

# ENVIRONMENT AUDIT REPORT | 2022

M. S. Ramaiah University of Applied Sciences



Registrar  
M.S. Ramaiah University of Applied Sciences  
Bangalore - 560 054

# Certificate of Environmental Audit

THIS CERTIFICATE IS PRESENTED TO

**M. S. RAMAIAH UNIVERSITY OF APPLIED SCIENCES**

This is to certify that M. S. Ramaiah University of Applied Sciences has successfully undergone 'Environmental Audit' on 20th December, 2022 and assessed the Environmental measures, policies and standards in the campus were found to be excellent.

This certificate is valid till 20th December, 2023

Ref. No: GA / ENVIRONMENTAL AUDIT / 03 / 12 / 22



**DR NISCHAY N GOWDA**

Founder & Director - Green Aura

CERTIFIED ISO EMS-LA, IGBC - AP,  
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GLOBAL DOCTORATE, SWITZERLAND.



## Acknowledgement

The Environment Audit Assessment team extends sincere gratitude to the management of M. S. Ramaiah University of Applied Sciences for entrusting us with the crucial task of conducting the Green Audit. We deeply appreciate the cooperation and unwavering support received throughout the completion of this study.

Special thanks are due to the following individuals, whose invaluable contributions played a pivotal role in the success of this audit:

**Dr. G. S. Venkatesh, Registrar:** Your guidance and support were instrumental in the success of this audit. Your leadership played a crucial role in ensuring the effectiveness of the audit process.

**Dr. Nayana Patil, HoD Civil Engineering; Mr. Parmeshwar.S, Head IQAC; Mr. Prakash, Manager Facilities; Mr. Sathyanarayana, Head Administration:** Your meticulous attention to detail and comprehensive understanding of educational processes have been a cornerstone of our success in this audit. Your dedication greatly contributed to shaping the positive outcomes we achieved.

The study team consisted of senior technical executives from Green Aura, and the audit spanned multiple visits from October to December 2022.

- **Dr. Nischay N Gowda**, Founder & Director Green Aura, Bengaluru. Lead Assessor PQMS Quality Services Pvt Ltd. (IGBC-AP and LEED-Green Associate)
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**Submitted to:**  
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## Disclaimer

The Environment Audit team has prepared this report for M. S. Ramaiah University of Applied Sciences using input data provided by the University's representatives. Our findings are based on both the provided data and the expert judgment of our team members. While we have taken reasonable care in its preparation, the details in this report are compiled in good faith and rely on the available information.

It is important to highlight that the calculations are derived from our best estimates, and we do not make any express or implied representation, warranty, or undertaking. The Audit team does not assume responsibility for any direct or consequential losses that may arise from using the information, statements, or forecasts in this report.

The information and analysis presented in this report are valid as of the date of our visit and the study period at the site. Our work reflects our best efforts and judgments based on the information available at the time of report preparation. Green Aura does not guarantee the accuracy of this information or any conclusions drawn from it. The observations made in this report serve as an indication of the facility's performance based on our assessment and should not be considered a definitive comment on the functioning of the facility. These observations are solely based on the data recorded during our assessment.

Green Aura disclaims any responsibility for the reader's use of or reliance upon this report, as well as for any decisions made based on its contents. Readers are advised that they assume all liabilities incurred by themselves or third parties resulting from their reliance on this report, including the data, information, findings, and opinions contained within it.

  
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## Executive Summary

University and Institutions wield a significant influence on their surroundings, contributing both positively and negatively to the world at large. The progress of a nation often commences within its educational institutions, where ecological considerations play a pivotal role in overall development. The activities undertaken by a university can result in a diverse range of environmental impacts. A clean and healthy environment not only facilitates effective learning but also fosters a conducive atmosphere for education. M. S. Ramaiah University of Applied Sciences places great importance on environmental factors and is actively incorporating eco-friendly concepts into its operations.

M. S. Ramaiah University of Applied Sciences is firmly committed to sustainability and has taken numerous proactive measures to minimize its environmental footprint. However, there are still several areas where significant improvements can be realized. This report aims to showcase the achievements of M. S. Ramaiah University of Applied Sciences while offering recommendations for enhancing its environmental sustainability. The University conducted a **Environment Audit** for the year **2022** and remains dedicated to maintaining a sustainable campus environment.

The primary goal of this report is to identify areas for improvement and propose practical, economically viable solutions to optimize energy and water usage on the campus. Just as individual self-reflection is a natural and integral part of a quality education, institutional self-evaluation is equally essential for a quality educational institution. Consequently, it is imperative for the University to assess its own contributions toward a sustainable future.

M. S. Ramaiah University of Applied Sciences has undertaken various initiatives to promote an eco-friendly campus environment, including:

Energy Conservation, Water Conservation, Efforts for Carbon Neutrality, Hazardous and E-waste Management, Health and Well-Being, Plantation.

The University and its constituent institutions actively engage in activities through organizations like the N.S.S. (National Service Scheme) and other initiatives to raise eco-friendly awareness among students. Special programs featuring prominent personalities are organized to educate and train the public, and students are encouraged to participate in eco-friendly endeavors.

In conclusion, M. S. Ramaiah University of Applied Sciences is committed to its mission of sustainability and continuously strives to create a more environmentally responsible campus for the benefit of its students and the wider community.

  
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# Environmental Auditing

Environmental Audit serves as a valuable tool for assessing the effectiveness of environmental sustainability practices and proposing solutions for improvement. It reflects a professional and systematic approach to the responsible utilization of economic, financial, social, and environmental resources. This type of audit not only evaluates but also enhances the management strategies employed by various organizations, especially educational institutions such as universities. Its primary function is to identify, assess, and manage environmental risks, whether they are apparent or latent.

Key Aspects of Environmental Audit:

1. **Thorough Evaluation:** Environmental Audit meticulously examines an organization's environmental practices, shedding light on both strengths and weaknesses. This examination provides a roadmap for addressing environmental challenges effectively.
2. **Professional Accountability:** The audit signifies a commitment to professionalism in resource utilization, emphasizing the careful management of economic, financial, social, and environmental assets.
3. **Value Addition:** Beyond mere assessment, Environmental Audit contributes tangible value to an institution's management approaches. It offers insights that can refine decision-making processes and enhance overall efficiency.
4. **Risk Management:** A key function of Environmental Audit is proactive risk management. It identifies, evaluates, and aids in the effective management of environmental risks, encompassing both well-known and potential latent risks.



