

GREEN AUDIT

STUDY PERIOD (TWO YEARS) 2021 – 2022 & 2022 - 2023

Sustainability study **RENEWAL AUDIT REPORT**

**Studied for
Rama University**

Rama City, G.T. Road Mandhana,
Kanpur,
Uttar Pradesh, Pin- 209217

Studied in the capacity of

**Accredited and Certified
Green Building Professional**



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

Email: greenviosolutions@gmail.com

Valid till **31 December 2024**

Disclaimer

The Audit Team has prepared this report for **Rama University** located at Rama City, GT Road Mandhana, Kanpur, Uttar Pradesh, Pin- 209217 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 in capacity of an 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

Sustainable Academe is our department for conducting Audits

Palghar District, Maharashtra- 401208

sustainableacademe@gmail.com



Acknowledgment

The Audit Assessment Team thanks the **Rama University, Uttar Pradesh** for assigning this important work of Green Audit. We appreciate the cooperation extended to our team during the entire process.

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

We are also thankful for **Institute Taskforce** who have collected the data required.

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. Observations.....	10
4. Inferences.....	11
5. Compilation.....	15

RENEWAL REPORT

1. Introduction

1.1 Statements of the Institution

1.1.1 Vision

To emerge as a Global Premier University in imparting education of international standards, to build superior professionals with strong work ethics and to empower the world with futuristic minds, through excellence in research and innovation.

1.1.2 Mission

- To promote national and international collaboration for industry academia integration to achieve top most position in global hierarchy
- To create a scientific, challenging, transparent and sustainable environment/curriculum ideal for research, innovation, entrepreneurship and consultancy
- To nurture talent and creativity, committed to serve people, society and nation at large
- To inculcate strong morals, values & ethics to build socially committed and spiritually inspired personalities
- To empower and uplift each section of society through education and to contribute back to the environment by adapting and promoting eco-friendly practices

1.2 Timeline of activities for research

As the Institute had undergone a renewal for Academic year 2022-2023, process was:

- Allotment and Initiation by the Institute
- Process discussion with team
- Data submitted by Institute
- Submission of the files

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 2021-2022.**

2.1 Compliance study

The compliance study is focused on photographic documentation done during the site visit on 11 January 2024



Plate 1: On-site investigation of the premises

The spaces documented for the compliance study include the following:

Plate 1: On-site investigation of the premises	5
Plate 2: Water tanks on the rooftop	6
Plate 3: Dustbins in the premises	7
Plate 3: Sep in the premises	8
Plate 4: Awareness banners	9
Plate 6: Health facilities	9

2.1.1 Water study



Plate 2: Water tanks on the rooftop

Observation: The overhead water tanks are not well maintained, there are too much of storage and temporary structure in and around

Inference: The study suggests that there is scope for improvement for all the **water tanks, bore well pipes, rain water pits with the following information mentioned on them either through paint or a display board:**

- **Size** – Diameter/ L X B X H
- **Capacity** – In Litres
- **Usage** – Primary (Drinking)/ Secondary (Washing, Toilets, Washbasins and other)/ Tertiary (Water harvesting)
- **Last maintenance and cleaning date** with Certificates if any
- **Institute name**
- Provide a **permanent support for every water tank**; colour code the pipe and water tank with information on **Rain water tank (Light blue), Drinking water tank (Dark blue), Sewage/ Secondary water tank (Grey), Fire water tank**
- A **layout** should be displayed either near every block or as a common map near entrance informing **nos. and locations of each type of tank, capacity for every block, their usage**
- The civil/ maintenance department should display a record of this digitally on website

2.1.2 Dustbins and waste management



Plate 3: Dustbins in the premises

Observation: Dustbins are available at specific locations

Inference: The study suggests that:

- **Single DRY WASTE dustbin** should be available inside the classroom, other spaces
- **MULTI-COLORED dustbins** for paper, glass, water in the corridor areas
- **E-WASTE and PLASTIC WASTE zone** to practice a dedicated 'collection drive' quantify and then either recycle or handover the same to certain vendors
- **A small compost bin** (check image below) can be purchased and composting can be carried out through small quantities for a start given the space constrains



Reference suggestions 1: Composting practice (Source - Trustbin)

