**AN INDUSTRIAL TOUR TO BAMROLI WASTER WATER TREATMENT PLANT, ECO FARM – SURAT and RAILWAY COLONY _BARODA**

- ♣ The Department of civil Engineering conducted the tour for the Pre-final Year student under the subject of Waste water and Water supply engineering & Railway Bridge and tunnel engineering.
- ♣ **Prof. Natasha Sagar** had co-ordinate with the Authority OF BAMROLI WASTE WATER TERTIARY TREATENT plant, **MR. SNEHAL PATEL** OWNER OF THE ECO-FARM (President Nature club, Surat) and railway authority Pratapnagar.
- ♣ **The visit had been planned by Prof. Rahul Parmar, Prof. Krunali Savalia and Student Co-coordinator's Brijesh Narola & Vipul Patel along with their CC Prof. Kajal Dudhatara.**
- ♣ **Prof. Vimal Patel** had arranged the one night stay **at SVNIT, Surat**
- ♣ **As Prof. Natasha Sagar had attained the STTP between periods of 23-27th January 2017 at SVNIT, Surat on "Recent Advances in Waste Management", based on which the faculty had already visited the tertiary treatment plant at Bamroli of 100 MLD capacity is one of the Asia's largest waste water treatment plant.**
- ♣ Eco- farm built under the guidance of Nature club President MR. Snehal Patel Surat is one of the finest example of the eco-friendly, self-reliant & energy efficient home cum garden, which was visited by the faculty during STTP.
- ♣ She wanted to deliver the student what she gained so the visit had been planned and executed from **31st March to 1st April, 2017.**
- ♣ The faculties took pain to take the **6 students of pre-final year of SHRI PANDIT NATHULALJI VYAS TECHNICAL CAMPUS** to this learning campaign.
- ♣ **The visit had been conducted in three phases:**
- ♣ **31st April, 2017 March Past to Waste Water TTP**:
    - The visit was conducted along with the **Prof. Natasha Sagar, Rahul Parmar, Prof. Krunali Savalia, Prof. Kajal Dudhatara.**
    - Almost by 7:00 A.M. civilians reached the SVNIT Campus get relaxed, get ready for the visit to the plant.
    - The bus reached the plant after refreshment and snacks at SVNIT to Bamroli TTP almost 15 km away from SVNIT on NH-53 by 11 A. M.
    - Mr. Ketan Desai and colleagues the engineer's t the waste water treatment plant took the charge to take round the visit to treatment plant.
    - The engineer first interacted with the student to know their fundamentals and then student's had been divided in to the **2 groups**

for the appropriate interaction at the treatment plant between the in-charge engineer's and the student.

- The student visited the Primary & Secondary unit which is conventional part of the treatment plant found in all the city's waste water treatment plant and then additionally but exceptional the tertiary unit in which waste water is converted to the Potable water supplied to the Nearby chemical industries in vicinity.
- The plant generates the electricity from the Methane gas generated in UASB and the gas generation is more than enough to operate the plant, is self-efficient plant.

- **Specialty of plant:**

- Project Name: Bamroli Sewage Treatment Plant
- Sub-Sector: Sewage collection, treatment and disposal system
- Name of Authority: Surat Municipal Corporation
- Location : Surat
- Project Cost: around90 corer to built this plant
  - **Surat is near by the river of Tapi.**
  - **This plant is sewage treatment plant (STP)**
  - **Total 11 no. of STP plant are there at Surat**
  - **It is developed in 324km sq. In which Is 80% residential area**
  - **Everyday 120 corer liter pure water is supply to Surat city by Municipal Corporation and 90 corer liters generate the waste water.**
  - **Then waste water is collected and transport at waste water treatment plant, and after the treatment procedure the water is discharged at midhola river, than it meet to Arabian Sea.**
  - **This plant is completely gravity based plant, not required any intermediate pump at any place.**

