

MULTI-DISCIPLINE ENGINEERING

Civil/Structural, Mechanical/Piping, Process /Instrumentation, Electrical

Site Evaluation & Development

- Feasibility Studies
- Conceptual Design
- Estimating

Engineering, Design & Analysis

• **Civil/Structural**

Finite Element Analysis
Wind Design
Seismic Design
Vibration Analysis
Structural Integrity

• **Mechanical/Piping**

Equipment Design & Specifications
Finite Element Analysis
Piping Design
Pipe Stress Analysis

• **Process/Instrumentation**

Process Studies
Equipment Design & Specifications
Equipment Sizing
Material & Heat Balances
Pressure Relief System Design
Validation
Process Control Analysis
Process Simulation
Automation & Instrumentation
Design & Evaluation
Process Hazard Automation
Process Safety Management

• **Electrical**

Interactive 3D Design

- SmartPlant 3D
- RISA 3D

Structural Steel Detailing & Connection Design

New Facility or Retrofit Designs

AutoCad & Microstation Formats

Continuous Improvement & Maintenance Services

CIVIL/STRUCTURAL

Buildings (Conventional & Pre-Engineered)
Foundations
Support Structures (Steel, Concrete & FRP)
Pipe Rack Structures & Pipe Supports
Modules & Decks
Maintenance Platforms (Steel, Concrete & FRP)
Storage Tanks & Facilities
Marine Structures
Roads & Bridges
Catwalks
Stairway & Ladders
Secondary Containment

MECHANICAL/PIPING & PROCESS/INSTRUMENTATION

Pressure Vessels, Tanks & Piping
Large Scale Ductwork
Mixers/Separators
Homogenizers
De-bubblers
Crushers/Pulverizers
Heat Exchangers
Vent/Flare Systems
HVAC
Injection Lines
Utility/Service Systems
Water & Wastewater Treatment
Instrumentation
Gauges/Indicators
Controllers



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PLANT DESIGN

Site Evaluation & Development

- Feasibility, Efficiency & Optimization

Plant & Equipment Design in SmartPlant 3D

- Civil/Structural
- Mechanical/Piping
- Process/Instrumentation
- Utilities

Engineering Supervision & Review

Continuous Improvement & Maintenance Services

INDUSTRIAL MAINTENANCE SUPPORT

Turnaround Planning

Heavy Lifting & Rigging Plans

Monorail/Bridge Crane Load Studies

Structural Condition Assessments

Multi-year Maintenance Master Plans

PROJECT MANAGEMENT-EDPCm

Engineering, Detailing, Procurement, Construction Management

Engineering

- Feasibility Studies
- Conceptual Design
- Final Design & Analysis
- Drawings & Specifications

Detailing

- Steel Detailing & Connection Design
- Fabrication Support

Procurement

- Scheduling & Estimating
- Purchasing
- Material Management

Construction Management

- Scheduling & Estimating
- Bidding, Bid Evaluations, Contract Award
- Field Administration