

The Bahia HILLBUILDIES

The Conceptual Premise:
In the 1960s, TV's intergenerational family of the "Beverly Hillbillies" moved together under one roof, propelled by the striking of highly-valued oil. In the 1990s, "Everybody Loves Raymond" imagined a different extended network, with Ray and his parents living across the street from one another. 1300 years earlier, Anasazi "Cliff Dwellers" effectively used topography to negotiate a variety of spatial and social relationships, forming cohesive and productive communities. These seemingly incongruent situations merge into one aspiration for our project: a response that is formed of its unique constraints and sustaining to new social potentials.

Our 27 unit proposal (19 primary units, 8 accessory units) involves building only on Parcel A. First, Parcel A has excellent access and views. Second, by minimizing the footprint, communal opportunities that these hillside sites present to the city and nearby residents will be expanded. Finally, the overall proposed number of units when considering Parcel A's 6.8 acres makes for a low density of 4 units/acre; spreading this development over both sites would act to dilute the social dynamics of the project presents.

The site's terraced condition allows accessory units to flexibly connect either horizontally (accessibly) or vertically to primary units and parking.

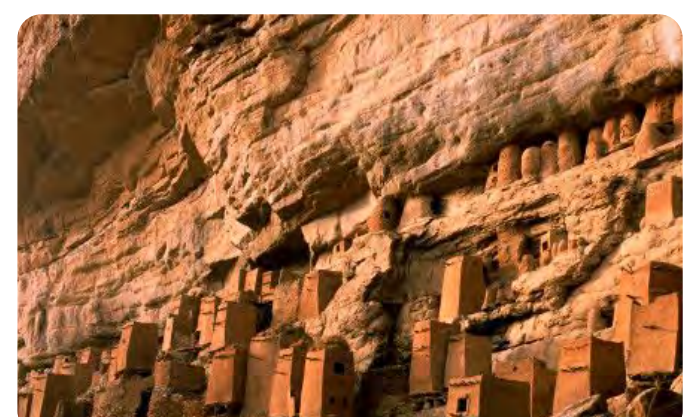
LEED and Sustainable Considerations:
By striving for a compact development along Bahia Drive, we minimize the disturbance to the hillside with building cover at only 11% of the two sites. At the same time, we maximize the site's usefulness and productivity within the larger Bahia and Novato community. Integrating pervious paving for parking and pedestrian walkways will further reduce site runoff, and capturing rainwater from roofs and drives into underground cisterns will handle on-site irrigation needs.

Materially, the project could utilize structurally insulated panels made from renewable materials (Agriboard is one such product). SIPs can be panelized off-site and quickly assembled, reducing construction time. They also possess higher R-values than conventionally framed exterior walls and are well suited to one and two story construction. The SIPs could be clad in a terra cotta or cement panel rain screen system to promote the ventilation of the building enclosure. Low pitch and flat roofs will be a white, high-albedo rubber membrane and occupiable roofs will be covered in recycled rubber pavers that can become home to potted "kitchen gardens" and bird watching for residents.

Energy efficient systems (such as radiant flooring and secondary, supplemental high efficiency heat pumps) will condition interior spaces, along with well considered passive ventilation of the units. Additionally, the project could take advantage of emerging affordable and highly efficient lighting options using LED and compact fluorescent technologies.

