

Resume

Senior Structural Engineer

PERSONAL DETAILS

Name : Angad Hanmant Chavan
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EDUCATION: B.E. Civil Engineering from University of Mumbai in 2006 Passed with First Class with distinction.
Achievement: Stood First in Maharashtra State in Final Year Examination of Diploma in Civil Engineering.

PROFESSIONAL PROFILE:

Senior Civil & Structural Engineer with 15 years of experience in the Oil & Gas Plants, Chemical plants & Industrial plants R.C.C. & Steel Structures design. Worked in multinational consultancies and familiar with work environment of multi-cultural and multi-national environment.

INDUSTRIAL & INFRASTRUCTURE STRUCTURES DESIGNED:

- **Oil & gas, Chemical plants:** Chemical Process Buildings, Industrial Sheds, Piperacks, Prilling tower, Electrical room & Substation Building, Vertical Vessels (Process Column) Foundations, Horizontal Vessels (Heat Exchangers) Foundations, Electrical cable galleris supports, pipe sleepers design, steel platforms, pump foundations, Pipe supports, special pipe supports.
- **Cement plant:** Industrial shed for limestone storage, Transfer Towers, Steel Conveyor Galleries, Retaining walls.
- **Infrastructure:** 4 No's of R.C.C. Underground Lite Rail Transit (LRT) Train stations design.
- **Brownfield Experience:** Inspections of Structures, Inspection reports preparations, Non Destructive tests witnessed at site. Suggestions & repair recommendations, Structural Audit reports preparation. Pipe supports design.
- **Foundation Design:** Isolated Footings, Combined Footings, Raft foundations, Combined Piled Raft Foundation, 3pile & 4pile pile caps, Ring wall, base plates and anchor bolts.

General Work activities:

- **Steel Structures & Fabrications drawings checking:** Steel structures general arrangement drawings and fabrications drawings checking for steel process structures, steel piperacks is done.
- **Interdisciplinary coordination:** Coordination with Piping, Mechanical, Electrical departments for the load data collections, drawings comments corrections, modifications in the structure, to make clash free structures is done.
- **Review and Checking work:** Subconsultants Structural Design reports & Drawings checking work.

Structural Design calculations reports checking:

Structural Calculations design report checking for the Steel Process building, steel piperack, substation building, security building is done.

Steel Structures Drawings:

Steel Structures drawings generated from the Tekla Software checking for various steel process buildings. Fabrication drawings generated from the Tekla software checking for various steel structures like Steel Storage sheds, steel process buildings, Steel piperacks, steel conveyor galleries etc.

R.C.C. Structures Drawings:

Substation Drawings checking The RCC structural Drawings checking work is done around 30 nos of drawings checking is done.

Security Building Drawings: RCC structure drawings checking work is done.

Administration Building Drawings Checking: RCC structural drawings of Admin Building checking work is done.

Entry & Exit gate for the Newport project: RCC Entry and Exit structure drawings checking.

STANDARD DESIGN CODES FOLLOWED:

- American Codes: AISC (Steel Construction Manual), ACI 318(Building code requirement for structural concrete, ASCE (Standards Minimum design loads for buildings & other structures), UBC (Uniform Building code)
- Euro Codes: BS EN 1991-1-4:2005+A1:2010 Eurocode 1: Actions on structures: Part 1-4 General actions – Wind actions
- British Codes: BS-8110(Structural Use of Concrete), BS-6399>Loading for Building), BS-5950(Structural use of steelwork in building), BS-5400(Steel, concrete & composite bridges)
- Indian Codes: IS456-Code of practice for plain & reinforced concrete, IS800-code of practice for general construction in steel, IS-1893 Indian Seismic code, IS-13920-Ductile detailing of RC Buildings.

SOFTWARE SKILLS

- Staad Pro V8i: Structural Analysis and design software used for the Steel & RCC Structures design.
- Staad Foundation: Software used for the Design of Combined Footings and Rafts.
- Foundation 3D: Software used for the design of Isolated and Combined Footings.
- Mat 3D: Foundation design software is used for the Mat/Raft type of foundations.
- Autocad: Used for Structural GA & details drawings preparation.
- Naviswork: Review of PDS & PDMS models in the naviswork software.

Main Structures designed:

1. Prilling Tower of Fertilizer plant: Concrete + Steel Structure in fertilizer plant
2. Process Buildings: RCC & Steel process Buildings for the Oil & Gas plants, Chemical plants.
3. Piperacks Design: Steel & RCC piperacks design for the Oil & Gas plants & Chemical Plants.
4. Process Columns foundations design: Octagonal Shaped process column foundation design.
5. Heat Exchangers Foundations design: Horizontal vessels foundation design.
6. Special pipe supports & Miscellaneous pipe supports design.
7. Pump foundations, Ring Wall Foundations for Tanks, Pipe sleepers design.
8. Steel Shed: Steel Storage shed for the storage of Limestones of Cement plant
9. Steel Shed: Steel shed for the enclosure of Grinding machine in cement plant.
10. Transfer Towers: Steel Structure for the cement plant
11. Conveyor Galleries: Steel Conveyor galleries of cement plants
12. Substation Building: R.C.C. Substation Building Drawings Checking.
13. PEB Building foundations design: Workshop Buildings foundations, Chemical Storage Building Foundation, Warehouse Building foundations.
14. Underground LRT train stations design: RCC structures for the Electrical machinery and working as train platform.
15. Misc. Items design: Grade slab design, paving design, RCC Underground pit design.
16. Pipesleeper foundations: pipe Anchor location pipe sleeper foundations & non anchor locations pipe sleeper foundations design.
17. Steel PipeBridge design: Design of 2 Nos of Steel pipebridge of span 41m & 35m to support the pipes.
18. Splitter station in Gas plant: 2 Nos of Valve operating station R.C. fire protection walls structure (10mx25mx3m height) design.

