

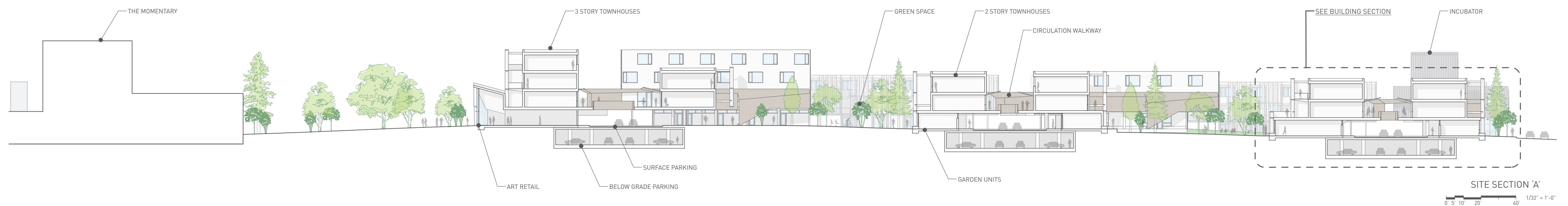
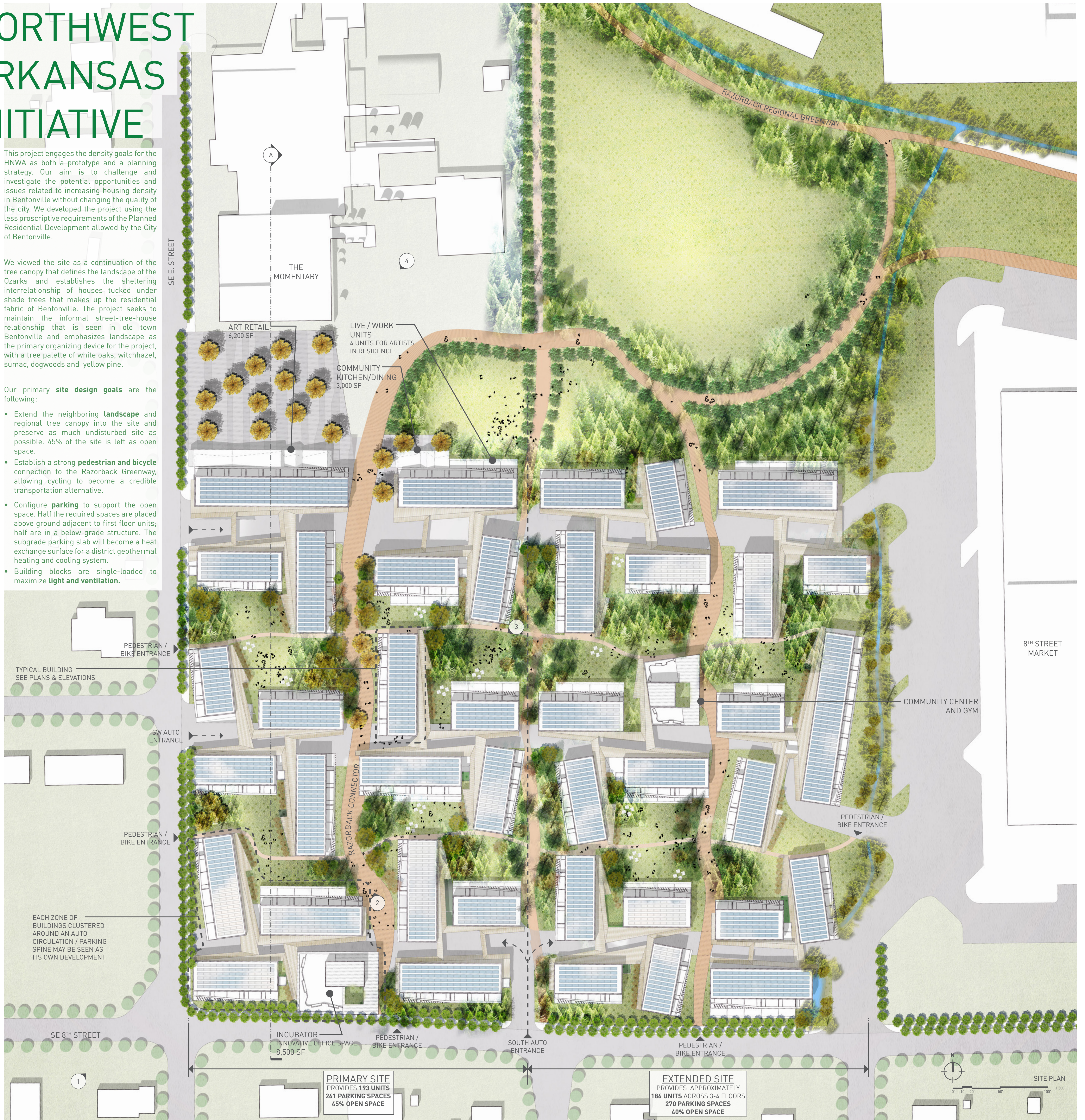
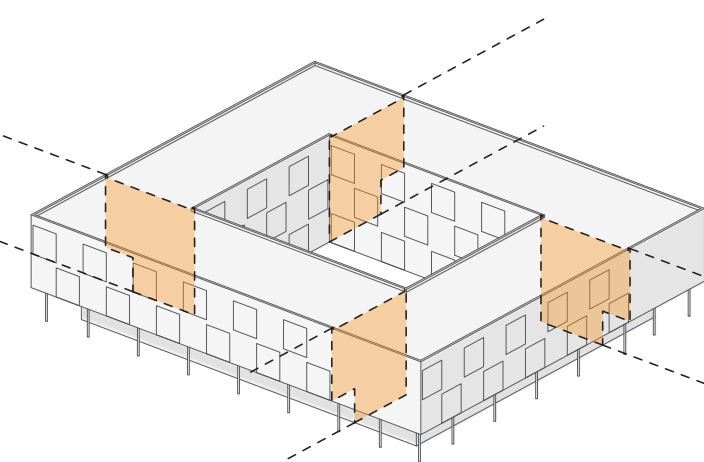
# HOUSING NORTHWEST ARKANSAS INITIATIVE

This project engages the density goals for the HNWA as both a prototype and a planning strategy. Our aim is to challenge and investigate the potential opportunities and issues related to increasing housing density in Bentonville without changing the quality of the city. We developed the project using the less prescriptive requirements of the Planned Residential Development allowed by the City of Bentonville.

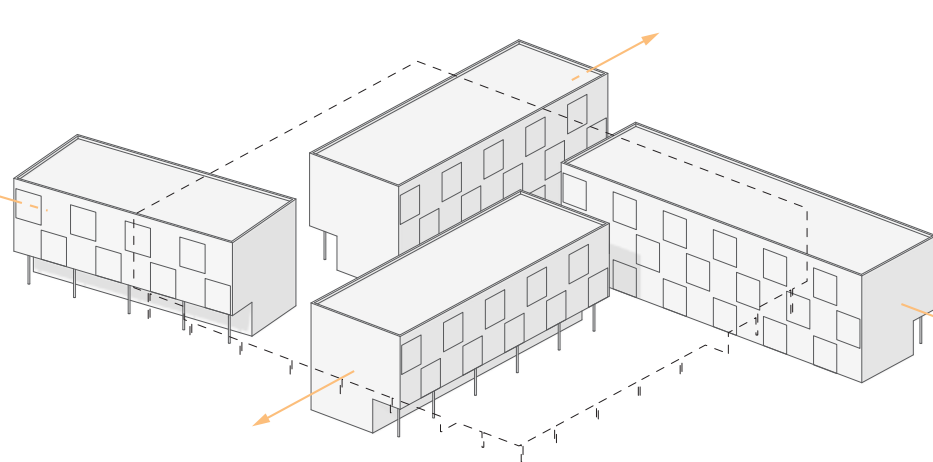
We viewed the site as a continuation of the tree canopy that defines the landscape of the Ozarks and establishes the sheltering interrelationship of houses tucked under shade trees that makes up the residential fabric of Bentonville. The project seeks to maintain the informal street-tree-house relationship that is seen in old town Bentonville and emphasizes landscape as the primary organizing device for the project, with a tree palette of white oaks, witchhazel, sumac, dogwoods and yellow pine.