**M. S. Ramaiah University of Applied Sciences- Campus.**

  
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## Approach & Methodology

A comprehensive study was conducted to thoroughly examine every aspect of M. S. Ramaiah University of Applied Sciences. This audit encompassed an array of measurements and analyses, with a specific focus on key areas of energy consumption, water usage, resource utilization, waste management, and sustainable practices. The objective was to assess real losses and potential savings, with a broader aim of enhancing the college's environmental performance.

In pursuit of this goal, a straightforward and locally developed monitoring system was devised. This system involves a set of periodic questions that individuals can voluntarily respond to. It is designed to be user-friendly and accessible, emphasizing ease of use for all participants. The ultimate purpose of this auditing report is to inspire the university to set a positive environmental example for the community and to educate its students about sustainability principles.

The primary areas under investigation during the audit were categorized as follows:

1. **Site Selection:** Examining the appropriateness of the college's location.
2. **Built Environment:** Assessing the infrastructure and facilities on campus.
3. **Water Audit:** Analyzing water consumption and management.
4. **Energy Audit:** Evaluating energy consumption and efficiency.
5. **Good Health and Well-Being:** Promoting a healthy living environment.
6. **Waste Management:** Studying waste disposal practices and their impact.
7. **Green Education:** Integrating sustainability into the educational curriculum.
8. **Transportation:** Assessing transportation-related sustainability measures.

Throughout the audit process, there was a continuous dialogue involving college officials, faculty members, and students. This collaborative approach ensured that the suggestions and recommendations put forth were not only meaningful but also practical and feasible for concurrent implementation.



## I. About

### M. S. Ramaiah University of Applied Sciences

M. S. Ramaiah University of Applied Sciences (MSRUAS) is a multidisciplinary, innovative, and collaborative Higher Education Institution established as a Private University by an Act of Karnataka State in 2013, with a vision to be student centric, emphasizing on applied research, while maintaining high academic and ethical standards. Initially, the University had Faculties of Engineering and Technology, Art and Design, Management and Commerce, Mathematical and Physical Sciences, Life and Allied Health Sciences, Pharmacy, Dental Sciences and Hospitality Management. The School of Social Sciences and School of Law were added in 2020. M S Ramaiah Medical College, M S Ramaiah Institute of Nursing Education and Research and M S Ramaiah College of Physiotherapy were brought under MSRUAS in 2022. MSRUAS offers Undergraduate, Postgraduate, Vocational and Ph.D. Programmes. The University has a student strength of around 7000+ and 740+ qualified faculty members well trained in pedagogy and constantly striving to impart quality education to address societal challenges. Through adoption of global best practices in curricular, research, co-curricular and extra-curricular activities, MSRUAS ensures all-round development of students. Directorates of Student Affairs, Training and Lifelong Learning, Transferable Skills and Leadership Development, Research, Internal Quality Assurance Cell, Techno-Centre, Entrepreneurship, International Collaborations and Partnership Management, support the academic activities and interaction with Academia, Research Organizations, Industry, and Communities, in India and Abroad. MSRUAS is equipped with modern infrastructure and laboratories including an Advanced Learning Center supporting initiatives in Research, Advanced Design, Simulation, Testing, Clinical Studies, and Health Care.


#### VISION

RUAS aspires to be the premier university of choice in Asia for student-centric professional education that lays emphasis on applied research while maintaining the highest academic and ethical standards.

#### MISSION

Our purpose is the creation and dissemination of knowledge. We are committed to creativity, innovation, and excellence in our teaching and research. We inspire critical thinking, personal development and a passion for lifelong learning.

We value integrity, quality, and teamwork in all our endeavors. And we serve the technical, scientific, and economic needs of our society.



## II. Built Environment

### i. Layout plan - Gnanagangothri Campus



M. S. Ramaiah University of Applied Sciences Gnanagangothri campus layout plan

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## **Gnanagangothri Campus: A Nexus of Knowledge and Progress**

Nestled in the vibrant locale of Mathikere, the Gnanagangothri Campus stands as a testament to the visionary legacy of its Founder-Chairman, Late Dr M S Ramaiah. Spanning an expansive 31.96 acres, this academic haven is more than just a physical space; it is a convergence point for over 21 healthcare and education initiatives fostered by the esteemed Ramaiah Group.

The campus serves as a harmonious coexistence of diverse disciplines, housing the Medical University, Institute of Technology, Institute of Management, University of Law, and the University of Arts, Science & Commerce. In addition, it shares grounds with Memorial Hospital, the Medical University Hospital, and the Indic Specialty Ayurveda Restoration Hospital. This unique integration of various institutions creates an enriching environment where different fields of study, schools of thought, and streams of research seamlessly come together.

Named the 'Well-Spring of Knowledge,' Gnanagangothri was envisioned as a hub propelling academic and societal progress. Founder-Chairman Late Dr M S Ramaiah established this campus with the foresight that it would be at the forefront of enlightenment and contribute significantly to the upliftment of society.

