



THEMATIC WORKSHOPS

Smart Cities and Academia towards Action
and Research

1. Climate Change and Resilient Cities
2. Information & Technology in Urban Management
3. Heritage Restoration and Conservation
4. Urban Infrastructure Management

The four-days Thematic Workshops on Smart Cities and Academia towards Action and Research (SAAR) held from 17 May to 20 May. The purpose of the workshops was to share the project outcomes and the key learnings by the students. There were in total 16 presentations under the 4 themes— **Climate Change and Resilient Cities, Information and Technology in Urban Management, Heritage Restoration and Urban Planning, and Urban Infrastructure and Management**—which were presented by the students. The workshops were preceded by the sectors experts from the National Institute of Urban Affairs. A brief bio of the panelists is given as below:

1. Dr. Umamaheshwaran Rajasekar

Dr. Mahesh is the Chair of Urban Resilience Unit at the National Institute of Urban Affairs. His interests are in the field of disaster risk reduction, climate change and urban resilience and has over 17 Years of experience in development sector. He is currently involved in mainstreaming urban resilience across Indian cities through development of policy briefs, indicators and frameworks.

2. Mr. Lovlesh Sharma

Mr. Lovlesh Sharma is a Senior sector specialist at the Water and Environment vertical at NIUA. He has over 12 years of experience as a development expert and Urban Planner. His area of expertise includes city master planning, infrastructure services including urban water and waste management; blue-green infrastructure.

3. Mr. Padam Vijayvergiya

Mr. Padam Vijayvergiya is a seasoned technocrat with over 25 years of experience in the area of Smart and Safe cities, Intelligent infrastructure Management, Data centers, emerging Technology solutions, among others. He is presently associated with NIUA as Technical Adviser, supporting Digital transformation programs and also providing handholding support to 100 Smart Cities thru smart cities mission for ICCC and other ICT interventions. A firm believer of usage of the technology for co-creation and bottom-up innovation, he brings a distinctive blend of expertise both in the information Technology and procurement.

4. Ms. Gurmeet Sangha Rai

Ms. Gurmeet Sangha Rai is a conservation architect and a heritage management specialist based in New Delhi. She established CRCI India Pvt Ltd, a leading firm in heritage practice in India in 1996. Some of the noted projects of CRCI have been preparation of conservation and management plans for the world heritage sites of Red Fort, New Delhi; Ellora Cave, Maharashtra, urban conservation plans for historic settlements of Amritsar and Puri, sustainable strategies for development of cultural tourism in Jammu and Kashmir, integrated conservation and development of tangible and intangible heritage; for governments, private, bilateral and multi-lateral agencies. She is currently the Vice President of

ICOMOS India and an expert voting member on the ICOMOS International Scientific Committee on Cultural Tourism.

5. Mr. Ajay Suri

Mr. Ajay Suri is an economist and a development expert with long standing experience in formulating strategies and managing people-centred development programs across various states and cities in India, south Asia (Bangladesh, Nepal and Maldives), south-east Asia (Indonesia, Myanmar, Philippines and Vietnam), Africa (Kenya), West Asia (Lebanon) and Central Asia (Iran).

His main areas of expertise are urban policy and strategy formulation, urban poverty assessment, city-wide service delivery profiling, participatory planning for livelihoods promotion and service delivery, program management, and institutional strengthening for improved governance.

6. Ms. Sarika Chakravarty

Ms. Sarika Chakravarty has nearly two decades of cross-sectoral experience in urban, transportation and environmental planning domains. Currently she is working as a Senior Sector Coordinator for the Master Plan for Delhi – 2041 project at the National Institute of Urban Affairs (NIUA) which is widely regarded as the think tank for the Ministry of Housing and Urban Affairs, Govt. of India. She has recently led a team of planners to develop a baseline and formulation of strategies for the housing and transport sectors of the MPD-2041. As part of the team, she also contributed to the formulation of the Land Policy, TOD Policy and Regeneration Policy for Delhi. Previously, Sarika has been part of organisations like UNICEF and NCRPB, and has worked on various projects funded by multilateral agencies like the World Bank, JICA, DFID, etc.

7. Ms. Ruchi Gupta

Ms. Ruchi Gupta has 15 years of experience in the field of urban planning and architecture. She is presently working as Sector Coordinator for Urban Planning in the Master Plan of Delhi team at NIUA.

The deliberations from the workshops provided insights institutionalizing the SAAR initiative. The projects documentation is aimed to know how the cities have imbedded the principles—live ability, economic ability, and sustainability— of the Smart Cities Mission into their planning framework. SAAR is a new sector of the Ministry of Housing and Urban Affairs and NIUA wherein it is aimed towards building the future urban professionals to manage the unprecedented urban growth and providing services to the citizens. The SAAR case studies should become ‘use cases’ for the upcoming students and other stakeholders.

The key takeaways from the four thematic workshops are detailed out in the following sections below.

Smart Cities and Academia Towards Action & Research (SAAR)

Thematic Workshop, Day 1 · Climate Change and Resilient Cities
17 May, Tuesday · 10:00 am – 12:30pm



Introduction to the Workshop

The introduction and opening remarks to the workshop was given by Mr. Hitesh Vaidya, Director-NIUA. In the opening remarks, he discussed that the Smart Cities projects cover a wide range of urban sectors such as technology, infrastructure, economic development, climate change, renewable energy, heritage restoration, mobility etc. The idea of the thematic workshop is to give a clarity to the SAAR students and understand the challenges the students have faced while documenting the project manuscripts on different urban sectors. Hence, the purpose of the thematic workshop is to bring in the sector experts to resolve the issues and questions from the students on their respective projects.

After the opening remarks, Dr. Purva Sharma from NIUA introduced the two panelists—**Dr. Umamaheshwaran and, Mr. Lovlesh Sharma**— to the participants, and requested for brief remarks about their work experience in the climate change and resilient cities sector.

