

ENVIRONMENT AUDIT

STUDY PERIOD (THREE YEARS) 2021 – 2022; 2022 - 2023 & 2023-2024

Sustainability study RENEWAL AUDIT REPORT

Studied for
Viswambhara Educational Society's
Vaagdevi College of Engineering
(Autonomous)
Bollikunta (Village), Khila Warangal (Mandal),
Warangal (Dist.) - 506 005, Telangana

Studied in the capacity of
Accredited and Certified
Green Building Professional



Website: <https://thegreenviosolutions.co.in/>

Email: greenviosolutions@gmail.com

Valid till **31 January 2025**

Disclaimer

The Audit Team has prepared this report for the **Viswambhara Educational Society's Vaagdevi College of Engineering (Autonomous)** located at Bollikunta (Village), Khila Warangal (Mandal), Warangal (Dist.) - 506 005, Telangana 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 a 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 Hon'ble Management and Institute. 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 while 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 an Accredited and Certified Green Building Professional. 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 incapacity of an Accredited & Certified Green Building Professional with extensive experience.

Nahida Shaikh
Ar. Nahida Abdulla
Greenvio Solutions

Developing Healthy and Sustainable Environments

We are an Environmental and Architectural Design Consultancy Firm
Sustainable Academe is our department for conducting Audits

Palghar District, Maharashtra- 401208

sustainableacademe@gmail.com



Acknowledgment

The Audit Assessment Team thanks the **Viswambhara Educational Society's Vaagdevi College of Engineering (Autonomous), 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 **Prof. K. Prakash**, (Principal).

We are also thankful for **Institute Taskforce** who have collected the data required – Prof. **K. Thirupathi Rao**, Vice-Principal; **Dr. U. Kiran**, IQAC Coordinator and **Mr. Y. Srinivas**, Assistant Registrar

We highly appreciate the assistance of the **entire Teaching, Non-teaching, and Admin staff** for their support while collecting the data.

Sustainable Academe

Brand of Greenvio Solutions, Palghar District, Maharashtra- 401208

Contents

Disclaimer	1
Acknowledgment	2
Contents.....	3
1. Introduction.....	4
2. Compliance	5
3. Inferences.....	9
4. Compilation.....	13

RENEWAL REPORT

1. Introduction

1.1 About the functioning of the Institution

Vaagdevi College of Engineering is an AICTE approved autonomous college, putting significant efforts to help students with internship opportunities. It is fully equipped with lecture theatres, purpose-built labs and learning areas, cafes, recreation areas, libraries, transport provisions with a fleet of college buses and separate hostels for boys and girls with a range of services and facilities.

1.2 Statements of the Institution

Vision

- *Striving Continuously for Global Recognition through Academic Excellence in Higher Education for the Betterment of Society*

Mission

- *To produce technically competent and socially responsible engineers with ethical values through innovative teaching learning process*
- *To promote research and entrepreneurship culture among faculty and students*

1.3 Populace analysis

1.3.1 Students and staff data (Academic year 2021-2022)

The premises had **3,130** male and **1,522** female stakeholders.

1.3.2 Students and staff data (Academic year 2022-2023)

The premises had **3,155** male and **1,608** female stakeholders.

1.3.2 Students and staff data (Academic year 2023-2024)

The premises had **3,167** male and **1,768** female stakeholders.

2. Compliance

The compliance study was carried out through investigative ways. This was done to understand the **extent of suggestions and their implementations based on previous report of Academic years 2019-2020 and 2020-2021**. The renewal is for academic years 2021-2022, 2022-2023 and 2023-2024.

2.1 Compliance status

The details of compliance state that no change has been implemented.

2.2 Compliance technical study

As per investigation of the systems, we confirm the availability of the following features:

2.2.1 Open Space



Plate 1: Open spaces in the premises

Observation: The spaces are well maintained.

2.2.2 Flora and fauna audit



Plate 2: Green cover at the entrance and inside the premises

Observation: The space is well maintained

2.2.3 Noise Audit

This section has been excluded technically, but as per site analysis the campus is away from the hustle bustle of noise area and located in a peaceful area.

2.2.4 Carbon Footprint Audit

2.2.4.1 Heat island



Plate 3: Green area in the courtyard

Observation: The green cover in the surrounding and internal spaces helps to reduce the heat island effect by absorbing the harsh radiation and providing a cool atmosphere.

