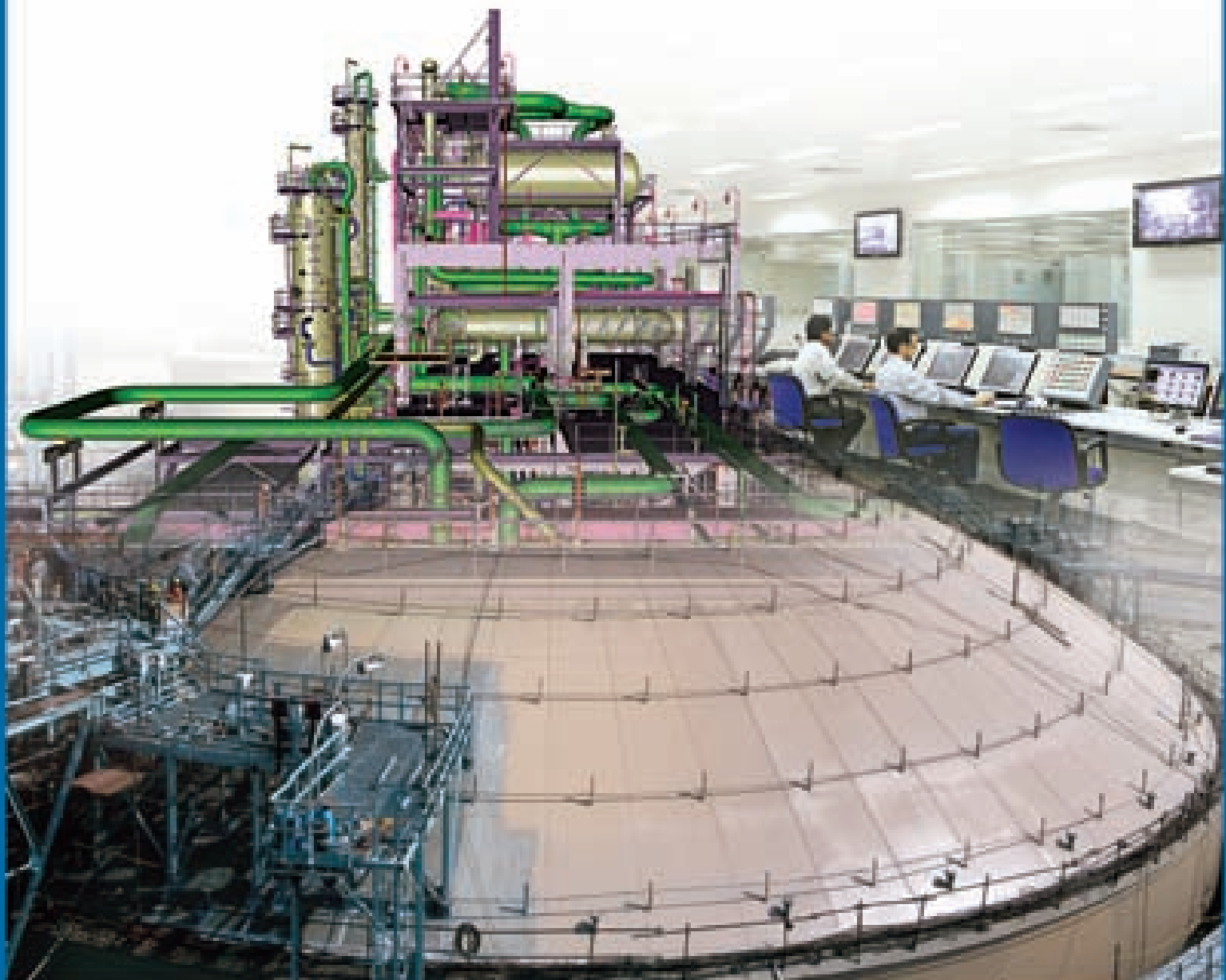
