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PETRO PALA MEHVAR

Engineering Company



Profile

Main Services

- Basic and Detail Design of Oil & Gas, Petrochemical, Power plant and Industrial projects
- Hazard and Operability Analysis (HAZOP)
- Reverse Engineering, As-built via 3D Laser Scanning

2016

WELCOME MESSAGE

Nowadays by increasing the oil, gas, petrochemical and power plant construction projects in Iran, one of the most important priorities in reconstruction programs of the government and also the most highlighted goal for the society of engineers and represented employers, is developing the centers, training and providing specialist and skilled staffs for maintaining, engineering, purchasing and also running out these projects in the country.

Petropalamehvar Company is arranged and organized by high qualified engineers and specialists with the best academic degrees and fine experiences in designing many of the huge oil, gas, petrochemical and power plant projects. As the result of this hard work plan our company is ready to receive various projects in any field and present the process to our respectful and honorable employers with the highest qualification as soon as possible.

Satisfaction of our employers is the first and main concern of us .we are going to achieve this major goal by using the best specialists, compliance codes and international standards. Also complying with full schedule and the highest quality in engineering services.

Petropalamehvar managers believe, the conclusion of the above principles by appropriate prices will satisfy and confide our employers in us.



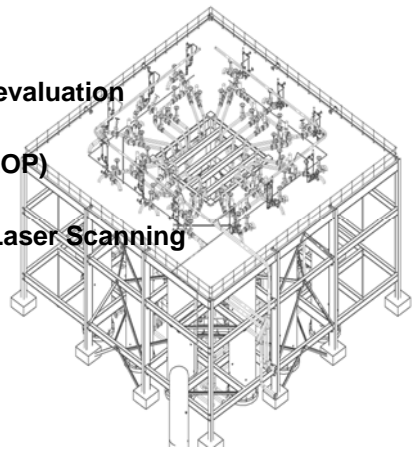
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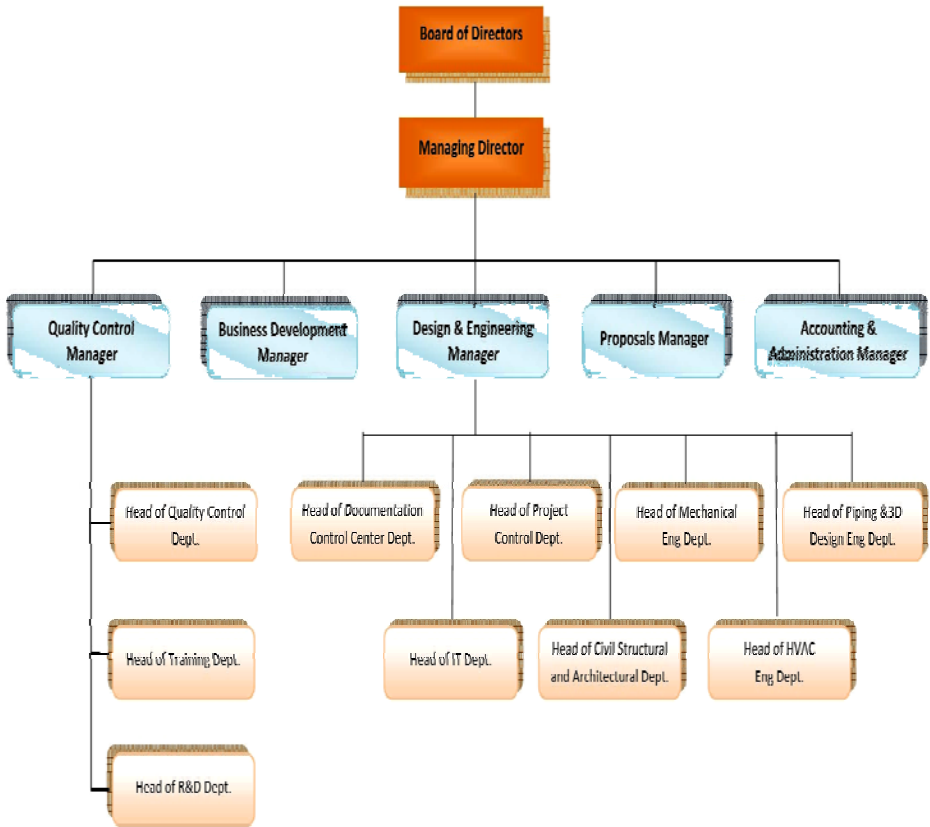


