



TRUE NATURE DESIGN

Permaculture Design Consultancy

REPORT

PREPARED BY

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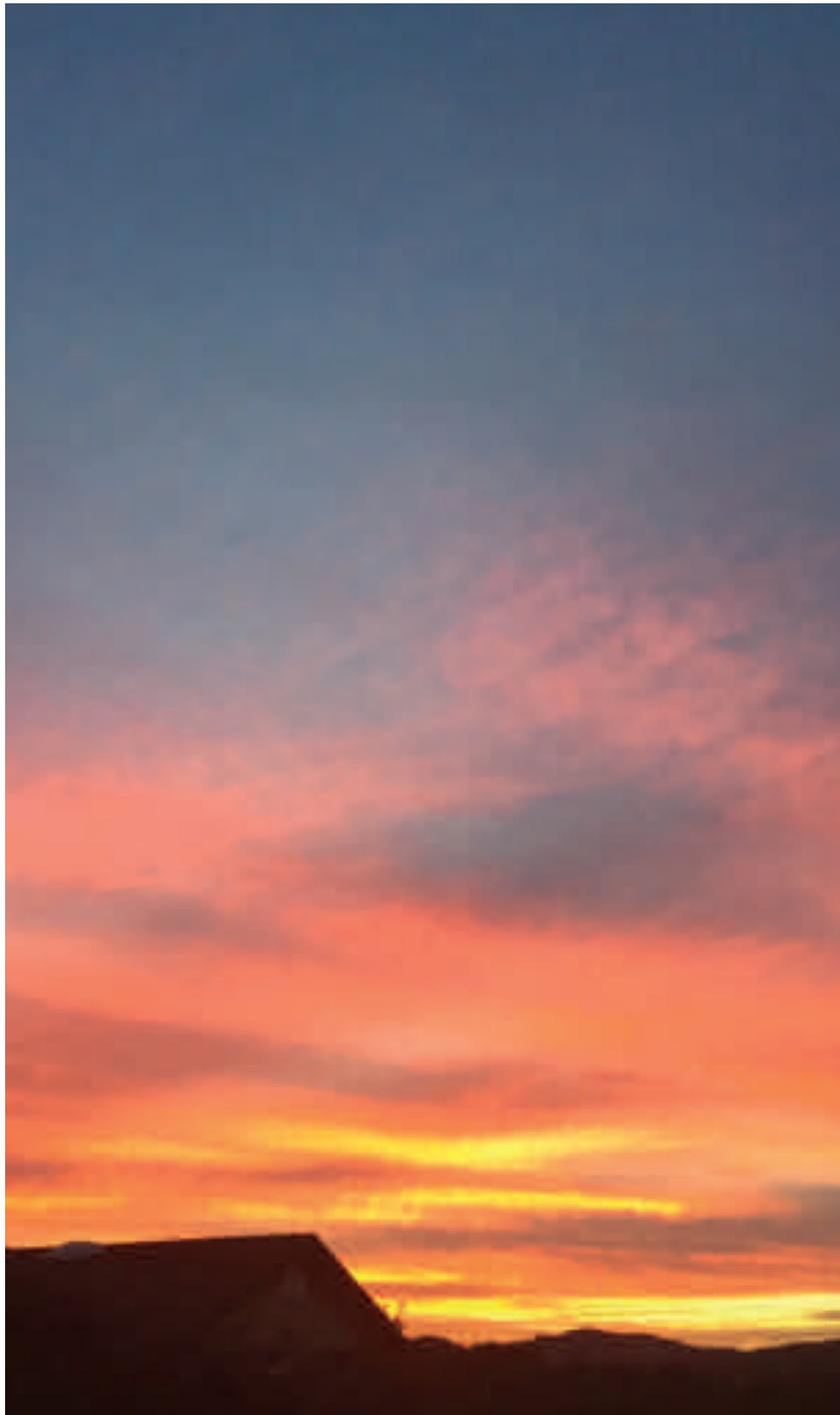
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Introduction

We are honored to be a part of the design process for your home and land in the hills above Oak View, California, an oak woodland that was an important acorn gathering site for the native Chumash Peoples. Your 1-acre property has extensive opportunities and potential to be able to reticulate water, cycle nutrients, grow food, live in an energy efficient manner, create play and exploration areas for children, have comfortable and inspiring living conditions, offer privacy visually, attenuate site-external noise, enhance views, enjoy interactive water features, enhance the site's natural healing qualities.

Our suggestions and the extensive supporting materials that make up our whole site design include an extensive report and base map that includes a plethora of site data, concept sketches, moodboards, plant suggestions and sourcing, estimated implementation budgets, earthworks planning, and links for additional resources. This is a process, not an end all. The design process should be an ongoing process of feedback observation and the redesign of the systems based on that feedback. The process of permaculture implementation is that it takes much more energy in the beginning to establish the systems than as they grow and commission, they take less energy to tend.

In observing your site, the slope and solar aspect of your site necessitates careful consideration to ensure that water safely harvested by slowing, spreading, infiltrating and utilizing the water for biological production. An important aspect to consider is that in having steeper slopes you need to be careful not to put too much water into the site to cause a "slip" in the stability of the hillside. Our unique approach to pairing water harvesting with terraces, net-n-pan structures, and utilizing a wide range of plants with different root growth patterns, will ensure that the water harvesting feeds the biology in a safe and abundant manner.

The semi-bowl shaped slope has a solar aspect that is mostly south to west facing giving good opportunity in the winter to use the solar gain to heat the house, the guest house and to keep the mid-slope plantings from freeze damage. The overall site slope also offers unique microclimates

to create a multitude of opportunities for planting a wide variety of food, pollination, beautification and support species of plants. We identified three major thermal areas that traverse the slope: 1) the upper ridge areas are where exposure is the highest for both wind and sun, the bowl shaped slope above the backyard that faces south and sits mid-slope. This area would be an area that could either be planted in a more subtropical range of plants or where you could plant a low water xerophytic range of plants. We have assembled lists of planting schemes for both. The lower part of the property that has the intense south and west exposure is also where there would be more susceptibility to cold as the colder air travels down slope and settles in the valley.

There are several suggestions we have made that are possibilities in the future as noted in the element list and on the base map. We suggest that your landscape stewards be trained in permaculture design processes. You could either hire people with that experience or send your current staff to a training. We also have considered how your family would be nested into the design and have tried to inspire their participation in the process and tending. Ideally, it is your family that would find solace and satisfaction in being integral in tending the soils, the water, plants and animals.

Our team looks forward to walking you through our ideas we have put forth here and we make ourselves available to update and revise the design as needed as part of the implementation phase of the project.

May your home forever be supported by a thriving ecology and may you all be steeped in abundance, joy, balance and grace.

Sincerely,

Warren Brush and the True Nature Design Team



Permaculture

The Prime Directive of Permaculture

A Lens for Design, Implementation and Tending for the Pio Family Permaculture Site.
The only ethical decision is to take responsibility for our own existence and that of our children.

Make it Now.

“Permaculture is a holistic design science that is reflective of natural patterns and promotes mutually beneficial relationships Rooted in ethics, the concepts and themes in Permaculture help us rediscover how to be a positive contribution to the earth, ourselves and humanity.”

The Ethical Intention of Permaculture

- **Earth Care** | Care of the Earth. Allowing provisions and resources for all life systems to continue and multiply.
- **People Care** | Care of People. Allowing provisions for people to access those resources necessary to their existence. Seeing people as part of the earth not separate from her
- **Fair Share** | Return the surplus and the setting of limits to population and consumption. By governing our own needs, we can set resources aside for the earth and others.



Permaculture Principles and Directives

- **Work With Nature:** rather than against the natural elements, forces, processes, agencies and evolutions, so that we can assist rather than impede natural developments. (Use gravity, use native species, use the sun, wind, etc.)
- **The problem is an opportunity:** everything works both ways. It is only how we see things that make them advantageous or not. Everything is a positive resource
- **Make the least change for the greatest possible affect:** Make work a source and not a sink of your energy
- **The yield of the system is theoretically unlimited:** The only limit on the number of uses of a Resource possible within a system is in the limit of the information and the imagination of the designer
- **Everything is connected:** Everything gardens and has an effect on its environment;
- **Relinquishing Power:** The role of beneficial authority is to return function and responsibility to life and people.
- **Unknown good benefit:** If we start with good intentions, other good things follow naturally
- **Succession of Evolution:** Natural design follows a pattern of evolution that is working towards stability and resiliency. Our own designs can follow suit.
- **Cyclical Opportunity:** every cyclical event increases the opportunity for yield to be increased. Increasing cycling is to increase yield.
- **Functional Design:** All functions are supported by many elements, while each element performs many functions. Function Stacking
- **Stability** Is created by a number of beneficial connections between diverse beings.
- **Information as a resource:** Information is the critical potential resource, Bad information can result in a poor design, likewise good information increases opportunity for a good design.
- **Relative Location:** Through proper placement of elements we can save time and energy

Roots of Permaculture Practice

Thoughtful And Protracted Observation (T.A.P.O): Observation that takes place over an extended period of time with thoughtful intention to our interactions with elemental forces, patterns and cycles of the natural world.

Start Small then Expand: Implement in phases and with the understandings of your actions. Being aware of scale and scope of project. Remembering that every action causes reaction.

Whole Systems Thinking: Everything is connected to everything else in some way, shape or form.

Life Enhancing: Systems of human settlement should always be life enhancing (not life degrading). This is our benchmark that tells us that the system is regenerative

Sector Analysis

Our sector analysis is a reference to external energies that affect the site and should be considered in how we place the design elements within the site.

Major Sector Considerations:

Sun

(see Figure #11)

- West: The west sun is a major consideration on heat gain in your house, the guesthouse and on the plantings that will be integrated as part of the design
- South (Winter): This sun sector is the path of winter sun (see the sun path data diagrams) which can be harmonized with to help heat the house in the colder times of year and that creates microclimates to extend our growing possibilities
- Northern (Summer): This sun sector is the hot time of year. Considerations for summer areas of outdoor use should be given shade considerations with either plantings or trellis or other structures or landscape features that offer shade.

Wind

- Southeast: This sector is the major wind corridor that must be considered to reduce evaporation and create comfort for outdoor activities

Fire

- Due to the predominant southeast winds, the major fire considerations would come from this direction.

Water Access

- East: Potential water catchment capabilities from neighbors roof/gutter system.
- Overland sheet flow can be captured and planted in the soil

Primary/Secondary Access

- West: Primary access is located at bottom of property at main driveway entrance
- East: Secondary access is located at top corner of property, and connected by dirt access road through neighbors property.

Visual and Sound

- South: Visually, this is the sector that is important to mitigate the visual corridor between the neighbors and the main house, guest house and surrounding outdoor use areas. Reducing sounds from neighboring property is also a consideration
- East: Visually creating a barrier for privacy and sound reduction from the neighbors is a priority
- West View: Maintain view of mountains while limiting sun exposure
- Northwest: Visually create a barrier for privacy from the neighbors is a priority



Figure #1

Sector Analysis

This shows a simple snapshot of the external energies that have an effect on the site.

Zone Analysis

Zone analysis is a determination of the placement of elements in relation to how much energy it takes to tend those elements. It is a function of energy planning and efficiency. On your property, there are three zones, 1, 2 and 3 which are briefly described here:

ZONE I

This is generally the home area where you spend the most time and where your kitchen is located.

- Home centre
- Herbs, vegetable garden
- Most structures
- Very intensive
- Start at back door, window boxes, balconies, window sill, etc.
- Mulched
- House comfort
- Energy production
- Outdoor kitchen/processing area
- Kitchen compost/worm bins
- Kids play areas
- Water features like a natural pool
- Patios and usable yard space
- Outdoor lounging in shade/sun depending on context

ZONE II

This zone is for more perennial food production with little daily tending other than interaction with animal systems

- Intensive cultivated
- Heavy mulched orchard
- Well maintained
- Mainly grafted and selected species
- Dense planting
- Use stacking, multiple stories
- Some animals: chickens, ducks, pigeon, quail
- Multi-purpose walks: collect eggs, milk, distribute greens/ scraps
- Areas of contemplation

ZONE IV

This is the wild part of every landscape, even if in an urban environment, it could be a few native plants

- Wildlife corridors
- Uncultivated bush and native forest
- Forest regrowth & regeneration
- Selective coppicing for firewood
- Wild pollinators

Figure #2 →

Zone Map

This map shows an overlay of the zonation referenced above.



Earthworks and Water Planning

Earthworks are essential in the process of mitigating erosion, reticulation of water, water and nutrient harvesting, recharging spring lines and wells. Earthworks are a part of the overall Conservation Hydrology strategy for any property.

