Solar Panels at the Downtown Florida Atlantic University Campus

Sustainable Practices at FAU

With the creation of the Florida Atlantic University (FAU) Campus Sustainability Committee this past May and the campaign launch of Mission Green in the Fall, the university has initiated a shift in policy and operations to incorporate *green* building construction, retrofits, and practices.

Before these recent green developments, the Downtown FAU campus in Fort Lauderdale already implemented an array of green initiatives through efforts led by the FAU Broward Facilities Department, including:

HEC Building at the Downtown FAU campus.

- Construction of a state of the art energy savings chiller plant
- Installation of an Emergency Management System
- Low energy light and light sensor retrofits
- Preventative maintenance schedules
- Intensification of campus recycling programs

Today, the Downtown campus is excited to take the next progressive step in conjunction with the university's sustainability goals by garnering funding for an alternative energy supply. The Sustainable Initiative, a division of the FAU Department of Urban and Regional Planning (DURP), would like to propose a way for the Downtown campus to move forward with this goal through the installation of solar panels on the roof of the Higher Education Complex (HEC) building.

Panel Possibility

www.advancedroofing.com
www.agt.com

The Downtown FAU campus recently invited Advanced Roofing to conduct a feasibility study for the installation of AGT's Flexlight-136 photovoltaic panels on the HEC building, with the intent to seek an alternative energy supply for campus operations. The quote supplied by Advanced Roofing included:

- Engineering schematics, permitting processes, and roof retrofits
- Installation of 252 Flexlight-136 photovoltaic panels (34,272 watts)
- Installation of a power inverter with connection to a public flat panel display screen and a computer performance monitoring system to track energy use and savings

Advanced Roofing Inc., a reputable reroofing company that has served the South Florida region since 1982, ranked 10 out of 100 of the largest roofing companies in the nation in 2005 (RSI, 2006). Advanced Roofing conducts work in a variety of roofing markets, even serving educational institutions in the area. They recently partnered with Advanced Green Technologies (AGT), a distributor of sustainable building solutions and renewable energy products for commercial and residential uses. Together the companies aim to provide solar energy opportunities to the South Florida region.

Made possible by
The Sustainable Initiative
at the Department of Urban
and Regional Planning,
Florida Atlantic University

111 E. Las Olas Blvd., HEC 1009B
Fort Lauderdale, FL 33301
954.762.5652

Author:
Rachel M. Kalin
MURP Graduate Student

Building Industry Facts

Building operations account for 40% of U.S. energy and contribute to 38% of carbon dioxide emissions; the building industry is the largest economic sector in the U.S., accounting for approximately $14 trillion of the Gross Domestic Product (USGBC, 2006).

Green Building

The tailoring of a building and its site to the local climate, culture, and community in order to reduce resource consumption, augment resource supply, and enhance the quality and diversity of life (R.S. Means, 2002).

Green Practices

The maintenance, purchasing, operation, and waste management practices by building occupants and managers whose goals involve reducing environmental impacts.

Solar Solutions

Some of the reasons people, businesses, and institutions have turned to photovoltaics for an alternative to traditional energy sources include:

- Solar energy is not only plentiful, it lessens one's dependence on oil for energy
- After installation the Photovoltaic (PV) system is practically pollution free
- Little maintenance and low operating costs
- Reduction in energy transmission costs
- Displacement of rising electricity costs
- Energy payback time averages 5 years

The PV installation of 34,272 watts will have the ability to produce 66,000 kilowatts of power and amount to a number of benefits for the Downtown FAU campus.

ENVIRONMENTAL Reduce 42 metric tons of carbon dioxide (CO_2) from entering the atmosphere. This is equivalent to keeping nine cars off the road, reserving 4,750 gallons of gasoline (0r 97 barrels of oil), and conserving 35 acres of forest yearly.*

ECONOMICAL Supply 20 to 33 percent of HEC's electrical demand, thereby reducing yearly energy bills in amounts up to $20,000.*

EDUCATIONAL Serve as a sustainable role model for the FAU community (students, employees, and visitors) and the South Florida region.

Going Solar with an Educational Initiative

As an educational institution the Downtown FAU campus has a unique opportunity to push forward Mission Green with such a ***tangible*** project as the installation of solar panels on the HEC building. Once installed the Downtown campus will join only one other building in the city of Fort Lauderdale with solar panels (Advanced Roofing) as well as be the first university in South Florida to implement a solar panel project of this size. The campus will serve as a role model in the implementation and success of alternative energy through educational outreach, and encourage innovation in planning studies through the creation of a scholarship fund for the FAU Department of Urban and Regional Planning.

EDUCATIONAL OUTREACH Students, faculty, and visitors will be welcome to view a flat screen display monitor in the lobby of the HEC building showing real time panel system performance and environmental savings. Brochures will be available and posters visible around the campus with information regarding the solar panel initiative and its benefits. The Department of Urban and Regional Planning (DURP) website will house a webpage with monthly reports on energy savings and updates on new developments with the department's Sustainable Initiative.

INNOVATION SCHOLARSHIP FAU will be the first university in the state of Florida to offer one graduate student per year in the planning program a scholarship completely ***paid for by the sun!*** A portion of budget savings in the HEC building utility bills from the solar panels will be set aside for one Master's degree student with a commitment to the department's Sustainable Initiative.

Please note these are preliminary numbers—Advanced Roofing, FPL, and the FAU Broward Facilities Department are further examining more accurate estimations in environmental and economical savings.

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The Sustainable Initiative DURP

Photovoltaics, PV, is an increasingly popular technology that converts light—or energy—from the sun into electrical power.

This proposal was made possible through enthusiastic collaboration with

Reid Morgan
Director
FAU Broward Physical Plant

&

Phyllis Bebko
Assistant Vice President
FAU Broward

And guidance by

Jaap Vos
Chair
Department of Urban and Regional Planning

The planning program wants to become a leader for the FAU community and South Florida region in alternative energy and looks forward to forming lasting partnerships with its supporters.