Our primary **site design goals** are the following:

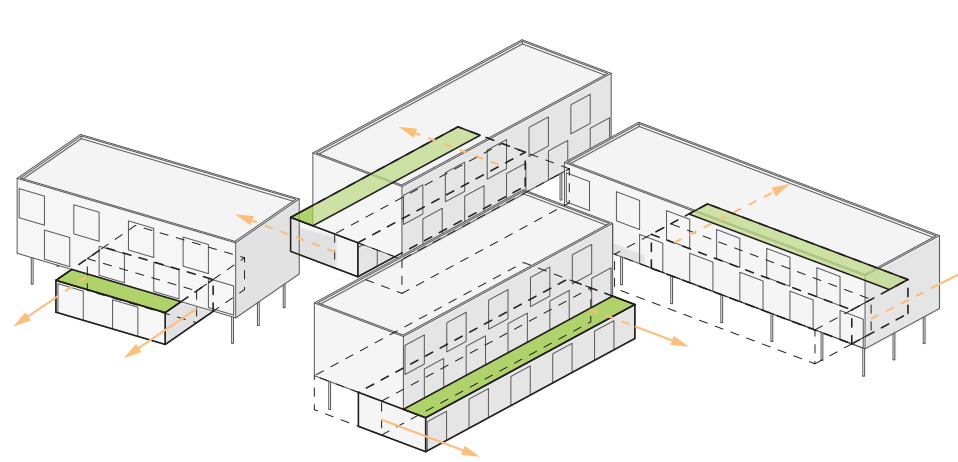
- Extend the neighboring **landscape** and regional tree canopy into the site and preserve as much undisturbed site as possible. 45% of the site is left as open space.
- Establish a strong **pedestrian and bicycle** connection to the Razorback Greenway, allowing cycling to become a credible transportation alternative.
- Configure **parking** to support the open space. Half the required spaces are placed above ground adjacent to first floor units; half are in a below-grade structure. The subgrade parking slab will become a heat exchange surface for a district geothermal heating and cooling system.
- Building blocks are single-loaded to **maximize light and ventilation**.

HOUSING TYPOLOGY TRANSFORMATION  
BUILDING NEIGHBORHOODS

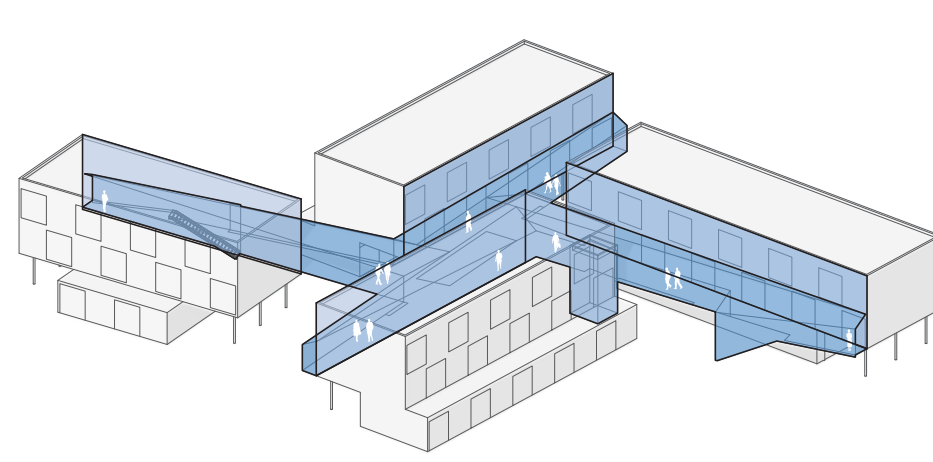
TYPICAL HOUSING TYPOLOGY  
LOW RISE, HIGH DENSITY



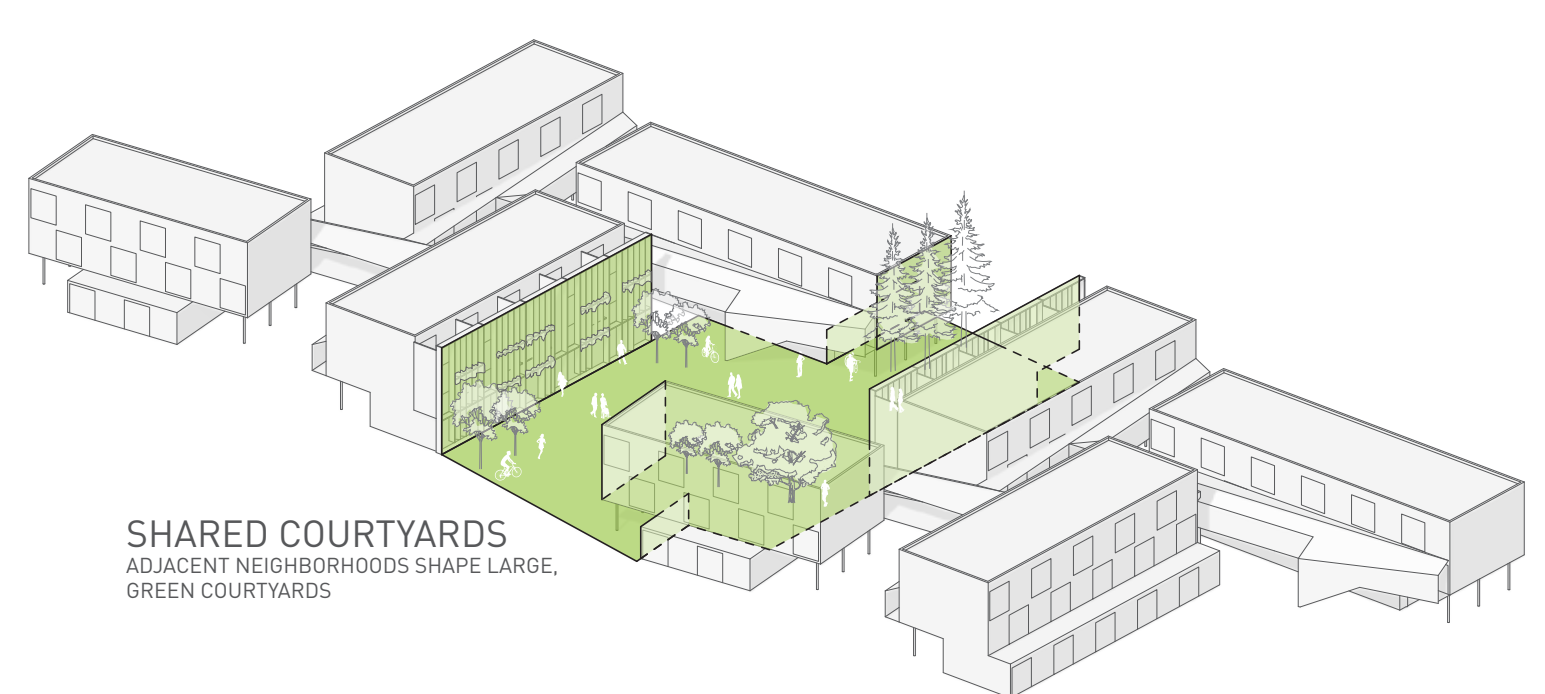
**PINWHEEL**  
INCREASES SUNLIGHT EXPOSURE AND OPPORTUNITIES  
FOR NATURAL VENTILATION



