Report on Technical Study Tour and Visits to Construction Projects and R & D Institutions at New Delhi
From 26/02/2018 to 04/03/2018

Department of Civil Engineering
Birla Vishvakarma Mahavidyalaya
(Engineering College)
Vallabh Vidyanagar

A technical study tour, visits to construction projects and R & D institutions at New Delhi has been organized from 26/02/2018 to 04/03/2018 for the Third year and fourth year students of Civil Engineering of B. V. M. Engineering College. The said technical tour is organized after having permission from Charutar Vidya Mandal and continuous guidance from Dr. Indrajit Patel, Principal and Dr. L. B. Zala, Head, Civil. Engg. Dept. Total sixty students from third and final year civil engineering discipline are benefited under care and guidance of four faculty members Prof. A. N. Bhavsar, Prof. B. R. Dalwadi, Dr. Darshana Bhatt and Prof A. A. Amin. Shri Mahendra Prajapati, peon has helped to execute the tour while the said period.

The date wise visit details in brief as follows:

Sr. No.	Date	Time	Technical Sites
1	26/02/2018, Monday	4:30 pm	All students and staff reported at Anand railway station.
2	26/02/2018, Monday	6:00 pm	Departure from Anand by 12917-Sampark Kranti Express train.
3	27/02/2018, Tuesday	10:45 am	Reached at Hazzarat Nizzamuddin (New Delhi)
4	27/02/2018, Tuesday	11:45 am	Check-in at Shri Swaminarayan Mandir, New Delhi and lunch at mandir.
5	27/02/2018, Tuesday	1:30 pm on wards	Visit to Mughal Garden, Rastrapatibhavan and visited Markets.
6	28/02/2018 Wednesday	7:00 am to 7:00 pm	Project visits at Jayprakash Associates/ Shapoorji Pallonji and Other nearby projects, Noida, New Delhi. IITD, Hauz Khass, New Delhi,
7	01/03/2018 Thursday	5:00 am to 9:00 pm	Visit to historical buildings and forts at Agra and new Delhi.
8	02/03/2018 Friday	9:00 am to 9:00 pm	CSMRS (Central Soil and Materials Research Station) & Delhi-city tour and Akshrdham Monument visit.
9	03/03/2018 Saturday	1:00 pm	Reported at H. Nizzamuddin railway station
10	03/03/2018 Saturday	1:55 pm	Departure from H. Nizzamuddin by 12918-Sampark Kranti express train.
11	04/03/2018	4:55 am	Arrival at Anand railway station.

The brief reports on the visits of key places/projects/institutes:

Visit to Indian Institute of Technology Delhi, A renowned R & D Institute, New Delhi:

As we have seek the prior permission from officials of IITD, Dr. Ramanathan Ayothiraman, Associate professor, Department of Civil Engineering, welcomed us and delivered an expert talk on R & D projects in area of Civil Engg. The entire group is divided in three batches and visit to all different laboratories and project works were visited under the leadership of Prof. Ayothiraman and team of research scholars. The visit to Soil Mechanics, Geology, Transportation Engg, Earthquake Engg, Environmental Engineering and Structure Engg consisting of advanced equipment and research projects were discussed and explained the need of research in details.

IIT Delhi Expert Lecture and laboratory visits


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Visit to Construction Projects:

Jaiprakash Associates Ltd. is a diversified infrastructural industrial conglomerate in India. The company is in the business of heavy civil engineering structures, expressways, cement, and real estate in New Delhi. Students have visited on site of this company named as Jaypee Greens at Greater Noida. It is a premium 452-acre golf-centric lifestyle real estate development situated in Greater Noida integrating homes with golf course, landscaped emerald spaces, resort living and commercial developments.

At this site, for high rise structures, a modern foundation system referred as piled raft foundation has been under construction. Prof. B. R. Dalwadi explained about benefits of the piled raft foundation compared to the use of only raft or only pile group for the high rise structures in detail.

