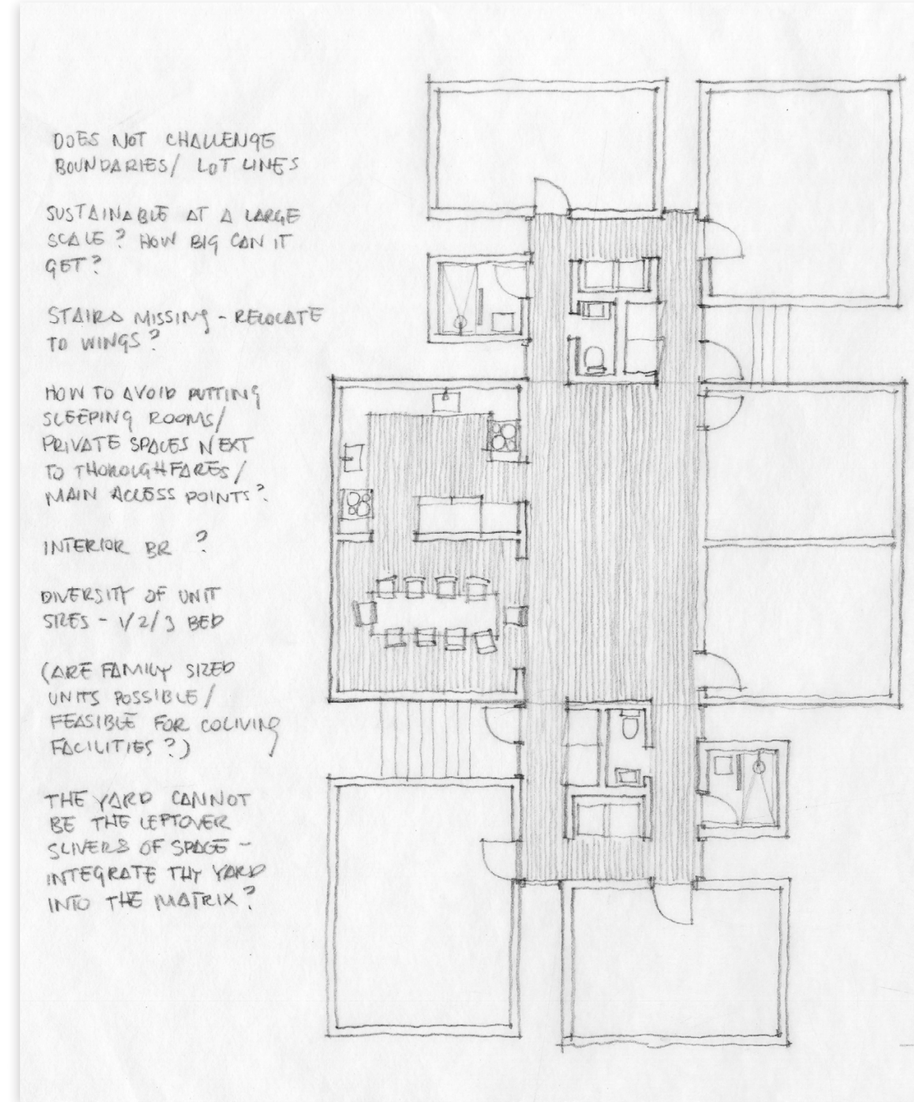
*Relationship between form and identity*

Initial concepts centered on the visual expression of unique identities on the outside of the existing structure through the manipulation of facade materials and depth. The majority of the houses in American University Park are brick colonial boxes. Many of these houses are virtually indistinguishable from one another save for personal touches added by their inhabitants over time--covered stoops, brightly colored front doors and shutters, and plantings, among others. The division of the single family house into multiple units has great potential to damage the sense of belonging that current residents derive from private property and personal touch, and that residents of multi-family housing complexes typically derive from such features as differentiated entrances, outwardly identifiable units, and private patios or back yard spaces (Wentling, 1991). Thus, the articulation of individual units on the exterior becomes a key consideration in the redesign of the single family house.

*Left: Sketch identifying some of the wasted spaces in the standard American University Park house. These houses (and many today) feature archaic organizations that result in wasted or underutilized spaces.*

*Right: Concept sketches outlining one agenda of the project - to preserve feelings of individuality and personal identity in opening up the former single family house to multiple parties.*




# Development

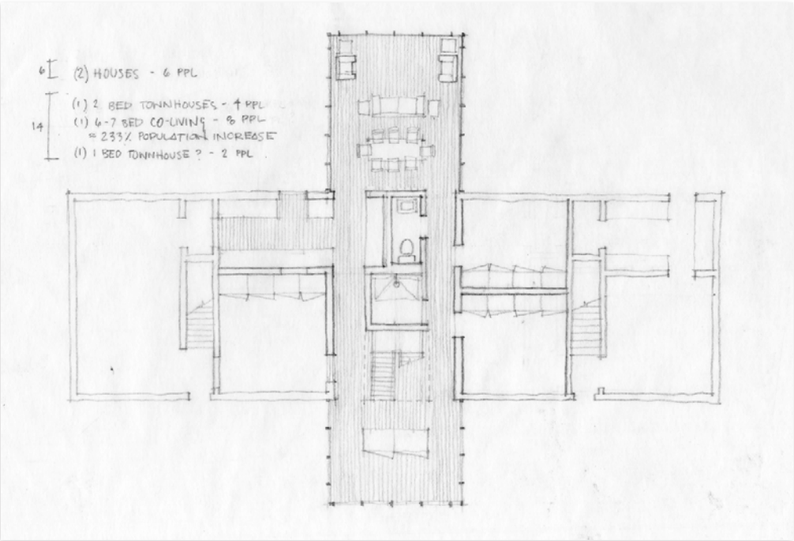
*Space Planning*

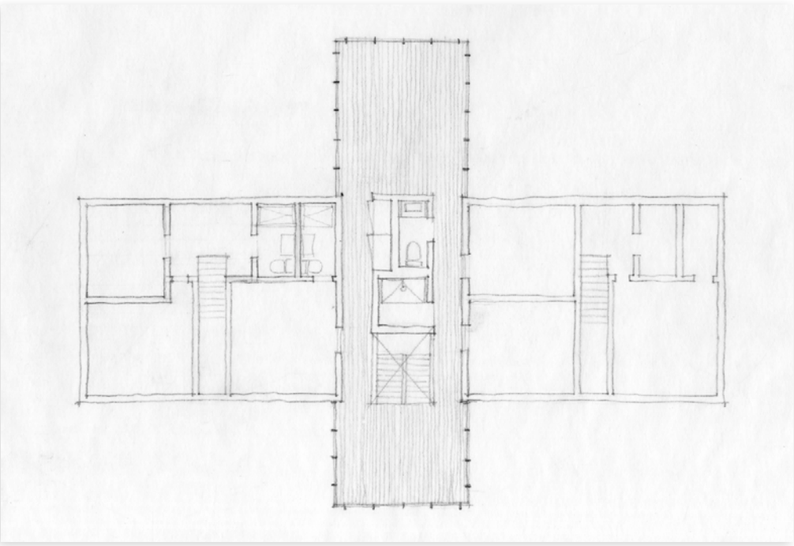
Units are created by dividing the existing house along the central stair/stair hall. The smaller of the two house forms can easily be divided into two 1,200 square foot units by barring entry to the basement stair from the left side of the house and by barring entry to the first floor stair from the right side of the house. In this way, the house can be divided into two units--an upper and a lower--which share the ground floor equally and take up all of either the top or basement floor.

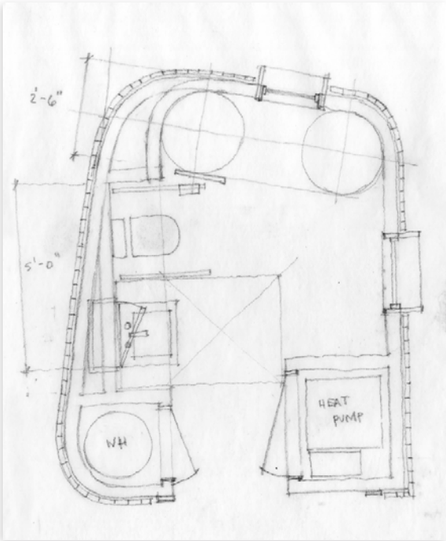
New residential typologies are also built into the suburban landscape through the extension of the existing houses. This early sketch explores the transformation of a typical 44' American University Park house into a 12 unit coliving facility through the addition of new shared restrooms and private sleeping quarters to the front and back of the house. The center bay of the house is extended to tie the additions into the old building; the existing stair could be left in place or relocated for a more open living space.

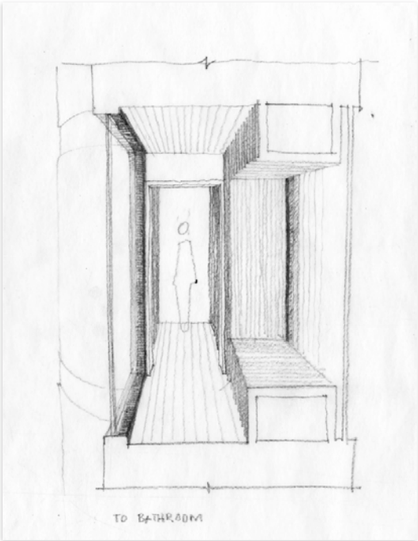
*Left: Initial exploration of spatial divisions. It quickly became clear that, spatially, the easiest way to split the standard American University Park house into separate units would be to divide the house along the central stairwell (or stair hall).*

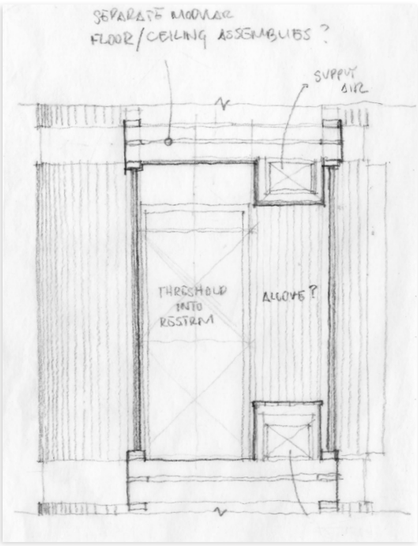
*Right: Adding to the existing single family house offers the potential to accommodate more people and new modes of living. This sketch depicts the ground floor of a house that has been converted into a coliving house through additions to both the front and back. The center bay of the 3-bay house is extended, and becomes a common space.*






*Right: Assorted sketches of proposed bathroom cores. From top left to bottom right:*

*Plan sketch of bathroom core.*

*Perspective sketch through bridge to core, showing conduits for HVAC ductwork and bathroom entry.*

*Section drawing through bridge, looking toward bathroom core.*

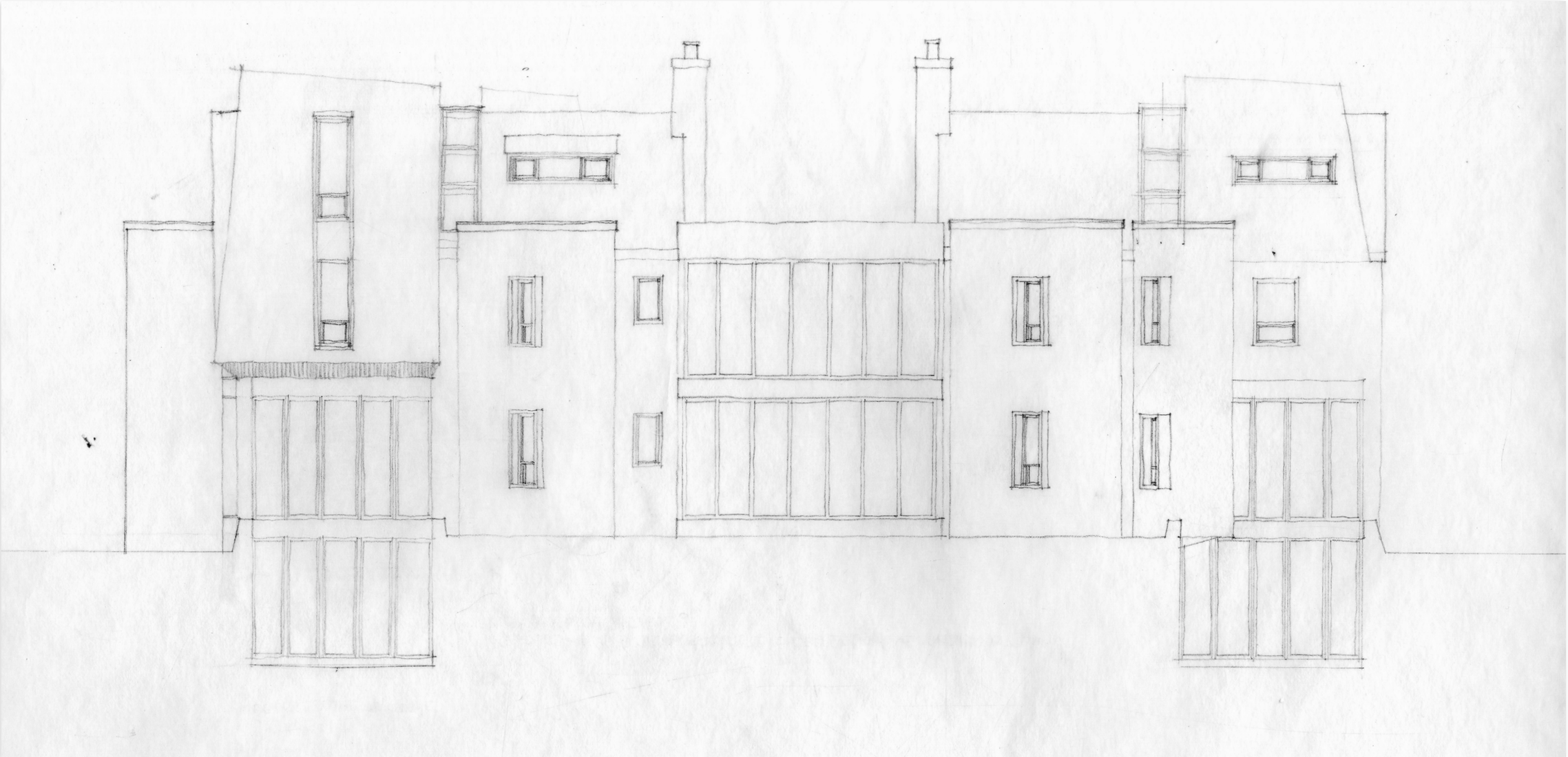
*Left: Combined floor plans - private units and collective living facility, borne out of two former single family houses.*

# Development

*Divisions and additions*

The coliving component of the project quickly evolved to occupy the space between two existing houses. The shared spaces of the coliving facility are oriented perpendicularly to the existing house forms, creating a cruciform shape where the coliving center occupies one axis and the existing structures form the other. The striking physical juxtaposition of the two forms corresponds with the conceptual act of inserting a new residential building typology into the existing homogeneous residential landscape.

In dividing one house into multiple units, there is a need for additional restroom facilities and kitchen spaces, as well as a need for divided heating and cooling systems. Modular bathroom cores are proposed - these cores will provided the needed facilities while minimizing the amount of plumbing needing to be run through the existing house. When possible they are located next to new kitchens, and can be used as conduits to plumb those spaces as well. Initial sketches contain space for a heat pump and associated ducts; this is removed in later versions in favor of ductless mini-split systems. These can be installed at any exterior location, providing a high degree of flexibility.