**PRIVATE TERRACES**  
OFFSET GARDEN LEVEL UNITS FORM PRIVATE TERRACES  
FOR UNITS ABOVE AND COVERED PARKING IN REAR



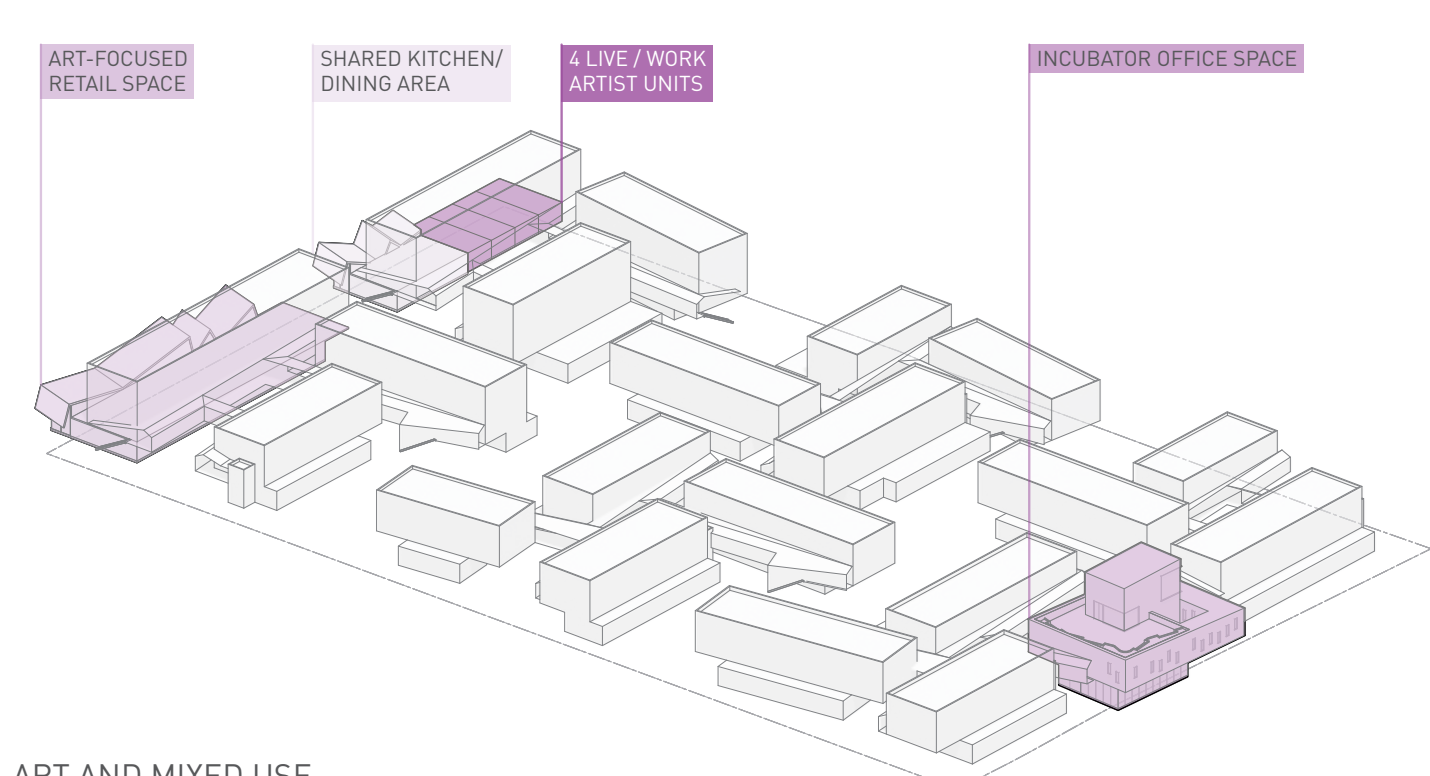
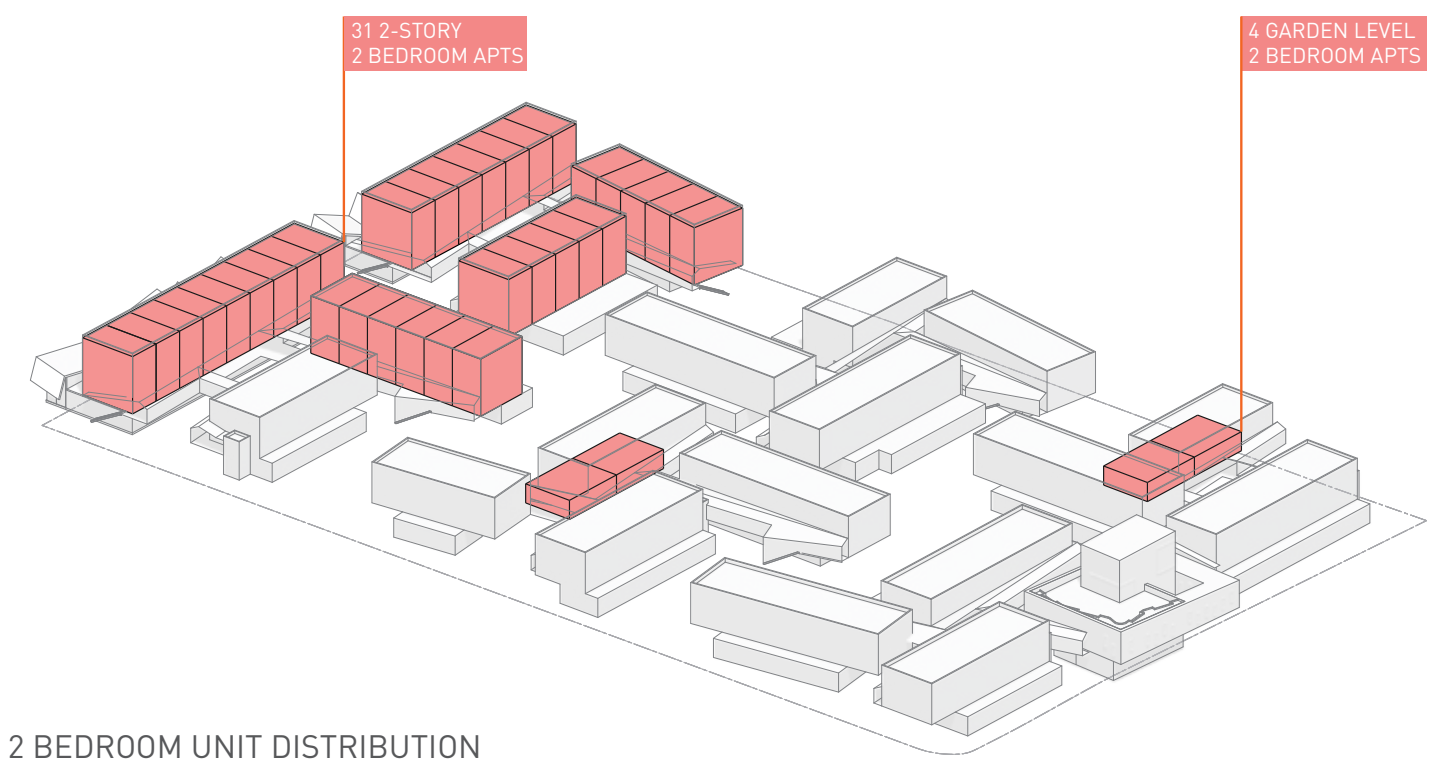
