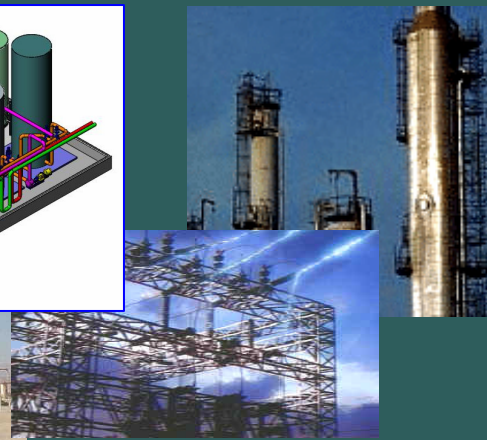
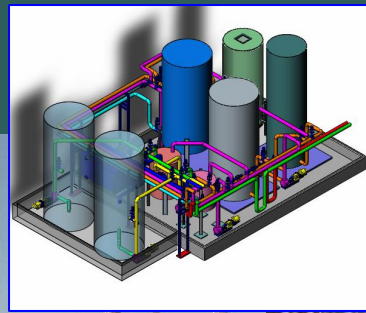


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**Project Management, Detail Engineering,  
Design, Drafting and Safety-Regulatory  
Service Company**

**We Are: “M E L”**

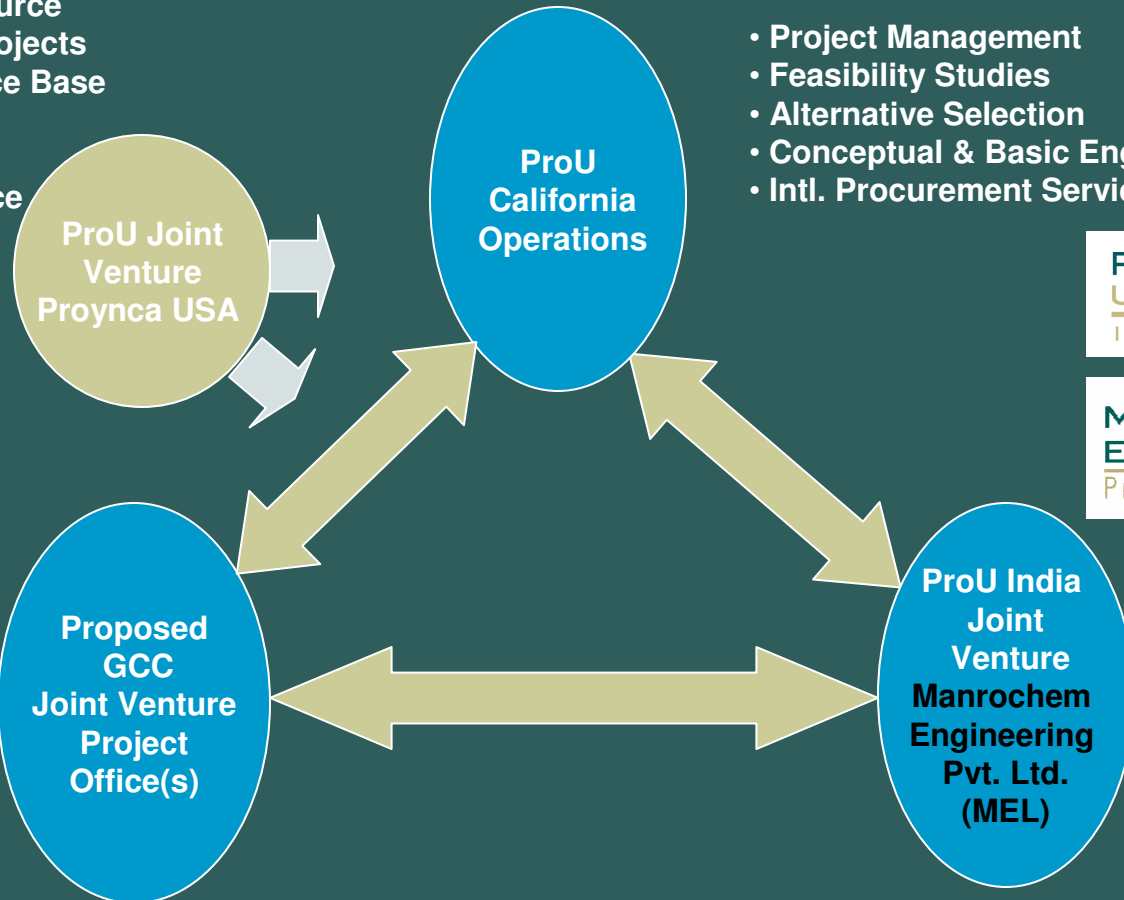
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- Established in 2006
- A Processes Unlimited International Inc., USA company with partners Manrochem, India and GPC, Bahrain
- Located in Chennai, India – the intellectual capital
- Specialists in Design, Drafting and Detail Engineering Services