Dr. Mahesh discussed in detail about the context of the term ‘resilience’ in the urban sector. He explained that ‘resilience’ is difficult to be defined for urban infrastructure. There are multiple parameters for planning and managing different urban infrastructure such as roads, water supply, digital services, sewerage, green areas etc. He explained that for managing such infrastructure there are multiple stakeholders and institutions to whom resilience and urban sustainability is defined differently. He highlighted that the climate change projects reflect upon the future development. Working on such projects can be challenging because there are a lot of predictions, projections, and assumptions involved in modelling the future growth of an urban area. He suggested that students should understand the context of climate change in sustainability with the Smart City officials, and most importantly involve the people, take their opinion because working on the impact of climate requires a macro-view.

Mr. Lovlesh Sharma appreciated the efforts and work of the students in the SAAR programme. He discussed that climate is not at all local. It is important to understand the unique point where the students can bring in an innovative solution.

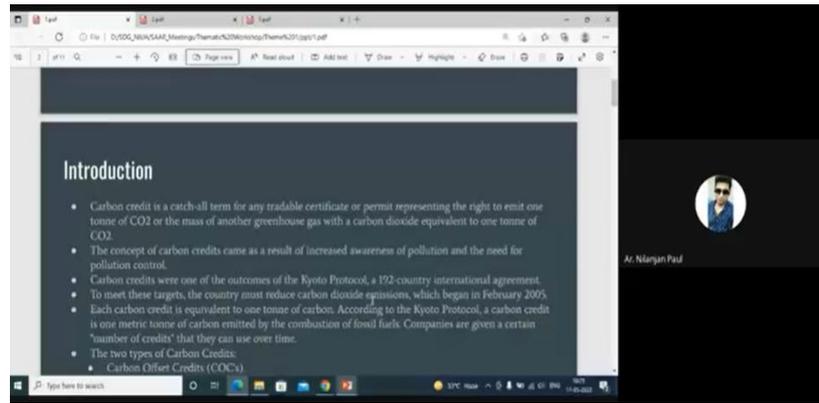
After the opening remarks and introduction, Dr. Purva Sharma from NIUA gave a brief overview of the presentations for the thematic workshop to the panelists. The list of presentations by the Institutes is given in the table below.

1. Carbon-Credit Aggregator Model, Indore

Maulana Azad National
Institute of Technology in
Bhopal.

Student's name: Nilanjan
Paul & Swatiraj Bansal

Mentor's name: Prof. Rahul
Tiwari



2. Canal-top Solar Power Plants, New Town Kolkata

Indian Institute of
Engineering, Science and
Technology, Shibpur

Student's name: Pronoy
Kumar Mondal

Mentor's name: Prof.
Sutapa Das

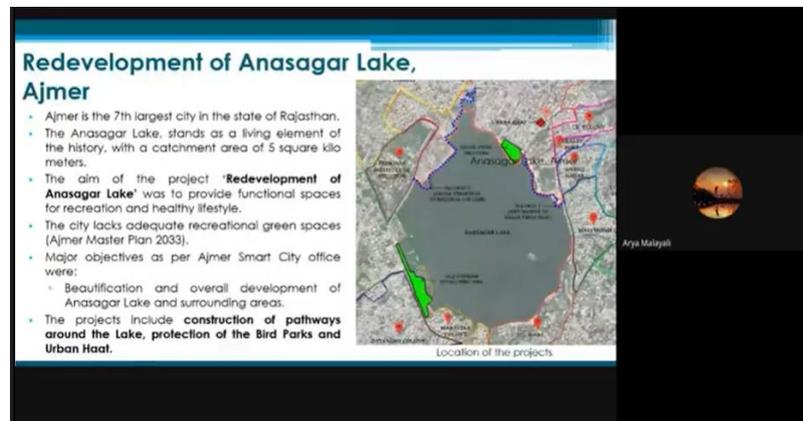


3. Redevelopment of Anasagar Lake, Ajmer

Malaviya National Institute
of Technology in Jaipur

Student's name: Arya
Malayali

Mentor Name: Dr. Nand
Kumar and Dr. Aditi Gupta

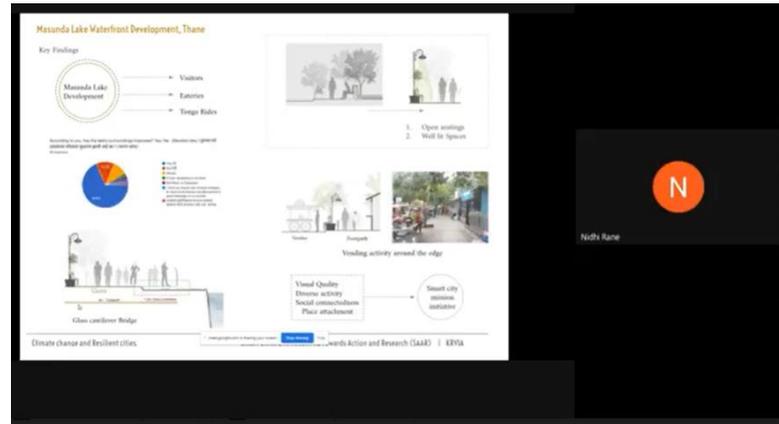


4. Masunda Lake Waterfront Development, Thane

KRVIA, Mumbai

Student's name: Nidhi Rane

Mentor's name: Prof. Ainsley Lewis



5. Canal Corridor Linear Park Development, Surat

CEPT Ahmedabad

Students' name: Yasin Kabaria

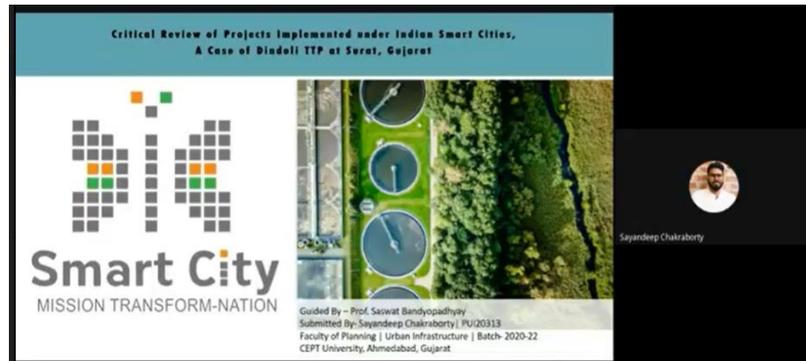
Mentors' name: Prof. Saswat Bandopadhyay & Prof. Sejal Patel



