

Project Case Study

LA PERLE BY DRAGONE - AL HABTOOR CITY, DUBAI

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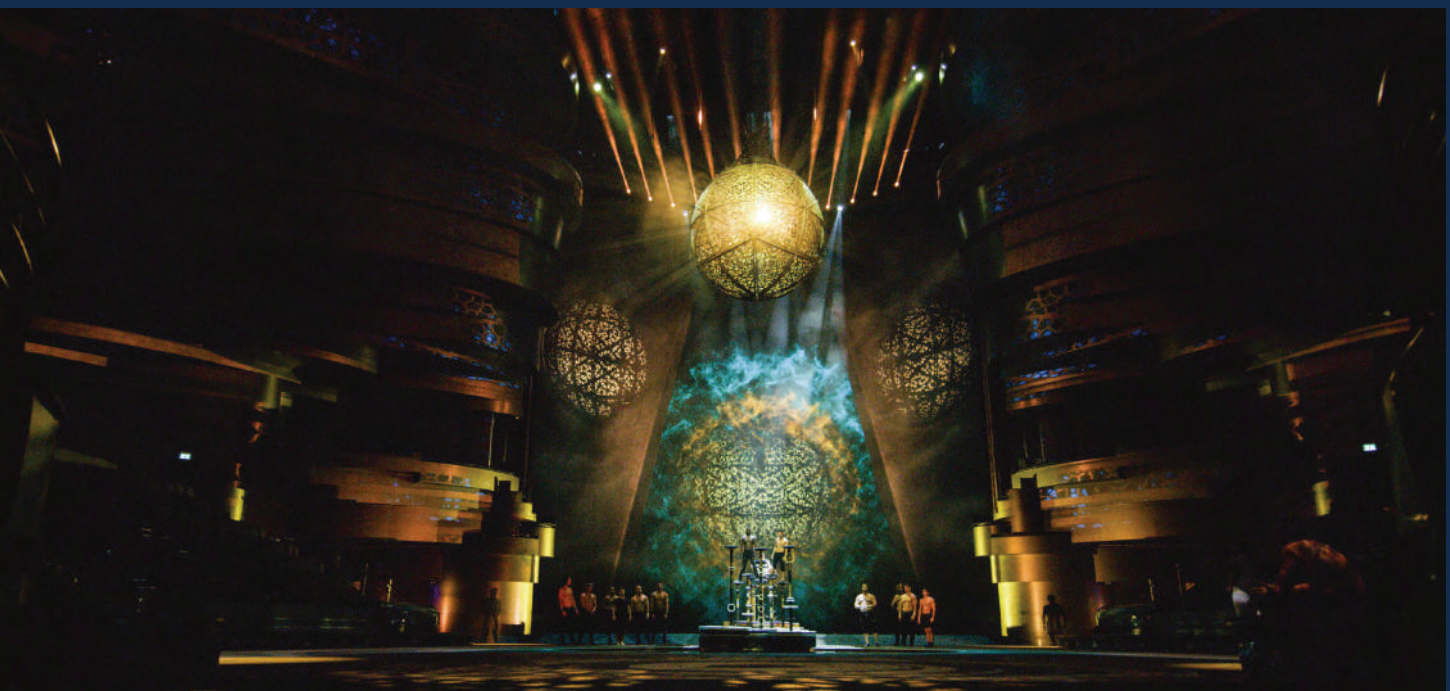
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The Project

La Perle by Dragone, located within Al Habtoor City, Dubai, is the region's first purpose-built aqua theatre and a permanent live performance venue of international standing. The 1,300-seat theatre was designed to host a high-frequency show schedule, exceeding 450 performances annually, within a highly immersive environment that integrates water, lighting, and special effects into a single production ecosystem.

A defining feature of the venue is its custom-built performance pool containing over 2.5 million litres of water, requiring all technical systems to be designed with enhanced protection, redundancy, and environmental resilience. The theatre was conceived to deliver a continuous, high-intensity production, placing significant demands on system reliability, maintainability, and operational safety.

The theatre consultancy was led by Auerbach Pollock Friedlander (APF), with Oasis Enterprises appointed as the sole supplier and integrator for production lighting, theatrical control systems, and special effects infrastructure, including safety-critical emergency stop systems. The project was awarded in 2015 and required close coordination with multiple stakeholders, including the client, consultants, contractors, and international equipment manufacturers.



