

Hidden Gardens: A Balance Between Inside and Outside

Approach

As Los Angeles neighborhoods continue to densify, the future of multi-family housing depends even more on finding the right balance between indoor and outdoor space. This **balance** is critical to the health of urban residents and the success of the places they call home. Planning for density and open space creates and opportunity for a more porous city with spaces that increase access to natural light, landscape, and human-centered places.

Hidden Gardens is a model for a versatile framework that creates relationships between indoor and outdoor spaces, and offers a compelling connection between views, neighbors, and the city. These spaces lead to a stronger sense of community within the complex and neighborhood by fostering dialogue and **social connections**.

Fourplex Strategy

Hidden Gardens places three individual two-story housing blocks, each inter-connected with multiple variations of internal and external spaces make the whole site feel like a series of gardens. This **porosity** creates spaces between the units that act as a buffer to help with privacy and noise reduction while allowing each space to have access to natural daylight and ventilation. The model also grants residents their own private indoor and outdoor spaces where they can **relax** and enjoy themselves within the garden setting.

Even though there is more building surface than a typical fourplex apartment, the use of **Structural Insulated Panels** (SIPs) as a construction method allows the units to be erected at a faster speed than traditional stick frame construction at an **affordable** cost.

The **Community Easement** provides a community-driven space for planned and spontaneous interactions, enhancing the connection between the residents, their families and neighbors. The front portion of the parcel could be managed and maintained by a **Community Land Trust** (CLT) to create a passive community park or community garden serving as a productive landscape that also acts as a buffer between the public way and the private spaces.

While the car remains an iconic form of transportation in Los Angeles, the proposed model allows for flexibility to host parking dependent on specific community needs. The site can host one parking spot per unit, up to four parking spots on-site inclusive of an accessible parking stall, that can be supplemented with electric vehicle charging, or bike storage to provide residents with access to a variety of **mobility** options regardless of proximity to public transportation. The public way can be treated as **Green Alleys** and **Slow Streets** to create protected lanes and additional open space for pedestrians to run, bike or scoot through their neighborhood.

Sustainable Communities

Hidden Gardens allows densification to occur **organically**, similar to a network of emerging fields between the built environment and the neighborhood it exists in. Each unit allows for a range of **flexible** uses over time that adapt to various needs throughout life and evolving family composition. This **adaptability** encourages multi-generational living, helps maintain the culture, ideals and family values currently present among the many communities of Los Angeles.

Comprehensive personal **wellness** remains a guiding principle for growth. This framework promotes a balance of both private and social spaces, both indoor and outdoor, for residents to work, create, play, and relax. Density is increased without compromising adequate space, light and airflow throughout the property, creating a healthy environment and connection to nature, even in the city.

Densification requires that each parcel carry greater **ecological performance** within reduced landscaped areas. The landscape actively seeks to expand the tree canopy, furnish urban agriculture opportunities for residents, and provide low-water, climate appropriate planting with stormwater gardens positioned to capture and infiltrate rainwater.

Passive and active building strategies are implemented to create a **Zero Net Building** model for Los Angeles by harnessing existing solar and wind patterns for resident comfort throughout the year. The placement of the structures, trellises, clerestory windows, deciduous planting, and renewable energy sources help to achieve **carbon neutrality** and status as a **Zero Energy Community**.

Expansion of housing opportunities for Angelenos is grounded in economic, environmental and social issues, however the soul of housing embraces **human centered design** principles such as light, access to nature and flexibility with the human experience at the forefront.



