Green Aura

Built Environment Sustainability & Transformation

GREEN 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 Green Campus 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 'Green Audit' on 11th November, 2023 and assessed the Green and Sustainability measures, policies and standards in the campus were found to be excellent.

This certificate is valid till 11th November, 2024

Ref. No: GA / GREEN AUDIT / 01 / 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

Signature
Maneet Dewan
Director

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

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

Acknowledgement

The Green 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
Bangalore - 560 054

Disclaimer

The Green Audit team has prepared this report for M. S. Ramaiah University of Applied Sciences using the input data provided by the University'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 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 **Green 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 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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Green Auditing

The term "Green" signifies practices that are environmentally friendly and do not harm the natural environment. This concept can be encapsulated by the acronym "Global Readiness in Ensuring Ecological Neutrality" (GREEN). A "Green Audit" can be defined as the systematic process of identifying, quantifying, recording, reporting, and analyzing elements of ecological diversity, and expressing these findings in financial or social terms.

To effectively implement a Green Audit, it is essential to understand various key aspects, including the objectives, drivers, future potential, benefits, and advantages of such an assessment. The practical application of Green Auditing involves various measures such as energy conservation, the utilization of renewable energy sources, rainwater harvesting, efforts towards achieving carbon neutrality, and extensive plantation initiatives.

The concept of Green Auditing has gained significance in educational institutions and organizations alike, as it serves as a valuable management tool for evaluating and improving environmental standards. By embracing Green Auditing, institutions can contribute to sustainable development and enhance their overall environmental performance. Moreover, the reckless experimentation with nature, often disregarding natural laws and regulations, is a significant driver behind the growing importance of Green Auditing.

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 University'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 University'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 University 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 Institute 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 University 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.

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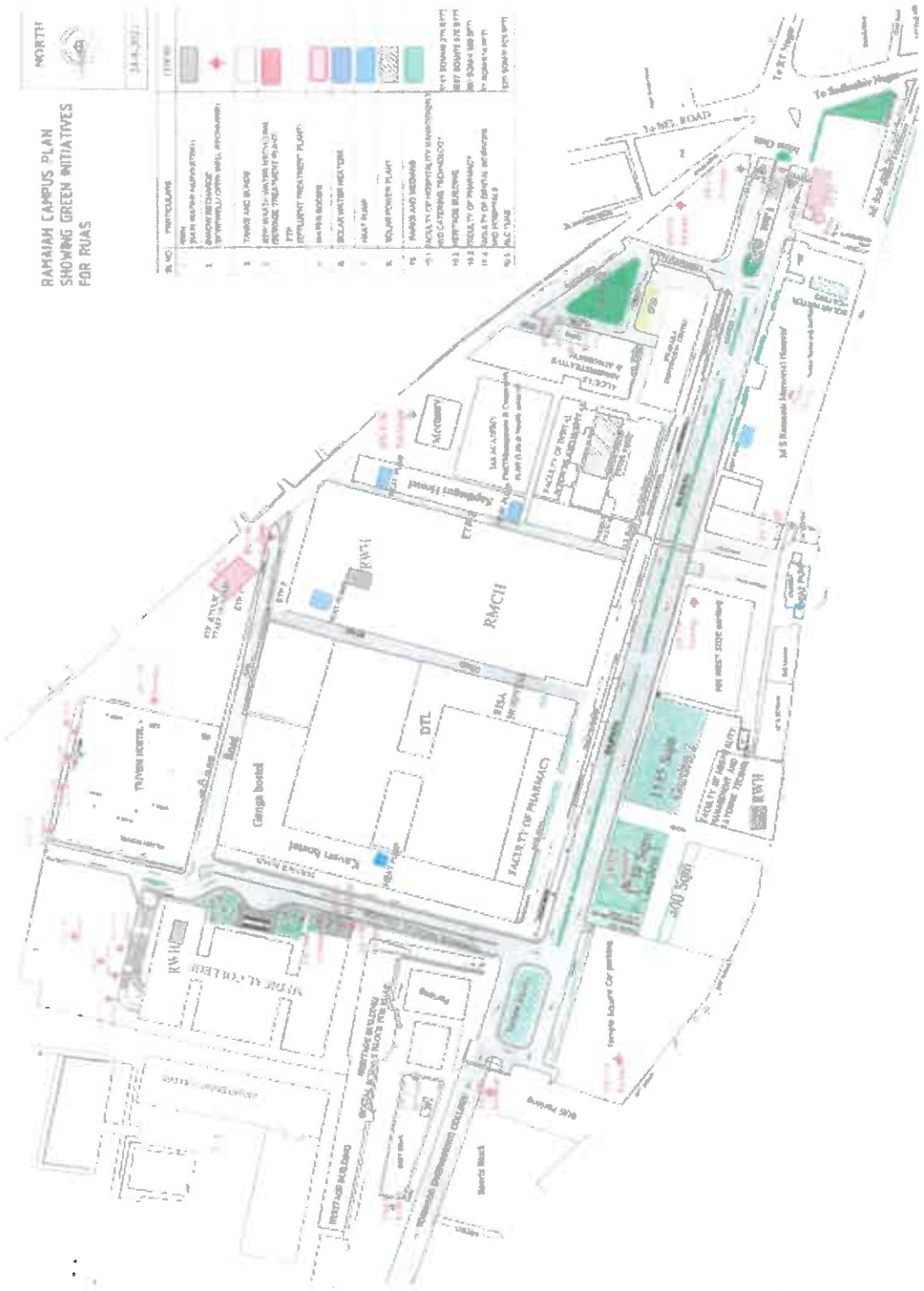
II. Built Environment

i. Layout plan - Gnanagangothri Campus



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

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.

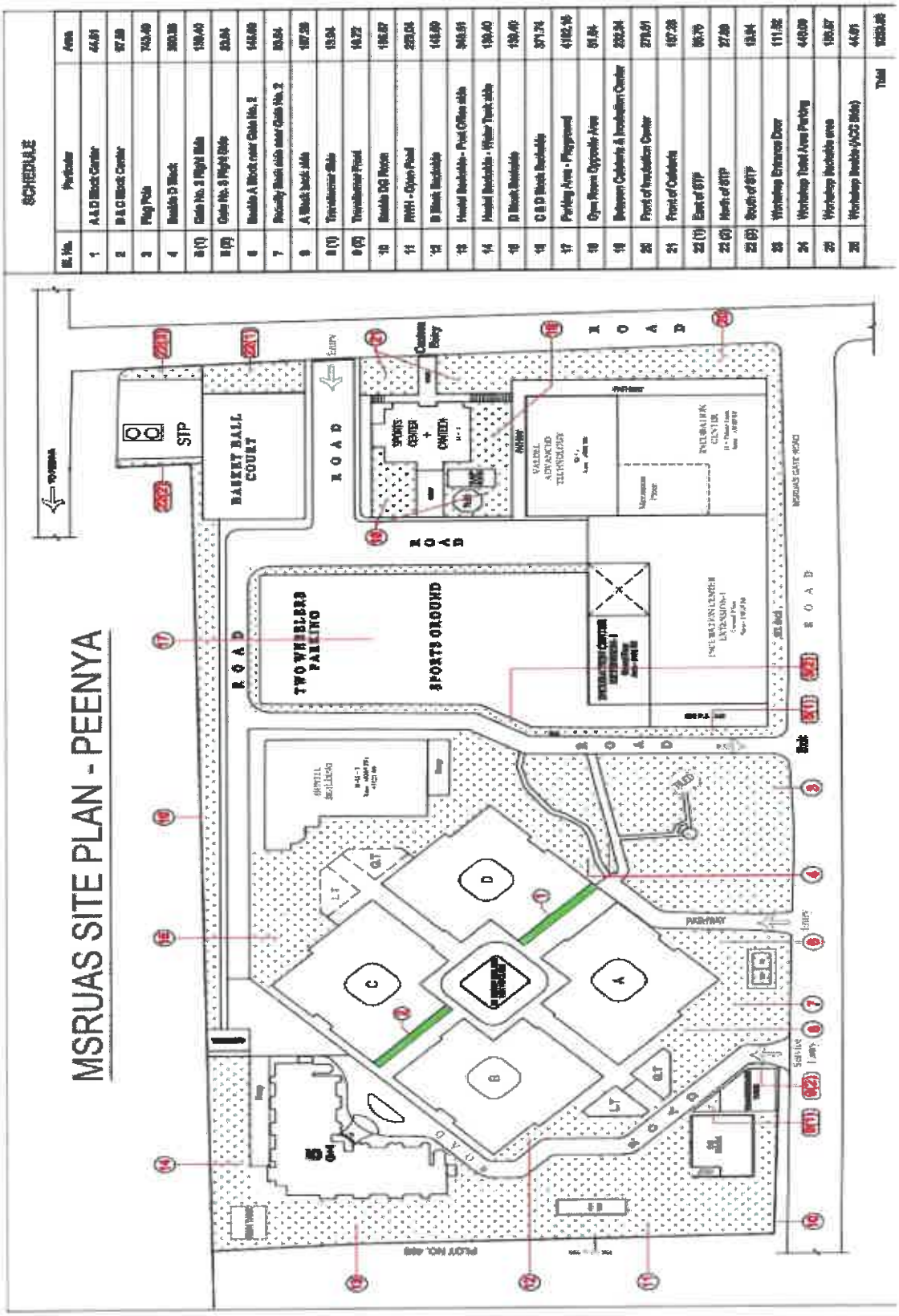
The campus serves as a harmonious coexistence of diverse disciplines, housing the Medical University, Institute of Technology, Institute of Management, University of Law, and the University of Arts, Science & Commerce. In addition, it shares grounds with Memorial Hospital, the Medical University Hospital,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

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
		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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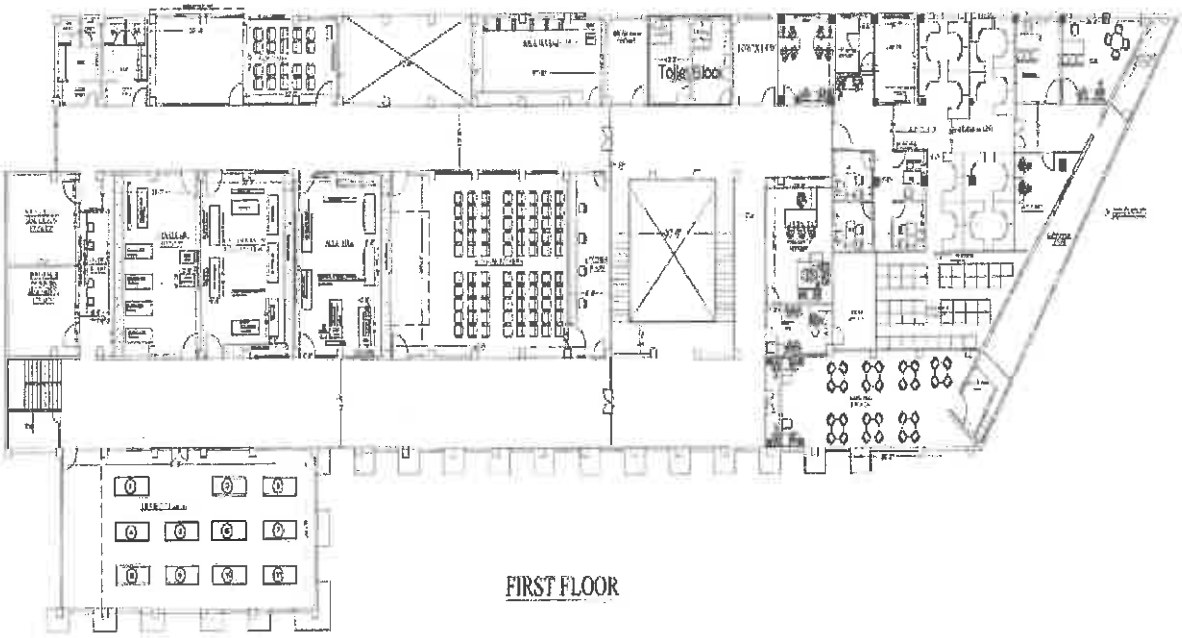

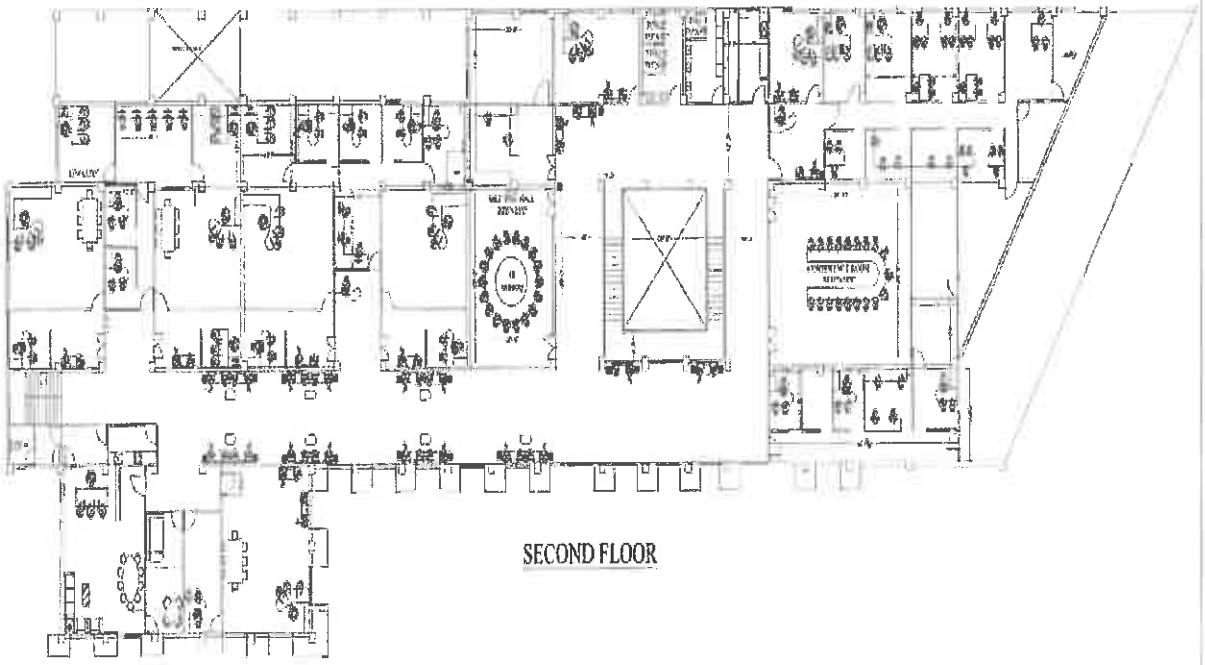

University House floor plan

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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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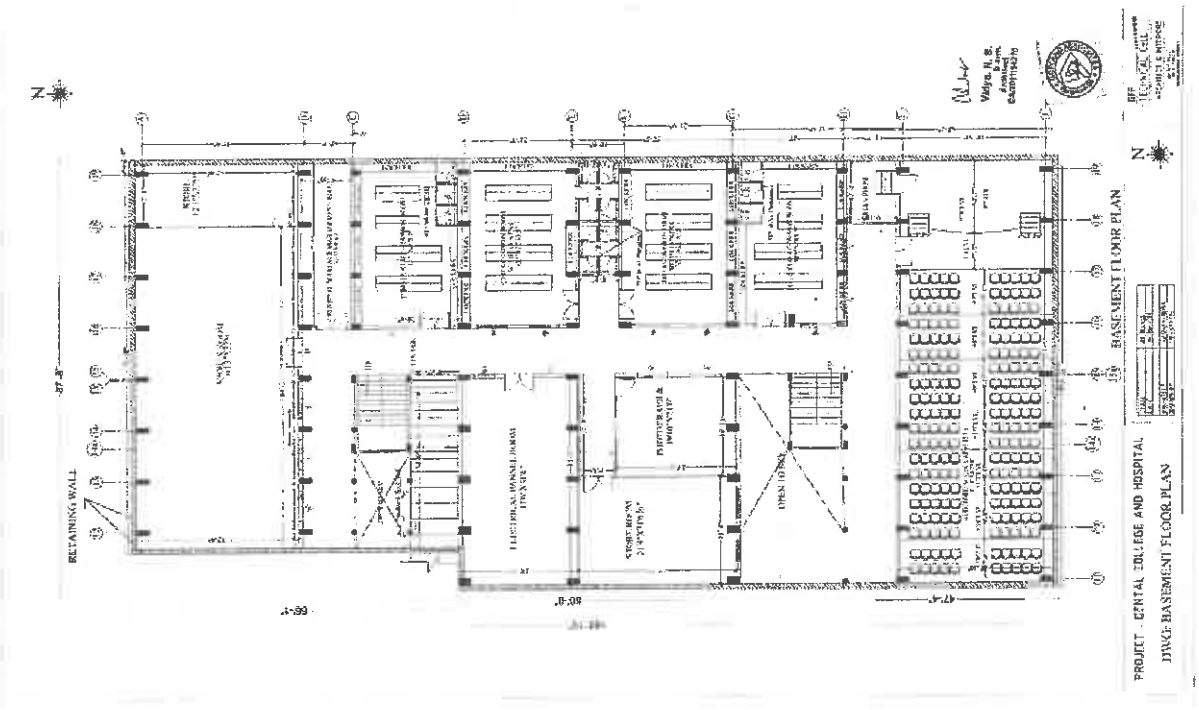

