CAMPUS GREEN AUDIT

NEHRU MEMORIAL COLLEGE

(AUTONOMOUS)

Puthanampatti -621007

REPORT

2019-2020

PREPARED BY

DEPARTMENT OF ENVIRONMENTAL SCIENCES

Bishop Heber College (Autonomous)

Tiruchirappalli, Tamilnadu – 620 017

CAMPUS GREEN AUDIT

19 DECEMBER 2019

CERTIFICATE

This is to certify that detailed **CAMPUS GREEN AUDIT** has been successfully conducted for **Nehru Memorial College, (Autonomous), Puthanampatti, Tamilnadu for the period 2019 – 2020** based on data and other credentials received from the College and site visit. The activities and measures carried out by the College have been verified and found to be satisfactory. The College has evolved policies on Environment, Water, Waste and Sanitation in line with the Sustainable Development Goals. The efforts taken by the members of the faculty, students, support staff and the Management towards creating a strategic change in attaining holistic environmental sustainability is highly appreciated and commended.

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SAVE NATURE SAVE LIFE SAVE EARTH

NISI DOMINUS FRUSTRA

Department of Environmental Sciences 35 ANNIVERSARY 1984 - 2019

PREFACE

An Environmental Audit is a tool comprising a systematic, documented, periodic and objective evaluation of how well a project, organization or equipment is performing with the aim of helping to safeguard the environment. The audit should facilitate management control of environmental practices and assess compliance with policy objectives and regulatory requirements.

Green audit is defined as an official examination of the effects a college has on the environment. It helps to improve the existing practices with the aim of reducing the adverse effects of these on the environment concerned.

Higher Educational Institutions are committed to preserve the environment within the campus through promotion of energy savings, recycling of waste, water use reduction, water harvesting etc.

Green audit visualizes the documentation of all such activities taking stock of the infrastructure of the college, their academic and managerial policies and future plans. A green auditor will study an organization's environmental effects in a systematic and documented manner and will produce an environmental audit report.

A clean and healthy environment aids effective learning and provides a conducive learning environment. Green audit can be a useful tool for a college to determine how and where they are using the most energy or water or resources; the college can then consider how to implement changes and make savings. It can also be used to determine the type and volume of waste which can be used for a recycling project or to improve waste minimization plan. It can create health consciousness and promote environmental awareness, values and ethics. It provides staff and students better understanding of green impact on campus.

Green auditing promotes financial savings through reduction of resource use. It gives an opportunity for the development of ownership, personal and social responsibility for the students and teachers. Thus it is imperative that the college evaluate its own contributions toward a sustainable future. As environmental sustainability is becoming an increasingly important issue for the nation, the role of higher educational institutions in relation to environmental sustainability is more relevant.

The audit process in Nehru Memorial College, Puthanampatti involved initial interviews with management to clarify policies, activities, records and the co-operation of staff and students in the implementation of mitigation measures. Staff and students were given training how to collect the data for the green audit process. This was followed by staff and student interviews, collection of data through the questionnaire based survey, review of records, observation of practices and observable outcomes. In addition, the approach ensured that the management and staff are active participants in the green auditing process in the college.

The baseline data prepared for the Nehru Memorial College (Autonomous), Puthanampatti will be a useful tool for campus greening, resource management, planning of future projects, and a document for implementation of sustainable development of the college. Existing data will allow the college to compare its programs and operations with those of peer institutions, identify areas in need of improvement, and prioritize the implementation of future projects. The green audit reports assist in the process of attaining an eco-friendly approach to the sustainable development of the college.

The results presented in the green audit report will serve as a guide for educating the college community on the existing environment related practices and resource usage at the college as well as spawn new activities and innovative practices. The Green Audit team expects the management to express their commitment to implement the recommendations.

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GREEN AUDIT REPORT

NEHRU MEMORIAL COLLEGE
(Autonomous)
Puthanampatti -621007

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NEHRU MEMORIAL COLLEGE

(Autonomous)
(ACCREDITED WITH "A" GRADE BY NAAC)
Puthanampatti - 621 007
TRICHIRAPALLI DISTRICT, TAMILNADU
Website: www.nmc.ac.in

Green Audit Assessment Team (Internal)

Sl. No	Campus Green Audit over all Team	Designation
1	Dr.A.R.Ponperiasamy Principal, NMC	Chairman
2	Dr.C.Sasikumar, Dean, Research and Development	MemberSecretary
3	Dr.S.Kumararaman, Vice - Pricnipal	Member
4	Dr.K.T.Tamilmani, Dean, Academic Affairs	Member
5	Dr.VijiSaral Elizabeth, Dean, Placement and Training.	Member
6	Mr.Rathakrishnanan, Estate Manager, NMC	Member
7	Er.Vijayakumar, Engineer, NMC	Member

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Website: www.nmc.ac.in

CAMPUS GREEN AUDIT TEAM COORDINATORS

SL. NO	AUDIT TEAM	COORDINATORS
1	ENVIRONMENTAL MANAGEMENT TEAM	Dr. M.Meenakshisundaram, Co-ordinator, Assistant Professor Department of Botany
2	WATER MANAGEMENT TEAM	Dr.K.Saravanan, Co-ordinator Assistant Professor Department of Zoology
3	WASTE MANAGEMENT TEAM	Dr.N.Ramesh, Co-ordinator , Assistant Professor Department of Zoology
4	SANITATION MANAGEMENT TEAM	Dr.V.Ramesh, Co-ordinator Assistant Professor Department of Zoology
5	AIR , NOISE MANAGEMENT TEAM	Dr.M.Ramesh, Co-ordinator, Assistant Professor Department of Chemistry

INTRODUCTION

Green Audit is a process of systematic identification, quantification, recording, reporting and analysis of components of environmental diversity of various establishments. It aims to analyze environmental practices within and outside of the concerned sites, which will have an impact on the eco-friendly ambience. Green audit can be a useful tool for a college to determine how and where they are using the most energy or water or resources; the college can then consider how to implement changes and make savings. It can also be used to determine the type and volume of waste, which can be used for a recycling project or to improve waste minimization plan. It can create health consciousness and promote environmental awareness, values and ethics. It provides staff and students better understanding of Green impact on campus. If self enquiry is a natural and necessary outgrowth of a quality education, it could also be stated that institutional self enquiry is a natural and necessary outgrowth of a quality educational institution. Thus it is imperative that the college evaluate its own contributions toward a sustainable future. As environmental sustainability is becoming an increasingly important issue for the nation, the role of higher educational institutions in relation to environmental sustainability is moreprevalent.

OBJECTIVES

The Green Audit of an institution is becoming a paramount important these days for self- assessment of the institution, which reflects the role of the institution in mitigating the present environmental problems. The college has been putting efforts to keep the environment clean since its inception. But the auditing of this non-scholastic effort of the college has not been documented. Therefore, the purpose of the present green audit is to identify, quantify, describe and prioritize frameworkof EnvironmentSustainability in compliance with the applicable regulations, policies and standards. The main objectives of carrying out Green Auditare:

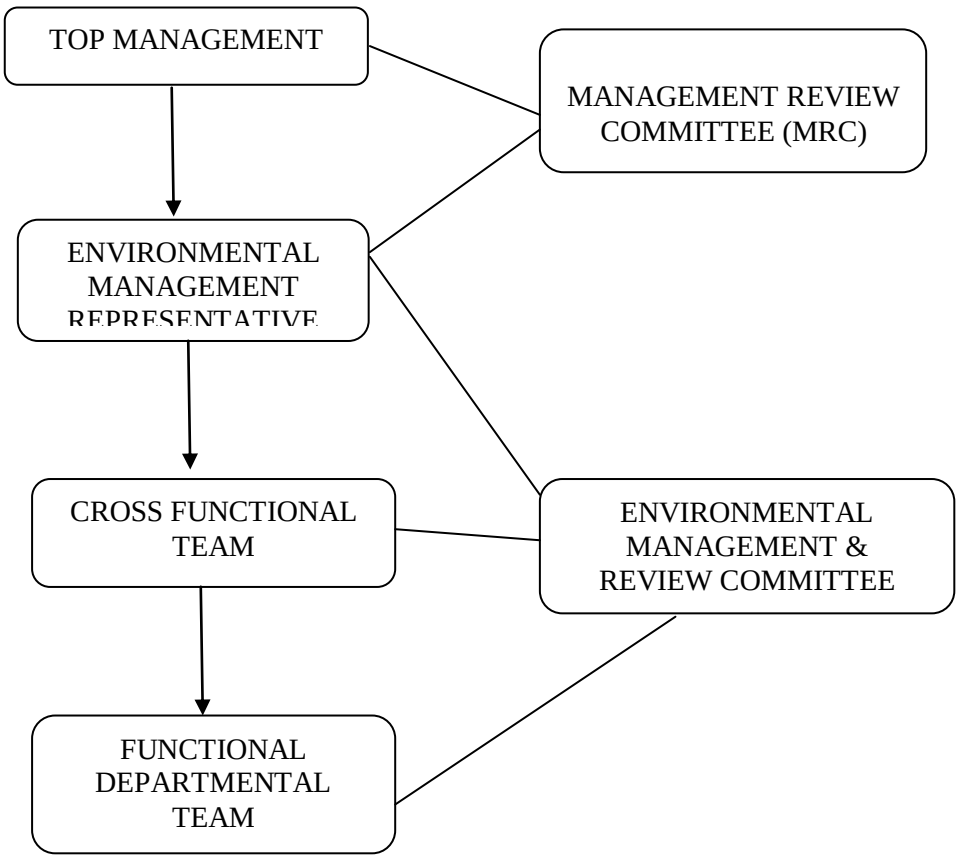
1. To document the status of land environment and land use pattern
2. To document the flora and fauna in the campus

METHODOLOGY:

The purpose of the green audit of NMC is to ensure that the practices followed in the campus are in accordance with the Green Policy adopted at the College. The Methodology include the preparation physical inspection of the campus, observation and review of the documentation green audit parameters at intervals , interviewing key persons and data analysis, measurements and recommendations. Key components of Green audit conducted at Nehru Memorial College, Puthanampatti included:

I. Pre-auditplanning

The first andvery important phase of green audit is establishment of anEnvironmental Management System (EMS) by an organization. The Environmental Management System is the backbone of the auditing process and its role is broad and wide. Every aspect of greenaudit ismonitored by this system. The organization should establish the Environmental Management System. The governance structure of the Environmental Management System is shown in following chart.



Governance of Environmental Management

a) Preliminary literature review of concepts and methodologies related to greenaudit.

b) Discussion with the management staff on various systems installed in thecampus.

c) Awareness creation and interaction with the staff and student on the concept of greenaudit.

d) Walk through the entire campus to understand the nature of water use, energy use and waste management systems in thecampus.

Benefits of the Green Auditing

- More efficient resource management
- To provide basis for improved sustainability
- To create a green campus To enable waste management through reduction of waste generation, solid- waste and water recycling
- To create plastic free campus and evolve health consciousness among the stakeholders Recognize the cost saving methods through waste minimizing and managing Point out the prevailing and forthcoming complications
- Authenticate conformity with the implemented laws
- Empower the organizations to frame a better environmental performance
- Enhance the alertness for environmental guidelines and duties
- Impart environmental education through systematic environmental management approach and Improving environmental standards Benchmarking for environmental protection initiatives⎫
- Financial savings through a reduction in resource use
- Development of ownership, personal and social responsibility for theCollege and its environment Enhancement of college profile
- Developing an environmental ethic and value systems in youngsters.
- Green auditing should become a valuable tool in the management
- and monitoring of environmental and sustainable development programs of the college

♣Actual Auditing

II. **Audit Stage**

- Checking of Documents and Evaluation
- Review of Environment Policy
- Review of Programmes or Activities

III. **Pre audit stage** - Meeting with the Principal and the Green audit coordinator

Fig.1: Meeting with Principal and Co-ordinators

IV. Meeting with the Audit team members (Staff advisers, student representatives etc..)

Fig .2 :Green Audit Inauguration at Nehru Memorial College, Puthanampatti.

A green audit was started at Nehru Memorial College, Puthanamapatti, Tiruchirappalli District, Tamilnadu – 621007 on 20th June 2019.

The methodology adopted for this audit was a three step process comprising of

I. Processing of Data Collection as per the template:

a) Development of questionnaire format to identify all water/energy using fixtures/ equipment and examine water or energy use patterns for individual buildings in thecampus.

b) Collection of secondary data from compilation of electricity bills, collecting records of pumps, generators, water quality analysis reports, civil and electrical etc.

c) Semi-structured interview with maintenance manager, technicians, plumber and housekeeping staff on current situation and the past trends in water consumption, electricity consumption, waste management, waste generationetc.

II. Data Processing and analysis

The existing trends and patterns in water usage, energy usage and waste generation and management is analysed in this step from the data collected from the previous step.

III. Audit Recommendations andreporting:

Recommendation – On the basis of results of data analysis and observations, some steps for reducing power and water consumption were recommended. Proper treatments for waste were also suggested. Use of fossil fuels has to be reduced for the sake of community health.

I. PROFILE

II. LAND AUDIT

III. FLORA & FUNNA

NEHRU MEMORIAL COLLEGE
(AUTONOMOUS)

PUTHANAMAPATTI - 621007

PROFILE

I. SECTION I : PROFILE

1.	**Name of the Institution**	**:**	**NEHRU MEMORIAL COLLEGE (AUTONOMOUS)**
2.	Address of the College	:	PUTHANAMPATTI – 621 007
	City / District	:	TRICHIRAPALLI -DISTRICT
	State	:	TAMILNADU
	Pincode	:	621 007
	Phone - Landline	:	04327 - 234227, 234638
	E mail	:	info@nmc.ac.in
	Web site	:	www.nmc.ac.in
3.	Name of the Principal	:	Dr.A.PONPERIASAMY
	Mobile Number	:	9486165596
4.	Green Audit Coordinator's Name	:	Dr. A. ALAGAPPA MOSES
	Mobile number	:	9842490057

5. How many shifts does your College have? Please Tick ✔ :

Shift	✔ / ×	Time	Hours
REGULAR	✔	9.30	3.30
Co-Education	✔		

6. Is your College single gender? :

7. What is the total population of the College? : Total : 4634

Students	:	Male	1611	Female	2716
Teachers	:		52		129
Non-Teaching Staff (housekeeping, support & Management Staff)	:		64		62
Total	:		1727		2907

8. How many visitors visit your College? (Visitors are Students & Teachers from other Colleges, Technicians, contractors, labourers, guests and others (Please provide an average number). : 65

9. How many students / wardens / support staff stay in your College? : 1300

10. **Brief History of the Campus**

VISION:

- For knowledge, Justice and Peace

MISSION:

With a view to realizing this vision, the college has taken up the following mission

- To impart the right kind of knowledge among the rural students with the aid of computers and other equipment,
- To ensure social justice for the rural people through various academic and non-academic activities viz., Cultural and Literary competitions, NSS, NCC, YRC, Gender Club etc.
- To stabilize inner peace in the minds of the young learners through meditation and Yoga practice in order to ensure peace among the rural people.

Motto

- Promoting higher level academic pursuits
- Building the Confidence level of the rural students
- Providing ample opportunities for Career Growth
- Sensitizing the youth about social justice and responsibility

ABOUT NMC

Nehru Memorial College, Puthanampatti was established in the year 1967. It was founded by Late Shri. Mookka Pillai a great philanthropist whose selfless spirit prompted him to take up the mission and vision of spreading education as early as 1942.

The great philanthropist and visionary Late Thiru. Mokka Pillai had conceived a noble idea of providing education to the children of peasants, the downtrodden and the poor section of the rural society and implemented it in the year 1942 by establishing a middle school in the rural village

Puthanampatti. He had put his heart and soul in addition to his hard earned money to impart education to the rural mass of the village.

During the Pre-independence days the founder had a great reverence for Pandit Jawaharlal Nehru and hence the school was named after our nation's first Prime Minister. The school was upgraded as High school in the year 1948. His another brainchild called Nehru Basic Training School paved the way for promoting a teacher in every house of the village in and around Puthanampatti.

The undaunted spirit of the unlettered genius did not satisfy himself with school education alone. He envisaged yet another noble cause of imparting higher education to the people in and around Puthanampatti and his dream was realized in 1967 in the form of 'Nehru Memorial College was declared open by HonourableShri.C.N. Annadurai, M.A., the then Chief Minister of Tamilnadu on 29th June 1967. The college is affiliated to Bharathidasan University, Tiruchirappalli, and was recognized under section 2 (f) and 12 (B) by the University Grants Commission, New Delhi in 1969. In appreciation of the societal concern and innovative practices adopted in a rural ambience, the college was granted autonomous status in 2004 by the University Grants Commission and accredited with "A" Grade by NAAC in the year 2013.

The College campus is spread over 45 acres of land. It has multi-storey buildings housing spacious class rooms and laboratories. The laboratories are equipped with state of art modern equipment. The college campus is spread over 45 acres of land. It has multi-storey buildings housing spacious class rooms and laboratories. All college has an exclusive computer centre with 300 terminals. The office of the Controller of Examinations functions separately in a well furnished wing. The institution has a separate two storey Library building with 50,000 volumes of books 73 national, and international reputed / peer reviewed journals. The college has two air-conditioned conference hall. A mega multipurpose hall with a floor space of 25,000 sq. feet is another unique feature of the college. There are three hostels:

1. Sir. C.V. Raman Hostel which could accommodate 1400 women inmates,
2. Mahatma Gandhi Centenary Hostel and
3. Highland Hostel for 600 men inmates.

These hostels are well furnished with lodging facility, reading rooms, computer laboratory with internet connectivity, play ground, ultra-modern kitchens and spacious dining halls. C.V. Raman Hostel for women has an open-air auditorium for the conduct of cultural and literary events. The institution has established Reverse Osmosis plant for the supply of purified drinking water for all the Students and Staff. As regards power supply, the college has 24 hrs HT power supplies along with 200 KVA backup generators. We have also installed about 300 kilo watts supply of SOLAR POWER Energy, and we are working towards “Zero Energy” campus in future.

All the academic administrative blocks and hostel are connected with Internet facility. All the faculty members are provided with computer and Internet facility. Students have access to Internet in the Internet centre. The institution conducts medical camps frequently. Any emergency medical need is taken care of by the nearest Government Hospital at Omandur which is 4 km. away from the campus. A separate vehicle is exclusively kept ready for the medical care of the students round the clock. The institution provides adequate transport facility for the students and staff.

We get students from various parts ie., Trichy, Salem, Namakal, Villupuram, Cudalore, districts, and we have about 50 students from Sri Lanka also studying in various programmes such as BBA, BCA, B.com, B.Com (CA) Chemistry and B.Sc., Hotel Management and Catering Science.

Main Block

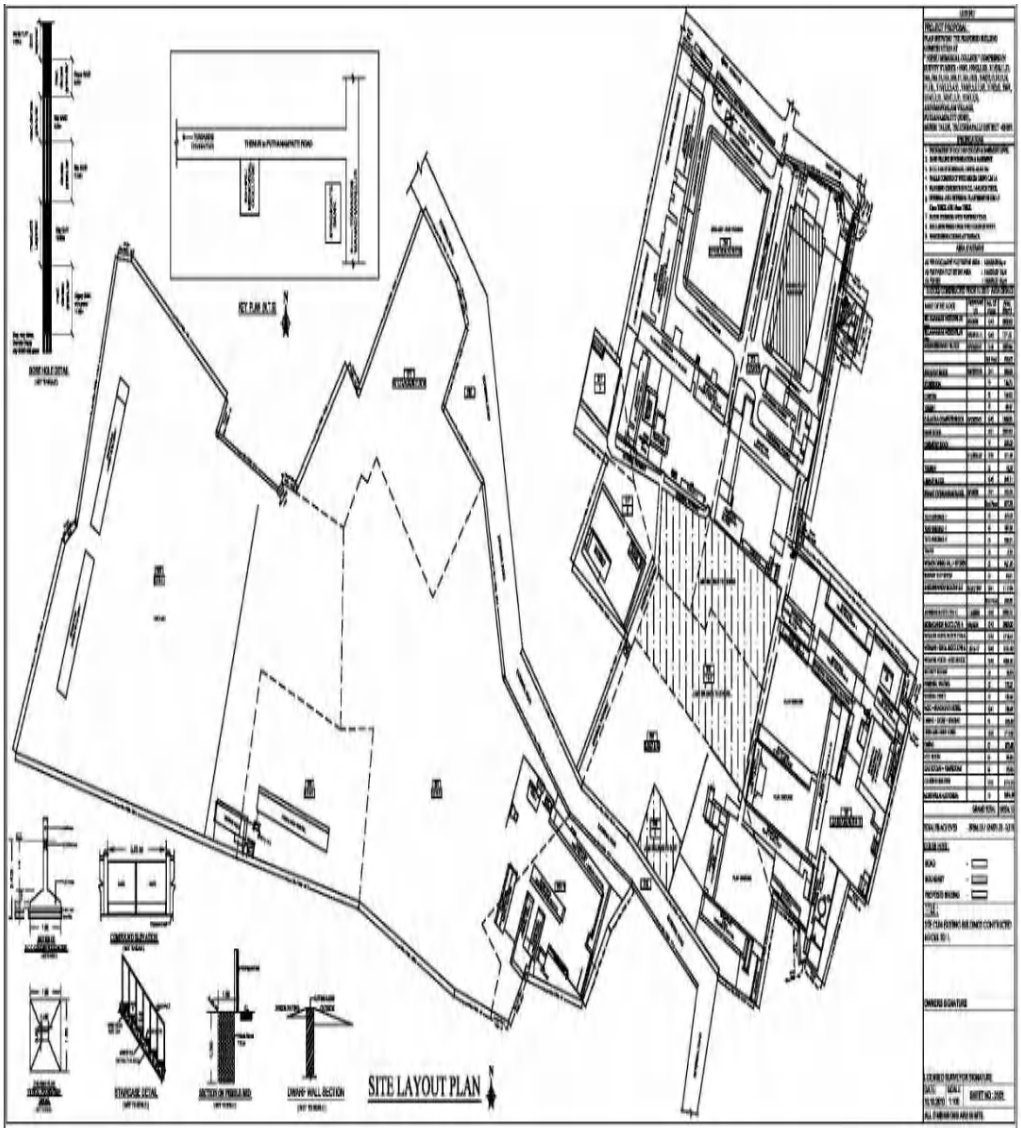
Main Entrance Road of College Campus

Dr.RadhakrishananBlock

SellammalMookapillai Block

Fig: NMC College Satellite View

11 Lay out of the Campus showing all the buildings, play grounds and other features



Annexure II

Total Area of the campus :	Acres	42.02	Sq. M	170060.61

11. Age of the Buildings

AGE OF THE BUILDING AND BUILT - UP AREA		
Sl.no	**Name of The Building**	**Open Date**
1	SellammalMookapillai Block -I	2005
2	SellammalMookapillai Block -II	2005
3	Mr.Radhakrishnan Block	2001
4	Zoology Block	2003
5	Store Room	2003
6	Canteen	2003
7	Toilet - 1	1995
8	Sujatha Computer Block	1999
9	Main Block	1972
10	Chemistry Block - 1	2003
11	Chemistry Block - 2	2003
12	Toilet - 2	1998
13	Library Block - 1	1994
14	Library Block - 2	2015
15	Vivekandha Block	2003
16	Muthaiya Block - Tiled Building - 1	1967
17	Muthaiya Block - Tiled Building - 2	1967
18	Muthaiya Block - Tiled Building - 3	1967
19	Temple	2005
20	Days scholar Toilet	1998
21	MookapillaiAuditirium	2010
22	Research Block	2018
23	Catering Building	2004

Sl.no	Name of The Building	Open Date
24	Women Hostel Dining	2003
25	Women Hostel Kitchen	2003
26	Servant Stay Room	2003
27	Sarojini Naidu Block –D Block	2003
28	Wash Yard	2003
29	Jansirani Block- C Block	2003
30	Indragandhi Block – B Blcok	1995
31	Mother Terasa Block - A	1976
32	Meerabai - E Block	2016
33	Lakshmi Bai - E Block	2016
34	Wash Yard	2003
35	Security Rooms	2018
36	Parents Waiting Hall	2003
37	CVR Office	1976
38	MGC Bagavatsingh Block	1972
39	Kamaraj Block	1972
40	V.O.C Block - Rc Roof	1972
41	Kodikathakumaran Block	1972
42	Bharathiyar Block	1972
43	Dining Hall - 1	1972
44	Dining Hall - 2	1972
45	Kitchen	1972
46	Gas Room	
47	Generator (Power Room)	1996
48	Bath Room	1972
49	Toilet	1972

Sl.no	Name of The Building	Open Date
50	Highland Hostel	1974
51	Dining Hall	1974
52	Kitchen	1974
53	Gas Room	
54	Staff Toilet	2000
55	NCC Room	2008
56	Ground Gallery	2014
57	RO Plant	2004
58	Security Rooms	2018
59	ATM	2015
60	Workshop	1978

14. Built up area (All Floors)

BUILDING AND BUILT - UP AREA				
Sl.no	Name of The Building	No of Flooring	Built up Area	
			Sq.feet	Sq.mtr
1	SellammalMookapillai Block -I	G + 3	29960.00	2784.39
2	SellammalMookapillai Block -II	G + 3	20000.00	1858.74
3	Mr.Radhakrishnan Block	G + 3	30378.00	2823.23
4	Zoology Block	G + 1	7808.00	725.65
5	Store Room	G	1386.00	128.81
6	Canteen	G	1864.00	173.23
7	Toilet - 1	G	968.00	89.96
8	Sujatha Computer Block	G + 2	13997.20	1300.86
9	Main Block	G +2	49582.08	4608.00
10	Chemistry Block - 1	G	2328.25	216.38

Sl.no	Name of The Building	No of Flooring	Built up Area	
			Sq.feet	Sq.mtr
11	Chemistry Block - 2	G+ 2	2242.50	208.41
12	Toilet - 2	G	802.37	74.57
13	Library Block - 1	G + 2	7531.13	699.92
14	Library Block - 2	G	1188.00	110.41
15	Vivekandha Block	G + 2	9438.03	877.14
16	Muthaiya Block - Tiled Building - 1	G	5142.25	477.90
17	Muthaiya Block - Tiled Building - 2	G	5027.13	467.20
18	Muthaiya Block - Tiled Building - 3	G	2262.00	210.22
19	Temple	G	35.00	3.25
20	Days scholar Toilet	G	740.00	68.77
21	MookapillaiAuditirium	G	27929.73	2595.70
22	Research Block	G + 3	11660.00	1083.64
23	Catering Building	G + 3	10944.00	1017.10
24	Women Hostel Dining	G`	8120.00	754.65
25	Women Hostel Kitchen	G	1688.00	156.88
26	Servant Stay Room	G	804.94	74.81
27	Sarojini Naidu Block –D Block	G + 1	23758.08	2208.00
28	Wash Yard	G	1000.00	92.94
29	Jansirani Block- C Block	G + 2	7445.92	692.00
30	Indragandhi Block – B Blcok	G + 3	28080.37	2609.70
31	Mother Terasa Block - A	G + 3	19023.68	1768.00
32	Meerabai - E Block	G + 3	19328.19	1796.30
33	Lakshmi Bai - E Block	G + 3	12201.84	1134.00
34	Wash Yard	G	873.17	81.15
35	Security Rooms	G	109.25	10.15
36	Parents Waiting Hall	G	2030.00	188.66

Sl.no	Name of The Building	No of Flooring	Built up Area	
			Sq.feet	Sq.mtr
37	CVR Office	G	1460.25	135.71
38	MGC Bagavatsingh Block	G + 1	4963.75	461.32
39	Kamaraj Block	G + 1	4153.50	386.01
40	V.O.C Block - Rc Roof	G + 1	2938.00	273.05
41	Kodikathakumaran Block	G + 1	4918.38	457.10
42	Bharathiyar Block	G + 1	2579.50	239.73
43	Dining Hall - 1	G	1763.44	163.89
44	Dining Hall - 2	G	1763.44	163.89
45	Kitchen	G	1092.50	101.53
46	Gas Room	G	201.00	18.68
47	Generator (Power Room)	G	324.06	30.12
48	Bath Room	G	405.63	37.70
49	Toilet	G	299.25	27.81
50	Highland Hostel	G+ 2	18015.75	1674.33
51	Dining Hall	G	1672.81	155.47
52	Kitchen	G	1241.56	115.39
53	Gas Room	G	218.75	20.33
54	Staff Toilet	G	60.00	5.58
55	NCC Room	G	925.36	86.00
56	Ground Gallery	G	11086.57	1030.35
57	RO Plant	G	680.00	63.20
58	Security Rooms	G	120.00	11.15
59	ATM	G	144.00	13.38
60	Workshop	G	620.00	57.62
	Total		**429324.59**	**39900.66**

15. Student's Strength (For the past Five years)

S. No.	Year	UG	PG	M. Phil	Ph. D	Total
1.	2014 – 2015	2857	469	130	49	3505
2.	2015 – 2016	3343	360	137	26	3866
3.	2016 – 2017	3129	429	296	57	3911
4.	2017 – 2018	3893	451	296	92	4732
5.	2018 – 2019	3435	445	356	91	4327

16. Staff Strength (For the past Five years)

S. No.	Year	Teaching			Non-Teaching			Other workers	Total
		Aided	SF	Total	Aided	SF	Total		
1.	2014 – 2015	52	110	162	35	50	85	36	530
2.	2015 – 2016	51	115	166	30	42	72	30	506
3.	2016 – 2017	49	119	168	29	42	71	42	520
4.	2017 – 2018	21	121	172	29	49	78	40	510
5.	2018 – 2019	50	129	188	27	51	78	44	567

NEHRU MEMORIAL COLLEGE
(AUTONOMOUS)

PUTHANAMAPATTI - 621007

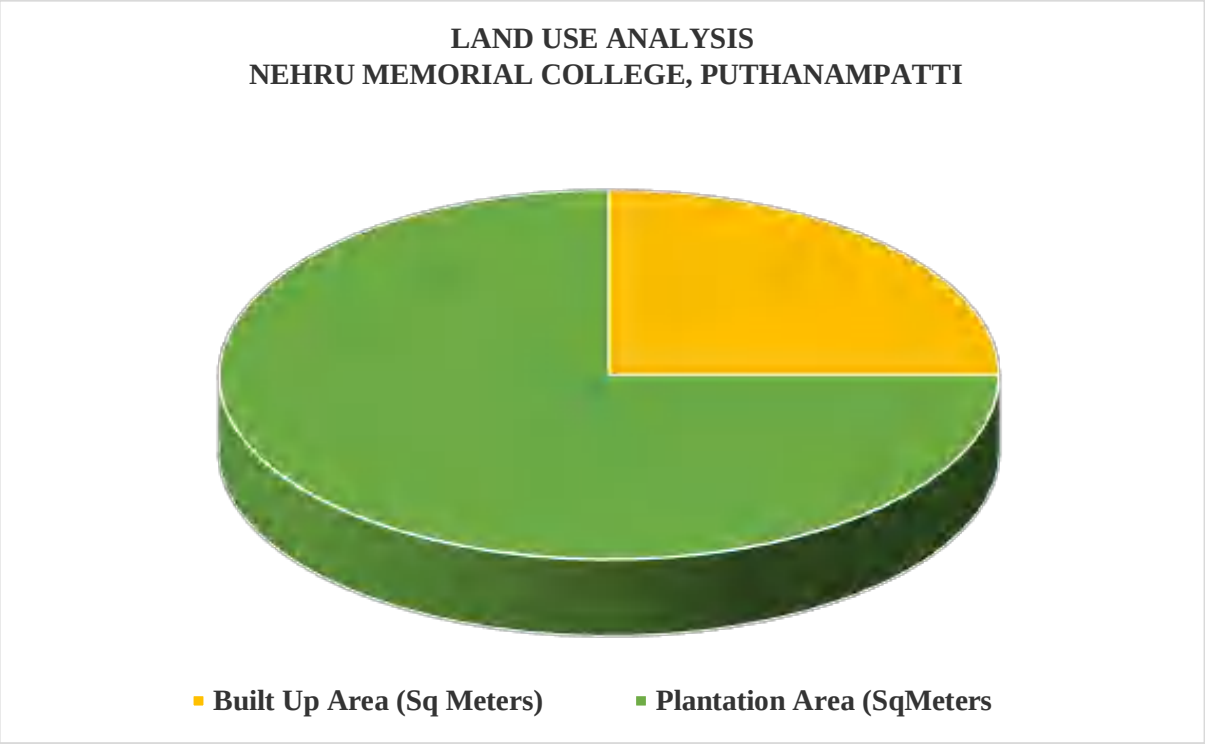
II. LAND AUDIT

II. LAND AUDIT			
Land at a Glance (Area in Sq. M.)			
1	Total Land area of your College	:	42.02 Acres
2	Open space	:	130159.95 Sq.mtrs
3	Plantation/Green area	:	2108 Sq.mtrs
4	Built-up/Constructed Area	:	39900.66
5	No. of Buildings in the campus	:	60 nos
6	Total No. of floors in buildings	:	103 Floors
7	Roof Top area - Rc Roof	:	10480 Sq.mtrs
	Roof Top area - Light Roof	:	9692 Sq.mtrs
8	Is there any rocky structure present	:	Yes (Main Block, Library Block)
9	Parking Area	:	935.87 Sq.mtrs

III. LAND USE DATA		
Categories of Land Use	**Area**	**Sq.mtrs**
Open space and plantation	130159.95	Sq.mtrs
Build up area	39900.66	Sq.mtrs
Total	**170060.61**	**Sq.mtrs**

IV.TOTAL GREEN COVER			
S.No.	**Place**		**Area Unit**
1	Ground coverage area		2108M^2
2	surface parking area		935.87 M^2

Ideally the green area on the ground should be 35% of the total site area, out of which 1.5% should be from given landscape area on ground.



