# 20242023 **YEARS) 2022** 0M Study Perio

2023

# Sustainability study AUDIT REPORT

Studied for

Anekant Education Society's
Jaysingpur College, Jaysingpur

and the second second second

Shirolwadi road, Jaysingpur 416101, Maharashtra

Studied in the capacity of

Accredited and Certified GBP



Website: https://thegreepwiosolutions.co.in/ Email: greenviosolutions@gmail.com

Background reference image Sasin Tipchai on unsplash

# Disclaimer

The Audit Team has prepared this report for the **Anekant Education Society's Jaysingpur College, Jaysingpur** located <u>Shirolwadi road, Jaysingpur 416101, Maharashtra</u> 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 Developing Consuminancy firm Sustainable Academe is our department for Consuminance dits Palghar District, Maharashtra- 401208 sustain placeder strain.com



# Acknowledgement

The Audit Assessment Team extends its appreciation to the **Anekant Education Society's Jaysingpur College, Jaysingpur** 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 Management.

Our heartfelt thanks are extended to the Chairperson of the entire process **Dr. S.A. Manjare**, (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.R.S.Dhabbe, Assistant Professor, Department of Chemistry
- Non-teaching staff member Mr. Nemminath Magdumand Mr. Satish Mangave
- Admin staff member Mr. A.B. Kambale (OS) and Mr. Sanjay Chavare (Head Clark)

# Sustainable Academe

Brand of Greenvio Solutions, Palghar District, Maharashtra- 401208



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# 1. Introduction

# 1.1 About statements of the Institute 1.1.1 Vision

The Institute proposes <u>"To construct the enlightened and humane society through</u> meaningful, valuebased and quality education."

# 1.1.2 Mission

The Institute adheres:

- To create and disseminate the knowledge amongst the students and society through continuous efforts by teaching, learning and research practices at par with the global standards.
- To inculcate the national values of socialism, secularism and democracy to build a society striving for social and economic justice.
- To enhance the employability of the students through use of ICT and various programs of personalitydevelopment, career counselling, placement cell.

# 1.2 Assessment of the Institute

The Institute was established in June 1964.



# 1.2.1 Affiliations

The courses provided by Institute have received affiliation through the **Shivaji University, Kolhapur, Maharashtra** 

# 1.2.2 Certification

**AISHE** – The All India Survey of Higher Education code is C-11084

# 1.2.3 Recognitions

The Institute has received recognition by the section 2(f) and 12(b) of the University Grants Council Act, 1956



# 2. Overview

# 2.1 Summarised Populace analysis for 2023-2024

# 2.1.1 Students data

The data (shared by the Institute) shows there were **2,115 students.** 

# 2.1.2 Staff data

S. No.	Туре	Male	Female	Total
1	Admin staff	10	03	13
2	Teaching staff	23	08	31
3	Non-Teaching staff	20	00	20
Total St	aff Members	53	11	64

Table 1: Staff data of the Institution for 2023-2024

The staff data shows the Institute premises had **64 Staff Members.** 

# 2.2 Summarised Populace analysis for 2022-2023 2.2.1 Students data

The data (shared by the Institute) shows there were **2,532 students.** 

# 2.2.2 Staff data

S. No.	Туре	Male	Female	Total
1	Admin staff	11	03	14
2	Teaching staff	22	08	30
3	Non-Teaching staff	19	00	19
Total Sta	aff Members	52	11	63

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

The staff data shows the Institute premises had **63 Staff Members.** 



# 3. Research

# 3.1 Campus area

The site is spread over 25 acres of land with a built-up area admeasuring 1,75,537 sq. ft.

# 3.2 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.

# 3.3 Analysis of the Green Building Study Audit

The procedure included detailed verification as follows:

- Investigation
- Technical
- Observations
- Inferences

# 3.4 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.





Plate 1: Evidence files related to inferences of the site visit





Plate 2: Evidence files related to the site visit



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#### Plate 4: Evidence file related to exit meeting attendance record

# 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 Site investigation and data verification of the premises; these are common for all the Buildings in the premises.

- Ecological museum There are multiple green zones developed highlighting the ecological maintenance approach adopted by campus.
- Ecological awareness on approach Awareness messages are not just displayed but maintained well on the compound wall of the approach road to the campus.
- Printing press unit The Institute provides a course related to printing and has a dedicated unit thereby managing the paper waste in a judicious manner.
- Social awareness The Institute has taken up awareness drives on various social issues for rural upliftment and regeneration in the Institute and surrounding villages.
- Fresh environment The Institute 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 institute is inviting and gives the stakeholders an opportunity to explore indoor and outdoor learning to a great extent.
- Silent and peaceful atmosphere The Institute is located amidst residential areas which are well designed thus these help to maintain the pollution under control and provide a healthy ambience.



Signages on the plants mentioning scientific names - The practice of having the names of each plant and tree is executed by the Institute and is very beneficial.





