

A REPORT

on

Professional Development Programme (PDP)

“URBAN DYNAMICS AND CLIMATE RESILIENCE”

(Conducted during 28 Nov – 03 Dec, 2020)

Conducted By:



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An Institute of National Importance, Ministry of Education Gov. of India

Co-funded by:



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B-RE-U-COM
Building Resilient Urban Communities



Knowledge Partner:



CONTENTS

| | |
|-----------------------|-----------|
| Background | 03 |
| Purpose of the PDP | 03 |
| Structure of PDP | 04 |
| Speakers' Particulars | 07 |
| Participant Details | 09 |
| Certification | 11 |
| Organisers | 11 |
| Annexure | 12 |

Background

A six day online ‘Professional Development Programme (PDP)’ was successfully organized by SPA Vijayawada between 28th November to 03rd December, 2020 on “Urban Dynamics and Climate Resilience”. This initiative was one of the key deliverables under the European Union funded project titled ‘Building Resilient Urban Communities’ acronymed as ‘BReUCom’. The BReUCom is a consortium project of HEIs led by Danube University Austria and executed by ITC Netherlands, SPA Vijayawada, SPA Bhopal, NIT Hamirpur, KRVI Mumbai, SPARC Mumbai and CURE Delhi. The project was initiated in 2019 and expected to reach its completion by 2021. The BReUCom project has conducted 10 comparative case studies in the realm of assessing and comprehending community resilience in India. These case studies have become the roots for evolving Open Educational Resources in the form of courseworks and PDPs, which are executed in the partner institutions as pilots. The intention of these courseworks and PDPs is to build the capacity of the HEIs and working professionals dealing with urban communities and resilience challenges. For more detail about BReUCom, please visit – www.breucum.eu. The Indian Green Building Council (IGBC) approached the organising team and expressed their interest in becoming a knowledge partner to further disseminate the intentions of the programme.

Purpose of the PDP

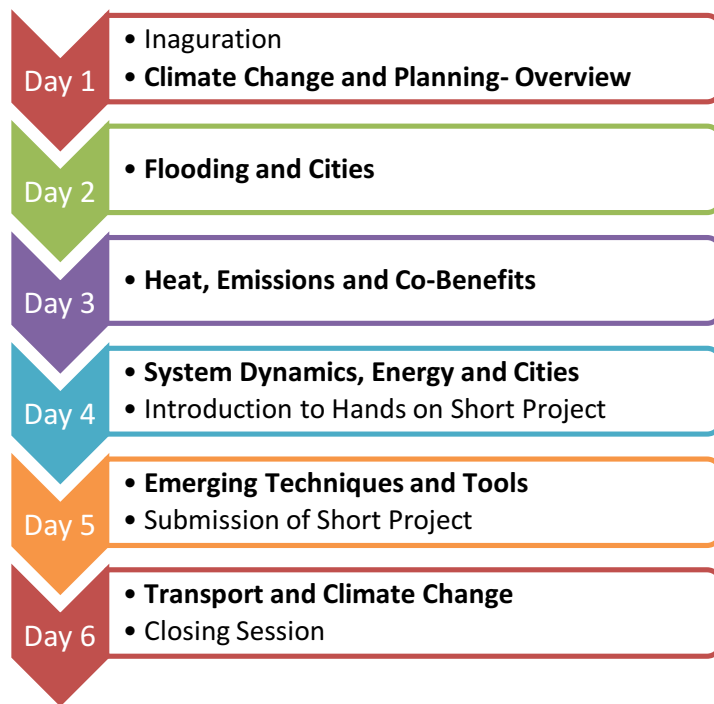
The main objective of the six day online ‘Professional Development Programme (PDP)’ was to update and develop capacities of professionals and researchers working in the field of urban planning, climate resilience and environmental management. The programme also aimed to bring together a selected combination of eminent experts representing the leading think-tanks of planning academia and practice, who shared some of their application-oriented professional and research works. This enabled the participants to understand and learn about some of the state-of-the-art tools and techniques that stand chances of replication in planning and administration of cities in their practice, in order to address the challenges of Climate Change in a systematic manner. The PDP had over 15 detailed presentations totaling to about 26 hours of training with topics like urban dynamics through system-based modeling, use of geo-informatics, use of statistical and computing tools and theoretical perspectives to address spatial planning concerns related to climate change. The title was discussed under four sub-themes as commonly manifested in Climate Change studies, namely - **Heat Stress, Flooding, Local Climate Change, Energy, and Emerging Techniques**. With over 15 detailed presentations spread over 6 days by eminent speakers from India and USA, the participants underwent a stimulating, intellectual and enriching technical experience aimed at augmenting their skills and capacities. All participants were given e-certificates, and opportunity to interact with the speakers live. In addition, a short assignment was conducted and detailed reading material was distributed for each day’s topics and lectures. The PDP was conducted online due to government restrictions against any public gathering due to pandemic situations.

