
PYRAMID E&C

High Value Engineering Centre

Mumbai, India

May 2021



May 2021

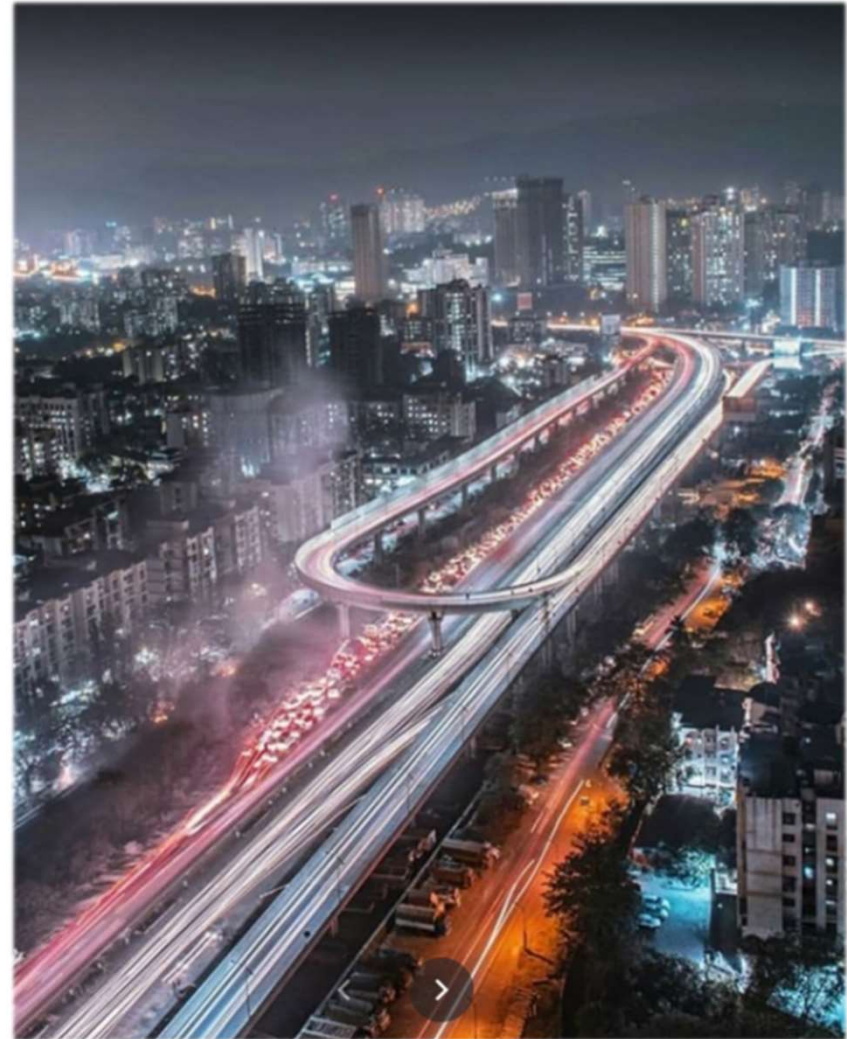


PYRAMID E&C

Conventional and Renewable
Hydrocarbon Processing Solutions

High Value Engineering Centre

- ▲ Global Engineering operations
- ▲ Hydrocarbon competence
- ▲ High Value Engineering center
- ▲ Range of Services
- ▲ Quality Management
- ▲ Information System
- ▲ Differentiators



May 2021



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Global Engineering Operations

AMERICAS

- ▶ Process & Technology
- ▶ Basic Engineering Packages
- ▶ Modular Fabrication
- ▶ Plant Relocation
- ▶ Engineering Outsourcing



EUROPE

- ▶ Concepts and Feasibility Studies
- ▶ Safety Studies
- ▶ Offshore Engineering
- ▶ Subsea Facility Design
- ▶ Asset Management Support



ASIA PACIFIC

- ▶ Engineering
- ▶ Process Equipment & Modules
- ▶ Construction
- ▶ EPC Turnkey
- ▶ Build, Own, Operate



MIDDLE EAST & AFRICA

- ▶ FEED Studies
- ▶ Project Management
- ▶ EPC Turnkey
- ▶ Modular Fabrication
- ▶ Build, Own, Operate