PPM Co. offers the following Services:

- **Feasibility Studies and basic design of Oil & gas, petrochemical, power plant, industrial and non-industrial projects**
- **Basic and Detailed design piping systems**
- **Standard and special pipe supports design**
- **Piping stress analysis**
- **Basic and Detailed design of fixed and rotary equipment**
- **Basic and Detailed design of HVAC and plumbing systems in residential, commercial, public and industrial buildings**
- **Basic and Detailed design of Mechanical infra-structural systems**
- **Basic and Detailed design of Architecture, civil & structure**
- **Procurement services**
- **Vendors technical & Commercial bid evaluation**
- **Hazard and Operability Analysis (HAZOP)**
- **Reverse Engineering As-built via 3D Laser Scanning**



 ORGANIZATION
CHART



MAIN PROJECTS

References

No.	Project Title	Owner
1	Cyclohexane petrochemical complex in Bandar Imam Khomeini	KEI and MAN Co.
2	Sarcheshmeh copper production complex, Sulfuric acid waste water collection and handling system	Sasad Co.
3	Zamzam-II mineral complex crystal and reformer units	Fanavar Co.
4	Damavand power plant auxiliary boilers	Packman Co.
5	Yazd power plant auxiliary boilers	Packman Co.
6	Khoy power plant auxiliary boilers	Packman Co.
7	Chahar Mahal power plant auxiliary boilers	Packman Co.
8	Tehran refinery IPSORB unit Detail Design	Chagalesh Consultant Co.
9	Mobin petrochemical plant water treatment unit in Asalouye	Dezon Co.
10	Kermanshah new oil storage plant	Enerchimi Engineering Co.
11	Niyam-III combined cycle Power Plant (Based on Heller type cooling system)	Emdad Sanat Engineering Company / Mapna Boiler Co.
12	Niyam-III combined cycle Power Plant (Based on ACC type cooling system)	Emdad Sanat Engineering Company / Mapna Boiler Co.