BUILT-UP AREA OF YOUR COLLEGE CAMPUS

S.No	Place	Area	Sq.mtr / Nos
1	Roof and terrace area - Rc Roof	10480.5	Sq.mtr
2	Roof and terrace area - Light Roof	9692.9	Sq.mtr
3	Total built -up / constructed area	39900.66	Sq.mtr
4	Total number of floors(excluding ground floor)	48.0	Nos

NMC Class Rooms

I. Please provide details for each building					
Name of the Building					
S.NO			**X**	**Y**	**Percentage of floor area ventilated**
		Room Nos	**Class Room Surface Area in Sq.mtrs**	**Window + Door + Ventilator (Sq/M)**	**Y/X*100**
Main Building					
1	1 to 23		1282.53	228.7	17.83
Muthaiya Block - Tiled Building					
2	24 to 35		1690.92	763.16	45.13
Vivekandha Block					
3		36 to 48	382.2	115.14	30.13
Mr.Radhakrishnan Block					
4	49 to 53 , 54 to 58 , 66 to 71, 89 - 90		987.12	204.00	20.67
Sujatha Block					
5	64 - 65		87.90	14.86	16.91
SellammalMookkapillI block					
6	59 to 63 , 72 to 77 , 78 to 83 , 84 to 88		1059.48	231.3	21.83
Zoology Block					
7	91 to 94		267.66		28.62
Hotel Management					
8	95 to 98		205.70	30.11	14.64

BUILDING AND BUILT - UP AREA				
Sl.no	Name Of The Building	No Of Flooring	Built up Area	
			Sq.feet	Sq.mtr
1	SellammalMookapillai Block -I	G + 3	29960.00	2784.39
2	SellammalMookapillai Block -II	G + 3	20000.00	1858.74
3	Mr.Radhakrishnan Block	G + 3	30378.00	2823.23
4	Zoology Block	G + 1	7808.00	725.65
5	Store Room	G	1386.00	128.81
6	Canteen	G	1864.00	173.23
7	Toilet - 1	G	968.00	89.96
8	Sujatha Computer Block	G + 2	13997.20	1300.86
9	Main Block	G +2	49582.08	4608.00
10	Chemistry Block - 1	G	2328.25	216.38
11	Chemistry Block - 2	G+ 2	2242.50	208.41
12	Toilet - 2	G	802.37	74.57
13	Library Block - 1	G + 2	7531.13	699.92
14	Library Block - 2	G	1188.00	110.41
15	Vivekandha Block	G + 2	9438.03	877.14
16	Muthaiya Block - Tiled Building - 1	G	5142.25	477.90
17	Muthaiya Block - Tiled Building - 2	G	5027.13	467.20
18	Muthaiya Block - Tiled Building - 3	G	2262.00	210.22
19	Temple	G	35.00	3.25
20	Days scholar Toilet	G	740.00	68.77
21	MookapillaiAuditirium	G	27929.73	2595.70
22	Research Block	G + 3	11660.00	1083.64
23	Catering Building	G + 3	10944.00	1017.10
24	Women Hostel Dining	G`	8120.00	754.65
25	Women Hostel Kitchen	G	1688.00	156.88
26	Servant Stay Room	G	804.94	74.81
27	Sarojini Naidu Block –D Block	G + 1	23758.08	2208.00
28	Wash Yard	G	1000.00	92.94

29	Jansirani Block- C Block	G + 2	7445.92	692.00
30	Indragandhi Block – B Blcok	G + 3	28080.37	2609.70
31	Mother Terasa Block - A	G + 3	19023.68	1768.00
32	Meerabai - E Block	G + 3	19328.19	1796.30
33	Lakshmi Bai - E Block	G + 3	12201.84	1134.00
34	Wash Yard	G	873.17	81.15
35	Security Rooms	G	109.25	10.15
36	Parents Waiting Hall	G	2030.00	188.66
37	CVR Office	G	1460.25	135.71
38	MGC Bagavatsingh Block	G + 1	4963.75	461.32
39	Kamaraj Block	G + 1	4153.50	386.01
40	V.O.C Block - Rc Roof	G + 1	2938.00	273.05
41	Kodikathakumaran Block	G + 1	4918.38	457.10
42	Bharathiyar Block	G + 1	2579.50	239.73
43	Dining Hall - 1	G	1763.44	163.89
44	Dining Hall - 2	G	1763.44	163.89
45	Kitchen	G	1092.50	101.53
46	Gas Room	G	201.00	18.68
47	Generator (Power Room)	G	324.06	30.12
48	Bath Room	G	405.63	37.70
49	Toilet	G	299.25	27.81
50	Highland Hostel	G+ 2	18015.75	1674.33
51	Dining Hall	G	1672.81	155.47
52	Kitchen	G	1241.56	115.39
53	Gas Room	G	218.75	20.33
54	Staff Toilet	G	60.00	5.58
55	NCC Room	G	925.36	86.00
56	Ground Gallery	G	11086.57	1030.35
57	RO Plant	G	680.00	63.20

III. FLORA & FAUNA

III. Flora and Fauna

FLORA

The natural landscape of the College campus includes green vegetation, tree canopy cover, small lentic system and artificial rain water harvesting pond provides a unique environmental setting conducive for a wide range of floral and faunal diversity. Totally 62 species of plants are present in the College campus.

STARTIFICATION

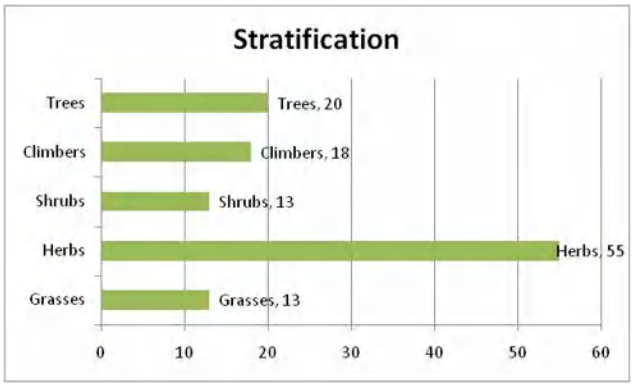
	Plant species	
1	**Grass**	
	1.	*Apludamutica*
	2.	*Aristidahystrix*
	3.	*Chrysopogonfulvus*
	4.	*Cynodandactylon*
	5.	*Cyperuscompressus*
	6.	*Cyperus triceps*
	7.	*Digitariaciliata*
	8.	*Digitarialongiflora*
	9.	*Dimeriaornithopoda*
	10.	*Eragrostisbifaria*
	11.	*Eragrostisplumosa*
	12.	*Fimbristylisovata*
	13.	*Heteropogoncontortus*
2	***Herbs***	
	1.	*Acanthospermumhispidum*
	2.	*Achyranthesaspera*
	3.	*Aervalanata*
	4.	*Aloe vera*
	5.	*Alysicarpusvarginalis*
	6.	*Biophytumsensitivum*
	7.	*Blepharismaderaspatensis*
	8.	*Blepharismullignifolia*
	9.	*Boerhaviadiffusa*
	10.	*Borreriaarticularis*
	11.	*Cleome aspera*
	12.	*Cleome felina*
	13.	*Cleome viscosa*
	14.	*Commelinabenghalensis*
	15.	*Corchorusurticifolius*
	16.	*Desmodiumtriflorum*
	17.	*Emilia scabra*
	18.	*Enicostemmaaxillare*
	19.	*Evolvulsusalsinoides*
	20.	*Hybanthusenneaspermus*
	21.	*Hyptissuaveolens*
	22.	*Indigoferalinnaei*
	23.	*Justiciaglauca*
	24.	*Justiciaprostrate*
	25.	*Justicia simplex*
	26.	*Justiciatranquebariensis*

	27.	*Leucasaspera*
	28.	*Merremiatridentata*
	29.	*Merremiatridentate*
	30.	*Mollugapentaphylla*
	31.	*Mollugonudicaulis*
	32.	*Nimbianodiflora*
	33.	*Ocimumgratissimum*
	34.	*Ocimumtenuiflorum*
	35.	*Oldenlandiacorymbosa*
	36.	*Oldenlandiaumbellata*
	37.	*Pavoniaodarata*
	38.	*Pavoniazeylanica*
	39.	*Phyllanthusamarus*
	40.	*Polycorpiacorymbosa*
	41.	*Polygala arvensis*
	42.	*Pupalialappacea*
	43.	*Rothiaindica*
	44.	*Sansevieriaroxburghiana*
	45.	*Scillaindica*
	46.	*Sidaacuta*
	47.	*Sidacordifolia*
	48.	*Sidarhomnifolia*
	49.	*Tephrosiapurpuirea*
	50.	*Tribulusterrestris*
	51.	*Tridaxprocumbans*
	52.	*Vernoniacinerea*
	53.	*Vicoaindica*
	54.	*Waltheriaindica*
	55.	*Zorniadiphylla*
3	***Shrubs***	
	1.	*Agave sisalana*
	2.	*Benkaramalabarica*
	3.	*Cadabafruticosa*
	4.	*Calatropisgigantea*
	5.	*Cassia auriculata*
	6.	*Clausenadentata*
	7.	*Dodonaeaviscosa*
	8.	*Durantaerecta*
	9.	*Fleuggealeucopyrus*
	10.	*Glycosmispentaphyla*
	11.	*Lantana camera*
	12.	*Randiadumetorum*
	13.	*Taranaasiatica*
4	***Climbers***	
	1.	*Albiziaamara*
	2.	*Azadirachtaindica*
	3.	*Bauhinia racemosa*
	4.	*Cassia siamea*
	5.	*Cassia fistula*
	6.	*Cassineglauca*
	7.	*Delonixelata*
	8.	*Delonixregia*

	9.	*Ficusmicrocarpa*
	10.	*Lanneacoromandelica*
	11.	*Madhucalongifolia*
	12.	*Millingtoniahortensis*
	13.	*Morindatinctoria*
	14.	*Peltophorumpterocarpum*
	15.	*Plumerarubra*
	16.	*Polyalthialongifolia*
	17.	*Pongamiapinnata*
	18.	*Prosopis julifera*
5	***Trees***	
	1.	*Albiziaamara*
	2.	*Azadirachtaindica*
	3.	*Bauhinia racemosa*
	4.	*Cassia siamea*
	5.	*Cassia fistula*
	6.	*Cassineglauca*
	7.	*Delonixelata*
	8.	*Delonixregia*
	9.	*Ficusmicrocarpa*
	10.	*Lanneacoromandelica*
	11.	*Madhucalongifolia*
	12.	*Millingtoniahortensis*
	13.	*Morindatinctoria*
	14.	*Peltophorumpterocarpum*
	15.	*Plumerarubra*
	16.	*Polyalthialongifolia*
	17.	*Pongamiapinnata*
	18.	*Prosopis julifera*
	19.	*Roystonearegea*
	20.	*Tectonagrandis*

Stratification of Plant Community

S. No.	Habit	No.
1	Grasses	13
2	Herbs	55
3	Shrubs	13
4	Climbers	18
5	Trees	20



Floral distribution in the NMC Campus

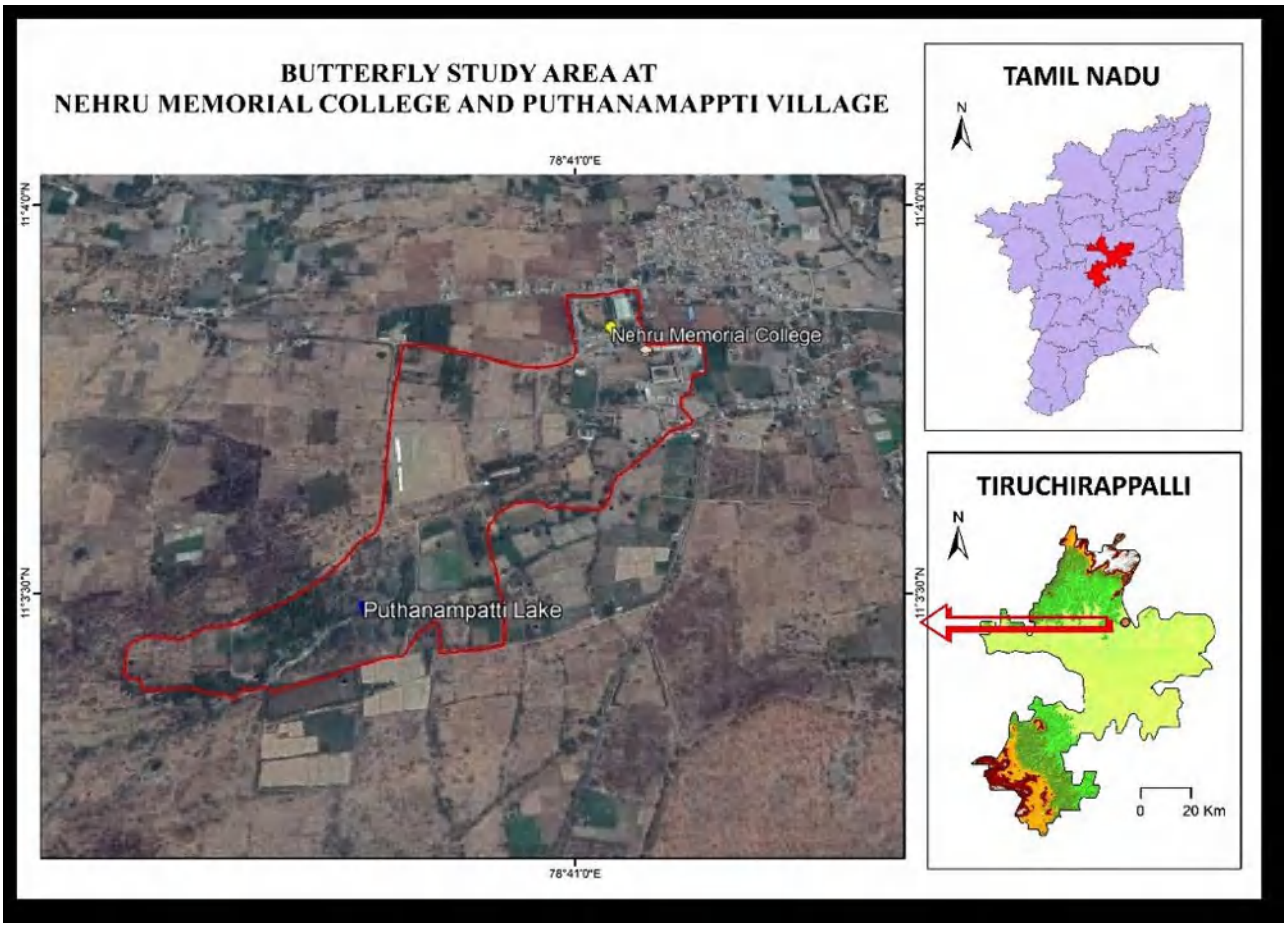
Assessment of Fauna

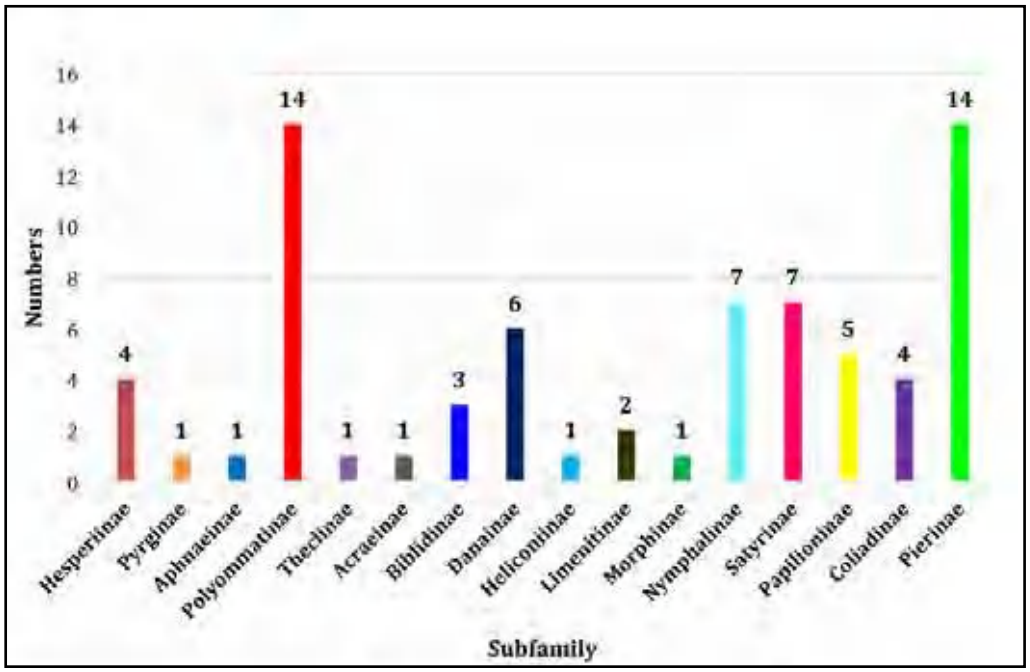
The animal life of an area is dependent upon the vegetation and there are countless relationships between the species composing an animal community. Fauna assessment involves more problems than flora assessment by virtue of the greater variety of animal types, their mobility and behavior. Faunal assessment provides a basis for determining relative abundance and evaluating commonness or rarity of each species encountered.

In the college campus, the animal survey was conducted along with the plants. The study includes surveys of the animal communities such as aquatic organisms, insects, molluscs, reptiles, fishes, amphibians, birds and mammals.

Butterflies

The butterflies play vital role in the ecological balance acting as biological indicators, pollinators, prey, defoliators and herbivores to provide economic and ecological benefits to human society and can indirectly change the plant diversity by pollination especially in herbs and shrubs. They play a major role in the food chain, by being prey for birds, reptiles, spiders and predatory insects. The department of zoology has prepared a detailed checklist of butterflies in 50 acres of the College campus and 69 acres of surrounding villages.

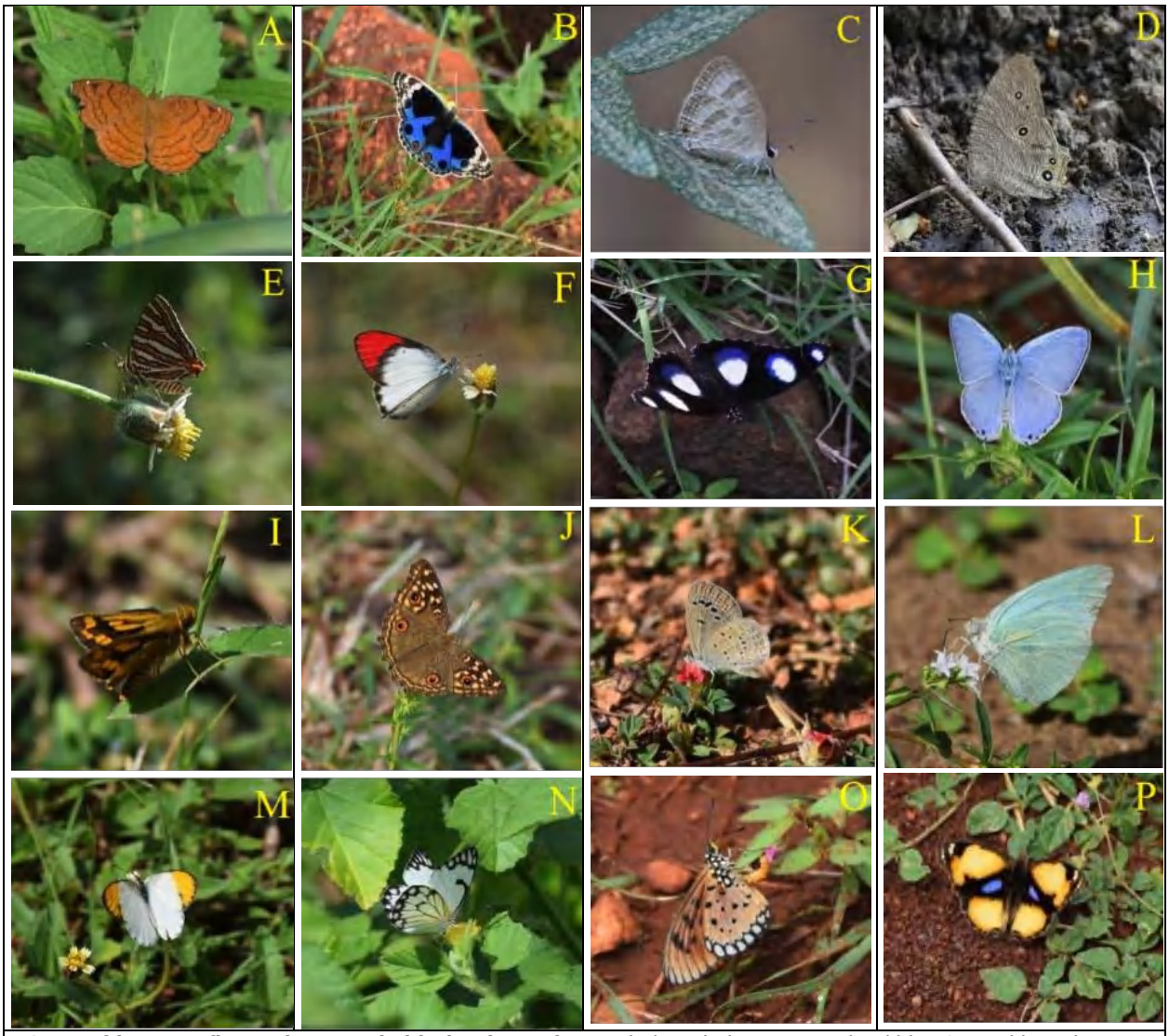




Number of Butterfly species recorded under different sub families

	Family	SubFamily	CommonName	ScientificName	Status	WildlifeProtectionAc
1	Hesperiida	Hesperiinae	RiceSwift	*Borbocinnara*	Common	-
2			PlainPalmDart	*Cephrenesacalle*	Common	-
3			IndianDart	*Potanthuspseudoma*	Common	-
4			IndianPalmBob	*Suastusaremius*	Common	-
5		Pyrginae	IndianSkipper	*Spialiagalba*	Common	-
6	Lycaenidae	Aphnaeinae	CommonSilverline	*Spindasisvulcanus*	Common	-
7		Polyommatin	CommonCerulean	*Jamidesceleno*	Common	-
8			Forget-Me-Not	*Catochrysopsstrabo*	Common	-
9			PeaBlue	*Lampidesboeticus*	Common	II
10			ZebraBlue	*Leptotesplinius*	Common	-
11			CommonPierrot	*Castaliusrosimon*	Common	I
12			RoundedPierrot	*Tarucusnara*	Common	-
13			DarkGrassBlue	*Zizeeriakarsandra*	Common	-
14			LesserGrassBlue	*Zizinaotis*	Common	-
15			PaleGrassBlue	*Pseudozizeeriamaha*	Common	-
16			GramBlue	*Euchrysopscnejus*	Common	II
17			IndianCupid	*Evereslacturnus*	Common	-
18			SmallGrassJewel	*Freyeriaputli*	Common	-
19			GrassJewel	*Freyeriatrochylus*	Common	-
20			LimeBlue	*Chiladeslajus*	Common	-
21		Theclinae	GuavaBlue	*Viracholaisocrates*	Common	-
22	Nymphalid	Acraeinae	TawnyCoster	*Acraeaviolae*	Common	-
23		Biblidinae	AngledCastor	*Ariadneariadne*	Uncomm	-
24			CommonCastor	*Ariadnemerione*	Common	-
25			Joker	*Byblialithyia*	Common	-
26		Danainae	BlueTiger	*Tirumalalimniace*	Common	-
27			PlainTiger	*Danauschrysippus*	Common	-
28			StripedTiger	*Danausgenutia*	Common	-
29			Double-	*Euploeasylvestercor*	Common	-
30			CommonCrow	*Euploeacore*	Common	IV
31			CommonNawab	*Polyuraathamas*	Common	-
32		Heliconiinae	CommonLeopard	*Phalantaphalantha*	Common	-
33		Limenitinae	CommonBaron	*Euthaliaaconthea*	Common	-
34			CommonSailer	*Neptishylas*	Common	-
35		Morphinae	BlackRajah	*Charaxessolon*	Uncomm	II
36		Nymphalinae	GreatEggfly	*Hypolimnasbolina*	Common	I

	Family	SubFamily	CommonName	ScientificName	Status	WildlifeProtectionAc
37			DanaidEggfly	*Hypolimnasmisippu*	Common	II
38			BluePansy	*Junoniaorithiya*	Common	-
39			ChocolatePansy	*Junoniaiphita*	Common	-
40			LemonPansy	*Junonialemonias*	Common	-
41			PeacockPansy	*Junoniaalmana*	Common	-
42			YellowPansy	*Junoniahierta*	Common	-
43		Satyrinae	SouthernPalmfly	*Elymniascaudata*	Common	-
44			CommonEvening Brown	*Melanitisleda*	Common	-
45			DarkEveningBrow	*Melanitisphedima*	Uncomm	-
46			CommonBushbrow	*Mycalesisperseus*	Common	-
47			Dark-	*Mycalesismineus*	Common	-
48			CommonThree-	*Ypthimaasterope*	Common	-
49			WhiteFour-Ring	*Ypthimaceylonica*	Common	-
50	Papilionida	Papilioninae	CommonRose	*Pachlioptaaristoloc*	Common	-
51			CrimsonRose	*Pachlioptahector*	Common	I
52			LimeButterfly	*Papiliodemoleus*	Common	-
53			CommonMormon	*Papiliopolytes*	Common	-
54			BlueMormon	*Papiliopolymnestor*	Uncomm	-
55	Pieridae	Coliadinae	CommonEmigrant	*Catopsiliapomona*	Common	-
56			MottledEmigrant	*Catopsiliapyranthe*	Common	-
57			SmallGrassYellow	*Euremabriaitta*	Common	-
58			CommonGrassYell	*Euremahecabe*	Common	-
59		Pierinae	CommonGull	*Ceporanerissa*	Common	II
60			SmallSalmonArab	*Colotisamata*	Common	-
61			CrimsonTip	*Colotisdanae*	Uncomm	-
62			PlainOrangeTip	*Colotisaurora*	Common	-
63			SmallOrangeTip	*Colotisetrida*	Common	-
64			WhiteOrangeTip	*Ixiasmarianne*	Common	-
65			YellowOrangeTip	*Ixiaspyrene*	Common	-
66			GreatOrangeTip	*Hebomoiaglaucippe*	Common	-
67			CommonWanderer	*Pareroniahippia*	Common	-
68			IndianCabbageWhi	*Pieriscanidia*	Common	-
69			SmallCabbageWhit	*Pierisrapae*	Common	-
70			CommonJezebel	*Deliaseucharis*	Common	-
71			Psyche	*Leptosianina*	Common	-
72			Pioneer	*Belenoisaurota*	Common	-