# Processes Unlimited (ProU) International Project Execution Strategy

- Supplemental Resource Staffing for ProU Projects
- Oil & Gas Experience Base (Latin America)
- Operations Support
- ISO 9002 Compliance



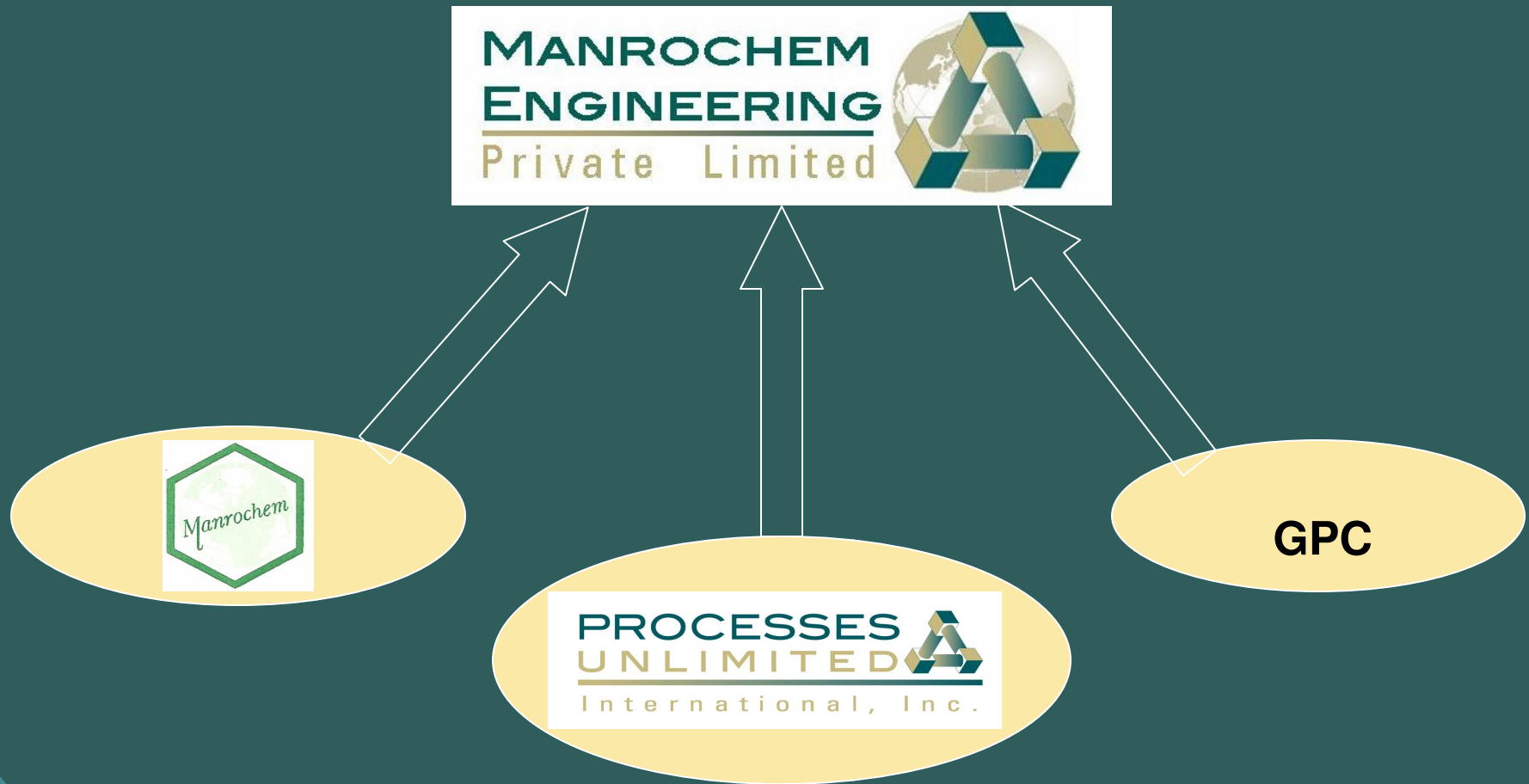
- Project Customer Liaison & Project Management
- Feasibility Studies
- Small Project Execution
- Field Support
- Construction Management

