

GREEN AUDIT

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

Sustainability study

AUDIT REPORT

Studied for

**Government Degree College,
Pattikonda**

Main road, Kotha Peta, Pattikonda,
Kurnool (District), Pattikonda – 518380,
Andhra Pradesh, India

Studied in the capacity of

Accredited and Certified
Green Building Professional



Studied by

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

Email: greenviosolutions@gmail.com

Disclaimer

The Audit Team has prepared this report for the **Government Degree College, Pattikonda** located at Main road, Kotha Peta, Pattikonda, Kurnool (District), Pattikonda – 518380, Andhra Pradesh, 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 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 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.

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

Acknowledgement

The Audit Assessment Team thanks the **Government Degree College, Pattikonda, Andhra 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 extended are due to **everyone from the Governing body.**

Our heartfelt thanks are extended to the Chairperson of the entire process **Dr. R. Madhuri** (Principal) for the valuable inputs.

We are also thankful to Institute's Task force who have played a major role in data collection - **Dr. Md. Osman Ahmed**, IQAC Coordinator; **Ms. Vasantha** and **Mr. Rajesh**

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
Acknowledgement	2
Contents.....	3
1. Introduction.....	4
2. Overview	7
3. Research	9
4. Observation	10
5. Documentation	11
6. Suggestions	16
7. Compilation.....	19

1. Introduction

1.1 About the Institution

The Government Degree College, Pattikonda, Kurnool Dist. was established with an initial strength of 88 students with B.A., & B.Com courses in 1988 in Government Junior College. Since its inception, it has been striving hard to impart quality and job oriented education to the students of socially and economically backward area of Kurnool district.

Innovative teaching and learning methods are adopted which include student centered learning, seminars, G.Ds and assignments. Besides Mana T.V. Guest lectures and invited lectures enhance the quality of education with values and latest concepts. Field trips are arranged to broaden the outlook of the students. Academically backward students are identified and special care is taken to sharpen their skills by conducting remedial coaching

Cerment cell is making relentless efforts to address the problems of the girl students. Apart form conducting various competitions for the girls, if instils confidence to face the challenges of the society bravely. Grievance Redressal cell is taking all steps to solve the issues of the students. Students are given freedom to express their grievances without hesitancy.

Eco club is at its best in maintaining greenery in the campus. On the games and sports front, physical education department deserves great appreciation as it is putting untiring efforts in shaping students into bright and talented.

Being a socially responsive organization, the institution is putting all its endeavours to improve the lot of the stake holders through value based education and relevant community development activities. **The College anticipates a good number of its students will become socially responsible citizens who can make society a better place to live in.**

1.2 About the statements of the Institute

1.2.1 Vision

The Institute proposes "To provide quality education to the students of poor, down trodden and privileged of rural, backward and side-lined area of Pattikonda and achieve academic excellence."

1.2.2 Mission

The Institute adheres and focuses towards:

- To provide quality education through effective curriculum design and implementation.
- To emancipate from legal, socio and economic restrictions.
- To help the students in the development of their personality, life skills, communicative skills for acquiring better and fruitful employment.
- To encourage staff to utilize ICT enabled methods in teaching and learning process to make it effective.
- To sensitize the students towards social concern human rights gender quality and environmental issues.

1.3 Assessment of the Institute

1.3.1 Affiliations

The Institute is affiliated to **Rayalaseema University**, a state University in Pasupula, Andhra Pradesh, India.

1.3.2 Certification

The Institute has received the following Certifications

- **ISO 9001** – Quality Management Systems
- **ISO 50001** – Energy Management Systems
- **All India Survey of Higher Education** (AISHE) - wherein the code is C-26248.

1.3.3 Recognitions

The courses provided and the Institute are recognised under the **section 2(f) and 12 (B) of the University Grants Council Act, 1956.**

1.3.4 Accreditation

The following are details of the accreditation awarded by the National Assessment & Accreditation Council (NAAC) to the College.

Cycle	First	Second
CGPA	70	2.3
Grade	B	B
Year	2007	2015

Table 1: NAAC Accreditation details of the Institute

The College is due to enter its next cycle of NAAC.

2. Overview

2.1 Summarised Populace analysis for 2022-2023

2.1.1 Students data

The data (shared by the Institute) shows there were **460 male and 265 female students**.

2.1.2 Staff data

S. No.	Type	Male	Female	Total
1	Teaching staff	19	03	22
2	Non-Teaching staff	06	01	07
Total Staff Members		25	04	29

Table 2: Staff data of the Institution for 2022-2023

The staff data shows the Institute premises had a total of **29 Staff Members**.

2.2 Summarised Populace analysis for 2021-2022

2.2.1 Students data

The data (shared by the Institute) shows there were **222 male and 135 female students**.

