7.1.2 Sources Of Alternate Energy

IAEER'S
Pune Institute Of Business Management
Gat No. 605/1, Mukaiwadi Road, Pirangut,
Tal. Mulshi Paud, Pune (Maharashtra)
Ph. No. 020 66036700, 66575000, Fax : 020-66036722
www.pibm.in

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Pune Institute Of Business Management
Gat No. 605/1, Mukaiwadi Road, Pirangut,
Tal. Mulshi Paud, Pune (Maharashtra)
Ph. No. 020 66036700, 66575000, Fax : 020-66036722
www.pibm.in

Rain Water Harvesting

Transport Facilities for Students, Faculties and Staff: -


ASHOK LEYLAND
MH.12.KQ.1310
MH.12.KQ.1311


ASHOK LEYLAND
MH.12.KQ.1310
MH.12.KQ.1311

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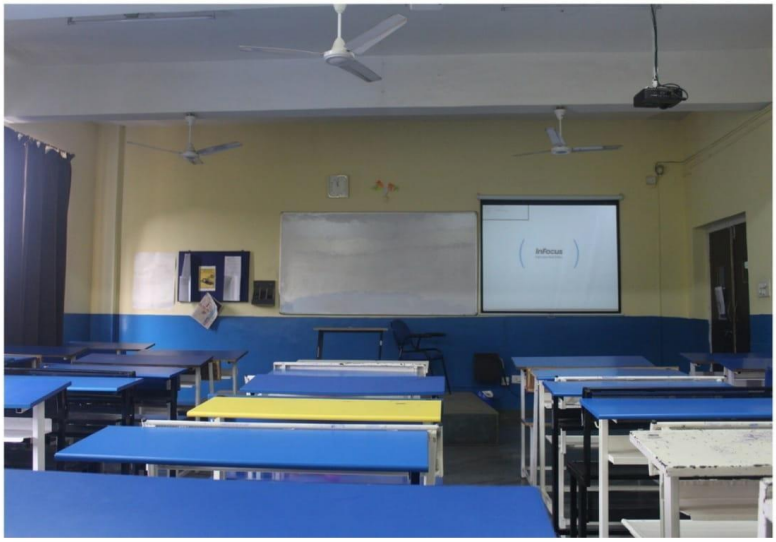
www.pibm.in

PUNE INSTITUTE OF BUSINESS MANAGMENT

PUNE INSTITUTE OF BUSINESS MANAGMENT



PUNE INSTITUTE OF BUSINESS MANAGMENT


Latitude: 18.491469
Longitude: 73.705812
Elevation: 695.9±8 m
Accuracy: 11.4 m
Time: 30-06-2023 10:40
Note: STP Plant
Big Blue
Powered by NoteCam

IAEER'S

Pune Institute Of Business Management

Approved by AICTE, Ministry of HRD, Govt. of India & Affiliated to University of Pune

IAEER'S

LIANCE RETAIL LIMITED

Invoice Place of Business: **Reliance Retail Limited**, Reliance Corporate Park, 6, TTC Industrial Area, Thane Belapur Rd, Ghansoli, Navi Mumbai - 400701
GSTIN: 27AABCR1718E1ZP State Code: 27, Maharashtra FSSAI Lic No: 11519038000498

Supply/Dispatch From Location Address: **Reliance Retail Limited**
Ideaspace Logistics Park B706 PN D223/4 Chakan MIDC Phase II Village Bhambol Taluka Khed Dist Pune KHED Maharashtra - 410501

Supply/Dispatch Code: R706
Telephone
FSSAI Lic. No.: 11519038000498

GSTIN: 27AABCR1718E1ZP
State Code: 27 Maharashtra

Tax Invoice : 27111100319216

Date: 16.03.2023

Billed To: **Pune institute of Business Management (2000164287)**

Address: 605/1 MUKAYWADI ROAD PIRANGUT TALUKA MULSHI
--- --- Pune Pune Mulshi Maharashtra - 412108
Contact No: 7447778681.

Shipped To Pune institute of Business Management (2000164287)

Address: 605/1 MUKAYWADI ROAD PIRANGUTTALUKA MULSHI
--- --- Pune Pune Mulshi Maharashtra - 412108
Contact No: 7447778681.

State Code: 27
GSTIN:
Cust. Ord. No & Dt:
Terms of Payment: 30 days from date of invoice
Delivery Terms: Ex Works
Place of Supply: 27, Maharashtra

State Code: 27
GSTIN:
Transporter Name:
Vehicle No:
Consignment Note No & Dt:
Mode of Transport:
Internal Ref. No: 3769246222
E-Way Bill No:

Sr No	Article Code	Article Description	HSN/SAC Code	Quantity	UOM	Rate/Unit	Base Value	Total Tax
1	492367241	Delivery No: 7034459516 BAJAJ LEDZ B&3 PLUS LED LAMP 12W CDL B22	85395000	250.00	EA	120.34	30,084.74	
		Total UoM Wise		250.00	EA			
		Total Base Value						30,084.74

Tax Summary

Sr No	HSN/SAC Code	Base Value	CGST		SGST/ UTGST		Cess %		Cess Lump sum	Tax Amount
			Rate %	Amount	Rate %	Amount	Rate %	Amount	Amount	
1	85395000	30,084.74	9.00	2,707.63	9.00	2,707.63	0.00	0.00	0.00	5,415.26
						Total Tax Amount				5,415.26
						Total Invoice Value				35,500

Total Invoice Value: (Rupees in Words Thirty Five Thousand Five Hundred only)

Certified that the particulars given above are True and Correct.

Total no. of Deliveries: 1 Total no of HUs: 0 Total no of SKUs: 1

Terms and Conditions

1. Our risk and responsibility ceases as soon as goods delivered to above mentioned delivery address.

TAX INVOICE

First Choice Enterprises

Anand Nagar, Pune. Mobile : 8554889994

GSTIN : 27AQOPP9084F1Z5
PAN : AQOPP9084F

First Choice
All Types of LED Lights

M/S Pune Institute of Business Management
Pune

GSTIN :

Date : 3/9/18
Invoice No. : 022
P. O. No. : PIBM-18-19/2
Date : 20/7/2018

S. N.	Particulars	HSN Code	Quantity	Rate	Amount	
1	18w LED Street Lights	9405	40	550/-	22,000	00
				Total	22,000	00
				6% CGST	1320	00
				6% SGST	1320	00
				GrandTotal	24,640	00

Rupees in Words Twenty Four Thousand Six Hundred Fourty only/-

Authorised Signatory

TAX INVOICE

First Choice Enterprises

Anand Nagar, Pune. Mobile : ~~8554869994~~ 9112662246

GSTIN : 27AQOPP9084F1Z5
PAN : AQOPP9084F

First Choice
All Types of LED Lights

M/S Pune Institute of Business Management Pune

Date : 30/07/2018
Invoice No. : 014
P. O. No. : PIBM 18-19/234
Date : 20/07/2018

GSTIN :

S. N.	Particulars	HSN Code	Quantity	Rate	Amount
1	22w Round Surface Panel	9405	50	575/-	28,750 00
2	18w LED Street light	9405	15	550/-	8,250 00
				Total	37,000 00
				6% CGST	2,220 00
				6% SGST	2,220 00
				GrandTotal	41,440 00

Recieved
Dhuber
9767819284

Rupees in Words Fourty One Thousand Four Hundred Fourty Only —x—

Authorised Signatory

Rupees in Words Twelve Thousand, Nine Hundred Thirty Six Only —x—

Authorised Signatory

☐ Original Copy ☐ Duplicate ☐ Transport Copy

QUOTATION

Sangita Enterprises

718, Budhwar Path, Near Kasba Ganpati, Ganesh Road, Pune - 411 011
Mobile : 9850575092, 9011804466, 9049957464, 9049457740
E-mail : dbhurje2060@gmail.com prasadbhu@gmail.com

Customer's Name & Address :

To, Pune Institute Of Business Managmen

QOUTATION No. 162
Date 19/12/2017
P.O No.: Date
Despatch To:

Party GST No.:

Vehicle No

Sr. No.	HSN	Description	Qty	Unit	Rate	Dis%	Amount	CGST Rt%	CGST Amt.Rs.	SGST Rt%	SGST Amt.Rs.
1	8536	63A 4P MCB L&T	1.00	Nos	1,810.00	38.00	1,122.20	9.0	101.00	9.	101.00
2	8536	63A 2P MCB L&T	1.00	Nos	960.00	38.00	595.20	9.0	53.57	9.	53.57
3		6sqmm X 4c Cu Flex Cable P	20.00	Mtr	280.00	40.00	3,360.00	9.0	302.40	9.	302.40
4	2508	Earthing Powder	40.00	Kg	9.00		360.00	2.5	9.00	2.	9.00
5	8537	4way Metal Mcb Box	1.00	Nos	120.00		120.00	9.0	10.80	9.	10.80
6	8537	2way Metal Mcb Box	1.00	Nos	70.00		70.00	9.0	6.30	9.	6.30
7		6mm Cu. Ring Type Lugs	12.00	Nos	4.32		51.84	9.0	4.66	9.	4.66
8	8536	35mm Alu lugs	8.00	Nos	3.65		29.20	9.0	2.63	9.	2.63
9	3917	25mm Pvc Pipe Diamond	200.00	Nos	42.10		8,420.00	9.0	757.80	9.	757.80
10	3917	25mm Socket	180.00	Nos	1.90		342.00	9.0	30.78	9.	30.78
11	3917	25mm Bend	60.00	Nos	5.50		330.00	9.0	29.70	9.	29.70
12	9405	50w Led Street Light	10.00	NOS	1,250.00		12,500.00	6.0	750.00	6.	750.00
13	8544	4sqmm X 2c Alu Service Cab	4.00	MTR	50.00		200.00	9.0	18.00	9.	18.00
14	3925	35/8 PVC RAWAL PLUG	10.00	BOX	20.00						

GST NO: 27ANQPB5563J1ZM

TOTAL CGST / SGST 2,079.56 2,079.56

Net Amount 27,332.84
GST @5% 18.00
GST @12% 1,500.00
GST @18% 2,641.00
Total : 31,692.00

Sale 18%: 27,533.00

TERMS & CONDITIONS
Payment Terms :- Immdiate
Freight :- Extra At Actual

Rs. Thirty One Thousand Six Hundred And Ninety Two Only

For SANGITA ENTERPRISES (GST)

TERMS & CONDITIONS
1. Delayed payments shall be charged interest at 24% p.a. from due date
2. Goods Once sold will not be taken back
3. All legs matter are subject to pune jurisdiction only
4. All goods are consigned at consignees risk we are not responsible for breakage and or losses in transit

Printed by SilverSoft TALENT Simple Software for Simple People ☎ 9422008022

Receiver's Sign.

Authorised Signatory

Ronak Hardware Ply & Electricals

e Vasti, Bhugaon, Tal. Mulshi, Dist. Pune - 412115
Mob. 9766502495
Maharashtra State Code : 27
TIN No. : 27ALUPC5243J1ZS COMPASSION
N No. : ALUPC5243J

TAX INVOICE

Invoice No. 079
Date 4/8/2018
PO No.
PO Date

Details of Billed to :
Name PIBM
Address Pirangut
GSTIN No. -
State M. State Code 27

Details of Shipped to :
Name
Address
GSTIN No.
State State Code

Sr. No.	Description and specification of goods	HSN Code	Total Qty. or goods	Rate Per Unit	CGST Rate	CGST Amount	SGST Rate	SGST Amount	IGST Rate	IGST Amount	Total
(1)	Crompton Fan Ceiling		280	1060							296800=00
(2)	LED 9W Bulb (B)		800	93							74640=00

Total Amount Before Tax		371440=00
Add : CGST	9%	33429=00
Add : SGST	9%	33429=00
Add : IGST		
TAX AMOUNT GST		
TOTAL AMOUNT AFTER TAX		438298=00

Amount in Words :

Pune Merchant's co-op Bank Ltd
Bhugaon, Pune - 412115
A/c No. : 01101110000045
IFSC Code : BKLC048PMC

Stamp

For New Ronak Hardware Ply & Electricals
Chaudhary
Authorised Signatory

TAX INVOICE

/HANT ELECTRICAL WORKS
SHOP NO. 5-6, 'PUSHKR-1',
DIRA SHANKAR NAGARI,
PP. MAHARAJA COMPLEX,
AUD ROAD, KOTHRUD, PUNE-38
20-25281079, 9850434820
020 65221726
GSTIN/UIN: 27AAHFA2040F1ZZ
State Name : Maharashtra, Code : 27
Contact : 25281079,9850434820
E-Mail : arihant.ele w@gmail.com

Buyer
PUNE INSTITUTE OF BUSINESS MANAGEMENT
GAT NO 605/1,LAVASA ROAD,MUKAIWADI,PIRANGUT
PUNE 66036700 66036722 96659227331
email=thakurjeevansingh@pibm.in
State Name : Maharashtra, Code : 27

Invoice No.	Dated
0725/18-19	29-May-2018
Delivery Note	
Supplier's Ref.	Other Reference(s)
Buyer's Order No.	Dated
PIBM-18-19/160	14-Mar-2018
Despatch Document No.	Delivery Note Date
Despatched through	Destination
DANAPPA 9767819284	

Sl No	Description of Goods	HSN/SAC	GST Rate	Quantity	Rate	per	Disc. %	Amount
1	Electronics Choke 36 Watts	8504	18 %	60 No	93.22	No		5,593.20
2	36w Tube Rod	8539	18 %	60 No	33.90	No		2,034.00
3	9w Led Bulb Tejas	85395000	12 %	50 No	93.75	No		4,687.50
4	Jute Stick Rawal Plug 35x8	5310	12 %	20 No	6.25	No		125.00
5	1" Casing Capping	3916	18 %	50 No	38.14	No		1,907.00
6	1.0sqmm Wire Anchor 90m	8544	18 %	4 Coil	650.00	Coil		2,600.00
7	Fan Capacitor	8205	18 %	50 No	20.34	No		1,017.00
8	Insulation Tape	3919	18 %	30 No	8.47	No		254.10
								18,217.80
	OUTPUT CGST@9%				*9*	%		1,206.48
	OUTPUT SGST@9%				*9*	%		1,206.48
	OUTPUT CGST @ 6%				*6*	%		288.75
	OUTPUT SGST@6%				*6*	%		288.75
Less	*Round Off*							(-)0.26

Total ₹ 21,208.00
E. & O.E

Amount Chargeable (in words)
INR Twenty One Thousand Two Hundred Eight Only

Company's PAN : **AAHFA2040F**

Declaration
I/We hereby certify that my/our registration certificate under the Maharashtra Value Added Tax Act,2002 is in force on the date on which the sale of the goods specified in this Tax Invoice is made by me/us and that the transaction of sale covered by this tax invoice has been effected by me/us, and it shall be

Company's Bank Details
Bank Name : UNION BANK OF INDIA
A/c No. : 498801010036050
Branch & IFS Code : PAUD PHATA PUNE-411029 & UBIN0549886

for ARIHANT ELECTRICAL WORKS

IAEER'S

PUNE INSTITUTE OF BUSINESS MANAGEMENT (MBA)

&

PUNE INSTITUTE OF BUSINESS MANAGEMENT FOR PGDM (PGDM)

PUNE INSTITUTE OF BUSINESS MANAGEMENT
NBA & NAAC ACCREDITED PROGRAMS
APPROVED BY AICTE | AFFILIATED TO SAVITRIBAI PHULE PUNE UNIVERSITY

ENERGY AUDIT REPORT

GUT NO: - 605/1, MUKAIWADI ROAD, PIRANGUT,
TALUKA- MULSHI, PAUD, PUNE- 412115, MAHARASHTRA
Phone No: +91-20-66036700/5/9
E-mail Id: pibmpune@pibm.in
Website: https://www.pibm.in/

Conducted and Submitted by

ENERFUTURE

ENERFUTURE TECHNOLOGY PRIVATE LIMITED

301, Above Ekbote Hospital,
Revenue Colony, J.M.Road,
Pune-411005
Website: http://www.ienerfuture.com
E-mail: info@ienerfuture.com
Telephone: +91- 9960041642, 9405065597

PUNE INSTITUTE OF BUSINESS MANAGEMENT * PUNE * PIBM

Director
Pune Institute of Business Management
Pirangut, Pune

ACKNOWLEDGEMENT

Enerfuture Technology Private Limited thanks the management of Pune Institute of Business Management (PIBM), Pune for assigning this important work of Energy Audit of Pune Institute of Business Management (PIBM), Pune

Energy Audit study is a joint venture exercise of consultant and college account and contain energy usage without sacrificing the purpose of energy use.

Contribution of college's team is equally important in this venture. Team of technical experts from Enerfuture Technology Private Limited is grateful to all the following personnel of Pune Institute of Business Management (PIBM), Pune for their kind cooperation, furnishing required data, analysis report and support offered during our visit.

Name	Designation
Mr. Raman Preet	Chairman and Trustee
Dr. Rajashree Pillai	Director
Prof. Poornima Sehrawat	IQAC Head
Dr. B Naresh	Assistant Director
Dr. Prasad Poorna Chandra	Associate Professor

We are also thankful to the other staff members who were actively involved while taking measurements and conducting field study.

STUDY TEAM

Sr No	Name	Qualification
1	Mr. Chetan Nemade	M.Tech (Energy Studies), Advance Diploma in Industrial Safety (ADIS), LLB, BEE Certified Energy Manager
2	Mr Vinay Mulay	M.Tech (Energy Studies), ISO 50001 Lead Auditor, BEE Accredited Energy Auditor
3	Mr Swapnil Gaikwad	M.Tech (Energy Studies), ISO 50001 Lead Auditor, BEE Certified Energy Auditor
4	Mr YogeshKuwar	M.Tech (Energy Studies), IGBC IGBC Accredited Professional, Post Graduate Diploma in Environmental law and Policy (PGDELP), BEE Certified Energy Manager
5	Mr Prasad Kalal	B.E Electrical, BE (Electrical), Electrical Supervisor(51242), Electrical Contractor(37364)

LIST OF INSTRUMENTS USED

1. Ultrasonic Water Flow meter
2. Distance Meter (Bosch)
3. Lux meter (Meco)
4. TD meter
5. CO2 meter
6. Air quality measure meter

CONTENTS

EXCECUTIVE SUMMARY

Sr no	Location	Area	Proposed Action	Expected Result	Saving Potential	Monetary Saving	Investment	Simple Payback Period
				monthly	kWh	INR	INR	months
1	College building	Lightning recommendations	Install motion sensor for lighting	Existing lighting consumption=2277.58kWh Expected energy consumption= 1874.08kWh Total energy saved per month=403.50kWh	403.50	7,122/-	28,800/-	4
	College building	Fan recommendations	Replace existing old conventional fans which consumes 65W with new energy efficient fans which consumes 28W(18W & 8W for exhaust fan)	Existing fan consumption= 3315.03kWh Expected energy consumption= 1364.18kWh Total energy saved per month=1950.85kWh	1950.85	34,432/-	11,81,200/-	34
2	College building	Water pumping system	Replace all old less energy efficient pumps with new energy efficient pumps. Optimise the existing water utilisation system.	Existing fan consumption= 419.50kWh Expected energy consumption= 314.63kWh Total energy saved per month=104.88kWh	104.88	1,851/-	90,000/-	49
3	Available rooftop on various buildings	Solar PV system	College can be installed 150kWp system		18750	3,30,937/-	67,50,000/-	20

4	College building	Bio-gas plant	College can be Installed the 100 kg of bio-gas plant at canteen to save LPG cylinders	-	24 LPG cylinder	42,158/-	-	-
5	Electricity bill	Power factor and contract demand	Improvement of power factor and reduce excess demand penalty			13,804/-	2,00,000/-	22

COLLEGE INTRODUCTION

INTRODUCTION

Pune Institute of Business Management, one of the best PGDM & MBA colleges in Pune, and accredited by NBA & NAAC, aims to provide New-age Industry 5.0 aligned management skillsets. Corporate Interactions at PIBM with Top Business Leaders from diverse sectors help the students in a better understanding of the real corporate world. Job-oriented training through a Practical and Hands-on training approach by involving the students in various projects and internships makes them ready to bag the best campus placement offers in top MNCs.

VISION

Pune Institute of Business Management strives to achieve global identity through its innovative and unconventional methods and efforts to better the community by producing a skilled workforce with values, dynamism, and entrepreneurial skills. Our vision is to become the hallmark of professional excellence by adopting a holistic approach to learning.

The institute has the vision to develop a dynamic workforce that will manage and lead the organization ethically for sustainable growth.

MISSION

At Pune Institute of Business Management we endeavour to become the finest institute in management education where equal emphasis is laid upon personal and academic development. Our aim is to create role models that can play a pivotal role in shaping our society as they climb the corporate ladder. Our mission is to develop action-oriented leaders of extraordinary tenacity and stamina to make things happen as they should be.

VALUES THAT DEFINE PIBM

PIBM stands firm on the robust foundation of crucial core values which envisions Student Growth & Empowerment.

CONTINUAL IMPROVEMENT

Consciously identifying gaps and deficiencies in the processes and improving them to build more robust systems, raising benchmarks of performance continually

HOLISTIC STUDENT DEVELOPMENT

Holistic Student Development is to instill ethical values, domain knowledge, confidence, and communication to develop student's competencies to become employable and perform well in the organization. It also focuses on developing entrepreneurs in India, which directly or indirectly support the nation's economic growth.

SUSTAINABLE GROWTH

Sustainable Growth is to teach students to focus on People, Process, Planet and usage of advance technology for business management, where students should be able to contribute to the sustainable performance of the business.

TRANSPARENCY & EMPOWERMENT

Transparency & Empowerment is to build a transparent and empowered culture by providing equal and fair opportunities to all stakeholders such as faculties, employees, and students. PIBM for PGDM honestly believes in transparency and empowerment by allowing giving suggestions on different processes.

TRAINING AND DEVELOPMENT PROGRAM FOR MBA & PGDM

Since Inception, PIBM has developed strong pillars of advanced training pedagogies where we focus on our philosophy that in Business Management how you learn is just as important as what you learn. Our training pedagogies includes a combination of lectures, conceptual discussions, live demonstrations, business projects, corporate interactions, case analysis with discussions, Model & Strategy designing followed by implementation and presentations. PIBM's industry recognized training approach for blending theory with compulsory hands-on practice & learning, assures that our students will learn more than they thought.

PIBM has always been a leader in providing quality education and having flexible training pedagogy because of which even during the recent challenges, learning never stopped at PIBM. We upgraded our training pedagogies by integrating the virtual training platform for our students to enable 24x7 learning availability for them. We ensure that our students' careers should not suffer under any

circumstances. We at PIBM, with our vast corporate tie-ups organised Virtual Leadership Series in order for our students to get more efficient learning experience and corporate exposure, at the same time ensuring their safety.

TRAINING PEDAGOGIES

- SCPS© (Sector - Company - Product/Service)
- Profile Oriented Training
- Comparative Analysis
- Experiential Learning
- Job Description (JD) Based Training
- Abhyas Prayas Saahas etc

LOCATION

ELECTRICITY BILL SUMMARY

Pune Institute of Business Management (PIBM), Pune have one MSEDCL HT three phase electricity connections in the college premises for all buildings.

The major electricity consumption in college building is lighting, fans, ACs, air coolers as well as water pumping to various buildings during college hours. Also Sewage Treatment Plant etc

ELECTRICITY BILL SUMMARY

Consumer No.					182859065620				
Billing Unit					4057				
Category					LT-VII-B (Public service-Others)				
Connected load					120				kW
Contract Demand					100				KVA
Month	Bill Demand	Actual Demand	Units		Tod	Excess Demand charges	P.F	Total Bill	Average Unit Rate
	KVA	KVA	kWh	kVAh	INR	INR		INR	INR/kVAh
Apr-23	120	120	18208	18395	1110.40	14970.00	0.989	332886.52	18.10
May-23	119	119	19945	20289	1794.90	14221.50	0.983	356360.88	17.56
Jun-23	131	131	17839	18180	1790.10	23203.50	0.981	347611.35	19.12
Jul-23	79	98	15040	15141	958.00	0.00	0.993	259847.61	17.16
Aug-23	108	108	16367	16469	1367.60	5988.00	0.993	290537.71	17.64
Sep-23	118	118	19225	19461	2346.00	13473.00	0.987	350834.01	18.03
Oct-23	120	120	20391	20636	2439.60	14970.00	0.988	369295.81	17.90
Nov-23	98	98	15164	15242	512.90	0.00	0.994	268885.00	17.64
Dec-23	98	68	13444	13522	-212.60	0.00	0.994	245167.10	18.13
Jan-24	98	66	14449	14531	-467.70	0.00	0.994	258259.91	17.77
Feb-24	109	109	36095	36548	1454.30	6736.50	0.993	567992.55	15.54
Mar-24	114	114	21748	22310	431.70	10479.00	0.974	385065.80	17.26
Average			**18992.92**	**19227.00**	**1127.10**	**8670.13**	**0.989**	**336062.02**	**17.65**

OBSERVATION

1. Total monthly average energy consumption of the college is 19227 units.
2. Average unit rate of college is 17.65 INR/kVAh
3. Total monthly billing is INR 3,36,062 /-
4. College has large available rooftop space for solar net meter PV system for electricity generation.

