

# GREEN AUDIT

STUDY PERIOD (TWO YEARS) 2020-2021 AND 2021-2022

Sustainability study  
**AUDIT REPORT**

Studied for  
The Loyola College Society's  
**Andhra Loyola College (Autonomous)**

Door No. 54-16-14, Govt. Polytechnic Post,  
Vijayawada - 520 008, Andhra Pradesh, India

Studied in the capacity of  
An accredited & Certified Green Building Professional



Studied by

**Greenenvia**  
Solutions

Valid till **December 2023**



Hereby presents the 'Sustainability Research' about

## **A Self-sufficient Sustainable premises**

That has proved exceptional results with an amalgamation of

### **Social and Green practices**

That has helped the premises become a

### **Nearly zero water premises**

One of the premier and Andhra Pradesh's leading educational institute

## **Andhra Loyola College**

**(Autonomous)**



# Disclaimer

The Audit Team has prepared this report for **The Loyola College Society's Andhra Loyola College (Autonomous)** located at Door No. 54-16-14, Govt. Polytechnic Post, Vijayawada - 520 008, Andhra Pradesh, India based on input data submitted by the College 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 College. 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 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](mailto:sustainableacademe@gmail.com)

## Acknowledgement

The Audit Assessment Team thanks **The Loyola College Society's Andhra Loyola College (Autonomous), 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 due to everyone from the Management.

Our heartfelt thanks to Chairperson of the entire process **Dr. G.A.P. Kishore, S.J.**, Principal for the valuable inputs.

We are also thankful to **College's Task force the faculty members** who have collected data required **Dr. G. Srinivasa Rao**, IQAC Coordinator; **Sri. G. M. Srirangam**, NAAC/RUSA/Autonomy Coordinator; **Dr. G. Sahaya Baskaran**, Placement Coordinator; **Dr. M. Srinivasa Reddy**, Best Practices.

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

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# 1. Introduction

## 1.1 Statements of the Institution

### 1.1.1 Vision

The College proposes "To impart Higher Education with integral formation involving academic excellence, social commitment and value based leadership."

### 1.1.2 Mission

The College adheres and focuses "To form its students as "men and women for others" and mould them as global citizens with Competence, Conscience and Compassionate Commitment, with preferential option for the marginalized students."

### 1.1.2 Aim

The College has formulated the following aim to achieve its mission:

- To promote an integrated formation in and through academic, co-curricular and spiritual programmes
- To make the learners do their very best and to always strive for personal excellence in all aspects of life: intellectual, emotional, moral and physical, culminating in their holistic formation, and
- To conduct value-based programmes that enhances social commitment among faculty and students.

## 1.2 Assessment of the Institute

### 1.2.1 Affiliations

The Institute is affiliated to **Krishna University**, a state university located in Machilipatnam, Andhra Pradesh, India.

### 1.2.2 Certification

The College has received the following Certifications

- Certified as **an ISO 9001:2015 Institution** under the scope of certification "Providing Quality Education"
- Certified as **an ISO 14001:2015 Institution** under the scope of certification "Providing Quality Education"
- **NIRF** awarded the All India 24<sup>th</sup> Rank for Colleges in April 2017, **the highest rank for both the Telugu States**; 56<sup>th</sup> Rank (2018); 45<sup>th</sup> Rank (2019); 36<sup>th</sup> Rank (2020); 34<sup>th</sup> Rank (2021) and 94<sup>th</sup> Rank (2022)
- **AISHE** – The All India Survey of Higher Education code of the College is C-25376.

### 1.2.3 Accreditation

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

Cycle	First	Second	Third
<b>CGPA</b>	-	3.65	3.66
<b>Grade</b>	A****	A	A+
<b>Year</b>	2002	2008	2017

*Table 1: NAAC Accreditation details of the Institute*

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

### 1.2.4 Recognitions

- Autonomous Status on 24.10.1987- Autonomy Implemented from the Academic Year 1988-1989 - Autonomy **First Extension** for five years from 1992-1993 – 1997-1998 **Second Extension** for five Years from 1997 -2002
- Autonomy **Third Extension** from 2001-2002 to 2005-2006
- Autonomy **Post Facto Approval for 2006-2007**; and **Fourth Extension** from 2007-2008 to 2012-13
- Autonomy **ex Post Facto Approval from 2013-2014 to 2016-2017 and Fifth Extension** from 2017-18 to 2021-2022
- Recognized as "**A-Grade College**" in the year 2015 and awarded the **First Rank**

in the College Rankings for 2017-2018 based on the **Key Performance Indicators** by the Commissioner of Collegiate Education, Govt. of A.P.

- ⇒ **Autonomy for P.G. Courses** by Krishna University on in May 2017

### 1.2.5 Approval

The technical course of Post Graduate Level, Management program and the Masters in Business Administration Course provided by the College are approved by **All India Council for Technical Education (AICTE), New Delhi.**

## 1.3 Achievements of the Institute

The Institute has a tremendous track record of excellence in Built form and educational services provided, below are some of the achievements of the prestigious Institute.

- ⇒ **'Certificate of Appreciation for maintaining Greenery in the premises'** by the Andhra Pradesh Greening and Beautification Corporation, 15 August 2022
- ⇒ **'Certificate of Recycling for handing over the waste'** to TES-AMM (India) Pvt. Ltd., 18 August 2022.
- ⇒ **'Certificate of Appreciation for securing 94<sup>th</sup> rank in NIRF Rankings, 2022'** awarded by the Andhra Pradesh State Council of Higher Education,
- ⇒ UGC awarded the status of a **"College with Potential of Excellence"** in September 2004 with a grant of Rs. 100 Lakhs
- ⇒ Selected under the UGC **Community College Scheme** in August 2015
- ⇒ Selected under the **Star College Scheme** in February 2016 by the Dept. of Biotechnology, Govt. of India, **becoming the first and only College in both the Telugu states** so far to have been selected under this Scheme.
- ⇒ Selected under Component 08 for *'Enhancing Quality and Excellence in select Autonomous Colleges'* by the **R.U.S.A.** of MHRD, Govt. of India, in June 2018.
- ⇒ Identified **for Support under the FIST Project of DST**, in January 2018, by the Ministry of Science and Technology, Govt. of India.



## 1.4 Facilities

The College emphasizes on latest technological advancement through its educational initiatives. Our interaction with the staff members and team showed that they are keen for further upgrading and use of sustainable features. Some of the current key facilities are listed below.

- Hostel facilities for boys and girl students; Health Check-up Centre
- Social welfare activities
- Library (Computerized), Teacher's Common room and Rest room for Non-Teaching Staff, Play Ground, Outdoor and Indoor games facilities, Multi-gym facility.
- NCC-Units and NSS Units
- Women's cell including committee against sexual harassment.
- Social interactions with neighbourhood society by extension activities.
- Education Tours and Surveys.

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## 2. Institution overview

### 2.1 Populace analysis for Academic year 2021-2022

#### 2.1.1 Students data

The student data (shared by the College) shows there were a total of **4,218 Boys and 2,212 Girl students**, thus there were **a total of 6,430 students** on the premises.

#### 2.1.2 Staff data

Type	Male	Female	Total
Teaching staff	127	77	<b>204</b>
Non-Teaching staff	78	20	<b>98</b>
<b>Total Staff Members</b>	<b>205</b>	<b>97</b>	<b>302</b>

*Table 2: Staff data of the Institution for 2021-2022*

The staff data shows the premises had a total of **302** Staff Members.

### 2.2 Populace analysis for Academic year 2020-2021

#### 2.2.1 Students data

The student data (shared by the College) shows there were a total of **4,013 Boys and 2,182 Girl students**, thus there were **a total of 6,195 students** on the premises.

#### 2.2.2 Staff data

Type	Male	Female	Total
Teaching staff	144	78	<b>222</b>
Non-Teaching staff	76	22	<b>98</b>
<b>Total Staff Members</b>	<b>220</b>	<b>100</b>	<b>320</b>

*Table 3: Staff data of the Institution for 2020-2021*

The staff data shows the premises had a total of **320** Staff Members.

## **2.3 Total College Area & College Building Spread Area**

The **total site area is 98 acres** and the **total Built-up area of the Institute is 1,20,000 sq. ft.** for an approximately **6,732 footfalls.**

## **2.4 Institute Infrastructure**

### **2.4.1 Establishment**

**The Institute was established in 1953.**

### **2.4.2 Spatial Organisation**

The College buildings are designed in one of the unique Architectural style's the stone material blocks are appropriately oriented. These provide an ambience of heritage and educational arena for the young minds.

The blocks are surrounded by huge walkways and driveways with appropriate zoning of the site maps; these walkways are landscaped with huge and an extensive number of plantations. The overall softscape and hardscape has a positive impact.

## **2.5 Operation and Maintenance of the premises**

The data collection session was held with the staff regarding the operation and working hours. The schedule mentions that the College is working Monday to Saturday with the timings being 8:00 hours to 13:30 hours.

## 3. Green Building Study as a Research based technical audit

### 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 for the following:

#### Energy Audit

- Analysis of the Lights, Fans, AC, Equipment
- Renewable energy
- Scope for reducing the current energy bills if any
- Improvement in the thermal comfort of the premises

#### Green Audit

- Green initiatives
- Hygiene audit
- Water Audit - Analysis of the current water consumption of campus; Rainwater harvesting and Wastewater treatment on the premises.
- Waste Audit - Current waste produced, its segregation, and usage; Strategies to be adopted for waste management and awareness

#### Environmental Audit

- Analysis of the current landscape + hardscape of the premises
- Analysis of the flora and fauna of the premises
- Strategies adopted at present to enhance vegetation
- Measures that can be adopted for ecological improvement of the premises.

