Swami Keshvanand Instituteof Technology,
Management & Gramothan

Approved by AICTE, Ministry of HRD, Government of India
Recognized by UGC under Section 2(f) of the UGC Act, 1956
Affiliated to Rajasthan Technical University, Kota

Quality Audit:

7.1.6: Quality audits on environment and energy are regularly undertaken by the institution:
(Reports on environment and energy audits submitted by the auditing agency)

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September 18, 2021

ENERGY AUDIT REPORT

Swami Keshvanand Institute of Technology, Management & Gramothan (SKIT Jaipur)

Ram Nagariya Rd, Shivam Nagar, Jagatpura, Jaipur, Rajasthan 302017

GSTIN : 08AAJFD9550B1ZH

Design2Occupancy Services LLP

D2O/EA/18092021 **Letter of Certification** Date: 18/09/2021

To,
The Director,
Swami Keshavanand Institute of Technology, Management & Gramothan
Ram Nagariya Rd, Shivam Nagar,
Jagatpura,
Jaipur, Rajasthan 302017

This letter is to certify that Swami Keshavanand Institute of Technology, Management & Gramothan has undergone Energy Audit, Green Audit and Environment Audit.

The audits have been performed by Design2Occupancy Services LLP, which is primarily a consulting firm which deals in Green energy, Energy Audits, Green Building Consultancy etc. We help clients in saving energy, operational costs while creating a sustainable environment.
Design2Occupancy Services LLP bears some of the most valued credentials in the industry such as LEED AP, IGBC AP, GRIHA trainer & evaluator, PQP Professional, ICP, and Certified Energy Auditors etc. and hold valuable experience in various areas like Green building facilitation, Energy Simulation and Analysis, Thermal & daylight modelling, CFD simulation, renewables, sustainability reporting, IAQ consulting, Energy audits & commissioning and several others. Our team's competence is our strength and our projects showcase our commitment towards a greener future.

This assignment is taken up for Swami Keshavanand Institute of Technology, Management & Gramothan, an environmentally responsible educational institution based out of Jaipur (Rajasthan) and embarking into this journey of sustainability. Therefore, we have independently conducted this entire assessment through step by step procedure prescribed for such practices. We have deployed our technical team to gather information and report the institution's effort towards sustainability in comprehensive manner.

We hereby submit these reports dated 18th September 2021. All assessments, results and reported facts are reliable, conservative and verifiable in all aspects.

for, Design2Occupancy Services LLP
Sai Balaji,
LEED AP and GEM Certified Professional
(Senior Counsellor)

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I. Executive Summary

The Swami Keshvanand Institute of Technology, Management & Gramothan acknowledges the importance of Energy as an essential resource for successfully meeting its operational objectives. The Institute also realizes the need to use this resource in a responsible manner that is sustainable and complementary to its Environmental Management Policy.

This document explores how the Institute uses Energy, outlines its approach to managing Energy use and sets targets for Carbon footprint reduction. This strategy is intended to sit alongside the other strategies which together make up the Institute's overall sustainability strategy

The Swami Keshvanand Institute of Technology, Management & Gramothan, Jaipur (SKIT) is committed to improving sustainability. SKIT strives to sustain its local and global environment, organizational health and ability to create a positive, viable future. SKIT endeavors to include environmental sustainability principles and targets in all aspects of its decision-making. Through its research, teaching and learning, operations and community engagement, SKIT aims to:

Minimize the environmental impact of its operations and move towards restoring environmental integrity

- Promote social justice, equity and diversity
- contribute to human health and well-being
- Maintain its financial viability.

As part of its commitment to sustainability, SKIT developed a Sustainability Policy and Sustainability Strategy. SKIT is now developing a series of Sustainability Action Plans on energy and greenhouse, water, transport and waste to support implementation of the Policy and Strategy. This document deals with Energy Audit of SKIT.

II. About the Institute

Swami Keshvanand Institute of Technology, Management & Gramothan (SKIT) inspired from the leanings of Swami Keshvanand, was established in the year 2000 by Technocrats and Managers Society for Advanced Learning. In order to carry the same, they leaped forward to establish MRM Public School in Nirwana village of Sri Ganganagar district of Rajasthan in the year 1992. Pursuing the vision of the Great Saint Swami Keshavanand, who devoted his life for the cause of education and the uplift of the rural folk, the promoters added "Gramothan" to the name of the institute not only to epitomize his vision but also to extend their efforts to explore the use of engineering education for innovations for improving the scenario for the rural community. Today the institute is recognized as one of the centers of academic excellence in Northern India.

The Institute is affiliated to Rajasthan Technical Institute, Kota for offering Postgraduate and Graduate Courses in Engineering and Management. Located in the Pink City Jaipur, which is a blend of traditional history and modern outlook, SKIT is putting in efforts for making industry ready engineers and managers through effective Industry –Institute Interface. Apart from Institute curriculum SKIT also pursues activities for research and development in various fields.