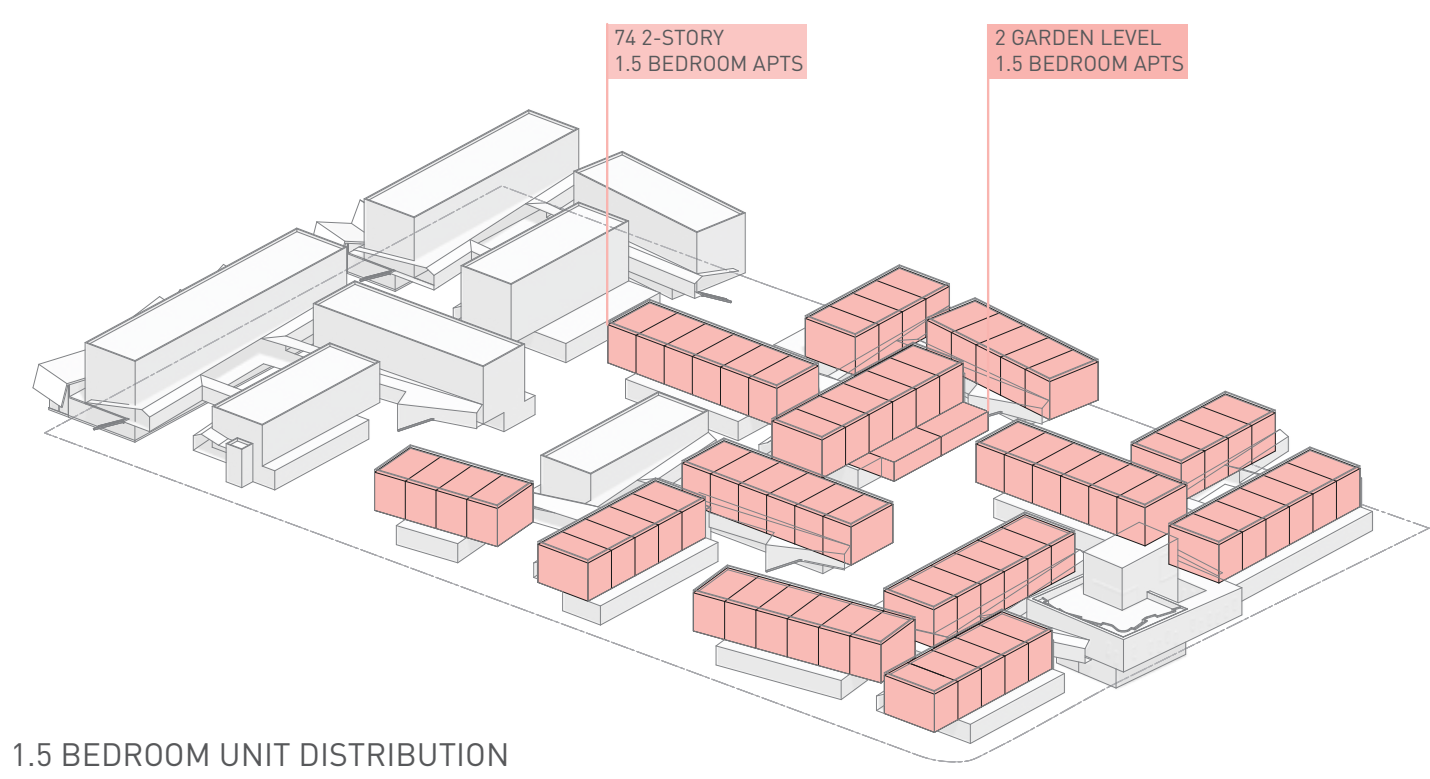
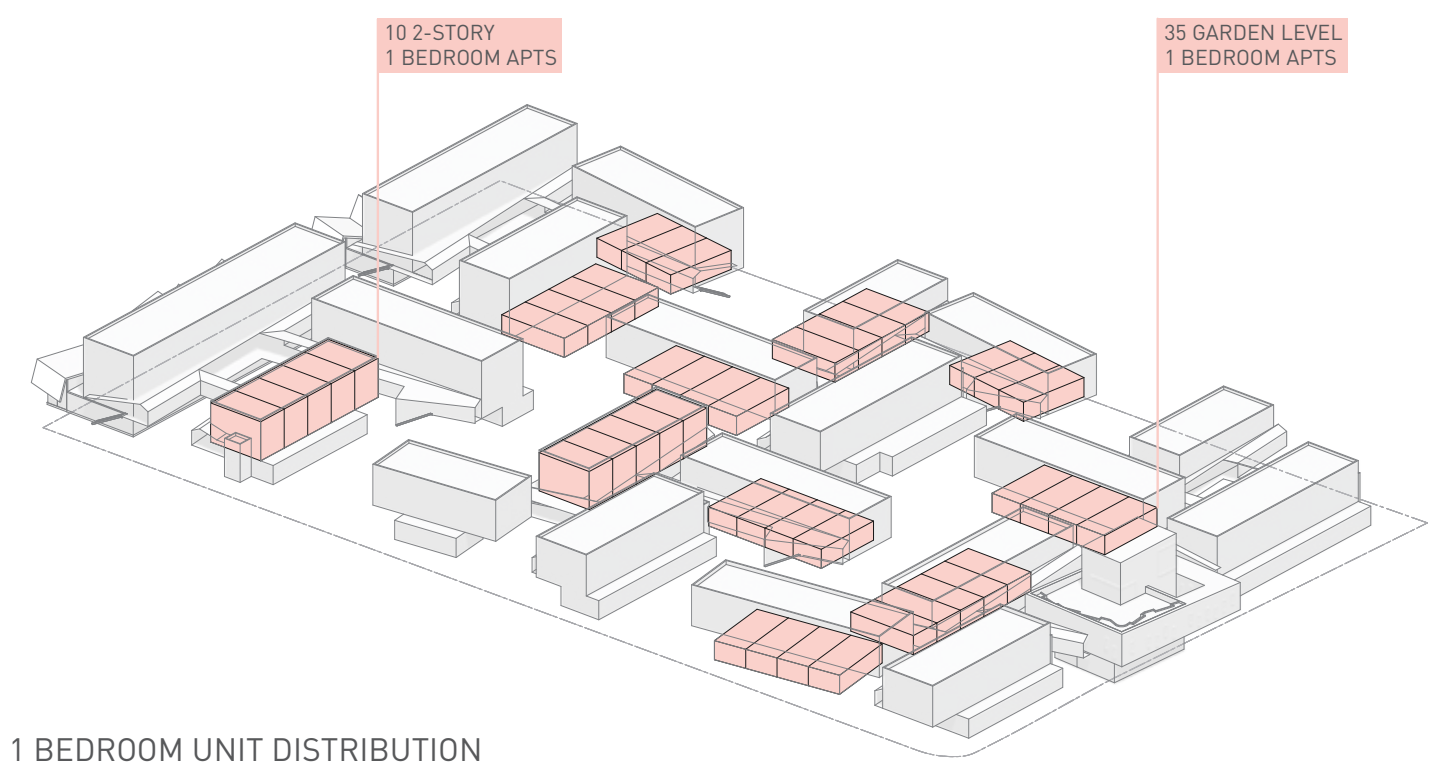
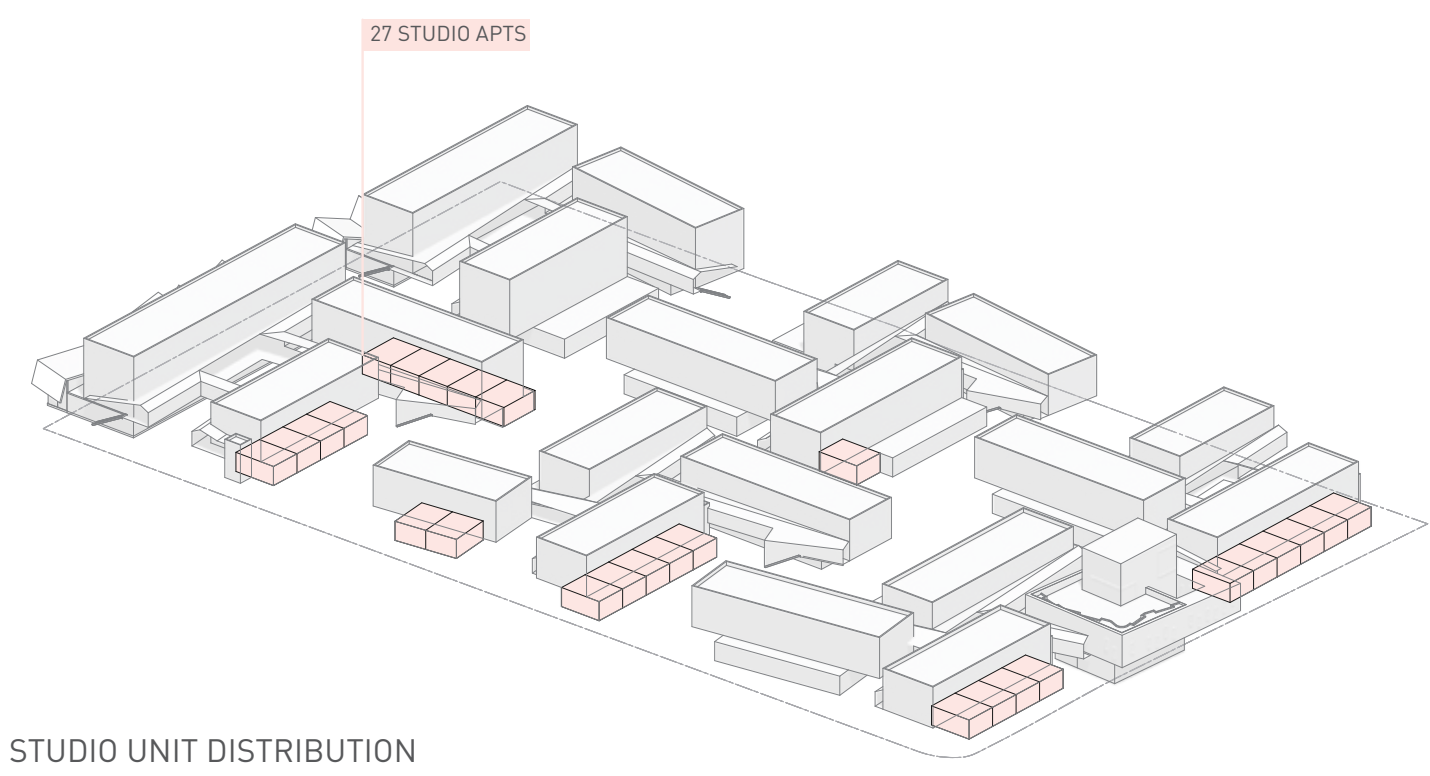
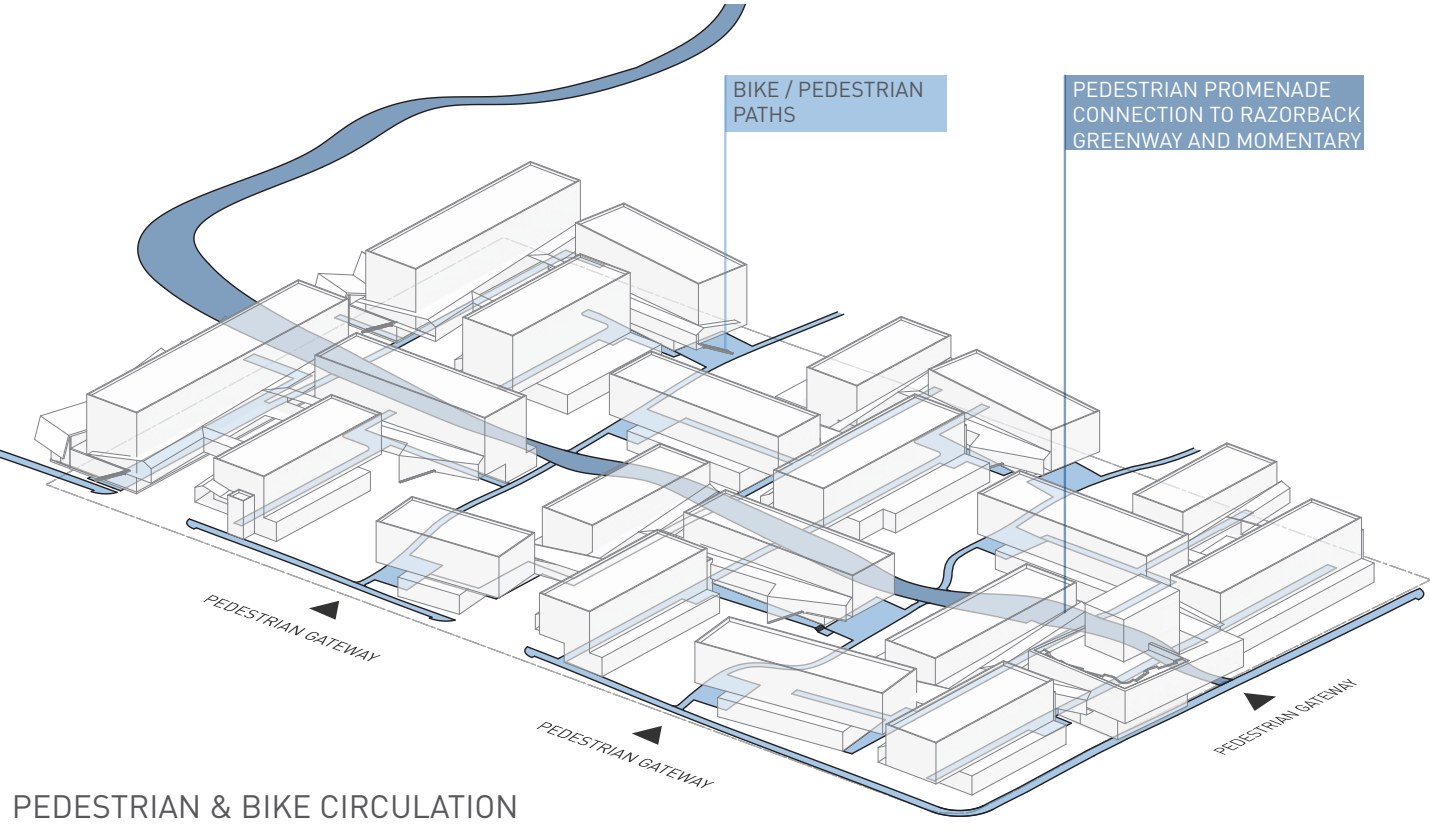