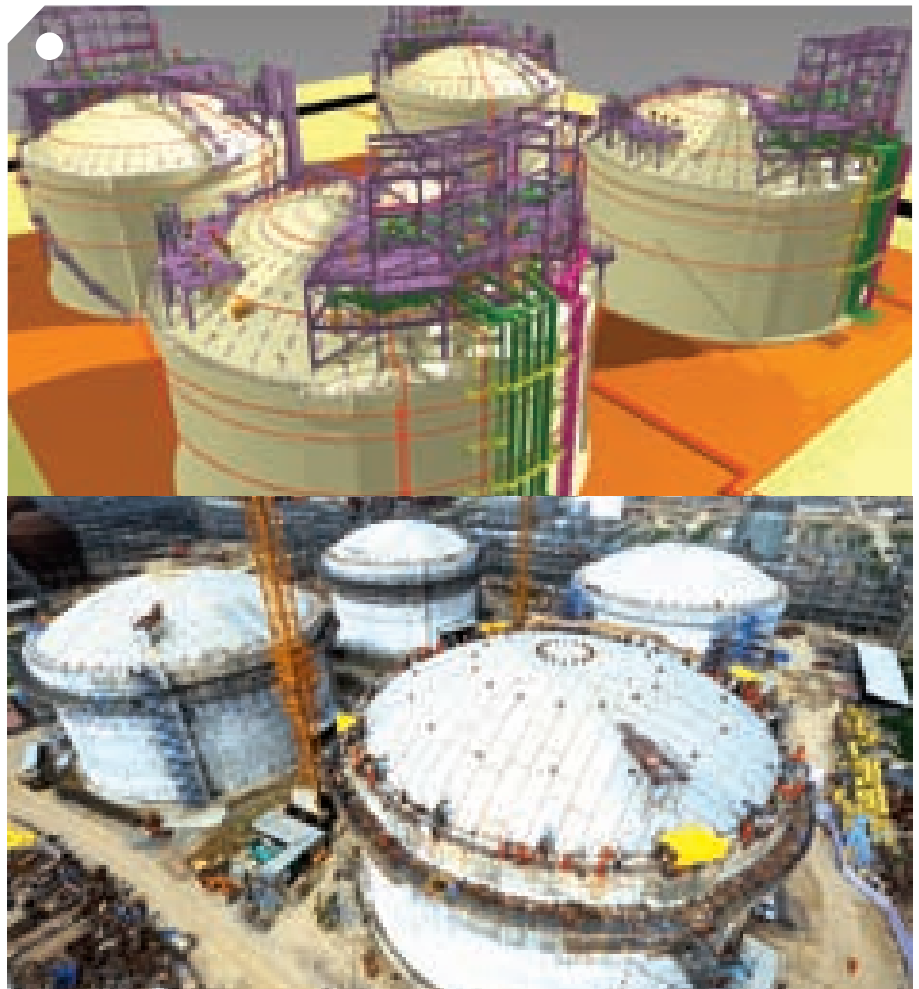