Earthworks are ethical and necessary when they:

- Reduce our need for energy.
- Diversify our landscape for food production.
- Permanently rehabilitate damage.
- Save materials, labor and resources.
- Enable better land use, or help re-vegetate the earth...promote stability, reduce erosion

Earthworks should be completed in phase I of the development of the project as they are the base structures for all other element placement, they reduce erosion and they reticulate water and nutrient..

The following earthworks related structures are recommended in various forms in the design for your home in Oak View:

- **Small BioSwale**
 - This on-contour ditch is strategically placed on the landscape to maximize water infiltration, nutrient capture and to eliminate erosion. Because a BioSwale captures water and nutrient in a passive way, it is an ideal planting structure especially for perennial plants. The bioswale is designed with a level-sill spillway that is armoured with stones to accept any overflows that may occur during large weather events. Bioswales are not ideal for steep slopes so we have avoided placing any on them and have chosen to use infiltration terraces and boomerang berms in a net pattern instead.
 - This smaller swale will be done by shovels and will not be more than 2' wide and is

located in the lower portion of the orchard just below the existing loquat tree.

- **Infiltration Terraces**

(see Figure#3)

- We have sighted four infiltration terraces on the site. Two in the south facing slope above the backyard and two below the house on the southwest facing slope
- See concept drawings and placements on base map for further details
- Armouring the upslope and downslope cuts. Trees can be cut into the
- French drain backfilled with gravel for optimal water spread and infiltration
- 8-12" french drain pipe
- 1.5% grade for first 50' of the terrace from the driveway going to contour
- Created with a bobcat skidsteer on rubber tracks with bucket. A trencher then could be used to create the french drain

- **Dry Creek Beds**

- Behind guest house to the east
- Conversion of lower concrete drain into a dry creek bed
- One rock gabions are then created across contour in the dry creek bed to reduce velocity of water and create a catch point for seeds, organic matter and manures to gather and naturally create a living gabion system

- **Catchment berms from easterly neighboring property**

- These small berms would be created just off contour with shovels to bring water from the field on the new property acquired on the eastern side of the existing fence. These low impact structures will slow the water down and reduce erosion on the neighbor's side of the property and bring water into the dry creek bed system on the eastern side of the guesthouse.



Figure #3

Infiltration Terrace

This is a look at the suggested construction of the infiltration terraces.

Earthworks and Water Planning continued...

- **Rooftop Rainwater Harvesting**
 - See calculations worksheet
 - Utilizing rainwater from the workshop on the upper neighbors land will allow for rainwater harvesting into the upper tanks and would help the neighbor reduce their hillside erosion
- **Existing Concrete Drains - Infiltration Alterations**
 - Small concrete berms would be created within the existing concrete drains at the height of drainage ditch to slow water as it passes down
 - Cuts in edge of concrete to just below the height of the concrete berm into armored planting basins to drain off small amounts of water
 - In large flow events, water continues to flow down the drain
- **Net N' Pan**
 - These simple boomerangs planting structures are often used for steep slope planting earthworks. The pattern replicates a net and the downslope boomerang berm helps to slow a small amount of water and nutrient and concentrate it to the primary plant in the structure. The berms/boomerangs can be armoured with stones depending on their availability. The stone covered berm has an appealing aesthetic and a functional benefit to protecting the berm. (see moodboard)
- **Rainwater Garden**
(see Figure#4)
 - Creating this excavation at the lowest place on the land will allow for water to be utilized at the lowest part of the land before leaving the site. (see moodboard). This structure is located between the existing lower retaining wall and the street. It has a levelled base with a wicking structure and a topsoil layer and an overflow system out to the road that keeps the system from ever getting water logged.
- **Driveway Trench Drains**
 - Two driveway trench drains will help to limit water loss down the hardscape of the driveway. These two drains are cut into the concrete (see moodboard) and drain into the lower infiltration terraces to spread that water over the dryer south slope in front of the house.
- **Other Excavations**
 - Creating the space in the hill where guest house will sit to allow for basement covered parking
 - Cutting the slope to the southeast of the house for parking
 - Use excavation dirt to extend the width of the terraces below the house
 - These excavations should happen after the lower terraces are cut but before the infiltration drain is created so the dirt can easily be moved and spread.
- **Notes:**
 - Use "dig-alert" service before any excavations to identify any buried utilities

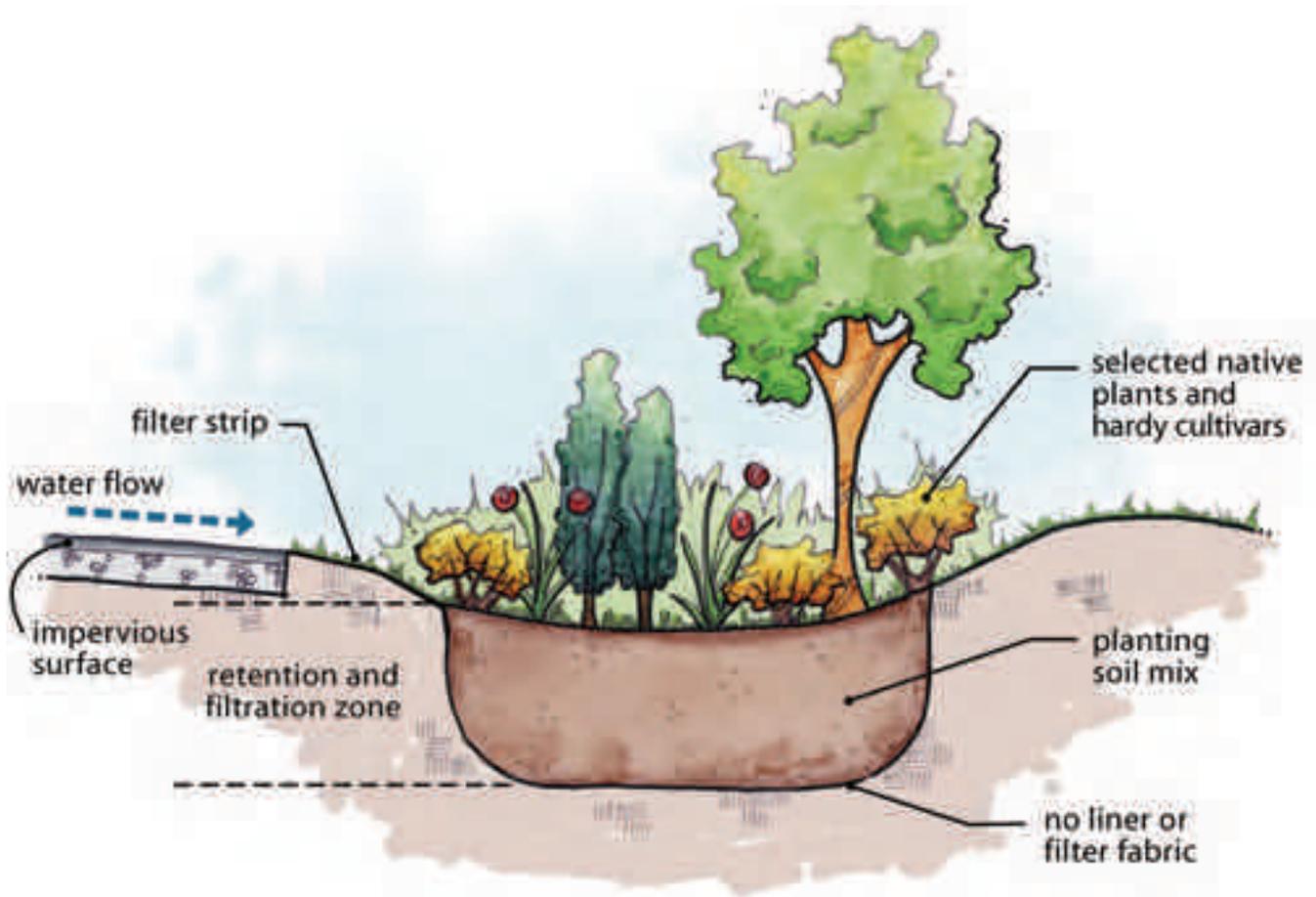


Figure #4

Rainwater Garden

This shows the basic construction of a rainwater garden and its associated elements.

Soil and Water Reports

We have found that further testing of your soils and water, using laboratories may not be necessary with the existing reports available from both the Casitas Municipal Water District (included), the Geotechnical Engineering Study (you have provided) and with the pH testing we did on site. Further reports would add a significant extra expense, and are not necessary at this time.

Biological testing is recommended for year 2 of the implementation of the system to ensure that the soil biota is being created. The soil building suggestions we are making in this permaculture whole site design, are structured to specifically build soils in the living systems integrated in and around the house and site.

If you find you would like to go ahead with further testing, we will be glad to do the sample gathering and would bill you for the lab costs and shipping, but not our labor to do so as per our contract.

Soils

- pH tests (7-is neutral):
 - At upper slope near the top of the land: pH-6.5
 - At avocados: pH-5.0
 - At loquat tree south of proposed guest house: pH 4.0
 - At lower drain area on southern facing slope near the road: pH-5.5

Soil Recommendations

- To build soils and balance the chemistry using healthy soil biology we recommend:
 1. Tropical plants prefer more acidic soils. All of the soil pH tests showed that the soils on your land vary but are all below neutral on the pH scale, meaning they have varied degrees of acidity. This is good for many plants and not so good for others. The plants we are suggesting will work with

your soil type.

2. The integration of nitrogen fixing plants as a living nutrient and organic matter creation system.
3. Use mulches such as wood chips, straw, and stones to limit evaporation and maintain moisture levels.
4. Grow shade and ground covers to limit evaporation and maintain moisture levels.
5. Use compost teas to boost beneficial bacteria and fungi and to help feed them.
6. Create beneficial planting guilds to help diversify pollinators, create living mulch, fix atmospheric nutrients and draw in beneficial insects, bacteria and fungi.

Water

We have included in this report a copy of the Casitas Municipal Water District laboratory results for their water which supplies your home. We concluded from our water testing that the pH of the water at your home is nearly 8.4 which is very alkaline.

Water Recommendations

1. Create a backup rainwater harvest system with adequate drinking water and conservation of domestic usage. See the design for further details
2. Work with neighbors to create a cooperative well that is shared by the neighbors. In the plan, water planting should be included to be sure that all the neighbors are putting water back into the active recharge area, essentially water banking to ensure that your well is drought resistant
3. We recommend you engage a geo-hydrologist to help you and your neighbors determine the best site in the neighborhood to place a well for success. We have had success and highly recommend: Adam Simmons: (805) 682-3898 and/or email: adamgeological@gmail.com

Element List • Zone I

1 • House

(see Figure#5)

- Heat Gain Mitigation on House
 - Window coverings, shutters
 - Window awnings that minimize light yet allow for view
 - West and south wall trellis of vines and espalier of tree species
 - Vine Suggestions - see Plant Species - Serenidad > Vines
 - Dusky Coral Pea for scarlet blooms, evergreen foliage, thick leathery leaves to block sun from hitting wall, grows to 30' tall.
 - Honeysuckle for heat loving, fragrant, evergreen wall coverage.
 - Espalier Suggestions - see Plant Species - Serenidad > Food Trees
 - Loquat (evergreen) on 12 gauge wire mounted to wall, thrives in high heat/sun locations. Once loquat up to 6'+ interplant jasmine/clematis vines as additional evergreen sunblock for west/south walls, fragrance, and beauty. Warm air hitting outside of house will self-perfume by the time it reaches upstairs balcony and windows.
 - Pineapple Guava (evergreen) with white/red blossoms, prolific fruit that can be eaten out of hand. Interplant once 6'+ in height with Jasmine, Honeysuckle, or Coral Pea for additional sun block.
 - Fig maintained in similar fashion to ones above. Would need alkalizing soil amendment to make up for the acidic pH. Also plant with one of the above vines once established if so desired.
 - Plant tall growing trees that can be pruned to have a canopy shade pattern with lower branching removed to maintain views from

house

- Tree Suggestions - see Plant Species - Serenidad > Shade/Windbreak Trees
 - Thornless Honey Locust - Deciduous, grows up to 80' tall with wide, plume like crown of foliage 20-30' across. Foliage lets through dappled light (will allow growth right up to trunk and protect from summer temperature highs). Fragrant, soil building, Nitrogen-fixing.
 - Mimosa/Silk Tree - Deciduous, Nitrogen-fixing, soil building, hummingbirds, pollinators, beautiful & fragrant white/pink silky flowers in summer. Large spreading crown allows for dappled light penetration to understory. Trunk is clean to minimize obstruction to views.
- NE glass mandala in wall high above the back patio
- Solar Hot Water system located on garage roof to the southeast of the upstairs bathroom. This will reduce energy bills by an average of 15%
- Open doors from kitchen to south side of house and a door from the existing bar to the back patio



Figure #5

Home - Western Face

This shows the suggested siting for the greenhouse on the western side of the garage. The shade coverings for the windows (shutters not shown). And the raised bed kitchen garden system.

