



# M&IR INDUSTRI ENGINEERING AND CONSULTANCY





# ABOUT US

- ✓ Process Designs
- ✓ Piping
- ✓ Control, Automation, Instrument, Design
- ✓ Electrical System Design
- ✓ Filling and Measuring Stations
- ✓ Promotion Stations
- ✓ Storage Tanks
- ✓ Pressure vessels
- ✓ Fire Fighting Systems
- ✓ Reverse Engineering
- ✓ Advanced Engineering Applications
- ✓ Steel construction

Who We Are

# OUR VALUES



**Customer Focus and  
Quality Service**



**Quality and Result  
Orientation**



**Innovative and  
Creative Approach**

Who We Are

# OUR VALUES



**Collaboration,  
Continuous  
Improvement and  
Team Spirit**




**Respectful to Human  
and Environment**



**Work safety  
culture**



The background of the slide features a blurred image of a person in a dark suit and white shirt, holding a pen and pointing at a transparent digital screen. The screen displays various financial data visualizations, including a line graph with a rising trend, a bar chart, and a table of numbers. The overall color scheme is professional, with blues, greys, and white. The text is overlaid on the left side of the image.

What We Do Today

# OUR VISION

- **To be the best competitive and innovative company.**
- **To be a company that will produce engineering solutions to meet the needs of the region.**
- **To be among the technological and quality companies that produce in international standards.**



What Do We Do Differently?

## WHY WE?

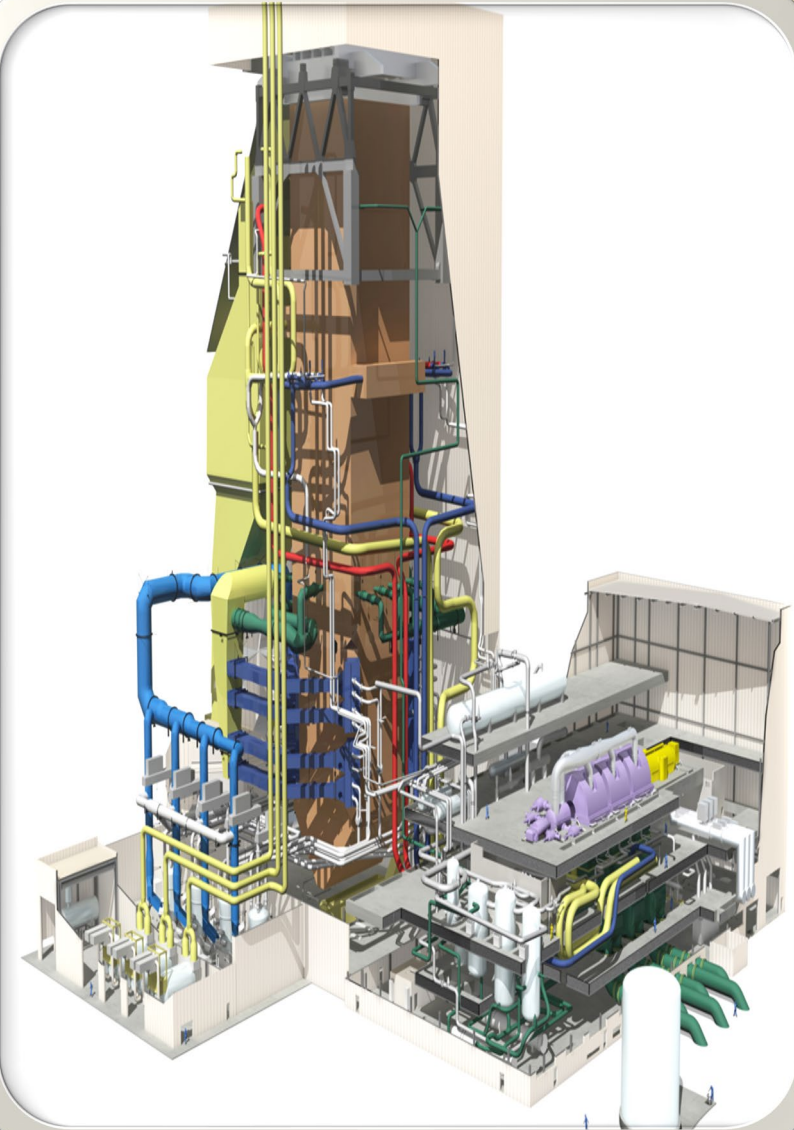
- ✓ **Because we provide engineering services in the shortest time and with reasonable prices.**
- ✓ **For our experienced and constantly renewing agile team.**
- ✓ **Because we offer optimum engineering solutions.**





# Pre-Engineering Design

- ✓ *Hazard and Operability Study (HAZOP)*
- ✓ *Security Integrity Level (SIL)*
- ✓ *Quantitative Risk Assessment (QRA)*
- ✓ *Cost Estimation*
- ✓ *Project Execution Plan*

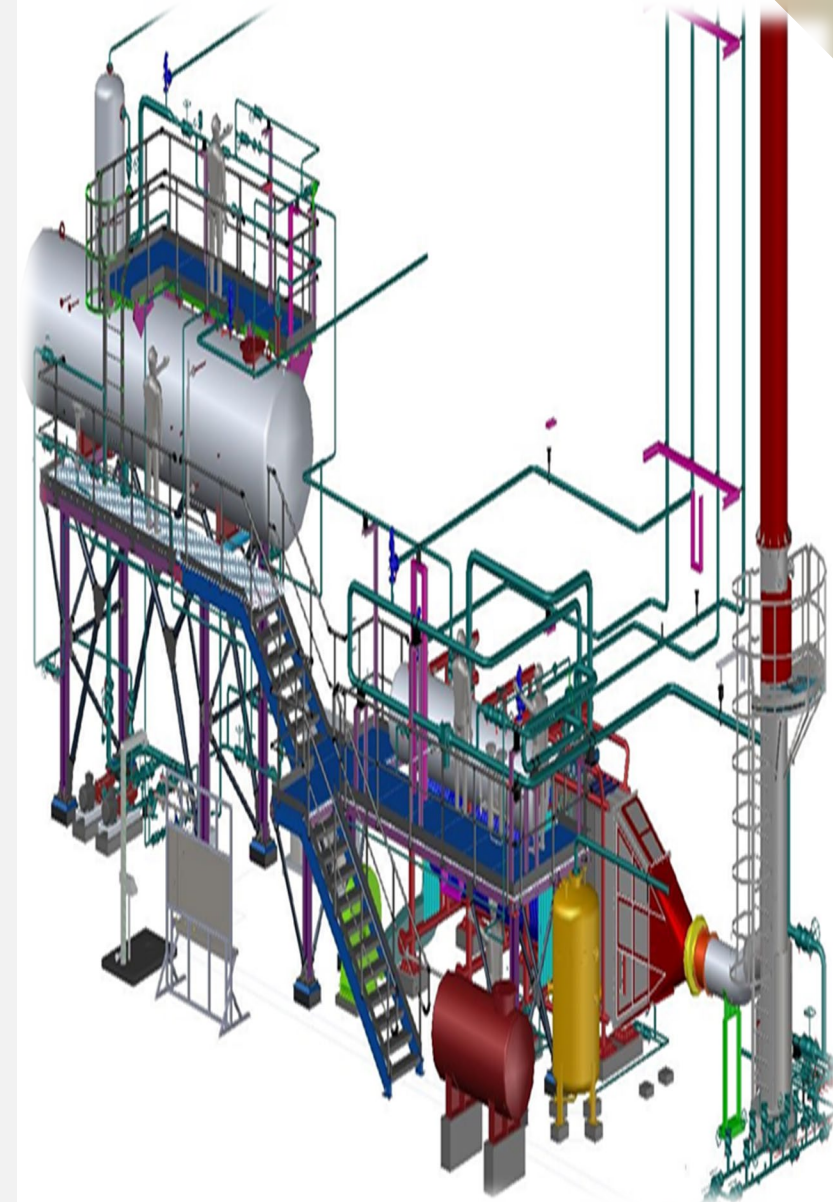






# Project Design and Engineering Services

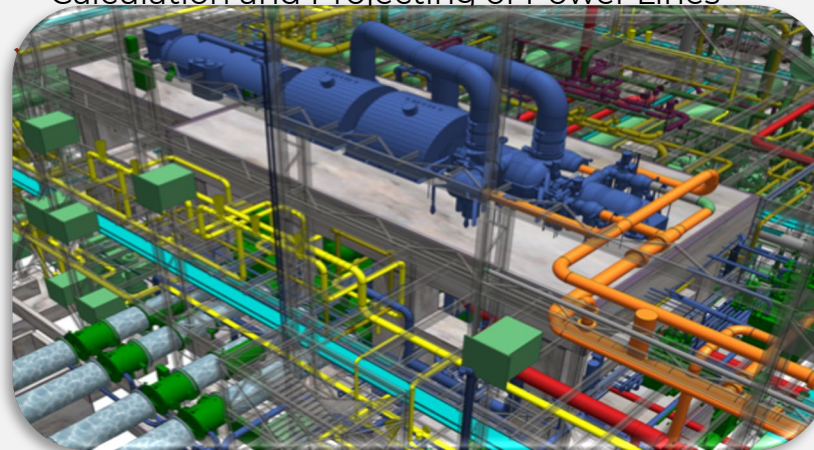
- ✓ *Process Specifications*
- ✓ *Process Flow Diagram (PFD)*
- ✓ *Piping and Instrument Diagram (P&ID)*
- ✓ *Facility Layout Plan*
- ✓ *Equipment Layout*
- ✓ *Facility 3D Modeling*
- ✓ *Bill of Materials (MTO)*



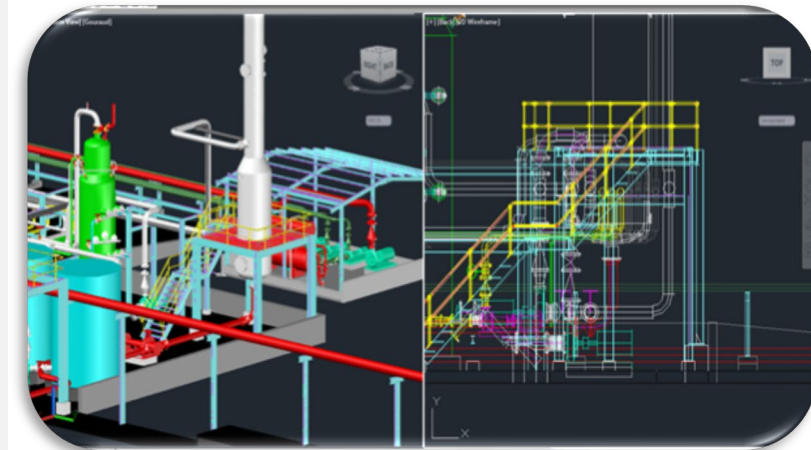


# Basic and Detail Engineering

- ✓ Transferring the Current Situation in the Field to the Project
- ✓ Determination of Equipment in the Project and Supply of Data Sheets
- ✓ General Layout Preparation
- ✓ Preparation of Flow Charts
- ✓ Preparation of Piping and Instrument Diagrams
- ✓ Preparation of Steel, Construction, Equipment and Piping Layouts
- ✓ Isometric Drawings of Pipelines
- ✓ Design of Steel Structures
- ✓ Design of Reinforced Concrete and Other Structures
- ✓ Calculation and Projecting of Power Lines



- ✓ Calculation of Tank, Silo, Heat Exchanger and Rotary Equipment
- ✓ Horizontal and Vertical Lifting and Transport Operations
- ✓ Calculation of Pipelines and Power Lines
- ✓ Making Static Calculations of Stress Analysis and Steel Load Calculations
- ✓ Calculation and Projecting of Support, Console and Carriers
- ✓ Preparation of Manufacturing and Assembly Detail Projects
- ✓ Preparation of Purchase Bills of Materials
- ✓ Seat Ware Material List Preparation





# Procurement

- ✓ *Preparation of technical specifications for Tender Invitations*
- ✓ *Market research and/or selection of suitable suppliers from the existing database*
- ✓ *Submitting bid requests*
- ✓ *Cost comparison studies and matching the incoming offers*
- ✓ *Preparation of the tender evaluation report*
- ✓ *Finalization of the tender evaluation report in line with the revised offers*
- ✓ *Finalization of orders and order tracking*





