

Designing for Water Scarcity: Experience from a Semi-Arid Landscape

ASLA 2013 Conference Presentation

Summary

Water scarcity is a global issue that will increasingly impact site design. Landscape Architects can be leaders in sustainable water-use by tapping on-site sources. Often, the biggest challenge is not in identifying sources, but in navigating a multi-discipline effort to determine the most effective option for site and Client. Through case studies, presenters will outline technical issues and provide strategies to approach on-site water re-use potential.

Learning Objectives

- Understand the issues of water scarcity and how they impact site design in the dry West and beyond.
- Learn about common on-site sources for water re-use in Southern California, including advantages, disadvantages, technical constraints, and common misconceptions
- Review case study projects that employ innovative, multi-discipline strategies for on-site water re-use

Presenter Bios

YuJu Liu, ASLA, LEED® AP, Spurlock Poirier Landscape Architect, CA

YuJu, an Associate Principal with Spurlock Poirier Landscape Architects, manages most of the studio's largest projects, both in scope and complexity. She leads the studio's Sustainability Research efforts, turning the research into high performing built landscapes that are acclaimed for beauty and elegance in both place-making and technical innovation. Her projects have earned LEED Platinum certification and multiple design awards. Liu holds a Master of Landscape Architecture degree from the University of Colorado, Denver.

Joanne Aitken, FAIA, KieranTimberlake, PA

Joanne Aitken is a Senior Associate at KieranTimberlake, with over 20 years of experience as an architect, dedicated educator, and advocate for the built environment. She has previously presented lessons learned on building performance and sustainability, taught at Drexel University, served as President of the AIA Philadelphia, and as Chair of the Steering Committee for the Design Advocacy Group (DAG) of Philadelphia. Joanne received a Bachelor of Arts from St. John's College and a Master of Architecture from Harvard University.

Brent Bucknum, Hyphae Design Laboratory, CA

Brent Bucknum is Founding Principal of Hyphae Design Laboratory, an Oakland, CA based ecological engineering, research and design firm. With a background in restoration ecology and environmental policy, his expertise includes living roof design, low-impact stormwater projects, ecological landscapes, and rainwater, graywater, and

ecological wastewater treatment systems. Brent is also founder of the Urban Biofilter, a green infrastructure non-profit. Brent previously served as Design Director for the Living Architecture department at Rana Creek, an ecological restoration and design firm based in Carmel Valley, California.

Outline

- I. Introduction: understanding the impact of water scarcity
 - A. Global issue with impacts beyond dry climates
 - B. The environmental challenges of Southern California's semi-arid climate
 1. Water sources, rainfall, topographical patterns and ecological impacts
 2. Landscape and Water in the dry West
 3. Sustainable water-use: what does it mean for Southern California
- II. Strategies for water-use reduction
 - A. Project framing, client support, leverage entire design team and overall process
 1. Impediments to water re-use
 2. Why re-use water?
 3. How to get water re-use to happen?
 4. Leverage entire design team
 5. Ensuring success
 - B. Water Reuse technical and permitting history
 1. Different water types: rain, grey, mechanical, reclaimed...etc.
 2. Graywater Reuse Codes
 - a. General US Codes
 - b. California Codes
 - C. Landscape Design Consideration related to water reuse
 1. Plant selections related with water treatment quality
 2. Irrigation installation and code requirement
 3. Planting Establishment and Irrigation Maintenance Issues
 - D. Greywater Systems Overview
 1. Indoor vs. Outdoor reuse
 2. Manufacture packaged systems vs. site built
 3. Costs and ROI's
- III. Project Case studies and Water Calculations
 - A. Water reuse calculations
 1. Landscape Water Calculations
 2. Greywater Reuse Calculations
 - B. Charles Keeling Student Apartments, Revella College, UCSD
 - C. Mercy-Chicago
 - D. SFMOMA
- IV. Lesson Learns