Site Plan

Site Plan

- A. Proposed Lot
- B. Slow Street
- C. Green Alley
- D. Existing Residences

Lot Plan

- 1. Fourplex
- 2. Community Easement
- 3. Communal Area
- 4. Shared Outdoor Space
- 5. Parking

Fourplex Lot: 7500 SF

Unit A: 944 SF - 2 Bedroom, 1 Flex Space, 2 Bath, 1 Powder Room

Unit B: 1209 SF - 3 Bedroom, 1 Flex Space, 2 Bath, 1 Powder Room

Unit C (ADA): 596 SF - 1 Bedroom, 1 Bath

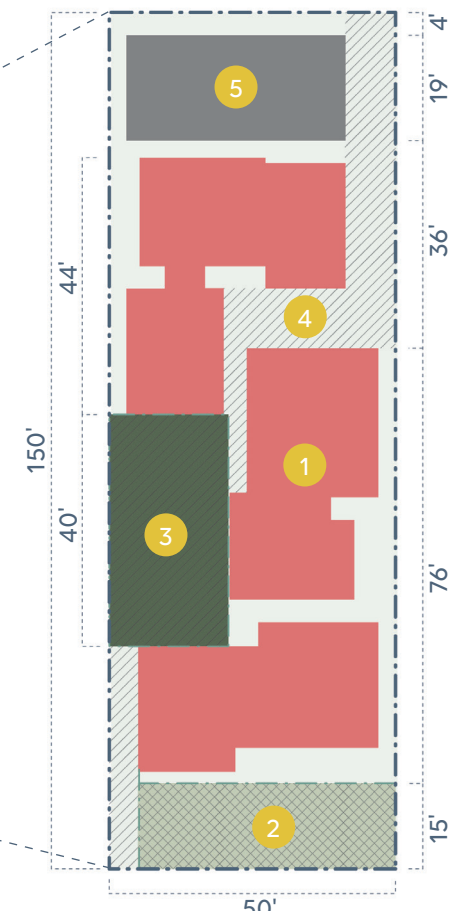
Unit D: 620 SF - 1 Bedroom, 1 Bath

Outdoor Patio per Unit: 277 SF

Community Easement: 675 SF

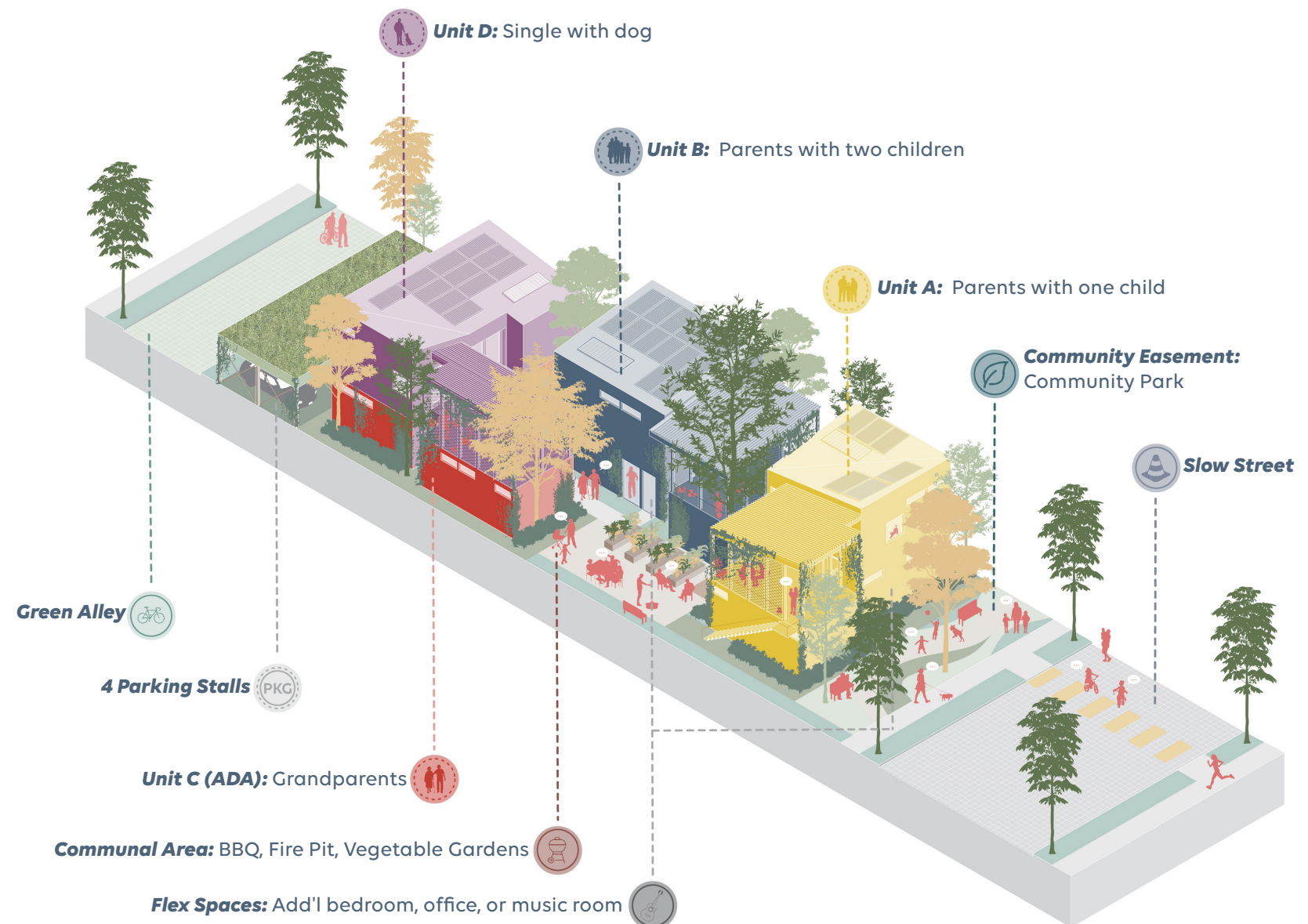
Communal Area: 680 SF

Parking: Three standard parking stalls and one ADA parking stall



Lot Plan

NTS



Program/Use Diagram

By transforming a typical Los Angeles mid lot into an interconnected network of gardens that are private and public, **Hidden Gardens** builds a stronger sense of community within the complex and neighborhood by fostering dialogue and social connections that otherwise don't typically occur in a typical fourplex apartment.



Elevations

1. Community Park
2. Communal Area
3. Stucco Finish
4. Metal Cladding
5. 4'x4' Casement/Fixed Window
6. 8'x8' Sliding Door
7. 1'-6"x4' Clerestory Hopper Window
8. 2'x4' Casement Window
9. Cable Net with Vine Screen
10. Trellis
11. Stormwater Infiltration Planters

Maximum Height

Hidden Gardens demonstrates that densification does not necessarily equate to building taller structures. Proper arrangement of program and new methods of construction can create dense urban housing that still provides natural daylight and ventilation into each individual space.

Upside-Down Space Planning

Upside down space planning positions sleeping spaces at the ground level, where they open up to smaller private gardens for each bedroom. Locating the living spaces on the upper level allows them to be directly connected to the private outdoor spaces which in turn leads to a better view, ventilation and daylight for each unit.



