

ENVIRONMENT AUDIT

2019-20 & 2020-21

AUDIT REPORT

Studied for

Rama University

Rama City, G.T. Road Mandhana, Kanpur,
Uttar Pradesh, Pin- 209217

Analysed by



11 March 2022

Disclaimer

The Audit Team has prepared this report for the **Rama University** located at Rama City, GT Road Mandhana, Kanpur, Uttar Pradesh, Pin- 209217 based on input data submitted by the University analysed by the team to the best of their abilities.

The details have been consolidated and thoroughly studied as per the various guidelines for Green Buildings available in National and International Standards; the report has been generated based on comparative analysis of the existing facilities and the prerequisites formulated by various standards. The inputs derived are a result of the inspection and research. These will further enhance and develop a Healthy and Sustainable Institution.

These can be implemented phase wise or as a whole depending on the decision taken by the Hon'ble Management and University. The warranty or undertaking, expressed or implied is made and no responsibility is accepted by Audit Team in this report or for any direct or consequential loss arising from any use of the information, statements or forecasts in the report.

The audit is a thorough study based on the inspection and investigation of data collected over a period of time and should not be used for any legal action. This is the property of Greenvio Solutions and should not be copied or regenerated in any form.

The Report is prepared by the Team of Greenvio Solutions under their brand and department – Sustainable Academe as Consultancy firm with the Project Head - Ar. Nahida Shaikh who has completed audits of multiple Institutes including Technical, State University, Private University and Single Faculty Universities for a total of more than 50 lakhs+ sq. ft. of Built-up area audited till date Pan India as an Accredited and Certified Green Building Professional-Architect. Green Building consultancy is her forte and she is one of the most sought after names when it comes to providing excellent quality services within the stipulated time frame.

The Study is conducted in capacity of Accredited & Certified Green Building Professional with extensive experience.

Greenvio Solutions

Developing Healthy and Sustainable Environments

We are an Environmental and Architectural Design Consultancy firm

Sustainable Academe is our department for conducting Audits

Palghar District, Maharashtra- 401208

sustainableacademe@gmail.com

Acknowledgement

The Audit Assessment Team thanks the **Rama University, Kanpur, Uttar Pradesh** for assigning this important work of Environment Audit. We appreciate the cooperation extended to our team during the entire process.

Our special thanks are due to **Dr. Suraj B. S. Kushwah**, Chancellor; **Ms. Aprajita Chauhan**, Principal Director; **Dr. Pranav Singh**, Director, Public Relations; **Dr. Prateek Singh**, Director and **everyone from the Management**.

Our heartfelt thanks to Chairperson of the entire process **Mr. Samir Kumar Mishra**, (Asst. Director, R&D Cell) and **Mrs. Rati Bajpai** (Asst. Professor, Applied. science) for their valuable inputs.

We are also thankful to **University's Task force the faculty members - Green Audit Coordinators** who have collected data required **Dr. Deeksha Ranjan** (Faculty of Engineering and Technology), **Dr. Raghvendra Singh** (Faculty of Agricultural Sciences & Allied Industries), **Mr. Vaibhav Dubey** (Faculty of Engineering and Technology), **Mr. Satish Parihar** (Faculty of Engineering and Technology) and **Mr. Amit Kumar Singh** (Faculty of Engineering and Technology)

The kind gesture for the inventory and data collection of **Mr. Rakesh Bhushan** (Admin. Manager) is quite commendable.

We highly appreciate the assistance of **Mr. Sudhir Savita** (R&D Cell), **Mr. Deepanker Singh Chauhan** (Office Assistant, R&D Cell) and the **entire Teaching, Non-teaching and Admin staff** for their support while collecting the data.

Sustainable Academe

Brand of Greenvio Solutions, Palghar District, Maharashtra- 401208

Contents

1. Introduction	4
2. Institution overview	16
3. Green Building Audit Study	21
4. Site Study	22
5. Ecological (Environmental) Audit.....	27
6. Towards a Healthy & Sustainable Institution	50
7. References.....	52



Hereby presents

An Environment & Ecological friendly premise

**Established as a State Private University at Kanpur
vide U.P. Act No. 1 of 2014 as passed by the State Legislature**

The prestigious

Rama University

Rama City, G.T. Road Mandhana, Kanpur, Uttar Pradesh, Pin- 209217



Best features of the University as per our study



1. Solar generation
Installation of Solar panels



2. Waste water recycling
In-house system designed



3. Amenities
Provision for parking & E-vehicles



12. Residential facility
Provided for staff and students



4. Natural manure
Prepared in premise and used



11. Natural water is harvested
Borewell system



An Environment and Ecological friendly premise



5. Waste segregation
Practiced at the source



10. Community development
Adopted 5 villages in UBA



6. Pollution free environment
No smell or smoke



9. Mobility
90 buses free of cost for students



8. Universal design
Ramps, Universal toilet, 100% lifts



7. Clean and hygienic premise
Regular maintenance

1. Introduction

1.1 About Rama University

An educational institute is beyond than being just a building. It helps one in acquiring knowledge which is a gateway to being successful and a good human.

“A good education is the best gift you can give yourself or anyone else”

- Mahtab Narsimhan

Rama University is the one of the best private universities in the state of Uttar Pradesh, India; started in the year 2014 by the founder **Late Dr. Babu Singh Kushwah, a great visionary, a dentist, an educationist and the guiding force behind the Rama Group with a motto “Healthy people build healthy nation and education is an important tool in transforming the society”.**

Following the directions of the founder, Rama Group has evolved as a multi-activity and multi-industry group that actively participates in many major contributions to our society. It strongly believes in creating responsible citizens out of its students and hence works with a 360 degree approach towards the all-round development of the students. In this effort, the group provides adequate opportunities to its students to gain both the theoretical and the practical hands on knowledge by way of providing training and work exposure within the Group companies.

“There is no school equal to a decent home and no teacher equal to a virtuous parent.”

- Mahatma Gandhi

The University offers undergraduate, post-graduate courses, research programmes. It has full-fledged infrastructure, advanced academic programs and efficient administrative hierarchy. **It is one of the premier Educational University providing quality education with best state of the art facility and Infrastructure to the students.**

1.2 Vision and Mission Statement of University

1.2.1 Vision towards the future

To emerge as a Global Premier University in imparting education of international standards, to build superior professionals with strong work ethics and to empower the world with futuristic minds, through excellence in research and innovation.

1.2.2 Mission for achieving benchmarks

- To promote national and international collaboration for industry academia integration to achieve top most position in global hierarchy.
- To create a scientific, challenging, transparent and sustainable environment/curriculum ideal for research, innovation, entrepreneurship and consultancy.
- To nurture talent and creativity, committed to serve people, society and nation at large.
- To inculcate strong morals, values & ethics to build socially committed and spiritually inspired personalities.
- To empower and uplift each section of society through education and to contribute back to the environment by adapting and promoting eco-friendly practices.

1.2.3 Aim for community development through goals

University have set ten Broad Based Goals for 2015-19

1. Ensuring Educational Excellence
2. Ensuring Student Development including physical and emotional health and wellbeing.
3. Creating culture of excellence in Research, Scholarship, Innovation and Creativity for high impact.
4. Enhancement of quality of faculty and staff for outstanding performance.
5. Advancing internationalization.
6. Enhancing relations with industry, alumni and society.

7. Enhancing employability and promote entrepreneurial initiatives.
8. Committing to all aspects of social, economic and environmental sustainability.
9. Enhancement of supporting resources.
10. Ensuring excellence in Organizational Leadership and governance.

1.2.4 Objective defining the educational purpose

- The objectives of the University are to disseminate and advance knowledge by providing instructional, research and extension facilities in such branches of learning as it may deem fit.
- The University endeavours to provide students and teachers the conducive atmosphere and facilities and infrastructure for the promotion of :
 - a) *Innovations in education leading to restructuring of courses, new methods of teaching and learning and integral development of personality*
 - b) *Studies in established and new disciplines.*
 - c) *Inter-disciplinary studies*
 - d) *National integration, secularism, international understanding and ethics.*

1.3 Institutions in the premises

The aim of the University is to continuously enhance the teaching methods in order to provide students with an opportunity for their all-round development. In order to manage the programme offerings in a much better way, Rama University has **structured its offerings under 11 Major Sections** as follows:

- 1. Faculty of Agricultural Sciences and Allied Industries**
- 2. Faculty of Ayurveda**
- 3. Faculty of Commerce and Management**
- 4. Faculty of Dental Sciences**
- 5. Faculty of Engineering and Technology**
- 6. Faculty of Juridical Sciences**
- 7. Faculty of Medical Sciences**

8. Faculty of Nursing
9. Faculty of Paramedical Sciences
10. Faculty of Pharmaceutical Sciences
11. Faculty of Professional Studies

Each of these Schools is headed by highly experienced and competent Director/Deans along with H.O.Ds checking on the right academic progress of each faculty/department in the University. The University strives for excellence in academics and makes an effort to induce passion for learning along with the inspiration for decisive thinking and assessment, thereby helping them to become the best professionals in their chosen careers.

1.4 Programs offered by the University

The University a wide range of courses for the students to upgrade their educational qualification. The details of each of these courses as per the School are as follows.

S. No.	School	Course offered
1.	Faculty of Medical Sciences	<u>1.1. MBBS</u> <u>1.2. MD(Anatomy)</u> <u>1.3. MD(Physiology)</u> <u>1.4. MD(Biochemistry)</u> <u>1.5. MD(Pathology)</u> <u>1.6. MD(Community Medicine)</u> <u>1.7. MD(Pharmacology)</u> <u>1.8. MD(Microbiology)</u> <u>1.9. MSc(Medical Microbiology)</u> <u>1.10. MSc(Medical Anatomy)</u> <u>1.11. MSc(Medical Physiology)</u> <u>1.12. MSc(Medical Pharmacology)</u> <u>1.13. MSc(Medical Biochemistry)</u> <u>1.14. PhD (Medical Anatomy)</u> <u>1.15. PhD (Medical Physiology)</u> <u>1.16. PhD (Biochemistry)</u> <u>1.17. PhD (Medical Pharmacology)</u> <u>1.18. PhD (Medical Microbiology)</u> <u>1.19. PhD (Medical Community Medicine)</u> <u>1.20. PhD (Forensic Medicine)</u> <u>1.21. PhD (Bio. Statistics)</u>
2.	Faculty of Dental	<u>2.1. BDS</u>

	Sciences	<u>2.2. MDS(Oral Medicine and Radiology)</u> <u>2.3. MDS(Prosthodontics and Crown and Bridge)</u> <u>2.4. MDS(Orthodontics and Dentofacial Orthopedics)</u> <u>2.5. MDS(Oral and Maxillofacial Surgery)</u> <u>2.6. MDS(Periodontology)</u> <u>2.7. MDS(Pediatric and Preventive Dentistry)</u> <u>2.8. MDS(Conservative Dentistry and Endodontics)</u> <u>2.9. MDS(Public Health Dentistry)</u> <u>2.10. MDS(Oral Pathology and Microbiology)</u> <u>2.11. PhD (Oral Medicine and Radiology)</u> <u>2.12. PhD (Prosthodontics and Crown and Bridge)</u> <u>2.13. PhD (Oral and Maxillofacial Surgery)</u> <u>2.14. PhD (Periodontology)</u> <u>2.15. PhD (Conservative Dentistry and Endodontics)</u>
3.	Faculty of Nursing	<u>3.1. BSc Nursing</u> <u>3.2. BSc(Post Basic Nursing)</u> <u>3.3. MSc(Medical Surgical Nursing)</u> <u>3.4. MSc(Obstetrics and Gynecology Nursing)</u> <u>3.5. MSc(Psychiatric Nursing)</u> <u>3.6. MSc(Community Health Nursing)</u> <u>3.7. MSc(Child Health Nursing)</u>
4.	Faculty of Paramedical Science	<u>4.1. BPT</u> <u>4.2. BSc(Medical Lab Technology)</u> <u>4.3. BSc(Optomtry)</u>
5.	Faculty of Engineering and Technology	<u>5.1. BTech(Mechanical Engineering)</u> <u>5.2. BTech(Electronics & Communication Engineering)</u> <u>5.3. BTech(Computer Science and Engineering)</u> <u>5.4. BTech(Civil Engineering)</u> <u>5.5. BTech(Biotechnology)</u> <u>5.6. BTech(Agricultural Engineering)</u> <u>5.7. Mtech(Electrical Engineering Power Electronics and Power System)</u> <u>5.8. Mtech(Mechanical Engineering CAD CAM)</u> <u>5.9. Mtech(Microelectronics and VLSI Design)</u> <u>5.10. Mtech(Computer Science and Engineering)</u> <u>5.11. Mtech(Civil Engineering Structure Engineering)</u> <u>5.12. Mtech(Biotechnology)</u> <u>5.13. PhD (Electrical Engineering)</u> <u>5.14. PhD (Electronics and Communication Engineering)</u>

