



**ATMIYA  
UNIVERSITY**

NAAC – Cycle – 1  
AISHE: U-0967

Criterion 6

GL & M

KI 6.5

M 6.5.2

6.5.2

*Institution has adopted the following for Quality assurance:*

- 1. Academic and Administrative Audit (AAA) and follow up action taken*
- 2. Conferences, Seminars, Workshops on quality conducted*
- 3. Collaborative quality initiatives with other institution(s)*
- 4. Orientation programme on quality issues for teachers and students*
- 5. Participation in NIRF and other recognized ranking like Shanghai Ranking, QS Ranking Times Ranking etc*
- 6. Any other quality audit recognized by state, national or international agencies*

**6. Any other quality audit recognized by state, national or international agencies**

# Environmental Audit Report

## Year 2022-23

**Registrar  
Atmiya University  
Rajkot**



**CLIENT: M/s. Atmiya University, Rajkot**  
**Yogidham Gurukul, Kalawad Road, Rajkot – 360 005**  
**(Audit Period: June 2022 to May 2023)**

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**1) Executive Summary**

Atmiya University established on April 13, 2018, under the Gujarat Private University Act 11, 2018, ATMIYA University emphasizes to train young minds in consonance with the doctrines of higher education and human values. The aim of this University is to spread eternal happiness and to create a happy society in letter and spirit. The motto “सुहृदंसर्वभूतानम्” (Suhardam Sarva Bhootanam) is an expression of willingness to attain harmony with each creation of the Almighty!

This environmental audit report provides a comprehensive overview of Atmiya University, located in the vibrant city of Rajkot, Gujarat. Atmiya University, a prominent educational institution in the region, serves as a dynamic center for higher education, offering a diverse range of undergraduate, postgraduate, and doctoral programs. Established with a vision ‘To nurture creative thinkers and leaders through transformative learning’ and committed to create a transformative learning experience by imbibing domain specific knowledge & wisdom and to focus on research based teaching learning with Industry relevant application knowledge. The university plays a crucial role in shaping the region’s educational landscape.

Situated in an urban setting, Atmiya University benefits from excellent connectivity and accessibility within the Rajkot area. The campus spans approximately 23.5 acre and features modern infrastructure that includes state-of-the-art classrooms, research labs, libraries, recreational facilities, and green spaces that enhance the learning environment.

The university accommodates a diverse and vibrant community from various parts of India and beyond. This thriving student body is supported by a faculty dedicated to promoting sustainable practices on campus, aligning with Atmiya University’s mission to minimize its environmental impact.

A satellite image of the campus highlights its strategic layout and showcases the integration of natural and built environments, offering a visual perspective on the university’s physical footprint within the urban landscape. This audit aims to evaluate Atmiya University's environmental practices and suggest actionable steps to enhance sustainability, further aligning with global standards in environmental responsibility and conservation.

**2) Acknowledgment**

On behalf of the Environmental Audit & Consultancy Cell at **V.V.P. Engineering College, Rajkot**, we would like to express our sincere gratitude to the management of **Atmiya University, Rajkot** for entrusting us with the important task of conducting their Environmental Audit/Green Audit.

We deeply appreciate the cooperation extended by your team throughout the assessment process. This cooperation was instrumental in the successful completion of the audit.

We would also like to extend our special thanks to **Dr. Ashish Kothari, Deputy Registrar, Atmiya University** for their unwavering support. Their dedication proved to be invaluable in ensuring the project's completion. Finally, we thank all other staff members who actively participated in data collection and field measurements. Their contributions were essential to the smooth execution of the audit.

We are also thankful to:

<b>SN</b>	<b>Name</b>	<b>Designation</b>
1	Er. Ravi S. Tank	Chemical Engineer
2	Dr. Hemantkumar G. Sonkusare	Civil Engineer
3	Dr. Anilkumar S. Patel	Chemist

In closing, we would like to express our gratitude to **Dr. Shiv Tripathi, Vice Chancellor, Atmiya University** for extending the opportunity to evaluate their esteemed campus's environmental performance.



**3) Disclaimer**

This Green Audit report has been prepared by the Environmental Audit Cell at **V.V.P. Engineering College, Rajkot for of Atmiya University, Rajkot**. It incorporates data submitted by University officials/representatives along with expert analysis by the EA&CC Audit team.

While all reasonable efforts have been made to ensure its accuracy, the report is based on information gathered in good faith. Conclusions are based on best estimates and do not constitute any express or implied warranty or undertaking. The EA&CC at Atmiya University, Rajkot assumes no responsibility for any direct or consequential loss arising from the use of the information, statements, or forecasts in this report.

The findings presented in this report are based entirely on data provided by Atmiya University and gathered by the audit team during their audit & monitoring visit. It assumes normal operating conditions within the institution throughout the audit period. The auditors are unable to comment on environmental audit parameters outside the scope of the on-site surveys. Consequently, the report's findings are strictly limited to the timeframe during which the audit team conducted its assessment.

The Environment Audit Cell at **V.V.P. Engineering College, Rajkot**, maintains strict confidentiality regarding all information pertaining to Atmiya University. No such information will be disclosed to any third party except public domain knowledge or when required by law or relevant accreditation bodies.

This certificate is valid solely for the current Environmental Audit/Green Audit report. It may be automatically revoked if any significant changes occur in the quantity or quality of waste generation at the aforementioned institute.

Environment Audit Cell,  
V.V.P. Engineering College



#### **4) Introduction**

Since the 2019-20 academic year, the National Assessment and Accreditation Council (NAAC) requires all Higher Educational Institutions (HEIs) to submit an annual Environmental Audit/Green Audit report. This requirement falls under Criterion 7 of the NAAC accreditation process, which evaluates institutions for their environmental sustainability practices. NAAC, an autonomous body in India, assigns accreditation grades (A, B, or C) based on various criteria, including environmental stewardship.

Furthermore, conducting Environmental Audit/Green Audits aligns with the Corporate Social Responsibility (CSR) initiatives of HEIs. By implementing measures to reduce their carbon footprint, institutions contribute positively to mitigating global warming.

In response to the NAAC mandate, the University management opted for an external Environmental Audit/Green Audit conducted by a qualified professional auditor.

Environmental Audit/Green Audit entails a comprehensive environmental assessment, examining both on-campus and off-campus practices that directly or indirectly impact the environment. In essence, it is a systematic process of identifying, quantifying, recording, reporting, and analysing environmental aspects within the institute setting.

Environmental Audit/Green Audits originated as a tool to evaluate institutional activities that might pose risks to human health and the environment. It provides valuable insights for improvement, guiding institutions towards environmentally responsible practices and infrastructure.

The specific areas covered by this audit include Green Campus initiatives, Waste Management, Water Management, Air Pollution Control, Energy Management, and Carbon Footprint reduction strategies employed by the University.

The following sections delve deeper into the concept, structure, objectives, methodology, analytical tools, and overall goals of this Green Audit.

Educational institutions are increasingly prioritizing environmental concerns. As a result, innovative concepts are emerging to make campuses more sustainable and eco-friendly. Numerous institutions are adopting various approaches to address environmental challenges within their facilities, such as promoting

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energy conservation, waste recycling, water use reduction, and rainwater harvesting.

The activities of educational institutions can have both positive and negative environmental impacts. A Green Audit is a formal evaluation process that assesses the University's environmental footprint. It provides a comprehensive picture of the current environmental conditions on campus.

Green Audits are a valuable tool for Universities to identify areas of high energy, water, or resource consumption. This allows institutions to implement targeted changes and achieve cost savings. Additionally, Green Audits can analyse the nature and volume of waste generated, leading to improved recycling programs or waste minimization plans.

Green auditing and the implementation of mitigation measures offer a win-win scenario for institutions, students, and the environment. It can foster health and environmental awareness, promoting values and beliefs that benefit everyone. Green Audits also provide an opportunity for staff and students to gain a deeper understanding of the impact their institution has on the environment.

Furthermore, Green Audits can translate into financial savings by encouraging a reduction in resource usage. This process also empowers students and teachers to develop a sense of ownership for personal and social environmental responsibility.

