U.S. Department of Energy's
National Renewable Energy Laboratory

Research Support Facility (RSF)
Pentagon Renovation Program (PENREN)

Use of Performance-based Contracting and Integrated Work Practices for Achieving High-Performance Federal Facilities: NREL Research Support Facility & Pentagon Renovation Program

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Goals, design philosophy and operating constraints

Who established the goals and how were they established?

How were the performance boundaries and cost boundaries for the project established?

How were the goals used in other phases of the procurement/project delivery process?

Problem Definition – Proposal Objectives Checklist

MISSION CRITICAL

Attain safe work performance/Safe Design Practices
LEED Platinum
Energy Star first "Plus"

HIGHLY DESIRABLE

800 staff Capacity
25kBTU/sf/year
Architectural integrity
Honor future staff needs
Measurable ASHRAE 90.1
Support culture and amenities
Expandable building
Ergonomics
Flexible workspace
Support future technologies
Documentation to produce a "How to" manual
"PR" campaign implemented in real-time
Allow secure collaboration with outsiders
Building information modeling
Substantial Completion by June 2010

IF POSSIBLE

Net Zero/design approach
Most energy efficient building in the world
LEED Platinum Plus
ASHRAE 90.1 + 50%
Visual displays of current energy efficiency
Support public tours
Achieve national and global recognition and awards
Support reduction in personnel turnover

Internal/Owner Project Team

What was the project team's composition and skill base?

Did the team change during the process?

How was the team managed?

U.S. DEPARTMENT OF ENERGY

NREL National Renewable Energy Laboratory

HASELDEN CONSTRUCTION

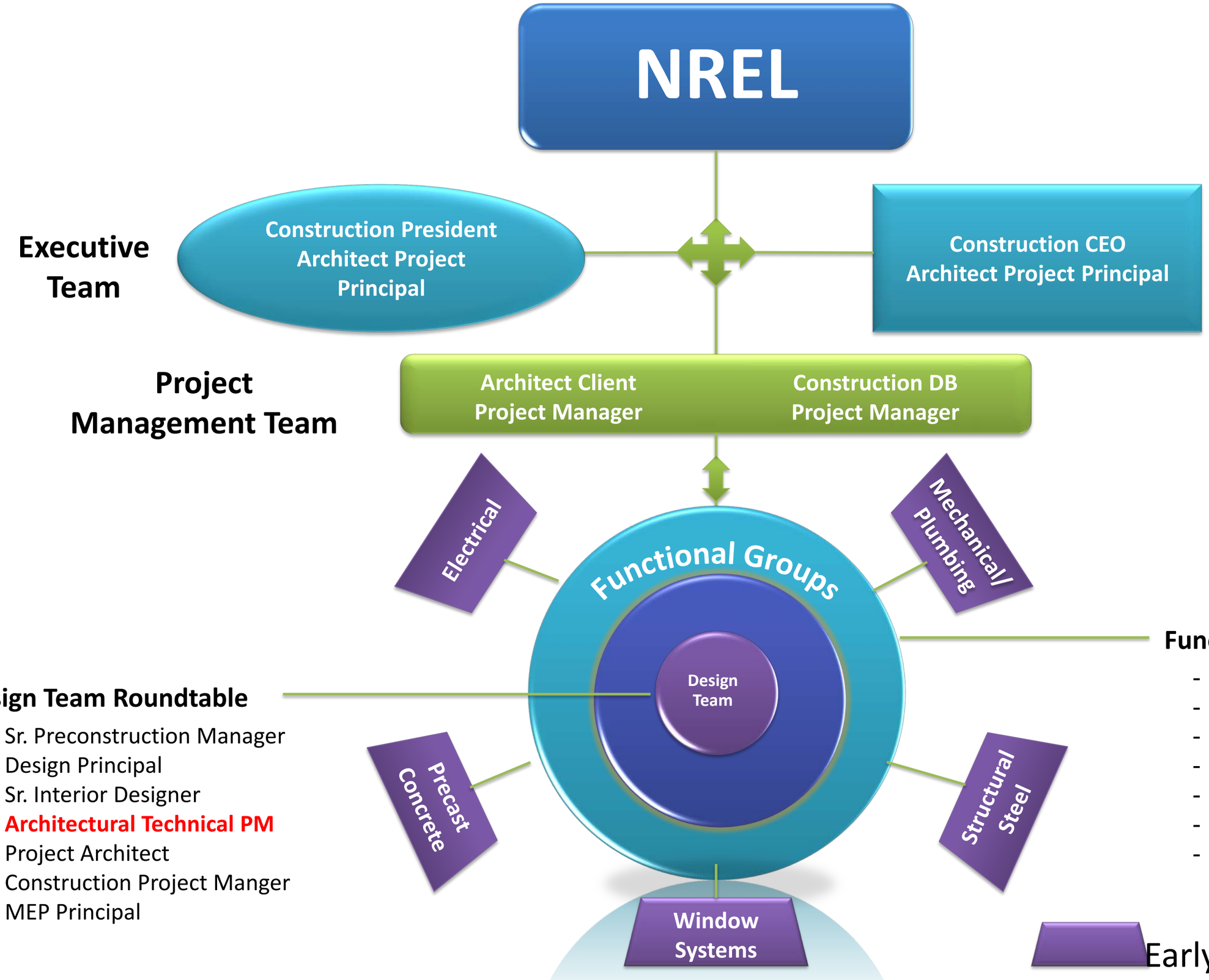
RNL

Stantec

ARCHITECTURAL ENERGY CORPORATION Integrated Engineered Solutions

KL&A, Inc.

MARTIN / MARTIN CONSULTING ENGINEERS



Design Team Roundtable

- Sr. Preconstruction Manager
- Design Principal
- Sr. Interior Designer
- **Architectural Technical PM**
- Project Architect
- Construction Project Manger
- MEP Principal

Functional Groups

- LEED
- Building Skin
- Budget
- Energy
- Core/Shell
- Interiors & Program
- Commissioning

Early Selected Subcontra

Pre-Project Planning

How were performance-based standards for the projects developed and how were they used by the owner, general contractor and subcontractors?

What performance measures were used and by whom?

Request for Proposal

How was the request for proposal developed/ refined during the process?

Project Delivery Strategy

When was the project delivery strategy (e.g., design-build; design-bid-build) established and why was it chosen?

Would the results have been different if a different strategy had been used?

Role of Performance-based Standards

What was the role of performance-based standards in aligning and managing the owner team with the design/construct (D/C) and the D/C with the subcontractors?

Risk Management

How were risks identified, shared and managed between the owner and D/C and among the D/C team members?

How did this come together?

Relationship: Performance-based Standards to Insurance Coverage

What was the relationship of performance-based standards to insurance coverage?

Cost Modeling

How did cost modeling and fee structures and relationship to award fee program all come together?

Contracting

What did it feel like to be on the contracting side of this arrangement?

Performance-based Contracting and Best Value Procurement/FAR

How does performance-based contracting fir in with the best procurement/Federal Acquisition Regulations (FAR)?

What was the role of award fees and how were they implemented?

Questions?