

awards

ASLA Presidential Award of Excellence, Pennsylvania/Delaware Chapter, 2014 Student Awards Program, Communication

Best in Show, Academic Education Major Exhibitor

PHS Award for Best Achievement Incorporating food, water, and beauty into a natural environment

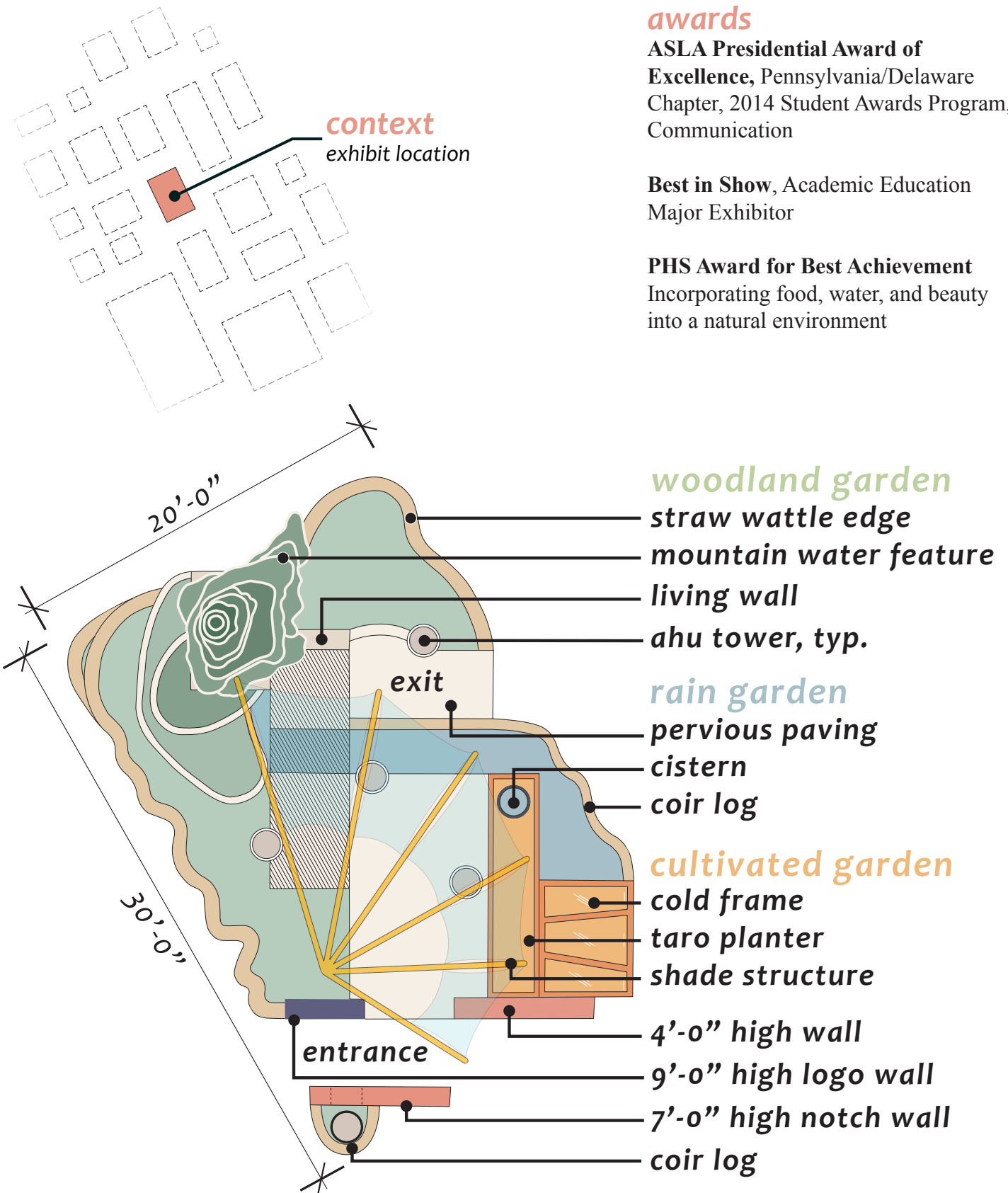


exhibit plan

The exhibit plan highlights the locations of unique features and materials within each of the three exhibit gardens—cultivated, woodland, and rain.



aloha `āina

a return to life with the land

The theme of the 2012 Philadelphia International Flower Show, which occurred between 2 and 10 May, 2012, was “Islands of Aloha” What follows is the text that was presented to show visitors via signage within the exhibit, as well as the design intent submitted to the Pennsylvania Horticultural Society (PHS).

design intent

Overall Design Intent

Simple methods for preserving and adapting environmental conditions to benefit from and protect soil, water, and plants are presented.

