



Evans Presentation

Our Mission

Is to design and equip mission critical operations



NASA – Shuttle Launch Control Room (Firing Room #4) - Kennedy Space Center, FL

We understand Control Rooms!

- Evans completes approximately 20-25 control room projects, plus 35-40 additions to existing control rooms - every month

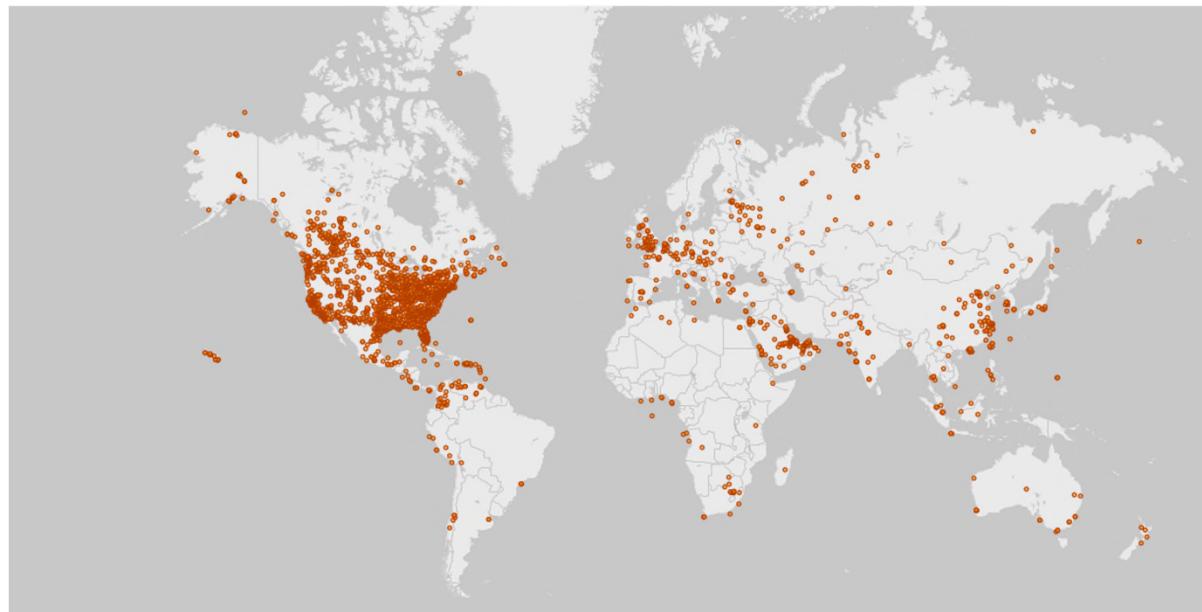
What this means to you;

- In depth understanding of what is required to design the optimum control room
- Continuous view into how control rooms are evolving from an operational, design and technology perspective
- Continuously expanding our understanding of opportunities and pitfalls in the control room design process
- Leveraging our continuous learning on future projects

A Global Perspective

Evans has Designed and Implemented over 15 000 control rooms around the world

- We leverage our global perspective of how control rooms designed in different regions in terms of best practices, innovation, efficiency and risk mitigation
- Maintain consistent standards of design and execution around the world
- Ability to fully execute anywhere in the world



Understanding Multiple Control Room Applications

- In depth understanding how other control rooms markets operate
- Ability to apply lessons from other applications in terms of Design, Operational Planning & Technology
- Leverage real applications to aid in implementing new operational environments by providing existing sites as references

Utilities	Process Control	Government	Public Safety	Technology	Airports

Services & Products That Support the Entire Control Room Lifecycle

Evans' products and services allow us to support our partners and customers in every stage of the Control Room project lifecycle



Focus on Expertise, Standards and Quality

- **Focus** – Evans expertise and focus is on control rooms and the control room suite. That is all we do.
- **Resources** – Our team includes subject matter experts in multiple areas Control Room Design including Architects, Professional Engineers, IT Experts, AV Engineers, Desing Engineers and Ergonomics Experts
- **Design Standards** – Evans follows global design standards for control room design, Ergonomics, quality and safety including ISO 11064, ISO 9001, NUREG, BIFMA and others
- **Environmental standards** – Evans has implemented multiple environmental standards that are utilized in design and products within control rooms including ISO 14001, Greenguard, FSC and others.