Scope of Work

Oasis Enterprises was responsible for the design support, supply, installation supervision, system integration, testing, and commissioning of all theatrical lighting and special effects systems.

1. Theatrical Lighting and Control Systems

- Deployment of a comprehensive lighting system comprising:
 - Approximately 150 intelligent moving luminaires
 - 84 conventional tungsten fixtures
 - 103 LED wash fixtures
 - 150 underwater lighting fixtures integrated within the performance pool
- Installation of 7 ETC Sensor ESR48 dimming systems, providing regulated power distribution and dimming control for conventional fixtures.
- Integration of MA Lighting control systems, including:
 - Two MA2 Full-Size consoles for primary show control
 - One MA Lite console dedicated to special effects operation
- Incorporation of Robert Juliat Cyrano followspots, positioned to provide long-throw, high-intensity tracking for performers.
- Deployment of ETC Unison Paradigm architectural control system, enabling integration between show lighting and house lighting, as well as preset-based operational control.

Scope of Work

2. Network Infrastructure and System Integration

- Design and implementation of a dual redundant fibre-optic backbone, supporting all lighting and control systems across the venue.
- Integration of over 20 Cisco Catalyst switches, configured to ensure:
 - Low-latency communication between control systems
 - Network segmentation for lighting, control, and effects systems
 - High availability and fault tolerance
- Configuration of DMX and Ethernet-based control protocols, ensuring seamless communication between lighting consoles, dimming systems, and distributed devices.
- Extensive pre-configuration and testing of 10 fully populated equipment racks, including switches, processors, and control modules, prior to site delivery.

3. Special Effects Systems

- Design and integration of a complex theatrical special effects system, including:
 - 90 low-fog generators, utilizing water-based technology to eliminate reliance on dry ice
 - Custom-built DMX-controlled damper manifolds, enabling precise control of fog distribution through ducted systems
 - 80 DMX-controlled fans for directional airflow and effect shaping
 - 10 snow machines and 50 smoke machines for atmospheric effects
- Integration of effects systems into the overall show control architecture, allowing synchronized operation with lighting and performance cues.
- Implementation of SFX Emergency Stop (E-Stop) systems, ensuring immediate shutdown capability in case of safety incidents, in compliance with international safety standards.

