Environment Audit

Study Period (One Year) 2024 - 2025

Sustainability study

AUDIT REPORT

Studied for

CMR Engineering Educational Society's

CMR Engineering College

Kandlakoya Village, Medchal Road,

Hyderabad- 501401, Telangana, India

Studied in the capacity of

Accredited and Certified

Green Building Professional

Studied by

Greenvio Solutions

Email: greenviosolutions@gmail.com

Disclaimer

The Audit Team has prepared this report for **CMR Engineering Educational Society's CMR Engineering College** located at *Kandlakoya Village, Medchal Road, Hyderabad-501401, Telangana, India* based on input data submitted by the Institute analysed by the team to the best of their abilities.

The details have been consolidated and thoroughly studied as per the various guidelines for Green Buildings available in National and International Standards; the report has been generated based on comparative analysis of the existing facilities and the prerequisites formulated by various standards. The inputs derived are a result of the inspection and research. These will further enhance and develop a Healthy and Sustainable Institution.

These can be implemented phase wise or as a whole depending on the decision taken by the internal team. The warranty or undertaking, expressed or implied is made and no responsibility is accepted by Audit Team in this report or for any direct or consequential loss arising from any use of the information, statements or forecasts in the report.

The audit is a thorough study based on the inspection and investigation of data collected over a period of time and should not be used for any legal action. This is the property of Greenvio Solutions and should not be copied or regenerated in any form.

The Report is prepared by the Team of Greenvio Solutions under their brand and department – Sustainable Academe as Consultancy firm with the Project Head - Ar. Nahida Shaikh who is as an Accredited and Certified Green Building Professional-Architect. Green Building consultancy is her forte and she is one of the most sought after names when it comes to providing excellent quality services within the stipulated time frame.

The Study is conducted in capacity of Accredited & Certified Green Building Professional with extensive experience.

Ar. Nahida Abdulla

Greenvio Solutions

Developing Healthy and Sustainable Environments

We are an Environmental and Architectural Design Consultancy firm

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Acknowledgement

The Audit Assessment Team extends its appreciation to **CMR Engineering Educational Society's CMR Engineering College, Telangana** for assigning this important work of Environment Audit. We appreciate the cooperation extended to our team during the entire process.

Our special thanks are extended are due to everyone from the Management.

We are also thankful to Institute's Task force who have played a major role in data collection.

Sustainable Academe
Brand of Greenvio Solutions, Palghar District, Maharashtra- 401208

Contents

1. Introduction

1.1 About the Institution

Established in 2010, CMR engineering college is one of the top premier private Engineering colleges in Hyderabad spreads over the vast area of 10 acres. The CMR College is authorized under All India Council for Technical Education (AICTE), New Delhi and affiliated to JNTUH. In the further journey, the college is also rated 5 Star under Institution Innovation Council, Ministry of Education, Govt of India & Achieved ARIIA Ranking.

2. Overview

2.1 Summarised Populace analysis for 2024-25

2.1.1 Students data

The data (shared by Institute) shows there were 3,049 male and 1,582 female students.

