

NEED FOR URBAN PLANNING TO MITIGATE AIR POLLUTION

NATIONAL WORKSHOP

Held at
Rotary Sadan, Kolkata,
On July 13, 2020



Organized by:
The Institute of Town Planners India
West Bengal Regional Chapter



Jointly with the
Dept. of Architecture & Regional Planning, IIT, Kharagpur





Institute of Town Planners, India
West Bengal Regional Chapter

NATIONAL WORKSHOP
ON
**NEED FOR URBAN PLANNING
TO MITIGATE AIR POLLUTION**

At Rotary Sadan, Kolkata
on
July 13, 2019

Organised By



The Institute of Town Planners, India
West Bengal Regional Chapter

Jointly with



Department of Architecture & Regional Planning
The Indian Institute of Technology
Kharagpur

.....

Souvenir Published By:

The Institute of Town Planners, India- West Bengal Regional Chapter

IB-190, Block-IB, Bidhannagar, Salt Lake, Kolkata 700 106

E-mail: secretary.itpiwbrc2011@gmail.com

Website: <https://itpiwbrc.in>

Organizing Team

On behalf of the ITPI-WBRC

Mr. Dipankar Sinha, Chairman	Prof. Jayita Guha Niyogi
Mr. Arabinda Debnath, Secretary	Prof. Debashis Das
Mr. Saibal Thakurata	Prof. Amitabha Bhattacharya
Ms. Anumita Mohanty	Dr. Soumyendu Biswas
Ms. Shreeja Ganguli	Ms. Julie Guha
Prof. Indrani Dhar	Ms. Shanta Biswas
Mr. Azam Hassan	Ms. Pampa Dey Biswas
Mr. Subimal Dutta	Dr. Ruma Bose
Prof. Souvanic Roy	Ms. Chandrani Bhattacharya
Mr. Sourav Sen	Ms. Debjani Saha

On behalf of the Department of ARP, IIT Kharagpur:

Prof. Subrata Chatterjee (Dean, Alumni Affairs); Prof. Joy Sen (HoD); Prof. Somnath Sen

Sponsors:

M/s ELT India

The Consumer Affairs Department, Government of West Bengal

M/s Havells

M/s SIMOCO

M/s Affcons Infrastructure Ltd

M/s H R Johnson



Visit ITPI-WBRC Website at <http://itpiwbrc.in>

The Event

Inaugural Session

The Session was presided by **Dr. D. S. Meshram, President, ITPI**

Chief Guest:

Dr. Subrata Gupta, IAS, Principal Secretary, UD & MA Department, GoWB

Guest of Honour:

Ms. Patti Hoffman, US Consul General, Kolkata Consular District

Special Guest:

Mr. Pradeep Kapoor, Secretary General, ITPI

Welcome Address By:

Mr. Dipankar Sinha, Chairman, ITPI-WBRC

Speech From the Joint Organiser By:

Dr. Subrata Chattopadhyay, Dean, Alumni Affairs, IIT Kharagpur

Vote of Thanks By:

Mr. Arabinda Debnath, Secretary, ITPI-WBRC

Technical Session I: Panel of Speakers

Dr. D.S Meshram, President, ITPI in the Chair

Mr. Debabrata Chakrabarti, VP (Technical), SIMOCO - Sponsor

Mr. Satya Narayan Kunwar, Project Manager, Affcons Infrastructure Ltd. - Sponsor

Dr. Somnath Sen, Professor, Dept. of ARP, IIT, Kharagpur- Water Sensitive Town Planning.

Dr. Saswata Bandyopadhyay, CEPT University - Climate Resilience in City Planning

Dr. Saikat Kumar Pal, Dept. ARP, IIT, Kharagpur- Urban Ecology and Urban Development

Technical Session II- Inter School Elocution Contest

[Juries: Dr. Souvanic Roy, Dr. Jayita Guha Neogi and Prof. Amitava Bhattacharya]

-
- Birla High School, Kolkata
 - Delhi Public School, Ruby Park, Kolkata
 - Gokhale Memorial Girls School, Kolkata
 - Jadavpur Vidyapith, Kolkata
 - La Martiniere for Boys, Kolkata
 - Pramila Memorial Institute, Kolkata
 - Salt Lake CA School, Bidhannagar, Kolkata
 - Shanti Sangha Balika Vidyalaya, Kolkata
 - Vidyapati Vidyamandir, Kolkata
-

Speakers:

Dr. Anupam Deb Sarkar, Asso. Professor of Env. Eng., CE Dept., Jadavpur University

Dr. Saumyabrata Acharyya, Head of the Department, Paediatrics, Amri Hospital

Prize Distribution and Thanks Giving

Foreword

The Institute of Town Planners, India is the apex body of the urban planners of the country. It is having more than 5000 members in various states, who are engaged in the profession discharging their responsibilities in the administrations, organisations, institutions or in the field of consulting services. The urban planners play the roles for physical development conserving our natural and built heritage to create diverse, vibrant and sustainable towns, cities or the metropolises with their hinterlands making these places ideal and safe for living, studying, working or recreation. Finding a scientific path to provide affordable housing for all, to mitigate the environmental pollution, to regenerating or revitalizing the economic development or to create opportunities for work and socio-cultural activities are tasks where the urban planners lead.

Urban Planning is being taught at the Post Graduation level in the country at 28 institutions and at the Graduation Level at 10 institutions. Apart from these, 10 more institutions are provisionally allowed to impart the courses at the Masters Level and three are allowed to impart the Graduation Level courses. The students may join the under graduate courses after clearing the JEE Examinations. Students may join the Post Graduation Level courses of Urban Planning after the completion of the Graduation Courses in Bachelor of Planning, Civil Engineering, Architecture and also on completion of Masters Degree courses in Economics, Geography etc.

The West Bengal Regional Chapter organises the workshops, seminars each year on the occasion of the Environment Day. This year (2019) the United Nations' call of the Environment Day was "Beat the Air Pollution". The ITPI-WBRC, with its dual objectives of awareness development about the environment pollution as well as the opportunities of studies of Urban Planning to be an expert in the field, organised this National Level Workshops.

The ITPI-WBRC expresses its heartfelt thanks to all the guests, speakers for their participation to make the endeavour a grand success. We also congratulate the participating schools and their students for their very intelligent presentations. Wish their grand success in future. The ITPI-WBRC expresses its respect and thanks to the national President of the ITPI, Dr. D.S. Meshram for agreeing to preside the sessions in spite of his very busy schedule and his guidance, encouragement and active participation in the proceedings. We also express our special thanks to Mr. Pradeep Kapoor, Secretary General, ITPI for his valuable inputs. The US Consul General, Ms. Patti Hoffman, in spite of her various preoccupation came forward and encouraged us with her beautiful speech. We thank her from our heart. Dr. Subrata Gupta encouraged us for organising this workshop and made us recharged by his excellent speech. Thanks to him. We convey our thanks to the members of the faculties and the Head of the Department of the Department of Architecture & Regional Planning, IIT Kharagpur. Last, but not the least, we thank our sponsors of the event, without whom the programme would not be successful. We take this opportunity to thank all our members of the organizing team for their excellent team work.