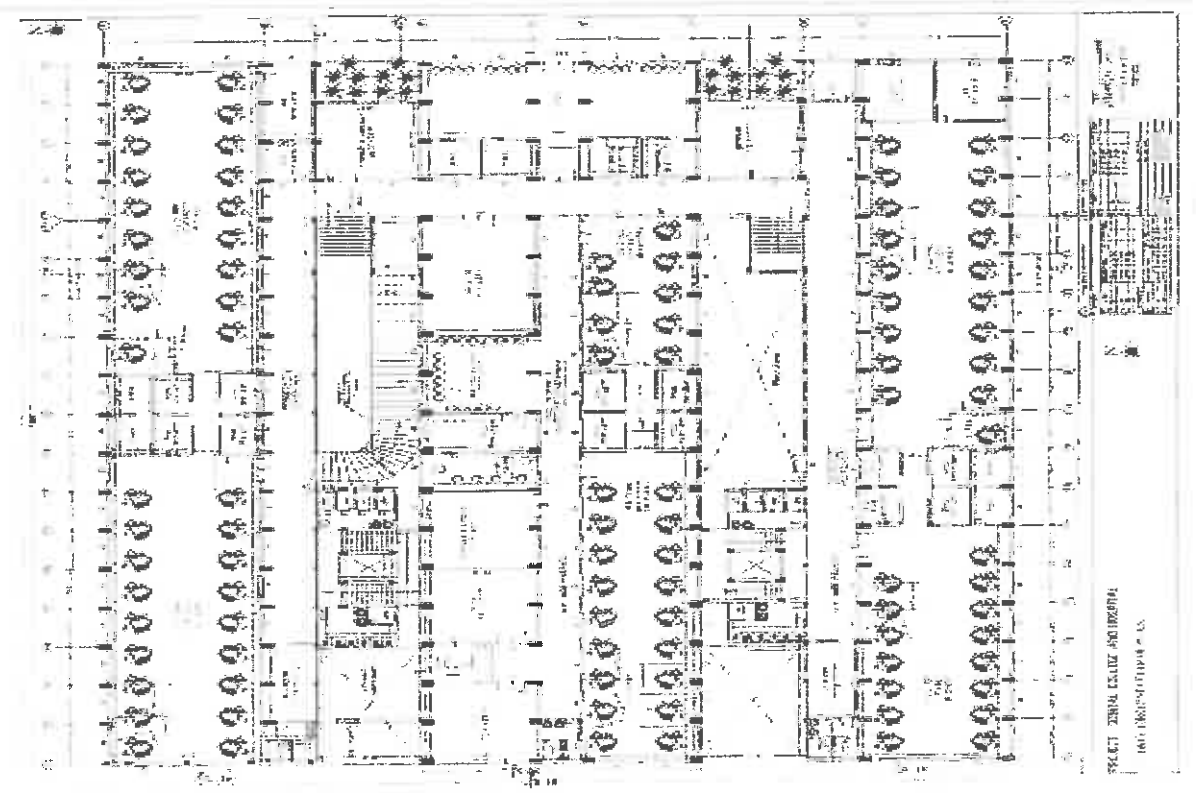

Faculty of Dental Sciences Basement and Ground floor plan

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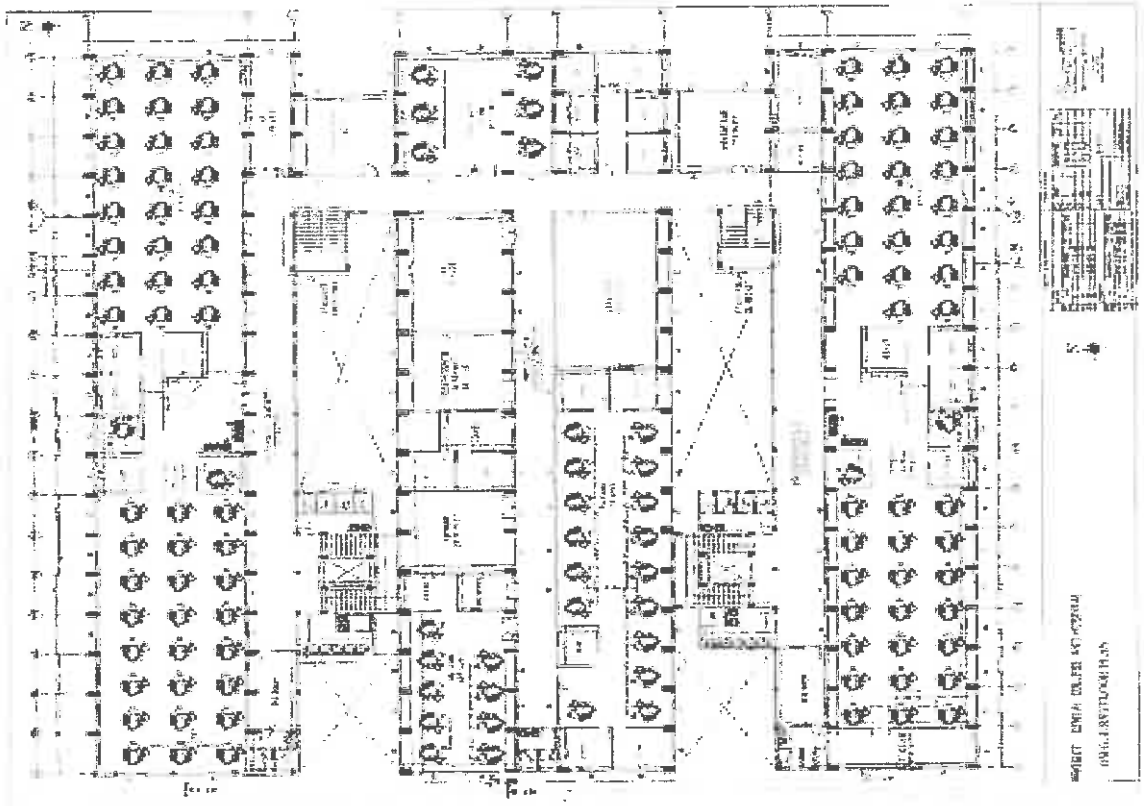
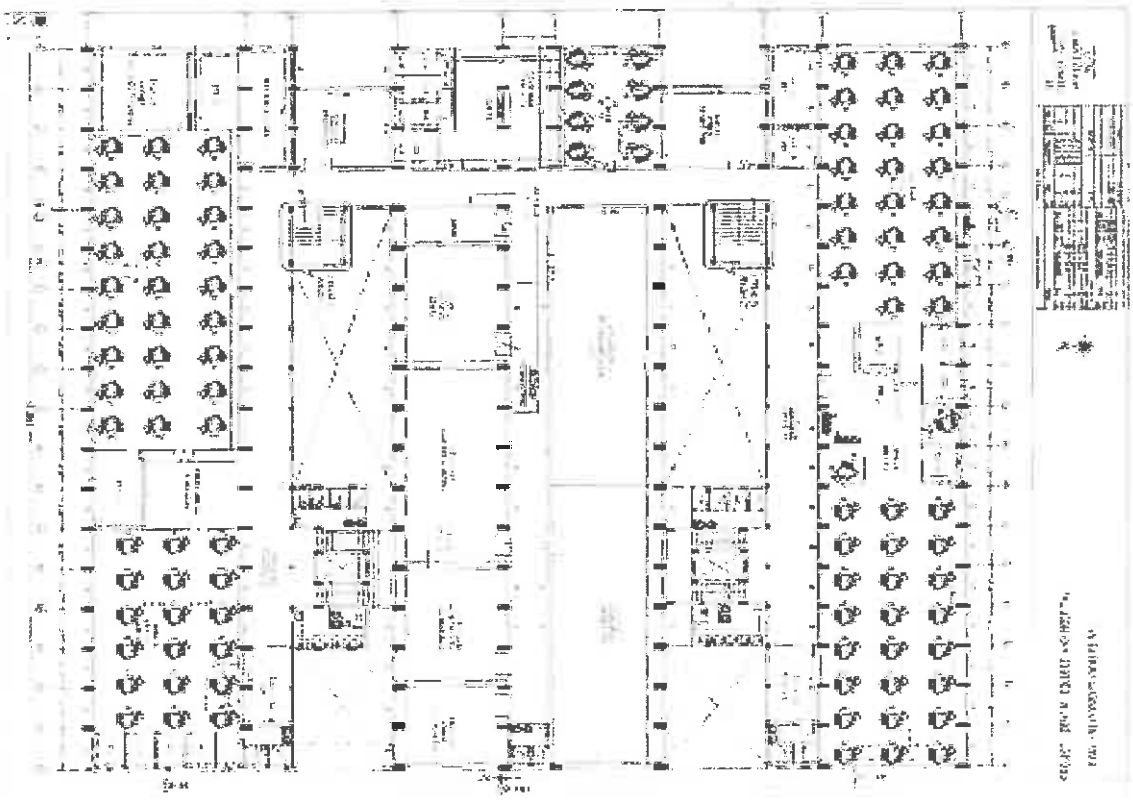
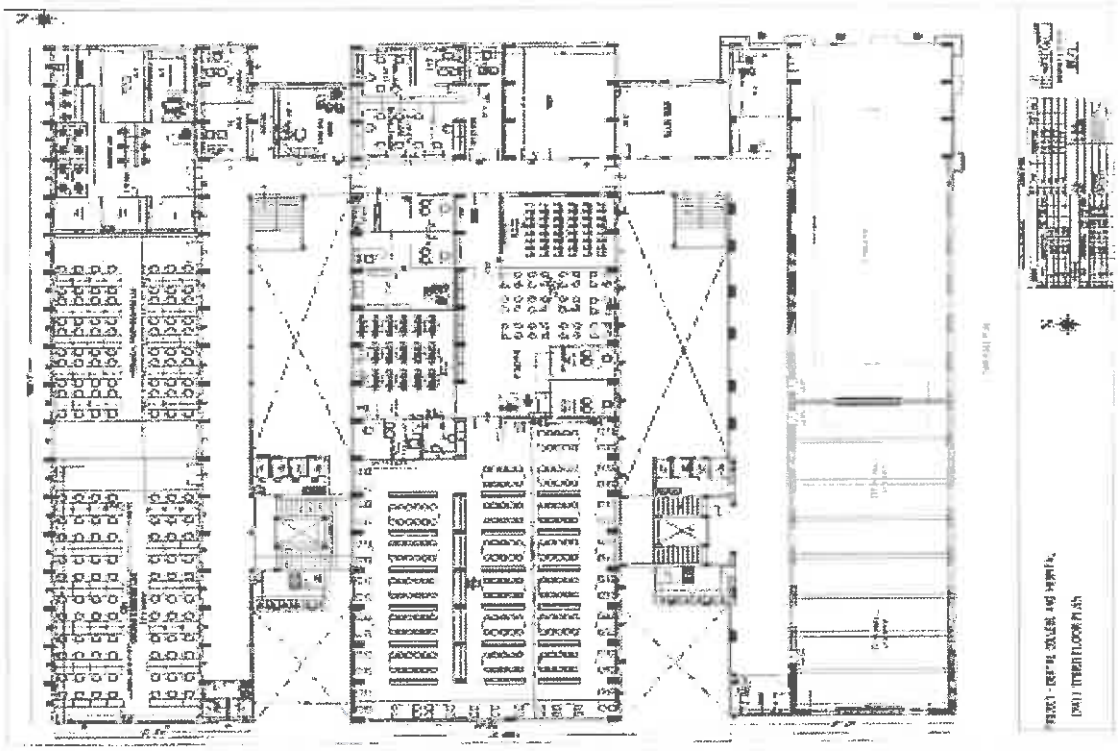




Faculty of Dental Sciences First and second floor plan



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.

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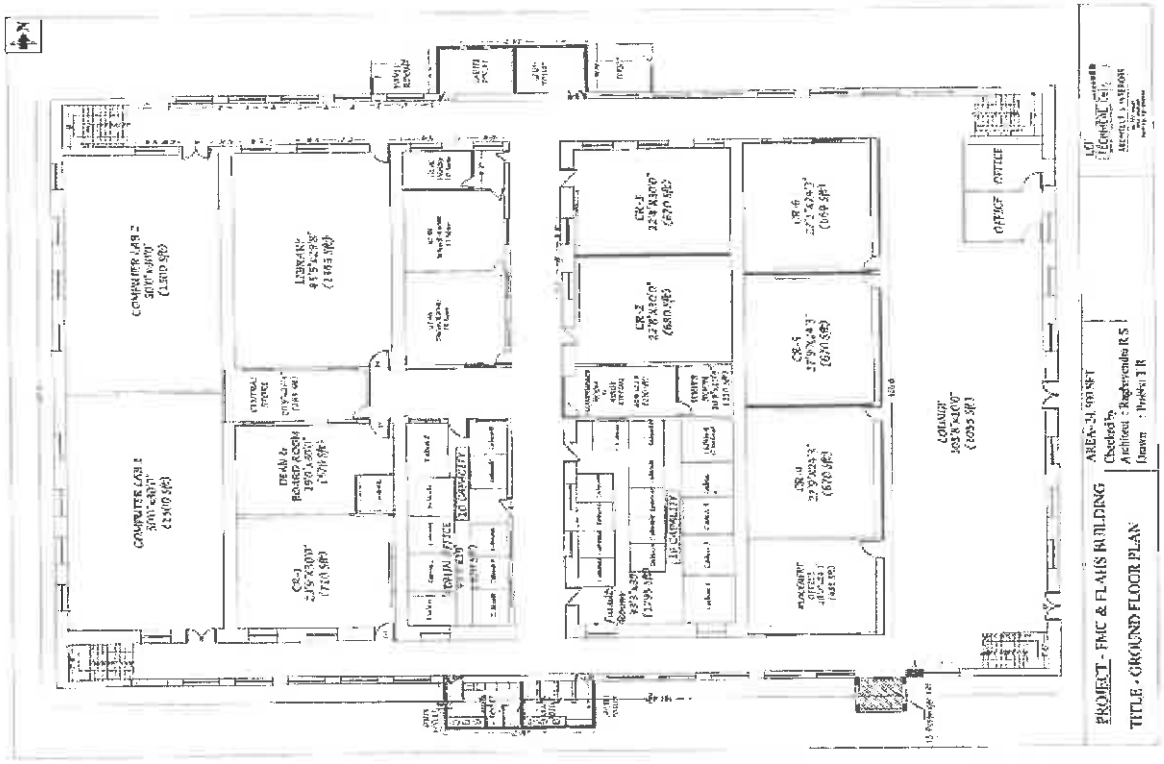

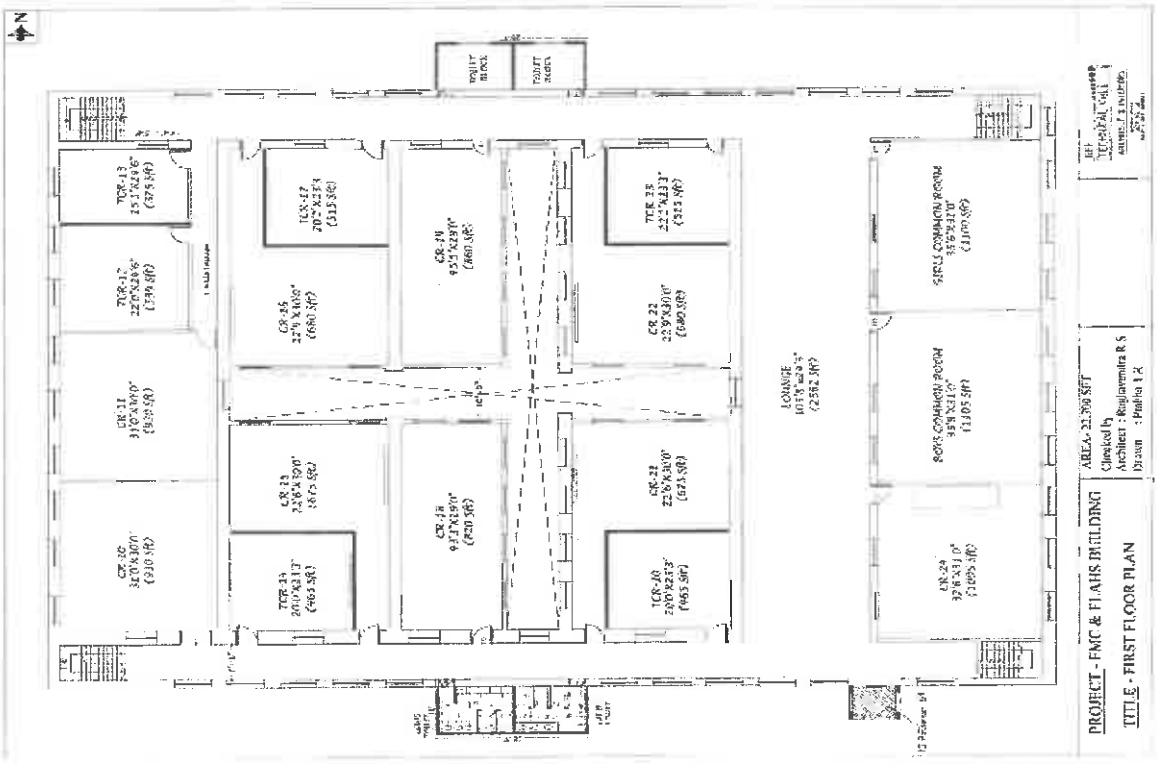

FMC and FLAHS Floor plan

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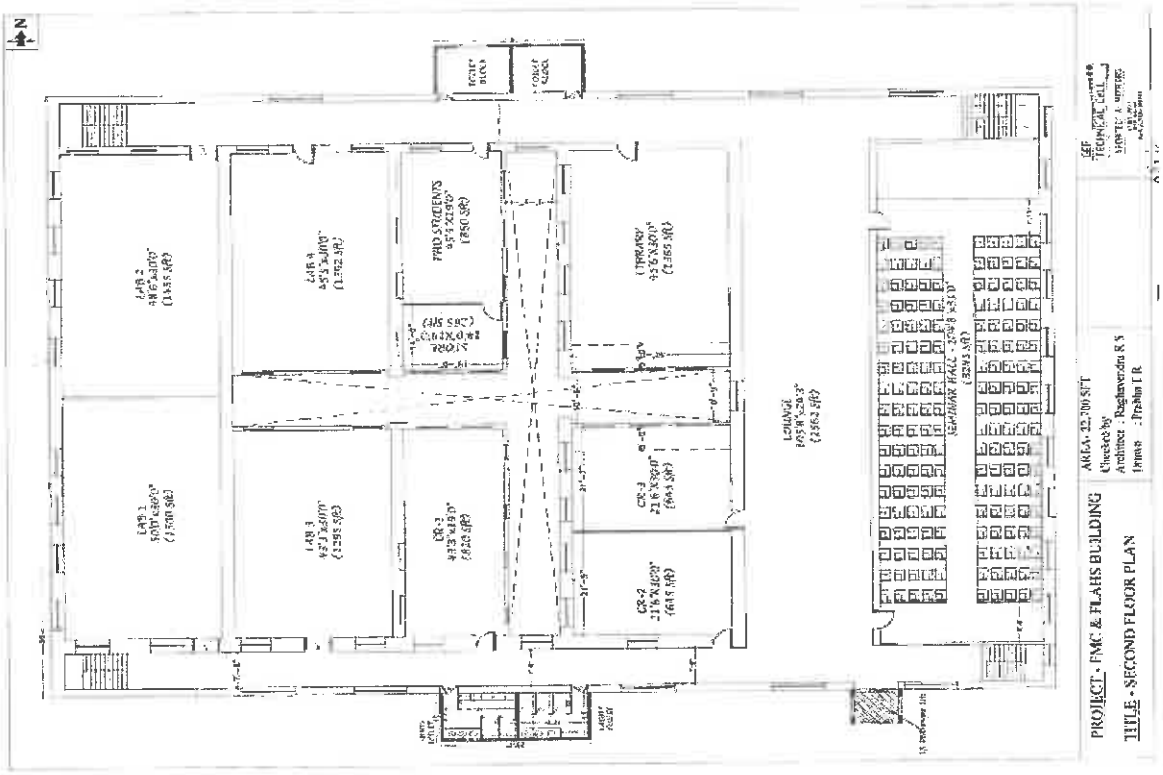

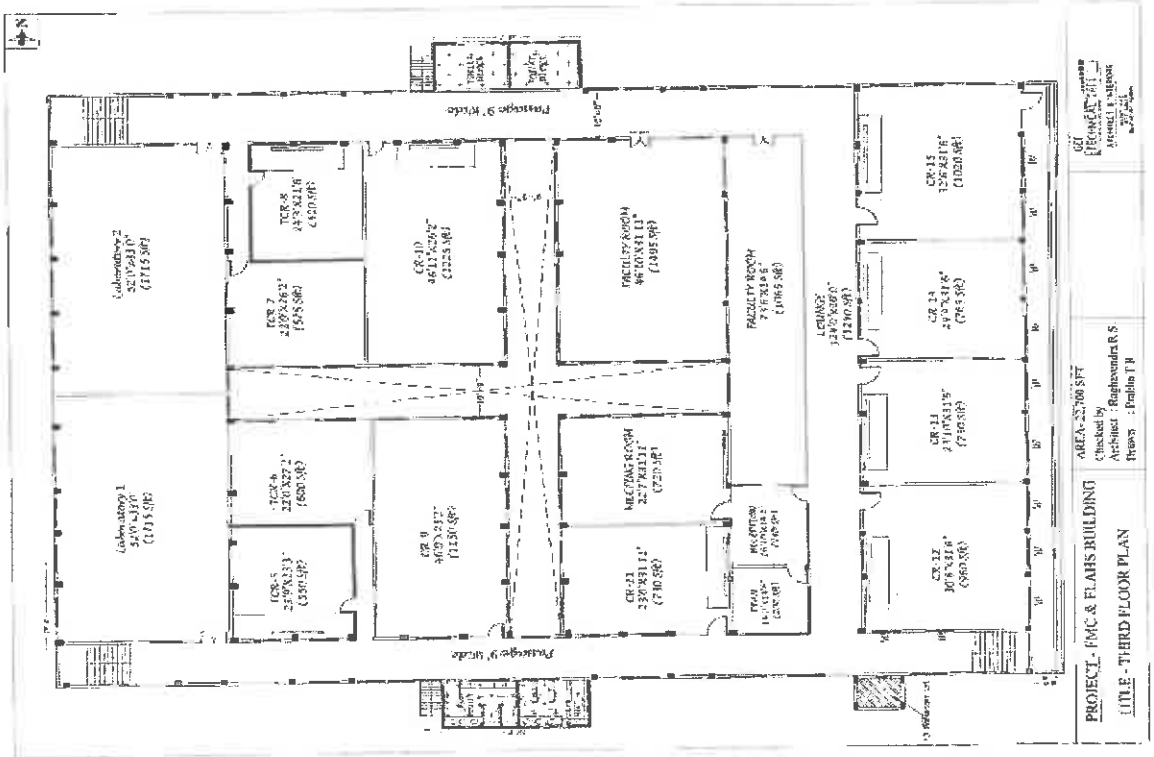

FMC and FLAHS Floor plan

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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.

