

Supporting Documents for Quantitative metric 7.1.3

7.1.3: Quality audits on environment and energy regularly undertaken by the Institution. The institutional environment and energy initiatives are confirmed through the following

1. Green audit / Environment audit
2. Energy audit
3. Clean and green campus initiatives
4. Beyond the campus environmental promotion activities

All the other supporting documents are available on the institute website under the given URL link.

<https://www.gate.ac.in/naac/criterion-7/7.1.3.pdf>



Submitted to NAAC

By

**Gandhi Academy of Technology and Engineering,
Berhampur**



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Ref. No.

Date.....

Index

All other data are available in Institute website under the URL given below

<https://www.gate.ac.in/naac/criterion-7/7.1.3.pdf>

This URL contain huge amount of data this may take few minutes depending upon speed of Network

Sl. No	Particulars	Page No.
01	Response	3
02	Report on Environmental Promotional activities conducted beyond the campus with geo tagged photographs with caption and date.	4-13
03	Policy document on environment and energy usage Certificate from the auditing agency	14-21
04	Energy audit,Environmental audit,Green audit report from recognized bodies	22-80



GANDHI ACADEMY OF TECHNOLOGY AND ENGINEERING

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RESPONSE

7.1.3 Quality audits on environment and energy regularly undertaken by the Institution. The institutional environment and energy initiatives are confirmed through the following:

1. Green audit / Environment audit
2. Energy audit
3. Clean and green campus initiatives
4. Beyond the campus environmental promotion activities

Response: A. All of the above

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Ref. No: GATE/430/2018

Date: - 04/06/2018

NOTICE

It is hereby notified that, the NSS Club of our college is going to organise a Tree Plantation Programme in the village, **GOLANTHARA** on DT:-05/06/2018 on 'World Environment Day'. You are already aware the importance of the tree plantation in these days of serious environmental pollution. To create a pollution free environment tree plantation programmes are important. Under this, drive 25 to 50 new saplings will be planted in the village.

All students and Staff Members are requested to join the above said program and to make it successful.

Co-ordinators:

1. Mrs.Ankita Jena (Asst.Prof. in Civil.Engg.)
2. Mr.Debasis Panda (Asst.Prof. in Mech.Engg.)

Program Schedule:

Date: **05/06/2018**
Venue: **GOLANTHARA**
Time: **10:00 AM**



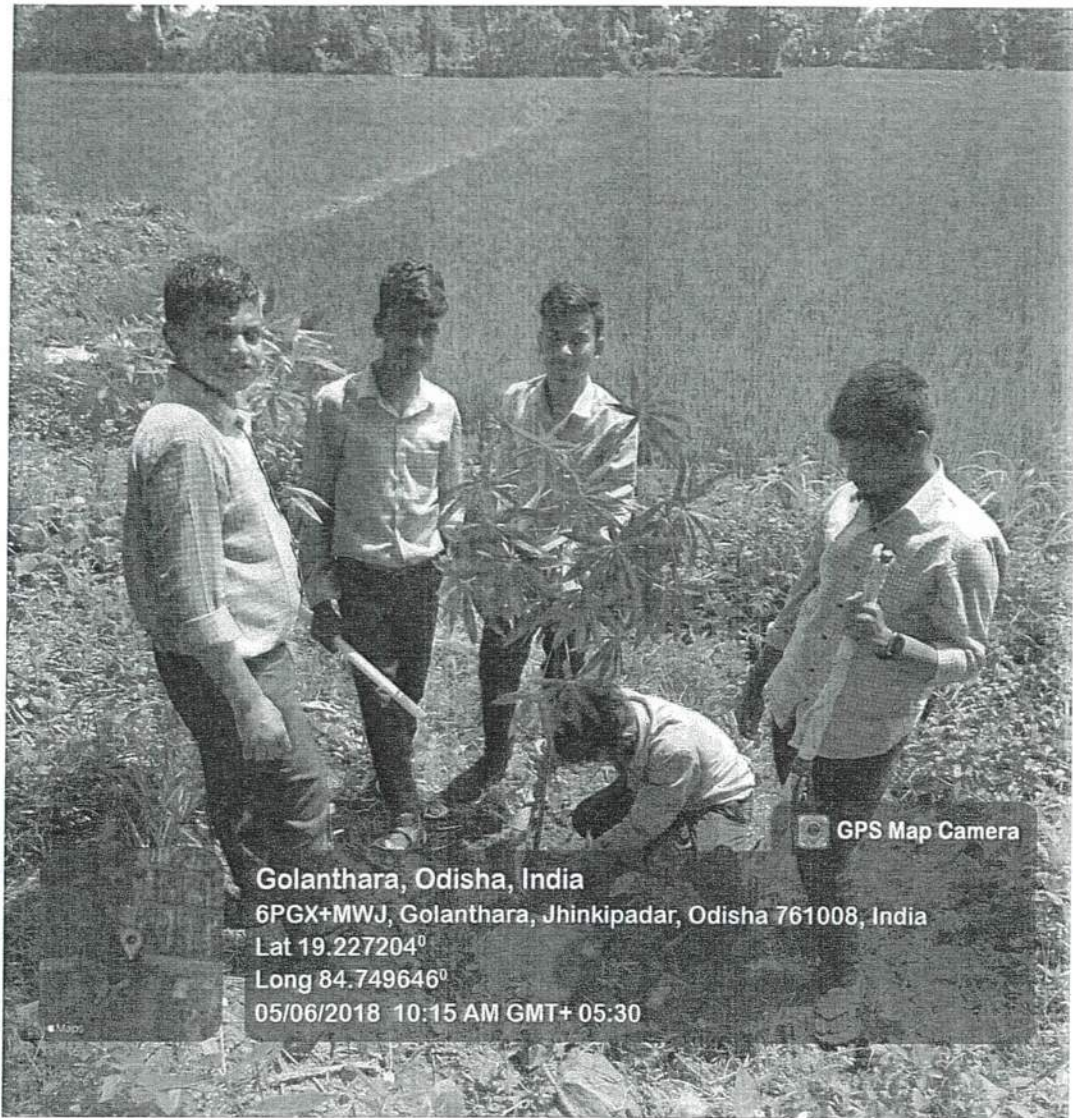

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Observation of World Environment Day (Tree Plantation Program) at Golanthara Village, on 05/06/2018




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Ref. No: GATE/432/2019

Date: - 03/06/2019

NOTICE

It is hereby notified that, the NSS Club of our college is going to organise a Tree Plantation Programme in the village, **RANDHA** on DT:-05/06/2019 on 'World Environment Day'. You are already aware the importance of the tree plantation in these days of serious environmental pollution. To create a pollution free environment tree plantation programmes are important. Under this, drive 25 to 50 new saplings will be planted in the village.

All students and Staff Members are requested to join the above said program and to make it successful.

Co-ordinators:

1. Mr.Prakash Kumar Shukla (Asst.Prof. in Basic Sc.& Humanities.)
2. Mr.Sachin Kumar Patra (Asst.Prof. in Computer Sc.& Engg.)

Program Schedule:

Date: **05/06/2019**
Venue: **RANDHA**
Time: **10:00 AM**



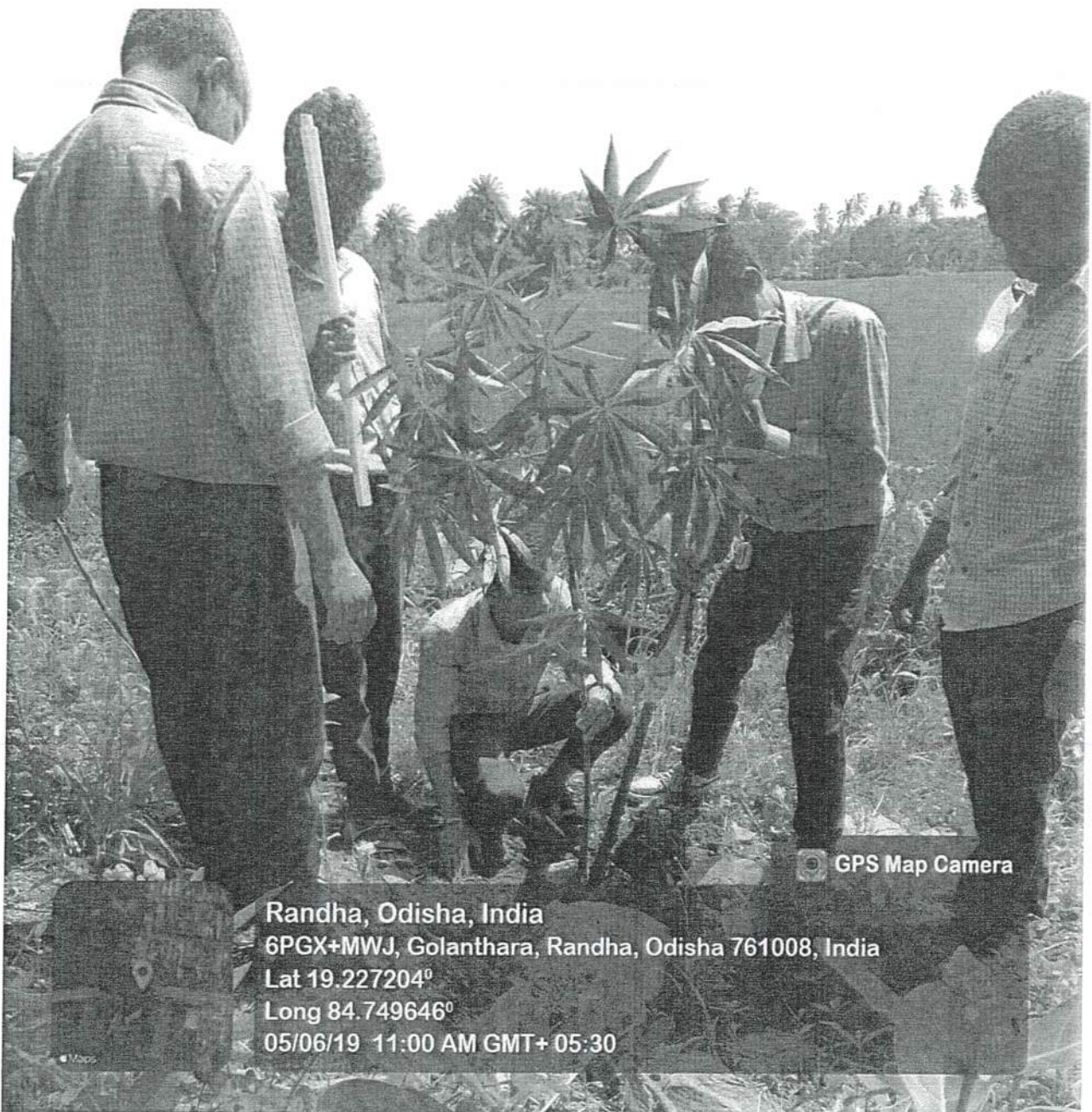
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Observation of World Environment Day (Tree Plantation Program) at Randha Village, on 05/06/2019



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Ref. No: GATE/434/2020

Date: - 03/06/2020

NOTICE

It is hereby notified that, the NSS Club of our college is going to organise a Tree Plantation Programme in the village, **BHALIAGADA** on DT:-05/06/2020 on 'World Environment Day'. You are already aware the importance of the tree plantation in these days of serious environmental pollution. To create a pollution free environment tree plantation programmes are important. Under this, drive 25 to 50 new saplings will be planted in the village.

