Debajyoti Ghosh Roy, P.E.

debajyoti_00@yahoo.com

(318) 450 1073

Professional Engagement Summary

- 12 years of experience as a Civil/Structural engineer in industrial structures. 9 years (out of 12) in Oil and Gas EPC projects in US and Canada (Oil Sand)
- Related experience in Front End, Detail Design and in Field Engineering Role
- Design of Piperack, Pipe bridge, Equipment/process structure, process modular building, stair tower, miscellaneous pipe supports (Pole support, pipe truss, pipe bent)
- Structural design incorporating 3rd generation modular concept, design for lifting of modules, land transportation (vertical and lateral impact loading) and sea transportation (rolling, pitch and heave forces), design of lifting lug and shipping beam
- Design of equipment (exchanger, vertical vessel, silo) foundations (mat and mat supported on piles), foundation for centrifugal and reciprocating pump, compressor foundation, design of pile foundation, pile cap and pedestal
- Structural connection design for shear (single plate, extended shear tab, end plate), moment (extended end plate, flush end plate), vertical bracing connection to column (Cross and Inverted V)
- Seismic analysis of structures using ELF method and Response Spectrum Analysis (RSA), determination of appropriate SFRS based on ASCE 7 Seismic design category and structural irregularities, design of Special Moment Frame (SMF), Special concentric braced frame (SCBF), Buckling restrained braced frame (BRB) for SDC D and R > 3 system
- Design of structures and foundations related to other industrial applications (Wood products) include Filter structure, Cyclone structure, Super screen structure, chipper structure and related mat foundations, supporting pneumatic conveying system, pole supports
- Review of shop drawings, technical specifications and geotechnical report, vendor drawings and piping ISO
- Conversant with codes (ASCE 7-12, AISC 360 14th Edition, AISC 341, ACI 318-08, IBC 2012)
- Conversant with RISA 3D, RISA Foundation, STAAD Pro, MAT 3D, Revit, Navisworks, Smart Plant

Professional Registration

- Professional Engineer, Michigan
- Professional Engineer, Texas
- Professional Engineer, Alberta (Canada)

Education

- ***Master of Science in Civil Engineering***
  Louisiana Tech University, Ruston, USA
- ***Master of Science (Research) in Civil Engineering***
  University of Dundee, Scotland, UK
- ***Bachelor of Engineering (Civil)***
  Bengal Engineering and Science University, India

Related Experience

- **Eagle Project Services, LLC, Ruston, LA, Nov 2015 – Current**

  Civil Structural Engineer

  Fine Screening Project, Lanett, Alabama & Joanna, South Carolina
  Client: Norbord

  - Structural and foundation design for cyclone and filter structure, superscreen platform and silo structure for the OSB plant in Joanna, SC. Structural analyses carried out using RISA 3D while the foundation designs were completed using RISA foundation

  Recycle Wood Project, Guntown, Mississippi
  Client: Norbord

  - Structural design and member optimization for Filter structure, screen platform, reject cyclone structure, flaker structure, chip storage building and conveyor bent. The structures are designed based on applicable provisions of Chapter 15 of ASCE 7 (Seismic design requirements for non-building structures) and Structural system and height requirements for SDC D structures.

  Dryer Exhaust Project, Guntown, Mississippi
  Client: Norbord

  - Duct Support Structure and Dryer building
  - Zone 2 and 3 Pipe supports

  Kronotex, Barnwell, South Carolina

  - High Pressure Relay
  - Truck Bin Floor Line

  SEFA EHE Dryer Project, Salisbury, North Carolina

  - EHE Dryer and Subframe

  Roseburg, Taylorsville, Mississippi

  - Dosing bin support structure

- **Fluor Canada, Calgary, Feb 2014 – Sep 2015**

  Senior Design Engineer, Fort Hills Utilities and Offsite Project

  - Analysis and design of Condensate Precoat Building modules consisting of equipment modules, Piperack and E&I modules, incorporating Fluor 3rd Generation module design concept. Modules designed for operation, lifting and road transportation condition
  - Connection design of structural modules. Design of extended end plate moment connection, fully welded moment connection, shear tab connection, end plate and clip angle shear connection
  - Analysis and design of stair tower modules (14m, 18m, 22m) in U&O unit including connection design
  - Design checker of OSBL Piperack/pipe bridge modules (from overseas work share office) for conformity to project specification, applicable building code (ABC 2006) and CISC S16-01. Review of pile design.
  - Design of pile foundations considering permafrost condition (incorporating frost uplift) to support process and equipment modules. Majority of the piles were driven friction piles of 20 and 24 inch diameters with embedment exceeding 30 m (90 ft).