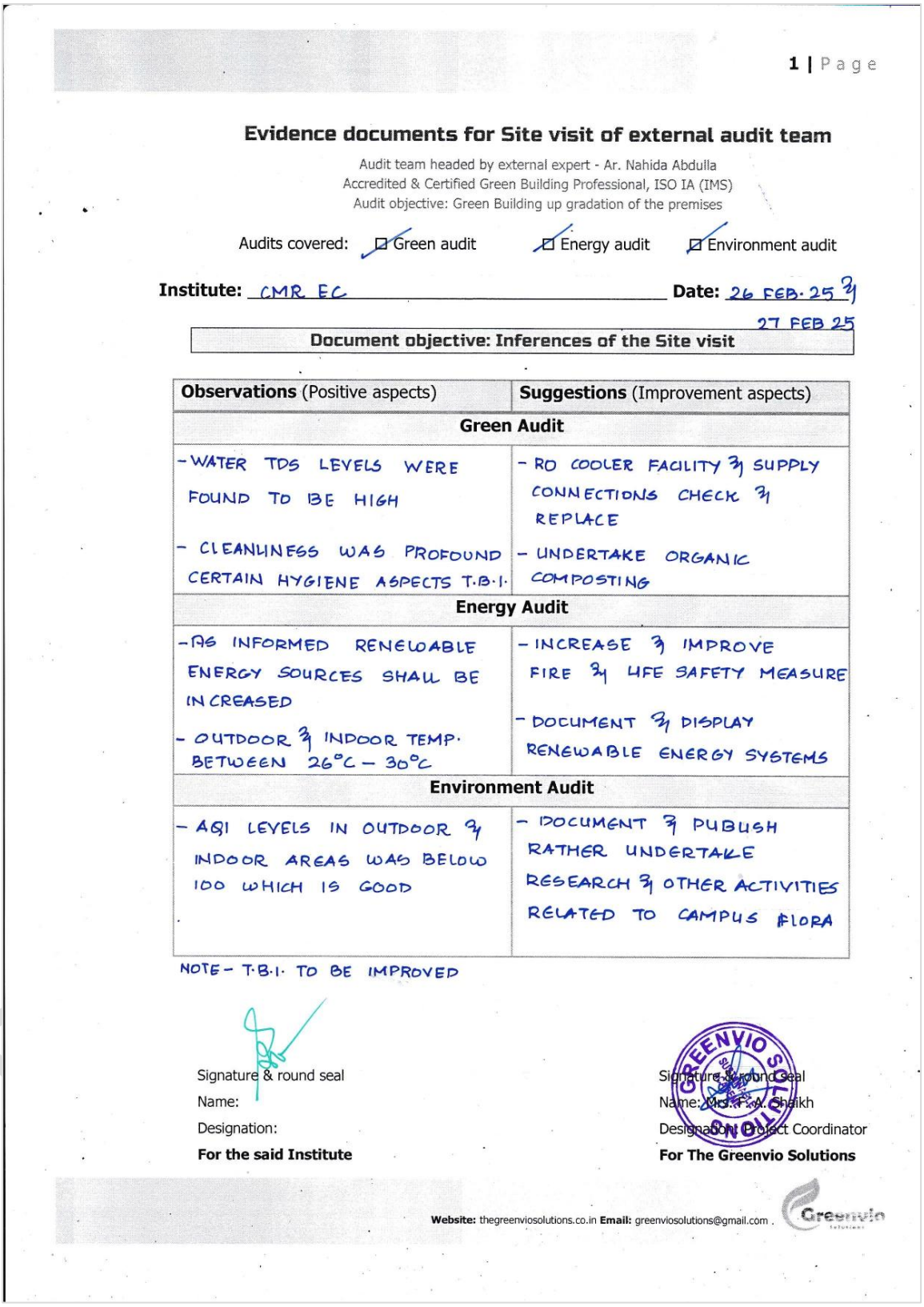
Thus total 4,631 students.

2.1.2 Staff data

The data (shared by Institute) shows there were 376 staff members.

Thus, total populace stands at 5,007 nos.

3. Observation



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Evidence documents for Site visit of external audit team

Audit team headed by external expert - Ar. Nahida Abdulla
Accredited & Certified Green Building Professional, ISO IA (IMS)
Audit objective: Green Building up gradation of the premises

