Green Aura

Built Environment Sustainability & Transformation

ENVIRONMENT AUDIT REPORT | 2023

M. S. Ramaiah University of Applied Sciences

2023-24

Green Aura

Built Environment Sustainability & Transformation

692F,12TH A CROSS BEL LAYOUT, BENGALURU- 560091

(ISO/IEC 17020:2012, ISO 9001:2015, ISO 1400:2015 Certified Organisation & Ministry of MSME registered organisation),

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 11th November, 2023 and assessed the Environmental measures, policies and standards in the campus were found to be excellent.

This certificate is valid till 11th November 2024

Ref. No: GA / ENVIRONMENTAL AUDIT / 03 / 11 / 23

DR NISCHAY N GOWDA

Founder & Director - Green Aura

CERTIFIED ISO EMS-LA, IGBC - AP,
US GREEN BUILDING COUNCIL - GREEN ASSOCIATE
GLOBAL DOCTORATE, SWITZERLAND.

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

Green Audit Certificate

This certificate is awarded to **M. S. Ramaiah University of Applied Sciences, University House, Gnanagangothri Campus, New BEL Road, MSR Nagar, Bangalore, 560054** in recognition of their commitment and efforts towards environmental sustainability.

As a result of the Green Audit conducted on **7th Nov 2023**, it has been determined that **M. S. Ramaiah University of Applied Sciences** has implemented a range of effective environmental sustainability practices in line with National Building Code 2016 –Part-11.

This certificate is valid for following scope of activities:

Green Audit
Energy Audit
Environment Audit

Audit Date	:	7th Nov 2023
Certificate No.	:	1B05323B20000160
Issuance Date	:	11th Nov 2023

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

Signature
Maneet Dewan
Director

PQMS Quality Services Private Limited
SCO-21, 4th Floor, Feroze Gandhi Market, Ludhiana-141001 (Punjab)
Email: info@qualityindia.in website: www.qualityindia.in

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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. B. S. Dayananda, Prof. Mechanical 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 September to November 2023.

- **Dr. Nischay N Gowda**, Founder & Director Green Aura, Bengaluru.
  Lead Assessor, PQMS Quality Services Pvt Ltd. (IGBC-AP and LEED-Green Associate)
- **Mr. Manish Walecha**, Certified Energy Auditor (EA-34073/23).
- **Mr. Sachin Kumawat**, Certified Energy Manager (EM-300475/23).
- **Mr. Akash Kumar**, Engineer.

RAMAIAH UNIVERSITY OF APPLIED SCIENCES

Green Aura
Built Environment Sustainability & Transformation

Submitted to:
Registrar,
M. S. Ramaiah University of Applied Sciences
University House, Gnanagangothri Campus
New BEL Road, MSR Nagar, Bangalore – 560054

Audited by:
Green Aura,
692F,12th A cross Bel layout,
Bengaluru- 560091.

Registrar
M.S. Ramaiah University of Applied Sciences
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Disclaimer

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

It is important to note that the calculations are based on our best estimates, and we do not make any representation, warranty, or undertaking, either express or implied. The Audit team does not accept responsibility for any direct or consequential losses that may arise from the use of 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 period of study at the site. Our work represents our best efforts and judgments based on the information available at the time this report was prepared. 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 construed as a definitive comment on the functioning of the facility. These observations are solely based on the data recorded at the time of our assessment.

Green Aura bears no responsibility for the reader's use of or reliance upon this report, nor for any decisions made based on its contents. Readers are advised that they assume all liabilities incurred by themselves or third parties as a result of 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 college 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 college conducted an **Environmental Audit** for the year **2023** 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 college 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 college 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 stands as a powerful tool for evaluating the robustness of environmental sustainability practices and devising solutions for improvement. It epitomizes a professional, methodical approach to the conscientious utilization of economic, financial, social, and environmental resources. An Environmental Audit not only assesses but also enriches the management strategies adopted by organizations, in particular, educational institutions like universities. It serves as a mechanism to identify, assess, and effectively manage environmental risks, whether they are known or latent. Key Aspects of Environmental Audit:

Efficient Evaluation: Environmental Audit efficiently scrutinizes an organization's environmental practices, illuminating areas of both strength and weakness. By doing so, it offers a roadmap for addressing environmental challenges.

Professional Responsibility: This audit represents a commitment to professionalism in the use of resources. It underscores the importance of managing economic, financial, social, and environmental assets conscientiously.

Value Augmentation: Environmental Audit goes beyond a mere assessment; it adds tangible value to an institution's management approaches. It provides insights that can refine decision-making and enhance overall efficiency.

Risk Mitigation: One of its primary functions is proactive risk management. It identifies, evaluates, and helps in the effective management of environmental risks, encompassing those that are well-known as well as those that may be lurking beneath the surface.

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

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.

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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 endeavours. And we serve the technical, scientific, and economic needs of our society.

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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.

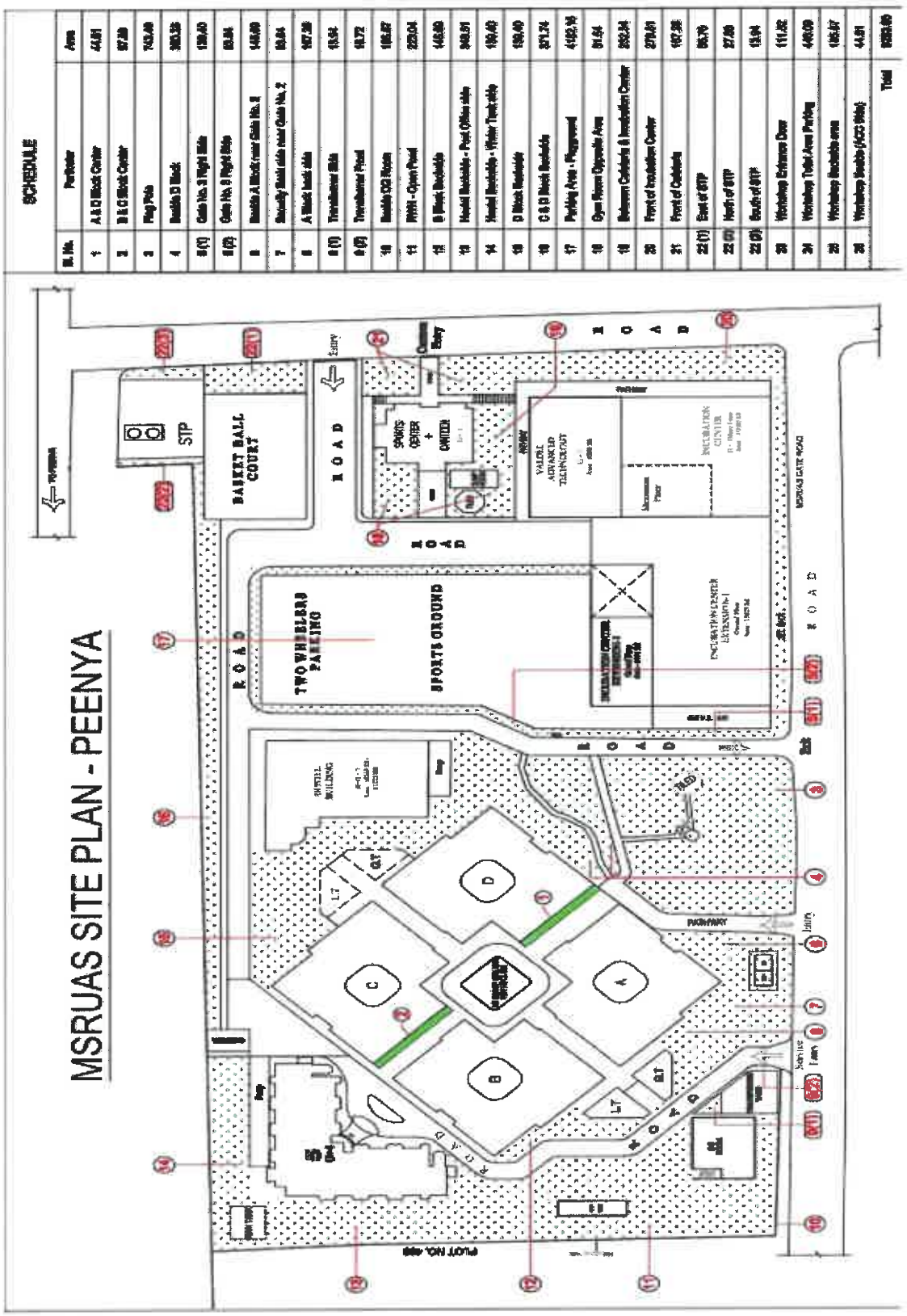
The campus serves as a harmonious coexistence of diverse disciplines, housing the Medical University, Institute of Technology, Institute of Management, University of Law, and the University of Arts, Science & Commerce. In addition, it shares grounds with Memorial Hospital, the Medical University Hospital, 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



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

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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

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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
		Third	29,623
3	Faculty of Management & Commerce and Faculty of Life & Allied Health Sciences	Ground	24,500
		First	22,700
		Second	22,700
		Third	22,700
4	Faculty of Hospitality Management & Catering Technology	Basement	15,300
		Ground	15,300
		First	15,900
		Second	15,900
		Third	15,900
5	Faculty of Pharmacy	Ground	22,700
		First	22,700
		Second	27,000
		Third	24,400
6	Heritage Block (School of Social Sciences and School of Law)	Basement	6,675
		Ground	31,445
		First	28,000
		Second	28,853
		Third	28,000
7	Ramaiah Medical College	Lower Basement	65,250
		Upper Basement	52,780
		Ground	60,270
		First	59,880
		Second	56,590
		Third	58,230
8	Ramaiah Medical College Hospital	Lower Basement 3 and	31,103
		Upper Basement 1	1,17,316
		Ground	1,17,144
		First	1,17,144
		Second	85,459
		Third	24,074
9	Ramaiah Institute of Nursing Education and Research	Ground	12,702
		First	12,702
		Second	12,702
		Third	12,702
10	Triveni Girls Hostel and Nilgiris Boys Hostel	Lower Basement	70,913
		Upper Basement	69,387
		Ground	42,338
		First	42,338
		Second	42,338
		Third	42,338
11	Sapthagiri Hostel	Ground	19,752
		First	19,752
		Second	19,752
12	Faculty Residence – Tulasi Staff Quarters	Stilt Floor	3,200
		Ground + 2 Typical	9,600

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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
		Third	10,600
3	C Block (RTC)	Lower	8,600
		Upper	10,200
		Ground	10,200
		First	10,200
		Second	10,200
		Third	10,200
4	D Block (RTC)	Upper	8,600
		Ground	10,200
		First	10,200
		Second	10,200
		Third	10,200
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	27,450
		Floors	
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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iv. Comprehensive Overview of Building Areas

a) University House

The central hub of administrative activities at M. S. Ramaiah University of Applied Sciences (MSRUAS) is the "University House," located in the Gnanagagothri Campus. This facility serves as the head office for the university and is prominently referred to in all official correspondences.

Facility Overview: University House spans approximately 25,000 sq. ft. and plays host to a range of key management offices, contributing significantly to the smooth functioning of the university.

Office Distribution: Ground Floor (12,675 sq. ft): The ground floor is strategically allocated for essential administrative offices, including those of the Vice Chancellor, Registrar, and Pro Vice Chancellors. This level also houses the Controller of Examination, Human Resources, and various directorates.

First Floor (20,057 sq. ft): The first floor accommodates crucial administrative functions such as the Office of the Dean - Academics, Student Affairs, and additional directorates. This level also features meeting rooms, boardrooms, and other amenities for collaborative activities.

Second Floor (17,900 sq. ft): The second floor is designed to support administrative efficiency, with additional offices and meeting spaces contributing to the overall operational ecosystem of the University House.

Overall Significance: University House stands as a central pillar in the administrative infrastructure of MSRUAS, providing a cohesive environment for decision-making, planning, and coordination among the university's key management entities. The strategic allocation of space ensures an organized and efficient workflow, promoting effective communication and collaboration among the university's leadership and administrative teams.

University House

GROUND FLOOR PLAN

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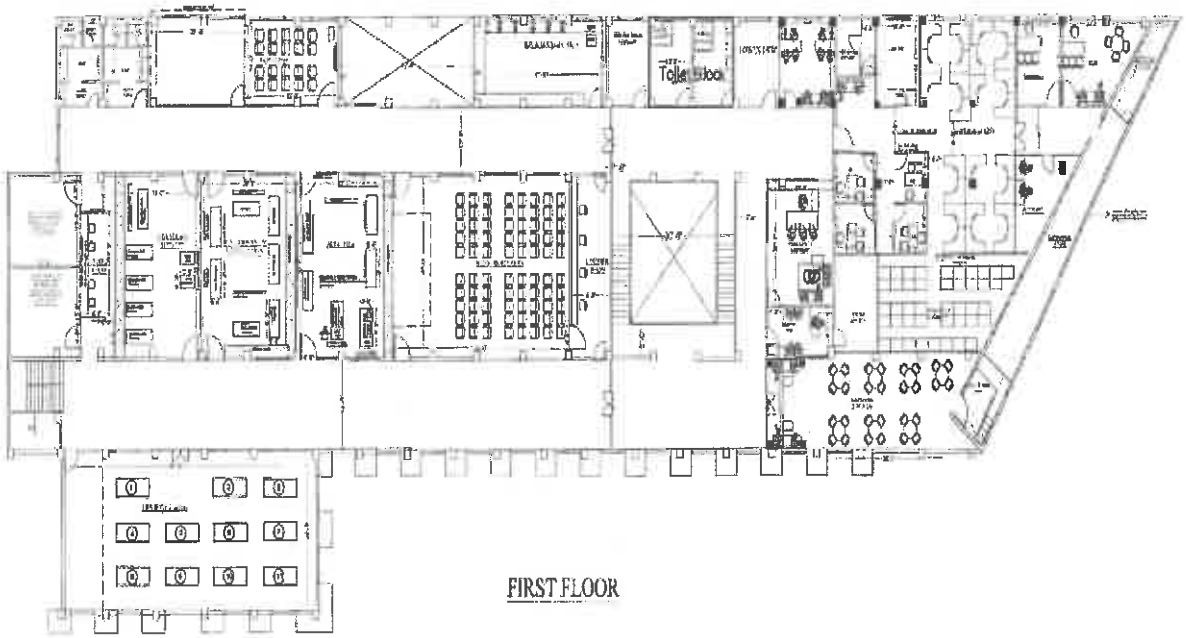
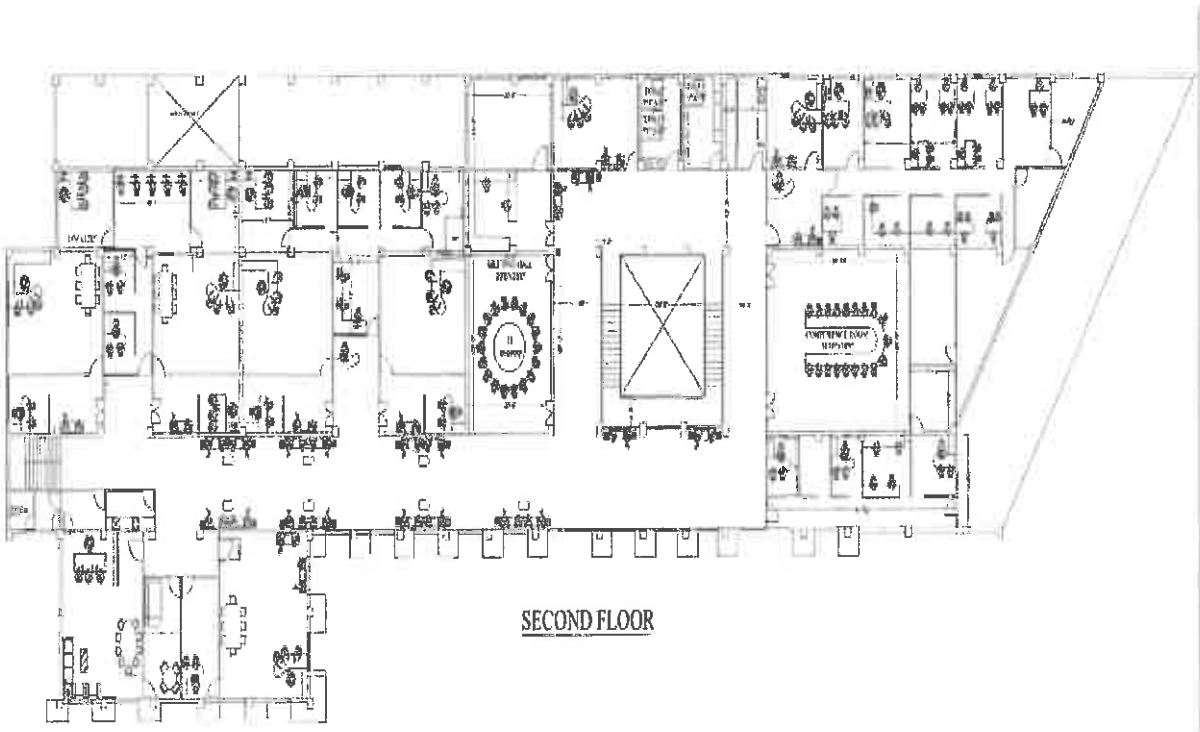


FIRST FLOOR



SECOND FLOOR

University House floor plan

Registrar

b) Faculty of Dental Sciences

Facility Overview:

The Faculty of Dental Sciences boasts a comprehensive infrastructure spread across multiple floors, catering to the diverse needs of academic, clinical, and administrative functions. The breakdown of space utilization is as follows:

Basement (13,850 sq. ft): The basement of the Faculty of Dental Sciences is a critical space contributing to the overall functionality of the institution. It is likely dedicated to specialized facilities such as storage, utility rooms, or possibly specialized laboratories and equipment storage.

Ground Floor (30,374 sq. ft): The ground floor serves as the primary entry point and often houses reception areas, administrative offices, and possibly lecture halls or classrooms. Additionally, it might accommodate common areas for students and faculty interaction.

First Floor (29,623 sq. ft): The first floor is likely a hub for academic activities, housing lecture halls, laboratories, and tutorial rooms. It may also feature faculty offices, allowing for easy accessibility for both students and staff.