All students and Staff Members are requested to join the above said program and to make it successful.

Co-ordinators:

1. Mr.Ajit Kumar Satapathy (Asst.Prof in Basic Sc.& Humanities.)
2. Mr.Manoja Kuamr Patnaik (Asst.Prof in Electrical Engg.)

Program Schedule:

Date: 05/06/2020

Venue: **BHALIAGADA**

Time: 10:00 AM




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Observation of World Environment Day (Tree Plantation Program) at Bhaligada Village, on 05/06/2020



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Ref. No: GATE/436/2021

Date: - 03/06/2021

NOTICE

It is hereby notified that, the NSS Club of our college is going to organise a Tree Plantation Programme in the village, **GOBINDANAGAR** on DT:-05/06/2021 on 'World Environment Day'. You are already aware the importance of the tree plantation in these days of serious environmental pollution. To create a pollution free environment tree plantation programmes are important. Under this, drive 25 to 50 new saplings will be planted in the village.

All students and Staff Members are requested to join the above said program and to make it successful.

Co-ordinators:

1. Asst.Prof. Ajaya Kumar Nahak (Asst.Prof in Electrical Engg.)
2. Asst.Prof. Bikram Kumar Sahu (Asst.Prof in Basic Sc.& Humanities.)

Program Schedule:


Date: **05/06/2021**

Venue: **GOBINDANAGAR**

Time: **10:00 AM**




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Observation of World Environment Day (Tree Plantation Program) at Gobindanagar Village on 05/06/2021




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Ref. No: GATE/438/2022

Date: - 04/06/2022

NOTICE

It is hereby notified that, the NSS Club of our college is going to organise a Tree Plantation Programme in the village, **PANCHAMA** on DT:-05/06/2022 on 'World Environment Day'. You are already aware the importance of the tree plantation in these days of serious environmental pollution. To create a pollution free environment tree plantation programmes are important. Under this, drive 25 to 50 new saplings will be planted in the village.

All students and Staff Members are requested to join the above said program and to make it successful.

Co-ordinators:

1. Mr.Tushar Kanta Satapathy (Asst.Prof in Electrical Engg.)
2. Mr.Bhabani Sanakr Panda (Asst.Prof. in Computer Sc.& Engg.)

Program Schedule:

Date: 05/06/2022
Venue: PANCHAMA
Time: 10:00 AM




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Observation of World Environment Day (Tree Plantation Program) at Panchama Village, on 05/06/2022




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Environmental Policy of Gandhi Academy of Technology and Engineering




Principal
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Environmental Policy-Gandhi Academy of Technology and Engineering (Policy No: GATE-02)



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P.O/P.S: Golanthara, Konisi, Berhampur- 761 008, Dist: Ganjam (ODISHA)

Scope of the Policy:

With the help of a green campus and environmental policy, innovative new co-curricular and extra-curricular activities are developed that encourage faculty and staff to initiate positive change. These programs require a comprehensive review of all administrative and infrastructure tasks in terms of energy efficiency, environmental sustainability and sustainability.

The focus areas of this policy are:

- Clean Campus Initiatives
- Landscaping Initiatives
- Clean Air Initiatives
- Infrastructure
 - ◆ Solar Power Plant
 - ◆ Installation of Energy Efficiency Equipment
 - ◆ Water Conservation through Rainwater Harvesting System
- Waste Management processes
 - ◆ Solid Waste Management
 - ◆ Liquid Waste Management
 - ◆ E-Waste Management
- Awareness Initiatives
- Environment-centric Student Societies and Department Activities
- Green Audit
- Energy Audit
- Plastic-Free Campus

Environmental Policy- Gandhi Academy of Technology and Engineering (Policy no: GATE-02)



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Objectives of the Policy:

1. To protect and conserve ecological systems and resources within the campus
2. To ensure the rational use of environmental resources to satisfy the needs and desires of present and future generations.
3. To integrate environmental concerns into policies, plans and programmes for social development and outreach activities
4. To work with all stakeholders and the local community to raise awareness and seek the adoption of environmental good practice and the reduction of any adverse effects on the environment.
5. To continuously improve our contribution to climate protection and adaptation to climate change and to the conservation of global resources
6. To continuously improve the efficient use of all resources, including energy and water, and to reduce consumption and the amount of waste produced, recovering and recycling waste where possible.
7. To make the campus plastic free.
8. To conduct environmental and energy audits from time to time
9. To minimize the use of paper in administration through having policy for E-governance.

Policy:

Clean Campus Initiatives

Gandhi Academy of Technology and Engineering had pledged to actively coordinate cleanliness activities in the college and beyond the campus in accordance with the vision of Swachh Bharat Mission. It commits to continue with this Programme. The broad vision is as follows:

1. Generating mass awareness on cleanliness and hygiene amongst students and staff members by holding regular cleanliness drives. The idea is to motivate them to contribute in a proactive manner.
2. Activities under 'Swachh Bharat Mission' will be a key component of all the community work being done by NSS and Green Warrior volunteers of the college.
3. Staff Members will be encouraged to participate in the cleanliness drive in the college campus.
4. Remove all kinds of waste material like broken furniture, unusable equipment etc.

Environmental Policy- Gandhi Academy of Technology and Engineering (Policy no: GATE-02)

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5. Administer of the pledge by students and staff members to maintain cleanliness of the college campus and its surrounding areas on an annual basis.
6. Conduct workshops on the 3Rs: Reduce, reusing and recycling of waste.
7. Commit to manage waste and maintain clean campus especially during college events.

Landscaping Initiatives

It is an important part of campus life and provides space for study, play, outdoor activities, relaxation and aesthetic appreciation. Green campus landscapes also control runoff, help recharge groundwater, and clean and cool campus air. The landscape visually represents the campus community's commitment to sustainability. Because campus landscapes are so visible and accessible, landscape initiatives are a great way to raise environmental awareness.

There are more than 150 trees and more than 500 shrubs on campus along with 1 acre of grass cover. The landscape of trees and plants provide the 1000+ students and staff with clean and cool air and is a soothing environment.

The diverse green cover of Gandhi Academy of Technology and Engineering is also home to a number of animals and rare birds across at least 24 species, creating a campus rich in biodiversity. The college commits to enriching this healthy habitat and maintaining the symbiotic relation of the institution with nature by

- Organizing annual tree plantation drives
- Encouraging student clubs to hold tree planting events

Clean Air Initiatives

We encourage our students and staff to use public transportation. The entry of automobiles inside the campus is restricted to discourage the use of private vehicles. Our campus is also located rural part of Bengaluru. For this reason, we feel responsible to maintain our green cover. The abundant natural landscape cleans the air on campus.

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Infrastructural Initiatives

Renewable Sources of Energy

Gandhi Academy of Technology And Engineering is dedicated to minimize and sustainably manage its use of electricity. The college believes in reducing the consumption of electricity produced by non-renewable resources by switching to clean energy sources like solar energy for purposes like lighting the campus. Hence solar panels were installed on top roof of the college building.

Energy Saving and Energy Efficient Equipment

We commit to install environment-friendly electrical appliances that save energy and reduce wasteful inefficiencies. The college believes in using cleaner energy such as LED lighting.

Water Conservation through Rainwater Harvesting System

Gandhi Academy of Technology And Engineering has committed itself to the effort to replenish the groundwater table by practicing rainwater harvesting. This practice helps in the replenishment and recharge of the groundwater.

Waste Management Process

Gandhi Academy of Technology And Engineering strives to have a minimal impact on the environment and is dedicated to reduce and manage the waste generated by the college campus. The following specific procedures will be undertaken to ensure krupajal engineering college contribution in protecting the environment.

Solid Waste Management

With its aim to provide holistic education that also has a positive impact on the environment, the college will adopt practices that will mitigate the generation, and manage solid waste through the following methods

1. Systematically engage with the 3Rs of environment friendliness (Reduce, Reuse and Recycle).
2. Collect paper waste produced on campus and collaborate with scrap dealers for recycling.
3. Reduce solid waste by developing a technology-centric teaching and administrative model.

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4. Reduce use of paper by supporting digitization of attendance and internal assessment records
5. Reduce requirement of printed books by updating the e-books and e-journals collection of the college library.
6. Take initiatives to spread awareness amongst students about
 - ◆ Food wastage and ways of minimizing it
 - ◆ Minimizing the use of packaged food
 - ◆ The habit of reusing and recycling non-biodegradable products
 - ◆ Organizing workshops for students on solid waste management.

Liquid Waste Management

- ◆ Maintain leak proof water fixtures
- ◆ Minimize the use of water by constructing more Indian style toilets instead of western style toilets.
- ◆ Continued employment of a caretaker to take immediate steps to stop any water leakage through taps, pipes, tanks, and toilet flush etc.
- ◆ Reuse of wastewater generated by the Reverse Osmosis (RO) system in washrooms.

E-Waste Management

Gandhi Academy of Technology and Engineering ensures that its usage of technology and generation of e-waste does not impact the environment. For this purpose, the college plans to strive towards:

1. More provisions for the disposal of the institutional e-waste.
2. Awareness amongst students about reduction of e-waste and environment friendly disposal practices for e-waste.
3. Encouraging department and society level activities pertaining to e-waste management

Awareness Initiatives

Environmental Policy- Gandhi Academy of Technology and Engineering (Policy no: GATE-02)




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Outreach and education are of utmost importance so that all members of the campus community may value the objectives of the policy and aid in its implementation. This is why Gandhi Academy of Technology and Engineering supports and encourages awareness campaigns, seminars, workshops, conferences and other interactive sessions to facilitate effective implementation of the Green Campus, Energy and Environment policies.

Environment-centric Student Clubs and Department Activities

Gandhi Academy of Technology and Engineering encourages all the departments and specific student societies like Green warriors, NSS, and others to organize events, competitions and training sessions that will bring about positive environmental changes at the grass root level. The college supports departments and student clubs in molding the students into active agents of environment protection and conservation.

Green Warriors

Institutional changes towards sustainability and eco-friendly practices have percolated down to the students which have led more and more students to join Green Warriors. Making the club a compulsory one will provide it a bigger platform to broadcast the institution's environmental values to raise awareness. This will aid the green initiatives and practices that are a part of this policy to grow exponentially.

