

WaterSmart Landscape MAKEOVER SERIES



CLASS 2 SHAPING SPACES





**SAN DIEGO COUNTY
WATER AUTHORITY**

Shaping Spaces

Housekeeping:

- Breaks: mid-class, after lab
- Restrooms (please respect closed-off areas)
- Please silence your cell phones
- If you can't attend, contact us!

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WaterSmart Landscape MAKEOVER SERIES

Let's Get Started

Watersheds, Plot Plan,
Scale, Soil,
Watersheds & Site
Evaluation



Make it Happen

Irrigation Design,
Turf Removal,
Implementation &
Maintenance

Shaping Spaces

Landscape Design
Fundamentals,
Plant Selection &
Functional Design

Design Coaching

Planting, Irrigation
and LID Plans

WaterSmart Landscape MAKEOVER SERIES

CLASS

2

Shaping Spaces

Learning Objectives

Landscape Design Factors

- Curb appeal
- Functional design
- Stormwater design
- Shape your space
- Aesthetic concepts
- Place your plants

Plant Selection

Drawing Plants To Scale

Sustainable Landscape Elements



You should have read...

- A Homeowner's Guide to a WaterSmart Landscape*** Steps 1-4

Hopefully you conducted...

- A soil drainage test
- An LID analysis based on your L-2 base plan
- A site analysis and complete the questionnaire

Of course you identified...

- Your star rating   

Did you check out...

- SoCalWaterSmart.com for rebates and incentives?

Did you find your WaterSmart lifestyle when you watched...

- Videos On Demand episodes 1 through 8?



Please introduce yourself...

- **Name**
- **Star rating**
- **New insights**

Glad you're back!

WaterSmart Landscape MAKEOVER SERIES

CLASS

2

Class 2 Objectives

Homework Review

Star Rating Introductions

Step 3 (continued)

Site Analysis

Step 4

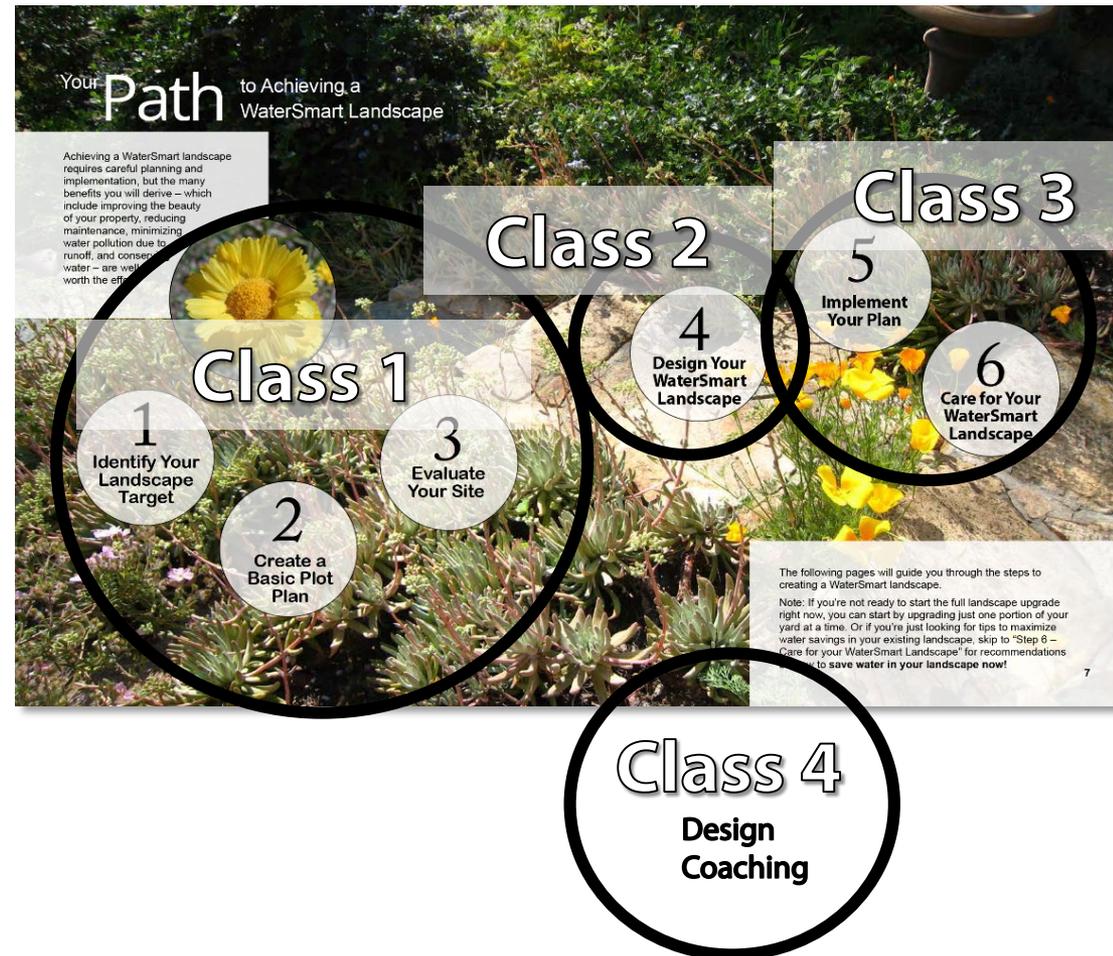
Design Your WaterSmart Landscape

Background Concepts

Functional Design

Plant Selection

Putting It All Together



Landscape Design & Other Design Disciplines

Similarities

- ✓ Same basic elements & principles

Differences

- ✓ Three-dimensional
- ✓ Living
- ✓ Seasonal & ever changing

Landscape Design & Other Design Disciplines

Topics:

- ✓ Design Solutions
- ✓ How will you use your space?
- ✓ Low Impact Development (LID) stormwater capture
- ✓ Form follows function / bubble diagram
- ✓ Aesthetics
- ✓ Plant selection
- ✓ Drawing plants in scale

Concepts for Landscape Design



Design Solutions

Curb Appeal: Billboard Effect

- Groups or drifts of plants catch the moving eye
- High contrast
- Simple



Design Solutions

Curb Appeal: Wayfinding

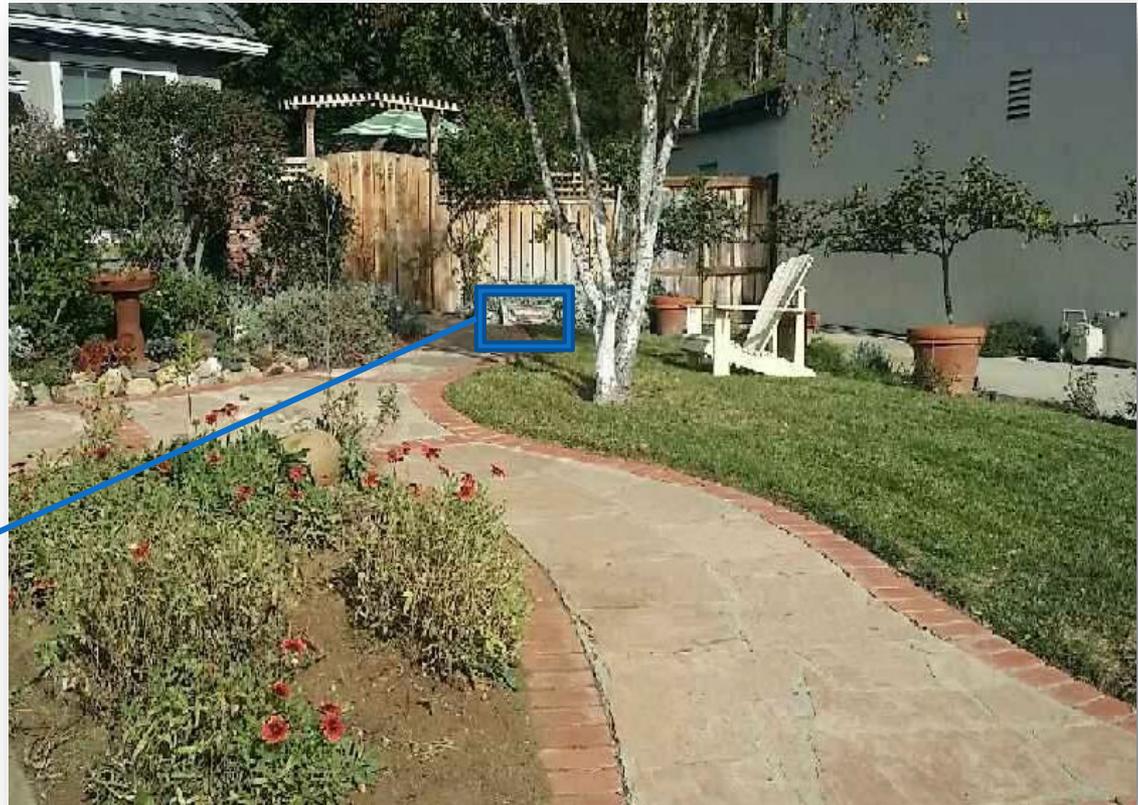
- Direct line of sight or visual cues
- Generous path welcomes guests
- No over grown areas



Design Solutions

Curb Appeal: Wayfinding

- Direct line of sight or visual cues
- Generous path welcomes guests
- No over grown areas

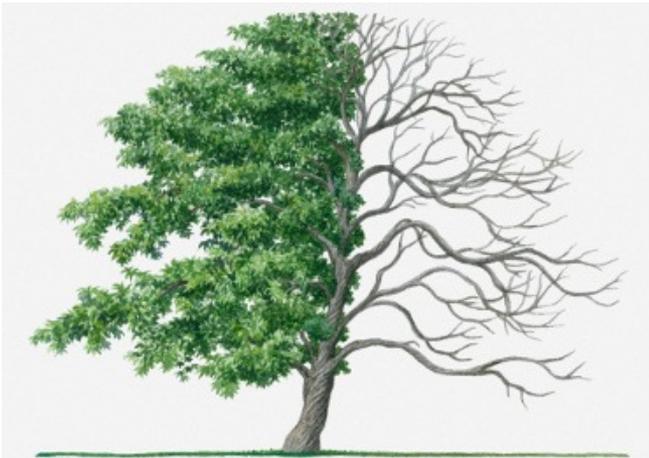


Design Solutions

Landscape Functions

Climate Mitigation

- Deciduous / Evergreen
- View vs. Temperature
- Avoid large trees close to structures in fire hazard areas



Design Solutions

Landscape Functions

Security

Thorns as a deterrent



Design Solutions

Landscape Functions

Privacy

Screen ugly views or create privacy

Pick a cultivar that doesn't need frequent pruning



Podocarpus macrophyllus maki
Shubby Yew



Pittosporum tenuifolium
'Silver Sheen'

Explore landscape design as two parts:

- 1. Shaping Spaces** - how will you use the space?
 - Space arrangement, location of major elements
 - Design in 3D
 - Form follows Function
 - Aesthetics
- 2. Planting Design** - how the space is filled with plants for effective design.

Functional Design: Shaping Spaces

How will you use your space?

Is your space an **outdoor room**, a **passageway**, or a **garden**?



Functional Design: Shaping Spaces

Outdoor Rooms

Walls do not need to be solid to create sense of enclosure

Floors can be flagstone, decomposed granite, mulch or groundcover

Ceilings can be canopies or arbors



Functional Design: Shaping Spaces

Passageways

- Way-finding or easy to follow
- Open path for curb appeal
- “Peek-a-view” for mystery



Functional Design: Shaping Spaces

Passageways

Way-finding or
easy to follow



Functional Design: Shaping Spaces

View Garden

- Enjoy from a distance
- Treat as a canvas
- Include paths for maintenance & strolling



Functional Design: Shaping Spaces

View Garden

- Look for distant views to “borrow” and add to your landscape



Functional Design

Design in 3D

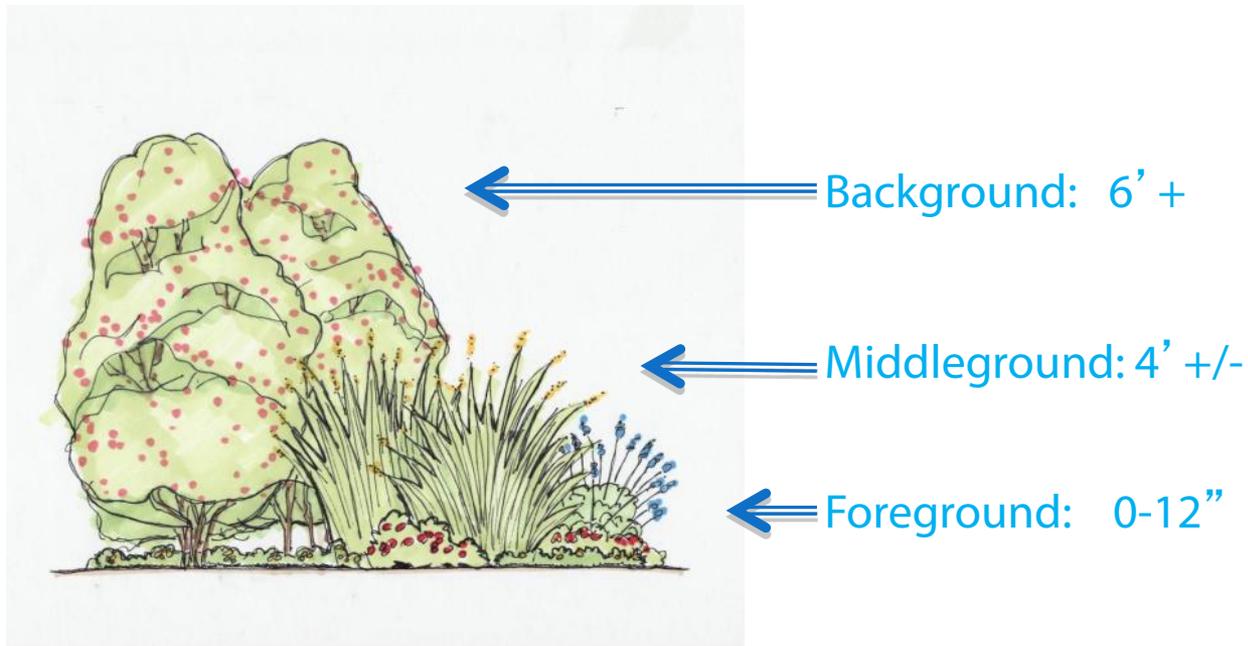
Create vertical dimension with

- Plant height contrast - trees or tall shrubs with low plantings
- Features - walls, fences, and arbors



Shaping Spaces Design in 3D

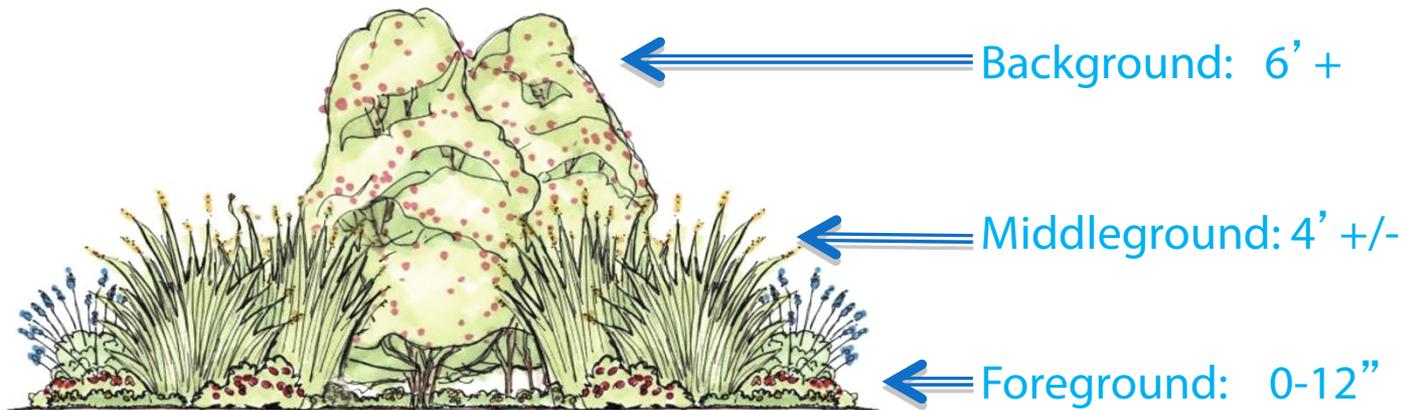
Create vertical dimension with layered planting



Functional Design

Design in 3D

Create vertical dimension with layered planting for islands



Functional Design

Low Impact Development (LID) Stormwater Design



Low Impact Development (LID)

First Flush Capture – A source of FREE water for your yard!

