Availability equals attainability

or supply meets demand.

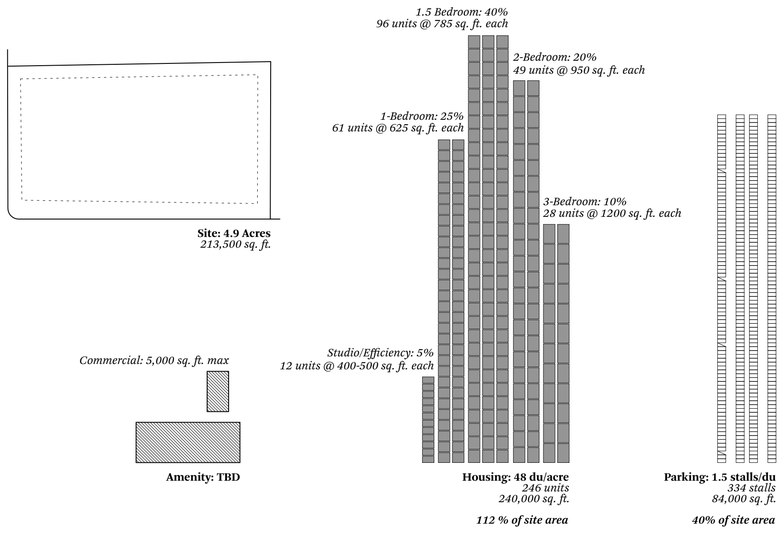
Bentonville is at a crossroads. As its population continues to boom, demand for new housing is straining affordability.

The only way to address fundamental concerns with rising housing costs is to expand availability at scale. The only way to address scale is to examine the systems that the modern housing market has created.

Our approach looks at the mid-rise type as a workhorse that leverages density against affordability. By working within the framework set by its internal logics and structural diagrams, we propose retooling the mid-rise's parts to efficiently increase Bentonville's housing stock.

The architectural consequences of this system have consistently taken the form of the perimeter block as a way to resolve needs in an urban market. Rather than developing a new type, our adaptation takes the form of the perimeter block and turns it inward.

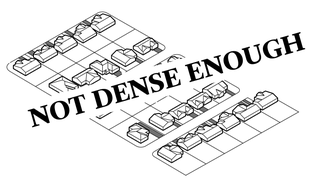
Our target density for this development is 48 units per acre.



The Sweet Spot

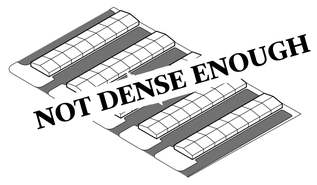
By briefly studying the number of units afforded to townhouses, mid-rise, and high-rise construction it quickly becomes apparent that the low-rise is not dense enough, while the high-rise is too cost-prohibitive. This leaves the mid-rise development as the most viable path for affordable density.