Resume Complete

Note: Annexure 1 can be referred for the detailed description of the structures designed and companywise work experience details.

Annexure 1 : Company wise work experience

1. Fortune Engineering and Energy Services, Abu Dhabi, UAE
DESIGNATION: Structural Design Engineer
DURATION: 27th October 2019 to August 2020

Project: 1 EPC for the upgrade of oil export flow measurements in Adnoc Onshore fields to fiscal service quality.

Adnoc Onshore plants: Al Dabbiya, Rumaiitha, ASAB & BAB

Al Dabbiya & Rumaiitha Plants:

- 1) Geotechnical Investigation report checking, coordination with survey subcontractor
- 2) Topographic and Underground Survey report checking, coordination with survey subcontractor
- 3) Instrumentations & Electrical Equipments load data collection and required coordination.
- 4) Precast concrete foundations design for Instruments like Sounder & Beacon, Instrumentation Junction Boxes, Electrical Junction boxes, Electrical LVDB
- 5) Piping Input collection coordination: Piping layout group and piping stress group input data collections, coordination for the requirements, Coordination for the IDC checks
- 6) Steel Pipe Supports & pipe supports foundations Design: Design of "T" type steel pipe supports of around 1m Height for 10" pipeline, concrete pedestal & footings design of pipe supports in MAT3D foundation. "T" pipe support for 2" pipeline with 3m height, foundation crack width check.
- 7) Baseplate & Anchor bolts design: Design of baseplate thickness for the pipe supports in standard excel spreadsheets, calculations of requires nos of anchor bolts for the pipe supports, instruments supports, lvdb supports.
- 8) Baseplates & anchor bolts, pedestal reinforcement & footing reinforcements for the additional pipe loads to consider new pipes in MAT 3D Software. Foundation crack width check.
- 9) MTO Calculations: Structural Steel Quantity calculations.
- 10) Coordination with client for the document's approval process. Resolving the client's comments & fulfilling the client's requirements,

Asab & BAB Plants: Adequacy Check for the Existing Steel Pipe Supports: Checking of Existing steel pipe supports, them

- 11) Trestle type pipe supports design for 36" pipe line of 1.5m x 1.5m x 6.5m height.
- 12) Steel operating platforms design: platforms of size 1m x 5m x 1.5m height (2 Nos) & 3m x 5m x 2.5m height (1 Nos)
- 13) Adequacy check for the existing pipe sleeper foundations: adequacy check of the existing pipe sleeper foundation for the additional piping loads.
- 14) Foundation's design: Raft foundation design to support the pipe supports and platforms. Isolated footing design.

Pipe Supports design, operating platforms design, Isolated & Raft foundation design in MAT 3D Software.

2. Worley Parsons, Qatar

DESCRIPTION: Worley Parsons provides Engineering & Services from concept-to-completion design.
DESIGNATION: Structural Design Engineer
DURATION: 16th September 2018 to 31st July 2019
PROJECTS

- **Qatar Shell Gas to Liquid, Ras Laffan, Qatar**

Project: Oxygen Import project:

Pipesleepers foundation design: Anchor location & non anchor locations pipe sleeper foundations design. Structural Design calculations report preparation. Design calculations reports include foundations design, pedestal design, Insert plates design.

The foundations' locations and geometry is developed to clear the clashes with the existing UG lines. Study of the UG survey report is done. Study of geotechnical report is done. The structures are designed as per Euro codes. PDMS model review, Navisworks model review & drawings checking work is done.

Piperack Design (4 No's): Steel Piperacks of 2m width having length of 6m, 20m, 60m & 130m length design is done. In both directions the shear connections are considered & bracings are provided in both direction of piperak, i.e., in the transverse direction of piperacks are done as braced frames. Piperacks are designed to resist the piping loads, wind loads, temperature loads. As the new piperacks are located in the existing plant, for the foundation design lots of trials are taken to adjust the new foundations to make the clash free agganrement with numerous UG lines. Foundations required for the piperacks are isolated footings, combined footings & Raft foundations. The foundations design is done in Staad Pro software. The foundations are modeled as FEM model & Analysis and design is carrioud as per Finite Element Method. Structure design calculations report preparations for the piperacks design. Design calculations reports are prepared for superstructure as well as for foundations of piperacks. Design calculations reports includes super structure design, foundations design, and anchor bolts design & baseplates design. PDMS model review, Navisworks model review & drawings checking work is done.