		<u>5.15. PhD (Computer Science and Engineering)</u> <u>5.16. BCA</u> <u>5.17. PhD (Environmental Chemistry)</u> <u>5.18. PhD (Applied Physics)</u> <u>5.19. PhD (Applied Mathematics)</u> <u>5.20. BSc(Biotechnology)</u> <u>5.21. MSc(Biotechnology)</u> <u>5.22. PhD (Biotechnology)</u>
6.	Faculty of Commerce & Management	<u>6.1. BBA</u> <u>6.2. BCom</u> <u>6.3. MBA(Dual Specialisation)</u> <u>6.4. PhD (Commerce)</u> <u>6.5. PhD (Management)</u>
7.	Faculty of Professional Studies	<u>7.1. BA(Journalism and Mass Communication)</u> <u>7.2. MA(Journalism and Mass Communication)</u> <u>7.3. PG Diploma(Journalism and Mass Communication)</u> <u>7.4. PhD (Journalism and Mass Communication)</u>
8.	Faculty of Agricultural Sciences and Allied Industries	<u>8.1. BSc(Agriculture)</u> <u>8.2. MSc(Agriculture)(Agronomy)</u> <u>8.3. MSc(Agriculture)(Horticulture)</u> <u>8.4. MSc(Agriculture)(Genetics and Plant Breeding)</u> <u>8.5. MSc(Agriculture)(Plant Pathology)</u> <u>8.6. MSc(Agriculture)(Soil Science)</u> <u>8.7. PhD (Horticulture)</u> <u>8.8. PhD (Plant Pathology)</u> <u>8.9. PhD (Agriculture)</u> <u>8.10. PhD (Agronomy)</u>
9.	Faculty of Juridical Science	<u>9.1. LLB</u> <u>9.2. BA LLB</u> <u>9.3. BBA(LLB)</u> <u>9.4. PhD (Law)</u> <u>9.5. LLM(Criminal and Security Law)</u> <u>9.6. LLM(Constitutional and Administrative Law)</u> <u>9.7. LLM(Business and Corporate Law)</u>
10.	Faculty of Pharmaceutical Sciences	<u>10.1. BPharm</u>

Table 1: Details of the various courses offered by each faculty of Rama University, Uttar Pradesh

1.5 Assessment of the University

1.5.1 Establishment and Affiliation

Rama University, Uttar Pradesh, has been established as a State University at Kanpur vide U.P. Act No. 1 of 2014 as passed by the State Legislature and is empowered to give degrees as specified by UGC under section 22 of the UGC Act 1956 through its main campus with the approval of Statutory Councils, wherever required. (Reference No. : 1-2014-15(63)/2005 dated 24.01.2014)

1.5.2 Approvals

The University is approved University Grant Commission (UGC).

1.5.3 Accreditation

NAAC - Rama Dental College (presently, the Faculty of Dental Sciences of Rama University) has been accredited with NAAC on 05 May 2014. *The University as a single entity is due to enter its First cycle of NAAC soon.*

1.5.4 Recognitions

The University has achieved the following recognitions:

- **University Grant Commission (UGC)** - Rama University under section 2 (f) of the UGC Act, 1956 vide by University Grants Commission, New Delhi.
- **Dental Council of India (DCI)** - Rama Dental College has been established in year 1996 and recognized by Dental Council of India for BDS and MDS courses. (Reference No.: UG [V-12017/21/95-PMS (Vol.VII)] and PG [V-12017/44/2003-DE (Vol. VI)])
- **Indian Nursing Council (INC)** - Nursing Council of India, after visiting and inspecting the medical as well as academic infrastructure and facilities and reviewing the history of successfully releasing qualified batch of nursing students, has recognized the Nursing College and permitted the University to award degrees to Nursing students. (Reference No: 386/71-3-08-N-5/08 and Date of Approval: Jan 31, 2008)
- **Medical Council Of India (MCI)** - On recommendation of MCI, Rama Medical

College Kanpur, has been recognized by MOHFW, Govt. of India under the notification no. MCI-34(41)/2013-Med./19815

- **BAR Council Of India (BCI)** - The University has also been recognized by Bar Council of India to offer LLB (3 Years), BA LLB (Five Years) & BBA LLB (Five Years) courses since 2015 vide notification no. BCI: D: 2162/ 2015 (LE) dated 2.11.15.
- **DSIR-SIRO** – The University has been recognised as a Scientific and Industrial Research Organisation (SIRO) by the Dept. of Scientific and Industrial Research under the scheme on recognition of Scientific and Industrial Research Organisation (SIROs), 1988.
- **AICTE** - The University is approved by All India Council for Technical Education (AICTE), New Delhi.

1.5.5 Certification

ISO - The University received ISO 9001:2015 (QMS) Certification for providing Educational Services by M/s Accredium Certifications Pvt. Ltd. since 2018.

1.6 Achievements of the University

The University has a tremendous track record of excellence in Built form and educational services provided, below are some of the achievements of the prestigious Institute.

Year of Award	Title of the innovation	Name of the Awardee	Name of the Awarding Agency
2015	Management of acute lymphoblastic leukemia in childhood	Dr. Nilam Nigam	CSJM university Kanpur
2017	Awarded second prize for Scientific paper presentation	Dr Vishal Mehrotra	Indian Academy of Oral Medicine and Radiology, VI National Triple O Symposium
2018	"Acclaimed Educator .	Dr Aftab Alam	MontanaUSA

2018	"BEST EDITOR" of International Journal of Contemporary Medicine, Surgery And Radiology	Dr. Rahul Srivastava	International Society for Holistic Dentistry (ISfHD) and International Society for Contemporary Medical Research (ISfCMR).
2018	Basics of medical education	Dr. Nilam Nigam	rama medical college hospital & research centre
2018	Best Postgraduate Student of the Year (Public Health Dentistry)	Dr. Devina Pradhan	International Dental Excellence Awards' Mumbai
2018	Best Professor Award in Services Marketing and Management	Dr Aftab Alam	ICBM Hyderabad
2018	Distinguished Academic Achievements in Dentistry	Dr. Janardhana Amaranath Bj	Bapuji Dental College and Hospital, Davengere, Rajiv Gandhi University of Health Sciences
2018	Distinguished Teacher in Management.	Dr Aftab Alam	MTC Global Bangalore
2018	International Exemplary Research and Performance Awards for "Best Editor"	Dr. Rahul Srivastava	International Society for Holistic Dentistry (ISfHD) and International Society for Contemporary Medical Research (ISfCMR).
2019	Best Model Polling Booth Award by National Election commission	Mis. Anjali Dixit	Loksabha Election Certificate
2019	Best Rural Dentist of the Year	Dr. Devina Pradhan	Indian Association of Dental Students
2019	Calcifying epithelial odontogenic tumor in a child patient a rare case report	Dr. Rahul Katyayan	International maxillofacial summit craniofacial surgery and oncology. Kanpur
2019	Dental website of the year. www.vivavoceoralmedici	Dr. Rahul Srivastava	International Society for Holistic Dentistry (ISfHD) and International Society for Contemporary Medical Research (ISfCMR).

	neradiology.com		
2019	Drug induced parkinsonism	Dr. Nilam Nigam	Govt. Medical college kannauj
2019	Excellence in Oral Health/ Oral Hygiene Awareness	Dr. Devina Pradhan	International Society for Holistic Dentistry (ISfHD) and International Society for Contemporary Medical Research (ISfCMR).
2019	Excellence in Public Health Dentistry	Dr. Devina Pradhan	International Society for Holistic Dentistry (ISfHD) and International Society for Contemporary Medical Research (ISfCMR).
2019	MTC Global Award	Dr. Suraj Kushwah	MTC Global Award Global outstanding contribution to education award
2020	Academic Excellence Award	Dr. Devina Pradhan	International Accurate Certification
2020	Boived Best Teacher Award 2020	Dr. Aneeta Yadav	National conference organized by BRIATS, Allahabad & Rama University Kanpur
2020	Contribution to education community	Dr. Rahul Srivastava	Asian education awards
2020	Excellence in Dentistry	Dr. Karuna Sharma	Online Dentistry
2020	Rational use of antimicrobials	Dr. Nilam Nigam	Hamdard institute of medical sciences & research hamdard nagar new delhi
2020	Research excellence award	Dr. Rahul Srivastava	Institute of Scholars, Bangalore Institute of Scholars, Department of Awards, #1338, 2nd Cross, 7th Block Sir M V Layout, Muddhinapalya Bengaluru-560091, Karnataka, India
2020	Research excellence award 2020	Dr. Rahul Srivastava	Institute of Scholars, Bangalore Institute of Scholars, Department of Awards, #1338, 2nd Cross, 7th Block Sir M V Layout, Muddhinapalya Bengaluru560091, Karnataka, India
2020	Young Researcher in oral	Dr. Rahul	Global Outreach Medical & Health

	medicine and radiology	Srivastava	Association http://www.gomha.org/
2020	Young Researcher in Public Health Dentistry	Dr. Devina Pradhan	Global Outreach Medical & Health Association
2020	Young Researcher in Public Health Dentistry	Dr. Rahul Srivastava	Global Outreach Medical & Health Association http://www.gomha.org/
2020	Bioved Ratan	Dr. Suraj Kushwah	Bioved Ratan Awarded From Bioved Research Institute Of Agriculture Technology Of Science. Prayagraj
2017	Awarded second prize for Scientific paper presentation	Dr Vishal Mehrotra	Indian Academy of Oral Medicine and Radiology, VI National Triple O Symposium

Table 2: Details of the awards

1.7 MoU's and Collaborations

The University has teamed up with the following Organizations for a smooth and efficient functioning.

- Regional Food Research and Analysis Center, Lucknow, Ministry of Horticulture and food Processing Govt. of U. P.
- Tribhuvan University
- VNurt Technology Solution Pvt. Ltd.
- Favoriot
- International Institute of Goat Management
- Red Hat India Private, Mumbai
- GLA University Mathura
- ICAR-CSSRI, Karnal/RSS, Lucknow
- National Institute of Informatics, Tokyo, Japan
- Foundation for Innovation & Research in Science & Technology, IIT Kanpur
- ICAR-Central Institute for Subtropical Horticulture, Lucknow
- ICAR-Indian Institute of Pulses Research, Kanpur

- National AIDS Control Organization, Government of India
- Paliwal Diagnostics Private Limited
- Gian Life Care Ltd.
- Willworld Environmental
- Computer Society of India
- Center for Research and Development
- Vraddhi Organic Agro India Private Limited Vrindavan Mathura
- Alloix Technical Education LLP, Kanpur
- ICTC-UP SACS
- Saraswati Medical College

2. Institution overview

2.1 Populace analysis for Academic year 2019-20

2.1.1 Students data

The student data (shared by the University) shows there were a total of **2,363 Boys** and **1,866 Girls** students thus **a total of 4,584 students** in the premises.

2.1.2 Staff data

Type	Male	Female	Total
Admin Staff	180	80	260
Teaching Staff	313	206	519
Non-Teaching Staff	890	145	1,035
Total Staff Members	1,383	431	1,814

Table 3: Staff data of the Institution for 2019-20

The staff data shows the premises had a total of **1,814** Staff Members.

2.2 Populace analysis for Academic year 2020-21

2.2.1 Students data

The student data (shared by the University) shows there were a total of **2,752 Boys** and **1,866 Girls** students thus **a total of 4,618 students** in the premises.

2.2.2 Staff data

Type	Male	Female	Total
Admin Staff	180	84	264
Teaching Staff	320	212	532
Non-Teaching Staff	895	150	1,045
Total Staff Members	1,395	446	1,841

Table 4: Staff data of the Institution for 2020-21

The staff data shows the premises had a total of **1,841** Staff Members.

2.3 Total University Area & Building Spread Area

The **total site area is 84.99 Acres** and the **total Built-up area of University is 3,26,523 sq. ft.** for a **total of 6,459 footfalls.**

2.4 University Infrastructure

The Buildings are made of Reinforced Cement Concrete (RCC) framework. These are equipped with modern amenities. It facilitates the students with a good environment for studies and stays true to its aim of providing Holistic development. The Residential and Academic buildings amalgamate smoothly with the open space in order to stand out as one of the most premier Institutes in the country.

Overall the Infrastructure of the Building is excellent in terms of the Architecture Design and Green Building Design. The Premises covers most of the requirements for a Green Habitat. It continues to upgrade itself in terms of the facilities and makes sure that there is no compromise on the quality of services towards Building requirements. The cooperative teamwork and the leadership of the Hon'ble dignitaries are one of the main reasons for achieving success in providing quality education with an advanced and up-to date premises.

2.4.1 Spatial Organisation

2.4.1.1 Architectural Design

The overall ambience of the University is warm and inviting. The courtyards, educational spaces, learning spaces, residential spaces and recreational spaces have ample natural ventilation in the form of clear glass windows with fresh air ventilation. The architecture of the buildings are quite well designed. The colour palette not just helps the buildings to stand out as per respective typology of the Building be it Educational or Residential but also provides an Institutional arena. There are provisions for lifts, CCTV, Fire extinguishers, first aid box and much more.