2.1.3 Septic tank

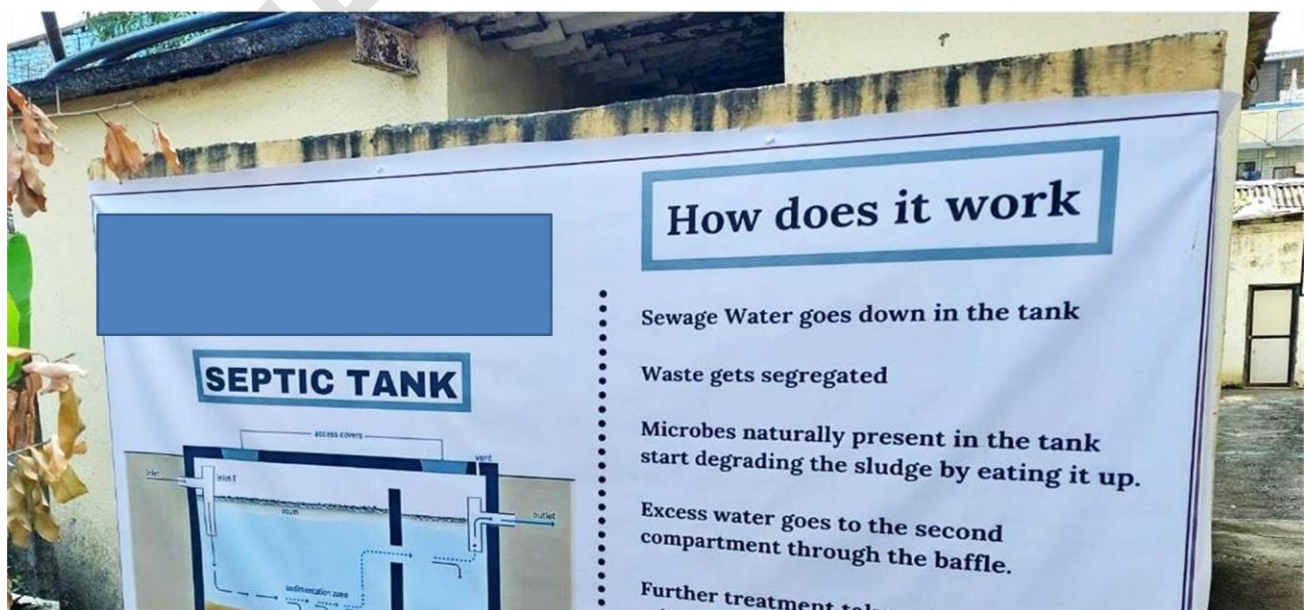


Plate 4: Sep in the premises

Observation: The space is not maintained appropriately

Inference: The study suggests that:

- ➔ The area should be demarcated as '**Danger zone**' by a fencing and students should not be allowed to visit the area
- ➔ The **tank should be painted and details** (Refer 2.1.1) should be displayed over it
- ➔ **Unwanted green cover should be removed** (such as moss etc.) and the landscape of the surrounding should be improvised
- ➔ A manual about the functioning should be displayed (Refer image below)



Reference suggestions 2: Manual for the Septic tank area

2.1.4 Awareness banners and health facilities



Plate 5: Awareness banners

Observation: The compound wall are painted with information for sensitization

Inference: *Since this is a good practice towards awareness, there are no suggestions.*

2.1.5 Health facilities

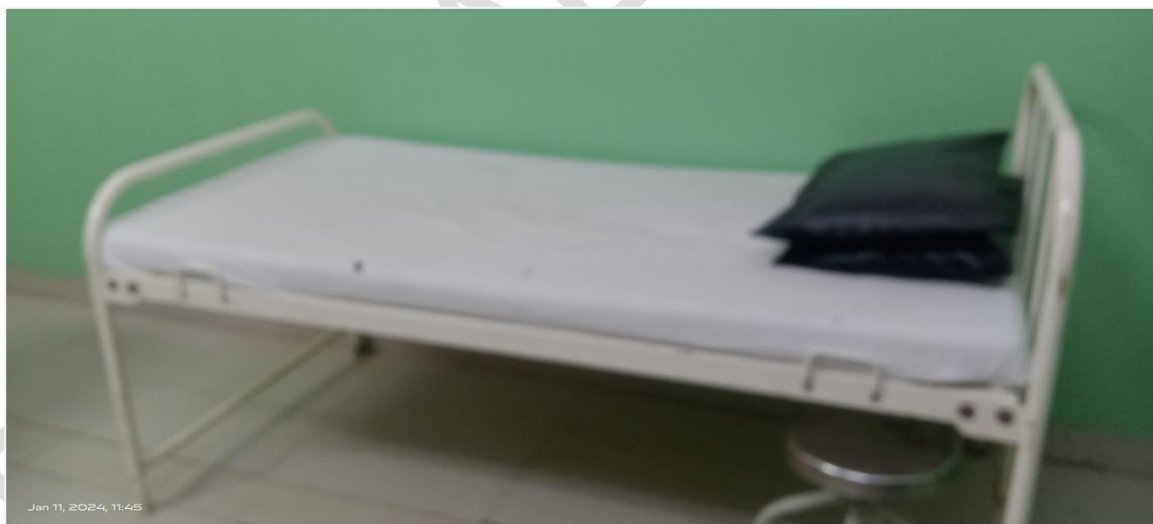


Plate 6: Health facilities

Observation: Being a medical campus, there are facilities for health provisions

Inference: *Since this is a good practice, there are no suggestions.*

3. Observations

3.1 Investigative suggestions

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

Certain aspects noted below in red font should be upgraded as per the convenience of the Institute; these are common to the site and can be considered for entire premises wherever there are similar areas.

➔ Library in the Campus

- Include silence board at various locations and at entrance.
- Install book drop box system at the entrance of the library.
- Upgrade smart scanning system for every book
- Include a self service station for digitalization.

