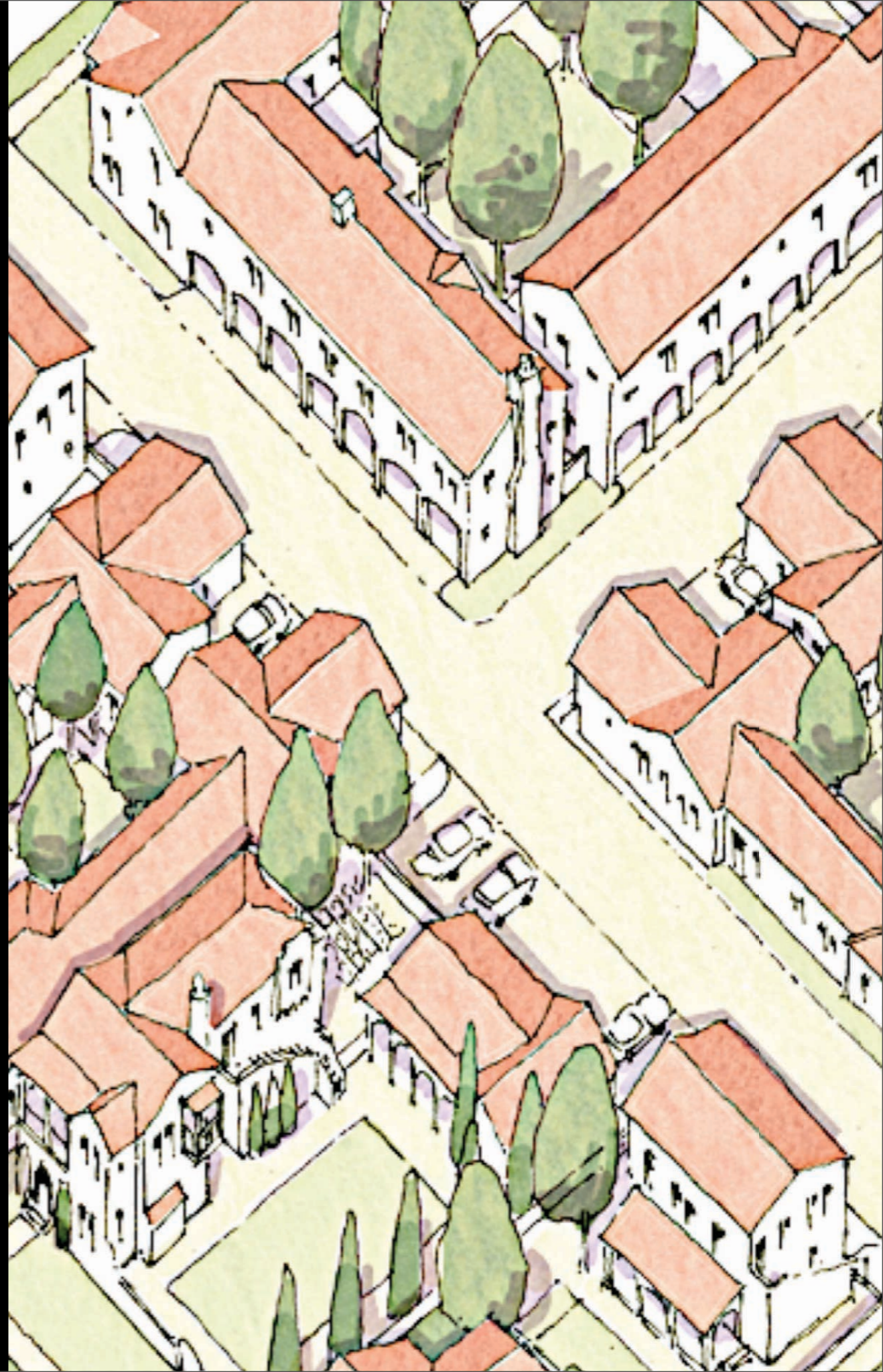


“Missing Middle” Housing: Design and Planning Considerations

Stefan Pellegrini, AICP, LEED AP

New Partners for Smart Growth

February 2nd, 2012



Small: South Main Live Work

Flexible Space, Walkable Frontage







SOUTH MAIN

901

SOUTH MAIN
Bicycle
Touring Station
Mountain Equipment

SOUTH MAIN ST
SWIFT CR

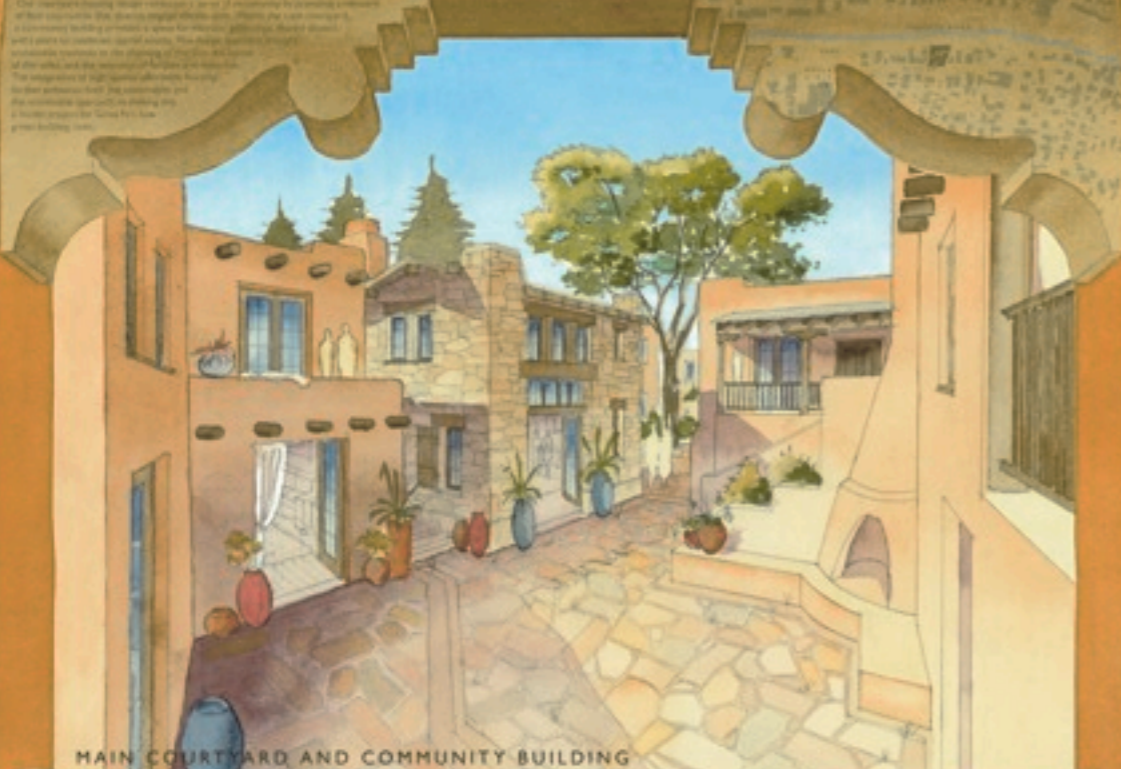
FOR SALE

Medium: Sante Fe Courtyard Housing

Small Building Footprint, Small Ecological Footprint
Shared Space

HEALTHY LIVING NEIGHBORHOOD
 DESIGN INFILL PROJECT COMMUNITY SOLAR ORIENTATION
 SUSTAINABLE MATERIALS ENERGY EFFICIENCY ENDURING VALUE
 PASSIVE HEATING & COOLING COURTYARDS COOLING NORTH-SOUTH BREEZES
 SOLAR ENERGY ON SITE FOOD PRODUCTION RESOURCE EFFICIENCY
 LIVING ROOFS TO SUPPORT ENDANGERED SPECIES
 DROUGHT-TOLERANT NATIVE LANDSCAPING SPECIES RAINWATER COLLECTION

The courtyard housing design includes a series of measures for creating a healthy and sustainable living environment. A courtyard housing project is a multi-unit residential development that is designed to create a sense of community and shared space. The design includes a central courtyard, a community building, and a variety of outdoor spaces. The design also includes a series of measures for creating a healthy and sustainable living environment. A courtyard housing project is a multi-unit residential development that is designed to create a sense of community and shared space. The design includes a central courtyard, a community building, and a variety of outdoor spaces.



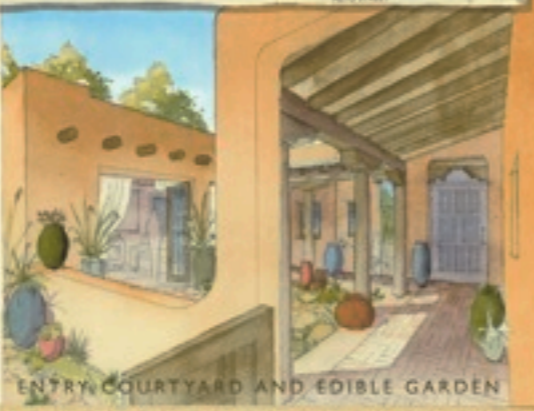
MAIN COURTYARD AND COMMUNITY BUILDING



ALTO STREET ELEVATION AND PARTIAL PLAN



CONCEPT AND MASSING DIAGRAM



ENTRY COURTYARD AND EDIBLE GARDEN

COURTYARD HOUSING
 SANTA FE, NEW MEXICO



SITE & UNIT PLANS

PROGRAM

UNIT 1	2 BEDROOMS / 1 BATH	880 SF
UNIT 2	1 BEDROOM / 1 BATH	440 SF
UNIT 3	3 BEDROOMS / 1 BATH	1080 SF
UNIT 4	1 BEDROOM / 1 BATH	440 SF
UNIT 5	1 BEDROOM / 1 BATH	440 SF
UNIT 6	1 BEDROOM / 1 BATH	440 SF
COMMUNITY ROOM, KITCHEN, DINING ROOM & LIBRARY		800 SF
PAVING		9 SPACES
OPEN SPACE		1.2M SF



GreenWORKS PRINCIPLES

- Plan and Lot Development**
The fundamental basis of sustainable design is a deep understanding of the site from its context to the construction and performance aspects. Early orientation, daylighting, passive cooling, and maximum ventilation drive design decisions after a clear understanding of occupancy and climate is established. Close proximity for entrances, air vents and exhaust, clearly visible and well-lit, encourages residents to walk, promoting a healthier lifestyle.
- Resource Efficiency**
Efficient floor plans make use of space while reducing the materials needed, lowering the peak construction energy loads. Passive systems for heating and cooling along with solar energy collection greatly reduce energy needs. EC2 construction creates high R-value and superior low maintenance and frequency for buildings. Recycled content for signs and outdoor spaces and bricks for terraces, courtyards and exterior walls add to the sustainability while giving the place a sense of authenticity.
- Energy Efficiency**
One room deep units with operable windows on multiple walls provide opportunities for daylighting and passive cooling through cross ventilation. Solar orientation maximizes passive heating with southern orientation when southern sun angles are blocked with shading devices and appropriately located landscaping that will allow low winter sun angles to give heat. Native vegetation shades walls, windows and sidewalks from direct sunlight while trees, hedges and courtyards cool the air down. PE panels and long roof greatly reduce energy needs and reduce the heat island effect of the City. Thermal mass of the roof provides insulation while incorporating cooling towers reduce temperatures.
- Water Efficiency**
Permeable surfaces and planting of native and drought-tolerant plants reduce the City's urban stormwater load by allowing water to infiltrate in areas of the City's system. The use of water and flowering vegetation also support stormwater retention. Water is collected from non-potable roof surfaces and is collected from rain barrels for large pots where a can be used for watering the vegetable garden.
- Sustainable Practices**
Courtyards and shared amenities, such as the community building, walkways and landscaping levels, promote a strong sense of community and ownership. Residents have pride in their home that encourages a shared responsibility for maintenance and upkeep. Outdoor living spaces with fragrant and edible gardens promote healthy lifestyles and communal programs for gardening, recycling and conservation.