MAIN PROJECTS

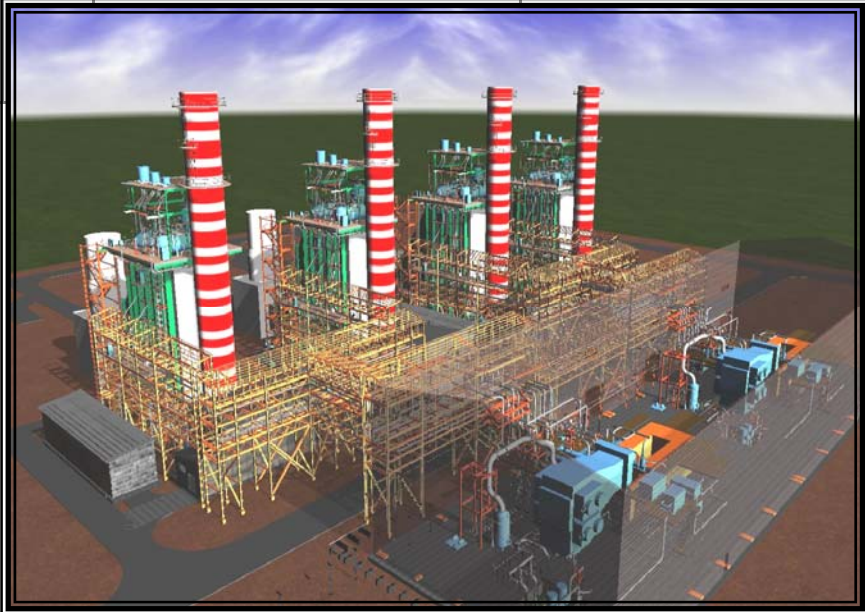
References

No.	Project Title	Owner
13	Paresar combined cycle Power Plant (Based on once through cooling system)	Emdad Sanat Engineering Company / Mapna Boiler Co.
14	Niyam combined cycle Power Plant overall 3d-modeling integration	Monenco Iran Consulting Engineers
15	Fajr-II petrochemical plant water treatment unit in Mahshahr	Enerchimi Engineering Co.
16	Songoon copper production complex	Bidec Engineering Co.
17	MDF decorative & impregnated paper factory in Mahmood Abad	Aria Choob Shomal Co.
18	PDMS 3d-Modeling of 15,000 Sheets Shop Spool Drawings of Tehran Refinery	Afrand Rasa Tehran Co. (ARTEC)
19	Piping Detail design sulfur recovery unit (SRU) of Persian gulf star refinery in Bandar Abbas	Nardis Energy Co.
20	Commercial kitchen of Hormozgan cement plant in Bandar Khamir	Hormozgan Cement Co.
21	Oil export terminal Fire Fighting system (water & foam) in Kharg island Detail design	Monenco Iran Consulting Engineers
22	Aboozar & Norouz Oil Field PDMS As-built 3D Modeling based on the extracted points cloud from Laser scan cam.	Monenco Iran Consulting Engineers

MAIN PROJECTS

References

No.	Project Title	Owner
23	Bahregansar, Hendijan, Nasr & Eilam Oil Field PDMS As-built 3D Modeling based on the extracted points cloud from Laser scan camera	Monenco Iran Consulting Engineers
24	Central processing facilities (CPF) of AZAR oil field Piping detail design & PDMS 3D-Modeling	Enerchimi Engineering Co.
25	Shahid Rasouli Petrochemical Plant Purification unit detail design	Monenco Iran Consulting Engineers



List of the Main Software used to perform engineering projects:

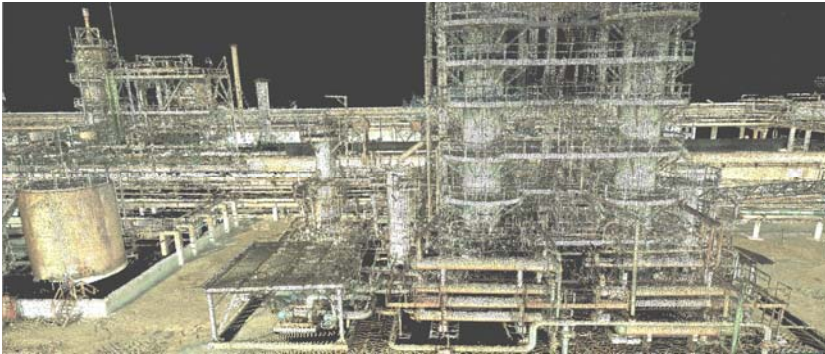
No.	Software Title	Software Usage	Engineering Dep.
1	PDMS	Three-Dimensional Modeling	Piping
2	AUTOPLANT	Three-Dimensional Modeling	Piping
3	Caesar II	Stress Analysis of Piping Networks	Piping
4	Pipeplus	Stress Analysis of Piping Networks	Piping
5	CYCLONE	3D Laser Scanning	Piping
6	PHA-PRO	HAZOP Study	Process
7	Carrier E20-II	Heating and Cooling Load Cal-	HVAC
8	Pipenet	Network Design	HVAC
9	Solid Works	Mechanical Modeling	Mechanical
10	PV-ELIT	Mechanical Calculation	Mechanical
11	SAP-2000	Structural Calculation	Civil & Structure
12	ETABS	Structural Calculation	Civil & Structure
13	SAFE	Foundation Calculation	Civil & Structure
14	3D-MAX	Three Dimensional Modeling	Architecture
15	VRAY	Rendering	Architecture
16	PHOTO SHOP	Graphical Design	Architecture
17	AUTOCAD	General Drafting	General
18	OFFICE	General Document Generation	General