Horticultural Concept

Native or hardy plants that provide a culinary, medicinal, or ecological use are included. Exotic ornamental plants are presented in a controlled environment.

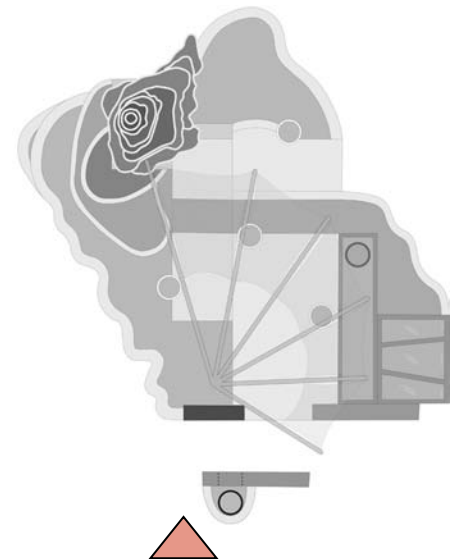


exhibit entrance Positioning the exhibit entrance at the intersection of main show aisles drew visitors from all directions. The brightly colored entrance walls attracted visitor attention, screened the exhibit interior, and enticed visitors to explore within.



1

Impact on Visitors

Visitors should gain an appreciation for various uses of plants and how environmental conditions affect them.

2

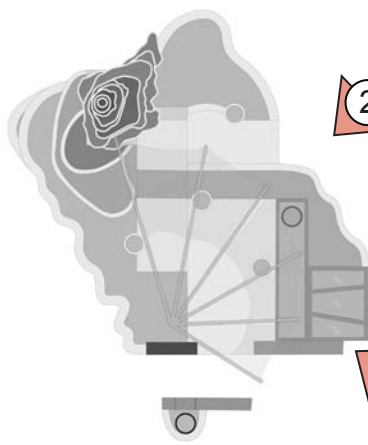
exhibit description

Atop a misty peak, ferns cling. Water seeps along cliffs and pools in a moist, shady woodland garden thick with pawpaws, magnolias, and white fringetrees. A stream passes beneath a metal catwalk supported by log rounds and emerges among cattail, corkscrew rush, and canna. Beneath the sweeping limbs and skin of a shade structure, taro and other sensitive exotics find shelter, some growing atop stone towers. Cold frames lean into the southern sun and protect lettuce, sage, dill, and dock. There are glimpses of the outside—through the stucco screen walls, past the living wall, and beyond the arms of sassafras and rhododendron. But why leave? Food, water, shelter, and beauty are all here.

1

introduction to show visitors

Aloha means more than hello and goodbye; something other than love—it's an exchange of life. Ancient Hawaiian's believed that the land, `āina, gave life and should be cared for and respected. Our exhibit reflects upon how ancient Hawaiians lived with the land and presents simple, attractive ways to protect natural resources.



view 1

Over the cold frame of the cultivated garden and under the shade structure toward the woodland garden.

view 2

From the exhibit exit toward through the rain garden.



ahupua'a

Ancient Hawaiians divided the land into strips that stretched from mountaintops to reefs off shore. Within these ahupua'a, residents got all the food, water, and other materials they needed to live. Using the ahupua'a as a guide, we divided our exhibit into three areas:

- Woodland garden
- Cultivated garden
- Rain garden

sustaining a life with the land

As island inhabitants, Hawaiians conserved natural resources for future generations. Our exhibit addresses a few ways we all can live like islanders:

- Use less fossil fuel by growing food at home year round
- Clean, harvest, and infiltrate rainwater
- Reduce waste, recycle, and reuse materials
- Remove invasive plants and replace with native or hardy plants

project credits

Faculty and Staff: Rob Kuper, Assistant Professor of Landscape Architecture; Michael LoFurno, Adjunct Assistant Professor of Landscape Architecture; Kathryn Reber, Acting Horticultural Supervisor ; Merrill Miller, Staff Horticulturist; Anne Brennan, Incoming Horticulture Supervisor. **Students:** Joyce Benson, Elizabeth Bieber, Ellen Biegert, Anthony Buscaino, Matthew Caucci, Phil Conte, Yinqi Dai, Angela Fleegle, Jacob Krieger, Timothy Lederman, Deirdre Lockman, Joseph Marker, Eric Molnar, Phillip Quenzer, Michael Smith, Loc Tran, Jacob Williams.