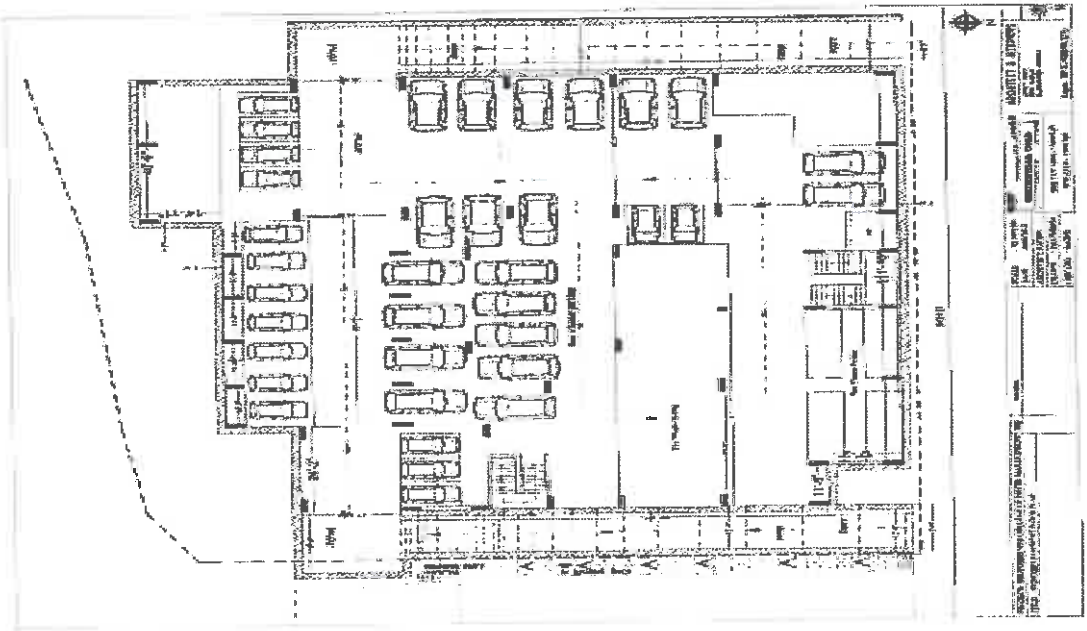
Basement (15,300 sq. ft): Likely dedicated to specialized facilities, storage, or practical training spaces to enhance the hands-on learning experience for students.

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

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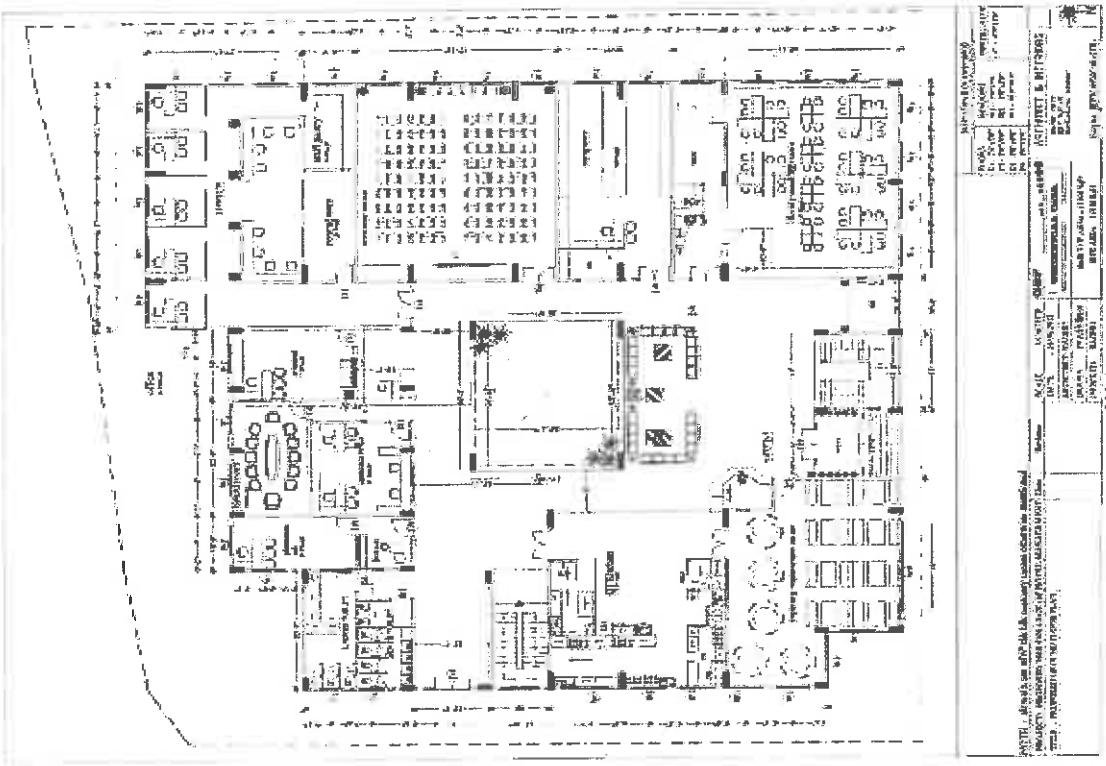

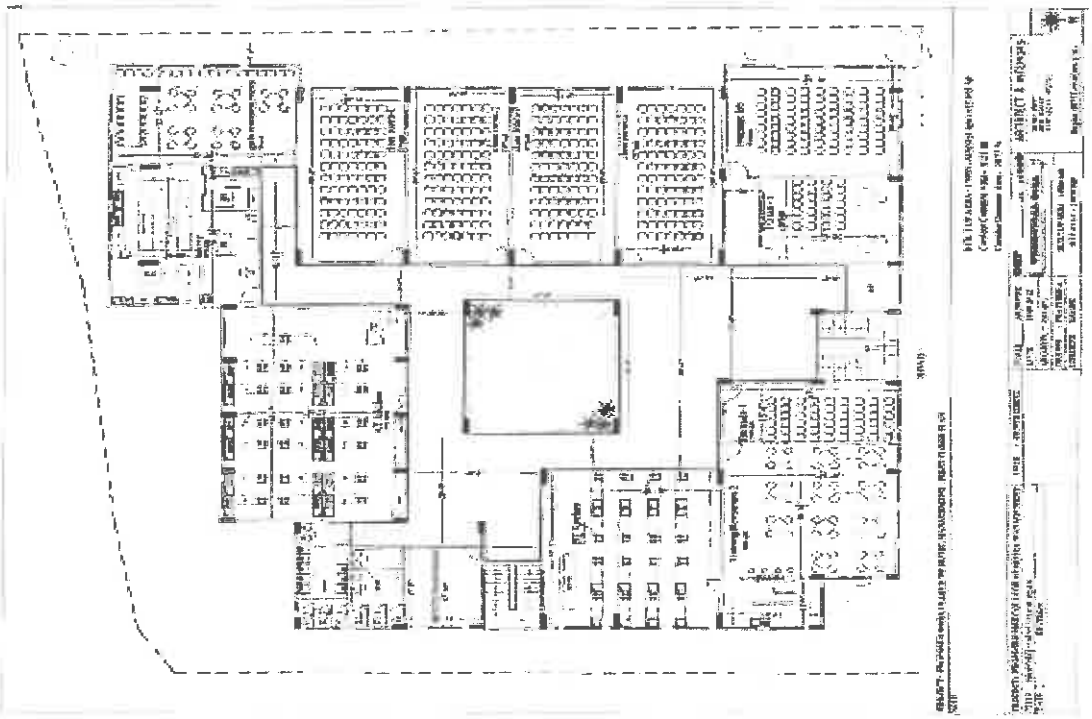

FHMCT Floor plan

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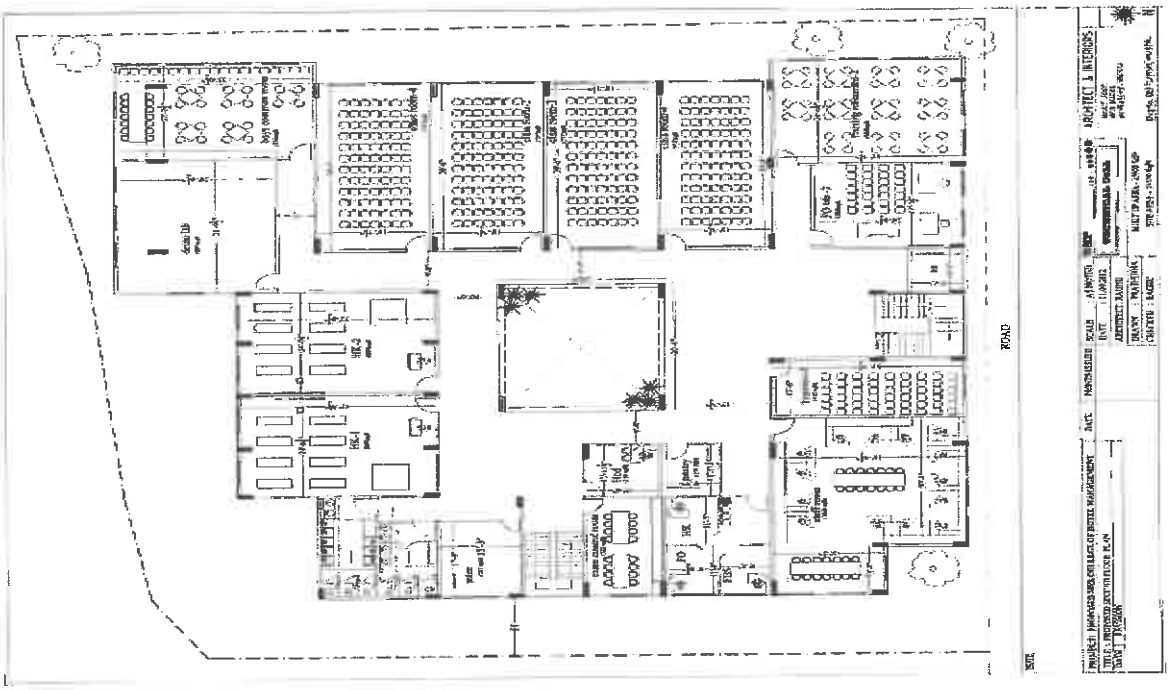

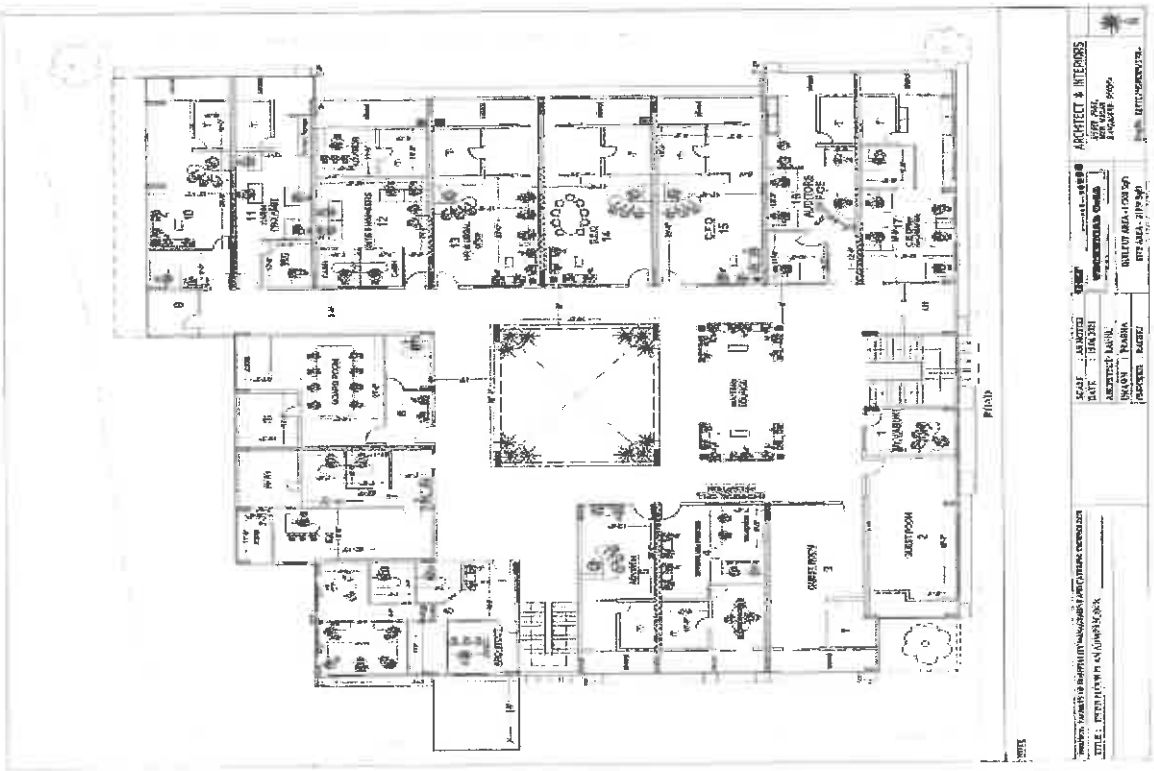

FHMCT Floor plan

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e) Faculty of Pharmacy (FPH)

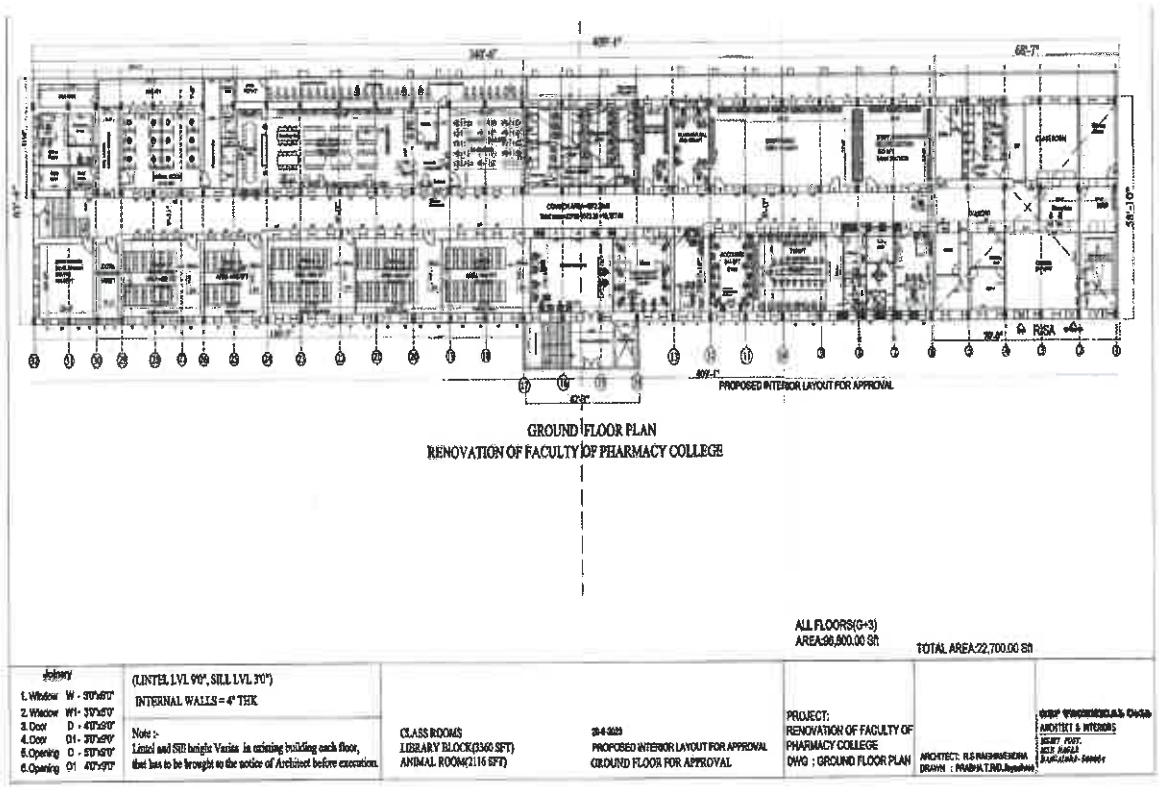
The Faculty of Pharmacy at MSRUAS is a pivotalcampusdedicated to shaping the future professionals and leaders of the pharmaceutical industry, contributing to India's prominent role in drug discovery, invention, and improvement.

