



Fondazione Museo Pino Pascali



Operazione co-finanziata dall'Unione Europea, Fondo Europeo di Sviluppo Regionale, dallo Stato Italiano, dalla Confederazione elvetica e dai Cantoni nell'ambito del Programma di Cooperazione Interreg V-A Italia-Svizzera. (Codice progetto 603882)

Introduction

A few metres from the sea, an old communal slaughterhouse houses the Museum Foundation dedicated to Pino Pascali, one of the leading artists of the Arte Povera (country) style. As a new museum, the nineteenth-century structure, whose character was already heavily altered by a previous expansion, required the completion and redevelopment of its interior and exterior spaces, as well as the activation of new functional areas in order to adapt the building to the specific requirements of a location intended to host contemporary artworks. The building, which has a photovoltaic system integrated on the roof, is located in a highly restricted coastal area, a strategic vantage point for the city. The building is easily accessible from the promenade, equipped with pedestrian and bicycle paths that offer panoramic views of landscapes, places, and prized natural and man-made elements.

Design approach

In general, the restyling project aimed to harmonise the building with its context and its new intended use through minimal interventions. With regard to the existing structures, the intervention involved the redefinition of the elevations and entrances, the creation of functional spaces for the museum (a small bookshop, a literary café, and a small sculpture park opening to the neighbourhood and the sea), and a public panoramic access path to the museum roof.

Aesthetic integration

The project is located in a highly restricted area of the Municipality of Polignano a Mare, declared to be of considerable public interest and protected by a Listed Property Decree pursuant to Italia Law 1497, Ministerial Decree 23/12/1982. With reference to the regulation of landscapes and other contexts, it is identified as being among the areas governed by the P.P.T.R. and PUTTP/Puglia local landscapes. The area falls within the "coastal territories included in a strip 300 metres in from the shoreline", characterised in this case by the cliff and an interesting system of sea caves, and is a strategic panoramic point for the city since it faces both the historic centre and the east coast and the Scoglio dell'Eremita. The photovoltaic system integrated on the roof is not visible from the sea since the former slaughterhouse is located on a high rocky coast. However, it becomes visible from the surrounding buildings, access roads, and terraces of the building itself, creating a colour contrast between the dark colour of the amorphous silicon and the new white structure. This contrast is reminiscent of the typical colour choices of the architecture in these locations. The BIPV modules are integrated from the morphological point of view, adapting perfectly to the curved shape of the existing roof.

Energy integration

Part of the electricity produced is used for the museum's uses. The remaining is sent to the network, receiving a contribution according to the on-site exchange scheme.

Technology integration

The BIPV modules contain a thin film of amorphous silicon protected by a flexible and weatherproofing membrane made of elastomeric polyolefins. Following the curved top of the roof, they replace the old

waterproofing membrane. They are resistant to fire and ultraviolet rays and contribute to thermal insulation.

Decision making

The decision that led to the choice and installation of the BIPV modules was made in agreement with the Superintendency for Architectural and Landscape Heritage for the city of Bari, which preferred this solution to others. Various types of rigid photovoltaic modules were considered, but they would have a more significant visual impact if installed on a curved surface as they would be seen from the sea and the road. As an alternative, they considered the possibility of installing the photovoltaic modules in other areas of the roof garden but then deemed that unsuitable as the areas would have become impassable. Flexible photovoltaic modules were chosen as they can adhere to the curvature of the roof surface. At the same time, they also solved the functional and aesthetic problem of the existing waterproofing membrane, which had to be restored and covered as it was partially damaged.

Lessons learnt

The design team had no experience using this type of photovoltaic module. However, the integration in the Pino Pascali Museum was positive from all points of view: aesthetic, functional, installation, and energy performance. This makes flexible photovoltaic modules an interesting solution with high integration potential in similar contexts and on valuable architecture.

PROJECT DATA

Project type	renovation
Building use	residential
Heritage constraint	conservation area
Building construction technique	industrial
Building address	Via Parco del Lauro 119, Polignano a Mare (BA), Italy

BIPV systems

BIPV SYSTEM DATA

Architectural system	opaque roof
Integration year	2016
Active material	amorphous silicon
Module transparency	opaque
Module technology	flexible polymer layers, recognizable PV, customized modules
System power [kWp]	6.4
System area [m²]	108.07
Module dimensions [mm]	5,486 x 394 x 4

BIPV SYSTEM COSTS

Stakeholders

Main building designer

Arch. Antonella Mari

BIPV components producer

UNI-SOLAR

Via Monte Baldo 14/F, Villafranca (VR), Italy

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Works supervisor

Francesco Angelillo, Matteo Lorusso



View from the sea © Alberto Ferrero



BIPV system on the roof © Alberto Ferrero



BIPV modules perfectly adapted to the curved roof © Alberto Ferrero



Detail of the BIPV modules © Alberto Ferrero



Front view of the building from the street © Alberto Ferrero

Case study author:

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