Low



Single Family Plots: 5.1 du/acre

25 Units
78.67% Open
Cost $

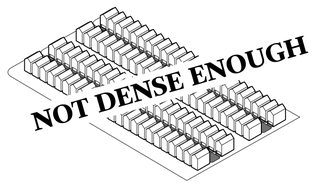


Drive Up Apartments: 16.3 du/acre

80 Units
58.61% Open
Cost $

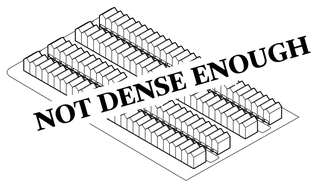
1

Low



Detached Townhouse: 18.7 du/acre

92 Units
65.69% Open
Cost $

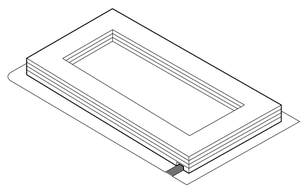


Attached Townhouse: 22.8 du/acre

112 Units
57.49% Open
Cost $

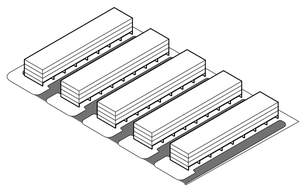
2

Mid



3-Over-1 Donut: 45.3 du/acre

222 Units
59.61% Open
Cost $$

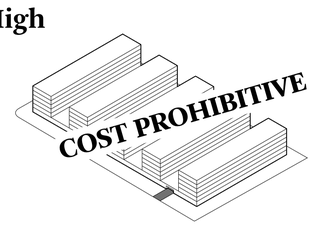


3-Over-1 Bars: 48 du/acre

240 Units
58.61% Open
Cost $$

3

High



5-Over-2 Bars: 81.9 du/acre

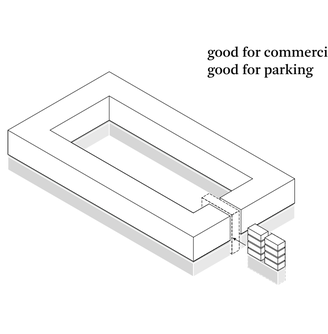
400 Units
25.23% Open
Cost $$$$

20-Story Housing Tower: 102 du/acre

500 Units
93.79% Open
Cost $$$$

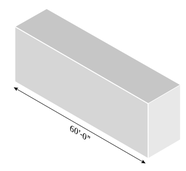
4

The 4/2 has become the defacto type for the mid-rise, mid-market.

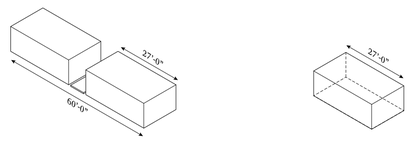


good for commercial
good for parking

good for commercial
good for parking



good for housing



Unpacking the system

The market standard for mid-rise development is the 4-Over-2. Its nomenclature is derived from the standard practice of placing four floors residential over two floors of mixed use. As with most successful housing typologies, the 4-Over-2 has been refined and codified in such a way that it has emerged as the dominant building type for mid-scale, mixed-use development of our time.

The origins of the type are, interestingly, tied to the advancement of building codes that permitted the use of wood frame construction (Type III) atop a noncombustible (Type I, cast-in-place concrete typically) base. The coupling of these two construction types created a perfect marriage of site adaptability and mass production.

The type has evolved around dimensional precursors and the exploitation of the building code to create a highly efficient method for the production of housing.

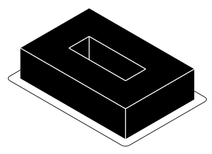
The clarity and universality of the system, since it relied on acceptance by way of a shared building code instead of a location-specific zoning provision, allowed it to be coopted by developers in most American cities that had the need for mid-density, mix-use infill.

It conforms to certain prescribed urban precepts. It's highly efficient. And it's highly predictable.

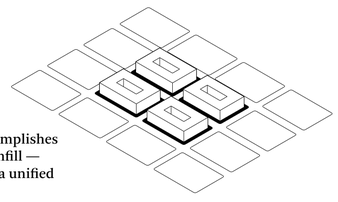
The 4–Over–2 is the A-frame of multi-family housing — placeless in its origin, but ubiquitous in its deployment.

Predictability is tied to affordability.

The Block Builder

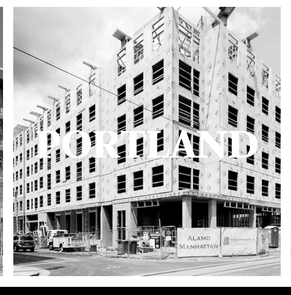


The unitization of the width allowed the manipulation of the form to adapt to common block sizes, forming a strong perimeter — or street wall — pushing ground floor commercial uses to the sidewalk and opening interior space for light and air in the inward facing units.



In aggregate, the massing accomplishes the spatial mandate of urban infill — holding the edge and forming a unified street wall.

Predictability drives development.



The scourage of urban infill.

The type has been rapidly adapted and deployed in most major to mid-tier cities in the US. The clarity of the system has also crowded out architecture, which is thinly applied to the surface.

This type is ubiquitous. Codified in the development handbook. It's become the de-facto housing type. It's placeless, much like suburbanization.

Reliance on type and the belief in style, as in the past, has come to diminish, if not eliminate the need for design.