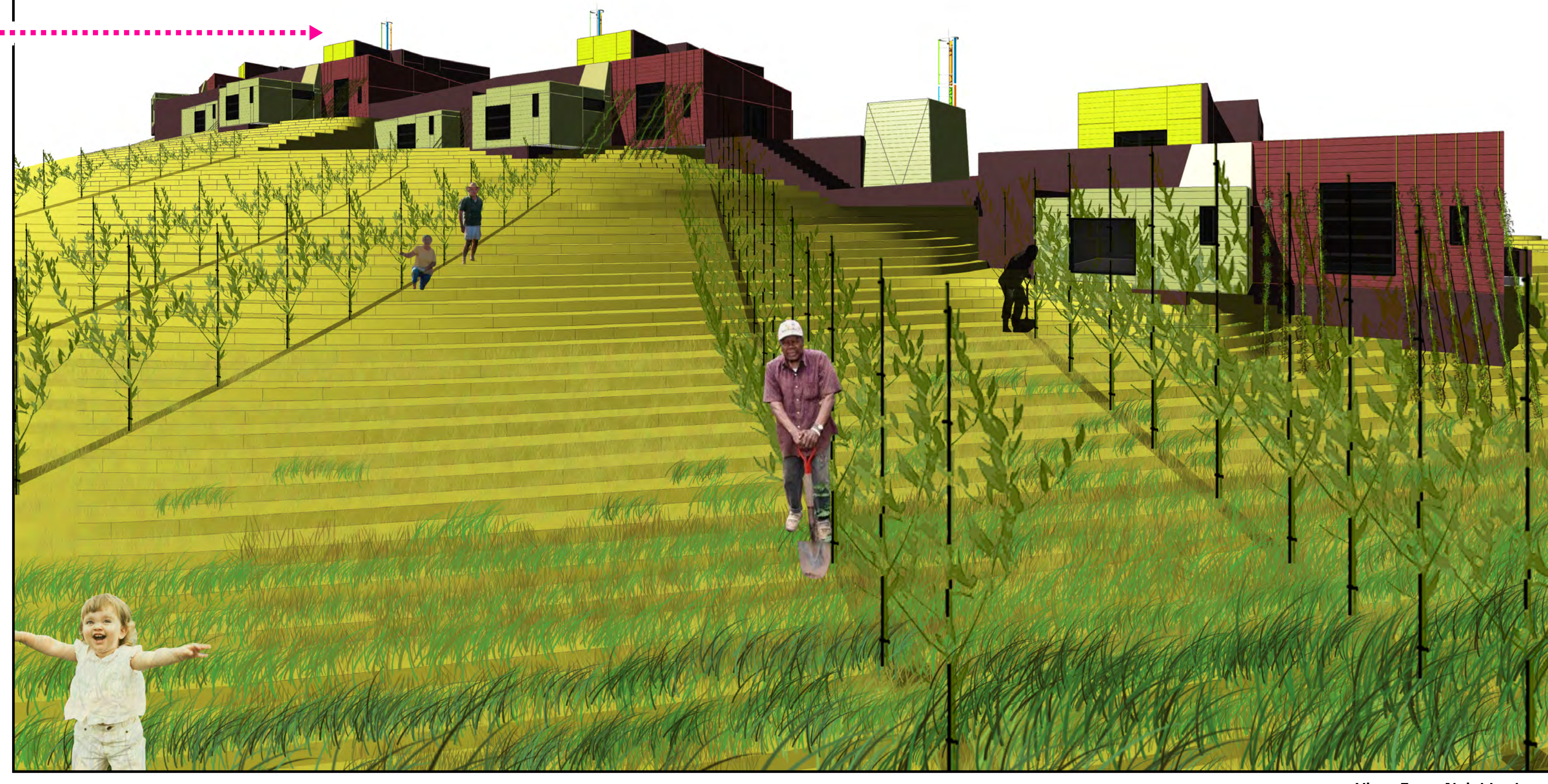
Site Generators:
We are proposing the integration of seven vertical axis wind turbines, which could conservatively generate 40% of the project's annual energy consumption. "Windspires" are elegantly designed, slow-moving, nearly silent, and relatively affordable. Given the site's proximity to an Audubon reserve, it is important to note that these vertical axis turbines are quite bird friendly; research has shown them to be highly visible to and safe for birds. Located appropriately below the level of the turbines will be bird feeders, connecting the activities of the new community to the Audubon Park.