Second Floor (29,623 sq. ft): Similar to the first floor, the second floor may contain additional classrooms, laboratories, and collaborative spaces. It could also host specialized facilities such as simulation labs or research spaces, depending on the academic requirements of the Faculty of Dental Sciences.

Third Floor (29,623 sq. ft): The third floor likely serves as an extension of academic and research facilities. It may house advanced laboratories, seminar rooms, and possibly faculty research offices. Collaborative spaces for research groups and postgraduate studies may also be situated on this floor.

The meticulous distribution of space across different floors reflects a thoughtful approach to providing an environment conducive to learning, research, and administration within the Faculty of Dental Sciences. It is essential to consider the unique requirements of dental education, including state-of-the-art laboratories, clinical spaces, and administrative support, to ensure a holistic and well-rounded educational experience for students and faculty alike. The well-organized spatial allocation is a testament to the institution's commitment to excellence in dental education and research.

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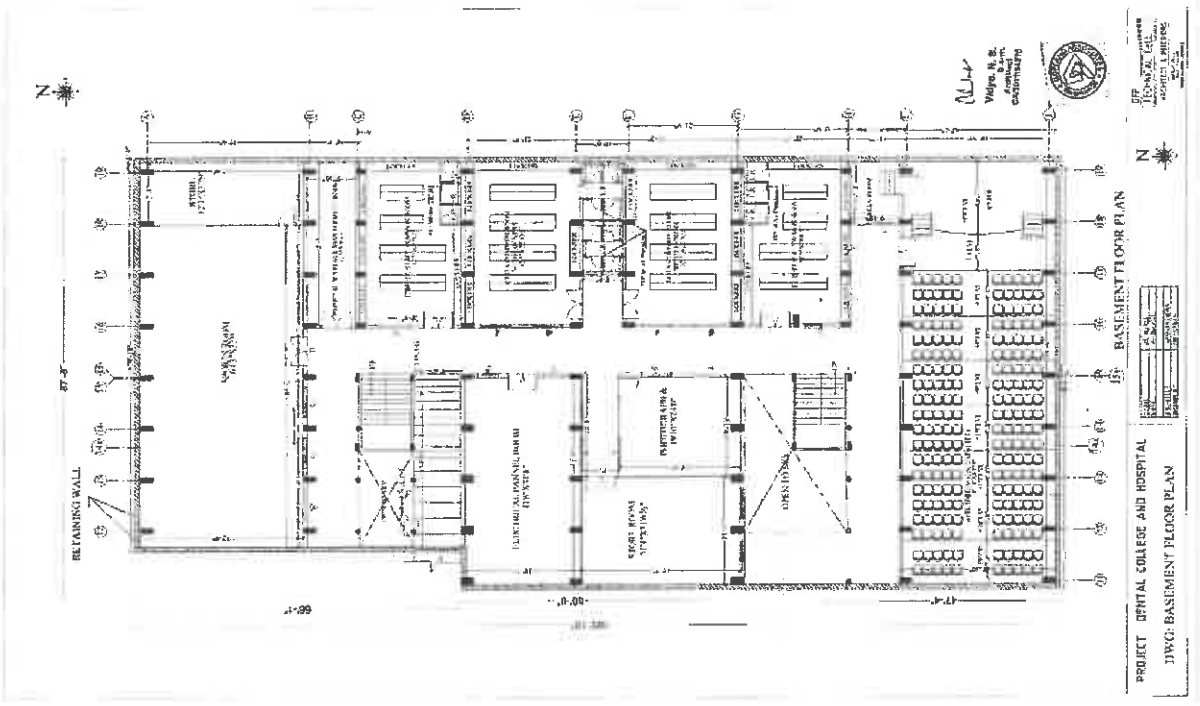

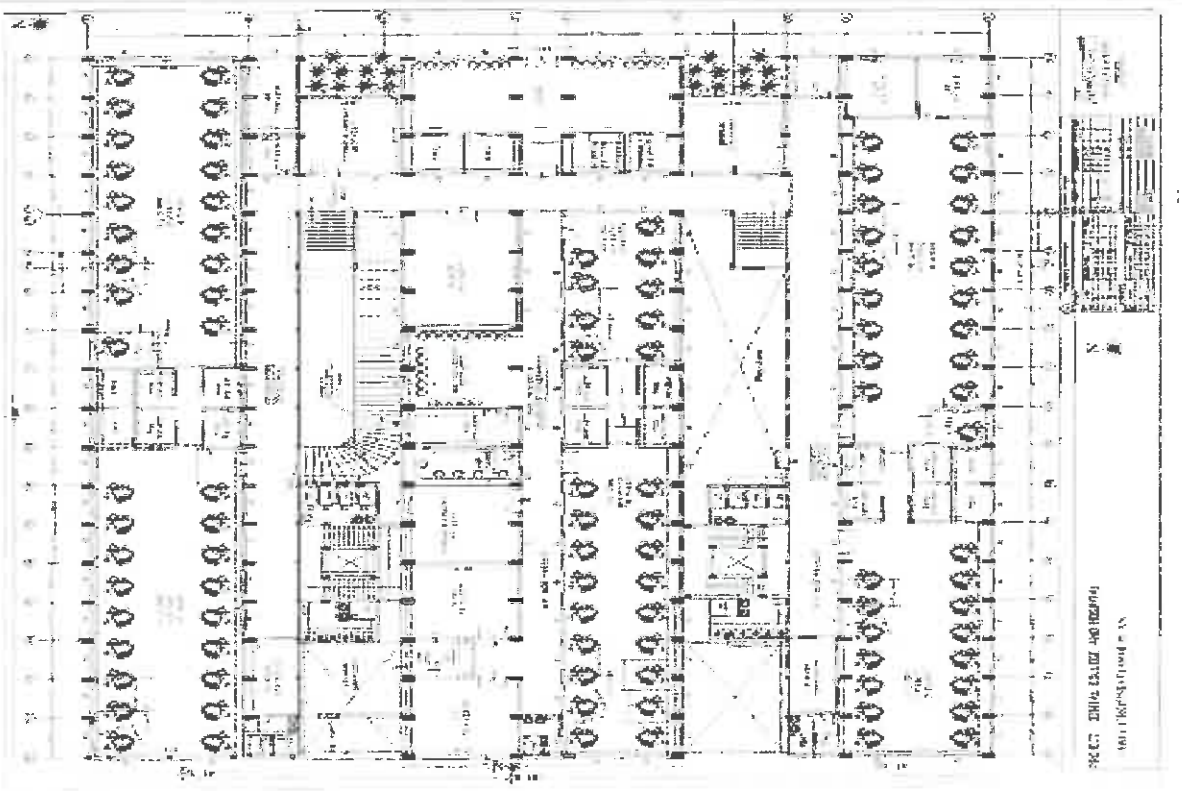

Faculty of Dental Sciences Basement and Ground floor plan

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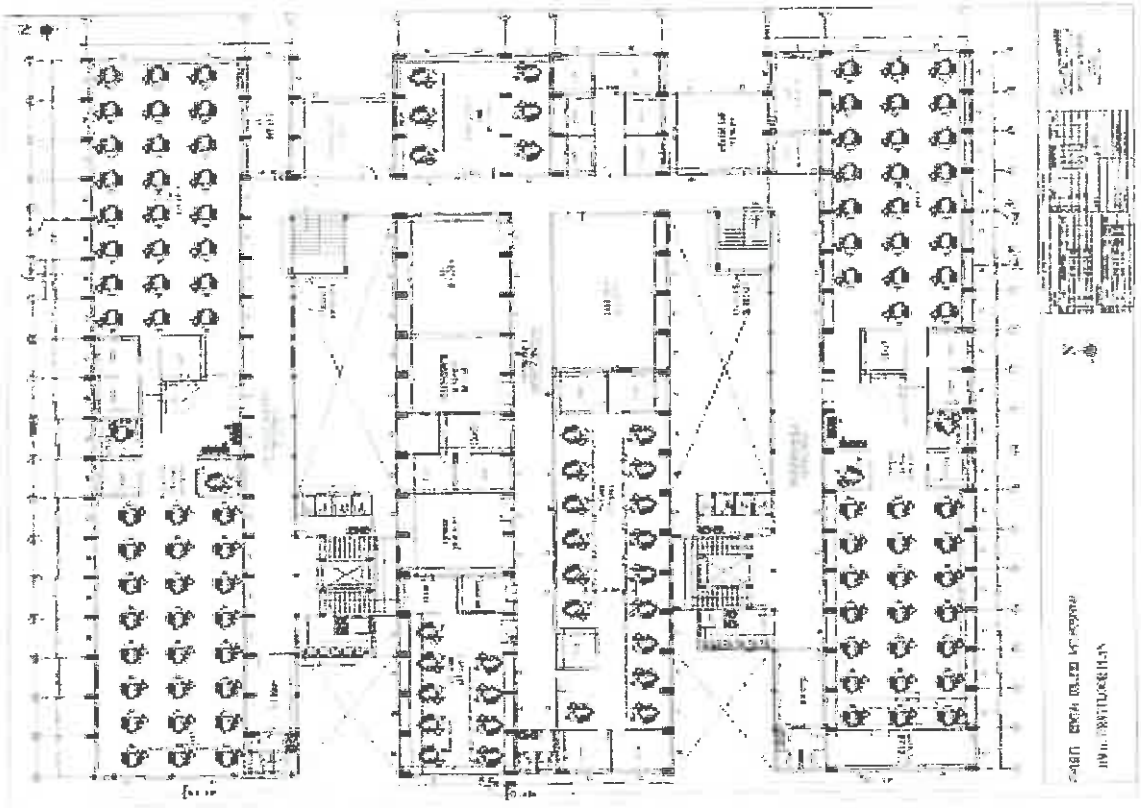
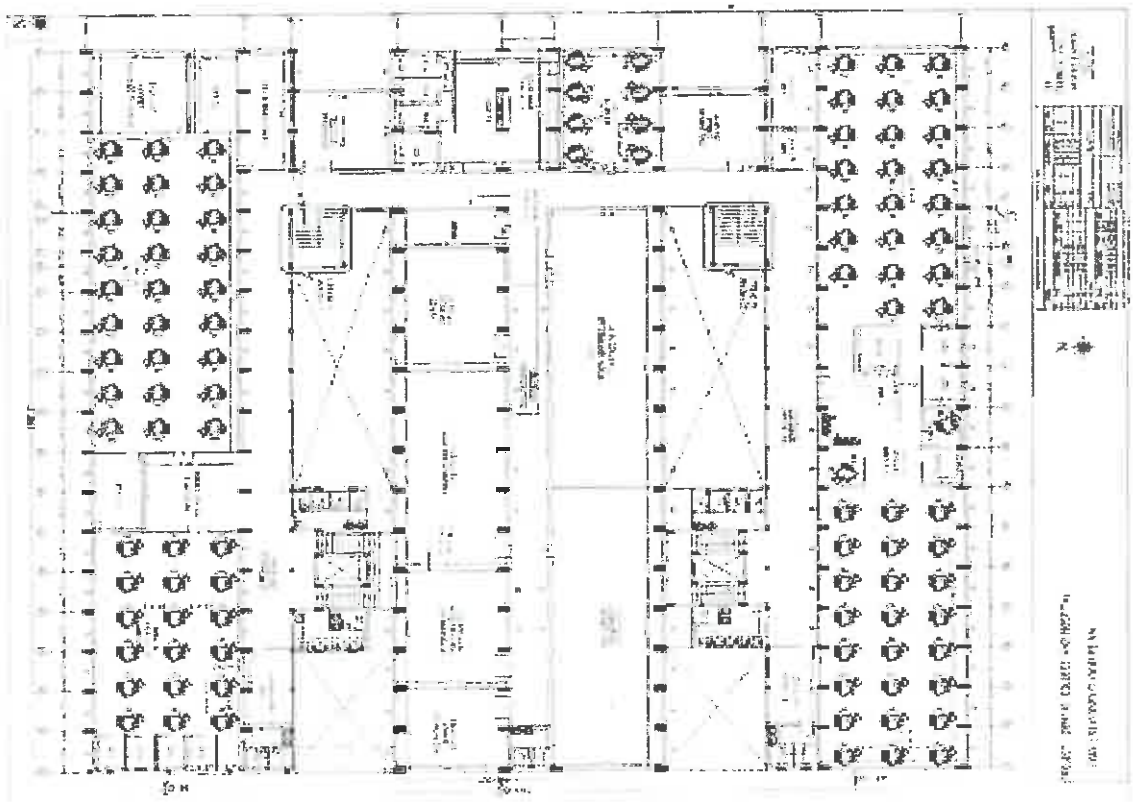
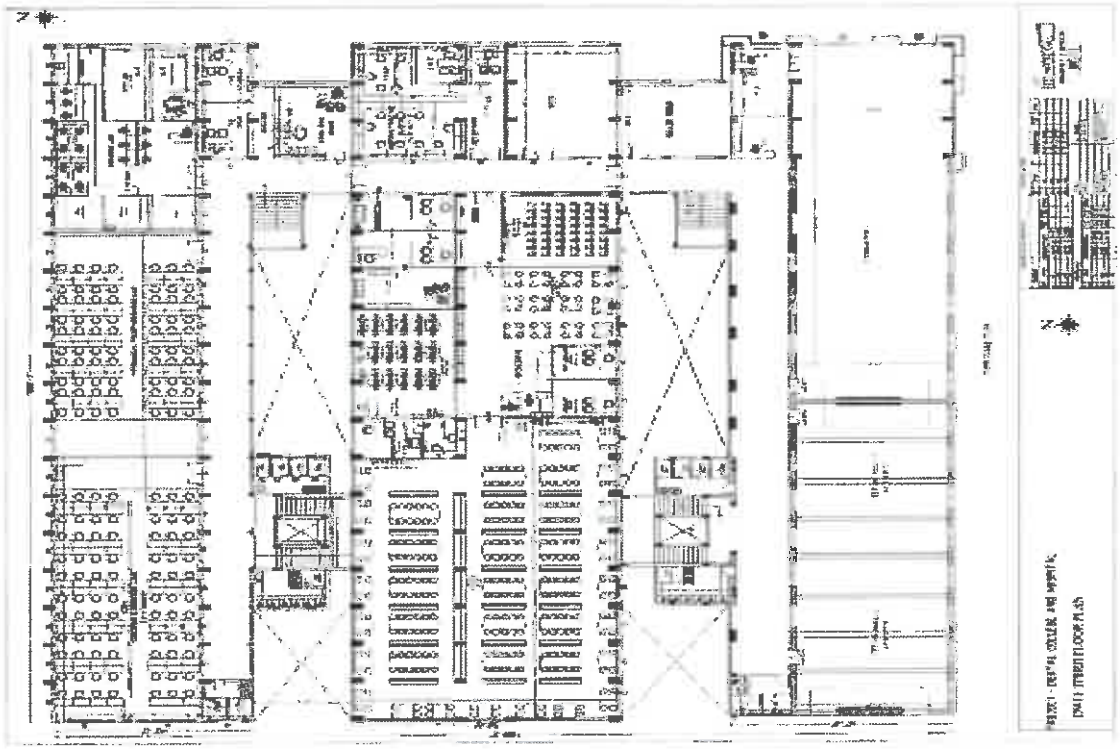




Faculty of Dental Sciences First and second floor plan



Faculty of Dental Sciences third floor plan

c) Faculty of Management & Commerce (FMC) and Faculty of Life & Allied Health Sciences (FLAHS)

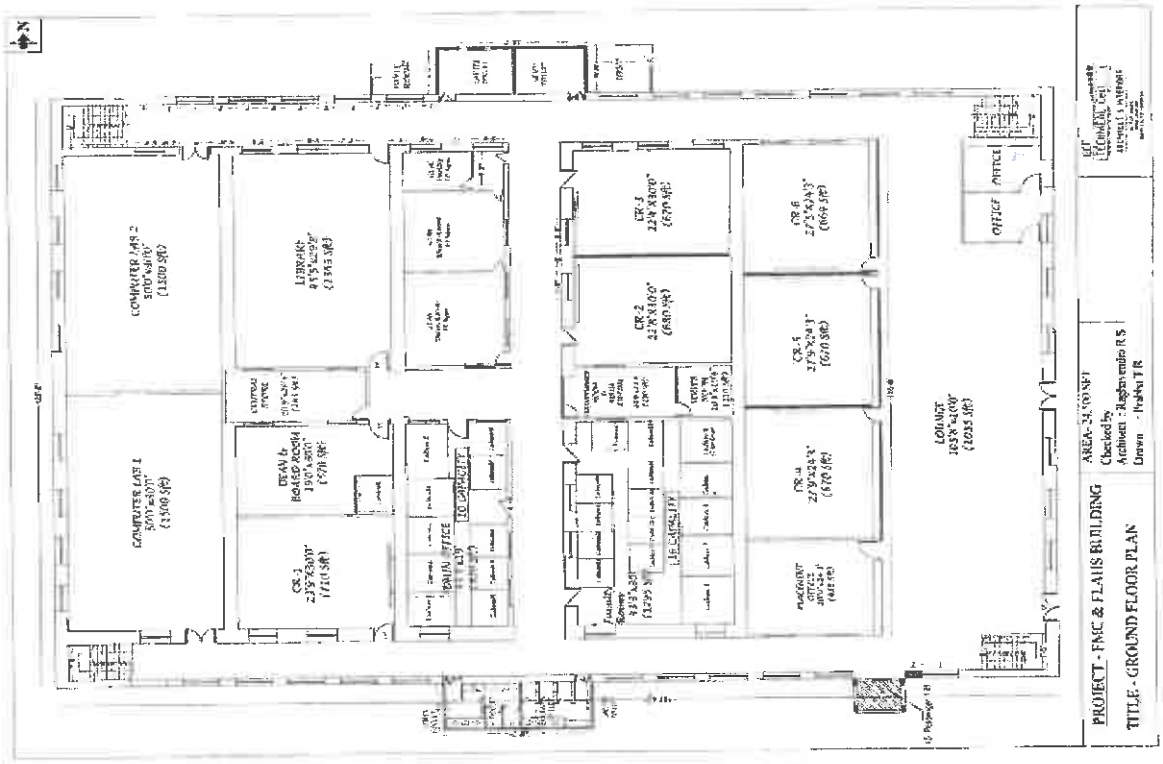
The Faculty of Management and Commerce (FMC) and the Faculty of Life & Allied Health Sciences (FLAHS) at MSRUAS are integral components of the academic landscape, each contributing uniquely to the university's commitment to excellence in education and research.

