SUSTAINABLE LANDSCAPE DESIGN PRINCIPLES

HISTORICAL PERSPECTIVE

RESOURCES  DESIGN  ON THE GROUND
How did the concept of ‘Sustainable Design’ become so popular?
Why does it seem as if every Magazine and every Company seems to be marketing the idea of ‘Sustainability’
More and more people are discovering the benefits to business and the environment by joining in

“... You have to have someone in every hotel who champions the process,” he says.

At the Atlantis, for instance, Food and Beverage Chira Pagidi wants the program to serve as an example to others about the steps that can be taken to improve the environment for future generations.

It’s important, too, for participating hotels and restaurants to make the commitment to train their staffs to remove contaminants — plastic straws, for instance — from the stream of food waste.

And Full Circle faces competition, both for the ingredients of compost as well as sales of the finished product to gardeners.

R.T. Donovan Co. Inc. in Spanish Springs also is drumming up sources of organic material, working closely with Castaway Trash Hauling of Lockwood.

The Spanish Springs composting company is handling material from locations such as John Ascuaga’s Nugget and Great Basin Brewing Co.

On the other side of the business — selling finished compost to improve Nevada’s notoriously lousy garden soils — Craig Witt is working hard to position Full Circle’s production as a branded product that so superior to its compe-

Nevada Appeal Article, Sunday Jan. 29, 2012
In the 1960’s and 70’s

Concepts like

- Ecology and Habitat
- Biodiversity
- Conservation
- Composting, Recycling
- Urban Garden Ecosystem
- Grey Water

were gaining acceptance; people were comprehending that resources were becoming limited, populations exploding and that the earth had a finite ability to absorb pollutants.
The ‘back-to-the-earth’ movement supported by young baby boomers and scientists (Garrett Hardin’s famous ‘lifeboat theory’) was concerned with human impacts on the environment and the ability of our planet to sustain life.

Today, such ideas are evolving daily and dynamically.

Resources are more limited than ever, regulations demand compliance, and cost efficient practices are on the rise.
Sustainable Design is evolving from Government regulations seeking to protect the quality of our environment by reducing runoff and pollutants through storm and wastewater management.
This has led to innovative practices such as

▶ LID Strategies that

- Reduce impervious surface
- Increase landscape area
- Capture, infiltrate and treat run-off
- Conserve site soils
and Construction mandates

➤ **BMPs (Best Management Practices)**

Figure 3. Site F with properly installed and maintained BMPs. Bales of hay contain much of the sediment while a hay reinforced silt fence.
MAYBE NOT AN ‘EXPERT’...
BUT BE A WISE ‘DECISION MAKER’!

Local Resource Agencies
Natural Resources Conservation Service
UNR Cooperative Extension
Nevada Division of Forestry

Partner with Local Professionals

Local Web Design Resources


NEMO Website:  http://www.unce.unr.edu/programs/sites/nemo/lid/
REGULATIONS, PERMIT REQUIREMENTS and ENFORCEMENT has some benefits!

- Heightened Public Awareness and Expectations
- Scientific and Technological Design Improvements
- Commercial Opportunities and Access to Products
- Increased Ethical and Professional Responsibility
- New Standards for Practice in the Marketplace
Sustainable Sites Initiative (SITES)

- Modeled after the LEED rating system for buildings
- Rates 9 areas

- Site Selection
- Pre-Design Assessment and Planning
- Water

- Soil and Vegetation
- Materials
- Human Health and Well Being

- Construction
- Maintenance
- Monitoring/Innovation

- Applies them to all types of landscape design projects, with or without buildings
A sustainable landscape (according to SITES) should be designed to be both **attractive and in balance** with the local climate and environment.