Element List continued...

2 • Patio / BBQ Area

(see Figure#6)

- Expansion
 - Door to bar
 - Shift bbq so it does not put chef with back to the patio
 - Cob oven (also give contacts for builders)
 - Privacy plantings (to block visual of patio from street)
 - Privacy Suggestions
 - Hammer's Rose planted on West edge of patio. Can be kept low with simple hand clippers, but will provide a dense, heat-loving, drought-tolerant, deer-tolerant privacy screen with lush, evergreen foliage and dense clusters of 2" upright tubular rosy-apricot flowers. Not fussy. Underplant with bulbing Iris for late winter/early spring color, or other bulb flower. See Plant Species - Serenidad > Viewscreen
 - California Fuschia - Xerophytic, blooms with lots of scarlet 1.5" blooms late in summer when everything else is fading. Grows to 30" so won't block view of mountains from patio when seated/reclining on chairs. No summer water once established, not fussy about soil. Can also add bulb element for seasonal color changes as listed above. See Plant Species - Serenidad > Flowers
 - Trellis system from edge of house to mid patio with deciduous vines
 - Vine Suggestions
 - Grapes - see Plant Species - Serenidad > Vines for varieties, sourcing.

3 • Jacuzzi

(see Figure#6)

- Located on a cantilevered deck on the west side of the house elevated from the patio.
- Elevated above main patio site
- Covered with trellis with vines growing on it to protect from direct sun.
 - Vine Suggestions - See Plant Species - Serenidad > Vines
 - Clematis - Fragrant, white silky flowers, evergreen.
 - Grapes (deciduous)
 - Passionfruit - may die back with cold temperatures, but will spring back when temperatures warm.



Figure #6

Patio - BBQ

This shows the suggested siting for the jacuzzi on a cantilevered deck (trellis covering not shown). The shade trellis off the western wall of the house. New location for BBQ area to offer more interaction between chef and guests (simple work station shown, more involved outdoor kitchen is suggested).

Element List continued...

4 • Pool and Biofiltration System:

(see Figure# 7)

- For a natural biofiltration pool system, it is generally accepted that the amount of pool area needs to be matched by an equal amount of biofiltration area. A pump would continuously cycle the water to the top biofiltration pond
 - See Plant Species - Serenidad > Aquatic/ Water Cleansers
- As water cascades down, it would move down through “flow forms” which offer the important function of aeration, accentuated sounds of water flowing and beauty (see moodboard)
- Integrate overflow from lower rainwater harvest tank to flow into the system to top off and add new water from rainfall
- Overflow from pool system would be directed around the northside of house and down into the upper terrace to feed the plantings on the dryer southwest facing slope

5 • Aviary

The location of this structure is on the north side of the house and runs the full length of that part of the house with a circular structure on either end where the resident birds are able to interact with people in the backyard AND on the patio. The rounded parts could extend higher than the roof of the main structure.

6 • Existing Garage Conversion

- Create a healing studio for Debbie’s work. A separate door from the new patio area could be created for people coming for healing so they could access directly from the parking area rather than having to go through the house - Please consult an architect for specific design parameters
- Change access and open up to a courtyard where the current driveway is in front of the garage doors
- Attached Greenhouse which is located on the south side of the garage just off from the electric area. This greenhouse will help to heat the converted garage during the winter, raise

veggies and greens during the winter season, grow some tropicals and to help get garden plant starts going early. Door on greenhouse will be toward kitchen and kitchen garden

- Sliding glass doors to courtyard (north side of garage)
- Trellis over glass doors to the north (planted in vines)
 - Vine Suggestions - see See Plant Species - Serenidad > Vines
 - Hardy Kiwi - evergreen, small grape-like fruit in clusters that can be eaten out of hand like grapes, no fuzz!
 - Kiwi - fuzzy fruits, like partial sun (morning sun should be enough in this location along with ambient light)
 - Dusky Coral Pea - bares scarlet pea shaped flowers, lush, leathery green foliage. Fast growing.
 - Port John’s Creeper - bunches of fragrant, lilac-pink, 3” trumpet flowers. Fast growing.
 - Chilean Jasmine - wonderfully fragrant, white flowers. Easy going vine, prefers regular water, dark green lush foliage.
 - Don Juan Climbing Rose - incredibly fragrant, red flowers. Hardy.
 - On the northeast corner, cutting out of the cement, a planting area for a tree espalier system (see moodboard) that will be trained up the side of the structure.
 - Espalier Suggestions - Pear, Apple, Pineapple Guava, Loquat, Stonefruits, even citrus!
 - Create doors into the courtyard area where the existing garage doors are
 - Create a long-term food storage area in the existing garage area.



Figure #7

Backyard - Natural Pool system

This diagram shows the suggested siting for the natural pool filtration system. The flowforms that empty into the final pool. The access steps that lead to the workshop. The aviary that extends along the northern border of the house to the BBQ patio. And the stepped arbor food tunnel (vegetation not shown).

Element List continued...

7 • Entry Courtyard

- Located on NE side of existing garage just in front of the existing garage doors
- Expand the fence to encircle this courtyard
- Landscape paving and raised planters balanced with sunken rainwater garden planting basins (pick up roof water from that side of main house).
 - Flower Suggestions - See Plant Species - Serenidad > Flowers
 - Guild Composition: Brugmansia trained to grow over/around entry way - new arrivals greeted by incredible fragrance, delicate hanging flowers that attract hummingbirds. Under plant with seasonal bulbs - Iris, Daffodils. Plumeria underneath for perennial tropical and fragrant floral smells - flowers can be arranged, used to prepare healing space etc. California Fuschia planted under plumeria to fill in understory with late season vibrant blooms. Plant jasmine/clematis/honeysuckle at base of brugmansia once full sized and allow them to climb trunk for additional fragrance.
 - Xerophytic Guild Suggestion - see Plant Species - Serenidad > Xeriscape
 - Guild Composition: Western Redbud (white/magenta prolific blooms, fragrant) small overstory tree, underplanted with CA Fuschia (vibrant red late season blooms), Black Adder Agastache (blue/purple vertical spikes), CA Penstemons (pink flowers), herb layer planted with Coyote Mint (small pink flowers, wonderful scented foliage), Yerba Buena (bright green groundcover, medicinal, scented foliage) dripping over rock edges, Attila strawberry (everbearing drought-tolerant, shade-loving strawberry - kids will love it as it trips over rock walls and edges!). Plant jasmine/clematis/honeysuckle at base of redbud once full sized and allow them to climb trunk for additional fragrance.

- **Greywater Basin Garden** from laundry of guest house and main house
 - See Plant Species - Serenidad > Aquatic/ Water Cleansers
 - Canna, taro, watercress, peppergrass, horse mint, Yerba Buena
- Entryway and stairs to guest house pathway lined up with main door
- Fire pit entry area
- Firewood Storage located in excavation into hill to the left of the guest house garage

8 • Backyard

This existing backyard would be developed with the pool system and a flow through to the entry courtyard.

- Utilizing rainwater runoff from house for sunken rainwater gardens (see moodboard)
 - Xerophytic Rainwater Garden Suggestions - see Plant Species - Serenidad > Xeriscape (assuming No Summer Water as main criteria)
 - Ceanothus "Julia Phelps" - large (6-8' wide/tall) with indigo/violet colored profuse and fragrant blooms, CA Fuschia (brilliant red later summer blooms - hummingbird favorite), CA Poppy (bright, cheerful orange/yellow blooms on smooth, shimmering lush foliage. Monkey Flowers, CA Buckwheat (bees & pollinators!), Muhly Grass (3'x3' clumping grass with red, fluffy tips, beautiful), CA & Heartleaf Penstemons, White Sage (medicinal & spiritual uses), Yerba Buena groundcover.
 - Pool integration with water works on South Slope Planting area
 - A kids play area would also be established and maintained
- ### 9 • Kid's Zones
- Kids play structure located in the backyard
 - A tree house platform in the upper conifers at the top of the north slope of the property

- Exploration Trails
- Secret gardens
 - Plants For Viewscreens/Secret Gardens - see Plant Species - Serenidad > Viewscreen
 - Simple low hanging trellises (just above head height of tallest user, or even lower when entering a space) with curving forms to melt into landscape (using concrete wire and bending to desired shape) and provide structure for vines.
 - Mexican Bird of Paradise - silvery green foliage, brilliant as fire yellow/orange/red unique and wonderful blooms, can form a dense 10'10' shrub or can be pruned to shape.
 - Goumi - dense foliage, Nitrogen fixing shrub that can be grown as a hedge, produces prolific amounts of high-vitamin C delicious berries that can be eaten fresh or dried, juiced, made into jams/jellies or wines, needs a second plant for optimal pollination.
 - Passionfruit - dense foliage and passionfruit everywhere!
 - Trees - see Plant Species - Serenidad > Shade/Windbreak Trees
 - Weeping Blue Broom - long, arching branches drooping with heavily scented wisteria like panicles of grape soda scented flowers, gorgeous and very unique.
 - Pepper Tree - easy to create fun spaces underneath dappled shade, climbable for kids, great for future hammock spot.

10 • Guesthouse

The guesthouse would be located on the east side of the upper portion of the existing driveway. It would be a two story structure with the bottom story being a drive-in carport or garage with the main living area on the second story. This structure's northerly most wall would be lined up with the southerly most edge of the garage (see the base

map). The garage space would be big enough for three cars or two cars and laundry/storage area.

- Rainwater garden for roof top rain catchment
 - See Backyard > Xerophytic Rainwater Garden Suggestions
- Patio to southeast
- Visual screening from neighbors with bamboo
 - View Screen Suggestions - see Plant Species - Serenidad > Viewscreen
 - Bamboo - Mexican Climbing, Golden Goddess varieties for appropriate height so as not to block neighbors/guesthouse/mainhouse views.
- Bathroom sink and shower greywater to southerly bamboo plantings - see above
- Laundry greywater to courtyard plantings in basin similar to rainwater gardens
 - See Backyard > Xerophytic Rainwater Garden Suggestions
- Working with an architect, we suggest that the guesthouse be oriented mostly to the south with its windows and limiting its exposure and window surfaces to the west. Opening up the house to an orchard view and to the outdoor patio area

11 • Parking

Parking is observed to be a significant issue and consideration for the property. We propose the following-

- Under guesthouse - three spaces
- Along excavation just to the south of the driveway where the current garbage and recycling cans are located - three spaces should fit with cars parked at a slight angle
- Automobile turn around excavated to the south of the guesthouse garage at the highest point in the driveway. This turnaround could also double as extra parking

Element List continued...

12 • Kitchen Garden

This step-down system will be located between the kitchen and the driveway on that slope using raised beds on terraces armoured with wood and/or stone (see moodboard).

- Door on SW side of house for access to garden
- Outdoor eating area along edge of house with shade trellis with deciduous food vines above the height of the windows (as to not restrict views from kitchen)
 - Vine Suggestions
 - Grapes - Thompson, Perlette, Flame for out of hand eating while enjoying a meal. See Plant Species - Serenidad > Vines
- Raised bed gardens in wood or stone on stone armoured terraces.
- Herb garden in raised beds and pots along edge of house near kitchen door
 - Perennial Herbs that love Heat: Salad Burnett, Sages, Thymes, Oreganos, Cuban Oregano, Parsley.
 - Perennial Herbs that like protection (plant to north side of bed): Chives, Garlic Chives, Chervil, Lovage
- Greenhouse will be located off garage with door toward kitchen garden (see Existing Garage Conversion)

13 • Greywater systems

Branched greywater system

- Main House
 - Bathroom sinks and showers
 - Laundry greywater to greywater basins in courtyard
 - Located just below the house and above the first terrace in
- Guesthouse
 - Bathroom sinks and showers to bamboo
 - Laundry water to greywater basins created along the east side of the back yard, between the new patio and the pool.

Zone II

14 • Backyard Hill Plantings

This natural bowl that extends from the backyard up the hill to the edge of the property and faces mostly in a southerly direction is a unique heat trap that is mid slope. Two planting schemes are outlined -Tropical (using rainwater and some irrigation) and Xerophytic (using rainwater and low/no supplemental irrigation after establishment).