Non-permeable surfaces

- roofs
- concrete
- asphalt
- grouted pavers

Semi-permeable surfaces

- decomposed granite
- cobble
- gravel
- compacted soil

Permeable surfaces

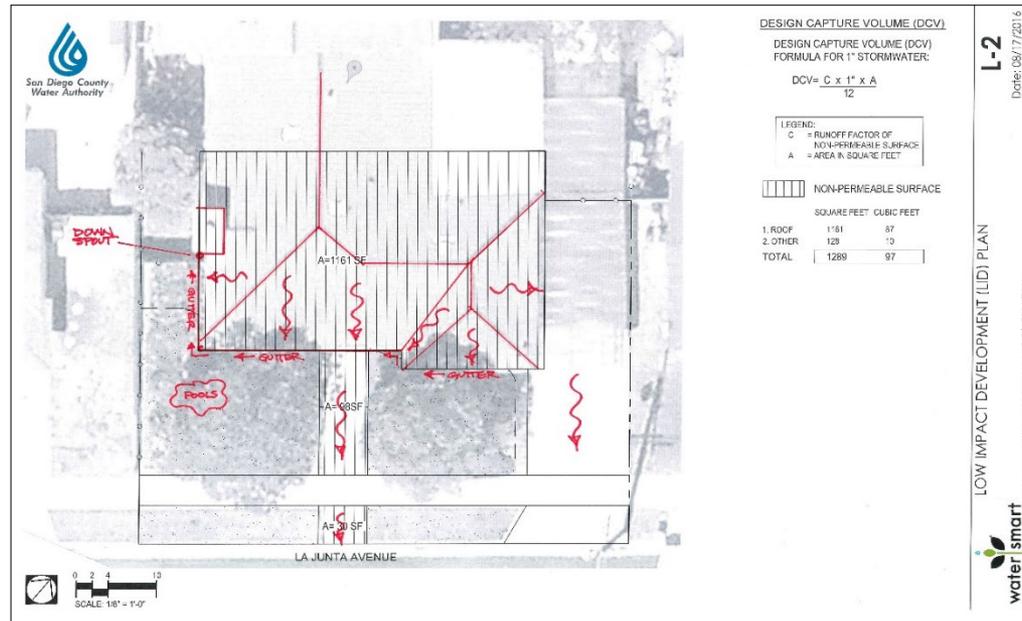
- landscape areas
- amended or mulched soils



Low Impact Development (LID)

How much runoff water do I plan for? What landscape features hold water to infiltrate into the soil?

- Refer to your notes on your LID Base Plan (L-2)



How can water capture work for you?

Question #1:

How much water do I plan for?

Determine your collection area

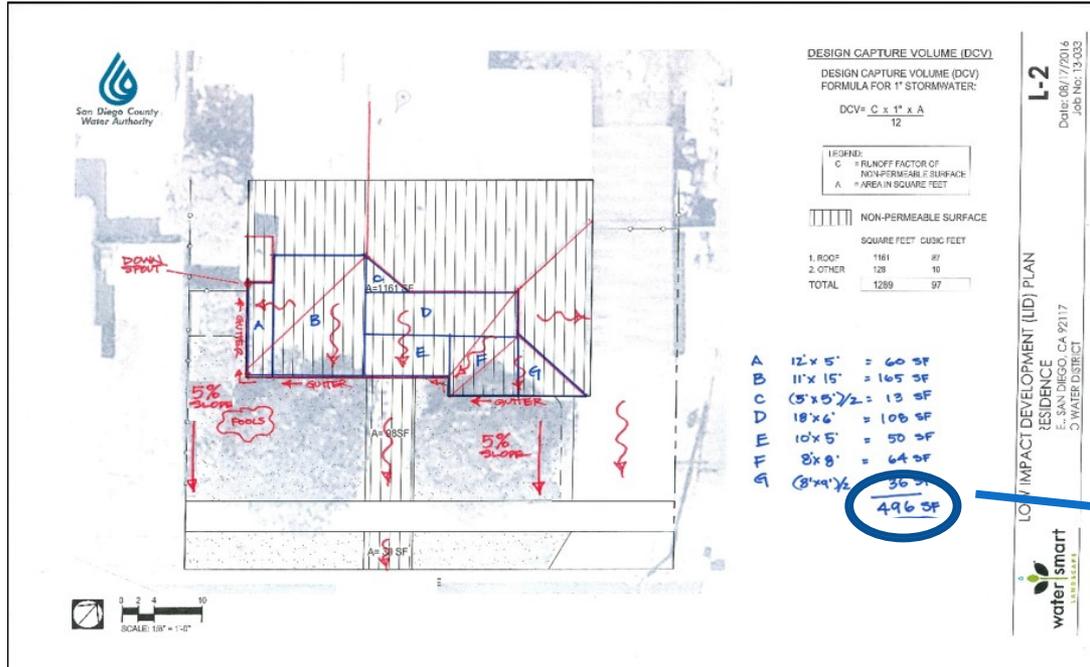
Question #1: How much water do I plan for?

- Define your storm water collection area - what makes sense for your project?
- Break the collection areas into geometric shapes



Question #1: How much water do I plan for?

- Calculate the area of each shape and total



496 SF
Area of
Collection

Determine the volume of water to be collected

Gallons Collected

$$1'' \text{ (Rainfall)} \times \text{Area of Collection} \times 0.62 = \text{Gallons}$$

(0.62 is a constant to convert SF inches into gallons)

Convert Gallons to CF needed to retain water

$$\text{Gallons} \div 7.48 = \text{Cubic Feet (CF)}$$

First Flush Techniques: Pitfalls & Problems

Setbacks for infiltration areas at least:

- 5' from foundations
- 10' from other buildings
- 3' from hardscape

Seek professional help:

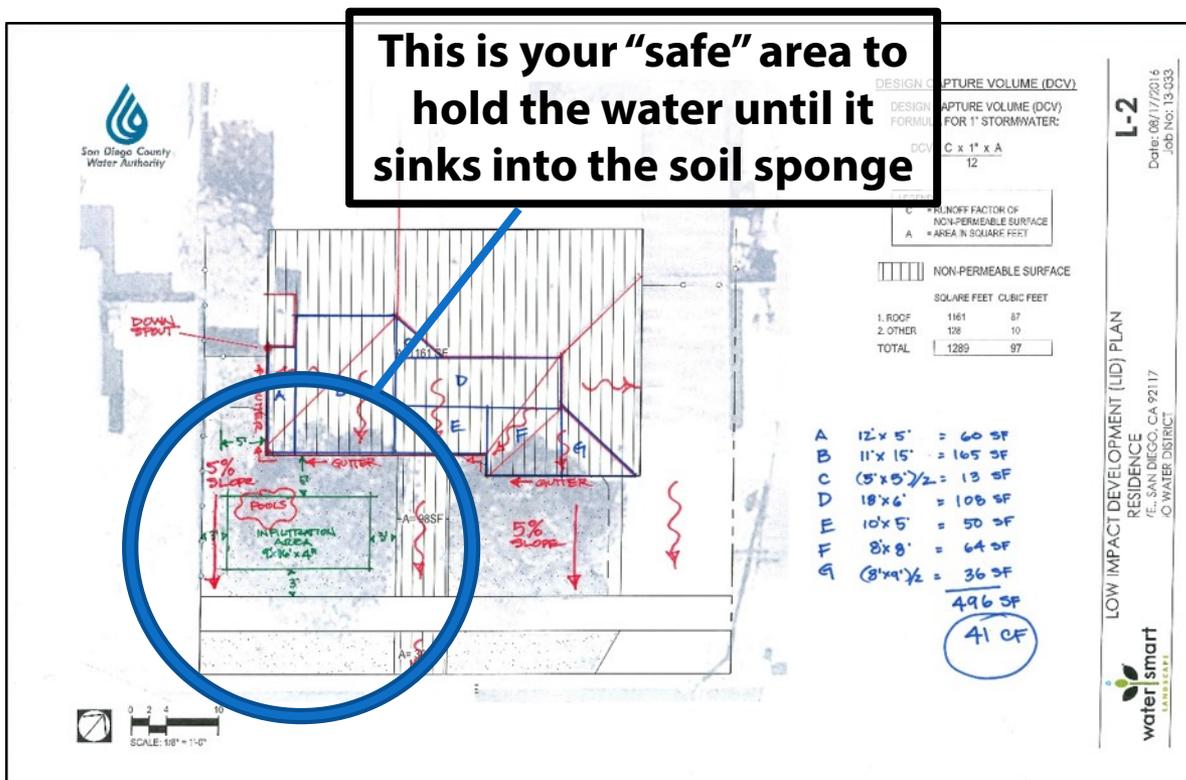
- Expansive clay soil
- Poor percolation



Question #2: Where can I store that water?

Draw setback lines for infiltration areas:

- 5 feet from any building foundation and property lines
- 3 feet from an impermeable surface
- No more than 12" below finish grade

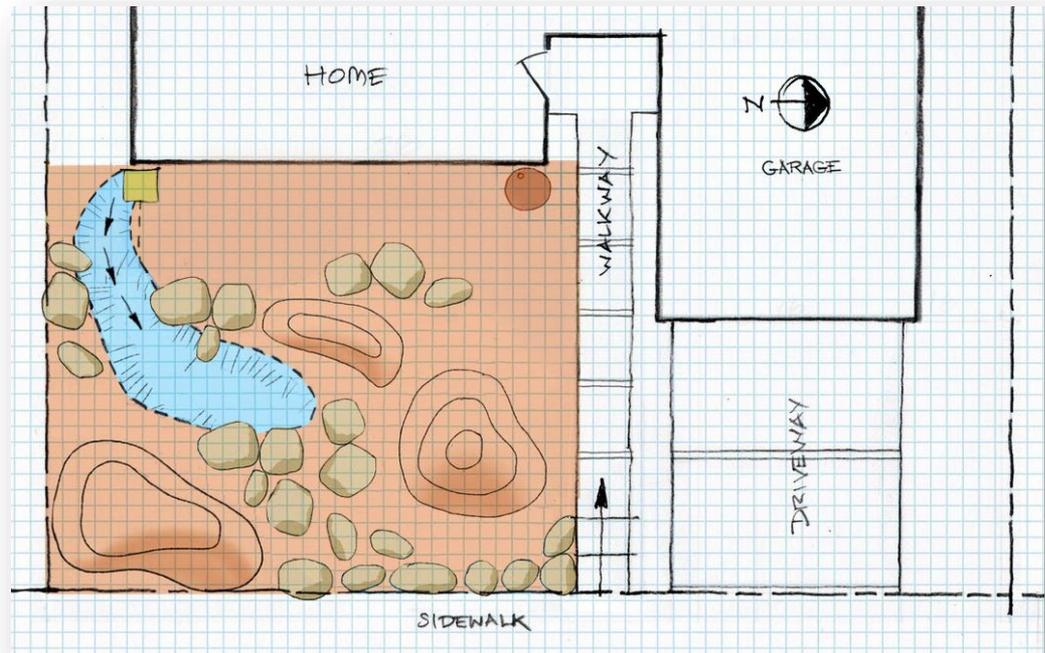


First Flush Capture Techniques

The goal is to *keep rainwater on site*

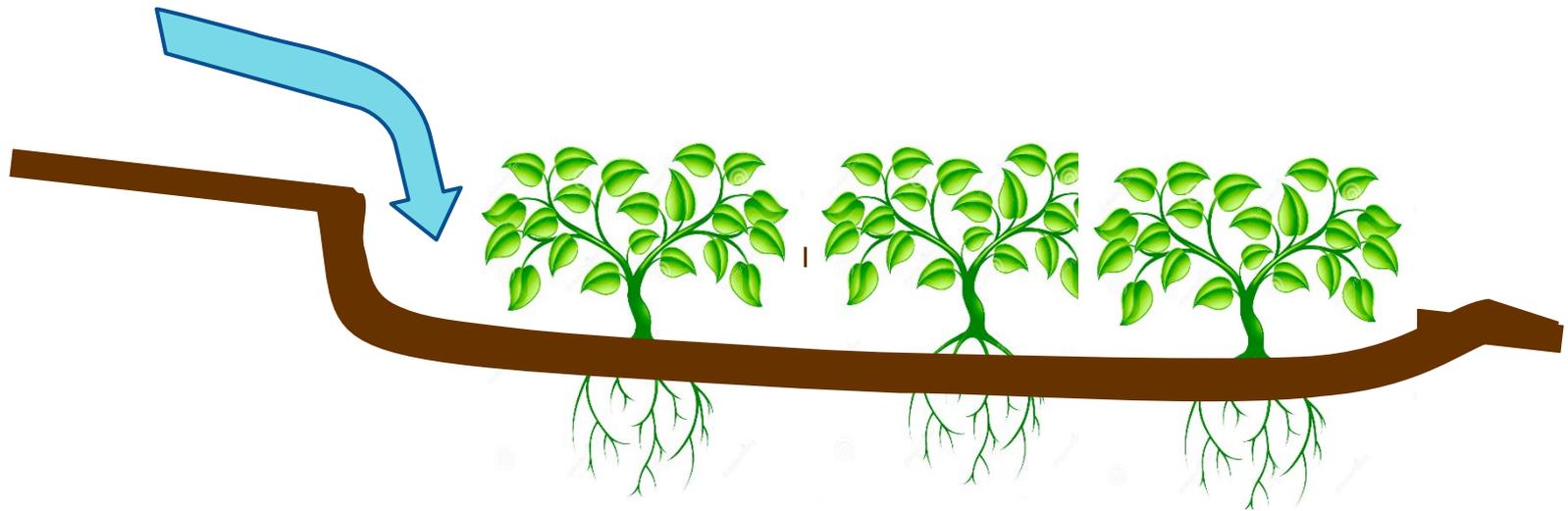
Slow-Store-Spread-Sink

- **Slow** down the speed of the flow
- **Store** in basins
- **Spread** over wider area
- **Sink** into healthy soil