Predictability has led to mediocrity.

Lineage of mis-use.

Looking back at other notable types that were ultimately systematized, the 4-Over-2 could be considered the unintentional diagram for mass housing today. It represents the (actual) aggregation of two maligned but ruthlessly deployed housing types, both systematized in their use—the Maison Domino and Levittown.

Le Corbusier's theorization of the concrete podium allowed the building's relationship with the ground to become abstract and flexible to adapt to and reproduce its site, producing efficiency and density.

Levittown's logics of mass production leveraged wood framed construction over subsidized land to create a surplus of standardized units. Cheap building materials paired with unskilled labor drove down the cost per square foot. Aided by simple plans and details, stick-built is copy-paste.

In combining these systems, the 4-Over-2 marries site adaptability and mass production.

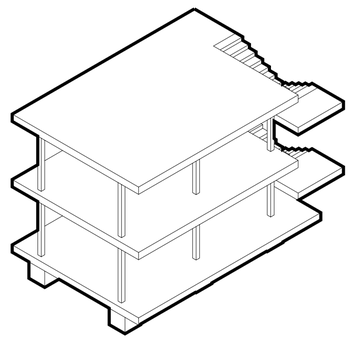


Diagram for Mass Housing.
Europe, ca. 1914

High

+

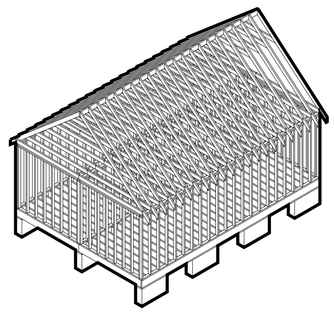


Diagram for Mass Housing.
United States, ca. 1950

Low

=

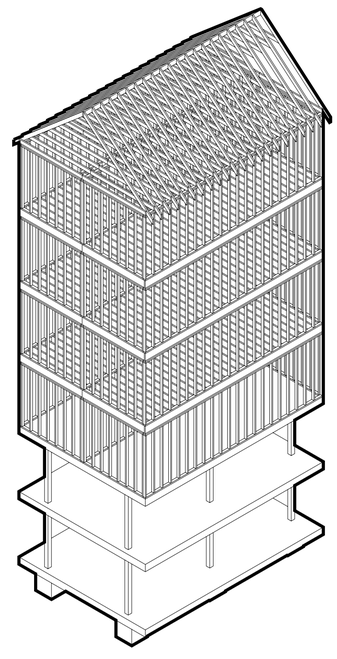
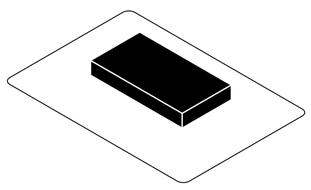
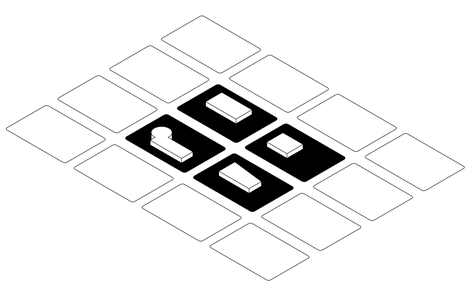