# Construction, Steel, Architecture



- ✓ *Geotechnical Research Report*
- ✓ *Construction and Steel Account Report*
- ✓ *Foundation and Concrete Structure*  
*General Arrangement Drawings*
- ✓ *Basic Drawings*
- ✓ *Underground Services Layout*
- ✓ *Cable Infrastructure Layout*
- ✓ *Structural Steel Drawing and Details for*  
*Pipe Structures and Pipe Supports*
- ✓ *Concrete Drawings for All Foundations,*  
*Concrete and Steel Structures*
- ✓ *Construction & Building & Architectural*  
*Manufacturing Pictures*
- ✓ *Construction & Building & Architectural*  
*Specifications*
- ✓ *Construction & Building & Architectural*  
*Bills of Materials*
- ✓ *Steel Construction Buildings*
- ✓ *Architectural Drawings of Buildings*

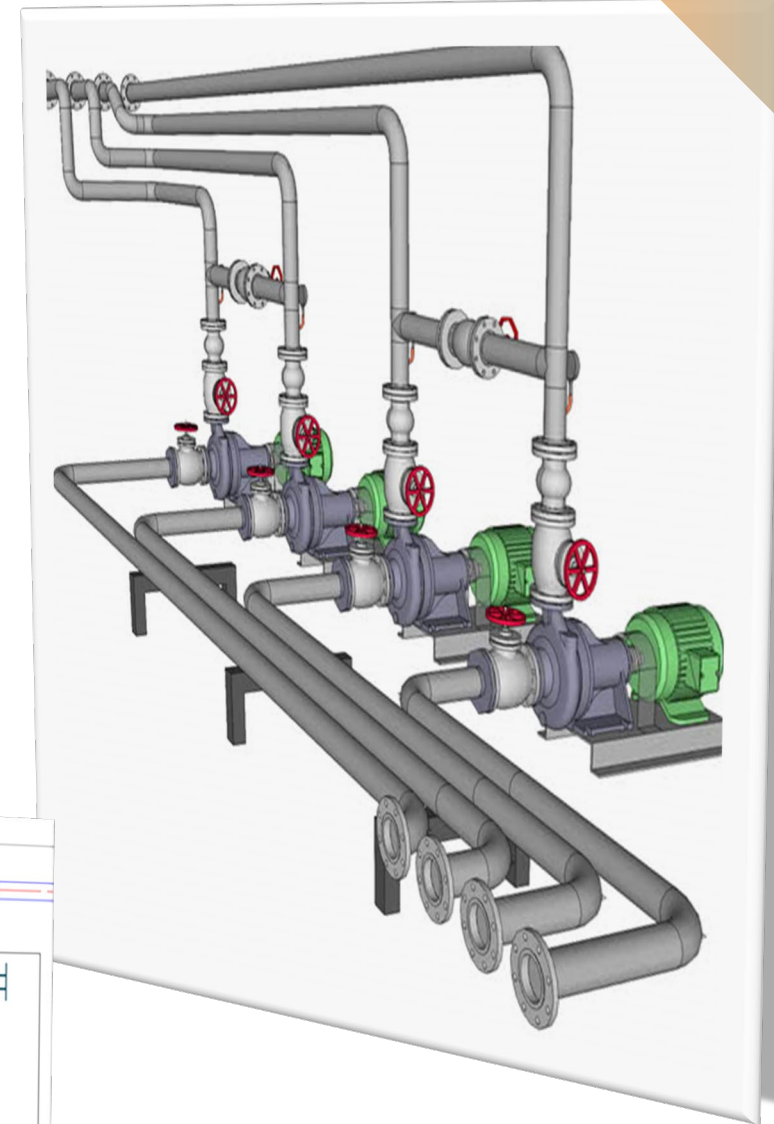
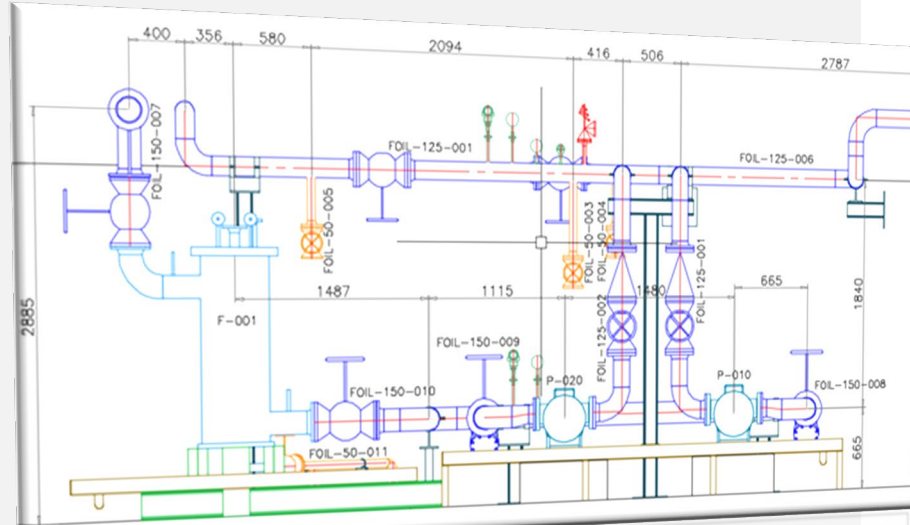






# Process Piping

- *General Layout Plan*
- *Equipment Layout*
- *Computer Aided Design*
- *Pipe Stress Analysis*
- *Equipment and Piping 3D Modeling*
- *Piping Isometries*
- *Pipe Support Design and Selection*
- *Piping Bill of Materials (MTO)*
- *Valve List*
- *Equipment Design and Drawings*
- *Equipment Data Sheets*
- ✓ *Equipment Purchase Specifications*





# Project Field Studies and Assembly

- ✓ *Making pipe productions in accordance with isometries. Making pipe bends.*
- ✓ *Making steel construction productions in accordance with the projects.*
- ✓ *Manufacturing of pressure vessels.*
- ✓ *Manufacture and repair of heat exchangers.*
- ✓ *Industrial boiler manufacturing in accordance with their projects*
- ✓ *Construction of storage tanks in accordance with their projects.*
- ✓ *Production of insulation.*
- ✓ *Sandblasting and painting works.*







1. Shanghai Shuangbao Machinery Co., Ltd is a **Pump Manufacturer** mainly serving chemical, petrochemical, and other **industries**.

2. The factory was established in 1985, with the land area of 120,000 m<sup>2</sup>.

3. The **main products** are chemical process pump –like API pump, Teflon-lined pump, and metal centrifugal pump.

4. We have opened up **markets** such as Turkey, Iran, Iraq, UAE, Oman, Brazil, Russia, Bangladesh, and our products has exported to **more than 60 countries** and **regions**.

# SBMC INDUSTRIAL PUMP PRESENTATION

## Factory: LEO

OH1/OH2 (HA/HE)

OH2 (HU)

OH3 (HGPN)

BB1 (A Series : Single stage)

BB1 (A Series : Two-stage)

BB1 (A-P Pipeline)

BB2 (HR Single stage )

BB2 (HR Two-stage )

BB2 (HR Three-stage)

BB3 (MA)

BB4 (M)

BB5 (T-G)

BB5 (T-K)

VS4 (HY)

VS5 (HLB/HNB)

VS6 (TD)

VS6 (TV)