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

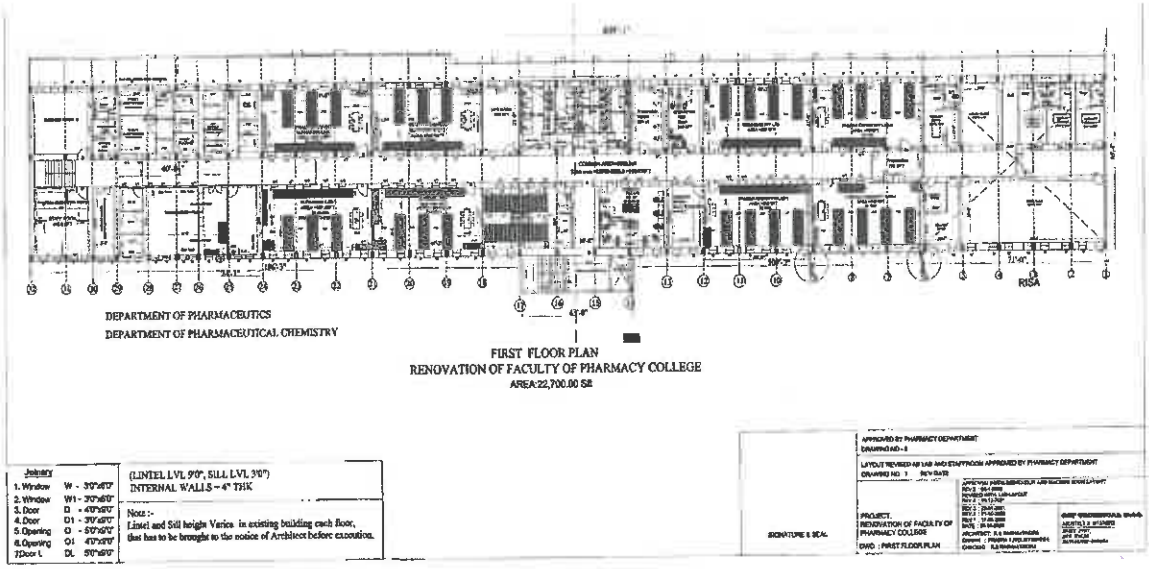
First Floor (22,700 sq. ft): A continuation of the academic journey, this floor may encompass additional classrooms, lecture halls, and potentially specialized labs for theoretical and practical learning.

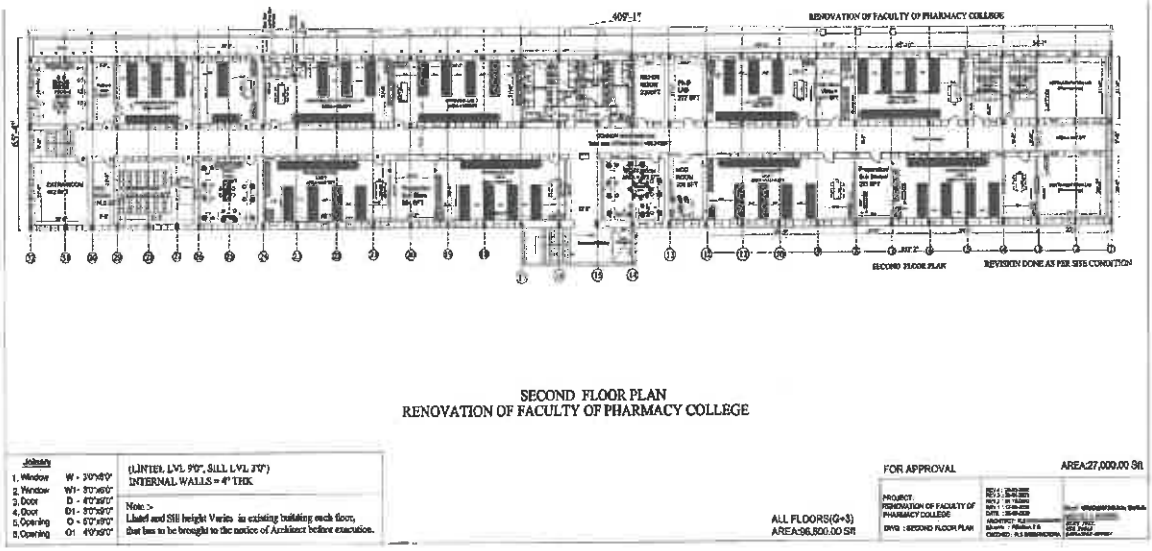
Second Floor (27,000 sq. ft): Recognizing the importance of hands-on experience, this floor could host state-of-the-art laboratories and research centers, providing students with opportunities for practical application and experimentation.

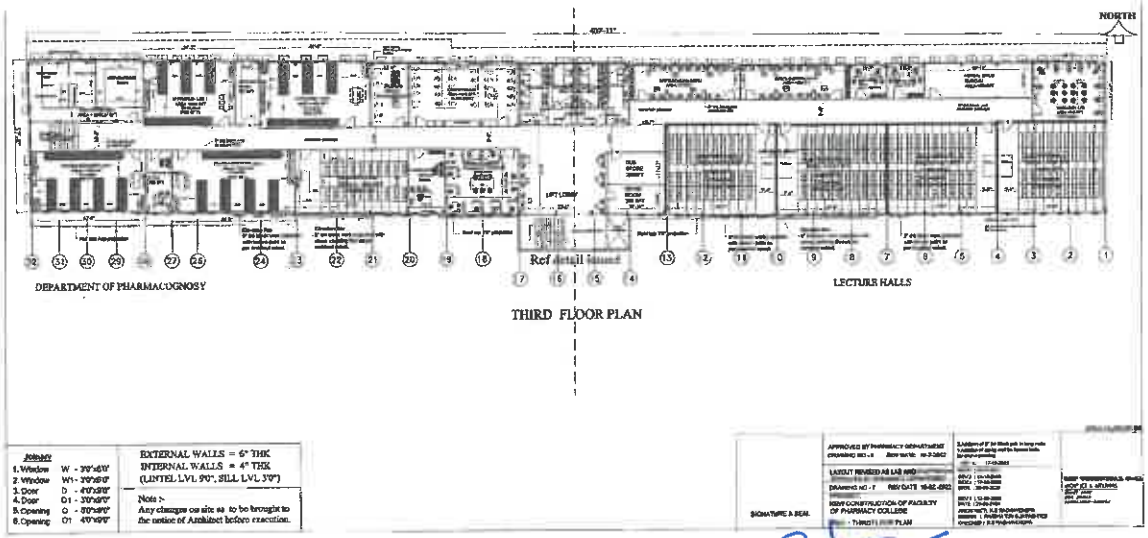
Third Floor (24,400 sq. ft): Emphasizing the integral connection between pharmacy and healthcare, this floor may include facilities for practical training in hospitals on campus, allowing students to actively participate in treatment plans and gain real-world experience.



FPH Floor plan







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.

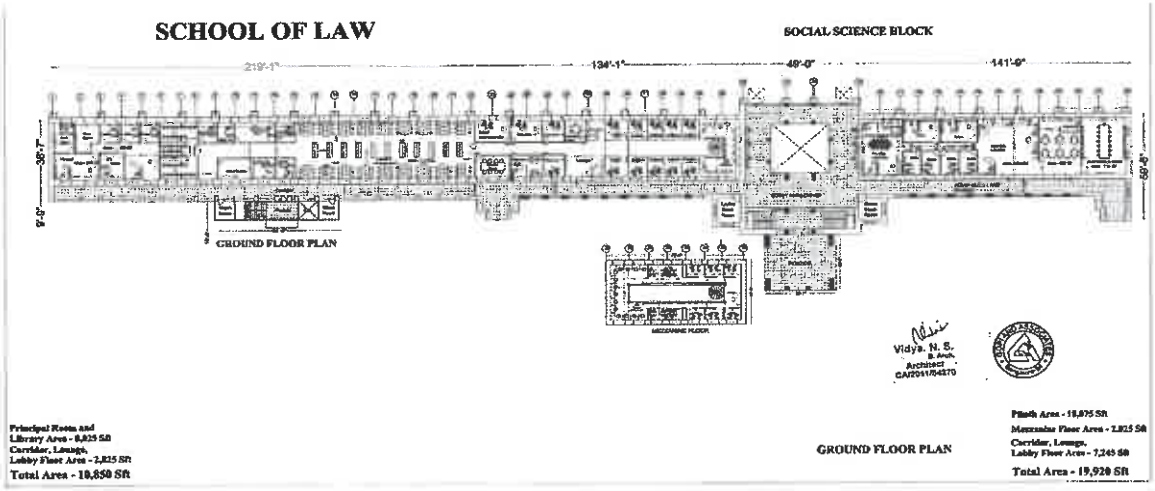
Ground Floor (31,445 sq. ft): This expansive floor may house administrative offices, classrooms, and collaborative spaces, serving as the entry point for students pursuing programs in social sciences and law.

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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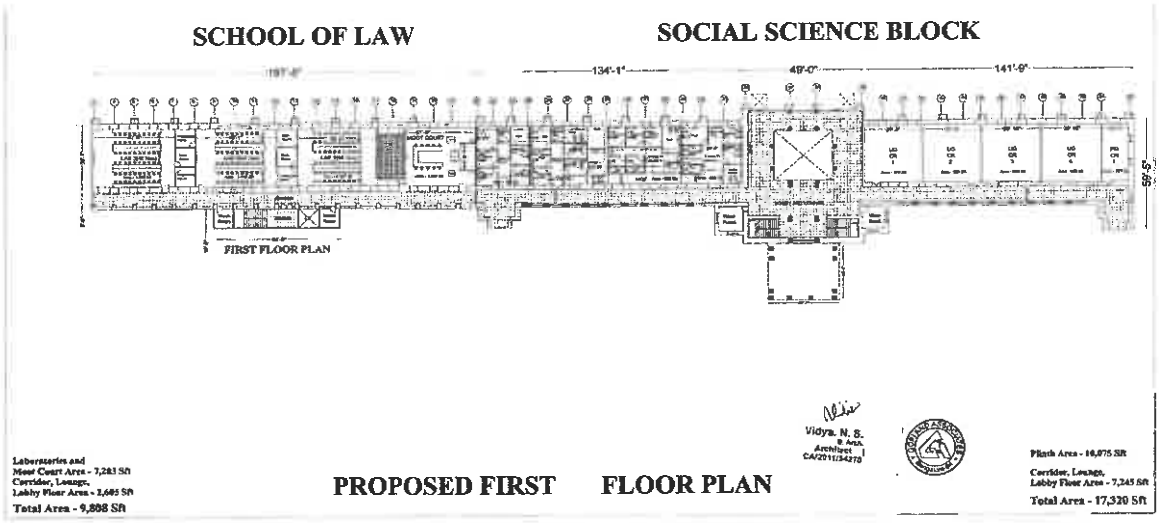
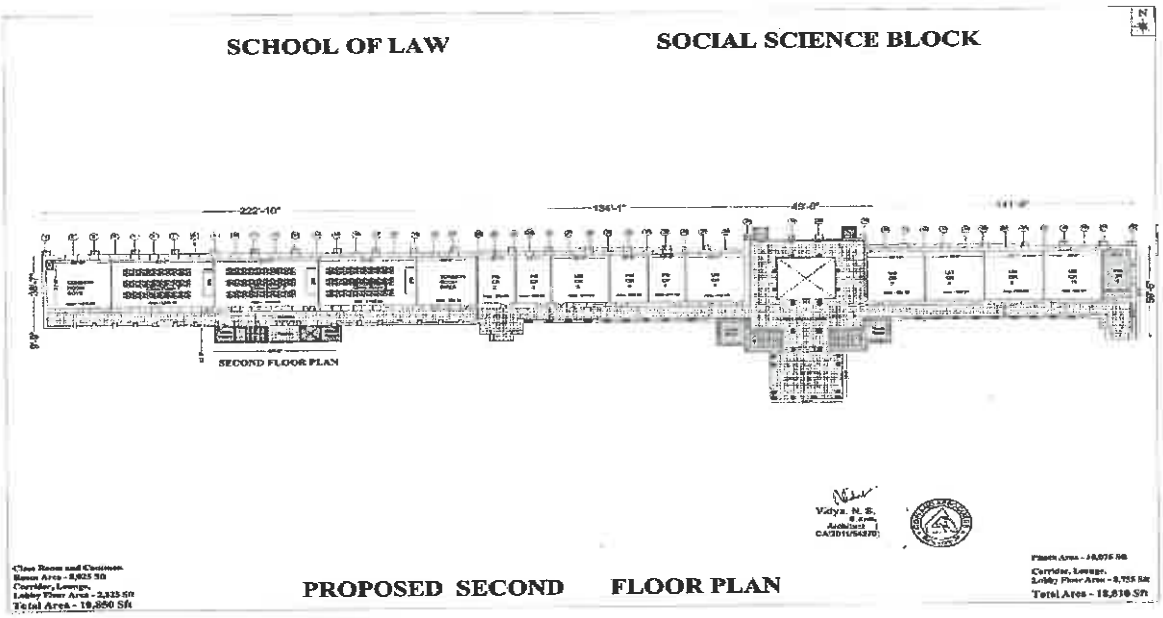
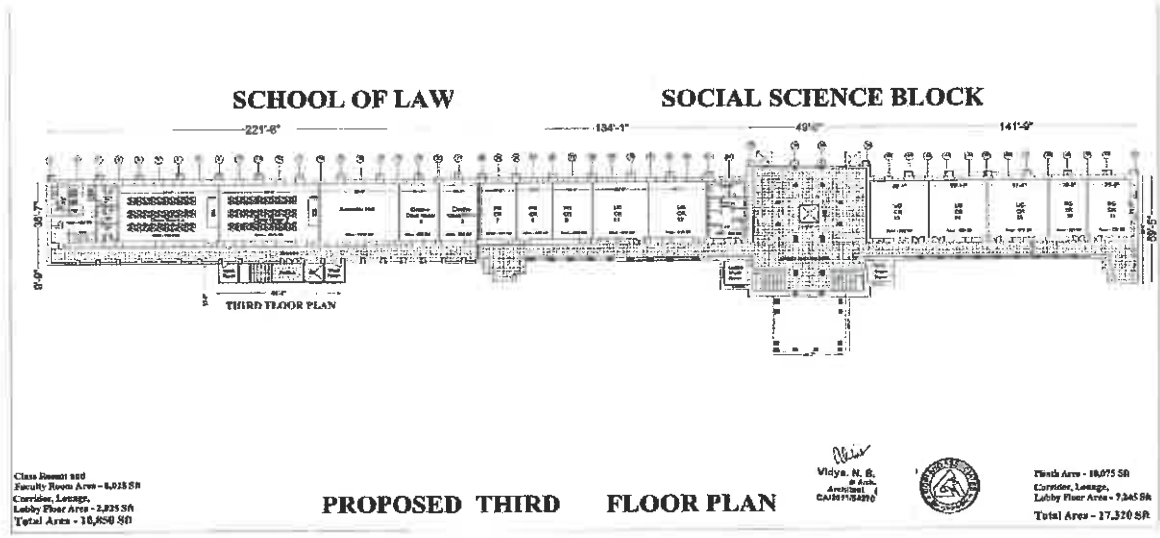






Heritage Block floor plan

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.

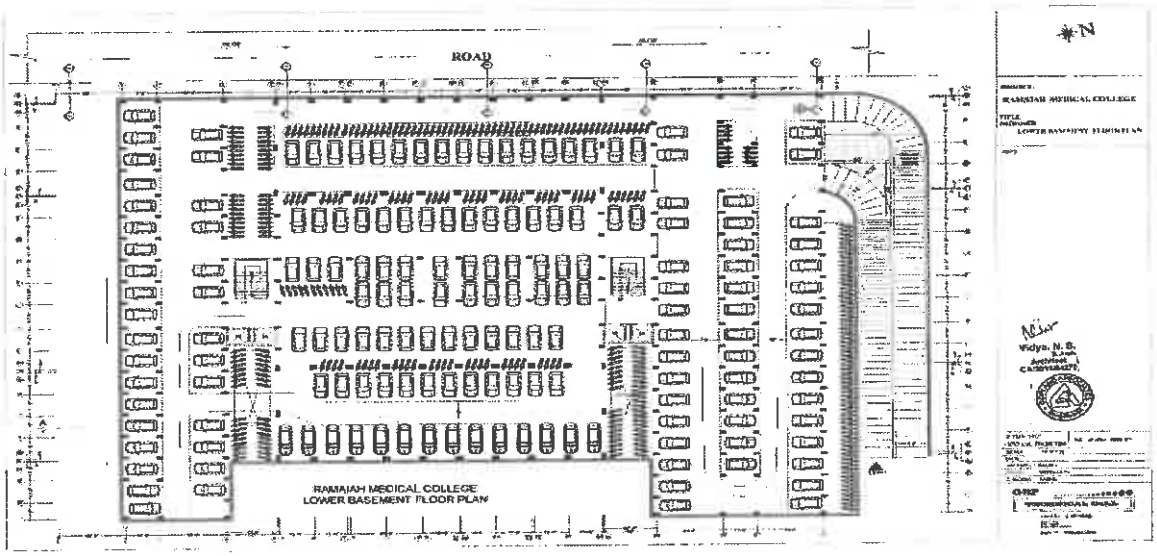
Ground Floor (60,270 sq. ft): Serving as the main entry point, this floor may house administrative offices, technology-enabled classrooms, and initial clinical practice spaces.

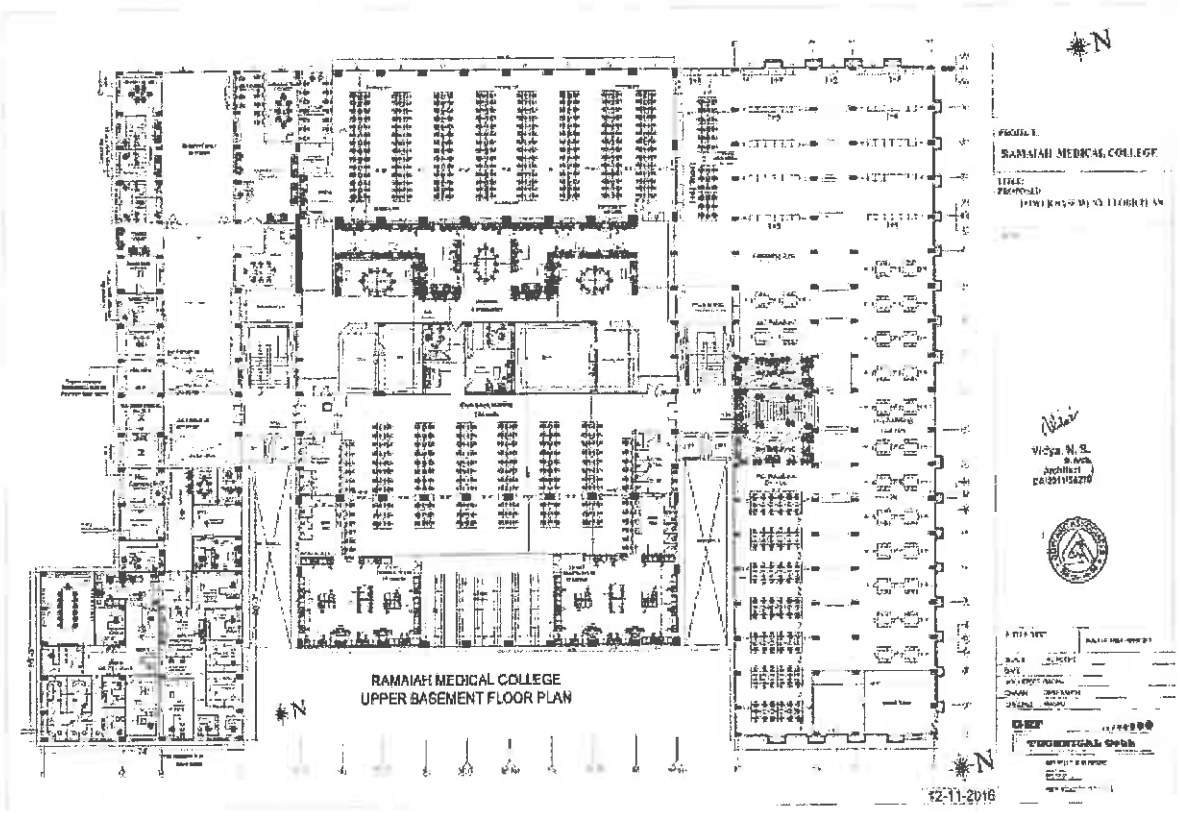
First Floor (59,880 sq. ft): Dedicated to teaching facilities, this floor likely accommodates lecture halls, classrooms, and collaborative spaces for medical students.

