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# PYRAMID

ENGINEERING :: SOLUTIONS

## ENGINEERING CAPABILITIES



# Engineering Capabilities

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Robust engineering team with track record of delivering more than 350 global assignments successfully. All the disciplines are in-house e.g.

 **Process Engineering**

 **Mechanical Engineering**

 **Structural Engineering**

 **Electrical & Instrumentation**

 **Plant 3D Modeling**

 **Construction Drawings**

 **Automated MTO**




Largest single work executed: 80,000 Man-hours

Annual Engineering Capacity: 300, 000 Man-hours












# Departments

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-  **Process Engineering**
-  **Static Equipment**
-  **Rotary equipment**
-  **Piping**
-  **Structural Engineering**
-  **Electrical**
-  **Instrumentation**
-  **Special Engineering Applications**
-  **3D Modeling**
-  **Engineering Coordination**
-  **Documentation**

# Process Engineering




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-  **Process Simulation**
-  **Basic engineering**
-  **PFD & P&ID Development**
-  **HAZOP & Safety Studies**
-  **Design of Process equipment**
-  **Plant hydraulics design**
-  **Specification for package systems**
-  **Instrument Specifications**
-  **Loss prevention system design**
-  **Operation & Maintenance Manual preparation**
-  **Commissioning & Troubleshooting**

# Static Equipment







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**Mechanical Design of entire range of process equipment  
e.g. distillation Columns, Vessels, Tanks, Heat exchangers  
and Reactors**

-  **Design & Engineering as per international codes e.g.  
ASME Sec. VIII, Sec. III, Sec.I, NUREG, API 650/ 620,  
AD Merckblatter, British Standards, Indian Standards etc.**
-  **Design by Finite Element analysis, Stress, Thermal  
analysis & Fatigue life evaluation**
-  **Generation of Fabrication Drawings**









# Rotary Equipment









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-  **Specification of Pumps and Compressors**
-  **Specifications for Package bought outs**
-  **Technical and commercial bid analysis**
-  **Vendor Document Approvals**
-  **Factory acceptance test witness**
-  **Commissioning support**

# Piping Engineering

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-  **Development of Plot Plans and Equipment layouts**
-  **Strength Calculations**
-  **Flexibility analysis**
-  **Plant 3-D Modeling and clash detection**
-  **Piping material Specification**
-  **Support specifications**
-  **Isometrics and Bill of Materials**
-  **Advanced dynamic analysis**

-  **Development of facilities and related civil work**
-  **Structural analysis**
-  **Foundation Design**
-  **Structural design**
-  **Design of Platform top sides**
-  **Engineering of Skids and Modular Structures**
-  **Structural 3-D Modelling**
-  **Automated fabrication drawing and MTO generation**

-  **Development of Control Logic**
-  **Preparation of Cause & Effect diagrams**
-  **Safety studies**
-  **Specifications of controls system**
-  **DCS/PLC engineering**
-  **Preparation of Field Instrument specifications**
-  **Layout and 3D modelling of Instrument system**
-  **Mounting and hook up drawings**
-  **Communication Network Design**

# Electrical Engineering

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-  **Electrical System Study**
-  **System reliability and stability study**
-  **Substation Design**
-  **Area Classification**
-  **Load Calculation and System design**
-  **Specifications for Electrical Equipment**
-  **Calculation of Electrical Bulk materials**
-  **General Arrangement & Interface inputs**

# Special Engineering Applications

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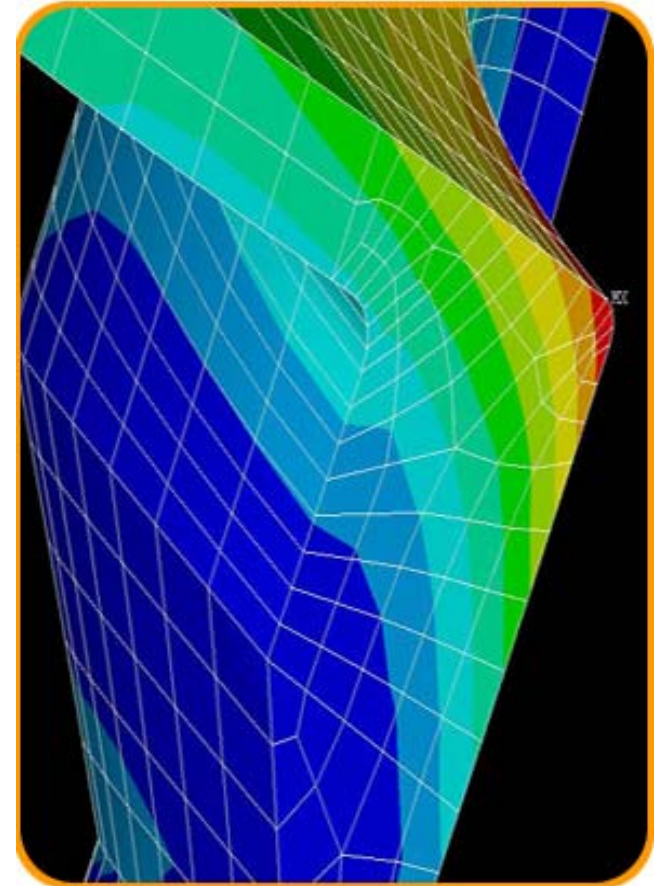
⑩ **Finite Element Stress Analysis**

