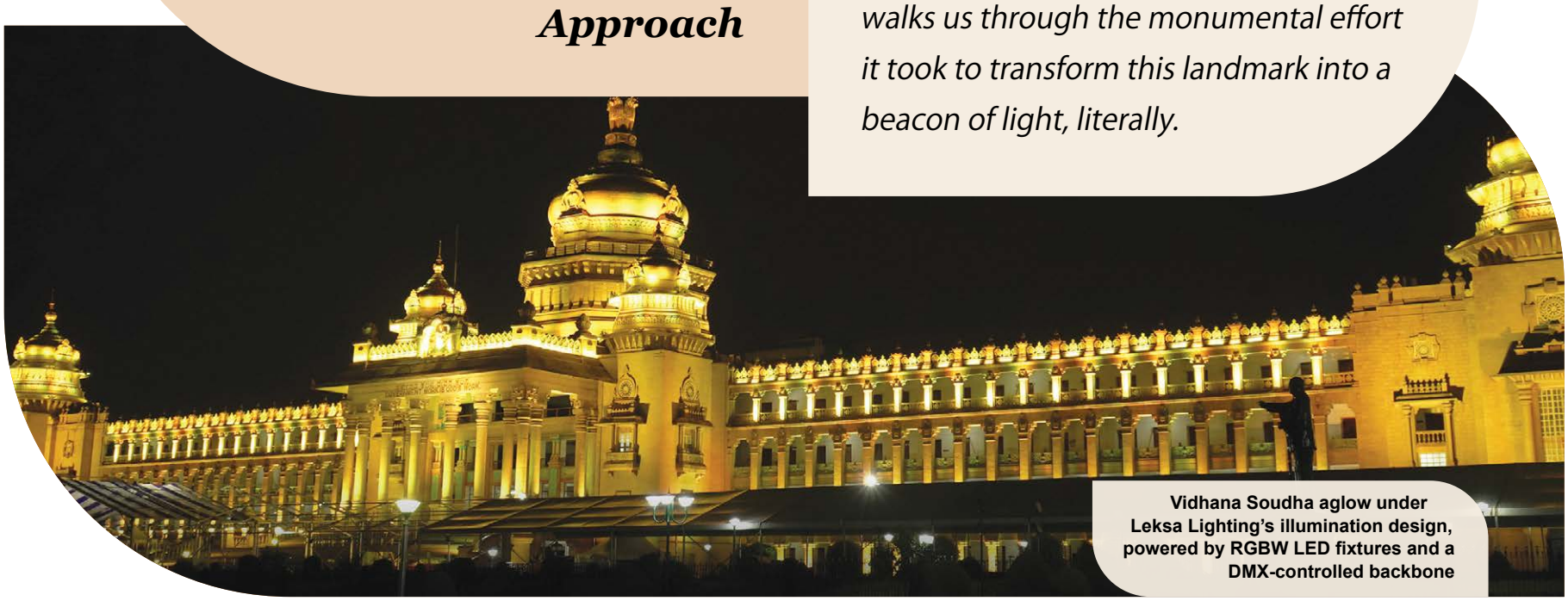
VIDHANA SOUDHA ILLUMINATION PROJECT

Unpacking Leksa Lighting's Innovation-Driven Design Approach

*Lighting a monument as iconic and historically significant as Bengaluru's **Vidhana Soudha** is no ordinary project. It requires a delicate balance of technical finesse, heritage preservation, and meticulous execution. In an exclusive conversation with **PALM Expo Magazine**, **Ronald D'Souza**, Founder and Executive Director of **Leksa Lighting** walks us through the monumental effort it took to transform this landmark into a beacon of light, literally.*



Vidhana Soudha aglow under Leksa Lighting's illumination design, powered by RGBW LED fixtures and a DMX-controlled backbone

"**Vidhana Soudha** is an iconic heritage building, deeply rooted in Karnataka's cultural and political history," explains **D'Souza**. "Given the building's significance, we exercised utmost care during the lighting installation to preserve its structural integrity and heritage value."

Heritage-Sensitive Design Brief

Designed under the leadership of **Chief Minister Kengal Hanumanthaiah** and led by architect **B. R. Manickam**, Vidhana Soudha required an approach rooted in creativity and responsibility.

"All work was carried out without any drilling or cutting that could potentially damage the original façade. Mock-up was conducted at various stages, and we worked in close collaboration with the concerned authorities to secure approvals at each phase."