Green Audit

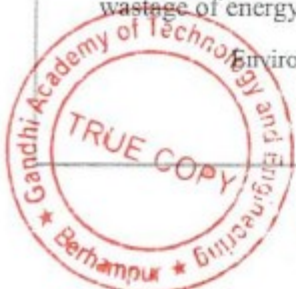
The college aims to regularly conduct a Green Audit of our college campus to assess our strengths and weaknesses to further our goals of long-term sustainability. A green audit is a useful tool to determine how and where most energy or water or resources are being used. The college can then consider how to implement changes and make savings. It can determine the type and volume of waste. Recycling projects or waste minimization plans can be adopted. It will create health consciousness and promote environmental values and ethics. It provides a better understanding of the impact of ecofriendly practices on campus. Green auditing will promote financial savings through reduction of resource use. It is imperative that the college evaluate its own contributions toward a sustainable future.

Energy Audit

An Energy Audit to be conducted as and when required to further reduce its carbon footprint. The importance of reducing energy consumption cannot be overstated. The energy audit, with its specialized tools will identify wastage of energy. Such an inspection often reveals several different flaws which cause a loss of significant

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amounts of energy which the college will not be able to detect. These flaws often have easy and affordable solutions and provide significant savings.

Plastic-Free Campus

Gandhi Academy of Technology and Engineering has been observing most of its duties in terms of solid waste management since its inception. In view of the Government of India's resolution to ban all single use plastics due to the hazardous impact of plastic use and pollution, the college administration strictly bans the use of single use plastics in its premise to make it a 'Plastic Free Campus'.



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Environmental Policy- Gandhi Academy of Technology and Engineering (Policy no: GATE-02)

ENERGY AUDIT Report
For
Gandhi Academy of Technology and Engineering
Berhampur



Carried For
For Year 2022-2023

Carried Out By



ELION TECHNOLOGIES & CONSULTING PVT LTD

307, 3rd Floor Local Shopping Centre, Lal Market, H Block,
Vikas Puri, New Delhi - 110018

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INDEX

Sl.No	Description	Page No.
1	Executive Summary	2
2	Chapter - I Introduction	3
3	Chapter - II Acknowledgement	5
4	Chapter - III Process Description & Energy Consumption Details	6
5	Chapter - IV Lighting System	10
6	Chapter - V Motors and Pumps	11
7	Chapter - VI Air Conditioning	13
8	Conclusion	14



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EXECUTIVE SUMMARY

Gandhi Academy of Technology & Engineering is situated at Berhampur in Odisha state of India. The Institute is managed by "Tarini Educational Trust". GATE, an Institute, is approved by AICTE New Delhi & Affiliated to BPUT, Rourkela, and Odisha. The Institute works with a mission to provide quality education of international standards for producing technocrats and future leaders in a disciplined and conducive environment as an integral part of our social commitment to promote education globally.

Focus is given to activities beyond academics at Gandhi Academy of Technology & Engineering, which is evident from its infrastructure, extracurricular activities and national & international collaborations. The placement at Gandhi Academy of Technology & Engineering is varied, with recruitment options both incorporates and public sector as well as entrepreneurship.

List of courses offered by the college

B.Tech

M.B.A

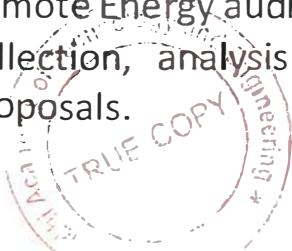
MCA


Total Area: More than 20 acres

Electricity is supplied by

TP Southern Odisha Distribution Limited (TPSODL) Odisha Distribution Limited and for backup power supply with DG Sets of 125KVA are available.

Elion Technologies and Consulting Pvt Ltd team conducted the Detailed Remote Energy audit of the premises. The energy audit included detailed data collection, analysis of data and identification of specific energy saving proposals.




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CHAPTER – I

INTRODUCTION

Gandhi Academy of Technology & Engineering, Berhampur evinced interest in availing the services of Elion Technologies and Consulting Pvt Ltd for conducting energy audit of their premises.

This report is on the energy audit carried out Gandhi Academy of Technology & Engineering, Berhampur. The detailed energy audit comprised of the following activities:

Data collection of power consuming equipment's.

A brief session on energy management was conducted to seek more inputs from the personnel engaged in operation and maintenance of electro mechanical services.

Analysis of collected data.


Discussion with the officials on the identified proposals.

Discussion and reporting of the findings of energy audit with the Engineers and management staff.

All the identified energy savings proposals have been discussed with the executives concerned before finalizing the projects.

The contents of the report are based solely on the data provided by Gandhi Academy of Technology & Engineering, Berhampur officials during the energy audit.

The management should implement the suggestions made in the report after verifying requisite safety aspects.


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Methodology for Energy Audit:

The following is a list of general procedure and information undertaken during the energy audit:

- General information of the campus.
- Baseline energy description.
- Past energy consumption bills which includes electricity bills.
- On site data collection.
- Energy analysis of different sectors.
- Recommendation of energy conservation measures.

The primary goal of the energy audit was to identify sources and areas of potential energy savings and cost saving throughout the Plant by measures of optimization, replacement, retrofitting, and on the other hand, to also provide recommendations on operational and maintenance practices improvements.



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CHAPTER – II

ACKNOWLEDGEMENT

Elion Technologies and Consulting Pvt Ltd places on record it's thanks to M/S Gandhi Academy of Technology & Engineering, Berhampur for entrusting the task of conducting energy audit study.

We acknowledge with gratitude the whole hearted support and cooperation extended by all team members while carrying out the study.



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CHAPTER – III PROCESS DESCRIPTION & ENERGY CONSUMPTION

DETAILS PROCESS DESCRIPTION

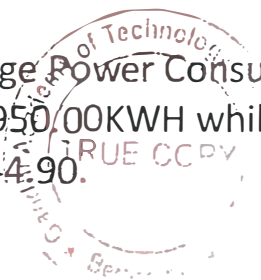
The main areas of energy consumption as observed during the audit are as follows:

- Motors/Pumps.
- Air Conditioner.
- Lighting.
- The main sources of energy to meet the required consumptions are as follows:
 - Electricity supply from Power Distribution Company.
 - DG sets of 35KVA.

ELECTRICITY CONSUMPTION PATTERN

Months	KWH	KVAH	Power Factor	Net Amount Payable
Jan-22	6444.50	6566.00	0.97	64130.00
Mar-22	22597.47	22878.97	0.96	166851.00
Apr-22	15735.50	15866.50	0.99	389504.00
May-22	20062.50	20512.50	0.97	153780.00
Jun-22	31140.50	31709.50	0.98	231501.00
Jul-22	31462.50	31803.50	0.98	234903.00
Aug-22	33157.50	33533.50	0.98	237056.00
Sep-22	21629.50	21884.50	0.98	167601.00
Oct-22	21644.50	21904.50	0.98	162555.00
Nov-22	25625.50	25864.50	0.99	186568.00

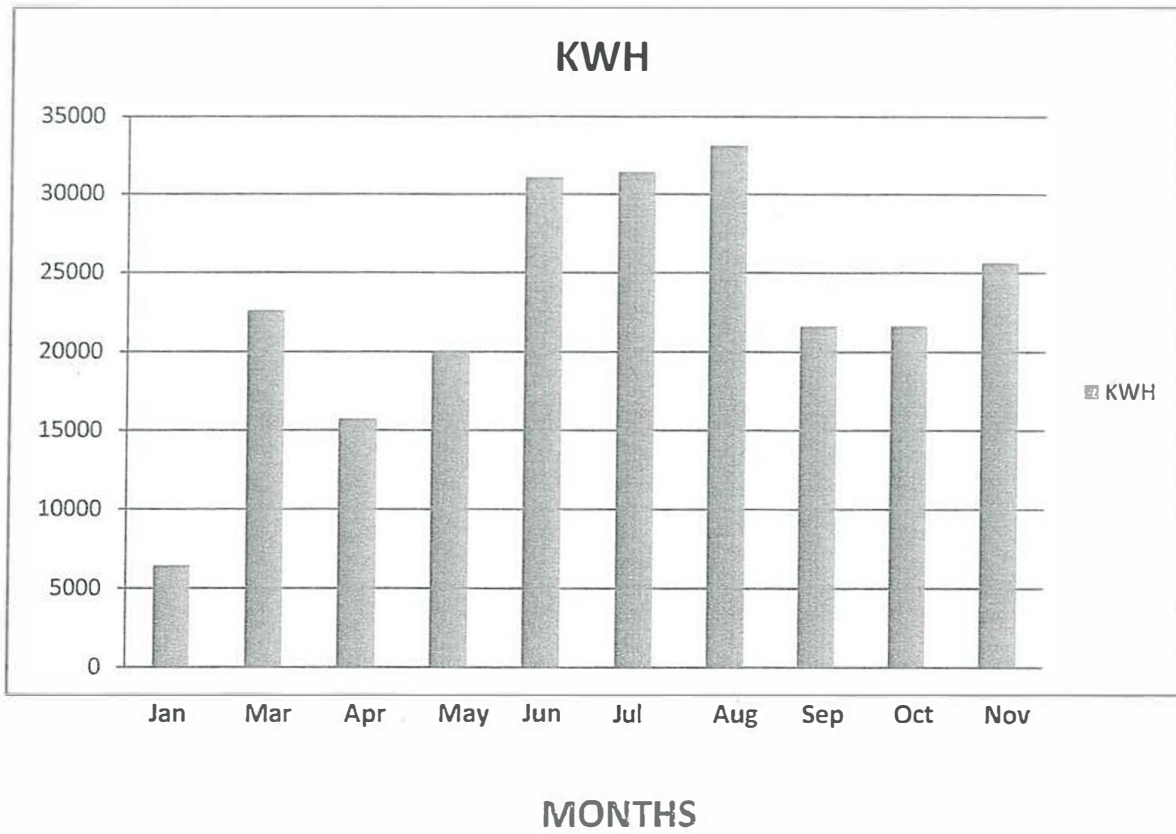
Average Power Consumption per month is calculated at 23252.40KVAH or 22950.00KWH while the average amount payable per month is Rs 199444.90.