*HT Series Hydraulic Power Recovery Turbine*

*HEZ Vacuum Pump*

*HSP Mixed-Flow Pump*

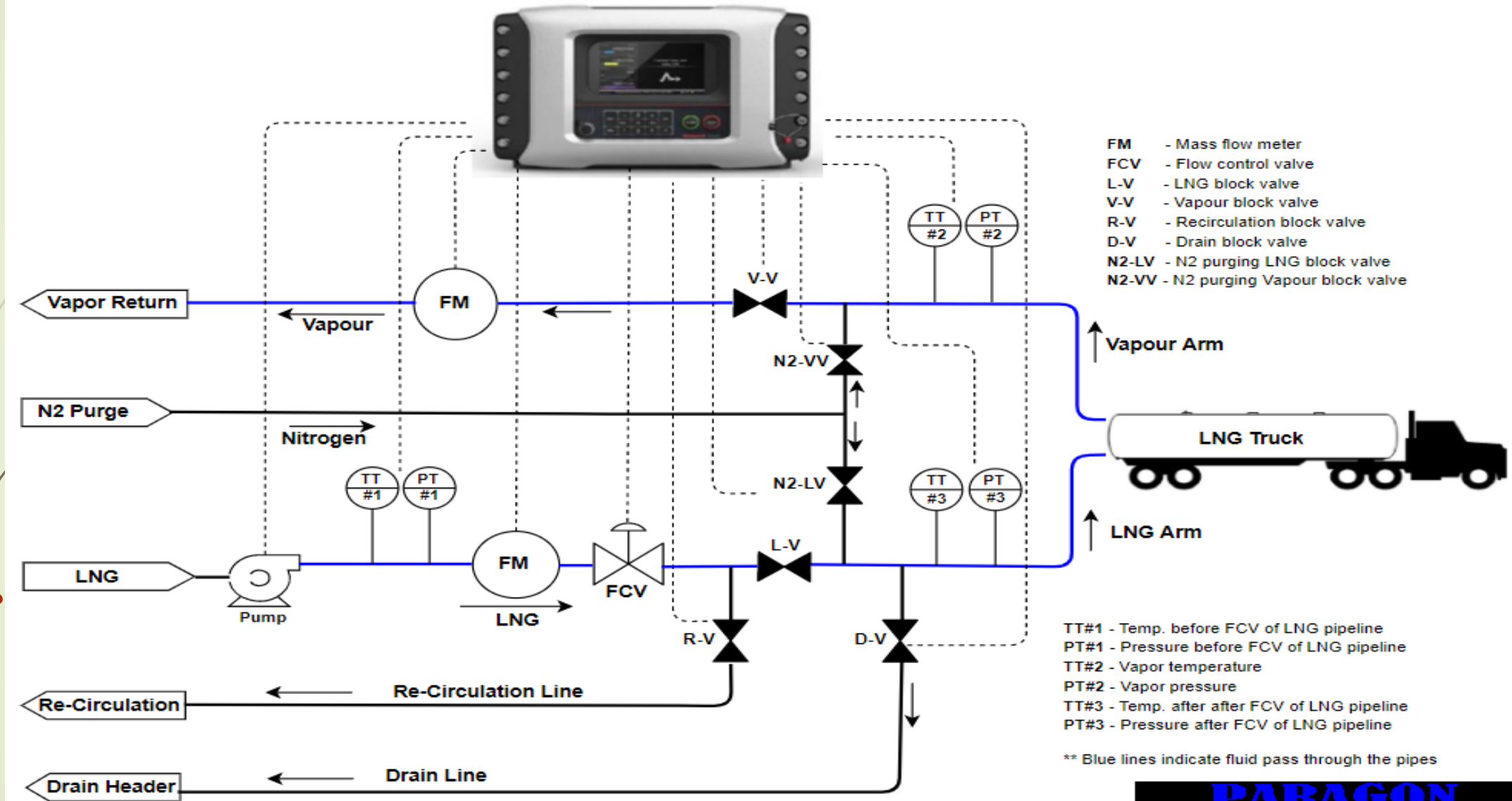
*HZ Axial Flow Pump*

*LK Air Separation Pump*

*LQ LNG Pump*



# Truck Loading Arms





# TURNKEY TRUCK LOADING & UNLOADING TERMINAL





# TURNKEY TRUCK LOADING & UNLOADING TERMINAL





# JETTY LOADING & UNLOADING METERING SYSTEM PROJECT





# TANK TRUCK LOADING TERMINAL





# TANK TRUCK LOADING TERMINAL





# TANK TRUCK LOADING TERMINAL



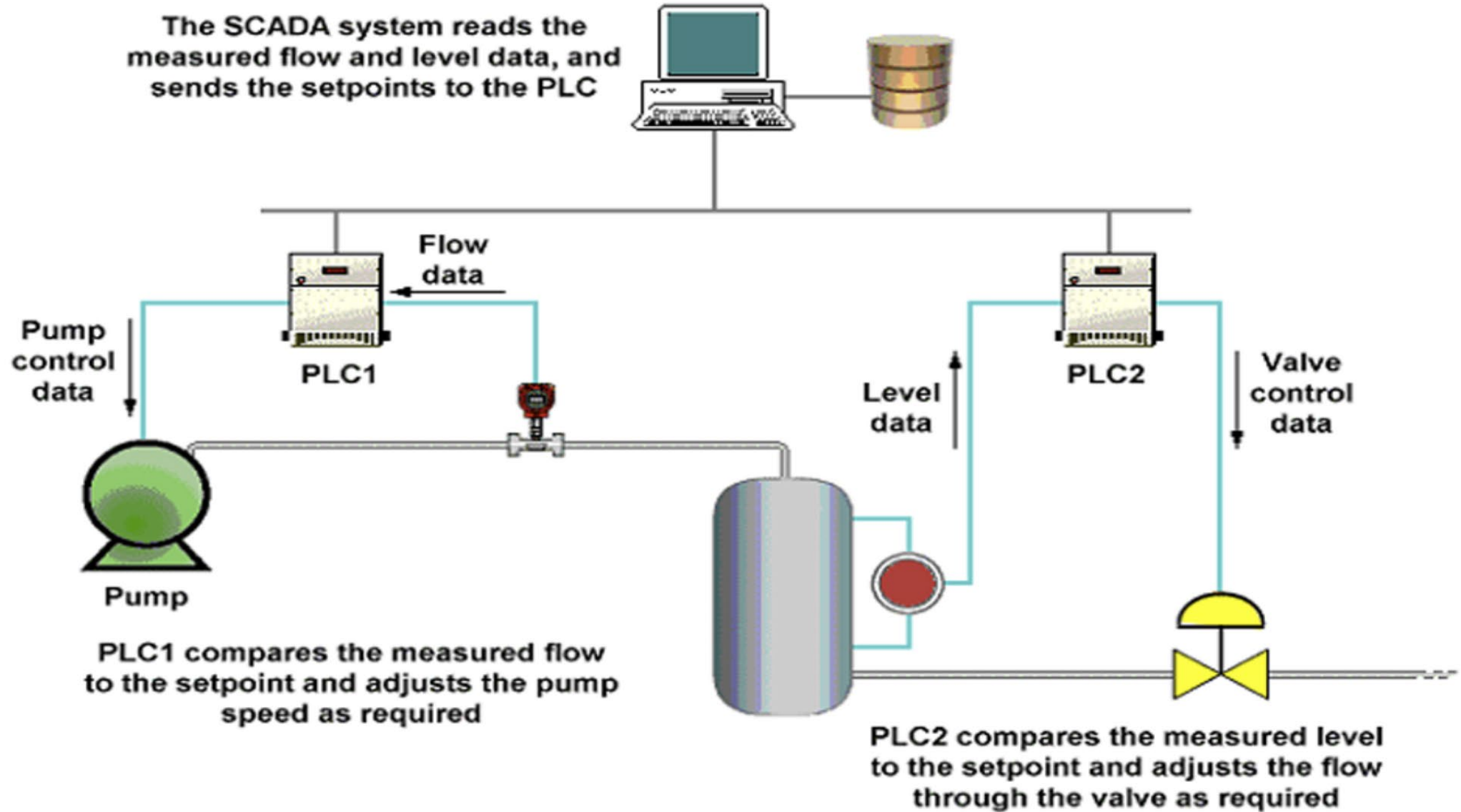
Industry Control Systems

# Top & Bottom Loading Arms

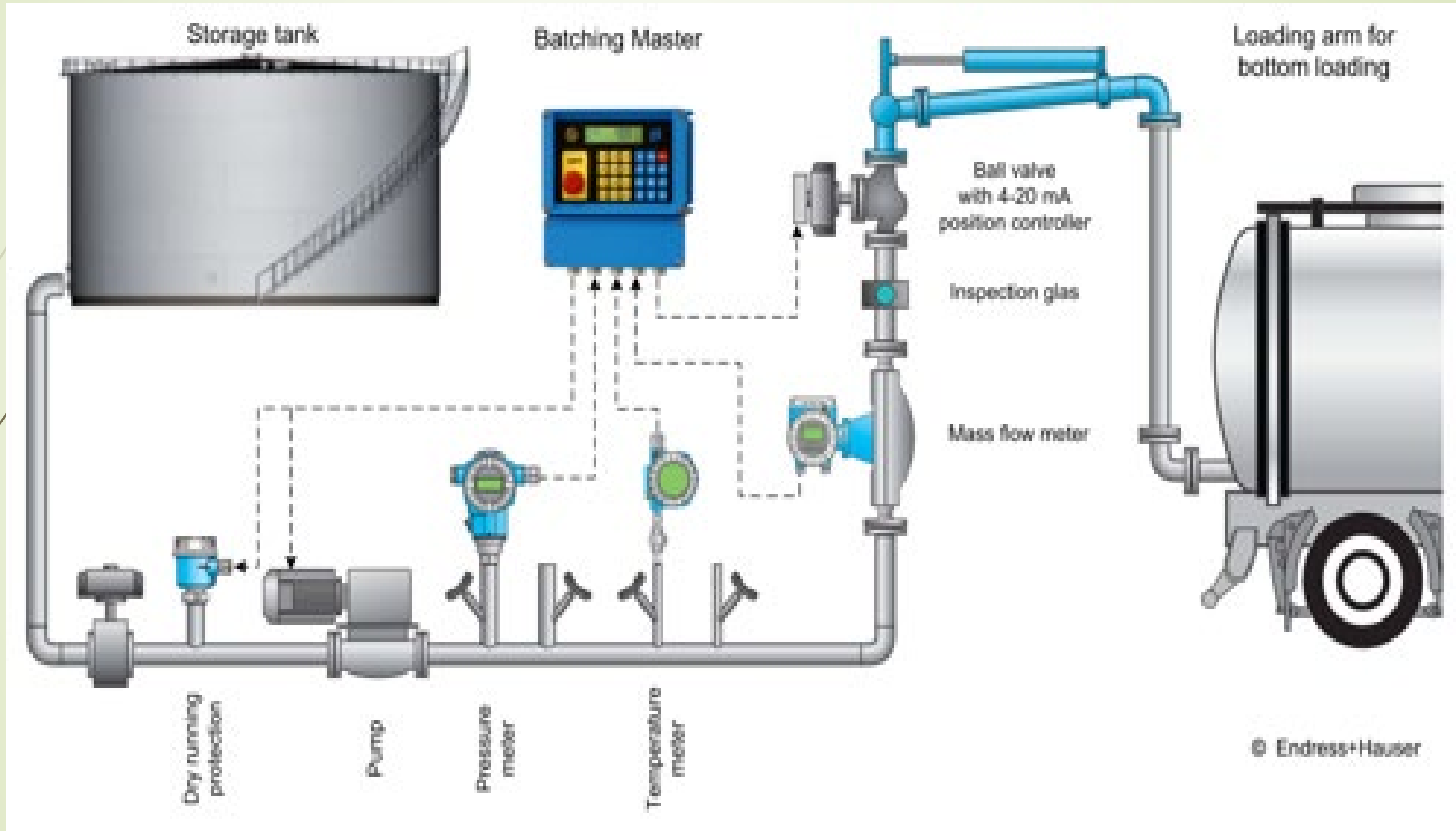




# PLC SYSTEM



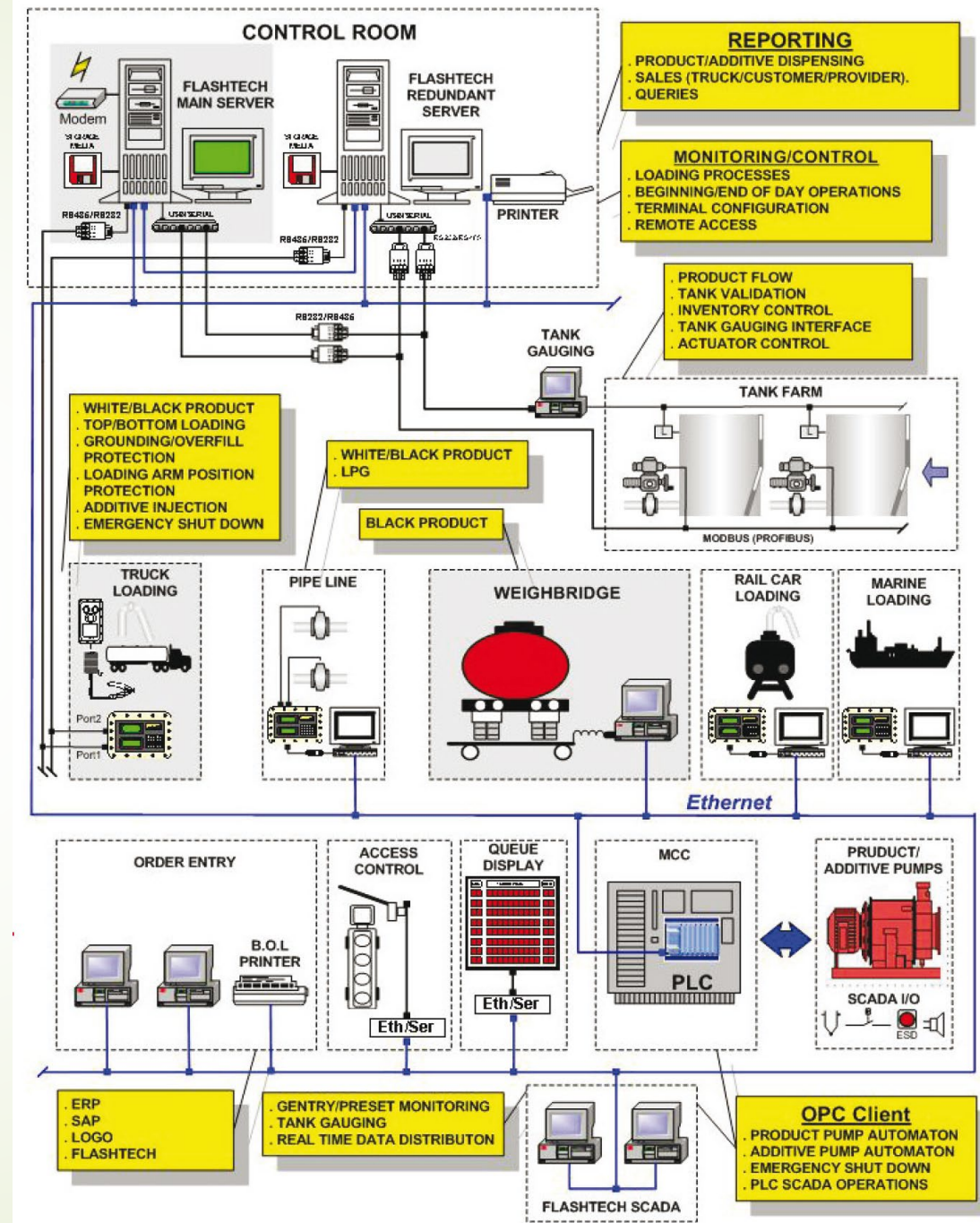
# Typical Truck Loading System



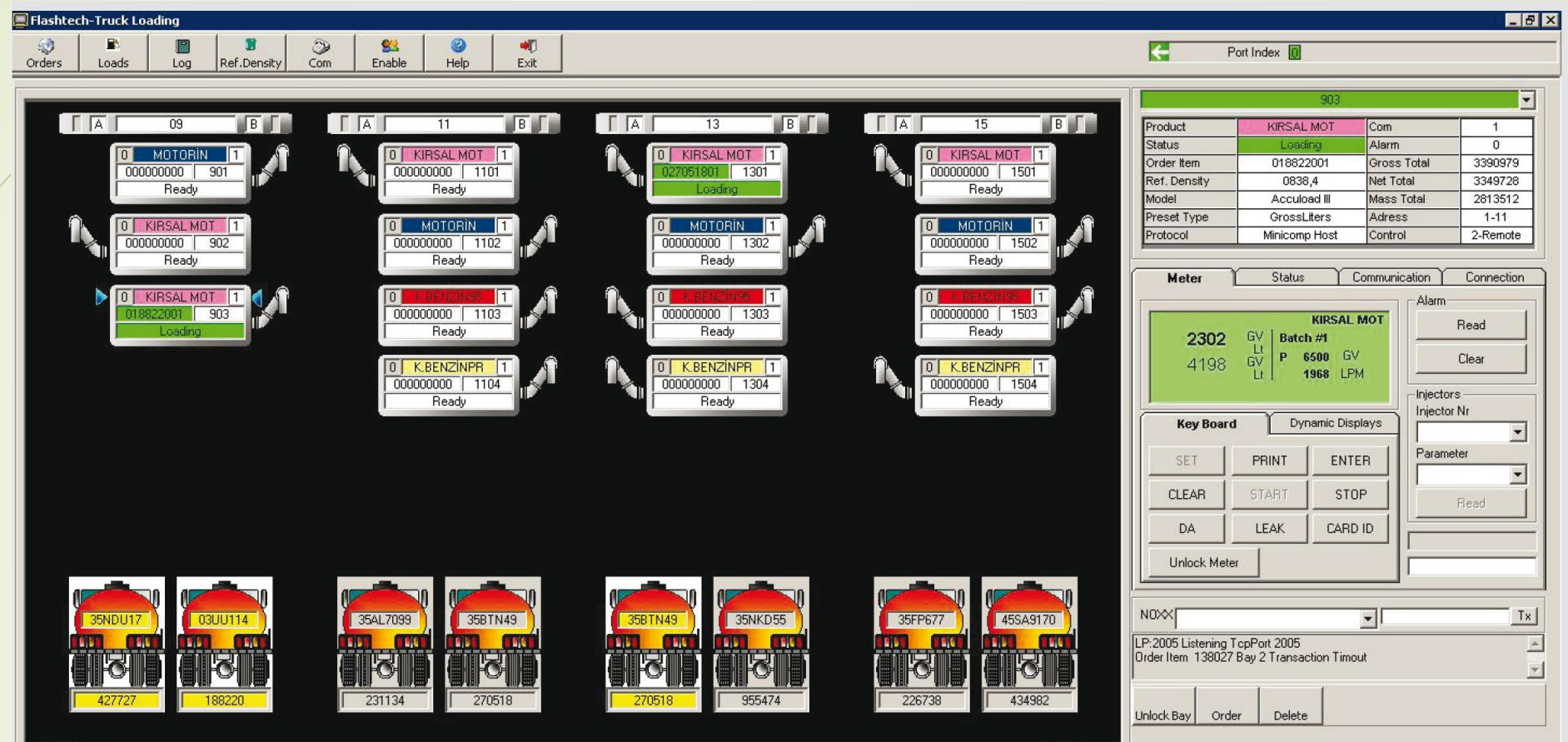


# Terminal Automation System

Terminal Automation Package that controls the flow of information from the loading area to the corporate order/business systems, specifically designed for loading terminals, refineries and petrochemical plants.