According to D'Souza, the brief prioritised both aesthetics and sustainability. "The lighting design brief was twofold. Specific directives from the authorities included maintaining a dignified and elegant tone, achieved using warm colour temperatures such as amber," he said. "The system was designed with the flexibility to incorporate dynamic colour-changing effects during festivals, allowing millions of colour combinations while still preserving the monument's integrity."

Fixture Selection and Technical Detailing

"For the Vidhana Soudha project, we used **RGBW LED fixtures**, carefully selected to complement the architectural character of the building while offering both functional and celebratory lighting options," revealed D'Souza.

"The fixtures were equipped with precision-engineered lenses to deliver optimized beam angles, ranging from narrow to wide, ensuring uniform light distribution across various surfaces without compromising the visual appeal, especially during dawn and dusk."

Energy efficiency was central to the lighting scheme. "To ensure energy efficiency, LED technology was used throughout, offering high lumen output with minimal power consumption. The fixtures are powered by high-efficiency drivers with a power factor of ≥0.9, ensuring reliable performance and minimal energy loss."

Environmental durability was another key factor. "Given Bengaluru's varied climate, all fixtures conform to **IP66** or higher for protection against dust and heavy rain, and IK08 or above for impact resistance. The system also considers color rendering with high CRI values, ensuring true color visibility on the granite surface."

Fixtures are connected through a DMX-based control system. "Each fixture is connected through dedicated decoders, allowing individual control over intensity, colour mixing, and programming. This enables highly customised lighting scenarios, from static warm tones to dynamic, multi-colour displays for festivals and national events, without compromising operational efficiency or structural aesthetics."

"The best part is all these fixtures are completely **Made In India** at our **Leksa Lighting factory** located in Moodbidri, Mangalore, Karnataka," added D'Souza.

Design Simulation and On-Ground Execution

Advanced simulation tools were crucial in developing and presenting the lighting design.

"A detailed 3D lighting concept was developed using advanced lighting design and visualization platforms during the initial stages of the project. We have inhouse expertise in it," D'Souza noted. "These tools allowed us to analyse fixture performance based on lux levels and lumen output, which helped us accurately select the appropriate wattages and beam angles for each application area."

Simulated walk-throughs and IES-based renderings helped secure approvals and set clear expectations. "The actual on-site execution was very much in line with the simulated visuals or even better, demonstrating a high level of accuracy and ensuring the design intent was faithfully achieved."

Navigating Architectural Complexity

"Since the use of drilling or cutting was strictly prohibited to preserve the heritage structure, we developed custom-designed clamps and mounting solutions tailored for each application," said D'Souza.

"Each lighting position was carefully finalised after multiple on-site assessments and mock-ups. The goal was to highlight architectural elements like the domes, columns, and cornices with precision, using focused beam angles and discreet mounting, so that the light enhanced the grandeur of the structure without overpowering it."

A robust, flexible control backbone supports daily and event lighting scenarios.

"We have deployed a DMX protocol-based control system across the entire façade lighting installation," said D'Souza. "This system is fully programmable and reprogrammable, allowing lighting themes to be updated or changed as per specific requirements or occasions."

Once the fixtures are mapped within the control software, the entire building is programmed scene by scene. These pre-configured lighting scenes are then stored in the central control unit. The system supports both automated

Custom-designed, non-invasive mounting solutions highlight the architectural intricacies of domes and cornices, executed without a single drill, preserving the monument's structural sanctity

triggering, where lighting scenes are activated based on pre-set calendar dates (such as Independence Day or Republic Day), as well as manual triggering, which can be done through a simple interface or control panel for real-time activation. Moreover, the lighting can be easily synchronised with the music.

Learnings from a Landmark Project

"The Vidhana Soudha project has been one of the most prestigious and challenging lighting installations our team has completed," elaborated D'Souza. "One of the biggest lessons we learned was the value of non-invasive installation methods. We developed special clamps and mounts that didn't require any drilling or damage to the building, something we now plan to use in future heritage projects."

Overall, this experience has strengthened our skills and increased our confidence in lighting up the iconic structures with both technical precision and respect for heritage, something we are proud to carry forward. Finally, we are very glad that our work and creativity was liked by all and well appreciated."

With this venture, the Vidhana Soudha Illumination Project is a veritable jewel in Leksa Lighting's crown of accomplishments.