INDOOR ENVIRONMENTAL QUALITY
 Energy and water conserving appliances and fixtures • On demand water heaters • Radiant heating
 Paints, caulking and flooring • Low VOC paints, materials, and furnishings • Recycled materials • Recycle

BUILDING A LIVING ROOF
 LAYERS OF THE LIVING ROOF
 1. Soil
 2. Root Barrier
 3. Drainage
 4. Filter Layer
 5. Vegetation
 6. Mulch
 7. Irrigation System
 8. Protection from Tarp
 9. Drainage
 10. Ground
 11. Sign

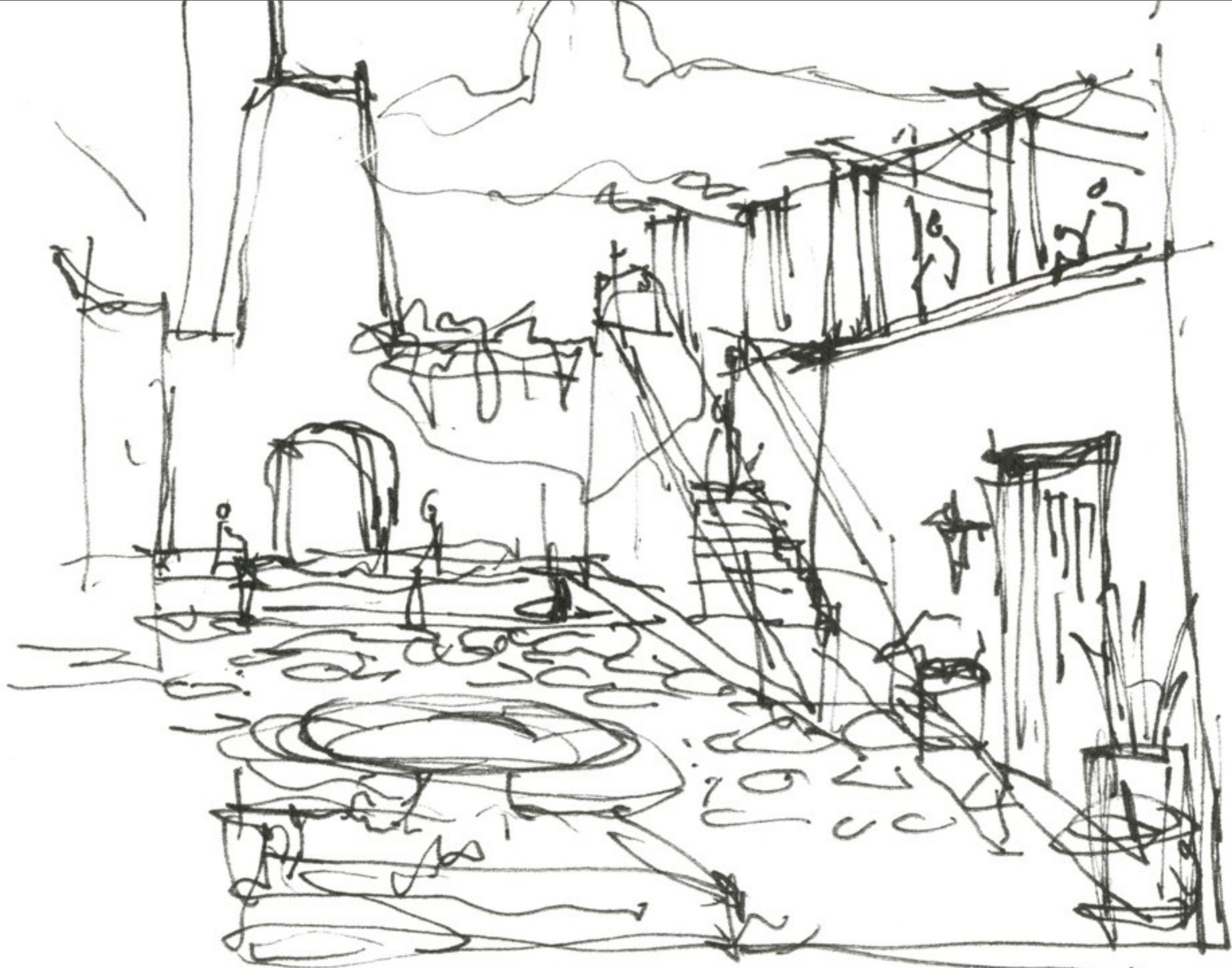
LIVING ROOF PLANT LIST
 Blue Grama
 Mesquite (Compass)
 Cardinal Flower
 Sulfuric Verbena
 Desert Echinops
 Ridge Yucca
 Rockrose
 Rock Sage
 Rock Penstemon
 Rock Phlox
 Rock Spurge
 Rock Yucca
 Rock Zinnia
 Rock Aster
 Rock Lobelia
 Rock Petaluma
 Rock Penstemon
 Rock Phlox
 Rock Spurge
 Rock Yucca
 Rock Zinnia

GREEN CONSTRUCTION
 EC2 Construction provides high insulation value for ground floor walls and gets through walls.

