



ISDS Technologies LLP

Imparting Skills & Delivering Solutions

Brochure

+91 - 22 4802 44 66

isds@isdstech.com

<https://www.isdstech.com>

ENGINEERING SERVICES

1. Conceptual Engineering

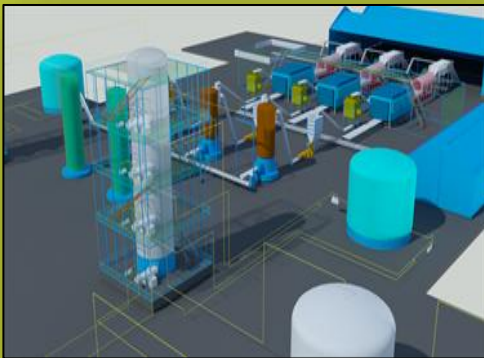
- Implementation of initial brainstorming sessions and concept sketches
- Innovations and Efficiency, Risk Mitigation, Cost Optimization and Sustainability
- Delivering Refined and Optimized concepts
- Feasibility studies, option screening, and Risk Assessment

2. Front End Engineering Design (FEED)

- Concept Refinement, Technical Specification Development, Feasibility Analysis
- Specifying the equipment, materials, and components required for the project
- Determining the optimal process flow, sizing equipment-tanks, vessels, heat exchangers, pumps, columns, etc, specifying operating conditions, and ensuring safety and reliability throughout the process
- Conducting risk assessments to identify potential challenges and mitigation strategies

3. Detailed Design Engineering

- Comprehensive Detailed Design engineering services and Project Management Consultancy services
- Creating precise drawings, schematics, and layouts specifying the dimensions, materials, and construction methods for every component of the project
- Performing detailed calculations and analysis to ensure project's safety, performance, and regulatory standards
- Involves structural analysis, stress analysis, fluid dynamics simulations, and other technical assessments to validate the design
- Technical Bid Evaluation Report



SIMULATION AND TRANSIENT ANALYSIS

1. Process Modelling and Simulation

- Development of comprehensive mathematical models to simulate engineering processes
- Utilization of industry-leading software for accurate prediction of system behaviour
- Development of detailed process models that accurately represent the operations
- Implementing advanced modelling techniques to create detailed representations of the processes, capturing every step and interaction with precision

2. Steady-State and Dynamic Simulation

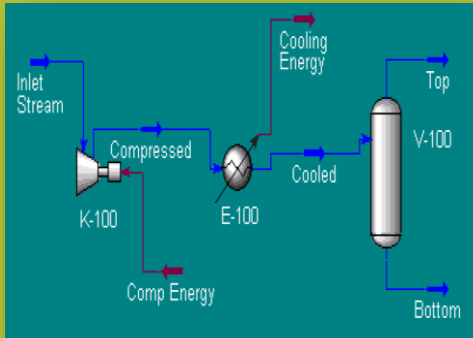
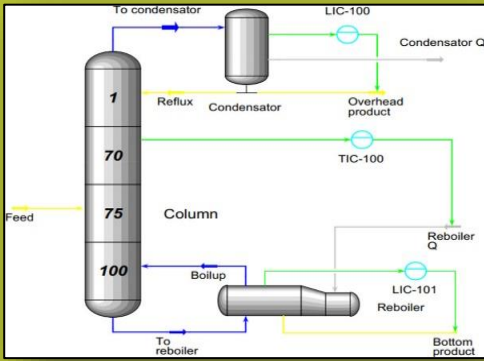
- Analysis of steady-state conditions to optimize process design and operation
- Dynamic simulation to study transient behaviour and response to disturbances
- Detailed modeling of process units and equipment
- Analysis of mass, energy balances, Troubleshooting and root cause analysis
- Optimization of operating conditions and parameters
- Evaluation of process performance and efficiency

3. Transient Analysis and Scenario Evaluation

- Investigation of system response to process upsets, startups, and shutdowns
- Scenario evaluation to assess the impact of changes in operating conditions or feed compositions
- Risk assessment and scenario-based analysis and evaluation of process safety and integrity

4. Optimization and Performance Improvement

- Identification of process bottlenecks and optimization opportunities through simulation
- Performance improvement strategies to enhance productivity, efficiency, and profitability
- Covers areas such as heat and mass transfer, separation processes, and process integration
- Analysing every aspect of the engineering processes to identify opportunities for optimization, enhancing yield and reducing energy consumption





LAYOUTS

1. Plant Layout

- Construction of a detailed plot plan to identify the necessary amount of space

2. Equipment Layout

- Equipment layout development based on PFDs and P&IDs, legal requirements, and maintenance needs

3. Piping Layout

- Generating piping plans according to vendor data, ergonomics, HFE specifications, P&IDs, and equipment layout.

4. Piping Materials

- Development of piping specifications, datasheets, MTO's, Material Requisitions, Technical Evaluations and Vendor Document Review

PIPING STRESS ANALYSIS & SUPPORT DESIGN

- To ensure compliance with both global and local regulatory requirements piping stress analysis and Flexibility calculation is conducted
- Equipment General Arrangement Layout, Piping Plan, Sections and Details
- Support Layout & Design of Special Supports, 3 –D Modeling, Isometrics
- Bill of Materials and As-Built drawings.