Capabilities

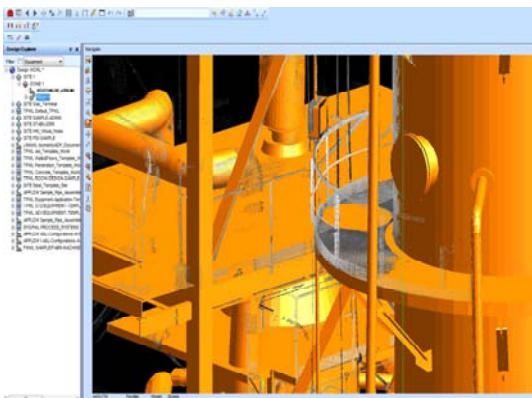
Reverse Engineering As-built via 3D Laser Scanning

- PPM Co. had the privilege of scanning the six offshore Oil Field platforms in Persian Gulf of Iran (**Aboozar, Norouz, Bahregansar, Hendijan, Nasr, Eilam**) to produce as-built 3D models which were used for retrofitting projects. 3D laser scanning has become a world-wide standard to capture as-built data for offshore platforms. 3D laser scanning allows complete collection of as-built data with complete safety and ease. It eliminates the risk of site revisits which is often required with traditional surveying methods.
- PPM Co. can produce accurate as-built 3D models of Plants within +/-2mm accuracy and the final deliverable can be given in PDMS, Autoplant, MicroStation, AutoCAD etc. 2D Plot plans can be developed with ease. Design data can be easily compared with as-built data for future revamp projects. PPM Co. also produces 360° high resolution panorama images of the Plant which is linked with General Alignment Drawings. Through our web based portal customers can access scan data, Tru-views and 3D models from anywhere in the world.





- PPM CO. have the capability of scanning medium and large scale onshore facilities within a very short period of time and produce end to end deliverables on different platforms such as AutoPlant, SmartPlant 3D, Aveva PDMS, AutoCAD etc. Accurate as-built plans are the key for any retrofit or revamp project; the most difficult part of generating as-built plans is thoroughly capturing data from the plant. However with 3D laser scanning every mm of a plant can be mapped without any difficulty and the resulting point cloud data can be easily converted into a 3D model which can be used for clash check analysis or fabrication checks. 3D Laser scanning offers several advantages over conventional method of surveying: hazardous areas in a plant can be accessed from a distance and can be surveyed accurately, no scaffoldings are required to capture details which



are at higher elevations, no site revisits are required, no tape measures are required, and the time to capture data is greatly reduced. Standard deliverables include colored point cloud data, 360° Panorama Images, 3D Models, 2D As-Built Drawings, and virtual walkthroughs.

Capabilities

Hazard and Operability Analysis (HAZOP)



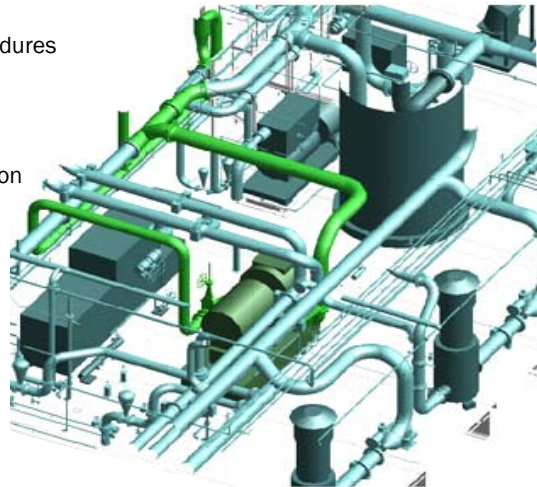
HAZOP analysis is a reputable and well proven method for identifying safety and operational issues related to the design, operation and maintenance of a process system.

- Essentially, a HAZOP analysis provides a full review of a process system and systematically questions every part of it to establish how deviations from the design intention might arise. This is done in a formal and objective way, based on predefined guide words.
- Once identified, deviations and their consequences are assessed to see whether they might have a negative effect on safe and efficient plant operation. This technique ensures a systematic evaluation to identify potential problems/hazards.

- PPM CO. have extensive experience with HAZOP analyses from numerous projects of varying complexity. Teams of HAZOP facilitators trained to help clients organize and perform such analyses . In addition, we have experienced HAZOP PHA-pro software in our Tehran office.