Audits covered: ☑ Green audit ☑ Energy audit ☑ Environment audit

Institute: CMR EC **Date:** 26 FEB. 25 &
27 FEB 25

Document objective: Inferences of the Site visit

Observations (Positive aspects)	**Suggestions** (Improvement aspects)
Green Audit	
- WATER TDS LEVELS WERE FOUND TO BE HIGH - CLEANLINESS WAS PROFOUND CERTAIN HYGIENE ASPECTS T.B.I.	- RO COOLER FACILITY & SUPPLY CONNECTIONS CHECK & REPLACE - UNDERTAKE ORGANIC COMPOSTING
Energy Audit	
- AS INFORMED RENEWABLE ENERGY SOURCES SHALL BE INCREASED - OUTDOOR & INDOOR TEMP. BETWEEN 26°C – 30°C	- INCREASE & IMPROVE FIRE & LIFE SAFETY MEASURE - DOCUMENT & DISPLAY RENEWABLE ENERGY SYSTEMS
Environment Audit	
- AQI LEVELS IN OUTDOOR & INDOOR AREAS WAS BELOW 100 WHICH IS GOOD	- DOCUMENT & PUBLISH RATHER UNDERTAKE RESEARCH & OTHER ACTIVITIES RELATED TO CAMPUS FLORA

NOTE - T.B.I. TO BE IMPROVED

Signature & round seal
Name:
Designation:
For the said Institute

Signature & round Seal
Name: Mrs. F. A. Shaikh
Designation: Project Coordinator
For The Greenvio Solutions

Website: thegreenviosolutions.co.in **Email:** greenviosolutions@gmail.com .

