ECOLOGICAL CONCERNS INCORPORATED

DESIGN-GROW-BUILD

ECOLOGICAL LANDSCAPING
ECOLOGICAL CONSULTING
RAINWATER/GRAYWATER
HABITAT RESTORATION
CALIFORNIA NATIVE PLANT NURSERY

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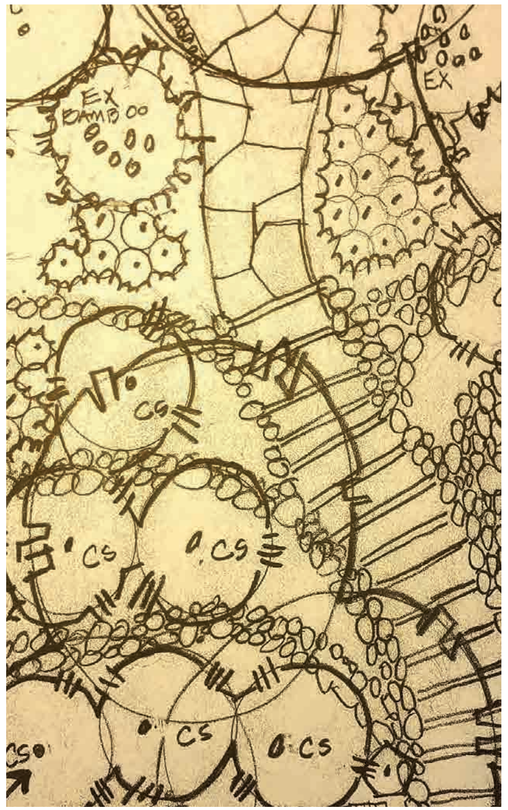
OLSEN RESIDENCE

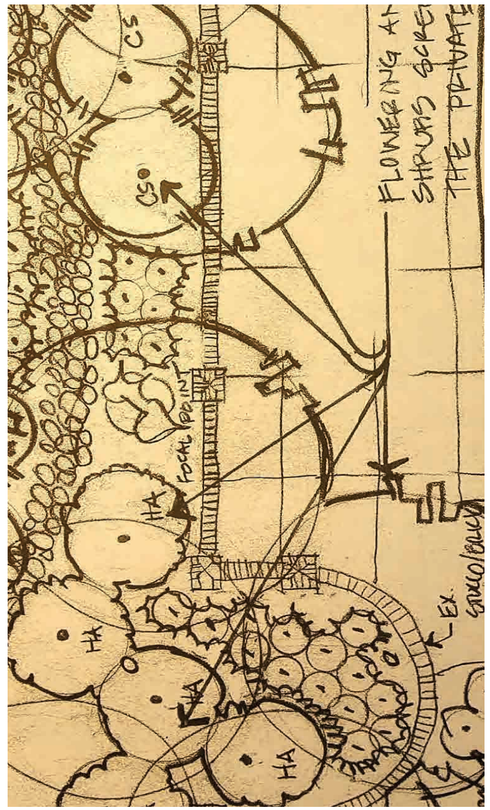
NATIVE LANDSCAPE DESIGN-GROW-BUILD

SAN JOSE, CA

PROJECT GOALS:
Lower Irrigation Needs, Landscape Beautification, Increased Habitat

PROJECT SERVICES:
Landscape Design, Native Plant Selection, Drip Irrigation Retrofit, Landscape Construction, Site Planning, Low-Maintenance Planting, Vegetable Garden Design Build