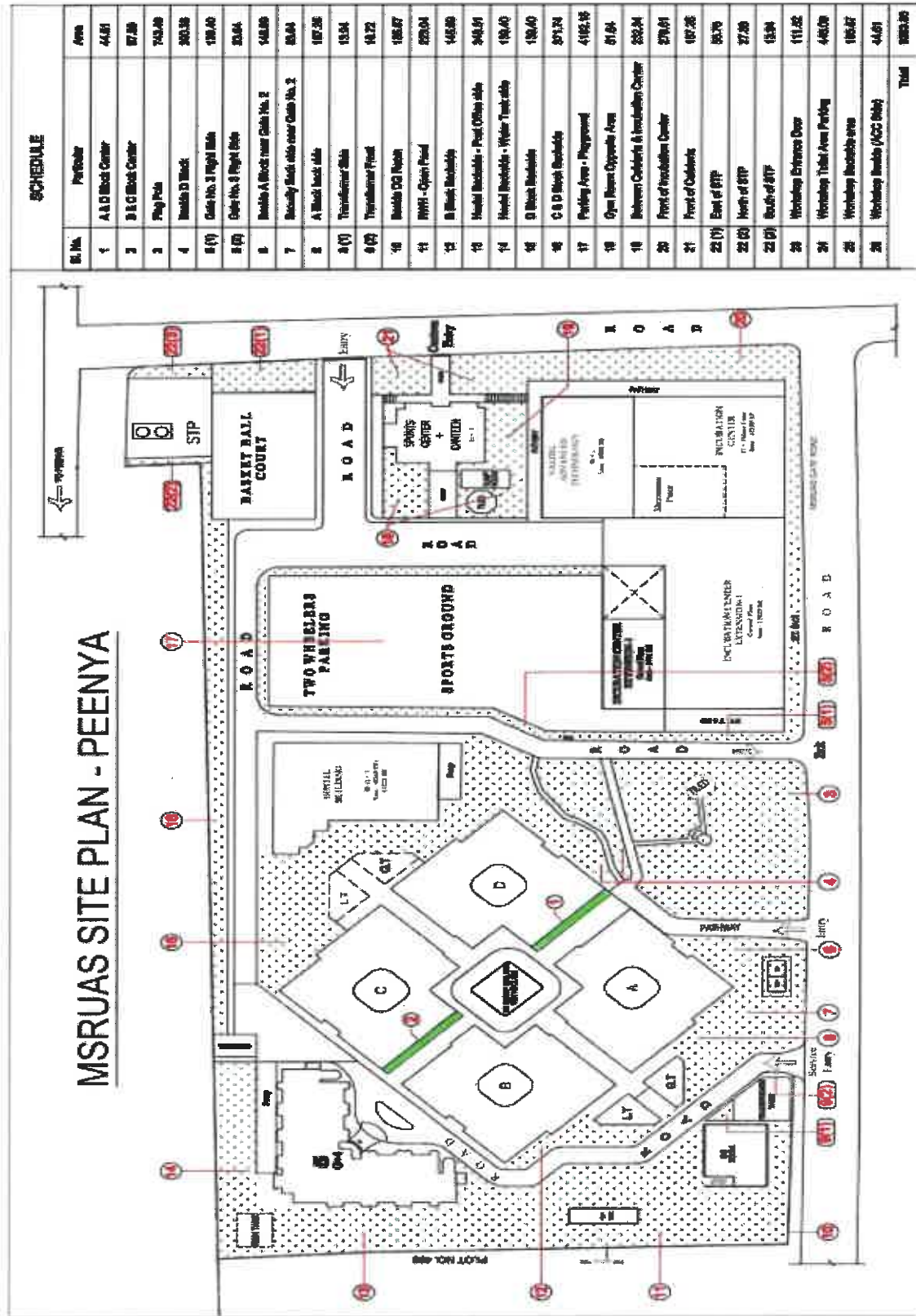
Today, Gnanagangothri is more than a physical space; it is a vibrant community comprising hundreds of students, teachers, researchers, doctors, and healthcare professionals. United in a common pursuit, the campus embodies the spirit of enlightenment, fostering an atmosphere where knowledge transcends boundaries and contributes to the betterment of society. As the Gnanagangothri Campus continues to evolve, it remains a beacon of intellectual vitality and a catalyst for positive societal change.



**M. S. Ramaiah University of Applied Sciences Gnanagangothri campus**



ii. Layout plan - Ramaiah Technology Campus



SCHEDULE

Sl. No.	Particular	Area
1	A & D Block Center	44.81
2	B & G Block Center	87.29
3	Flag Pole	742.49
4	Block D Block	262.29
5 (1)	Gate No. 3 Right Side	139.40
5 (2)	Gate No. 8 Right Side	20.64
6	Block A Block near Gate No. 2	148.89
7	Block A Block near Gate No. 2	20.64
8	A Block side side	187.26
9 (1)	Transformer Station	13.94
9 (2)	Transformer Pond	12.72
10	Block C2 North	188.87
11	WPT - Open Pond	229.04
12	B Block Blockside	148.89
13	Block Blockside - Front Office side	248.91
14	Block Blockside - Water Tank side	190.40
15	D Block Blockside	139.40
16	C & D Block Blockside	291.74
17	Parking Area - Programmed	4165.95
18	Open Areas Opposite Area	61.64
19	Between Canteen & Installation Center	232.24
20	Front of Installation Center	279.61
21	Front of Canteen	187.26
22 (1)	East of BTP	63.79
22 (2)	North of BTP	27.29
22 (3)	South of BTP	15.84
23	Workshop Entrance Door	111.25
24	Workshop Total Area Parking	448.09
25	Workshop Installable area	186.87
26	Workshop Installable (ACC Side)	44.61
<b>Total</b>		<b>9889.89</b>

M. S. Ramaiah University of Applied Sciences, Ramaiah Technology Campus layout plan

### **Ramaiah Technology Campus (Peenya Campus): Where Innovation Meets Industry**

Spread across 8.85 acres in the dynamic locale of Peenya, the Ramaiah Technology Campus is a vibrant hub of innovation and learning. Designed over a sprawling 8.86 acres, this campus is strategically situated in close proximity to industries big and small. The short distance from international and local corporations is not just a geographical advantage; it's a strategic asset that the campus leverages through a spectrum of activities including workshops, visits, seminars, and research opportunities.

At this campus, students are afforded a rare and invaluable opportunity to witness, up close, the intricate workings of various industries. This hands-on experience provides them with a distinctive edge over their peers, offering insights that go beyond theoretical knowledge.

Beyond its academic prowess, the Ramaiah Technology Campus in Peenya is committed to eco-friendly measures that significantly reduce its carbon footprint. The campus is not merely a physical space for learning; it's a living, breathing ecosystem that prioritizes sustainability.

Moreover, the campus boasts a range of meticulously planned facilities aimed at ensuring the safety and comfort of every student. It is a testament to the institution's dedication to creating an environment where innovation thrives, and students are equipped not just with academic knowledge but with practical insights that prepare them for the challenges of the real world.

Ramaiah Technology Campus (Peenya Campus) stands as a beacon where innovation meets industry, shaping the future leaders and professionals of tomorrow.