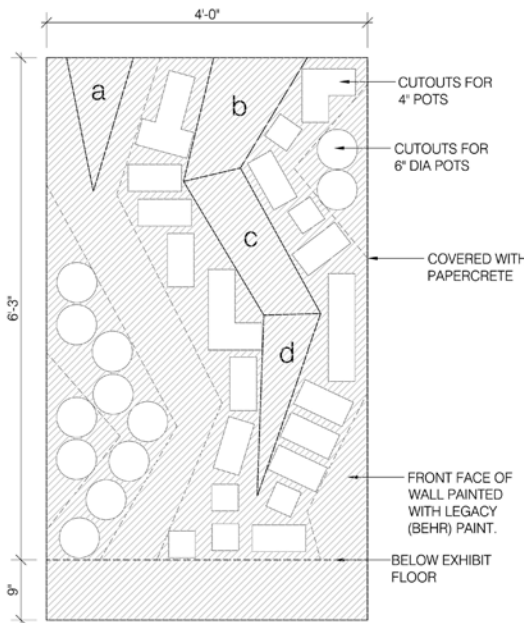
woodland garden

remove invasive plants; replace with native or hardy plants

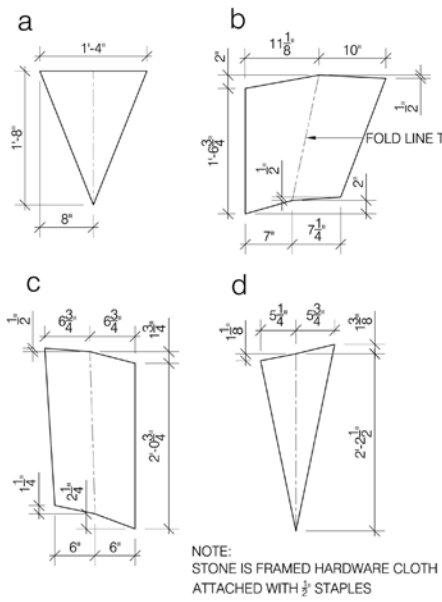
Redbuds, pawpaws, rhododendrons, and ferns were some of the plants included in the woodland garden. Each is native or hardy to the mid-Atlantic U.S. and looks tropical. Reclaimed lumber, chicken wire, and newspaper were recycled in the construction of an eighteen-foot high water feature that resembled a mountain.



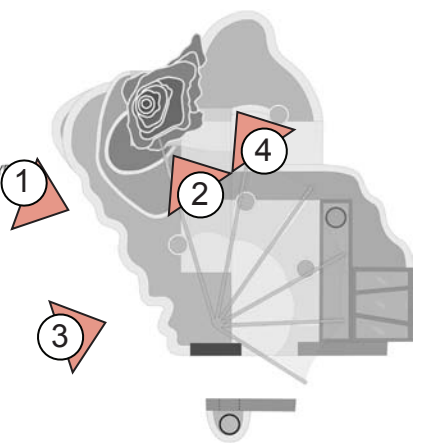
3



4 Green Wall Elevation



SCALE 1" = 1'-0"



- view 1**
Straw wattles and papercrete walls created planted slopes and terraces.
- view 2**
From atop the mountain, water misted, seeped, and trickled before running beneath the exhibit path.
- view 3**
Plant colors conveyed warmth and bright sunshine.
- view 4**
Beside the lowest mountain tier, the green wall juxtaposed natural and artificial forms.

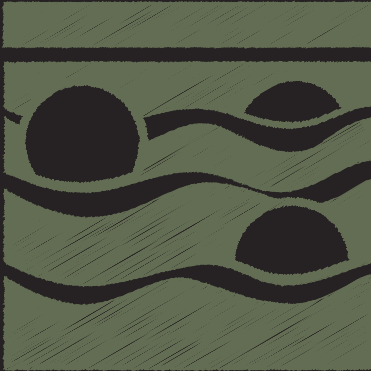
woodland garden



The forested mountains of ancient Hawaii teemed with a wide variety of insects and animals. To conserve resources and protect habitat, Hawaiians restricted who entered and what was taken.



