

CALIFORNIA SENIOR HOUSING DESIGN COMPETITION

SUBURBAN ALTERNATIVES LAND TRUST
NORTHBAY FAMILY HOMES



Landscape Design Concept is aimed at protecting the site, sensitively creating community involvement, movement and connection, and committing to sustainability, water management, and drought tolerant plantings. It preserves existing oak woodlands for development, and protects the marshland and wildlife below from run-off and pollution.

The concept incorporates jobs, gardening activities and social gathering areas such as the community garden, botanical garden and observation decks. Neighborhood sidewalks, bike and footpaths provide movement. And the creation of small-scale agriculture provides jobs and income.

1 Urban Design
Bahia Drive is lined with Coast Live Oaks to lend a promenade feel. Roads are flanked by 'Bio Swale' parkways to filter, slow and infiltrate runoff from streets. Wide sidewalks encourage public access. Two bus stops in front of the Resource Center connect the community to Novato. Perpendicular parking stalls are provided in this public area, while on-street parking is provided along both sides of Bahia. Street lighting would be incorporated within the ROW.

2 Urban Design
Misty Road's streetscape is more informal, with drifts of tree groupings, and shrubs adjacent to the sidewalks and in the front yards. 'Bio swale' parkways filter polluted run-off from the marshland. Some off-street parking is provided for orchard parking. Street lighting would be incorporated in the ROW.

3 Community Vineyards and Orchards
This site includes 2 acres of grapes and fruit trees, maintained organically with bio-diesel equipment and 'stylet oil'. Bike/foot paths connect to the community gardens, Resource Center deck and Misty parcel.

4 Misty Way Orchards
These orchards provide spectacular views, while a small picnic area and a bike/foot path provide access through the orchard to connecting ultimately to the Bahia parcel.

5 Community Garden
The garden provides the opportunity to grow and sell seasonal berries, spring, summer and fall vegetables and flowers. Surplus produce can be sold in the Farmers Market in front of the Resource Center.

6 Bahia Sustainability Resource Center Plaza and Viewing Deck
Designed to provide spaces for events and outdoor dining, the plaza provides a display area for farmers market stalls. The extensive wood deck creates outdoor dining and views of the vineyards and orchards below.

7 Botanical Garden Pavilion
This roofed information structure houses displays that educate and inform the community on current events, as well as wildlife and agricultural job opportunities. Rainwater for irrigation is collected from this structure.

8 Kiwi Observation Deck
This dining deck is sheltered by a patio cover planted with kiwi vines, which produce fruit for the garden. It provides an outstanding overlook of the vineyards, orchards and communities below.

9 Botanical Community Garden
This garden was created to provide a display of indigenous plants for wildlife. Landscaped with drought-tolerant plantings, the garden is designed to attract birds and butterflies. The garden would educate while being maintained by the community.

10 Common Area Landscaping
Designed with water management, rainwater harvesting, solar access and a naturalistic look, the landscaping would be planted with drought plant materials. All irrigation systems would emphasize water conservation.

11 Private Landscaping
Gardens would be landscaped with drought tolerant trees, shrubs, grasses, perennials and lawn substitutes. Rainwater collection through down spouts and water features would provide irrigation. The building's solar panels power low voltage lighting.