Much like The Beverly Hillbillies, The Bahia HillBuildies recognizes the productive capacity of oil within the landscape: *olive oil* that is, lucrative, renewable gourmet gold. By planting the remaining 13.5 acres of the two parcels with olive trees (an olive tree nursery is located twelve miles away in Sonoma County), a cottage industry might be created that could be supported by senior housing residents and interested members of the larger community. We estimate that nearly 1000 trees could be planted, capable of producing two tons of gourmet olive oil annually. Simultaneously, the olive tree farm will become a picturesque back-drop for the established housing community and a shared resource that in its care, maintenance, and profit, binds together its neighbors.



Community Plan

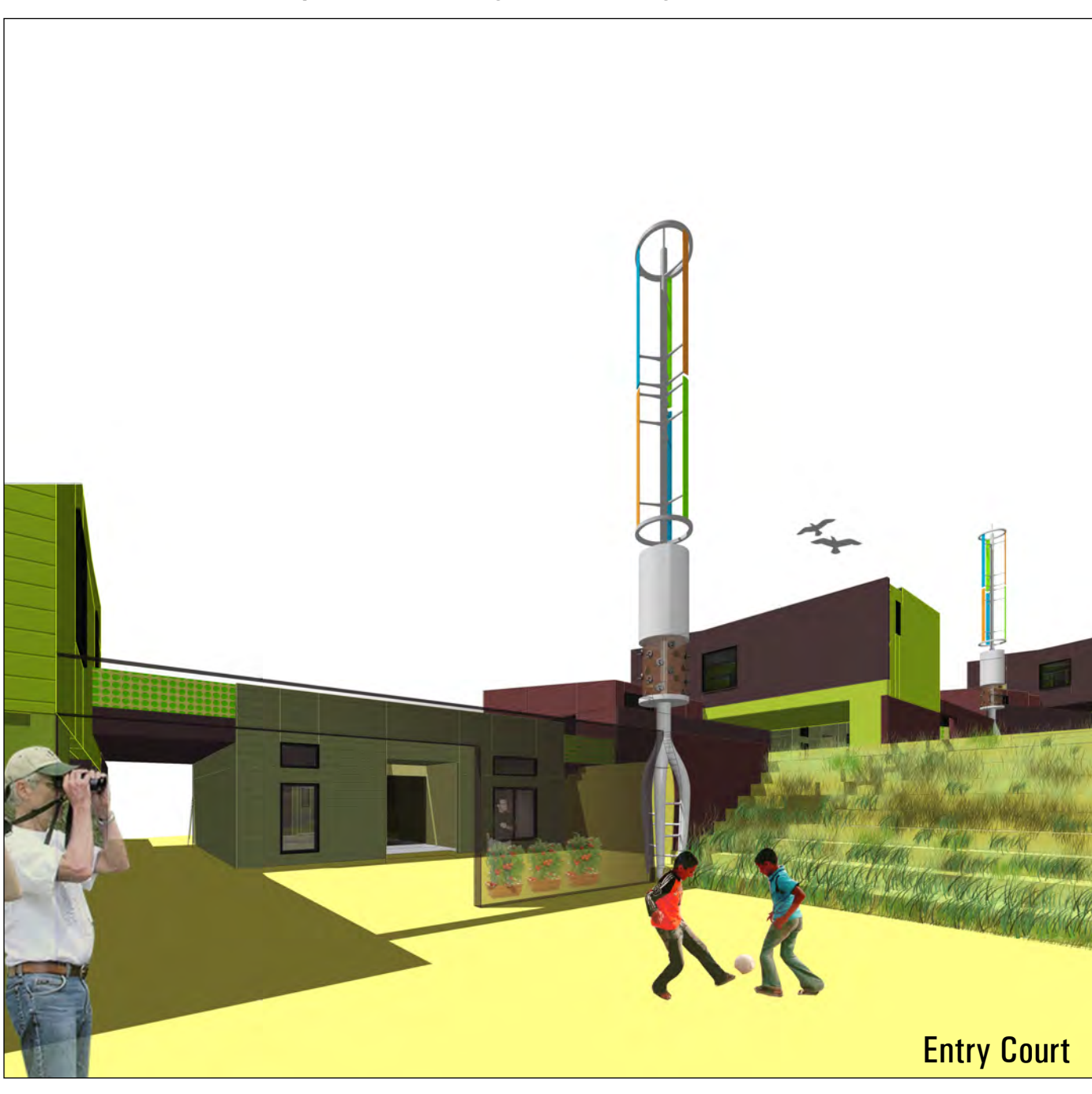
Unit Breakdown	type	size	quantity	total square footage
Primary Units	studio	710 sf	7	4970 sf
	one bedroom	835 sf	7	5945 sf
	two bedroom	1290 sf	5	6250 sf
	total		19	17,095 sf
Accessory Units	accessory unit	800 sf	8	6880 sf
	19 units + accessory units			23,945 sf



