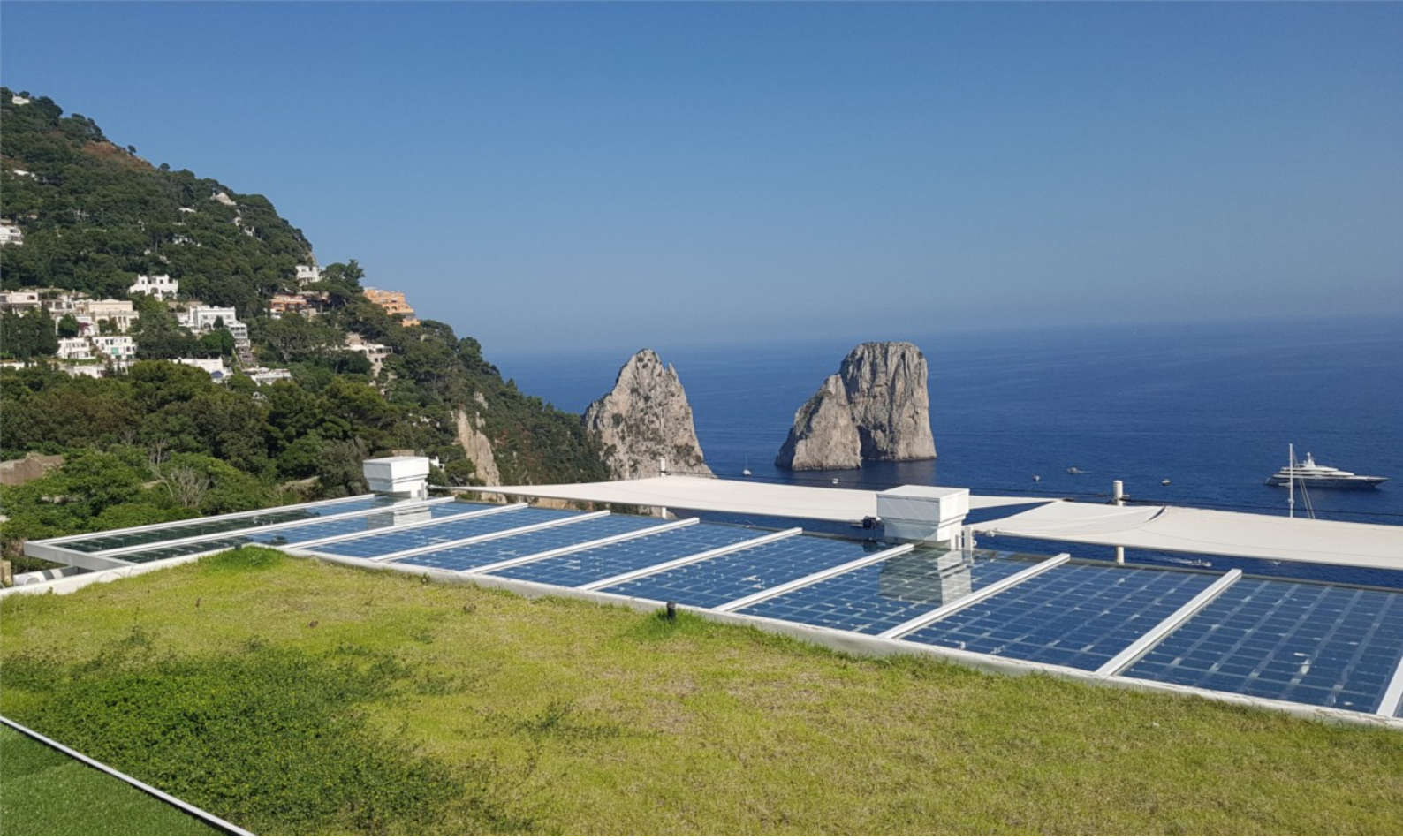

Hotel Luna

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Introduction

The Hotel Luna is located in a privileged and panoramic point on the island of Capri, one of the most visited and photographed by tourists. The terrace on the top floor of the hotel looks out over the Faraglioni, the characteristic sea stacks emerging from the waters. On one side it is bordered by the Giardini di Augusto (panoramic terraces dating back to the beginning of the twentieth century), and on the other by the Certosa di San Giacomo (an ancient monastery founded in the fourth century and now the home of a museum). Semi-transparent photovoltaic canopies provide shade to the terrace.

Design approach

The project for the Hotel Luna photovoltaic canopies was developed as part of the refurbishment of the terrace, with the aim of facilitating its use all year round. As the building is located within an area of “Urban-Building Recovery and Landscape-Environmental Remediation” in accordance with the islands Landscape Plan, the project required the creation of an open-air covered structure that respected the local style.

Aesthetic integration

Cells in polycrystalline silicon of a blue-green colour were added to integrate with the colours of the island. The resulting work is of low visual impact from the sea, which remains the best viewpoint. Aesthetic integration has been successful in an area dominated by Mediterranean bush and the panoramic view of the Capri Faraglioni.

Energy integration

The electricity produced is used entirely to power the structure.