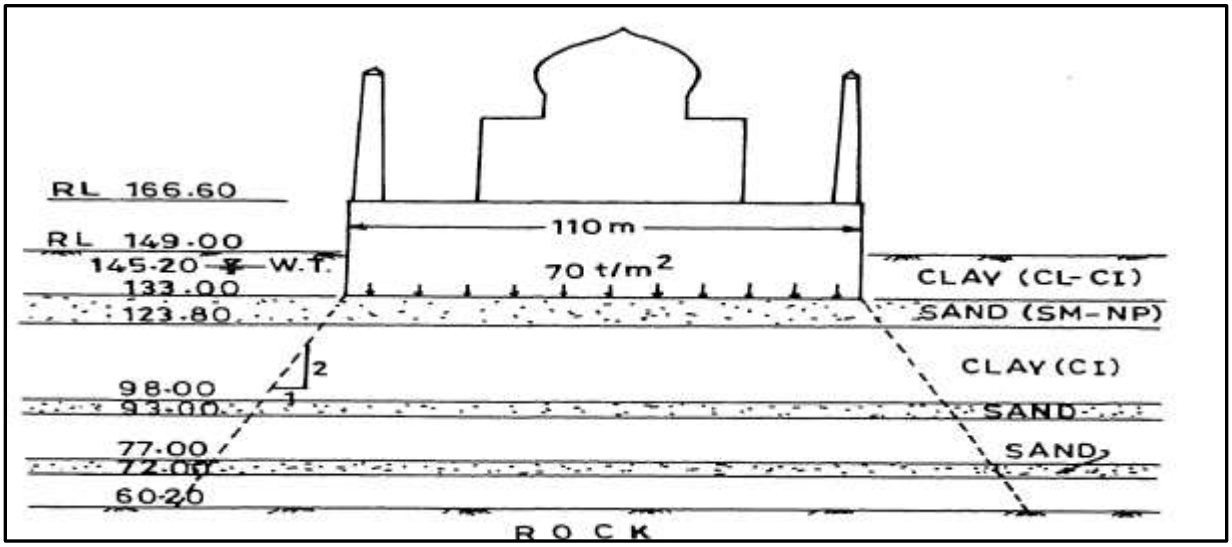
Prof. A. N. Bhavsar explained about the key points of building infrastructure and discussed about Planning & scheduling of activities, general management approach, organization structure, safety at site, execution of works, equipments and tools used etc. All students also visited concrete mix plant and checked the grade of concrete according to provided mix design. They also studied QC tests and

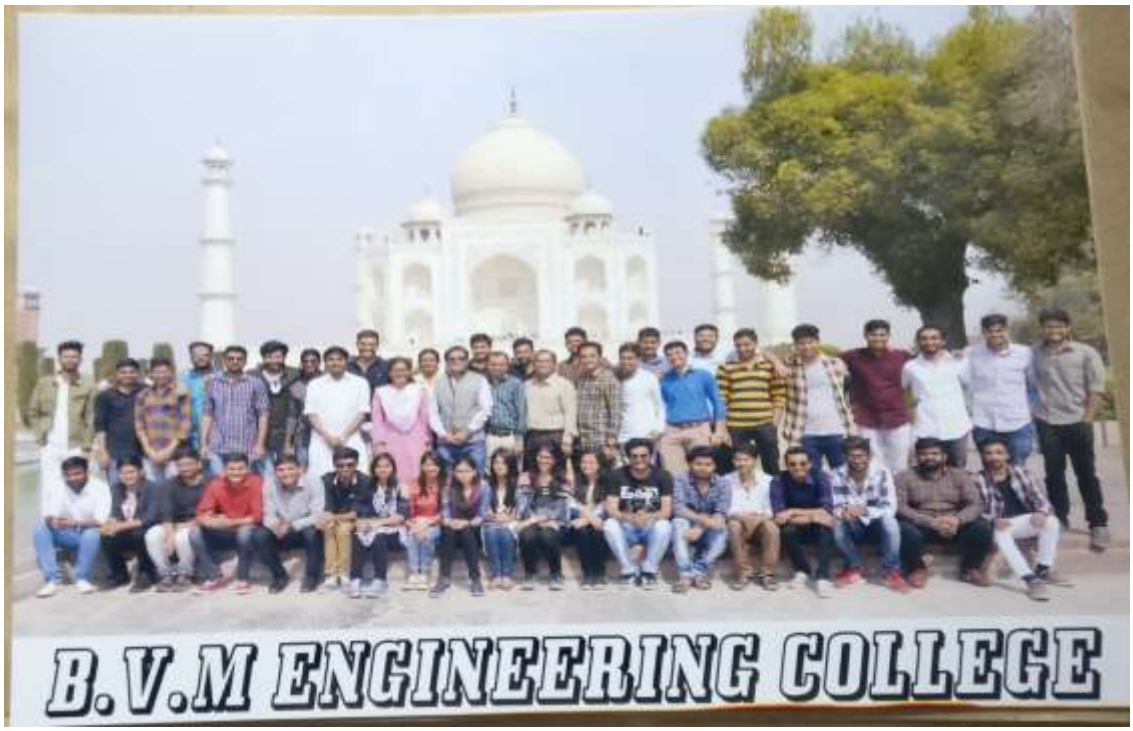
method of delivering the concrete on the high rise structure by pumping method. Students could also observe reinforcement arrangement for the different structural members.