SomeoftheButterflyspeciesrecordedduringthestudy:A-*Ariadneariadne,***B-***Junoniaorithiya,***C-***Jamidesceleno,***D-***Melanitisleda,***E-***Spindasisvulcanus,***F-***Colotisdanae,***G-***Hypolimnasmisippus,***H-***CatochrysopsStrabo,***I-***Potanthuspseudomaesa,***J-***Junonialemonias,***K-***Pseudozizeeriamaha,***L-***Catopsiliapyranthe,***M-***Colotisaurora,***N-***Belenoisaurota,***O** *-Acraeaviolae,* **P-** *Junoniahierta*

Insects

Table List of Insects

S.No	Common name	Scientific Name	Status/Schedule
1	House fly	*Muscadomestica*	Common/ NA
2	Common grasshopper	*Gastrimargusmarmoratus*	Common/ NA
3	Common grasshopper	*Cleoboracrassa*	Common/ NA
4	Red cotton bug	*Dysdercuscingulatus*	Common/ NA
5	White spotted cockroach	*Coridiapetivariana*	Common/ NA
6	House cockroach	*Periplanataamericana*	Common/ NA
7	Honey bee	*Apisindica*	Common/ NA
8	Small honey bee	*Apisflorea*	Common/ NA
9	Anopheles mosquito	*Anopheles meigen*	Common/ NA
10	Water scorpion	*Nepacinerea*	Common/ NA
11	Praying mantis	*Gongylusgongiloides*	Common/ NA
12	Water strider	*Gerrisgracilicornis*	Common/ NA

Molluscans

S.No	Common name	Scientific name	Status / Schedule
1.	Apple snail	*Pilaglobosa*	Common / NA
2.	Wheel snail	*Planorvisgyrautus*	Common / NA
3.	Tower snail	*Limnaeaperegra*	Common / NA
4.	Cone snail	*Limnaeatruncatula*	Common / NA
5.	Fresh water mussel	*Lamellidensmarginalis*	Least concern

Fishes

S. No.	Common Name	Scientific Name	Status/Schedule
1	Mosquito fish	*Gambusia affinis*	Common
2	Common carp	*Cyprinuscarpio*	Common

Reptiles

S. No.	Common Name	Scientific Name	IUCN Status
1	Garden Lizard	*Calotesversicolor*	Least concern
2	Monitor Lizard	*Varanusbenghalensis*	Threatened
3	Garden skink	*Lampropholisguichenoti*	Common/NA
4	Cobra	*Najanaja*	Threatened
5	Indian Rat snake	*Ptyas mucosa*	
6	Common krait	*Bangaruscaerules*	

Amphibians

S. No	Common Name	Scientific Name	Status/Schedule
1.	Skittering frog	*Ranacyanophlyctis*	Common/ NA
2.	Indian Bull frog	*Hoplobatrachustigerinus*	Common/ NA
3.	Common Indian toad	*Bufomelanostictus*	Common/ NA
4.	Indian Pond frog	*Ranahexadactylus*	Common/ NA

Birds

	Waterfowl	**Scientific name**
1	Indian Spot-billed Duck	*Anaspoecilorhyncha*
	Grouse,Quail,andAllies	
2	IndianPeafowl	*Pavocristatus*
3	RainQuail	*Coturnixcoromandelica*
4	Old worldquailsp.	*Synoicus/Coturnixsp.*
5	GreyFrancolin	*Francolinuspondicerianus*
	Grebes	
6	LittleGrebe	*Tachybaptusruficollis*
	PigeonsandDoves	
7	Rock Pigeon(BlueRockPigeon)	*Columbalivia*
8	EurasianCollared-Dove	*Streptopeliadecaocto*
9	Red Collared-Dove (RedTurtle-Dove)	*Streptopeliatranquebarica*
10	SpottedDove	*Streptopeliachinensis*
11	Laughing Dove (LittleBrownDove)	*Streptopeliasenegalensis*
	Sandgrouse	
12	Chestnut-belliedSandgrouse	*Pteroclesexustus*
	Cuckoos	
13	GreaterCoucal	*Centropussinensis*
14	Blue-facedMalkoha	*Phaenicophaeusviridirostris*
15	Pied Cuckoo(JacobinCuckoo)	*Clamatorjacobinus*
16	AsianKoel	*Eudynamysscolopaceus*

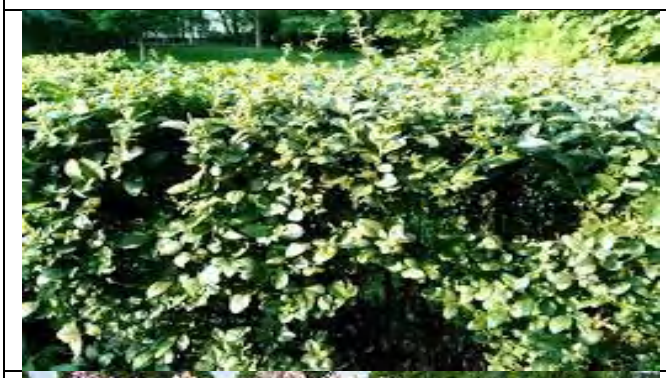
17	Grey-belliedCuckoo	*Cacomantispasserinus*
18	CommonHawk-Cuckoo	*Hierococcyxvarius*
	Nightjars	
19	Indian Nightjar	*Caprimulgusasiaticus*
	Swifts	
20	AlpineSwift	*Apus melba*
21	LittleSwift(Indian HouseSwift)	*Apusaffinis*
22	AsianPalm-Swift	*Cypsiurusbalasiensis*
23	Swift sp.	*Apodidaesp.*
	Rails,Gallinules,andAllies	
24	Eurasian Moorhen	*Gallinulachloropus*
25	White-breastedWaterhen	*Amaurornisphoenicurus*
	Shorebirds	
26	IndianThick-knee(IndianStone-curlew)	*Burhinusindicus*
27	Red-wattledLapwing	*Vanellusindicus*
28	CommonSnipe	*Gallinagogallinagoglareola*
29	CommonSandpiper	*Actitishypoleucos*
30	CommonGreenshank	*Tringanebularia*
31	Wood Sandpiper	*Tringa Sp.*
32	Yellow-leggedButtonquail	*Turnixtanki*
33	Buttonquail	*Turnixsp.*
	CormorantsandAnhingas	
34	LittleCormorant	*Microcarboniger*
35	Cormorant sp.	*Phalacrocoracidae sp.*
	Herons,Ibis,andAllies	
36	IntermediateEgret	*Ardeaintermedia*
37	LittleEgret	*Egrettagarzetta*
38	Cattle Egret	*Bubulcusibis*
39	whiteegretsp.	*Ardea/Egretta/Bubulcussp.*
40	IndianPond-Heron	*Ardeolagrayii*
41	Black-crowned Night-Heron	*Nycticoraxnycticorax*
	Vultures,Hawks,andAllies	
42	Black-wingedKite (Black-shouldered Kite)	*Elanuscaeruleus*
43	BootedEagle	*Hieraaetuspennatus*
44	White-eyedBuzzard	*Butasturteesa*
45	Eurasian Marsh-Harrier	*Circus aeruginosus*
46	Pallid Harrier	*Circus macrourus*
47	Shikra	*Accipiter badius*
48	BlackKite	*Milvusmigrans*
49	Common Buzzard	*Buteobuteo*
50	Eagle sp.	*Accipitridae sp.*
	Owls	
51	Indian Scops-Owl(CollaredScops-Owl)	*Otusbakkamoena*
52	SpottedOwlet	*Athenebrama*
	Hoopoes	
53	Eurasian Hoopoe	*Upupaepops*
	Kingfishers	
54	CommonKingfisher (SmallBlueKingfisher)	*Alcedoatthis*
55	White-throatedKingfisher	*Halcyonsmyrnensis*
56	Pied Kingfisher	*Cerylerudis*

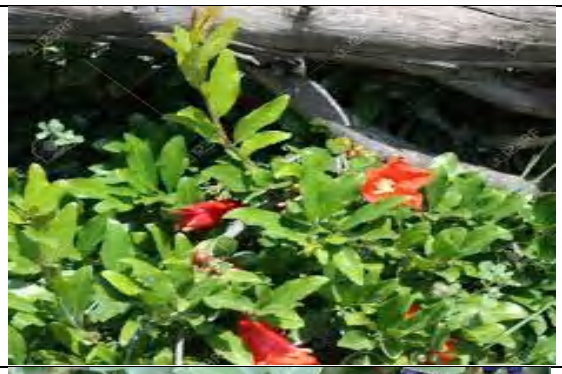
	Bee-eaters,Rollers,and Allies	
57	GreenBee-eater	*Meropsorientalis*
58	Blue-tailedBee-eater	*Meropsphilippinus*
59	bee-eater sp.	*Meropssp.*
60	Indian Roller	*Coraciasbenghalensis*
	BarbetsandToucans	
61	CoppersmithBarbet	*Psilopogonhaemacephalus*
	Woodpeckers	
62	LesserGoldenbackedWoodpecker)	*Dinopiumbenghalense*
	FalconsandCaracaras	
63	EurasianKestrel(CommonKestrel)	*Falcotinnunculus*
64	PeregrineFalcon	*Falco peregrinus*
65	Diurnal raptorsp.	*Accipitriformes/Falconiformessp.*
	Parrots,Parakeets,andAllies	
66	Rose-ringedParakeet	*Psittaculakrameri*
67	Parakeetsp.*)*	*Psittaciformessp.*
	Cuckooshrikes	
68	SmallMinivet	*Pericrocotuscinnamomeus*
69	Black-headed Cuckooshrike	*Lalagemelanoptera*
	OldWorldOrioles	
70	IndianGolden Oriole	*Orioluskundoo*
71	Black-hoodedOriole	*Oriolusxanthornus*
	Vangas,Helmetshrikes,andAllies	
72	CommonWoodshrike	*Tephrodornispondicerianus*
	Ioras	
73	CommonIora	*Aegithinatiphia*
	Drongos	
74	BlackDrongo	*Dicrurusmacrocercus*
75	MonarchFlycatchers	
76	IndianParadise-Flycatcher	*Terpsiphoneparadisi*
	Shrikes	
77	Brown Shrike	*Laniuscristatus*
78	Bay-backedShrike	*Laniusvittatus*
	Jays,Magpies,Crows,and Ravens	
79	RufousTreepie	*Dendrocittavagabunda*
80	House Crow	*Corvussplendens*
81	Large-billed Crow	*Corvusmacrorhynchos*
	Larks	
82	Rufous-tailedLark	*Ammomanesphoenicura*
83	Ashy-crownedSparrow-Lark(Ashy-crowned Finch-Lark)	*Eremopterixgriseus*
84	Jerdon'sBushlark	*Mirafraaffinis*
85	OrientalSkylark	*Alaudagulgula*larksp.
	CisticolasandAllies	
86	CommonTailorbird	*Orthotomussutorius*
87	Jungle Prinia	*Priniasylvatica*
88	AshyPrinia	*Priniasocialis*
89	PlainPrinia	*Priniainornata*
90	ZittingCisticola	*Cisticolajuncidis*
	ReedWarblersandAllies	
91	BootedWarbler	*Idunacaligata*
92	Blyth'sReedWarbler	*Acrocephalusdumetorum*

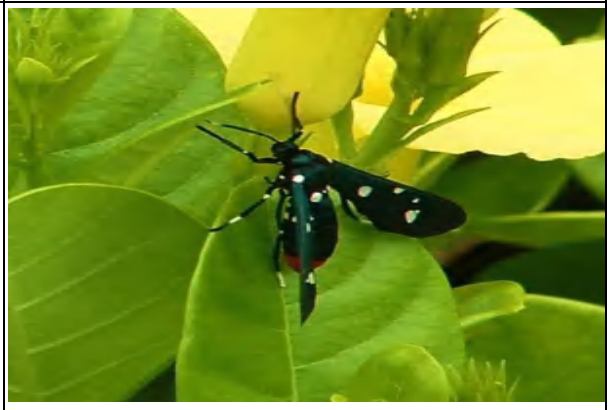
93	Warbler sp.	*Acrocephalussp.*
	MartinsandSwallows	
94	Barn Swallow	*Hirundorustica*
95	Red-rumpedSwallow	*Cecropisdaurica*
96	Martin/swallowsp.	*Hirundinidae sp.*
	Bulbuls	
97	Red-ventedBulbul	*Pycnonotuscafer*
98	White-browedBulbul	*Pycnonotusluteolus*
	LeafWarblers	
99	GreenWarbler	*Phylloscopusnitidus*
100	GreenishWarbler	*Phylloscopustrochiloides*
130	Phylloscopuswarbler	*Phylloscopussp*
131	LesserWhitethroat	*Sylviacurruca*
	LaughingthrushesandAllies	
132	Large GreyBabbler	*Turdoidesmalcolmi*
133	Yellow-billedBabbler	*Turdoidesaffinis*
	StarlingsandMynas	
134	RosyStarling	*Pastorroseus*
135	BrahminyStarling	*Sturniapagodarum*
	Common Myna	*Acridotherestristis*
136	AsianBrown Flycatcher	*Muscicapadauurica*
137	Indian Robin	*Copsychusfulicatus*
138	OrientalMagpie-Robin	*Copsychussaularis*
139	PiedBushchat	*Saxicolacaprata*
	SunbirdsandSpiderhunters	
140	Purple-rumped Sunbird	*Leptocomazeylonica*
141	PurpleSunbird	*Cinnyrisasiaticus*
142	Loten'sSunbird(Long-billed Sunbird)	*Cinnyrislotenius*
143	Sunbird sp.*(sunbird sp.)*	*Nectariniidae sp.*
	Leafbirds	
144	Leafbird	*Chloropsissp.*
	WeaversandAllies	
145	BayaWeaver	*Ploceusphilippinus*
	Estrildids	
146	IndianSilverbill(White-throatedMunia)	*Euodicemalabarica*
147	White-rumpedMunia	*Lonchurastriata*
148	Scaly-breastedMunia(Spotted Munia)	*Lonchurapunctulata*
156	Tricolored Munia(Black-headedMunia)	*Lonchuramalacca*
157	Lonchuramunia sp.	*Lonchurasp*
	OldWorldSparrows	
158	House Sparrow	*Passer domesticus*
159	Chestnut-shoulderedPetronia)	*Gymnorisxanthocollis*
	WagtailsandPipits	
160	GreyWagtail	*Motacillacinerea*
161	White-browedWagtail(LargePiedWagtail)	*Motacillamaderaspatensis*
162	wagtailsp.	*Motacillasp.*
163	PaddyfieldPipit	*Anthusrufulus*
164	TawnyPipit	*Anthuscampestris*
165	Pipit sp.	*Anthussp.*

Mammals

Sl. No.	Common Name	Scientific Name	IUCN status / Schedule
1	Indian palm squirrel	*Fumambuluspalmarum*	*Lower risk/III*
2	Grey mongoose	*Herpestesedwardsii*	*Lower risk/II*
3	Black naped hare	*Lepusnigricollis*	*Lower risk/III*
4	Indian flying fox	*Pteropusgiganteus*	*Lower risk/III*
5	Short nosed fruit bat	*Synopterus sphinx*	*Lower risk/III*
6	Indian gerbils	*Tateraindica*	*Lower risk/III*
7	Large bandicoot – rat	*Bandicotaindica*	*Lower risk/III*
8	House rat	*Rattusrattus*	*Lower risk/III*







CERTIFICATE

This is to certify that **Nehru Memorial College, (Autonomous), Puthanampatty, Tamilnadu** has conducted detailed ENERGY AUDIT for the period 2019 – 2020 based on the data and credentials for submitted scrutiny. The activities and measures carried out by the College have been verified based on the reports submitted and was found to be satisfactory. The College has evolved policies on Environment, Water, Waste and Sanitation in line with the Sustainable Development Goals. The efforts taken by the members of the faculty, students, support staff and the Management towards creating a strategic change in attaining holistic environmental sustainability is highly appreciated and commended.

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SAVE NATURE SAVE LIFE SAVE EARTH

Department of Environmental Sciences 35 ANNIVERSARY 1984 - 2019

CAMPUS ENERGY AUDIT

NEHRU MEMORIAL COLLEGE
(Autonomous)
Puthanampatti -621007

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TRICHIRAPALLI DISTRICT, TAMILNADU
Website: www.nmc.ac.in

Green Audit Assessment Team (Internal)

Sl. No	Campus Green Audit over all Team	Designation
1	Dr. A. R. Ponperiasamy Principal, NMC	Chairman
2	Dr. C. Sasikumar, Dean, Research and Development	Member Secretary
3	Dr. S. Kumararaman, Vice - Pricnipal	Member
4	Dr. K. T. Tamilmani, Dean, Academic Affairs	Member
5	Dr. Viji Saral Elizabeth, Dean, Placement and Training.	Member
6	Mr. Rathakrishnanan, Estate Manager, NMC	Member
7	Er. Vijayakumar, Engineer, NMC	Member

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Website: www.nmc.ac.in

CAMPUS GREEN AUDIT TEAM COORDINATORS

SL. NO	AUDIT TEAM	COORDINATORS
1	ENVIRONMENTAL MANAGEMENT TEAM	Dr. M.Meenakshisundaram, Co-ordinator, Assistant Professor Department of Botany
2	WATER MANAGEMENT TEAM	Dr.K.Saravanan, Co-ordinator Assistant Professor Department of Zoology
3	WASTE MANAGEMENT TEAM	Dr.N.Ramesh, Co-ordinator , Assistant Professor Department of Zoology
4	SANITATION MANAGEMENT TEAM	Dr.V.Ramesh, Co-ordinator Assistant Professor Department of Zoology
5	AIR , NOISE MANAGEMENT TEAM	Dr.M.Ramesh, Co-ordinator, Assistant Professor Department of Chemistry

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ENVIRONMENTAL MANAGEMENT POLICY

- The NMC always aims to eliminate or reduce all forms of environmental pollution and encourages all faculty members, staff, students and others to practice the same.
- The College always raises awareness of environmental issues among its staff/students/visitors and encourages initiatives leading towards a clean and green environment.
- The College promote the 5 R's for waste management in the order of **Reduce, Reuse, Recycle, Refuse, Recover and provide** convenient waste segregation, collection and guidance for the disposal of paper, cardboard, glass, plastic, electrical and white goods, hazardous waste and e-waste.
- The College minimizes the consumption of water and enhances groundwater level by establishing campus catchment area and rainwater harvesting schemes in all buildings of the campus, encouraging to report leaks and rectifying them promptly, progressively replacing faulty taps and fittings, exploring options for using waste roof runoff water wherever possible.

- The College minimizes the consumption of electricity where opportunity arise by progressive replacement of light bulbs with energy efficient ones. (LED) Inculcating the practice among staff and residents to turn off electrical appliances when not in use. Installation of a Hybrid solar power system in the campus.
- The College adapts health, safety and environmental codes of practice and relevant rules and regulations and complies with legislation relating to use of chemical products.
- The College is completely free from plastics and discourages burning of waste materials in any form.

ENVIRONMENTAL MANAGEMENT TEAM		
1	Staff in-charge	Dr. M.Meenakshisundaram, Co-ordinator
Student Volunteers		
2	M.Sridevi,	2K17BT32, III B.Sc., Botany
3	S.Pramila	2K17BT39, III B.Sc., Botany
4	S.Vignesh	2K17BT48, III B.Sc., Botany
5	K.Subashree	2K17BT33, III B.Sc., Botany

NEHRU MEMORIAL COLLEGE
(AUTONOMOUS)

PUTHANAMAPATTI - 621007

ENERGY MANAGEMENT AUDIT

ENERGY AUDIT

1.1 Introduction

Energy audit has a vital role in the implementation of energy conservation measures. The energy audit enables the institution to meet the Energy efficiency Standards and to reduce carbon foot print. There are several types of energy audits that are commonly performed by energy service personnel or engineers with various degrees of complexity.

1.2 Need for Energy Audit

The energy crisis in the present day world has led us to the design of new energy efficient buildings. An energy audit establishes both where and how energy is being used, and the potential for energy savings. It includes a walk-through survey, a review of energy using systems, analysis of energy use and the preparation of an energy budget, and provides a baseline from which energy consumption can be compared over time. An audit can be conducted by an employee of the organization who has appropriate expertise, or by a specialist energy-auditing firm. An energy audit report also includes recommendations for actions, which will result in energy and cost savings. It should also indicate the costs and savings for each recommended action, and a priority order for implementation. As per the Energy Conservation Act, 2001, Energy Audit is defined as the verification, monitoring and analysis of use of energy including submission of technical report containing recommendations for improving energy efficiency with cost benefit analysis and an action plan to reduce energy consumption. (Chandra Prakash et al, 2017).

1.3 Electrical Energy Audit

Energy cannot be seen, but we know it is there because we can see its effects in the forms of heat, light and power.

This indicator addresses energy consumption, energy sources, energy monitoring, lighting, appliances, and vehicles. Energy use is clearly an important aspect of campus sustainability and thus requires no explanation for its inclusion in the assessment. Energy auditing deals with the conservation and methods to reduce its consumption related to environmental degradation. It is therefore

essential that any environmentally responsible institution examine its energy use practices.

1.4 Energy-saving measures and Carbon Footprint Reduction

A carbon footprint is historically the total set of greenhouse emissions caused by an individual event organization or product. It is expressed as CO_2e (Carbon dioxide equivalent) which can broadly be defined as a measure of the greenhouse gas emission that are directly and indirectly caused by an activity or are accumulated over the life stages of a product or service (Wiedman and Minx, 2008; Igbokwe et al 2018)

Intergovernmental Panel on Climate (IPCC) reviewed 18 greenhouse gases with different global warming potential. According to United Nation Framework Convention on carbon dioxide (UNFCCC) and its Kyoto protocol, only Carbon dioxide (CO_2), Methane (CH_4), Nitrous oxide (N_2O), Hydrofluorocarbons (HFCs), Perfluorocarbons (PFCs) and sulphur hexafluoride (SF_6) are considered for the purpose of carbon accounting, with others being regulated elsewhere (Hall and Murray, 2008).

The main elements that generates large amounts of carbon dioxide are fossil fuels (especially oil and coal), through burning them for obtaining energy. Of all greenhouse gases, CO_2 has the largest share. Thus, emissions of other greenhouse gases as stated earlier are converted into units of CO_2 equivalents (CO_2e) using the warming potential related to each gas.

1.5 Electrical Energy Audit

Energy cannot be seen, but we know it is there because we can see its effects in the forms of heat, light and power. This indicator addresses energy consumption, energy sources, energy monitoring, lighting, appliances, and vehicles. Energy use is clearly an important aspect of campus sustainability and thus requires no explanation for its inclusion in the assessment. Energy auditing deals with the conservation and methods to reduce its consumption related to environmental degradation. It is therefore essential that any environmentally responsible institution examine its energy use practices.

Table 1.1 Power Grid Specifications

	Power : Maximum Demand (MD)	:	250 KVA
	Transformer	:	500 KVA
	No. of Diesel Generator sets & Capacity	:	2 No (200KVA & 250KVA)
	Solar energy utilization (Yes / No)	:	Yes (310 KVA)
	Fuel used for cooking in hostels	:	Yes (Gas)

Table 1.2 Electricity Consumption for 5 months Details

Month	Service No.	EB Load (Unit)	Amount Paid (Rs.)	Units consumed KVA
Dec 19	172	50724	469001	80761
Nov 19	172	62590	547322	74918
Oct 19	172	60148	528343	90449
Sep19	172	71316	605213	82841
Aug 19	172	70944	621496	90964
	Total	315722		491133
	Month Average	63,145		98,225

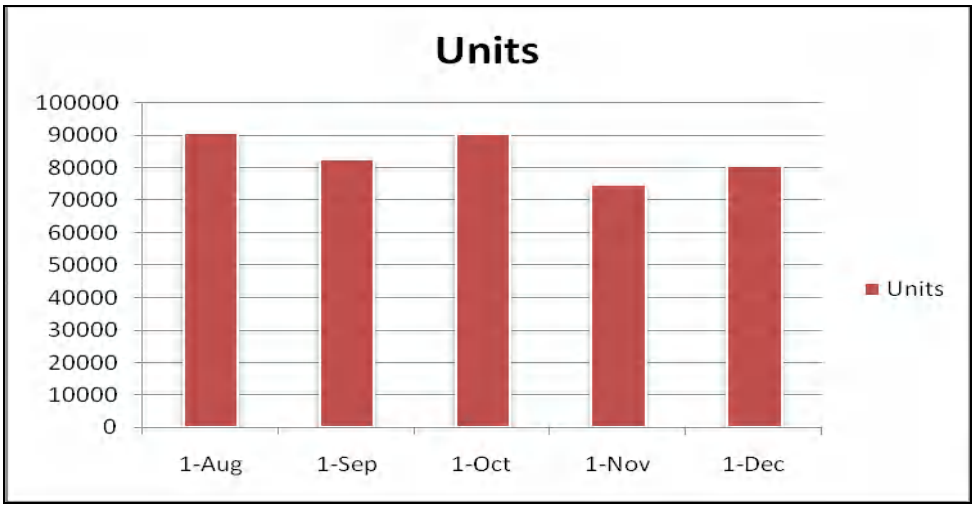


Fig. 1.1 Consumption electricity in electrical units for 5 months

1.6 Solar Power Generation in the Campus

The Local power generation of every month by roof top solar installed is 35,808 KWh (Approx) or 1000 KWhper Day.

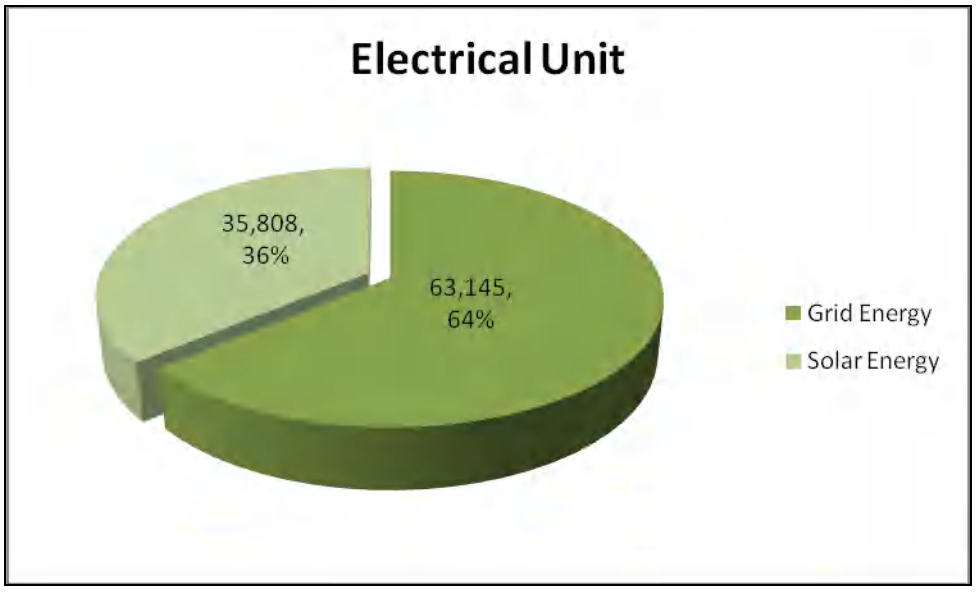


Fig.1.2 Comparative power consumption by the Institution

Table 1.3 Total Electricity consumption in the 5 year

Year	Units consumed (KVA)	Amount Paid in Rs.
2014 – 2015	754058	6786522
2015 – 2016	616452	5548065
2016 – 2017	626818	5641365
2017 – 2018	575047	5750470
2018 – 2019	611851	6118510

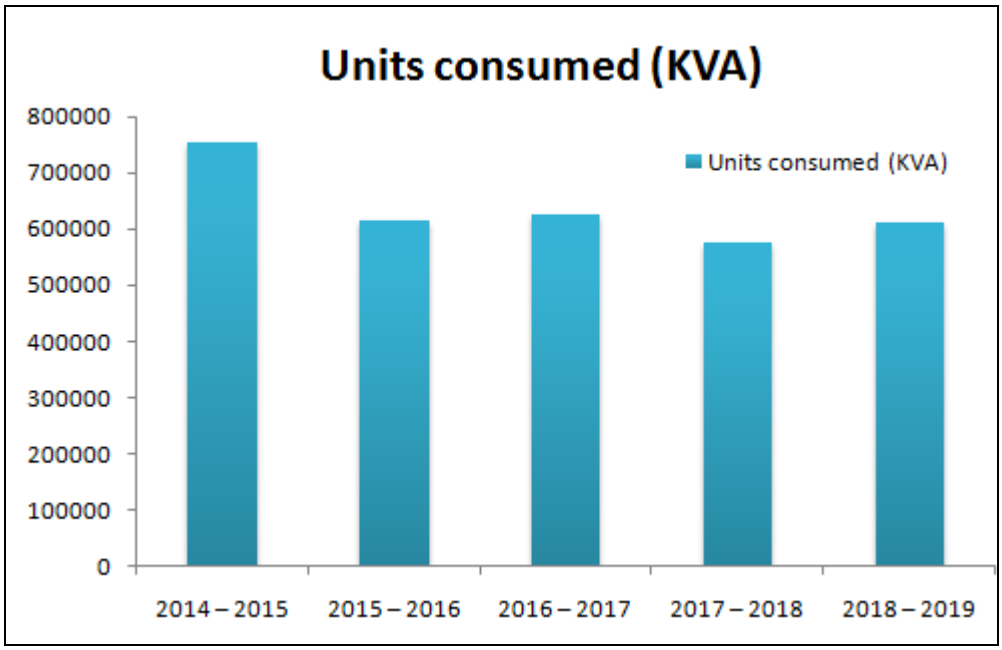


Fig. 1.3 Total Electrical Units consumed fo the 5 years

Fig 1.4 NMC Campus Power Grid Supply 500KVA Transformer

1.7 Electricl Unit Calculation

- voltage X ampere = Power (V X I = P)
- Unit: (volt X ampere = watt)
- Tariff Structure and Power cost
- One electrical Unit = 1000W/hour
- *(1000 watt bulb glows for an hour or 100 watt bulb glows for 10 hours)*
- Power factor(pf)= Actual power/ apparent power

Table 1.4 Details of UPS and BATTERY

UPS And Battery Details										
Place	**Date Of Install**	**Capacity**	**Type**	**Brand**	**Batt. Brand**	**Battery Nos**	**Batt Capacity**	**Batt Replaced**	**UPS Life in Year**	**Batt Life in Year**
Power Room	28/02/2017	120KVA/ 384V	UPS	POWER ONE	Exide	32	200AH	24/09.18 32 Nos	10	2

1.8 Images Local Roof top Solar Power generation

2. Fuel Consumption Audit

2.1 Diesel Consumption

The total consumption of diesel towards generators and transportation per month is 13,150 liter.

