Fußgängerbrücken in Mekka

Introduction

The challenge of this project was to continue the architecture of the overall construction with its dome structures and curved elements. Curved BIPV modules were integrated on the bridges' roof, close to the Masjid al-Haram mosque.

(Sunovation)

Aesthetic integration

The customized colour of both the PV cells and the module glass layers creates a homogeneous overall appearance. The BIPV surfaces follow the construction shape thanks to the curved modules provided in 14 different sizes (without edges). The mounting structure is invisible.

Energy integration

The BIPV modules are estimated to produce around 2.8 GWh per year.

Technology integration

8,600 glass-glass modules (eFORM colour) were integrated on the bridge, as custom products provided by SUNOVATION. They are double screen printed and contain high-efficiency crystalline cells. The unique Silicon Cell Embedding Technology (SCET) is applied in the creation of the BIPV modules, enabling the architects to seamlessly integrate curved solar glass elements into the curved roof shape.

Decision making

Green coloured modules were integrated since the green is an important and meaningful colour for Muslims people.

PROJECT DATA

Project type	renovation
Building use	infrastructure
Building address	Al Haram, Mekka, Saudi-Arabien

BIPV systems

BIPV SYSTEM DATA

Architectural system	opakes Dach
Active material	kristallines Silizium
Module transparency	opaque
Module technology	glass-glass, hidden PV, customized modules
System power [kWp]	1540
System area [m²]	13000
Annual FV production [kWh]	2800000

BIPV SYSTEM COSTS

Stakeholders

BIPV components producer

Sunovation GmbH
Glanzstoffstraße 21, Elsenfeld, Deutschland
info@sunovation.de +49(0) 6022 / 26573-0
https://sunovation.de/de

Case study author: