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## FOREIGN INFORMATION

LOST DOG WASH TRAILHEAD

LANDESGARTENSCHAU RIETBERG

## FEATURES

INFORMATION SOCIETY & LANDSCAPE ARCHITECTURE

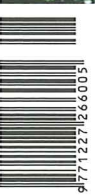
## COMPETITION

INTERNATIONAL COMPETITION FOR MAGOK WATERFRONT

# 244

2008 우수전문잡지

환경과조경 200808







LOST DOG



# Lost Dog Wash Trailhead in Arizona

McDowell Sonoran Preserve의 남쪽 출입구에 위치한 The Lost Dog Wash Trailhead는 공사작업, 보존상태, 입안을 위한 환경을 포함하여 건조한 지역에서의 새로운 표준을 설립한 작품이다. 본 프로젝트는 환경적인 보존문제와 연약한 사막생태계를 보호하는데에 초점을 두어, 태양열의 효율적인 이용을 비롯해, 화장실 설치, 우수저장시스템등 다양한 부분에 대해 고심하였다고 한다. 9분의 3에 해당하는 지역이 생태계 보존지역인 The Lost Dog Wash Trailhead는 전체면적의 사막환경설계에 관한 미래를 보여주는 표준적인 모델로 손꼽히며, 이에 참여했던 회사들로는 Weddle Gilmore Architects, Floor Associates, Landscape Architects들이 있다.

글 \_ 김규형 · 본지 객원기자 | 에디터 \_ 백정희 | 사진 및 자료제공 \_ Floor Associates | 디자인 \_ 이은미







대상지는 산들과 초목이 자라고있는 총적으로 구성된 부지, 그리고 근접한 The Tonto National Forest와 The Maricopa County Regional Park를 이어주는 길게 뻗은 자연도로가 형성되어 있었고, The McDowell Sonoran Preserve이 차지한 지역은 거의 57평방마일에 해당되었는데, 이는 Scottsdale 전체부지의 3분의 1을 차지하는 면적이며 미국에서 가장 큰 보호구역이기에 가능한 자연 그대로의 모습을 유지하려 노력했다고 한다. Lost Dog Wash Trailhead는 하이킹이나 승마, 산악자전거, 조류관찰, 경관감상, 피크닉, 암벽등반 등을 즐기려는 사람들이 주로 찾는 곳으로 다양한 기능을 할 것으로 생각된다.

The Lost Dog Wash Trailhead의 총괄적인 계획은 야의 학습장으로서의 기능, 보행자와 말을 타는 사람들이 이용하는 데 있어서의 편리함, 공원과 주차장의 구분등이 고려 되었다. 부지 곳곳에는 하이킹의 기본교육, 지역의 역사소개, 소노란 사막Sonoran Desert의 동식물 분포 등에 관한 시설물들이 설치되어 교육적 요소로 활용되고 있다

주변환경에 대한 연구와 분석은 설계팀에 의해서 이루어 졌으며, 주로 고고학적인 평가, 지형분석, 경사 및 수문학적 분석, 토양 및 야생동식물 관찰 등이 대부분이었다. 연구결과는 프로젝트의 부지양상 및 전반적인 설계의 정확성을 구축하는데 많은 도움이 되었으며, 설계팀은 주변 현황을 고려하여 시각적인 효과를 두드러지게 하고, 지역 특성상 침식가능성이 높은 지역에 대해서는 조심스럽게 작업을 진행하였다고 한다. 또한 중요한 지역은 그대로 보존하여 활용하였으며, 초원의 생태계를 유지하는데 큰 역할을 하고 있는 수계는 가급적 보호하고자 노력하였다.

야생식물들은 최대한 보존하고 개발이 필요한 지역의 경우 야생식물들을 그대로 채취하여 다시 식재하는 과정으로 설계를 변경해 나갔다고 하는데, 이곳에는 약 1천여 종 이상이 번성하고 있었기 때문에, 전반적인 프로젝트의 컨셉은 바로 자연적인 부지 그 자체만으로도 가치가 있다는 것이었다. 따라서 자연 그대로의 부지특성을 살리고 기존의 야생식물을 다시 재활용하는 계획이 적용되었으며, 이러한 재활용의 의미는 ‘re-vegetate’라는 표현으로 소노란 사막지대의 상징적인 요인이 되었다고 한다.

재활용에 대한 부분은 토양도 마찬가지여서 기존의 토양은 4인치 두께의 자연적인 도로로 재활용하였다.