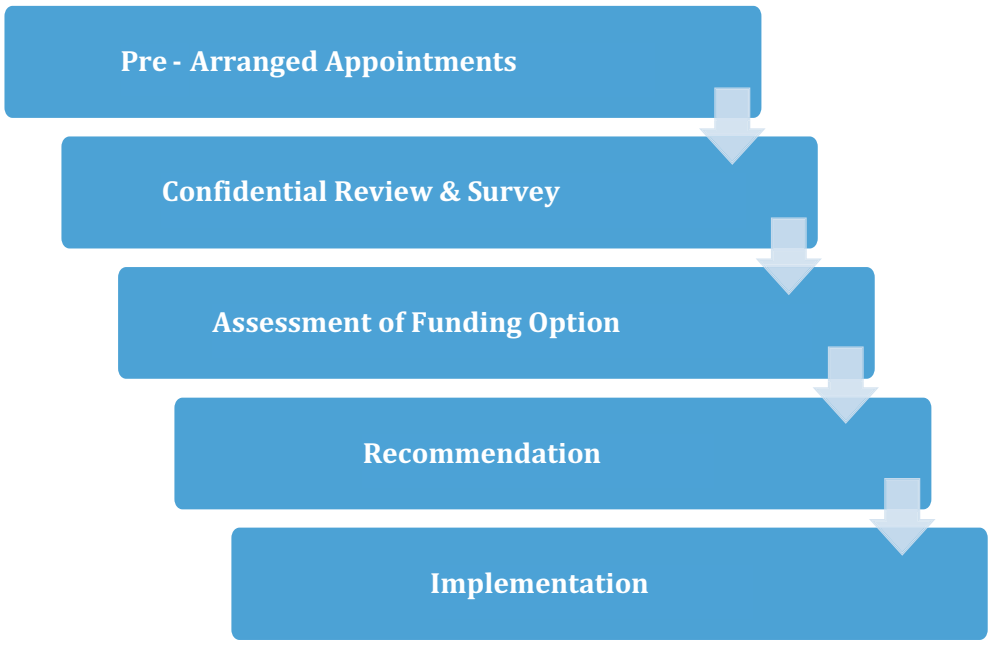
The green landscaping, aesthetic elegance of arches and the vibrant pursuit of knowledge by the young aspirants make the environment serene, pleasant and dynamic.

Students joining the institute share the box full of opportunities for professional and personal development through an environment of practical orientation, industrial interaction and student led activities which help the students to develop good communication skills, integrated personality and greater competitive spirit.

III. Introduction

Based on an inspection of the building plans, measurements and documents, energy auditing includes an evaluation and analysis of the existing situation and the various measures that could be implemented to reduce the energy consumption and improve the indoor environment. The results are presented in an energy analysis report describing the recommended measures with corresponding investments, savings and profit.

The energy analysis in a building is a feasibility study, for it not only serves to identify energy use among the various services but also identify opportunities for energy conservation. The study should reveal to the owner, manager, or management team of the building the options available for reducing energy waste, the costs involved, and the benefits achievable from implementing those energy-conserving opportunities (ECOs). It is to reduce waste of energy and money to the minimum, permitted by the climate in which the building is located, its functions, occupancy schedules, and other factors. It establishes and maintains an efficient balance between a building's annual functional energy requirements and its annual actual energy consumption.



Energy Analysis Process Flow

Occupancy Details

The number of occupants is also important to define the amount of water and energy used in the building; therefore, the following details of the occupants have been considered during the calculation and report preparation. It is observed that the total occupancy of the campus is 5500 approx.

Brief

The Energy analysis was conducted by D2O team for a period of sufficient time, at the Institute premises to study the existing practices of energy consumption and seek possible ways to conserve energy.

SKIT is the first total green campus in Rajasthan with 900 kW Solar Power Plant (400 kW Rooftop + 500 kW Captive). The solar power generation will annually generate nearly 14 lakh units of electricity cutting 1150 tons of CO emissions that shall contribute towards saving nearly 34000 trees annually.

IV. Assessed Parameters

Geology of Jaipur, Rajasthan

Jaipur city is the capital and largest city of the Indian state of Rajasthan. Its municipal boundary of the city extends from 26º46' N latitude to 27º01'N latitude and 75º39'E longitude to 75º57'E longitude. The city is surrounded by the Nahargarh hills in the north and Jhalana in the east, which is a part of Aravalli hills ranges. To its south and west, the city is surrounded by isolated and discontinuous hillocks. The southern end of the city is an open plain stretching far and wide towards Sanganer and beyond. The city was initially located within the walls with the rocky streets providing an easy drainage system on either side of the city but the later extension of the city took place towards the south and west on the alluvial plains formed in the confluence zone of the Amani Shah Nala in the west and Jawahar Nagar Nala in the east and beyond.

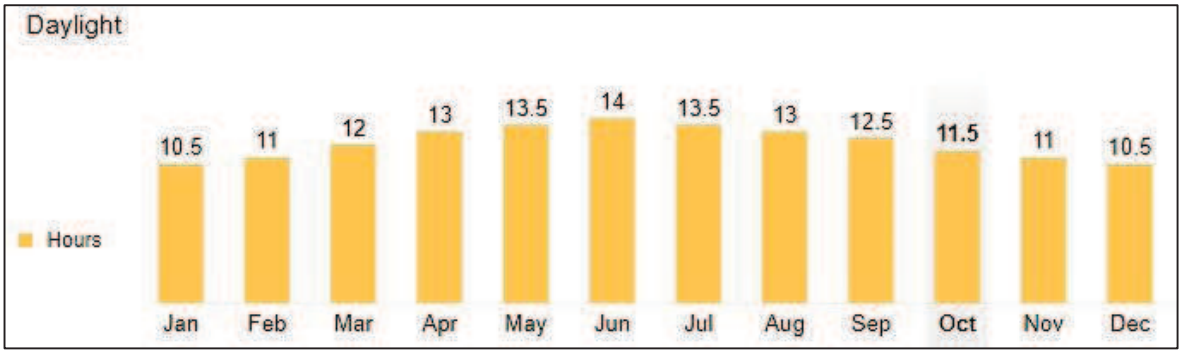
Climate

Jaipur city falls under the semi-arid of climate and experiences a continental type of climate owing to its proximity to the desert and inland location. It is characterized by hot summers and cold winters. The mean daytime temperature of Jaipur is 36^0C varying from

18^{0}C in winter (January) to 45^{0}C in summer (June). The normal rainfall of Jaipur is 600 mm nearly 90 percent of which takes place in the summer monsoon period from (June to September) and the rest comes from the winter cyclones:

Mean Temperature of Jaipur

Mean Maximum Temperature (May)	40^{0}C
Mean Minimum Temperature (January)	8^{0}C

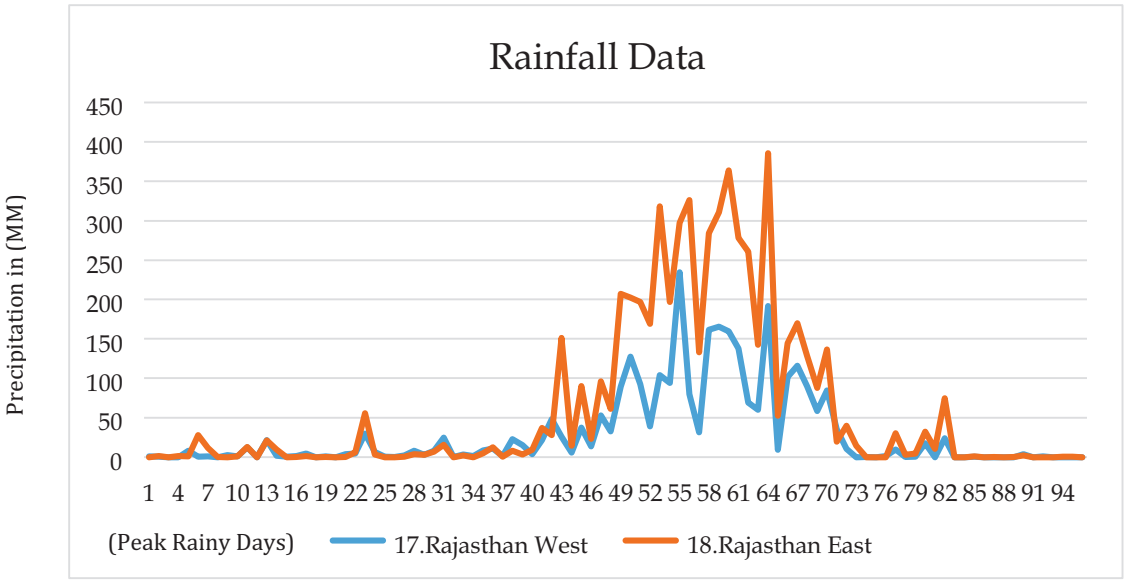


Annual Daylight Hours (Monthly Mean) Source-NOAA

Temperature and Rainfall

The month of May experiences the maximum temperature and January experiences minimum temperature. The data is based on 7 observation years recorded by Indian Meteorological Department (IMD). Jaipur city recorded the maximum temperature of 45.2°C and minimum temperature of 2.5°C in the year 2001 and the maximum temperature of 45.7°C and minimum temperature of 2.2°C in the year 2011.

Heat wave prevails for a few days when day temperature rises 4°C to 6°C above normal. During winter season, minimum temperatures remain at about 4°C to 9°C and fall below 0^{0}C when chilly winds (northerly) blow from the Himalayan region. Mist and Fog occur in the morning hours after passage of western disturbances. The minimum temperature of -2.2°C was recorded on 31st January, 1905 and 16th January, 1964. The surge in temperature starts from April and peaks in the month of June. The downward trend in temperatures commences in September and continues up to January. The mean annual rainfall is around 60 mm. Maximum rainfall is 198.8 mm which occurred in the month of August in 2006. Rainfall increases from the month of June when thundering activities start, and July and August are the rainiest months. Monsoon withdraws in the middle of September. Rainfall decreases sharply in October and November.



Seven Year Rainfall Data (Source: by meteorological sub-divisions)

V. Energy Analysis Definition & Procedure

Definition

This report elaborates the current actual energy performance of the building and real-time performance of all the energy intensive systems installed in the facility. Detailed survey and testing of the energy intensive systems has been performed in order to arrive at the present performance of each equipment. The test results have been carefully analyzed and presented along with improvement measures and general recommendations for each of the systems. The suggested Energy Efficiency Measures (EEMs) presented in the report are mainly of three types depending on their initial cost implications – No Cost, Low Cost and Medium Cost measures. The measures, if implemented, may help the facility team in optimizing the building operations and may result in comprehensive energy and cost savings in the long run.

Objective

The objective of Energy Analysis is to assess the following:

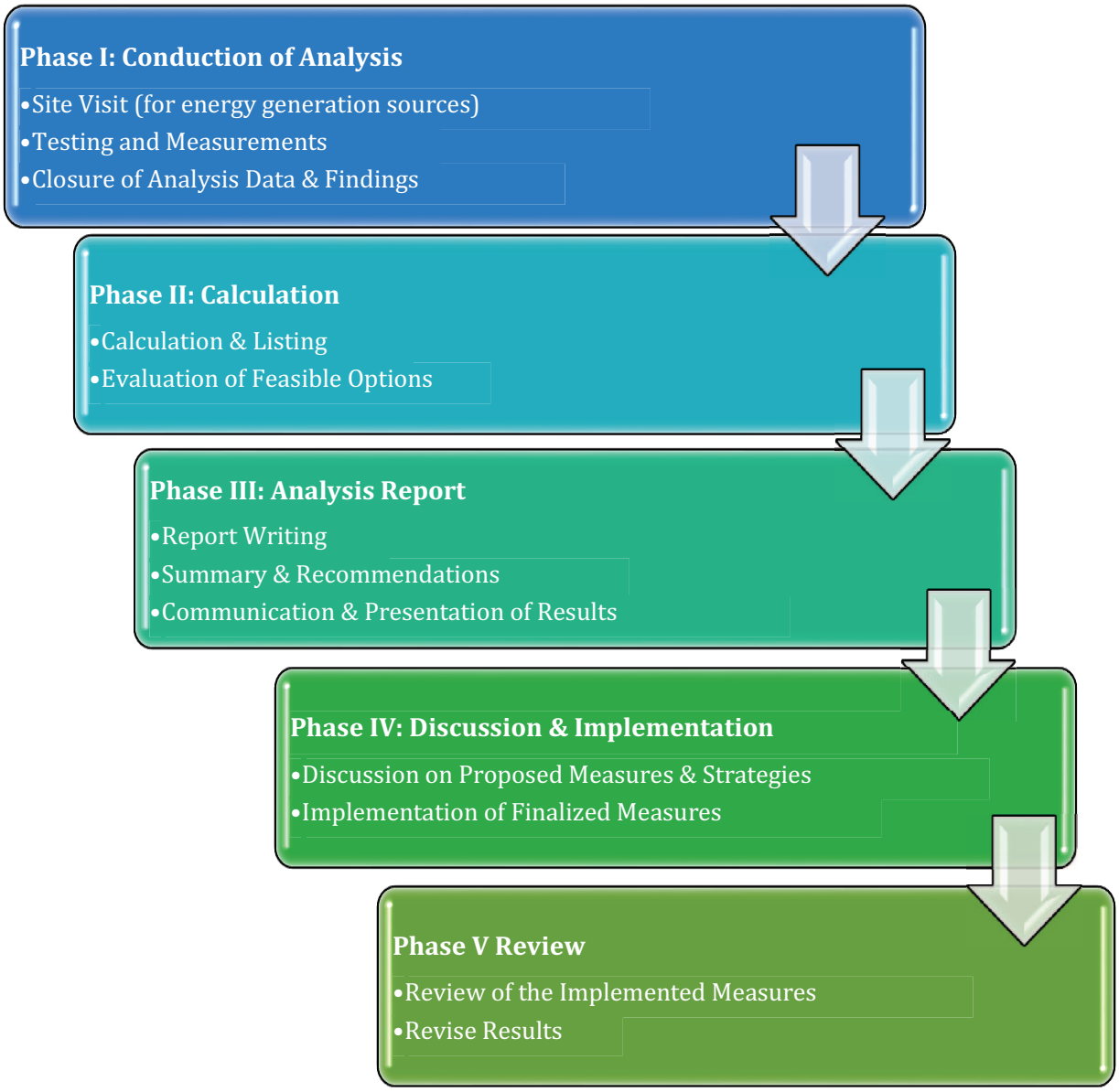
a) Understand the energy consumption scenario.

b) Survey the energy generation systems.

c) Suggest potential energy conservation measures based on end uses.

d) Support with Implementation and maintenance.

VI. Procedure



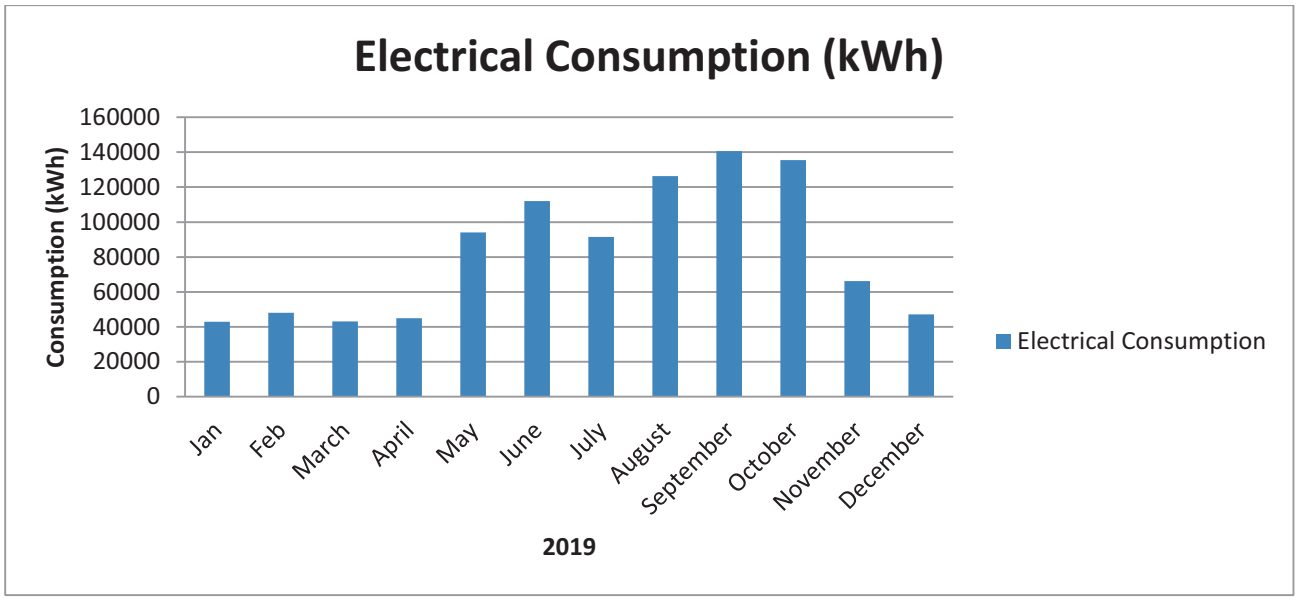
Energy Analysis Procedure

VII. Energy Consumption Scenario

The electric power for the entire facility is mainly procured from the 400 kW Rooftop + 500 kW Captive wheeling. In case of loss of grid power, diesel generator sets are installed at the Campus for power backup.