COURTYARD HOUSING
 SANTA FE, NEW MEXICO





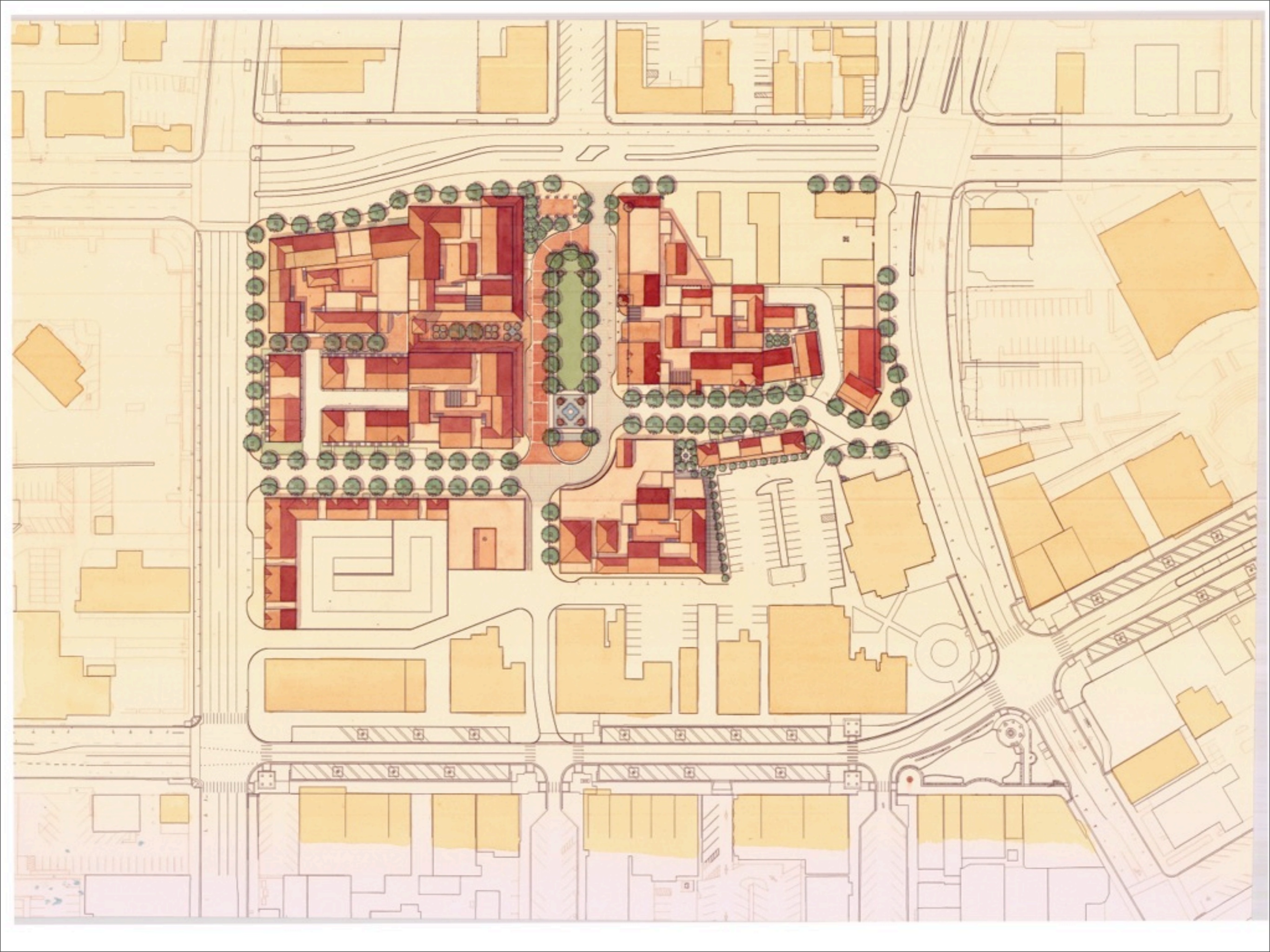


Santa Fe Court



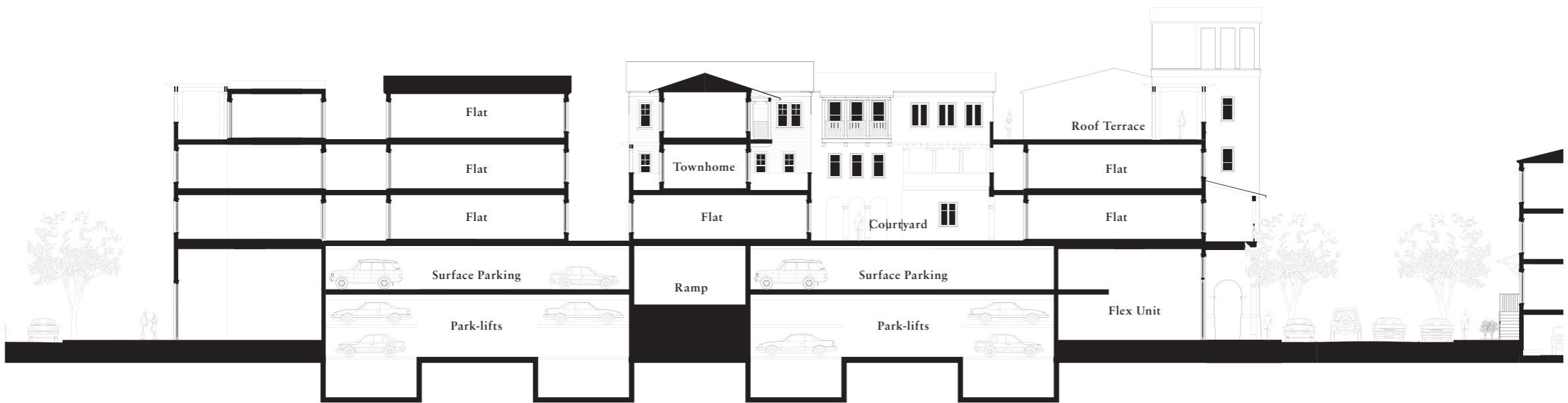
Large: Livermore Village

Orientation, Civic Space, Livability



Building A - Building Section Looking East

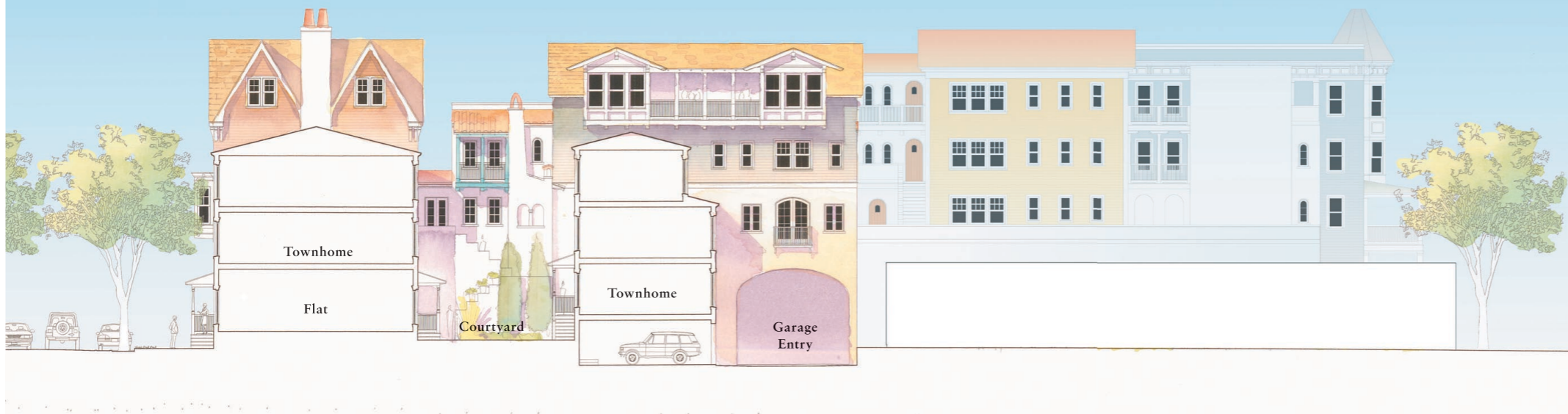
Scale: 1" = 10'-0"



Building A - Building Section Looking West

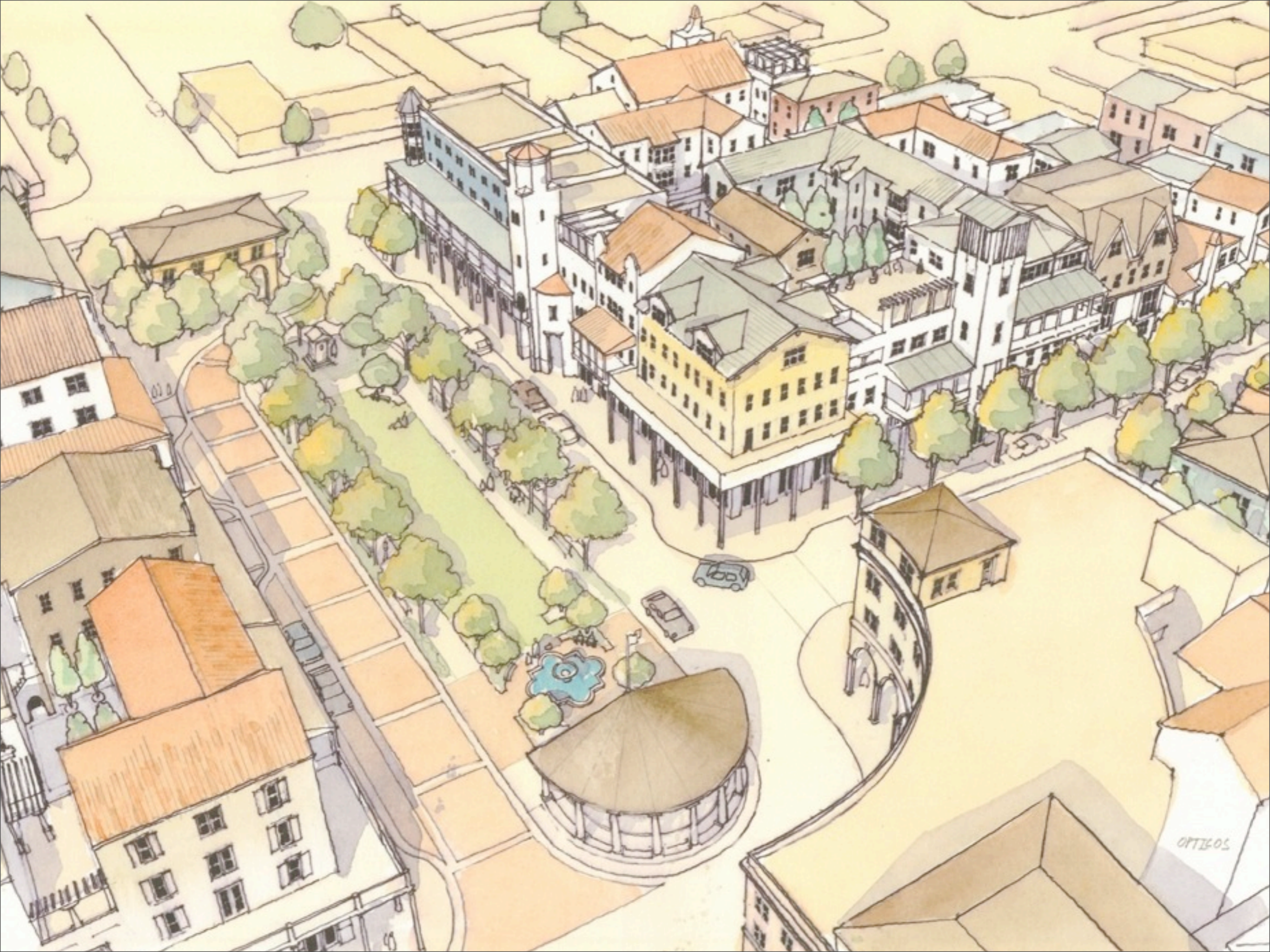
Scale: 1" = 10'-0"

Feet 5 10 15 20



Livermore Village I
Livermore, California

LIVERMORE VILLAGE I, LLC.
6701 Center Drive, Suite 710 Los Angeles, California 90045
Tel 310.689.2300 Fax 310.689.2305 www.andersonpacific.com