건축물 및 시설물 제작에 있어서도 70% 이상은 현지에서 활용할 수 있는 토양 및 석재를 재활용 하였으며, 주차장은 부식된 화강암을 사용하여 삼투압 효과를 증대시키고 지면의 열을 줄이는 효과가 있을 뿐만 아니라 화강암과 산길 지면 색채의 적절한 조화가 자연스러운 분위기를 연출하고 있다. 구조물을 둘러싼 외벽은 다져서 굳힌 흙으로 만들었고, 지붕 판넬은 철골 프레임으로 형성된 구조물 위에 설치함으로써 도료를 사용하지 않고 자연스럽게 녹이 생기도록 하였다. 조명볼라드나 휴지통, 재활용 수거함 등도 자연스러움을 강조하기 위해 건축물과 같이 조화를 이루도록 제작하였다고 한다.

우수저장시설로 연간 2만갤론 정도의 물을 보관하여 시설물 내 화장실에서 사용하고 있어 별도의 수도관 설치의 필요하지 않았으며, 또한 지붕에는 태양광을 모을 수 있는 집열판을 설치하여 저장된 2000와트의 전력이 LED조명과 음수대를 돌리는 원동력이 된다. 지붕을 타고 내려오는 빗물이나 음수대, 시설물 내부에서 사용하고 남은 물들은 정화처리하여 약 4000갤론 정도의 물을 보관할 수 있는 지하탱크에 저장해 두는데, 이 물은 주변에 산재된 초목들의 공급원으로 활용이 되기도 한다.

The Lost Dog Wash Trailhead 프로젝트는 자연환경을 재활용한 좋은 예를 제시할 뿐 아니라 ASLA와 미국 건설협회(The American Institute of Architects) 등 단체들로부터 다수의 디자인상을 수상함으로써 그 가치를 인정받았다. Weddle Gimore Architects와 Floor Associates의 설계팀은 최근 Gateway로 알려진 보존생태구역에 관한 설계를 성공적으로 마치고 내년에 오픈할 예정이라고 한다.





Situated at the southern gateway to the City of Scottsdale's McDowell Sonoran Preserve, the Lost Dog Wash Trailhead has established a new standard for sustainable arid region design, including strategies for planning, preservation and construction. The project balances the various needs of the Preserve visitors and methodologies to protect the fragile desert ecology, including minimization of site disturbance, utilization of onsite materials, solar power, composting toilets, rainwater and gray-water harvesting. The Lost Dog Wash Trailhead is the third of nine planned Preserve Access Areas designed by the award winning team of Weddle Gilmore Architects and Floor Associates, landscape architects, and the project now serves as the model for all future Preserve Access Areas and desert sensitive design in general.

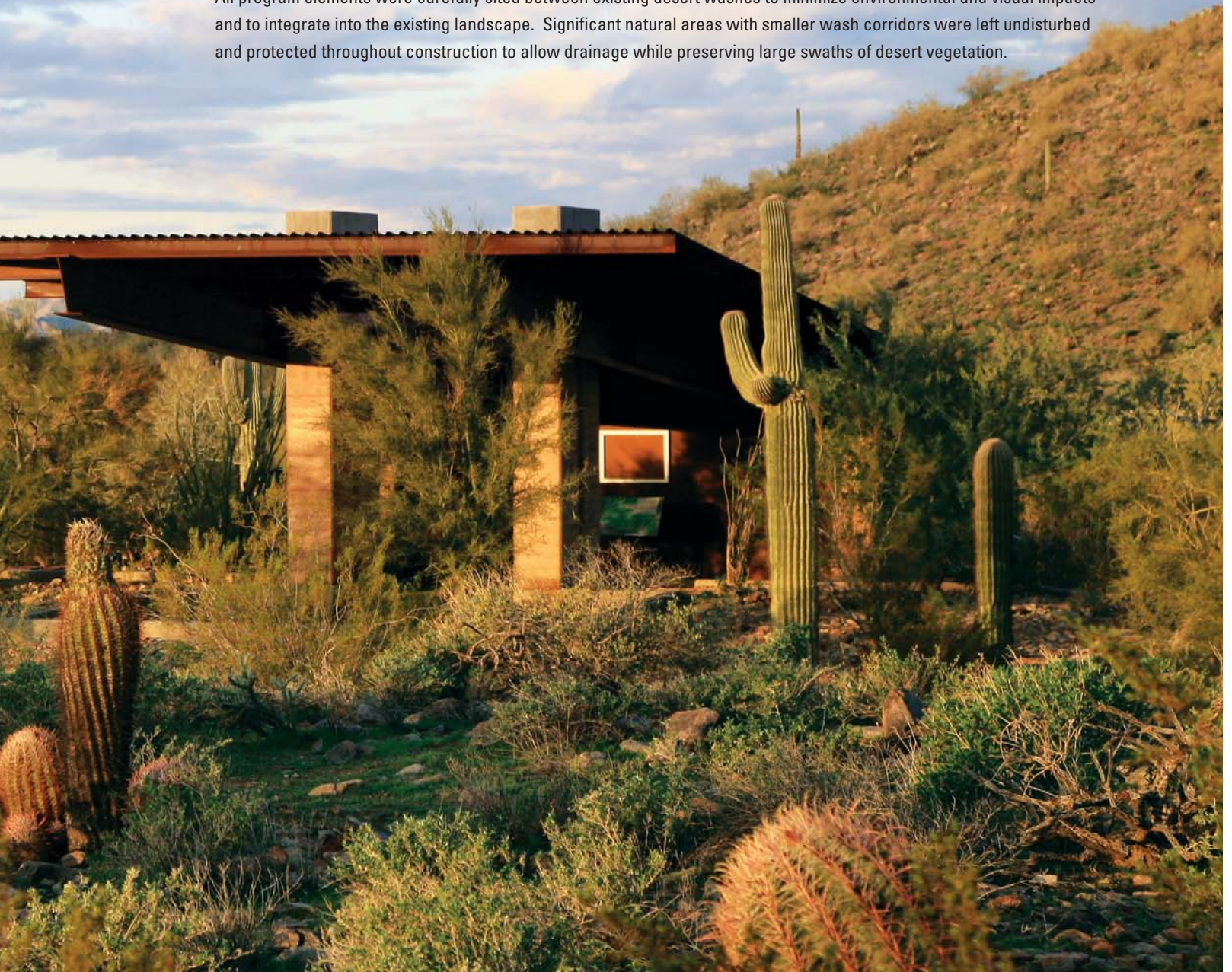
Located in north Scottsdale, Arizona, the McDowell Sonoran Preserve consists of mountains, heavily vegetated alluvial washes and large tracts of undisturbed Sonoran Desert that create natural open space corridors linking adjacent communities, the Tonto National Forest and the Maricopa County Regional Park. When completed, the McDowell Sonoran Preserve will encompass nearly 57 square miles (147 square kilometers) or approximately one-third of Scottsdale's total land area, creating one of the largest urban preserves in the United States. The McDowell Sonoran Preserve is intended to be maintained in as natural a state as possible. As such, the Preserve Access Areas are envisioned to be demonstration projects for sustainable desert design practices and are intended to explore new technologies and develop new methodologies that promote and contribute directly to sustainable design practices.