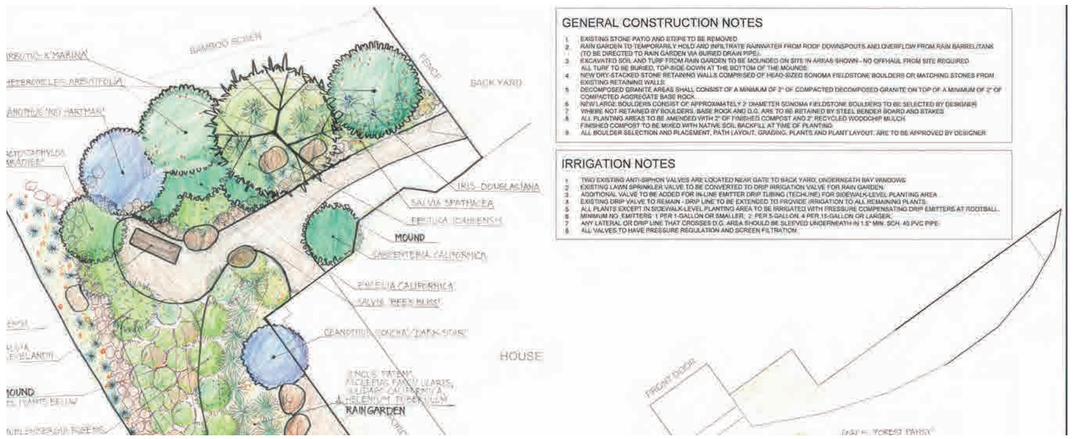




PROJECT DESCRIPTION:
Ecological Concerns Incorporated was hired to oversee and manage the construction of a backyard landscape that had a distinctive Moroccan design. ECI worked with the owner to improve the design so that it included native habitat areas and drought tolerant planting. Extensive stone and tile walls were installed with trees, large ornamental planters and perennial flowers to surround their poolside paradise. The installation was a success and ECI has been contracted to maintain the estate's entire landscape. The maintenance is minimal because of the natural aesthetics and the use of natives. ECI continues to receive praise from the homeowner and their guests.

MOSES LANDSCAPE DESIGN GROW BUILD
LAWN REPLACEMENT LID PROJECT

SANTA CRUZ, CA



GENERAL CONSTRUCTION NOTES

1. EXISTING STONE PATIO AND STEPS TO BE REMOVED.
2. RAIN GARDEN TO TEMPORARILY HOLD AND INFILTRATE RAINWATER FROM ROOF DOWNSPOUTS AND OVERFLOW FROM RAIN BARREL/TANK (TO BE DIRECTED TO RAIN GARDEN VIA BURIED DRAIN PIPE).
3. EXCAVATED SOIL AND TURF FROM RAIN GARDEN TO BE MOUNDED ON SITE IN AREAS SHOWN - NO OFFHAUL FROM SITE REQUIRED.
   ALL TURF TO BE BURIED, TOP-SIDE DOWN AT THE BOTTOM OF THE MOUNDS.
4. NEW DRY-STACKED STONE RETAINING WALLS COMPRISED OF HEAD-SIZED SONOMA FIELDSTONE BOULDERS OR MATCHING STONES FROM EXISTING RETAINING WALLS.
5. DECOMPOSED GRANITE AREAS SHALL CONSIST OF A MINIMUM OF 2" OF COMPACTED DECOMPOSED GRANITE ON TOP OF A MINIMUM OF 2" OF COMPACTED AGGREGATE BASE ROCK.
6. NEW LARGE BOULDERS CONSIST OF APPROXIMATELY 2' DIAMETER SONOMA FIELDSTONE BOULDERS TO BE SELECTED BY DESIGNER.
7. WHERE NOT RETAINED BY BOULDERS, BASE ROCK AND D.G. ARE TO BE RETAINED BY STEEL BENDER BOARD AND STAKES.
8. ALL PLANTING AREAS TO BE AMENDED WITH 2" OF FINISHED COMPOST AND 2" RECYCLED WOODCHIP MULCH.
   FINISHED COMPOST TO BE MIXED WITH NATIVE SOIL BACKFILL AT TIME OF PLANTING.
9. ALL BOULDER SELECTION AND PLACEMENT, PATH LAYOUT, GRADING, PLANTS AND PLANT LAYOUT, ARE TO BE APPROVED BY DESIGNER.