Today, many plant species grow far away from their homeland. Some produce more seeds and offspring than native plants or grow more aggressively. Either way, forests become less diverse. Animals and insects have fewer preferred foods and places to find shelter.



Our exhibit's woodland garden includes plants that are native or hardy to the Mid-Atlantic states yet appear sub-tropical, and have culinary, medicinal, or ecological uses.



takeaway card
location

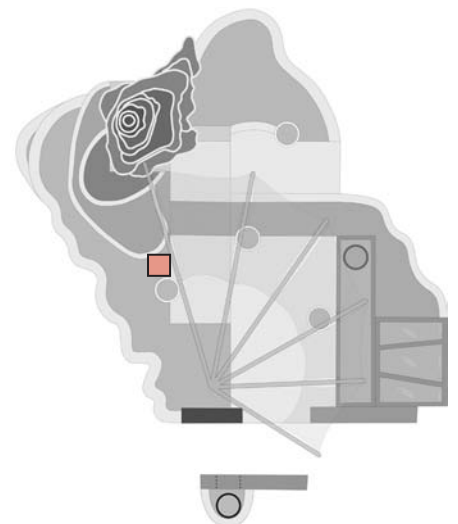
remove invasive plants; replace with native or hardy plants

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woodland garden interpretive sign

(16" w x 14" h)

This sign briefly implied how native or hardy plants may help recreate sacred, rich habitats in currently disturbed forests.



woodland garden

A **woodland garden** provides shade and a nutrient-rich soil for shrubs, ferns, and flowering ephemerals. It's also a good place for song birds, which nest and forage in the canopy.



scarlet tanager

To make a **woodland garden**, start by getting rid of invasive plants. Invasives produce more seeds and offspring than natives and grow more aggressively. Spraying invasives with a glyphosate herbicide like Roundup® is considered by many to be the best method of removal.



woodland invaded with garlic mustard

Next, plant natives or hardy substitutes. When selecting the plants, keep the adage **“right plant, right place”** in mind. Determine whether the area is usually wet or dry, shady or sunny, and windy or calm. Finally, test the soil for texture and pH.



healthy woodland floor

plant list

<i>Aquilegia canadensis</i> 'Little Lanterns'	Columbine
<i>Asimina triloba</i>	Pawpaw
<i>Calycanthus floridus</i> 'Michael Lindsay'	Carolina Allspice
<i>Carex pensylvanica</i>	Sedge
<i>Cercis canadensis</i> 'The Rising Sun'	Redbud
<i>Cornus sericea</i> 'Bailey'	Red-Twigged Dogwood
<i>Dryopteris filix-mas</i>	Male Fern
<i>Dryopteris marginalis</i>	Marginal Wood Fern
<i>Erythronium americanum</i>	Trout Lily
<i>Fothergilla gardenii</i>	Dwarf Witchhazel
<i>Kalmia latifolia</i> 'Minuet'	Mountain Laurel
<i>Magnolia virginiana</i>	Sweet Bay
<i>Matteuccia struthiopteris</i>	Ostrich Fern
<i>Polygonatum biflorum</i>	Great Solomon's Seal
<i>Polypodium virginianum</i>	Rockcap Fern
<i>Polystichum acrostichoides</i>	Christmas Fern
<i>Rhus typhina</i> Tiger Eyes™	Staghorn Sumac
<i>Sassafras albidum</i>	Sassafras
<i>Uvularia perfoliata</i>	Bellwort

invasive woodland plants



Norway Maple
Acer platanoides



Empress Tree
Paulownia tomentosa



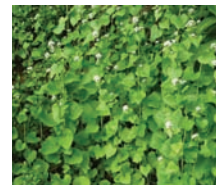
Tree-Of-Heaven
Ailanthus altissima



Japanese Honeysuckle
Lonicera japonica



Mile-A-Minute
Polygonum perfoliatum



Garlic Mustard
Alliaria petiolata

aloha`āina

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front

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back

woodland garden takeaway card

(4" w x 9" h)