2.2.4.2 Commuting practices



Plate 4: Buses to commute back and forth

Observation: The campus provides hostel facilities for stakeholders, for the students who are day-scholars there are buses provided for commuting back and forth. To a certain extent there is a reduction on reliance of private vehicles to commute by stakeholders, thereby providing an eco-friendly way of commuting

2.2.5 Universally accessible premises

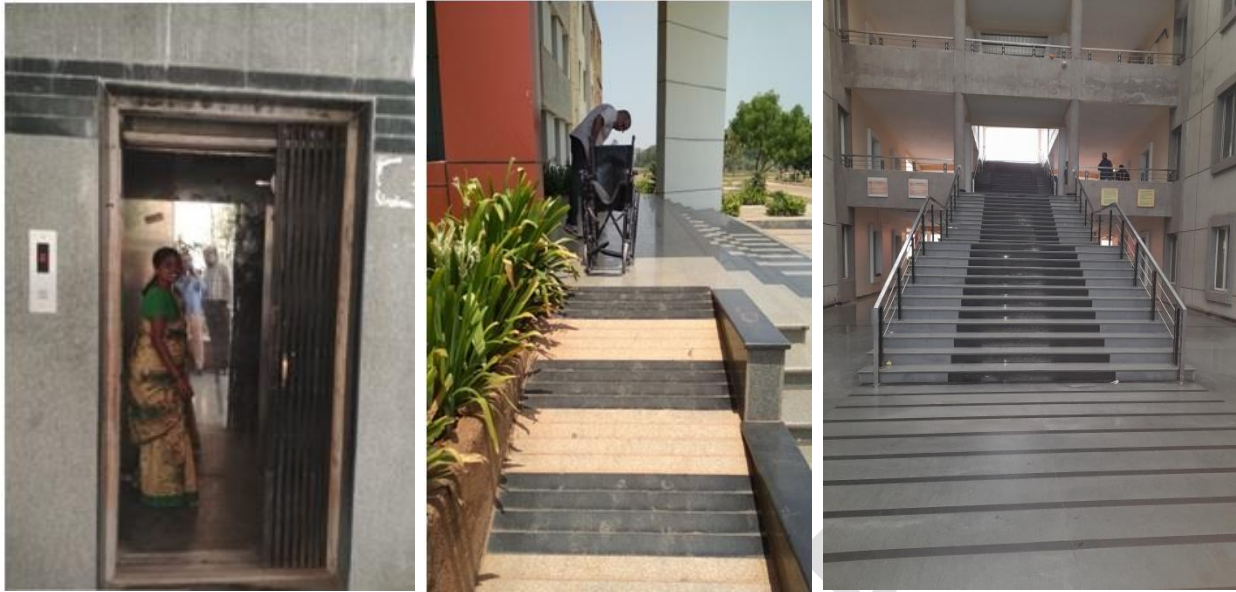


Plate 5: Lift, Ramp and handrail along staircase

Observation: The current facilities w.r.t. access parameter are fine.

2.2.6 Fire Safety

The details about this facility were not informed by internal team.

3. Inferences

The following suggestions can be implemented ***in next two years***. The Institute can execute a plan after discussion with Project Head.

Note: The text with light blue background is the same recommendation as last year that has not been implemented.

3.1 Site beautification

- ➔ **Bird house/ Feeders** - At appropriate locations there can be provisions for drinking water and some grains for birds as they visit the site much frequently.
- ➔ **Child area** - There can be one provision where if student's or staff relative who are toddlers or senior citizens can rest and this area could have facilities accordingly.
- ➔ **Nutrition pits** - Certain pits can be demarcated as 'Nutrition pits' where the organic food from the kitchen and Canteen fruit peels and fruits or vegetables can be degraded for making nutrition-rich soil.
- ➔ **Garden development** - *Scientific name plates and QR codes* – The team should undertake a project to have name plates with QR codes on every plant of the premises.
- ➔ **Architectural landscape and streetscape features such as:**
 - *Speed limit signage*
 - *Parking mirror*
 - *Speed breakers and zebra crossing*
 - *No parking signboards at dedicated locations*
 - *Direction sign board*
 - *Post box*
 - *Signboard about specific space*

3.2 Heat island reduction

- ➔ **Cool rooftops** - The Terrace rooftops should be painted with Cooltop – reflective materials to reflect the harsh sun rays and reduce the heat absorption in the top most floor and surrounding areas of the building.

