

case study | Virasat-E-Khalsa Museum Punjab, India





## THE CHALLENGE:

Highlight the museum's many unique and fascinating artifacts, while embracing its vision for environmental protection and energy savings



## Background

Virasat-E-Khalsa Museum, located at Anandpur Sahib was opened to the public in November 2011. The museum showcases 500 years of Sikh history, 300th anniversary of the Khalsa and the scriptures written by the 10th and the last Guru Gobind Singh, founder of the modern Sikh faith. This project is an inspiring tribute to the heroic and poignant saga of the Sikhs and Punjab. In order to bring optimal lighting effects to its exhibits, the museum chose the GRAFIK 7000™

lighting control system from Lutron to enhance the beauty of the art work. The museum was dubbed as a 'wonder in the making' and has been conceived to project the history and culture of Sikhs on an international scale. Clad with local sandstone and evoking the fortress cities of Rajasthan, Gwalior and Punjab, the museum acknowledges the Sikh history as celebrated warriors. It is the world's foremost Sikh heritage museum that has got no precedent and beyond comparison.





The Virasat-E-Khalsa's architect, Moshe Safdie, made use of modern architectural elements like stainless steel, glass, thematic carpets and many other traditional materials to mesmerize the beauty of the artifacts. The Museum was visualized by Amardeep Behl, a Delhi based designer running Design Habit.

The upwardly curving roofs of the museum's tower-like galleries are covered in stainless steel, designed as counterpoint to the rich tradition of domes that crown sacred Sikh buildings such as the Golden Temple in Amritsar. The museum campus is composed of two functionally integrated sets of buildings. The Western complex forms the gateway for Anandpur Sahib, changing exhibition galleries, a two-storey research museum and reference library around a

great reading room open to vistas of water gardens to house rare archival materials, books, journals as well as audio visual resources and a 400-seat auditorium to host seminars and cultural events.

¶ The easy-to-use preset function of Lutron lighting control system which can recall the appropriate lighting environment at the touch of a button can efficiently meet the needs of our museum ¶

#### **Mr. Kelvin Ashby King - Lighting Consultant**

A 165-metre bridge from the western complex crosses a seven-acre network of reflecting pools, providing access to the eastern complex, which houses permanent exhibitions presenting Sikh history, religion, and culture.



Arranged in groups of five, the galleries reference the five virtues of Sikh religion. The symbolic themes of earth and sky, mass and lightness as well as depth and ascension are represented by the museum's sandstone towers and reflective silver roofs, which are further echoed inside the museum's galleries.

Environmental protection and energy savings were taken into consideration in the architectural design. To create an effective lighting design with energy efficiency, the museum deployed the GRAFIK 7000 lighting control system to control various light sources including modern ones like colour-changing LED.

The GRAFIK 7000 provides switching, dimming and timeclock control all in a single system. It manages lighting usage in multiple spaces and includes both manual and automatic control options. With up to 16,384 zones available on a single processor, GRAFIK 7000 is suitable for the museum's various exhibition areas. The flexibility and scalability of the system can also meet the versatile needs of those exhibition halls with changing layouts and exhibits from time to time. Instead of doing all the rewiring for lamps per change, the museum operators only have to reprogram the lighting scenes according to the new layouts to highlight the new artifacts.