OPTIBOS

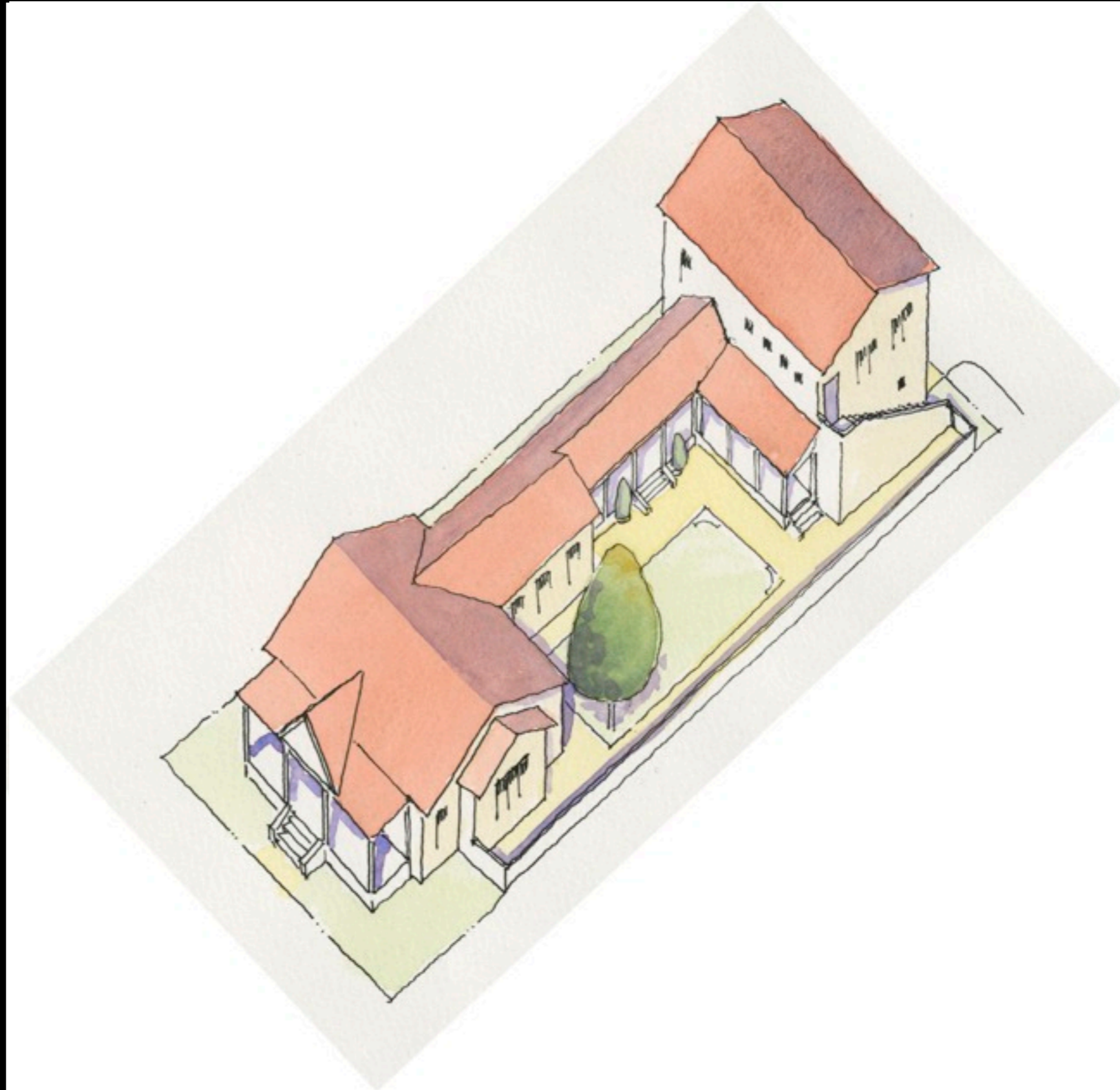
How: Getting to Medium Density

Small Building Footprint and Small Ecological Footprint

50' x 125'-135'
2 Units
13 du/a



50' x 125'-135'
2 Units
13 du/a



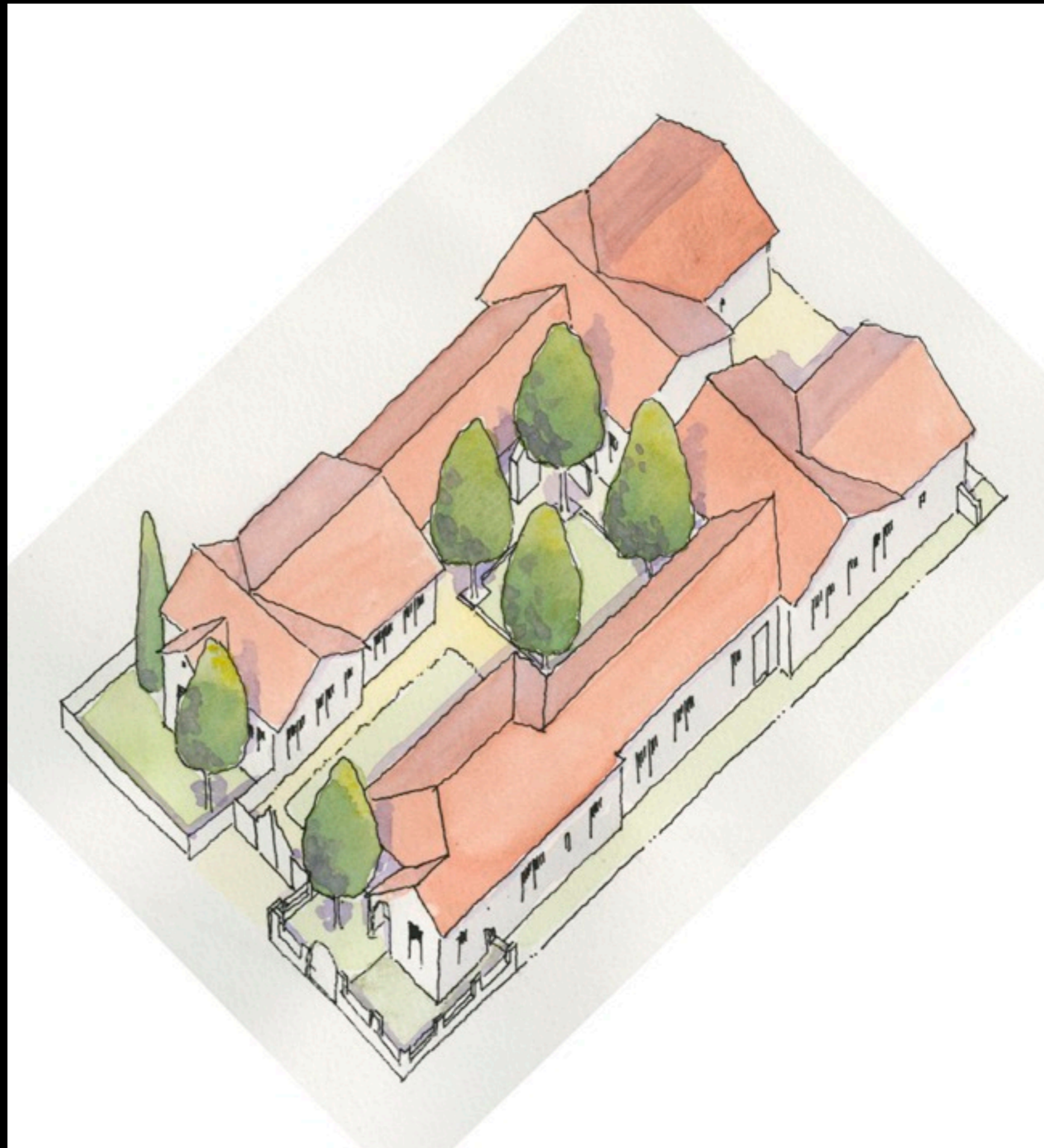
75' x 125'-135'
3-6 Units