The Preserve Access Areas allow visitors to experience the Preserve through hiking, horseback riding, mountain biking, nature studies, bird watching, scenic viewing, picnicking, rock climbing and more. The 7-acre Lost Dog Wash Trailhead site is located at the convergence of two popular multi-use trails at the foot of the McDowell Mountains, allowing for access to more than 17 miles of recreational trails within the Preserve.

The program for the Lost Dog Wash Trailhead project included new trailhead facilities, outdoor classroom areas and trail improvements for pedestrian and equestrian uses, each being served by separate parking areas. The facilities are home to various educational programs that include guest lectures, field-based classrooms and guided interpretive hikes that introduce participants to local area history and instill appreciation for the varied flora and fauna of the Sonoran Desert. The surrounding desert context was the touchstone for all site and architectural improvements within the project. Extensive studies and analyses were conducted by the design team which included archeological assessments, topographic surveys, slope and hydrology analyses, vegetation survey, soil studies, wildlife and habitat surveys and native plant inventories. These studies informed all design decisions from initial design through the project's construction phase. All program elements were carefully sited between existing desert washes to minimize environmental and visual impacts and to integrate into the existing landscape. Significant natural areas with smaller wash corridors were left undisturbed and protected throughout construction to allow drainage while preserving large swaths of desert vegetation.











Early conceptual studies were frequently reviewed and proposed development limits were repeatedly fine-tuned allowing for maximum preservation of native trees and cacti stands. Where development required disturbance, the native desert pavement, trees, cacti, shrubs and natural artifacts were salvaged, stockpiled, and reinstalled on site as part of the planting design. In total, more than 1,000 specimen plants were salvaged and reintroduced to the site as part of the revegetation effort.

The planting concept is derived entirely from the site itself. As part of the site analysis process, Floor Associates conducted extensive field surveys to determine which plant species were indigenous to the specific areas of the site, including cataloging of plant densities and plant associations. In the desert, plant species, densities and associations can vary widely within even relatively small sites due to such environmental influences as drainage patterns, soil characteristics, exposure and elevation. This data was used to “re-vegetate” the site to replicate pre-construction conditions. Re-vegetation efforts mirrored the symbiotic plant relationships of the surrounding Sonoran desert and drew from native plant densities and growth patterns cataloged prior to construction. The focus on these patterns and densities helped to ‘blur the edges’ of natural and recreated landscapes, as well as to preserve and protect wildlife habits. In addition to the native plants, the top four inches of native soil and native “desert pavement” cobble within the limits of disturbance were salvaged and stockpiled for later redistribution. This allowed the project’s top-dressing to seamlessly integrate into the adjacent coarse and rugged desert floor. The desert cobble textures allow the establishment of plant communities by providing a protected place to take root. To minimize site disturbance, the construction process was carefully monitored by the design team. This included locating temporary fencing at the edge of the construction envelope to limit activities to designated areas; designating staging areas for materials and equipment and restoring these areas upon project completion; and developing a stringent construction recycling program.





