

# Guggenheim Museum

Bilbao, Spain



*"I wanted the museum to have a system that would provide precise, reliable control of the lighting, plus a system that is easy to install and program. That was exactly why I insisted on the GRAFIK 6000® from Lutron"*

*Paul Zaferiou, Lighting Designer*

## Background:

The \$100 million Guggenheim Museum, designed by Frank Gehry, opened in 1997 to international acclaim. Within its curvaceous, free-form sculptural style, the museum offers intimate areas for special shows and monumental spaces for very large works and temporary exhibitions. The colossal structure also houses a network of galleries designed to display the encyclopaedic wealth of modern art that forms the museum's permanent collection.

## The challenge:

To design a lighting control system for the 23,225 m<sup>2</sup> of space to showcase works of art in the best possible light, while, at the same time, protecting them from potentially harmful ultraviolet rays. The system was required to handle various lighting sources and loads, and be flexible enough to meet to the demands of a wide range of exhibitions, without detracting from the spectacular internal architecture.

## Lutron's GRAFIK 6000® series:



Ideal for multiple area lighting, GRAFIK 6000 can control the lit environment for an entire facility, with up to 512 zones.



A mixture of preset programmes and custom controls that can be combined or used separately, to provide a wide range of lighting possibilities.



A built in astronomic timeclock saves energy and money by operating the system so lighting can be programmed throughout the day and night to maximum effect.

## The solution:

Paul Zaferiou, the project's lighting designer, was familiar with Lutron's GRAFIK 6000 preset lighting control system, which was used in the original Guggenheim in New York. "I knew it would deliver precise, reliable control, and that it was easy to install and programme."

Lighting within the building had to be beautiful and flexible to complement an environment where walls curve, snake around and rise to incredible heights. The Lutron GRAFIK 6000 system met the designer's request for "the ability to add layers of light".

The system features close to 2,000 circuits, 1,375 power boxes and over 80 dimming panels, controlled by three GRAFIK 6000 processors, one for each floor. The dimming panels were built in Lutron's US factory and shipped to the museum. Installation took just four days.

## The results:

The lighting system ensures an unforgettable experience for visitors to the museum – whatever the gallery, whatever the exhibition.

The three Lutron GRAFIK 6000 processors provide precise control throughout the whole building. The preset programme offers six different lighting scenes plus control of daylight through a system of motorised window blinds. Everything can be combined through a central computer, or controlled separately from wallstations.

Dimming the lights by just eight per cent enables the true colours of the exhibits to be maintained, while, at the same time, doubling lamp life to make huge savings in maintenance and energy costs.

A built-in astronomic timeclock is used to save energy at night and when the museum is not being fully used.

<b>Client</b>	The Soloman R. Guggenheim Foundation, Bilbao, Spain
<b>Architect</b>	Frank O. Gehry & Associates
<b>Lighting Designer</b>	Paul Zaferiou, Iam partners, Cambridge, MA
<b>Photography</b>	Lutron
<b>Lutron products</b>	GRAFIK 6000 system

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