2.2.2 Staff data

S. No.	Type	Male	Female	Total
1	Teaching staff	19	03	22
2	Non-Teaching staff	06	01	07
Total Staff Members		25	04	29

Table 3: Staff data of the Institution for 2021-2022

The staff data shows the Institute premises had a total of **29 Staff Members**.

2.3 Institute area

The **site area is 6.5 acres** for an approximately **754 footfalls**.

2.4 Institute Infrastructure

2.4.1 Establishment

The Institute was established in **1988**.

2.4.2 Spatial Organisation

There are provisions for staircase for accessibility on the premises, whereas there are amenities such as CCTV, a first aid room, etc.

The Institute is located prettyclose to nature and hence has a very fresh environment which is absolutely pollution free and healthy.

The Building is a Reinforced Cement Concrete (RCC) framework building.

2.5 Operation and Maintenance of premises

The interview session was held with the staff regarding the operation and working hours. The Institution is open from Monday to Saturday with the timings being 10:00 am to 17:00 hours.

3. Research

3.1 About the Green Building Study Audit

It is a systematic study of the aspects which make the Institution sustainable and healthy premises for its inhabitants.

3.2 Analysis of the Green Building Study Audit

The procedure included detailed verification as follows:

- Investigation
- Technical discussion with team
- Observations
- Inferences

3.3 Strategy adopted for Green Building Study Audit

The strategies included data collection from the admin department, actual inventory, investigation to check the operation and maintenance, analysis of the data collection, and preparation of the Report.

3.4 Activities undertaken for the Green Building Study Audit

- Discussion with the Institute
- Allotment and Initiation by the Institute
- Data collection
- Submission of the files