Shaping the World





PL Engineering

PL Engineering is a full spectrum design and engineering company providing services in Energy, Product and Infrastructure sectors. The Company also provides consulting services in e-learning and embedded systems design.

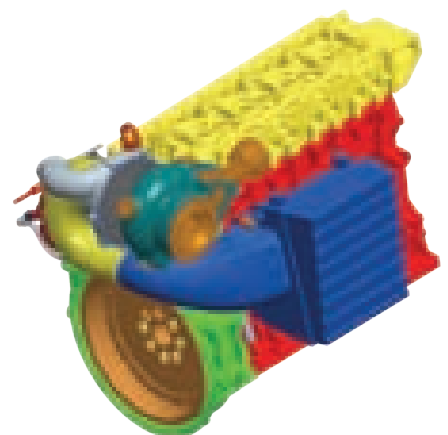
PL Engineering provides engineering services worldwide for Pipelines, Refineries, Oil & Gas Storage Facilities, Field Development, Thermal and Nuclear Power, Petrochemical and Chemical Plants, Automotive, Aerospace, Heavy Machinery and BFSI projects.

Combined with Group companies - Simon Carves, leader in petrochemical and biofuel engineering and Technodyne, specialist in cryogenic tank engineering, PL Engineering offers a formidable bouquet of services.

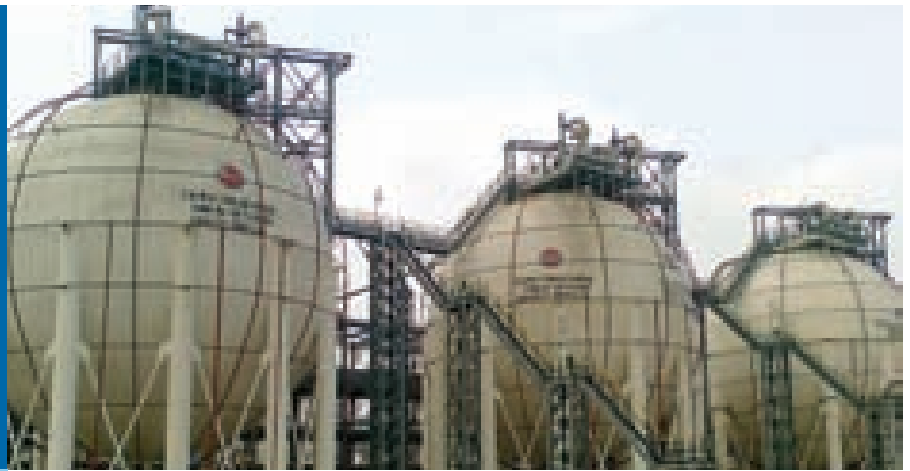
By virtue of its global experience and extensive expertise, PL Engineering has developed proven systems and processes for need identification, transitioning, execution and delivery in a customer-centric manner. To support customers on global projects from the most remote locations, engineering excellence centres have been set up across the globe. These centres leverage talent and expertise from group companies to service the customers on global projects.

Its multi-disciplinary team of over 800 professionals work with cutting-edge design and simulation software in a secured environment ensuring IP protection and data privacy.

As a part of Punj Lloyd Group, PL Engineering imbibes the Group's core values of Performance, Passion, Teamwork, Agility and Reliability.



Services



Catering to the various sectors and industries, PL Engineering's services span across the life cycle of a typical project from Concept and Feasibility to Detailed Design & Engineering, Analysis, Project Support Services to specialised CAD & IT services.

Plant Design / Process Engineering

- ▶ Conceptual and Techno-Economic Feasibility Studies
- ▶ FEED & Basic Engineering
- ▶ Pre-bid / Proposal Engineering
- ▶ Process Packages
- ▶ Technology Sourcing / Evaluation / Selection
- ▶ Detailed Design & Engineering
- ▶ Design & Analysis
- ▶ De-bottlenecking, Trouble Shooting
- ▶ As-Builts
- ▶ Procurement & Construction Support

Product Design / Analysis

- ▶ Product & Component Design
- ▶ Layout, Modeling & Detailing (3D & 2D)
- ▶ Meshing & FE Modeling
- ▶ Strength and Dynamic Analysis
- ▶ Reverse Engineering
- ▶ Process sheets for components and assembly
- ▶ Tooling Development and NC Code
- ▶ Test Rig Design & Development
- ▶ Product Life Cycle Management (PLM), Implementation & Library Development

Infrastructure Design

- ▶ Feasibility Studies
- ▶ Pre-bid / Proposal Engineering
- ▶ Urban Planning and Design
- ▶ Detailed Design & Engineering
- ▶ Architectural Design and Detailing
- ▶ Electrical systems including Lighting and Illumination
- ▶ HVAC and Mechanical
- ▶ Plumbing and Drainage, water supply, Firefighting system
- ▶ Procurement & Construction Support

