



## **Environment and Green Audit Report**

**Ram Lal Anand College**

**University of Delhi**

**Audit Conducted By: EM Project Services**

Principal Auditor: Mr. Satvinder Singh

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## **Introduction**

We at EM Project Services are grateful to the management of Ram Lal Anand College- of Delhi- for awarding the work of Environment and Green audit of RLAC. We are especially thankful to Prof. Dr. Rakesh.K.Gupta, Principal and maintenance and other members of team for their proactive approach and providing us well maintained relevant data required for audit. We are also thankful to the other concerned in charge of various department for their cooperation during audit study at site and also the members of staff for their active involvement in audit on site study.

The following members of Ram Lal Anand College facilitated the conduct of Audit and provided documented information related to Green and Environment aspects.

**Dr. Swagata Karmakar (Mob: 9910479037)**

Assistant Professor  
Department of Environmental Studies  
Ram Lal Anand College  
of Delhi

**Dr. Rajesh Sachdev**

Associate Professor  
Department of Statistics  
Ram Lal Anand College  
of Delhi

**Dr. Parul Lau Gaur**

Associate Professor  
Department of History  
Ram Lal Anand College  
of Delhi

## **Executive Summary**

An environmental audit is a snapshot in time, in which one assesses campus performance in complying with applicable environmental laws and regulations. Though a helpful benchmark, the audit almost immediately becomes outdated unless there is some mechanism in place to continue the effort of monitoring environmental compliance. This audit report contains observations and recommendations for improvement of environmental consciousness.

A nation's growth starts from its educational institutions, where the ecology is thought as a prime factor of development associated with environment. A clean and healthy environment aids effective learning and provides a conducive learning environment. Educational institutions now a day are becoming more sensitive to environmental factors and more concepts are being introduced to make them eco-friendly.

With pro-active approach of management and staff for improvement of environment and reduction of impact of activities on climate and also improvement of indoor air quality and optimization of energy use, there is always an inclination of all related stake holders that is teaching, non-teaching staff and other support staff the is continually functioning for improvement of environment in and around premises and mitigation of impact of its activities on climate.

To preserve the environment within the campus, various viewpoints are applied by all the concerned stake holders. RLAC-New Delhi to solve their environmental problems through formulation of Environment and green policy, Plantation policy, commitment for empowerment of women and their active participation in improvement of interior and surrounding environment of premises.

The administration is working towards promotion of the energy savings demonstrated through energy audit and there is already renewable energy (Solar PV plant-130.3kWp is already installed on various buildings , recycle of waste, water use reduction, Rain water harvesting, regular plantation activities with native species, judicious management of all kind of waste as per statutory procedures, reduction of paper use , and promoting the use of E-vehicles inside the campus .

The college is also instrumental for the well-being of all stake holders and a regular medical officer is available in University medical centre, reduction of paper use and also mitigating impact of transportation activities of students, teaching and non-teaching staff by shared transport, whenever possible.

## Points of Appreciation

The staff of RLAC are quite aware and proactive in approach towards environmental aspects.

1. There is strong data base maintained and kept updated at all times which is beneficial for management of Environmental and Green aspects related to activities of .
2. There are signages installed for smoke free campus.
3. Data for electricity use is recorded and maintained and it reflects the sustainable approach of the RLAC.
4. There is STP plant planned and is under installation in the college premises. Reuse of water: The treated water from STP is proposed to be used for Gardening and Flushing purpose depending on the quantity treated.
5. There is a commitment towards Women empowerment related to climate and active participation of women.
6. There is an environment policy in place that covers aspects of air quality, environment and sustainability in extensive manner.
7. There is plantation policy and plan for managing and mitigation of impact on climate.
8. E-Library : Records of E-Library are maintained. There are plans for future and PO's are already in place for coming time.
9. Usage data of e- books is maintained and monitored.
10. The staff and students of are taking active interest for improvement of environment.
11. Record of Food wastage is prepared and is composted in college premises for manure production that is utilized for vegetation.
12. There are efforts to reduce food waste generation.
13. Composting plant has been installed on site and botanical waste and post use food waste is regularly composted and converted to manure used for landscape and plantation use.
14. The college is regularly conducting department activities for creating awareness and sensitization of students, faculty members and other staff members. The details are shown separately.
15. NSS activities


## Sustainability recognition awards

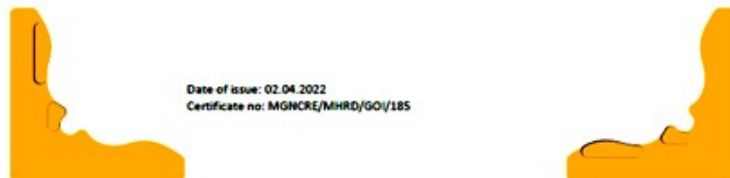
### Certificate of Recognition as the Sustainable Campus from Ministry of Environment



#### *Certificate of Recognition*

This is to recognize **Ram Lal Anand college, Delhi** as the Sustainable Campus. The Institution has done the best work for making the campus sustainable in the areas of **Sanitation, Hygiene, Waste Management, Water Management, Energy Management, and Greenery Management**. This program is organized by Mahatma Gandhi National Council of Rural Education, Department of Higher Education Ministry of Education Government of India.

  
Dr W G Prasanna Kumar  
Chairman  
MGNCRE, Ministry of Education  
Government of India



## Cleanliness Champion 2023 Award

The institution's commitment to sustainability has been recognized through "Cleanliness Champion," recognition presented by the Municipal Corporation of Delhi (MCD).





# Certificate of Recognition as 'being a Green Warrior'



**H.M.E-WASTE MANAGEMENT**

ETHICAL | TRANSPARENT | RECYCLING

A Certified Co. From ISO 45001 : 2018, ISO 14001 : 2015, ISO 9001 : 2015

24<sup>th</sup> February, 2024

## LETTER OF APPRECIATION

Ram Lal Anand College  
University of Delhi.

Subject: Appreciation Certificate for Being A Green Warrior!

Dear Green Warrior,

Greetings!

H.M.E-Waste Management would like to appreciate Prof. Rakesh Kumar Gupta (Principal), Prof. Prema Diwan (IQAC coordinator), Dr. Swagata Karmakar (Dept. of Environmental Studies) and students of Ram Lal Anand College, University of Delhi, for joining our Green Campaign #BeAGreenWarrior and for actively participating in the training workshop on 'Mission LIFE & E-Waste Management' dated 24<sup>th</sup> February, 2024.

We truly acknowledge your contribution as a **Green Change Maker!**

Best Regards!

*R. Sharma*  
24/02/2024  
**Dr. Renu Sharma**

Head of Program (Research and Advocacy): H.M.E-Waste Management

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#BeAGreenWarrior

*'Let Us Talk, Share And Act to be a Green Change Maker!'*

Head Office: 6th Floor, Tower-A, Park Centre Building, Sector-30 Gurugram, Haryana  
Plant: # G1/226, Pico Industrial Area, Kharar, Bhiwadi-301019, Alwar, Rajasthan ☎ +91 76000 67003  
✉ [info@hmcgreen.com](mailto:info@hmcgreen.com) 🌐 [www.hmcgreen.com](http://www.hmcgreen.com)

This is a confidential document generated by H.M.E-Waste Management



रामलाल आनंद कॉलेज  
दिल्ली विश्वविद्यालय  
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University of Delhi  
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RLAC/Notice/2022/ 705

02.09.2022

### Clean Campus Drive Schedule


### NOTICE

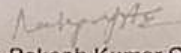
This is to inform all the faculty members that the college has decided to conduct Clean Campus Drive under Swacchta Action Plan (SAP) engaging students and the members of the faculty of all the departments. The schedule of this drive is as follows:

Date	Department
6 <sup>th</sup> September, 2022	Computer Science
14 <sup>th</sup> September, 2022	Mathematics
11 <sup>th</sup> October, 2022	History
3 <sup>rd</sup> November, 2022	Geology
22 <sup>nd</sup> November, 2022	Microbiology
4 <sup>th</sup> January, 2023	Hindi
25 <sup>th</sup> January, 2023	Commerce
10 <sup>th</sup> February 2023	BMS
20 <sup>th</sup> February, 2023	BJMC
16 <sup>th</sup> March, 2023	BA Program
31 <sup>st</sup> March, 2023	Statistic
13 <sup>th</sup> April, 2023	Political science
20 <sup>th</sup> April, 2023	English

Time: 1 PM onwards  
Duration: 45 minutes

All the necessary arrangements such as gloves, disposable bags etc. will be provided by the Swacchta Action Committee. The departments will maintain a record in which the attendance of the participating students and faculty will be registered. At the end of the session, the report of this drive, along with relevant photographs will have to be submitted by the respective TIC of the Department to Swacchta Action Committee. TICs will notify their dates of Clean Campus Drive to the students in advance.


  
Dr. Parul Lau Gaur  
Swacchta Action Plan

  
Prof. Rakesh Kumar Gupta  
Principal

## NSS Activities at Ram Lal Anand College

# JUNE

June the month dedicated for Yoga saw 15 (7) volunteers getting in touch with their inner peace in a 10- day yoga camp held at the college, from 12 June onwards. The month of June came to a successful, almost healing close with 87 (33) volunteers enjoying the craft of Yoga with their family on 21 June 2023, in light of the International Yoga Day.



**INTERNATIONAL YOGA DAY**

# JULY



**CLOTH DONATION DRIVE**

Thursday, 13 July 2023  
1 PM - 3 PM  
JJ COLONY

Donate now and provide them with decent clothing.



**INTERNATIONAL PAPER BAG DAY**

*The unit organized an activity of paper bag making on the occasion of World Paper Bag Day. This was followed by a cloth donation drive on 13th July at JJ Colony. Around 27 volunteers participated in the activity which made it a successful event.*



# SEPTEMBER

The top section features three posters on a textured, light-brown background. The left poster is for 'NSS DAY 24 SEPTEMBER 2023' at Ram Lal Anand College, University of Delhi, National Service Scheme. It highlights 'FEEDING STRAY ANIMALS' and 'TREE PLANTATION' activities. The middle poster is for 'NATIONAL SERVICE SCHEME 5 KM RED RUN' organized by the Delhi State AIDS Control Society, held on 17 September 2023 at 7 AM at Netaji Subhash University of Technology. The right poster is for 'G20 2023 INDIA University Connect Finale' at Bharat Mandapam on 26 September 2023, chaired by Shri Narendra Modi. All posters include contact information for Dr. Anurag Sharma, Harshdev Singh, and Prof. Rakesh Kumar Gupta.

The bottom section is a duplicate of the top section, featuring the same three posters on a textured, light-brown background. The left poster is for 'NSS DAY 24 SEPTEMBER 2023' at Ram Lal Anand College, University of Delhi, National Service Scheme. It highlights 'FEEDING STRAY ANIMALS' and 'TREE PLANTATION' activities. The middle poster is for 'NATIONAL SERVICE SCHEME 5 KM RED RUN' organized by the Delhi State AIDS Control Society, held on 17 September 2023 at 7 AM at Netaji Subhash University of Technology. The right poster is for 'G20 2023 INDIA University Connect Finale' at Bharat Mandapam on 26 September 2023, chaired by Shri Narendra Modi. All posters include contact information for Dr. Anurag Sharma, Harshdev Singh, and Prof. Rakesh Kumar Gupta.

# JANUARY

Ram Lal Anand College  
University of Delhi

NATIONAL SERVICE SCHEME  
in collaboration with  
**RED RIBBON CLUB**  
organises

REEL MAKING COMPETITION  
on the occasion of  
**NATIONAL YOUTH DAY**

THEME:  
HIV/AIDS Awareness

Reels can be made individually or in groups!

Mail your entries at [nssrla.du@gmail.com](mailto:nssrla.du@gmail.com) by 19 January 2024  
Winners will get a shout out on our official Instagram handle

Dr. Anurag Sharma Programme Officer | Harshdeep Singh President | Prof. Rakesh Kumar Gupta Principal

RAM LAL ANAND COLLEGE  
UNIVERSITY OF DELHI

NATIONAL SERVICE SCHEME

75th  
**REPUBLIC DAY**  
and  
**VOTERS DAY**

12:30 PM **25th Jan** FRONT STAGE

Dr. Anurag Sharma Programme Officer | Harshdeep Singh President | Prof. Rakesh Kumar Gupta Principal

Ram Lal Anand College  
University of Delhi

NATIONAL SERVICE SCHEME  
ON THE OCCASION OF  
**NATIONAL YOUTH DAY**  
12 JANUARY, 2024  
ORGANISES

EVENT: ELOCUTION GROUP COMPETITION

THEME: 'IT'S ALL IN THE MIND'

TIME: 6 PM

VENUE: Google Meet

Dr. Anurag Sharma Programme Officer | Harshdeep Singh President | Prof. Rakesh Kumar Gupta Principal

Ram Lal Anand College  
University of Delhi

NATIONAL SERVICE SCHEME

NATIONAL  
**GIRL CHILD DAY**

CLOTH & SANITARY PAD DONATION DRIVE

COLLECTION: 22 & 23 January, 2024  
Main Stage | 10am-4pm

DONATION: 24 January, 2024  
J.J. Colony | 3 pm

Dr. Anurag Sharma Programme Officer | Harshdeep Singh President | Prof. Rakesh Kumar Gupta Principal



# FEBRUARY

Ram Lal Anand College  
University of Delhi

NATIONAL SERVICE SCHEME  
Organises

**STRAY ANIMAL FEEDING DRIVE**  
25th FEB, 2024

Send the geo-tagged pictures by 11:59 pm at [nssrla.du@gmail.com](mailto:nssrla.du@gmail.com)

Dr. Anurag Sharma Programme Officer | Harshdeep Singh President | Prof. Rakesh Kumar Gupta Principal

RAM LAL ANAND COLLEGE  
UNIVERSITY OF DELHI

NATIONAL SERVICE SCHEME  
ORGANIZES

**VOTER AWARENESS CAMPAIGN  
&  
MYBHARAT PORTAL  
REGISTRATION HELP DESK**

LOCATION: MAIN STAGE | DAY & DATE: THURSDAY 15 FEBRUARY 2024 | TIME: 10:00AM TO 3:00PM

- You can register yourself at mybharat portal and also in voter ki portal
- All student Youth (between the age group 15 to 29 years) Can register as Youth in NSS
- My Bharat is an online Youth Leadership and Social Engagement Platform that aims to empower and engage youth to become leaders and active citizens

For further queries contact us on original E-learn Campus  
Ambassadors: Animesh : 7450968742 | Mangla : 8439983293

Dr. Anurag Sharma Programme Officer | Harshdeep Singh President | Prof. Rakesh Kumar Gupta Principal



# Sapling Plantation Drive

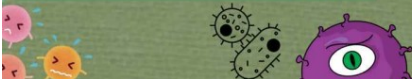
The first event of the month which was organized by National Service Scheme of Ram Lal Anand College was Sapling Plantation Drive on 3 March, 2024. This event was aimed to return something back to the nature. The volunteers were asked to send their geo-tagged pictures with plant saplings. A number of 8 volunteers sent their pictures for the event.