The Green Audit process typically involves collecting primary data, conducting a site visit with University representatives, and reviewing relevant policies, activities, documents, and records.



## **OBJECTIVE AND SCOPE**

The broad aims/benefits of the Environmental Audit/Green Audit would be

- Environmental education through systematic environmental management approach
- Improving environmental standards
- Benchmarking for environmental protection initiatives
- Sustainable use of natural resource in the campus.
- 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

## **Outcomes OF ENVIRONMENT AUDIT TO EDUCATIONAL INSTITUTIONS**

There are many advantages of environment audit to an Educational Institute:

1. Protect the environment in and around the campus.
2. Recognize the cost saving methods through waste minimization and energy conservation.
3. Empower the organization to frame a better environmental performance.
4. Portrays good image of institution through its clean and green campus.



## 5) Environmental Policy



# ATMIYA UNIVERSITY

(Established under the Gujarat Private University Act 11, 2018)

Yogidham Gurukul, Kalawad Road, Rajkot - 360005, Gujarat (INDIA)

### Environment and Sustainability Policy for Green Campus

Atmiya University recognizes the critical importance of environmental sustainability and its role in minimizing ecological footprints. Guided by its commitment to the principles of conservation and harmony with nature, the university adopts this Policy to integrate environmental awareness and sustainable practices into its daily academic and administrative operations, education, and community engagement. This policy reflects the university's dedication to fostering a sustainable future.

#### Objective

Atmiya University strives to establish a clean, green, and sustainable campus by:

- Developing, monitoring, and evaluating a policy to guide green campus initiatives.
- Reducing the ecological footprint through sustainable practices.
- Educating students and staff on environmental issues and on building harmony with nature & mother earth to create a healthier, sustainable future.
- Promoting innovative environmental practices to enhance sustainability performance.
- Strengthening an environmentally responsible culture across curricular and extracurricular activities.
- Addressing local and regional environmental challenges with sustainable solutions.
- Ensuring sustainable resource use and minimizing wasteful practices.
- Protecting biodiversity and reducing environmental pollution.

#### Environmental Goals and Targets

The university sets specific goals such as reducing energy consumption, minimizing waste generation, conserving water, managing/recycling/disposal of waste, and promoting biodiversity to enhance its sustainability initiatives.

#### Key Focus Areas

1. **Clean Campus Initiatives:** Regular cleaning drives, waste segregation, and beautification projects.



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**Environmental Audit & Consultancy Cell**  
**V.V.P. Engineering College, Rajkot**



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2. **Green Energy:** Installing renewable energy sources to reduce dependency on non-renewable energy sources.
3. **Landscaping and Biodiversity:** Developing green spaces, planting neem trees, and conserving biodiversity.
4. **Energy Efficiency:** Installing energy-efficient appliances, natural lighting, and ventilation.
5. **Water Conservation:** Using rainwater harvesting systems, low-flow fixtures, and RO wastewater recycling.
6. **Waste Management:** Segregating solid, liquid, e-waste, and bio-waste for recycling and composting.
7. **Transportation and Mobility:** Promoting biking, carpooling, e-vehicles, and public transit.
8. **Green Building Standards:** Incorporating eco-friendly designs in construction and renovation projects.
9. **Curriculum Integration:** Courses on SDG awareness and environmental science across all disciplines.
10. **Community Engagement:** Conducting workshops, seminars, and outreach programs on environmental topics.

## Key Practices

### 1. Energy Efficiency

- Transition to energy-efficient devices and systems.
- Encourage behaviour changes for energy conservation.
- Promote renewable energy solutions like solar and biogas.

### 2. Waste Management and Recycling

- Comprehensive waste management with dedicated recycling and composting units.
- Initiatives like **Parivartan (Paper Recycling Unit)** and **Sarjan (Agricultural Waste Recycling Unit)** to create sustainable products.

### 3. Water Conservation

- Installation of rainwater harvesting systems and reservoirs with a 17 lakh-litre capacity.
- Xeriscaping and responsible water usage to reduce dependency on municipal water.

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#### 4. Biodiversity and Green Spaces

- Develop gardens, tree plantations, and outdoor educational spaces to promote biodiversity.
- Integrate sustainable farming practices using Panchgavya and Jivamrut fertilizers.

#### 5. Transportation and Mobility

- Establish e-vehicle charging stations, bike racks, and pedestrian-friendly paths.

#### 6. Education and Awareness

- Organize campaigns like Use Solar-Save Nature, Save Energy-Water and tree plantation drives.
- Include sustainability topics in the curriculum to foster awareness and innovation.

#### Implementation and Monitoring

- **Incentives and Recognition:** Reward active participants in sustainability efforts.
- **Budget and Funding:** Allocate resources for projects and seek grants for sustainability initiatives.
- **Compliance and Legal Adherence:** Ensure alignment with relevant environmental laws and regulations.
- **Periodic Review:** Monitor the policy's impact and revise based on feedback and emerging challenges.


#### Conclusion


Adopting this Policy highlights Atmiya University's unwavering commitment to environmental stewardship and sustainable development. By fostering a culture of awareness and proactive participation, the university aspires to create a greener and healthier campus, setting a benchmark for future generations. Together, we will build a resilient and sustainable future.



  
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**6) General Information**

- a. Does any Green Audit conducted earlier? **Yes**
- b. Total Area of the University = 84455 m<sup>2</sup>
- c. What is the total strength (people count) of the Institute?

AY	Students			Teaching Staff			Non-Teaching Staff			Total		
	M	F	Trans	M	F	Trans	M	F	Trans	M	F	Trans
2022-2023	3776	2204	0	168	134	0	190	32	0	4134	2370	0

- d. What is the total number of working days of your campus in a year?

Month (AY- 2022-2023)	No. of Working Days
June	26
July	25
August	18
September	26
October	17
November	21
December	26
January	23
February	23
March	24
April	22
May	26
Total	277



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e. Which of the following are found near your institute?

Municipal dump yard	No
Garbage heap	No
Public convenience	Yes
Sewer line	Yes
Stagnant water	No
Industry	No
Bus / Railway station	Yes
Market / Shopping complex	Yes
Play Ground	Yes

f. Does your institute generate any waste? If so, what are they?

Type of waste		Response	Detail(s) of Waste Generated	Quantity of Waste Generated (kg)
Solid	Biodegradable	Yes	Gardening, Cow dung	175
	Non-biodegradable	Yes	Sweeping waste,	10
	e-waste	Yes	Computer, Battery	00
Liquid		Yes	Kitchen Waste	35
Gas		No	--	--

g. How is the waste managed in the institute? By Composting, Recycling, Reusing, Others (specify)

- Composting: Gardening and cow dung waste used to make compost.
- Non-recyclable and non biodegradable waste disposal is managed by the Rajkot Municipal Corporation.

  
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**h.** Do you use recycled paper in institute? Yes

**i.** How would you spread the message of recycling to others in the community?

Poster competition activities	<b>Yes</b>
Campaigns	<b>Yes</b>
Webinars and seminars	<b>Yes</b>

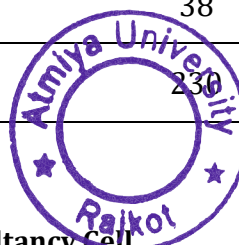
**j.** Is there a garden in your institute?

<b>Garden</b>	<b>Yes</b>	<b>Area = 6732.26m<sup>2</sup></b>
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**k.** Total number of Plants in Campus?

