Department of Mechanical Engineering

Visit Report

Date: 19/10/2023

Name of the Subject	Heating Ventilation Air Conditioning & Refrigeration		
Class	BE Mechanical	**Date**	17/10/2023
Title	Visit to Cold Storage Plant		
Visit Site	Sahib Cold Storage		
Address	4MWV+WQ9, Renukanagar, MIDC, Ahmednagar, Maharashtra 414111.		

Summary:

The visit to Sahib Cold Storage in Ahmednagar provided valuable insights into the facility's use of the Vapour Compression Cycle (VCC), a critical technology employed to regulate the temperature and preserve agricultural produce, such as potatoes. The Vapour Compression Cycle is a widely used refrigeration process in cold storage units, and this visit shed light on its operational mechanics and efficiency.

Key Observations:

1. **Vapour Compression Cycle Overview:**
   - At Sahib Cold Storage, the VCC system ensures that the potatoes and other perishable products are maintained at optimal temperatures for long-term storage.
2. **Working Principle of VCC at Sahib Cold Storage:**
   - **Compression Stage**: The refrigerant gas (ammonia) is compressed in the compressor unit, which increases its pressure and temperature.
   - **Condensation Stage**: The hot, high-pressure gas is passed through a condenser, where it cools down and turns into a liquid.
   - **Expansion Stage**: The liquid refrigerant is then allowed to expand rapidly through a valve, causing it to cool down and vaporize.

- **Evaporation Stage**: The low-pressure, cold refrigerant gas is passed through the evaporator coils inside the cold storage rooms, absorbing heat from the stored produce, which lowers the temperature of the space.
- This cycle repeats, maintaining a stable and controlled environment inside the storage rooms.

3. **Efficiency and Performance:**
   - The use of the Vapour Compression Cycle at Sahib Cold Storage ensures energy-efficient cooling, crucial for reducing operational costs.
   - The system is designed to operate continuously with minimal maintenance, providing reliable performance for large-scale storage needs.
4. **Temperature Control and Preservation:**
   - The VCC system allows precise control over the storage temperature, ensuring that potatoes are kept at the ideal conditions to prevent spoilage, sprouting, and dehydration.
   - The ability to adjust the cooling load depending on external weather conditions helps the storage facility maintain consistency in product quality, particularly during seasonal changes.
5. **Environmental and Sustainability Aspects:**
   - Sahib Cold Storage has integrated energy-saving technologies within the Vapour Compression Cycle, such as heat recovery systems, which help reduce energy consumption and improve overall system efficiency.
   - The refrigeration system is also designed to minimize refrigerant leakage, thereby reducing the environmental impact and ensuring compliance with sustainability standards.
6. **Maintenance and Monitoring:**
   - The facility employs real-time monitoring of the VCC system to ensure that temperatures and pressures remain within specified limits. Regular maintenance checks and diagnostics help identify any potential issues before they impact the cold storage operation.

Conclusion:

The visit to Sahib Cold Storage offered a comprehensive understanding of how the Vapour Compression Cycle is utilized for efficient refrigeration and the preservation of agricultural produce. The system not only plays a key role in maintaining the quality of stored potatoes but also showcases modern, energy-efficient cooling techniques that support sustainability. The use of VCC technology helps Sahib Cold Storage maintain optimal conditions for long-term storage, reducing spoilage and waste while ensuring reliable product delivery.

Documents:

Ref No. CCAM/SS/23/2624 Date:-29/09/2023

To,
The General Manager,
Sahib Cold Storage
Plot No A/65/1 Industrial Area,
Nimblak Road, MIDC,
Ahmednagar, Maharashtra 414111

Sub: - Request to permit B.E. (Mech.) students to visit your Cold Storage

Dear Sir,

We remain highly obliged to you for your permission to visit your Cold Storage by our Mechanical engineering students last year.