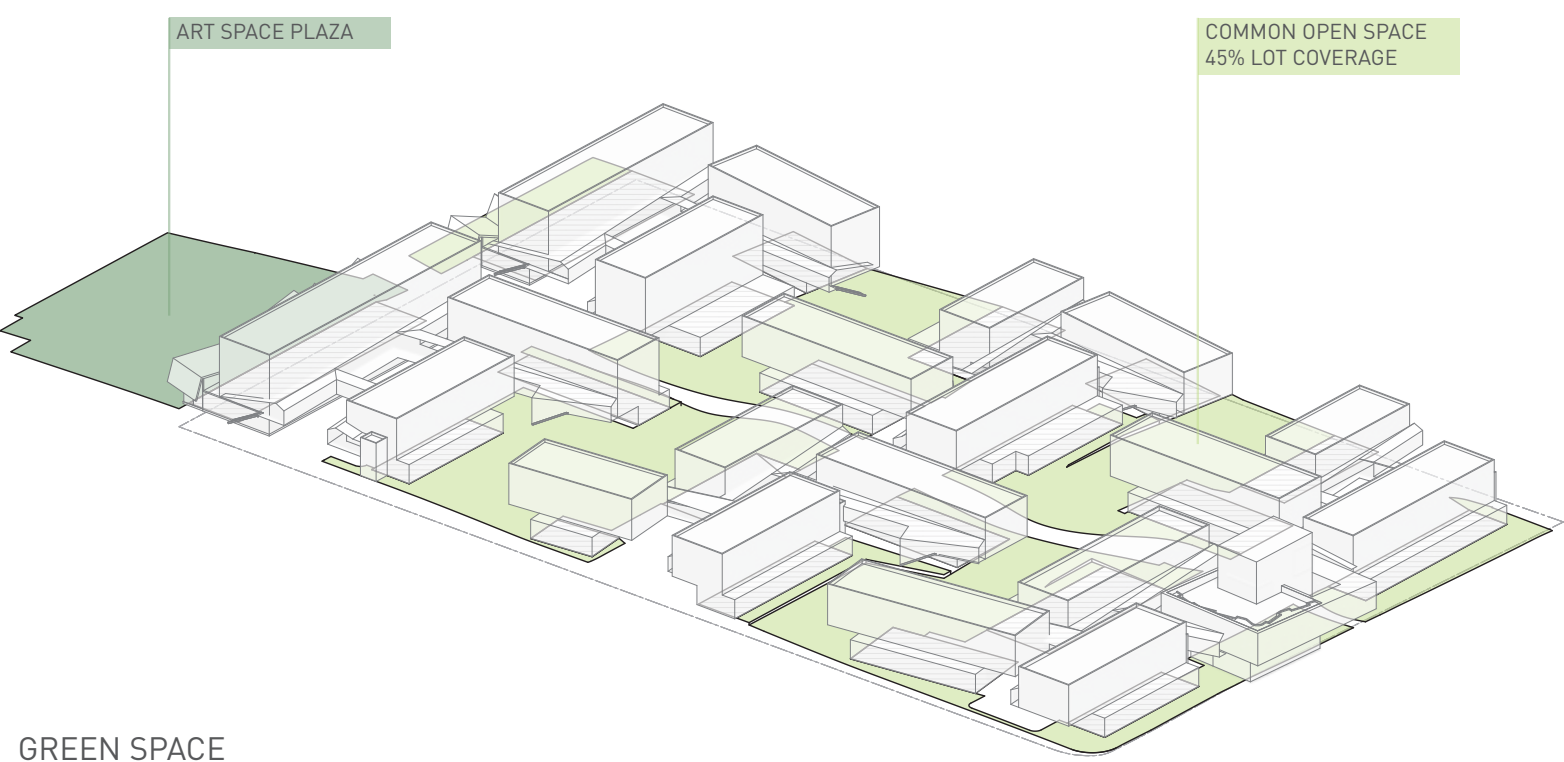
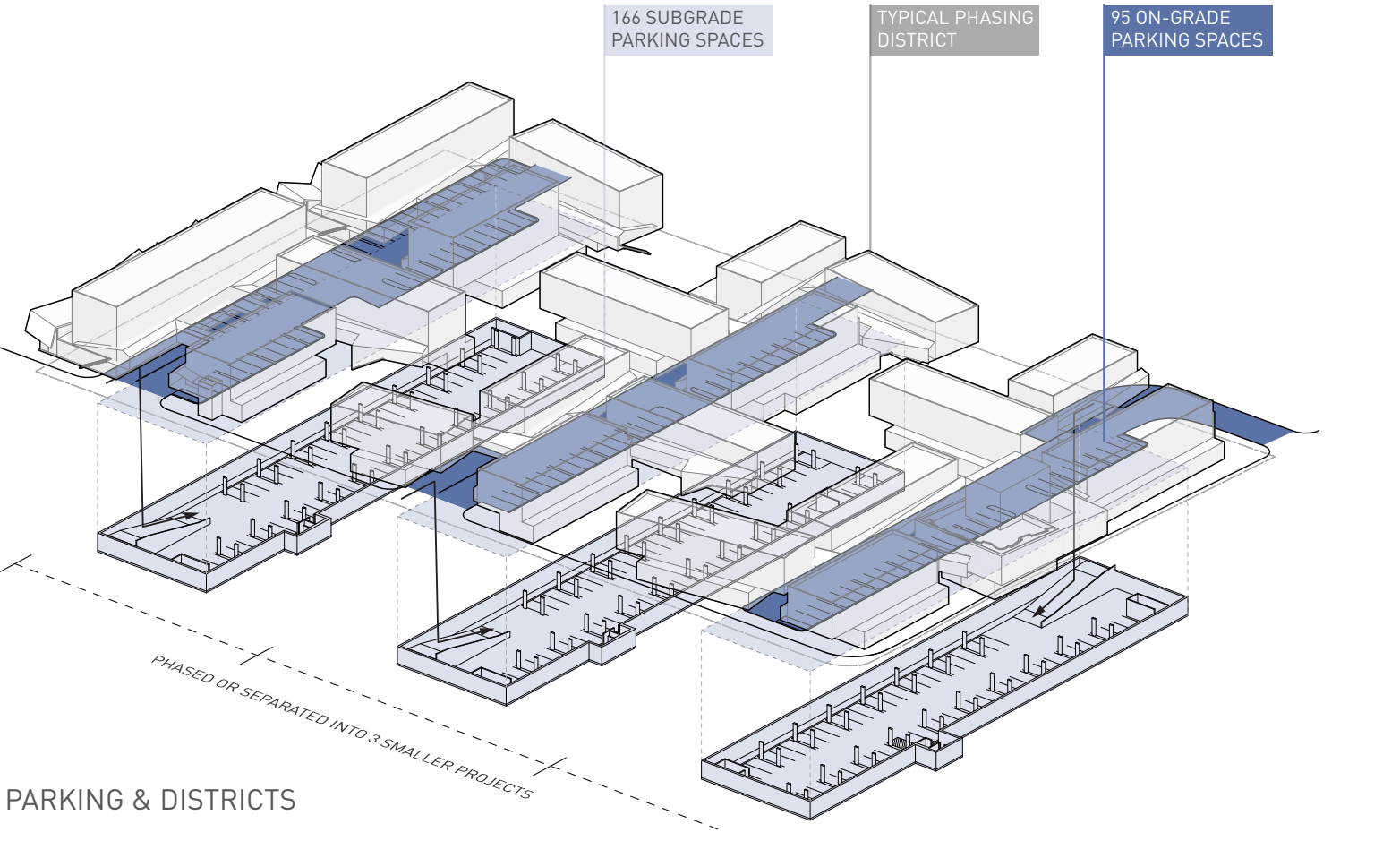
**COVERED WALKWAYS**  
MINIMIZE SHARED ELEVATORS AND EGRESS STAIRS  
WHILE FORMING BUILDING NEIGHBORHOODS



