

SEPADUTM SPECIALTY



New Energy-Green Hydrogen, Ammonia, Methanol
Clean Environment-Carbon Capture & Storage, Sox, NOx,
Industrial Waste Gas Scrubbing



Engineering & Specialist Consultancy Services for
New Energy & Clean Environmental



Renewable Energy - Solar & Wind Power



Green Methanol



Green Hydrogen Plant



CO2 Capture & Storage

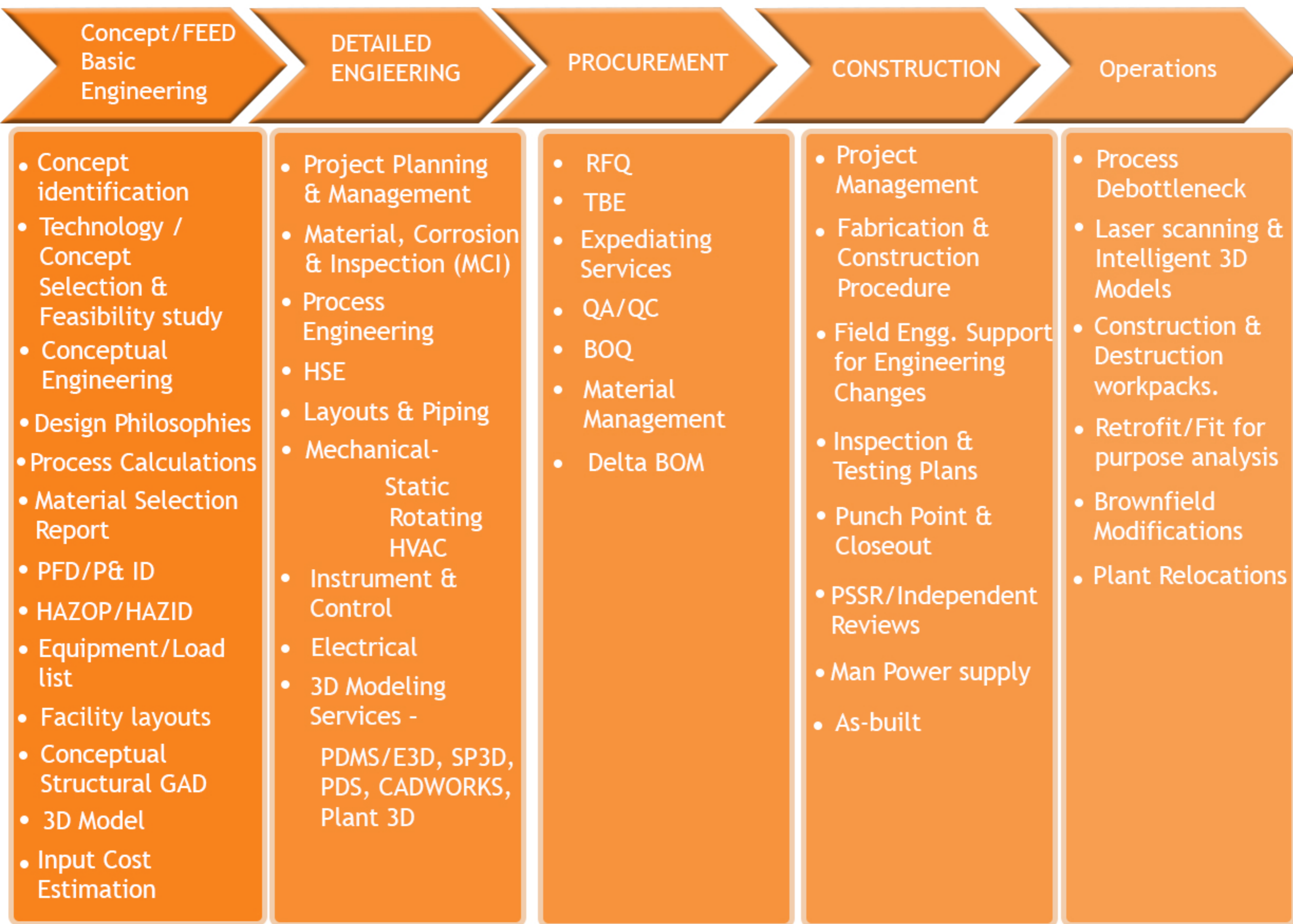


Green Ammonia



Waste Gas Scrubbing System-
SOx NOX & Industrial Gas

Range of Services



Scope of Services

- Conceptual / FEED
- Detailed Engineering
- Procurement Support

- Project Management Services
- Laser Scanning & Brownfield Engineering
- Manpower Supply

Project Management

- Project Planning & Control
- Construction Management Support

- Cost Estimation & Optimisation

Engineering-Process & Safety

- Concept Selection & Conceptual Engineering.
- Steady State & Dynamic Process Simulation
- PFD, UFD, Mass & Heat Balance
- Equipment & Relief System Sizing
- PID'S, PDS , Load List, Equipment List
- HAZOP, HAZID, QRA, Fire & Explosion
- Dispersion, Fume & Flare radiation studies
Fire Water Demand & Surge analysis study

Software & Tools

SP PID, ASPEN HYSYS, FLARESIM, PIPESIM, PIPENET, AFT Software, CFD

Engineering- Instrumentation & Control

- Instrument Design Basis
- Specification & Datasheets
- Logic diagrams & Loop diagrams
- Control system design & specification
- Wiring drawings, Instrument Hook-ups

Softwares & Tools- Instrucalc & SP-Instrumentation

Engineering -Mechanical

- Design & Datasheets for Static Equipment
- Skids & Rotating Packages
- HVAC Load Calculations
- Duct fabrication drawings
- RFQ/TBE-Static, Rotating & HVAC
- Fabrication Drawings MTO
- Field Engineering Support

Software - PV Elite, Compress, E-Tank.

Engineering-Piping

- Plot Plans
- Conceptual Equipment layouts,
- Piping Material Specifications & datasheets
- Study Piping GAD
- Pipe stress Reports
- 3D Models- SP 3D/PDMS/CADWORKS
- Deliverable
Material take off
Piping GAD
Isometrics-System/Spool Isometrics
support Detail Drawings
- Piping Fabrication & Field Engineering
- As-built Engineering

Software - SP 3D, PDS, PDMS, CADWORKS, AUTOCAD Plant 3D, CEASAR 2, SPOOLGEN

Engineering- Electrical

- Electrical Equipment Datasheets
- Single line Diagrams (SLD)
- Power system simulation-ETAP/EDSA Load, Fault, Transient stability, ARC Flash analysis cable Scheduling, Tray Sizing, & Transformer sizing.
- Wiring diagram & Cable Tray Layouts
- Lighting Layouts
- 3D Modeling- Cable tray & Electrical Equipment

Software - SP 3D, PDMS, SP Electrical & ETAP

Engineering-Architecture /Civil & Structural

- Conceptual Structural GAD Drawings
- Foundation Design & GAD
- Structural Analysis for RCC & Steel
- Dynamic Structural Analysis
- Detail Fabrication & Installation drawings
- MTO