### 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

- 25 November 2022 - Discussion with the College
- 7 December 2022 - Allotment and Initiation by the College
- 14 December 2022 - Site visit at the Institute
- 18 December 2022 - Survey of students and staff completed
- 30 December 2022 - Submission of the Report

# Green practices

Background reference image Free photos on pixabay

## 4. 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.

### 4.1 Green practices

We observed the following points during the Site investigation and data verification of the premises; these are common for all the Buildings in the premises.

- **Social awareness** - *The College has taken up awareness drives on various social issues for rural upliftment and regeneration in the college and surrounding villages.*
- **Cleanliness Campaign** - *The Swachha Bharat Abhiyan is carried out on college premises as well as off-premises.*
- **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 from other institutes is its coordinating and cooperative staff members, as for a building the foundation plays the most important role for its future similarly for an educational institute its staff members do.*
- **Hygiene committee** - *The College has a hygiene committee which undertakes multiple programs and necessary actions towards the maintenance of cleanliness in the premises.*
- **Documentation of all the events** – *The best part about the College is the prompt and professional response, this was observed not only in the way the Team responded throughout the project but also through the documented data submitted be it the cleanliness report or the eco club activities report; each of these were documented and presented in a sophisticated manner which is highly appreciating.*

## 4.2 Community Development

The College launched an extension activity called – ALANA, the acronym for the “**Andhra Loyola Assistance for Neighbourhood Advancement**”. The main goal of ALANA is to involve students of the College in tutoring and coaching the School going Children from primary to VIII class students at various centers like Social Welfare Hostels, Municipal Schools which were identified and conducting ALANA Extension Work programme in Vijayawada Urban and Rural areas very effectively.

Rev. Fr. Dr. G.A.P. Kishore S J, Principal had took initiative to strengthen ALANA, Extension programme by involving all Degree First year students for “Tutoring and Animating Children in the urban/rural/slum Areas of Vijayawada”

## 4.3 Eco-friendly initiatives undertaken

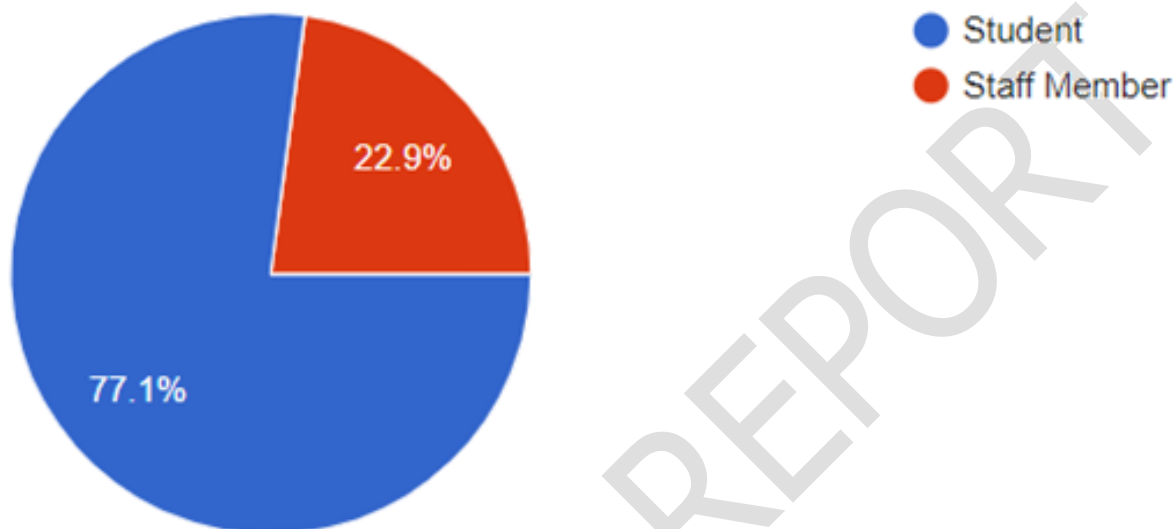
The Institution undertakes a lot of environmental related activities through numerous student and staff participation in major sections as documented below.

- **National Service Scheme (NSS)** - *The College has six NSS Units led by service-oriented Programme Officers who motivate the students, organize Blood Donation Camps, observe days like the World AIDS day, actively participate in programmes like Swacch Bharat, Neeru-Chettu, Clean and Green Programmes, Open Defecation Free Campaigns, People-oriented welfare and awareness programmes.*
- **National Cadet Corps (NCC)** – *The College is one of the few Colleges with all the four wings of National Cadet Corps – Army, Navy, Air and R&V Wings - with the cadets holding fast to their motto of unity and discipline.*
- **National Green Corps (NGC)** - *The Department of Botany is one of the unique Departments since the inception of the College with its well established Labs, Inter-disciplinary Research Lab, Botanical Garden, Herbal Garden, well organized Herbarium and recently added Green House. It is well organized with an aim to provide green lungs for the inhabitants of Vijayawada – the commercial city of Andhra Pradesh. Gradually, it became a dynamic and vibrant Department, focusing on conservation of plant biodiversity and has made significant contributions in the field of ex situ and in situ conservation and assessment of genetic diversity of various groups of plants and its related aspects. With strengthening of scientific manpower and laboratory facilities, it expanded into areas of research.*

## 4.4 Survey Results

An online survey was conducted to analyse the student and staff views about the Energy management practices adopted in College, following is the result received.

### 4.4.1 Participation



*Figure 1: Participation analysis in the survey*

A total of **118 responses** were received out of which 77% were students.

#### Note about the review-rating survey

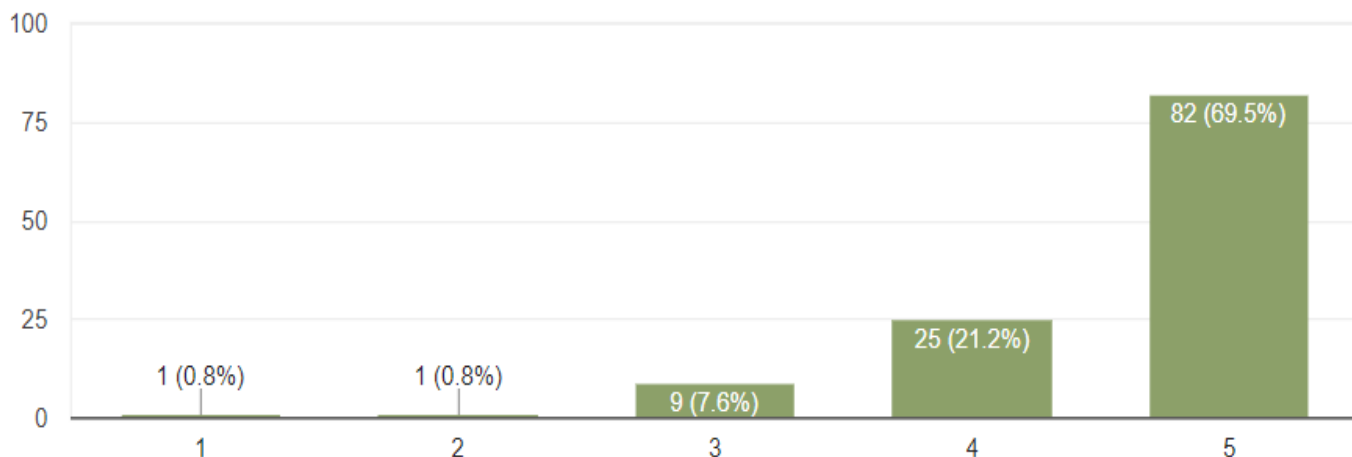
Note: The Participants were asked to review the practice on a scale of 1-5 with scale components as follows:

- ➔ Scale 1 – Poor
- ➔ Scale 2 – Satisfactory
- ➔ Scale 3 – Good
- ➔ Scale 4 – Very good
- ➔ Scale 5 – Excellent

The figures in each of the columns of graph depict the Number of participants responses in numerical (Percentage of the participant response) – For example 101 responses (44.5%)



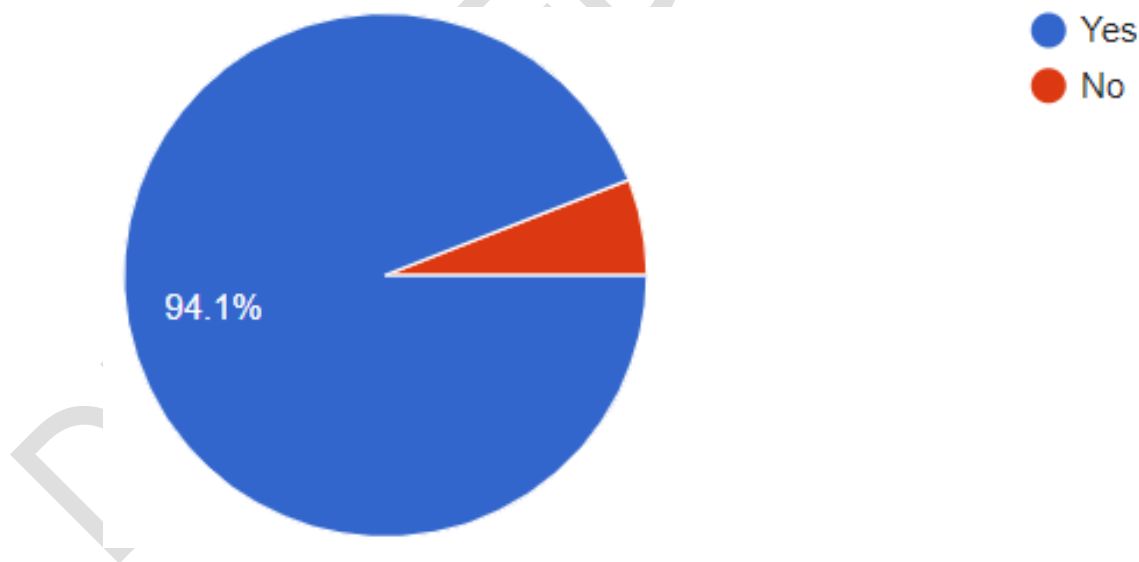
#### 4.4.1 Rate the Green awareness practices in College



*Figure 2: Green awareness practices in College*

There were mixed responses received the highest was for **rating 5 (Excellent) at 70%** followed by **21% for rating 4 (Very good)**.