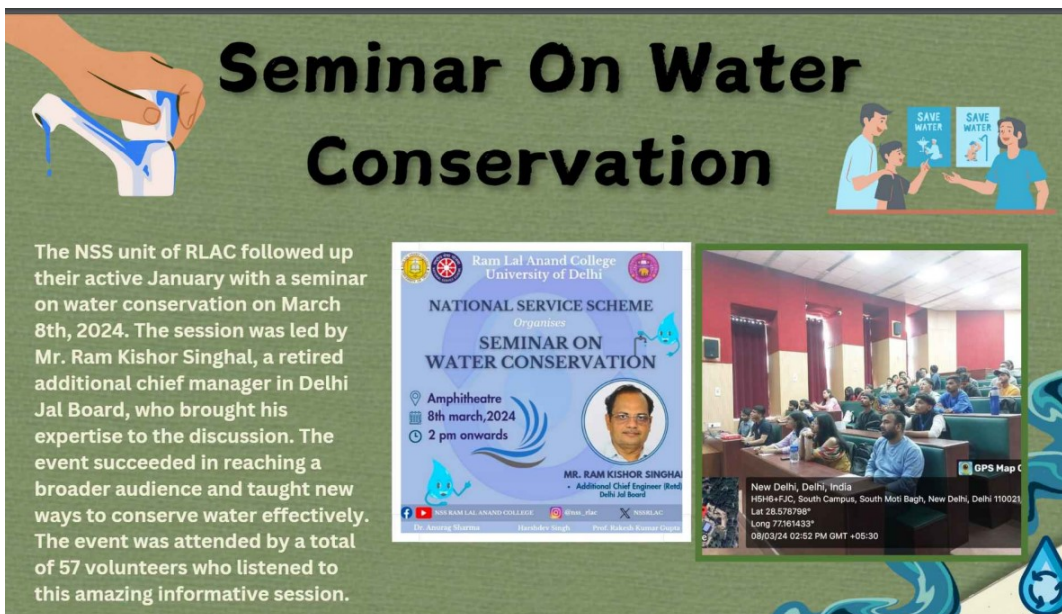


# Lymphatic Filariasis Awareness Drive



Second event of this month was Lymphatic Filariasis Awareness Drive. The event was held across multiple locations: Basant Gaon, Satya Niketan, and Moti Bagh on 4, 5, and 6 March, 2024. The volunteers were asked to make posters also. A total of 37 volunteers participated for the good cause. The drive aims to spread awareness among the people about this disease.





## General observations and Recommendations

- ❖ Display of Environment and Green policy at following prominent locations inside the premises is recommended.
  - a. Near main gate
  - b. At main entrance of Administrative Building
  - c. Cafeteria
  - d. Academic Blocks
  - e. Auditorium
  - f. Library
- ❖ There are Signage for Tobacco free campus are displayed in Cafeteria and these required to be displayed at main entrance and other prominent areas inside the campus.
- ❖ Signage for avoiding Food wastage be displayed at important locations of like cafeteria in campus.
- ❖ There is minimal food wastage to the extent of 1-2 kgs per day. The food peels are being fed into composting.
- ❖ Signage for Water conservation be displayed at important locations in campus.
- ❖ Signage for plastic free campus is required to be displayed.
- ❖ Signage for Segregation of waste at the source is required to be provided.
- ❖ The exhaust system for Microbiology lab is provided. An additional designed exhaust system with hood is recommended for dispersion of hazardous chemical fumes.
- ❖ The space for Microbiology is insufficient and need additional space should be provided.

- ❖ In future all the glasses of window when replaced should be provided with super ECBC compliant spectrally selective glass of low Solar heat gain co-efficient and high visual light transmittance.
- ❖ Cool Roof: As per ECBC for improving the indoor thermal comfort of top floor in building and also reducing energy use of top floor by providing cool roof at terrace level.

❖ **Excerpts from ECBC are attached in this report-Annexure-C**

**Cool roof:** roof with top layer of material that has high solar reflectance and high thermal emittance properties. Cool roof surfaces are characterized by light colors so that heat can be rejected back to the environment.

- ❖ There is no practice of use of Eco-Friendlyhousekeeping material in campus.
- ❖ Stack Height of DG set exhaust is not as per CPCB requirement.
- ❖ Blue and Green Waste bins be installed for segregation of waste at source.



## **Environment and Green policy**

**RLAC–University of Delhi**

**South Campus**

**Numerous policies for covering individual attributes of Environment are in place and attached.**



## रामलाल आनंद कॉलेज

दिल्ली विश्वविद्यालय  
बेनिटो हुआरेज़ रोड, नई दिल्ली-110021 (इंडिया)

### Ram Lal Anand College

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#### Version-I: Policy document of Clean and Green Campus of

#### Ram Lal Anand College, University of Delhi

Ram Lal Anand College (RLAC) campus spread over 10 acres caters to over 2500 students, 90 faculty and more than 100 staff members at various levels. The College campus has large lush green areas, which visitors find attractive and is appreciated by them. The college has continued to invest in sustainable initiatives at the core of all activities, and endeavours to achieve a human – environment co-existence model that would promote society's welfare through environmental protection. The policy for a Clean and Green Campus visualizes setting a national and international benchmark for a socially and environmentally sustainable campus, through action plans involving environmental awareness, education, management and conservation from where, "liberation through knowledge" (*jna-nadeva tu kaivalyam*) is realized.

The college has identified with the 17 UN Sustainable Development Goals (SDGs), representing globally perspective and is continuously striving to achieve them. We strongly believe that our concerted long term efforts would drive its significance at the local and regional levels. The goals are directed to reduce carbon footprints, energy consumption, waste management, and transforming the university landscape into a greener campus. We realize that as the world goes higher up the ladder of evolution and technological innovation, its development spree starts to consume the resources endowed upon by nature. The college has devoted its commitment to a sustainable future that is equal and resource-abundant for everyone. Being endowed with the power, to create a positive impact in society, we believe the initiatives that we undertake, would also enlighten our students, who would carry forward the practices of sustainability from their individual capacity and become ambassadors for change. To fulfil this vision, the college is obliged to institute a Clean and Green Policy as below

#### Objectives

- To impart understanding about the importance of environment in students and all stakeholders and their accountability to take environment friendly initiatives to save environment
- To work with all stakeholders and the local community to raise awareness and seek the adoption of environmental good practice and the reduction of any adverse effects on the environment.
- To facilitate students, take small steps in protecting and conserving the environment and sustain natural resources within the campus.

- To work with all stakeholders and the local community to raise awareness and seek the adoption of environmental good practice and the reduction of any adverse effects on the environment.
- To facilitate students, take small steps in protecting and conserving the environment and sustain natural resources within the campus.
- To ensure judicious use of environmental resources to meet the needs and aspirations of the present and future generations.
- To integrate environmental concerns in to policies, plans and programmes for social development and outreach activities.
- To continuously improve our contribution to climate protection and adaptation to climate change and to the conservation of global resources.
- To audit and continuously improve the efficient use of all resources, including energy and water, and to reduce consumption and the amount of waste produced, recovering and recycling waste where possible.

### Scope of the Policy

The Clean and Green Campus, Policies will incorporate co-curricular and extra-curricular practices that will encourage students to take the lead in creating positive change. These initiatives call for a thorough review of all infrastructural, administrative functions from the stand points of energy efficiency, sustainability and the environment. The focus areas will be as below:

1. **Clean Campus Initiatives:** RLAC will actively coordinate cleanliness activities in the college and beyond the campus in accordance in line with *Swachh Bharat Abhiyan*. The college will be generating mass awareness on cleanliness and hygiene amongst students and staff members by holding regular scheduled cleanliness drives. The idea is to motivate them to contribute in a proactive manner. Such activities will be core activities under NSS, NCC and other societies. Staff Members will also be encouraged to participate in such cleanliness drives. Events such as pledges, poster, slogans, essay writing, spoken word poetry, speeches, Rallies, skits on '*Swachh Bharat*' will be organized. The college will ensure regular removal of all kinds of waste material like broken furniture, unusable/obsolete equipment etc. College will conduct workshops on the **3Rs: Reduce, reusing and recycling** of waste and commit to manage waste and maintain clean campus especially during college events. Students will be taken to Biodiversity Parks including Yamuna Biodiversity Park, Aravali Biodiversity Park and Neel Hauz Biodiversity Park, Delhi to sensitize the students towards biodiversity and for showing ecological restoration of degraded soils.
2. **Waste Management processes:** RLAC strives to have a minimal impact on the environment and is dedicated to reduce and manage the waste generated by the college campus. The following specific procedures will be undertaken to ensure RLAC's

contribution in protecting the environment. For **Solid Waste Management**, segregation into biodegradable and non-degradable and their proper disposal in line with *Swachh Bharat* initiative will be practiced. All over the campus blue and green dustbins are placed. Use of sanitary disposal bin in Girls Common Room is one of the best practices adopted by the RLAC towards eco-friendly disposal mechanisms. The college will adopt practices that will mitigate the generation, and manage solid waste through the following methods

- i. Systematic engagement with the 3Rs of environment friendliness (Reduce, Reuse and Recycle).
- ii. Collect paper waste produced on campus and collaborate with scrap dealers for recycling.
- iii. Reduce solid waste by developing a technology-centric teaching and administrative model.
- iv. Take initiatives to spread awareness amongst students about food wastage and ways of minimizing it and minimizing the use of packaged food
- v. Organizing workshops for students on solid waste management.

**For E -Waste Management** the RLAC is grappling with ways to handle the issue of electronic waste (e-waste) efficiently and cost-effectively, on campus in environment friendly manner. For this purpose, the college plans to strive towards:

- i. Awareness amongst students about reduction of e-waste and environment friendly disposal practices for e-waste through department and society level activities pertaining to e-waste management
- ii. Collaboration with e-waste recycling vendors/companies to get electronic waste recycled.


**Liquid waste Management:** Water is the most important element for the preservation of life. Water is a finite commodity which, if not managed properly, will result in shortages soon. Water conservation can go a long way to help alleviate these impending shortages. For this purpose, the college will ensure to use the available water judiciously through the following

- i. Installation of Liquid waste treatment Plant with an estimated cost of 25 lacs
- ii. Maintain leak proof water fixtures.
- iii. Minimize the use of water by constructing more Indian style toilets instead of western style toilets.
- iv. Continued employment of a caretaker to take immediate steps to stop any water leakage through taps, pipes, tanks, and toilet flush etc.
- v. Prevention of release and mixing of oil from the college canteen liquid waste in the municipal drainage system by use of Grease trap mechanism to keep Biochemical Oxygen Demand reduced in the effluent wastewater.
- vi. Recycle and reuse of wastewater generated by the Reverse Osmosis (RO) system in irrigation/horticulture/washrooms.

3. **Rainwater water harvesting:** Rainwater recharge is gaining popularity as a sustainable water saving system in urban as well as rural areas. The college has installed rainwater recharge mechanism wherein the rainwater is accumulated from all the catchment areas and deposited for reuse. The water collected and directed to a deep pit of bore-well for later use. Even the ground water is directed towards the plants.
4. **Paperless Operating Procedure:** RLAC is striving towards a paperless office, a work environment in which the use of paper is eliminated or greatly reduced. This is done by converting documents and other papers into digital form, facilitate E-communication and use of public address systems reduces usage of paper in notices and circulars. In addition to going more paperless in the classrooms, wherein, notes, syllabus question banks, study material, assignments are stored and shared on the e-platforms, avoiding massive usage of paper. Reducing use of paper by supporting digitization of attendance and internal assessment records will be practiced. Also, attempt will be made to reduce requirement of printed books by updating the e-books and e-journals collection of the college library.
5. **Alternate Energy Source Utilisation:** Installation of 130 KV electricity generating roof top solar panel has been done. Replacement of conventional lights with LED lights throughout the campus including all offices, like Principal office, office of IQAC, Administrative Office, Library, Staff rooms, Girls Common Room, Labs, Departmental Offices, and all classrooms to save and conserve energy. Installation of Energy Efficiency Equipment like power saving ACs and fridges will be done.
6. **Initiatives towards Landscaping by Gardening Committee and Eco Club:** Following activities will be undertaken
  - ✓ Planting of seasonal flowering plants
  - ✓ Maintaining Rose Garden
  - ✓ Regularly adding and maintaining medicinal plants in Herbal Garden
  - ✓ Practising Composting using composting machine and utilizing manure produced for the maintenance of plants and involving students for awareness
7. **Ban on use of plastic:** Single-use plastic items such as plastic bottles, bags, spoons, straws and cups are banned completely and awareness is created among staff and students through orientation and display boards in the premises. The staff and students are informed to use steel or copper water bottles instead of plastic bottles.
8. **Air Pollution Management:** The College will conduct awareness programs for staff, students, and society for protecting and maintaining environment and air pollution management. In compliance with the frame work provided by the National Tobacco Control Programme (NTCP) 2007-2008, the college also strictly prohibits smoking and the use of other tobacco products. "**No Smoking, No Tobacco**". Slogans/posters will be put

up in prominent locations. Tobacco and associated substances are strictly prohibited in the college premises and is a punishable offence.