Software - SP 3D, PDMS, TEKLA, BOCAD, REVIT, STADPRO, SACS

3D Modeling & Integrated Engineering Services- AVEVA Engineering (E3D, PDMS, PID)

AVEVA Engineering

AVEVA Electrical & Instrumentation

AVEVA Diagrams

AVEVA E3D

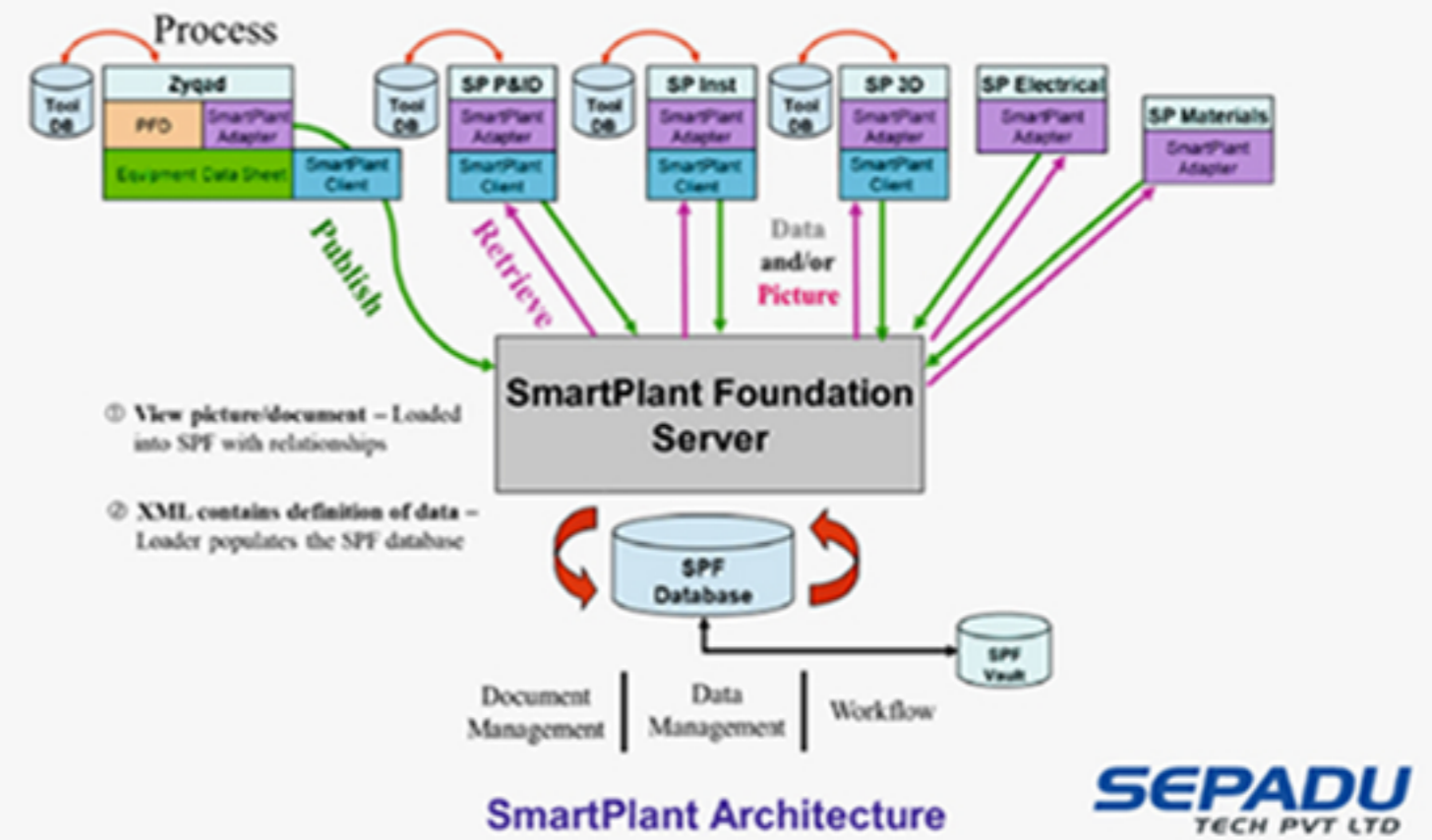
AVEVA Bocad

Integrated Engineering & Design

Sharing same technology architecture

- Concurrent, multi-discipline, multi-user, multi-site working environment
- The schematics data is managed together with the 3D and Engineering data **in the same project environment**
- Single definition of Status/Maturity
- Users can easily access reference data from other applications and vice versa
- Existing system administration skills can be used for all applications
- Open Configuration/Customisation
- Standards driven data governance (CFRHS, ISO15926, customer standards)

HEXAGON PPM (SPF, SP3D, SP PID SP Materials, SP Instrumentation)



Autodesk Inc. Plant Design AEC Collection

Autodesk Inc. Plant Design AEC Collection

- INFRAWORKS
- AUTOCAD CIVIL 3D
- AUTOCAD
- REVIT
- NAVISWORKS MANAGE
- AUTOCAD mobile app
- AUTOCAD RASTER DESIGN
- RENDERING IN A360
- VEHICLE TRACKING
- 3DS MAX
- AUTOCAD MAP 3D
- AUTOCAD ELECTRICAL
- AUTOCAD ARCHITECTURE
- AUTOCAD MEP
- FORMIT PRO
- AUTOCAD PLANT 3D
- INSIGHT
- STRUCTURAL ANALYSIS FOR REVIT
- RECAP PRO
- CLOUD STORAGE