**SHARED COURTYARDS**  
ADJACENT NEIGHBORHOODS SHAPE LARGE,  
GREEN COURTYARDS

PROGRAM

Our project seeks to reinforce the cultural and physical connection with the Momentary by facing the museum with the art retail and live-work unit program. Living units are clustered around open green space, with 1-story garden units at grade and 2-and 3-story townhouses above. 60% of the required parking is located below grade in three single-story structures, with the remainder as surface parking. This allows for a dense unit count while maximizing open space and privacy.

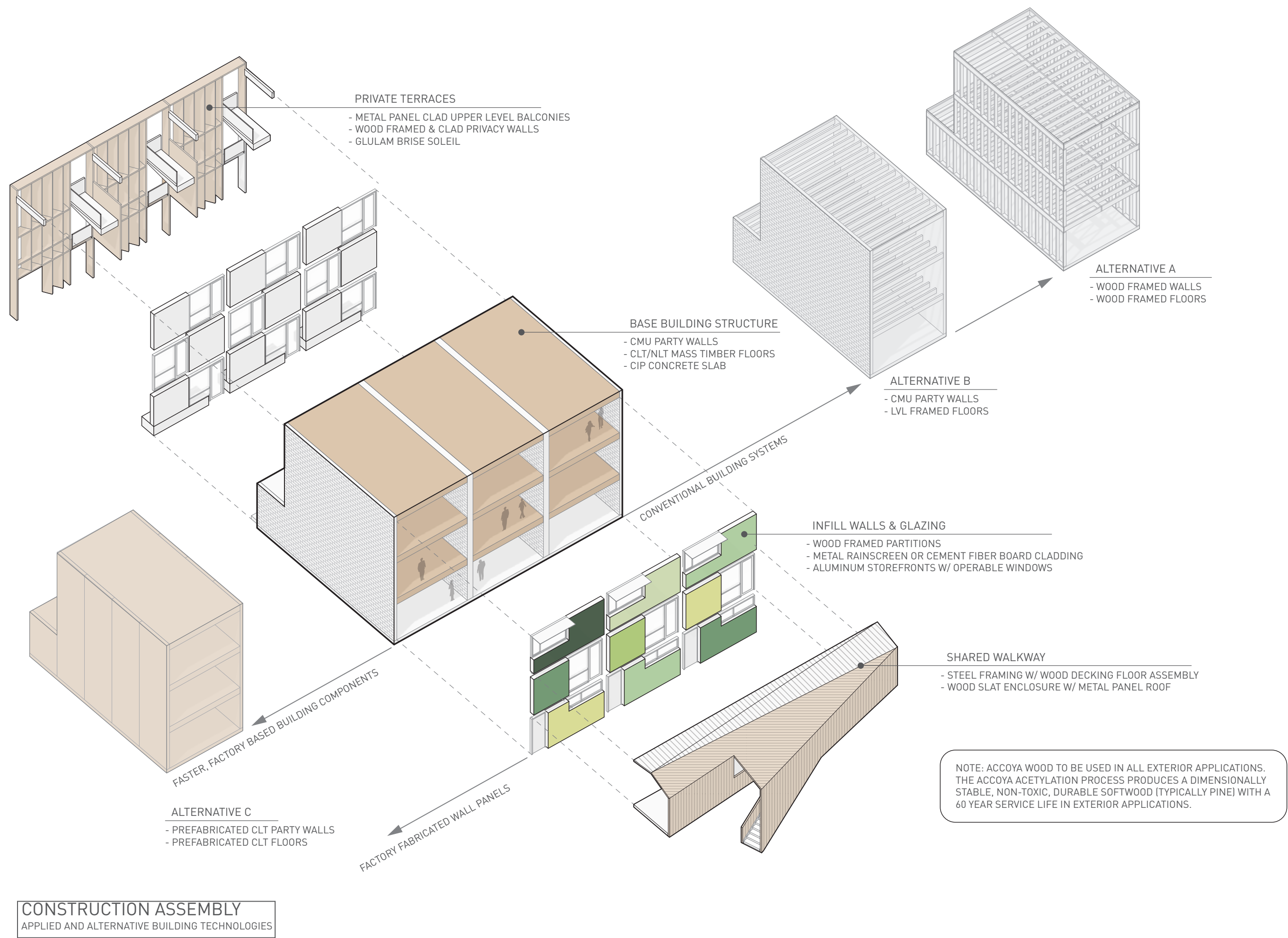


CONSTRUCTION ASSEMBLIES

Innovation in construction technology must contribute to the affordability of the project. The project proposes systems that are both new and established in the construction industry; bearing walls supporting floor systems that can readily be rationalized into prefabricated elements. Cross Laminated Timber (CLT) components could be considered for floors and roofs, spanning between concrete masonry unit bearing walls.