6. Dindoli Tertiary Treatment Plant in Surat by CEPT Ahmedabad

Student's name: Sayandeep Chakravarty

Mentors' name: Prof. Saswat Bandopadhyay & Prof. Sejal Patel



The key takeaways from Day-1 of the workshop are the following:

1. Dr. Mahesh discussed that the projects related to climate change and resilience require an approach by the city officials which is sustainable for proper implementation of the projects in long-term. It was discussed that the large infrastructure projects such as the Carbon Aggregator Model cannot be implemented by the local authorities of different population sizes. This is mainly because of the limited technical capacities, large financial cost, involvement of multi-stakeholders, type of institutions, operating mechanisms, and long-term sustainability of projects. A critical evaluation of such projects is required based on the issues, challenges and long-term monitoring mechanisms. Dr. Mahesh suggested that the above can be included as one of the recommendations by the students in the project manuscripts.

2. In the case of projects related to renewable energy it is important to analyze the impact of extreme weather events (cyclones, floods, storms) on the built-up infrastructure such as solar panels. Dr. Mahesh explained that the intensity of damage the project had gone through, and the mitigation efforts taken by the authorities should be reflected by way of 'use cases' or 'learnings' in the project manuscripts or in the recommendations so that it may help other cities to implement such projects.

3. Dr. Mahesh suggested that in the case of projects on biodiversity the students should make note of Biodiversity Management Committee as per section 41(1) of Biodiversity Management Act 2002. It is important because the purpose of the Committee under this Act is to take prepare a documentation of the list of biodiversity existing in the city, and the measures that have taken for the conservation and management of biodiversity in a city. An important part is the cost analysis (both CAPEX and OPEX) of the projects. This is crucial because if Smart City handovers the project to Municipal Corporation then the financial details would help in budgeting the project in future.

Mr. Lovlesh Sharma highlighted that rejuvenating the water bodies and connecting the people to the water bodies is an important part of the project implementation. He gave the reference of 'Urban Water Body Diagnostic Toolkit' developed by NIUA in collaboration with UNESCO. The tool has been developed for the city officials in identifying and prioritizing actions for rejuvenation of water bodies in the city. The tool consists of 10 indicators which reflect upon the present condition and management associated the water bodies. Mr. Sharma suggested that students can include the adoption of toolkit by the city officials as one of the recommendations in the project manuscripts.

4. Dr. Mahesh discussed that the process of the development of project evolves gradually. The ideation of a project is generally pre-conceived by technical professionals. The citizen perception is



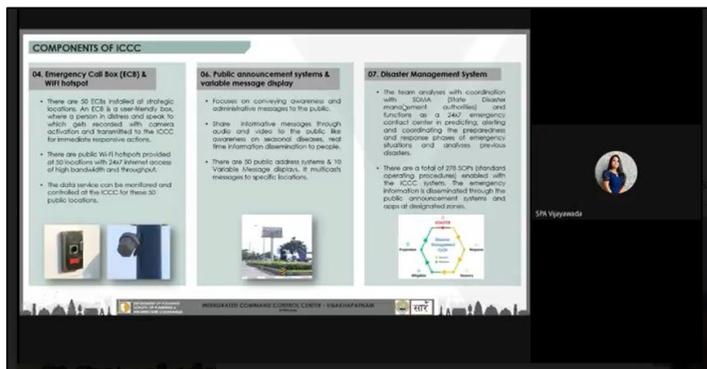
generally ignored during the project development stage. Hence, stakeholder consultations with the people on pre and post development of the projects must be considered.

5. Mr. Lovlesh Sharma highlighted that in the case of urban environmental projects it is important to study the legislative aspects for projects such as the type of land uses, permissible & non-permissible activities, type of construction activities must be noted.

Smart Cities and Academia Towards Action & Research (SAAR)

Thematic Workshop, Day 2 · Information & Technology in Urban Management

18 May, Wednesday · 10:00 am – 12:30pm



Introduction to the Workshop

The introduction to the workshop was given by Mr. Hitesh Vaidya, Director-NIUA. He discussed that the objective of SAAR is to give the students a leadership role when they join the urban sector. The SAAR programme gives the students a platform to learn in detail about the project development process, understand how urban local bodies have envisaged the Smart Cities



projects, and study the legislative and administrative perspective. The purpose of the documentation of the projects by the students is to identify the gaps in the project, and how it can be improved in future. Mr. Vaidya in the context of the second workshop remarked that technology should be seen as an enabler to urban management, and how it can bring in value added knowledge in the projects.

Dr. Purva Sharma thanked the Director for his remarks, and welcomed the panelists—**Mr. Padam Vijayavargaya, and Mr. Manish Bhatt**— for a brief background to their work experience in the information and technology sector in urban management.

Mr. Padam Vijayavargaya addressed that technology should be build up and use to deal with the infrastructure problem. The technology and data tools should not be seen as design elements. The Integrated Command Control Centres should be seen as decision-support system. The ICCCs brings the entire city administration together, and break the silos to address the urban problems. It should be seen as achieving the three goals of Smart Cities Mission—live ability, economic ability, and sustainability.