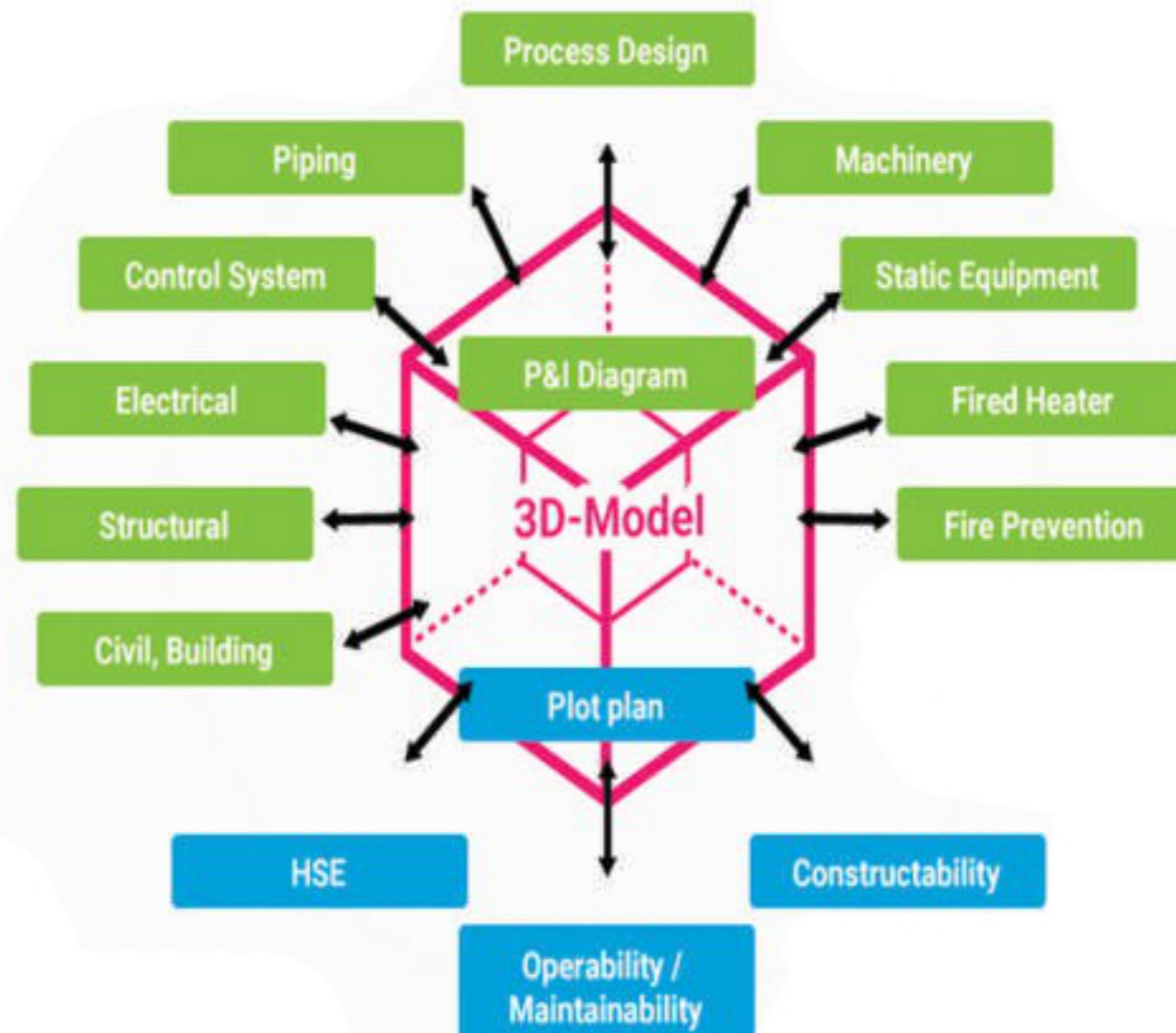
Bentley Systems Advanced Infra structure Offshore & Plant Design Software

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BENTLEY'S PROJECT PLAYBOOKS

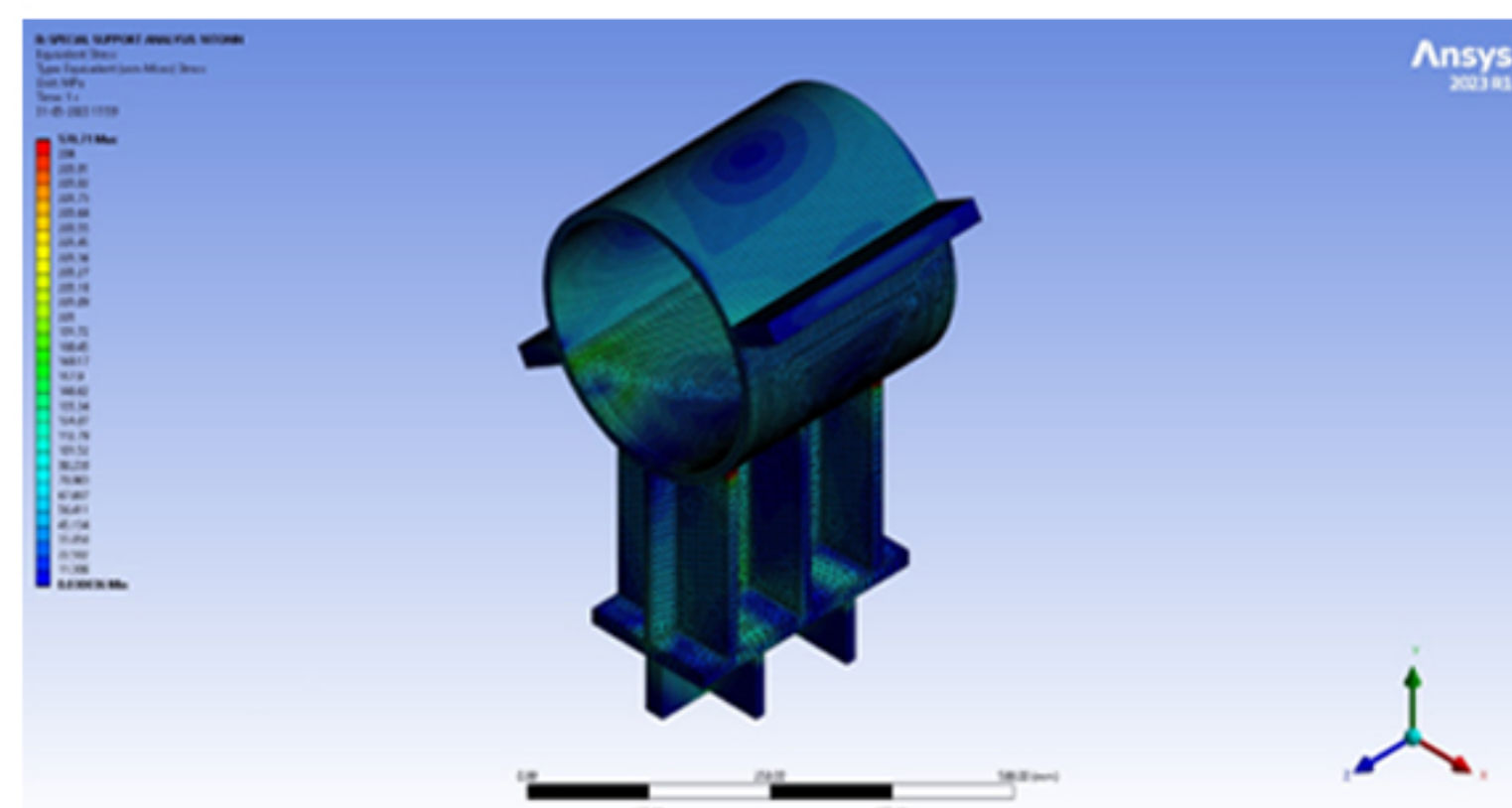
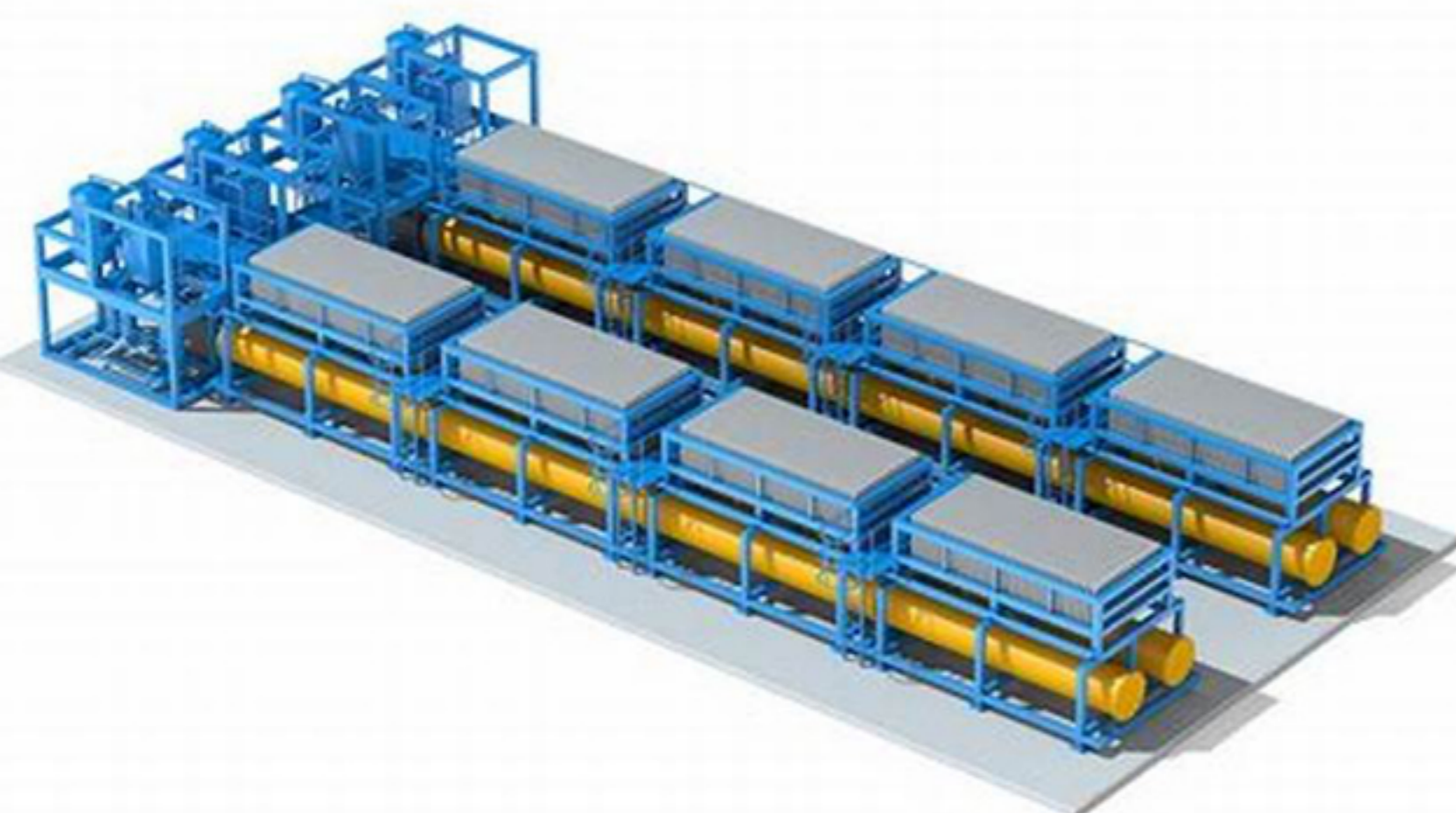
BENTLEY'S COMMON PLATFORM: MICROSTATION | PROJECTWISE | ASSETWISE