ENERGY PERFORMANCE ASSESSMENT OF LIGHTING

OBSERVATION

College has installed new energy efficient LED lighting in the college building. Also some street lights are solar based battery backup light installed.

Building	Floor	Name	Light Type	Type	Qty	Wattage	Hours of usage	No of Days in a month	Monthly consumption
					Nos	watt	hrs	days	kWh/day
College building		All floor Passage	LED	1x20W	57	20	4	25	114.00
			LED	1x22W	10	22	4	25	22.00
New building		All floor Passage	LED	1x20W	7	20	4	25	14.00
College building		All floor bathrooms	LED	1x20W	16	20	8	25	64.00
New building		All floor bathrooms	LED	1x20W	6	20	8	25	24.00
College building	Ground	101-Class Room	LED	1x15W	12	15	11	25	49.50
		102-Class Room	LED	1x15W	12	15	4	25	18.00
		103-Class Room	LED	1x15W	12	15	4	25	18.00
		104-Class Room	LED	1x15W	12	15	4	25	18.00
		106-Class Room	LED	1x15W	12	15	4	25	18.00
		105-Academics department	LED	1x20W	8	20	4	25	16.00
		Guest cabin	LED	1x15W	4	15	8	25	12.00
		Account department	LED	1x20W	6	20	8	25	24.00
		Admin department	LED	1x20W	3	20	8	25	12.00
		Faculty cabin	LED	1x20W	18	20	8	25	72.00
		G-1	LED	1x22W	8	22	4	25	17.60
		G-2	LED	1x22W	8	22	4	25	17.60

		G-3	LED	1x22W	9	22	4	25	19.80
		G-4 chairman office	LED	1x22W	11	22	1	25	6.05
	First	201-Class Room	LED	1x15W	12	15	4	25	18.00
		202-Class Room	LED	1x15W	12	15	4	25	18.00
		203-Class Room	LED	1x15W	12	15	4	25	18.00
		204-Class Room	LED	1x15W	6	15	4	25	9.00
		205-Class Room	LED	1x15W	12	15	4	25	18.00
		206-Class Room	LED	1x15W	12	15	4	25	18.00
		General manager office	LED	1x15W	6	15	1	25	2.25
		Placement outer cabin	LED	1x20W	1	20	8	25	4.00
		Placement department	LED	1x20W	4	20	8	25	16.00
		Board room	LED	1x22W	8	22	1	25	4.40
		Conference room	LED	1x22W	6	22	1	25	3.30
		Executive Director room-2	LED	1x22W	12	22	1	25	6.60
		Board meeting room	LED	1x20W	2	20	1	25	1.00
		Executive Director room-1	LED	1x20W	1	20	1	5	0.10
	Second	301-Class Room	LED	1x15W	12	15	4	25	18.00
		302-Class Room	LED	1x15W	12	15	4	25	18.00
		304-Class Room	LED	1x20W	6	20	4	25	12.00
		Director office, meeting room	LED	1x20W	4	20	1	25	2.00
		Director office lobby area	LED	1x20W	3	20	1	25	1.50
		Dean office	LED	1x20W	3	20	1	25	1.50
		Communication head office	LED	1x20W	2	20	4	25	4.00
		Communication office	LED	1x20W	5	20	8	25	20.00
		Aptitude HOD	LED	1x20W	1	20	4	25	2.00
		Research office	LED	1x20W	1	20	4	25	2.00
		Faculty room lobby	LED	1x20W	8	20	8	25	32.00
		Lobby cabin-1,2,3	LED	1x20W	4	20	4	25	8.00

		Examination department	LED	1x20W	7	20	8	25	28.00
		Computer lab-1	LED	1x20W	8	20	4	25	16.00
		Computer lab-2	LED	1x20W	8	20	4	25	16.00
		Server room	LED	1x20W	1	20	1	25	0.50
		Media lab	LED	1x15W	24	15	4	25	36.00
	Third	401-Class Room	LED	1x20W	8	20	4	25	16.00
		403-Class Room	LED	1x15W	20	15	4	25	30.00
		404-Class Room	LED	1x15W	20	15	4	25	30.00
		405-Class Room- Reading room	LED	1x15W	19	15	4	25	28.50
		Faculty room	LED	1x20W	19	20	8	25	76.00
		HR department	LED	1x20W	2	20	8	25	8.00
		Library	LED	1x20W	24	20	8	25	96.00
	Fourth	501-Class Room	LED	1x15W	6	15	4	25	9.00
		502-Class Room	LED	1x15W	9	15	4	25	13.50
		503-Class Room	LED	1x15W	9	15	4	25	13.50
		504-Class Room	LED	1x15W	12	15	4	25	18.00
		Auditorium	LED	1x15W	109	15	1	25	40.88
New building		101-Class Room	LED	1x20W	10	20	4	25	20.00
		102-Class Room	LED	1x20W	10	20	4	25	20.00
		103-Class Room	LED	1x20W	10	20	4	25	20.00
		104-Class Room	LED	1x20W	10	20	4	25	20.00
		105-Class Room	LED	1x20W	10	20	4	25	20.00
Canteen		Canteen area	LED	1x20W	15	20	4	25	30.00
		Kitchen	LED	1x20W	10	20	4	25	20.00
		Grocery store	LED	1x20W	4	20	4	25	8.00
		Vegetable cutting area	LED	1x20W	6	20	4	25	12.00
Gymkhana		Gymkhana	LED	1x15W	9	15	4	25	13.50
		Sport room	LED	1x15W	6	15	4	25	9.00

		Paid canteen	LED	1x100W	4	100	1	25	10.00
		Box stadium	LED	1x100W	17	100	1	25	42.50
		Two wheeler parking	LED	1x100W	9	100	11	25	247.50
		Road light	LED	1x100W	5	100	11	25	137.50
		New land	LED	1x100W	13	100	11	25	357.50

Building	Floor	Name	Light Type	Change	New used Qty	New monthly consumption	Monthly saving	Monthly saving	Total invest	Payback period
					nos	kWh/month	kWh/month	INR/month	INR	months
College building		All floor Passage	LED	1x10W	57	57.00	57.00	1006.05	11400	11.33
			LED	No change	10	22.00	0.00	0.00	0	-
New building		All floor Passage	LED	1x10W	7	7.00	7.00	123.55	1400	11.33
College building		All floor bathrooms	LED	Motion sensor	16	32.00	32.00	564.80	4000	7.08
New building		All floor bathrooms	LED	Motion sensor	6	12.00	12.00	211.80	1500	7.08
College building	Ground	101-Class Room	LED	No change	12	49.50	0.00	0.00	0	-
		102-Class Room	LED	No change	12	18.00	0.00	0.00	0	-
		103-Class Room	LED	No change	12	18.00	0.00	0.00	0	-
		104-Class Room	LED	No change	12	18.00	0.00	0.00	0	-
		106-Class Room	LED	No change	12	18.00	0.00	0.00	0	-
		105-Academics department	LED	No change	8	16.00	0.00	0.00	0	-
		Guest cabin	LED	No change	4	12.00	0.00	0.00	0	-
		Account department	LED	No change	6	24.00	0.00	0.00	0	-
		Admin department	LED	No change	3	12.00	0.00	0.00	0	-
		Faculty cabin	LED	No change	18	72.00	0.00	0.00	0	-
		G-1	LED	No change	8	17.60	0.00	0.00	0	-

		G-2	LED	No change	8	17.60	0.00	0.00	0	-
		G-3	LED	No change	9	19.80	0.00	0.00	0	-
		G-4 chairman office	LED	No change	11	6.05	0.00	0.00	0	-
	First	201-Class Room	LED	No change	12	18.00	0.00	0.00	0	-
		202-Class Room	LED	No change	12	18.00	0.00	0.00	0	-
		203-Class Room	LED	No change	12	18.00	0.00	0.00	0	-
		204-Class Room	LED	No change	6	9.00	0.00	0.00	0	-
		205-Class Room	LED	No change	12	18.00	0.00	0.00	0	-
		206-Class Room	LED	No change	12	18.00	0.00	0.00	0	-
		General manager office	LED	No change	6	2.25	0.00	0.00	0	-
		Placement outer cabin	LED	No change	1	4.00	0.00	0.00	0	-
		Placement department	LED	No change	4	16.00	0.00	0.00	0	-
		Board room	LED	No change	8	4.40	0.00	0.00	0	-
		Conference room	LED	No change	6	3.30	0.00	0.00	0	-
		Executive Director room-2	LED	No change	12	6.60	0.00	0.00	0	-
		Board meeting room	LED	No change	2	1.00	0.00	0.00	0	-
		Executive Director room-1	LED	No change	1	0.10	0.00	0.00	0	-
	Second	301-Class Room	LED	No change	12	18.00	0.00	0.00	0	-
		302-Class Room	LED	No change	12	18.00	0.00	0.00	0	-
		304-Class Room	LED	No change	6	12.00	0.00	0.00	0	-
		Director office, meeting room	LED	No change	4	2.00	0.00	0.00	0	-
		Director office lobby area	LED	No change	3	1.50	0.00	0.00	0	-
		Dean office	LED	No change	3	1.50	0.00	0.00	0	-
		Communication head office	LED	No change	2	4.00	0.00	0.00	0	-
		Communication office	LED	No change	5	20.00	0.00	0.00	0	-
		Aptitude HOD	LED	No change	1	2.00	0.00	0.00	0	-
		Research office	LED	No change	1	2.00	0.00	0.00	0	-

		Faculty room lobby	LED	No change	8	32.00	0.00	0.00	0	-
		Lobby cabin-1,2,3	LED	No change	4	8.00	0.00	0.00	0	-
		Examination department	LED	No change	7	28.00	0.00	0.00	0	-
		Computer lab-1	LED	No change	8	16.00	0.00	0.00	0	-
		Computer lab-2	LED	No change	8	16.00	0.00	0.00	0	-
		Server room	LED	No change	1	0.50	0.00	0.00	0	-
		Media lab	LED	No change	24	36.00	0.00	0.00	0	-
	Third	401-Class Room	LED	No change	8	16.00	0.00	0.00	0	-
		403-Class Room	LED	No change	20	30.00	0.00	0.00	0	-
		404-Class Room	LED	No change	20	30.00	0.00	0.00	0	-
		405-Class Room- Reading room	LED	No change	19	28.50	0.00	0.00	0	-
		Faculty room	LED	No change	19	76.00	0.00	0.00	0	-
		HR department	LED	No change	2	8.00	0.00	0.00	0	-
		Library	LED	Motion sensor	24	48.00	48.00	847.20	6000	7.08
	Fourth	501-Class Room	LED	No change	6	9.00	0.00	0.00	0	-
		502-Class Room	LED	No change	9	13.50	0.00	0.00	0	-
		503-Class Room	LED	No change	9	13.50	0.00	0.00	0	-
		504-Class Room	LED	No change	12	18.00	0.00	0.00	0	-
		Auditorium	LED	No change	109	40.88	0.00	0.00	0	-
New building		101-Class Room	LED	No change	10	20.00	0.00	0.00	0	-
		102-Class Room	LED	No change	10	20.00	0.00	0.00	0	-
		103-Class Room	LED	No change	10	20.00	0.00	0.00	0	-
		104-Class Room	LED	No change	10	20.00	0.00	0.00	0	-
		105-Class Room	LED	No change	10	20.00	0.00	0.00	0	-
Canteen		Canteen area	LED	No change	15	30.00	0.00	0.00	0	-
		Kitchen	LED	No change	10	20.00	0.00	0.00	0	-
		Grocery store	LED	No change	4	8.00	0.00	0.00	0	-

		Vegetable cutting area	LED	No change	6	12.00	0.00	0.00	0	-
Gymkhana		Gymkhana	LED	No change	9	13.50	0.00	0.00	0	-
		Sport room	LED	No change	6	9.00	0.00	0.00	0	-
		Paid canteen	LED	No change	4	10.00	0.00	0.00	0	-
		Box stadium	LED	No change	17	42.50	0.00	0.00	0	-
		Two wheeler parking	LED	No change	9	247.50	0.00	0.00	0	-
		Road light	LED	Motion sensor	5	68.75	68.75	1213.44	1250	1.03
		New land	LED	Motion sensor	13	178.75	178.75	3154.94	3250	1.03

Type	Quantity	kW load	% of load
LED lighting	851	17.02	100.00
Old conventional lighting	0	0.00	0.00
Total	851	17.02	100

ENERGY SAVING MEASURES AND RECOMMENDATION

1. It is recommended that installed motion sensor lighting wherever is required..

Total Lighting savings		
Monthly consumption	2277.58	kWh/month
New monthly consumption	1874.08	kWh/month
New monthly saving	403.5	kWh/month
New monthly saving	7121.78	INR/month
Total Investment	28800	INR
Payback period	4.04	months

ENERGY PERFORMANCE ASSESSMENT OF FAN

1. COLLEGE CAMPUS AND ALL BUILDINGS

OBSERVATION

1. College has installed old conventional induction motor fans which consumes 65W and 45 W at full speed.
2. Also 165W consuming exhaust fans are used in canteen, bathrooms etc

Building	Floor	Name	Qty	Watt	Hours of usage	No of Days in a month	Monthly consumption	New watt	New monthly consumption	Monthly saving	Total invest	Payback period
			Nos	watt	hrs	days	kWh/day	watt	kWh/mnth	kWh/mnth	INR	months
College building		All floor bathrooms	14	165	8	25	462.00	20	56.00	406.00	28000	3.91
College building	Ground	101-Class Room	3	65	4	25	19.50	28	8.40	11.10	8400	42.88
			6	50	4	25	30.00	35	21.00	9.00	14400	90.65
		102-Class Room	3	65	4	25	19.50	28	8.40	11.10	8400	42.88
			5	50	4	25	25.00	35	17.50	7.50	12000	90.65
		103-Class Room	3	65	4	25	19.50	28	8.40	11.10	8400	42.88
			6	50	4	25	30.00	35	21.00	9.00	14400	90.65
		104-Class Room	3	65	4	25	19.50	28	8.40	11.10	8400	42.88
			5	50	4	25	25.00	35	17.50	7.50	12000	90.65

		106-Class Room	5	65	4	25	32.50	28	14.00	18.50	14000	42.88
			5	50	4	25	25.00	35	17.50	7.50	12000	90.65
		105-Academics department	6	65	4	25	39.00	28	16.80	22.20	16800	42.88
		Guest cabin	1	50	4	25	5.00	35	3.50	1.50	2400	90.65
		Account department	1	65	4	25	6.50	28	2.80	3.70	2800	42.88
			4	50	4	25	20.00	35	14.00	6.00	9600	90.65
		Admin department	3	65	4	25	19.50	28	8.40	11.10	8400	42.88
		Faculty cabin	13	65	4	25	84.50	28	36.40	48.10	36400	42.88
		G-1	8	65	4	5	10.40	28	4.48	5.92	22400	214.38
		G-2	7	65	4	25	45.50	28	19.60	25.90	19600	42.88
		G-3	8	65	4	25	52.00	28	22.40	29.60	22400	42.88
		G-4 chairman office	8	50	1	25	10.00	35	7.00	3.00	19200	362.61
	First	201-Class Room	3	65	4	25	19.50	28	8.40	11.10	8400	42.88
			3	50	4	25	15.00	35	10.50	4.50	7200	90.65
		202-Class Room	3	65	4	25	19.50	28	8.40	11.10	8400	42.88
			2	50	4	25	10.00	35	7.00	3.00	4800	90.65
		203-Class Room	5	65	4	25	32.50	28	14.00	18.50	14000	42.88
		204-Class Room	3	65	4	25	19.50	28	8.40	11.10	8400	42.88
		205-Class Room	3	65	4	25	19.50	28	8.40	11.10	8400	42.88
			3	50	4	25	15.00	35	10.50	4.50	7200	90.65
		206-Class Room	3	65	4	25	19.50	28	8.40	11.10	8400	42.88
			4	50	4	25	20.00	35	14.00	6.00	9600	90.65
		General manager office	2	65	4	25	13.00	28	5.60	7.40	5600	42.88
		Placement outer	2	65	4	25	13.00	28	5.60	7.40	5600	42.88

		cabin										
		Placement department	4	65	4	25	26.00	28	11.20	14.80	11200	42.88
			2	50	4	25	10.00	35	7.00	3.00	4800	90.65
		Board room	3	65	4	25	19.50	28	8.40	11.10	8400	42.88
		Conference room	1	65	4	25	6.50	28	2.80	3.70	2800	42.88
		Executive Director room-2	2	65	4	25	13.00	28	5.60	7.40	5600	42.88
		Board meeting room	1	65	4	25	6.50	28	2.80	3.70	2800	42.88
		Executive Director room-1	1	65	4	25	6.50	28	2.80	3.70	2800	42.88
	Second	301-Class Room	6	65	4	25	39.00	28	16.80	22.20	16800	42.88
			3	50	4	25	15.00	35	10.50	4.50	7200	90.65
		302-Class Room	6	65	4	25	39.00	28	16.80	22.20	16800	42.88
			3	50	4	25	15.00	35	10.50	4.50	7200	90.65
		304-Class Room	5	65	4	25	32.50	28	14.00	18.50	14000	42.88
		Director office, meeting room	2	65	4	25	13.00	28	5.60	7.40	5600	42.88
		Director office lobby area	2	65	4	25	13.00	28	5.60	7.40	5600	42.88
		Dean office	2	65	4	25	13.00	28	5.60	7.40	5600	42.88
		Communication head office	1	65	4	25	6.50	28	2.80	3.70	2800	42.88
		Communication office	6	65	4	25	39.00	28	16.80	22.20	16800	42.88
		Aptitude HOD	1	65	4	25	6.50	28	2.80	3.70	2800	42.88
		Research office	1	65	4	25	6.50	28	2.80	3.70	2800	42.88
		Faculty room lobby	6	65	4	25	39.00	28	16.80	22.20	16800	42.88

			2	50	4	25	10.00	35	7.00	3.00	4800	90.65
		Lobby cabin-1,2,3	1	65	4	25	6.50	28	2.80	3.70	2800	42.88
			2	50	4	25	10.00	35	7.00	3.00	4800	90.65
		Examination department	2	65	4	25	13.00	28	5.60	7.40	5600	42.88
			1	50	4	25	5.00	35	3.50	1.50	2400	90.65
		Computer lab-1	8	65	4	25	52.00	28	22.40	29.60	22400	42.88
		Computer lab-2	7	65	4	25	45.50	28	19.60	25.90	19600	42.88
		Server room	1	65	4	25	6.50	28	2.80	3.70	2800	42.88
	Third	401-Class Room	4	65	4	25	26.00	28	11.20	14.80	8000	30.63
			2	50	4	25	10.00	35	7.00	3.00	4800	90.65
		403-Class Room	4	65	4	25	26.00	28	11.20	14.80	11200	42.88
			5	50	4	25	25.00	35	17.50	7.50	12000	90.65
		404-Class Room	4	65	4	25	26.00	28	11.20	14.80	11200	42.88
			5	50	4	25	25.00	35	17.50	7.50	12000	90.65
		405-Class Room-Reading room	6	65	4	25	39.00	28	16.80	22.20	16800	42.88
		Faculty room	18	65	4	25	117.00	28	50.40	66.60	50400	42.88
			3	50	4	25	15.00	35	10.50	4.50	7200	90.65
		HR department	1	65	4	25	6.50	28	2.80	3.70	2800	42.88
		Library	20	65	8	25	260.00	28	112.00	148.00	56000	21.44
	Fourth	501-Class Room	6	65	4	25	39.00	28	16.80	22.20	16800	42.88
		502-Class Room	6	65	4	25	39.00	28	16.80	22.20	16800	42.88
		503-Class Room	6	65	4	25	39.00	28	16.80	22.20	16800	42.88
		504-Class Room	8	65	4	25	52.00	28	22.40	29.60	22400	42.88
		Auditorium	41	65	4	25	266.50	28	114.80	151.70	114800	42.88
New building		101-Class Room	7	65	4	25	45.50	28	19.60	25.90	19600	42.88

		102-Class Room	10	65	4	25	65.00	28	28.00	37.00	28000	42.88
		103-Class Room	7	65	4	25	45.50	28	19.60	25.90	19600	42.88
		104-Class Room	7	65	4	25	45.50	28	19.60	25.90	19600	42.88
		105-Class Room	7	65	4	25	45.50	28	19.60	25.90	19600	42.88
Canteen		Canteen area	16	65	8	25	208.00	28	89.60	118.40	44800	21.44
		Kitchen	2	165	8	25	66.00	20	8.00	58.00	4000	3.91
		Grocery store	1	65	1	25	1.63	28	0.70	0.93	2800	171.50
		Vegetable cutting area	2	65	4	25	13.00	28	5.60	7.40	5600	42.88
Gymkhana		Gymkhana	6	65	4	25	39.00	28	16.80	22.20	16800	42.88

ENERGY SAVING MEASURES AND RECOMMENDATION

1. It is recommended that replaced old fans with new energy efficient BLDC fans which consumes 28W, 18W etc.

Total Fan savings		
Monthly consumption	3315.03	kWh/month
New monthly consumption	1364.18	kWh/month
New monthly saving	1950.85	kWh/month
New monthly saving	34432.50	INR/month
Total Investment	1181200	INR
Payback period	34.30	months

ENERGY PERFORMANCE ASSESSMENT OF WATER PUMPING

OBSERVATION

1. There are five water pumps operated in the college for gardening, drinking water and domestic purposes etc.
2. Currently three water pumps are operated and two water pumps under repairing.
3. Level sensors are installed for water pumps except bore well pumps in the college.
4. Total three bore wells are in the college premises for water requirement of college.
5. Water tankers are also used for water requirements.

Particulars	Voltage	Current	Power	PF	Operating hours
	V	A	kW		hrs
Borewell-1	237	12	2.47	0.85	2
Borewell-3	237	12	2.47	0.85	2
Main water pump	411	5.7	3.45	0.85	2

SAVINGS MEASURES AND RECOMMENDATION

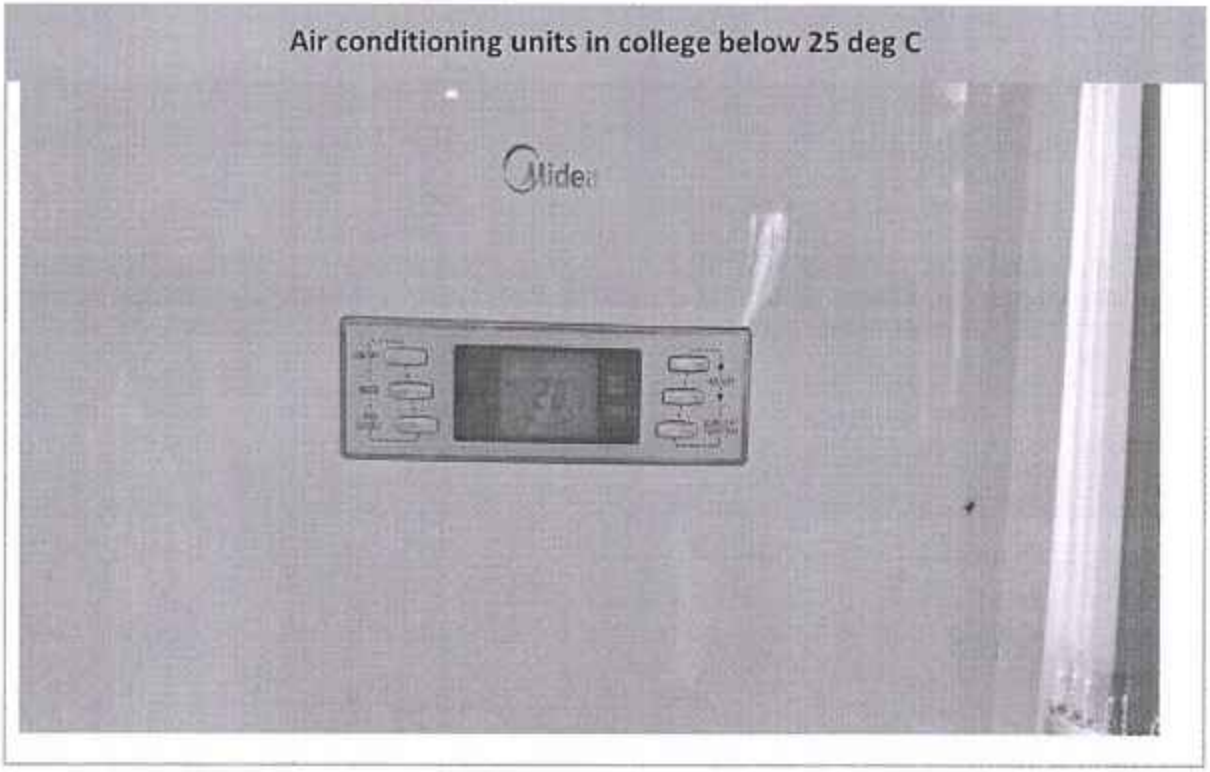
1. It is recommended that replaced the old water pumps with new energy efficient water pumps like Shakti, grandfos pumps etc to save energy up to 30%.