14-17 du/a



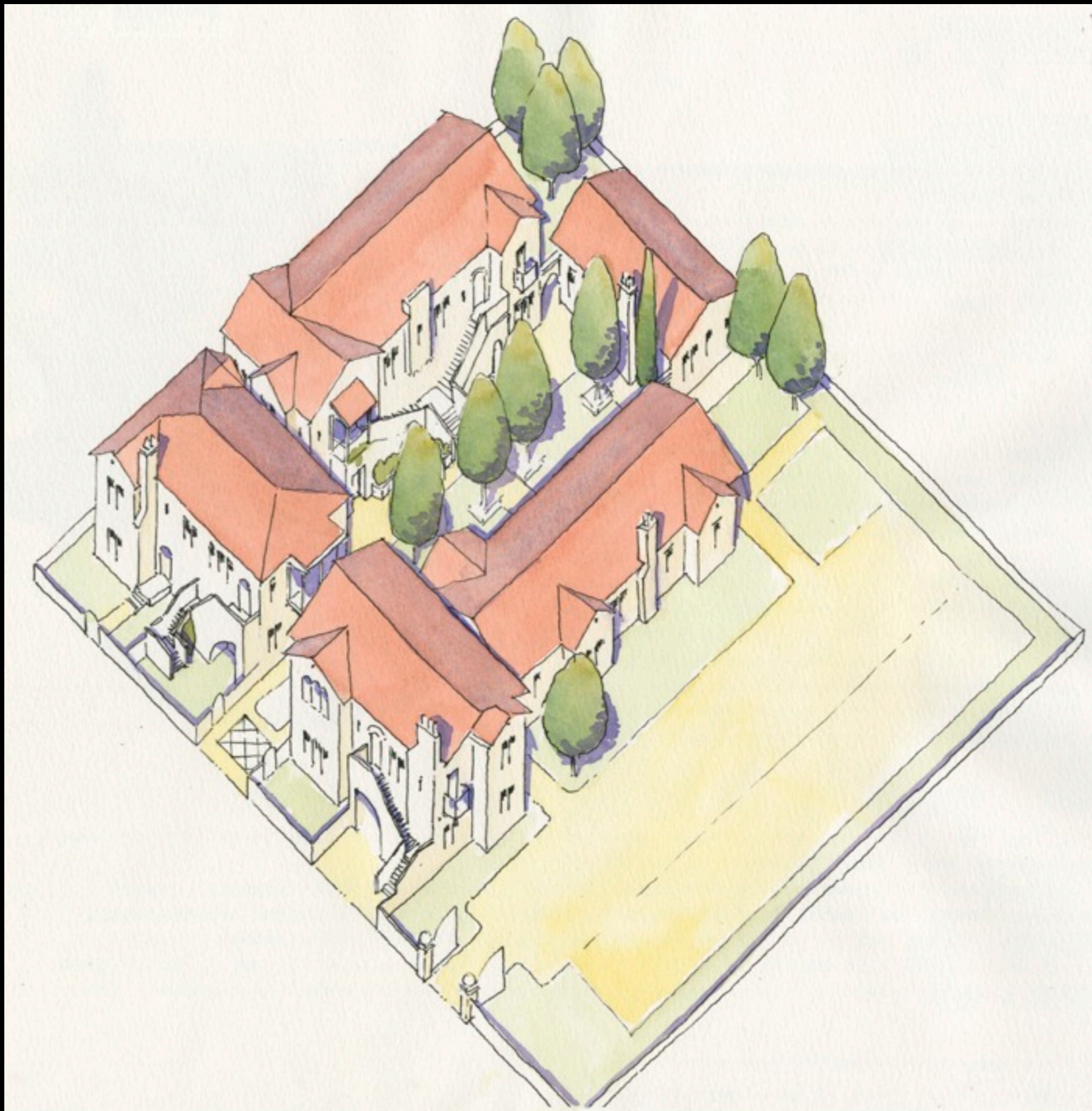
75' x 125'-135'
3-6 Units
14-17 du/a



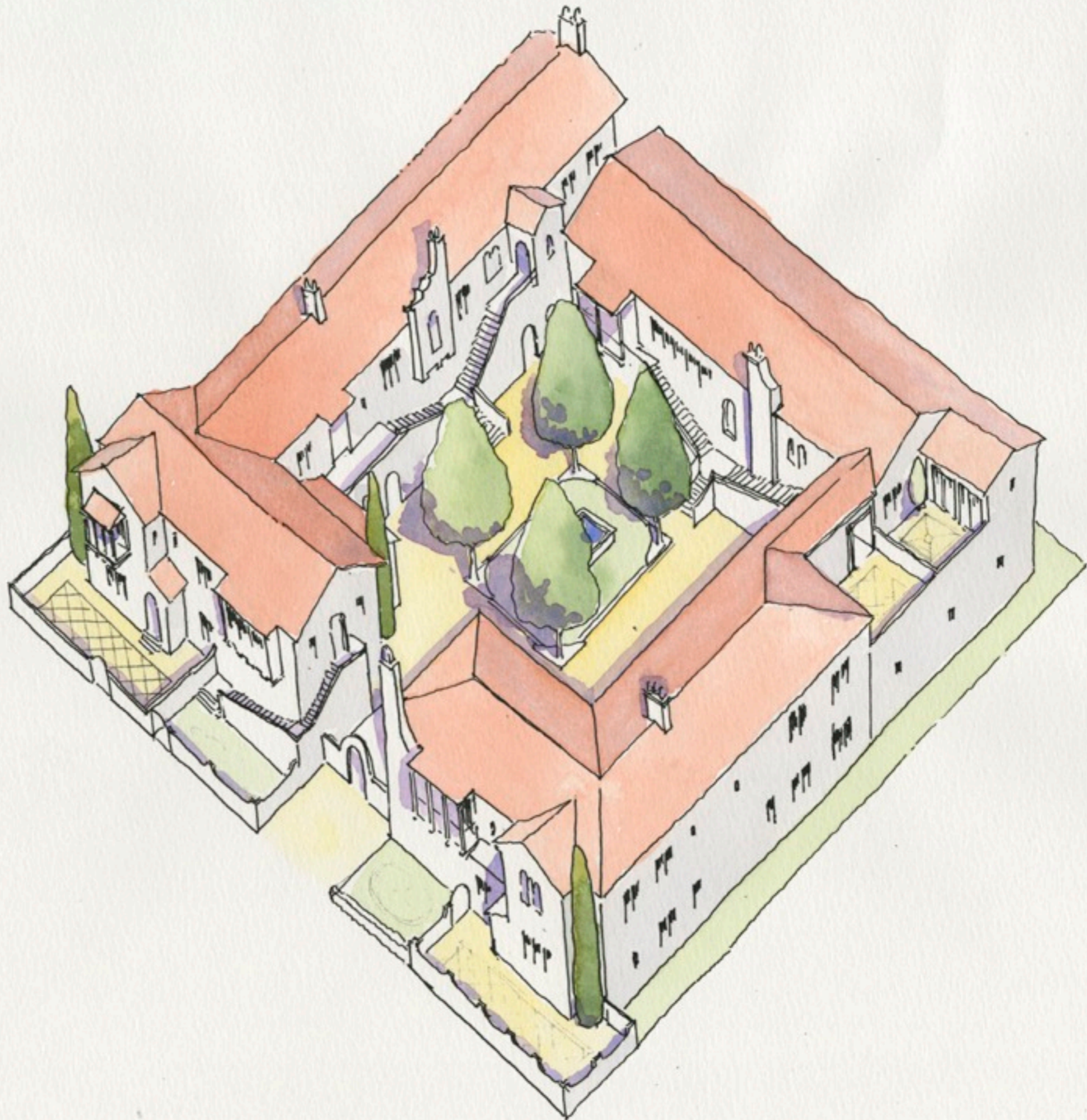
75' x 125'-135'
3-6 Units
14-17 du/a



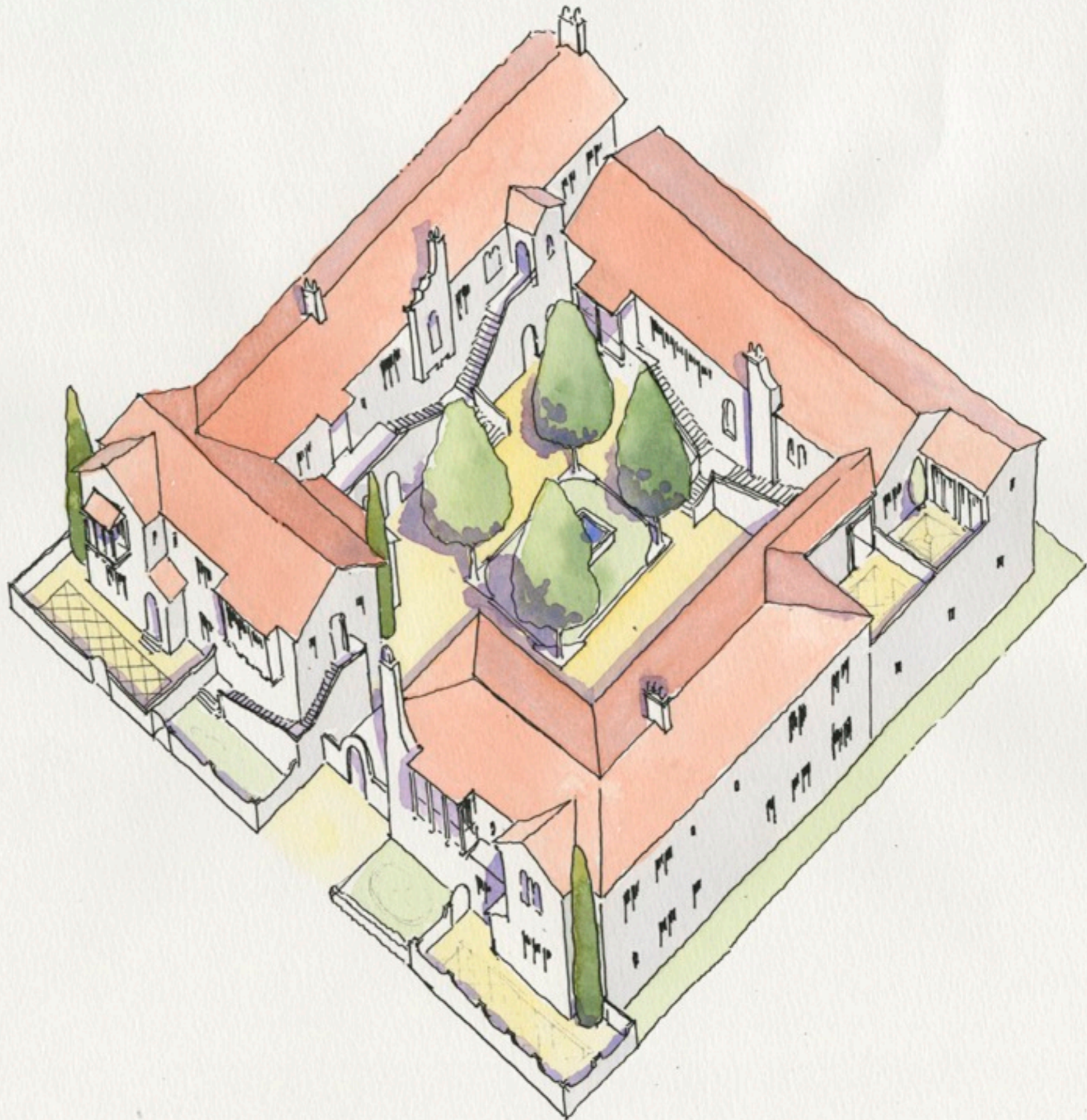
125' x 125-135'
10-11 Units
24-28 du/a



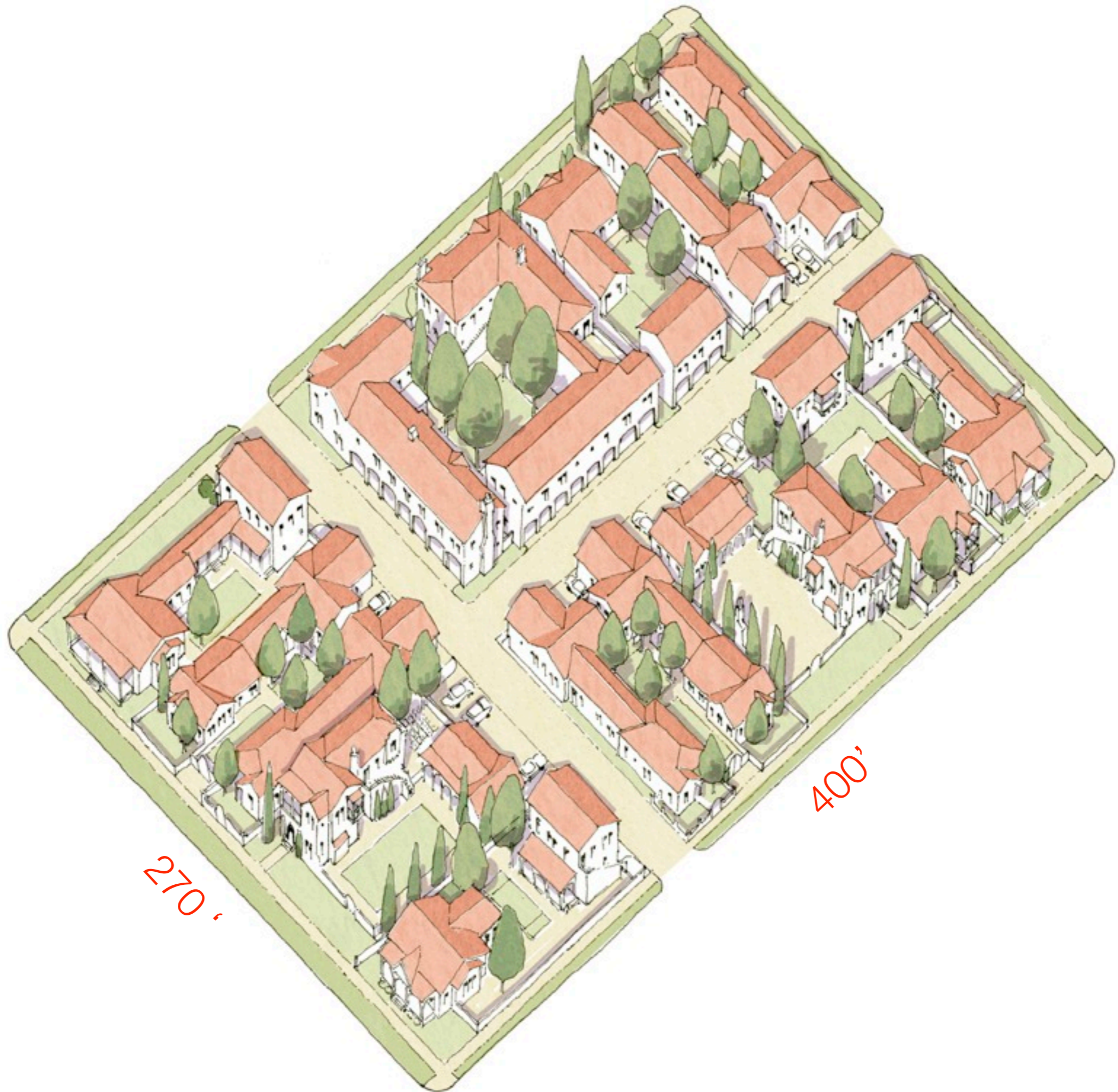