2.4.1.2 Landscape design

The built-form balances with the local architecture and amalgamates very well with the natural landscapes in form of open ground, designed landscape spaces, streetscape

elements such grounds, designed gardens, greenhouse, botanical gardens and huge trees all around. There are provisions for ramps, open ground, courtyards, designated landscape areas, signages, Utility Boxes, Parking, Sidewalk Furniture and Utility Poles.

2.4.2 Building and Block wise details

The Building & Block wise details on the Rama University premises are mentioned below:

S. No.	Branch name	Floor
1	Faculty of pharmaceutical sciences	G+4
2	Faculty of Agricultural Sciences & Allied Industries	G+3
3	Vice Chancellor Building	G+3
4	Faculty of Ayurvedic Medical Sciences	G+2
5	Faculty of Nursing	B+G+3
6	Rama Hospital	B+G+3
7	Faculty of Medical Sciences	G+3
8	Faculty of Engineering & Technology	B+G+3
9	Raman House	G+3
10	Kalpana House	G+3
11	MBBS Boys Hostel	G+3
12	MBBS Girls Hostel	G+4
13		G+3
14	Nursing Girls Hostel	B+G+3
15	Nursing Boys Hostel	B+G+3
16	Resident Hostel	G+5
17	Staff Accommodation I	G+5
18	Staff Accommodation II	G+5

Table 5: Block and department wise details of the University premises

2.4.3 Salient features

The University had the best State of the art Infrastructure in the Country. Some of the best features available are as follows:

1. ERP System for monitoring administration /academics
2. Wi-Fi enabled premises
3. Modern infrastructure with well-equipped laboratories
4. Guest Lectures by Eminent Scholars
5. Ragging free environment
6. Hostels for Girls and Boys
7. 24 x 7 Power and RO water supply
8. State of art Library
9. Canteen Facility
10. Medical Facility (Health Centre)
11. Auditorium with all ultra-modern facilities.
12. Multipurpose Hall
13. Landscaped Gardens
14. On premises Residential Facilities for faculties and employees.
15. Community development programs
16. Arrangement for physically Challenged persons/students.

The University endeavours at training young women to be competent, committed and compassionate and lead in all walks of life.

2.4.5 Operation and Maintenance of the premises

The interview session with the staff regarding the operation and working hours is summarized in the table. The Institutions are open Monday to Friday for full day. Saturday, Sunday is an off for all. Below mentioned in the table are the average working hours. The detail wise timing for each is mentioned below the table.

S. No.	Section	Spaces	Time	Hours / day	Days in a year
1	Main Institutional University	Student areas and Teaching faculty	09:00 a.m. to 4:30 p.m.	7.5	280
2	General areas	Admin areas and library, Passage, staircase, toilet	8:00 a.m. to 5:00 p.m.	9	300

Table 6: Schedule of the timings of the premises

On-site investigation and physical verification
The Beautiful and Eminent Institution Building and premises



Auditorium



Faculty of Agricultural Sciences & Allied Industries



Faculty of Ayurveda Sciences



Faculty of Commerce and Management



Faculty of Engineering and Technology



Faculty of Juridical Sciences



Faculty of Medical Sciences



Faculty of Nursing

On-site investigation and physical verification
The Beautiful and Eminent Institution Building and premises



Faculty of Pharmaceutical Sciences



Kalpana House



MBBS and Nursing Girls Hostel



MBBS Boys Hostel



Rama Hospital and Research Centre



Raman House



Staff Accommodation First And Resident Hostel



Vice Chancellor's Secretariat

3. Green Building Audit Study

3.1 About the Green Building Study Audit

It is a systematic study of the aspects which make the Institution a sustainable and healthy premises for its inhabitants.

3.2 Analysis for the Green Building Study Audit

The procedure included detailed verification for the following:

Energy Audit

- Analysis of the Lights, Fans, AC, Equipment
- Renewable energy
- Scope for reducing the current energy bills if any
- Improvement in the thermal comfort of the premises

Green Audit

- Green initiatives
- Hygiene audit
- Water Audit - Analysis of the current water consumption of premises; Scope to include Rain water harvesting and Waste water treatment in premises
- Waste Audit - Current waste produced, its segregation and usage; Strategies to be adopted for waste management and awareness

Environmental Audit

- Analysis of the current landscape + hardscape of premises
- Analysis of the flora and fauna of campus
- Strategies adopted at present to enhance vegetation
- Measures that can be adopted for ecological improvement of the premises.

3.3 Strategy adopted for Green Building Study Audit

The strategies included data collection from admin department, actual inventory, investigation to check the operation and maintenance, analysis of the data collected and preparation of the Report.

3.4 Timeline of the activities for Green Building Study Audit

- | | |
|---------------------|--|
| • 28 December 2021 | – Discussion with the University |
| • 13 January 2022 | – Allotment and Initiation by the University |
| • 20 January 2022 | – Induction meeting |
| • 25 January 2022 | – Survey of the Student and staff submitted |
| • 7 to 9 March 2022 | – Data submitted by University |
| • 11 March 2022 | – Submission of the Report |

4. Site Study

4.1 On-site observations study

The following listed are some of the positive site elements which are beneficial to the University in terms of tangible and intangible benefits.

- **Location** - The Rama University located at Rama City, GT Road Mandhana, Kanpur, Pin- 209217, Uttar Pradesh, India and falls under the Kanpur Municipality Corporation in the state of Uttar Pradesh.
- **Neighbourhood context** - The premises is surrounding by open spaces and Residential spaces on the immediate surroundings of the site, there are educational institutes and the site is adjacent to the Aligarh-Kanpur road, it is situated in the Kanpur city which is famous for Leather industry.
- **Natural physical features** – The premises includes a rich biodiversity and huge number of plants in the open space. The site does not have major different in the land levels (contours). The rainwater is diverted through pipes into ground and it has helped ground water recharge for the well water over the years and treated waste water is used as a source of organic fertilizer in the premises.
- **Manmade features** – The premises is situated in a rural area amidst residential areas and open spaces with appropriate proximity to necessary amenities. There is sufficient appreciation space for entrance. The materials used for construction are RCC and the landscaping includes in potted plants.
- **Circulation** – There is a smooth transition of pedestrian traffic inside the premises due to the large entrance gate and the huge open space where vehicles of students and staff is parked.
- **Climate** – The climate in Kanpur is warm and temperate. When compared with winter, the summers have much more rainfall. According to Köppen and Geiger, this climate is classified as Cwa. The average annual temperature is 25.3 °C | 77.5 °F in Kanpur. The annual rainfall is 939 mm | 37.0 inch.

(Source: <https://en.climate-data.org/asia/india/uttar-pradesh/kanpur-5844/>)

4.2 Survey results

An online survey was conducted to analyse the student and staff views about the premises, following are some of the reviews. (Note - Responses have been rounded off keeping in the population study)

4.2.1 Participation

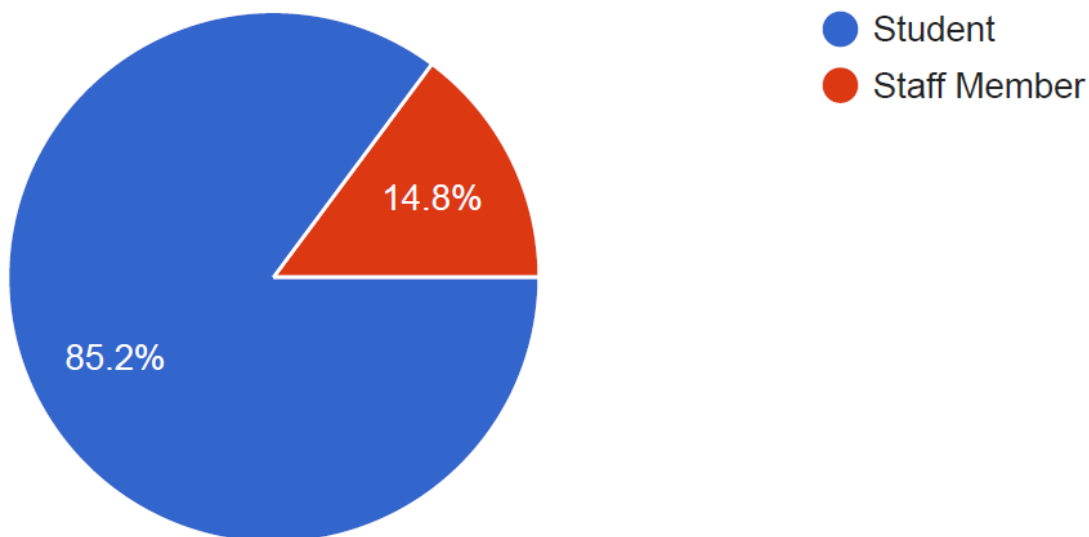


Figure 1: Participation analysis in the survey

A total of **843 responses** were received out of which 85% were students.

4.2.2 Schools (Dept./ Faculty)

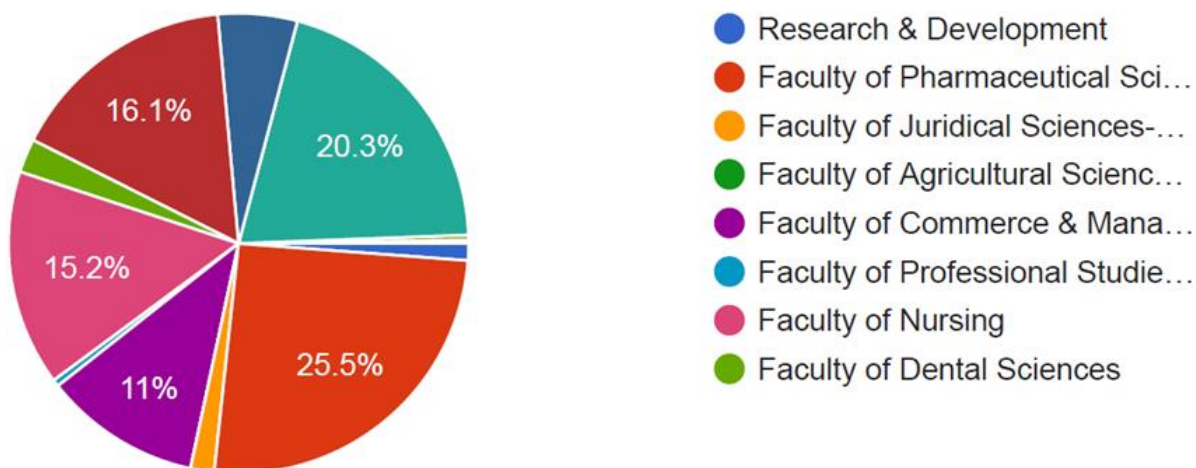


Figure 2: Participation analysis in the survey

The **highest response which is 26% was received from Faculty of Pharmaceutical sciences** the other responses were almost equal among all departments and encouragement of students to participate is quite commendable.

4.2.3 Is there any Dust pollution in the premises?

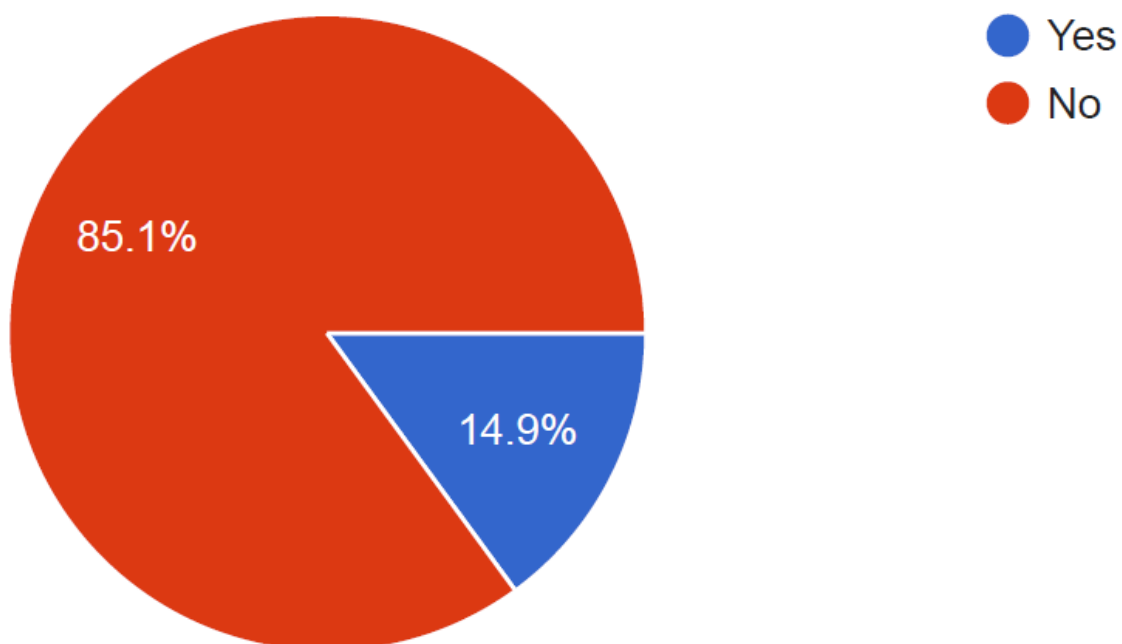


Figure 3: Participation analysis in the survey

The students, staff (**almost 85%**) of responses confirmed that there is no dust pollution.