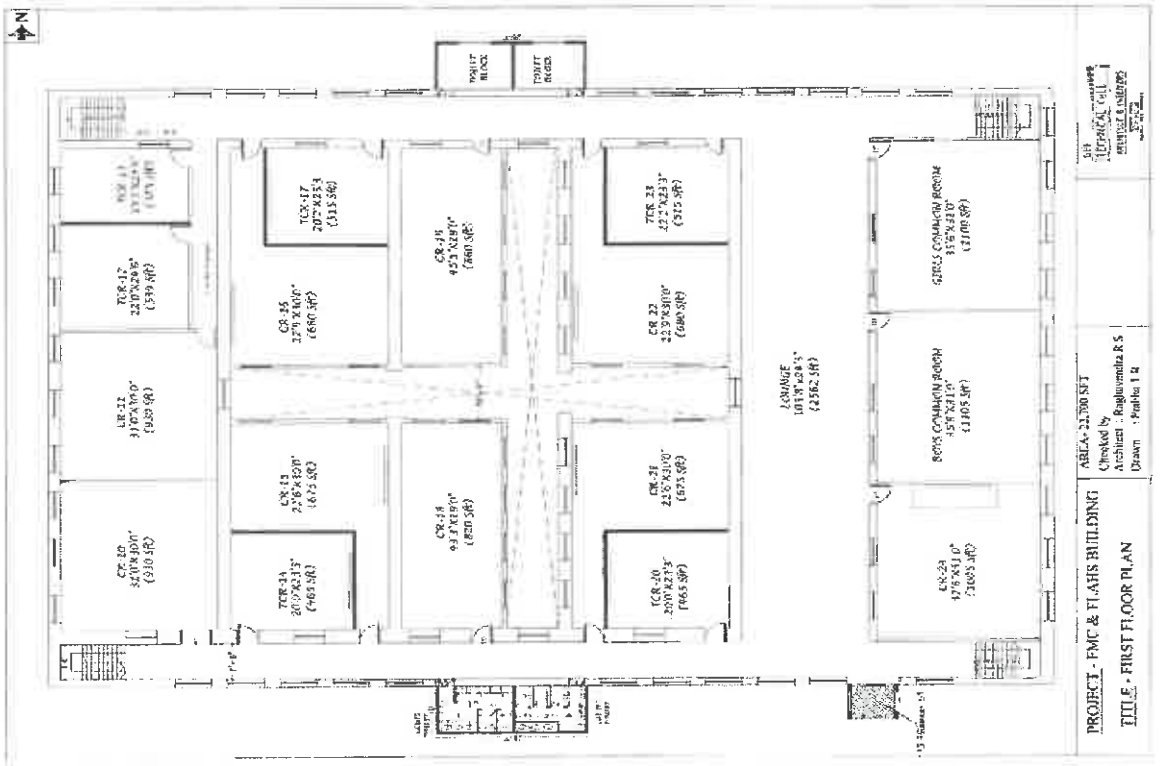
Space Utilization: Ground Floor (24,500 sq. ft): This level serves as the foundational space for the faculties, likely accommodating administrative offices, lecture halls, and possibly collaborative spaces for students.

First Floor (22,700 sq. ft): The first floor, characterized by a dedication to innovative education, may house classrooms, seminar rooms, and faculty offices fostering a dynamic academic environment.

Second Floor (22,700 sq. ft): Continuing the theme of adaptability to industry trends, this floor likely hosts specialized facilities, labs, or additional instructional spaces designed to align education with the demands of the evolving business landscape.

Third Floor (22,700 sq. ft): The third floor, mirroring the commitment to outcome-based education, could include research centers, project rooms, or spaces dedicated to fostering critical thinking and problem-solving skills.





FMC and FLAHS Floor plan

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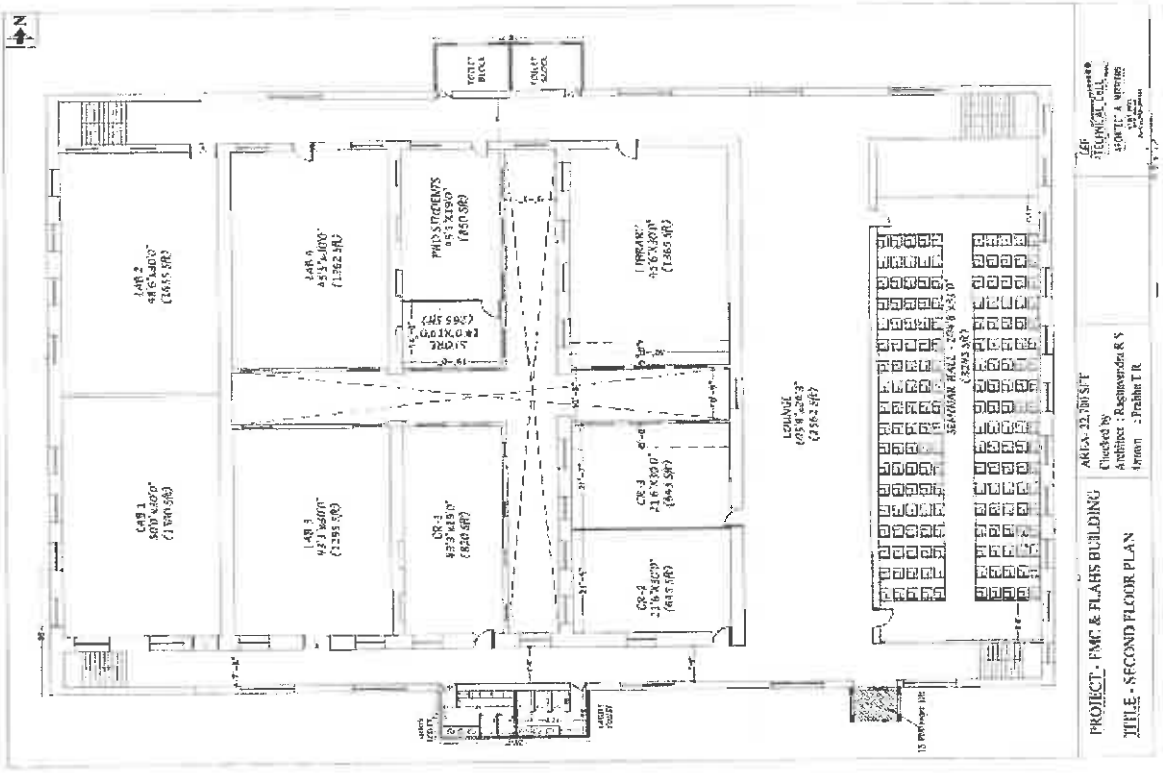

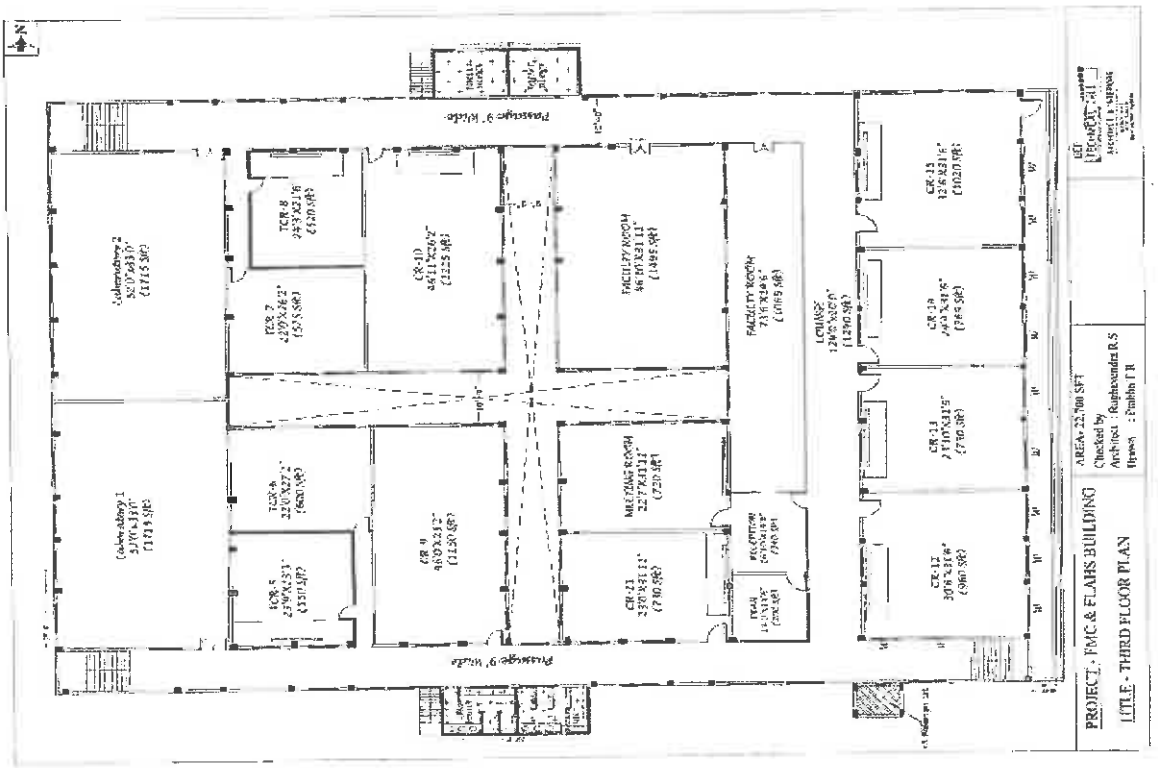

FMC and FLAHS Floor plan

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d) Faculty of Hospitality Management & Catering Technology (FHMCT)

The Faculty of Hospitality Management & Catering Technology (FHMCT) at MSRUAS stands as a cornerstone in preparing future leaders for the ever-evolving hospitality industry. The utilization of space across various floors reflects a commitment to providing a comprehensive educational experience.

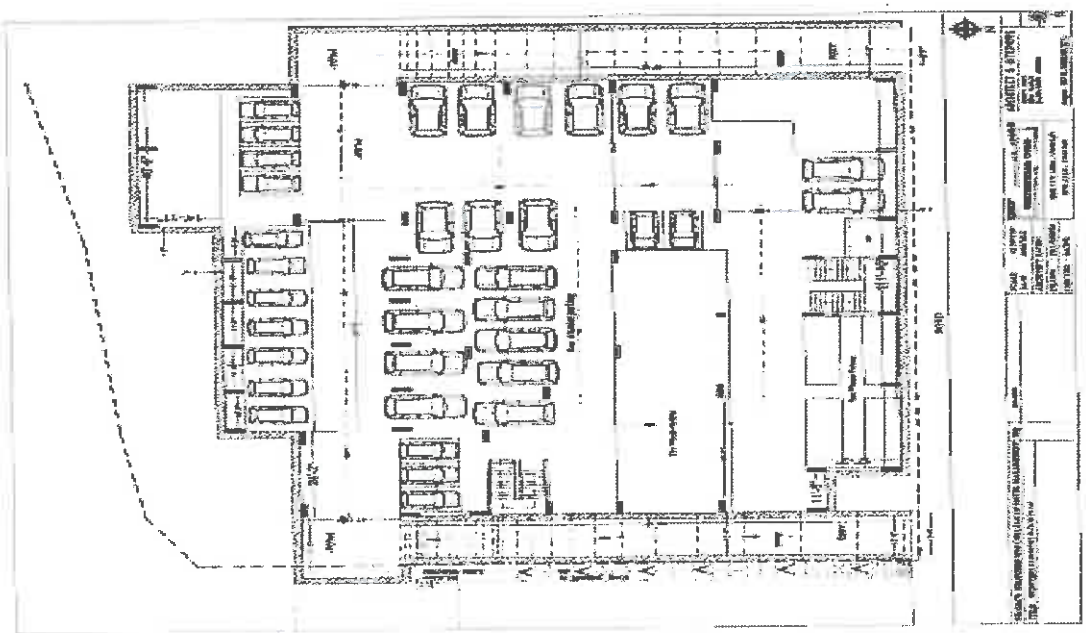
Basement (15,300 sq. ft): Likely dedicated to specialized facilities, storage, or practical training spaces to enhance the hands-on learning experience for students.

Ground Floor (15,300 sq. ft): Serving as an introduction to the world of hospitality, this floor may house administrative offices, welcoming spaces, and potentially initial training areas for students.

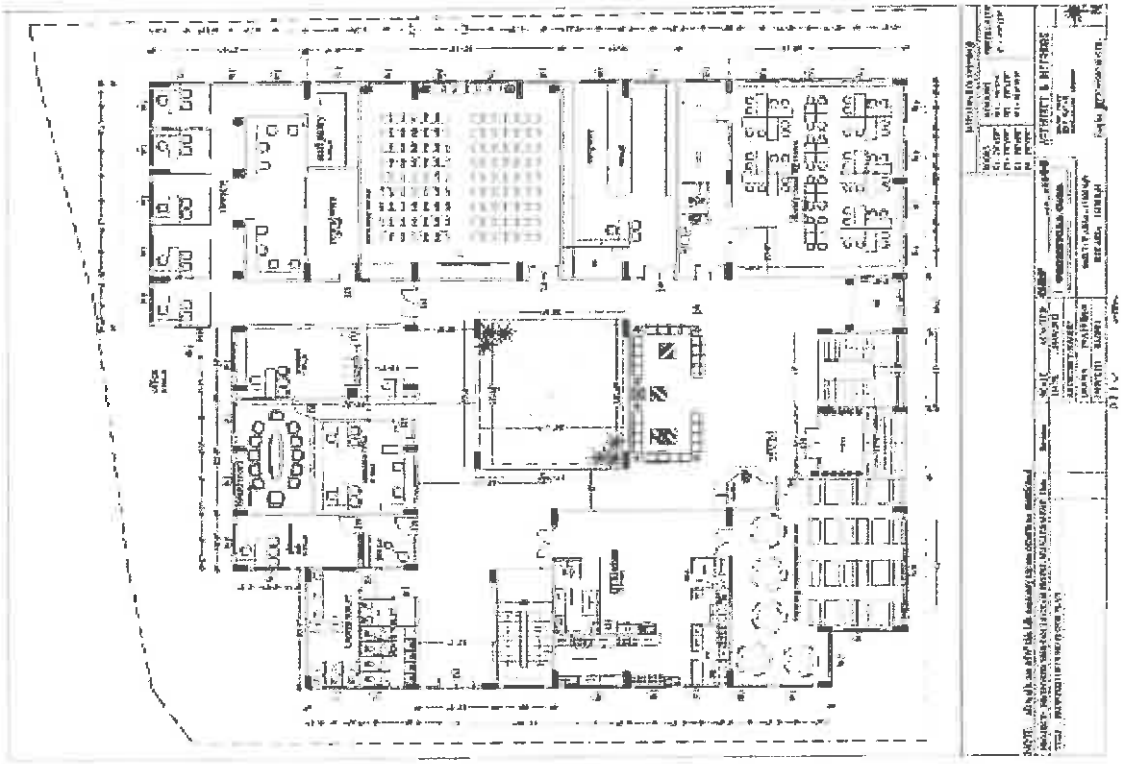
First Floor (15,900 sq. ft): Reflecting a dynamic curriculum, this floor likely accommodates classrooms, practical labs, and spaces for interactive learning sessions that align with the ever-changing landscape of the hospitality industry.

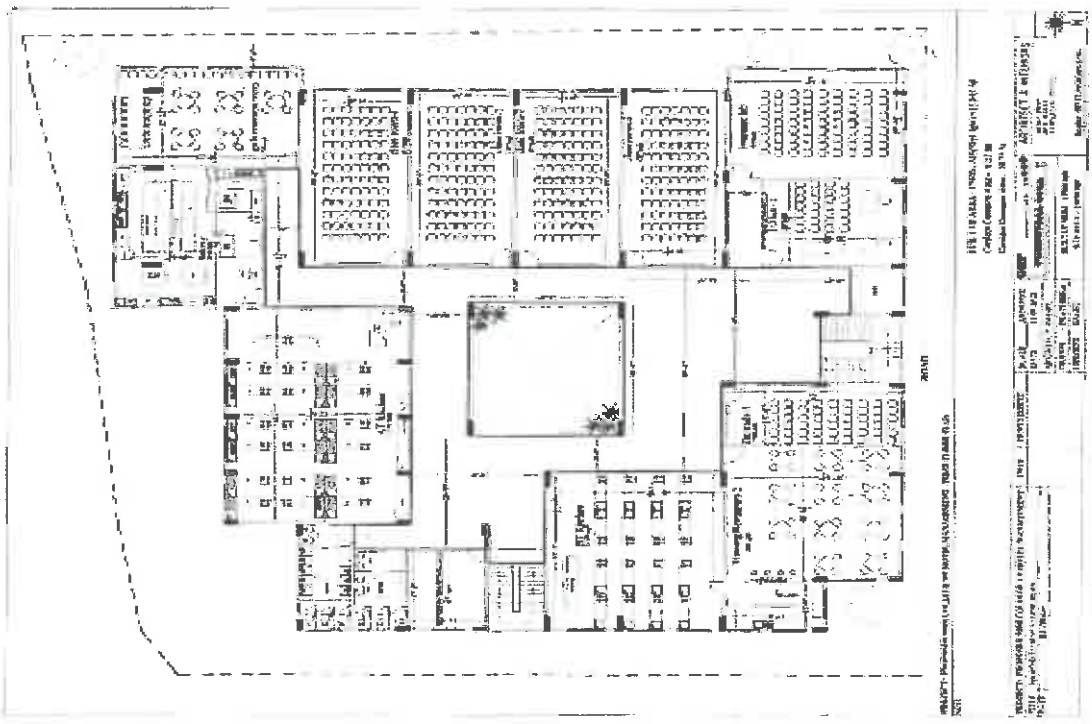
Second Floor (15,900 sq. ft): Continuing the immersive education approach, this floor could host advanced labs, specialized kitchens, or simulation rooms to provide students with real-world scenarios and challenges.

