OUR MULTIDISCIPLINARY HIGH-END ENGINEERING SERVICES

www.vitalengsolutions.com

VITAL ENGINEERING SOLUTIONS

About Us

Vital Engineering Services is a multi-disciplinary engineering company serving Owners and Operators, OEMs, EPC contractors, PMCs, and Technology Package Fabricators. We offer a range of services, including Project Management, Conceptual Design, FEED & Extended Basic Engineering, Detailed Engineering, Procurement Support, Pre-Commissioning, Site Support, and Resource Augmentation.

Our custom service delivery models are tailored to meet your project's specific needs based on size, scope, and duration. We recommend the most feasible and viable delivery model from the following options:

1. Fixed Price
2. Time & Material
3. DTM Model
4. Resource Augmentation.

Our Services
Process & Safety

- Process Flow Diagrams
- Conceptual Layout
- P&ID
- Line List
- Equipment List
- Instrument Process Design Sheet
- Process Data Sheets
- Piping Service Index
- Line & Pump Sizing
- Utility Consumption Summary
- Participation in HazOp

Mechanical Engineering

- Mechanical Engineering
- Design of Static & Rotating Equipment
- Equipment List
- Mechanical Datasheet
- Mechanical Schematic Diagram
- Equipment Arrangement Drawing
- Fatigue & Failure Analysis & FEA
- General Arrangement Drawing for all Equipment
- Nozzle and Manhole Detail Drawing
- Equipment and Pipe Support Drawing
- Ladder & Platform Support Drawings
- Tray Support and other welded internal detail drawing
- Tube Bundle Detail drawing for S&T Heat Exchangers
- 3D Modeling
- MTO/BOM

Piping

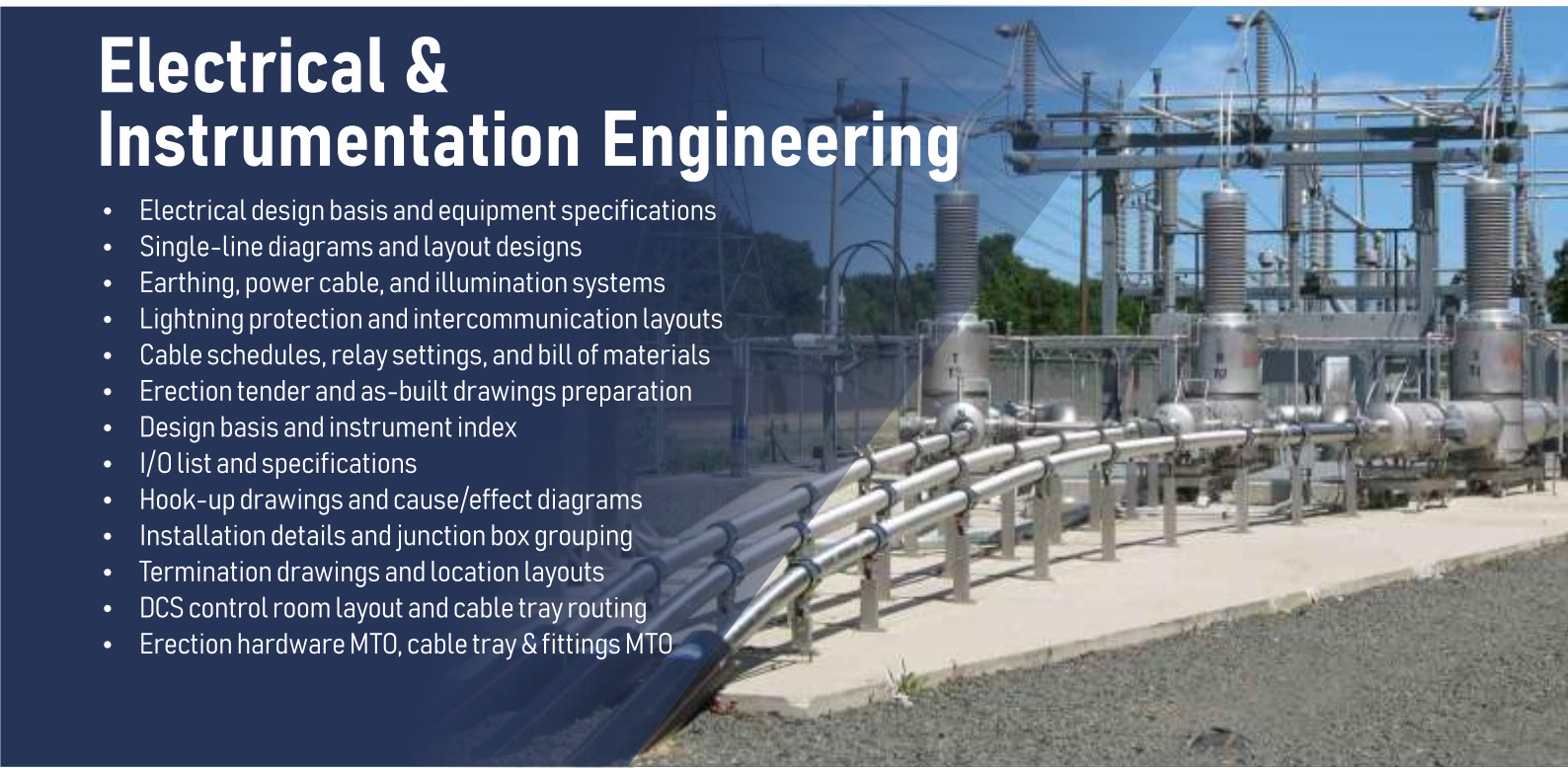
- Overall Plot Plan & Unit Plot Plan
- Equipment Layouts & GA Drawings
- Piping Layouts & GA Drawings
- Piping Isometrics
- Line List or Line Schedule
- Nozzle Orientation, Spool, Special Support, and Platforms Design Drawings
- Piping Support Design & Calculation
- MTO/BOM
- Piping Insulation, Painting, & Material Specification
- Specialty Items Lists
- Data Sheets for Valve & Piping Specials
- Piping Stress Analysis
- 3D Modeling
- Technical Bid Evaluation
- As-built Updates