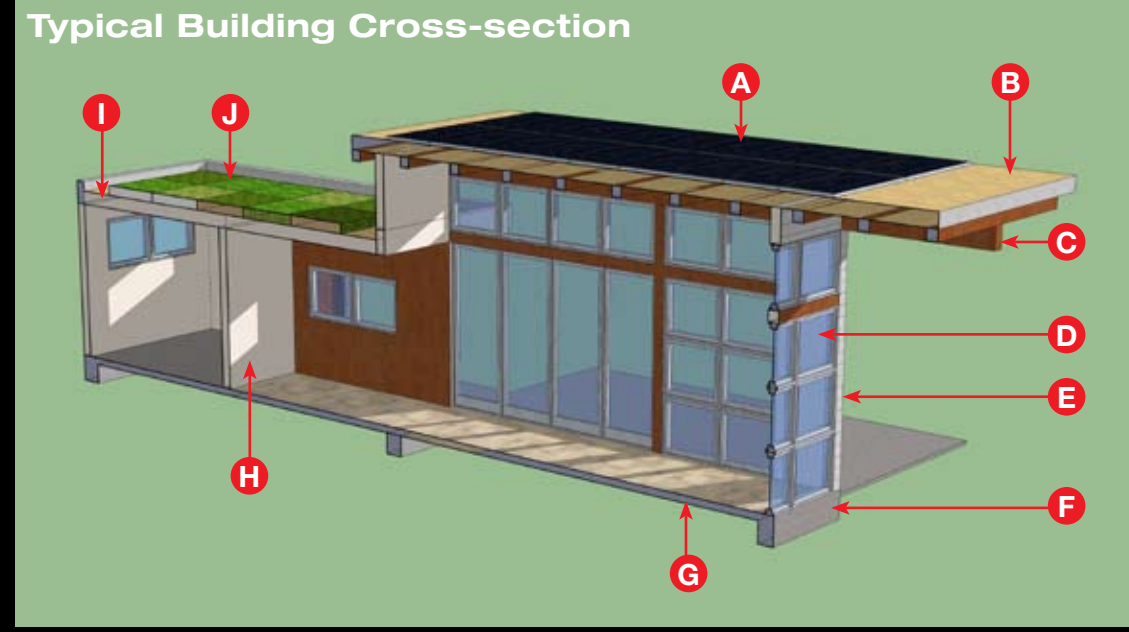
12 Misty Way and Bahia Housing
Effective use of housing rooftops includes solar thermal water heating system and photo voltaic power generation. Green roof panels with drought tolerant ground covers and grasses please the eye from upper slope homes and provide additional thermal insulation. Rainwater harvesting system collects and stores up to 10,000 gallons of water underground and is connected to a low water use, automatic, drip irrigation system.

13 Bahia Sustainability Center
Bahia sustainable living center is a community based destination. It features a resource and education area which will showcase and educate the public about the extensive natural environment surrounding the Bahia community. A marketplace is provided to sell sustainably grown fruits and vegetables from the community gardens

and provide a venue for off-site locally grown products to be showcased and sold. Terraces overlook the vineyard and orchards as well as the wetlands and oak covered hills. A demonstration greenhouse adjoins the community garden facility and a large courtyard provides outdoor gathering space.

Construction Estimate				
Residences	Percent	Studio	1 Bedroom	2 Bedroom
Labor and Materials	82.2	\$93,130	\$143,061	\$166,565
Insurance, payroll tax	2.8	\$3,163	\$4,873	\$5,674
Permits and utilities	2.0	\$2,259	\$3,481	\$4,053
Final clean-up	0.5	\$565	\$870	\$1,013
Overhead and profit	12.5	\$14,117	\$21,755	\$25,329
Soft costs sub-total	17.8	\$20,104	\$30,979	\$36,069
Base home cost	100.0	\$113,234	\$170,040	\$202,634
Bonus Green Features				
PV System		\$10,000	\$13,000	\$16,000
Solar Hot Water System		\$5,600	\$5,600	\$5,600
Solar Radiant Heating System		\$2,560	\$4,830	\$5,750
Gray Water System		\$1,500	\$1,500	\$1,500
Rain Water Harvesting System		\$5,000	\$5,000	\$5,000
Green Roof Technology		\$4,200	\$6,650	\$8,048
Green Features Sub-Total		\$28,860	\$36,580	\$41,898

Construction Estimate	
Community Structures	
Sustainability Resource Center	\$35,200
Marketplace Pavilion	\$118,800
Community Garden Greenhouse	\$17,200
Green Features	\$41,898
Community Structures Sub-Total	\$213,098
Capital Improvement Costs per unit	
Clearing and Grubbing	\$1,435
Earthwork	\$12,600
Excavation	\$4,626
Embankment	\$5,742
Sanitary Sewer System	\$5,280
Storm Drainage System	\$6,135
Domestic Water System	\$5,760
Street Surface Improvements	\$13,550
Private Utilities	\$19,140
Capital Improvements Sub-Total	\$74,288
Landscaping Costs	
Common Area Landscaping	\$437,250
Community Garden Landscaping	\$376,950
Studio Unit - per unit	\$11,890
1 Bedroom Unit - per unit	\$12,120
2 Bedroom Unit - per unit	\$12,315
Housing Total	\$4,391,680
Capital Improvements Total	\$2,079,504
Landscaping	\$1,151,545
Total Project Cost	\$7,622,729



- CROSS SECTION KEY**
- A** Solar thermal hot water heating system with evacuated tube collector and heat exchanger to provide domestic hot water and in-floor radiant heat. Photo-voltaic power generation, mono-crystalline PV cell array.
 - B** Class A fire resistive cool roof
 - C** Structural beams FSC certified or engineered lumber
 - D** Low-E, dual-glazed window and door system with integral thermal break
 - E** Pre-finished fiber-cement siding and pre-colored smooth finish stucco
 - F** 50% Fly-ash concrete with R-5 insulated slab edge and bottom
 - G** Polished and sealed concrete floor with hydronic radiant heating system
 - H** Interior wall finishes, trowel applied clay, Zero-VOC natural finish
 - I** Energy-Star qualified structural insulated panel building system with 100% recyclable R-40 EPS foam core covered by TYVEC water and air resistive barrier with all joints sealed
 - J** Green living technologies green roof panels with drain board, water retention and root stabilizer, vegetated with drought tolerant ground covers and grasses.