**Phase:1 single stage biological treatment**
**Capacity: 100 MLD**
**Technology: anaerobic biological treatment through UASB system**
**Year of commissioning: 2003**

**Phase:2 two stage biological treatment / secondary treatment**
**Capacity: 100 MLD**
**Technology: plant upgraded through extended aeration to meet the revised stringent effluent discharge standards.**
**Year of commissioning: 2008**

**Phase:3 tertiary treatment**
**Capacity: 40 MLD**
**Technology: ultra filtration (UF) & reverse osmosis (RO) system.**
**Year of commissioning: 2014**

- ♣ The student lean the concept the world is emerging to reduce, reuse and recycle the liquid as well as the solid waste, which is a prominent environmental issue for the countries.
- ♣ The Marc past to plant completed at 1:30 P.M. and the student return to the SVNIT and took lunch at SVNIT, Campus.
- ♣ **At 3:00 o'clock the faculty Prof. Natasha Sagar with the prior permission of Dr. K. D. Yadav made the visit to the Environmental Engineering Laboratory and modern instrument used for environmental impact evaluation done by the Environmental consultancy conducted by the SVNIT up to 5:00P. M. by the laboratory in charge.**
- ♣ **1st April March Past to Eco- Farm:**
- ♣ At early morning along the same highway about 7km away from SVNIT, Eco-farm had been developed **by MR. SNEHAL PATEL ( Owner and President Nature club Surat).**
- ♣ The architecture who designed the house amidst the orchards and gardens is **Ms. Falguni Desai.**

- **The roof of house was situated at suitable angle approximately 40°. This slop roof also having sprinkle fountain system for the cleaning purpose. Solar cell also situated at the top of the roof, which produce the power. Electricity generated by this solar system and there was no need of any external electric power.**
- **In house interior is very impressive.**
- **There was one small pond between the two floors.**
- **There were fishes in that pond. Water harvesting system also available in that house.**
- **2 overhead tanks also available. Rain water filtered in natural filter. Filter was made up of 3 layers. Gravel, fine sand particles and coal. There was small water treatment plant also available for sewage treatment. After purification of waste water, it has been used in agriculture and cleaning purpose.**

- **There was also composting pot which has been used for recycling of organic waste. All the kitchen waste was compost in that pot and convert into fertilizer. It used in organic farming. This organic fertilizer is 50% more rich then the other fertilizers. There was also water filter pot which was purifying drinking water.**
- **Separate urinals and hard solid waste removing toilets from which urine is feed to the orchard to grow fruits.**
- **Sewage went to the sewage treatment unit which is fed as a fertilizer.**
- **Birds like Nilgai, woodpecker, sparrow, Emu, swan in natural pond, Parrot and peacock reside there.**
- **The trees having nectar can be seen in butterfly garden developed by the owner in infertile barren land.**

- ♣ The student enjoyed learning through interaction and enthusiastically participate the learning campaign.
- ♣ The student had been motivated to build such houses in such a energy crisis era and polluting era to nurture the endangered species.
- ♣ They learned that nature has provided its own cycle of waste reduction which we should adopted for our survival as well as for flora and fauna.
- ♣ They learned to become nature loving engineers not nature hampering engineers.

From there visit to Baroda Railway Museum at about 1:30 P.M., which covers the history, trends and growth.

Student sees live diamond crossing, Goya gate station, Heritage park and gauges, Turn table, etc.

**" Interaction with Plant Engineer Mr. Ketan Desai"**

**" Ultra filtration unit"**

**“Proud and Privilege to visit such a  largest tertiary treatment in India at Surat”.**

**“Honoring their dedication to train young engineers”**

**“Advance flushing treatment at TTP, Surat”**


A VIEW OF INTERACTION AT ECO FARM


A visit to Railway Museum
RAILWAY MUSEUM AND AUDITORIUM PRATAPNAG
रेलवे संग्रहालय एवं सभागृह प्रतापनगर