Plate 1: Evidence files related to inferences

4. Investigation

The following results were carried out during visit on ***26 February 2025.***

4.1 Micro-site study

1. F-Block @ 10:24 (Indoor)

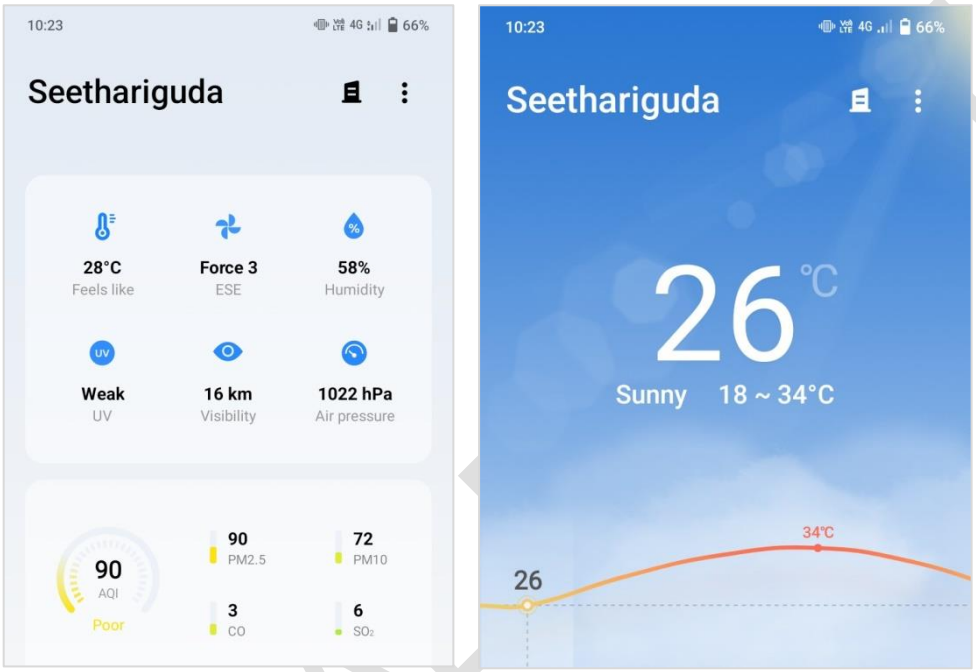

Figure 1: Study at F-Block indoor area

2. F-Block @ 10:54 (Outdoor)

Figure 2: Study at F-Block outdoor area

3. A-Block server room @ 11:28 (Indoor)

Figure 3: Study at A-Block server room

4. Transformer area @ 11:44 (Outdoor)

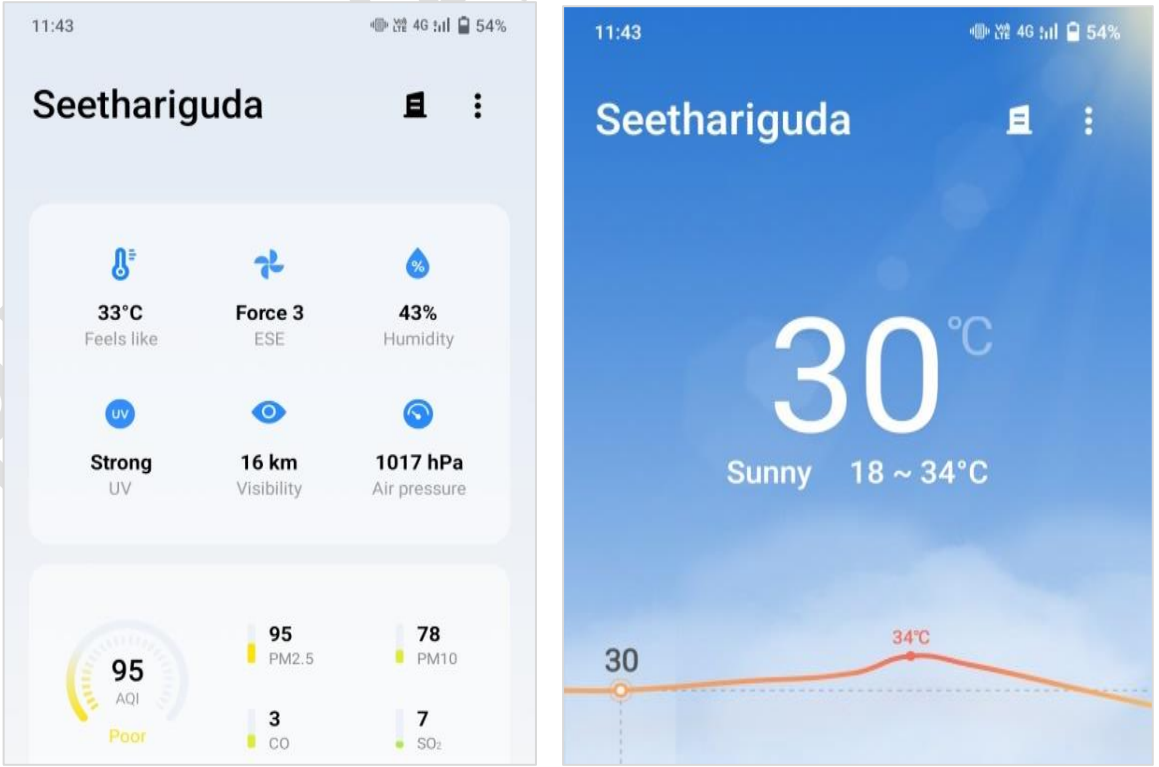

Figure 4: Study at Transformer area

5. C-Block @ 12:28 (Indoor)

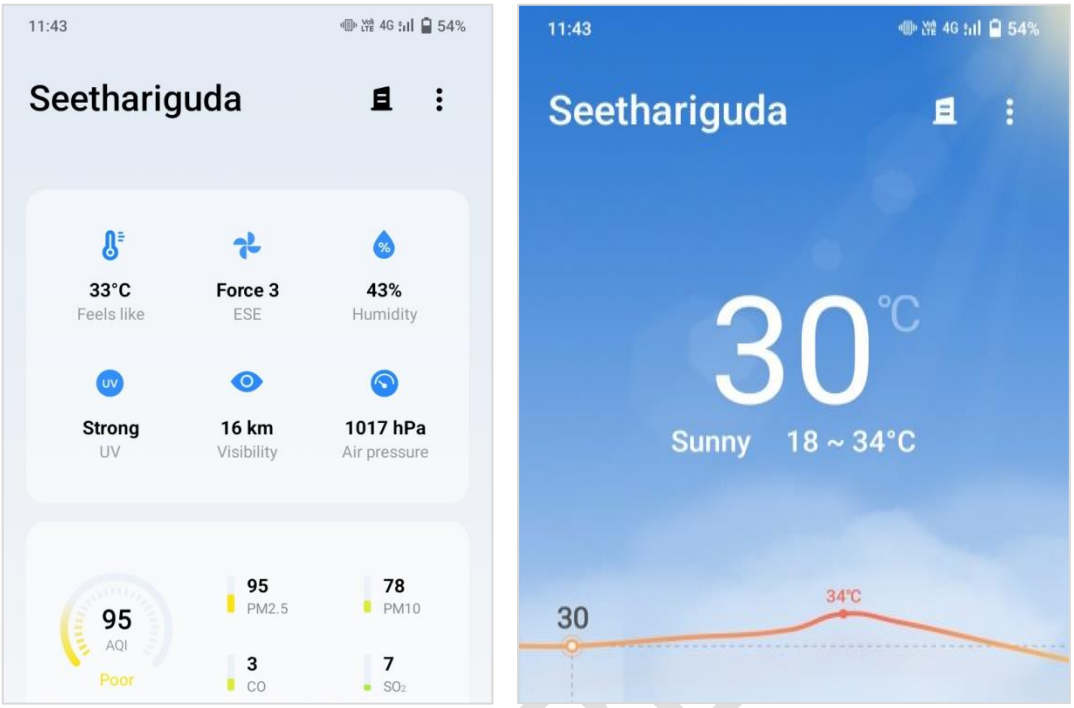

Figure 5: Study at C-Block

4.2 Macro summary study

This study is the combined study of all the micro-studies taken place in previous section to draw a specific conclusion of overall AQI. The key parameters include:

- Month of testing – February
- Season os testing – As per IMD winter season

S. No.	Space	Location	AQI result	AQI category as per IMD	Requires improvement
1.	F-Block	Indoor	90	Satisfactory (51-100)	Yes
2.	F-Block	Outdoor	98	Satisfactory (51-100)	
3.	A-Block server room	Indoor	98	Satisfactory (51-100)	
4.	Transformer area	Outdoor	95	Satisfactory (51-100)	
5.	C-Block	Indoor	95	Satisfactory (51-100)	

Table 1: Macro level study of the site – AQI parameters

Note: The software used considers only AQI below 50 as Fair and better. *The above study was conducted using the HuaFeng Accuweather software.*