Pipe bridge design (2 No's): Design of Steel pipe bridge of span 35m (35 Tonne Structural Tonnage) & 45m (50Tonne Structural Tonnage) is done in the staad pro software. The Foundation design is carried out in the staad pro software as FEM analysis. The foundation is modeled along with the superstructure & structure is designed in the one model. Structural Design calaculations report preparation for pipebridges design. Design calculations reposrts prepared for superstructure as well as for the foundations of the pipebride structures. Design calculations reports include the calculations for the steel superstructure, foundations, and anchor bolts baseplates. PDMS model review, Navisworks model review & drawings checking work is done.

Splitter Station/Fire protection wall structure design:

Design of RCC structure made of concrete walls called firewalls to prevent the fire in accidental case. The valve operating station is surrounded by the firewalls. The pipe supports are taken from the raft of the structure. FEM analysis of RCC structure walls & raft is done in the staad pro software. The structure of size 10mx25mx3m. The vent pipe supporting steel structure of height 7m is supported on the top of the splitter structure. The vent pipe supporting structure is designed to support the vent pipes at the splitter station locations. Structural Design calaculations report preparation for R.C.C. splitter station structure, vent pipe supporting steel structure & piperack connected with the RCC splitter station structure. PDMS model review, Navisworks model review & drawings checking work is done.

Trial Pits requisition and Trial pits drawings preparation: As the new project is expansion of the existing plants to locate the existing UG lines UG survey is carried out for the preoject area. To reconfirm the locations of the detected UG lines trial pits suggestion are given. Trial pits locations are decided as per the locations of the designed foundations & UG survey report. The drawings are prepared showing the required trial pits locations & requisition is prepared mentioning the required results from the trial pits.

Pipe Supports design (20 Nos): Design of the special pipes supports, Insert plates.

BOQ calculation for the Oxygen Import project. Steel piperacks, pipebridge, splitter station concrete structure, valve operating concrete structures, foundations for entire oxygen import project quantity calculation. (Total Structural Tonnage = 150 Tonne, Concrete =700 Cubic Meter & Reinforcement Steel 80Tonnes)

Coordination: Required Coordination for load data collection from stress department, piping layout data collection from piping department, electrical cables trays data collection from electrical & Instrumentation cable data & support locations collections from PACO department.

- **Qatar Chemical Company, Messaied, Qatar**

Admin Building Expansion MTO calculation:

Calculation of MTO of the admin building expansion in Q chem. Project located at Messaied Industrial complex. The bulding is 1200 Sq.m. in Area. The materal take of Quanitites are calcuated.

Special Pipe Supports design:

Around 30 Nos of Special pipes support are designed. The pipe supports are required in the Q Chem plant. The pipe supports of Height 1.5m and loading rge of 1 to 1.5 kN are designed. The geometry is the critical thing for these pipe supports since the pipe supports were in the highly conjested areas in the plant. The pipe supports geometry is Irregular and locations are decided based on the space availability.

TCM Warehouse: Inspection of Warehouse & Structural Integrity Checking, (Site Workt at Qatar Chemical companys Messaied plant for about 3 Weeks) :

The TCM warehouse in the Q Chem plant is used for the storage of the chemicals and it's very near to the ground flare stack, so it is suceptible to the severe environment. The Size of the Structure is 20m x 60m. The structure is PEB steel structure with concrete foundations of Isolated footings.

Worked as Technical Supervisor for witnessing the NDT test at Site at Qatar Chemical Company, Messaied location. Following NDT Tests are witnessed & monitored at the site.

- 1) Concrete Cover Meter Test
- 2) Concrete Rabars Scanning
- 3) Concrete Core cutting Test to measure the compressive strength of concrete.
- 4) Concrete Dust samples collection for the Chemical Analysis.
- 5) Half Cell Potential Test.
- 6) Cracks Measurement by Ultrasonic Pulse Velocity Test.
- 7) Excavation to check the foundation sizes.
- 8) Chipping out of the concrete in cover portion of the structural elements to check the structural rebars arrangement.
- 9) Reinstatement of the chipped concrete portion
- 10) Existing steel structures sizes measurement and drawings checking: drawings pepaired by the subconsultant
- 11) Foundation reinformcent data collection.

Structural Inspection is carried out for the complete warehouse structure consisting of Steel Framed PEB building and Single Isolated Footings foundations. Defects in the concrete is observed and noted and NDT tests recommendations suggestions is provided. The concrete core test's locations are decided as per the site condition. Various test locations are decided as per the structural requirements.

Underground Scanning supervision (Site Workt at Qatar Chemical companys Messaied plant for about 1 Weeks):

For Construction of substation, new chemical storage shed modification in the Control room building & Construction of New polished water tanks in the Ethylene area. Construction of Catalyst & Mix tanks in NAO area. Witnessing and monitorig of the subcontractor's work for the Underground scanning work. Monitoring the calibration of the equipments approving the survey Instruments like total station, GPS, Radio Detector for the work.

Civil & Structural Drawings checking:

Substation Building Drawings Checking. R.C.C. Building of size 30mx20mx10m heigh. Consists of Transformer foundations, ACCU foundations, Duct banks, Monorail, Oil Collection pits, Trenches, Duct Banks etc. Drawing's checking is done (30 Drawings).