- Tropical
 - Fruit Trees
 - Cherimoya, Banana, Mango, Avocado, Moringa, Acerola Cherry, Citrus, Macadamia
 - Vines
 - Passionfruit, Kiwi, dragonfruit
 - Understory
 - Taro, Canna, Siberian Pea Shrub,
 - Groundcover
 - Gotu Kola, Sweet Potato
 - Guild Suggestions
 - Banana Circle (6 bananas of various types) integrated into swimming pool natural filtration edges, under planted with sweet potato/taro, wet edges with gotu kola groundcover
 - Mango (will grow to be a large tree, plant at top of north slope behind the house), once large enough plant passionfruit, dragon fruit, kiwi underneath, understory with Cannas, sweet potatoes
 - Cherimoya underplanted Siberian Pea Shrub. Trees pruned to be kept small, accessible without a ladder with structure promoting fruit production. Ringed with Kahili Ginger, Canna, vined with self-reseeding annual Malabar Spinach. Groundcover of strawberries (Seascape variety).

- Trellised passion fruit / dragon fruit / kiwi running along/over pathways/berms on the slope.
- Blueberries in border rows along terraced walkways or in Net and Pan system (see
- Xerophytic
 - Fruit Trees
 - Loquat, Pineapple Guava, Pomegranate, Fig, Olive
 - Vines
 - Grapes
 - Understory
 - Prickly Pear, Peruvian Cactus Apple, Goji Berry, CA Currant
 - Groundcovers
 - Las Pilitas Nursery - Native Groundcovers
 - Guild Possibilities
 - Loquat / Pineapple Guava planted as a “fedge” (food producing hedge) - plant 2’ on center and they will grow into a dense hedge that will create a leeward wind-protected area for planting other, more tender plants such as CA Currant.
 - Loquat / Pineapple Guava planted as overstory or in tandem with Mimosa as a nurse tree/ possible long term overstory. Underplant with goumi berry, goji berry, CA currant. Groundcover of Attila strawberry and Yerba Buena.
 - Grape Trellises covering entirety of contour berm walkways, curving overhead using concrete wire remesh remesh, creating summer shaded growing area underneath for more tender plants.
 - Contour strips of thornless Opuntia varietal or Peruvian Cactus Apple, Underplanted with Goji and CA Currant to the north side. Creeping thymes, oreganos, and sages underplanted on the south side. Could also train grapes up to trel-

lis beginning at 6’ height that would run behind these plantings, still creating the covered walkways effect from the previous bullet point.

- This hill is edged with an Arbor Trellis and has the biofiltration system cascading through it at the convergence of the slopes

15 • Arbor Trellis

(see moodboard)

A Japanese style Living Food Tunnel

- At the ridgeline stepping down to the South and to the West along ridges to help hold the South Slope Bowl
- Planted with various food vines
 - Suggested Plantings - see Plant Species - Serenidad > Vines
 - Grapes (will love the heat and long sun exposure)
 - Tree Kale on eastern side (will appreciate some shade from later afternoon summer sun),
 - Kiwi vines planted on east side (likewise will appreciate afternoon shade). Passionfruit on either side. (Passionfruit, Kiwi and Tree Kale will need more irrigation than grapes).

16 • Access Pathway

(see Figure #8)

We suggest that a pathway be created that goes from the orchard around the edge of the property along the top edge of the South Slope Bowl all the way to the top terrace along the south side of the house just below the existing avocado trees

- **Fence Removal:** We suggest that the wooden fence on the north side of the top of the South Slope Bowl be removed to open up the area for a trail that moves around that part of the property, which will enhance access in the area

Element List continued...

17 • Visual Barriers

- The main barrier offers a visual screen and sound attenuation from the neighbors to the south, yet will be able to be maintained at the height of keeping the ideal views
- Neighbors to the Northwest with the pool. Bamboo will also be used there to create a visual and sound barrier.
 - Visual Barrier Suggestions - see Plant Species - Serenidad > Vines and Plant Species - Serenidad > Viewscreen
 - Mexican Weeping Bamboo - has a slight weeping habit that makes for gracefully arching clumps with frilly foliage that dances in the early morning and late afternoon light. Interplant with Weeping Blue Broom to keep continuity of "weeping" aesthetic but inject some color OR vine underneath with Morning Glories / Firecracker Vine / Hyacinth Vine for heat-loving color and dense green foliage to fill in the gaps between the clumps of bamboo.

18 • Nursery

(see Figure #5)

This is a small shaded area to the south of the guest house in the orchard area to nurse plants into ideal planting size. It could also serve as an area for a shaded bench and sit spot amongst the orchard. It could also be done as a gazebo type structure

- This is also the place where the compost teas will be made

19 • Orchard/Food Forest

The existing fruit orchard would be diversified to include multiple layers of food production and support species. (see recommendations in the appendix)

- Located where the existing orchard is to the south of the guesthouse
- A mid orchard swale would be a primary water infiltration structure that will accept the water from the dry stream bed coming from behind the guest house and off the hill to the north.

Where the stream bed enters on the east side of the swale it will be armoured with stones

- The swale will then have a spillway that spills into the lower concrete drain that goes along the south side of the property. This concrete drain will then be diverted back to the driveway pickup point for the upper infiltration terrace on the southwest side of the house just below the kitchen garden.
- Additional Tree Suggestions and Associated Guilds
 - Citrus Guild: Underplant sun edge of water well with thornless blackberries/raspberries to sun side, lemongrass at base of trunk on sun side to protect from sun scald (especially for new trees), Malabar Spinach and Perennial Peanut as groundcovers.
 - Can substitute Citrus for Acerola Cherry or others.
 - Stonefruit/Apple/Asian Pear Guild: (see Plant Species - Serenidad > Food Trees for suggested varieties and sourcing) Stonefruit/Apple/Asian Pear as main tree, underplanted with Goumi/Thornless Blackberry/Raspberry to sun side of water well/tree. Comfrey to North Side of tree, Alpine strawberry and Yarrow as groundcovers, Daffodils for seasonal bulbing and Chives for perennial gopher deterrence. Mammoth Dill for predatory insect attraction.
 - Fuyu Persimmon Guild: Persimmon tree underplanted with Comfrey to North side of water well/berm, Lemongrass to sun side, seeded with dill, borage for additional predatory insect attraction. Groundcover of Attila Strawberry or Perennial Peanut, 1-2 CA Currant bushes underneath dripline. **This guild has lower average water needs than the other, and as such any irrigation should allow for this guild to be turned off while watering others on a more frequent basis.
 - Any of the xeriscape friendly fruit trees can also be substituted into this guild - Loquat, Fig, Pomegranate, Olive, Pineap-



Figure #8

Access Paths

This shows the main ways that you can move around the site.

Element List continued...

ple Guava etc.

20 • Meditation / Sacred Spaces

here are several spaces we see that could be enhanced to become areas of contemplation and quietness. Essentially strategically placed sit-spots on the landscape

- Deck to pine tree to the east and upslope from the pool at the edge of the Arbor Trellis
- Next to existing avocado trees nested between new bamboo planting and the edge of the patio
- One of the meditation spaces would be integrated into the understory of the existing Pepper Tree at the top of the slope to the NE of the backyard. Some pruning will be required.

21 • Fence Plantings

On all of the fences, we have several suggestions of vines that could utilize the fence structure and add additional visual barriers. Specifically along the northerly, easterly and southerly fences between your property and the neighbors

- Vine Recommendations - see Plant Species - Serenidad > Viewscreen and > Vines
 - Morning Glory, Clematis, Dusky Coral Pea, Hammer's Rose, Jasmine, Chilean Jasmine

22 • Rainwater Storage Tank

Located on the high point of northeast side of property.

- This tank would be filled with rainwater from the shop on the neighbor's land.
- Overflow from this tank would be to Secondary Rainwater Storage Tank.
- This tank could either be plastic, steel or ferrocement
- Tank should be covered with a vine or painted to reflect light which will help it last longer by minimizing sunlight exposure - see Vine Recommendations from Fence Plantings above.

23 • Secondary Rainwater Storage Tank

Located on the top of the north slope nested in the

pine trees above the corner of the northwesterly neighbors property (with the pool).

- This tank would be filled with the overflow from the upper rainwater storage tank.
- The overflow from this tank would go to the upper biofiltration pond and add valuable rainwater to the natural pool system.
- This tank could either be plastic, steel or ferrocement
- Tank should be covered with a vine or painted to reflect light which will help it last longer by minimizing sunlight exposure - see Vine Recommendations from Fence Plantings above.

24 • BioSwale

Located in the lower area of the orchard and crosses the slope just below the existing loquat.

25 • Infiltration Terraces

- 8-12" french drain pipe
- 1.5% grade for first 50' of the terrace from the driveway going to contour
- Clean-out at the intersection of the 1.5% grade where it begins to go on contour

26 • Net and Pan Systems

(see moodboard)

This system of creating planting structures for trees or shrubs on steep slopes in a pattern that resembles a net. We will utilize this type of planting structure on the steeper parts of the property

- On south facing slope above the backyard
 - Blueberry Guild - 2-3 bushes planted to rim of pan, understory of creeping thyme, one sage/salvia intermixed for pollinator attraction and predatory insect attraction / pest repellent. See Plant Species - Serenidad > Food Understory for specific blueberry varieties suited to this climate. Sorrel can work at the upper edge of Blueberry's pH range and could act as an edible, perennial living mulch groundcover if the soil is rich enough.
- On lower part of property to the west of the

existing concrete drainage and above the top terrace

- See Blueberry Guild above
- See Orchard/Food Forest Guild suggestions above
- Honeysuckle already growing there - trim back, replant, possibly trellis over pathways.

27 • Stone-Lined DryCreek Beds

(see moodboard)

We have identified three places of utilization of this strategy to allow water to move down slope passively and in a way where it hydrates the landscape without eroding it

- Along the east fence area behind the guesthouse we will redirect the current concrete drainage ditch to go behind the guest house using this method and then connect with the orchard swale

28 • Rainwater garden

(see moodboard)

The sunken gardens are particularly crafted to accept rainwater runoff from the drains and/or roof gutters. This system utilizes a design that allows the water to fill the system but to overflow before over saturating the plants

- The upper courtyard and backyard will both have rainwater gardens to utilize water from roof runoff
- As a sink at the very bottom of the land at the edge of the road near the mailbox. Overflow would then be directed onto the original drainage of the road during extreme rain events
- Curb Appeal Rainwater Garden Guild Suggestions
 - Overstory Tree - Paulownia / Silk Tree
 - Small Trees - CA Redbuds
 - Shrubs - Ceanothus "Julia Phelps"
 - Grass - Pink Muhly Grass
 - Flowers - CA Fuschia, Agastache, Heart-leaf Penstemon

- Trellis (along cinder block wall to left of driveway - anchor concrete remesh wire with masonry attachments as structure)
 - Dusky Coral Pea, Firecracker Vine, Jasmine planted into the rainwater basin or at base of wall, trained to run over the trellis.
- Herbaceous Layer - California Poppy
- Groundcover - Creeping Rosemary (sunny edges) and Yerba Buena (shaded edges)
- **NOTE: This guild will provide tremendous amounts of blooms over a long season along with lots of nectar for bees, hummingbirds and butterflies. There are many other plants that we could substitute for any one of these roles. This selection was chosen for their prolific blooms and drought tolerance. The general color scheme for this grouping includes Reds/Purples/Yellows/Oranges/Whites/Pinks.

Path to Upper Shop

This path will traverse the South Facing Bowl and zig zag pattern to reduce the impact of the steep slope and to weave around the Aviary, planting and water structures

30 • Chicken house (future)

This small structure for 10-12 chickens would be located on the edge of the future orchard/food forest at the southeast corner of the land where the two property lines converge. The chickens would provide valuable nutrient cycling functions, integrated pest management services, in addition to eggs and meat.

- This living animal system could be integrated into the orchard at a future time, possibly when you would have your children and their families present to help tend to them.