However, as per Standard for Operating Procedure – IMD – Minstry of Earth Sciences, Govt. of India 2021; the norms state 0-50 as Good and 51-100 as Satisfactory.

5. Documentation

5.1 Ecological audit

The campus has multiple blocks and open spaces including outdoor play areas.

Plate 2: Seating around the tree

Plate 3: Open spaces and ground

5.2 Biodiversity (Flora) audit

The provided information is documented below:

S. No.	Plant name	Type	Nos.	Planted by
1	*Crateva Religiosa*	Tree	42	Staff
2	*Pandanus Veitchii*	Plant	30	Natural
3	*Dragon Tree*	Tree	40	Natural
4	*Dracena Marginata*	Plant	30	Natural
5	*Desert Olive*	Shrub	5	Natural
6	*Manchineel*	Tree	8	Natural
7	*Mimosa Pudica*	Plant	2	Staff
8	*Pterospermum*	Plant	1	Natural
9	*Spathodea Camparulata*	Plant	2	Natural
10	*Muntingia Calabura*	Plant	4	Staff
11	*Tamarindus*	Tree	9	Natural
12	*Tecoma Stans*	Shrub	19	Staff
13	*Crinum Menehune*	Plant	50	Natural
14	*Rhapis Excelsa*	Plant	20	Natural
15	*Cycas*	Plant	10	Natural
16	*Euphorbia Milli*	Plant	7	Natural
17	*Ficus Tsja*	Tree	20	Natural
18	*Buxus Microphylla*	Plant	55	Staff
19	*Coleus Plant*	Plant	6	Natural
20	*Solenostemon*	Plant	15	Staff
21	*Plumeriacharley*	Tree	9	Natural
22	*Beschorneria Yuccoides*	Plant	52	Natural
23	*Ficus Micratiylla Var*	Tree	4	Staff
24	*Tanacetum Balsamita*	Herb	42	Natural
25	*Scindapsus*	Plant	5	Natural
26	*Syngonium Podophyllum*	Plant	2	Natural
27	*Tradescantia Spathacea*	Plant	2	Staff
28	*Perilla Frutescens*	Plant	21	Staff