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KWH Consumption

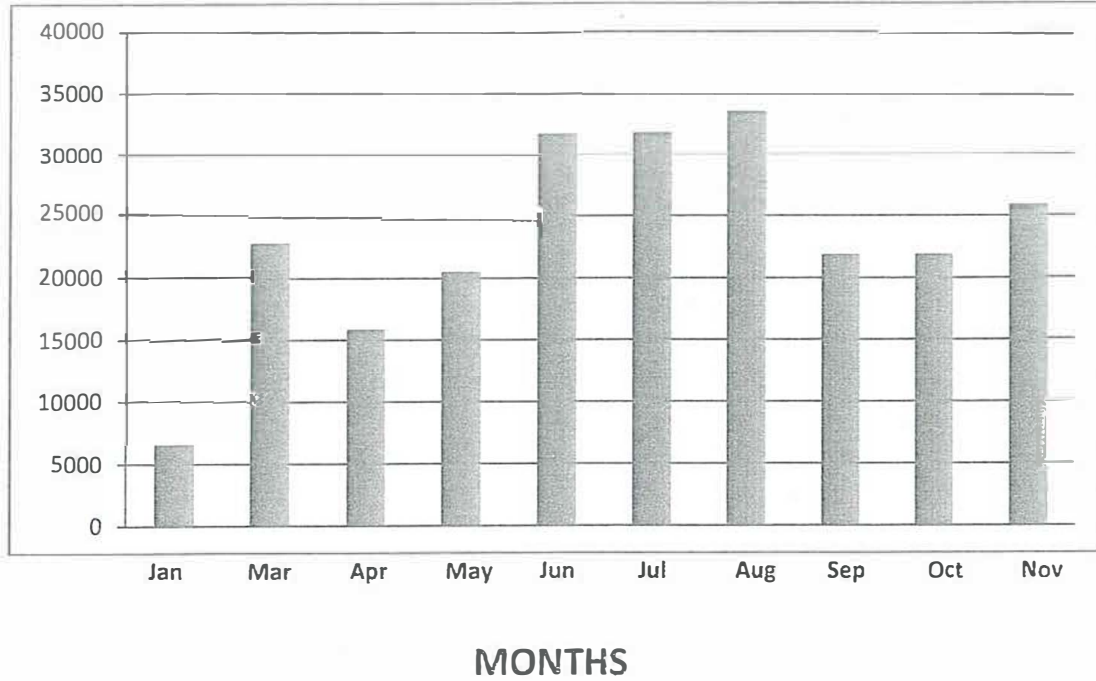


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KVAH Consumption

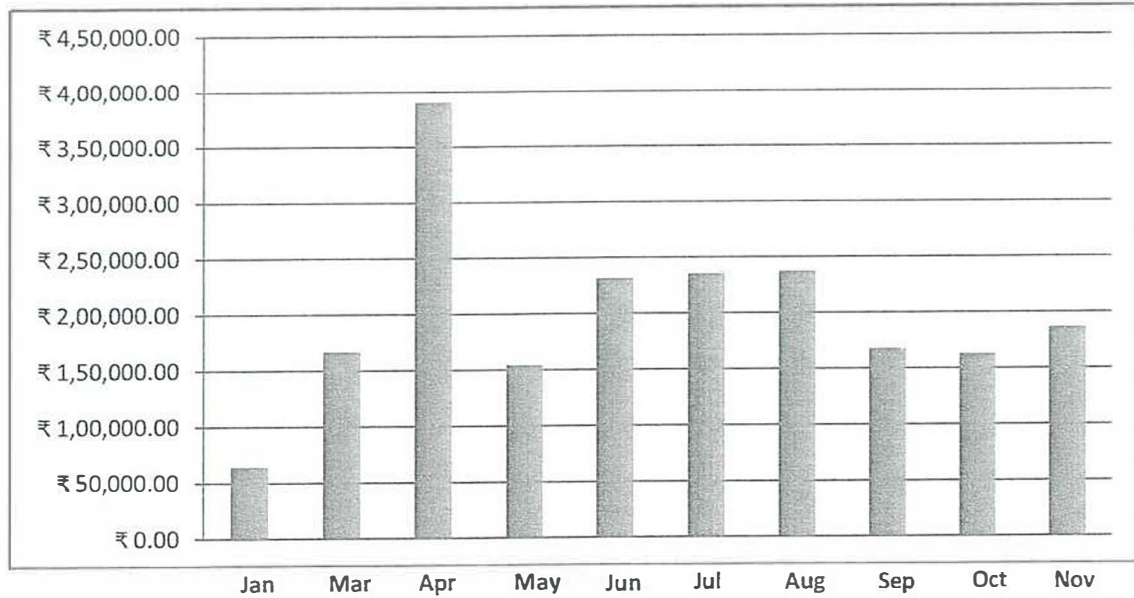


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Net Amount Payable



MONTHS



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CHAPTER – IV LIGHTING SYSTEM

The inventory of lighting was collected and following is the summary:

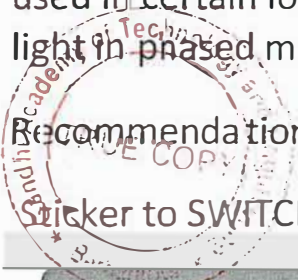
Type-LED/CFL/Conventional Bulb/Tube Light	Location	Rating	Quantity	Number of Hours being turned on
Tube Light	Block - A	40W	150	8
Tube Light	Block - B	40W	120	8
Tube Light	Block - C	40W	180	8
Tube Light	Hostel	40W	196	8
Tube Light	Canteen	40W	10	8
LED BULB	Block - A	10W	70	8
LED BULB	Block - B	10W	72	8
LED BULB	Block - C	10W	55	8
LED BULB	Hostel	10W	166	8
LED BULB	Canteen	10W	44	8

Observation:

Most of the lighting used are LED. Conventional fluorescent Tube lights are being used in certain location. It was informed that college has planned to replace Tube light in phased manner with replacement of faulty lights with LED tube lights.

Recommendation:

Sticker to SWITCH OFF LIGHT and SAVE ENERGY to be displayed.



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CHAPTER – V MOTORS AND PUMPS

Pumps are used for pumping of water. The details of the pumps and motors are given below:

PUMPS:

Name of Pump and Make	Name Plate Details					
	Running Hours	Any VFD	Rated Capacity in HP	Flow Rate (LPM)	Head (m)	RPM
CRI	12	No	3	100	-	2500
CRI	12	No	2	100	-	2500

Motors:

Name of Motor and Make	Name Plate Details					
	Running Hours	Any VFD	Rated Capacity in KW	Efficiency	Amper e	RPM
Submersible water pumpmotor	12	No	3	80.0	3.8	2700
Submersible water pumpmotor	12	No	3	80.0	3.8	2700
Submersible water pumpmotor	12	No	3	80.0	3.8	2700
Submersible water pumpmotor	12	No	2	80.0	8.4	2500

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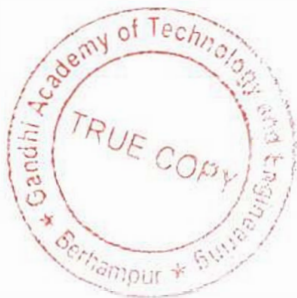


Observation:

All pumps and motors are functioning properly and well maintained.

Recommendation:

Proper maintenance and upkeep of pumps and motors to be done.



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CHAPTER – VI AIR CONDITIONING

Split AC's are used in facility for air conditioning. Temperature maintained is 22°C. Following is the summary of air conditioners installed:

Type Windows/Split/Package and Location	Capacity in Ton	Whether any star rating available	Set temperature	Running Hours	Whether AC performance is satisfactory Yes/No
Split AC - BLOCK - A(10 nos)	1.5	5	22	8	Yes
Split AC - BLOCK - B(12 nos)	1.5	5	22	8	Yes
Split AC - BLOCK - C(5 nos)	1.5	5	22	8	Yes

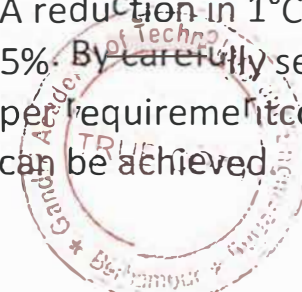
Observation:

All air conditioners are found to be functioning properly and well maintained.

Recommendation:

All doors to be kept closed while using the air conditioner and regular annual services of AC should be carried out.

The set temperature of the air conditioners should be maintained at 24°C. A reduction in 1°C set point temperature, the energy cost comes down by 5%. By carefully selecting the seasonal temperature in different areas as per requirement, considerable saving on account of power consumption can be achieved.



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CONCLUSION

The energy audit conducted at M/S Gandhi Academy of Technology and Engineering, Berhampur has revealed that campus is doing good work in having sustainable college. In house solar power plant is installed. The college is sustainable in energy consumption. To further reduce energy consumption, college should implement the recommendation made in report.




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Certificate

This is to certify that Energy Audit at **Gandhi Academy of Technology and Engineering, At: Golanthara, Berhampur-761008** was Conducted on 6th June, 2022.

It is found that sustainable measures are taken by the college for reduction in energy consumption.

VALID TILL
5th June, 2023


Audit Officer

Certificate Number
GA/2022/099
6th June, 2022

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**ENVIRONMENT AUDIT REPORT
FOR
GANDHI ACADEMY OF TECHNOLOGY AND ENGINEERING
GOLANTHARA, BERHAMPUR, ODISHA, 761008.**



Carried For Academic Session 2022 – 2023

Carried Out By



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CONTENTS

S. No.	Content	Page Number
1	Acknowledgement	3
2	Concept	4
3	Introduction	5
4	Overview of Institute	6
5	Audit Objectives	7
6	Executive Summary	8
7	Area of Improvements	9
8	Environmental Audit - Questionnaire	10
9	Waste Minimization and Recycling	12
10	Greening	13
11	Energy Conservation	14
12	Water Conservation	15
13	Clean Air	16
14	Animal Welfare	17
15	Environmental Legislative	17
16	General Practices	18
17	Recommendation	20
18	Conclusion	21
19	Reference	22




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ACKNOWLEDGEMENT

Elion Technologies and Consulting Pvt Ltd thanks the management of Gandhi Academy of Technology and Engineering ,Berhampur for assigning this important work of Environmental Audit. We appreciate the co-operation to our team for completion of study.

For giving us necessary inputs to carry out this very vital exercise of Environment Audit. We are also thankful to other staff members who were actively involved while collecting the data and conducting field measurements.




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CONCEPT

The term 'Environmental audit' means differently to different people. Terms like 'assessment', 'survey' and 'review' are also used to describe similar activities. Furthermore, some organizations believe that an 'environmental audit' addresses only environmental matters, whereas others use the term to mean an audit of health, safety and environment-related matters. Although there is no universal definition of Environmental Audit, many leading companies/institutions follow the basic philosophy and approach summarized by the broad definition adopted by the International Chambers of Commerce (ICC) in its publication of Environmental Auditing (1989).

The ICC defines Environmental Auditing as:

"A management tool comprising a systematic, documented, periodic and objective evaluation of how well environmental organization, management and equipment are performing with the aim of safeguarding the environment and natural resources in its operations/projects."

The European Commission, in its proposed regulation on environmental auditing, has also adopted the ICC definition of Environmental Audit.



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INTRODUCTION

A clean and healthy environment aids effective learning and provides a conducive learning environment. There are various efforts around the world to address environmental education issues.

Environmental Management Systems (EMS) is very popular in the industrial sector, but the general belief is that EMS is something pertaining to industries only. Other parts of the world have started adopting compatible environmental management systems either voluntarily or for promoting standards by external certification. International environmental standards do not suit the existing Indian educational system.

A very simple indigenized system has been devised to monitor the environmental performance of educational institutions. It comes with a series of questions to be answered on a regular basis. Environmental conditions may be monitored from angles that are relevant to Indian requirements, without stress on legal issues or compliance. This innovative scheme is user-friendly and totally voluntary. The environmental monitoring system helps the institution to set environmental examples for the community and to educate young learners. It can be adapted to urban and / or rural situations.