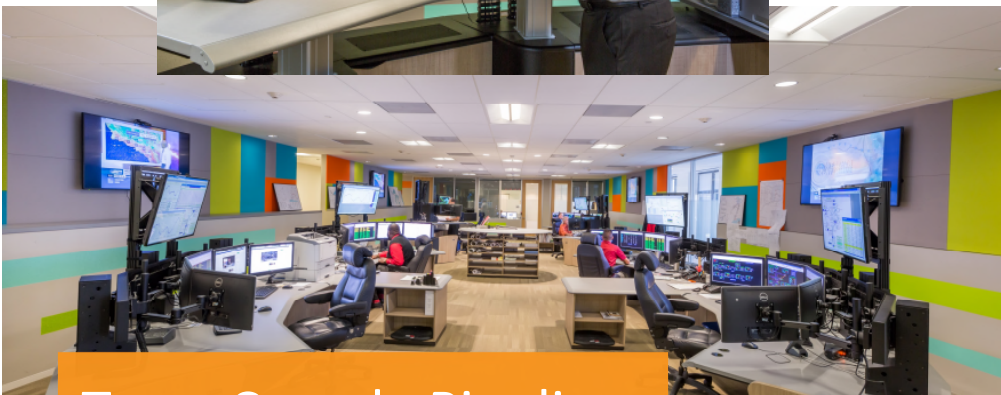
ISO 11064-1:2000



Market Segment Examples

CONTROL ROOM APPLICATIONS

Oil & Gas



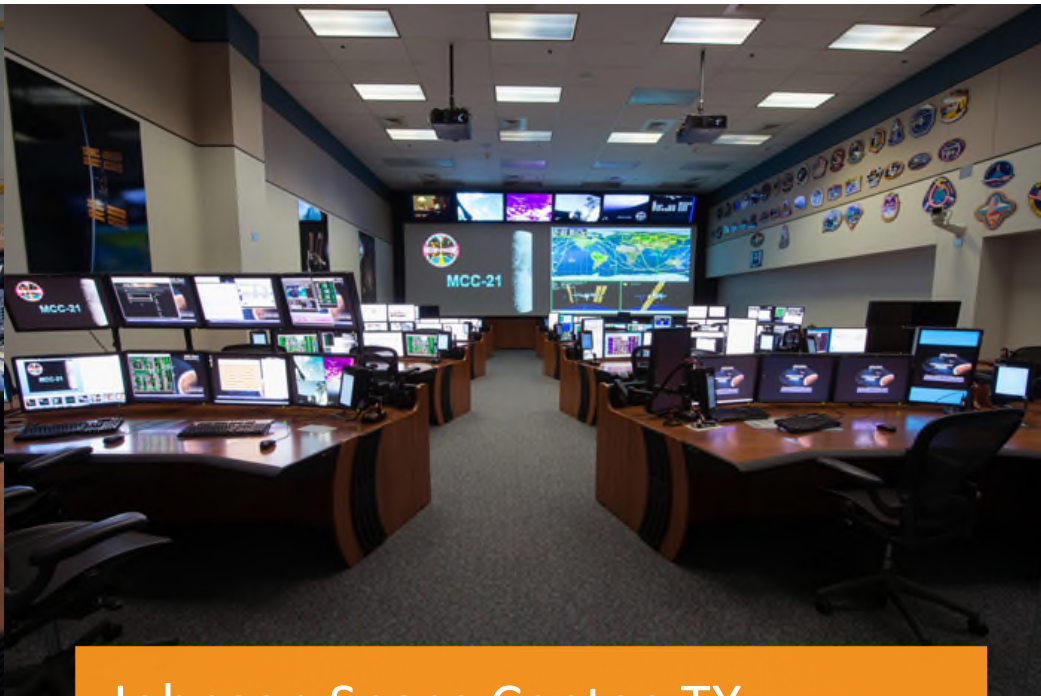
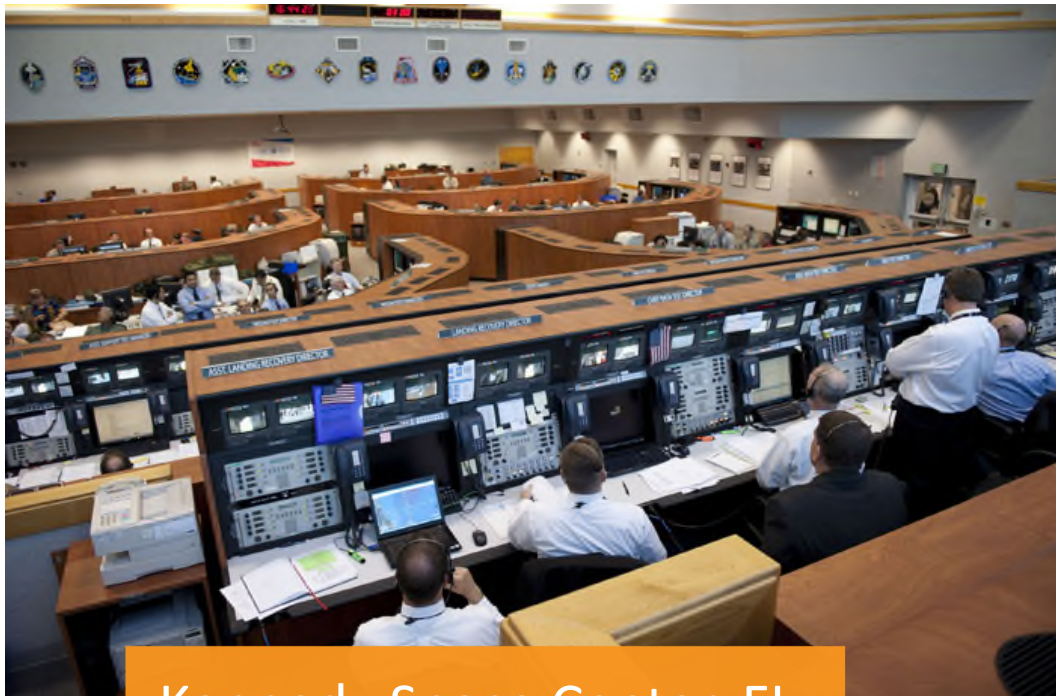
Trans Canada Pipelines