Third Floor (15,900 sq. ft): Focusing on leadership development and industry-specific expertise, this floor may include faculty offices, meeting rooms, and spaces for collaborative projects, ensuring students are well-prepared for their professional careers.



FHMCT Floor plan





FHMCT Floor plan

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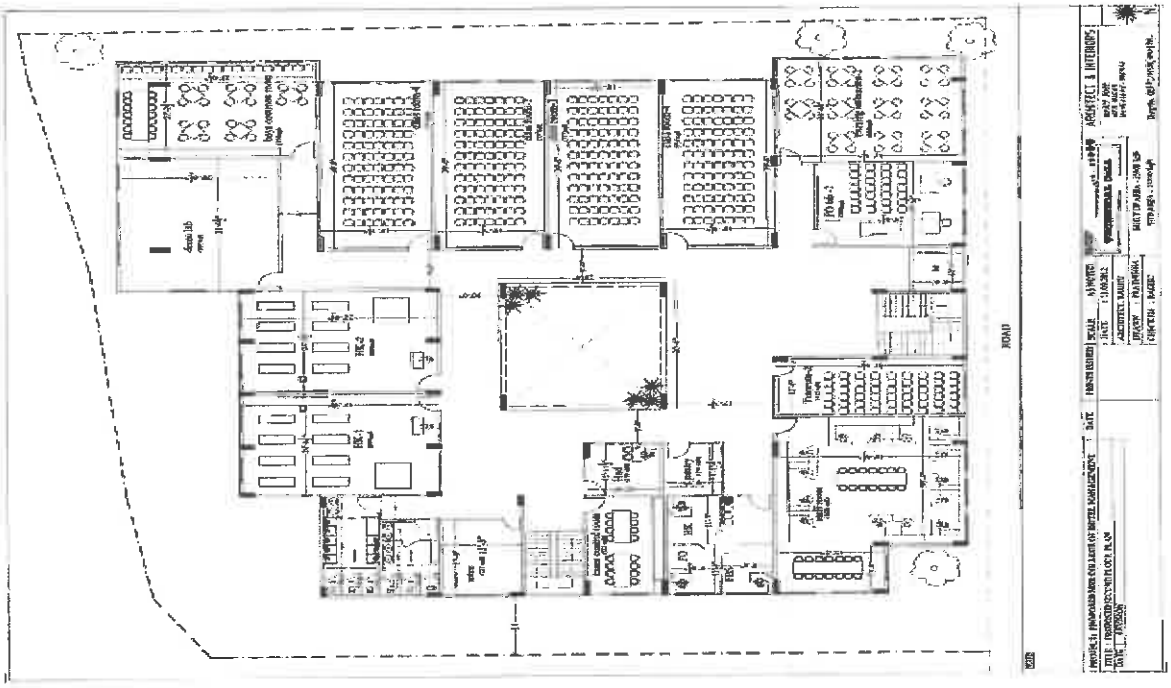

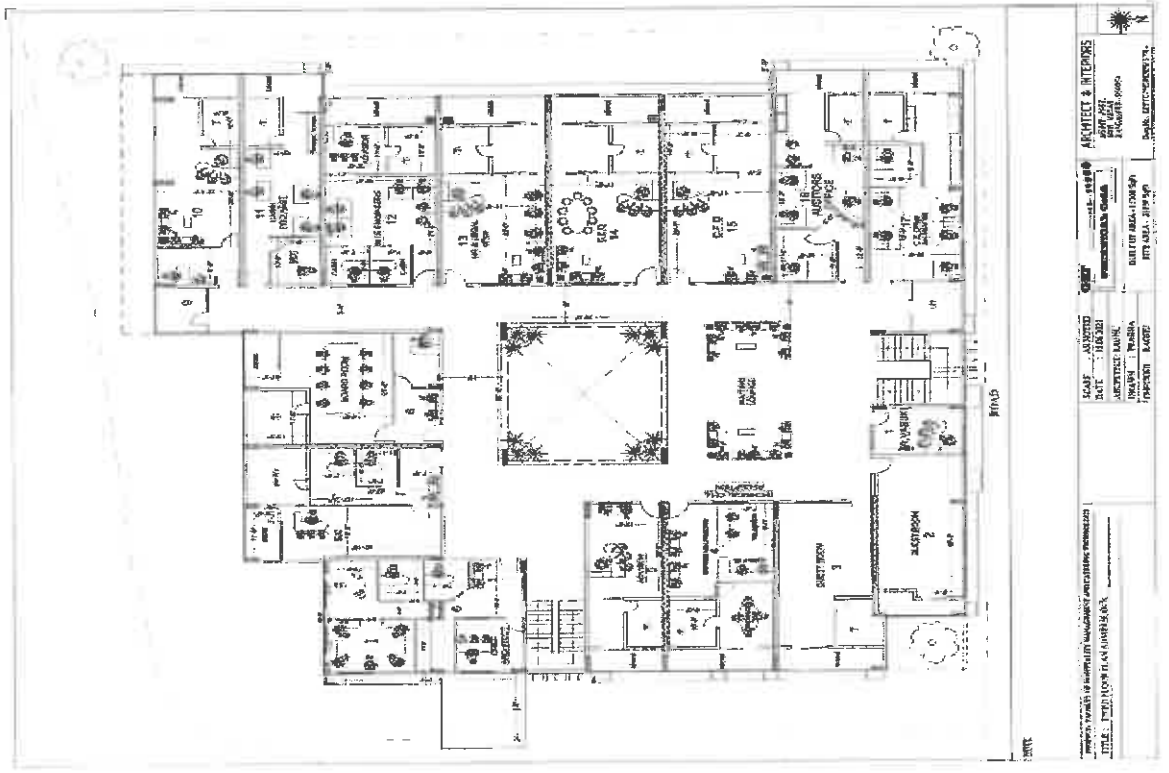

FHMCT Floor plan

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e) Faculty of Pharmacy (FPH)

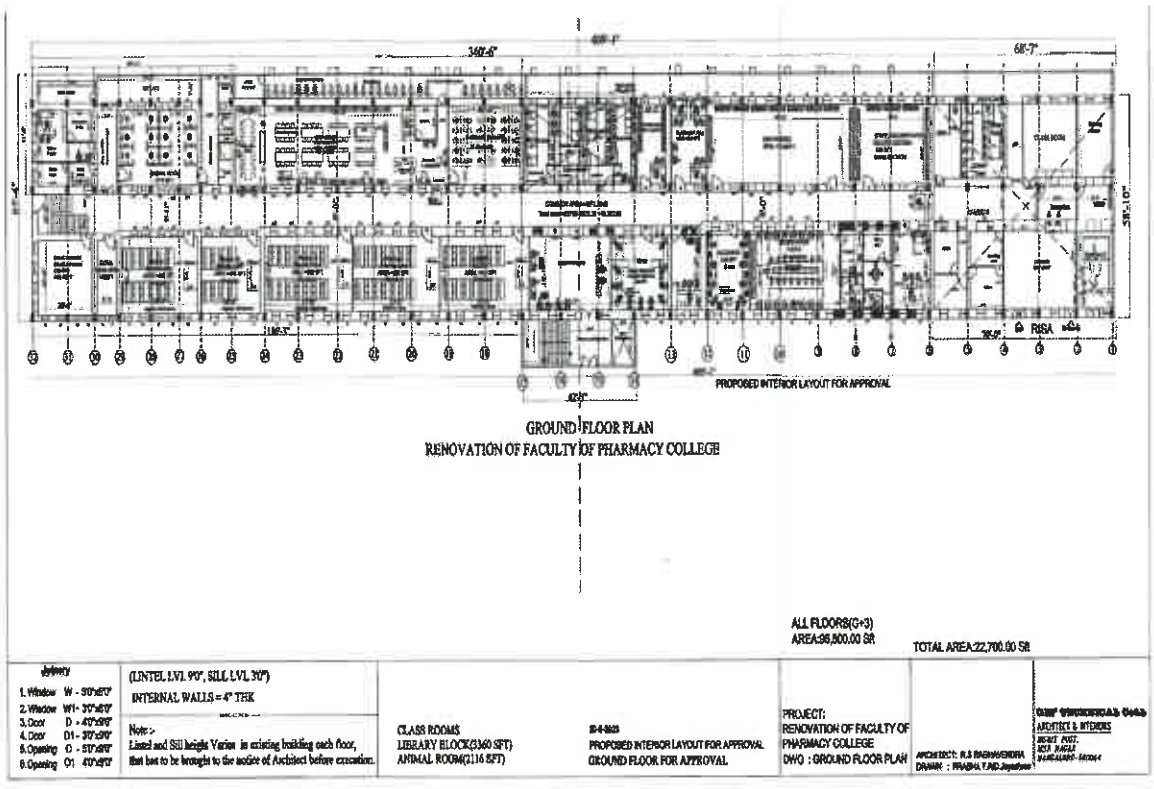
The Faculty of Pharmacy at MSRUAS is a pivotalcampusdedicated to shaping the future professionals and leaders of the pharmaceutical industry, contributing to India's prominent role in drug discovery, invention, and improvement.

Space Allocation: Ground Floor (22,700 sq. ft): Likely to house administrative offices, initial classrooms, and spaces for foundational learning in pharmaceutical sciences.

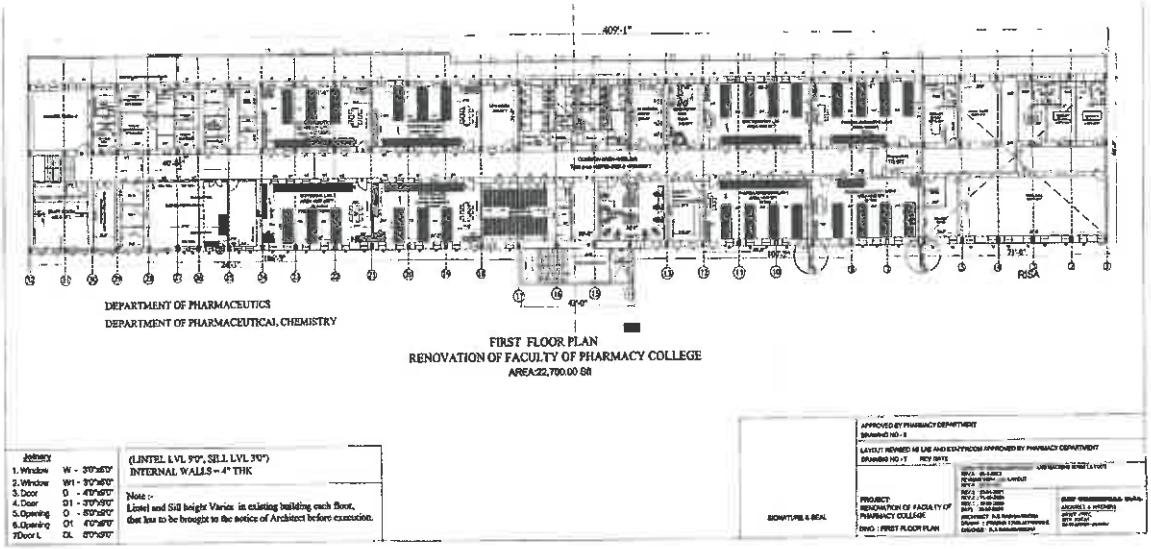
First Floor (22,700 sq. ft): A continuation of the academic journey, this floor may encompass additional classrooms, lecture halls, and potentially specialized labs for theoretical and practical learning.

Second Floor (27,000 sq. ft): Recognizing the importance of hands-on experience, this floor could host state-of-the-art laboratories and research centers, providing students with opportunities for practical application and experimentation.

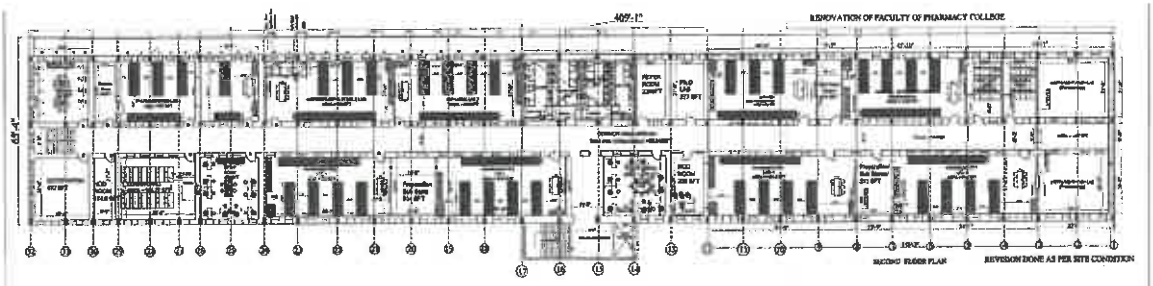
Third Floor (24,400 sq. ft): Emphasizing the integral connection between pharmacy and healthcare, this floor may include facilities for practical training in hospitals on campus, allowing students to actively participate in treatment plans and gain real-world experience.



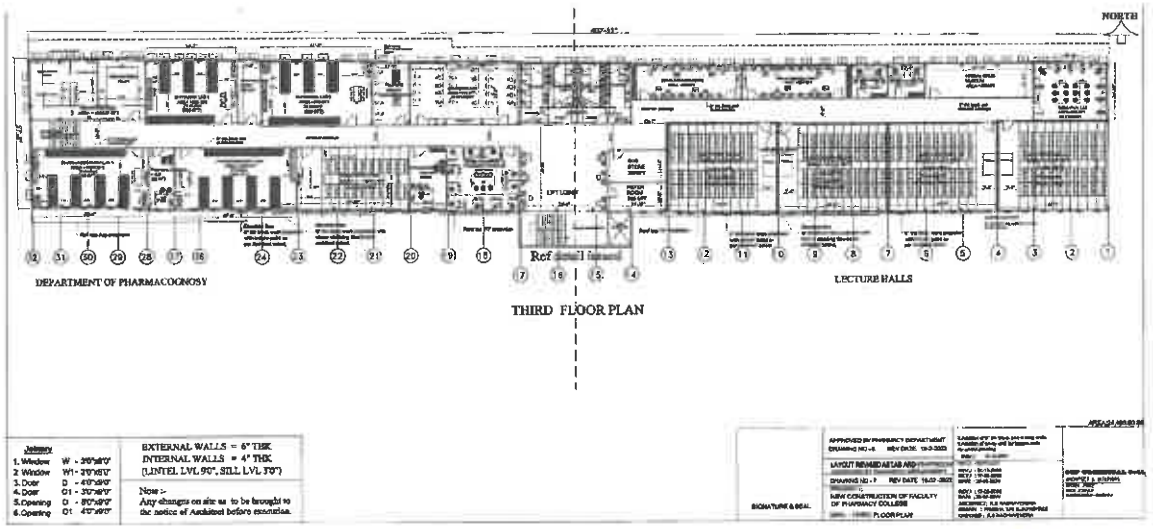
FPH Floor plan



FIRST FLOOR PLAN
RENOVATION OF FACULTY OF PHARMACY COLLEGE
AREA:22,700.00 Sft



SECOND FLOOR PLAN
RENOVATION OF FACULTY OF PHARMACY COLLEGE



THIRD FLOOR PLAN

FPH Floor plan

f) Heritage Block: School of Social Sciences and School of Law

The Heritage Block, housing the School of Social Sciences and the School of Law at MSRUAS, is a hub of multidisciplinary education that spans the spectrum from social sciences to law, science, and technology. The thoughtful allocation of space across different floors facilitates a conducive learning environment.

Space Allocation: Basement (6,675 sq. ft): Likely utilized for specialized facilities, storage, or practical spaces that support the unique requirements of the School of Law and the School of Social Sciences.

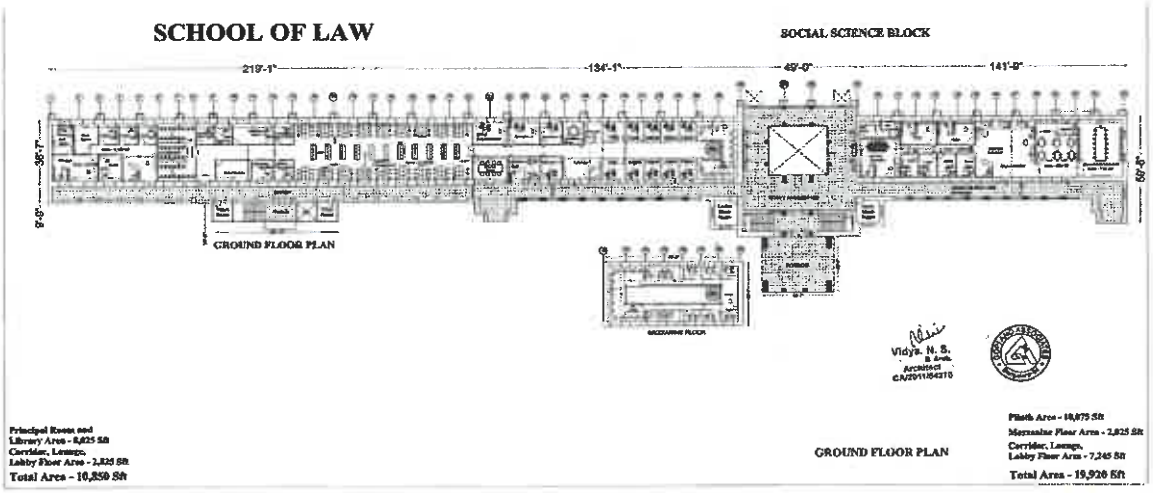
Ground Floor (31,445 sq. ft): This expansive floor may house administrative offices, classrooms, and collaborative spaces, serving as the entry point for students pursuing programs in social sciences and law.

First Floor (28,000 sq. ft): Dedicated to the School of Social Sciences, this floor likely accommodates classrooms, lecture halls, and innovative spaces for courses in Economics, Psychology, Sociology, Data Sciences, and Public Policy.

Second Floor (28,853 sq. ft): Reflecting the interdisciplinary nature of the programs, this floor may cater to both schools, providing classrooms, laboratories, or collaborative spaces where law, science, and technology intersect.

Third Floor (28,000 sq. ft): Serving as an additional space for the School of Law or other interdisciplinary activities, this floor could host faculty offices, research spaces, or specialized facilities that contribute to the unique blend of law, science, and technology programs.