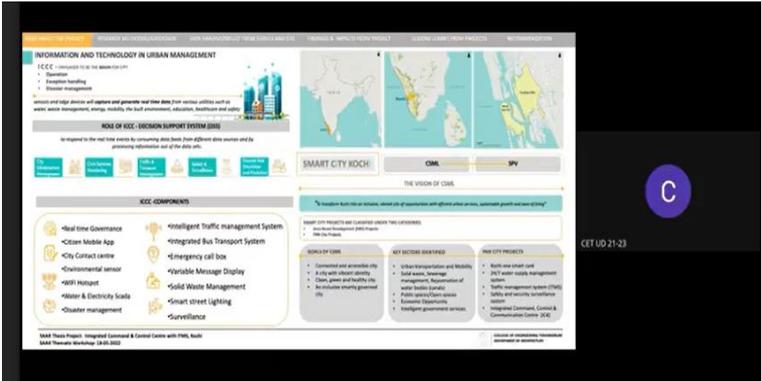
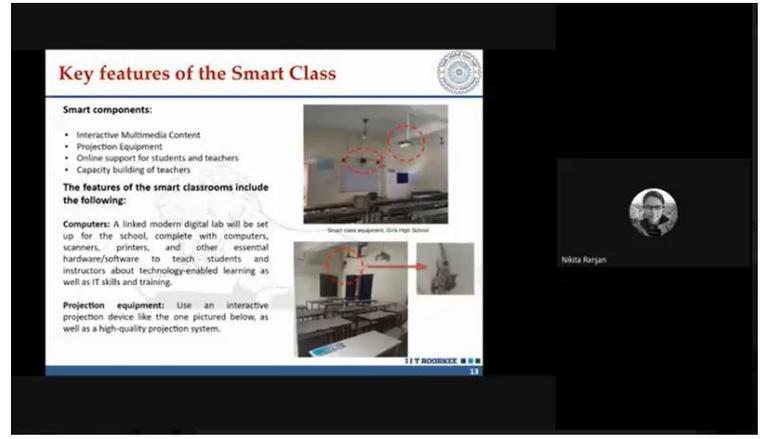


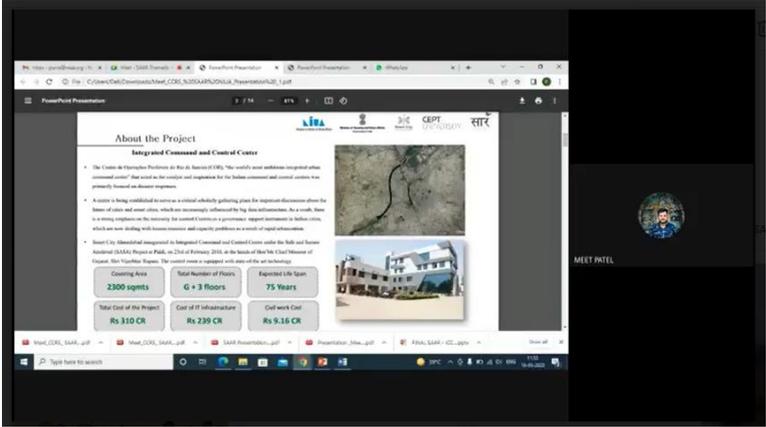
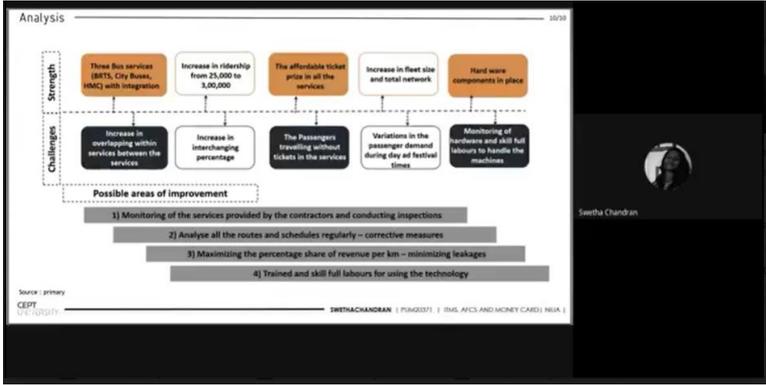
Mr. Manish Bhatt, Director-in Chief of ICCV Vadodara Smart City gave brief remarks about the centre's initiatives in the city. He highlighted that the purpose of ICCV Vadodara is to safety and security of the city. Each component in ICCV has its own feature and advantage. He gave examples of different sectors such as traffic violation, fire



detection, crime detection, SWM, etc. where ICCC Vadodara has made remarkable achievements. The centre is also giving opportunities for internship to the students to work in ICCC Vadodara.

After the opening remarks and introduction, Dr. Purva Sharma from NIUA gave a brief overview of the presentations for the thematic workshop to the panelists. The list of presentations by the Institutes is given in the table below.

<p>1. Integrated Command Control Centre with ITMS, Kochi</p> <p>College of Engineering, Trivandrum</p> <p>Student's name: Rakhi</p> <p>Mentor's name: Prof. Bejene Kothari</p>	
<p>2. Integrated Command Control Centre in Vishakhapatnam</p> <p>School of Planning and Architecture, Vijayawada</p> <p>Mentor's name: Prof. Ayon Tarafdar and Prof. Adinarayane</p>	
<p>3. Information and Technology in Urban Management Agra Smart City Projects: Smart Classes and Micro Skill Development Centre</p> <p>IIT-Roorkee</p> <p>Student's name: Kritika Sharma & Shipra Verma</p>	