KNPC

CONTROL ROOM APPLICATIONS

AEROSPACE

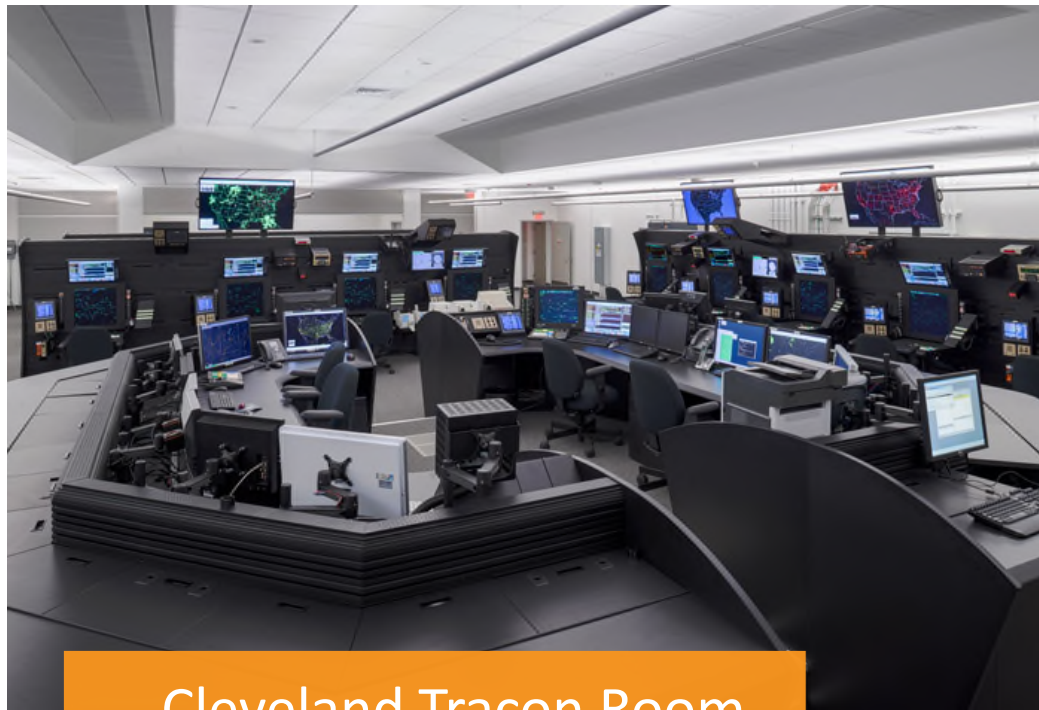


Kennedy Space Center, FL

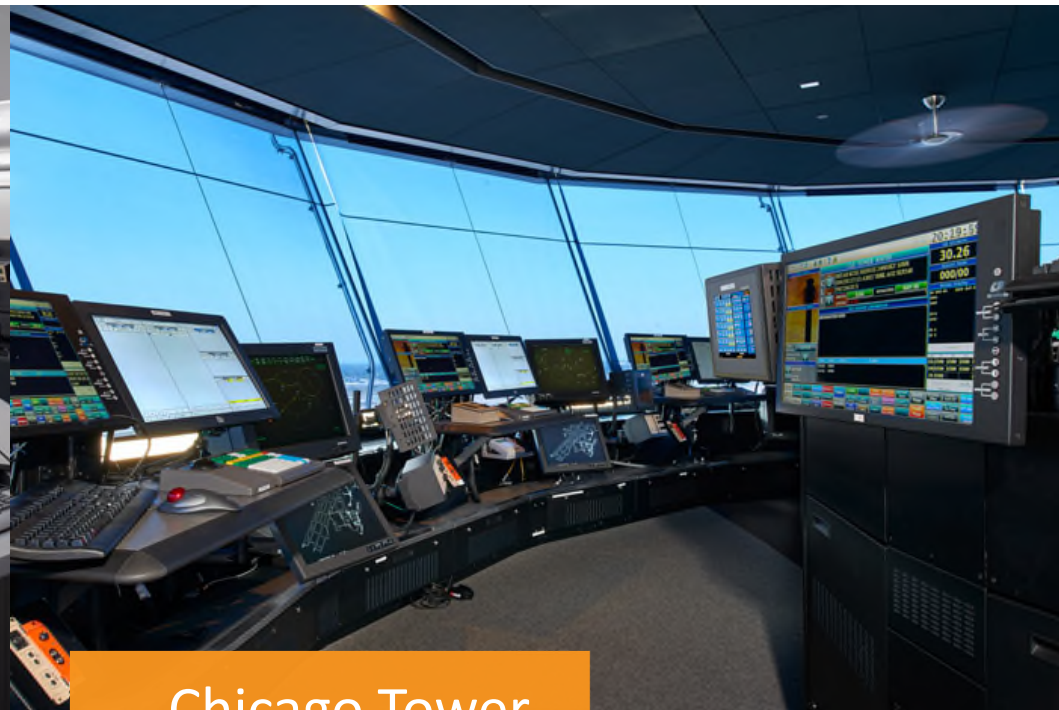
Johnson Space Center, TX

CONTROL ROOM APPLICATIONS

Air Traffic Control



Cleveland Tracon Room



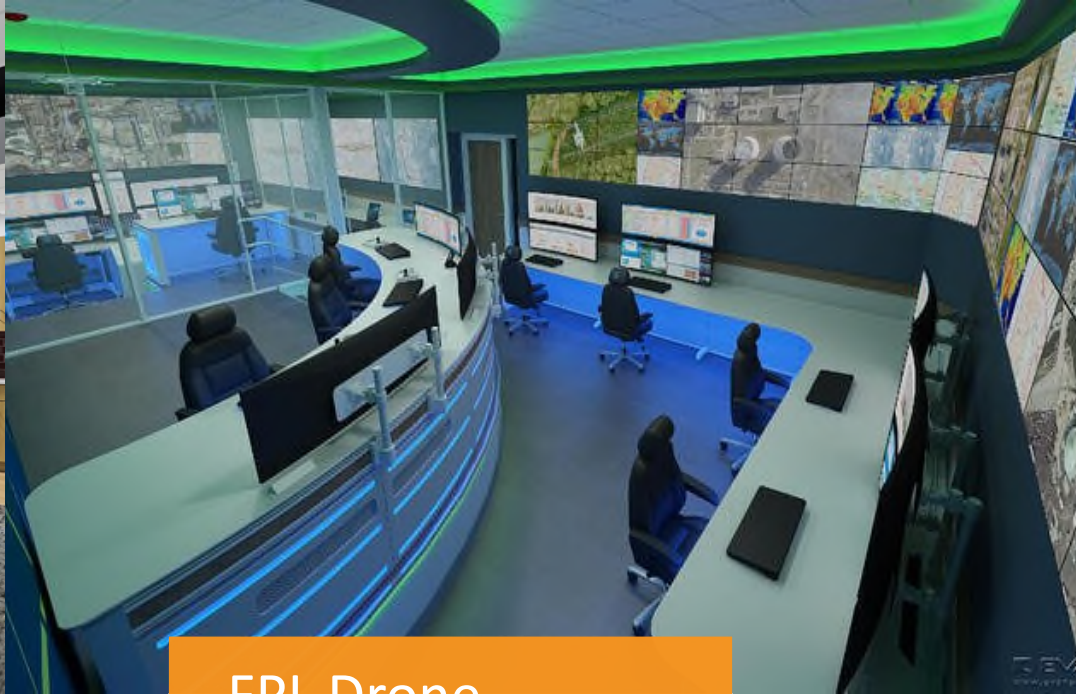
Chicago Tower

CONTROL ROOM APPLICATIONS

Energy & Utilities



AES Indy



FPL Drone

Selected Successes

Emergency Operations Dispatch Centers



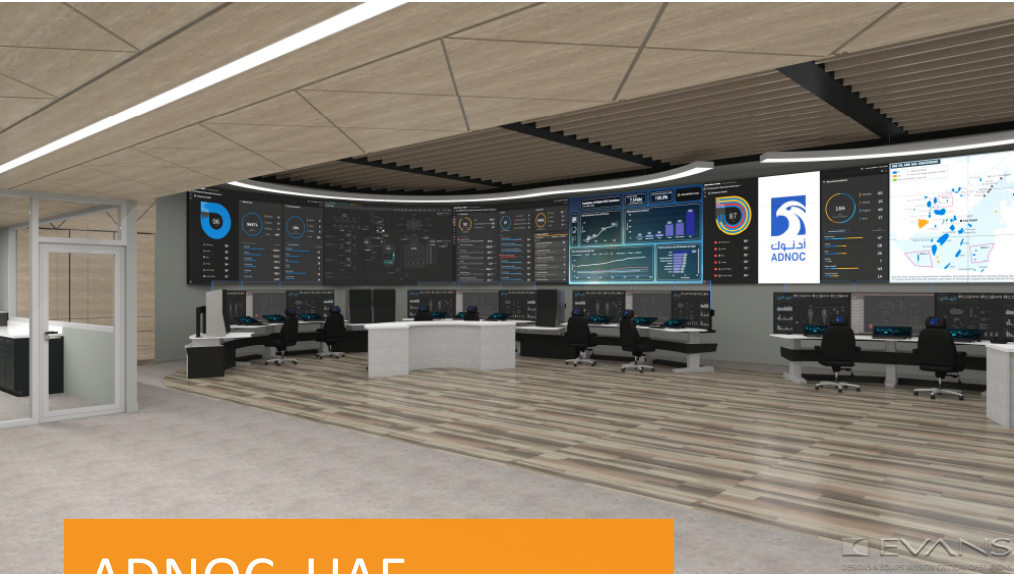
St Petersburg 911



Harris County 911

CONTROL ROOM APPLICATIONS

International



ADNOC, UAE



PDO, Oman

CONTROL ROOM APPLICATIONS

Universal Pictures



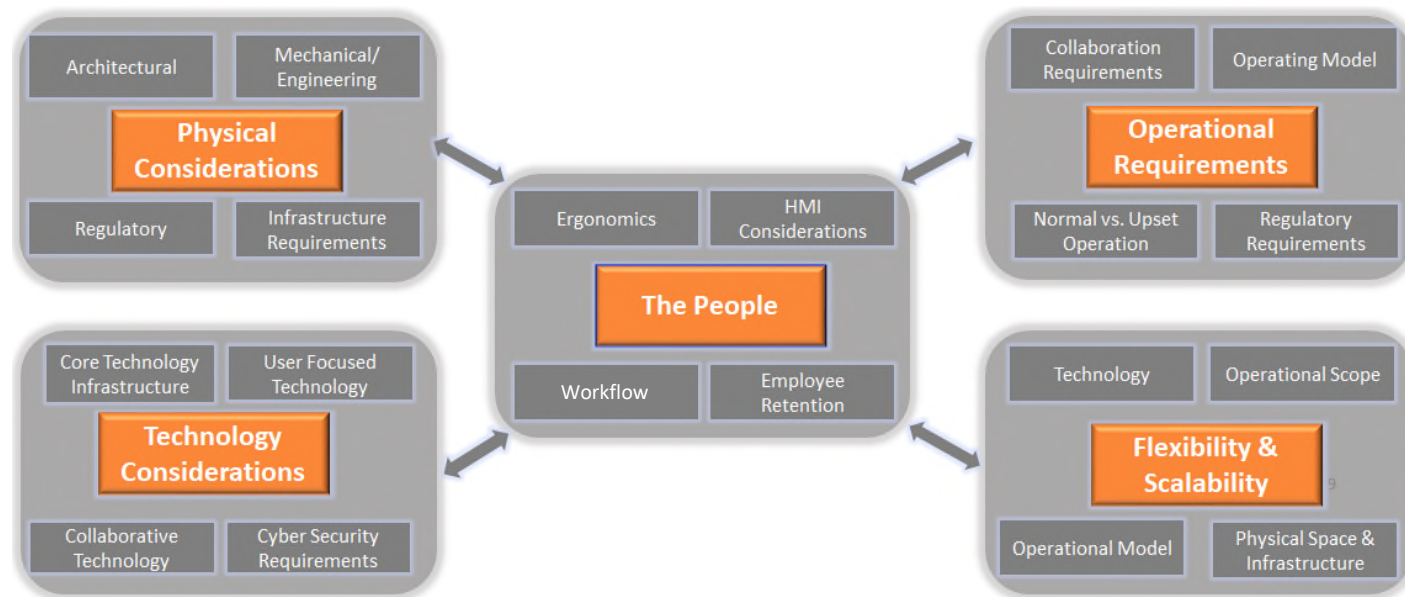
If You Can Dream It, Evans Can Make It

Control Room Design & Services Overview

Control Room Vision

Engaging Evans early can reduce costs and problems later

- Comprehensive approach that looks at all aspects impacting the design of an ideal operating environment
- Unique position to understand trends, technology features, innovative operating models and best practices across industries and geographies
- Flexibility to tailor each solution to the needs of the operation while balancing constraints



Phase 1 – Conceptual Planning

CONCEPTUAL DESIGNS - Architectural