Energy Consumption (2019)

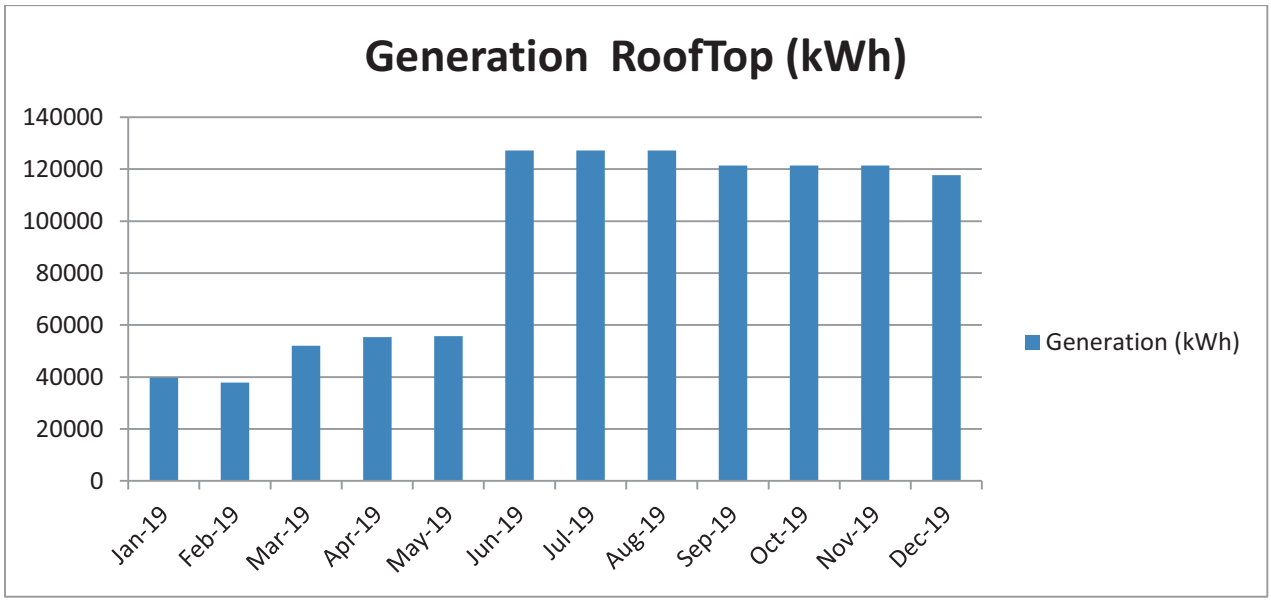
S. No.	Month	Total Energy consumption from SKIT (kWh)
1	January	42940
2	February	48000
3	March	43030
4	April	44970
5	May	94000
6	June	112000
7	July	91570
8	August	126260
9	September	140535
10	October	135385
11	November	66240
12	December	47115
Total Consumption (kWh) - 992045		



Energy Consumption of Campus for 2019

S. No.	Month	Total Energy Generation from Rooftop of SKIT (kWh)
1	January	121368
2	February	121368
3	March	117712
4	April	39676
5	May	37823
6	June	52024
7	July	55370
8	August	55721
9	September	127206
10	October	127206
11	November	127206
12	December	121368
Total Generation (kWh) - 1104048		

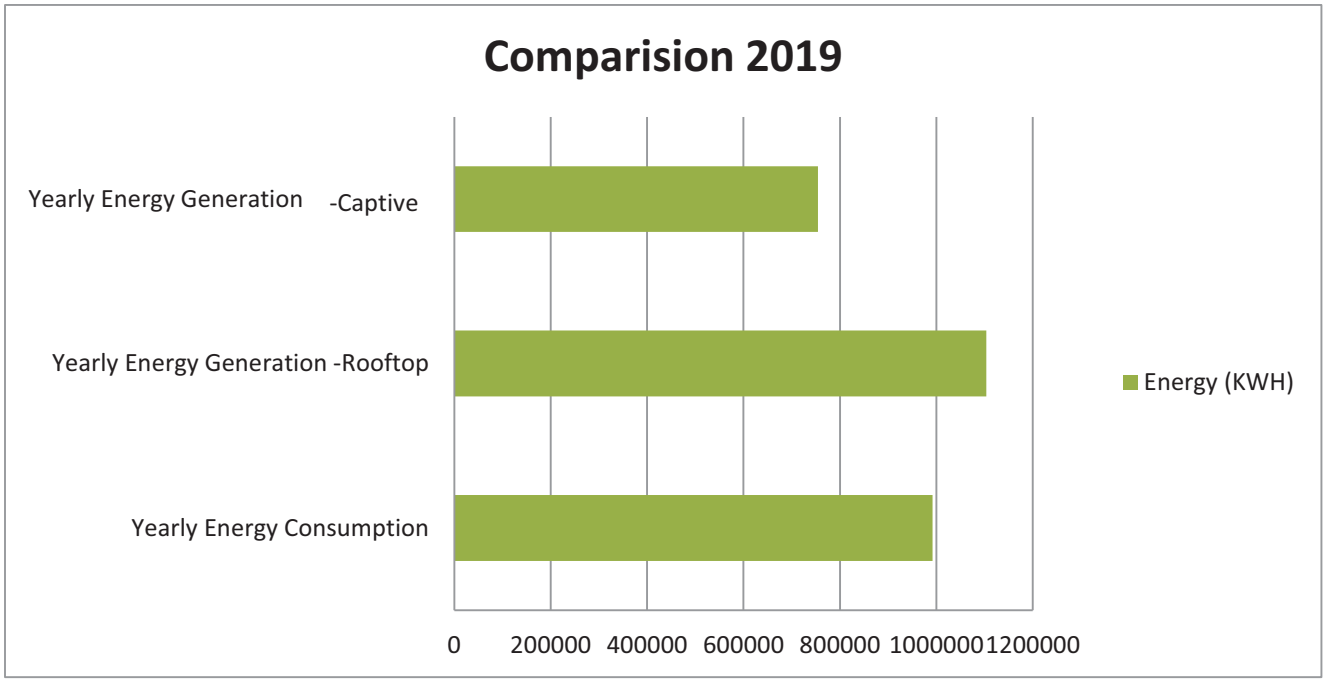
Energy Generation 2019



Energy Generation of Solar Rooftop in SKIT Campus for 2019

S. No.	Month	Total Energy Generation from Rooftop of SKIT (kWh)
1	January	66144
2	February	47189
3	March	29960
4	April	59823
5	May	61647
6	June	76706
7	July	64982
8	August	76621
9	September	75825
10	October	59956
2	November	67327
3	December	68458
Total Generation (kWh) - 754638		