4. Observation

The section showcases the facilities available in the premises

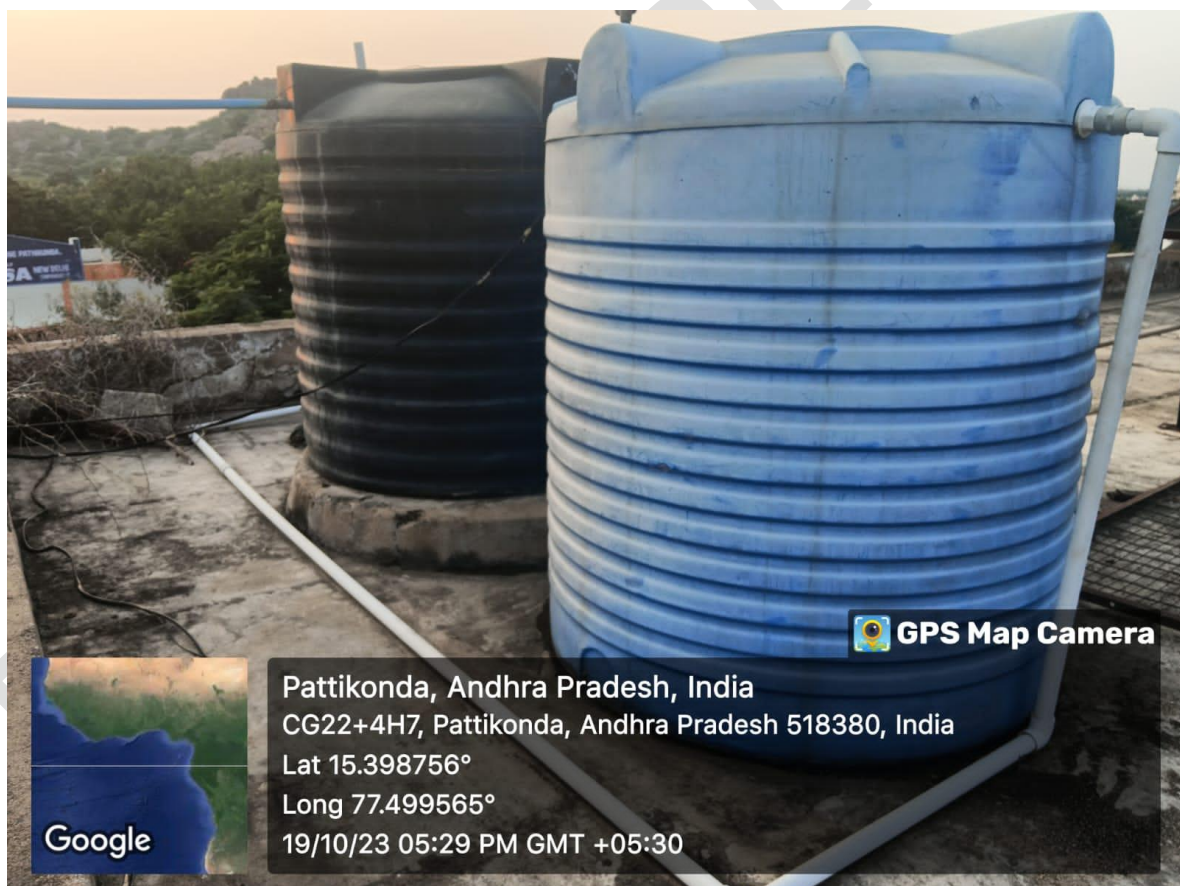


Plate 1: Building facilities in the premises

5. Documentation

5.1 Green Practices Audit

The increasing global warming and climate change have made us realise that apart from the enormous strategies the individual small efforts need to be taken by individuals and Educational Institutes as the younger generations are the future of the world and once they are taught about these practices only then can we assume a better future.

5.1.1 Green practices

We observed the following points during the process.

- **Fresh environment** – *The College provides an eco-friendly ambience with fresh air and soothing environment which helps to maintain a physical and mental balance. This kind of a space it a must for an educational specially technical institute which is inviting and gives the stakeholders an opportunity to explore indoor and outdoor learning to a great extent.*
- **Team work** – *The best quality of the College which sets it apart is its coordinating, cooperative staff members; for a building the foundation plays the most important role for its future similarly for an educational institute its staff members do.*

5.1.2 Community development

The details of **extension initiatives** under various heads in Institute are documented below:

S. No.	Type	Coordinator name
1	National Service Scheme (NSS)	S. Soma Sekhar
2	National Cadet Corps (NCC)	Y. Sasidhar
5	Jawahar Kala Kendra (JKC)	P. Surya Chandra
6	Employability Skills centre	A. K. Althaf

Table 4: Details of the extension initiatives by the Institute

Some of **environmental activities** conducted as extension initiatives are below:

S. No.	Name of the event	Date
1	Clean & green programme	03-04-2022
2	World wild life day	03-03-2022
3	Clean & green programme	25-7-2022
4	World forest day	21-03-2022
5	Clean & green programme	08-05-2022
6	Plantation of the trees	21-03-2022
7	Mothers earth day	22-04-2022
8	Bio diversity conservation seminar	03-03-2023

Table 5: Details of the environmental activities

5.2 Waste Audit

Waste is an inevitable part of our lives. Over the years the awareness about waste management techniques has given a rise to rethink how the waste can be avoided being sent to the landfills.

The audit provides an approximation of the types of waste generated, location of waste collections, disposal techniques used, waste segregation methodologies adopted. It provides realistic inputs about the waste management strategies that are implemented in addition to the newer ways that can be adopted aiming to make the premise clean and sustainable.

5.2.1 Waste produced

S. No.	Type of waste	Source	Current Disposal	Can be retreated?	Methodology
1	Solid waste	Toilets– Biodegradable waste	Soak pit connected for solid-liquid waste management	Yes	TREATED – Biogas plant can be initiated
2	Liquid waste	Toilets, washbasins		Yes	TREATED - Sewage treatment plant can be initiated
3	Paper waste	Newspaper and other paper		Yes	TREATED – A recycling plant can be initiated
4	E-waste	Computers - Non-biodegradable waste	Given to vendor	Yes	CONTINUE with the current practice
5	Plastic waste	Bottles, wrappers		Yes	
6	Dry waste in form of leaves	Open space & plantations, papers - Non biodegradable waste	Dustbins	Yes	TREATED – Composting can be undertaken
7	Organic regular waste	Dust, dirt dust waste from indoor spaces			
8	Bio-waste	Sanitary waste	Dustbins	Yes	TREATED – Bio-waste management can be undertaken
9	Lab waste	Laboratories	Well handled	Yes	CONTINUE with the current practice

Table 6: Details of the waste management practices adopted by the team

There are 20 dustbins in the outdoor areas of the premises.

5.3 Water Audit

Water is one of the basic needs. Pure drinking water is a resource that needs to be preserved efficiently. A water audit helps to identify the sources of water consumption, and the water requirement by the premises is met by these sources. The effective usage of water without any wastage should be a mandatory practice. Understanding the techniques as per site context to increase water conservation in terms of awareness and practice can be identified and executed as part of this exercise.

5.3.1 Water availability and consumption

5.3.1.1 Source of Primary water supply

The College uses drinking water for daily consumption through four 'OVERHEAD' water tanks bifurcated and used for primary and secondary purposes. In addition, there is one large R. O. water plant.

5.3.1.2 Source of Secondary water supply

The College uses the secondary sources of water supply for general usages such as watering plants, kitchen, toilets, and wash basins connected to the labs and other spaces. At present, there is one bore wells used as secondary uses.