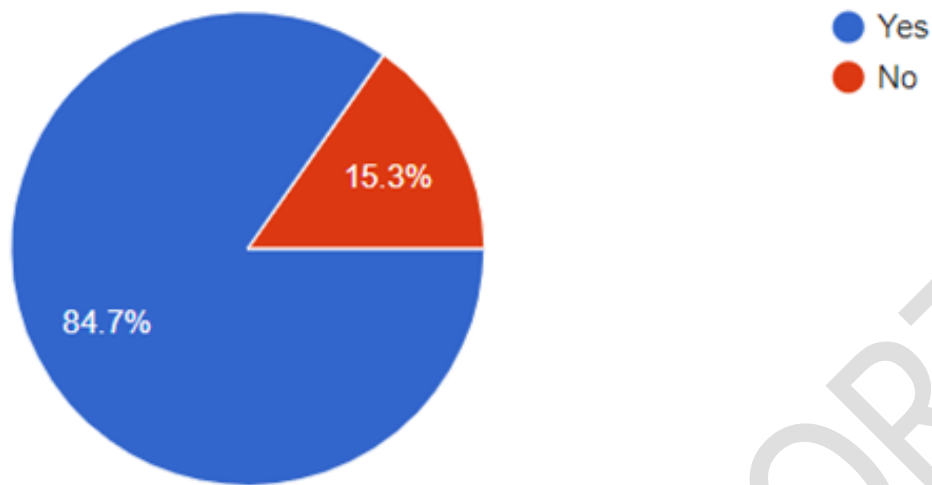
#### 4.4.2 Does your College conduct environment awareness programs/ webinars/ plantations/ cleanliness or similar programs?



*Figure 3: Confirmation of the environment awareness programs/ webinars/ plantations/ cleanliness or similar programs conducted by the College*

The students, staff **94%** of responses confirmed activities are conducted which is very excellent.

#### 4.4.3 Do you participate in such events?



*Figure 4: Participation in the environment awareness programs/ webinars/ plantations/ cleanliness or similar programs conducted by the College*

The students, staff **almost 85%** of the responses confirmed their participation, **this is an excellent response.**

#### 4.5 Recommendations for a Sustainable Habitat by Greenvio Solutions

*To be considered as **first priority but first in sequence** for implementation under section wise study*

- ➔ **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.
- ➔ **Environmental awareness** - There can be various artworks 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.

# Waste Audit



Background reference image Polina Tankilevitch on pexels

## 5. Waste Audit

Waste is an inevitable part of our lives. Over the years as the awareness about waste management techniques has given a rise to rethink how the waste can be avoided from 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, waste management strategies that are and implemented in addition to the newer ways the can be adopted aiming to make the premise clean and sustainable. Here sustainable refers to a broader aspect to analyse whether the current techniques are having positive or negative effect on the stakeholders of the premises.

### 5.1 Waste produced

The types of waste collected in the premises are as follows, these are separated before processing.

S. No.	Type of waste	Source and quantity	Current Disposal method	Can be treated/ recycled?	Methodology
1	Solid waste	Toilets–Biodegradable waste	Led into the storm water drain	Yes	TREATED - Small biogas plant can be proposed in open space
2	Paper waste	Newspaper and other paper	Given to vendor	Yes	TREATED – Small paper recycling unit can be proposed
3	E-waste	Computers - Non-biodegradable waste as per the annual year usage	Give to a vendor	Yes	CONTINUE - with the current practice
4	Dry waste in form of leaves	Open space & plantations, papers - Non biodegradable waste	Organic and vermin-compost	Yes	CONTINUE - with the current practice
5	Liquid waste	Toilets, washbasins – Around 500-600 litres per week during general times and 50-80 litres at present	Led into the storm water drain	Yes	Waste water can be redirected for reuse
6	Organic regular waste	Dust, dirt usually dry waste from Canteen and all sources – approx. 15-20 kg	Organic and vermin-compost	Yes	CONTINUE - with the current practice

*Table 4: Summary of the types of waste produced in the premises*

## 5.2 Waste management

The College reuses the papers. Ample measures are taken to maintain hygiene.

- There are adequate numbers of bins present in all parts of building.
- *The College should upgrade & use better waste management techniques.*

## 5.3 Survey Results

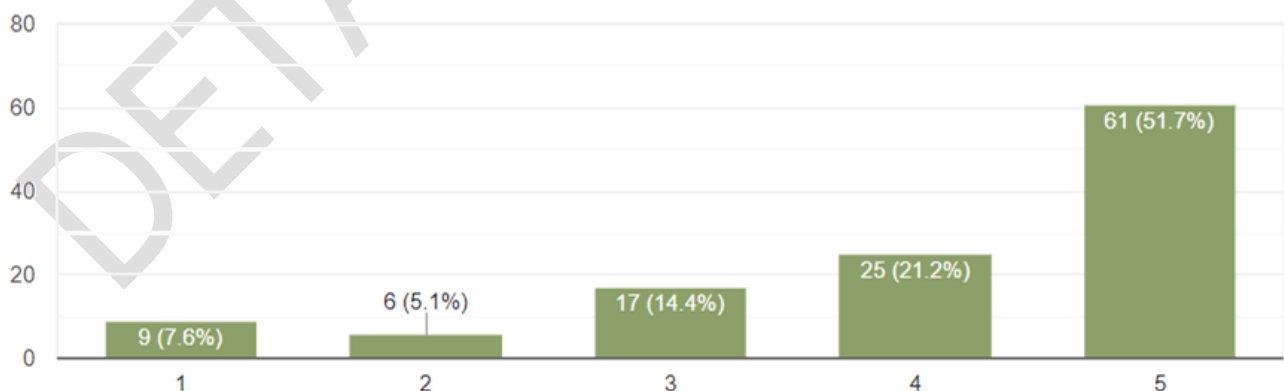
### Note about the review-rating survey

The Participants were asked to review the practice on a scale of 1-5 with scale components as follows:

- Scale 1 – Poor
- Scale 2 – Satisfactory
- Scale 3 – Good
- Scale 4 – Very good
- Scale 5 – Excellent

The figures in each of the columns of graph depict the Number of participants responses in numerical (Percentage of the participant response) – For example 101 responses (44.5%)

**Rating for the views regarding the Waste management practices adopted in College, following is the result received.**



*Figure 5: Waste management practices in College*

There were mixed responses received the highest was for **rating 5 (Excellent) at 52%** followed by **21% for rating 4 (Very good)**.

## 5.4 Recommendations for a Sustainable Habitat

*To be considered as **first priority but first in sequence** for implementation under section wise study*

- ➔ **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.
- ➔ **Material of the dustbin** - The current plastic dustbins should be replaced with eco-friendly material.

DETAILED REPORT

# Water Audit



*Background reference image Vlad Chetan on pexels*

## 6. Water Audit

Water is one of the basic needs. Pure drinking water is a resource which needs to be preserved efficiently. Water audit helps to identify the sources of water consumption, the water requirement by the premises met by these sources. The points and effective usage of without any wastage. Understanding the techniques which are best suited to the site to increase water conservation in terms of awareness and practice.

### 6.1 Water availability and consumption

#### 6.1.1 Sources of Primary water supply

**The primary water supply refers to the drinking water.** The main source of water is the Local Municipality. The water received is stored in water tanks at various locations. These are periodically cleaned and well maintained for hygiene purpose. **At present there are tanks at various location and their capacities total up to 1,00,000 litres for the entire premises.**

#### 6.1.2 Sources of Secondary water supply

**The secondary source of water is the source of water supply available through wells/ bore wells/ tube wells which is used for wash basin, kitchens, toilet purposes.** **At present there are 10 bore wells available on site.**

#### 6.1.3 Sources of Tertiary water supply

**The tertiary source of water is the additional source of water harvesting.** **At present there is natural rain water harvesting practiced to increase recharge of groundwater by capturing, by rainwater harvesting from rooftop run-offs; collected water from rooftop was discharge in bore well.**

### 6.2 Water requirement

The main areas of water requirement and type of usage is as follows

- ➔ **Drinking water** – Consumption of around 2,000 litres of water through Aquaguard like system available in the premise, the taps and water cooler.



- **Toilet blocks**– General usage by occupants in toilets, urinals, bathrooms, wash basins using approx. 1,500 litres of water daily
- **Cleaning of the premises** – The entire Institution is very well maintained with respect to hygiene and cleaning is one of the major uses of water requirement. The toilet areas are cleaned twice on a daily basis.

### 6.3 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 (Relates to the Academic building only).

- Urinals – 290 Nos.
- Toilets – 62 Nos.
- Wash basins – 26 Nos.
- Taps (Indoors) – 379 Nos.
- Taps (Outdoor) – 48 Nos.