The image shows a detailed 3D rendering of an industrial facility. Various components are labeled with callouts, including **MINING**, **CAMPUS**, **ROADS**, **CONSTRUCTION**, **RAIL & TRANSPORT**, **WIND FARMS**, **WATER & WASTEWATER**, **BUILDINGS**, **INDUSTRIAL STRUCTURES**, **POWER PLANTS**, **COMMUNICATIONS NETWORKS**, **NUCLEAR POWER**, **PROCESS PLANTS**, and **OFFSHORE STRUCTURES**. The Bentley logo is visible in the bottom right corner.



We can buy/lease any software to meet Project Requirement

Project Name	Owner/ Operator	Order by	Scope
NEOM -GHE (650 T/day)	Air Product	Thyssen Krupp	Manpower for Engineering activities(Layout, Piping & SP3d modelling scope) for Electrolyser scope
NEOM HIDC	Air Product	CPP India	Sp-3d catalogues, Stress analysis, 3d Model review, IFC Isometrics with BOM, Pipe support design & details, MTO for interconnecting DM water Supply, Supply & Return KOH system (FEP lined GRV piping)
NEOM -GHE (650 T/day)	Air Product	CPP India	SP-3D catalogues, Stress analysis for Module scope transportation case analysis, 3d Model review, IFC Isometrics with BOM, Pipe support design & details, MTO for FEP lined GRV KOH system, FEA Study to check shear build up & Thermal Stresses due to different Poisons ratio & relative thermal conductivity of FEP/PP Liner & GRV dual laminate system. Buckling check Calculation for compressive loads between two Limit/Anchor, FEA analysis for Support Strength check.
NEOM -GHE (650 T/day)	Air Product	CPP India	Sp-3d catalogues, Stress analysis, 3d Model review, IFC Isometrics with BOM, Pipe support design & details, MTO for interconnecting DM water Supply system (PP-R lined GRV piping)
Casa Garande Green Hydrogen Project	Air Product	CPP India	Stress analysis, 3d Model review, IFC Isometrics with BOM, Pipe support design & details, MTO for interconnecting DM water Supply system (PP-R lined GRV piping)