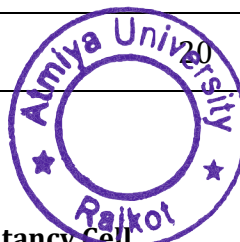
SN	Namepd Species	Numbers
1	Neem Tree	211
2	Lemon cypress	1
3	FicusMicrocapra	100
4	Hedge Plant	01
5	Tajplantshub dracaena	01
6	Crown of Throns	01
7	Spanish Moss (TilandsiaUsneoides)	10
8	Ruellia simplex	51
9	FagusSylvatica plant	01
10	Euphorbia Tithymaloides	11
11	Weeping Fig	685
12	LysilomaWatsonil	01
13	Royal Palm	38
14	Bāmboo	230

**Registrar**



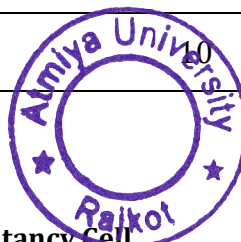
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15	Moringa	01
16	Acalyphawilkesiana	300
17	Dracaena Angustifolia	11
18	<i>Polysciasscutellaria</i>	04
19	<u>Cordylinefruticosa</u>	40
20	Dracaena Reflexa	500
21	Garden Croton	01
22	polysciasguilfoylei	10
23	Oyster Plant (tradescantiazebrina)	300
24	Lonicerapileata	50
25	Saribusrotundifolius	10
26	Ixora	10
27	Hyophorbelagenicaulis	20
28	Purple heart	150
29	Yellow cosmos (sulphur cosmos)	100
30	Canna discolor	15
31	Durantaerecta	1100
32	Pritchardiapacifica	11
33	Capparissandwichiana	50
34	Nerium Oleander	10
35	Casuarinaequisetifolia	20
36	Caryotaurens	2
37	Areca palm	



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38	Ravenala	10
39	Iresineherbstii	300
40	Sago Plam	22
41	Sphgneticolatrilobata	1500
42	Thuja	24
43	Dracaena trifasciata	62
44	Ponytail Palm	2
45	Asparagus densiflorus	50
46	Alocasiazebrina	02
47	Bismarck palm	8
49	Lotus	100
50	Catharanthus	50
51	Padavati Jasmin	50
52	Caryotamitis	04
53	Monoonlongifolium	3
54	Breyniadicisticha	50
55	PlumeriaObtusa	10
56	Alovera	100
57	Century Plant	30
58	Sweet osmanthus	1
59	Crinum asiaticum	27
60	Diantherapectoralis	200
61	Hibiscus	





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62	Ficusaspera	5
63	Mulberry tree	10
64	Barbary fig	5
65	Dracaena angolensis	2
66	Terminaliachebula plant	2
67	Nettlesparges	2
68	Yellow elder	2
69	MadhucaLongifolia	2
70	Eucalyptus globulus.	1
71	Melicoccusbijugatus	1
72	Casuarinaequisetifolia	1
73	Indian jujube	5
74	Tulsi	50
75	Coconut palm tree	8
76	Calotropisgigantea	1
77	Persian Silk	5
78	Mango tree	1
79	Curry Tree	4
80	Punicagranatum	5
81	Pandanusveitchii	50
82	Streblusasper	5
<b>Total</b>		<b>6859</b>





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**l. List uses of water in your institute**

<b>Basic use of water in campus</b>	<b>KL/Day</b>
Drinking	14
Gardening	16
Kitchen and Toilets	19
Others	14
Hostel	28
<b>Total</b>	<b>91 KL/Day</b>

**m. Electricity Consumed**

<b>Month (Academic Year 2022-2023)</b>	<b>Electricity Consumed (kWh)</b>
June	1,73,425
July	1,75,107
August	1,70,233
September	1,75,633
October	1,89,039
November	1,20,528
December	1,21,489
January	1,06,395
February	1,04,507
March	1,41,223
April	1,71,150
May	1,88,347
<b>Total</b>	<b>18,37,076</b>




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n. How does your institute store water? Are there any water saving techniques followed in your institute?

Building	SN	Tank Description	Size (liter)	No. of Tank	Capacity (liter)
AU Building	1	Raw Water- A Wing	2500	4	10000
	2	Raw Water- B Wing	2500	4	10000
	3	Master RO - Raw Water	5000	3	15000
	4	RO Water Tank	2500	7	17500
	5	Pharmacy and Mechanical Lab	2000	1	2000
	6	Faculty Block (A& B Wing)	2500	2	5000
	7	Library Terrace	2000	1	2000
	8	Raw Water Near AU Building- Underground	275000	1	275000
MPAB	9	RO Water - at Terrace	2000	2	4000
	10	Raw Water- at Terrace	60000	1	60000
	11	Raw Water- at Terrace	40000	7	280000
	12	Near Building- Undrground	333746	2	667492
	13	Near Building- Undrground	336826	2	673652
	14	Below Temple- Underground	189924	1	189924
	15	Below Temple- Underground	43718	1	43718
	16	In Front of Store- Underground	123604	1	123604



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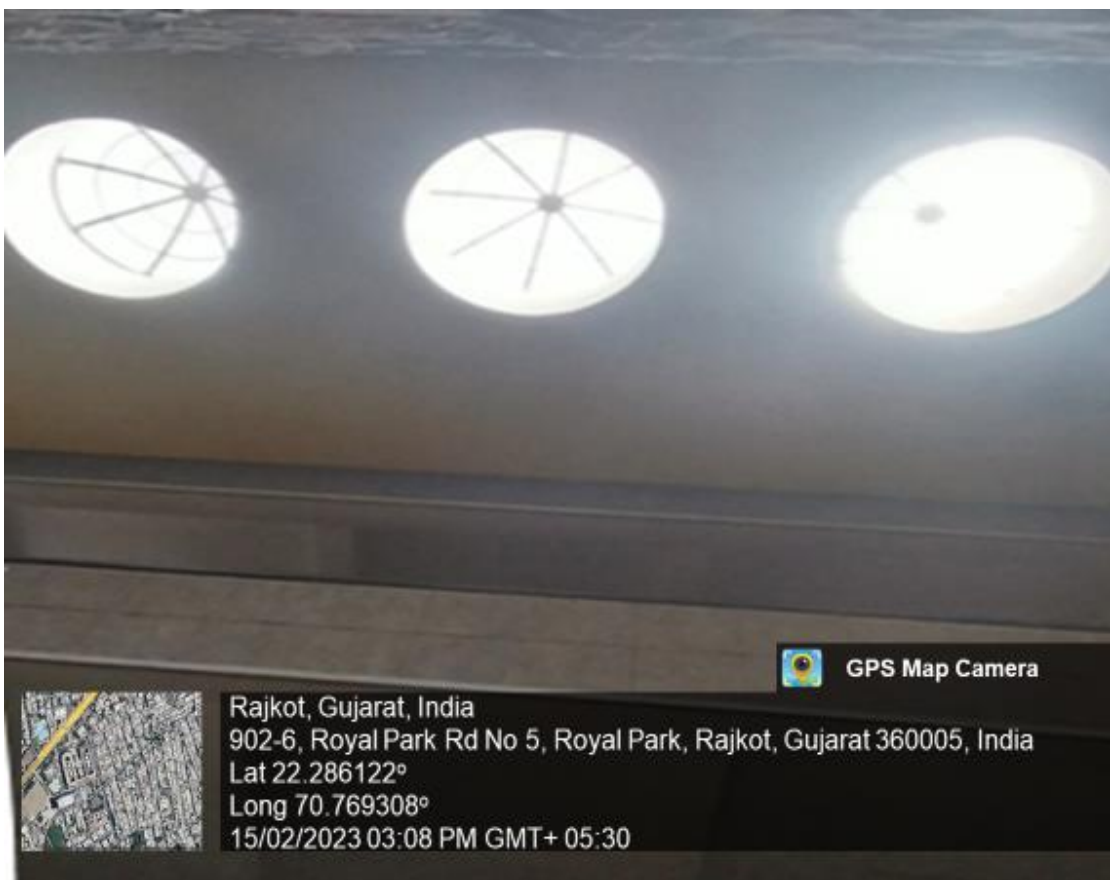
Workshop	17	RO Water- at Terrace	2000	1	2000
	18	Raw Water- at Terrace	2000	2	4000
	19	Raw Warer- at Terrace	5000	1	5000
	20	Behind Workshop- Round Tank- Underground	45650	1	45650
Science Building	21	RO Water- at Terrace	2500	1	2500
	22	Raw Water Tank- at Terrace	23300	2	46600
	23	Raw Water Tank- Ladies Toilet	30000	3	90000
	24	CIF Lab	1500	1	1500
	25	Raw Water- OTIS- Underground	32620	1	32620
	26	Wastewater- Outside the Building	2000	1	2000
Yogidham Gate	27	Raw Water Tank- Underground	48750	4	195000
Niramay	28	RO Water Tanki at Terrace	2500	1	2500
	29	Raw Water Tank- at Terrace	11650	1	11650
	30	Raw Water Tank- Near Office	5000	2	10000
Sarva naman	31	Raw Water Tank- at Terrace	2000	1	2000
	32	Raw Water Tank- at Terrace	8550	1	8550
	33	Raw Water- inside building	600	1	600
<b>Total Water Storage Capacity</b>					<b>28,41,060</b>



7) **Green Initiatives By the Institute**

**Green Architecture**

The incorporation of green architecture principles in academic institutions not only reduces environmental impact but also fosters a healthier and more inspiring learning environment for students and faculty alike. By integrating features such as passive solar design, natural ventilation, and green roofs, these institutions showcase a commitment to sustainability while promoting innovation and awareness of eco-friendly design practices within the academic community.