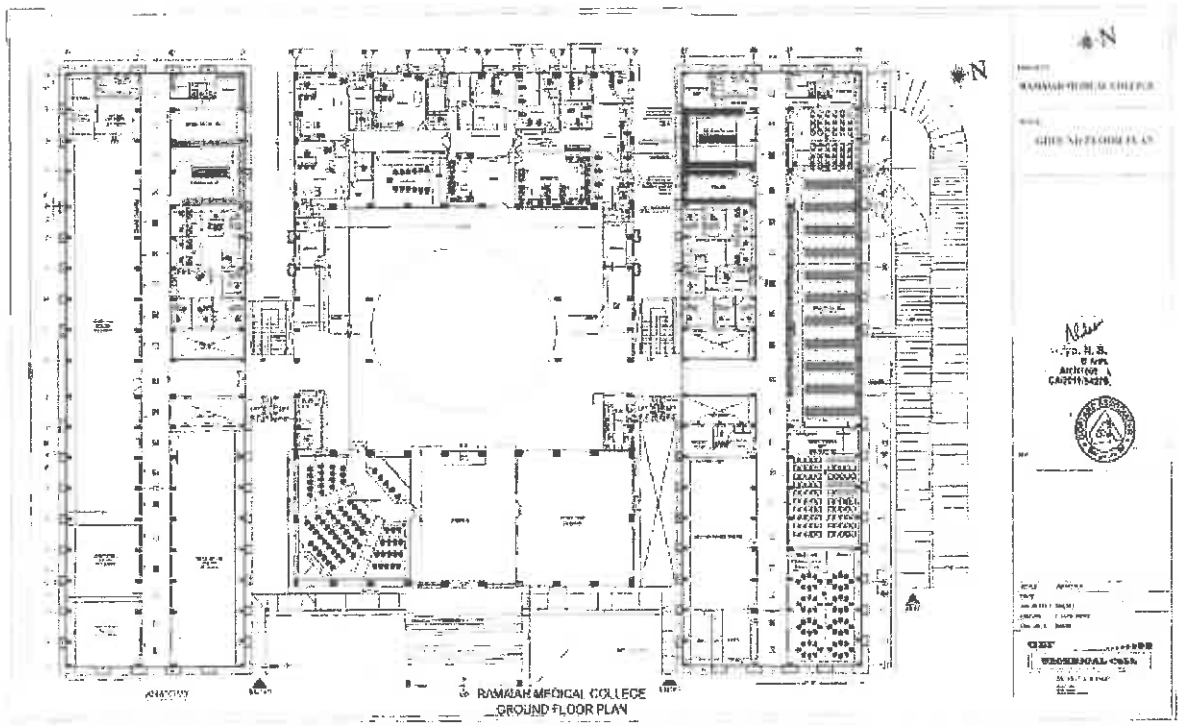
Second Floor (56,590 sq. ft): Reflecting the emphasis on clinical practice, this floor may house specialized clinical training areas, simulation rooms, or other facilities that support hands-on learning.

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.

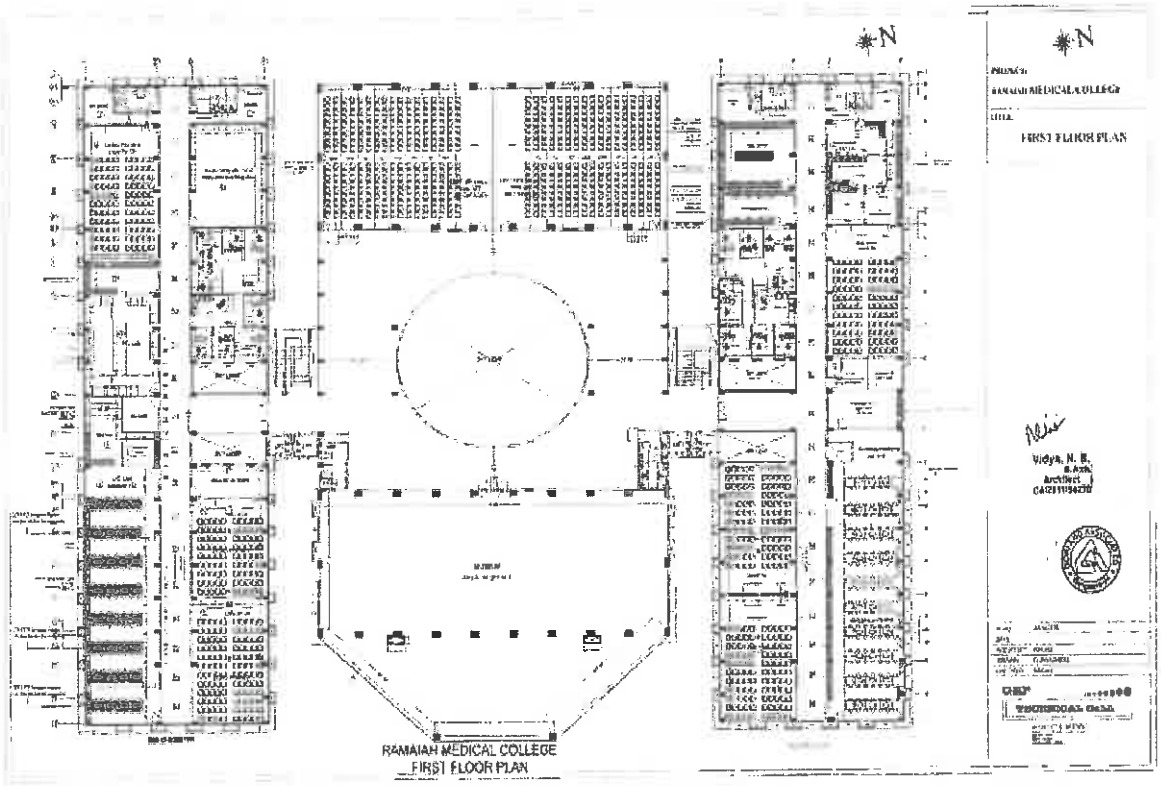
In essence, Ramaiah Medical College at MSRUAS stands as a beacon of excellence in medical education, fostering a comprehensive learning environment that integrates cutting-edge infrastructure, clinical practice, and research to prepare future healthcare professionals.

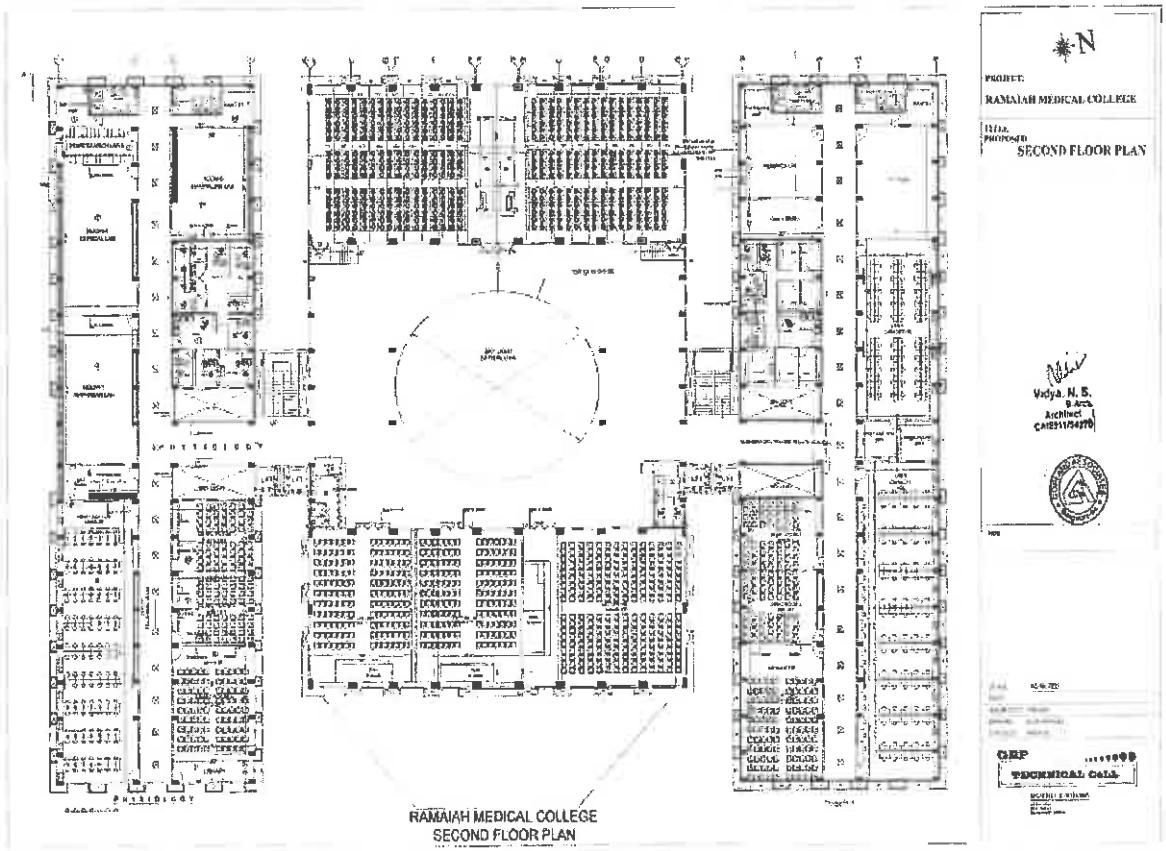




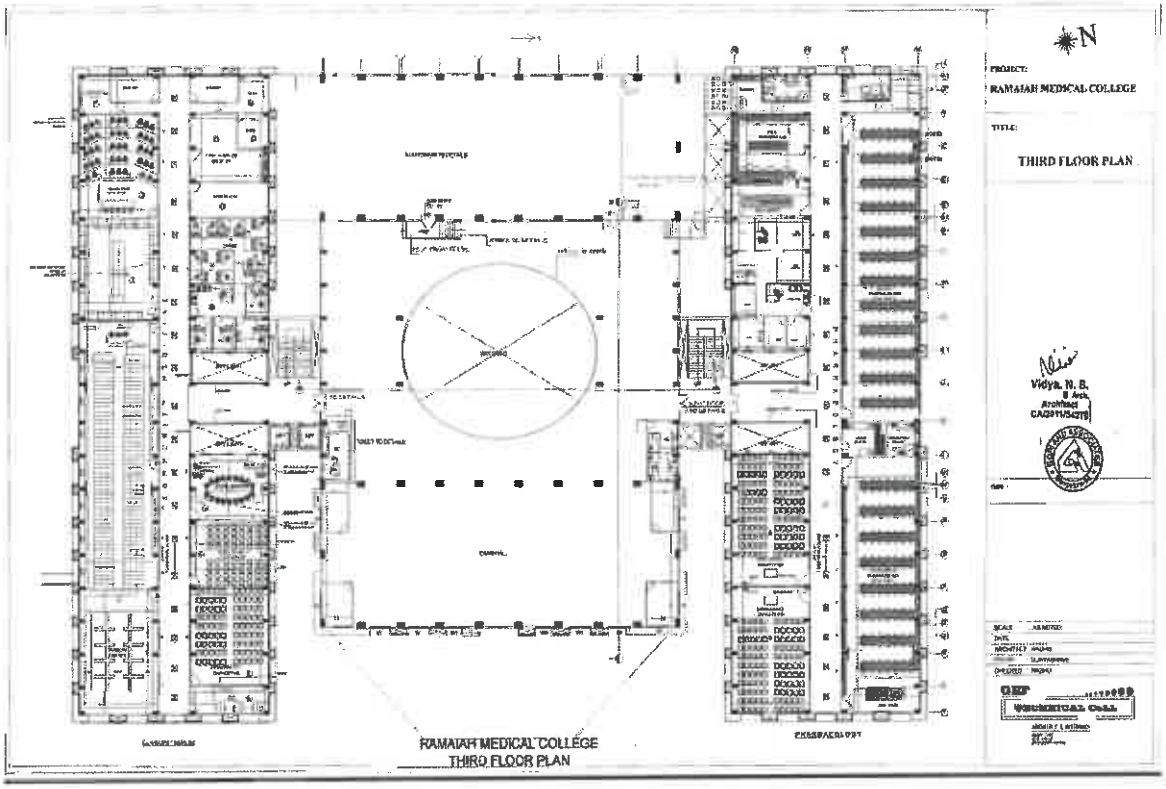


Ramaiah Medical College floor plan





Ramaiah Medical College floor plan



Ramaiah Medical College floor plan

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

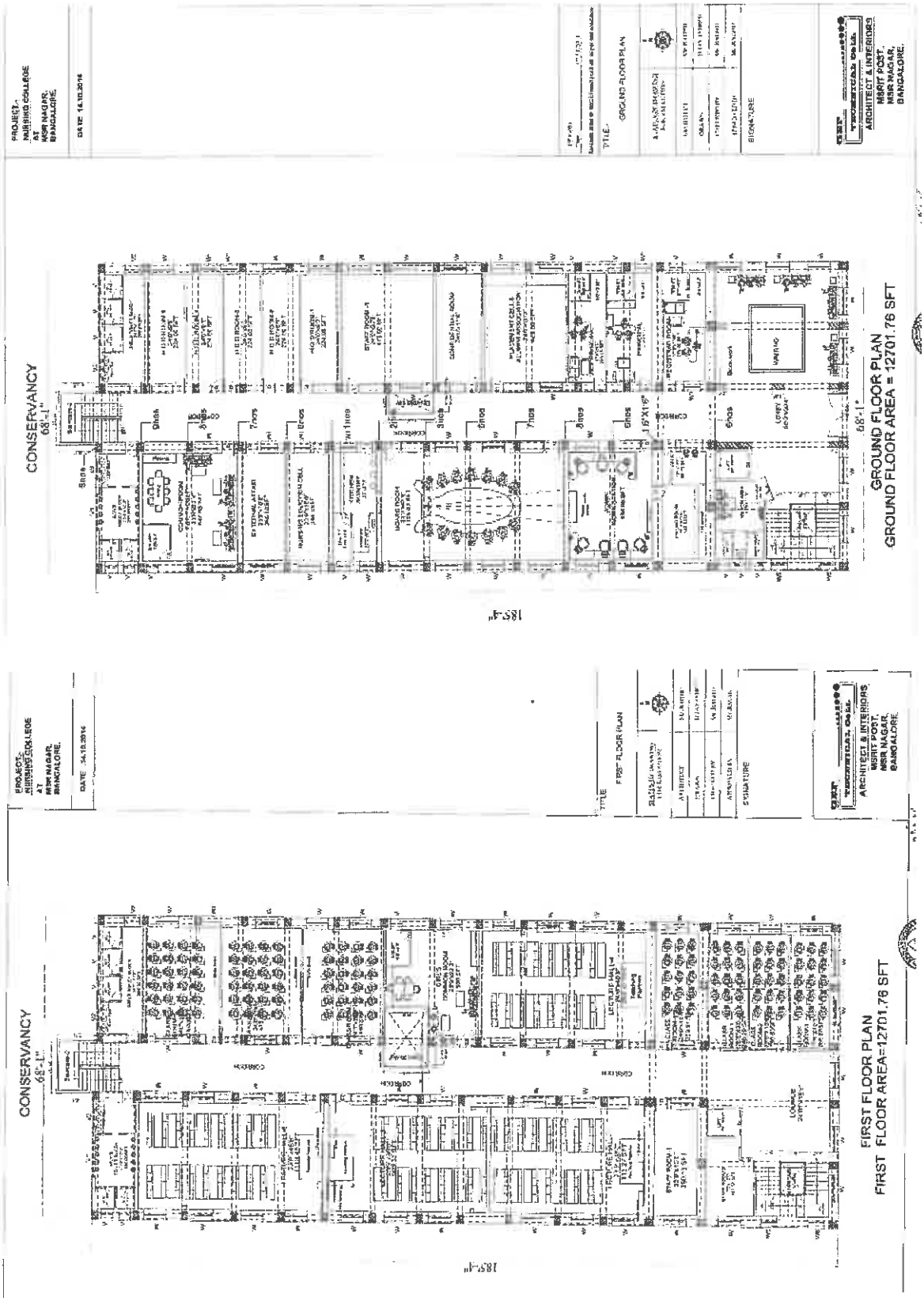
RINER boasts a strong team of motivated faculty and passionate students, emphasizing an exceptional pedagogical approach. Thecampusis equipped with advanced facilities and infrastructure, positioning it as one of the most acclaimed nursing education institutions.

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.



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

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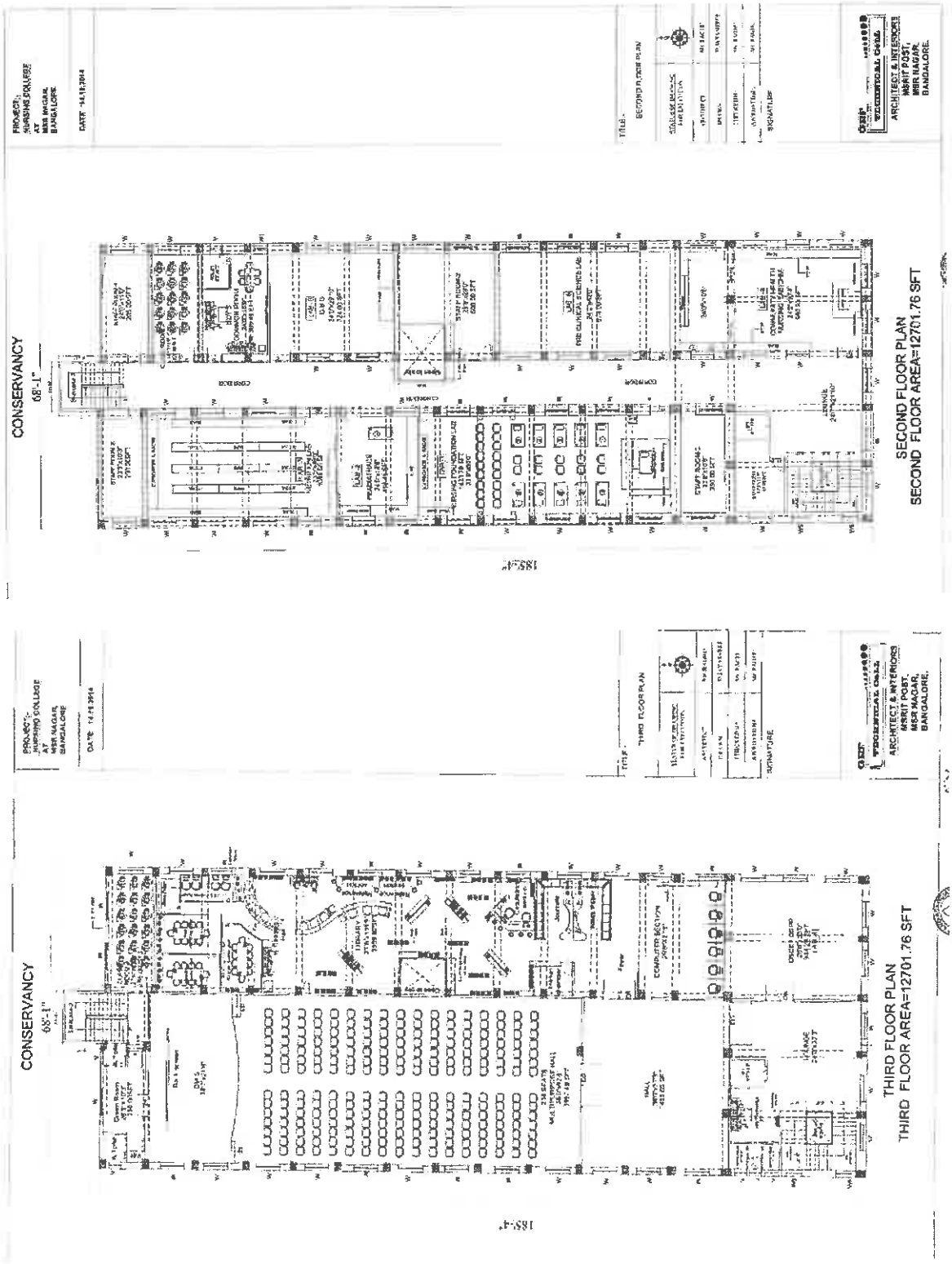


Ramaiah Institute of Nursing Education and Research (RINER) floor plan

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.