3D MODELING

1. Conceptual Design Visualization

- Implementing ideas to plan a new engineering process plant or upgrade existing facilities
- Providing a clear understanding of the layout, equipment placement, and spatial relationships, enabling stakeholders to make informed decisions

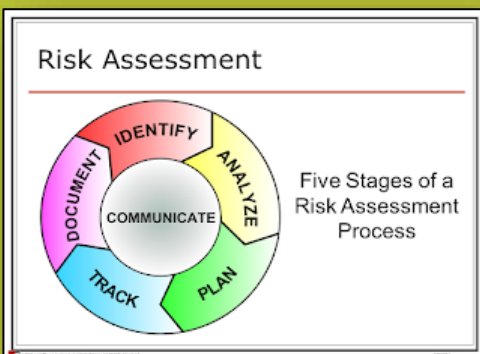
2. Equipment and piping layout

- Services include detailed modelling of equipment, piping, and instrumentation to optimize layout designs

3. Process flow simulation

- Identifying potential bottlenecks, optimising flow paths, and improving efficiency in engineering processes, ensuring smooth operation and optimal performance

SAFETY STUDIES



- Process Safety Management
- Project HSE Plan and Philosophy
- Hazard and Effect Register
- Hazardous Area Classification Schedule
- Fire and Gas mapping study
- Escape Route, Muster Station & Safety Signs Layout
- Environmental Management Program (EMP) Document
- Fire Fighting and Safety Equipment Layout Study
- Fire Proofing Specification
- Fire-Water Demand Calculation Study
- Fire-Water System Design and Hydraulic study
- Fire Zones Layout
- Construction HSE Plan
- Contractor Camp Design HSE plan
- Constructability review and workshop
- Post mobilisation HSE audit report
- Construction Risk Assessment
- Construction Environment Management Plan (CEMP)
- HAZID / ENVID / OHID Report and Close-out Report
- HAZOP Report and Close-out Report
- Health, Safety and Environment Impact Assessment (HSEIA), Environmental Impact Assessment (EIA)
- Control of Major Accident Hazards (COMAH) Assessment
- Emergency Response Plan
- Functional Safety Assessment (FSA)
- Quantitative Risk Assessment (QRA)
- Blast Overpressure Assessment
- Vent Dispersion and Radiation Study
- Noise Study
- Social Baseline survey and Social Impact Assessment Study
- OHRA Study
- SIMOPs Report and Close-out Report
- Inherent Safer Design Review Report and Close-out Report
- Escape, Evacuation and Response Analysis (EERA)
- ESSA Study
- Dropped Object Study
- SIL Assessment
- Project, Health, Safety and Environment Reviews (PHSER)
- Surge/Transient Analysis

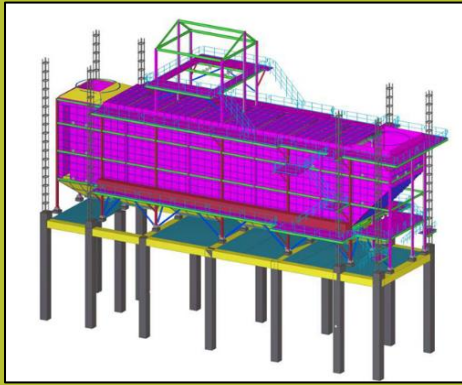


INSTRUMENTATION & CONTROL

- Detail engineering instrumentation control & system
- Process instruments
- Engineering deliverables
- Calculations & studies
- Alarm Management system.
- SIL study workshops

ELECTRICAL

- Engineering & Design
- Lighting calculation
- Electrical equipment sizing
- Layouts
- Support for vendor package
- 3D Modelling
- Electrical equipment Layout
- Electrical Panel layout
- Cable Routing layout



CIVIL & STRUCTURAL

- Structural Design, Analysis, 3-D Modeling & Detailing for Industrial sheds, Pipe Racks
- Equipment Supporting Structures
- Material Handling Equipment.
- Stress and fatigue analysis of structures
- Preparation of GA, Fabrication Drawings
- Rebar schedules & Bill of materials
- Design of drainage system
- Structural Audit & Assessment, BOQ
- Design, Detailing and Site Support
- Retrofitting Scheme

MECHANICAL AND PIPING

- Static Equipment's
- Basic Engineering Design, Detail Engineering services, Design Validation services
- 3-D Modeling Services and Isometrics, As-Built drawings, Point Cloud to 3D Modeling Services
- Equipment General Arrangement Layout, Piping Plan, Sections and Details
- Nozzle Orientations, Piping Stress Analysis & Flexibility Calculations
- Support Layout & Design of Special Supports
- Bill Of Quantity

INDUSTRIES WE SERVE.

- **Chemical**
- **Petrochemical**
- **Oil and Gas**
- **Refinery**
- **Agro chemicals**
- **Pharmaceuticals**
- **Polymer**
- **Power**

Contact us

ISDS Technologies LLP

Imparting Skills & Delivering Solutions
LLPIN No.: ACG-4786

Reg Office:

FL-B/504, Millenium Orchid, Plot-C/03,
Sector-12, Kharghar, Panvel,
410210, Maharashtra, India

Work Office:

609, A Wing, Kukreja Plaza, Plot: 46, 47 & 55,
Sector 11, CBD Belapur, Navi Mumbai,
Pin 400 614 Maharashtra, India
Office Ph: +91 (0) 22 4802 44 66
Email: isds@isdstech.com
Website: <https://www.isdstech.com>