

Project Case Study

DUBAI OPERA – STUDIO HOUSE LIGHTING UPGRADE

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The Project

Dubai Opera is a flagship cultural venue within the Opera District, designed as a 2,000-seat, multi-format performing arts centre capable of transforming between theatre, concert hall, and flat-floor configurations. The Studio space, a critical component of the venue, is utilized for rehearsals, smaller-scale performances, and experimental productions.

The project involved the replacement of an end-of-life house lighting system within the Studio, with the objective of enhancing lighting levels, operational flexibility, and integration with theatrical production lighting console. The upgrade was strategically important to maintain operational continuity, improve lighting quality, and align the facility with contemporary performance and control standards expected in world-class venues.



Scope of Work

The scope encompassed the complete design, supply, installation and commissioning of a new studio house lighting system.

a. System Design

A fully engineered lighting solution was developed to meet both functional and performance requirements:

- Deployment of high-efficiency LED luminaires with colour changing capabilities.
- Target illumination levels exceeding 300 lux at finished floor level, verified through Dialux calculations.

b. Photometric Analysis and Compliance

- Detailed DIALux simulation and calculation reports were prepared to validate design assumptions
- Consideration of reflectance values, mounting heights, and beam angles to ensure consistent luminance across the studio space

c. Control System Architecture

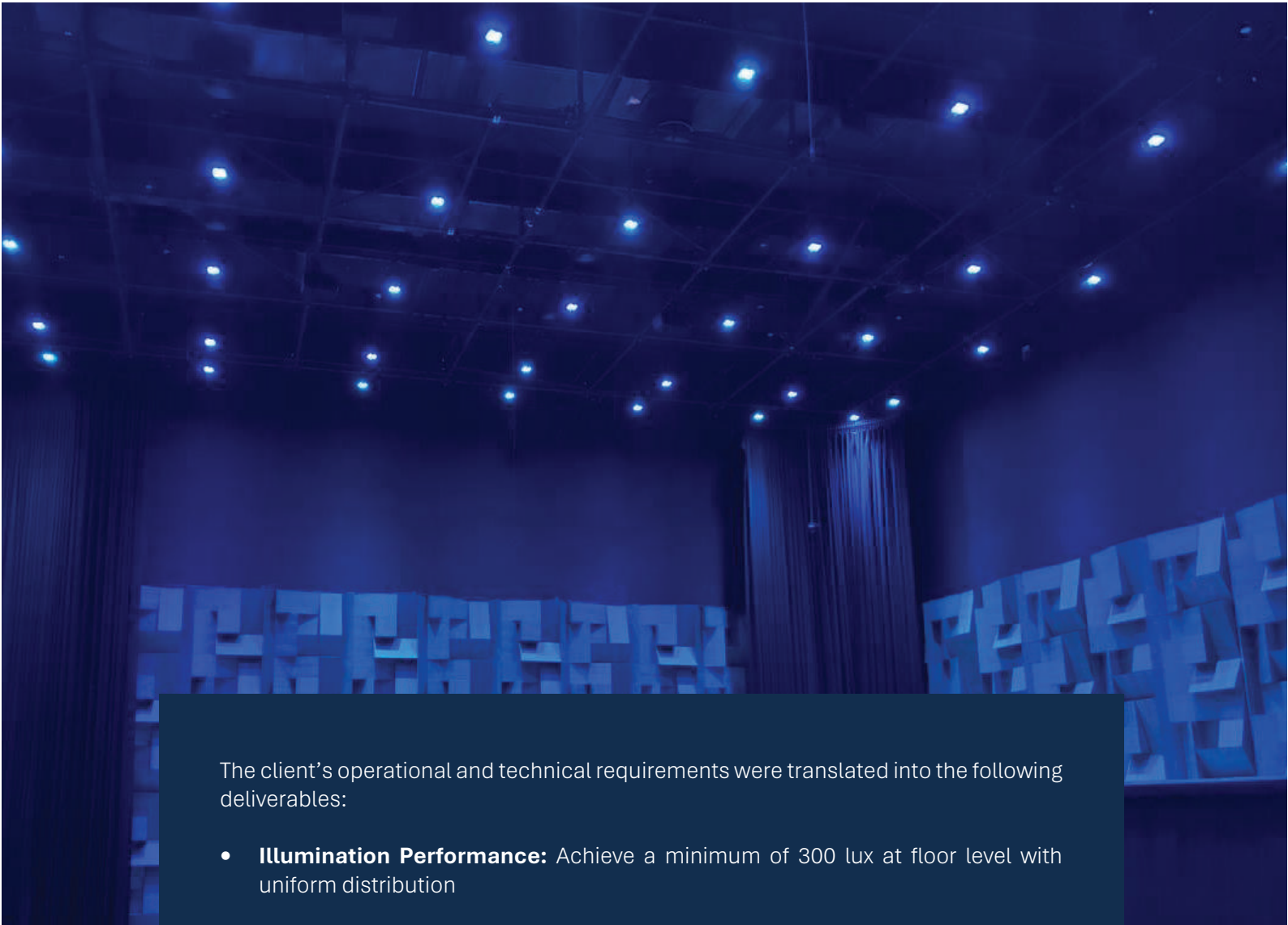
A flexible control system was implemented to replace the legacy fixed-intensity setup:

- Integration of DMX and sACN (Streaming ACN) protocols for real-time control
- Full compatibility with the venue's theatrical lighting console, enabling seamless integration between house and stage lighting
- Implementation of scene-based control architecture, enabling pre-programmed lighting states for rehearsals and every day work light.

d. Installation and Commissioning

- Safe removal and disposal of the old lighting system
- Installation of new fixtures, hardware and control system
- Addressing, patching, and configuration of all fixtures.
- Programming of lighting scenes and testing.
- Final commissioning, including lux level verification and system performance validation.

Client Requirements

The background image shows a theater interior. The ceiling is a complex grid structure with numerous small, bright blue spotlights. The stage area is visible in the background, featuring a large, curved, blue, geometric structure. The overall lighting is a deep blue, creating a dramatic atmosphere.

The client's operational and technical requirements were translated into the following deliverables:

- **Illumination Performance:** Achieve a minimum of 300 lux at floor level with uniform distribution
- **Dynamic Lighting Capability:** Provide full colour control and variable intensity, replacing the previous fixed colour temperature system
- **System Integration:** Enable direct control from the existing theatrical lighting console
- **Ease of Reprogramming:** Allow in-house technical teams to modify lighting scenes
- **Zoning Flexibility:** Separate control of audience and stage areas
- **Long-Term Reliability:** Utilize fixtures and components with extended warranties

Project Challenges

1. Retrofit Within an Operational Venue

The project required execution within an active performance environment:

- Phased installation strategy to avoid disruption to scheduled events
- Coordination with venue management to align works with non-operational hours
- Protection of existing infrastructure and finishes during installation

2. Achieving Uniform Illumination in a Multi-Use Space

The adaptable nature of the Studio required a lighting design capable of performing across multiple configurations:

- Optimization of fixture placement to accommodate different seating and staging layouts
- Balancing general illumination with performance lighting requirements
- Minimizing glare and ensuring visual comfort for both audience and performers

3. System Reliability and Maintenance

Given the critical role of house lighting, system reliability was paramount:

- Selection of fixtures with long-life LED arrays ($\geq 50,000$ hours) and extended warranties (up to 10 years)
- Implementation of robust control hardware with proven performance in similar environments





Project Outcomes

The final solution provides Dubai Opera with a future-ready studio lighting system that enhances both technical capability and user experience, while maintaining alignment with international performance venue standards.

The upgraded system delivered a high-performance, fully integrated lighting solution with measurable improvements:

- **Enhanced Illumination:** Achieved and exceeded the specified 300 lux requirement, with improved uniformity and visual comfort
- **Operational Flexibility:** Full colour and intensity control enabling rapid adaptation to different event types
- **Seamless Integration:** Direct control from the theatrical lighting console, allowing house lighting to be incorporated into live productions
- **Zoned Control:** Independent management of audience and stage areas, supporting complex lighting scenarios
- **User Empowerment:** Intuitive control system enabling in-house teams to program and adjust lighting without external support
- **Long-Term Reliability:** Deployment of high-quality fixtures with extended warranties, ensuring reduced lifecycle costs

Installed Items/BOQ

Control System

1 X ETC EchoTouch Controller Mk2

1 x ETC F-Drive Wall Mount

1 X ETC Response Mk2 4-Port Gateway - 4 Output

1 X ETC Response Opto - 16 Port Rack-mount - RJ45

1 X CBS350-24P-4G, Cisco Business 350 Switch, 24xPoE+

Fixtures

7 X ArcSystem Navis 100 RGBW 40°

72 X ColorSource PAR jr



Client Testimonial

“Working with Oasis Enterprises on this project has been an absolute pleasure, removing a layer of stress from me as I had complete faith in your team.

From the initial site visit, Richard Burton, Entertainment and Themed Environment Manager, presented a clear and comprehensive proposal aligned with our scope of work, while confidently and effectively addressing all questions.

Led by Jack Jennings, Project Manager, the installation team executed the project with a high level of efficiency and professionalism, addressing challenges promptly and effectively, and achieving completion ahead of schedule.

I look forward to working with you again in the future.”

-Martin Doone
Head of Lighting - Dubai Opera

Contact Us

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