<p>Mentor's name: Prof. Arindam Biswas & Nikita Ranjan</p>													
<p>4. Critical Review of Integrated Command and Control Centre through the lenses of CCRS system</p> <p>CEPT, Ahmedabad</p> <p>Student's name: Meet Patel</p> <p>Mentor's name: Prof. Saswat Bandyopadhyay and Prof. Sejal Patel</p>	 <table border="1" data-bbox="592 689 1085 761"> <tr> <td>Counting Area</td> <td>Number of Floors</td> <td>Expected Life Span</td> </tr> <tr> <td>2300 sqmtrs</td> <td>G + 3 floors</td> <td>75 Years</td> </tr> <tr> <td>Total Cost of the Project</td> <td>Cost of IT Infrastructure</td> <td>Cost of Work Desk</td> </tr> <tr> <td>Rs. 3.10 CR</td> <td>Rs. 239 CR</td> <td>Rs. 5.16 CR</td> </tr> </table>	Counting Area	Number of Floors	Expected Life Span	2300 sqmtrs	G + 3 floors	75 Years	Total Cost of the Project	Cost of IT Infrastructure	Cost of Work Desk	Rs. 3.10 CR	Rs. 239 CR	Rs. 5.16 CR
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2300 sqmtrs	G + 3 floors	75 Years											
Total Cost of the Project	Cost of IT Infrastructure	Cost of Work Desk											
Rs. 3.10 CR	Rs. 239 CR	Rs. 5.16 CR											
<p>5. Integrated Command Control Centre in Vadodara and ITMS in Surat</p> <p>CEPT, Ahmedabad</p> <p>Student's name: Meet Shah and Swetha Chandran</p> <p>Mentor's name: Dr. Gayatri Doctor</p>	 <p>Strengths:</p> <ul style="list-style-type: none"> Three Bus services (BETS, City Buses, HMC) with integration Increase in ridership from 25,000 to 3,00,000 The affordable ticket price in all the services Increase in fleet size and total network Hard ware components in place <p>Challenges:</p> <ul style="list-style-type: none"> Increase in overlapping services between the Increase in interchanging percentage The Passengers travelling without tickets in the services Variations in the passenger demand during day and festival times Monitoring of software and skill gap (labour) to handle the machines <p>Possible areas of improvement:</p> <ol style="list-style-type: none"> 1) Monitoring of the services provided by the contractors and conducting inspections 2) Analyse all the routes and schedules regularly – corrective measures 3) Maximizing the percentage share of revenue per km – minimizing leakages 4) Trained and skill full labours for using the technology <p>Source: primary CEPT SWETHACHANDRAN PUNGGUPTI (IMG, APCS AND MONEY CARDS) NIUA </p>												

Key takeaways from Day-2 of the workshop are briefly summarized as below:

1. Mr. Padam Vijay discussed that it is important to look at the Standard Operating Procedures (SoPs) prepared by the city for the ICCCs. He explained that SoPs helps in making the ICCCs work effectively. The idea is to scale up the work done by the ICCCs in Smart Cities to other cities hence the procedures put the system effectively in place. Further, the aim of setting up the ICCCs is to help the citizens in solving their problems. It is important to analyse that the ICCCs functions and features are aligned to the requirements of the citizens.
2. It was suggested that data management is very important part of ICCC. The centres include monitoring for urbans services such as electricity generation, traffic monitoring, SWM etc. It can be included in the project manuscripts studies or analysis on specific services related to ICCC. The

monitoring mechanisms helps in assessing the demand and supply by the citizens or in identifying the areas in the city which are not receiving the services adequately.

3. It was suggested by Mr. Padam Vijay if one of the recommendations can be upon the institutionalization of data in a city should be properly curated so that the data can be utilized for any future planning in the city.

4. Citizen-engagement is an important part of ICCC. The students should note while analyzing the ICCC if there is a system that has been developed to receive regular feedback, suggestions from the citizens. In cities, which have developed a mobile app then the effectiveness of application should be examined.

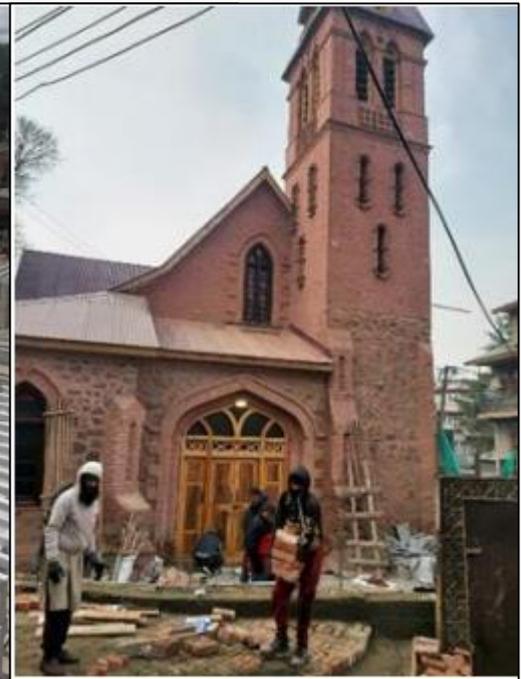
5. It was highlighted by Mr. Padam Vijay that in projects such as Smart Classrooms there are technical challenges faced both by the students and teachers. It is important to capture the learnings from the challenges faced by the users in the projects manuscripts. Other issues such as smart infrastructure, capacity building, quality of education, and intrinsic value added to education by the use of technology should be analysed so that adaptive learning can be created to motivate the students, and facilitating remote education. For effectiveness of Smart Classrooms it is important to highlight the analysis on the 'use of services' and the ways/methods for delivering quality of education.

6. A Citizen-Complaints Redressal System (CCRS) is an essential part of urban management. Mr. Padam Vijay suggested that if the recommendations on CCRS have been given in the project manuscripts then they should be innovative so that the city officials can identify the gaps in the complaints redressal system. Presently, there is a lack of awareness among the citizens on CCRS. For ICCC to be citizen-centric, identification of different channels such as website, telephones, walk-in, emails etc for seeking complaints should be developed. It can be recommended in ICCC that an 'index of citizen perception and awareness' can be developed to strengthen the CCRS. Inter-departmental coordination is important so that it can facilitate overall coverage of complaints. A ward-wise analysis and management of complaints can be an effective way to address maximum complaints.