- Project Management
- Feasibility Studies
- Alternative Selection
- Conceptual & Basic Engineering
- Intl. Procurement Services



- Detail Engineering
- Design
- Drafting
- Resource Staffing for ProU projects
- Safety – Regulatory Services

# The Best From the Partners



## ProU brings expertise in

- Basic Engineering and conceptualization for Oil, Gas Industry
- Instrumentation controls – logic and programming
- Project Management Techniques
- Project Scheduling to dovetail expansion to a planned shut down of existing operations
- Process Engineering and Concepts for food and beverages



***MANROCHEM INDIA PRIVATE LIMITED***

ENGINEERING DESIGN • PROJECT MANAGEMENT & CONSULTANCY

## **Manrochem India brings expertise in**

- Basic Engineering and conceptualization for batch process industries
- Designs meeting regulatory requirements in food and pharmaceutical industries
- HSE and Quality Management Systems – compliance to current Good Manufacturing Practices
- Specialty and fine chemical industry
- Process Engineering and special equipment/ system design for nutraceuticals/ natural products/ phytochemicals

# ***Gulf Process Company***

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## **GPC brings expertise in**

- System Integration for field instrumentation
- Instrumentation and control system for oil and gas fields
- Continuous emission monitoring
- Analyzers/ shelters for remote monitoring – field instruments and telecommunication
- Customer needs identification and marketing network in the Middle East





- Process / chemical
- Mechanical and piping
- System and controls
- Electrical
- Instrumentation
- Civil / structural

**Engineering Services**

**Procurement**

- Procurement Management
- Expediting & Inspection
- Logistics - Transportation

**M E L**

- International Project Execution – ProU, GPC, Manrochem UK:
- Latin America, Middle East, Russia, Kazakhstan, Far East, Europe, UK

**International Experience**

**Safety Regulatory**

- EHS Program Implementation, training, auditing
- Behavior-Based Safety Program development
- Process Safety Management compliance
- Contractor Compliance Programs

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# Differentiating Factors

- **Understanding Customer's Values and Culture**
- **Established alliances (focus on continuous improvement, best practices)**
- **Project performance metrics**
- **Continuous Improvement of work procedures & practices**
- **Flexibility – adapting services to reflect needs of project**
- **Project management practices**
  - Scope Development
  - Schedule & cost monitoring
  - Communication
- **International Resources and Relationships**
- **Partners' competencies and experience readily available**
- **International Quality at an affordable price**



## Current projects

- Burren Energy - Turkmenistan Field Development – 17,000 Man hours
  - Brown field upgrades include
    - Water Treatment Expansion
    - Oil Dehydration Expansion
    - Substation Replacement
    - Utility Expansion
    - Flare Knockout Drum Installation
    - Heater Installation
  - Scope
    - Detailed Engineering and Design
    - Procurement Support



## Current projects

- Taft Manufacturing Company – 1250 Man-hours
  - Create non-electronic P&ID's in ACAD
  - Update all drawings with all MOC (management of change) changes
- Chevron USA – 725 Man-hours
  - Station 1-09 To 26C Dehy Produced Water Plant Update
  - Electrical Design and Drafting Support
  - Single Line Diagram
  - Grounding and Lighting Plan, Lighting Schedule and Schematic
  - Conduit and cable Schedules, Motor Schematics
  - PLC Panel Layouts, I/O Wiring Diagrams
  - Cable Tray Routing and Details
  - Hazardous Area Classification
  - Electrical MTO (material take-off), Electrical Installation Details
  - Junction Box Assembly Drawing