31 • Nutrient Cycling Area

This area would be located to the right of the top of the steps leading up to the south side of

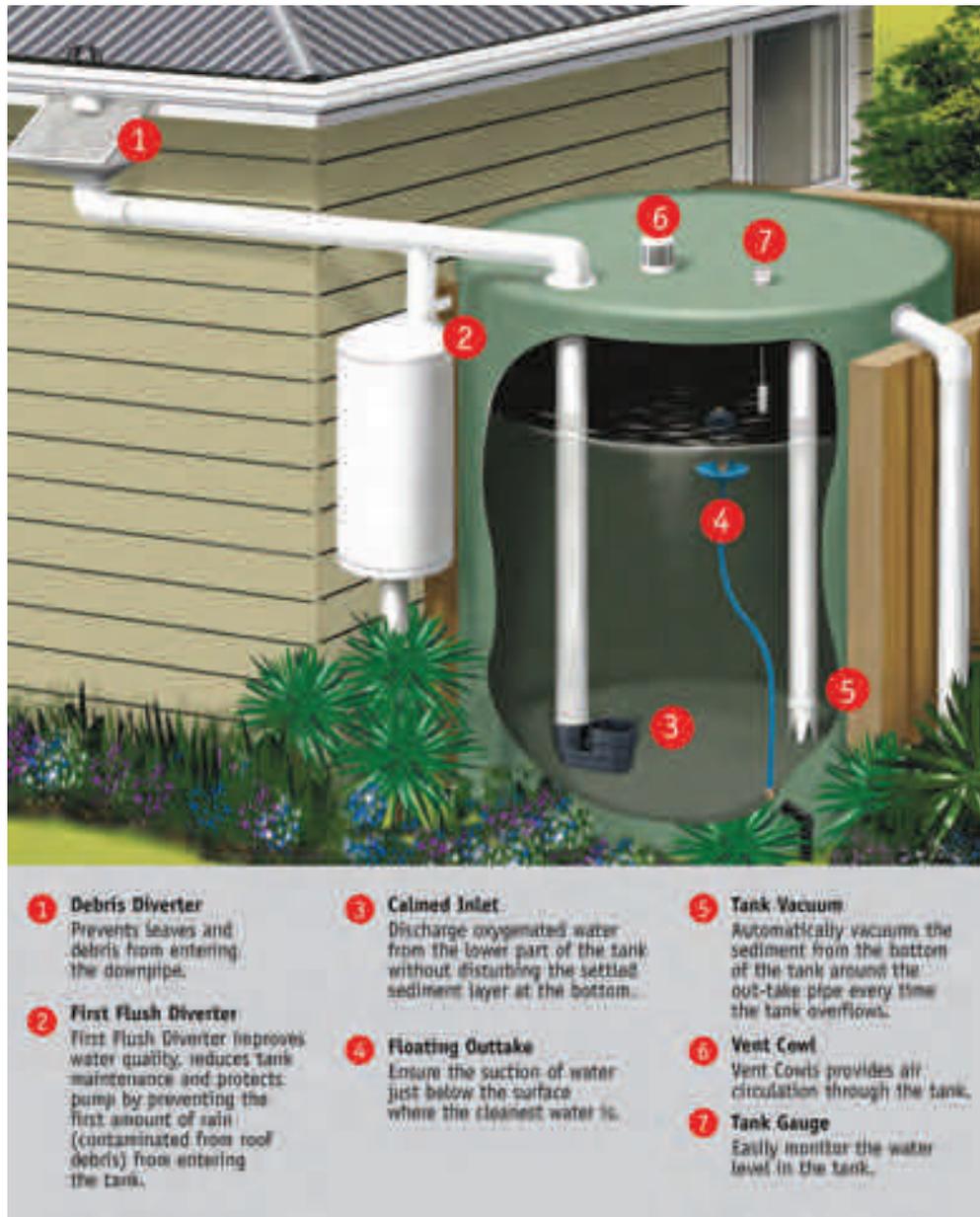


Figure #9

Rainwater Storage System

This shows some of the key factors in establishing a successful rainwater harvesting and storage system.

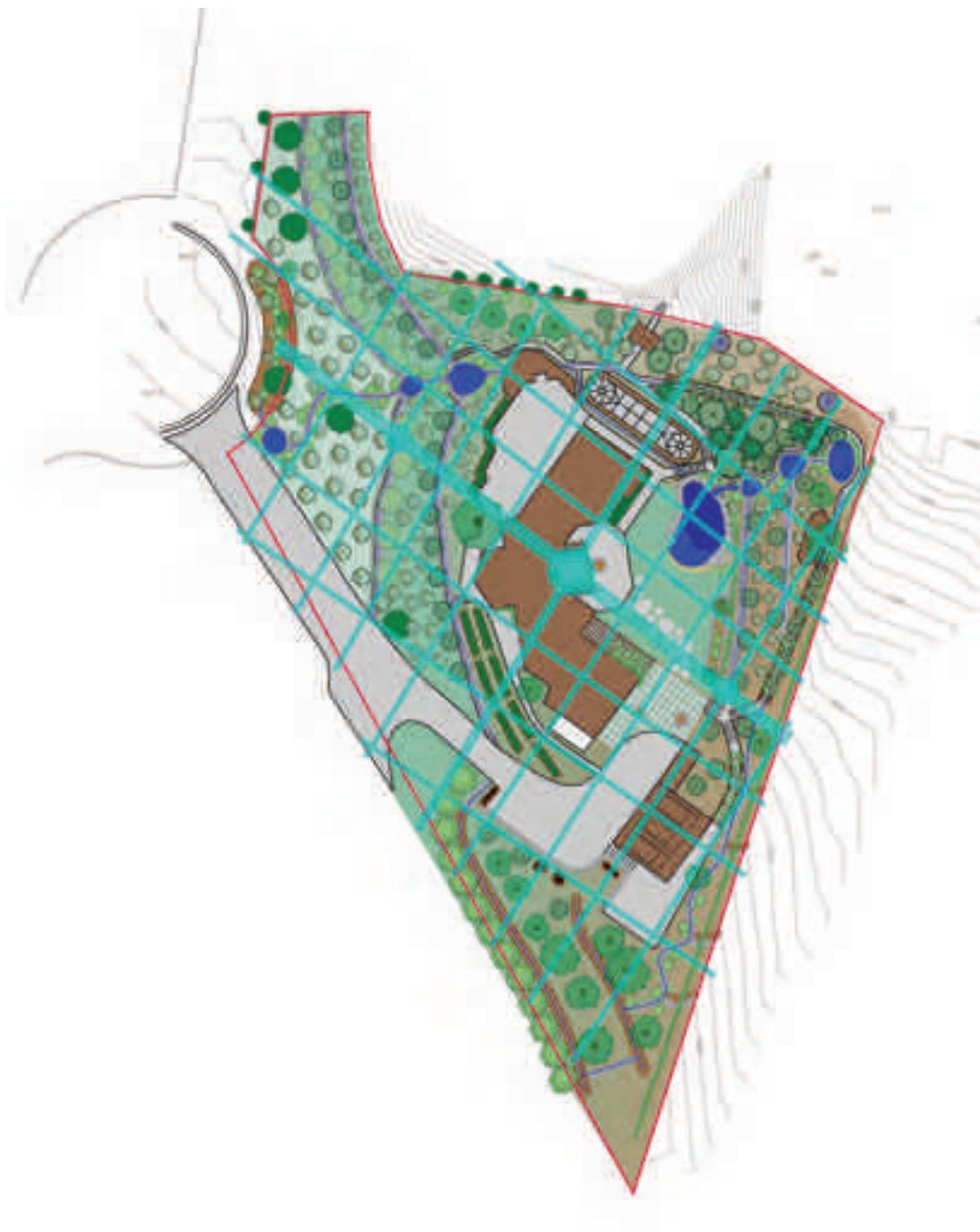


Figure #10

Energy "Lay" Lines

This is a map of the energy lines on the property

Element List continued...

the guesthouse. This area would consist of the following:

- Vermicompost (worm) system
- Compost tea brewer
- Green and dry materials holding area for food and yard scraps
- A thermophillic compost area for larger heaps of compostable material

32 • Recycling and garbage Area

This system would be located at the bottom of the parking area cut into the southerly berm along the existing driveway making it easy to access from the kitchens of both the main home and the guest house

- Area surrounded by cedar fencing with a gate to access
- Recycling delineated for optimal recyclability and appropriate disposal

33 • Apiary (future)

Having a beehive on-site would enhance pollination and provide some honey and wax to your family.

- Located in the shade and can be situated on one of the top water tanks to discourage predation and to keep the bee flight patterns high up and from conflicting with people walking on the pathways

34 • Catchment Berms

These berms would be just off contour to drain water from the easterly neighbors property bringing runoff from their unprotected field into the dry creek bed that runs along your easterly fence

35 • Existing Concrete Drains

Reroute the existing concrete drain along south neighboring property that follows the fence. We would cut into the existing drain just up from the place where the other drain just to the north spills into the driveway. This will allow the water moving along this edge to be directed to our driveway trench drain and then on into the infiltration terrace systems where we can utilize that water for living

systems

- Trench Drain - see moodboard
- Cut in a rock lined sediment basin near the lowest point of the existing drain
- With all the existing concrete drains, we suggest cutting into them just above the placement of concrete berms every 5-8 feet to create a place where a small amount of the water coming down the drain will be utilized in a growing basin lined with stones and where the freeboard is above the overflow would go back into the existing concrete drain, not over the top of the planting structure where it could create erosion

36 • Firewood Storage

A Firwood storage shed can be built into the hillside with sliding wood doors. It will have easy access from patio between main house and guesthouse.

37 • Geo-Thermal Air Conditioning

(see Figure #11)

A simple passive air conditioning system utilizes the cool ambient temperature of the earth at least 48" below grade to cool the summer air and bring it into a low point in the house. For increased CFMs (cubic feet per minute) a small solar fan could be integrated into the system.

Other Design Considerations:

Energy "Lay" Lines

(see Figure #10)

- These "lay" lines were dowsed for on the land. From the dowsing we were able to observe a grid like pattern on the land with two significant energy "rivers" that converge just in front of the northeast facing part of the home
- These major energy "rivers" go in a general direction of North to South and East to West
- Create an "alter" structure of water, fire, stone, or ? over the intersection of the two major energy lay lines

Tree removals

- Selective conifers near corner with neighbor to the west on the northeast corner
- Eucalyptus on north side of driveway
- Several trees on the south facing slope above the backyard