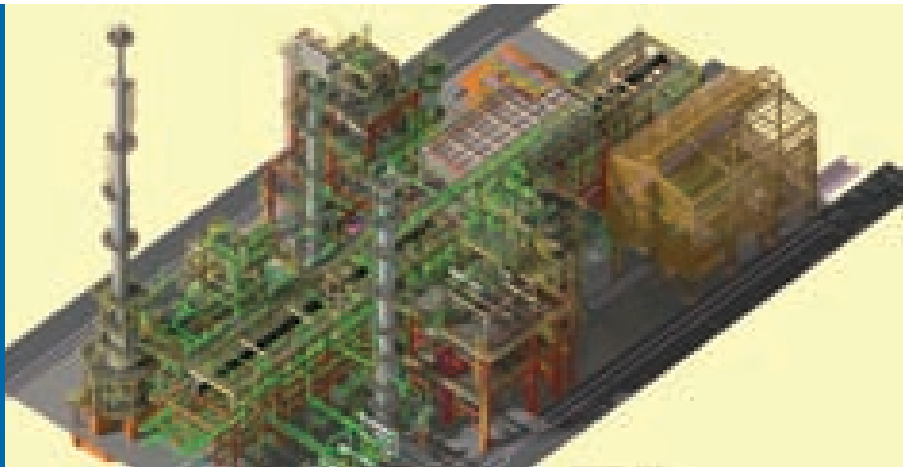
E- Solutions

- ▶ Training Need Identification
- ▶ Business Process Mapping & e-solutioning
- ▶ Engineering Animations for Assembly & Packaging
- ▶ Product Presentations and Working Principles
- ▶ Spare Parts Catalogue
- ▶ Construction Sequence
- ▶ Plant Overview, Operation and Commissioning Manuals
- ▶ e-learning Modules for Training
- ▶ Deployment of Learning Content

Embedded systems

- ▶ PCB Level Simulation and Design
- ▶ Firmware Development and Deployment
- ▶ Testing & Validation
- ▶ Product Validation and Certification

Our Focus Sectors & Industries



Energy

▶ Oil & Gas

Offshore & Onshore Field Development
Onshore & Offshore Pipelines
Tankage & Terminals
Caverns

▶ Process Plants

Refinery Units
Chemical & Petrochemical Plants
Gas Processing Facilities
Polysilicon Plants

▶ Power

Thermal
Nuclear
Renewable (Wind/Solar)

Product Design

▶ Automotive

Engine, Body, Chassis & Power Train

▶ Aerospace

Aero structures

▶ Industrial (Heavy Engineering)

Excavators
Tests & Simulation Rigs
Refuse Collectors

Infrastructure Design

▶ Buildings

Industrial
Commercial & Residential Complexes
Healthcare

▶ Transportation

Airports
Subway & Metro Systems
Highways & Bridges
Seaports & Terminals

▶ Land Development

Townships
Industrial Parks
SEZs

▶ Water

Water Desalination
Waste Water
Sewage Treatment

E- Learning

Automotive
Heavy Machinery
Industrial & Process Plants
BFSI
Telecom

Embedded Systems

Automotive
Heavy Machinery
Industrial & Process Plants



Global Delivery Model

PL Engineering's organisational matrix enables it to create synergy through shared responsibility between project teams and discipline, creating a cross functional environment. Each discipline is a center of excellence fostering domain expertise and engineering talent, while project teams are responsible for resource mapping, planning and control, financial management and customer interface. The organisational structure ensures cost effectiveness, higher productivity through better resource utilisation and reconciliation of technological requirements.

PL Engineering's global delivery model helps to support customers during execution inspite of remote locations. To enhance effectiveness in the off-shore delivery model, front-end offices in US, Canada, Europe, South East Asia and Middle East have been established.

Offices and Infrastructure

PL Engineering appreciates the importance of world-class facilities and logistics to ensure seamless service in the engineering industry. The Company has offices in Gurgaon, Hyderabad, Abu Dhabi and Doha.