Energy Generation of Solar Capacitive in SKIT Campus for 2019



The Comparison of Energy Consumption and energy generation for SKIT Jaipur in 2019

Installed 400KW Capacity of Solar at Rooftop of SKIT

VIII. Load Calculation

Building No: Vikram Sarabhai Block					Floor: Basement	
S.NO	Name/Location	Fan	LED	Tube light	Computer	AC
1	HOD	2	4	0	1	1
2	AC-002	2	4	0	0	1
3	ECL-01	6	0	9	28	0
4	Faculty-AC03	1	0	1	0	0
5	Faculty-AC04	1	0	1	1	0
6	Faculty-AC05	1	0	1	1	0
7	ECL-02	6	0	8	9	0
8	Faculty-AC011	1	0	2	2	0
9	Faculty-AC010	1	0	1	1	0
10	EPBX Room	1	0	1	0	0
11	Faculty –AC09	1	0	1	1	0
12	Faculty- AC08	1	0	1	0	0
13	Faculty -AC07	1	0	1	1	0
14	Faculty –AC06	1	0	1	1	0
15	ECL-03	6	1	7	18	0
16	ECL-04	8	0	8	16	0
17	Store-2	0	0	2	0	0
18	ECL-05	2	0	4	5	0
19	ECL-06	4	0	5	19	2
20	ECL-07	6	0	7	1	0
21	ECL-08	6	0	6	1	0
22	ECL-09	6	0	7	1	0
23	ECL-10	6	0	7	2	0
24	ECL-11	6	0	6	1	0
25	ECL-12	6	0	7	1	0
26	Corridor	0	0	8	0	0
27	Toilet	0	0	3	0	0
28	Faculty2	2	2	2	2	1

Building No: Vikram Sarabhai Block					Floor: Ground Floor	
S.NO	**Name/Location**	**Fan**	**LED**	**Tubelight**	**Computer**	**AC**
1	Waiting Hall	2	7	0	2	1
2	Meeting Room	0	6	0	0	2
3	Principal Room	1	6	1	0	1
4	Dir. Acad. Room	1	6	1	0	1
5	Exam Cell	5	0	6	4	1
6	Entrance Lobby	3	0	4	0	0
7	Office	2	0	4	1	0
8	TP Cell	11	32	0	7	5
9	Faculty	1	0	2	1	1
10	Faculty	1	0	2	1	1
11	Classroom-106	9	0	5	0	0
12	Classroom-105	9	0	5	0	0
13	Classroom-104	9	0	5	0	0
14	Classroom-103	8	0	4	0	0
15	Classroom-102	8	0	5	0	0
16	Classroom-101	8	0	6	0	0
17	Lab CL-10	4	0	8	30	2
18	CL-11 Lab	5	0	6	32	2
19	Faculty .AC 105	1	0	2	1	1
20	Toilet	0	0	4	0	0
21	Corridor	0	0	5	0	0

Building No: Vikram Sarabhai Block					Floor: First Floor	
S.NO	**Name/Location**	**Fan**	**LED**	**Tubelight**	**Computer**	**AC**
1	Lab ECL-15	4	0	6	3	0
2	Lab ECL-14	5	0	5	1	0
3	Studio-1	0	12	0	2	1
4	Studio-2	1	9	0	2	1
5	Studio-3	1	9	0	2	1
6	Faculty AC-208	1	0	1	0	0
7	Faculty AC-209	1	0	1	0	0

8	Faculty AC-210	1	0	1	0	0
9	Faculty AC-211	1	0	1	1	0
10	Faculty AC-212	2	0	2	0	0
11	Faculty	1	0	1	0	0
12	ECE Lab (T)	5	0	4	1	0
13	Virtual Lab (T)	5	0	4	16	0
14	Faculty -AC205	1	0	1	0	0
15	Faculty –AC 206	1	0	1	1	0
16	Faculty –AC 207	1	0	1	1	0
17	Lab ECL-13	4	0	6	31	0
18	Faculty AC-204	3	0	4	2	0
19	Faculty AC-203	1	0	1	1	0
20	ERP AC-202	2	0	2	3	1
21	Faculty AC-201	2	0	2	0	1
22	Class Room-201	9	0	5	0	0
23	Class Room-202	9	0	5	0	0
24	Class Room-203	9	0	5	0	0
25	Class Room-204	9	0	5	0	0
26	Class Room-205	9	0	5	0	0
27	Class Room-206	9	0	5	0	0
28	Lab ECL-16	5	0	7	20	0
29	Lab ECL-17	5	0	7	27	2
30	Faculty AC-214	1	0	2	1	0
31	Toilet	0	0	4	0	0
32	Corridor	0	0	6	0	0

Building No: Vikram Sarabhai Block **Floor: Second Floor**

S.NO	Name/Location	Fan	LED	Tube light	Computer	AC
1	CS Library	2	0	2	1	0
2	Faculty AC 301	1	0	1	0	0
3	Faculty AC 302	1	0	1	0	0
4	Faculty AC 303	1	0	1	0	0
5	Faculty AC 304	1	0	1	1	0
6	Faculty AC 305	1	0	2	1	0
7	Faculty AC 306	1	0	1	1	1

8	Faculty AC 307	1	0	2	1	0
9	Faculty AC 308	3	0	2	1	0
10	Faculty AC 309	3	0	2	1	0
11	Faculty AC 310	1	0	1	0	0
12	Faculty AC 311	1	0	1	0	0
13	Faculty AC 312	1	0	1	1	0
14	Faculty AC 313	1	0	1	2	1
15	Lab CL-13	3	0	6	32	2
16	Lab CL-14	3	0	6	29	2
17	Lab CL-15	7	0	6	29	2
18	Lab CL-16	7	0	6	29	2
19	Lab CL-17	3	0	6	30	2
20	Lab CL-18	3	0	7	6	2
21	Lab CL-8	4	0	6	33	0
22	Lab CL-9	6	0	9	29	0
23	Class Room -301	9	0	5	0	0
24	Class Room -302	9	0	5	0	0
25	Class Room -303	9	0	5	0	0
26	Class Room -304	8	0	5	0	0
27	Class Room -305	9	0	5	0	0
28	Class Room 306	9	0	5	0	0
29	Toilet	0	0	2	0	0
30	Corridor	0	0	9	0	0
31	Exam (PSMR)	2	0	4	1	1