- **Exxon Mobil/Imperial Oil, Fort McKay, Canada, July 2012- Nov 2013**

CSA Engineer (Field)*, Field Engineering Support, Kearl Expansion Project*

- Review of capacities and settlement calculations of driven steel piles in the Main Plant site
- Oversee subcontractor installation of driven piles and sheet piles
- Review of installation records of driven piles and screw piles for conformity to project specification in terms of blow count, embedment and refusal criteria, hammer stroke and driving energy, soil plug elevation, maximum and minimum design torque (screw piles)
- Addressing technical issues with respect to pile out of tolerance, predrilling, splicing and extensions, low blow count and inadequate set up, soil heaving
- Inspection of earthworks including excavation, backfill and compaction
- Inspection of base and sub base preparation of mat/footing for compliance to project specification in terms of material size, lift and compaction requirement
- Review of fill material specification and backfill compaction report submitted by contractor
- Responding to Specification Deviation Request and Non-Conformance Reports
- Provide engineering input to RFI, design changes at site, scope change orders and site project instructions
- Coordinate with EPC personnel on site and home office on engineering matters, provide technical support and resources to Construction Management Team of Exxon Mobil

- **Bantrel Co, Calgary (Canada), Dec 2010 – July 2012**

Civil/Structural Engineer: *Detail Engineering, Surmont Phase 2 SAGD, Conoco Phillips*

- Performed structural analysis and design of preassembled piperack and process (equipment) modules, access platforms, stair towers, pump house and electrical substations in steam generation and U&O unit under Central Processing Facility. Modular design criteria incorporating lifting and land transportation of modules considered in the design
- Design of skids, grade beam and base plate for the modules (engineering standard for the project)
- Design of concrete pile cap and pedestal
- Design of screw and driven piles in the Central Processing Facility supporting main piperacks, finger racks, process structures, stair towers and pre-assembled units
- Reviewed the various issues related to the use of screw piles in the project with respect to design methodology, limitations in the use of design parameters, the construction procedure and the use of helical and driven piles on a case to case basis
- Acted as a coordinator between EPC and piling contractor in the detail design phase. Providing technical comments with regards to installations, pile load test data interpretation, feasibility study of alternate pile load test on production piles
- Respond to RFI's for driven and screw piles, field change notice, non-conformance report, evaluate and implement design changes in the piling program
- Coordinating with home office and geotechnical consultant with regards to pile capacity evaluation, driven pile set criteria, hammer calibration, pile retap and restrike, PDA testing and heave monitoring

- **Foster Wheeler Corporation, Houston, United States, Jan 2008 - Nov 2010**

Civil/Structural Engineer: *Detail engineering, BP Delayed Coker Unit (DCU)*

- Analysis and design of piperack and process structural modules (exchanger, boiler, drum and condenser support structure), platform and air cooler support structures. Seismic design criteria for ordinary moment frame and seismic design requirements for non-building structures incorporated in design
- Modular design criteria incorporated for lifting, sea and land transportation of structural modules. Lifting analysis of structural modules at fabrication yard and at site (45 and 90 degree sling angle for single & dual lifting), design of lifting lugs. Sea transportation analysis of structural modules considering acceleration due to roll, pitch, and combined effect of roll heave and pitch heave. Stability analysis of structural modules during land transportation
- Design of pile cap, mat foundations, equipment support structures and exchanger foundation, design of octagonal foundation for vertical vessel, pump foundation
- Design of miscellaneous pipe supports (MPS) on piperacks to support flare line, pipe support structures and MPS on ground (T post and inverted L post)
- Site preparation and drainage calculation
- Review of shop/fabrication drawings and squad checks on drawings and calculations
- Weight management of pre-assembled units and pre-assembled piperacks at 60 % and 90 % model review for total weight and composite COG during lifting/sea transport. Maintaining project module index with information of each module including module size, number, weight and COG. Tracking module design and sequence changes throughout the project. Development of module key plot plan and the weight control procedure to calculate, track, control and manage the weight and COG of respective modules

Front end engineering (FEED), Ecopetrol Barancabermeja Refinery modernization, Coker Unit and miscellaneous structure

- Design of piperacks and equipment support structures based on analysis incorporating modular design criteria for lifting, sea and land transportation
- Design of vertical vessel and tank foundation
- Design of anchored sheet pile for coke dock structure. Design included seismic forces and berthing impact loads

Detail engineering, Ecopetrol Barancabermeja Refinery modernization, pipeline relocation

- Design of piperacks/sleepers and strip footing
- Design of end plate moment connection and beam-column web shear connection

- **Hunt Guillot & Associates L.L.C, Ruston, Louisiana, Dec 2006 - Dec 2007**

Civil/Structural Engineer–In-Training:

- Design and analysis of new and existing industrial structures (hydrocarbon, industrial and commercial power generation), design of equipment foundations, pile cap and mat
- Detail analysis carried out for cyclone support structure, defibrator structure, truck dumper foundation and silo structure (Louisiana door skin plant)
- Design of fly ash silo steel frame and mat footing (Factory Sales), air preheater support tower (SID Richardson, TX), steel building structure (Metal building) and turbine generator foundation
- Design of retaining wall around community pool