

# U.S. Embassy Monrovia

## LEED® Gold Certified



The U.S. Embassy in Monrovia, Liberia is the first Leadership in Energy and Environmental Design (LEED®) Certified building in Liberia. The Embassy achieved LEED Gold Certification under the LEED for New Construction green building rating system.

Site 12 Acres | Project Cost \$28 Million | Occupancy November 2012

### Sustainable Site

The Embassy is located in the Mamba Point section of Monrovia, at the Greystone Compound. Throughout construction, nine rainforest upper-canopy species called Ceiba pentandra or Cottonwood rees, were protected. Cottonwoods not only provides valuable habitat for the giant fruit bats, but they are also worshiped as sacred trees by Liberians. Additionally, a number of other native species, were protected and integrated into the landscape of the new embassy grounds.

### Energy and Atmosphere

The Embassy consumes power produced from a 183-kilowatt photovoltaic installation serving dual purposes of shading vehicles from the hot African sun, and generating clean power from a renewable source. The installation is estimated to produce 75,170 kWh per year. The system was calculated to pay for itself within 14 years of installation. The new embassy is projected to reduce energy costs by 28% compared to the calculated baseline (ASHRAE 90.1-2004). The building off-sets power consumption by creating chilled water via a tri-generation system that has a 150 ton adsorption chiller. This system utilizes the waste heat of prime power generation as its main source of energy, thereby reducing the electrical loads that would be required by conventional chillers. Through the creation of energy, domestic hot water, and chilled water through one integrated process, the embassy's overall green house gas emissions are greatly reduced.

### Water Efficiency

Monrovia is the world's rainiest capital city. To take advantage of this abundance, a 264,000-gallon rainwater collection system was installed to supply the embassy with most of the necessary fresh water building and irrigation needs. In addition to not having to rely on municipally-provided water, the building is also calculated to use 32% less water than the performance requirements of EPA 1992.

### Materials and Resources

Due to the rock outcroppings pervasive throughout the site, the embassy footprint was reduced and the building made taller, to minimize site disruption. Extensive rock blasting was still required; however, all resulting gravel was reused onsite, providing much of the required aggregate for the concrete mix.

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**Design Architect** RTKL Associates

**Architect of Record** PageSoutherlandPage

**Contractor** B.L. Harbert International

**Landscape** LaPierre Studio

**Civil** Cervantes & Associates

**Structural** Ehlert / Bryan

**MEP** H&A Architects & Engineers

**Commissioning** KSJ Resources

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