1 liter of diesel weighs 835 gram. Diesel consists for 86.2% of carbon, or 720 gram of carbon per liter diesel. In order to combust this carbon to CO_2, 1920 gram of oxygen is needed. The sum is then 720 + 1920 = 2640 gram or 2.7 kg of CO_2/liter diesel.

2.2 Generators and Transportation

Generators

Emergency power requirement in Nehru Memorial College is met by 2 diesel generators of varying capacities. (Table 2.1).

Table 2.1 Details of Generators

S. No.	Department	Capacity in KVA	MF Date	Make
1.	General /Comman	200 KVA	2007	Kirloskar
2.	General /Comman	250 KVA	20014	Kirloskar

Transportation

Daily operating logistics of the college given below in Table 2.2

Table 2.2 Details of Logistics

S. No.	Vehicle Type	No's	Capacity	Make
1.	College Bus	13	58 persons	
2.	Water Tanker	-	-	-
3.	Other Logistics- Cars	4	6 persons 4 persons	Innova Maruthi Susuki
4.	Official Vehicle – Passenger Van	1	16 Persons	Mahindra

13,150 liter of diesel will produce (13,150 X 2.7 kg) = 35,505 Kg of CO2 emission from the fuel consumption per month.

Total emission of CO_2 per year (35,505 X 12) = 4,26,060 Kg or **426 ton /year.**

2.3 LPG Consumption

1 liter of LPG weighs 550 gram. LPG consists for 82,5% of carbon, or 454 gram of carbon per liter of LPG. In order to combust this carbon to CO2, 1211 gram of oxygen is needed. The sum is then 454 + 1211 = 1665 gram of CO2/liter of LPG. 1 Kg of LPG = 1.94 liter

Total No. of cylinders consumable per month in the campus is given Table 2.3

Table 2.3 Details of LPG cylinders

S.No	Location	Consumption	
		Daily	Monthly
1	MGC	2	55 (ave)
2	CVR	3	80 (ave)
TOTAL			135

The average total of commercial (19 Kg) 135 cylinders (135 X 19Kg) = 1140 Kg (1140 Kg X 1.94) or 4976 liter

Total consumption of LPG per month = **4976** liter

Emission of CO_2 per month of the institution = (4976 X 1.67kg)

= **8,310** Kg of CO_2

Therefore Emission of CO_2 per year (8,310 X 12) = **99721 Kg**

or 99.7 ton/ year

The total carbon foot print per year is 426 + 99.7 = 525.7 ton of CO_2 emission in to atmosphere by fuel Consumption in the institution.

3. Carbon offset

3.1 Power Ration Measures

The campus replaces light fittings with energy efficient LED lighting to reduce the cost and carbon emission indirectly. An old incandescent bulb uses approximately 60W to 100W while an energy efficient light emitting diode (LED) uses only less than 10 W.

Table 3.1 LED Lights Details

S.No.	LED / CFL lights	Power in watt	Qty	Duration In hour	Total Consumption in Kwh /day
01	LED	12 Watt	419	6	30.17
02	CFL	18 Watt	120	6	12.96
03	LED Street Lights	35 Watt	33	8	9.24
Total					52.37

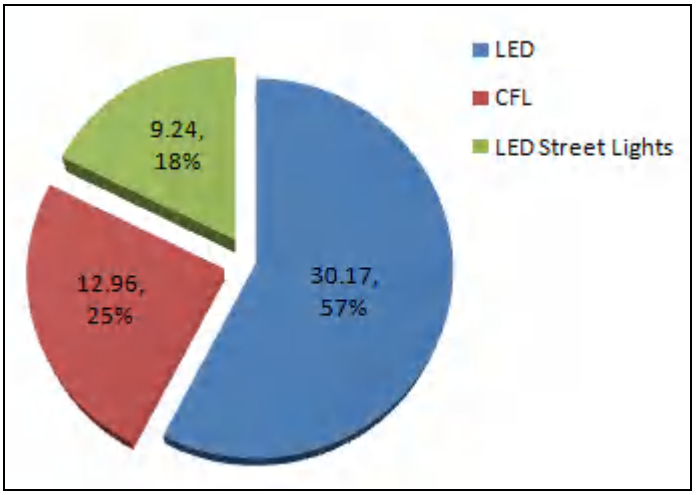


Fig. 3.1 Carbon Offset by LED Lights in the Campus

The total quantity of coal required to produce 52.37 X 30 X 12 = 18,853 units of electricity /year (18,853 × 0.538 kg coal) = 10,143 kg emission by coal One kilogram of coal emits 10,143 X 2.86 = 29,009 kg of CO_2, or 29 ton only per year against (25W[average of LED]/60W[R]) X 100 = 41.66 % of offset by regular emission of CO_2 in to the atmosphere.

3.2 Carbon offset suggestions

The management of **Nehru Memorial College** is conscious of this damage to the environment and has been implementing various programs/activities to reduce energy consumption on the one hand and increase green energy sources on the other. They are:

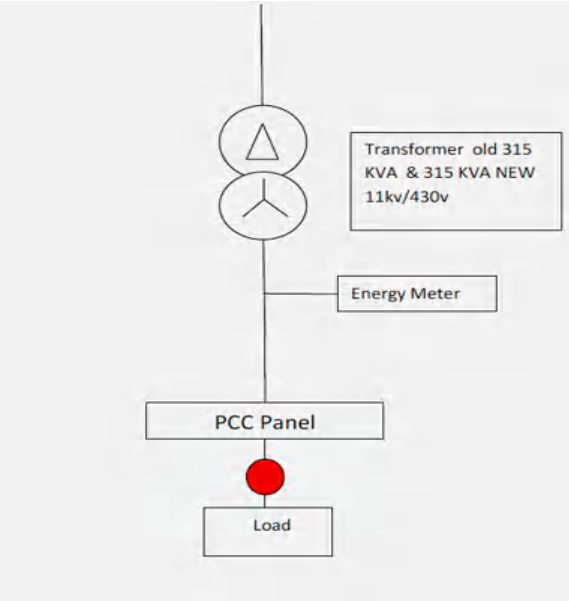
a) Replacing high energy-consuming lighting system with energy-efficient lighting systems.

b) Installing energy-efficient lighting system Based on the recommendations of the Energy Audit conducted this year, the Institution has reduced CO_2 emissions indirectly by replacing high energy-consuming electric bulbs with energy-efficient LED lighting systems by 41.66% is reduced can be enhanced to 80 – 100 %.

4. Power Quality Observations & Remedies

4.1 Site Description

The detailed Single Line Diagram is not available with Nehru Memorial College. The basic site survey was conducted as per following Single Line Diagram.



4.2 Existing Scenario with the Installation under survey

Table 4.1 Main Transformer details

Transformer	550 KVA
Voltage on LV side	433 V
Voltage on HV side	235 KV

4.3 IEEE-519-1992 Consideration and Value for Plant under survey

The said standard id applicable at the PCC (Point of Common Coupling). In above mentioned SLD at Survey Point no.1 is the point of coupling. As per the standards; the harmonic limits are to be considered at PCC Recommended Limits for these ratios as per IEEE-519-2014 are as here under.

Table 4.2 Current Distortion Limits for General Distribution Systems (120 V through 69 KV)

Maximum Harmonic Current Distortion in Percent of IL					
	Individual Harmonic Order (Odd Harmonic)				
Isc//L	<11	11<h<17	17<h<23	23<h<35	35<h
TDD					
<20*	4.0	2.0	1.5	0.6	0.3
5.0					
20<50	7.0	3.5	2.5	1.0	0.5
8.0					
50<100	10.0	4.5	4.0	1.5	0.7
12.0					
100<1000	12.0	5.5	5.0	2.0	1.0
15.0					
>1000	15.0	7.0	6.0	2.5	1.4
20.0					
Even harmonic are limited to 25% the odd harmonic limits above					
Current distortions that result in a offset, e.g. half –wave convertes are not allowed					
*All power generation equipment is Limited to these values of current distortion. regardless of actual/sc//L					
Where /sc =maximum short-circuit current at PCC /L =maximum demand load current (fundamental frequency component) at PCC. TDD =Total demand distortion (RSS).harmonic current distortion in% of maximum demand load current (15 or 30 min demand). PCC =Point of common coupling.					

Voltage Distortion Limits

Bus Voltage at PCC Voltage THD (%)	Individual Voltage Distortion (%)	Total Distortion
69 kv and below	3.0	5.0
69.000 kV through 161kv	1.5	2.5
161.001 kV and above	1.0	1.5
Note: High-voltage systems can have up to 2.0% THD where the cause is an HADC terminal that will attenuate by the time it is tapped for a user.		

Table 4.3 Voltage Current and Harmonic Values

RMS Voltage Values							
	Phase R-Y	Phase Y-B	Phase R-B	Phase R-N	Phase Y-N	Phase B-N	Ph N-G
Min Value	464.66	468.49	468.61	268.93	269.07	271.30	0.24
Ave Value	464.77	468.61	468.70	268.97	269.13	271.37	0.25
Max Value	464.82	468.73	468.77	269.01	269.18	2671.42	0.27

RMS Current Values				
	Phase R	Phase Y	Phase B	Neutral
Min Value	10.05	6.79	4.73	7.90
Ave Value	10.25	6.97	4.98	7.99
Max Value	10.45	7.15	5.22	8.09

PEAK Current Values				
	Phase R	Phase Y	Phase B	Neutral
Min Value	25.03	19.32	16	23.54
Ave Value	25.81	20.45	17.23	24.48
Max Value	26.68	21.83	18.67	25.55

	HARMONIC LEVEL IN %					
	Phase R	Phase Y	Phase B	Phase N	As per IEEE in %	As per MSEDCL in %
Voltage	**0.85**	**0.90**	**1.1**	230	Up to 5%	Up to 5 %
Current	40	45	75	105	Up to 10 %	Up to 10 %

Frequency	
Max	50.02
Avg	50.02
Min	50.02

4.4 Observations

4.4.1 500 KVA Transformer

1. Due to unbalanced and non linear load condition in each phase, harmonics in neutral is 230% and 105% in voltage and current respectively.
2. 3rd and 7th harmonic is present in the system. This is observed due to SMPS ie computer load & electronic ballasts.
3. Current in Neutral is 14.5 amp and 80 amp to maximum level.
4. Voltage harmonics are under permissible limits of MSEDCL and IEEE norm, while the Current harmonics are above the ideal values and these harmonics were induced through machinery.
5. Spikes are observed, no spike protection is provided to the system.
6. Overall Voltage supplied by grid is on HIGHER SIDE.

4.4.2 Current, Voltage and Harmonics

1. For Harmonics of 7th order the APFC panel (automatic power factor control) of 50 KVA with 7.68% detuned reactors and 525v capacitors with thyristerised switching are to be installed.
2. For harmonics of 3rd and 9th order the earthing is to be done .The detailed specification is given below.

- Make proper earthing as per IEC 60364-5-54 to meter as well as control panels.
- It is suggested to install new earthing system the details are as below:

Make OBO Betterman, Germany

- Length of Earth electrode: 1250 mm, Diameter of earth electrode: 14.2mm. Tested as per IEC 60364-5-54.
- Earth conductivity enhancing mineral compound of 5KG
- Total quantity required = 05 no. set (for 250 KVA) .

3. Install a Spike Protection Device, for protection from sudden high current spike which occurs due to high voltage. This is to be installed next to Energy Meter; also in each control panel.

4.5 The Specification for SPD is as follows

I. For protection against the Lightening surge and Surge through power lines (HT),

- Combi controller = 1 nos. to be connected to transformer LT side. Technology : MOV for L to N and SG for N to PE, Normal line voltage 230/ 400 v, 50Hz.
- Impulse current (10/350 micro sec), 7 KA and 25 KA.
- Response time < 25 nano seconds.
- Voltage protection level 900 volts & 1200 volts.

II. For protection against internal surges.

- Surge Controller = 4 nos. to be installed at each floor east and west side.
- Technology : MOV for L to N and SG for N to PE, Normal line voltage 230/ 400 v, 50Hz.
- Nominal discharge current 8/20 micro sec. = 20 KA & 50 KA.

- Voltage protection level = 1300v and 1200 volt.
- Response time less than 20 nano sec.

4.6 Effect on system

1. Circuit will be free from harmonic current.

2. The voltage regulation will be good, which results in low maintenance and saving in units also.

3. Neutral Current will be minimizing so very negligible amount of current will be there.

5. Energy Audit Methodology

5.1 Electrical Distribution System:

Scope of Work:

- To study existing electrical distribution system
- Measure/ Record the 12 hrs Load distribution
- To suggest various energy efficient measures with first order cost benefit analysis.

5.2 Methodology 1

A. Census :

1) Find out the electrical normal & emergency loading.

Type of tariff

- Rating of installed transformer
- General hygiene as per standard maintenance practices
- Operating hrs data were collected from respective person

B. Indoor Lighting

Scope of work

- To study the existing lighting scenario of facility & verify the building data
- To find out the performance of lighting fixture
- To calculate the ILER (Lux/ watt/ m2) & compare lux with the bench mark /prevailing std in the facility.
- To suggest various energy efficient measures with first order cost benefit analysis

Censes

- Upto 80% of the lighting fixture were inspected for following
- No.of light installed & no of light working.

- Type of lights, General hygiene as per std maintenance practices
- Operating hrs data were collected from respective person.

5.3 Computer

Scope of work :

- To study existing computer at facility and verify the billing data.
- To Find out the power drawn.
- To compare the power drawn with the bench mark or prevailing standard in the facility.
- To identify the causes of deviation in the performance & suggest recommendation for corrective actions.
- To suggest various energy efficient measures with the first order cost benefit analysis.

5.4 Methodology 2

Census:

- Up to 80% of the computers printers & faxes were inspected for following.
- No of computers printers & faxes installed.

5.5 Diesel Generators (D.G. sets)

The facility is not having D.G. 250 KVA set

5.6 Pumps

Scope of work:

- To study existing pumping system at facility and verify the billing data.
- To carry out analysis.
- To Find out the performance of the pumping system.
- To compare the operating efficiency with the bench mark or prevailing standard in the facility.
- To identify the causes of deviation in the performance & suggest recommendation for corrective actions.
- To suggest various energy efficient measures with the first order cost benefit analysis.

5.7 Methodology 3

Census:

- All water pumps were audited for following.
- Total no of pumps installed.

5.8 Report Writing

A detailed report of all the outcomes

i. Observations
ii. Remedies
iii. Census
iv. Data Collections
v. Data Processing
vi. Data Analysis
vii. Results
viii. Summery
ix. Suggestions Suggestions and
x. Conclusions are repotted in defined format for documentation and further references

Annexure

Electrical Audit (Prepare the details for each building – Model is given in the next table)

Prepare for all the buildings								
Sl. no	**Name of the Article**	**Quantity**	**Power in Watt**	**Duration in Hours/ Day**	**Total Power consumed**	**Total Electrical Unit/day**	**Total electrical/ Two months**	**Total**
1	**AIDED BUILDING DETAILS OF FLOOR AREA**							
	GROUND FLOOR - Rc Roof first floor (Room details)							
	Ceiling fan	133	70	6	55860	55.86	2234.4	
	Tube Light	130	36	6	28080	28.08	1123.2	
	LED light	21	22	6	2772	2.772	110.88	
	LED light	12	20	6	1440	1.44	57.6	
	CFL	36	36	6	7776	7.776	311.04	
	CFL	10	11	6	660	0.66	26.4	
	AC	8	2000	6	96000	96	3840	
	Wall mount fan	11	70	6	4620	4.62	184.8	
	Excessd Fan	7	70	6	2940	2.94	117.6	
	Projector	10	280	6	16800	16.8	672	
							8677.92	
2	**RADHAKRISHANAN BLOCK**							
	IT Block (Room details)							
	GROUND FLOOR - RC Roof							
	Ceiling fan	29	70	6	12180	12.18	487.2	
	Tube Light	36	36	6	7776	7.776	311.04	
	LED light	5	9	6	270	0.27	10.8	
	LED light	1	11	6	66	0.066	2.64	
	LED light	1	22	6	132	0.132	5.28	
	CFL	2	36	6	432	0.432	17.28	
	CFL	4	11	6	264	0.264	10.56	
	AC	3	2000	6	36000	36	1440	
	Wall mount fan	3	70	6	1260	1.26	50.4	
	Projector	2	280	6	3360	3.36	134.4	
							2469.6	

3	**FIRST FLOOR - RC Roof**							
	Ceiling fan	24	70	6	10080	10.08	403.2	
	Tube Light	51	36	6	11016	11.016	440.64	
	LED light	1	22	6	132	0.132	5.28	
	AC	2	4000	6	48000	48	1920	
	Projector	4	280	6	6720	6.72	268.8	
							3037.92	
4	**SECOND FLOOR - RC Roof**							
	Ceiling fan	37	70	6	15540	15.54	621.6	
	Tube Light	36	36	6	7776	7.776	311.04	
	Projector	3	280	6	5040	5.04	201.6	
							1134.24	
5	**Third Floor - RC Roof**							
	Ceiling fan	25	70	6	10500	10.5	420	
	Tube Light	23	36	6	4968	4.968	198.72	
	CFL	2	30	6	360	0.36	14.4	
	CFL	8	36	6	1728	1.728	69.12	
	AC	2	2000	6	24000	24	960	
	Projector	2	280	6	3360	3.36	134.4	
							1796.64	
	ZOOLOGY BLOCK							
	Ground Floor							
	Ceiling fan	13	70	6	5460	5.46	218.4	
	Tube Light	11	36	6	2376	2.376	95.04	
	LED light	2	22	6	264	0.264	10.56	
	AC	1	2000	6	12000	12	480	
	Projector	2	280	6	3360	3.36	134.4	
							938.4	

6	**First Floor**							
	Ceiling fan	19	70	6	7980	7.98	319.2	
	Tube Light	19	36	6	4104	4.104	164.16	
	Projector	2	280	6	3360	3.36	134.4	
							617.76	
7	**Store Room**							
8	Tube Light	1	36	6	216	0.216	8.64	
9	**Work shop**							
10	Ceiling fan	1	70	6	420	0.42	16.8	
11	Tube Light	2	36	6	432	0.432	17.28	
								42.72
	SELLAMMAL MOOKKAPILLAI BLOCK (Room details)							
	GROUND FLOOR							
	Ceiling fan	25	70	6	10500	10.5	420	
	Tube Light	51	36	6	11016	11.016	440.64	
	LED light	24	22	6	3168	3.168	126.72	
	LED light	16	15	6	1440	1.44	57.6	
	LED light	3	9	6	162	0.162	6.48	
	CFL	36	36	6	7776	7.776	311.04	
	CFL	5	11	6	330	0.33	13.2	
	AC	12	2000	6	144000	144	5760	
	Wall mount fan	15	70	6	6300	6.3	252	
	Excessd Fan	7	70	6	2940	2.94	117.6	
							7505.28	

	FIRST FLOOR -							
	Ceiling fan	36	70	6	15120	15.12	604.8	
	Tube Light	104	36	6	22464	22.464	898.56	
	CFL	38	36	6	8208	8.208	328.32	
	AC	11	2000	6	132000	132	5280	
	Excessd Fan	3	70	6	1260	1.26	50.4	

	Projector	3	280	6	5040	5.04	201.6	
							7363.68	
	SECOND FLOOR -							
	Ceiling fan	47	70	6	19740	19.74	789.6	
	Tube Light	33	36	6	7128	7.128	285.12	
	Projector	7	280	6	11760	11.76	470.4	
							1545.12	
	Third Floor - RC Roof							
	Ceiling fan	21	70	6	8820	8.82	352.8	
	Tube Light	14	36	6	3024	3.024	120.96	
	Projector	3	280	6	5040	5.04	201.6	
							675.36	
	LIBRARY BUILDING DETAILS							
	GROUND FLOOR AREA - RC Roof							
	Ceiling fan	19	70	6	7980	7.98	319.2	
	Tube Light	31	36	6	6696	6.696	267.84	
	LED light	1	9	6	54	0.054	2.16	
	AC	1	2000	6	12000	12	480	
	Wall mount fan	3	70	6	1260	1.26	50.4	
							1119.6	

	FIRST FLOOR - RC Roof							
	Ceiling fan	3	70	6	1260	1.26	50.4	
	Tube Light	13	36	6	2808	2.808	112.32	
	LED light	1	9	6	54	0.054	2.16	
	Wall mount fan	2	70	6	840	0.84	33.6	
							198.48	
	SECOND FLOOR - RC Roof							
	Tube Light	8	70	6	3360	3.36	134.4	
	Wall mount fan	2	70	6	840	0.84	33.6	
							168	

	ER.SUJATHA BLOCK (CS)							
	GROUND FLOOR - RC Roof							
	Ceiling fan	5	70	6	2100	2.1	84	
	Tube Light	5	36	6	1080	1.08	43.2	
	LED light	3	15	6	270	0.27	10.8	
	LED light	6	20	6	720	0.72	28.8	
	LED light	40	22	6	5280	5.28	211.2	
	AC	10	2000	6	120000	120	4800	
	Projector	2	280	6	3360	3.36	134.4	
							5312.4	
	FIRST FLOOR - RC Roof							
	Ceiling fan	5	70	6	2100	2.1	84	
	Tube Light	8	36	6	1728	1.728	69.12	
	LED light	5	20	6	600	0.6	24	
	LED light	1	15	6	90	0.09	3.6	
	LED light	20	22	6	2640	2.64	105.6	
	AC	10	2000	6	120000	120	4800	
	Projector	2	280	6	3360	3.36	134.4	
							5220.72	
	SECOND FLOOR - RC Roof							
	Ceiling fan	19	70	6	7980	7.98	319.2	
	Tube Light	23	36	6	4968	4.968	198.72	
	Wall mount fan	1	70	6	420	0.42	16.8	
	Projector	2	280	6	3360	3.36	134.4	
							669.12	
	TILED BUILDING							
	Ceiling fan	64	70	6	26880	26.88	1075.2	
	Tube Light	37	36	6	7992	7.992	319.68	
							1394.88	

AUDITORIUM - Light Roof							
Ceiling fan	10	70	6	4200	4.2	168	
Tube Light	39	36	6	8424	8.424	336.96	
LED light	2	20	6	240	0.24	9.6	
CFL	5	80	6	2400	2.4	96	
AC	2	2000	6	24000	24	960	
Wall mount fan	31	180	6	33480	33.48	1339.2	
Metal halogen (250watts)	24	250	6	36000	36	1440	
Metal halogen (500 watts)	4	500	6	12000	12	480	
						4829.76	
VIVEKANANDHA BLOCK							
Ground Floor							
Ceiling fan	13	70	6	5460	5.46	218.4	
Tube Light	18	36	6	3888	3.888	155.52	
Projector	1	280	6	1680	1.68	67.2	
						441.12	
First Floor - RC Roof							
Ceiling fan	15	70	6	6300	6.3	252	
Tube Light	14	36	6	3024	3.024	120.96	
Projector	3	280	6	5040	5.04	201.6	
						574.56	
Second Floor - Light Roof							
Ceiling fan	15	70	6	6300	6.3	252	
Tube Light	12	36	6	2592	2.592	103.68	
						355.68	

	RESEARCH BLOCK							
	Ground Floor							
	Ceiling fan	13	70	6	5460	5.46	218.4	
	LED light	7	18	6	756	0.756	30.24	
	LED light	8	20	6	960	0.96	38.4	
	LED light	3	11	6	198	0.198	7.92	
							294.96	
	First Floor - RC Roof							
	Ceiling fan	17	70	6	7140	7.14	285.6	
	LED Light	21	20	6	2520	2.52	100.8	
	LED light	1	18	6	108	0.108	4.32	
	LED light	6	11	6	396	0.396	15.84	
	AC	15	2000	6	180000	180	7200	
	Projector	1	280	6	1680	1.68	67.2	
							7673.76	
	Second Floor - Rc Roof							
	Ceiling fan	17	70	6	7140	7.14	285.6	
	LED light	17	20	6	2040	2.04	81.6	
	LED light	10	11	6	660	0.66	26.4	
	LED light	1	18	6	108	0.108	4.32	
	AC	16	32000	6	3072000	3072	122880	
							123278	
	Third Floor - Light Roof							
	LED light	13	22	6	1716	1.716	68.64	
	LED light	4	6	6	144	0.144	5.76	
	LED light	4	8	6	192	0.192	7.68	
	LED light	35	15	6	3150	3.15	126	
							208.08	

	HOTEL MANAGEMENT							
	Ground Floor - RC ROOF							
	Ceiling fan	9	17	6	918	0.918	36.72	
	Tube Light	13	36	6	2808	2.808	112.32	
	light	3	3	6	54	0.054	2.16	
							151.2	
	First Floor - RC Roof							
	Ceiling fan	1	70	6	420	0.42	16.8	
	Tube Light	8	36	6	1728	1.728	69.12	
	Light	12	25	6	1800	1.8	72	
	Light	2	3	6	36	0.036	1.44	
	LED light	7	18	6	756	0.756	30.24	
	LED light	18	6	6	648	0.648	25.92	
	CFL	10	18	6	1080	1.08	43.2	
	AC	1	2000	6	12000	12	480	
	Wall mount fan	3	70	6	1260	1.26	50.4	
	Excessd Fan	3	70	6	1260	1.26	50.4	
							839.52	
	Second Floor - RC Roof							
	Ceiling fan	8	70	6	3360	3.36	134.4	
	Tube Light	12	36	6	2592	2.592	103.68	
	Tube Light	3	3	6	54	0.054	2.16	
	LED light	2	12	6	144	0.144	5.76	
	LED light	2	6	6	72	0.072	2.88	
	LED light	2	18	6	216	0.216	8.64	
	AC	1	2000	6	12000	12	480	
	Wall mount fan	1	70	6	420	0.42	16.8	
							754.32	
	Third Floor - RC Roof							
	Ceiling fan	12	70	6	5040	5.04	201.6	
	LED light	9	20	6	1080	1.08	43.2	
							244.8	

	ATM ROOM - Rc Roof							
	Tube Light	4	36	6	864	0.864	34.56	
	LED light	3	3	6	54	0.054	2.16	
	CFL	3	11	6	198	0.198	7.92	
	AC	2	2000	6	24000	24	960	
								1004.64
	Security Room							
	Ceiling fan	2	70	6	840	0.84	33.6	
	LED light	2	20	6	240	0.24	9.6	
	LED light	3	11	6	198	0.198	7.92	
	LED light	2	18	6	216	0.216	8.64	
	Main Gate							
	LED light	6	30	6	1080	1.08	43.2	
	LED light	6	3	6	108	0.108	4.32	
								107.28
	RO PLANT (Minaral water)							
	Ceiling fan	1	70	6	420	0.42	16.8	
	light	4	36	6	864	0.864	34.56	
								51.36

	CVR HOSTEL							
	MOTHER TERESA BLOCK – A							
	Ground Floor - RC ROOF							
	Ceiling fan	12	70	15	12600	12.6	504	
	Tube Light	22	36	15	11880	11.88	475.2	
	First Flooor - RC Roof							
	Ceiling fan	12	70	15	12600	12.6	504	
	Tube Light	21	36	15	11340	11.34	453.6	
	Second Floor - Rc Roof							
	Ceiling fan	12	70	15	12600	12.6	504	
	Tube Light	21	36	15	11340	11.34	453.6	
	Third Floor - Asbestos sheet							
	Light	27	3	15	1215	1.215	48.6	
								2943

	INDIRA GANDHI BLOCK – B							
	Ground Floor - Rc Roof							
	Ceiling fan	34	70	15	35700	35.7	1428	
	Tube Light	29	36	15	15660	15.66	626.4	
	First Floor - Rc Roof							
	Ceiling fan	34	70	15	35700	35.7	1428	
	Tube Light	29	36	15	15660	15.66	626.4	
	Second Floor - Rc Roof							
	Ceiling fan	34	70	15	35700	35.7	1428	
	Tube Light	29	36	15	15660	15.66	626.4	

	Third Floor - Rc Roof							
	Tube Light	16	36	15	8640	8.64	345.6	
	light	41	3	15	1845	1.845	73.8	
	Wall mount fan	12	70	15	12600	12.6	504	
							7086.6	
	JANSIRANI BLOCK – C							
	Ground Floor - RC ROOF							
	Ceiling fan	9	70	15	9450	9.45	378	
	Tube Light	12	36	15	6480	6.48	259.2	
	Open Air Audiorium							
	Ceiling fan	3	70	15	3150	3.15	126	
	Tube Light	4	36	15	2160	2.16	86.4	
	First Floor - Rc Roof							
	Ceiling fan	9	70	15	9450	9.45	378	
	Tube Light	12	36	15	6480	6.48	259.2	
	Second Floor - Rc Roof							
	Ceiling fan	9	70	15	9450	9.45	378	
	Tube Light	12	36	15	6480	6.48	259.2	
	Third Floor - Rc Roof							
	Ceiling fan	9	70	15	9450	9.45	378	
	Tube Light	12	36	15	6480	6.48	259.2	
							2761.2	
	SAROJINAIDU BLOCK - D							
	Ground Floor - Rc Roof							