In essence, the Heritage Block at MSRUAS is a vibrant academic space fostering innovative education, research, and a multifaceted understanding of the connections between social sciences, law, science, and technology.



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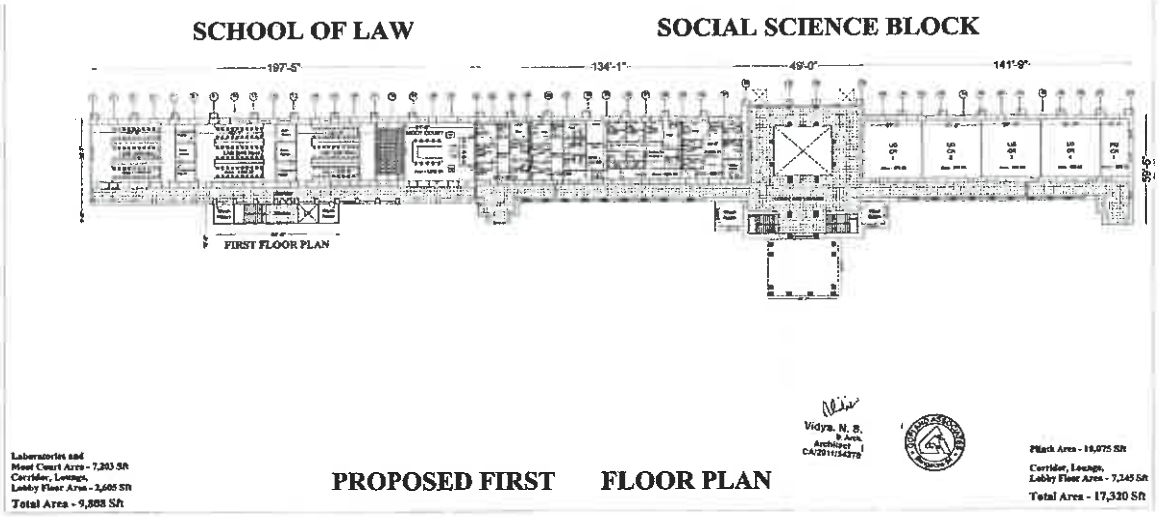
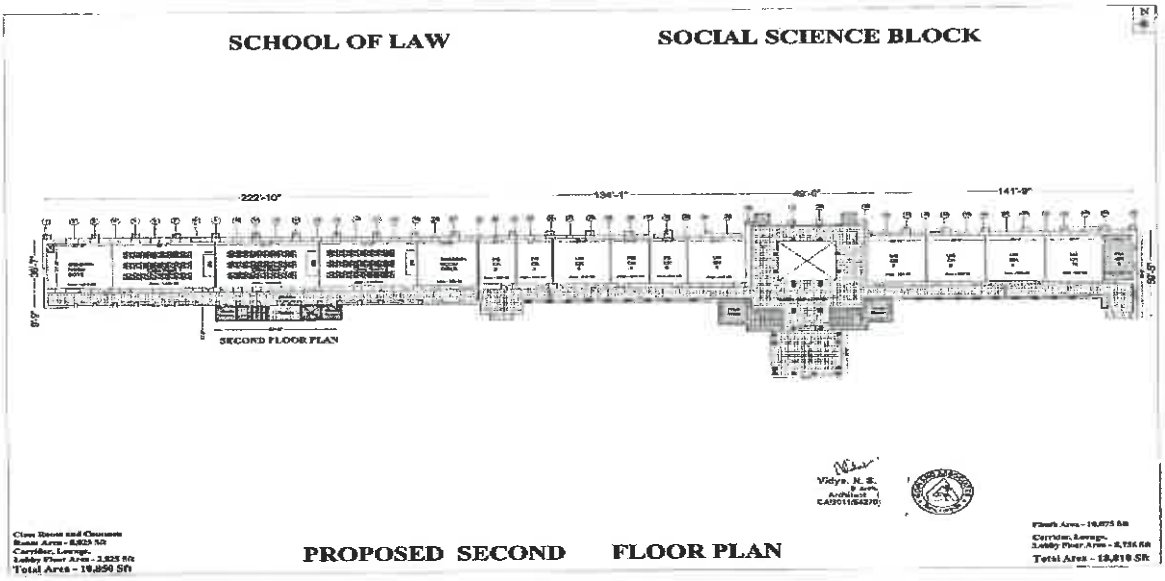
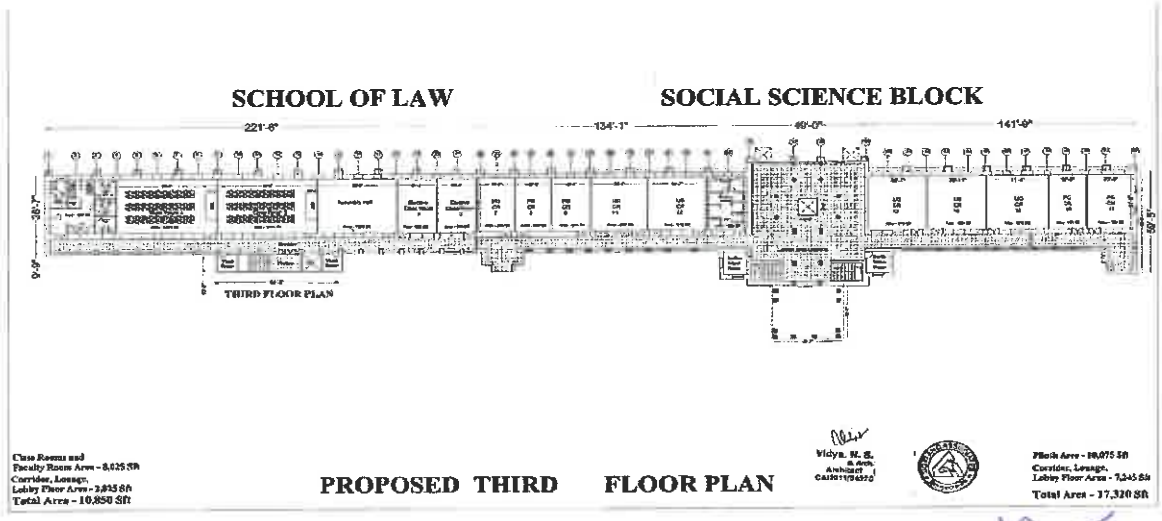






Heritage Block floor plan

g) Ramaiah Medical College (RMC)

Infrastructure and Focus: Ramaiah Medical College equipped with state-of-the-art infrastructure, including technology-enabled classrooms and advanced laboratories. The University places a continuous focus on teaching, clinical practice, and research, aligning its activities with the evolving landscape of medical education and healthcare.

Space Allocation: Lower Basement (65,250 sq. ft): Dedicated to car parking.

Upper Basement (52,780 sq. ft): Potentially housing additional laboratories, storage, or specialized spaces integral to the medical education and research infrastructure.

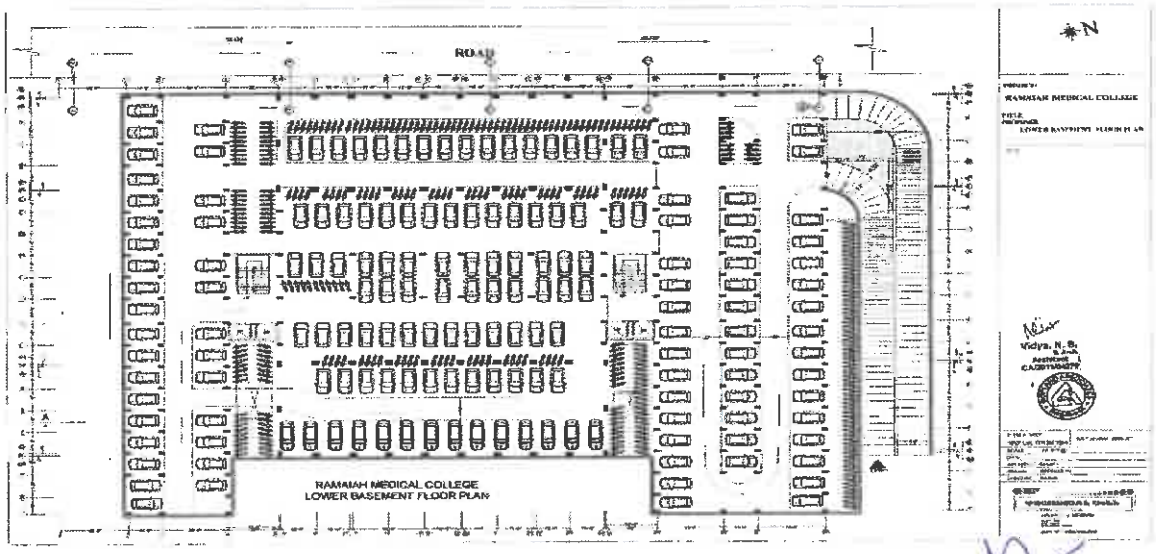
Ground Floor (60,270 sq. ft): Serving as the main entry point, this floor may house administrative offices, technology-enabled classrooms, and initial clinical practice spaces.

First Floor (59,880 sq. ft): Dedicated to teaching facilities, this floor likely accommodates lecture halls, classrooms, and collaborative spaces for medical students.

Second Floor (56,590 sq. ft): Reflecting the emphasis on clinical practice, this floor may house specialized clinical training areas, simulation rooms, or other facilities that support hands-on learning.

Third Floor (58,230 sq. ft): Potentially hosting additional teaching spaces, faculty offices, or research facilities that contribute to the medical University's commitment to research and innovation.

In essence, Ramaiah Medical College at MSRUAS stands as a beacon of excellence in medical education, fostering a comprehensive learning environment that integrates cutting-edge infrastructure, clinical practice, and research to prepare future healthcare professionals.



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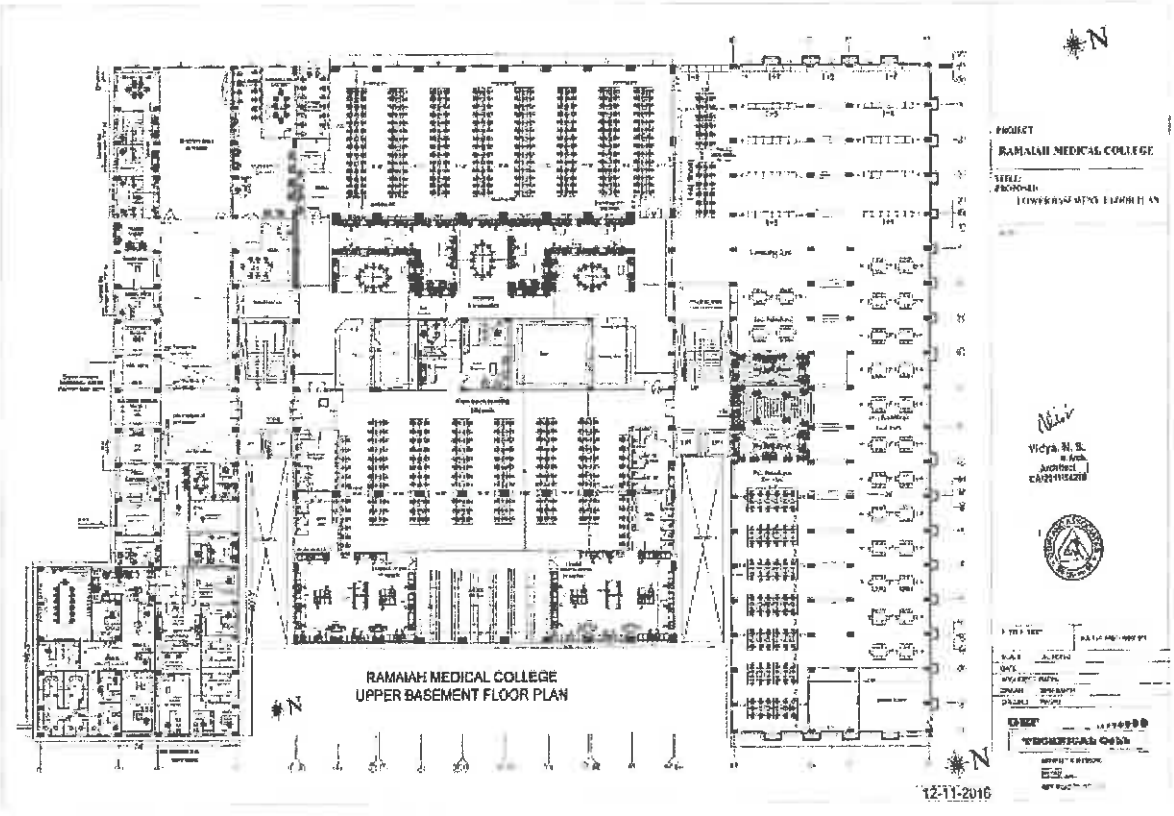