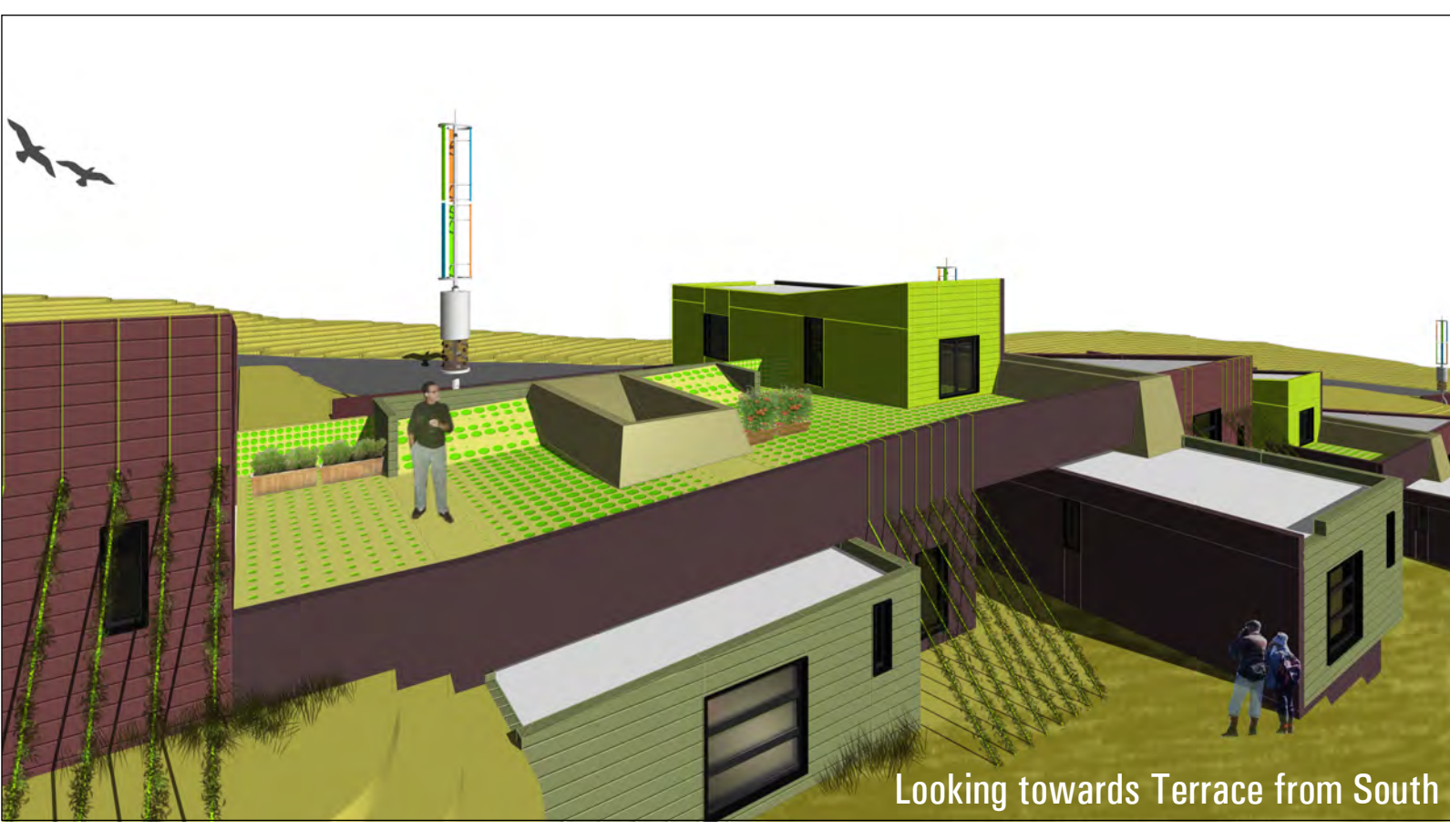
View From Neighborhood



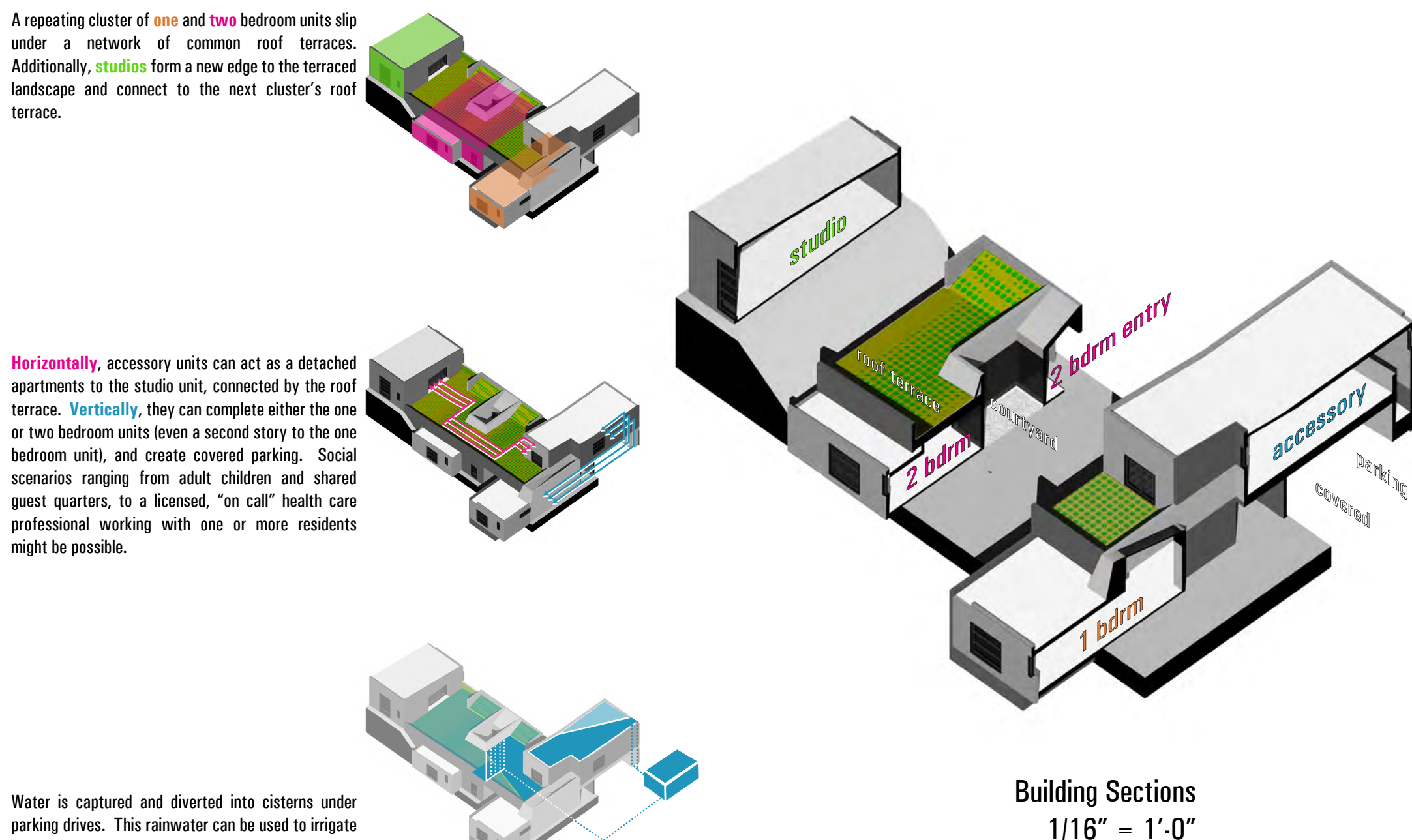
Aerial View over Bahia Drive



Entry Court



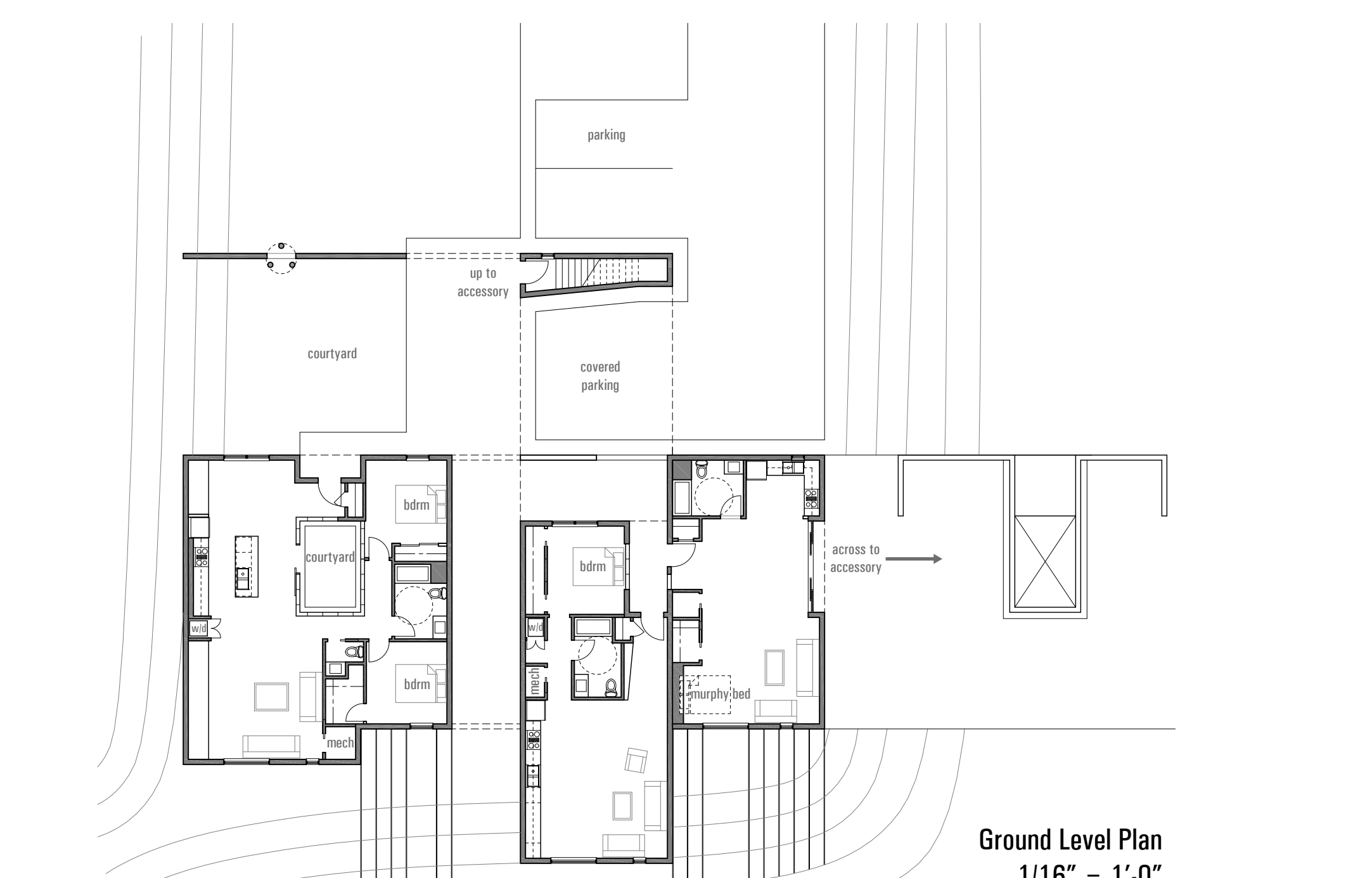
Looking towards Terrace from South