7. It was suggested that KPIs can be developed and mandatorily maintained or monitored by each city. This would help in bringing transparency in the city governance system, and in reaching the goal of 'more governance and less government'.

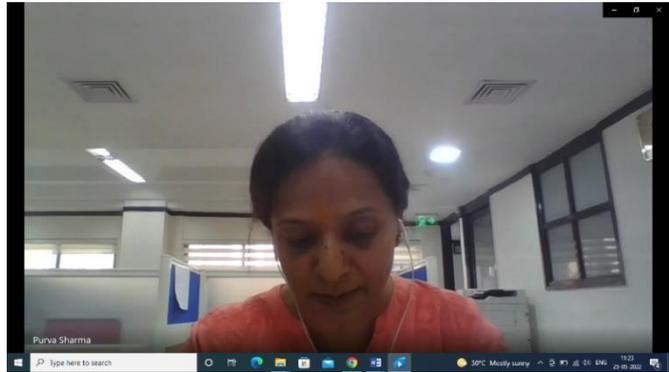
**Smart Cities and Academia Towards Action & Research
(SAAR)**

**Thematic Workshop, Day 3 · Heritage Restoration & Conservation
19 May, Thursday · 10:00 am – 12:30pm**



Introduction to Day 3 of the workshop

The introduction and background to the workshop was given by Dr. Purva Sharma, NIUA. She discussed that heritage buildings and their conservation is an important part of urban planning and management. Cultural heritage involves a strong human component including evidence of human creativity, and protecting and enhancing identities of people and communities. Cultural heritage and development of tourism should be inclusive and sustainable. Sustainable tourism management should take into account the impact of visits on the preservation, and the benefits generated by tourism should be reinvested in the cultural development. Policies in these areas require participatory approaches to governance and management, involving local communities in an inclusive way. Dr. Sharma welcomed the panelists and requested them to give a brief background about their work in the area of heritage restoration and urban planning.



Ms. Gurmeet Sangha Rai highlighted that Ministry of Tourism took the most of the interest in heritage management before the Smart Cities Mission. The change occurred when the Ministry of Urban Development took the path to engage in heritage with the launch of Heritage City Development and Augmentation Yojana



(HRIDAY). It was for the first time that the competition for preparing the heritage management plans was seen only through technical competencies and not the financials. Now, the Smart Cities Mission has identified heritage restoration as one of the sectors.

Mr. Ajay Suri discussed about the heritage in urban planning and management. He highlighted that earlier the heritage development in the cities was siloed only under the conservation and preservation of the places. The Urban Ministries and associated departments were the late



entrance in to heritage management and planning. It is important to look at heritage management in the larger context of urban management. During the Jawaharlal Nehru Urban Renewal Mission, it was identified that the cities do not have the technical capacities to undertake urban revitalization programme. Hence, the World Bank developed an 'Integrated Heritage and Urban Management' programme. The programme engaged multiple stakeholders and develop tools and strategies, engaging the communities. This culminated into guidelines for urban revitalization to the Ministry of Urban Development.

In 2014, when the budget was presented, INR 500 crores was given to the HRIDAY mission. The mission provided knowledge support to 12 cities in preparing the heritage city management plan. However, the focus was on the processes under the HRIDAY such as engaging stakeholders, and making plans. In consultation with NIUA, this focus was diverted and a 'Strategic Framework for Developing Heritage Management Plan' was prepared. The framework included the use of heritage assets to catalyze urban development. The key takeaways from the heritage plans were focus on the tangible and intangible heritage in a comprehensive way and less focus on conservation of built-forms, managing the historical precincts, heritage management as a tool to poverty reduction, and promoting local economic development through promoting historical preservation.

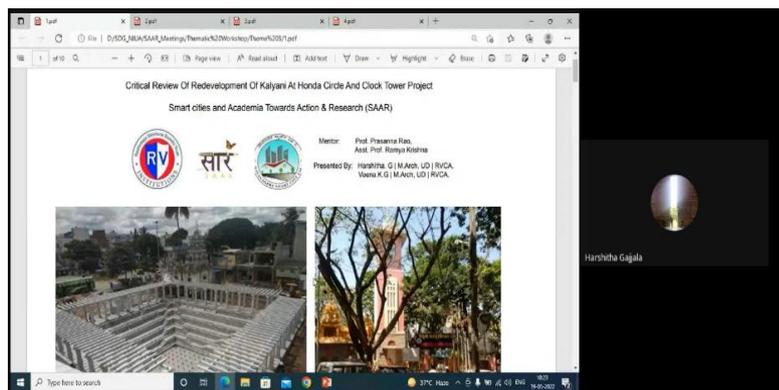
After the opening remarks and introduction, Dr. Purva Sharma from NIUA gave a brief overview of the presentations for the thematic workshop to the panelists. The list of presentations by the Institutes is given in the table below.