Security Building Drawings Checking.
25mx26mx11m Heigh RCC structure drawings checking (30 Drawings). Drawings for foundations, first floor slab & roof slab, grade slabs checking is done.

Electrical Room: 4x6mx3m Electrical Room R.C.C. Drawings checking, Security cabin foundation, Climate controls cabin foundation layout and reinforcement drawings checking (8 Nos).

3. Short duration project basis contract jobs, Mumbai, India

DESCRIPTION: Freelancer in to the Industrial Structures design.
DESIGNATION: Structural Engineer
DURATION: 16th Nov 2014 to 12th September 2018 (4 Years)

PROJECTS Steel & RCC Structures design work.

Work for GS E&C Mumbai Private Limited, Mumbai-India

- Gasoline and Aeromatic Project, UAE (Praposal Project)

Steel Piperack Design (6 Nos):

Analysis and Design of 3m wide x 10m height x 30m length, 4m wide x 20m height 28m length, 6m wide x 20m height 56m length, 9m wide x 27 m height x 56m length piperacks is done for the proposal. The structural Steel quantities are calculations are done. The American Codes are followed. Design is done as per the AISC ASD code.

Work for MCE Consulting Engineers, Mumbai-India

- ONGC Mangalore Petrochemical Limited, Karnataka

Pipe Sleepers design in Naptha Tank Farm Area: Design of RCC pipe sleepers are done to support the pipes running near to the ground level in the refinery tank farm area. The pipe sleepers up to 5m width are designed as per the piping requirements.

Valve operating and pipe supporting Steel Platform design:

Design of Steel platform of 3mx18m of 2.5m height. The platform is provided to support the pipes and cable rack. The platform is designed as per the Indian codes. The Steel Tonnage of the platform is around 5 tonnes. Structural Steel GA drawings & design reports are prepared following IS codes.

Raft foundation design: Design of Raft foundation for the platform steel structure and pipe supporting sleepers. The FEM model is done for the foundation design. Around 20 Nos of Foundations drawings are prepared for the sleepers and platform foundations In the Naptha Tankfarm area.

- Mangalore Refinery Petrochemical Limited, Karnataka

Cooler fan supporting steel structure design review. The steel structure of Size 18mx18mx7m height is deisgned considering the Bundle load, Cooling Fan, and motor Load in the Structure. The sprinkler system is required on the top floor of the steel platform. Sprinkler supporting arrangement is designed. The Load data received from piping, Equipment loadings from Mechanical is considered for the design. The Wind load calculations are done as Open steel structure considering the shielding effect in the structure. The steel tonnage of the structure is around 50 Tonnes.

Work for Nicholson Jones Partnership Oman LLC (NJP Oman)

- Liwa Plastic, Oman

Warehouse Foundation Design:

Analysis and design of warehouse structure foundation is done. General activities: Modelling of RCC pedestals and plinth beams in staad pro, steel structure design is done by other company, steel structure loads transferred on the top of pedestals for the foundation design, design of pedestals and plinth beam is carried out in the STAAD pro software. GA & RCC reinforcement drawings checking work is done, 6 Nos of drawings are prepared and checked.

Workshop Foundation Design:

Analysis and design of Workshop structure foundation is done. General activities: Modelling of RCC pedestals and plinth beams in staad pro, steel structure design is done by other company, steel structure loads transferred on the top of pedestals for the foundation design, design of pedestals and plinth beam is carried out in the STAAD pro software. GA & RCC reinforcement drawings checking work is done, 8 Nos of drawings are prepared and checked.

Chemical Storage Building Foundation design:

Analysis and design of CSB structure foundation is done. General activities: Modelling of RCC pedestals and plinth beams in staad pro, steel structure design is done by other company, steel structure loads transferred on the top of pedestals for the foundation design, design of pedestals and plinth beam is carried out in the STAAD pro software. GA & RCC reinforcement drawings checking work is done, 7 Nos of drawings are prepared and checked.

Work for Taal Tech India Pvt. Ltd, Bangalore, India:

- Detailed Design of 40 TPH Cement Grinding Unit as per Euro Codes

Steel shed Design (17mx30mx25m high): Analysis and design of Steel Shed is done in the staad pro software as per Euro code. The wind intensity is considered as 100KMPH for the design of the steel shed. Optimised design is carried out for the steel shed. The total tonnage required for the shed is 100 Tonnes. The steel drawings are prepared as output of the Tekla model. The complete steel structure is modeled in the TEKLA software the clash check with the equipments, pipings cranes, and ducts is carried out in the Tekla structure by the Tekla designers. My work is to resolve the clashes with the mechanical parts in the structure it was involved the change in the structural arrangement, coordination with the other departments. Around 20 Nos of the Structural Steel GA drawings are required. Checking of Structural Steel GA drawings is done.

Conveyor supporting steel structure design:

Open conveyor (without roof) of 40m length with walkways on the both side of the conveyor is considered. The trestles of height 1.5m to 3m is required to support the walkways and the conveyor supporting channels at the trestle's locations. The Analysis and design is done in the Staad pro software, Structural GA drawings checking work is done. Around 4 Nos of Steel GA drawings are required.