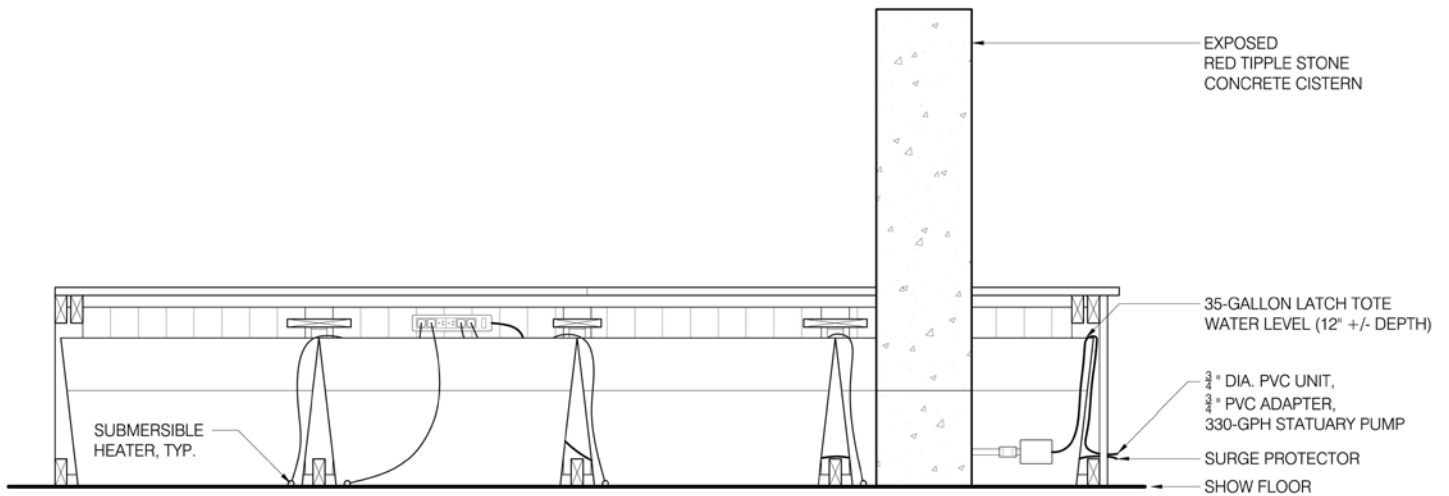
Why and how to create a woodland garden at home can be found on the front. The back lists some of the plants included in exhibit woodland garden, and shows photos of common invasive exotic plants in the region.



cultivated garden

grow food at home year-round

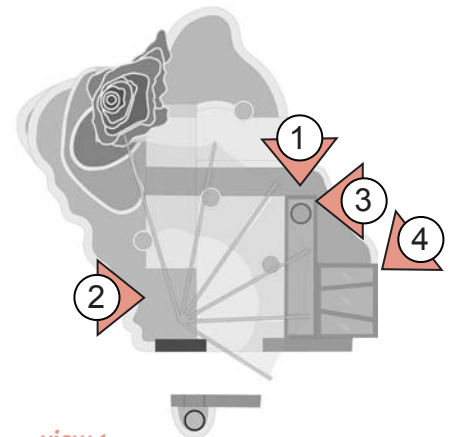
Located within the taro planter, an overflowing five-foot high concrete cistern audibly signaled the harvest and reuse of rain water to grow food. The “controlled” environment beneath the shade structure permitted our limited use of exotic plants like taro. The cold frame further illustrated how temperature can be controlled in order to grow food year-round.



NOTE:
 POSITION CISTERN ONTO SHOW FLOOR HORIZONTALLY. SLIDE CISTERN INTO REAR END LATCH TOTE AND LIFT VERTICALLY. MAKE SURE CISTERN IS LEVEL.
 POSITION THE REST OF THE LATCH TOTES ACCORDINGLY.
 LIFT TARO PLANTER ABOVE CISTERN AND LATCH TOTES, AND LOWER IT WHILE FITTING EVERYTHING INTO PLACE.
 ATTACH SURGE PROTECTOR TO THE INTERIOR VERTICAL MUSHROOM WOOD CLADDING WITH $\frac{3}{8}$ " TRUSS HEAD SCREWS.
 PLACE ONE SUBMERSIBLE HEATER INTO EACH LATCH TOTE AND PLUG ELECTRICAL CORD INTO SURGE PROTECTOR.
 ATTACH $\frac{3}{8}$ " PVC ADAPTER TO $\frac{3}{4}$ " PVC UNIT AND 330-GPH STATUARY PUMP.
 FILL LATCH TOTES WITH WATER.
 PLACE TARO WITH REGARD TO THE OVERALL COMPOSITION. JUDGE WHETHER SOME NEED TO BE PROPPED UP. IF SO, USE BELGIUM BLOCKS ACCORDINGLY.
 APPLY BLACK POND DYE TO WATER UNTIL POTS AND BELGIUM BLOCKS ARE CONCEALED.
 CONNECT PUMP ELECTRICAL CORD AND SURGE PROTECTOR ELECTRICAL CORD TO EXTENSION CORD BELOW CRUSHED ASPHALT LANDING.

