



Maharaja Agrasen Institute of Technology, Delhi  
Department of Mechanical and Automation Engineering

**Celebration of World Earth Day (22<sup>nd</sup> April)**

Department of Mechanical & Automation Engineering in association with the Institute Innovation Council (IIC) and ASHRAE MAIT Student Branch celebrated “**World Earth Day (22<sup>nd</sup> April)**” on 23<sup>rd</sup> April 2022. The event was started with an introductory note given by Dr. Sumit Joshi, Member, IIC MAIT who highlighted the importance of Earth and its ecosystem. Dr. Vaibhav Jain, SBA, ASHRAE Student Chapter MAIT welcomed the dignitaries and participants with his kind words. Mr. Ashish Rakheja graced the occasion as the keynote speaker of the online event.

Mr. Ashish Rakheja is a managing partner at AEON Consultants and has a post-graduate degree in Thermal Engineering from IIT Delhi with over twenty-eight years of work experience. Mr. Rakheja is also associated with ASHRAE as Director at Large (DAL), ASHRAE Board of Directors. He is a seasoned Consulting Engineer who has designed over 2000 projects including Hotels, Airports, Hospitals, Retail, Residential, Commercial, High rises and Industrial projects. Mr. Rakheja specializes in high-performance buildings and has been actively involved in leading design activities of electro-mechanical services for ten Net Zero Energy Buildings and over sixty Platinum rated green projects in India. He is spearheading the green building movement in India in the capacity role of Chairman, Technical Committee of the Indian Green Building Council (IGBC). Mr. Rakheja has won many awards and delivered over 1000 talks on various facets of building design across the world. He is an active member of over 20 Technical societies and regularly contributes his time to writing Standards, codes & position papers for Government bodies & Technical societies. He is involved in imparting training to budding Architects in the field of Building Services and a visiting faculty at leading schools in India.

Mr. Ashish Rakheja delivered a very beautiful talk on the topic “**Net Zero Water Building**”. The lecture was primarily focused on the conservation of water. Various techniques for water treatment and distribution were highlighted and explained. The innovations in water savings like low flow fixtures, toilet fixtures, and wall-mounted sensors were presented. The

speaker highlighted the world water use and the current situation of water in India. The lecture presented various rating systems of energy conservation such as IGBC, GRIHA, LEED, MOEF and IPC standards. The concept of carbon neutrality and green building footprint was also presented. The lecture ended with a short eye-opening video on Earth and its ecosystem. The speaker stressed the call for the conservation of water among participants.

Finally, the event ended with a Q & A session. More than 100 participants attended for the same and the event was a grand success.

**MAHARAJA AGRASEN INSTITUTE OF TECHNOLOGY**  
 DEPARTMENT OF MECHANICAL AND AUTOMATION ENGINEERING (MAE)  
 in association with  
**INSTITUTE INNOVATION COUNCIL (IIC) & ASHRAE MAIT STUDENT BRANCH**  
 celebrates  
**WORLD EARTHDAY (22<sup>ND</sup> APRIL)**

**Faculty Coordinator:**  
 Dr. Sumit Joshi  
 Member, IIC MAIT

**Keynote Speaker**  
**Mr. ASHISH RAKHEJA**  
 Managing Partner, AEON Consultants  
 Director at Large (DAL), ASHRAE Board of Directors

**TOPIC: NET ZERO WATER BUILDING**  
**DATE: APRIL 23, 2022 (SATURDAY)**  
**TIME: 03:00 PM-04:00 PM**  
**PLATFORM: ZOOM**

**DR. NAND KISHORE GARG** FOUNDER & CHIEF ADVISOR, MATS  
**SHRIVINEET KUMAR GUPTA** CHAIRMAN, MATS  
**PROF. NEELAM SHARMA** DIRECTOR, MAIT  
**PROF. S. S. DESWAL** DEAN ACADEMICS, MAIT  
**PROF. NIAMITA GUPTA** PRESIDENT, IIC MAIT  
**MR. ALOK KUMAR SHARMA** CONVENER, IIC MAIT  
**Prof. V.N. MATHUR** HOD, MAE  
**Dr. VAIBHAV JAIN** SBA, ASHRAE STUDENT CHAPTER MAIT

Zoom Meeting

Participants (11)

Find a participant

Search participants

Surabhi Lata (Co-host), Sumit Joshi (Host), Ashish Rakheja (Co-host), Dr. Vibhava Jain (Co-host), Ansh, Ashish, Ashish Sharma, Aditya Dhal (S14830319), Aditya Gupta, Aditya Gupta, Ashish Mehta (S14830319), Ashish Kumar, Ashish Sharma, Ashish, Ansh Joshi, Ansh Joshi

47°C Raipur

10:08 AM 23/04/2022

Zoom Meeting

Participants (12)

Find a participant

Search participants

Surabhi Lata (Co-host), Sumit Joshi (Host), Ashish Rakheja (Co-host), Dr. Vibhava Jain (Co-host), Dhirish Sharma, Ansh, Ashish, Ashish Sharma, Aditya Dhal (S14830319), Aditya Gupta, Aditya Gupta, Ashish Mehta (S14830319), Ashish Kumar, Ashish Sharma, Ashish, Ansh Joshi, Ansh Joshi

47°C Raipur

10:18 AM 23/04/2022

Zoom Meeting

Participants (12)

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Surabhi Lata (Co-host), Sumit Joshi (Host), Ashish Rakheja (Co-host), Dr. Vibhava Jain (Co-host), Ansh, Ashish, Ashish Sharma, Aditya Dhal (S14830319), Aditya Gupta, Aditya Gupta, Ashish Mehta (S14830319), Ashish Kumar, Ashish Sharma, Ashish, Ansh Joshi, Ansh Joshi

47°C Raipur

10:24 AM 23/04/2022

Zoom Meeting

Participants (11)

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Search participants

Surabhi Lata, Sumit Joshi, Dr. Vibhava Jain, Ashish Rakheja, Ashish Sharma, Ansh Joshi

**DESIGNING LOW CARBON, WATER EFFICIENT BUILDINGS**

Ashish Rakheja  
 AEON Consultants  
 ashish.rakheja@aeonconsultants.in

aeon

23°C Suraj

10:31 AM 23/04/2022

Zoom Meeting

Participants (11)

Find a participant

Search participants

Surabhi Lata (Co-host), Sumit Joshi (Host), Dr. Vibhava Jain (Co-host), Ansh, Ashish, Ashish Sharma, Aditya Dhal (S14830319), Aditya Gupta, Ashish Mehta (S14830319), Ashish Kumar, Ashish Sharma, Ashish, Ansh Joshi, Ansh Joshi

47°C Raipur

10:36 AM 23/04/2022

## Concept Of Carbon Neutrality

Carbon Neutral refers to achieving net zero carbon emissions by balancing a measured amount of carbon release with an equivalent amount sequestered/offset/buying enough carbon credits to make up the difference.

Dr. Vaibhav Jain  
Dr. Vaibhav Jain  
Ajith Rajagopalan  
Naveen Sharma

# GO GREEN Be a Crusader

Dr. Vaibhav Jain  
Dr. Vaibhav Jain  
Ajith Rajagopalan  
Naveen Sharma

## Water conservation strategy for toilet fixtures

S.No	Description	Spiral Flush or Tornado flush	Vacuum Water Toilets	Siphonic water toilet
1	Working Principle	<ul style="list-style-type: none"> <li>Design of toilet bowl usually is round to facilitate the water to flow in circular motion.</li> <li>The centrifugal force helps for better flushing.</li> </ul>	<ul style="list-style-type: none"> <li>They are flush toilets that use a negative pressure (vacuum) to suck faeces away.</li> <li>Suction effect increase hygiene quality.</li> </ul>	<ul style="list-style-type: none"> <li>The toilet uses a simple suction principle to flush the waste away efficiently.</li> </ul>
2	Water Use per Flush	3.5 GPF (13 LPP)	1.6 Gallon or 6 liter flush toilets	4 Liter/Flush and also 3 Liter/Flush

Spiral Flush  
Vacuum Water Toilets  
Siphonic water toilet  
Dual Flush Toilet

Dr. Vaibhav Jain  
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Ajith Rajagopalan  
Naveen Sharma

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Naveen Sharma

every superstar,  
every supreme leader

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Ajith Rajagopalan  
Naveen Sharma

## Water SAVINGS: Innovations

- The intelligent device measures the amount of water going down the plug hole when you shower and memorizes it.
- It uses a series of "traffic lights" flashing gently from green to red whenever you finish showering. The device allows the user to fractionally reduce shower time to make sure that the device is always flashing green.

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