# Terminal Automation System



The operator interface allows:

- Monitoring and control of the selected meter position
- Monitoring of device event/alarm status
- Tracing of orders/vehicles for order status and meter status updates



# Terminal Automation System



## Pay & Check System

In custody transfer pipelines, the performance of the fiscal meter needs to be monitored using a second meter.

These pay and check meters need to be calibrated using an in-line proving system.

We use Bidirectional Provers for in-line proving of volumetric meters such as Ultrasonic Meter, PD Meter and Turbine Meter.

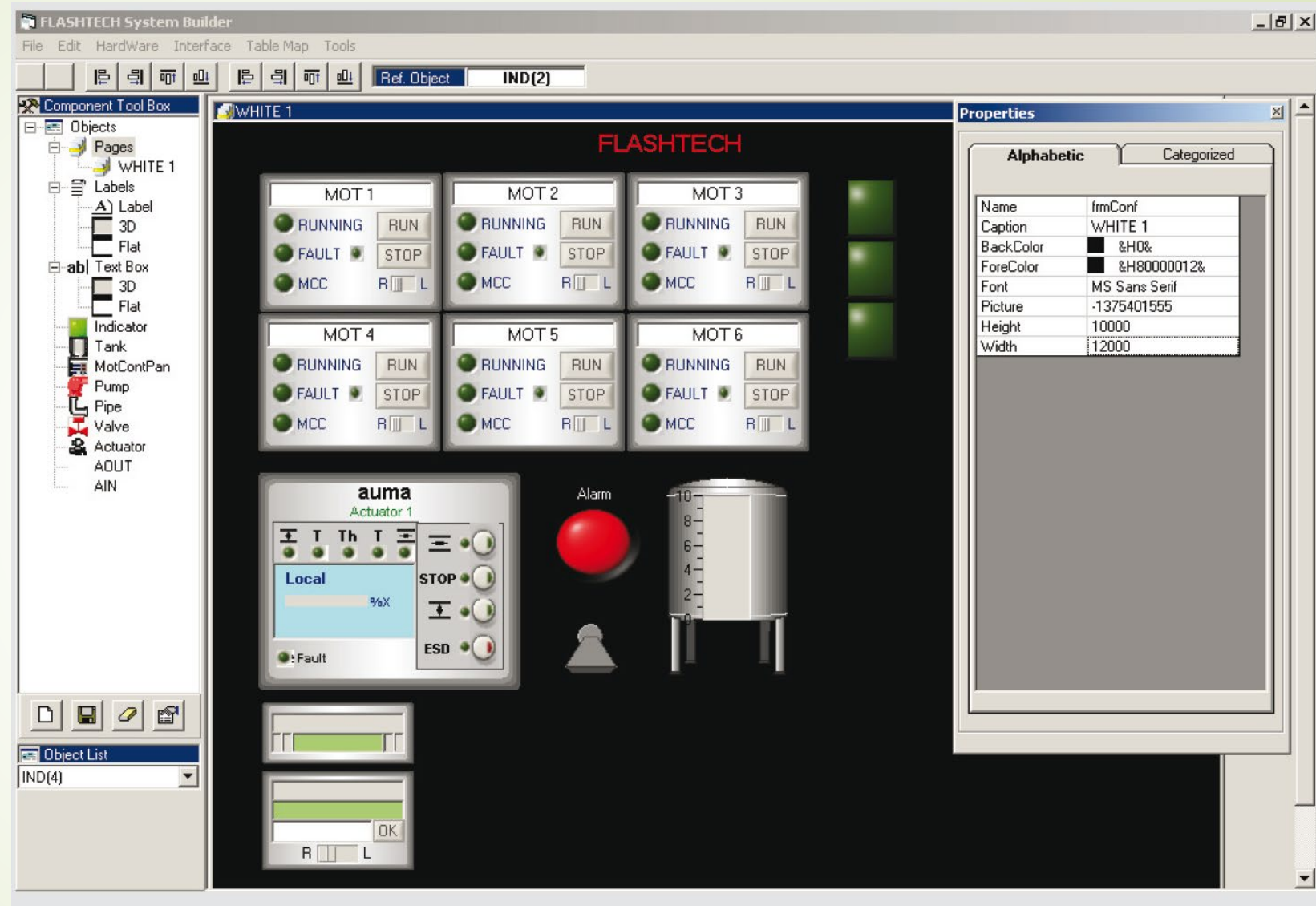


# Terminal Automation System

## ➔ SCADA Builder:

*Together with Accuload III Electronic Preset and powerful OPC interface*

*for the third party PLCs, Flashtech creates a powerful SCADA system.*





# Terminal Automation System

Flashtech-Truck Loading

Orders Loads Log Ref.Density Com Enable Help Exit

Port Index 0

1104			
Product	K.BENZINPR	Com	1
Status	Ready	Alarm	0
Order Item	000000000	Gross Total	49419
Ref. Density	0751,6	Net Total	48722
Model	Accuload III	Mass Total	36875
Preset Type	GrossLiters	Adress	1-15
Protocol	Minicomp Host	Control	2-Remote

Meter Status Communication Connection

K.BENZINPR Ready

Press SET key

Key Board Dynamic Displays

SET PRINT ENTER

CLEAR START STOP

DA LEAK CARD ID

Unlock Meter

Alarm Read Clear

Injectors: Injector Nr

Parameter Read

NOXX Tx

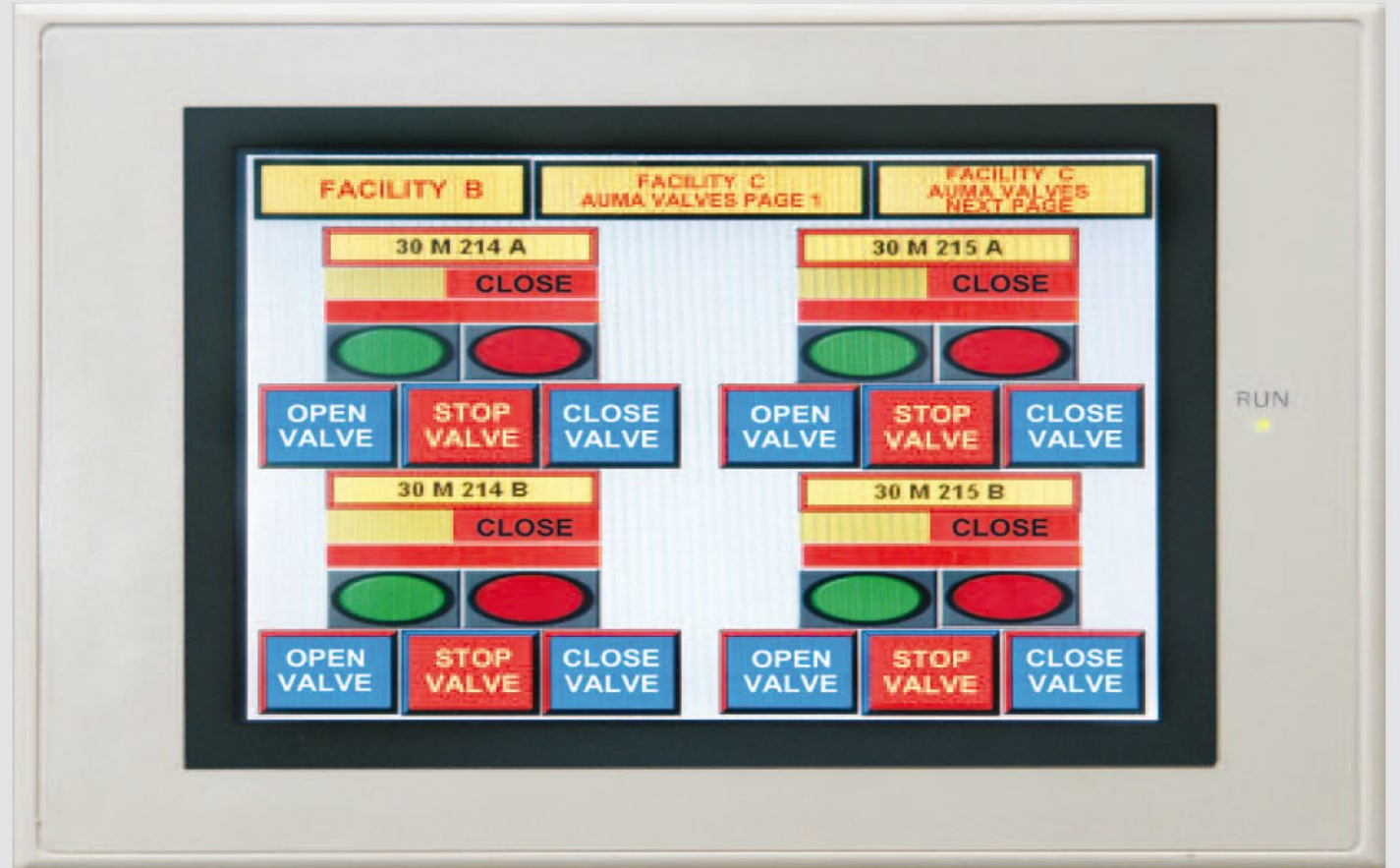
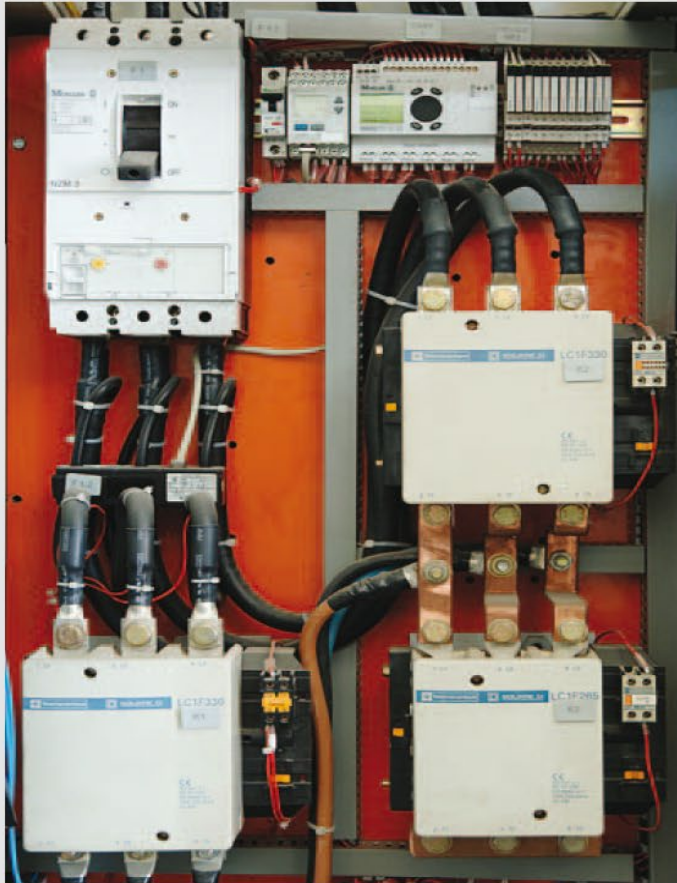
LP:2005 Listening TcpPort 2005

Unlock Bay Order Delete

## Load Rack Automation:

- Compartment based loading
- Load request validation
- Meter-Tank product density cross-checking
- Monitoring of real time data
- Tracing of orders and trucks
- Alarm/Event management

# Terminal Automation System



## Terminal Automation System PUMP CONTROLS

- Variable Frequency Drives (VSD) are used almost in all terminals for cost reduction and best automation practices.
- Product Loading pumps start/stop on flow demand rate basis received from Preset's pump demand outputs.
- On demand rate of one loading arm/bay, PLC calculate discharge flow rate and start one loading pump at the predetermined frequency.
- On increasing load demand, the PLC modulates the VSD until the second product pump will start.
- Pump stop sequence are exactly reverse as the pump start sequence.
- Pump start/stop sequence are done by PLC, calculating running hours.