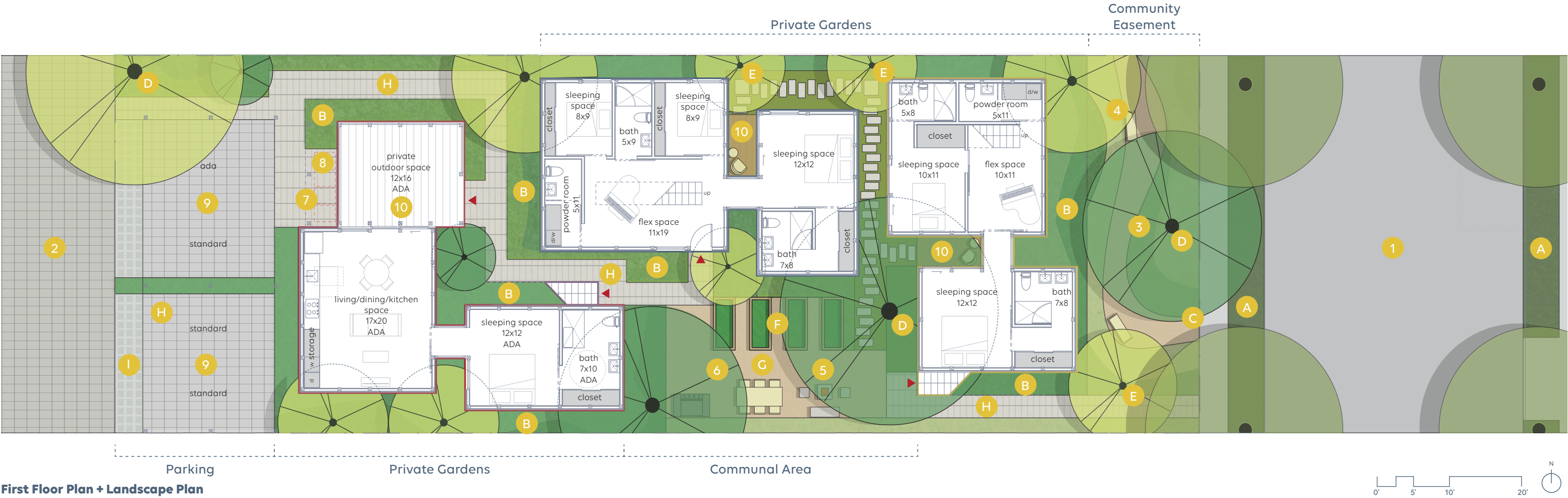
0' 5' 10' 20'



Second Floor Plan

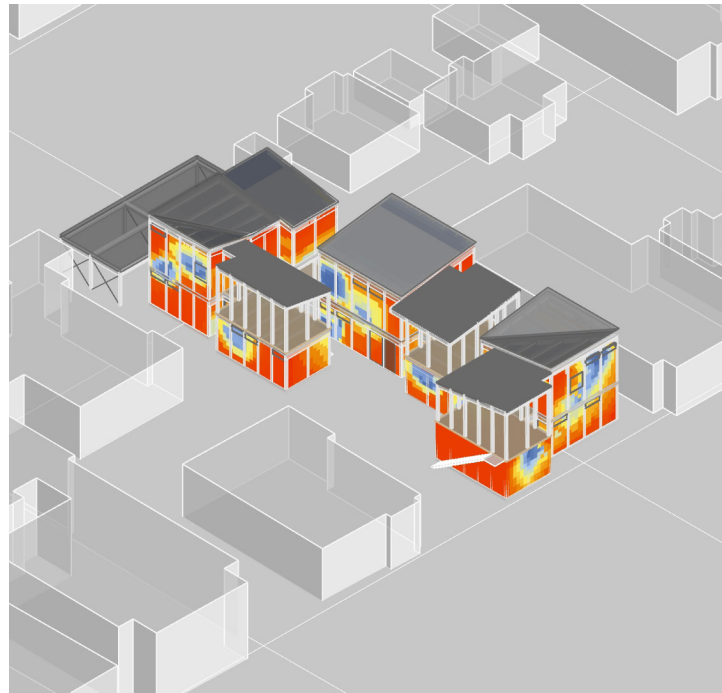
- Landscape**
- A. Stormwater Infiltration Planters
 - B. Climate Appropriate Planting
 - C. Community Park Path
 - D. Shade Tree
 - E. Fruit Tree
 - F. Vegetable Beds
 - G. Decomposed Granite (Permeable)
 - H. Sand-set Pavers (Permeable)
 - I. Grasscrete Pavers (Permeable)
 - J. Green Roof

- Site**
- 1. Slow Street
 - 2. Green Alley with Pervious Paving
 - 3. Community Park
 - 4. Bench
 - 5. Fire Pit
 - 6. BBQ Area
 - 7. Trash Area
 - 8. Bike Rack
 - 9. Parking
 - 10. Outdoor Private Patio