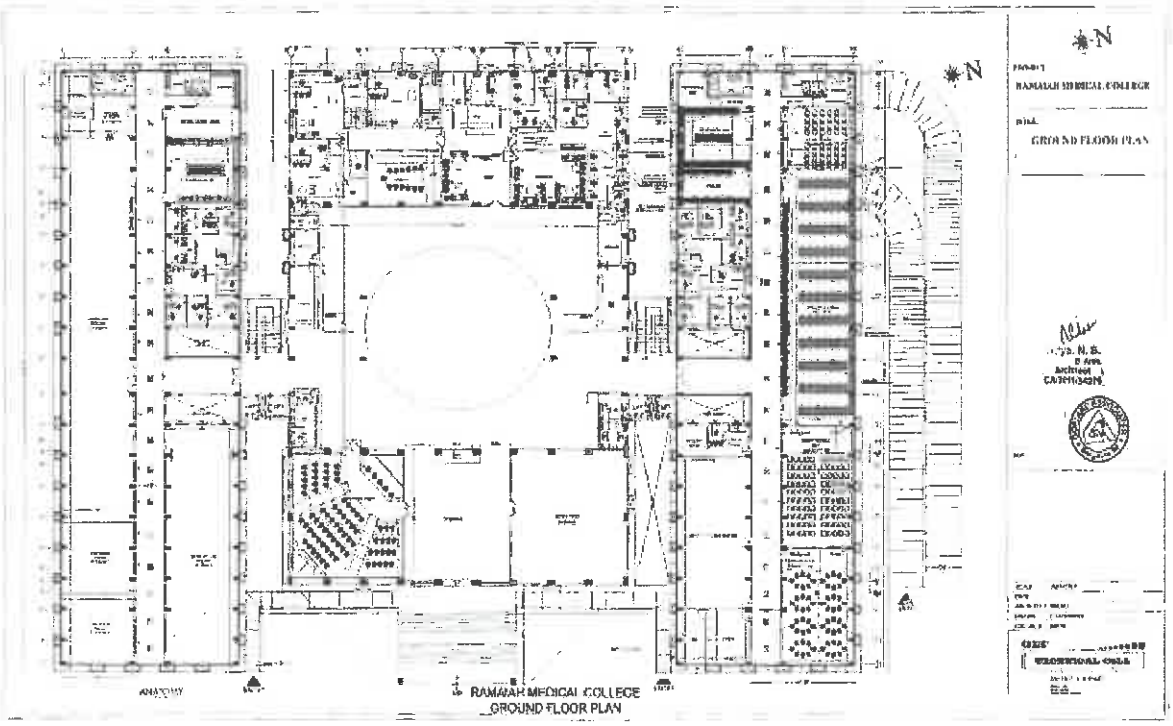

Ramaiah Medical College floor plan

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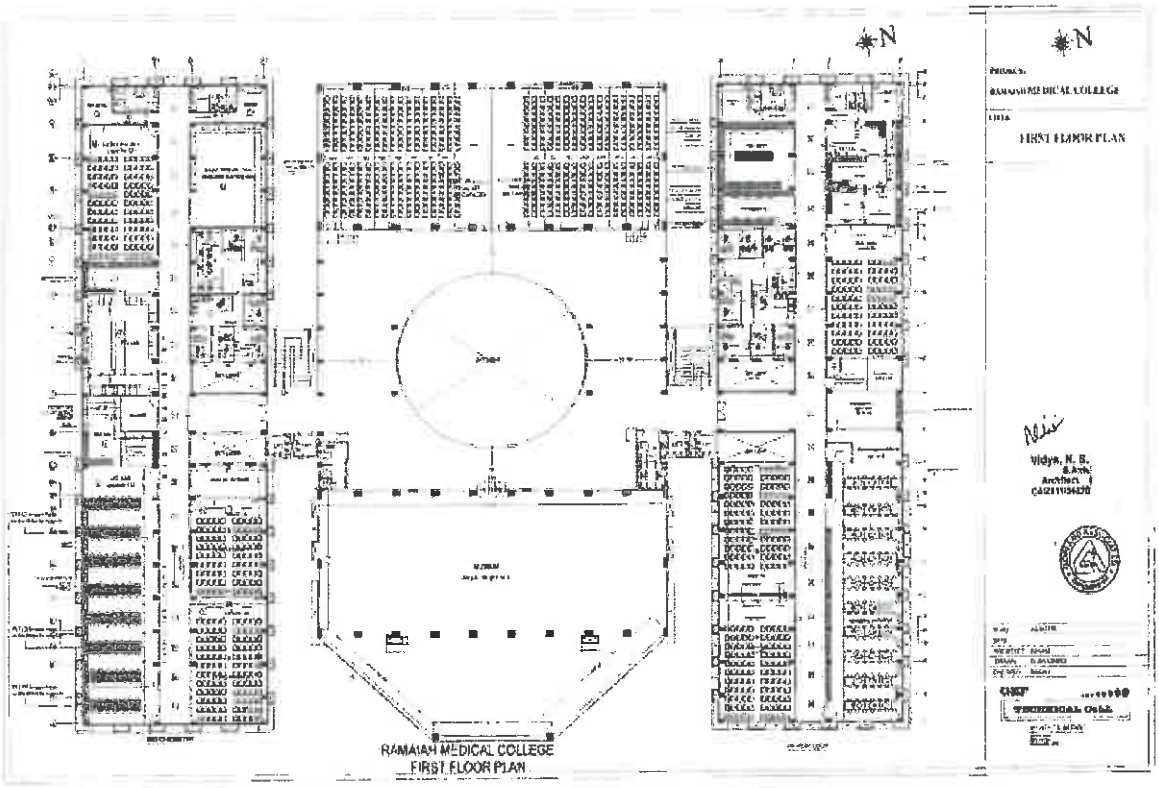
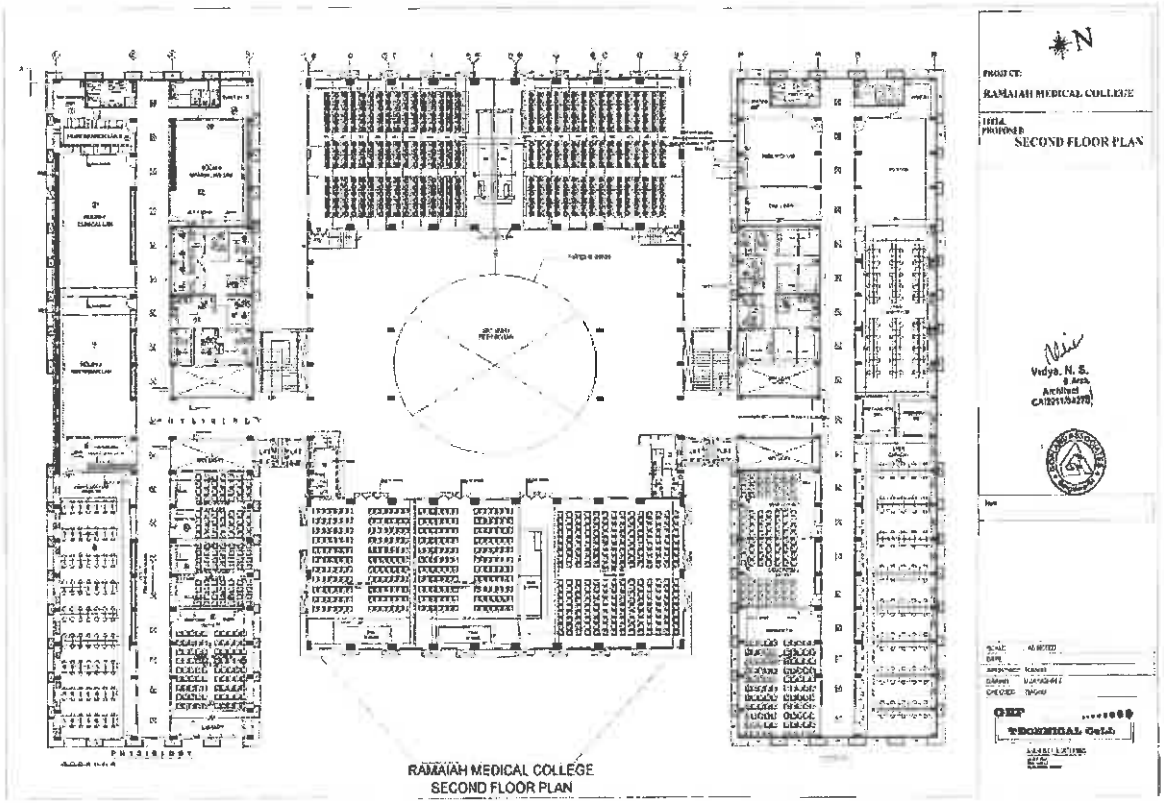
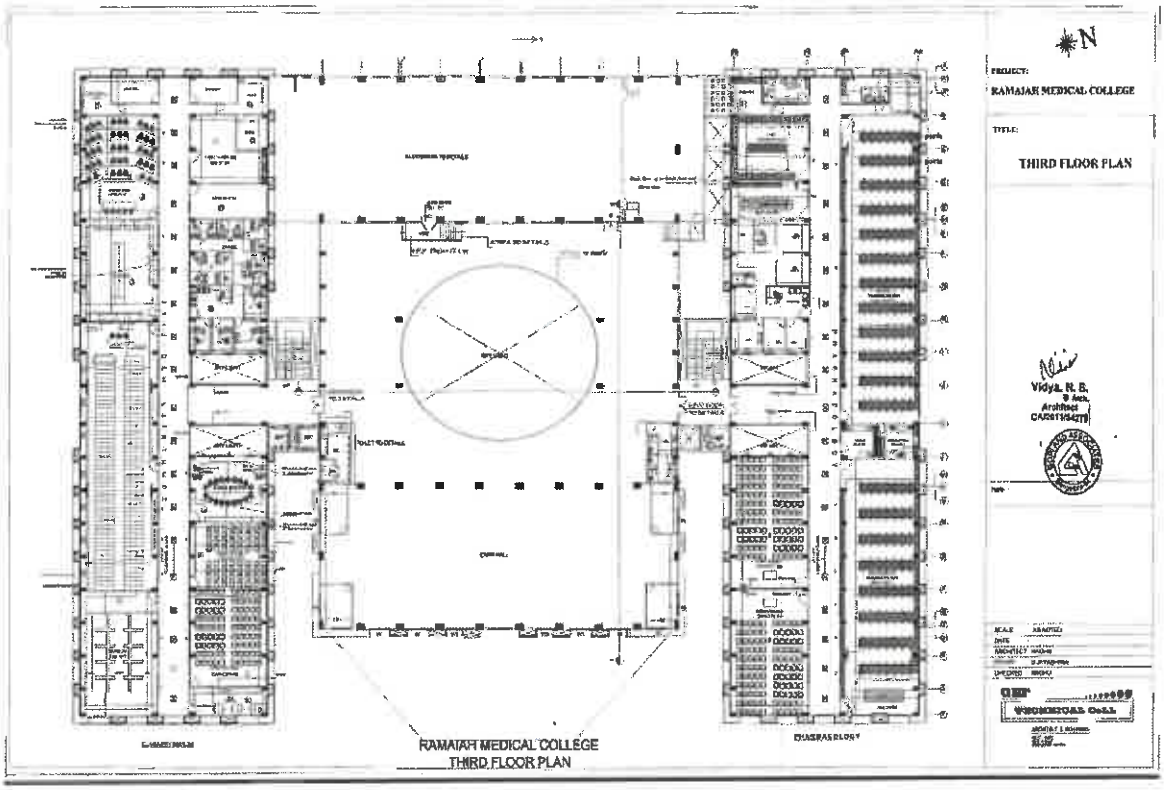




Ramaiah Medical College floor plan



Ramaiah Medical College floor plan

h) Ramaiah Institute of Nursing Education and Research (RINER)

RINER boasts a strong team of motivated faculty and passionate students, emphasizing an exceptional pedagogical approach. The Institution is equipped with advanced facilities and infrastructure, positioning it as one of the most acclaimed nursing education institutions.

Space Allocation: Ground Floor (12,702 sq. ft): Likely houses administrative offices, classrooms, and initial facilities for nursing education and research.

First Floor (12,702 sq. ft): This floor may include additional classrooms, lecture halls, and spaces dedicated to specific nursing programs.

Second Floor (12,702 sq. ft): Continuation of educational facilities, potentially hosting specialized labs or practical training areas for nursing students.

Third Floor (12,702 sq. ft): Reflecting the commitment to nursing education and research, this floor may house faculty offices, research facilities, or additional learning spaces.

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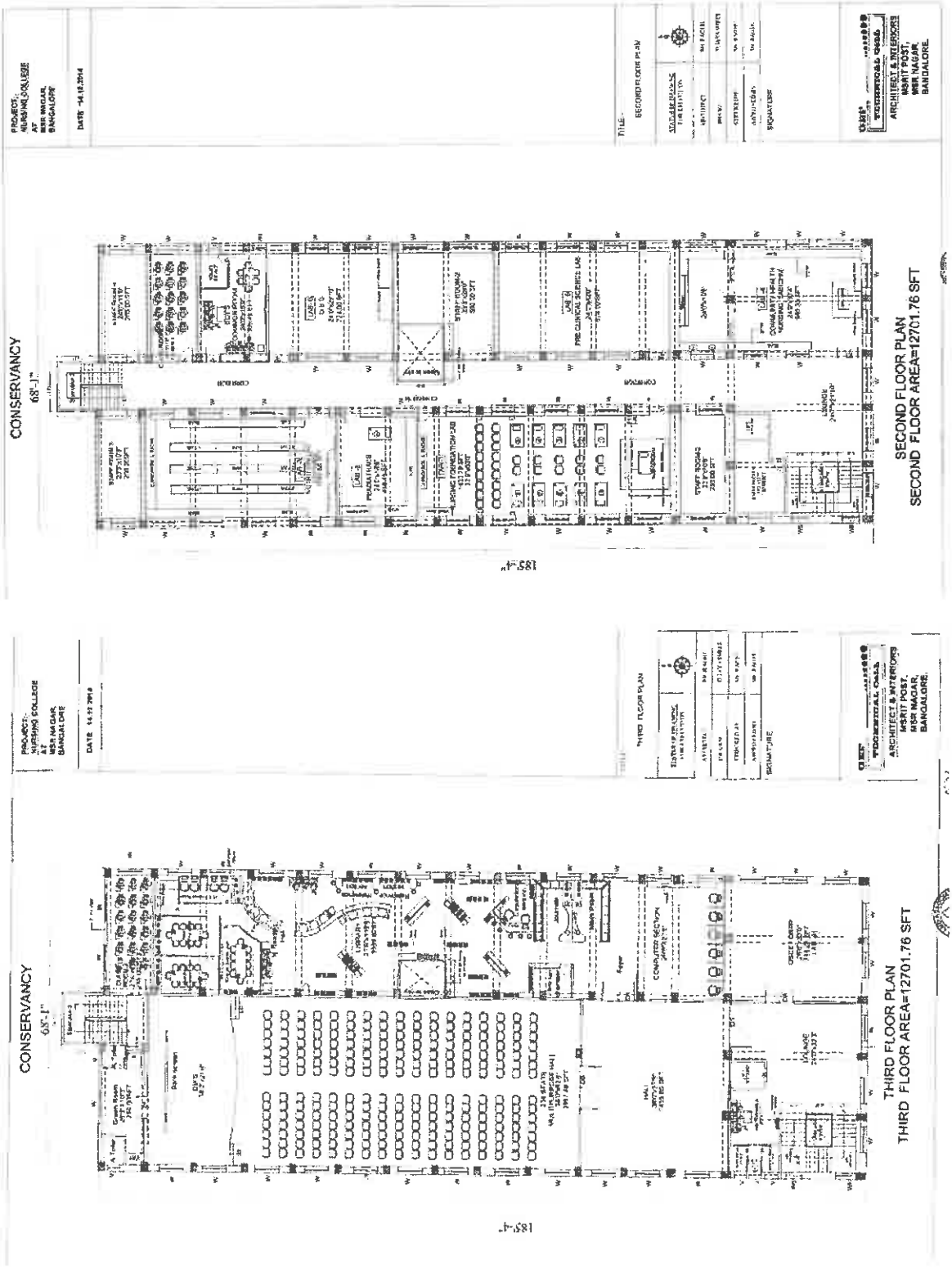
Ramaiah Institute of Nursing Education and Research (RINER) floor plan



Ramaiah Institute of Nursing Education and Research (RINER) floor plan

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i) Ramaiah Technology campus (RTC Peenya campus)

Space Allocation:

A Block- Basement to Third (10,600 to 12,100 sq. ft each): Multi-purpose academic spaces.

B Block- Upper Basement to Third (10,600 sq. ft each): Varied academic and collaborative spaces.

C Block - Lower Basement to Third (8,600 to 10,200 sq. ft each): Versatile spaces catering to academic needs.

D Block - Upper Basement to Third (8,600 to 10,200 sq. ft each): Additional academic spaces fostering collaborative learning.

Incubation Block - Ground (42,200 sq. ft): Spaces for innovation and entrepreneurship activities.

First (6,777 sq. ft): Potential offices and collaborative spaces.

Canteen Block - Ground (3,714 sq. ft): Dining and social spaces for students and staff.

First (3,750 sq. ft): Additional spaces for culinary services.

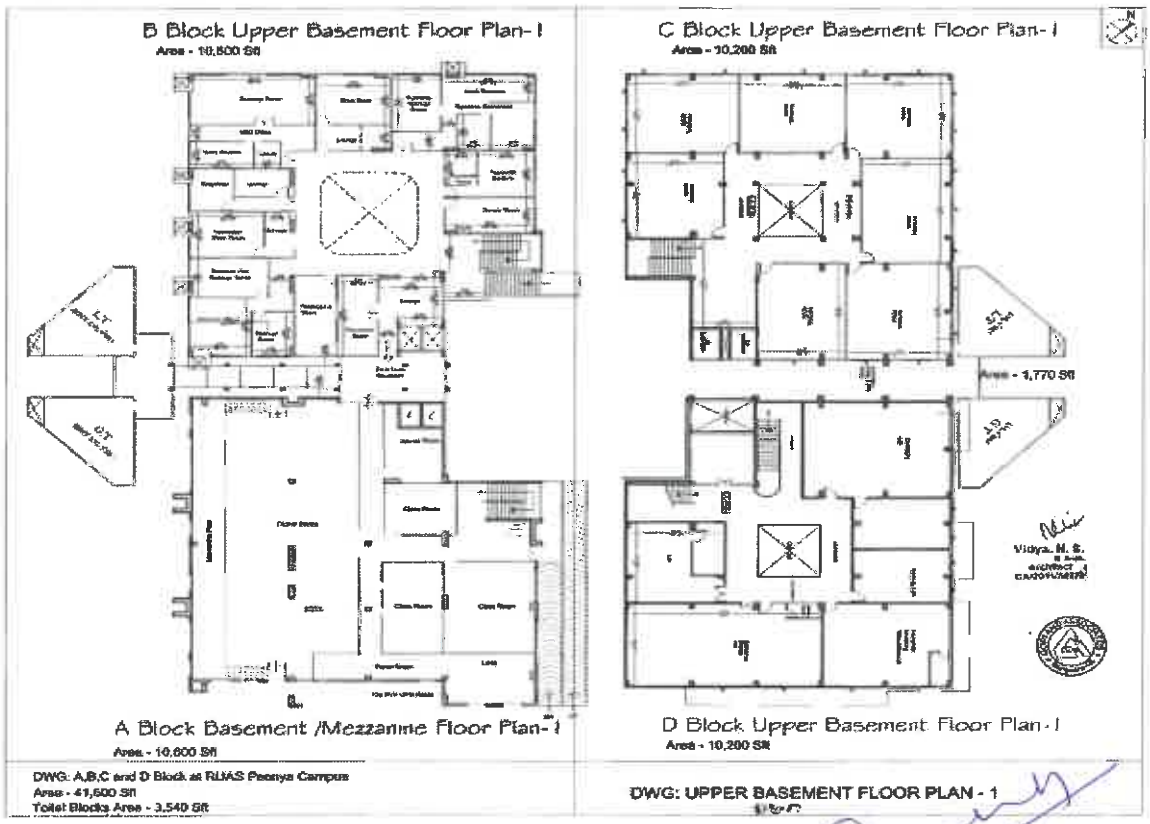
Service Block - Ground (2,800 sq. ft): Support spaces for maintenance and service personnel.

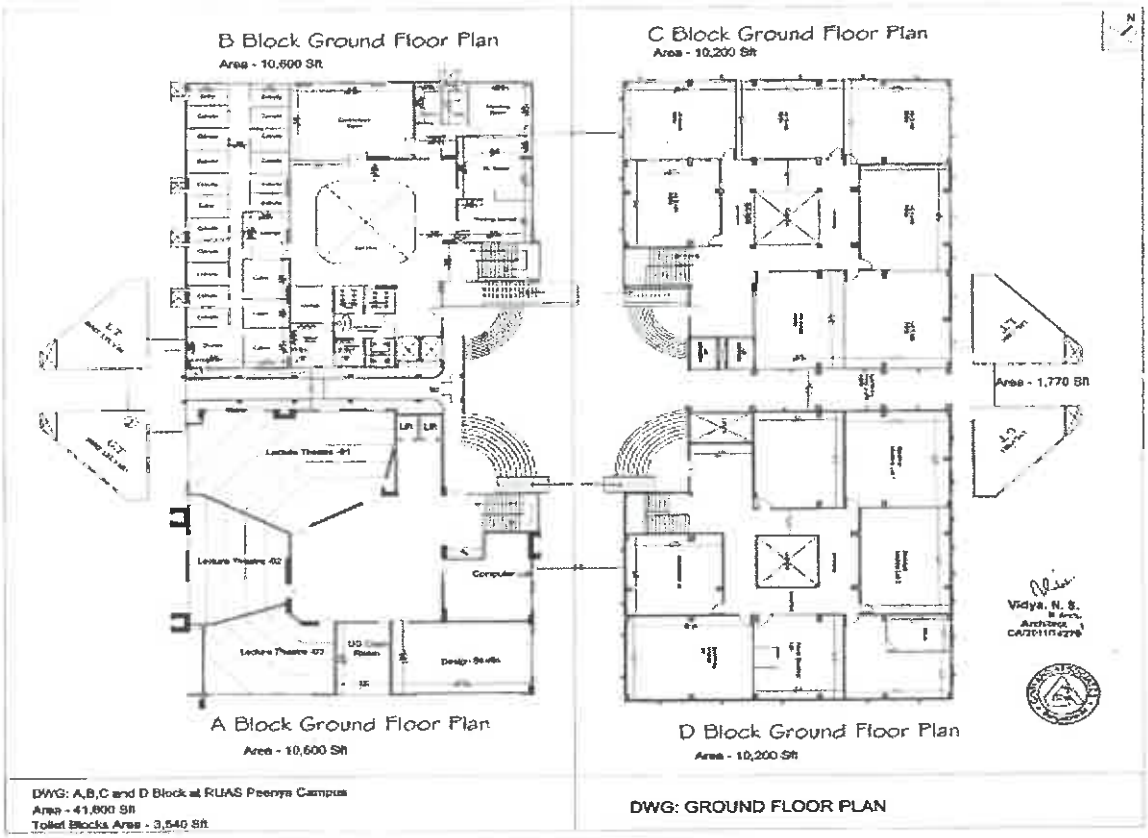
First (2,700 sq. ft): Additional facilities supporting university services.