**As per the data shared by the College and on site observation, it was noted that there is no water wastage of water in the form of Cleanliness of toilets.**

### 6.4 Site investigation about water management.

**The College has an excellent management system which is very appreciable. We have observed the following points.**

- There is **no water leakage in the entire premise**; the pipes are well maintained with adequate hygiene.
- **The premise has an efficient water management in terms of operations and maintenance.** The toilets are kept very tidy and are cleaned every day.
- The **waste water does not mix with ground water and gets directed to storm water drains.** There are sufficient numbers of taps in the premise.

## 6.5 Survey Results

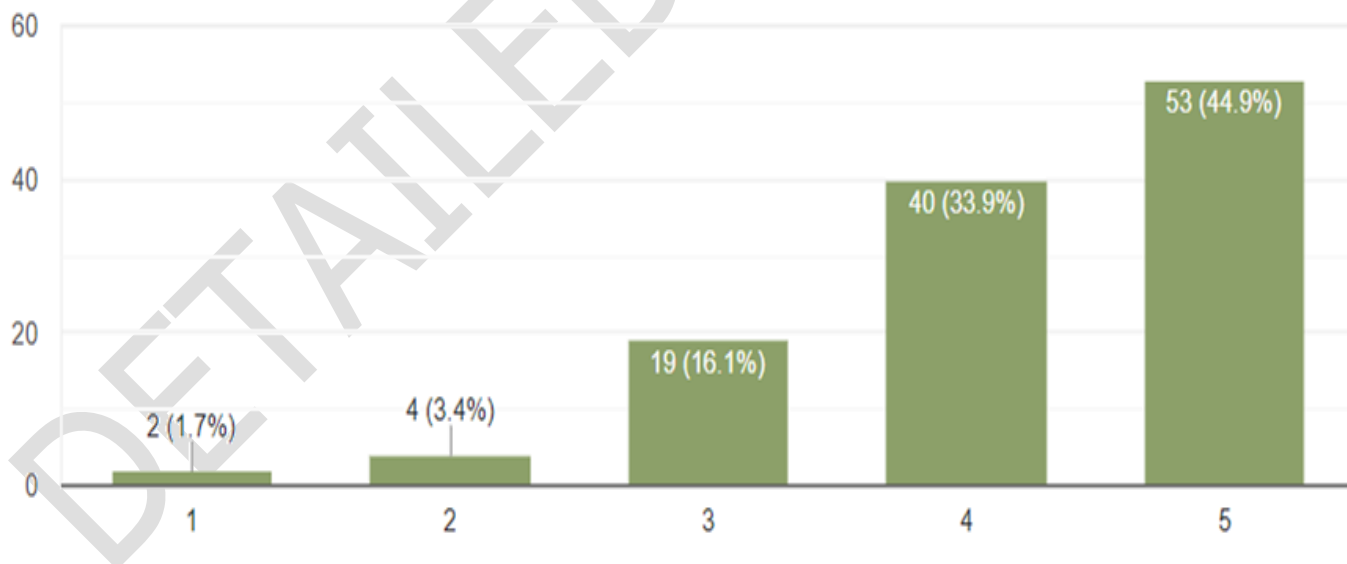
### Note about the review-rating survey

The Participants were asked to review the practice on a scale of 1-5 with scale components as follows:

- ➔ Scale 1 – Poor
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- ➔ Scale 3 – Good
- ➔ Scale 4 – Very good
- ➔ Scale 5 – Excellent

The figures in each of the columns of graph depict the Number of participants responses in numerical (Percentage of the participant response) – For example 101 responses (44.5%)

**Rating for the views regarding the Water management practices adopted in College, following is the result received.**



*Figure 6: Water management practices in College*

There were mixed responses received the highest was for **rating 5 (Excellent) at 45%** followed by **34% for rating 4 (Very good)**.

## 6.6 Recommendations for a Sustainable Habitat

*To be considered as **first priority but first in sequence** for implementation under section wise study*

- ➔ **Universal Toilet** - At least 1 toilet should be made specially-abled as per universal design norms.
- ➔ **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.

DETAILED REPORT

# Health & Hygiene Audit



*Background reference image Curology on unsplash*

## 7. 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.

### 7.1 Facilities available

The Institution has the following facilities as part of the premise.

- Availability of a Health care centre for dispensary in the premises.
- Washroom facility in each of the Building.
- Hand wash facility.
- Drinking water facility in the form of Water coolers and taps.
- Ample number of dustbins in the premises.

### 7.2 Smoke Exposure

As per the Site visit the following analysis **has a positive impact on premises.**

- The College has No Smoking and No Tobacco awareness practice.
- Canteen uses Gas cylinders for cooking, there is no utilisation of fire wood. Thus **there is no smoke from burning of fire wood and any health issues related to the same.**
- The **garbage in premise is not burnt** and there is not air pollution because of it.
- The Institution is a tobacco and smoke free premises which helps in adapting to a Healthy Institution
- There is parking provision inside the premises there is slight issue of dust owing to the same but it is **balanced with the good vegetation in the premises.**

### 7.3 Hygiene

As per the Site visit the following analysis **has a positive impact on premises.**

- For overall hygiene of the students and staff there are facilities such as Washroom facility on ground floor, hand wash. The hygiene of toilet areas is well maintained. **The entire premises is cleaned twice on a daily basis. It is very appreciating that there are only few Maintenance staff who strive their best to take care of the entire premise in the most excellent way possible.**
- Water management initiative with appropriate hygiene is undertaken. The areas of water tanks in site on ground floor are clean and no mosquito breeding spots are there.
- There are pest controls program practiced with appropriate sanitation facilities and Annual Maintenance Contract for pest control is done once a year by professional Pest control units
- The food premises and equipments are cleaned as per schedule with special care taken to avoid any water stagnation. The food waste and other refuse are removed periodically from food handling areas to avoid accumulation.

### 7.4 Recommendations for a sustainable habitat

As per site verification for this audit the efforts of the College are highly appreciable as they are very well maintained however, there should be provision for sanitary vending, incinerator machine and incinerator in every ladies' common room, and toilet on the premises.

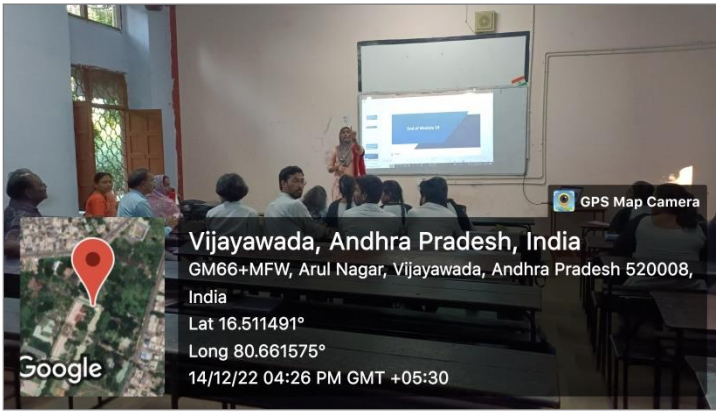
## 8. Inferences as Consolidated study

*(Based on the site visit)*

These are to be considered as **second priority** for implementation, once the section wise recommendations are implemented. The following recommendations should be *implemented within the next 2.5 – 3.5 years from the date of the Report submission.* The Institute can execute a plan of action after discussion with Project Head.

- ➔ **Premises up gradation** – The College has undertaken multiple activities related to 'Green Buildings' however some additional initiatives such as premises up gradation for biodiversity enhancement, backyard gardens will add a feather to their cap. **This has already been initiated through the Government awarded 'Biodiversity project' additional efforts channelized towards this will be more fruitful in the long run.**
- ➔ **Website up gradation** – The College should hence forward document and reflect the initiatives through dedicated pages and tabs on website and social media.
- ➔ **Environment Certificate Courses** – The College could begin courses such as Bachelors, Diploma, or Certificate courses with National and International Collaboration related to Environment as part of the courses provided. Though, this is not a requirement or compulsion.
- ➔ **Signages** – In addition to the signages being in regular language there can be additional signages in braille language for the specially-abled students.

# On-site investigation and physical verification Audit Team during the visit on 14 December 2022



Discussion with the MBA Program Students on 'Green Buildings' and Induction meeting with the Core Team



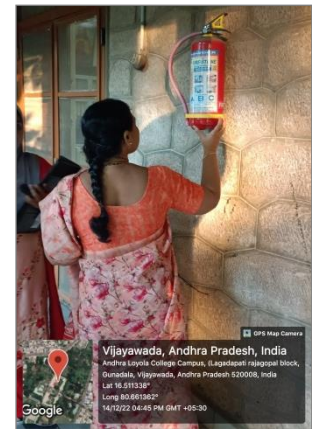
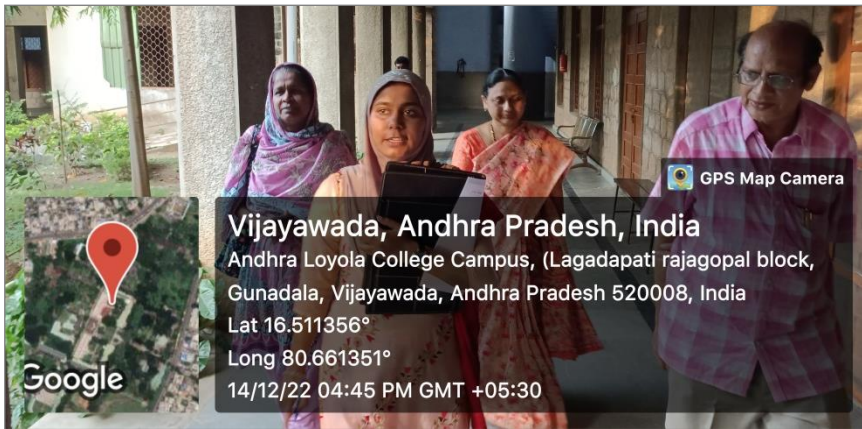
On-site review with the team for water management, life safety aspects, environmental awareness campaign, universal accessibility and other features



Group photo with the Team



# On-site investigation and physical verification Audit Team during the visit on 14 December 2022



Site discussions with the Team



On-site review with the team for waste management, life safety aspects and organic farm



Site premises

## 9. References

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.