**Natural Light and Ventilation in Academic Building**

**Impact:**

- Low artificial lighting requirements
- Energy consumption optimization
- Low green house gas emission
- Low level of strain to Eyes

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### Campus Biodiversity

A thriving campus biodiversity in academic institutions is not merely a reflection of ecological health but also serves as a testament to the institution's commitment to sustainability and environmental stewardship. It provides a living laboratory for students to engage with nature firsthand, fostering a deeper understanding of ecological systems and instilling a sense of responsibility towards conservation. Beyond its educational value, a biodiverse campus offers numerous benefits such as improved air and water quality, enhanced aesthetics, and increased resilience to environmental stressors. It becomes a sanctuary for wildlife, contributing to the preservation of local ecosystems and biodiversity at large. Atmiya University campus is a rich in the biodiversity with the full of greenery and in house terrace garden.



Glimpse of Flora at University Campus

## Terrace Farming Capacity (Niramaya)

### Installation Detail

- Total Area: 800 Square meter
- Three different farming: Hydroponics , Vertical and Terrace

### Hydroponic farming

- method of growing plants without soil, using a nutrient-rich water solution to deliver essential nutrients directly to the plants' roots
- Tomato, Basil and mint grown by using this method.

### Vertical farming

- vertical farming utilizes vertical space
- growing crops in vertically stacked layers
- Vertical farming reduces the need for extensive land use.

### Terrace garden

- The following are grown in the terrace garden
- Grapes, Calabash and asparagus bean are grown using this method.

### Impact of terrace farming

- Controlled environments can reduce the need for pesticides, as pests and diseases are less likely to affect crops grown indoors
- Terrace gardens act as natural insulators, reducing the need for artificial heating and cooling within the building. This can lead to energy savings and lower electricity bills.
- Students get the practical knowledge of terrace farming in the urban environment that can be replicated and implemented at their home and society.

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**Terrace Garden (Niramay) at University Campus**

  
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**Atmiya University**  
**Rajkot**

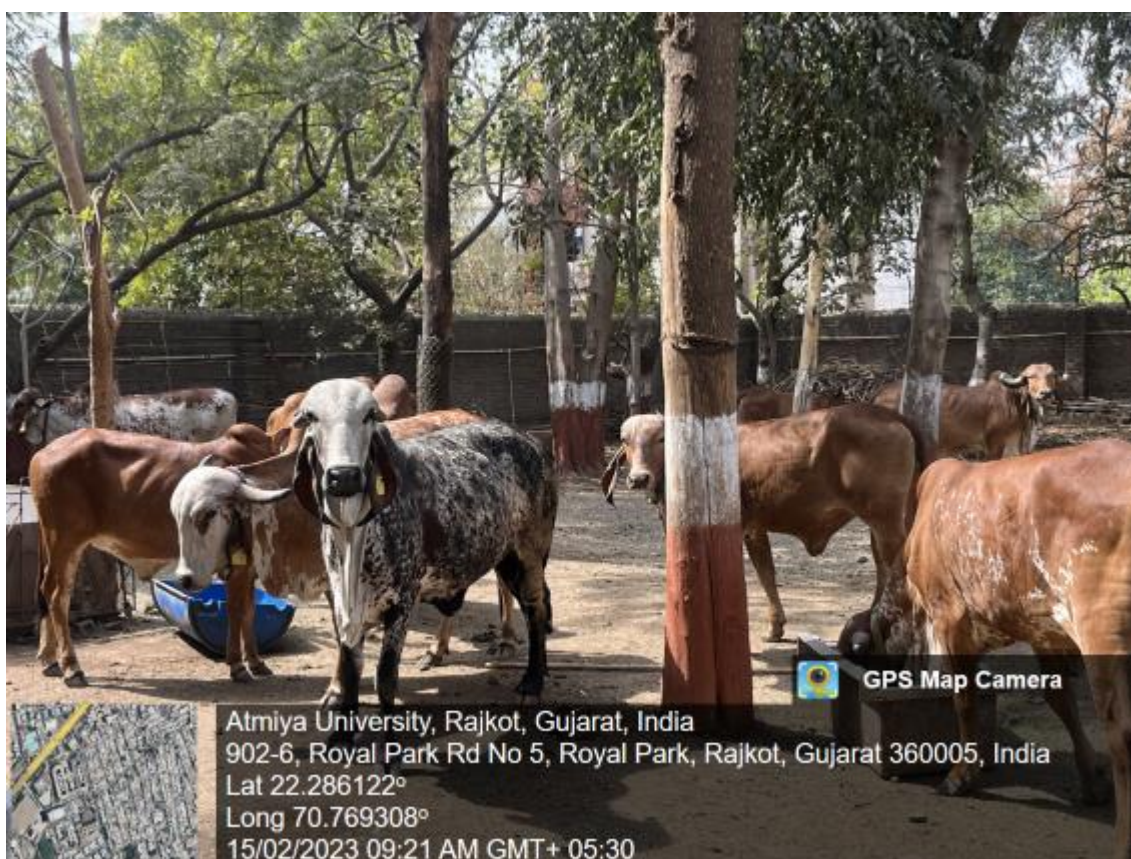


**Environmental Audit & Consultancy Cell,**  
**V.V.P. Engineering College, Rajkot**



### Gaushala at Campus

- 24 Indian Breed Cow
- 01 Bull
- State of the art facilities
- Value addition cow urine for herbal and fertilizer utilization
- Decorative products are being made from the cow dung.
- Jivamrut fertilizer being used in the campus is a product of gaushala.
- It contributes to maintain the organic carbon content in the campus soil as it provides the raw material for the compost.



### Satyakam Gaushala

It provides students with firsthand experience in animal care, veterinary science, and sustainable agriculture. They can learn about the importance of cows in Indian culture, their significance in agriculture, and sustainable farming practices.

Gaushalas contributes to the eco-friendly practices like composting cow dung for fertilizer, using biogas for cooking which can serve as models for sustainable living and agriculture.

In Indian cultures, cows are revered as sacred animals. Having a gaushala on campus can help preserve and promote this cultural heritage among students and the community.

Universities can conduct research on various aspects of cow rearing, including breeding, nutrition, and healthcare. This research can contribute to advancements in animal science and agriculture.

Cows play a crucial role in maintaining soil fertility through their dung, which is rich in nutrients. By managing cow waste effectively, gaushalas can contribute to soil health and environmental conservation.

## **Solid Waste Management**

### **Natural Fertilizer from Organic Waste**

#### **Jivamrut (Natural Fertilizer)**

Installation Detail:

- Year: 2008
- Place: at boys parking
- Process: Collect neem leaves from campus and added with cow dung, cow urine and Earthworms

#### **Amrut Soil**

- Ingredients for AmrutMitti range from cow dung, cow urine, biomass like dry and decayed leaves, household kitchen waste like vegetable peels.
- AmrutSoil is full of all nutrients needed by plants, is very rich in variety of microbes, has the right pH, has high carbon content, has excellent water holding capacity.
- Mixing Cow dung, cow urine and jaggery
- Immersing dry biomass in AmrutJal kept in drums
- Process take at least 1 month
- Use as garden fertilizer.