Table 2: Details about the flora in the campus

As per above study there are 512 nos. of plantations in the premises.

Query	Yes/ No
Any research carried about flora?	No
Any Publication presented about flora of campus?	No
Any book prepared about flora of campus?	No

Table 3: Technical data about the flora

Comparison, the study shows previous year too had same nos. and this year as well there are same nos. of plantations.

5.3 Carbon Footprint Audit – Heat Island Reduction

5.3. Light pollution study

This type of pollution is not experienced within premises

5.3.2 Heat Island Reduction

The heat island effect refers to the study of micro climatic feature within a site. There are multiple factors that add on to feature such as external temperature, internal temperatures, site context including available and site adjacent facilities. Observed features include:

- Situated away from the city to some extent.
- Very clos to oxygen park.
- Light colored facades

Plate 4: Certain spaces have cool rooftops

5.4 Noise Audit

This study was excluded.

6. Compliance

The compliance study was carried out through investigative ways. This was done to understand extent of implementations based on previous reports.

- Original report study was for June 2022 to May 2023 and June 2023 to May 2024
- Renewal study is currently done for June 2024 onwards

6.1 Compliance status in form of Action taken report

The inputs are documented below:

6.1.1 Restricted Access & Safety Enhancements:

Signboards stating **"No Students Allowed in This Area"** have been installed at all rooftop entry points.

6.1.2 Cool Roof Implementation:

The rooftop has been upgraded with cool-top material to reduce heat absorption and create an energy-efficient environment.

6.1.3 Storage Restrictions:

Measures have been implemented to keep terrace areas clear of any storage materials, ensuring safety and easy maintenance.

6.1.4 Messages on Beam Areas for Inspiration & Beautification

6.1.4.1 Installation of Motivational Quotes:

- Quotes and messages from eminent personalities have been displayed on beams across the campus to motivate students and staff.
- These messages promote a positive learning atmosphere and aesthetic appeal.

6.1.4.2 Inspirational Timelines on Blank Interior Facades – Educational & Career-Oriented Displays:

- Interior walls have been utilized to showcase subject-related information, career opportunities, and inspirational timelines.
- This initiative helps students gain valuable insights into various disciplines while enhancing campus aesthetics.

6.1.5 General Campus Enhancements

6.1.5.1 Zone-Wise Information Boards:

Detailed zone-wise information boards have been introduced at key locations for better navigation and awareness.

6.1.5.2 Increased Awareness Through Placards & Manuals:

Awareness placards and manuals have been strategically placed to educate students and staff about environmental sustainability and safety protocols.

6.1.5.3 Website Upgrades for Green Initiatives:

The official college website has been updated to highlight various green initiatives and provide information on ongoing sustainability efforts.

7. Suggestion

The suggestion (inference) would act as a 'PLAN OF ACTION' to implement all the suggestions in a detailed manner.