HAZOP highlights include:

- Systematic examination
- Multidisciplinary study
- Utilization of operational experience
- Safety as well as operational evaluations
- May indicate solutions to the identified problems
- Considers operational procedures
- Human errors
- Led by an independent person
- Results are recorded



Publications

◆ **Piping Material Selection (2014) / ISBN 978**

-600-6190-49-5 This is an engineering book which is published by PPM and subjected to some technical issues regarding to piping material selection, industrial chemical resistance guide and fundamentals of metallurgy.



◆ **HAZOP Study (2014) / ISBN 978-600-6190-**

25-9 This is an engineering book which is published by PPM and subjected to some technical issues regarding to hazard and operability (HAZOP) study identification, practical method, case study and software training (PHA-pro).



◆ **Commercial Kitchen Design (2014) / ISBN**

978-600-6190-03-7 This is an engineering book which is published by PPM and subjected to some technical issues regarding to commercial kitchen design & layout fundamentals, equipment selection method, utility services, ventilation, fire fighting and first aid requirements.



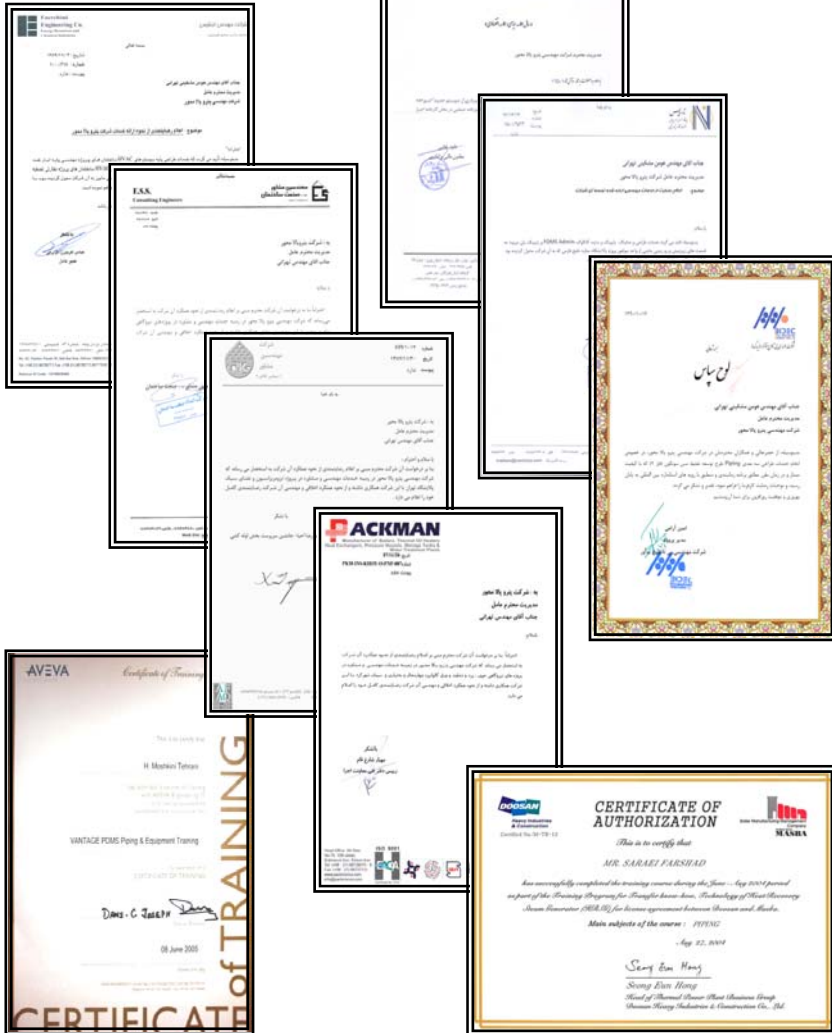
◆ **Zero Energy Buildings Design (2015) /**

ISBN 978-600-7093-97-9 This is an engineering book which is published by PPM and subjected to some technical issues regarding to Zero Energy Buildings Design.





Certificates





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