Total water pump savings		
Total monthly consumption	419.5	kWh/month
New monthly consumption	314.63	kWh/month
Total saving kWh	104.88	kWh/month
Total saving in INR	1851.04	INR/month
Total Investment	90000	INR/month
Payback period	49	months

SAVING IN AIR CONDITIONING UNITS

OBSERVATION

1. It is observed college has installed energy efficient BEE star rating ACs in the college rooms, labs, offices etc.
2. But temperature setting was observed during audit at various locations below 25 deg C.



Building	Name	Qty	TR	Monthly consumption	New monthly consumption	Monthly saving
		Nos	TR	kWh/day	kWh/month	kWh/ month
College building	G-1	1	4	352.00	246.40	105.60
	G-2	1	4	352.00	246.40	105.60
	G-4 chairman office	2	2	70.40	49.28	21.12
	201-Class Room	2	2	352.00	246.40	105.60
	202-Class Room	2	2	352.00	246.40	105.60
	203-Class Room	2	2	352.00	246.40	105.60
	Placement department	1	2	176.00	123.20	52.80
	Conference room	1	2	176.00	123.20	52.80
	Executive Director room-2	1	2	35.20	24.64	10.56
	Executive Director room-1	1	2	35.20	24.64	10.56
	Server room	1	2	214.72	150.30	64.42
	403-Class Room	2	2	352.00	246.40	105.60
	404-Class Room	1	2	176.00	123.20	52.80
	405-Class Room-Reading room	2	2	352.00	246.40	105.60
	Auditorium	2	13	91.52	64.06	27.46

RECOMMENDATION

1. It is recommended that AC should operate at temperature settings of AC 25 deg C to optimise the energy consumptions.
2. Purpose of AC in humid environment like in Mumbai and its suburban is to reduce the humidity and make environment at comfort zone. So 25 deg C is well sufficient for ACs.

SAVINGS MEASURES

Total AC savings due to temperature setting at 25 deg C		
Monthly consumption	3439.04	kWh/month
New monthly consumption	2407.33	kWh/month
New monthly saving	1031.71	kWh/month
New monthly saving	18209.68	INR/month
Total Investment	0	INR
Payback period	0.00	months

SAVING IN ELECTRICITY BILL

OBSERVATION

1. In electricity bill College has taken 100kW connected load and 120KVA contract demand.
2. But college's actual demand exceeds the contract demand due to which college pays excess contract demand penalty charges in the electricity bill.
3. College power factor is below unity so there is difference in actual kWh units and kVAh units. Also due to this there is difference in kW and KVA in electricity bill.

RECOMMENDATION

1. It is recommended that increase the existing contract demand to avoid excess contract demand penalty charges in the electricity bill.
2. Also maintain power factor at unity by placing automatic power factor controller (APFC) so that kW and KVA as well as kWh and KVAh units difference minimise in the electricity bill.

SAVINGS MEASURES

Saving due to improvement of power factor		
Latest last two months average kWh units in the electricity bill	28992	KVA
Latest last two months average kWh units in the electricity bill	29429	KVA
Difference in kVAh and kWh	437	KVA
Average power factor	0.984	INR/KVA
Average difference in kVAh and kWh can be maintained	100	kVAh
Saving in KVA due to less difference maintained by improvement of power factor	8	KVA
Savings in INR	3992	INR/month
Saving in units due to less difference maintained by improvement of power factor	300	kVAh
Savings in INR	5295	INR/month
Total savings	9287	INR/month
Total savings	111444	INR/year
Investment	100000	INR

Saving in excess contract demand		
Contract demand	100	KVA
Average excess contract demand	17	KVA
Demand charges/KVA	499	KVA
Average excess demand charges	13000	INR
Demand charges of excess demand	8483	INR
Saving in excess demand charges	4517	INR/month
Saving in excess demand charges	36136	INR/year
Investment	100000	INR/month
Payback period	33.21	months

RENEWABLE ENERGY SYSTEMS

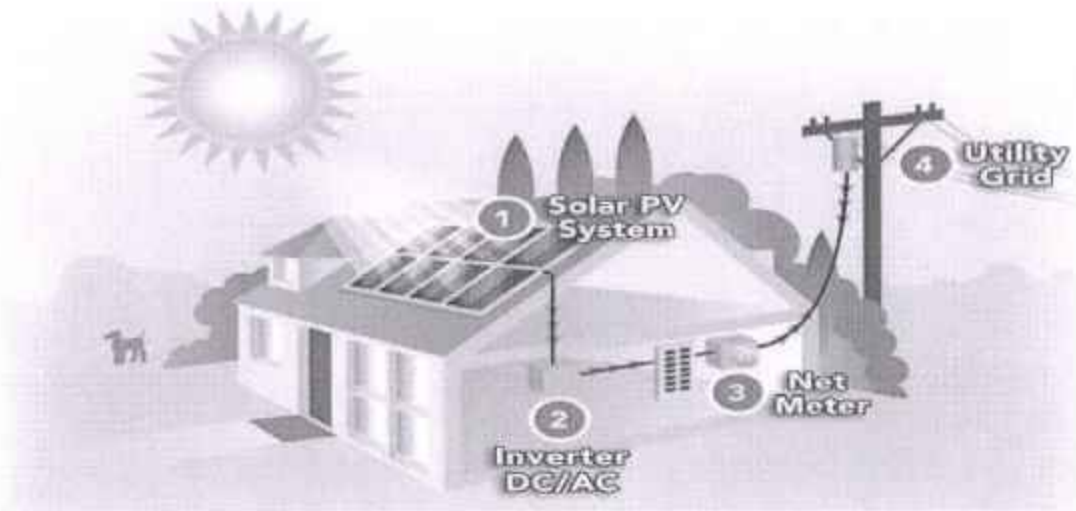
1. SOLAR PHOTOVOLTAIC SYSTEM- ELECTRICAL ENERGY GENERATION

INTRODUCATION

Solar photovoltaic system- with Net meter

Maharashtra Government has new solar energy policy name as "Rooftop Solar with Net Meter system". Maharashtra government encourages to install rooftop solar PV system with net meters at available roof top of consumers. This helps to reduce the burden on existing conventional fuel fired power plants in the country.

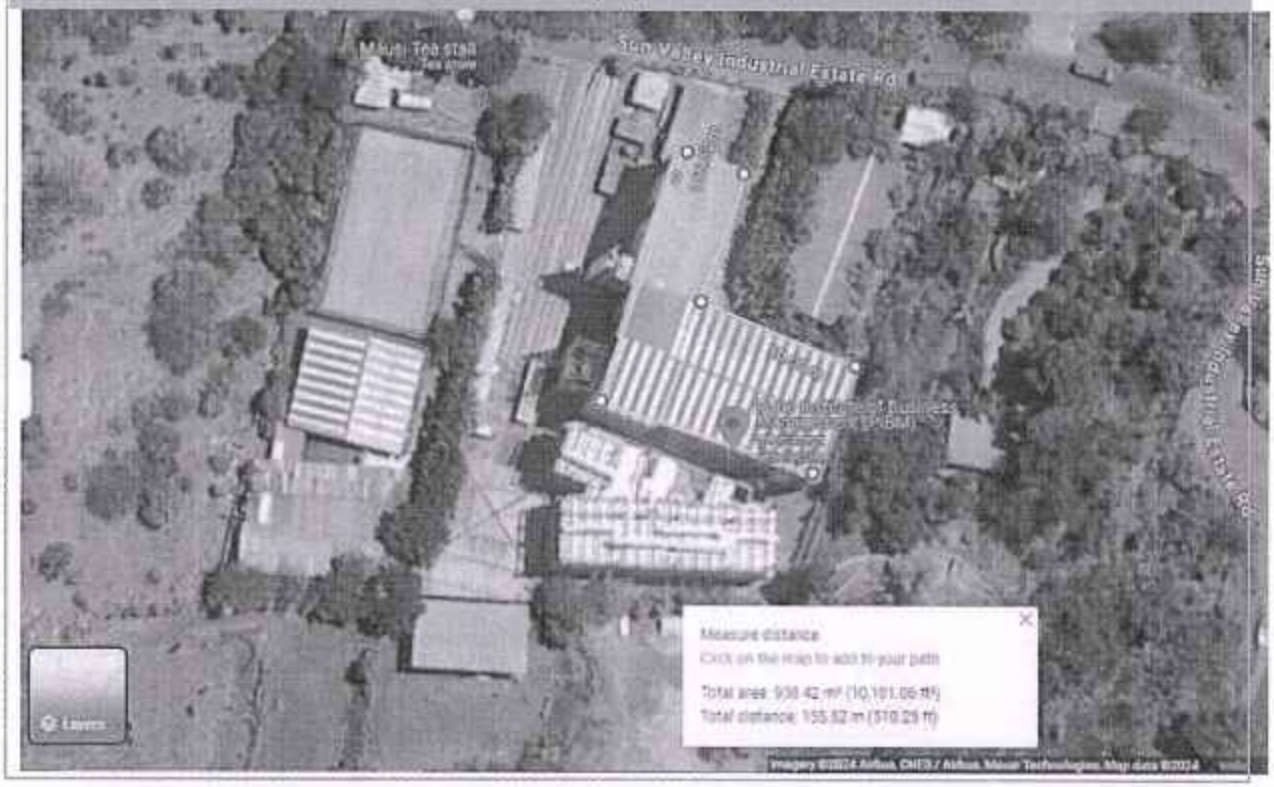
Solar Rooftop Net meter system helps consumers to reduce the electricity consumption in the electricity bill due to net meter.



OBSERVATION

1. College has large solar rooftop space available solar net meter PV system for electricity generation.
2. College has not yet installed solar PV system in the college.

Solar rooftop space available



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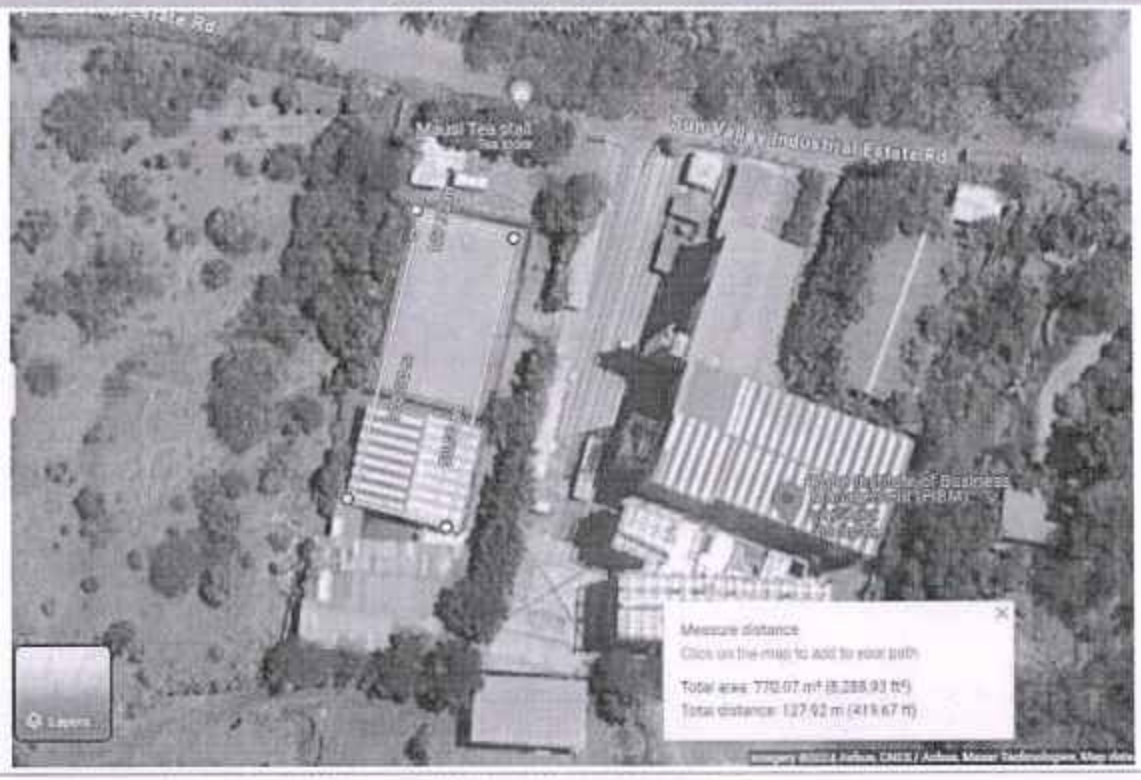

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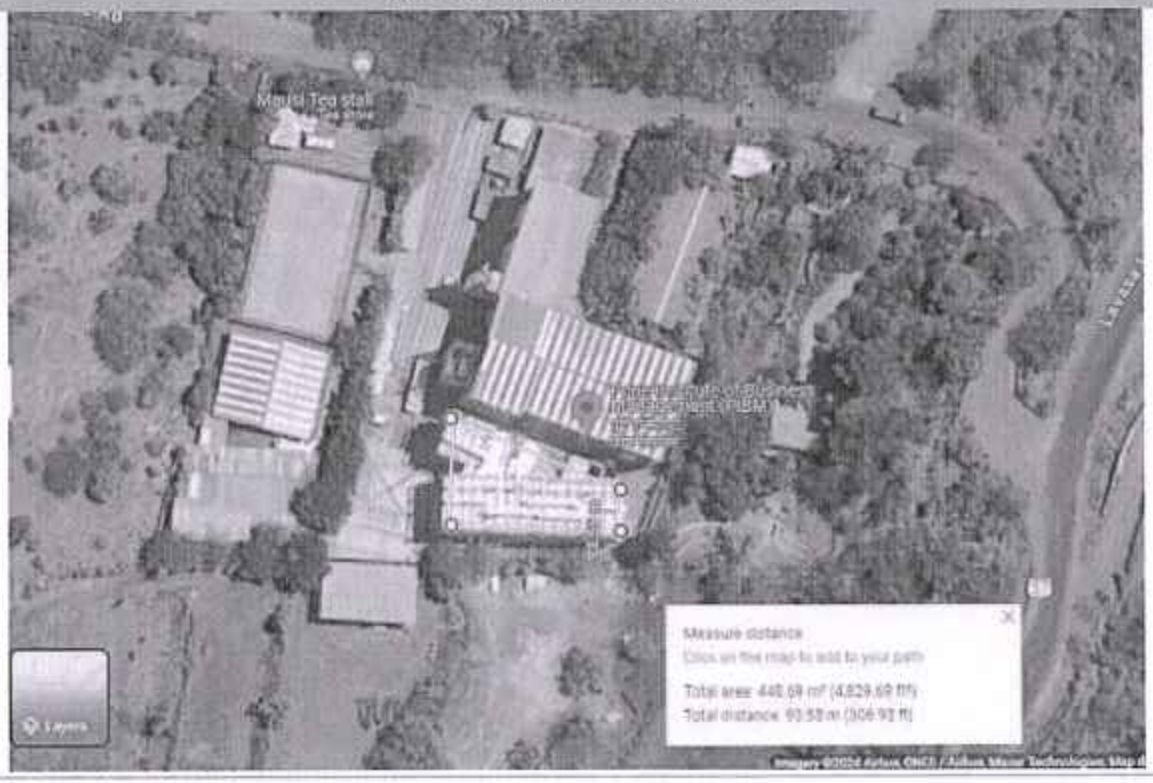


RECOMMENDATION

1. It is recommended that college can installed 150 kWp Solar Photovoltaic (PV) system on available rooftop for solar energy generation.

SAVINGS MEASURES

Savings due to Solar PV system		
Total Rooftop space available- approximate	23218	sqfoot
Total capacity of Solar PV system can be installed	150	kWp
Total solar unit generation	18750	kWh/month
Average electricity unit rate	17.65	INR/kWh
Total cost of Solar PV system	6750000	INR
Total saving	330937.5	INR/month
Payback period	20.40	months
Payback period	1.70	year
CO2 emission reduction/year	191.25	tonnes of CO2e

2. BIO GAS PLANT

INTRODUCTION

Biogas is a mixture of gases, primarily consisting of methane and carbon dioxide, produced from raw materials such as agricultural waste, manure, municipal waste, plant material, sewage, green waste or food waste. It is a renewable energy source.

Biogas is produced by anaerobic digestion with anaerobic organisms or methanogen inside an anaerobic digester, bio digester or a bioreactor.

Biogas is primarily methane (CH4) and carbon dioxide (CO2) and may have small amounts of hydrogen sulphide (H2S), moisture and siloxanes. The gases methane, hydrogen, and carbon monoxide (CO) can be combusted or oxidized with oxygen. This energy release allows biogas to be used as a fuel; it can be used in fuel cells and for any heating purpose, such as cooking. It can also be used in a gas engine to convert the energy in the gas into electricity and heat.

Biogas can be compressed after removal of Carbon dioxide, the same way as natural gas is compressed to CNG, and used to power motor vehicles. In the United Kingdom, for example, biogas is estimated to have the potential to replace around 17% of vehicle fuel. It qualifies for renewable energy subsidies in some parts of the world. Biogas can be cleaned and upgraded to natural gas standards, when it becomes bio-methane. Biogas is considered to be a renewable resource because its production-and-use cycle is continuous, and it generates no net carbon dioxide. As the organic material grows, it is converted and used. It then regrows in a continually repeating cycle. From a carbon perspective, as much carbon dioxide is absorbed from the atmosphere in the growth of the primary bio-resource as is released, when the material is ultimately converted to energy

LPG (Liquefied Petroleum Gas) is a key source of cooking fuel in urban India and its prices have been increasing along with the global fuel prices. Also the heavy subsidies provided by the successive governments in promoting LPG as a domestic cooking fuel has become a financial burden renewing the focus on biogas as a cooking fuel alternative in urban establishments. This has led to the development of prefabricated digester for modular deployments as compared to RCC and cement structures which take a longer duration to construct.

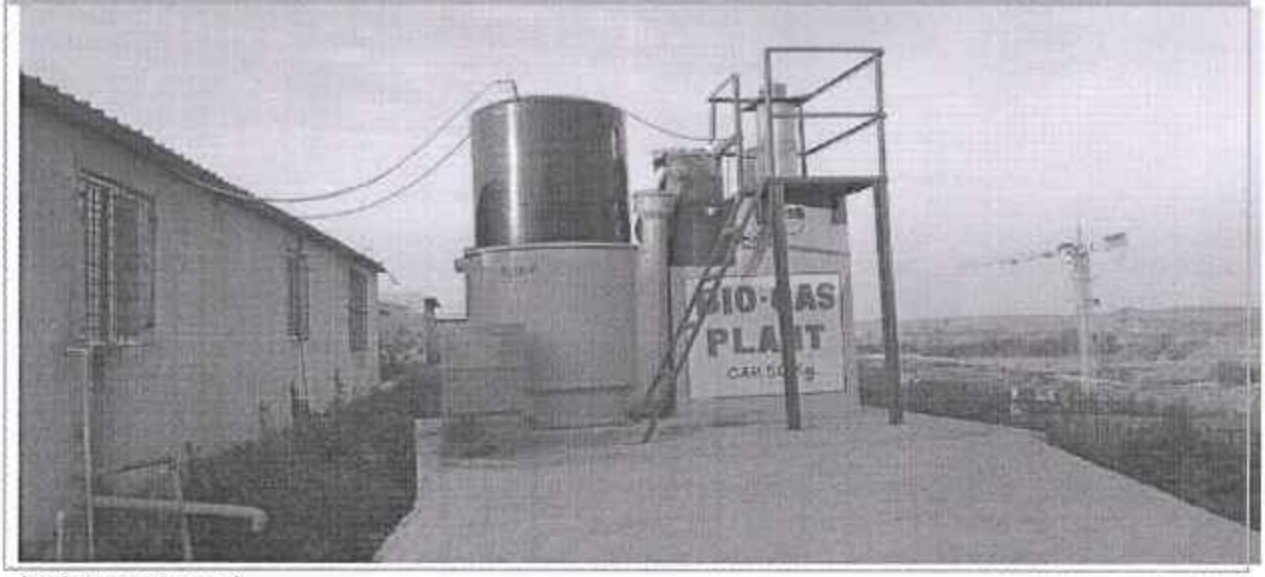
OBSERVATION

1. Approximate kitchen waste generated in college canteen per day is about 100kg.
2. For cooking in college canteen conventional fuel LPG cylinder is used of cost INR 1780/- per cylinder.

RECOMMENDATION

- It is recommended that college can installed kitchen waste bio gas plant for generation of bio gas for cooking purpose.

Bio-Gas Generation Plant – Approximate 100kg/day- College Canteen



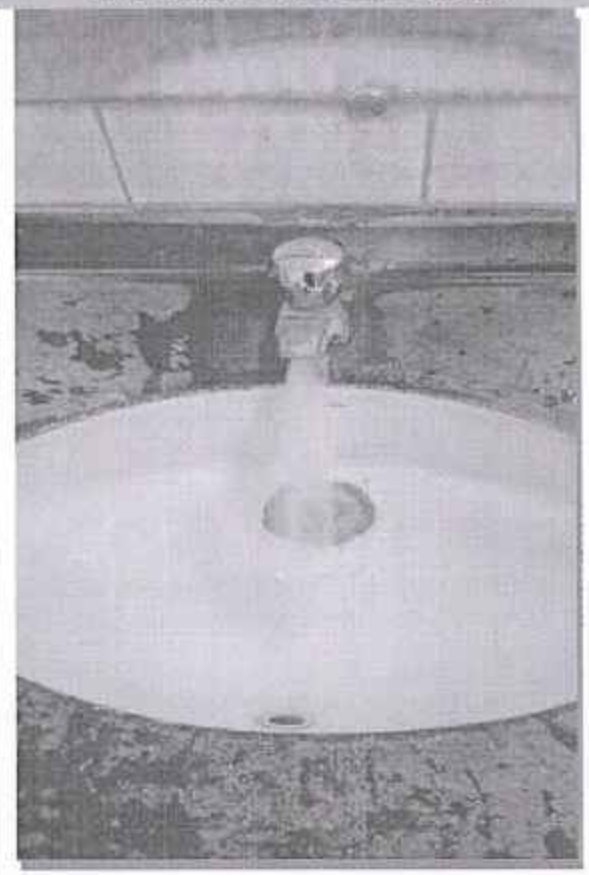
(Reference image)

SAVING MEASURES

Savings due to Bio gas plant		
Capacity of bio gas plant	100	kg/day
Waste generated	100	kg/day
Approximate bio gas generation	10	m3/day
Approximate bio gas generation	300	m3/month
Equivalent LPG gas saved	450	kg/month
Approximate LPG cylinder saved	24	nos
Cost saved	42158	INR/month
CO2 emission reduction/year	16.11	tonnes of CO2e

ENERGY CONSERVATION BY SAVING OF WATER

TAP WATER REDUCER

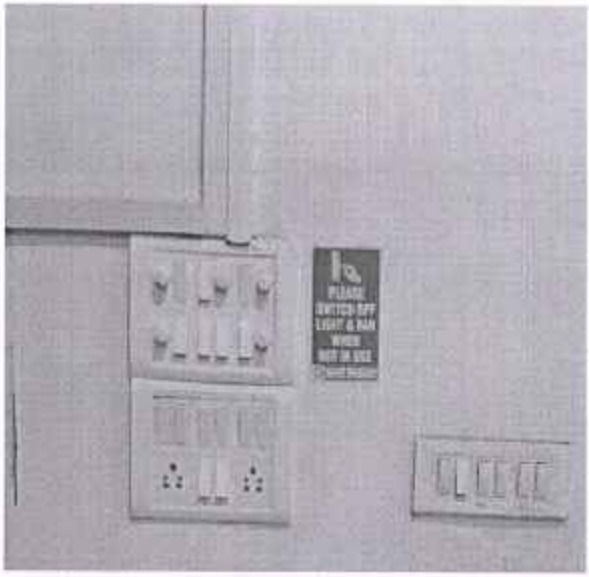
Conventional Tap water system	Tap water system with Reducer
	
Existing tap water system uses more water while during purpose of washing of utensils, hands etc in college.	**Used reducer to tap water for purpose of washing of utensils, hands etc which reduces flow of water and ultimately saves the water.**
⊘	√

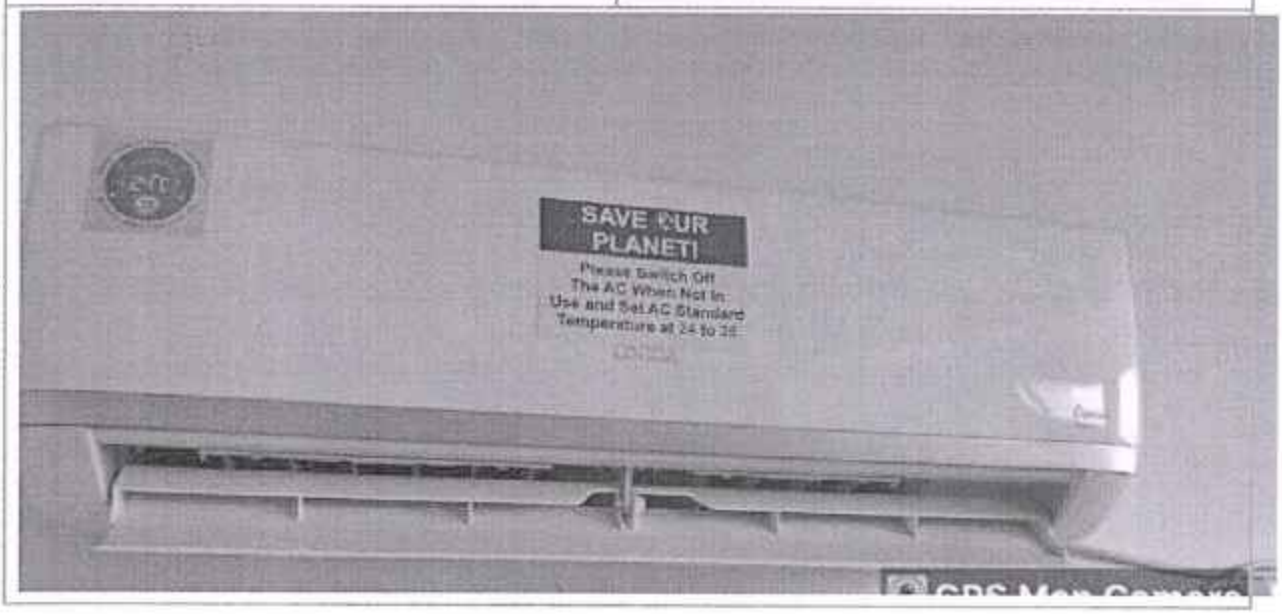
RECOMMENDATION

It is recommended that to use water reducer for water taping for save the water and energy consumption of water pump to lift excess water.