**Designs should be**
- Functional
- Cost-efficient
- Visually pleasing
- Environmentally friendly
- Minimal resource input
- Maintainable
Some of the Solutions available to us right now are

- Reduction of Storm Water Runoff through bio-swales
- Reduction of Water Use through xeriscaping
- Bio-filtering of Wastes through constructed wetlands
- Integrated Pest Management Techniques
Energy efficient landscape design in the form of proper placement of shade trees and wind breaks

Replenish groundwater and control runoff with permeable pavers

Efficient Irrigation or use of gray water

Preserving and enhancing wildlife habitat
Use of sustainably harvested wood or other composite products in deck or other landscape construction

Soil Management techniques to maintain a healthy soil

Using renewable energy sources such as solar powered lighting

Recycling of products to make other materials
Post Construction Goals of Sustainability

- Reduced Water Use
- Lower Utility Bills
- Reduced Urban Heat Island Effect
- Cleaner Air, Water
- Restored Habitats
- Lower Maintenance Costs
- Reduced Carbon Emissions
Design

Landscape Professionals are often viewed as ‘caretakers of the earth’.

Our role includes understanding and balancing diverse elements.

Human Needs and Desires
Aesthetics
Soils
Plants
Animal Habitat
Pest and Diseases
Erosion Processes
Hydrology
Nutrients
Climate
Engineering Practices
Architectural Intent
Regulatory Environment
Design is a Collaboration

Smart Design + Qualified Contractors + Well Maintained Product = No one person defines success
Teamwork is Essential

Designers
Landscape Architects
Architects
Engineers
Contractors
Resource Specialists

Contractors
Landscape Contractors
General Contractors
Masons
Subcontractors
Material Suppliers
Maintenance Crews
Related Professionals such as

Arborists
Horticulturalists
Nurserymen
Wetlands Experts
Native Seed Vendors
Erosion Control Specialists
Mulch Suppliers
Soil Laboratories
And, Your Client
SO, MAYBE NOT AN EXPERT...
BUT A PRAGMATIC THINKER!

Design doesn’t start at the desk or the computer, it starts by

► Getting Informed
  □ Site Evaluation (observe, photograph, take measurements)
  □ Talk with your Client, Team members
  □ Obtain relevant history, background data
  □ Find out what regulations/permits are applicable

► Establishing clear Goals
  □ Set standards for the design
  □ Understand the constraints and benefits of the site
  □ Think about the consequences of action

► Now Conceptual Design can begin
Nice Try

First Attempt

Getting It

EVOLUTION OF A DESIGN
DESIGN ALTERNATIVES
THE END GOALS INCLUDE

ATTRACTION, USEFUL, IN CONTEXT, SAFE AND SUSTAINABLE
Next steps can be repetitive

► Present to your Client, Stakeholders, Customer
  □ Can you justify your proposals
  □ Are there workable alternatives
  □ Are there cost / benefit tradeoffs involved

► Refine, Redo, Revise, Re-cost, Re-evaluate
  □ Did everyone’s comments get incorporated
  □ Is there a suitable compromise
  □ Can the Client afford it

► Keep working towards a plan that is the best synthesis of
  □ Intent
  □ Ideas
  □ Discourse
  □ Client satisfaction
  □ Environmental care
  □ Public acceptance
A feature of Sustainability is making ‘sensible space of the landscape’

- A house has every room programmed
- Useless space costs $
- Useable space provides value beyond input costs

LAWN = BLANK SLATE OR PURPOSEFUL?
A feature of Sustainability is acknowledging the environment, design context

- Nevada is closer to Arab and African landscapes than pastoral
- Gas-powered landscapes are a source of pollution
- Sustainable designs should not require a constant maintenance approach

High Desert Ecology and Climate
Sustainable design can and should be aesthetically pleasing.
AFTER

SEPTIC MOUNDS
WHERE IS THE FRONT DOOR?
LOTS OF LAWN AND GRAVEL
CONSTRUCTION
Sustainable design requires thoughtful installation and maintenance practices
Noticing irregularities

When the sprinkler keeps getting broken, is location the problem?

Does every plant deserve the same haircut?
RECAP

THINK ABOUT THE PARTS AND THE WHOLE

PROTECT AND ENHANCE RESOURCES

BE A WISE DECISION MAKER

WORK CONSCIENTIOUSLY
CREATE SOMETHING
SUSTAINABLE, LASTING
AND BEAUTIFUL