4.2.4 Is there any Air pollution in the premises?

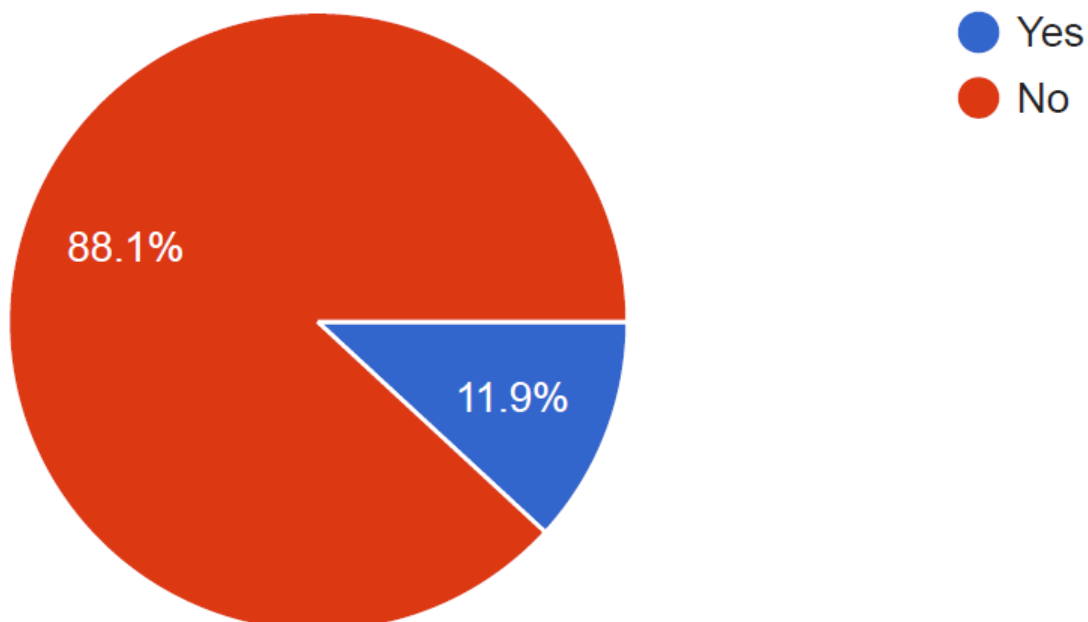


Figure 4: Participation analysis in the survey

The students, staff (**almost 88%**) of responses confirmed that there is no air pollution.

4.3 Survey ratings

Note about the review-rating survey

The Participants were asked to review (Though an online mode) the practice on a scale of 1-5 with scale components as follows:

- Scale 1 – Poor
- Scale 2 – Satisfactory
- Scale 3 – Good
- Scale 4 – Very good
- Scale 5 – Excellent

The figures in each of the columns of graph depict the Number of participants responses in numerical (Percentage of the participant response) – For example 101 responses (44.5%)

4.3.1 Rate - Location of the Institute premises with respect to surrounding context

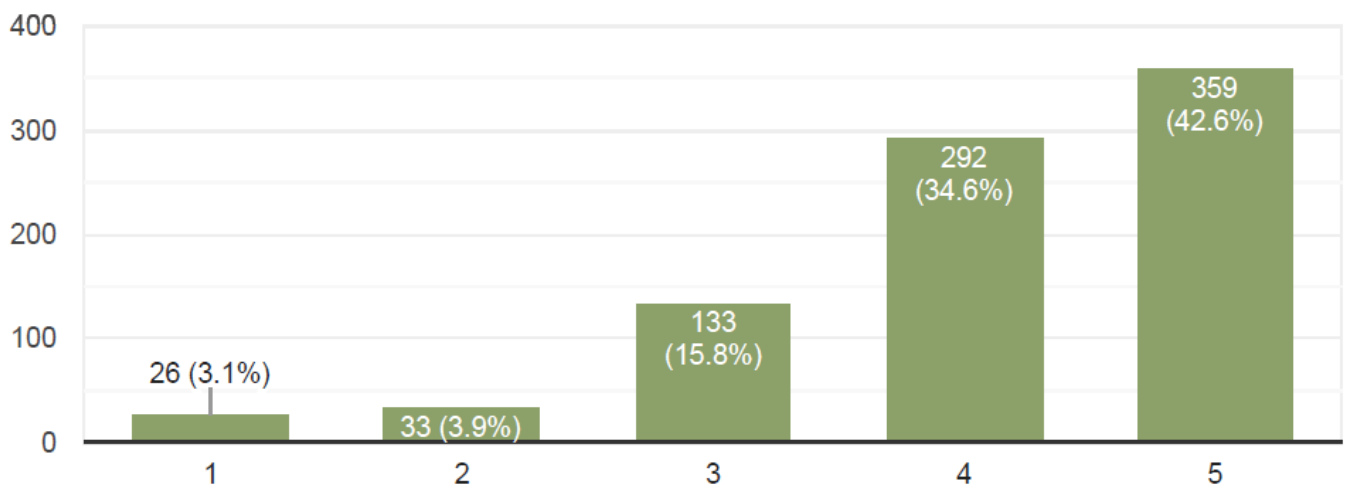


Figure 5: Participation analysis in the survey

There were mixed responses received the equal also the highest was for **rating 5 (Excellent) at 43%** and **rating 4 (Very good) at 35%**

4.3.2 Rate - Circulation of students and staff within the Institute premises with respect to mobility (Travel)

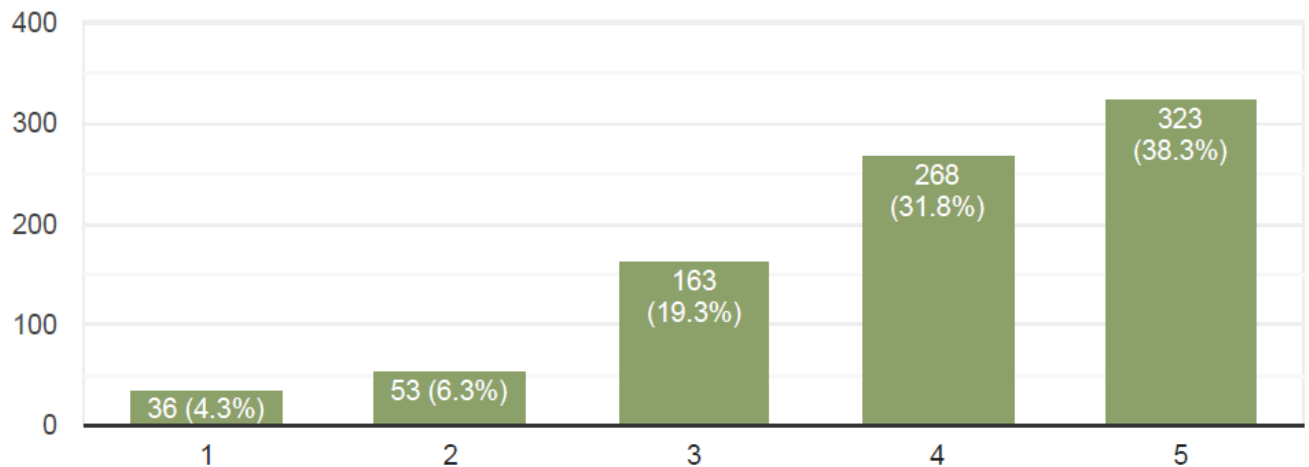


Figure 6: Participation analysis in the survey

There were mixed responses received the equal also the highest was for **rating 5 (Excellent) at 38%** and **rating 4 (Very Good) at 32%**

4.4 Survey review

Some of the key responses are noted below as a result of Online survey.

What is the best environmental feature you find about the Institute site?

- Environment and Working culture is good
- Fresh weather
- More than 50% green area available in the campus
- Location of the university is the best part as well as campus is green that make it a beautiful and green premises.
- Clam environment
- Smoke free environment
- The best environmental feature about university is it is situated in an open area and surrounded by greenery everywhere.

Ecological (Environment) Audit



Background reference image Yugal Shrivastava on pexels

5. Ecological (Environmental) Audit

Environment is an essential part for human survival. We co-exist with the environment and it cannot be termed as a separate entity. The Ecological audit helps to understand the flora, fauna that exists and steps that can be taken to improve the same. To denote if there are problems related to sound in and around the surrounding. In terms of the carbon footprint it helps in keeping a tab on the eco-friendly habits incorporated by the inhabitants of the premises. Health today is the topmost priority, a general understanding of the initiatives undertaken along with sufficient hygiene practices adopted. Universal design is applicable to all built and unbuilt spaces.

As part of our study we could state that the University has developed eco-friendly practices and sustainable solutions which are well reflected in the rich biodiversity of the Premises. Being situated near the city the appreciation space towards the main entrance provides a welcoming approach to the University.

The University has huge open space used by all. The students use it for as a leisure place for study and University ground is used for sports activities. There are ample resting spaces as part of building design which provide a resting and warm welcoming approach in the premises.

5.1 Open Spaces

There is a beautiful balance of natural and open spaces in the premises and the open/vegetation spaces are balanced overall. The Ground is used by students at present for sports as it has outdoor sports facility in the premises. **There are provisions for natural plantations which have enhanced the beauty of the space.**

There are sufficient numbers of Maintenance staff allotted for the open spaces and they have done an excellence job in terms of the duty allotted. The infrastructure committee too is involved in this process. The traditional tap and pipe facility is adopted for watering and the University has taken special provisions for the same. The spaces are watered daily in summer. **The efforts to maintain the existing space are commendable.**

5.2 Flora and Fauna Audit

Note about the review-rating survey

The Participants were asked to review (Though an online mode) the practice on a scale of 1-5 with scale components as follows:

- Scale 1 – Poor
- Scale 2 – Satisfactory
- Scale 3 – Good
- Scale 4 – Very good
- Scale 5 – Excellent

The figures in each of the columns of graph depict the Number of participants responses in numerical (Percentage of the participant response) – For example 101 responses (44.5%)

5.2.1 Survey Ratings

An online survey was conducted to analyse the student and staff views about **Rate - The existing flora and fauna and efforts taken by the Institute towards its preservation?**

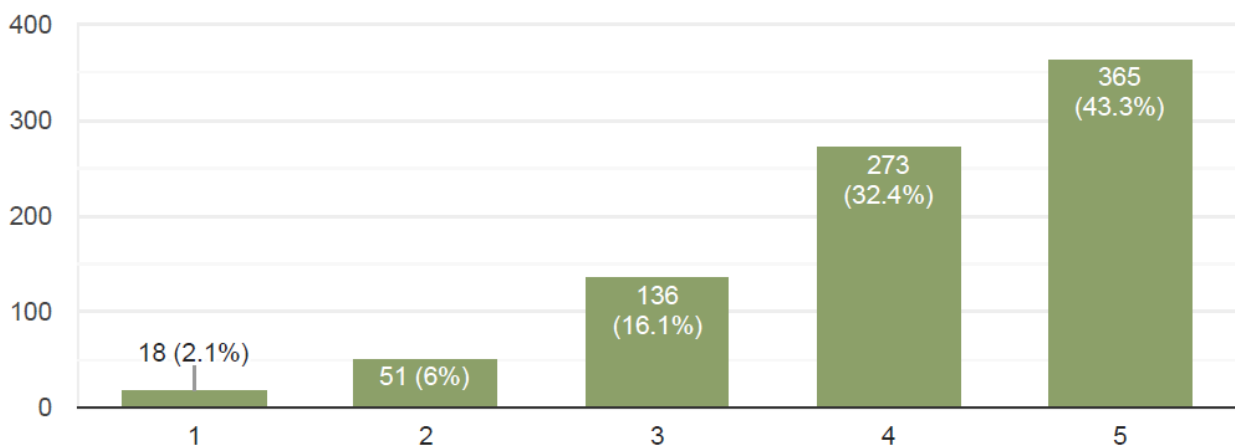


Figure 7: Participation analysis in the survey

There highest response was for **rating 5 (Excellent) at 43%**; **rating 4 (Very good) at 32%** and **16% for rating 3 (Good)**.

5.2.2 Flora Audit

A flora survey was carried out to identify the plantations. The premises have huge open areas and gardens with a balance of various types of gardens. The detailed plantations are classified with respect to the location in tables below.