ANNEXTURE

Example of Energy conservation awareness sign boards

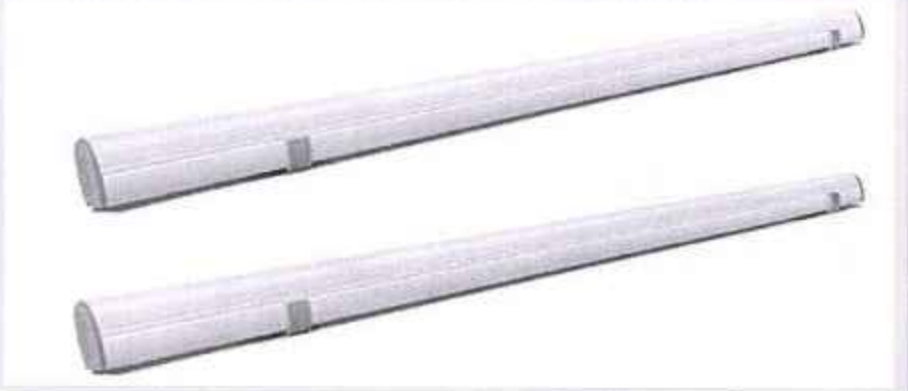




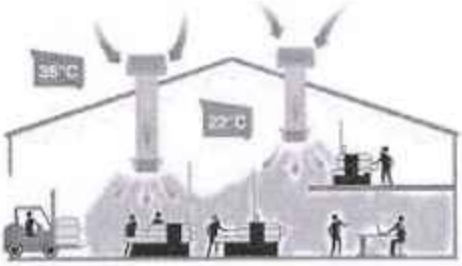
ENERGY EFFICIENT FANS

ATOMBERG TECHNOLOGIES	
	28 watts
	18watts or 8 watts as per size and load

ENERGY EFFICIENT LIGHTING

LED Lightings	
	18 watts, 9 watts, 5 watts Companies: 1. Wipro 2. Osram 3. Syska 4. Philips etc
	
	Motion sensor bulbs

ENERGY EFFICIENT EVAPORATIVE TECHNOLOGY

Evaporative cooling system same as Air cooler alternative to Air conditioners	
	Evaporative cooling system temperature effect
	On rooftop fitted system
	Window side fitted system

IAEER'S

PUNE INSTITUTE OF BUSINESS MANAGEMENT (MBA)

&

PUNE INSTITUTE OF BUSINESS MANAGEMENT FOR PGDM (PGDM)

PUNE INSTITUTE OF BUSINESS MANAGEMENT
NBA & NAAC ACCREDITED PROGRAMS
APPROVED BY AICTE | AFFILIATED TO SAVITRIBAI PHULE PUNE UNIVERSITY

GREEN AND ENVIRONMENT AUDIT REPORT

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Conducted and Submitted by

ENERFUTURE

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PUNE INSTITUTE OF BUSINESS MANAGEMENT PIBM PUNE

Director
Pune Institute of Business Management
Pirangut, Pune

ACKNOWLEDGEMENT AND CONCEPT

Enerfuture Technology Private Limited thanks the management of Pune Institute of Business Management (PIBM), Pune for assigning this important work of Green and Environment Audit of Pune Institute of Business Management (PIBM), Pune

Green audit is defined as a formal examination of practices adopted and their effects on the environment, by an organization. It is also widely known as Environmental Audit.
The aim of the Green Audit is to review the overall environment management systems. Depending on the types of standards and the focus of the audit.

Organizations now recognize the importance of environmental matters and accepts that their environment performance should be scrutinized to understand its impact and to take remedial measures to lessen it.

Environmental auditing is used to investigate, understand and identify the environmental issues. These are then used to help in improving existing human activities, with the aim of reducing the adverse effects of these activities on the environment.

Impact: Utilization of natural resources. Sustainable use of Environmental resources. Maximize the use of renewable energy resources. Reduce, Reuse and Recycle.

An environment auditor studies an organization's environment in a systematic and documented manner and produces an environmental audit report.

Green audit for an educational institution mainly examines the following systems:

1. Biodiversity
2. Health and safety management
3. Water management and conservation
4. Sanitation management
5. Renewable/ green energy usage
6. Adopted Green practices
7. Various Audits
8. Recommendations

Contribution of college's team is equally important in this venture. Team of technical experts from Enerfuture Technology Private Limited is grateful to all the following personnel of Pune Institute of Business Management (PIBM), Pune for their kind cooperation, furnishing required data, analysis report and support offered during our visit.

Name	Designation
Mr. Raman Preet	Chairman and Trustee
Dr. Rajashree Pillai	Director
Prof. Poornima Sehrawat	IQAC Head
Dr. B Naresh	Assistant Director
Dr. Prasad Poorna Chandra	Associate Professor

We are also thankful to the other staff members who were actively involved while taking measurements and conducting field study.

STUDY TEAM

Sr No	Name	Qualification
1	Mr. Chetan Nemade	M.Tech (Energy Studies), Advance Diploma in Industrial Safety (ADIS), LLB, BEE Certified Energy Manager
2	Mr Vinay Mulay	M.Tech (Energy Studies), ISO 50001 Lead Auditor, BEE Accredited Energy Auditor
3	Mr Swapnil Gaikwad	M.Tech (Energy Studies), ISO 50001 Lead Auditor, BEE Certified Energy Auditor
4	Mr YogeshKuwar	M.Tech (Energy Studies), IGBC IGBC Accredited Professional, Post Graduate Diploma in Environmental law and Policy (PGDELP), BEE Certified Energy Manager
5	Mr Prasad Kalal	B.E Electrical, BE (Electrical), Electrical Supervisor(51242), Electrical Contractor(37364)

LIST OF INSTRUMENTS USED

1. Lux meter (Meco)
2. TDS meter
3. CO2 meter
4. Air quality measure meter

CONTENTS

EXCECUTIVE SUMMARY

Sr No	Location	Area	Objective/Purpose	Recommendation/Status
1	College Campus	Net meter Solar Photovoltaic System- 150kWp	To generate electrical energy by renewable sources and feed to the electricity grid and reduce the CO2 emissions	Can be Implemented
2	College campus	Solar street light with battery back-up	To generate electrical energy by renewable sources and feed to the electricity grid and reduce the CO2 emissions	Implemented
3	College canteen	Bio-Gas generation plant- 100kg	Utilised organic food generated in the college canteen to generate bio-gas for cooking purpose. This saves conventional fuel LPG and ultimately reduce the CO2 and Greenhouse gases emissions	Can be Implemented
4	College Campus	Efficient Tap water reducers	To save the water	Can improve
5	College Campus	Rain water harvesting	Save water. Increases the groundwater recharge.	Can be Implemented. Awareness programme conducted.
6	College buildings/campus	Air Quality	Air quality for human being comfort	Aspirational
7	College buildings/campus	Illumination	Daylight illumination for human being comfort	Within permissible limits

8	College buildings/campus	No vehicle day	Save the conventional fuel and reduces the CO2 emissions.	Uses college bus for transport purposes
9	College buildings/campus	Waste management- E-waste/Bio waste	Reduce the CO2 emissions by recycling of waste. Also Save environment from hazardous materials.	Regularly implemented and will be sign MoU with third party recycler
10	College buildings/campus	Waste management- Solid waste	Reduce the CO2 emissions by recycling of solid waste	Regularly implemented and maintained
11	College buildings/campus	Liquid waste management- Sewage Treatment Plant	To treat the sewage water and save water for reuse purpose.	Implemented
12	College buildings/campus	Tree plantation/ Green belt cover	To increase the forest cover. Reduce the Air, Noise pollution, reduce CO2 emissions etc	Regularly implemented
13	College buildings/campus	Plastic free/No paper policy or campaign	Save environment from non-recycling and hazardous materials.	Institute has taken some steps towards making premises plastic free & reducing paper usage
14	College buildings/campus/region	Various other environment activity, seminars etc	To create awareness among the students, people etc	Regularly conducted

COLLEGE INTRODUCTION

INTRODUCTION

Pune Institute of Business Management, one of the best PGDM & MBA colleges in Pune, and accredited by NBA & NAAC, aims to provide New-age Industry 5.0 aligned management skillsets. Corporate Interactions at PIBM with Top Business Leaders from diverse sectors help the students in a better understanding of the real corporate world. Job-oriented training through a Practical and Hands-on training approach by involving the students in various projects and internships makes them ready to bag the best campus placement offers in top MNCs.

VISION

Pune Institute of Business Management strives to achieve global identity through its innovative and unconventional methods and efforts to better the community by producing a skilled workforce with values, dynamism, and entrepreneurial skills. Our vision is to become the hallmark of professional excellence by adopting a holistic approach to learning.

The institute has the vision to develop a dynamic workforce that will manage and lead the organization ethically for sustainable growth.

MISSION

At Pune Institute of Business Management, we endeavour to become the finest institute in management education where equal emphasis is laid upon personal and academic development. Our aim is to create role models that can play a pivotal role in shaping our society as they climb the corporate ladder. Our mission is to develop action-oriented leaders of extraordinary tenacity and stamina to make things happen as they should be.

VALUES THAT DEFINE PIBM

PIBM stands firm on the robust foundation of crucial core values which envisions Student Growth & Empowerment.

CONTINUAL IMPROVEMENT

Consciously identifying gaps and deficiencies in the processes and improving them to build more robust systems, raising benchmarks of performance continually

HOLISTIC STUDENT DEVELOPMENT

Holistic Student Development is to instil ethical values, domain knowledge, confidence, and communication to develop student's competencies to become employable and perform well in the organization. It also focuses on developing entrepreneurs in India, which directly or indirectly support the nation's economic growth.

SUSTAINABLE GROWTH

Sustainable Growth is to teach students to focus on People, Process, Planet and usage of advance technology for business management, where students should be able to contribute to the sustainable performance of the business.

TRANSPARENCY & EMPOWERMENT

Transparency & Empowerment is to build a transparent and empowered culture by providing equal and fair opportunities to all stakeholders such as faculties, employees, and students. PIBM for PGDM honestly believes in transparency and empowerment by allowing giving suggestions on different processes.

TRAINING AND DEVELOPMENT PROGRAM FOR MBA & PGDM

Since Inception, PIBM has developed strong pillars of advanced training pedagogies where we focus on our philosophy that in Business Management how you learn is just as important as what you learn. Our training pedagogies includes a combination of lectures, conceptual discussions, live

demonstrations, business projects, corporate interactions, case analysis with discussions, Model & Strategy designing followed by implementation and presentations. PIBM's industry recognized training approach for blending theory with compulsory hands-on practice & learning, assures that our students will learn more than they thought.

PIBM has always been a leader in providing quality education and having flexible training pedagogy because of which even during the recent challenges, learning never stopped at PIBM. We upgraded our training pedagogies by integrating the virtual training platform for our students to enable 24x7 learning availability for them. We ensure that our students' careers should not suffer under any circumstances. We at PIBM, with our vast corporate tie-ups organised Virtual Leadership Series in order for our students to get more efficient learning experience and corporate exposure, at the same time ensuring their safety.

TRAINING PEDAGOGIES

- SCPS© (Sector - Company - Product/Service)
- Profile Oriented Training
- Comparative Analysis
- Experiential Learning
- Job Description (JD) Based Training
- Abhyas Prayas Saahas etc

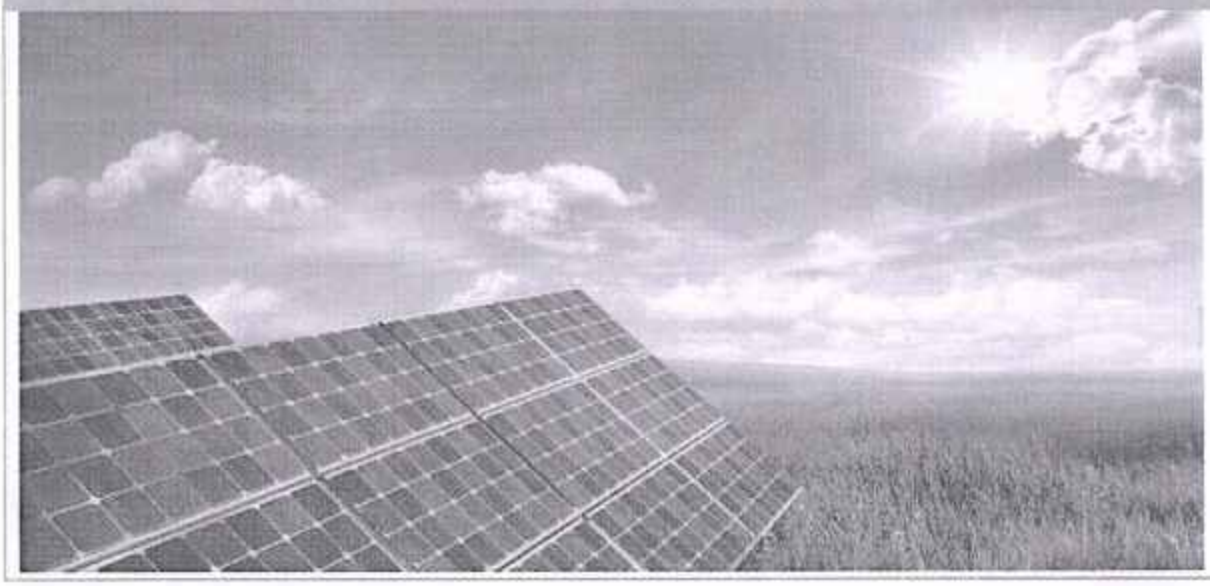
LOCATION

RENEWABLE ENERGY SYSTEMS

1. SOLAR PV SYSTEM- NET METER

INTRODUCATION

Solar photovoltaic system- with Net meter



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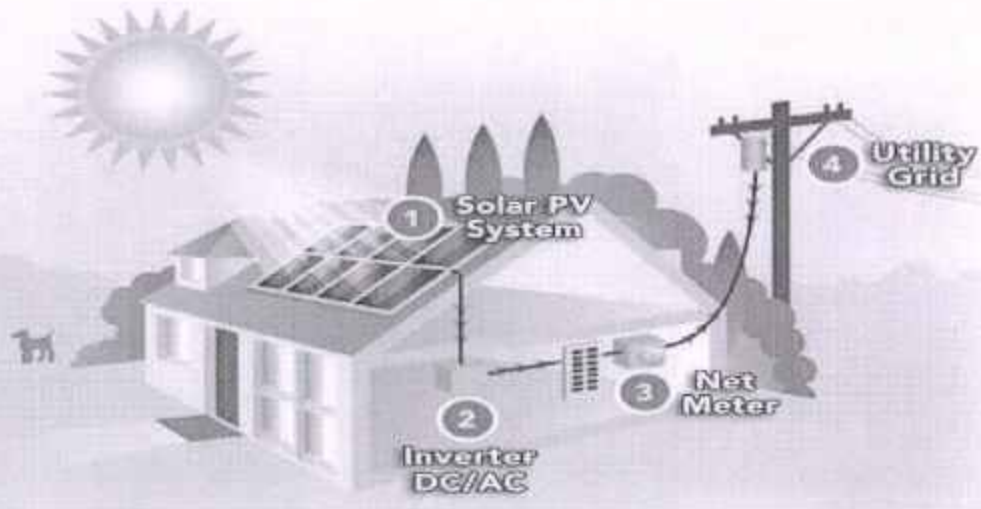

OBSERVATION

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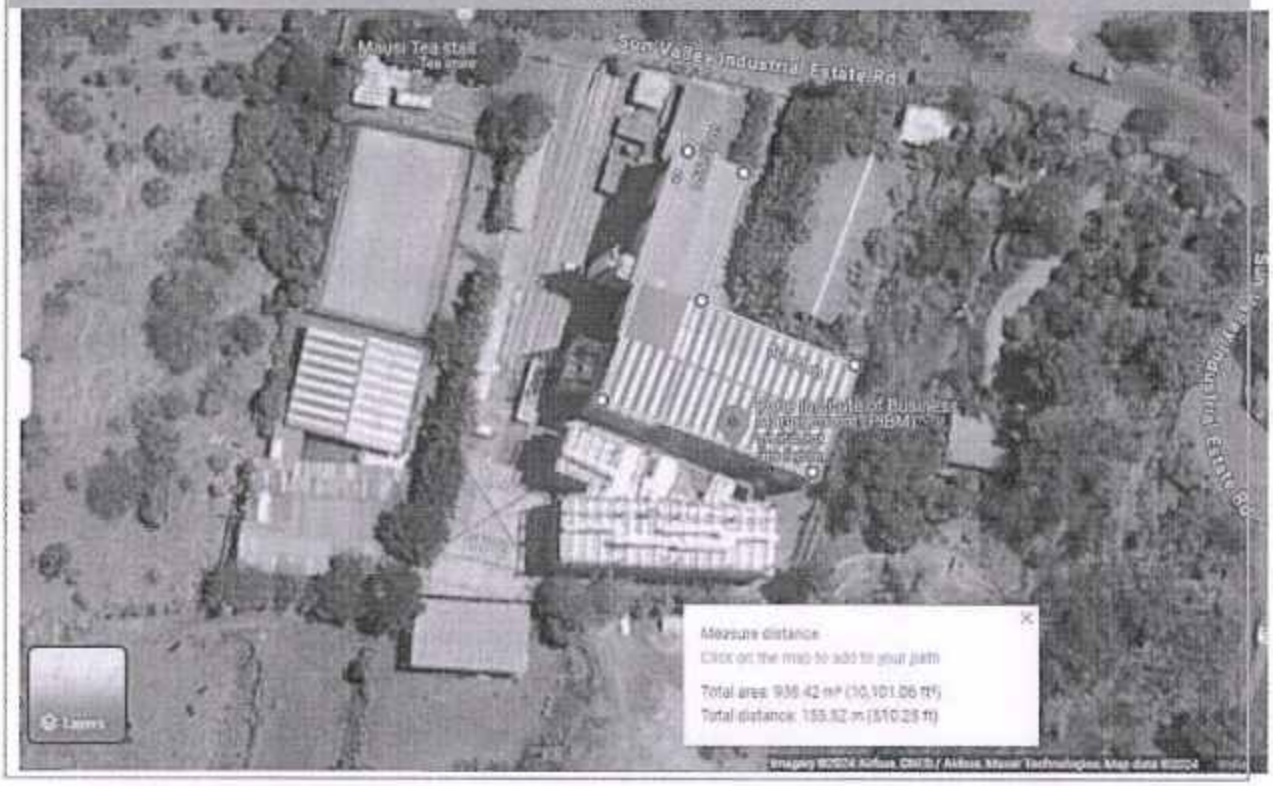
2. College has not yet installed solar PV system in the college.

