SWAMI KESHVANAND INSTITUTE OF TECHNOLOGY MANAGEMENT & GRAMOTHAN

CIVIL ENGINEERING DEPARTMENT

REPORT OF CONFERENCE (SDSC-2019)

Title of Activity: A Two Day National Conference on 'Sustainable Development of Smart Cities' (SDSC-2019)

Type of Conference: National Level

Date and Venue: January 18-19, 2019 & SKIT, Jaipur

Organized by: Department of Civil Engineering, SKIT, Jaipur

About the Activity:

No matter how much we can do by ourselves on the national level, whether it be research or development, it is never enough. But in a spirit of true cooperation, we must join in an action-oriented effort to solve the problems that beset our livelihood. With this thought the 'Department of Civil Engineering', organized two day National Conference on "Sustainable Development of Smart Cities". Sustainability has become a hot topic among engineers and researchers around the globe. Engineers today are faced with challenge to balance the infrastructure development and environment protection. It is the need of the hour to come up with innovative techniques and methods which not only promote development but also preserve non-renewable resources and protect flora and fauna.

We, at SKIT are aware of this situation and are committed to provide a sustainable environment to the present and future generation. In light of this a Two day national conference was organized by the department of Civil Engineering, SKIT Jaipur.

Objective of Conference:

The following are the objectives of the conferences

- To provide a platform to the academic scientists and researchers to exchange and share their experience in Civil Engineering field through presentation and publication mechanism.
- To highlight the technological application experiences and solutions for the transportation, material, energy and water concerns towards commercialization and industries for the nation.
- To provide opportunities for discussion and information sharing platform for researchers from various organizations, investors, and industrialists regarding their finding, technology, policies and services.

Detail of Activity with their Expected Outcome:

The inaugural ceremony of conference was held on 18 Jan, 2019 in Gyan Mandir auditorium. At the onset, a very warm welcome speech was delivered by Mr. Jaipal Meel, Director SKIT Jaipur. S.L. Surana, Director Academics gave a brief description about the Institute, which was followed by details about Civil Engineering Department. Dr. D.K. Sharma, HOD & *convener* of the conference, apprised about details of the conference. The conference then witnessed a motivating key note address by the Chief Guest Er. Anoop Bartariya, chairman WTP and CMD, Sincere Architects and Engineers Pvt Ltd, Jaipur. The speech focused on need of aware the individuals to make the society smart and the country great. His vision and accomplishment on sustainable development of smart city mission was highly appreciated by the audience.

The inaugural ceremony was followed by a plenary session in which Er. Gauresh Kumar Gupta (Adviser, Tata Projects) and Er. K. Harish Kumar (Senior Project Manager) delivered a key note address on various technical aspects of Drayavati River Project. They summarized the methodology used to rejuvenate Dravyavati River. This real time methodology will help students to understand the parameters on which a study needs to be evaluated. The session was followed by keynote address by Dr. T. R. Nayak, Scientiest F, NIH, Bhopal on “Building Smart Cities GIS tools and Technologies in which the speaker highlighted the implementation of GIS tools in various works related to engineering. Next key note was delivered by Dr. B. L. Swami, Professor, MNIT Jaipur in which he focused on the problems and prospects of present traffic conditions of Jaipur city. He also suggested the techniques by which heavy traffic congestion could be mitigated.

The first technical session in the post lunch break was chaired by Dr. Nitin Goyal, HOD Civil Engg. Dept. Manipal University, Jaipur. Dr. Goyal delivered a key note speech on Air Pollution - Source and Remedy. The speech was followed by technical and research paper presentations. Each paper was unique and suggested methods to elevate an ordinary city into smart city.

The second day of the conference commenced with a keynote address of Er. K. Sitaraman Janeulu, Senior Principal Scientist, CRRI New Delhi entitled "Innovative Technologies for Construction & Maintenance of Roads". Speaker discussed about WMA technology and sustainable pavement maintenance technologies for urban roads. Er. Sandesh Saxena, Charted Engineer, IEI introduced the monitoring tools for effective planning and construction projects. The use of recycled asphalt pavement on HMA was delivered by Er. Ankit Sharma, Assistant Professor, SKIT, Jaipur. This study summarized innovative methodology to procure natural resources.