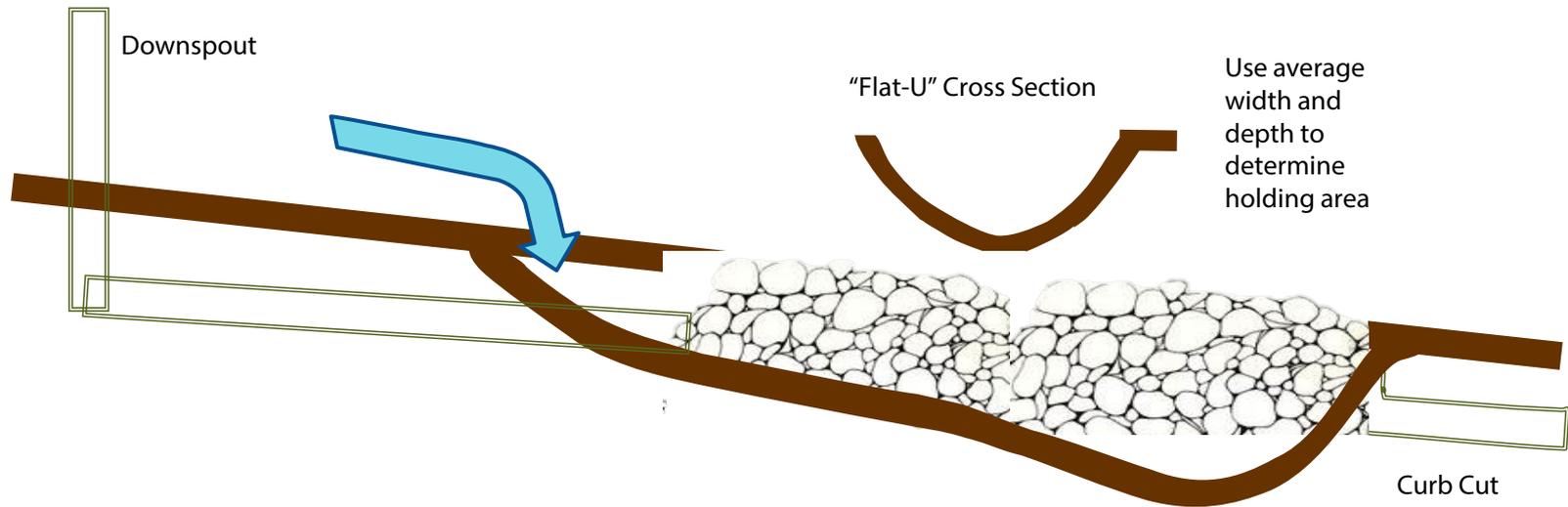
Basin Cross Section

Basin 14' long x 12' wide x 4" deep holds 50 CF

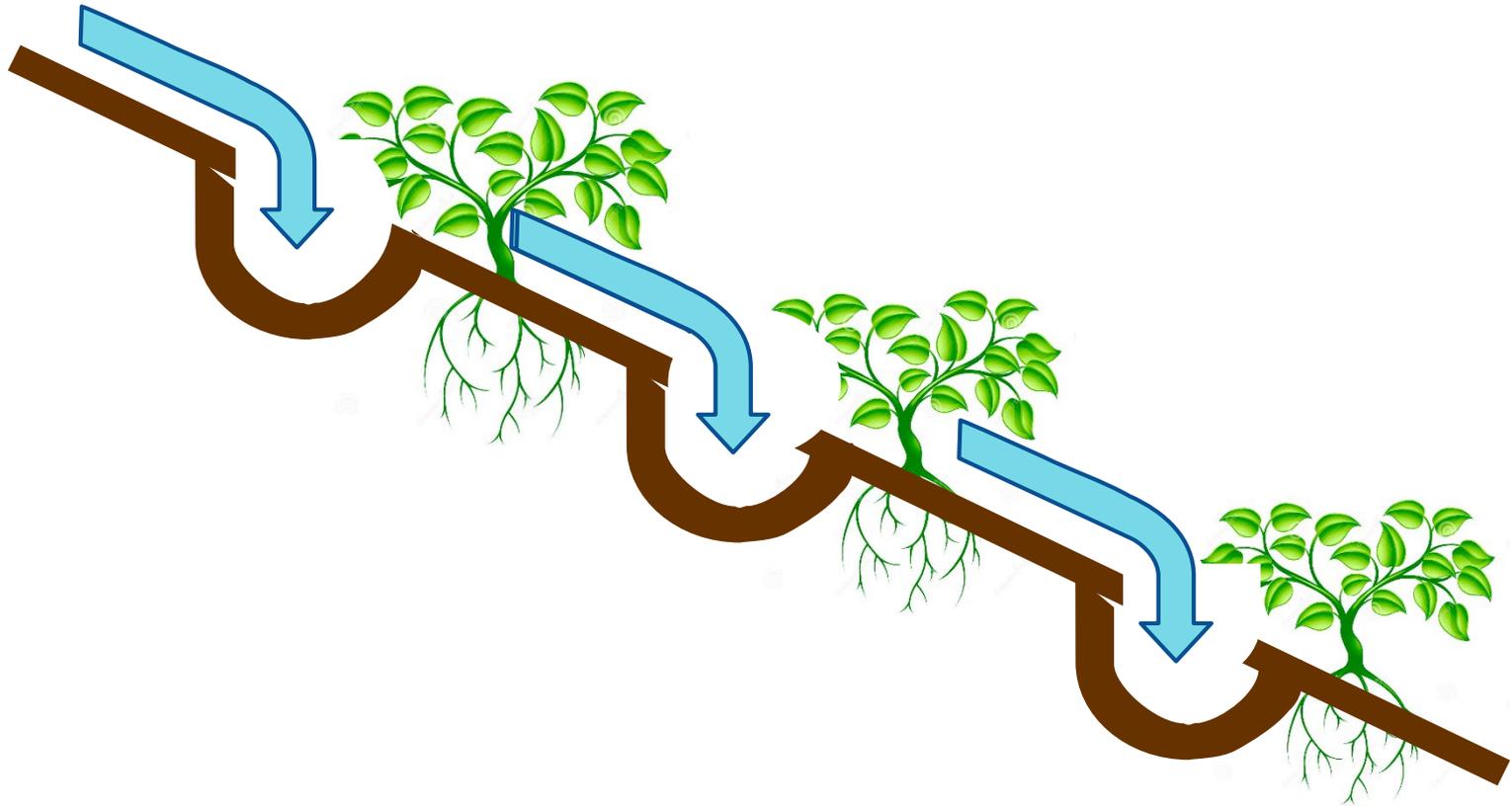


Swale or Dry Stream Cross Section

Swale: 30' long x 3.5' wide x "V" cross section: 1' deep in center holds 50 CF



Slopes & Hillside Cross Section



First Flush Techniques

Dry Stream



Infiltration Trench



First Flush Techniques



Cisterns



Dry Well

First Flush Techniques: Rain Barrels

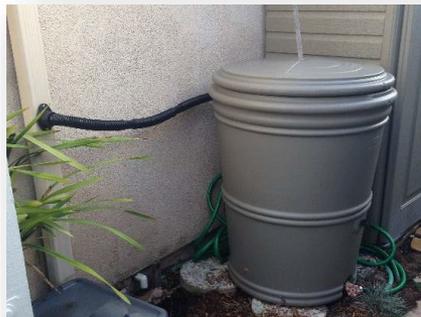
- Plan for overflow to protect foundation
- Check local agencies for current rain barrel & cistern incentives
- First Flush from 1,000 SF roof, 1.0" rain event is 83 CF
 - ✓ Requires **eleven** 55 gallon rain barrels



Question #2: Where can I store that water?

- Determine the CF of your method(s)

**Length x
Width x
Depth = CF**
Note: All
measurements are in
feet, not inches



Functional Design

Form Follows Function

How will the space be used?

What activities will occur there?

- Active uses: cooking, eating, entertaining, sports, play, pool, pets, food
- Passive uses: resting, meditation, viewing

Does the current layout “work” or does it need to change to be more functional?

Lose the bed lines!

- Don't think of your planting bed as a separate area...plan the entire space!



Functional Design

Form Follows Function

Functional Spaces & Hardscape

Create a Functional Bubble Plan

Think...

- How the space **could be** used, **not** how it **IS** used.
- Will it be an outdoor room, garden or pathway?
- Do you want add
 - Seating areas?
 - Pathways through planting “islands”?
 - Meander through your yard/slope with a circular route?



Functional Design

Form Follows Function

Functional Spaces & Hardscape

Create a Functional Bubble Plan

Think...How the space **could be** used, **not** how it **IS** used.



Functional Design

Form Follows Function

Functional Spaces & Hardscape

Create a Functional Bubble Plan

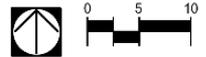
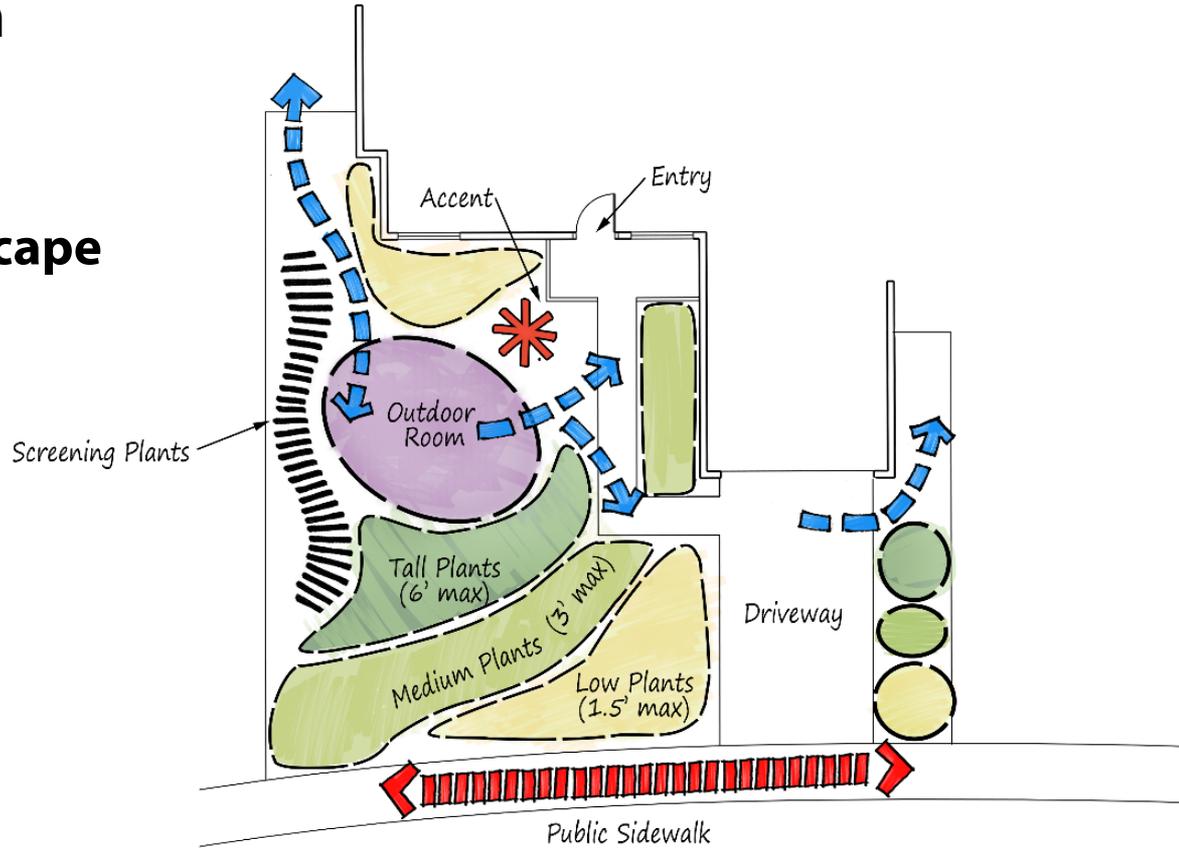
Think...How the space **could be** used, **not** how it **IS** used.



Functional Design Form Follows Function

Functional Spaces & Hardscape

Is it an outdoor room?

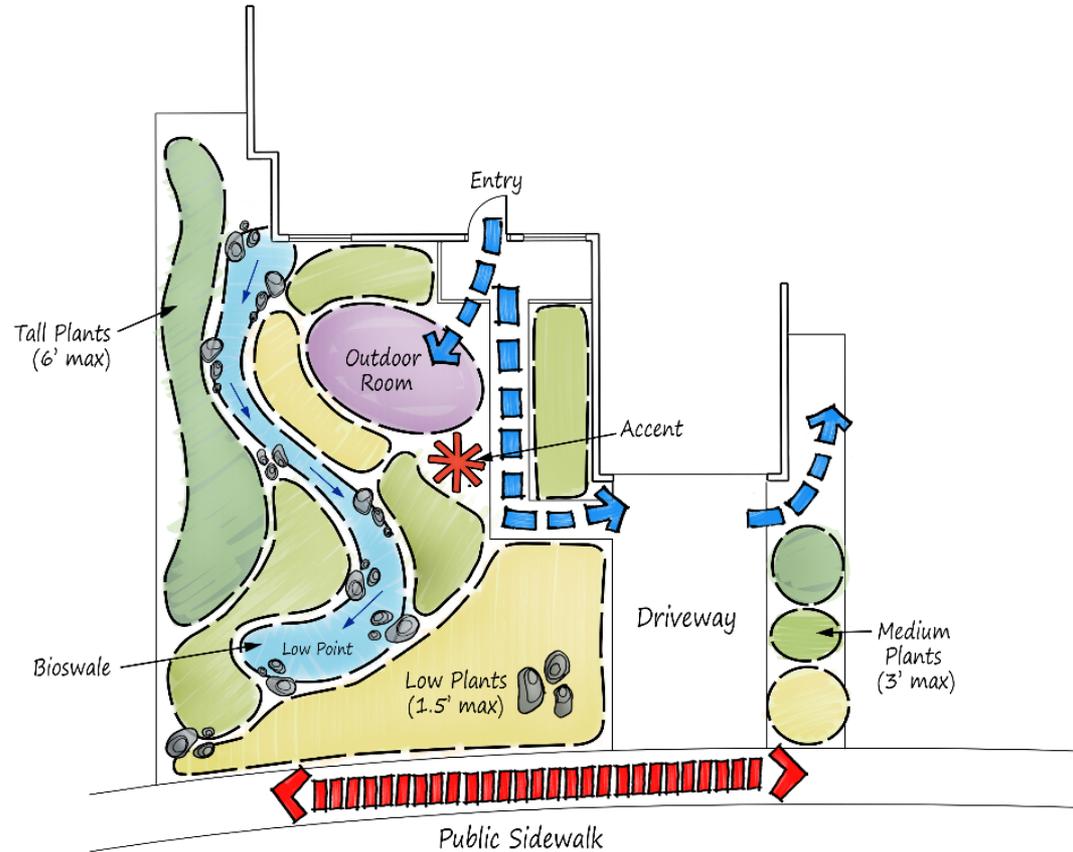


Functional Design

Form Follows Function

Functional Spaces & Hardscape

Is it an outdoor room with a dry stream bed for **LID**?

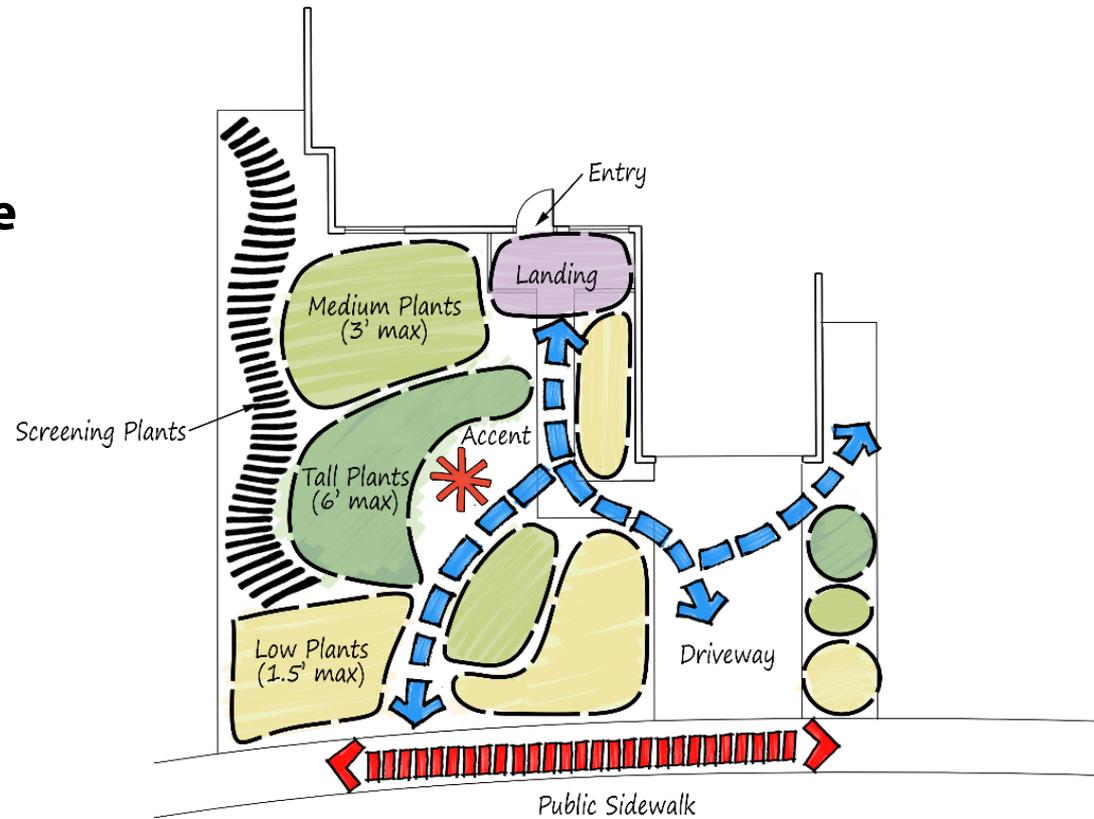


Functional Design

Form Follows Function

Functional Spaces & Hardscape

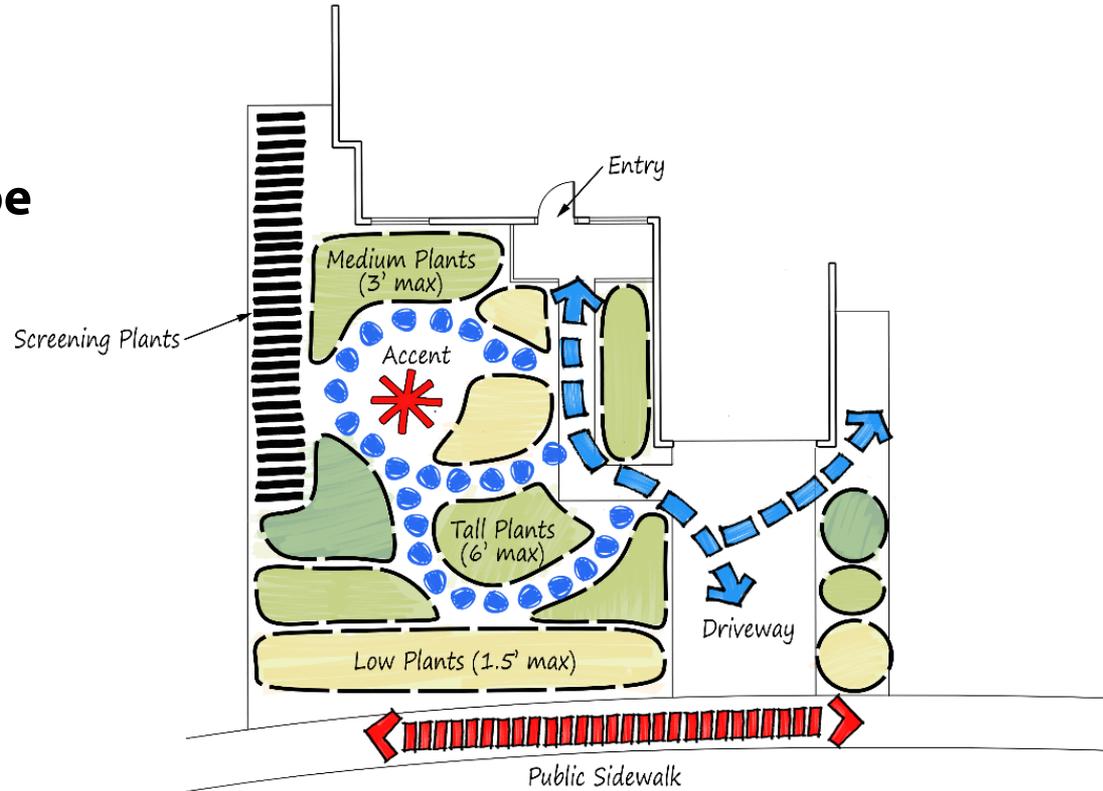
Is it a passageway?