▲ **Computational Fluid Dynamics**

▲ **Fatigue and Vibration Analysis**

▲ **Surge and Transient Studies**

▲ **Residual Life Assessment**



# MAJOR ENGINEERING TOOLS

## Process Engineering

HYSYS      Process Simulation  
HTFS      Thermal Design  
Pipe Net      Hydraulic analysis  
Flare net      Flare System Design  
Smart plant      P&ID Generation

## Mechanical Engineering

PDS/ PDMS      Plant 3 D Modeling  
Isogen      Piping isometric  
Caesar II      Piping Stress Analysis  
ANSYS      Finite Element Analysis  
PV Elite      Pressure Vessel Design

## Instrumentation

IN Tools      Instrument Specs  
Instru Calc      Instrument Sizing

## Electrical Engineering

ETAP      Electrical Systems Design  
CABsys      Electrical System Detailing

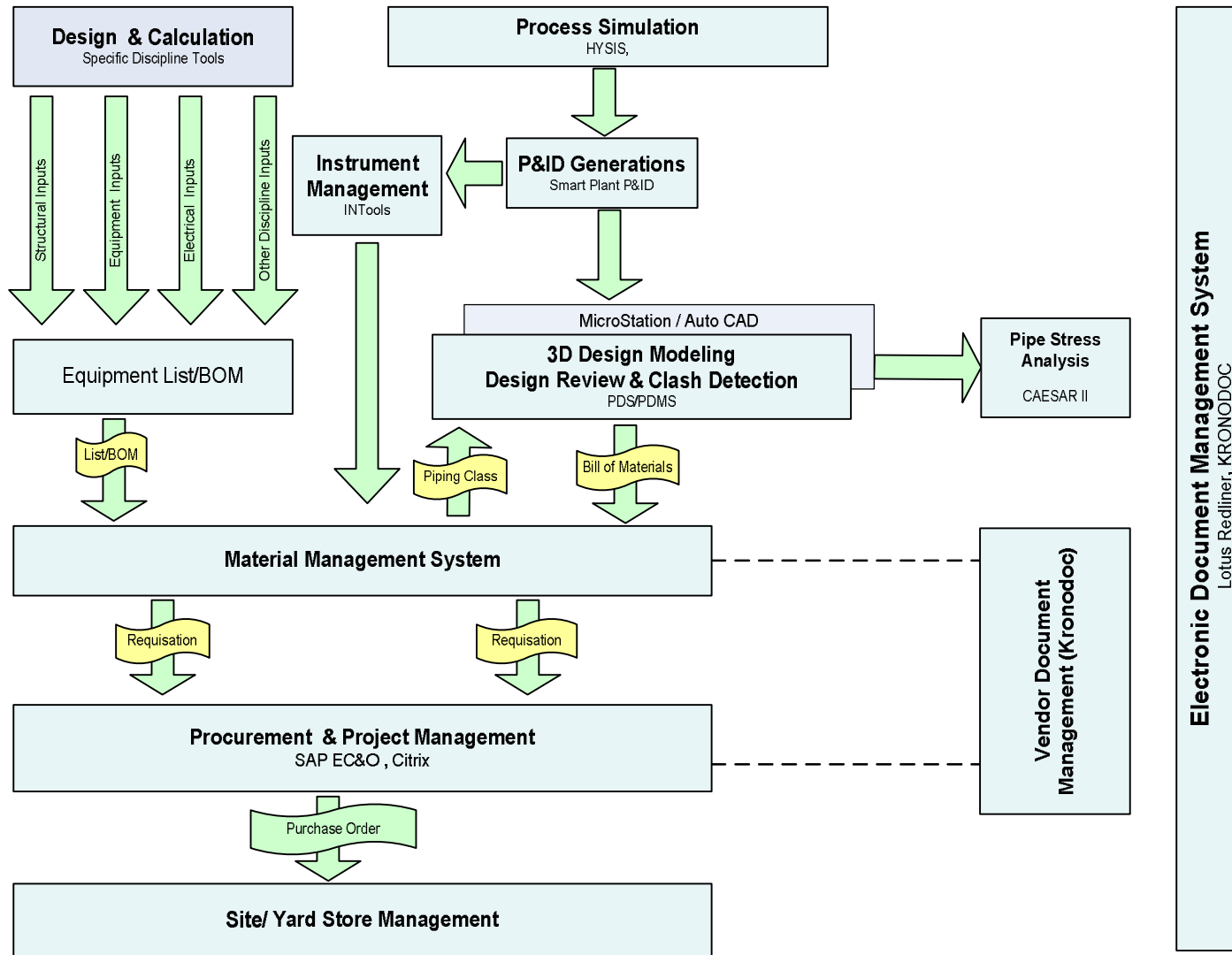
## Structural Engineering

SACS      Offshore Structural Analysis  
STAAD      Structural Analysis  
X-Steel      Structural detailing

## Project Management

Primavera      Project Planning & Control  
Kronodoc      Document Management  
Redliner      Drawing Collaboration  
SAP      ERP

# Engineering Coordination



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