# Terminal Automation System



## Benefits

- Improved reliability and efficiency
- Security and supervision of loads
- 24 hours operations
- Control and monitoring of loading process
- User configurable terminal operations
- Seamless TAS-SCADA integration
- Expansion capabilities
- Can be used in any language

## Security

- Prevents unauthorized access
- Insure correct product loading
- Order validation
- Driver/Vehicle validation



# Terminal Automation System

## Economy

*Reduced installation and operation cost*

*Reliable, fast and efficient supervision & control through user friendly operator interface*

*Improved product and service quality*

*Improved order management*

*Comprehensive report and document generation*

*Scheduling of vehicles onto site to prevent congestion*

- *Elimination of the need for a database administrator*
- *Control and supervision of terminal operations through single source responsibility*
- *Low cost system upgrades*





# Terminal Automation System



## Expansion Capabilities

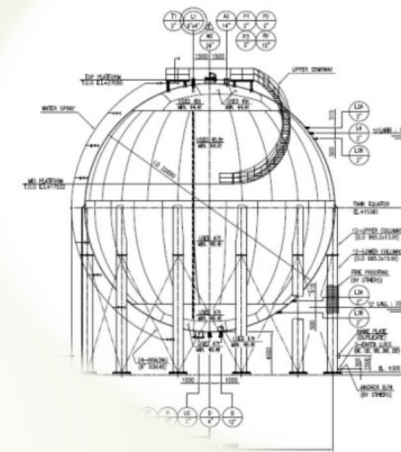
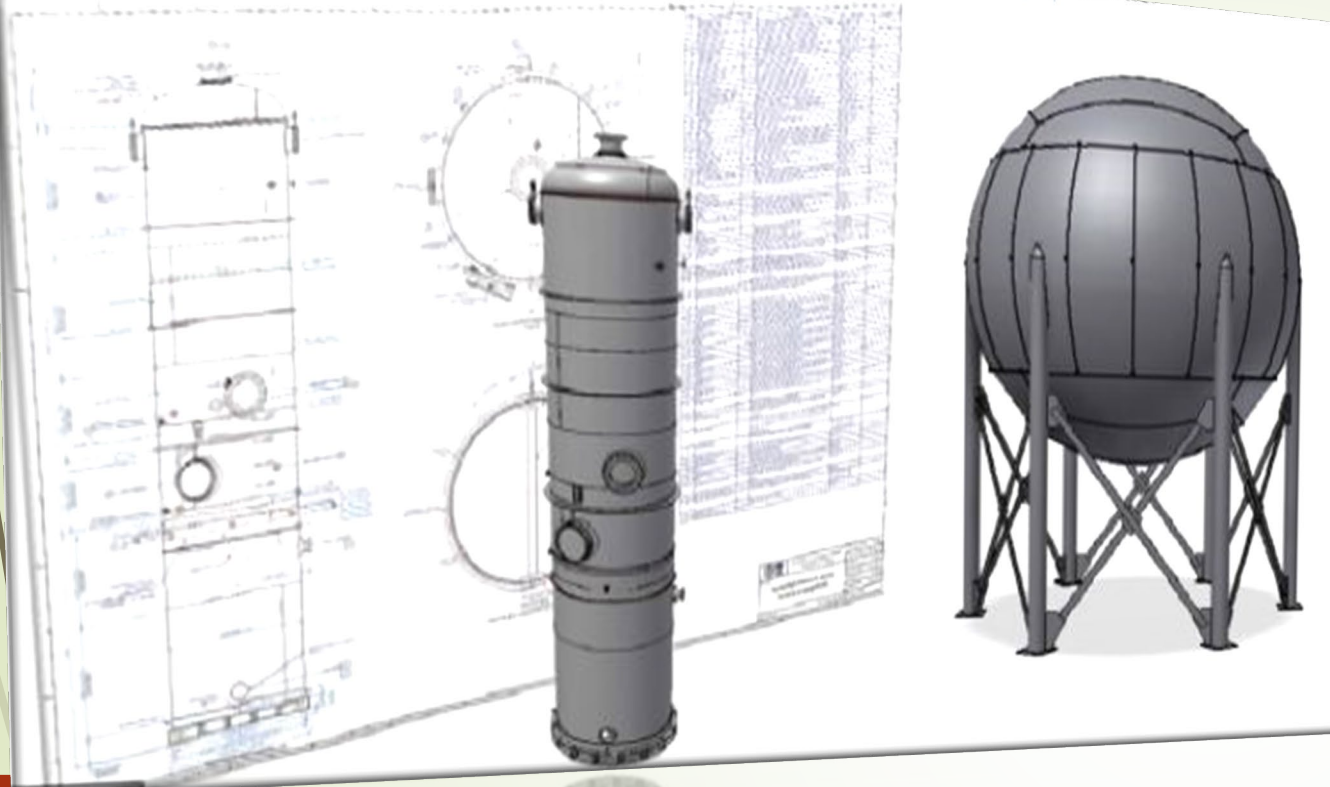
*Tailor made terminal definitions*

- *Unlimited number of load arm support*
- *No additional cost for system expansion*
- *No additional cost for system upgrades*
- *OPC and ActiveX SCADA interface for wide range of PLC and DCS systems*
- *Ready for ethanol, biodiesel, blending and other possible future applications*

## Programming Technology

- *Object oriented event driven programming*
- *OLEDB Provider for Data Base access*
- *IP addressing for LAN & WAN data transfer*
- *ERP, SRP, SAP and custom host interface*
- *Wide range of real time and historical data retrieval*
- *Flexible reporting*
- ☐ ☐ *Elimination of the need for a database administrator*

# Storage Tank Design

[illegible]

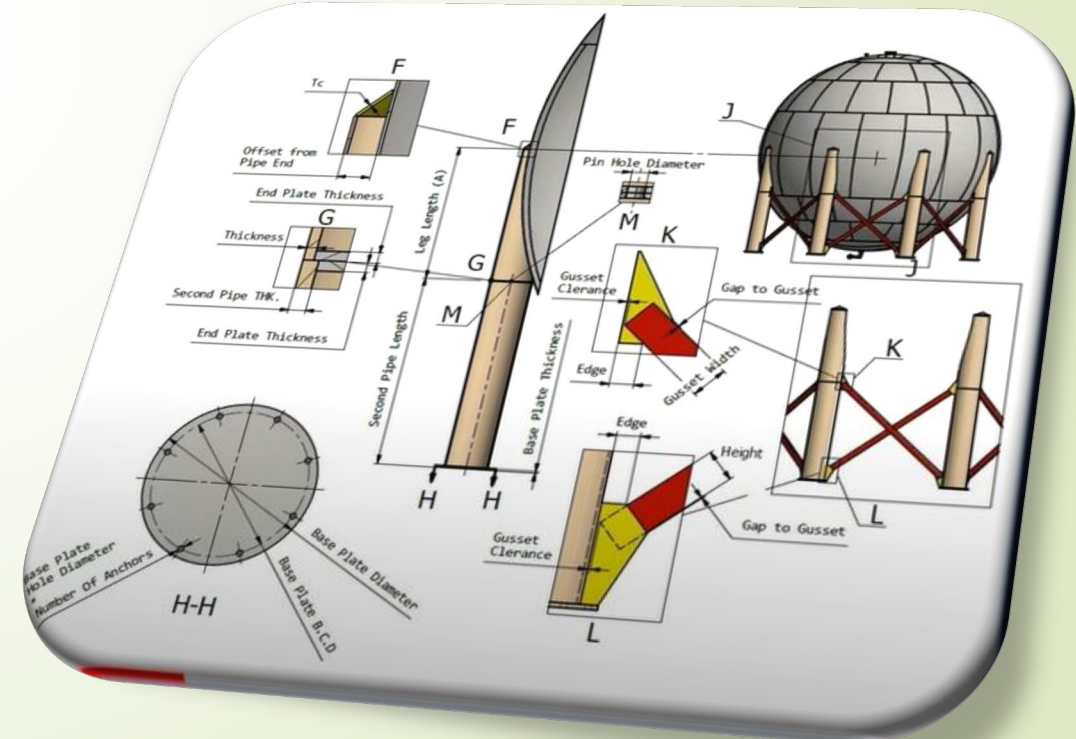
GENERAL NOTES

1. ALL DIMENSIONS ARE IN MM UNLESS OTHERWISE NOTED
2. BOLT HOLES FOR NUTS SHALL BE DRILLED TO NORMAL COVERAGE.  
( Ø 107 - 107-137 )
3. GASKET : SPINAL WOUND
  - INNER RING : 316 S.S
  - FILLER : GRAPHITE
  - HOOP : 316 S.S
  - OUTER RING : S.S

[illegible]

NOZZLE FORCE & MOMENT				
NOZZLE NO.	NO.	AL 40 (147)	B (147)	C (147)
Force & Moment	kgf	2000	2143	
Force & Moment (kgf)	kgf	2000	2143	
Force & Moment (kgf)	kgf	2000	2143	
Force & Moment (kgf)	kgf	2000	2143	

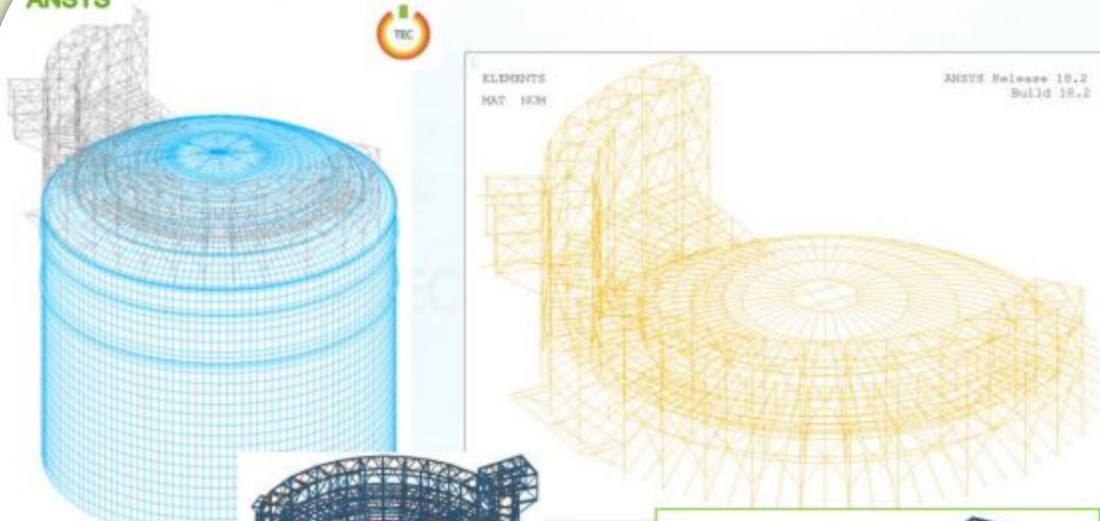
ASME		CODE STAMPED STAMP (U.S.)	
▲			
▲			
▲			
▲			
▲			
▲			
▲			
Date	Date	Description	Stamp 18
<input type="checkbox"/> D1 APPROVED			
<input type="checkbox"/> D2 APPROVED WITH COMMENTS			
<input type="checkbox"/> D3 NOT APPROVED			
<input type="checkbox"/> D4 FOR INFORMATION			
<p>We warrant not to reduce the scope of the responsibility of the Engineer solely by this specification without your prior written agreement.</p> <p>Date:                      SIGNED                      RECD</p>			
<p>CLIENT _____</p>			
<p>PROJECT _____</p>			
<p>CONTRACTOR _____</p>			