Functional Design Form Follows Function

Functional Spaces & Hardscape

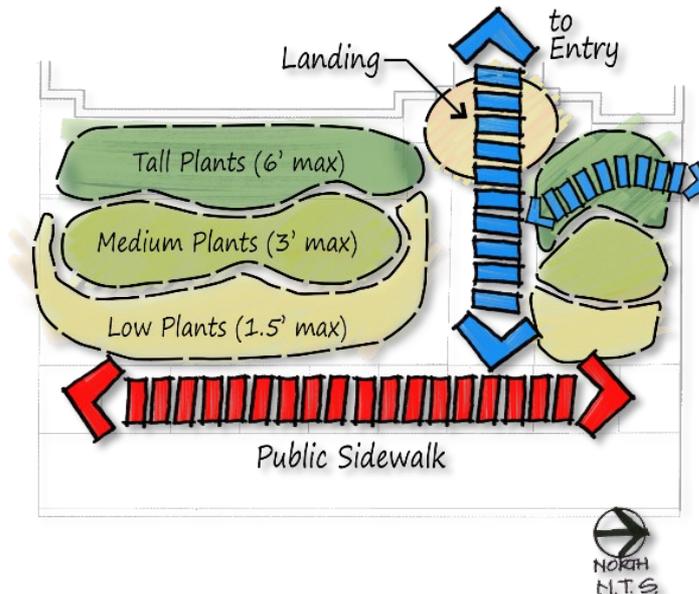
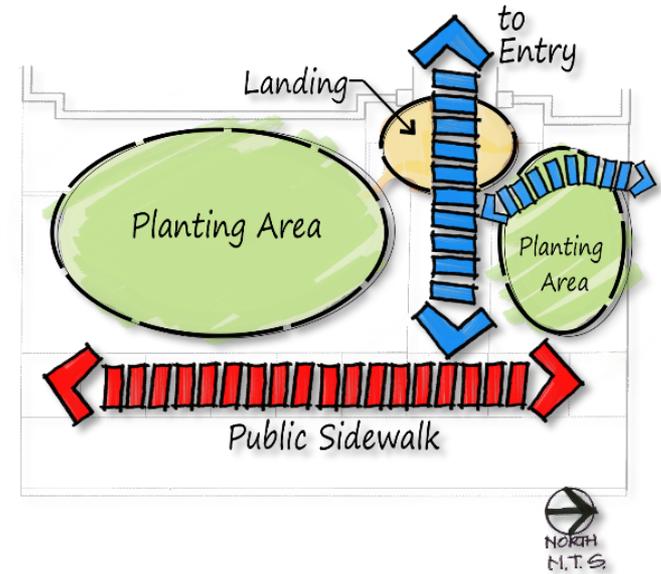
Is it a garden?



Functional Design Form Follows Function

Create a Planting Area Bubble Plan

- Show basic planting areas
- Locate planting heights of
 - ✓ High
 - ✓ Medium
 - ✓ Low



Functional Design Form Follows Function

Functional Spaces & Hardscape

✓ Complete your Functional Bubble Plan

- Sketch circulation paths and gathering areas
- Show planting areas and height

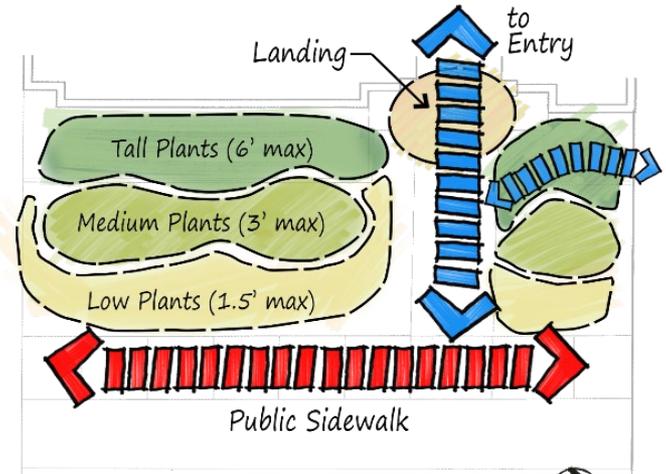
✓ Create your Hardscape Plan

- Check hardscape in place and correct
- Add desired elements

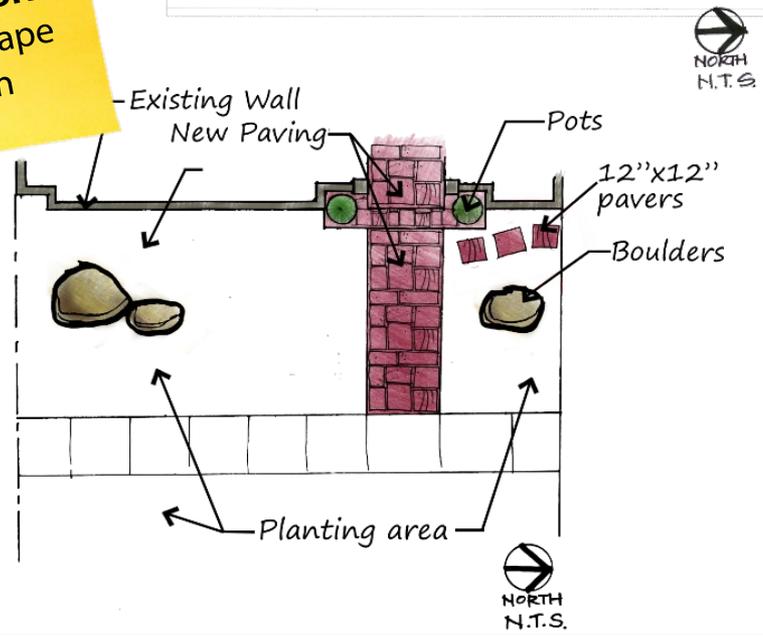
✓ Include

- Hardscape: walkways, drive, walls, patios
- Fences and walls
- Elements: fountains, pots, arbors, rocks
- Planting areas

Homework:
Functional
Bubble Plan



Homework:
Hardscape
Plan

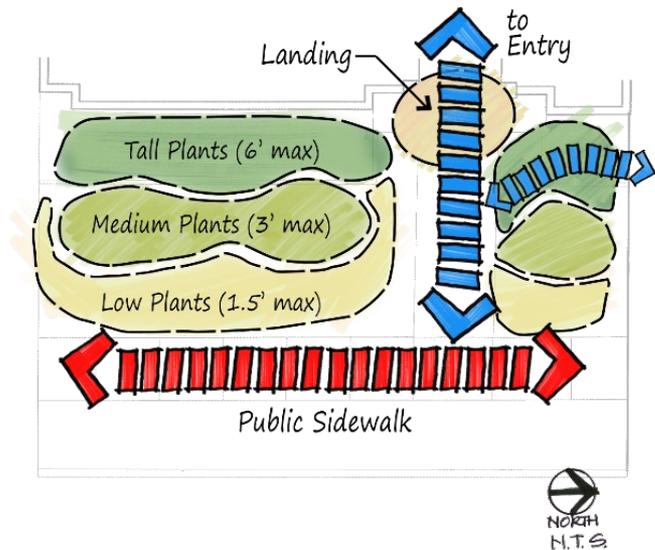
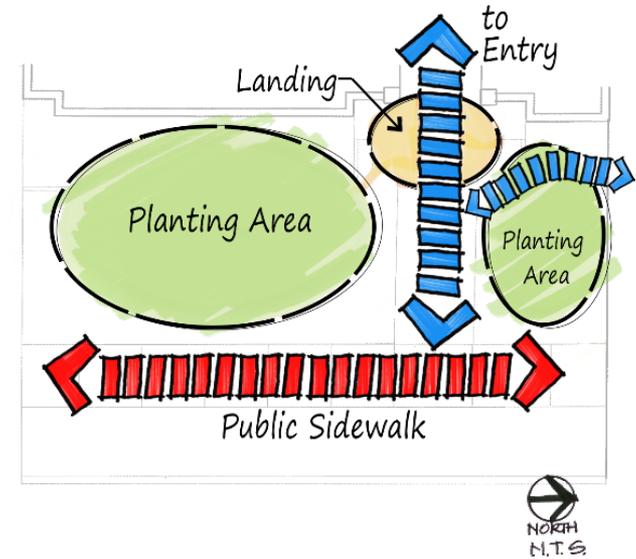


Functional Design

Form Follows Function

Lab Work:
Sketch
Functional
Layout

- ✓ Overlay tissue paper on the L-3 plan
- ✓ Mark corners of the house for alignment
- ✓ Sketch ideas about your functional layout on the tissue
- ✓ Try several layouts until you find one that works for you
- ✓ Develop your hardscape and check in place at home

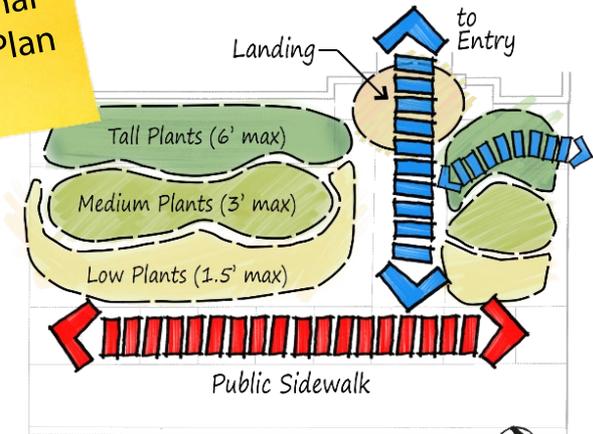


Lab & Break (30 min)

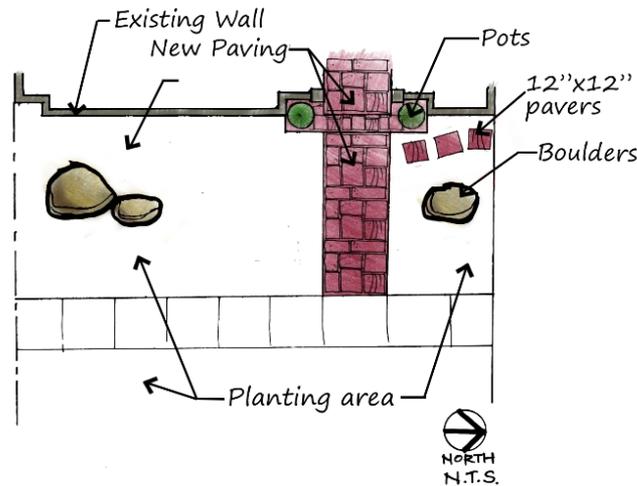
After Break:

- ✓ Landscape Form
- ✓ Aesthetics
- ✓ Plant selection
- ✓ Putting it all together

Homework:
Functional
Bubble Plan



Homework:
Hardscape
Plan



Form Composition

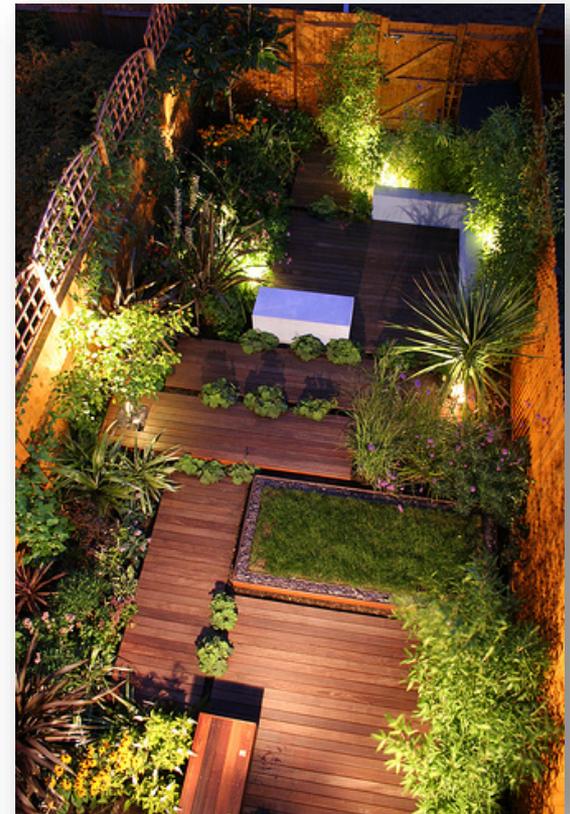
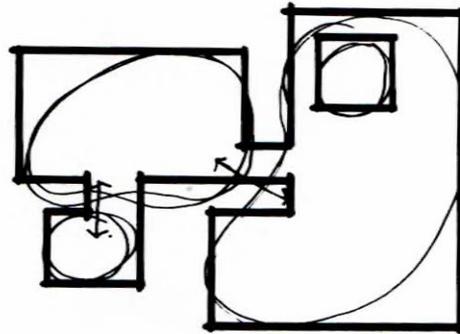
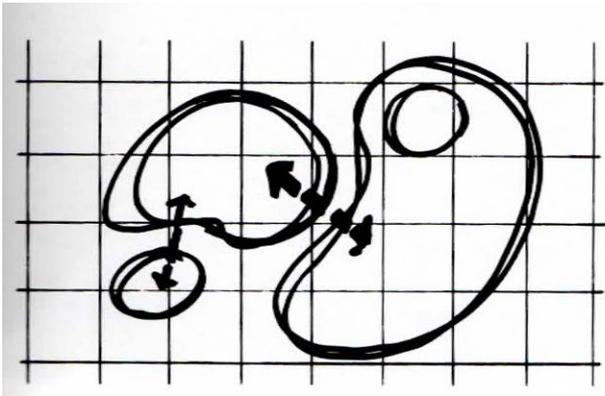
Form Follows Function

- Geometric or natural forms
- Forms provide visual order
- Forms provide edges between spaces

Form Composition

Rectangular Forms

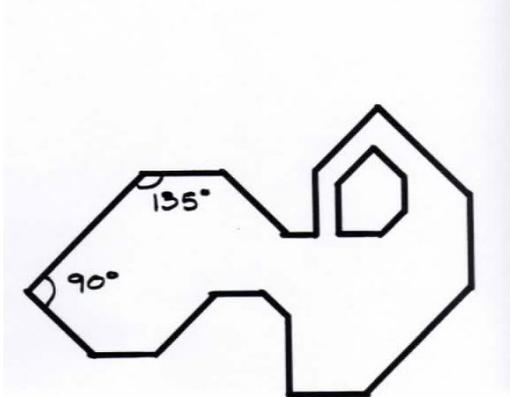
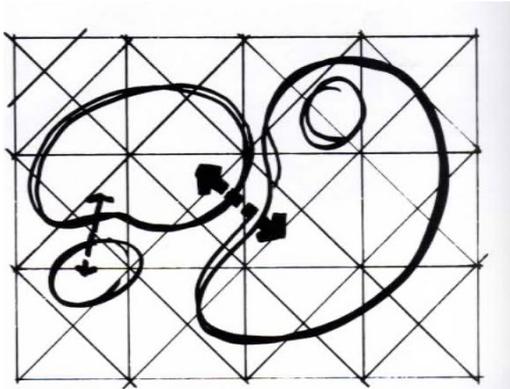
- Formal, considered “man-made”
- Simple and relates to many materials and construction methods



Form Composition

Angular and Hexagonal Forms

- Less formal than rectangular forms
- Creates interest in the landscape



Form Composition

Circular Forms

- Simple feeling of unity and wholeness
- Circles as a whole or arcs can be form generators



Form Composition

Organic Meander

- Smooth back and forth transitions inspired by nature
- Many times used for walkways or dry stream beds



2-136.



2-137.



Design Concepts

Aesthetics

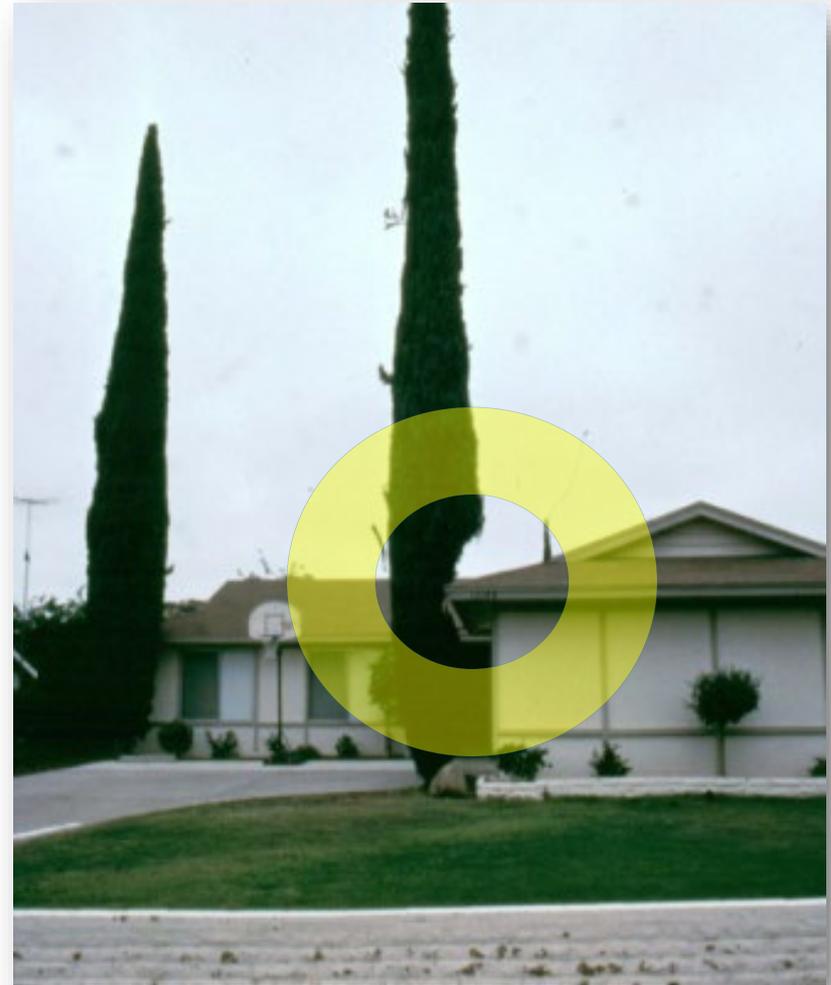
- Provides interest and impact
- Creates focal points and catches the eye
- Contrast plant textures, values, and colors



Design Concepts

Aesthetics of Proportion

- relative size of objects within the composition
- a large tree can make a house appear smaller
- most SoCal homes are out of scale to their lots



Design Concepts

Aesthetics of Proportion



Design Concepts

Aesthetics of Unity

- Provides cohesive calm
- Repeat plant selections throughout the plan including both sides of driveway



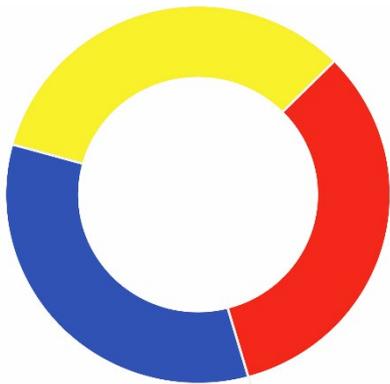
Design Concepts

Aesthetics of Color

Most powerful of art elements

Establish harmony

- Soothing: low contrast, monochromatic, cool
- Energizing: contrast, complimentary, warm



PRIMARY COLORS



TRIADIC COLORS



COMPLEMENTARY
COLORS (OPPOSITE)

Design Concepts

Aesthetics of Color

Simple Color Harmony

Soothing

Energizing



Functional Design: Shaping Spaces

Aesthetics of Lines

- Curving lines provide a relaxed, informal feel
- Straight and geometric lines are classic and formal



Functional Design: Shaping Spaces

Aesthetics of Points

Created Views - use an accent feature to create a focal point



Design Concepts

Aesthetics of Texture and Contrast

- Provides interest and impact
- Creates focal points and catches the eye
- Contrast plant textures, values, and colors



Plant Selection

Creating Your Plant Palette

How to Choose?