#### **Impact:**

- Applied in garden as fertilizer

Improve soil micro-biota of campus soil

Less usages of chemical fertilizer



Figure 6: Amrut Soil and Jivamrut Plant

### Municipal Solid Waste Segregation Bin

University campus having more the 100 solid waste collection dustbin design for the proper waste segregation. Waste paper is recycled at the in-house paper recycling facility and converted into the filter paper, envelope and other artistic and decorative products.

Having separate bins encourages people to sort their waste, making it easier to recycle materials such as paper, plastic, glass, and metal. This promotes a culture of recycling and reduces the amount of waste sent to landfills or incinerators.

Recycling materials reduces the need for raw materials, energy, and water required to manufacture new products. This conserves natural resources and reduces the environmental impact associated with extraction, processing, and transportation.

Implementing separate bins provides an opportunity for educational initiatives on waste management, recycling, and environmental stewardship. Students, faculty, and staff can learn about the importance of recycling and how their actions contribute to sustainability.





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Separate Dustbin for Recyclable and Non-Recyclable Waste



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V.V.P. Engineering College, Rajkot

## Paper Recycling Unit

In embracing the principles of the circular economy, Atmiya university is pioneer in sustainable practices such as paper recycling, ensuring that resources are reused and regenerated rather than disposed of after single use. By implementing robust paper recycling programs, these institutes not only reduce waste and environmental impact but also cultivate a culture of resource efficiency and responsible consumption among students, faculty, and staff.

Recycling paper can lead to cost savings for the university by reducing waste disposal fees and the need to purchase new paper products. This can free up financial resources that can be allocated to other campus initiatives or projects.



Parivartan- Paper Recycling Plant

### Plastic Water Bottle Recycling Plant

University have installed water bottle recycling plant at entrance for all stakeholders having capacity of 20 kg/day

A bottle crusher helps reduce the volume of plastic bottles, thereby decreasing the amount of plastic waste generated on campus. This contributes to waste reduction efforts and helps minimize the environmental impact of plastic pollution.

By providing a convenient way to crush plastic bottles, the crusher encourages recycling behavior among students, faculty, and staff. It reinforces the importance of recycling and helps divert plastic waste from landfills or incinerators.

Plastic pollution poses significant threats to ecosystems, wildlife, and human health. By reducing plastic waste through recycling, a bottle crusher helps protect the environment and minimize the adverse effects of plastic pollution on marine life, terrestrial habitats, and waterways.



Plastic Bottle Crusher Machine

## Energy Conservation Measures

### Renewable Power Generation

The adoption of solar rooftop systems in Atmiya university significantly reduces carbon emissions, contributing to a cleaner and more sustainable environment while serving as a tangible demonstration of the institute's commitment to renewable energy and climate action. Additionally, the integration of solar rooftops enhances the educational experience by providing real-world examples of sustainable technology, inspiring students to explore and innovate in the field of renewable energy. Atmiya University having fully operational solar rooftop electricity generation capacity as per the vision of the government.



  
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**Rooftop Solar Plant**  
**Renewable Power Generation per Month**

Month & Year	RE Cultivation in KWh
Jun-22	33,642
Jul-22	20,784
Aug-22	23,264
Sep-22	29,568
Oct-22	33,664
Nov-22	28,864
Dec-22	26,432
Jan-23	30,064
Feb-23	32,576
Mar-23	41,648
Apr-23	57,504
May-23	66,992
<b>Total</b>	<b>4,25,002 KWh</b>



### Energy Efficient Electrical Appliances

Energy-efficient infrastructure in institutions not only lowers operational costs but also serves as a beacon of sustainable practices, showcasing the institution's dedication to environmental stewardship and responsible resource management. By implementing measures such as LED lighting, efficient HVAC systems, and smart building technologies, these institutions demonstrate leadership in sustainability while providing a conducive learning environment for students and faculty.



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### LED Lighting and 5 Star Rated Appliances



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## Water Management

Water conservation is a key activity as water availability affects on the development of the campus as well as on all area of development such as farming, industries, etc. Keeping this view water conservation activity is carried out.

### Sources of Water

- Rainwater Harvesting
- Bore water
- A Main source of water is RMC connection and Ground water is extracted to fulfill the requirement. The University stores the water in overhead tank.

### Sewage Disposal Facility

Atmiya University is situated in the municipal area of Rajkot. RMC (Rajkot Municipal Corporation) provides municipal facilities to the university. Sewage is being disposed in the sewerage network of Rajkot city.

### RO Plant

RO plants provide clean and safe drinking water by removing contaminants, such as bacteria, viruses, and dissolved solids, from the water. This ensures that students, faculty, and staff have access to safe drinking water, promoting better health and well-being. With access to clean drinking water on campus, there is less reliance on bottled water. This can lead to a significant reduction in plastic waste generated by the university, contributing to environmental sustainability efforts.



### Rainwater Harvesting

Capacity : 12 Lac Liters

**Environmental Benefits:** By reducing the demand for potable water and minimizing stormwater runoff, rainwater harvesting contributes to environmental conservation efforts. It helps preserve freshwater resources, protects aquatic ecosystems, and mitigates the impacts of urbanization on natural hydrological cycles.

**Water Conservation:** Rainwater harvesting reduces reliance on traditional water sources by collecting and storing rainwater for various uses, such as irrigation, flushing toilets, and landscape maintenance. This helps conserve freshwater resources and reduces the strain on municipal water supplies, especially during periods of drought or water scarcity.