This system can be altered to fit a range of economic models. For a value-driven budget, LVL framing may be substituted for the CLT, or the entire building may be framed with conventional lumber. For a schedule-driven budget, prefabricated CLT wall panels may take the place of CMU bearing walls.

Wood brise-soleil structures are proposed as a part of the courtyard-facing facades. These are to be fabricated of glulam members made up of Accoya wood, pine that has been treated by acetylation, a preservative process that produces a low maintenance, rot-proof material.

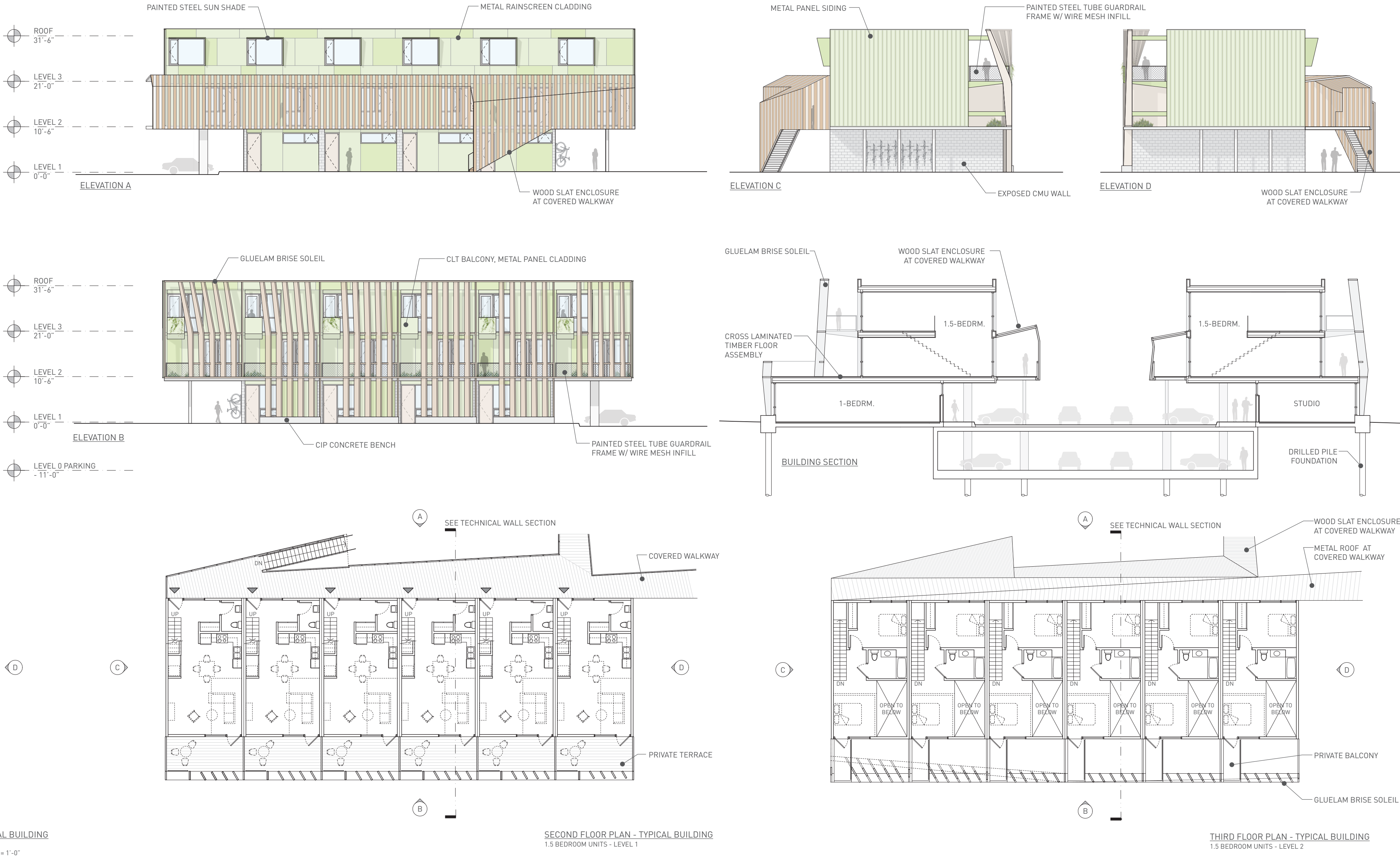


# BUILDING NEIGHBORHOODS

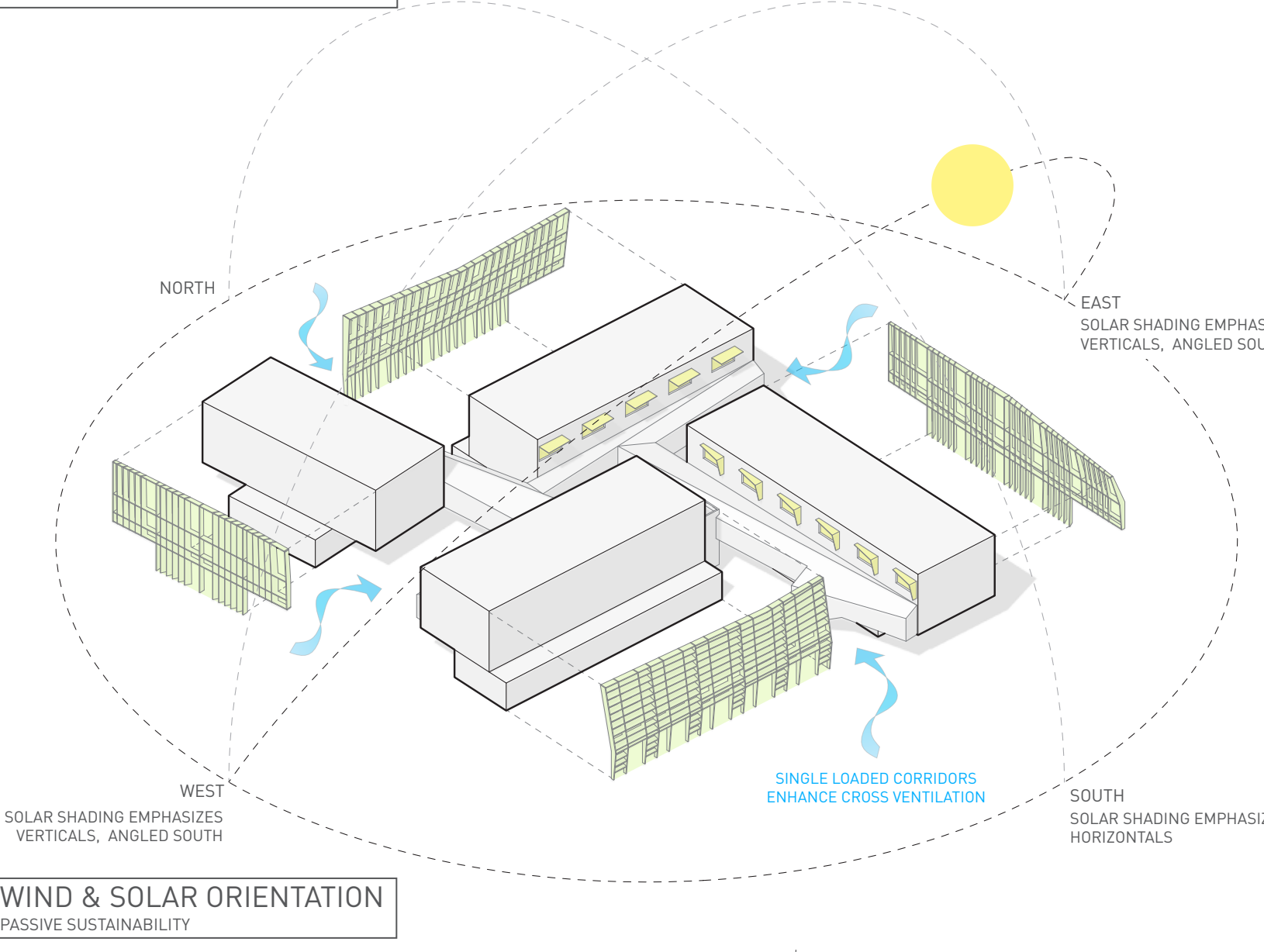
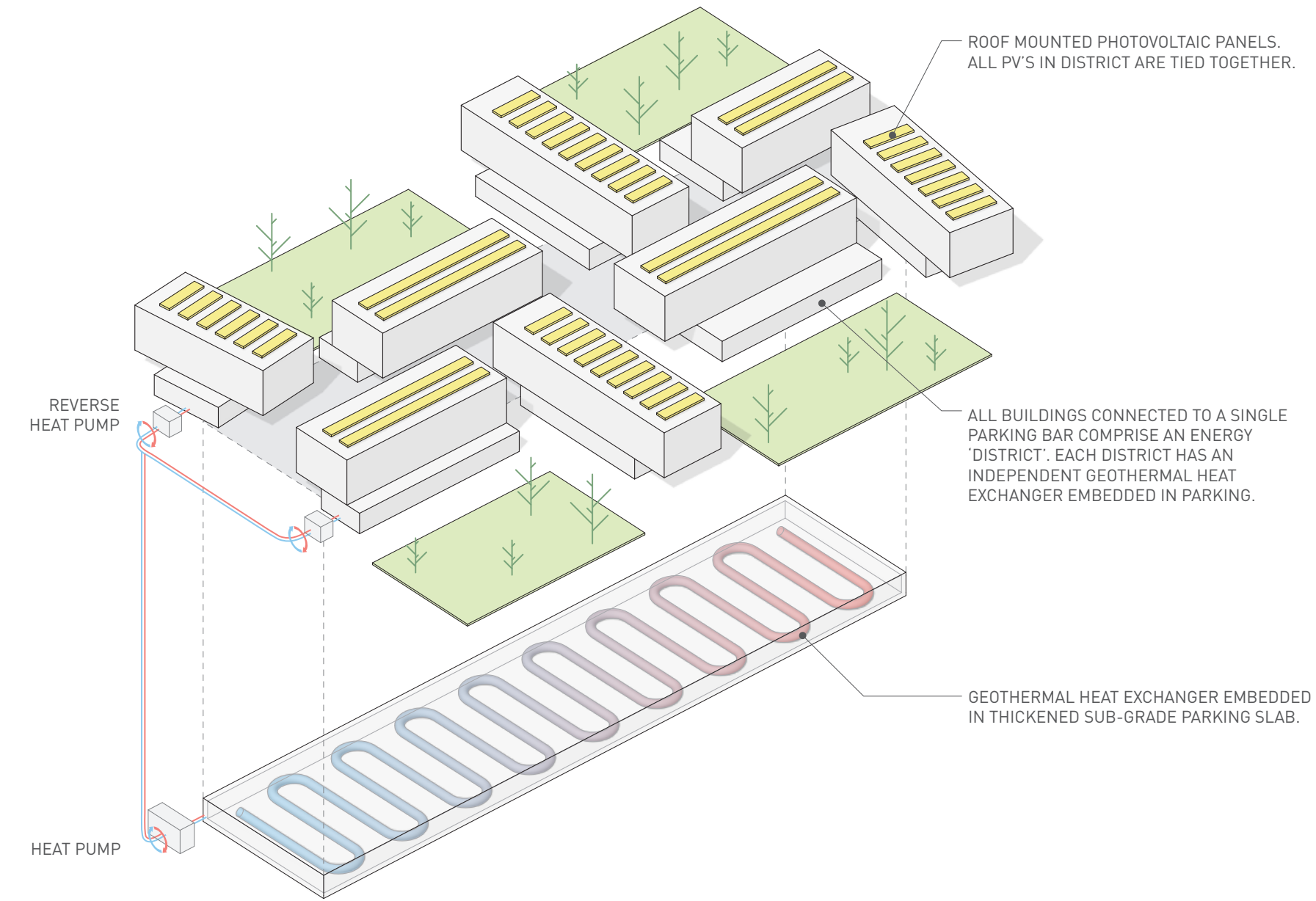
The individual buildings aggregate to create high density, low rise housing in a landscape setting. Each building is grouped in a cluster of three or four, with a connective second floor walkway. This walkway gives access to all shared vertical circulation (stairs and elevators) and provides shelter from sun, rain and snow.