9. **Green Audit:** The College will regularly conduct a Green Audit of our college campus to assess our strength and weaknesses to further our goals of long-term sustainability. A green audit is a useful tool to determine how and where most energy or water or resources are being used. The college committees will work towards compliances of recommendations of this audit. Recycling projects or waste minimization plans will be adopted. It will create health consciousness and promote environmental values and ethics. It provides a better understanding of the impact of eco-friendly practices on campus. Green auditing will promote financial savings through reduction of resource use.
10. **Water Audit:** Every two years the college will conduct the water audit which will ensure judicious utilization of water recycling.
11. **Energy Audit:** An Energy Audit will be conducted on regular intervals to further reduce its carbon footprint. The importance of reducing energy consumption cannot be overstated. The energy audit, with its specialized tools will identify wastage of energy. Such an inspection often reveals several different flaws which cause a loss of significant amounts of energy which the college will not be able to detect. These flaws often have easy and affordable solutions and provide significant savings.
12. **Restricted Entry of Automobiles:** Patterns of parking and driving around campus have significant effects on campus life and the environment at large. While it seems like a relatively small issue in the context of the operations of the College, reducing driving behavior fits within many of the other initiatives that the RLAC has set forth to achieve, such as the Sustainability Initiative and creating well-rounded citizens of the community at large. Activities to motivate the faculty and student to preferably use public transportation/shared transportation and the vehicles will be restricted till parking area

  
**Prof Rakesh Kumar Gupta**  
**Principal**

## **Description of Campus**

Ram Lal Anand College was founded in the year 1964 by Late Shri Ram Lal Anand, a senior advocate in the Supreme Court of India, in response to the growing social demand in the sixties for providing educational opportunities at the university level. The college was initially managed by the Ram Lal Anand College Trust. It was later taken over by the University of Delhi. Since 1973, it has been run by the University of Delhi as a University Maintained Institution.

The college is located in the picturesque surroundings against the backdrop of the Aravali ranges in the neighbourhood of the South Campus of the University of Delhi and several other educational institutions. It has a vast campus, spread over ten acres of land with green lawns and elegant buildings of much sprawling architectural merit. The college has excellent infrastructure, with state-of-the-art Laboratories, Seminar room, Amphitheatre, Library, Playground and Cafeteria. The campus is Wi-Fi enabled. Being a multi-disciplinary, co-educational institution it has approximately 2500 students pursuing different courses in Arts, Commerce and Science streams. Ram Lal Anand College is administered by a statutory Governing Body as per the University Ordinances and legislated by the Executive Council of the University of Delhi.

The college has highly learned and committed teaching faculty of about 108 teachers. Apart from their traditional role of disseminating knowledge, the teachers inspire and guide the students to manage different activities such as seminars, workshops, debates, theatre, cultural activities including classical music and dance programmes. Teachers are also involved in guiding students in various research and innovation projects. RLA with its wide expanse of fields and a technical support provides conducive environment for sports. The College is proud to be one of the leading affiliates of the National Cadets Corps (NCC) and National Services Scheme (NSS) with an impressive member of cadets / volunteers enrolled each academic year. welcome to RLA and experience the joys of learning

## **Green and Environment audit**

### **Pre -Audit meeting**

A pre-audit meeting provided an opportunity to reinforce the scope and objectives of the audit and discussions were held on the practicalities associated with the audit. This meeting is an important prerequisite for the green audit because it is the first opportunity to meet the concerned personnel for audit and deal with any concerns.

## Scope and Goals of Green and Environment Auditing

A clean and healthy environment aids effective learning and provides a conducive learning environment. There are various efforts around the world to address environmental education issues. Green Audit is the most efficient and ecological way to manage environmental problems. It is a kind of professional care which is the responsibility of each individual who are the part of Economical, financial, social, environmental factor. It is necessary to conduct green audit in

### Details of Campus -Rooms –Ram Lal Anand College

S.No.	Location
1	Room No.1
2	Room No.1A
3	Room No.2 (lap Top)
4	Room No.3
5	Room No.4
6	Room No.5
7	Room No.6
8	Room No.7
9	Room No.8
10	Room No.9
11	Room No.10
12	Room No.11
13	Room No.12
14	Room No.13
15	Room No.14
16	Room No. 15 (General Computer room)
17	Room No. 16
18	Room No. 17
19	Room No.19 (NCC office)
20	Room No.20 (NCC)
21	Room No. 21 (Geology Department)
22	Room No.22 (Physics lab)
23	Room No. 23
24	Room No. 25 -Geology Department
25	Room No. 26-Geology Department
26	Room No. 27-Geology Department
27	Room No. 28
28	Room No. (BJMC)
29	Micro lab lobby
30	Room No. 31- (Micro-Biology Department)
31	Room No. 32- (Micro-Biology Department)
32	Room No. 33- (Micro-Biology Department)
33	Room No. 34- (Micro-Biology Department)
34	Room No. 35- (Micro-Biology Department)
35	Room No. 36- (Micro-Biology Department)



36	Room No. 37- (Micro-Biology Department)
37	Room No. 38- (Micro-Biology Department)
38	Room No. 39- (Micro-Biology Department)
39	Room No. 40- (Micro-Biology Department)
40	Room No. 41- (Micro-Biology Department)
41	Room No. 42 (Commerce lab)
42	Room No. 43 (Computer Science lab)
43	Room No. 43 (Computer Science lab)
44	Room No.44 (Statistics Department)
45	Room No.45(Statistics Department)
46	Room No.46 (Statistics Department)
47	Porta cabin 1
48	Porta cabin 2
49	Porta cabin 3
50	Porta cabin 4
51	Porta cabin 5
52	Porta cabin 6
53	Porta cabin 7
54	Porta cabin 8
55	Porta cabin 9
56	Porta cabin 10
57	Porta cabin -11
58	Porta cabin -12
59	Porta cabin -13
60	Conference room
61	Principal Room
62	Principal PA room
63	Seminar Room
64	AO Room
65	IQAC/Ecell
66	Girls Common Room
67	Medical Room
68	Office &Admn
69	Staff Room
70	Canteen
71	Canteen Wall Fan
72	Sports Room
73	Library
74	Library wall Fan
75	Research lab-Ground Floor
76	Reading Room
77	Examination/Committee Room
78	Pantry Room
79	Outside office and Admn.
80	Main gate Security Room

81	Research lab-2 -First Floor
82	Staff Room-2
83	Ground Floor
84	Sever room

## **Water Policy and Water Conservation**

### **Part of Environment Policy-RLAC**

**10. Water Audit:** Every two years the college will conduct the water audit which will ensure judicious utilization of water recycling.

#### **Objectives:**

1. Practice effective management of water, its quality and usage across the lifecycle of our assets.
2. To set the energy performance improvement objectives and targets.
3. To ensure water is recycled and reused wherever possible.
4. Apply the 4R principle (Reduce, Reuse, Recycle, and Recover) across the campus to improve the water performance.

#### **Proposed ActionPlan:**

- Ensure a sustainable balance between water demand management and the resources.
- Create an Water Management Team to ensure that the actions decided upon are implemented.
- Ensure the availability of necessary information and resources to achieve the objectives and water targets.
- Ensure zero-discharge STPs. When installed
- Ensure treated storm water and grey water is utilized for irrigation of landscape, sanitation, and make-up water for cooling towers.
- Ensure water meters and sub-meters installations at every consumption point to monitor and improve water consumption patterns at regular intervals and establish baseline.
- Ensure effectiveness of Leak detection systems and timely repair of leakage and overflows.
- Regularly Optimizing the efficiency of R.O. plant through reject recirculation.
- Ensure education, research, and innovation to identify best practices of water conservation to improve continually.
- Ensure that this plan is widely communicated and updated as and when required, or at least annually.
- Satisfy applicable legal and other requirements related to water efficiency, water uses and consumption.
- Procure water efficient equipment and services to improve water performance.
- Adopting sustainable technology-based water management practices to establish an example for peers.

## Details of Occupancy -RLAC

S.No.	Discription	Qty.-Nos.	No. of hours of presence	No. of Days of Occupancy
1	No. of daytime students	2672	5 hours/day	6 days
2	Faculty Staff	104	5 hours/day	5-day week
3	Non-Teaching staff (Administration.)	80	8 hours/day	5-day week
4	Support staff/Security	20	24*7	7 days per week
5	Approx. no. of daily Visitors-Estimated average	7	2-3/hours	5-day week

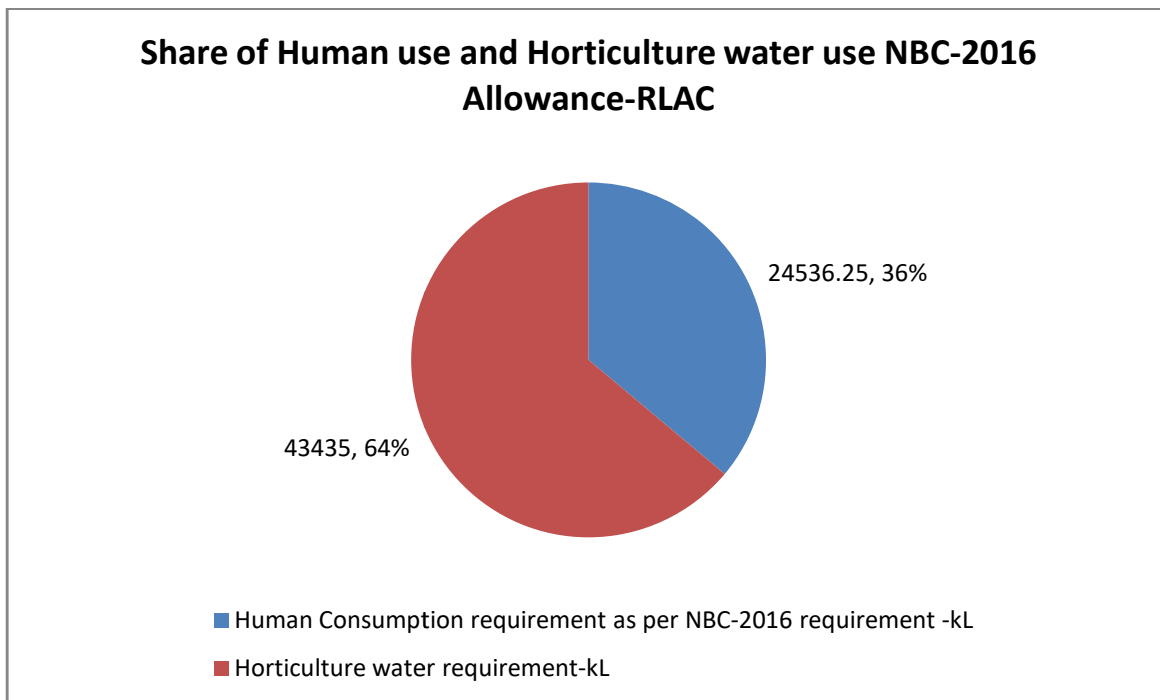
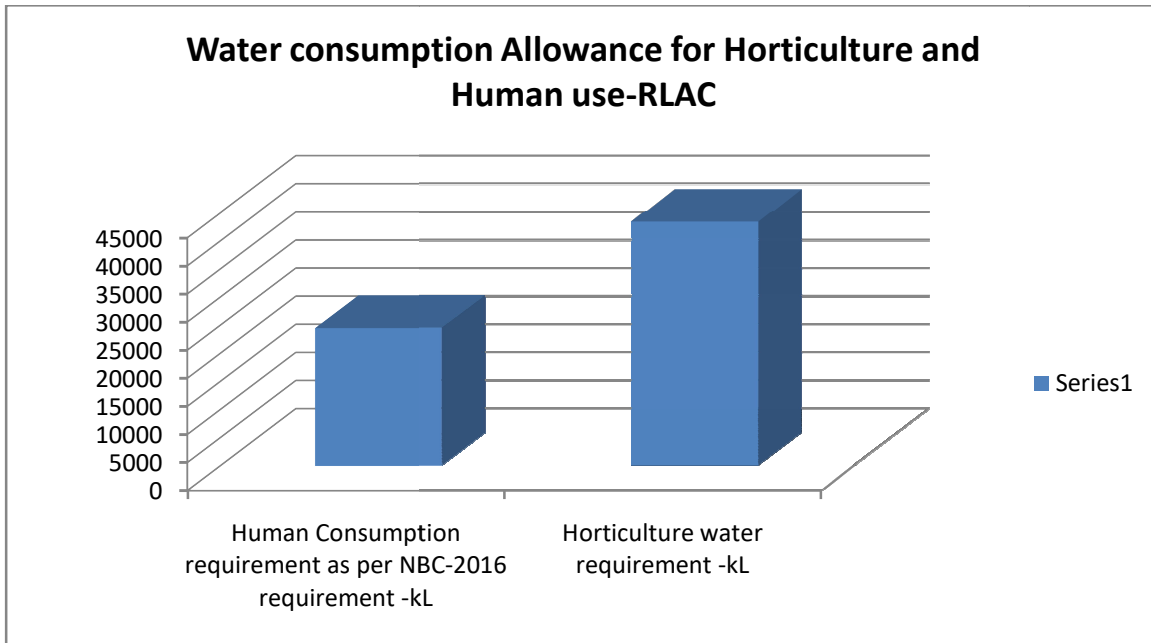
## Annual Human Consumption Allowance as per National Building Code-2016