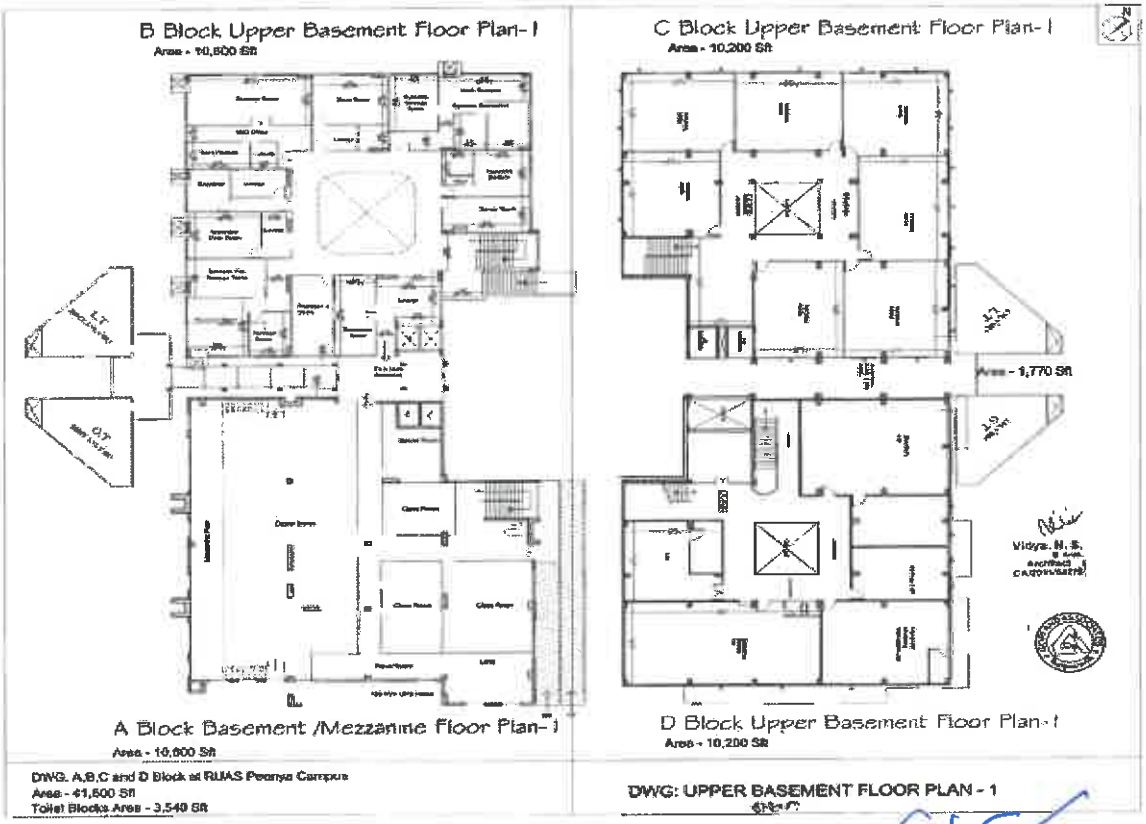
Service Block - Ground (2,800 sq. ft): Support spaces for maintenance and service personnel.

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.



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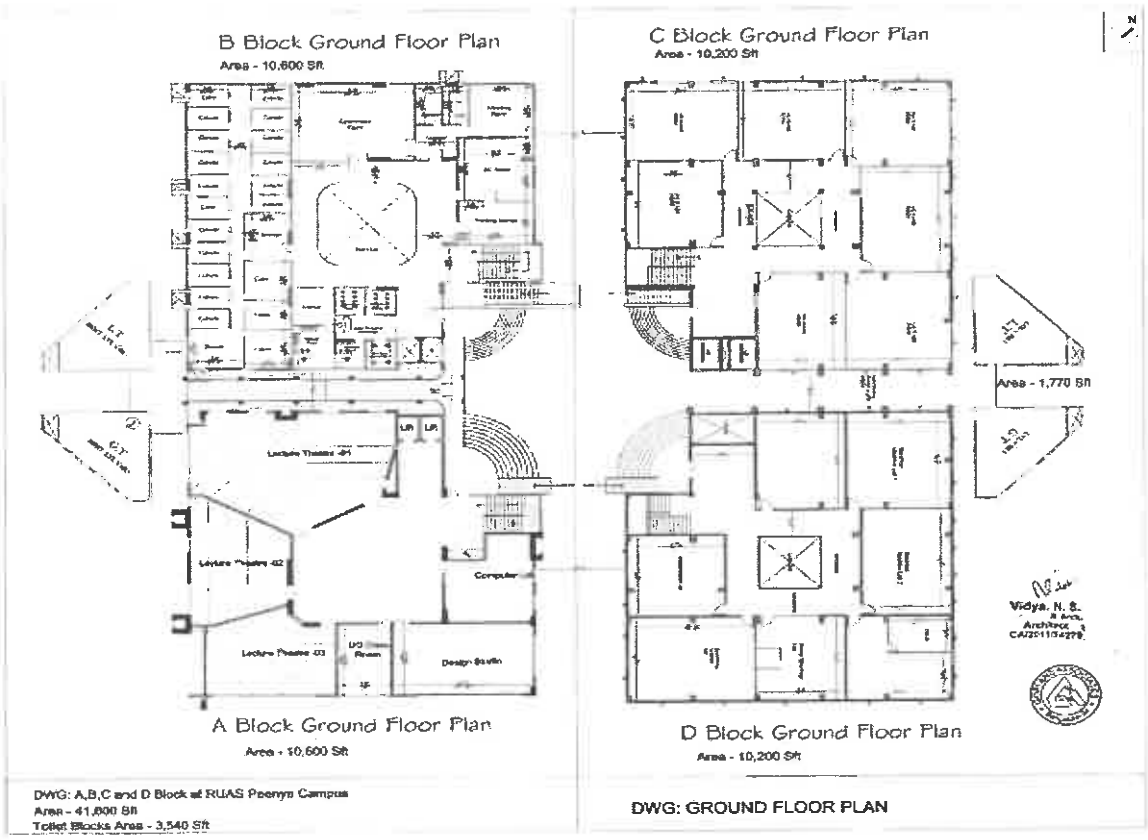

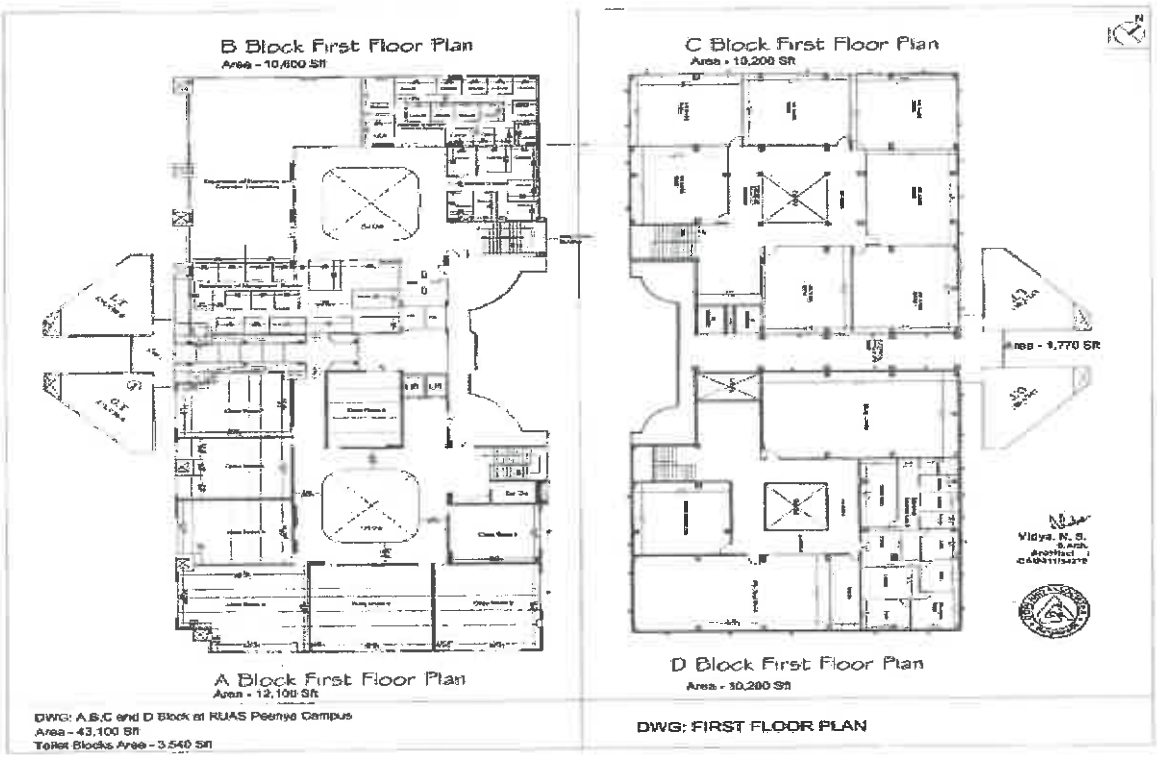

Technology campus (Peenya campus) floor plan

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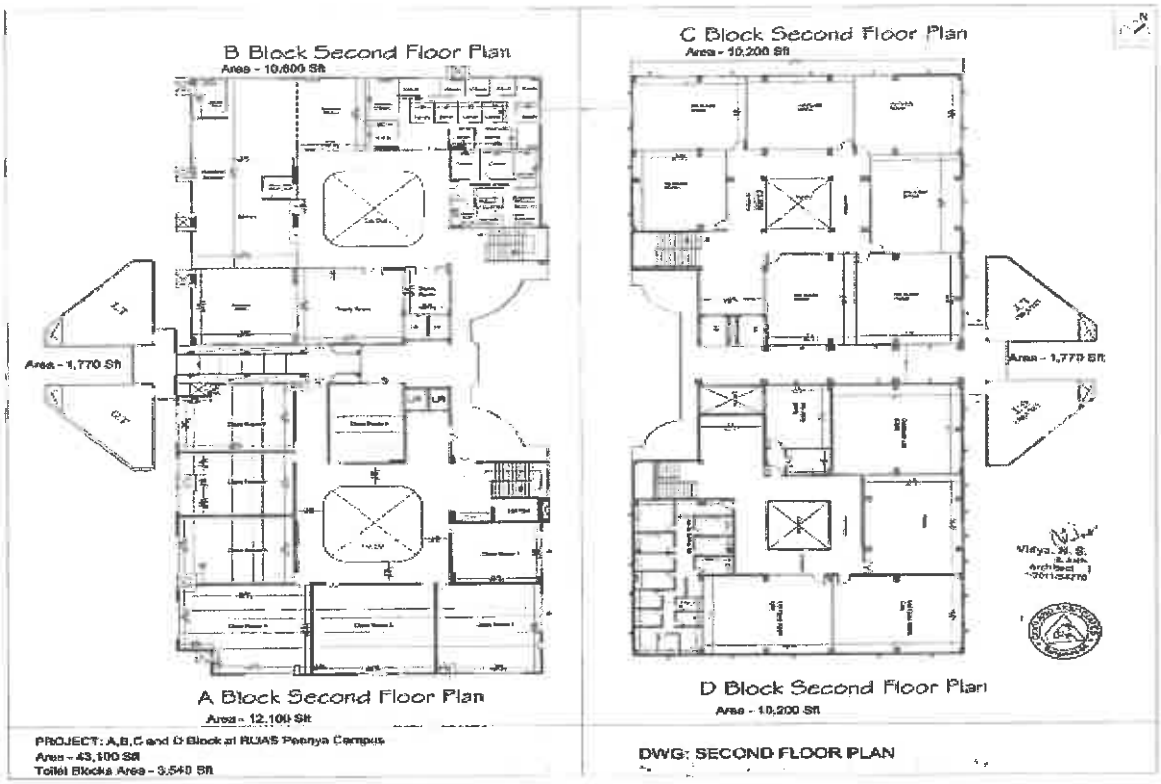

Technology campus (Peenya campus) floor plan

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.

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j) 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, thecampusensures 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.

k) 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, thecampusshowcases 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

I) 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

m) 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

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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.

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III. Water Audit

Water audit is an effective management tool for minimizing losses, optimizing various uses and thus enabling considerable conservation of water, the efforts of thecampusin water usage and management is seen through following activities it is satisfactory and no unnecessary water wastage is noticed in the campus.

During the survey, no wastages were observed. The open grounds provide means for water percolation as they are not barren due to ample greenery on campus. The campus has a functional rain water harvesting unit and the water collected is used for campus needs. All the waste water from the campus is treated by a fully functional Sewage Treatment Plant and is reused for gardening purposes in the University.

i. Water Supply and Usage

At the university, the primary water source for meeting the campus water demands is derived from bore wells, effectively catering to the campus water needs. With a total of six bore wells strategically located across the campus, the University has established a robust system to harness groundwater efficiently. These bore wells, carefully situated, act as essential reservoirs, ensuring a consistent and reliable water supply throughout the year. Recognizing the importance of water conservation and replenishing groundwater resources, the university has undertaken a commendable effort by implementing recharge structures for all its bore wells. These recharge structures, designed and integrated systematically, play a pivotal role in replenishing the aquifers by allowing rainwater and surface runoff to percolate into the ground, thus contributing to the preservation and sustainability of the groundwater resources. This conscientious approach to utilizing bore well water as the primary source, coupled with the deployment of recharge structures, exemplifies the University's commitment to efficient water management and the conservation of precious water resources.

Unit 1 – Gate 2 Borewell (RTC)

Unit 2 – Gate 5 Borewell (RTC)

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Unit 3 – Boys Hostel Borewell (RTC)

GG Campus borewell

GG Campus borewell

Summary of water resources at RTC, Peenya

S no	Details	Numbers	Source	Location	Capacity	Utilization
1	Source of Water	2	Bore-well	Gate no.2 and Gate no.5	2.5 inch and 3 inch	Laboratories, toilets and Mess kitchen
2	Facilities of raw water intake: Pumps	2	Suguna make	Gate no.2 and Gate no.5	5 HP each	Pumping of water to overhead tank
3	Water treatment and reuse	1	Used water	Near Gate no 5	5000 KLD	Treated water will be reused for flushing of toilets and gardening
4	Water conservation and methods	1	Rain water harvesting	Behind the hostel building	1 lakh liter	To improvethe water resources

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ii. Water consumption

As a primary data collected by survey, we found

Sr. No.	Particulars	Details
1	Students staying at Hostel	250
2	Students at University	7377
3	Teaching Staff	859
4	Non-Teaching Staff	424
5	Visitors	200
	Total	9110

Estimation of water requirement for drinking & domestic use as per (Source: NBC 2016, BIS)

Sr. No.	Particulars	Details	Water Consume limit	Total water in lit/day
1	Students staying at Hostel	250	135 lit/day	11250
2	Students at University	7377	45 lit/day	331965
3	Teaching Staff	859	45 lit/day	38655
4	Non-Teaching Staff	424	45 lit/day	19080
5	Visitors	200	15 lit/day	3000
	Total	9110		403950

Total expected Water consumption as per NBC 2016, BIS for MSRUAS is – 403.950 m^3/day.

Actual Water Uses for both Campus:

Sr.No.	Description	Water Consumption (m^3/day)	Source/Remark
1	Domestic		1.BWSSB 2.Ground Water
	a) Hospital	450	
	b) University	280	
	c) Hostel	11	
2	Laundry	10	
3	Lab Washing	10	
4	Miscellanies	10	Fresh Water
	Total	771	
5	Gardening	20	Treated/Recycle Water from STP Plant
6	Flushing	80	
		881.7	(Fresh Water & Treated Water From STP)

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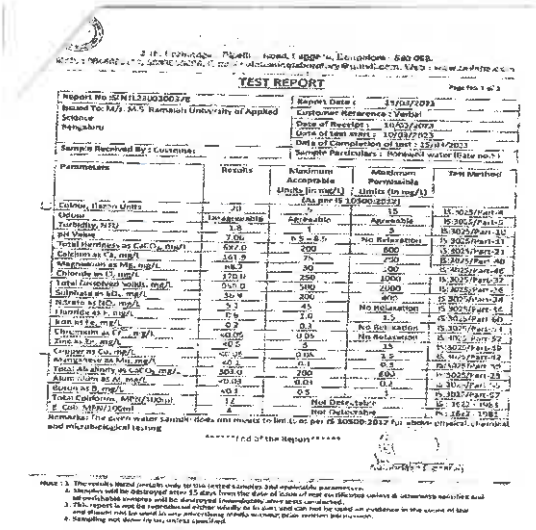
iii. Water quality

The quality of the bore well water has been assessed and meets the standards for potable (drinkable) water. To ensure the continued safety and quality of the drinking water provided to staff and students, thecampushas implemented a comprehensive water treatment system. This system includes UV (Ultraviolet) and RO (Reverse Osmosis) filtration systems installed on each floor of every block. These filtration systems effectively purify the water, making it safe for consumption, and contribute to the overall well-being of the University community by providing access to clean and potable drinking water.



TEST REPORT

RO water filtration system and Test report

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iv. Rain water harvesting

At MSRUAS, a comprehensive approach to rainwater harvesting has been embraced to promote sustainable water management practices on campus. Utilizing the non-roof method, thecampushas implemented an innovative strategy aimed at optimizing rainwater utilization and recharging the groundwater table effectively. As part of this approach, specific structures, such as recharge pits, have been strategically established across the campus to capture and infiltrate rainwater into the ground. This method not only conserves water but also significantly contributes to enhancing the groundwater table.

Furthermore, thecampushas incorporated an advanced system of drain channels distributed throughout the campus, intelligently designed to collect rainwater and channel it to a centralized point or low-lying areas. This meticulous planning ensures that rainwater is efficiently gathered and redirected to specific zones for effective absorption or collection. By adopting this holistic approach, thecampusminimizes surface runoff and effectively manages rainwater, contributing to both groundwater replenishment and the conservation of water resources.