Diagram for Mass Housing.
International Building Code, ca. 2009

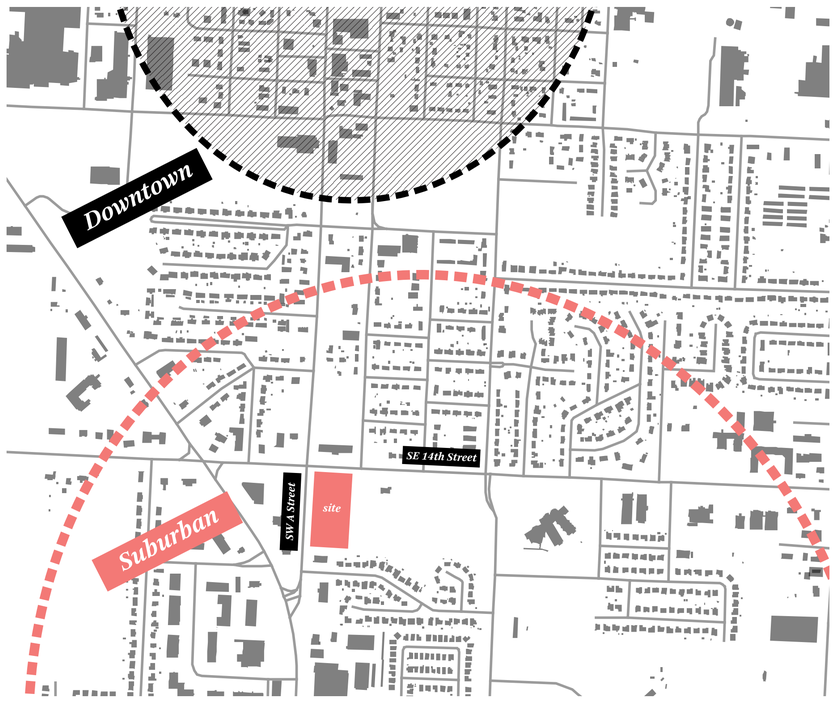
Mid



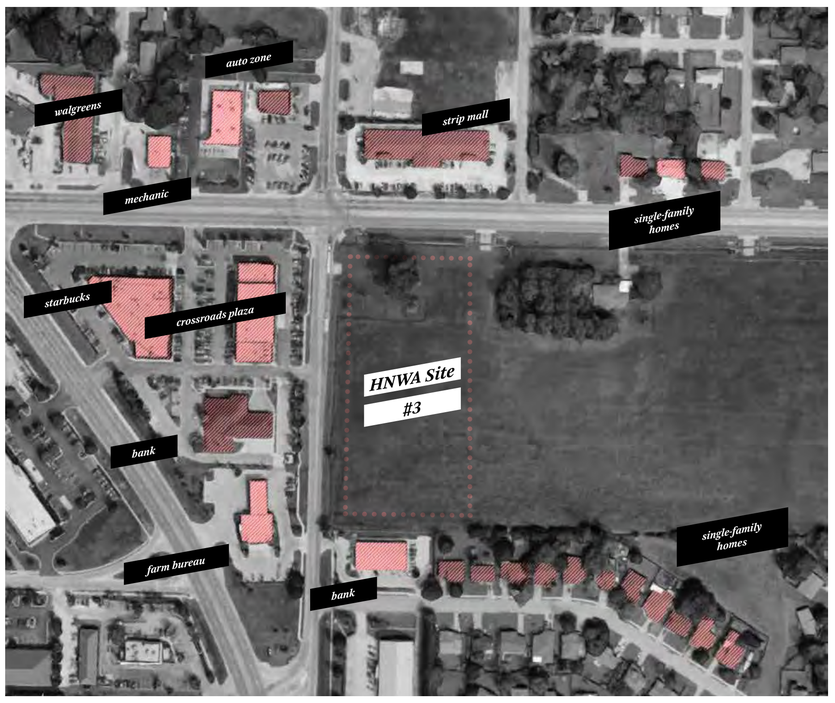


Land logic when land is plentiful

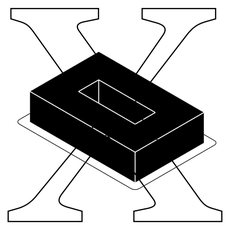
In Northwest Arkansas, the dominant form of housing is the single-family plot. When land is plentiful, the logic is to spread thin. Buildings are short and surrounded by buffer zones. As sites aggregate, this creates an urban condition of low-rise objects in a field.



Area plan illustrates the location of the site in a predominantly suburban context.



The site is surrounded by structures occupying the interior of their properties, illustrating the actual spatial context.



The 4-Over-2 block runs counter to these conditions. It pushes to the edge instead of pulling to the center. It assumes more blocks will follow. It refuses to acknowledge the strip mall and parking lot across the street.