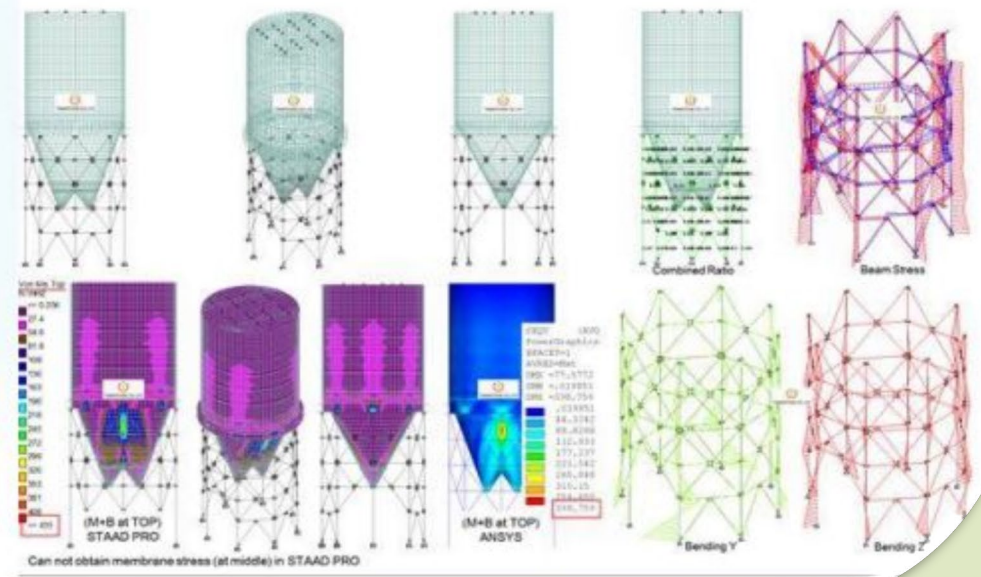
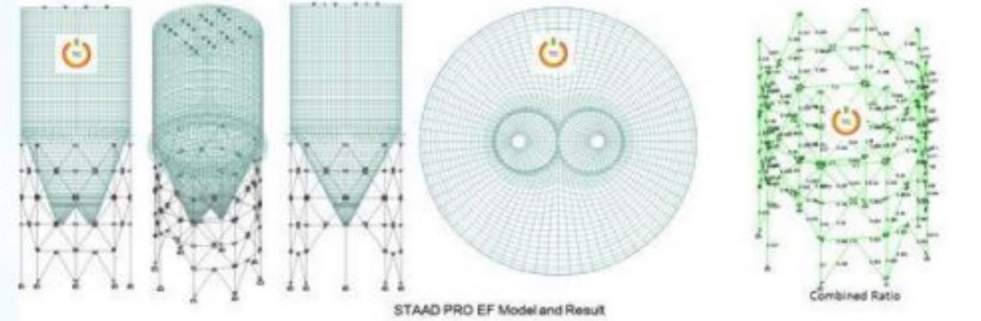
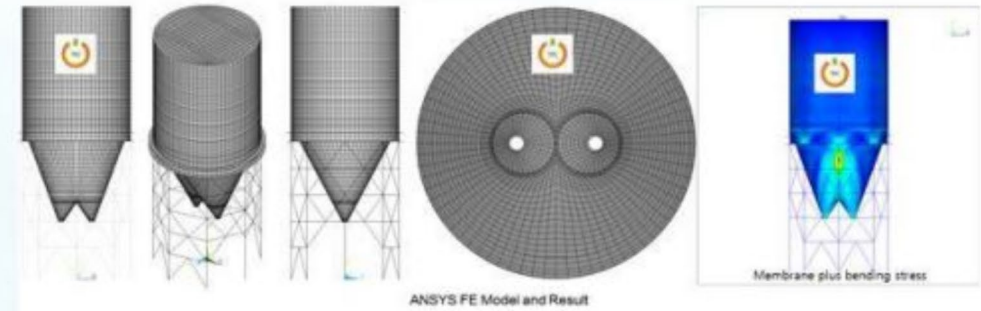
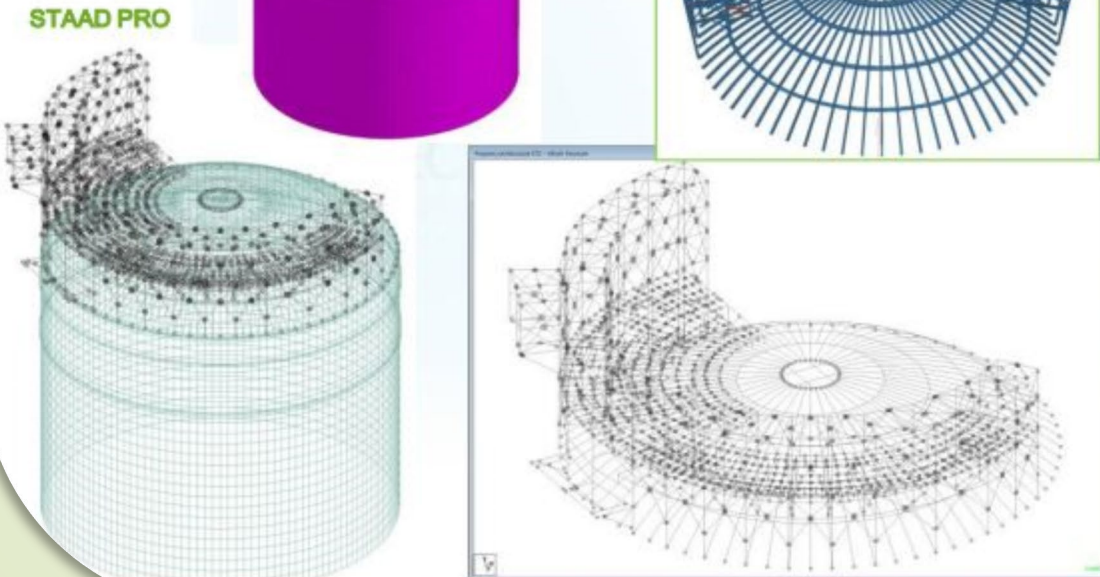


# :: ANSYS and STAAD PRO Combination ::

ANSYS



STAAD PRO







What We Do Today

# STORAGE TANKS

**Storage tanks are designed and constructed according to API 620 (low pressure) and API 650 (atmospheric). Other international norms may also be taken into account. The capacity of conical roof, dished and floating roof tanks reaches up to 1,000,000 barrels.**





What We Do Today

## *ALUMINIUM GEODESIC DOME ROOF*

**Aluminium (more specifically an aluminium alloy) is one of the world's most commonly used metals. Its lightness coupled with its strength, and excellent corrosion resistance are the main reasons for it being used in the design of the aluminium geodesic dome roof and this non corrosive property means that the aluminium geodesic dome roof can be used on tanks used to store most products.**



What We Do Today

## *INTERNAL FLOATING ROOF FABRICATION*

**Aluminium (more specifically an aluminium alloy) is one of the world's most commonly used metals. Its lightness coupled with its strength, and excellent corrosion resistance are the main reasons for it being used in the design of the aluminium geodesic dome roof and this non corrosive property means that the aluminium geodesic dome roof can be used on tanks used to store most products.**





What We Do Today

# FLOATING ROOF STORAGE TANK SEALS

We can adapt any seal design to suit your particular roof configuration. In particular if you have tanks that suffer from tank shell distortion we can tailor make a sealing system that will provide an effective sealing solution. We offer the following types of tank seal

## *Double seal*

The most cost effective tank seal, can also be offered as a complete installation with an integral foam dam.

## *Mechanical seal*

Suitable for tanks without appreciable tank shell distortion or where the product stored is particularly aggressive.

## *Liquid seal*

Suitable for all tanks but particularly where tank shell distortion is present.

## *Foam seal*

Used either as vapour mounted (not in contact with the stored product) or liquid/product mounted.

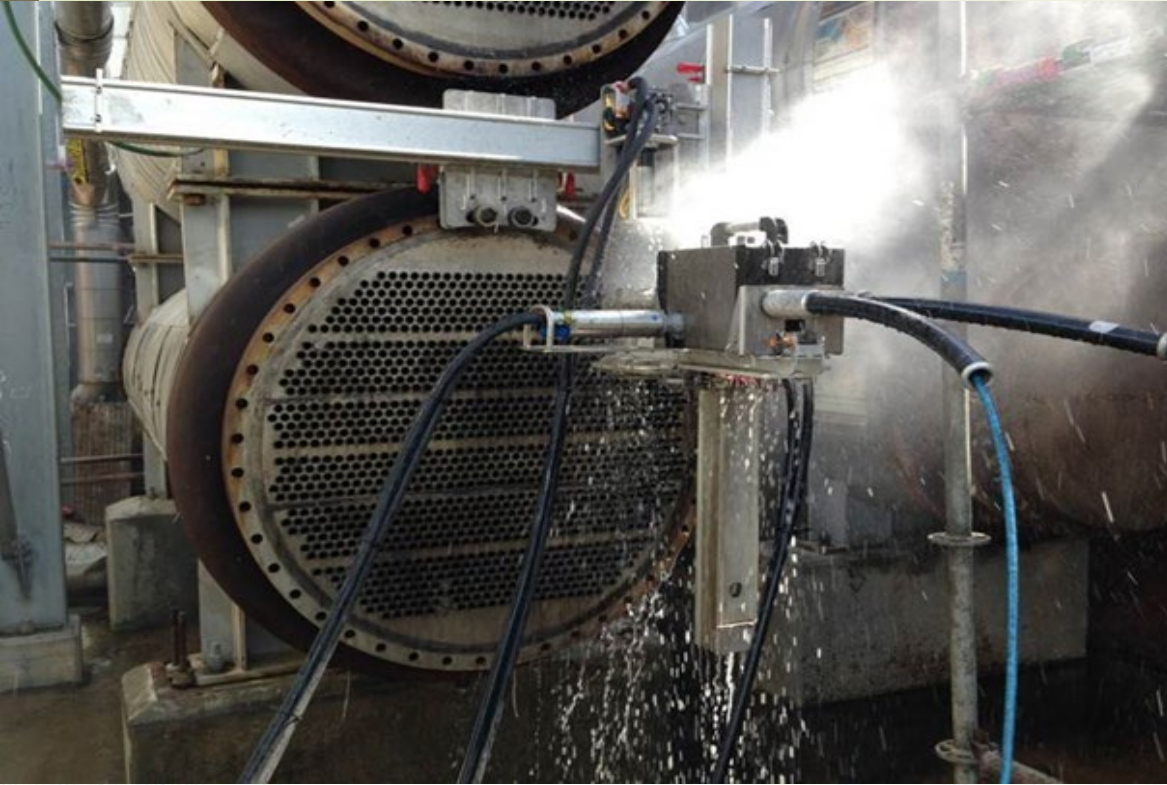
## *Secondary seal*

Can be retro fitted to existing floating roof tanks.

# HEAT EXCHANGER MAINTENANCE

Product or chemical deposits on heat-transfer surfaces weaken an exchanger's heat-transfer capacity and must be cleaned away regularly to maintain high performance and prevent disruption of processing. Heat exchanger fouling, or the unwanted accumulation of deposits on heat-transfer surfaces, can result in several costs

- Production loss from shutdowns
- Maintenance costs for removal of heavy fouling deposits
- Replacement of plugged equipment





# HEAT EXCHANGER FABRICATION

Floating head, fixed mirror, U-tube etc. All types of heat exchangers (vertical or horizontal, including condensers, evaporators, suction heaters, vacuum system condensers, etc.) are manufactured by us. Heat Exchangers ASME Sec. VIII Div.1 and Div.2 are designed and manufactured in accordance with AD 2000-Merkblatt, EN 13445 or any other code requested by the customer, TEMA Class R, C or B standard. It is made of complete carbon heat exchangers material. can be manufactured.