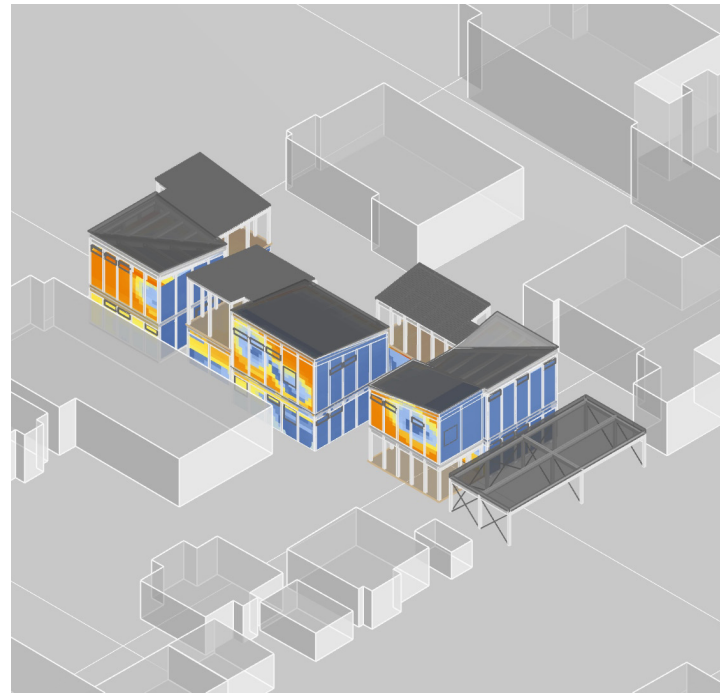


First Floor Plan + Landscape Plan





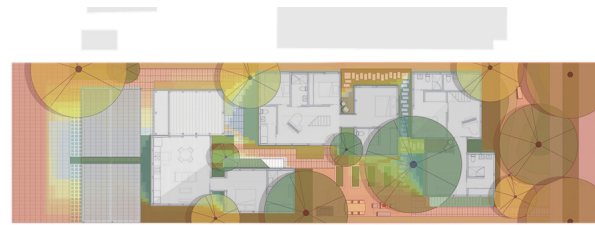
Peak solar radiation massing study - Southwest



Peak solar radiation massing study - Northeast



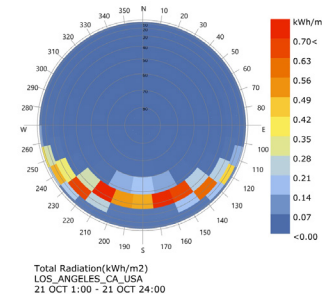
Outdoor micro climate map



Maximum sun exposure for the location of planting on site

Passive Building and Landscape Strategies

- The massing of the building allows for south-western winds to cool down the communal area and the units during the summer, while blocking northern easterly winds in the winter to stop any cold fronts from entering the site.
- Trellises, recessed windows, large shade trees and vine screens are built within the architecture and landscape to allow for cooling in the summer, but allow to heat the units in the winter.
- Operable clerestory windows are designed for air and daylight to penetrate deep within the units, which would minimize electrical usage during the day.
- Roof slopes are directed internally towards the open spaces where the landscape could retain and filter the runoff before it goes to the street or alley.
- Light colored permeable pavers and green roofs reduce the **heat island effect** for the for the lot and if the model is implemented throughout the neighborhood it would drastically reduce it for the whole block and even the city.
- Climate appropriate drought tolerant plants and large shade trees are located at open spaces and courtyards with the most sun exposure, which are able to shade and cool the structures and site to minimize the **heat island effect**.



Active Building Strategies

- Active building strategies like solar panels, solar thermal collectors, radiant heating, EV charging stations, drain water recovery and reversible fans are implemented within the units to keep them comfortable and efficient all year long.
- Low emissivity glazing and **"healthy"** local materials are used for construction to achieve a **Net Zero Carbon** footprint.

Active Landscape Strategy

- Incorporate vegetated swales increasing storm water capture and use greywater and roof water to irrigate planting areas.
- Incorporate food gardens and the community park easement for social interaction, community well-being & health.