IRRIGATION NOTES

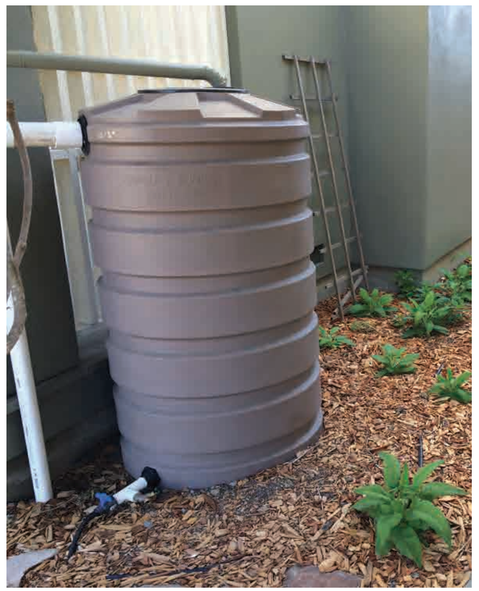
1. TWO EXISTING ANTI-SIPHON VALVES ARE LOCATED NEAR GATE TO BACK YARD, UNDER/NEATH BAY WINDOWS.
2. EXISTING LAWN SPRINKLER VALVE TO BE CONVERTED TO DRIP IRRIGATION VALVE FOR RAIN GARDEN.
3. ADDITIONAL VALVE TO BE ADDED FOR IN-LINE EMITTER DRIP TUBING (TECH-LINE) FOR SIDE/MAIN LEVEL PLANTING AREA.
4. EXISTING DRIP VALVE TO REMAIN - DRIP LINE TO BE EXTENDED TO PROVIDE IRRIGATION TO ALL REMAINING PLANTS.
5. ALL PLANTS EXCEPT IN SIDE/MAIN-LEVEL PLANTING AREA TO BE IRRIGATED WITH PRESSURE COMPENSATING DRIP EMITTERS AT ROOTBALL.
6. MINIMUM NO. EMITTERS: 1 PER 1-GALLON OR SMALLER; 2 PER 5-GALLON; 4 PER 15-GALLON OR LARGER.
7. ANY LATERAL OR DRIP LINE THAT CROSSES D.G. AREA SHOULD BE SLEEVED UNDERNEATH IN 1.5" MIN. SCH. 40 PVC PIPE.
8. ALL VALVES TO HAVE PRESSURE REGULATION AND SCREEN FILTRATION.

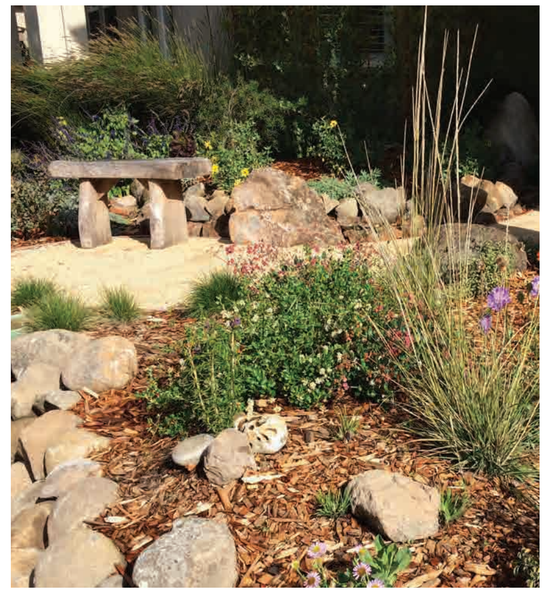
PROJECT GOALS:

Increased Habitat, Low Maintenance Planting; Reduce City Water and Energy Dependency, Support Green Infrastructure and Building

PROJECT SERVICES:

Ecological Landscape Design, Low Impact Developemnt Design, Native Plant Palette, Rainwater Harvesting System Design, Stormwater Management, Project Management,





PROJECT DESCRIPTION:

This residential client, with a home overlooking beautiful Moore Creek Preserve in Santa Cruz, requested ECI's help to transform their small front lawn and patio into a more ecological landscape. The client's goals were to remove the lawn, reduce the footprint of the hardscape patio, create more space for gardening, and to use native plants to extend the natural beauty and habitat of the Preserve into their own yard.