# Elevation Study

*Articulation of Units*

This elevation study explores the differentiation of the units on the rear facade of the collective living building. The two end bays, capped with angular roof forms, house private apartments, while the coliving residence occupies the three center bays. The basement end units are glassy; the upstairs end units are enclosed in more opaque framed envelopes. The center portion of the building is distinguished as a separate intervention by its perpendicular orientation and by the general glassiness of the facade.

*Above: Rear elevation study examining the transformation of the existing rear facades.*

# Plan Explorations

## *Consolidating Programs*

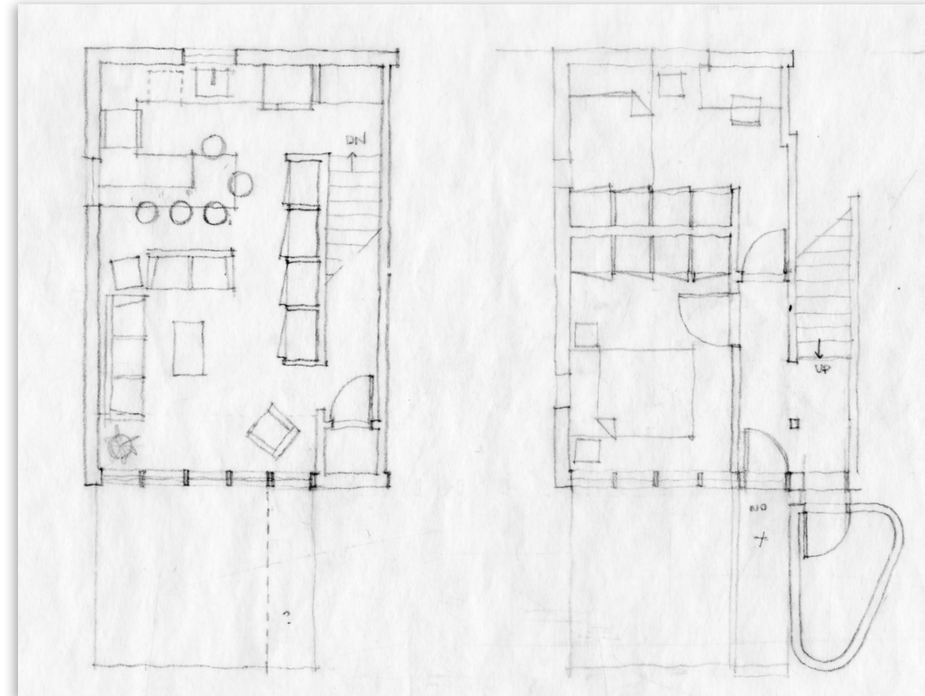
Several strategies guided the development of the units. One such strategy was the unification of the living spaces. In the existing houses, living spaces are spread across the basement and ground floor; here they are condensed into one half of one floor - an area of approximately 300 square feet. In the smaller private units, a bar mediates between the kitchen and the living room; the bar wraps around the end of the counter, creating a 3-seater table and eliminating the need for a formal dining table.

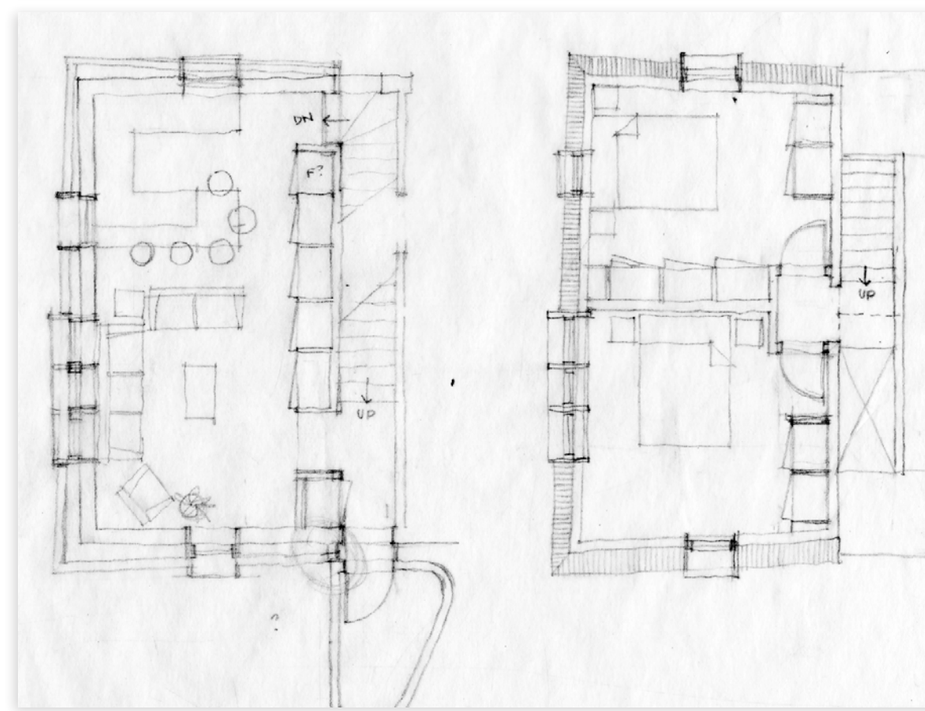
The kitchen is compact but fairly conventional (U-shaped, 7'-6" wide by 6'-6" deep), leaving two-thirds of the room - 200 square feet - for the 'living-room' side of the living space. By bringing the kitchen, living, and dining areas together into one room, the new unit increases cohesion between the living spaces and provides opportunities for interaction between people in the kitchen and people in the living room, even in decreasing the overall square footage of the living space in each unit.

*Right page, top: plan sketches for a 2 bedroom, 1 bathroom ground floor/ basement unit. (Top left is basement; top right is ground floor)*

*Right page, bottom: plan sketches for a 2 bedroom, 1 bathroom 2nd floor/attic unit. (Bottom left is 2nd floor; bottom right is attic floor).*

*Left page, below: View of living room and kitchen in a 1 bedroom, 1 bathroom unit. The kitchen, dining, and living spaces are consolidated into one room, saving space while creating a more 'open' plan.*



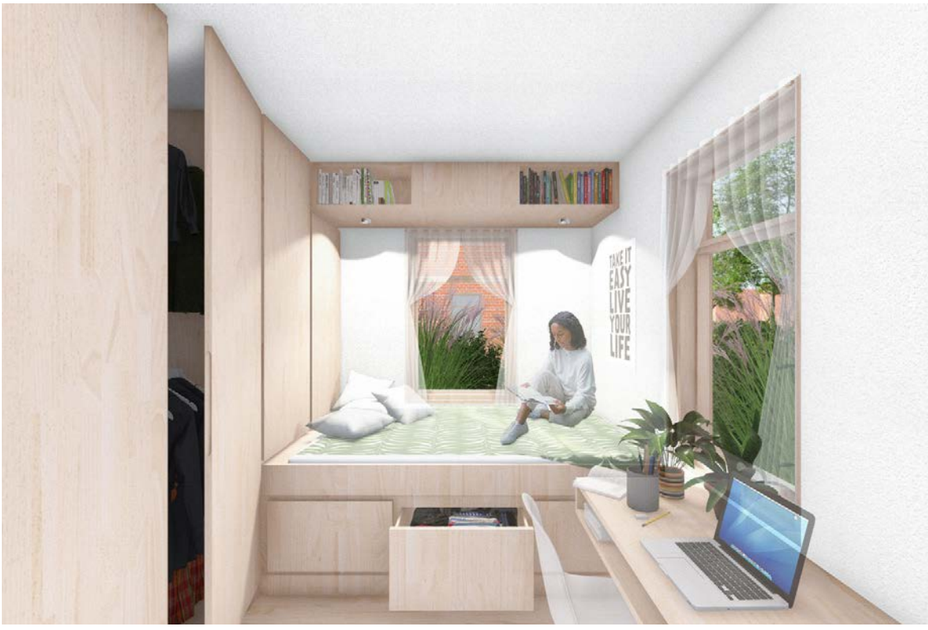
# Plan Explorations

## *Planning for Storage*

Another strategy employed in the units is the explicit provision of storage space. Especially in small living spaces where leftover spaces that can be converted into storage rooms are few and far between, storage spaces must be designed into the project with much intention. Therefore, a focus has been placed on the placement of storage spaces within the units. In the private residential units, a storage wall has been built into the center of the residence, against the stair wall. This wall of storage stretches through the living space, and can support any use - for example, the end nearest the kitchen can serve as pantry storage, while the end nearest the primary living space might conceal a television and other personal effects.

Storage spaces also figure prominently in the designs of the bedrooms: The closets occur on the walls between bedrooms, helping to dampen sound transmission from bedroom to bedroom. Generally, each room has been designed with at least one 5' wide closet; most have additional built-in storage space to accommodate either short- or long-term storage needs.

*Below: Rendering of a teen's bedroom The bedroom pictured here is the smallest that occurs in the complex. It is 7' wide and 12.5' deep; not including the small entry corridor, it is just shy of 90 square feet. Storage has been planned into the space carefully: the inside wall is entirely given over to storage, with floor to ceiling doors enclosing a standard closet, and custom - fabricated partial height doors accommodating additional long term storage behind the foot of the bed. The bed itself is raised 28 inches off the ground to accommodate additional storage below it.*

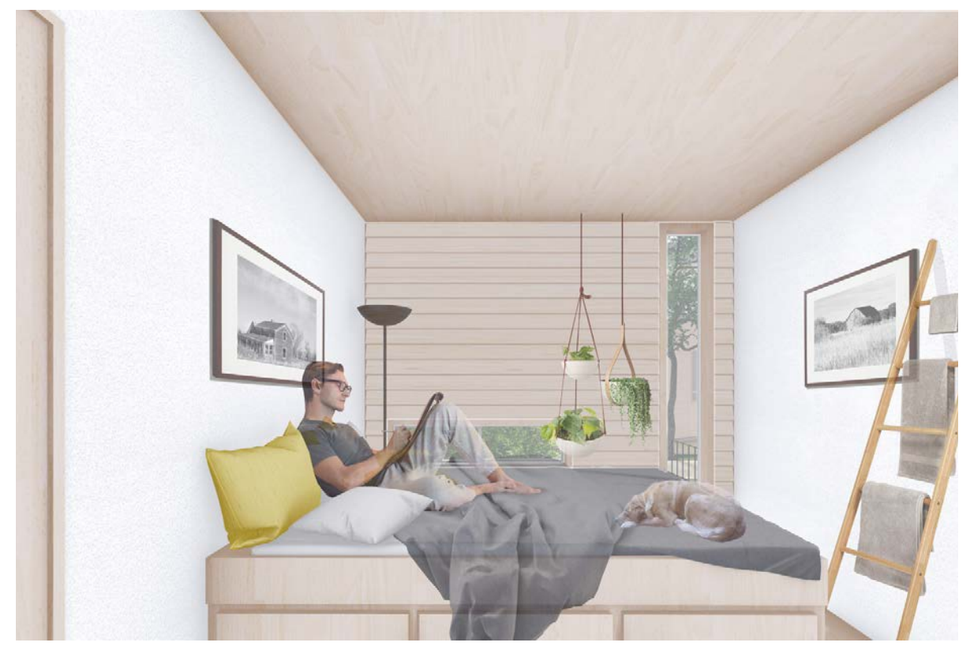



# Plan Explorations

## *Planning for diverse expectations*

Rooms - especially the bedrooms - are varied in size to accommodate a wide range of expectations regarding room layout, format, and use. Some rooms are extremely compact, allowing just enough space for a bed, a desk, and an additional piece of furniture (see image on p.44), while others, like the one pictured below, are just large enough to accommodate more traditional furniture layouts. The bedroom below - 9'-6" x 11'-6" or 110 square feet - is small for a traditional main bedroom, but is nonetheless large enough to accommodate a queen bed with sufficient space to ambulate around it, allowing occupants to reach both sides of the bed on foot. The back wall of the room, not pictured, features a full wall of closets, providing, in conjunction with the under-bed drawers, a decent amount of storage space for two occupants. In the bedroom below, liberties have been taken with the placement of windows in the renovated outer wall. One horizontal window corresponds with the height of the bed, providing views out from a reclined position, while a vertical window in the corner of the room provides outward views to the occupant as they navigate around the bed.

*Below: Rendering of a couple's bedroom. The bedroom below is designed to accommodate the needs of a couple with more conventional expectations regarding the size of their bedroom.*