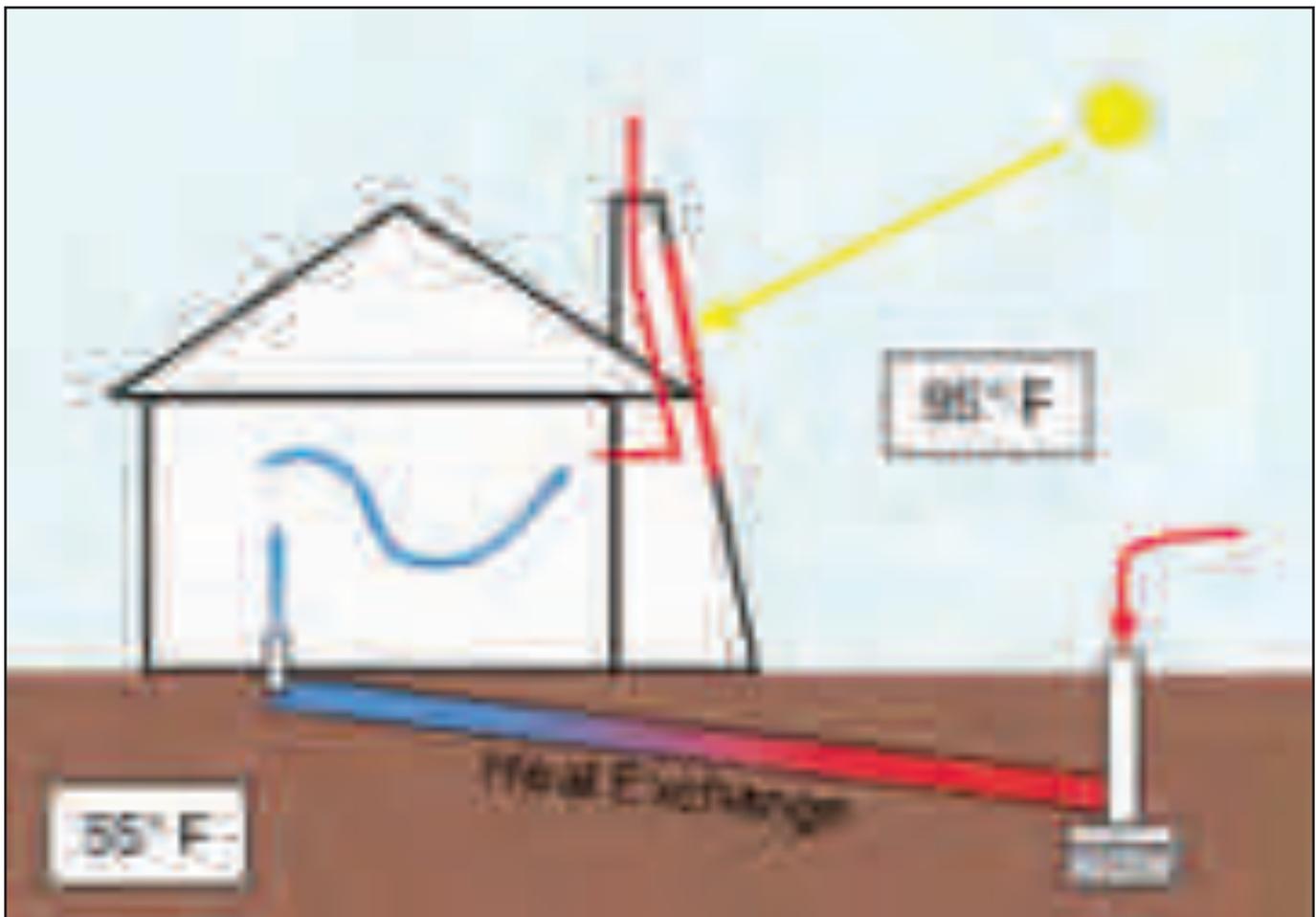


Figure #11

Geo-Thermal Air Conditioning

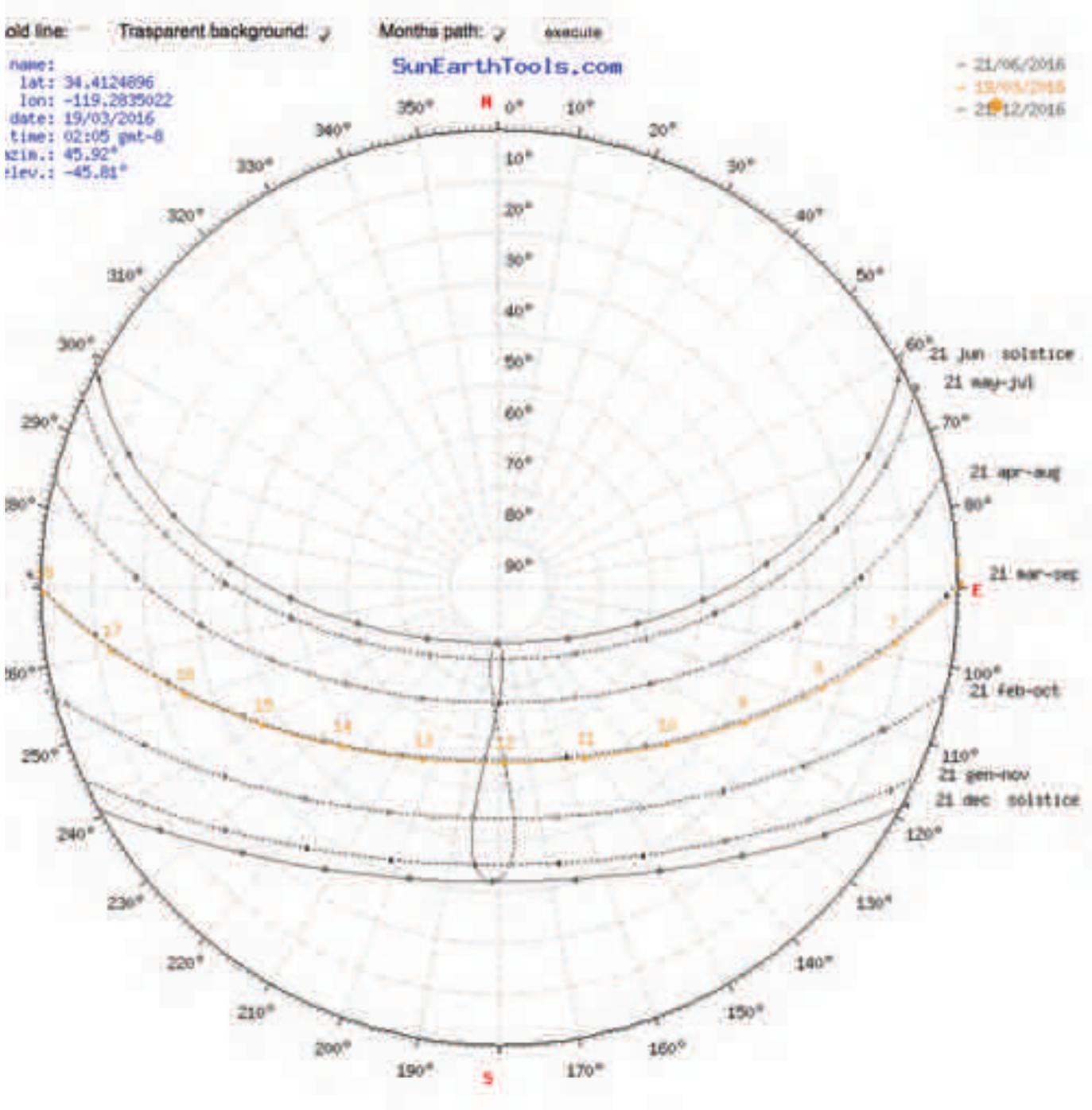
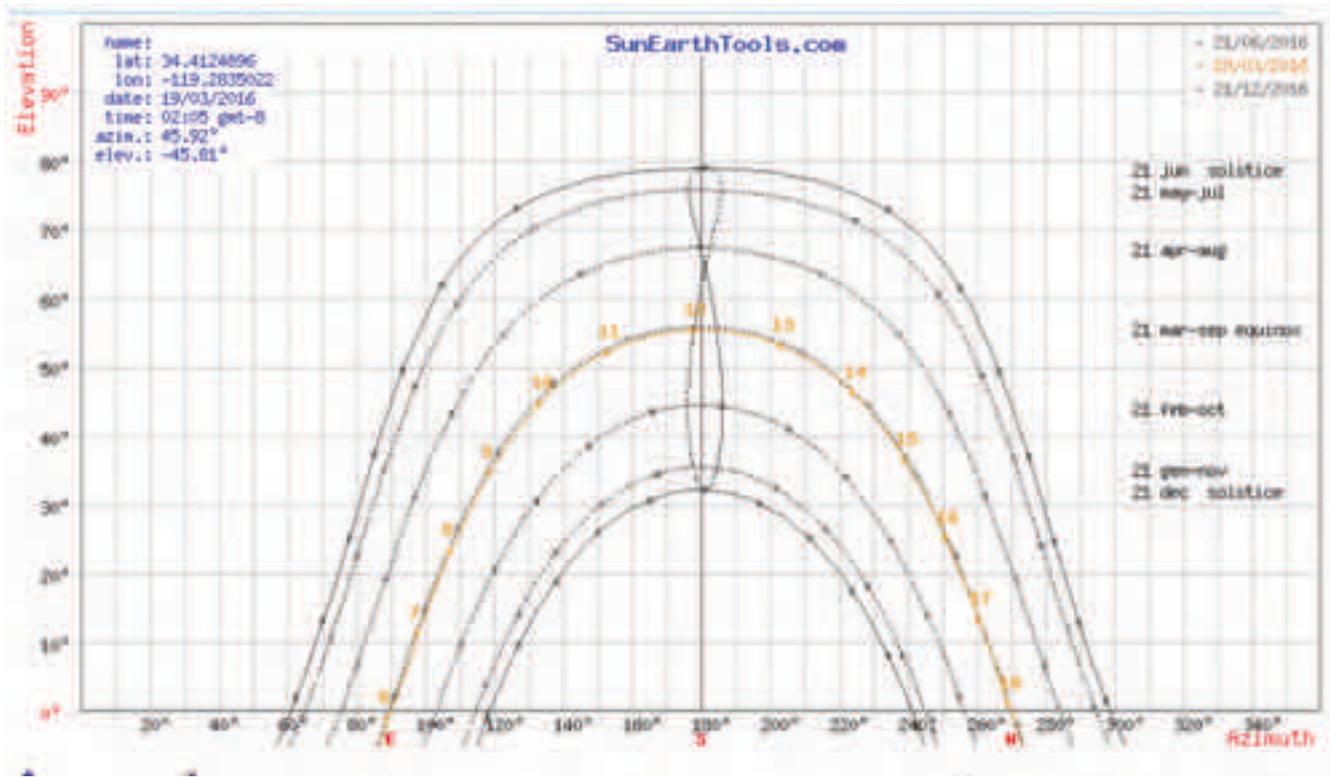


Figure #12

Sunpath Data

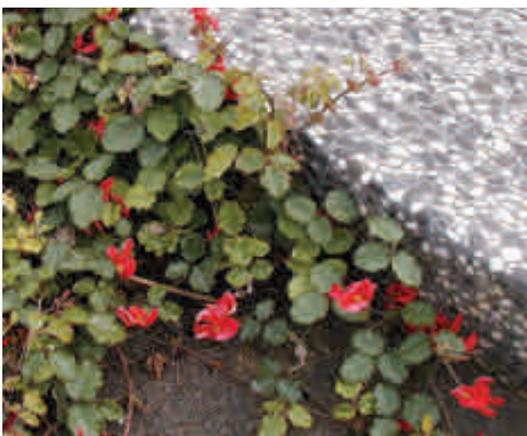
This shows the sun's path during different times of year.



Plant Species

Vines

Name	Scientific name	Plant Type
Dusky Coral Pea	<i>Kennedia rubicunda</i>	Perennial, Evergreen
Hardy Kiwi	<i>Annanasnaja arguta</i>	Perennial, Evergreen
Kiwi	<i>Actinidia deliciosa/chinensis</i>	Perennieal, Evergreen
Jasmine		
Wisteria - Purple	<i>Wisteria floribunda</i>	Perennial
Wisteria - Pink		
Wisteria - White		
Malabar Spinach		Annual
Tree Kale	<i>Brassica oleracea v. acephala</i>	Perennial, Vegetable
California Grape	<i>Vitis californica</i>	Deciduous Perennial Vine
Grape - Thompson Seedless, Perlette Seedless, Flame Seedless	<i>Vitis vinifera</i>	Deciduous Perennial Vine
Clematis - Western	<i>Clematis ligusticifolia</i>	Perennial
Creeping Fig	<i>Ficus pumila</i>	Perennial
Passionfruit - Constance Elliot	<i>Passiflora caerulea</i>	Perennial
Port John's Creeper	<i>Podranea brycei</i>	Perennial
Hammer's Rose	<i>Tecomaria capensis</i>	Perennial
Chilean Jasmine	<i>Mandevilla laxa</i>	Perennial
Passionfruit- Frederick		
Don Juan Climbing Rose	<i>Rosa spp.</i>	Perennial
Honeysuckle	<i>Lonicera japonica</i>	Perennial Evergreen Vine
Moon Vine	<i>Ipomea alba</i>	Annual Vine
Firecracker Vine	<i>Ipomea lobata</i>	Annual Vine



Kennedia rubicunda



Don Juan Climbing Rose



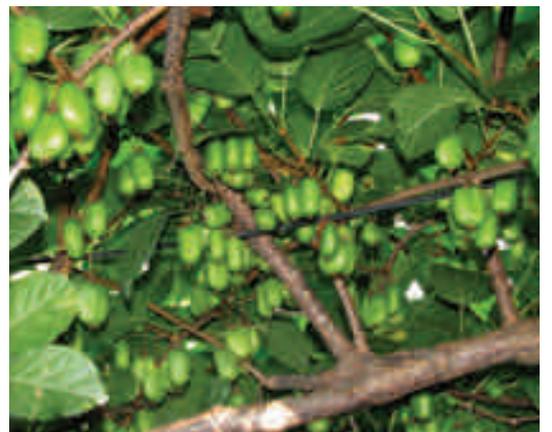
Wisteria floribunda



Mandevilla laxa



Podranea brycei



Annanasnaja arguta



Lonicera japonica



Ipomea lobata

Plant Species

Shade/Windbreak Trees

Name	Scientific name	Plant Type
Peruvian Pepper Tree	Schinus molle	Evergreen Tree
Mimosa/Persian Silk Tree	Albizia julibrissin	Deciduous Tree
Mexican Weeping Bamboo	Otatea acuminata spp. aztecorum	
Weeping Blue Broom	Psoralea fleta	Evergreen
Thornless Honey Locast	Gleditsia triacanthos	
Siberian Pea Shrub	Caragana arborescens	
Mesquite		

Viewscreen

Name	Scientific name	Plant Type
Bamboo, Golden Goddess	Bambusa multiplex	Perennial Grass
Bamboo, Mexican Climbing	Chusquea coronalis	Perennial Grass
Goumi	Eleagnus multiflora	Perennial Shrub
Pinaeapple Guave	Feijoa sellowiana	Perennial Shrub
Mexican Bird of Paradise	Caesalpinia pulcherrima	Perennial Shrub
Pink Muhly Grass	Muhlenbergia capillaris	Perennial Grass, Clumping
	Lochroma cyanea	Perennial Shrub
Hammer's Rose	Tecomaria capensis	Perennial Shrub/Vine
Bird of Paradise		

Groundcovers

Name	Scientific name	Plant Type
Dusky Coral pea	Kennedia rubicunda	Perennial Vine
Gotu kola, Spadeleaf	Hydrocotyle asiatica	Perennial Groundcover
Yerba Buena	Satureja douglasii	Perennial Groundcover
Attila Strawberry	Fragaria vesca	Perennial Groundcover
Sweet Potato	Ipomea spp.	Perennial Groundcover
Groundnut	Apios americana	Perennial Groundcover
Perennial Peanut	Arachis pintoii	Perennial Groundcover
Wayne Roderick Daisy	Erigeron glaucus	Perennial Groundcover
Bee's Bliss Salvia	Salvia leucophylla	Perennial Groundcover
Creeping Rosemary	Rosmarinus officinalis prostratus	Perennial Groundcover



