

## Building Integrated Photovoltaic Canopy Installed at Madrona Marsh Nature Center in Torrance, CA

*City of Torrance California recently completed a BIPV canopy addition to the courtyard portion of the Madrona Marsh Nature Center. The canopy will collect sunlight to help offset power consumption.*



The Madrona Marsh is a wetland called a “vernal marsh.” Vernal meaning the wetlands do not have a built-in water source. Winter and Spring rains are the only source for water at the marsh. When enough water accumulates, it becomes a resting spot for migrating bird, insects, frogs, reptiles and small mammals.

Directly across the street is the Nature Center where visitors can learn about the marsh and its inhabitants. The City of Torrance with help from sponsors and donors recently added a building integrated photovoltaic canopy which will serve as the ceiling and natural light source for the new Butterfly exhibit and save on the facilities utilities usage.

The structure was designed by managing principal, Segun Abegunrin of SAA Associates from Pasadena, CA. Manufacturing was done by [Skyco Skylights](#), a building integrated photovoltaics manufacturer located in Costa Mesa, CA. Skyco Skylights also builds industrial skylights and custom structural skylights.

### **Purpose:**

“From a design and innovation standpoint , the problems that we are trying solve are 1) protect the courtyard against inclement weather 2) create an opportunity for students and patrons to view the sky and see butterflies fly away from the courtyard once released 3) facilitate sustainable practices learning opportunity for students and patrons using project components

and 4) use solar panels to generate power for water fountain.” -Segun Abegunrin, Managing Principal SAA Architects

**Details:**

The canopy is 500 square feet; 50% is amorphous silicon photovoltaic glass with 20% transparency supplied by ONYX Solar of Spain. The other 50% is standard laminated tinted glass as the perimeter. Amorphous silicon glass serves two functions; 20% light passes through to help daylight the exhibit area while the balance of sunlight is utilized to generate solar power.

25 PV glass units with dimensions 1200 mm x 1124 mm, 45 Wp/unit for a total installed power of 1.15 kWp. Each PV glass unit is comprised of three layers of glass as follows:

- 1/4" fully tempered glass
- 1/8" amorphous Silicon glass
- 1/4" fully tempered glass

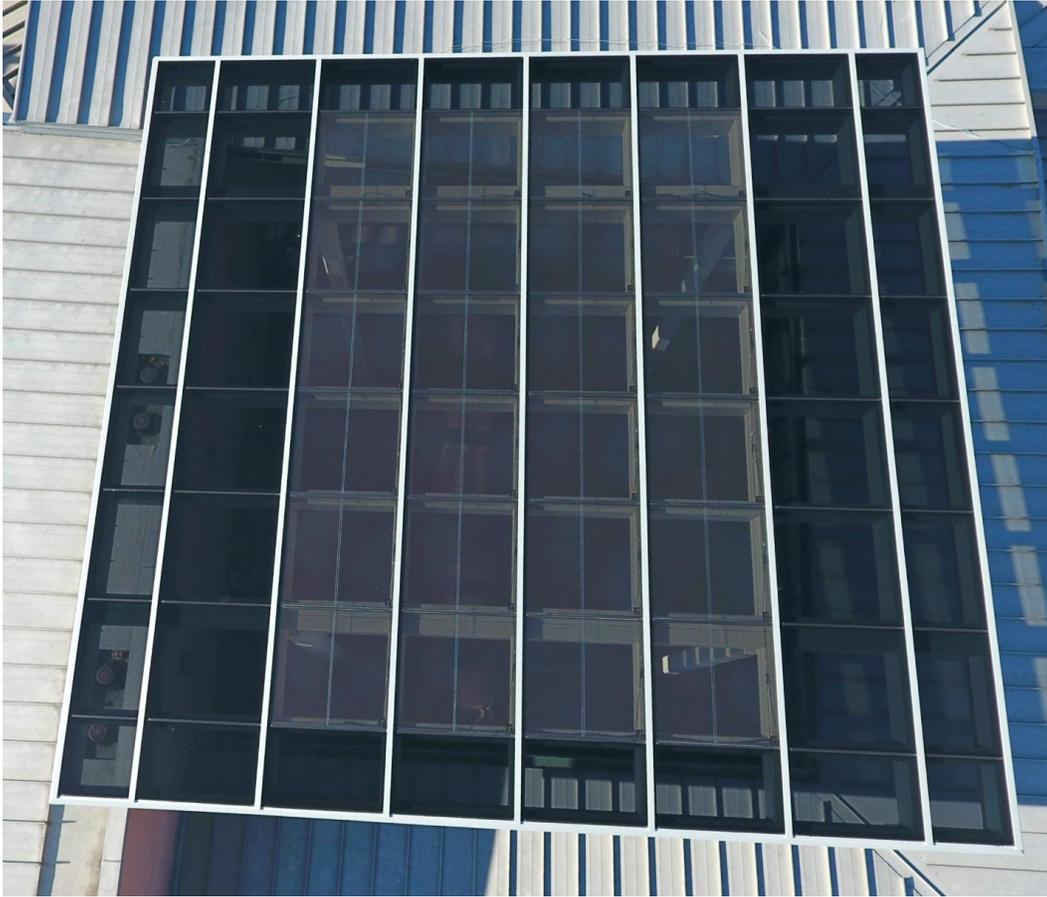
**Estimated energy output: 1,826 kWh/year.**

“Delivering PV glass for this project was a pleasure,” said Diego Cuevas, VP Business Development for Onyx Solar. “Madrona Marsh is a unique natural environment the deserves to be preserved.”

Building integrated photovoltaic is one of the hottest technologies amongst Architects and Green Building Developers. The multi-faceted glass contributes significantly to Net Zero Building Design as well as LEED credentials.

“The photovoltaic structure is quite an innovative addition to the nature center,” explains Paul Simony, [building integrated photovoltaics](#) specialist at Skyco Skylights. “Management was looking for a creative solution to enclosing the courtyard and the BIPV system is the most efficient solution for that goal.”





[SAA Associates from Pasadena, CA](#) principals have over a quarter century years of professional experience in planning, design, construction management, project management and owners representative services.

[Skyco Skylights](#) is an industry leading industrial & custom structural skylight manufacturer located in Costa Mesa, CA. Skyco Skylights has a full range of products including Industrial Skylights, UL Listed Smoke Vents, Custom Structural Skylights, Photovoltaic Skylights & Canopies and rooftop safety and security products. All of Skyco Skylights' product come with a 10 year warranty. For additional information, you can reach Skyco Skylights at 949-629-4090 or email Skyco Skylights at [info@skycoskylights.com](mailto:info@skycoskylights.com)

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