Technology integration

The BIPV canopies are made of 29 glass-glass type modules. The polycrystalline silicone cells have been interposed with laminated safety glass elements, extra-clear and tempered with HST, of a thickness of 8 mm (above), and hardened Super Silver Clear solar control glass, also of a thickness of 8 mm (below), used to limit undesired light radiation. The BIPV modules are of varying dimension in order to adapt to the size of the canopies. The photovoltaic cells are spaced in order to provide a module transparency of 45%. The cabling is via lateral connectors hidden within the structure. The BIPV canopies provide protection from rain and excessive sunlight.

Decision making

The BIPV canopies were created to allow the terrace to be used for the entire period that the hotel is open, offering suitable levels of comfort while at the same time producing energy and lending the structure an image of environmental sustainability. The process that led to the project being approved was planned with the aim of identifying a design and product solution that best responded to all the

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requirements, and saw the involvement of related organisations, the superintendency, planners and suppliers.

Lessons learnt

The project for the photovoltaic canopies at the Hotel Luna is a typical example of how prestigious architectural projects such as this can integrate the production of renewable energy and favour environmental sustainability. BIPV have been created for this very purpose, and when clients are informed and aware of the wide-ranging possibilities offered by this sector, it is much easier to satisfy the various requirements and implement sustainable projects.

The costs involved in a BIPV project include those related to the architectural structure that serves as an element of the building, and the photovoltaic component is therefore of a marginal cost that allows for energy costs for the building to be reduced while increasing the value of the property in question.

Collaboration from the outset between designers and companies specialised in structural and photovoltaic components, together with a range of differing skills, were fundamental elements in managing the design and construction processes, allowing for a successful outcome.

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PROJECT DATA

Project type	renovation
Building use	receptive
Heritage constraint	conservation area
Building construction technique	industrial
Building address	Viale Giacomo Matteotti 3, Capri (NA), Italy

BIPV systems

BIPV SYSTEM DATA

Architectural system	canopy
Integration year	2019
Active material	polycrystalline silicon
Module transparency	semi-transparent
Module technology	glass-glass, recognizable PV, standard modules
System power [kWp]	14
System area [m²]	146
Module dimensions [mm]	several
Modules orientation	South-West
Modules tilt [°]	5

BIPV SYSTEM COSTS

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Stakeholders

Main building designer

Rollin&Rollin

BIPV system designer

GruppoSTG Srl

BIPV system installer

GruppoSTG Srl
Via P. Paleocapa 19, Bergamo (BG), Italy
+39 035-0510171
https://www.gruppostg.com/it/

BIPV components producer

GruppoSTG Srl
Via P. Paleocapa 19, Bergamo (BG), Italy
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https://www.gruppostg.com/it/

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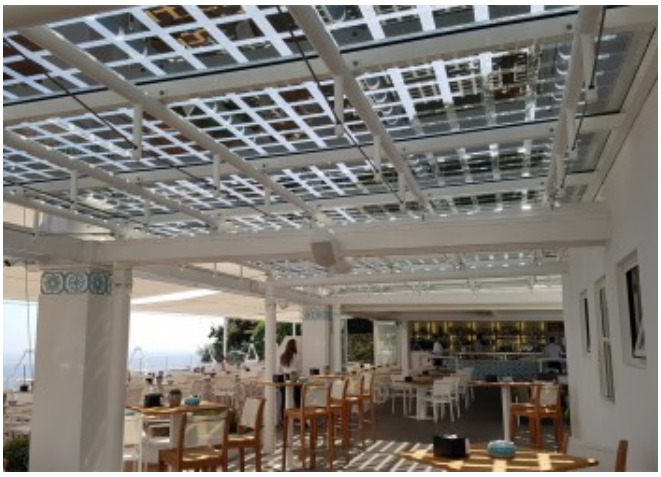
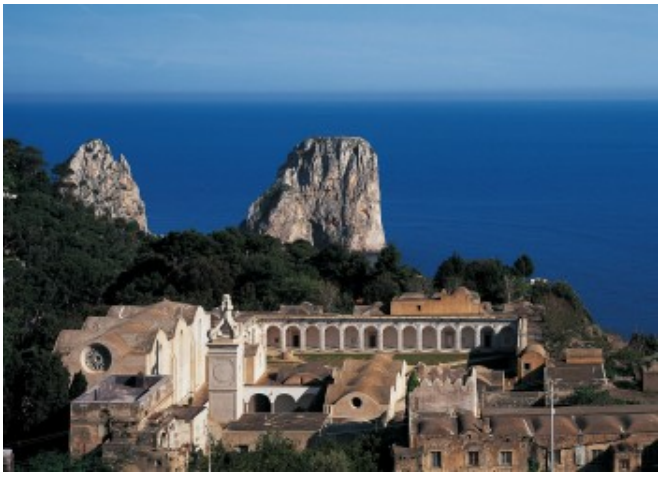
Close-up of a BIPV canopy © GruppoSTG Srl



The BIPV modules provide shade to the terrace © GruppoSTG Srl

Panoramic view of the Giardini di Augusto in the vicinity of the hotel



The ancient monastery of the Certosa di Capri in the vicinity of the hotel

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Case study author:

Eurac Research