5.1.3.3 Source of Tertiary water supply

The tertiary source of water is the additional source of water harvesting. The project is under practice with availability of one pit in the campus.

5.1.3.4 Source of Reusing waste water

The initiative is not under practice at present completely only the chemicals are neutralized before letting it down in the drains. **However, certain measures w.r.t. academics and equipment are practiced in the laboratories.** We have suggested to under practices of green chemistry as per discussion to treat the waste water from the laboratories and reuse after filtering for watering the plants and the trees in the premises.

5.3.2 Areas of water usage

Based on the inventory done and data shared by the staff it was found that the premise has the following facilities:

Particulars
General toilet for students
General toilet for staff
Urinals
Taps in laboratories
Taps in wash basins in toilets
Taps in Canteen

Table 7: Details of the water usages in the premises

5.4 Health and Hygiene Audit

The hygiene is a part and parcel of our daily life. It is extremely essential to keep the surroundings clean in the same manner as we would want our houses to be.

Educational Institutes have a bigger role to play in order to affect the young minds in the positive manner through better hygienic practices.

5.4.1 Facilities available

The Institution has washroom facility, hand wash, drinking water and dustbin facilities.

5.4.2 Hygiene aspects

There was no major hygiene issue observed anywhere in the premises, however there is scope for improvement.

6. Suggestions

Section-wise suggestions related to premises

The following suggestions **should be executed within the next 2.5 to 3.5 years from the date of the Report submission.**

6.1 Green practices Audit

- ➔ **Increase the plantations on the premise** - There can be provision for more plantations on the premise maybe even a Kitchen garden facility.
- ➔ **Environmental awareness** - There can be various slogans in local and national language on the compound wall giving the message of saving the environment through the joint efforts of the students and staff thereby making the student socially and environmentally responsible citizens.
- ➔ **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.
- ➔ **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)
- ➔ **Documentation** – Improve and increase the documentation and visibility/ reflectance of the environment related events on the website, social media handles
- ➔ **Undertake environment study of local areas** – This aspect is w.r.t. environmental parameters and submits the same to local municipality for further up gradations.
- ➔ **Increase the organic farming practices** - The premises can have an organic farming facility in terms of farms, kitchen, terrace gardens the produce can be directly utilised in the premises.

6.2 Waste Audit

- ➔ **Twin Dual Litter Dustbin 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.
- ➔ **Signages** - Messages about avoiding wastage should be placed at appropriate locations.
- ➔ **Dustbins at every 100m** - There should be a dustbin at every 50-100m in open spaces
- ➔ **Material of dustbin** - The plastic dustbins should be replaced with eco-friendly material.
- ➔ **Organic compost pit maintenance methodology** - The Institute can recheck the current methodology as it can yield better results in terms of quantity if it is well maintained with the following strategies:
 - The sanitary pad incineration dust can be sent to the compost pit
 - There should be a balance of brown and green waste material
 - Shred the materials before adding them to pit
 - Add twigs
 - Stir occasionally
 - Add water in less quantity to avoid the smell
 - Keep ample air circulation to avoid the smell
 - Regular monitoring and maintenance.
- ➔ Join hands for '**Trash to Treasure**' initiative as a Donor or Beneficiary Institute through which any type of building or material waste shall be collected from your Institution, recycled and given to an NGO or Organization for reuse.
- ➔ 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.
- ➔ Write to NGOs such as *Adar Poonawala Foundation* for twin litter dustbins and beautification projects.

6.3 Water Audit

- ➔ **Wastewater from toilets** - This should be collected and a wastewater treatment plant can be installed in the open space wherein this water can be treated and reused for gardening and toilet flushing.
- ➔ **Signages** - Messages about avoiding water wastage should be placed at appropriate locations.
- ➔ **Waterless urinals** - There can be the provision of waterless urinals as a Green Building initiative in the premise, either the existing ones can be replaced with such a facility or new toilets can be constructed in this manner.
- ➔ **Rain water bunds** – There should be landscape beautification project undertaken to appropriate channelize the rain water through bunds and similar facilities.

6.4 Health and Hygiene Audit

- ➔ **Health related provisions** – There should be provisions for a dedicated health centre and 24x7 available ambulance services inside the premises.
- ➔ **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.
- ➔ **Sanitary vending and incinerator** - There should be provision for sanitary vending, incinerator machine and incinerator in every ladies common room, and toilet on the premises.
- ➔ **Compound wall** – The compound wall should have awareness messages about 'No Smoking' and 'No Tobacco'

7. 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
- ➔ Images on site by Coordinators of the both teams
- ➔ Icon images used by <https://www.vecteezy.com/free-vector/security-camera-icon> and <https://www.vecteezy.com/free-vector/electric-car-icon>