- Architectural layouts of space based on the established operational plan;
 - Site survey and existing conditions drawings (floor plan & ceiling plan)
 - 2-3 Conceptual Floor Plan Options (Preferred option to be developed into drawing package)
 - Proposed Floor Plan (with Furniture & Equipment)
 - Proposed Reflected Ceiling Plan
 - Proposed Floor Finish Plan (usually conveyed on floor plan)
 - Proposed Interior Elevations
 - Color/Material Board (2-3 options)
 - Proposed Renderings

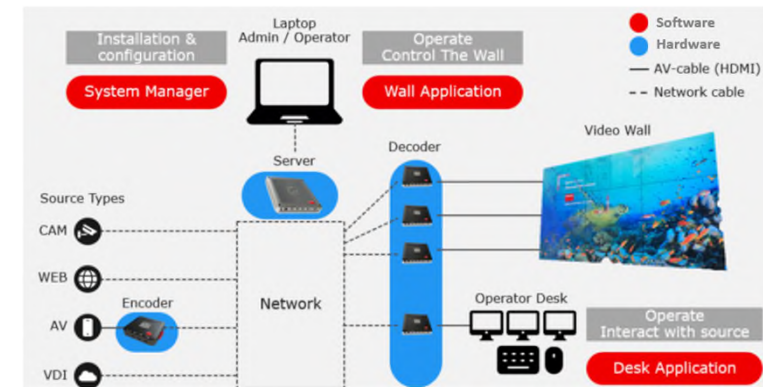


Phase 1 – Conceptual Planning

CONCEPTUAL DESIGNS – AV & Technology

- Conceptual Display Layouts – both for operator monitors and for common viewing displays (video walls)
- Conceptual AV hardware & content management options – strategic alternatives based on operational performance, budget and overall system flexibility. This includes:
 - Display hardware options (LED, LCD, single displays, matrix displays and similar)
 - Video processing hardware/software alternatives
 - Content management (IT source management/consolidation options)

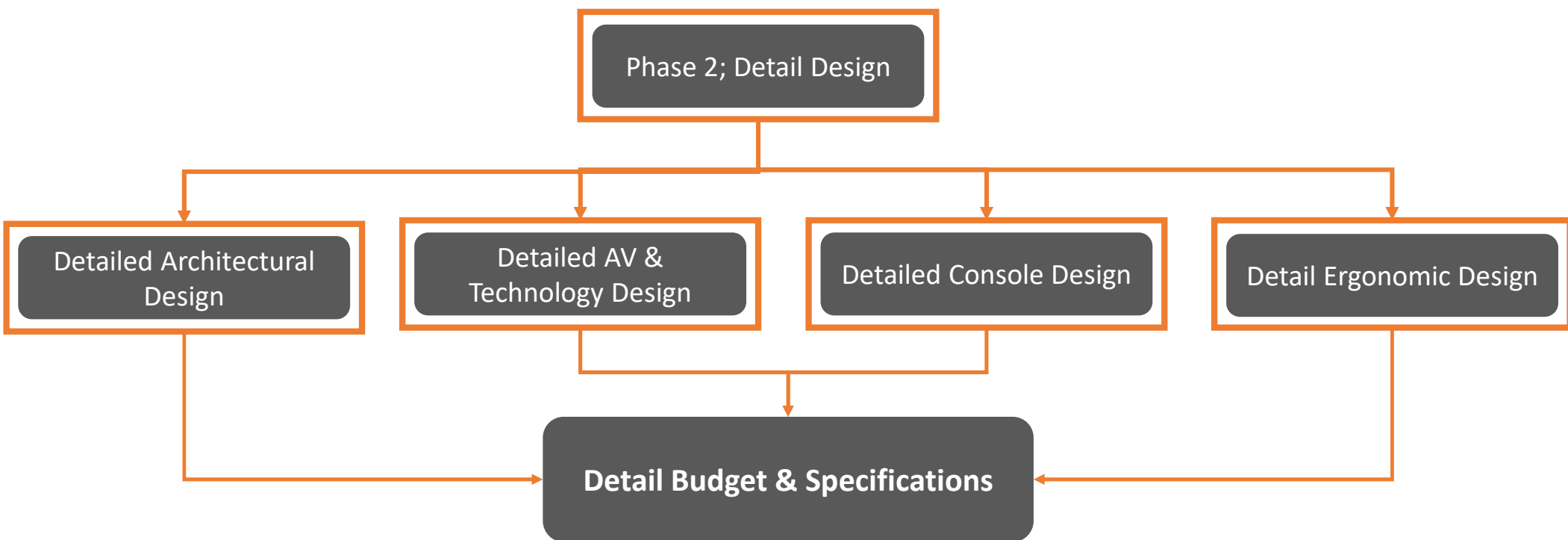
NOTE: Evans takes an agnostic approach to technology design whereby we will recommend the best manufacturers of AV hardware or software depending on the specific operational or budgetary requirements.