S.No.	Description	Qty.-Nos.	No. of days	No. of hours of presence	Daily water Allowance as per NBC per capita-Litres per Capita per day	Daily water requireme nt-Kilo Liters	Annual Water consumption-kL
1	No. of daytime students	2672	300	5	45	75.15	22545
2	Faculty Staff	104	250	5	45	2.925	731.25
3	Non-Teaching staff (Administrati on.)	80	250	8	45	3.6	900
4	Support staff/Security	20	365	8	45	0.9	328.5
5	Approx. no. of daily-Visitors-Estimated average	7	300	8	15	0.105	31.5
<b>Total Annual Bench Mark for consumption of water as per NBC-2016</b>							<b>24536.25</b>

## Bench Mark -Annual Consumption as per NBC-2016- Horticulture purpose

<b>Water used for Horticulture purpose-RLAC</b>						
<b>S. No.</b>	<b>Description</b>	<b>Area- Sq. mts.</b>	<b>Daily water requirement- litres/day/sq. mts.</b>	<b>Daily water requirement in kilo litres/Day</b>	<b>No. of days in year- water Use</b>	<b>Annual Water requirement for Horticulture- kilo Litres</b>
1	Turf (Grass Area)	17000	7	119	365	43435
	<b>Total</b>					<b>43435</b>

<b>Total Water Requirement -RLAC</b>			
	<b>Water use allowance as per NBC-2016</b>		<b>Actual Water use</b>
1	Human Consumption requirement as per NBC-2016 requirement -kL	24536.25	<b>Data not maintained</b>
2	Horticulture water requirement -kL	43435	<b>Data not maintained</b>
	<b>Total Annual permissible water consumption-kL</b>	<b>67971.25</b>	<b>Data not maintained</b>



It can be seen that the allowance as per NBC-2016 is 64% and this is required to be managed with greater emphasis.

## Water requirement as per NBC-2016 is attached in Annexure

There is ample awareness of management of campus towards sustainability. Management of is very instrumental in spearheading movement of sustainable practices in running of and also facilitating dissemination of these practices to all students studying in this campus. It is through support of management and active involvement of other stake holders and staff members that this has managed sustainable practices by being proactively initiating suitable actions for the same.

In all matters of resource use, there is effective implementation of 3R's. Reduction of resource use, Recycling of resources and also re-use. It is for attaining objectives of sustainability.

STP is being installed (Already under installation)in campus and to be used forfor re-use of treated water.

During audit, it has been seen that a lot of work for conservation of water has already been taken.

## Water Use Study

### Flow rate of installed fixtures measured-RLAC

The flow rate of fixtures measured at the site has been found to be between 2.5 to 3.0 Litres per minute. That is in good range of consumption

The following points needs attention and required to be addressed. The saving targets over NBC-2016 requirement should be fixed for next 12 months and practice of recording and reviewing of water use on periodic basis for pointing out any sudden variation is required to be followed.

### Observations on water use

S.No.	Issue	Standard	Shortcomings	Recommendations
1	Flow of water in plumbing fixtures	GRIHA/IGBC	None	The awareness is required regularly for water use
2	Cisterns installed for flushing	GRIHA/IGBC	Single /Double controlflow cisterns are installed	Awareness is required to be created for use of Dual flow fixtures for water conservation.Signages be put near Double control. Single control be replaced with double flow when required to

				be replaced.
3	Rain Water harvesting system	Central Water Ground Water Board	2 Nos.Rain Water harvesting pits are installed	These are maintained and functioning effectively.
4	Water Meters	NBC-2016	Water Meters for Utility supply are installed	Water Meters be got installed for Individual blocks, Labs and also for water used for horticulture/land-scaping purpose.
5	Bills and Stickers for water conservation	Best practices	Presently installed at few locations only	The stickers be installed near water use points for conservation of water. Specially in Hostel Toilets, these are required to be put.

- Special Note : All the water consumption should be monitored with installation of meters for all individual occupancies including canteen, office block and horticulture also.
- It has been informed that there is no run-off even during peak rainy days which is very positive attribute.

### **Turf Area (Grass Area)-RLAC-New Delhi**

**Total Turf-Grass Area—17000 Sq. meters**

# Good Practices of Water conservation

## Rain Water harvesting system

Threare2 nos. of Rain Waterharvesting system pits have been installed.

The regular cleaning and de-silting process are carried out for maintenance of Rain water harvesting pits.

Rain Water harvesting pits are in excellent condition and no water was found inside the Rain water harvesting pit depicting soaking of water in ground.

## Abstract from Policy statement

- 3. Rainwater water harvesting:** Rainwater recharge is gaining popularity as a sustainable water saving system in urban as well as rural areas. The college has installed rainwater recharge mechanism wherein the rainwater is accumulated from all the catchment areas and deposited for reuse. The water collected and directed to a deep pit of bore-well for later use. Even the ground water is directed towards the plants.



**रामलाल आनंद कॉलेज**

दिल्ली विश्वविद्यालय  
बेनिटो हुआरेज़ रोड, नई दिल्ली-110021 (इंडिया)

**Ram Lal Anand College**

University of Delhi  
Benito Juarez Road, New Delhi-110021 (India)

Tel. No. : 011-24112557

Fax : 24112151

E-mail : rfac.du@gmail.com

rfac.bjr.du@gov.in

Website : www.rfacollege.edu.in

RLAC/2024/

06.04.2024

## DECLARATION

The college has established rain water harvesting (RWH) system in 2010 on its campus under the guidance of Central Water Commission Board. These RWH systems are sufficient to take care of the runoff water during monsoons and recharges efficiency of the aquifers. The rain water from the whole building is collected in these RWH systems. Hence there is zero run-off of storm water from campus. The Empathetic Humane Socially Awakened Samaj (EHSAS) has certified the adequacy of RWH system in the campus.

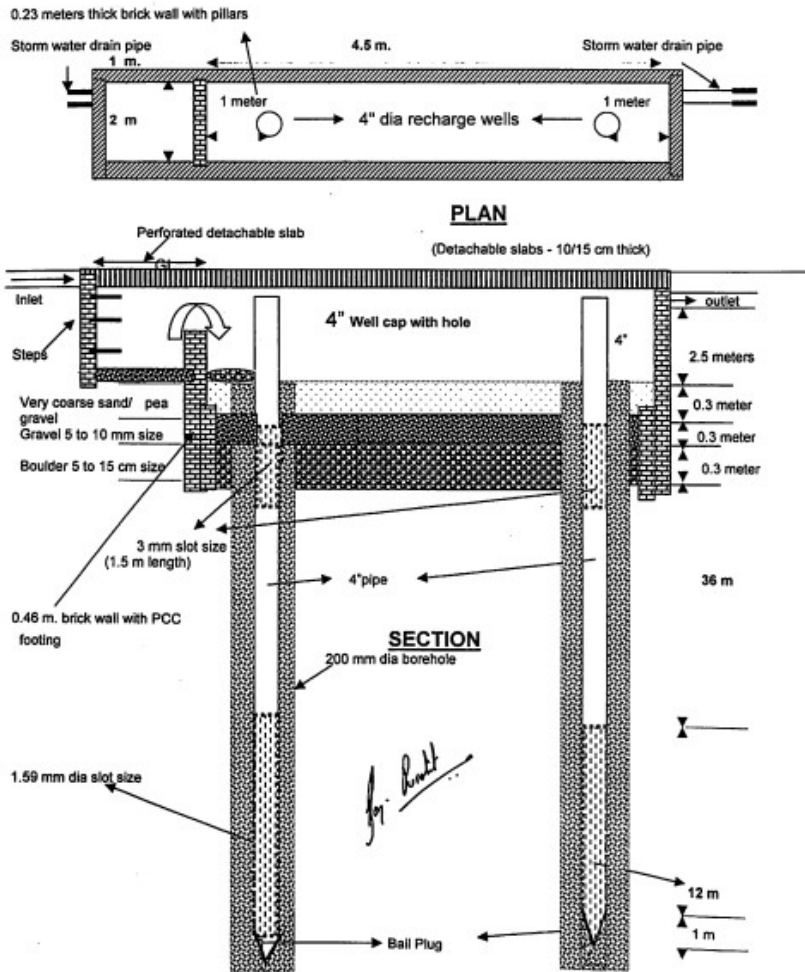
  
PRINCIPAL



Design of installed Rain Water Harvesting system

**Recharge Pit cum Borewell with Desilting Chamber S1 to S5 in**

**RAM LAL ANAND COLLEGE, BENITO JUAREZ ROAD, NEW DELHI-21**



~ 3 ~



Regd under Indian Trusts Act, 1882      Approved u/s 80G of Income Tax Act, 1961      Approved by MCA, GOI for CSR  
PAN No. AABTE0191K      (AABTE 0191 KF20206)      (CSR00012973)


## RWH ADEQUACY CERTIFICATE



This is awarded to the Principal, Ram Lal Anand College regarding adequacy and functionality for RWH structure at the College Campus at Benito Juarez Road, New Delhi - 110021. Referring to your letter dated 20<sup>th</sup> March, 2024 in which you have informed that Rain Water Harvesting has been installed at your said premise. The rain water harvesting structure was inspected by Sh. R.K. Singhal, former CE, Delhi Jal Board on 22<sup>nd</sup> March, 2024 with his inspection team and found sufficient and adequate to harvest the catchment area of your premises. This certificate is issued based on the above joint inspection report and same is valid for two years' subject to terms and condition as under:

1. RWH system maintained neat and clean at every time for proper recharge of rain water.
2. College Authorities will allow inspection of RWH by any NGT/DJB and other inspection teams;
3. In case of any dispute/litigation on the premises for which above certificate issued, the above certificate will be treated as cancelled;
4. In case any changes are made to the above RWH system, this should be intimated to this office.

No.1/2024  
Dated: 26/03/2024

  
Head Rainwater Harvesting  
C-47, Lane 4, Mahendru Enclave,  
Delhi - 110009

C-47, Lane No. 4, Mahendru Enclave, Delhi - 110009

011-46081750      96255 00733      ehsas.hum@gmail.com      www.ehsas.co.in  
Darpan Niti Aayog: DL/2019/0241369      MSME Udyam No: DL-06-0001133

**As per the certificate the rain water adequacy is as per requirement.**

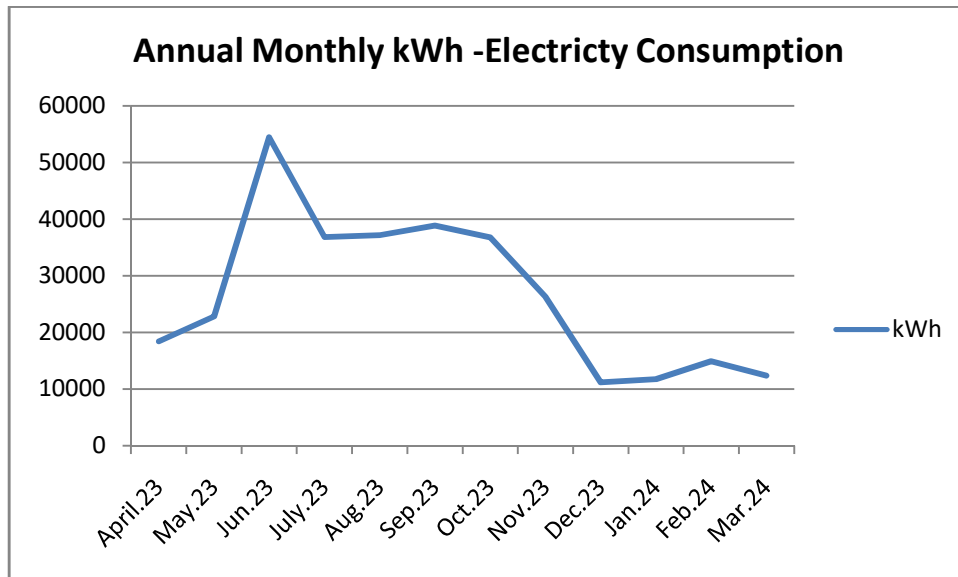
**Rain Water Harvesting pits**



# Auditing for Energy Management

## Energy Use RLAC–Year-April-2023 to March-2024

Month	kWh consumption
<b>Apr</b>	<b>18393</b>
<b>May</b>	<b>22795</b>
<b>Jun</b>	<b>54438</b>
<b>Jul</b>	<b>36826</b>
<b>Aug</b>	<b>37161</b>
<b>Sep</b>	<b>38840</b>
<b>Oct</b>	<b>36781</b>
<b>Nov</b>	<b>26291</b>
<b>Dec</b>	<b>11171</b>
<b>Jan</b>	<b>11712</b>
<b>Feb</b>	<b>14880</b>
<b>MAr</b>	<b>12330</b>
<b>Total</b>	<b>321618</b>



Total use of Electricity is monitored. There is requirement of maintaining and tracking Energy performance Indicator and some targets of energy performance index/Energy Intensity reduction are required to be fixed and tracked year on year.