Structure of the PDP

The programme was conducted over 6 days with two sessions each day i.e. morning and evening session with a lunch break of one-and-a-half hour each day. The PDP content was structured in line with the key manifestations of climate change in urban centres in contemporary times – heat zones, flooding, energy crisis, transport concerns, and emerging techniques. Under each sub-theme, expert talks were delivered which touched both upon theoretical foundations and application techniques, that can be replicated.

Talks were delivered predominantly by SPA Vijayawada. However, expert speakers representing SPA Delhi, IIT Roorkee, NIT Calicut, VNIT Nagpur, MANIT Bhopal, IIPA Delhi, Ministry of Environment and Forests GoI Delhi, NIH Roorkee, GEC Talakal, and from Planning Consultants from California and Connecticut, USA also shared their ideas and research works with the participants.

Overall Structure of the PDP:



A day wise description of the lectures is presented in the following section.

Day 1 (28 November, 2020; 10:30 to 17:00)

Focus: Inauguration and Overview on Climate Resilience and Planning

Moring Session : The day started with an Inaugural Session addressed by Prof. Dr. Minakshi Jain, Director, SPA Vijayawada. Thereafter, Dr. Adinarayanane R., HoD Planning, SPA Vijayawada gave a BREUCOM Project Overview. The PDP was introduced and all the 6

days were outlined by Dr. Ayon K Tarafdar Associate Prof, Dept of Planning SPA Vijayawada for the participants. After that the first technical session started with Prof. Dr. Meenakshi Dhote (Ms), Head, Dept of Environmental Planning, SPA Delhi who delivered a detailed lecture (2 hrs) on the topic '**The Role of Planning in Environmental Sustainability**', followed by discussions.

Afternoon Session : The post-lunch session began with a presentation by Shri. Ajay Raghava, Joint Director, Climate Change Division, Ministry of Environment & Forests, Govt of India, on the topic '**Climate Change and Cities – The Need to Integrate**'. He presented the central government's vision and priorities. Thereafter, Prof. Dr. Vinod K Sharma, Professor of Disaster Management, Indian Institute of Public Administration, Delhi & Vice Chairman, Sikkim Disaster Management Authority presented a lecture on topic '**Institutional Preparedness and Climate Change Adaptation**' with field observations and case studies from Sikkim. Dr. Ayon K Tarafdar Associate Prof, Dept of Planning SPA Vijayawada moderated the session engaging in discussions with the experts and participants.

Day 2 (29 November, 2020; 11:00 to 17:00)

Focus: Flooding and Cities

Morning Session: In pre-lunch session, Dr. Santosh M. P., Scientist C, National Institute of Hydrology, Roorkee delivered on '**Watershed Management for Prevention of Regional Flooding**'. With the help of case study, the expert explained how geospatial tools play an important role in decision making in basin, watershed and regional level planning.

Afternoon Session: In the post lunch session, the topic discussed was 'Modelling towards Urban Flood Management'. Detailed presentation was given by Dr. Sathish D., Asst Professor, Dept of Civil Engineering, NIT Calicut.

Dr. Ayon K Tarafdar Associate Prof, Dept of Planning SPA Vijayawada moderated the two sessions engaging in discussions with the experts and participants.

Day 3 (30 November, 2020; 10.00 to 16.00)

Focus: Heat, Emission and Cities

Morning Session: Dr. Ayon K Tarafdar, Associate Professor, Dept. of Planning, SPA Vijayawada started the session on the third day of PDP with a lecture on '**Responsive Planning in the context of Heat Vulnerability**', with case study analysis from Delhi. After that, Prof. Dr. Rajashree Kotharkar (Ms), Professor, Dept of Architecture & Planning, VNIT Nagpur, lectured on the topic '**Heat Waves and Cities: Challenges ahead**'.