Rainwater Harvesting Tank

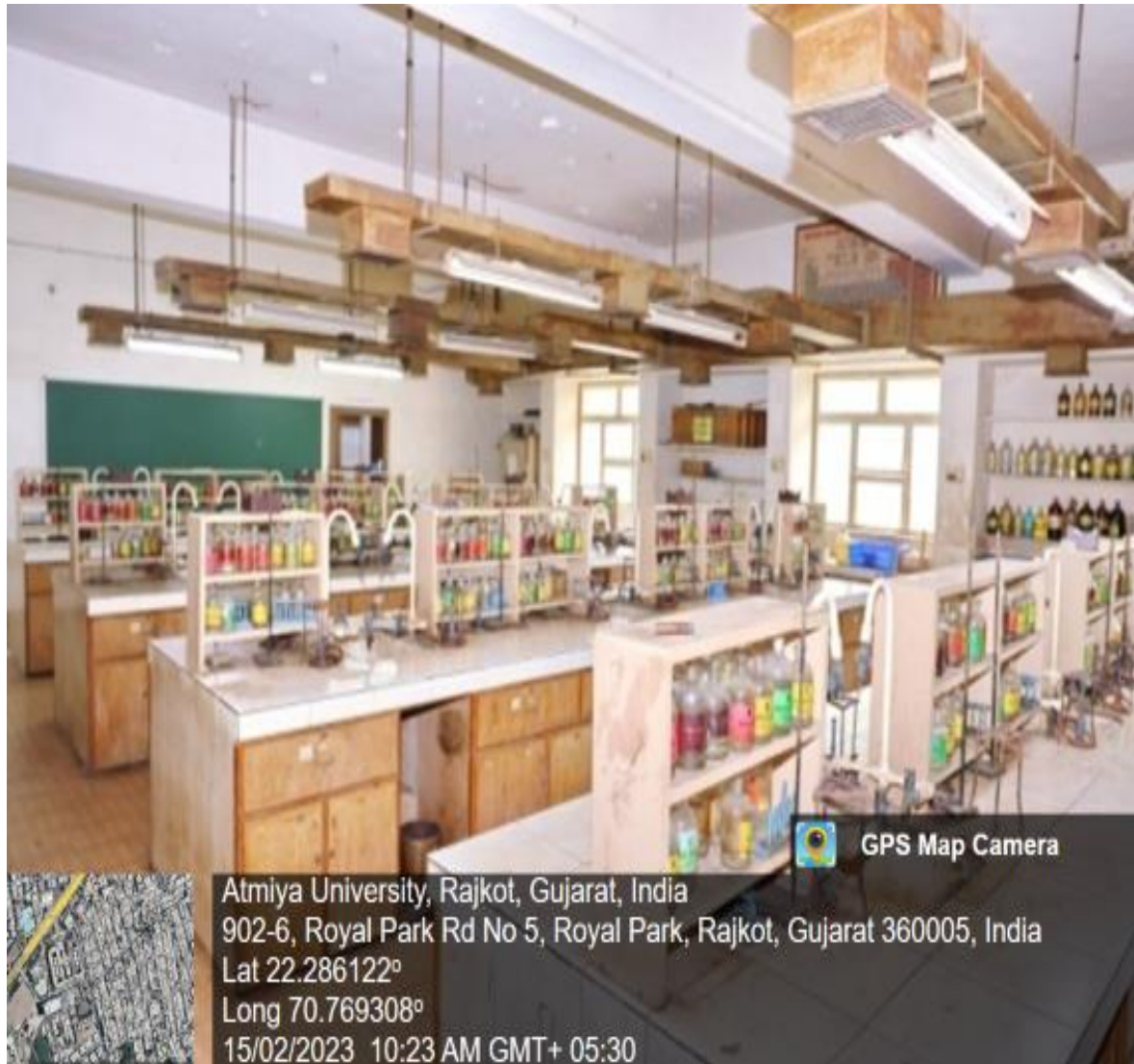
  
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Rajkot 



## Air Pollution Control Measures

### Acidic Fume Suction Panel

Laboratory of chemistry department is equipped with the vapour suction panel mounted on the platform. It collects the hazardous gas and channelizes it to the wet scrubber for the neutralizing before discharge into the atmosphere.



Acidic Fume Suction Panel

### Fume Hood at Chemistry laboratory

Fume hoods are designed to contain and exhaust potentially hazardous fumes, vapors, and gases generated during chemical experiments. They create a barrier between the experiment and the laboratory environment, preventing exposure to toxic or harmful substances. Fume hoods protect laboratory personnel from inhaling harmful chemicals or being exposed to hazardous substances.



Fumehood at Chemistry Laboratory

## Wet Scrubber

- 1. Reduction of Air Pollution:** Scrubbers help remove harmful gases, such as hydrogen chloride (HCl) and hydrogen fluoride (HF), from the laboratory air. By capturing these pollutants before they are released into the atmosphere, scrubbers contribute to reducing air pollution and improving indoor and outdoor air quality.
- 2. Prevention of Acid Rain Formation:** Hydrogen chloride and hydrogen fluoride emissions can contribute to the formation of acid rain when released into the atmosphere. Alkali gas scrubbers mitigate this environmental impact by removing these acidic gases from laboratory emissions before they can react with moisture in the air and contribute to acid rain formation.
- 3. Protection of Ecosystems:** Acid rain resulting from air pollution can have detrimental effects on ecosystems, including damage to vegetation, soil, aquatic habitats, and wildlife. By reducing the emission of acidic gases, alkali gas scrubbers help protect sensitive ecosystems and promote biodiversity conservation.
- 4. Minimization of Health Risks:** Hydrogen chloride and hydrogen fluoride are corrosive and toxic gases that can pose health risks to laboratory personnel and surrounding communities if released into the environment. Alkali gas scrubbers help minimize these risks by capturing and neutralizing these hazardous pollutants before they can be emitted.
- 5. Reduction of Odors:** In addition to removing acidic gases, alkali gas scrubbers can also help eliminate unpleasant odors associated with certain chemical processes in the laboratory. This improvement in air quality enhances the comfort and well-being of laboratory personnel and visitors.

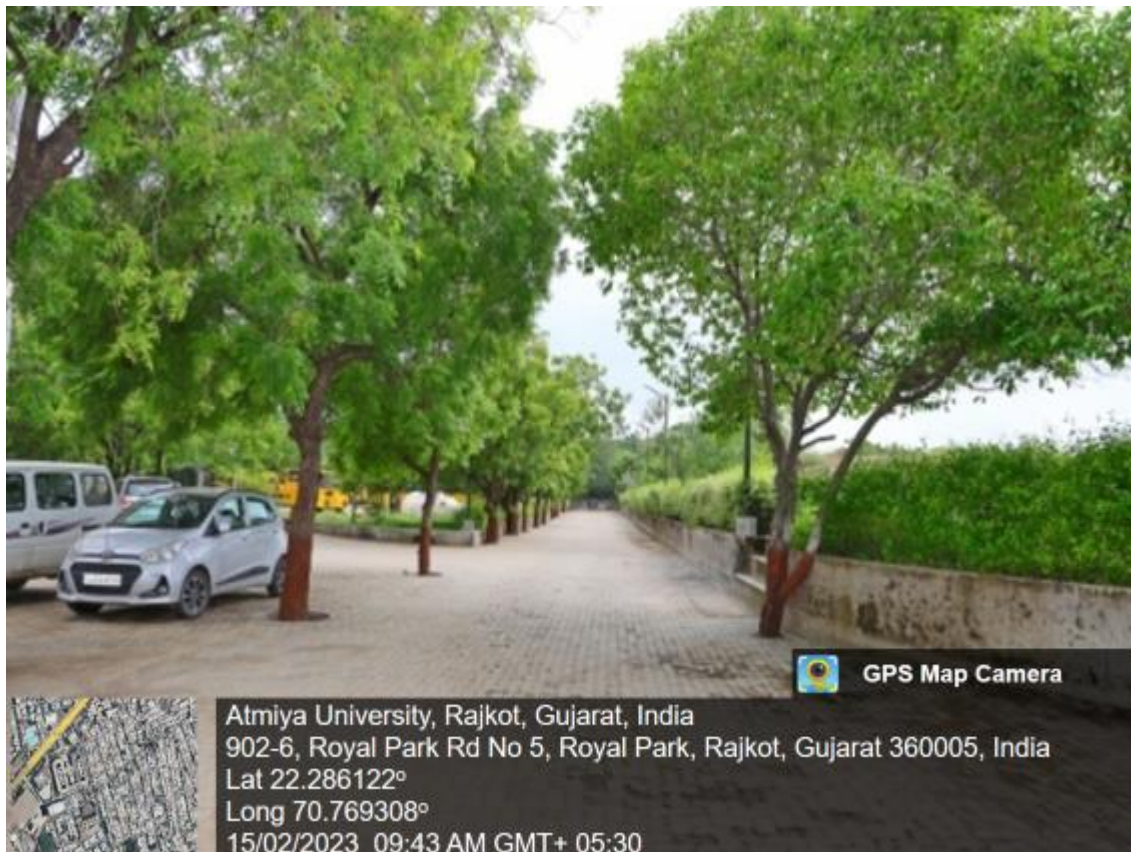


6. **Conservation of Resources:** Alkali gas scrubbers typically utilize alkaline solutions, such as sodium hydroxide (NaOH), to neutralize acidic gases. While the operation of scrubbers requires resources such as water and chemicals, their use contributes to the conservation of environmental resources by preventing the release of pollutants into the air and minimizing the need for remediation measures.



**Wet Gas Scrubber**

### Tree Plantation



### Greenery at Atmiya University Campus

University campus is full of indigenous tree and medicinal plants produce positive impact on environment.

- **Air Quality Improvement:** Trees and plants act as natural air filters, absorbing carbon dioxide (CO<sub>2</sub>) and other pollutants from the air while releasing oxygen through the process of photosynthesis. This helps improve air quality on campus, reducing the concentration of harmful gases and particulate matter and promoting a healthier environment for students, faculty, and staff.
- **Carbon Sequestration:** Trees play a crucial role in mitigating climate change by sequestering carbon from the atmosphere and storing it in their biomass. By planting trees on campus, universities can contribute to carbon sequestration efforts and help offset their carbon footprint, supporting broader sustainability goals and initiatives.