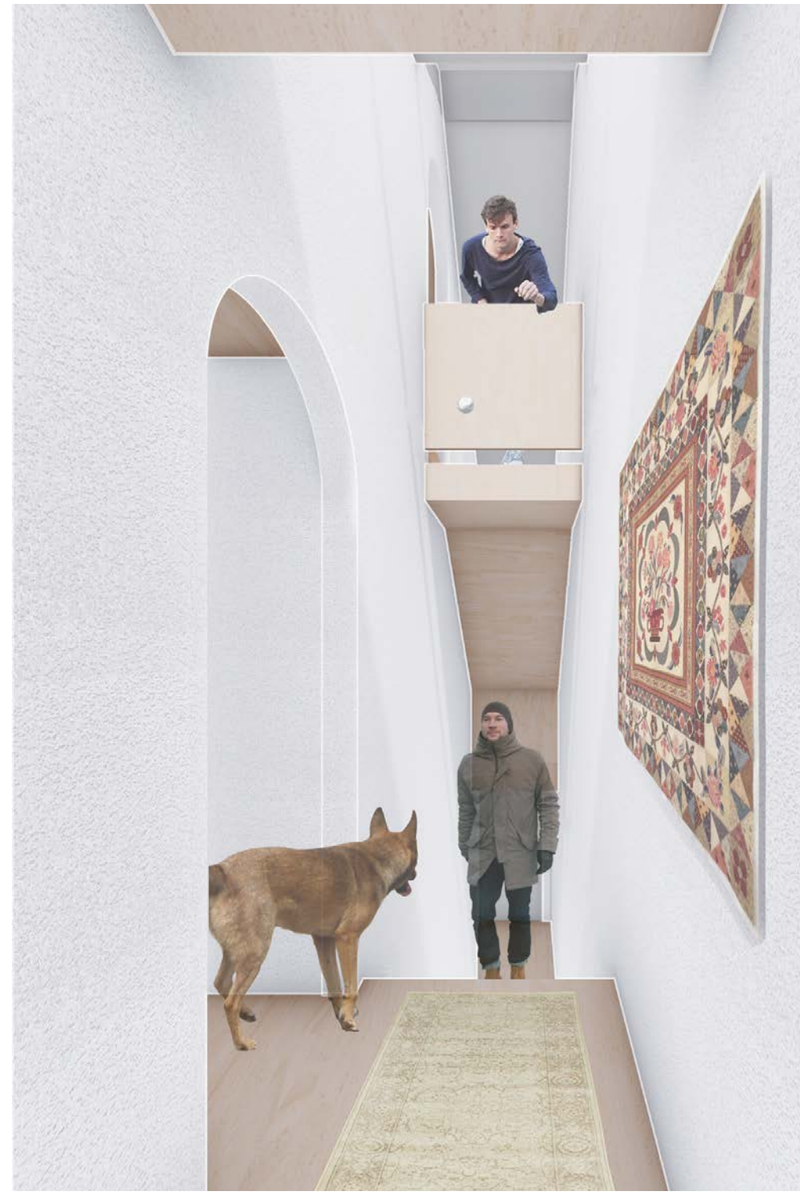
# Plan Explorations

*Improving the Fixed Condition*

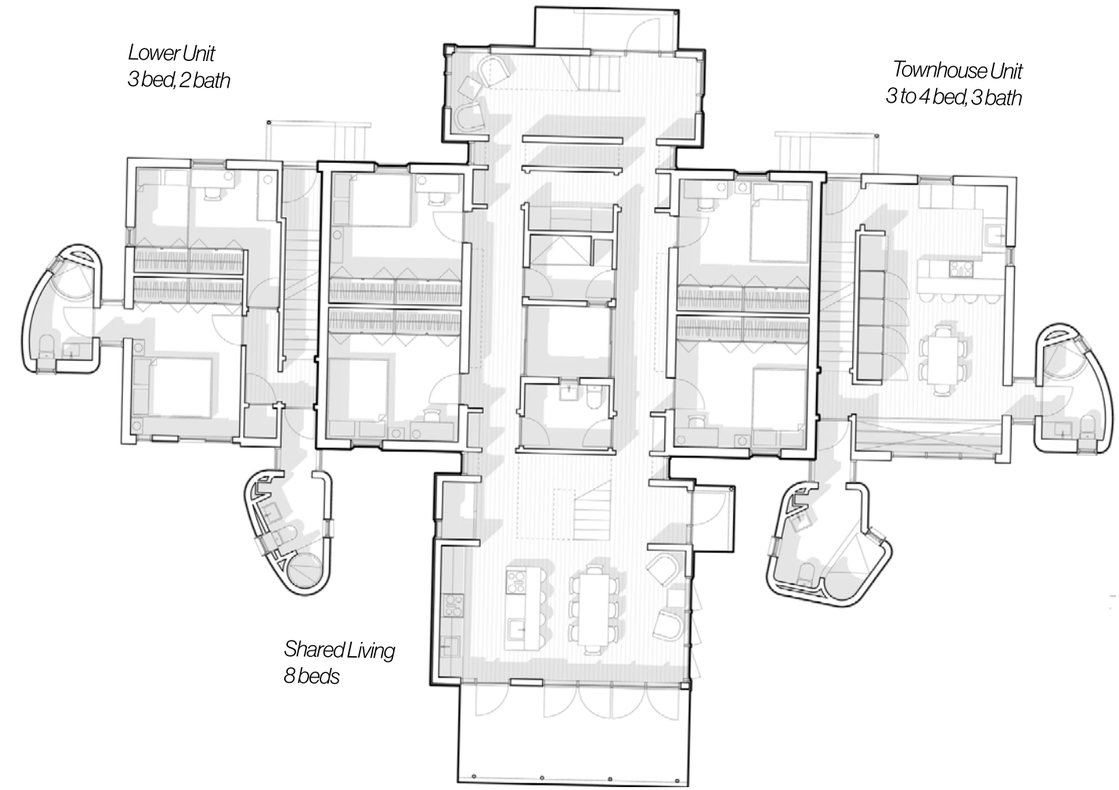
The investigations conducted here all seek to heighten the experience of living in the former single family house. The project seeks out opportunities to enliven the experience of moving throughout and occupying the house. Points of heightened intrigue and interest are developed; storage is programmed into rooms even as the rooms themselves shrink in order to accommodate material possessions; living spaces are brought together for social cohesion and private quarters are re-sized for efficiency; opportunities for flexibility are explored.

*Below: View toward the shower in one of the modular bathroom units. The bathroom is fairly minimal, designed only for one person to use at a time. A built-in floor to ceiling storage cabinet (out of frame) accommodates toiletries and clean towels eliminating the need for clutter on the exposed surfaces in the bathroom.*

*Right: The entryway to one of the upstairs units. The upstairs units occupy the 2nd and attic floors of the former house. The front door opens directly onto a set of stairs leading up to the main floor of the upper unit. The stair well is opened to above, and daylight spills in to the space from a skylight in the roof far above, enriching the experience of coming and going from the apartment.*




*Basement Floor Plan*
*Scale: 1/4" = 3'-0"*




*Ground Floor Plan*
*Scale: 1/4" = 3'-0"*

# Floor Plans

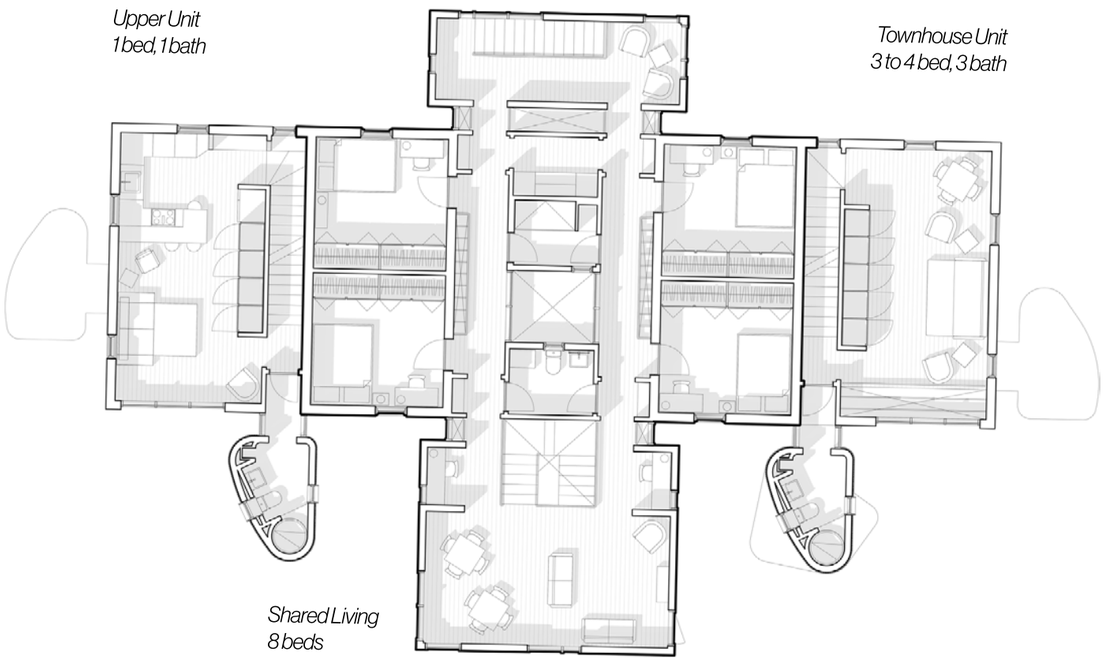
*Basement & First Floor*

The basement is comprised of the bottom floors of two units - one lower level, two-story apartment (left), and one four-story townhouse-type unit (right). In the left unit, the primary living space opens into the recessed patio; a spiral stair leads up to the common yard. In the right unit, the basement floor is given over to bedrooms and a rare dedicated home office. A small flexible space at the back of the house can serve as a living room or a bedroom; this space opens to a recessed patio at the basement level which was formerly a small well for an access stair.

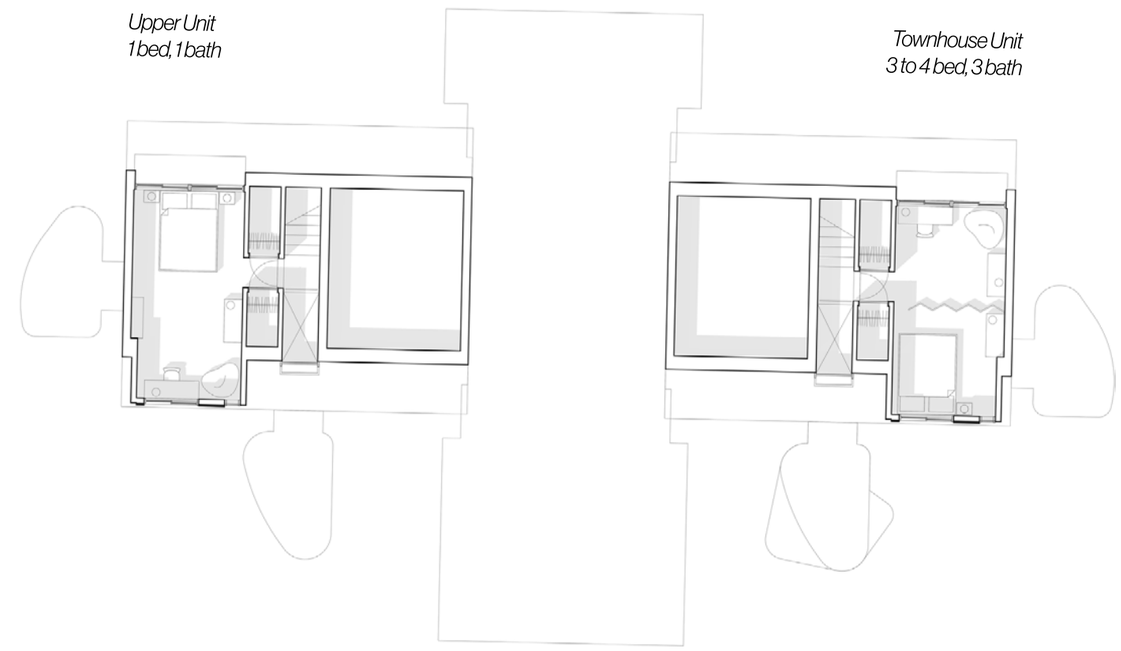
The ground floor features the upper floor of the lower apartment as well as the entrance vestibule to the upper apartment (left), the ground floor of the shared living space (center) and the second floor of the four-story townhouse-style unit (right). This floor of the lower unit is given over to sleeping spaces and restrooms; the ground floor of the coliving space features public spaces (entry hall, kitchen, dining) as well as four of the eight bedrooms; the ground floor of the townhouse apartment features the kitchen as well as a dedicated dining space. One restroom serves the public space; another, tucked behind the interior partition wall, is more private and serves the downstairs bedrooms. It can be partitioned off from the rest of the ground floor to make an informally-separated suite of rooms spanning the basement rooms and first floor restroom.

*Left: Basement floor plan*

*Right: Ground floor plan*




*Second Floor Plan*
*Scale: 1/4" = 3'-0"*




*Attic Floor Plan*
*Scale: 1/4" = 3'-0"*

# Floor Plans

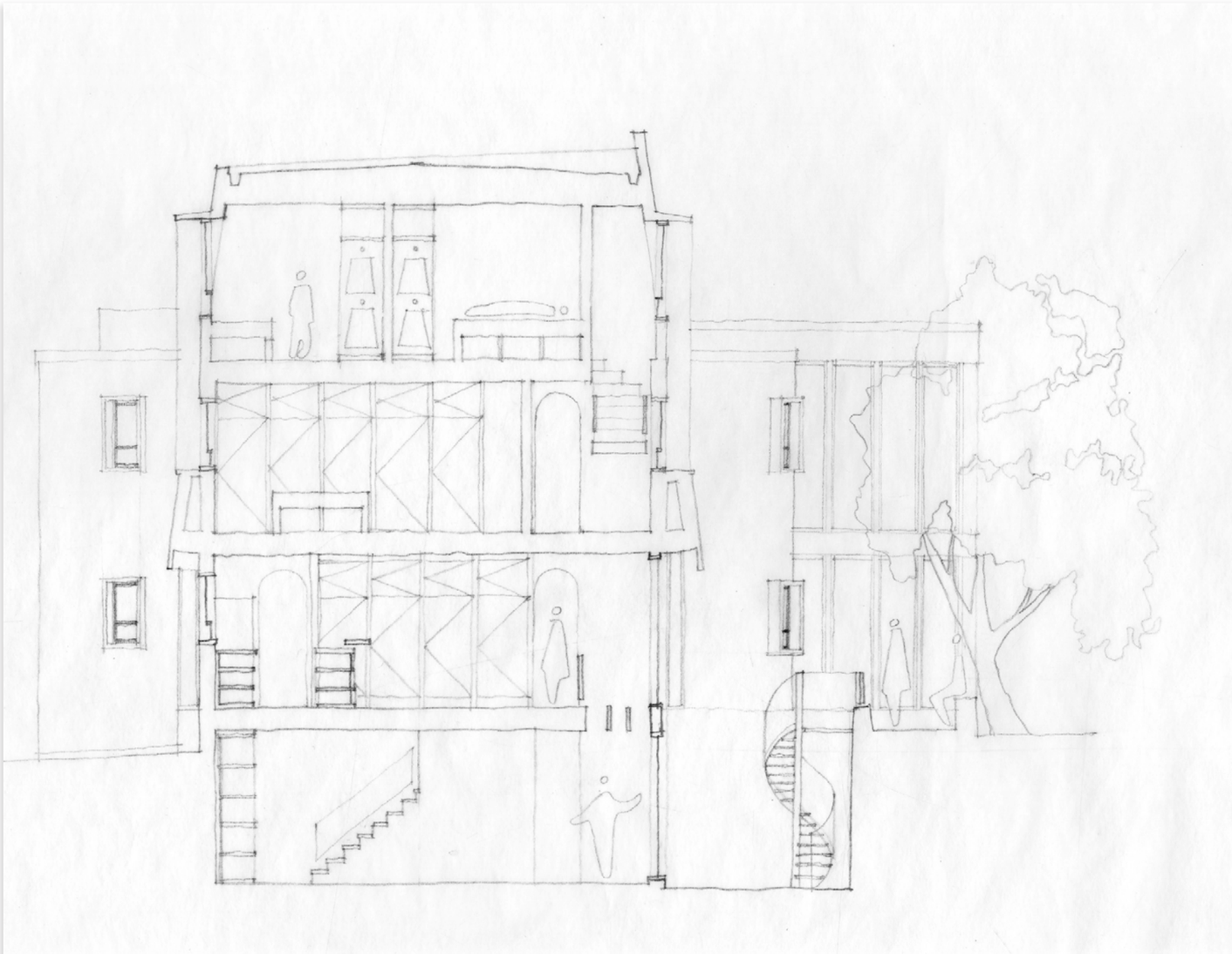
*Second and Attic Floors*

The second floor features the main level of the upper apartment (left), the top floor of the shared living facility (center), and the third floor of the townhouse-style unit (right).

The attic floor contains the top floor of the upper unit (left) and the top floor of the townhouse unit (right). Both of these spaces are given over to large attic spaces which can serve as a large singular space or which can be partitioned to create distinct bedroom and study or recreational spaces. The stair up to this top floor is offset toward the front of the building, and toward the back of the unit, the stairwell is open to below. A skylight over the stairwell allows light to reach the entry hall of the unit.

*Left: Second floor plan*

*Right: Attic floor plan*



## Zooming out: Block Scale

In the typical single family suburban neighborhood, where each house unit sits on its own private lot, the relationship of house to lot is more or less irrelevant - the house can relate to the lot in any number of ways, any of which can provide the residents of the house with desired levels of privacy and perceived safety. In dividing a house into multiple units, the relationship between the building and the land it sits on becomes more complex, as multiple parties occupying different portions of the building will inevitably have to share the yard. Therefore, As the units take shape, they begin to have implications for the design of the yard around them.