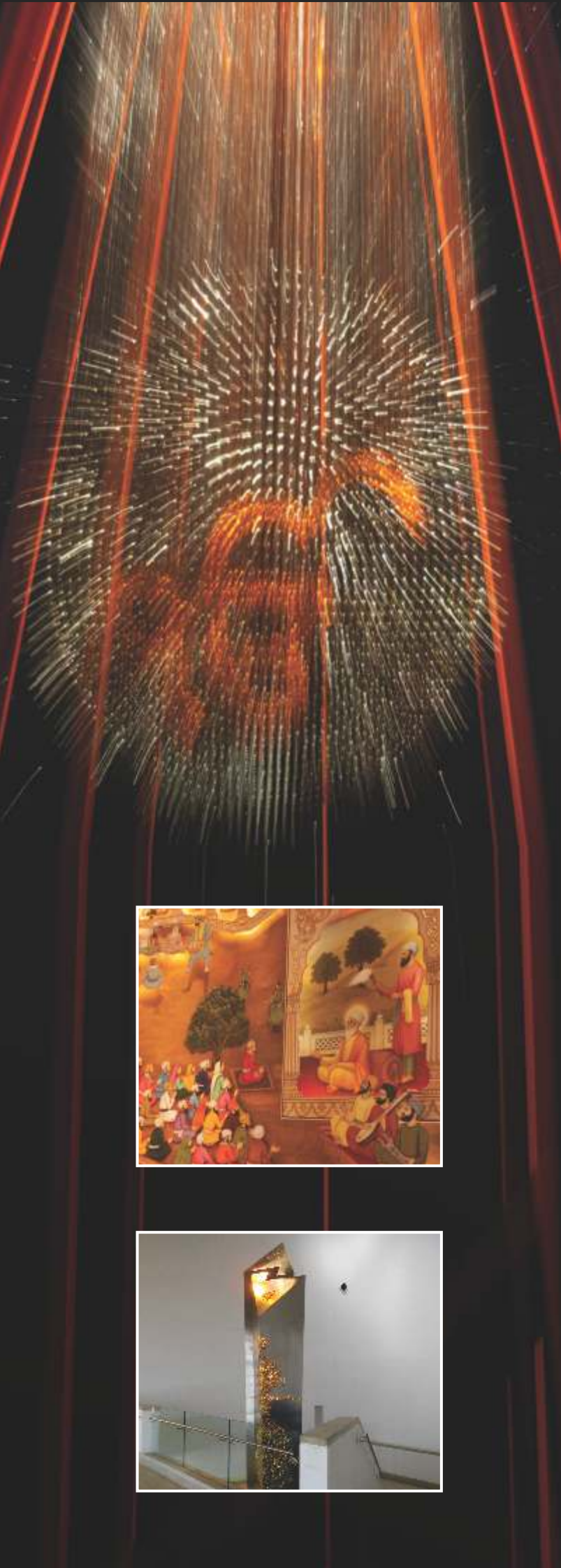
Lighting is the key to bring out the best qualities of the artifacts. The museum needs different lighting effects that best fit the different exhibition halls and galleries in order to put the artifacts in the best light and the visitors in the most appropriate ambience. Therefore, Lutron lighting control system was installed in 14 galleries in the museum.



**¶ The biggest benefit of Lutron systems is its after sales service & support ¶**

**Rajesh Pathak - Project Manager  
M.R.S. Corporation, Delhi, India**





## TECHNOLOGY TO ILLUMINATE HISTORY

To enhance the look of drum building gallery, Fiber Optic Light Engines were used to light up the chandelier, roof and walls. In Petal areas, auto sequencing of T-5 lighting fixtures was used by switching off the existing light fixtures to create ripple effect in the river. CFL lamps were used to create an effect of leaves falling from a tree.

The most interesting part within the Virasat-E-Khalsa is the chandelier. It's an unique art work made up with 2500 tails of Fiber Optics of .75mm thick and 4 metre long. They are all hanging at an angle of 45° in 1.8 meter diameter circular shape. At the end of the fiber tails hang 2500 crystals and the light is emitted from the tips of the crystals. Out of 2500 fiber tails, 501 tails are making an Ek-Onkar in the center of the chandelier. The visitors are greeted with the thought provoking concept of Ek Onkar. This mool mantra echos all round the exhibit with special sound effects situated in a drum-like building highlighting the core principles of Sikhism. For this concept, Lutron GRAFIK 7000 system was used to create alternating light effects emitted from the 5 light engines, with 4 for white light and 1 in deep amber color for Ek-Onkar.

In the grand staircase gallery there are two giant swords of 14 metre long each. The gap between the coverings of two swords is merely 100 mm. A LED strip was installed between these two swords. Again, Lutron GRAFIK 7000 system was used to do the auto-sequencing and colour-changing light effects, with the help of a Lutron DMX interface.





## CREDITS :

### Integrator:

MRS Corporation

### Lighting Design Consultant:

Mr. Kelvin Ashby King

### Architecture Design:

Mr. Amardeep Behl

### Architect:

Moshe Safdie

### Photography:

Courtesy of

Virasat-E-Khalsa

Punjab, India

¶ We are confident in the quality of Lutron as an international brand having a large market share in lighting control business and the positioning of Lutron is very much associated with advanced technologies ¶

**Mr. Kelvin Ashby King - Lighting Consultant**

In addition, Lutron dimming systems can save energy and extend lamp life. Dimming light level by 10% will double lamp life and reduce energy consumption by 10%. Lamp life can be extended 20 times by dimming the light level to half. This can significantly reduce the depletion of resources and help protect the environment for many years to come, which is in line with the motto of the museum - "Sustainability."

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