S. No.	Flora Type	Name	Local name	Scientific name	Location	Nos.
1	Tree	<i>Blackboard Tree</i>	सप्तपर्णी	<i>Alstonia Scholaris</i>	RH towards Medical	1 5
2	Tree	<i>Teak</i>	सागौन	<i>Tectona Grandis</i>	Girls Hostel	3
3	Tree	<i>Blackboard Tree</i>	सप्तपर्णी	<i>Alstonia Scholaris</i>		4
4	Tree	<i>Burflower-Tree</i>	कदंब	<i>Neolamarckia Cadamba</i>		5
5	Tree	<i>Mango</i>	आम	<i>Mangifera Indica</i>	P.G. Boys and field	1
6	Shrub	<i>Orange Jasmine</i>	मधुकामिनी	<i>Murraya Paniculata</i>		6
7	Shrub	<i>Hibiscus</i>	गुड़हल	<i>Hibiscus Rosa-Sinensis</i>		1
8	Shrub	<i>Powder Puff</i>	पाउडर पफ	<i>Calliandra Aeschynomenooides</i>		1
9	Tree	<i>False Ashok</i>	अशोक-भेड़ / देवदारु / नकली अशोक	<i>Polyalthia Longifolia</i>		8
10	Tree	<i>Portia Tree</i>	पारस पीपल	<i>Thespesia Populnea</i>		9
11	Shrub	<i>Thuja</i>	मोरपंखी	<i>Thuja Occidentalis</i>		2
12	Tree	<i>Royal Poinciana</i>	गुलमोहर	<i>Delonix Regia</i>		6
13	Tree	<i>Teak</i>	सागौन	<i>Tectona Grandis</i>		1
14	Tree	<i>Rosewood</i>	शीशम	<i>Dalbergia Sissoo</i>		3
15	Tree	<i>Royal Poinciana</i>	गुलमोहर	<i>Delonix Regia</i>		6
16	Tree	<i>Burflower-Tree</i>	कदंब	<i>Neolamarckia Cadamba</i>		2
17	Tree	<i>Flame Of The Forest</i>	पलाश/ ढाक/ टेसू	<i>Butea Monosperma</i>		1
18	Tree	<i>Guava</i>	अमरूद	<i>Psidium Guajava</i>		1
19	Tree	<i>Black Plum</i>	जामुन	<i>Syzygium Cumini</i>	1	
20	Tree	<i>Neem</i>	नीम	<i>Azadirachta Indica</i>	1	
21	Tree	<i>Mango</i>	आम	<i>Mangifera Indica</i>	1	
22	Fruit	<i>Papaya</i>	पपीता	<i>Carica Papaya</i>	Behind hospital	1
23	Tree	<i>Burflower-Tree</i>	कदंब	<i>Neolamarckia Cadamba</i>		1
24	Tree	<i>Golden Shower Tree</i>	अमलतास	<i>Cassia Fistula</i>		6
25	Tree	<i>Royal Poinciana</i>	गुलमोहर	<i>Delonix Regia</i>		23
26	Tree	<i>Banyan</i>	बरगद	<i>Ficus Benghalensis</i>	Main Gate	1

27	Tree	<i>Blackboard Tree</i>	सप्तपर्णी	<i>Alstonia Scholaris</i>	inwards	1
28	Tree	<i>Weeping Fig</i>	पुकर	<i>Ficus Benjamina</i>		1
29	Tree	<i>Royal Poinciana</i>	गुलमोहर	<i>Delonix Regia</i>		1
30	Tree	<i>Mango</i>	आम	<i>Mangifera Indica</i>		12
31	Tree	<i>Plum</i>	बेर	<i>Ziziphus Mauritiana</i>		5
32	Tree	<i>Sycamore</i>	गूलर	<i>Ficus Racemosa</i>		1
33	Tree	<i>False Ashok</i>	अशोक-भेड़ / देवदारु / नकली अशोक	<i>Polyalthia Longifolia</i>	Auditorium front and side	52
34		<i>King Palm</i>		<i>Archontophoenix Cunninghamiana</i>		9
35	Tree	<i>Weeping Fig</i>	पुकर	<i>Ficus Benjamina</i>	Park Adjacent to Medical and In front of Medical	7
36	Tree	<i>Royal Poinciana</i>	गुलमोहर	<i>Delonix Regia</i>		12
37	Shrub	<i>Nerium</i>	कनेर	<i>Nerium Oliander</i>		1
38		<i>Powder Puff</i>		<i>Calliandra Aeschynomenooides</i>		5
39	Shrub	<i>Crepe Jasmine/Pinwheel Flower</i>	चांदनी	<i>Tabernaemontana Divaricata</i>		2
40	Climber	<i>Rangoon Creeper</i>	मधुमालती	<i>Combretum Indicum</i>		7
41	fruit	<i>Papaya</i>	पपीता	<i>Carica Papaya</i>		1
42	Shrub	<i>Catterpillar Tree/Pagoda Tree</i>	चंपा / गुलचिन	<i>Plumeria Alba</i>	Medical	5
43	Shrub	<i>Hibiscus</i>	गुड़हल	<i>Hibiscus Rosa-Sinensis</i>		2
44	tree	<i>False Ashok</i>	अशोक-भेड़ / देवदारु / नकली अशोक	<i>Polyalthia Longifolia</i>		1
45	Shrub	<i>Yellow Elder</i>	पीलिया	<i>Tecoma Stans</i>		5
46	Tree	<i>Burflower-Tree</i>	कदंब	<i>Neolamarckia Cadamba</i>		1
47	Tree	<i>Weeping Fig</i>	पुकर	<i>Ficus Benjamina</i>		2
48	Shrub	<i>Chinese Ixora</i>	रुक्मणी	<i>Ixora Chinensis</i>		1
49	Tree	Night-Flowering Jasmine	पारिजात / हरसिंगार	<i>Nyctanthes Arbor-Tristis</i>		1
50	Tree	<i>Cape Jasmine</i>	गंधराज	<i>Gardenia Jasminoides</i>		11
51	Shrub	<i>Traveler's Palm</i>		<i>Ravenala Madagascariensis</i>		25
52	Tree	<i>Orchid Tree/ Mountain Ebony</i>	कचनार	<i>Bauhinia Variegata</i>	Park in front of medical	1
53	Tree	<i>Mango</i>	आम	<i>Mangifera Indica</i>		6
54	Shrub	<i>Thuja</i>	मोरपंखी	<i>Thuja Occidentalis</i>		24

55	Shrub	<i>Catterpillar Tree/ Pagoda Tree</i>	चंपा / गुलचिन	<i>Plumeria Alba</i>		5
56	Tree	<i>Neem</i>	नीम	<i>Azadirachta Indica</i>		1
57	Tree	<i>Teak</i>	सागौन	<i>Tectona Grandis</i>		23
58	Tree	<i>Black Plum</i>	जामुन	<i>Syzygium Cumini</i>		5
59	Shrub	<i>Powder Puff</i>		<i>Calliandra Aeschynomenooides</i>		15
60	Shrub	<i>Nerium</i>	कनेर	<i>Nerium Oliander</i>		3
61	Tree	<i>Sacred Fig</i>	पीपल	<i>Ficus Religiosa</i>		2
62	Shrub	<i>Chinese Ixora</i>	रुक्मणी	<i>Ixora Chinensis</i>		8
63	Shrub	<i>Yellow Elder</i>	पीलिया	<i>Tecoma Stans</i>		3
64	Tree	<i>Guava</i>	अमरूद	<i>Psidium Guajava</i>		3
65	Tree	Night-Flowering Jasmine	पारिजात / हरसिंगार	<i>Nyctanthes Arbor-Tristis</i>		23
66	Tree	<i>False Ashok</i>	अशोक-भेड़ / देवदारु / नकली अशोक	<i>Polyalthia Longifolia</i>		12
67	Shrub	<i>Penang Peach</i>	चंपा / लाल गुलचिन	<i>Plumeria Rubra</i>		3
68	Shrub	<i>Bougainvillea</i>	बोगनवेलिया	<i>Bougainvillea × Buttiana</i>		9
69	Tree	<i>False Ashok</i>	अशोक-भेड़ / देवदारु / नकली अशोक	<i>Polyalthia Longifolia</i>	Near Temple	1
70	Shrub	<i>Banana</i>	केला	<i>Musa × Paradisiaca</i>		7
71	Tree	<i>China Rose</i>	गुड़हल	<i>Hibiscus Rosa-Sinensis</i>		6
72	Shrub	<i>Nerium</i>	कनेर	<i>Nerium Oliander</i>		1
73	Shrub	<i>Pomegranate</i>	अनार	<i>Punica Granatum</i>		1
74	Shrub	<i>Bottle Brush</i>	बोतल ब्रश	<i>Callistemon Citrinus</i>		1
75	Tree	<i>Royal Poinciana</i>	गुलमोहर	<i>Delonix Regia</i>	Agriculture, FET gate and premises	35
76	Tree	<i>Weeping Fig</i>	पुकर	<i>Ficus Benjamina</i>		17
77	Tree	<i>Sacred Fig</i>	पीपल	<i>Ficus Religiosa</i>		2
78	Shrub	<i>Cape Jasmine</i>	गंधराज	<i>Gardenia Jasminoides</i>		6
79	Shrub	<i>Nerium</i>	कनेर	<i>Nerium Oliander</i>		2
80	Shrub	<i>Catterpillar Tree/ Pagoda Tree</i>	चंपा / गुलचिन	<i>Plumeria Alba</i>		5
81	Tree	<i>Teak</i>	सागौन	<i>Tectona Grandis</i>		15
82	Shrub	<i>Rubber Tree</i>	रबर का पेड़	<i>Ficus Elastica</i>		2
83	Shrub	<i>China Rose</i>	गुड़हल	<i>Hibiscus Rosa-Sinensis</i>		9
84	Shrub	<i>Weeping Bottle</i>	रोती हुई	<i>Melaleuca Viminalis</i>		4

		<i>Brush</i>	बोतल ब्रश			
85	Shrub	<i>Crepe Jasmine/Pinwheel Flower</i>	चांदनी	<i>Tabernaemontana Divaricata</i>		4
86	Shrub	<i>Thuja</i>	मोरपंखी	<i>Platyclusus Orientalis</i>		2
87	Shrub	<i>Night Blooming Jasmine</i>	रातरानी	<i>Cestrum Nocturnum</i>		1
88	Shrub	<i>King Palm</i>	किंग पाम	<i>Archontophoenix Cunninghamiana</i>		4
89	Tree	<i>Guava</i>	अमरूद	<i>Psidium Guajava</i>		1
90	tree	<i>Tower Tree</i>	टावर ट्री	<i>Schizolobium Parahybum</i>		1
91	Tree	<i>False Ashok</i>	देवदारु	<i>Monoon Longifolium</i>		5
92	Shrub	<i>Penang Peach</i>	चंपा / लाल गुलचिन	<i>Plumeria Rubra</i>		1
93	Shrub	<i>Florida Fishpoison Tree/Jamaican Dogwood</i>		<i>Piscidia Piscipula</i>		1
94	Shrub	<i>Powder Puff</i>		<i>Calliandra Haematocephala</i>		2
95	Shrub	<i>Chinese Ixora</i>	रुक्मणी	<i>Ixora Chinensis</i>		2
96	Shrub	<i>Silk/Silver Oak</i>		<i>Grevelia Robusta</i>		1
97	Shrub	<i>Yellow Elder</i>	पीलिया	<i>Tecoma Stans</i>		1
98	Tree	<i>Drumstick</i>	सहजन	<i>Moringa Oleifera</i>		1
99	Tree	<i>Weeping Fig</i>	पुकर	<i>Ficus Benjamina</i>	V.C. Building	1
100	Tree	<i>False Ashok</i>	देवदारु	<i>Monoon Longifolium</i>		5
101	Tree	<i>Sago Palm</i>	साबूदाना पाम	<i>Cycas Revoluta</i>		4
102	Shrub	<i>Powder Puff</i>		<i>Calliandra Haematocephala</i>		2
103	Shrub	<i>Fishtail Palm</i>	फिशटेल पाम	<i>Caryota Mitis</i>		2
104	Tree	<i>Cape Jasmine</i>	गंधराज	<i>Gardenia Jasminoides</i>		8
105	Shrub	<i>Chinese Ixora</i>	रुक्मणी	<i>Ixora Chinensis</i>		6
106	Shrub	<i>Traveler's Palm</i>		<i>Ravenala Madagascariensis</i>		2
107	Shrub	<i>Yellow Elder</i>	पीलिया	<i>Tecoma Stans</i>		2
108	Shrub	<i>China Rose</i>	गुड़हल	<i>Hibiscus Rosa-Sinensis</i>		2
109	Shrub	<i>King Palm In Pots</i>		<i>Archontophoenix Cunninghamiana</i>	8	
110	Shrub	<i>Marigold</i>	गेंदा	<i>Tagetes Erecta,</i>	1	
111	Shrub	<i>Rangoon Creeper</i>	मधुमालती	<i>Combretum Indicum</i>	2	
112	Tree	<i>Weeping Fig</i>	पुकर	<i>Ficus Benjamina</i>	Nursing Park	1
113	Tree	<i>False Ashok</i>	देवदारु	<i>Monoon Longifolium</i>		3

