



Report on
Design Presentation Day (DPD – March 2019)
Stakeholders: Students of Vishwakarma
Government Engineering College



Venue: Power Electronics Department, VGEC – Chandkheda
Date: 18 March, 2019

To enhance the quality work on economic and human-centric Ideas developed through *Design Engineering* subject taught to the students of various engineering discipline, **Design Presentation Day (DPD – March 2019)** was organized by **Prof. N. D. Mehta** & **Dr. A. M. Haque** on 18 March, 2019 with kind permission from **Prof. V. G. Patel**, HOD, Power Electronics & Principal **Dr. Rajul K Gajjar**. 14-year Presentation by second year engineering students were observed by approximately 240 faculties and students of VGEC – Chandkheda. **Prof. Karamjitsing Bihola** from **Open Design School, GTU** was invited to share his experience and inculcate the students with renowned methodology of Design Engineering for State-of-the-art work.



Students have benefitted with this event much more and enthusiastic to perform better in the near future. Few projects which are really good and heart touching are:

Second year students **Shukla Amit, More Krishna, Rajput Suryaprakash-singh & Mishra Sandeep** under design engineering concept identified malfunctioning and misconducts of AMC in each & every sector. Water Supply System, Savage System, waste disposal system, Health Care Centers, AMTS, BRTS, road-cleaning, amenities &



parking places are the main working areas of AMC. Dengue malaria typhoid diseases are water - prone diseases and recently number of patients are increasing. Students were sympathized with this issue but eventually when they went for observation, they have changed their ideas from water supply system to waste disposal system.

They got strained to observe the waste disposal system, dustbin used for waste collection and the way of disposal by local public in the vicinity of Ranip. People are blaming to AMC for the way of working but listening from AMC waste disposal staff common public are equally responsible for that. Observation depicts

- throw of disposal from safe distance
- waste disposal laying around dustbin
- overflowing garbage can
- inconvenient approach up to dustbin
- Dustbin locked under grill to save from theft.



Students ideate from observation to develop a dustbin such as to send the command to nearest waste collection center office to empty the garbage-can before going to overflow. Also, they are planning to shape the dustbin with bigger opening to avoid waste disposal laying around garbage-can. At the same time counselling is also necessary, for using the dustbin and cooperate AMC to make clean environment.

Most of the time people blame the Government for their inefficient work and shortage of equipment but misuse of waste disposal tools and places are experienced by AMC staff. Specifically, urban people are so reluctant that they always look on others to correct the things. If challan is issued near waste collection areas (garbage-can / dustbin space) like E-challan issued by Ahmedabad police through CCTV camera for breaking traffic rules, seems only the way to control the unwanted activities near waste collection post. Before going to deliver such advice to AMC officials, students are doing some analysis about:

- ✓ Counting number of waste collection posts under AMC purview,
- ✓ Number of CCTV required and installation charges,
- ✓ Number of waste collection control offices to install screen and accessories for preparing and sending challan to defaulters.

Designing a dustbin with new concept and controlling the people from unwanted act may improve the cleanliness of our surrounding, city, state and country fulfilling the national agenda – Clean India.

Dhorajiya Mehul, Patel Jay, Parsaniya Shyam and Geeta Singh of second year Engineering students of Power Electronics under Design Engineering concept identified the Jan-Marg Road Trafficking issues and electricity issues at most of the ***BRTS stations***. Day by day BRTS services are



deteriorating and commuters are decreasing rapidly – are in the newspaper since long time. Administration are doing their best effort to sustain. Electrical power and appliances are not enough to facilitate the staffers and commuters are observed by them. Our surrounding must be clean & clean for good health and activities. When solar -energy has paved their path to harness the electrical energy at subsidized rate by Government, having ample deserted areas on roof-tops of BRTS stations are enough to generate their own electricity required for station appliances are going to design by this group of four students to deduce the burden of electricity bill paid to Torrent Power. Prototype and design analysis are under progress to produce one station model with estimated cost of installation. They are preparing a device to install in emergency vehicle to cut the man power used for stopping vehicle in BRTS roots for improvement of BRTS services.

Mistry Jay, Morker Dhruvin, Vaghela Sunil and Vekariya Krishna are working on automation system of electrical appliances through sensors to save the electricity and its tariff in college campus.



Though IIMs and IITs are used to use such system, State colleges may save huge amount of electricity bill by adopting such devices. They are working on to establish a unit in one of the chambers and analyzing on the bill differences.



Recently, we read the news that returning from Saputara, school bus carrying 25- students jumped into valley at shrill U-turn. In hilly areas such incidents are very common. ***Solanki Jaimin, Barua Maitriyaditya, Goswami Hardikgiri and Kshatriya Dharmendra*** were sympathized with such incident and working on ***Accident Avoidance System*** to avoid such accidents in near future.

They are designing a device which will be ringing alarm and switch-on blinking lamps to alert the driver at U-Turn.

In rural villages, oven (chulha) used for cooking purpose are either wood based or cow-dunk based. Such oven smokes more and produce less heat in early stage, such smokes invite lungs diseases majority in female present at home. **Hirpara Viraj, Acharya Urvil, Rathod Ravi and Katechiya Uday** were sympathized on that and working on **Health and Hospital domain**. They are preparing prototype oven having elements to generate electricity from smoke and heat to run the fan to scatter / suck the smoke from kitchen.



Overloaded bus driver lost control on bus and injured lots of people, commuters stranded due to non-availability of bus, passengers on road waited for hours as bus stopped in between due to engine failure – are news read in daily newspapers. GSRTC administration are doing best at their level to satisfy the commuters. **Prajapati Ketan, Pandav Divyesh, Thumar Harsh and Patel Jay** are working on the domain “**Transportation System**” to deliver the command through GSM to GSRTC nearest control room to service the tourists / travelers. They are making a prototype of GSRTC Bus having counter system and audio /video systems on door to facilitate the passengers.



Students came with very new innovative ideas. Other Design Engineering based projects presented by the students of Power Electronics were Smart Solar generation, home automation, cross-road, battery operated vehicle, solar energy and renewable energy sources.

We emphasized on *'Reverse Engineering'* and *'Prior Art Search'* to second year students. They are keen to work on the design engineering methodology and we expect few of them will come ahead with innovative marketable economic & socio-centric project in the near future.



At the end of program, appreciation gifts were given to one team. *Prof. Karamjitsinh Bihola* visited all team and gave guidelines individually to each team for making a perfect prototype.



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