



Greening Diplomacy Initiative

Leading by Example: Keeping Earth in Diplomacy

OBO supports the Department-wide Greening Diplomacy Initiative (GDI) to harmonize diplomacy with responsible development by aligning with three key objectives:



Reducing the Department's environmental footprint: OBO establishes planning, design, and construction standards that implement sustainable technologies in all of our overseas construction projects. OBO's standards result in energy, water, and greenhouse gas emissions savings as well as resource conservation through the specification of environmentally friendly materials.



Informing both internal and external audiences about our efforts: OBO provides educational programs and presentations about the greening features of our embassies and consulates through press releases, training, on-site signage, and videos.



Tracking our greening progress: OBO's Utility Portal collects and analyzes utility data worldwide to document, track, measure progress, and benchmark achievements.

External Site:

<http://www.state.gov/m/pri/gdi>

Internal Site:

<http://m.state.sbu/sites/pri/GDI/Pages/Home.aspx>

Front cover: Mission Geneva, Switzerland – 105kW building-integrated photovoltaic array



UNITED STATES DEPARTMENT OF STATE

Contact Us!

If you are interested in learning more about OBO's projects and other greening initiatives, please visit our websites:

External Site:

<http://www.state.gov/obo/green>

Internal Site:

<http://obo.m.state.sbu/greenteam/Pages/GreenPage.aspx>

For any questions or comments, please email us:
OBOGreenTeam@state.gov

The Bureau of Overseas Buildings Operations Office of Design and Engineering

Green Guide for Embassy & Consulate Operations

The Guide provides both a world context for global challenges such as greenhouse gas emissions and climate change, as well as mission-specific tips for systems such as lighting, irrigation, and fleet management, to generate immediate results.

"I encourage our missions to use this timely and valuable guide to address energy and sustainability challenges at our facilities overseas, in response to federal mandates and in support of greater environmental stewardship. Regular adherence to the guidance provided here will allow Overseas Buildings Operations to participate in and further the Department of State's platform of eco-diplomacy."

- Patrick F. Kennedy
Under Secretary for Management
Department of State

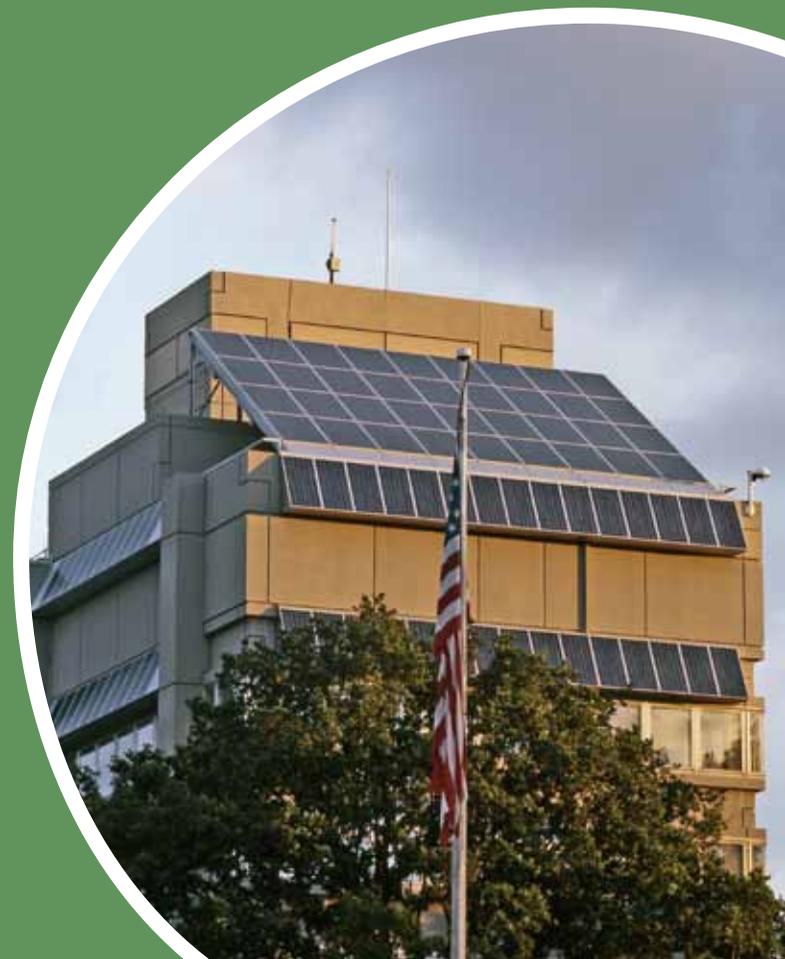
Available online:

<http://www.state.gov/documents/organization/155651.pdf>



U.S.
DEPARTMENT
OF STATE

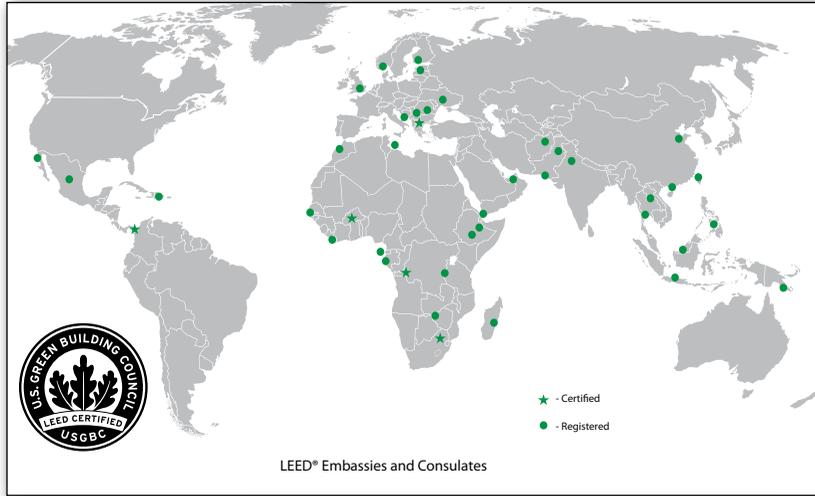
Printed September 2011



FOR OVER A DECADE, the Department of State's Bureau of Overseas Buildings Operations (OBO) has worked to significantly increase the performance of more than 280 embassies, consulates, and diplomatic facilities around the world. Through new construction, major renovation, and systems upgrades, OBO has greatly improved conditions for our Americans overseas.



Our diplomatic missions require safe, secure, functional, well-maintained, and sustainable platforms for operation. At a time of surging energy prices and increasingly limited access to freshwater and natural resources, conservation is of paramount importance at our facilities. To that end, OBO formed an Energy & Sustainable Design (ESD) Unit that is challenged with bringing our portfolio into compliance with recent federal mandates that have aggressive greening targets and requirements. In addition to producing a variety of technical studies, ESD has produced a Green Guide for Embassy and Consulate Operations, along with a sustainability survey, database, and report. OBO has also completed the assessment of numerous missions and the implementation of energy- and water-conservation measures to reduce energy and water consumption and costs. Together, these initiatives provide the State Department with a strong framework for high-performance facilities and stronger American missions.



LEED®

OBO has completed 83 new embassies and consulates in the past 10 years using the US Green Building Council's Leadership in Energy and Environmental Design (LEED®) Green Building Rating System and has another 34 under design and construction. In 2008, OBO formalized LEED® certification as a contract requirement for new embassy and consulate construction, and raised the required level of achievement to LEED® Silver in 2010. Currently, OBO has over 40 LEED® projects in the pipeline for certification. Executive Order 13423 (2007) requires federal agencies to document sustainable performance, according to Guiding Principles, for 15% of buildings over 464m² (5,000sf) by 2015. Compliance can largely be achieved through LEED® certification.

U.S. EMBASSY SOFIA, BULGARIA was the Department of State's first LEED® certified building. Site design features contributing to the certification include brownfield remediation, public transportation access, four acres of wildlife habitat and tree preservation, and a high-efficiency drip irrigation system. Additionally, building features include water-efficient plumbing fixtures; locally sourced materials; and lighting sensors, timers, and shelves to harvest the daylight and reduce energy consumption.



WATER

As segments of the world's populations are increasingly impacted by water scarcity, OBO is committed to reducing water demands on public systems and resources, increasing water reuse on-site, and protecting water quality at our diplomatic and residential facilities abroad. Executive Order 13514 (2009) requires existing federal facilities to reduce building water use from 2007 levels by 26% and reduce water used for irrigation from 2010 levels by 20% by 2020. To support this challenge, OBO is conducting comprehensive water audits at posts with high water use or at posts experiencing water shortages, and is planning new projects to reuse rainwater and treated wastewater effluent for landscape irrigation and for use within building systems.

U.S. EMBASSY NAIROBI, KENYA was the subject of one such water audit that revealed opportunities to reuse 3.8M liters of treated wastewater per year for irrigation, reducing demand on the local aquifer. A constructed wetland clarifying treated wastewater discharge is already in place. Additionally, redesign of the planting and irrigation system would conserve 8.3M liters of water per year.

ENERGY

Building operations are responsible for 40% of the world's energy consumption and related 1/3 of global greenhouse gas (GHG) emissions. Facilities operating overseas are often subject to variable and inflated energy costs and many are dependent on volatile sources. GHG emissions are reduced and energy security is increased through lowering demand and increasing on-site renewable sources of energy. Section 431 of the Energy Independence and Security Act (EISA 2007) requires existing federal facilities to reduce building energy use from 2006 levels by 30% by 2015. The Department also has a carbon reduction goal of 20% by 2020. Toward that goal, OBO has identified over \$300M of potential photovoltaic projects that would increase our energy security and pay for themselves within ten years through energy savings.

U.S. EMBASSY KIGALI, RWANDA hosts one of OBO's 11 photovoltaic installations. This grid-connected photovoltaic array is mounted on the roofs of the General Services Office and Warehouse. With a power capacity of 251kW, the array is expected to produce 328,000 kWh/yr. Through the display monitor installed in the building's lobby, visitors and staff are educated on the system attributes; current weather conditions; total, annual, and daily production of power; and total greenhouse gas emissions offset by the generation of renewable energy. Simple payback for the system is estimated to be 9.5 years, based on current and escalated utility rates.



MATERIALS

The United Nations Environment Program estimates that the construction industry is responsible for 1/3 of global resource consumption, 12% of all freshwater use, and 40% of the total volume of solid waste. Executive Order 13514 requires diversion of 50% of non-hazardous solid waste generated by the construction, demolition, and operation of federal facilities by 2015. OBO's goal is to recycle a minimum of 75% of new embassy/consulate construction waste.

U.S. EMBASSY BRAZZAVILLE, REPUBLIC OF THE CONGO generated waste during new embassy construction that was used to build 30 houses. OBO's General Contractor, B.L. Harbert International, partnered with the U.S. Agency for International Development (USAID), the Fuller Center for Housing, and the International Partnership for Human Development (IPHD) to build these houses for the Makana II village. In total, 95% of the project's construction waste was successfully diverted from landfills.