Open Rain water channels

This multi-faceted strategy underscores the institution's commitment to sustainable water management. By combining the non-roof method with an intricate network of drain channels, the University demonstrates a dedication to eco-friendly practices and responsible water utilization, ensuring an environmentally sustainable campus for the benefit of present and future generations

The campus has implemented rainwater recharge pits, specifically designed to improve the groundwater table and augment the vegetated area on campus. These pits, constructed with a depth of 15 feet, are strategically located within the institution's premises, primarily near the bore well.

The primary objective of these recharge pits is to facilitate the restoration of groundwater levels by enabling rainwater to permeate through the soil and recharge underground aquifers. Placing these pits in close proximity to the bore well is a carefully considered decision, accounting for crucial factors such as the catchment area, soil percolation rates, and groundwater depth. This strategic placement near the bore well maximizes water infiltration in a specific targeted area, effectively contributing to the institution's sustainable water resource management and promoting groundwater replenishment. The recharge structures are dedicated specifically to the bore well, ensuring a localized and efficient recharge process.

Rain water Recharge Pit

v. Water efficient plumbing fixtures

To further their commitment to water conservation, the University has incorporated water-efficient plumbing fixtures throughout their facilities. This includes the installation of sensor-based urinals and taps equipped with aerators. These fixtures help reduce water consumption, promoting water efficiency and sustainability within the institution.

Sensor based urinals

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IV. Good Health and Well-being.

i. Campus design caters to differently able people

The campus design places a strong emphasis on accessibility and inclusivity, catering to differently-abled individuals and senior citizens. Several measures have been implemented to ensure their comfort and ease of movement, including:

Non-Slippery Ramps: Ramps with non-slip surfaces have been installed to provide smooth access for individuals with mobility challenges, ensuring safe and secure movement.

Non slippery ramps and Lifts with Braile assistance

Non slippery ramps

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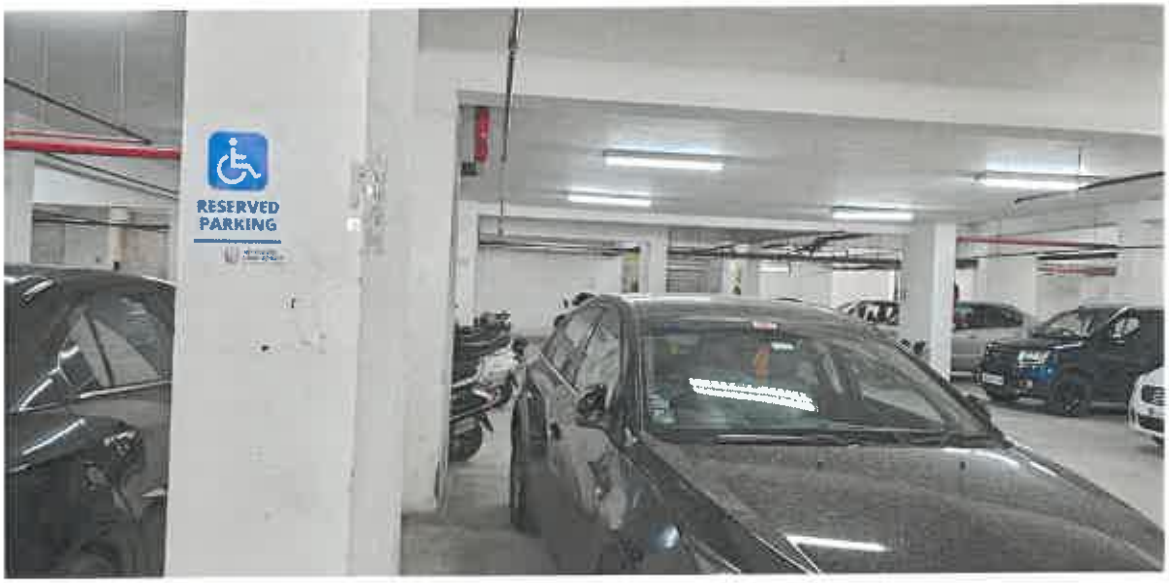
Wheelchairs: Wheelchairs are provided to assist those who require mobility aids, facilitating their movement within the campus.

Uniformity in Floor Level: Exterior common areas have been designed with consistent floor levels to ensure unobstructed movement and accessibility for all.

Easy Access to Main Entrance: The main entrances of buildings are easily accessible, removing barriers and enabling smooth entry for everyone.

Preferred Parking for Differently-Abled: Designated parking spaces have been allocated for differently-abled individuals, allowing them convenient access to the campus facilities.



Appropriately Designed Preferred Car Park Spaces: Specifically designed preferred car park spaces are situated for easy access to the building's main entrance enhancing convenience for differently-abled and senior citizens.

Dispensary: A dispensary is a vital facility provided within the University campus to cater to the healthcare needs of students. It serves as a dedicated space where students can receive medical care, treatment, and support. The purpose and features of a University dispensary is as follows:

a. **Basic Medical Services:** The University dispensary offers essential medical services to address common health issues that students may encounter. This includes treatment for minor injuries, illnesses, and other health concerns.

b. **Qualified Medical Staff:** A qualified and experienced medical team, often consisting of doctors, nurses, and support staff, is available in the dispensary. They are responsible for diagnosing and treating students and providing healthcare advice.

c. **First Aid:** The dispensary is equipped with first-aid supplies and equipment to provide immediate care in case of accidents or emergencies. This quick response can be critical in preventing the worsening of injuries.

d. **Medication Distribution:** The dispensary typically stocks a range of common medications, allowing students to obtain prescribed or over-the-counter drugs as needed. This is especially beneficial for students with chronic medical conditions.

e. **Health Counseling:** In addition to treatment, the dispensary often offers health counseling and guidance on maintaining a healthy lifestyle. This can include advice on nutrition, stress management, and preventive measures.

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f. **Vaccination and Health Programs**: Some University dispensaries may also organize health programs, vaccination campaigns, and wellness workshops to promote the overall well-being of the student population.

g. **Confidentiality:** The dispensary maintains strict patient confidentiality, ensuring that students can discuss their health concerns without fear of information being disclosed without their consent.

h. **Emergency Response**: In the case of a medical emergency, the dispensary can serve as a primary point of contact and coordination for arranging hospital transfers or ambulance services.

i. **Convenient Access:** Having a dispensary on campus ensures that students have easy and timely access to healthcare services. This can be particularly valuable when students are too unwell to travel off-campus.

Washroom facilty for differently abled

These measures collectively create an inclusive environment, promoting equal access and participation for all members of the campus community, regardless of physical abilities or age.

ii. Tobacco Smoke Control

Thecampushas taken care to eliminate exposure of students & teachers to tobacco smoke thereby reducing health impacts caused due to passive smoking.

iii. Ozone Depletion

The refrigerant selected for the Air Conditioning System eliminates the emission of compounds that contribute to ozone depletion and global warming. The Air conditioning equipment has been selected with HFC based refrigerant R 410A.

iv. Fire suppression system

To ensure the safety and well-being of the University community, University has implemented a robust fire safety system with hand held fire extinguishers and are Halon free.campushas not used any Halon based fire suppression system. Carbon dioxide B C Fire Extinguisher, also including dedicated fire safety water lines. These water lines serve as a crucial component of our emergency response plan, providing the means to combat fires effectively and minimize potential damage.

Fire suppression system

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Key Features of our Fire Safety Water Lines:

Strategic Placement: The fire safety water lines are strategically placed throughout our campus, ensuring quick and easy access in case of emergencies. These lines cover all critical areas, including academic buildings and common areas.

Adequate Water Supply: We maintain a continuous and pressurized water supply in these lines to meet the high demands of firefighting equipment, such as fire hydrants.

Regular Maintenance: Our maintenance team conducts routine checks and tests to ensure that the fire safety water lines are always in optimal working condition. Any issues or concerns are addressed promptly to maintain system reliability.

Emergency Response Training: Our staff and security personnel are trained in fire emergency response procedures. This includes the proper utilization of fire safety water lines and related equipment to contain and control fires until professional firefighting services arrive.

Compliance with Safety Standards: Our fire safety water lines adhere to all relevant safety standards and regulations, guaranteeing their effectiveness and compliance with local fire safety codes.

Education and Awareness: We prioritize educating our University community about the importance of fire safety and the proper use of fire safety water lines. Awareness campaigns and training sessions are regularly conducted to empower individuals to respond effectively in emergencies.

University has taken safety and security of the community very seriously. Fire safety water lines are a testament commitment to providing a secure and protected environment where learning and personal growth can thrive, free from unnecessary risks associated with fire hazards. We encourage all members of our community to familiarize themselves with our fire safety measures and be vigilant in maintaining a safe and secure campus environment.

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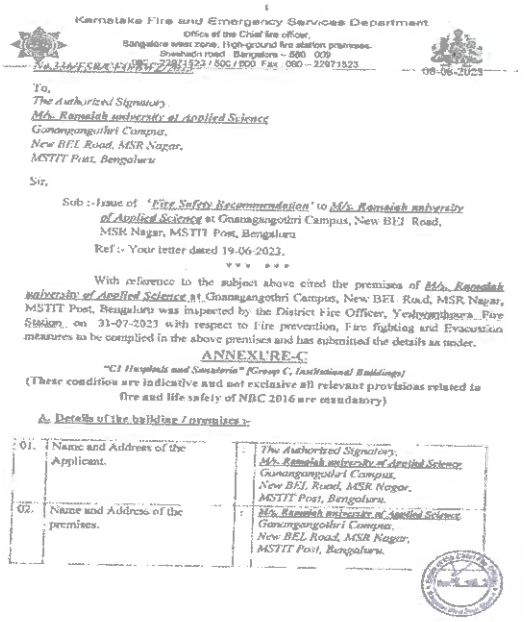


Karnataka Fire and Emergency Services Department

Office of the Chief fire officer,
Bangalore west zone, High-ground fire station premises,
Sheshadri road, Bangalore – 560 009.
080 – 22971523 / 500 / 800. Fax : 080 – 22971523

No.337/FSR/CFO/BWZ/2023. 08-06-2023

To,
The Authorized Signatory,
M/s. Ramaiah university of Applied Science
Gnanagangothri Campus,
New BEL Road, MSR Nagar,
MSTIT Post, Bengaluru

Sir,

Sub :- Issue of *'Fire Safety Recommendation'* to *M/s. Ramaiah university of Applied Science* at Gnanagangothri Campus, New BEL Road, MSR Nagar, MSTIT Post, Bengaluru

Ref :- Your letter dated 19-06-2023.

*** ***

With reference to the subject above cited the premises of *M/s. Ramaiah university of Applied Science* at Gnanagangothri Campus, New BEL Road, MSR Nagar, MSTIT Post, Bengaluru was inspected by the District Fire Officer, Yeshwanthpura Fire Station on 31-07-2023 with respect to Fire prevention, Fire fighting and Evacuation measures to be complied in the above premises and has submitted the details as under.

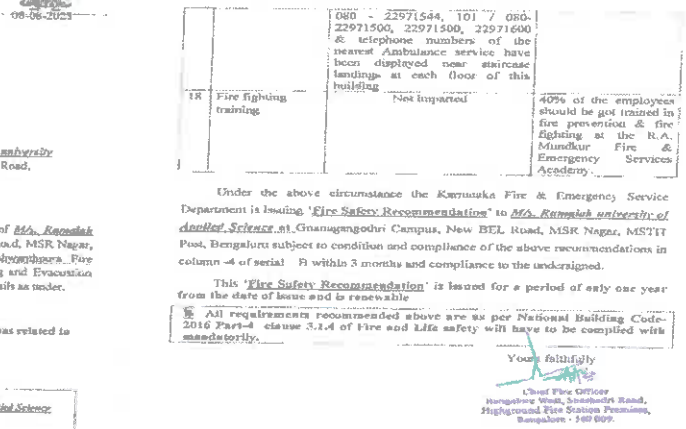
ANNEXURE-C

"C3 Hospitals and Sanatoria" (Group C, Institutional) Buildings)

(These condition are indicative and not exclusive all relevant provisions related to fire and life safety of NBC 2016 are mandatory)

A. Details of the building / premises :-

01.	Name and Address of the Applicant.	: *The Authorized Signatory, M/s. Ramaiah university of Applied Science Gnanagangothri Campus, New BEL Road, MSR Nagar, MSTIT Post, Bengaluru.*
02.	Name and Address of the premises.	: *M/s. Ramaiah university of Applied Science Gnanagangothri Campus, New BEL Road, MSR Nagar, MSTIT Post, Bengaluru.*



		080 - 22971544, 101 / 080-22971500, 22971500, 22971600 & telephone numbers of the nearest Ambulance service have been displayed near staircase landings at each floor of this building	
18	Fire fighting training	Not imparted	40% of the employees should be got trained in fire prevention & fire fighting at the R.A. Mundkur Fire & Emergency Services Academy.

Under the above circumstance the Karnataka Fire & Emergency Service Department is issuing *'Fire Safety Recommendation'* to *M/s. Ramaiah university of Applied Science* at Gnanagangothri Campus, New BEL Road, MSR Nagar, MSTIT Post, Bengaluru subject to condition and compliance of the above recommendations in column -4 of serial – B within 3 months and compliance to the undersigned.

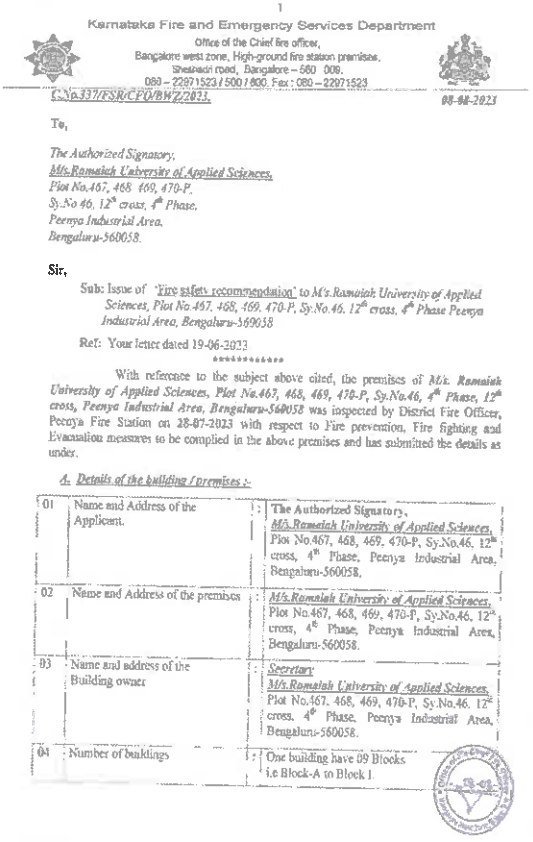
This *'Fire Safety Recommendation'* is issued for a period of only one year from the date of issue and is renewable

※ All requirements recommended above are as per National Building Code-2016 Part-4 clause 3.1.4 of Fire and Life safety will have to be complied with mandatorily.

Yours faithfully

Chief Fire Officer
Bangalore West, Sheshadri Road,
Highground Fire Station Premises,
Bangalore - 560 009.

Fire safety advice from Karnataka fire and emergency services department for GG Campus



Karnataka Fire and Emergency Services Department

Office of the Chief fire officer,
Bangalore west zone, High-ground fire station premises,
Sheshadri road, Bangalore – 560 009.
080 – 22971523 / 500 / 800. Fax : 080 – 22971523

C.No.337/FSR/CFO/BWZ/2023. 08-08-2023

To,

The Authorized Signatory,
M/s.Ramaiah University of Applied Sciences,
Plot No.467, 468, 469, 470-P,
Sy.No.46, 12th cross, 4th Phase,
Peenya Industrial Area,
Bengaluru-560058.

Sir,

Sub: Issue of *'Fire safety recommendation'* to *M/s.Ramaiah University of Applied Sciences, Plot No.467, 468, 469, 470-P, Sy.No.46, 12th cross, 4th Phase Peenya Industrial Area, Bengaluru-560058*

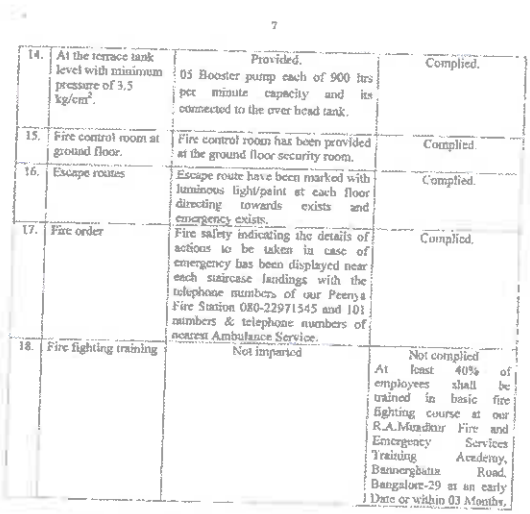
Ref: Your letter dated 19-06-2023

****

With reference to the subject above cited, the premises of *M/s. Ramaiah University of Applied Sciences, Plot No.467, 468, 469, 470-P, Sy.No.46, 4th Phase, 12th cross, Peenya Industrial Area, Bengaluru-560058* was inspected by District Fire Officer, Peenya Fire Station on 28-07-2023 with respect to Fire prevention, Fire fighting and Evacuation measures to be complied in the above premises and has submitted the details as under.

A. Details of the building / premises :-

01	Name and Address of the Applicant.	: The Authorized Signatory, *M/s.Ramaiah University of Applied Sciences,* Plot No.467, 468, 469, 470-P, Sy.No.46, 12th cross, 4th Phase, Peenya Industrial Area, Bengaluru-560058.
02	Name and Address of the premises	: *M/s.Ramaiah University of Applied Sciences,* Plot No.467, 468, 469, 470-P, Sy.No.46, 12th cross, 4th Phase, Peenya Industrial Area, Bengaluru-560058.
03	Name and address of the Building owner	: *Secretary, M/s.Ramaiah University of Applied Sciences,* Plot No.467, 468, 469, 470-P, Sy.No.46, 12th cross, 4th Phase, Peenya Industrial Area, Bengaluru-560058.
04	Number of buildings	: One building have 09 Blocks i.e Block-A to Block I.



14.	At the terrace tank level with minimum pressure of 3.5 kg/cm².	Provided. 05 Booster pump each of 900 ltrs per minute capacity and its connected to the over head tank.	Complied.
15.	Fire control room at ground floor.	Fire control room has been provided at the ground floor security room.	Complied.
16.	Escape routes	Escape route have been marked with luminous light/paint at each floor directing towards exists and emergency exists.	Complied.
17.	Fire order	Fire safety indicating the details of actions to be taken in case of emergency has been displayed near each staircase landings with the telephone numbers of our Peenya Fire Station 080-22971545 and 101 numbers & telephone numbers of nearest Ambulance Service.	Complied.
18.	Fire fighting training	Not imparted	Not complied At least 40% of employees shall be trained in basic fire fighting course at our R.A.Mundkur Fire and Emergency Services Training Academy, Bannerghatta Road, Bangalore-29 at an early Date or within 03 Months.

