MANIPAL UNIVERSITY
JAIPUR

SDG 11

SUSTAINABLE DEVELOPMENT GOALS

11 SUSTAINABLE CITIES AND COMMUNITIES

REPORT 2023

MANIPAL UNIVERSITY
JAIPUR

Manipal University Jaipur promotes the development of sustainable living on campus as a model toward sustainable communities. The university employs green building practices, waste management, and sustainable transportation options in its environmental conservation. By educating students in sustainability and carrying out community outreach, MUJ supports sustainable urban development.

Contents

ACADEMICS

MANIPAL UNIVERSITY
JAIPUR

FACULTY OF DESIGN

School of Design & Art

Department of Fashion Design

Expert Talk

20th March 2023

Index

1. **Introduction of the Event**

   On Monday, 20th March 2023, the Department of Fashion Design at Manipal University Jaipur organised an expert talk on "Design Conceptualisation and Realisation" for its students. The talk was held in Room number 302 from 2-3 pm.

2. **Objective of the Event**

3. The primary objective of the event was to provide students with insights on design development as per clients or industry brief and requirements. This event was organised to strengthen the student's designing skills and to help them understand the real-world challenges of the industry. Mr. Purohit shared his experiences and knowledge with the students and gave them some valuable tips on how to improve their design skills. During the talk, Mr. Purohit showed some of his exemplary work to the students and explained how he conceptualised and realised his designs. The designs he presented were impressive, and the students were thrilled to see such creative work. He interacted with the students, answered their queries and questions, and provided them with constructive feedback.

4. **Beneficiaries of the Event:**

   Students of Department of Fashion Design, Manipal University Jaipur

5. **Details of the Guests:**

   The invited expert for the talk was Mr. Yogesh Purohit, an Indian international clothing and textile designer and academician. Mr. Purohit had studied at prestigious institutions such as NIFT, Mumbai, NID Ahmedabad, and Nottingham University in the UK. He was an excellent choice as an expert as he had years of experience in the field of fashion designing and had worked with various international brands. He is a freelancer Designer.

6. **Brief Description of the event: -**

   "InnovateXperience," a dynamic event at the crossroads of design conceptualization and realization, brought together visionaries, designers, and industry experts to explore the evolving landscape of design innovation. Held in a vibrant conference venue, the event featured keynote speeches, interactive workshops, and a Design Challenge, emphasizing the seamless integration of design concepts into tangible, real-world solutions. Attendees experienced firsthand the journey from ideation to actualization, with cutting-edge technologies showcased in the exhibition hall, showcasing the transformative potential of creative vision in practical applications. InnovateXperience successfully inspired a community of forward-thinking designers equipped to bridge the gap between imagination and implementation in the dynamic world of design."

7. **Photographs of the event**


GPS Map Camera
Dahmi Kalan, Rajasthan, India
RHR8+J9V, Dahmi Kalan, Rajasthan 303007, India
Lat 26.842016°
Long 75.566477°
20/03/23 02:22 PM GMT +05:30
Google


GPS Map Camera
Dahmi Kalan, Rajasthan, India
RHR8+J9V, Dahmi Kalan, Rajasthan 303007, India
Lat 26.841855°
Long 75.566648°
20/03/23 03:22 PM GMT +05:30
Google


GPS Map Camera
Dahmi Kalan, Rajasthan, India
RHR8+J9V, Dahmi Kalan, Rajasthan 303007, India
Lat 26.842046°
Long 75.566489°
20/03/23 02:22 PM GMT +05:30
Google

8. Schedule of the event

The lecture was conducted on 20th March 2023, from 2 PM to 3 PM, at Room no. 302, Administrative Block, 3rd Floor, Department of Fashion Design at Manipal University Jaipur.

9. First Year, Second year and Third Year students.

S.No.	Full Name	Registration Number
1	VIDISHA BAJAJ	220601008
2	JANVEE SONI	220601009
3	ADRIJA RATHORE	220601010
4	ABHAMAYI SHRESTHA	220601011
5	ANUSHKA	220601003
6	SHRUTI VERMA	220601004
7	NAVDHA MISHRA	220601005
8	SUMERA PARVEEN	220601006
9	HIMANSHI SAMPAT JANGID	220601007
10	PIYUSH RAJ	220601013
11	VRINDA MAHESHWARI	220601015
12	DRISHTI TIWARI	220601016
13	NAVYA GUPTA	220601017
14	SAKSHI AGRAWAL	220601018
15	GARIMA HOTWANI	220601019
16	MINI GAUTAM	220601020
17	KHUSHI MEHTA	220601021

18	NEHA DAGDI	220601022
19	PREKSHA BAPLAWAT	220601023
20	RAKHI VERMA	220601024
21	KHUSHI PORWAL	220601001
22	JAGRATI JAIN	210601003
23	AYUSH SAINI	210601007
24	PRIYA LODHI	210601008
25	BHUMIKA SINGH RATHORE	210601009
26	NAVYA VIDYARTHI	210601011
27	GEETIKA RAI	210601013
28	KOVVURU GEETIKA	210601014
29	DEVIKA SONI	210601015
30	SAMYA GUPTA	210601016
31	KAVYA KALRA	210601017
32	SNEHA SARKAR	210601018
33	SIMRAN PARAG PATIL	210601019
34	HARSHVARDHAN SINGH	210601020
35	RAJNISH KUMAR	210601023
36	SHUBHI TAMBI	210601024
37	BHAVIKA PABUWAL	210601025
38	SUHANI GUPTA	200601002
39	VANSHIKA ARORA	200601003
40	KHUSHI SHARMA	200601004
41	MANASVI ACHARYA	200601005
42	MYTHILI S. ITTAMAN	200601006
43	ANISHA VERMA	200601007
44	SALONI RAVINDRA VERMA	200601009
45	BRINDA GUPTA	200601011
46	AKSHITA	200601012
47	AKSHIKA KUMAWAT	200601013
48	SHORYA VARDHAN SINGH SHEKHAWAT	200601014
49	JANHAVI BORSE	200601018
50	PRADHYUMAN SINGH	200601019
51	AISHWARYA SHARMA	200601020

Signature of HOD

Dr. Deepshikha Sharma

Department of Fashion Design

MUJ/DSW/Student Clubs/2023/Biotech Club MUJ/9th September'23

DIRECTORATE OF STUDENTS' WELFARE

IMPORTANCE OF GUT MICROBE IN HUMAN HEALTH AND DISEASE

Biotech Club, Manipal University Jaipur

Date of Event (9th September 2023)

(Platform: Google Meet)

Index

1. Introduction of the Event

The Biotech Club, Manipal University Jaipur organized an online Bio wellness session on 9th September'23. The convenor – Dr. Mousumi Debnath, Faculty Coordinator, Biotech Club, invited: Mr. Surendra K Chikara, founder and CEO of Bione Ventures Pvt. Ltd., Bengaluru, Mr. Prabhat Nath Jha, professor, BITS Pilani.

This Bio wellness session was organised for students to understand the importance of gut microbes in human health and diseases caused by them. Measures for keeping the body healthy and be deprived of diseases were discussed in meeting.

2. Objectives of the Event

- To increase the awareness about the various microbes found inside the human body, especially the gut and their roles in human health and how can they affect humans due to poor and malnourished diet.
- To discover how minor dietary adjustments can elevate the quality of these microorganisms serves as a catalyst, inspiring students to embrace healthier dietary choices and cultivate a wholesome lifestyle
- To understand the measures implemented to maintain body and keep state of mind healthy
- Understanding the wellness of gut and its environment and with help of an online test called "MyMicroBiome Test"

3. Beneficiaries of the Event

- MUJ students
- BITS PILANI students

4. Brief Description of the event

The Biotech Club at Manipal University Jaipur successfully hosted an enlightening online webinar titled "Importance Of Gut Microbes in Human Health and Diseases," skillfully guided by our esteemed faculty coordinator, Dr. Mousumi Debnath, from the Department of Biosciences. We were honored to welcome the distinguished guest, Mr. Surendra K Chikara, who graced the event with his expertise. The session commenced with an insightful opening address by Dr. Mousumi, setting the stage for an engaging and informative gathering. Dr. Surendra then assumed the role of guest lecturer, sharing his expertise and knowledge with our students.

He delivered a comprehensive presentation, elucidating the pivotal role of gut microbes in human health and disease. Dr. Surendra delved into the diverse array of microbes residing within the human body and the intricate relationship they share with our dietary choices. He expounded on the profound connections between gut microbes, diabetes, and obesity, emphasizing the transformative potential of personalized dietary recommendations in rejuvenating gut health. Dr. Surendra also introduced us to the innovative concept of the MyMicroBiome Test, a tool for analyzing gut health and tailoring balanced diets to maintain its well-being.

The session culminated in an engaging Q&A session, where Dr. Surendra K Chikara addressed students' inquiries, covering topics such as nutrition, gut health-related health issues, and dietary recommendations for nurturing and sustaining a healthy gut. In

closing, heartfelt gratitude was extended to all participants, speakers, and organizers for their invaluable contributions.

The online webinar proved to be an enriching and informative guide to holistic health, leaving a lasting impact on all those who attended.

5. Photographs

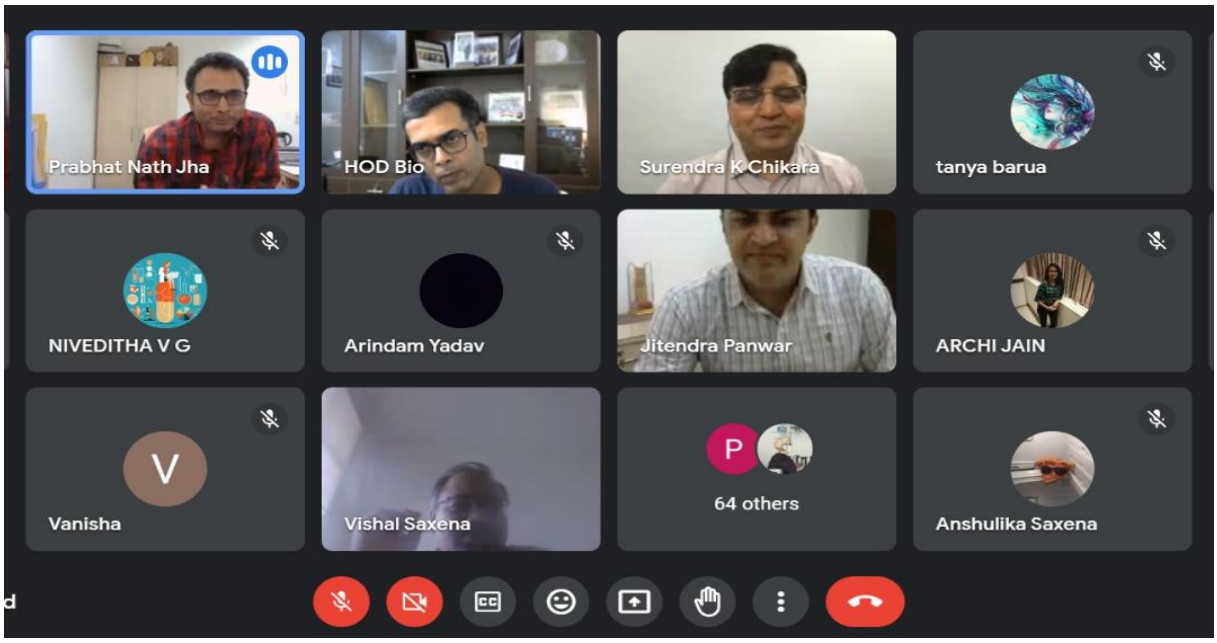


Figure 1 Introduction to Speakers

Figure 2 Explanation of topic by Dr. Surendra K Chikara

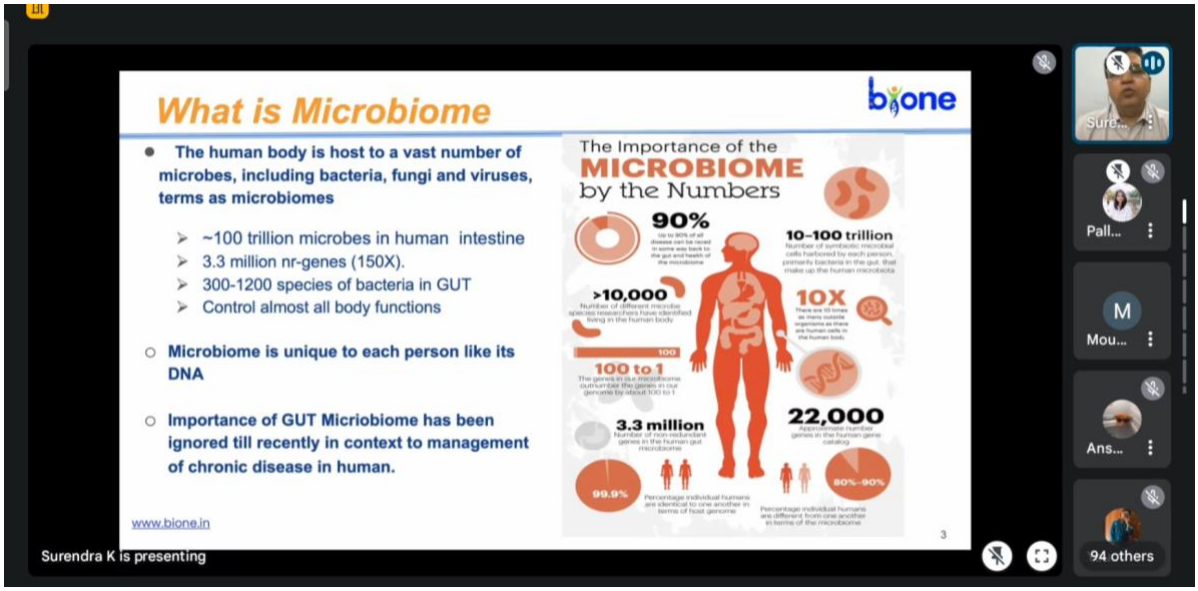


Figure 3 Presentation by Mr. Chikara

Figure 4 Final address/ Vote of thanks

6. Brochure or Creative of the Event

7. SCHEDULE OF THE EVENT:

The event was on the 9th September 2023 from 4:00 AM- 5:30 PM on Google Meet.

8. ATTENDANCE OF THE EVENT:

S.No.	Name	Registration No.
1.	Anshulika Saxena	211002053
2.	Prachi Jain	221002016
3.	Anvarshu Gopal	211002011
4.	Anuj Kumar	221002063
5.	Divyanshu Joshi	221002056
6.	Arindam Yadav	221003015
7.	Anshi Agarwal	211002008
8.	Yashvardhan Gupta	221002012
9.	Tanya Barua	221002065
10.	Mohammad Aman	221003012
11.	Poorvi Sharma	221002074
12.	Vaishali Shahi	23FS10BIO00056
13.	Tushar Pareek	23FS10BIO00040
14.	Aishwarya Jaiswal	23FS20MBO00014
15.	Pari Tayal	23FS10BIO00049
16.	Simran maharshi	23FS20MBO00022
17.	Garima	23FS20MBO00011
18.	Nikita	23FS20MBO00018
19.	Prashant pradhan	23FS20MBO00015
20.	Tanishka	23FS10BIO00048

21.	Riya ranjan	23FS10MIC00009
22.	Akshara Alex	23FS10BIO00022
23.	Priya Agarwal	23FS10BIO00042
24.	Pragya Chauhan	23FS10BIO00006
25.	Kanushree Rathore	23FS10BIO00055
26.	Juhi Garg	23FS10BIO00036
27.	Aishwarya Rai Saxena	23FS10BIO00065
28.	Radhika Rathore	23FS20MBO00008
29.	Lavanya	23FS20MBO00002
30.	Faizan Khan	23FS10BIO00009
31.	Shreyas M Iyer	2020PHXF0005P
32.	Simran Khushwaha	2018PHXF0406P
33.	Muskan Yadav	211002040
34.	Rochita Bani	211002039
35.	Samrat Banerjee	211003008
36.	Priya sharma	2023PHXP0001P
37.	Abhimanyu kumar	2023PHXP0002P
38.	Shivani Tiwari	211002002
39.	Sakshi Gupta	2023H1290008P
40.	Dikshita Aneja	231051005
41.	Siddharth	2020B1A31392P
42.	Yasaswini Reddy S	2020B1A71892P
43.	Harsh khandan	2020B1A40601P
44.	Anisha Saini	f2021B1TS2072P

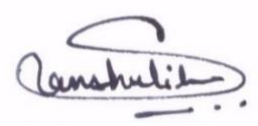
45.	Ayush	2020B1A70623P
46.	Archi Jain	2020B1A71380P
47.	Ameya Aglawe	2020B1A41913P
48.	Suhani Gupta	23FE10CSB00027
49.	Adya	23FS10BIO00067
50.	Sahil Kumar	23FS10BIO00046
51.	Namrata Yadav	23FS10BIO00032
52.	Anukriti sharma	23FS10BIO00052
53.	Ragini Singh Thakur	23FS10BIO00051
54.	Akash Chandra	211002036
55.	Avyakt Garg	2020B1A71902P
56.	Sahaj Tandi	2020B1A31904P
57.	Sylvia Parveen	211003009
58.	Anushka Singh	211002003
59.	Divya	211002056
60.	Gourav verma	2FS10BIO00017
61.	Kashish jain	230115700
62.	Gaurav Jetlie	23FS10MIC00003
93.	Thati Ameta	23FS10BIO00031
64.	Abhishek	2020B1A81914P
65.	Saksham Kumar	23FS10BIO00059
66.	Rohan Sharda	2020B1A31610P
67.	Nitya gupta	23FS10BIO00039
68.	Jaspreet Marwaha	23FS10MIC00011

69.	Tejas Sangale	23FE10BTE00034
70.	Aditi Mukherjee	230106036
71.	Garima	230111382
72.	Asmi Dhadiwal	23FE10BTE00013
73.	Sheryl	23FS10BIO00021
74.	Krishnendra Singh	23FS10BIO00014
75.	Soumya	23FS10BIO00002
76.	Sakshi Nirmal	211002060
77.	Stephenie Namchyo	230108439
78.	Bhumika Agarwal	23FS10MIC00010
79.	Arun Ramanathan	2020B1A41907P
80.	Ishpreet Singh	2020B1A40651P
81.	Nihal Panchal	23FS10BIO00010
82.	Shivali Sharma	23FS10MIC00012
83.	Jayraj Kuntal	23FS10BIO00018
84.	Samarth Trivedi	2020B1A71605P
85.	Gautam chikkara	MT230007
86.	Vanisha Sharma	230201821
87.	Harshita	211003011
88.	Smita Dey	2019PHXF0419P
89.	Sanyam Gupta	2020B1A31910P
90.	Mona singh	23FS10BIO00035
91.	Avinash Gautam	RU2119424
92.	Jyoti yadav	BU0210257546

93.	Gargi	23FS20MBO00026
94.	Anirudha Kumar Sahu	2018PHXF0408P
95.	Deeya Pradhan	23FS10BIO00023
96.	Jigyasha Rishu	23FS10BIO00012
97.	Mariyam khan	23FS10BIO00027
98.	Soubhik Ghosh	221002009
99.	Aditi Rathore	221002036
100.	Tanisha Singh	221002003

9.POST EVENT LINK:

https://meet.google.com/okc-uans-dpd



Anshulika Saxena

President, Biotech Club MUJ

Signature of the Student Coordinator

Dr. Mousumi Debnath

School of Basic Sciences

Signature of the Faculty Coordinator

MANIPAL UNIVERSITY JAIPUR

INSPIRED BY LIFE

School of Architecture and Design

Expert talk
on

'Community Interaction Workshop to Share knowledge on Community Based Solid Waste Management Practices'

Venue: Prithvirajsinghpura, Jaipur, Rajasthan

Time: 11:00 AM onwards

12th May 2023

Index

1. Introduction of the Event:

The School of Architecture & Design at Manipal University Jaipur in association with Mahilla Housing Trust on May 12th, 2023, from 11:00 am onwards, a transformative event unfolded—the "Community Interaction Workshop on Community-Based Solid Waste Management Practices." This gathering served as a platform for knowledge exchange, fostering a collaborative environment where community members shared insights, experiences, and innovative practices in solid waste management. The event aimed to empower participants with practical solutions, strengthening their commitment to sustainable and effective waste management within their communities.

2. Objectives of the Seminar:

- To facilitate the exchange of valuable insights and experiences among community members, promoting a comprehensive understanding of community-based solid waste management practices.
- To provide practical knowledge and tools to empower participants with the skills needed to implement effective and sustainable waste management solutions within their respective communities.
- To foster a collaborative environment to encourage networking and partnership-building among participants, promoting collective efforts towards creating cleaner and healthier communities.

3. Beneficiaries of the Event:

- Common public residing at Prithvirajsinghpura

4. Details of the Expert:

Dr. Madhura is a highly accomplished Architect Planner with 29+ years of experience in Administration, Academics & Research and currently Dean of Faculty of Design at Manipal University Jaipur, and an expert in UPSC, AICTE, CoA and DST Rajasthan & NITI Ayog, Government of India. Her expertise in Sustainable Architecture Design & Planning has been shared through keynotes across universities and governmental bodies. Her scholarly work includes numerous publications and mentoring PhD candidates.

Her research and publications have earned her numerous awards and accolades, including the Indo Pacific Architecture Excellence Award 2021, Education Leadership Award 2019. She is also a UNESCO certified mentor and a member of ICOMOS National Scientific Committee in Working Group of Sustainable Development and in Climate Change and Heritage. She is Fellow Member of various architectural and planning institutes, IGBC etc. contributing to the growth of sustainable and inclusive Design & Planning.

5. Brief Description of the event:

The "Community Interaction Workshop on Community-Based Solid Waste Management Practices" unfolded on May 12th, 2023, from 11:00 am onwards in the rustic setting of Prithvirajsinghpura, a quaint village under the Sanjhariya panchayat in Jaipur, Rajasthan. The event aimed to empower the local community with knowledge and skills for effective waste management. Residents of this rural area actively participated, exchanging insights and experiences. The workshop not only offered practical tools for sustainable waste practices but also facilitated networking and collaboration, fostering a sense of collective responsibility. Amidst the serene surroundings, community members engaged in enriching discussions, contributing to the shared goal of creating a cleaner and healthier environment for Prithvirajsinghpura and its neighboring regions. The event encapsulated a spirit of community collaboration and empowerment, laying the foundation for positive and sustainable changes in solid waste management practices within the rural landscape of Jaipur, Rajasthan.

6. Images

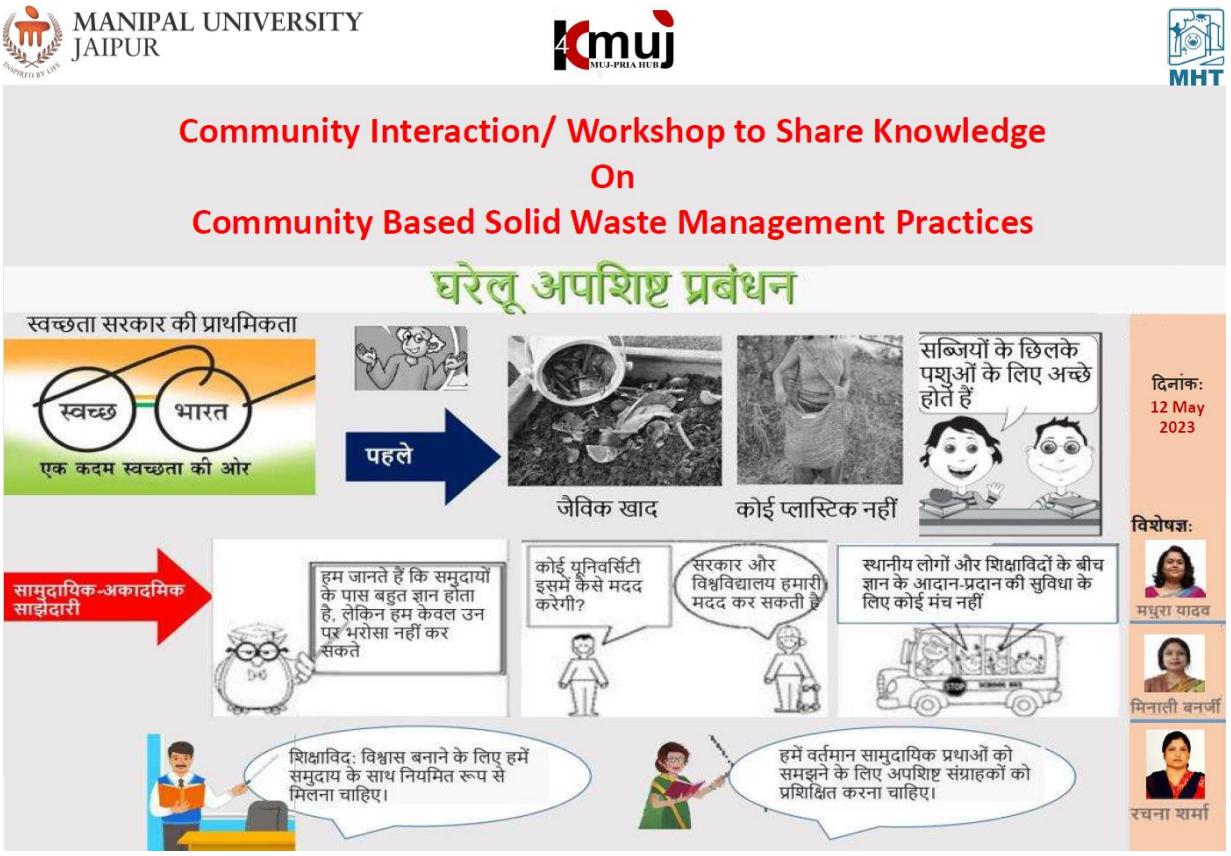
Figure 1: Discussion on Site About Waste Management System

Figure 2: Prof. (Dr.) Madhura Yadav, Delivering about the waste management practice

Figure 3: Prof. (Dr.) Madhura Yadav, Delivering about the waste management practice

Figure 4: Prof. (Dr.) Madhura Yadav, Delivering about the waste management practice

7. Brochure of the Event



8. Schedule of the event

11:00 AM onwards

9. Weblink:

10. Event Coordinators:

Prof. (Dr.) Madhura Yadav (Professor & Dean – Faculty of Design, MUJ)
Ms. Rachna Sharma,
Ar. Akshay Gupta (Assistant Professor, SA&D)

Prof. (Dr.) Sunanda Kapoor
Head, Architecture
School of Architecture & Design, Faculty of Design, MUJ

MANIPAL UNIVERSITY
JAIPUR

INSPIRED BY LIFE

11 SUSTAINABLE CITIES AND COMMUNITIES

RESEARCH

Summary for Manipal University Jaipur 11

Manipal University Jaipur 2021 to 2023

Research performance within SDG 11: Sustainable Cities and Communities (2023)

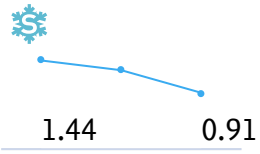
Entity: Manipal University Jaipur · Within: All subject areas (ASJC) · Year range: 2021 to 2023 · Data source: Scopus, up to 30 Oct 2024

109

Scholarly Output

1.18

Field-Weighted Citation Impact



26

International Collaboration

3,435

Views Count

598

Citation Count

Collaboration summary within SDG 11: Sustainable Cities and Communities (2023)

Entity: Manipal University Jaipur · Within: All subject areas (ASJC) · Year range: 2021 to 2023 · Data source: Scopus, up to 30 Oct 2024

International Collaboration

Publications co-authored with Institutions in other countries/regions

Manipal University Jaipur
23.9%

Academic-Corporate Collaboration

Publications with both academic and corporate affiliations

Manipal University Jaipur
0.0%

Top keyphrases within SDG 11: Sustainable Cities and Communities (2023)

Entity: Manipal University Jaipur · Within: All subject areas (ASJC) · Year range: 2021 to 2023 · Data source: Scopus, up to 30 Oct 2024

Top keyphrases by relevance

- Smart City
- India
- Municipal Solid Waste
- Waste Management
- Internet of Things
- Road
- Transport
- Solid Waste Management
- Intelligent Transportation
- Environmental Impact Assessment
- Intelligent Transportation System
- Information Management
- Solid Waste
- Traffic Management
- Thermochemical Process

EVENTS

MANIPAL UNIVERSITY
JAIPUR

FACULTY OF MANAGEMENT AND COMMERCE

SCHOOL OF BUSINESS AND COMMERCE

BUSINESS ADMINISTRATION

INTERCTIVE SESSION ON ROAD SAFETY

08/11/2023

Head
Department of Business Administration
Manipal University Jaipur

HoD, Department of Business Administration

1. **Introduction of the Event**

   School of Business and Commerce conducted a road safety interactive session in association with Rotary Club Jaipur on 8th Nov 2023.

2. **Objective of the Event**

   The event was conducted with a view to enhance road safety awareness among students. The students were made aware of road safety measures by experts from the NGO. They learnt about significance of Helmet, seat belts and traffic signals. During the past few months, some major road accidents were reported involving students. The event was conducted with an objective to increase road safety awareness so that such fatal incidents can be controlled in future.

3. **Beneficiaries of the Event**

   - Students
   - Faculties
   - General Public
   - Police and Administration

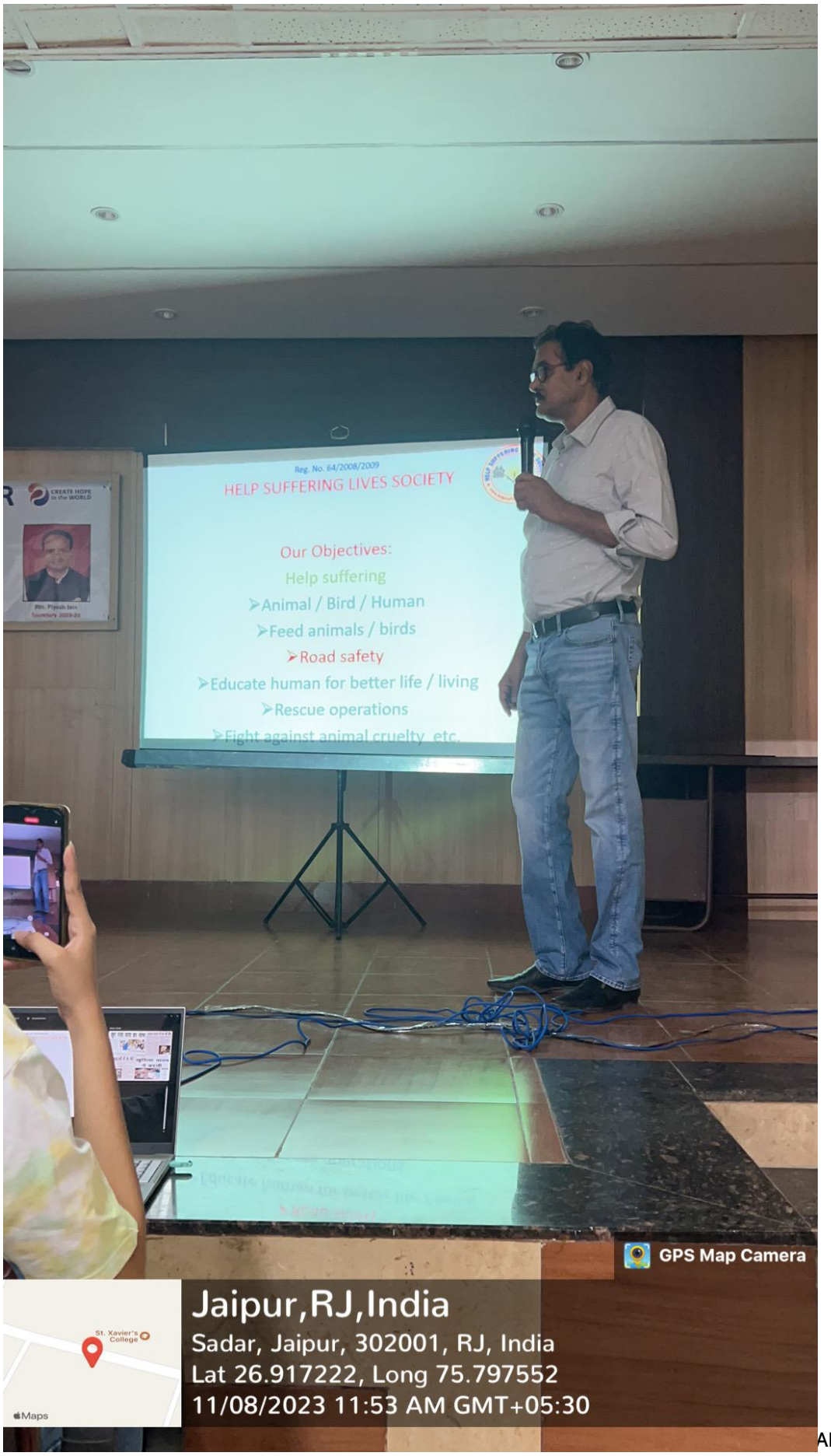
4. **Details of the Guests**

   During the event, Mr Sanjeev Sankhla, Founder Help Suffering Lives interacted with students. Various other dignitaries from Rotary Club Jaipur were also present. The experts helped in training the students about Road safety measures and the importance of safety measures while driving on road.

5. **Brief Description of the event**

   The event was conducted on 8th Nov 2023. During the event, the experts conducted a session for the students in which they discussed various road safety measures like wearing helmet, seat belt, traffic signals, road signs etc. In the session, the students interacted with the experts and their doubts were clarified by the experts. Also, it was discussed that why is it important to observe speed limit and driving signals. The session was conducted in Rotary club Jaipur. After the session, the students were also presented certificates by Rotary club.

3 to 5 photographs of the event or screenshots of the event (if online) with captions


Reg. No. 64/2008/2009
HELP SUFFERING LIVES SOCIETY
Our Objectives:
Help suffering
➢Animal / Bird / Human
➢Feed animals / birds
➢Road safety
➢Educate human for better life / living
➢Rescue operations
➢Fight against animal cruelty etc.
GPS Map Camera
Jaipur,RJ,India
Sadar, Jaipur, 302001, RJ, India
Lat 26.917222, Long 75.797552
11/08/2023 11:53 AM GMT+05:30
St. Xavier's College
Maps

AD SAFETY

6. **Schedule of the event**

The event was conducted on 8th Nov 2023 between 11.00 am to 1.00 pm.

7. **Attendance of the Event**

Total attendee- 73

S.no.	Name	Class
1	Kashish jain	BBA V (Sec C)
2	Sanyogeeta sahoo	BBA V (Sec C)
3	Ramay mehta	BBA V (Sec C)
4	Tarun Agarwal	BBA V (Sec C)
5	Pakhi agarwal	BBA V (Sec C)
6	Aditi jain	BBA III sem (Sec C)
7	Aastha	BBA III sem (Sec C)
8	Anshika	BBA III sem (Sec C)
9	Adhiraj	BBA III sem (Sec C)
10	Jiya Hotwani	BBA III sem (Sec C)
11	Aditya kawat	BBA III sem (Sec C)
12	Vedang Saxena	BBA III sem (Sec C)
13	Kartik Saraf	BBA III sem (Sec C)

14	Ansh Saraswat	BBA III sem (Sec C)
15	Abhijeet Singh Rathore	BBA III sem (Sec C)
16	Anjaneya Singh	BBA III sem (Sec C)
17	Aakash	BBA III sem (Sec C)
18	Adhyayan	BBA III sem (Sec C)
19	Anushka jain	BBA III sem (Sec C)
20	aditi Sinha	BBA III sem (Sec C)
21	Harshvardhan Singh	BBA III sem (Sec C)
22	Anisha Sonia	BBA III sem (Sec C)
23	Kartikey Singh Khangarot	BBA III sem (Sec C)
24	Ansh Agarwal	BBA III sem (Sec C)
25	Jyoti Modani	BBA III sem (Sec C)
26	Abhishek Mittal	BBA III sem (Sec C)
27	Krishna Wadhwani	BBA III sem (Sec C)
28	Kartik jhanwar	BBA III sem (Sec C)
29	Shaurya Mehra	BBA III sem (Sec C)
30	Devansh Mithia	BBA III sem (Sec C)
31	Aditya jain	BBA III sem (Sec C)
32	Bhavya malik	BBA III sem (Sec D)
33	Anuvansh Maheshwari	BBA III sem (Sec D)
34	Divyanshi Singh	BBA III sem (Sec D)
35	Lakshya Raj Singh	BBA III sem (Sec D)
36	Kashish Pathania	BBA III sem (Sec D)
37	Harshvardhan Singh	BBA III sem (Sec D)
38	Guneet Singh	BBA III sem (Sec D)
39	Manas agrawal	BBA III sem (Sec D)
40	Anmol Dixit	BBA III sem (Sec D)
41	GARVIT BAJAJ	BBA III sem (Sec D)
42	Diya gogia	BBA III sem (Sec D)
43	sriyush gupta	BBA III sem (Sec D)
44	harshit khandelwal	BBA III sem (Sec D)
45	Chhavi pareek	BBA III sem (Sec D)
46	Navya Tekriwal	BBA III sem (Sec D)
47	Harshit Garg	BBA III sem (Sec D)
48	Devansh Gupta	BBA III sem (Sec D)
49	Hardik Jangid	BBA III sem (Sec D)
50	Gautam Khandelwal	BBA III sem (Sec D)
51	Devansh sharma	BBA III sem (Sec D)
52	Harshit Khandelwal	BBA III sem (Sec D)
53	Rohit bhansali	BBA III sem (Sec D)
54	Vikas rai	BBA III sem (Sec D)
55	Sara agnihotri	BBA III sem (Sec D)
56	Mahak jain	BBA III sem (Sec D)

57	Nishika sharma	BBA III sem (Sec D)
58	Madhvi Bhardawaj	BBA III sem (Sec D)
59	Aditya agarwal	BBA III sem (Sec D)
60	Naksh gupta	BBA III sem (Sec D)
61	Samkit jain	BBA III sem (Sec D)
62	Madhav Gehlot	BBA III sem (Sec D)
63	Richa Hazariwal	BBA III sem (Sec D)
64	Ujjwal Kumar Goel	BBA III sem (Sec D)
65	Tanishk Agrawal	BBA III sem (Sec D)
66	Sanchita Jain	BBA III sem (Sec D)
67	Mohit Saini	BBA III sem (Sec D)
68	Saksham sharma	BBA III sem (Sec D)
69	Rajat singh rathore	BBA III sem (Sec D)
70	Rishika bhatera	BBA III sem (Sec D)
71	Tanmay gupta	BBA III sem (Sec D)
72	Madhav sharma	BBA III sem (Sec D)
73	Saurabh mishra	

Head
Department of Business Administration
Manipal University Jaipur

HoD, Department of Business Administration

MANIPAL UNIVERSITY
JAIPUR

MUJ/Q&C/021/F/1.01

MANIPAL UNIVERSITY
JAIPUR

DIRECTORATE OF STUDENT'S WELFARE

(SOCIETY CONNECT)

And

Faculty of Management and Commerce

Department of Business Administration

Presents

SWACH BHARAT

OCTOBER 25, 2023

1. **Introduction of the Event**

School of Business and Commerce in collaboration with Directorate of Student Welfare, Directorate of sports and NCC, NSS organized a "SWACH BHARAT" on October 25, 2023. 52 students participated in the campaign. The event took place in Dehmi Kalan hamlet.

2. **Objective of the Event**

The aim of the campaign was to raise awareness about Waste Segregation and encourage education on the SWACH BHARAT.

3. **Beneficiaries of the Event**

Through this initiative, students and villagers had better communication and understanding of the situation.

4. **Details of the Guests**

The event was laid by the students of BBA, BBA(BA), IMBA

Rotary Club Jaipur Bapu Nagar

Rotary started with the vision of one man — Paul Harris. The Chicago attorney formed the Rotary Club of Chicago on 23 February 1905, so professionals with diverse backgrounds could exchange ideas and form meaningful, lifelong friendships.

Over time, Rotary's reach and vision gradually extended to humanitarian service. Members have a long track record of addressing challenges in their communities and around the world.

Rotary is a global network of 1.4 million neighbors, friends, leaders, and problem-solvers who see a world where people unite and take action to create lasting change – across the globe, in our communities, and in ourselves. They provide service to others, promote integrity, and advance world understanding, goodwill, and peace through our fellowship of business, professional, and community leaders. We collaborate with community leaders who want to get to work on projects that have a real, lasting impact on people's lives. We connect passionate people with diverse perspectives to exchange ideas, forge lifelong friendships, and, above all, take action to change the world.

5. **Brief Description of the event**

The event was initiated to make students aware of their surroundings with respect to Waste and it consequences on the local community. The students went on a rally in groups, holding posters on Wet Waste and Dry Waste. They were chanting slogans "Alag Karo Alag Karo" Gila aur Sukha Kachara Alag Karo, to make the local community aware of the Waste Segregation process.

