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Civil Engineering Department

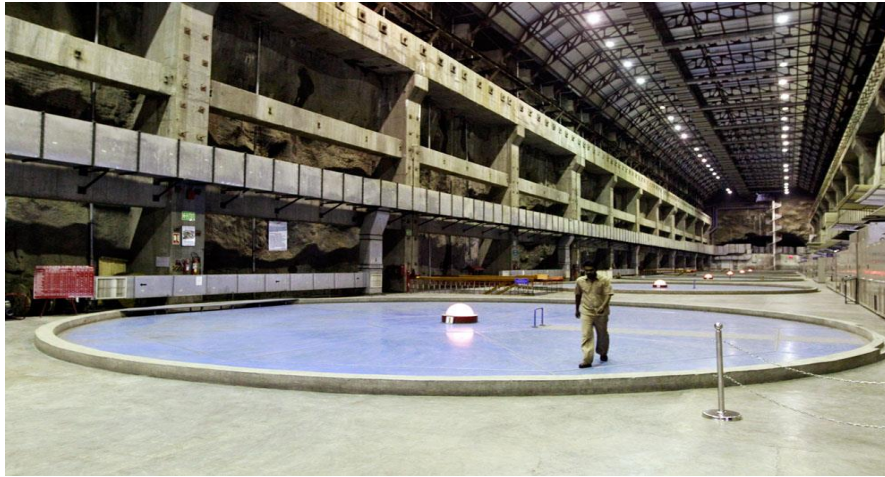
Report on Technical visit at Sardar Sarovar Dam and Statue of Unity

Prof. Krutika Chauhan organised the technical visit on 6th and 7th February 2020 in which 72 students and 6 faculty members (Dr. Bhavin patel, Prof. Sunil Jaganiya, Prof. Pritesh Rathod, Prof. krutika Chauhan, Prof. Jaldip Patel and Miss. Foram Patel) visited the Sardar Sarovar Dam and Statue Of Unity.

Sardar Sarovar Project is considered as a lifeline of Gujarat state. The technical visit was planned to understand the multipurpose river project, its components and important features and current status of on-going activities on the site. The journey to the Dam site started early in the morning around 5 am by a private bus. Students visited the dam site view points, River Bed Power House (RBPH), Top of the dam and the main canal.

Sardar Sarovar Dam is a concrete gravity dam across river Narmada, 1210 meters in length and with a maximum height of 163 meters above the deepest foundation level. It will be the third highest concrete dam in India. In terms of the volume of concrete involved for gravity dams, this dam is ranked as the second largest in the world.

The River Bed Power House with an installed capacity of 1200 MW is an underground power house stationed on the right bank of the river located about 165 meters downstream of the dam. It has six number of Francis type reversible turbine generators each of 200 MW installed capacity. The CHPH is a surface power station in a saddle dam on right bank of the reservoir having total installed capacity of 250 MW (5 x 50 MW). The diameter of the penstock is 22 feet. The power generation cost is 30 paisa per unit. The power generated by the SSP is shared among three states – Gujarat (16%), Madhya Pradesh (57%), and Maharashtra (27%). The students got to understand the technical details of RBPH and its functioning.



The dam is 1.2 km long and it is 146.5 m high. It is 163 m from foundation and it is located at an elevation of 146.5 m from sea level. The dam comprises of 30 gates each having a discharge capacity of 1 lakh cusecs. For spillway 7 radial gates of size 60' x 60' and for service spillway, 23 radial gates of size 60' x 55' are provided to negotiate the design flood.

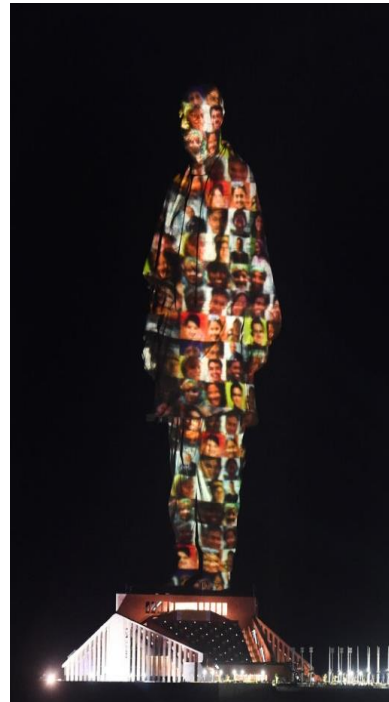


The Narmada main canal is the biggest lined irrigation canal with a length of 458 km reaching the Gujarat-Rajasthan border. The site visit gave an exposure as to how water is brought to the main canal from the main reservoir through the ponds and link canals. The field visit gave a good exposure to civil engineering students on the multipurpose river valley water resources project of Gujarat state.



As is evident from the above the Sardar Sarovar Project has adopted many innovative and path-breaking approaches in planning, design, construction and operation, all of which have no parallel in the whole world.

The statue of unity depicts the Indian independence activist Sardar Vallabhbhai Patel who was the first Home minister of India. He is highly respected for his leadership in uniting 562 princely states to form the single large Union of India. It is located in the state of Gujarat, India.



It is the world's tallest statue with a height of 182 meters. It is located on a river island facing the Sardar Sarovar Dam on river Narmada, 100 km southeast of the city of Vadodara. This inspiring memorial site, with a number of edutainment components, is located between the Vindhyachal and Satpuda Ranges rising weir Narmada River, impounded by Garudeshwar, the Sardar Sarovar Dam and the town of Kevadia. The construction process started by L&T in October 2013 with budget of \$420 million and designed by sculptor Ram V. Sutar. Finally on 31st October, 2018 it was inaugurated by Indian Prime Minister Shri. Narendra Modi. The core of the statue utilised 210000 cubic metres of cement concrete, 6500 tonnes of structural steel and 1700 tonnes of bronze plates. The statue till the shoulder is made up of concrete and the head part is made up of steel. Self-compacting cement of M65 grade were used for the construction.

The most interesting part is the height of statue which is from its base 240 m with a base of 58 m and statue of 182 m. The height of 182 was specifically chosen to match the number of seats in the Gujarat Legislative Assembly. The statue is divided into five zones of which only three are accessible to the public. There are a memorial garden and a museum which we have visited and enjoyed a lot. There was gallery at a height of 153 meters and we reached there by 2 lifts which can carry 26 each at a time and the gallery can hold up to 200 people. It was mesmerizing experience clubbed with bunch of knowledge for all.