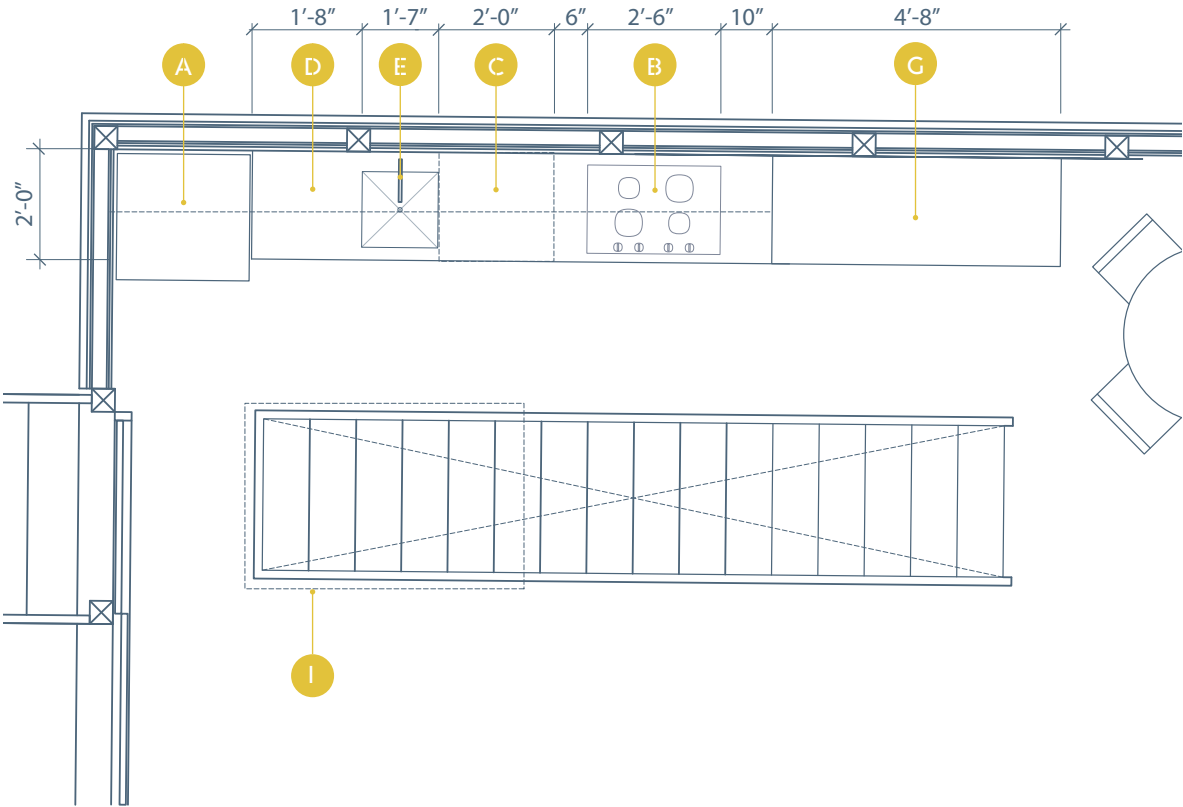


Kitchen

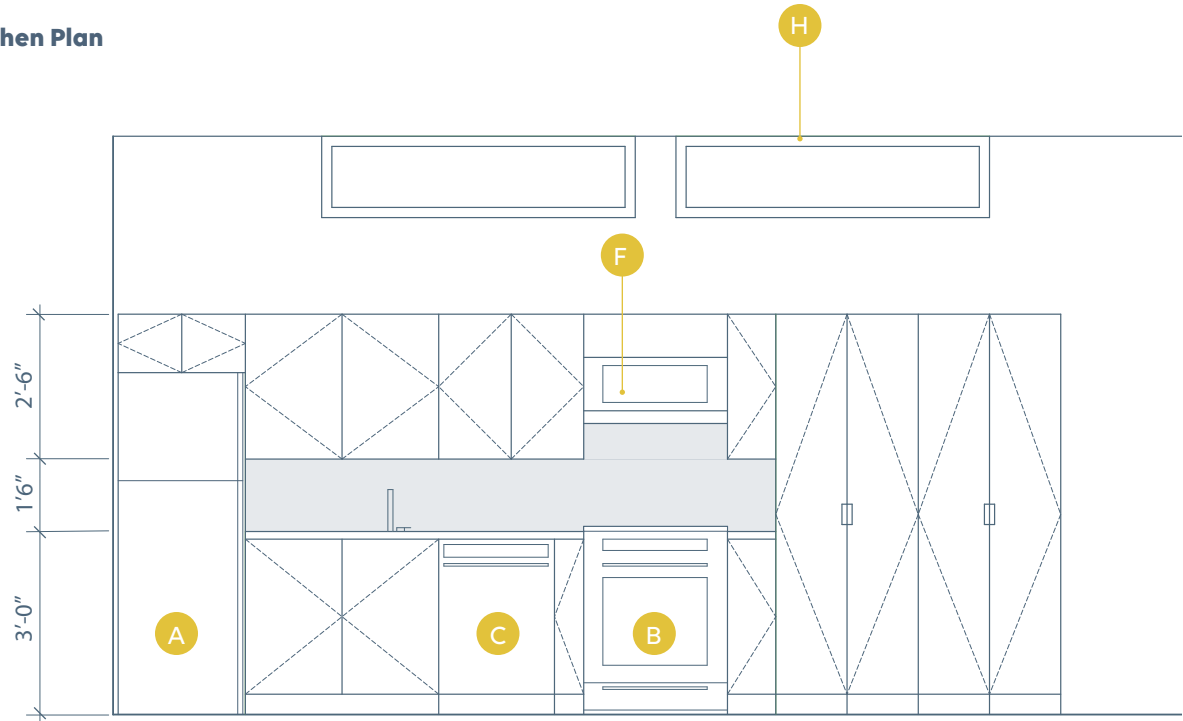
- A. Refrigerator
- B. Induction Cooktop & Range
- C. Dishwasher
- D. Engineered Stone
- E. S.S. Faucet & Single Basin Sink
- F. Microwave Hood
- G. Pantry
- H. Operable Clerestory Window
- I. Movable Cutting Board

Kitchen Design

- Kitchen's should have access to natural light to serve as the primary light source during daytime hours. For non daytime hours dimmable LED lighting should be provided for general ambient light as well as accent lighting over islands or under cabinets.
- Neutral color palettes for cabinetry in warm earth tones. Kitchens should feel warm and inviting not sterile. Cabinet boxes to use **FSC certified** wood and non-chemical adhesives.
- Greenguard certified engineered stone that mimics natural stone but is maintenance free and easy to clean with soap and water providing durability for all family sizes and levels of use. Product is certified for **low chemical emissions**.
- Minimize hardware costs by providing routed finger pulls in cabinetry.
- The maximum flow rate of residential lavatory faucets shall not exceed 1.2 gallons (4.54 L) per minute at 60 psi. The minimum flow rate of residential lavatory faucets shall not be less than 0.8 gallons (3.03 L) per minute at 20 psi.
- Induction Cooktop, Range and Microwave Hood.
- **Energy star** appliances including refrigerators and dishwashers.
- Provide ample storage or flexible shelving solutions.