What We Do Today

## LOADING ARM FABRICATION

**Our range of truck loading arms are known globally as one of the highest quality available on the market. We are world renowned for our design, manufacture, installation and service of well-proven fluid handling equipment for petroleum, gas, chemical and food applications**



What We Do Today

# LOADING PLATFORM FABRICATION

*Truck Loading Platforms to fit your tank truck loading, unloading, inspection, and sampling applications. Our loading rack designs provide your operators with a convenient, safe, and durable solution.*



# LOADING PLATFORM STAIRS FABRICATION

**Safety till the last step**

**A folding stair is the last step before finishing a loading arm project and PARAGON manufactures many types of them: with or without safety cage and with 3, 4 or 5 steps.**

**We also produce structures made with structural tubes on foundations, stairs to access platforms, operator canopies and arms' anchoring.**







What We Do Today

# PIPE RACK MODULE FABRICATION

**At PARAGON, safe working conditions, proper angle welds, and controlled plant environments are among our highest priorities as we work to provide our clients with the highest quality systems.**

**Our state-of-the-art plant guarantees higher quality industrial piping systems in less time. All pre-fabricated piping applications are integrated at our state of the art fabrication facility with pumps, valves, sensors and most other process system components before shipment.**

**PARAGON guarantees proper fit-up and integration with our industrial piping systems.**





What We Do Today

# *FIRE PROTECTION SYSTEMS*

**Paragon Engineering provides National (Regulation on Fire Protection of Buildings) and International (NFPA, FM, UL, EN, VDS, LPCB, GOST, RINA... etc.) in line with accepted standards, offers the most appropriate solutions with its expert technical staff.**





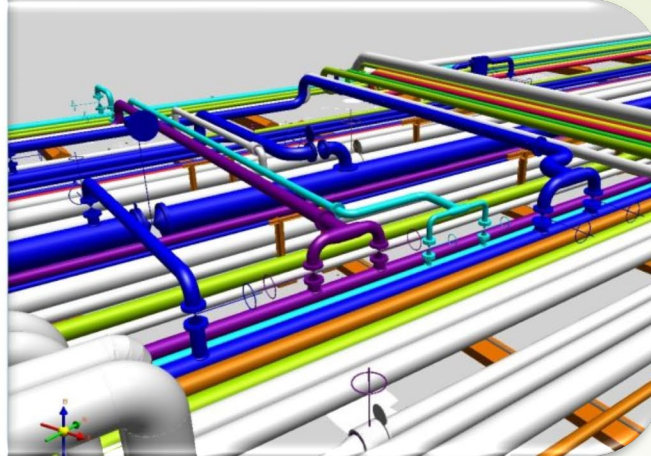
What We Do Today

# VESSEL FABRICATION

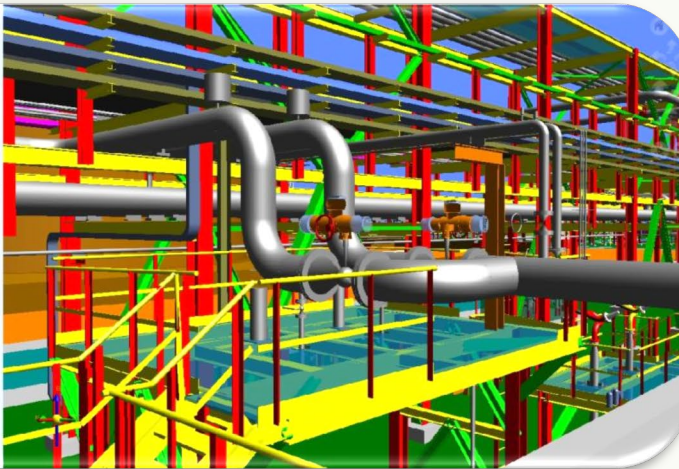
In order to meet the demands of the developing technology and ship industry sector, we have developed the machinery park and we are producing in a quality manner at international standards with our expert staff. Our company, which is involved in the leading projects of the world, keeps customer satisfaction at the highest level by making quality controls at every stage of the work.

We manufacture all kinds of tanks and pressure vessels, Slop Tank Manufacturing, Norwegian deck tanks, Fuel Tanks.

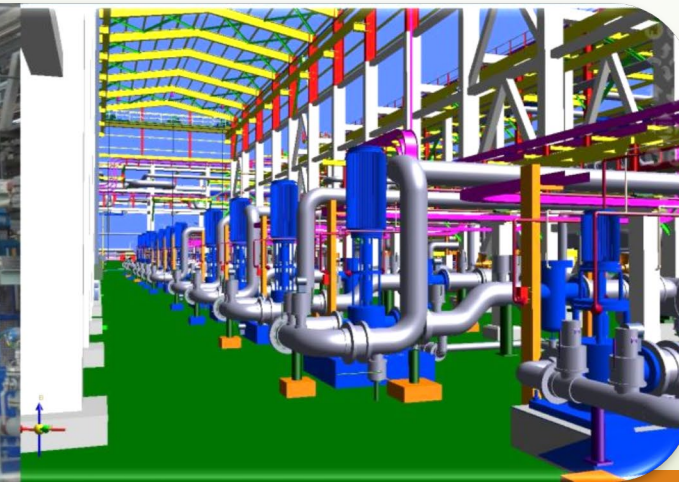




## *PROJECT AND SITE WORKS*



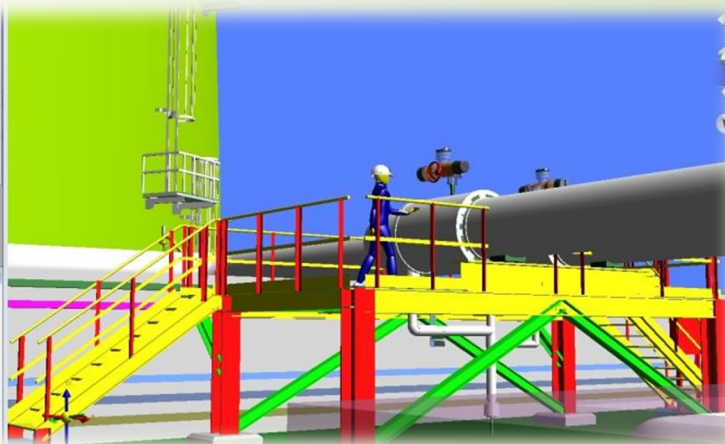
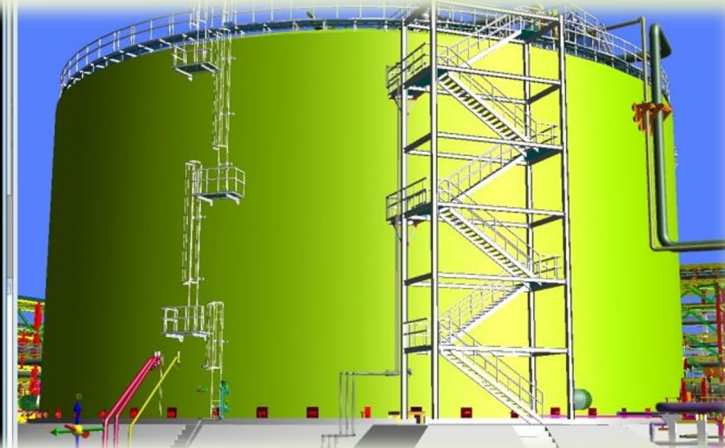
**We are building the future.**