Gleditsia triacanthos



Albizia julibrissin



bamboo



Feijoa sellowiana



Fragaria vesca



Erigeron glaucus

Plant Species

Food Trees

Name	Scientific name	Plant Type
Mango		Evergreen
Bananas	Musa spp.	Evergreen
Acerola Cherry		Deciduous Tree
Persimmon - CoffeeCake, Fuyu, Giant Fuyu		Deciduous Tree
Asian Pear - Shinseiki		Deciduous Tree
Nectarine - Arctic Star, Double Delight, Snow Queen, Southern Belle		Deciduous Tree
Peach - May Pride, Mid-Pride, Eva's Pride, June Pride, August Pride		Deciduous Tree
Loquat - Big Jim		Evergreen
Avocado		Evergreen
Olive - Arbequina, Mission, Koroneiki		Evergreen
Macadamia		
Guava		
Cherimoya		
Moringa		
Calamondin		Evergreen
Limes		Evergreen
Pomegranate	Punica granatum	Deciduous Tree
Apple, Granny Smith	Malus domestica	Deciduous Tree
Apple, Fuji	Malus domestica	Deciduous Tree
Apple, Lady Williams	Malus domestica	Deciduous Tree
Apple, Mollie's Delicious	Malus domestica	Deciduous Tree
Apple, Tompkin's County King	Malus domestica	Deciduous Tree
Apple, Wickson Crabapple	Malus domestica	Deciduous Tree
Apple, Hudson's Golden Gem	Malus domestica	Deciduous Tree
Apple, Kerr Crab	Malus domestica	Deciduous Tree
Apple, Nittany	Malus domestica	Deciduous Tree
Apple, Rome Beauty	Malus domestica	Deciduous Tree
Apple, Yellow Newtown Pippin	Malus domestica	Deciduous Tree
Pear - Monterrey, Kieffer, Southern Bartlett		Deciduous Tree



Moringa Tree



Persimmon Tree



Acerola Cherry



Asian Pear



Banana



Pomegranate

Plant Species

Name	Scientific name	Plant Type
Apricot, Goldkist		Deciduous Tree
Hazelnuts		Deciduous Tree
Mulberry	<i>Morus Alba</i>	Deciduous Tree
Plum - Beauty, Burgundy, Catalina, Inca, Mariposa, Methley		Deciduous Tree
Fig - Black Jack, Black Mission, Brown Turkey	<i>Ficus carica</i>	Deciduous Tree
Pineapple Guava	<i>Feijoa/acca sellowiana</i>	Evergreen Tree

Aquatic/Water Cleansers

Name	Scientific name	Plant Type
Canna	<i>Canna edulis</i>	Herbaceous annual
Taro / Elephant Ear		
Rushes		
Reeds		
Gotu Kola	<i>Centella asiatica</i>	Perennial Herb
Watercress		Annual Herb
Peppergrass		Annual Herb
Horse Mint, Licorice Mint	<i>Agastache urticifolia</i>	Deciduous Herb
Cat Tail	<i>Typha</i> spp.	Reed
Coontail	<i>Ceratophyllum demersum</i>	Aquatic
Muskgrass	<i>Chara vulgaris</i>	Aquatic
Common Rush	<i>Juncus effusus</i>	Perennial Rush

Food Understory

Name	Scientific name	Plant Type
Purple Lab Lab, Hyacinth Vine	<i>Lab lab purpureus</i> syn. <i>Dolichos lablab</i>	
Goumi	<i>Elaeagnus multiflora</i>	Perennial
Black Raspberry		Perennial
Strawberry	<i>Fragaria</i> spp.	Perennial Groundcover
Blackberry		
Common Yarrow	<i>Achillea millefolium</i>	Perennial
Birdsfoot trefoil		
Elderberry		Perennial



Typha latifolia



Canna edulis



Ceratophyllum demersum



Elaeagnus multiflora



Lab lab purpureus

Plant Species

Name	Scientific name	Plant Type
White Horehound		
Blueberry - Sharpblue, Southmoon, Pink Lemonade, Sunshine, Emerald		Perennial
Goji		
Aronia		
Yarrow		
White Sage	Salvia apiana	Herbaceous shrub
Dragonfruit		
Ground Cherry	P. pruinosa	Annual Fruit
Kahili Ginger	Hedichium gardneranium	

Flowers

Name	Scientific name	Plant Type
Gladiolas		
Daffodils		
Iris		
Plumeria		
Brugmansia		
Rose "Carefree Delight"	Rosa	Perennial Shrub
Rose "Felicia"	Rosa	Perennial Shrub
Blue Flax	Linum lewisii	Self-seeding Perennial
Agastache	Agastache spp.	Perennial Flower
	Penstemon palmeri	Perennial
	Clarkia amoena	Perennial
Silver Bush Lupine	Lupinus albifrons	Perennial
	Mimulus bifidus	Perennial
Ceanothus "Julia Phelps"	Ceanothus	Perennial
Yellow Coastal Bush Lupine	Lupinus arboreus	Perennial
Milkweed	asclepias spp.	Perennial
	Aristea major	Perennial
Mexican Bird of Paradise	Caesalpinia pulcherrima	Perennial
California Fuschia	Zauschneria californica	Perennial
	Helleborus orientalis	Perennial
	Brugmansia	Perennial



Dragonfruit



Aronia



Yarrow



Brugmansia



Agastache

Plant Species

Kitchen Garden

Name	Scientific name	Plant Type
Ginger		Perennial Rhizome
Jicama		
Beets		
Carrots		
Broccoli		
Cauliflower		
Potatoes		
Sweet Potatoes		
Malabar Spinach		Vegetable, Annual Vine
Sorrel		Vegetable, Green, Perennial
Tree Kale		Vegetable, Perennial, Green
Salad Burnett		Herb, Perennial
Parsley		Herb, Perennial
Sage		Herb, Perennial
Oregano		Herb, Perennial
Thyme		Herb, Perennial
Chives		Herb, Perennial
Garlic Chives		Herb, Perennial
Chervil		Herb, Perennial
Lovage		Herb, Perennial
Sunchoke	Helianthus tuberosa	Tuber, Perennial
Mammoth Dill		Herb, Annual
Tomato		
Cucumber		
Sweet Pea		
Peppers		
Beans		



Tree Kale



Tomato



Potatoes



Malibar Spinach



Cauliflower



Sweet Pea



Cucumber

Plant Species

Xeriscape

Name	Scientific name	Plant Type
Tillandsias	Tillandsia spp.	
Aeonium		
Aloe (medicinal)		
Agave		
Ceanothus "Julia Phelps"	Ceanothus	Perennial Shrub
California Fuschia	Zauschneria californica	Perennial
CA Poppy		
Common Yarrow	Achillea millefolium	Perennial
CA Buckwheats		Perennial Flowering Shrub
Monkey Flowers		
Wallace's Pitcher Plant	Lepechinia fragrans	Perennial
Heartleaf Penstemon	Keckiella cordifolia	Perennial Shrub
CA Currant	Ribes aureum	Perennial Shrub
GOLDen Yarrow	Eriophyllum confertiflorum	Perennial
Coyote Mint	Monardella villosa	Perennial Groundcover
Deer grass	Muhlenbergia rigens	Perennial Clumping Grass
Fuschia Flowering Gooseberry	Ribes speciosum	Perennial Shrub
CA Penstemons		Perennial Flower
Tranquil Coffeeberry	Rhamnus californica	Perennial Shrub
Yerba Buena	Satureja douglasii	Perennial Groundcover
Blue-Eyed Grass	Sisyrinchium bellum	Perennial Grass
Salvias		
White Sage	Salvia apiana	Herbaceous shrub
Wooly Blue Curles	Trichostema lanatum	
California Redbud	Cercis occidentalis	Deciduous tree
Big Leaf Maple	Acer macrophyllum	Deciduous tree
Prickly Pear (spineless)	Opuntia spp.	
Dusky Coral Pea	Kennedia rubicunda	Perennial, Evergreen
California Grape	Vitis californica	Deciduous Perennial Vine
Loquat - Big Jim, Champagne, Advanced, McBeth, Gold Nugget		Evergreen
Grape - Thompson Seedless, Perlette Seedless, Flame Seedless	Vitis vinifera	Deciduous Perennial Vine
Attila Strawberry	Fragaria vesca	Perennial Groundcover



Deer Grass



Fireweed with Monkey Flowers



Blue-Eyed Grass



Ceanothus "Julia Phelps"

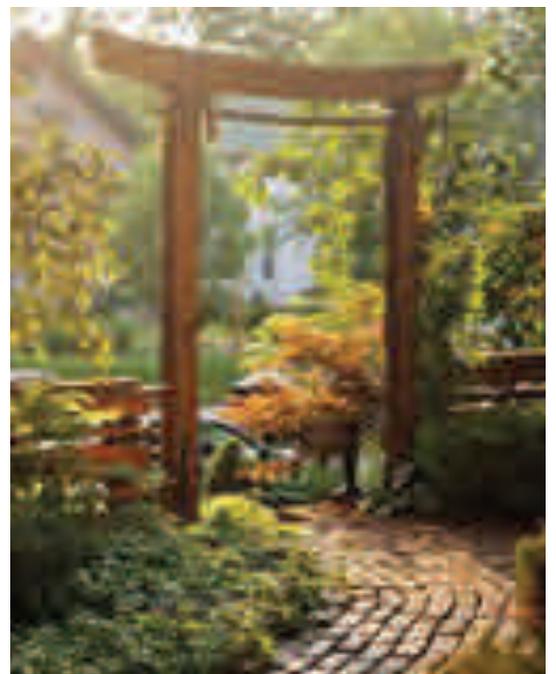
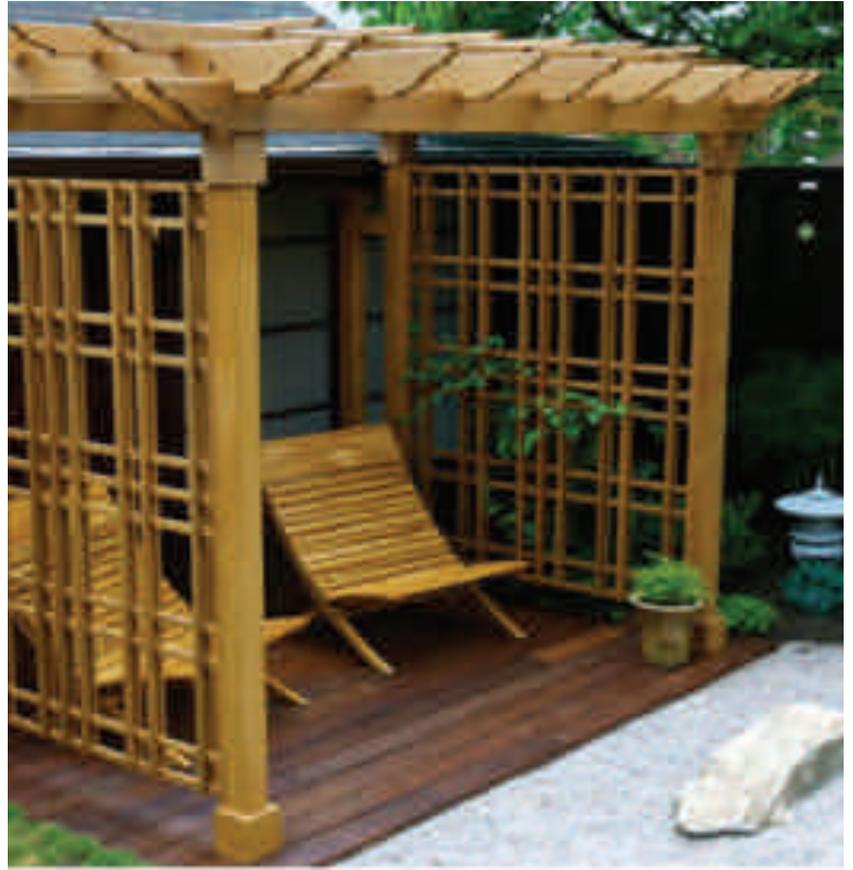


