# U.S. Embassy Antananarivo LEED® Silver Certified

The U.S. Embassy in Antananarivo, Madagascar is the first Leadership in Energy and Environmental Design (LEED®) Certified building in Madagascar. The embassy earned the silver level of LEED under LEED for New Construction. It is the sixth U.S. Diplomatic facility to achieve this prestigious certification.

**Site** 9.64 Acres | **Project Cost** $112 Million | **Occupancy** April 2010

## Sustainable Sites

The embassy is located in Point Liberty. Over 50% of the embassy site is open vegetated space planted with native and adaptive species, including large canopy and medium height trees, palm trees, shrubs, ground cover and ornamental grasses.

## Water Efficiency

Reduced outdoor water consumption is accomplished through meeting irrigation demand with non-potable wastewater effluent, which is treated on-site. The water used for irrigation percolates into the soils, replenishing the groundwater. The building is calculated to use 39% less water than the performance requirements of EPAct 1992. Reduced indoor water usage is accomplished through installation of waterless urinals, automatic shut-off faucets with aerators, and low-flow plumbing fixtures.

## Energy and Atmosphere

The new embassy is projected to reduce energy costs by 20% compared to the calculated baseline (ASHRAE 90.1-2004). The building's sunshades reduce solar heat gain. Additionally, the embassy employs many energy efficient technologies, including solar hot water; LED task lighting; occupancy sensors; electric traction elevators; and variable frequency drives for pumps, fans, and motors. The building managers optimize performance by utilizing an automation system that allows the building to dynamically respond to the local climate.

## Materials and Resources

This facility was built using materials with high quantities of recycled content. The combined recycled content value, as a percentage of total base building materials, by cost, is over 21%. Most notably the rebar has 98% post consumer recycled content; ceiling tiles have 76% pre-consumer recycled content; gypsum wall board with 94% pre-consumer recycled content; and carpet tile made with 10% post consumer, and 25% preconsumer recycled content.

## Indoor Environmental Quality

Employees and visitors will benefit from a superior indoor environment. By monitoring $CO_2$ levels, optimal amounts of fresh air are provided to the occupants. Outside air is filtered with HEPA and carbon filters. Low-emitting materials were selected to reduce potential off-gassing after installation. Adhesives, sealants, paints, coatings, and furniture systems all contain low quantities of volatile organic compounds.

**Architect** PageSoutherlandPage

**Contractor** B.L. Harbert International

**Landscape** AST Cowen Design Group

**Civil** Cervantes and Associates

**Structural** Ehlert / Bryan

**MEP** H&A Architects & Engineers

**Commissioning** KSJ Resources

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