125' x 125-135'
10-11 Units
24-28 du/a



125' x 125-135'
10-11 Units
24-28 du/a

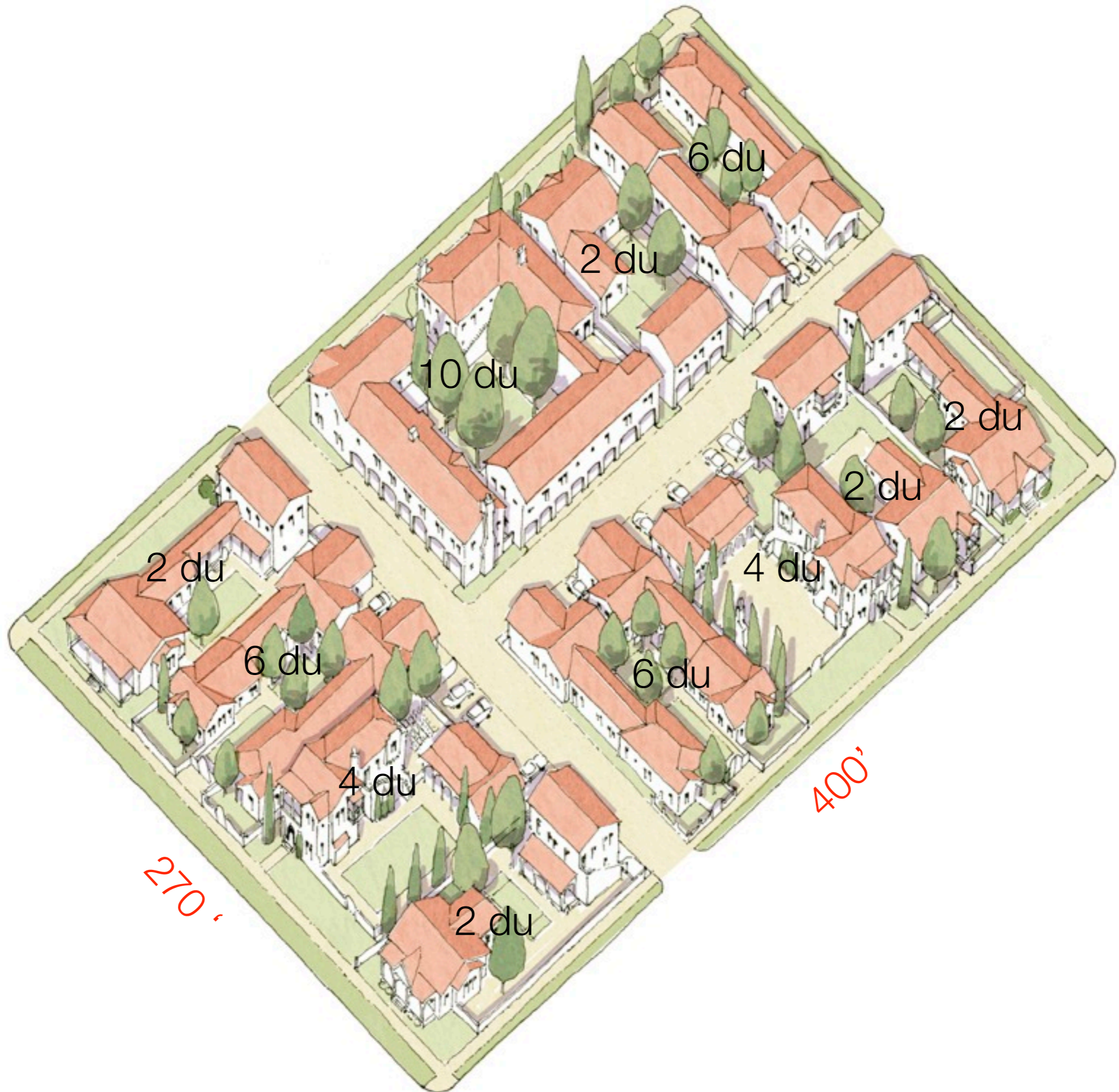


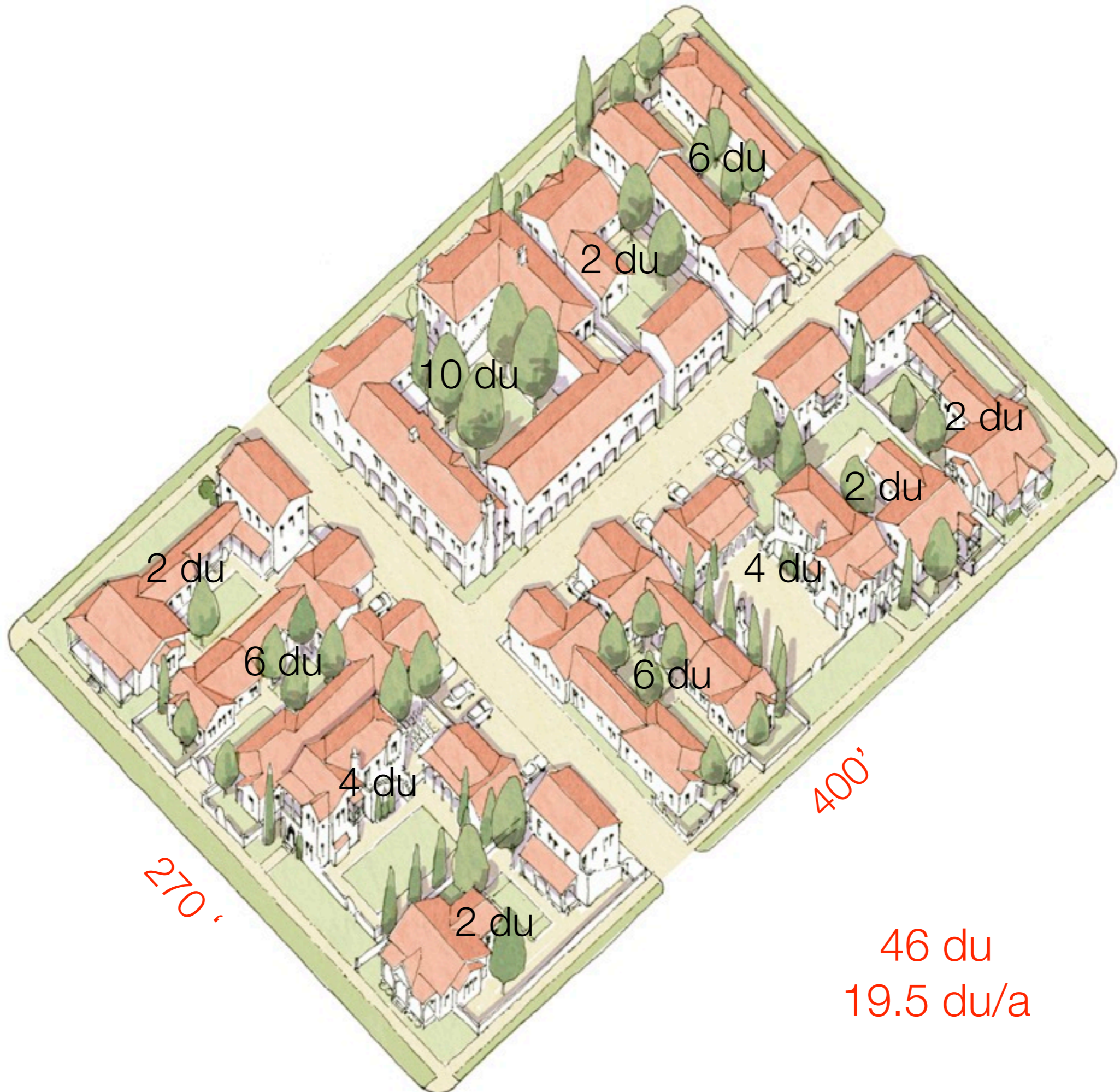


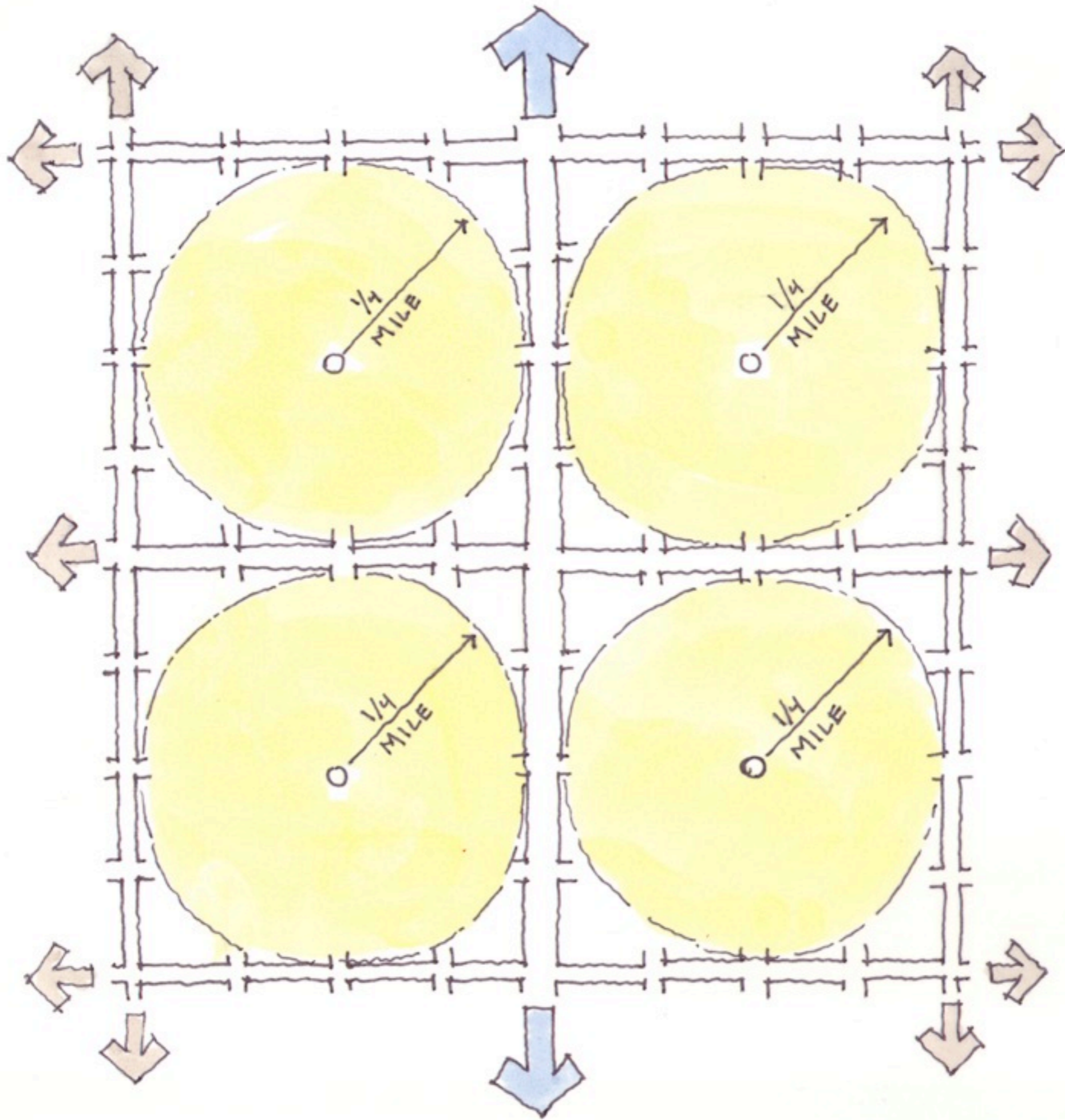


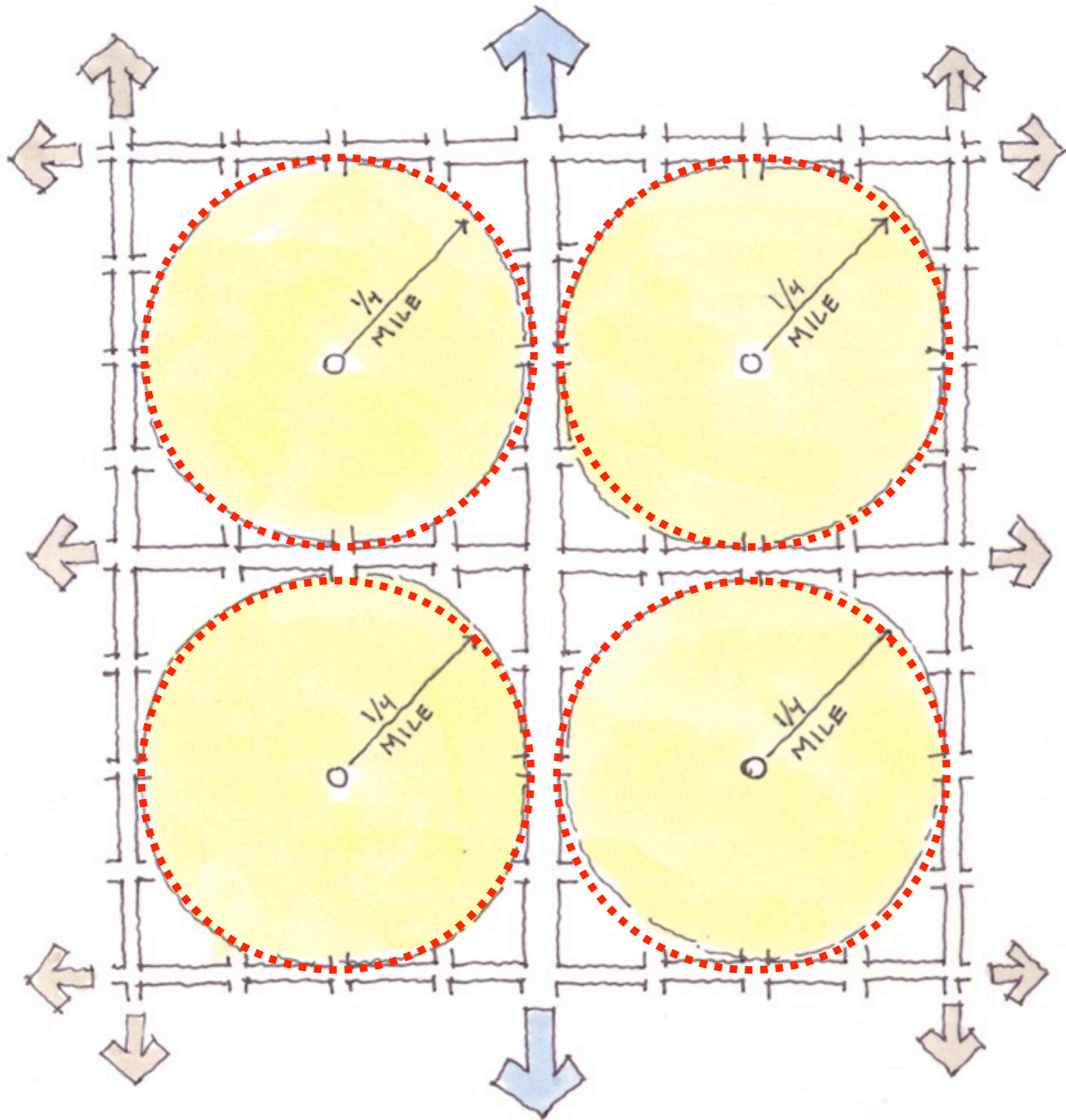
270'