3 TARO PLANTER SIDE SECTION FROM SHOW FLOOR SHOWING ELECTRICAL

SCALE: 1" = 1'-0"



view 1

Concrete cistern within the raised taro planter. An "Ahu" tower stands beyond. (see "rain garden" description).

view 2

The materials and form of the shade structure were inspired by sails and trees.

view 3

Cistern and taro planter construction drawing.

view 4

Locally harvested clam shells served as ornamental handles on the cold frame doors.

cultivated garden



Where soils and rainfall were good, ancient Hawaiians harvested rainwater, tilled and terraced the earth to grow sweet potato, taro, and sugar cane year-round.

Simple farming methods that moderate changes in temperature, sunlight, and wind exposure make year-round gardening at home possible.

The shade structure, cold frames, and taro planter are a few basic examples of how to do it.

On a large scale, growing more food at home could decrease the energy needed to grow and transport it there.

takeaway card
location

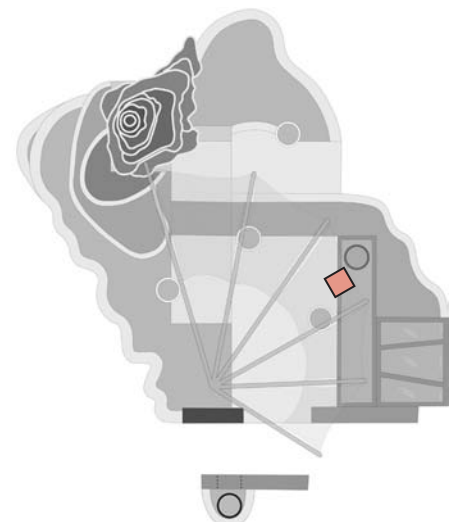
grow food at home year-round

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cultivated garden interpretive sign

(16" w x 14" h)

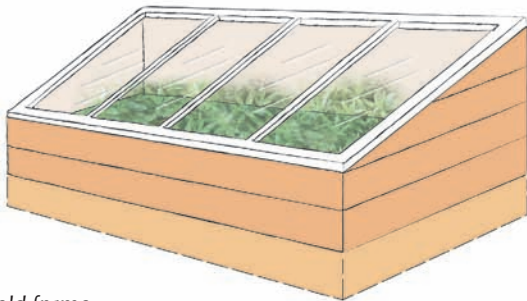
Visitors read that practicing longstanding, elementary agricultural methods at home could have personal, social, and ecological benefits.



cultivated garden

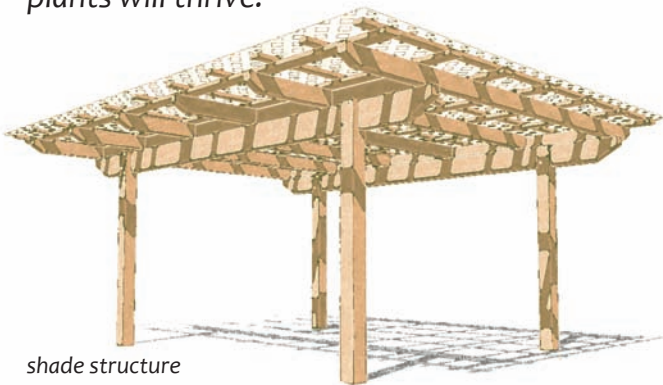
Grow plants outside longer than you might think! Use a **cold frame** or **shade structure**.