Energy Conservation measures

1. All Lighting fixtures are LED.
2. BLDC fans are being installed in Phases.
3. Air Conditioners with phased out refrigerant are planned to be replaced

## **Renewable energy**

### **Abstract from policy statement**

- 5. Alternate Energy Source Utilisation:** Installation of 130 KW electricity generating roof top solar panel has been done. Replacement of conventional lights with LED lights throughout the campus including all offices, like Principal office, office of IQAC, Administrative Office, Library, Staff rooms, Girls Common Room, Labs, Departmental Offices, and all classrooms to save and conserve energy. Installation of Energy Efficiency Equipment like power saving ACs and fridges will be done.

**There are solar photovoltaic plants installed at roof top totalling to 130.3 kWp. The generation as per actual is required to be monitored.**

**There is no monitoring of renewable energy in place.**



## **Renewable Energy-Solar PV Plant installed**

### **Waste Management**

#### **Policy Statement**

RLAC is committed to enhancing the health and wellbeing of its campus community, to increasing safety practices, to reducing environmental footprint and to reducing solid and hazardous wastes. The college recognizes the importance of sustainable waste management and established a policy to the management of various types of generated solid and liquid wastes. Members of the community including management, employees, students, guests, supplier, or anyone else making use of the premises are expected to integrate best practices into their daily operations to reduce, reuse, and recycle materials, consistent with municipal, state, and national rules and guidance.

#### **Purpose**

RLAC endeavors to adopt practices that reflect a comprehensive approach to conserving resources and reducing and managing waste. Waste prevention, reuse, recycling, and composting are prioritized over landfill disposal. In order to minimize our environmental footprint; to provide guidance to the community on best practices for reducing and recycling waste; and to promote adherence to environmental law, this policy establishes a sustainable, solid waste management program that communicates acceptable methods of handling, storing, recycling, and disposing of materials.

#### **Solid Waste Management, E-waste, hazardous waste and bio-medical waste Policy.**

#### **Waste Management processes:**

RLAC strives to have a minimal impact on the environment and is dedicated to reduce and

manage the waste generated by the college campus. The following specific procedures will be undertaken to ensure RLAC's contribution in protecting the environment.

For Solid Waste Management, segregation into biodegradable and non-degradable and their proper disposal in line with Swachh Bharat initiative will be practiced.

All over the campus blue and green dustbins are placed.

Use of sanitary disposal bin in Girls Common Room is one of the best practices adopted by the RLAC towards eco-friendly disposal mechanisms.

The college will adopt practices that will mitigate the generation, and manage solid waste through the following methods

1. Systematic engagement with the 3Rs of environment friendliness (Reduce, Reuse and Recycle).
- ii. Collect paper waste produced on campus and collaborate with scrap dealers for recycling.
- iii. Reduce solid waste by developing a technology-centric teaching and administrative model.
- iv. Take initiatives to spread awareness amongst students ways to minimize the use of packaged food
- v. Organizing workshops for students on solid waste management.

For E -Waste Management the RLAC is grappling with ways to handle the issue of electronic waste (e-waste) efficiently and cost-effectively, on campus in environment friendly manner. For this purpose, the college plans to strive towards:

1. Awareness amongst students about reduction of e-waste and environment friendly disposal practices for e-waste through department and society level activities pertaining to e-waste management
- ii. Collaboration with e-waste recycling vendors/companies to get electronic waste recycled

Liquid waste Management:

Water is the most important element for the preservation of life.

Water is a finite commodity which,

if not managed properly, will result in shortages soon. Water conservation can go a long way to help alleviate these impending shortages. For this purpose, the college will ensure to use the available water judiciously through the following

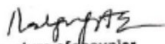
1. Installation of Liquid waste treatment Plant with an estimated cost of 25 lacs
- ii. Maintain leak proof water fixtures.
- iii. Minimize the use of water by constructing more Indian style toilets instead of western style toilets.
- iv. Continued employment of a caretaker to take immediate steps to stop any water leakage through taps, pipes, tanks, and toilet flush etc.
- v. Prevention of release and mixing of oil from the college canteen liquid waste in the municipal drainage system by use of Grease trap mechanism to keep Biochemical Oxygen Demand reduced in the effluent wastewater.
- vi. Recycle and reuse of wastewater generated by the Reverse Osmosis (RO) system in irrigation/horticulture/washrooms.



- E-waste collection drive conducted in college
- Rules of Central Pollution Control Board (CPCB) being followed for e-waste management
- Auction will be done when there is sufficient e-waste

4. Date wise description of management of hazardous and other wastes including products sent and to whom in case of recyclers or pre-processor or utiliser:
- The college started a campaign to spread awareness amongst its students and staff regarding proper disposal of e-waste by organizing events like:
    - Poster making competition (held on 9<sup>th</sup> September 2023) and
    - E-Waste collection Drive (held from 28<sup>th</sup> September to 30<sup>th</sup> September 2023)
  - The e-waste was collected from all the departments, office and laboratories of the college from 01<sup>st</sup> February to 21<sup>st</sup> March .2023 (for the session 2022-23).
  - On 31<sup>st</sup> January 2023, a notice was issued to all the Departments, Administration office and Library for submitting a list of e-waste items after being verified from IT Infrastructure committee of the college. The college is in the process of contacting different vendors for the proper disposal of e-waste as per government norms.
5. Date of environmental monitoring (as per authorization or guidelines of Central Pollution Control Board):

Date.....29/9/23  
Place.....New Delhi

  
Signature of occupier  
प्राचार्य / Principal  
रामलाल आनन्द महाविद्यालय  
Ram Lal Anand College  
दिल्ली विश्वविद्यालय / University of Delhi  
बेनिटो हुआरेज रोड, नई दिल्ली-110021  
Benito Juarez Road, New Delhi-110021





## **Auditing for Waste Management-RLAC**

Pollution from waste is aesthetically unpleasing and results in large amounts of litter in our communities which can cause health problems. Plastic bags and discarded ropes and strings can be very dangerous to birds and other animals.

This indicator addresses waste production and disposal, plastic waste, paper waste, food waste, and recycling. Solid waste can be divided into two categories:

**General waste and hazardous waste.** General wastes include what is usually thrown away in schools such as garbage, paper, tins and glass bottles. Hazardous waste is waste that is likely to be a threat to health or the environment like cleaning chemicals and petrol. Unscientific landfills may contain harmful contaminants that leach into soil and water supplies, and produce greenhouse gases contributing to global climate change.

Furthermore, solid waste often includes wasted material resources that could otherwise be channelled into better service through recycling, repair, and reuse. Thus, the minimization of solid waste is essential to a sustainable campus. The auditor diagnoses the prevailing waste disposal policies and suggests the best way to combat the problems. It is therefore essential that any environmentally responsible institution examine its waste processing practices.

**Solid waste:** Paper is collected and disposed of through sale to recyclers. 620 Kilograms of waste paper has been sold for recycling that was collected in a period of two years

**E-Waste:** The old computers are sold back to vendor which is again put to beneficial use by repairing and it is good sustainable practice. Material not reusable is recycled as per extant guidelines.

**Key Boards and mouse** which become un-serviceable are also disposed of. It is required to be ensured that vendor dealing with E-waste is authorised to collect E-waste.

**Hazardous Waste:** Lead Acid Cell Batteries are returned to Vendors for re-cycling of lead and other constituents.

**Fluorescent tubes** are handed over to Junk dealer who in turn should send them to Local recycling units. Storage of Fluorescent tubes in should be as per recommended practice.

#### **WASTE- Types of waste generated in campus**

- E-waste-Yes-Handled as per government guidelines and rules.

7. **Ban on use of plastic:** Single-use plastic items such as plastic bottles, bags, spoons, straws and cups are banned completely and awareness is created among staff and students through orientation and display boards in the premises. The staff and students are informed to use steel or copper water bottles instead of plastic bottles.



**WE RECYCLE**  
...because we care

**JAAGRUTI™ WASTE PAPER RECYCLING SERVICES**  
 Works Address: F-3, Shopping Centre, Mansarovar Garden, New Delhi-110015  
 E-mail: paper@we-recycle.org Tel: +91-98101 91625, +91-9818 144 244  
 Website: www.we-recycle.org  
 Corporate Identification Number (CIN): U74140DL2010PTC293497  
(Paper Conversion, Street Consultancy Private Limited)

**Client Acknowledgement of Receipt of Recycled Paper Products**  
 Dated: 7/11/2022

Name of Client Organisation	Ram Lal Anand College
Collection Address	Dhaura Kuan, Delhi
Date/s of pickup	25/11/2021 (1463 60Kgs)
Date of submission of Waste Paper Assessment Report	

Waste Paper Grade	Net Weight (in kgs)	Client Acknowledgement of receipt of following products		
		A4 paper reams (1 Ream = 500 sheets; 75 GSM)		
Office Grade paper	446.36	28	—	—
Magazine and Newspaper Grade paper	866.12	47	—	—
<b>TOTAL</b>		75		
Board, Plastic	157.12 kgs			
		77 A4 Reams (All dues settled)		

Signed and stamped on behalf of Client Organisation:  
 Name: SAHIL KUMAR JAIN  
 Dated: 7/11/22

Signed and stamped on behalf of 'JAAGRUTI™ Waste Paper Recycling Services':  
 Name: Virek Mehta  
 Dated: 7/11/2022

77 Reams

*[Signature]*  
7.11.22

Acknowledgment of Receipt of Recycled Paper Products



### **E-Waste disposal**

The record of use and handling of E-waste is maintained, while disposing/Auction or sale of E-waste credential of purchaser is documented and vendor is authorised for collection and ensuring re cycling of E-waste as per extant guidelines.

➤ **Hazardous waste (toxic)-yes**

For safe handling and management of hazardous waste in an environmentally sound manner, Govt. of India has notified the Hazardous Waste (Management & Handling) Rules, 1989, under the Environment (Protection) Act, 1986. However, these Rules were suppressed with re notification of the Hazardous Wastes (Management, Handling and Trans boundary Movement) Rules, 2008. Under the said Rules, hazardous waste has been defined as those wastes which by reason of any of its physical, chemical, reactive, toxic, flammable, explosive or corrosive characteristics causes danger or is likely to cause danger to health or environment, whether alone or when in contact with other wastes or substances, and shall include wastes as specified in Schedules of the Rules.

- Solid waste-yes-Extra waste removed and disposed in municipal waste collection points
- Dry leaves-Yes-Used in for making manure/compost
- Canteen waste-yes-Used for Compost in
- Liquid waste-yes-Preserved and used in

- Glass-Yes-sent for recycling
- Unused equipment-yes-Returned to vendors through sale
- Plastic waste-Yes-Segregated and removed

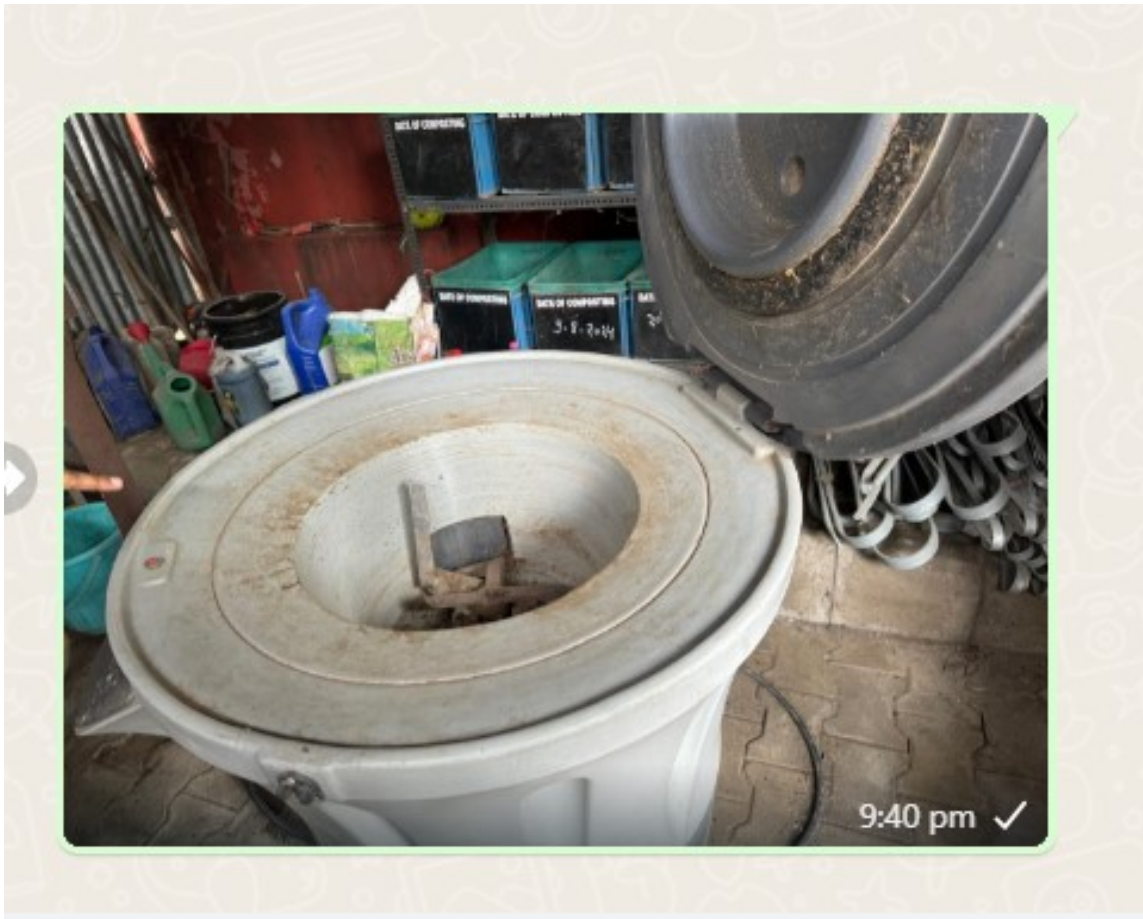
## **Canteen Waste-Handling practice**

Food Waste - Standee for Preventing Food Wastage be placed.