Phase 2 – Detailed Design Phase

Phase 2 – Detail Design

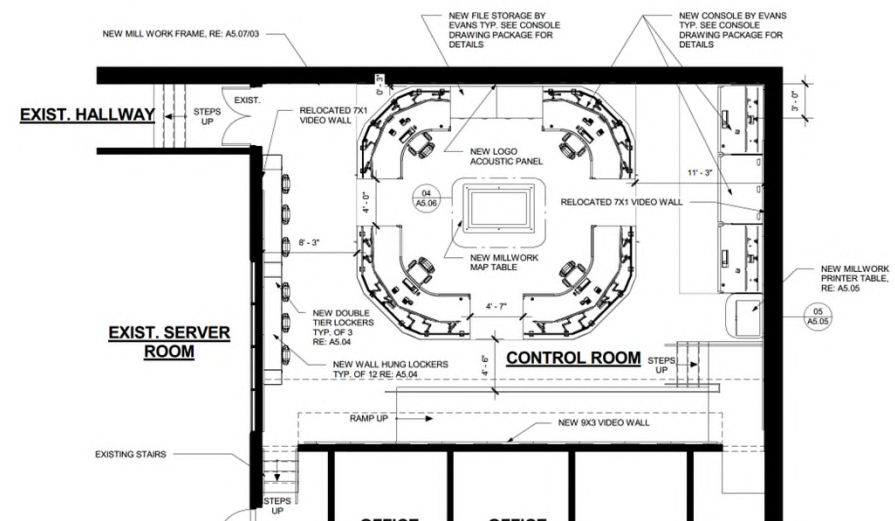
Once a conceptual design direction is selected, Evans completes a detailed design which encompasses all of the critical aspects of the control room. Upon completion of the detailed design, a complete budget and specifications can be developed.



Phase 2 – Detail Architectural Design

Architectural Design Intent Drawing Package

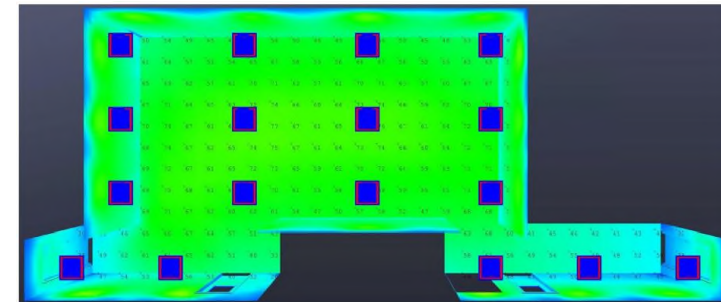
- Site survey and existing conditions drawings (floor plan & ceiling plan)
- Project scope/needs Information gathering with key personnel
- 2-3 Conceptual Floor Plan Options (Preferred option to be developed into drawing package)
- F,F, & E Plan (Fixture, Furniture, & Equipment)
- Demolition plan & Details
- Demolition ceiling plan & Details
- Floor Plan & Details
- Reflected Ceiling Plan & Details
- Light Study
- Raised Floor Plan & details
- Floor Finish Plan & Details
- Interior Elevations & Details
- Color/Material Boards (2-3 Options)
- Renderings
- Product Specs



Phase 2 – Detailed Architectural Design

Lighting Study

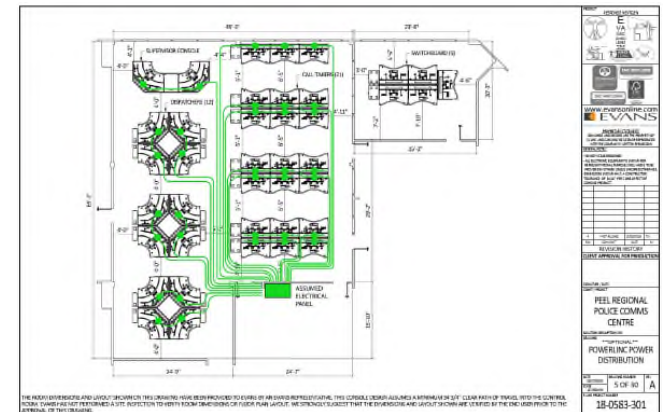
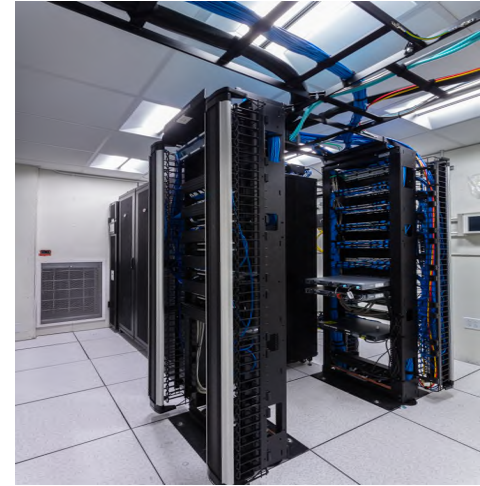
- F, F & E Plan (Furniture, Fixture, & Equipment)(as required)
- Demolition ceiling plan & Details (as required)
- Reflected Ceiling Plan
 - Lighting layout
 - Light Zone Diagram
- Light Study
 - Rendering of the proposed Illuminance Levels within the space
- Console Overlay Plan w/ Ceiling
- Product Specs/Cut sheets
 - Light fixtures
 - Switches
 - controllers



Phase 2: Detailed Technology Design

Technology and AV Design

- Network infrastructure recommendations
- Overall AV system design
- AV Hardware design & Specification's
- AV processors and controller specification
- Secure vs. non secure content mapping
- Cabling infrastructure, server location, power and data distribution
- IDF room planning and design
- Cabling design and planning



Phase 2: Detailed Console Design

- ▶ Console design based on architectural and technology requirements
- ▶ Integration of all required equipment into each console
- ▶ Functional and ergonomic features based on design requirements
- ▶ Integrated visual alarms
- ▶ Monitor display system
- ▶ Auxiliary control room furniture (technology tables, millwork and similar)



Phase 2: Detailed Ergonomic Design

Level II - Ergonomic Design & Validation

- Ergonomic design validation
 - Physical
 - Cognitive
 - Organizational
- Regulatory compliance considerations
- ISO 11064 review & compliance of all proposed solutions
- Review and compliance to customer specific human factor standards
- Visual sightline study

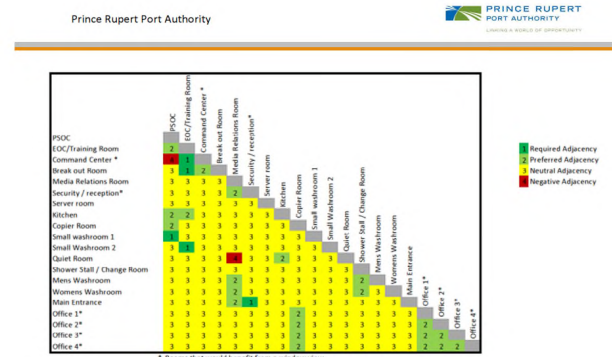
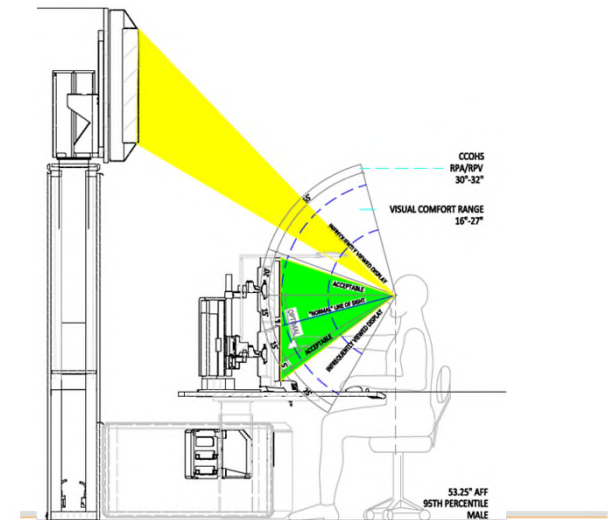