Over seventy-percent of building materials were of local origin or directly supplied from the site in the form of native soils and screened rock materials. The parking lot areas and vehicular drives were constructed of stabilized decomposed granite, in lieu of traditional paving materials, to increase percolation and minimize surface runoff and heat gain. Stabilized granite parking areas and trail surfaces utilized screened site soils to match the adjacent colors and textures of the desert floor. The walls of the trailhead structures are rammed earth, utilizing soil from onsite excavations. The structures' metal roof panels and steel framing members were left in their unfinished raw state and allowed to naturally rust and patina, thus avoiding the use of paint or other potentially toxic finishes. This natural approach was extended to include the site furnishings, such as light bollards, trash receptacles and vehicular wheel stops. This thoughtful use of natural indigenous materials effectively integrates the amenities into the native site landscape. The Trailhead lavatories use composting toilets that provide an annual savings of 20,000 gallons of water compared to conventional systems and eliminated the need for installation of municipal sewer lines. The rooftop panels of the main trailhead structure house a 2,000-watt solar array which allows the Trailhead to be self-sufficient and independent from the municipal electric grid. The array powers LED lighting and a drinking fountain chiller. The project is essentially "off the grid" with no utility connections, with the single exception being potable drinking water.









Rainwater from the roof of the main structure and gray-water from its lavatory sinks and drinking fountains is collected and stored in a 4,000-gallon underground cistern. This gray-water is reused by the drip irrigation system as supplemental water to new landscape plantings. A two-year timetable was set to wean new plantings from irrigation, thus relying solely on natural rainfall. A temporary irrigation system utilizing potable water was used for initial establishment, particularly for the dry-scattered seed mix, and has since been phased out, as initially planned. The collected gray-water will continue to provide supplemental water during severe summer months to offset the long-term drought the region is currently experiencing.

The Lost Dog Wash Trailhead project exemplifies the principals of sustainable arid region design practices and has received a number of design awards from such entities as the American Society of Landscape Architects and the American Institute of Architects. The design team of Weddle Gilmore Architects and Floor Associates has recently completed the design of the next Preserve Access Area, known as Gateway, which will open to the public next year. Each project is unique in both the specifics of their sites and their programmed uses, however, each project successfully pushes the envelope of sustainable design and construction practices to create beautiful demonstrations on how to properly and appropriately build in the desert.





**Location** \_ 12601 North 124th Street, Scottsdale, Arizona, USA  
**Client/Owner** \_ City of Scottsdale  
**Lead Designers** \_ Phil Weddle(Architect), Christopher Brown(Landscape Architect)  
**Landscape Architect** \_ Floor Associates, Inc.  
**Architect** \_ Weddle + Gilmore Architects  
**Civil Engineer** \_ DMJM  
**General Contractor** \_ Valley Rain Construction  
**Rammed Earth Contractor** \_ Rammed Earth Solar Homes  
**Steel Contractors** \_ Kovak Inc  
**Photovoltaic** \_ American Solar Electric



Floor Associates is a Phoenix-based Landscape Architecture and Planning firm. Since its inception in 1997, the firm's focus has been providing quality design services for project types ranging from highly technical mixed-use commercial developments and resorts to master planned communities, community parks, interpretive places and healing garden designs. Our firm is dedicated to collaborating with our clients to reinvent the places we live, work and play, while respecting our sensitive desert environment.

Floor Associates has been recognized for design excellence for a variety of projects including Lost Dog Wash Trailhead Area (2008 National ASLA Honor Award), McDowell Sonoran Preserve Guidelines (2008 AZ-ASLA Presidents Award), McDowell Mountain Ranch Aquatic Center, Tropical Trails, East Valley Bus Operations and Maintenance Facility, Apache Junction City Hall and Municipal Court, Elsie McCarthy Sensory Garden, Herberger Theater, Acme Building, Finova Corporate Headquarters, Desert Garden, Foothills Academy, Pinnacle Peak Park and Desert Lives at the Phoenix Zoo, which received the President's Award for Environmental Design Excellence from the Valley Forward Association and national recognition from the ASLA. The firm's principals, Kristina Floor and Christopher Brown, have each practiced Landscape Architecture in the southwest for over 20 years.