1. Critical Review of Redevelopment of Kalyani at Honda Circle and Clock Tower Project

RVCA, Bangalore

Student's name:
Harshitha G. and Veena K.G

Mentor's name: Prof.
Prasanna Rao and Prof.
Ramaya Krishna



2. Mahakaal-Rudrasagar Integrated Development Approach

Maulana Azad National Institute of Technology, Bhopal

Student's name: Amit Biswal, Vedankur Kedar, Minhaj Qureshi

Mentor's name: Dr. Krishna Kumar Dhote and Dr. Preeti Onkar

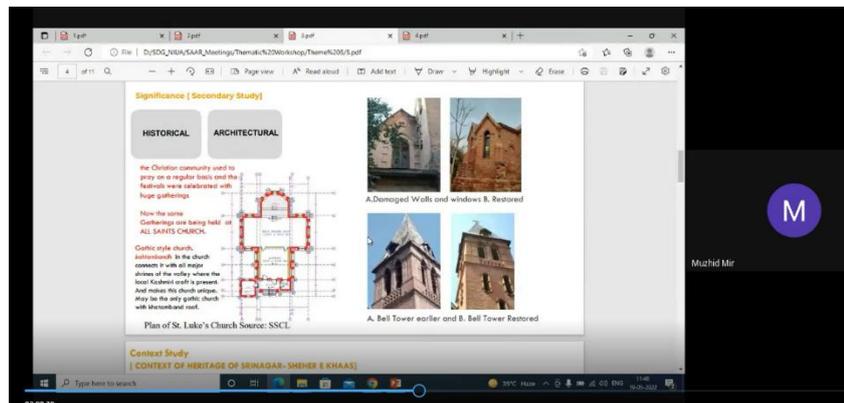


3. St. Luke's Church Heritage Restoration Project: Srinagar

Jamia Milia Islamia, New Delhi

Student's name: Hakim Danish, Muzhid Mir, Qazi Mohammed Tavqeer

Mentor's name: Prof. Hina Zia, Dr. Nisar Khan, Dr. Sheikh Intekhab Alam, and Dr. Nomaan Khan



4. Restoration of Surat Fort

CEPT University Ahmedabad

Student's name: Pratyusha Jain

Mentor's name: Prof. Saswat Bandopadhyay and Prof. Sejal Patel



Key takeaways from Day-3 of the workshop are the following:

1. The heritage conservation of a water body raises important concerns regarding the issues related to water table in a city and the water issues faced by the citizens. In assessing the water related projects it is important to study the relation between the project site and local environmental conditions. It was suggested by Ms. Gurmeet Rai that there is a need to understand the local settings and the interaction between the place within the local settings. Mr. Ajay Suri discussed that in the case of analyzing the heritage projects sites it is always important to study the factors such as footfall, mobility plan, the link between the communities and the heritage sites, and stakeholder consultations with the surrounding communities in the process of heritage restoration process. This is important in envisaging the outcomes from the project study. The link between the sites and the local handicrafts, local cuisines, knickknacks, and tourist facilities would help understand the conditions that can be enabling for promoting local economic development. It was recommended that the approach has to be either an 'infrastructure' development or 'communities' development'.

2. It was discussed by Ms. Gurmeet Rai that the Sustainable Development Goals are an integral part in the heritage management plans. The goals are inter-related to the environmental sustainability. However, the city officials do not have adequate understanding of the SDGs. Therefore, there is a need to build the capacities of urban local bodies to address the current challenges in making the heritage management plans or restoring the heritage sites. Mr. Ajay Suri discussed that there is a need to adopt a 'consultative' approach so that the surrounding communities can take their ownership in heritage management.

3. Mr. Ajay Suri briefly explained that in the heritage management the study of local area development plan is significant. He discussed that the focus should not be only on the monument but on the precincts on the place. The heritage sites create an impact on both the visitors and residents around the place especially in terms of decongesting the access roads, vending zones, parking, etc. It is important to conduct city consultations including the facilities for the residents. The economic impact assessment around the historic sites in the case of a Smart City will add value-addition to look for outcomes in terms of livability and economic opportunities for the vendors and the residents. Mr. Suri explained the importance of taking into consideration the urban mobility, hydrology, demographics etc. are important in engaging with the process of urban renewal and shift from the project-end towards long-term environmental sustainability of the projects.

4. Mr. Ajay Suri highlighted that presently there is a strong rhetoric for adopting a circular economy approach in urban planning. There is a merit in retrofitting, restoring and conserving the historic



buildings and structures. This includes the use of construction materials and engaging people with local skills. It would be helpful to study the impacts of circular economy in generating economic opportunities for the local employees.

5. Lastly, it was recommended that financial sustainability of historic restoration and conservation is an important aspect which city officials must consider. There are avenues and possibilities of putting the historic site to raising the revenue from itself, and leading towards increasing the municipal revenues for the city.

**Smart Cities and Academia Towards Action & Research
(SAAR)**
Thematic Workshop, Day 4 · Urban Planning & Infrastructure
20 May, Friday · 10:00 am – 12:30pm



Date : 20-02-2022
Location : Sagar

Activity observation of Chandra Park



USE OF BROAD-SCALE INFRASTRUCTURE FOR DEVELOPMENT OF INDUSTRIAL ZONING

PROJECT'S GOAL

- Tumkur, the district of South Karnataka, is an industrial city spread over 4827 Sqkm with an ARI area of 5.58 sqkm and is known as the knowledge hub of south Karnataka. Food and Agro-processing industry form the major economic base.
- **Priority** - 10km from Bengaluru

Name of Project
Use of Broad-scale infra for development, Tumkur
Year of Project Implementation
2019
Sector
Multinodal Transit under ARI area
Cost of Project
68.40 Cr

INTRODUCTION

Introduction to the workshop

The opening remarks to the workshop was given by Mr. Hitesh Vaidya, Director-NIUA. He discussed that under the SAAR programme the students have studied and analysed the Smart City projects to from critical perspective. The projects have been implemented, but how it has benefitted the citizens and created an impact on the lives of citizens is important part of the SAAR programme. As a way forward, NIUA will scale-up the documentation of the programme to non-Smart Cities.

Dr. Purva Sharma from NIUA introduced the panelists—**Ms. Sarika Chakravarty and Ms. Ruchi Gupta**— to the workshop, and requested to give a brief background of their work experience in the field of urban management and infrastructure.

Ms. Sarika Chakravarty discussed that the approach to urban planning has to be holistic. It is important to make use of the existing resources. She emphasized that as the students as they will start working as urban professionals it is important to follow the basic principles of planning. Ms. Ruchi Gupta discussed upon the land as a resource. She highlighted that in resource panning it is important to use the land for multiple things. Open space and greens cannot be compromise. There is a need to take efforts in preserving the existing resources. Ms. Gupta emphasized that engaging people is crucial to bring them in the planning process.

After the opening remarks and introduction, Dr. Purva Sharma gave a brief overview of the presentations for the thematic workshop to the panelists. The list of presentations by the Institutes is given in the table below.