Solar rooftop space available



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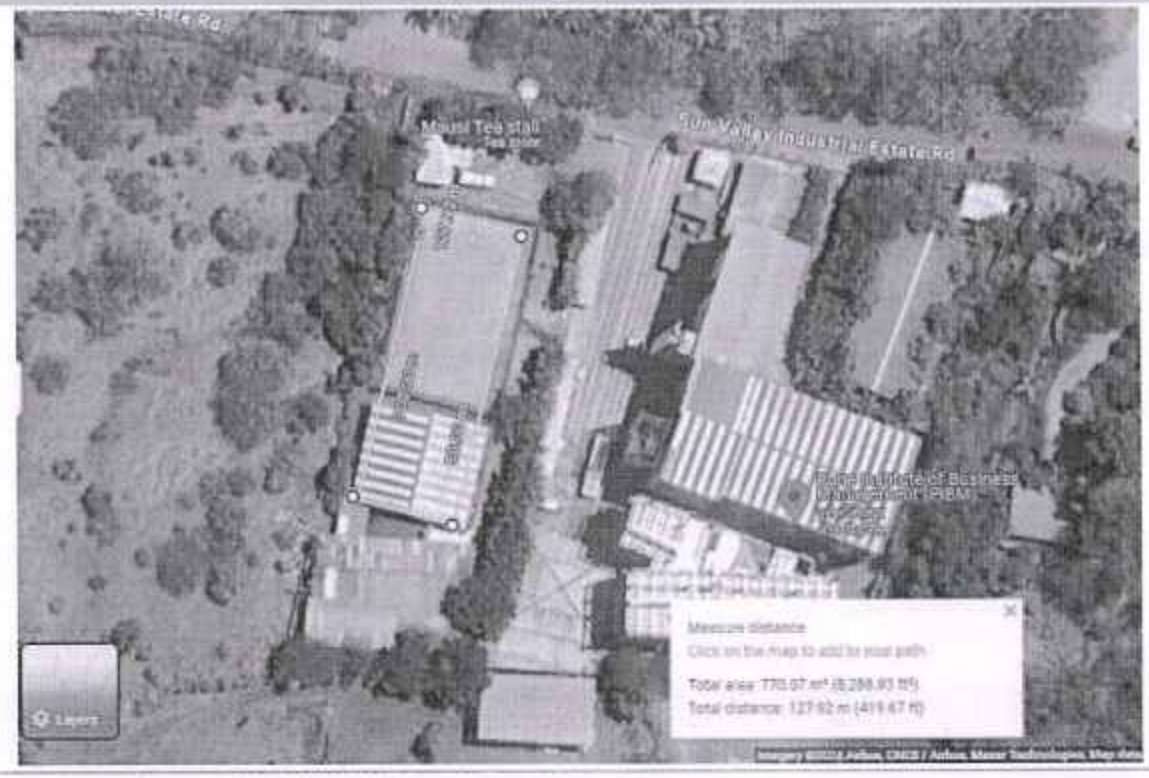

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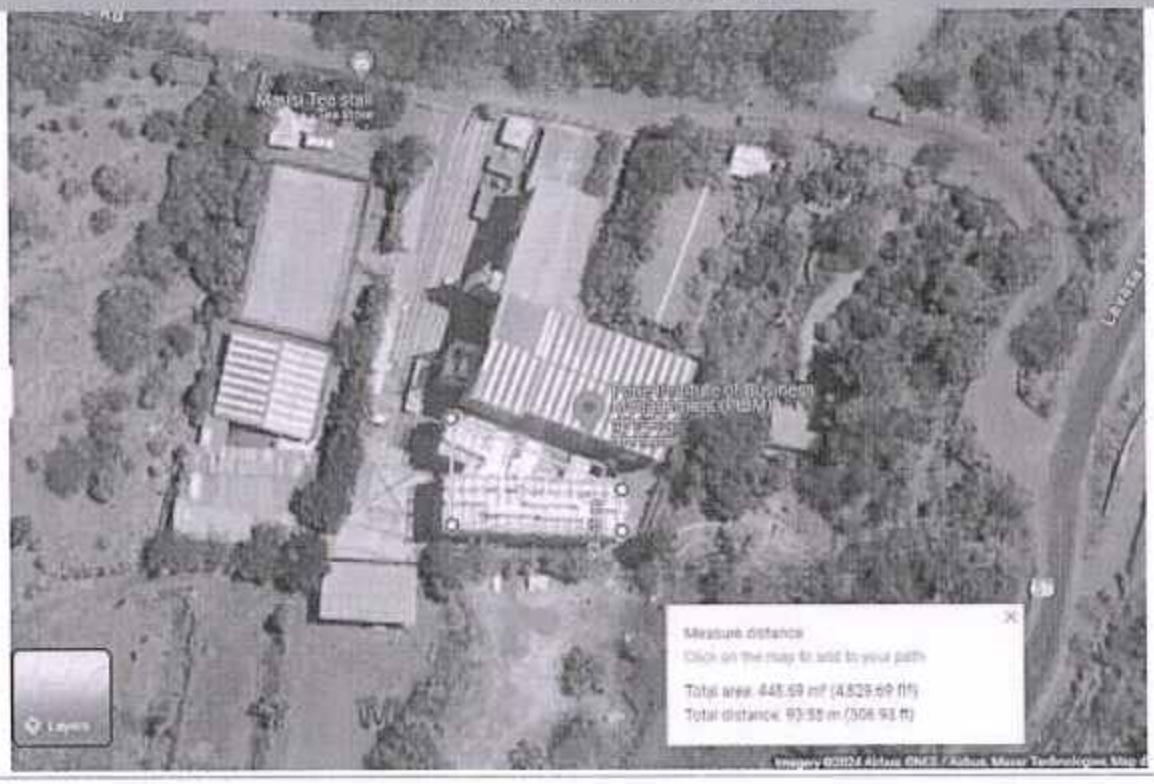

RECOMMENDATION

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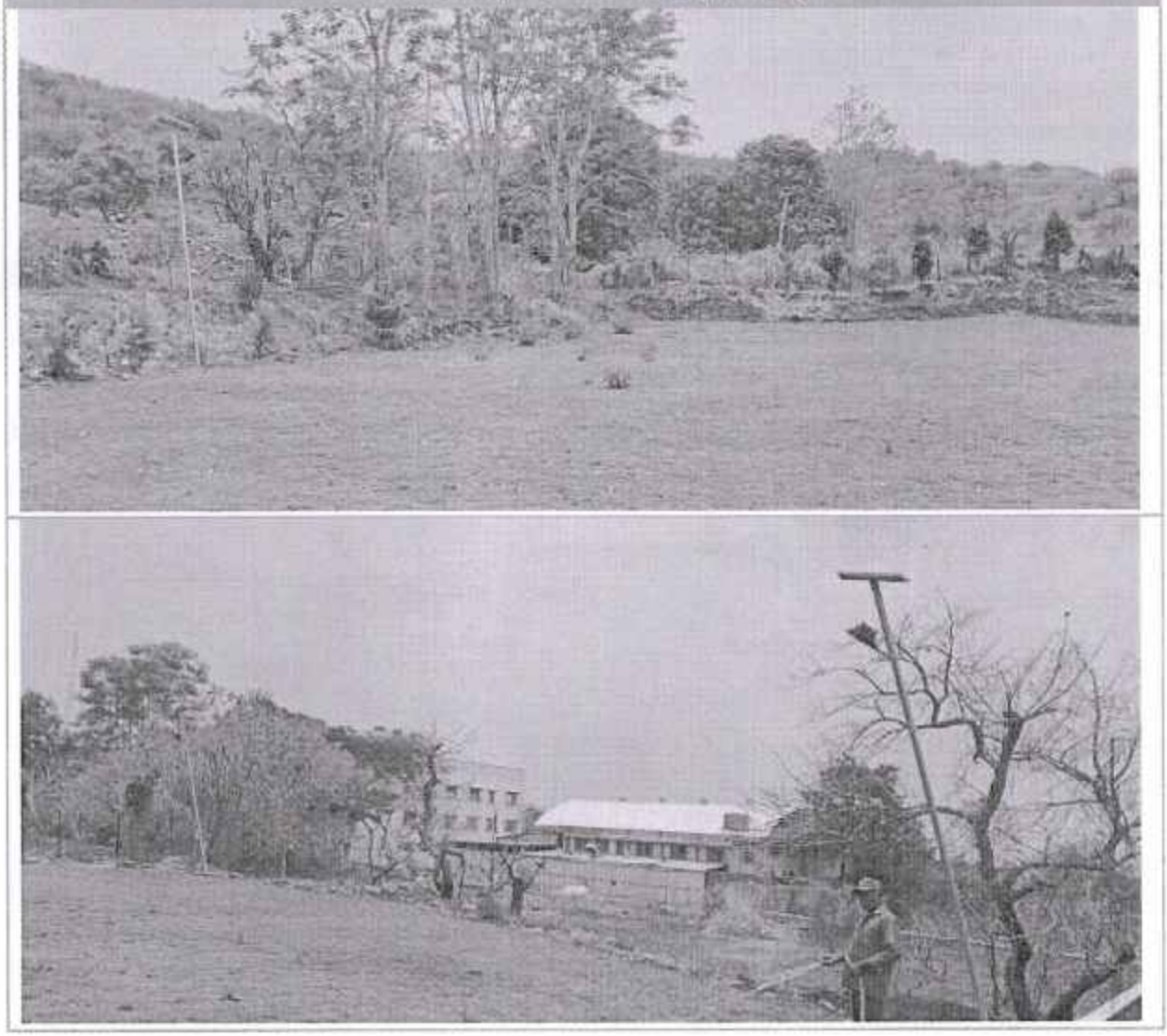
CO2 emission reduction/year	191.25	tonnes of CO2e

2. SOLAR PV SYSTEM- NET METER

OBSERVATION

1. College has number of street lights in campus as well as outside area and new land area.
2. Many times there is failure in MSEB board electricity in the college. Due to which college has implemented solar PV street lights with battery back lights to save energy as well as overcome the failure MSEB board electricity during night time.

Solar PV street lights with battery back system



WASTE MANAGEMENT SYSTEMS

1. BIO-GAS GENERATION

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Biogas is produced by anaerobic digestion with anaerobic organisms or methanogen inside an anaerobic digester, bio digester or a bioreactor.

Biogas is primarily methane (CH4) and carbon dioxide (CO2) and may have small amounts of hydrogen sulphide (H2S), moisture and siloxanes. The gases methane, hydrogen, and carbon monoxide (CO) can be combusted or oxidized with oxygen. This energy release allows biogas to be used as a fuel; it can be used in fuel cells and for any heating purpose, such as cooking. It can also be used in a gas engine to convert the energy in the gas into electricity and heat.

Biogas can be compressed after removal of Carbon dioxide, the same way as natural gas is compressed to CNG, and used to power motor vehicles. In the United Kingdom, for example, biogas is estimated to have the potential to replace around 17% of vehicle fuel. It qualifies for renewable energy subsidies in some parts of the world. Biogas can be cleaned and upgraded to natural gas standards, when it becomes bio-methane. Biogas is considered to be a renewable resource because its production-and-use cycle is continuous, and it generates no net carbon dioxide. As the organic material grows, it is converted and used. It then regrows in a continually repeating cycle. From a carbon perspective, as much carbon dioxide is absorbed from the atmosphere in the growth of the primary bio-resource as is released, when the material is ultimately converted to energy

LPG (Liquefied Petroleum Gas) is a key source of cooking fuel in urban India and its prices have been increasing along with the global fuel prices. Also the heavy subsidies provided by the successive governments in promoting LPG as a domestic cooking fuel has become a financial burden renewing the focus on biogas as a cooking fuel alternative in urban establishments. This has led to the development of prefabricated digester for modular deployments as compared to RCC and cement structures which take a longer duration to construct.

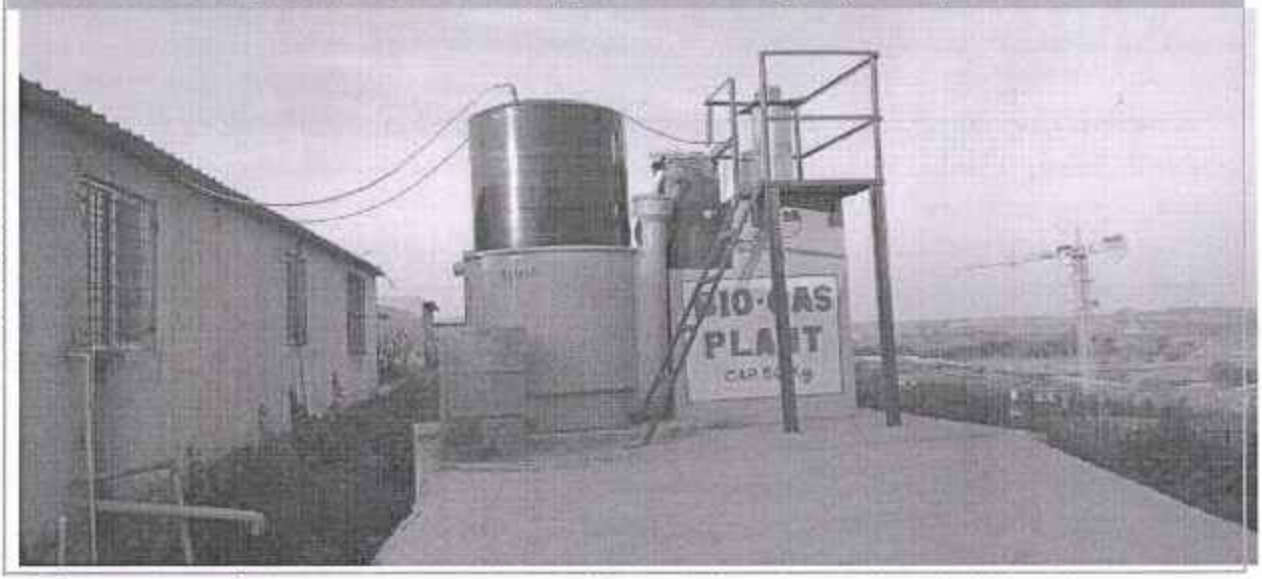
OBSERVATION

1. Food waste: Food waste is supplied to a local pig farmer in the Bhugaon area. A vehicle collects all the food waste daily from the institution canteen and all the hostels.
2. Approximate kitchen waste generated in college canteen per day is about 100kg.
3. For cooking in college canteen conventional fuel LPG cylinder is used of cost INR 1780/- per cylinder.

RECOMMENDATION

- It is recommended that college can installed kitchen waste bio gas plant for generation of bio gas for cooking purpose.
- After bio gas generation, remaining slurry can be used as fertilizer for gardening purposes.

Bio-Gas Generation Plant – Approximate 100kg/day- College Canteen



(Reference image)

SAVING MEASURES

Savings due to Bio gas plant		
Capacity of bio gas plant	100	kg/day
Waste generated	100	kg/day
Approximate bio gas generation	10	m3/day
Approximate bio gas generation	300	m3/month
Equivalent LPG gas saved	450	kg/month
Approximate LPG cylinder saved	24	nos
Cost saved	42158	INR/month
CO2 emission reduction/year	16.11	tonnes of CO2e

2. WASTE WATER TREATMENT PLANT/ SEWAGE TREATMENT PLANT

INTRODUCTION

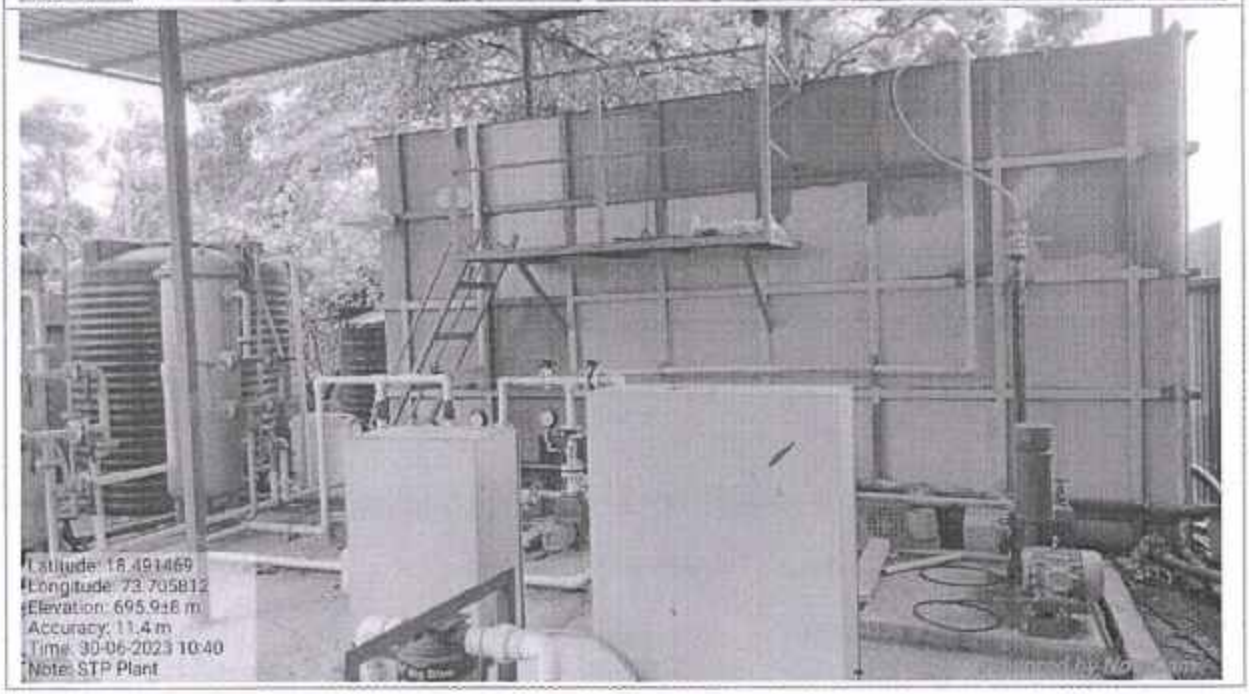
Sewage treatment is the process of removing contaminants from municipal wastewater, containing mainly household sewage plus some industrial wastewater. Physical, chemical, and biological processes are used to remove contaminants and produce treated wastewater (or treated effluent) that is safe enough for release into the environment. A by-product of sewage treatment is a semi-solid waste or slurry, called sewage sludge. The sludge has to undergo further treatment before being suitable for disposal or application to land.

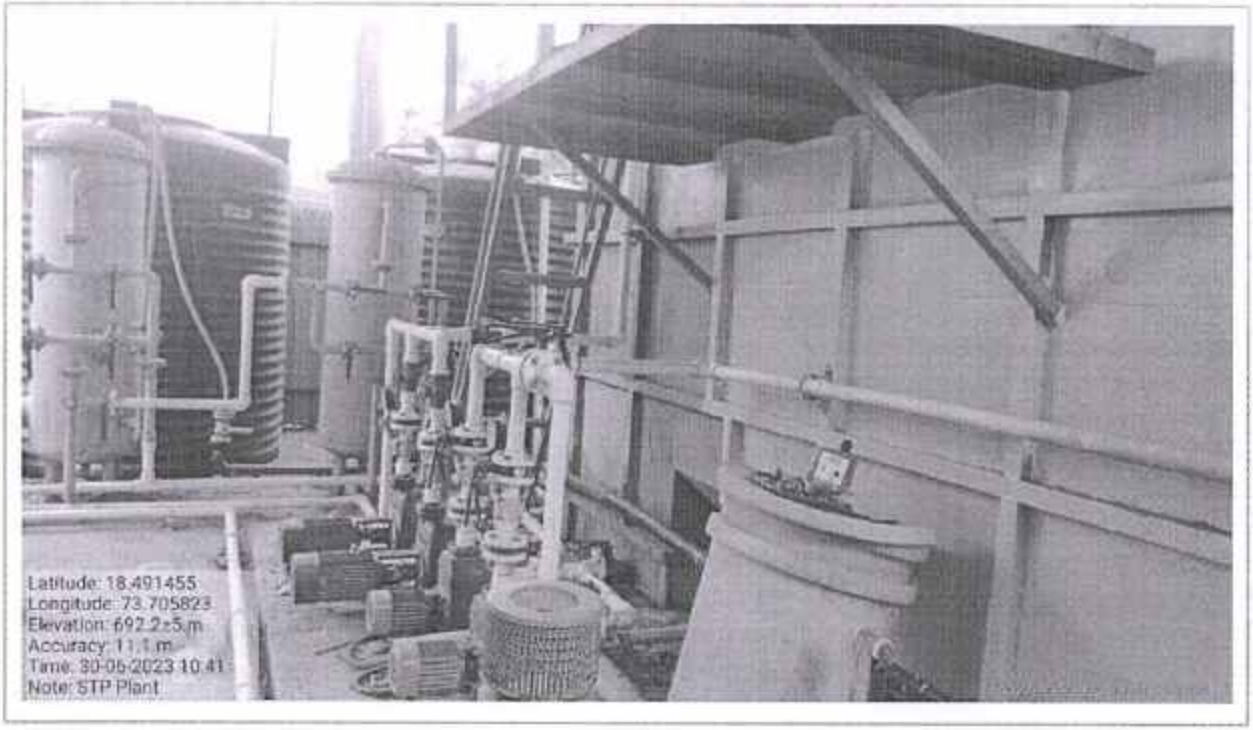
Sewage treatment may also be referred to as wastewater treatment. However, the latter is a broader term that can also refer to industrial wastewater. For most cities, the sewer system will also carry a proportion of industrial effluent to the sewage treatment plant that has usually received pre-treatment at the factories to reduce the pollutant load. If the sewer system is a combined sewer, then it will also carry urban runoff (storm water) to the sewage treatment plant. Sewage water can travel towards treatment plants via piping and in a flow aided by gravity and pumps. The first part of the filtration of sewage typically includes a bar screen to filter solids and large objects that are then collected in dumpsters and disposed of in landfills. Fat and grease are also removed before the primary treatment of sewage.

OBSERVATION

1. In college premises there are number of buildings where water is used for domestic purpose.
2. Waste water generated in college mainly in canteen, toilets blocks etc
3. Waste water generated in the college is treated in Sewage Treatment Plant installed by college.
4. Treated water in Sewage Treatment Plant is reused for gardening purposes in the college.
5. It is also saves lot of water due to recycling of waste water daily.
6. College has very well maintained and operate Sewage Treatment Plant regularly for treating sewage water

Sewage Treatment Plant





RECOMMENDATION

1. It is also recommended that put name board of Sewage Treatment Plant, capacity, flow diagram, operating manual of Sewage Treatment Plant in Sewage Treatment Plant room.

GREEN BELT OR FOREST COVER IN THE COLLEGE PREMISES

INTRODUCTION

Tree-planting is the process of transplanting tree seedlings, generally for forestry, land reclamation, or landscaping purpose. It differs from the transplantation of larger trees in arboriculture, and from the lower cost but slower and less reliable distribution of tree seeds.

In silviculture the activity is known as reforestation, or afforestation, depending on whether the area being planted has or has not recently been forested. It involves planting seedlings over an area of land where the forest has been harvested or damaged by fire, disease or human activity. Tree planting is carried out in many different parts of the world, and strategies may differ widely across nations and regions and among individual reforestation companies.

Tree planting is grounded in forest science, and if performed properly can result in the successful regeneration of a deforested area. Reforestation is the commercial logging industry's answer to the large-scale destruction of old growth forests, but a planted forest rarely replicates the biodiversity and complexity of a natural forest. Because trees remove carbon dioxide from the air as they grow, tree planting can be used as agro engineering technique to remove CO2from the atmosphere.

OBSERVATION

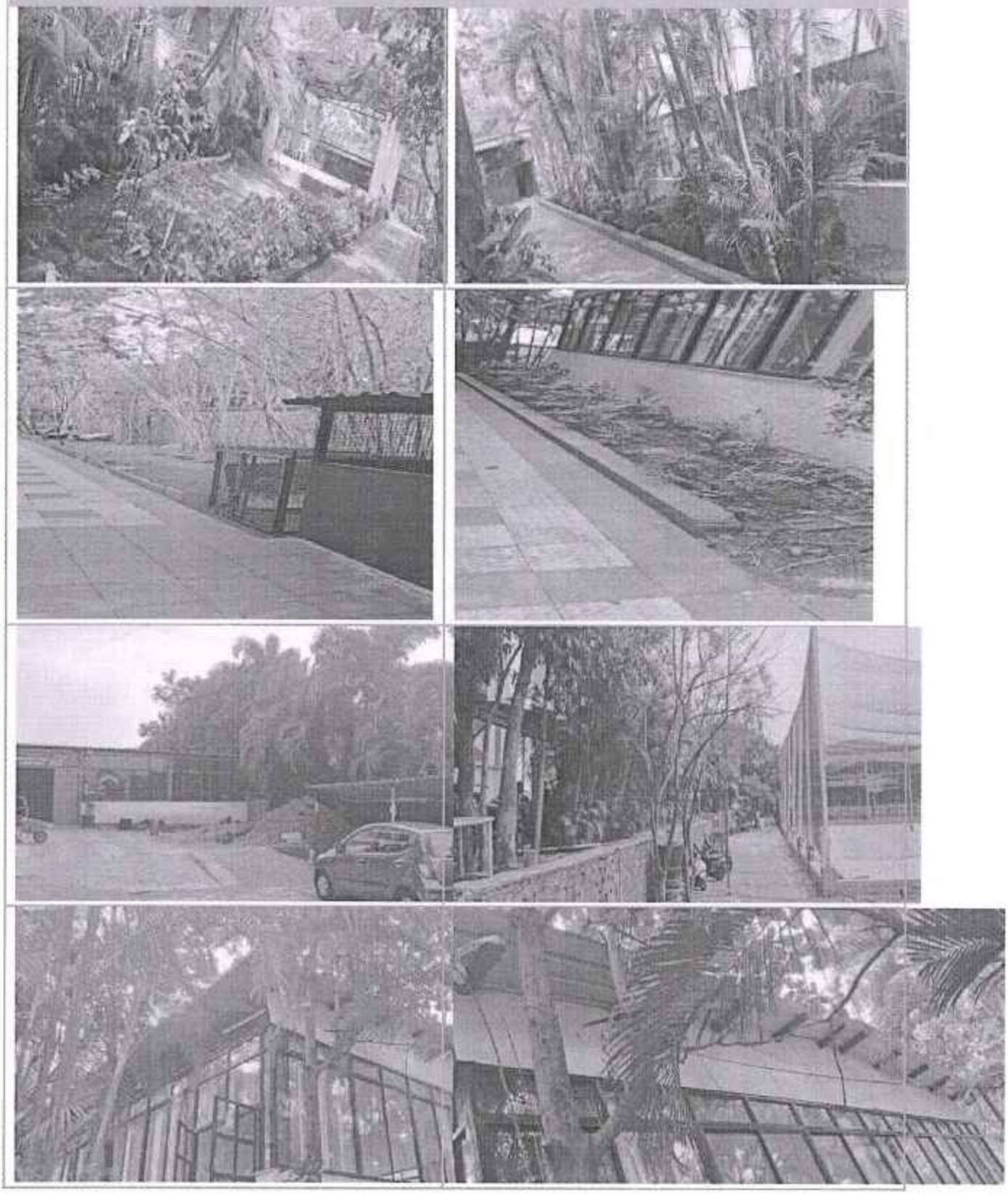
1. Green landscaping with trees and plants: The campus has housed various trees to maintain the green environment and reduce carbon footprint. An experienced gardener is recruited who takes care of all the trees inside the campus. Around 20% of the total campus area is covered under green landscaping

2. PIBM campus is located at a scenic and green location of Pirangut area. The authority is very careful about preserving the green environment surrounding the campus. Various initiatives are taken and proper maintenance policy followed for preserving the environment. A full-time gardener is on campus to take care of the trees planted in the campus.