Total Engineering capacity > One Million manhour per annum

May 2021



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Global Engineering offices

	India	60 000 ft²
	Houston	5 000 ft²
	London	5 000 ft²
	Dubai	5 000 ft²



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Hydrocarbon competence



Oil & Gas

- Onshore Production Facilities
- Offshore Production Topsides for FPSO/ MOPU/ Platforms
- Gas Plants/ Cryogenic units
- Storage and Pipelines



Refining & Petrochemicals

- Refining units
- Petrochemical units
- Bitumen/ Carbon Black units



Steam Methane Reforming

- Hydrogen units
- Methanol plants
- Ammonia plants



Renewable Hydrocarbons

- Conventional (1G) Ethanol plants
- Cellulosic (2G) Ethanol plants

High Value Engineering Centre, India

- ▲ **Establishment: 1995**
- ▲ **Location: Thane, Mumbai, India**
- ▲ **Head count: 545 Personnel**
- ▲ **Office 1: 10 000 ft²**
 - 4th Floor Hamilton A Wing
 - Hiranandani Business Park
 - Thane 400 607 INDIA
- ▲ **Office 2: 50 000 ft²**
 - 6th Floor, B Wing
 - Lodha I- Think Campus
 - Thane 400 610 INDIA



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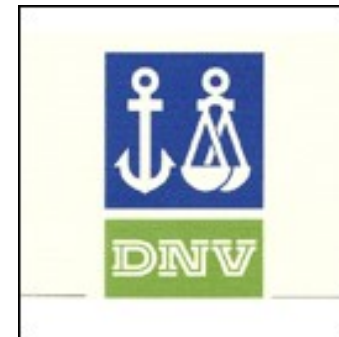
Range of Services



Services

Comprehensive engineering team with track record of delivering more than 700 global assignments successfully.

- Residual Process Engineering
- Front End Engineering & Design
- Safety Studies
- Detailed Engineering
- CAD
- Vendor Document Review
- Construction Engineering
- Field Engineering Support



Disciplines

HVEC has all the major engineering disciplines in-house:

- Engineering Management**
- Process Engineering**
- Mechanical Engineering**
- Piping Engineering**
- Civil & Structural Engineering**
- Electrical Engineering**
- Instrumentation Engineering**
- Safety Engineering**
- Risk Management**
- Asset Integrity**
- Environmental Studies**

Process Engineering

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

Mechanical Engineering

- ▲ Static equipment e.g. distillation Columns, Vessels, Tanks, Heat exchangers and Reactors as per International codes & Practices (ASME , API, BS, EN, TEMA etc.)
- ▲ Design by Finite Element analysis, Stress, Thermal analysis & Fatigue life evaluation
- ▲ Specification of Pumps and Compressors
- ▲ Specifications for Package bought outs
- ▲ Technical and commercial bid analysis
- ▲ Vendor Document Approval
- ▲ Machinery Factory acceptance test witness










Piping Engineering

- ▲ Development of Plot Plan
- ▲ Equipment layout
- ▲ Strength Calculations
- ▲ Flexibility analysis
- ▲ Plant 3-D Modeling and clash detection
- ▲ Piping Material Specification
- ▲ Support specifications
- ▲ Isometrics and Bill of Materials











Civil & Structural Engineering

-  Facility development planning
-  Subsurface civil work
-  Foundation Design
-  Structural Engineering
-  Civil works design
-  Offshore Structure design
-  Engineering of Skids and Modular Structures
-  Structural 3-D Modelling
-  Automated fabrication drawing
-  MTO generation
-  Construction Support