Kitchen Plan

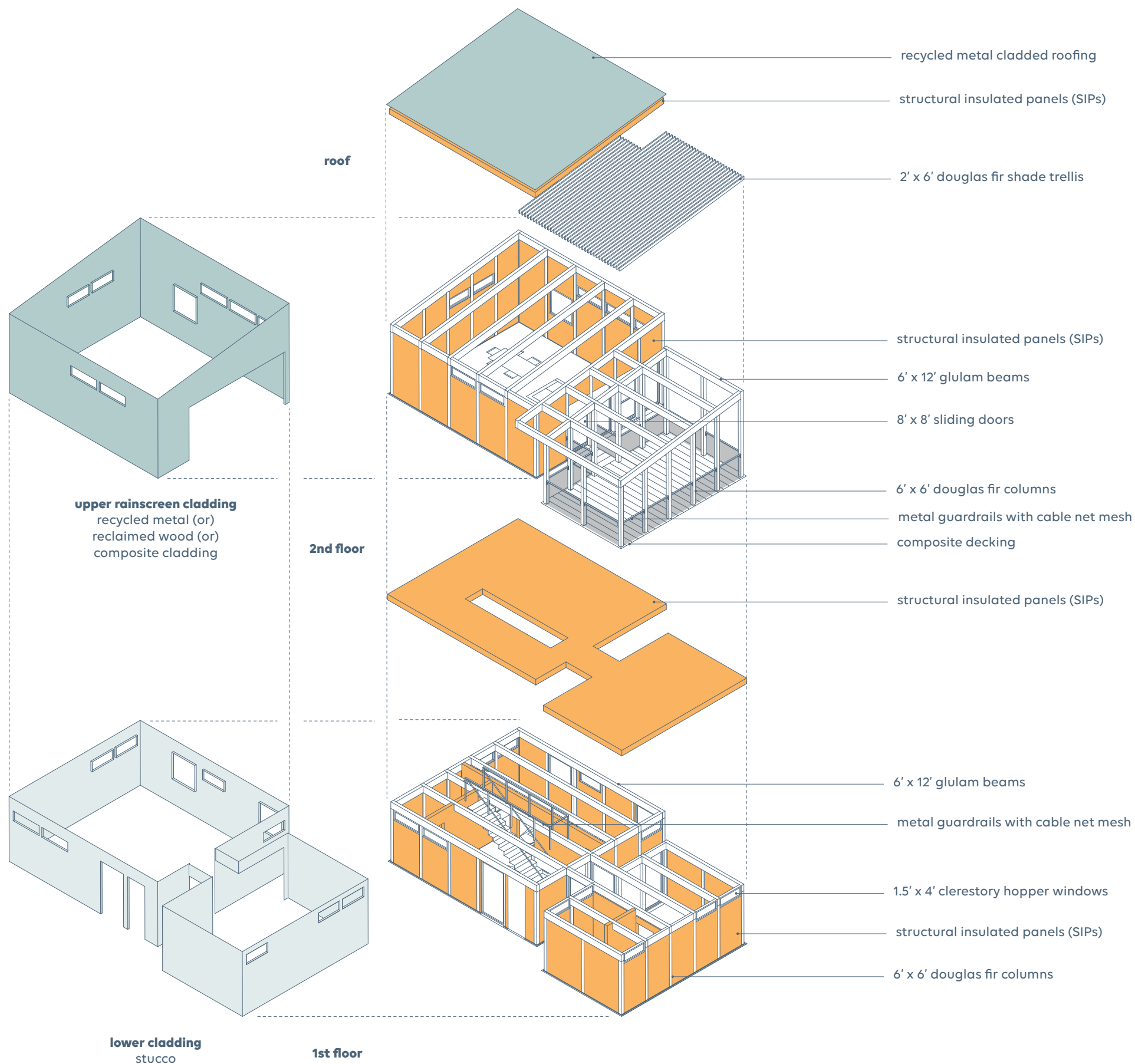


Kitchen Elevation









Building Components

The proposed structures of **Hidden Gardens** are constructed with mass timber and **Structural Insulated Panels (SIPs)**, which have been utilized in the construction of **Net Zero Carbon** and **LEED** certified buildings throughout the country. These panels are a prefabricated wall assembly known for their insulated properties and renewable resource of Oriented Strand Board (OSB) layers. Implementing SIPs as an initial design parameter **reduces labor cost** and construction time by 30% while **minimizing waste** on site as an efficient form of new construction.

Recycled metal cladding and roof shroud the upper floor of the units to help **cool down** the building in the summer and helps with **fireproofing** the structure during Southern California's fire seasons.