- All PL Engineering offices comply with EHS standards
- The IT set-up is devised in a way to ensure logical segregation and IP protection of all customer operations
- Compliance to BS7799 ensures IP protection and data privacy
- A robust knowledge management system with inbuilt process allows capturing of tacit and implicit knowledge
- One of the youngest ISO 9001: 2008 certified companies in India

Engineering Software

Engineering organisations count their human resources and software expertise as their biggest strengths. PL Engineering engineers use software applications of global-acceptance across the engineering industry for corresponding disciplines. The Company has a wide range of engineering software including SP 3D, PDMS, PDS, NISA, Solidworks, VANTAGE P & ID, CAESAR II, Pro-Engineer, Aspen Suite, STRUCAD, NASTRAN, Auto pipe, Microprotol and many more for integrated 3D modeling, creation of intelligent P & IDs, design & analysis including FEM. The different types of software are complemented by a gallery of tools/spreadsheets which have been developed and standardised in-house.



Project Experience

PL Engineering has extensive global industry experience. Its project execution spans across diverse industries like Oil & Gas, Nuclear Power, Thermal Power, Chemicals, Petrochemicals, Automotive, Aerospace, Infrastructure and BFSI. Its experience in executing large and difficult projects within the stipulated time and budget is unmatched in the industry. From a 500 km pipeline in SE Asia to automotive design projects in Netherlands, from nuclear power projects in India to chemical plants in Middle East, from aerospace design projects in France to complex refinery projects in India, from offshore platform work to crude oil processing terminals, the list is long.

Some Key Projects

- Engineering Design and Analysis for RAPP - 7 & 8, India
- 521 km 36" dia Sabah Sarawak Gas Pipeline, Malaysia
- Chabua Gas Gathering Station, India
- Mangala Process Train Expansion Rajasthan, India
- MSQ Upgradation Barauni Refinery, India
- 3500 TPA Polysilicon Plant, Middle East
- Delayed Coker Unit & LPG Merox, Vadodara Refinery, India
- Propane/ Butane/ LPG Import Terminal Ennore, India
- Tankfarm Ireland Feasibility Study, Ireland
- Offshore Development Centre Establishment, Netherlands
- 3200 km Mehsana-Bhatinda & Mallavaram - Vijapur Gas Pipeline, India
- Coke Drum System Package, India
- Engineering Services for Gas Pipeline, Middle East
- Sulphur Block, Bina Refinery, India
- Sulphuric Acid Plant, UAE
- 56 km 24" dia Viramgam Salaya Heated Crude Oil Pipeline, India
- Chemical – IC & T – Early Tankage for Singapore Parallel Train, Singapore
- 24 km 20" dia Uran Trombay Gas Pipeline, India
- Bulk Liquid Products Terminal, Phase 3 Expansion, Singapore
- Piltun Astokhskoye Offshore Platform, Russia
- Storage Facilities in Naphtha Cracker Project, Panipat Refinery, India
- 2 x 350 MW Thermal Power Plant, India
- Aerospace Design and Analysis project, France
- Automotive Design and Analysis project, Austria
- Offshore Development Centre Establishment, Canada

Some Valued Clients

AGIP KCO	GECI	KENTZ QATAR	PETRONAS CARIGALI
AMEC	GEESINKNORBA	KIDDE INDIA	PTT-PE – THAILAND
BHARAT OMAN REFINERIES LTD	GLOBAL LIQUID SOLUTIONS LTD	KTM SPORTS	QATAR PETROLEUM
BLACK CAT E & C	GULF FLUOR	LANCASTER HOLDING	QUIPPO TELECOM INFRASTRUCTURE
BOMBARDIER TRANSPORTATION	HELIOS TERMINAL CORPORATION	MANGALORE REFINERY & PETROCHEMICALS LTD	RELIANCE INDUSTRIES
CAIRN ENERGY	HONDA SIEL CARS INDIA	NIIT	RELIGARE
DELHI METRO RAIL CORPORATION	HORIZON TERMINAL	NUCLEAR POWER CORPORATION OF INDIA LTD	SAUDI KAYAN
ENSUS BIOETHANOL	IND- BARATH UTKAL ENERGY LTD	OIL INDIA	STANTEC
ETIMAAD LLC	INDIAN OIL PETRONAS PVT LTD	ONGC	THYSSENKRUPP
EXXONMOBIL	KALPATRU	PB TANKERS LTD	WARDROP
GAIL	KAZSTROY	PETROFAC	WHESSEO



Company Differentiators

The Company's competitive advantage is its biggest differentiator, helping it win and execute complex and prestigious projects, and also making it the preferred choice of customers.