Afternoon Session: In post-lunch session, Prof. Dr. Manmohan Kapshe, Professor, Dept of Arch and Planning, MANIT Bhopal, discussed on '**Human Settlements and Climate Change: Co-benefits of GHG Mitigation**' in Indian urban perspective. Dr. Ayon K Tarafdar Associate Prof, SPA Vijayawada moderated the session engaging in discussions with the experts and participants.

Day 4 (01 December, 2020; 10.15 to 16.30)

Focus: System Dynamics and Energy Planning

Morning Session : Mr. Saurav Choudhury, **Indian Green Building Council**, explained participants the concept of green cities through his detailed presentation on the topic '**Green Cities in India - Impacts & Benefits**'. Thereafter, Prof. Dr. Devadas, Dept of Architecture and Planning, IIT Roorkee, talked about '**System Dynamics for Energy Efficient City Planning**'.

Afternoon Session : Prof. Dr. Virupaxi Bagodi, Principal, Govt Engineering College, Talakal, Karnataka, explained '**Application of System Dynamics in Urban Planning**' in the afternoon session.

Hands on Short Project: At around 4 PM of Day 4, a 'Hands-on Short Project' was introduced to the registered participants, who were supposed submit the project individually within the deadline of 27 hours.

Day 5 (02 December, 2020; 09.45 to 17.00)

Focus: Emerging Tools & Techniques

Morning Session: Various tools and techniques related to planning were discussed by the speakers under sub-theme '**Emerging Tools and Techniques**'. Morning session began with the presentation of Mr. Ashish Mohan, Team Lead, Data Science, CovFin Technologies, Connecticut, USA (Alumni of Dept of Planning, SPA Vijayawada), on the topic '**Data Analytics for Energy Efficient Urban Planning**'. Thereafter a lecture was delivered by Dr. Adinarayanane R. SPAV on '**Significance in Climate Change in Planning Studies – A System Dynamics Approach**'.

Afternoon Session: In afternoon session, Dr. Faiz Ahmed C., SPA Vijayawada discussed on '**Computing Tools and Techniques for Urban Climate Studies**'.

Day 6 (03 December, 2020; 09.45 to 12.15)

Focus: Transport Planning and Climate Resilience

Morning Session: In the last day of PDP, morning session was taken by Mr. Dhawal Kataria, Transportation Planner, TJKM Transport Consultants, California, USA (Alumni of Dept of Planning, SPA Vijayawada). Taking examples from his professional experiences, he discussed on the topic '**Transportation Planners Role in Mitigating Climate Change**'.

The session was followed by interactive session with participant's feedback and discussion on Hands-on Short Project Submissions. Closing summary remarks were made by Dr. Ayon K Tarafdar, Associate Professor, Dept. of Planning, SPA Vijayawada. Certificates were distributed virtually to the participants. The programme ended with vote of thanks by the organizers.

Speakers' Particulars

About 15 speakers representing various national and international institutions around the world delivered the talks on topics based on their years of experiences and research in their respective field.



Prof. Dr. Meenakshi Dhote

Professor of Environmental Planning
Head, Dept. of Environmental Planning
Head I/c, Dept. of Landscape Architecture
SPA Delhi



Shri. Ajay Raghava

Jt. Director, Climate Change Division
Ministry of Environment and Forests
Govt. of India



Prof. Dr. Vinod K Sharma

Professor of Disaster Management,
Indian Institute of Public Administration, Delhi
Vice Chairman, Sikkim Disaster Management Authority



Dr. Santosh Murlidhar Pingale

Scientist 'C', National Institute of Hydrology,
Roorkee



Dr. Sathish D.

Asst. Professor, Dept. of Civil Engineering,
NIT Calicut

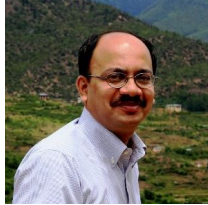


Dr. Ayon Kumar Tarafdar

Associate Professor, Dept. of Planning,
SPA Vijayawada



Prof. Dr. Rajashree Kotharkar
Professor, Dept. of Architecture & Planning,
VNIT Nagpur



Prof. Dr. Manmohan Kapshe
Professor, Department of Architecture and
Planning, Maulana Azad National Institute of
Technology, Bhopal



Mr. Saurav Chaudhury
CII, Indian Green Building Council
Associate Counsellor & Infrastructure Planner