Plate 5: Greenhouse in the premises



Plate 6: Re-use of natural features as awareness zones in the premises







# Plate 7: Awareness messages on compound walls of the premises 5.1.2 Community development

# The details of **<u>extension initiatives</u>** under various heads in Institute are documented below:

S. No.	Туре	Since	Coordinator name
1	National Service Scheme (NSS)	Year 2000-2001	Dr.P.T.Mane
2	National Cadet Corps (NCC)	Year 2000-2001	Mr.Sushant PAtil
3	Earn while you learn scheme	Year 2010-11	Prof.Dr.B.M.Sargar

Table 3: Details of the extension initiatives by the Institute

# The details of the *environmental activities* conducted by the Institute documented below:

S. No.	Initiative	Information	Date		
	Academic year one (June 2023 – May 2024)				
1.	Campus	The campus cleaning drive activity is organised under	30 September		
	cleanliness drive	Green campus club. The Programme was inaugurated	2025		
		by Dr. S.A. Manjare. The session was chaired by Dr.			
		M.V. Kale. The campus was cleaned by students and			
		waste is segregated as solid waste, plastic waste and			
		Bio waste.			
	Aca	ademic year one (June 2022 – May 2023)			
2.	Workshop on	The department of Botany organized "Workshop on	24 April 2023		
	Mushroom	Mushroom Cultivation Technique" for the B. Sc.			
	Cultivation	students. In this activity, about 59 student participants			
	Technique were participated. The workshop promoted the				
		curiosity and entrepreneurship among the students.			

Table 4: Details of the environmental initiatives undertaken by Institute

The study suggests increasing the initiatives and its documentation.



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# 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, and 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.	Туре	Current practice	Proposed practice
1	Solid waste (Toilets)	Solid waste from every toilet on campus is collected through a network of pipes and transported to the municipal waste management system for proper treatment and disposal. This centralized approach reduces risks to both human health and the environment.	Introduce a biogas plant and utilise the same as source of renewable energy for laboratory gas supply
2	Organic waste (Regular)	<ul> <li>The college manages its organic waste using a variety of techniques, including:</li> <li>Large pit decomposition, which gives natural breakdown processes plenty of room,</li> <li>Vermicomposting, in which worms turn the waste into rich compost,</li> <li>Traditional composting, in which microbes break down the material, and</li> <li>MADEP composting, which uses layered aerobic decomposition.</li> </ul>	Continue with the practice



		Augusta         Augusta <td< th=""><th></th><th></th><th></th></td<>			
3	Liquid waste (Toilets, wash basins)	An indoor sewage system effectively collects liquid waste from college campus washbasins and toilets. By directing the trash into the municipal drainage system, this network ensures that it is appropriately processed and disposed of, preserving environmental purity and avoiding hygienic conditions.	Continue v practice	with	the
4	Chemical waste from laboratories	Laboratory waste is appropriately neutralized before being dumped into the sewer system. The effluent treatment facility processed and released the chemical waste from the chemistry labs into the sewer system. The fuming hood is where the volatile chemical waste is maintained at all times.	Continue v practice	with	the
5	Toxic waste from laboratories	Under the guidance of a specialist and a member of the college administration, toxic waste from each lab is collected individually and neutralized. The treated waste is carefully disposed of in a designated dirt pit following complete neutralization, assuring compliance with safety procedures and reducing environmental effect.	Continue v practice	with	the



6	E-waste from different departments is gatilered in accordance with their instructions. Following careful segregation, its collection and administration are handled by only authorized individuals and the assigned business, who are bound by the college's MOU and ensure appropriate disposal and environmental stewardship. E-waste		Tie-up with eco- reco; thereco for recycling	
		Jaysingpur, Maharashta' India Gold Stassa, Hahinagar, Jaysingpur, Maharashtra 416101, India Let 18.2708.88° Long 26.257731 02/07/24 04/30 PM GMT + 06/30		
7 Plastic waste		All departments collaborate to collect plastic garbage, which is then carefully divided into categories for single-use, reusable, and non-reusable items. Following the process of segregation, the garbage is given to a licensed scrap collector in accordance with an MOU that the college has signed, guaranteeing ethical disposal and environmental stewardship.	Continue with the practice	
8	Bio-waste (Sanitary)	Sanitary pad vending machines and biomedical waste incinerators are installed in the ladies' room at Jaysingpur College. Sensitization and training on using these facilities will be conducted by the female teaching staff.	Continue with the practice	
		Table 5: Waste management system by the Institute		

There are sixty dustbins in indoor areas and one in outdoor areas.



# 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

# 5.3.1 Water availability and consumption

# 5.3.1.1 Source of Primary water supply

The Institute requires water from the Local Municipality for drinking water purposes. <u>The</u> documentation below related to water tanks in the premises.