- Climate appropriate?
- What do you like?
- Place appropriate?
- Does it fill a design function?



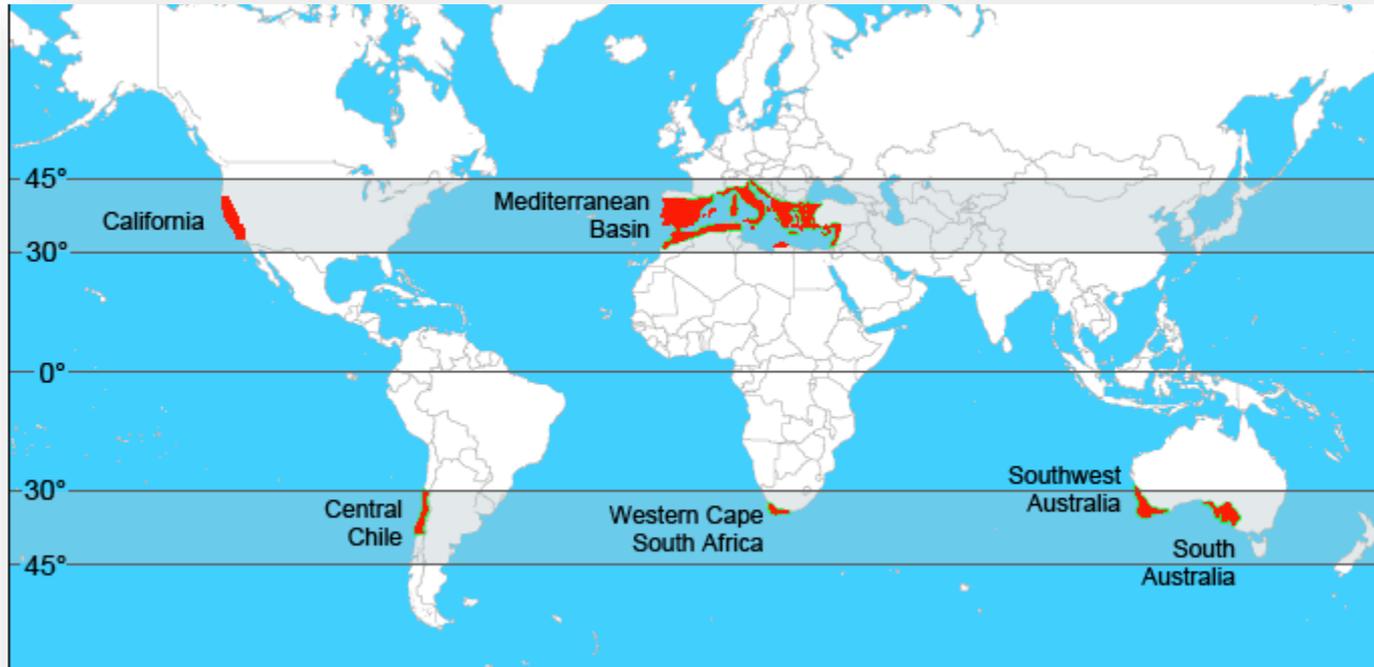
Plant Selection

Climate Appropriate Plants

Where do they come from?

Look to other Mediterranean climates:

- California
- Mediterranean Basin
- Chile/South America
- Western Cape of South Africa
- Western & South Australia



Plant Selection

Climate Appropriate Plants

Leaf characteristics



Plant Selection

Climate Appropriate Plants

Edibles are the ultimate in local food but generally **NOT** climate appropriate



- Buried reservoirs or "ollas"
- Drip irrigation
- Sunken beds & planting pits
- Wicking beds
- Partial root-zone drying
- Encourage deep rooting
- Weed and mulch



Plant Selection

Climate Appropriate Plants

Climate appropriate edibles include

Figs



Pomegranates



Goji Berries



Plant Selection

Climate Appropriate Plants

Where to get plant suggestions?

WaterSmart plant palettes found in your Homeowner's Guide and notebook

- Mediterranean
- Asian
- Tropical
- Contemporary
- Native
- Shade
- Groundcover options

Homework:
Review Plant Palettes



WaterSmart Mediterranean Effect Plants:

Type	Scientific Name	Common Name	Mature Size HT x WIDTH	WUCOLS			Design Feature
				3	4	6	
				Coastal	Inland	Desert	
Tree	Arbutus unedo	Strawberry Tree	20-30' x 15-40'	L	L	M	FR
	Brahea armata	Blue Hesper Palm	25-40' x 6-8'	L	L	L	AC
	Chamaerops humilis	Mediterranean Fan Palm	8-12' x 10-15'	M	M	M	AC
	Cupressus sempervirens	Italian Cypress	40-60' x 8-12'	L	L	M	AC
	Feijoa sellowiana	Pineapple Guava	12-20' x 10-15'	L	L	M	FL
	Laurus nobilis	Sweet Bay	20-30' x 10-20'	L	L	M	EV
	Olea europaea 'Swan Hill'	Swan Hill European Olive	15-25' x 15-20'	L	L	M	EV
	Pinus halepensis	Aleppo Pine	50-60' x 60-80'	L	L	L	EV
(L)Shrub	Agave attenuata	Foxtail Agave	4-5' x 6-8'	L	L	L	AC
	Carpenteria californica	Bush Anemone	6-8' x 4-5'	L	M	/	FL
	Cistus ladanifer	Crimson-spot Rockrose	4-5' x 4-5'	L	L	L	FL
	Rhaphiolepis indica	Indian Hawthorn	4-5' x 4-5'	M	M	M	FDN
	Westringia 'Wynyabbie Gem'	Coast Rosemary	6-8' x 4-6'	L	L	M	FDN
(M)Shrub	Cistus x purpureus	Purple Rockrose	4' x 4-6'	L	L	L	FL
	Correa 'Ivory Bells'	Australian Fuchsia	4-5' x 4-5'	L	L	M	FL
	Rosmarinus o. 'Blue Spires'	Blue Spires Rosemary	4-5' x 2-3'	L	L	M	FDN
	Salvia leucantha	Mexican Sage	3-4' x 4-6'	L	L	M	FL
(S)Shrub	Agave parryi	Artichoke Agave	2-4' x 2-4'	L	L	L	AC
	Aloe striata	Coral Aloe	1-2' x 2-3'	L	L	L	AC
	Convolvulus cneorum	Bush Morning Glory	2-4' x 2-4'	L	L	L	FL
	Correa 'Dusky Bells'	Australian Fuchsia	1-2' x 2-3'	L	L	M	FL

Plant Selection

WaterSmart Plant Palettes

Mediterranean

Lavender



Rosemary



Olives

Plant Selection

WaterSmart Plant Palettes

Low Water Asian

Iris douglasiana



Diets



African Iris



Nandina



Juniperus

Juniper

Plant Selection

WaterSmart Plant Palettes

Low Water Tropical

Bromeliads



Plumeria



Lantana



Alstroemeria



Euphorbia millii
Crown of Thorns

Strelitzia
Bird of Paradise

Bougainvillea

Geraniums

Bird of Paradise

Plant Selection

WaterSmart Plant Palettes

Low Water Contemporary



Assorted Succulents



Anigozanthos Kangaroo Paw



Fire Sticks Kalanchoe thyrsifolia Agave Attenuata

Plant Selection

WaterSmart Plant Palettes

California Natives

Romneya coulteri
Matilija Poppy



Heteromeles arbutifolia Toyon



Epilobium California Fushia



Salvia clevelandii
Cleveland Sage

Plant Selection

WaterSmart Plant Palettes

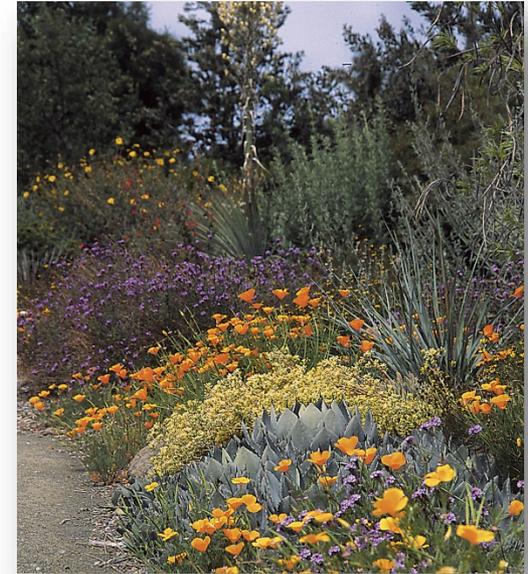
What you need to know about natives...

California natives are

- ✓ Adapted for our climate, soils
- ✓ Provide habitat and attract wildlife
- ✓ Some plants are summer deciduous

Native plants need

- ✓ Little or no summer water
- ✓ Little or no fertilizer
- ✓ No pesticides
- ✓ Less maintenance



Some native plants are summer deciduous

Plant Selection

WaterSmart Plant Palettes

Shade Plants for Dry Areas



Bromeliads



Clivia Dianella variegata
Schefflera arboricola variegata

Plant Selection

WaterSmart Plant Palettes

Walkable Ground Cover



Dymondia margaretae (Silver Carpet)



Lippia nodiflora (Kurapia)



Plant Selection

WaterSmart Plant Palettes

Flat Green Ground Cover



Fragaria chiloensis
(Beach Strawberry)

Achillea millefolium
(Yarrow)



Plant Selection

*When you choose a plant, note the **mature** plant size*



Agave americana marginata

Plant Selection

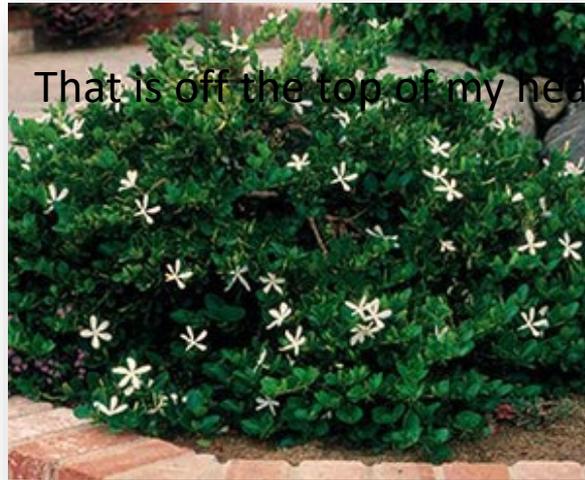
Pick the right size cultivar for the right place

Carissa macrocarpa "Natal Plum"

'Grandiflora'
8' x 8'



'Boxwood Beauty'
2' x 2'



'Green Carpet'
1-1½' x 4'



Plant Selection

**If your garden is supporting undesirable wildlife,
try the following strategies...**

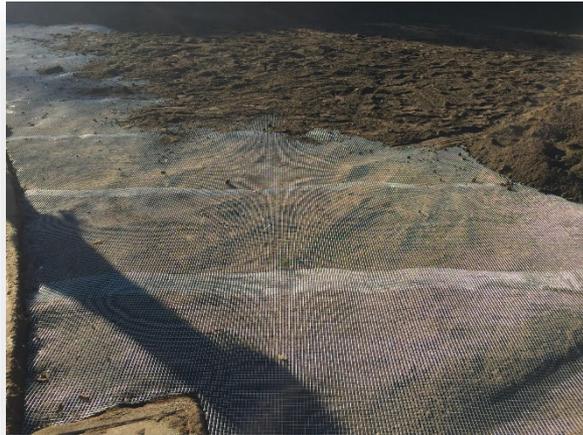
Use native and other
highly scented plants



Examples Include:

- Rosemary
- Lavender
- Sage (many different species)
- Encelia or other low water
- types of daisies
- Society Garlic

For severe burrowing animal issues,
use wire mesh as an underlayment



For deer and other non-burrowing animals,
add fencing around damage prone plants



Plant Placement

Consider growing conditions

Exposure

- ✓ Soil type
- ✓ Drainage



Full Shade



Full Sun

Plant Placement

Pay close attention to your plants' water requirements!

Refer to WUCOLS IV -
Water Use Classification of
Landscape Species

✓ South Coastal

- San Diego
- Chula Vista
- Del Mar
- La Jolla
- Carlsbad
- Oceanside
- Vista
- El Cajon

✓ South Inland

- Escondido
- Rancho Bernardo
- San Marcos
- Poway
- Lakeside
- Ramona

WUCOLS IV

Water Use Classification of Landscape Species

Number	WUCOLS Region	Sunset climate zones*	CIMIS ET ₀ zones**	Representative Cities
1	North-Central Coastal	14, 15, 16, 17	1, 2, 3, 4, 6, 8	Healdsburg, Napa, San Jose, Salinas, San Francisco, San Luis Obispo
2	Central Valley	8, 9, 14	12, 14, 15, 16	Auburn, Bakersfield, Chico, Fresno, Modesto, Sacramento
3	South Coastal	22, 23, 24	1, 2, 4, 6	San Diego, Chula Vista, Del Mar, La Jolla, Carlsbad, Oceanside, Vista, El Cajon
4	South Inland	18, 19, 20, 21	9	Escondido, Rancho Bernardo, San Marcos, Poway, Lakeside, Ramona
5	High and Intermediate Desert	11	14, 17	Apple Valley, Barstow, Bishop, Lancaster, Lone Pine, Tehachapi
6	Low Desert	13	18	Borrego Springs, Blythe, Death Valley, El Centro, Needles, Palm Springs

*See Brenzel, K. N., ed., *Sunset Western Garden Book* (2012).
 **See CIMIS ET₀ Zone Map, <http://www.cimis.water.ca.gov/cimis/cimiSatEtoZones.jsp>

- Home Page
- User Manual
 - Regional Committees
 - Project Rationale and Goal
 - The Evaluation Process
 - Categories of Water Needs
 - Standard Conditions
 - Plant Types
 - **Regions**
 - Using WUCOLS Evaluations
 - Resources
- Plant Search Instructions
- Plant Search Database
- Download WUCOLS IV Plant List
- Download WUCOLS IV User Manual
- Water Requirements for Turfgrasses
- Partners
- Acknowledgements

Regions

Since substantially different climate zones exist in California, species were evaluated for regions that represent six different climatic conditions. These are not the only climate zones that exist in California, but they include much of the state where irrigated landscapes occur. For locations outside of the six regions, it is best to use species evaluations from a region that is most similar climatically to the location of interest.