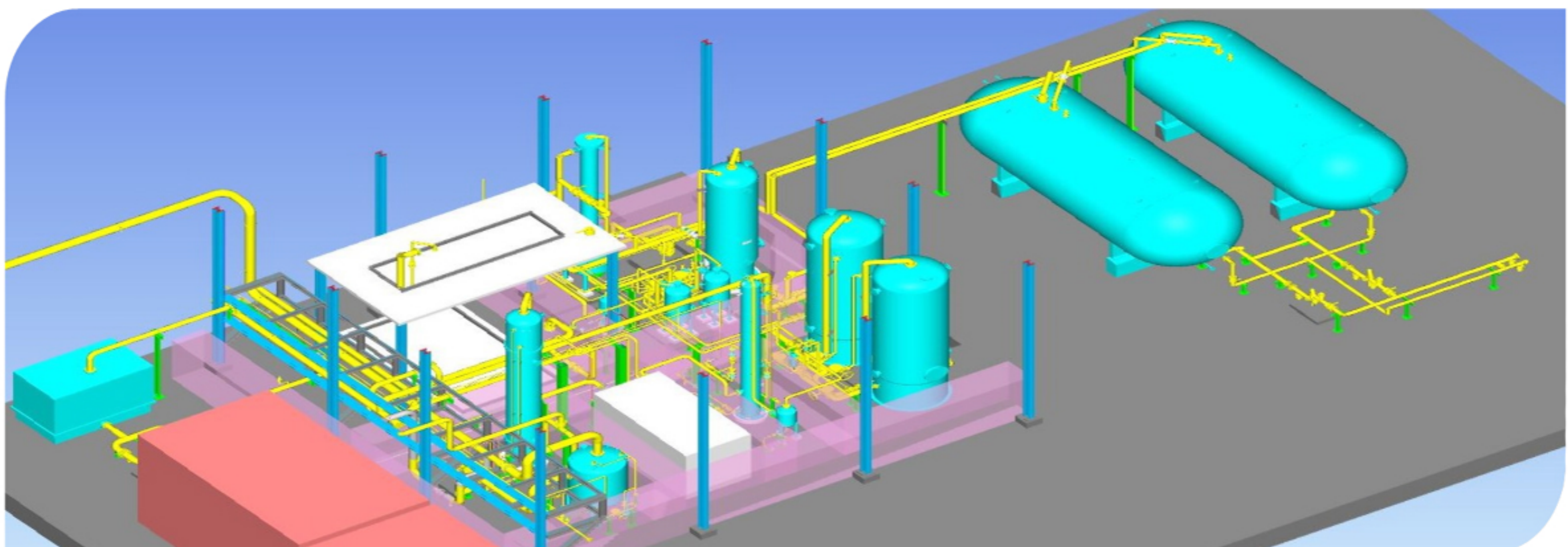
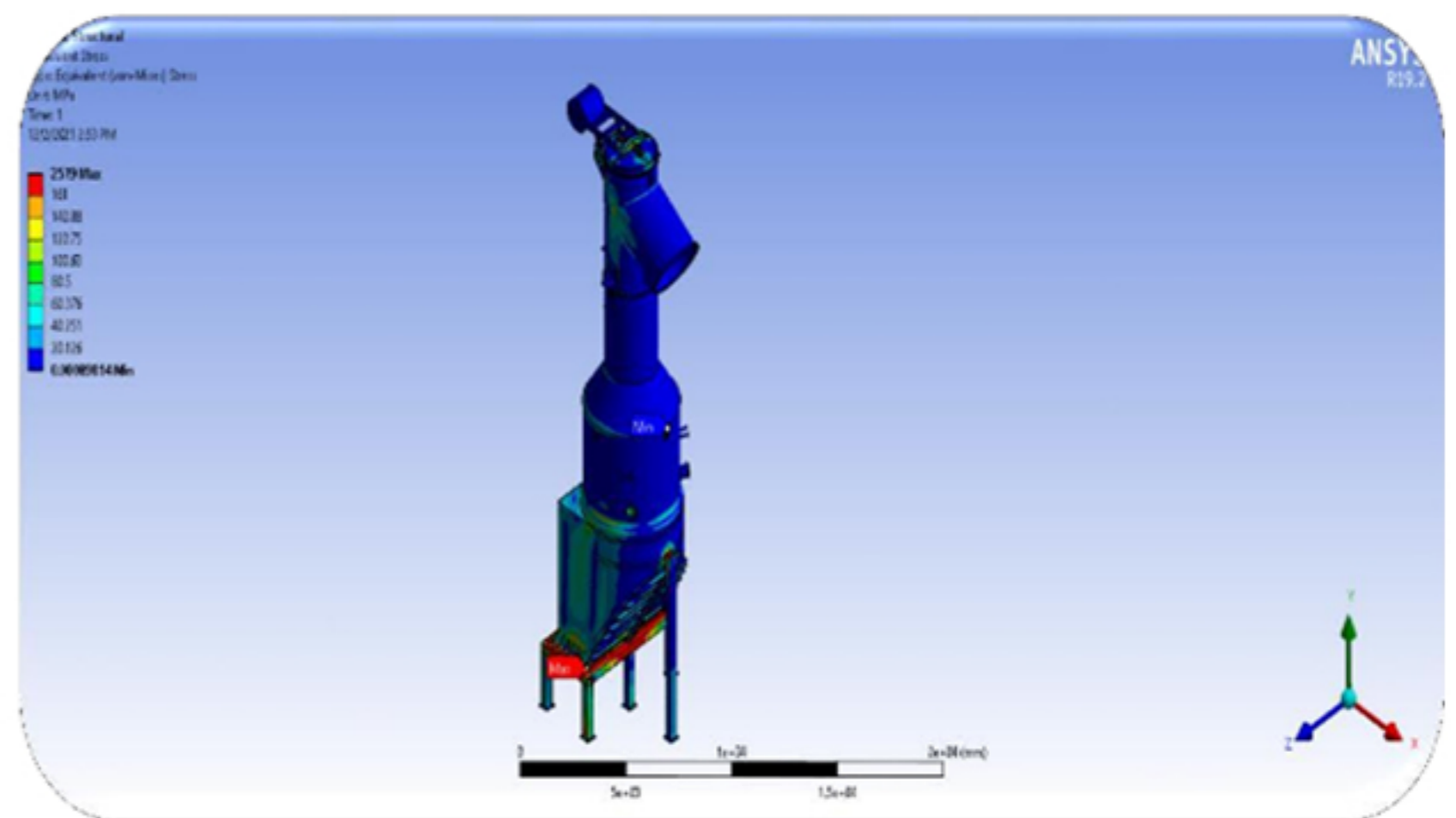
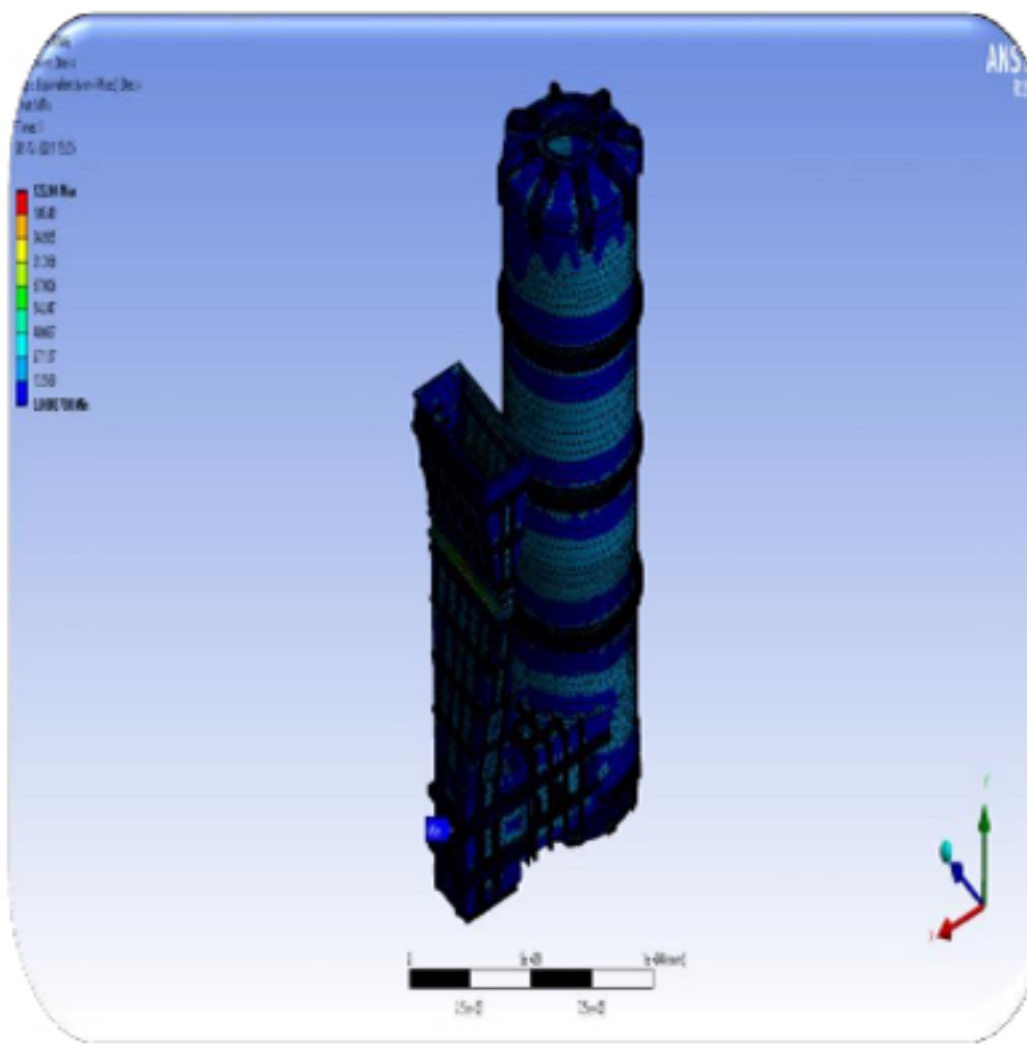
SR. NO.	PROJECT	COMPRESSOR PACKAGE	PC	END CLIENT	SCOPE
1.	YEOSU NO. 2 COMPLEX PROJECT	H2 MAKE UP COMPRESSOR	NEA	LG CHEM	Detailed Engineering-3D model Piping & Equipments, Stress analysis, Structural Fabrication Drawings
2.	CHEVRON ICR UNIT 132/REF' Y MODERNISATION PROJECT	H2 MAKE UP COMPRESSOR	NEA	BPCL	Detailed Engineering-3D model Piping & Equipments, Stress analysis, Structural Fabrication Drawings
3.	NRL Project	H2 MAKE UP COMPRESSOR	NEA	NRL	Detailed Engineering- P & ID, Piping, SP-3D, SPPID
4.	NRL Project	SHU H2 Makeup Compressor	NEA	NRL	Detailed Engineering- P & ID, Piping, SP-3D, SPPID
5.	NRL Project	NRL Project - H2 Rich Gas Compressor	TKIS/Howden Solyvent	NRL	Detailed Engineering for carrier gas Compressor - Piping / 3D modelling in SP3D /Stress/ Structural details dwg
6.	GAIL USAR	Hydrogen Compressor	NEA	GAIL USAR	Detailed Engineering for carrier gas Compressor - Piping / 3D modelling in SP3D /Stress/ Structural details dwg
7.	GAIL USAR	Hydrogen Booster Compressor	NEA	GAIL USAR	Detailed Engineering for carrier gas Compressor - Piping / 3D modelling in SP3D /Stress/ Structural details dwg