6. Photographs

Image 1 : Students with faculty

Image 2: Students walking with the Rally through the Village

Image 3: Team of MUJ Students at Village for Rally

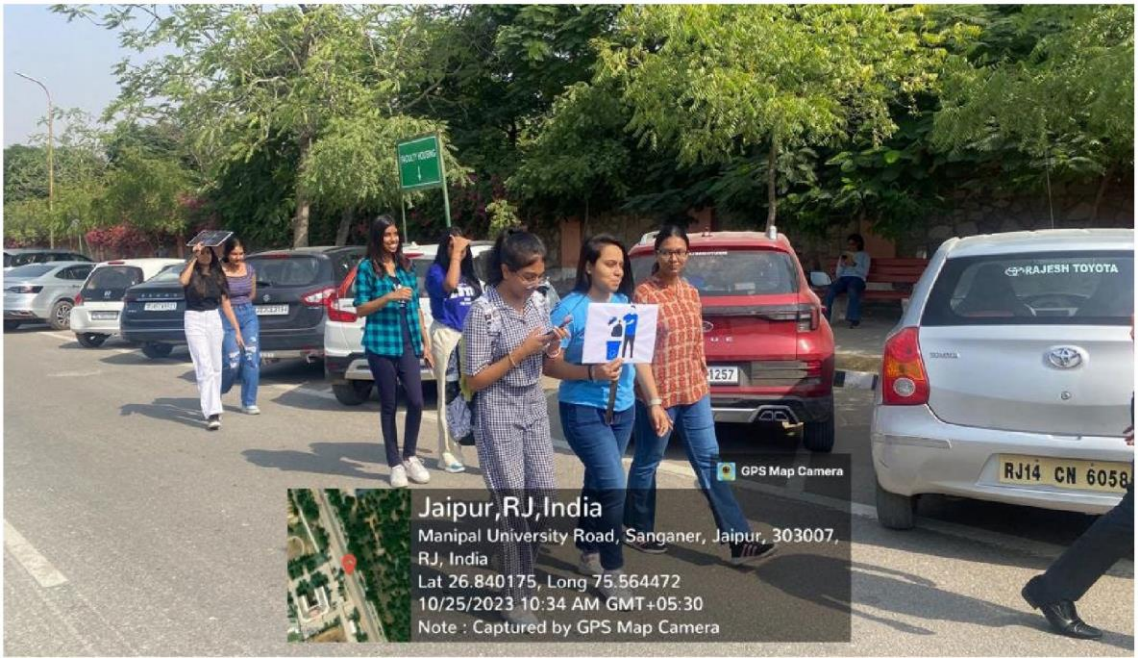


Image 4: Team of MUJ Students at Village for Rally

7. Brochure or creative of the event

8. Schedule of the Event

The event took place on Ocotber 25, 2023

9. Attendance of the Event

Sr. No	Name of Institution	Registration No	Attendee Name
1	Manipal University Jaipur	23FM10BBA00122	Naresh Choudhary
2	Manipal University Jaipur	23FM10BBA00123	Prem Singhrathore
3	Manipal University Jaipur	23FM10BBA00124	Yash Vardhansingh
4	Manipal University Jaipur	23FM10BBA00125	Krishna Snair
5	Manipal University Jaipur	23FM10BBA00126	Viyom Gupta
6	Manipal University Jaipur	23FM10BBA00127	Aditya Singh shekhawat
7	Manipal University Jaipur	23FM10BBA00128	Sheikh Tabish ahmed
8	Manipal University Jaipur	23FM10BBA00129	Bhavesh Aggarwal
9	Manipal University Jaipur	23FM10BBA00130	Riddhima Gupta
10	Manipal University Jaipur	23FM10BBA00131	Ishita Sharma
11	Manipal University Jaipur	23FM10BBA00132	Akshat Sharma
12	Manipal University Jaipur	23FM10BBA00133	Preksha Sood
13	Manipal University Jaipur	23FM10BBA00134	Tanisha Agarwal
14	Manipal University Jaipur	23FM10BBA00135	Ram Avtarchouhan

15	Manipal University Jaipur	23FM10BBA00136	Sourabh Shekhawat
16	Manipal University Jaipur	23FM10BBA00137	Abhishek Jain
17	Manipal University Jaipur	23FM10BBA00138	Priyanshu Yadav
18	Manipal University Jaipur	23FM10BBA00139	Riddhi Charan
19	Manipal University Jaipur	23FM10BBA00140	Akhil
20	Manipal University Jaipur	23FM10BBA00141	Shaily Kushwaha
21	Manipal University Jaipur	23FM10BBA00142	Deep Mittal
22	Manipal University Jaipur	23FM10BBA00143	Rahul Choudhary
23	Manipal University Jaipur	23FM10BBA00144	Ronil Joshi
24	Manipal University Jaipur	23FM10BBA00145	Arihant Jaisawal
25	Manipal University Jaipur	23FM10BBA00146	Ayush Kumarthakur
26	Manipal University Jaipur	23FM10BBA00147	Angad Yadav
27	Manipal University Jaipur	23FM10BBA00148	Shashank Chaudhary
28	Manipal University Jaipur	23FM10BBA00149	Khushi Gupta
29	Manipal University Jaipur	23FM10BBA00150	Garvita Rathore
30	Manipal University Jaipur	23FM10BBA00151	Anirban Bhattacharyya
31	Manipal University Jaipur	23FM10BBA00152	Keshav Badthuniya
32	Manipal University Jaipur	23FM10BBA00153	Yash Saini
33	Manipal University Jaipur	23FM10BBA00154	Vineet Kumar
34	Manipal University Jaipur	23FM10BBA00155	Bhavuk Parashar
35	Manipal University Jaipur	23FM10BBA00156	Mohit Oshu
36	Manipal University Jaipur	23FM10BBA00157	Honey Chandnani
37	Manipal University Jaipur	23FM10BBA00158	Veer Singh
38	Manipal University Jaipur	23FM10BBA00159	Naman Kriplani
39	Manipal University Jaipur	23FM10BBA00160	Himanshu Yogesh Mittal
40	Manipal University Jaipur	23FM10BBA00161	Amogh Goyal
41	Manipal University Jaipur	23FM10BBA00162	Alina Nadeem
42	Manipal University Jaipur	23FM10BBA00163	Prince Gandhi
43	Manipal University Jaipur	23FM10BBA00164	Devansh Devansh Tiwari
43	Manipal University Jaipur	221016048	Aarohi
44	Manipal University Jaipur	229301387	Soham maskara
45	Manipal University Jaipur	229301650	Karan Kapoor
46	Manipal University Jaipur	229301552	MONIL SHAH
47	Manipal University Jaipur	229311009	Krittika Wadhawan
48	Manipal University Jaipur	229301034	Maulik Mehrotra
49	Manipal University Jaipur	229302340	Shreya Saihgal
50	Manipal University Jaipur	229302257	Yash Dhruv
51	Manipal University Jaipur	229302641	Pankaj Patel
52	Manipal University Jaipur	229310250	Amrit Raj
53	Manipal University Jaipur	220901154	Mehul rawat
54	Manipal University Jaipur	221201002	Palak chawla
55	Manipal University Jaipur	229309070	Pranav Banker
56	Manipal University Jaipur	229303128	Mahi Bhardwaj
57	Manipal University Jaipur	229303305	Karshh Divekar
58	Manipal University Jaipur	229310242	Ashmit

59	Manipal University Jaipur	229301681	Armaan Deep Singh Bedi
60	Manipal University Jaipur	229302281	Shriyam Singh Tiwari
61	Manipal University Jaipur	229301130	Shreyansh Reddy
62	Manipal University Jaipur	220901032	Raj Singh
63	Manipal University Jaipur	211103077	Sanmai Pathak
64	Manipal University Jaipur	211103075	Anvesha Shekhar
65	Manipal University Jaipur	219311129	Shubham Yadav
66	Manipal University Jaipur	221201033	Divanshi Gupta
67	Manipal University Jaipur	229310052	Lakshya Khandelwal
68	Manipal University Jaipur	229303191	Krishang Shukla
69	Manipal University Jaipur	221305050	Baibhav Bhanu Naithani
70	Manipal University Jaipur	229302371	Rishika Bhagawati
71	Manipal University Jaipur	229311168	Rudra Nayyar
72	Manipal University Jaipur	229311024	Shivam Singh
73	Manipal University Jaipur	229311289	puneet more
74	Manipal University Jaipur	229310200	Nainish Mane
75	Manipal University Jaipur	229310153	Diksha M
76	Manipal University Jaipur	221007068	Akshita Pandey
77	Manipal University Jaipur	229309068	Rahul Trivedi
78	Manipal University Jaipur	229309052	Raeez Mohammed K P

Dr Narendra Singh Bhati HoD, BBA

(Hemant Kumar)
Assistant Director, Society Connect
Directorate of Student's Welfare

(Prof. AD Vyas)

Director, Directorate of Student's Welfare

DIRECTOR STUDENT WELFARE & PROCTOR
MANIPAL UNIVERSITY, JAIPUR

MANIPAL UNIVERSITY
JAIPUR

MUJ/DSW/Student Clubs/2023/Biotech Club MUJ/28th February

DIRECTORATE OF STUDENTS' WELFARE

Nukkad Natak

ON

Solid Waste Management

Department of Biosciences & Biotech Club, Manipal University Jaipur

Date of Event (28th February, 2023)

(Venue: TMA Pai Auditorium)

Index

Introduction of the Event ,

The Department of Biosciences & Biotech Club, Manipal University Jaipur organized a 'Nukkad Natak' on 'Solid Waste Management' on 28th Feb, 23. It was directed by 2nd year students of Department of Biosciences, Divya and Samrat and it was awe-inspiringly performed by the students. This Nukkad Natak was under the guidance of the convenor – Dr. Mousumi Debnath, Faculty Coordinator, Biotech Club.

The performers interacted with the audience and presented an informatic skit on solid waste management and the do's and don'ts of waste disposal.

This skit was a call to action, urging the audience to take responsibility for their waste and make conscious choices in their daily lives. It was an effective way to educate and engage the public on a crucial environmental issue.

Objectives of the Event

- To increase awareness about solid waste management.
- To bring public awareness about the fatality caused by wastes.
- To educate about the waste disposal methods and its do's and don'ts.

Beneficiaries of the Event

- MUJ Students
- Faculty

Brief Description of the event

Conducted under the guidance of the Founder Faculty Coordinator, Biotech Club, Dr. Mousumi Debnath, Faculty of Biosciences, this Nukkad Natak solely aimed in bringing public awareness on solid waste management. It was well directed by students of Department of Biosciences, Divya and Samrat, who commenced from writing the scripts to directing the performers and eventually operated a successful and inspiring Nukkad Natak.

A group of brilliant and motivated performers presented the Nukkad Natak, bringing attention to the problem of solid waste management through a stirring and thought-provoking performance. The show highlighted the negative consequences of littering and the necessity of effective waste management.

The actors portrayed different characters like a litterbug, a garbage collector, and a responsible citizen who showed how the problem of solid waste management can be tackled. The audience was made conscious of the risks that incorrect garbage disposal poses to both the public's health and the environment.

The play also highlighted the role of the government and the civic bodies in managing solid waste.

In conclusion, the Nukkad Natak on Solid Waste Management held on 28th February on the occasion of National Science Day was a highly successful event that effectively highlighted the issue of solid waste management. The play succeeded in spreading awareness about the importance of proper waste management practices and the role of individuals and the government in tackling this issue.

Photographs

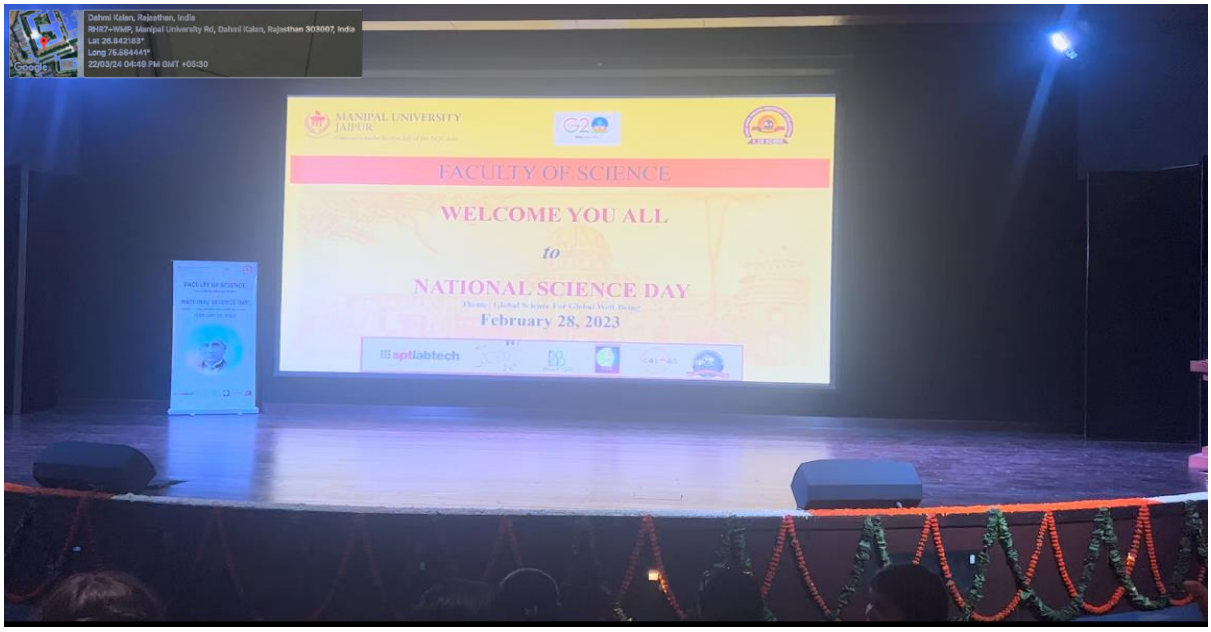


Figure 1 National Science Day; Coordinates: 26.843429; 75.566529; N26°50'36.34" E75°33'59.50"(Manipal University Jaipur)

Figure 2 Nukkad Natak performed by students.; Coordinates: 26.843429; 75.566529; N26°50'36.34" E75°33'59.50"(Manipal University Jaipur)

Figure 3 Nukkad Natak performed by students. Coordinates: 26.843429; 75.566529; N26°50'36.34" E75°33'59.50"(Manipal University Jaipur)

Figure 4 Nukkad Natak performed by students. Coordinates: 26.843429; 75.566529; N26°50'36.34" E75°33'59.50"(Manipal University Jaipur)

Figure 5 Nukkad Natak team and Dr. Mousumi Debnath, Faculty Coordinator, Biotech Club; Coordinates: 26.843429; 75.566529; N26°50'36.34" E75°33'59.50"(Manipal University Jaipur)

Brochure or Creative of the Event

MANIPAL UNIVERSITY
JAIPUR
(University under Section 2(f) of the UGC Act)

FIRST STATE PRIVATE UNIVERSITY IN RAJASTHAN
A+ NAAC
3.28 SCORE

Biotech Club

G20 भारत 2023 INDIA

BIOTECH CLUB OF MUJ

Presents

NUKKAD NATAK

on

SOLID WASTE MANAGEMENT

DATE AND TIME

28th February, 2PM onwards

VENUE

TMA PAI auditorium, MUJ

Schedule of the event

The event was on the 28th February 2023 from 2:00 PM- 3:00 PM in TMA Pai Auditorium, Academic Block 2.

Attendance of the event: 38

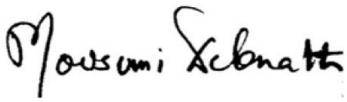
S.No.	Name	Registration No.
1.	Ananya Singh	201002002
2.	Harsh Saxena	201003004
3.	Anvarshu Gopal	211002011
4.	Anshullika Saxena	211002053
5.	Ayushi Gupta	201002029
6.	Divya	211002056
7.	Sylvia Parveen	211003009
8.	Anushka Singh	211002003
9.	Shivani Tiwari	211002002
10.	Aryan Singh	211002038
11.	Muskan Yadav	211002040
12.	Sakshi Nirmal	211002060
13.	Priyasha Paul	211002035
14.	Akash Chandra	211002036
15.	Shashank Goyal	21102043
16.	Nandini	211003001
17.	Mrunal Mangaje	211003007
18.	Sowvhik Parvej	211002007
19.	Aayushi Thakkar	211002061
20.	Manisha Verma	211002009
21.	Rahul Shrivastava	211002050
22.	Debarghya Sarkar	211002015

23.	Samrat Banerjee	211003008
24.	Sneha Srivastava	211002042
25.	Sonali Lalwani	211002041
26.	Suhani Pareek	211002062
27.	Vishnu Priya	211002028
28.	Tarushi Jain	201003001
29.	Dr. Abhijeet Singh	
30.	Dr. Mousumi Debnath	
31.	Dr. Madan Mohan Sharma	
32.	Dr. Rakesh Sharma	
33.	Dr. Nitesh Poddar	
34.	Dr. Monika Sangani	

Ananya Singh

President, Biotech Cub MUJ

Signature of the Student Coordinator



Dr. Mousmai Debnath

School of Basic Science

Signature of the Faculty Coordinator

DIRECTOR STUDENT WELFARE & PROCTOR
MANIPAL UNIVERSITY, JAIPUR

Dr. Arun Kumar Poonia
Asst. Director, DSW Clubs

MANIPAL UNIVERSITY
JAIPUR

FACULTY OF ENGINEERING

School of Automobile Mechanical & Mechatronics

Department of Mechanical Engineering

Road Safety Event

Topic – "World Day of Remembrance for Road Traffic Victims"

Date of Event – 25th Nov 2023

MANIPAL UNIVERSITY
JAIPUR

Brochure/Flyer of Event:

MANIPAL UNIVERSITY
JAIPUR

Introduction of the Event

Road safety event on "World Day of Remembrance for Road Traffic Victims" at Jawahar Kala Kendra Jaipur, November 25th, 2023.

Brief Description of the event

Department of Mechanical Engineering, MUJ has successfully organized a road safety event with Muskan NGO on "World Day of Remembrance for Road Traffic Victims" at Jawahar Kala Kendra Jaipur, Rajasthan on November 25th, 2023. Madam Neha Khullar, Director of Projects at MUSKAAN NGO, gave the speech. She explains that the number of automobiles in our nation has grown significantly in recent years, which has led to an increase in accidents. It is imperative that the next generation understands proper driving behaviour. Students and the other NGO volunteers have demonstrated the traffic rules and signals on roads at real time. The programme proved to be successful as over thirty pupils had participated by the end and pledged to lead safe driving lives.

Photographs

Pictures taken during the event

About MUSKAAN NGO

The Foundation for Road Safety is a registered non-profit trust that is dedicated to using awareness, education, training, and advocacy to create a culture of safety on the roads. In 2001, it was officially registered as a charity trust. The NGO addresses the complicated problem of road safety by taking an integrated, community-centric approach because it is a shared duty. The 17-year-old Durva Bhasin died in a car accident in 1999, which led to the founding of the NGO. She is the daughter of Mr. Pramod Bhasin and Dr. Mridul Bhasin, the founding members. While a personal tragedy served as the impetus for the start, MUSKAAN is not a family trust.

MANIPAL UNIVERSITY
JAIPUR

Invitation for the event

From: Muskaan RoadSafety <jaipurmuskaan@gmail.com>
Sent: Monday, September 4, 2023 5:40 PM
To: Dr. Krishnamurti Singh [MU - Jaipur] <krishnamurti.singh@jaipur.manipal.edu>
Subject: Collaboration Proposal: World Day of Remembrance for Road Traffic Victims Program

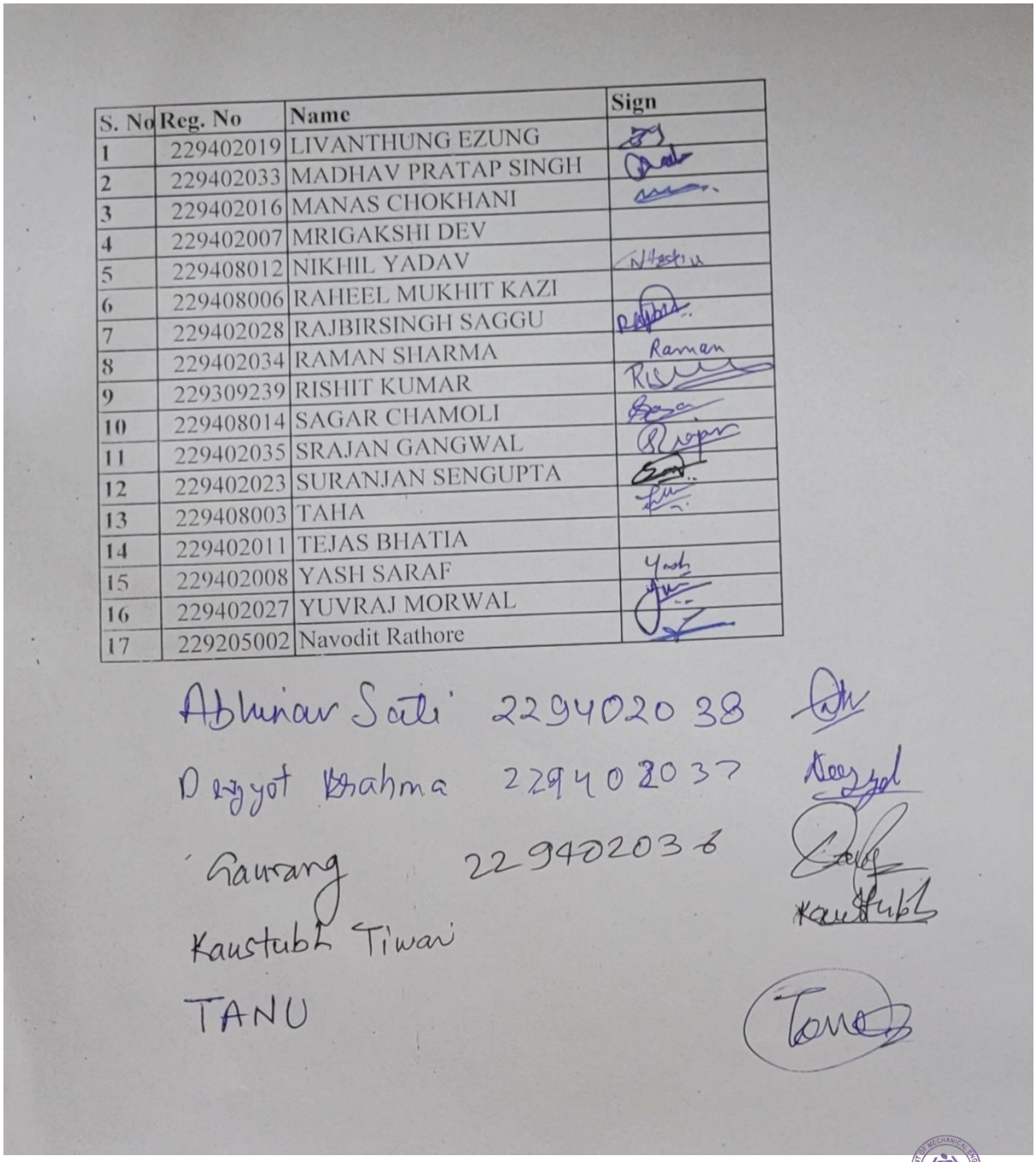
Dear Dr. Krishnamurti,

Greetings for the day!

I hope this message finds you well. Following our recent discussion over the phone, I am excited to introduce the World Day of Remembrance for Road Traffic Victims Program to you. This internationally recognized day, designated by the United Nations, serves as a poignant commemoration of lives lost and families affected by road traffic incidents. Since its initiation in 2005, it has gained global significance and is observed annually on the third Sunday of November. Muskaan has been actively organizing this event for the past seven years in Jaipur.

The primary goal of this day is to provide a platform for governments, organizations, and communities to raise awareness about road safety, promote preventive measures, and advocate for enhanced road infrastructure and regulations. On the World Day of Remembrance, we aim to raise awareness about the profound impact of road traffic incidents by engaging the youth from educational institutions in Jaipur City. We incorporate a rich cultural expression into our program, involving road accident victims, their families, parents, community members, and essential stakeholder departments. Our objective is to effectively convey the crucial message of road safety. The major components are choir singing by 500 students, talking with victim families and officials, dance drama, etc. This program will directly reach approximately 1,500-2,000 individuals, including students, teachers, parents, community members, and respected officials and bureaucrats from various stakeholder departments.

Participants: 19



S. No	Reg. No	Name	Sign
1	229402019	LIVANTHUNG EZUNG	
2	229402033	MADHAV PRATAP SINGH	
3	229402016	MANAS CHOKHANI	
4	229402007	MRIGAKSHI DEV	
5	229408012	NIKHIL YADAV	
6	229408006	RAHEEL MUKHIT KAZI	
7	229402028	RAJBIRSINGH SAGGU	
8	229402034	RAMAN SHARMA	
9	229309239	RISHIT KUMAR	
10	229408014	SAGAR CHAMOLI	
11	229402035	SRAJAN GANGWAL	
12	229402023	SURANJAN SENGUPTA	
13	229408003	TAHA	
14	229402011	TEJAS BHATIA	
15	229402008	YASH SARAF	
16	229402027	YUVRAJ MORWAL	
17	229205002	Navodit Rathore	

Abhinav Sati 22940238

Deepjyot Brahma 22940237

Gaurang 22940236

Kaustubh Tiwari

TANU

MUJ/DSW/Student Clubs/2023/MUJ ACM/02.04.2023

MANIPAL UNIVERSITY
JAIPUR

DIRECTORATE OF STUDENTS' WELFARE

AutoBots

MUJ ACM SIGBED Student Chapter

OFFLINE EVENT

Date of Event

2nd April, 2023

(5:00 PM onwards)

Index

1. Introduction of the Event

The MUJ ACM SIGBED Student Chapter brings to you "AutoBots". This event is being presented to the public with the intention of providing a platform for enthusiasts to showcase their knowledge and skills in the field of IOT and Robotics.
This is an event that utilizes Robot building and programming skills of the participants to overcome a set of challenges and allow them to showcase their potential typically in the field of embedded systems.

2. Objectives of the Event

- Encourage students to showcase innovative ideas and solutions to real world problems.
- Encourage students to showcase their creativity and demonstrate their ability to think and outside the box
- Encourage students to network with like-minded people.

3. Beneficiaries of the Event

- Students of Manipal University, Jaipur
- Members of MUJ ACM Student Chapter
- Members of MUJ ACM SIGAI Chapter
- Members of MUJ ACM SIGBED Chapter

4. Brief Description of the event

AutoBots is a robot building competition that is based on IoT technology. The event required participants to have knowledge of robotics and IoT technologies. The robots were designed using IoT technologies, such as sensors, microcontrollers, and other peripherals, which enable them to navigate through the track and overcome obstacles. The proceedings started at 5 o'clock. The participants were allowed dry runs and test their robots on the course. The deadline to perform dry runs was till 8pm. The teams were informed of the event's regulations and grading procedures during a briefing session. The participating teams had to put the robot together, programme it to move through several checkpoints, and make sure it doesn't run into any walls as it moves through the track. With few wall collisions and restarts, 12 teams raced for the fastest lap time on the track. At 10:00 pm, the event's results were released.

5. Photograph

6. Brochure or Creative of the event

7. Schedule of the event

S.no	Event	Date	Time
1.	Commencement	2nd April 2023	5:00pm-9:00pm
2.	Judgement	2nd April 2023	9:00pm-9:30pm

8. Attendance of the event:

S No	Name of the Participants
1	Naad Dantale
2	Vansh Kumar Singh
3	Vansh Kumar Singh
4	Shivam Raj Dubey
5	Jaskaran Singh Taneja
6	Rishabh Bachani
7	Varun Lall Srivastava
8	Ayush Jaiswal
9	Aryan Gupta
10	Prithvi Singh
11	ADITYA KUMAR MISHRA
12	Yash Prasd
13	Aryan Garv
14	Priyansh Goel
15	Anurag Bijalwan
16	Anushka Shreya
17	Devansh Goel
18	Varun Lall Srivastava
19	Aryan Mishal
20	Pratyush Kumar Debata
21	Yaduvir
22	Aayush singh
23	ANGSHUMAN KUMAR MAHATO
24	Nekunj Khanna
25	Rachit Mehwala
26	Kumar Kartikay Shankar
27	Aryan Mishal
28	Harshit Agarwal
29	Abhyam
30	Tushar goyal
31	Naman jain
32	Adwait Sumedh Deshpande
33	Kamya Singh
34	Sairaj Sirsat
35	Hanis Gori
36	Sugam Nema

Umang
Chairperson
MUJ ACM SIGBED Student Chapter

Dr. Shiva Prasad HC
Director SAMM
School of Automobile, Mechanical & Mechatronics

	Dr. Sanchit Anand **Assistant Professor, Assistant Director DSW**

MANIPAL UNIVERSITY
JAIPUR

Post Event Report

FACULTY OF DESIGN

5days Executive
Development Program
on

‘Bamboo Renaissance: Modern Design Meets Sustainability’

Venue: Online platform

Time: 9:30 AM-12.00 PM (First day)

2:30 PM-4.00 PM (2nd to 5th day)

18th September- 22nd September 2023

Index

1. Introduction of the Executive development Program:

On World Bamboo Day, the Faculty of Design at Manipal University Jaipur organized a 5-day Executive Development Program titled "Bamboo Renaissance: Modern Design Meets Sustainability" in collaboration with their industrial partner, KONBAC, and the Indian Bamboo Forum, in association with the IGBC Student Chapter, MUJ, and MUJ-TEC. The program was conducted in virtual mode from September 18th to September 22nd, 2023.

2. Objectives of the Seminar:

- Understanding the various application of Bamboo in Exterior and interior spaces.
- To create awareness about bamboo in different regions.
- To understand its production and preservation technique techniques.

3. Beneficiaries of the Event:

- UG Students (Architecture, Design and Construction related Fields)
- PG Students (Architecture, Design and Construction related Fields)
- Research Scholars
- Academicians, Practitioners, and Industry Professionals in the fields of Architecture, Design, Civil, and Structural Engineering.

4. Details of the Speakers:

a) Dr. Jagdish Vengala, Head of EDC & Associate Professor at PVPSIT Vijayawada. Dr. Jagdish Vengala presented various components of bamboo and explained its diverse strength and elastic properties. He also discussed the various IS codes applicable in India for bamboo construction.

b) Prof. Sankalp, an associate professor from CEPT UNIVERSITY. Prof. Sankalp presented various construction techniques related to Bamboo construction, demonstrating proposals from different parts of the world. He elucidated innovative joinery details pertinent to bamboo construction.

c) Prof. Charruchandra K. faculty member at CTARA, IIT Mumbai,discussed various species of bamboo and highlighted their unique thermal, bending, tensile, and compressive strength properties. He also showcased the application of innovative joinery details using Bomcrete (HIB) technology in arch construction. In addition, Prof. Charruchandra K. presented models of bamboo structures subjected to different loads, demonstrating their strength and durability.

d) **Mr. Sanjeev Shashikant Karpe** is a qualified Electrical Engineer has been associated with bamboo Industry for last eighteen years and has pioneered the work in setting up of self-sustainable bamboo-based enterprise in rural India. He is a Founder and Director with Konkan Bamboo & Cane Development Centre (KONBAC), an organization working for sustainable development through use of bamboo as a resource & implementing various bamboo projects successfully for last 17 years. Mr. Sanjeev Karpe explained bamboo construction in India and worldwide.

He stated that bamboo has strong potential to grow in degraded land, requires less water compared to sugarcane, and consumes less embodied energy compared to conventional materials. In the global context, countries such as Colombia and Vietnam have embarked on large-scale bamboo projects, whereas in India, despite being the world's second-largest bamboo producer, its full potential remains largely untapped. In addition, Ar. Sanjeev Karpe presented models of bamboo structures subjected to different loads, demonstrating their strength and durability. Various experiments related to straightening of bamboo and bending it to achieve the required form were also demonstrated.

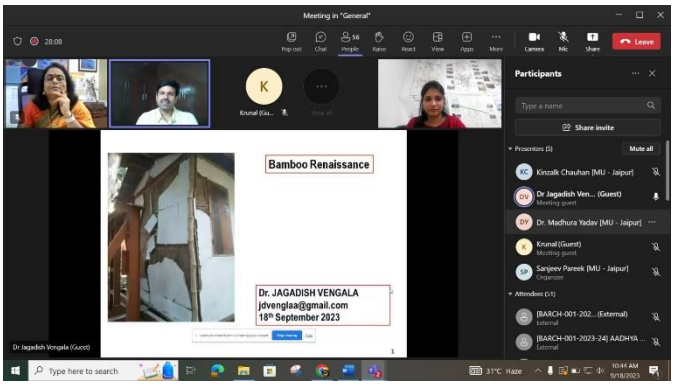
e) Mr. Amitava Sil, a Scientist at IWST (Indian Wood Science and Technology), Kolkata, renowned for his extensive knowledge and experience in the preservation treatment of bamboo species. Mr. Amitava Sil provided insights into preservative treatments and fire retardancy in structural bamboo. He elucidated various treatment methods and processes, highlighting their associated benefits. Furthermore, he offered a demonstration of bamboo's structural frame by showcasing its inherent structural properties.

5. Brief Description of the event:

In the context of a Global Environmental crisis, coupled with economic and health challenges, the time has come for radical cultural awareness, politicians. architects, engineers, developers, and construction companies have an enormous responsibility as the construction industry and processes have an enormous negative impact on the environment. Bamboo is a key natural resource and, together with conscious design, draws a new direction for Contemporary Architecture. The Executive Development Program "Bamboo Renaissance: Modern Design Meets Sustainability is a comprehensive initiative designed to explore the dynamic intersection of modern design principles and sustainable practices within the realm of bamboo. This program is carefully curated to provide Industry Professionals, Academicians, and Researchers with the knowledge and tools needed to harness bamboo's immense potential as an eco-friendly resource in contemporary design and construction. The EDP 2023 will be a great opportunity to facilitate networking with industry experts and peers, enabling participants to exchange ideas, collaborate on projects, and stay updated on emerging trends and innovations in sustainable design.

6. Images

1.Inaugural Address by Prof. (Dr.) Madhura Yadav, Dean, FoD



2. . First day expert lecture by Prof. (Dr.) Jagdish Vegala

3. . Second day expert lecture by Prof. (Dr.) Sankalp

4. . Third day expert lecture by Prof. (Dr.) Charuchandra

5. . Fourth day expert lecture by Mr. Sanjeev Karpe

6. . Fifth day expert lecture by Mr. Amitava Sil

7. . Valedictory session by Mr. Anand Mishra and Mr. Dhirendra Madan

7.Brochure of the event:

8 .Schedule of the event

S.No.	Description	Time
1	Welcome Address by **Prof. (Dr.) Madhura Yadav, Director, SA&D, Manipal University Jaipur**	9.30 AM
2	Inaugural Address by **Hon'ble Mr. Suresh Prabhu, Member of Parliament, India's Sherpa to G7 & G20**	9.35 AM
3	Address by **Prof. (Dr.) Anuradha Chatterjee, Dean, FoD, Manipal University Jaipur**	9.45 AM
4	Address by **Mr. Sanjeev Karpe, Director, KONBAC Maharashtra**	9.55 AM
5	Presidential Address by **Prof. (Dr.) G. K. Prabhu, President, Manipal University Jaipur**	10.10 AM
6	Vote of Thanks by **Prof. Kinzalk chauhan, SA&D, Manipal University Jaipur**	10.20 AM
7.	Fist day Expert Lecture by Dr. Jagdish Vengela	10.30 AM

9. Attendance of the Event:

S.No	Full Name	Timestamp
1	Sanjeev Pareek [MU - Jaipur]	22/9/23, 3:53:32 pm
2	Guest	22/9/23, 3:54:07 pm
3	Guest	22/9/23, 5:54:32 pm
4	Archish Bahl	22/9/23, 4:00:51 pm
5	Archish Bahl	22/9/23, 4:04:18 pm
6	Archish Bahl	22/9/23, 4:11:51 pm
7	Archish Bahl	22/9/23, 5:53:53 pm
8	Nikhitha Naresh Molly [B.Des - ID - 2020]	22/9/23, 4:00:54 pm
9	Nikhitha Naresh Molly [B.Des - ID - 2020]	22/9/23, 4:01:23 pm
10	Nikhitha Naresh Molly [B.Des - ID - 2020]	22/9/23, 4:34:28 pm
11	Dr. Ashutosh Saini [MU - Jaipur]	22/9/23, 4:02:27 pm
12	Guest	22/9/23, 4:04:52 pm
13	Guest	22/9/23, 5:04:44 pm
14	Guest	22/9/23, 5:05:01 pm
15	Guest	22/9/23, 5:27:38 pm
16	Guest	22/9/23, 5:27:53 pm
17	Guest	22/9/23, 5:53:49 pm
18	Guest	22/9/23, 4:05:19 pm
19	Guest	22/9/23, 4:49:13 pm
20	Guest	22/9/23, 4:49:16 pm
21	Guest	22/9/23, 5:02:02 pm
22	Guest	22/9/23, 5:02:05 pm
23	Guest	22/9/23, 5:50:05 pm
24	Anjali Adhikari [B ARCH - 2021]	22/9/23, 4:08:47 pm
25	Anjali Adhikari [B ARCH - 2021]	22/9/23, 4:10:48 pm
26	Anjali Adhikari [B ARCH - 2021]	22/9/23, 4:50:38 pm
27	Anjali Adhikari [B ARCH - 2021]	22/9/23, 5:41:03 pm
28	Anjali Adhikari [B ARCH - 2021]	22/9/23, 5:41:07 pm
29	Anjali Adhikari [B ARCH - 2021]	22/9/23, 5:53:53 pm
30	Guest	22/9/23, 4:11:20 pm
31	Guest	22/9/23, 5:53:49 pm
32	Guest	22/9/23, 4:13:26 pm
33	Guest	22/9/23, 4:55:11 pm
34	Guest	22/9/23, 4:55:23 pm
35	Guest	22/9/23, 5:24:41 pm
36	Digvijay Singh Panwar [B.Arch - 2022]	22/9/23, 4:14:24 pm
37	Digvijay Singh Panwar [B.Arch - 2022]	22/9/23, 5:54:03 pm
38	Ananya Tandon [B.Arch - 2022]	22/9/23, 4:14:54 pm
39	Ananya Tandon [B.Arch - 2022]	22/9/23, 4:21:25 pm
40	Ananya Tandon [B.Arch - 2022]	22/9/23, 4:21:47 pm
41	Ananya Tandon [B.Arch - 2022]	22/9/23, 5:31:24 pm
42	Dr. Madhura Yadav [MU - Jaipur]	22/9/23, 4:15:24 pm
43	Dr. Madhura Yadav [MU - Jaipur]	22/9/23, 5:53:44 pm
44	Guest	22/9/23, 4:15:56 pm
45	Guest	22/9/23, 5:53:58 pm
46	Vanshika Sharma [B.Arch - 2022]	22/9/23, 4:17:06 pm
47	Vanshika Sharma [B.Arch - 2022]	22/9/23, 4:31:11 pm
48	Vanshika Sharma [B.Arch - 2022]	22/9/23, 4:32:39 pm
49	Vanshika Sharma [B.Arch - 2022]	22/9/23, 5:53:54 pm
50	Guest	22/9/23, 4:19:15 pm
51	Guest	22/9/23, 5:53:46 pm
52	Kinzalk Chauhan [MU - Jaipur]	22/9/23, 4:20:11 pm
53	Kinzalk Chauhan [MU - Jaipur]	22/9/23, 5:53:49 pm
54	Guest	22/9/23, 4:21:10 pm
55	Guest	22/9/23, 4:21:19 pm
56	Guest	22/9/23, 4:22:16 pm
57	Guest	22/9/23, 4:34:10 pm
58	Guest	22/9/23, 4:34:12 pm

59	Guest	22/9/23, 5:10:30 pm
60	Guest	22/9/23, 4:22:46 pm
61	Guest	22/9/23, 5:54:05 pm
62	Dr. Sunanda Kapoor [MU - Jaipur]	22/9/23, 4:24:48 pm
63	Dr. Sunanda Kapoor [MU - Jaipur]	22/9/23, 5:49:49 pm
64	Dr. Richa Jagatramka [MU - Jaipur]	22/9/23, 4:25:00 pm
65	Dr. Richa Jagatramka [MU - Jaipur]	22/9/23, 4:25:35 pm
66	Dr. Subhash Chandra Devrath [MU - Jaipur]	22/9/23, 4:25:15 pm
67	Dr. Subhash Chandra Devrath [MU - Jaipur]	22/9/23, 4:36:51 pm
68	Dr. Subhash Chandra Devrath [MU - Jaipur]	22/9/23, 4:56:45 pm
69	Dr. Subhash Chandra Devrath [MU - Jaipur]	22/9/23, 5:54:34 pm
70	Guest	22/9/23, 4:25:34 pm
71	Guest	22/9/23, 4:34:10 pm
72	Nehal Jain [B.Arch - 2022]	22/9/23, 4:26:08 pm
73	Nehal Jain [B.Arch - 2022]	22/9/23, 5:07:24 pm
74	Raunak Prasad [MU - Jaipur]	22/9/23, 4:26:49 pm
75	Raunak Prasad [MU - Jaipur]	22/9/23, 4:55:24 pm
76	Raunak Prasad [MU - Jaipur]	22/9/23, 5:13:20 pm
77	Raunak Prasad [MU - Jaipur]	22/9/23, 5:19:57 pm
78	Amne Iqbal [B.Arch - 2020]	22/9/23, 4:30:35 pm
79	Amne Iqbal [B.Arch - 2020]	22/9/23, 4:30:51 pm
80	Ritu Sharma [PhD - 2020]	22/9/23, 4:30:52 pm
81	Guest	22/9/23, 4:33:54 pm
82	Guest	22/9/23, 4:34:17 pm
83	Guest	22/9/23, 4:34:25 pm
84	Guest	22/9/23, 5:28:55 pm
85	Guest	22/9/23, 4:34:56 pm
86	Guest	22/9/23, 5:53:54 pm
87	Guest	22/9/23, 4:37:48 pm
88	Guest	22/9/23, 5:43:48 pm
89	Ishika Singhal [B-ARCH - 2019]	22/9/23, 4:38:08 pm
90	Ishika Singhal [B-ARCH - 2019]	22/9/23, 5:53:56 pm
91	Pavani Pandey [B-ARCH - 2019]	22/9/23, 4:38:12 pm
92	Pavani Pandey [B-ARCH - 2019]	22/9/23, 5:53:54 pm
93	Sneh Singh [MU - Jaipur]	22/9/23, 4:39:26 pm
94	Sneh Singh [MU - Jaipur]	22/9/23, 5:54:01 pm
95	Nandini Rawat [B-ARCH - 2019]	22/9/23, 4:40:02 pm
96	Nandini Rawat [B-ARCH - 2019]	22/9/23, 4:55:44 pm
97	Nandini Rawat [B-ARCH - 2019]	22/9/23, 4:56:09 pm
98	Nandini Rawat [B-ARCH - 2019]	22/9/23, 4:56:19 pm
99	Nandini Rawat [B-ARCH - 2019]	22/9/23, 4:56:47 pm
100	Nandini Rawat [B-ARCH - 2019]	22/9/23, 5:30:17 pm
101	HARSH VARDHAN PATHAK [B.Arch - 2019]	22/9/23, 4:41:49 pm
102	HARSH VARDHAN PATHAK [B.Arch - 2019]	22/9/23, 5:53:31 pm
103	[BARCH-001-2023-24] A ANANYA	22/9/23, 4:42:30 pm
104	[BARCH-001-2023-24] A ANANYA	22/9/23, 4:44:46 pm
105	[BARCH-001-2023-24] A ANANYA	22/9/23, 4:45:11 pm
106	[BARCH-001-2023-24] A ANANYA	22/9/23, 4:48:13 pm
107	[BARCH-001-2023-24] CHANDRIKA VERMA	22/9/23, 4:42:42 pm
108	[BARCH-001-2023-24] CHANDRIKA VERMA	22/9/23, 4:49:18 pm
109	Arunima Kiro [B-ARCH - 2019]	22/9/23, 4:42:41 pm
110	Arunima Kiro [B-ARCH - 2019]	22/9/23, 5:53:54 pm
111	[BARCH-001-2023-24] AANYA GUPTA	22/9/23, 4:42:45 pm
112	[BARCH-001-2023-24] AANYA GUPTA	22/9/23, 5:07:14 pm
113	Aamera Quazi [M. Des (Major Interior Design) - 2022]	22/9/23, 4:43:56 pm
114	Aamera Quazi [M. Des (Major Interior Design) - 2022]	22/9/23, 4:48:30 pm
115	Pushpak Bhagwati	22/9/23, 4:44:49 pm
116	Guest	22/9/23, 4:44:59 pm
117	Guest	22/9/23, 4:55:40 pm

118	Guest	22/9/23, 4:46:41 pm
119	Guest	22/9/23, 5:40:51 pm
120	Guest	22/9/23, 5:40:56 pm
121	Guest	22/9/23, 5:49:49 pm
122	Pooja [Guest]	22/9/23, 4:47:12 pm
123	Pooja [Guest]	22/9/23, 5:37:19 pm
124	Pooja [Guest]	22/9/23, 5:43:27 pm
125	Aashima Mathur [B-ARCH - 2019]	22/9/23, 4:47:19 pm
126	Aashima Mathur [B-ARCH - 2019]	22/9/23, 5:08:14 pm
127	Aashima Mathur [B-ARCH - 2019]	22/9/23, 5:08:32 pm
128	Mansi [B.Arch - 2020] [Guest]	22/9/23, 4:47:26 pm
129	Mansi [B.Arch - 2020] [Guest]	22/9/23, 5:53:49 pm
130	Guest	22/9/23, 4:51:12 pm
131	Guest	22/9/23, 5:43:30 pm
132	Bhavesh Khemka [B ARCH - 2021]	22/9/23, 4:51:41 pm
133	Kartik Gehlot [B ARCH - 2021]	22/9/23, 4:51:56 pm
134	Vaishnavi Shukla [B Arch - 2021]	22/9/23, 4:52:02 pm
135	Vaishnavi Shukla [B Arch - 2021]	22/9/23, 5:35:09 pm
136	abhijeet yadav [Guest]	22/9/23, 4:52:08 pm
137	Guest	22/9/23, 4:52:10 pm
138	Guest	22/9/23, 5:43:26 pm
139	Pranat Kothari [B.Arch - 2022]	22/9/23, 4:52:35 pm
140	Pranat Kothari [B.Arch - 2022]	22/9/23, 4:54:01 pm
141	Pranat Kothari [B.Arch - 2022]	22/9/23, 4:56:02 pm
142	Pranat Kothari [B.Arch - 2022]	22/9/23, 5:11:31 pm
143	[BARCH-001-2023-24] TANMAY GUPTA	22/9/23, 4:52:38 pm
144	Guest	22/9/23, 4:52:48 pm
145	Guest	22/9/23, 5:06:36 pm
146	Vanshika Chandel [B-ARCH - 2019]	22/9/23, 4:53:06 pm
147	Vanshika Chandel [B-ARCH - 2019]	22/9/23, 5:25:50 pm
148	Neha Saxena [MU - Jaipur]	22/9/23, 4:53:23 pm
149	Neha Saxena [MU - Jaipur]	22/9/23, 5:32:57 pm
150	Guest	22/9/23, 4:53:30 pm
151	Guest	22/9/23, 4:54:18 pm
152	Guest	22/9/23, 4:54:23 pm
153	Guest	22/9/23, 5:46:18 pm
154	Sajal Panwar [B.Arch - 2022]	22/9/23, 4:54:10 pm
155	Sajal Panwar [B.Arch - 2022]	22/9/23, 4:54:19 pm
156	Sajal Panwar [B.Arch - 2022]	22/9/23, 4:54:37 pm
157	Sajal Panwar [B.Arch - 2022]	22/9/23, 5:13:19 pm
158	Sajal Panwar [B.Arch - 2022]	22/9/23, 5:13:45 pm
159	Sajal Panwar [B.Arch - 2022]	22/9/23, 5:13:56 pm
160	Sajal Panwar [B.Arch - 2022]	22/9/23, 5:14:12 pm
161	Sajal Panwar [B.Arch - 2022]	22/9/23, 5:51:42 pm
162	Khushi Vipulkumar Chaudhari [B ARCH - 2021]	22/9/23, 4:55:09 pm
163	Khushi Vipulkumar Chaudhari [B ARCH - 2021]	22/9/23, 5:41:36 pm
164	Aishwarya Singh Rathore [B Arch - 2021]	22/9/23, 4:55:12 pm
165	Aishmeen Kaur [B ARCH - 2021]	22/9/23, 4:55:32 pm
166	Aishmeen Kaur [B ARCH - 2021]	22/9/23, 5:15:44 pm
167	Naveen Sharma	22/9/23, 4:58:59 pm
168	Guest	22/9/23, 4:59:12 pm
169	Guest	22/9/23, 5:25:53 pm
170	Guest	22/9/23, 5:03:45 pm
171	Guest	22/9/23, 5:28:59 pm
172	Harsh Shrivastav [B.Arch - 2021]	22/9/23, 5:05:52 pm
173	Harsh Shrivastav [B.Arch - 2021]	22/9/23, 5:46:09 pm
174	Arghya B S Bhagwat [B.Arch - 2022]	22/9/23, 5:07:24 pm
175	Aarya Chandiramani [B.Arch - 2022]	22/9/23, 5:08:13 pm
176	Aarya Chandiramani [B.Arch - 2022]	22/9/23, 5:28:01 pm

10.Weblink:

https://jaipur.manipal.edu/content/dam/manipal/muj/fod/Document/eventlist/EDP%20ON%20Bamboo%20-Event%20report.pdf

11.Event Coordinators:

- Ar. Sanjeev Pareek (Assistant Professor, SA&D)

  Ar. Kinzalk Chauhan (Assistant Professor, SA&D)

MANIPAL UNIVERSITY
JAIPUR

Faculty of Management and Commerce

Department of Business Administration

Societal Connect Activity on

Bird Nest Installation

NOVEMBER 30, 2023

Head
Department of Business Administration
Manipal University Jaipur

1. **Introduction of the Event**

Introduction of the Event: School of Business and Commerce organized a activity to install bird nests in the nearby village on November 30, 2023. 5 students and 1 faculty member participated in the campaign. The event took place in nearby village of Manipal university.