3. College taking intuitive of tree plantation with the help of students and staff in region.

Number trees planted in the college premises

Number trees planted in the college premises



WATER QUALITY AND MANAGEMENT SYSTEMS

1. TDS LEVEL OF WATER

INTRODUCTION

The water we drink contains essential salts and minerals like calcium, potassium and magnesium, besides hydrogen and oxygen.

These minerals make up the acceptable levels of TDS (Total Dissolved Solids). Besides, these minerals, the source water contains heavy impurities like arsenic, antimony, lead, iron, etc. It also includes carbonates, fluorides, sulphides and other salts picked along the way. These contaminates enhance the TDS levels to unacceptable levels.

BIS (Bureau of Indian Standards) determines the TDS acceptability levels in drinking water. In India, drinking water can contain TDS up to 500 ppm. BIS has constituted the following table that could clarify the matters further.

TDS level (PPM)		Reasons for acceptability or non-acceptance
less than 50	Unacceptable	The water with these TDS level does not contain the minerals required for healthy growth
50 - 150	Acceptable	Such TDS levels are usually due to minor industrial contamination
150 - 250	Acceptable	BIS considers water with this TDS levels as the healthiest of all because it is excellent for cardiovascular health
250 - 350	Acceptable	Many areas in India depends on groundwater or bore wells for their water requirements. This water contains essential minerals hence is in acceptance range
350 - 500	Fair	The maximum TDS levels acceptable for human consumption is 500
above 500 - 1200	Not Acceptable	BIS does not recommend ant TS level above 500 as fit for human consumption. However, water with TDS levels up to 1200 can be subjected to purification using Reverse Osmosis(RO) technology to eliminate TDS and bring it down to acceptable levels

OBSERVATION

1. Drinking water requirement of college is fulfilled by water tanker water after its purification by RO system.
2. Domestic water requirement of college is fulfil by bore well water as well as water tanker water.

TDS level of water

Drinking water	Water tanker water
⃠- Need to maintain above 50	√- Acceptable

	TDS	Acceptability
	ppm	
Drinking water	14	Need to improve above 50
Water tanker water	49	Acceptable

RECOMMENDATION

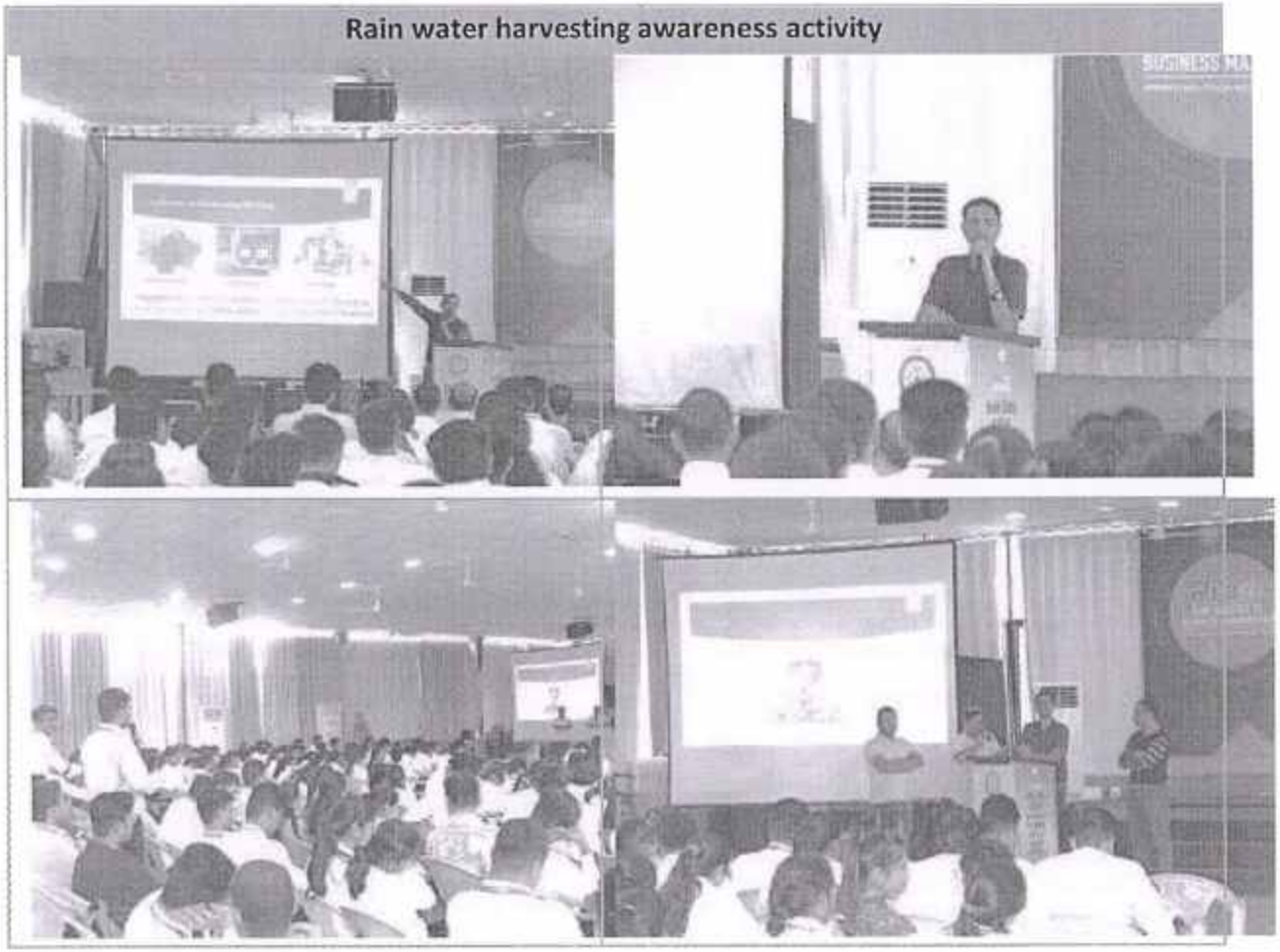
To increase the TDS level of drinking water by controlling TDS of water purification system as current TDS of drinking water is below acceptable level.

2. RAIN WATER HARVESTING- COLLEGE PREMISES

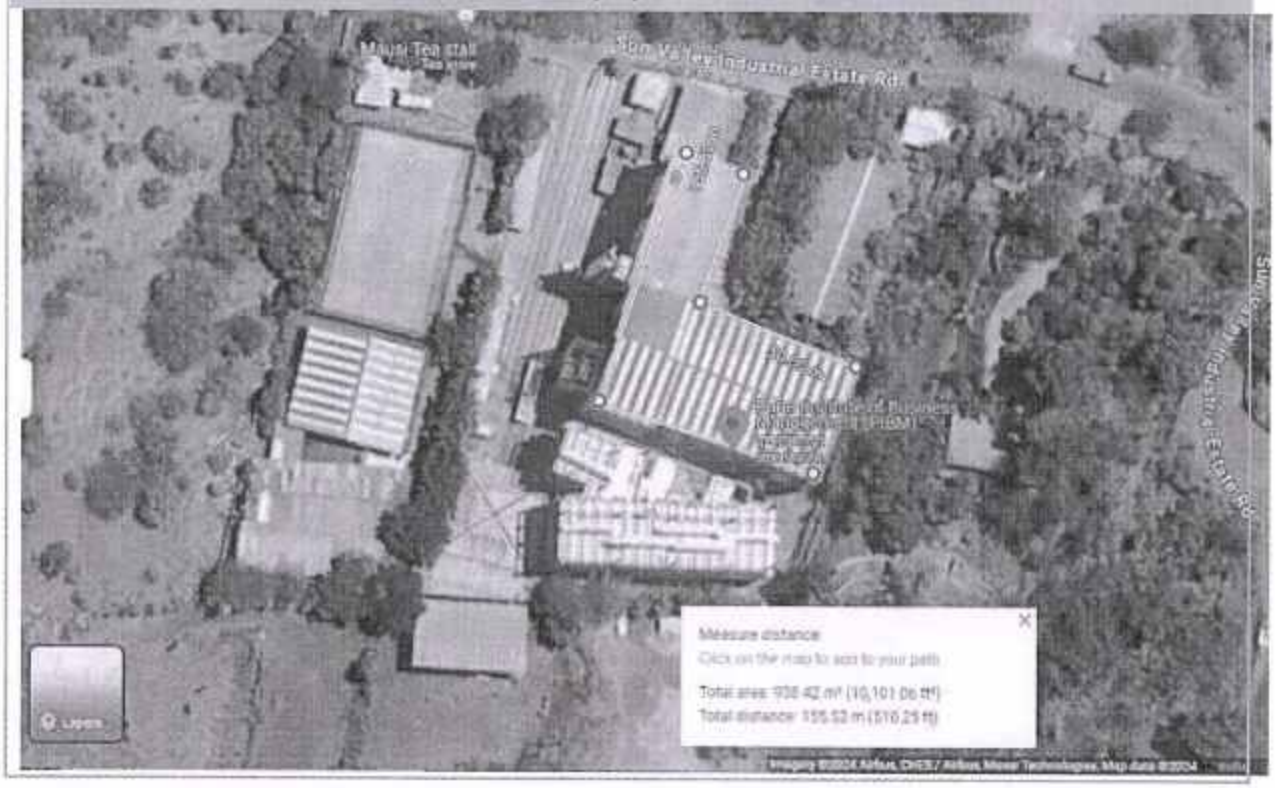
OBSERVATION

1. College has not implemented rain water harvesting in college premises.
2. College has large rooftop space from where large amount of rain water can be collected in rainy season.
3. College has plans to invest in such facilities in future and attempt to improve the overall water consumption and water conservation practices at the institution
4. College has taken initiative on rain water harvesting awareness and taken seminars.

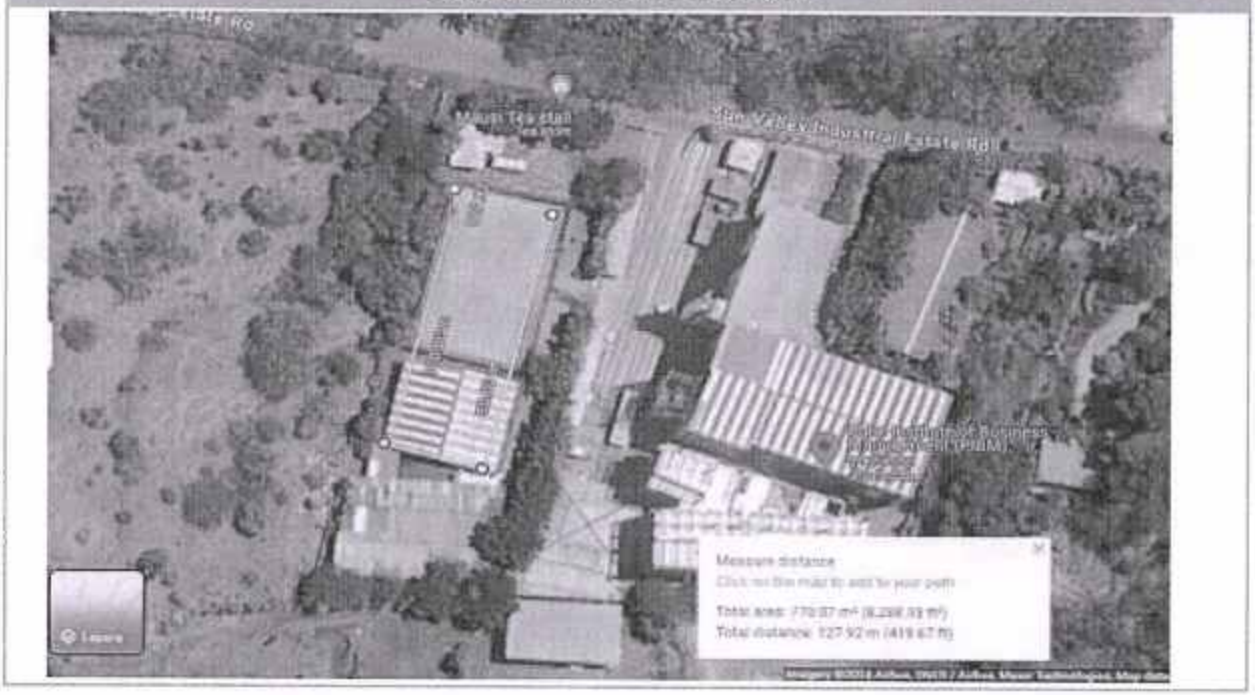
Rain water harvesting awareness activity



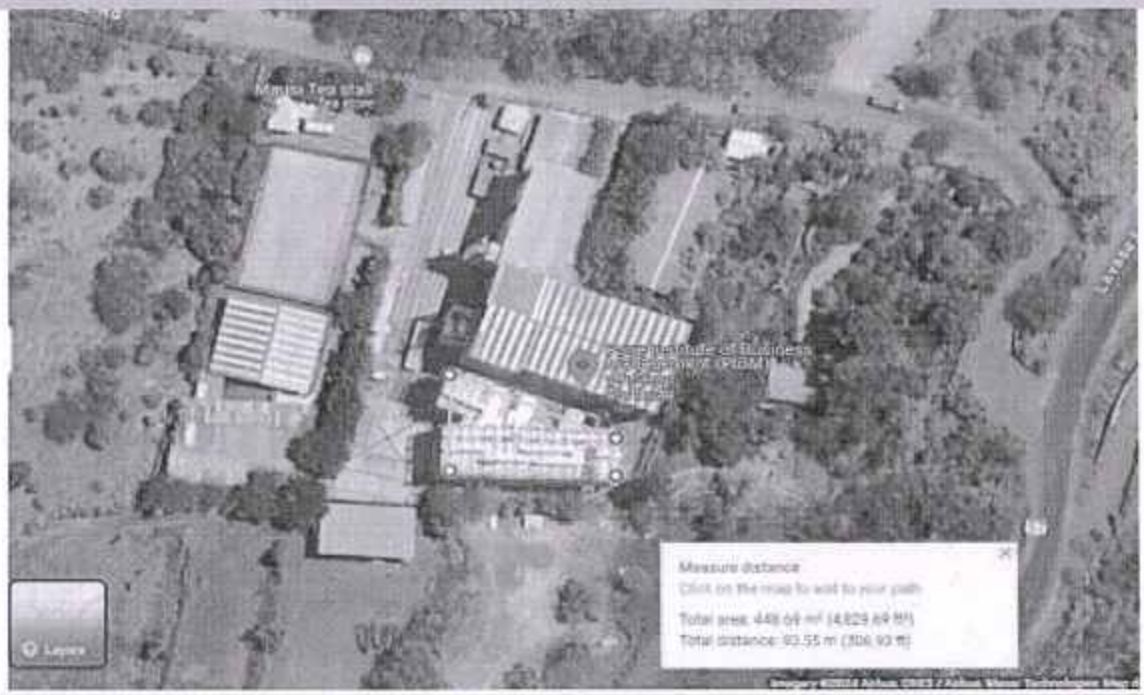
Solar rooftop space available



Solar rooftop space available



Solar rooftop space available



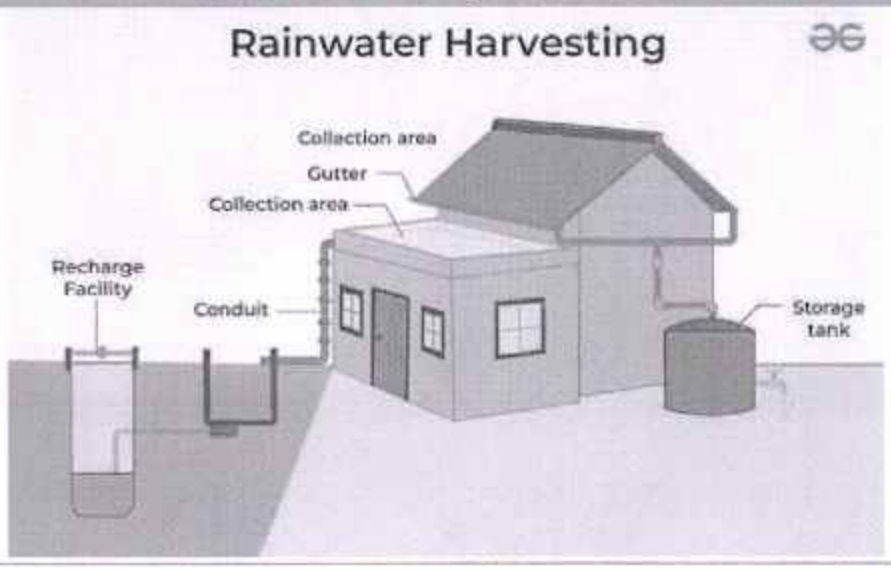
RECOMMENDATION

1. It is recommended that implement rainwater harvesting system in the college to save water in rainy season. Saved water can be used for domestic purposes like bathroom, flushing etc.

2. For rainwater harvesting college can use water tanks on ground for collection of rainwater or can construct underground water tanks.

3. College can also recharge less water supplying bore well for increasing ground water table water.

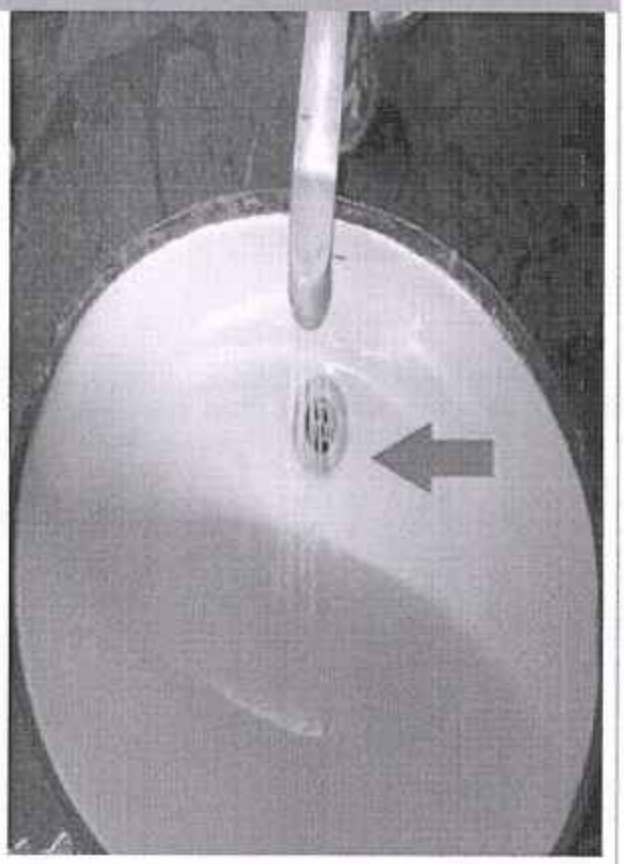
Rainwater harvesting various methods



3. WATER TAP REDUCER

OBSERVATION

1. College has conventional water tap system in the area like bathrooms, toilets, canteen etc.
2. Conventional water tap system consumes or requires more water for the purpose of washings, cleanings etc.

Conventional Tap water system in college	Tap water system with efficient reducer
	
Existing tap water system uses more water while during purpose of washing of utensils, hands etc in college.	Use such more efficient reducer to tap water for purpose of washing of utensils, hands etc which reduces flow of water and ultimately saves the water.
⊘	√

RECOMMENDATION

It is recommended that use the water reducer for water taping system. This helps saving the volume of water and subsequently energy cost of pumping also.

AIR QUALITY

INTRODUCTION

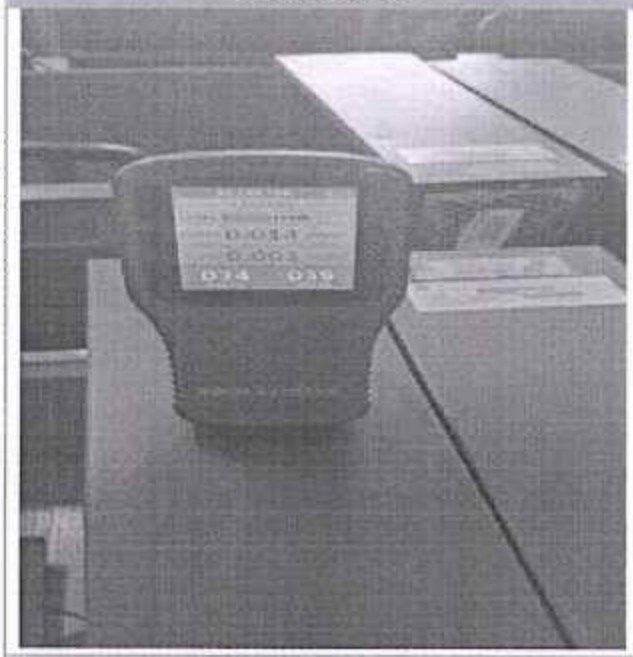
Indoor air is considered to be healthy when the air does not contains contamination in harmful concentrations and is acceptable when the majority of people feel satisfied. A human being breathes about 12,000 litres of air every day and is vital for our health. Exposure to hazardous airborne agents present in indoor space causes adverse effects such as respiratory and cardiovascular diseases, allergy and irritation of the respiratory tract and possibly leads to cancer.

Main source of indoor air pollutants are from outdoor air, household cooking (especially cooking with biomass or frying), tobacco smoking, polluted ambient air, cleaning agents, resuspension of dust during the cleaning activities, construction materials and paints, copy machines and printers as well as other human activities. Ambient air pollutant sources are vehicle emissions, thermal power plants, biomass burnings, construction work, unattended debris, open sewage pipes, fossil fuel based power generation and various industrial processes etc.

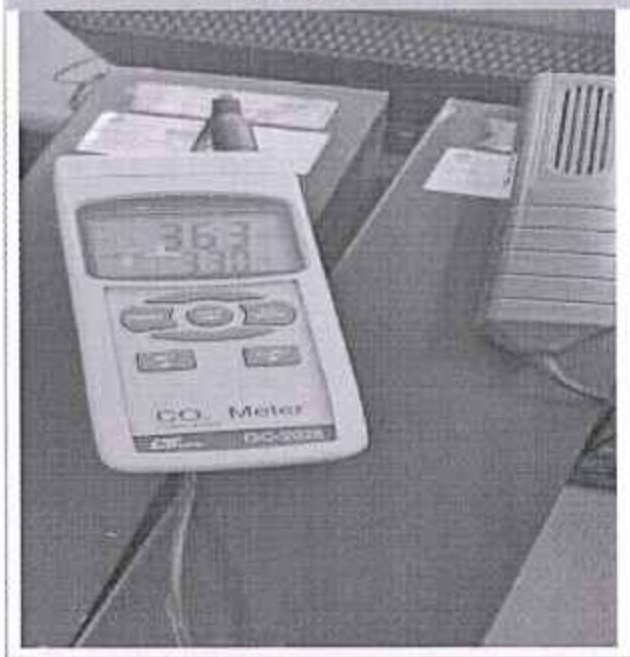
Threshold values for indoor air quality parameters				
Parameters	**Classification**			
	Class A	**Class B**	**Class C**	
Level	**Aspirational**	**Acceptable**	**Marginally acceptable**	
CO2	Ambient+350	Ambient+500	Ambient+700	ppm
PM2.5	<15	<25	<25	ppm
PM10	<50	<100	<100	ppm
HCHO	30			ppm
TVOC	<200	<400	<500	ppm
Occupational satisfaction	**90**	**80**	-	%

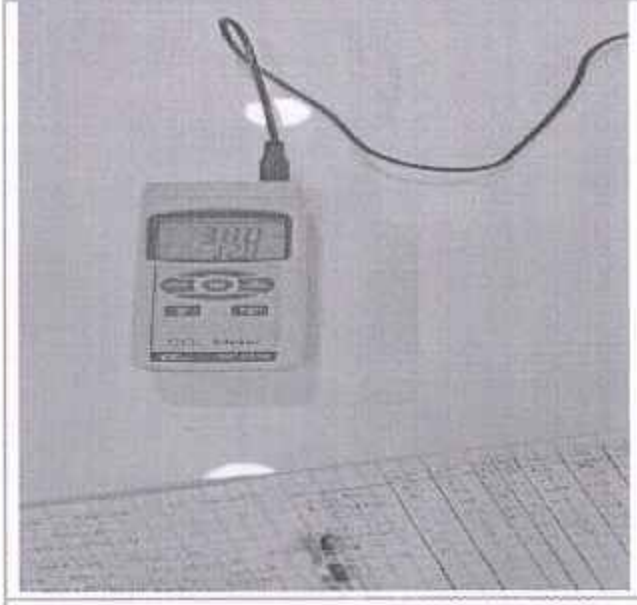
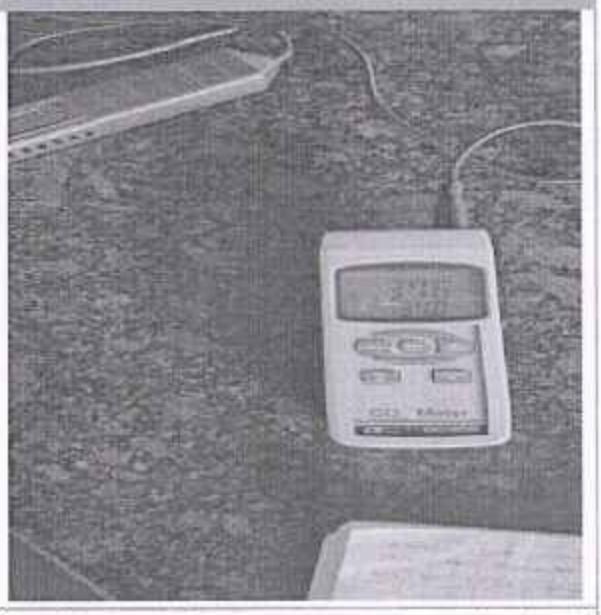
OBSERVATION

1. In college air quality is at good/ aspirational level.
2. Only the place where construction of building is going on, air quality is at not acceptable level.