Under the above circumstance the Karnataka Fire & Emergency Service Department is issuing *'Fire Safety Recommendation'* to of *M/s. Ramaiah University of Applied Sciences, Plot No.467, 468, 469, 470-P, Sy.No.46, 4th Phase, 12th cross, Peenya Industrial Area, Bengaluru-560058* subject to condition and compliance of the above recommendations in column -3 of serial – B within 3 months and compliance to the undersigned.

This *Fire Safety Recommendation* was issued for the only one year from the date of issue & it is renewable.

Yours faithfully

Chief Fire Officer
Bangalore West, Sheshadri Road,
Highground Fire Station Premises,
Bangalore - 560 009

Fire safety advice from Karnataka Fire and Emergency services department for RT Campus

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

v. Basic Amenities

Institution has Provide access to basic amenities, so as to reduce negative impacts caused from automobile use and also make it easy for students, basic amenities such as bank, cafeteria, canteen, bus stop in front of the University and several other basic amenities, within the campus itself.

Creche Facility at GG Campus -Nanda Gokula

Day care center for young children - The provision of a daycare facility for women employees in a university is of paramount importance. It recognizes the unique challenges faced by working mothers, allowing them to balance their professional responsibilities with the care of their children. A daycare facility within the university premises offers convenience, peace of mind, and a sense of security for these women, knowing that their children are well-cared for in a safe and nurturing environment. This support fosters employee loyalty, productivity, and retention, enabling women to pursue their careers while also meeting their parental obligations. Ultimately, a daycare facility promotes gender equality, inclusivity, and work-life balance within the university community.

Nanda Gokula was initiated in 2009 to help working mothers to return back to work under a responsible caretaker.

Creche is located in the basement, opposite to Ramaiah Medical college. The center started crawling with 2 teachers, and 12 students and now it is walking high with 36 children and 10 staff members including 6 helpers and 4 teachers.

Children are given ample care and treated with love. They are given a feel of home away from home. The hygiene and safety of the kids are taken care always and especially during play time and lunch. The children are thought hygiene habits and importance of sharing and caring. The toilets and eating areas are always maintained hygienically. The toys and playing area are. frequently cleaned and disinfected.

Emergency medical services

Vehicle for Medical Emergency: RUAS provides swift and efficient transportation for medical emergencies, ensuring timely care and potentially saving lives. An emergency vehicle is made available to cater to emergency medical needs for students and staff (especially in RTC Peenya campus) Ramaiah Teaching Hospital is located within the MSRUAS campus and makes it easily accessible for 24 X 7 emergency for all the faculty employees for any medical emergencies.

Sanitary pad vending machine

Promotes menstrual hygiene, ensures accessibility, and supports the well-being of female students and staff. RUAS has installed vending machines in every faculty.

To enhance physical, emotional and spiritual well-being of campus occupants, the campus has breakout spaces by providing facilities such as, but not limited to gymnasium, yoga, meditation, indoor games, outdoor games, playground, etc.,

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V. Waste Management Audit.

M. S. Ramaiah University of Applied Sciences is committed to promoting environmentally responsible practices, and one key area where this commitment is evident is in its waste management strategies. By implementing a range of initiatives, the university aims to reduce its environmental impact, minimize landfill contributions, and foster a culture of sustainability among its students and staff.

Source Segregation:
The university has established a robust source segregation system, encouraging the separation of waste at its origin. Dust bins for biodegradable and plastic waste are strategically placed across the campus, facilitating the easy disposal of waste materials by students and staff.

Regular Cleaning and Municipal Service Collaboration:
Daily cleaning activities ensure the maintenance of a clean and hygienic environment.
A significant portion of non-biodegradable waste is efficiently lifted by the City Municipal service, reinforcing the university's commitment to responsible waste disposal.

Specialized Handling of Hazardous Waste:
University is responsible for the collection and proper disposal of various types of hazardous waste generated within the university, ensuring adherence to safety and environmental standards.

Hazardous waste room at RT campus

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E-waste Management:

The university recognizes the importance of responsible e-waste management. Defective items from the computer lab and other electronic waste are stored appropriately.

An approved e-waste management and disposal facility have been contacted to ensure the scientific and environmentally sound disposal of electronic waste, with a focus on potential reuse.

Dedicated Collection Centers:

Specific collection centers on campus are designated for all kinds of waste generated, ensuring safe and compliant handling of these materials.

E-waste room

General waste room

Plastic waste room

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Biomedical waste segregation and storage area at GG Campus

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Promotion of 3R Principles:

Reduce:

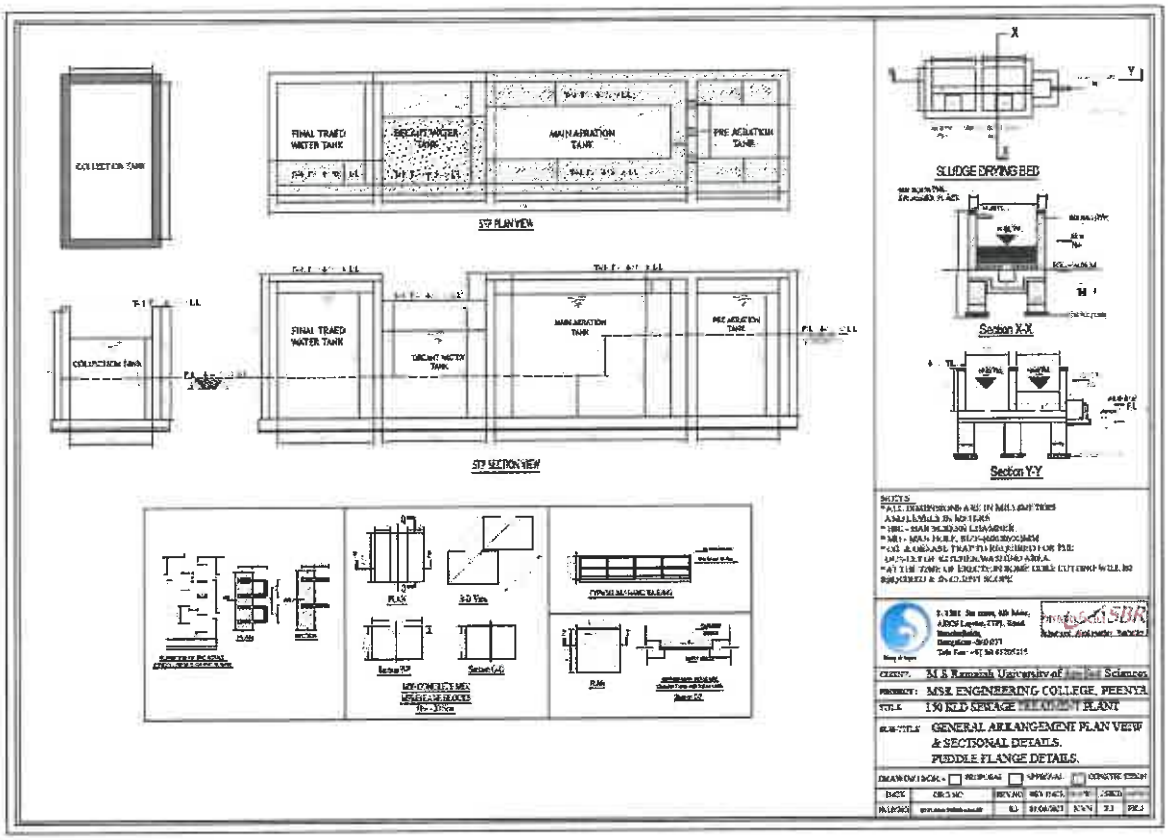
M. S. Ramaiah University of Applied Sciences has taken significant steps to reduce paper usage. Paperless processes have been implemented for admissions, examination forms, and financial transactions. Students are encouraged to use both sides of paper for writing tests, and the adoption of paper binding for academic practical records has replaced the use of plastic. The dissemination of notices and circulars to faculty is predominantly done through email, minimizing the need for printed materials.

Reuse:

The university stores e-waste and defective items from the computer lab with the intention of facilitating their reuse wherever possible. By embracing a culture of reusing materials, M. S. Ramaiah University of Applied Sciences actively contributes to the reduction of waste generation.

Sewage Treatment Plant: University has designed a sewage treatment plant and will treat waste water to tertiary standards, so as not to pollute the water streams, Sewage treatment plant is provided for 50 +150 KLD capacity of Sewage Treatment Plant advanced technology of MBBR wastewater treatment plant at RT Campus and 250KLD at GG campus.

STP 50 & 150 Tank at RT Campus



Solid waste management unit 150 KLD Plan Layout

250 KLD STP at GG Campus

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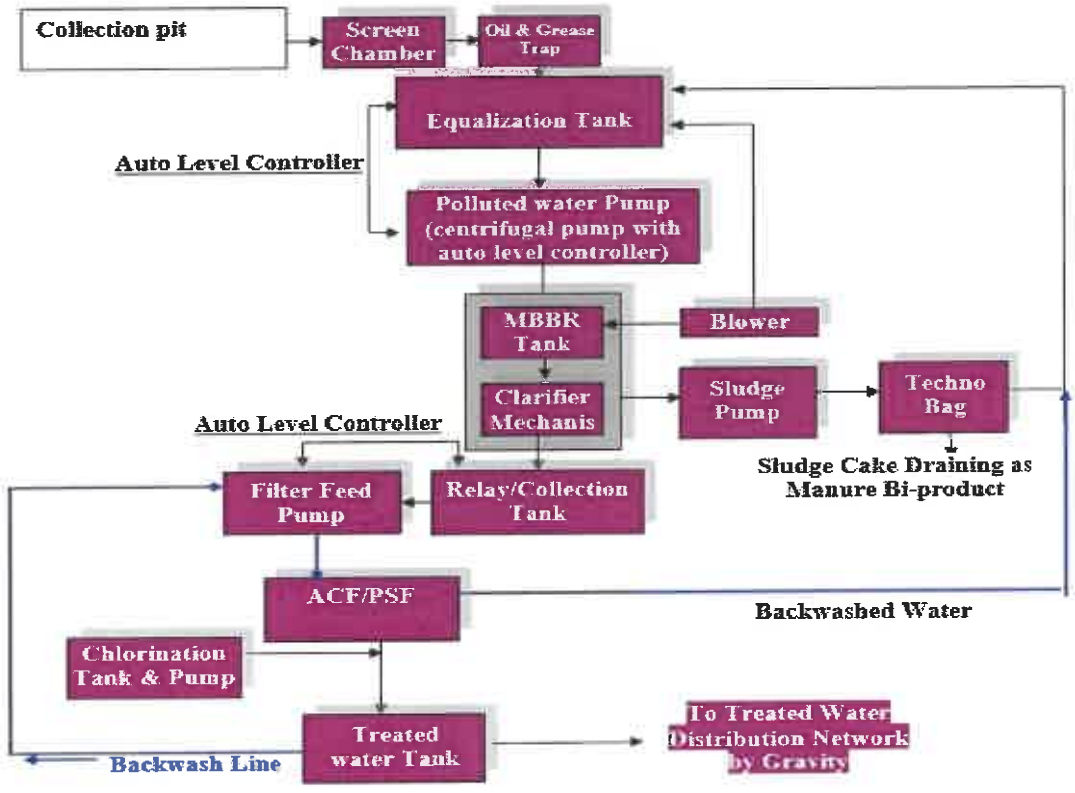
GENERIC FLOW CHART: MBBR BASED DOMESTIC POLLUTED WATER POLLUTION CONTORL EQUIPEMT AND SYSTEM



Hydraulic Flow Drawing for Sewage Treatment Plant.

Bio Gas plant: University is poised to make a significant stride towards environmental sustainability with the planned installation of a biogas plant. This forward-thinking initiative underscores our dedication to responsible waste management and resource reuse. By converting organic waste into renewable biogas through anaerobic digestion, we not only address the issue of waste but also contribute to a cleaner and more sustainable campus. The project's success hinges on a comprehensive waste collection and segregation system, along with active involvement from the university community through educational programs. This endeavor aligns seamlessly with our commitment to reducing our carbon footprint and exemplifies our university's proactive approach to fostering a greener future. 200 litre capacity bio gas digester is installed behind the Vivekannada Girls Hotel and the generated gas is used for heating application in the Hostel Mess

Biogas plant at RT campus

Recycle: The waste management is in order with the installation of dust bins. The waste is segregated at source by providing separate dust bins for Biodegradable and Plastic waste. Students and staff members are given sufficient information regarding the effective management of the waste generated in the campus.

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Pad buring machine : University is taking a significant step towards sustainable waste management with the introduction of a pad burning machine. Aligned with our commitment to environmental responsibility, this initiative provides an eco-friendly solution for the disposal of sanitary products. By strategically placing these machines across the campus and incorporating them into existing waste management infrastructure, we aim to efficiently incinerate used pads, reducing the environmental impact associated with traditional disposal methods. The integration of pad burning machines not only meets our waste reduction goals but also promotes a cleaner, more sustainable campus environment, reinforcing our commitment to responsible waste management practices.

PAD Buring machine

Conclusion:

M. S. Ramaiah University of Applied Sciences has successfully implemented a comprehensive waste management strategy that aligns with the principles of sustainability. Through source segregation, collaboration with municipal services, and dedicated handling of various waste streams, the university is setting a positive example for responsible waste management within the academic community. The commitment to the 3R principles—Reduce, Reuse, and Recycle—underscores the institution's dedication to minimizing its environmental footprint and fostering a culture of sustainability among students, staff, and the broader community.

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VI. Trasportation

Vehicles stand as a notable contributor to energy consumption and environmental pollution. Recognizing this impact, our university fervently advocates for a shift towards eco-friendly transportation options among students and faculty. By encouraging the adoption of sustainable modes of transportation, such as cycling, walking, carpooling, or utilizing electric vehicles, University aim to mitigate the environmental footprint associated with conventional automobile use. This initiative aligns with our commitment to fostering a greener campus, promoting not only energy efficiency but also a healthier and more sustainable environment for our university community. Embracing eco-friendly transportation is a collective responsibility that contributes to a positive change, reflecting their dedication to environmental stewardship.

i. Pedestrian Network

In line with the dedication to enhancing the safety and overall experience for pedestrians on campus, the University has implemented a meticulously designed interconnected network of walkways. This thoughtfully planned system seamlessly connects key buildings and essential amenities, prioritizing the safety and convenience of the campus community. With a focus on providing proper shading and ample illumination, these walkways not only ensure a secure environment but also contribute to a more pleasant and comfortable experience for those traversing the campus. By placing the safety of our campus occupants at the forefront, simultaneously address concerns related to reduced congestion, promote environmental sustainability, and create a more scenic and enjoyable atmosphere for everyone within our university community.

Vehicle free pathways

ii. Sustainable Transportation

Demonstrating a steadfast commitment to sustainability, our university has made significant strides in providing accessible and eco-friendly transportation options for its community. The implementation of shuttle services and facilitation of public transportation usage exemplify our dedication to reducing the environmental impact of commuting. Moreover, a substantial number of our faculty actively participates in carpooling initiatives, further bolstering our sustainable transportation efforts. By fostering these practices, we not only prioritize the well-being of our environment but also encourage a sense of shared responsibility among our university community, solidifying our commitment to a greener and more sustainable future.

Charging points for E vechicles

Sustainable transportation through Electric car to travel inside the campus.

College Bus facility

Bicycle stand to promote usage of bicycle

Vehicle free pathways

VII. Observation and Recommendation

Observations of the Green Audit

Our recent Green Audit has yielded several noteworthy observations that reflect commitment to sustainability and environmental responsibility. These observations encompass various aspects of our operations and practices across:

1. **Well-Maintained Signages:** We are pleased to report that signages, essential for guiding and informing our campus community, have been meticulously maintained at all relevant locations across our campuses.

2. **Paper Consumption Monitoring:** Vigilant paper consumption monitoring is in place across all our buildings, reflecting our dedication to reducing paper waste and promoting eco-friendly practices.

3. **Effective Waste Management:** Waste bins and containers are strategically positioned, with separate receptacles for different types of waste. Continuous waste quantity monitoring ensures efficient waste management.

4. **Responsible E-Waste Disposal:** E-waste is responsibly handled by returning it to suppliers for proper disposal, minimizing its environmental impact.

5. **Lead-Acid Battery Management:** Used lead-acid batteries are returned to manufacturers or their agents during replacements, ensuring safe and eco-conscious disposal.

6. **Afforestation Efforts:** Our commitment to environmental conservation is exemplified by the planting of over 100 saplings in and around our campus as part of NSS and other initiatives.

7. **Environmentally Friendly Cleaning Practices:** We prioritize the use of environmentally friendly cleaning agents for maintaining the cleanliness of our floors and toilets across all campuses.

8. **Fire Safety Measures:** Fire extinguishers are regularly refilled, and mock drills are conducted to prepare our campus community for potential fire emergencies.

9. **First Aid Availability**: To ensure that first aid kits are readily available on each floor of campus at convenient locations. Regular monitoring ensures that all items are consistently accessible.

These observations reaffirm University dedication to environmental sustainability and our resolve to create a greener, safer, and more eco-conscious environment campuses.

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

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 University 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. **Stakeholder Engagement:** Encourage government, foundations, and industry involvement in interdisciplinary research, education, policy formation, and information exchange related to environmentally sustainable development.
4. **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.
5. **Employee Tree Ownership:** Consider assigning tree ownership to our employees, fostering a sense of ownership and responsibility for the campus's green spaces.
6. **Butterfly Garden:** Develop a butterfly garden on campus to celebrate and appreciate the diversity of flora and fauna, promoting biodiversity conservation.
7. **Water meter:** Installation of water meters: install water meters at all water tank outlets to accurately monitor and control water usage.
8. **Low VOC paints:** During renovation, maintenance or new builing construction use low voc paint for painting purposes.
9. **Repairing leaks:** Address leaks promptly by fixing taps and pipes to minimize water wastage.
10. **Automatic faucets:** Install auto-flush systems for basins to reduce water usage and promote efficient handwashing practices

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

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, S60091, 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

Authorised Signatory

UK Certification & Inspection Ltd

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

#692 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: 30502301140 2Q

QRO EGAC IAF

The Validity of this certificate can be verified at www.qrocert.org

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

#6921, 12TH A CROSS BEL LAYOUT, BHARATHINAGAR, 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	23EEN086		
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

Magnitude Management Services Pvt. Ltd.
Third Floor, A-68, Sector-2, Noida, Gautam Budh Nagar, U.P.-201301, India

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

Nischay N

LEED Green Associate™

Confederation of Indian Industry

The Indian Green Building Council

hereby certifies that

Nischay N

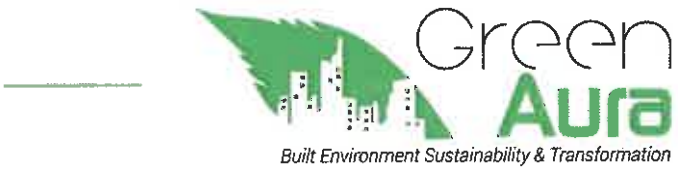
has successfully demonstrated knowledge on the Green Building Design & Construction, Building Standards & Codes, IGBC Resources & Processes and Green Design Strategies & their Impacts required to be awarded the title of

IGBC Accredited Professional

S Raghupathy

Dr Prem C Jain

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


Green
Aura
Built Environment Sustainability & Transformation