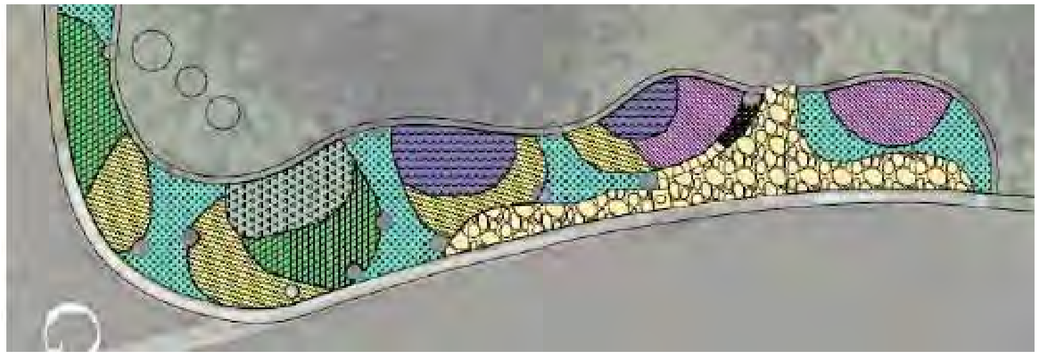
ECI's landscape designer, Dakotah Bertsch, worked with the client to develop a plan to incorporate their goals into a cohesive vision for the landscape, working in additional ecological features such as a rain garden to harvest stormwater, permeable decomposed granite paths, and a rain water harvesting tank for water storage. Grade changes for the rain garden were achieved using boulders and dry-stacked stone retaining walls, and all soil was kept onsite in order to minimize waste and enhance the sustainability of the project. Much of the nursery stock used was grown at Central Coast Wilds, ECI's nursery division, with seeds and cuttings collected from local watersheds.

The installation included demolition of their older landscape, light grading for the rain garden, construction of the paths, and planting. The landscape was polished off with wood chip mulch to help retain moisture and build soil. Since installation, the plants have started to grow in wonderfully, and we have seen butterflies and other insects enjoying the new habitat. The client has opted to get their landscape rated as a Monterey Bay Friendly Landscape. We are excited to see this project continue to serve our client and the community at large!

BAJOREK FRONT AND BACKYARD
LAWN REPLACEMENT
LOS GATOS, CA

PROJECT GOALS:
Lower Irrigation Needs, Recreational Use, Landscape Beautification, Increased Habitat

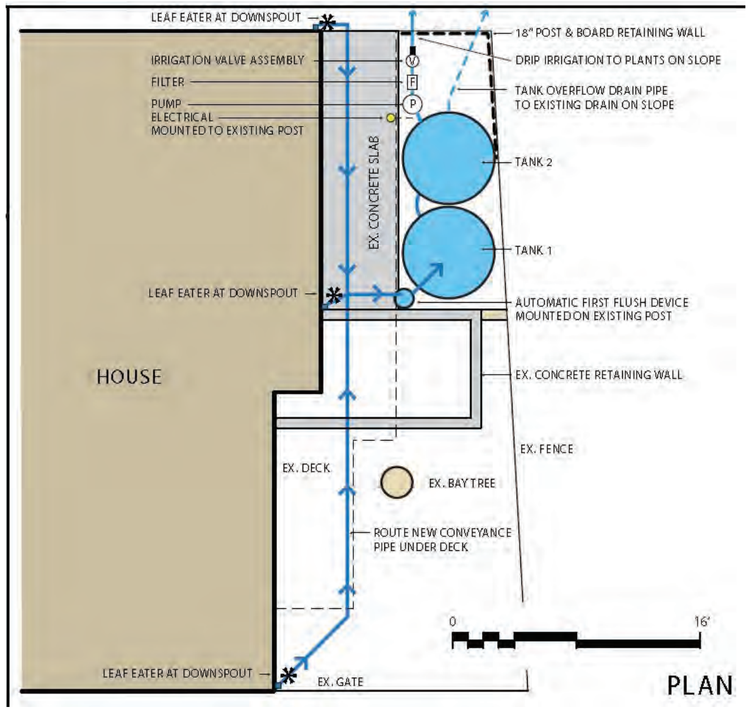
PROJECT SERVICES:
Landscape Design, Rebate Assistance, Native Plant Selection, Lawn Replacement, Sheet Mulching, Drip Irrigation Retrofit, Landscape Construction, Low-Maintenance Planting