Structural Design of Feeder hoppers foundation:

FEM Model is done for the Feeder hoppers foundations the hoppers are supported on the concrete wall on one side. The retaining walls are required at the feeder's side. Mechanical loads of Feeder hoppers, truck movement load is considered for the foundation design. Piles foundations are required for the structure. The design of foundation is done as FEM Analysis in the Staad pro software. 5 Nos of RCC GA drawings are prepared for this structure.

4. Consolidated Gulf Company, Qatar

DESCRIPTION Consolidated Gulf Company is a leading provider of professional services to the resources & energy sectors and complex process industries.

DESIGNATION: Structural Engineer

DURATION: 13 May 2014 to 15 November 2014 (6 months)

PROJECTS:

- Qatar Gas, Ras Laffan, Qatar

Industrial Steel shed design: Analysis and Design of Industrial shed is done to cover new fuel dispeners & some existing piping in the Qatar Gas plant. The project involved the site survey, taking measurements of existing pipe locations, feasibility study to accommodate new structure & piping & detailed design of Industrial shed. Few new Pipe supports design is done.

- Qatar Vinyl Company, Qatar:

Modification to existing RCC Dyke walls to Increase in storage capacities of tanks: Analysis and design is done for the Existing Dyke wall to increase the dyke wall height. Work involved the nos of site visits, Inspection of dyke wall, Inspection report preparation, ND test suggestions to check the existing strength of wall, dyke wall modifications suggestions. Man-hours Estimation required to perform all above activities for this project. Drawings preparation, construction methodology preparation and drawings checking work is carried out.

On Deputation to Worley Parsons, Doha Qatar

Projects Worked on in Worley Parsons, Qatar:

- Lusail City Development, Qatar.

Underground light rail transit (LRT) train Stations Design:

Light Rail transit (LRT), or fast tram is a form of urban rail transit using rolling stock similar to a tramway, but operating at a higher capacity.

FEM Analysis & Detailed Design of 4 nos underground RCC LRT train stations:

Light Rail Transit (LRT) Underground Train Stations Structural Design: RCC structure of size 10m x 10m x 90m with underground depth of 10m. The Structure is having the concrete Base slab, all around R.C.C. walls & Top slab. Enclosed underground concrete structure is used for the support of required electrical machinery/equipments for the train movement. And required openings are provided for the staircase, electrical cable routing in the structure. The base slab is at 10m depth from the ground level. The top slab of the structure is flushed with the ground level to support the rails on which LRT train runs.

On the top slab the steel superstructure shed & waiting rooms are supported to provide the waiting rooms for the passengers. The top slab is designed to resist the train load, steel shed and waiting rooms loads. The top slab level is flushed with the ground level and top slab is having the level difference of about 1m. In upper top slab portion the steel shed & waiting rooms are supported. & on lower top slab the LRT train rails are supported for the train movement. Also, the Train Impact loads are considered for the structure design. The RCC Structure supporting structural steel superstructure shed & train route for lusail city. Design is carried out considering Earth pressures, train loads, superstructure loads for design life of 100 Years. Design is done considering BS 5400 Steel, concrete and composite bridges. Around 50 Nos of RCC GA drawings are prepared for the total 4 Nos of LRT train stations.

For the structural Design of the LRT train stations the Finite Element Model is prepared in the Staad Pro software. The primary loads like Dead loads, weight of structural components, weight of superstructure, earth pressure, ground water, Railway Live loads, overhead catenaries System, Live loads on backfillings, Effect of creep, shrinkage of concrete, Thermal Effects, Wind Loads, Thermal rail forces Accidental actions like railway derailment (Impact on columns or walls), fire & specified earthquake loads are considered.

Load combinations are done as per the Lusail City project Structural Design Basis. The structure is designed in such a way that the structure design life is 100 years. The entire structure including the base slab, walls & top slab is designed for the maximum permissible crack width of 0.2mm as per BS 8007. The Buoyancy/flotation check is performed for the accidental/extreme condition of water being at the proposed ground level. The Entire structure is designed in accordance with the British Standards.

Structural Calculations report preparation work is done for the LRT train stations design.

Around 30 Nos of R.C.C. Structure General arrangement & reinforcement details drawings are prepared for each LRT train station, like that 4 nos of train's stations drawings checking work is done.

- New Port Project, Qatar:

Around 20 nos of drawings checking and approval work is done for the various structures like entry and exit gates structures, grade slabs in the port projects.

5. Freelancer, Dubai-UAE

DESCRIPTION: Freelancer in to the Industrial Structures design.
 DESIGNATION: Structural Engineer
 DURATION: 14th October 2013 to 12th May 2014 (6 Months)
 PROJECTS Steel & RCC Structures design work.

Work for Asset Integrity Engineering, Dubai, UAE

- Sharjah Gas Plant, UAE: Inspection/Rehabilitation Work

Inspection of existing gas plant Structures. Entire Sharjah gas plants including onshore and offshore structure's concrete part structures Inspection is carried out. Work involved the Inspection of concrete structures, structural Defects identification in the RCC structures, Inspection report preparation and Severity definitions for various defects in concrete and repair recommendations for the defects. Structural works repairs recommendations & construction procedures recommendations are provided in the Inspection reports.