Electrical Engineering

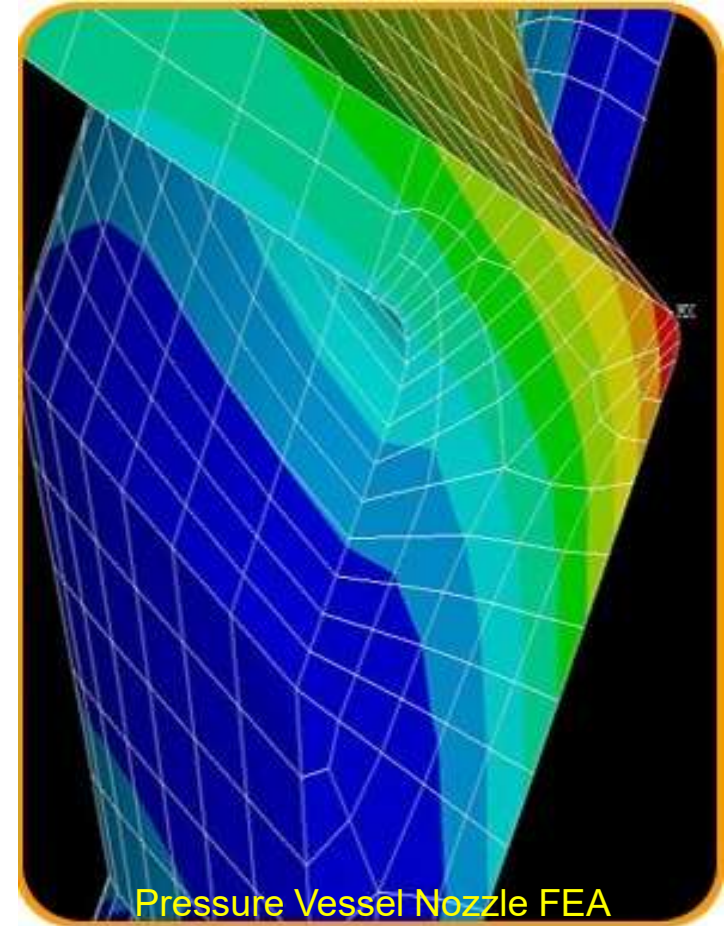
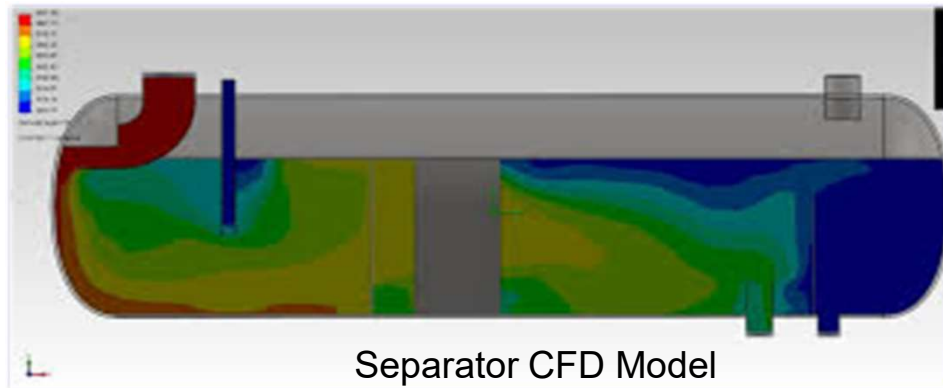
-  **Electrical System Study**
-  **System reliability and stability study**
-  **Substation Design**
-  **Hazardous Area Classification**
-  **Load Calculation and cable sizing**
-  **Specifications for Electrical Equipment**
-  **Calculation of Electrical Bulk materials**
-  **General Arrangement & Interface inputs**
-  **FAT Planning and witness**

Control & Automation

-  **Development of Control Logic**
-  **Preparation of Cause & Effect diagrams**
-  **Specification of controls system**
-  **DCS/PLC Programming**
-  **Preparation of Field Instrument specifications**
-  **Communication Network Design**
-  **Operator Training Simulators**
-  **Layout and 3D modelling of Instrument system**
-  **Mounting and hook up drawings**
-  **FAT Planning and witness**

Specialist Studies










- ▲ Finite Element Stress Analysis
- ▲ Computational Fluid Dynamic Studies
- ▲ Gas Dispersion & Explosion Analysis
- ▲ Noise & Vibration Studies
- ▲ Fire & Gas Mapping (3D)
- ▲ Flow Assurance Studies
- ▲ Residual Life Assessment












Safety Engineering

- ▲ Study Facilitation (HAZOP, HAZID, ENVID, BOWTIE etc)
- ▲ Active Fire Protection Design
- ▲ Passive Fire Protection Design
- ▲ Firewater System Design
- ▲ Blowdown/ Flare Studies
- ▲ Fire & Gas Mapping
- ▲ Site Hazard Assessment

Risk Management

-  **Fire & Explosion Studies**
-  **QRA Studies**
-  **Risk Assessment Studies**
-  **TR Impairment Studies**
-  **EERA Studies**
-  **ESSA Studies**
-  **HSEIA Studies**
-  **ALARP Demonstration**
-  **Cost Benefit Analysis**