Site Visit at Jaypee Greens at Noida

Visit to the historical buildings:

During visit of the Taj Mahal, students were explained about the technical challenges faced and the technical skills used to overcome the same at that time. The constructional details, design considerations and soil charecteristics are discussed at length by the local guide, Prof. Bhavsar and Prof. Dalwadi. As it is built on the bank of the river Yamuna, the construction of its foundation must have required special attention. It was the practice of the Mughal builders to support massive structures on masonry with timber cylindrical pile-foundations sunk into the soil at close intervals. Apparently, the terrace and the mausoleum building, as well as the minarets, rest on one firm, compact bed of masonry.





Akshardham Monumental Building Visit:

A socio- religious sect of BAPS has constructed massive complex with monumental structure Akhshardham near Noida-New Delhi (India). The 80.0 m x 95.0 m monument with 38.0 m height is built using stones only i.e. using stone columns, stone beams and stone slabs. Students have been explained about the earthquake resistant foundation treatment and construction aspects of the main temple without using any reinforcements. The site is protected by flood dyke. It is located in seismic Zone IV as per BIS.

Foundation: The detailed soil investigation and scientific analysis of the soil was done. A leading geotechnical consultant and devotee from our Gujarat, Dr. Maheshbhai Desai and structural consultant Shri B. V. Chaudhary have designed the foundation. First, a 961,874 cu. ft (285 ft wide x 225 ft long x 15 ft deep) foundation pit was dug in which using gabions of geomatrix and geofilters, 11 separate layers of sand and stones were laid. On top of these layers, a five-feet thick raft of plain cement concrete (P.C.C.) has been laid. Then, numerous concrete cubicles, measuring 36 sq. m, were arranged like a jigsaw puzzle around the raft. Bearing in mind the expansion and contraction properties of concrete, a special concrete curing process was carried out. The plinth was built using five million specially prepared and tested Meerut bricks. Normally, these bricks have a weight bearing capacity of 35 kg/cm², but here bricks with a weight bearing capacity of 100 kg/ cm² were rigorously tested and used.

Yamuna Express way project

India has the world's second largest road network, aggregating over 3.34 million kilometers. As Indian Economy grew in the early part of this decade, challenges & opportunities across entire spectrum emerged and so was the case of large expressways with unique model of ribbon development along it, which modeled as developed tracks of New India.

The Group has entered into construction of expressways with the Yamuna Expressway project – a 165 km access controlled 6 lane super expressway along the Yamuna River connecting Noida and Agra on Build – Own – Transfer basis. The project envisages ribbon development along the expressway at 5 locations totaling 25 million square metres for residential/industrial/institutional purposes and shall trigger

multidimensional, socio-economic development in Western U.P. besides strengthening the Group's presence in real estate segment in this decade.

The technical tour and visits to the various R & D institutions were completed as per the planning. The successful completion of visit, without any difficulty, is due to the continuous support and guidance of Principal Dr. I. N. Patel, HOD Civil Dr. L. B. Zala, TEQIP coordinator Dr. S. D. Dhiman, Prof. B. S. Patel and the cooperation from the faculties and students. We are thankful to the Department of railway, India for the concessions given to the students and faculty members.