The simple utilitarian agriculture buildings of the region inspired our architectural solution. These wood-sided, post-and-beam buildings represent a straightforward design aesthetic and timeless architectural tradition. Our interpretation makes this sense of simplicity of construction the basis for three prototypes. The studio, one-bedroom and two-bedroom units all are designed to be stand-alone structures or combined to form higher densities. The prototypes could be used on multiple sites and at varying densities. The Bahia project utilizes the stand-alone configuration and the attached duplex configuration.

The floor plans are simple, elegant, and efficient. The design takes into account the needs of seniors by being an aesthetically enriching, barrier-free living environment. In this way seniors can remain in their home safely, independently, and comfortably. It allows living in a familiar

environment throughout one's maturing years, and the ability to enjoy the familiar daily rituals and the special events that enrich our lives. Although the plans are practical, they contain spatially exciting building volumes. The large great room with 12' ceilings and floor-to-ceiling glass will capture views to the outdoors. From the sleeping rooms, the ceiling lowers and provides a more cocoon-like experience appropriate to a bedroom, bath and hall. All of the plans have an oversized garage with an area that can be converted into a small home office.

Of special importance is orientation to the site's outstanding views, while addressing the need for passive and active solar response. In addressing this issue, the 3 configurations rotate, mirror and combine, which then provides visual variety and avoids the typical repetitive look of standard plans.

The green attributes are extensive. They include solar hot water heating and photo voltaic power generation. Grey water is collected and reused, and a rainwater harvesting system is envisioned to assist in landscape irrigation. The construction systems from foundation to roof will last longer, cost less to operate, and won't harm people's health. Some of the major systems include:

- SIP (structural insulated panel) construction for the entire building shell with an R-40 insulation factor,
- engineered wood or FSC-Certified lumber for the exposed timber framing and wood ceilings,
- radiant heating in the insulated concrete slab,