Onshore structures Inspected: Complete Sharjah Gas Plant Unit, LPG Terminal Unit & condensate terminal
 Offshore structures Inspected: Offshore loading platform, Jetty, breasting & Mooring dolphins.

6. Kentz, Qatar

DESCRIPTION: Kentz Qatar is a leading provider of professional services to the resources & energy sectors and complex process industries.

DESIGNATION: Structural Engineer

DURATION: 15 April 2013 to 13 October 2013 (6 months)

PROJECTS:

- Qatar Shell GTL, Qatar:

Analysis and design of Heavy-duty paving: Design of paving for construction crane movement, Project Involved Site visits, required data collection, Analysis & design of paving for construction crane movement. 12mx15m heavy duty paving is designed to sustain the construction crane movement. FEM Analysis of foundation is done.

- Qatar Petroleum, Dukhan Field, Qatar:

Substation Building design: Analysis & design of RCC Substation building of Size 15mx15mx4m height is carried out. Building includes the transformer foundation, EL cable trenches, various equipment foundations.

- Gasco, Abu Dhabi, UAE:

Proposal quantities calculations for Buried EL & Instrumentation cable trenches.

- Zadco, UAE:

Potable water & Sewage treatment plant quantity Estimation for the Proposal, Preliminary design of the buildings, Equipment foundations etc.

7. Freelancer, Muscat-Oman

DESCRIPTION: Freelancer in to the Industrial Structures design.

DESIGNATION: Structural Engineer

DURATION: 15th December 2012 to 14th April 2013 (6 Months)

PROJECTS Steel & RCC Structures design work.

Work for Technicas Reunidas Engineering, Muscat Oman

Design of Electrical Room for the Qatar Petroleum project at Dukhan doha Qatar. The electrical room of 6mx8mx4m height is designed. The RCC foundation drawings, grade slab drawings, trenches pits drawings checking work is done.

Pipe supports design: Structural Analysis and design of special pipe supports are done. Pipe supports drawings checking work is done.

8. PENTA Engineering Corporation, Mumbai

DESCRIPTION : Penta India Cement & Minerals Private Limited" is the LSTK / EPC Company of India for Cement plants, Minerals plants, Conveyors, Plant Construction, Power, Petro Chemicals and Infra-structure etc.

DESIGNATION: Senior Structural Engineer

DURATION: 2 Jun 2011 to 14 December 2012 (1.5 Year)

PROJECTS:

- Ultratech Cement Plant, Andhra Pradesh, India: Inspection/Rehabilitation Work

Structural Inspection & Audit of Cement plant:

Inspection of cement plant structures is carried out.

Following cement plants structures Inspection is carried out

Kiln foundation, preheater building, cement silo, mill foundation and various process buildings.

Work involved the Inspection of Structures, defects Identifications, ND Tests recommendations for the structures as per the defect's severity. ND Test results Interpretation and repair recommendations/strength improvement based on the ND test results & judgement.

Structural Inspection reports including the modifications in the existing structures, defect's locations, repair recommendations are prepared.

- Lafarge Cement Plant, Jamshedpur. India

Transfer Tower Design: Analysis and design of closed steel structure of size 10m x 10m x 25m height supporting various mechanical equipments like bagfilters, fans and ducts & conveyor galleries is done. The structure included the roof purlins and cladding runners. The design of purlins and cladding runners is carried out in the staad pro software. Around 20 Nos of Structural GA drawings of the plans at various levels and purlins and cladding runner's details are prepared.

Structural steel Bridge Design: The Steel Bridge of Railway crossing is designed (width 4m & length 50m) for movement of men & light weight machinery. Analysis and design of the steel structure bridge is done in the Staad pro software. The steel trusses are modeled, wind load as per the site location is considered for the design. The work involved the nos of site visits, taking site measurements & data collections for the design work. The design drawings and report is approval taken from the client. Around 5 Nos of Structural Steel GA drawings are prepared.

Structural steel chimney design: Structural Analysis & design of cement plant steel stack 1.2m Dia. 30m height, considering wind & Earthquake dynamic loads is done.

- Kuwait Cement Plant, Kuwait

Structural steel EL cable galleries running at height 4 to 6m for the road crossing points. Box type gallery made up four angle sections of size 1.5m x 1.5m is designed. Isolated foundations are designed to support the conveyor galleries columns. Around 4 Nos of the steel GA drawings are prepared.

- Orient Cement Plant, Bengal, India

Complete cement plant proposal bill of quantities calculation, man hour's estimation.

CIVIL & STRUCTURAL STANDARD DRAWINGS PREPARATION WITH BACKUP CALCULATIONS AS PER INDIAN STANDARD CODES:

General notes for Concrete Construction
General notes for Steel Construction
Shear Connections (Welded & Bolted)
Moment Connections (Welded & Bolted)
Bracing's connections (Bolted & Welded)
Ductile detailing
Chequered plate
Anchor bolts
Insert plates
Splice Connections

9. Freelancer, Mumbai-India

DESCRIPTION: Freelancer in to the Industrial Structures design.
DESIGNATION: Structural Engineer
DURATION: 28th Nov 2010 to 20th May 2011 (6 Months)
PROJECTS Steel & RCC Structures design work.