Thank you all

30th December, 2019

Sourav Sen, Coordinator-Publication, ITPI-WBRC

**Indrani Dhar, Member, Executive Committee,
Workshop Coordinator, ITPI-WBRC**

**Dr. Debashis Das, Convenor, Workshop
Sub Committee ITPI-WBRC**

Dipankar Sinha, Chairman, ITPI-WBRC

Arabinda Debnath, Secretary, ITPI-WBRC

NEED FOR URBAN PLANNING TO MITIGATE AIR POLLUTION

The Report

Inaugural Session

Lighting the Lamp:

Planning for sustainable urban development aims long-term goals utilizing knowledge about the environmental consequences of urban growth. Institute of Town Planners India (ITPI), the apex body of the Urban Planners is promoting planning education and research in this respect, since its inception in 1951.

The West Bengal Regional Chapter of ITPI (ITPI, WBRC) in collaboration with Department of Architecture and Regional Planning, IIT, Kharagpur has organized a National Workshop on Need for Urban Planning to mitigate Air Pollution at Rotary Sadan (94/2, Chowringee Road, Kolkata-700020) on 13th July, 2019 (Saturday). The workshop was targeted towards building awareness about necessity urban planning process as means of mitigation of the environmental pollution and opportunities of its study in India. One of the attractions of the workshop was participation of senior students of renowned higher-secondary schools who shared their ideas on mitigating air pollution through urban planning.





The programme was chaired by Dr. D. S. Meshram, President, ITPI. He along with Ms. Patti Hoffman, US Consul General (Kolkata), Shri Pradeep Kapoor, Secretary General, ITPI, Dr. Subrata Chatterjee, Dean, Alumni Affairs, IIT Kharagpur and other distinguished members of ITPI lighted the auspicious candle and formally inaugurated the workshop.



Visit ITPI-WBRC Website at <http://itpiwbrc.in>

Welcome Address:



Shri Dipankar Sinha, Chairman (ITPI, WBRC) welcomed the audience and introduced the dignitaries on the dais.

Mentioning the inception year of ITPI as 1951, Sri Sinha introduced Dr. Diwakar S. Meshram, a father figure of ITPI in present times, who has led the town planners for a long time in achieving the goal, acting in different roles – as President of ITPI, Chief Planner of Town & Country Planning Organisation (TCPO), member of Delhi Development Authority and New Delhi Municipal Council. Shri Meshram had a crucial role in constituting separate Town and Country Planning Board at the national level by the All India Council for Technical Education (AICTE) under MoHRD, Govt. of India and preparing model curriculum for UG and PG course in urban planning education in the country.

Sri Sinha introduced the Chief Guest of the workshop, Dr. Subrata Gupta, IAS, Principal Secretary, UD & MA Department, GoWB as an Engineering Scholar and Doctorate from IIT, Kharagpur, who also obtained the Degree in Management from the University of Birmingham. Shri Sinha recognised the role of Dr. Gupta under various capacities in policy making for Govt. of West Bengal and Govt. of India.

The role of the US Consul General's Office at Kolkata in monitoring the air quality data of the city is well known for a long period. Recognising the same the Consul General of the Kolkata Consular District was invited. Ms. Patti Hoffman, US Consul General (Kolkata), who is a Biologist by education as well as an expert in International Relations and worked for US embassy in different capacities in the cities of western part of the world, graced the occasion by her presence in the event as the Guest of Honour. Shri Sinha expressed that the ITPI-WBRC expects more opportunities of working together with the US Consular Office and their various experts in the field of planning for awareness development and introduced her with the audience who welcomed her by cheers.

Sri Dipankar Sinha introduced Sri Pradeep Kapoor, Secretary General, ITPI as Ex-Chief Town Planner of Govt. of Rajasthan; Prof. Subrata Chattopadhyay, Dean, Alumni Affairs, IIT, Kharagpur as Professor and former Head of the Department of Architecture and Regional Planning in that institute and Sri Aurobindo Debnath, Secretary of ITPI, WBRC as a versatile Urban Planner, Architect and Civil Engineer.

After that, he welcomed all the students of various schools, their teachers, and speakers of different technical sessions and representatives of the print and electronic media. He also welcomed the

representatives of the sponsors and mentioned their valuable contributions in organising the workshop.

Reminding the theme of 2019 ‘**Beat the Air Pollution**’ for **World Environment Day by United Nations** Shri Sinha stressed that this workshop has been organised to highlight the role planned development in mitigation of the pollution. He emphasized on the requirement of more urban planners to face the challenges of achieving the sustainable urban development. He marked the necessity of associating the school students in this regard to make them aware and encourage them towards the profession of urban planning. Beauty of cities is not limited in few decorative items around, beauty lies in making the place fit for living, working, studying and visiting with safety, security and dignity in an healthy environment, fulfilling the basic needs of clean potable drinking water, food, shelter and clean air etc. Referring to various national and international reports he stated that at present, Kolkata seems to have deficiency in most of the parameters that indicates a city liveable: overcrowding, insufficient open spaces, critical level of air pollution, heat islands, generation of solid waste. It is needed to restore the assets and natural resources to redeem the environmental condition. Finally, Shri Sinha expressed the wish of ITPI, WBRC in building awareness programmes on environment and development issues through workshops and extend support to any government agencies in preparing realistic plans for sustainable development. The speech set the tune of the day’s discussion.



Speech of the Special Guest:

Sri Pradeep Kapoor, Secretary General (ITPI) introduced role played by the ITPI in the relevant fields since its inception briefed the audience about its activities.

He memorised that way back in 1951, Institute of Town Planners India was created by 15 urban planners and registered under Companies Act as Societies Act didn't prevail in the country then. At present, there are more than 5000 members in the country.



Apart from them, ITPI has also few honorary fellow members. Among them some important names are Pandit Jawaharlal Nehru, the first Prime Minister of India; Sardar Swaran Singh, the then foreign minister; Sir M. Visvesvaraya, eminent engineer of India and Sri Bhagawan Sai, Ex Secretary of Urban Development, Government of India. The basic objectives of ITPI are to advance the study of town and country planning and related subjects and to promote planned development. Institute also take cares of the professional interests of the town planners. Shri Kapoor mentioned that Institute also helped different State Government in formulating various planning legislation. ITPI also formulated Urban Development and Plan Formulation Guidelines for Urban Development Department, Government of India. ITPI was instrumental to set different planning schools in different parts of India. Apart from that ITPI has a distant course of doing PG degree in town planning. He mentioned the activity of 24 regional chapters in form of workshops and seminars.



Speech on Behalf of the Joint Organizer:



Dr. Subrata Chattopadhyay, Prof. of IIT, Kharagpur briefed the career opportunities of town planners. He felt that before leaving the schools the students should have at least the general concept about subject of town planning.

Indian planning schools are producing around 350 to 400 town planning graduates every year, but the needs are more. He mentioned the statistics from United States of America where the profession would grow at 13 percent between 2016 to 2026, faster than the average of all other occupations. Discussing

whether the urban planners are well paid, he mentioned that the planners in different places of USA are among the highest paid professionals. There is one planner to every five thousand population in North America. On the other side, considering India's urban population as about 375 million, there are only one planner to every 10 thousand people and thus the need urban planners in our country is ten times more in number. In spite of efforts of ITPI and the government, we have much less number of planning schools. Dr. Chattopadhyay focused on the trend where the planning students of IIT, Kharagpur, are opting for changing streams in further studies despite the rising recruitment in core planning fields. Opportunities of higher planning studies, such as brown field redevelopment, sustainable development, public policy and management, are now evolving. He referred an opinion survey by IIT Kharagpur using 5-point Likert scale among the students, faculties, scholars in the institute, the respondents have rated the necessity of mass awareness regarding the planning profession as the most important, followed by the public participation in planning. But the respondents didn't believe planners have superior role in decision making process, which Prof. Chattopadhyay mentioned as unfortunate. The respondents of the studies favored early conceptualization of the planning as a subject. In Scandinavia the school-children are given task to make cognitive mapping of the routes as they explore trailing a butterfly. Informants of that survey considered planning curriculum must transform and include the emerging areas which the planners need to tackle at present and future. Large proportion of respondents of the survey also believed that a three year planning course after 10th standard might cater to the demand of planners at local government level. He also marked the role of NGOs in planning giving few examples from United States. He concludes inviting more reforms in the Planning Studies.