1. Cafeteria
2. Pantry

**Zero Food wastage week be planned to create awareness.**

## **On Site Composting**



## **Auditing for Green Campus Management**

Unfortunately, biodiversity is facing serious threats from habitat loss, pollution, over consumption and invasive species. Species are disappearing at an alarming rate and each loss affects nature's delicate balance and our quality of life. Without this variability in the living world, ecological systems and functions would break down, with detrimental consequences for all forms of life, including human beings. Newly planted and existing trees decrease the amount of carbon dioxide in the atmosphere. Trees play an important ecological role within the urban environment, as well as support improved public health and provide aesthetic benefits to cities. In one year, a single mature tree will absorb up to 48 pounds of carbon dioxide from the atmosphere, and release it as oxygen. The amount of oxygen that a single tree produces is enough to provide one day's supply of oxygen for people. So, while you are busy studying and working on earning those good grades, all the trees on campus are also working hard to make the air cleaner for us. Trees on our campus impact our mental health as well; studies have shown that trees greatly reduce stress, which is a huge deal considering many students are under some amount of stress.

### **Health Audit:**

1. There is a regular medical officer in medical centre in south university campus .
2. There is no specific environment related disease noticed in students or faculty members arising out of their presence in campus.
3. There is a para medic available during all the time college is open.

# Noise Pollution

## 1. Sounds of Normal Conversations:

**Sound Intensity:** 40-60 dB

**Health Hazard:** Sound less than 80 dB is safe for the ear.

## 2. Sounds emanating from Tape recorders or an Orchestra:

**Sound Intensity:** 70 dB

**Health Hazard:** It is safe for ear.

## 3. Sounds of Heavy Traffic:

**Sound Intensity:** 90 dB

**Health Hazard:** Constant exposure to sound greater than 80 dB causes temporary hearing loss and if they are not treated immediately, causes permanent impairment.

## 4. Sounds of Pneumatic drills and other machines:

**Sound Intensity:** 100 dB

**Health Hazard:** Constant exposure causes temporary hearing loss and if they are not treated immediately, causes permanent impairment.

## 5. Sounds of Aircraft engine:

**Sound Intensity:** 100-200 dB

**Health Hazard:** Higher noise level of 160 dB cause total deafness, rupturing eardrums, damaging inner ear. It also causes high blood pressure, ulcer in stomach, palpitation, nervous problems, irritation, anger, and affects pregnant women's embryo.

## 6. Sounds of Rockets during Take-off:

**Sound Intensity:** 200 dB

**Health Hazard:** It is dangerously causing total deafness by rupturing the eardrums and damaging the inner ear. It also causes high blood pressure, ulcer in stomach, palpitation, nervous problems, irritation, anger, and affects pregnant women's embryo.

Random Decibel Measurement -RLAC

S.No.	Area	Db Level	Remarks
1	Main Gate near Road	79.6	Satisfactory for the duration
2	Main Park-Reading -1	75.2	Satisfactory for the duration
3	Main Park-Reading -2	69.6	Satisfactory for the duration
4	Principal office corridor	62.4	Satisfactory for the duration
5	Canteen	73.5	Satisfactory for the duration
6	Kitchen	75.1	Satisfactory for the duration
7	Basement-Reading-1	74.5	Satisfactory for the duration
8	Basement-Reading-2	77.2	Satisfactory for the duration
9	Principal office	55.7	Satisfactory for the duration
10	Library	61.9	Satisfactory for the duration
11	Admn. Office	65.4	Satisfactory for the duration
12	Auditorium reading-1	67.6	Satisfactory for the duration
13	Auditorium reading-2	69.2	Satisfactory for the duration
14	Class Room-Fl and Room No.1	76.6	Satisfactory for the duration
15	Class Room-Fl and Room No.4	71.3	Satisfactory for the duration
16	Class Room-Fl and Room No.5	75.2	Satisfactory for the duration
17	Class Room-Fl and Room No.11	67.4	Satisfactory for the duration
18	Class Room-Fl and Room No.13	73.4	Satisfactory for the duration
19	Class Room-Fl and Room No.44	65.1	Satisfactory for the duration
20	Class Room-Fl and Room No.40	52.4	Satisfactory for the duration
21	Class Room-Fl and Room No.PC-4	71.5	Satisfactory for the duration
22	Class Room-Fl and Room No.Pc-2	74.5	Satisfactory for the duration
23	Class Room-Fl and Room No.PC-8	73.4	Satisfactory for the duration




24	Class Room-Fl and Room No.-PC-12	76.9	Satisfactory for the duration
25	Class Room-Fl and Room No.	87.1	Satisfactory for the duration
26	First Floor -Principal office Building - PC-14	88.8	Satisfactory for the duration

**Sound/Decibel level measured is satisfactory and there is no adverse impact of the same on occupants.**

**NBC-2016 standards of exposure to sound level is annexed as per Annexure-D**

## TRANSPORTATION PRACTICES



**रामलाल आनंद कॉलेज**  
दिल्ली विश्वविद्यालय  
बेनिटो हुआरेज़ रोड, नई दिल्ली-110021 (इंडिया)  
**Ram Lal Anand College**  
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E-mail : rlac.du@gmail.com  
rlac.bjr.du@gov.in  
Website : www.rlacollege.edu.in


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RLAC/2024/

19.10.2023

**Encouragement for Car Pools**

With an objective of maintaining a clean campus and de- congesting the college parking area the teaching and non- teaching faculty of the college are encouraged to use car pool. This would help in improving the ambience of the college, contributing towards maintaining a healthy eco- system and also reducing air pollution in the city.

  
**PRINCIPAL**

## **Observation and Recommendation**

1. Daily commuting Teaching and Non-Teaching faculty is also sensitized for using pooled transportation for working towards sustainability and reducing resource use and encouragement of resource conservation.
2. Transport vehicles purchased in future should be purchased with consideration of life cycle cost. (Keeping in consideration fuel efficiency of vehicle purchased.).
3. It is recommended that charging station in common parking be provided for encouragement of e-vehicles by students and staff members.
4. The RLAC is located near bus stand and Delhi metro station and the students and staff are making use of the facility.

## **PROCUREMENT PRACTICES TO BE FOLLOWED**

### **Paper use and printing goals of RLAC**

Procurement team is required to be made aware regarding procurement of goods and services that are sustainable. The sensitization is required for all purchases in a way that optimized utilisation of natural resources is possible.

- 1 Paper with Recycle content
2. AC's using refrigerant with Zero ODP Refrigerant
3. Environment friendly Housekeeping Chemicals
4. Paints, Adhesives, sealants with recommended percentage of volatile organic compound.

**For reduction of use of paper, paperless work has been adopted in all offices and laboratories. The following initiatives are already in vogue in functioning of :**

1. Paperless work has been adopted by teachers and staff members
2. Teachers share data among students and staff
3. WhatsApp groups are created for communication.

4. Applications like LMS, Shiksha Setu, google forms, Cisco Webex are used to share data and gathering of information (assessments, tests, assignments, notes, projects, ppt etc.
5. Online e-content has been prepared by students.
6. Staff members attended training to use and develop e-content.

### **PAPER USE AND PRINTING GOALS**

1. There are efforts already directed through use of E-Books for reducing the use of paper.
2. There are instructions to staff and student to resort to printing only if it is absolutely unavoidable.
3. Papers should be purchased that have recycled content.
4. Paper use and printing goals are already circulated by management is followed by students and staff of .

## **Detailed Summary of E-Library-RLAC**

### **E-Library**

#### **The following provisions are available**

1. Kindle =10
2. Laptop=6

#### **Total system with e-library facility=10+6=16**

Despite fewer in numbers the e-books have advantage of being used by multiple students/faculties simultaneously and thus creating better impact on sustainability in contrary to hard copy that can be read by only one person at a time.

The following recommendations are made

1. Use of E-books be promoted for students and faculty members specially in present Covid situation.
2. No. of E-books made available should be increased continuously.
3. Training on sustainability should be provided.
4. Adaption be promoted considering it to be a new normal.
5. Targets for increasing E-books should be fixed on continual basis.

### **Training and Awareness**

The is regularly conducting awareness program for students and faculty members.

### **Governance**

Through enactment of Waste Management policy that includes reduction of waste including paper waste and its circulation to all stake holders, sustainability can be achieved. The results are regularly required to be verified at Periodical intervals. These can be managed through internal or external audits.

### **Plantation policy**

#### **Plantation Inventory**

**The inventory of plants is not maintained in numbers .**

**Type of installed plants is documented as hereunder**

## List of Campus Herbal Plants and their Properties

Plant	Use
Aloe Vera	Antibacterial, anti-inflammatory, antioxidant, laxative, cure acne and ulcers
Basil	Sharpen memory, fight cold, flu and infection, adaptogen, anti-inflammatory
Insulin plant	Anti diabetic, reduce cholesterol, anti-cancer, prebiotic, immunity boosts
Ashwagandha	Stress & anxiety relief, improve memory, increase strength of muscle
Brahmi	Antioxidant, antibacterial, skin and hair benefits enhance memory, treat epilepsy
Mint	Anti-depressant, weight loss, oral health, digestion, anti-viral, anti-allergic
Ajwain	Digestive health, analgesic, antiseptic, treat cold, weight loss
Tulsi	Antimicrobial, antidiabetic, antipyretic, digestive, anti-cancer, anti-ageing, anti-allergic
Peppermint	Anti-spasmodic, anti-allergic, sinus care, fresh breath, stimulate appetite
Haldi	Boost immunity, wound healing, antioxidant, anti-ageing, prevent arthritis, anti-diabetic, skin benefits
Nagdon	Stop abnormal and excessive bleeding, constipation, joint pain, anti-inflammatory
Oregano	Anti-oxidant rich, anti-viral, anti-cancer, treat cough, heal wounds
Thyme	Antifungal, respiratory and digestive benefits, improve vision, cure muscle cramps
Pathar chatta	Anti-microbial, treat kidney stones, heal wounds, relief pain, reduce inflammation
Rosemary	Antibacterial, antifungal, anti-stress, digestive, pain relief

### Plantation Program

The RLAC, has regular plantation program.

Native species are planned to be planted and it is very good as these have minimum water requirement.

**Photographs of Plantation**



**Plantation drive at front lawn RLAC campus (29 August 2023)**









## **Air Quality**

### **CPCB GUIDELINES**

**Exhaust of DG Sets are required to be raised as per CPCB requirement.**

There is no record of air quality testing done earlier.

As per WHO guidelines the following should be the limits for Air Quality

### Particulate matter

Guidelines	
<b>PM<sub>2.5</sub>:</b>	<b>10 µg/m<sup>3</sup> annual mean</b> <b>25 µg/m<sup>3</sup> 24-hour mean</b>
<b>PM<sub>10</sub>:</b>	<b>20 µg/m<sup>3</sup> annual mean</b> <b>50 µg/m<sup>3</sup> 24-hour mean</b>

Normal outdoor level: 350 - 450 ppm. acceptable levels: < **600 ppm**. complaints of stuffiness and odors: 600 - 1000 ppm. ASHRAE and OSHA standards: 1000 ppm. general drowsiness: 1000 - 2500 ppm. Acceptable indoor level is 500ppm differential from outdoor levels

## Air Data-Particulate matter- RLAC

S.No.	Area	PM2.5	PM10	Remarks
1	Main Gate near Road	123.2	176.8	Unhealthy
2	Main Park-Reading -1	100.2	148	Unhealthy
3	Main Park-Reading -2	73.7	133.1	Unhealthy
4	Principal office corridor	73.7	106.5	Unhealthy
5	Cantten	104.1	151.2	Unhealthy
6	Kitchen	159.6	176	Unhealthy
7	Basement-Reading-1	103.7	145.2	Unhealthy
8	Basement-Reading-2	106.6	156.9	Unhealthy
9	Principal office	44.7	63.7	Unhealthy
10	Library	79	114.1	Unhealthy
11	Admn. Office	85	118	Unhealthy
12	Auditorium reading-1	84	114	Unhealthy
13	Auditorium reading-2	83	117	Unhealthy
14	Class Room-Fl and Room No.1	101.4	160.1	Unhealthy
15	Class Room-Fl and Room No.4	110.8	158.5	Unhealthy
16	Class Room-Fl and Room No.5	120	178.1	Unhealthy
17	Class Room-Fl and Room No.11	126.4	180.5	Unhealthy
18	Class Room-Fl and Room No.13	106.3	160.1	Unhealthy
19	Class Room-Fl and Room No.44	109.6	158.5	Unhealthy
20	Class Room-Fl and Room No.40	104.6	178.1	Unhealthy
21	Class Room-Fl and Room No.PC-4	19	180.5	Unhealthy
22	Class Room-Fl and Room No.Pc-2	110.3	154.2	Unhealthy
23	Class Room-Fl and Room No.PC-8	124.2	159.2	Unhealthy
24	Class Room-Fl and Room No.-PC-12	87.1	152.1	Unhealthy
25	Class Room-Fl and Room No.	88.8	174.3	Unhealthy
26	First Floor -Principal office Building -PC-14	89.3	162	Unhealthy