Scope of Work

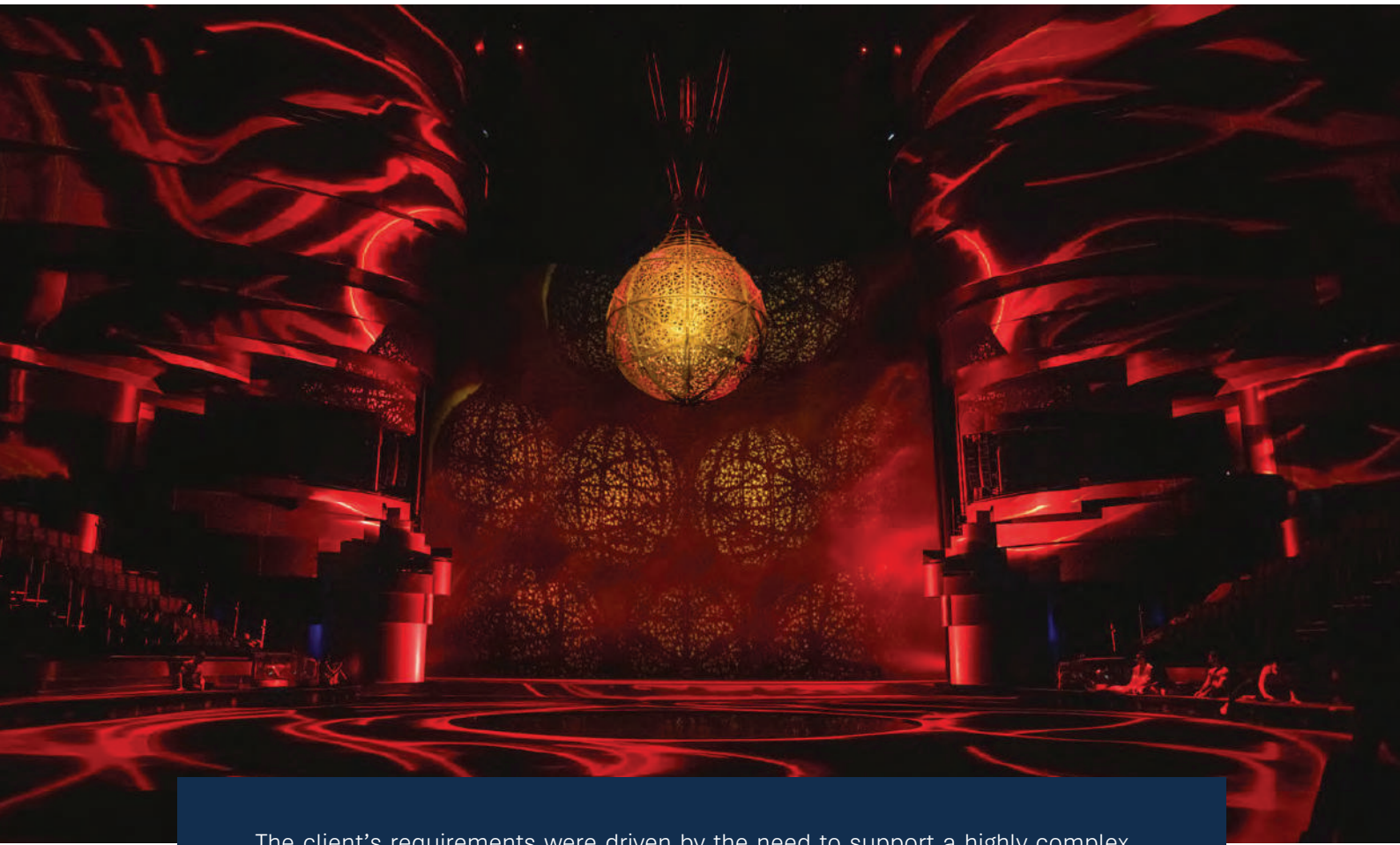
4. Testing, Commissioning, and FAT

- Execution of comprehensive Factory Acceptance Testing (FAT) at Oasis Enterprises' dedicated facility in Dubai:
 - Full system simulation including lighting, control, and network components
 - Stress testing of network performance and latency
 - Validation of integration between MA Lighting consoles and ETC Paradigm system
- Pre-addressing and configuration of all luminaires and control devices prior to installation, reducing on-site commissioning time.

5. Installation and Coordination

- Supervision of on-site installation, including:
 - Data cabling infrastructure across the theatre
 - Coordination with MEP contractors for power and integration with Building Management Systems (BMS)
 - Alignment with structural and architectural constraints
- Integration of lighting and effects systems with BMS, including control of HVAC systems for specific effects sequences.

Client Requirements



The client's requirements were driven by the need to support a highly complex, permanent live show environment, with the following technical deliverables:

- High-reliability lighting and effects systems capable of supporting daily performances without failure
- Full system integration across lighting, special effects, and control platforms
- Low-latency network infrastructure to support real-time show control
- Advanced special effects capability, including water-integrated and atmospheric effects
- Safety-critical control systems, including emergency stop functionality
- Pre-tested and validated systems to minimize on-site risks and commissioning delays
- Long-term maintainability and access to after-sales technical support

Project Challenges

a. Integration Within an Aqua Theatre Environment

The presence of large water volumes introduced significant challenges:

- Selection of IP-rated fixtures and corrosion-resistant materials
- Isolation of electrical systems from water exposure
- Design of underwater lighting systems capable of long-term submersion