Speech by the Guest of Honor:



Ms. Patti Hoffman, US Consul General, Kolkata Consular District, stated that quality of air has profound impact on emotional and physical health. Air pollution has critical negative impact on health and life throughout the world. She referred to 2018 report of IQ Air – Air Visual and informed India has seven out of ten most polluted cities in the world including Gurgaon outside New Delhi. However, Kolkata ranks 23rd in terms of pollution in that report. In this context, US

government emphasizes on awareness on air pollution – especially its negative impact on human health, economic development and environment. USA and India collaborate on a range of matter related to environment, energy and research. Several academics and research organization do studies on various issues related to air pollution partnering with US consulates in different cities. US consulate takes the awareness task as mission. US school students are also engaged in awareness campaigns. In May 2019, US department of states organized a conference in Katmandu on three main objectives: protecting our people, partnering with local governments on policy approaches to improve air quality and to promote air quality solutions. Ms. Hoffman described the success of her department in developing smart regulations, innovative technology and political will. In June 2019, Dr. James Shower, US scientist and expert in air-pollution mitigation met government officials, academics and members of civil society to discuss air quality improvement measures in Kolkata. She informed that later in July, participants of various countries in south-east Asia would assemble to discuss about such measures in a tech-camp. The tech camp is supposed to develop ways to educate and engage public on various facets of air quality – political social and scientific sectors to spur action in mitigating air pollution. In August, Journalists from Kolkata would be sent to US for professional exchange program on air quality.

She conveyed her thanks for inviting her to the workshop.

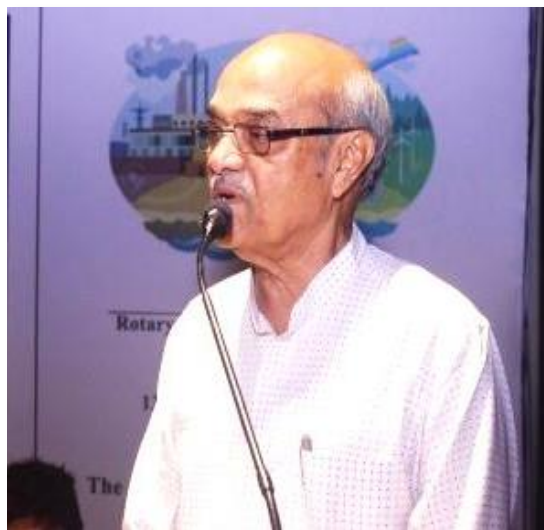


Visit ITPI-WBRC Website at <http://itpiwbrc.in>

Presidential Address:

Prof. (Dr.) D. S. Meshram, President of the ITPI, in his presidential address confirmed the significance of urban planning throughout India, at the present times.

Sharing the data of UN regarding threats of air-pollution, he mentioned about the seven million deaths annually are due to air-pollution, the largest global risk at present. Among this, 4.3 million deaths are due to household air pollution and 3.7 million deaths are due to outdoor air pollution.



In 2018, principals and students of HS schools attended a meeting in Delhi, where students were asked to create a poster their vision of city to development, when excellent ideas emerged. Town and country planning discipline is very young. IIT Kharagpur and afterwards School of Planning & Architecture (SPA) Delhi are the two first schools started planning studies only at the PG level of Town & Country Planning in 1952 and presently there are 26 schools imparting planning education. In 1988, necessity of planning education at under graduate level is felt by ITPI and was suitably proposed to Dr. Chandra, special secretary of Ministry of Education. In those days there was 3000 towns in India and had only 800 planners, which was insufficient considering one town planner per city. The deficit remains the same till today – while India could produce 5000 planners, there are 9000 towns. In 2014, Ministry of Human Resource Development constituted a committee to assess the requirement of Architect and the Planners of which he himself a member. The committee estimated that by 2031, country would require 80000 planners considering implementation of several planning and development schemes in the country. Urban planning, regional planning, traffic & transportation planning, housing & environmental planning and the new ones Infrastructure planning and Rural planning are the various sub streams of planning. Town planning is a specialized subject to be dealt by qualified planners only. He referred to a letter of MoHUA that requests all the secretaries of the state government to take attention in the issue. He also mentioned the necessity of modifying recruitment rules as the present ones are framed while there were no planners and the planning tasks are undertaken by the Engineers.

Speech of the Chief Guest:

Finally, the **Chief Guest** of the workshop, **Dr. Subrata Gupta, IAS, Principal Secretary of UD&MA department, GoW**, addressed the august gathering.



He mentioned that air-pollution, water pollution, global warming, transport in cities, land use planning are interlinked aspects. According to him, air pollution has its roots in our urban settlements. Referring to NEERI report he mentioned that one-third of the air pollution in Kolkata is contributed by road-side eateries and shops using coal-fired and wood-fired *chulas*. Another one-third is contributed by vehicles on road. However, Kolkata has six air-pollution monitoring stations. Air quality monitoring is important because, for being better informed about the facts. Monitoring stations would be installed by pollution control board in first phase for another 58 out of 125 statutory towns in West Bengal, apart from Kolkata. He believed that the approach would aware the citizens regarding the extent of pollution and inspire them to address the problem. In this context, he mentioned the significance of associating students with the facts of air-pollution as well as the responsibility of mitigating it. In this regard, he encouraged the initiative of ITPI to take the interaction regarding strategies to face the urban challenge to the future citizens i.e. students. He liked ITPI to make this initiative a real mass movement through state wide awareness campaign. His point of concern was not only the air pollution but also the water scarcity and solid waste management. The use of plastic bags is creating enormous nuisance to cities' soil condition and drainage system, but he admitted the constraints of finding appropriate substitute of plastic bags. He firmly criticized the rampant use of private cars within the cities that is causing congestion and pollution on roads and accepted that flyovers are not the solution of decongesting cities. He prescribed compact development of cities, which would be linked with the peripheries by mass rapid transport system. He also emphasized over synchronized management of street lights efficiently and reasonably in different hours of day based on the illumination needs, which reduces power wastage and requirement of power. He reminded the audience that GHG emission during power generation can be decreased to a considerable extent by reducing the demand of power.



Visit ITPI-WBRC Website at <http://itpiwbrc.in>

Vote of Thanks:



The inaugural session ended by vote of thanks from **Shri Arabinda Debnath, Secretary, West Bengal Regional Chapter of ITPI**. He thanked President, Chief Guest, Guest of Honor and the Special Guest and other distinguished guests including the speakers, participants, school students, their guardians, teachers; collaborators of the event, sponsors and the members of the ITPI. He had specially mentioned the name of Architect Sunil Gambani of Drishti Architects, Mumbai and thanked him for mobilization of sponsors from Western India.

During a short tea-break, the members and participants interacted with each other and observed the banners and exhibits from the main sponsors of the workshop.

End of the Inaugural Session



First Technical Session

After the tea break there were back to back two technical sessions with another break for lunch in between. The entire auditorium was then completely filled up, including a considerable participation of the students.