2. **Objective of the Event**

The primary objective of the event was to promote environmental awareness and conservation by actively contributing to the well-being of local bird populations. Through the installation of bird nests, the aim was to create a sustainable habitat for birds in the nearby village, fostering biodiversity and ecological balance.

3. **Beneficiaries of the Event**

The beneficiaries of the event included the local bird species in the nearby village. By providing suitable nesting spaces, the initiative sought to enhance the living conditions for birds, contributing to the overall ecosystem health. Additionally, the participating students gained hands-on experience in environmental stewardship.

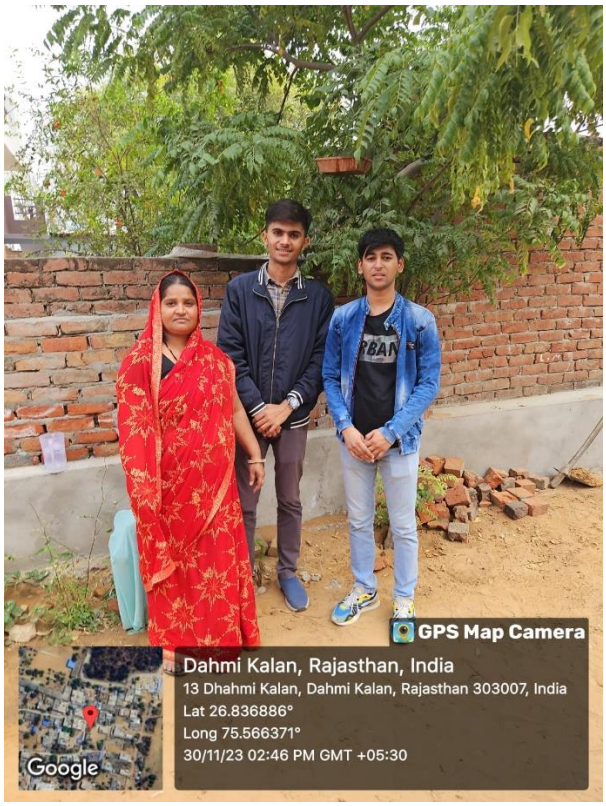
4. **Details of the Guests**

The event was laid by the students of BBA.

5. **Brief Description of the event**

The activity involved the installation of bird nests in the nearby village of Manipal University, with students and faculty members actively engaging in the process. Participants worked together to strategically place the nests, considering the local ecology and the needs of various bird species. The event not only contributed to the local environment but also provided a unique learning experience for the students, emphasizing the importance of hands-on conservation efforts. Overall, the initiative aimed to create a positive impact on the local ecosystem while instilling a sense of environmental responsibility among the participants.

6. **Photographs**

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Google


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Google


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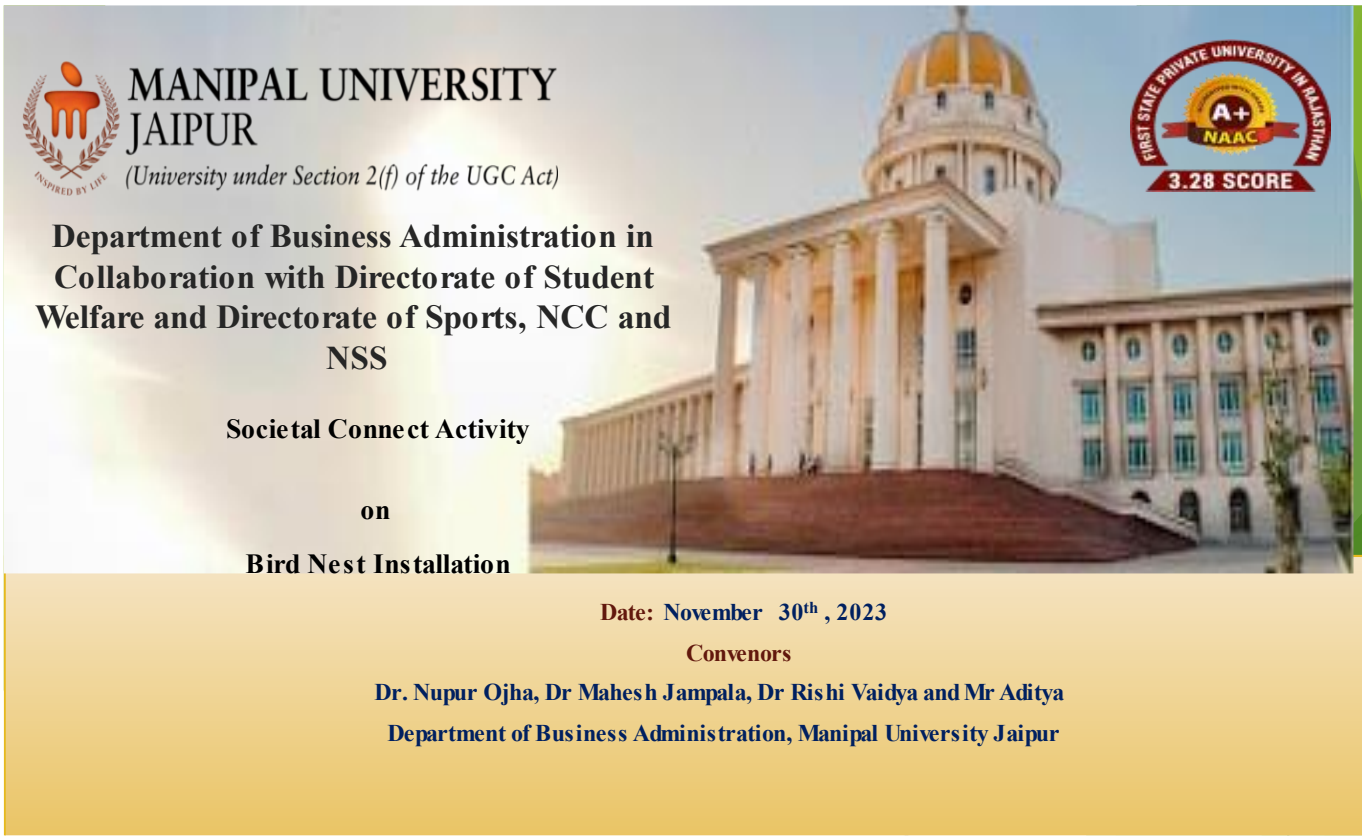
Google

7. Brochure or creative of the event



8. Schedule of the Event

The event took place on November 30, 2023

9. Attendance of the Event

Sr. No	Name of Institution	Registration Number/ Employee Code	Attendee Name
1	Manipal University Jaipur	MUJ0099	Dr. Mahesh Jampala
2	Manipal University Jaipur	MUJ1538	Dr Rishi Vaidya
3	Manipal University Jaipur	MUJ0623	Dr. Nupur Ojha
4	Manipal University Jaipur	MUJ1490	Mr. Aditya Dhiman
5	Manipal University Jaipur	23FM10BBA00204	DINESH CHOUDHARY
6	Manipal University Jaipur	23FM10BBA00200	VANSH MULCHANDANI
7	Manipal University Jaipur	23FM10BBA00214	GOPAL BISHNOI
8	Manipal University Jaipur	23FM10BBA00215	AKSHAT SHARMA
9	Manipal University Jaipur	23FM10BBA00216	KHUSHWANT SANKHLA
10	Manipal University Jaipur	23FM10BBA00205	AYUSHMAN GUPTA

Head
Department of Business Administration
Manipal University Jaipur

MUJ/DSW/Society Connect/ Oct2023/03

MANIPAL UNIVERSITY
JAIPUR

DIRECTORATE OF STUDENT'S WELFARE

(SOCIETY CONNECT)

#DAANUTSAV 2023

Plantation Drive

3rd October 2023

Date: 3rd October 2023

Index

1. Introduction of the Event

"A nation that destroys its soils destroys itself. Forests are the lungs of our land, purifying the air and giving fresh strength to our people." Trees are indispensable for life. Man can't live without trees. However, the present condition of forests in the world, especially developing countries is pathetic and miserable. Forests are the source of life. They are the giving angels. They give man oxygen, rains, wood, fruit, make the world look so beautiful, yet the sinister man kills them! Who will be more inhumane than man himself? Cutting of forests ultimately endangers man's own existence. Trees are important to the environment; they recycle water and process carbon dioxide in the atmosphere through photosynthesis. They are the world's full-time purifiers of air and water. Their cutting will disturb the natural water cycles which will lead to the shortage of fresh water in the water reserves of the world.

Rotaract Green Club under Society Connect organized a Plantation Drive on account of DAAN UTSAV 2031. It took place on the 3rd of October from 10 a.m. Students were taken to the Mahatma Gandhi School, Begus for the drive. The drive aimed to instill a sense of discipline and respect for the environment while doing our part.

2. Objective of the Event

- Spread awareness on the importance of afforestation
- Direct students' mind in constructive activities
- Contribution to the society
- Promote tree planting
- Create awareness regarding importance of ecology
- Attempt at reducing pollution and improve green ambience

3. Beneficiaries of the Event

Community

4. Brief Description of the event

Rotaract Green Club organized the Plantation Drive on the 3rd October at 9 a.m. on account of DAAN UTSAV 2023. The drive's main aim was to direct student's mind

in constructive activities with the positive outcome through the facilitation of contributing to the nature and environment.

It also aimed at spreading awareness about the effects of global warming and the positive effects of planting trees. The students gathered on campus to go to the Mahatma Gandhi School, Begus.

The students participated in the drive enthusiastically and helped each other in planting the saplings. All the saplings were planted in the school ground by students. Participants were highly energetic to make the event a big success. A spirit of teamwork, exchange of ideas and enthusiasm of the participants especially among the students could be seen. Pictures were taken. The drive was successfully conducted by planting 40-50 saplings.

5. Photographs of the event

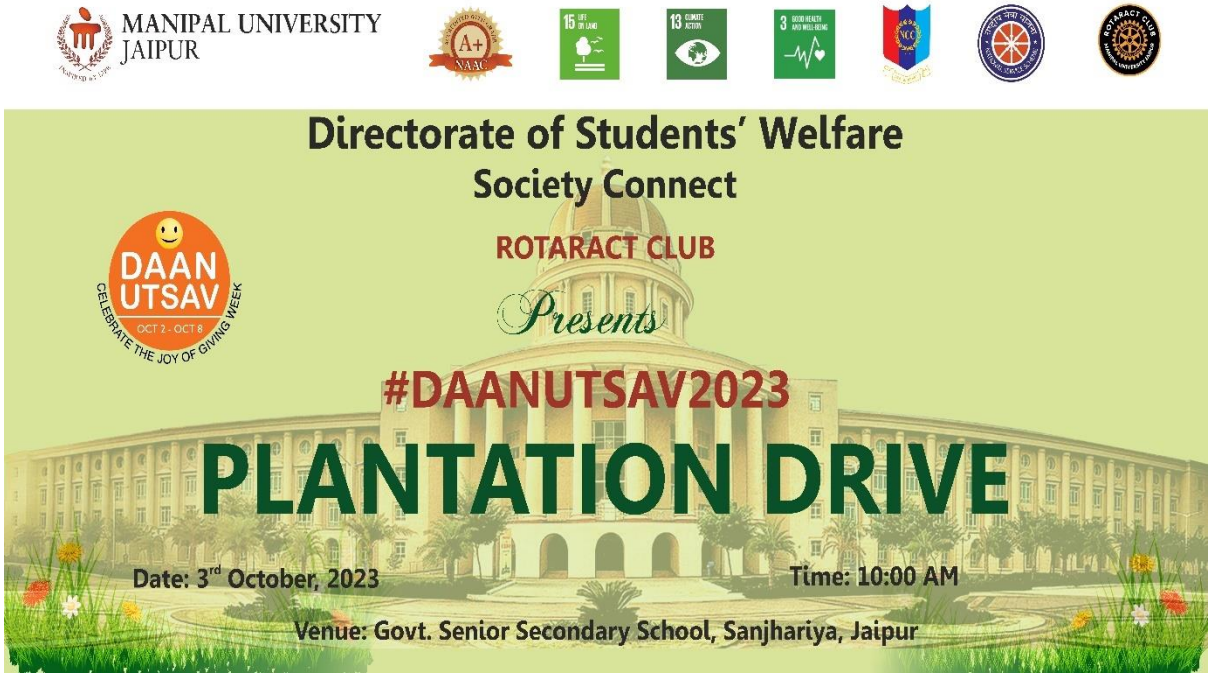
Image 1. Students and Faculty planting saplings

Image 2 Students participating in the Drive.

Students participating in the Drive.

Image 4 Giving the manure to the newly plant samplings

6. Brochure or creative of the event



Plantation Drive

7. Schedule of the event

S.NO.	Name of the Event	Time	Place
1.	Plantation Drive	10:00 AM	Mahatma Gandhi School (English Medium) Begus.

A bus from MUJ was taken to the school in the morning.

8. Attendance of the Event

Total attendee- 67

S.No.	Reg. NO.	Name of Students	Institute Name
1	23FE10ITE00079	Amisha anand	Manipal University Jaipur
2	23FE10CAI00360	shaivi adesh	Manipal University Jaipur
3	23FE10CSE00060	Amay Garg	Manipal University Jaipur
4	23FE10CDS00177	Manas Mathur	Manipal University Jaipur
5	23fe10bte00029	Saloni kamal	Manipal University Jaipur
6	23FE10CSE00508	Dev Dhawan	Manipal University Jaipur
7	23fe10cii00035	Bhargavi Anand	Manipal University Jaipur
8	220606004	Pranjal Puri	Manipal University Jaipur
9	23FA10BSP00028	Anupama Rustagi	Manipal University Jaipur
10	23FE10CCE00085	Siddhartha tiwari	Manipal University Jaipur
11	23FA10BAP00002	Tanisha Mathur	Manipal University Jaipur
12	23FD10BFD00009	Mariya Shabbir Baiwala	Manipal University Jaipur
13	23FE10CDS00224	Harsh Ajmera	Manipal University Jaipur
14	23fe10cds00125	Suryanshi Singh	Manipal University Jaipur
15	23fs10mat00009	Malavika ramdas	Manipal University Jaipur
16	221007021	Arshi Jain	Manipal University Jaipur
17	23FE10CSE00137	Stuti Dixit	Manipal University Jaipur
18	23fe10cii00094	Aarohi Tyagi	Manipal University Jaipur
19	23FE10CSE00152	Gautam Kakkar	Manipal University Jaipur
20	23FE10CSE00318	Krish Ray	Manipal University Jaipur
21	23FE10CII00076	Kriissh Marwaha	Manipal University Jaipur
22	229310321	Shiv Rajput	Manipal University Jaipur
23	23FS10BIO00051	Ragini Singh Thakur	Manipal University Jaipur
24	23FS10BIO00052	Anukriti sharma	Manipal University Jaipur
25	220901073	Diya Mittal	Manipal University Jaipur
26	23FE10CSE00081	Smmayan Gupta	Manipal University Jaipur
27	229309083	Raghav Gupta	Manipal University Jaipur
28	23FE10CDS00397	Hrishita Singh Timaney	Manipal University Jaipur
29	23FE10ITE00203	Sarah Sharda	Manipal University Jaipur
30	23fa10bsp00025	Jasleen kaur	Manipal University Jaipur

31	23FA10BSP00039	Jiya Kumar	Manipal University Jaipur
32	23FA10BSP00004	Aarya Mahale	Manipal University Jaipur
33	220606020	Chaarvi Kumar	Manipal University Jaipur
34	23fa10bsp00058	Kashvi Mahajan	Manipal University Jaipur
35	229301095	Shaurya Singh	Manipal University Jaipur
36	23fe10ece00024	Kushagra agrawal	Manipal University Jaipur
37	23FA10BSP00017	Megha Sharma	Manipal University Jaipur
38	23FM10BBA00162	Alina Nadeem	Manipal University Jaipur
39	23FM10BBA00178	Avishi Akhaury	Manipal University Jaipur
40	221007004	Urvi Thakare	Manipal University Jaipur
41	23FA10BAP00027	Natasha Joan Menezes	Manipal University Jaipur
42	23FA10BLE00004	Tanisha chaturvedi	Manipal University Jaipur
43	23fe10cai00579	Arjun Malhotra	Manipal University Jaipur
44	23FE10CAI00352	Maanyata Aul	Manipal University Jaipur
45	220901322	Divyanshi Singh	Manipal University Jaipur
46	229310412	Jatin Verma	Manipal University Jaipur
47	229301094	Yashovardhan Pratap Singh	Manipal University Jaipur
48	23FM10BBA00348	Niska kedia	Manipal University Jaipur
49	221105005	Dhruv Nair	Manipal University Jaipur
50	23FM10BBA00170	Shambhavi Agrawal	Manipal University Jaipur
51	23FE10CDS00241	Armaan Setia	Manipal University Jaipur
52	23FE10CAI00105	Mritunjay Singh	Manipal University Jaipur
53	229311075	Aarna Tyagi	Manipal University Jaipur
54	229302051	Prince jindal	Manipal University Jaipur
55	23FA10BHE00035	Taneesha puri	Manipal University Jaipur
56	220903033	Suhani Jain	Manipal University Jaipur
57	220901391	Dipika Agarwal	Manipal University Jaipur
58	229310222	Aayush Sharma	Manipal University Jaipur
59	221003007	Yachna Jain	Manipal University Jaipur
60	220901002	Anshu jangir	Manipal University Jaipur
61	23FE10CDS00284	Anant Barjatya	Manipal University Jaipur
62	221015074	Rupal Sharma	Manipal University Jaipur
63	23fa10bsp00047	Vartika Agarwal	Manipal University Jaipur
64	23FA10BSP00041	Kali Vithlani	Manipal University Jaipur
65	23FM10BBA00030	Harshal Saini	Manipal University Jaipur
66	23FE10CSE00746	Daksh Sharma	Manipal University Jaipur
67	23FS10BIO00034	PC Rahul	Manipal University Jaipur

9. Feedback of the Event:- The students participated enthusiastically.

(Hemant Kumar)

Assistant Director, Society Connect

Directorate of Student's Welfare

DIRECTOR STUDENT WELFARE & PROCTOR
MANIPAL UNIVERSITY, JAIPUR

(Prof. AD Vyas)

Director, Directorate of Student's Welfare

MANIPAL UNIVERSITY
JAIPUR

FACULTY OF ARTS

SCHOOL OF HUMANITIES AND SOCIAL SCIENCES

DEPARTMENT OF ARTS

Tree plantation Drive

Social outreach event in collaboration with DSW and NCC

06/09/2023

Index

1. **Introduction of the Event**
   The Department of Arts in collaboration with the DSW (NCC and NSS) organized a tree plantation drive with a number of BA(Liberal Arts) students.

2. **Objective of the Event (bullet points or about 50 words)**

To make the students aware of the importance of tree plantation.

3. **Beneficiaries of the Event**

   Government school, Begas, an adopted school of MUJ

4. **Brief Description of the event**
   The Department of Arts in collaboration with the DSW (NCC and NSS) organized a tree plantation drive with a number of BA(Liberal Arts) students. The objective of the event was to make the students aware of the importance of tree plantation.

5. **Photographs**

Students engaged in a tree plantation drive in the government school, Begas

MUJ students with the government school students

MUJ department students during the plantation drive

6. Brochure or creative of the event (insert in the document only)

8x4.5 feet

7. Schedule of the event (insert in the report)

6th September, 11:00 a.m. to 12:00 p.m.

8. Attendance of the Event (insert in the document only)

Total attendee-16

Sr. No	Name of Institution	Place of Institution	Name of Attendee	Name of Dept
1.	MUJ	Jaipur	Chandravardhan	Arts
2.	MUJ	Jaipur	Kumesh Mishra	Arts
3.	MUJ	Jaipur	Soumya Pareek Dhanushree	Arts
4.	MUJ	Jaipur		Arts
5.	MUJ	Jaipur	Karan Mallick	Arts
6.	MUJ	Jaipur	Vanshika Agarwal	Arts
7.	MUJ	Jaipur	Prithviraj	Arts
8.	MUJ	Jaipur	Akshatt Singh	Arts
9.	MUJ	Jaipur	Dhruv Nair	Arts
10.	MUJ	Jaipur	Krishna	Arts
11.	MUJ	Jaipur	Gaury	Arts
12.	MUJ	Jaipur	Sudeepti Dhruv Dahiya	Arts
13.	MUJ	Jaipur	Aditi Panigrahi	Arts
14.	MUJ	Jaipur	Aradhya Khandelwal	Arts
15.	MUJ	Jaipur	Komal Chadha	Arts
16.	MUJ	Jaipur	Krritika Khandelwal Pragya Sharma	Arts
17.	MUJ	Jaipur	Prachi Randhawa	Arts
18.	MUJ	Jaipur	Gurmehr Singh	Arts
19.	MUJ	Jaipur	Himmat di Charan	Arts
20.	MUJ	Jaipur	Sameer Khan	Arts
21.	MUJ	Jaipur	Ananya Thakur	Arts
22.	MUJ	Jaipur	Harshita Das	Arts
23.	MUJ	Jaipur	Manan Sharma	Arts

24.	MUJ	Jaipur	Surendra Singh	Arts
25.	MUJ	Jaipur	Joy Tak	Arts
26.	MUJ	Jaipur	Soumya harma	Arts
27.	MUJ	Jaipur	Deepak	Arts
28.	MUJ	Jaipur	Anup Choudhary	Arts
29.	MUJ	Jaipur	Prithviraj Hada	Arts
30.	MUJ	Jaipur	Tanisha Vashisht	Arts

9. Link of MUJ website stating the event is uploaded on website

https://jaipur.manipal.edu/muj/news-events/events-list.html

Dr. Mani Sachdev
Head, Department of Arts
Manipal University Jaipur

15.9.23

Seal and Signature of HOD

DIRECTOR STUDENT WELFARE & PROCTOR
MANIPAL UNIVERSITY, JAIPUR

(Prof. AD Vyas)
Director, Directorate of Student's Welfare

MANIPAL UNIVERSITY
JAIPUR

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Students engaged in a tree plantation drive in the government school, Begas


GPS Map Camera
Begas, Rajasthan, India
VHF2+FP2, Begas, Rajasthan 303007, India
Lat 26.873903°
Long 75.552877°
06/09/23 11:26 AM GMT +05:30
Google

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7.	MUJ	Jaipur	Prithviraj	Arts
8.	MUJ	Jaipur	Akshatt Singh	Arts
9.	MUJ	Jaipur	Dhruv Nair	Arts
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MANIPAL UNIVERSITY, JAIPUR

(Prof. AD Vyas)
Director, Directorate of Student's Welfare

EVENT REPORT

MANIPAL UNIVERSITY
JAIPUR

FACULTY OF DESIGN

HERITAGE CLUB

School of Architecture and Design

FOOD WALK

Walled City, Jaipur

18th FEBRUARY 2023

Contents

1. Introduction of the Event:

Heritage Club, School of Architecture and Design conducted a Food walk through a well curated route in the walled city of Jaipur for the students of MUJ, where students got to explore the Heritage City of Jaipur through its tasty delicacies while also enjoying the religious vibe in the walled city on the occasion of Mahashivratri.

2. Objective of the Event:

The curated route of Food Walk took the participants to the pink city in order to help them appreciate and admire the following –

- The scrumptious local delicacies along with their specific history.
- The streets featuring continuous small scaled shops and local vendors that thrive upon the city's heart.
- The built heritage of walled city, as the route also covered prominent architectural structures such as Hawa Mahal, Tripolia Gate and Tarkeshwar temple(one of the most prominent shiva temple in Jaipur) etc.

3. Beneficiaries of the Event:

- Students from all faculties of MUJ.
- Faculty members of MUJ

4. Brief Description of the event:

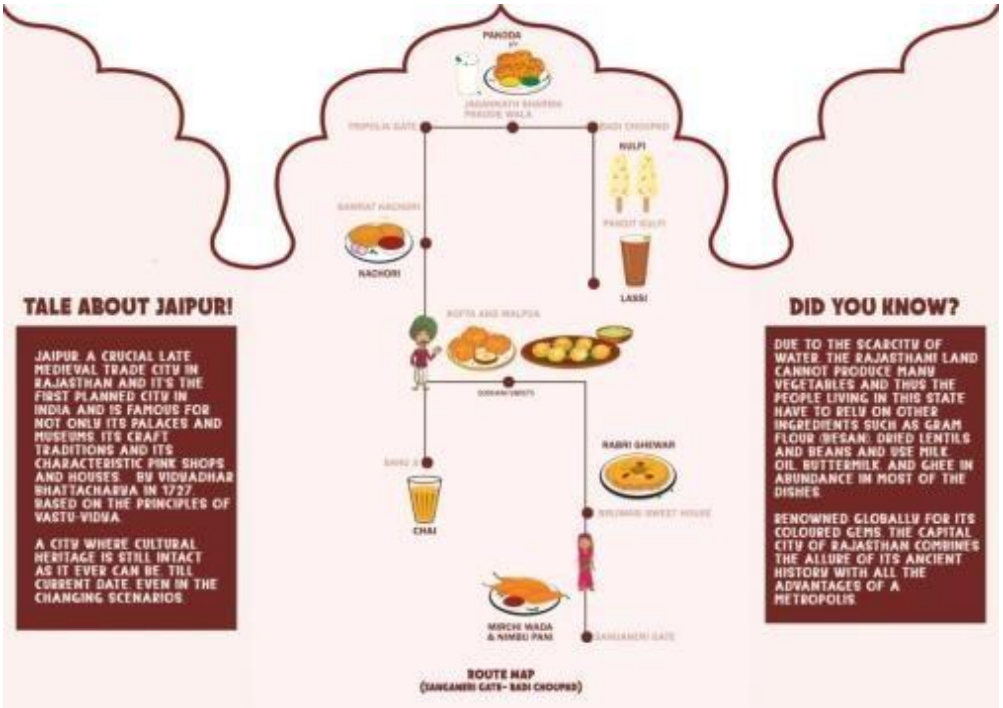
Heritage Club (School of Architecture and Design) conducted a Food Walk in the Walled City of Jaipur to acquaint the student fraternity of MUJ with the food delicacies and heritage beauty of Jaipur, on 18th February 2023. The food walk included several food items which offered different tastes of local Rajasthani cuisines where students could appreciate and admire the taste.

This Food Walk was the third physical event of the Heritage Club, but first of its kind ever. The walk began from Sanganeri Gate and terminated at Zaleb Chowk (route details as per brochure on the following page). Besides briefing about the history of the traditional bazaars, participants were also enlightened about the legacy of diverse cuisines by the enthusiastic food vendors themselves who showed utmost hospitality to the group of students and faculties.

The food menu provided a variety of items ranging from local drinks like nimbu pani to snacks like mirchi bada, kachoris & pakoras to sweets like ghewar and kulfi. The portions of all food items were specially made uniquely after requesting the vendors so that the portions then become easily consumable by a single person. Hence, everyone got an opportunity to taste all items (and the walk made it easy to digest them and create an appetite for the next item).

The walk ended with a positive feedback and contentment by all the participants. Mementos (key chains) created in-house by the club and school were distributed to everyone as a token of memory and gratitude. E-certificates were also given to all participants and volunteers of the event.

5. Brochure of the event



6. Photographs of the event.

Picture 1- Participants of the Food Walk

Picture 2-Sodhani Sweets (2nd stop)
Food vendors presenting the importance and making of malpua and aloo vada along with the narrative on when the shop was opened.

Picture 3- Sahoo Restaurant (3rdstop)
Participants having a break with Tea.

Picture 4 – Jagannath Pakode Wale (4th stop).

Picture 5- Pandit Kulfi (last stop).

7. Attendance of the Event:

ID	Name2	Registration Number	Course & Branch	h/d	Contact	Signature
1	Divyesh Shankla	210501003	Barch	Day scholar	9894699992	
2	Mansi	200501024	B.arch	Day scholar	7877991098	
3	Ria Rattan Kotwal	210501028	B.Arch	Hosteler	7406524738	
4	Jai	200901001	BBA	Hosteler	969093693	
5	Sonali	211002041	Bio science	Hosteler	8770273605	
6	Sanchoita	200606015	B.ARCH	Hosteler	8408803378	
7	Hrishita Kesarwani	229303266	Cse ai ml	Hosteler	9922490410	
8	Anjali Adhikari	210501025	B Arch	Hosteler	9733182131	
9	Priya Agarwal	211002006	Bsc biotechnology (biosciences)	Hosteler	7061587976	
10	Bhavesh Khemka	210501009	Architecture	Day scholar	9116006663	
11	Athrav	219301466	Btech cse	Hosteler	9833094011	
12	Shashank Goyal	211002043	Bio science	Hosteler	9024935154	
13	Naman Agrawal	219303093	B.Tech CCE	Hosteler	7013464852	
14	Riddhi Daga	211201064	BJMC	Hosteler	9331214622	
15	Vivek Anand	210901312	Business Administration	Hosteler	8610310054	
16	Yashi Shree	229301030	Btech	Hosteler	9599147349	
17	Dr. Subhash Devrath	-	-	Day scholar	9571188767	
18	Mrs. Suman Devrath	-	-	Day scholar	9571188767	
19	Tejashwini joshi	210901112	BBA marketing	Hosteler	6309335977	
20	Harshita mandhra	220501018	Architecture	Hosteler	9610814620	
21	Vaishnavi shukla	210501022	Barch	Hosteler	7607694292	
22	Anaya	221151002	1 year phd	Hosteler	7889559667	
23	Abhik	220502004	M.arch	Day scholar	7873726178	
24	Ankita Shrivastava	220501012	B. arch	Day scholar	8839638509	
25	PRACHITA BHIWAPURKAR	200501001	B.ARCH	Hosteler	9898711500	
26	Aarshia Chauhan	229302370	BTech IT	Hosteler	9710000136	
27	Vaidehi Agarwal	229302245	Btech IT	Hosteler	9999367467	
28	Arpita garg	229303156	Btech with cce	Hosteler	7983182007	
29	Shriya	220501014	B.arch	Hosteler	9599571767	
30	Kasvi Soni	229311033	Btech cse with iot	Hosteler	9650848355	
31	MOULESH MR	220501005	B arch	Hosteler	9087023888	
32	Rudr Sikaria	220801018	BHM	Hosteler	8638136126	
33	Ahaana Verma	221015001	BCA	Hosteler	9315421451	
34	Mehma singh	220801003	Bhm management	Hosteler	7267984000	
35	Yash bhargava	221201025	BAJMC	Hosteler	8458922968	
36	Divyansh	229310407	CSE(AI&ML)	Hosteler	7082947781	
37	Anjali choudhary	211002005	Bsc biotechnology	Hosteler	6367051288	
38	Ikshita Bagla	220501021	B.Arch	Hosteler	9336057274	
39	Sajal panwar	220501002	B.arch	Hosteler	9667899121	
40	Mustansir kanchwala	220903021	B.com honours	Hosteler	8871600661	
41	Rijul Chaudhary	220501003	B.arch	Hosteler	8433130649	
42	Aarya Chandiramani	220501010	B.arch	Day scholar	8852953085	
43	Arghya Bhagwat	220501022	B.Arch	Hosteler	8219847663	
44	Pranjal Puri	220606004	B.des interior design	Hosteler	7727031282	
45	Vedika Gupta	221007014	BSc psychology	Hosteler	9310489974	
46	Shinaya Badgujar	221105022	BA Liberal Arts	Day scholar	8209657590	
47	Ayamullah Khan	229309022	B.Tech	hosteler	8530044774	

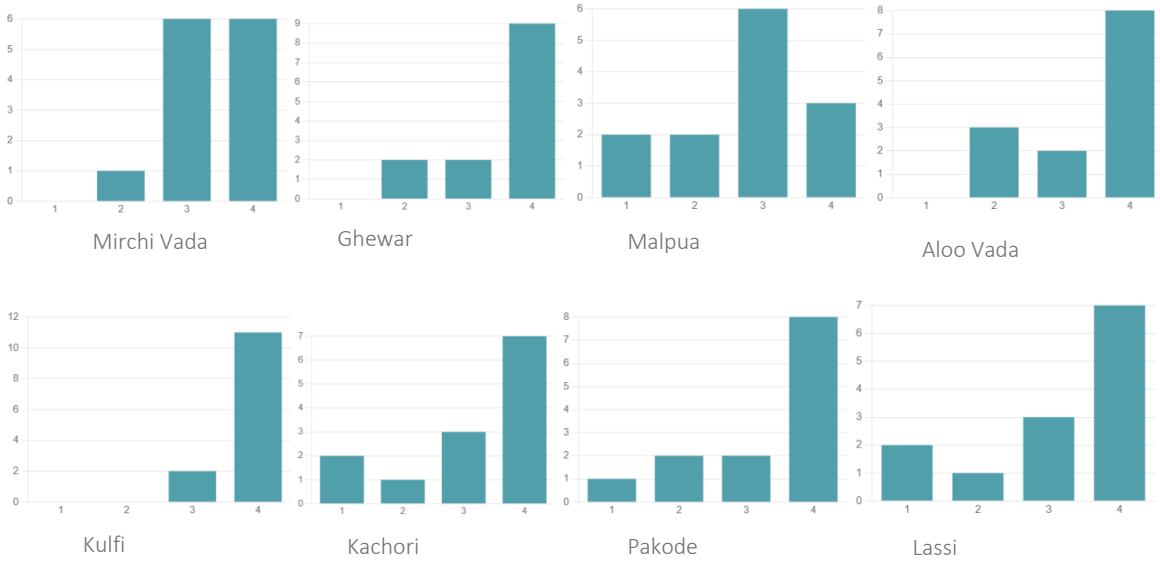
8. Feedback:

Students were amazed by the flavor of cuisines and had a boundless experience while exploring local markets and historical sites through the organized route. They cherished and gave a positive response towards organizing such walks and events in future.

Following is the feedback collected through Google Forms-

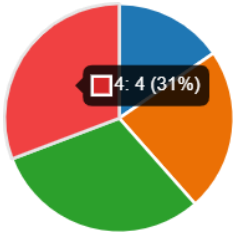
Response to each food items by students-

1-Not Bad; 2-Good; 3-Very Good; 4-Delicious

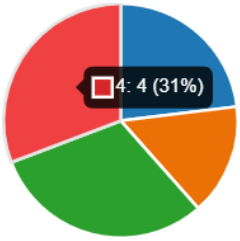


- Route curated for the walk-

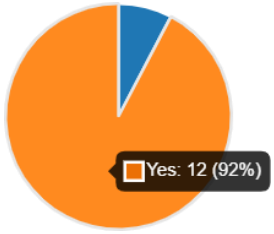
  1-Very Satisfied; 2-Satisfied; 3-Neutral; 4-Unsatisfied



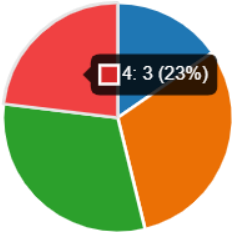
- Walk to be informative-



- Order of the Food Items-



- Overall Experience-



- Feedbacks from Students through forms-

  "Walk was well organized". – Bhavesh Khemka

"Good event... Enjoyed very much". – Rudr Sikaria

"It was a very great experience. Tasting different food items I have never heard of was superb". - Mansi

9. Post event link-

10. Faculty Coordinator:

Signature of Faculty Coordinator
Ar. Ayushi Sharma
Assistant Professor, SA&D
9660311113

Signature of Faculty Coordinator
Ar. Neha Saxena
Associate Professor, SA&D
9950158160

Assistant Director, DSW

DIRECTOR STUDENT WELFARE & PROCTOR
MANIPAL UNIVERSITY, JAIPUR

EVENT REPORT

MANIPAL UNIVERSITY
JAIPUR

FACULTY OF DESIGN

HERITAGE CLUB X CACTUS

School of Architecture and Design

SAGUARO

12th & 13th APRIL 2023

Contents

1. Introduction of the Event:

Heritage Club, School of Architecture and Design in collaboration with Cactus Community conducted an event **'SAGUARO'** in hostel of Manipal University of Jaipur on 12th & 13th April 2023 The event was open for all the hostellers to let them work together and explore heritage buildings. Heritage Club arranged activities which enabled students to explore, discover and acknowledge the built heritage.

2. Objective of the Event:

The Saguaro event helped the students to appreciate and explore the following-

- To let the students of hostels and day scholars to interact through activities.
- To engage them with activities, explore diversity and culture through letting them solve the puzzles of famous heritage buildings and paint them through mosaic art such as Lotus Temple, Red Fort, Gateway of India, Victoria's Memorial, Hawa Mahal, Golden Temple and Taj Mahal.

3. Beneficiaries of the Event:

- All the students of Manipal University Jaipur.

4. Brief Description of the event:

Heritage club conducted different activities such as Mosaic Painting and Puzzle Solving along with retailing of few items such as postcards, bookmarks and keychains. All of these products were designed and manufactured by the students of Heritage Club themselves which promised featuring unique designs, creative ensembles and heritage decors along with engaging activities such as puzzle solving and mosaic painting.

- **Mosaic Painting** included 2 different Heritage buildings (Golden Temple and Hawa Mahal). The canvas for mosaic paintings were created in the form of grid which the students had to paint as per the building profile.
- **Puzzle solving** activities kept the students engaged rigorously. The puzzle was made in the profile of heritage building such as Taj Mahal, Red Fort, Lotus Temple, Gateway of India and Victoria's Memorial. These were laser cut on medium fibre boards to let the student perform as a time solving problem.

5. Brochure of the event.

6. Photographs of the event.

Picture 1- Participants of the Saguaro event.

Picture 2 – Retailing items.

Picture 4 – students enthusiastically participating in mosaic painting

Picture 5- Desk setup at hostel

7. Attendance of the Event:

*Since it was an on-desk walk-in setup, no formal record of attendance could be maintained.

However, a footfall of over a thousand students was observed on the 3 days.

8. Feedback:

The students were engaged with the activities for a long time, hence having them amazed and inspired by India's heritage.

Students enjoyed mosaic painting and puzzle solving activities the most as it helped them stay curious and acknowledge the heritage culture.

9. Post event link

10. Faculty Coordinator:

Signature of Faculty Coordinator
Ar. Ayushi Sharma
Assistant Professor, SA&D
9660311113

Signature of Faculty Coordinator
Ar. Neha Saxena
Associate Professor, SA&D
9950158160

EVENT REPORT

MANIPAL UNIVERSITY
JAIPUR

FACULTY OF DESIGN

HERITAGE CLUB IN COLLABORATION WITH AIC,MUJ

School of Architecture and Design

EXPLORING HERITAGE THROUGH VIRTUAL REALITY

18th APRIL 2023

World Heritage Day

Contents

1. Introduction of the Event:

On the occasion of **World Heritage Day on 18th April 2023**, Heritage Club, School of Architecture and Design celebrated this day by conducting an event by showing the futuristic prospects of the built heritage using artificial intelligence with virtual reality with the support of Atal Incubation Centre, MUJ. Atal Incubation Centre serves as a platform for nurturing innovative ideas, promoting entrepreneurship, supporting innovators, mentoring youth in general and women in particular.

2. Objective of the Event:

The Virtual Reality event helped the students to appreciate and explore the following-

- The heritage and cultural diversities around the world.
- Working with artificial intelligence and experience the digital world through virtual reality.
- Understanding how to decode the architecture of "then" in the world of "today" using the latest technology.

3. Beneficiaries of the Event:

- Students of 1st Yr B.Arch
- Students of 2nd Yr B.Arch
- Students of 3rd Yr B.Arch
- Faculty members of School of Architecture and Design.

4. Brief Description of the event:

Heritage Club (School of Architecture and Design) with Atal Incubation centre conducted an event to experience the virtual reality to explore heritage around the world. The event was organised at Manipal University Jaipur, Atal Inclubation VR Lab on 18th April 2023 to celebrate the World Heritage Day.

The event started off with the presentation explaining the emerging technology- artificial intelligence and growth of virtual reality through experts and heritage club members. Later, each participant of the event were taken to the lab where they explored different heritage sites and places through virtual reality, using the VR headsets.