A **cold frame** is simple: just four walls and a transparent lid to trap heat. The walls can be made of untreated wood, concrete, or even hay bales. An old window works well as a lid, but you can also use acrylic panes or plastic sheeting tacked to a frame.



cold frame

A **shade structure** is simple too: lattice sheets or permeable cloth placed atop poles or posts. Underneath, the wind is calmer, the air is cooler, and water in the soil will evaporate slower than outside. Sensitive plants will thrive!



shade structure

plant list

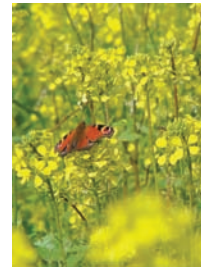
<i>Alocasia</i> 'Calidora'	Elephant's Ear
<i>Anethum graveolens</i>	Dill
<i>Beta vulgaris</i> 'Bull's Blood'	Beet
<i>Brassica juncea</i> 'Ruby Streaks'	Mustard Greens
<i>Colocasia esculenta</i> 'Fontanesii'	Taro
<i>Foeniculum vulgare</i> 'Purpureum'	Bronze Fennel
<i>Lactuca sativa</i> 'Dancine'	Lettuce
<i>Origanum</i> 'Hot and Spicy'	Oregano
<i>Rumex sanguineus</i> var. <i>sanguineus</i>	Bloody Dock
<i>Salvia dorisiana</i>	Fruit-Scented Sage
<i>Salvia officinalis</i> 'Purpurascens'	Purple Sage
<i>Thymus</i> 'Argenteus'	Silver Thyme



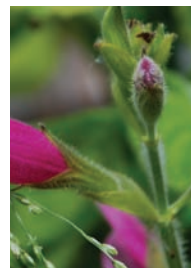
Silver Thyme



Bloody Dock



'Ruby Streaks'
Mustard



Fruit-Scented Sage



Sage



Fennel

aloha`āina

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front

cultivated garden takeaway card

(4"w x9"h)

Visitors learned the definition and function of a cold frame and shade structure on the card front. A list of all plants included in the cultivated garden can be found on the back, along with some photos.

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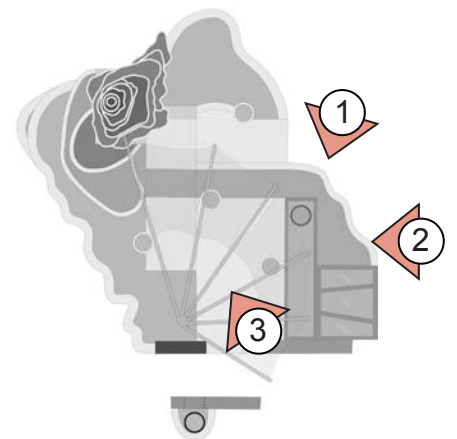
back



rain garden

clean, harvest, and infiltrate rainwater

Water condensing, trickling, and running from the mountain water feature gathered in the rain garden. Including coir logs, along with native or hardy plants that tolerate moist to saturated soils, recalled stream and wetland restoration. Hexagonal pavers and recycled crushed asphalt demonstrated paving materials that infiltrate rain water rather than create runoff.



view 1

Through the rain garden toward the exhibit entrance.

view 2

Coir logs were used to disguise plant pots, retain mulch, and evoke the presence of water.

view 3

Five ahu towers, each four or six feet high, marked exhibit areas. Natural materials from campus were included within.

rain garden



In ancient Hawaii, families with lots of freshwater, or wai, were wealthy. Why? There was just so little of it.

Although water covers much of Earth, we can use only a small percentage. Using as little as possible helps, but more can be done.

In the rain garden, crushed asphalt and pavers let rain seep into the ground. Closely spaced, upright plants slow and clean rainwater that runs off paved areas. The natural materials of straw wattles and coir logs trap silt and sediment before it enters streams.

takeaway card
location

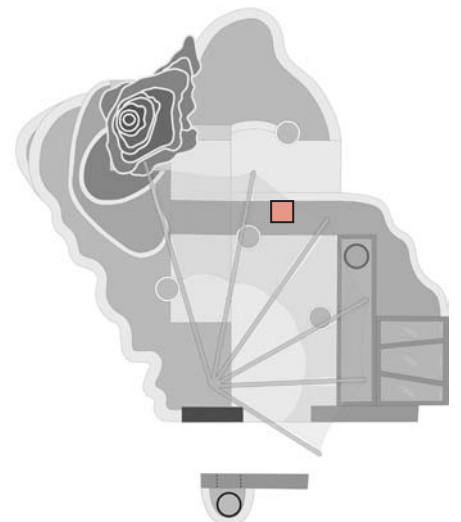
clean, harvest, and infiltrate rainwater