Aloe

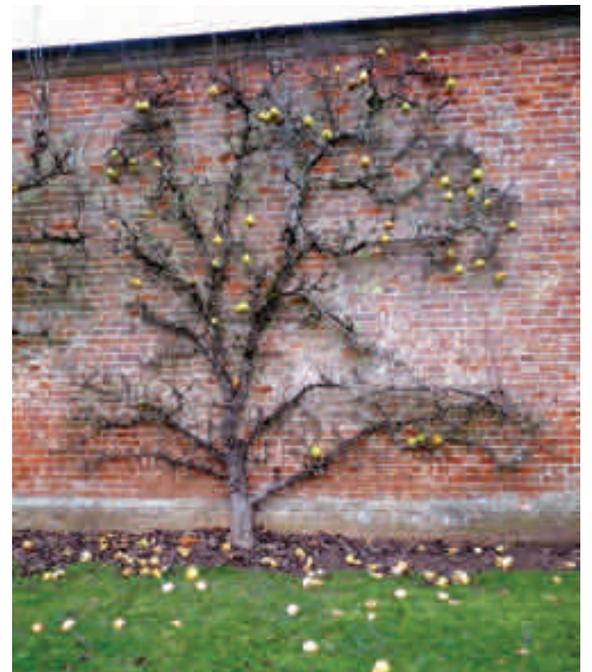
Natural Pool and Filtration



Arbor Trellis



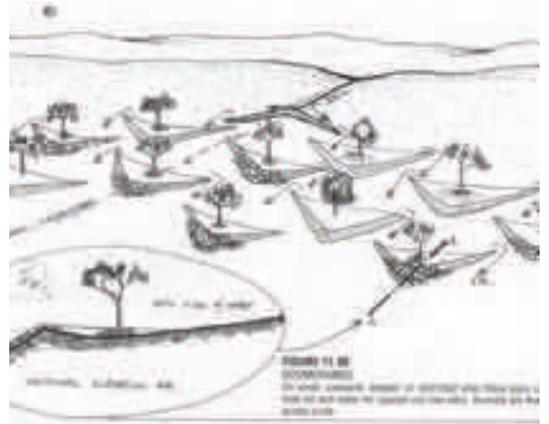
Espalier



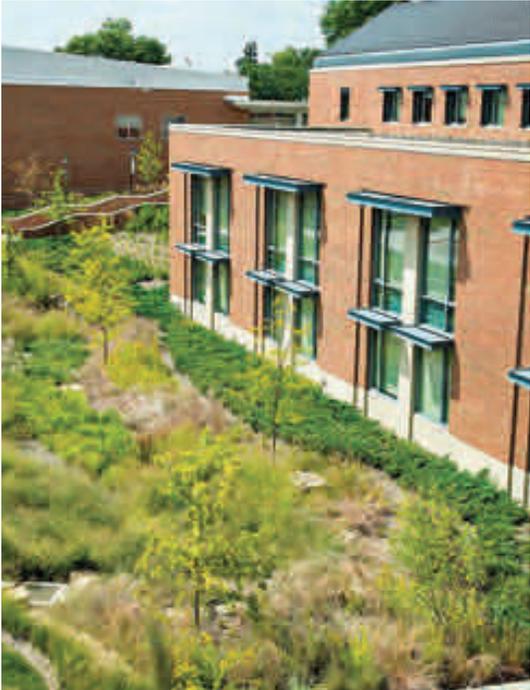
Flow Forms



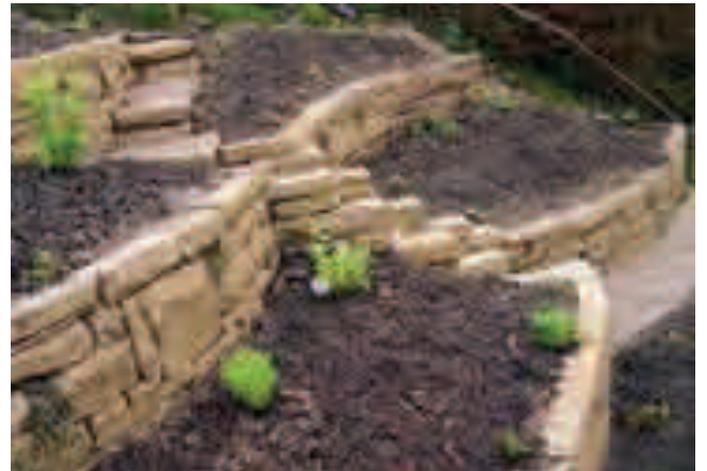
Net & Pan



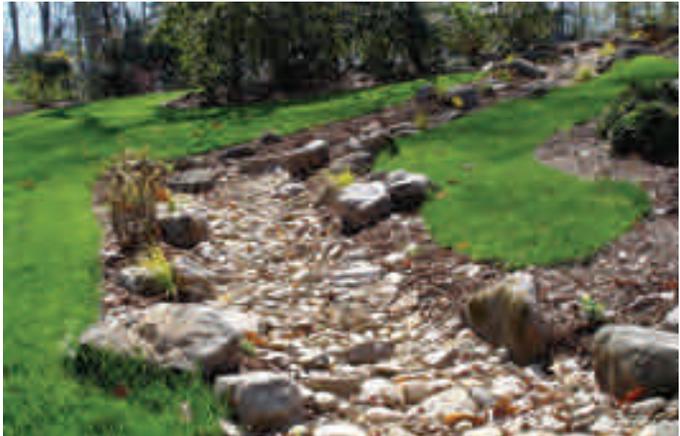
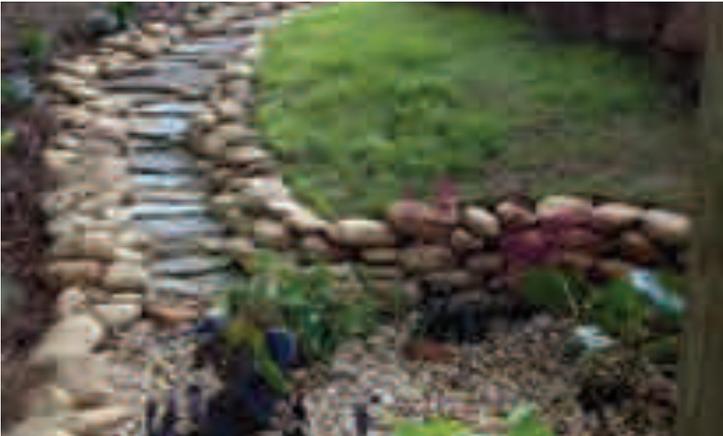
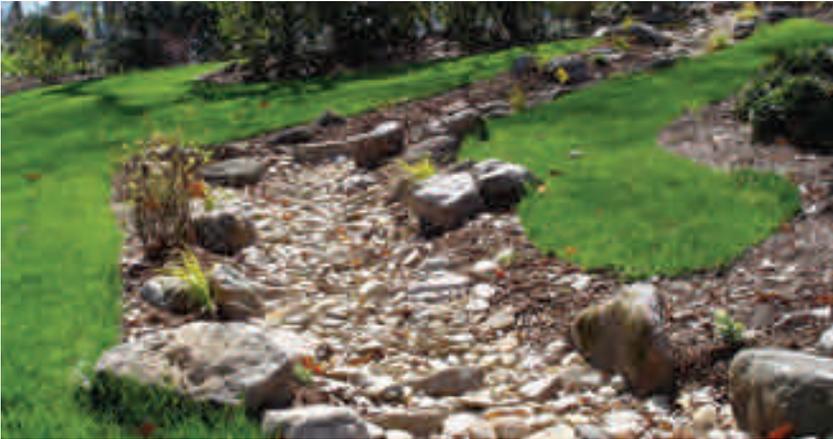
Rainwater Gardens



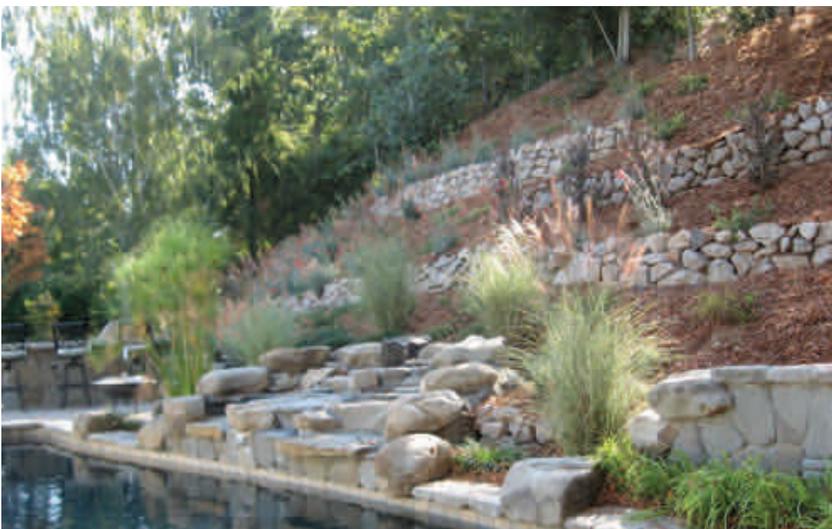
Terraced Garden



Dry Creek Bed



Xeriscape



Zuni Bowl



Phase Planning

For your planning, we have compiled this general phase planning document to assist in the implementation process.

Phase I:

- Dig alert called and underground utilities flagged
- Selective plant and tree removals
- Remove upper wooden log fence on north side of property
- Earthworks
 - Excavations for guest house and parking area
 - Topsoil removed at sites for Terraces and Swale and set aside to recover disturbance with
 - Terraces dug
 - Swale dug
 - Rainwater garden dug and bottom leveled
 - Dry creek beds established
 - Net and Pan
 - Mapping and digging
 - Stone work
- Plantings
 - Digging holes
 - Amending soil
 - Planting
 - Irrigation set up
- Infiltration Terraces
 - French drain dug and pipe laid, gravel put over it
 - Planting excavations into uphill/back side of terrace and stone lined
- Driveway Trench Drains dug and tied to Infiltration Terraces
- Mulching
 - Mulch existing trees
 - All excavations planted and covered with

mulches

- Stone mulch for net and pan

- Stone Work for dry creek beds, cascading ponds on front drain
- Re-work concrete drains as per design recommendations
- Irrigation Systems
- Rainwater Harvest Systems
- Biofiltration Ponds and cascading stone work and flow forms
- Natural Pool
- Create entry courtyard in front of garage
- House modifications for access, heat gain mitigation, etc.
- Create access trails and pathways
- Driveway trench drains installed
- Build and install kitchen garden beds
- Greywater gardens installed

Phase II

- Build aviary
- Jacuzzi
- West facing patio rebuild and extension
- Build guest house
- Garage conversion
- Build Arbor Trellis
- Greenhouse
- Kids play structures

Phase III

- Chicken coop and forage area
- Apiary - bee hives
- Adjust design with feedback integration

Additional Resources

Flow Forms:

- <http://www.bohemianstoneworks.com/portfolio-item/flowforms/>

Greywater Systems:

- <http://oasisdesign.net>

Energy Lines:

- <http://www.amazon.com/The-Sun-Serpent-Hamish-Miller/dp/0951518313>

Rainwater Harvesting:

- <http://www.harvestingrainwater.com>, <http://www.westechcontractors.net/rainwater-harvesting>

Natural Pools:

- <http://www.latimes.com/home/la-lh-natural-swimming-pools-20140526-story.html>
- http://www.amazon.com/Guide-Building-Natural-Swimming-Pools/dp/0764350838?ie=UTF8&p-sc=1&redirect=true&ref_=oh_aui_detailpage_o03_s00

Aviary Design:

- <http://www.buildanaviary.com/how-to.php>

Mushroom Systems:

- http://www.namyco.org/mushroom_cultivation_resources.php

Chicken Systems:

- <http://sustainablemallholding.org/chicken-scavenging-system-2/>
- <http://www.amazon.com/City-Chicks-Micro-flocks-Bio-recyclers-Producers/dp/0962464856>
- <http://www.mnn.com/your-home/organic-farming-gardening/photos/8-awesome-urban-chicken-coops/mitchell-snyders-coop#top-desktop>

Permaculture Plants:

- <http://permacultureplantdata.com>
- <http://www.amazon.com/Permaculture-Plants-Selection-Jeff-Nugent/dp/1856230295>

Permaculture Books:

- <http://www.chelseagreen.com/gaias-garden-second-edition>
- <http://www.amazon.com/Practical-Permaculture-Landscapes-Community-Whole/dp/1604694432>
- <http://www.amazon.com/Permaculture-Designers-Manual-Bill-Mollison/dp/0908228015>
- <http://www.amazon.com/Earth-Users-Guide-Permaculture-Edition/dp/1856230511>

Cob Oven Builders:

- Paul Swenson - (805) 636-6813, paul@quailsprings.org
- Sasha Rabin - (928) 243-2243, sasha@quailsprings.org

Pool Heating:

- Heliocol - www.heliocol.com



TRUE NATURE DESIGN