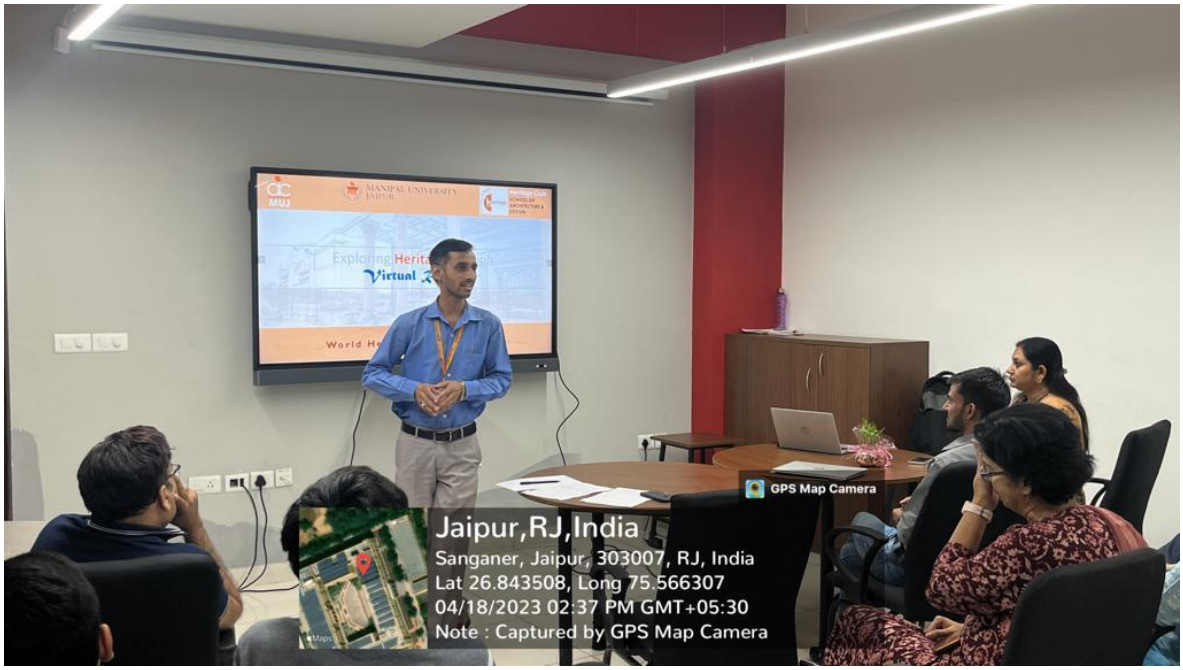
Schedule of the event:

Sr. No	Time	Schedule
		INAUGURATION
1.	2:00 – 2:15 pm	Welcome note by Prof. (Dr.) Madhura Yadav, Dean FoD and Prof. (Dr.) Sunanda Kapoor, Head, SA&D Address by Dr. Amit Soni, CEO, AIC
		SESSION - 1
2.	2:15 – 2:35 pm	Orientation to VR Technology by AIC, MUJ
3.	2:35 – 2:55 pm	Application of VR in Heritage by Ar. Neha Saxena, Asso. Prof., Ar. Bibhu Nayak, Asst. Prof. and Ar. Ayushi Sharma, Asst. Prof., SA&D
		SESSION - 2
4.	3:00 pm onwards	Exploration of heritage monuments through VR sets – Faculty and Students

5. Brochure of the event.

6. Photographs of the event.

Picture 1 & 2- Expert faculty members providing a briefing



Picture 3 – Club members and AIC expert elaborating upon the aspects of virtual reality

Picture 4- Question and answer round

Picture 5 & 6- Faculty members exploring the virtual world

Picture 7 & 8 - students exploring and visualizing realistic places at virtual level

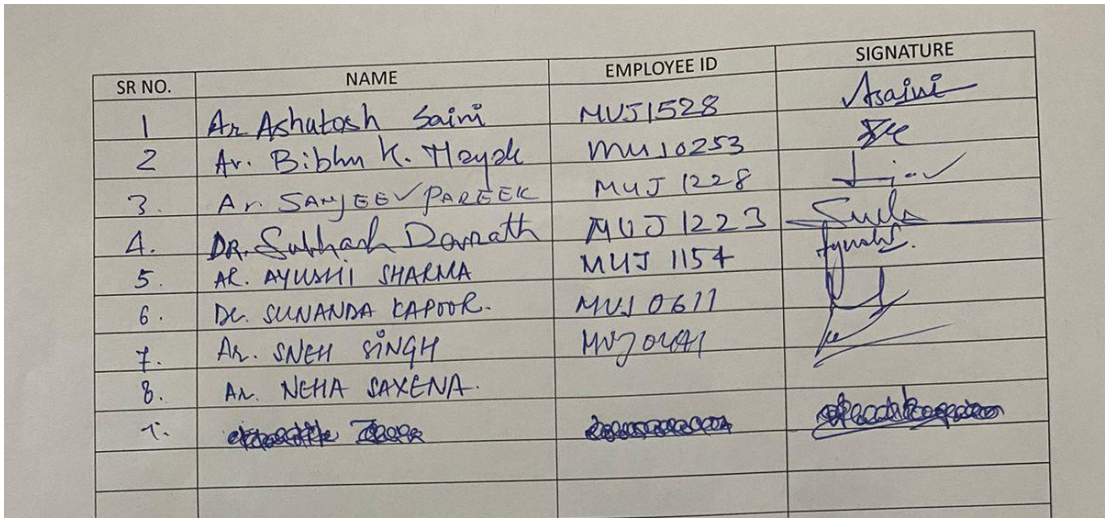
Picture 9- students exploring and visualizing realistic places at virtual level

7. Attendance of the Event:

Students-

SR NO.	NAME	REG NO.	SIGNATURE
1.	CHIRAG GURNANI	210501026	
2)	Kartik Gehlot	210501005	
3)	Vaishnavi Shukla	210501022	
4)	Prachita Bhiwapurkar	200501001	
5)	Priyangana Kaushik	200501004	
6)	Aditi Didwania	200501012	
7)	Divya Rathore	200501020	
8)	Hardik Jain	200501017	
9)	Riddhi Soni	210501027	
10)	Aishmeen Kaur	210501015	
11)	Trisha Chowdhury	180501019	
12)	Vaishnavi Shukla	210501022	
13)	Sahil Chaggar	210501004	
14	Aishwarya Singh Rathore	210501021	

Faculties members-



SR NO.	NAME	EMPLOYEE ID	SIGNATURE
1	Ar. Ashutosh Saini	MUJ1528	
2	Ar. Bibhu K. Nayak	MUJ0253	
3.	Ar. SANJEEV PAREEK	MUJ 1228	
4.	DR. Subhash Devratth	MUJ 1223	
5.	AR. AYUSHI SHARMA	MUJ 1154	
6.	Dr. SUNANDA KAPOOR.	MUJ 0611	
7.	Ar. SNEH SINGH	MUJ0484	
8.	Ar. NEHA SAXENA.		
9.			

8. Feedback:

Students and Faculty members found the workshop for virtual reality very helpful in visualizing the built heritage with greater experience. The demonstrations and understandings let the participants explore in the virtual world.

Some Feedbacks through forms-

Ar. Sunanda Kapoor (Head, Architecture)	It was an amazing experience to be at VR lab. The 2 hour demonstration has given an insight about the application in exploring different sites which can be visited personally.
Dr. Subhash Devratt (Asso Prof. SA&D)	Simply amazing experience for real world by virtual medium.

9. Post event link:

10. Faculty Coordinator:

Signature of Faculty Coordinator
Ar. Ayushi Sharma
Assistant Professor, SA&D
9660311113

Signature of Faculty Coordinator
Ar. Neha Saxena
Associate Professor, SA&D
9950158160

MANIPAL UNIVERSITY JAIPUR

INSPIRED BY LIFE

SCHOOL OF ARCHITECTURE AND DESIGN

FACULTY OF DESIGN

05-Day Online Faculty Development Program in collaboration with CoA TRC, Bhopal on

‘Rethinking Building Byelaws & Planning Regulations’

Online : Zoom

23rd - 27th January 2023

Index

1. Introduction of the Program:

Building Byelaws play an important role in building design and its execution. Environmental cause, social aspects and economic processes have caused a significant shift in architectural thinking during the past few decades. It becomes important to impart the related knowledge regarding building byelaws and their sustenance over the time.

This program is an effort to provide an in-depth understanding of emerging scenarios and concepts related to building design and urban development. This FDP shall offer a platform to discuss the imperatives of building byelaws and regulations with respect to role of Urban Local Bodies paving way to crop solutions and guidelines particularly in Indian context.

The participants will be able to comprehend the change in thought process for a more optimum use of land and development under the impact of changing environmental, social, economic and political scenarios.

Hence, School of Architecture and Design, MUJ in collaboration with Council of Architecture, Training and Research Centre, Bhopal organized and conducted a 5-day online Faculty development program on **Rethinking Building Byelaws & Planning Regulations** from **23rd – 27th January 2023.**

2. Objectives of the Workshop:

- To impart knowledge about contextual understanding, sustainability, inclusivity, safety and security, functionality, cost-effectiveness, and aesthetic appeal within the regulatory realm.
- To encourage participants for implementing this knowledge while designing cities & buildings to achieve sustainability and cultural & heritage conservation.
- To enable participants in delivering quality, managing risks, and nurturing innovation to allow for maximized public interest of investment for the built environment.

3. Beneficiaries of the Event:

- Academicians
- Ph.D. Scholars
- Policy makers from the Department of Town Planning & Development Authorities
- Professionals from the field of Building construction & allied fields.

The specific SDG that are incorporated in the event -

SDG 3: Ensure healthy lives and promote well-being for all at all ages, SDG 6: Ensure availability and sustainable management of water and sanitation for all SDG 9: Industry, Innovation, and Infrastructure, SDG 11: Make cities and human settlements inclusive, safe, resilient and sustainable, SDG 15: Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss

4. Details of the Guests:

S.No.	NAME	DESIGNATION	TOPIC
1.	Ar. Shobhit Tayal	Architect Planner and Co-founder, Design and Planning Counsel	Enhancing the Quality of Life through Building Byelaws
2.	Prof. Anjali Sharma	Professor and Director, School of Architecture Planning and Design, DIT University	Building Byelaws – A tool for Preserving Image of the City
3.	Prof. Anand Khatri	Founding Director Urban Village Charitable Trust and Professor, AIT SAP	Critically Evaluating Building Bye-laws for Indian Cities: Academician Perspective
4.	Dr. Sandeep Sharma	Assistant Professor, Department of Architecture, National Institute of Technology, Hamirpur	Building Byelaws/Regulations for Resilience in India
5.	Ar. Mala Mohan	Retd. ADG (Arch), Military Engineering Service, Ministry of Defence	Building Byelaws for Healthcare Facilities
6.	Prof. (Dr.) Rajiv Mishra	Principal at Sir JJ college of Architecture, University of Mumbai	Reforms in Fire Code & Accessibility for all in Historic Buildings
7.	Prof. Jit Kumar Gupta	Founding Director COA, Bhaddal	Building Plan Approval Process and Systems.
8.	Dr. Shikha Jain	Founding Director, DRONAH	Heritage Bye Laws for Built & Natural sites
9.	Dr. Pawan Kumar	Associate Town and Country Planner in TCPO, New Delhi	Building Byelaws and Planning Practices in Hilly Region
10.	Dr. Monalisa Bhardwaj	Associate Professor at the Department of Architecture, Ramaiah Institute of Technology, Bangalore	Urban Design Development - Laws and guidelines in India.

5. Brief Description of the event:

The 5-day online Faculty Development Program on Rethinking Building Byelaws & Planning Regulations started with an inaugural & welcome by Hon. Director, CoA TRC Bhopal along with Dr. Madhura Yadav (Professor, Architecture and Dean, FoD) Chief Coordinator, Ar. Neha Saxena (Asso. Prof.) and Ar. Ayushi Sharma (Asst. Prof.), School of Architecture and Design, Manipal University Jaipur.

A summary of the sessions by all experts is as follows:

1. **Ar. Shobhit Tayal: Enhancing the Quality of Life through Building Byelaws**

According to Ar. Shobhit Tayal, the quality of life directly related to infrastructure of the place. A good infrastructure can be provided when we as professionals are continuously aiming for better progressive byelaws through practicing transparency in developing permissions and approvals. He also suggested, through examples of good initiative like Rajkot, the potential possibilities of revamping the zoning and special regulations and how the built form and public plazas in

commercial zones must be envisaged. Ar. Tayal aptly pointed out the myths that people relate to quality of life with built environment, density and building and FAR and building height relation and concluded that the same must be relative to land and building use.

2. Prof. Anjali Sharma: Building Byelaws – A tool for Preserving Image of the City

After having understood that the fire codes and norms do not mandatorily exist for the heritage buildings, due to which we have witnessed us some shocking and unfortunate incidents that have occurred in the last few years, which can be resolved using the context based byelaws.

She enlightened us with many ways that can be integrated and used by us professionals on how these byelaws can be integrated in the heritage context as well as for other built forms, along with the cooperation of urban local bodies Professor highlighted on the need of the hour to make the byelaws inclusive as per the image of the city with respect to all the stages of the project with distinctive regard to the immediate and local context.

She provokes each one of us to rethink our personal takes to make conscious efforts to deliver definite values, and to enhance the quality of life through building byelaws.

3. Prof. Anand Khatri: Critically Evaluating Building Bye-laws for Indian Cities: Academician Perspective

Prof. Anand Khatri initiated with explaining the development scenarios of cities, which helped us understand the changing dynamics with respect to both land values and ecology. He threw bright light on the subject of the new concept of ecological acquisition, which we need to look into carefully, as there are certain subject areas that need attention at city level, while others at a local or contextual level.

Therefore, in his perspective, we must all find means to take conscious steps towards formulating synergies between the urban formalities and informalities, and to not push out the urban informalities out of the city development strategies.

4. Dr. Sandeep Sharma: Building Byelaws/Regulations for Resilience in India

Dr. Sandeep Sharma initiated his talk with briefing about the comprehensive revisions and features that have been included in building byelaws and regulations in 2016 like Green Buildings, structural safety, high rise buildings, Swatchh Bharat Mission, Rain Water Harvesting, communication & technology, conservation of heritage sites and ease of building plan approvals through single window processes. He elaborated on various features through specific examples of hilly regions and states of India. According to him, byelaws must be resilient enough to correspond to the natural or man made disasters. Through his comparative analysis, he emphasized that regulations must be formulated to be region specific based on climate, topography and orientation, etc. He further stressed on the importance to establish minimum standards for building regulations for acceptable performance.

5. Ar. Mala Mohan: Building Byelaws for Healthcare Facilities

The importance of each and every factor that is involved in the designing and planning of a healthcare facilities, ranging from its site area to programming was explained in great detail. From smallest of details such as of corridor widths to ramps, each plays a crucial role in the functioning of a good hospital.

On the contrary, even in today's date these important details are not being paid the required attention and thought, as it is our moral duty to play our responsible roles in this regard, especially when it comes to healthcare facilities, be it in rural or urban setups.

6. Prof. (Dr.) Rajiv Mishra: Reforms in Fire Code & Accessibility for all in Historic Buildings

Through his expertise in heritage conservation, Prof. Rajiv Mishra shed light on reforms in fire code and accessibility that are a need of the hour for historic buildings. By Supreme Court Law, compliance with fire safety and accessibility is a mandate and it is the responsibility of professionals like us to do it sensitively. This shall enable a historic building to live by itself in the current scenario. He concluded by suggesting ways forward and roles of both practicing architects and academicians to sensitize the public as well as authorities to pay attention towards preserving our heritage.

7. Prof. Jit Kumar Gupta: Building Plan Approval Process and Systems

It is surprising to observe that even till date, the entire system of codes and regulations in India still remains complex in India. Our key role still remains to reduce the conflicts between the manmade and natural environments, as buildings have direct relations with human beings, their well being, health, external environment and other such factor. Henceforth, making it very important for us to have an in depth understanding of codes, norms, byelaws and regulations.

The changing typologies make buildings more susceptible to all kinds of damages and disasters, hence working in an exhaustive and extensive process will help us through all the stages of building design, till its approval which is one of the toughest stage, till its execution.

8. Dr. Shikha Jain: Heritage Bye Laws for Built & Natural sites

According to Dr. Shikha Jain different government authorities and private organizations are facing challenges for Heritage Management of our cultural heritage. Through, key highlights from Report on developing Research Project Database for Niti Aayog, as prepared by her organization DRONAH, she pointed out that from about 500000 heritage properties identified, only 10% have the status of being protected by central or state authorities. In this process, however, a paradigm shift has been observed on part of organizations, public and experts and they are taking dynamic initiatives towards listing and protecting our heritage. This is also setting an example for those who are still unaware or hesitant towards the noble cause.

9. Dr. Pawan Kumar: Building Byelaws and Planning Practices in Hilly Region

Dr. Pawan through his presentation has raised a concern on the critical conditions and challenges faced by hilly regions that need immediate attention and action. He emphasized that although there are many policies, regulations and bye laws in place, the same need to be upgraded to address the current concerns. For this, there needs to be a synergy amongst different agencies, departments and public both tourists and local communities. He also shared prevailing good practices and solutions that are happening as small initiatives locally and globally and according to him it is the need of the hour to incorporate these practices as part of local bye laws and regulations.

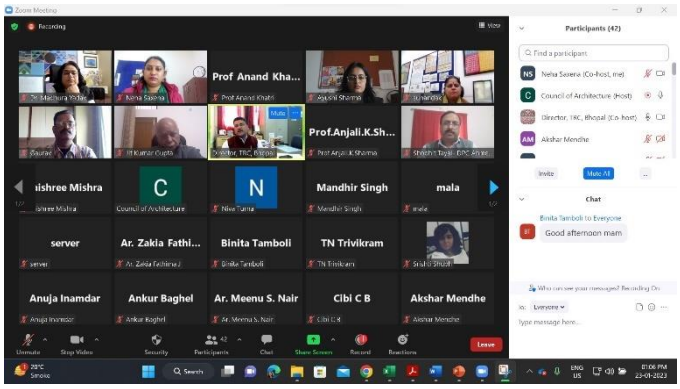
10. Dr. Monalisa Bhardwaj: Urban Design Development – Laws and Guidelines in India

Through her presentation Dr. Monalisa emphasized the importance of understanding the existing provisions and laws within the constitution of India. She mentioned that both tangible and

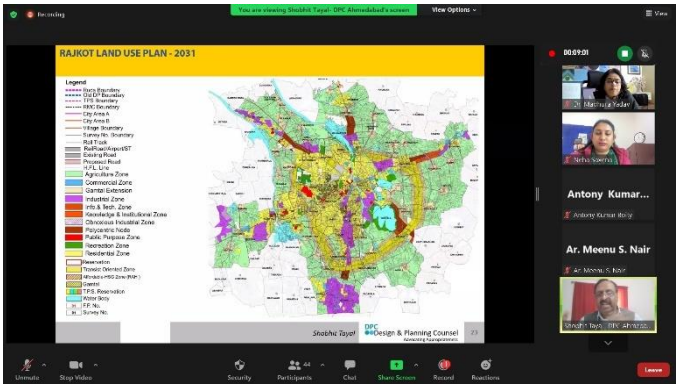
intangible aspects are already embedded in the constitution which need to be understood and implemented. While, the vision travels bottom to up, the approvals travel top to bottom, hence the complexity of processing needs to be realized. She also gave an overview of policies and roles of institution at different hierarchical levels and the interface between the urban and the rural. She quite clearly explained how policies translate into the Urban undertakings and illustrated the outcomes through examples.

The event concluded with a valedictory session and thanking all the experts and participants for their time and dedication. On the last day, an online MCQ and feedback form was circulated to all participants as a mandate (by CoA TRC, Bhopal) for receiving certificates for attending the five day online program. The event received overwhelming response from the participants and appreciation by CoA TRC, Bhopal for SA&D, MUJ as host institute.

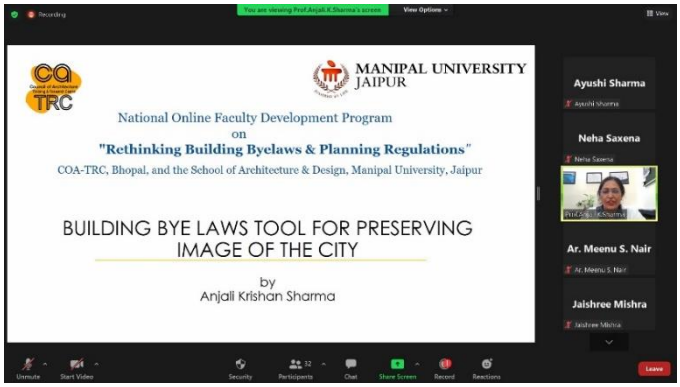
6. Screenshots of the event:



1. Inaugural Address by Hon. Director, CoA TRC, Bhopal and Prof. (Dr.) Madhura Yadav, Dean, FoD



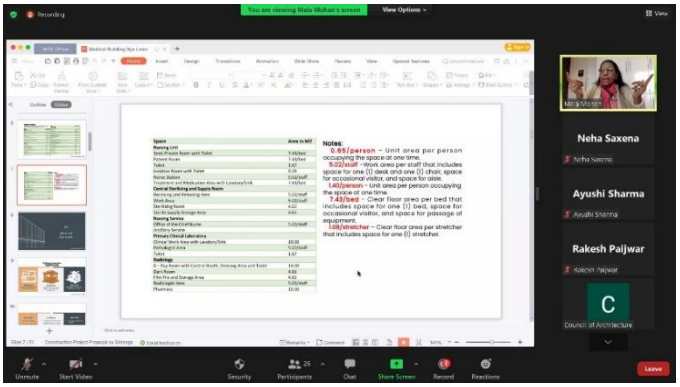
2. Session by Ar. Shobhit Tayal – Day 1 Session 1



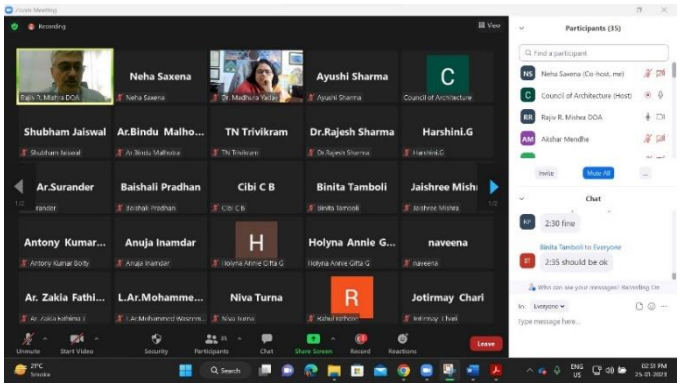
3. Session by Prof. Anjali Sharma – Day 1 Session 2

4. Session by Prof. Anand Khatri – Day 2 Session 1

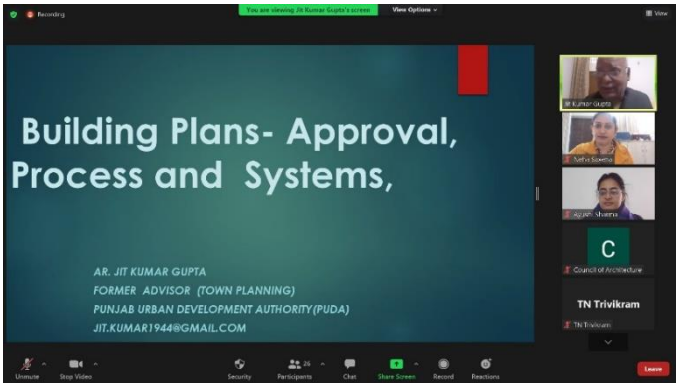
5. Session by Dr. Sandeep Sharma – Day 2 Session 2



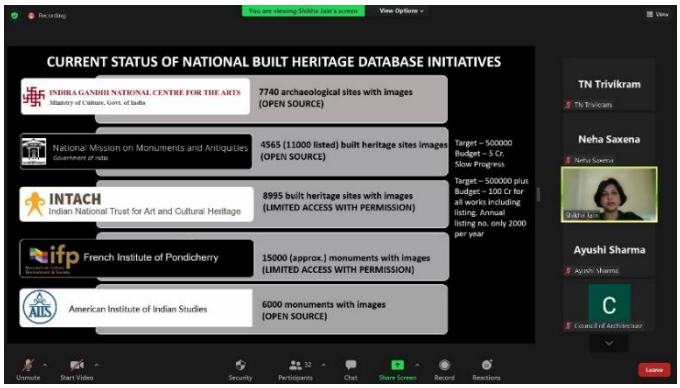
6. Session by Ar. Mala Mohan – Day 3 Session 1



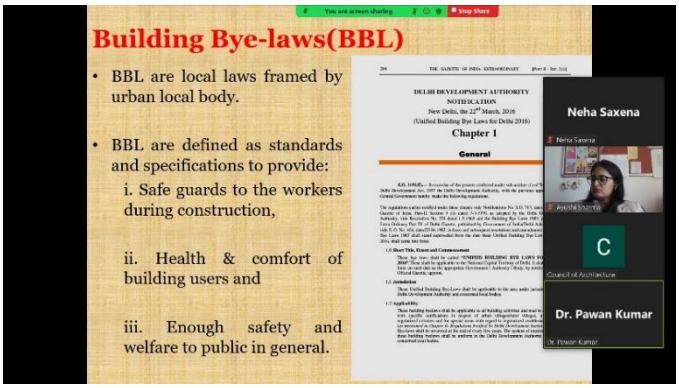
7. Session by Prof. Rajiv Mishra – Day 3 Session 2



8. Session by Prof. Jit Kumar Gupta – Day 4 Session 1

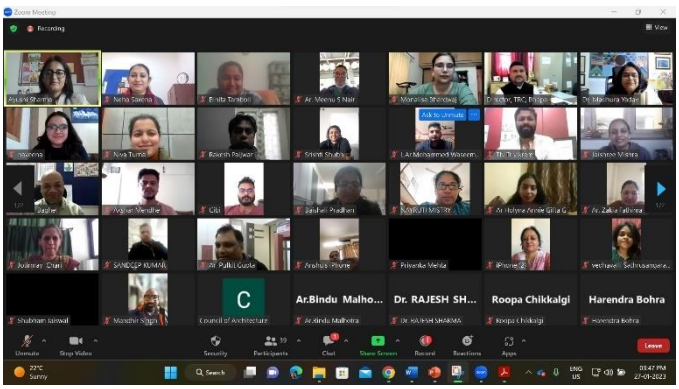


1. Session by Dr. Shikha Jain – Day 4 Session 2



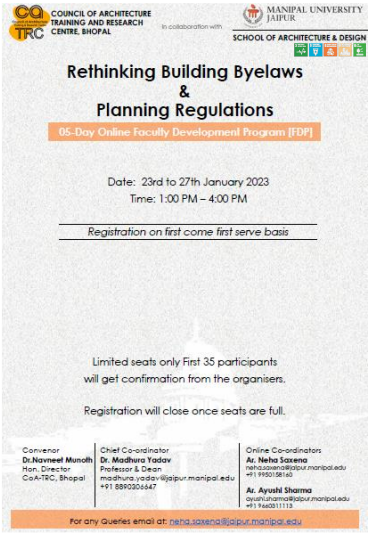
2. Session by Dr. Pawan Kumar – Day 5 Session 1

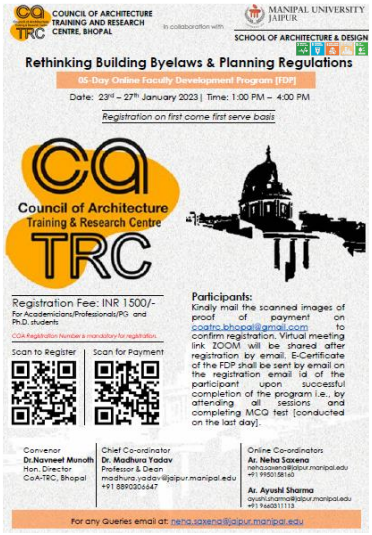
3. Session by Dr. Monalisa Bhardwaj – Day 5 Session 2



4. Valedictory Session with the participants and experts

7. Brochure of the event:





8. Schedule of the event

Day 1	12:45 pm - 1:00 pm		1:00 pm -2:30 pm	2:30 pm – 4:00 pm
23/01/2023 (Monday)	Inauguration		Session – 01	Session – 02
			Ar. Shobhit Tayal	Prof.Anjali Sharma
Day 2	12:45 pm - 1:00 pm		1:00 pm -2:30 pm	2:30 pm – 4:00 pm
24/01/2023 (Tuesday)	Day briefing		Session – 03	Session – 04
			Prof. Anand Khatri	Dr. Sandeep Sharma
Day 3	12:45 pm - 1:00 pm		1:00 pm -2:30 pm	2:30 pm – 4:00 pm
25/01/2023 (Wednesday)	Day briefing		Session – 05	Session – 06
			Ar. Mala Mohan	Prof. (Dr.) Rajiv Mishra
Day 4	12:45 pm - 1:00 pm		1:00 pm -2:30 pm	2:30 pm – 4:00 pm
26/01/2023 (Thursday)	Day briefing		Session – 07	Session – 08
			Prof. Jit Kumar Gupta	Dr. Shikha Jain
Day 5	12:45 pm - 1:00 pm	1:00 pm -2:30 pm	2:30 pm – 4:00 pm	4:00 pm – 4:15 pm
27/01/2023 (Friday)	Day briefing	Session – 09	Session – 10	Valedictory
		Dr. Pawan Kumar	Dr. Monalisa Bhardwaj	

9. Registration Details:

S No	Name	Email	Phone Number	Institute/ College Code	City
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31	Sushmita.B	sushmita.arch@drmgrdu.ac.in	9790981919	TN41	CHENNAI
32	TN TRIVIKRAM	trivikram.tn@manipal.edu	7799892428	KA02	MANIPAL
33	Vedhavalli Sathrusangaravel	Vedhavalli.arch@drmgrdu.ac.in	9789531100	TN41	Chennai
34	Zakia Fathima J	zakiafathima.arch@drmgrdu.ac.in	9789807543	TN41	Chennai
35	C.B.Cibi	cibi@psgitech.ac.in	8220222645	TN99	PSGIAP
36	Priyanka Mehta	arpriyankamehta@gmail.com	98290 26200	RJ02	Jodhpur

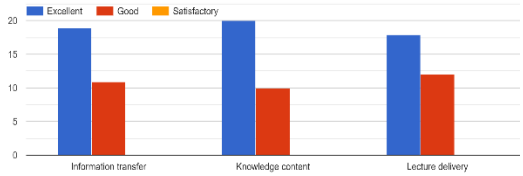
10. Attendance of the Event:

Day 1 - 44	Day 2 - 41	Day 3 - 38	Day 4 - 37	Day 5 - 38
				

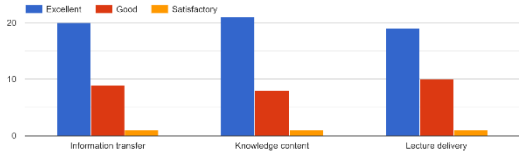
11. Feedback of the Event:

Day 1- Session 1: Enhancing the Quality of Life through Building Byelaws by Ar. Shobhit Tayal

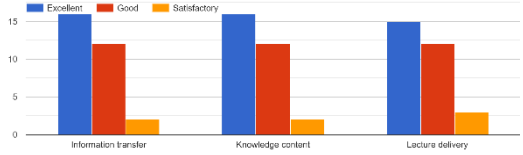
Day 1- Session 2: Building Byelaws A Tool for Preserving Image of the City by Prof. Anjali Sharma



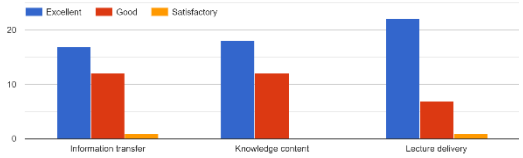
Day 2- Session 1: Critically Evaluating Building Bye laws for Indian Cities Academician Perspective by Prof. Anand Khatri



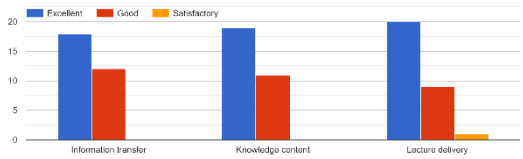
Day 2- Session 3: Building Byelaws/Regulations for Resilience in India by Dr. Sandeep Sharma



Day 3- Session 1: Building Byelaws for Healthcare Facilities by Ar. Mala Mohan

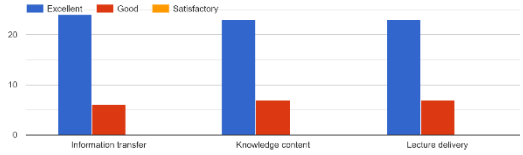


Day 3- Session 2: Reforms in Fire Code Accessibility for all in Historic Buildings by Prof. (Dr.) Rajiv Mishra

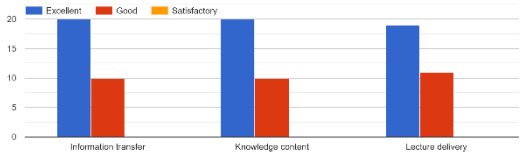


Day 4 - Session 1: Building Plan Approval Process and Systems by Prof. Jit Kumar Gupta

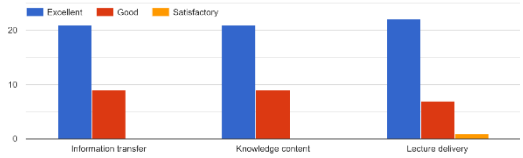
Day 4- Session 2: Heritage Bye Laws for Built & Natural sites by Dr. Shikha Jain



Day 5- Session 1: Role of Building Byelaws for Environmental Protection by Dr. Pawan Kumar



Day 5 - Session 2: Urban Design Development Laws and Guidelines in India by Dr. Monalisa Bhardwaj



12. Weblink:

https://jaipur.manipal.edu/content/dam/manipal/muj/fod/Document/eventlist/13022023_PER_COA%20TRC%20FDP%202023_NS.pdf

13. Event Coordinators:

Chief Coordinator:

- **Dr. Madhura Yadav** (Professor, Architecture and Dean, FoD)

Online Coordinators:

- **Ar. Neha Saxena** (Asso. Prof., SA&D)
- **Ar. Ayushi Sharma** (Assist. Prof., SA&D)

Ar. Neha Saxena (Associate Professor, SA&D)

Dr. Sunanda Kapoor
Head, School of Architecture and Design

MANIPAL UNIVERSITY
JAIPUR

INSPIRED BY LIFE

FACULTY OF DESIGN

International Conference on Sustainable Development for Heritage and Built Environment

22/06/2023 – 23/06/2023

Head, Department of Interior Design
SD&A, Faculty of Design
Manipal University Jaipur

Content of Report

1. Introduction of the Event

The conference is inspired from the critical challenge of human, environmental, heritage and built sustainability concerning the present and future generations in a global-scale context. This theme emphasizes the strong foundation that is provided by using research to inform our everyday practices, policies, and analytical approaches. This interdisciplinary forum is for scholars, teachers, and practitioners from the built environment professional discipline who share an interest in—and concern for— sustainability in an holistic perspective, where environmental, cultural, economic and social concerns intersect. It will provide a platform for various individuals to connect the past and present and develop solutions to a more universal and environmentally friendly approach towards built environment.

The conference will include topics such as

(i)Sustainable approach to design in built environment,

(ii)Sustainability & built Heritage,

(iii)Conserving Built Heritage,

(iv)Sustainable Policies for Environmental and Infrastructure Planning,

(v)Earth and Environmental Planning & Design

2. Objective of the Event

This conference was a gathering of minds dedicated to addressing the pressing challenges of sustainability that affect our world today and tomorrow. It recognized that sustainability is a multifaceted concept that requires interdisciplinary collaboration and rigorous research. By bringing together scholars, educators, and practitioners, the conference facilitated the exchange of ideas and the development of solutions that promote a more sustainable, resilient, and environmentally friendly built environment.

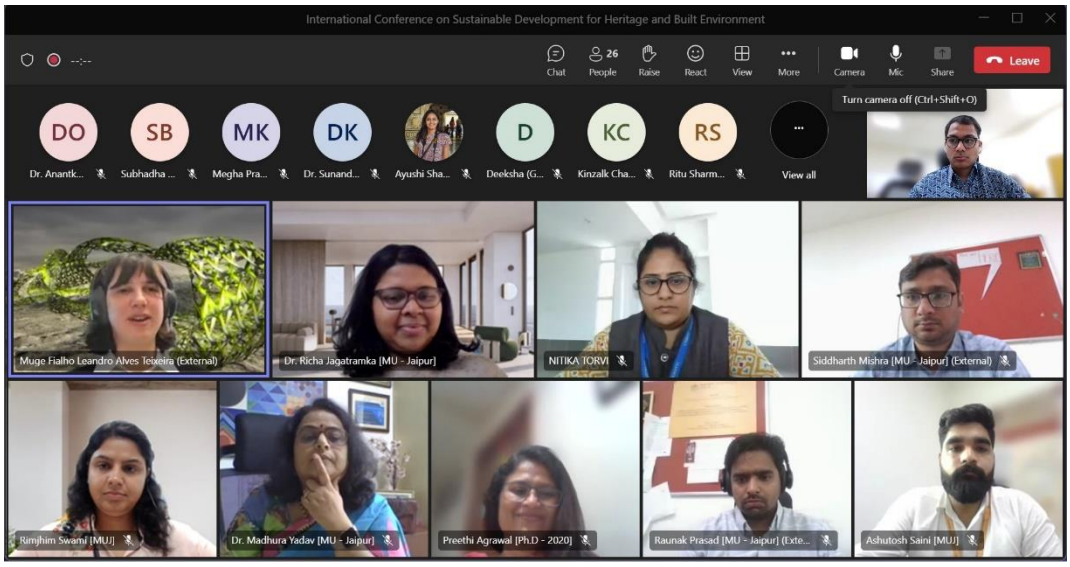
3. Beneficiary of the event

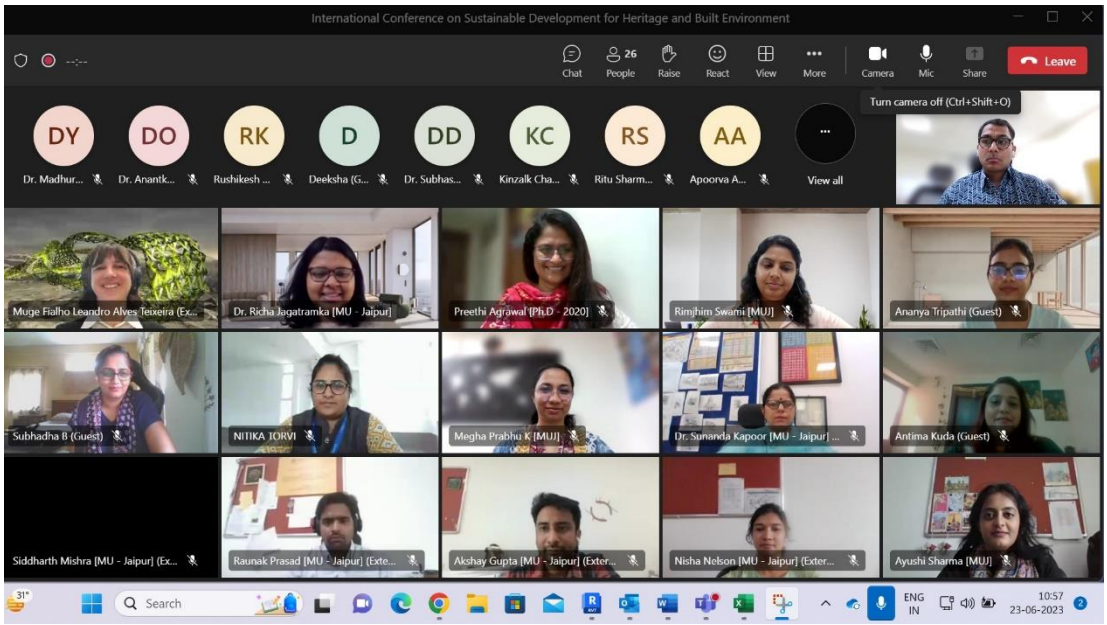
This interdisciplinary forum is for scholars, teachers, and practitioners from the built environment professional discipline who share an interest in—and concern for— sustainability in an holistic perspective, where environmental, cultural, economic and social concerns intersect.

4. Brief Description of the event

The conference was hosted by Department of Interior Design and School of Architecture and Design, Faculty of Design at Manipal University Jaipur. This interactive and engaging event is tailored exclusively for our researchers, as part of our commitment to foster continuous learning,future research opportunities. The presentations focused on sustainability as the prime agenda and paved way for the researchers to present their work at an international level.

5. Photographs of the Event





Snippets of the Conference

6. Poster of the event

7. Schedule of the event

Time	Event	Speaker
11:00 – 11:30 AM	Opening speech	Dr Richa Jagatramka
11: 30 – 11:35 AM	Welcome address	Dr Madhura Yadav
11: 35 – 11:45 AM	Introduction of international speaker	Ar Himangshu Kedia
11: 45 AM – 12:45 PM	Presentation by Dr Muge	Dr Muge
12: 45 – 01:00 PM	Q & A session	
01:00 – 01:05PM	Vote of Thanks	Ar. Himangshu Kedia

Meeting Link :

https://teams.microsoft.com/l/meetup-join/19%3ameeting_MmRjNjZiN2ItMTc1NS00YmJlLTkwMTItMzBiYTVjNTI0YTRh%40thread.v2/0?context=%7b%22Tid%22%3a%227d0726e8-bf4b-4ac1-99f1-010fb11f1d3f%22%2c%22Oid%22%3a%2216be8839-914f-456c-9836-e6b3ba8fa2f9%22%7d

8. **Attendance of the Event**

Total attendees – 28 participants from MUJ and outside

Sl.no	Name	Organisation
1	Dr. Richa Jagatramka	FOD
2	Megha Prabhu K	FOD
3	Dr. Sampath Kumar Padmanabha Jinka	FOD
4	Dr. Madhura Yadav	FOD
5	Dr. Anantkumar Dada Ozarkar	FOD
6	Dr. Subhash Chandra Devrath	FOD
7	Nisha Nelson	FOD
8	Preethi Agrawal	Practicing Architect and PhD scholar
9	NITIKA TORVI	Christ University
10	Subhadha B	Christ University
11	Himangshu Kedia	FOD
12	Rushikesh Kolte	MNIT
13	Dr. Sunanda Kapoor	FOD
14	Ananya Tripathi	AKTU - GCA
15	Kinzalk Chauhan	FOD
16	Ritu Sharma	FOS – Phd Scholar
17	Rimjhim Swami	FOD
18	Ayushi Sharma	FOD
19	Apoorva Agarwal	FOD
20	Muge Fialho Leandro Alves Teixeira	QUT Australia
21	Deeksha	MNIT
22	Siddharth Mishra	FOD
23	Akshay Gupta	FOD
24	Ritu Sharma	FOD
25	Neha Saxena	FOD
26	Antima Kuda	MAHE Dubai
27	Raunak Prasad	FOD
28	Ashutosh Saini	FOD

Head, Department of Interior Design
SD&A, Faculty of Design
Manipal University Jaipur

MANIPAL UNIVERSITY
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MUJ/DSW/Society Connect/ Oct2023/03

MANIPAL UNIVERSITY
JAIPUR

DIRECTORATE OF STUDENT'S WELFARE

(SOCIETY CONNECT)

#DAANUTSAV 2023

Plantation Drive

3rd October 2023

Date: 3rd October 2023

MANIPAL UNIVERSITY
JAIPUR

Index

1. Introduction of the Event

"A nation that destroys its soils destroys itself. Forests are the lungs of our land, purifying the air and giving fresh strength to our people." Trees are indispensable for life. Man can't live without trees. However, the present condition of forests in the world, especially developing countries is pathetic and miserable. Forests are the source of life. They are the giving angels. They give man oxygen, rains, wood, fruit, make the world look so beautiful, yet the sinister man kills them! Who will be more inhumane than man himself? Cutting of forests ultimately endangers man's own existence. Trees are important to the environment; they recycle water and process carbon dioxide in the atmosphere through photosynthesis. They are the world's full-time purifiers of air and water. Their cutting will disturb the natural water cycles which will lead to the shortage of fresh water in the water reserves of the world.

Rotaract Green Club under Society Connect organized a Plantation Drive on account of DAAN UTSAV 2031. It took place on the 3rd of October from 10 a.m. Students were taken to the Mahatma Gandhi School, Begus for the drive. The drive aimed to instill a sense of discipline and respect for the environment while doing our part.

2. Objective of the Event

- Spread awareness on the importance of afforestation
- Direct students' mind in constructive activities
- Contribution to the society
- Promote tree planting
- Create awareness regarding importance of ecology
- Attempt at reducing pollution and improve green ambience

3. Beneficiaries of the Event

Community

4. Brief Description of the event

Rotaract Green Club organized the Plantation Drive on the 3rd October at 9 a.m. on account of DAAN UTSAV 2023. The drive's main aim was to direct student's mind

in constructive activities with the positive outcome through the facilitation of contributing to the nature and environment.

It also aimed at spreading awareness about the effects of global warming and the positive effects of planting trees. The students gathered on campus to go to the Mahatma Gandhi School, Begus.

The students participated in the drive enthusiastically and helped each other in planting the saplings. All the saplings were planted in the school ground by students. Participants were highly energetic to make the event a big success. A spirit of teamwork, exchange of ideas and enthusiasm of the participants especially among the students could be seen. Pictures were taken. The drive was successfully conducted by planting 40-50 saplings.

5. Photographs of the event

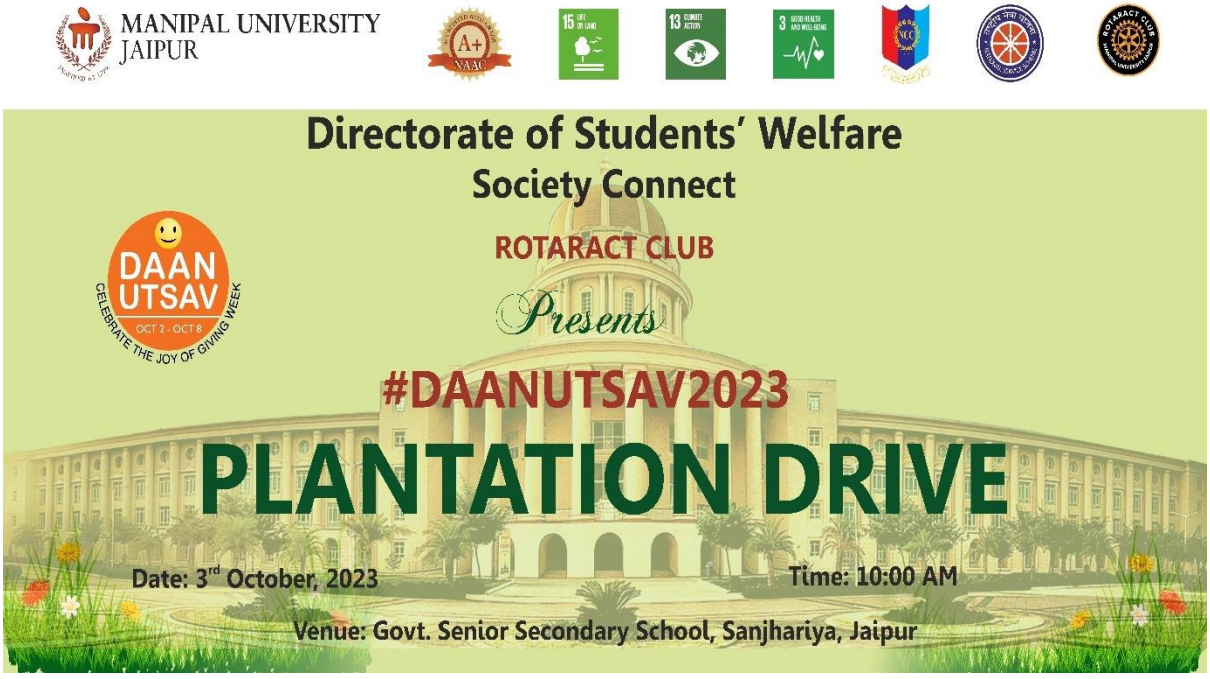
Image 1. Students and Faculty planting saplings

Image 2 Students participating in the Drive.