Prof. Dr. Virupaxi Bagode
Principal, Govt. Engineering College, Talakal,
Karnataka



Prof. Dr. Devadas
Professor,
Dept. of Architecture and Planning,
IIT Roorkee



Dr. Adinarayanane R.
Associate Professor, Dept. of Planning
Dean Planning and Development
SPA Vijayawada



Dr. Faiz Ahmed
Assistant Professor,
Dept. of Architecture, SPA Vijayawada
Associate Dean (Research), SPA Vijayawada



Mr. Dhawal Kataria
Transportation Planner, TJKM Transport Consultants,
California, USA
(Alumni of Dept. of Planning, SPA Vijayawada)



Mr. Ashish Mohan
Team Lead, Data Science, Covr Fin Technologies,
Connecticut, USA
(Alumni of Dept. of Planning, SPA Vijayawada)

Participant Details

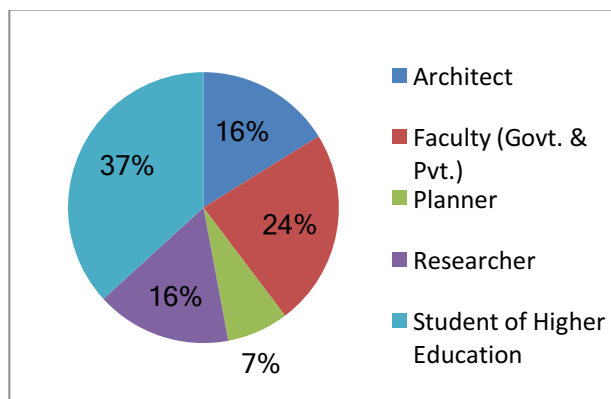
The PDP garnered a good response from participants across India and beyond. Some of the key details related to the participants are:

- There were a total of 68 number of registered participants.
- Out of all participants, 22 were male (32%) and 46 were female (68%)
- Out of all participants, 57 were not belonging to SPA Vijayawada
- Participants were from different backgrounds (which included research scholars, faculty members and practitioners in the field of architecture and planning. Graph 1 shows the percentage distribution of background profile of participants.
- Majority of the participants had post graduated in the field of architecture, planning and engineering. Graph 2 shows the educational qualification of participants.

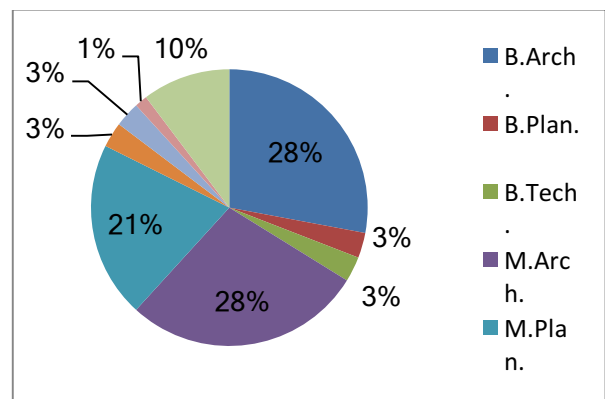
Below is the list of organizations from where the participants who registered belong:

1. SCET-Surat
2. AMS Academy of Architecture, Chennai
3. Anna University, Chennai
4. College of Engineering, Pune
5. Deenbandhu Chhotu Ram University of Science and Technology, Murthal, Haryana
6. G D Goenka University, Gurugram
7. GGSIPU, Delhi
8. Govt. College, Chittur, Kerala

9. Indian Institute of Technology Kanpur
10. Indian Institute of Technology Kharagpur
11. Indian Institute of Technology Roorkee
12. Indus University Ahmedabad
13. JSR, Mumbai
14. Lucknow University, Lucknow
15. MNIT, Jaipur
16. National Institute of Technology Calicut
17. National Institute of Technology Surat
18. National Institute of Technology Tiruchirapalli
19. National Institute of Technology Hamirpur
20. National Institute of Urban Management, Hyderabad
21. S.V.National Institute of Technology, Surat
22. Sarvajanik College of Engineering and Technology, Surat
23. School of Architecture, IPS Academy, Indore
24. School of Planning and Architecture, Delhi
25. SRM School of Architecture and Interior Design, Kattankulathur, Tamil Nadu
26. TKM College of Engineering, Kollam, Kerala
27. Veer Surendra Sai University of Technology, Sambalpur, Odisha
28. Barthakur and Associates, Guwahati
29. Town Planning Department, UAE Government
30. Independent Planning Consultant, Finland
31. Arba Minch University, Ethiopia