Asset Integrity

-  Reliability Availability Maintainability (RAM)
-  Reliability Centred Maintenance (RCM)
-  Risk Based Inspection (RBI)
-  Safety Integrity Level (SIL) Assessments
-  Logistics & Transportation studies
-  Failure Modes Effects & Criticality Analysis (FMECA)
-  Life Cycle Costing
-  Laser Scanning
-  Intelligent As built documentation

Our Priorities

1. Safety
2. Quality
3. Schedule
4. Cost

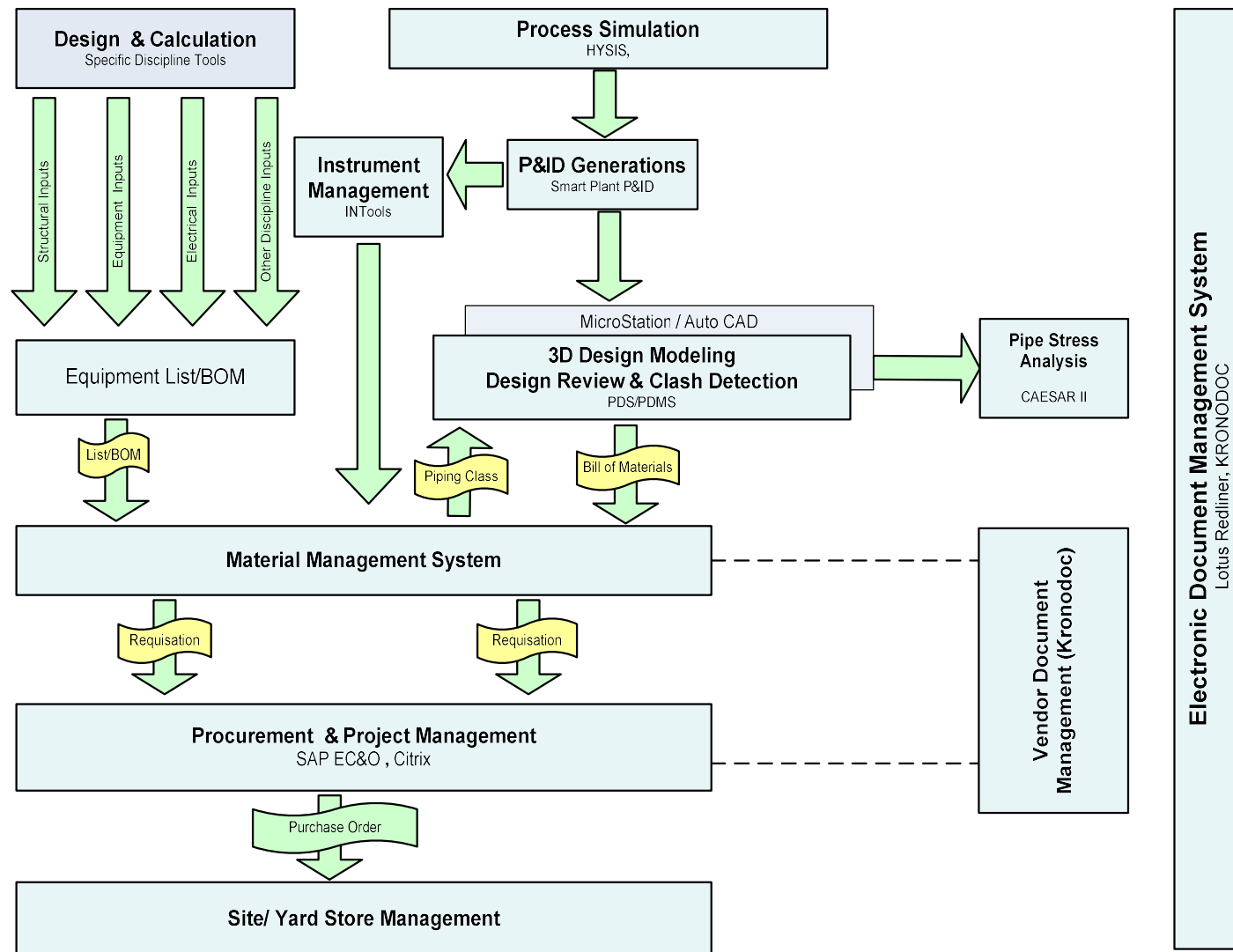


Quality Management

Engineering Management

- ▲ Scope definition
- ▲ Cost and Time resource estimation
- ▲ Document Control register compilation
- ▲ Engineering team assignment
- ▲ Delivery Planning & Expediting
- ▲ Organizing Site visits/ Internal/ External meeting
- ▲ 30/ 60/ 90% Review of 3D Model
- ▲ Quality and Data Security Audits
- ▲ Ensuring Squad Checks
- ▲ Vendor/ Subcontractor management
- ▲ Construction Support
- ▲ Change Management

Information Flow



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Quality Certifications



ISO 14001:2015

DNV-GL

MANAGEMENT SYSTEM CERTIFICATE

Certificate No: 17003-2015-IND-IND-UKAS
Initial certification date: 21, May, 2015
Valid: 21, May, 2015 - 20, May, 2018

This is to certify that the management system of

Pyramid Consulting Engineers Pvt. Ltd.
6th Floor, Wing-B, I-Think Techno Campus, Off Eastern Express Highway,
Pokhran Road No. 2, Thane (West) - 400 607, Maharashtra, India

has been found to conform to the Environmental Management System standard:
ISO 14001:2015

This certificate is valid for the following scope:
Design, engineering, project management, procurement, supply, installation and construction of hydrocarbon processing and chemical facilities

Place and date:
Chennai, 17, May, 2015



For the issuing office:
DNV GL - Business Assurance
ROMA, No. 10, GST Road, Alandur,
Chennai - 600 016, India

Shivadasan Madiyath
Management Representative

Lack of fulfillment of conditions as set out in the Certification Agreement may render this Certificate invalid.
ACCREDITED UNIT: DNV GL Business Assurance UK Limited, Place House, 5 Cathedral Street, London SE10 0SE, United Kingdom. TEL: +44(0) 207 257 1600. www.dnv-gl.com

OHSAS 18001:2007

DNV-GL

MANAGEMENT SYSTEM CERTIFICATE

Certificate No: 17003-2015-IND-IND-UKAS