Plant Placement

WUCOLS IV

Water Use Classification of Landscape Species

Plant Search Database

Select a City by Region

- North Central Coastal -
- Central Valley -
- San Diego
- South Inland Valley -
- High and Intermediate Desert -
- Low Desert -

WUCOLS IV

Water Use Classification of Landscape Species

Plant Search Database

Plant Search

San Diego, CA

Botanical Name

Common Name

Plant Type

- Gc (Ground Cover)
- P (Perennial)
- S (Shrub)
- T (Tree)
- V (Vine)
- Ba (Bamboo)
- Bu (Bulb)
- G (Grass)
- Pm (Palm and Cycad)
- Su (Succulent)
- N (California Native)
- A (Arboretum All-star)

Water Use

- Very Low
- Low
- Moderate
- High
- Unknown
- Not Appropriate for this Region





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Plant Search: <http://ucanr.edu/sites/WUCOLS/>

Plant Placement

Hydrozoning

- Group plants with similar water needs together, according to irrigation zone
- Do not put high-water-use plants next to low-water-use plants
- Research
 - WUCOLS plant ratings
 - Plant palettes
 - Sunset Western Garden Book



Plant Research

How do I get to know this plant?
WaterSmart Plant Palettes



WaterSmart Garden Friendly California Natives:

Type	Scientific Name	Common Name	Mature Size HT x WIDTH	WUCOLS			Design Feature
				3	4	6	
				Coastal	Inland	Desert	
Tree	Cercidium microphyllum	Little Leaf Palo Verde	12-20' x 12-25'	VL	VL	L	AC
	Cercis occidentalis	Western Redbud	12-20' x 10-15'	L	L	/	FL
	Chilopsis linearis	Desert Willow	30' x 25'	VL	L	M	FL
	Lithocarpus densiflorus	Tanbark Oak	30-80' x 30-80'	L	L	/	EV
	Myrica californica	Pacific Wax Myrtle	20-30' x 10-20'	L	M	/	FL

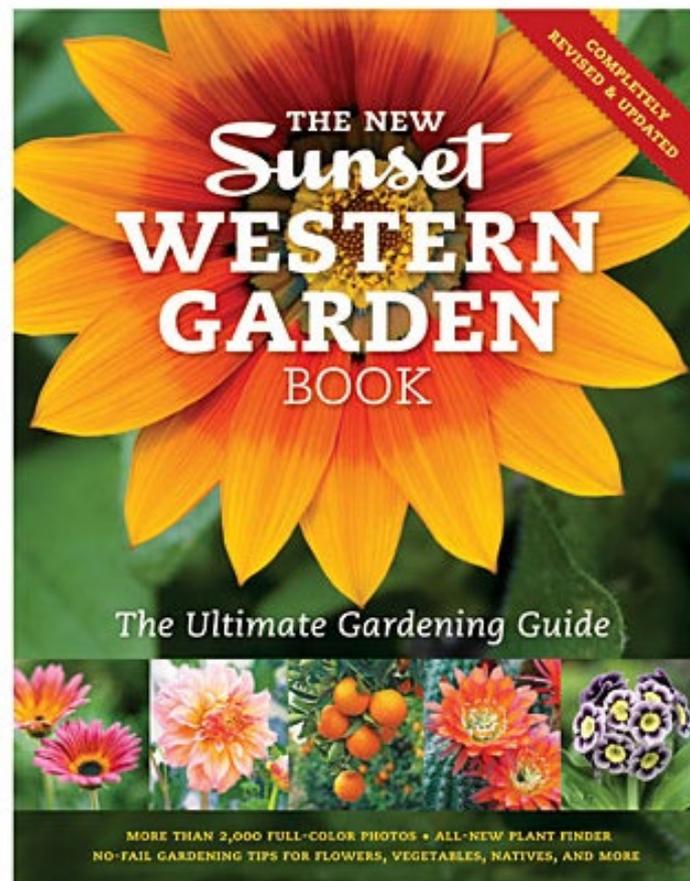
Plant Research

How do I get to know this plant?

Sunset Western Garden Book

Specific plant info, including

- ✓ mature size
- ✓ cultivars
- ✓ growing conditions



Find Your Sunset Western Zone

Zone 24

- Mild maritime climate, mild winters, cool summers, rarely freezes

Zone 23

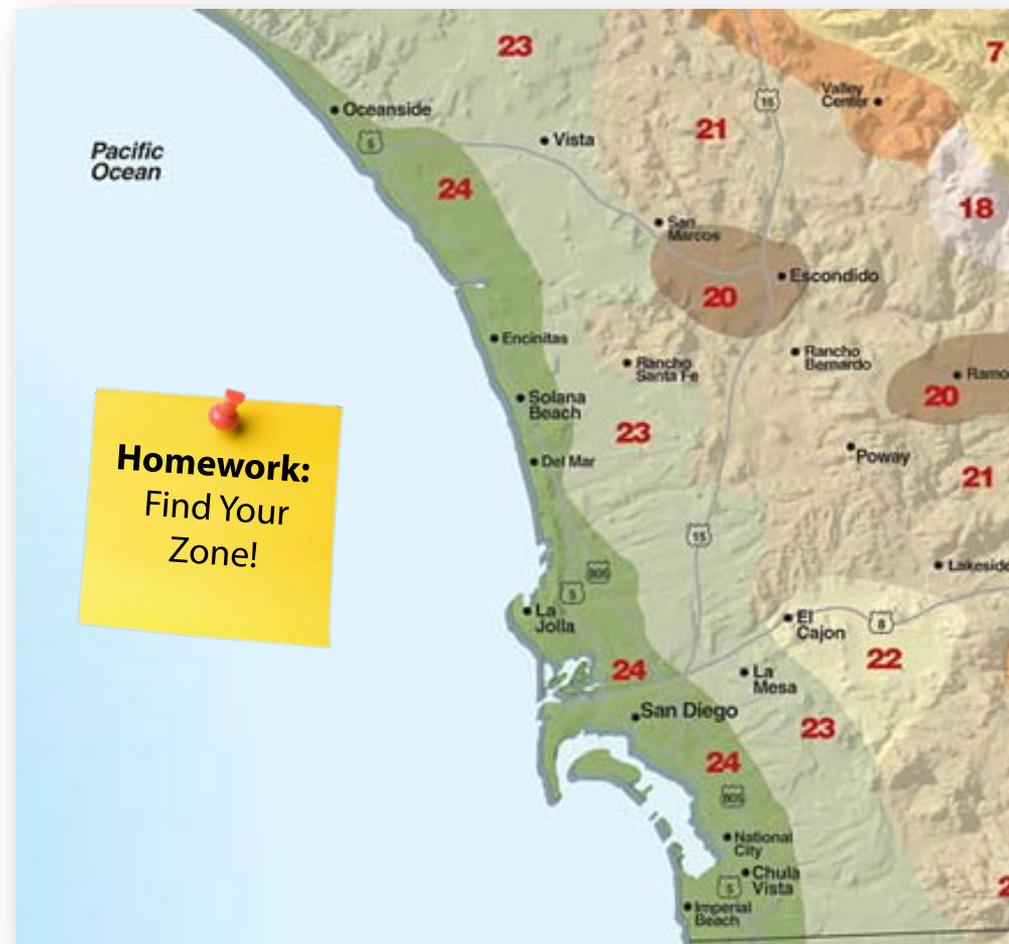
- Warmer than Zone 24, usually frost-free

Zone 22

- More winter chills than Zone 23, but influenced by ocean air

Zone 21

- A mix of maritime & continental influence, colder in winter



Plant Research

How do I get to know this plant? Sunset Western Garden Book

74 PLANTS FOR WATERWISE GARDENS

PLANTS FOR WATERWISE GARDENS 75

Special Situations

PLANTS FOR WATERWISE GARDENS

In most parts of the West, where a short rainy season is followed by many months during which there is no rainfall at all, gardeners recognize that they must carefully manage their use of supplemental water for their plants. Some municipalities place limits on supplemental watering, especially during drought years. Fortunately, many fine plants are both good-looking and well suited to the West's dry summers. Some have naturally deep roots that can reach water reserves far down. Others have hairy leaves that help reduce water loss. Although their moisture needs vary slightly—depending on climate, exposure, and soil type—most thrive with little or no irrigation once established. If you're planning a new garden, consider landscaping entirely with unthirsty plants. If you're renovating an old one, modify it in stages.



Artemisia, Taraxacum officinale, Lonicera, Euphorbia corollata

Trees

- Azalea (many)** p. 151
☞ ZONES VARY
- Arbutus** p. 153
☞ ZONES VARY
- Brexylychton** p. 163
☞ ZONES VARY
- Calocedrus decurrens** p. 214
Incense cedar
☞ ZONES 11, 14-24
- Casuarina** p. 276
Shepherd
☞ ZONES 9, 12, 24; H1, H2
- Cedrus** p. 228
Cedar
☞ ZONES VARY
- Celtis** p. 230
Hickberry
☞ ZONES VARY
- Carotonia siliquea** p. 252
Carob
☞ ZONES 13, 15, 18, 24, H1
- Chilopsis linearis** p. 289
Desert willow
☞ ZONES 7, 14, 18, 25
- Chitalpa tashkentensis** p. 240
☞ ZONES 24
- Cedrus** p. 275
Cypress
☞ ZONES VARY
- Elaeagnus angustifolia** p. 299
Banana olive
☞ ZONES 42, 43, 1, 3, 7, 14, 16, 19
- Eucalyptus (most)** p. 311
☞ ZONES 5, 6, 5-24; H1, H2
- Gelera parviflora** p. 354
Australian willow
☞ ZONES 8, 9, 12-24
- Gravilea** p. 347
☞ ZONES VARY
- Lagerstroemia indica** p. 358
Crape myrtle
☞ ZONES 12-24; H1, H2
- Laurus nobilis** p. 401
Savory bay
☞ ZONES 5-9, 15-24; H1, H2
- Lophosolen confertus** p. 427
Driftbone tree
☞ ZONES 19, 21, 23-24; H1, H2
- Olea europaea** p. 400
Olive
☞ ZONES 9, 11, 24; H1, H2
- Oleiva tosaia** p. 400
Osage ironwood
☞ ZONES 8, 11-14, 15-25
- Parsonsia aculeata** p. 475
Jewwealder thorn
☞ ZONES 8-24; H1, H2



Mimulus aurantiacus



Salvia splendens



Chrysanthemum leucanthemum



Dianthus barbatus

Pinus (most)

☞ ZONES VARY

Platanus p. 511
Sycamore
☞ ZONES VARY

Prosopis p. 529
Mimosa
☞ ZONES 15, 18-24

Quercus (many) p. 544
Oak
☞ ZONES VARY

Rhus lancea p. 563
Alfalfa shrub
☞ ZONES 8, 9, 17-24

Robinia p. 567
Locust
☞ ZONES VARY

Schinus molle p. 590
Chilipepper tree
☞ ZONES 9, 12-24; H1, H2

Styphnolobium japonicum p. 671
Japanese pagoda tree
☞ ZONES 24

Tamarix p. 678
Tamarisk
☞ ZONES VARY

Umbellularia californica p. 640
California laurel
☞ ZONES 14, 19-21

Shrubs

Aescia (many) p. 125
☞ ZONES VARY

Anisacanthus thurberi p. 154
Chiquarose
☞ ZONES 14, 18, 23; H1, H2

Anisodonta p. 156
☞ ZONES VARY

Arbutus unedo p. 154
Strawberry tree
☞ ZONES 24

Arctostaphylos p. 164
Munzambur
☞ ZONES VARY

Artemisia (most)

☞ ZONES VARY

Atriplex p. 170
Saltbrush
☞ ZONES VARY

Baccharis p. 182
☞ ZONES VARY

Ceanothus p. 200
Blueberry
☞ ZONES VARY

Calliandra (some) p. 211
☞ ZONES VARY

Carpenteria californica p. 222
Rock anemone
☞ ZONES 2-9, 14-24

Caryopteris p. 214
Blue mist
☞ ZONES 24, 9, 14-24

Ceanothus p. 200
California wild blue
☞ ZONES 1, 3, 11, 14-24

Cercis occidentalis p. 233
Western redbud
☞ ZONES 2-21

Carocarpus p. 255
Mountain mahogany
☞ ZONES VARY

Chamaelirium uncinatum p. 238
Crocodile scorpion
☞ ZONES 9, 12-24

Cistus p. 241
Rockrose
☞ ZONES 4-9, 14-24

Convolvulus cneorum p. 228
Blue morning glory
☞ ZONES 9-12-24

Coprosma p. 258
☞ ZONES VARY

Cardia (some) p. 250
☞ ZONES VARY

Cercis p. 234
Australian redbud
☞ ZONES 14-24



TOP ROW: *Lagerstroemia indica*, *Desmodium illinoense*; MIDDLE ROW: *Styphnolobium japonicum*, *Artemisia tridentata*; BOTTOM ROW: *Calliandra californica*, *Arctostaphylos*

Plant Research

How do I get to know this plant?

Sunset Western Garden Book

PLANT SELECTION GUIDE 75

Pinus (most) * ZONES VARY	p. 507	Artemisia (most) * ZONES VARY	p. 109
Pistacia <i>Pistache</i> * ZONES VARY	p. 511	Atriplex <i>Saltbush</i> * ZONES VARY	p. 178
Prosopis <i>Mesquite</i> * 10-13, 18-24	p. 520	Baccharis * ZONES VARY	p. 182
Quercus (many) <i>Oak</i> * ZONES VARY	p. 544	Caesalpinia * ZONES VARY	p. 209
Rhus lancea <i>African sumac</i> * 8, 9, 12-24	p. 565	Calliandra (some) * ZONES VARY	p. 211
Robinia <i>Locust</i> * ZONES VARY	p. 567	Carpenteria californica <i>Bush anemone</i> * 5-9, 14-24	p. 222
Schinus molle <i>California pepper tree</i> * 8, 9, 12-24; H1, H2	p. 594	Caryopteris × clandonensis <i>Blue mist</i> * 2B-9, 14-24	p. 224
Styphnolobium japonicum <i>Japanese pagoda tree</i> * 2-24	p. 617	Ceanothus <i>California wild lilac</i> * 1-3, 8-9, 14-24	p. 226
Tamarix <i>Tamarisk</i> * ZONES VARY	p. 623	Cercis occidentalis <i>Western redbud</i> * 2-24	p. 233
Umbellularia californica <i>California laurel</i> * 4-9, 14-24	p. 643	Cercocarpus <i>Mountain mahogany</i> * ZONES VARY	p. 233
Shrubs		Chamaelucium uncinatum <i>Geraldton waxflower</i> * 8, 9, 12-24	p. 236
Acacia (many) * ZONES VARY	p. 125	Cistus <i>Rockrose</i> * 4-9, 14-24	p. 244
Anisacanthus thurberi <i>Chuparesa</i> * 8-13, 18-23; H1, H2	p. 154	Convolvulus cneorum <i>Bush morning glory</i> * 5-9, 12-24	p. 258
Anisodonta × hypomadara <i>Cape mallow</i> * 14-24	p. 154	Coprosma * ZONES VARY	p. 258
Arbutus unedo <i>Strawberry tree</i> * 4-24	p. 164	Cordia (some) * ZONES VARY	p. 259
Arctostaphylos <i>Manzanita</i> * ZONES VARY	p. 164	Correa <i>Australian fuchsia</i> * 14-24	p. 264



TOP ROW: *Lagerstroemia indica*; *Olea europaea*. SECOND ROW: *Styphnolobium japonicum*; *Anisodonta × hypomadara*. THIRD ROW: *Calliandra californica*. BOTTOM ROW: *Coprosma* "Marble Queen"; *Eurypia acrocaris*

Plant Profile

- Latin name
- Common Name
- Sun / Shade
- Zone
- Page for Info

Plant Research

How do I get to know this plant? Sunset Western Garden Book

Specific plant info, including

- ✓ mature size
- ✓ cultivars
- ✓ growing conditions

Carissa macrocarpa "Natal Plum"

'Grandiflora'
8' x 8'



'Boxwood Beauty'
2' x 2'



'Green Carpet'
1-1½' x 4'



moist, well drained. Apply frequent light doses of nitrogen fertilizer. A 10-ft. row yields 10-25 lbs. To avoid overproduction, set out a few plants every week or two, or plant both early and late kinds. Cut off firm, well-formed heads before they split or crack. Harvest and store before heavy freezes occur. To prevent soil-borne pest buildup, plant in different site each year. Row covers will protect plants from aphids, cabbage loopers, imported cabbage worms, and root maggots. *Bacillus thuringiensis* (BT) can control young larvae of cabbage worms and loopers. Hand-pick or bait for snails and slugs.

Cabbage and Kale, Flowering

- Brassicaceae
- BIENNIALS GROWN AS ANNUALS
- ALL ZONES
- BEST IN SUN; TOLERATE SOME SHADE
- REGULAR WATER



Kale

Flowering cabbage and flowering kale are grown for their leaf rosettes, which look like giant, dense blue-green peonies marbled and edged with white, cream, rose, or purple. Kale's head is slightly looser and its leaf edges are more heavily fringed than cabbage. Both are spectacular in the cool-season garden, and go well with parishes and viotas.

CARE

Same as for cabbage. Plant 15-18 in. apart in beds, singly in 8-in. pots, or several in a large container. Colors are

strongest after first frosts. A single rosette cut and placed on a spike holder in a decorative bowl makes a striking harvest arrangement. Foliage is edible and quite striking as a salad garnish. For the edible flowering cabbage typically used in Chinese cooking, see Asian Greens.

Caesalpinia (Poinciana)

- Caesalpinaceae
- EVERGREEN AND DECIDUOUS SHRUBS AND TREES
- ZONES VARY BY SPECIES
- FULL SUN
- LITTLE TO MODERATE WATER
- ATTRACT HUMMINGBIRDS
- PODS AND SEEDS ARE POISONOUS IF INGESTED



Caesalpinia gilliesii

These garden-scale, ferny-leaved trees and shrubs are grown for branch-end clusters of colorful blossoms featuring (except *C. platyloba*) protruding stamens.

C. cactiflora, CASCALOITE. Evergreen tree, Zones 12, 13, 21-24. Mexican native grows slowly to 20 ft. tall and wide, with thorny branches and bright green foliage, coarser than that of *C. pulcherrima*. Very showy, large yellow flowers carried well above branches in winter.