Building No: Vikram Sarabhai Block **Floor: Third Floor**

S.NO	Name/Location	Fan	LED	Tube light	Computer	AC
1	Faculty AC-401	2	4	0	2	1
2	Faculty AC-402	2	1	1	2	1
3	Faculty AC-403	3	3	0	9	1
4	Faculty AC-404	1	2	0	1	1
5	SERVER ROOM	3	3	0	8	3
6	Class Room-401	10	7	0	1	0
7	Class Room -402	10	7	0	1	0

8	Class Room -403	10	7	0	1	0
9	Class Room -404	8	7	0	1	0
10	Class Room -405	8	7	0	1	0
11	Class Room -406	8	7	0	1	0
12	Lab CL-1	4	5	2	31	2
13	Lab CL-2	4	8	1	31	2
14	Lab CL-3	4	8	0	30	2
15	Lab CL-4 (IBM)	4	8	0	30	2
16	Lab CL-5	4	4	1	25	2
17	Lab CL-6	4	8	0	30	2
18	Lab CL-12	4	5	1	33	2
19	Lab IAI	15	17	0	87	4
20	UPS Room	0	0	2	0	1
21	TOILET	0	0	4	0	0
22	CORRIDOR	0	0	9	0	0
23	RAMAVTAR	1	0	2	0	0

Building No: Dhanwantri Block **Floor: Basement/Ground Floor**

S.NO	Name/Location	Fan	LED	Tube light	Computer	AC
1	Central Comm. Facilities	6	0	12	41	2
2	Digital Library	5	0	8	14	2
3	Central Library	4	0	56	9	0
4	Registrar Office 101	2	10	1	1	1
5	Director Office 102	2	10	1	1	1
6	Principal Office 103	1	0	2	1	1
7	Admission Office 104	1	0	1	1	1
8	Dy. Registrar Office 105	1	0	2	1	1
9	Accounts	1	0	0	1	1
10	Accounts	1	0	2	1	1
11	Accounts	2	0	4	3	0
12	Accounts Store	1	0	2	1	0
13	Admission Cell	3	0	8	8	3
14	Admission Office Cell	7	0	13	1	2
15	Board Room	3	16	0	3	2

16	Bhargav Sir Cabin	1	0	1	1	1
17	Permila Bhafana Cabin	1	0	1	1	1
18	Pantry	1	0	1	0	0
19	Toilet(ladies)	0	0	1	0	0
20	Toilet(Gents)	0	0	1	0	0
21	Corridor	8	0	18	0	0
22	Reception	4	4	0	0	0
Building No: Dhanwantri Block				**Floor: First Floor**		
S.No.	**Name/Location**	**Fan**	**LED**	**Tube light**	**Computer**	**AC**
1	Principal Office	2	0	4	1	1
2	Office	1	0	3	1	0
3	Class Room-101	6	0	9	0	0
4	Class Room-102	6	0	9	0	0
5	Machine Room	5	0	10	0	0
6	CIR Room	5	0	10	0	0
7	Pharmaceutical Lab-1	8	0	16	1	0
8	Pharmaceutical Lab-2	8	0	16	1	0
9	Corridor	0	0	10	0	0
10	Toilets	0	0	3	0	0
Building No: Dhanwantri Block				**Floor: Second Floor**		
S.No.	**Name/Location**	**Fan**	**LED**	**Tube light**	**Computer**	**AC**
1	Class Room No.201	6	0	9	0	0
2	Class Room No.202	6	0	9	0	0
3	Museum	2	0	1	0	0
4	Practice Lab	8	0	16	0	0
5	Pharmaceutical Lab-3	8	0	16	0	0
6	Computer Lab	4	0	6	24	2
7	Library	13	0	11	3	0
8	Corridor	0	0	5	0	0
9	Toilets	0	0	4	0	0

Building No: Dhanwantri Block				Floor: Third Floor		
S.No.	**Name/Location**	**Fan**	**LED**	**Tube light**	**Computer**	**AC**
1	Chemistry lab -1	6	0	12	0	0
2	Chemistry lab -2	5	0	9	0	0
3	Analysis lab	6	0	12	0	0
4	D-Pharmacy Chem. lab	6	0	9	0	0
5	Boys Common Room	3	0	6	0	0
6	Store	3	0	6	0	0
7	HAP Lab	8	0	15	0	0
8	Cog nosy lab	8	0	15	0	0
9	Corridor	4	0	9	0	0
10	Toilets	0	0	4	0	0
Building No: Dhanwantri Block				**Floor: Fourth Floor**		
S.No.	**Name/Location**	**Fan**	**LED**	**Tube light**	**Computer**	**AC**
1	Corridor	0	2	0	0	0
2	Cology-1	6	6	0	1	0
3	Cology-2	6	6	0	0	0
Building No: Sir M. Visvesvaraya Block						**Floor: Basement**
S.No.	Name/Location	Fan	LED	Tube light	Computer	AC
1	Tea Room	6	0	4	0	2
2	Seminar Hall (J.C. Bose)	0	33	0	1	0
3	structural Lab	7	0	4	1	0
4	Geotech Lab	6	0	4	1	0
5	Project Lab	8	0	6	0	0
6	Control Room	1	2	0	0	1
7	Auditorium	0	50	0	1	0
8	Stage	0	0	0	0	2
9	Green Room	3	0	7	0	0
10	Electric Machine Lab	6	0	6	0	0
11	Electric Lab	6	0	4	0	0
12	Corridor	0	0	8	0	0