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Pyramid E & C
31st Floor, JBC - 1, Cluster 'G', Jumeirah Lake Tower, P.O. Box - 643 857, Dubai, UAE

Pyramid Consulting Engineers Pvt. Ltd.
4th Floor, Hamilton 'A' Wing, Hiranandani Business Park, Thane (W) - 400 607, Maharashtra, India

has been found to conform to the Occupational Health and Safety Management System standard:
OHSAS 18001:2007

This certificate is valid for the following scope:
Design, engineering, project management, procurement, supply, installation, construction and commissioning of hydrocarbon processing facilities

Place and date:
Chennai, 20, May, 2015



For the issuing office:
DNV GL - Business Assurance
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ISO 27001:2013

DNV-GL

MANAGEMENT SYSTEM CERTIFICATE

Certificate No: 188830-2013-415-IND-UKAS
Initial certification date: NN Month, YYYY
Valid: NN Month, 2015 - NN Month, 2018

This is to certify that the management system of

Pyramid E & C
31st Floor, JBC - 1, Cluster 'G', Jumeirah Lake Tower, P.O. Box No. 643857, Dubai, UAE

Pyramid Consulting Engineers Pvt. Ltd.
6th Floor, Wing-B, I-Think Techno Campus, Off Eastern Express Highway,
Pokhran Road No. 2, Thane (West) 400607, Maharashtra, INDIA

has been found to conform to the Information Security Management System standard:
ISO/IEC 27001:2013

This certificate is valid for the following scope:

The Management of Information Security in Design, Engineering, Project Management, Procurement, Supply, Installation, Construction and Commissioning of Hydrocarbon Processing Facilities in accordance with Statement of Applicability ver 1.0 dated 15-Jun-2015

Place and date:
Chennai, NN Month, 2015



For the issuing office:
DNV GL - Business Assurance
ROMA, No. 10, GST Road, Alandur,
Chennai, PIN - 600 016, India

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ISO 9001:2015

DNV-GL

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has been found to conform to the Quality Management System standard:
ISO 9001:2015

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Design, engineering, project management, procurement, supply, installation and construction of hydrocarbon processing and chemical facilities