C. gilliesii (Poinciana gilliesii), YELLOW BIRD OF PARADISE. Evergreen to deciduous South American shrub or tree; drops leaves in cold winters. Zones 8-16, 18-24; occasionally seen in Zones 6, 7. Tough, fast growing to 10 ft. tall, 8 ft. wide, with finely cut foliage and open, angular branch structure. Yellow summer flowers have bright red stamens.

MEET THE CACTUS CLAN

The cactus family contains a huge number of succulent plants (see also "Meet the Succulents," page 618). Generally leafless, cacti have stems modified into cylinders, pads, or joints that store water in times of drought. Thick skin reduces evaporation, and most species have spines for protection against browsing animals. Flowers are usually large and brightly colored; fruit may also be colorful and is sometimes edible. All are native to the Americas—from Canada to Argentina, from sea level into high mountains, from deserts to dripping tropical rain forests. Many are native to drier parts of the West. Cacti range in height from a few inches to 50 ft. tall.

Large Cacti

Use these striking, shapely plants to create desert landscapes. See *Carnegiea gigantea*, *Cephalocereus senilis*, *Echinocactus*, *Echinocereus*, *Ferocactus*, *Opuntia*, and *Stereocactus thurberi*.

Small Cacti

These usually have interesting forms and brightly colored flowers; grow them in pots or, if hardy, in rock gardens. See *Echinopsis*. Feed and water these plants well during warm weather for good display; taper off on fertilizer to encourage winter dormancy. Use fast-draining planting mix.

Tropical Cacti

Showiest in flower, these grow as epiphytes on trees or rocks. See *Ephedra* and *Schubertias*. They need rich soil with much humus, frequent feeding and watering, partial shade, and protection from frost. They grow outdoors all year in Hawaii; elsewhere, grow them in bathhouse or greenhouse, or treat them as outdoor/indoor plants.

HOW TO GROW

Water newly planted cacti very little; roots are subject to rot before they begin active growth. In 4 to 6 weeks, water thoroughly; then let soil dry before watering again. Reduce watering in fall to allow plants to go dormant. Feed monthly in spring and summer.

C. mexicana, MEXICAN BIRD OF PARADISE. Evergreen shrub or tree. Zones 12-16, 18-24. Moderately fast growth to 10-12 ft. tall and wide; keep to 6-8 ft. with pruning. Covered with 6 in. clusters of yellow flowers in all but coldest months.

C. platyloba, Evergreen tree, Zones 12, 13, 21-24. From Mexico. To 20 ft. tall and wide. Narrow, elongated clusters of tiny yellow flowers in spring; lack the long, protruding stamens of other *Caesalpinias*. Open habit and few leaflets give it an attractively airy look. Leaves turn rust red in fall.

C. pulcherrima (Poinciana pulcherrima), RED BIRD OF PARADISE, DWARF POINCIANA. Deciduous shrub, evergreen in mildest winters. Zones 12-16,

18-23; H1, H2. Native to tropical America. Fast, dense growth to 10 ft. tall and wide. Dark green leaves with many ¾-in. leaflets.

In warm weather, this plant bears showy clusters of orange or red flowers with red stamens. "Phoenix Bird" has bright yellow blooms. Various other salmon- and yellow-flowered forms are available in Hawaii. All make good quick screens.

Plants freeze to ground in the colder part of range but rebound in spring. In milder climates, you can cut them to ground in early spring to make more compact mound.

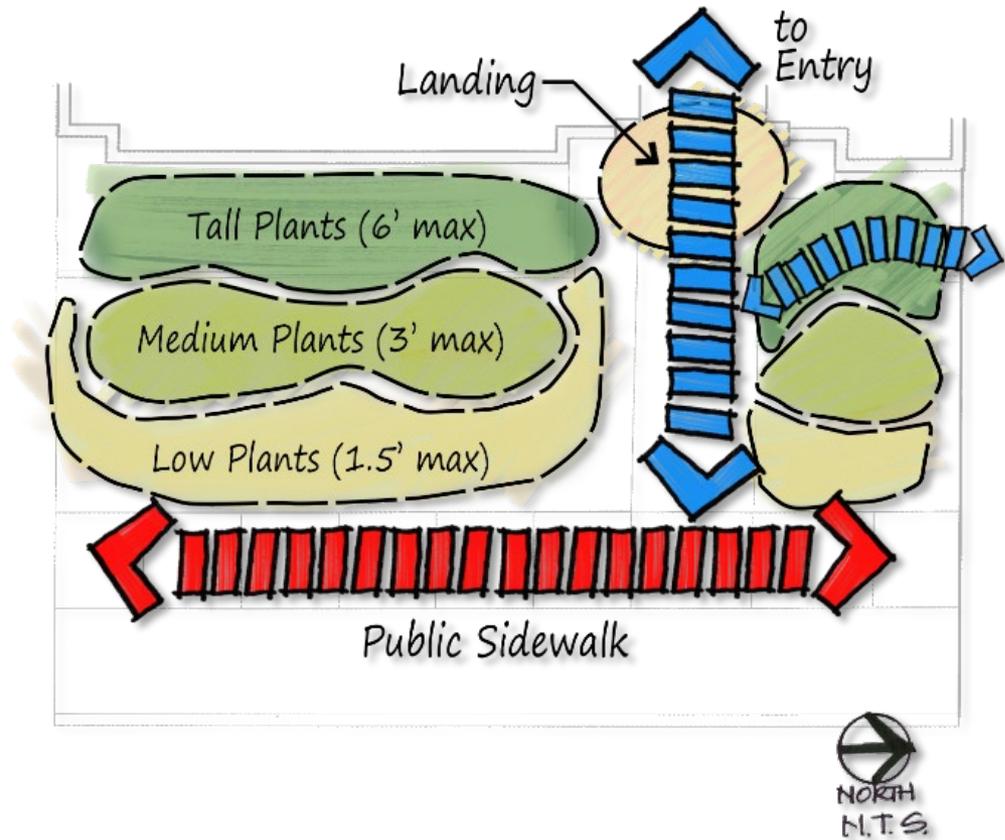
Explore landscape design as two parts:

- 1. Physical site design** - how the space is arranged and the location of major elements
 - Design in 3D
 - Form follows Function
- 2. Planting design and placement** - how the space is filled with plants for effective design.

Plant Design and Placement

Putting It Together:

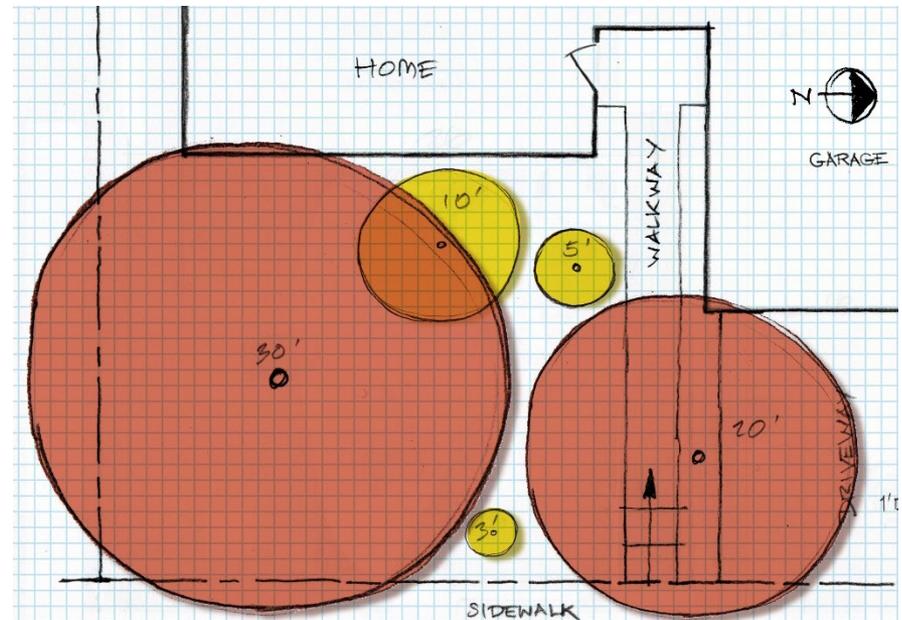
Select plant locations based on your bubble diagram



Plant Design and Placement

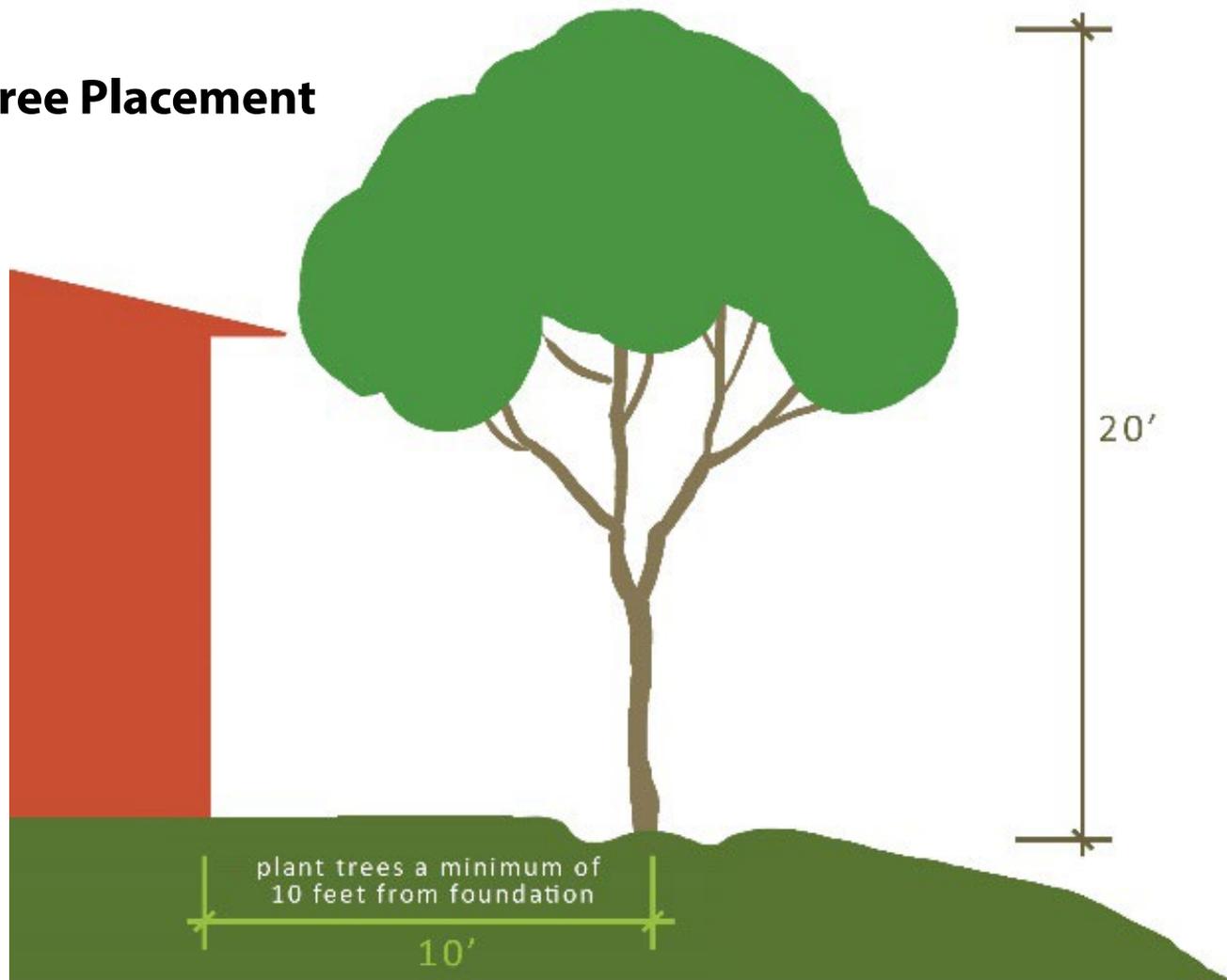
Putting It Together: Size Your Plants

- Draw at mature size
- Avoid overplanting
- Allow room to grow
- Understand you may need to edit and thin later



Plant Design and Placement

Putting It Together: Tree Placement



Plant Design and Placement

Putting It Together: Simplicity

- Limit your plant selections
- Avoid the temptation to get “one of everything”
- Make hard choices



Plant Design and Placement

Putting It Together: Final Tips

Keep it simple!

- ✓ Avoid the “beginner buffet” look
- ✓ Make hard choices
- ✓ Limit your plant palette

Group plants in drifts

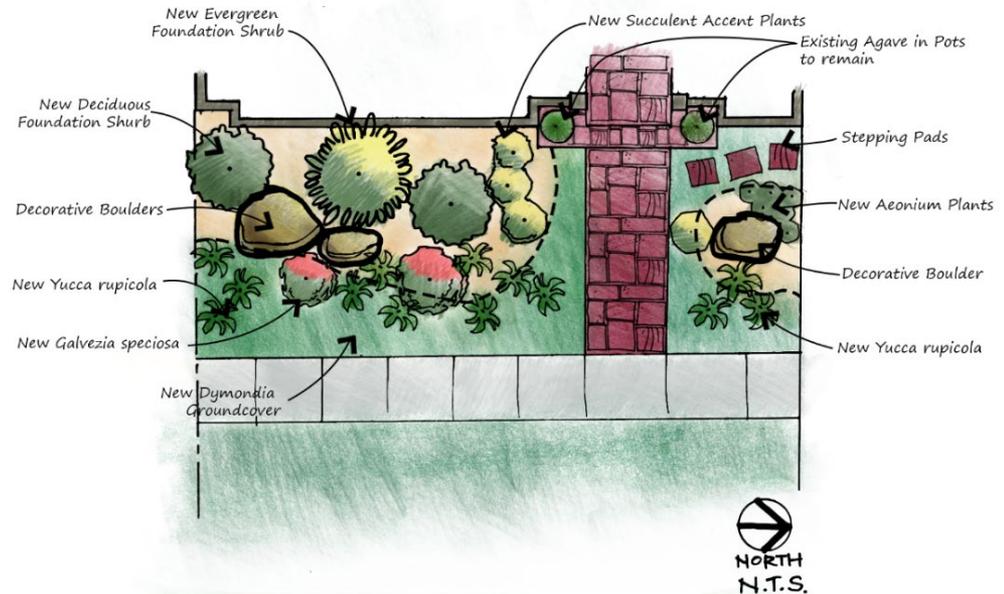
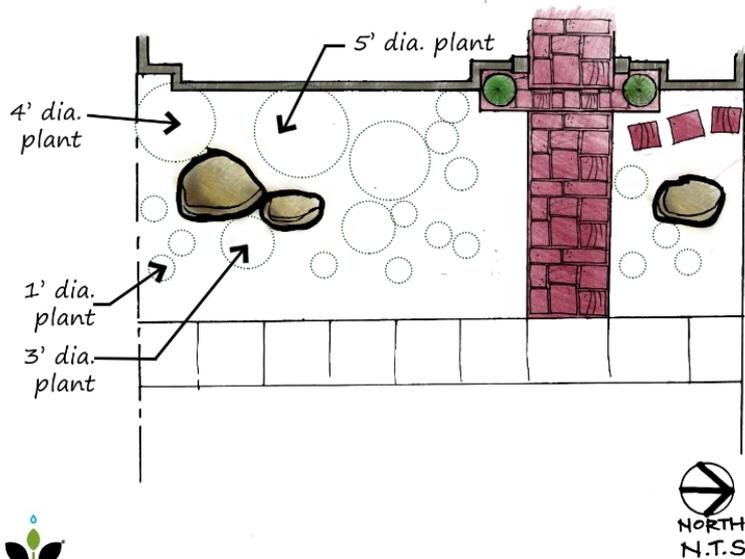
- ✓ Use the rule of threes, or default to odd numbers
- ✓ Don't blindly alternate plants

Now you're ready to plan
your plants!

Plant Design and Placement

Putting It Together: Remember Drawing in Scale?

This means using accurate proportion using a standard measurement to represent one foot.



Plant Design and Placement

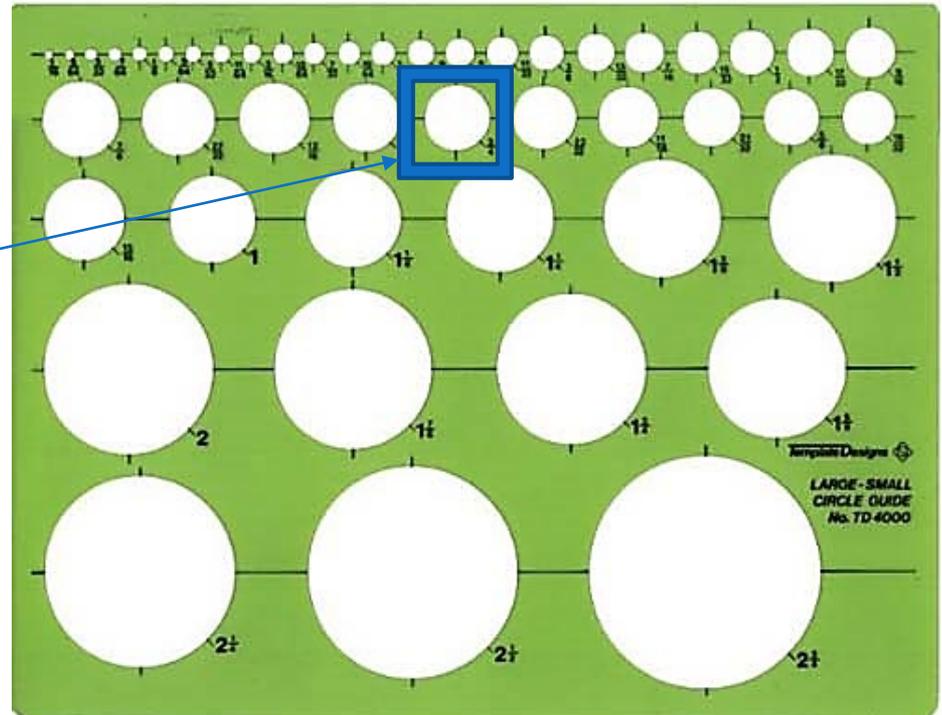
Drawing Plants in Scale

- Determine the mature size of the plant
- Use the mature size
- Find appropriate circle on template

Example:

A bush is 3' in circumference at maturity.