Students participating in the Drive.

Image 4 Giving the manure to the newly plant samplings

6. Brochure or creative of the event



Plantation Drive

7. Schedule of the event

S.NO.	Name of the Event	Time	Place
1.	Plantation Drive	10:00 AM	Mahatma Gandhi School (English Medium) Begus.

A bus from MUJ was taken to the school in the morning.

8. Attendance of the Event

Total attendee- 67

S.No.	Reg. NO.	Name of Students	Institute Name
1	23FE10ITE00079	Amisha anand	Manipal University Jaipur
2	23FE10CAI00360	shaivi adesh	Manipal University Jaipur
3	23FE10CSE00060	Amay Garg	Manipal University Jaipur
4	23FE10CDS00177	Manas Mathur	Manipal University Jaipur
5	23fe10bte00029	Saloni kamal	Manipal University Jaipur
6	23FE10CSE00508	Dev Dhawan	Manipal University Jaipur
7	23fe10cii00035	Bhargavi Anand	Manipal University Jaipur
8	220606004	Pranjal Puri	Manipal University Jaipur
9	23FA10BSP00028	Anupama Rustagi	Manipal University Jaipur
10	23FE10CCE00085	Siddhartha tiwari	Manipal University Jaipur
11	23FA10BAP00002	Tanisha Mathur	Manipal University Jaipur
12	23FD10BFD00009	Mariya Shabbir Baiwala	Manipal University Jaipur
13	23FE10CDS00224	Harsh Ajmera	Manipal University Jaipur
14	23fe10cds00125	Suryanshi Singh	Manipal University Jaipur
15	23fs10mat00009	Malavika ramdas	Manipal University Jaipur
16	221007021	Arshi Jain	Manipal University Jaipur
17	23FE10CSE00137	Stuti Dixit	Manipal University Jaipur
18	23fe10cii00094	Aarohi Tyagi	Manipal University Jaipur
19	23FE10CSE00152	Gautam Kakkar	Manipal University Jaipur
20	23FE10CSE00318	Krish Ray	Manipal University Jaipur
21	23FE10CII00076	Kriissh Marwaha	Manipal University Jaipur
22	229310321	Shiv Rajput	Manipal University Jaipur
23	23FS10BIO00051	Ragini Singh Thakur	Manipal University Jaipur
24	23FS10BIO00052	Anukriti sharma	Manipal University Jaipur
25	220901073	Diya Mittal	Manipal University Jaipur
26	23FE10CSE00081	Smmayan Gupta	Manipal University Jaipur
27	229309083	Raghav Gupta	Manipal University Jaipur
28	23FE10CDS00397	Hrishita Singh Timaney	Manipal University Jaipur
29	23FE10ITE00203	Sarah Sharda	Manipal University Jaipur
30	23fa10bsp00025	Jasleen kaur	Manipal University Jaipur

31	23FA10BSP00039	Jiya Kumar	Manipal University Jaipur
32	23FA10BSP00004	Aarya Mahale	Manipal University Jaipur
33	220606020	Chaarvi Kumar	Manipal University Jaipur
34	23fa10bsp00058	Kashvi Mahajan	Manipal University Jaipur
35	229301095	Shaurya Singh	Manipal University Jaipur
36	23fe10ece00024	Kushagra agrawal	Manipal University Jaipur
37	23FA10BSP00017	Megha Sharma	Manipal University Jaipur
38	23FM10BBA00162	Alina Nadeem	Manipal University Jaipur
39	23FM10BBA00178	Avishi Akhaury	Manipal University Jaipur
40	221007004	Urvi Thakare	Manipal University Jaipur
41	23FA10BAP00027	Natasha Joan Menezes	Manipal University Jaipur
42	23FA10BLE00004	Tanisha chaturvedi	Manipal University Jaipur
43	23fe10cai00579	Arjun Malhotra	Manipal University Jaipur
44	23FE10CAI00352	Maanyata Aul	Manipal University Jaipur
45	220901322	Divyanshi Singh	Manipal University Jaipur
46	229310412	Jatin Verma	Manipal University Jaipur
47	229301094	Yashovardhan Pratap Singh	Manipal University Jaipur
48	23FM10BBA00348	Niska kedia	Manipal University Jaipur
49	221105005	Dhruv Nair	Manipal University Jaipur
50	23FM10BBA00170	Shambhavi Agrawal	Manipal University Jaipur
51	23FE10CDS00241	Armaan Setia	Manipal University Jaipur
52	23FE10CAI00105	Mritunjay Singh	Manipal University Jaipur
53	229311075	Aarna Tyagi	Manipal University Jaipur
54	229302051	Prince jindal	Manipal University Jaipur
55	23FA10BHE00035	Taneesha puri	Manipal University Jaipur
56	220903033	Suhani Jain	Manipal University Jaipur
57	220901391	Dipika Agarwal	Manipal University Jaipur
58	229310222	Aayush Sharma	Manipal University Jaipur
59	221003007	Yachna Jain	Manipal University Jaipur
60	220901002	Anshu jangir	Manipal University Jaipur
61	23FE10CDS00284	Anant Barjatya	Manipal University Jaipur
62	221015074	Rupal Sharma	Manipal University Jaipur
63	23fa10bsp00047	Vartika Agarwal	Manipal University Jaipur
64	23FA10BSP00041	Kali Vithlani	Manipal University Jaipur
65	23FM10BBA00030	Harshal Saini	Manipal University Jaipur
66	23FE10CSE00746	Daksh Sharma	Manipal University Jaipur
67	23FS10BIO00034	PC Rahul	Manipal University Jaipur

9. Feedback of the Event:- The students participated enthusiastically.

(Hemant Kumar)

Assistant Director, Society Connect

Directorate of Student's Welfare

(Prof. AD Vyas)

Director, Directorate of Student's Welfare

DIRECTOR STUDENT WELFARE & PROCTOR
MANIPAL UNIVERSITY, JAIPUR

MANIPAL UNIVERSITY
JAIPUR

MUJ/Q&C/DSW/SC/1.01

MANIPAL UNIVERSITY
JAIPUR

DIRECTORATE OF STUDENT'S WELFARE

(SOCIETY CONNECT)

And

Faculty of Science

Department of Chemistry

Presents

Plantation Drive

OCTOBER 26, 2023

Venue : Dabar Ki Dhani

1. **Introduction of the Event**

School of Basic science in collaboration with Directorate of Student Welfare, NCC, NSS organized a "Plantation Drive" on October 26, 2023. The societal connect outreach activity on by planting the small plants. Program is organized by the Department of Chemistry in collaboration with Department of Student welfare (DSW) under the guidance of Mr. Hemant Kumar (Assistant Director, DSW), Dr. Rahul Shrivastava (Head, Department of Chemistry) and Dr Meenakshi Pilania (Departmental coordinator, DSW). The mention activity held at a Government School, Dabar ki Dhani, near Manipal University Jaipur on Thursday, 26th October 2023.

2. **Objective of the Event**

The focal point of this event was to spread awareness among school students with respect to their environment and also motivate the students towards to work their endeavors via the power of knowledge and education.

3. **Beneficiaries of the Event**

Through this initiative, students and villagers had better communication and understanding of the situation.

4. **Details of the Guests**

The event was laid by the students of BBA, BBA(BA), IMBA

Rotary Club Jaipur Bapu Nagar

Rotary started with the vision of one man — Paul Harris. The Chicago attorney formed the Rotary Club of Chicago on 23 February 1905, so professionals with diverse backgrounds could exchange ideas and form meaningful, lifelong friendships.

Over time, Rotary's reach and vision gradually extended to humanitarian service. Members have a long track record of addressing challenges in their communities and around the world.

Rotary is a global network of 1.4 million neighbors, friends, leaders, and problem-solvers who see a world where people unite and take action to create lasting change – across the globe, in our communities, and in ourselves. They provide service to others, promote integrity, and advance world understanding, goodwill, and peace through our fellowship of business, professional, and community leaders. We collaborate with community leaders who want to get to work on projects that have a real, lasting impact on people's lives. We connect passionate people with diverse perspectives to exchange

ideas, forge lifelong friendships, and, above all, take action to change the world.

5. Brief Description of the event

The Department of Chemistry organized a societal connect outreach activity on Plantation in collaboration with the Department of Student Welfare (DSW) under the supervision of Mr. Hemant Kumar (Assistant Director, DSW), Dr. Rahul Shrivastava (Head, Department of Chemistry) and Dr. Meenakshi Pilania (Departmental coordinator, DSW). The mentioned activity was held at a Govt. school, Dabar ki Dhani, near Manipal University Jaipur on Thursday, 26th October 2023.

6. Photographs

Image 1 : Students with faculty at School for the Career Awareness

Image 2: Students of school during the plantation drive

Image 3: Team of MUJ Students at DABAR ki Dani School

7. Brochure or creative of the event

8. Schedule of the Event

The event took place on October 26, 2023

9. Attendance of the Event (50)

S. No.	Name	Registration No	Name of Institution
1	Rakshanda Singhal	211051012	Manipal University Jaipur
2	Vartika Vaishya	211051015	Manipal University Jaipur
3	Shakir Sisodia	201022604	Manipal University Jaipur
4	Govind Gupta	170703601	Manipal University Jaipur
5	Kanika Taneja	211004002	Manipal University Jaipur
6	Avani Kothari	221004004	Manipal University Jaipur
7	Pranjalee Ghosh	221004002	Manipal University Jaipur
8	Kishika Arora	221004003	Manipal University Jaipur
9	Aman Kumar	221004001	Manipal University Jaipur

10	Khushi Verma	211004006	Manipal University Jaipur
11	Karunya Papney	211004004	Manipal University Jaipur
12	Ankita Kumawat	211004003	Manipal University Jaipur
13	Supriyo	23FS20MCH00004	Manipal University Jaipur
14	Anjali Yadav	23FS20MCH00001	Manipal University Jaipur
15	Divya Sharma	23FS20MCH00003	Manipal University Jaipur
16	Vaibhav Anand	221013001	Manipal University Jaipur
17	Dipesh Gehlot	221013002	Manipal University Jaipur
18	Suman Yadav	221013003	Manipal University Jaipur
19	Ashish Sharma	221013004	Manipal University Jaipur
20	Ishan Jain	229310159	Manipal University Jaipur
21	Ishika Jain	229310410	Manipal University Jaipur
22	Aditi Singh Parihar	219311171	Manipal University Jaipur
23	Utkarsh Shukla	229301763	Manipal University Jaipur
24	Vedika	221007014	Manipal University Jaipur
25	Honey Trivedi	229302207	Manipal University Jaipur
26	Shaurya Nandwani	229301726	Manipal University Jaipur
27	Shreyas Bhati	229301374	Manipal University Jaipur
28	Aditya Mishra	229310237	Manipal University Jaipur
29	Aaryan kale	229303031	Manipal University Jaipur
30	Mustansir kanchwala	220903021	Manipal University Jaipur
31	Sahil Kalra	229303321	Manipal University Jaipur
32	Krishang Goel	229309035	Manipal University Jaipur
33	Anand Mandlik	229310162	Manipal University Jaipur
34	Aryan Sachdeva	229301438	Manipal University Jaipur
35	Ansh manawat	229301712	Manipal University Jaipur
36	Utkarsh Jha	220901009	Manipal University Jaipur
37	ria chauhan	229301253	Manipal University Jaipur
38	Ishita Sharma	229303237	Manipal University Jaipur
39	Ajinkya wagh	229310003	Manipal University Jaipur
40	Kritika Pahuja	229310048	Manipal University Jaipur
41	Ishan Aaditya	229303314	Manipal University Jaipur
42	Jiya Thakur	229309176	Manipal University Jaipur
43	Utsav Acharjya	229301358	Manipal University Jaipur
44	Kanishka Chaudhary	229202010	Manipal University Jaipur
45	Sameeksha	229310311	Manipal University Jaipur
46	Taarush Kathuria	229301462	Manipal University Jaipur
47	Ankit Kumar Tiwari	229309098	Manipal University Jaipur
48	Hanis Gori	229310131	Manipal University Jaipur
49	Aditya Prakash Sinha	229310189	Manipal University Jaipur
50	Lakshita Agrawal	229301455	Manipal University Jaipur

(Hemant Kumar)
Assistant Director, Society Connect
Directorate of Student's Welfare

(Prof. AD Vyas)
Director, Directorate of Student's Welfare

DIRECTOR STUDENT WELFARE & PROCTOR
MANIPAL UNIVERSITY, JAIPUR

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JAIPUR

FACULTY OF ARTS

SCHOOL OF MEDIA AND COMMUNICATION

DEPARTMENT OF JOURNALISM AND MASS COMMUNICATION

NAME OF EVENT

One Day International Seminar

on

Media and Rural Development: Retrospect and Prospect

Date of Event

12.05.2023

MANIPAL UNIVERSITY
JAIPUR

Content of Report (Index):

1. Introduction of the Event

India, which is a country often referred to as the 'land of villages', is predominantly known for its rich tillage. As per the 2011 Census of India, a staggering proportion of 68.8% of the Indian population finds themselves living in the rural areas. Although India is known for having the largest rural population in the world, rural development has been an ongoing concern for the country. To this day, the villages of India still struggle with agrarian distress, massive poverty, inadequate health facilities and a general scarce supply of resources. To help stimulate conversations around bringing a social change in and around the Indian villages, this one-day international seminar aims at providing an appropriate platform to numerous attendees including media academicians, development experts and researchers to help them share their insights on the role and challenges faced by media while lending the rural community a helping hand in development. The event was organized under the guidance of Dr. Ram Pratap Singh and Dr. Avneesh Kumar, Assistant Professor Department of J&MC, Manipal University Jaipur. All the faculty members of department were present during the event.

2. Objective of the Event

- To initiate a discussion on the role of media in relation to rural development.
- To generate a discourse on sustainable development goals (SDGs).
- To discuss the role of alternative media in rural development.
- To sensitize the students, researchers, media academicians and journalists towards the issues of rural India.

3. Beneficiaries of the Event:

Media Students, Academician and Researcher

4. Details of the Guests

1. Prof. (Dr.) Ram Mohan Pathak, Former Vice Chancellor, Nehru Gram Bharati (Deemed to be university), Prayagraj (Chief Guest)

2. Prof. (Dr.) Sanjeev Bhanawat, Former Head, Centre of Mass Communication, Rajasthan University (Expert)
3. Dr. Vipul Mudgal, Director- Common Cause, New Delhi (Expert)
4. Lyndee Prickitt, Director- Village Square (Expert)

5. Brief Description of the event

The Department of Journalism and Mass Communication of Manipal University Jaipur organized a One Day International Seminar on Media and Rural Development: Retrospect and Prospect. It provided a platform to media academicians, working professionals, development experts, and researchers to share their views on the role and challenges of media in relation to rural development. The event commenced with an opening speech by Dr. Komal Audichya where she welcomed the chief guest and experts of the seminar.

Lyndee Prickitt:

She spoke about the humanity of local news; how global news always starts with local news and that this local news talks about the real people at the heart of the story. Throughout her career as a journalist, there is a phrase that was infamous in the newsroom- "Worthy but dull." Ultimately, not all news stories make into the public eye, therefore, she says, something will always be cut. In India, stories about the villagers are cut out as the news organizations want to seem aspirational. The local elements of our country get lost since nobody writes stories about the local villages. The politicians get upset that the news of local India is found in international media around the world.

Prof. (Dr.) Sanjeev Bhanawat:

Dr. Bhanawat said that the development of a nation is in the hands of the media; it depends on whether they can work efficiently and effectively. He thinks that the problems of the rural people are not just theirs, but the problems of the country as a whole. Since independence, India has seen a lot of progress, however, in the rural areas, the issues of casteism, misogyny, patriarchy and such are still prevalent. He enlightened the audience about the concept of 'Radio Rice' which stemmed from Karnataka. He said that digital media is a free platform that is available to all and when used wisely, it helps in progression of the rural society. He told the audience that it

is not only the story that is important, but also the way it is written and how it has been portrayed. Journalists should write with emotion, with empathy; they should make the readers see themselves in the story. He ended by saying that society has given the media the title of the fourth pillar of democracy; the reporters should work hard to earn that title.

Dr. Vipul Mudgal:

Dr. Mudgal informed us that all the issues in society are intertwined within our daily lives; some are rural while some are urban but ultimately, they are all intermeshed within each other. He educated us about International Plant Health Day, climate change, and how it adversely affects the crops. In the crisis of climate change, we should find a way to change ourselves such that we might get a solution to India's agrarian crisis. He further talked in detail about the agrarian crisis, the production and productivity crisis, and the midday meal issue. It is important for a journalist to understand rural India because rural India is reflected everywhere else in the country; in one way or another, journalism will take you to rural India. Journalists must know how the issues of climate change affect rural India- including farmers, fishermen and so on- and show a genuine interest in it; they should able to make sense of the data in a way that a reader might not be able to. He ended his session by informing us im4change.org, a site that covers that the agrarian crisis and rural issues.

Dr. Prof. Ram Mohan Pathak:

Prof. Pathak told us that to be able to build a successful career in journalism, one must be able to think for themselves practically. He said that the life of Gautama Buddha is a field of study for a journalist since the ethics of journalism are inspired by the teachings of Buddha. As a journalist, you have to be able to reach your audience effectively. He told us that we shouldn't be too dependent on the media; he talked about how media literacy is necessary for every person living in society. Journalists should have a command over their language strong enough that they can stay within the space provided by the newspaper and write in the colloquial language. He mentioned that media makes people aware of the issues surrounding them. Media shouldn't abuse their power and should always work in the favour of rural development after understanding its needs thoroughly.

In the second half of the seminar the Village Square Fellows Miss Jyoti Thakur, Mr. Amir Malik and Miss Monika Marandi shared their experiences while working with the Village Square. Jyoti Thakur talked about why the stories of rural India matter. She told us about the stories of the rural village women she had talked to, Leela and Meena, and how they believe that the issues they are facing is a normal occurrence. She spoke specifically about the Jantar Mantar protests which was a 100 days protest that ended in 60 days. Rural stories have quite an impact on our economy, the common man's daily life, and our country. She stated that the aim to report rural stories is not always to bring about change, but to mainly document reality. Amir Malik talked about his experience at Village Square and why he decided to become a journalist. He stated that "People are the source of your stories." He talked about "Her Life"- a section on the Village Square website dedicated solely to share the real experiences of the village women in the rural areas. Monika Marandi spoke about how there is almost no space in Indian media for the news of tribal communities. She has travelled all over India for three years to get to know the rural and tribal society in depth. She is also the proud founder of Sakhua, India's first digital platform run by tribal women for tribal women. She talked about the development of tribal society and the domestic violence still prevalent in it.

At the end of the seminar Dr. Vaishali Kapoor, Head of Department Journalism and Mass Communication, proposed a formal vote of thanks to everyone who has contributed and participated and made the event successful.

6. Photographs of the Seminar

Dr. Vipul Mudgal addressing the audience

Prof. (Dr.) Sanjeev Bhanawat addressing the audience

7. Brochure and Creative of the Event

MANIPAL UNIVERSITY JAIPUR

VILLAGE SQUARE

School of Media and Communication

Department of Journalism and Mass Communication

in association with

Village Square

is organizing

One Day International Seminar

on

Media and Rural Development: Retrospect and Prospect

Friday, May 12, 2023

Venue: Smt. Sharada Pai Auditorium
Time: 9:30 AM onwards

About the University

The Manipal Education Group, with its heritage of excellence in higher education for over 60 years, launched Manipal University Jaipur (MUJ) in 2011. MUJ is recognized by University Grants Commission, Association of Indian Universities, Council of Architecture, Bar Council of India, and All India Council of Technical Education. MUJ is the first university in the state of Rajasthan to be accredited with A+ (3.28) grade by NAAC. The university offers courses in different disciplines like Engineering, Journalism and Mass Communication, Management, Architecture, Interior Design, Fashion Design, Applied Arts, Hospitality, Humanities and Social Sciences, Basic Sciences, Law, Business and Commerce.

Organising Committee

Chief Patron
Mr. S. Vaitheeswaran
Chairperson, MUJ

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Dr. G. K. Prabhu, President, MUJ

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Dr. Nitu Bhatnagar, Registrar, MUJ

Conveners
Dr. Komal Audichya, Dean, FoA, MUJ
Dr. Vaishali Kapoor, HoD, J&MC, MUJ

Organisers
Dr. Ram Pratap Singh
Assistant Professor, J&MC, MUJ
Dr. Avneesh Kumar
Assistant Professor, J&MC, MUJ

About the School

School of Media and Communication at MUJ endeavours to combine innovative practices and technology with the traditional pedagogue to groom learners into proficient members of the global community. The School consists of one department, Department of Journalism and Mass Communication, that offers Bachelor of Arts in Journalism and Mass Communication and Master of Arts in Journalism and Mass Communication, and Doctoral program in Journalism and Mass Communication. The Bachelor's program focuses on media education and covers journalism (print, radio, television and new media), film studies, public relations, advertising, etc. The school has an excellent blend of academics and co-curricular activities.

About the Seminar

India is predominantly an agrarian society, often referred as the land of villages. As per the Census of India 2011, 68.8% of the total Indian population reside in rural areas. As per the United Nations Population Division Report (2019), India has the largest rural population in the world. However, rural development in India has been an issue of concern. After more than 75 years of independence and planned development, Indian villages are still facing challenges, like agrarian distress, inadequate infrastructure, poor education system, massive poverty, pitiable health facilities, etc. Media's role is crucial in the process of development & social change as it disseminates information and knowledge. This one-day seminar will provide a platform to media academicians, working professionals, development experts, and researchers to share their views on the role and challenges of media in relation to rural development.

Objectives of the Seminar

- To initiate a discussion on the role of media in relation to rural development.
- To generate a discourse on sustainable development goals (SDGs).
- To discuss the role of alternative media in rural development.
- To sensitize the students, researchers, media academicians and journalists towards the issues of rural India.

Notable Speakers

Chief Guest
Prof (Dr.) Ram Mohan Pathak
Former Vice Chancellor
Nehru Gram Bharati (Deemed to be University)
Prayagraj

Experts
Prof (Dr.) Sanjeev Bhanawat
Former Head, Centre for Mass Communication
Rajasthan University

Dr. Vipul Mudgal
Director
Common Cause
New Delhi

Lyndee Prickitt
Director
Village Square
New Delhi

Registration

- Registration is required to attend the seminar.
- Participants can attend the seminar in both online and offline mode.
- No registration fee for students and scholars.

Scan for Payment

Scan for Registration

Contact:

Dr. Vaishali Kapoor
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vaishali.kapoor@jaipur.manipal.edu

Dr. Ram Pratap Singh
Mob.- 9990762529
rampratap.singh@jaipur.manipal.edu

MANIPAL UNIVERSITY JAIPUR

VILLAGE SQUARE

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Pro-President, MUJ

Dr Nitu Bhatnagar
Registrar, MUJ

Conveners
Dr Komal Audichya
Dean - FoA, MUJ

Dr Vaishali Kapoor
HoD - J&MC, MUJ

Organizers
Dr Ram Pratap Singh
Assistant Professor,
J&MC, MUJ

Dr Avneesh Kumar
Assistant Professor,
J&MC, MUJ

8. Schedule of the Event

Date: 12/05/2023

Time: 9:00 am to 3:20 pm

Venue: Smt. Sharada Pai Auditorium, 2AB, Manipal University Jaipur

9. Attendance of the Event

Total Attendee: 49

Sr. No.	Name of Institution	Place of Institution	Registration umber/Employee ode	Name of Attendee	Name of Dept
1.	University of Delhi	Delhi	NA	Ram Pravesh kumar	Hindi Department
2.	MUJ	JAIPUR	221202006	Sachin Manyal	J&MC
3.	MUJ	JAIPUR	2212022020	Apoorva	J&MC
4.	MUJ	JAIPUR	2212022017	Mansi Adhikari	J&MC
5.	MUJ	JAIPUR	221202015	Ishani Santuka	J&MC
6.	MUJ	JAIPUR	221202004	Deepit Mathur	J&MC
7.	MUJ	JAIPUR	221202019	Purvi Sahani	J&MC
8.	MUJ	JAIPUR	MUJCON067	Rayaz Hassan	J&MC
9.	MUJ	JAIPUR	----------	Ibtisham	-------
10.	MUJ	JAIPUR	----------	Devanshi Kapoor	--------
11.	MUJ	JAIPUR	----------	Suman Kumawat	----------
12.	MUJ	JAIPUR	MUJ0710	Dr. Vaishali Kapoor	J&MC
13.	MUJ	JAIPUR	----------	Kriti Vashishtha	Psychology Department
14.	MUJ	JAIPUR	221202012	Shambhavi Das	J&MC
15.	MUJ	JAIPUR	221202009	Khushii Kulkarni	J&MC
16.	MUJ	JAIPUR	221202003	Isha Deshmukh	J&MC
17.	MUJ	JAIPUR	----------	Uma	J&MC
18.	HAU, Hisar	Haryana	----------	Ajay Kumar	Extension Dept

19.	Amity University	Manesar	----------	Amit Chawla	J&MC
20.	MUJ	JAIPUR	221202018	Shivansh Purohit	J&MC
21.	Mizoram University	Mizoram	----------	Chitralekha Agarwal	Media Dept
22.	AMU, Aligarh	Aligarh	----------	Mohd Anas	J&MC
23.	MUJ	JAIPUR	----------	Manoj Kumar	J&MC
24.	MUJ	JAIPUR	MUJ0889	Aditi Priya	Liberal Arts
25.	MUJ	JAIPUR	221202005	Kashish Dhaker	J&MC
26.	HNBU, Uttarakhand	Dehradoon	----------	Saket Kumar Bhardwaj	J&MC
27.	University of Delhi	Delhi	----------	JAI PRATAP SINGH	Education Dept
28.	MUJ	JAIPUR	MUJ1482	RAM PRATAP SINGH	J&MC
29.	MUJ	JAIPUR	221202007	Akanksha Agarwal	J&MC
30.	MUJ	JAIPUR	221202001	Ruchika Singh	J&MC
31.	MUJ	JAIPUR	221202013	Khushboo Didwani	J&MC
32.	MUJ	Jaipur	MUJ0944	Lakhan Raghuvanshi	J&MC
33.	MUJ	Jaipur	----------	Mansi Gotharwal	J&MC
34.	MUJ	Jaipur	MUJ1081	Dr. Kirti Shekhawat	Psychology Dept
35.	MUJ	Jaipur	MUJ0585	Prashasti Jain	Psychology Dept
36.	MUJ	Jaipur	MUJ1063	GOVIND KUMAR	J&MC
37.	MUJ	Jaipur	MUJ1124	Amit Kumar Sharma	J&MC
38.	MUJ	Jaipur	MUJ1470	Manish Sachan	J&MC
39.	MUJ	Jaipur	----------	Prachi Sirvi	J&MC
40.	MUJ	Jaipur	MUJ0334	Rahul Babu Kodali	J&MC
41.	MUJ	Jaipur	MUJ1064	Prabhat Dixit	J&MC

42.	MUJ	Jaipur	MUJ1125	Swikrita Dowerah	J&MC
43.	MUJ	Jaipur	MUJ1502	Rachan Daimray	J&MC
44.	MUJ	Jaipur	MUJ1067	Avneesh Kumar	J&MC
45.	MUJ	Jaipur	221202008	Alaina Lawrence	J&MC
46.	MUJ	Jaipur	MUJ1483	Harshwardhani Sharma	J&MC
47.	MUJ	Jaipur	221201076	Rashi Duggal	J&MC
48.	MUJ	Jaipur	221201006	Kartik Dutt Sharma	J&MC
49.	MUJ	Jaipur	211201025	Prachi Sirvi	J&MC

10. News Publication:

Punjab Kesari, 16 May 2023

'मीडिया एवं रूरल डेवलपमेंट: रेट्रोस्पेक्ट एंड प्रॉस्पेक्ट' विषय एक दिवसीय अंतरराष्ट्रीय सेमिनार

'पत्रकारिता के लिए पृष्ठभूमि को समझना जरूरी'

जयपुर, 15 मई (ब्यूरो): मणिपाल यूनिवर्सिटी जयपुर के पत्रकारिता एवं जनसंचार विभाग की ओर से हाल ही में मीडिया एवं रूरल डेवलपमेंट: रेट्रोस्पेक्ट एंड प्रॉस्पेक्ट विषय एक दिवसीय अंतरराष्ट्रीय सेमिनार का आयोजन किया गया। कार्यक्रम का शुभारंभ दीप प्रज्वलित करके किया गया। फैकल्टी आफ आर्ट्स की डीन प्रो. कोमल औदिच्य ने स्वागत भाषण दिया और वर्तमान में मीडिया की ग्रामीण विकास में भूमिका की प्रस्तावना रखी।

पहले सत्र में मुख्यातिथि नेहरू ग्राम भारती विश्वविद्यालय, प्रयागराज के पूर्व कुलपति प्रो. राम मोहन पाठक ने अपने वक्तव्य में कहा कि ग्रामीण पत्रकारिता के लिए सबसे पहले गांव और उसकी समूची पृष्ठभूमि को समझना होगा। लोगों को मीडिया की साक्षरता के बारे में जागरूक करना होगा, तभी सही मायने में ग्रामीण विकास संभव होगा। उन्होंने कहा कि मीडिया की कवरेज सरकार के लिए फीडबैक का काम करती है। वर्तमान में लोगों को जागरूक करने के लिए मीडिया बड़ी भूमिका निभाता है। हालांकि सूचना का दुरूपयोग रोकने के लिए भी मीडिया की भूमिका अहम है। सत्य एवं तथ्य ही मीडिया की पहली जरूरत हैं। उन्होंने कहा कि सामाजिक बदलाव में मीडिया का बड़ा योगदान है। जब लोकतंत्र खतरे में पड़ेगा तब मीडिया ही उसका सहारा बनेगा। विलेज स्क्वायर संस्था की डायरेक्टर लिंडी प्रिकिट ने अपने वक्तव्य में ग्रामीण विकास में वैकल्पिक मीडिया की भूमिका पर प्रकाश डाला। उन्होंने कहा कि ग्रामीण क्षेत्रों की कहानियां पत्रकारिता की धड़कन हैं। जनसंचार की भाषा ऐसी होनी चाहिए जो आम लोगों की समझ में आए। उन्होंने कहा कि ग्रामीण आंचल की स्टोरी ज्यादा महत्वपूर्ण हैं, उन्हें अधिक प्रोत्साहित करने की जरूरत है। राजस्थान यूनिवर्सिटी जयपुर के जनसंचार केंद्र के पूर्व अध्यक्ष प्रो. संजीव भानावत ने ग्रामीण उत्थान में मीडिया की भूमिका विषय पर अपने विचार रखे।

कॉमन कॉज के डायरेक्टर डॉ. विपुल मुद्गल ने मीडिया एवं ग्रामीण संचार पर अपने विचार रखे। विलेज स्क्वायर की ओर से ज्योति ठाकुर ने ग्रामीण समाचार बहुमूल्य है विषय पर प्रस्तुति दी। अंत में जनसंचार एवं पत्रकारिता विभाग की विभागाध्यक्ष डॉ. वैशाली कपूर ने धन्यवाद ज्ञापित किया। उन्होंने सेमिनार के वर्तमान एवं भविष्य की उपयोगिता पर प्रकाश डाला।

Sach Bedhadak, 16 May 2023

इवेंट | मणिपाल यूनिवर्सिटी में मीडिया एंड रूरल डवलपमेंट पर सेमिनार

मीडिया की पहली जरूरत है सत्य और तथ्य : प्रो. राम मोहन पाठक

बेधड़क | जयपुर

"खबरें और उनकी समृद्धि पृष्ठभूमि को समझे बिना सही मायनों में ग्रामीण पत्रकारिता संभव नहीं है। लोगों को मीडिया साक्षरता के बारे में जागरूक कर ही ग्रामीण विकास के एजेंडे को आगे बढ़ाया जा सकता है।

मीडिया की कवरेज सरकार के लिए फीडबैक का काम करती है इसलिए ग्रामीण पत्रकारिता का स्तरीय होना जरूरी है।" ये कहना था नेहरू ग्राम भारती विश्वविद्यालय प्रयागराज के पूर्व कुलपति प्रो. राम मोहन पाठक का। प्रो. पाठक मणिपाल यूनिवर्सिटी के पत्रकारिता व जनसंचार विभाग की ओर से 'मीडिया एंड रूरल डेवलपमेंट: रेट्रोस्पेक्ट एंड प्रॉस्पेक्ट' विषय पर आयोजित अंतरराष्ट्रीय सेमिनार में बोल रहे थे। उन्होंने कहा कि सत्य और तथ्य ही मीडिया की पहली जरूरत है। सामाजिक बदलाव में मीडिया का बड़ा योगदान है। जब लोकतंत्र खतरे में पड़ेगा तब मीडिया ही उसका सहारा बनेगा। सेमिनार की शुरूआत दीप प्रज्वलन के साथ हुई। फैकल्टी ऑफ आर्ट्स की डीन प्रो. कोमल औदिच्य ने स्वागत भाषण दिया और वर्तमान में मीडिया की ग्रामीण विकास में भूमिका की प्रस्तावना रखी। अंत में जनसंचार एवं पत्रकारिता विभाग की विभागाध्यक्ष डॉ. वैशाली कपूर ने धन्यवाद ज्ञापित किया।

ग्रामीण कहानियां पत्रकारिता की धड़कन

विलेज स्वायर संस्था की डायरेक्टर लिडी प्रिकिट ने कहा कि ग्रामीण क्षेत्रों की कहानियां पत्रकारिता की धड़कन हैं। जनसंचार की भाषा ऐसी होनी चाहिए जो आम लोगों की समझ में आए। राजस्थान यूनिवर्सिटी के जनसंचार केंद्र के पूर्व अध्यक्ष प्रो. संजीव भानावत ने 'ग्रामीण उत्थान में मीडिया की भूमिका' विषय पर बोलते हुए कहा कि मीडिया लोगों और सरकार के बीच सूचनाएं साझा करने के लिए एक ब्रिज की तरह काम करता है। ग्रामीण विषयों या बदलाव के विषय में शोधपरक अध्ययन समाचार प्रस्तुत करने की जरूरत है।

ग्रामीण भारत से बढ़ती है शहरों की चमक

कॉमन कॉज के डायरेक्टर डॉ. विपुल मुद्गल ने कहा कि ग्रामीण भारत ही शहरी भारत की चमक-धमक को बढ़ाता है। ग्रामीण लोगों की आय बढ़ती है तो उसका सीधा प्रभाव शहरी लोगों पर पड़ता है। उन्होंने कहा कि ग्रामीण भारत में कहानियां भरी पड़ी हैं जो पूरे विश्व के पाठकों को अपनी ओर खींचने में सक्षम हैं। पत्रकारों को ग्रामीण भारत को समझना होगा, तभी वे सही तरीके से सटीक मुद्दे उठा पाएंगे। विलेज स्वायर की ओर से ज्योति ठाकुर ने 'ग्रामीण समाचार बहुमूल्य है' विषय पर प्रस्तुति दी।

Link of the publication-
https://sparkpr.in/international-seminar-on-media-and-rural-development-retrospect-and-prospect-at-manipal-university-jaipur/

11. Feedback of the Event: NA

12. Link of MUJ Website:
https://jaipur.manipal.edu/muj/news-events/news-list/media-and-development--retrospect-and-prospect.html

Event Coordinator: Dr. Ram Pratap Singh and Dr. Avneesh Kumar

MANIPAL UNIVERSITY
JAIPUR

FACULTY OF ENGINEERING

School of Civil & Chemical Engineering

Department of Civil Engineering

Societal Connect Activity

On

Toilet Training for GHS Staff

Date of Event 19th Oct. 2023

Content of Report

1. Introduction of the Event
2. Objective of the Event
3. Beneficiaries of the Event
4. Details of the Guests
5. Brief Description of the event
6. Photographs
7. Brochure or creative of the event
8. Schedule of the Event
9. Attendance of the Event
10. News Publication
11. Feedback of the Event
12. Link of MUJ website

1. Introduction of the Event

Department of Civil Engineering SCCE, Conducted Toilet management training for GHS staff on 19th Oct. 2023. The planned and coordinated by Mr Sagar Gupta, Assistant Professor, Civil Engineering Department.

2. Objective of the Event

- The activity was designed to raise conscious related to behaviour of toilet users and consensus building.
- Understanding essential composnent of toilet cleaning and management

3. Beneficiaries of the Event

The beneficiaries of event where GHS house keeping staff and students of MUJ.

4. Details of Speaker

Sr.No.	Name of Guest	Designation
1.	Animesh Kumar, Good Host Spaces	Operations Manager
2.	Sagar Gupta, MUJ	Assistant Professor

5. Brief Description of the event

The activity includes video lecture and active question and answer sessions . The planned and coordinated by Mr Sagar Gupta, Assistant Professor, Civil Engineering Department.

Brochure of the Event

6. Attendance of the Event

Manipal University Jaipur
School of Civil & Chemical Engineering
Department of Civil Engineering

Toilet Training for GHS Staff		
Date	Oct. 19, 2023	
Attendance List		
S. NO.	Name	Reg.No.
1.	AKSHIT CHAURASIA	219102001
2.	PRINCE KUMAR	219102002
3.	HARSHIT GOTHWAL	219102005
4.	AAKARSH RANJAN RAI	219102009
5.	ARMAAN VERMA	219102010
6.	TANYA SINGH THAKUR	219102011
7.	DIVYA PRAKASH DUBEY	219102014
8.	RAVISH DEG	219102015
9.	MAYANK CHOUDHARY	219102016
10.	SUPRIYA CHATTOPADHYAY	219102017
11.	JASVEER DEWASI	219301128
12.	HEMANT MEDATWAL	209102009
13.	ADNAN SHEIKH	209102010
14.	PIYUSH SHARMA	209102013
15.	SANKET SANDEEP KARPE	209102014
16.	KHADKE SUYASH SHAILENDRA	209102015
17.	SPARSH KHARE	209102016
18.	ANURAG MEERAL	209102017
19.	SAGAR CHOUHAN	209102018
20.	MAYANK SHARMA	209102019
21.	HIMANSHU MANDRAI	209102021
22.	MAYANK TOMAR	209102023

7. List of Participants

Manipal University Jaipur		
School of Civil & Chemical Engineering		
Department of Civil Engineering		
Toilet Training for GHS Staff		
Date	Oct. 19, 2023	
Attendance List		
S.No	**Employee Code**	**Employee Name**
1	2000860612	Meera Devi Mundotiya
2	2000860626	Kamla Devi
3	2000860635	Santosh
4	2000860649	Geeta Verma
5	2000860699	Seeta Kumawat
6	2000860726	Chanda Devi
7	2000860731	Vimla Devi
8	2000860734	Vinod

9	2000860741	Jitendra Kumar Pareek
10	2000860767	Manju Devi
11	2000860770	Manju Devi
12	2000860773	Manju Devi
13	2000860794	Nagendra Singh
14	2000860797	Nand Kishore
15	2000860835	Sita
16	2000860874	Guddi Devi Balai
17	2000860904	Sugan Meena
18	2000860913	Suman Devi
19	2000860939	Shanti Kumawat
20	2000860963	Deepak Bariwa
21	2000860981	Lali Barai
22	2000861082	Tara Kumawat
23	2000861094	Gopali
24	2000861138	Prem Devi
25	2000861150	Radha Devi
26	2000861170	Guddi Devi
27	2000861192	Prem Devi
28	2000861286	Jagdish
29	2000861302	Usha
30	2000861307	Babli Harijan
31	2000861359	Rakesh Kumar Raikwar
32	2000861384	Koyal Devi
33	2000861404	Manisha Devi
34	2000861426	Anita Devi
35	2000939490	Gita Devi
36	2000939503	Naina
37	2000939515	Santosh Devi
38	2000939527	Vimla Devi Bairwa
39	2000954160	Minakshi Devi
40	2000982536	Ramesh
41	2000996175	Kavita Kumari Raigar
42	2001043602	Pinky Yogi
43	2001113764	Somoti Lal Bairwa
44	2001194725	Anju Devi
45	2001289599	Ramswrup

8. Photograph

Pic no.1 active session on toilet management training

Pic no.2 Participant at Event

Link of event posted on university Website -

Head
Civil Engg. Dept.
MUJ, Dehmikalan, Jaipur

MANIPAL UNIVERSITY
JAIPUR

FACULTY OF ARTS

SCHOOL OF HUMANITIES AND SOCIAL SCIENCES

DEPARTMENT OF ARTS

Tree plantation Drive

Social outreach event in collaboration with DSW and NCC

06/09/2023

Index

1. **Introduction of the Event**
   The Department of Arts in collaboration with the DSW (NCC and NSS) organized a tree plantation drive with a number of BA(Liberal Arts) students.

2. **Objective of the Event (bullet points or about 50 words)**

To make the students aware of the importance of tree plantation.

3. **Beneficiaries of the Event**

   Government school, Begas, an adopted school of MUJ

4. **Brief Description of the event**
   The Department of Arts in collaboration with the DSW (NCC and NSS) organized a tree plantation drive with a number of BA(Liberal Arts) students. The objective of the event was to make the students aware of the importance of tree plantation.

5. Photographs

Students engaged in a tree plantation drive in the government school, Begas


GPS Map Camera
Begas, Rajasthan, India
VHF2+FP2, Begas, Rajasthan 303007, India
Lat 26.873903°
Long 75.552877°
06/09/23 11:26 AM GMT +05:30
Google

MUJ students with the government school students

MUJ department students during the plantation drive

6. Brochure or creative of the event (insert in the document only)

8x4.5 feet

7. Schedule of the event (insert in the report)

6th September, 11:00 a.m. to 12:00 p.m.

8. Attendance of the Event (insert in the document only)
Total attendee-16

Sr. No	Name of Institution	Place of Institution	Name of Attendee	Name of Dept
1.	MUJ	Jaipur	Chandravardhan	Arts
2.	MUJ	Jaipur	Kumesh Mishra	Arts
3.	MUJ	Jaipur	Soumya Pareek Dhanushree	Arts
4.	MUJ	Jaipur		Arts
5.	MUJ	Jaipur	Karan Mallick	Arts
6.	MUJ	Jaipur	Vanshika Agarwal	Arts
7.	MUJ	Jaipur	Prithviraj	Arts
8.	MUJ	Jaipur	Akshatt Singh	Arts
9.	MUJ	Jaipur	Dhruv Nair	Arts
10.	MUJ	Jaipur	Krishna	Arts
11.	MUJ	Jaipur	Gaury	Arts
12.	MUJ	Jaipur	Sudeepti Dhruv Dahiya	Arts
13.	MUJ	Jaipur	Aditi Panigrahi	Arts
14.	MUJ	Jaipur	Aradhya Khandelwal	Arts
15.	MUJ	Jaipur	Komal Chadha	Arts
16.	MUJ	Jaipur	Krritika Khandelwal Pragya Sharma	Arts
17.	MUJ	Jaipur	Prachi Randhawa	Arts
18.	MUJ	Jaipur	Gurmehr Singh	Arts
19.	MUJ	Jaipur	Himmat di Charan	Arts
20.	MUJ	Jaipur	Sameer Khan	Arts
21.	MUJ	Jaipur	Ananya Thakur	Arts
22.	MUJ	Jaipur	Harshita Das	Arts
23.	MUJ	Jaipur	Manan Sharma	Arts

24.	MUJ	Jaipur	Surendra Singh	Arts
25.	MUJ	Jaipur	Joy Tak	Arts
26.	MUJ	Jaipur	Soumya harma	Arts
27.	MUJ	Jaipur	Deepak	Arts
28.	MUJ	Jaipur	Anup Choudhary	Arts
29.	MUJ	Jaipur	Prithviraj Hada	Arts
30.	MUJ	Jaipur	Tanisha Vashisht	Arts

9. Link of MUJ website stating the event is uploaded on website

https://jaipur.manipal.edu/muj/news-events/events-list.html

Dr. Mani Sachdev
Head, Department of Arts
Manipal University Jaipur

15.9.23

Seal and Signature of HOD

DIRECTOR STUDENT WELFARE & PROCTOR
MANIPAL UNIVERSITY, JAIPUR

(Prof. AD Vyas)
Director, Directorate of Student's Welfare

NATIONAL INSTITUTE OF
TECHNICAL TEACHERS' TRAINING & RESEARCH
An ISO-9001:2000 Certified Institute
(Ministry of Education, Govt of India)
SECTOR 26, CHANDIGARH 160 019

Ref: NITTTR/2023-24 Dated : 18.09.2023

To
Honorable Vice Chancellor / Worthy Registrar
Manipal University, Jaipur

Subject: Short Term Programme on **"Energy efficient and innovative building construction practices"** from 09-13 October, 2023.

