



Green Infrastructure & Stormwater Management CASE STUDY

Stone Brewing World Bistro & Gardens

Location: 1999 Citricado Parkway, Escondido, CA

Client: Stone Brewing World Bistro & Gardens

Design Firm(s): Schmidt Design Group, Inc.

Landscape architect/Project contact: Glen Schmidt, FASLA

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ASLA Chapter: San Diego

Project Specifications

Project Description: This project includes the outdoor patios and gardens at a popular brewery/restaurant destination, Stone Brewing World Bistro & Gardens, in North San Diego County.

The gardens were created as a 1 acre park-like environment for dining, relaxing, exploration, and special events. The majority of these gardens are located within a stormwater detention basin that accepts water from the surrounding commercial/industrial park.

Project Type:

Commercial

Part of a new development

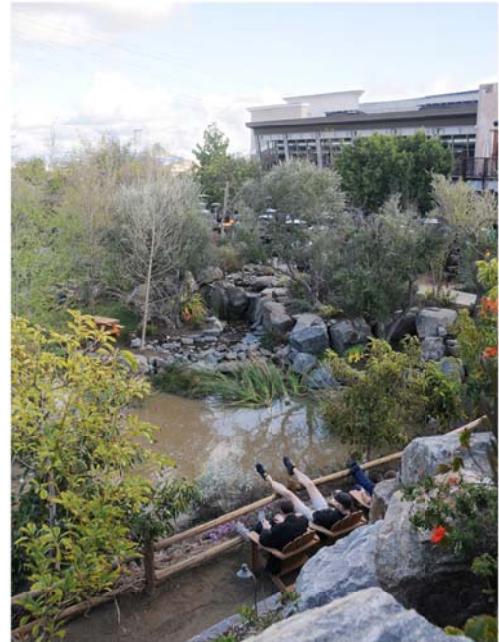
Design features: Bioretention facility, rain garden, temporary detention facility within a larger stormwater retention/detention framework within the 100-acre commercial development.

This project was designed to meet the following specific requirements or mandates:

Local ordinance, developer/client preference

Impervious area managed: 5,000 sq/ft to 1 acre

Amount of existing green space/open space conserved or preserved for managing stormwater on site: less than 5,000 sq/ft



The central detention pond is wet year-round from the surrounding development nuisance water. A small cascading waterfall provides aeration. Edible plants are specially featured in this part of the garden, such as the Avocado tree in the left corner of the photograph.



The regulatory environment and regulator was indifferent to the project.

Did the client request that other factors be considered, such as energy savings, usable green space, or property value enhancements? Yes. Energy savings, usable green space, and property value enhancements were all important factors considered when designing the space. In particular, usable green space was a focus. A decomposed granite handicap-accessible pathway leads visitors around the perimeter and into the basin. During large storm events, stormwater flow fills most of the basin and gardens and can overflow onto the lower patios and gathering spaces. Throughout the remainder of the year, the entire garden and basin area remains usable green space.

Cost & Jobs Analysis

Estimated Cost of Stormwater Project: \$500,000-\$1,000,000 (Public funding: None)

Was a green vs. grey cost analysis performed? No.

Cost impact of conserving green/open space to the overall costs of the site design/development project: By preserving open space and developing the basin as an aesthetically appealing, accessible space, the owner was able to create usable space that accommodates restaurant seating, large fundraisers, weddings, and other special events such as movie nights. This turned a stormwater basin that would otherwise have been an expense, into an income-generating space.



Site Plan: Stone Brewing World Bistro & Gardens - Escondido, California

Cost impact of conserving green/open space for stormwater management over traditional site design/site development approaches (grey infrastructure)? Significantly reduced costs (10% or greater savings). The careful design of the basin allows it to function as a regional resource providing stormwater management and water quality improvements, while continuing to be a functional space for the business. As mentioned above, this transformed a stormwater basin that would otherwise have been an expense, into an income generating space.

Number of jobs created: 26

Job hours devoted to project:

Planning and Design: 345

Construction: Unknown

Annual Maintenance: Unknown

Performance Measures

Stormwater reduction performance analysis:

Temporary detention facility was designed to meet criteria for a 50-year storm.

Community & economic benefits that have resulted from the project: The utilization of a detention basin for public enjoyment and recreation has positive community and economic benefits. By taking advantage of detention basins like this, communities can combine the need for open space and recreation with stormwater management and water quality improvements. It is a model that provides water quality improvements for the runoff through bioremediation and phytoremediation.

