



Saint Andrew's Cathedral



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

Saint Andrew's is the oldest cathedral in Australia. It was founded in 1817 when Francis Greenway led the design of a building known as the Metropolitan Church. This neo-Gothic cathedral was completed in 1868 and consecrated on St. Andrew's Day of the same year. During the canopy renovation in the cathedral's chapter house, a photovoltaic skylight was installed, proving that tradition and modernity can merge in perfect harmony while maintaining a high aesthetic level.

Aesthetic integration

The BIPV modules were installed on the courtyard between the cathedral and the adjacent chapter house building. The photovoltaic material used, semi-transparent amorphous silicon, creates a uniform surface where the technology is not perceived.

Energy integration

The BIPV system produces about 3300 kWh of electricity per year. The electricity is mainly used for the air cooling system.

Technology integration

The BIPV system is made up of glass modules with a thin inner film of amorphous silicon inside with a low degree of transparency. The modules were custom-made to adapt perfectly to the Chapter House Canopy structure. The 70 m² photovoltaic skylight helps shade the entire courtyard below by filtering solar radiation.

Lessons learnt

The system installed is estimated to prevent the release of 65 tonnes of CO₂ into the atmosphere over 35 years, equivalent to using 57 barrels of oil per square metre. The return of investment time was calculated at less than ten years.

PROJECT DATA

Project type	renovation
Building use	religious
Heritage constraint	listed building
Building construction technique	pre-industrial
Building address	Sydney NSW 2000, Australia

BIPV systems

BIPV SYSTEM DATA

Architectural system	Skylight
Integration year	2021
Active material	Amorphous silicon
Module transparency	semi-transparent
Module technology	glass-glass, hidden PV, customized modules
System area [m²]	70
Module dimensions [mm]	1,496-1,597 x 2,268-3,007
Annual FV production [kWh]	2778

BIPV SYSTEM COSTS

Stakeholders

BIPV system designer

Onyx Solar, Hume Building Products

BIPV system installer

Smart Commercial Solar
Elizabeth Plaza 2, Sydney NSW 2060, Australia
contact@smartcommercialsolar.com.au 1300 044 087
<https://www.smartcommercialsolar.com.au/>

BIPV components producer

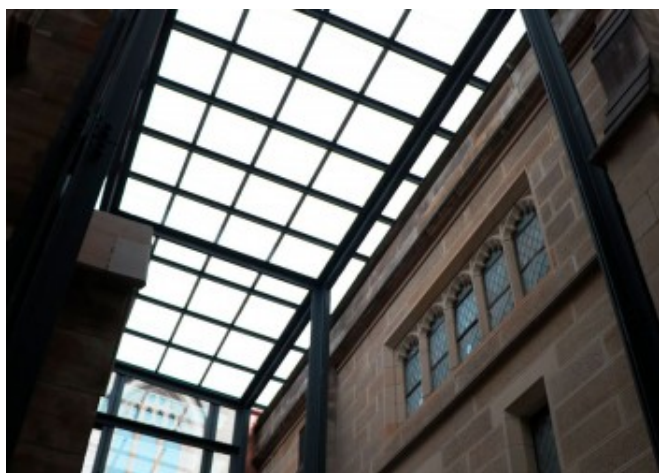
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