PROJECT DESCRIPTION:
ECI was referred to a client in Los Gatos for a lawn removal project and optimizing their return on investments through local rebate programs. There was about 2,600 square feet of lawn removed from the front and backyards. The lawn was removed by excavating down into the roots about 2”. The old lawn material was then reused onsite to create planting mounds and contrast to the yard. ECI then installed large areas of natives with naturally placed boulders acting as an accent. ECI constructed a decomposed granite badminton court with several paths leading to and from the house, garden and yard. The sprinkler heads were either capped or converted into drip irrigation. ECI also continues to perform maintenance on the landscape as it flourishes.

HURLEY LANDSCAPE AND RAINWATER
DESIGN-GROW-BUILD

SCOTTS VALLEY, CA



PROJECT GOALS:
Stabalizing a Steep Slope on the Property, Increased Habitat, Low Maintenance Planting, Reduce City Water and Energy Dependency, Support Green Infrastructure and Building,

PROJECT SERVICES:
Botanical Consulting, Habitat and Site Planning, Native Plant Landscape Design, Seed Collection and Nursery Contract Grow, Rainwater Collection Design, Rainwater System Installation, Landscape Construction

PROJECT DESCRIPTION:
ECI had the privilege to design and build a rainwater harvesting system that supplies a native evergreen forest in Scotts Valley. ECI was hired in 2014 to develop a custom plant palette for a client looking to provide erosion control to a steep slope. ECI's lead botanist developed a native plant palette and had Central Coast Wilds propogate and grow the plants. Four months later, ECI installed a mix of native evergreen forest plants at client's house. A year later a rainwater system was designed and installed to irrigate the native plants.

This rainwater harvesting system features two connected 660-gallon above-ground tanks creating a total capacity of 1,320 gallons. The tanks are tucked into a small space along the side of the house so that they are hidden from view. A level pad was made for the tanks by installing a small retaining wall. The tanks also specified to be low profile, to give the owner the option of building above them in the future. Rainwater is filtered in multiple stages to keep the storage tanks free of debris, and filtered again before being delivered to the irrigation system.

PALO ALTO, CA RESIDENCE
CLOSED LOOP DESIGN

PROJECT GOALS:
Reduce city water dependency,
Support green infrastructure and building,
Take advantage of city rebates
Stormwater Management

ECI PROJECT SERVICES:
Greywater and Rainwater Harvesting System Design,
Project Management and Site Planning

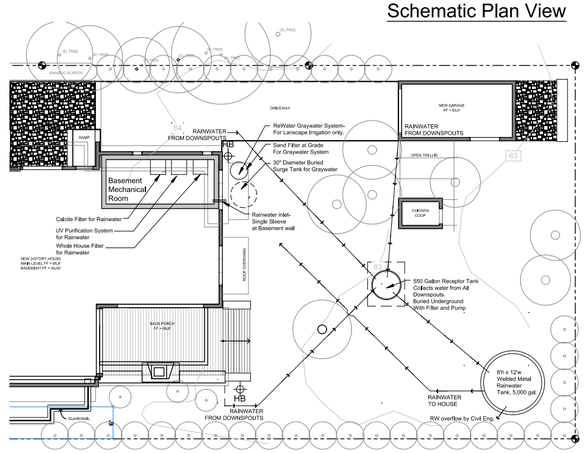
ESTIMATED CONSTRUCTION COSTS:
$50,000

Graywater Components

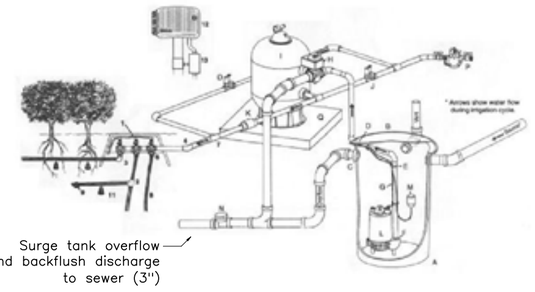
1. 1" 24 VAC solenoid valve
2. Tees (1/2", 3/4", 1" & 1 1/2")
3. 90° elbow (1/2", 3/4", 1" & 1 1/2")
4. 45° elbow (1/2", 3/4", 1" & 1 1/2")
5. 1" threaded male adapter
6. Slip reducers (1/2"x3/4", 3/4"x1", & 1"x1 1/2")
7. Reducing tees (1 1/2"x1 1/2"x1")
8. Polyethylene tubing (1/2", 3/4" & 1")
9. Polyethylene tubing Ends (1/2", 3/4" & 1")
10. Emitter
11. Emitter screens
12. Controller
13. Relay junction box

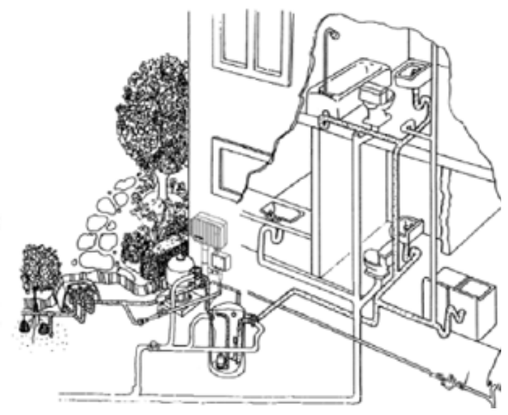
A. Surge tank, 70 gallons (30"x36")
B. Lid w/ 6 SS screws
C. Bulkhead adapters, 3 @ 2", 1 @ 1 1/2"
G. 1 1/2" discharge pipe
H. 3-way Tee valve with 24 VAC actuator
I. Filter vessel with PVC pipe adapters
J. 1 1/2" solenoid valve for backwash
K. 1 1/2" PVC swing check valve
L. Pump, 1/2 hp high pressure
M. Float switch
N . Backflow valve with viewing port
O. 1" reduced pressure valve for irrigation supplement
P. Reverse pressure assembly
Q. Platform (optional)

