

Dr. RAHUL BHARTIYA

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EDUCATION

Indian Institute of Technology Delhi

Ph.D., Structural Engineering 2022
Thesis: Prediction of confinement behaviour of concrete-filled tubular columns under monotonic and cyclic axial loading

Indian Institute of Technology Bombay

B.Tech (Civil) + M.Tech (Structural Engineering) 2008
Pursued as a dual-degree programme
Thesis: Fatigue analysis of concrete structures

RESEARCH AREAS/INTERESTS

- Concrete Confinement Models
- Concrete-filled Steel Tubular Columns
- Numerical modelling
- High-strength Steel Reinforced Concrete
- Seismic Strengthening

PUBLICATIONS

Peer-Reviewed Journals:

1. **Bhartiya, R.**, and Sahoo, D. R. (2021). "Prediction of axial compression behavior of rectangular RCFST columns with confining ties." *Journal of Constructional Steel Research*, 186, 106920. (IF-4.349)
2. **Bhartiya, R.**, Sahoo, D. R., and Verma, A. (2021). "Modified damaged plasticity and variable confinement modelling of rectangular CFT columns." *Journal of Constructional Steel Research*, 176, 106426. (IF-4.349)
3. **Bhartiya, R.**, Oinam, R. M., Sahoo, D. R., and Utkarsh, K. (2021). "Modified confinement model for monotonic axial behavior of concrete-filled tubular columns." *Journal of Constructional Steel Research*, 180, 106570. (IF-4.349)
4. **Bhartiya, R.**, Sahoo, D. R., and Oinam, R. M. (2023). "Cyclic axial stress-strain model for circular CFST columns under compression loading" *Soil Dynamics and Earthquake Engineering*, 164, 10758. (IF-4.25)

Conference Proceedings:

1. **Bhartiya, R.**, Sahoo, D. R., and Oinam, R. (2020). "Influence of length-to-depth ratio on monotonic compression behaviour concrete-filled tubular columns." *Proceedings of the fib Symposium 2020: Concrete Structures for Resilient Society*, 392–398.

2. Abhilash, M., **Bhartiya, R.**, Oinam, R., and Sahoo, D. R. (2022). "Comparative study on mitigation of soft storey effects by FRP wrapping and addition of shear-walls", *Proceedings of the Socio-Technological Aspects of Seismic Disaster and its Mitigation (STASDM)*, IIT Guwahati.

INDUSTRIAL EXPERIENCE

WSP, Noida, India

2016 – 2019

Designation: Principal Engineer

- **La Maison by HDS, Dubai:** a 105 stories tall skyscraper. Designed piled-raft foundation, composite columns, shear walls, out-rigger, and belt walls
- **Jumeirah Gate, Dubai:** consisted of 74 stories tall twin towers connected via a link bridge structure at the top. Was instrumental in the design of the steel link bridge
- **B4 Hotel, Dubai:** a 70 stories tall tower located adjacent to Burj Khalifa. Designed piled-raft foundation, columns, and shear walls

Royal HaskoningDHV, Noida, India

2015 – 2016

Designation: Senior-I Engineer/Expert

- **Water treatment plant at Ravine Sable Sandpit, Port of Spain:** was lead in detailed (seismic resistant) design of various tanks, utilities, and auxiliary buildings as per Euro codes
- **New CDS Line, Brasco Pointe Noire Brewery Ltd., Congo:** worked on foundation design for the tender stage
- **Goa Shipyard phase-4, Goa:** worked on the concept design of various Steel and RCC structures, including a shipbuilding complex
- **Pulse TU Delft, The Netherlands:** designed pile foundation for the 4500 m² library building

GODREJ Properties Ltd., Gurgaon, India

2014 - 2015

Designation: Manager - Structure

- **Godrej Summit, Godrej Oasis, Godrej Icon, Godrej Aria & Aravalli:** worked as a client structural engineer and led the structural design of group housing projects with a total built-up area of 4.5 million ft²

M3M India Pvt. Ltd., Gurgaon, India

2013 - 2014

Designation: Deputy Manager - Structure and Design

- **M3M Golf Estate, Gurgaon:** the project consists of a high-end group housing society, built over 75 acres of land with a built-up area of 4.2 million ft², with buildings ranging from 6 stories to 44 stories
- Worked as a client structural engineer and coordinated among structural consultants, peer reviewers, and contractors, and also performed the in-house design of auxiliary structures. Was successful in *value engineering* and saved around 1200 tons of steel

Designation: Sr. Project Engineer

- **DLF Ultima Sec 81 and DLF Sky Court Sec 86, Gurgaon:** was instrumental in the peer review of residential buildings of the proposed group housing society having built-up areas of 3 and 1.7 million ft², respectively
- **3G Tower, Wave City Centre, Sec 32, Noida:** worked on the concept and schematic design of (3B+G+45) storied building
- After numerous iterations, carefully selected the structural arrangement and system to provide adequate safety, serviceability, and economy
- **Grand Hyatt Hotel, Sec 94 Noida:** worked on the concept and the schematic design of the Service Apartment and Hotel Tower, each consisting of (3B+G+45) and (3B+G+35) floors, respectively. Both the towers have a swimming pool on the terrace. The total built-up area of the project was about 1.8 million ft²

Designation: Structural Engineer

- **Security Buildings in Shamiyah Area (Makkah, KSA):** a 26 storied building over an emergency tunnel. Instrumental in the design of transfer girders above tunnel and 3.0 m thick transfer floor above podium.
- **Mianga Residential Building, Angola:** the project houses eight luxurious residential apartments and one VVIP Floor with a swimming pool on terrace on a plot of 767 m² and a total built-up area of 5369 m². Worked as a lead engineer and was able to complete the project successfully in a *tight schedule of 2 weeks*
- **National Assembly Building, Angola:** built-up area of 53,000 m². Value engineered the foundation, thereby **reducing** the substructure quantities by **40 %**
- **Princess Nora Bint University, Riyadh, Saudi Arabia:** the *World's Largest University of Women (LEED Certified)*, area about 8 million m², was sent onsite to Dar's Beirut office for 3 months to work on academic buildings
- **King Abdullah Financial District, Riyadh:** reviewed parcel 2.05 designed by KPFF consultants, USA. It consists of mixed-use residential and commercial towers resting on 5 common podium floors. The total height above the ground was about 80 m
- **La Plage, The Pearl, Qatar:** built on 400 hectares of reclaimed land, and consisted of 12 residential buildings and 2 retail buildings. The total built-up area was about 250,000 m²

OTHER ACHIEVEMENTS

- Led the team of 15 engineers and 5 draughtsmen in WSP India and received the "Best team award" for the year 2017
- *LEED Accredited Professional* (U.S. Green Building Council) since March 2009