	Ceiling fan	42	70	15	44100	44.1	1764	
	Tube Light	48	36	15	25920	25.92	1036.8	
	First Floor - Rc Floor							
	Ceiling fan	42	70	15	44100	44.1	1764	
	Tube Light	48	36	15	25920	25.92	1036.8	
	Second Floor - Rc Roof							
	Ceiling fan	42	70	15	44100	44.1	1764	
	Tube Light	48	36	15	25920	25.92	1036.8	

	Third Floor - Rc Roof							
	Ceiling fan	42	70	15	44100	44.1	1764	
	Tube Light	48	36	15	25920	25.92	1036.8	
							11203.2	
	CVR							
	CVR Office							
	Ceiling fan	16	70	15	16800	16.8	672	
	Tube Light	20	36	15	10800	10.8	432	
	LED light	4	20	15	1200	1.2	48	
	CVR, Washyard & Comman Toilet							
	Tube Light	15	36	15	8100	8.1	324	
							1476	
	CVR Dinning Hall							
	Ceiling fan	38	70	6	15960	15.96	638.4	
	Tube Light	41	36	6	8856	8.856	354.24	
	Security Room							
	Tube Light	2	36	15	1080	1.08	43.2	
							1035.84	
	MEERABAI BLOCK - E							
	Ground Floor - Rc Roof							
	Ceiling fan	29	70	15	30450	30.45	1218	
	Tube Light	35	36	15	18900	18.9	756	
	First Flooor - Rc Roof							
	Ceiling fan	29	70	15	30450	30.45	1218	

	Tube Light	39	36	15	21060	21.06	842.4	
	Second Flooor - Rc Roof							
	Ceiling fan	29	70	15	30450	30.45	1218	
	Tube Light	39	36	15	21060	21.06	842.4	
	Third Floor - Rc Roof							
	Ceiling fan	29	70	15	30450	30.45	1218	
	Tube Light	41	36	15	22140	22.14	885.6	
	CFL	2	9	15	270	0.27	10.8	
								8209.2
	LAKSMIBAI BLOCK - E							
	Ground Floor - Rc Roof							
	Ceiling fan	17	70	15	17850	17.85	714	
	Tube Light	28	36	15	15120	15.12	604.8	
	Excessd Fan	2	120	15	3600	3.6	144	
	First Floor - Rc Roof							
	Ceiling fan	20	70	15	21000	21	840	
	Tube Light	25	36	15	13500	13.5	540	
	Second Floor - Rc Roof							
	Ceiling fan	18	70	15	18900	18.9	756	
	Tube Light	21	36	15	11340	11.34	453.6	
	Third Floor - Rc Roof							
	Ceiling fan	18	70	15	18900	18.9	756	
	Tube Light	22	36	15	11880	11.88	475.2	
								5283.6
	HIGHLAND HOSTEL							
	Ground Floor - Rc Roof							
	Ceiling fan	28	70	15	29400	29.4	1176	
	Tube Light	38	36	15	20520	20.52	820.8	
	First Floor - Rc Roof							
	Ceiling fan	28	70	15	29400	29.4	1176	
	Tube Light	37	36	15	19980	19.98	799.2	

	Second Floor - Rc Roof							
	Ceiling fan	28	70	15	29400	29.4	1176	
	Tube Light	37	36	15	19980	19.98	799.2	
								5947.2
	MGC HOSTEL							
1	**Bharathiyar Block**							
	Ground Floor - RC Roof							
	Ceiling fan	4	70	15	4200	4.2	168	
	Tube Light	6	36	15	3240	3.24	129.6	
	First Floor							
	Ceiling fan	5	70	15	5250	5.25	210	
	Tube Light	7	36	15	3780	3.78	151.2	
								658.8
2	**Kodikatha kumaran Block**							
	Ground Floor - RC Roof							
	Ceiling fan	8	70	15	8400	8.4	336	
	Tube Light	11	36	15	5940	5.94	237.6	
	First Floor - Rc Roof							
	Ceiling fan	7	70	15	7350	7.35	294	
	Tube Light	10	36	15	5400	5.4	216	
								1083.6
3	**V.O.C Block - Rc Roof**							
	Ground Floor - RC Roof							
	Ceiling fan	4	70	15	4200	4.2	168	
	Tube Light	6	36	15	3240	3.24	129.6	
	First Floor - Rc Roof							
	Ceiling fan	6	70	15	6300	6.3	252	
	Tube Light	8	36	15	4320	4.32	172.8	
								722.4

4	**Kamaraj Block**							
	Ground Floor - RC Roof							
	Ceiling fan	6	70	15	6300	6.3	252	
	Tube Light	13	36	15	7020	7.02	280.8	
	First Floor - Rc Roof							
	Ceiling fan	6	70	15	6300	6.3	252	
	Tube Light	8	36	15	4320	4.32	172.8	
							957.6	
5	**Bhagatshing Block**							
	Ground Floor - RC Roof							
	Ceiling fan	7	70	15	7350	7.35	294	
	Tube Light	11	36	15	5940	5.94	237.6	
	First Floor - Rc Roof							
	Ceiling fan	10	70	15	10500	10.5	420	
	Tube Light	10	36	15	5400	5.4	216	
	Second Floor - Rc Roof							
	Ceiling fan	2	70	15	2100	2.1	84	
	Tube Light	2	36	15	1080	1.08	43.2	
							1294.8	
	Kitchen, Store Room, Dinning Room I & II							
	Ceiling fan	30	70	8	16800	16.8	672	
	Tube Light	38	36	8	10944	10.944	437.76	
	LED light	13	20	8	2080	2.08	83.2	
	LED Street Light	3	30	8	720	0.72	28.8	
							1221.8	

	Gem Room - Rc Roof						
	Ceiling fan	5	70	6	2100	2.1	84	
	Tube Light	12	36	6	2592	2.592	103.68	
							187.68
	Canteen						
	Ceiling fan	7	35	6	1470	1.47	58.8	

	Ceiling fan	11	70	6	4620	4.62	184.8	
	Tube Light	5	36	6	1080	1.08	43.2	
	LED light	9	20	6	1080	1.08	43.2	
								330
	Street Light (Lights only)							
1	**Chellammal Block**	3	35	10	1050	1.05	42	
2	**Rathakrishnan Block**	1	35	10	350	0.35	14	
3	**Er.Sujatha**	1	35	10	350	0.35	14	
4	**Main Block**	3	35	10	1050	1.05	42	
5	**Audiotorium**	8	35	10	2800	2.8	112	
6	**Chemistry Lab Near Gate**	1	35	10	350	0.35	14	
7	**Main Gate**	1	35	10	350	0.35	14	
8	**Canteen**	2	35	10	700	0.7	28	
9	**Power House**	3	35	10	1050	1.05	42	
10	**Zoology Lab Staircase near**	1	35	10	350	0.35	14	
11	**Library Backside Corner**	1	35	10	350	0.35	14	
12	**Tiled Building**	4	35	10	1400	1.4	56	
13	**Temple**	1	35	10	350	0.35	14	
14	**HMCS**	1	35	10	350	0.35	14	
15	**R/O Plant**	1	35	10	350	0.35	14	
								448

CERTIFICATE

This is to certify that a detailed Environment Audit has been conducted for **Nehru Memorial College, (Autonomous), Puthanampatti, Tamilnadu** for the period **2019 – 2020** based on the data and credentials submitted for scrutiny. The activities and measures carried out by the College have been verified based on the reports submitted and was found to be satisfactory. The College has evolved policies on Environment, Water, Waste and Sanitation in line with the Sustainable Development Goals. The efforts taken by the members of the faculty, students, support staff and the Management towards creating a strategic change in attaining holistic environmental sustainability is highly appreciated and commended.

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PREFACE

An Environmental Audit is a tool comprising a systematic, documented, periodic and objective evaluation of how well a project, organization or equipment is performing with the aim of helping to safeguard the environment. The audit should facilitate management control of environmental practices and assess compliance with policy objectives and regulatory requirements.

Green audit is defined as an official examination of the effects a college has on the environment. It helps to improve the existing practices with the aim of reducing the adverse effects of these on the environment concerned.

Higher Educational Institutions are committed to preserve the environment within the campus through promotion of energy savings, recycling of waste, water use reduction, water harvesting etc.

Green audit visualizes the documentation of all such activities taking stock of the infrastructure of the college, their academic and managerial policies and future plans. A green auditor will study an organization's environmental effects in a systematic and documented manner and will produce an environmental audit report.

A clean and healthy environment aids effective learning and provides a conducive learning environment. Green audit can be a useful tool for a college to determine how and where they are using the most energy or water or resources; the college can then consider how to implement changes and make savings. It can also be used to determine the type and volume of waste which can be used for a recycling project or to improve waste minimization plan. It can create health consciousness and promote environmental awareness, values and ethics. It provides staff and students better understanding of green impact on campus.

Green auditing promotes financial savings through reduction of resource use. It gives an opportunity for the development of ownership, personal and social responsibility for the students and teachers. Thus it is imperative that the college evaluate its own contributions toward a sustainable future. As environmental sustainability is becoming an increasingly important issue for the nation, the role of

higher educational institutions in relation to environmental sustainability is more relevant.

The audit process in Nehru Memorial College, Puthanampattiinvolved initial interviews with management to clarify policies, activities, records and the co-operation of staff and students in the implementation of mitigation measures. Staff and students were given training how to collect the data for the green audit process. This was followed by staff and student interviews, collection of data through the questionnaire based survey, review of records, observation of practices and observable outcomes. In addition, the approach ensured that the management and staff are active participants in the green auditing process in the college.

The baseline data prepared for the Nehru Memorial College (Autonomous), Puthanampatti will be a useful tool for campus greening, resource management, planning of future projects, and a document for implementation of sustainable development of the college. Existing data will allow the college to compare its programs and operations with those of peer institutions, identify areas in need of improvement, and prioritize the implementation of future projects. The green audit reports assist in the process of attaining an eco-friendly approach to the sustainable development of the college.

The results presented in the green audit report will serve as a guide for educating the college community on the existing environment related practices and resource usage at the college as well as spawn new activities and innovative practices. The Green Audit team expects the management to express their commitment to implement the recommendations.

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ENVIRONMENT AUDIT

NEHRU MEMORIAL COLLEGE
(Autonomous)
Puthanampatti -621007

Green Audit Assessment Team (Internal)

Sl. No	Campus Green Audit over all Team	Designation
1	Dr.A.R.Ponperiasamy Principal, NMC	Chairman
2	Dr.C.Sasikumar, Dean, Research and Development	MemberSecretary
3	Dr.S.Kumararaman, Vice - Pricnipal	Member
4	Dr.K.T.Tamilmani, Dean, Academic Affairs	Member
5	Dr.Viji Saral Elizabeth, Dean, Placement and Training.	Member
6	Mr.Rathakrishnanan, Estate Manager, NMC	Member
7	Er.Vijayakumar, Engineer, NMC	Member

NEHRU MEMORIAL COLLEGE
(Autonomous)
(ACCREDITED WITH "A" GRADE BY NAAC)
PUTHANAMPATTI – 621 007
Tiruchirappalli District, Tamilnadu
Website: www.nmc.ac.in

CAMPUS GREEN AUDIT TEAM COORDINATORS

SL. NO	AUDIT TEAM	COORDINATORS
1	ENVIRONMENTAL MANAGEMENT TEAM	Dr. M.Meenakshisundaram, Co-ordinator, Assistant Professor Department of Botany
2	WATER MANAGEMENT TEAM	Dr.K.Saravanan, Co-ordinator Assistant Professor Department of Zoology
3	WASTE MANAGEMENT TEAM	Dr.N.Ramesh, Co-ordinator , Assistant Professor Department of Zoology
4	SANITATION MANAGEMENT TEAM	Dr.V.Ramesh, Co-ordinator Assistant Professor Department of Zoology
5	AIR , NOISE MANAGEMENT TEAM	Dr.M.Ramesh, Co-ordinator, Assistant Professor Department of Chemistry

ENVIRONMENTALMANAGEMENT POLICY

- The NMC always aims to eliminate or reduce all forms of environmental pollution and encourages all faculty members, staff, students and others to practice the same.
- The College always raises awareness of environmental issues among its staff/students/visitors and encourages initiatives leading towards a clean and green environment.
- The College promote the 5 R's for waste management in the order of **Reduce, Reuse, Recycle, Refuse, Recover and provide** convenient waste segregation, collection and guidance for the disposal of paper, cardboard, glass, plastic, electrical and white goods, hazardous waste and e-waste.
- The College minimizes the consumption of water and enhances groundwater level by establishing campus catchment area and rainwater harvesting schemes in all buildings of the campus, encouraging to report leaks and rectifying them promptly, progressively replacing faulty taps and fittings, exploring options for using waste roof runoff water wherever possible.

- The College minimizes the consumption of electricity where opportunity arise by progressive replacement of light bulbs with energy efficient ones. (LED) Inculcating the practice among staff and residents to turn off electrical appliances when not in use. Installation of a Hybrid solar power system in the campus.
- The College adapts health, safety and environmental codes of practice and relevant rules and regulations and complies with legislation relating to use of chemical products.
- The College is completely free from plastics and discourages burning of waste materials in any form.

ENVIRONMENTAL MANAGEMENT TEAM		
1	Staff in-charge	Dr. M.Meenakshisundaram, Co-ordinator
Student Volunteers		
2	M.Sridevi,	2K17BT32, III B.Sc., Botany
3	S.Pramila	2K17BT39, III B.Sc., Botany
4	S.Vignesh	2K17BT48, III B.Sc., Botany
5	K.Subashree	2K17BT33, III B.Sc., Botany

WATER MANAGEMENT POLICY

- The Collegerecognizes and endorses water as a prime natural resource, a basic human need and a precious institutional asset.
- The College emphasizes water as a significant commodity and strives to promote its conservation and efficient use through the implementation of the 6th Sustainable Development Goal **'Clean Water and Sanitation'.**
- The College minimizes the consumption of water and enhances groundwater level by establishing Campus Catchment Area and rainwater harvesting schemes in all buildings of the campus. Students and Staff are encouraged to report leaks and faulty taps and take measures to rectify them promptly by progressively replacing faulty taps and fittings.
- The College utilizes rainfall directly with a Campus Catchment Area by gravity method through well laid conduits. The Campus Rainwater Harvesting facility is considered in a holistic manner. Recycle and reuse water as a much as possible.

WATER MANAGEMENT TEAM		
1	Staff in-charge	Dr.K.Saravanan, Co-ordinator
Student Volunteers		
2	A.Amirish Antony	2K18443, II B.Sc., Zoology
3	S.Subash	2K18402, II B.Sc., Zoology
4	P.Monicka	2K17420, III B.Sc., Zoology
5	M.S.Monishree	2K18425, II B.Sc., Zoology
6.	R.Sajee	2K18433, II B.Sc., Zoology

WASTE MANAGEMENT POLICY

- The College promotes sustainable consumption pattern among staff, students and visitors. Waste is considered as a misplaced resource and is managed responsibly.
- The College endorses that careless waste disposal leads to Environmental hazards and Responsible disposal leads to a healthier living.
- The College stimulates 5 R principles in the order of **Reduce, Reuse, Recycle, Refuse and Recover** and provide convenient waste segregation, collection and guidance for the disposal of paper, cardboard, glass, plastic, electrical and white goods, hazardous waste and e-waste.
- The College inculcates a culture of avoiding purchase of products with excessive or unnecessary packaging and encourages to purchase products that can be used multiple times and are long lived rather than single-use or poor quality items that are thrown away quickly.

- The College encourages all the stakeholders to improve the habit of recycling materials by appropriate segregation of waste and recycling paper waste through paper recycling unit.
- Solid Waste (Biodegradable) and litters of the campus used for producing Vermi-Compost.
- Waste Water (Gray Water) generated from ladies hostels are used for agricultural irrigation.
- E-Waste from the College are collected and is transferred for wiping and recycling to the local vendors.
- Refilling of donors and Cartridges of printers and maintaining by an appointing technician who makes reuse of donors and reduces the rate of E-Waste generation.

WASTE MANAGEMENT TEAM		
1	Staff in-charge	Dr.N. Ramesh, Co-ordinator
Student Volunteers		
2	V.Glaraa	2K17412, III B.Sc., Zoology
3	K.Hariharan	2K17404, III B.Sc., Zoology
4	M.Karthikeyan	2K17405, III B.Sc., Zoology
5	S.Janani	2K17416, III B.Sc., Zoology
6.	M.Rajeshwari	2K17431, III B.Sc., Zoology

SANITATION POLICY

- Environmental sanitation at NMC is aimed at developing and maintaining a clean, safe and pleasant physical environment in all the buildings.
- The NMC aims at promoting the social, economic and physical well-being of all sections of the students.

The principal components of environmental sanitation include:

- Collection and biogas generation using vegetable wastes and black water
- Storm water drainage
- Control of pests and vectors of disease by fitting mosquito net in all windows of Hostel rooms and applying fumigation at of request interval with help of local Panchayat Union Staff.
- Hand hygiene: Hostel workers using hand gloves while serving the food.
- Environmental sanitation education
- Napkin sanitizers installed at wash rooms at ladies hostel.
- Inspection and enforcement of sanitary regulations
- Monitoring the observance of environmental standards

WASTE MANAGEMENT TEAM		
1	Staff in-charge	Dr.M. Ramesh, Co-ordinator
Student Volunteers		
2	L.Abibarath.	2K18PBT01 , II M.Sc., Botany
3	S.Santhosh	2K18PBT05 , II M.Sc., Botany
4	E.Elakkiya	2K18PBT11 , II M.Sc., Botany
5	G.Krishnaverni	2K18PBT06 , II M.Sc., Botany

QUALITY AIR NOISE MANAGEMENT TEAM & POLICY

The human ear is constantly being assailed by man-made sounds from all sides, and there remain few places in populous areas where relative quiet prevails. There are two basic properties of sound, (1) loudness and (2)frequency.

Loudness is the strength of sensation of sound perceived by the individual. It is measured in terms of Decibels. Just audible sound is about 10 dB, a whisper about 20 dB, library place 30 dB, normal conversation about 35-60 dB, heavy street traffic 60-0 dB, boiler factories 120 dB, jet planes during take-off is about 150 dB, rocket engine about 180 dB . The loudest sound a person can stand without much discomfort is about 80 dB. Sounds beyond 80 dB can be safely regarded as Pollutant as it harms hearing system.

The WHO has fixed 45 dB as the safe noise level for a city. For international standards a noise level up to 65 dB is considered tolerate. Loudness is also expels. One some equals the loudness of 40 dB sound pressure at 1000 Hz. Frequency is defined as the number of vibration per second. It is denoted as Hertz (Hz).

QUALITY AIR NOISE MANAGEMENT TEAM		
1	Staff in-charge	Dr.M.Ramesh, Co-ordinator
Student Volunteers		
2	Shona R	2K17333, III B.Sc., Chemistry
3	Gayathri.P	2K17315, III B.Sc., Chemistry
4	Abirami.M	2K17310, III B.Sc., Chemistry
5	Elavarasan.O	2K17304, III B.Sc., Chemistry
6.	Madhavan M	2K17307, III B.Sc., Chemistry

INTRODUCTION

Green Audit is a process of systematic identification, quantification, recording, reporting and analysis of components of environmental diversity of various establishments. It aims to analyze environmental practices within and outside of the concerned sites, which will have an impact on the eco-friendly ambience. Green audit can be a useful tool for a college to determine how and where they are using the most energy or water or resources; the college can then consider how to implement changes and make savings. It can also be used to determine the type and volume of waste, which can be used for a recycling project or to improve waste minimization plan. It can create health consciousness and promote environmental awareness, values and ethics. It provides staff and students better understanding of Green impact on campus. If self enquiry is a natural and necessary outgrowth of a quality education, it could also be stated that institutional self enquiry is a natural and necessary outgrowth of a quality educational institution. Thus it is imperative that the college evaluate its own contributions toward a sustainable future. As environmental sustainability is becoming an increasingly important issue for the nation, the role of higher educational institutions in relation to environmental sustainability is moreprevalent.

OBJECTIVES

The Green Audit of an institution is becoming a paramount important these days for self- assessment of the institution, which reflects the role of the institution in mitigating the present environmental problems. The college has been putting efforts to keep the environment clean since its inception. But the auditing of this non-scholastic effort of the college has not been documented. Therefore, the purpose of the present green audit is to identify, quantify, describe and prioritize framework of Environment Sustainability in compliance with the applicable regulations, policies and standards. The main objectives of carrying out Green Audit are:

1. To document the quality of drinking water
2. To document the quality of recycled waste water for gardening
3. To document the solid Waste disposal system
4. To document the ambient environmental condition of air, water and noise in the campus.

METHODOLOGY:

The purpose of the green audit of NMC is to ensure that the practices followed in the campus are in accordance with the Green Policy adopted at the College. The Methodology include the preparation physical inspection of the campus, observation and review of the documentation green audit parameters at intervals , interviewing key persons and data analysis, measurements and recommendations. Key components of Green audit conducted at Nehru Memorial College, Puthanampatti included:

I. Pre-audit planning

The first and very important phase of green audit is establishment of an Environmental Management System (EMS) by an organization. The Environmental Management System is the backbone of the auditing process and its role is broad and wide. Every aspect of green audit is monitored by this system. The organization should establish the Environmental Management System. The governance structure of the Environmental Management System is shown in following chart.

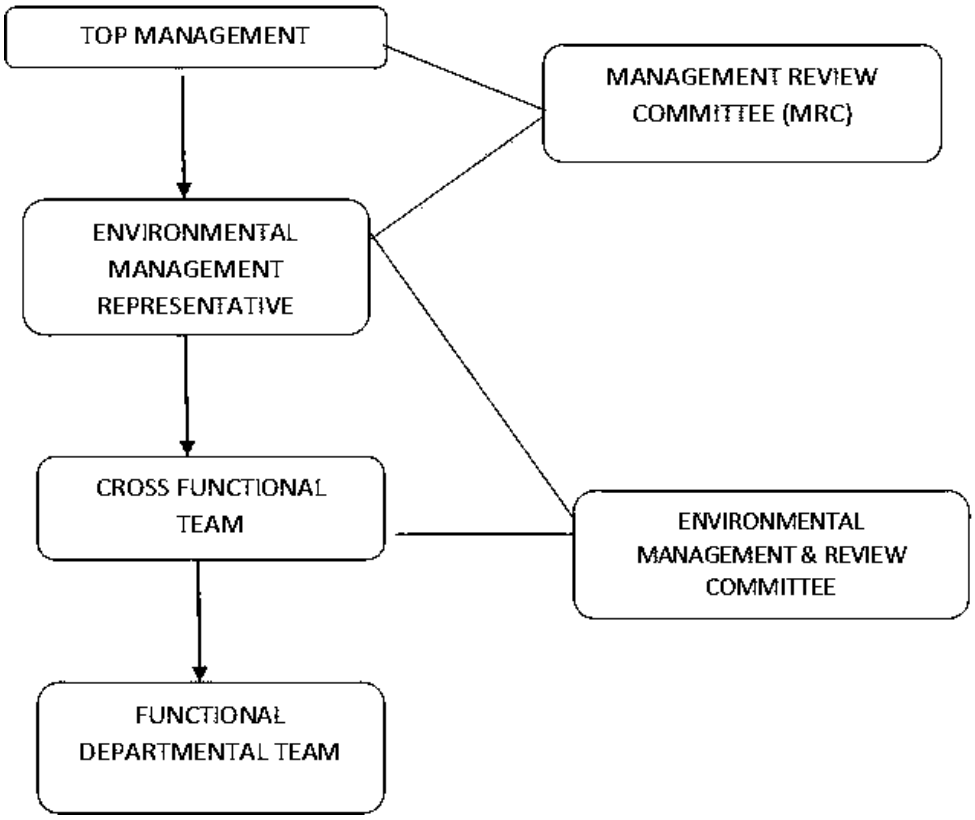


Fig. 1.1 Governance of Environmental Management

a) Preliminary literature review of concepts and methodologies related to green audit.

b) Discussion with the management staff on various systems installed in the campus.

c) Awareness creation and interaction with the staff and student on the concept of green audit.

d) Walk through the entire campus to understand the nature of water use, energy use and waste management systems in the campus.

Benefits of the Green Auditing

- More efficient resource management and provide basis for improved sustainability
- Create a green plastic campus and enable waste management through reduction of waste generation, solid- waste and water recycling
- Evolve health consciousness among the stakeholders

- Recognize the cost saving methods through waste minimizing and managing Point out the prevailing and forthcoming complications
- Authenticate conformity with the implemented laws
- Empower the organizations to frame a better environmental performance
- Enhance the alertness for environmental guidelines and duties
- Impart environmental education through systematic environmental management approach and Improving environmental standards
- Benchmarking for environmental protection initiatives)
- Financial savings through a reduction in resource use
- Development of ownership, personal and social responsibility for the College and its environment Enhancement of college profile
- Developing an environmental ethic and value systems in youngsters.
- Green auditing should become a valuable tool in the management and monitoring of environmental and sustainable development programs of the college

II. Audit Stage

- ♣ Checking of Documents and Evaluation
- ♣ Review of Environment Policy
- ♣ Review of Programmes or Activities

III. Pre audit stage- Meeting with the Principal and the Green audit coordinator

Fig.1: Meeting with Principal and Co-ordinators

IV. Meeting with the Audit team members (Staff advisers, student representatives etc..)

Fig .2 : Green Audit Inauguration at Nehru Memorial College, Puthanampatti.

A green audit was started at Nehru Memorial College, Puthanamapatti, Trichirapalli District, Tamilnadu – 621007 on 20th June 2019.

The methodology adopted for this audit was a three step process comprising of

I. Processing of Data Collection as per the template:

a) Development of questionnaire format to identify all water/energy using fixtures/ equipment and examine water or energy use patterns for individual buildings in thecampus.

b) Collection of secondary data from compilation of electricity bills, collecting records of pumps, generators, water quality analysis reports, civil and electrical etc.

c) Semi-structured interview with maintenance manager, technicians, plumber and housekeeping staff on current situation and the past trends in water consumption, electricity consumption, waste management, waste generationetc.

II. Data Processing and analysis

The existing trends and patterns in water usage, energy usage and waste generation and management is analysed in this step from the data collected from the previous step.

III. Audit Recommendations andreporting:

Recommendation – On the basis of results of data analysis and observations, some steps for reducing power and water consumption were recommended. Proper treatments for waste were also suggested. Use of fossil fuels has to be reduced for the sake of community health.

I. PROFILE
II. CLASS ROOMS
III. FOOD
IV. ENERGY AUDIT
V. WATER AUDIT
VI. WASTE MANAGEMENT AUDIT
VII. VERMI-COMPOST
VIII. CAMPUS HYGIENE
IX. COLLEGE REST ROOMS
X. QUALITY AIR NOISE ASSESSMENT

The above target areas particular to the college was evaluated through questionnaire circulated among the students for data collection. Twelve categories of questionnaires were distributed.

NEHRU MEMORIAL COLLEGE
(AUTONOMOUS)

PUTHANAMAPATTI - 621007

I. PROFILE

I. SECTION I : PROFILE

1.	**Name of the Institution**	:	**NEHRU MEMORIAL COLLEGE (AUTONOMOUS)**
2.	Address of the College	:	PUTHANAMPATTI – 621 007
	City / District	:	TRICHIRAPALLI -DISTRICT
	State	:	TAMILNADU
	Pincode	:	621 007
	Phone - Landline	:	04327 - 234227, 234638
	E mail	:	info@nmc.ac.in
	Web site	:	www.nmc.ac.in
3.	Name of the Principal	:	Dr. A. PONPERIASAMY
	Mobile Number	:	9486165596
4.	Green Audit Coordinator's Name	:	Dr. A. ALAGAPPA MOSES
	Mobile number	:	9842490057

5. How many shifts does your College have? Please Tick ✔ :

Shift	✔ / ×	Time	Hours
REGULAR	✔	9.30	3.30
Co-Education	✔		

6. Is your College single gender? :

7. What is the total population of the College? : Total : 4634

Students	:	Male	1611	Female	2716
Teachers	:		52		129
Non-Teaching Staff	:		64		62
Total	:		1727		2907

8.	No. of visitors to the College (Visitors are Students & Teachers from other Colleges, Technicians, contractors, labourers, guests and others	:	65
9.	No. of students / wardens / support staff stay in the College	:	1300

10. Brief History of the Campus

VISION:

- For knowledge, Justice and Peace

MISSION:

With a view to realizing this vision, the college has taken up the following mission

- To impart the right kind of knowledge among the rural students with the aid of computers and other equipment,
- To ensure social justice for the rural people through various academic and non-academic activities viz., Cultural and Literary competitions, NSS, NCC, YRC, Gender Club etc.
- To stabilize inner peace in the minds of the young learners through meditation and Yoga practice in order to ensure peace among the rural people.

Motto

- Promoting higher level academic pursuits
- Building the Confidence level of the rural students providing ample opportunities for career growth
- Sensitizing the youth about social justice and responsibility

ABOUT NMC

Nehru Memorial College, Puthanampatti was established in the year 1967. It was founded by Late Shri. Mookka Pillai a great philanthropist whose selfless spirit prompted him to take up the mission and vision of spreading education as early as 1942.

The great philanthropist and visionary Late Thiru. Mokka Pillai had conceived a noble idea of providing education to the children of peasants, the downtrodden and the poor section of the rural society and implemented it in the year 1942 by establishing a middle school in the rural village Puthanampatti. He had put his heart and soul in addition to his hard earned money to impart education to the rural mass of the village.

During the Pre-independence days the founder had a great reverence for Pandit Jawaharlal Nehru and hence the school was named after our nation's first Prime Minister. The school was upgraded as High school in the year 1948. His another brainchild called Nehru Basic Training School paved the way for promoting a teacher in every house of the village in and around Puthanampatti.