Figure 1: Adjacency Matrix

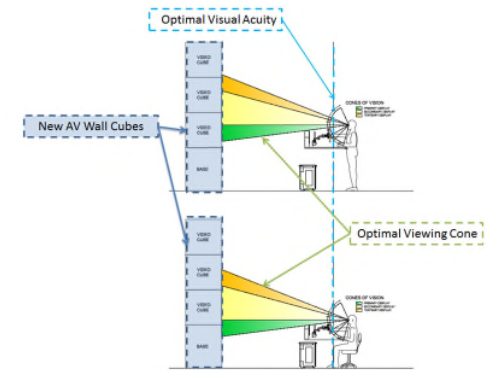
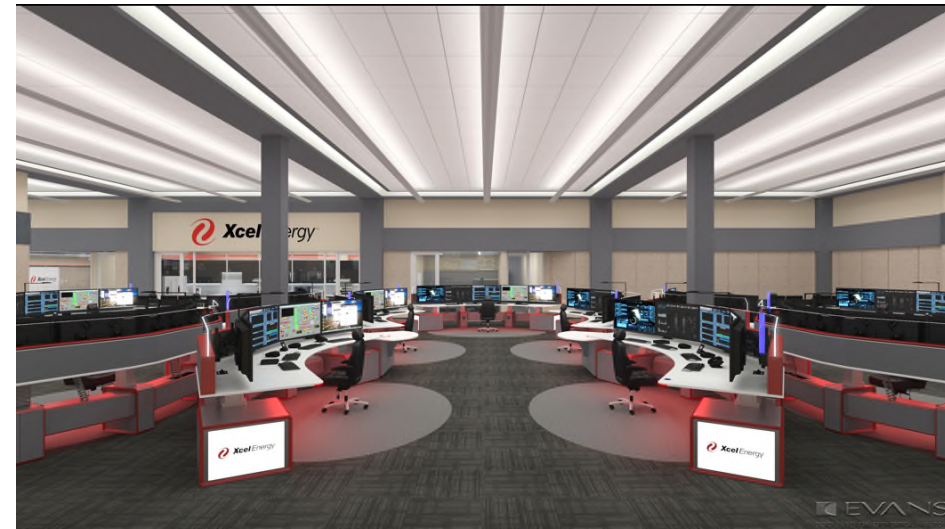


Figure 1d: Operator sightlines to the AV Wall

VR Design Assessment

- A virtual model of the proposed room is created for evaluation
- Allows for the detailed evaluation of
 - The physical space
 - Operational evaluation
 - Content and display evaluation
- Key consideration for control room design...
 - Immersive
 - Real
 - Precise
 - Flexible
- Creates engagement on all levels....
 - Operator Level
 - HSE
 - Facilities
 - Management

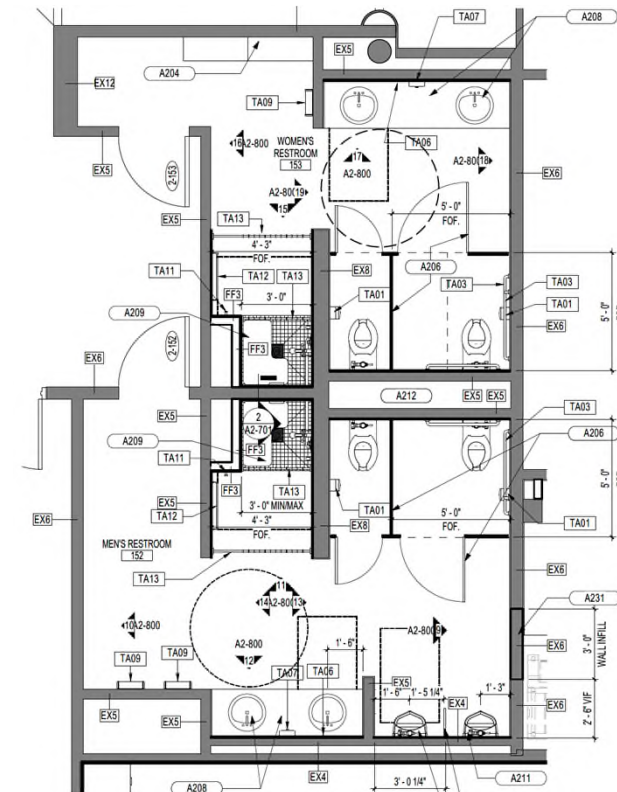
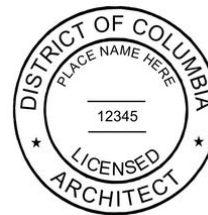
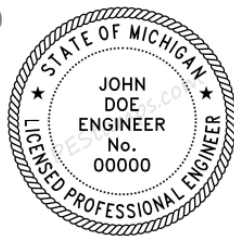


Phase 3: Construction Execution & Implementation

Design Services Offering

Level III – Construction / Bid / Permit Drawing Package

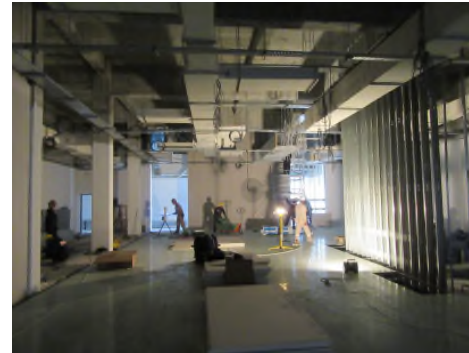
- Site Visit with full Architectural and Engineering team:
 - Detailed Site Survey
 - Meetings with Client and support staff
- Stamped and Sealed Architectural & Engineering drawings & specifications required for construction/bidding/permitting of Project limited to the following disciplines:
 - Architectural
 - Structural
 - Mechanical (HVAC)
 - Plumbing
 - Electrical
 - Fire Protection
- Pricing includes Construction Administration Services for all disciplines listed above



Construction Services

Construction Management for the Control Room Suite

- Pre-Construction Planning
 - Physical Site Surveys
 - Demolition & Construction phasing
 - Live cutover planning
 - Construction Scheduling & Sequencing
 - Safety Plans / Emergency Action Planning
- Construction
 - By Evans Project Manager & On-Site Supervisor
 - Full Construction services including:
 - Raised flooring
 - Ceilings and Lighting
 - Plumbing
 - HVAC & Electrical
 - Fire Alarm & Fire Protection
 - Acoustical Treatments
 - Access Control
 - Kitchens/Breakrooms/Rest & Recovery/Locker Rooms