## Air Data-Carbon Dioxide- RLAC

Sno	Location	CO2	Remarks
1	Main Gate near Road	1902	High
2	Main Park-Reading -1	1236	Satisfactory
3	Main Park-Reading -2	1245	Satisfactory
4	Principal office corridor	1660	Satisfactory
5	Canteen	1343	Satisfactory
6	Kitchen	2013	High
7	Basement-Reading-1	1542	Satisfactory
8	Basement-Reading-2	1548	Satisfactory
9	Principal office –Closed on the day	2085	Satisfactory
10	Library	1764	Satisfactory
11	Admn. Office	1405	Satisfactory
12	Auditorium reading-1	1345	Satisfactory
13	Auditorium reading-2	1356	Satisfactory
14	Class Room-FI and Room No.1	1669	Satisfactory
15	Class Room-FI and Room No.4	1315	Satisfactory
16	Class Room-FI and Room No.5	1289	Satisfactory
17	Class Room-FI and Room No.11	1291	Satisfactory
18	Class Room-FI and Room No.13	1225	Satisfactory
19	Class Room-FI and Room No.44	1195	Satisfactory
20	Class Room-FI and Room No.40	1154	Satisfactory
21	Class Room-FI and Room No.PC-4	1153	Satisfactory
22	Class Room-FI and Room No.Pc-2	1175	Satisfactory
23	Class Room-FI and Room No.PC-8	1181	Satisfactory
24	Class Room-FI and Room No.-PC-12	1225	Satisfactory
25	Class Room-FI and Room No.	1243	Satisfactory
26	First Floor -Principal office Building -PC-14	1250	Satisfactory

## Air Data-Formaldehyde-RLAC

Sno	Location	NCHO	Remarks
1	Main Gate near Road	0.001	Satisfactory
2	Main Park-Reading -1	0.001	Satisfactory
3	Main Park-Reading -2	0.001	Satisfactory
4	Principal office corridor	0.001	Satisfactory
5	Canteen	0.001	Satisfactory
6	Kitchen	0.001	Satisfactory
7	Basement-Reading-1	0.001	Satisfactory
8	Basement-Reading-2	0.001	Satisfactory
9	Principal office –Closed on the day	0.001	Satisfactory
10	Library	0.001	Satisfactory
11	Admn. Office	0.001	Satisfactory
12	Auditorium reading-1	0.001	Satisfactory
13	Auditorium reading-2	0.001	Satisfactory
14	Class Room-FI and Room No.1	0.001	Satisfactory
15	Class Room-FI and Room No.4	0.001	Satisfactory
16	Class Room-FI and Room No.5	0.001	Satisfactory
17	Class Room-FI and Room No.11	0.001	Satisfactory
18	Class Room-FI and Room No.13	0.001	Satisfactory
19	Class Room-FI and Room No.44	0.001	Satisfactory
20	Class Room-FI and Room No.40	0.001	Satisfactory
21	Class Room-FI and Room No.PC-4	0.001	Satisfactory
22	Class Room-FI and Room No.Pc-2	0.001	Satisfactory
23	Class Room-FI and Room No.PC-8	0.001	Satisfactory
24	Class Room-FI and Room No.-PC-12	0.001	Satisfactory
25	Class Room-FI and Room No.	0.001	Satisfactory
26	First Floor -Principal office Building -PC-14	0.001	Satisfactory

The values of PM-2.5 and PM-10 are very high and values are dangerous for human beings. Values of CO<sub>2</sub> and Formaldehyde are satisfactory in general . There is not much that can be done by for management of particulate matter. Only any loose soil or construction material inside premises should be sprinkled with water to mitigate to some extent.

## Stack testing of DG Sets

DG Set stack testing is not got done. Recommended that stack testing from recognised Lab may be got done

### Significance of Refrigerant for Environment

Table depicting properties of Refrigerants

Refrigerant	Global Warming Poetential	Ozone Depletion Potential
R 22	1810	Medium
R 410A	2088	Nil
R 32	675	Nil
R 134A	1430	Nil
R 290	3	Nil
R 600A	3	Nil

Refrigerant	Type	ODP	GWP	Atmospheric lifetime (years)
R12	CFC	0.9	8500	102
R22	HCFC	0.06	1700	13.3
R134a	HFC	0	1300	14
R407C	HFC blend	0	1610	36
R410A	HFC blend	0	1900	36
Ammonia (R717)	Natural compound	0	0	< 1
Propane (R290)	HC	0	3	< 1
R1234yf	HFC unsat.	0	6	Very low
R1234ze	HFC unsat.	0	6	Very low

## Detail of Refrigerant used in installed Air Conditioners

Data of Refrigerants not maintained.

All window type Air conditioners installed are with R-32refrigerant. ON replacement all AC's should be purchased with zero ODP refrigerants. It is recommended that in future all procurement for AC's, Water cooler etc. be made with consideration for Environment friendly refrigerants.

Action for replacement of AC's with zero ODP refrigerant be initiates in phases.

### Recommendations

1. It is recommended that infuturecare should be taken to purchase Airconditionerswith refrigerants for which GWP is low and ODP is nil.
2. Life cycle cost should be considered for making decision about purchase of Air Conditioners.

## Eco friendly house keeping materials

**At present eco-friendly housekeeping material are not used. It is recommended that Green Seal -37 compliant an International standard or Green Pro-CII certified housekeeping material should be used for reduction of impact of activities of o environment.**

Green Seal -37 compliant an International standard or Green Pro-CII certification

It is recommended that Eco Friendly material and Sustainable material as per NBC-2016 guidelines be procured and used.



**GreenPro Certification Standard for  
Cleaning Chemicals**

**Version 1.0**

**General Purpose Cleaners**

Eco friendly housekeeping materials are recommended to be used for all cleaning application should be Green Pro or any similar Indian standard should be procured in future and records of such procurement b documented for future references.

The cleaning material may be required for following applications and also may be some other in addition to these.

1. Glass Cleaners
2. Bathroom Cleaners
3. Disinfectants and Sanitizers
4. Cleaner/Degreasers
5. Carpet and Upholstery Cleaners
6. Floor Cleaners
7. Liquid Hand Soap
8. Furniture Polish



## **Ventilation assessment**

The areas constructed have been provided with adequate windows and ventilators have been provided @ more than 6% of floor area as per requirement of ventilation as per IGBC operation and maintenance green building rating system.

The ventilation in most of the areas have been found to be satisfactory as per requirement of Green building standard. Where lacking ventilation be supplemented through making fixed glasses openable.

**Table 11 Recommended Rate of Air Circulation  
for Different Areas  
(Clause 11.3)**

Sl No. (1)	Application (2)	Air Change per Hour (3)
1)	Assembly rooms	4-8
2)	Bakeries	20-30
3)	Banks/building societies	4-8
4)	Bathrooms	6-10
5)	Bedrooms	2-4
6)	Billiard rooms	6-8
7)	Boiler rooms	see 11.2.2
8)	Cafes and coffee bars	10-12
9)	Canteens	8-12
10)	Cellars	3-10
11)	Changing rooms	6-10
12)	Churches	1-3
13)	Cinemas and theatres	10-15
14)	Club rooms	12, <i>M/h</i>
15)	Compressor rooms	10-12
16)	Conference rooms	8-12
17)	Corridors	5-10
18)	Dairies	8-12
19)	Dance halls	12, <i>M/h</i>
20)	Dye works	20-30
21)	Electroplating shops	10-12
22)	Engine rooms/DG rooms/CG rooms	see 11.2.2
23)	Entrance halls	3-5
24)	Factories and work shops	8-10
25)	Foundries	15-30
26)	Garages	6-8
27)	Glass houses	25-60
28)	Gymnasium	6, <i>M/h</i>
29)	Hair dressing saloon	10-15
30)	Hospitals-sterilising	15-25
31)	Hospital-wards	6-8
32)	Hospital domestic	15-20
33)	Laboratories	6-15
34)	Laundrettes	10-15
35)	Laundries	10-30
36)	Lavatories	6-15
37)	Lecture theatres	5-8
38)	Libraries	3-5
39)	Lift cars	20, <i>M/h</i>
40)	Living rooms	3-6
41)	Mushroom houses	6-10
42)	Offices	6-10
43)	Paint shops(not cellulose)	10-20
44)	Photo and X-ray dark room	10-15
45)	Public house bars	12, <i>M/h</i>
46)	Recording control rooms	15-25
47)	Recording studios	10-12
48)	Restaurants	8-12
49)	Schoolrooms	5-7
50)	Shops and supermarkets	8-15
51)	Shower baths	15-20
52)	Stores and warehouses	3-6
53)	STP rooms	30, <i>M/h</i>
54)	Squash courts	4, <i>M/h</i>
55)	Swimming baths	10-15
56)	Toilets	6-10
57)	Underground vehicle parking	6, <i>M/h</i>
58)	Utility rooms	15-30
59)	Welding shops	15-30

## **Fire Safety:**

No halon-based fire extinguishers have been used, it is very good initiative. As a future guideline it is recommended that a fire suppression system is to be used for any fire extinguishing system, only clean agents with minimum environmental impact should be installed.

**For sustainability there is requirement of reducing the fire risk. There is requirement of firefighting to be followed as per NBC-2016. It is recommended that audit for fire safety-General safety and Electrical safety should be got conducted and required provisions should be made for safety and averting loss of life and property.**

## **Custodial chemical use**

Chemical for one-year requirement are stored in Labs and these are stored in a separate store. The store requires to be ventilated and hazard analysis should be got done through Material Specification Data Sheet and record should be maintained. Proper ventilation with hoods should be designed.

## Sustainable Development Goals

Sustainable development should always be practiced in all activities of . The administration, students and staff are already aware and efforts are always put to meet requirement as per applicability.

# SUSTAINABLE DEVELOPMENT GOALS



The principal, teaching and Non-teaching staff is aware of these goals and there is a practice of considering these goals while taking decisions in .

## Summarization of Green and Environment Audit findings

An Environment and Green Audit was conducted, the major relevant aspects that were covered in the Environment and Green audit and present level of performance of are summarized here:

- 1. Policies, planning and Commitment:** The college has already in place an Environment and Green policy that covers all concerning aspects, plantation policy and commitment for women empowerment and their active participation for improvement of Environment in and around and also working towards mitigation impact of activities on climate.  
Effective Policy preparation and its implementation with appropriate planning is the major contributor for bringing in change and for continual improvement.
- 2. Awareness of Staff :** The concerned staff members are very much aware and there are excellent records maintained and kept updated for environmental aspects.  
This attitude has made the implementation of environmental aspects for activities of easier and effective.
- 3. land, structural foot print and maintaining inventory of ventilation, Plumbing and sanitation and recharging of Ground water:**  
The concerned staff is maintaining the details of all constructed areas of building for effective management of ventilation, sanitation and reduction of water use for betterment of Environment and making the green.  
There are enough openable windows for requirement of natural ventilation in premises and only a few places only fixed windows are being made openable for fulfilling the requirement of natural ventilation..
- 4. Plantation and Turf area:** The college is conducting regular plantation program and planting native species that has low consumption of water for their subsistence. The turf area has also been optimized to avert use of excess water that may be required for maintenance of grass. NCC, NSS and other departments have participated in plantation program in recent years.
- 5. Health of students and staff:** The college is having a regular Medical officer in an established medical center at south Delhi university campus and full time Paramedic is available at the college premises and there is a dedicated space allocated for Medical room is always attended by a paramedic for further guidance after providing first aid if required.

**6. Transportation:**The administration is encouraging the mitigation of impact on environment due to use of public transport by students and members of staff.

Substantial proportion of population is using metro and bus services as shared transport.

**7. Procurement Procedures:**

- a. The procurement activities of an institution are very significant for making it sustainable and also in mitigation of energy foot print by purchase of energy efficient equipment.
- b. As Energy consumption has direct bearing on climate change and environment, the awareness of those responsible for purchase of energy consuming equipment should be aware regarding energy efficiency of equipment for considering the same while making purchase.
- c. The purchase committee of RLAC -Delhi University members are imparted awareness knowledge on the adverse impact of less energy efficient equipment and thereby increase of carbon foot print due to use of in efficient equipment. They have the understanding that in case of energy efficient equipment **first cost** has not to be the only consideration while making purchase decisions, instead life cycle cost should be considered for making purchase decision of energy consuming equipment.
- d. The purchase committee members are also aware that for any equipment the impact of substances like refrigerants, the fixture that are containing mercury or other harmful substance is to be avoided absolutely and equipment with zero ODP and with low hazard elements are only to be purchased.
- e. The committee has also been sensitized for purchase of paints, sealants and adhesives with permissible quantity of volatile organic compounds.
- f. The committee has also been made aware for considering recycled content of paper for any future purchases.
- g. The committee members are aware of Ecofriendly housekeeping materials and for future purchases the same shall be considered.

**8. Use of paper and E-library**

The has already instructions in place for all members of staff for avoiding the printing where ever possible and also apply other techniques for reduction of paper use.

Use of E-library for on line study is encouraged and is also monitored regularly and ratio of E- books to hard copies is increasing year on year with normalized calculations.

**9. Sustainable development goals**

The staff and students are aware of sustainability goals and practicing the same in their actions as per applicability.

**10. On-site composting and use of manure:**

Leaves and other botanical waste including food waste is treated in composting plant and manure thus formed is used in place of chemical fertilizer and no fertilizer is purchased for plantation.

**11. Fire Fighting equipment:**

None of firefighting equipment installed is with high environment impact chemicals like halon etc.

**12. Handling of waste from Microbiology lab and exhaust fumes handling**

Presently there is no practice of proper handling of chemical fumes. The discharge from Microbiology lab is required to be handled as per laid down guidelines

Exhaust hood is required to be provided at a height of 3.00 meters above building height for safe dispersion of chemicals. The enough sized space is required to be provided as the activities are presently extending to Corridor.

**13. Air Quality**

The presence of particulate matter is higher than acceptable limits. There is nothing that can be done for improvement of same.