S. No	Туре	Size (ft.)	Capacity (litres)	Numbers
1	Underground	8 x 5 x 5	5,000	3
2	Overhead	7 X 3 X 6	5,000	10
3	Rain water harvesting tank	8 X 5 X 5	5,000	2
4	RO plant		100	1



Table 6: Water tanks in the premises

Plate 8: Water facility in the premises

and executed as part of this exercise.



# The study suggests tanks can be documented with mention of size, capacity usage, Institute name, colour coding and last maintenance date mentioned on each facility. Additionally, the hygiene around the RO plant should be improved.

5.3.1.2 Source of Secondary water supply

The Institute uses the following sources of water supply for secondary usages such as watering plants, kitchen, toilets, and wash basins and other spaces. <u>There are two bore wells.</u>





#### 5.3.1.3 Source of Tertiary water supply

The tertiary source of water is the source of water harvesting, the pit is available.

The study suggests connecting the overflow pipe of the pit to bore well for additional ground water recharge.

### 5.3.1.4 Source of Reusing waste water

This initiative is not practiced.

# 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.

The overall impression was found to be good; however certain spaces had tobacco stains that should be improved with appropriate measures.

# 6. Investigation

The following results are based on the investigation carried out during the site visit.



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#### Figure 1: Water testing investigation study

S. No.	Type of water	Required level	Actual level	Inference
1	R.O. water (Drinking purpose)	50	9	Good, no change
2	Normal water (General use purpose)	N.A.	495	Introduce a signboard stating 'Not suitable for drinking'

Table 7: Water testing details



# 7. Suggestion

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

# Phase 1

- o 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

# 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

o January

i. Wd. Braille Day

#### ◦ February

i. Wd. Wetland day



ii. Wd. Pulses day

iii. Intd. Polar Bear Day iv. Nl. 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

o 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

o May

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

o June

- i. Wd. Bicycle day
- ii. Wd. Envt 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. Nl. 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
  - <u>Educate the housekeeping staff through monthly or quarterly programs</u>elated to waste management
  - <u>Generate awareness among student and staff stakeholders about products that</u> <u>generate waste</u> through display boards about "Do not litter" with messages about waste management, its importance and process

#### Measures towards waste management

- <u>Check cutlery practice in canteen area to inculcate healthy habits</u>
  - 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. <u>Green organic waste</u> Dust, dry leaves, twigs, branches Converted into organic compost/ bio fertilizer
  - iv. <u>Brown organic waste</u> Non-vegetarian food waste along with green organic waste converted into vermin compost
  - <u>Scrap materials</u> Generated through furniture or old products should be recycled 100% through workshops for stakeholders
  - vi. <u>Go paperless</u> Use online medium to transfer notes and all information which save paper waste



# Regular checks

- <u>Food wastage</u> Check the quantity of food wastage in canteen/ hostel mess and device a plan of action with the staff accordingly
- <u>Dustbins overflow</u> Location of the dustbins, whether they are over flowing, whether the waste is dumped anywhere within or in backyard of premises
   Take a check and collect the waste appropriately

# Facilities

- One dry small dustbin of each class must be installed
- <u>One dry big dustbin</u> has to be installed in every 10-20 meters of walking area in outdoor spaces
- <u>Install twin litter dustbins</u> 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
- <u>Install Sani bins</u> with display of "Sanitary pads icon" in washrooms of every department and toilets



### Section 3 - Water audit

# Awareness

 <u>Remind every stakeholder about water conservation/ avoid water wastage by</u> <u>displaying board</u> at every wash room, laboratories, outdoor ground and canteen areas o <u>Literate employees about water conservation and educate the staff</u> 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

<u>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 o 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 o Lock the outdoor taps when they are not in use and check pipelines for damage to avoid any non-maintenance o Use buckets for floor cleaning to save water and recycle the waste water o Any kind of water wastage in any area indoor/ outdoor in every department of the Institute and report about the same to authorities o Cover any open drain/ open water area (except farm/ water pond) that can be prone to become a mosquito breeding spot
</u>

# Section 4 - Health and Hygiene Audit

#### Awareness

 <u>Prepare specific instructions for cleaning and sanitizing</u> and display the instructions all over premises 
 <u>Display signages</u>/ posters about "Do not spit"



and "Keep surrounding clean" No smoking" and "Healthy premises" for healthy habits o 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

 <u>Practice pest control programs</u> 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 
   <u>Install sanitary vending machine or make the sanitary pads available</u> through a female representative, the information about the same should be displayed in foyer areas
- <u>Green carpets</u> could be placed outside drinking water and toilet blocks. This will add to hygiene areas and keep the water spillage under control.

# 8. Compilation

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



are used as a base to analyze and study the data collected.

- 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



Greenvio Solutions I Sustainable Academe I Developing Healthy and Sustainable Environments I sustainableacademe@gmail.com