Project Examples – Turnkey Design, Construction & Implementation

TURN KEY SOLUTIONS

PEMEX, Dos Bocas, MX



EVANS PROPRIETARY INFORMATION



TURN KEY SOLUTIONS

PEMEX, Dos Bocas, MX



EVANS PROPRIETARY INFORMATION



TURN KEY SOLUTIONS

PEMEX, Dos Bocas, MX



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TURN KEY SOLUTIONS

PEMEX, Dos Bocas, MX



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EVANS PROPRIETARY INFORMATION

EVANS
DESIGNS & EQUIPS MISSION CRITICAL OPERATIONS

TURN KEY SOLUTIONS

TAESA, Rio de Janeiro, Brazil



EVANS PROPRIETARY INFORMATION



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TAESA, Rio de Janeiro, Brazil

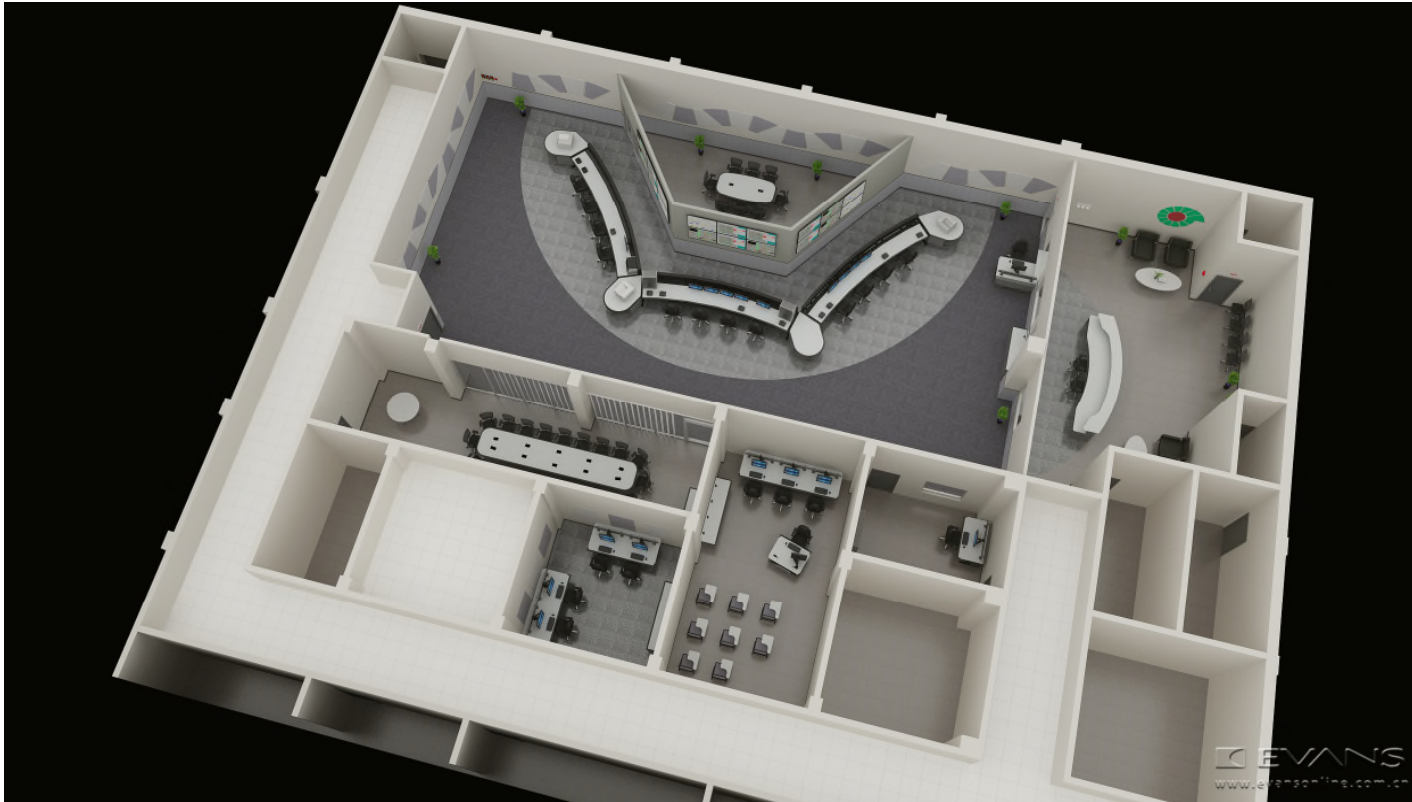


EVANS PROPRIETARY INFORMATION



TURN KEY SOLUTIONS

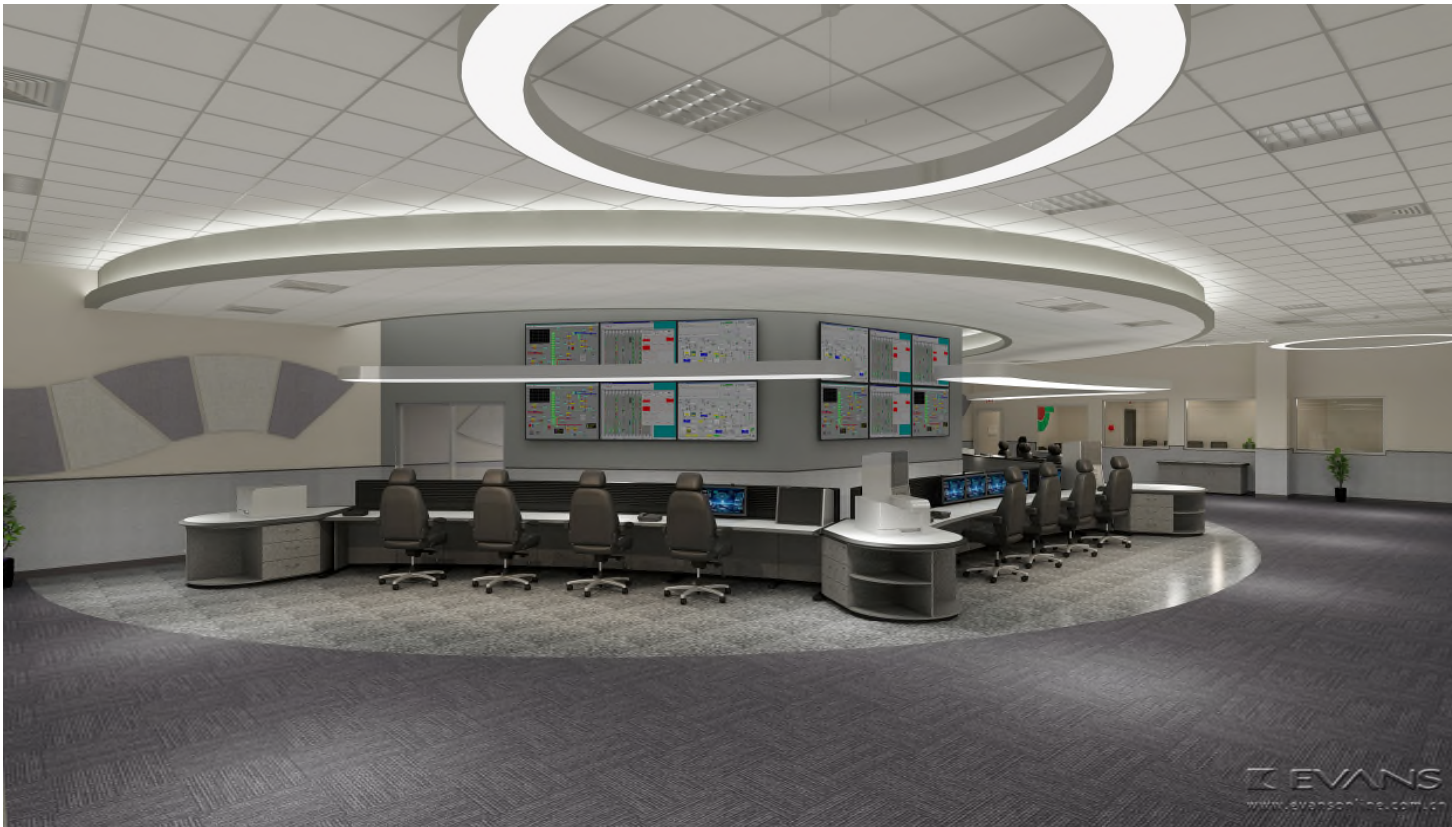
PDO, Marmul, Oman



EVANS PROPRIETARY INFORMATION

TURN KEY SOLUTIONS

PDO, Marmul, Oman



EVANS PROPRIETARY INFORMATION



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TURN KEY SOLUTIONS

PDO, Marmul, Oman



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TURN KEY SOLUTIONS