Civil & Structural Engineering

- Foundations Design & Analysis (Static & Dynamic)
- Site Preparation, Site grading & Fence Details
- Formworks and Detailed Civil drawings
- Detailed Engineering for Special Structures
- GA, Erection and Fabrication Drawings
- Pipe support, Pipe racks, Shelters, Platforms, Cross overs & Sleepers
- Structural Stress Analysis
- Transportation and Lifting Analysis, Reports & Drawings
- As-built drawings
- 3D Modeling

Electrical & Instrumentation Engineering

- Electrical design basis and equipment specifications
- Single-line diagrams and layout designs
- Earthing, power cable, and illumination systems
- Lightning protection and intercommunication layouts
- Cable schedules, relay settings, and bill of materials
- Erection tender and as-built drawings preparation
- Design basis and instrument index
- I/O list and specifications
- Hook-up drawings and cause/effect diagrams
- Installation details and junction box grouping
- Termination drawings and location layouts
- DCS control room layout and cable tray routing
- Erection hardware MTO, cable tray & fittings MTO



Reverse Engineering

- Laser Scanning
- Registering & Stitching of Scan Data
- Creating precise plant 3D Laser models from
- Scanned Point Cloud data in various formats,
- such as .pptx, .pcg, .xyx, .dwg, .dgn, .rvt.
- Point Cloud to 3D Dumb Model
- Millimeter-accurate 3D CAD Models
- Dumb Model from Laser Scan
- Extraction & Submission of deliverables like;
- GAD's Isometrics, MTO, etc.

Industry Served

- Oil & Gas – Offshore & Onshore
- Petrochemical
- Chemicals
- Power & Infrastructure
- Manufacturing
- Water and Wastewater Treatment
- Carbon Capture
- Cryogenics
- Hydrogen

International Codes & Standards

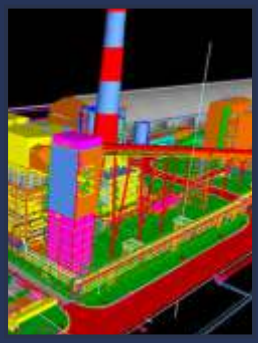
- Shell DEP
- ASME B31.1, B31.3, B31.4
- ASME Section VIII Div. 1, 2
- API 650, 620
- AISI
- ANSI
- AISC
- UBC
- ASCE
- ACI
- TEMA
- IS 1978-82, IS 3589-01
- BS 5500
- BS EN 13480, 14364
- IBC
- IEC
- IEEE
- CBIP
- NFPA/NEC
- B31.8, B31.11
- NORSOK, UKOOA

Software

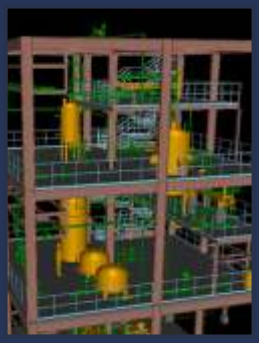
- Hexagon CAESAR II
- Bentley STAAD Pro
- Hexagon PV–Elite
- Bentley Systems ProSteel
- ETAP
- Autodesk AutoCAD
- Bentley MicroStation
- BrisCAD
- AVEVA E3D
- Hexagon CADWorx
- Bentley AutoPLANT
- Dassault Systems SOLIDWORKS
- Trimble's TEKLA
- Autodesk Advance Steel
- Autodesk AutoCAD Plant 3D
- Autodesk Inventor
- Ansys
- Bentley RAM Connection
- Autodesk REVIT
- HTRI

Project Portfolio

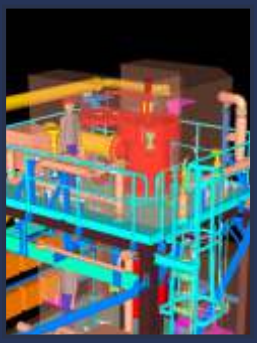
List of Vital Engineering Solutions



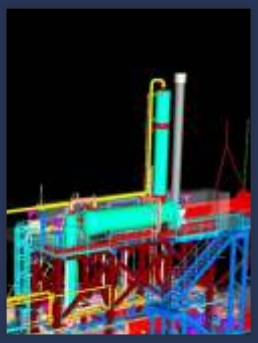
HAZIRA
POWER PLANT



H2O2 REGENERATION
PLANT



COALESCER MODULE
SKID



VAPOR RECOVERY
UNIT

CONDENSATE TREATMENT
PACKAGE

SHELL & TUBE
HEAT EXCHANGER

BOILER BURNER
SKID

KNOCK OUT SKID

OXYGEN PLANT

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