The undaunted spirit of the unlettered genius did not satisfy himself with school education alone. He envisaged yet another noble cause of imparting higher education to the people in and around Puthanampatti and his dream was realized in 1967 in the form of 'Nehru Memorial College was declared open by Honourable Shri.C. N. Annadurai, M.A., the then Chief Minister of Tamilnadu on 29th June 1967. The college is affiliated to Bharathidasan University, Tiruchirappalli, and was recognized under section 2 (f) and 12 (B) by the University Grants Commission, New Delhi in 1969. In appreciation of the societal concern and innovative practices adopted in a rural ambience, the college was granted autonomous status in 2004 by the University Grants Commission and accredited with "A" Grade by NAAC in the year 2013.

The College campus is spread over 45 acres of land. It has multi-storey buildings housing spacious class rooms and laboratories. The laboratories are equipped with state of art modern equipment. The college campus is spread over 45 acres of land. It has multi-storey buildings housing spacious class rooms and laboratories. All college has an exclusive computer centre with 300 terminals. The office of the Controller of Examinations functions separately in a well furnished wing. The institution has a separate two storey Library building with 50,000 volumes of books 73 national, and international reputed / peer reviewed journals. The college has two air-conditioned conference hall. A mega multipurpose hall with a floor space of 25,000 sq. feet is another unique feature of the college. There are three hostels:

1. Sir. C.V. Raman Hostel which could accommodate 1400 women inmates,

2. Mahatma Gandhi Centenary Hostel and Highland Hostel for 600 men inmates.

These hostels are well furnished with lodging facility, reading rooms, computer laboratory with internet connectivity, play ground, ultra-modern kitchens and spacious dining halls. C.V. Raman Hostel for women has an open-air auditorium for the conduct of cultural and literary events. The institution has established Reverse Osmosis plant for the supply of purified drinking water for all the Students and Staff. As regards power supply, the college has 24 hrs HT power supplies along with 200 KVA backup generators. We have also installed about 300 kilo watts supply of SOLAR POWER Energy, and we are working towards "Zero Energy" campus in future.

All the academic administrative blocks and hostel are connected with Internet facility. All the faculty members are provided with computer and Internet facility. Students have access to Internet in the Internet centre. The institution conducts medical camps frequently. Any emergency medical need is taken care of by the nearest Government Hospital at Omandur which is 4 km. away from the campus. A separate vehicle is exclusively kept ready for the medical care of the students round the clock. The institution provides adequate transport facility for the students and staff.

We get students from various parts ie., Trichy, Salem, Namakal, Villupuram, Cuddalore, districts, and we have about 50 students from Sri Lanka also studying in various programmes such as BBA, BCA, B.com, B.Com (CA) Chemistry and B.Sc., Hotel Management and Catering Science.

Main Block

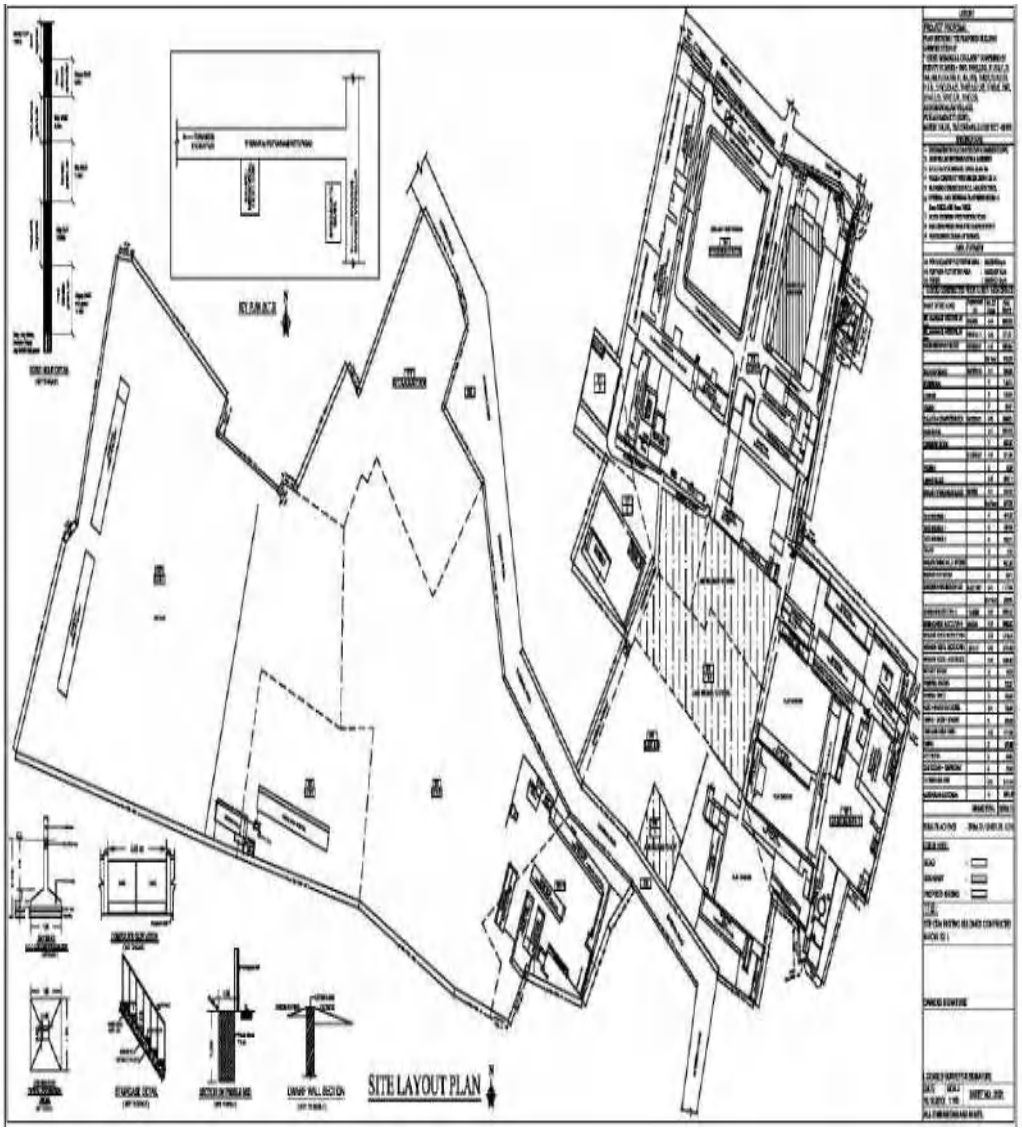
View of the Greenery

Main Entrance Road of College Campus

Dr.Radhakrishanan Block

Fig: NMC College Satellite View

11 Lay out of the Campus showing all the buildings, play grounds and other features



Annexure II

Total Area of the Campus

Total area of the Campus	Acres	Sq.M
	42.02	170060.61

11. Age of the Buildings

AGE OF THE BUILDING AND BUILT - UP AREA		
Sl.no	**Name of The Building**	**Open Date**
1	Sellammal Mookapillai Block -I	2005
2	Sellammal Mookapillai Block -II	2005
3	Mr.Radhakrishnan Block	2001
4	Zoology Block	2003
5	Store Room	2003
6	Canteen	2003
7	Toilet - 1	1995
8	Sujatha Computer Block	1999
9	Main Block	1972
10	Chemistry Block - 1	2003
11	Chemistry Block - 2	2003
12	Toilet - 2	1998
13	Library Block - 1	1994
14	Library Block - 2	2015
15	Vivekandha Block	2003
16	Muthaiya Block - Tiled Building - 1	1967
17	Muthaiya Block - Tiled Building - 2	1967
18	Muthaiya Block - Tiled Building - 3	1967
19	Temple	2005
20	Days scholar Toilet	1998
21	Mookapillai Auditirium	2010
22	Research Block	2018
23	Catering Building	2004

Sl.no	Name of The Building	Open Date
24	Women Hostel Dining	2003
25	Women Hostel Kitchen	2003
26	Servant Stay Room	2003
27	Sarojini Naidu Block –D Block	2003
28	Wash Yard	2003
29	Jansirani Block- C Block	2003
30	Indragandhi Block – B Blcok	1995
31	Mother Terasa Block - A	1976
32	Meera bai - E Block	2016
33	Lakshmi Bai - E Block	2016
34	Wash Yard	2003
35	Security Rooms	2018
36	Parents Waiting Hall	2003
37	CVR Office	1976
38	MGC Bagavatsingh Block	1972
39	Kamaraj Block	1972
40	V.O.C Block - Rc Roof	1972
41	Kodikatha kumaran Block	1972
42	Bharathiyar Block	1972
43	Dining Hall - 1	1972
44	Dining Hall - 2	1972
45	Kitchen	1972
46	Gas Room	
47	Generator (Power Room)	1996
48	Bath Room	1972
49	Toilet	1972

Sl.no	Name of The Building	Open Date
50	Highland Hostel	1974
51	Dining Hall	1974
52	Kitchen	1974
53	Gas Room	
54	Staff Toilet	2000
55	NCC Room	2008
56	Ground Gallery	2014
57	RO Plant	2004
58	Security Rooms	2018
59	ATM	2015
60	Workshop	1978

14. Built up area (All Floors)

BUILDING AND BUILT - UP AREA				
Sl.no	**Name of The Building**	**No of Flooring**	**Built up Area**	
			Sq.feet	**Sq.mtr**
1	Sellammal Mookapillai Block -I	G + 3	29960.00	2784.39
2	Sellammal Mookapillai Block -II	G + 3	20000.00	1858.74
3	Mr.Radhakrishnan Block	G + 3	30378.00	2823.23
4	Zoology Block	G + 1	7808.00	725.65
5	Store Room	G	1386.00	128.81
6	Canteen	G	1864.00	173.23
7	Toilet - 1	G	968.00	89.96
8	Sujatha Computer Block	G + 2	13997.20	1300.86
9	Main Block	G +2	49582.08	4608.00
10	Chemistry Block - 1	G	2328.25	216.38

Sl.no	Name of The Building	No of Flooring	Built up Area	
			Sq.feet	Sq.mtr
11	Chemistry Block - 2	G+ 2	2242.50	208.41
12	Toilet - 2	G	802.37	74.57
13	Library Block - 1	G + 2	7531.13	699.92
14	Library Block - 2	G	1188.00	110.41
15	Vivekandha Block	G + 2	9438.03	877.14
16	Muthaiya Block - Tiled Building - 1	G	5142.25	477.90
17	Muthaiya Block - Tiled Building - 2	G	5027.13	467.20
18	Muthaiya Block - Tiled Building - 3	G	2262.00	210.22
19	Temple	G	35.00	3.25
20	Days scholar Toilet	G	740.00	68.77
21	Mookapillai Auditirium	G	27929.73	2595.70
22	Research Block	G + 3	11660.00	1083.64
23	Catering Building	G + 3	10944.00	1017.10
24	Women Hostel Dining	G`	8120.00	754.65
25	Women Hostel Kitchen	G	1688.00	156.88
26	Servant Stay Room	G	804.94	74.81
27	Sarojini Naidu Block –D Block	G + 1	23758.08	2208.00
28	Wash Yard	G	1000.00	92.94
29	Jansirani Block- C Block	G + 2	7445.92	692.00
30	Indragandhi Block – B Blcok	G + 3	28080.37	2609.70
31	Mother Terasa Block - A	G + 3	19023.68	1768.00
32	Meera bai - E Block	G + 3	19328.19	1796.30
33	Lakshmi Bai - E Block	G + 3	12201.84	1134.00
34	Wash Yard	G	873.17	81.15
35	Security Rooms	G	109.25	10.15
36	Parents Waiting Hall	G	2030.00	188.66

Sl.no	Name of The Building	No of Flooring	Built up Area	
			Sq.feet	Sq.mtr
37	CVR Office	G	1460.25	135.71
38	MGC Bagavatsingh Block	G + 1	4963.75	461.32
39	Kamaraj Block	G + 1	4153.50	386.01
40	V.O.C Block - Rc Roof	G + 1	2938.00	273.05
41	Kodikatha kumaran Block	G + 1	4918.38	457.10
42	Bharathiyar Block	G + 1	2579.50	239.73
43	Dining Hall - 1	G	1763.44	163.89
44	Dining Hall - 2	G	1763.44	163.89
45	Kitchen	G	1092.50	101.53
46	Gas Room	G	201.00	18.68
47	Generator (Power Room)	G	324.06	30.12
48	Bath Room	G	405.63	37.70
49	Toilet	G	299.25	27.81
50	Highland Hostel	G+ 2	18015.75	1674.33
51	Dining Hall	G	1672.81	155.47
52	Kitchen	G	1241.56	115.39
53	Gas Room	G	218.75	20.33
54	Staff Toilet	G	60.00	5.58
55	NCC Room	G	925.36	86.00
56	Ground Gallery	G	11086.57	1030.35
57	RO Plant	G	680.00	63.20
58	Security Rooms	G	120.00	11.15
59	ATM	G	144.00	13.38
60	Workshop	G	620.00	57.62
	Total		**429324.59**	**39900.66**

15. Student's Strength (For the past Five years)

S. No.	Year	UG	PG	M. Phil	Ph. D	Total
1.	2014 – 2015	2857	469	130	49	3505
2.	2015 – 2016	3343	360	137	26	3866
3.	2016 – 2017	3129	429	296	57	3911
4.	2017 – 2018	3893	451	296	92	4732
5.	2018 – 2019	3435	445	356	91	4327

16. Staff Strength (For the past Five years)

S. No.	Year	Teaching			Non-Teaching			Other workers	Total
		Aided	SF	Total	Aided	SF	Total		
1.	2014 – 2015	52	110	162	35	50	85	36	530
2.	2015 – 2016	51	115	166	30	42	72	30	506
3.	2016 – 2017	49	119	168	29	42	71	42	520
4.	2017 – 2018	21	121	172	29	49	78	40	510
5.	2018 – 2019	50	129	188	27	51	78	44	567

NEHRU MEMORIAL COLLEGE
(AUTONOMOUS)

PUTHANAMAPATTI - 621007

INFRASTRUCTURE AND LEARNING FACILITIES

Infrastructure and Learning Facilities

Laboratory

The College is well equipped with the state of art modern laboratories in all Science Programmes, which includes:

- ✧ Botany
- ✧ Chemistry
- ✧ Computer Science
- ✧ Data Science
- ✧ Embedded System
- ✧ Hotel Management and Catering Science
- ✧ Physics
- ✧ Zoology

<table>
<tr><td>  </td><td>  </td></tr>
<tr><td>Hotel Management and Catering Science</td><td>Botany</td></tr>
<tr><td>  </td><td>  </td></tr>
<tr><td>Computer Science</td><td>Chemistry</td></tr>
</table>

LIBRARY

Our Library is equipped with a huge Collection of more than 50,000 National and International books. A Collection of rare books is also available. Seventy three magazines and Journals of multi-disciplinary are subscribed for the benefit of research scholars and staff.

AUDITORIUM

There is a spacious and adequately large auditorium which can comfortably accommodate more than 2000 Students. It is named after our beloved founder Shri.M. Mooka Pillai. It is a multipurpose auditorium where indoor games such as Shuttle and Tennis could be played. The general programmes of the College such as students' Union Functions, Fresher's Day, Cultural programmes, College Annual day celebration ,Hostel Day and Graduation Day Ceremony etc., are comfortably conducted. It is also used as a huge examination hall for the autonomous examination. The dais is equipped with latest audio, video and lighting facilities.

AUTITORIUM

SEMINAR HALL

There are three compact air conditioned Seminar Halls with a seating capacity of 250 and 150 respectively. Both the Seminar Halls are equipped with double LCD Projectors and smart boards. Seminars, Workshops and Conferences of various disciplines are held.

TRANSPORT FACILITIES

10 buses 3 vans are operated by the college for carrying women students every day. Buses and vans are operated to different locations such as Trichirapalli, Thruiayur, Musuri, Metupalayam, Thammampatty, etc.,

HOSTELS

There are four hostels operated separately two for men and two for women students which provide an ideal environment for a holistic residential learning experience. Sir.C.V.Raman Hostel and U.G.C. Hostel are operated for 1400 women students. Both are having spacious dining halls where nutritious vegetarian food is served. The hostels are well equipped with lodging facilities, reading rooms, Computer labs with internet connectivity, playground, Mahathama Gandhi Centenary Hostel and Highland Hostel are operated for men where 600 students can be accommodated.

CANTEEN

A Canteen is functioning in the campus for the benefit of students and staff members. Breakfast and Lunch including snacks and bakery items of good quality and hygienic food are provided at an affordable price.

GYMNASIUM

Two fully equipped “Multi-gymnasium” are functioning in the College for men and women students separately. Both the Gyms contain all essential advanced equipments and gadgets for working towards a healthy life. A new indoor sports stratum with a seating capacity of 350 students and a 50 bedded Sports Hostel for women are under construction.

R.O. Water

The College has established a Reverse Osmosis Plant for the supply of purified drinking water for all the students and staff.

Solar Power

The college has 24 hours HT power supply along with 250KVA backup generators. Our campus is also installed with 310KW Solar Power Plant which provides solar power for the entire campus

.

B.P.O. Centre

The college has established a 300 seater Rural BPO center (non-voice based) which provides employment to the rural population in and around Puthanampatti. It also provides part-time job for our students. Which help them to pay for their College fees and living expenses. This system encourages the students to **earn while they learn.**

Extra- curricular activities

Apart from Sports and Cultural activities students are shaped and fine tuned by the following club activities.

Rotaract Club, LEO Club, YRC, RRC, Youth Club, Yoga, NSS & NCC.

View of the Spectators

Prize Winners

NEHRU MEMORIAL COLLEGE
(AUTONOMOUS)

PUTHANAMAPATTI - 621007

II FOOD

II FOOD AUDIT

Eat Good Food for Good Health

Good food is all around us. For generations, Indians have incorporated biodiversity in their daily food-using millets instead of wheat or rice, eating vegetables sourced from forests rather than farms, eating local food, and changing their diet with changing seasons.

India is one of the biodiversity-rich countries and home to nearly 12 per cent of the world's plant species. People in the biodiversity-rich areas have an immense understanding of the plants that grow around them. Each region of the country has its special cuisine based on the plants available in the area. https://www.globalhungerindex.org/results.html

Many bio-diverse foods have medicinal properties. They are rich in micronutrients, help people fight disease and keep them healthy in changing seasons. It was for food that people protected their environment. When crops were cultivated, they were grown naturally, without the use of agrochemicals. In rural areas, people often do not have to buy food and this provides nutrition security. There is some evidence that people living in places where food is available in traditional sources are healthier.

Access to good food has decreased drastically. Most traditional food cannot be stored and it is difficult to market them. People no longer have access to forests and kitchen gardens are fast disappearing, particularly in urban areas. In many places, environmental damage has decimated the biodiversity.

Child Health and Food Policy

Food has been at the centre of policy debate in India for many years, as more than 20 per cent of the country's population suffers from under nourishment. India ranks 97th out of 118 countries in the 2016 Global Hunger Index and has further pushed to 102nd out of 117 qualifying countries in 2019 with a score of 30.3. India suffers from a level of hunger that is serious.

Global Hunger Index - India

It ranks 120thamong 128 countries with data on under nutrition during 2009-13; 30.7 per cent of the country's children are underweight (an improvement from 43.5 per cent in 2005-06). Data from targeted studies show an alarming trend. The HUNGaMA (Hunger and Malnutrition) report covering 112 worst-performing districts in nine states tells us that 42 per cent children are underweight, 58 per cent are stunted and 11.4 are 'wasted' by the age of 24 months.

Meanwhile, childhood obesity is also alarmingly on the rise globally as well as in India. The International Obesity Task Force (IOTF) of WHO estimates that 10 per cent of children aged 5-17 years worldwide are overweight.

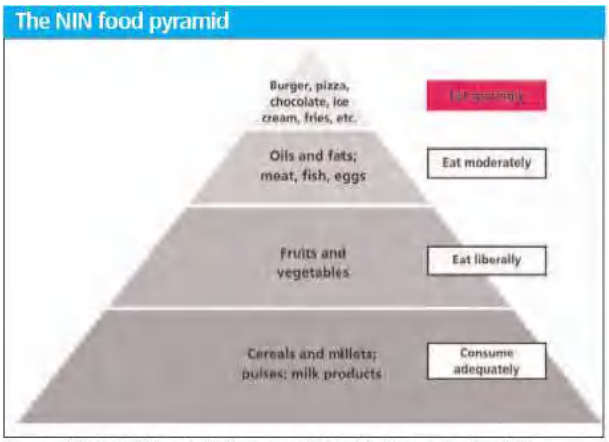
India therefore faces a peculiar crisis that spans both ends of the spectrum of nutritional disorders — while 30.7 per cent of the country's children are underweight, according to the International Association for the Study of Obesity's world map of obesity, overfeeding is evident as overweight and obesity has been recently on the rise and is present in 20.6 per cent boys and 18.3 per cent girls in India.

Given India's dubious distinction of carrying the twin burden of under nutrition and overfeeding, we need to be extra cautious. In a bid to beat hunger, we are losing out to the deadly parasite of ultra-processed food, without realizing how harmful it actually is. Yes, craving for ultra-processed food is a global epidemic.

The fat of the matter:

The highest level of total fat was found in an Indian snack (Haldiram's aaloobhujia): 37.8 gm/100 gm of the sample (Centre for Science and Environment)

- Trans-fat content was the highest in french fries (8.1 per cent of the total fat), followed by instant noodles (4.6 percent of the total fat) and potato chips (4.5 per cent of the total fat).
- Salt content was the highest in instant noodles (3.7 gm/100 gm of sample). Eating a packet of instant noodles, therefore, will cover about half of the daily salt quota. The salt content is not declared by the companies on the label
- The highest level of carbohydrates was detected in Top Ramen noodles at 73.3 gm per 100 gm.



Source: Dietary Guidelines for Indians, 2011, National Institute of Nutrition (NIN)

Recommended Daily Allowance (RDA) for a 10- to 12-year-old moderately active child

Nutrient/energy	RDA
Energy (E)	2,100 kilocalorie*
Sugar	Up to 30 g
Total visible fat	35 g [~15%E]
Saturated fatty acids (SFA)	Up to 8% E
Trans-fatty acids (TFA)	< 1% E
Salt	5 g
Protein	34g/day
Carbohydrates	130g/day

kote: *Average for calculation purpose [2,190 kcal for a boy weighing 34.3 kg and 2,010 kcal for a girl weighing 35 kg]; calorie calculation; 1 g of fat=9 kcal; 1g of protein = 4 kcal
Source: Dietary Guidelines for Indians, 2011, National Institute of Nutrition

Food Pyramid and Recommended Daily Allowance

Table 8.1: Food Categorization for College Canteen Policy

GREEN	Always on menu	Vegetables and legumes, fruits, grain (cereal) foods; mostly whole grain and/or high in fibre, learn meat, egg, fish etc.
YELLOW	Select carefully Approach should be greening, small portion size and reduced frequency.	Baked vegetable-based snacks, Ice creams, milk-based ices and dairy desserts etc.
RED	Not on menu Banned from Colleges as they are high in fat, salt and sugar.	Energy drinks, carbonated and other sweetened beverages, fried packaged foods, chocolates, potato fries

Canteen Facility

	
Canteen	**Students in the Canteen**
	
Space available in the Canteen	**Iddly and Vadai**
	
Dosa	**Pani Poori**

Balanced Diet

According to the 'Dietary Guidelines for Indians, 2011' of the National Institute of Nutrition (NIN), a balanced diet is one that provides all nutrients in required amounts and proper proportions. It should provide around 50-60 per cent of the total calories from carbohydrates, about 10-15 per cent from proteins and 20-30 per cent from both visible and invisible fat. In addition, it should provide other non-nutrients such as dietary fibre and antioxidants that bestow positive health benefits.

VARIETIES OF PACKAGED FOOD ITEMS SOLD IN THE COLLEGE

S. No.	Packaged Food Items	Please count all flavours / variants available in the College separately	Total No. of items sold on an average in a Day	Day the food items were sold in
1	Savoury snacks and similar packaged food like chips, and Haldirams.	9	50	50
2	Instant noodles like knorr, Cup-a-Noodles, Top ramen, Wai-wai, Yippee, Foodles, Maggi Etc.	Nil		
3	Potato fries and burgers	Nil		
4	Confectionery (Chocolates, Candies, gums)	8	100	
5	Ice cream			
6	Carbonated beverages	Nil		
7	Sugar sweetened non-carbonated beverages	2	50	
8	Packages / bottles Maza/lassi/flavoured milk	5	50	
9	Packaged / bottled energy drinks	Nil		

TRADITIONAL INDIAN FOOD ITEMS SERVED IN THE COLLEGE

S. No.	Traditional Indian Snacks (non-packaged) Samosas, idli/dosa, sambhar, pavbhaji, moms etc.	Number of servings sold when on the menu
1	Samosas	100
2	Idli/Dosa and Sambhar	20 plates
3	Panipoori	40
4	Others/Chapathi	20 plates

VARIETIS OF TRADITIONAL INDIAN BEVERAGE ITEMS (EXPECIALLY NON-PACKAGED) SERVED IN THE COLLEGE CANTEEN

S. No.	Traditional Indian beverages (non-packaged)	Number of plates sold when on the menu
1	Lemon Juice	40
2	Sweet lassi	-

NEHRU MEMORIAL COLLEGE
(AUTONOMOUS)

PUTHANAMAPATTI - 621007

III. WATER MANAGEMENT AUDIT

III.WATER MANAGEMENT AUDIT

Water is a natural resource; all living matters depend on water. While freely available in many natural environments, in human settlements potable (drinkable) water is less readily available. We need to use water wisely to ensure that drinkable water is available for all, now and in the future. A small drip from a leaky tap can waste more than 180 liters of water to a day; that is a lot of water to waste - enough to flush the toilet eight times. It is therefore essential that any environmentally responsible institution should examine its water use practices. Water auditing is conducted for the evaluation of facilities of raw water intake and determining the facilities for water treatment and reuse. The concerned auditor investigates the relevant method that can be adopted and implemented to balance the demand and supply of water. It is therefore essential that any environmentally responsible institution examine its water use practices.

1.	**WATER AUDIT**		
1	**Key Facts about the institution**		
1	No. of Staff (Teaching and Non-Teaching)	:	340 nos
2	No. of Student	:	4327 nos
3	No. of Metro water connections	:	No
4	No. of Sumps for storing Metro water	:	No
5	No. of Storage tanks for storing Metro water	:	No
6	No. of Bore wells	:	3 nos
7	Total Rooftop Surface area (Sq.M)	:	8194.88 Sq.mtrs
9	No. of Rainwater Harvesting Structures	:	2 nos
10	Average Visitors per day	:	65 nos

2	Storage Tanks in the Campus				
S.no	**Location of the Tank**	**Dimension of the Tanks (M)**	**Capacity in m3**	**No of Tanks in each Location**	**Total Capacity in Liters**
1	Sellammal Mookapillai Block	9.3 x 4.5 x 1.2	50.22	1 nos	50000
2	Mr.Radhakrishnan Block	5.5 x 4.6 x 1.2	30.3	1 nos	30000
	Mr.Radhakrishnan Block	5.5 x 3.7 x 1.2	20.3	1 nos	20000
3	Research Block	3 x 1.3 x 1.1	4.2	1 nos	4000
4	Library Block	3.5 x 1.5 x 1.2	6.72	1 nos	6000
5	CVR - A Block	6.4 x 5.1 x 2.2	71.8	1 nos	70000
6	CVR - B Block	6.4 x 5.1 x 1	32.6	1 nos	32000
7	CVR - E Block	12.1 x 5.1 x 1	61.7	1 nos	60000
8	Hight Land Hostel	7.6 x 2.7 x 2.2	45	1 nos	45000
9	MGC Hostel	6 x 3.3 x 2.3	45	1 nos	45000

3	Number and Location of Bore Wells			
	Table Number & Location of Bore Wells in Academics unit			
Sl.no	**Location of the Bore well**	**Type of Pump used & hp**	**Depth of the Borewell**	**Average depth of the water table**
1	CVR Hostel	Radealflow-15hp	700 feet	80 feet
2	UG	Mixerflow-15hp	500feet	80 feet
3	Uirni vayal	Radealflow-7.5hp	250feet	80 feet
4	CVR Hostel - Well	Open Well	60 feet	50 feet
5	MGC - Well	Open Well	70 feet	55 feet

3. Water Consumption

	Table Water Consumption			
Sl.no	**UNIT**	**POPULATION**	**WATER CONSUMPTION (L)**	**Percapital Consumption**
1	Acedemic	3500 nos	250000	71
2	Hostels	1000 nos	200000	200

Bore Well, Open Well and

Water Recharge

Water Quality Assessment

Table Physico - Chemical Characteristic of Water

S.No	Parameter	
1	PH	7.06
2	Turbidity (NTU)	0.66
3	EC	2577
4	TS (mg/l)	2360
5	TDS (mg/l)	1288
6	TSS (mg/l)	1088
7	BOD (mg/l)	6.08
8	COD (mg/l)	20.26
9	DO (mg/l)	8.95
10	Temperature ^{o}C	24
11	Total Hardness (mg/l)	823.3
12	Calcium (mg/l)	230.2
13	Magnesium (mg/l)	58.31
14	Fluoride (mg/l)	0.053
15	Nitrate (mg/l)	0.346
16	Nitrite (mg/l)	Nil
17	Silicate (mg/l)	0.286
18	Phosphate (mg/l)	Nil
19	Chloride (mg/l)	370.4
20	Total Alkalinity (mg/l)	17.3

Water Quality Assessment

	Tables Physico - Chemical Characteristic of Water Purifiers			
S.NO	Parameter	Sample		
		1	2	3
1	PH	7.02	7.15	7.00
2	Turbidity (NTU)	0.99	0.84	0.16
3	EC	2276	2680	2776
4	TS (mg/l)	2026	2480	2576
5	TDS (mg/l)	1138	1340	1388
6	TSS (mg/l)	938	1140	1188
7	BOD (mg/l)	6.53	4.26	7.46
8	COD (mg/l)	25.6	12.8	22.4
9	DO (mg/l)	8.45	9.20	9.20
10	Temperature ^{o}C	24.0	24.0	24.0

11	Total Hardness (mg/l)	785	725	960
12	Calcium (mg/l)	21.4	190.3	286
13	Magnesium (mg/l)	60.75	57.10	57.10
14	Fluoride (mg/l)	0.04	0.05	0.07
15	Nitrate (mg/l)	0.44	0.17	0.43
16	Nitrite (mg/l)	Nil	Nil	Nil
17	Silicate (mg/l)	0.34	0.26	0.26
18	Phosphate (mg/l)	Nil	Nil	Nil
19	Chloride (mg/l)	282.2	461.5	367.7
20	Total Alkalinity (mg/l)	20.0	15.0	17.0

Water Tank Capacity

1 **RADHAKIRSHNAN BLOCK**

Minenaral water 30000 ltrs
Raw water 20000 ltrs

LIBRARY BUILDING DETAILS

Raw water 9000 ltrs

CVR HOSTEL

Water Tank 70000 ltrs
Water Tank 30000 ltrs

Storage Tanks in College - Academic Buildings

Table Storage tanks (Over Head) in The College

Sl.no	Location of the tank	Dimension of the Tanks(M)	Capacity in m3	No of tanks in each Location	Total capacity in Litres
	RADHAKIRSHNAN BLOCK	5.48 x 4.57 x 1.21	30.30276	1	30000

NEHRU MEMORIAL COLLEGE
(AUTONOMOUS)

CAMPUS HYGIENE

IV. WASTE MANAGEMENT

IV. WASTE MANAGEMENT

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 homes and 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 channeled into better service through recycling, repair. Thus the minimization of solid waste is essential to a sustainable college. 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.