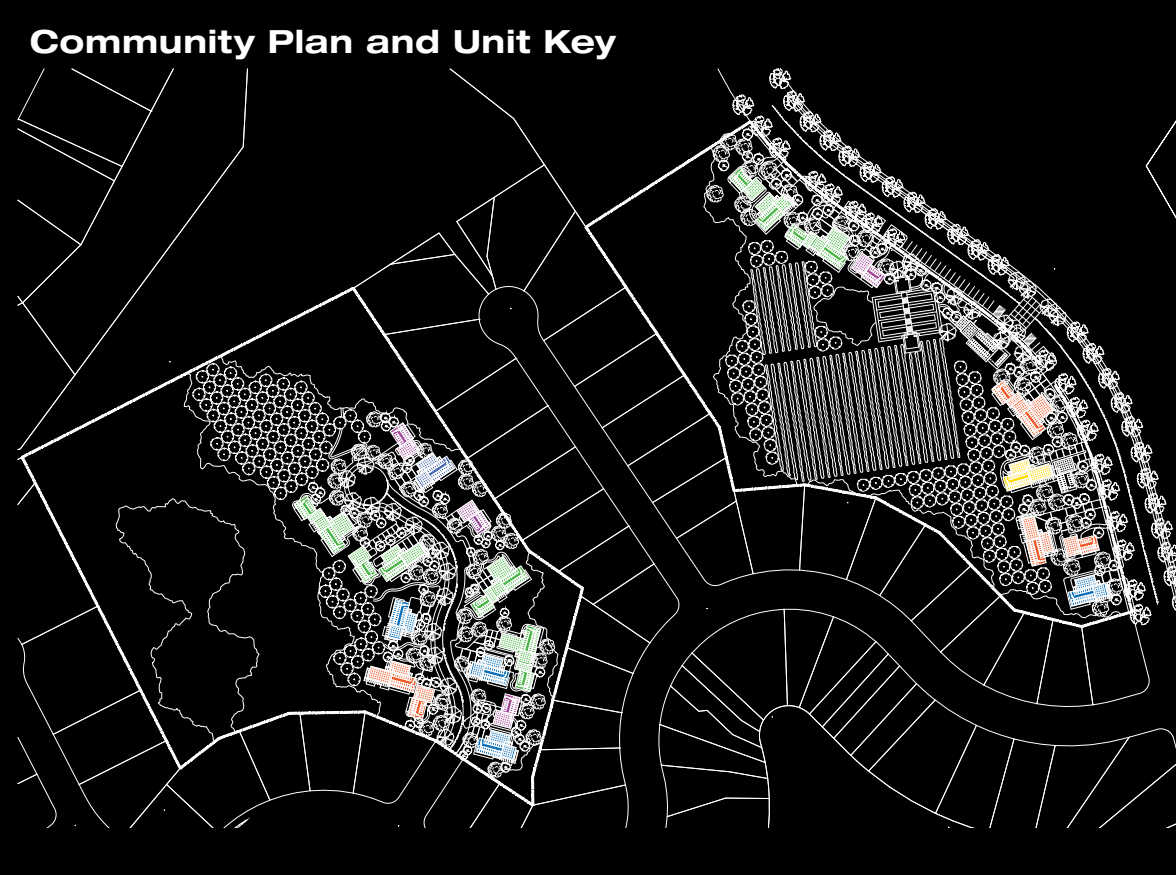
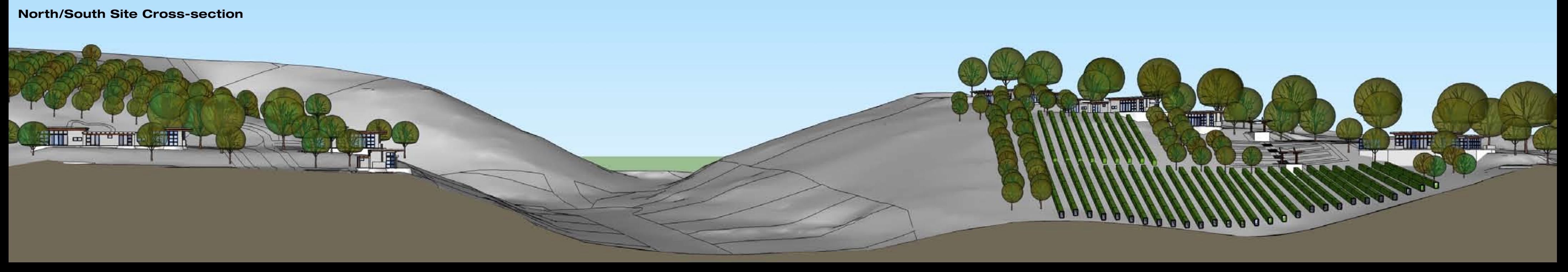
- and lightweight green roofs to provide additional thermal insulation and visual appeal from adjacent properties.

All plumbing fixtures would be low flow and dual flush. The exterior finish materials are low maintenance and highly durable, as well as environmentally friendly. The interior finishes would be low or zero VOC. The technological aspects were also considered with a hybrid vehicle charging station, whole house energy monitoring system, and smart-home technologies.

Landscape Design Concept is aimed at protecting the site, sensitively creating community involvement, movement and connection, and committing to sustainability, water management, and drought tolerant plantings. It preserves existing oak woodlands for development, and

protects the marshland and wildlife below from run-off and pollution. The concept incorporates jobs, gardening activities and social gathering areas such as the community garden, botanical garden and observation decks. Neighborhood sidewalks, bike and footpaths provide movement. And the creation of small-scale agriculture provides jobs and income.

The design solution also incorporates a community garden, vineyard and orchards. This includes the "Bahia Sustainability Resource Center," which is envisioned as a both a source of community identity and pride, as well as a Novato destination. Here, fresh organic food can be purchased or grown, educational opportunities in sustainability and green living can be pursued, and a point of departure and return while exploring the vast natural environment surrounding the Bahia community on bike or foot.



Key	Unit Type	Living SF	Garage SF	Total SF	Bahia	Misty Way
	Studio	640	300	940	1	3
	1 Bedroom	1050	335	1385	1	4
	1 Bedroom + Guest Unit	1690	670	2360	2	3
	2 Bedroom	1250	335	1585	1	0
	2 Bedroom + Guest Unit	1890	670	2560	2	2
	Total Primary Units				7	12
	Total Guest Units				4	5
	Total Units				11	17