Computer lab	Media lab
	
√-Aspirational	√-Aspirational

G-3	Canteen
	
√-Aspirational	√-Aspirational

Computer lab	Media lab
	
√-Aspirational	√-Aspirational

G-3	Canteen
	
√-Aspirational	√-Aspirational

Location	CO2	PM2.5	PM10	HCHO	TVOC	Level
	ppm	ppm	ppm	ppm	ppm	
Class room	419	63	73	0	1	Acceptable
Academic office	475	62	71	8	34	Acceptable
Library	488	39	45	11	160	Acceptable
Reading room	419	36	41	10	167	Acceptable
Faculty room	411	32	37	6	1	Acceptable
Computer lab-1	363	35	40	10	0	Acceptable
Media lab	429	36	41	10	3	Acceptable
G-3	380	42	48	10	3	Acceptable
Canteen	376	29	33	8	2	Acceptable
New building ground floor	390	32	37	7	0	Acceptable
New building first floor	392	31	35	10	0	Acceptable

DAY LIGHT ILLUMINATION/COMFORT

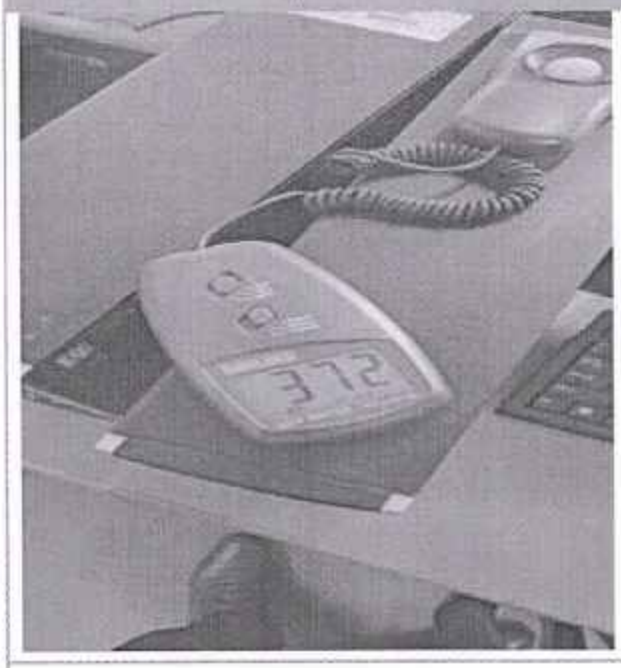
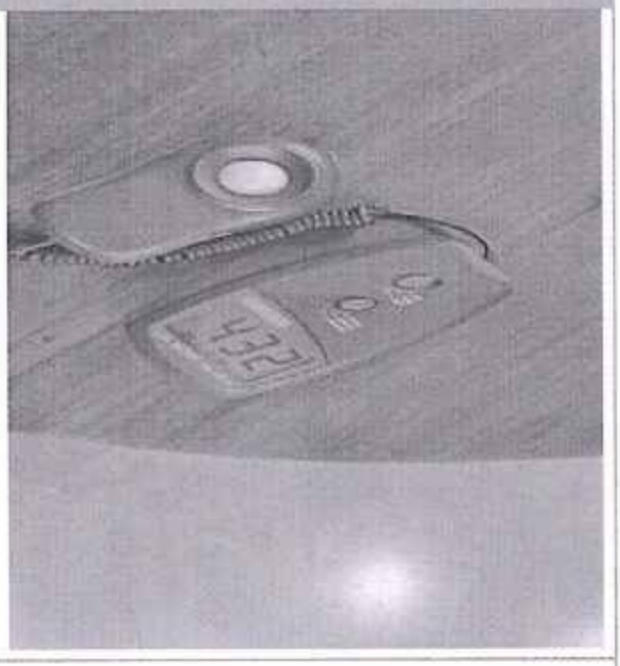
INTRODUCTION

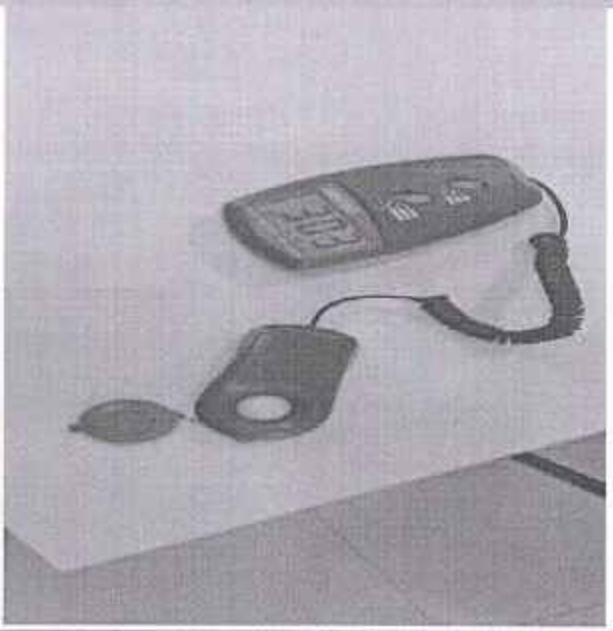
Light has significant impact on many body functions, including the nervous system, circadian rhythms, pituitary gland, endocrine system, pineal gland and alertness as these are affected by different wavelengths of light.

Variations over time in lighting conditions, in terms of intensity, illumination levels, distribution, ambient lighting and colour temperature, can stimulate alertness and well-being of people.

Threshold IL luminance level		
Building type	**Type of space**	**IL luminance**
		Lux
Educational institutes	Classrooms	500
	Corridors	100
	Teachers rooms	300
	Libraries	500
	Offices	300

OBSERVATION

Computer lab	Media lab
	
Within permissible limit	Within permissible limit

G-3	Canteen
	
Within permissible limit	Within permissible limit

Location	IL luminance	Limits/Levels
	Lux	
Class room	438	within permissible limits
Academic office	248	within permissible limits
Library	346	within permissible limits
Reading room	1201	within permissible limits
Faculty room	228	within permissible limits
Computer lab-1	373	within permissible limits
Media lab	432	within permissible limits
G-3	303	within permissible limits
Canteen	382	within permissible limits
New building ground floor	1055	within permissible limits
New building first floor	821	within permissible limits

INFRASTRUCTURE OF COLLEGE

1. COLLEGE INFRASTRUCTURE

INTRODUCTION

College campus comprises of various buildings as main college building, new building, Canteen, Library, Gymkhana, etc. Parking area, central playing ground and underground water tank bodies for storage of water, sewage treatment plant etc

OBSERVATION

Sr. No.	Locations	Space
1	Main college building	Spacious
2	New college building	Spacious
3	Library & Reading hall	Spacious
4	Canteen	Spacious
5	Gymkhana	Spacious
6	Toilet Blocks	Spacious
7	Parking Area	Spacious
8	Passage	Spacious
9	Class rooms	Spacious
10	Staircase	Spacious
11	College premises	Spacious

ASSESSMENT OF COLLGE CAMPUS BUILDING INFRASTRUCTURE

Sr. No.	Locations	Space	Ventilation	Natural Light	Cleanliness	Remark
1	Main college building	Spacious	Excellent	Very Good	Excellent	
2	New college building	Spacious	Good	Very Good	Good	
3	Library & Reading hall	Spacious	Excellent	Very Good	Excellent	
4	Canteen	Spacious	Excellent	Very Good	Excellent	
5	Gymkhana	Spacious	Good	Very Good	Good	
6	Toilet Blocks	Spacious	Good	Good	Excellent	
7	Parking Area	Spacious	Excellent	Very Good	Good	
8	Passage	Spacious	Excellent	Very Good	Excellent	
9	Class rooms	Spacious	Excellent	Very Good	Excellent	
10	Staircase	Spacious	Excellent	Very Good	Excellent	
11	College premises	Spacious	Excellent	Very Good	Excellent	

NO VEHICLE DAY INITIATIVE

OBSERVATION

1. Public Transport: To reduce the effect of carbon emission, PIBM provides a bus facility for all the students and staff who wishes to avail the service. The commute to and from the campus is facilitated by the bus service, this reducing the need for individual transport for both staff and students.
2. Private vehicles are also used in college for transportation purposes.
3. It contributes the CO2 emission due to burning of petrol or diesel in the vehicles.

Parking area of college

Parking area of college

SAVING MEASURES

Saving due to no vehicle day		
Number of private vehicles in college premises	100	nos
Average running of vehicle	5	km/vehicle
Average fuel required	25	litres/day
Average cost of fuel	1125	INR/day
Number of Saturday per month	4	nos
Average fuel save	100	litres/month
Average cost save	4500	INR/month
Average CO2 emission reduction per month	0.27	tonnes of CO2e
Average CO2 emission reduction per year	3.216	tonnes of CO2e

RECOMMENDATION

It is recommended that college take initiative of No Vehicle Day once every week to reduce the CO2 emission reduction due to fuel burning.

OTHER ENERGY EFFICIENT, GREEN, WASTE RECDUCTION PRACTICES BY THE COLLEGE MANAGEMENT

1. WASTE MANAGEMENT (SCRAPS LIKE PLASTIC, PAPER, / E- WASTE/ BIO WASTE ETC MANAGEMENT)

INTRODUCTION

College have good policy and maintained the record for solid waste generated in the college like old newspapers, books, scrap boxes, etc.

E-WASTE MANAGEMNT

Electronic waste or e-waste describes discarded electrical or electronic devices. Used electronics which are destined for reuse, resale, salvage, recycling, or disposal are also considered e-waste. Informal processing of e-waste in developing countries can lead to adverse human health effects and environmental pollution.
Electronic scrap components, such as CPUs, contain potentially harmful components such as lead, cadmium, beryllium, or brominates flame retardants. Recycling and disposal of e-waste may involve significant risk to health of workers and communities in developed countries and great care must be taken to avoid unsafe exposure in recycling operations and leaking of materials such as heavy metals from landfills and incinerator ashes.

The environmental impact of the processing of different electronic waste components

E-Waste Component	Process Used	Potential Environmental Hazard
Cathode ray tubes (used in TVs, computer monitors, ATM, video cameras, and more)	Breaking and removal of yoke, then dumping	Lead, barium and other heavy metals leaching into the ground water and release of toxic phosphor
Printed circuit board (image behind table – a thin plate on which chips and other electronic components are placed)	De-soldering and removal of computer chips, open burning and acid baths to remove metals after chips are removed	Air emissions and discharge into rivers of glass dust, tin, lead, brominated dioxin, beryllium cadmium, and mercury
Chips and other gold plated components	Chemical stripping using nitric and hydrochloric acid and burning of chips	PAHs, heavy metals, brominated flame retardants discharged directly into rivers acidifying fish and flora. Tin and lead contamination of surface and groundwater. Air emissions of brominated dioxins, heavy metals, and PAHs
Plastics from printers, keyboards, monitors, etc.	Shredding and low temp melting to be reused	Emissions of brominated dioxins, heavy metals, and hydrocarbons
Computer wires	Open burning and stripping to remove copper	PAHs released into air, water, and soil.

OBSERVATION

1. Recyclable Material: Solid waste that is recyclable is directly given to a local waste management plant. A vehicle collects all recyclable materials from the campus and recycles them for further use.

2. Reusable Material: Reusable material such as wooden structure, metal is used for various support works carried out at the institution and hostels.

3. E-Waste (Obsolete but functional): According to the routine up gradation of IT Policy, a few part and peripherals are discarded from further use. A few of them though functional, cannot be used further due to standard practice. Those material are donated to a Government school in the Bhugaon area.

4. E-Waste (Non-functional parts): Those parts that have become completely non-functional are discarded properly and provided to the local recyclable plant that collects solid wastes. College also preparing to sign MoU local recyclable plant.

5. This helps to reduce the CO2 emission reduction due to recycling of the solid waste.

6. College has maintained and placed number of waste collection dust bin everywhere in campus.

7. Bio-waste management: - College has also placed sanitary pad disposal machines in girl's washroom.

Sale of scrap

Pune Institute of Business Management
Gat No. 605/1, Mukaiwadi Road,
Pirangut, Tal.- Mulshi, Dist.- Pune
Pune - 412115

Sale of Scrap
Ledger Account

1-Apr-2023 to 31-Mar-2024

Date	Particulars	Vch Type	Vch No./Excise Inv.No.	Debit	Credit	Balance
27-4-2023	By Cash Being Cash Recived Agaist Sale Of Canteen Scrap	Receipt	66		1,060.00	1,060.00 Cr
15-5-2023	By Cash Being Cash Received Agaist Sale Of Canteen Scrap	Receipt	94		750.00	1,810.00 Cr
19-5-2023	By Cash Being Cash Received Agaist Sale Of Scrap & Raddi	Receipt	112		3,148.00	4,958.00 Cr
29-5-2023	By Cash Being Cash Recived Agaist Sale Of Scrap	Receipt	130		620.00	5,578.00 Cr
12-6-2023	By Cash Being Cash Received Agaist Sale Of Canteen Scrap	Receipt	169		710.00	6,288.00 Cr
3-7-2023	By Cash Being Cash Received Agaist Sale Of Canteen Scrap	Receipt	220		1,010.00	7,298.00 Cr
18-7-2023	By Cash Being Cash Received Agaist Sale Of Canteen Scrap dt. 18-7-2023.	Receipt	251		1,200.00	8,498.00 Cr
4-8-2023	By Cash Being Cash Received Agaist Sale Of Canteen Scrap	Receipt	294		966.00	9,464.00 Cr
11-9-2023	By Cash Being Cash Received against Sale Of Canteen Scrap	Receipt	403		1,629.00	11,113.00 Cr
27-9-2023	By Cash Cash Recived Agaist Canteen Scrap Sale	Receipt	462		1,457.00	12,570.00 Cr
5-10-2023	By Cash Being Amount received campus scrap sale cash received - By Satish	Receipt	499		7,000.00	19,570.00 Cr
7-10-2023	By Cash Being cash received Scarp sale	Receipt	505		920.00	20,490.00 Cr
26-10-2023	By Cash Being cash received Scrap sale	Receipt	536		1,524.00	22,014.00 Cr
3-11-2023	By Cash Being Cash Recived Agaist Sale Of Canteen Scrap	Receipt	570		1,105.00	23,119.00 Cr
	Carried Over				23,119.00	

Sale of scrap

IAEER'S

Pune Institute of Business Management

Gat no. 605/1, Mukundwadi Road, Pirangut, Tal. Mulashi, Dist Pune.-412115

Pibm

Canteen Scarp Sale Detais

Date :- 12/04/2024

Name of Vendor:-Mr Hanuman Jadav

Contact Details :-8308301159

Type of Material :- Oil Tin

Sr. No	Description	Qty	Rate	Amount (Rs)
1	Oil Tin 15 ltr New	52	27	1,404.00
2	Oil Tin 15 ltr Rusted	32	10	320.00
3	Carton Box	28	5	140.00
	Total			1,864.00

Sold By
Store Manager

Approved By
HOD

Checked By
Canteen Manager

Security

Accountant

Institute of Business Management Accounts Pune

Sale of E-waste

Pune Institute of Business Management

Date:07-08-2019

To,
Account Department
PIBM Pune

SUBJECT: E-waste sell to PUNA GREEN Ganesh peth Pune

SR.NO	Perticuler	Qty	Rate	Amount	Total
1					
2	E-waste	300KG		Lumsum amount	6000.00
3					
4					
5					
6					
7					
8					
9					
10					
				Total	6000.00

Total Six Thousand only

Encloser:- 1. List Attached
NOTE:-All system checked by IT team- system were not repairable. After that process all items was disposed off.

Prepared by

Checked By
07/8/19
IT HEAD

Checked By
08/08/2019
HOD

Checked By
CFO

Approved By

Executive Director

Received cash
1/8/2019

Pune Institute of Business Management * Pune * Accounts

Sale of E-waste

EWASTE

Sr No	Description	Qty	Remarks
1	CPU	46	
2	UPS	11	
3	EPABX Box	1	
4	Tripod	12	
5	Motherboard	4	
6	SMPS	51	
7	Hard Disk	31	
8	RAM	23	
9	Telephone	16	
10	Speaker	1	
11	Router	3	
12	UPS Battery	13	
13	Headphone	1	
14	Projector	1	
15	Monitor	9	
16	Xerox Workstation	1	
17	CRT Monitor	6	
18	Mic Reciever With Audiobox	8	
19	Keyboard	58	
20	Mouse	42	

Pune Institute of Business Management * Pune *

Maharashtra Pollution Control Board (MPCB) certificate

MAHARASHATRA POLLUTION CONTROL BOARD

Phone : [illegible]
Fax : [illegible]
Email : [illegible]
Website : www.mpcb.gov.in

[illegible]
Mumbai - 400 022

Red/S.S.I/Dismantler
UAN: MPCB-CONSENT-0000019128
Consent No: BO/MPCB/BO(HQ)/COB 18 07 0 0 0 [illegible] Date: 07/04/2018

Consent to operate under Section 26 of the Water (Prevention & Control of Pollution) Act, 1974 & under Section 21 of the Air (Prevention & Control of Pollution) Act, 1981 and Authorization / Renewal of Authorization under Rule 6 of the Hazardous & Other Wastes (Management & Transboundary Movement) Rules 2016 & Authorization / Renewal of Authorization under Rule 13 of the E-Waste (Management) Rules, 2016.

[To be referred as Water Act, Air Act and HOW (M&TM) Rules respectively].

CONSENT is hereby granted to,

M/s. Pune Greens Electronic Waste Recycler Pvt. Ltd.,
S. No. 63/1, B/4/1, Handewadi Road,
Hadpsar, Pune.

Located in the area declared under the provisions of the Water Act, Air act, Authorization under the provisions of HOW (M&TM) Rules, the E-Waste (M) Rules, 2016 and amendments thereto and subject to the provisions of the Act and the Rules and the Orders that may be made further and subject to the following terms and conditions:

1. The Consent to operate is valid up to 31/05/2023

[Subject to having Authorisation from MPCB as "E-Waste Dismantler" as per provisions of the Rule 13 (3) of the E-Waste (M) Rules, 2016.]

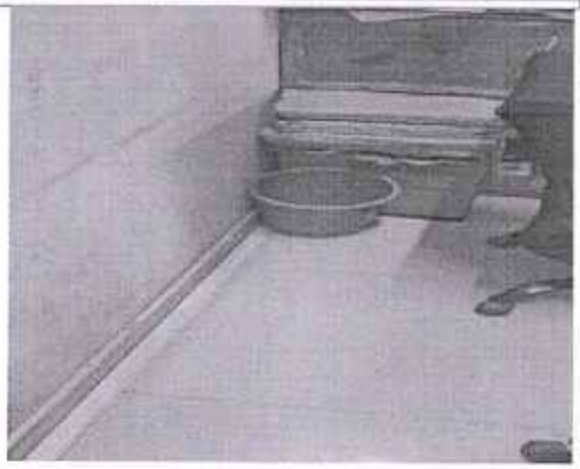
1. The Consent is valid for the activity of –

Sr. No.	Product Name	Electrical & electronic equipment code	Maximum Quantity
1.	Collection, segregation, refurbishing & dismantling E-Waste (Using Environmentally Sound technology as per E-Waste (M) Rules, 2016)	ITEW 1,2,3,4,5,6,7,8,9,10, 11,12,13,14,15,16 & CEEW 1,2,3,4	600 MTA

2. CONDITIONS UNDER WATER ACT:
(i) The daily quantity of trade effluent from the factory shall be NIL.
(ii) The daily quantity of sewage effluent from the factory shall not exceed 9.3M³.
(iii) [illegible] Treatment & Disposal :--
[illegible] Treatment: The applicant shall provide comprehensive [illegible] with reference to influent quality and [illegible] maintain the [illegible] continuously so as to achieve the quality of [illegible] to the following standards:

[illegible] Electronic Waste Recycler Pvt. Ltd. UAN 29128 1

Waste collection dust bins in college campus



Bio-waste management: Sanitary pad disposal machine

2. TREE PLANTATION, SOIL CONSERVATION

INTRODUCTION

Tree-planting is the process of transplanting tree seedlings, generally for forestry, land reclamation, or landscaping purpose

In silviculture the activity is known as reforestation, or afforestation, depending on whether the area being planted has or has not recently been forested. It involves planting seedlings over an area of land where the forest has been harvested or damaged by fire, disease or human activity. Tree planting is carried out in many different parts of the world, and strategies may differ widely across nations and regions and among individual reforestation companies. Tree planting is grounded in forest science, and if performed properly can result in the successful regeneration of a deforested area. Reforestation is the commercial logging industry's answer to the large-scale destruction of old growth forests, but a planted forest rarely replicates the biodiversity and complexity of a natural forest.[citation needed]

Because trees remove carbon dioxide from the air as they grow, tree planting can be used as a geoengineering technique to remove CO2 from the atmosphere.

Canopies in tropical and temperate forests can be important habitats for many animals and plants. A dense canopy cover will let little light reach the ground and will lower temperatures.
The canopy protects the ground from the force of rainfall and makes wind force more moderate

OSERVATION

1. College has planted the number trees in college campus area to make it more environment friendly.
2. College taking intuitive of tree plantation with the help of students and staff in region.

Tree plantation activity

Tree plantation activity

3. PLASTIC AND PAPER FREE CAMPAIGN

INTRODUCTION

As single used plastic is hazardous to the environment as it is once used cannot be recycled. Also paper is used in college for various purposes like student assignments, official works etc.

OBSERVATION

1. Plastic-free campus: Keeping up with the Maharashtra Government's initiative of making whole Maharashtra a plastic-free zone, PIBM authority has also complied with the norms and follows a strict guideline against the usage of plastic inside the campus. Most of the plastic products are either replaced by durable material product or recyclable material. The shops inside the campus follow the same rule.
2. Paperless office: To encourage the green initiatives, PIBM has taken a pledge to make the campus a paper-free operation zone except for the academic one. Though a large number of academic operations are carried out paperless. The ERP system is in place that helped the authority greatly reduce the paper consumption in campus.

Example of sign board

RECOMMENDATION

- It is recommended that college can paste more attractive and more visible sign board everywhere in the college to create awareness among students, staff etc.