Bentonville Housing Types and Density Models

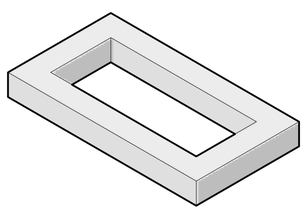
Bentonville's housing stock is primarily single-family types, making up approximately 95% of the overall housing inventory, or clustered small-scale residental units.

How to rescue form from the demands of predictability.

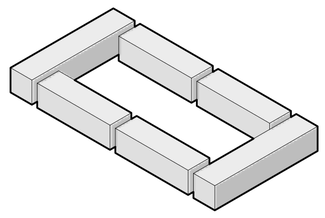
The realities of development mean tested systems are necessary to maintain efficiency, which, in absence of subsidy, is an economic necessity.

While the 4-Over-2 development is highly effective because of the systems that allow its rapid construction and development, it is still somewhat absent from the landscape of suburbs. Suburban development is a tricky matter – in introducing density on an urban scale, does a new development also seek to transform the suburb into the city?

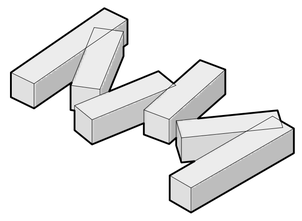
Alternatively, can we effectively manipulate an efficient system, embracing those efficiencies, while localizing it to a town like Bentonville?



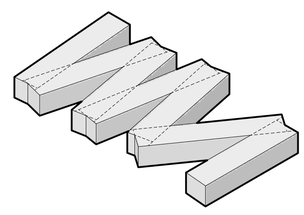
Conventional edge-oriented configuration.



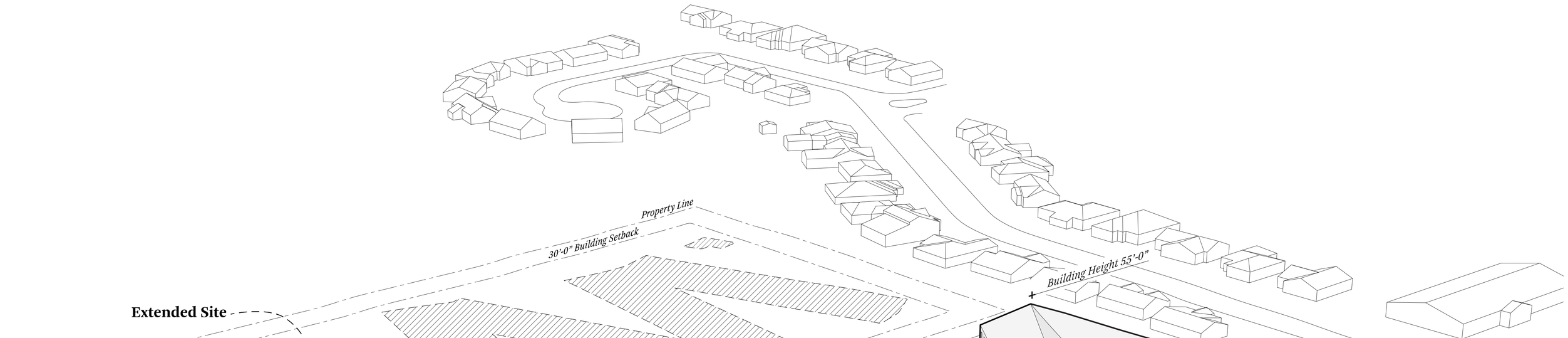
Each block configuration is composed of distinct, easily circulated units.



Instead of assuming the block as the formal outgrowth of type, our approach re-engages the 60-foot- wide bar as the culmination of 4-Over-2's efficiency. Each block configuration is composed of distinct, easily circulated components, which are broken at each of the cores.