b. Complex Multi-System Integration

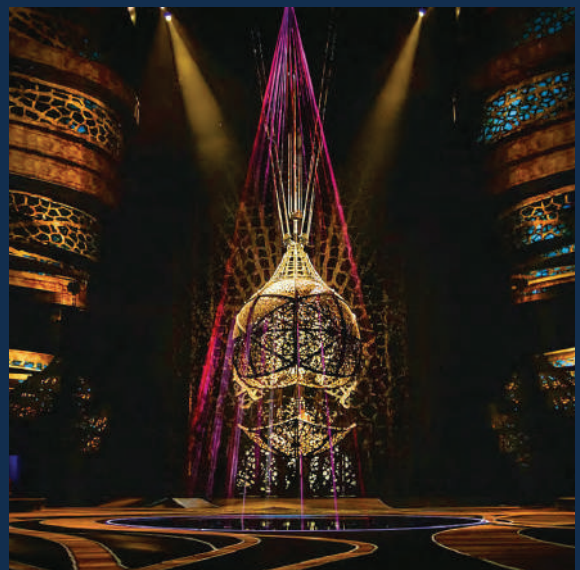
The project required seamless coordination between multiple systems and vendors:

- Integration of lighting, special effects, and architectural control systems
- Synchronization between MA Lighting consoles and ETC Paradigm system
- Network configuration to prevent data conflicts and ensure deterministic performance

c. High System Dependency on Network Infrastructure

Modern theatrical systems rely heavily on network performance:

- Implementation of redundant fibre to ensure continuous operation
- Real-time troubleshooting of network issues during FAT
- Optimization of data traffic to prevent latency during live performances



Project Challenges



d. Custom Special Effects Engineering

The scale and complexity of the effects system required bespoke solutions:

- Development of custom DMX-controlled manifolds for fog distribution
- Integration of water-fed fog systems
- Coordination between airflow systems and HVAC controls

e. Construction and Coordination Constraints

As with most bespoke theatre projects:

- Continuous coordination with multiple contractors and consultants
- Alignment of installation timelines with overall construction progress
- On-site problem-solving for unforeseen integration challenges



Project Outcomes

The La Perle project was successfully delivered, resulting in a fully integrated, high-performance theatre system capable of supporting one of the region's most technically demanding live productions.

Key outcomes include:

- **Seamless System Integration:**

All lighting, control, and special effects systems operate as a unified platform, enabling precise show execution.

- **High Operational Reliability:**

The system supports over 450 performances annually with minimal downtime, demonstrating robust design and implementation.

- **Advanced Show Capabilities:**

Integration of lighting and effects systems enables complex and immersive audience experiences.

- **Optimized Commissioning Process:**

Extensive FAT reduced on-site commissioning time and minimized project risk.

- **Enhanced Safety Systems:**

Implementation of E-Stop and safety controls ensures compliance with international theatre safety standards.

- **Future-Proof Infrastructure:**

Network-based architecture allows for system upgrades and scalability as production requirements evolve.

Installed Items/BOQ

Kit List:	Brand	Qty
SENSOR CE ESR3AFN-48 WITH ADVANCED FEATURES (AF), BLACK	ETC	6
Cisco Catalyst 3750X-12S-E 12 Port SFP Managed Rack Mountable Switch	CISCO	2
Cisco Catalyst 3750-X 24 Port Managed L2 Stackable Gigabit PoE+ Switch	CISCO	10
Cisco Catalyst Switch 8 GE PoE, 2 x Dual Uplink, IP Base	CISCO	6
Network Processing Unit	MA Lighting	2
Grand MA 2 Lighting Console	MA Lighting	2
DMX 4 Port Nodes	MA Lighting	6
P-ACP UNISON PARADIGM ARCH CONTROL PROCESSOR 2	ETC	5

Client Testimonial

“Running a high-pressure resident show such as La Perle by Dragone requires pushing equipment to its limits ten times each week. Although I was not present during the original theater construction, the lighting infrastructure installed by Oasis Enterprises continues to serve as the foundation of our daily operations in the lighting department. In this high humidity environment lighting systems stability is critical, despite years of consistent use, the system has remained dependable.

Oasis Enterprises has demonstrated its value as a reliable partner in maintaining the theater, they have provided support for our systems through servicing, the supply of spare parts, and technical visits to ensure our equipment remains up to date.”

—Domenica Boscardin

Head of Lighting La Perle

La Perle Theatre Lighting Installation and infrastructure

Contact Us

OASIS ENTERPRISES L.L.C.

DUBAI - UAE
+971 4 282 1337
info@oasismena.com

ABU DHABI - UAE
+971 26 217 043
info@oasismena.com

RIYADH - KSA
+966 11 222 4488
info.ksa@oasismena.com