Schematic Plan View



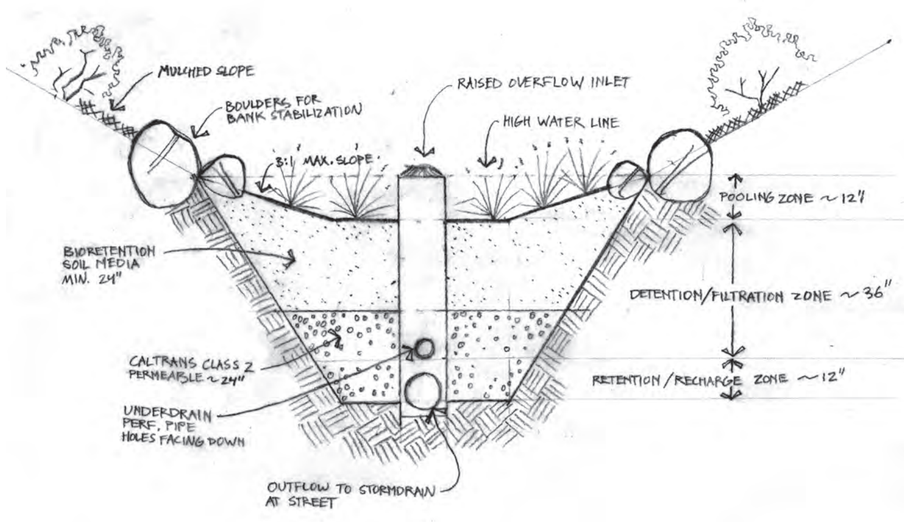
Graywater System Overview

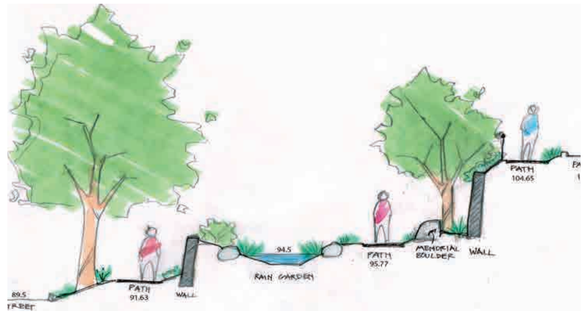


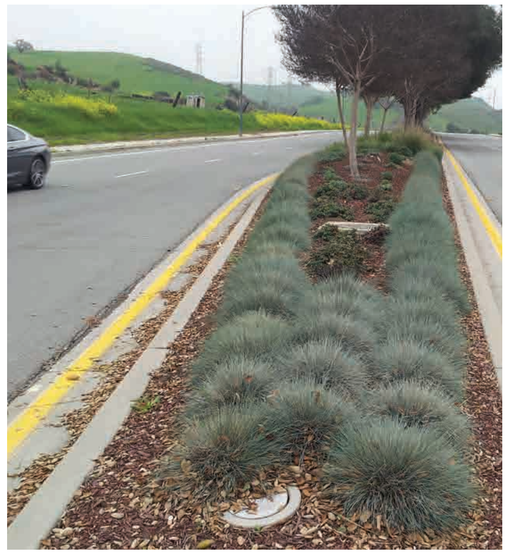


PROJECT DESCRIPTION:
Bobby Markowitz was asked to design a rainwater and greywater system for a new home being built in Palo Alto. It was determined that 25,000 gallons could be captured from the roof during the rainy season, therby eliminating any stormwater leaving the site. The system was designed to utilize harvested rainwater for the family's domestic non-potable uses, such as toilets and washing machine. They then calculated their average greywater output from the washing machine, showers and bathroom sinks to design their landscape with what's called a Closed Loop Design. This means that the landscape should not require more water than what can be produced from the site.

COMMERCIAL LANDSCAPE EXPERIENCE







ADDITIONAL SERVICES OFFERED

ECOLOGICAL LANDSCAPES - COMMERCIAL & RESIDENTIAL

- Sustainable Landscape Design
- Low Impact Development Planning
- Stormwater Management
- Rainwater/Graywater
- Landscape Installation
- Landscape Maintenance
- Habitat Gardens

HABITAT RESTORATION

- Habitat Restoration Plans
- Erosion & Sediment Control
- Vegetation Management

ECOLOGICAL CONSULTING

- Site & Botanical Assessments
- Environmental Impact Reports
- Feasability Studies
- Species Specific Mitigation Plans
- Monitoring & Reporting
- GIS/GPS Data

CALIFORNIA NATIVE PLANT NURSERY

- Site Specific Seed Collection
- Botanical Consultations
- Contract Growing
- Habitat Specific Native Plants

CLIENT TESTIMONIALS

"While I was having my house remodeled, ECI was the best contractor we had on site out of 15 other tradesmen. I loved the quality that came from having a contractor that could design and install such a complicated rainwater and greywater system." **- BEN BOYER**

"We are extremely pleased with Dakotah's design and ECI's work. In addition to its beauty, our garden now has ecological value and contributes to the bio-diversity of our local environment. Golden-crowned sparrows, black-capped chickadees, Monarch butterflies, bumblebees and other pollinators are daily visitors. My favorite part of the new landscape is a rain garden that harvests stormwater runoff from our roof and directs it into a vegetated swale where the soil filters and cleans the water instead of having it disappear down a storm drain. Thanks to ECI, our garden was certified a Monterey Bay Friendly Landscape, which means it meets the highest standards of sustainability and eco-friendliness." **- TAI MOSES**