The first technical session was chaired by Dr. D. S. Meshram. The session started with the deliberations of the representatives from two of the main sponsors, i.e. M/s Simoco and M/s Affcons Infrastructure.

Mr. Debabrata Chakrabarti, Vice President (Technical), Simoco, briefed about their organisation and activities. Simoco prepares LED lights, streetlights, flood lights, etc. which consumes very little power and this save energy and reduce emission of GHG gas in atmosphere. He compared life time, efficacy of different lights with Simoco made LEDs. Its life time is 50000 hour or around 13.5 years and thus can reduce emission of GHG emissions maximum. He stated that different types of light-control can add to such savings.



Shri Satya Narayan Kunwar, Project Manager, Affcons Infrastructure Ltd. presented the challenges and some of the practices adopted during and after the construction that Affcons is facing as the major construction agency of underground structure of the East West Metro Rail Project of Kolkata. Affcons, a constituent part of Shapoorji Pallonji Group, has strong presence in construction sector like marine and industrial surface transport, urban infrastructure and hydro and tunnel and oil and gas sector. As part of East West Metro project, they are erecting 3 underground stations, one ventilation shaft and twin tunnel 3.8kms each including a stretch below the river Ganga. The project received many national and international awards such as Safety awards, CA excellence awards. There are recognitions from Institute of Civil Engineers UK and National Geographic Channel. Mentioning the challenges due to spiraling urban growth in India and world, and consequent growth of vehicles on road, he reiterated the need of Mass Rapid Transport System (MRTS). MRTS could be constructed as elevated or underground system. The challenges of the

underground system are (1) impact on adjoining structure (2) impact on utilities (3) traffic issues and (4) safety construction. The underground vibration leads to surface settlement and distress to the adjoining structures, which affect the old dilapidated structures badly. The project has to deal and negotiate with 165 buildings of which 21 are vulnerable buildings and 18 are highly vulnerable buildings. There were 3 heritage structures and 2 monuments under the Archaeological Survey of India. There is 500m of underground tunneling below the Howrah Railway yard. As far as other parts of the project are concern, there are more than 660 buildings of which 67 buildings are at vulnerable condition. Metros in other cities are also having the similar challenges. In order to manage these buildings proper assessment of impact on these buildings during the construction following a Building Condition Survey is required. Accordingly buildings are categorized and mitigation measures are worked out. But Proper information is lacking about the ages of the buildings and modifications that has taken place in due course of time. However in order to mitigate, there are proven methods by which the foundations of the unsecured buildings and protection from ground water are managed. Extensive repair works in arches and columns are done. About 450 people were shifted keeping CCTV surveillance of their property that are in vulnerable construction during tunneling near the old Burrabazar area. Utilities get affected by accidental underground blasts and settlements. So, utility divergence is required and that leads to delay of works. Traffic divergence from the construction site leads to public inconvenience. Management failure can also lead to safety concern. However, in Affcons, there are trained professionals and crew in fields to address the behavior based safety. Apart from that, Affcons take care of environmental pollution through tree plantations, monitoring fumes and gases in tunnels, using LED lights for illumination as well as low emitting substances in floors and walls. Roofs and canopies are so designed to prevent heat island effect.

After the presentations of the sponsors, **Dr. Somnath Sen from IIT, Kharagpur** presented on water sensitive town planning. Global water crisis, that emerged from the climate change, is affecting mostly the urban areas. While some areas are observing flash floods, a vast area elsewhere are facing water crisis. He described how the use of water have governed the settlement pattern since the dawn of human civilization and how water related challenges have increased gradually. Human habitation grew near the water source. They collected water from river, ponds, etc. Manual lifting of water from the rivers, ponds, wells or tube wells were ensuring controlled use of water and deterring wastage. But there were health hazards from the untreated natural sources of water for contamination. As the municipal piped water supply started



being relied upon the settlement started concentrating along the pipeline, and the growing density and demand caused the scarcity in supply. With the improvement of the municipal water supply and the provisioning of house connection, supply became uncontrolled and in the absence of the need of physical labour for water lifting, care for wastage of water disappeared. On one side abundant unaccount for water by leaking an unchecked flow to the drains and on the other side some cities are experiencing severe shortage of water. People in places are lining up to fetch water from municipal water tankers, wherever available in different localities in limited periods. Rainwater drains out causing flooding the roads and neighborhoods. This enormous wastage of water is to be stopped. To describe the concept of water-sensitive urban design and planning he gave an analogy of how the process of washing clothes and cooking foods changed in modern times from a day decade back. He prescribed to integrated water cycle management in the built environment to ensure water sensitive urban development, and this water sensitive urban development (WSUD) should take into account all water streams, e.g. rainwater, storm water, potable mains, grey water, black water and ground water as water resource. Water is to be preserved and all the draining out water is to be prevented or collected separately and reused for gardening or street cleaning, etc. Thus a balance and efficiency in demand and supply shall be achieved, if planned from the initial stage. He identified WSUD principles are (i) optimized use of rain water (ii) reduce the storm water runoff and manage flooding (iii) prevent flash flood related damage (iv) incorporating water related social and ecological objectives in urban design. He stated the options for making use of roof-top rainwater harvesting structures in high-rise buildings, impervious parking areas to increase of rainwater percolation recharging the ground water source. He gave reference of different WSUD initiatives in different countries Australia, Israel and USA. This WSUD approach should have a one point control – instead of separate departments for water supply, drainage and sewerage – and the same is to look after the aspects of water management in a water-sensitive approach.

Prof. Saswata Bandyopadhyay, Professor, Faculty of Planning, CEPT University talked about climate resilience in city planning and how the city planners could respond and act to global climate change. He explained that urban growth, especially people's tendency to move to urban area per hour in India, is phenomenal. He stated that Delhi is growing 55sq.km per year and referred to the expansion of various cities encroaching upon environmentally sensitive areas, i.e. open spaces, vegetation and water bodies. Rainfall pattern and quantum of surface run-off has changed with the change of land uses and increase in built-up areas. As the consequence cities are



becoming warmer, rainfall pattern is becoming erratic, urban heat islands are created and occurrence of flooding are increasing. He accepted that keeping reasonable green spaces is extremely challenging in the context of urban sprawling and growth. Combating climate change risks cannot be dealt only through land use development planning. With the substantial increase in health hazards and newer diseases suitable Health Service Planning is necessary. He referred the case of Ahmadabad where climate pattern is changing with rising temperature that is resulting in the changes of rainfall pattern, mosquito breeding pattern, diseases. This has compelled the city of Ahmadabad to prepare a comprehensive city health plan to combat with the newer challenges. Unfortunately, urban planner in many cities are till day keeping themselves limited to the land use planning, infrastructure planning or the traffic and transportation planning. The impact of the climate change, which calls for newer outlook and action, is being ignored. The need of planning for the emerging areas like water sensitivity are remaining unaddressed. He was drawing the attention towards Mumbai, where frequency of flooding is increasing substantially. But the planning documents are almost silent about it or not adequately dealt. He stressed on the need to plan the cities climate resilient, where the urban planners may play a major role. Referring to the initiatives in other countries he was highlighting the case of Singapore that has increased the urban green from 38 percent in 1997 to 48 percent in 2008 using the urban planners by managing the land uses. The five-finger plan of Copenhagen, where the fingers are the spines allowing the stretches of greeneries connect the city outskirts with the city center. Cities authorities have reserved 40-50% land for urban green in central areas. Throughout the world people are trying to tackle climate change through greening cities. But in India, urban greening is not getting that much importance from the authorities. They opt for the instant return from the high value land in monetary terms. He ended his speech by informing about an opportunity provided by Govt. of India to the urban planners, making cities water sensitive and climate resilient, launching two schemes i.e. sub-scheme for town planning and local area plan.

