Maharaja Agrasen Institute of Technology, Delhi

PSP Area, Plot No. 1, Sector-22, Rohini, Delhi-110086

Department of Mechanical Engineering

EVENT REPORT

Name of the Activity:	7 Days Workshop on " Heat Load Estimation"
Resource Person:	Mr. Yash Dayal; YEA (ASHRAE India Chapter), Mr. Abhishek Jain (Chair Student Activity) and Mr. Kanakraj Ganeshan (Past President ASHRAE India Chapter)
Date: April-May 2024	**No. of Participants:** 6 + 1 Faculty member

The 7-Day Workshop on "Heat Load Estimation", organized under the mentorship of Dr. Vaibhav Jain, was conducted in April–May 2024 as a foundational training initiative for the ASHRAE Design Competition 2024. The workshop involved enthusiastic participation from undergraduate students of the Mechanical Engineering Department at Maharaja Agrasen Institute of Technology (MAIT), who formed Team Climate Crafters. Coordination took place via WhatsApp group chats, with structured sessions held through Google Meet and Microsoft Teams.

The workshop focused on building foundational knowledge and practical skills in HVAC design, particularly in heat load estimation, using software such as Carrier HAP and psychrometric tools. Team members were trained in core HVAC components like AHUs, duct and piping layout design, terminal units, diffusers, and VAV systems—all discussed within the framework of ASHRAE standards including 55 (thermal comfort), 62.1 (ventilation), and 90.1 (energy efficiency). The workshop enabled students to analyze architectural layouts of a proposed public library building in São Paulo, Brazil, for which they calculated space-wise heating and cooling loads using standardized Excel templates and architectural DWG files. These calculations formed the basis for chiller and AHU selection, ensuring proper system sizing to achieve desired indoor air quality and energy performance. The workshop not only facilitated active learning through software demonstrations and collaborative discussions but also ensured every participant contributed to key tasks such as data collection, zoning using Trane Trace, ventilation calculations, and documentation. This effort culminated in a complete HVAC design proposal adhering to all competition requirements. The training sessions empowered the team to implement their learning in a real-world scenario, strengthening both their technical and teamwork capabilities while ensuring compliance with modern HVAC practices. A detailed report submitted by the team outlining their calculations, methodology, and system selection can be accessed through

https://drive.google.com/file/d/1_crqSqG4fTs7lJzg2_wu__Ir1lsbfCKX/view?usp=drive_link

Overall, the workshop served as a robust foundation for the team's successful participation in the ASHRAE challenge and deepened their understanding of sustainable HVAC systems.

List of Students

S.No.	Name
1	Lalit Sharma
2	Aman Kumar
3	Abhishek Chandyok
4	Vaibhav Goyal
5	Sharmishta Menon
6	Sachin Kumar Jha