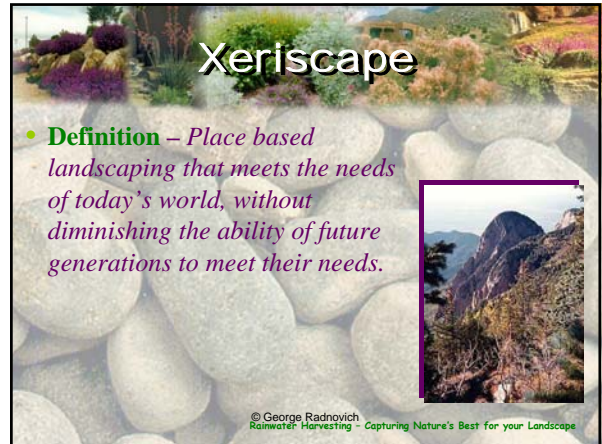




Xeriscape & Green Technologies


George Radnovich, ASLA
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Xeriscape

- **Definition** – *Place based landscaping that meets the needs of today's world, without diminishing the ability of future generations to meet their needs.*



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Agenda

- Background
- Xeriscape and Green Technologies
- Public Ordinances / Laws
- The Costs of Xeriscape
- Case Studies
 - MESA
 - !25
 - Pavilions
 - High Desert
- Questions and Answers

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Background

- Xeriscape is a whole systems approach
 - Holistic Approach
 - Site Preservation
 - Natural Materials
 - Resource Conservation
 - Sense of Place



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Background

- Whole Systems Approach
 - Limit Waste / Recycle Materials



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Xeriscape and Green Technologies

- Site Protection
- Layout and Organization
 - Land Use
 - Site Circulation
 - Hydrozoning and Oasis Concepts



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Xeriscape and Green Technologies

- **Land Forming Devices**
 - Hilltop
 - Swale
 - Slope
 - Flat Terrain
- **Watershed & Drainage**



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Xeriscape and Green Technologies



- **Water Harvesting**
 - Arroyos, Swales and Drainageways
 - Dams / Ponding and Storage
 - Check Dams
 - Porous Dams
 - De-Sedimentation Ponds



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Xeriscape and Green Technologies

- **Wicking Systems**
- **Cisterns**
- **Site Hydrology**



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Xeriscape and Green Technologies



- **Plant Layering**
- **Re-vegetation**
 - Re-seeding (crimp, imprinting, etc.)
 - Waterless landscaping
- **Landscaping (irrigated)**
 - Dry Land Plants
 - Higher Water Plants



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Xeriscape and Green Technologies

- **Remediation of Water Pollution**
- **Sound Attenuation**
- **Protection of Night Skies**



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Public Ordinances/Laws

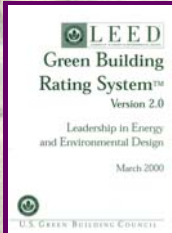
- **Local**
 - **Typical Landscape Regulations**
 - Stormwater Management
 - Water Waste / Xeriscape Ordinance



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Public Ordinances/Laws

- **Federal Guidelines**
 - Energy Consumption (DOE)
 - Environmental Quality (EPA)
 - Stormwater (FEMA (NEPA))
 - **LEED**



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LEED

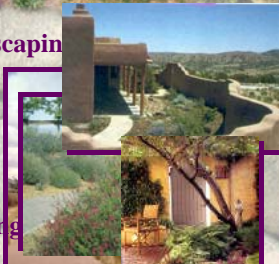
- Erosion and Sediment Control
- Urban / Brownfield Redevelopment
- Reduced Site Disturbance
- Stormwater Management
- Design to Reduce Heat Islands




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LEED

- Water Efficient Landscaping
- Green Power
- Materials


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Xeriscape Steps

Steps	New Xeriscape	Xeric Conversion
Design	✓	✓
Protection of Retained Landscape	✓	✓
Careful Removal of Extant Landscape		✓
Save Aside Recyclables		✓
Grading	✓	✓
Install Retrofit Irrigation System	✓	✓
Install Landscape Materials	✓	✓
Topdress and Finish	✓	✓
Conduct Irrigation Audits	✓	✓
Train Maintenance Personnel	✓	✓

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Cost Comparisons

- **Costs**
 - Reclamation - \$2,000.00/acre
 - Re-vegetation - \$.50 to \$1.00/sf
 - Xeriscapes - Primarily Mulch/Gravel \$1.00 to \$2.00/sf
 - Xeriscapes - Mulch/Gravel with Alternative Turfs - \$1.75 to \$2.50/sf
 - Traditional Landscapes \$1.75 to \$3.00/sf




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The Cost of Xeric Conversions

- **Payback Period**
 - 3 to 6 years
- **Water Savings**
 - Cost cut by 1/2 to 2/3
- **Savings of Other Resources**
 - Fertilizer
 - Gasoline
 - Labor
- **Maintenance Costs**

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The Cost of Xeric Conversions

- **Maintenance Costs**
 - Traditional Landscape - \$1,300 to \$2,600 /acre/mo.
 - Heavily Planted Xeriscape - \$900 to \$1,700 /acre/mo.
 - Moderate Xeriscape - \$500 to \$900 /acre/mo.
 - Natural Landscape - \$150 to \$300 /acre/mo.

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Case Studies

- **MESA (Microsystems and Engineering Sciences Applications)/Sandia Labs**
- **!25 Project**
- **Pavilions**
- **High Desert**

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MESA

- **Campus Planning Important**



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MESA

Characteristics




- **Uses a Previously Developed Site**
- **Relocates Trees/Other Materials**
- **Reduces Heat Islands**
- **Uses Native Plants**
- **Uses Local Materials**



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MESA


- **Water Harvesting**



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MESA

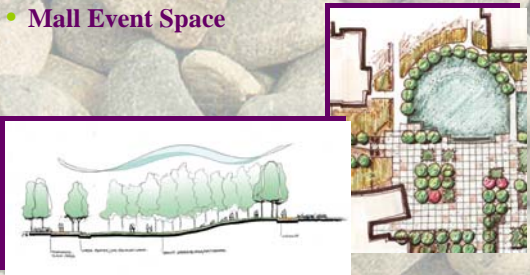
- **Mall Area**



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MESA

- **Mall Event Space**



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MESA

- **Interpretive Feature**



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I25 Project

- **Reuses Existing Site**
- **Uses Native Plants in Traditional Ways**
- **Use Environmental Graphics**



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I25 Project

- **Pedestrian Orientation**
- **Use of Local Materials**
- **Use of Alternative Turfs**



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Pavillions

- **Water Harvesting**
- **Local Materials**
- **Native Plants**



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Pavillions

- **Pedestrian Orientation**
- **Shade to Reduce Heat Islands**



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