This is to request you again to grant permission to visit the Cold Storage, by B.E. (Mech.) students of this year also. Your kind permission will provide the students an opportunity to study the Cold Storage, and have a better understanding of its operations.

The strength of class is of @60 students who will be accompanied by 2 staff members. We would like to have the visit in the 2nd week of October 2023, if you approve the same.

Your early confirmation in this connection is solicited.

Thanking you,

Yours faithfully,

Principal
College of Engineering,
Ahmednagar.

Rec. 16/10/23 Or 17/10/23

॥ न हि ज्ञानेन सदृशं पवित्रमिह विद्यते ॥
Dr. Vitthalrao Vikhe Patil Foundation's
Dr. Vithalrao Vikhe Patil College of Engineering Ahmednagar
DTE College Code: EN-5161

Department of Mechanical Engineering

Notice- BE Mechanical Visit

All the students of BE Mechanical are hereby informed that, the compulsory **visit** for Heating, Ventilation, Refrigeration & Air Conditioning title **"Visit to Sahib Cold Storage"** has been organized on **17th October, 2023**.
It is instructed that all the students should come in uniform, shoes, identity card & notebook.

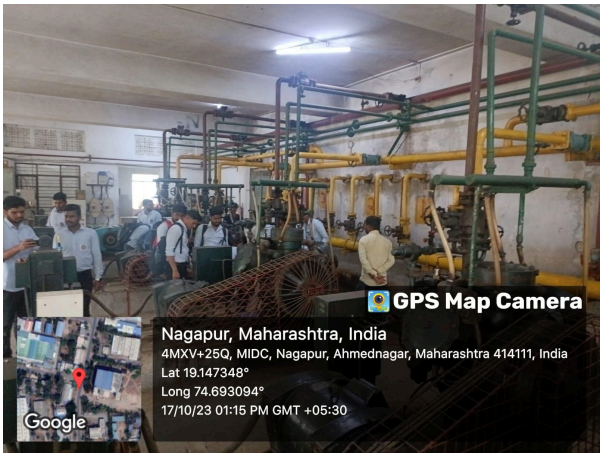
Address: Sahib Cold Storage
4MWV+WQ9, Renukanagar,
MIDC, Ahmednagar,
Maharashtra 414111

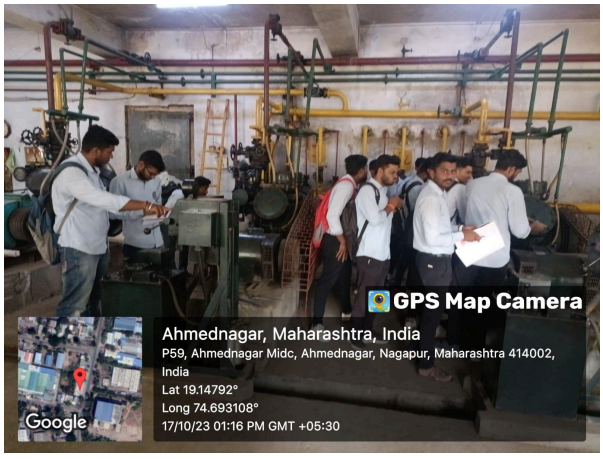
Time: 12.30pm(Sharp).

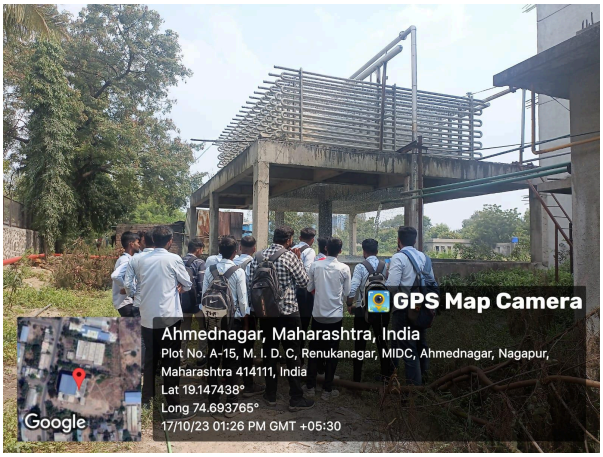
Mech.Engg. Dept.