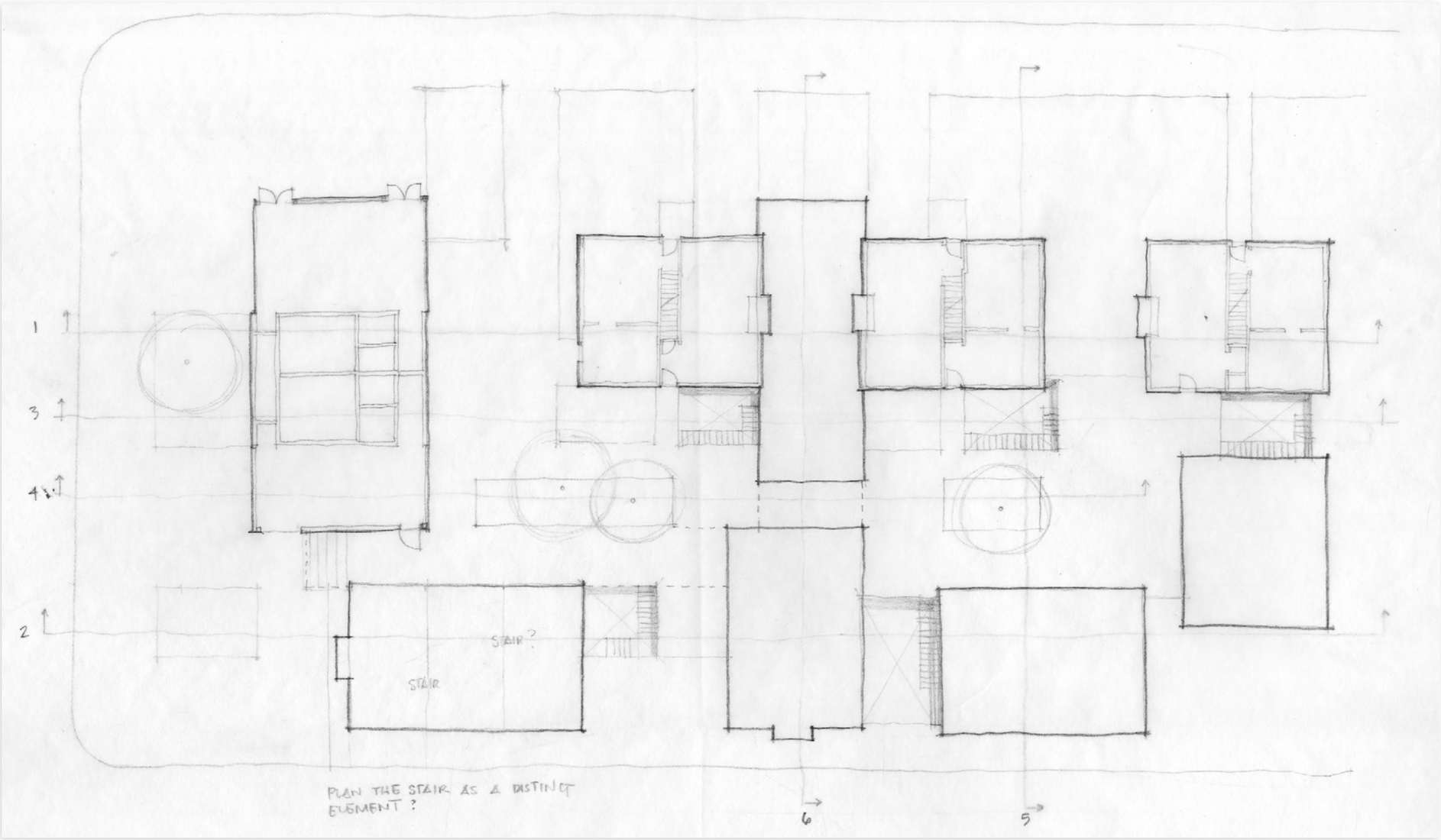
## Section

*Maximizing occupiable floor area, investigating relationships*

In order to maximize the amount of usable space in the existing house envelope, the basement and attic are converted into meaningful living spaces. The existing basements are low-ceilinged and fairly dim, having only a few small transom windows and one cellar access door. To elevate the experience of occupying basement living spaces, the cellar access stair is expanded, creating a 100 square foot occupiable light well which doubles as a means of access and egress. The door opening is expanded, and a large window wall is installed to bring light deep into the basement. In the section above, flooring and ceiling finishes are removed from the first floor at the back of the house, creating a dialogue between the public spaces on the first floor and the basement, bringing light further into the space and helping to alleviate the enclosed feeling of the basement.

*Left: Section study through 3 bedroom, 2 bathroom converted townhouse - type unit. This unit is quite spacious, at approximately 1600 square feet! The public spaces of the house are contained on the ground and basement floors; the second floor and attic floors contain the three bedrooms. Each floor is approximately 360 square feet, with the two bathrooms adding 160 square feet to the unit.*

*Right: Image of one of the basement living rooms.*



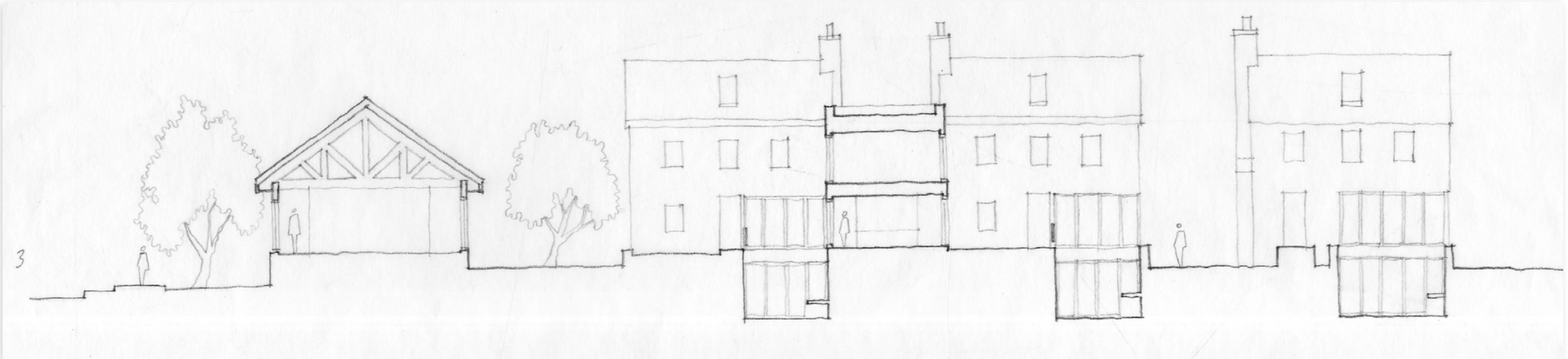

# Four Lot Study

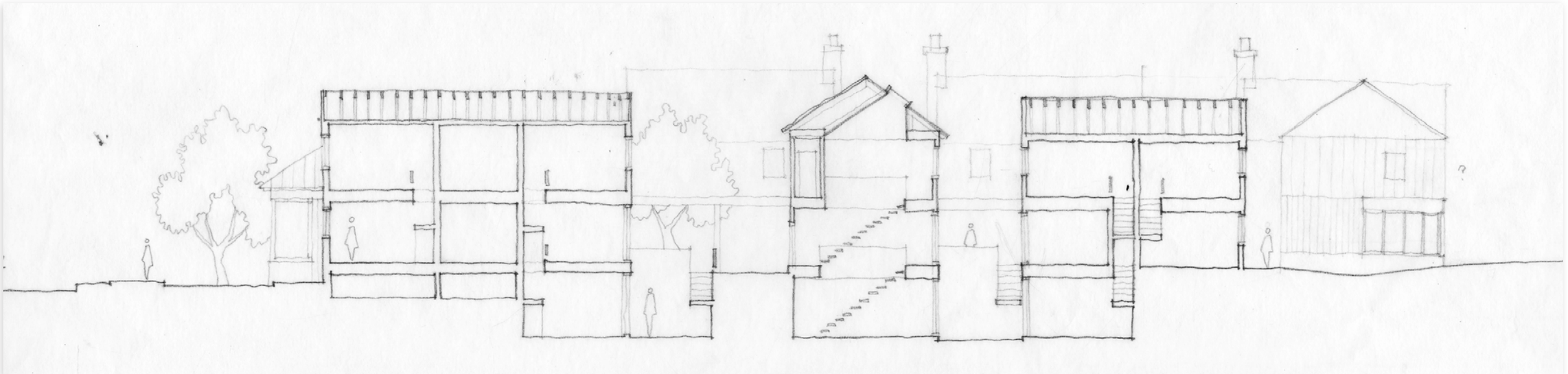
*Examining the relationships between units and the nature of the new public space*

This study examines how the public spaces of the complex take shape around the buildings which form the complex. In this study, new buildings are proposed in the backs of the lots, fronting along the alley on the inside of the block. This formations begins to give rise to a number of different conditions: the original houses, still firmly tethered to the center of the lot, retain some of their suburban character, while the new residential buildings, built directly up to the sidewalk in the alley, begin to resemble a more urban condition.

A courtyard space is formed between the new and old buildings. The recessed basement patios behind the original structures hold the communal space of the courtyard away from the backs of the existing houses. This separation is clarified and pursued more wholly in later iterations of the block plan.

*Above: Four lot study examining how new buildings may be imposed upon the site to further build residential density into the block.*





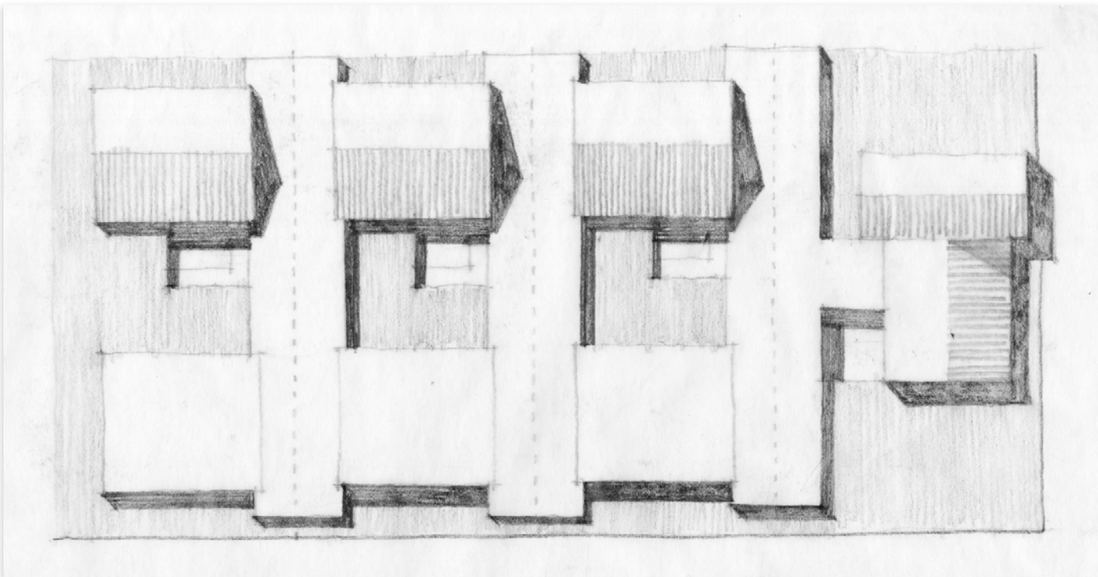
## Block Section Studies

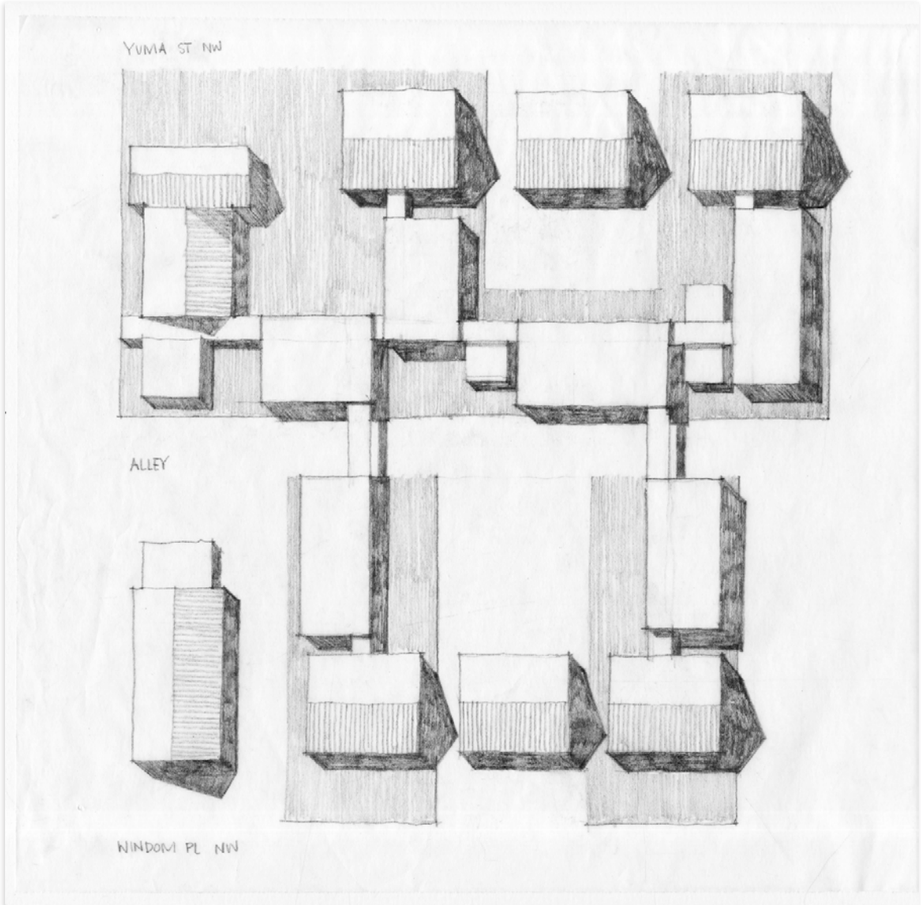
*Proliferation of unit types and relationships between private and communal outdoor spaces*

The early sectional studies above explore the density of the site as well as the relationships between the buildings which make up the complex. In this early state, the new buildings are proposed to take the same gabled roofed-form as the existing brick box tract houses. In the initial study, the lightwell-patios were intended to serve as outdoor extensions of primary basement living-spaces.

*Top: Section study through the middle of the complex. This section cuts through the basement patios/lightwells at the backs of the existing houses.*

*Bottom: Section study through the new buildings at the inside of the block. This section study begins to suggest a breakdown of units in the new structures, and examines how a system of basement lightwells might serve as 'backyards' for the new units. This approach is dropped in later developments.*






## Degree of Conformity

*How does this transformation take place? Does everyone agree to participate?*

Expanding the proposal beyond the scale of one or two lots generated an important question: What implications does the design have for models of land ownership in American University Park?

The diagrams above offer two different approaches to development at the block scale. The diagram on page 58 illustrates 100% conformity, where every house, and by extension every current property owner within the neighborhood, either agrees to buy into the proposed development, or agrees to sell their property in order for the proposal to move forward. This approach is deemed thoroughly infeasible and undesirable. A more favorable approach, illustrated by the diagram above, is piecemeal: residents have the opportunity to sell out in order for development to proceed, or retain ownership of their property and buy into the transformation. Furthermore, the development is dynamic and resilient enough to dance around properties who opt out of the proposed development entirely, providing a varied landscape that offers unique experiences in different areas of the neighborhood.