### 9.1 National references

- 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

### 9.2 International references

- Form, Space and Order by Francis D. K. Ching
- BOMA Canada Waste Auditing Guide, Best Environmental Standards, BOMA BEST – Canada



# Green Audit Certificate

*The study is conducted as per Indian and International Green Building Standards initiated in the capacity of an Accredited & Certified Green Building Professional*

It is awarded for **2020-2021 and 2021-2022** to the Esteemed Institution  
(Analysed for 2 years and extended validity for 1 year, thus total 3 years)

The Loyola College Society's

## **Andhra Loyola College (Autonomous)**

Door No. 54-16-14, Govt. Polytechnic Post, Vijayawada - 520 008, Andhra Pradesh, India

*(Site visit held on 14 December 2022)*

As part of the Institution's initiatives for a Healthy & Sustainable College the audit was conducted.  
We appreciate the immense efforts taken by Staff and students towards the Efficient Management of Premise.

Issued on **Friday, 30 December 2022** valid till **December 2023**

  
**Ar. Nahida Shaikh**

Architect, IGBC Accredited Professional, ISO Certified I. A. (IMS)  
Assocham GEM Certified Professional (Regn. No. 22/718)

Project Head and Green Building Professional-Consultant

## **Sustainable Academe**

Sustainability Department of Greenvio Solutions, Naigaon

An environment Design and Consultancy developing Healthy and Sustainable Environments

**sustainableacademe@gmail.com** | **greenviosolutions@gmail.com**



# GREEN AUDIT

STUDY PERIOD (TWO YEARS) 2022 – 2023 & 2023 - 2024

Sustainability study  
**AUDIT REPORT**

Studied for  
The Loyola College Society's  
**Andhra Loyola College**  
**(Autonomous)**

Door No. 54-16-14, Govt. Polytechnic Post, Vijayawada -  
520 008, Andhra Pradesh, India

Studied in the capacity of  
Accredited and Certified GBP



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

Email: [greenviosolutions@gmail.com](mailto:greenviosolutions@gmail.com)

# Disclaimer

The Audit Team has prepared this report for **The Loyola College Society's Andhra Loyola College (Autonomous)** located at Door No. 54-16-14, Govt. Polytechnic Post, Vijayawada - 520 008, 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 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

Sustainable Academe is our department for conducting audits

Palghar District, Maharashtra- 401208

[sustainableacademe@gmail.com](mailto:sustainableacademe@gmail.com)



# Acknowledgement

The Audit Assessment Team extends its appreciation to **The Loyola College Society's Andhra Loyola College (Autonomous), Andhra Pradesh** for assigning this important work of Green Audit. We appreciate the cooperation extended to our team during the entire process.

Our heartfelt thanks to Chairperson of the entire process **Dr. G.A.P. Kishore, S.J.**, Principal for the valuable inputs.

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

- ➔ **Teaching staff member – Dr. M. Srinivas Reddy, Vice Principal; Dr. A. Lavanya, Criteria 7 Incharge and Dr. G. Jameema, HOD Agriculture and Rural Development**
- ➔ **Admin staff member – Ms. Karuna**

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

## Sustainable Academe

Brand of Greenvio Solutions, Palghar District, Maharashtra- 401208

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# 1. Introduction

## 1.1 Statements of the Institution

### 1.1.1 Vision

The College proposes "To impart Higher Education with integral formation involving academic excellence, social commitment and value based leadership."

### 1.1.2 Mission

The College adheres and focuses "To form its students as "men and women for others" and mould them as global citizens with Competence, Conscience and Compassionate Commitment, with preferential option for the marginalized students."

## 1.2 Assessment of the Institute

### 1.2.1 Affiliations

The Institute is affiliated to **Krishna University**, Machilipatnam, Andhra Pradesh, India.

### 1.2.2 Certification

- Certified as **an ISO 9001:2015 Institution** under the scope of certification "Providing Quality Education"
- Certified as **an ISO 14001:2015 Institution** under the scope of certification "Providing Quality Education"
- **AISHE** – The All India Survey of Higher Education code of the College is C-25376.

### 1.2.3 Accreditation

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

### 1.2.4 Recognitions

**Autonomy for P.G. Courses** by Krishna University on in May 2017

### 1.2.5 Approval (AICTE)

Technical course are approved by **All India Council for Technical Education, New Delhi.**

## 2. Overview

### 2.1 Summarised Populace analysis

The information shared by the Institute shows there are more than 4,300 students and 220 staff members in the premises

### 2.2 Site & Institute building spread details



*Plate 1: Site map of the campus*

More than 80% of the site has green cover.

### 3. Evidence

1 | Page

**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: Andhra Loyola College Date: 13/2/24


**Document objective: Inferences of the Site visit**

Observations (Positive aspects)	Suggestions (Improvement aspects)
<b>Green Audit</b>	
- Waste water treatment plant; R.O. plant; rain water harvesting; medical facility; excellent waste management measures undertaken	No major suggestions but documentation of reflectance can be increased
<b>Energy Audit</b>	
- Energy efficient lights, fans are available - Fire & life safety measures are well undertaken	- Sensor based facilities, systems can be undertaken - Fabrication of electrical systems can be improved
<b>Environment Audit</b>	
- Green cover is good & well improved	Continue with the current practices; no changes




Signature & round seal  
Name: Dr. Rev. Fr. G. A. P.  
Designation: Principal  
For the said Institute






Signature & round seal  
Name: Mrs. P. S. Shalini  
Designation: Project Coordinator  
For The Greenvio Solutions



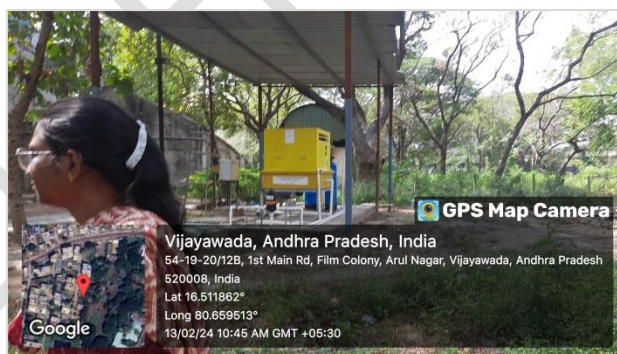
Website: thegreenviosolutions.co.in Email: greenviosolutions@gmail.com



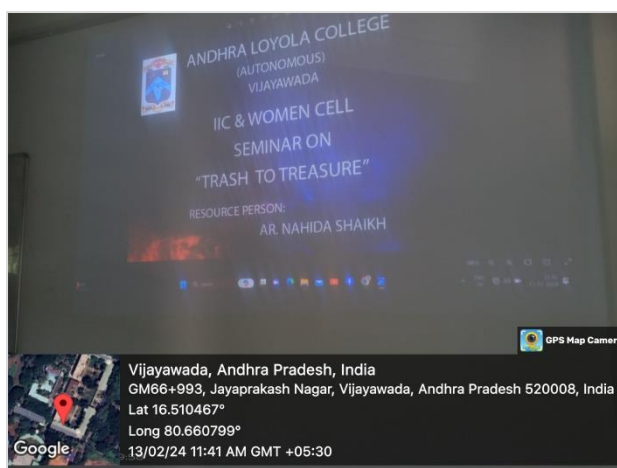
**Plate 2: Evidence files related to observations**



*Plate 3: Discussion with the team*



*Plate 4: On-site inspection with the team*



*Plate 5: Seminar on 'Trash to Treasure' for stakeholders*

**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: Andhra Loyola college      Date: 13/2/24

**Document objective: Induction Meeting attendance sheet**

S. No.	Name	Committee	Designation	Signature
1.	Mrs. F. A. Shaikh	External	Project Coordinator	
2.	Ar. Nahida Abdulla	External	Project Head	
3.	Rev. Fr. Dr. G. A. P. Kishore, S.J.		Principal	
4.	Dr. M. Srinivas Reddy		vice principal	
5.	Dr. A. Lavanya		criteria & incharge	
6.	Dr. G. Jameema		HOD Agriculture and Rural development	

Signature & round seal  
 Name: Rev. Fr. Dr. G. A. P. Kishore, S.J.  
 Designation: Principal  
**For the said Institute**



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



Website: [thegreenviosolutions.co.in](http://thegreenviosolutions.co.in) Email: [greenviosolutions@gmail.com](mailto:greenviosolutions@gmail.com)



**Plate 6: Evidence file related to induction meeting attendance record**

**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: Andhra Loyola College      Date: 13/2/24

**Document objective: Exit Meeting attendance sheet**

S. No.	Name	Committee	Designation	Signature
1.	Mrs. F. A. Shaikh	External	Project Coordinator	
2.	Ar. Nahida Abdulla	External	Project Head	
3.	Rev. Fr. Dr. G-A-P Kishore, SJ		principal	
4.	Dr. M. Srinivas Reddy		Viceprincipal	
5.	Dr. A. Lavanya		Criteria 7 incharge	
6.	Dr. G. Jameema		HOD Agriculture and Rural development	