**CLIENT: M/s. Atmiya University, Rajkot**  
**Yogidham Gurukul, Kalawad Road, Rajkot – 360 005**  
**(Audit Period: June 2022 to May 2023)**

- **Temperature Regulation:** Trees provide natural shade and evapotranspiration, helping to cool the surrounding environment and reduce the urban heat island effect. By creating shaded areas and lowering ambient temperatures, trees contribute to energy conservation efforts by reducing the need for air conditioning and mitigating heat-related stress during hot weather.
- **Storm water Management:** The roots of trees and plants help absorb rainwater and reduce runoff, preventing soil erosion and minimizing the risk of flooding and water pollution. By incorporating green infrastructure such as rain gardens and bio swales, university campuses can effectively manage storm water runoff, improve water quality, and enhance overall watershed health.
- **Biodiversity Conservation:** Trees and plants provide habitat and food sources for various species of birds, insects, and other wildlife, contributing to biodiversity conservation on campus. By creating green corridors and natural habitats, universities support local ecosystems and promote ecological resilience in urban environments.
- **Noise Reduction:** Trees and vegetation help absorb and deflect sound waves, acting as natural buffers against noise pollution from nearby roads, buildings, and other sources. By planting trees strategically around campus buildings and outdoor spaces, universities can create quieter and more tranquil environments conducive to learning, research, and relaxation.



## 8) **Audit Methodology**

The purpose of the audit was to ensure that the practices followed in the campus are in accordance with the Green Policy adopted by the institution. The criteria, methods and recommendations used in the audit were based on the identified risks. The methodology includes: preparation and filling up of questionnaire, physical inspection of the campus, observation and review of the document, interviewing responsible persons and data analysis, measurements and recommendations. The methodology adopted for this audit was a three-step process comprising of:

**1. Data Collection** - In preliminary data collection phase, exhaustive data collection was performed using different tools such as observation, survey communicating with responsible persons and measurements.

Following steps were taken for data collection:

- Site Visit
- Data about the general information was collected by observation and interview.
- The power consumption of appliances was recorded by taking an average value in some cases.

**2. Data Analysis** - Detailed analysis of data collected include: calculation of energy consumption, analysis of latest electricity bill of the campus, Water consumption, Waste Generation and Greenery Management.

**3. Recommendation** - On the basis of results of data analysis and observations, some steps for reducing power and water consumption were recommended. Proper treatments for waste were also suggested. Use of fossil fuels has to be reduced for the sake of community health.

The above target areas particular to the University was evaluated through questionnaire circulated among the students for data collection.

The following data collected for the following areas during the assessment.

1. Environment & Waste Management
2. Energy Management
3. Water Management



**9) Monitoring, Observations & Recommendations**

**Ambient Air Quality Monitoring**

**Date: 15/02/2023**

<b>Location</b>	<b>PM<sub>10</sub> (µg/m<sup>3</sup>)</b>	<b>PM<sub>2.5</sub> (µg/m<sup>3</sup>)</b>	<b>SO<sub>2</sub> (µg/m<sup>3</sup>)</b>	<b>NO<sub>2</sub> (µg/m<sup>3</sup>)</b>
AU Building Main Entrance	<b>49</b>	<b>31.4</b>	<b>16.1</b>	<b>26.3</b>
B/H Ashwad canteen	<b>43.3</b>	<b>29.2</b>	<b>12.3</b>	<b>19.7</b>
Nr. Bus parking	<b>51.5</b>	<b>36.2</b>	<b>14.6</b>	<b>27.1</b>
Nr. Haridarshanam Temple	<b>57.7</b>	<b>31.3</b>	<b>15.7</b>	<b>26.4</b>

**Noise Monitoring**

**Date: 15/02/2023**

<b>Location</b>	<b>Observed Value (db (A))</b>	<b>Permissible Day Time Limit (db (A))</b>
AU Building Main Entrance	<b>47</b>	<b>50</b>
B/H Ashwad canteen	<b>46</b>	
Nr. Bus parking	<b>48</b>	
Nr. Haridarshanam Temple	<b>45</b>	

**Water Analysis Report**

**TEST REPORT**

<b>Sample Description</b>	Borewell Water from VIP parking Area
<b>Sample collection Date</b>	15/02/2023
<b>Sample analysis date</b>	15/02/2023
<b>Quantity of Sample</b>	2.5 liters

**Test Result**

<b>Sr. No.</b>	<b>Test Parameter</b>	<b>Results</b>	<b>Units</b>	<b>Desirable limit As per IS 10500:2012</b>	<b>Test method</b>
1	<b>Taste</b>	Agreeable	-	Agreeable	IS 3025 (Part 7&8)
2	<b>Odour</b>	Unobjectionable	-	Unobjectionable	IS 3025 (Part 5) 1983
3	<b>pH</b>	7.8	-	6.5 to 8.5	IS 3025 (Part 11)
4	<b>Total Dissolved Solids (TDS)</b>	234	mg/l	500 max	IS 3025 (Part 16)
5	<b>Chloride</b>	9.32	mg/l	250 max	IS 3025 (part 32)
6	<b>Turbidity</b>	<1	NTU	1.0 Max	IS 3025 (part 10)
7	<b>Total Hardness (as CaCO<sub>3</sub>)</b>	25.2	Mg/l	200 max	IS 3025 (part 21)

**Microbial Analysis**

<b>Test</b>	<b>Observation</b>
<b>EMB plates</b>	TLTC (< 7 colonies )
<b>MacConkey Plates</b>	TLTC (< 3 colonies )
<b>Single strength MPN broth</b>	No Colour change, No Gas production
<b>Double strength MPN broth</b>	No Colour change, No Gas production

**Water Analysis Report**

**TEST REPORT**

<b>Sample Description</b>	Borewell Water from Yogidham Gate 3
<b>Sample collection Date</b>	15/02/2023
<b>Sample analysis date</b>	15/02/2023
<b>Quantity of Sample</b>	2.5 liters

**Test Result**

<b>Sr. No.</b>	<b>Test Parameter</b>	<b>Results</b>	<b>Units</b>	<b>Desirable limit As per IS 10500:2012</b>	<b>Test method</b>
1	<b>Taste</b>	Agreeable	-	Agreeable	IS 3025 (Part 7&8)
2	<b>Odour</b>	Unobjectionable	-	Unobjectionable	IS 3025 ( Part 5) 1983
3	<b>pH</b>	7.9	-	6.5 to 8.5	IS 3025 ( Part 11)
4	<b>Total Dissolved Solids (TDS)</b>	222	mg/l	500 max	IS 3025 ( Part 16)
5	<b>Chloride</b>	11.68	mg/l	250 max	IS 3025 (part 32)
6	<b>Turbidity</b>	<1	NTU	1.0 Max	IS 3025 (part 10)
7	<b>Total Hardness (as CaCO<sub>3</sub>)</b>	18.2	Mg/l	200 max	IS 3025 (part 21)

**Microbial Analysis**

<b>Test</b>	<b>Observation</b>
<b>EMB plates</b>	TLTC (< 5 colonies )
<b>MacConkey Plates</b>	No Colonies Observed
<b>Single strength MPN broth</b>	No Colour change, No Gas production
<b>Double strength MPN broth</b>	No Colour change, No Gas production

**Water Analysis Report**

**TEST REPORT**

<b>Sample Description</b>	Borewell Water Near Boy's Hostel
<b>Sample collection Date</b>	15/02/2023
<b>Sample analysis date</b>	15/02/2023
<b>Quantity of Sample</b>	2.5 liters

**Test Result**

<b>Sr. No.</b>	<b>Test Parameter</b>	<b>Results</b>	<b>Units</b>	<b>Desirable limit As per IS 10500:2012</b>	<b>Test method</b>
1	<b>Taste</b>	Agreeable	-	Agreeable	IS 3025 (Part 7&8)
2	<b>Odour</b>	Unobjectionable	-	Unobjectionable	IS 3025 (Part 5) 1983
3	<b>pH</b>	7.78	-	6.5 to 8.5	IS 3025 (Part 11)
4	<b>Total Dissolved Solids (TDS)</b>	322	mg/l	500 max	IS 3025 (Part 16)
5	<b>Chloride</b>	22.5	mg/l	250 max	IS 3025 (part 32)
6	<b>Turbidity</b>	<1	NTU	1.0 Max	IS 3025 (part 10)
7	<b>Total Hardness (as CaCO<sub>3</sub>)</b>	88.2	Mg/l	200 max	IS 3025 (part 21)