A. Biodegradable /wet waste

S. No.	How much waste does your College generate?	Quantity of solid waste generated (monthly average in kg)
1	Garden / horticulture waste	4000kg
2	Kitchen waste ---- Raw	1290kg
3	Kitchen waste ---- Cooked	1790kg
4	Wet waste from classroom etc. (Burning)	2000kg
5	Total amount of waste	9080kg
6	Per capita waste generation	

B. Dry / Recyclable waste

S. No.	How much waste does your College generate?	Quantity of solid waste generated (monthly average in kg)
1	Plastic	41.66kg
2	Paper	16.66kg

3	Wood or classroom furniture	08.33kg
4	Glass	12.5kg
5	Metal	20.83kg
6	Thermocol	8.33kg
7	Tetra packs	4.16kg
8	Total amount of waste	112.47kg
9	Per capita waste generation	

C. Domestic Hazardous Waste

S. No.	How much waste does your College generate?	Quantity of solid waste generated((monthly average in kg)
1	Hazardous and toxic waste (Paints, Lab waste, etc.)	2.6
2	Oil from diesel generator sets	3.33
3	Total amount of waste	5.93
4	Per capita waste generation	

D. E-Waste

S. No.	How much waste does your College generate?	Quantity of solid waste generated (monthly average in kg)
1	E-Waste	25kg
2	Per capita waste generation	

E. Biomedical Waste

S. No.	How much waste does your College generate?	Quantity of solid waste generated (monthly average in kg)
1	Biomedical waste such as Syringes, band aids, expired medicines etc.	¼ band Aid
2	Per capita waste generation	

F. Sanitary Waste

S. No.	How much waste does your College generate?	Quantity of solid waste generated (monthly average in kg)
1	Sanitary waste	44kg
2	Per capita waste generation	

G. C & D Waste

S. No.	How much waste does your College generate?	Quantity of solid waste generated (monthly average in kg)
1	Construction and Demolition waste	550kg
2	Per capita waste generation	

WASTE COLLECTION

Waste Collection Pointsin the College

Area	Total No. of Waste collection points	No. of waste collection points with no bin	No. of waste collection points with one bin (mixed waste)	No. of waste collection points with one bin (for only dry waste)	No. of waste collection points with two bins (wet &dry)	No. of waste collection points with three bins or more)
Class rooms	50	0	10	15	08	17
Play grounds	-	0	-	-	-	-
Common area (e.g. reception, corridors)	40	0	08	05	10	17
Staff room	10	0	10	-	-	-
Laboratory	05	0	05	-	-	-
Canteen	04	0	04	-	-	-
Clinic/sick room	01	0	01	-	-	-
Library	07	0	-	-	-	1
Toilets	24	0	08	10	5	-
Others	-	-	-	-	-	-
Total	**141**	**0**	**46**	**37**	**23**	**35**

TOTAL QUANTITY OF WASTE TREATED

S. NO.	Type of Waste	Quantity of waste recycled per month (in Kg, frequency may differ)
1	Garden waste/horticulture waste	2000kg
2	Kitchen waste – Raw	1200kg
3	Kitchen waste – Cooked	1640kg
4	Wet waste from classrooms etc.	-
5	Plastic	-
6	Paper	-
7	Wood, class room furniture	-
8	Glass	-
9	Metal	-
10	Thermocol	--
11	Tetra packs	-
12	Hazardous and toxic waste (paints, lab waste etc.	-
13	Oil from diesel generator sets.	-
14	E – waste	-
15	Biomedical waste such as syringes, Band-Aids, expired medicines etc.	Nil
16	Sanitary waste	-
17	Construction and demolition (C&D) Waste	-
18	Total (in Kilograms)	2840kg

Waste recycling practices followed in College to understand whether waste recycling procedures are applied to waste.

Waste Recycling Practices followed in College

S. No.	Category Waste	Local Scrap collector	Authorized dealer	Dumped at a designated community site	Internal Procedure
1	Paper (e.g. used notebooks, used examination papers, subscription newspaper and magazines)	✔	-	-	-
2	Plastic (e.g. Broken, unusable)	✔			
3	Horticultural waste				✔
4	E-Waste (e.g. broken, unusable computers)	✔			
5	Hazardous waste			✔	
6	Wood, glass, metal	✔			
7	Biomedical Waste (e.g. waste from nurse room in College such as Band-Aids, syringes..)	-	-	✔ (Burning)	-

Please upload the following supporting documents on GSP Audit Portal:

- Pictures of recycling units – paper recycling machines, selling paper to scrap men, recyclers etc.

Does your College have the following?

- If yes, please give the numbers of items in working condition and those that are not.

E-Waste Disposal

S. No.	Item	Total no. of Items	BEE Star Rating	Working condition	Non-Working condition
1	TVs	7	3 star	Good	Nil
2	VCR or DVD players	30	-	Good	Nil
3	Refrigerators and freezers	7	-	Good	1
4	Washing machines	-	-	-	-
5	Air conditioners	105	5star	Good	Nil
6	Heaters	02	-	Good	Nil
7	Microwaves	-	-	-	-
8	Ovens	3	-	Good	1
9	Toasters	-	-	-	-
10	Electric kettles	-	-	-	-
11	Personal computers (CPU, Mouse, Screen, and key board included)	650	-	-	50
12	Laptop computer (CPU, mouse, Screen, and key board included)				
13	Notebook computes	15	-	-	Nil
14	Notepad computers	-	-	-	-
15	Printers	-	-	-	-
16	Copying equipment (Xerox)	20	-	-	Nil

17	Projectors (LCD)	03	-	-	-
18	Whiteboards	60	-	-	Nil
19	Electric/Electronic computers	-	-	-	-
20	Pocket and desk calculators	-	-	-	-
21	Fax machines	01	-	-	-
22	Telex	-	-	-	-
23	Telephones /Intercom				
24	Pay Telephones	05	-	-	-
25	Mobiles	-	-	-	-
26	Mobile batteries	-	-	-	-
27	Induction cookers	-	-	-	-
28	Geysers/water heaters	-	-	-	-
29	Batteries condemned	-	-	-	-
30	Bulbs – tube lights and others	-	-	-	-

Integration of environment in to the curriculum

- The Nehru Memorial College demonetizing building materials and dumped in a common place outside the college campus (about 1Km) and the Public are using the materials for their use.
- From women Hostel and ladies toilet, Napkins are being burnt.
- Plastic awareness (avoiding use of plastic) Programme are organized by the College NSS Students in their camp.
- At Boys Hostel (MGC), the Raw waste and Cooking waste are used an feed for local livestock.
- The dry waste i.e paper, Collected from Class room are being burnt.

Solid waste:-

The main producers of Solid waste in campus include, Canteen waste, hostel kitchen waste, Institutional waste, and staff quarters. Most of the Dry waste in campus is stored at a transfer station within the campus near the back gate.

Hazardous waste Management

Green Chemistry approach helps in reducing the excess use of chemicals and also provides approach towards reducing hazardous waste products. Broken glassware, plastic needles, syringes, razor blades, slides, scalpels, pipettes, broken plastic or glassware, micropipettes and pipette tips ware creates a potential hazard. Triple rinse with copious amounts of water help in reducing the pathogens and neutralizing harmful chemicals on to it. Collect the first rinse as chemical/harmful waste. Rinse two and three can go down the sanitary sewer. The empty/triple rinsed containers can then be placed in a glass only box, recycling container or directly into the dumpster. Use of sterilized agar waste for composting is one of the ways of waste management. Purchase of minimal chemicals as per the requirement avoids wastage of chemicals.

NEHRU MEMORIAL COLLEGE
(AUTONOMOUS)

CAMPUS HYGIENE

V. VERMICOMPOST

CENTRE FOR ECO-FRIENDLY AGRO-TECHNOLOGIES (CEAT)
VERMICOMPOST PRODUCTION YARD

The Nehru Memorial College has created an exclusive facility for converting fallen leaves solid wastes of our campus along with Cow dung into Vermicompost. The facility was established in the Year 2007 with the financial support of UGC. It helps us to maintain our campus free from litter, neat and tidy. This facility functions with the direct supervision of Dr P Neelanarayanan, Associate Professor of Zoology of our College since its inception.

This facility was utilized for conducting practical classes and practical examination for Advanced Diploma Students. Further, this facility is also utilized for imparting Hands –on -training to the interested students of our college and Farmers on Vermicompost production techniques and its advantages. Hundreds of Students and Farmers have benefitted out of these programmes.

The supporting staff Mr. S Ramachandran, Mrs. Kamatchi and Mrs. Mallika takes care of the Vermicompost Production and maintenance of Vermicompost Yard. On an average, this yard produces approximately FOUR tonnes of Vermicompost per month. The vermicompost is kept for sale for Students, Staff and Farmers of nearby villages at the yard. College Management also utilizes the vermicompost for various crops (Coconut palm, Oil Palm, Lemon, Paddy etc.) grown by them.

The Vermicompost is sold @ Rs. 8/- (Rupees Eight only)/per kg for those who buy more than 500 kg in a time. The retail price is Rs. 10/- per kg. Dr. P. Neelanarayanan is the Contact person for the purchase of Vermicompost from the yard.

We appreciate and congratulate Dr P Neelanarayanan and his team of supporting staff for continuous production of Vermicompost *i.e.,* approximately 40-45 tonnes per annum and selling them to the needy people and running the unit in a sustainable manner for the past TWELVE years.


NEHRU MEMORIAL COLLEGE
(Autonomous)


ORGANIC COMPOST PIT
No. 1


VERMICOMPOST PRODUCTION TANK


2019/11/19 12:41

NEHRU MEMORIAL COLLEGE
(AUTONOMOUS)

CAMPUS HYGIENE

VI. CAMPUS HYGIENE

"Sanitation is more important than independence."

– Mahatma Gandhi Ji

He made cleanliness and sanitation an integral part of the Gandhian way of living. His mission was total sanitation for all.

"…….. I want to make a beginning today itself and that is – all schools in the country should have toilets with separate toilets for girls. Only then our daughters will not be compelled to leave schools midway. Our parliamentarians utilising MPLAD fund are there. I appeal to them to spend it for constructing toilets in schools for a year. The government should utilise its budget on providing toilets. I call upon the corporate sector also to give priority to the provision of toilets in schools with your expenditure under Corporate Social Responsibility. This target should be finished within one year with the help of state governments and on the next 15th August, we should be in a firm position to announce that there is no school in India without separate toilets for boys and girls."

– Shri Narendra Modi, Prime Minister
Independence Day, August 15, 2014

"Educating girls is my priority. I have noticed that girls drop out of schools by the time they reach class 3rd or 4th just because schools don't have separate toilets for them. They don't feel comfortable. There should be toilets for boys and girls in all schools. We should concentrate on girl students not quitting schools."

– Shri Narendra Modi, Prime Minister
Teachers' Day, September 5, 2014

Shri Narendra Modi
Hon'ble Prime Minister of India

CLEANLINESS IS NEXT TO GODLINESS

"For this very reason make every effort to supplement your faith with virtue, and virtue with knowledge, and knowledge with self-control, and self-control with steadfastness, and steadfastness with godliness, and godliness with brotherly affection, and brotherly affection with love. For if these things are yours and abound, they keep you from being ineffective or unfruitful in the knowledge of our Lord Jesus Christ." 2 Peter 1:5-8

If the saying, "Cleanliness is next to godliness" is truemy mother would easily rank as one of the godliest people I have ever known. My mother cleaned our home with the greatest of care. There was never a dirty dish in the sink or a speck dust on shelf. She would vacuum the carpet every day before she left the house. Every night, after dinner, my mother could sweep and mop the kitchen and dining room floors. We once had to replace the flooring in the kitchen and dining room because my mom had mopped the finish off the tile (yes, really). If there is a connection between cleanliness and godliness, well then, my mother was well connected to God!

The phrase, "Cleanliness is next to godliness" is not a biblical quote. Although it seems like something taken right out of Leviticus or Proverbs, it is not. The phrase dose not actually appear in writing until 1791 when in his sermon, "On Dress," John Wesley writes, "Slovenliness is no part of religion…Cleanliness is indeed next to godliness" John Wesley is not the originator of this phrase. In fact, he is quoting someone or at least alluding to a commonly used phrase.

The Bible does have several references to cleanliness. In the Old Testament, cleanliness is most often part of following the law. If one were to eat the right things, worship in a certain way and keep the commandments you were, for the most part, considered "clean." When a person was unable to follow the law, there were washing rituals that would help restore them to a state of being clean. Being physical clean did and does help to live together in community.

I understand the many reasons that this commonly used phrase has remained throughout history. I am sure parents have used it to encourage their children to clean their rooms or wash behind their ears while priests in medieval times may have used a similar phrase to help encourage cleanliness in their communities to help prevent disease. While both cleanliness is an important part of our lives it is not a tool that brings God closer to us. God does not wait for us to vacuum our carpet or wash the dishes. God is present with us in the messy moments of our lives, or while we are cleaning up.

My mother was a godly woman; however, it was not the condition of our home that brought her close to God. My mother was a godly woman because she had a tremendous trust in God. She knew God was present with her as she cleaned, went to work or church. Godliness is a condition that develops in us as we grow in our faith, our knowledge of God and our trust in God's good will towards us. When we grow in our love for God and our love for our neighbors we become a godly people.

Rev. Keith King, Online Campus Pastor
St. Luke's United Methodist Church, Oaklahoma City

प्रो (डॉ) जसपाल एस सन्धू
सचिव
Prof. Dr. Jaspal S. Sandhu
MBBS, MS (Ortho), DSM, FAIS, FASM, FAFSM, FFIMS, FAMS
Secretary

विश्वविद्यालय अनुदान आयोग
University Grants Commission
(मानव संसाधन विकास मंत्रालय, भारत सरकार)
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D.O.F.No.1-1/2017(Secy) **20th July, 2017**

Dear Sir/Madam,

The Ministry of Human Resource Development, vide its communication dated July 16, 2017 has sent a call for participation from all Colleges/Universities/Institutions in 'Swachhta' Ranking of Higher Educational Institutions. The modalities and criteria for judging for 'Swachhta' Ranking of Higher Educational Institutions are enclosed. **Entries for 'Swachhta' ranking are open from 20th July to 31st July, 2017.**

You are requested to ensure the participation of your esteemed University and your affiliated colleges in the 'Swachhta' Ranking of Higher Educational Institutions and **fill up web based form online before 31st July, 2017 by logging in to MHRD website www.mhrd.gov.in.**

This may please be treated as urgent.

With kind regards,

Yours sincerely,

(Jaspal S. Sandhu)

Encl: As above

The Vice-Chancellor of all Universities

Copy to :

The Publication Officer, UGC for uploading on UGC website.

(Jaspal S. Sandhu)

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भारत सरकार
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MINISTRY OF HUMAN RESOURCE DEVELOPMENT
DEPARTMENT OF HIGHER EDUCATION
SHASTRI BHAWAN
NEW DELHI-110 115

No.11014/02/2016-CDN(Pt.1)
Date: 21.07.2017

To,

1. **Heads of all Higher Educational Institutions (Universities, IITs, NITs, IIITs, IISc, IISERs etc)**

2. **UGC and AICTE**

Dear all,

The Ministry of Human Resource Development has launched the exercise for Swachhta Rankings of Higher Educational Institutions (HEIs). An advertisement was issued in all major English dailies on 17.07.2017 inviting participation by all HEIs. The details are now available on the website of the Ministry at www.mhrd.gov.in.

2. The Swachhta Rankings would take into account the degree of hygiene in HEIs, the coverage and nature of waste disposal systems, water supply & water purity and several other parameters which have been listed out in the format. The participating institutions are required to submit their details as per the format given in the web page before 30th July, 2017, after which inspection teams would visit the premises of participating HEIs for verification. The top 10 institutions in terms of hygiene would be awarded in a Conference in New Delhi on 8th September, 2017.

3. This ranking exercise will serve to motivate and galvanise all HEIs into achieving higher standards in cleanliness, while duly recognising the institutions that have already reached appreciable levels of hygiene in their campuses. It is an opportunity for institutions to highlight and project their clean campuses and gain credit. I would request all Heads of Higher Educational Institutions to participate in this Swachhta Ranking exercise in right earnest and in recognition of the priority that is being accorded to Swachhta by the Government.

With regards,

Yours sincerely,

(R. SUBRAHMANYAM)

शिक्षा का अधिकार
सर्व शिक्षा अभियान
सब पढ़ें सब बढ़ें

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10.	*Toilets in Nehru Memorial College*
	Main Block - Aided
	Sellamal Block and Auditorium – SF
	Radhakrishnan Block and Library – SF
	Research Block and Catering wing - SF
	Block A (Mother Therasa Block) – CVR Hostel
	Ground Floor – 4 Bath room & 4 toilet
	I Floor - 4 Bath room & 4 toilet, 1 wash basin
	II Floor - 4 Bath room & 4 toilet, 1 wash basin
	Block B (Indira Ghandhi Block), CVR Hostel
	Ground Floor
	I Floor
	II Floor

11.	Block C (JanciRani Block), CVR Hostel
	Ground Floor
	I Floor
	II Floor
	III Floor
	Block D (Sarojini Naidu Block), CVR Hostel
	Ground Floor
	I Floor
	II Floor
	III Floor
	Mother Therasa Top Floor – 16 bath room, 11 toilets, 2 wash basin
	Common bath room cleaning (10 bath room, 12 toilets, 1 wash basin)
	Cleaning ground in front of Indra Ghandhi block and open auditorium cleaning. Indira Ghandhi top floor : 14 bath room, 7 toilets, 1 wash basin cleaning.
	Cleaning ground around the temple, Indra Ghandhi top Floor: 13 bath room, 7 toilets, 1 wash basin cleaning and CVR master bath room cleaning, ground cleaning in front of Mess.
	MGC Boys hostel: 22 toilets, 5 urinary place, 15 bath room
	High Land Boys hostel:
	I Floor: 8 toilets, 8 bath room
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CAMPUS HYGIENE

Background

One of the world's most urgent issues is lack of safe water, sanitation and hygiene. Water and sanitation related improvements are crucial to meet the development goals and improve health in a sustainable way. The United Nations' Sustainable Development Goals have emphasized on the achievement of universal and equitable access to safe and affordable drinking water and adequate and equitable sanitation and hygiene for all.

Campus hygiene is defined as a comprehensive plan for preserving individual and community health in all its dimensions. Implementing such practices are particularly important on college campuses where students often live in close quarters and move from one building or class room to another every day.

Cleaning is one of the most important aspects of running a college building. Failing to ensure the cleanliness of a building can have a detrimental impact on the health and wellbeing of all of those who use it.

Ensuring that the college is well maintained is not only conducive to productivity; it also increases the likelihood of attracting more students. The World Green Building Council revealed that clean offices that are well-designed are more likely to produce a good working atmosphere.

Maintaining a clean college environment sets a **good example** to students. It encourages learners to take pride in their university or college, which makes them less likely to drop litter and as such they will potentially make a bigger effort to maintain their environment.

The **cleanliness is incredibly important when it comes to cutting down on the spread of diseases in the college** and means that staff and students are able to enjoy a comfortable learning environment. It also improves hygiene levels and can help to reduce the spread of sickness.

Campus Cleaning is committed to sustainability and efficiency through a "Cleaning for Health" initiative. Green chemicals are dispensed using a chemical management system; floor care products are used that contain minimal Volatile Organic Chemicals and all accessories used are eco-friendly.

The goal of Campus Cleaning continues to focus on what's best for both building occupants and the environment as we continually research and review industry trends, products and new ideas. Each of the Nehru Memorial College is committed to professional excellence and pride in the service provided to Nehru Memorial College.

Buildings in the Campus

Sl.no	Name of The Building
1	Sellammal Mookapillai Block -I
2	Sellammal Mookapillai Block -II
3	Mr.Radhakrishnan Block
4	Zoology Block
5	Store Room
6	Canteen
7	Toilet - 1
8	Sujatha Computer Block
9	Main Block
10	Chemistry Block - 1
11	Chemistry Block - 2
12	Toilet - 2
13	Library Block - 1
14	Library Block - 2
15	Vivekandha Block
16	Muthaiya Block - Tiled Building - 1
17	Muthaiya Block - Tiled Building - 2
18	Muthaiya Block - Tiled Building - 3
19	Temple
20	Days scholar Toilet

21	Mookapillai Auditirium
22	Research Block
23	Catering Building
24	Women Hostel Dining
25	Women Hostel Kitchen
26	Servant Stay Room
27	Sarojini Naidu Block –D Block
28	Wash Yard
29	Jansirani Block- C Block
30	Indragandhi Block – B Blcok
31	Mother Terasa Block - A
32	Meera bai - E Block
33	Lakshmi Bai - E Block
34	Wash Yard
35	Security Rooms
36	Parents Waiting Hall
37	CVR Office
38	MGC Bagavatsingh Block
39	Kamaraj Block
40	V.O.C Block - Rc Roof
41	Kodikatha kumaran Block
42	Bharathiyar Block
43	Dining Hall - 1
44	Dining Hall - 2
45	Kitchen
46	Gas Room
47	Generator (Power Room)
48	Bath Room
49	Toilet
50	Highland Hostel

51	Dining Hall
52	Kitchen
53	Gas Room
54	Staff Toilet
55	NCC Room
56	Ground Gallery
57	RO Plant
58	Security Rooms
59	ATM
60	Workshop

Campus Population – Academics

Teaching Non-Teaching Staff and Student's strength for the year 2018-19

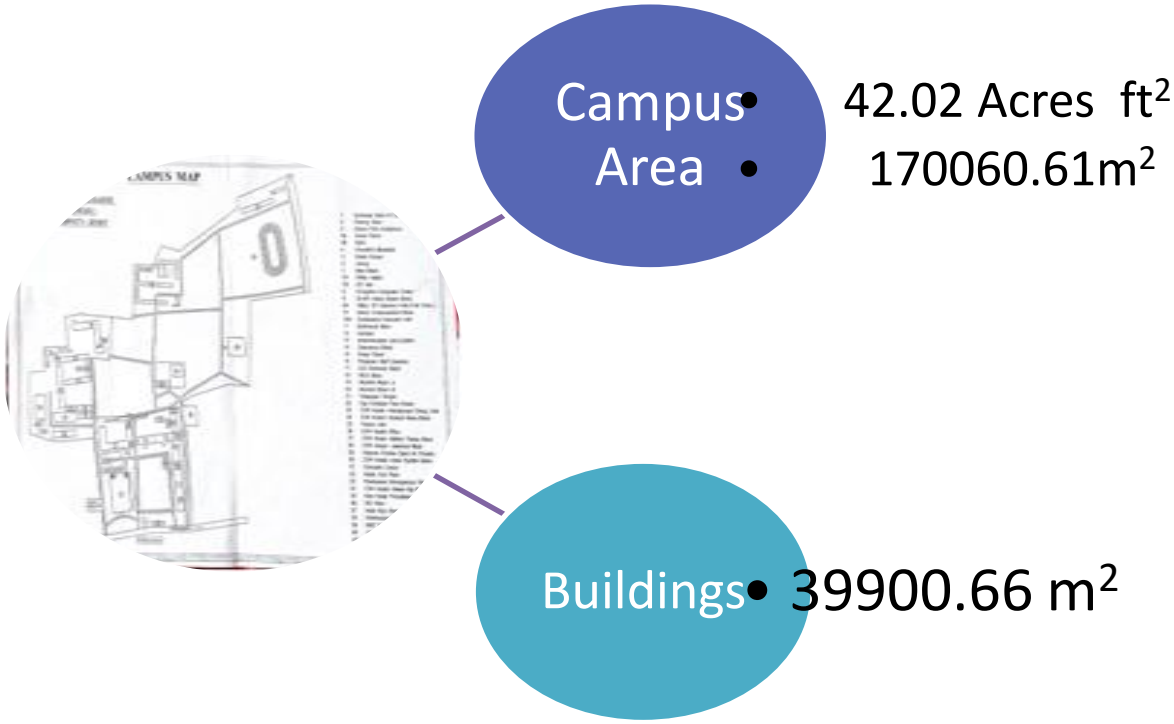
S. No.	Particulars	Course	Male	Female	Total
01	Teaching Staff		52	129	181
02	Non Teaching Staff		64	62	126
Total			116	191	307
03	Student's Strength	UG	1316	2119	3435
		PG	153	292	445
		M.Phil	127	229	356
		Ph.D	15	76	91
Total			1611	2716	4327

TOILETS IN COLLEGE CAMPUS

S. NO.	Building	No. of Floors	Types and No / Western / Indian / Urinals/ Bathroom/ Wash Basin					Average No. of Students using the Toilet	No. of times cleaned per day
			Western	Indian	Urinal	Bath	Wash Basin		
1.	Muthaiya Block (Tiled Building)	0	0	9	1	3	1	350	3
2.	Main Block	G+1	1	27	28	1	2	600	3
3.	Mr.Radhakrishnan Block	G+3	2	15	4	4	7	750	3
4.	Sellammal Mookkapillai Block	G+3	9	49	26	11	17	800	3
5.	Research Block	G+3	6	2	8	4	8	50	3
7	Library	G+1	2		2	2	2	40	3
8	Auditorium	0	4	4	5	0	8	300	3
9	Hotel Management	G+2	4	3		1	5	90	3
10	M.G.C Hostel	G		22	5	15		250	3
11	High Land Hostel	G+2		24		24		160	3
	CVR Hostel								
12	A - Block	G+2		33		28		113	3
13	B - Block	G+2		26		39		110	3
14	E - Block	G+3		40		40		150	3
15	Stadium			6				20	3
16	CVR Master			1		1		9	3
17	Common			12		10		170	3
18	Master			4		3		16	3

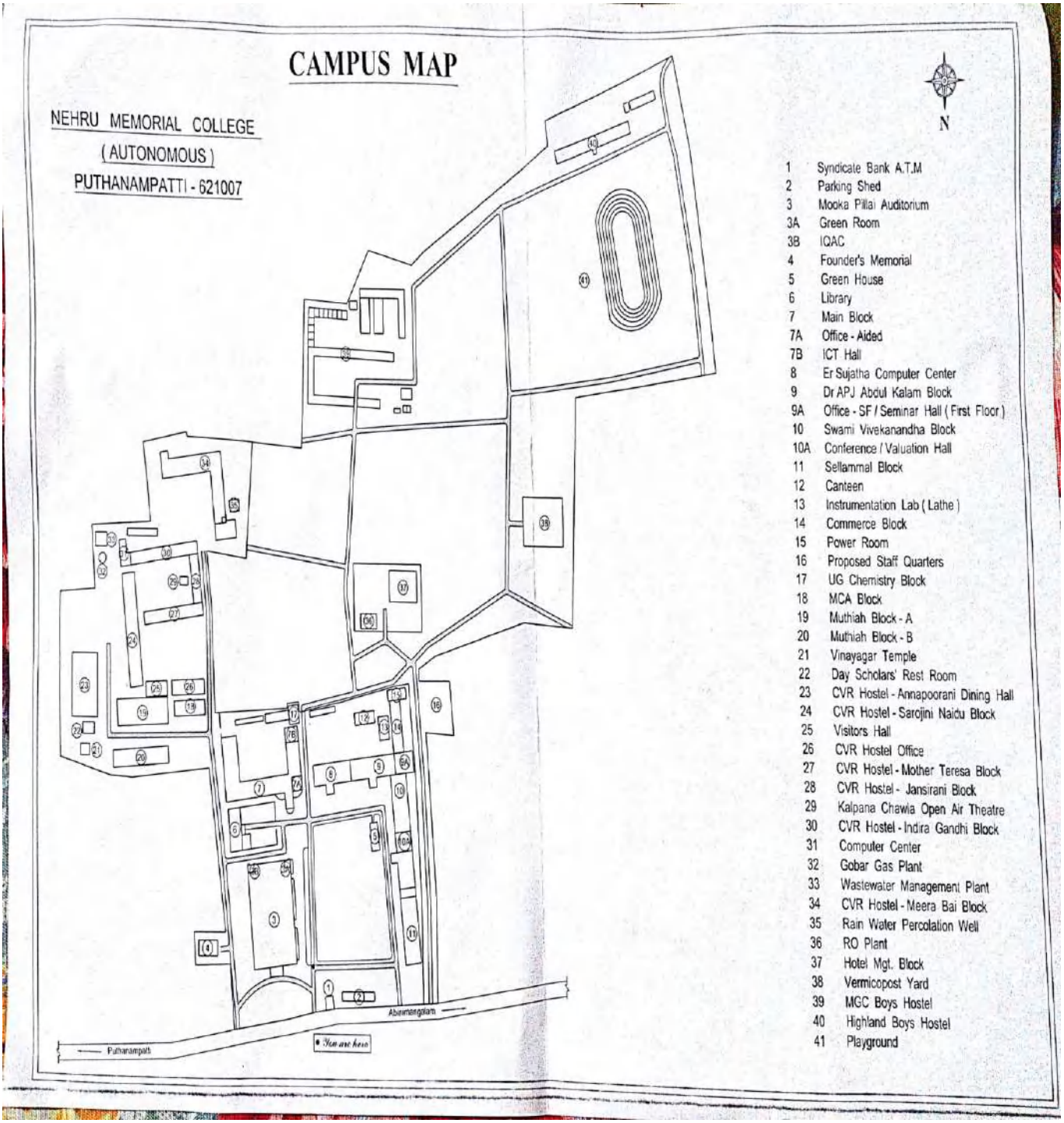
S. No.	Fittings	No.
1.	Western Closet	28
2.	Indian Closet	300
3.	Urinals	79
4.	Bath Room	188
5.	Wash Basin	50

Satellite view of the College



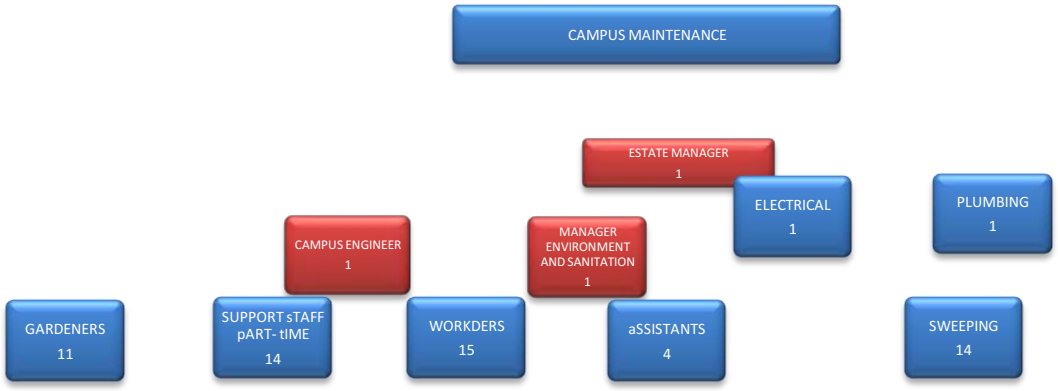
Campus Area

The Nehru Memorial College is committed to a continuous effort to instill sustainability into the many aspects of life on our campuses, in our institutions, and in the larger community of which we are part. In alignment with its values, vision and mission, the College takes an integrated approach to sustainability that incorporates teaching and learning, research, outreach, and the operations that support them, as it builds one of the great Colleges for the public in remote and rural area.