Place and date:
Chennai, 17, May, 2015



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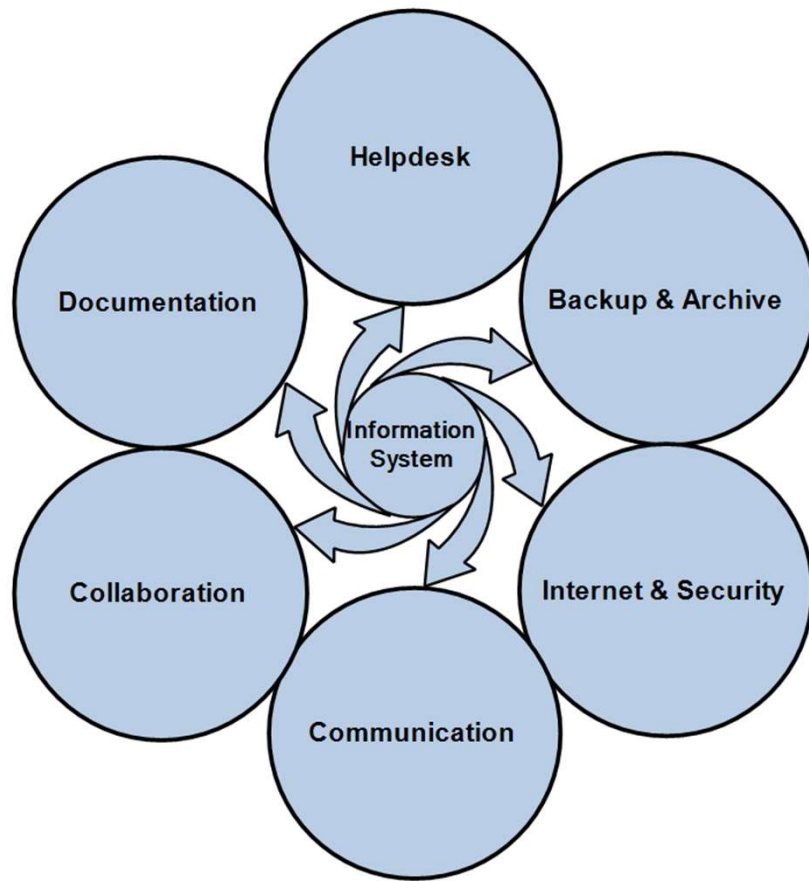
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Information System

Communication

Pyramid E&C information systems are Cloud and Mobile enabled except the proprietary information and CAD which are on local servers permitting VPN access only:

-  **Office 365 Suite**
-  **SharePoint Intranet**
-  **Engineering Information System**
-  **Internet Portal**
-  **MS Teams Conferencing**
-  **Secure FTP Server**








Collaboration

-  **Document Management using Kronodoc®**
-  **PDS/ PDMS Based collaboration for 3D environment**
-  **Secure FTP based document delivery**
-  **Lotus Redliner for 2D Drawings and Documents**
-  **Office 365/ SharePoint suite**
-  **Audio/ Video conferencing system**

Engineering Software

Process Engineering Hysys/ Promax Process Simulation HTFS/ HTRI Thermal Design Pipe Net Hydraulic analysis Flare net Flare System Design Smart plant P&ID Generation PHASt Process Safety Studies	Mechanical Engineering SP 3D/ PDMS/ CWorx Plant 3 D Modeling Caesar II Piping Stress Analysis Spoolgen Piping shop drawings ANSYS Finite Element Analysis PV Elite Pressure Vessel Design
Instrumentation IN Tools Instrument Specs Instru Calc Instrument Sizing	Electrical Engineering ETAP Electrical System Design
Structural Engineering STAAD Structural Analysis SACS Offshore Structural Analysis Tekla Structural detailing SDS 2 Structural detailing	Project Management Primavera Project Planning & Control Kronodoc Document Management Redliner Drawing Collaboration SAP Enterprise Resource management

Differentiators

-  **Mature engineering capability of 25 years**
-  **Robust knowledge base of 700 projects**
-  **Comprehensive multidiscipline engineering expertise**
-  **Competence on all CAD Platforms and Digitalization**
-  **Exposure to relevant hydrocarbon technologies**
-  **Exhaustive vendor database for services and products**
-  **ERP Integrated CAD, Document and Material management System**



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