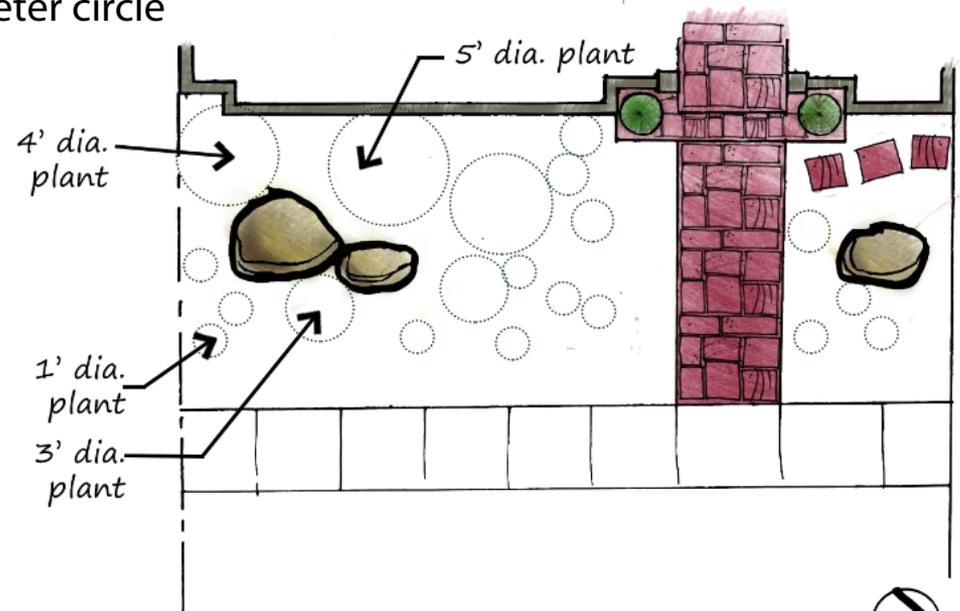
In a $\frac{1}{4}$ " scale, use the $\frac{3}{4}$ " diameter circle.



Plant Design and Placement

Drawing Plants in Scale

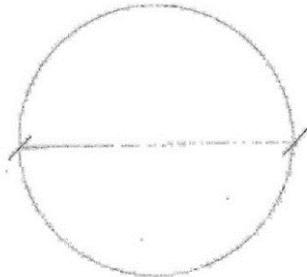
- Pencil in the plants for your space:
- At 1/4" scale = 1'-0"
 - 3' diameter shrub drawn as 3/4" diameter circle
 - 12' canopy tree drawn as 3" diameter circle



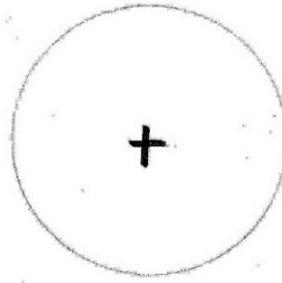
Plant Design and Placement

Drawing Plants in Scale

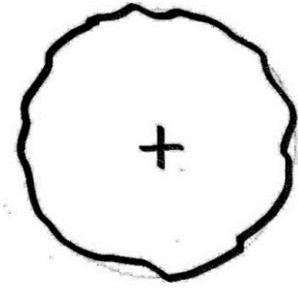
How to Draw Simple Plants



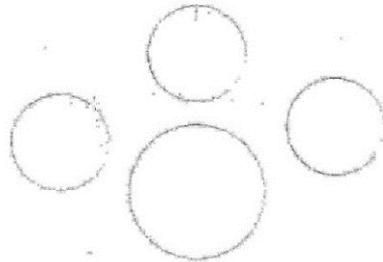
1. Measure the plant diameter and draw a circle to scale



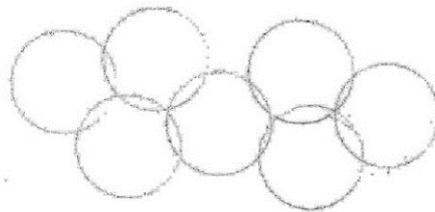
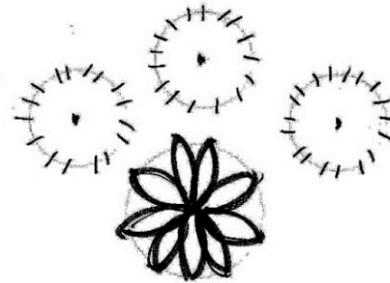
2. Mark the center



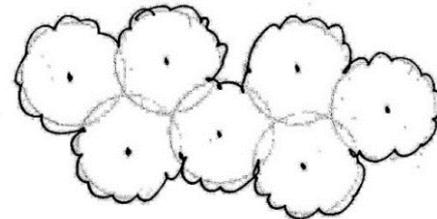
3. Add a rough outline



4. Same steps for a group of plants...



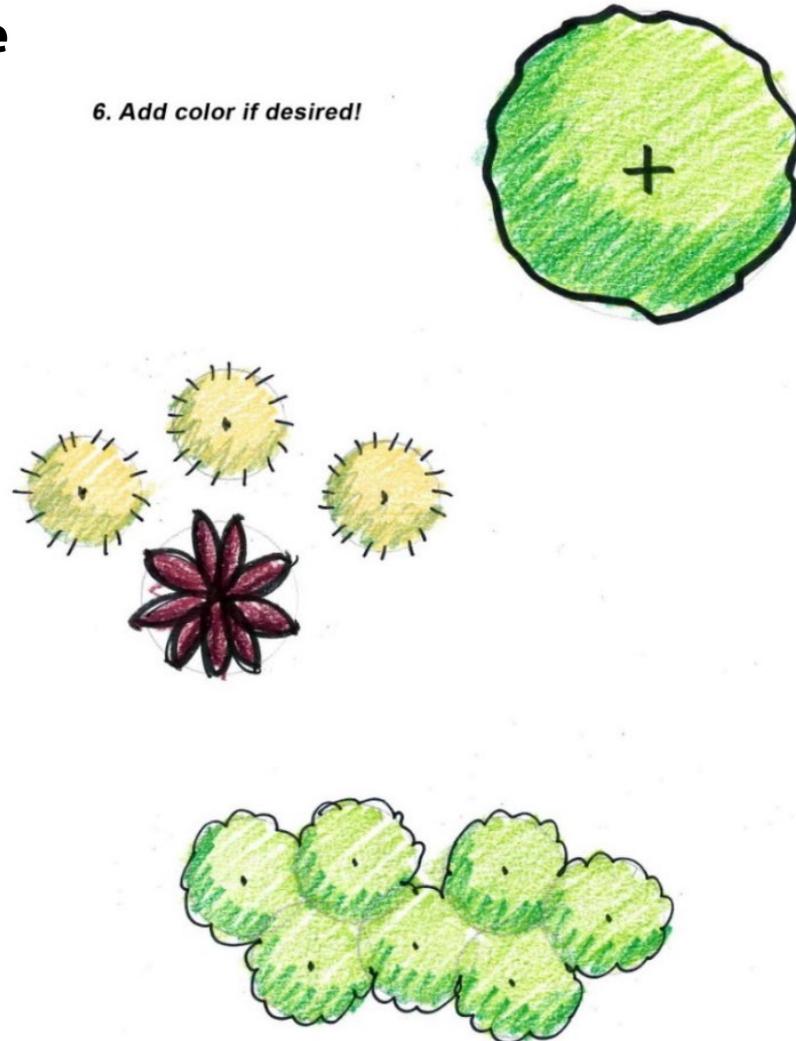
5. Or a drift of plants or groundcover



Plant Design and Placement

Drawing Plants in Scale

6. Add color if desired!



Homework:
Complete
Landscape Design
Questionnaire

Complete your landscape design questionnaire

Clarify your requirements and tastes so you can communicate quickly with your design coach

Highlight the most important information (yes, with a highlighter!)



WaterSmart Landscape
MAKEOVER SERIES

Landscape Design Questionnaire
Please highlight the most important information.

Name(s): _____

The following questions are designed to give the Design Coach an overall idea of your likes and dislikes as well as what you might like to see in your new landscaping. Please **only fill in the items that pertain to what the Design Coach will work on**. Bring this to your Design Coach Appointment.

1. Please list **family members** and **hobbies** which might influence property use
2. Are there any **allergies** or other **medical conditions** to be considered?
3. Do you have any **pets** that might require a special area or run?
4. Do you want or need a **fence**?
Are there any specific community height restrictions or covenants?
5. **Entryway:**
Would you like it open, or more enclosed and private?
What type of walkway?
Is it wide enough to be welcoming?
6. **Driveway:**
Is it wide enough/too wide for your needs?
Do you need additional parking for guests?
7. **Utility Area:**
Where will you place your garbage cans?
Do you need room for a compost pile? Woodpile? Storage shed?
Any future outbuildings?



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Narrow the list of plants that match your selected rating

WaterSmart Personal Plant Palette:

Name: _____

Common Name	Botanical Name	Mature Size HT x WIDTH	Design Feature	Water Use

Homework:
Complete Bubble
and Hardscape
Plans

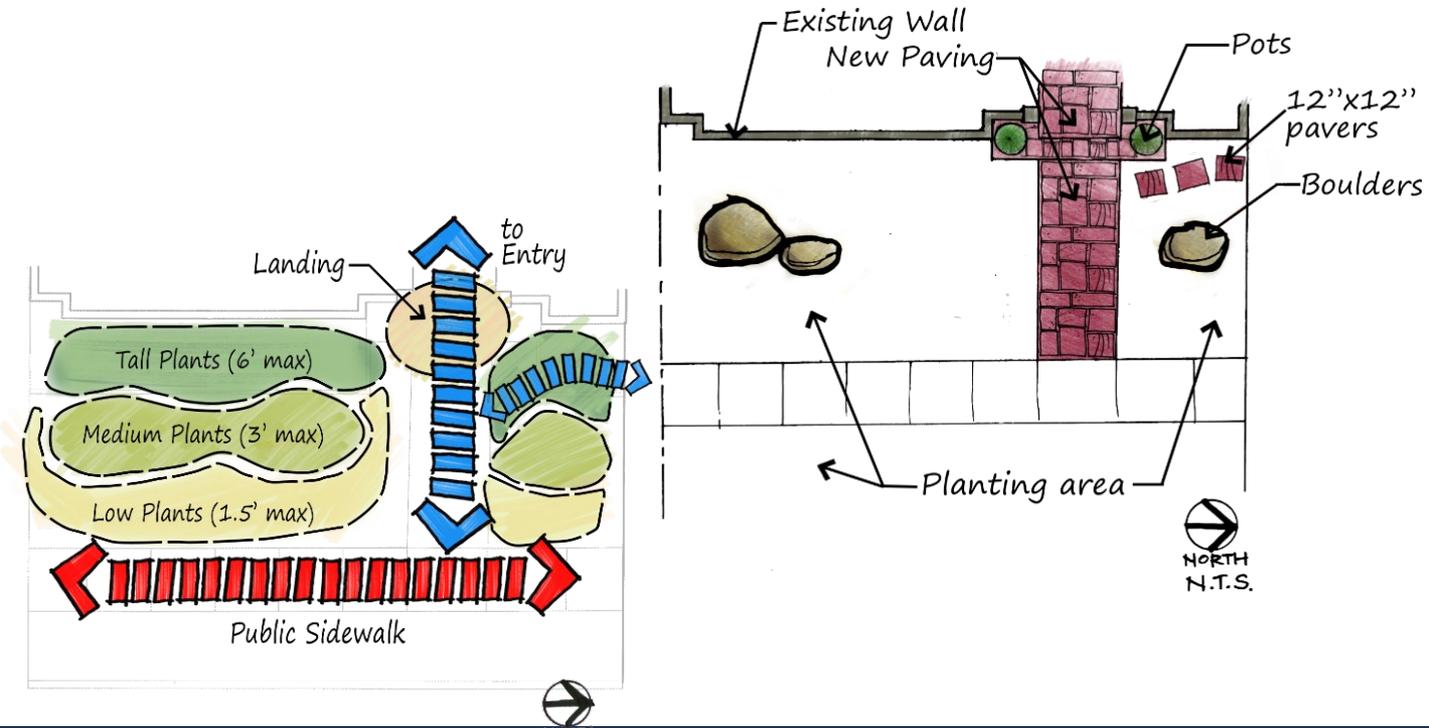
Complete your bubble plan with different heights

Draw a hardscape plan that defines your space and your use areas

List your different materials and elements on the plan

Bring these to Class 4 for your Design Coach appointment

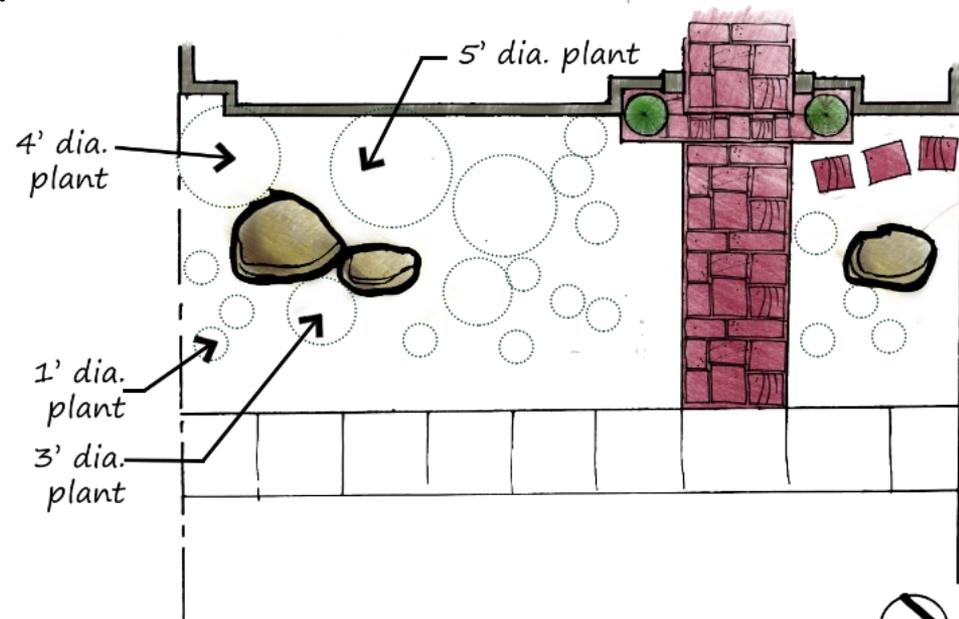
Get Ready!
For your
Design Coaching
Appointment
at class 4



Add your plants after you've completed your hardscape. Pencil them in using scale circles. Indicate plants by name using a key or labels. Bring this to Class 4.

Push through any crisis in confidence!

You will have your plans by the end of Class 4!



Complete

- Landscape design questionnaire
- Plant list
- Bubble diagram
- Hardscape plan

Start

- Planting plan

Read

- A Homeowner's Guide to a WaterSmart Landscape*** steps 4-6
- The resource info in your notebook

Watch

- Videos On Demand** episodes 9 through 17 at landscapemakeover.watersmartsd.org

For more technical information, refer to the **Sustainable Landscape Guidelines** online at landscapemakeover.watersmartsd.org/resources

Photograph

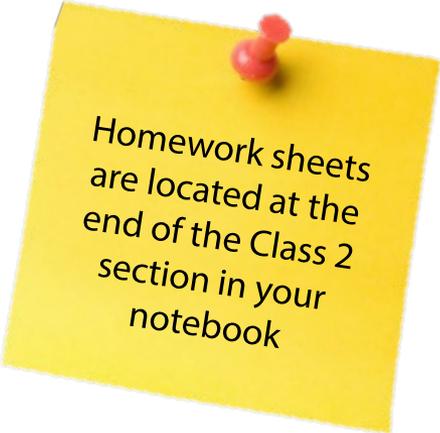
- Your irrigation system

Identify

- Sunset climate zone

Collect

- A turf sample – one for each type of lawn you have – and bring it to the next class



Homework sheets
are located at the
end of the Class 2
section in your
notebook

WaterSmart Landscape MAKEOVER SERIES

CLASS

3

Class 3 – Make It Happen!

Learning Objectives

Retrofit Your Irrigation

Landscape Implementation

- Turf Removal
- Sheet Mulching
- Contouring

Maintenance

Prep for Design Coaching

WaterSmart Landscape MAKEOVER SERIES



QUESTIONS?