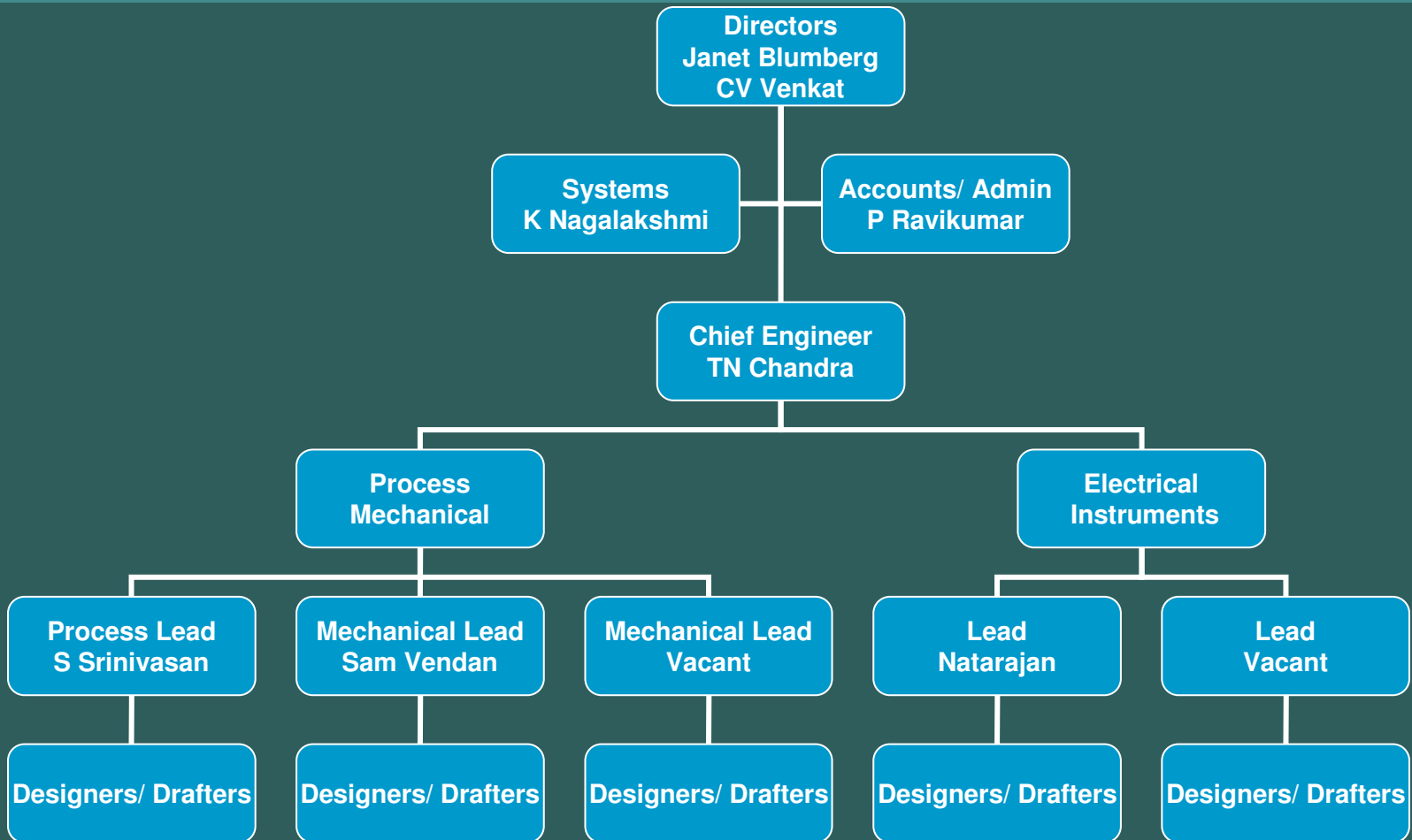
## Previous Projects

- Ivanhoe Energy – 400 Man-hours
  - Bottom Recycle Pump Modification
    - Piping Layout
    - General Arrangement Drawings
    - Isometrics
- Plains Exploration
  - Offshore Platform As-Built Drafting (Platform Irene & Platform Hidalgo) - 1,000 Man-hours
    - Receive field data of P&ID changes and incorporate into drawings
    - Interface with client on clarifications required
  - Vapor Recovery Unit Detail Design – 1200 Man-hours
    - Mechanical/Piping Design Layout
    - General Arrangement Drawings
    - Isometrics
    - Updates of P&ID
    - Structural Drafting
    - Interface/collaborate with all other disciplines