Signature & round seal  
 Name: Dr. Rev. Fr. Kishore  
 Designation: principal  
**For the said Institute**

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

**Plate 7: Evidence file related to exit meeting attendance record**



## 4. Observation

### 4.1 Positive/ Good practices

#### 4.1.1 Green practices audit



*Plate 8: Green practices audit – Agriculture farm in the premises*

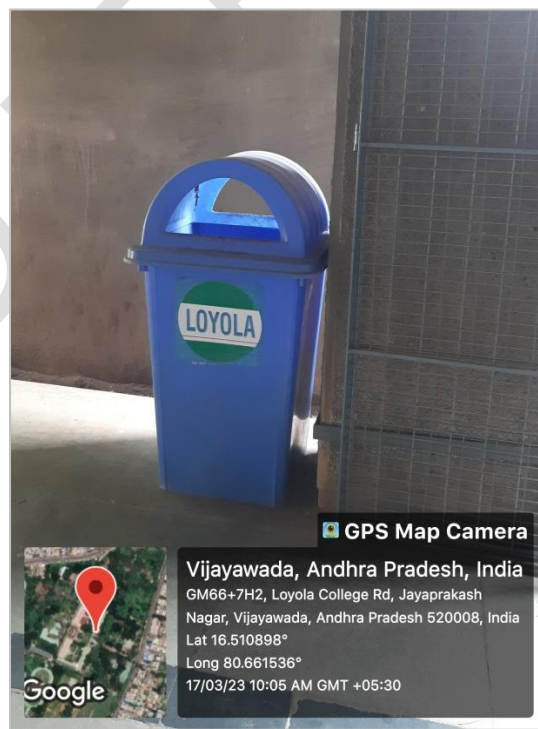
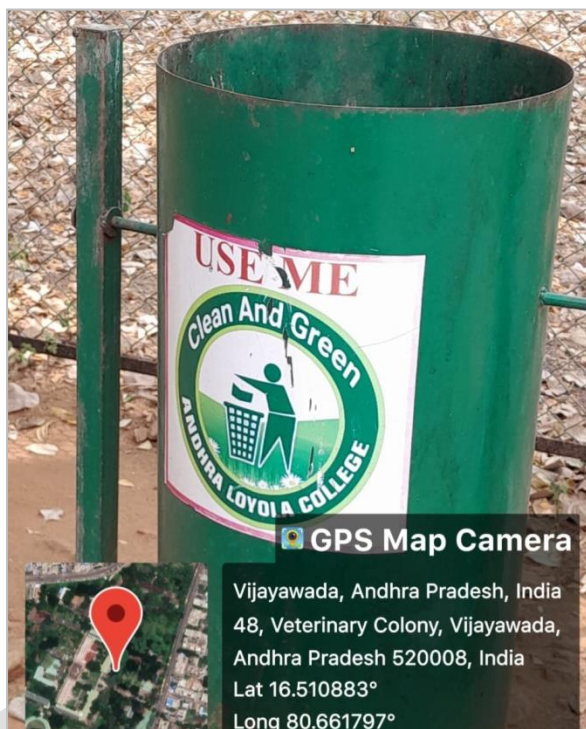


*Plate 9: Constant up gradation of the landscape in the premises*

### 4.1.2 Waste management - Dustbins within the premises



**Plate 10: Plastic waste collection bin**

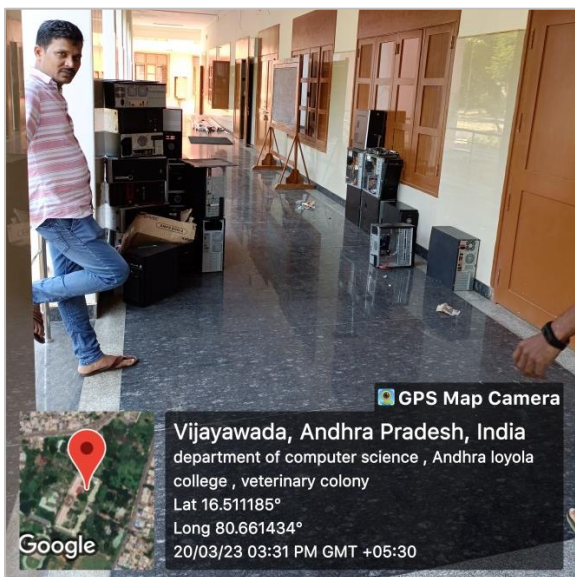


**Plate 11: Dustbins within the premises for dry waste with Institute logo**



**Plate 12: Different types of waste management bins all over the premises**



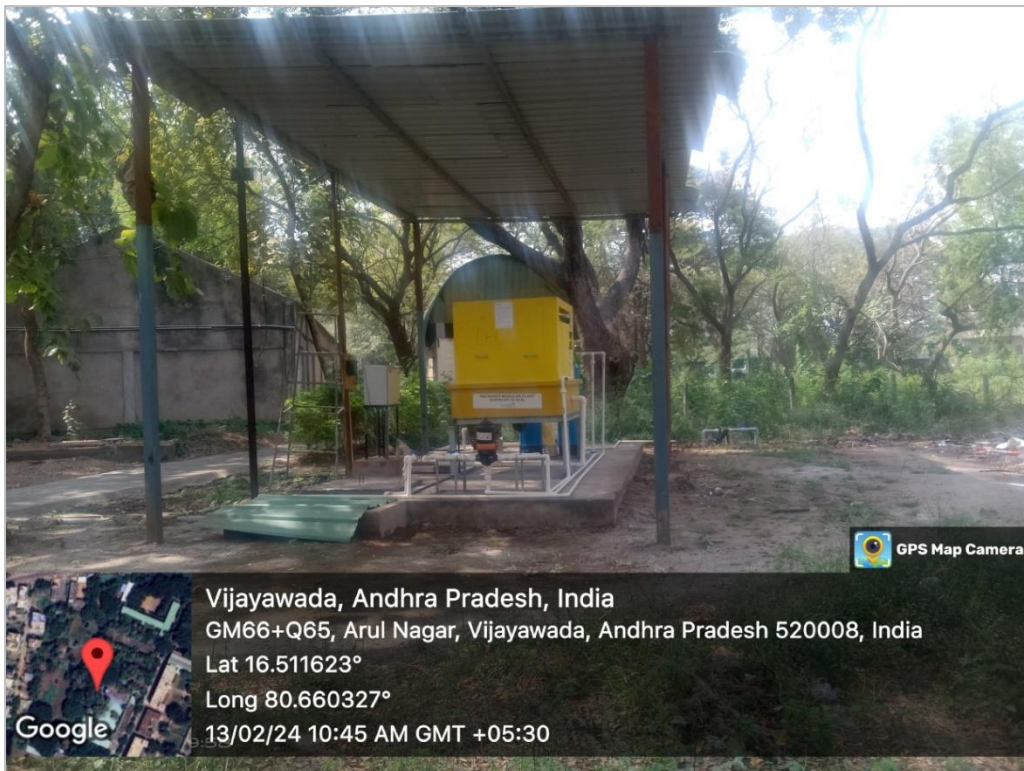


**Plate 13: E-waste management practice**

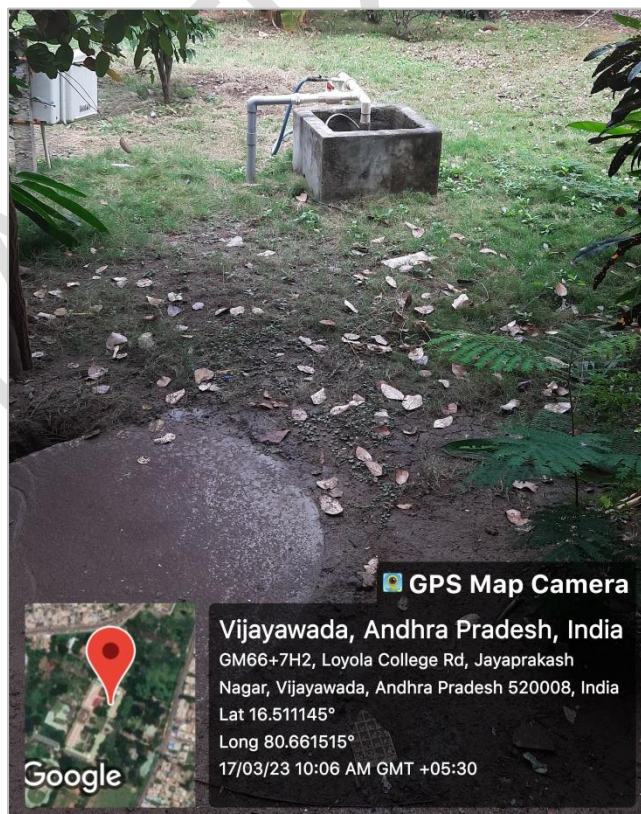


**Plate 14: Organic waste management – Compost pit in the premises maintained by the agriculture department**

### 4.1.3 Water management



**Plate 15: Waste water treatment plant in the premises**



**Plate 16: Bore well in the premises**



***Plate 17: Rain water pipes***



***Plate 18: Rain water pipes connected underground***



***Plate 19: Dedicated rain water pits covered in tarpulin***



**Plate 20: Dedicated rain water pits**



**Plate 21: Signages to save water near water facilities**

#### 4.1.4 Awareness messages



*Plate 22: Awareness messages/ signboards/ signages*

## 5. 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 2020-2021 and 2021-2022. The current study is for academic years 2022-2023 and 2023-2024.**

### 5.1 Compliance status

The details of compliance are analysed on previous year Report.