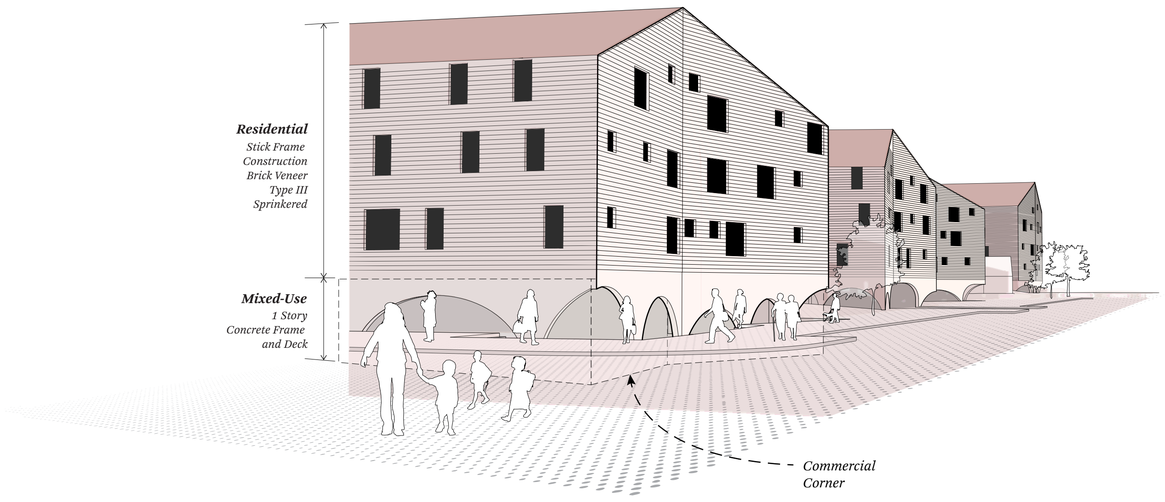


Merging ends of units smoothes out overall form and created interconnected circulation. Re-engaging form to re-engage context rescues architecture from the demands of predictability.