Prof. Saikat Kumar Pal, Dept. of Architecture & Regional Planning, IIT, Kharagpur, presented on urban ecology and how urban development is affecting human life in reality. He stated about various research aspects in urban ecology. His presentation covered different urban systems, managing carbon cycle, integration of human systems with ecology and various bio-chemistry in ecology. He emphasized on urban forestry.



Urban development of present times has led to severe soil erosion, drought condition due to scarcity

of rainfall and rise of temperature. He referred to an article in Down to Earth of 10th July edition that studied how the soil erosion made a hand pump tube well a free standing 6 meter tall structure exposing the underground pipe in Satbhaya village of Kendrapara District in coastal Odisha. The villages are completely devastated. He observed that during the month of July is having 1/3rd of the annual rainfall and there is 21 per cent deficit in the rainfall in the monsoon period of 2019. In this context, more than 42 percent of land area in India had been facing abnormally dry to exceptionally dry conditions, whereas 'severe to exceptionally dry conditions' prevailed in 17.31 per cent area. He referred to Longyearbyen in Norway's Svalbard archipelago where the temperature has risen by 4°C since 1971, which is five times faster than the global average. Scientists have estimated that Longyearbyen and Svalbard's temperature will increase by 10°C by 2100, according to current trends. He also mentioned about increasing global carbon footprints of which cities contribute to the 70 percent of global CO₂ emissions.

Saying these Prof. Pal defined urban ecology as a study of living organisms in the context of urban environment. Human beings tend to modify and affect natural ecology due to some bio-physical, socio-economic, demographic and policy drivers. Thus, Dolphins and Pilot Whales slaughtered each year on Faroe Islands, Denmark; lives of flora and fauna remained threatened due to socio-cultural interactions and land use changes. In the urban systems, urban ecology deals with four interrelated aspects – drivers, patterns, processes and effects or changes.

Prof. Pal referred to a few pioneers and their theories in the field of urban ecology. Some of the important names are Robert E. Park, Forest W. Stearns, Herbert Sukopp, Ernest Burgess, Ebenezer Howard, Amos Rapport, Lewis Mumford, Lester Brown and others.

Finally he talked about integrating human systems into ecology and repeated the necessity of urban forestry for various reasons – such as improvisation of biodiversity, maximization environmental services, altering of hydrology in a beneficial way, mitigation of urban heat island, reduction of noise pollution, improvisation air quality, contributing aesthetically, improving livability and quality of life and reducing stress level.

Concluding the session, **Dr. D.S. Meshram** emphasized on the physical planning initiatives which may be successful in combating extreme odd situations. Discussing the issue of the water-sustainability he told that the people of Aizawl utilize the rainwater collected roof drains during rainy seasons and use the same recycling at least 7 times to meet their water need. In Once it was thought that Dwarka would suffer from water scarcity, but it has sustained using the water from River Ganga. Hence, Dr. Meshram opined the word 'sustainability' is a relative term, that can increase or decrease. He also stated that Town Planning Organization have developed Auroville

with forests on a land that was almost barren 25 years back, adopting the zero-runoff principle by maximally controlling the discharging the rain water into the sea. In Port Blair of Andaman and Nicobar Island, rainwater is collected for consumption. But during tsunami, the saline sea water got mixed and resulted in severe water crisis for a long duration. Referring the presentation of Dr. Saswata Badyopadhyay, he commented that Delhi is not growing at its periphery; in fact that cannot expand as that is land locked from all side being surrounded by Uttarpradesh, Rajasthan and Haryana. Actually, the suburban towns of Delhi such as Gurgaon, Faridabad are growing at tremendous pace. In the context of urban ecology, he stated that the city Dubai had made green spaces despite of limited land and water resources.

He facilitated the speakers of the session with mementoes.



****End of the First Technical Session****



Visit ITPI-WBRC Website at <http://itpiwbrc.in>

Second Technical Session

After an absorbing first technical session and an extraordinary lunch, no one possibly knew another magical session was ahead where the students would deliver their ideas regarding how to combat air pollution through urban planning. In that session, nine renowned schools, who were selected from a preliminary round held earlier on 11th July, 2019, from different areas of Kolkata participated in an Inter School Elocution Contest through their presentations on the theme of the workshop.

Prof. Dr. Joy Sen from IIT, Kharagpur anchored this session in his usual attractive style. Dr. Souvanic Roy, Dr. Jayita Guha Neogi and Prof. Amitava Bhattacharya were the members of the juries for assessing the students' performance in the competition.



The Conceptual Layout of a Traffic Intersection
by the students of the La Martiniere School for Boys



PRESENTATIONS BY THE SCHOOLS

Presentation of Birla High School, Kolkata



The students of Birla High School were the first to present their deliberation. Their presentation established how urban areas of India are extremely threatened of air pollution. They mentioned about the researchers' warning that India is going through public health emergency requiring a full emergency mode response from local and national authorities. They emphasised more on the various initiatives of the central government e.g. National Clean Air Mission and its aims and objectives. Their presentations were so enthusiastic and smart that it raised the bar of the competition to a professional level.



Visit ITPI-WBRC Website at <http://itpiwbrc.in>

Presentation of Delhi Public School Ruby Park, Kolkata



The students of Delhi Public School of Rubi Park (Kasba), Kolkata, pointed out towards various technological innovations to combat air pollution. They talked about making fish foods from organic wastes, plantation of CO₂ absorbing plants, devices which convert pollution in air inks, using PYRO ovens and bio-gas plants. They felt that the building vertical gardens, smog free towers, generating powers from solar energy and wind energy, and using hydrogen powered vehicles on road may help to mitigate air pollution. It seemed they are extremely promising to develop such ideas in their future.



Visit ITPI-WBRC Website at <http://itpiwbrc.in>

Presentation of Gokhale Memorial Girls School, Kolkata

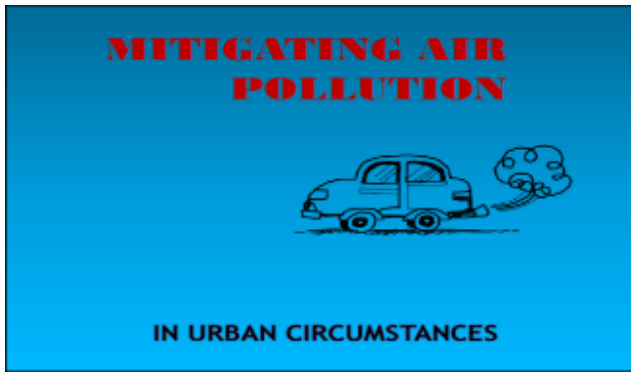


The students from Gokhale Memorial Girls School emphasized over various structural innovations used globally to combat air pollution. They gave example of using titanium di-oxide as paint in the building surfaces that removes smog and converts harmful pollutant into harmless substances in presence of sun light. Making air inks and fly ash bricks are similar options that are produced by converting potentially polluting substances. They prescribed promoting battery operated and electro motive public transport, using anti-smog guns and making vertical forests. Their idea of building urban spaces underground was thought provoking. They are very promising by their thoughts.