- Conduct the 'Before' and 'After' study with photos
- Document the same in 'Action taken report'

S. No.	Aspect with evidence if any	Suggestion
1.	Ecological aspect **Aspect area:** **Plant as an extension of 'Green motto'**	External resource persons visiting the premises can share the goal of green environment in the following ways: 1. Plant a sapling within the premises 2. Handover a sapling as a gesture
2.	Biodiversity aspect **Aspect area:** **Water and food feeders**	At appropriate locations there can be provisions for drinking water and some grains for birds as they visit the site much frequently.   ***Food and water feeder*** Waste plastic bottles can be recycled & used as a student activity
3.	Carbon footprint aspect **Aspect area:** **Environment monitoring**	Install CO_2 monitor in public areas of indoor areas such as porch and AQI meter in outdoor areas near compound wall
4.	Carbon footprint aspect **Aspect area:** **Cool rooftop**	➲ Keep terrace areas free of any kind of storage materials ➲ Terrace rooftops can be painted with Cooltop (Reflective material) to reflect the harsh sun rays and reduce the heat absorption in the top most floor and surrounding areas of the building. ➲ Introduce signboards about 'No students are allowed to

enter'

- Undertake feasibility study of before - after temperature reading.

Current status

Proposed status

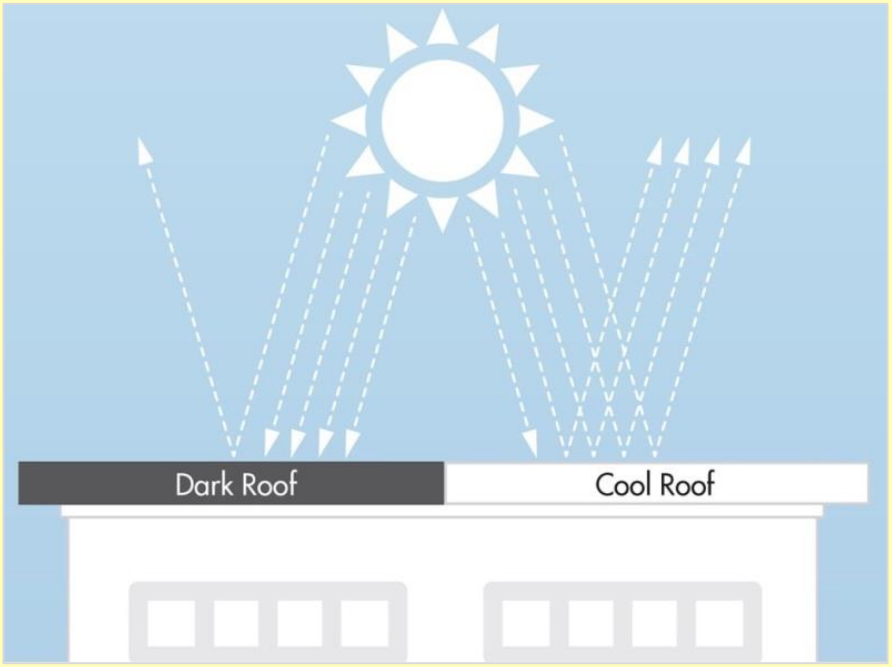

Plate 5: Cool roof comparative analysis (For reference purpose only)

Source: Image by https://www.gaf.com/en-us/blog/six-truths-about-cool-roofs-281474980105387

5.	Carbon footprint aspect **Aspect area:** **Campus vehicle footprint**	Introduce speed limit signage in site 

Table 4: Observation based suggestion study of the campus

8. Compilation

The study is based on the data collected, analyzed, rechecked, and confirmed through multiple modes. For the quality study, some standards/ notes have been referred to. These are listed and noted below. However, no direct references have been used anywhere. These are used as a base to analyze and study the data collected.

National references

- IGBC Green Existing Buildings – Operation & Maintenance (O&M) Rating system, Pilot version, Abridged Reference Guide, April 2013
- IGBC Green Landscape Rating system, March 2013

International references

- The city of Cheyenne, Streetscape/ Urban Design elements - Wyoming Planning Association, Gillette, Wyoming, United States
- Streetscape elements – Chapter 6 on San Francisco
- American lung association https://www.lung.org/
- Study related to air pollution https://www.airgle.com/
- Exploring the light pollution https://education.nationalgeographic.org/
- Urban heat island effect https://www.epa.gov/heatislands/what-you-can-do-reduce-heat-islands