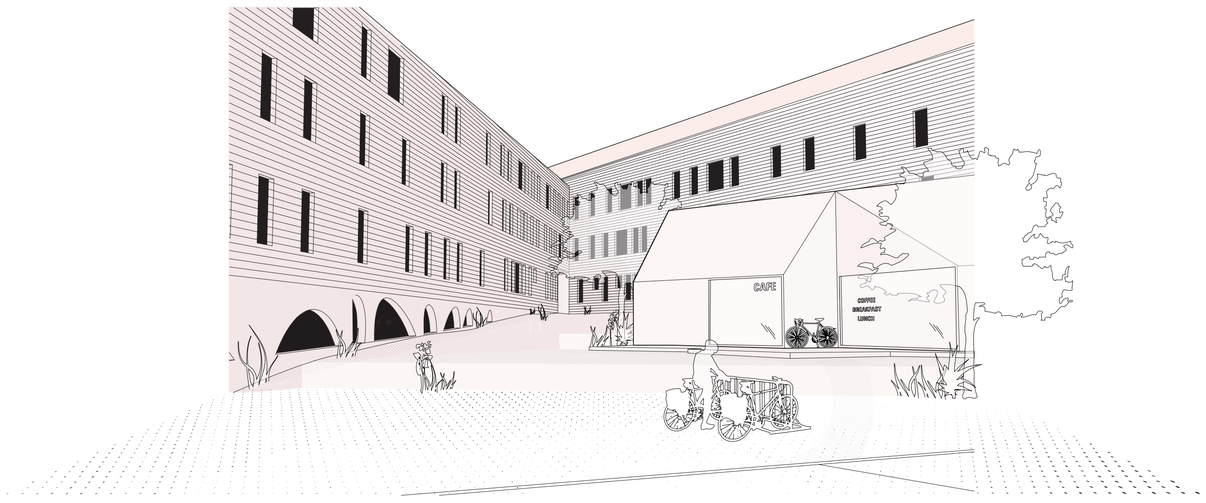


Site Plan / Expanded Site Plan

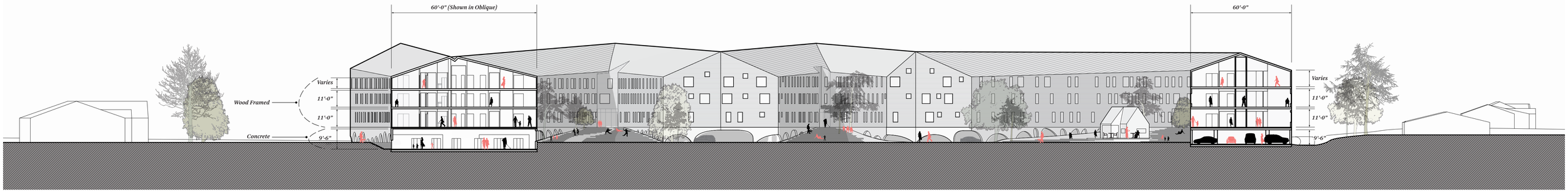
Scale: Not to scale.



View from primary corner.



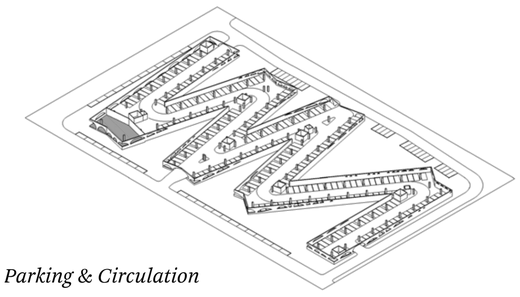
Forecourt with commercial space.



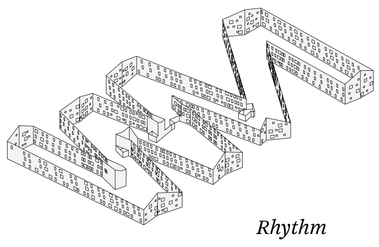
Site / Building Section

Scale: 1/32" equals 1'

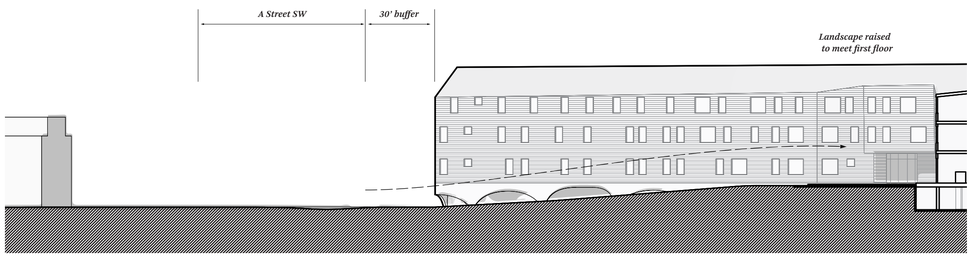
These are all the things it can do when you ask it to do something.



Parking & Circulation



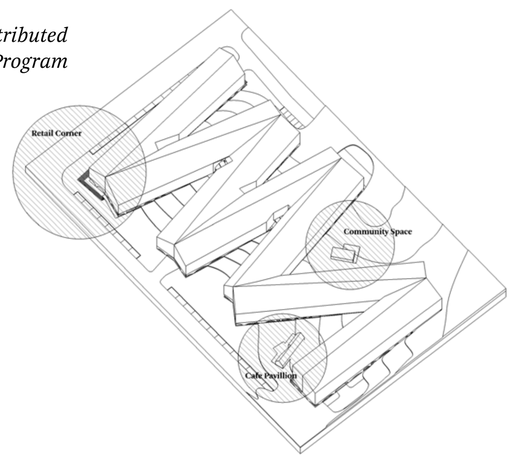
Rhythm

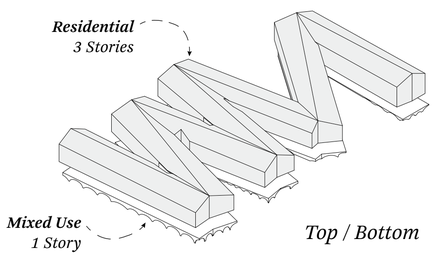


Site / Building Section

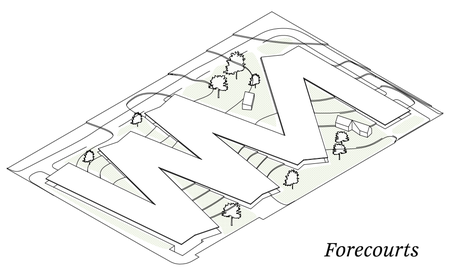
Scale: 1/32" equals 1'