Visit ITPI-WBRC Website at <http://itpiwbrc.in>

Presentation of Jadavpur Vidyapith, Kolkata



The students of Jadavpur Vidyapith mentioned that the level of air pollution in Kolkata has become equivalent to smoking 22 cigarettes per day. They stated that major reasons of air pollution in urban areas are construction works and vehicular emissions. They prescribed the need of spraying water, using effective dust extraction and filtering devices in construction site. They gave example of Odd-Even rule adapted in Delhi to regulate cars on road. They talked about compact development with social facilities at the close proximity to residential areas, constructing energy efficient buildings and revitalizing tramways in Kolkata. They were very much impressed of vertical garden and roof top gardens in Paris. They have tried to present a few solutions that they have learnt from various sources, which are very interesting.



Visit ITPI-WBRC Website at <http://itpiwbrc.in>

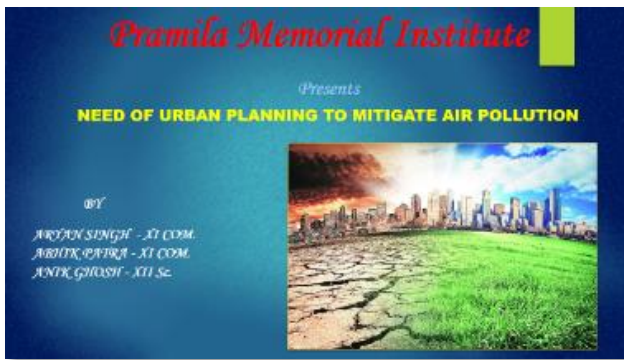
Presentation of La Martiniere For Boys School



The students of the La Martiniere For Boys were well conversant with various core town planning issues. They provided a general understanding of how the town planning helps in mitigating air pollution. They have good understanding about the functioning of the Central Business District of a city, which is the core of any city holding the central functions. Considering its importance they recommend for efficient public transport for the reduction of the air pollution. In their view designing roundabouts in congested intersections may reduce congestion related air pollution on streets. They talked about zoning regulations, and segregating industrial and residential areas. They stated about applying travel demand management strategies by the private agencies wherein companies offer subsidies and other benefits to employees who opt for carpool services while attending work places. At the end, they referred to various environmental management strategies with economic, social and environmental objectives. Their presentation has impressed.



Presentation of Pramila Memorial Institute, Kolkata



The students of Pramila Memorial Institute started their presentation recognizing the sources of air pollution. Their observations are,- apart from natural phenomena, urban construction works, livestock farming, use of fertilizers in agriculture, transportation and industries generate air pollutants. They prescribed banning of old cars that fail to burn the petrol or diesel efficiently; promoting walking and bi-cycle riding and vehicles that run on electricity and alternative bio-fuels, public transport etc. They talked about restoration of canals for water transport, widening and maintenance of roads etc. Planting of leafy hedges along the roads, beautification of public space and private gardens are a few other recommendations from them. Most importantly, they showed their dream plans for green and clean city.



Visit ITPI-WBRC Website at <http://itpiwbrc.in>

Presentation of Salt Lake CA School, Kolkata



The well-coordinated presentations by the three students of Salt Lake CA School attracted attention of audience. They look at the air pollution as a world-wide concern and prescribed urban planning solutions of it, relating them with the planning initiative under taken in national scenario. For example: they talked about raising the height of the smoke emitting chimneys of industries and keeping them away from the residential areas while showing the example of the Vidyasagar Industrial Park at Kharagpur. They talked about necessity of controlling vehicles on road and promoting bicycle tracks as well as managing wastes, referring the layout of the city of Chandigarh. They placed their observations about the planning of Salt Lake City, Kolkata pointing towards its strengths and weaknesses and presented their concept and vision about planning a city Their performance was praised by the entire audience in the hall.



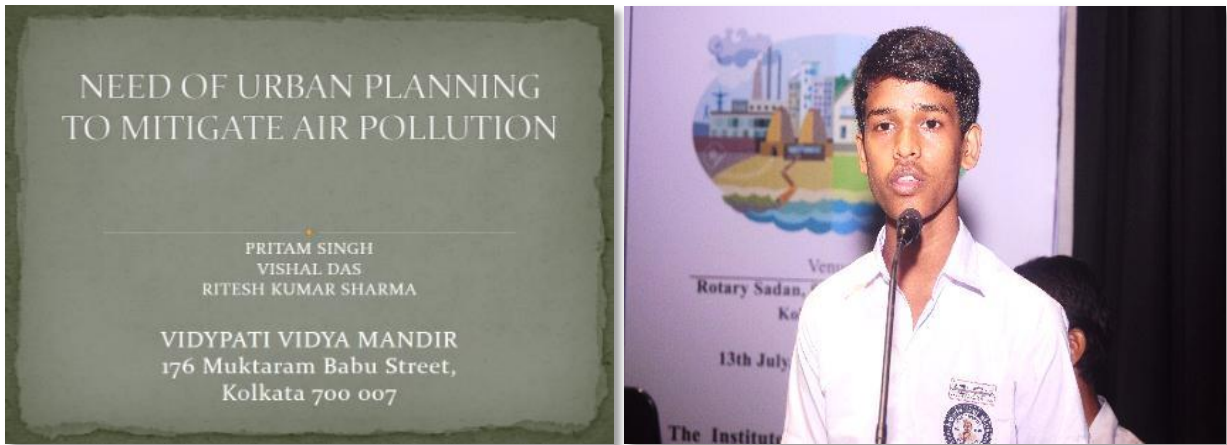
Presentation of Shanti Sangha Balika Vidyalaya, Kolkata



The brief presentation of Shanti Sangha Balika Bidyalaya in Bengali also attracted the attention of the juries. Apart from describing general understanding of air pollution and their impact on health of the people, they prescribed planting trees along the road as pollutant barrier, making green roof or green wall, and making school garden. They mentioned about various options of making the roads pollution free by promoting pool car services, electricity motivated buses and CNG vehicles, bi-cycle tracks, revitalizing trams and making metro oriented transit development. They also mentioned about the nuisance from plastic wastes and burning of wastes. The most interesting features of their presentation were the real life initiatives in their school premises by in tree plantation program, and distribution of student-made cloth bags in the locality for building awareness against use of plastic bags.



Presentation of Vidyapati Vidya Mandir, Kolkata



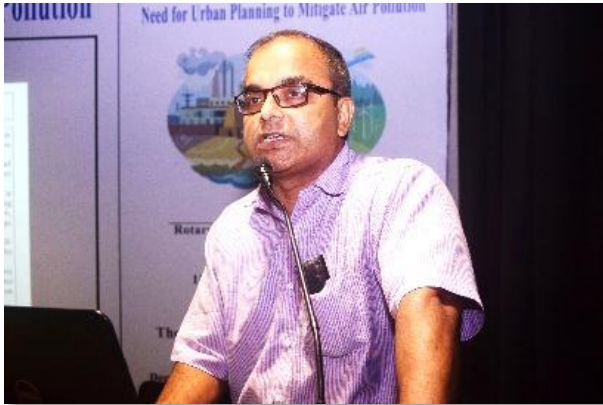
The students of Vidyapati Vidya Mandir were very good in presentation which contained various urban planning measures to mitigate air pollution. The examples are: replacing combustion of fossil fuels by using solar, wind and geo-thermal energy, making green spaces along the roads, vertical and rooftop plantations, prevention of cutting trees and filling of water bodies, allowing industries and dumping sites away from residential areas, eco-friendly algae planting (algae curtain) on the facades of large buildings, installation of giant air purifiers and solar panels, constructing underground cities. Their efforts were praised by the juries.