4. ENERGY EFFICIENT EQUIPMENTS AND AWARNESS

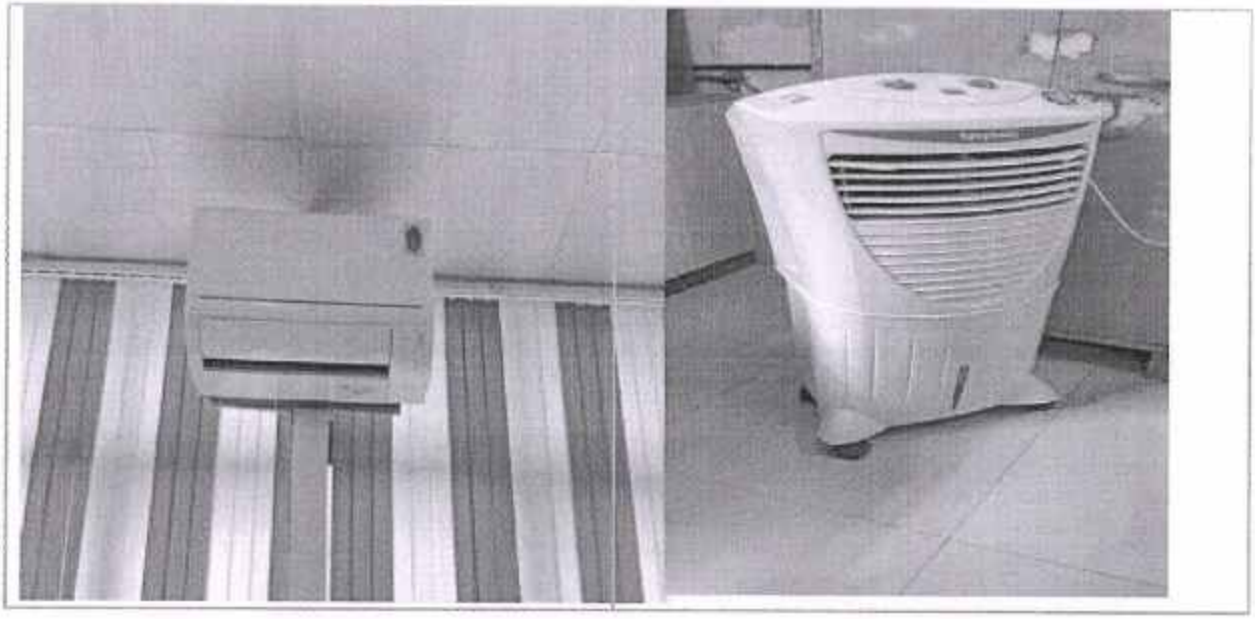
INTRODUCTION

Due to climate change and CO2 emission it is necessary to use energy efficient technologies. It helps to reduce the energy consumption without affecting the output. It also helps the reduced the CO2 emission reductions.

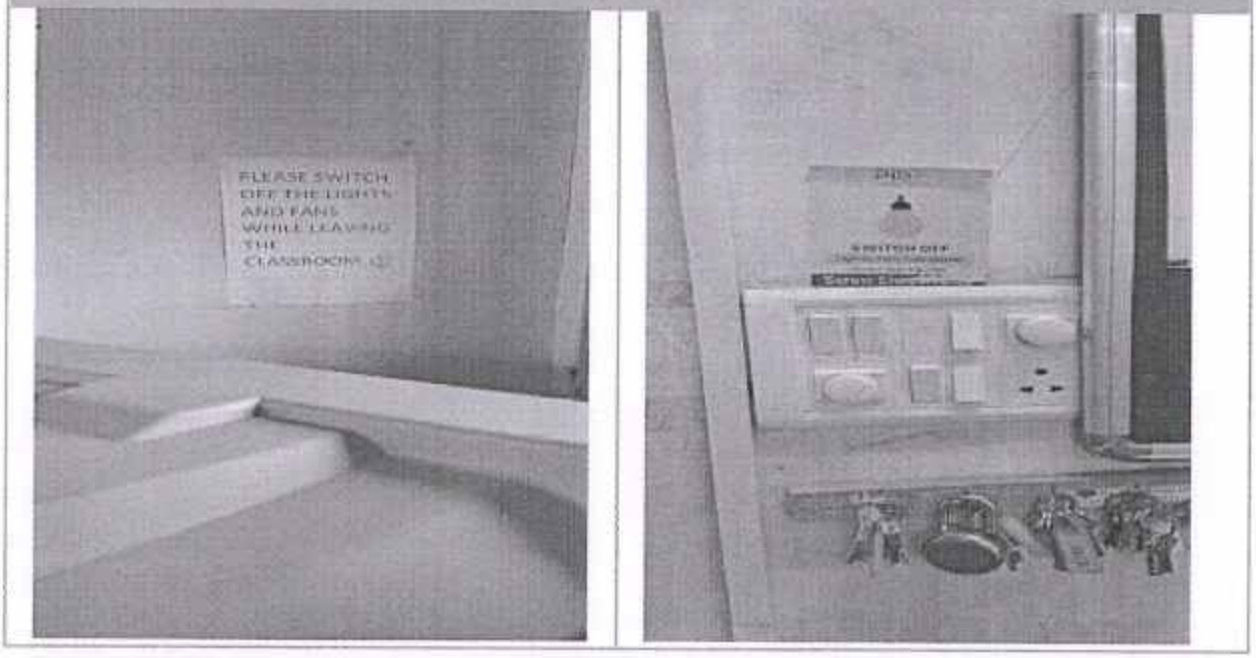
OSERVATION

1. College has taken step by step initiative to implement various energy efficient equipment/technologies the college.
2. College has implemented various energy efficient equipment like lighting, Air conditioners, Air coolers etc
3. College also create awareness of energy saving by implementing poster/sign boards at various locations.
4. College uses Air coolers instead of Air conditioners many places which is good practice to save energy in the hot and dry region of pune.
5. College has creating awareness of energy conservation by sign boards at various places.

Energy efficient equipment



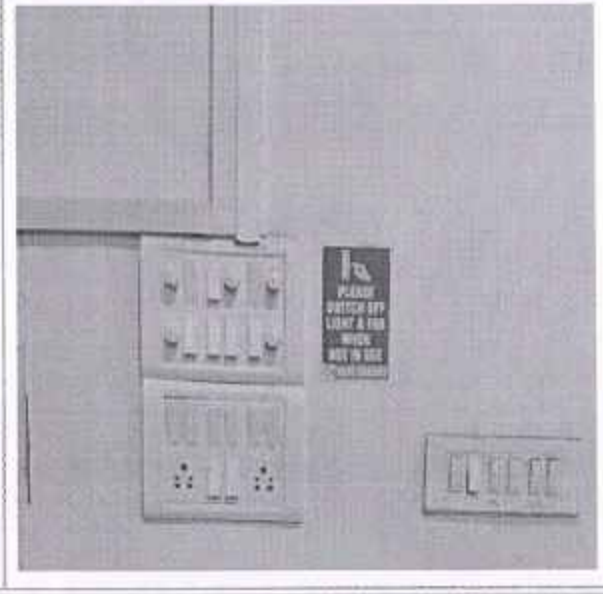
Energy conservation awareness sign boards implemented by college



RECOMMENDATION

College can paste more various attractive and informative sign boards for energy conservation in the college premises, class rooms, etc

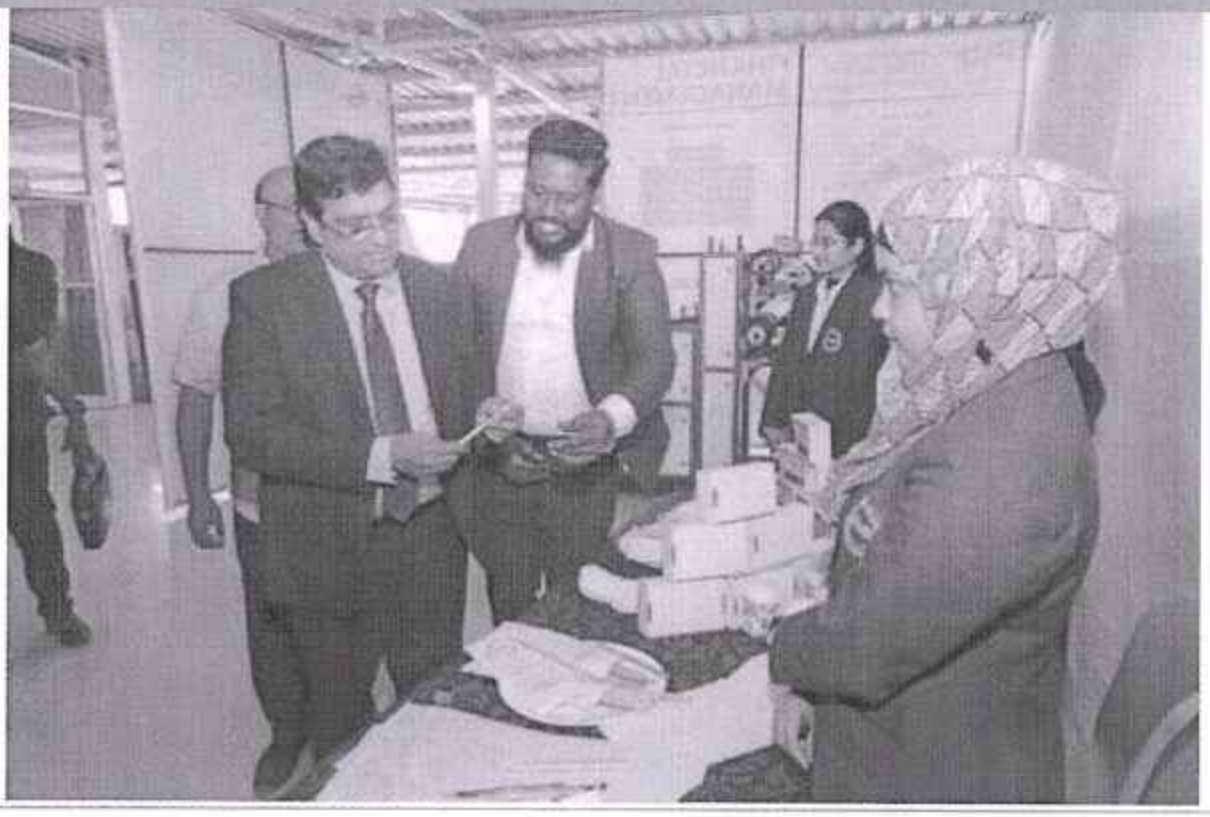
Example of Energy conservation awareness sign boards



5. OTHER ENVIRONMENTAL AWARNESS/ IMPEMENTATION PROJECTS IN COLLEGE PREMISES/REGION

Sanitary napkin manufacturing machine

Paper napkin and paper pencil manufacturing machine



Swachh Bharat Abhiyan

CSR ACTIVITY BY PUNE INSTITUTE OF BUSINESS MANAGEMENT

BATCH 2022-24

Name of the Event: Swachh Bharat Abhiyan

Date of the Event: 30th November 2022

Participants: PIBM Faculties (2) and Students ()

About the Program

As everyone is aware, plastic is a major contributor to environmental degradation, and many people are unaware of the serious harm it may inflict. So, on November 30, 2022, PIBM launched an initiative to promote cleanliness. Students from Batch 2022-24 carried out a CSR project, with the primary goal of making the city clean or raising awareness among the public.

our students cleaned different areas of Bhukum Village from Mainway (Entrance of the Village) to Ayushman Bharat (End of Village). They gathered all the waste from the roads, such as plastics, empty water bottles, garbage, and so on.

They scrubbed the roadways with a broom while taking hygienic precautions by donning gloves and a face mask, collecting all of the trash in a rubbish bag, and delivering it to the municipal corporation's cleaning vehicle.

Swachh Bharat Abhiyan, Road cleanliness activity

Swachh Bharat Abhiyan, Road cleanliness activity

Appreciation letter to college for Swachh Bharat Abhiyan

पिरंगुट इंग्लिश स्कुल व ज्युनिअर कॉलेज ऑफ सायन्स, पिरंगुट

[illegible]

जा.क्र. : 334/2022-23 दि. 30/11/2022

प्रति,
मा. संचालक साहेब,
पुणे इन्स्टिट्यूट ऑफ बिझनेस मॅनेजमेंट
पुणे

विषय : स्वच्छ भारत अभियानाबाबत.

महोदय,

[illegible]

आपला विश्वासू

मुख्याध्यापक
पिरंगुट इंग्लिश स्कूल, पिरंगुट,
ता.मुळशी, जि.पुणे

सत्यमेव जयते

ग्रामपंचायत भुकूम

स्थापना : १६/१०/१९९६

ता. मुळशी, जि. पुणे

(उपसरपंच)	(ग्रामसेवक)	(सरपंच)
मो.नं. [illegible]	मो.नं. [illegible]	मो.नं. [illegible]

जावक क्र. [illegible] दिनांक : 30/11/2[illegible]

प्रति,
मा.डायरेक्टर सो.
पुणे इन्स्टिट्यूट ऑफ बिझनेस मॅनेजमेंट २
मुकाईवाडी रोड,पिरंगुट पुणे

विषय :- ग्रामपंचायत भुकूम मध्ये मुख्य रस्ता ते गाव या ठिकाणी स्वच्छता अभियान राबविणे बाबत.

रिपोर्ट :- सरपंच / ग्रामसेवक ग्रामपंचायत भुकूम ता.मुळशी जि.पुणे

महोदय,

उपरोक्त संदर्भिय विषयास अनुसरून आपणास कळविण्यात येते की,आपल्या पुणे इन्स्टिट्यूट ऑफ बिझनेस मॅनेजमध्ये या संस्थेतर्फे ग्रामपंचायत भुकूम या ठिकाणी मुख्य रस्ता ते गाव या रस्त्यावरती स्वच्छता अभियान राबवून आपण गावातील नागरीकांना स्वच्छतेविषयी जनजागृती व प्रत्यक्ष स्वच्छता आपल्या स्टाफ व विद्यार्थी मार्फत करण्यात आली,त्या बद्दल ग्रामपंचायत भुकूम तर्फे आपले हार्दिक आभार.

Notice of college for cleanliness drive

PUNE INSTITUTE OF BUSINESS MANAGEMENT

APPROVED BY AICTE, MINISTRY OF HRD, GOVT. OF INDIA,
AFFILIATED TO UNIVERSITY OF PUNE

Notice/Academic/2022-24/039 Date: 15/11/2022

स्वच्छ भारत

एक कदम स्वच्छता की ओर

(Swachh Bharat Mission)

CLEANLINESS DRIVE IN OUTSIDE CAMPUS AREA

(INSTRUCTIONS FROM THE MANAGEMENT)

This is to inform all the students that our institute is going to start "CLEANLINESS DRIVE in OUTSIDE CAMPUS AREA" on 24th November 2022 as part of CSR Activity.

The main aim of this campaign is to create awareness among the students and outside villagers regarding Cleanliness and its benefits.

After collecting garbage, students have to submit it to the sweeper. The one who will collect more garbage and clean the outside institute area will be awarded with a certificate.

Many inter-house competitions such as poster making, slogan writing etc will be planned for this activity.

Those students who are interested to participate in this CSR activity, please enroll your name in attached link by 21st November 2022; 10:00am.

You are requested to come up in large numbers to volunteer for the programme.

P.I.B.M.

Assistant Director
Pune Institute of Business Management

"Melaspace" event conducted by college on "Modern agriculture"

REFERENCES AND STANDARDS

1. Bureau of Energy Efficiency (BEE), Ministry of Power, Government of India
2. Energy Conservation Building Code (ECBC), 2007, BEE, Government of India
3. Indian Green Building Council (IGBC), India
4. National Ambient Air Quality Standards,2009, Central Pollution Control Board (CPCB), Government of India
5. The Noise (Pollution and Control) Rules, 2000 Government of India
6. Municipal Solid Wastes (Management and Handling) Rules, 2000, Government of India
7. Solid Waste Management Rules, 2015, Government of India
8. E-waste (Management) Rules, 2015, Government of Indi
9. Plastic Waste (Management and Handling) Rules, 2016, Government of India
10. National Electrical Code, 2011
11. Fire Extinguisher Standards,2190-2010, Bureau of Indian Standards (BIS
12. IS 14489-1998, Code of Practice of Occupational and Health audit
13. Indian Society of Heating, Refrigerating and Air Conditioning Engineers (ISHRAE)

CERTIFICATE

OF E-WASTE DISPOSAL

Maharashtra Pollution Control Board

Authorised By

PRABHUNATH TRADERS

(E-waste Management Company)

No. 1034

This is to certify that the 306 kg, e-waste received from **Pune Institute of Business Management (MBA)**

Tal-Mulshi, Gut no. 605/1 Lavasa Road Poud Road, Pirangut, Maharashtra 411019**.**

Disposal **Date: 28/08/2023** has been disposed of in scientific & eco-friendly manner. We appreciate your efforts in Green and healthy environment.

BE GREEN KEEP OUR PLANET CLEAN

for, **PRABHUNATH TRADERS**

PRABHUNATH TRADERS Lice. No. : BO/MPCB/ RO(HQ)/PN/CO/ B-1902001133. PUNE

Authorised Signature

CONSENT NO.: HQ/UANNo.0000191107/CR/2403000266.

Address : S.No. 314/2, Urili Devachi, Tal. Haveli, Dist. Pune
Contact No. 9326262223 / 9552522235
www.ewastebuy.com / info@ewastebuy.com / scrapcomputer11@gmail.com

CERTIFICATE

OF E-WASTE DISPOSAL

Maharashtra Pollution Control Board

Authorised By

PRABHUNATH TRADERS

(E-waste Management Company)

No. 1177

This is to certify that the 700 kg, e-waste received from **Pune Institute of Business Management (MBA)**

Tal-Mulshi, Gut no. 605/1 Lavasa Road Poud Road, Pirangut, Maharashtra 411019**.**

Disposal **Date: 13/06/2024** has been disposed of in scientific & eco-friendly manner. We appreciate your efforts in Green and healthy environment.

BE GREEN KEEP OUR PLANET CLEAN

for, PRABHUNATH TRADERS

PRABHUNATH TRADERS Lice. No. : BO/MPCB/ RO(HQ)/PN/CO/ B-1902001133. PUNE

Authorised Signature

CONSENT NO.: HQ/UANNo.0000191107/CR/2403000266.

Address : S.No. 314/2, Urili Devachi, Tal. Haveli, Dist. Pune
Contact No. 9326262223 / 9552522235
www.ewastebuy.com / info@ewastebuy.com / scrapcomputer11@gmail.com

CERTIFICATE

OF E-WASTE DISPOSAL

Maharashtra Pollution Control Board

Authorised By

PRABHUNATH TRADERS

(E-waste Management Company)

No. 992

This is to certify that the 252 kg, e-waste received from **Pune Institute of Business Management (MBA)**

Tal-Mulshi, Gut no. 605/1 Lavasa Road Poud Road, Pirangut, Maharashtra 411019**.**

Disposal **Date: 12/07/2023** has been disposed of in scientific & eco-friendly manner. We appreciate your efforts in Green and healthy environment.

BE GREEN KEEP OUR PLANET CLEAN

for, **PRABHUNATH TRADERS**

PRABHUNATH TRADERS Lice. No. : BO/MPCB/ RO(HQ)/PN/CO/ B-1902001133. PUNE

Authorised Signature

CONSENT NO.: HQ/UANNo.0000191107/CR/2403000266.

Address : S.No. 314/2, Urili Devachi, Tal. Haveli, Dist. Pune
Contact No. 9326262223 / 9552522235
www.ewastebuy.com / info@ewastebuy.com / scrapcomputer11@gmail.com

E- Vehicle- Green Campus Initiative

Pune Institute of Business Management

Date:07-08-2019

To,
Account Department
PIBM Pune

SUBJECT: E-waste sell to PUNA GREEN Ganesh peth Pune

SR.NO	Perticuler	Qty	Rate	Amount	Total
1					
2	E-waste	300KG		Lumsum amount	6000.00
3					
4					
5					
6					
7					
8					
9					
10					
				Total	6000.00

Total Six Thousand only

Encloser:- 1. List Attached
NOTE:-All system checked by IT team- system were not repairable. After that process all items was disposed off.

Prepared by

Checked By
07/8/19
IT HEAD

Checked By
07/08/2019
HOD

Checked By
CFO

Received cash
7/8/2019

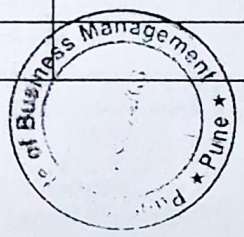
Approved By

Executive Director

Pune Institute of Business Management * Pune * Accounts

EWASTE

Sr No	Description	Qty	Remarks
1	CPU	46	
2	UPS	11	
3	EPABX Box	1	
4	Tripod	12	
5	Motherboard	4	
6	SMPS	51	
7	Hard Disk	31	
8	RAM	23	
9	Telephone	16	
10	Speaker	1	
11	Router	3	
12	UPS Battery	13	
13	Headphone	1	
14	Projector	1	
15	Monitor	9	
16	Xerox Workstation	1	
17	CRT Monitor	6	
18	Mic Reciever With Audiobox	8	
19	Keyboard	58	
20	Mouse	42	



IAEER'S

Pune Institute of Business Management

Gat no. 605/1, Mukaiwadi Road, Pirangut, Tal. Mulashi, Dist Pune.-412115

PIBM

Canteen Scarp Sale Detais

Date :- 12/04/2024

Name of Vendor:-Mr Hanuman Jadav

Contact Details :-8308301159

Type of Material :- Oil Tin

Sr. No	Description	Qty	Rate	Amount (Rs.)
1	Oil Tin 15 ltr New	52	27	1,404.00
2	Oil Tin 15 ltr Rusted	32	10	320.00
3	Cartoon Box	28	5	140.00
				-
	Total			1,864.00

Sold By
Store Manager

Approved By
HOD

Checked By
Canteen Manager

Security

Accountant

Pune Institute of Business Management * Pune * ACCOUNTS

IAEER'S

Pune Institute of Business Management

Gat no. 605/1, Mukaiwadi Road, Pirangut, Tal. Mulashi, Dist Pune -412115

Canteen Scarp Sale Detais

Date :- 09/05/2024

Name of Vendor:-Mr Hanuman Jadav

Contact Details :-8308301159

Type of Material :- Oil Tin

Sr. No	Description	Qty	Rate	Amount (Rs.)
1	Oil Tin 15 ltr New	30	27	810.00
2	Oil Tin 15 ltr Rusted	20	10	200.00
3	Cartoon Box	20	5	100.00
4	Jute Bag	10	5	50.00
5	Plasic Can	13.5	5	67.50
	Total			1,227.50

By 1230/- Received

Pune Institute of Business Management * Pune * Accounts

+ 2.50

Sold By
Store Manager

Rounded - 1230/-

Checked By
Canteen Manager

Approved By
HOD

Security

Accountant

09.05.24

MAHARASHTRA POLLUTION CONTROL BOARD

Phone : 24010437/24020781
/24037134/24035273
Fax : 24044537/24024068
/24022516
Email : info@mpcb.gov.in
Website : www.mpcb.gov.in

Kalpataru Point, 3rd & 4th floor, Sion Matunga
Scheme Road No. 3, Opp. Cine Planet Cinema
Near Sion Circle, Sion (E),
Mumbai - 400 022

Red/S.S.I/Dismantler
UAN: MPCB-CONSENT-0000029128
Consent No: BO/MPCB/RO(HQ)/CO/B-18 07 00 0345 Date: 07/04/2018

Consent to operate under Section 26 of the Water (Prevention & Control of Pollution) Act, 1974 & under Section 21 of the Air (Prevention & Control of Pollution) Act, 1981 and Authorization / Renewal of Authorization under Rule 6 of the Hazardous & Other Wastes (Management & Transboundry Movement) Rules 2016 & Authorization / Renewal of Authorization under Rule 13 of the E-Waste (Management) Rules, 2016.

[To be referred as Water Act, Air Act and HOW (M&TM) Rules respectively].

CONSENT is hereby granted to,

M/s. Pune Greens Electronic Waste Recycler Pvt. Ltd.,
S. No. 63/1, B/4/1, Handewadi Road,
Hadpsar, Pune.

Located in the area declared under the provisions of the Water Act, Air act, Authorization under the provisions of HOW (M&TM) Rules, the E-Waste (M) Rules, 2016 and amendments thereto and subject to the provisions of the Act and the Rules and the Orders that may be made further and subject to the following terms and conditions:

1. **The Consent to operate is valid up to 31/03/2023**

[Subject to having Authorisation from MPCB as "E-Waste Dismantler" as per provisions of the Rule 13 (3) of the E-Waste (M) Rules, 2016.]

1. **The Consent is valid for the activity of –**

Sr. No.	Product Name	Electrical & electronic equipment code	Maximum Quantity
1	Collection, segregation, refurbishing & dismantling E-Waste (Using Environmentally Sound technology as per E-Waste (M) Rules, 2016)	ITEW 1,2,3,4,5,6,7,8,9,10, 11,12,13,14,15,16 & CEEW 1,2,3,4	500 MTA

2. CONDITIONS UNDER WATER ACT:

(i) The quantity of trade effluent from the factory shall be NIL.

(ii) The quantity of sewage effluent from the factory shall not exceed 9.3M³.

(iii) Effluent Treatment & Disposal :–

Effluent Treatment: The applicant shall provide comprehensive measures as warranted with reference to influent quality and maintain the same continuously so as to achieve the quality of effluent to the following standards:

M/s Pune Greens Electronic Waste Recycler Pvt. Ltd." UAN 29128

1