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OVERVIEW OF INSTITUTE

Gandhi Academy of Technology and Engineering is situated in Berhampur in Odisha state of India. The college is accredited by AICTE. Gandhi Academy of Technology and Engineering offers 14 programs in 3 faculties like Engineering, Management and Computer Application. Besides a robust teaching pedagogy, Gandhi Academy of Technology and Engineering is also a leader in research and innovation.

Focus is given to activities beyond academics at Gandhi Academy of Technology and Engineering, which is evident from its infrastructure, extracurricular activities and collaboration with institutions at national level. The placement at Gandhi Academy of Technology and Engineering is varied, with recruitment options both in public and private sectors.



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AUDIT OBJECTIVES

The broad aims/ benefits of the eco-auditing system would be –

- Environmental education through systematic environmental management approach
- Improving environmental standards
- Benchmarking for environmental protection initiatives
- Reduction in resource use
- Financial savings through a reduction in resource use
- Curriculum enrichment through practical experience
- Development of ownership, personal and social responsibility for the university campus and its environment
- Enhancement of university profile
- Developing an environmental ethic and value systems in young people




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EXECUTIVE SUMMARY

An environmental audit is a snapshot in time, in which one assesses campus performance in complying with applicable environmental laws and regulations. Though a helpful benchmark, the audit almost immediately becomes outdated unless there is some mechanism in place to continue the effort of monitoring environmental compliance.

This environmental audit of institute is for NACC affiliation; QS Program and doing their bid towards environmental protection and environmental awareness at local and global front. Audit criterion is environmental cognizance, waste minimization and management, biodiversity conservation, water conservation, energy conservation and environmental legislative compliance by the campus. A questionnaire is used during audit. This audit report contains observations and recommendations for improvement of environmental consciousness.



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AREA OF IMPROVEMENTS

- Environment Policy shall be adopted by the institute.
- Electrical/Electronic Equipments when not in use should be switched off and should not be on standby modes.
- Practice of reuse of old papers shall be implemented in the institute.
- Use of recycle paper should be encouraged in the campus.
- Green and Environment Audits shall be carried out on regular basis.



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ENVIRONMENTAL AUDIT - QUESTIONARE

The areas of eco/environmental/green auditing to be followed/practiced by participating institutions:

- I. Waste Minimization and Recycling
- II. Greening
- III. Energy Conservation
- IV. Water Conservation
- V. Clean Air
- VI. Animal Welfare
- VII. Environmental Legislative
- VIII. General Practices

Dose any Environmental Audit conducted earlier?

No, Environment Audit is not conducted earlier.

What is the total permanent population of the Institute?

	Male	Female	Total
Students	542	421	963
Teachers	52	20	72
Non-Teaching Staff	36	14	50
Sub Total	630	455	1085
Approximate Number of Visitors (Per day)			8
What is the total number of working days of your campus in a year?			260

Where is the campus located?

The campus is Located in outskirts of Berhampur city, Odisha.



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Which of the following are available in your institute?

1 Garden area	Yes
2 Playground	Yes
3 Kitchen	Yes
4 Toilets	Yes
5 Garbage Or Waste Store Yard	Yes
6 Laboratory	Yes
7 Canteen	Yes
8 Hostel Facility(numbers)	Yes
9 Guest House	Yes

Which of the following are found near your institute?

1 Municipal dump yard	No
2 Garbage heap	Yes
3 Public convenience	Yes
4 Sewer line	NO
5 Stagnant water	Yes
6 Open drainage	NO
7 Industry – (Mention the type)	NO
8 Bus / Railway station	Yes
9 Market / Shopping complex / Public halls	NO



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I WASTE MINIMIZATION AND RECYCLING

1.	Does your institute generate any waste? If so, what are they?	Yes Kitchen Waste
2.	What is the approximate amount of waste generated per day? (in Kilograms/month) (approx.)	1500Kg/month
3.	How is the waste generated in the institute managed? By 1 Composting 2 Recycling 3 Reusing 4 Others(specify)	Composting & Recycling
4.	Do you use recycled paper in institute?	Yes
5.	Do you use reused paper in institute?	Yes
6.	How would you spread the message of recycling to others in the community? Have you taken any initiatives? If yes, Please specify.	Yes
7.	Can you achieve zero garbage in your institute? If yes, how?	No



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II GREENING THE CAMPUS

1.	Is there a garden in your institute?	Yes
2.	Do students spend time in the garden?	Yes
3.	Total number of Plants in Campus	1500
4.	Suggest plants for your campus. (Trees, vegetables, herbs, etc.)	Normal Trees Herbal Trees Fruits Trees
5.	Is the institute campus have any Horticulture Department	NO
	Number of Staff working in Horticulture Department	-
6.	Number of Tree Plantation Drives organized by Institute per annum. (If Any)	Two
7.	Number of Trees Planted in Last FY.	500
	Survival Rate	70%
8.	Plant Distribution Program for Students and Community	Yes
9.	Plant Ownership Program	Yes



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III ENERGY CONSERVATION

1.	List ten ways that you use energy in your institute. (Electricity, LPG, firewood, others). Using this list, try to think of ways that you could use less energy every day.	1. Electricity. 2. LPG. 3. Solar.
2.	Are there any energy saving methods employed in your institute? If yes, please specify. If no, suggest some	Yes LED bulbs, Solar street lights, Solar panels.
3.	How many CFL/LED bulbs has your institute Installed?	512
4.	Are any alternative energy sources employed / installed in your institute? (photovoltaic cells for solar energy, windmill, energy efficient stoves, etc.,) Specify.	Photovoltaic cells for solar energy motion sensing LED bulbs.
5.	Do you run "switch off" drills at institute?	Yes
6.	Are your computers and other equipment's put on power-saving mode?	Yes
7.	Does your machinery (TV, AC, Computer, weighing balance, printers, etc.) run on standby modes most of the time? If yes, how many hours?	Yes, 2 hours.



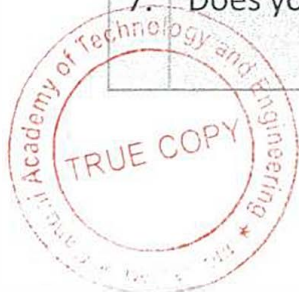
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IV WATER CONSERVATION

1.	List four uses of water in your institute	1. AQUAGUARD – 8 NOS. 2. WATER COOLER – 4 NOS.
		3. Toilets 4. Gardening
2.	How does your institute store water? Are there any water saving techniques followed in your institute?	1. Underground Tank 2. Overhead Tank 3. Rain water harvesting
3.	If there is water wastage, specify why and How can the wastage be prevented/stopped?	Apparently there is no water wastage.
4.	Locate the point of entry of water and point of exit of waste water in your institute. Entry- Exit-	Entry - Bore well to Overhead Tank Exit - Bath rooms & Toilets
5.	Write down four ways that could reduce the amount of water used in your institute	1. To use required amount of water 2. To stop overflow 3. To stop wastage of water 4. Rain water harvesting
6.	Record water use from the institute water meter for six months (record at the same time of each day). At the end of the period, compile a table to show how many litres of water have been used.	5000 litres per day.
7.	Does your institute harvest rain water?	Yes



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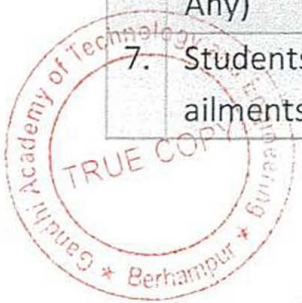




8.	Is there any water recycling System.	No
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V CLEAN AIR

1.	Are the Rooms in Campus are Well Ventilated?	Yes				
2.	Window Floor ratio of the Rooms	4:1				
3.	What is the ownership of the vehicles used by your institute? (Please Tick ✓ only one)		Yes			
			Operator-owned vehicles			
		✓	Institute-owned vehicles			
			A combination of campus-owned and operator-owned vehicles			
4.	Provide details of institute-owned motorized vehicles?	Buses	Cars	Vans	Other	Total
	No. of vehicles	10	4	4	10	37
	No. of vehicles more than five years old	5	-	1	-	-
	No. of Air conditioned vehicles	-	3	-	2	-
	PUC done	Yes	Yes	Yes	Yes	
5.	Specify the type of fuel used by your institute's vehicles:	Buses	Cars	Vans	Other	
	Diesel	10	4	2	3	
	Petrol	-	-	2	7	
	CNG	-	-	-	-	
	LPG	-	-	-	-	
	Electric	-	-	-	-	
6.	Air Quality Monitoring Program (If Any)	No				
7.	Students suffer from respiratory ailments? (If	No				



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	Any)	
8.	Details of Genset	2 Gensets

VI ANIMAL WELFARE

1.	List the animals (wild and domestic) found on the campus (dogs, cats, squirrels, birds, insects, etc.)	Squirrel, birds
2.	How many dogs in your area have undergone Animal Birth Control - Anti Rabies (ABC - AR)?	NA
3.	Does your institute have a Biodiversity Programme or a KARUNA CLUB?	NA

VII ENVIRONMENTAL LEGISLATIVE COMPLIANCE

1.	Are you aware of any environmental Laws pertaining to different aspects of environmental management?	Yes
2.	Does your institute have any rules to protect the environment? List possible rules you could include.	Yes (Green campus policy)
3.	Does Environmental Ambient Air Quality Monitoring conducted by the Institute?	No
4.	Does Environmental Water and Wastewater Quality monitoring conducted by the Institute?	No
5.	Does stack monitoring of DG sets conducted by the Institute?	Yes
	Is any warning notice, letter issued by state government bodies?	No



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7.	Dose any Hazardous waste generated by the Institute? If yes explain its category and disposal method	No
8.	Dose any Bio medical waste generated by the Institute? If yes explain its category and disposal method	No

VIII GENERAL PRACTICES

1.	Are you aware of any environmental Laws pertaining to different aspects of Environmental management?	Yes
2.	Does your institute have any rules to protect the environment? List possible rules you could Include.	Yes(Green campus policy)
3.	Is there any housekeeping schedule in your campus?	Yes
4.	Are students and faculties aware of environmental cleanliness ways? If Yes Explain	Yes
5.	Does Important Days Like World Environment Day, Earth Day, and Ozone Day etc. eminent in Campus?	Yes.
6.	Does Institute participated in National and Local Environmental Protection Movement?	Yes
7.	Does Institute has any Recognition/certification for environment friendliness?	No
8.	Dose Institute using renewable energy?	Yes



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9.	Dose Institution conducts a Green/Environmental audit of its campus?	No
10.	Has the institution been audited / accredited by any other agency such as NABL, NABET, TQPM, NAAC etc.?	No



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RECOMMENDATIONS

- Formation of Environment Policy and communicated to all faculties and other staff.
- Electrical/Electronic Equipments when not in use should be switched off and should not be on standby modes.
- Practice of reuse of old papers shall be implemented in the institute.
- Use of recycle paper should be encouraged in the campus.
- Green and Environment Audits shall be carried out on regular basis.
- Increase in Environmental promotional activities for spreading awareness t campus.
- Water Meter should be installed at institute for monitoring of water consumption per capita
- Environment/Green committee formation for regulating eco-friendly initiatives at campus premises and periphery.