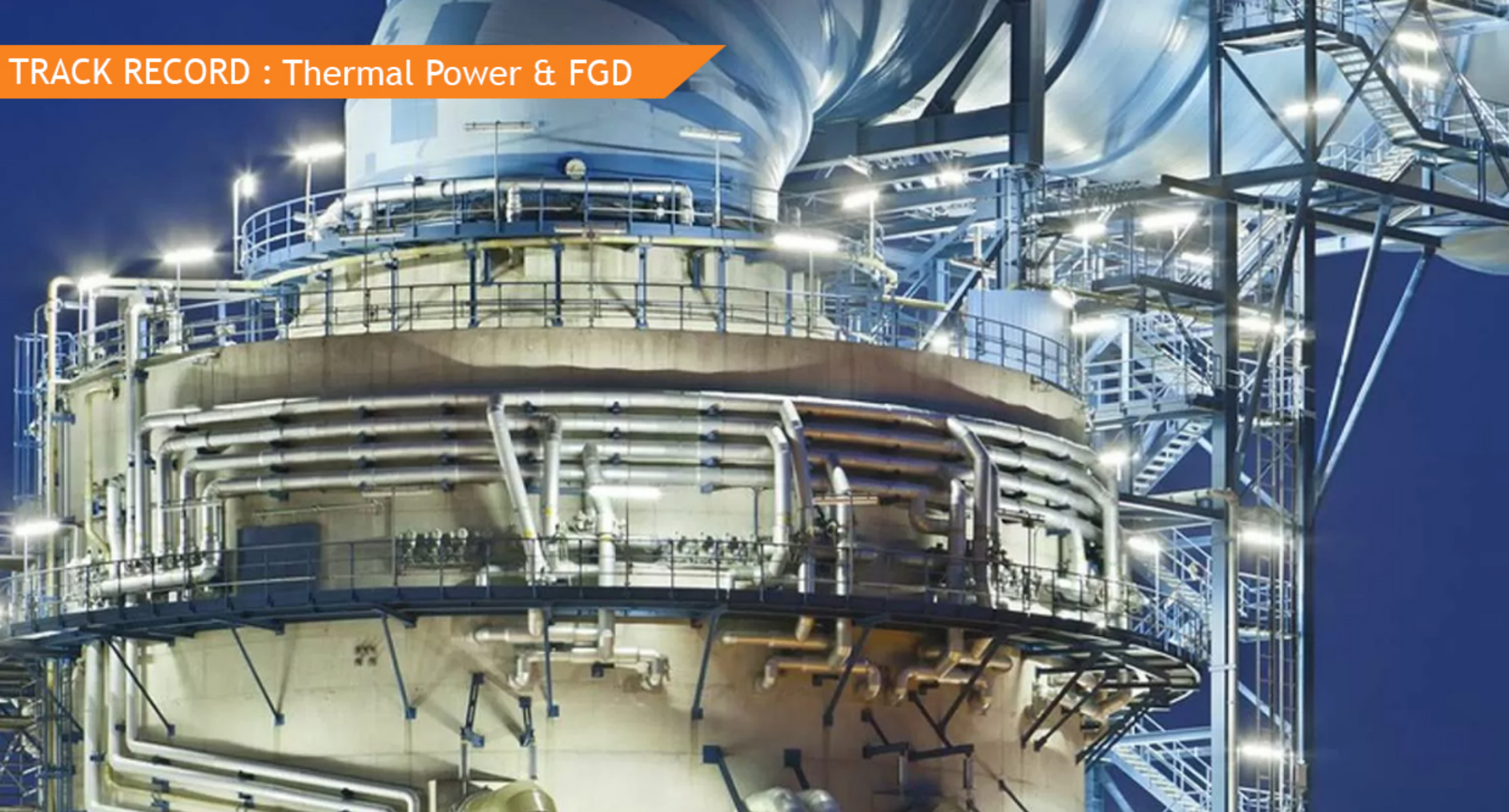


**Burckhardt
Compression**



- CO2 Collection, Cleaning & liquification from Ethanol Plant- for Praj Industries / Manas Agro/Purti Group
- Incinerator & associated Ducting- Verentis Sinagpore
- Exhaust Ducting & Stack for Fired heaters - JNK Heater
- EED/Pre-bidding - Sugar Dust collection System- MSM Sugar Malaysia
- Generic Green Ammonia FEED Project(545 MT/Day)- Sepadu Tech Generic Green Ammonia FEED Project(545 MT/Day)- Sepadu Tech
- Generic Green Methanol FEED Project(490 MT/Day)- Sepadu Tech