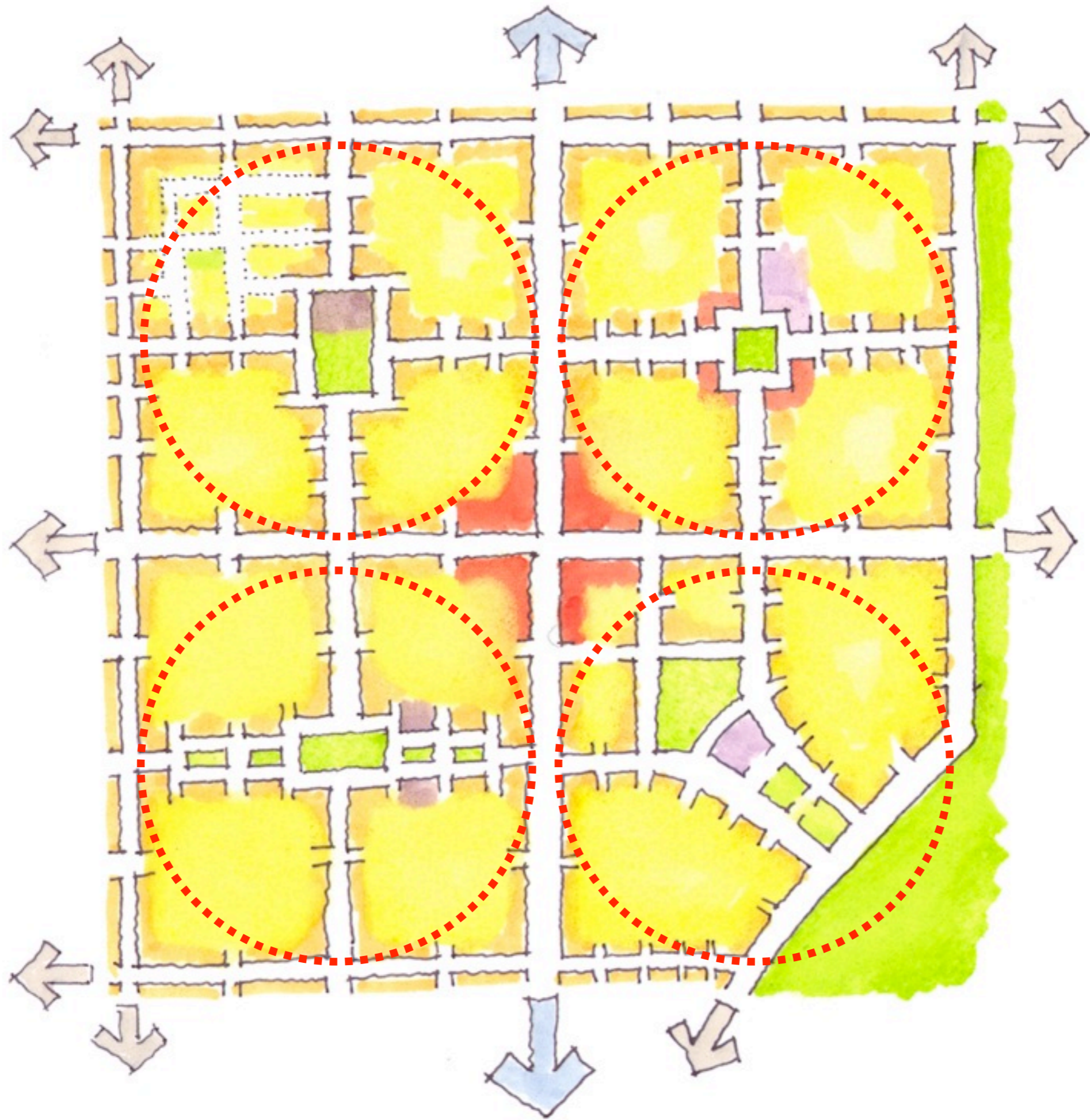
400'











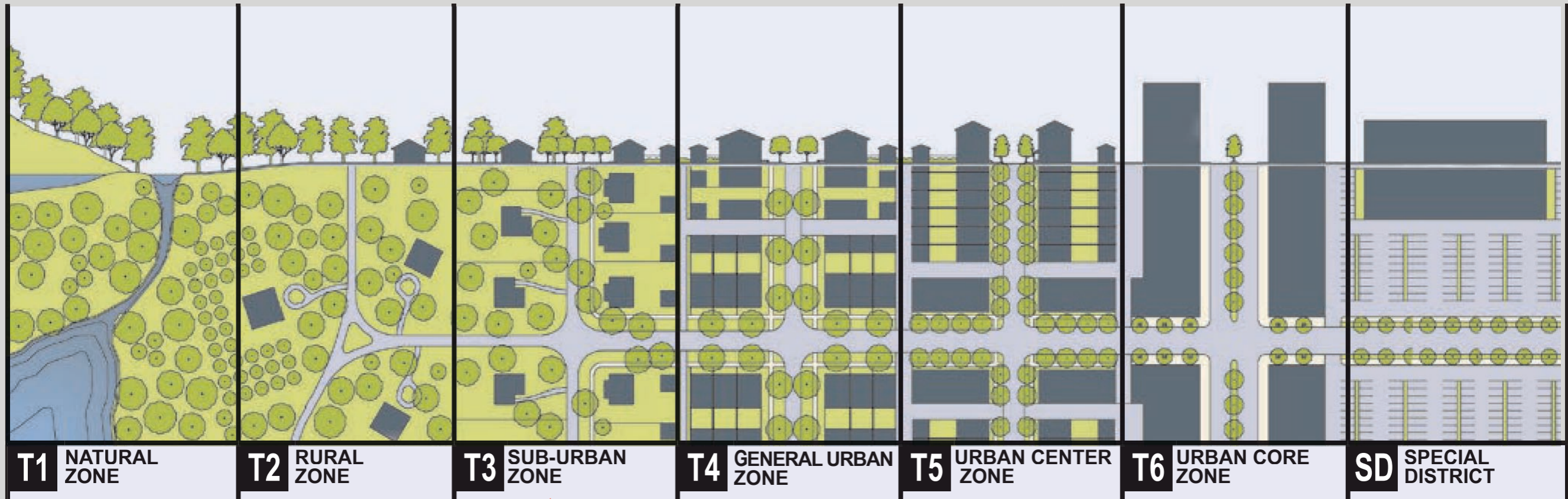
Getting to Medium Density

1. “Cottage Ordinances” - The Cottage Company
2. Form-Based Codes
3. Building Type Regulations
4. “Think Small” - Housing and related Improvements - “Tactical Urbanism”
5. Target the right places
 1. Pre-WWII neighborhoods
 2. Aging/outdated corridors



“Missing Middle” Densities

Looking at Density along the Transect



Wrong place for density

SmartCode (Image Credit: DPZ)



“Missing Middle” Densities

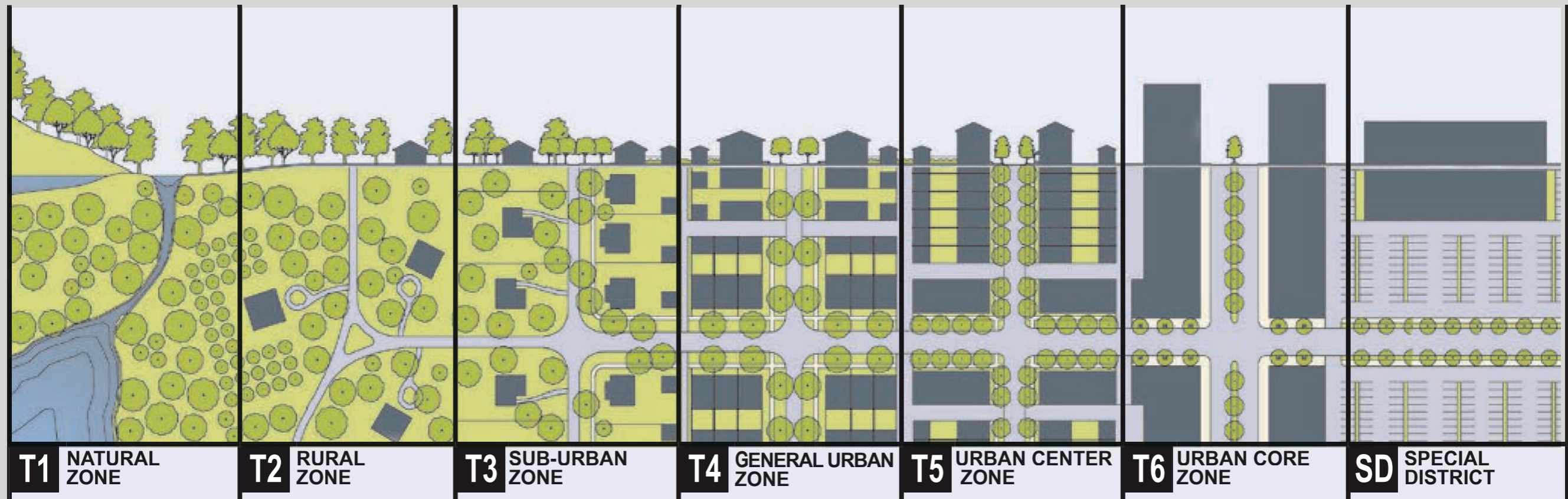
What is the Intent?

City of Livermore, CA Development Code

“Purpose...is to provide areas for the location of low density, multiple-family residential dwellings...It is intended that the district be used in the higher density areas designated in the general plan...”

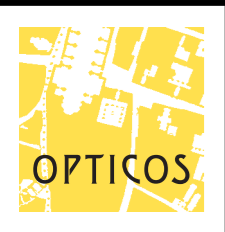


Looking at Density along the Transect



Right place for density

SmartCode (Image Credit: DPZ)



“Missing Middle” Densities



T4 Hamlet Center

Intent

To integrate appropriate, medium-density residential building types such as duplexes, townhouses, small courtyard housing, and mansion apartments with limited retail and service uses in an environment conducive to walking and bicycling.

T4 Hamlet Center is appropriate for more rural areas, implementing the comprehensive plan goals of creating areas of medium intensity residential with limited commercial uses in portions of Beaufort County, the City of Beaufort and Town of Port Royal.

Desired Form

Predominantly detached, closely spaced low rise form, setback from the street.

Building Height

3 stories max.

General Use

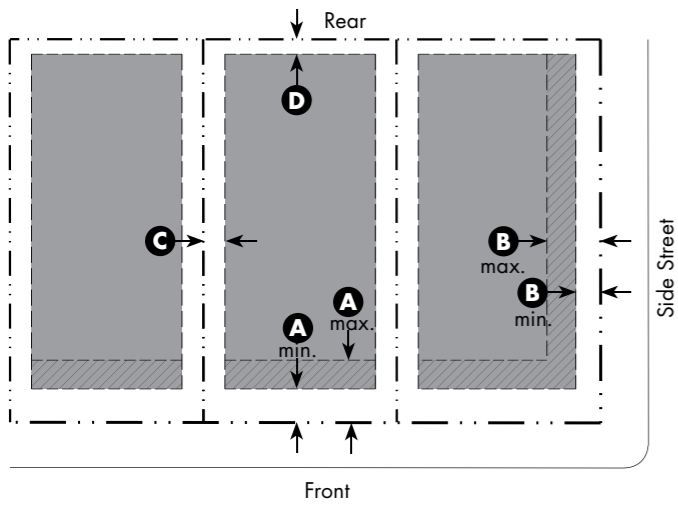
Residential, with limited Retail, and some Civic/Open Space and Service Uses

Parking

Low to moderate Parking Requirements to promote walkability and minimize visual impact. On street parking should be counted toward required nonresidential parking in selected areas.