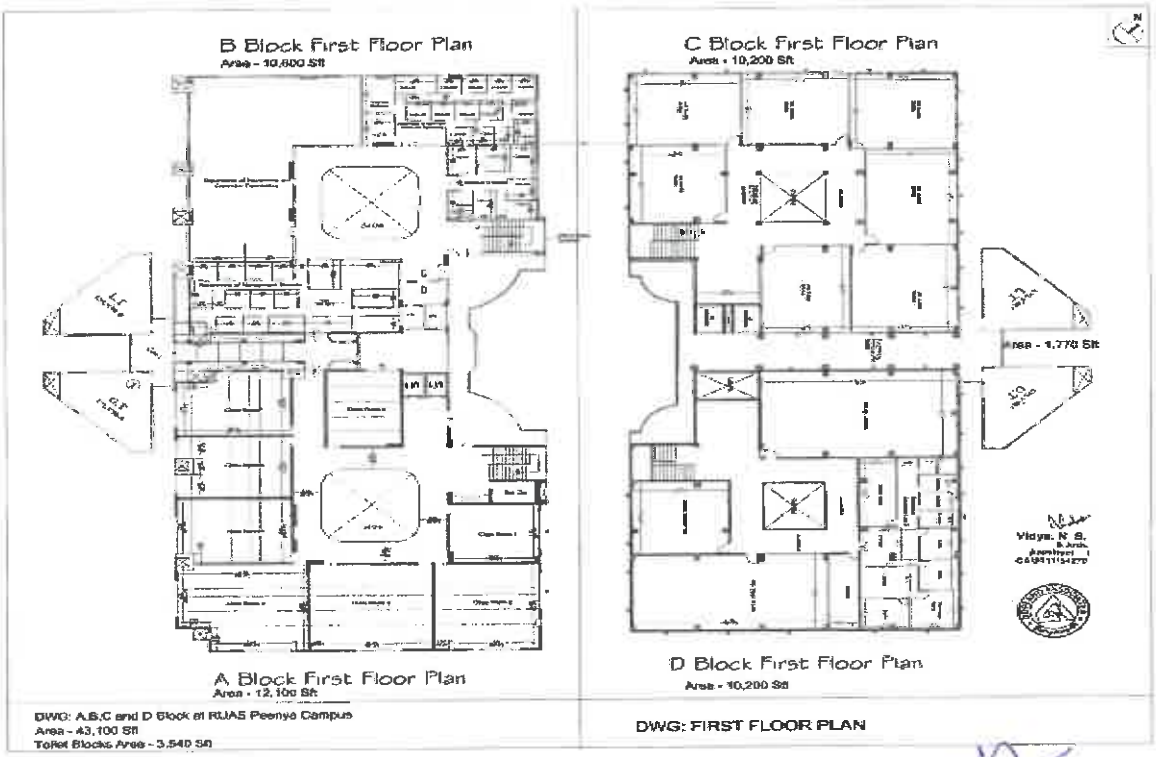
Toilet Block A & B - Ground to Third (1,770 sq. ft each): Essential facilities contributing to student and staff welfare.

Toilet Block C & D - Ground to Third (1,770 sq. ft each): Additional restroom facilities ensuring convenience across the campuses.

Note: The mentioned areas are approximate and subject to change based on specific campus needs and renovations.







Technology campus (Peenya campus) floor plan

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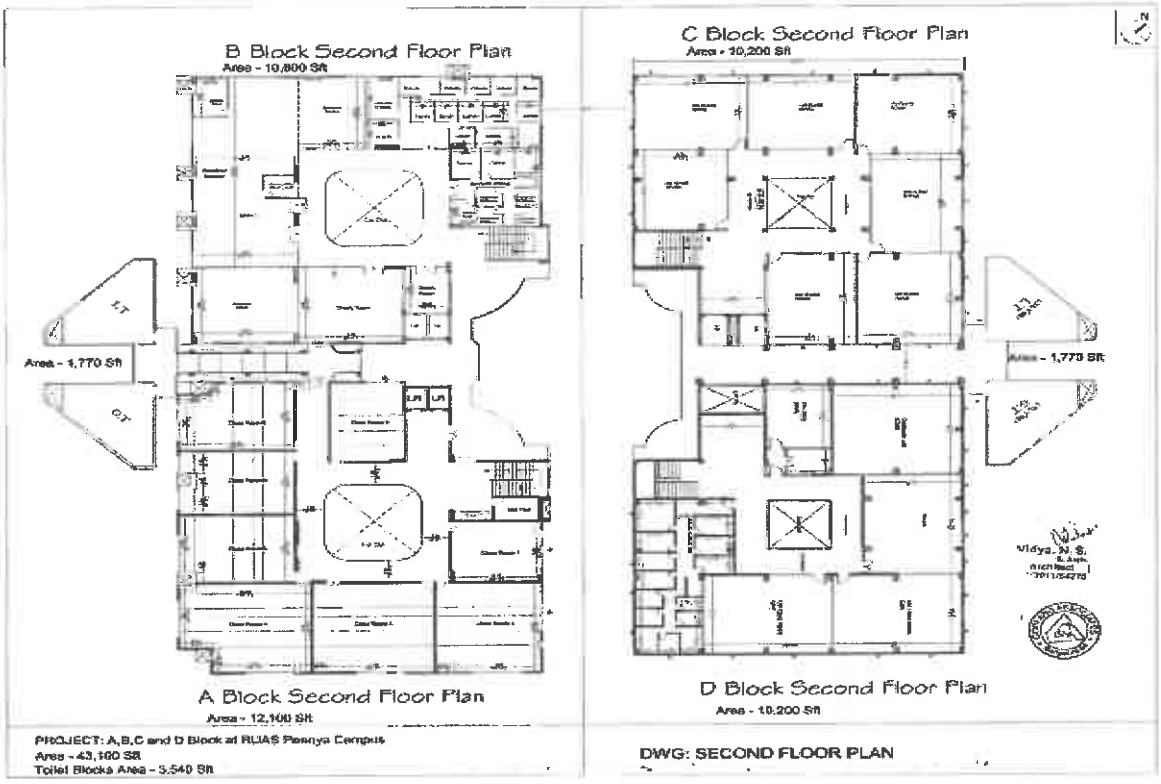

Technology campus (Peenya campus) floor plan

Assessment and Comparison:

The constructed build-up areas closely align with the sanctioned areas in most buildings, indicating effective utilization of the allocated space. The significant diversity in the constructed areas showcases the multifaceted nature of the University, providing dedicated spaces for academic, administrative, and student-centric activities.

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.

i. 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, the institution 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.

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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.

ii. 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, university 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

Feeling of space and light in the building

Building front view, representing more openings for daylight.

The campus holds substantial potential for energy conservation within its buildings by maximizing the use of natural daylight, consequently reducing the reliance on artificial lighting during daylight hours. This approach is meticulously crafted to ensure thermal comfort while taking into account climatic conditions and building design. By thoughtfully leveraging natural light, the campus not only achieves significant energy savings but also actively contributes to fostering a sustainable and eco-friendly environment throughout the campus.

Use of Natural light for Classrooms

Classrooms: Classrooms are meticulously designed to harness natural daylight using passive architectural techniques. The strategic placement of large windows and the thoughtful architectural layout ensure an abundance of natural light within the learning spaces. Ample daylight not only creates a vibrant and conducive environment for academic pursuits but also contributes to the well-being and comfort of students and faculty.

Feeling of space and light in all the labs

Laboratories: The laboratories at university are intelligently designed with a focus on optimizing natural daylight. Employing passive architectural methods and spacious windows, these spaces are bathed in natural light, fostering an ideal setting for scientific experiments and practical work. The abundance of daylight not only enhances visibility but also creates an inspiring and comfortable environment for research and experimentation.
It is maintained that all regularly occupied spaces are daylit, thereby improving health and well-being of students & teachers.

Sr.no.	Space	Prescribed Illumination Level (Lux)	Avg.Readings
1	Classroom	150-300	305
2	Lab/workshop	150-300	350
3	Library	200-300	333
4	Lobby	300	396

Please note that the illumination level is monitored only for daylight. Before starting the monitoring process, the artificial lighting fixtures were switched off. Measured with Digital Lux Meter.

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Use of Natural light for library

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iii. Outdoor Light Pollution Reduction

In an effort to minimize light pollution, enhance access to the night sky, and improve the nocturnal environment, the institute has implemented a thoughtful exterior lighting design strategy. Specifically, they have ensured that no external light fixture emits more than 5% of the total initial designed fixture Lumens, and this light emission occurs at an angle of 90 degrees or higher from nadir, meaning it is directed straight down. This approach significantly reduces light spill and upward-directed light, thereby preserving the natural darkness of the night sky and promoting a more environmentally responsible and astronomically friendly lighting system.

LED Lighting Distribution for Outdoor Street Area Light

iv. 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

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

Parking space under cover

Solar panels on roof top

The installation of solar panels has yielded remarkable results in reducing heat absorption on the building's roof. It has effectively decreased the amount of heat reaching the roof by an impressive margin of over 35%. This significant reduction has resulted in maintaining the covered portions of the roof at temperatures approximately 5 degrees cooler compared to areas of the roof exposed directly to sunlight. This innovative use of solar technology not only generates clean energy but also contributes to improved thermal comfort and energy efficiency within the building.

III. Biodiversity Audit

A comprehensive scientific survey of the campus' flora and fauna was conducted throughout the rainy, winter, and summer seasons in 2022-23. This biodiversity audit yielded noteworthy findings, including the identification of numerous tree species and a diverse array of mammals, birds (Aves), arthropods, and annelids. These discoveries underscore the remarkable composition of flora and fauna thriving on the campus. Notably, the campus hosts a seasonal influx of various bird species, further enhancing its ecological significance. Moreover, the institution has embarked on a commendable initiative 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, fostering 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.

Horticulture Department Presence: In the campus, there is a dedicated Horticulture Department overseeing the management of the garden areas.

Staff Composition in the Horticulture Department:
- 01 Assistant Facility Manager
- 01 Supervisor
- 03 Gardeners

This integrated approach to horticulture not only beautifies the campus but also instills a culture of environmental stewardship and community engagement among the campus occupants.

List of Plants at RUAS

Sl No	Botanical name	Common name	Family	Nos of plants
1	Citrus limon (L) obbeck	Lemon	Rutaceae	4
2	Eugenia Jambosoides C Wright ex Griseb	(nerale)	Myrtaceae	16
3	Azadirachtra Indica A Jubs	Neem	Meliaceae	12
4	Dracaena reflexz Lam	Sang - of - India	Asparagaceae	13
5	Plumiria Obtusa. L.	Singapore graveyard flower	Apocynaceae	10
6	Plumiria Obtusa. L.	Pagoda- tree	Apocynaceae	6
7	Jacaranda Mimosifolia D. Don	Block poui	Bignoniaceae	28
8	Luacaena Lencocephala (Lam)de wit	coffee bush	Leguminosae	5
9	Hibiscus rosa-sinensis L	Chinese hibiscus	Malvaceae	8
10	Ixora coccinea L	Flame -of-the-woods	Rubiaceae	30
11	Thuja occcidentlis L	Northern White-cedar	cupressaceae	32
12	Erica arborea L	Tree health (Austalian bottle brush)	Ericaceae	25
13	Tabebnia aurea (silvamanso)Benth. &Hook.f.	Carribbean trumpet-tree	Bignoniaceae	6
14	Saraca Indica L	Ashoka tree	Leguminosae	4
15	Phyllanthus emblica L	Indian -goosberry	Phyllanthaceae	3
16	Phyllanthus acidus(L). Skeeb	Indian -goosberry	Phyllanthaceae	4
17	cocos nucifera L	Coconut	Arecaceae	13
18	Trichilia dregeana sond.	Christamas-bells	Meliaceae	11

19	Terminalia catappa L	Indian - almond	Combretaceae	8
20	Ficus sycomorus L	Sycomore	Moroceae	4
21	Callistemon viminalis (sol. Ex Gaertn).G. Don	Greek bottle brush	Myrtaceae	3
22	Araucaria heterophylla (Salisb.) Franco	Norfolk island. Pine (*X Mass tree	Araucariaccae	2
23	Tectona grandis L.f.	Bankok teak	Lamiaceae	28
24	Grevillea robusta A. cunn.ex R.Br.	Asustralian silky- Oak	Proteaceae	47
25	Tecoma Stans(L.) jubs.ex Kunth	Trumpet- flower	Bognoniaceae	10
26	Polyatthia longifolia(sonn.) Thwaites	Cemetery- tree	Annonaceae	4
27	Areca catechu L.	Indian- nut	Arecaceae	40
28	Tamarindaus Indica L.	Tamarind	Leguminosae	1
29	Limonia acidissima Graff	Indian wood apple	Rutaceae	3
30	Bougainvillea glabrachoisy	Paper- flower	Nyctaginaceae	10
31	Dyposis Lutescens (H.Wendl.)Beentje & J.Dransf.	Areca palm	Arecaceae	24
32	Ficus carica L.	Fig	Moroceae	2
33	Risa chinesis Jacq	Bengal rose	Rosaceae	74
34	Plumeria Pudica Jacq	Bridal boquet	Apocynaceae	13
35	Euphorbia Lotinifolia L.	Tropical smokebush	Euphorbiaceae	15
36	Murraya Koenigii (L.) Spreag.	Curryleaf tree	Rutaceae	1
37	Anacardium occidental L.	Cashew	Anacardiaceae	2
38	Arotocarpus heterophyllus Lam	Jack fruit	Moraceae	10
39	Averrhoa carambola L.	Carambola (star fruit)	Oxalidaceae	1
40	Dendrocalamus giganteus munro	Giant bamboo	Poaceae	6
41	Maringa Ofera Lam	Drumstick tree	Maringaceae	8
42	Mangifera Indica L.	Common Mango	Anacardiaceae	27
43	Psidium guajava L.	Common gouava	Myrtaceae	35
44	Manilkara Zapota (L>) P. Royen	Chicle	Sapotaceae	5
45	Pterocarpus Indicua Willd.	Amboyna- wood	Leguminosae	36
46	Ficus Microcarpa L.f.	Chinese benyan	Maraceae	10
47	Tabebuia heterophylla (DC.) Britton.	White- cedar	Bignoniaceae	6
48	Spathodea campanuiata P. Beaur.	African Thlip tree	Bignoniaceae	3
49	Cordia Sebestena L.	Geranium-tree	Boraginaceae	1
50	Annona Montana Macfad	Mountain Soursop	Annonaceae	2
51	Citrus Maxima (Burm) Merr.	Pomelo	Rutaceae	2

52	Filicium decipicus (wight & Arn.) Thwaites	Feru tree	Sapindaceae	3
53	Brownea grandiceps Jacq	Rose-of-venezuela	Leguninosae	3
54	Persea americana Mill	Avocada	Lauraceae	2
55	Annona Squamosa L.	Custard - apple	Annonaceae	4
56	Calophyllum inophyllum L.	Indian lourel	Clusiaceae	2
57	Syzygium samangense(Blume) Merr.& L.M.	Java - apple	Myrtaceae	2
58	Euphorbia miliides moul.	Christ's- plant	Euphorbiaceae	8
59	Roystonea regia (. Kunth)D.F.Cook	Cuban rayal palm	Arecaceae	84
60	Ficus benjamina L.	Mahyan banyan	Moraceae	25
61	Santalum album L.	East Indian sandl wood	Santalaceae	3
62	Mognolia Champaca (L). Baill. Ex pierre	Michelia	Magnolioceae	3
63	Acacia auriculiforis Benth	Earleaf acacia	Leguominosae	1
64	Ficus religiosa L.	Sacred fig	Moraceae	1
65	Radermachera sinica (Hence)Hemsl.	China doll plant	Bignoniaceae	4
66	Syzygium Jambos(L.)Alston	Jambos	Myrtaceae	2
67	Mimusops elevgi L.	Medar	Sapotaceae	4
68	Delonix regia(Hook.)Ref.	Flamboyant	Leguninosae	9
			Total	**824**

Plant Distribution Program: As part of the campus's commitment to environmental awareness, plant distribution programs are organized for students and the community. Total Plants in GG Campus is 820, Peenya Campus, Total Plants in Peenya Campus is 2000.

Recent Plantation: In the last year, 250 edge plants were planted in the Peenya campus, contributing to the overall green cover.

Survival Rate: The observed survival rate of the trees planted last year is commendable, with an impressive 90%. Out of the 250 edge plants, 230 have thrived and are contributing to the greenery of the campus.

The ongoing commitment to a sustainable and green campus remains a top priority. The expectation is for continued growth and flourishing greenery in the years to come.

In GG, 80% of events and programs feature Chief Guests receiving a plant or sapling instead of traditional bouquets. Additionally, trainers and faculty conducting workshops within departments are gifted with saplings as tokens of gratitude.

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In Peenya, all University activities involve the distribution of plants as mementos to guests and visitors.

Plant Ownership Program: A plant ownership program is in place, fostering a sense of responsibility and connection with nature among the campus community.

In GG, many employees have small in-house plants on their desks or cabins, actively caring for and nurturing them.

In Peenya, as a unique memory of significant activities on the campus, plants are planted in the names of dignitaries and managed collectively.

Medicinal Plants at MSRUAS: Cultivating Health and Wellness:

Ramaiah University of Applied Sciences (MSRUAS) takes pride in fostering a holistic environment that extends beyond academic pursuits. In alignment with this vision, both campuses of MSRUAS have embraced the cultivation of medicinal plants, contributing to the health and well-being of the university community.

Key Features:

1. **Diverse Medicinal Flora:**

Both campuses boast a diverse collection of medicinal plants, carefully curated to include a variety of species known for their therapeutic properties.

2. **Integration into Green Spaces:**

Medicinal plants are strategically integrated into the green spaces across the campuses, creating an environment that not only promotes academic growth but also supports health and wellness.

3. **Educational Significance:**

The presence of medicinal plants serves an educational purpose, providing students with hands-on learning opportunities in the field of botany, pharmacology, and traditional medicine.

4. **Herbal Garden Initiatives:**

Dedicated herbal gardens have been established, showcasing a spectrum of medicinal plants. These gardens serve as living laboratories for students, faculty, and researchers interested in herbal medicine and alternative healthcare.