## Previous Projects

- Chevron USA – 350 Man-hours
  - MWSS Station 1-09 Water Plant Expansion Project
    - Electrical Design and Drafting Support
    - Single Line Diagram
    - Grounding and Lighting Plan
    - Conduit and cable Schedules
    - Motor Schematics
    - PLC Panel Layouts
    - I/O Wiring Diagrams
- Big West Oil – 750 Man-hours
  - Flying J Refinery
    - Creation of isometrics from weld testing drawings





# Technical Capabilities

## ● Upstream

- AWT
- Production Gathering
- Steam Distribution
- CVR Systems
- Steam Generators
- Water flooding
- Kill Water Systems
- Slug Catchers
- Separators / Treaters
- FWKO
- Tanks
- Offshore Platforms
- Operations – troubleshooting
- Vessel Sizing and Design



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# Technical Capabilities

- Petroleum Engineering
  - Reservoir
  - Production
  - Operations
  - Workovers
  - Downhole
  - Steam Flooding
  - Operations

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## The People

- T.N.Chandrasekharan, Chief Engineer
- S.Srinivasan, Lead Engineer – Process
- J. Sam Vendan, Lead Engineer – Piping
- A.K.Natarajan, Lead Engineer – Electrical

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## Profile – TN Chandra

- Chemical Engineer with more than 30 years experience in Plant Design, Engineering and Project Management
- Facilitate a team of Lead Engineers and Designers of all disciplines
- Pressure vessel and process equipment design as per international codes
- Design piping system
- Design and selection of utility equipment
- Training of leads and designers in new design softwares
- Manpower planning and recruitment



## Profile – S Srini

- Chemical Engineer with more than 25 years experience in Plant Design, Engineering and Project Management
- Procurement specialist - national and international resources
- Facilitates/ co-ordinates between process licensor, detailed engineering team and vendors
- Evaluates vendors' design/ fabrication drawings and incorporates into detailed engineering
- Implements Quality Assurance System with respect to vendor development, inspection and auditing



## Profile – Sam

- Mechanical Engineer with 18 years experience in Oil, Gas, Refinery, Petrochemical process and power plant piping
- Piping
  - Hydraulic Calculations
  - Pipeline Specifications
  - P&ID, PFD
  - Plot plan, Layouts and Transposition
  - Field review, Re engineering and As-built
  - Isometric Generation, MTO
- Vessels and Equipment
  - Pressure vessels
  - Storage Tanks
  - Heat exchangers
  - Fired heaters
  - Chimney



## Profile – Sam

- Projects
  - Estimation, Scheduling and co-ordination
  - Engineering and Procurement, Materials management
  - Erection, Commissioning, testing, and installation,
  - QA&QC
  - Installation and Testing procedure write-ups
- Systems/ Softwares
  - AutoCAD
  - CAD WORKS
  - Leica -CAD WORKS Field Pro
  - PRO-E
  - UNIGRAPHICS



## Profile – Nat

- Electrical Engineer with more than 25 years experience in
  - Design of electrical systems
  - Engineering
  - Operation
  - Trouble-shooting
- Knowledge of National and international design and safety codes
- Carryout basic and detailed calculations for design of
  - Substations
  - Transformers
  - Motors
  - HV/MV/PFC panels
  - AC/DC Drives

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## Profile – Nat

- Design total electrical control system for oil, gas, petrochemical and process plants
- Design and selection of control and instrumentation equipment/ system, PLC, SCADA
- Design and selection of electrical equipment for hazardous operations
- Implement quality assurance procedures
- Inspection and testing of electrical equipment
- Carryout energy audit
- Implement QS 9000 standards





## Process & Mechanical Engineering

- Oil and Gas Industry
  - Oil dehydration
  - Oil metering
  - Oil & gas gauging
- Refinery
  - Crude Distillation
  - Reformers
  - Delayed Coking
  - Hydro treating,
  - Gas Treating
  - Water Treating
- Gas processing facilities
  - Compression facilities
  - NGL extraction
  - Gas treatment
- Gas/ Oil pipe lines
  - Metering
  - Control Stations
  - Analyzer shelters
- Water Treatment Plants
  - Injectors
  - Waste Water System



## Process & Mechanical Engineering

- Steam and Utilities
  - Generation
  - Distribution
  - Metering and Control
- Vapor Recovery System
- Power Generation
- Co-Generation
- Food and Beverages
  - Processing
  - Storage
  - Packaging
- Specialty and fine chemicals
  - Multipurpose
  - Regulatory compliant
  - EHS Management
- Pharmaceuticals/  
Nutraceuticals/ Natural  
Products
  - Conceptualization
  - cGMP compliant
  - CIP