An extremely interactive session was taken by Er. Vikram Gupta, Senior Consulting Engineer, Eptisa who discussed real time problems and solutions to make Jaipur a smart city. His deliberation was highly informative for undergraduate students. Model and poster presentation was also conducted parallel to ongoing session where undergraduate students presented model and techniques that can make a city smart and sustainable. Students' efforts and their innovative ideas on the theme were much appreciated by the guests.

The conference finally concluded with the Valedictory Ceremony including feedback and suggestions by Dr. T R Nayak and Mr. K. Sitaramanjaneulu. Both the Chairpersons lauded the Conference as a great success of Civil Engineering department and congratulated the organizers and participants of the conference. Finally, a two day report of the conference was read by Dr. Pradeep Kumar Gautam and a vote of thanks given by Er. Amit Jhakkar, *Organizing Secretary* of the conference.

Participation

A total number of 31 research papers were presented in three technical sessions, obtained from various institutions and organizations. Collaboration was done with **International Organization of Scientific Research-Journal of Engineering** to publish the selected papers. Around 450

delegates participated in the conference including academicians, research scholars, students and practicing engineers.

Recommendations emerging from the Conference

1. The concept of a smart city is highly context specific. It is therefore important for national and city governments to work together with all relevant stakeholders to develop a common understanding of what a smart city entails in specific national and local contexts. In designing smart cities and infrastructure, several key design principles namely inclusiveness, human capability, resilience, sustainability, interoperability, flexibility, risk mitigation and safety need to be followed.
2. Adopting a participatory approach to smart city development that actively engages citizens at all stages of development, and ensuring that cultural and livelihood factors of all sections of society are adequately integrated into the design of smart city plans.
3. A proper monitoring system should be set up around the city to the check the air pollution level and it should be maintained at-least below the permissible level by enforcement of regulations.
4. As per the climate requirement foot path/pedestrian path should be shaded or unshaded. In hot weather region like Jaipur, it should be shaded and in cold weather region like Shimla, it must be unshaded.
5. Use of smart dustbins should be brought into regular practices. As soon as these bins get full, censor must communicate the control room and within minimum response time, the bin must be change.
6. Old buildings/ monuments of Jaipur Heritage City should be secured time-to-time by strengthening its foundation by retrofitting, underpinning and grouting methods etc.
7. Smart sustainable cities need a telecommunication infrastructure that is stable, secure, reliable and interoperable to support an enormous volume of information and communication technologies based applications and services.
8. Traffic optimization techniques should be introduced to improve the comfort conditions of the users. There are several urbanization models that incorporate digital technologies to

address some of the urbanization and sustainability challenges: Digital Cities feature the integration of digital technology into the city's core infrastructure systems; Intelligent Cities rely on the digital city infrastructure to build intelligent buildings, transportation systems, schools, enterprises, public spaces, public services, etc. and to integrate them into intelligent urban systems; and Smart Cities – deploy intelligent urban systems at the service of socio-economic development and improve urban quality of life.

9. IoT—referring to the network of rapidly growing computing devices with built-in sensors and software to connect with each other and share data—enables billions of devices and objects equipped with smart sensors to connect with each other, collect real-time information and send this data, via wireless communication, to centralized control systems. These, in turn, manage traffic, reduce energy usage and improve a wide range of urban operations and services.
10. From the studies, the major contribution in air pollution is made by vehicles. Motivate the citizens for using the public transports instead of personal vehicles for reducing pollution.
11. Staggered working hours culture as in other countries must be applied in our cities. So the peak time traffic will be reduced. Provide the necessary facilities (i.e. schools, hospitals, amusement parks, shopping malls, post office, hair salon etc.) within 5 kms area. So that travel time reduces and further air pollution can be reduced.
12. Garbage must collected in packed bags which can be provided free of cost to household through advertisements.
13. Green belt must be increased by plants along roads, grass and shrubs along roads so that dust particles will not be in air and one can take fresh breath. Motivate every citizen to plant at least 10 trees in a year.
14. Rain water harvesting must be necessary for every Commercial/Residential/Industrial infrastructure and the drained out water should be charged instead of clean water.
15. Happiness index should be introduced as an evaluating parameter to assess the "smartness" of a city; similar to Bhutan city.
16. Incorporating insights obtained from data generated from smart cities and infrastructure into governing processes by making data available in a timely fashion and effectively using it in policy formulation and decision-making.


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