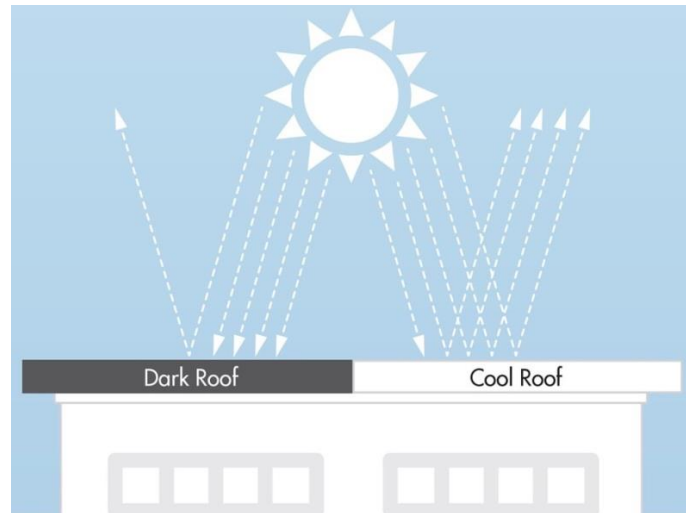


Plate 6: Cool roof comparative analysis (For reference purpose only)

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

- ➔ **Structures for shaded walkways** – There should be provisions for shaded walkways and also resting/ breakout zones. A sample of the same is as follows:



Plate 7: Shade structures concept for the Institute (For reference purpose only)

Source: Image by <https://earthbound.report/2021/07/14/5-ways-to-reduce-the-urban-heat-island-effect/>

3.3 Life safety

- **Fire station** – A dedicated fire station could be established within the premises as part of the Fire and Life safety practices.
- **Combustible equipment** - Every space which has a gas cylinder or combustible equipment should have a provision for the barricade around the gas cylinders, appropriate safety board's mentioning 'danger sign' and 'Do not touch' with an additional small fire extinguisher close by.
- **Awareness** - Fire layouts in immediate spaces outside the lift, on the staircase landing, signages mentioning 'Do not use lift in case of fire' additionally fire exit signages, boards should be put up at all possible locations.
- *The **fire and life safety signages (Including exit signages)** should be increased and displayed.*
- *There should be a **PASS Board** alongside every fire extinguisher and a **RACE Board** at the location of extreme populace/ footfalls.*



Reference suggestions 1: PASS Board display

3.4 Pollution Control

- **Vehicle usage** - Restricting the speed limit of vehicles on the premises to 10 km per hour, not honking on the premises will help in maintaining the sound in control and emphasis on a silent zone.
- **Specific area designated for E-vehicles** – There should be designated area dedicated to E-vehicles parking and charging and this zone should be demarcated as 'Eco-Zone'
- **Promote the use of Eco-friendly vehicles** - There can be student and staff sensitization program on eco-friendly and battery-operated vehicles/ low emission vehicles for daily use.
- **Battery charging points for Eco-friendly vehicles** - There can be provision for battery charge points, this would inspire students to change their mode of transportation and adopt sustainable practices.
- **Avoid burning waste** - The waste produced on the premises should not be burned as it is dangerous to the health of students and staff
- **Bicycles as a gift** - As an appreciation gesture maybe the student's toppers/ staff best performers can be awarded a bicycle occasionally.
- **Plant more radiation absorbing plants** - The following flora helps in reducing the harmful effects to a certain extent, the Institute can develop a radiation free zone and take to planting these through potted plants or permanent planting:
 - Spider plant
 - Rubber plant
 - Asparagus fern
 - Snake plant
 - Nelumbo nucifera (Includes colourful flowers)
 - Cactus
 - Areca palm
 - Mustard green
 - Betel
 - Aloe vera
 - Sprengers asparagus
 - Fiddle fig

4. Compilation

The study is based on the data collected, analysed, 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 analyse and study the data collected.

- ➔ Uniform Plumbing Code – India, 2008
- ➔ IGBC Green Existing Buildings – Operation & Maintenance (O&M) Rating system, Pilot version, Abridged Reference Guide, April 2013
- ➔ IGBC Green Landscape Rating system, March 2013
- ➔ BOMA Canada Waste Auditing Guide, Best Environmental Standards, BOMA BEST – Canada
- ➔ Used only for understanding Universal design - Universal Accessibility Guidelines for Pedestrian, Non-motorized vehicle and Public Transport Infrastructure – Report guidelines by Samarthyam (National center for Accessible Environments) – an initiative supported by Shakti Sustainable Energy Foundation and www.umassd.edu
- ➔ The city of Cheyenne, Streetscape/ Urban Design elements - Wyoming Planning Association, Gillette, Wyoming, United States