*Left: Diagram illustrating 100% buy-in and conformity at the block scale. In this scenario, all current residents have likely moved out in order for development to proceed uniformly across the neighborhood. This would not only be impossible to effect, but also heavy handed and oppressive in nature*

*Right: Diagram illustrating partial buy-in and conformity at the block scale. In this scenario, residents who desire to can opt into this development. The development grows organically and even perhaps independently from lot group to lot group, producing a varied patchwork of interventions.*

# Block Formations

*Unit breakdown and spatial character of 2-lot, 3-lot, and 4-lot developments*

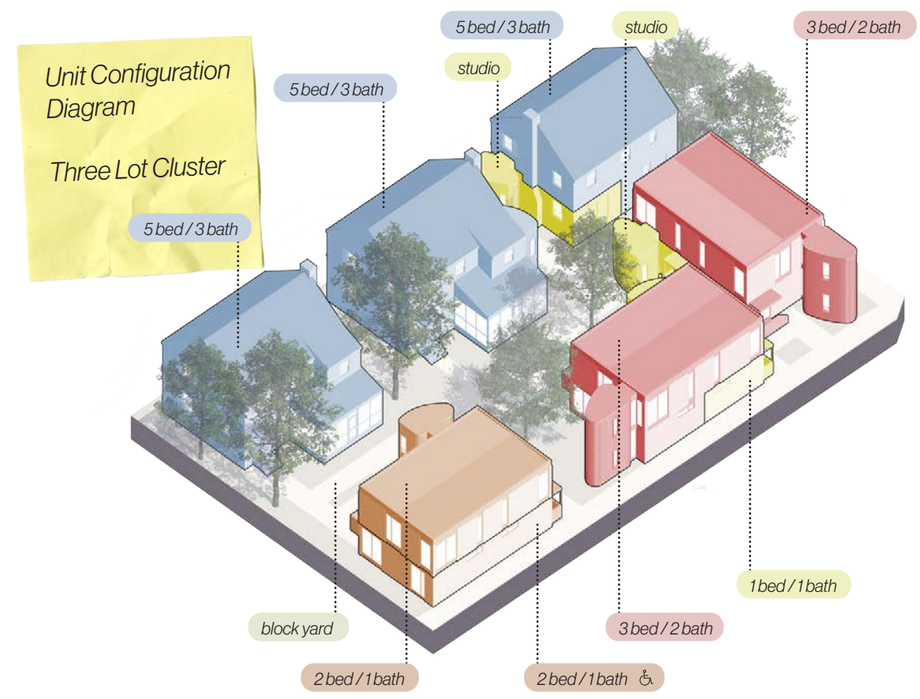
Different interventions will inevitably take place on different sites depending on how much land is available for development and, potentially, to what degree the owners of the existing lots have agreed to participate in the reprogramming of their neighborhood. Therefore, development may occur on single isolated blocks, or on groupings of lots. Similar forms are proposed for these different scales of development - from the addition of a single new residential structure in the backyard of one isolated lot (which might serve as an in-law suite or rental income property for existing residents) to the creation of a four-lot residential complex consisting of multiple subdivided houses and multiple new residential structures.

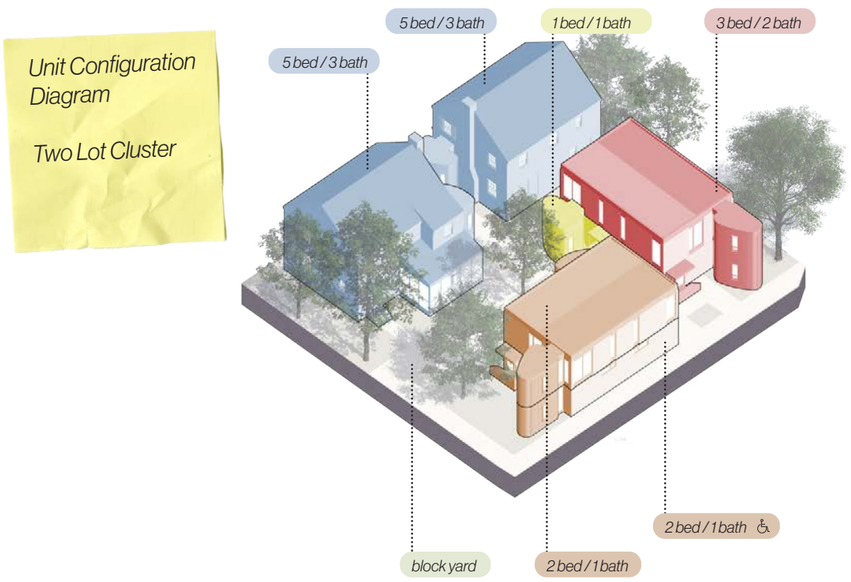
Each proposed cluster of residences is centered on a linear, semi-enclosed courtyard situated between the new and old developments on the lot. Larger developments begin to accrue other outdoor spaces in addition to the central courtyard provided in each cluster type. These additional outdoor spaces can, of course, accommodate additional programs. These spaces might be developed in any number of ways - perhaps serving as communal flower or vegetable gardens, grass or environmental laws, patios, or perhaps even as brick-paved parking areas if a need for such a use is identified by the residents of the individual cluster.

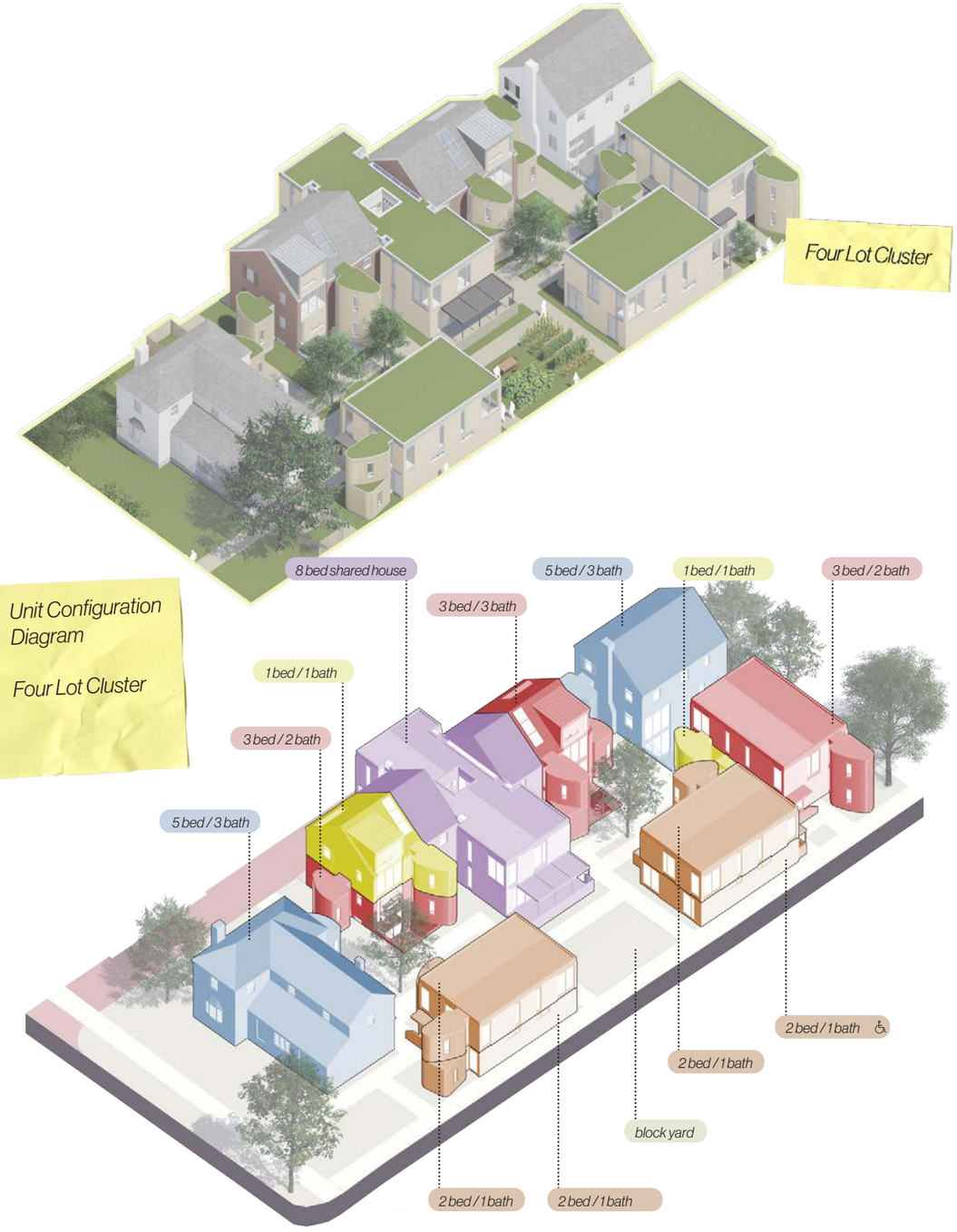
*Top Right: Section study through the middle of the complex. This section cuts through the basement patios/lightwells at the backs of the existing houses.*

*Bottom Right: Section study through the new buildings at the inside of the block. This section study begins to suggest a breakdown of units in the new structures, and examines how a system of basement lightwells might serve as 'backyards' for the new units. This approach is dropped in later developments.*

*Below: neighborhood plan , clipped. Clusters are highlighted with black surrounds. Each cluster features the same basic organizational principle: a long rectangular courtyard spans across the center of each complex.*

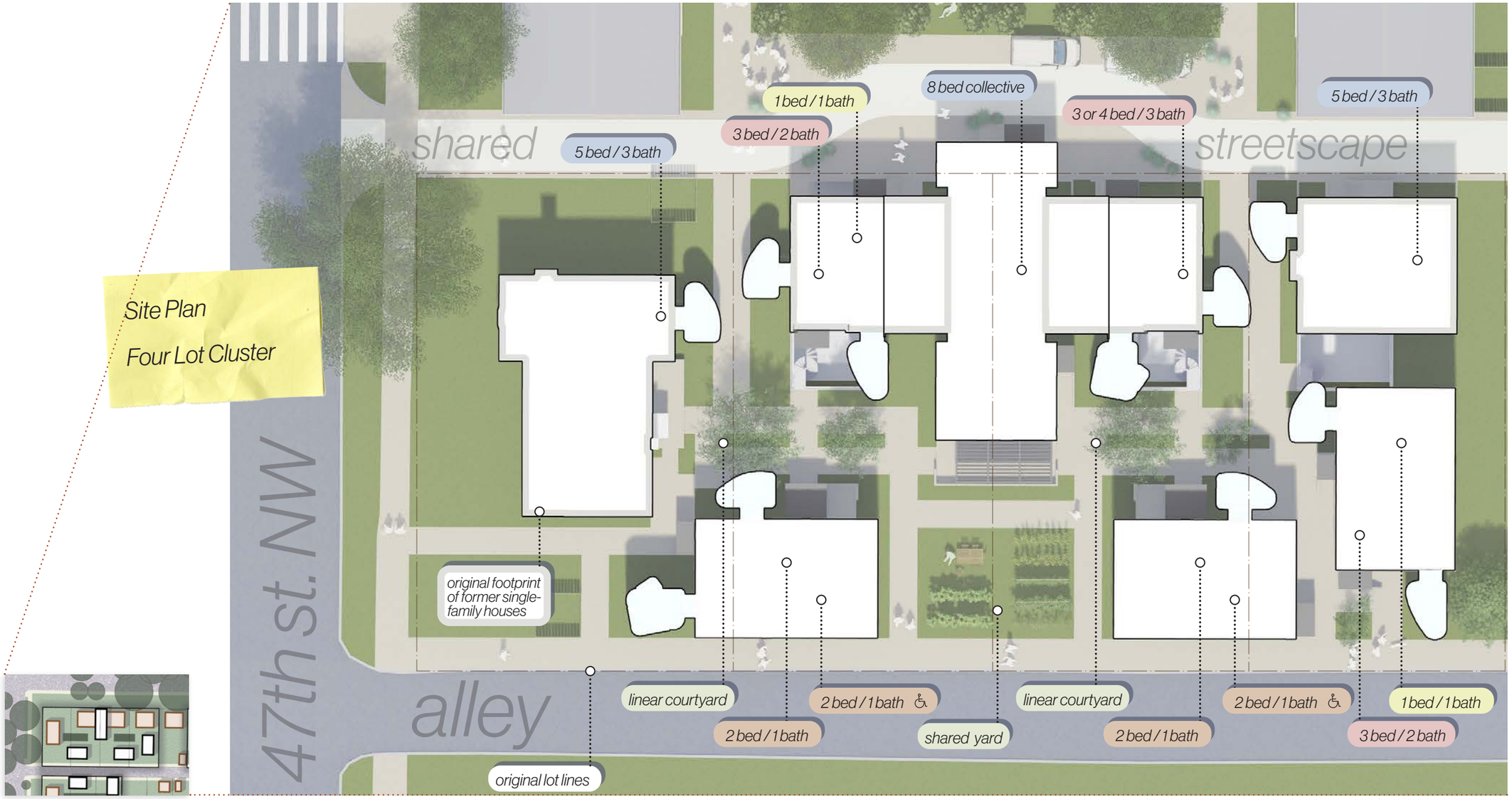

As demonstrated above, the same general configuration of buildings which makes up the Two Lot Cluster is present in the Four Lot Cluster. This is done so that clusters might start with one or two properties, and expand in a coherent fashion over time should adjacent properties become available for reprogramming. Similarly, the Three Lot Cluster (depicted on page 61) is a combination of One Lot and Two Lot Clusters, offering the opportunity for either cluster type to expand over time.

*Top Left: Two Lot Cluster Axon Rendering*

*Bottom Left: Two Lot Cluster Unit Configuration Diagram*

*Top Right: Four Lot Cluster Axon Rendering*

*Bottom Right: Four Lot Cluster Unit Configuration Diagram*




# Four Lot Cluster Plan

*Arrangement of units & commons spaces; relationship of complex to street; existing fabric.*

The plan above, of a four-lot cluster, illustrates the organization of the units in the complex and the relationship between the units and the public space.

The front yards of the former houses have been eliminated, and a new shared streetscape -a lane for both pedestrian and automobile use, reminiscent of the woonerf - has been installed at the front of the complex. The lane shifts regularly, encouraging drivers to progress slowly down the street.

The new lane is built on the edge of the public domain, directly up against the fronts of the existing lots. (Interestingly, the property lines at the street are only about 6' off the front facades of the houses; the deep, lush front lawns that can be found in American University Park today are actually mostly public property). Therefore, while the 'front yard' provided by public easements is erased along the whole block, the lane intervention does not encroach directly upon existing private properties.

*Above: Four Lot Cluster Plan*
*The plan above displays the locations of notable features in the four-lot complex and illustrates the nature of the public space.*

# Perspective

*Cluster from alleyway*

The scene above depicts one of the alley-side entrances to the inner courtyard of the four lot cluster depicted in plan on the previous page. Individual entrances to units are marked by sheltered stoops; no units share entrances, so each resident has their own dedicated front door. These stoops are set back from the primary sidewalk and the alley in a small paved court.