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rain garden interpretive sign

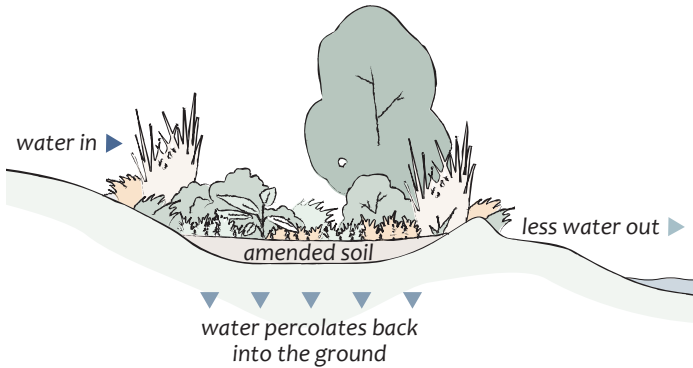
(16" w x 14" h)

Here we recalled how precious water is and has been in peoples' lives, and suggested simple methods of infiltrating, cleaning, and slowing rain water.

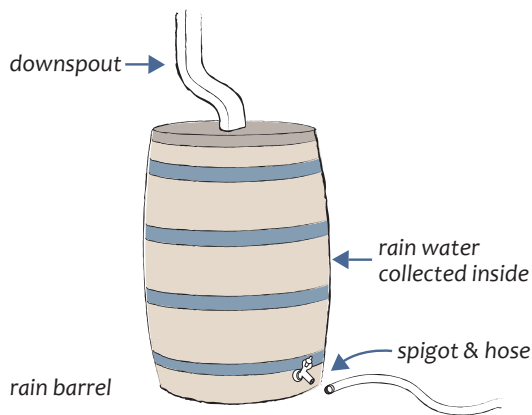


rain garden

Rain water leaving downspouts, gutters and paved surfaces can cause erosion and contribute to flooding. A **rain garden** or **rain barrel** can help solve these problems.



A low point in your yard can become a **rain garden**. Amending the soil with gravel and/or sand to promote drainage may be necessary. Choose plants that tolerate standing water.



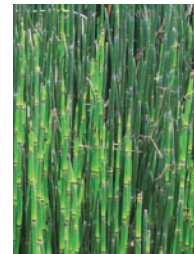
If you have limited space, try harvesting rain water. Connect your downspout to a **barrel** and use your faucet less.

plant list

- | | |
|----------------------------------|---------------------|
| <i>Acorus calamus</i> | Sweet Flag |
| <i>Carex muskingumensis</i> | Palm Sedge |
| <i>Equisetum hyemale</i> | Scouring Rush |
| <i>Hydrocotyle ranunculoides</i> | Floating Pennywort |
| <i>Juncus effusus</i> | Common Rush |
| <i>Juncus inflexus</i> 'Afro' | Corkscrew Rush |
| <i>Pontederia cordata</i> | Pickerel Weed |
| <i>Sarracenia alata</i> | Yellow Trumpets |
| <i>Sarracenia</i> | |
| 'Dana's Delight' | Hybrid Pitcherplant |
| <i>Sarracenia flava</i> | Yellow Pitcherplant |
| <i>Sarracenia leucophylla</i> | White Trumpet |
| 'Tarnok' | Pitcherplant |
| <i>Sarracenia psittacina</i> | Parrot Pitcherplant |
| <i>Sarracenia x moorei</i> | Hybrid Pitcherplant |
| <i>Saururus cernuus</i> | Lizard's Tail |
| <i>Thalia dealbata</i> | Hardy Canna |
| <i>Typha latifolia</i> | Broadleaf Cattail |



Sweet Flag



Scouring Rush



Broadleaf Cattail



Lizard's Tail



Pickerel Weed



Pitcherplant

aloha`āina

2012 Philadelphia International Flower Show

front

rain garden takeaway card

(4" w x 9" h)

On the card front, the function and components of rain gardens and barrels are defined. A list of all plants included in the exhibit rain garden can be found on the back, along with some photos.

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back