5. **Community Engagement:**

The cultivation of medicinal plants goes beyond the academic realm, engaging the wider university community. Workshops, awareness programs, and demonstrations highlight the importance of these plants in promoting natural health solutions.

6. **Promotion of Traditional Knowledge:**
7. By nurturing medicinal plants, MSRUAS contributes to the preservation and promotion of **traditional knowledge about the healing properties of various herbs and plants.**
8. **Accessible Resources:**

The availability of medicinal plants on campus provides easy access for students and faculty, encouraging them to explore and incorporate natural remedies into their lifestyle.

9. Environmental Impact:

Beyond their medicinal value, these plants contribute to the overall biodiversity of the campuses, enhancing the ecological balance and fostering a sustainable and harmonious environment.

The integration of medicinal plants into the university's landscape reflects MSRUAS's commitment to the well-being of its community members and the broader societal impact. This initiative not only enriches the academic experience but also encourages a lifestyle that prioritizes health, nature, and the inherent healing properties of plants.

Medicinal Plant List GG Campus

Sl. No	Botanical name	Common name	Family	Number of plants
1.	*Asparagus setaceus*	Asperagus fern	Asparagaceae	1
2.	*Cinnamomum verum*	Cinnamon	Lauraceae	2
3.	*Saraca asoca*	Ashoka tree	Detarioideae	10
4.	*Euphorbia tirucalli*	Fire finger	Euphorbiaceae	2
5.	*Ficus pseudopalma*	Sicus palm	Moraceae	20
6.	*Jatropha integerrima*	Peregrina	Euphorbiaceae	100
7.	*Duranta erecta*	Golden dew drop	Verbenaceae	200
8.	*Phoenix dactylifera*	Date palm	Arecaceae	3
9.	*Pinus radiata*	Monterey pine	Pinaceae	45
10.	*Hibiscus rosa*	Hibiscus	Malvaceae	40
11.	*Ficus benghalensis*	Bengal banyan	Moraceae	12
12.	*Catharanthus roseus*	Vinca rosea	Apocynaceae	30
13.	*Morus alba*	White mulberry	Moraceae	2
14.	*Azadirachta indica*	Neem	Meliaceae	2
15.	*Styphnolobium japonicum*	Pagoda tree	Fabaceae	7
16.	*Nyctanthes arbor-tristis*	Night jasmine	Oleaceae	1
17.	*Ficus racemosa*	Cluster fig	Moraceae	2
18.	*Ocimum tenuiflorum*	Tulasi	Lamiaceae	5
19.	*Dracaena reflexa*	Song of India	Asparagaceae	53
20.	*Lantana montevidensis*	Purple falls	Labiatae	50
21.	*Tradescantia pallida*	Purple heart	Commelinaceae	20
22.	*Nerium oleander*	Oleander	Apocynaceae	50
23.	*Gardenia jasminoides*	Gardenia	Rubiaceae	20
24.	*Bauhinia variegata*	Mountain ebony	Fabaceae	2
25.	*Ruta graveolens*	Rue	Rutaceae	5
26.	*Chlorophytum comosum*	Spider plant	Asparagaceae	3
27.	*Tecoma capensis*	Cape honey suckle	Bignoniaceae	10
28.	*Ficus malacocarpa*	Indian burel fig	Moraceae	45

29.	*Canna* indica	Canna lily	Cannaceae	5
30.	*Ficus elastica*	Rubber plant	Moraceae	5
31.	*Eugenia uniflora*	Pitanga	Myrtaceae	40
32.	*Clerodendrum speciosissimum*	Java glory	Lamiaceae	10
33.	*Dalbergia sissoo*	Indian rose wood	Fabaceae	10
34.	*Millettia pinnata*	Indian beech	Fabaceae	10
35.	*Juglans nigra*	Black walnut	Juglandaceae	4
36.	*Ficus benjamina*	Weeping fig	Moraceae	10
			Total	**836**

Medicinal Plant List RTC Peenya				
Sl No	**Botanical name**	**Common name**	**Family**	**Numbers**
1	*Eugenia Jambosoides C Wright ex Griseb*	Nerale	Myrtaceae	16
2	*Azadirachtra Indica A Jubs*	Neem	Meliaceae	12
3	*Plumiria Obtusa. L.*	Singapore graveyard flower	Apocynaceae	10
4	*Styphnolobium japonicum. L.*	Pagoda- tree	Apocynaceae	6
5	*Jacaranda Mimosifolia D. Don*	Block poui	Bignoniaceae	28
6	*Hibiscus rosa-sinensis L*	Chinese hibiscus	Malvaceae	8
7	*Ixora coccinea L*	Flame -of-the-woods	Rubiaceae	30
8	*Thuja occcidentlis L*	Northern White-cedar	cupressaceae	32
9	*Erica arborea L*	Tree health (Austalian bottle brush)	Ericaceae	25
10	*Saraca Indica L*	Ashoka tree	Leguminosae	4
11	*Phyllanthus emblica L*	Indian -goosberry	Phyllanthaceae	3
12	*Phyllanthus acidus(L). Skeeb*	Indian -goosberry	Phyllanthaceae	4
13	*Terminalia catappa L*	Indian - almond	Combretaceae	8
14	*Ficus sycomorus L*	Sycomore	Moroceae	4
15	*Tectona grandis L.f.*	Bankok teak	Lamiaceae	28
16	*Grevillea robusta A. cunn.ex R.Br.*	Asustralian silky-Oak	Proteaceae	47
17	*Tecoma Stans(L.) jubs.ex Kunth*	Trumpet- flower	Bognoniaceae	10
18	*Ficus carica L.*	Fig	Moroceae	2
19	*Euphorbia Lotinifolia L.*	Tropical smoke bush	Euphorbiaceae	15
20	*Murraya Koenigii (L.) Spreag.*	Curry leaf tree	Rutaceae	1
21	*Moringa Olifera Lam*	Drumstick tree	Maringaceae	8

22	*Ficus Microcarpa L.f.*	Chinese banyan	Maraceae	10
23	*Spathodea campanuiata P. Beaur.*	African Thlip tree	Bignoniaceae	3
24	*Annona Montana Macfad*	Mountain Soursop	Annonaceae	2
25	*Annona Squamosa L.*	Custard - apple	Annonaceae	4
26	*Euphorbia miliides moul.*	Christ's- plant	Euphorbiaceae	8
27	*Ficus benjamina L.*	Mahyan banyan	Moraceae	25
28	*Santalum album L.*	East Indian sandal wood	Santalaceae	3
29	*Mognolia Champaca (L). Baill. Ex pierre*	Michelia	Magnolioceae	3
30	*Acacia auriculiforis Benth*	Ear leaf acacia	Leguominosae	1
31	*Ficus religiosa L.*	Sacred fig	Moraceae	1
32	*Syzygium Jambos(L.)Alston*	Jambos	Myrtaceae	2
33	*Delonix regia (Hook.)*	Flamboyant	Leguninosae	9
			Total	**372**
	Total Medicinal Plants at RUAS		**GG campus**	**836**
			RTC campus	**372**
			Total	**1208**

Suggested Plants for Campus Beautification:

In line with the observations made in the audit, the recommended distribution is as follows:

- Flower Plants: 250 Nos
- Shelter Plants: 150 Nos
- Show Plants: 150 Nos
- Herbal Plants: 100 Nos
- Fruits Plants: 200 Nos

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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.

Animals and Birds most observed are as follows:

	Sr. No.	Common Name	Species
Birds	1	House Sparrow	Passer domesticus
	2	Great Egret	Ardea alba
	3	Rosy Starling	Paster roseus
	4	Large Grey Babbler	Turtoides malcolmi
	5	Alpine swift	Apus melba
	6	Common Cuckoo	Cuculus canorus
	7	Common Myna	Acridotheres tristis
	8	Pigeon	Columbidae
Reptiles	1	Indian cobra	Naja naja
	2	Graceful racer	Platyceps gracilis
	3	Indian Palm Squirrel	Funambulus palmarum
Insects	1	Sphinx moths	Sphingidae
	2	Common Gull	Cepora nerissa
	3	Common grass yellow	Eurema hecabe
	4	Lemon migrant	Catopsilia Pomona
	5	White orange tip	Ixias Marianne
	6	Common Jay	Grapium doson
	7	Peacock pancy	Junonia almanac
	8	Common crow butterfly	Euploea core
	9	Lesser grass blue	Zizina otis
	10	Forget Me Not	Catochrysops Strabo
	11	Common Mormon Swallowtail	Papilio polytes
	12	Lime Swallowtail	Papilio demoleus
	13	Lime blue	Chilades lajus
	14	Grasshopper	Poekilocerus pictus
	15	Blue Tiger	Tirumala limniace
	16	Common evening brown	Melanitis leda

Institution is Minimizing disturbances and restoring vegetation in the campus, so as to promote habitat and biodiversity.

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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.

Ramaiah University of Applied Sciences' Collaborative Cleanup Drive

In a collaborative effort, Ramaiah University of Applied Sciences (RUAS) joined hands with Bhumi Catalyze Environment Team and Athena Club for a cleanup drive within the university premises. The initiative, organized by MHA students under the guidance of Ms. Aileen J., Assistant Professor of RUAS, aimed to instill a sense of responsibility among the public and students, promoting a clean and litter-free environment. The core principles emphasized were Reduce, Reuse, Recycle, Respect, and Restore.

Event Highlights:

Date of Cleanup Rally: The cleanup rally took place on 27-01-2023, marking the commencement of efforts to clean up designated spots within the university.

Organizers: MHA students, guided by Ms. Aileen J., played a pivotal role in organizing the event.

Participants: The event witnessed active participation from key figures in RUAS, including Prof. Sai Baba Sir (Registrar), Uday Kumar Sir (Faculty), Dr. Govind R Kadambi Sir (Pro-Vice Chancellor - Research), Professor and Director-Techno Centre Engineering, and Dr Jyothi Shankar (Director of Transferable Skills and Leadership Development). Additionally, 54 students from various courses enthusiastically joined the initiative.

Plastic-Free Zone Declaration: As part of the cleanup initiative, a section of the university was declared a plastic-free zone. Following this, a group photo was taken to commemorate the commitment to a cleaner environment.

Plastic-Free Zone Declaration in Front of University House:

Following the cleanup efforts, a significant milestone was achieved with the declaration of a plastic-free zone in front of the university house. This declaration underscores the university's commitment to environmental sustainability and serves as a step towards fostering a culture of cleanliness and responsibility among its members. The collaborative cleanup drive not only contributes to a cleaner and healthier campus but also sets an inspiring example for the broader community on the importance of maintaining and respecting our shared spaces.

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Sapling Distribution and Plantation Drives at MSRUAS:

At MSRUAS, the distribution of saplings as mementoes has evolved into a commendable practice, symbolizing the university's commitment to environmental stewardship. This practice has become ingrained in the fabric of various events, extending to both prestigious occasions with chief guests and eminent members, as well as events organized by students. The distribution of saplings has thus become a routine, fostering a culture of sustainability among both the academic community and the younger generations

Key Practices:

1. Mementoes for Dignitaries:

- Saplings are presented as thoughtful mementoes to chief guests, eminent members, and event organizers during various university events.
- This practice is not limited to specific types of events but is seamlessly integrated into the fabric of both formal and student-organized occasions.

2. Percolation to Younger Generations:

- Through the regular distribution of saplings, this eco-friendly practice has percolated to the younger generations within the university.
- Students, as both event organizers and participants, actively engage in and support this sustainable initiative.

3. Sapling Plantation Drives:

- Complementing the distribution efforts, sapling plantation drives are actively executed by the university.
- These drives contribute to the expansion of green spaces within and around the campus, aligning with the university's broader commitment to environmental conservation.

The integration of sapling distribution into the university's event culture not only serves as a unique and environmentally conscious way of expressing gratitude but also reinforces the importance of nurturing and caring for the environment. MSRUAS, through these initiatives, continues to inspire a sense of responsibility towards nature and sustainability among its community members.

V. Observation and Recommendation

Observation on Best Initiatives in Campus Sustainability:

1. Renewable Energy:
Solar Panels: Both campuses have embraced renewable energy by installing solar panels.
Bio Gas Plant: Peenya campus has further implemented a bio-gas plant, contributing to sustainable energy practices.

2. Biodiversity Conservation:
Green Surroundings: Both campuses boast lush green beds fostering biodiversity.
Avian Diversity: Trees in the campuses provide a habitat for various birds such as crows, pigeons, mynahs, nightingales, snakes, and peacocks.
Insect Life: Beehives are discovered under the ceilings, showcasing a thriving ecosystem.
Animals: Dogs and cats move freely, contributing to the natural balance, feeding on leftovers from the canteen and food street.

3. Tree Plantation Drives:
NSS Participation: The National Service Scheme (NSS) actively participates in tree plantation drives, conducting two such initiatives.
Service to Society: Annual tree planting efforts extend to nearby streets, areas, towns, and villages, emphasizing the commitment to environmental conservation.

4. Ground Water Recharge:
Peenya: Groundwater recharge initiatives are in place, emphasizing sustainable water management.

5. Pollution Reduction:
Green Commuting: Car-pooling, usage of battery-operated vehicles, and bicycles are encouraged to reduce pollution.

6. E-Waste Management:
Authorized Disposal: Unused and old electronic equipment is responsibly managed through sales to authorized E-Waste scrap dealers.

7. Solid Waste Management:
Efficient Waste Handling: Both campuses actively practice solid waste management, contributing to a cleaner and healthier environment.

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8. **Adoption of Village/Society:**

Unnat Bharath Abhiyan Scheme: The campuses have adopted five villages (Kaiwara, Rajgere, Mallur, Kannalli, and Jakkanalli) across Karnataka. This initiative aims to support the technical development of these villages, promoting sustainable growth.

Recommendations for Sustainable Practices

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

1. **Sustainability Training:** Implement comprehensive sustainability training programs to educate our college community on sustainable practices and environmental stewardship.
2. **Environmentally Responsible Purchasing Policy:** Adopt and implement an Environmentally Responsible Purchasing Policy to guide our procurement decisions and reduce our environmental footprint.
3. **Institutional Ecology:** Establish institutional ecology policies and practices that promote resource conservation, recycling, waste reduction, and environmentally sound operations within our college.
4. **Stakeholder Engagement:** Encourage government, foundations, and industry involvement in interdisciplinary research, education, policy formation, and information exchange related to environmentally sustainable development.
5. **Canteen Renovation:** Explore the renovation of our canteen's cooking system by installing solar water heaters with heat pumps to reduce gas consumption and promote renewable energy use.
6. **Employee Tree Ownership**: Consider assigning tree ownership to our employees, fostering a sense of ownership and responsibility for the campus's green spaces.
7. **Butterfly Garden:** Develop a butterfly garden on campus to celebrate and appreciate the diversity of flora and fauna, promoting biodiversity conservation.

Annex 1

ISO17020:2012

UKcert
Certification & Inspection

Certificate of Registration

This is to certify that the
Conformity Assessment Certification
of
GREEN AURA
at

#692 F, 12TH A CROSS BEL LAYOUT, BHARATHNAGAR, MAGADI ROAD, BENGALURU KARNATAKA, 560091, INDIA

has been independently assessed and is compliant with the requirements of.

ISO/IEC 17020:2012

For the following scope of activities:

GREEN BUILDING SERVICES, CONSTRUCTION, INTERIOR DESIGN, GREEN AUDITING, SUSTAINABLE SERVICES

Certificate Number: UQ - 2023011404

Validity of this certificate can be verified at www.ukcertifications.org.uk/verify

Date of Certification	14th January 2023
1st Surveillance Audit Due	13th January 2024
2nd Surveillance Audit Due	13th January 2025
Certificate Expiry	13th January 2026

Authonsed Signatory

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

Annex 2

ISO9001:2015

QRO

QUALITY RESEARCH ORGANIZATION

Certificate of Registration

This is to certify that

GREEN AURA

#492 F, 12TH A CROSS BEL LAYOUT, BHARATHNAGAR, MAGADI ROAD, BENGALURU KARNATAKA, 560091, INDIA

has been independently assessed by QRO

and is compliant with the requirement of

ISO 9001:2015

Quality Management System

For the following scope of activities.

GREEN BUILDING SERVICES, CONSTRUCTION, INTERIOR DESIGN, GREEN AUDITING, SUSTAINABLE SERVICES

Date of Certification: 14th January 2023
1st Surveillance Audit Due: 13th January 2024
2nd Surveillance Audit Due: 13th January 2025
Certificate Expiry: 13th January 2026

Certificate Number: 30502301140200

QRO EGAC IAF

Head of Certification

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

Annex 3

ISO14001:2015

Certificate of Registration

This is to Certify that
Environmental Management System of

GREEN AURA

#692 F, 12TH A CROSS BEL LAYOUT, BHARATHNAGAR, MAGADI ROAD, BENGALURU
KARNATAKA-560091, INDIA

has been assessed and found to conform to the requirements of

ISO 14001:2015

for the following scope :

GREEN BUILDING SERVICES OF CONSTRUCTION, INTERIOR DESIGN, GREEN AUDITING
SUSTAINABLE SERVICES

Certificate No	23EENO86		
Initial Registration Date	02/08/2023	Issuance Date	02/08/2023
Date of Expiry	01/08/2026		
1st Surve. Due	02/07/2024	2nd Surve. Due	02/07/2025

Director

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e-mail: info@mmscertifications.com, website: www.mmscertifications.com

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Confederation of Indian Industry

The Indian Green Building Council

hereby certifies that

Nischay N

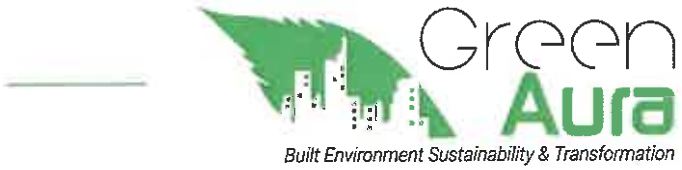
has successfully demonstrated knowledge on the Green Building Design & Construction, Building Standards & Codes, IGBC Resources & Processes and Green Design Strategies & their impacts

required to be awarded the title of

IGBC Accredited Professional

S Raghupathy

Dr Prem C Jain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