Dear Sir/Madam,

We are organizing the above cited STC for the faculty of Engineering Colleges and Polytechnics of all northern states of the country w.e.f. **09-13 October, 2023**. The above mentioned programme is being organized with the prime to acquaint the participants about the energy efficient innovative construction practices.

The importance of energy efficient and green buildings has assumed great urgency today. In light of fast depleting energy resources, energy scarcity and increasing environmental pollution, innovative ways to cut down energy consumption are necessary. The construction industry is one of the largest energy consuming sectors. In modern buildings significant amounts of energy are also consumed to keep the building environment comfortable. Estimates suggest that about 20-25 percent of the total energy demand is due to manufacturing materials required in the building sector, while another 15 percent goes into the running needs of the building like lighting, air-conditioning, room heating and ventilation etc.

In view of the global energy crisis and increasing energy demand is expected to continue and apart from possible end-use restrictions, energy efficiency and energy management is essentially required.

As Manipal University,Jaipur is a renowned university and Department of Architecture is one of the emerging department of the institute so, we want to conduct the above mentioned programme in collaboration of your organisation. We expect the following co-operation from your institution.

- Arrangement of one lecture hall equipped with facilities like LCD Projector, Computer and sound system for Video films show.
- Field study visit to nearby educational places or site. Charges /fuel charges to the institute bus from the institute for the field visit will be paid by NITTTR, Chandigarh
- Arrangement of few lecturers on the topics marked in the time table (send you in few days). Honorarium and TA to the experts will be paid by NITTTR, Chandigarh
- Arrangement of one guest house rooms for NITTTR faculty from **08-13 November, 2023** at your College/ Guest House.
- Stationary to the course participants for the programme will be provided by NITTTR, Chandigarh.
- As per the decision of the Institute, Rs.118/- (Rs. 100/- +18% GST) per participant will be charged from all participants.
- Honorarium of Rs. 2500/- to coordinator and Rs. 1500/- to supporting staff will be provided by NITTTR, Chandigarh
- No working lunch and tea will be provided to the participants by NITTTR, Chandigarh.

As it is a inter-disciplinary programme so we expect a minimum number of participants for the programme may be 30. The details of the programme will be shared on receiving letter of acceptance from your end through the coordinators.

We will highly appreciate your timely communication and approval for the above mentioned course.

(Dr. Amit Goyal)
Course Coordinator
9417569559

CC:
Dr. Sunanda Kapoor, Department of Architecture, Manipal University

MANIPAL UNIVERSITY
JAIPUR

INSPIRED BY LIFE

FACULTY OF DESIGN

SCHOOL OF ARCHITECTURE AND DESIGN

Short Term Programme

on

Energy Efficient and Innovative Construction Practices

Hybrid Mode

16th to 20th October 2023

Index

1. Introduction

The importance of energy efficient and green buildings has assumed great urgency today. In light of fast depleting energy resources, energy scarcity and increasing environmental pollution, innovative ways to cut down energy consumption are necessary. The construction industry is one of the largest energy consuming sectors. In modern buildings significant amounts of energy are also consumed to keep the building environment comfortable. Estimates suggest that about 20-25 percent of the total energy demand is due to manufacturing materials required in the building sector, while another 15 percent goes into the running needs of the building like lighting, air-conditioning, room heating and ventilation etc. Increased development of housing and commercial buildings has imposed immense pressure on our dwindling energy sources. The availability of energy is limited and known resources of energy are exhausting fast. Therefore, energy efficiency is assuming importance in different sectors. In view of the global energy crisis and increasing energy demand is expected to continue and apart from possible end-use restrictions, energy efficiency and energy management is essentially required.

2. Objectives of the STP

The objective of STP was to discuss on the below mentioned aspects related to energy efficient and green buildings-

➢ Basic Knowledge of Energy Efficient Buildings

➢ Planning and Preparedness

➢ Solar Passive Architecture

➢ Vaastu Shastra Myths and Realities

➢ Innovative Practices/Research in Green Buildings

➢ Green Buildings-Design and Construction

➢ Energy efficiency in old traditional buildings

➢ Solar Devices and their Utilization

3. Beneficiaries of the Event

- Academicians
- Research Scholars
- PG Students (Architecture, Civil, Management and Allied Fields)

4. Details of the Guests

- Dr. Amit Goyal NITTTR, Chandigarh
- Dr. Sanjay Sharma NITTTR, Chandigarh
- Shashwat Singh, Energy Simulation Expert Northumbria University, UK
- Dr. J.M. Mathur, MNIT Jaipur
- Dileep Singh, BoG, ASHRAE

- Ar. Bibhu K. Nayak, Associate Professor, Manipal University Jaipur
- Dr. Madhura Yadav, Professor & Dean, Faculty of Design, Manipal University Jaipur
- Dr. Abhishek Sharma, Professor, Manipal University Jaipur

5. Brief Description of the Event

School of Architecture & Design, Manipal University Jaipur organized a five-day Short-Term Programme titled "Energy Efficient and Innovative Construction Practices" in association with NITTTR, Chandigarh. The STP aimed to introduce various Energy Efficient practices adopted in Building Construction. The Short-Term Programme was scheduled from 16th to 20th October 2023 in Hybrid mode. This event also helped to enhance the existing knowledge of various teachers and students to cater the new innovations in the field of architecture and design. The event received good feedback from faculty members and all the participants.

6. Brochure of the Event

ABOUT MANIPAL UNIVERSITY

Manipal University Jaipur (MUJ) has redefined academic excellence in the region and inspires students of all disciplines to learn and innovate through hands-on practical experience. Manipal University Jaipur (MUJ) was launched in 2011 on an invitation from the Government of Rajasthan, as a self-financed State University. MUJ has redefined academic excellence in the region, with the Manipal way of learning; one that inspires students of all disciplines to learn and innovate through hands on practical experience. Jaipur, being one of the fastest growing cities in India, has increasing demand for quality higher education in the region. Following an allotment of 122 Acres of land at Dehmi Kalan village near Jaipur, the permanent campus of the University has come up at a fast pace and is by far one of the best campuses in the region.The multi-disciplinary university offers career-oriented courses at all levels, i.e., UG, PG and doctoral and across diverse streams, including Engineering, Architecture, Planning, Fashion Design, Interior Design, Fine Arts, Hospitality, Humanities, Journalism and Mass Communication, Basic Sciences, Law, Commerce, Computer Applications, Management, etc. Some PG programmes are also available in the research mode.The university has been granted the ATAL Incubation Centre , funded by Niti Aayog, Government of India.

ORGANISING COMMITTEE

Coordinator
Prof. (Dr.) Sunanda Kapoor, Head , School of Architecture & Design, Manipal University Jaipur
Co-Coordinator
Dr. Ashutosh Saini, Assistant Professor, School of Architecture & Design, Manipal University Jaipur
Contact: ashutosh.saini@jaipur.manipal.edu

ABOUT NITTTR, CHANDIGARH

Since its inception in 1967, NITTTR (formerly TTTI) Chandigarh has made rapid strides in the areas of engineering and technology and emerging areas like computer, educational technology, entrepreneurship development, rural development, industry-institute interaction and educational management. Presently, the institute conducts more than 400 short-term training programmes annually for polytechnics and engineering colleges teachers, professionals and managers of industries. The institute also conducts a large number of AICTE sponsored Summer and Winter Schools every year. The institute offers six postgraduate programmes in engineering and engineering education through regular and modular modes. In addition to education and training programmes, the institute renders extension services to Polytechnics, undertakes research and development projects and develops print and non-print instructional material.

ABOUT SCHOOL OF ARCHITECTURE AND DESIGN, FACULTY of DESIGN, MUJ

School of Architecture & Design, Jaipur encapsulates the philosophy of creating innovators, empowered with the knowledge for the creation of a dynamic world, pulsating with intellectual acuity and striving for the utopia of a prosperous biosphere for all. The School strives to provide world-class architectural education by coupling state-of-art facilities with a dedicated and experienced faculty team and student-centric academic practices. Also, owing to the location, we have a vantage point in understanding the state of Rajasthan, which is one of the richest states in India in terms of its culture and heritage. The School intends to create an archive of heritage documentation for the state and become forerunners in the conservation of cultural landscape and heritage of the region.

ADDRESS FOR CORRESPONDENCE

Dr. Amit Goyal, Assistant Professor
Department of Civil Engineering
National Institute of Technical Teachers' Training and Research, Sector 26, Chandigarh 160 019
Tel: 0172- 2759656, Mobile No- 09417569559
Fax: (0172) 2793893, 2791366
E-mail: amitgoyalamit23@gmail.com, amitgoyalamit@rediffmail.com,

SHORT TERM PROGRAMME ON ENERGY EFFICIENT AND INNOVATIVE CONSTRUCTION PRACTICES

From- 16-20 October, 2023

ORGANISED BY

School of Architecture & Design
Faculty of Design
&
MUJ-TEC
Manipal University Jaipur
[University under Section 2(f) of UGC Act]
Dehmi Kalan, Off Jaipur-Ajmer Expressway,
Jaipur, Rajasthan

In Collaboration with

National Institute of
Technical Teachers' Training and Research
An ISO:9001-2000 Certified Institute
[Ministry of Human Resource Development, Govt of India]
Sector 26, Chandigarh 160 019

Venue- Manipal University Jaipur

INTRODUCTION AND OBJECTIVES

The importance of energy efficient and green buildings has assumed great urgency today. In light of fast depleting energy resources, energy scarcity and increasing environmental pollution, innovative ways to cut down energy consumption are necessary. The construction industry is one of the largest energy consuming sectors. In modern buildings significant amounts of energy are also consumed to keep the building environment comfortable. Estimates suggest that about 20-25 percent of the total energy demand is due to manufacturing materials required in the building sector, while another 15 percent goes into the running needs of the building like lighting, air-conditioning, room heating and ventilation etc. Increased development of housing and commercial buildings has imposed immense pressure on our dwindling energy sources. The availability of energy is limited and known resources of energy are exhausting fast. Therefore, energy efficiency is assuming importance in different sectors. In view of the global energy crisis and increasing energy demand is expected to continue and apart from possible end-use restrictions, energy efficiency and energy management is essentially required.

COURSE CONTENTS

- Basic Knowledge of Energy Efficient Buildings
- Planning and Preparedness
- Solar Passive Architecture
- Vastu Shatra Myths and Realities
- Innovative Practices/Research in Green Buildings
- Green buildings-Design and Construction
- Energy efficiency in old traditional buildings
- Solar Devices and their Utilization

COORDINATORS

Programme Coordinator : Dr. Amit Goyal, Assistant Professor, Department of Civil Engineering, NITTTR, Chandigarh
Dr. Sanjay Sharma, Professor, Department of Civil Engineering, NITTTR, Chandigarh

Local Coordinators :

Coordinator
Prof. (Dr.) Sunanda Kapoor, Head, School of Architecture & Design, Manipal University Jaipur
Contact: sunanda.kapoor@jaipur.manipal.edu

Co-Coordinator
Dr. Ashutosh Saini, Assistant Professor, School of Architecture & Design, Manipal University Jaipur
Contact: ashutosh.saini@jaipur.manipal.edu

METHODOLOGY

The one-weeks programme will be judiciously utilized by integrating theory classes, practicals, field visits, audio-visual presentations and educational video films shows. In order to make the programme participatory, group discussions and project formulations exercises will also be done. Besides the institute faculty, experts will be invited from research and development organizations, science and technology departments, working on green and energy efficient buildings.

TARGET GROUP

Faculty members of all Engineering Disciplines, Architectural, Management and Humanities streams working in an AICTE approved engineering college/institute can participate in this programme. These faculty members have to get themselves sponsored from the Principal/Head of Institution and register themselves on NITTTR Chandigarh Website at www.nitttrchd.ac.in
[Note: Seats are limited, please get your admission confirmed in advance].

LAST DATE

Last date of registration for participation in this training programme is 15 October, 2023.

REGISTRATION

Fee of Rs 118/- is chargeable from the participants engineering college teachers whose names are sponsored by the competent authority (Principal / Director). Click on the following link to register:
https://fdp.nitttrchd.ac.in/backingup/

After successful registration, email the registration form and payment receipt to amitgoyalamit23@gmail.com

TA/DA

3 tier AC train travel will be paid to the participants of Govt. Institutes by NITTTR, Chandigarh.

ACCOMMODATION

Accomodation to the participants shall be provided on payment basis.

VENUE

Room No. 201, Lecture Hall, Second Floor, School of Architecture and Design, Dome Building, Manipal University Jaipur.

SHORT TERM PROGRAMME

on

Energy Efficient and Innovative Construction Practices
at
Faculty of Design, Manipal University Jaipur

16-20 October, 2023

Name: _____

Age: _____ Sex: Male ☐ Female ☐

Qualification: _____

Designation: _____

Experience (Teaching/Industrial/Others): _____

Institution: _____

Address: _____

_____

_____

Phone No. with STD Code

E-Mail :

Whether Accommodation Needed: Yes ☐ No ☐

Signature of the Applicant

Recommendation of the Principal/Head of the Sponsoring Institute (Signature with seal)

[Last Date of Submission of Application is 15 October, 2023]

7. Photographs of the Event

Figure 1: Inauguration Ceremony

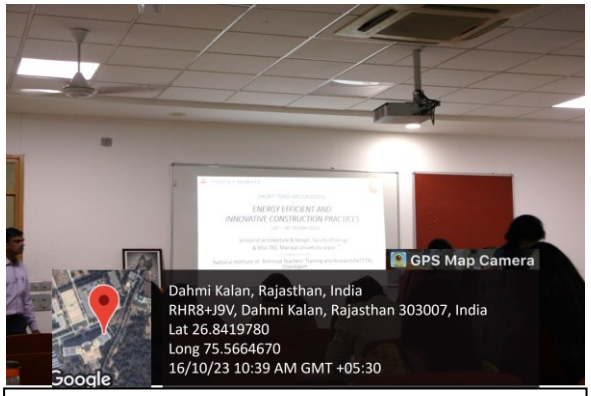

Figure 3: Registrations

Figure 2: Lamp Lighting by Dr. Sunanda Kapoor

Figure 4: Introduction to the STP

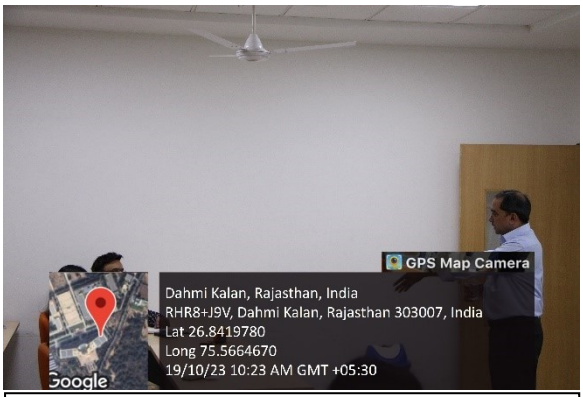

Figure 5: Expert Lecture by Dr. J.M. Mathur

Figure 9: Expert Lecture by Dr. Madhura Yadav

Figure 6: Introduction to STP by Dr. Madhura

Figure 10: Expert Talk by Ar. Sneh Singh

Figure 7: Expert Talk by Dr. Subhash Devrath

Figure 11: Expert Lecture by Dr. Abhishek

Figure 8: Felicitation of Dr. Amit Goyal

Figure 12: Group Photograph post STP

8. Schedule of the Event

Short Term Programme on 'Energy Efficient and Innovative Construction Practices'
From 16-20 October 2023 at **Manipal University Jaipur**

Day/Date	SESSION – I 10.00 am to 11.30 am	SESSION – II 11.30 am to 1.00 pm	1.00 to 2.30 pm	SESSION – III 2.30 pm to 4.00 pm
Monday 16.10.2023	Registration / Inauguration	Innovation in Clean Construction of Masonry Houses **Dr. Amit Goyal** **NITTTR, Chd**	LUNCH BREAK	Bioinspired building facade design **Shashwat Singh,** **Energy Simulation Expert** **Northumbria University. UK**
TUESDAY 17.10.2023	Design in Motion **Ar. Bibhu K. Nayak,** **Associate Professor, Manipal University Jaipur**	Energy Efficiency HVAC system Expert in efficient HVAC systems **Dileep Singh, BoG, The American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE)**		Sustainable Material for Net Zero **Arun Jain**, Energy expert in Efficient Building techniques **BoG The American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE)**
WEDNESDAY 18.10.2023	Building Materials for Green construction **Dr. Sanjay Sharma** **NITTTR, Chd**	New Innovation in Earthquake Resistant Clean Construction of Masonry Houses **Dr. Amit Goyal** **NITTTR, Chd**		Field Visit to Trimurty Aurum C-Scheme Jaipur, first gold rated green building by IGBC in Rajasthan **Dr. Amit Goyal** **NITTTR, Chd**
THRUSDAY 19.10.2023	Energy consumption in Residential Buildings **Dr. J.M. Mathur, MNIT Jaipur**	The Energy-Saving Potential of Bamboo-based Materials **Dr. Madhura Yadav, Professor & Dean, Faculty of Design, Manipal University Jaipur**		Passive Strategies in Architectural Design **Dr. Tarush Chandra,** Expert: Urban Planning **MNIT Jaipur**
FRIDAY 20.10.2023	Simplified metrics and workflows for microclimate responsive urban buildings design **Mr. Naga Vankata Sai Kumar,** **Expert: Energy Simulation Software, Environmental Performance and Design Lab (EPDL), Technion-Israel Institute of Technology**	Biochar as construction material for sustainable buildings: From Production to Application **Dr. Abhishek Sharma, Professor,** **Manipal University Jaipur**		Group Discussion Valedictory Session

9. Attendance of the Event

*Please see the annexure no. 1

10. Weblink

11. Event Coordinators

- Dr. Amit Goyal, NITTTR Chandigarh
- Prof. Sunanda Kapoor (Professor & Head, SA&D)
- Dr. Ashutosh Saini (Assistant Professor, SA&D)

Prof. (Dr). Sunanda Kapoor
Head, Architecture (SA&D, MUJ)

Dr. Ashutosh Saini
Assistant Professor

Annexure: 1

NITTTR CHANDIGARH
CIVIL ENGINEERING DEPARTMENT
STC ON "ENERGY EFFICIENT AND INNOVATIVE BUILDING CONSTRUCTION PRACTICES"
FROM 16th to 20th OCTOBER, 2023

Course Coordinator: Dr. Amit Goyal
Venue: MANIPAL UNIVERSITY JAIPUR

REGISTRATION & ATTENDANCE SHEET

Sr. No.	Name (in English & Hindi), Designation & Official Address with E-mail and Contact no.	Gender M/F	Category SC/ST/ OBC/GEN	Spon. Letter Yes/No	Govt./ Govt. Aided/ Self-financed	Signature								
						First Day	Second Day		Third Day		Fourth Day		Fifth Day	
							FN	AN	FN	AN	FN	AN	FN	AN
1.	Dr. Manish Sharma (Asst. Prof., NSUT, New Delhi) manish.sharma@nsut.ac.in. 94143-17189.	M	GEN	Yes.	Govt.	[signature]	[signature]	[signature]	[signature]	[signature]	[signature]	[signature]	[signature]	[signature]
2.	Dr. Sunanda Kapoor Professor. Manipal University Jaipur 9872663383	F	GEN	Yes	self financed	[signature]	[signature]	[signature]	[signature]	[signature]	[signature]	[signature]	[signature]	[signature]
3.	Dr. Ashutosh Saini Asst. Professor. Manipal University Jaipur, 7018150626	M	OBC	Yes	Self. Financed	[signature]	[signature]	[signature]	[signature]	[signature]	[signature]	[signature]	[signature]	[signature]
4.	Swasti Sharma Ph.D Scholar MNIT Jaipur 8219164070	F	GEN	Yes	Govt.	[signature]	[signature]	[signature]	[signature]	[signature]	[signature]	[signature]	[signature]	
5.	Ar. Siddharth Mehra MUJ. 9425790200	M	Gen	Yes	Self. finance	[signature]	[signature]	[signature]	[signature]	[signature]	[signature]	[signature]	[signature]	[signature]

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Faculty of Design
Manipal University Jaipur

6.	BINEET CHHAJER ASSOCIATE PROFESSOR AAYOJAN SCHOOL OF ARCHITECTURE bic@aayojanedu.in 9929767309.	M	GEN	~~SELF~~ YES.	SELF FINANCE	[signature]	[signature]	[signature]	[signature]	[signature]	[signature]	[signature]	[signature]	[signature]
7.	Saurabh Sharma Asst. Professor MUJ	M	Gen.	Yes	Self Finance	[signature]	[signature]	[signature]	[signature]	[signature]	[signature]	[signature]	[signature]	[signature]
8.	Ar. Neha Saxena Asso. Professor MUJ	F	Gen.	Yes	self Finance	[signature]	[signature]	[signature]	[signature]	[signature]	[signature]	[signature]	[signature]	[signature]
9.	Ar. Kingalk Chauhan Asst. Prof. MUJ	F	Gen.	Yes	self Finance	[signature]	[signature]	[signature]	[signature]	[signature]	[signature]	[signature]	[signature]	[signature]
10.	Srishti Bhattacarjee M.Arch Student FOD	F	Gen	Yes	Self finance	S.B	S.B	S.B	S.B	S.B	S.B	S.B	S.B	S.B
11.	Apurva Ranjan M.Arch (Landscape) FOD	F	Gen	-	self finance	[signature]	[signature]	[signature]	[signature]	[signature]	[signature]	[signature]	[signature]	[signature]
12.	Such Singh Associate Prof.	F	Gen	Yes	Self finance	[signature]	[signature]	[signature]	[signature]	[signature]	[signature]	[signature]	[signature]	[signature]
13.	Ar. Ayushi Sharma Asst. Prof (senior) SA&D, FOD.	F	GEN	Yes	Self financed	[signature]	[signature]	[signature]	[signature]	[signature]	[signature]	[signature]	[signature]	[signature]

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14.	Siddhant Walia Assit Prof. 954906[illegible]	M	GEN.	Yes	Self finance	[signature]	[signature]	[signature]	[signature]	[signature]	[signature]	[signature]	[signature]	[signature]
15.	AR. SANJEEV PAREEK ASSISTANT PROFESSOR SA&D, MUJ	M	gen	YES	SELF FINA	[signature]	[signature]	[signature]	[signature]	[signature]	[signature]	[signature]	[signature]	[signature]
16.	AAMERA QUAZI M.DES STUDENT	F	Gen	yes	self finance	[signature]	[signature]	[signature]	[signature]	[signature]	[signature]	[signature]	[signature]	[signature]
17.	Shivangi chaurasiya M.Des. student 7524995595	F	OBC	yes	self finance	[signature]	[signature]	[signature]	[signature]	[signature]	[signature]	[signature]	[signature]	[signature]
18.	SANA SHAIKH M.DES STUDENT	F	GEN	YES	″	[signature]	[signature]	[signature]	[signature]	[signature]	[signature]	[signature]	[signature]	[signature]
19.	KANIKSHA MALE M.DES (student)	F	Gen	y	Self	[signature]	[signature]	[signature]	[signature]	[signature]	[signature]	[signature]	[signature]	[signature]
20.	DR. Subhadu Chandra Devnath	M	Gen	Yes	Self	[signature]	[signature]	[signature]	[signature]	[signature]	[signature]	[signature]	[signature]	[signature]
21.	Raunak Prasad Asst. Professor SA&D MUJ	M	Gen	Yes	Self	[signature]	[signature]	[signature]	[signature]	[signature]	[signature]	[signature]	[signature]	[signature]

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22.	Shipra Goswami PH.D. MNIT Jaipur	F		ONLINE	[illegible]	P	P	P	P	P	P	P	P	P
23.	Pushpendra Chaturvedi PhD. MNIT Jaipur	M		ONLINE		P	P	P	P	P	P	P	P	P
24.	Yogesh Kumar Assistant Professor. PPSUD, Surat	M		ONLINE		P	P	P	P	P	P	P	P	P
25.	Vijay Lakshmi Bhati Assistant Professor LPU	F		ONLINE		P	P	P	P	P	P	P	P	P
26.	Vishakha Santosh Kumar. Assistant Professor. SSPA, Maharashtra	F		ONLINE		P	P	P	P	P	P	P	P	P
27.	Rakshandha Saini Ph.D Scholar Shoolini University, H.P.	F		ONLINE		P	P	P	P	P	P	P	P	P
28.	Hemant Kumar Ph.D Scholar IIT Kharagpur.	M		ONLINE		P	P	P	P	P	P	P	P	P
29.	Banwari Sharma Ph.D. Scholar MNIT Jaipur.	F		ONLINE		P	P	P	P	P	P	P	P	P

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30.	Sanjay Pramod Holey Associate Professor SIPNA School of Arch & Planning	M		ONLINE		P	P	P	P	P	P	P	P	P
31.	Abhinam Bhardwaj Ph.D Scholar NIT Hamirpur	M		ONLINE		P	P	P	P	P	P	P	P	P
32.	Richma Sharma Ph.D Scholar NIT Hamirpur.	F		ONLINE		P	P	P	P	P	P	P	P	P

Verified by:

(Dr. Sunanda K.)
Name & Signature of :
Head/ Coordinator
Head, School of Architecture & Design
Faculty of Design
Manipal University Jaipur

MANIPAL UNIVERSITY
JAIPUR

FACULTY OF MANAGEMENT AND COMMERCE

DEPARTMENT OF BUSINESS ADMINISTRATION

WEBINAR ON

COMMUNITY ENGAGEMENT AND PARTICIPATION IN SUSTAINABLE CITY INITIATIVES in Collaboration with CUTS International

November 8, 2023

Head
Department of Business Administration
Manipal University Jaipur

MANIPAL UNIVERSITY
JAIPUR

Event Report

1. Introduction of the Event
2. Objective of the Event
3. Beneficiaries of the Event
4. Details of the Guests
5. Brief Description of the event
6. Photographs
7. Brochure or creative of the event
8. Schedule of the Event
9. Attendance of the Event

1. **Introduction of the Event : Community engagement and participation in sustainable city initiatives** was organized by School of Business & Commerce-Department of Business Administration for the students of University and for young entrepreneurs on 8th November 2023 online mode through Webex. The programme was organized to address the challenges and opportunities related to Sustainable Development Goal 11: Sustainable Cities and Communities. The goal aimed to ensure that cities and settlements are inclusive, safe, resilient, and sustainable.
2. **Objective:**
   The objective of this event was to convene urban planners, policymakers, community leaders, and stakeholders to discuss innovative solutions, share best practices, and foster collaborations towards creating sustainable and resilient cities**.**
3. **Beneficiaries of the Event:**
   The target audience are young entrepreneurs, students, and faculty members.
4. **Details of the Guest:** Purushendra Singh, Assistant Policy Analyst, CUTS International and Senior Fellow, Warrior Maven, USA. Assistant Policy Analyst working at CUTS International, a global policy and advocacy group exceling in research and policy analysis, with a demonstrable strategic and public policy record. Dealt with various issues concerning policy making, implementation across multiple domains, strategic international relations, in particular, and imparting theoretical and practical learnings. Education background: LL.B, Bhimrao Ambedkar Law University (2020-2023) ❖ Diploma in Rural Development, IGNOU (2020-2021) ❖ M.A. in Political Science & International Relations, Rajasthan University (2017-2019) ❖ B.A. in Political Science & International Relations, University of Delhi (2012-2015) Past work as Professor: Former Assistant Professor of Political science, Psychology & International Relations at VGU Vivekananda Global University, Jaipur (6 th February,2021-24th March,2022) and course coordinator of Public Policy & development and has been teaching all the undergraduate students in three departments.
5. **Brief Description of the event: Key Topics Discussed:**
   Urban Planning and Design: Experts highlighted the importance of thoughtful urban planning and innovative design approaches in creating cities that are both environmentally sustainable and inclusive for all residents.
   Infrastructure Development: Discussions revolved around the significance of resilient infrastructure and its role in ensuring the safety, accessibility, and sustainability of urban areas, especially in the face of climate change and natural disasters.
   Community Engagement and Participation: The webinar emphasized the pivotal role of community engagement in decision-making processes related to urban development. Successful community-driven initiatives were shared as models for fostering inclusivity and ownership within local communities.
   Technology and Innovation: Presentations showcased the integration of technology and innovation in promoting sustainable solutions for urban challenges, ranging from smart city initiatives to renewable energy adoption and waste management.
   Key Takeaways:

Interdisciplinary Collaboration: The importance of interdisciplinary collaboration between urban planners, policymakers, architects, environmentalists, and community leaders was highlighted as a cornerstone for achieving sustainable urban development.

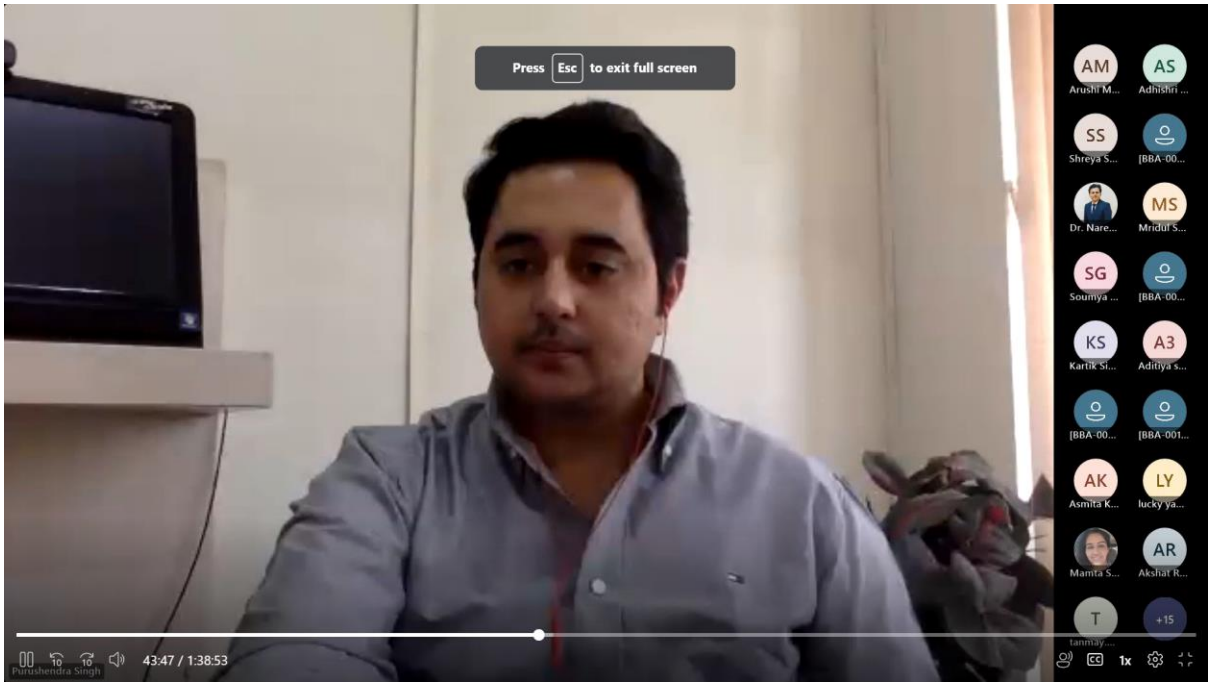
Local Context Sensitivity: Recognizing the diversity of urban settings globally, speakers emphasized the need for context-sensitive approaches tailored to each community's unique needs and challenges.

Policy Recommendations: Webinar discussions culminated in the identification of actionable policy recommendations to support and advance SDG 11 at the local, national, and international levels.

Conclusion: The webinar served as a platform to exchange ideas, insights, and best practices in pursuit of sustainable urban development under SDG 11. It reinforced the necessity of concerted efforts, innovation, and collaborative approaches involving diverse stakeholders to build resilient and sustainable cities and communities for current and future generations.

6. Photographs of the event or screenshots of the event

Expert Introducing the Sustainable Goals



Expert explaining the participation of society in SDGs

7. Brochure or Creative of the event

10. Schedule of the event

The event was scheduled on 8th November 2023 from 3-5pm via online mode through Webex.

11 Attendance of the event:

Sr. No	Name of Institution	Place of Institution	Name of Attendee	Name of Dept
1	Manipal University Jaipur	Jaipur	Dr Manisha Choudhary	Business Administration
2	Manipal University Jaipur	Jaipur	Dr Naresh Kedia	Business Administration
3	Manipal University Jaipur	Jaipur	Dr Mamta Soni	Business Administration
4	CUTS INTERNATIONAL	Jaipur	Mr Pushpendra Singh	Expert
5	Manipal University Jaipur	Jaipur	SUHANI BHATIA	Business Administration
6	Manipal University Jaipur	Jaipur	ANUSHRI KOTHARI	Business Administration
7	Manipal University Jaipur	Jaipur	HONEY CHANDNANI	Business Administration
8	Manipal University Jaipur	Jaipur	SUHANI VERMA	Business Administration
9	Manipal University Jaipur	Jaipur	AYUSHMAN GUPTA	Business Administration
10	Manipal University Jaipur	Jaipur	PUNEET KUMAR	Business Administration
11	Manipal University Jaipur	Jaipur	AKHIL	Business Administration
12	Manipal University Jaipur	Jaipur	ABHIJEET TOMAR	Business Administration
13	Manipal University Jaipur	Jaipur	AARAV GUPTA	Business Administration
14	Manipal University Jaipur	Jaipur	PUSHKAL SHARMA	Business Administration
15	Manipal University Jaipur	Jaipur	SAKSHAM AGRAWAL	Business Administration
16	Manipal University Jaipur	Jaipur	BHUMI RAMPURIA	Business Administration
17	Manipal University Jaipur	Jaipur	RISHABH MANGNANI	Business Administration
18	Manipal University Jaipur	Jaipur	HARSHIT AGRAWAL	Business Administration
19	Manipal University Jaipur	Jaipur	PIHU AGARWAL	Business Administration
20	Manipal University Jaipur	Jaipur	Prabh (Guest)	Business Administration
21	Manipal University Jaipur	Jaipur	RAMNIBAHE CHANDGOTHIA	Business Administration
22	Manipal University Jaipur	Jaipur	MOHIT OSHU	Business Administration
23	Manipal University Jaipur	Jaipur	AISHAL KHAN	Business Administration
24	Manipal University Jaipur	Jaipur	PRATHAM JAIN	Business Administration
25	Manipal University Jaipur	Jaipur	SHEIKH TABISHAHMED	Business Administration
26	Manipal University Jaipur	Jaipur	SHASHANK CHAUDHARY	Business Administration
27	Manipal University Jaipur	Jaipur	VIPUL SHARMA	Business Administration
28	Manipal University Jaipur	Jaipur	UTKARSH MISHRA	Business Administration
29	Manipal University Jaipur	Jaipur	LAXITA MENARIA	Business Administration
30	Manipal University Jaipur	Jaipur	VANSH MULCHANDANI	Business Administration
31	Manipal University Jaipur	Jaipur	ADITYA AGRAWAL	Business Administration

32	Manipal University Jaipur	Jaipur	ROSHAN GUPTA	Business Administration
33	Manipal University Jaipur	Jaipur	GARVITA RATHORE	Business Administration
34	Manipal University Jaipur	Jaipur	SATVIK SONI	Business Administration
35	Manipal University Jaipur	Jaipur	GOPAL BISHNOI	Business Administration
36	Manipal University Jaipur	Jaipur	VIYOM GUPTA	Business Administration
37	Manipal University Jaipur	Jaipur	PRANJAL MANGLANI	Business Administration
38	Manipal University Jaipur	Jaipur	SHANTANU SHARMA	Business Administration
39	Manipal University Jaipur	Jaipur	USHA PRASADPRASAD	Business Administration
40	Manipal University Jaipur	Jaipur	SARA KOTHARI	Business Administration
41	Manipal University Jaipur	Jaipur	ABHISHEK JAIN	Business Administration
42	Manipal University Jaipur	Jaipur	DINESH CHOUDHARY	Business Administration
43	Manipal University Jaipur	Jaipur	TANISHA AGARWAL	Business Administration
44	Manipal University Jaipur	Jaipur	PRIYANSHU KUMARSINGH	Business Administration
45	Manipal University Jaipur	Jaipur	NIKHIL PHULWANI	Business Administration
46	Manipal University Jaipur	Jaipur	TANISHKA SHARMA	Business Administration
47	Manipal University Jaipur	Jaipur	PRIYANSHU YADAV	Business Administration
48	Manipal University Jaipur	Jaipur	TARANG JAIN	Business Administration
49	Manipal University Jaipur	Jaipur	VEDANG SONI	Business Administration
50	Manipal University Jaipur	Jaipur	DENIYAL KUMARSINGH	Business Administration
51	Manipal University Jaipur	Jaipur	KRISHNA SNAIR	Business Administration
52	Manipal University Jaipur	Jaipur	KIRTAN JAIN	Business Administration
53	Manipal University Jaipur	Jaipur	AKSHAT KUMARCHOUDHARY	Business Administration
54	Manipal University Jaipur	Jaipur	AKSHAT SHARMA	Business Administration
55	Manipal University Jaipur	Jaipur	AMAN CHHIPACHHIPA	Business Administration
56	Manipal University Jaipur	Jaipur	GAURI BHARDWAJ	Business Administration
57	Manipal University Jaipur	Jaipur	NITESH JAIN	Business Administration
58	Manipal University Jaipur	Jaipur	RIDDHIMA GUPTA	Business Administration
59	Manipal University Jaipur	Jaipur	RINKU SHARMA	Business Administration
60	Manipal University Jaipur	Jaipur	PRINCE GANDHI	Business Administration
61	Manipal University Jaipur	Jaipur	VIPUL AGRAWAL	Business Administration
62	Manipal University Jaipur	Jaipur	BHAVESH AGGARWAL	Business Administration
63	Manipal University Jaipur	Jaipur	PREKSHA SOOD	Business Administration

64	Manipal University Jaipur	Jaipur	ANIRBAN BHATTACHARYYA	Business Administration
65	Manipal University Jaipur	Jaipur	JATIN BAGARIA	Business Administration
66	Manipal University Jaipur	Jaipur	SHUKRITAYU RANJAN	Business Administration

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Department of Business Administration
Manipal University Jaipur

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INSPIRED BY LIFE

11 SUSTAINABLE CITIES AND COMMUNITIES

COLLABORATIONS

ScienceDirect

Thermal Science and Engineering Progress

Volume 42, 1 July 2023, 101929

5E analysis of a novel designed hot water storage header integrated vacuum tube solar water heater

K. Chopra [a d], V.V. Tyagi [b], Sudhir Kumar Pathak [b], Ravi Kumar Sharma [c], Muhamad Mansor [d e], Varun Goel [f], Ahmet Sari [g h]

Show more

https://doi.org/10.1016/j.tsep.2023.101929

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Highlights

- 5-E analysis of a novel designed hot water storage header integrated system.
- Thermal and exergy outputs of the system varied by 63–74% and 4–10% respectively.
- Hot water cost by designed & electric heater is 0.15 & 0.47 INR/L respectively.

Abstract

In this study, 5-E analysis of a heat pipe equipped vacuum tube collector system for residential warm water application has been carried out. The issue of overheating in heat pipes and low thermal efficiency is the major key issues associated with heat pipe

vacuum tube collector. This design completely removes the problem of overheating. In addition to this copper fins mounting with condensers of heat pipe enhance the heat transmission rate between the condenser & water stored in a manifold. The results of an experimental investigation reveal that thermal and exergy outputs of the proposed system were obtained almost 63–74% and 4–10% respectively. The average energy gain at the end of the days selected for Run-A, B, and C was calculated to be 7505, 6912, and 6619 kJ respectively, whereas the average exergy gain for corresponding runs was found to be 928, 700, and 401 kJ respectively. In addition to this, the proposed system can provide hot water of approximately 125 L, 76 L, and 52 L in temperatures 50 °C, 55 °C, and 60 °C respectively.

Concerning to techno-economic investigation, the per liter cost of warm water generation for the proposed & electric geyser was observed to be 0.15 INR/L & 0.47 INR/L respectively. The levelized energy cost, net present worth, and payback time were found to be 5.48 INR/kWh, 55,819 INR, and 4.12 years respectively. The amount of CO_2 mitigation by the developed system was found to be 18.76, 17.28, and 16.54 tCO_2/lifetime for Run-A, B & C respectively.

Introduction

In today's era, non-conventional energy sources utilization has increased rapidly because of the incessant exhaustion of conservative fuels. Among available renewable power sources, solar energy is quite fascinating and promising energy source due to its huge accessibility in maximum parts of the earth free of cost [1]. Solar energy is mainly harnessed in two forms: (i) solar energy is directly changed into electricity using a photovoltaic device (ii) solar energy is transformed into heat energy using thermal collectors [2], [3], [4]. Solar energy can be utilized in several applications like water/air heating, and crop drying. In all solar thermal applications, water heating is consuming a huge amount of conventional energy that will lead to a rise in greenhouse gas (GHG) emissions. Solar heat collectors, which are mostly utilized for water heating, are called solar water heaters. Generally, two types of collectors: vacuum tube collectors & flat plate collectors (FPCs) are utilized for hot water production [5], [6]. The ETCs are dominating the FPCs due to their higher thermal output in cold regions. Also, the convective heat losses are minimum in evacuated tube collectors. Currently, 80–85% of total installed solar collectors are ETCs. Moreover, the ETCs can warm the water to 90 °C comparatively at a low cost. Thus, ETC is a promising technology, which can be implemented for hot water applications in fluctuating weather conditions [7], [8].

Nowadays, different designs of vacuum tube collectors are mainly utilized for hot water production. Among these, heat pipe-based vacuum tube collectors are the most efficient and advanced in technology because heat pipe is an efficient heat exchanger unit. Many

researchers have completed various studies on different designs of heat pipe-based vacuum tube collectors for hot water generation. Işka and Yldzba [9] designed a unique hot water collector tank with a novel finned-type cell construction. The performance of the newly developed tank was compared with a PCM-embedded nonfinned tank & a normal insulated tank. The outcomes reveal that the newly constructed tank's thermal energy storage ability is roughly 10% higher than the normal tank and, almost 4–5% more in comparison to a non-finned water tank. Khani et al. [10] evaluated that the integrated system's three-objective optimization decrease reduces environmental impacts, total costs, and monthly environmental emergency rate by 34.31%, 11.4%, and 6.38%, respectively. Nitsas and Koronaki [11] experimentally investigated U-Tube solar vacuum collector in terms of exergy efficiency, energy efficiency, and heat energy output. The results indicate that collector thermal efficiency was 60% and the system gained the highest heat energy output of 5.60 kW at approximately noon. The authors observed the highest exergy gain when the temperature of the working fluid was highest. By utilizing a variety of heat-carrying fluids and variable flow rates, the thermal output of a heat pipe-equipped SWH was improved by Shafieian et al. [12]. The different cases, i.e., a flexible flow of nanofluid (Case-I), a fixed flow of nanofluid (Case-II), and a fixed flow of DI water (Case-III), all performed under similar climatic conditions. The exergy output of Cases I and II was found to be higher than Case III by 2.66% and 1.58%, respectively. Al-Joboory [13] performed experiments with two identical ET-SWHs. The first system employs thermosyphon; the second employs twenty wickless heat pipes filled with methanol (50%) as working fluid and serve as heat conductors from the collector to the storage tank. The test results found that the wickless heat pipe system outperforms the thermosyphon one in terms of overall daily efficiency by 22.5% for zero loads, 42.5% for fluctuating loads, and 32.4% for constant loads. The heat pipe based SWH was more suited to local domestic use because it produced higher temperatures and thermal output under all loads and adverse weather situations. Ozsoy and Corumlu [14] analyzed the energy output of a thermosyphon heat pipe (THP) based ETSC using nanofluid (silver-water) used in viable applications. It was discovered that the THP filled with nanofluid upheld its enhanced heat transmission ability. Nanofluid improved the collector efficiency by 20.7% to 40% more than water. The experiment's findings indicate that the THP ETSC can be marginally improved by using silver-water nanofluid. Maraj et al. [15] performed the energy study of a forced flow SWH with an HP-ETC (area of 1.476 m^2) in Mediterranean environmental conditions. For a solar collection of 2,212 kWh/year, they determined that the yearly valuable heat gain of the HP-ETC, the valuable energy delivered to the storage tank by the collector, and the delivered energy to the heat consumer were 1,345, 1,311, and 1,009 kWh/year. The forced circulated system had an annual efficiency of 0.516 compared to the HP-ETC's 0.62. Jayanthi et al. [16] performed an experiment to determine the thermal output of a HP-ETSC using DI water and R134a as the heat transfer fluid. The impact of input variables on the thermal output of the

HPSC, such as temperature distribution and time, was looked into, compared, and discussed. The findings revealed that using R134a in place of distilled water increases the HPSC's thermal output. Chopra et al. [17] done the exergy, energy, and financial investigation of the vacuum collector based SWH system for the complex climate of Jammu (India). The system was designed and built for a six-person family. The tests were carried out for six flow rates of a fluid. The highest avg. energy and exergy outputs were 72% and 5.2%, at 20 LPH, while the lowest was 55% and 1.25% at 60 LPH. It was discovered that at 20 and 60 LPH, the max. and min. avg. outlet temperatures were 76.4 and 45 °C, respectively. It was discovered that the cost of producing hot water at the required temperature was 0.12, as opposed to 0.40 and 0.26 INR/L for electric and gas geysers, respectively. The return on investment of the SWH was 4 years, which is a much shorter period. Mehmood et al. [18] created a TRNSYS simulation prototype of an SWH system that uses evacuated tubes fitted with heat pipes and is hybridized with a backup of natural gas to deliver a continuous thermal energy supply. It was discovered that switching from a traditional (gas) water heater to a hybrid solar water heater could save 23% to 56% on backup fuel while also lowering greenhouse gas (GHG) emissions. The results revealed that the hybrid vacuum tubes-based SWH is more effective and eco-friendlier, with a benefit-cost ratio of 1.87, & would result in yearly natural gas savings of 8.79105 kWh, resulting in a reduction of 175.539 tCO_2 emissions. Bhowmik et al. [19] studied the thermal output of serpentine vacuum collector system for different tilt angles. They also validated the experimental results with outcomes obtained from computational fluid dynamics model. The results of CFD depicted that with increasing of diameter of U-Tube from 1/8–3/8″ increased the net gain in temperature by 39%. They also concluded that twisted taped with square holes among the various considered geometries observed to be most effective in terms of thermal output in comparison to plain serpentine design. Kuang et al. [20] used convolutional Neutral Network technique to forecast the thermal output of vacuum collector system on the basis of collected operational data over many days. Authors concluded that Back Propagation (BP) neural network model having high accuracy than Multiple Linear Regression model. Also Multiple Linear Regression model is not suggested to be used for the evaluation of the performance of vacuum tube collector system because of its inability to handle non-linear problem results in poor accuracy. Modabber and Manesh [21] found that by integrating of solar heating and inlet air cooling system with the existing cogeneration plant (generation of power with hot water), energy performance touch 68% and increase in exergy efficiency was 50%, also reduced the impact of environmental. Haghghi et al. [22] evaluated the thermal performance, environmental and economic aspects of flat plat collector integrated with conventional heating system (run on natural gas). The experimental results revealed that the maximum load of 91.05 and 37.52 kW in cold and warm days respectively can be accomplished by flat plat collector with area of 443.8 and 63.3 m^2 respectively. In addition to this, they determined that deployment of flat plat

collector reduced the carbon dioxide emission of 84.71 and 84.67 kg/MWh in warm and cold seasons respectively.