**Microbial Analysis**

<b>Test</b>	<b>Observation</b>
<b>EMB plates</b>	TMTC (> 100 colonies)
<b>MacConkey Plates</b>	TMTC (> 100 colonies)
<b>Single strength MPN broth</b>	No Colour change, No Gas production
<b>Double strength MPN broth</b>	No Colour change, No Gas production

**Water Analysis Report**

**TEST REPORT**

<b>Sample Description</b>	Borewell Water near Temple
<b>Sample collection Date</b>	15/02/2023
<b>Sample analysis date</b>	15/02/2023
<b>Quantity of Sample</b>	2.5 liters

**Test Result**

Sr. No.	Test Parameter	Results	Units	Desirable limit As per IS 10500:2012	Test method
1	<b>Taste</b>	Agreeable	-	Agreeable	IS 3025 (Part 7&8)
2	<b>Odour</b>	Unobjectionable	-	Unobjectionable	IS 3025 (Part 5) 1983
3	<b>pH</b>	7.68	-	6.5 to 8.5	IS 3025 (Part 11)
4	<b>Total Dissolved Solids (TDS)</b>	318.8	mg/l	500 max	IS 3025 (Part 16)
5	<b>Chloride</b>	8.02	mg/l	250 max	IS 3025 (part 32)
6	<b>Turbidity</b>	<1	NTU	1.0 Max	IS 3025 (part 10)
7	<b>Total Hardness (as CaCO<sub>3</sub>)</b>	80.2	Mg/l	200 max	IS 3025 (part 21)

**Microbial Analysis**

Test	Observation
<b>EMB plates</b>	TLTC (< 5 colonies )
<b>MacConkey Plates</b>	TLTC (< 4 colonies )
<b>Single strength MPN broth</b>	No Colour change, No Gas production
<b>Double strength MPN broth</b>	No Colour change, No Gas production

**Water Analysis Report**

**TEST REPORT**

<b>Sample Description</b>	Drinking Water- AU Main Building
<b>Sample collection Date</b>	15/02/2023
<b>Sample analysis date</b>	15/02/2023
<b>Quantity of Sample</b>	2.5 liters

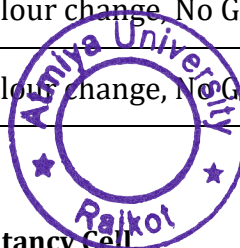
**Test Result**

Sr. No.	Test Parameter	Results	Units	Desirable limit As per IS 10500:2012	Test method
1	<b>Taste</b>	Agreeable	-	Agreeable	IS 3025 (Part 7&8)
2	<b>Odour</b>	Unobjectionable	-	Unobjectionable	IS 3025 ( Part 5) 1983
3	<b>pH</b>	7.6	-	6.5 to 8.5	IS 3025 ( Part 11)
4	<b>Total Dissolved Solids (TDS)</b>	118.8	mg/l	500 max	IS 3025 ( Part 16)
5	<b>Chloride</b>	9.78	mg/l	250 max	IS 3025 (part 32)
6	<b>Turbidity</b>	<1	NTU	1.0 Max	IS 3025 (part 10)
7	<b>Total Hardness (as CaCO<sub>3</sub>)</b>	38.9	Mg/l	200 max	IS 3025 (part 21)

**Microbial Analysis**

Test	Observation
<b>EMB plates</b>	No Colonies Observed
<b>MacConkey Plates</b>	No Colonies Observed
<b>Single strength MPN broth</b>	No Colour change, No Gas production
<b>Double strength MPN broth</b>	No Colour change, No Gas production

**Registrar**





**Water Analysis Report**

**TEST REPORT**

<b>Sample Description</b>	Drinking Water- Science Building
<b>Sample collection Date</b>	15/02/2023
<b>Sample analysis date</b>	15/02/2023
<b>Quantity of Sample</b>	2.5 liters

**Test Result**

<b>Sr. No.</b>	<b>Test Parameter</b>	<b>Results</b>	<b>Units</b>	<b>Desirable limit As per IS 10500:2012</b>	<b>Test method</b>
1	<b>Taste</b>	Agreeable	-	Agreeable	IS 3025 (Part 7&8)
2	<b>Odour</b>	Unobjectionable	-	Unobjectionable	IS 3025 ( Part 5) 1983
3	<b>pH</b>	7.80	-	6.5 to 8.5	IS 3025 ( Part 11)
4	<b>Total Dissolved Solids (TDS)</b>	130.1	mg/l	500 max	IS 3025 ( Part 16)
5	<b>Chloride</b>	7.7	mg/l	250 max	IS 3025 (part 32)
6	<b>Turbidity</b>	<1	NTU	1.0 Max	IS 3025 (part 10)
7	<b>Total Hardness (as CaCO<sub>3</sub>)</b>	8.1	Mg/l	200 max	IS 3025 (part 21)

**Microbial Analysis**

<b>Test</b>	<b>Observation</b>
<b>EMB plates</b>	No Colonies Observed
<b>MacConkey Plates</b>	No Colonies Observed
<b>Single strength MPN broth</b>	No Colour change, No Gas production
<b>Double strength MPN broth</b>	No Colour change, No Gas production

\*TFTC-Too Less To Count

\*TMTTC-Too Much To Count



**Observations & Suggestions:**

- The University has modern infrastructure, including smart classrooms, a computer lab, and a library, which may indirectly impact the environment through energy consumption and waste generation.
- The presence of a functional borewell suggests potential for implementing rainwater harvesting systems to further conserve water resources.
- The University's adoption of rooftop solar power reflects a proactive approach towards utilizing renewable energy sources.
- University has actively participated in the Government/University programmes like Van Mahotsava, Environment day celebration, Gurupurnima day celebration etc..
- The well-designed University building maximizes natural light, promoting energy efficiency and a positive learning environment.
- Expand the display of informative posters and slogans promoting the benefits of a green and clean campus.
- Conduct drive to promote energy conservation, potentially including a designated "power saving day" each quarter.

10) Certificate



## V.V.P. ENGINEERING COLLEGE

ENVIRONMENTAL AUDIT CELL, Vajdi - Virda, Kalawad Road, Rajkot

**Environmental Audit Certificate**  
Atmiya University, Rajkot-360005-Gujarat-India  
For the AY (2022-23)

Environmental Audit for the period **June 2022 to May 2023** has been conducted for the **Atmiya University, Rajkot** to assess the green initiatives planning and efforts implemented in the college campus like Green Campus Management. This Environmental Audit is also aimed to assess eco-friendly initiatives of the Institute towards sustainability.

It is believed that the institution has presented authentic data on various aspects of working of the institute before the audit team. The recommendations are based on the data presented before the team as they existed at the audit time. This certificate is valid for the audit period only. However, it is subject to automatic cancellation in case of any change in prevailing green practice or misleading data. The findings reported in this audit report are entirely based on data furnished by the institute and data collected by the audit team during the audit. Thus, the findings reported in this audit report are strictly limited to the period when the audit was conducted.

The Environmental Quality in the campus is found **adequate and efficacious**.

**Dr. Sushil Korgaokar**

*(Recognised Schedule-I Environmental Auditor, Gujarat Pollution Control Board-GPCB – Gandhinagar, Gujarat)*

Environmental Audit Laboratory,  
V.V.P. Engineering College, Virda – Vajdi,  
Kalawad Road, Opp. Motel the Village,  
Rajkot-360005-Gujarat-India



I assure that the data presented is authentic to the best of my knowledge & I agree to comply with the recommendations received this report within a year at maximum after the internal review.

**Dr. Ashish M. Kothari,**

Dy. Registrar,  
Atmiya University,  
Rajkot-360005-Gujarat-India

*Ashish*  
Deputy Registrar  
Atmiya University  
Rajkot