114	Tree	<i>Banyan</i>	बरगद	<i>Ficus Benghalensis</i>		1
115	Tree	<i>Royal Poinciana</i>	गुलमोहर	<i>Delonix Regia</i>		11
116	Tree	<i>Catterpillar Tree/ Pagoda Tree</i>	चंपा / गुलचिन	<i>Plumeria Alba</i>		3
117	Shrub	<i>Nerium</i>	कनेर	<i>Nerium Oliander</i>		6
118	Shrub	<i>China Rose</i>	गुड़हल	<i>Hibiscus Rosa-Sinensis</i>		1
119	Tree	<i>Guava</i>	अमरूद	<i>Psidium Guajava</i>		4
120	Shrub	<i>Crepe Jasmine/Pinwheel Flower</i>	चांदनी	<i>Tabernaemontana Divaricata</i>		35
121	Shrub	<i>Thuja</i>	मोरपंखी	<i>Platyclusus Orientalis</i>		1
122	Shrub	<i>Cape Jasmine</i>	गंधराज	<i>Gardenia Jasminoides</i>		2
123	Tree	<i>Silk Cotton Tree</i>	सेमल	<i>Bombax Ceiba</i>	In front of	18
124	Tree	<i>Neem</i>	नीम	<i>Azadirachta Indica</i>	New Resident Hostel	1
125	Tree	<i>Rubber Tree</i>	रबर का पेड़	<i>Ficus Elastica</i>	Field adjacent to nursing	1
126	fruit	<i>Papaya</i>	पपीता	<i>Carica Papaya</i>		4
127	Tree	<i>Royal Poinciana</i>	गुलमोहर	<i>Delonix Regia</i>		6
128	fruit	<i>Banana</i>	केला	<i>Musa × Paradisiaca</i>		24
129	Tree	<i>Sapota</i>	चीकू	<i>Manilkara Zapota</i>		1
130	Shrub	<i>Yellow Elder</i>	पीलिया	<i>Tecoma Stans</i>		1
131	Shrub	<i>Thuja</i>	मोरपंखी	<i>Platyclusus Orientalis</i>		55
132	Tree	<i>Burflower-Tree</i>	कदम्ब	<i>Neolamarckia Cadamba</i>		2
133	Tree	<i>Mango</i>	आम	<i>Mangifera Indica</i>		10
134	Tree	<i>China Rose</i>	गुड़हल	<i>Hibiscus Rosa-Sinensis</i>		10
135	Tree	<i>Neem</i>	नीम	<i>Azadirachta Indica</i>		1
136	Shrub	<i>Orange Jasmine</i>	मधुकामिनी	<i>Murraya Paniculata</i>		12
137	Shrub	<i>Catterpillar Tree/ Pagoda Tree</i>	चंपा / गुलचिन	<i>Plumeria Alba</i>		4
138	Shrub	<i>Marigold</i>	गेंदा	<i>Tagetes Erecta,</i>		1
139	Tree	<i>Cluster Fig Tree</i>	गूलर	<i>Ficus Racemosa</i>		1
140	Shrub	<i>Bougainvillea</i>	बोगनवेलिया	<i>Bougainvillea × Buttiana</i>		1
141	Tree	<i>Guava</i>	अमरूद	<i>Psidium Guajava</i>	Agriculture Field and Banana orchard	27
142	Tree	<i>Jamun</i>	जामुन	<i>Syzygium Cumini</i>		7
143	Tree	<i>Aonla/Indian Gooseberry</i>	आंवला	<i>Phyllanthus Emblica</i>		17
144	Tree	<i>Burflower-Tree</i>	कदम्ब	<i>Neolamarckia Cadamba</i>		7
145	Tree	<i>Teak</i>	सागौन	<i>Tectona Grandis</i>		50
146	fruit	<i>Banana</i>	केला	<i>Musa × Paradisiaca</i>		110

147	SLEAPER	<i>Rangoon Creeper</i>	मधुमालती	<i>Combretum Indicum</i>		4	
148	Shrub	<i>Senna</i>	सनाय	<i>Senna Alexandrina</i>		10	
149	Tree	<i>Agave</i>	रामबांस	<i>Agave Americana</i>		10	
150	Tree	<i>Weeping Fig</i>	पुकर	<i>Ficus Benjamina</i>	Pharmacy and road towards VC building; Pharmacy park towards Raman hostel	1	
151	Tree	<i>False Ashok</i>	देवदारु	<i>Monoon Longifolium</i>		1	
152	Tree	<i>Royal Poinciana</i>	गुलमोहर	<i>Delonix Regia</i>		30	
153	Shrub	<i>Nerium</i>	कनेर	<i>Nerium Oliander</i>		1	
154	Shrub	<i>China Rose</i>	गुड़हल	<i>Hibiscus Rosa-Sinensis</i>		20	
155	Shrub	<i>Crepe Jasmine/Pinwheel Flower</i>	चांदनी	<i>Tabernaemontana Divaricata</i>		37	
156	Shrub	<i>Thuja</i>	मोरपंखी	<i>Platycladus Orientalis</i>		2	
157	Shrub	<i>Cape Jasmine</i>	गंधराज	<i>Gardenia Jasminoides</i>		1	
158	Shrub	<i>Burflower-Tree</i>	कदम्ब	<i>Neolamarckia Cadamba</i>		1	
159	Tree	<i>Neem</i>	नीम	<i>Azadirachta Indica</i>		1	
160	Shrub	<i>Powder Puff</i>	पाउडर पफ	<i>Calliandra Haematocephala</i>		1	
161	Shrub	<i>Yellow Elder</i>	पीलिया	<i>Tecoma Stans</i>		2	
162	Tree	<i>Neem</i>	नीम	<i>Azadirachta Indica</i>		Boundary from Pharmacy to Raman House	20
163	Tree	<i>Teak</i>	सागौन	<i>Tectona Grandis</i>			12
164	Tree	<i>Sacred Fig</i>	पीपल	<i>Ficus Religiosa</i>			4
165	Tree	<i>Lemon</i>	नींबू	<i>Citrus Aurantifolia</i>	13		
166	Tree	<i>Banyan</i>	बरगद	<i>Ficus Benghalensis</i>	2		
167	Tree	<i>Council Tree</i>	परिषद वृक्ष	<i>Ficus Altissima</i>	1		
168	Tree	<i>North Indian Rosewood</i>	शीशम	<i>Dalbergia Sissoo</i>	1		
169	Tree	<i>Kaith Tree</i>	कैथा	<i>Feronia Limonia</i>	1		
170	Tree	<i>Silk Cotton Tree</i>	सेमल	<i>Bombax Ceiba</i>	6		
171	Tree	<i>False Ashok</i>	देवदारु	<i>Monoon Longifolium</i>	From VC building to Road towards Ayurveda		150
172	Tree	<i>Royal Poinciana</i>	गुलमोहर	<i>Delonix Regia</i>		30	
173	Tree	<i>Neem</i>	नीम	<i>Azadirachta Indica</i>		1	
174	Tree	<i>Mango</i>	आम	<i>Mangifera Indica</i>		32	
175	Tree	<i>Teak</i>	सागौन	<i>Tectona Grandis</i>		1	
176	Tree	<i>Catterpillar Tree/Pagoda Tree</i>	चंपा / गुलचिन	<i>Plumeria Alba</i>		1	
177	Tree	<i>Spanish Cherry</i>	स्पेनिश चेरी	<i>Mimusops Elengi</i>		15	
178	Shrub	<i>Nerium</i>	कनेर	<i>Nerium Oliander</i>	Around Basketball Court	3	
179	Tree	<i>Weeping Fig</i>	पुकर	<i>Ficus Benjamina</i>		6	
180	Tree	<i>False Ashok</i>	देवदारु	<i>Monoon Longifolium</i>	Kalpana	37	

181	Tree	<i>China Rose</i>	गुड़हल	<i>Hibiscus Rosa-Sinensis</i>	House Field and Mango Orchard	34
182	Tree	<i>Royal Poinciana</i>	गुलमोहर	<i>Delonix Regia</i>		8
183	Tree	<i>Mango</i>	आम	<i>Mangifera Indica</i>		50
184	fruit	<i>Papaya</i>	पपीता	<i>Carica Papaya</i>		35
185	Tree	<i>Weeping Fig</i>	पुकर	<i>Ficus Benjamina</i>		15
186	Shrub	<i>Nerium</i>	कनेर	<i>Nerium Oliander</i>		1
187	Shrub	<i>Lemon</i>	नींबू	<i>Citrus Aurantifolia</i>		1
188	Shrub	<i>Golden Shower</i>	अमलतास	<i>Cassia Fistula</i>		5
189	Shrub	<i>Silk/Silver Oak</i>	रेशम	<i>Grevelia Robusta</i>		15
190	Tree	<i>Sacred Fig</i>	पीपल	<i>Ficus Religiosa</i>		3
191	Shrub	<i>Thuja</i>	मोरपंखी	<i>Platycladus Orientalis</i>	In Front of Ayurveda	10
192	Shrub	<i>King Palm</i>	राजा हथेली	<i>Archontophoenix Cunninghamiana</i>		1
193	Tree	<i>Castor</i>	अरण्ड	<i>Ricinus Communis</i>		1
194	Tree	<i>Portia Tree</i>	पारस पीपल	<i>Thespesia Populnea</i>		10
195	Tree	<i>Spanish Cherry</i>	स्पेनिश चेरी	<i>Mimusops Elengi</i>		6
196	Tree	<i>False Ashok</i>	देवदारु	<i>Monoon Longifolium</i>		10
197	Tree	<i>Long Leaf Pine</i>	देवदार	<i>Pinus Palustris</i>		1
198	Grass	<i>Doob Grass</i>		<i>Cynodon Dectylon</i>		All Grounds in Rama University

Table 7: Details of Ornamental Plants

There are more than 1700+ plantations in the premises. All of these species are planted by students and staffs on multiple occasions with some of them have grown naturally.

5.2.3 Fauna Audit

It is a beautiful site to have the birds chirping around the University premises. It highlights the ecological co-existence concept in the most beautiful way. The surveyed data of the fauna is summarised below:

S. No.	Name	Type	Location	Nos.
1	Crow	Bird	At near VC building	07-10
2	Squirrels	Animal	In ground in front of VC building	05-07
3	Parrot	Bird	On Neem tree in Rama Campus	13-15
4	Water bird (Sonpatari)	Bird	In west pond	50-60

5	Peacock	Bird	Near Kalpana hostel	2
6	Gauraiya (Passeridae)	Bird	On tree in Rama campus	20-30
7	Mynah	Bird	On Neem tree in Rama Campus	15-20
8	Golden oriale	Bird	Near dairy farm	03-04
9	Nightingale	Bird	Near Polly house	03-05
10	Woodpecker	Bird	On tree in near VC building	01
11	Owl	Bird	On tree main gate	15-20
12	Cuckoo	Bird	At near Hospital on the tree	02
13	Bee-Eather	Bird	On the Neem tree	02
14	Peahen	Bird	Near Kalpana hostel	03
15	Egret	Bird	Near Dairy farm	05
16	Rabbit	Animal	In Agriculture Crop field	01
17	Cow	Animal	In dairy farm	15
18	Buffalo	Animal	In dairy farm	11
19	Rat	Animal	Agriculture collage, medical college and Aayurveda building	30-40
20	Monkey	Animal	Main gate near railway crossing	06
21	Frog	Animal	Near pond	50-60
22	cat	Animal	Kalpana hostel	01
23	Ox	Animal	Near Railway crossing	04
24	Calf (Cow)	Animal	In dairy farm	08
25	Calf (Buffalo)	Animal	In dairy farm	03

Table 8: Details of the fauna in the premises

The University being located in the North-central part of the country has multiple varieties of fauna which enhance the ecological footprint of the premises in a positive manner.

5.2.4 Survey reviews

Some of the key responses are noted below as a result of Online survey.

5.2.4.1 Name some of the Flora (Plants) and Fauna (Birds) you have observed in the premises

- *Hibiscus Rosa Sinensis, Rosa Gallica, Saraca Indica, Lily, Neem, Jasmine, Aloe, Lemongrass, Ficus Religiosa, Ficus Benghalensis, Eucalyptus*
- Flora - Mango, Neem, Papaya, Sacred Fig, Banana, Poinciana; Fauna :Starling, Herons
- **The plants and birds in our premises are well taken care.**
- *Mangifera indica, Musa acuminata & Nocturnalis Strigiformes ,Columba livia*
- Kingfisher, Toucan, Eagle, Parrot, and plants *Marigold, Hibiscus, Cosmos, Mogra, Zinnia*
- Plants- *Saraca Asoca, Mangifera Indica*. Birds- *Eudynamys Scolopaceus*
- Some grass beds parks, flowering and nonflowering trees are available here and some local birds are in the premises.