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CONCLUSION

This audit involved extensive consultation with all the campus team, interactions with key personnel on wide range of issues related to Environmental aspects. Overall, majority of university campus is for landscaping and greenery. The audit has identified several observations for making the campus premise more environmentally friendly. The recommendations are also mentioned with observations for college team to initiate actions.

The audit team opines that the overall site is maintained well from environmental perspective. There are no major observations but few things are important which if implemented would further strengthen the environment setting in the college.




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REFERENCE

- The Environment [Protection] Act – 1986 (Amended 1991) & Rules-1986 (Amended 2010)
- The Petroleum Act: 1934 – The Petroleum Rules: 2002
- The Central Motor Vehicle Act: 1988 (Amended 2011) and The Central Motor Vehicle
- Rules:1989 (Amended in 2005)
- Energy Conservation Act 2010.
- The Water [Prevention & Control of Pollution] Act – 1974 (Amended 1988) & the Water (Prevention & Control of Pollution) Rules – 1975
- The Water [Prevention & Control of Pollution] Cess Act-1977 (Amended 2003) and Rules- 1978
- The Air [Prevention & Control of Pollution] Act – 1981 (Amended 1987) The Air (Prevention & Control of Pollution) Rules – 1982
- The Gas Cylinders Rules – 2016 (Replaces the Gas Cylinder Rules – 1981
- E-waste management rules 2016
- Electrical Act 2003 (Amended 2001) / Rules 1956 (Amended 2006)
- The Hazardous Waste (Management and Handling and Trans-boundary Movement) Rules, 2008 (Amended 2016)
- The Noise Pollution Regulation & Control rules, 2000 (Amended 2010)
- The Batteries (Management and Handling) rules, 2001 (Amended 2010)
- Relevant Indian Standard Code practices



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Certificate

This is to certify that Environment Audit at **Gandhi Academy of Technology and Engineering, At: Golanthara, Berhampur-761008** was Conducted on 6th June, 2022.


Campus has submitted necessary data and credentials for scrutiny it is found that Gandhi Academy of Technology and Engineering is taking measure for sustainable environment like Tree plantation, Rain water harvesting etc. are being taken by the college.

VALID TILL
5th June, 2023


Audit Officer

Certificate Number
EA/2022/099
6th June, 2022




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**GREEN AUDIT REPORT
FOR
Gandhi Academy of Technology and Engineering
Golanthara, Jhinkipadar, Odisha, 761008**



**Carried For
Academic Session 2022 – 2023**

Carried Out By



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CONTENTS

Sr. No.	Topic	Page No.
1	Introduction	3
2	Environmental setting	4
3	Green Audit	6
3.1	Good Daylight Design and Ventilation	6
3.2	Water Efficiency	7
3.3	Wastewater Management	9
3.4	Indoor Air Quality	9
3.5	Energy Efficiency	10
3.6	Onsite Energy Generation	11
3.7	Temperature and Acoustic Control	12
3.8	Paper Waste Management	12
3.9	E-waste Management	12
3.10	Solid Waste Management	12
3.11	Universal Access and Efficient Operation & Maintenance of Building	13
3.12	Green Belt/ Landscaping	13
3.13	Green Initiatives taken up by Institute	13
4	Recommendations / Suggestions	14
4.1	Improving energy consumption	14
4.2	Water conservation	15
4.3	Paper and other waste reduction	15
4.4	Other	16
	Annexure 1: Indoor Gardening Details	17



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Technology and Engineering, Berhampur

**1.****INTRODUCTION**

Gandhi Academy of Technology and Engineering is situated in Golanthara in Odisha state of India. The college is accredited by AICTE, New Delhi & Affiliated to BPUT, Rourkela, Odisha. Gandhi Academy of Technology And Engineering offers 17 courses across 1 streams namely Engineering. Popular degrees offered at Gandhi Academy of Technology And Engineering include B.Tech, Diploma, MCA, MBA. Besides a robust teaching pedagogy, Gandhi Academy of Technology And Engineering is also a leader in research and innovation.

The Institute works with a mission to provide quality education of international standards for producing technocrats and future leaders in a disciplined and conducive environment as an integral part of our social commitment to promote education globally.

List of courses offered by the college

- Diploma
- B.Tech
- MCA
- MBA

Total Area: 10.199 Acres

Green Area: 4030 (Sqm)

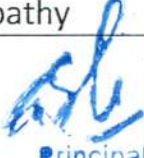
List of the Facility Building

Building Name	Areas	Number of Floors
Block- A	1000 (Sqm)	3
Block- B	900 (Sqm)	3
Block- C	830 (Sqm)	3
Block- D	1050 (Sqm)	3
Block- E	1100(Sqm)	5
Block- F	989(Sqm)	3

List of personal interacted during audit

Name	Designation
Prof. (Dr.) G.S. Mohapatro	Principal
Asst. Prof. M.M. Patnaik	H.O.D, Mech. Engg.
Asst. Prof. T.K. Satapathy	H.O.D, Elect. Engg.



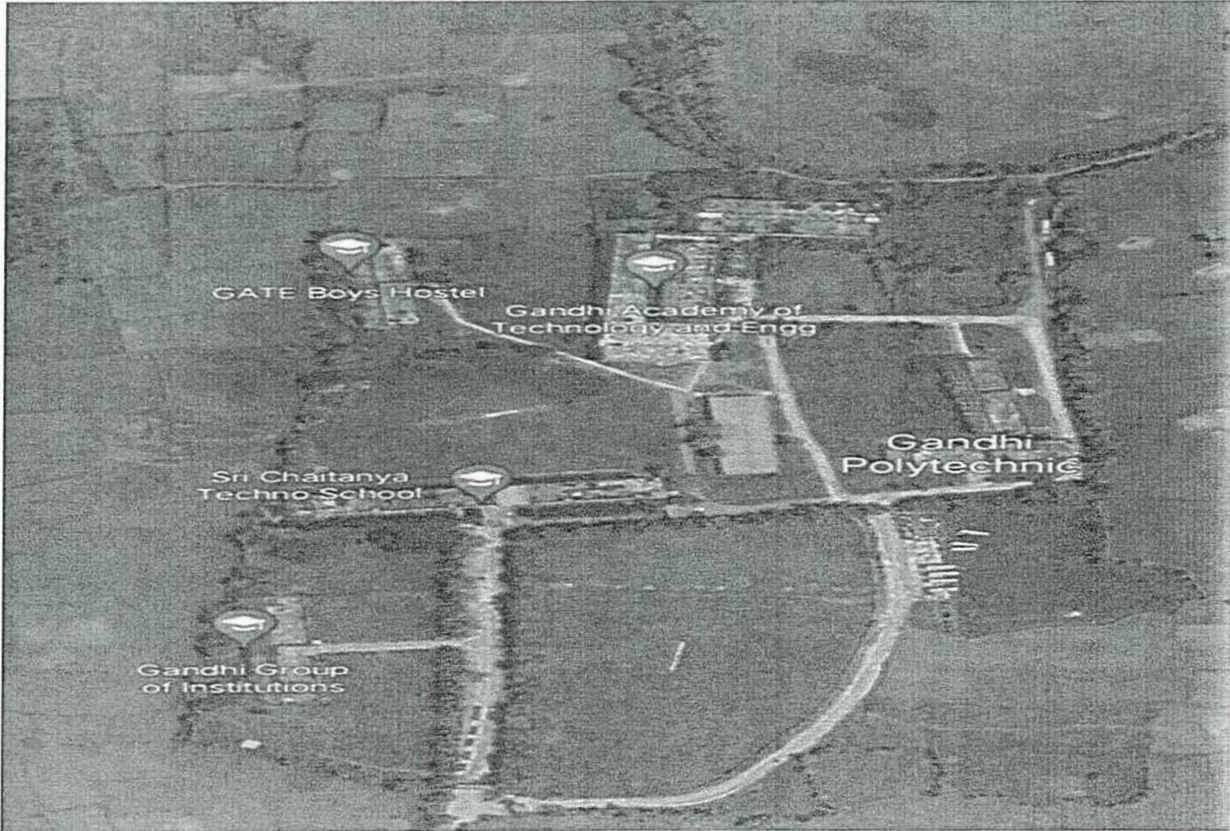

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2.

ENVIRONMENTAL SETTING

The land use around the campus mainly comprises of residential and commercial area.



Gandhi Academy of Technology and Engineering



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Location of Gandhi Academy of Technology and Engineering



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3.

GREEN AUDIT

For Green Audit following 13 major areas (including their subsections) were covered and compliance/ initiatives under these areas were verified/ validated.

- a) Good Daylight Design and Ventilation
- b) Water Efficiency
- c) Wastewater Management
- d) Indoor Air Quality
- e) Energy Efficiency
- f) On-site Energy Generation
- g) Temperature and Acoustic Control
- h) Paper Waste Management
- i) E-Waste Management
- j) Canteen and Solid Waste Management
- k) Universal Access and Efficient Operation and Maintenance of Building
- l) Green Belt
- m) Green Programs (Green initiatives)

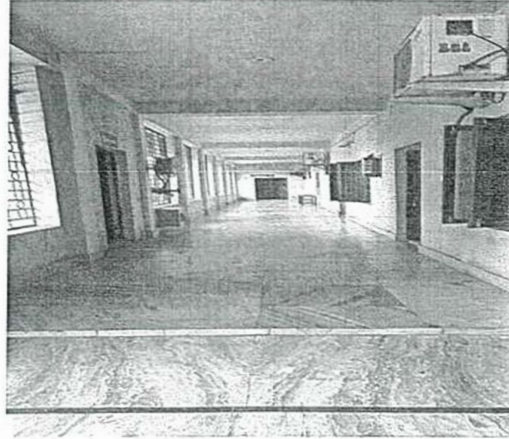
Good Daylight Design and Ventilation

- a) Corridors are wide and have good ceiling height. All corridors receive good daylight.
- b) Curtains are provided on some of the windows to avoid glare.
- c) Laboratories are provided with exhaust fans to disperse heat, fumes and odours.
- d) Stair cases receive daylight through windows provided at various levels.
- e) Classrooms, Labs and Library have large windows. Windows are kept open to adequate daylight.
- f) Classroom walls, corridors and labs are white-washed, this enhances the daylight received.