Peeking out from behind the new structures is one of American University Park's original houses. Plantings and benches create a pedestrian friendly alley-scape. A two-story modular bathroom core is seen to the right.

*Above: Rendering of new residential structures in the former 4600 S block of Yuma Street NW. These buildings front on the Alley, which is left in-tact and utilized as a parking lane as well as a fire route.*

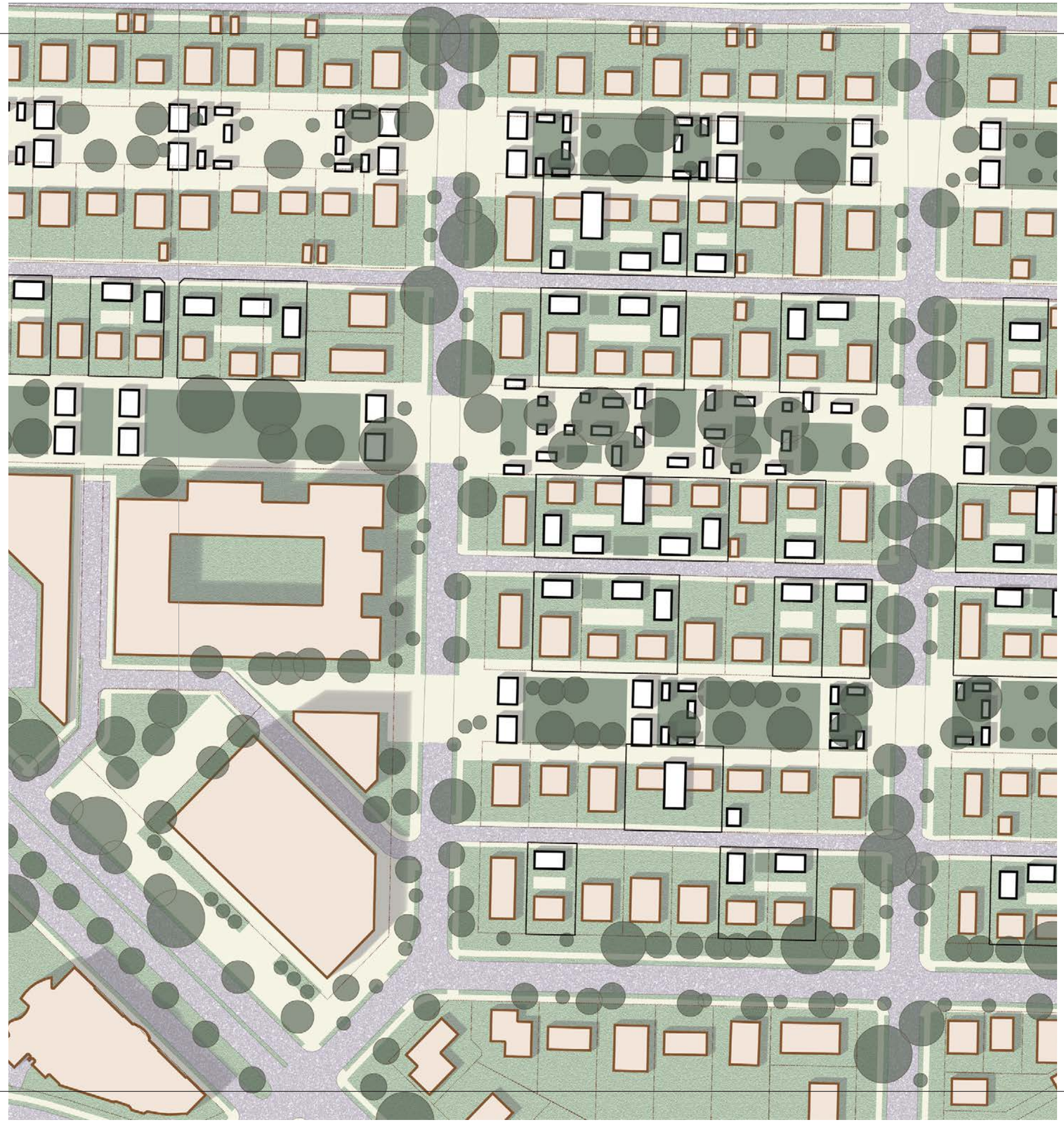
# reprogramming the *street*

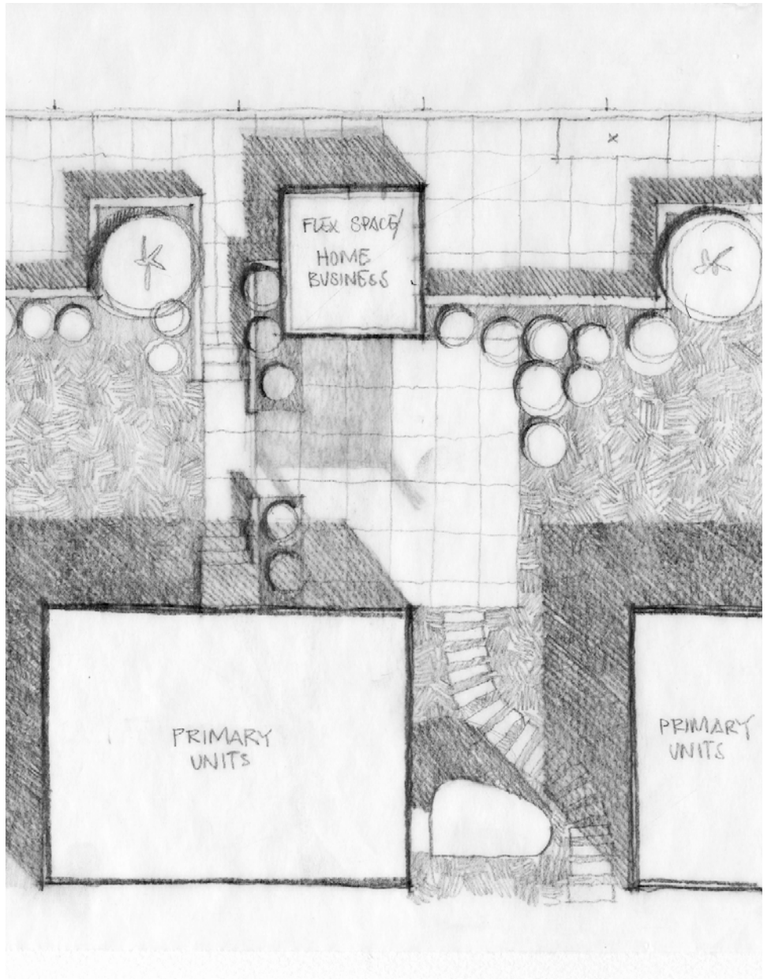
*Repositioning the suburban street as a community resource hub*

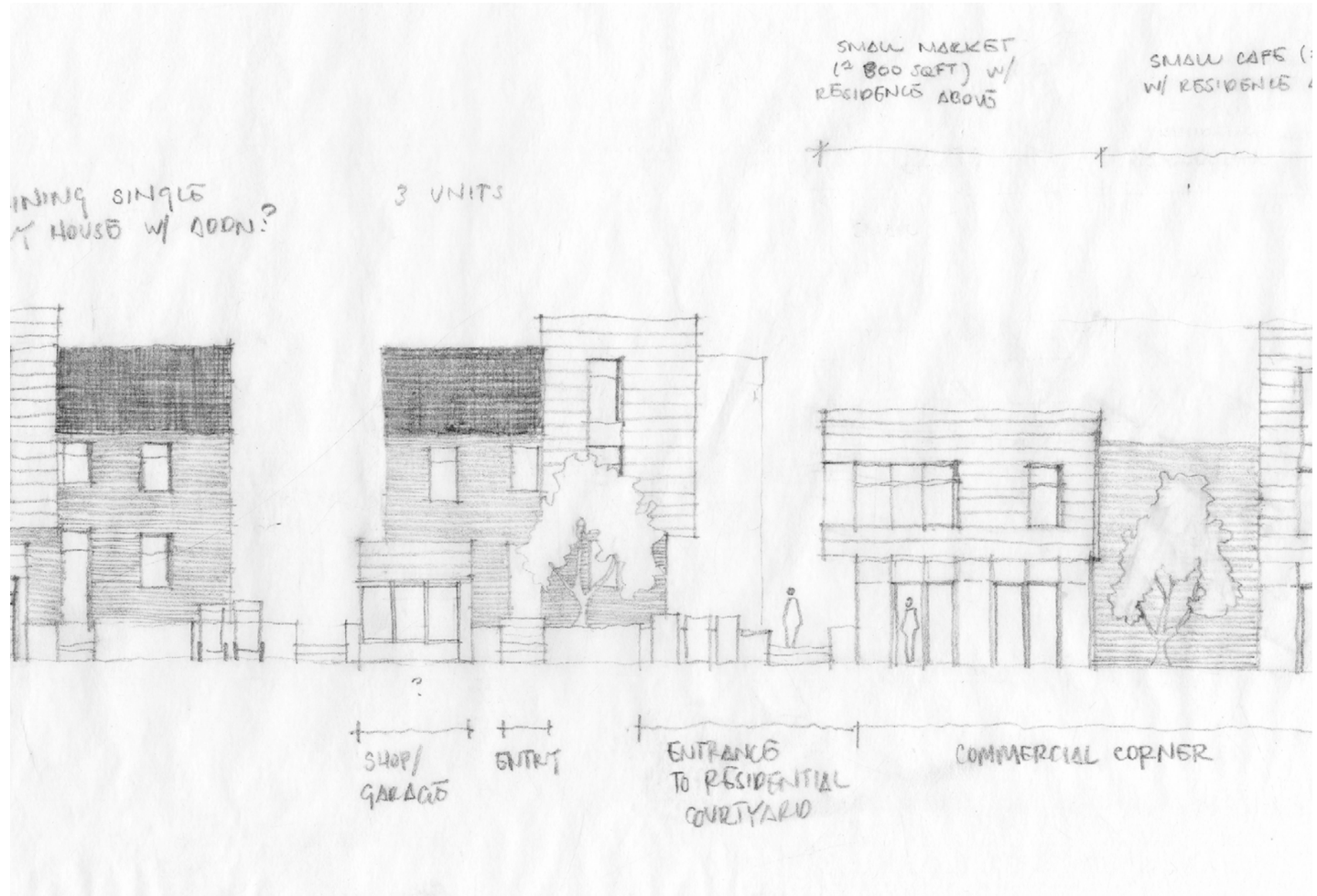
It is well known - or, commonly asserted, at least - that the suburban landscape is unsustainable. Generally characterized by the extreme stratification of land uses as a result of decades of widespread single-use zoning policies, the suburban landscape has fostered in the average suburbanite an extreme over dependence on the personal vehicle, and has thus contributed significantly to increasing trends in air and water pollution and global warming trends. Furthermore, as the suburbs continue to creep outward from urban centers, natural resources and habitats and agricultural landscapes are cannibalized, threatening the survival of various animal species and local ecosystems (Kelbaugh, 2019).

Though American University Park is perhaps far more connected than many outer ring suburbs are nowadays, its residents appear still to be heavily dependent on personal vehicles - on any given day, streets can be seen lined with parked cars. The automobile-oriented infrastructure of American University Park indeed takes up quite a bit of space. The 4600 block of Yuma Street NW, for example, is platted 90' across, and the houses on either side of Yuma Street are more than 100 feet apart. The lots on the south side of Yuma, meanwhile, are only 91' deep, with the entire width of the 4600 block of Windom and Yuma streets being 198' deep (Grabill, n.d.). Using these numbers, we might estimate that almost 30% of the land area in this neighborhood is given over to the public way, which is generally dominated by the automobile. Could we repurpose this land for other uses? What might it look like if we reprogrammed the street to accommodate individual means of income generation, dedicated places for community gathering, and other programs and socially productive landscapes?

*Right: Neighborhood plan, American University Park, featuring several reprogrammed streets in various configurations.*






# Initial Studies

*Railing against the uselessness of the traditional front yard*

Initial investigations into the reprogramming of the streetscape were generally isolated to front yards and easements, leaving the actual street in-tact. The sketch above illustrates an attempt to imbue the front yard with usable indoor and outdoor spaces by developing a semi-enclosed courtyard between a streetside accessory unit and the main dwelling structure. A low retaining wall provides alcoves in the sidewalk to accommodate mailboxes, rubbish bins, and seating.

This approach reinforces the rhythm of the original houses on the street edge, maintaining a one-to-one relationship between house and accessory unit. Thus it limits the number of accessory units which can be installed on a given street. Furthermore, by neglecting to engage the space of the street (and by potentially offering even more territory to the car, as indicated by the shop/garage note in the drawing above), it quietly maintains the primacy of the car and private car-travel in the public landscape.

*Left: Plan view, front yard.*
*This proposal for reprogramming the front yard effectively attempts to activate the front yard by developing a protected patio space between the house and a new streetside accessory unit. However, it offers little by way of pedestrian-oriented public space, and doesn't challenge the car culture that currently pervades AU Park.*

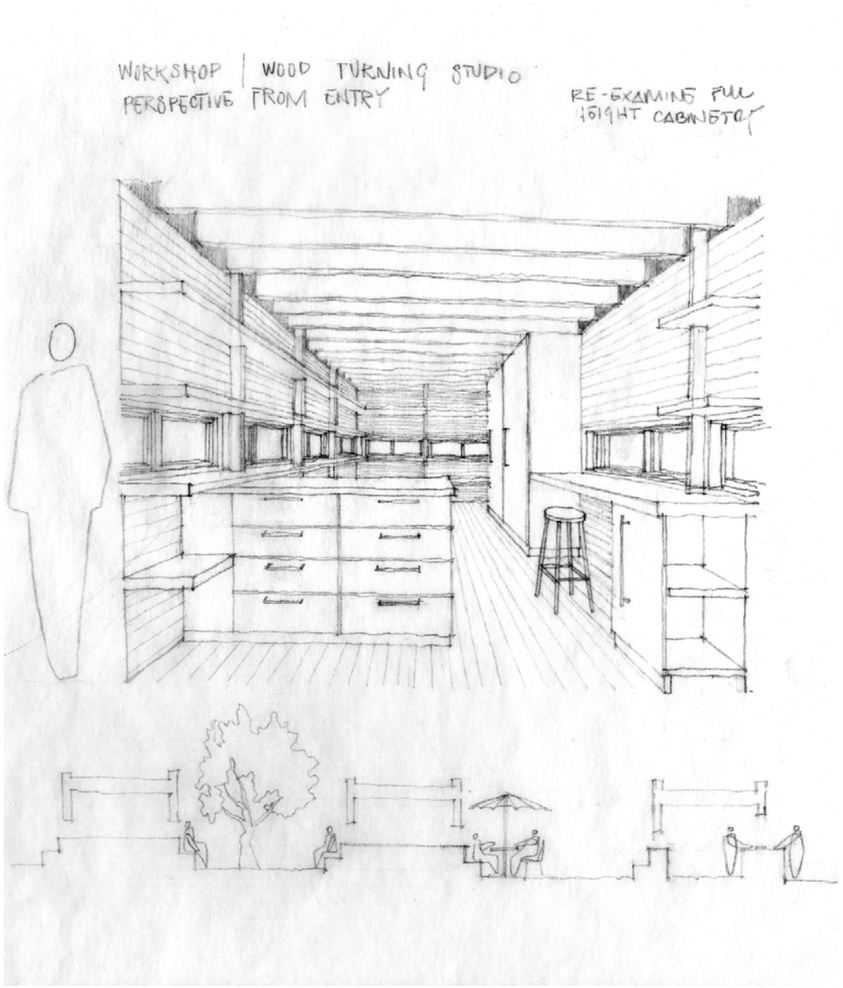
*Right: Block elevation, front yards.*
*The one-to-one relationship between the shop space and the former house behind it is called into question.*