"We decided to work with ECI , and we are completely satisfied with their efforts and results on our behalf. They worked well with all the entities involved in this complicated project from the county, to the water district, our concrete guys and all other subs. They installed a 2500 gallon tank underground for us that filled up on the first rain we had in November, and their system will allow us to water our yard for free until the next rains come and fill the tank again, my only regret is we didn't install the 5000 gallon tank as Bobby had recommended. It turned out that the county has started overseeing these systems, and the their requirements can impact the esthetics, and overall design, but working with Bobby Markowitz proved to be a great choice for us as he was able to work with the county, and our subs in a comprehensive manner to finish our project on time and on budget. I would recommend this company highly for any and all rainwater capture projects, as well as native designs and systems." - **WILLIAM KENNEDY**

ECI PERSONNEL

Joshua T. Fodor: President, Restoration Ecologist, CPESC
Josh has 20 years experience in organic horticulture, habitat restoration and ecological landscape design and implementation. After completing degrees in Biology and Environmental Studies at U.C. Santa Cruz and working 5 years in organic agriculture, he founded Central Coast Wilds in 1992. Early on he combined his interest in organic production methods with his botanical skills to create the first registered organic native plant nursery in California. Josh leads design and implementation of ecological landscape plans, vegetation management plans and habitat restoration plans throughout California, particularly in the San Francisco and Monterey Bay areas. Over the last decade he has continued his professional training in erosion control, stream restoration, watershed assessment, wetland delineation, and ecological landscape management techniques. In 2006, Josh completed an extension certificate in California Water Management and Ecosystem Restoration at U.C. Berkeley. In 2008 Josh became a Certified Professional in Erosion and Sediment Control. He teaches Principles of Restoration Landscaping at Cabrillo College and is an active member of numerous professional associations including the Ecological Landscaping Association, California Landscape Contractors Association and the Society for Ecological Restoration.

Bobby Markowitz: Senior Landscape Architect, ASLA # 3309
Rainwater/Greywater Specialist
An accredited professional of the American Rainwater Catchment System Association and a licensed landscape architect. Bobby has over 17 years of experience designing and installing rainwater harvesting systems as well as site planning and project management. Because of the rising costs and diminishing supplies of municipal water, planning for rainwater harvesting and graywater use have become critical components of any landscaping firm's portfolio.

Dakotah Bertsch: Landscape Architect
Dakotah earned his Masters degree in Landscape Architecture from Cal Poly Pomona, and he has a B.S. in Environmental Studies from U.C. Santa Barbara. He's had a long love affair with California ecosystems, with years of ecological studies, frequent hikes and explorations, and years of working in the field of design, construction, maintenance and restoration of California landscapes. He also studied and apprenticed in Permaculture, and is experienced with edible and sustainable landscapes. Dakotah moved to Santa Cruz from Mendocino County to join the team at Central Coast Wilds, where he combines his interests in native habitats and ecological landscape design.

Greg Gill: Landscape Architect
A registered Landscape Architect, Greg Gill has worked in both the private and public sectors for over 20 years. He has designed many high profile residential projects and supervised their installation. He has also designed parks and trail systems and has been involved with several historic habitat restoration projects. Greg moved to Santa Cruz from New York City to live in a more rural environment and is excited by the variety of landscape projects he is working on for ECI.

Jessica Benet: Assistant Project Manager and Landscape Designer
After 10 years in the marine biology sector, Jessica has turned her focus towards the landscape in hopes to change the effects of our current systems for dealing with stormwater runoff. Jessica has studied permaculture, horticulture and Landscape Architecture at UC Berkeley Extension and has previously worked as a landscape designer, concentrating on sustainable residential landscapes. With her focus on rainwater harvesting and greywater use, she is involved with designing alternative water systems here at ECI.