S. No.	Recommendation Title	Compliance Status
<b>5.1 Green practices management</b>		
<b>Implemented</b>		
1.	Plant as a gift to external stakeholders to take green vision forward	Implemented
<b>Not implemented</b>		
2.	Environmental awareness - compound wall with message of saving the environment	Not implemented
<b>5.2 Waste management</b>		
<b>Implemented</b>		
1.	Introduce twin litter dustbins	Implemented, however the nos. can be increased; also tie-up for plastic and e-waste; bin set up has been a good initiative
2.	Introduce signages about waste management for sensitization	Implemented, however the nos. can be increased
3.	Material of the dustbin should be replaced with eco-friendly	Implemented, the practice can be continued

	material	
4.	Separate waste management practices for each type: <ul style="list-style-type: none"> <li>➔ Paper</li> <li>➔ Plastic</li> <li>➔ E-waste</li> </ul>	Implemented, however documentation should be reflected on website under 'Green practices tab' and maintained annually to check the improvement
5.	Recycle the waste water in the premises through treatment plant	Pilot project undertaken, the output of treated water is reused for agriculture farm  The work is good, further quantity documentation of how much waste water is generated; how much is recycled on daily – weekly – monthly – annually should be calculated in the form of a report reflected on 'Green practices' tab  Furthermore, the same should be extended to entire premises by connecting the soak pits
6.	Recycle organic waste into compost	Three pits have been constructed and well maintained; however there is scope to increase the nos. and provide detailed documentation chart
<b>Not implemented</b>		
7.	Undertake biogas plant to recycle solid waste	Not implemented
<b>5.3 Water management</b>		
<b>Implemented</b>		
1.	Signages about water wastage and management	However the nos. can be increased
<b>Not implemented</b>		
2.	Built or redevelop an existing toilet into a universally accessible toilet for specially	Not implemented as per National Building Code (2016) requirement

	abled	
<b>3.</b>	Waterless urinals	Not implemented – As per discussion with team this is not feasible at present
<b>5.4 Health and Hygiene management</b>		
<b>Implemented</b>		
<b>1.</b>	Cleanliness in outdoor areas	As compared to the last years visit there has been a good improvement in hygiene towards: <ul style="list-style-type: none"> <li>➤ Site clearance for dry leaves etc.</li> <li>➤ Landscape beautification</li> <li>➤ Road maintenance</li> </ul> There is still scope for improvement
<b>Not implemented</b>		
<b>2.</b>	Outdoor safety w.r.t. lights	The nos. of street lights, women safety guards should improve
<b>3.</b>	Provision for sanitary vending, incinerator machine and incinerator in every ladies' common room, and toilet	The recommendation suggests separate facility should be available in each and every toilet/ common room of every block

*Table 1: Details of the compliance study*





**TES-AMM INDIA**

**TES-AMM (INDIA) PRIVATE LIMITED**

A-18, SIPCOT IND., GROWTH CENTRE, PANRUTTI "A" VILLAGE DRAGADAM, SRIPERUMBUDUR TLX., KANCHEEPURAM - 631 504  
Telephone: +91 44-42030353 Fax: +91-44-42030352 Website: www.les-amm.net

## Certificate of Recycling

To: Andhra Loyala College  
Society Vijayawada, Veterinary  
Colony, Vijayawada,  
Andhra Pradesh-520 008.





Date : 20-Sep-22  
Load No : 234775

Dear Sir / Madam,

This is to certify that TES-AMM (India) Pvt. Ltd., has recycled the materials stated below :

<u>Sl. No</u>	<u>Description</u>	<u>EEE Code</u>	<u>Quantity (In Nos)</u>	<u>Quantity (In Kgs)</u>
1	CPU	ITEW2	92	371.00
2	Cabinet	ITEW2	106	380.00
3	Mother Board	NA	38	23.00
4	SMPS	NA	202	146.00
5	Monitor	ITEW2	26	100.00
6	Keyboard	ITEW2	502	313.00
7	Mouse	ITEW2	200	20.00
8	UPS	NA	11	51.00
9	Accessories	NA	-	69.00
10	Projector	NA	1	3.00
11	Scanner	ITEW6	2	5.00
12	Toner	ITEW6	4	3.00
13	Boom Headset	NA	8	5.00
14	HDD	ITEW2	133	58.00
15	Laptop	ITEW3	1	3.00
Total :			1326	1550.00


Collection Date:18-Aug-22      Recycling Date : 20-Sep-22

Approved By *R. Sathish Kumar*

Name R Sathish Kumar

Designation General Manager- Operations



105

Plate 23: E-waste recycling Certificate from the vendor



ఆంధ్రప్రదేశ్ ఆంధ్ర ప్రదేశ్ ANDHRA PRADESH 68AA9918422  
 S.No. 14094 Dt: 18/05/2019 Rs. 20/ J. VINATHI  
 Sold to: Fr. G.A.P. Kishore SJ S/o (late) G. Prasada Rao LICENCED STAMP VENDOR  
 For Whom: self VJA O.L.No. 06/2014, RL.No. 06-27-026/2018  
 Valid up to 31-12-2020  
 Sivananjani Complex,  
 N.R.P. Road, Gandhinagar, Vijayawada.  
 Cell: 97051 23555

### MEMORANDUM OF UNDERSTANDING

This Memorandum of Understanding is made and executed on 3<sup>rd</sup> December 2019.

BY AND BETWEEN

Andhra Loyola College (Autonomous), Vijayawada – 520 008 presented by Rev.Fr.Dr.G.A.P.Kishore, SJ, Principal, Who is duly authorized to sign and execute the MoU.

Being the First Part

AND

Suraj Krishna Greenaries, an authorized agency of ITC having its principal office situated at D.NO-37/1052-AI, Nehru Nagar, Kadapa-516 002 and

  
 PRINCIPAL  
 ANDHRA LOYOLA COLLEGE  
 VIJAYAWADA-8.



Represented by Mr. K.Rama Chandraiah, Managing Partner referred as “**Suraj Krishna**”

### **Being the Second Part**

Whereas **Andhra Loyola College (Autonomous)** has agreed to educate their students on waste management and form DOVE Student Group of Andhra Loyola College with the students to spread the message of source segregation to other students, and also agree to collect and handover the dry recyclable waste.

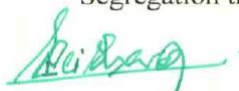
#### **1. NOW THIS MOU WITNESSETH AS UNDER:**

This is an agreement for a synergic alliance between Andhra Loyola College (Autonomous) and Suraj Krishna Greenaries for the social cause of recycling of Dry Waste and Environment Protection through recycling.

2. **Time period:** This MOU shall be for a period from 3<sup>rd</sup> December 2019 – 2<sup>nd</sup> December 2024.

#### **3. Roles and Responsibilities of Andhra Loyola College (Autonomous):**

- a. To ensure source segregation of dry and wet waste at College premises through its Teaching staff, housekeeping staff and Students.
- b. Andhra Loyola College (Autonomous) will give away any kind of paper waste, plastic waste and other dry recyclable waste to Suraj Krishna Greenaries at price agreed mutually. Suraj Krishna will pay as rates mentioned below :
  - White paper & News Paper : Rs.10/kg.
  - Carton Boxes: Rs.3/kg.
  - Plastic waste - 2/- to 5/- (Depending upon the grade)
- c. Andhra Loyola College, shall form DOVE Student Volunteers Group in the College and adopt nearby Schools or Colonies to promote Source Segregation through student volunteers.

  
 PRINCIPAL  
 ANDHRA LOYOLA COLLEGE  
 VIJAYAWADA-8.



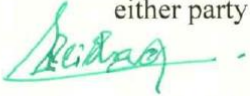

- d. Andhra Loyola College shall provide students for Internship in WOW Program.
- e. Andhra Loyola College shall motivate students to bring dry recyclables like paper, plastic, metal etc. from their home and donate to WOW initiative.
- f. Andhra Loyola College will put-up color-coded bins for waste segregation at different points in College premises.

**4. Roles and Responsibilities of Suraj Krishna Greenaries:**

- a. ITC-WOW team will impart training to the students and housekeeping staff on source segregation and through them inculcate the habit of source segregation among the other students.
- b. Suraj Krishna Greenaries will collect dry recyclable waste and old records from Andhra Loyola College and bring to the Hub for sorting and baling of the material collected and dispatch to respective recycling industries.
- c. Suraj Krishna Greenaries shall coordinate with ITC and undertake necessary measures for dispatch of the sorted recyclables for recycling at its own cost.
- d. Suraj Krishna Greenaries will make payment to Andhra Loyola College, Vijayawada, directly into their accounts for the dry recyclable waste collected against the accurate weighment and the type or category of the dry waste. The payment shall be made no later than 15 days from the date of payment request raised by the college. Franchisee on the request of Andhra Loyola College may give New Stationery against the value of dry recyclable waste lifted.

**5. Performance of Obligations**

- a. The details laid out in this MOU, notwithstanding the essence and spirit of this MOU is an understanding between Andhra Loyola College, Vijayawada, and Suraj Krishna Greenaries.
- b. Any notice or other communication under or in connection with this agreement shall be in writing in the English language and shall be delivered personally or sent by way of e-mail to the party due to receive the notice or communication at its address set out in this contract or such other address as either party may specify by notice in writing to other.