**M. S. Ramaiah University of Applied Sciences, Ramaiah Technology Campus**



### iii. Total built-up area of the University

Gnanagangothri Campus			
Sl. No.	Name of the Building	Floor	Area (Sft)
1	University House	Ground	12675
		First	20057
		Second	17900
2	Faculty of Dental Sciences	Basement	13,850
		Ground	30,374
		First	29,623
		Second	29,623
3	Faculty of Management & Commerce and Faculty of Life & Allied Health Sciences	Third	29,623
		Ground	24,500
		First	22,700
4	Faculty of Hospitality Management & Catering Technology	Second	22,700
		Third	22,700
		Basement	15,300
5	Faculty of Pharmacy	Ground	15,300
		First	15,900
		Second	15,900
		Third	15,900
6	Heritage Block (School of Social Sciences and School of Law)	Ground	22,700
		First	22,700
		Second	27,000
		Third	24,400
7	Ramaiah Medical College	Basement	6,675
		Ground	31,445
		First	28,000
		Second	28,853
		Third	28,000
		Lower Basement	65,250
8	Ramaiah Medical College Hospital	Upper Basement	52,780
		Ground	60,270
		First	59,880
		Second	56,590
		Third	58,230
		Lower Basement 3 and Upper Basement 1	31,103
9	Ramaiah Institute of Nursing Education and Research	Ground	1,17,316
		First	1,17,144
		Second	85,459
		Third	24,074
		Ground	12,702
10	Triveni Girls Hostel and Nilgiris Boys Hostel	First	12,702
		Second	12,702
		Third	12,702
		Lower Basement	70,913
		Upper Basement	69,387
11	Sapthagiri Hostel	Ground	42,338
		First	42,338
		Second	42,338
		Third	42,338
12	Faculty Residence – Tulasi Staff Quarters	Ground	19,752
		First	19,752
		Second	19,752
12	Faculty Residence – Tulasi Staff Quarters	Stilt Floor	3,200
		Ground + 2 Typical	9,600

Ramaiah Technology Campus			
Sl. No.	Name of the Building	Floor	Area (Sft)
1	A Block (RTC)	Basement	10,600
		First	10,600
		Second	12,100
		Third	12,100
2	B Block (RTC)	Upper	10,600
		Ground	10,600
		First	10,600
		Second	10,600
3	C Block (RTC)	Third	10,600
		Lower	8,600
		Upper	10,200
		Ground	10,200
4	D Block (RTC)	First	10,200
		Second	10,200
		Third	10,200
		Upper	8,600
5	Incubation Block (RTC)	Ground	42,200
		First	6,777
6	Workshop Block A (RTC)	Ground, First	19,600
		Second	
7	Workshop Block B (RTC)	Ground and	16,750
		Mezzanine	
8	Ladies Hostel Block (RTC)	Basement	8500
		Ground	8500
		First + Typical Floors	27,450
9	Gents Hostel Block (RTC)	Basement	8,695
		Ground +	33,052
10	Canteen Block (RTC)	Ground	3,714
		First	3,750
11	Service Block (RTC)	Ground	2,800
		First	2,700
12	Toilet Block A & B (RTC)	Ground	1,770
		First	1,770
		Second	1,770
		Third	1,770
13	Toilet Block C & D (RTC)	Ground	1,770
		First	1,770
		Second	1,770
		Third	1,770

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### **Vegetated Area and Open Space:**

An exceptional feature of the M. S. Ramaiah University of Applied Sciences, is the extensive open and vegetated spaces within its 60-acre campus. More than 50% of this vast area is dedicated to lush greenery and vegetation, illustrating the University's commitment to maintaining an eco-friendly and sustainable environment. The substantial vegetated areas and ample open spaces not only contribute to the aesthetic appeal but also serve as vital spaces for recreation, relaxation, and environmental conservation. These green zones provide an ideal setting for students and faculty, offering a serene atmosphere conducive to learning and fostering a deep appreciation for nature. The vast open spaces also allow for outdoor activities, sports, cultural events, and potential future expansions, enhancing the overall campus environment.

This integration of greenery and open areas reflects the University's holistic approach to creating a harmonious ecosystem for academic and personal development.

### **iv. Development Footprint and Green Cover**

At M. S. Ramaiah University of Applied Sciences, the preservation of site features, particularly greenery within its campus, stands as a cornerstone of its development ethos. Embracing a conscientious approach, the campus prioritizes the retention of natural elements—trees, plants, and green spaces during its construction endeavors. This deliberate strategy serves to curtail site damage and reduce the associated negative environmental impacts. The University is dedicated to achieving a delicate equilibrium between its building footprint and the existing green cover. By meticulously integrating construction with the preservation of vegetation, university ensures that the architectural and infrastructural developments seamlessly coexist with the natural landscape. This commitment not only amplifies the overall aesthetic appeal of the campus but also fosters thriving habitats for wildlife, encourages biodiversity, and significantly contributes to the creation of a sustainable, environmentally friendly environment.







**M. S. Ramaiah University of Applied Sciences campus development footprint and green cover**  
A dedicated effort is made to preserve the campus's natural features, aiming to minimize site damage and reduce negative environmental impacts. An integral part of this conservation initiative is the deliberate preservation of existing trees without disruption. This commitment to safeguarding mature trees not only aligns with the institution's environmental sustainability goals but also serves to maintain the ecological integrity of the site.



**M. S. Ramaiah University of Applied Sciences campus development footprint and green cover**

## v. Day lighting

At M. S. Ramaiah University of Applied Sciences, the integration of abundant natural daylight through passive architectural methods stands as a hallmark of its design philosophy. Across various spaces, including classrooms, laboratories, computer labs, and the library showcases a deliberate and thoughtful approach to maximize the use of natural light. Through strategic placement and expansive windows, each area is meticulously designed to invite in copious amounts of daylight, creating bright, inviting, and conducive spaces for learning, research, and study. This conscious use of daylight not only enhances the aesthetic appeal of the campus but also fosters an environment that supports the well-being, focus, and productivity of students and faculty across different educational and research settings.



**Feeling of space and light in the building**



## vi. Heat Island Reduction, Non-roof and roof

Urban heat islands occur when cities replace natural land cover with dense concentrations of pavement, buildings, and other surfaces that absorb and retain heat. This effect increases energy costs (e.g., for air conditioning), air pollution levels, and heat-related illness and mortality.

The university has taken proactive steps to combat the urban heat island effect and minimize its impact on microclimates, as well as the well-being of both humans and wildlife. They have achieved this by strategically planting native, drought-tolerant shade trees and smaller vegetation like shrubs, grasses, and groundcover across the campus. This comprehensive landscaping approach prioritizes tree cover on exposed non-roof impervious areas, effectively reducing heat absorption and promoting a more comfortable environment. Moreover, the provision of shade for over 100% of the parking spaces through covered structures demonstrates a commitment to mitigating heat-related issues and underscores the University's dedication to sustainable and eco-friendly practices.