Building Sections
1/16" = 1'-0"



Accessory Unit Plan
1/16" = 1'-0"



Ground Level Plan
1/16" = 1'-0"

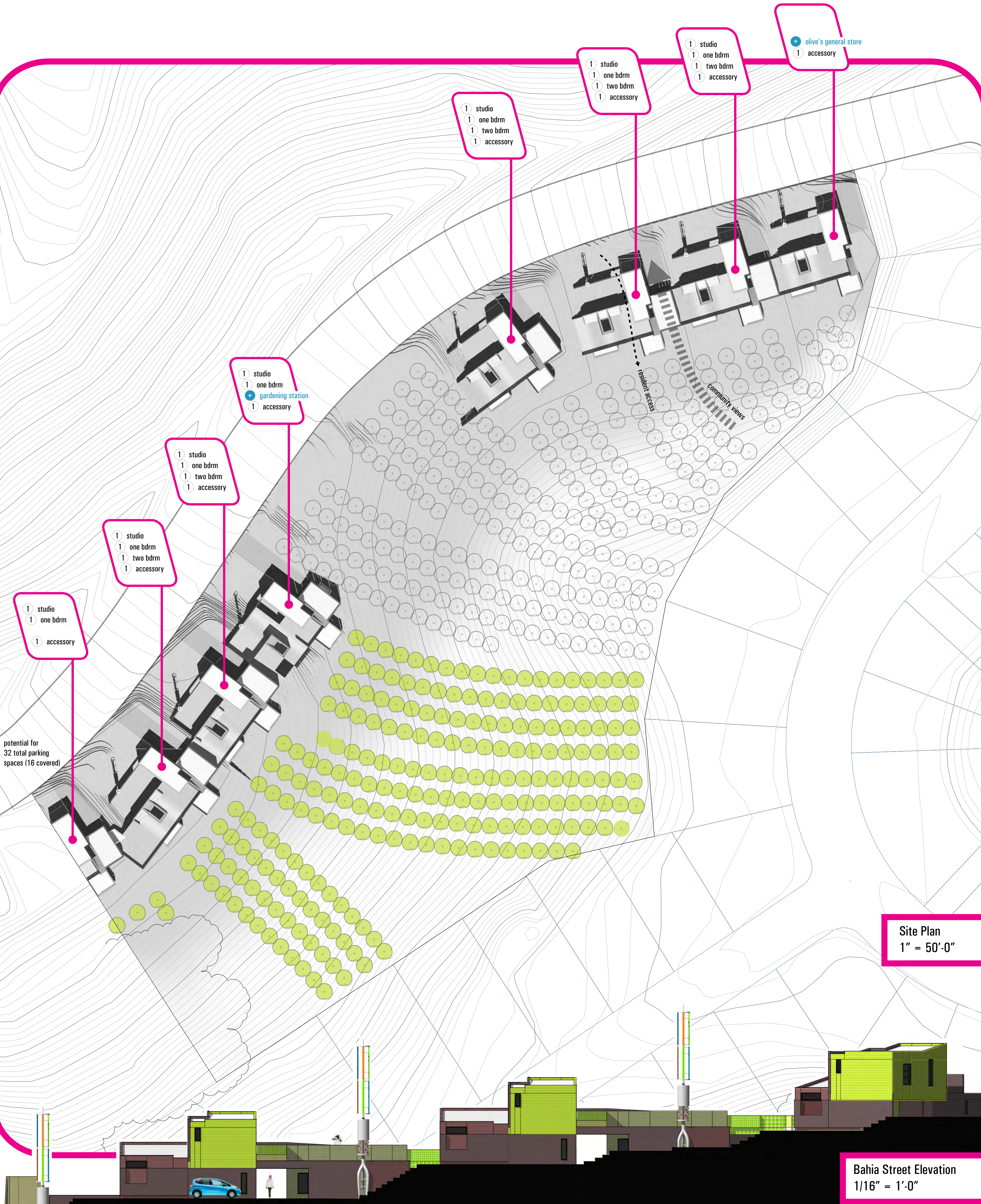
Conceptual Cost Estimate
For this conceptual cost estimate, we used 2009 construction cost data from RSMeans, which assumes (and includes) a 10% general contractor fee and markup and 10% project contingency. These two items account for \$475,000 of the cost estimate below, and likely are factored differently by the developer. Additionally, we show total costs for the development as envisioned (19 units + 8 accessory units + projected amenities), with the understanding that this mix is flexible and may change in additional phases of design.