In the present study, a 5-E analysis of the novel designed hot water storage header integrated vacuum tube solar water heater is carried out. On the basis of the previous research work in the concerned field, the authors find the uniqueness of the present work as:

- In this study, the author has uniquely designed the water storage tank cum header of the heat pipe based vacuum collector. An integrated finned heat exchanger is placed inside the header/water tank to increase the rate of heat transfer due to the welding of copper fins over the condenser of the heat pipe.
- Based on the literature studies related to solar water heaters (summarized in Table 1) the energy efficiency of the proposed system fluctuates in the range of 63–74% which is more efficient than the conventional heat pipe system whose thermal efficiency fluctuates in the range of 42–56% [23]. Also, the increment in the energy gain of the designed system fluctuates in the range of 32–50%, which is higher as compared to the increment in energy gain reported in previous studies (Tabulated in Table 1).
- In most of the existing studies, exergy, energy, and heat transfer investigation of vacuum collector have been done. But these methods do not consider the economic and environmental aspects. The economic and environmental exploration clarifies whether utilization of the proposed system is feasible in terms of the environmental and economic points of view or not. These aspects of the analysis of the system are crucial to be considered during its sustainability analysis. Therefore, in this study along with energy and exergy investigation, enviroeconomic, economic, and exergoeconomic analysis is also carried out for the practical implementation of the proposed solar water heater.
- In the current study, modification in the vacuum collector system reduces the issue of overheating, decreases the overall heat losses and the initial financial investment in the vacuum collector system.

Section snippets

Experimental setup & methodology

This section is divided into two sub-sections. Firstly, the design and development of the experiment setup were explained comprehensively. Secondly, the research methodology adopted to perform the experiments has been discussed. …

Thermodynamic, enviro-economic, and exergo-economic analysis

The present section is classified into three subsections namely energy and exergy analysis, enviroeconomic analysis, and exergoeconomic analysis. In the first subsection i.e. in section 3.1, the relations of energy and exergy investigation of designed and fabricated solar collector system has been given which is useful to access the quantitative and qualitative analysis of the designed system. In subsection 3.2, the equations which are useful to access the commercial viability of the designed …

Experimental error analysis

The uncertainty related to a specific observation is calculated using Holman's Eq. can be given as:$$\delta U = \left[\left(\frac{\partial U}{\partial x1}\delta w1\right)^2 + \left(\frac{\partial U}{\partial x2}\delta w2\right)^2 + \cdots \left(\frac{\partial U}{\partial xn}\delta wn\right)^2\right]$$

Where $i = 1, 2, \cdots\cdots . n$ and $U = U\left(x1, x2 \cdots\cdots xn\right)$ are the independent variables, the dependent variable is xi, and the independent variable's ambiguity is wi. For instance, the error in temperature sensors is ± 0.6°C, whereas the solar power error is ± 1.2%, and the rotameter error is ± 1.5% of the standard deviation.

$$\delta\eta_O = \eta_O \times \sqrt{\left(\frac{\delta EN_{u,O}}{EN_{u,O}}\right)^2 + \left(\frac{\delta EN_{inc,O}}{EN_{inc,O}}\right)^2}\ \delta\eta_{ex,\ O} = \eta_{ex,\ O} \times \sqrt{\left(\frac{\delta EX_{u,O}}{EX_{u,O}}\right)^2 + \left(\frac{\delta E}{}\right)} \ldots$$

Result and discussion

The current section provides a compressive discussion of the results of different experiments. In this section, thermal analysis, thermodynamic analysis, financial analysis, enviroeconomic & exergoeconomic analysis of the proposed system for different runs have been presented and discussed. Section 5.1 discuss batch wise hot water temperature, ambient temperature & solar radiation variation with time, Section 5.2 deliberate energy and exergy efficiencies variation, Section 5.3 debate heat …

Conclusions

The current study provides a compressive discussion of the results of thermal performance analysis, thermodynamic analysis, financial analysis, enviroeconomic & exergoeconomic analysis of the proposed system for different runs. Based on the analysis following observations have been pointed out which are as:

a) Integration of novel designed manifold with a vacuum tube collector completely removes the problem of overheating. …

b) The copper fins mounting with condensers of the heat pipe enhance the …

…

CRediT authorship contribution statement

K. Chopra: Conceptualization, Methodology, Writing – original draft, Writing – review & editing. **V.V. Tyagi:** Writing – review & editing, Supervision, Project administration. **Sudhir Kumar Pathak:** Formal analysis, Writing – review & editing. **Ravi Kumar Sharma:** Formal analysis. **Muhamad Mansor:** Writing – review & editing. **Varun Goel:** Formal analysis. **Ahmet Sari:** Visualization, Writing – review & editing. …

Declaration of Competing Interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper. …

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References (38)

G. Hekimoğlu *et al.*

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Mater. Today Proc. (2022)

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Therm. Sci. Eng. Prog. (2018)

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Energy, exergy, exergoeconomic and enviroeconomic (4-E) assessment of solar water heater with/without phase change material for building and other applications: A comprehensive review

Sustain. Energy Technol. Assessments. (2021)

S. Faisal Ahmed *et al.*

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Therm. Sci. Eng. Prog. (2021)

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Energy Convers. Manag. (2019)

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Improving thermal energy storage efficiency of solar collector tanks by placing phase change materials in novel finned-type cells
Therm. Sci. Eng. Prog. (2020)

N. Khani *et al.*
Optimal 6E design of an integrated solar energy-driven polygeneration and CO2 capture system: A machine learning approach
Therm. Sci. Eng. Prog. (2023)

M.T. Nitsas *et al.*
Experimental and theoretical performance evaluation of evacuated tube collectors under mediterranean climate conditions
Therm. Sci. Eng. Prog. (2018)

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Design consideration of a filled layer U-pipe evacuated tubular solar collector with flat diffuse reflector: energy and exergy analysis ↗
2024, International Journal of Ambient Energy

Environmental Science and Pollution Research (2023) 30:77713–77728
https://doi.org/10.1007/s11356-023-28004-y

RESEARCH ARTICLE

Geophysical and geostatistical assessment of groundwater and soil quality using GIS, VES, and PCA techniques in the Jaipur region of Western India

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Abstract

In present study, geophysical and geostatistical variability of ground water and agricultural soil investigated in the Jaipur region of Rajasthan (Western India) by applying the geographic information system (GIS), vertical electrical sounding (VES) ,and statistical analysis. Ground water and soil samples collected from different sites from the selected study area and variation pattern of quality parameters were assessed. A contour map analysis of distribution of metals and other contaminants in the samples was conducted using GIS. Maximum concentration of metals recorded in the soil samples in order of Fe, 11.25 mg kg^{-1} > Mn, 8.6 mg kg^{-1} > Zn, 7.2 mg kg^{-1} > Cu, 0.455 mg kg^{-1}; however, maximum concentration of metals in the ground water samples was found as Zn, 2.64 mg L^{-1} > Cu, 0.86 mg L^{-1} > Fe, 0.39 mg L^{-1} > Mn, 0.18 mg L^{-1} > Pb, 0.065 mg L^{-1} > Ni, 0.016 mg L^{-1}. Observed data emphasis variability in groundwater and soil quality parameter by PCA technique indicated 84.60% and 66.98% of variance, respectively. Soil quality index (SQI) value was observed as 0.482 indicating that 46% of soil sampling sites deteriorated and shown poor quality. Similarly, water quality index (WQI) value indicates good water quality at the sampling sites TW1, TW8, TW10, and TW12; however, TW3, TW4, TW6, TW19, TW20, and TW22 sites showed very poor water quality. The present study concludes that overexploitation of groundwater and unregulated discharge of wastewater leads to depletion of water and soil quality. Further, applying geographical and geostatistical techniques in assessing water and soil quality could be more effective tools in environmental monitoring and management for environmental and health safety.

Keywords Bioaccumulation · Bioavailability · Biotransformation · Contamination · Groundwater · Metals · Principal component analysis (PCA) · Water quality

Introduction

Rapid urbanization leads to several environmental issues, including poor living conditions, changes in land use pattern, overexploitation of water and soil, transportation congestion, resettlement, disasters, and environmental pollution (Kalayci Onac et al. 2021; Aksoy et al. 2022; Tay and Ocansey 2022; Dogan et al. 2023). Fresh water including ground water is one of the most important components of the environment and essential for human survival and wellbeing (Gavrilescu 2021). However, extensive exploitation of water by human being leads to substantial environmental cost due to contamination, scarcity, and depletion of water resources affecting water supply and health safety (Tzanakakis et al. 2020; Singh et al. 2022). Scarcity of safe drinking water is now becoming a problem due to

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extensive urbanisation, industrialization, agriculture, and climate change affecting about 40% of human population globally (Calzadilla et al. 2011; Bilge Ozturk et al. 2022). Groundwater found underground in cracks and crannies in rock, sand, and soil is the main source of drinking water supply. Exploitation of groundwater may result in dissolution of numerous contaminants as it passes through the rocks and soil during leaching and percolation (Saleem et al. 2018). Trace metals emanating from different industrial, transportation, construction, and agricultural activities affect soil and water quality as recalcitrant and toxic contaminants (Romic and Romic 2003; Cetin et al. 2022a; Sahin et al., 2022). Link between soil quality and socioeconomic well-being of humans, particularly, global food security and human health have been reported (Yu et al. 2018; Kopittke et al. 2019). Soil and water contamination occurs due to various anthropogenic activities and geological processes releasing metals and other elements; therefore, assessment of soil and water quality is becoming more crucial in adapting appropriate strategies to prevent and preserve the land and water resources for human wellbeing (Ahmet et al. 2006; Cesur et al. 2021). More common metal contaminants in soil and water are Pb, Cr, As, Zn, V, Cd, Cu, and Sn reported with high levels of toxicity for biota (Yang et al. 2016; Hanfi et al. 2020; Cetin et al. 2022b).

India is one of the emerging nations with more industrial and other developmental activities having wastewater generation and discharge on the land and in the aquatic ecosystems leads to soil and water contamination (Tiwari et al. 2011). Metals persist in the soil and water, accumulates in the plants by roots uptake, and biomagnifies in the animals through food chain, which causes detrimental impact to the biota (Luo et al. 2012; Ali et al. 2019; Cetin and Abo Aisha 2023). Certain metals easily enter the food chain due to their bioavailability in the rhizosphere, uptake, and accumulation in the plants and can reach to other animals and humans through food (Gu et al. 2016; Rajendran et al. 2022). It has been reported that excessive accumulation of trace elements like cadmium, lead, and nickel in the plants causes toxicity and slows down the growth and productivity (Pandey and Sharma 2002; Zouboulis et al. 2004). A substantial threat to aquatic and terrestrial biodiversity as well as health hazards for humans posed by contaminated water and soil (Olayinka-Olagunju et al. 2021). Types of rock, physicochemical characteristics of soil, atmospheric precipitation, and surface geochemical processes affect the groundwater quality parameters and contamination (Garg and Hassan 2007; Cesur et al. 2021). Groundwater is most reliable source even in India because it provides a significant proportion of the country's drinking and agricultural water requirements (Mahmood and Kundu 2005).

Physico-chemical characteristics of soil also affects the water quality of groundwater at a given regions (Griffiths et al. 2010; Hermans et al. 2020). Different physio-chemical and biological indicators have been used in various studies to evaluate the soil quality (Filip 2002; Schloter et al. 2003). GIS has evolved into a trustworthy instrument for absorbing, analyzing, and displaying spatial data that can be utilized for environmental monitoring, planning, and resource management applications (Cetin 2015; Singha et al. 2015). The geographical information system (GIS) has become an important tool in research for resource management as it allows users to use geographical data in a variety of context and way in an integrated approach. Remote sensing (RS) and GIS studies in integration make it easier to work in relatively broad areas, particularly in environmental impact assessment for sustainable urban planning and resource utilization (Cetin 2019; Pekkan et al. 2021; Cetin et al. 2022c). Convergence of data concerning environmental assessment-related issues as well as the manipulation of spatial data into various forms in response to geosocial requirements may be accomplished using GIS (Cetin et al. 2022d). The principal component analysis (PCA) is a prominent statistical analysis tool for investigating data patterns thorough factor analysis approach. Basic purpose of PCA is to create new variables as principal components, from a set of existing original variables (Wu et al. 2020). Potential of geophysical information system-based geostatistical methodologies in assessing the region's groundwater and soil quality as well as its susceptibility to water-borne diseases reported (Ali and Ahmad 2020).

The Sanganer, Jaipur region of Rajasthan, Western India, having more industrial activities specially printing and dyeing operations leads to huge amount of wastewater generation and discharge in water and agricultural soil through unregulated disposal and irrigation practices. Very limited data are available related to using geographical information system and geostatistical techniques in the ground water and soil quality assessment. Therefore, the present study was conducted to assess ground water and soil quality at different sites based on a minimal set of interconnected geophysical and chemical criteria at Sanganer, Jaipur region of Rajasthan, Western India, and apply geophysical and geostatistical including GIS, VES, and PCA techniques to emphasize the water and soil quality parameters for environmental monitoring and assessment.

Materials and methods

Study area

The whole study conducted in the industrial and agricultural tracts in the north of Jaipur–Sanganer regions at different selected sampling sites, situated between 26° 49° and 26° 51° N and 75° 46° and 75° 51° E in the Jaipur district,

Rajasthan, Western India (Fig. 1). One selected study site, the Sanganer, is famous for its hand-printed textiles have land size of 78.24 square kilometres, situated on NH-12, 10 kilometres to the southwest of Jaipur City. The Sanganer is well-known for its distinctive type of printing "Sanganer Printing" basically in the small-scale industries of the Chippas community, involving dyeing and printing of textiles (Dadhich et al. 2016). Dyeing and printing processes release wastewater during water-based color fixing procedure and discharged in the surrounding areas which pollutes water and soil. The chippas community either transport the textiles to a well dug on the bank of the Dravyawati River or

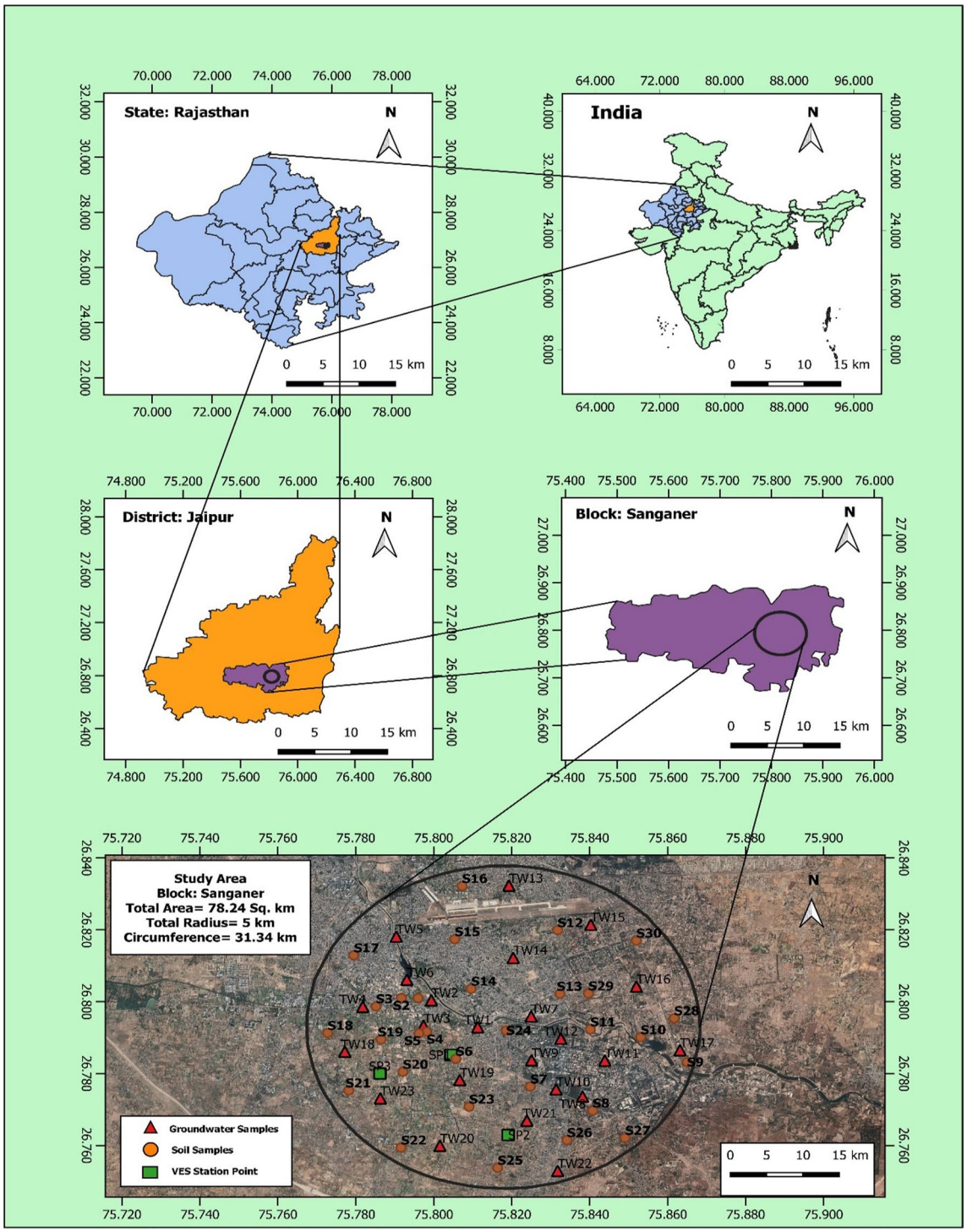


Fig. 1 Sampling sites of soil and ground water selected in the study area, Sanganer, Jaipur, Rajasthan, India

wash it at their wells in the city at various places randomly. Textile wastewater along with sewage from across the of Jaipur city discharged directly into the Dravyawati river in the selected study area is being polluted. Historically, Sanganer was primarily an agricultural region; however, during the last decade, the textile and dying industries have dramatically risen in the area and encroached the previously untapped agricultural land. With more than 250 separate printing units connected, it has emerged as one of the major centers of the printing and dying industries nowadays today in India. Growing demand and low production costs leads to the introduction of synthetic and chemical dyes, which have several environmental impacts. The regions of Jaipur–Sanganer with a high number of dyeing and printing industrial units releasing tonnes of waste into the aquatic environment, agricultural fields, and on open spaces nearby, polluting the water and soil (Sharma et al. 2014). Contamination of water and soil have negative impact on nutrition and human health due to deterioration of drinking water quality and food quality; however, at severe stage, poor quality may prevent soil from performing its natural physio-chemical and biological functions and deteriorate region's overall productivity of the terrestrial ecosystem.

Sampling sites and sampling

One-liter capacity plastic bottle rinsed with distilled water used to collect the groundwater samples. Grab sampling conducted for groundwater water sampling and samples preserved in the bottles with adjusted pH 2 and stored in refrigerator at 4 °C with slightly acidified with nitric acid (HNO_3) for analysis of water quality parameters including metals (Mn, Cu, Ni, Zn, Pb, and Cu). In Sanganer industrial region, having a new industrial area (RICCO) and an industrial zone (RSMDC), a quantitative soil and water sampling conducted to evaluate the water and soil quality parameters of the agricultural land as well as the degree of contamination in water due to industrial activities. Soil samples (250 g) taken from 30 randomly selected sites with a depth of 45 to 60 cm within a 5-kilometer radius of the Sanganer industrial zone and packed in fresh plastic zip-lock bag separately to determine the soil quality parameters (Fig. 2). All the sampling sites were precisely geotagged and labeled from S1 to S30 using a Garmin GPS device (model 68 s), allowing for the retrieval of a variety of location-specific data (Luo et al. 2011). Description of location and sampling sites are shown in the Table 1. The geoelectrical resistivity approach used to conduct field surveys in the study region which requires injecting a man-made current through several electrodes (AB) into the subsurface medium and observing the voltage changes at the potential electrodes (MN) to assess the variation in the ground's resistivity (Binley et al. 2015).

Analysis of soil and water quality parameters

Collected soil samples analyzed for 10 functional indicators parameters (i.e., pH, EC, OC, P, S, K, Zn, Fe, Cu, and Mn) for soil quality (YanBing et al. 2009). Similarly, collected water samples from different selected sites analyzed for water quality parameters in the laboratory. Average of all sets of triplicates calculated and values recorded into the data system (Juhos et al. 2019). All the analysis conducted following the procedure established by the American Public Health Association (Baird and Bridgewater 2017). A typical laboratory digital micro-processor pH meter used to estimate hydrogen ion concentration (pH) in the water samples (Salem et al. 2020). Similarly, electrical conductivity (EC) determined using an electrical conductivity meter (an EC probe and equipment that had been calibrated) by following the procedure of McNeill 1992. A digital water quality test kit used to evaluate total dissolved solids (TDS); however, EDTA titration method was used to calculate total hardness in the water samples. An argentometric titration used to quantify the amount of chloride in a water sample followed by alkalinity determined using the titrimetric method. UV-visible spectrophotometer used to determine the amount of fluoride in the collected water samples. Titration method used to estimate soil organic carbon (SOC) in the soil samples (Walkley and Black 1934) which involves oxidizing organic material in sulfuric acid with a predetermined quantity of chromate (Sato et al. 2014; Gelman et al. 2012). The Johnson–Nishita procedure used to measure sulfur content in the soil samples (Dean 1966). Sulfur and other minerals present in soil solution specially SO_4 ions adsorbed are the principal source of sulfur in soil. The replacement of SO_4 ions is of the utmost importance, and phosphate ions substituted wherever possible for adsorption and monocalcium phosphate, or phosphate ions, are present in the soil. The SO_4 ions are replaced with $CaCl_2$ ions in a more effective way throughout the extraction process and SO_4 extract turbulence determined by using a spectrophotometer. Potash content in soil samples estimated using a flame photometer following the procedure of Brondi et al. (2016).

Metal estimation

The concentration of Fe, Cu, Zn, Ni, Mn, and Pb in groundwater samples, whereas the metal Fe, Zn, Cu, and Mn analyzed in the soil samples estimated after complete digestion in $HClO_4$ and HNO_3 (3 : 1), using hollow cathode lamp at a certain wavelength into an atomic absorption spectrophotometer (AAS, Shimadzu) in comparison to standard metal solutions.

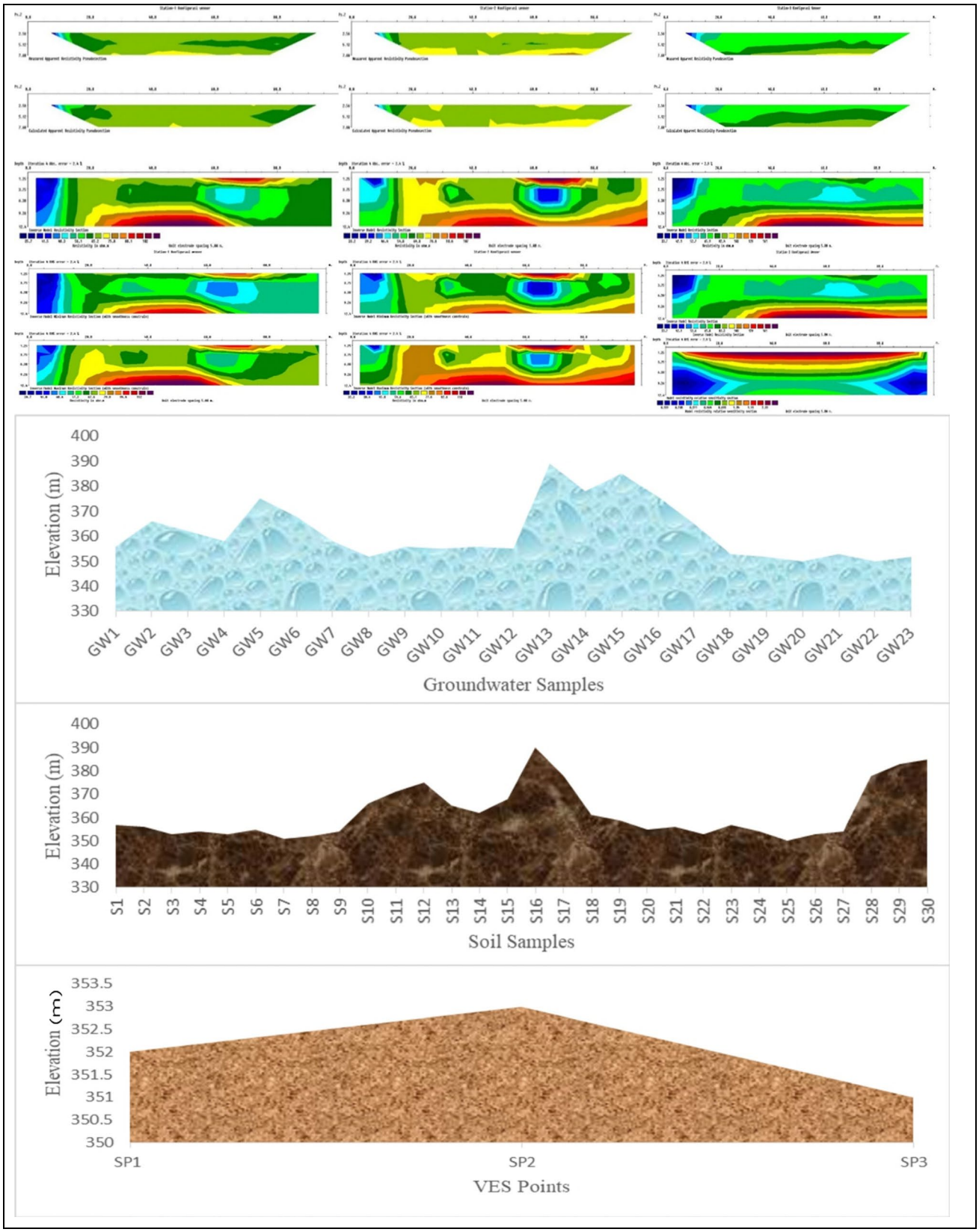


Fig. 2 Geoelectrical layers and elevation point of different sampling sites at the study area, Sanganer, Jaipur, Rajasthan, India

Table 1. Description of sampling sites of ground water samples, soil samples and VES station selected at Sanganer study area, Jaipur (Rajasthan), India

Ground water sample			Soil samples		
Sampling site	Latitudinal and longitudinal position	Elevation (m)	Sampling site	Latitudinal and longitudinal position	Elevation (m)
GW1	26.7929 N, 75.8113 E	357	S1	26.8010 N, 75.7960 E	354
GW2	26.8004 N, 75.7994 E	356	S2	26.8010 N, 75.7917 E	350
GW3	26.7933 N, 75.7974 E	353	S3	26.7987 N, 75.7852 E	353
GW4	26.7986 N, 75.7818 E	354	S4	26.7916 N, 75.7982 E	354
GW5	26.8181 N, 75.7904 E	353	S5	26.7912 N, 75.7962 E	378
GW6	26.8061 N, 75.7931 E	355	S6	26.7841 N, 75.8057 E	383
GW7	26.7959 N, 75.8250 E	351	S7	26.7764 N, 75.8248 E	385
GW8	26.7736 N, 75.8382 E	352	S8	26.7697 N, 75.8408 E	356
GW9	26.7837 N, 75.8251 E	354	S9	26.7832 N, 75.8650 E	366
GW10	26.7756 N, 75.8314 E	366	S10	26.7901 N, 75.8531 E	362
GW11	26.7836 N, 75.8439 E	371	S11	26.7923 N, 75.8402 E	358
GW12	26.7897 N, 75.8326 E	375	S12	26.8199 N, 75.8318 E	375
GW13	26.8323 N, 75.8193 E	365	S13	26.8022 N, 75.8324 E	368
GW14	26.8122 N, 75.8204 E	362	S14	26.8036 N, 75.8096 E	358
GW15	26.8214 N, 75.8403 E	368	S15	26.8174 N, 75.8054 E	352
GW16	26.8042 N, 75.8520 E	390	S16	26.8322 N, 75.8073 E	356
GW17	26.7865 N, 75.8632 E	378	S17	26.8129 N, 75.7795 E	355
GW18	26.7861 N, 75.7772 E	361	S18	26.7913 N, 75.7728 E	356
GW19	26.7782 N, 75.8067 E	359	S19	26.7895 N, 75.7865 E	355
GW20	26.7599 N, 75.8016 E	355	S20	26.7805 N, 75.7921 E	389
GW21	26.7669 N, 75.8239 E	356	S21	26.7753 N, 75.7782 E	378
GW22	26.7529 N, 75.8318 E	353	S22	26.7594 N, 75.7916 E	385
GW23	26.7731 N, 75.7863 E	357	S23	26.7708 N, 75.8091 E	376
			S24	26.7920 N, 75.8186 E	365
	VES		S25	26.7538 N, 75.8164 E	353
SP1 (VES)	26.7852 N, 75.8044 E	352	S26	26.7615 N, 75.8342 E	352
SP2 (VES)	26.7629 N, 75.8191 E	353	S27	26.7621 N, 75.8491 E	350
SP3 (VES)	26.7800 N, 75.7862 E	351	S28	26.7954 N, 75.8617 E	353
			S29	26.8023 N, 75.8397 E	350
			S30	26.8170 N, 75.8520 E	352

Geostatistical analysis

To assess overall quality of water and soil samples collected from the different sites in the study area, data of soil and water quality parameters analysed thoroughly by applying geostatistical tools. Quantitative evaluation's framework combines geotechnical and physicochemical analysis of water and soil samples with descriptive statistics and statistical modelling. Outcome data is gathered after the laboratory chemical analysis of selected soil and water samples, followed by review with analysis of data on SPSS software (version 22 for Windows). Discriminating analysis (correlation) of data performed using Statistical Package for the Social Sciences (SPSS) for Windows, version 23.0. (Ukah et al. 2019, 2020). Several statistical methods used in data analysis and models including MV, SD, and CV (Li et al. 2016; Zhu et al. 2019). Further, water quality index (WQI) and soil quality index (SQI) evaluated to assess the region's overall variations and patterns of water and soil quality parameters using site-specific indicator evaluation outputs. Weighted arithmetic mean technique for WQI was used in this investigation (Tyagi et al. 2013).

$$WQI_A = \sum_{i=1}^{n} qi\ X\ Wi,$$

$$\sum_{i=1}^{n} Wi = 1,$$

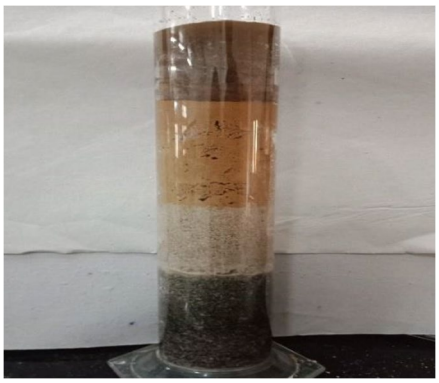
where Wi is the unit weight of each parameter, qi is the 0–100 subindex rating for each variable, and n is the number

of subindices aggregated. Multivariate statistical technique, the principal component analysis (PCA), was used to reduce the dataset into new variables, create a minimum data set (MDS), and analyze relationships between different metal contents in the water and soil samples and other quality parameters including pH, TOC, and EC along with factor analysis (FA) to identify specific factor weight of a particular metal (Weissmannová and Pavlovský 2017). The SAS Systems for Windows 10 platform and Statistica 12.5® software used to perform principal component analysis (PCA), followed by a Varimax rotation used to rotate each PCA component. The Varimax rotation method of factor analysis and the principal component primary result analysis performed by following the procedure of Kaiser 1958 and Maiz et al. 2000. For the GIS-based evaluation, SQI and WQI maps, spatial distribution maps, area maps, and thematic maps for the region produced by using Sentinel 2 Satellite data (March 2021) in bands: 3, 4, 8 developed on ArcGIS software 10.8 (2020).

Results

Groundwater samples (23) and soil samples (30) collected from selected sampling sites of the study area, Jaipur regions of Rajasthan, Western India, analyzed for quality parameters. Based on the sounding data, the present study inferred with three geoelectrical layers comprising topsoil, unsaturated, and saturated zones (Fig. 2). For all the sections topmost layer assumed to be topsoil, above the water table and substantially drier more often reflects greater resistivity. Peat investigated in the topsoil layer by resistance correlation with soil lithology from neighboring boreholes. Regional lithology of Sanganer shown in the Table 2 which indicates formation depth range as alluvium, 0.0–95 m; weathered, 0.69–128 m; and hard rock, 9.2 m. In present study, the third layer of all the sections represent highest concentration of geoelectrical sections with low resistivities (less than 10 m). Values and their variation pattern of water quality parameters in 23 groundwater samples at different sites of the study area depicted in Fig. 3. Maximum values of different parameters of groundwater samples recorded as pH, 8.0; electrical conductivity (EC), 3.01 S/m, TDS, 1501 mg/l; fluoride, 1.9 mg/l; total hardness, 273 mg/l; Ca, 88.1 mg/l; Mg, 12.67 mg/l; chloride, 227.42 mg/l; HCO_3, 61.87 mg/l; and CO_3, 58.29 mg/l. However, maximum metal concentration in groundwater samples recorded as Zn, 2.64 mg/l; Cu, 0.862 mg/l; Fe, 0.392 mg/l; Mn, 0.181 mg/l, Pb, 0.065 mg/l; and Ni, 0.016 mg\l. pH and TDS level in the ground water samples found in the range of 7.0 to 8.0 and 559 to 1501 mg/l, indicate that values are within the range of 6.5 to 8.5 and 500 to 1500 mg/l, respectively, as per WHO standard of water quality. Similarly, for 30 soil samples, maximum values of soil quality parameters recorded as pH, 8.4; electrical conductivity (EC), 0.27 µS/m; organic carbon, 0.23 %; phosphorous, 50.23 mg/kg; potash, 786 mg/kg; sulfur, 29.68 mg/kg. However, maximum metal concentration in the soil samples recorded as Fe, 11.25 mg/kg; Mn, 8.65 mg/kg; Zn, 7.26 mg/kg; and Cu, 0.45 mg/kg as shown in Fig. 4. Result shows that none of the parameters including pH have a strong correlation. Samples' scores and loadings plots together showed physio-chemical characteristics of soil that affect each order on the score plots. Retained variables divided into groups using the factor analysis technique in accordance with statistical factors and correlation matrix (Table 3). As depicted in the Table 4, maximum WQI found in groundwater sample collected at sampling site TW22 and minimum in the sample collected from TW12. Results of PCA and FA analysis for groundwater revealed that the first component (PC1), which accounted for 39.12% of the total variance, included Mn, pH, and EC; however, S, OC, and P made the second component (PC2) with a total variance of 12.54%. Similarly, pH, Mn,

Table 2. Regional lithology of the study area, Sanganer, Jaipur (Rajasthan), India

Aquifers depth (m)	Aquifers	Geological formation	Depth (m)	Laboratory experiment model
0–95	Alluvium	Surface soil, sandy clay	0–4	
		Clayey sand	4–13	
		Clayey kankar	13–19	
0.6–128	Weathered	Sandy clay with kankar	19–29	
		Kankar and clay	29–38	
		Kankar and sand	38–47	
9.2	Hardrock	Weathered schist	47–73	
		Schist	73–150	

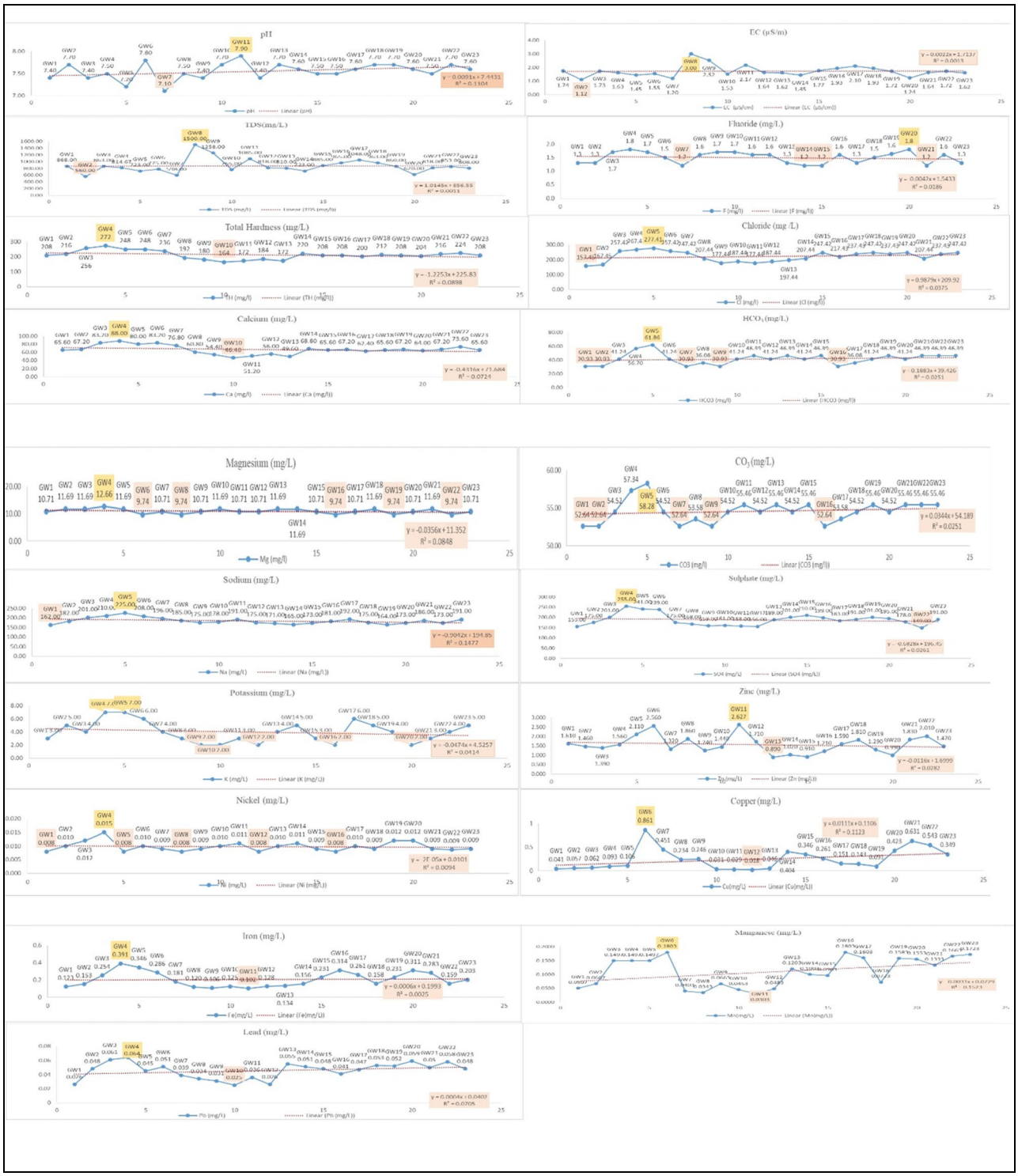


Fig. 3 Variations in water quality parameters of ground water samples collected from in different sites at the study area, Sanganer, Jaipur, Rajasthan, India

and Cu made PC3 with a total variance of 11.42% followed by phosphorous made PC4 a total variance of 9.06%, while all four extraction factors accounted for 72.15% of the overall variation. However, in case for soil samples Mn, pH, and EC produced the first component (PC1) with 24.26% of the variance followed by the second component (PC2) produced included S, OC, and P with a total variation of 17.48%, while PC3 made up of pH, Cu, and Mn with a total variance of

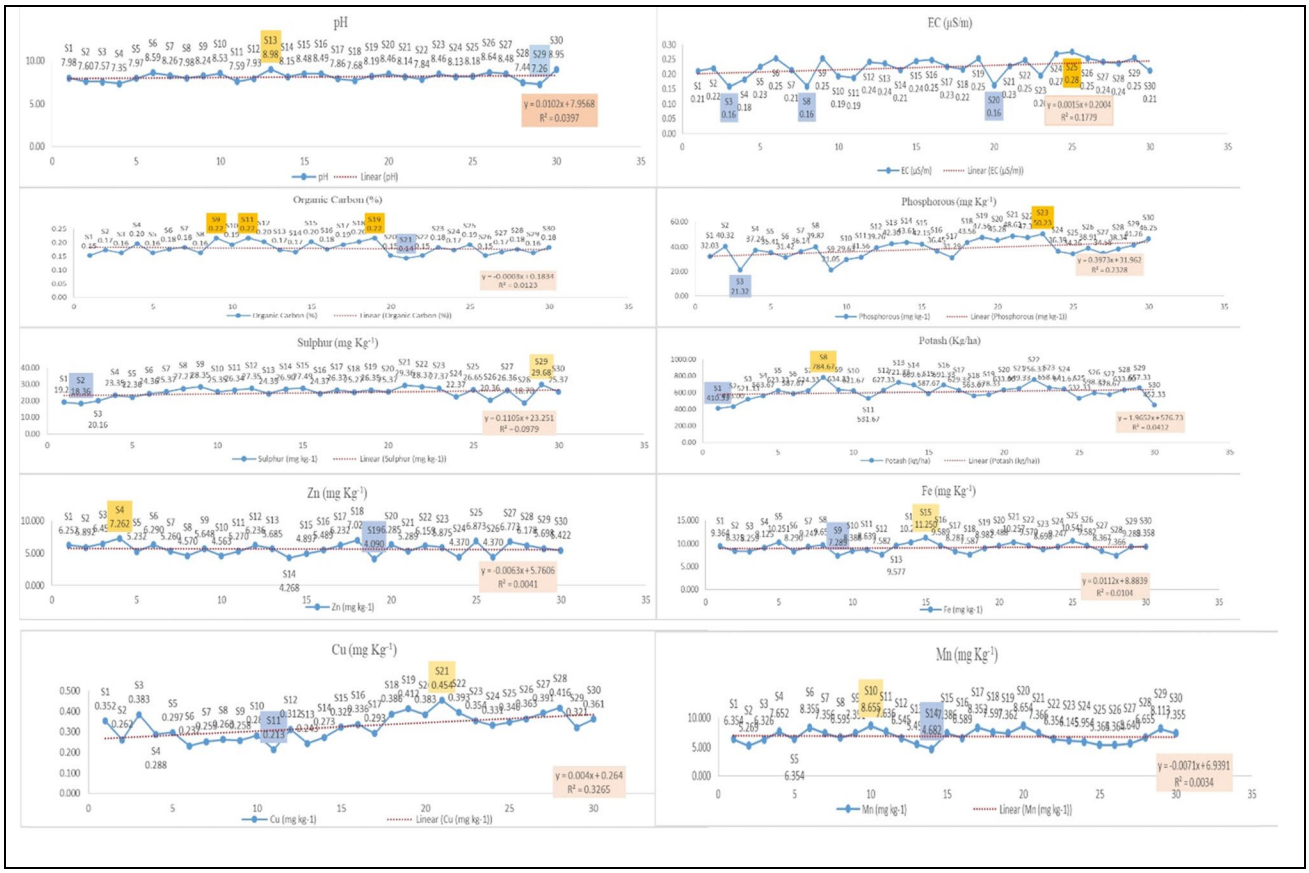


Fig. 4 Variations in soil quality parameters of soil samples collected from different sites at the study area, Sanganer, Jaipur, Rajasthan, India