Focus on Value Engineering

- Design not just based on client inputs but geared to save cost for the client, applying VE & Lean concepts

Align to Customer Priorities & Culture

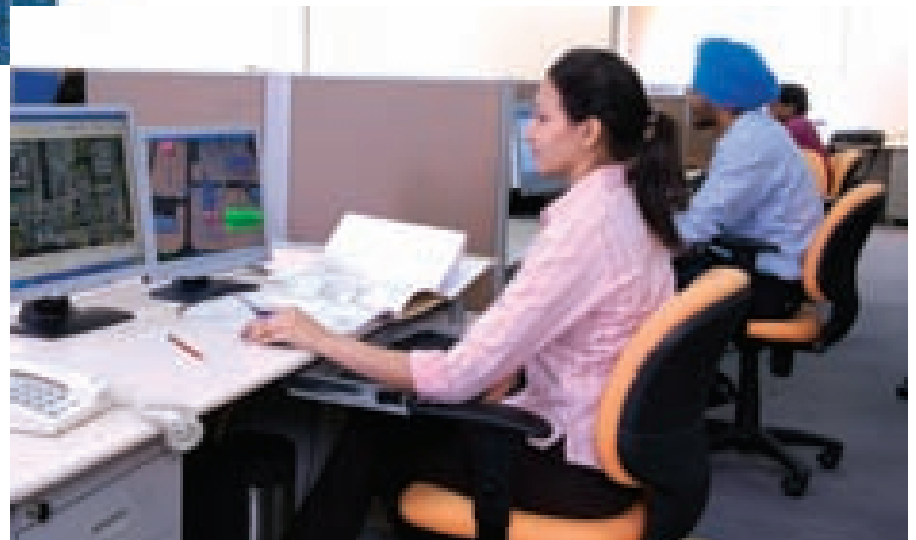
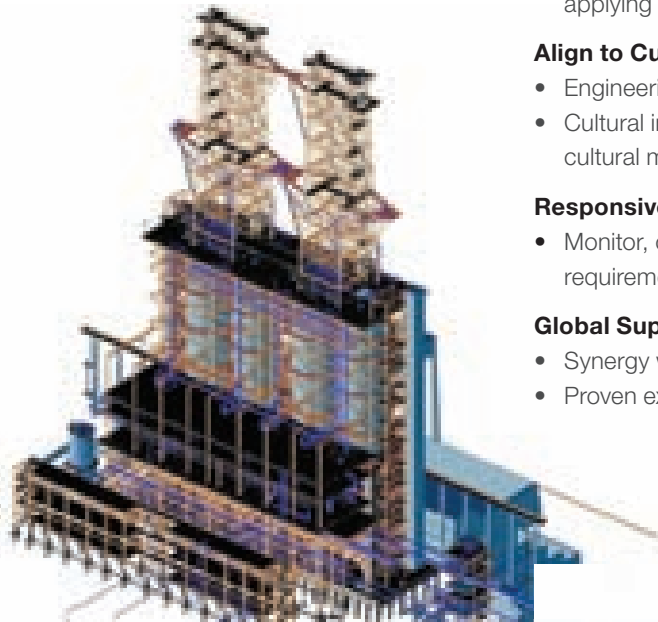
- Engineering driven by client priorities and not just by engineering norms
- Cultural integration of client and PL Engineering teams through country specific cultural modules

Responsiveness & Flexibility

- Monitor, continuously adapt and swiftly respond to the client's changing requirements

Global Support & Presence

- Synergy with partner companies in Middle East, UK & Asia
- Proven expertise in global work-share environment



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