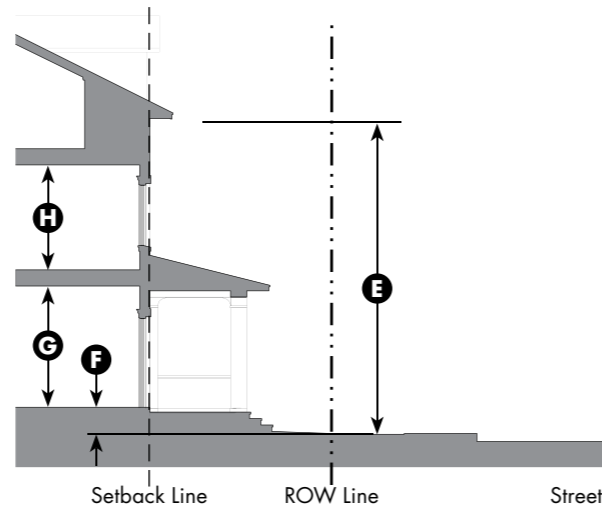
T4 Hamlet Center (T4HC)

Building Placement

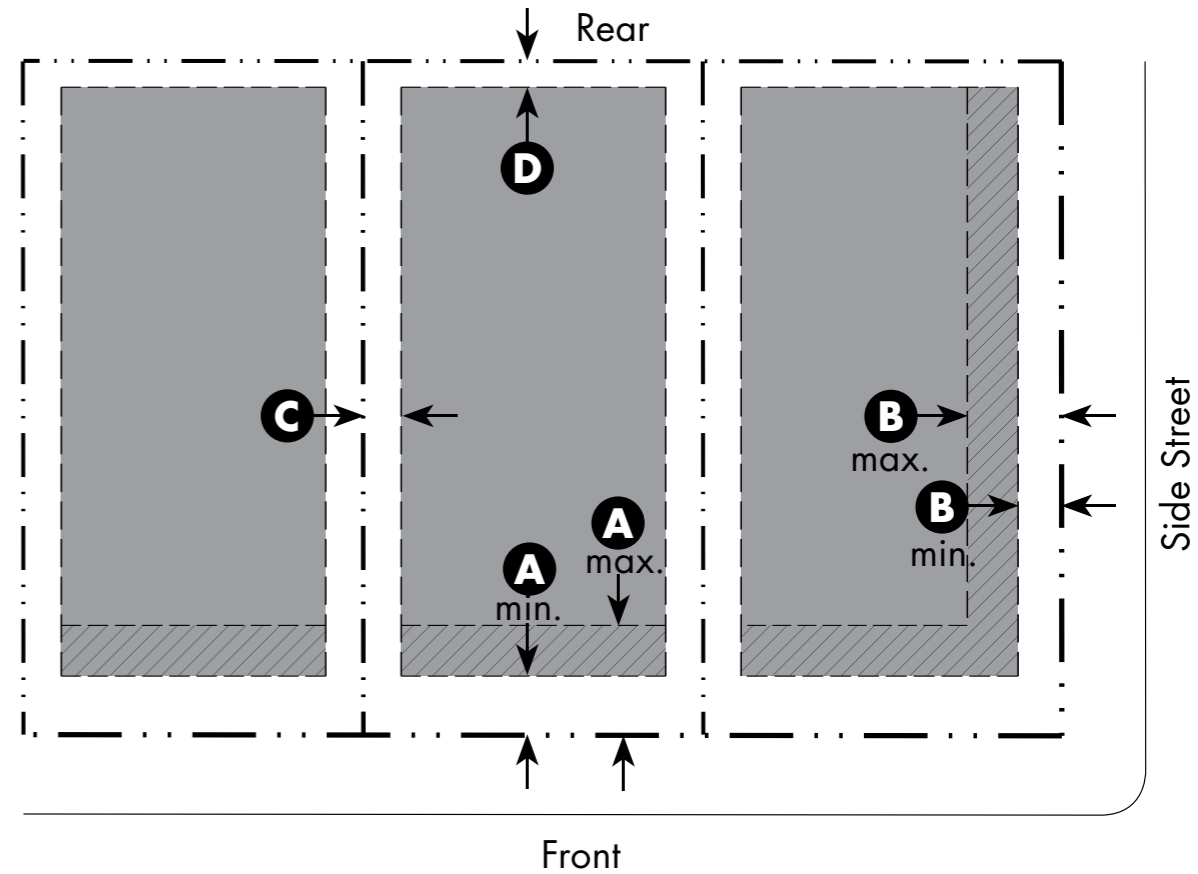


- Key**
- - - - ROW / Property Line
 - - - - Setback Line
 - Building Area
 - ▨ Facade Zone

Building Form

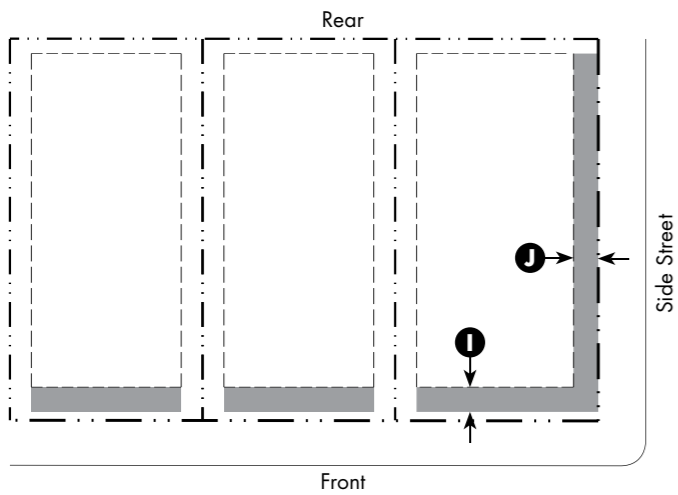


Building Placement



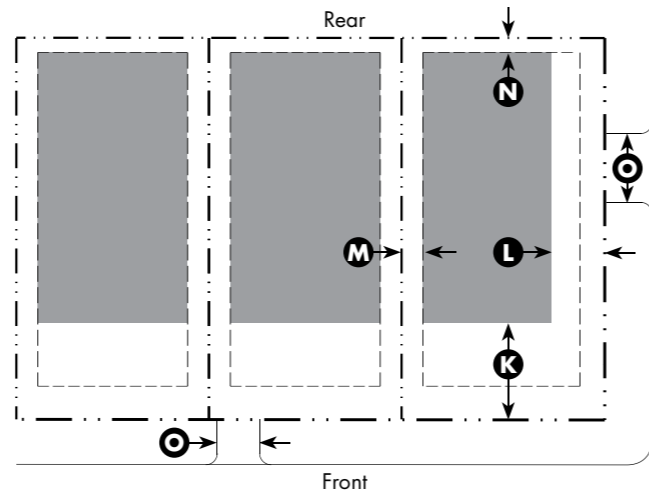
- Key**
- - - - ROW / Property Line
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 - Building Area
 - ▨ Facade Zone

Encroachments



- Key**
- - - - ROW / Property Line
 - - - - Setback Line
 - Encroachment Area

Parking Location



- Key**
- - - - ROW / Property Line
 - - - - Setback Line
 - Parking Area

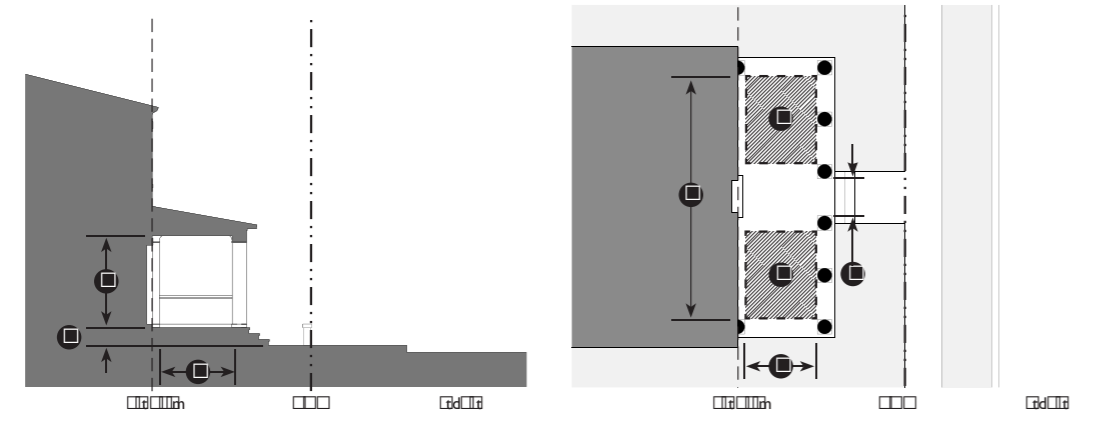


“Missing Middle” Densities

Frontage Types

Legend: [Symbol] [Symbol] [Symbol] [Symbol]

Legend: [Symbol] [Symbol]



Legend: [Symbol] [Symbol] [Symbol] [Symbol] [Symbol]

[Symbol] [Symbol] [Symbol]

Architectural description of frontage types.

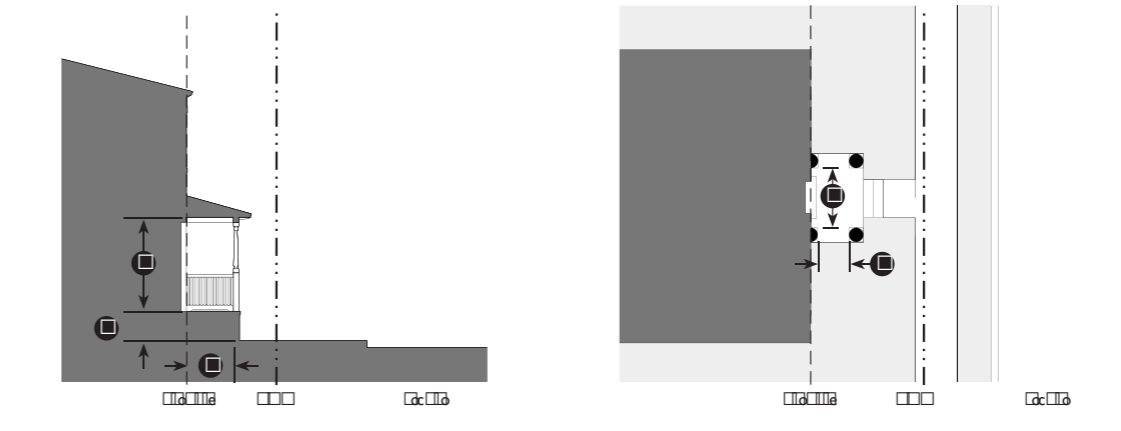
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Architectural description of frontage types.



Legend: [Symbol] [Symbol] [Symbol] [Symbol]

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Legend: [Symbol] [Symbol] [Symbol] [Symbol]

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Architectural description of frontage types.

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[Symbol]	[Symbol] m	[Symbol]
[Symbol]	[Symbol] m	[Symbol]
[Symbol]	[Symbol] m	[Symbol]
[Symbol]	[Symbol] m	[Symbol]

Architectural description of frontage types.



Regulate for Blended Density

Townhouse
18 du/acre

Mews House
15 du/acre

Courtyard
30 du/acre

Single Family
9-13 du/acre



“Missing Middle” Densities

Courtyard Apartment: 30 du/acre



“Missing Middle” Densities





Thank You

Stefan Pellegrini, AICP, LEED AP
Principal
stefan.pellegrini@opticosdesign.com

Opticos Design, Inc.
www.opticosdesign.com

