PHOTOVOLTAIC SKYLIGHT

RENOVATION

Onyx Solar **replaced the existing glass** envelope of the Kukullaga subway station in Bilbao **with solar photovoltaic glass**. This project involved installing double laminated safety glass panels in diamond shapes varying **across 35 different sizes.**

The original glass lacked adequate sun control properties and this deficiency resulted in discomfort for subway's users & workers due to high temperatures so the replacement was a must.

The installation of **crystalline silicon PV glass** solved this issue by eliminating the greenhouse effect without sacrificing the natural light entrance thanks to a **perfect balance between the g-value and visible light transmittance** that was achieved thanks to a cell density totally customized for this building that also allows the station to produce a great amount of solar energy on-site.

This upgrade not only enhances the energy efficiency of the station reducing drastically the consumption of air conditioning but also prioritizes the comfort and well-being of station travellers by mitigating the previous discomfort caused by excessive heat.

TECHNICAL DATA

Nominal Power (Wp/m²)	125 Wp/m²
Visible Light Transmittance (VLT)	43%
Solar Factor (g-value)	40%
U value (W/m²K)	N/A
U value (Btu/h ft² °F)	N/A
Light Reflection (external)	8%

TECHNICAL DATA SHEET

"To address the temperature problem we were experiencing at the station, we decided to make a change in the station's glazing. Instead of using conventional glass, we installed photovoltaic glass that not only allows light to pass through, but also generates electricity by taking advantage of solar radiation.
This change not only contributes to improving comfort on hot days, but also helps reduce the station's energy consumption, providing a more sustainable and efficient solution."

Project Manager - Metro Bilbao

METRO STATION

KUKULLAGA, BILBAO, SPAIN

SKYLIGHT

CRYSTALLINE SILICON TECHNOLOGY

BACK TO START