Dr. R.R. Navthar
HOD
Mechanical Dept.

Photograph/Screenshots of event:



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Ahmednagar, Maharashtra, India
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Lat 19.147438°
Long 74.693765°
17/10/23 01:26 PM GMT +05:30
Google


GPS Map Camera
Nagapur, Maharashtra, India
4MXV+25Q, MIDC, Nagapur, Ahmednagar, Maharashtra 414111, India
Lat 19.147322°
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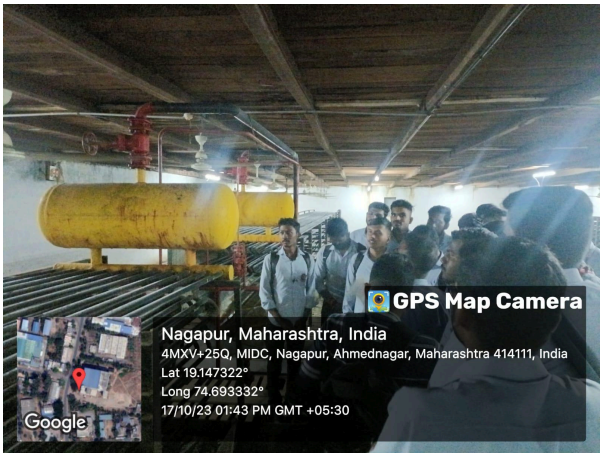
GPS Map Camera
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4MXV+25Q, MIDC, Nagapur, Ahmednagar, Maharashtra 414111, India
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Long 74.693332°
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साहिब कोल्ड स्टोरेज
GPS Map Camera
Nagapur, Maharashtra, India
4MXV+25Q, MIDC, Nagapur, Ahmednagar, Maharashtra 414111, India
Lat 19.147221°
Long 74.693197°
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Dr. Vitthalrao Vikhe Patil Foundation's

Dr. Vithalrao Vikhe Patil College of Engineering Ahmednagar

DTE College Code: EN-5161

Attendance:

|| न हि ज्ञानेन सदृशं पवित्रमिह विद्यते ||

Dr. Vitthalrao Vikhe Patil Foundation's

Dr. Vithalrao Vikhe Patil College of Engineering Ahmednagar

DTE College Code: EN-5161

Department of Mechanical Engineering

Visit Attendance

Subject: **Heating, Ventilation, Refrigeration & Air Conditioning**

Topic: **Visit to Cold Storage.** Date: 17/10/2023

Sr. No.	Name of the Students	Sign
1	Madane Tanmay Shivaji	
2	Bade Shantanu Ravindra	
3	Mohite Vishal Kashinath	
4	Bakal Gaurav Sanjay	
5	Lokhande Suresh Sanjay	
6	Pund Vishal Sanjay	
7	Yengupatala Sumit Dhananjay	
8	Aseri Shivam Nandkishor	
9	Gugale Krishna Sambhaji	
10	Bhosale Omkar Ashok	
11	Pawar Akash Babasahe	
12	Ugale Digvijay Balasaheb	
13	Gaurav Shankar Dahatonde	
14	Sairaj Babasaheb Kokane	
15	Zine Aniket Keshav	
16	Pawar Yogesh Kishor	
17	Sonawane Premdas Jayprakash	
18	Sutar Prathmesh	
19	Dangat ~~Akash~~ Akshay	
20	Manch Yash	
	Dipak Waghade	

BTagad

Prof. B.T. Tagad.
Subject Teacher

Organized by:

Name of the Incharge Faculty	**Prof. B.T Tagad**

PRINCIPAL
Dr. Vithalrao Vikhe Patil
College of Engineering
Ahmednagar

Dr. R.R. Navthar
HOD
Mechanical Dept.