Native grass for lawn and drought tolerant shade trees at university to reduce heat island effect

### III. Biodiversity Audit

A thorough scientific survey of the campus's plant and animal life was conducted throughout the rainy, winter, and summer seasons in 2022, constituting a comprehensive biodiversity audit. This examination revealed significant findings, including the identification of numerous tree species and a diverse array of mammals, birds (Aves), arthropods, and annelids. These findings highlight the remarkable diversity of flora and fauna flourishing on the campus.

Noteworthy among the discoveries is the seasonal influx of various bird species, contributing to the ecological significance of the campus. In a commendable initiative, the institution has taken steps to label trees and plants with their botanical names and assign unique numerical identifiers. This concerted effort aligns with the broader goal of preserving and celebrating the campus's rich biodiversity, aiming to foster a deeper appreciation for the natural world.

**Campus Plantation Overview:** In the campus, there is a dedicated effort towards creating a vibrant and green environment with a focus on a variety of plants that contribute to the beauty and ecological balance of the surroundings.



### List of Plants at RUAS

Sl No	Botanical name	Common name	Family	Nos of plants
1	Eugenia Jambosoides C Wright ex Griseb	(nerale)	Myrtaceae	16
2	Azadirachtra Indica A Jubs	Neem	Meliaceae	12
3	Dracaena reflexz Lam	Sang - of - India	Asparagaceae	13
4	Plumiria Obtusa. L.	Pagoda- tree	Apocynaceae	6
5	Jacaranda Mimosifolia D. Don	Block poui	Bignoniaceae	28
6	Luacaena Lencocephala (Lam)de wit	coffee bush	Leguminosae	5
7	Hibiscus rosa-sinensis L	Chinese hibiscus	Malvaceae	8
8	Ixora coccinea L	Flame -of-the-woods	Rubiaceae	30
9	Thuja occidentlis L	Northern White-cedar	cupressaceae	32
10	Erica arborea L	Tree health (Austalian bottle brush)	Ericaceae	25
11	Tabebnia aurea (silvamanso)Benth. &Hook.f.	Carribbean trumpet-tree	Bignoniaceae	6
12	Saraca Indica L	Ashoka tree	Leguminosae	4
13	Phyllanthus emblica L	Indian -goosberry	Phyllanthaceae	3
14	Phyllanthus acidus(L). Skeeb	Indian -goosberry	Phyllanthaceae	4
15	cocos nucifera L	Coconut	Arecaceae	13
16	Trichilia dregeana sond.	Christamas-bells	Meliaceae	11
17	Terminalia catappa L	Indian - almond	Combretaceae	8
18	Ficus sycomorus L	Sycomore	Moroceae	4
19	Callistemon viminalis (sol. Ex Gaertn).G. Don	Greek bottle brush	Myrtaceae	3
20	Araucaria heterophylla (Salisb.) Franco	Norfolk island. Pine (*X Mass tree	Araucariaccae	2
21	Tectona grandis L.f.	Bankok teak	Lamiaceae	25
22	Grevillea robusta A. cunn.ex R.Br.	Asustralian silky- Oak	Proteaceae	45
23	Tecoma Stans(L.) jubs.ex Kunth	Trumpet- flower	Bognoniaceae	10
24	Polyatthia longifolia(sonn.) Thwaites	Cemetery- tree	Annonaceae	4
25	Areca catechu L.	Indian- nut	Arecaceae	40
26	Tamarindaus Indica L.	Tamarind	Leguminosae	1
27	Limonia acidissima Graff	Indian wood apple	Rutaceae	3
28	Bougainvillea glabrachoisy	Paper- flower	Nyctaginaceae	10
29	Dyposis Lutescens (H.Wendl.)Beentje & J.Dransf.	Areca palm	Arecaceae	24
30	Ficus carica L.	Fig	Moroceae	2
31	Risa chinesis Jacq	Bengal rose	Rosaceae	74
32	Plumeria Pudica Jacq	Bridal boquet	Apocynaceae	13



33	<i>Euphorbia Lotinifolia</i> L.	Tropical smokebush	Euphorbiaceae	15
34	<i>Murraya Koenigii</i> (L.) Spreag.	Curryleaf tree	Rutaceae	1
35	<i>Anacardium occidental</i> L.	Cashew	Anacardiaceae	2
36	<i>Arotocarpus heterophyllus</i> Lam	Jack fruit	Moraceae	10
37	<i>Averrhoa carambola</i> L.	Carambola (star fruit )	Oxalidaceae	1
38	<i>Dendrocalamus giganteus</i> munro	Giant bamboo	Poaceae	6
39	<i>Maringa Ofera</i> Lam	Drumstick tree	Maringaceae	8
40	<i>Mangifera Indica</i> L.	Common Mango	Anacardiaceae	27
41	<i>Psidium guajava</i> L.	Common gouava	Myrtaceae	35
42	<i>Manilkara Zapota</i> (L>) P. Royen	Chicle	Sapotaceae	5
43	<i>Pterocarpus Indicua</i> Willd.	Amboyna- wood	Leguminosae	28
44	<i>Ficus Microcarpa</i> L.f.	Chinese benyan	Maraceae	10
45	<i>Tabebuia heterophylla</i> (DC.) Britton.	White- cedar	Bignoniaceae	6
46	<i>Spathodea campanuiata</i> P. Beaur.	African Thlip tree	Bignoniaceae	3
47	<i>Cordia Sebestena</i> L.	Geranium-tree	Boraginaceae	1
48	<i>Annona Montana</i> Macfad	Mountain Soursop	Annonaceae	2
49	<i>Citrus Maxima</i> ( Burm) Merr.	Pomelo	Rutaceae	2
50	<i>Filicium decipicus</i> ( wight & Arn.) Thwaites	Feru tree	Sapindaceae	3
51	<i>Brownea grandiceps</i> Jacq	Rose-of-venezuela	Leguminosae	3
52	<i>Persea americana</i> Mill	Avocada	Lauraceae	2
53	<i>Annona Squamosa</i> L.	Custard - apple	Annonaceae	4
54	<i>Calophyllum inophyllum</i> L.	Indian lourel	Clusiaceae	2
55	<i>Syzygium samangense</i> (Blume) Merr.& L.M.	Java - apple	Myrtaceae	2
56	<i>Euphorbia miliides</i> moul.	Christ's- plant	Euphorbiaceae	8
57	<i>Roystonea regia</i> ( Kunth)D.F.Cook	Cuban rayal palm	Arecaceae	80
58	<i>Ficus benjamina</i> L.	Mahyan banyan	Moraceae	25
59	<i>Santalum album</i> L.	East Indian sandl wood	Santalaceae	3
60	<i>Mognolia Champaca</i> (L). Baill. Ex pierre	Michelia	Magnolioceae	3
61	<i>Acacia auriculiforis</i> Benth	Earleaf acacia	Leguominosae	1
62	<i>Ficus religiosa</i> L.	Sacred fig	Moraceae	1
63	<i>Radermachera sinica</i> (Hence)Hemsl.	China doll plant	Bignoniaceae	4
64	<i>Syzygium Jambos</i> (L.)Alston	Jambos	Myrtaceae	2
65	<i>Mimusops elevgi</i> L.	Medar	Sapotaceae	4
66	<i>Delonix regia</i> (Hook.)Ref.	Flamboyant	Leguminosae	9
			<b>Total</b>	<b>802</b>