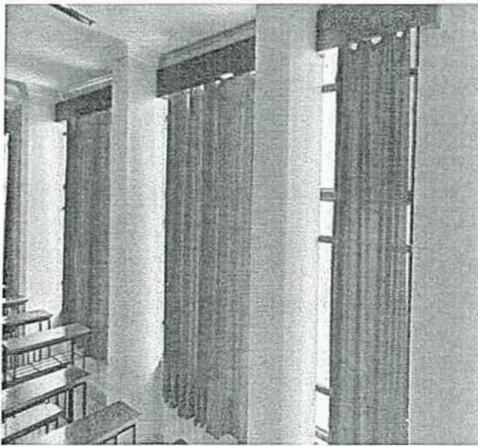


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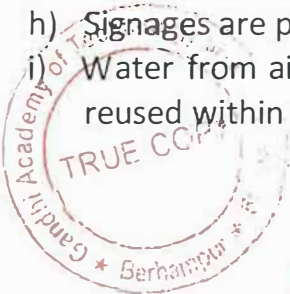
Corridors



Daylight in labs and classrooms

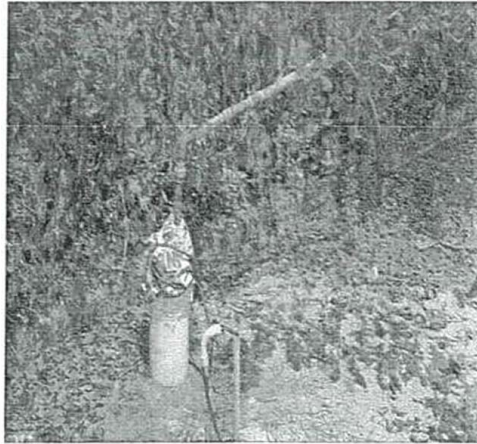
Water Efficiency:

- a) Bore well is used for water supply in the campus.
- b) Overhead tanks are used for water storage inside the campus.
- c) For drinking water coolers are available at prominent locations in the campus.
- d) Rain water harvesting system is available in the college campus.
- e) There are water-saving faucets in the washrooms. Installing such faucets can save water and help minimize the institute's water footprint.
- f) Normally mops are used for floor cleaning and hose is used for cleaning once a week
- g) Dual flushing system is provided in the washrooms.
- h) Signages are provided in washrooms emphasizing water conservation.
- i) Water from air conditioning unit and reject water from water purifiers is reused within the institute

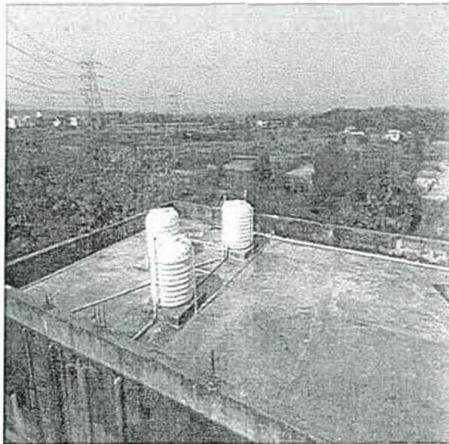



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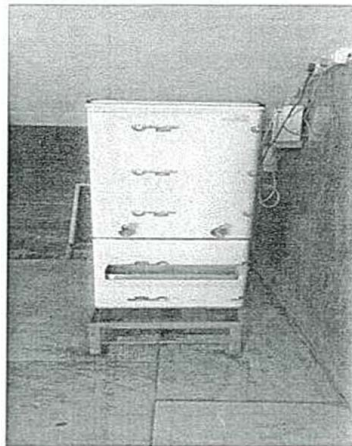
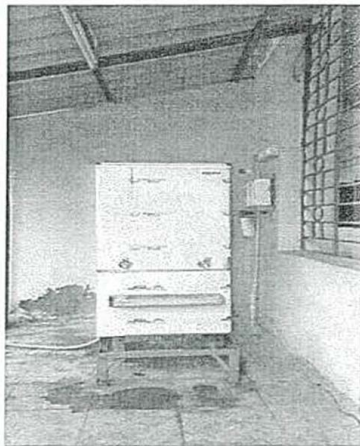




Borewell



Overhead Tanks



Water coolers for drinking




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Rain water harvesting pit

Wastewater Management:

- a) Sewage Treatment Plant is available in the campus.
- b) Water from STP is used for gardening.

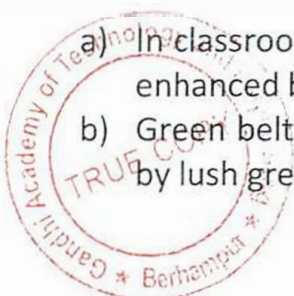
Indoor Air Quality:

Indoor Air Quality (IAQ) refers to the air quality within and around buildings and structures, as it relates to the health and comfort of building occupants. Some common indoor pollutants are listed as below:

- Molds and other allergens – This may arise from water seeping into the building envelope or skin, plumbing leaks, condensation due to improper ventilation, or from ground moisture penetrating a building part.
- Volatile organic compounds (VOCs) – VOCs are emitted by paints and lacquers, paint strippers, pesticides, office equipment such as copiers and printers, correction fluids and carbonless copy paper, graphics and craft materials including glues and adhesives, permanent markers, and photographic solutions etc.
- Carbon monoxide – Sources of carbon monoxide are incomplete combustion of fossil fuels.
- Carbon dioxide – Due to human respiration
- Particulate matter – Due to construction and maintenance activities

Major observations under indoor air quality are as below:

- a) In classrooms the mode of ventilation is natural (through windows) and is enhanced by fans.
- b) Green belts have been set up in campus area and the area is surrounded by lush green environment.



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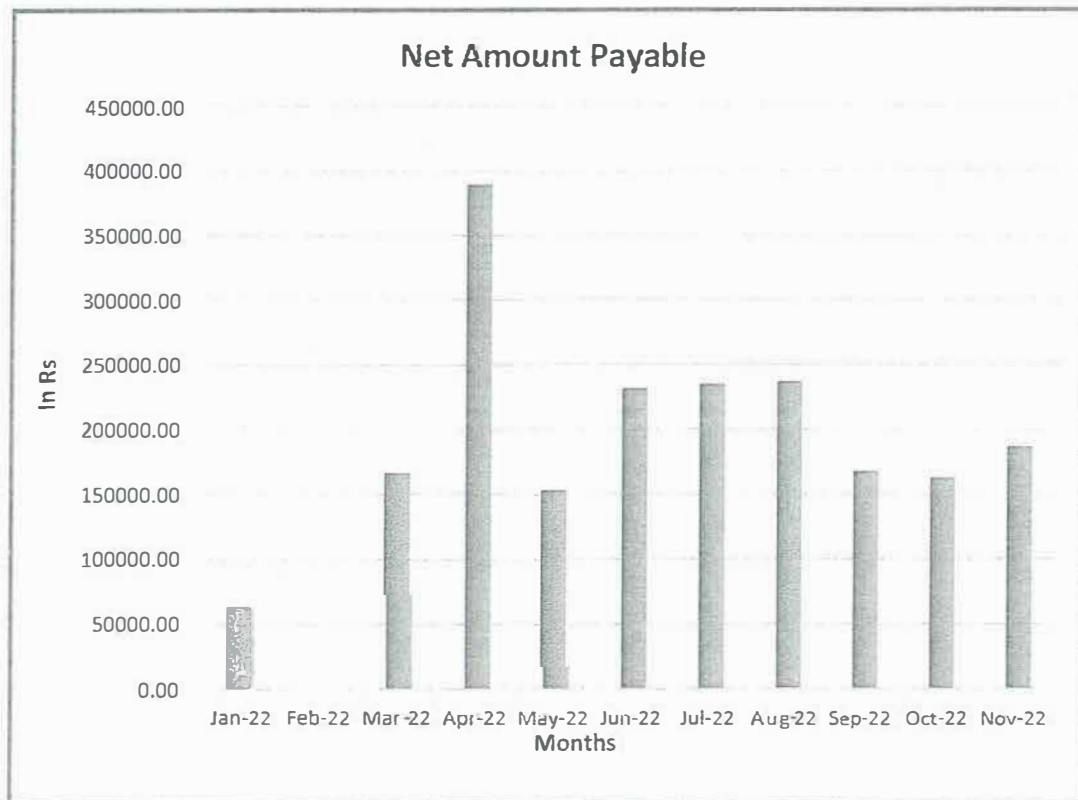


- c) Heating Ventilation and Air Conditioning (HVAC) system does not exist.
- d) Indoor plants are seen in the College. Indoor plants can be plotted not only for the aesthetic appearance but also for health benefits. Refer **Annexure 1** for details.
- e) Exhaust fans are provided in labs and washroom.
- f) IAQ awareness signage was missing in college. Information on sources, impacts and mitigation of indoor air pollution to be displayed within college for increasing awareness about indoor air pollution.
- g) Indoor Air Quality tests have been carried out.

Energy Efficiency:

Electricity:

Power is supplied by TP Central Odisha Distribution Limited. The major electricity consuming equipment installed in the campus are Motors, air conditioners, Desktop, Printer, Fan, Tube light, LED Bulb and Street Lights.



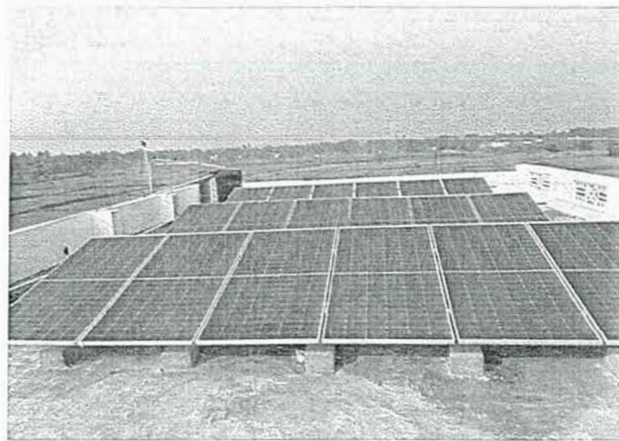
It was observed that:

- e) Solar power plant of capacity 1KW is installed in the campus.



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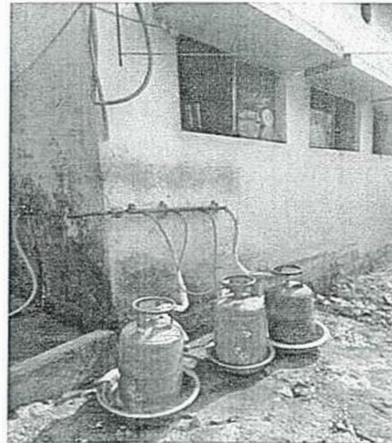




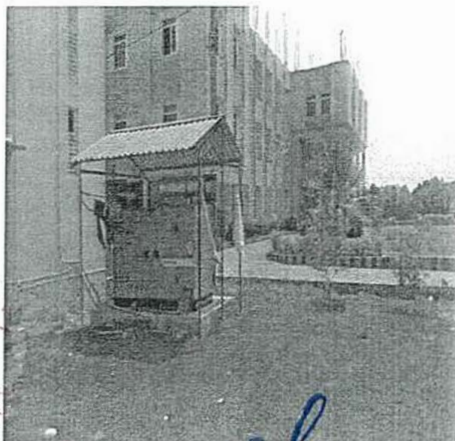
Solar Panel

On Site Energy Generation (usage of LPG/ Natural Gas):

- a) LPG is used in canteen and hotel mess for cooking.
- b) Back Up diesel generators are available.



