

Toshima Ecomusee Town



Integrazione estetica

The City hall building is designed as a tree. The ECO VEIL which surrounds the building like leaves has various functions and has adopted a role as a new symbol representing Toshima ward. Panels and modules of the ECO VEIL separate the big building into a human scale and integrates the building into the town. The design of the external appearance responds to various trees along the “Green Road” between Ikebukuro station and the city building and continues the landscape of the town. “EcoMusee” provides a green city landscape with the ECO VEIL and reproduces “Toshima forest” on the roof terrace of the building.

Integrazione energetica

“Environmental city hall leading environmental measure” is symbol for Toshima ward’s goal of “development of an environmental city”. The building creates green-rich space for inhabitants and actively adopts environmental technology including photovoltaics, natural lighting, eco-lighting, water circulation system using rainwater harvesting, and a district heating and cooling system. As a result of these environmental efforts, the CO2 emission of the city hall area is reduced by more than 30% compared to the former city hall. The total amount of installed PV power from the entire ECO VEIL is 57kWp and is sold through the FIT feed-in-tariff programme. The total installed PV power on the roof and balcony of the upper residential area is 77kWp and is consumed in the residential common area.

Integrazione tecnologica

Together with different kinds of panels (glass panes, wall greening, wooden louvres), the ECO VEIL adopts two type of PV technologies, monocrystalline silicon and amorphous silicon, for appealing diversity and excellent design. The amorphous silicon modules are used in the balcony balustrades as they transmit light and do not disturb the view from inside.

Processo decisionale

The main reason for adopting BIPV is that the ECO VEIL, which is the main concept of the building, requires BIPV. Appreciation of one of the ECO VEIL functions, which is to publicize the environmental efforts of Toshima ward to its citizens, is another significant reason.

Lesson learnt

One of the challenges of BIPV is the payback time, but the motivation of the project is not the pay-back time but success of the ECO VEIL concept and public information about the city hall effort to inhabitants. A cost reduction evaluation was executed for critical areas and due to the cost estimation, the number of BIPV modules was reduced, but finally the project completed, keeping the original concept.

In this project, BIPV is a component of the ECO VEIL. More design conditions should have been clear. Under the given circumstances, the challenges of installing BIPV were hard to solve. BIPV which is installed close to visitors access to the roof garden, is efficient for advertising the environmental effort and also makes careful installation necessary in detail.

DATI EDIFICIO

Tipologia progetto	Nuova costruzione
Destinazione d'uso	Residenziale
Sistema di integrazione	Dispositivo esterno opaco
Indirizzo	2-45,Minami-Ikebukuro, Toshima-ku, Tokyo, Japan

DATI SISTEMA BIPV

Tipologia moduli	Moduli custom
Tecnologia FV	Monokristallines Siliium and amorphes Silizium
Potenza nominale (STC) [kWp]	133
Dimensione sistema [m²]	-
Dimensioni moduli [mm]	-
Orientamento	Süden, Osten, Westen
Inclinazione [°]	Verschiedene

COSTI SISTEMA BIPV

Costo totale [€]	-
€/m²	-
€/kWp	-

DATI PRODUTTORE

Produttore	Asahi Building-Wall Co., Ltd.
Indirizzo	JPR Ueno East Building, 1-3-5 Matsugaya Taito-ku, Tokyo, Japan
Contatto	+81-(0)3-5806-3110
Web	http://www.agb.co.jp/singapore/

1. BIPV façade
2. BIPV on residential façade
3. Variety of elements in the façade
4. Section of the building façade
5. Inside view of the BIPV balustrades
6. BIPV façade