Plant List RTC Peenya				
SI No	Botanical name	Common name	Family	Numbers
1	<i>Eugenia Jambosoides C Wright ex Griseb</i>	Nerale	Myrtaceae	14
2	<i>Azadirachtra Indica A Jubs</i>	Neem	Meliaceae	12
3	<i>Plumiria Obtusa. L.</i>	Singapore graveyard flower	Apocynaceae	10
4	<i>Styphnolobium japonicum. L.</i>	Pagoda- tree	Apocynaceae	6
5	<i>Jacaranda Mimosifolia D. Don</i>	Block poui	Bignoniaceae	28
6	<i>Hibiscus rosa-sinensis L</i>	Chinese hibiscus	Malvaceae	8
7	<i>Ixora coccinea L</i>	Flame -of-the-woods	Rubiaceae	30
8	<i>Thuja occidentlis L</i>	Northern White-cedar	cupressaceae	32
9	<i>Erica arborea L</i>	Tree health (Austalian bottle brush)	Ericaceae	25
10	<i>Saraca Indica L</i>	Ashoka tree	Leguminosae	4
11	<i>Phyllanthus acidus(L). Skeeb</i>	Indian -goosberry	Phyllanthaceae	4
12	<i>Terminalia catappa L</i>	Indian - almond	Combretaceae	8
13	<i>Ficus sycomorus L</i>	Sycomore	Moroceae	4
14	<i>Tectona grandis L.f.</i>	Bankok teak	Lamiaceae	28
15	<i>Grevillea robusta A. cunn.ex R.Br.</i>	Asustralian silky- Oak	Proteaceae	47
16	<i>Tecoma Stans(L.) jubs.ex Kunth</i>	Trumpet- flower	Bognoniaceae	5
17	<i>Ficus carica L.</i>	Fig	Moroceae	2
18	<i>Euphorbia Lotinifolia L.</i>	Tropical smoke bush	Euphorbiaceae	15
19	<i>Murraya Koenigii (L.) Spreag.</i>	Curry leaf tree	Rutaceae	1
20	<i>Moringa Olifera Lam</i>	Drumstick tree	Maringaceae	8
21	<i>Ficus Microcarpa L.f.</i>	Chinese banyan	Maraceae	10
22	<i>Spathodea campanuiata P. Beur.</i>	African Thlip tree	Bignoniaceae	3
23	<i>Annona Montana Macfad</i>	Mountain Soursop	Annonaceae	2
24	<i>Annona Squamosa L.</i>	Custard - apple	Annonaceae	4
25	<i>Euphorbia miliides moul.</i>	Christ's- plant	Euphorbiaceae	8
26	<i>Santalum album L.</i>	East Indian sandal wood	Santalaceae	3
27	<i>Mognolia Champaca (L). Baill. Ex pierre</i>	Michelia	Magnolioceae	3
28	<i>Acacia auriculiforis Benth</i>	Ear leaf acacia	Leguominosae	1
29	<i>Ficus religiosa L.</i>	Sacred fig	Moraceae	1
30	<i>Syzygium Jambos(L.)Alston</i>	Jambos	Myrtaceae	2
31	<i>Delonix regia (Hook.)</i>	Flamboyant	Leguninosae	9
			<b>Total</b>	<b>337</b>



A diverse range of mammal, bird, arthropod, and annelid species were observed on campus, showcasing an unexpectedly rich composition of flora and fauna. This biodiversity is particularly remarkable given the urban location of the campus in the heart of the city, underscoring the resilience and adaptability of the local wildlife to coexist in this unique environment.



## IV. Green Policy and Education

The institution is actively promoting green education by engaging students and local communities to elevate awareness levels and inspire the adoption of eco-friendly practices through the National Service Scheme (NSS). NSS plays a pivotal role in educating students about the environment, environmental laws, and their responsibilities in safeguarding the environment. The institution conducts a myriad of programs and awareness initiatives dedicated to environmental protection. These activities are organized periodically and encompass various outreach and educational programs throughout the year, involving both campus residents and local communities. This collective effort aims to enhance public awareness of environmental sustainability and the green initiatives implemented on the campus.

The entire campus is dedicated to the Swachh Bharat Abhiyan, actively raising awareness about the Clean India mission. Staff and students alike enthusiastically participate in keeping the campus and its surroundings impeccably clean, contributing to the mission's success across the campus.

The institution also celebrates significant environmental occasions such as Environmental Day, Earth Day, and Water Day every year. These celebrations often involve tree planting activities, serving as a means to raise awareness and expand green coverage in and around the campus. This commitment to environmental awareness and action demonstrates the institution's dedication to sustainable practices and the well-being of the environment.

### **"RUAS NSS Units Commemorate World Environment Day with Green Sunday Initiative: Planting Seeds for a Greener Tomorrow"**