Work for L&T Engineering Powai, Mumbai

Piperack Design: 6m x 60m with 2 tiers steel piperacks design. Tekla Structure model review and Tekla output drawings checking work. Steel Fabrication drawings checking work is done.

Steam Drum supporting steel structure design: Structural Design of Steam drum supporting steel structure in Gujarat Narmada Valey Fertilizers company project. The Structure of size 6m x 12m x 10m in height. Steel fabrications drawings checking work

10. Uhde India Limited, Mumbai

DESCRIPTION : Uhde India Limited is an engineering Consultancy firm which takes contracts on LSTK basis. Uhde group scope of work includes Project Management, Basic engineering, Detail Design Engineering, Procurement, Procurement Services, Construction and Commissioning on the plant.

DESIGNATION: Engineer (Civil)
DURATION: 3rd July 2006 – 27th October 2010 (4.5 years)
PROJECTS:

- Indian Oil Corporation Ltd. (IOCL) Paradeep, Orissa:

RCC Process Buildings design:

Analysis and design of 2 Nos of RCC process buildings is done in the staad pro software. The RCC Structures of size 20mx30mx 20m is designed to accommodate the various mechanical equipments, piping & EL cable galleries. Around 30 Nos RCC GA drawings are prepared for the structure. The RCC structures of process buildings are supported on the Raft foundation with piles. The FEM Analysis and design of piled raft is carried out in the Staad pro software. The piling arrangement drawings foundation GA drawings and RCC reinforcement drawings are prepared for these structures.

Steel Piperacks design (2nos):

Analysis and design of steel piperacks of 8m wide 35m height of 4 tiers is done. The piperack is loaded with heavy piping loads, electrical cable galleries. The foundation of piperacks is of 3pile, 4pile pilecap foundation. Design of foundation is carried out in Standard UHDE excel spreadsheets. Steel piperacks Structural drawings checking work is done.

Process column foundation:

The process columns are most important equipments in the oil & gas plants. The civil work is to design the RCC foundations to sustain the process column load. The foundation for 50m height process column is designed considering the given mechanical loads. The RCC foundation of octagonal shape with piles is designed in the staad pro software. FEM Analysis and design is done for the foundation design. RCC GA drawings showing anchor bolts, foundation sizes, foundation arrangement and reinforcement details are prepared.

Horizontal vessels (Heat Exchangers) foundation design:

The horizontal vessels i.e., heat exchangers resting on the fixed and sliding saddle support which are supported on the RCC pedestals and foundation are designed considering the equipment empty loads, Equipment Operating Loads, Equipment Test loads, Equipment earthquake loads, wind loads.

Tank foundation design (1Nos):

Ring wall foundations: The tank foundation for the tank of Dia. 6m supported on the R.C.C. Ring wall type foundation is designed considering the tank loads.

Pump foundations design:

Process pumps are supported on the RCC block type foundations of 1.5mx1.5x1m thk. are designed.

- **PDH-Polypropylene Plant – Egypt** (Structures are designed as per American Codes)

Process column Equipment Supporting Structure (2Nos):

The Stool spaced RCC structure of 6m x 6m plan dimension of 4m height to support the Vertical process column structure is designed. The structure is designed for the mechanical equipment loads. The Equipment is resting on the peripheral beams in the structure. The Anchor Bolts arrangement is done as per mechanical requirement. Suitable Edge distances are maintained in the equipment supporting beams. The Rebars BBS drawings are prepared. Concrete Quantity and Rebars steel quantities are calculated.

Concrete Process Buildings:

The RCC structures of size 20mx30mx 15m height is required to support the various chemical plants equipments and pipings. The mechanical equipments loads, piping loads, El cable galleries loads and structural loads like DL, LL, wind loads and Earthquake loads is considered for the process building design. Structural design calculations reports are prepared. and GA drawings are prepared. The building required the raft foundation, so the FEM analysis & design of raft foundation is done the staad pro software.

Steel Process Building design:

Analysis and Design of Steel process building is done. 12mx12mx20m height steel structures process buildings required to support various mechanical equipments, pipings is designed. Steel structure general arrangement & fabrication drawings checking work is done.

Steel Piperacks design:

Steel piperacks of 6m wide 12m height with 2 tiers, with piping loads, electrical cable galleries. Analysis & Design of Steel piperacks is done in the Staad Pro software considering the various piping loads like Pipe Empty load, Pipe Operating Load, Pipe Testing loads, Pipe Friction forces, Pipe anchor forces, Wind loads & Earthquake loads are considered for the design of piperacks. Steel piperacks General arrangement drawings checking work is done.

Special & miscellaneous pipe supports design:

Around 20 Nos of special pipe supports design is done. Pipe supports located at various places like on grade slab, on the structure's platforms & on the Equipments are designed.