GRP- Piping System - Spray nozzle & Header System

- FEA Analysis -Piping system
- Pipe support design
- Structural detail drawing
- Structural Fabrication Drawings.
- Cooling media
- PDMS Models * STP formate

FGD - Solapur system Thermal Power Project (2*660mw)
 FGD - Meja Thermal Power Project Phase Stage (2*660MW)
 FGD - Tanda Thermal Power Station 2 (2*660MW)
 FGD JHAJJAR TPS -Stage 1 (2*550MW)



FGD for Singrauli Super Thermal Power Stage I & II -17 M Dia
 FGD for Singrauli Super Thermal Power Stage I & II -20M Dia
 FGD for Singrauli Super Thermal Power Stage I & II -17.5M Dia
 FGD for ANPARA D Thermal Power Plant

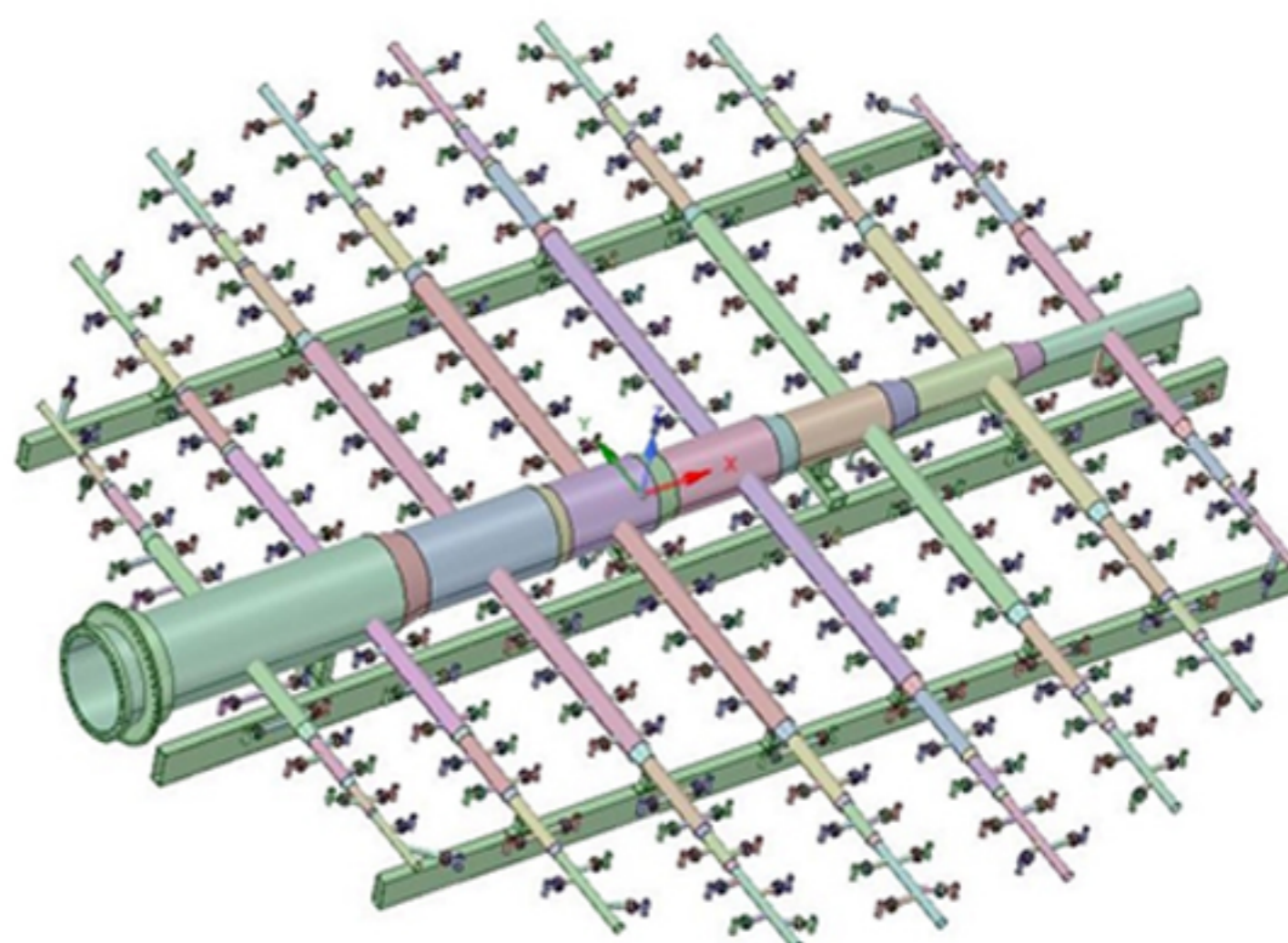


FGD - Jhawarpur Super thermal power station (660*2MW)

FGD -Nagison II Thermal Power Plant



FGD for bokaro A Thermal Power Station



PROJECT	OWNER	EPC	Licenser	SCOPE
FGD-Super Thermal Power Project Stage-I (2x800 MW) - GADARWARA	NTPC LTD	ISGEC Heavy Engg. LTD	BABCOCK POWER ENVIRONMENTAL INC	Detailed Engineering, Piping surge, Stress analysis of CS+RL, FRP piping
FGD-Super Thermal Power Project Stage-I (3x800 MW) - KUDGI	NTPC LTD	ISGEC Heavy Engg. LTD	BABCOCK POWER ENVIRONMENTAL INC	Detailed Engineering, Piping, surge Stress analysis of CS+RL, FRP piping
FGD-Super Thermal Power Project Stage-I (260 MW) -KHARGONE	NTPC LTD	L & T Power	-	Detailed Engineering, Piping Stress analysis of FRP piping
FGD- Rajpura Thermal Power project (2X700 MW)	NTPC LTD	L & T Power	-	Detailed Engineering, Piping Stress analysis of FRP piping
Mundra Termal Power Plant (830X5 MW)	TATA-Costal Gujrat Power	TATA PROJECT	ANTRIZ GROUP	Detailed Engineering, Piping Stress analysis FRP piping
FGD Feroze Gandhi, TPS Unchahar (5*210 MW)	NTPC LTD	GE POWER	GE	Detailed Engineering, Piping Stress analysis FRP piping
FGD-Meja Thermal Power Project Phase Stage (2*660MW)	NTPC LTD	GE POWER	GE	Detailed Engineering, Piping Stress analysis FRP piping
FGD JHAJJAR TPS-stage 1 (2*550 MW)	NTPC LTD	GE POWER	GE	Detailed Engineering, Piping Stress analysis FRP piping
SWG D FOR VANPHONG PHASE 1 Thermal Power plant (2X660MW)	Van Phong Power Company Limited (VPCL)	MHPS	MHI	Detailed Engineering, Surge, Piping Stress analysis IFC ISO, piping Support
FGD Thermal power station Bokoro (500MW)	DVC	Techno Electric & Engineering	KC Cottrel	Detailed Engineering, Surge, Piping Stress analysis IFC ISO, piping Support



PROJECT- FRP Ducting, Scrubbers & Piping for OCP DAP Plant Morocco
EPC- JESA Morocelo

Mechanical

■ **Scrubbers**

- Pre - Scrubber
- Dryer Scrubber
- Dust & Fume Scrubber
- Design Calculation & Nozzle Strength check using FEA analysis