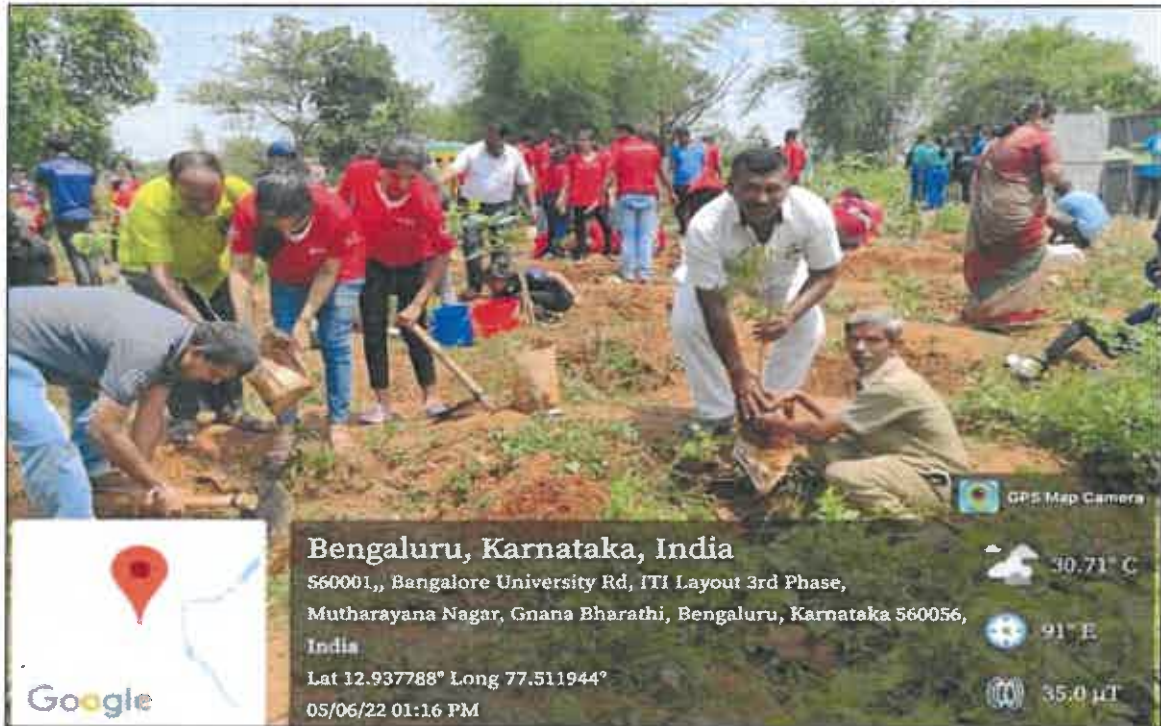
Ramaiah University of Applied Sciences (RUAS) celebrated World Environment Day on June 5th with a meaningful and impactful initiative led by its NSS (National Service Scheme) units. As part of their commitment to environmental sustainability, the NSS Cell collaborated with the Adama Chetana Foundation for a special Green Sunday initiative.

The chosen location for this eco-conscious endeavor was the Bangalore University Campus, where 100 saplings were planted. Dr. Tejawini Anantkumar, Managing Trustee of the Adama Chetana Foundation, addressed the participating students, urging them to dedicate a few Sundays each year to the noble cause of planting saplings. This initiative not only contributes to the preservation of the environment but also aligns with the broader mission of creating a greener and more sustainable world.

The tree-planting activity held special significance as it commemorated the Centennial Birth Anniversary of Karmayogi Dr. MS Ramaiah, the Hon'ble Founder of RUAS. The event symbolized a collective effort to give back to nature and honor the visionary founder whose legacy continues to inspire positive change.



The day was not only about planting trees but also about fostering a sense of responsibility towards the environment. It provided an opportunity for the university community to actively engage in making the world a better and greener place for all. This initiative reflects RUAS's dedication to environmental stewardship and instills a sense of environmental consciousness among its students, contributing to a sustainable and healthier future.







**Bengaluru, Karnataka, India**

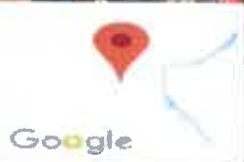
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**Bengaluru, Karnataka, India**

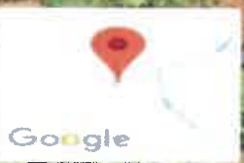
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**Bengaluru, Karnataka, India**

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## "NSS RUAS Volunteers Join Forces in the 355th Green Sunday Initiative: A Mega Plantation Drive for a Greener Future"

On October 16th, 2022, the NSS (National Service Scheme) volunteers of Ramaiah University of Applied Sciences actively participated in the 355th Green Sunday Initiative organized by Adama Chethana in collaboration with Rotary Bangalore Midtown. This collaborative effort aimed to make a substantial impact on the environment by planting saplings and promoting green practices.

More than 80 enthusiastic volunteers from RUAS played a vital role in the plantation drive, working together to plant saplings and contribute to the ambitious goal of planting 500 saplings. The entire supply of saplings for this Mega Plantation Drive was generously provided by the Adama Chetana Trust.

During the event, the student volunteers, alongside their NSS Program Officer, took a solemn oath to care for the planted saplings, commit to planting more trees in the future, and inspire others to do the same. This initiative not only reflects the dedication of RUAS students to environmental conservation but also emphasizes the importance of collective action in fostering a sustainable and green future.

The accompanying glimpses showcase the active participation and commitment of NSS RUAS volunteers in the Tree Plantation Drive, highlighting their role in making a positive impact on the environment and promoting a culture of environmental responsibility.



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### **"Plog Run: RUAS NSS Units Lead the Charge to Make Mathikere Litter-Free"**

In alignment with the Clean India initiative, Ramaiah University of Applied Sciences (RUAS) NSS Units orchestrated a Plog Run on October 29th, 2022, embodying their commitment to a cleaner and greener environment. The event focused on the active participation of students in a collective effort to combat plastic pollution in the Mathikere locality.

During the Plog Run, NSS volunteers engaged in the conscientious task of picking up plastic waste strewn along the roads. Equipped with bags, they systematically collected the discarded plastic items and handed them over to municipal officials for proper disposal. The initiative not only addressed immediate environmental concerns but also contributed to creating awareness about the harmful effects of plastics.

To amplify their message, NSS volunteers held placards displaying various messages on the detrimental effects of plastic, aiming to educate and inspire the public to join the cause. The teams dispersed in different directions, covering localities around the University campus, making a tangible impact on the immediate surroundings.

All the collected waste was efficiently transported in a van to a designated common point within the campus for further disposal, ensuring a responsible and eco-friendly approach to waste management. The event concluded with group photos and a heartfelt round of applause extended to Mr. Damodar Nayak and Ms. Pranupa S, the dedicated Program Officers leading the initiative. The collective efforts of RUAS NSS Units showcased their proactive role in fostering environmental stewardship and community engagement.