Distributed Public Program





Top / Bottom



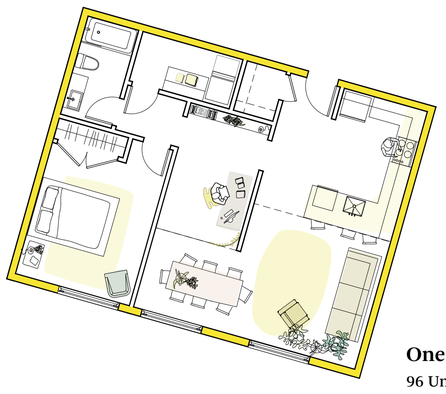
Forecourts

Ground Floor Plan

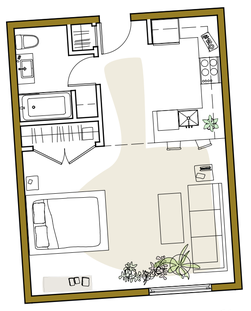
Scale: 1/32" equals 1'

Developed Land Area: 106,961 Sq. Ft.
Open Space: 50%

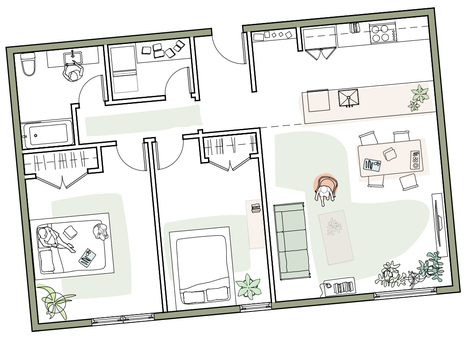
Three Bedroom
28 Units Total



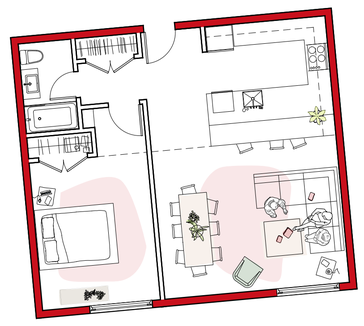
One.Five Bedroom
96 Units Total



Studio
12 Units Total



Two Bedroom
49 Units Total



One Bedroom
61 Units Total

Unit Plans

Scale:

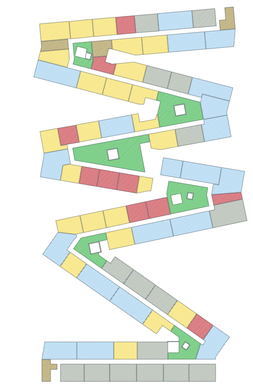
0' 5' 10' 20'

A varied mix of unit types and adjancies.

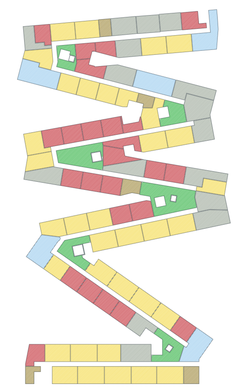
Typical Floor Plan

Scale: 1/32" equals 1'

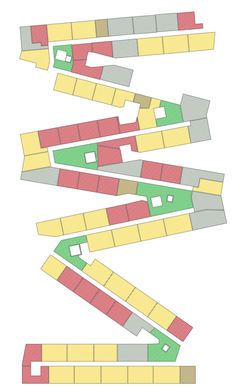
Gross Unit Area: 79,800 Sq. Ft.
Ammenity/ Community Area: 4,000 Sq. Ft.
Circulation: 18%



Level 1



Level 2



Level 3

Total Unit Count: 246

Unit Distribution per Level

Level 1 — 73
Level 2 — 86
Level 3 — 87

Entry court for housing units.

Unit interior with view to forecourt.

Living area with view to adjacent building.