Project Recognition

Sustainable Sites pilot program participant; Presidents Award, ASLA San Diego (2009); Orchids and Onions Public Awareness Program (2007)

Additional Information

Links to images: Stone Brewing World Bistro & Gardens: www.StoneBrew.com

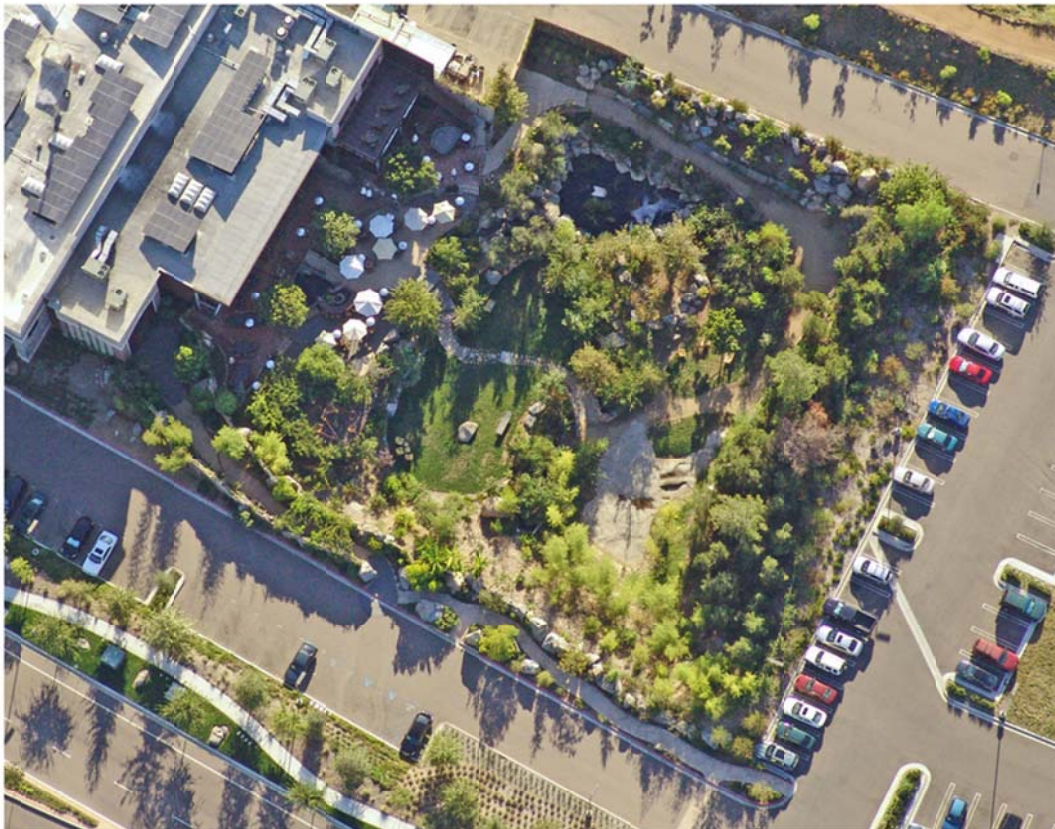
Stone Brewing Garden Blog: <http://blog.stonebrew.com/> (Click to "Our Garden")

EPA Photo Album:

<http://www.flickr.com/photos/48875472@N06/sets/72157626448853932/with/5598385106/>

The owner is committed to environmental responsibility in numerous ways. For example, 30% of the Brewery's electrical needs are produced with a 277 kilowatt photovoltaic solar panel system. The basin gardens are 100% organically cared for by the Brewery's resident gardener. He uses byproducts from the brewery process and restaurant to maintain the garden, such as composting with spent barley and vegetable compost from the restaurant, and using spent oak

chips for mulch. The planting palette concentrates on Mediterranean plants and California natives appropriate to our region. Within the wetter areas, wetland and riparian species were specified. Ninety-nine percent of the boulders and rock utilized came from the site itself. Many of the patio materials were made from reused salvaged materials such as used brick from demolished buildings downtown. All granite pavers, tables, counters, and bars in the restaurant and patio, and the retaining slabs in the Gardens, are repurposed discards from a local quarry just 15 miles away. Edible plantings are in certain portions of the garden, including avocados, olives, citrus, sapote, cherimoya, fig, loquat, kumquat, Mexican guava, pomegranate, chili peppers, mint, rosemary, basil, bananas, apple, and nectarine. In addition, Chinook Hop vines have been planted in one area of the garden that are harvested and included in certain beer recipe.



Aerial of outdoor dining and the 1-acre detention basin/gardens.