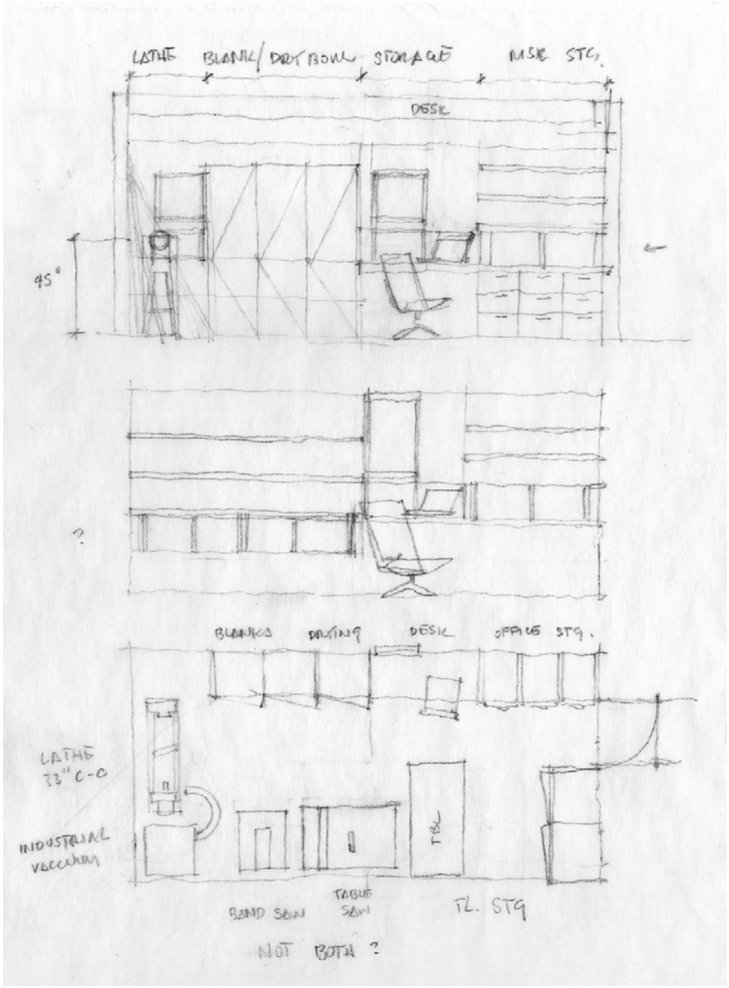
# Pushing the Module

*Elevating the experience of the pedestrian; checking the privilege of the car.*

The proposed design eradicates the existing 35' wide, three lane street. Replacing the traditional street is a pedestrian plaza which spans from property line to property line, encompassing all of the public property on which Yuma street previously sat. The plaza accommodates a single lane of traffic, distinguished from the rest of the plaza by changes in the surface pavement, as well as a field of modular accessory units. These units are intended to serve the residents of the neighborhood as income generation spaces - residents with small businesses can utilize them as offices, workshops, storefronts, etc. The modules interact with one another to form various outdoor rooms within the broader structure of the pedestrian plaza. These outdoor rooms can be taken over by the residents of the block or the tenants of the modules for individual or semi-private uses as well.

*Left: Development of the public plaza. The modular structures form varied patchwork of smaller, more intimate public spaces, which lend themselves to temporary personal or group occupancy. The ends of the plaza nearest the roads are left more open, creating grander pedestrian spaces and introducing urban design elements for seating.*




# Module Development

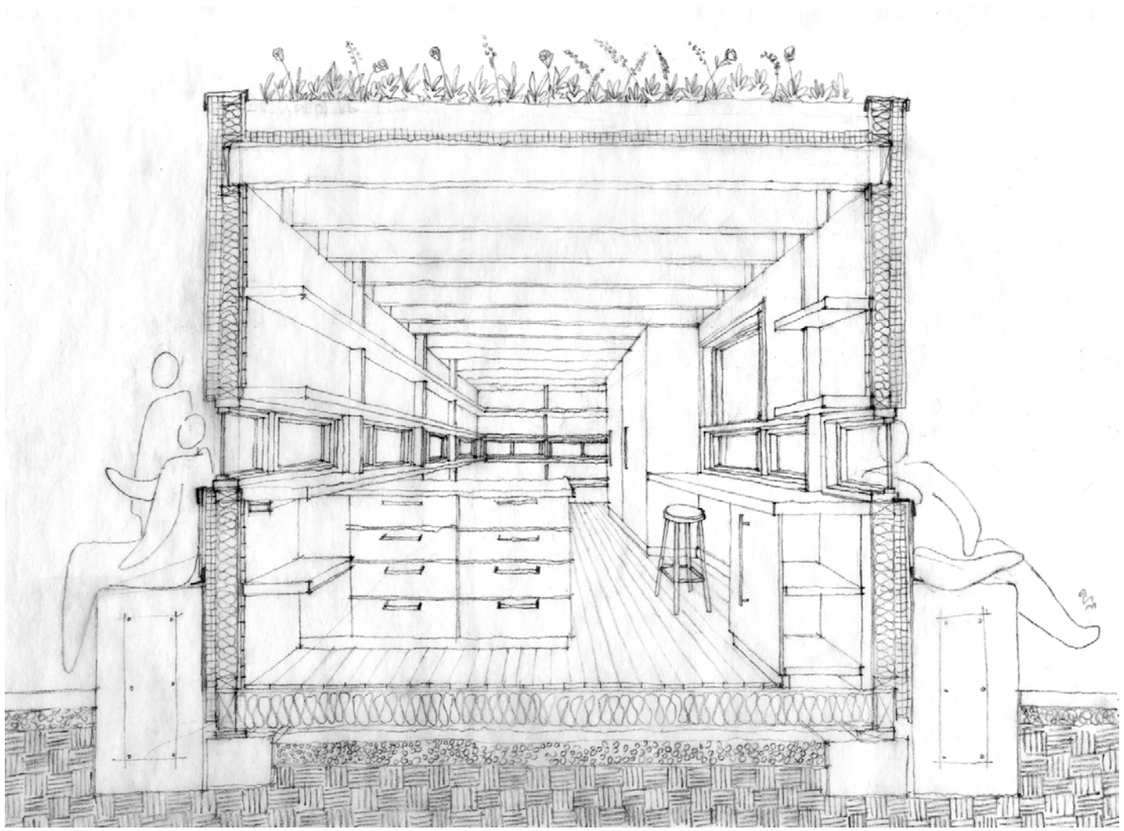
*Creating spaces of income generation outside the home.*

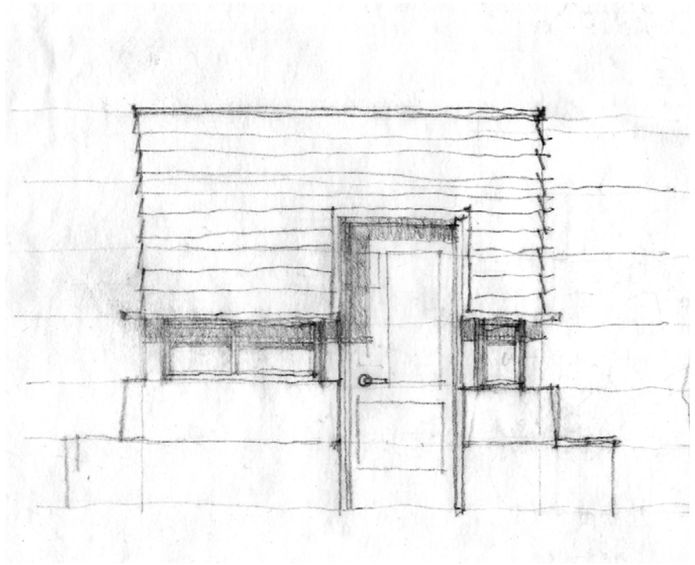
The modules are small - 200 square feet - but they nonetheless can accommodate a wide range of activities. Floor to ceiling shelving and cabinetry wraps the entire room and maximizes the storage potential of the module. Modifications to this integral shelving structure produce worktables and desks, and divide the interior volume into distinct areas. Because the modules are so close to occupants' residences, they need not feature restrooms, or any plumbing whatsoever unless it is needed for individual uses.

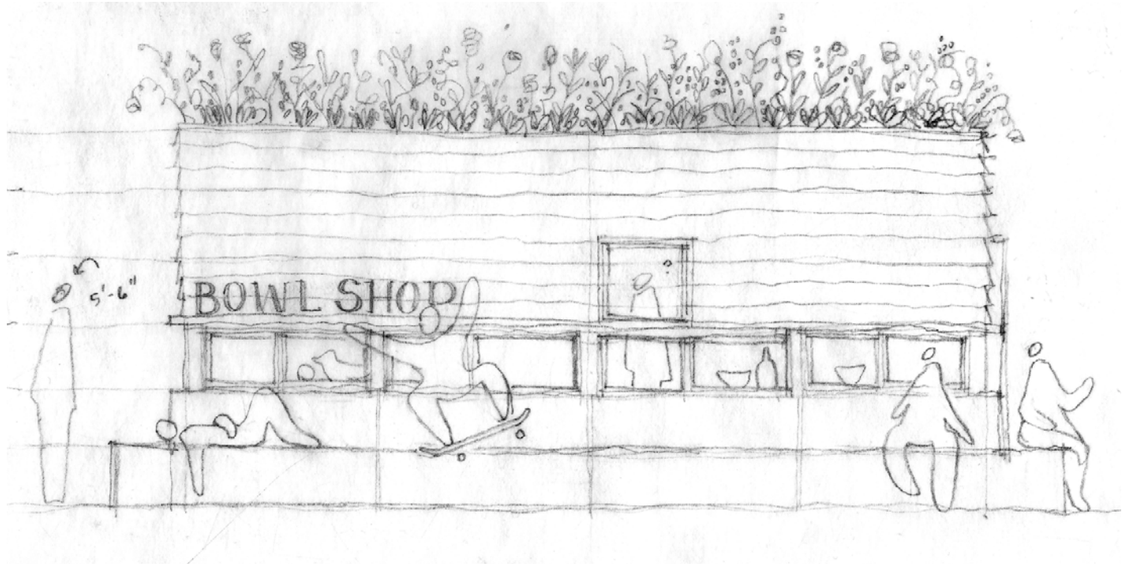
The modules themselves have great potential to engage with the urban space surrounding them. Bench seating built into the exterior envelope give patrons to the shops places to sit and wait for an order, converse with neighbors, or eat a meal. Low horizontal windows might hold hand-made wares, offering interested neighbors the opportunity to get to know their neighbors' crafts without giving them direct sight-lines to the people working inside.

*Left: Interior perspective, woodshop module and modular urban design approach.*

*Right: Interior elevation sketches and plan sketch, wood-turning workshop. These sketches flesh out how a 200 sq ft module might accommodate a small woodshop. Such a space could accommodate a mid-sized lathe, industrial vacuum, band and table saws, 15 square foot worktable, 10 square foot desk, and ample cabinet storage for bowl blanks, assorted tools, and records related to the operations of the business.*