Buildings all have two types of units: garden units, accessed from the ground level, and townhouse units of two or three stories accessed from the walkway level. All accessible units are garden units.

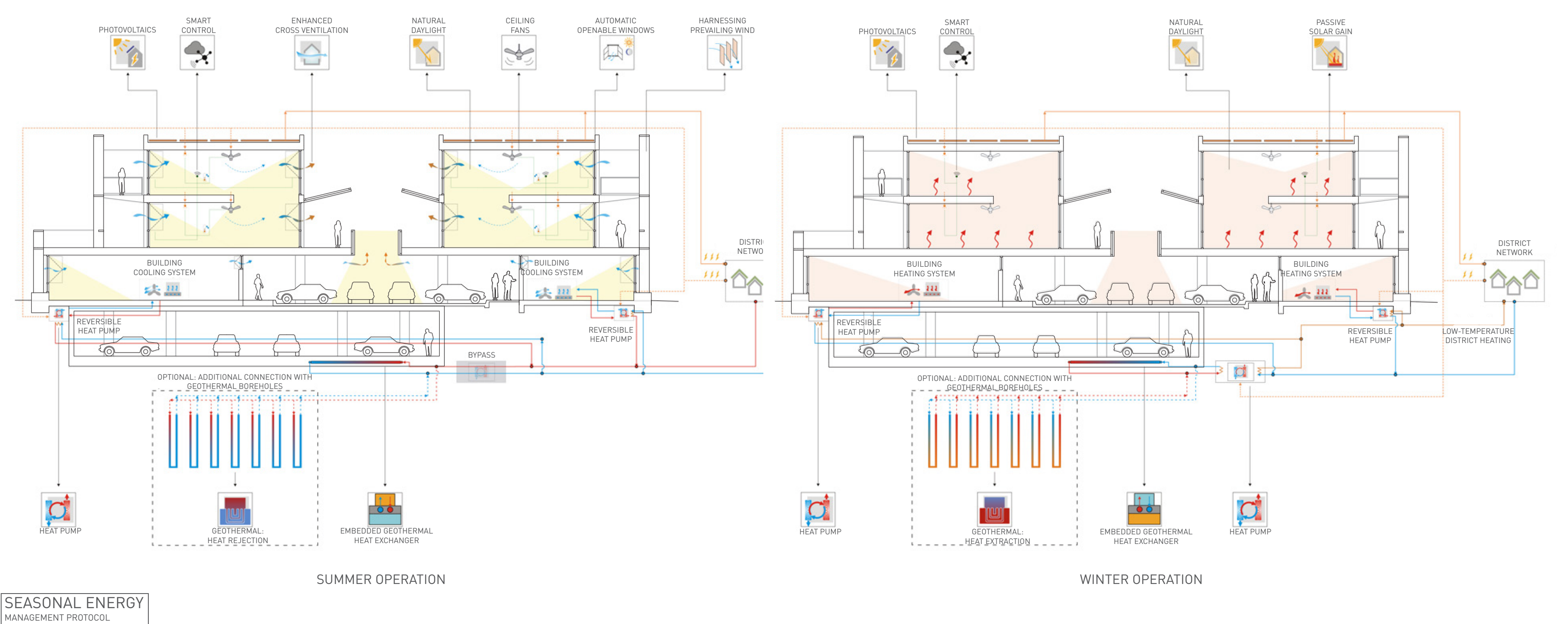
The wood brise-soleil at all units provides privacy at the garden level, and private terraces at the upper level units.



SUSTAINABILITY



Our sustainability objective is to achieve a significant reduction in demand for energy, providing a general environmental benefit and reduced utility bills for residents. Data shows that for almost half the year, Bentonville is at a temperature that does not require heating or cooling. Integrating natural ventilation controls into the building systems may create a "shoulder season" where air conditioning may be limited only to a small number of hours per day, extending this percentage by 15-20%. Cooling loads are further reduced by extensive exterior trellises that create shaded outdoor space at each unit and are optimized in their configuration to address their orientation. The project is configured with a ground based heat exchange system, using the subterranean parking level and foundation system to create a district-wide shared heating and cooling system. Using the building roofs to support a PV array, the project achieves net zero status.



GARDEN APARTMENTS & TOWNHOUSES

All garden units have direct access to the open space courtyards, with the brise-soleil providing privacy. Townhouse units have private outdoor terraces and balconies. These multi-story units both reduce vertical circulation at the building level and provide a variety of spaces for both gathering and privacy.

UNIT PLANS  
0' 1' 2' 3' 5' 3/16" = 1'-0"