  
 PRINCIPAL  
 ANDHRA LOYOLA COLLEGE  
 VIJAYAWADA-8.




**Plate 24: MoU for dry waste and environmental protection**

## 6. Roadmap

The roadmap refers to the recommendations/ inferences/ suggestions that have been derived after the 'Green Building study' of the premises.

### 6.1 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.

### 6.2 Roadmap

The Institute suggested to prepare a roadmap for data collected, observed, investigated for a specific duration. This was due to the systematic steps undertaken to conduct the exercise.

The roadmap would act as a 'PLAN OF ACTION' to implement all the suggestions in a detailed manner. The same has been identified in two phases for a total duration of three years.

#### ➔ Phase 1

- Duration: One year from the date of Report submission – Shared currently
- These are first hand suggestions
- They are easy and quick to implement
- They involve close very less or almost no expenses
- They can serve as a foundation for the entire plan of action

#### ➔ Phase 2

- Duration: Within two years of Phase one completion – Not shared currently
- There are certain expenses but no major cost involved in implementation

The study does not complete in just two phases, but it sets a benchmark to achieve the goal of achieving the next stages of green building:

- ➔ Nearly Net zero campus (Energy/ Water)
- ➔ Net Zero campus (Waste/ Energy/ Water)
- ➔ Net positive campus (Waste/ Energy/ Water)

## Phase 1 – First priority

To be implemented within **ONE** year from date of Report submission.

### Section 1 – Green practices audit

#### ➔ 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.

#### ➔ Government initiatives

- Undertake initiatives such as Swachh Bharat Abhiyan, cleanliness drives in the Institute and surrounding villages also activities such as the capacity building of locals in surrounding villages by Institute 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)

#### ➔ Mandatory programs should be conducted on following days

- January
  - i. Wd. Braille Day
- February
  - i. Wd. Wetland day
  - ii. Wd. Pulses day
  - iii. Intd. Polar Bear Day
  - iv. NI. Science day
- March
  - i. Wd. Wildlife day
  - ii. Intd. Action for Rivers
  - iii. Global Recycling Day
  - iv. Wd. Sparrow day
  - v. World forest day/ Intl. day of happiness
  - vi. Wd. Water day
  - vii. Wd. Meteorological & resources day

- April

- i. Intd. Mine awareness day
- ii. World health day
- iii. Wd Atmosphere Day
- iv. Intd. Earth day
- v. Intd girl in ict/ Wd. Safety, health

- May

- i. Wd Migratory Bird Day
- ii. Intd. Of plant health
- iii. Wd. Bee day
- iv. Intd. Biological diversity
- v. Wd. No tobacco day

- June

- i. Wd. Bicycle day
- ii. Wd. Env't day
- iii. World Oceans Day
- iv. Global Wind Day
- v. Wd. Combat drought
- vi. Sustn. Gastronomy day
- vii. Intd. Of the tropics

- July

- i. Intd. Of cooperatives & World Day Free of Plastic Bags
- ii. Soil conservation
- iii. Wd. Population day
- iv. Mangrove Ecosystem

- August

- i. Intd. Indigenous day

- September

- i. Intd. Clean blue sky
- ii. Intd. Literacy/ Clean-up Day
- iii. World ozone day
- iv. Intd. Of peace/ Zero Emission Day
- v. Intd. Aware food loss

- October
  - i. Wd. Nature day
  - ii. Wd. Habitat day
  - iii. Wd. Wildlife day
  - iv. Wd. Cotton day
  - v. Wd. Migratory bird
  - vi. Intd. Rural women
  - vii. Wd. Food day
  - viii. Climate Action
  - ix. Wd. Cities day
- November
  - i. Wd. Tsunami awareness
  - ii. NI. Birds day
  - iii. Wd. Energy/ Diabetes
  - iv. Wd. Toilet day
- December
  - i. Intd. Person with disability day
  - ii. Wd. Soil day

Note:

- ➔ Wd. Stands for World
- ➔ Intd. Stands for International Day



## Section 2 - Waste audit

### ➔ Awareness

- Educate the housekeeping staff through monthly or quarterly programs related to waste management
- Generate awareness among student and staff stakeholders about products that generate waste through display boards about 'Do not litter' with messages about waste management, its importance and process

### ➔ Measures towards waste management

- Check cutlery practice in canteen area to inculcate healthy habits
  - i. Steel/ paper/ *bagasses* (sugarcane waste) plates for food
  - ii. Paper cups/ *Kulhad* or mud containers for tea
  - iii. Food served on leaf and further used for composting
  - iv. Spoons or straws made of disposable or edible material
  - v. Stakeholders can be guided to bring their own tiffin's for material management
  - vi. Possibilities of waste paper reused including newspaper for cutlery replacement can be explored
- Waste management for every type of waste
  - i. Increase the manpower for campus management
  - ii. Avoid any kind of waste burning as it is hazardous
  - iii. Go paperless – Use online medium to transfer notes and all information which save paper waste

### ➔ Regular checks

- Food wastage - Check the quantity of food wastage in canteen/ hostel mess and device a plan of action with the staff accordingly

### ➔ Facilities

- One dry small dustbin of each class must be installed
- One dry big dustbin has to be installed in every 10-20 meters of walking area in outdoor spaces

- Install twin litter dustbins on every floor, outdoors specifically canteen - Provision of coloured specific dustbins for different waste, instruction boards at multiple locations 'OR' Blue dustbin for degradable or red dustbin for household waste or green dustbin for recyclable
- Install Sani bins with display of 'Sanitary pads icon' in washrooms of every department and toilets

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## Section 3 - Water audit

### ➔ Awareness

- Remind every stakeholder about water conservation/ avoid water wastage by displaying board at every wash room, laboratories, outdoor ground and canteen areas
- Literate employees about water conservation and educate the staff members about the measures and action that can be taken

### ➔ Measures towards water conservation

- Put a container below the outdoor unit pipe of every air conditioner and reuse the same for secondary purposes such as washing cars, cleaning campus outdoor areas etc. avoid using the same for plantation.
  - i. Maintain a record of the nos. of containers and water recycled on a daily basis, further prepare a monthly or quarterly report about the same

### ➔ Regular checks

- Check taps/ faucets of toilets, wash basins, laboratories and outdoor areas for non-working conditions and leakages on a daily basis after 5 pm or once Institute's working hours are over
- If there is hostel facility there should be a regular check once students go to the Institute for any open taps or any type of water wastage; additionally replace all showers with bucket and tap system within hostel premises
- Lock the outdoor taps when they are not in use and check pipelines for damage to avoid any non-maintenance
- Use buckets for floor cleaning to save water and recycle the waste water
- Any kind of water wastage in any area indoor/ outdoor in every department of the Institute and report about the same to authorities
- Cover any open drain/ open water area (except farm/ water pond) that can be prone to become a mosquito breeding spot

## Section 4 - Health and Hygiene Audit

### ➔ Awareness

- Prepare specific instructions for cleaning and sanitizing and display the instructions all over premises
- Display signages/ posters about 'Do not spit' and 'Keep surrounding clean' No smoking' and 'Healthy premises' for healthy habits
- Undertake every Saturday 'Campus Cleanliness program' once in a week by the students and staff members

### ➔ Neat and clean premises practices

- Daily one times cleaning of all floors passage areas through sweeping dusting in indoor areas collection of dry fallen leaves and access ways; watering of plants in outdoor areas
- Daily three times cleaning, disinfecting washroom areas and check to avoid any garbage burning all around campus
- Weekly deep cleaning of building spaces including individual areas, open grounds and grass cutting

### ➔ Stakeholder intervention

- Practice pest control programs with through external stakeholders such that 'Once in every 15 days for Library' whereas 'Once in a month for outdoor areas such as open drains, mosquito breeding spots etc.' and 'Once in every six months or annually for entire campus'

### ➔ Hygiene Facilities - Availability of Sanitizing Equipment

- Water dispenser (Non-mechanic/ electric), hand wash on every floor
- There should be facilities such as potpourri, camphor tablets in the toilet to avoid smell and health related issues in toilet areas
- Install sanitary vending machine or make the sanitary pads available through a female representative, the information about the same should be displayed in foyer areas
- Green carpets could be placed outside drinking water and toilet blocks. This will add to hygiene areas and keep the water spillage under control.

## 7. 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.

- ➔ 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

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# *(Renewal) Green Audit Certificate*

*The study is conducted as per Indian and International Green Building Standards initiated in the capacity of an Accredited & Certified Green Building Professional*

It is awarded for **2022-2023 and 2023-2024** to the Esteemed Institution  
(Analysed for 2 years and extended validity for 1 year, thus total 3 years)

The Loyola College Society's

## **Andhra Loyola College (Autonomous)**

Door No. 54-16-14, Govt. Polytechnic Post, Vijayawada - 520 008, Andhra Pradesh, India

*(Site visit held on 13 February 2024)*

As part of the Institution's initiatives for a Healthy & Sustainable College the audit was conducted.  
We appreciate the immense efforts taken by Staff and students towards the Efficient Management of Premise.

Issued on **Tuesday, 13 February 2024** valid till **31 January 2025**

*Ar. Nahida Shaikh*  
**Ar. Nahida Shaikh**

Architect, IGBC Accredited Professional, ISO Certified I. A. (IMS)  
Assocham GEM Certified Professional (Regn. No. 22/718)

Project Head and Green Building Professional-Consultant

## **Sustainable Academe**

Sustainability Department of Greenvio Solutions, Naigaon

An environment Design and Consultancy developing Healthy and Sustainable Environments

**sustainableacademe@gmail.com** I **greenviosolutions@gmail.com**



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