## Process & Mechanical Engineering

- Processing facilities
  - Tomatoes, milk, cheese, ice cream
  - Chips
  - Fruit, fruit roll-ups, endive, parsley,
  - Bleach, wine
- Material handling systems – graphite, concrete, asphalt, kitty litter, sludge, pressboard material, food products
- Documentation and Training

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## Civil and Structural Engineering

- Industrial and Commercial Structures
- Skid – Design and Development
- Pipe Racks, Supports and Pipe Bridges
- Stress Analysis – Structural and piping systems
- Structural supports, operating platforms, ladders
- Equipment Support and Foundation Engineering

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## Civil and Structural Engineering

- Seismic Analysis – Static and Dynamic
- Plumbing, Cleaning and Drainage Plans
- Site Development and Plot Plan Concepts
- Tank farm engineering and retaining walls
- Fire Protection Engineering/ Hydrant Systems
- 3 D Laser Scan Imaging
- Assistance and support service for getting Statutory and Environmental Clearance
- Fabricators/ Vendor Auditing and Inspection

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## Electrical and Instrumentation Engineering

- Electrical system design
- Plant electrical load studies and analysis
- Distribution – Power and Lighting
- Lighting plan development / analysis
- PCC, MCC and switchgear specification
- Power generation, transmission and distribution
- Electrical inspection services
- Troubleshooting, optimization and energy conservation

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## Electrical and Instrumentation Engineering

- Process control system design
- Instrumentation specifications
- Facilities control systems design or upgrade
- SCADA
- Plant start-up and commissioning
- Networking systems - design and installation
  - Cable, fiber, radio and satellite
- Troubleshooting and optimization

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# Instrumentation Control System

- PLC programming and development
- DCS System integration (Foxboro, DeltaV, Rosemount, etc.)
- Systems integration and automation (logic and database)
  - Data management systems
  - Networking
- Custom PDA software development
- Control panel design & fabrication
- System commissioning and start-up
- Troubleshooting and optimization
- Training



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# Process & Mechanical Engineering Software



**PIPE PHASE**

Fluid Movement Modeling  
Single and Multi-Phase  
Networks



**SiNET**

Transient Analysis  
Hydraulic Calculations  
Single and multiphase

SINET 6.11.Ink

2D / 3D



**RISA**

2D/3D Finite Element Analysis Modeling



**PRO II**



Bryan Research



**HYSIS**

Process Simulation Modeling Software

*ACX / STX*

**ACX/STX**

Heat Exchanger Size Simulation Software  
Shell Tube and Fin Fan



**CAESAR**

Pipe Stress Modeling  
Steady State and Dynamic.  
Thermal Expansion, Gravity,  
Pressure and Seismic stresses



**CADWORX**

Three Dimensional Piping Design  
Software

**FIELD PIPE**

In-field direct-to-model scanning

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# Electrical / Systems Engineering Software



## *Electrical Circuit Analysis*

- Short Circuit Study
- Load Flow Analysis
- Relay Coordination



## *PROGRAMMING/SOFTWARE*



MODICON



## Safety / Regulatory Services

- Policies, Protocols, Procedures
  - Quality, Safety and Productivity Management Systems
  - Environment Management System/ Impact Assessment
  - Contractor and construction safety
  - On-site support and training
  - HACCP
  - Self-assessment checklists, Audits and Program Implementation
- Specification interpretation/implementation:
  - General – API, NFPA, ASME, UBC, etc
  - Food and Pharmaceutical safety design standards -FDA, AIB
- IH surveys
- Air-quality permitting assistance

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## Project Management Services

- Project Management
- Construction management
- Inspection services
- Procurement services
- Project schedule tracking and reporting services
- Value Improving Practices
- Client's Engineering Services

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## Design and Drafting Services

- AutoCAD
- 3D design – CADworx
- On-site design and drafting support
- As-builts
- Document management systems
- Project collaboration website via [www.buzzsaw.com](http://www.buzzsaw.com)
  - Communication with remote sites
  - Common secure internet site for all parties
  - Fast delivery of data via internet
  - Redline, review capabilities, etc.

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## World Class Project Engineering & Management

**A professional, flexible & efficient team  
for project management, engineering,  
design, construction management,  
safety, and regulatory services.**