13.65% and PC4 contained phosphorus with a total variance of 11.58% (Fig. 5A). Result shows that water quality of groundwater samples collected at TW1, TW8, TW10, and TW12 sampling sites in the Sanganer area are in very good quality category; however, groundwater samples from TW3, TW4, TW6, TW19, and TW22 sites recorded under very poor water quality category with high level of contaminants (Fig. 5B). Similarly, total 9 soil quality parameters including pH, EC, OC, P, S, K, Zn, Fe, and Mn used to evaluate the soil quality index (SQI), and an average soil quality index (SQI) value 0.517 recorded for the selected study area based on MDS, with a range of 0.341 to 0.635 (Fig. 5B). According to the suggested framework, the SQI values for the entire selected region divided into three categories viz; category 1 (C1), SQI value less than 0.4 (degraded); category 2 (C2), SQI value between 0.41 and 0.5 (moderately degraded); and category 3 (C3), SQI value greater than 0.51(least degraded). SQI revealed that soil samples at S19 site showed highest SQI score, 0.636, followed by S6, S7, S12, S13, S15, S16, S17, S18, S20, S21, S22, S23, S25, S27, S29, and S30 more than average as shown in Fig. 5B. Data shows that 13.3% of the soil samples from the study area have low soil pollution with good soil health; however, 40% of the soil samples have moderate contamination with SQI values in the range of 0.41 to 0.5 and 46.6% of soil samples shown as degraded soil under the poor-quality category with SQI values more than 0.51. At 5 kilometers away from the Sanganer industrial regions, high-intensity farming techniques, and conventional farming practices, excessive fertilizer use may be responsible for the soil degradation in the selected sites. Based on SQI score, the S19 site showed highly contaminated soil in the study area; however, it is crucial to note that the high score may be due to increased chemical build-up and other components like sulfur rather than trace metals having low concentration; however, it may be useful in environmental health assessment. Results of the factor analysis (FA) recorded insufficient if the Kaiser–Meyer–Olkin (KMO) test result value found to be less than 0.5; however, KMO found less FA findings in the test's outcome than the chemical examination of soil samples. FA did not alter KMO testing significantly because there is no related cut-off point, and the results for the sample given a less clear indication of the applicability of the FA as KMO values estimated 0.487 and 0.466 (less than 0.5) for the groundwater and soil samples, respectively. Percentage (%) of variance evaluated by placing three components out of

Table 3. Correlation matrix[a] of ground water and soil samples collected from different sites at Sanganer study area, Jaipur, Rajasthan, India

Groundwater quality parameters																			
		pH	EC	TDS	F	TH	Ca	Mg	Cl	HCO_3	CO_3	Na	K	SO_4	Zn	Ni	Mn	Cu	Fe	Pb
Correlation	pH	1.000	.080	.082	.047	− .348	− .338	− .–	− .207	.078	.078	− .284	.008	− .087	.250	.300	.121	.047	− .213	.219
	EC	.080	1.000	1.000	.217	− .366	− .327	− .371	− .211	− .185	− .185	− .088	− .251	− .282	.214	− .241	− − .241	− .147	− .309	− .326
	TDS	.082	1.000	1.000	.217	− .367	− .328	− .370	− .212	− .185	− .185	− .088	− .252	− .279	.212	− .239	− .242	− .149	− .308	− .326
	F	.047	.217	.217	1.000	.068	.074	− .040	.194	.267	.267	.257	− .111	.155	.213	.337	.131	− .259	.240	.036
	TH	− .348	− .366	− .367	.068	1.000	.993	.217	.695	.320	.320	.605	.671	.698	.153	.351	.491	.322	.693	.599
	Ca	− .338	− .327	− .328	.074	.993	1.000	.096	.705	.282	.281	.586	.641	.676	.180	.307	.517	.374	.687	.580
	Mg	− .132	− .371	− .370	− .040	.217	.096	1.000	.028	.361	.361	.241	.346	.280	− .190	.399	− .131	− .366	.156	.244
	Cl	− .207	− .211	− − .212	.194	.695	.705	.028	1.000	.538	.538	.572	.569	.734	.044	.295	.645	.345	.735	.659
	HCO_3	.078	− .185	− .185	.267	.320	.282	.361	.538	1.000	1.000	.441	.480	.560	.242	.343	.381	− .032	.462	.449
	CO_3	.078	− .185	− .185	.267	.320	.281	.361	.538	1.000	1.000	.441	.480	.560	.242	.343	.381	− .032	.462	.449
	Na	− .284	− .088	− .088	.257	.605	.586	.241	.572	.441	.441	1.000	.615	.590	.498	.154	.288	.115	.582	.215
	K	.008	− .251	− .252	− .111	.671	.641	.346	.569	.480	.480	.615	1.000	.672	.284	.314	.411	.074	.459	.529
	SO_4	− .087	− .282	− .279	.155	.698	.676	.280	.734	.560	.560	.590	.672	1.000	− .010	.451	.589	.185	.811	.590
	Zn	.250	.214	.212	.213	.153	.180	− .190	.044	.242	.242	.498	.284	− .010	1.000	− .145	− .054	.175	− .008	− .143
	Ni	.300	− .241	− .239	.337	.351	.307	.399	.295	.343	.343	.154	.314	.451	− .145	1.000	.281	− .117	.388	.604
	Mn	.121	− .241	− .242	.131	.491	.517	− .131	.645	.381	.381	.288	.411	.589	− .054	.281	1.000	.393	.750	.695
	Cu	.047	− .147	− .149	− .259	.322	.374	− .366	.345	− .032	− .032	.115	.074	.185	.175	− .117	.393	1.000	.270	.288
	Fe	− .213	− .309	− .308	.240	.693	.687	.156	.735	.462	.462	.582	.459	.811	− .008	.388	.750	.270	1.000	.582
	Pb	.219	− .326	− .326	.036	.599	.580	.244	.659	.449	.449	.215	.529	.590	− .143	.604	.695	.288	.582	1.000

Soil quality parameter										
		pH	EC	OC	Phosphorus	Sulfur	Potash	Zn	Fe	Cu	Mn
Correlation	pH	1.000	.163	− .071	.166	.148	.111	− .324	.291	− .039	− .089
	EC	.163	1.000	.125	.059	.113	.075	− .064	.079	.131	− .264
	OC	− .071	.125	1.000	− .237	.226	− .174	.023	− .382	− .331	.288
	Phosphorus	.166	.059	− .237	1.000	.290	.250	− .178	.385	.400	− .109
	Sulfur	.148	.113	.226	.290	1.000	.493	− .101	.202	− .026	.314
	Potash	.111	.075	− .174	.250	.493	1.000	− .291	.160	− .064	− .012
	Zn	− .324	− .064	.023	− .178	− .101	− .291	1.000	− .362	.149	.110
	Fe	.291	.079	− .382	.385	.202	.160	− .362	1.000	.054	− .234
	Cu	− .039	.131	− .331	.400	− .026	− .064	.149	.054	1.000	− .059
	Mn	− .089	− .264	.288	− .109	.314	− .012	.110	− .234	− .059	1.000

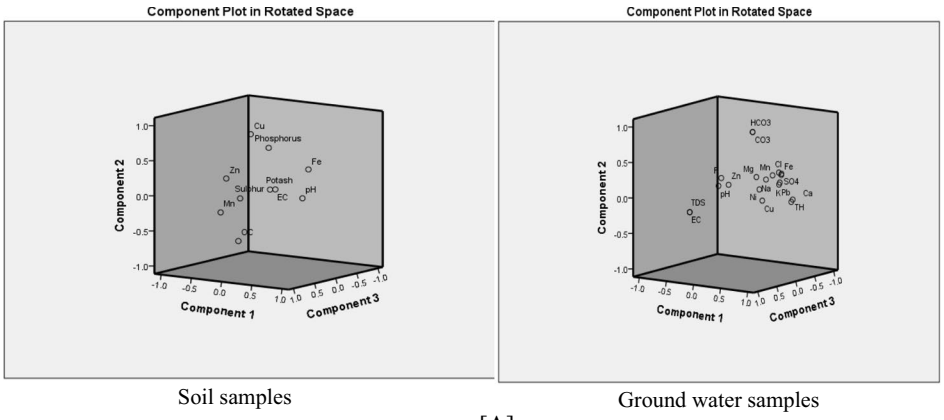
Table 4. Water quality and soil quality Index

Groundwater quality index						
Parameters	Quantity of sample	WQI (mean)	Std. deviation	Std. error	Maximum	Minimum
pH	23	7.5522	.0035	.0020	8.0000	7.0000
EC (µS/m)	23	1.7400	.0027	.0015	3.0100	1.1100
TDS (mg/l)	23	868.7246	.7633	.4407	1501.0000	559.0000
Fluoride (mg/l)	23	1.4928	.0054	.0031	1.9000	1.1000
TH (mg/l)	23	211.1304	.5325	.3074	273.0000	163.0000
Ca (mg/l)	23	66.5043	.0035	.0020	88.1000	46.3000
Mg (mg/l)	23	10.9249	.0009	.0005	12.6700	9.7300
Cl (mg/l)	23	221.7787	.0025	.0014	277.4200	157.4400
HCO_3 (mg/l)	23	41.6862	.0041	.0024	61.8700	30.9200
CO_3 (mg/l)	23	54.6017	.0082	.0047	58.2900	52.6300
Na (mg/l)	23	184.0000	.6035	.3484	226.0000	161.0000
K (mg/l)	23	3.9565	.6745	.3894	8.0000	1.0000
SO_4 (mg/l)	23	188.2609	.8165	.4714	256.0000	148.0000
Zn (mg/l)	23	1.5612	.0083	.0048	2.6400	1.6000
Ni (mg/l)	23	0.0098	.0010	.0006	.0160	.0011
Mn (mg/l)	23	0.1099	.0004	.0002	.1810	.0300
Cu (mg/l)	23	0.2442	.0008	.0005	.8620	.0170
Fe (mg/l)	23	0.2068	.0008	.0005	.3920	.1010
Pb (mg/l)	23	0.0456	.0008	.0004	.0650	.0240
Soil quality index						
Parameters	Quantity of sample	SQI (mean)	Std. deviation	Std. error	Maximum	Minimum
pH	30	8.11	.0064	.0037	8.40	7.98
EC (µS/m)	30	.2240	.0008	.0005	.2760	.1580
Organic carbon (%)	30	.1793	.0061	.0035	.2300	.1400
Phosphorous (mg kg^{-1})	30	38.1197	.0009	.0005	50.2310	21.0500
Sulfur (mg kg^{-1})	30	24.9634	.0006	.0004	29.6810	18.3620
Potash (kg/ha)	30	607.1889	.7385	.4264	786.00	410.00
Zn (mg kg^{-1})	30	5.6635	.0010	.0006	7.2630	4.0890
Fe (mg kg^{-1})	30	9.0579	.0006	.0003	11.2510	7.2890
Cu (mg kg^{-1})	30	.3261	.0005	.0003	.4550	.2130
Mn (mg kg^{-1})	30	6.8290	.0007	.0004	8.6560	4.6810

the four PC ranges (component based on Jolliffe's criterion) and recorded 84.60% and 66.98% for groundwater and soil samples, respectively (supplementary data).

Discussion

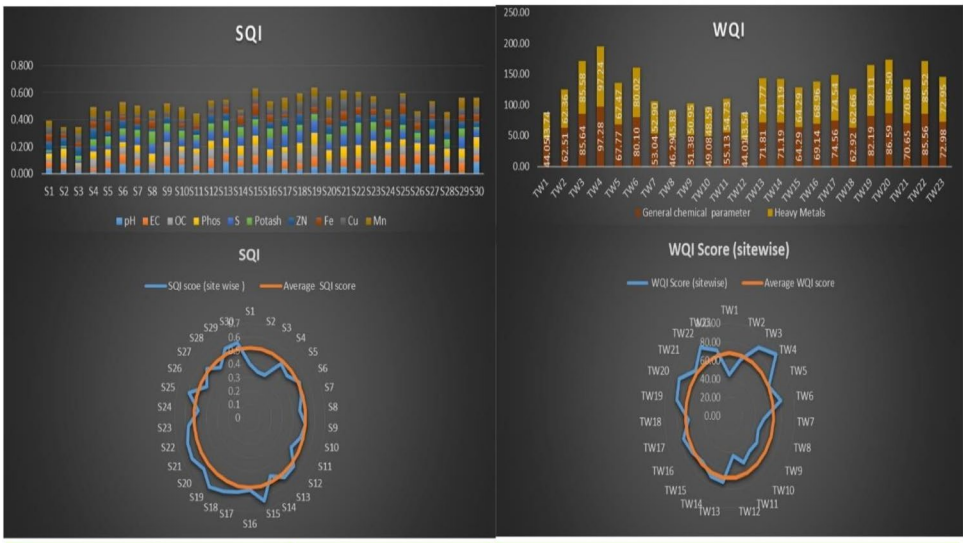
Collected samples from the selected study area, Jaipur regions of Rajasthan, Western India, evaluated for water and soil quality parameters which indicate slightly basic in nature as pH varied within the ranged of 7.0 to 8.0 in the samples. pH is one of the essentially functional parameters for evaluating the quality of soil and water (Filip 2002). Depending on the underlying geological units' actual resistivity, the geoelectrical characteristics utilized to create earth models which displayed as subsurface stratigraphy and from which possible aquifer zones mapped for sampling and assessing the groundwater quality parameters at different sites in the selected region (Mogaji and Omobude 2017). Higher value of EC in groundwater samples indicates impurity as compared to pure water which is not an excellent conductor of electricity having a lower EC than the groundwater. According to previous studies, groundwater exhibits low resistivities between 10 and 100 Ωm in the context of sedimentary (Adagunodo et al. 2018). Kaiser's criterion replaced with Joliffe's criterion since it is too high and allows for a graphic representation of the factor loading through a dipole using the first three components (Jolliffe 1972). However, soil solutio"s EC indicates total amount of salts and ions present in the soil (Bronson et al. 2005; Peralta and Costa 2013). A significant indicator of the soil quality is electrical conductivity, which reflects the salinity of the soil



Soil samples

Ground water samples

[A]



Category-A	0-25	Excellent
Category-B	26-50	Good
Category-C	51-75	Poor
Category-D	76-100	Very Poor

[B]

Fig. 5 Component plot of ground water and soil samples (**A**). Soil quality index (SQI) and water quality index (WQI) of collected samples (**B**)

(Hardie and Doyle 2012). Studies revealed that low resistivity values inside the underlying strata likely caused by high ion concentrations and fine-grained sediments like silt and clay (Amaya et al. 2018). Another soil quality parameter of soil is known as soil organic carbon (SOC) contains organic remains of dead animals and plants at various stages of decomposition which affects physicochemical characteristics of the soil (Campbell 1978). Concentration of SOC in the soil samples is one of the fundamental criteria for soil quality (Unger 1997). Agricultural production, plant development, and soil fertility also depend on phosphorus content, which is the second-most important macronutrient in soil after nitrogen (Malhotra et al. 2018). Similarly, soil fertility, pH levels, plant development, and efficient nitrogen fixation processes dependent on its existence in the soil (Jordan and Ensminger 1959). Potash content is another essential macronutrient for preserving soil fertility and pH homeostasis. Fertilizer used usually to supplement K into the soil in case of its deficiency because plants require K for their growth and development during the life cycle (Morgan and Connolly 2013). However, high concentration of potash in soil also effects soil quality and causes soil degradation (Sillanpaa 1982). Water and soil quality assessment studies have sparked interest on a global scale due to growing

attention on the depletion of water and soil quality to assess the environmental impact of anthropogenic activities for environmental sustainability (Raiesi and Kabiri 2016). Various attempts have been made to measure the quality of the soil and water using different indicators (Armenise et al. 2013; Seybold et al. 2018). Water quality index makes it possible to examine water quality in a variety of ways that affect a stream's ability to sustain by its processes and to ensure sustainable use of water resources to minimize risks and preserve aquatic ecosystems (Akkaraboyina and Raju 2012). WQI is an important distinctive grade which summarizes overall quality of water and helps in selecting the most effective treatment strategy for wastewater before its final discharge and disposal to prevent water contamination (Tyagi et al. 2013). Status and level of contamination of water has been evaluated by using water quality parameters and quality index (Shah and Joshi 2017). The WQI and SQI approach is one of the best and most widely used techniques for assessing the quality of soil and water for adapting treatment and conservation strategies (Arshad and Martin 2002; YanBing et al. 2009). Physio-chemical and biological characteristics of soil indicated by the soil quality which is crucial to its long-term functionality and productivity and sustainability. An encompassing view of the region's overall soil quality evaluated assessing the soil quality index (Bhattacharyya 2017). Similarly, minimum data set (MDS) for the data reflecting the soil's functional capacity used in evaluating the soil quality index (Klimkowicz-Pawlas et al. 2019). By using multivariate geostatistical techniques, contemporary data analysis and metal content estimation of four metals (Zn, Cu, Mn, and Fe) in the soil and six metals (Zn, Cu, Mn, Fe, Pb, and Ni) in groundwater emphasis water and soil quality (Lu et al., 2010). Metals Zn, Ni, Mn, Cu, Fe, and Pb chosen based on PCA, FA, and CA investigations as reference elements for soil and groundwater contamination. Several studies evaluated metal contamination of soil and water in the different urban and industrial regions using principal component analysis (Manta et al. 2002; Skrbic and Djurisic-Mladenovic, 2007, Guo et al., 2013). PCA technique used to show the relationship among metals concentration and other parameters (pH, EC, TOC) in the soil and water (Weissmannová and Pavlovský 2017). FA produced using a constant value for all the soil and water quality parameters with a correlation matrix to minimize the effect of varying units on the variables (Lin et al. 2002). Kaiser–Meyer–Olkin (KMO) test used to evaluate whether the sample is large enough to use factor analysis (Kaiser 1974). In principal component analysis (PCA), variables referred to as principal components (PC) used to illustrate the relation between two elements (Esbensen and Geladi 2010). In similar study, Tripathi and Singal (2019) evaluated water quality of the Ganga River using PCA technique. In contrast, Praus (2019) used primary component weighted index (PCWI) for assessing the quality of both untreated and treated wastewater to evaluate WQI. Data indicate that unregulated discharge of wastewater including urban sewage contaminate water and soil by the process of seepage and leaching or irrigation with wastewater leads to depletion of groundwater and soil quality. High concentration of metals and other contaminants in the soil and groundwater may be due to continuous and long-term disposal of wastewater containing metals from industrial units leading to health hazards (Wuana and Okieimen 2011). Therefore, applying geographical and geostatistical techniques with an integrated approach could be more effective ways in environmental monitoring and assessment of soil and water contamination to ensure environmental and health safety.

Conclusion

Groundwater and soil quality parameters of water and soil samples varied with different sites of the selected study area, indicate about 13.3% of the sites found to have good soil health with minimum contamination level followed by 40% of sites with moderate contamination; however, 46.6% of sites shown high level of contamination of soil. Evaluating WQI and SQI values in the present study offers insightful information about site-wise variation pattern of quality parameters including metals identifying the sites with high level of contamination to opt appropriate strategies and mitigation measures to ensure preserving groundwater and soil quality. Further, a study concludes that contamination of water and soil with metals and other contaminants leads to depletion of quality parameters which affects nutrients cycling in the aquatic and terrestrial ecosystem with more imbalances in availability of NPK. GIS-based WQI maps provide more description of sites in categorizing contaminated regions to ensure safe water supply and developing wastewater treatment facilities for sustainable urban planning. Besides, water and soil quality assessment using GIS and geostatistical technique provide regional and spatial variability of contaminants with their correlation to establish standards of soil health and drinking for effective natural resource management in a particular region. Therefore, the present study could be a new insight in in environmental monitoring involving quantitative and qualitative assessment of water and soil quality for sustainable resource utilization and conservation applying geographical and geostatistical techniques.

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Author contribution All authors contributed to the study conception and design. Sampling of water and soil samples, analysis, and drafting of manuscript were performed by J. Khan and G. Gupta. All authors commented on previous versions of the manuscript. Hypothesis and designing of the experiment were done by N. K. Singh; data analysis and improving the manuscript were done by V.N. Bhave and V. Bhardwaj; map designing and statistical analysis were done by P. Upreti and R. Singh; and geophysical analysis and editing were done by A. K. Sinha. All authors read and approved the final manuscript.

Data availability This is not applicable.

Declarations

Ethical approval This is not applicable.

Consent to participate The authors mutually agreed to submit the manuscript in the esteemed journal ESPR.

Consent to publish All authors are mutually agreed to publish the manuscript in the journal ESPR.

Competing interests The authors declare no competing interests.

References

Adagunodo TA, Akinloye MK, Sunmonu LA, Aizebeokhai AP, Oyeyemi KD, Abodunrin FO (2018) Groundwater exploration in Aaba residential area of Akure, Nigeria. Front Earth Sci 6

Ahmet D, Fevzi Y, Tuna AL, Nedim O (2006) Heavy metals in water, sediment and tissues of *Leuciscus cephalus* from a stream in southwestern Turkey. Chemosphere 63:1451–1458

Akkaraboyina MK, Raju PS (2012) A comparative study of water quality indices of River Godavari. UJERT 2:161–167

Aksoy T, Dabanli A, Cetin M, Senyel Kurkcuoglu MA, Cengiz AE, Cabuk SN, Agacsapan B, Cabuk A (2022) Evaluation of comparing urban area land use change with Urban Atlas and CORINE data. Environ Sci Pollut Res Int 29:28995–29015

Ali H, Khan E, Ilahi I (2019) Environmental chemistry and ecotoxicology of hazardous heavy metals: Environmental persistence, toxicity, and bioaccumulation. J Chem 6730305

Ali SA, Ahmad A (2020) Analysing water-borne diseases susceptibility in Kolkata Municipal Corporation using WQI and GIS based Kriging interpolation. Geo Journal 85:1151–1174

Amaya GA, Mårdh J, Dahlin T (2018) Delimiting a saline water zone in Quaternary fluvial–alluvial deposits using transient electromagnetic: a case study in Punata, Bolivia. Environ Earth Sci 77:46

Armenise E, Redmile-Gordon MA, Stellacci AM, Ciccarese A, Rubino P (2013) Developing a soil quality index to compare soil fitness for agricultural use under different managements in the Mediterranean environment. Soil Tillage Res 130:91–98

Arshad MA, Martin S (2002) Identifying critical limits for soil quality indicators in agro-ecosystems. Agric Eco Environ 88:153–160

Baird R, Bridgewater L (2017) Standard methods for the examination of water and wastewater. APHA, Washington, DC

Bhattacharyya P (2017) Soil quality index under organic farming. Organic farming in tropical islands of india, 260-267

Bilge Ozturk G, Ozenen Kavlak M, Cabuk SN, Cabuk A, Cetin M (2022) Estimation of the water footprint of kiwifruit: in the areas transferred from hazelnut to kiwi. Environ Sci Pollut Res Int 29:73171–73180

Binley A, Hubbard SS, Huisman JA, Revil A, Robinson DA, Singha K, Slater LD (2015) The emergence of hydrogeophysics for improved understanding of subsurface processes over multiple scales. Water Resour Res 51:3837–3866

Brondi AM, Daniel JSP, de Castro VXM, Bertoli AC, Garcia JS, Trevisan MG (2016) Quantification of humic and fulvic acids, macro- and micronutrients and C/N ratio in organic fertilizers. Commun Soil Sci Plant Anal 47:2506–2513

Bronson KF, Booker JD, Officer SJ, Lascano RJ, Maas SJ, Searcy SW, Booker J (2005) Apparent electrical conductivity, soil properties and spatial covariance in the US Southern High Plains. Precision Agriculture 6:297–311

Calzadilla A, Rehdanz K, Tol RSJ (2011) Trade liberalization and climate change: a computable general equilibrium analysis of the impacts on global agriculture. Water 3:526–550

Campbell CA (1978) Soil organic carbon, nitrogen and fertility. In: Schnitzer M, Khan S.U. (Eds.). Developments in soil science 8:173–271

Cesur A, Zeren Cetin I, Abo Aisha AES, Alrabiti OBM, Aljama AMO, Jawed AA, Cetin M, Sevik H, Ozel HB (2021) The usability of *Cupressus arizonica* annual rings in monitoring the changes in heavy metal concentration in air. Environ Sci Pollut Res Int 28:35642–35648

Cetin M (2019) The effect of urban planning on urban formations determining bioclimatic comfort area's effect using satellitia imagines on air quality: a case study of Bursa city. Air Qual Atmos Health 12:1237–1249

Cetin M, Abo Aisha AES (2023) Variation of Al concentrations depending on the growing environment in some indoor plants that used in architectural designs. Environ Sci Pollut Res Int 30:18748–18754

Cetin M, Aksoy T, Bilge Ozturk G, Cabuk A (2022d) Developing a model for the relationship between vegetation and wind power using remote sensing and geographic information systems technology. Water Air Soil Pollut 233:450

Cetin M, Aljama AMO, Alrabiti OBM, Adiguzel F, Sevik H, Cetin IZ (2022a) Determination and mapping of regional change of Pb and Cr pollution in Ankara City Center. Water Air Soil Pollut 233:163

Cetin M, Aljama AMO, Alrabiti OBM, Adiguzel F, Sevik H, Cetin IZ (2022b) Using topsoil analysis to determine and map changes in Ni Co pollution. Water Air Soil Pollut 233:293

Cetin M, Isik Pekkan O, Bilge Ozturk G, Anil Senyel Kurkcuoglu M, Kucukpehlivan T, Cabuk A (2022c) Examination of the change in the vegetation around the Kirka Boron Mine Site by using remote sensing techniques. *Water Air Soil Pollut* 233:254

Cetin M (2015) Using GIS analysis to assess urban green space in terms of accessibility: case study in Kutahya. Int J Sust Devel W Ecol 22:420–424

Dadhich PN, Jain H, Meena J, Meena H, Meena CS (2016) Water resource management based on GIS- a case study of municipality of Sanganer, Jaipur. IJERT, NCACE 4:23

Dean GA (1966) A simple colorimetric finish for the Johnson-Nishita microdistilation of sulphur. Analyst 91:530

Dogan S, Kilicoglu C, Akinci H, Sevik H, Cetin M (2023) Determining the suitable settlement areas in Alanya with GIS-based site selection analyses. Environ Sci Pollut Res Int 30:29180–29189

Esbensen KH, Geladi P (2010) Principles of proper validation: use and abuse of re-sampling for validation. J Chemom 24:168–187

Filip Z (2002) International approach to assessing soil quality by ecologically related biological parameters. Agric Ecosys Environ 88:169–174

Garg NK, Hassan Q (2007) Alarming scarcity of water in India. Curr Sci 93:932–941

Gąsiorek M, Kowalska J, Mazurek R, Pająk M (2017) Comprehensive assessment of heavy metal pollution in topsoil of historical urban park on an example of the Planty Park in Krakow (Poland). Chemosphere 179:148–158

Gavrilescu M (2021) Water, Soil, and Plants Interactions in a Threatened Environment. Water 13:2746
Gelman F, Binstock R, Halicz L (2012) Application of the Walkley–Black titration for the organic carbon quantification in organic rich sedimentary rocks. Fuel 96:608–610
Griffiths BS, Ball BC, Daniell TJ, Hallett PD, Neilson R, Wheatley RE, Osler G, Bohanec M (2010) Integrating soil quality changes to arable agricultural systems following organic matter addition, or adoption of a ley-arable rotation. Appl Soil Ecol 46:43–53
Gu YG, Gao Y, Lin Q (2016) Contamination, bioaccessibility and human health risk of heavy metals in exposed-lawn soils from 28 urban parks in southern China's largest city, Guangzhou. Appl Geochem 67:52–58
Guo X, Yuan D, Jiang J, Zhang H, Deng Y (2013) Detection of dissolved organic matter in saline-alkali soils using synchronous fluorescence spectroscopy and principal component analysis. Spectrochim Acta A 104:280–286
Hanfi MY, Mostafa MY, Zhukovsky MV (2020) Heavy metal contamination in urban surface sediments: sources, distribution, contamination control, and remediation. Environ Monitor Assess 192:1–21
Hardie M, Doyle R (2012) Measuring soil salinity. In: Methods in molecular biology (Clifton, N.J.), 913:415–425
Hermans SM, Buckley HL, Case BS, Curran-Cournane F, Taylor M, Lear G (2020) Using soil bacterial communities to predict physico-chemical variables and soil quality. Microbiome 8:79
Jolliffe IT (1972) Discarding variables in a principal component analysis. I: artificial data. J R Stat Soc Ser C Appl Statics 160–173
Jordan HV, Ensminger LE (1959) The role of sulfur in soil fertility. In: Normax AG (ed) Advances in agronomy, vol 10. Academic Press, pp 407–434
Juhos K, Czigány S, Madarász B, Ladányi M (2019) Interpretation of soil quality indicators for land suitability assessment–a multivariate approach for Central European arable soils. Ecol Indic 99:261–272
Kaiser HF (1958) The varimax criterion for analytic rotation in factor analysis. Psychometrika 23:187–200
Kaiser HF (1974) An index of factorial simplicity. Psychometrika 39:31–36
Kalayci Onac A, Cetin M, Sevik H, Orman P, Karci A, Gonullu Sutcuoglu G (2021) Rethinking the campus transportation network in the scope of ecological design principles: case study of Izmir Katip Çelebi University Çiğli Campus. Environ Sci Pollut Res 28:50847–50866
Klimkowicz-Pawlas A, Ukalska-Jaruga A, Smreczak B (2019) Soil quality index for agricultural areas under different levels of anthropopressure. Inter Agrophys 33:455–462
Kopittke PM, Menzies NW, Wang P, McKenna BA, Lombi E (2019) Soil and the intensification of agriculture for global food security. Environ Int 132:105078
Li D, Gao G, Shao M, Fu B (2016) Predicting available water of soil from particle-size distribution and bulk density in an oasis–desert transect in northwestern China. J Hydrol 538:539–550
Lin YP, Teng TP, Chang TK (2002) Multivariate analysis of soil heavy metal pollution and landscape pattern in Changhua country in Taiwan. Landsc Urban Plan 62:19–35
Lu X, Wang L, Li LY, Lei K, Huang L, Kang D (2010) Multivariate statistical analysis of heavy metals in street dust of Baoji, NW China. J Hazd Mater 173:744–749
Luo XS, Ding J, Xu B, Wang YJ, Li HB, Yu S (2012) Incorporating bio accessibility into human health risk assessments of heavy metals in urban park soils. Sci Total Environ 424:88–96
Luo Y, Su B, Yuan J, Li H, Zhang Q (2011) GIS techniques for watershed delineation of SWAT Model in Plain Polders. Procedia Environ Sci 10:2050–2057
Mahmood A, Kundu (2005) "Stattus of water supply, sanitation and solid waste management in urban areas" New Delhi, National Institute of Urban Affairs (NIUA)
Maiz I, Arambarri I, Garcia R, Millán E (2000) Evaluation of heavy metal availability in polluted soils by two sequential extraction procedures using factor analysis. Environ Pollut 110:3–9
Malhotra H, Vandana Sharma S, Pandey R (2018) Phosphorus nutrition: plant growth in response to deficiency and excess. In: Hasanuzzaman M, Fujita M, Oku H, Nahar K, Hawrylak-Nowak B (eds) Plant Nutrients and Abiotic Stress Tolerance. Springer, pp 171–190
Manta DS, Angelone M, Bellanca A, Neri R, Sprovieri M (2002) Heavy metals in urban soils: a case study from the city of Palermo (Sicily), Italy. Sci Total Environ 300:229–243
McNeill JD (1992) Rapid, accurate mapping of soil salinity by electromagnetic ground conductivity meters. In: Advances in measurement of soil physical properties: bringing theory into practice. John Wiley & Sons, Ltd, pp. 209–229
Mogaji KA, Omobude OB (2017) Modeling of geoelectric parameters for assessing groundwater potentiality in a multifaceted geologic terrain, Ipinsa Southwest, Nigeria – a GIS-based GODT approach. NRIAG J Astron Geophys 6:434–451
Morgan JB, Connolly EL (2013) Plant-soil interactions: Nutrient uptake learn science at scitable. National J Edu 4:2
Olayinka-Olagunju JO, Dosumu AA, Olatunji-Ojo AM (2021) Bioaccumulation of heavy metals in pelagic and benthic fishes of Ogbese River, Ondo State, South-Western Nigeria. Water Air & Soil Pollut 232:44
Pandey N, Sharma CP (2002) Effect of heavy metals Co^{2+}, Ni^{2+} and Cd^{2+} on growth and metabolism of cabbage. Plant Sci 163:753–758
Pekkan OI, Senyel Kurkcuoglu MA, Cabuk SN, Aksoy T, Yilmazel B, Kucukpehlivan T, Dabanli A, Cabuk A, Cetin M (2021) Assessing the effects of wind farms on soil organic carbon. Environ Sci Pollut Res Int 28:18216–18233
Peralta NR, Costa JL (2013) Delineation of management zones with soil apparent electrical conductivity to improve nutrient management. Comp Electron Agricul 99:218–226
Praus P (2019) Principal component weighted index for wastewater Quality Monitoring. Water 11:2376
Raiesi F, Kabiri V (2016) Identification of soil quality indicators for assessing the effect of different tillage practices through a soil quality index in a semi-arid environment. Ecol Indicat 71:198–207
Rajendran S, Priya TAK, Khoo KS, Hoang TK, Ng HS, Munawaroh HSH, Show PL (2022) A critical review on various remediation approaches for heavy metal contaminants removal from contaminated soils. Chemosphere 287:132369
Romic M, Romic D (2003) Heavy metals distribution in agricultural topsoils in urban area. Environ Geol 43:795–805
Sahin G, Cabuk SN, Cetin M (2022) The change detection in coastal settlements using image processing techniques: a case study of Korfez. Environ Sci Pollut Res Int 29:15172–15187
Saleem M, Hussain A, Mahmood G, Waseem M (2018) Hydrogeochemical assessment of groundwater in shallow aquifer of greater Noida region, Uttar Pradesh (U.P), India. Appl Water Sci 8:186
Salem A, Dezső J, El-Rawy M, Lóczy D (2020) Hydrological modeling to assess the efficiency of groundwater replenishment through natural reservoirs in the Hungarian Drava River Floodplain. Water 12:250
Sato JH, de Figueiredo CC, Marchão RL, Madari BE, Benedito LEC, Busato JG, de Souza DM (2014) Methods of soil organic carbon determination in Brazilian savannah soils. J Agric Sci 71:302–308
Schloter M, Dilly O, Munch JC (2003) Indicators for evaluating soil quality. Agric Ecosys Environ 98:255–262

Seybold CA, Mansbach MJ, Karlen DL, Rogers HH (2018) Quantification of soil quality. In: Soil processes and the carbon cycle. CRC Press, pp 387–404

Shah KA, Joshi GS (2017) Evaluation of water quality index for River Sabarmati, Gujarat, India. Appl Water Sci 7:1349–1358

Sharma N, Sharma S, Gehlot A (2014) Influence of dyeing and printing industrial effluent on physicochemical characteristics of water – case study on the printing cluster of Bagru, Jaipur (Rajas than), India. IOSR J Appl Chem 7:61–64

Sillanpaa M (1982) Micronutrients and the nutrient status of soils: a global study. FAO Soil Bulletin No. 48, Food and Agriculture Organization, Rome

Singh R, Upreti P, Allemailem KS, Almatroudi A, Rahmani AH, Albalawi GM (2022) Geospatial assessment of ground water quality and associated health problems in the Western Region of India. Water. 14:296

Singha SS, Devatha CP, Singha S, Verma MK (2015) Assessing ground water quality using GIS. International J Eng Res Technol 4:11

Skrbic B, Djurisic-Mladenovic N (2007) Principal component analysis for soil contamination with organochlorine compounds. Chemosphere 68:2144–2152

Tay DA, Ocansey RTA (2022) Impact of urbanization on health and well-being in Ghana. Status of research, intervention strategies and future directions: a rapid review. Front Pub health 10:877920

Tiwari KK, Singh NK, Patel MP, Tiwari MR, Rai UN (2011) Metal contamination of soil and translocation in vegetables growing under industrial wastewater irrigated agricultural field of Vadodara, Gujarat, India. Ecotoxicol Environ Saf 74:1670–1677

Tripathi M, Singal SK (2019) Allocation of weights using factor analysis for development of a novel water quality index. Ecotoxicol Environ Saf 183:109510

Tyagi S, Sharma B, Singh P, Dobhal R (2013) Water quality assessment in terms of water quality index. Am J Water Resour 1:34–38

Tzanakakis VA, Paranychianakis NV, Angelakis AN (2020) Water supply and water scarcity. Water 12:2347

Ukah BU, Ameh PD, Egbueri JC, Unigwe CO, Ubido OE (2020) Impact of effluent-derived heavy metals on the groundwater quality in Ajao industrial area, Nigeria: an assessment using entropy water quality index (EWQI). IJWREE 4:231–244

Ukah BU, Egbueri JC, Unigwe CO, Ubido OE (2019) Extent of heavy metals pollution and health risk assessment of groundwater in a densely populated industrial area, Lagos, Nigeria. IJWREE 3:291–303

Unger PW (1997) Aggregate and organic carbon concentration interrelationships of a Torrertic Paleustoll. Soil and Tillage Res 42:95–113

Walkley A, Black IA (1934) An examination of the degtjareff method for determining soil organic matter, and a proposed modification of the chromic acid titration method. Soil Sci 37:29–38

Weissmannová HD, Pavlovský J (2017) Indices of soil contamination by heavy metals—methodology of calculation for pollution assessment (minireview). Environ Monit Assess 189:616

Wu J, Li P, Wang D, Ren X, Wei M (2020) Statistical and multivariate statistical techniques to trace the sources and affecting factors of groundwater pollution in a rapidly growing city on the Chinese Loess Plateau. Hum Ecol Risk Assess 26:1603–1621

Wuana RA, Okieimen FE (2011) Heavy metals in contaminated soils: a review of sources, chemistry, risks and best available strategies for remediation. ISRN Ecol 402647

Yanbing Q, Darilek JL, Huang B, Yongcun Z, Weixia S, Zhiquan G (2009) Evaluating soil quality indices in an agricultural region of Jiangsu Province, China. Geoderma 149:325–334

Yang K, Nam T, Nam K, Kim YJ (2016) Characteristics of heavy metal contamination by anthropogenic sources in artificial lakes of urban environment. KSCE J Civ Eng 20:121–128

Yu P, Han D, Liu S, Wen X, Huang Y, Jia H (2018) Soil quality assessment under different land uses in an alpine grassland. CATENA 171:280–287

Zhu Y, Chen L, Wang K, Wang W, Wang C, Shen Z (2019) Evaluating the spatial scaling effect of baseflow and baseflow nonpoint source pollution in a nested watershed. J Hydrol 579:124221

Zouboulis AI, Loukidou MX, Matis KA (2004) Biosorption of toxic metals from aqueous solutions by bacteria strains isolated from metal-polluted soils. Process Biochem 39:909–916

Rotary Year 2022-2023

ROTARY CLUB JAIPUR BAPU NAGAR

Club ID 73485 R.I. District 3054 Charter Date 21-06-2006

(Rotary Theme 2022-23)

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Date: 31 Oct 23

TO WHOMSOEVER IS CONCERN

Rotaract Club, Directorate of Students' Welfare along with Rotary Club Jaipur, Bapu Nagar conducted a Awareness on Environmental Protection at Dehmi Kalan Village by planting the 15 plants in village on 31st Oct 2023. It was a physical activity involving the students from NSS, DSW and the Rotaract Club MUJ. Event was well coordinated by the Department of Business Administration

We would like to appreciate Rotaract Club, Directorate of Students' Welfare, Manipal University Jaipur for the efforts and express our gratitude towards them.

Regards

Rtn Meeta Mathur
Secretary

Rotary Year 2022-2023

ROTARY CLUB JAIPUR BAPU NAGAR

Club ID 73485 R.I. District 3054 Charter Date 21-06-2006

(Rotary Theme 2022-23)

Date: 02/10/23

TO WHOMSOEVER IS CONCERN

Rotaract Club, Directorate of Students' Welfare along with Rotary Club Jaipur, Bapu Nagar conducted a Cleanliness Drive at Dehmi Kalan Village on 2nd October 2023. It was a physical activity which is the Swachhtha Abhiyan involving the students from NSS, DSW and the Rotaract Club MUJ.

We would like to appreciate Rotaract Club, Directorate of Students' Welfare, Manipal University Jaipur for the efforts and express our gratitude towards them.

Regards

Rtn Meeta Mathur
Secretary

Rotary Year 2022-2023

ROTARY CLUB JAIPUR BAPU NAGAR

Club ID 73485 R.I. District 3054 Charter Date 21-06-2006

(Rotary Theme 2022-23)

Date: 03/10/23

TO WHOMSOEVER IS CONCERN

Rotaract Club, Directorate of Students' Welfare along with Rotary Club Jaipur, Bapu Nagar conducted a Plantation Drive at Mahatma Gandhi Government School (English Medium), Begas on 3rd October 2023. It was a physical activity involving the students from NSS, DSW and the Rotaract Club MUJ.

We would like to appreciate Rotaract Club, Directorate of Students' Welfare, Manipal University Jaipur for the efforts and express our gratitude towards them.

Regards

Rtn Meeta Mathur
Secretary

Rotary Year 2022-2023

ROTARY CLUB JAIPUR BAPU NAGAR

Club ID 73485 R.I. District 3054 Charter Date 21-06-2006

(Rotary Theme 2022-23)

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Date: 26 Oct 23

TO WHOMSOEVER IS CONCERN

Dept of Chemistry and Rotaract Club, Directorate of Students' Welfare along with Rotary Club Jaipur, Bapu Nagar conducted Plantation Drive at Dadar ki Dhani Village. Event was well coordinated by the Department of Chemistry and DSW.

We would like to appreciate Rotaract Club, Directorate of Students' Welfare, Manipal University Jaipur for the efforts and express our gratitude towards them.

Regards

Rtn Meeta Mathur
Secretary

Rotary Year 2022-2023

ROTARY CLUB JAIPUR BAPU NAGAR

Club ID 73485 R.I. District 3054 Charter Date 21-06-2006

(Rotary Theme 2022-23)

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Date: 06/09/23

TO WHOMSOEVER IS CONCERN

Rotaract Club, Directorate of Students' Welfare along with Rotary Club Jaipur, Bapu Nagar conducted a Plantation Drive at Mahatma Gandhi Government School (English Medium), Begas on 6th September 2023. It was a physical activity involving the students from NSS, DSW and the Rotaract Club MUJ. Event was well coordinated, where more then 30 samplings of plants were planted in the schools.

We would like to appreciate Rotaract Club, Directorate of Students' Welfare, Manipal University Jaipur for the efforts and express our gratitude towards them.

Regards

Rtn Meeta Mathur
Secretary

Rotary Year 2022-2023

ROTARY CLUB JAIPUR BAPU NAGAR

Club ID 73485 R.I. District 3054 Charter Date 21-06-2006

(Rotary Theme 2022-23)

Date: 25 Oct 23

TO WHOMSOEVER IS CONCERN

Rotaract Club, Directorate of Students' Welfare along with Rotary Club Jaipur, Bapu Nagar conducted campaign on Swach Bharat Abhiyan on October 25 2023 at Dehmi Kalan. An awareness session is taken by Team MUJ physically involving the students from NSS, DSW and the Rotaract Club MUJ. Event was well coordinated by the Department of Business Administration.

We would like to appreciate Rotaract Club, Directorate of Students' Welfare, Manipal University Jaipur for the efforts and express our gratitude towards them.

Regards

Rtn Meeta Mathur
Secretary