Item	Item total
01 site work (minimal grading, excavation and removal; previous concrete sidewalks and parking areas)	\$156,250
02 foundation (per and grade beam foundations)	\$257,700
03 framing (exterior walls panelized with structurally insulated panels, reducing on-site labor and increasing wall insulation R value)	\$148,700
04 exterior walls (terra cotta admission and cement panel over SIPs; low E windows and doors; channel glass glazing in two bedroom courtyard)	\$334,250
05 roofing (expanding foam insulation in ceiling cavities; high-albedo rubber membrane on non-occupiable roof surfaces; artificial ground connecting studio and accessory units)	\$117,320
06 interiors (gypsum board partitions, stained concrete flooring in main spaces and tile or linoleum in bathrooms)	\$480,700
07 appliances (two finish levels of kitchen and bath accessories)	\$251,480
08 mechanical (radiant heating system w/ heat pump backup; passive ventilation via well positioned operable windows)	\$388,900
09 electrical (LED and compact fluorescent lighting package)	\$224,950
total conceptual costs	\$2,360,250

10 site generators
Because we have developed a compact housing strategy on one of the two parcels, we can use the remaining land as a productive reserve that can be enjoyed by hill dwellers and residents of the Bahia community. We propose two Site Generators:

- "Windspires" could be purchased with tax credits, or grid-tied and in collaboration with public utilities in exchange for lower kWh rates.
- An Olive Tree Farm could be established in just four years with the goal of producing small batch olive oil. Olive harvesting is low intensity, but requires hand labor and care. This process might become a community hobby for residents, and generate as much as \$80,000 annually.

Item	unit cost	quantity	item total
windspire/bird feeder	\$12,000.00	7	\$84,000
15 gallon multi trunk	\$85.00	200	\$17,000
5 gallon	\$45.00	750	\$33,750
initial planting	\$15.00	950	\$14,250
total for site generators:			\$149,000



Site Plan
1" = 50'-0"

Bahia Street Elevation
1/16" = 1'-0"