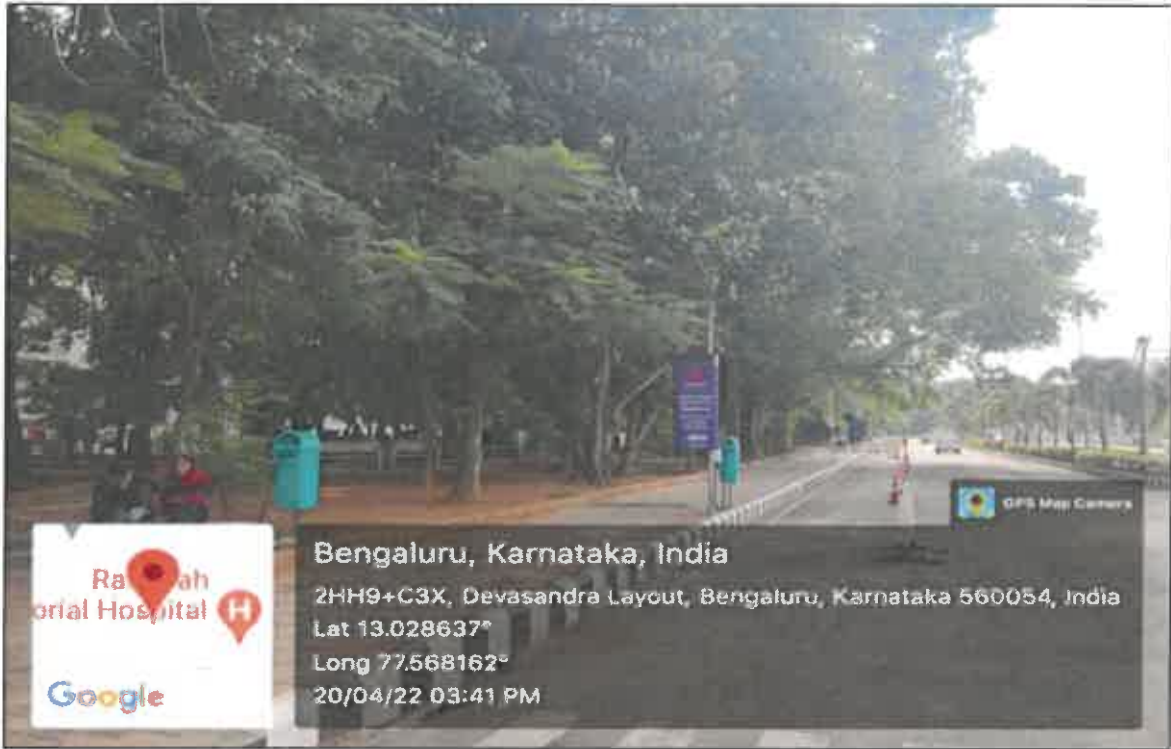






The median on the main road is planted with flowers bearing trees and herbs for a width of about 3 feet and length of 1236 feet. The total number of saplings planted are about 9000. Extensive planting has been done on the lower road in front of institutions. The existing garden in front of the Faculty of Hotel Management (FHMCT) is totally renovated with Herbal plants. In addition, another garden with an area of 7800 sq. ft. is created adjacent to FHMCT in which around 2250 number of plants have been planted. The area in front of the Ramaiah statue is also covered with plants. Dustbins are fixed at prominent zones on the roads and parks. Extensive Tree Plantation and Green Landscaping across the Campus provides a fresh environment. Every year around 50+ Plants will be planted at each faculty to make up for the lost Plants.





Ramaiah Memorial Hospital



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Long 77.568162°  
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Peenya 4th Cross Rd



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470-P, Peenya 4th Phase, Peenya Industrial Area Phase IV, Peenya, Bengaluru, Karnataka 560058, India  
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## V. Observation and Recommendation

### Observation on Best Initiatives in Campus Sustainability:

- 1. Biodiversity Conservation:** Both campuses boast lush green beds fostering biodiversity. Trees in the campuses provide a habitat for various birds such as crows, pigeons, mynahs, nightingales, snakes, and peacocks. Beehives are discovered under the ceilings, showcasing a thriving ecosystem. Dogs and cats move freely, contributing to the natural balance, feeding on leftovers from the canteen and food street.
- 2. Ground Water Recharge:** Groundwater recharge initiatives are in place at the Peenya campus, emphasizing sustainable water management.
- 3. Pollution Reduction:** Car-pooling, usage of battery-operated vehicles, and bicycles are encouraged to reduce pollution.
- 4. E-Waste Management:** Unused and old electronic equipment is responsibly managed through sales to authorized E-Waste scrap dealers.
- 5. Solid Waste Management:** Both campuses actively practice solid waste management, contributing to a cleaner and healthier environment.
- 6. Renewable Energy:** Both campuses have embraced renewable energy by installing solar panels. The Peenya campus has implemented a bio-gas plant, contributing to sustainable energy practices.
- 7. Tree Plantation Drives:** The National Service Scheme (NSS) actively participates in tree plantation drives, conducting two such initiatives. Annual tree planting efforts extend to nearby streets, areas, towns, and villages, emphasizing the commitment to environmental conservation.
- 8. Adoption of Village/Society:** The campuses have adopted five villages (Kaiwara, Rajgere, Mallur, Kannalli, and Jakkanalli) across Karnataka through the Unnat Bharath Abhiyan Scheme. This initiative aims to support the technical development of these villages, promoting sustainable growth.

## Recommendations for Sustainable Practices

Following the recent Environment Audit, we have identified several key recommendations aimed at further enhancing our sustainability efforts and environmental responsibility:

- 1. Stakeholder Engagement:** Foster collaboration with government, foundations, and industry stakeholders to support interdisciplinary research, education, policy formation, and information exchange focused on environmentally sustainable development.
- 2. Environmentally Responsible Purchasing Policy:** Develop and implement an Environmentally Responsible Purchasing Policy to guide procurement decisions, emphasizing choices that reduce the college's environmental footprint.
- 3. Employee Tree Ownership:** Explore the assignment of tree ownership to employees, cultivating a sense of responsibility and ownership for the campus's green spaces.
- 4. Butterfly Garden:** Develop and nurture a butterfly garden on campus to celebrate and appreciate the diversity of flora and fauna, actively contributing to biodiversity conservation efforts.
- 5. Canteen Renovation:** Investigate the renovation of the college canteen's cooking system by incorporating solar water heaters with heat pumps to reduce gas consumption and encourage the use of renewable energy.
- 6. Institutional Ecology:** Establish and enforce institutional ecology policies and practices to promote resource conservation, recycling, waste reduction, and environmentally sound operations throughout the college.
- 7. Sustainability Training:** Introduce comprehensive sustainability training programs for the college community to promote awareness of sustainable practices and environmental stewardship.



  
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