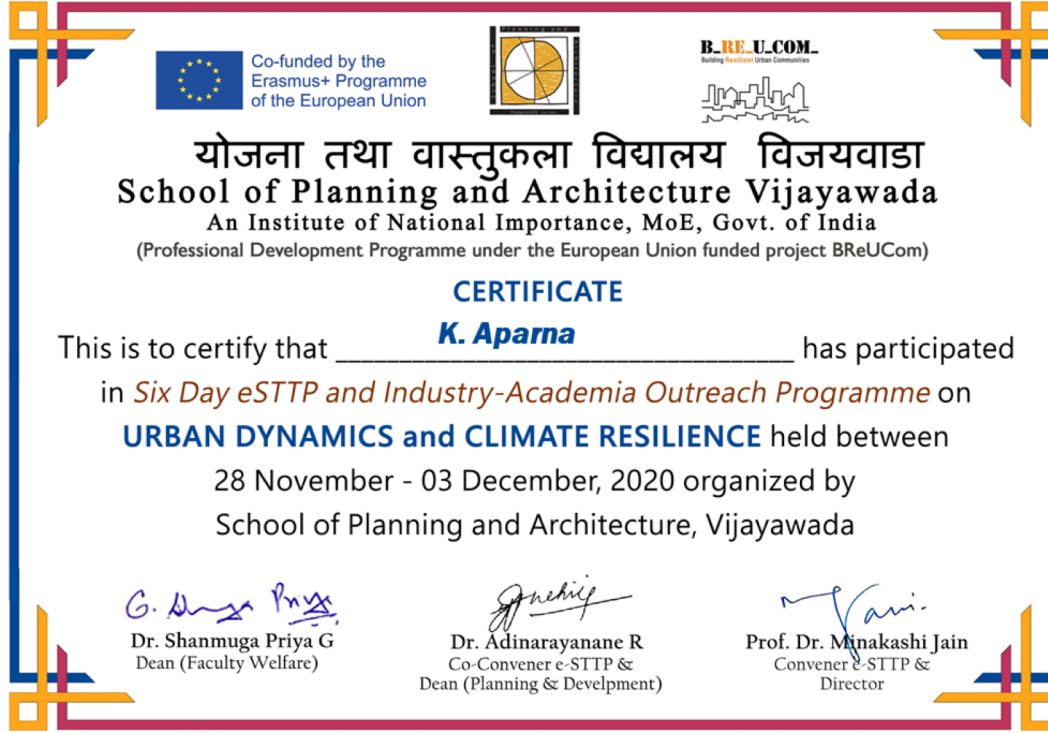
Graph 1: Profile of Participants



Graph 2: Educational Qualification of Participants

Certification

Certificates were given to each participants of the PDP. One of the certificates which was handed over is placed here as a sample.



Organisers

Chairperson and Convenor:

Prof. Dr. Minakshi Jain

Organisers:

Dr. Ayon K Tarafdar

Dr. Adinarayanane R.

Dr. Faiz Ahmed

Dr. Prashanti R.



A Six-Day eSTTP and Industry-Academia Outreach Program

URBAN DYNAMICS AND CLIMATE RESILIENCE

Organised by:
School of Planning and Architecture Vijayawada
 (Professional Development Programme under the European Union funded project BReUCom)

28 – 03
 NOV DEC
 2020

spav.ac.in

06 Days | 11 Sessions
 12 Institutions | 14 Presentations



Purpose of the Program

The Six Day **Industry Academia Outreach Programme** organized by SPA Vijayawada on "Urban Dynamics and Climate Change" is an **e-Short Term Training Programme (eSTTP)** aimed at updating and developing capacities of professionals and researchers working in the field of urban planning, climate change and environmental management. It is co-funded under the **European Union Project of 'Building Resilient Urban Communities'** as one of its **'Professional Development Program (PDPs)'**. The 6-days envision bringing together a select combination of eminent experts representing the leading think-tanks of planning academia and practice, who shall share some of their application-oriented professional and research works. This shall enable participants to understand some of the state-of-the-art tools and techniques that stand chances of replication in planning and administration of cities, in order to address the challenges of Climate Change in a systematic manner. Urban dynamics through system-based modelling, use of geo-informatics, and statistical and computing tools to address direct spatial planning concerns related to climate change shall be discussed over 4 sub-themes covering – Energy, Heat Stress, Flooding, Local Climate Change and Emerging Techniques. With over 15 detailed presentations spread over 6 days by eminent speakers from India and USA, the participants can expect a stimulating, intellectual and enriching technical experience aimed at augmenting their skills and capacities.