<p>1. Use of Municipal Waste for Ring Road Development in Tumakuru</p> <p>Manipal School of Architecture and Planning, Udupi</p> <p>Student's name: Ketki Vankudre and Manasi Shendre</p> <p>Mentor's name: Prof. Purushottam Kesar, Prof. Venkat Ramana, and Prof. Yogendra Singh Yadav</p>	
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2. Public bicycle sharing and promoting NMT in Chandigarh

Jamia Milia Islamia, New Delhi

Student's name: Madiha Khanam, Tanya Ahmed, Shahbaz Khan, Sachin Goyal

Mentor's name: Prof. Hina Zia, Dr. Nisar Khan, Ripu Dhawan Singh, Yogesh Bhardwaj

PROJECT BRIEF

The public bicycle sharing system is one in which a high quality bicycle based public transport is facilitated. A flexible personalised public transport that involves laying out a dense network of cycle rental stations. Its four basic components are:

- Parking stations:** Docks with locking, Advertisement space, Bicycles, Mobile app.
- Public information:** Redistribution vehicles, User registration infrastructure, Central control system, Fios collection system, Depots/workshops, User information system.
- Bicycle:** Network of stations at key locations, GPS based tracking of bicycles, Allows short-term shared use of bicycles.

Dedicated cycle tracks in Chandigarh incorporated as NMT by Le Corbusier. Substituting of existing 40 km of cycle tracks. Addition of 200 km of cycle tracks by UT administration.

- Launched as pilot project under the "India Cycle4Change Challenge."
- 25 dock stations and 225 cycles initially set up as the corridor pilot (Jan, Himalaya, and Uttar Marg) and neighbourhood pilot (Sector 24 V4 Road).
- Total Cost of Rs. 11.85 Cr.

Location of proposed 617 Public Bike Sharing sites in Chandigarh, source: Office of the Chief Architect, UT Chandigarh.

Faculty of Architecture & Design - IIT

3. Open Gymnasiums in Kanpur and Water ATMs in Dehradun

IIT-Roorkee

Student's name: Dibyank Daksh and Shiksha Singh

Mentor's name: Prof. Arindam Biswas

INDIAN INSTITUTE OF TECHNOLOGY ROORKEE

Urban Planning and Infrastructure Dehradun Smart City

Project: Water ATMs

Department of Architecture and Planning
Faculty Member of Institute, Roorkee

Mentors:
Prof. Arindam Biswas
Ripu Dhawan
Divyank Daksh

DIBYANK DAKSH

4. Mariyammanagar Slum Redevelopment, Tumakuru

Manipal School of Architecture and Planning, Udupi

Student's name: T. Sachin

Mentor's name: Prof. Purushottam Kesar, Prof. Venkat Ramana, and Prof. Yogendra Singh Yadav

HOUSING AND BASIC SERVICES FOR URBAN POOR AT MARIYAMMANAGAR, TUMAKURU

AIM: The study aims to understand the slum rehabilitation project and to identify the shortcomings in planning and implementation. To identify the issues related to project implementation.

OBJECTIVE: Impact of the newly developed housing complex on the social and economic conditions of the slum dwellers.

- Risks and challenges faced by the URB, various authorities in the implementation of a slum rehabilitation project.
- Contribution of the project towards SDG's.

LIMITATION:

- Limited Sample size of the interviews.
- The opinions and data collected from the interviews may be biased.
- The Design is qualitative.

RESEARCH METHODOLOGY:

PRE - SITE VISIT: LITERATURE REVIEW (JPR Study, Case studies, Risk mapping assessment tool etc., POLARIS), AGENDA SETTING (Cor-site visit, Stakeholders consultation, Focus group discussion).

SITE - VISIT: STAKEHOLDERS CONSULTATION, SEMI-STRUCTURED INTERVIEWS, OBSERVATION.

DATA COLLECTION

IMPACT ASSESSMENT: ART LITERATURE LEARN, SUGGESTING BEST PRACTICES TO THE URB.

RESEARCH METHODOLOGY

T. Sachin

5. Urban Green Spaces as socio-ecological systems-A case study of Three Parks Redevelopment in Sagar

School of Planning and Architecture, Bhopal

Student's name: Gurudutt Pandya

Mentor's name: Prof. Rama Pandey



Key takeaways from Day-4 of the workshop are the following:

1. The panelists highlighted that stakeholder engagement is important in planning and managing for the urban infrastructure projects. In the projects on urban mobility it is recommended to enable a modal shift towards public transport such as green modes of mobility, cycling, pedestrians etc.
2. It has been recommended that the weather conditions and provision of adequate infrastructure are crucial for the development of mobility corridors and its related infrastructure. The shift towards NMT and public transport requires adequate provision of infrastructure such as cycle shades, electric vehicles, green fuels, smart mobility apps etc.
3. In the case of slum rehabilitation, number of household members, per capita space, presence of skill development centres and health centres, incorporation of green/open space in the design are some of the important factors. Further, in the projects for urban poor it is important to consider the 'before' and 'after' impacts of the construction of the projects on urban poor.
4. The New Urban Agenda focuses on creating inclusive, resilient and sustainable urban areas. It was recommended that there is a need to sensitize the local body officials on SDGs.
5. Green and open spaces are important for urban aesthetics and lowering the pollution levels. It is important to analyse that these spaces are equally distributed in the city. It will lead to creation of ecological corridors between green spaces to facilitate pollination.



Way forward for the Smart Cities and Academia towards Action and Research (SAAR) programme:

1. A working group meeting to be conducted in first week of June for discussion on the layout of the compendium, editing and formatting of the manuscripts. The dates for final design and printing, and launch of the compendium will also be discussed in the working group meeting.
2. The students who presented in the workshops to update the presentations and the manuscripts. The mentors and faculties to share the workshop report with other SAAR students to update the manuscripts accordingly.
3. The last date to receive the updated and final manuscripts is 12 June 2022.