➔ Carpets

- Green carpets could be placed outside drinking water and toilet blocks.
- This will add to hygiene areas and keep the water spillage under control.

➔ Awareness displays

- E-waste management chart can be displayed in spaces that have computers such as offices and laboratories.
- Going paperless, Print less etc. awareness boards could be displayed.

4. Inferences

4.1 Section-wise suggestions

The following are consolidated study related to 'entire Institute' should be considered as **second priority** once section wise recommendations are implemented.

4.1.1 Green practices audit

- ➔ **Plant as a gift** - As a kind gesture, the guests visiting the premise can be asked to plant a small plant on the premise itself and they can be even given plants/bouquets from the flowers of the plants on the premise as a gift.
- ➔ **Signages on the plants mentioning scientific names** - The practice of having the names of each plant and tree will provide awareness among the staff and students.



Reference suggestions 3: Signages on the plantations

- ➔ **Increase the green awareness practice** – This should be in terms of the physical and virtual events which will be beneficial for all stakeholders in the shared premises. (Basically the frequency of the lectures should be increased)

4.1.2 Waste Audit

- ➔ **Multi-colored waste management bins** - There should be more number of dual litter dustbins at various locations in areas such as Canteen, and open spaces. This would inculcate the awareness of waste segregation among students. Whereas a single type of dry waste dustbin should be available inside the teaching areas.



Reference suggestions 4: Twin litter dustbins in the premises

- ➔ **Material of dustbin** - The plastic dustbins should be replaced with eco-friendly material.
- ➔ **Include better plastic/ E-waste management measures** - The Institute can celebrate one day of every month as a 'Plastic/ E-waste awareness day' The stakeholders (Students and staff members) can be asked to bring plastic/ E-waste which can be further given to an NGO for recycling or better purpose.
- ➔ Tie up with **Bisleri International** regarding their '**Bottles for change program**' also with '**Thereco**' for their waste management.
- ➔ Invite companies such as '**Thaely**' and '**Recharkha**' to undertake skill development workshops.

4.1.3 Water Audit

- **Water tanks** - Additional safety and concrete support can be provided for the Water tanks with appropriate beautification and display boards about their capacity.
- **Signages** - Messages about avoiding water wastage should be placed at appropriate locations.
- **Water flow stopper** - The water flow stopper should be installed to avoid overflow and smart use of the system. Install water-saving showerheads or flow restrictors. No leakage anywhere on-premises. Water lawn only when it needs it.
- **Rain water bunds** – There should be landscape beautification project undertaken to appropriate channelize the rain water through bunds and similar facilities.
- **Manual about the functioning of the system** – There should be manual such as follows to increase sensitization about the facility and its operations.

Roof Rain water Harvesting System

For irrigating the plantation in campus

Rainwater harvesting is a technique used for collecting, storing, and using rainwater for landscape irrigation and other uses. The rainwater is collected from various hard surfaces such as rooftops and/or other manmade aboveground hard surfaces. We have much potential of roof rain water harvesting from which we can collect this water and store it for different purposes.

In first phase we have collected the roof water 3000 sqft.

On that basis we can estimate the annual water collection which as follows

Roof Type	Co-efficient
Slab	0.8 to 0.9

Satara City annual rainfall in mm = 1200-1500, Consider rainfall -1300 mm. **Rainfall in meter =1.3**


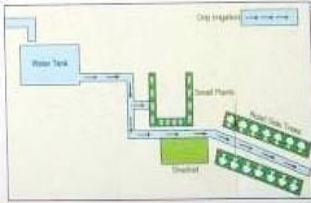
Rainwater Harvesting Potential (In Cum) = Area (in Sq,Meter) X Annual Rainfall (m)X Co-efficient X Constant Co.eff (0.80)

Rainwater Harvesting (3000 Sq.ft) =Area in Meter X Annual Rainfall (m) X Co-efficient X Constant Co.eff

278.7091	1.3	0.8	0.80
----------	-----	-----	------

Rainwater Harvesting (3000 Sq.ft) = 278.7091X 1.3 X 0.8 X 0.80
 = 231.8859712 Cum
 = 231885.9712

We are using this water for irrigation plantations in campus by using drip irrigation system

Reference suggestions 5: Roof rain water harvesting system

4.1.4 Health and Hygiene Audit

- ➔ **Avoid burning waste** - The waste produced on the premises should not be burned as it is dangerous to the health of students and staff
- ➔ **Pest control program** - The Institute should practice pest control programs with appropriate sanitation facilities through an appropriate agency.
- ➔ **Signboards** – The Institute should have multiple signboards about 'No smoking' and 'Healthy premises' at every nook and corner of the Institute.
- ➔ **Compound wall** – The compound wall should have awareness messages about 'No Smoking' and 'No Tobacco'
- ➔ **Toilet hygiene** – There should be facilities such as potpourri, camphor tablets in the toilet to avoid smell and health related issues.

RENEWAL REPORT

5. 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 centre for Accessible Environments) – an initiative supported by Shakti Sustainable Energy Foundation.