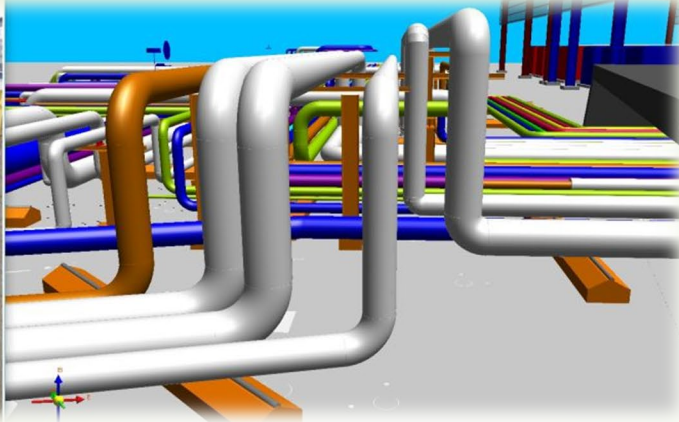
*Imagine, design, realize....*



# PROJECT AND SITE WORKS







**PROJE VE  
SAHA ÇALIŞMALARI**

*PROJECT AND  
SITE WORKS*



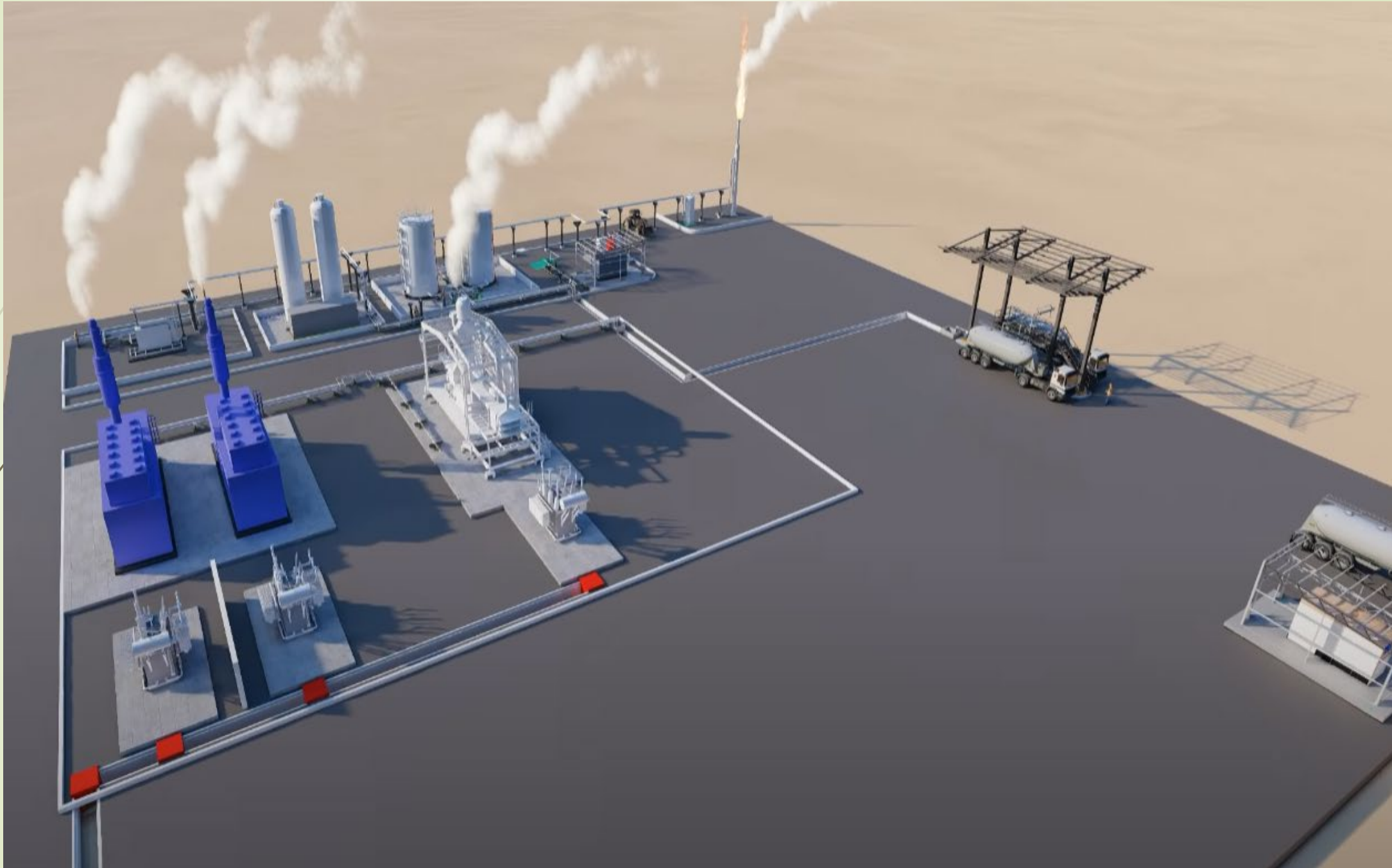
**...projeden, uygulamaya..**

*...from project to application*

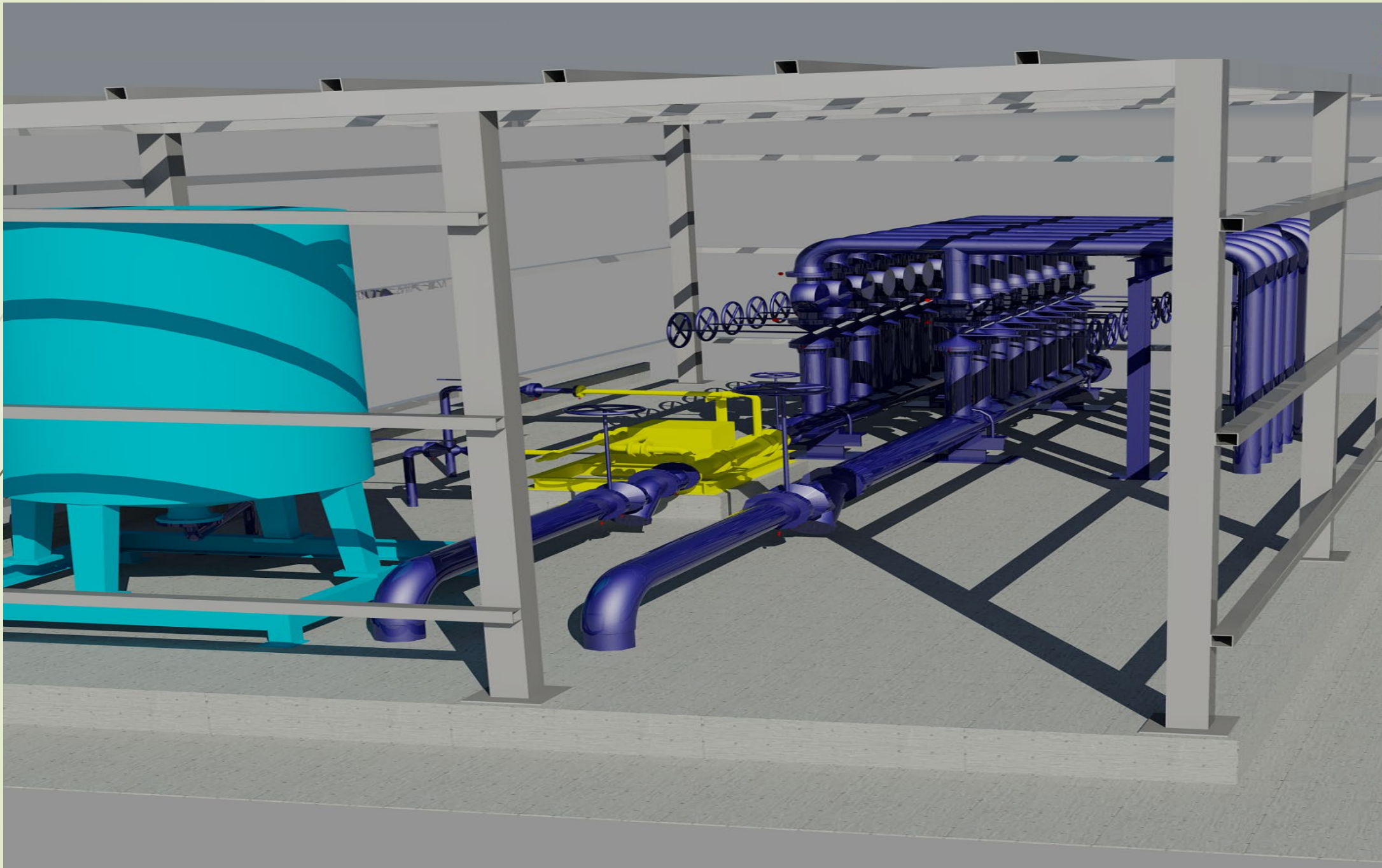




# NATURAL GAS CYCLE POWER PLANT

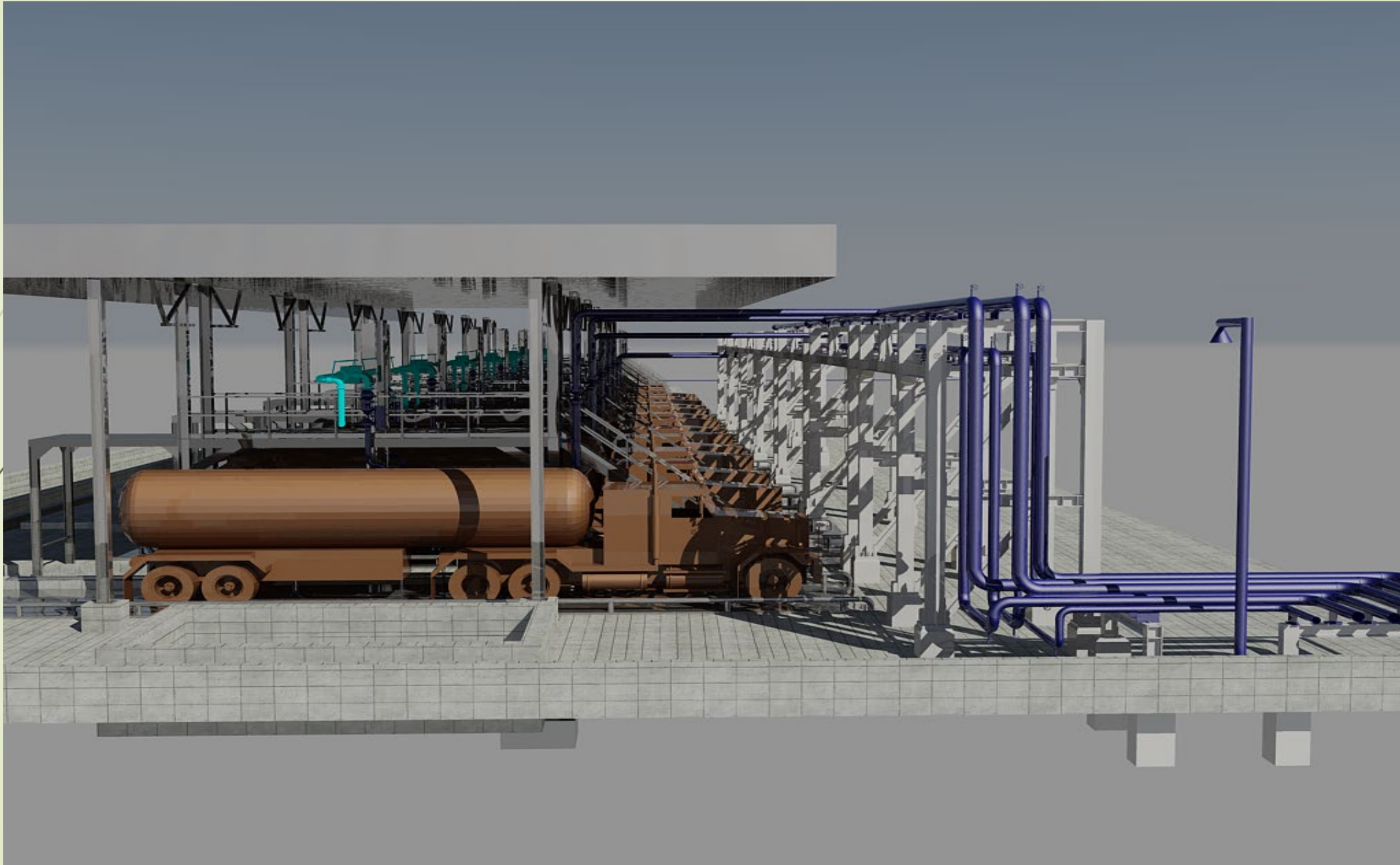


# FIRE FOAM STATION

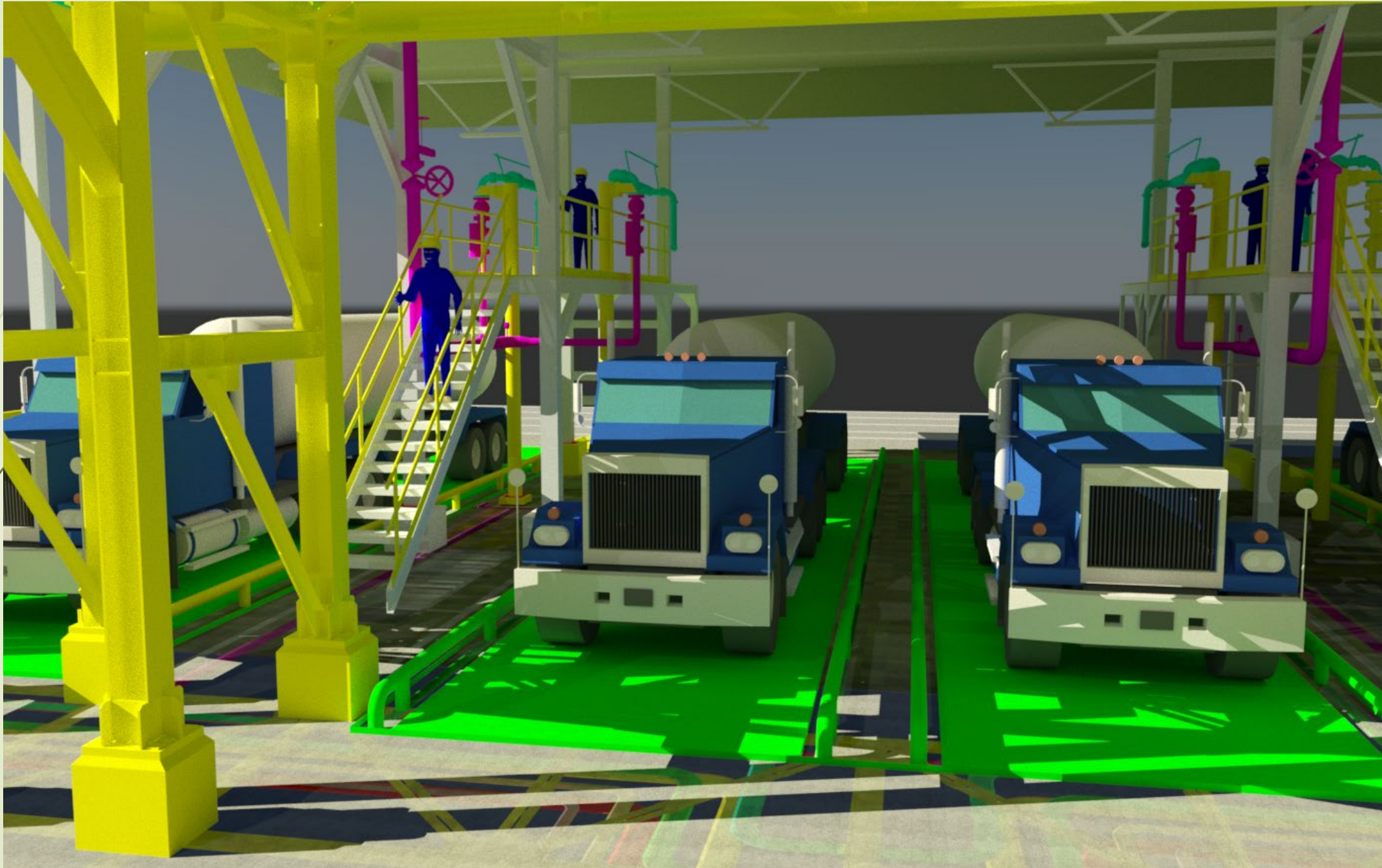




# TRUCK LOADING UNIT

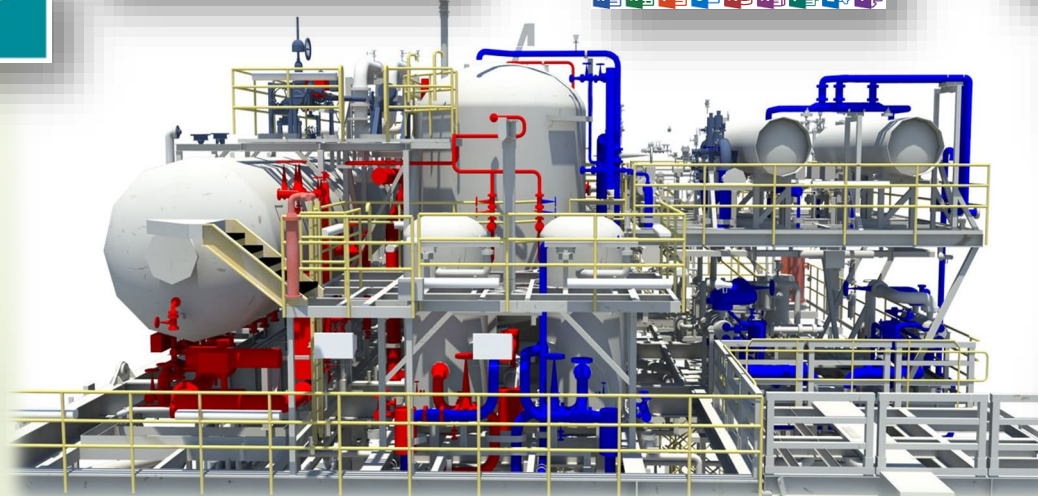


# TRUCK LOADING UNIT





## USED PROGRAMS





- GAP MAH. TURGUT .ZAL BUL.  
GOLDEN PLAZA NO: 52 IC KAPI  
NO: 223 MERKEZ / BATMAN



- +90 532 602 86 72



- [info@mirendustri.com.tr](mailto:info@mirendustri.com.tr)
- [m.tamar@mirendustri.com.tr](mailto:m.tamar@mirendustri.com.tr)



[www. mirendustri.com.tr](http://www.mirendustri.com.tr)