Target Audience:

Planning and Architecture fraternity - Practitioners, Engineers, Academicians, Consultants; Policy makers and Government officials from concerned departments involved in Environmental Planning, Urban & Regional Planning, Remote Sensing & GIS, Transportation planning, Environmental Planning; Researchers

Participation Fee: PG/PhD Students Rs. 500 and for others Rs. 1000

For Registration and Detailed Program, Visit:

<https://www.spav.ac.in/breucom.html>



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DISCUSSION THEMES

28th NOV | **Climate Change and City Planning**
 Speakers
 Prof. Dr. Meenakshi Dhote, Dept. of Env. Planning, SPA Delhi
 Mr. Ajay Raghava, Climate Change Division, MoEF, Govt. of India
 Prof. Dr. Vinod K Sharma, IIPA Delhi

29th NOV | **Flooding and City Regions**
 Speakers
 Dr. Santosh, NIH Roorkee
 Dr. Sathish, NIT Calicut

30th NOV | **Heat, Emission and Cities**
 Speakers
 Prof. Dr. Rajashree Kotharkar, VNIT Nagpur
 Prof. Dr. Manmohan Kapshe, MANIT Bhopal
 Dr. Ayon K Tarafdar, SPA Vijayawada

01st DEC | **Energy and Cities**
 Speakers
 Prof. Dr. Virupaxi Bagodi, GEC, Talakal, Karnataka
 Prof. Dr. Devadas, IIT Roorkee

02nd DEC | **Emerging Tools and Techniques**
 Speakers
 Dr. Adinarayanane R, SPA Vijayawada
 Dr. Faiz Ahmed C, SPA Vijayawada
 Mr. Ashish Mohan, Covr Fin Technologies, Connecticut

03rd DEC | **Closing Discussions**
 Speakers
 Mr. Dhawal Kataria, TJKM Transport Consultants, California
 Dr. Adinarayanane R, SPA Vijayawada

Project Coordinator
 Prof. Dr. Minakshi Jain
 Director, SPA Vijayawada

Organisers:

Dr. Ayon K Tarafdar
 Associate Professor, SPA Vijayawada

Dr. Adinarayanane R.
 Project Co-Coordinator
 Dean Planning and Development &
 Head, Dept. of Planning, SPA Vijayawada

Dr. Faiz Ahmed
 Associate Dean (Research) &
 Assistant Professor, SPA Vijayawada

Dr. Prashanti R.
 Associate Dean (Consultancy)
 Assistant Professor, SPA Vijayawada



Six Day eSTTP and Industry-Academia Outreach Programme
"URBAN DYNAMICS and CLIMATE RESILIENCE"

28 Nov – 03 Dec, 2020 (Online)

Organised by:

School of Planning and Architecture Vijayawada

(As a PDP under the European Union funded project titled BReUCom)