- **Deepak Fertilisers & Petrochemical Ltd. Mumbai, India**

Prilling Tower design (Process Building):

Prilling tower is one of the main processes building in Fertiliser plant. Structure is of size 15m x 15m x 75m. This structure is made up of RCC structure up to 20m height and from 20m to 75m the closed steel structure is provided. The floors are provided at every 4 to 5-meter height interval. The major equipments are supported at the top floor of the structure where required chemical process will take place.

The top floor is subjected to heavy load of pendulum like mechanical stainless-steel conduit which is of 10m x 10m in size & 50m height which is supported on the top floor. The total load of the mechanical equipment is acting at top floor. The floors at regular interval are provided to provide the lateral support to the Stainless-steel closed conduit of 50m height.

The structure includes one lift & one staircase from ground level to 75m height. Beams required to support the lift movement laterally is provided in the structure.

The complete structure is closed structure so the Purlins and cladding runners are designed considering wind loads.

Structural Steel General Arrangement drawings for the various platform levels in the structure are prepared. The main top floors drawings are checked which are supporting the main equipment and piping. Around 50 Nos of Structural Steel GA drawings are prepared for this structure.

- **Gujarat Alkalies & Chemicals Limited, Gujarat, India:**

Piperacks design

Analysis and design of Steel piperacks of 6m wide 12m height with 2 tiers, with piping loads, electrical cable galleries. Piperack Structural steel drawings checking is done.

- **Travancore Chemicals, Cochin, India**

Process Building design:

Analysis and Design of RCC process building of size 10m x 15m x 12m height design are done. Process structure supporting various mechanical equipments, piping, EL cable galleries is analyzed and designed in the Staad pro software. The mechanical equipments loads, piping loads, El cable galleries loads and structural loads like DL, LL, WL and EQL is considered for the process building design. Structural design reports and GA drawings are prepared. The building required the raft foundation, so the FEM analysis & design of raft foundation is done the staad pro software.

Piperacks design:

Analysis and design of Steel piperacks of 6m wide 12m height with 2 tiers, with piping loads, electrical cable galleries. Piperack Structural steel drawings checking is done.

Substation building design drawings checking

RCC Substation building of Size 12m x 12m x 6m consisting transformer foundation, electrical cable pits, and other equipments R.C.C. drawings checking is done.

Special & miscellaneous pipe supports design. Around 10 Nos of special pipe supports design is done.

Electrical cable galleries design is done.

- **Polysious cement plant, U.A.E.**

Design of Conveyor galleries:

Analysis & detailed design of 2 nos. 4mx4m conveyor galleries carrying limestones, running at 35m height. Is done. Conveyor galleries loads, wind loads calculations are done for the conveyor galleries and galleries supporting trestles. Structural GA & details drawings are prepared. The conveyor galleries steel structures are modeled in the PDMS software to make the clash free structural arrangement of the structure. Fabrication's drawings checking work is done.

Combined foundation design is done for the conveyor galleries foundations.

Limestone Storage Shed:

Closed Industrial shed of size 40mx70mx35m. The structure is basically used for the storage of the Raw limestone required in the cement manufacturing plant. The limestones are conveyed to the structures through the conveyor galleries which runs from limestone quarry to the storage shed.

So, the functional requirement of the structure is to support the 2 nos of the Conveyor galleries which are used to carry the limestone to the structure & one horizontal conveyor belt which runs along the length of structure to transfer the limestones along the length of structure. And some backfilters and ducts are required in the structure at the conveyor levels which are at the top of shed. To accommodate the various equipments one transfer tower is provided on top of the shed. The steel structure is supported on top of the shed trusses.

The transfer tower called penthouse structure is supported on the shed. So, the frames are supporting the penthouse structure of span 40m to be designed to carry around vertical load of penthouse structure & huge horizontal loads generating from windload of penthouse structure.

The frames made up of 4 nos of I sections connected to each other to form the box of size 2mx2m. Total Steel tonnage of structure is 900 tonnes.

The structural Analysis and design are done in the Staad pro software as per BS codes. For the analysis the Dead loads, Live loads, wind loads, Earthquake loads, Conveyor galleries loads, penthouse structure loads, mechanical equipment operating loads are considered.

Wind loads are calculated considering the closed storage shed and closed penthouse tower.

Moving load analysis is done for the beams supporting the equipment which ultimately carries the limestones along length of the structure i.e., the equipment moves along the length of structure.

Since the structure is closed nos of Cladding runners & purlins are designed and drawings are prepared. Roof Sheeting and side sheeting drawings checking is done.

The structures central frames are loaded with the penthouse loads, so the heavy steel connections are required in the steel structure. These connections are designed considering the penthouse structures loads i.e., reactions from the penthouse staad analysis on top of storage sheds frames. Various connections like Baseplates, Shear connections, Moment connections, purlins and cladding runner's connections, anchor bolts are designed.

The steel structures PDMS models are prepared to make the clash free arrangement of the structure. General arrangement and fabrication drawings are prepared in the autocad. Also, the structure is modeled in the Tekla software for the fabrication drawings generation. So, around 1000 nos of fabrication drawings are generated for this structure. Fabrication drawings checking work is done.