5.2.4.2 Name some of the trees you would like to plant in the premises in future.

- Banyan tree, Neem tree , mango tree
- Fruits tree like guava, lemon, mango
- Plant more Banyan tree, Neem, peepal tree
- Palm trees, Eucalyptus, Neem, Guava, Gulmohar, Deodar
- Ficus tree are seen in future because they provide a lot of oxygen
- Trees which have colourful flowers.
- Birch, yew and elder trees, banyan tree and other evergreen trees
- Neem tree it's good for oxygen and also make healthy environment
- More tall widespan trees near the playground and parking
- Ashoka, Neem, Date tree, palm tree which can enhance the beauty of premise

5.3 Noise Audit

5.3.1 Macro level

On a macro level there are open grounds in the site. The approach road too has very minimal traffic. As the University is oriented amidst the residential areas with immense vegetation the noise levels do not affect the students and staff in their day to day functioning. The approach road too is pretty away. **Overall the noise level in terms of bad effect is low and there are positive outcomes as per our analysis on macro level.**

5.3.2 Micro level

The University has an adequate open space covered with huge trees prevailing naturally in the premises. There are bare minimum parking provisions provided in the premises which causes bare minimum noise as they are situated near the entrance which is a bit away. The University has Substation facility but there is no inconvenience or sound problem caused due to the same. There are no particular equipments which cause any noise effect. **Overall the noise levels inside the premises are low which is a good approach.**

5.3.3 Survey Result

An online survey was conducted to analyse the student and staff views about **any Noise pollution in the premises?**

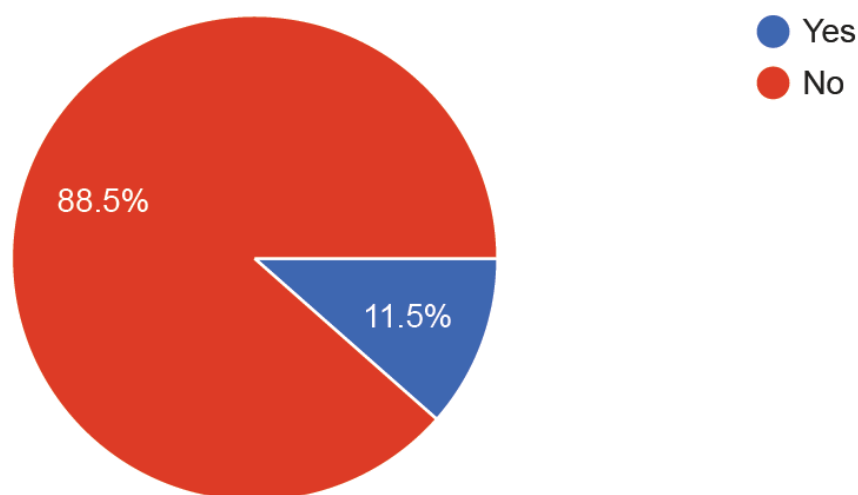


Figure 8: Participation analysis in the survey

The students, staff (**almost 89%**) of responses confirmed that there is no Noise pollution.

5.4 Carbon Footprint Audit

5.4.1 Eco-friendly Commuting Practices

Based on data collection and discussion with staff the following points were noted:

- **Ease of commuting** – Owing to close proximity to public transport the access is very feasible and walk able.
- **Area** – Sufficient area is designated for overall parking including the ones for 400+ residences in the premises.
- **Vehicles details** – The provision provided by University for Educational facilities includes Parking facilities for 500+ cars, 200+ cycles, 800+ bikes, 3 electric vehicles. In the residential areas there are additional provisions for parking.
- **Visitors vehicle** – There are adequate number of visitors parking for 300 cars at 2 places in the premises.
- **Commute details** – The students and staff commute from quite a lot of places. However, the premise has a Hostel facility for around 600+ students thus the external commute is comprehensively low. The internal roads are wide enough.

Being situated in Kanpur (Urban) City area the load-frequency on travelling by private vehicles by students and staff is however very less thus there is less or negligible air pollution caused within and around the premises.

5.4.2 Heat Island Reduction

The University has **adopted the following practices which are yielding positive results** in terms of Urban Heat Island Effect which refers to increase in temperature of the surrounding because of ineffective strategies.

5.4.1 Exposed roof areas

The terrace is flat roof covered with solar panels. The current practices are clean and well maintained.

5.4.2 Exposed non-roof hardscape areas

The following were the main observations:

- There are 6-8 feet wide pathways on all sides of the premises. These include some natural and potted plantations. There are huge numbers of trees planted on both sides of the roads. These provide immense shade to the sun-exposed

roads. Moreover sitting areas are provided at multiple locations in the premise.

- The University has multiple types of open spaces in the form of lush green carpet; gardens available. The overall temperature in these areas is cool.

There are adequate measures adopted in the premises to reduce heat island effect of Building roofs and in site.

5.4.3 Outdoor Light Pollution Study

5.4.3.1 Investigation observation

The University compound lights are not upward looking thus, these do not cause light pollution. The flood lights are facing towards specific boards but not causing and environmental degradation.

5.4.3.2 Survey results

An online survey was conducted to analyse the student and staff views about **Is there any Light pollution in the premises?**

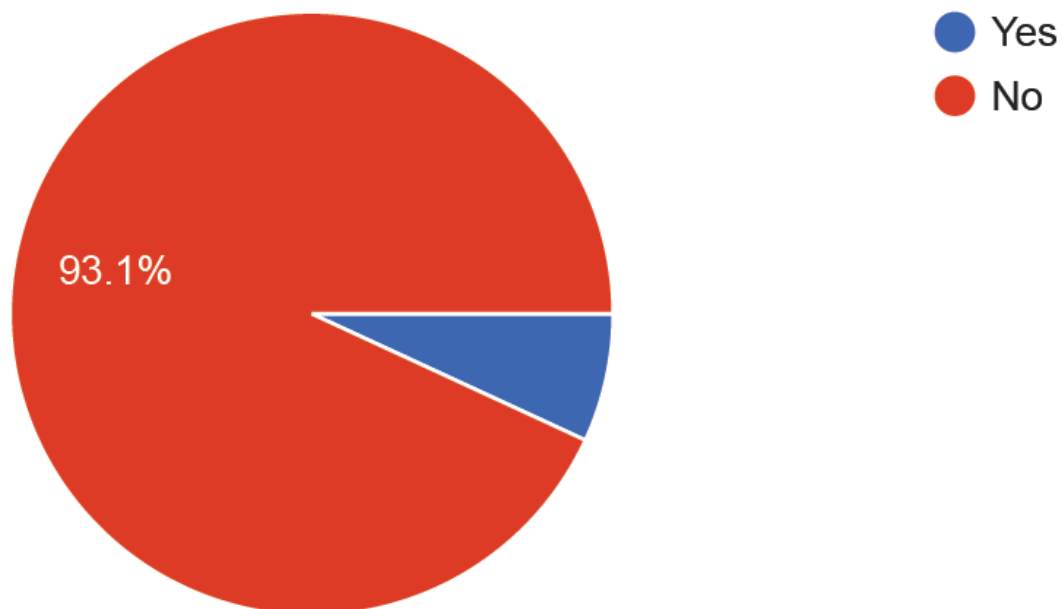


Figure 9: Participation analysis in the survey

The students, staff (**almost 93%**) of responses confirmed that there is no light pollution.

5.5 Universally accessible premises

5.5.1 On-site observations

As per World Report on Disability, 2011 there are 180 million approx. Persons with Disabilities that makes it 15% of total population of India.

There are Handrails along staircase, ramps, lifts, Universal toilets, low height risers in the Staircases as part of universally accessible premises initiatives.

The design of the premises is appropriate for access with passages and corridors being wide enough in size and naturally ventilated. The doubly and singly loaded corridors are safe from fire safety aspect. The University has resting places (seating areas) in the outdoor along the trees thereby making it user friendly for the specially abled students.

5.5.1.1 Features for user benefit

The below mentioned are details of the Universal Design and Additional features for user benefit in the premise.

S. No.	Particular	Nos	Building name
1	Ramp	3	Faculty of Engineering and Technology, Hospital, OT complex
2	Staircase	32	Hospital, OT complex, Medical College, Faculty of Engineering and Technology, Faculty of Agricultural Science and Allied Industries
3	Wheelchair	52	VC building, Faculty of Nursing, Faculty of Pharmacy, Faculty of Ayurveda, Raman hostel, Kalpana hostel, Nursing girls hostel, Nursing boys hostel, Old boys hostel, New boys hostel, Medical Boys hostel, Medical girls hostel, Old girls hostel, Staff- I and Staff- II accommodation.
4	Sanitary vending machine	2	Faculty of Nursing and Kalpana hostel
5	Lift	5	Faculty of Agricultural Science and Allied Industries, VC building, Hospital and Staff- II accommodation.

Table 9: Details of Universal design and additional features for user benefits

The existing facilities are very well maintained was the on-site observation and at present there is not much requirement to increase these numbers. However, in future the premise can be fully equipped with 100% lifts,

wheelchairs and sanitary vending as well as incinerator machines in all Buildings.

5.5.2 Survey results

An online survey was conducted to analyse the student and staff views about **Do you find the facilities for the Physically challenged people sufficient in the premises?**

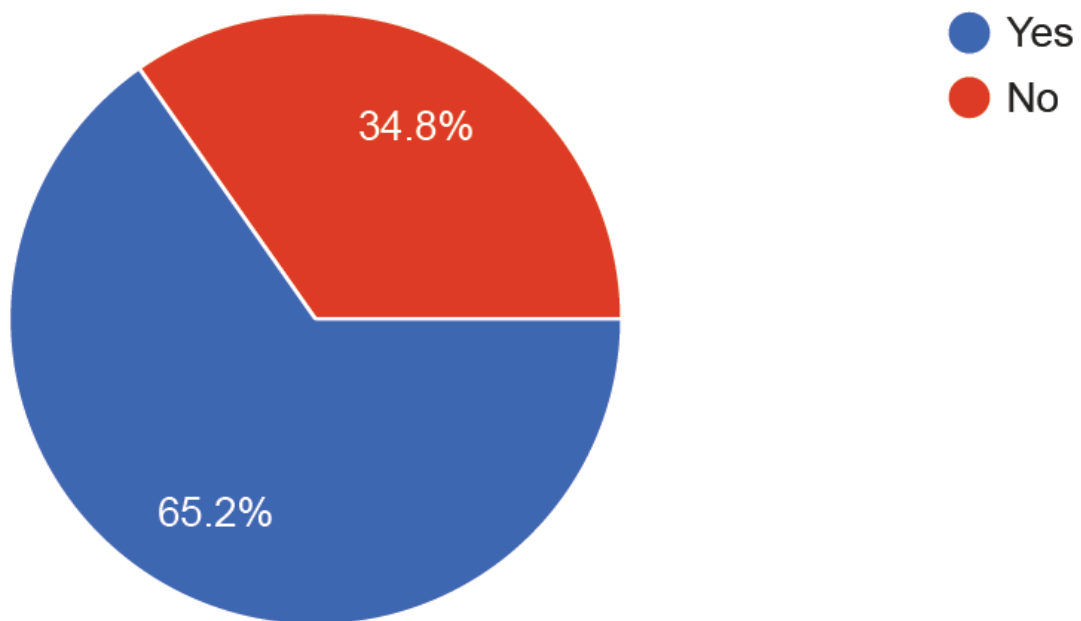


Figure 10: Participation analysis in the survey

The students, staff (**almost 65%**) of responses confirmed activities are conducted sufficient, though this number can be improved.

5.6 Fire Safety

The University has taken care for adequate fire safety measures to be adopted. Each floor has an open staircase without any barriers for fire safety measures & is free of any kind of storage or combustible material. The University has adopted additional fire safety practices such as signages, Fire hydrant cabinets. The current facilities are quite well maintained. The Building wise summary is mentioned below.