Visit ITPI-WBRC Website at <http://itpiwbrc.in>

PART- II of Second Technical Session:

While judges of the students' competition were calculating marks, **Dr. Anupam Deb Sarkar**, Associate Professor of Environmental Engineering, Department of Civil Engineering, Jadavpur University and **Dr. Saumyabrata Acharyya**, Head of the Department, Pediatrics, AMRI Hospital appeared for their presentations.



Dr. Anupam Deb Sarkar talked about the alarming scenario of air-pollution. He mentioned that sustainable development refers to economic, social and environmental dimensions of sustainability future generation.

Referring to the sustainable development goals he mentioned about the global commitment of reducing the death and distress from environmental pollution by 2030. Key drivers of air pollution are rampant urbanization, indiscriminant industrialization, power generation particularly thermal power, transportation using fossil fuels and intensified agriculture. Health effect of air pollution are headache and fatigue due to carbon mono-oxide, nerve damages from lead, respiratory illness and cardio-vascular illness caused by particulate matter, gastroenteritis, cancer risk, nausea and skin irritability caused by volatile compound. These become more adverse due to soil and water pollution. Air pollution can cause type II diabetes among the children. He talked about the 12 parameters of air-pollutants that describe air-pollution scenario at particular place. But WHO have focused 5 health related air-pollutants, e.g. respiratory particulate matter or PM₁₀, fine particulate matter or PM_{2.5}, nitrogen-dioxide, sulphur-di-oxide and ozone. Out of these five, PM₁₀, PM_{2.5} and NO₂ are considered with immense importance. PM_{2.5} is the major culprit; being finer particulate matter, it can penetrate to alveoli region of the lungs. He stated that 97 percent of the cities with more than 100000 inhabitants in low and middle income countries don't meet the WHO guidelines of air quality. In the cases of rich countries the same is 49 in percentage. Sub-Saharan Africa, Middle East countries, Indian sub-continent and South East Asia are the major sufferer in terms of PM_{2.5}. Children are the most sufferer of this condition. In terms of mortality due to air pollution, India and China remain at the top five countries. Growth of private vehicles is increasing air-pollution level. Finally he described fundamentals of air quality management. The need of effective spatial distribution of point sources of pollution. He stressed on defining regional physical structure in terms of shape and organization of settlement areas and open spaces, pattern and type of transportation systems. Adoption of a

balanced sub-regional approach for regional and metropolitan development that induce urban growth, efficiently disperse air pollution and reduce motorized travel with integration of mass transit. Land use planning with plans of reduced population density around industrial zones or in downwind direction should also be part of the initiatives in his view.



Dr. Saumyabrata Acharyya, a noted pediatrician associated with AMRI hospital, Kolkata, gave a presentation in which he stated that the nature of health related problems of children has changed largely in last decade. Now, asthma and related problems have become quite frequent among the children compared to earlier decade.

He suggested to the parents to consider and treat asthma of their children accepting the same as a common illness, without being over-worried and sigh of it. As a doctor, Shri Acharyya was trying to impress the audience about the reason, prevention and treatment of the same. The major reasons of respiratory illness and asthma are dust and smoke that remains in the indoor or outdoor environment and from the passive smoking. There are preventive measures such as avoiding dust and smokes either by keeping away from pollution and smoking, or by using proper mask. In acute condition steroids, inhalers, nebulizers are prescribed. Dr. Acharyya mentioned about a study of ten years back when five percent of the child-patients at outdoor of AMRI are prescribed with inhalers. But now it has gone up to 20 percent. Hence, using masks has become a necessity nowadays. After that, he described various bronchial diseases and hay fever. People with bronchial diseases, due to air-pollution exposure, have constricted air-passage at bronchus due to layering of dusts and pollutants on the inner layer of the passage. Inhaler and medications expand the air-passages to make breathing easier for the patients. He described silicosis that occur among the people working at crushers with silica; similarly anthracosis from coal-dust, asbestosis from asbestos, bronchiolitis from oxides of nitrogen, lung cancers from hydrocarbon inhaling. He discussed about COPD-Asthma from sulphur-di-oxide or chronic obstructive pulmonary airway disease, in which alveoli remain expanded and have no capacity for further expansion after inhaling oxygen. Finally, he admitted the pollution cannot be avoided altogether in the present scenario though lots of initiatives are taken to restrict and prevent it through planning initiative. He concluded that there is need of awareness in tackling the asthma or respiratory illnesses apart from urban planning to prevent pollution.

After two speeches, there were short video from M/s **Havells** (Sponsor), which showed that Havells

makes world class water purifiers apart from various lights and electrical appliances. They are also involved in various social programs and disaster management services.



The second presentation was given by another sponsor: **M/s H R Johnson**. **M/s H R Johnson** have an experience of sixty-one years since 1958 of innovating and renovating environment friendly tiles. A short presentation was given to explain that 60 years journey of the company. The presenter from Johnson Tiles described that the company has thirteen plants across India. The management and products of those plants have fulfilled ISO standard and BEE standards. The plants have considered all energy saving aspects in producing tiles. The presenter also described about a cool-roof tiles that have the capacity of reflecting 90 percent of the solar radiation and thus keeping the indoor environment cool. She also talked about glazed ceramic tiles those are covered with silver powder infused with the glazing. These tiles have antibacterial and self-cleansing property and are an innovative product of the R&D section of one of their plants for industrial product and natural resource. She talked that the company will come with healing tiles very soon that will put the negative ions discharging oxygen and provide a healing effect.



End of the Second Technical Session

Prize Declaration for the School Students

At the end, Prof. Joy Sen declared the result of the student contest. Salt Lake CA School ranked first in the contest followed by Pramila Memorial Institute, the second and Shanti Sangha Girls High School, the third.





The Organizing Team

The workshop is extremely successful with active participation of around 180 individuals including students, educationalists, engineers, architects, town planners and policy makers. The target to reach the future citizens, who would lead our country and keep the cities livable through their passion and knowledge of urban planning, has been partially fulfilled. ITPI, WBRC would continue such initiatives further in future.



The Institute of Town Planners, India- West Bengal Regional Chapter (ITPI-WBRC)

Offers

Professional Consulting Services

Urban and Regional (including rural areas and environment) Planning

- Statutory Plans (As per Act);
- Non-Statutory Area Development Plans;
- Infrastructure Project Planning and Studies such as Water Supply, Sewerage, Drainage, Solid Waste Management, Power Supply, etc;
- Monitoring and Evaluation;
- Impact Assessment Studies;
- Technical Assistance/Advisory Services/ Project Management Consultancy;
- Technological Studies and Services related to Planning; and
- Institutional / Capacity Building Studies / Training

Transportation Planning

- City / Urban Transport Plans;
- Regional / State Level Transport Plans;
- Project Planning Studies
- Monitoring and Evaluation / Impact Assessment Studies, and;
- Institutional / Capacity Building Studies / Training.

Spatial Planning Policy Studies / Guidelines.

- Evaluation of existing and / or formulation of new policies etc.
 - City Level Policies / Guidelines;
 - State Level Policies / Guidelines; and
 - National Level Policies / Guidelines



For details, please contact

Secretary, ITPI-WBRC; IB- 190, Bidhannagar, Salt Lake, Kolkata, 70010

E-mail: secretary.itpiwbrc2011@gmail.com

With Best Complements From:

Er. Gopal Ch. Bag

B.E. (Civil), M.E., C.E.,
M.I.E., Chartered Civil Eng.,
ESE-I, Geotech Eng (Regd.)
(Enlisted ESE-I, G.Tech. Eng.
of K.M.C., M.E.D., R.S.M.,
N.K.D.A. etc)

Specialized in -

- Soil Test at site & analysis at laboratory.
- Economic Pile design & Construction Work.
- Residential, Commercial, Industrial Building Design, Stadium, Auditorium, Bridge Design & Vetting from J.U., M.E.D., Zilla Parishad etc.