■ **Circular & Rectangluar FRP ducting system**

FEA analysis -

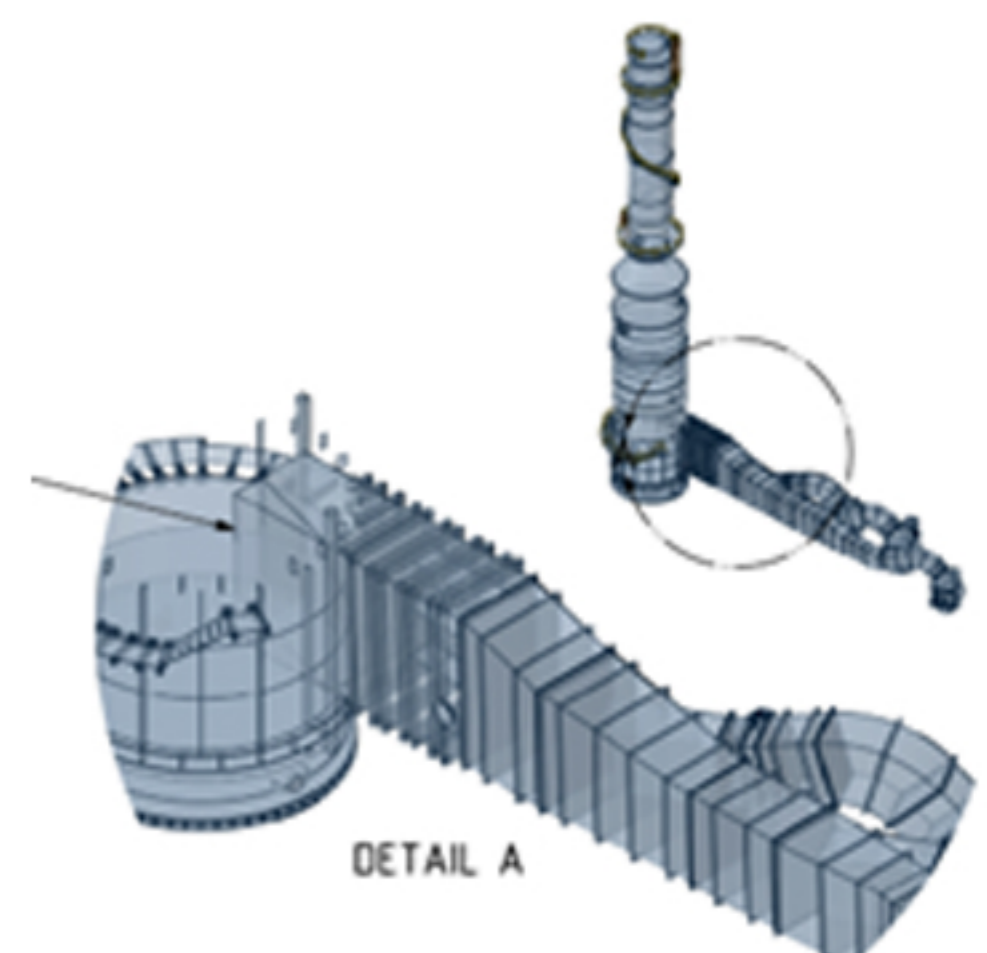
- Static Structural
- Thermal analysis
- Model & Harmonics analysis to cater for Harmonics loads produced by fan motion / Mechanical vibrations
- Seismic analysis
- Fabrication Detail drawings
- Support design & detail drawing

■ **Structural Engineering**

- GAD
- Structural Design & analysis STADPRO
- Foundation & Structural Detail drawings

Piping Engineering

- Pipe stress analysis of GRP Piping connected to Scrubber and ducts (100 lines)
- Pipe stress analysis metallic Piping connected to Scrubber and ducts
- Nozzle Qyalification Using FEA analysis





Oil and Gas Upstream

- Wellheads & Gathering lines
- Crude Handling facilities
- Produced water Treatment
- Gas handling & compression

Mid Stream

- Pipelines
- Oil Terminals
- Gas Terminal
- LNG Storage & Regasification

Downstream

- Refinery
- Petrochemicals
- Utilities
- Offsite facilities
- Pipelines



Water & Waste water Treatment

- Sea Water Desalination
- Raw Water treatment
- Demineralized Water
- Condensate Polishing
- Produced Water Treatment
- Zero liquid Discharge
- Pumping Station & Pipeline
- Cooling water System
- Effluent Treatment
- Sewerage Treatment
- Domestic/Municipal water Treatment



Power

- Thermal Power Plant
- Combined Cycle Power Plant
- Co-Generation
- Power barge
- Boilers
- HRSG
- BOP
- Heaters
- Flue Gas Desulphurization

Chemical & Allied Process Industries



- Organic & Aromatics
- Inorganic Chemicals
- Industrial gases
- Caustic Soda
- Soda ash
- Chloro-Alkalies
- Phosphoric acid
- Organic chemicals
- Pharma
- Food
- Ethanol



Offshore Projects

- Field Development Studies, Topsides/ Modules of Wellheads(WHP) Central Processing Platforms(CPP), FPSO, FLNG



New Energy & Clean Environment

- Solar Power/Green Hydrogen/Green Methanol /Green Ammonia Plant
- CO2 Capture, FGD/SCR- SOx NOX Control, Dust, Ash & Fume Handling Systems



Product & Systems

- Non-Metallics- Piping, Equipment, Duct & Stack, Structural Profiles, Liners.
- Metallic- Equipment, Boilers, Fired Heaters, Thermal Oxidiser, Reformers, Incinerator, Scrubbers, Bag filters, ESP, SCR, FGD, Ducting, Stack.



Sepadu Tech Academy for professional skill development is established to bridge the gap between academic knowledge and industry requirements. Our courses are job-oriented, professional skill development programs based on the Oil and Gas, Chemical, Power, Marine, Water and Waste water Treatment, New Energy, and Carbon Capture industries. Course completed candidates get the opportunity to work with design consultancy, EPC contractor, Equipment Manufacturer (OEM) and owner operators of above mentioned industry segments .

List of Courses

- Plant Layout & Piping Engineering
- Process & Process Safety
- Mechanical Static Equipment
- Architectural, Civil & Structural Engineering
- Instrumentation & Control Engineering
- Electrical Engineering

Advanced Courses

- Offshore Field Development Study & Facilities Layouts
- Offshore Structural Engineering
- Offshore Process & Safety.
- E3D Administration
- SP3d Administration
- Mechanical Product Design (CAD/FEA)

Typical Course duration is 3 months extended up to 6 months to acquire skill sets. Courses includes class room session, Case study Workshops, assignments and real time project exposure. Coaching faculties are from industry. Courses conducted on regular and weekend batches. Regular batches are suggested for fresh graduates and weekend batches for working professionals.





Manpower

Process Team=8+
 Regular Employee - 65+
 Contract staff-10+ In/Out depending need
 Senior Consultants=12+




Software & Tools

HYSYS, PIPENET	SP-3D
AUTOCAD	CEASAR-2
SP-PID,	STADPRO
PDMS/E3D	SP-Instrumentation



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