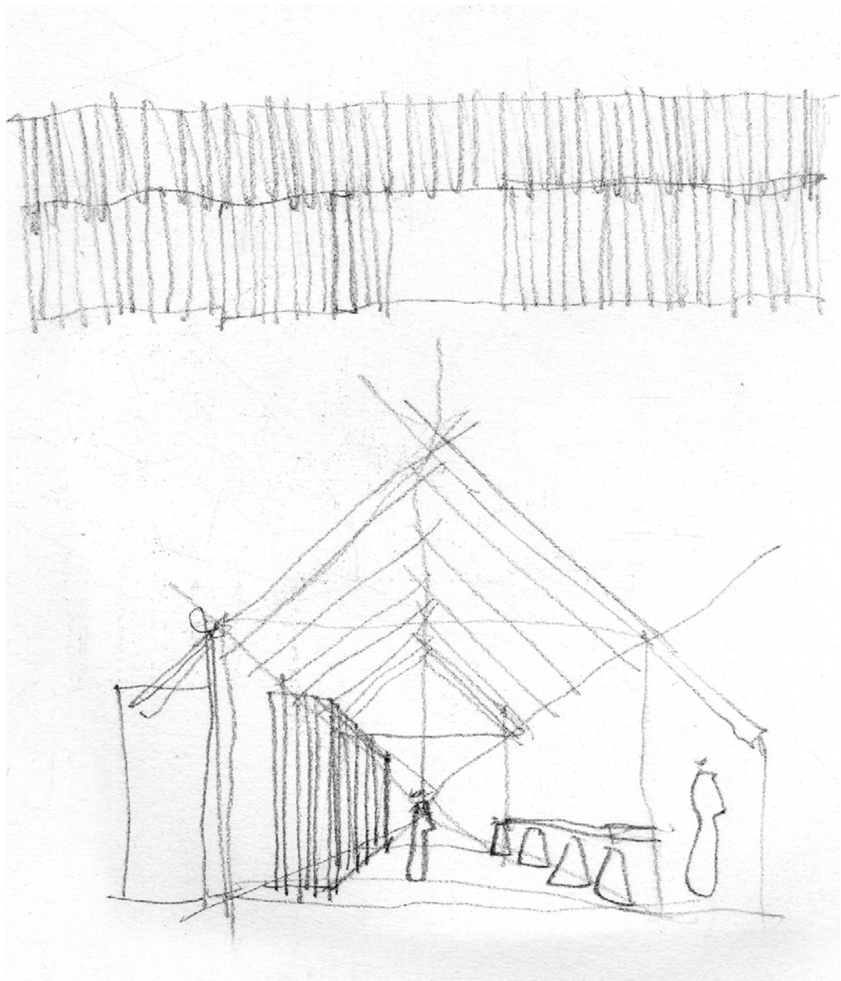

# Module Drawings

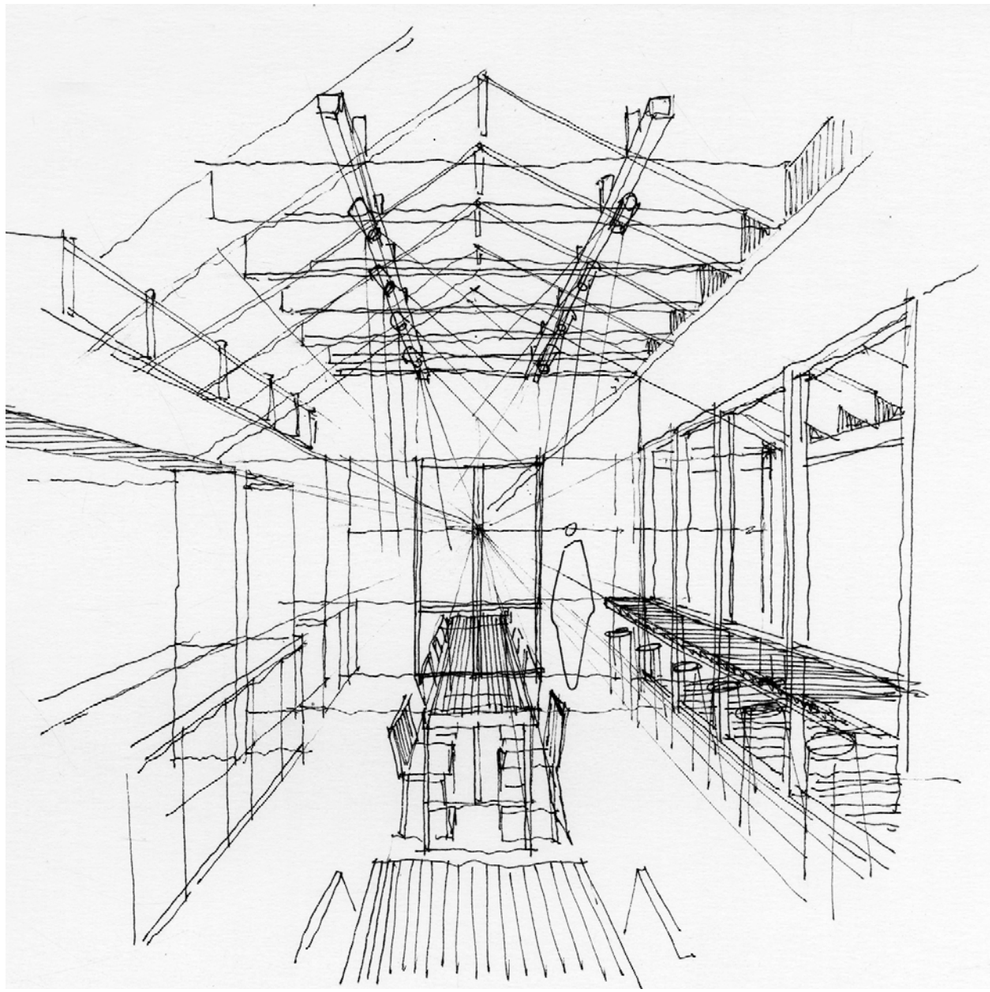
*Private workshop with public presence*

The module above is built into a concrete trough which forms a bench. The trough can be installed as an urban design element prior to the construction of the module. Until the module is built in, the trough accommodates plantings. Therefore, even without a module, the trough serves as a seating element, as a generator of space, and as a focal point in the plaza. This approach also ensures that modules are only installed as demand requires - if few people are in need of a workshop/office outside the home, few modules are installed, and the troughs remain landscaping elements. Conversely, should any module fall into disrepair or go unused, it can be removed, and the trough which contained it can be returned to its former use as a landscaping retainer. This form ensures that the modules are active participants in the plaza. They can accommodate myriad social activities.

*Left: Section perspective sketch of the woodshop module. The module features a green roof , helping to offset the loss of green space occurring with the construction of the plaza.*

*Right: Front and side elevations; woodworking module. The integral bench component encourages community members to engage with the structure.*





# Community Hubs

*Developing brick-and-mortar buildings to serve the community at large*

The former street not only has great potential to accommodate small individual-use modules that serve as spaces of income generation for individuals residing within the community - it also has the potential to accommodate larger structures which cater to the needs of the entire community. These larger spaces introduce services directly into the fabric of the suburb, making the suburban landscape immensely more walkable and reducing the need for car travel in many situations.

These larger spaces are reserved for cafes, communal kitchens, daycare centers, shared workspaces, community centers, convenience shops, and perhaps laundry mats and dry cleaners, among other possible uses. They are designed as simple rectangular gable roofed structures, as this form engages in a dialogue with the existing gable-roofed houses, and the simple form can accommodate a wide range of uses.

*Left: Community resource hub sketches. The resource hubs are relatively simple gable-roofed structures. These structures are flexible, accommodating a wide variety of uses.*

*Right: Perspective sketch of a cafe within one of the community resource hubs. This space features a central hall under the main gable roofed form, and back of house spaces (kitchen, bathroom, mechanical, storage, etc.) within a secondary mass that opens onto the main hall from the left. Seen to the right, a porch shelters the other side of the building, offering refuge and covered outdoor seating areas to cafe visitors.*

# Closed-Form Community Hub

*Inward-looking building catering to residents of the block*

In the rendering above, the community resource hub is oriented so that back-of-house functions face the street, and the building opens toward the inside of the block. The building itself is set back off the street, accommodating a small parking lot in between it and the road. The nearly-opaque street facade and the separation of the building from the road suggests to the casual observer that the building is private, and thus, this form would better lend itself to uses that support the needs of the residents immediately around it. In serving as a barrier that keeps the general public out of the center of the block, the closed-form community hub sets up the entire inner-block streetscape as a 'private' community space, exclusive to the residents of the immediate block. This will result in insular blocks, which see less traffic from the public at large.

*Above: Closed-Form Community Resource Hub. The closed-form community resource hub is better suited for use by the residents of the block on which it sits. Because it serves as a closed border and keeps the public at large out of the inner block, it creates a more intimate atmosphere in the public space at the center of the block.*


# Open-Form Community Hub

*Outward-looking building serving residents and the general public.*

The opposite of the closed-form community hub is the open-form community hub. In this scenario, the back-of-house spaces of the two commercial units are relegated to the far ends of the gable-roofed structure, and both sides of the building can be opened up with glassy window-walls. In the rendering above, the community resource hub has also been set flush with the houses fronting on 47th street, leaving no space for parking in front but thrusting the building directly into the public realm of 47th street. Because there is no physical buffer between the resource hub and the public sidewalk, and because the street-facing facade is more open and inviting, the resource hub is better suited to serve the residents of the block and the public at large. It serves as a vibrant public gathering space, even perhaps encouraging outsiders to pass through the central breezeway and to check out what the center of the block has to offer.

*Above: Open-Form Community Resource Hub. The open-form community resource hub invites residents of the block and members of the general public into its doors. It is an open border where the two groups mix freely. Because of this, it is well suited to accommodate local businesses, whereas the closed-form community resource hub would be better suited to hold dedicated resident-based services. The open-form community hub emboldens residents of the general public to enter into the center of the block, potentially making this space more public as well.*

# Quarter-Block Site Plan

*Putting the pieces together*

The whole block begins to take shape. The existing intersection is converted from a four-way to a T-junction, and the former 4600 block of Yuma Street is given over to the new pedestrian plaza. Two open-form community resource hubs occupy the center of the block; the one facing the street accommodates local businesses while the one in the center of the block (right) accommodates shared resources for the immediate neighborhood. East of the community resource hubs, a cluster of private accessory units serve residents as income generation spaces - artists studios, woodshop, and offices, etc.

On the south side of the plaza, a four-lot cluster of residences holds 11 units, including one eight-bed collective living facility and private units ranging from one to five bedrooms. The collective living facility juts out into the space of the plaza, distinguishing itself from the private residences, disrupting the urban edge created by the facades of the former single family houses, and forcing the lane to bend around it, in turn encouraging drivers to progress along the woonerf-style shared street slowly and with caution. Informal parking opportunities along the new shared lanes accommodate but do not encourage parking; rather, conventional parking is relegated to the alley at the south side of the complex.

*Right: Quarter Block Site Plan. This site plan illustrates how the residential and commercial/civic spaces of the reprogrammed suburban block interact with one another, as well as how the reprogrammed block ties into the existing conventional street grid.*

## Community Events

*Establishing the reprogrammed street as a node of commerce and social activity*

The community resource hubs work in tandem with the orderly rows of existing structures to create well defined public squares. These squares can be given over to formally-programmed outdoor gathering spaces, like the plaza depicted above. In this particular case, the asphalt plaza is a remnant of the former Yuma street. Disconnected from the new lane grid, it now serves as a productive gathering space. In the section perspective above, it is shown hosting a pop-up market - tents and people occupy the former street, and loading vans park along the new lanes on the periphery of the square. Plantings - including the original street trees, which are preserved - partially shield the residences from the activity in the square. When it is not reserved for community gatherings or events, it can be taken over by the neighborhood kids for bike-riding and roller blading, or for other such games, or it could be taken over by the adjacent community resource hubs as an outdoor seating area during times of good weather.

*Above: Section cut through the porches and breezeways of two community resource hubs on the former Yuma Street. The dogtrot form of the community resource hub permits pedestrian travel along the centerline of the public space, carrying visitors to the heart of the reprogrammed street. The hub to the right acts as a threshold between the inner block and the neighborhood at large. Glassy facades on both sides of the building invite residents of the block and visitors from neighboring blocks to converge in this space, making it ideal for a small business such as a cafe. Deeper inside the block, the resource hub buildings might accommodate resources geared toward the residents of the block.*

# Tailored Landscapes

*Using a kit of parts approach to tailor reprogrammed streets-capes to the needs of residents*

The aforementioned public squares may hold any number of facilities, and therefore may conceivably accommodate any number of programs. For example, small community-run farms - supported by food and tool storage spaces in one of the community resource hubs on the block - could be developed. These spaces could easily be given over to the plazas depicted in the section perspective on pages 84 and 85, to module clusters for individual use, to a mix of these uses, or to other uses yet to be explored.

Ideally, residents of a given block will play an active role in deciding what uses the center of the block will be given over to, and no block will look exactly the same, with each accommodating unique programs in this given urban framework.

*Above: Inner-Block Farm.*
*Two residents sit at the farm patio and enjoy some warm weather while two other residents, who've volunteered to maintain the community farm part-time, water the crops and remove weeds from the plots. Meanwhile, a grandmother teaches her grandson about vegetables, and a young couple meanders through the farm on the way back to their apartment.*

# conclusion

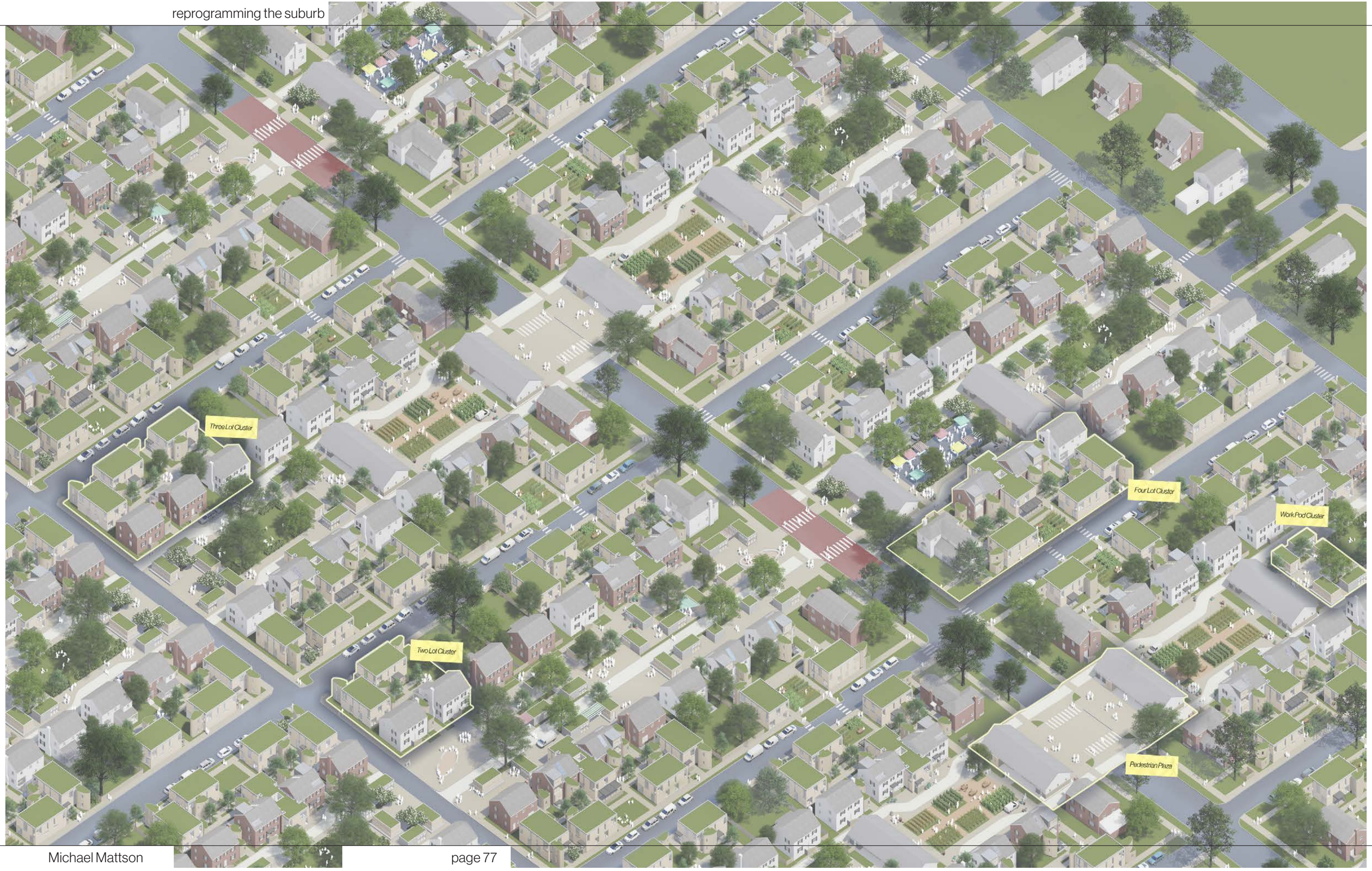
*Concluding thoughts, reflections, and hopes for the future*

This study of the potential of the suburban landscape to accommodate new residents and programs has been incredibly idealistic, and in today's world it would be practically impossible to bring about. Community support would be difficult to garner – in all likelihood, most residents of American University Park have little interest in participating in such an effort if it means sacrificing their own yards or even houses. Current city zoning regulations forbid the development of multifamily and non-residential structures from being established in the neighborhood, and these provisions would almost certainly have to change if such a project were to be effected at the neighborhood scale. Furthermore, the project demands large-scale infrastructural changes which would be cost-prohibitive to private citizens, developers, and governments alike.

Still, one can hope. Across the country, the general public is starting to recognize a need for the densification of suburban communities. Various states, Portland and California included, have passed resolutions upping the number of units that can be built on R - zoned lots, encouraging the construction of denser housing typologies. A recent competition held by the Mayor's office in Los Angeles - Low Rise LA - saw hundreds of professional architecture firms from around the world submitting proposals for the development of denser housing prototypes in suburban Los Angeles. And around the country, private citizens are beginning to see value in the pooling of land and resources, forming and expanding their cohousing facilities, like the 19-house, 19-lot N Street Cohousing Community in Davis, California.

So, even though this project is not likely to be built anytime soon, it offers a hopeful look at how we may one day take up the goal of turning our existing closed-off cookie-cutter suburban neighborhoods into denser, more inclusive, more vibrant, and more resource-rich community spaces - spaces which encourage sustainable lifestyles and begin to eliminate many of the detriments typically associated with the suburban landscape. Let us commence the task of reprogramming the suburb!

*Right: Neighborhood plan, American University Park, featuring several reprogrammed streets in various configurations.*


Three Lot Cluster
Two Lot Cluster
Four Lot Cluster
Work Pod Cluster
Pedestrian Plaza

# Images:

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