Address: R. N. Engineers.

1) 4/28, Fern Road, Bullygunge, Kolkata
700019

With Best Compliments From :-

Sur Electrical Co. Pvt. Ltd.

***Solar Energy Division * Engineering Division ***

Medical Division



3/1, Dr. Suresh Sarkar Road, Kol- 14

Ph.: 2286 6737, 2264 8275

Email: sepl.sv71@gmail.com



WELCOME TO A GERM-FREE LIFESTYLE.

JOHNSON
Not just tiles, Lifestyles.

GERM FREE

Presenting a wide range of germ free wall & floor tiles from Johnson that ensures health, hygiene and safety at one go! Infused with the germ free technology patented by Johnson close to a decade ago, these tiles can be used across a broad spectrum of spaces, including residential spaces, schools, hospitals & healthcare facilities.

Available in:
160x80 cm, 120x120 cm, 120x60 cm, 60x60 cm, 60x30 cm, 45x30 cm, 40x40 cm, 30x30 cm & 24x7.5 cm.

Winner of the Golden Peacock Innovative Product/ Service 2020 Award for the Germ Free range of products.

Explore the complete range on www.hrjohnsonindia.com
Toll Free: 1800-22-7484 | tiles.customer@prismjohnson.in

* H & R Johnson's GERM FREE tiles are made using patented Silver- ion based Antimicrobial Compound. # As per JIS Z 2801:2010 Test Protocol.

With Best Wishes from:



HAVELLS

M/s Havells India Ltd.
Manufacturer / Importer:

Registered Office:
904, Surya Kiran Building,
K.G. Marg, New Delhi – 110001. (INDIA)

Corporate Office:
QRG Towers 2D, Sector-126,
Expressway, Uttar Pradesh , Noida - 201304

With Best Compliments From:



Best Wishes From:



With Best Compliments From:

A Well Wisher

With Best Compliments From:



M/s Mishra & Mishra
Consulting Services (P) Ltd

Multi Disciplinary Architecture &
Engineering Consultants

FD-396/410/413. Sector III, Salt Lake City, Kolkata
700 106

Phone: 033-4004 5307 (O)

9830574324 (M)

E-mail: umes_mmcs_2006@yahoo.co.in,
mmcsdesigngroup@gmail.com

Website: www.mmcsdesign.com

With Best Compliments From:

*M/s Ananta Electrical Engg.
Construction*

*Govt. electrical contractor & general order
supplier*

*Burdwan Zilla Parishad M. E. Dte & PWD
Voll & PO- URA Purba Bardhaman.*

Mobile no.: 9434673583
9093208565

With Best Regards:

M/S SAURAV BATABYAL

**(ENGINEERS & CONTRACTORS,
BURDWAN)**

MOB - 94754 52727



M/s Ecogreen Landscape Technologies India Pvt. Ltd.

01, Ananda Apartments, Behind Anjor Co-op Housing Society,
 Veerbhadra nagar, Baner
 Pune 411045, Maharashtra
 E mail: sales@eltindia.com; Website: <http://eltindia.com>

**CII-Godrej GBC Green Building Campus in Hyderabad introduces
 Green Wall feature**

On 13 August 2015, the Living wall installed by ELT India was inaugurated by Mr. Jamshyd N Gogrej,

Living Wall at CII-Godrej GBC, Hyderabad - India's first Platinum rated Green Building



- Benefits**
- Reduces urban heat island effect
 - Increases Biodiversity
 - Reduces energy costs
 - Regulates temperature
 - Improves air quality
 - Protects building façades
 - Improves aesthetics
 - Speeds recovery time for patients



Page42/ National Workshop on Need for Urban Planning to Mitigate Air Pollution



The Lifestyle Gardening...

With Best Compliments From:



With Best Compliments from:

M/s Ecogreen Landscape Technologies India Pvt. Ltd.

01, Ananda Apartments,
Behind Anjor Co-op Housing Society, Westbhadra Nagar, Baner
Pune 411045, Maharashtra



সময়ের কাজ সময়ে করি এসো নতুন বাংলা গড়ি



পশ্চিমবঙ্গের মাননীয় মুখ্যমন্ত্রী মমতা বন্দ্যোপাধ্যায়ের
একটি ঐতিহাসিক পদক্ষেপ

পশ্চিমবঙ্গ জনপরিষেবা অধিকার আইন ২০১৬, 'সময়ের সাথী'

সময় মতো সরকারী পরিষেবা পাওয়া সাধারণ মানুষের অধিকার। এই অধিকারকে সুনিশ্চিত করতে পশ্চিমবঙ্গের মাননীয় মুখ্যমন্ত্রী মমতা বন্দ্যোপাধ্যায়ের উদ্যোগে ২০১৬ সালের ৬রা অক্টোবরে চালু হয়েছে পশ্চিমবঙ্গ জনপরিষেবা অধিকার আইন। বহু পরিষেবা এই আইনের অন্তর্ভুক্ত, যেমন তপশিলী জাতি, তপশিলী উপজাতি ও অন্যান্য অনগ্রসর সম্প্রদায়ের জাতিগত শংসাপত্র, প্রতিবন্ধী শংসাপত্র, জননী সুরক্ষা যোজনা, কন্যাশ্রী প্রকল্পে বৃত্তি প্রদান, রেশন কার্ড প্রদান, ডুপ্লিকেট রেশন কার্ড, রেশন কার্ডের ঠিকানা পরিবর্তন, জন্মের শংসাপত্র, মৃত্যুর শংসাপত্র, অ্যাডমিট কার্ড/মার্কশীটের সংশোধন, ডুপ্লিকেট মার্কশীট প্রদান, জমির পরচার কপি, ড্রাইভিং লাইসেন্স সহ আরও অনেক পরিষেবা।

পশ্চিমবঙ্গ জনপরিষেবা অধিকার আইন ২০১৬



পরিষেবা পান সহজে
সাথে সাথে

ICA 2158(9)/2014



ফোন করুন ১৮০০ ৬৪৫২৮০৮ • পশ্চিমবঙ্গ সরকার, উপভোক্তা বিষয়ক দপ্তর,
১১এ, মির্জা গালিব স্ট্রীট, কলকাতা ৭০০০৮৭ • www.publicservicesright.in

Office Space, Lecture Hall, Meeting Room

Available on Rent

At ITPI-WBRC Building

Contact the Secretary,
Institute of Town Planners, India (ITPI-WBRC)
West Bengal Regional Chapter

IB-190, Bidhannagar, Salt Lake, Kolkata 70010

E mail: secretary.itpiwbrc2011@gmail.com

Visit Website: <https://itpiwbrc.in>





HUMAN SETTLEMENTS PLANNING CENTR

মানব বসতি পরিকল্পনা কেন্দ্র

Consulting, Engineering, Surveying & Mapping

Specialization:-

Existing Land Use Mapping & Register (LUMR), Land Acquisition Plan (LAP),
Railways, Roads, Buildings & Irrigation Project



Khirai Railway Station, P.O. Meghadangar, Via-Panskura, Dist-Purba
Medinipur, PIN-721152, West Bengal, Mobile: 09434058393/ 08250175885
Email: hspc1990@gmail.com