- PROGRAMME SCHEDULE -

| TIME | SPEAKER | TOPIC * |
|---------------|--|---|
| 28 NOV | DAY 1 - CLIMATE CHANGE & PLANNING | |
| 10.30 – 11.15 | - Welcome Note by Dr. Faiz Ahmed Assistant Prof, Dept of Architecture - Inaugural Address by Prof. Dr. Minakshi Jain Director, SPA Vijayawada - Project Overview by Dr. Adinarayanane R. HoD Planning, SPA Vijayawada - PDP-Overview by Dr. Ayon K Tarafdar Associate Prof, Dept of Planning | INAUGURATION |
| 11.30 – 13.30 | Prof. Dr. Meenakshi Dhote (Ms) Head, Dept of Environmental Planning, SPA Delhi | The Role of Planning in Environmental Sustainability |
| 12.30 – 14.30 | BREAK | |
| | AFTERNOON SESSION – DAY 1 | |
| 14.30 – 15.30 | Shri. Ajay Raghava Jt. Director, Climate Change Division, Ministry of Environment & Forests, Govt of India | Climate Change and Cities – The Need to Integrate |
| 15.30 – 17.00 | Prof. Dr. Vinod K Sharma Professor of Disaster Management Indian Institute of Public Administration, Delhi & Vice Chairman, Sikkim Disaster Management Authority | Institutional Preparedness and Climate Change Adaptation |
| 29 NOV | DAY 2 - FLOODING & CITY REGIONS | |
| | MORNING SESSION – Day 2 | |
| 11.00 – 13.00 | Dr. Santosh M. P. Scientist C, National Institute of Hydrology, Roorkee | Watershed Management for Prevention of Regional Flooding |
| 13.00 – 14.30 | BREAK | |
| | AFTERNOON SESSION – DAY 2 | |
| 14.30 – 16.30 | Dr. Sathish D. Asst Professor, Dept of Civil Engineering, NIT Calicut | Modelling towards Urban Flood Management |
| 30 NOV | DAY 3 – HEAT, EMISSION and CITIES | |
| | MORNING SESSION - Day 3 | |
| 10.00 – 11.30 | Dr. Ayon K Tarafdar Associate Professor, Dept of Planning, SPA Vijayawada | Responsive Planning in the context of Heat Vulnerability |
| 11.30 – 13.30 | Prof. Dr. Rajashree Kotharkar (Ms) Professor, Dept of Architecture & Planning, VNIT Nagpur | Heat Waves and Cities: Challenges ahead |
| 13.30 – 14.30 | BREAK | |
| | AFTERNOON SESSION – DAY 3 | |
| 14.30 – 16.00 | Prof. Dr. Manmohan Kapshe Professor, Dept of Arch and Planning, MANIT Bhopal | Human Settlements and Climate Change: Co-benefits of GHG Mitigation |
| 01 DEC | DAY 4 - ENERGY and CITIES | |
| | MORNING SESSION - Day 4 | |
| 10.15 – 10.55 | Mr. Saurav Choudhury Indian Green Building Council | Green Cities in India - Impacts & Benefits |
| 11.00 – 13.00 | Prof. Dr. Virupaxi Bagodi Principal, Govt Engineering College, Talakal, Karnataka | Application of System Dynamics in Urban Planning |
| 13.00 – 14.30 | BREAK | |
| | AFTERNOON SESSION – DAY 4 | |
| 14.30 – 16.00 | Prof. Dr. Devadas Dept of Architecture and Planning, IIT Roorkee | System Dynamics for Energy Efficient City Planning |
| 16.00 – 16.30 | Introduction of Hands-on Short Project | |





| TIME | SPEAKER | TOPIC * |
|---------------|--|---|
| 02 DEC | DAY 5 - EMERGING TOOLS & TECHNIQUES | |
| | MORNING SESSION - Day 5 | |
| 09.45 – 11.15 | Mr. Ashish Mohan Team Lead, Data Science, Covr Fin Technologies, Connecticut, USA (Alumni of Dept of Planning, SPA Vijayawada) | Data Analytics for Energy Efficient Urban Planning |
| 11.30 – 13.00 | Dr. Adinarayanane R. Head & Associate Professor, Dept of Planning, SPA Vijayawada | Significance in Climate Change in Planning Studies – A System Dynamics Approach |
| 13.00 – 14.30 | BREAK | |
| | AFTERNOON SESSION – DAY 5 | |
| 14.30 – 16.00 | Dr. Faiz Ahmed C. Asst. Professor, Dept of Architecture, SPA Vijayawada | Computing Tools and Techniques for Urban Climate Studies |
| 16.30 – 17.00 | Submission of Hands-on Short Project | |
| 03 NOV | DAY 6 – CLOSING DISCUSSIONS | |
| | MORNING SESSION – Day 6 | |
| 09.45 – 11.15 | Mr. Dhawal Kataria Transportation Planner, TJKM Transport Consultants. California, USA (Alumni of Dept of Planning, SPA Vijayawada) | Transportation Planners Role in Mitigating Climate Change |
| 11.15 – 11.45 | Discussion on Hands-on Short Project Submissions | |
| 11.45 – 12.15 | CLOSING REMARKS AND DISTRIBUTION OF CERTIFICATES | |

*Exact topic titles may change slightly.

Chairperson and Convenor:
Prof. Dr. Minakshi Jain

Organisers:
Dr. Ayon K Tarafdar and Dr. Adinarayanane R.
Dr. Faiz Ahmed and Dr. Prashanti R.