Maintenance of Campus Facilities

The college has appointed a Estate Manager who monitors the maintenance of the campus. Campus Cleaning is made up of 5 dedicated custodians and 25 Support staff servicing 42.05 acres (170060.61 ft^2) of the campus and 39900.66 m^2 of learning, office and research space. Through eco-awareness signage like 'Plastic Free Campus' and 'Litter-Free Zone', the college has taken initiatives to maintain the healthy ambience of the campus. The college has a Campus Engineer who supervises the maintenance of the infrastructure, with the assistance of quality supporting staff members.



Campus Maintenance Team

The management periodically replaces the damaged furniture with new ones and thus ensures a good ambience for the learners and the teachers. The following are the salient features of campus maintenance.

- Painting of the entire campus is done every 5 years.
- Sweep and spot mop academic and administrative classrooms, entrances, corridors and lobbies on a daily basis (Monday through Sunday).
- Empty trash in academic and administrative areas on a daily basis.
- Every Saturday, floor cleaning is done.
- Every year, class room benches and desks are checked and repaired.
- Monthly twice cleaning of the entire campus is done using water.
- Toilets and Bath rooms are cleaned every 2 hours using “Green” Cleaning agents.
- Watering the garden is done 2 times a day (6.30 am and 4.30 pm)
- Electrical and plumbing connections are maintained once in 15 day.

The electrical facilities are maintained by a team of well-trained and certified electricians. The College has an effective mechanism to protect the infrastructure of the College by renewing the insurance policies of the college buildings, the lab equipments and the computers annually.

S. NO.	Building	No. of Floors	Types and No / Western / Indian / Urinals/ Bathroom/ Wash Basin					Average No. of Students using the Toilet	No. of times cleaned per day
			Western	Indian	Urinal	Bath	Wash Basin		
1.	Muthaiya Block (Tiled Building)	0	0	9	1	3	1	350	3
2.	Main Block	G+1	1	27	28	1	2	600	3
3.	Mr.Radhakrishnan Block	G+3	2	15	4	4	7	750	3
4.	Sellammal Mookkapillai Block	G+3	9	49	26	11	17	800	3
5.	Research Block	G+3	6	2	8	4	8	50	3
7	Library	G+1	2		2	2	2	40	3
8	Auditorium	0	4	4	5	0	8	300	3
9	Hotel Management	G+2	4	3		1	5	90	3
10	M.G.C Hostel	G		22	5	15		250	3
11	High Land Hostel	G+2		24		24		160	3
	CVR Hostel								
12	A - Block	G+2		33		28		113	3
13	B - Block	G+2		26		39		110	3
14	E - Block	G+3		40		40		150	3
15	Stadium			6				20	3
16	CVR Master			1		1		9	3
17	Common			12		10		170	3
18	Master			4		3		16	3

Toilet Signage

REST ROOM - GENTS

REST ROOM - LADIES

Wash Room Cleaning Checklist (To be placed/hanged in Wash Rooms)

NEHRU MEMORIAL COLLEGE
(AUTONOMOUS)

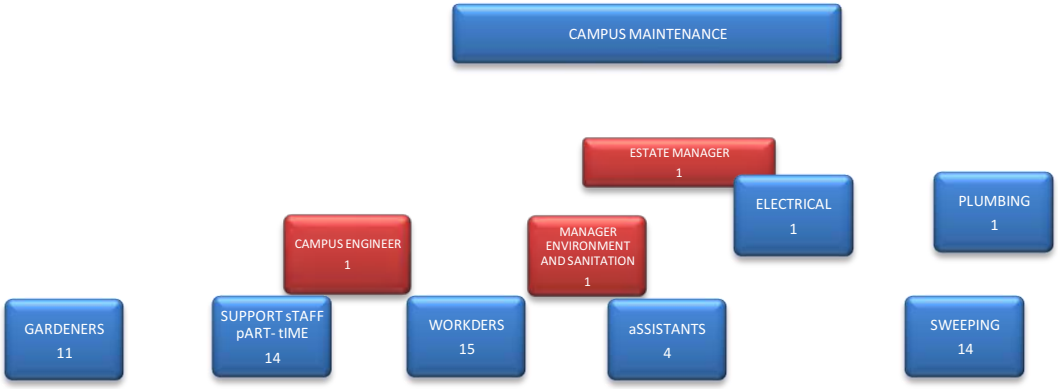
Date	CHECK STOCK (AS REQUIRED)						CLEAN & TIDY (HOURLY)					MOP (AS REQUIRED)	
	Toilet Paper	Paper Towels	Soap	Hand Lotion	Feminine Hygiene	Air Freshener	Wipe Sink & Fittings	Wipe Mirror	Check / Wipe Toilets	Pick Up Litter	Empty Bins	For Clean Floors	Signed by
Supervisor Inspection													
9am													
10am													
11am													
Supervisor Inspection													
12pm													
1pm													
2pm													
Supervisor Inspection													
3pm													
4pm													
5pm													
Deep Cleaning													

Tick box only if an item has been restocked or completed

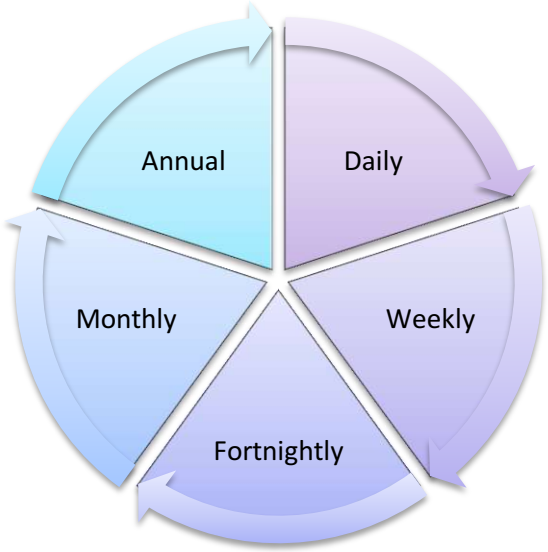
Report any faulty or broken items to your supervisor as soon as possible

Operation and Maintenance (O & M) to Ensure Campus Hygiene

All water, sanitation and hand washing facilities need to be clean, functional and well Maintained to ensure that the intended results are achieved and capital investments made in installing these systems are not lost. Annual Maintenance is done by the Estate Manager with supporting staff which will include regular maintenance of selected facilities, regular supply of cleaning materials, consumables like soap, disinfectants, brooms, brushes, buckets etc. The AMC also includes identification of repair tasks and arrangement for repair facilities.



O & M Team



Daily maintenance

- General cleaning of indoor floors of the entire campus including toilet and kitchen
- Cleaning of any water-logging in the entire College campus
- Dusting of general storage, desks and benches

Weekly maintenance

- Check for all leaky taps, valves, flushing cisterns etc.,
- Check for any blockage in the drains, sewage pipes and waste water pipes,
- Check for any loose locks, sliding doors, windows, Steel tables and almirah.

Fortnightly maintenance

- Cleaning of dust from all appliances and walls etc,
- Remove dumped rubble/debris/building waste from the premises
- Observe any water logging in open areas
- Check for clogged drains on the ground, portico and water outlets from buildings
- Stain removal on the enamel painted portions of the walls (especially corners and edges) door, window, almirah, sliding doors etc.

Monthly maintenance

- Check for any damp marks on the walls, ceilings and floor
- Check for any termites in the building
- Check for proper hard ware operation of all doors, windows and almirahs
- Check for any cracks on the walls, roofs, sun shades etc.
- Check if main water storage tank cover and outlets are leaking and the stored water is clean.
- Check if all the manhole covers/inspection chamber covers are properly in place and not damaged.
- Check the status of fire extinguishers
- Check if the first aid kit is up-to-date and the medicines are within their expiry date.
- Seasonal / quarterly maintenance
- Seasonal/quarterly maintenance (beforemonsoon)
- Check water tank thoroughly for leakage etc. and sealing with sealant
- Cleaning Sump and Over Head Water Tanks at regular intervals (once in three months)
- Thorough cleaning of the roof, water outlets, checking for cracks and carrying out repair work.
- Leveling and cleaning of open ground
- Checking Rain water harvesting pits
- Through checking of electrical lines and earthing
- Cleaning all dust from fans, light fittings and bulbs
- Cleaning coolers, internal and external

Annual maintenance

- General repair and maintenance work during the vacation
- Structural repair and plaster work
- Associated painting work
- Thorough cleaning of open drain/ditch and all underground drains
- Through cleaning of septic tanks and leach pits
- Repair/paining Black boards

Sanitation: Student – Toilet Ratio

- Separate toilet for men and women, with one unit generally having one toilet (WC) plus 3 urinals. The ration to be maintained is preferably one unit for every 40 students.
- Disposal of menstrual waste as per Biomedical Waste (Management and Handling) Rules, 2016.
- Pedal type Yellow colour bins are provided in all Women Toilets with chlorine free yellow colour bags.

Campus Maintenance Crew of Nehru Memorial College

Garden Maintenance and Campus Cleaning

S.No	Name of the Gardeners	Mode of work	Timing
1	R. Santhi	Garden maintance & Road sweeping	08.30 am to 5.30 pm Full day work
2	R. Dhanam	Garden maintance & Road sweeping	
3	Lakshmi	Sweeping work at seminar hall, CS dept.	
4	P. Jothi	Sweeping work at CS Lab, Office	
5	Selvi	Garden maintance	
6	Rajeswari	Garden maintance	
7	Kalpana	Garden maintance	
8	Rewathi	Research block sweeping, Garden maintance	
9	Akila	Garden maintance	
10	Palaniyandi	Garden maintance	
11	Kuzhathaivelu	Garden maintance	
12	K. Renuka	Road sweeping & Garden maintance	
13	Kumutha	Sweeping – B Block	06.00 to 9.00 am only Part Time
14	A. Eswari	Sweeping – IT Block First Floor	
15	S. Amsa	Sweeping - IT Block Ground Floor	
16	A. Sasikala	Sweeping - IT Block Second Floor	
17	R. Pichaiammal	Sweeping - IT Block Third Floor	
18	Angaye	Sweeping – Chemistry dept I Floor	
19	N. Selvi	Sweeping - Chemistry dept III Floor	
20	S. Kamalam	Sweeping - Chemistry dept II Floor	
21	P. Santhi	Sweeping – Class room II Floor	
22	L. Sumathi	Sweeping – Vevekanantha Block	
23	S. Pushparani	Sweeping – Catering Block	
24	S. Therkadharshini	Sweeping – Class room tiles building	
25	S. Sumathi	Sweeping – Office	

26	K. Ambika	Sweeping - Road	
27	M. Venkatachalam	Garden maintance & sweeping (MGC Hostel)	08.30 am to 5.30 pm Full day work
28	S. Selladurai	Garden maintance & sweeping (MGC Hostel)	
29	A. Muthusami	Garden maintance & sweeping (Highland Hostel)	
30	S. Jayabalan	Sweeper – Aided section	

Campus Maintenance Crew of Nehru Memorial College
Toilet Cleaning and Moping

Timing : 6.00am -08:30 am
1:30 pm - 5:30 pm

S.No	Name of the Workers	Block/Floor Allotted	Remark
1	P. Selvaraj	Main Block - Aided	Cleaning
2	V. Rani	Sellamal Block and Auditorium – SF	
3	J. Vasuki	Radhakrishnan Block and Library – SF	
4	T. Susela	Research Block and Catering wing - SF	
5	K. Macilamani	Block A (Mother Therasa Block) – CVR Hostel	Total 12 Bath room & 12 toilets, 2 wash Basin- cleaning
		Ground Floor – 4 Bath room & 4 toilet	
		I Floor - 4 Bath room & 4 toilet, 1 wash basin	
		II Floor - 4 Bath room & 4 toilet, 1 wash basin	
6	B. Susila	Block B (IndiraGhandhi Block), CVR Hostel	11 Bath room, 12 Toilets, 1 wash Basin - cleaning
		Ground Floor –	
		I Floor -	
		II Floor -	
7	M. Vasantha	Block C (Janci Rani Block), CVR Hostel	11 Bath room, 12 Toilets, 1 wash Basin - cleaning
		Ground Floor	
		I Floor	
		II Floor	
		III Floor	
8	R. Rani	Block D (Sarojini Naidu Block), CVR Hostel	11 Bath room, 12 Toilets, 1 wash Basin - cleaning
		Ground Floor	
		I Floor	
		II Floor	
		III Floor	

9	N. Thavamani	Mother Therasa Top Floor – 16 bath room, 11 toilets, 2 wash basin	CVR Hostel
10	T. Jayalakshmi	Common bath room cleaning (10 bath room, 12 toilets, 1 wash basin)	
11	A. Aravayu	Cleaning ground in front of Indra Ghandhi block and open auditorium cleaning. Indira Ghandhi top floor : 14 bath room, 7 toilets, 1 wash basin cleaning.	
12	P. Suba	Cleaning ground around the temple, Indra Ghandhi top Floor: 13 bath room, 7 toilets, 1 wash basin cleaning and CVR master bath room cleaning, ground cleaning in front of Mess.	
13	M. Nagarajan	MGC Boys hostel: 22 toilets, 5 urinary place, 15 bath room	Cleaning
14	R.Rajamanikkam	High Land Boys hostel:	Cleaning
		I Floor: 8 toilets, 8 bath room	
		II Floor: 8 toilets, 8 bath room	
		III Floor: 8 toilets, 8 bath room	

CLEANING AND HYGIENE SOLUTIONS USED BY NEHRU MEMORIAL COLLEGE

1. White Scented Phenyl	:	Toilet and bath room
2. Detergent Liquid Soap	:	Wash basin, Toilet Bowl
3. Room Spray	:	AC Rooms
4. Stain Remover	:	Toilets and deep cleaning areas
5. Floor perfume		
6. Bleaching Powder		
7. Liquid Hand wash		
8. HARPIC		
9. Green Solution		

Scented White Phenyl

Liquid Hand Wash

Room Spray

Liquid Detergent

Deep Stain Remover

Floor Perfume

Bleaching Powder

Deep Toilet Cleaner

Naphthalene Balls

PART - TIME- MORNING CLEANING WORKERS

Time Schedule : 06.00 am – 5.30pm

S.No	Name of the worker	Work Allotment	
1	Kumutha	Sweeping – B Block	
2	A. Eswari	Sweeping – IT Block First Floor	
3	S. Amsa	Sweeping - IT Block Ground Floor	
4	A. Sasikala	Sweeping - IT Block Second Floor	
5	R. Pichaiammal	Sweeping - IT Block Third Floor	
6	Angaye	Sweeping – Chemistry dept I Floor	06.00 to 9.00
7	N. Selvi	Sweeping - Chemistry dept III Floor	am only
8	S. Kamalam	Sweeping - Chemistry dept II Floor	Part Time
9	P. Santhi	Sweeping – Class room II Floor	
10	L. Sumathi	Sweeping – Vevekanantha Block	
11	S. Pushparani	Sweeping – Catering Block	
12	S. Therkadharshini	Sweeping – Class room tiles building	
13	S. Sumathi	Sweeping – Office	
14	K. Ambika	Sweeping – Road	

CLEANING AND HYGIENE SOLUTIONS USED BY IN OUR CAMPUS
complies with International Standards

- ISO 9001 and ISO 13485 certified products for Quality
- ISO 14001 certified products for to reduce the environment impact of their products

pH<11.4

pH 9.5±0.5

All Purpose Cleaner

Room Spray pH 9.0±0.5

Glass Cleaner

Toilet Bowl Cleaner

Floor Mop

Cleaning Material Used in Nehru Memorial College

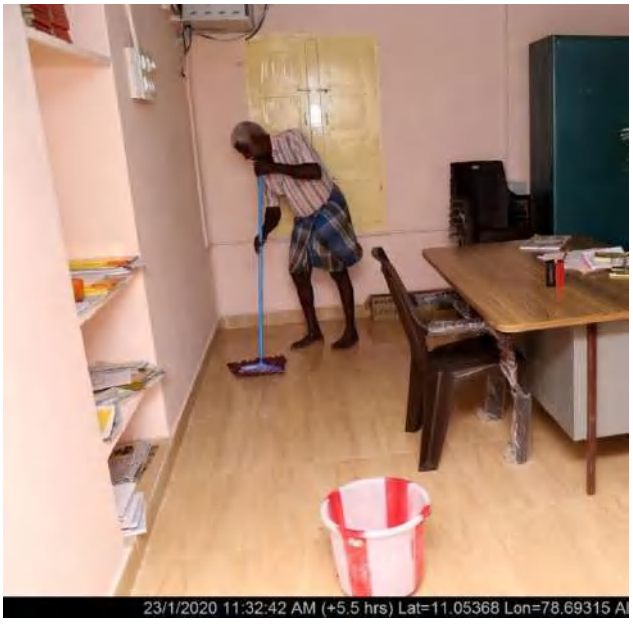
Free Broom

Fan-shaped bunched Filament Broom

Coconut Broom

Dust Pan

X. OUR COLLEGE REST ROOMS

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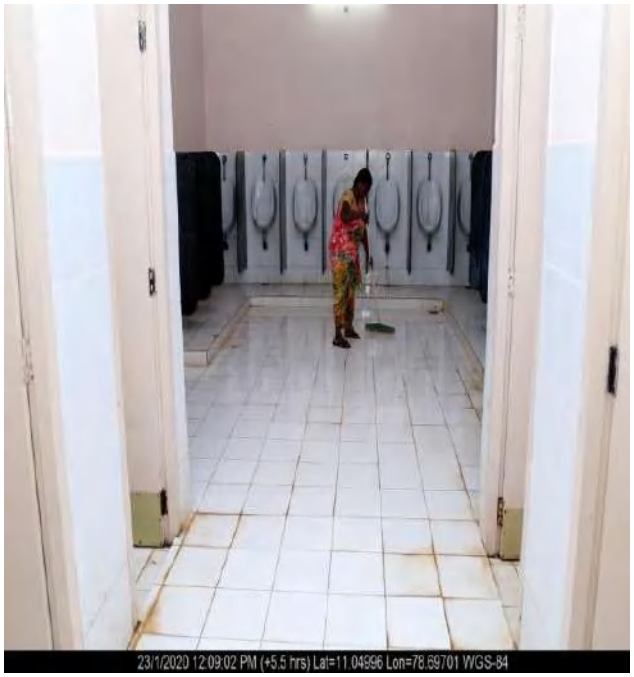
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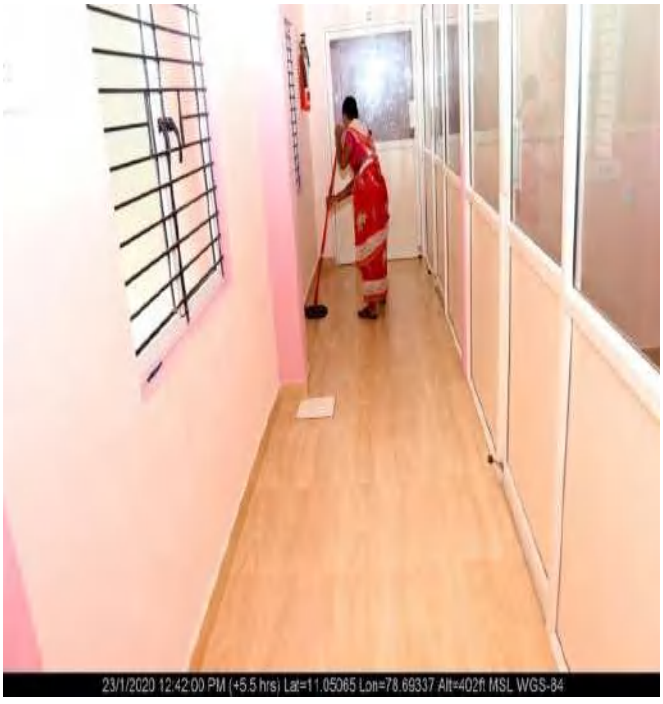
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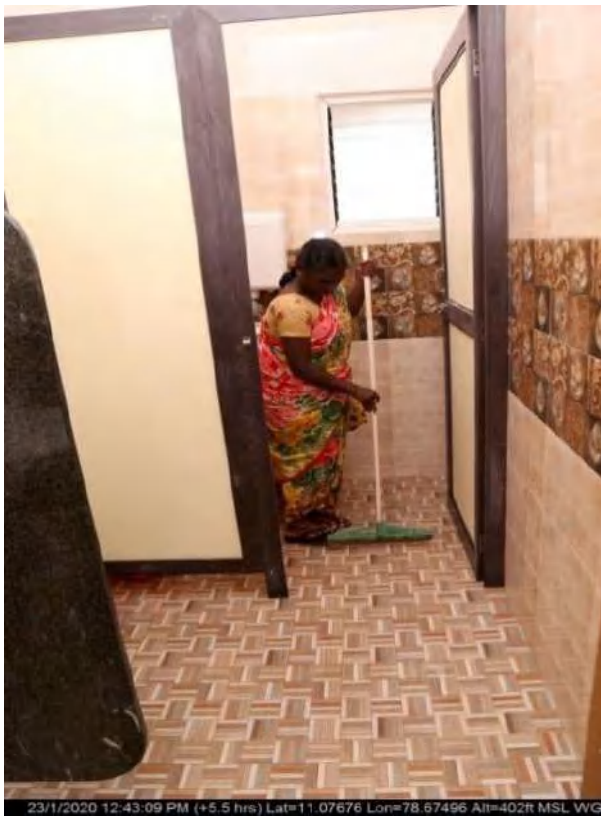
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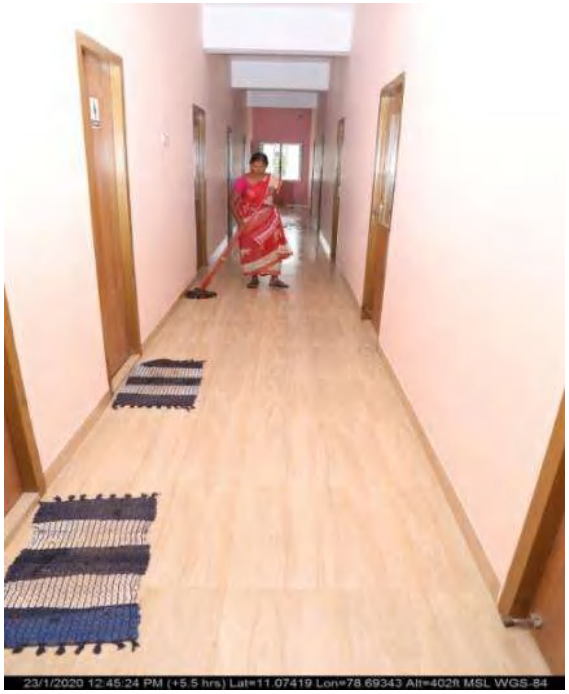
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VIII. AIR QUALITY ASSESSMENT

NOISE LEVEL IN THE SURROUNDING OF NMC

The human ear is constantly being assailed by man-made sounds from all sides, and there remain few places in populous areas where relative quiet prevails. There are two basic properties ofsound:

- Loudnessand
- Frequency.

Loudness is the strength of sensation of sound perceived by the individual. It is measured in terms of Decibels. Just audible sound is about 10 dB, a whisper about 20 dB, library place 30 dB, normal conversation about 35-60 dB, heavy street traffic 60-0 dB, boiler factories 120 dB, jet planes during take-off is about 150 dB, rocket engine about 180 dB. The loudest sound a person can stand without much discomfort is about 80 dB. Sounds beyond 80 dB can be safely regarded as Pollutant as it harms hearing system. The WHO has fixed 45 dB as the safe noise level for a city. For international standards a noise level up to 65 dB is considered tolerate. Loudness is also expressed in sones. One sone equals the loudness of 40 dB sound pressure at 1000 Hz. Frequency is defined as the number of vibration per second. It is denoted as Hertz(Hz).

MATERIALS, STUDY AREA & METHODS

Noise level meter or noise measuring app, Noise test pro (version: 1.0.2), was used to measure the noise level. Noise test pro detect of any noise, music or sound in your surroundings. It will tell you maximum, minimum and average decibels

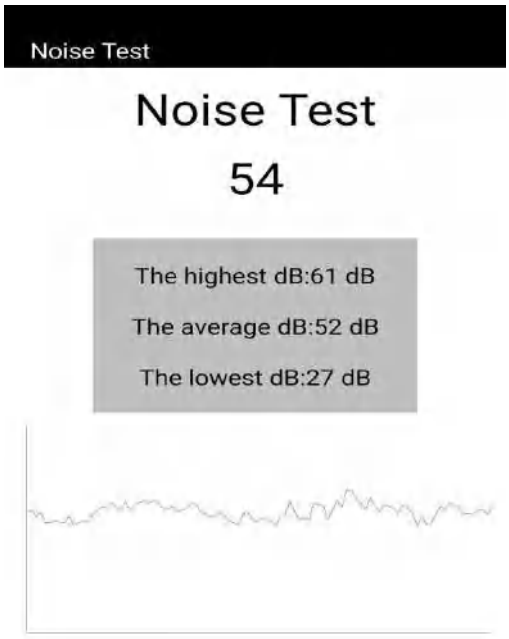


PHOTO GALLERY


HIGHLAND HOSTEL

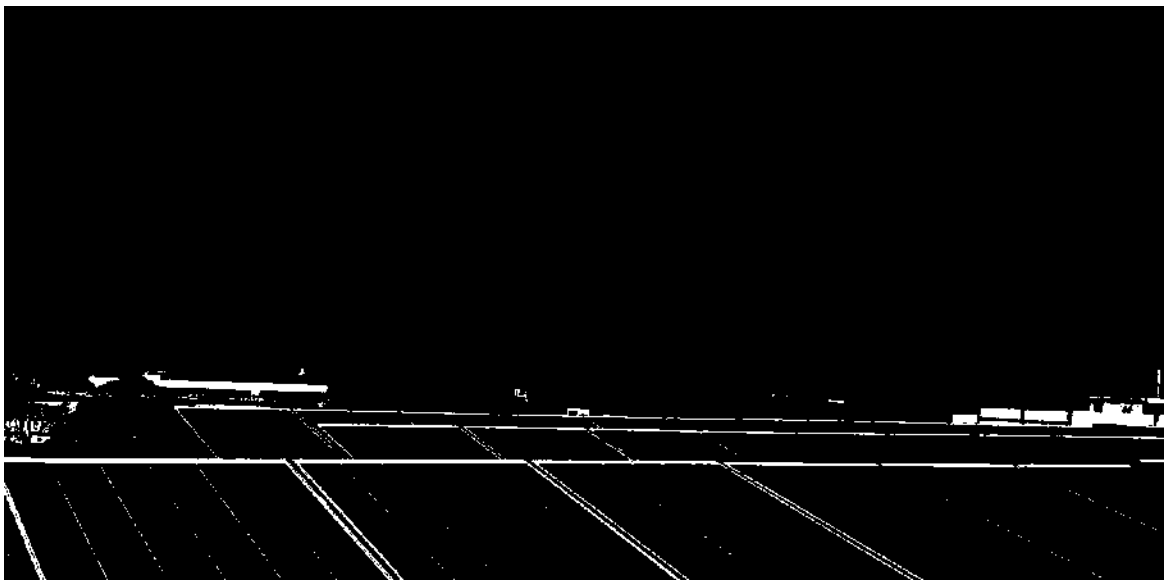

LECTURE WORKSHOP ON
NEED BASED VALUE ADDED RESEARCH PROPOSAL WRITING


WORK SHOP


CANTEEN

Solid Waste Disposal Room


சிண்டிகேட் வங்கி
ஏ டி எம்
ATM
SyndicateBank




CABLE ALLEY
Latitude: 30.645385
Longitude: 76.399767
Elevation: 279.22m
Accuracy: 8.0m
Time: 18-09-2019 12:51
Note: Control Room
Powered by NoteCam