**14. Waste management**

There is an effective waste management plan and procedures in place that are followed by for handling of solid, plastic, paper and E- waste.

**15. Noise Level**

Level of sound in areas of is within acceptable limits as per length of exposure as per NBC-2016 standards.

-----End of Report-----

## Annexure-A-Excerpts from Energy Conservation Building Code-2017

Table 4-6 Roof Assembly U-factor ( $W/m^2.K$ ) Requirements for SuperECBC Building

	<i>Composite</i>	<i>Hot and dry</i>	<i>Warm and humid</i>	<i>Temperate</i>	<i>Cold</i>
All buildings types	0.20	0.20	0.20	0.20	0.20

### 4.3.1.1 Vegetated and Cool Roof

All roofs that are not covered by solar photovoltaics, or solar hot water, or any other renewable energy system, or utilities and services that render it unsuitable for the purpose, shall be either cool roofs or vegetated roofs.

- (a) For qualifying as a cool roof, roofs with slopes less than 20° shall have an initial solar reflectance of no less than 0.70 and an initial emittance no less than 0.75. Solar reflectance shall be determined in accordance with ASTM E903-96 and emittance shall be determined in accordance with ASTM E408-71 (RA 1996).
- (b) For qualifying as a vegetated roof, roof areas shall be covered by living vegetation of >50 mm high.



## Annexure-B Standards for water requirement

**Table 1 Water Requirements for Buildings Other than Residences**  
(Clause 4.1.2)

Sl No.	Type of Building	Domestic Per Day litre	Flushing Per Day litre	Total Consumption Per Day litre
(1)	(2)	(3)	(4)	(5)
i)	Factories including canteen where bath rooms are required to be provided	30 per head	15 per head	45 per head
ii)	Factories including canteen where no bath rooms are required to be provided	20 per head	10 per head	30 per head
iii)	Hospital (excluding laundry and kitchen) ( <i>see</i> Note 2):			
	a) Number of beds not exceeding 100	230 per head	110 per head	340 per head
	b) Number of beds exceeding 100	300 per head	150 per head	450 per head
	c) Out patient department (OPD)	10 per head	5 per head	15 per head
iv)	Nurses' homes and medical quarters	90 per head	45 per head	135 per head
v)	Hostels	90 per head	45 per head	135 per head
vi)	Hotel (up to 3 star) excluding laundry, kitchen, staff and water bodies	120 per head	60 per head	180 per head
vii)	Hotel (4 star and above) excluding laundry, kitchen, staff and water bodies	260 per head	60 per head	320 per head
viii)	Offices (including canteen)	25 per head	20 per head	45 per head
ix)	Restaurants and food court including water requirement for kitchen:			
	a) Restaurants	55 per seat	15 per seat	70 per seat
	b) Food court	25 per seat	10 per seat	35 per seat
x)	Clubhouse	25 per head	20 per head	45 per head
xi)	Stadiums	4 per head	6 per head	10 per head
xii)	Cinemas, concert halls and theatres and multiplex	5 per seat	10 per seat	15 per seat
xiii)	Schools/Educational institutions:			
	a) Without boarding facilities	25 per head	20 per head	45 per head
	b) With boarding facilities	90 per head	45 per head	135 per head
xiv)	Shopping and retail (mall)			
	a) Staff	25 per head	20 per head	45 per head
	b) Visitors	5 per head	10 per head	15 per head
xv)	Traffic terminal stations ( <i>see</i> Notes 3 and 4)			
	a) Airports	40 per head	30 per head	70 per head
	b) Railway stations (Junctions) with bathing facility	40 per head	30 per head	70 per head
	c) Railway stations (Junctions) without bathing facility	30 per head	15 per head	45 per head
	d) Railway Stations (Intermediate) with bathing facility	25 per head	20 per head	45 per head
	e) Railway Stations (Intermediate) without bathing facility	15 per head	10 per head	25 per head
	f) Interstate bus terminals	25 per head	20 per head	45 per head
	g) Intrastate Bus Terminals/Metro Stations	10 per head	5 per head	15 per head

### NOTES

**1** For calculating water demand for visitors, consumption of 15 litre per head per day may be taken.

**2** The water demand includes requirement of patients, attendants, visitors and staff. Additional water demand for kitchen, laundry and clinical water shall be computed as per actual requirements.

**3** The number of persons shall be determined by average number of passengers handled by stations, with due considerations given to the staff and vendors who are using these facilities.

**4** Consideration should be given for seasonal average peak requirements.

**5** The hospitals may be categorized as Category A (25 to 50 beds), Category B (51 to 100 beds), Category C (101 to 300 beds), Category D (301 to 500) and Category E (501 to 750 beds).

### Annexure-C-Detail of Lux Level at RLAC

S.No.	Area	Lux Level	Remarks
1	Main Gate near Road	Day Time	Satisfactory
2	Main Park-Reading -1	Day Time	Satisfactory
3	Main Park-Reading -2	Day Time	Satisfactory
4	Principal office corridor	150	Satisfactory
5	Cantten	Lights off	Satisfactory
6	Kitchen	155	Satisfactory
7	Basement-Reading-1	209	Satisfactory
8	Basement-Reading-2	215	Satisfactory
9	Principal office	425	Satisfactory
10	Library	301	Satisfactory
11	Admn. Office	325	Satisfactory
12	Auditorium reading-1	150	Satisfactory
13	Auditorium reading-2	160	Satisfactory
14	Class Room-Fl and Room No.1	310	Satisfactory
15	Class Room-Fl and Room No.4	325	Satisfactory
16	Class Room-Fl and Room No.5	326	Satisfactory
17	Class Room-Fl and Room No.11	322	Satisfactory
18	Class Room-Fl and Room No.13	301	Satisfactory
19	Class Room-Fl and Room No.44	309	Satisfactory
20	Class Room-Fl and Room No.40	340	Satisfactory
21	Class Room-Fl and Room No.PC-4	332	Satisfactory
22	Class Room-Fl and Room No.Pc-2	331	Satisfactory
23	Class Room-Fl and Room No.PC-8	353	Satisfactory
24	Class Room-Fl and Room No.-PC-12	310	Satisfactory
25	Class Room-Fl and Room No.	320	Satisfactory
26	First Floor -Principal office Building -PC-14	327	Satisfactory

## Annexure-D-Limits of Sound level as per NBC-2016

SI No.	Sound Level (Slow Response) dBA	Time Permitted, <i>T</i> h : min
(1)	(2)	(3)
i)	85	16:00
ii)	86	13:56
iii)	87	12:08
iv)	88	10:34
v)	89	9:11
vi)	90	8:00
vii)	91	6:58
viii)	92	6:04
ix)	93	5:17
x)	94	4:36
xi)	95	4:00
xii)	96	3:29
xiii)	97	3:02
xiv)	98	2:50
xv)	99	2:15
xvi)	100	2:00
xvii)	101	1:44
xviii)	102	1:31
xix)	103	1:19
xx)	104	1:09
xxi)	105	1:00
xxii)	106	0:52
xxiii)	107	0:46
xxiv)	108	0:40
xxv)	109	0:34
xxvi)	110	0:30
xxvii)	111	0:26
xxviii)	112	0:23
xxix)	113	0:20
xxx)	114	0:17
xxxi)	115	0:15

## **Annexure-E-Guidelines for Environment Friendly and Green Initiatives**

### **VOC limits of materials**

<b>Type of Material</b>	<b>VOC Limit (g/L less water)</b>
<b>Paints</b>	
Non- Flat (Glossy) paint	150
Flat (Mat) paint	50
Anti- corrosive/ anti-rust paints	250
Varnish	350
<b>Adhesives</b>	
Glazing adhesives	100
Tiles adhesives	65
Wood adhesive	30
Wood flooring adhesive	100

## **Aneexure-F-Credentials of Principal Auditor**

The following members of EM Project Services was part of audit study at RLAC .

1. Mr. Satvinder Singh-Principal Auditor
2. Mr. Ranjit Singh -Data surveyor cum senior instrument technician
3. Mr. Vaibhav -Instrument Engineer
4. Mr. Niraj Gupta

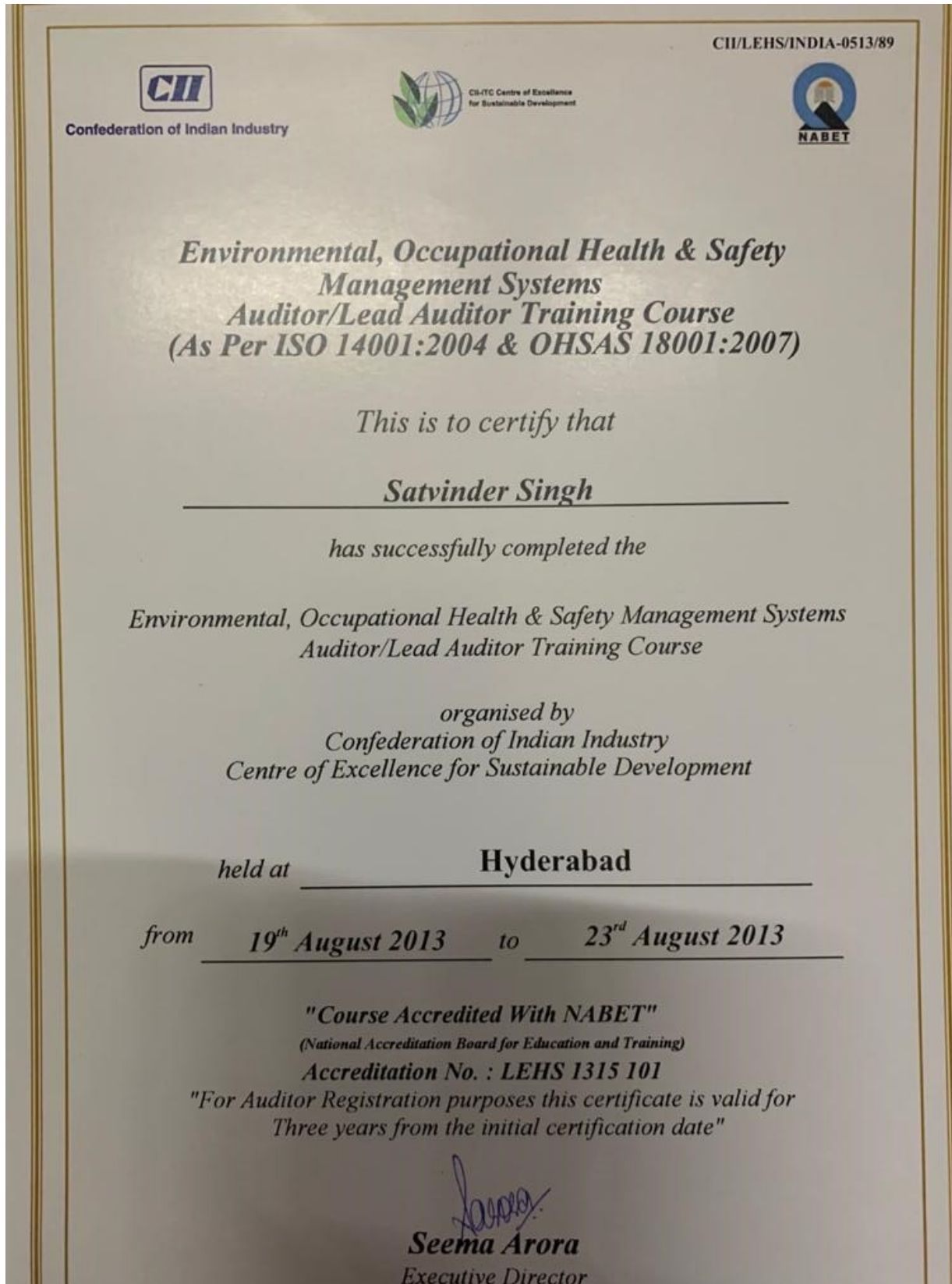
### **Credential of Mr. Satvinder Singh are as under**

Qualifications :

1. Graduate Electrical Engineer.
2. Post Graduate in Business Administration.
3. Attended five days preparatory professional development hours for PMP (USA) certification.

Certifications :

1. BEE Accredited Energy Auditor-AEA-0294
2. Energy Conservation Building Code Master trainer (Under UNDP-GEF-BEE Project)
3. Indian Green Building Council-Accredited Professional
4. Lead Auditor-ISO-14001-Environment Management system.
5. Certified Monitoring and Verification practitioner-(AEE-USA)
6. Galileo Master Certificate-Renewable Energy (U.K)
7. Lead Auditor-ISO-50001- BSI-16001 (Energy management system)
8. Lead Auditor OHSAS-18001
9. Attended World Energy conference in USA on three occasions in Washington D.C-Atlanta and Charlotte (North Carolina)





Confederation of Indian Industry  
CII-Sohrabji Godrej Green Business Centre



Indian Green Building Council

## Indian Green Building Council

hereby certifies that

**Satvinder Singh**

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**  
Senior Director & Head  
CII-Godrej GBC

**Dr Prem C Jain**  
Chairman  
Indian Green Building Council

15 May 2010

MTN74653

# EM PROJECT SERVICES

A-615 Shastri Nagar-Delhi-110052

## CERTIFICATE OF GREEN AND ENVIRONMENT AUDIT

*This is to certify that Ram Lal Anand College - University of Delhi, 5, Benito Juarez Marg, South Campus, Anand Niketan, New Delhi, Delhi 110021 has successfully undergone Green and Environment Audit during June-2024 to assess the Green and Eco-friendly Initiatives planning and efforts carried out in the campus to keep environment friendly atmosphere to the stake holders was found satisfactory.*

**Dated: 19-06-2024**

SSMAAN

**Satvinder Singh**  
Principal Auditor