S. No.	Type	Building name	Floor	Location	Nos	Date of renewal
1	Institutional	Hospital	Basement	Corridor, indoor	14	22/07/2021
2	Institutional	Hospital	Ground Floor	Corridor Gali, indoor	28	22/07/2021
3	Institutional	Hospital	First Floor	Corridor Gali	20	22/07/2021
4	Institutional	Hospital	Second Floor	Corridor Gallery	12	22/07/2021
5	Institutional	Hospital	Third Floor	Corridor	6	22/07/2021
6	Institutional	Hospital	Fourth Floor	Corridor Exit	2	22/07/2021
7	Institutional	RMC	Basement	Library, Photography	6	7-10-2021
8	Institutional	RMC	Ground Floor	Exit Passage way	5	7-10-2021
9	Institutional	RMC	First Floor	Passage way common path of travel	5	7-10-2021
10	Institutional	RMC	Second Floor	Passage way Lab	6	7-10-2021
11	Institutional	RMC	Third Floor	Exit Passage way common path	4	7-10-2021
12	Assembly	Auditorium	Ground Floor	Common Path of Travel	3	7-10-2021
13	Institutional	A.C Plant	Ground Floor	Exit Door	1	7-10-2021
14	Institutional	Oxygen Plant	Ground Floor	Exit Passage way	2	7-10-2021
15	Storgae	Side Store	First Floor	Exit Access	2	7-10-2021
16	Institutional	D.G Room 1	Ground Floor	Transformer, Exit Way	6	9-12-2021
17	Resident	MBH	Ground Floor	Penal Security Gate, Mess	7	7-10-2021
18	Resident	Resident	Ground Floor	Passageway	2	7-10-2021
19	Resident	Resident	First Floor	Passageway	1	7-10-2021
20	Resident	Resident	Second Floor	Passageway	1	7-10-2021
21	Resident	Resident	Third Floor	Passageway	1	7-10-2021
22	Resident	Staff First	Ground Floor	Stairway	1	7-10-2021
23	Resident	Staff First	First Floor	Stairway	1	7-10-2021
24	Resident	Staff First	Second Floor	Stairway	1	7-10-2021
25	Resident	Staff First	Third Floor	Stairway	1	7-10-2021

26	Resident	Staff First	Fourth Floor	Stairway	1	7-10-2021
27	Resident	Staff First	Fifth Floor	Stairway	1	7-10-2021
28	Resident	Resident Female	Ground Floor	Common Path of Travel	1	7-10-2021
29	Resident	Resident Female	First Floor	Common Path of Travel	1	7-10-2021
30	Resident	Resident Female	Second Floor	Common Path of Travel	1	7-10-2021
31	Resident	Resident Female	Third Floor	Common Path of Travel	1	7-10-2021
32	Resident	Resident Female	Fourth Floor	Common Path of Travel	1	7-10-2021
33	Resident	Resident Female	Fifth Floor	Common Path of Travel	1	7-10-2021
34	Resident	M.G.H	Basement	Common Path of Travel	2	7-10-2021
35	Resident	M.G.H	Ground Floor	Canteen	4	7-10-2021
36	Resident	M.G.H	First Floor	Common Path of Travel	3	7-10-2021
37	Resident	M.G.H	Second Floor	Common Path of Travel	2	7-10-2021
38	Resident	M.G.H	Third Floor	Common Path of Travel	2	7-10-2021
39	Resident	N.G.H	Basement	Common Path of Travel	1	7-10-2021
40	Resident	N.G.H	Ground Floor	Canteen	3	7-10-2021
41	Resident	N.G.H	First Floor	Passageway	1	7-10-2021
42	Resident	N.G.H	Second Floor	Passageway	1	7-10-2021
43	Resident	N.G.H	Third Floor	Passageway	1	7-10-2021
44	Resident	N.B.H	Basement	Stairway	1	7-10-2021
45	Resident	N.B.H	Ground Floor	Canteen Passage way	2	7-10-2021
46	Resident	Staff Second	Ground Floor	Stairway	1	7-10-2021
47	Resident	Staff Second	First Floor	Passageway	1	7-10-2021
48	Resident	Staff Second	Second Floor	Common Path of Travel	2	7-10-2021
49	Resident	Staff Second	Third Floor	Passageway	1	7-10-2021
50	Resident	Staff Second	Fourth Floor	Passageway	1	7-10-2021
51	Resident	Staff Second	Fiveth Floor	Passageway	1	7-10-2021
52	Storgae	Petrol Pump	Ground Floor	Storage area	3	7-10-2021
53	Institutional	Welding Shop	Ground Floor	Passageway	1	7-10-2021
54	Institutional	Laundry	Ground Floor	Passageway	1	7-10-2021
55	Institutional	RCN	Basement	Passageway	3	7-10-2021

56	Institutional	RCN	Ground Floor	Passageway Lab	5	7-10-2021
57	Institutional	RCN	First Floor	Passageway Lab	3	7-10-2021
58	Institutional	RCN	Second Floor	Passageway	2	7-10-2021
59	Institutional	FET	Basement	Stairway	2	9-12-2021
60	Institutional	FET	Ground Floor	Stair passageway	7	7-10-2021
61	Institutional	FET	First Floor	Lab. Passageway	4	7-10-2021
62	Institutional	FET	Second Floor	Passageway C.P.T	3	7-10-2021
63	Institutional	FET	Third Floor	Passageway C.P.T	3	7-10-2021
64	Institutional	FET	Fourth Floor	Common Path of Travel	3	7-10-2021
65	Institutional	Agriculture	Ground Floor	Security Gate, Work shop	5	7-10-2021
66	Industry	D.G Second	Ground Floor	Panel Gate	4	7-10-2021
67	Institutional	V.C Office	Ground Floor	Stair passageway	2	7-10-2021
68	Institutional	V.C Office	First Floor	Stair passageway	2	7-10-2021
69	Institutional	V.C Office	Second Floor	Stair passageway	2	7-10-2021
70	Institutional	V.C Office	Third Floor	Stair passageway	2	7-10-2021
71	Institutional	F.O.P.S	Ground Floor	Chemical Store Exit way	3	7-10-2021
72	Institutional	F.O.P.S	First Floor	Lab. Passageway	3	7-10-2021
73	Institutional	F.O.P.S	Second Floor	Lab. Passageway	3	7-10-2021
74	Institutional	F.O.P.S	Third Floor	Lab. Passageway	4	7-10-2021
75	Institutional	F.O.P.S	Fourth Floor	Lab. Passageway	3	7-10-2021
76	Resident	Raman House	Ground Floor	Canteen Passageway	7	7-10-2021
77	Resident	Kalpna House	Ground Floor	Canteen Gali	4	7-10-2021
78	Resident	Kalpna House	First Floor	Passageway	2	7-10-2021
79	Resident	Kalpna House	Second Floor	Passageway	2	7-10-2021
80	Resident	Kalpna House	Third Floor	Passageway	2	7-10-2021
81	Resident	Kalpna House	Fourth Floor	Passageway	2	7-10-2021
82	Hospital	Ayurveda	Ground Floor	Passageway	5	7-10-2021
83	Hospital	Ayurveda	First Floor	Passageway	3	7-10-2021
84	Hospital	Ayurveda	Second Floor	Exit way O.T	1	7-10-2021

Figure 11: Building wise Details of the Fire extinguishers in premises

At present as per Fire norms there are equal number of extinguishers present in all the buildings. However, there can be additional provisions of sand buckets and increased number of extinguishers. Also, there should be at least 1 fire extinguisher in every space which has an air conditioner.

5.7 Survey review for the Site features study

Some of the key responses are noted below as a result of an online survey is summarised as follows:

What can be additional features you would want in terms of Institute premises in terms of accessibility, open spaces, site features and neighbourhood?

- **The environment here is balanced. Maintenance should continue.**
- **Everything is fine.**
- Stadium for indoor & outdoor games.
- Elevator and Ramp facility must be in all building of the university.
- College should have start NCC because many students wants to go in army.
- There should be beautiful grass work on borders of fields and more benches and seats for students sitting.
- We want a stationary shop near our hostel, as we need to walk 2 kms to get our stationary.

5.8 Positive site features as per our study

a) Cool rooftops

The University has the Terrace roofs painted with white cover it helps reduce the temperature of the spaces.

b) User friendly movability in premises

There are provisions of Kerb Ramp in the Building premises, also low height hand rail for ease of access.

c) Avoid using plastic in premises

There are provisions for ban on the use of plastic bags or products in the Premises for office purpose as well eco-friendly materials area used.

d) OPAC system

The system is beneficial for the students.

e) Cleanliness and regular maintenance

There are ample provisions to maintain the site, cleanliness of the premises, regular maintenance and infrastructure up gradation.

f) Provision of wheelchair

There is provision of wheelchair in the premises for specially abled, senior citizens it is very beneficial facility.

g) Promote the use of Eco-friendly vehicles

There are provisions for battery operated and low emission vehicles which inspire students to change mode of transportation and adopt sustainable practices.

5.9 Recommendations for a Sustainable Habitat by Greenvio Solutions

Site beautification

a) Additional facilities for birds

There can be provision for drinking water and food facility for birds visiting in the College premise.

b) Nutrition pits

Certain pits can be demarcated as 'Nutrition pits' where the organic food from kitchen and Canteen fruit peels and fruits or vegetables can be degraded for making nutrition rich soil

Universal Campus

a) Universal Toilet

There should be minimum 1 toilet for the specially abled people as per guidelines prescribed by National Building Code 2016 with size being minimum or more than 1.5m x 1.5m

b) Resting places

There should be increased provision for resting places in premises in outdoor and indoor.

Pollution Control

a) Promote the use of Eco-friendly vehicles

There can be provision for battery operated vehicles/ low emission vehicles such as electrically driven vehicles parking in open space along with battery charge points, this would inspire students to change mode of transportation and adopt sustainable practices.

b) Bicycles as a gift

As an appreciation gesture may be the students toppers/ staff best performers can be awarded with a bicycle occasionally.

c) Vehicle usage

Restricting the speed limit of vehicles in the premises to 10 km per hour, not honking on the premises.

Smart and responsible environment systems**a) Smart Gardening System**

The College can undertake Smart Gardening system using IoT Technology such as an automated watering system. This will result in saving time by scheduling time for watering; Saving money and water as smart irrigation systems have automated water schedules in addition to tracking dampness of soil which helps the irrigation system know when and how much the garden needs. It also helps in healthier plants as with the help of apps, smart irrigation systems, or even smart growing containers, these tasks can be provided evenly and allow the plants to be healthier and more productive. More information on this system can be checked here <https://www.happysprout.com/inspiration/what-is-smart-gardening/>

On-site investigation and physical verification
Plantations and fresh vegetation in the premise



6. Towards a Healthy & Sustainable Institution

6.1 Inputs by Greenvio Solutions

Based on the analysis of the study of premises in addition to the recommendations provided in each section of Ecological, Water, Waste and Energy Audit the University can adopt the following strategies towards a Healthy and Sustainable Institution practices.

- a) Kitchen garden** - There can be provision of kitchen garden practices in a designated area of the open space this would enhance the biodiversity and be useful in training students and staff about the healthy practices and vegetables grown which would be used in Canteen/ Mess. It helps in capacity building. The smaller steps taken have huge impacts when each student would adopt these practices in their homes or societies and grow kitchen garden, terrace garden there will be a long term benefit for the environment as a whole.
- b) Cutlery in the Canteen** – The regular plastic and steel plates, spoons used in Canteen can be replaced with eco-friendly and organic leaves, paper straw, disposable plates, edible spoons and tables made out of sugarcane waste or bamboo. This will be first of its kind initiative to be adopted and practiced thus also inculcating the healthy practices in students.
- c) Signages** – In addition to the signages being in regular language there can be additional signages in braille language for the specially abled students.
- d) Waste vio** – Stepping up a little further an initiative can be undertaken wherein University can tie up with an organisation and students can be encouraged to collect dry waste and electronic waste such as newspapers, old computers and others and hand over to organisation on a weekly or monthly basis thereby making a waste reduction approach in the community. This has benefits such as awareness, eco-friendly habits in becoming a responsible citizen.
- e) Eco clubs** – In addition to the NSS there can be an eco-club with school and college students operating together which will help the collaboration to yield results right from micro level.

6.2 Survey Results

An online survey was conducted to analyse the student and staff views about what changes according to you can be undertaken for Green audit improvement in University premises and activity, some of the key responses are listed below. Whereas many responses **stated there were no changes requires because the present practices are excellent.**

- No need for changes or activities
- Good surrounding

Some of the suggestions by the Students and staff are listed below:

- Tree plantation programme
- Unnecessary water uses should be reduced
- Donate bicycles ask facilities HOD or Dean to switch to cycle
- We should adopt fully paperless system.
- Plantation of different types of plant or new varieties of flower which make university environment green, fragrance and also attractive.
- Waste management could be improved by keeping different bins for biodegradable and non-biodegradable wastes. These biodegradable wastes can be used to make compost for gardens. Students active participation is also required, thus conducting seminars for waste management and air and water pollution management and its effect on climate change, should be conducted more.
- Student awareness program for growing more trees and respecting the trees and plants, caring of them and knowledge about how to grow them.
- Minimising the use of plastics
- Use of e-vehicles in the premise and not allowing of fuel vehicles to run in the premises.
- Cleaning of university

However, it should be noted that the University has taken up multiple initiatives and because of Pandemic the students have not practically visited the campus so many of these points are not mandatory at the moment.

7. References

- Uniform Plumbing Code – India, 2008
- IGBC Green Existing Buildings – Operation & Maintenance (O&M) Rating system, Pilot version, Abridged Reference Guide, April 2013
- IGBC Green Landscape Rating system, March 2013
- BOMA Canada Waste Auditing Guide, Best Environmental Standards, BOMA BEST – Canada
- Climate data <https://en.climate-data.org/asia/india/uttar-pradesh/kanpur-5844/>
- Used only for understanding Universal design - Universal accessibility Guidelines for Pedestrian, Non-motorized vehicle and Public Transport Infrastructure – Report guidelines by Samarthyam (National centre for Accessible Environments) – an initiative supported by Shakti Sustainable Energy Foundation.
- City of Cheyenne, Streetscape/ Urban Design elements - Wyoming Planning Association, Gillette, Wyoming, United States