LPG for cooking



DG Sets



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Temperature and Acoustic Control

- a) White washed rooms & corridors and white/ off-white flooring improve the lighting conditions.
- b) The entire campus has green area.
- c) There is no noise pollution in the campus.

Paper Waste Management:

Being academic institution, waste paper is the main solid waste generated in the premises. The College has taken steps to minimize and avoid paper usage. It was observed that:

- a) Prints and photocopies are taken on both sides of the pages to avoid excess paper usage. Rather than photocopy, digitalization (scanning) is practiced.
- b) Old papers in the campus are disposed off through municipality.
- c) Paper notices are displayed on the notice boards
- d) Internal notices and communications are through E-mail/SMS and paper both.

E-Waste Management:


- a) There is a provision for disposal of E-waste currently in the college campus.

Solid Waste Management:

It was observed that:

- a) Wet waste and dry waste segregation is practiced in the premises. Separate bins are provided for wet biodegradable and dry recyclable waste.
- b) Waste is collected and disposed through Municipality Waste disposal vehicle.



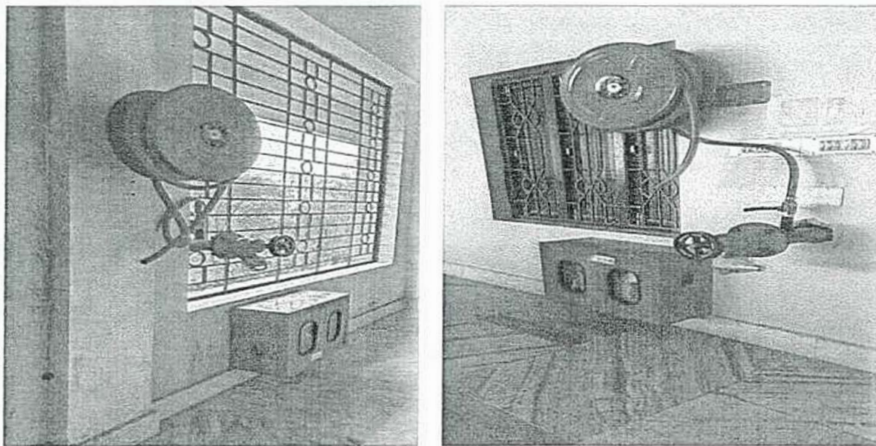

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Universal Access and Efficient Operation and Maintenance of Building:

It was observed that:

- a) College is easily accessible. Staircase is provided for staff and students.
- b) Ramps are provided for specially abled.
- c) Fire extinguishers and hydrants are provided in the campus.
- d) There are signages for emergency fire exit present. This is of crucial importance during emergency.
- e) Since the access and staircases are wide and uncluttered, it is possible to have a safe evacuation during emergency.
- f) Fire Safety Training is given to the staff regularly.



Fire Hydrants


Green belt/ Landscaping:

- a) Large trees are planted in the premises. Plantation also helps maintaining lower temperatures of the area. .
- b) Potted plants are also kept around the campus.
- c) Indoor plants are also kept along the corridors and entrance of the building.

Green Initiatives:

College is regularly celebrating Environment Day, Yoga Day, Festivals and other Cultural programs.




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4.

RECOMMENDATIONS/ SUGGESTIONS

For Improving Energy Consumption:

- a) Every classroom and lab with central switch board can have a diagram linking location of a tube light, fan etc. with corresponding switch. This will ensure that correct fitting is switched on/ off and can save time & unnecessary operation.
- b) Installation of automatic lights with sensors can be considered.
- c) Standard Operation Procedures (SOPs) should be prepared and followed for green purchasing. Equipment with star rating, using eco-friendly materials; with safe disposal policy to be preferred. Policy of returning equipment at the end of life span to the supplier to be preferred.
- d) Conduct energy audit every two or three years and determine the lux levels within College. Energy audit can help in reduction in number of light fittings/ energy usage in the College.
- e) For purchasing new electronic appliances, star rating provided by Bureau of Energy Efficiency (BEE) should be considered. The equipment which has maximum star ratings could be purchased, which will consume less energy, ensure environmental sustainability and also operate at low cost.
- f) Usage of light reflectors is recommended as the reflectors can spread light to relatively large areas.
- g) Notices/ signages can be put up/ displayed near switches and on notice boards, informing students and staff to switch off all electricals when not in use.
- h) If possible, computers should be switched off from main power connections.
- i) Control sensors can help to reduce consumption by automatically dimming lights when people are not around, and keeping blinds open to use natural light & reduce energy consumption.
- j) Raise awareness:
 - Encourage students to help in monitoring energy consumption & implement corrective actions
 - Integrate energy education into classroom learning.




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Water Conservation:

- a) Provide information on water usage and savings to students/ staff through notices, screen savers in computer labs.
- b) Dry sweep or use a sponge broom when possible, instead of using a hose to clean floors, sidewalks, or other hard surfaces.
- c) Minimize/ reduce water usage by installing water saving faucets such as pressmatic taps, tap aerators, jet sprays etc.
- d) Grey water/ sewage recycling system can be installed for flushing toilets. This will reduce the fresh water footprint.
- e) Installation of waterless urinals can be considered to reduce water consumption.
- f) Water balance diagram can be prepared to quantify the water consumption by installing water meters at key points. Based on data gathered, appropriate measures can be taken to reduce the water consumption.

Paper and other Solid Waste Reduction:

- a) Inventories of all solid waste generated in the premises must be maintained.
- b) Enhance recycling. This can be done by creating a group where students can recycle books, personal clothes and other material to needy students. This can be an initiative under green program.
- c) Standard Operating Procedures (SOP) for Solid and E-waste management and for recycling of waste should be prepared & practiced. The SOP's may include collection, segregation and reuse of different types of wastes, if any (e.g. biodegradable waste for composting). This will help in safe disposal of waste to recycle agencies.
- d) The college can introduce online app, which can be useful for conducting internal exams, assignment/ reports submission. This system can also be used for displaying important notices, timetables.
- e) Paper usage shall be monitored to understand the impact of digitization in the facility.
- f) Training as well as awareness programs should be organized on segregation of biodegradable waste and recycling of waste. Efforts should be taken to inform students about recycling options and signs should be posted on appropriate bins indicating what could be dumped in each bin.



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Others:

- a) Environmental advisory committee could be formed. The discussions/ information sharing among different departments can generate lot of ideas and awareness on green issues.
- b) Since each student uses computer lab, the screen savers can be set up for creating environmental awareness. (Ergonomics, water conservation etc.). Short 30 second pop up can be displayed on computer screens when they are on standby mode. Or wallpapers informing students about environment conservation can be created.
- c) Maintain minutes of meetings of environmental committees; evaluate the effectiveness of various environmental programs conducted by the institutes. Set annual targets for Green Initiatives & monitor them closely. Create 'Green Champions'.
- d) Consider detailed energy audit (energy consumption, thermal emission, visual comfort) and water audit.
- e) Adopt environmentally responsible purchasing policy, and work towards creating and implementing a strategy to reduce environmental impact of its purchasing decision.




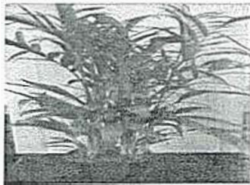

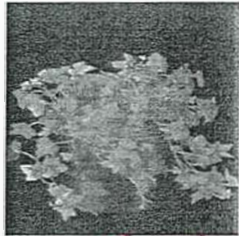
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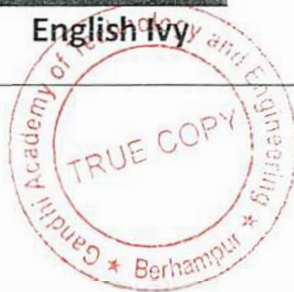


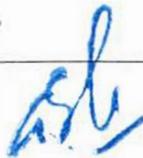
ANNEXURE 1

INDOOR GARDENING DETAILS

Indoor plants are commonly used for their aesthetics benefits but they also have vital role reducing airborne pollution. The right choice of plants can be an excellent way of improving indoor air quality and general health. Local landscape contractor can be contacted for supply and rotation of these plants.





Plants	VOC it removes	Indoor source of VOC's	Plant care
 Aloe Vera	Formaldehyde, Trichloroethylene and Benzene	Chemical based cleaners and paints	Easy to grow with enough sunlight
 Bamboo Plant	Formaldehyde, Trichloroethylene and Benzene	Paints, Plastics, Wood products etc.	Thrives under low light conditions as well as easy to maintain
 Chinese Evergreen	Benzene	Paints	Low maintenance plant that prefers low light conditions.
 English Ivy	Formaldehyde, Benzene, Air borne fecal matter particles	Wood, Paper products, Air borne fecal – matter particles from pests	Easy to maintain




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 Janet Craig	<p>Formaldehyde, Benzene and Trichloroethylene</p>	<p>Paints, Plastics, Wood products etc.</p>	<p>Medium to low light tolerant plant. Requires little water for growth.</p>
 Golden Pothos or Devils Ivy	<p>Formaldehyde, Cleanses air</p>	<p>Exhaust fumes, carpeting materials, panelling and furniture products made with particle board</p>	<p>Extremely easy to maintain under low to bright light conditions. Fast growing and grows well under Fluorescent light.</p>
 Mass Cane	<p>Formaldehyde, benzene and trichloroethylene</p>	<p>Paints, Plastics, Wood products etc.</p>	<p>Medium to low light tolerant plant. Requires little water for growth.</p>
 Snake plant	<p>Formaldehyde and trichloroethylene</p>	<p>cooking fuels, wood products, facial tissues, personal care products and waxed papers</p>	<p>Drought resistant and Tolerates a variety Of light conditions. Hard to damage or kill.</p>



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 <p>Peace Lily</p>	<p>Formaldehyde, benzene and trichloroethylene</p>	<p>Paints, Plastics, Wood products etc.</p>	<p>Relatively easy to maintain. Survives in low light conditions.</p>
 <p>Red-edged Dracaena</p>	<p>Formaldehyde and trichloroethylene</p>	<p>cooking fuels, wood products, facial tissues, personal care products and waxed papers</p>	<p>Drought resistant and Tolerates a variety of light conditions. Hard to damage or kill.</p>
 <p>Spider Plant</p>	<p>Formaldehyde, benzene, carbon monoxide and xylene</p>	<p>cooking fuels, wood products, Printing</p>	<p>Easy to maintain under medium to bright light condition.</p>
 <p>Parlor Palm</p>	<p>Purifies indoor air</p>	<p>-</p>	<p>Easy to maintain</p>



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Elion Technologies & Consulting Pvt. Ltd.

Certificate

This is to certify that Green Audit at **Gandhi Academy of Technology and Engineering, At: Golanthara, Berhampur-761008** was Conducted on 6th June, 2022.

College has submitted necessary data and credentials for scrutiny. The activities and measures carried out by the college have been verified. The efforts taken by the college towards environment and sustainability is highly appreciated and commendable.

VALID TILL
5th June, 2023

Audit Officer

Certificate Number
GA/2022/099
6th June, 2022



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