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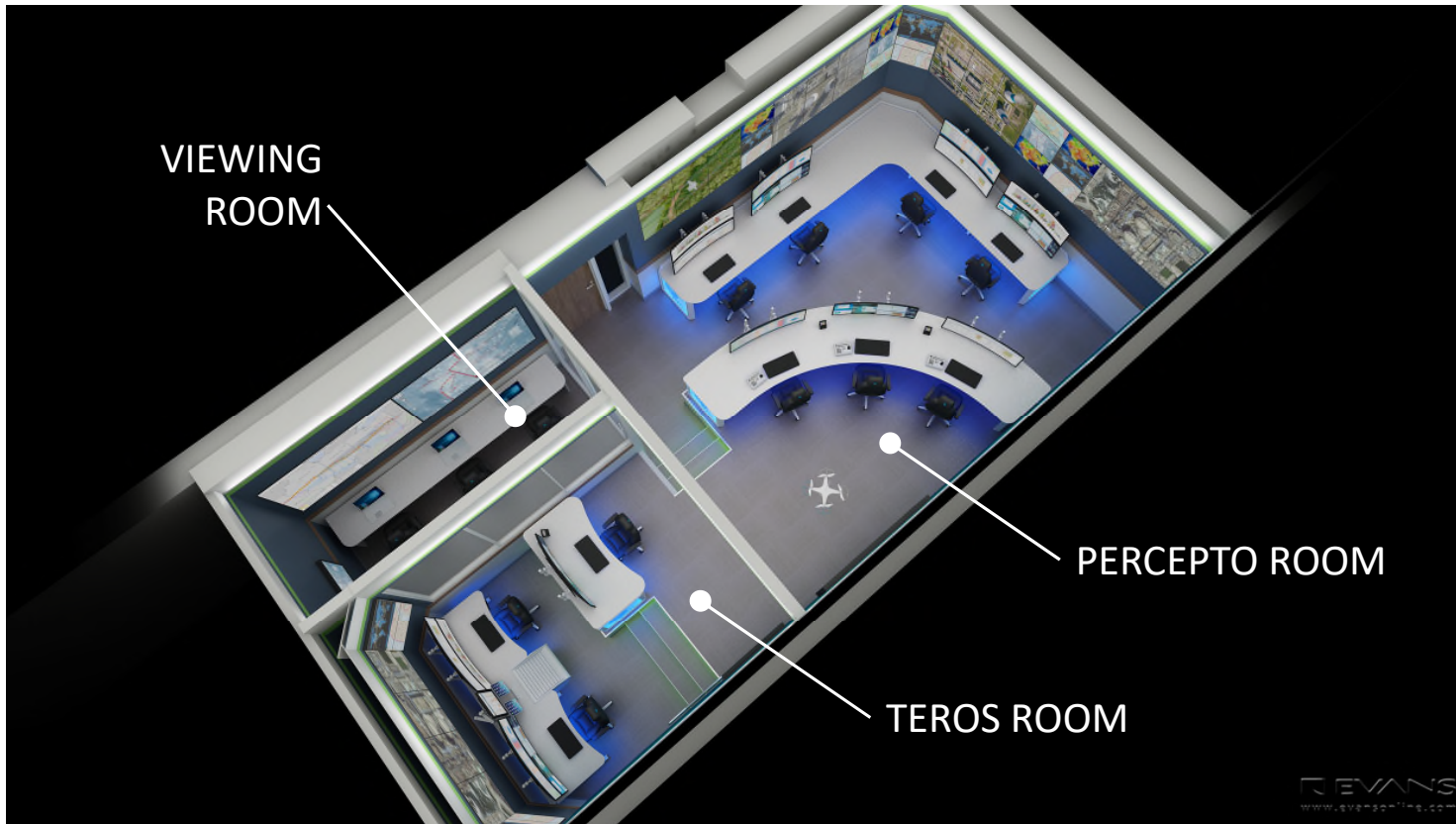


EVANS PROPRIETARY INFORMATION



TURN KEY DESIGN SERVICES

FPL Drone Command – West Palm Beach, Florida



EVANS PROPRIETARY INFORMATION



TURN KEY DESIGN SERVICES



FPL Drone Command – West Palm Beach, Florida



EVANS PROPRIETARY INFORMATION



TURN KEY DESIGN SERVICES



FPL Drone Command – West Palm Beach, Florida

PERCEPTO ROOM



**COVE LIGHTING SHOWN IN
WHITE LED**



**COVE LIGHTING
SHOWN IN GREEN LED**

TURN KEY DESIGN SERVICES

FPL Drone Command – West Palm Beach, Florida

PERCEPTO ROOM



**COVE LIGHTING SHOWN IN WHITE LED &
SWITCHABLE GLASS TURNED ON**



**COVE LIGHTING
SHOWN IN GREEN LED**

TURN KEY DESIGN SERVICES

FPL Drone Command – West Palm Beach, Florida

TEROS ROOM



COVE LIGHTING SHOWN IN
WHITE LED



COVE LIGHTING
SHOWN IN GREEN LED

TURN KEY DESIGN SERVICES

FPL Drone Command – West Palm Beach, Florida



EVANS PROPRIETARY INFORMATION

TURN KEY SOLUTIONS

Cenagas, Mexico City



TURN KEY SOLUTIONS

Cenagas, Mexico City



TURN KEY SOLUTIONS

Cenagas, Mexico City



TURN KEY SOLUTIONS

Cenagas, Mexico City