13	Toilet	0	0	3	0	0
Building No: Sir M. Visvesvaraya Block						**Floor: Ground Floor**
S.No.	**Name/Location**	**Fan**	**LED**	**Tube light**	**Computer**	**AC**
1	Survey Lab.	6	0	4	0	0
2	Drawing Hall	12	0	8	0	0
3	Drawing Lab.	10	0	5	0	0
4	Computer Lab.	9	0	6	36	0
5	Geology Lab.	10	0	6	0	0
6	Staff Room Civil	6	0	5	5	0
7	Tutorial	6	0	4	0	0
8	Panel Room	1	0	1	0	0
9	Corridor	4	4	12	0	0
10	Toilet	0	0	2	0	0
Building No: Sir M. Visvesvaraya Block						**Floor: First Floor**
S.No.	**Name/Location**	**Fan**	**LED**	**Tube light**	**Computer**	**AC**
1	BCE Lab	6	0	4	0	0
2	Environmental Lab	13	0	9	1	0
3	Faculty Room	1	0	2	0	0
4	Class Room 1F1	9	0	6	0	0
5	Class Room 1F2	9	0	6	0	0
6	Class Room 1F3	9	0	6	0	0
7	Staff Room (English)	6	0	9	0	0
8	Staff Room (Civil)	6	0	9	0	0
9	Civil O/A Room	1	0	2	1	0
10	Soft Skill	6	0	4	1	0
11	Corridor	0	0	8	0	0
12	Toilet	0	0	7	0	0
Building No: Sir M. Visvesvaraya Block						**Floor: Second Floor**
S.No.	**Name/Location**	**Fan**	**LED**	**Tube light**	**Computer**	**AC**
1	I year Incharge Cabin	2	0	2	1	0
2	I year office cabin	1	0	1	1	0
3	Class Room 2F1	9	0	6	0	0
4	Class Room 2F2	9	0	6	0	0

5	Class Room 2F3	9	0	6	0	0
6	Director Office (academics)	2	9	0	1	1
7	Staff Room	5	0	6	3	0
8	Physics Lab	8	0	7	1	0
9	Chemistry Lab	12	0	9	1	0
10	Language Lab	7	0	6	36	0
11	Corridor	0	0	15	0	0
12	Toilets (Gents)	0	0	1	0	0
13	Toilets (Ladies)	0	0	1	0	0
Building No: Sir M. Visvesvaraya Block						**Floor: Third Floor**
S.No.	**Name/Location**	**Fan**	**LED**	**Tube light**	**Computer**	**AC**
1	HV LAB	8	0	5	33	0
2	DE LAB	8	0	4	0	0
3	BEE LAB	6	0	6	1	0
4	PHYSICS LAB	8	0	6	1	0
5	CHEMISTRY LAB	13	0	9	1	0
6	FACULTY CABIN (CS)	2	0	2	0	0
7	Class Room 3F1	9	0	6	0	0
8	Class Room 3F2	9	0	6	0	0
9	Class Room 3F3	9	0	6	0	0
10	Tutorial Room	4	0	2	0	0
11	Staff Room	5	0	4	6	0
12	Corridor	0	0	12	0	
13	Toilets (Gents)	0	0	1	0	0
14	Toilets (Ladies)	0	0	2	0	0
Building No Sir M. Visvesvaraya Block						**Floor: Fourth Floor**
S.No.	**Name/Location**	**Fan**	**LED**	**Tube light**	**Computer**	**AC**
1	Staff Room	8	0	7	2	0
2	Tutorial	6	0	4	0	0
3	Class Room 4F3	9	0	6	0	0
4	Class Room 4F2	9	0	6	0	0
5	Class Room 4F1	9	0	6	0	0
6	Faculty Room	1	0	1	0	1
7	Drawing Hall -2	7	0	6	0	0

8	Drawing Hall -1	6	0	4	0	0
9	Computer lab - 1	9	0	6	34	0
10	Computer lab - 2	9	0	6	33	0
11	Faculty Room	4	0	4	4	0
12	Seminar hall	12	0	10	0	0
13	Faculty Room	2	0	2	2	0
14	Corridor	0	0	12	0	0
15	Toilets (Gents)	0	0	2	0	0
16	Toilets (Ladies)	0	0	2	0	0
Building No: Sir M. Visvesvaraya Block						**Floor: Fifth Floor**
S.No.	**Name/Location**	**Fan**	**LED**	**Tube light**	**Computer**	**AC**
1	HOD Cabin	2	4	0	2	1
2	O/A EE Dept.	1	2	0	2	0
3	Faculty Room	1	0	1	0	0
4	Faculty Room	1	0	1	1	0
5	Faculty Room	1	0	1	1	0
6	Faculty Room	1	0	1	1	0
7	Faculty Room	1	0	1	1	0
8	Faculty Room	1	0	1	1	0
9	Faculty Room	1	0	2	1	0
10	EM LAB (5F:EE:LAB05)	9	0	6	1	0
11	Computer LAB01(5F:EE:LAB06)	9	0	6	24	0
12	Computer LAB02(5F:EE:LAB07)	9	0	6	25	0
13	Tutorial Room (5F:T1)	4	0	2	0	0
14	Tutorial Room (5F:T2)	4	0	2	0	0
15	Class Room 5FL1	9	0	6	0	0
16	Class Room 5FL2	9	0	6	0	0
17	Class Room 5FL3	9	0	6	0	0
18	Class Room 5FL4	12	0	6	0	0
19	Corridor	0	0	16	0	0
20	Toilets (Gents)	0	0	2	0	0
21	Toilets (Ladies)	0	0	2	0	0

Building No: Sir M. Visvesvaraya Block						Floor: Sixth Floor
S.No.	Name/Location	Fan	LED	Tube light	Computer	AC
1	Faculty Room	1	0	2	1	0
2	Faculty Room	1	0	1	1	0
3	Faculty Room	1	0	1	0	0
4	Faculty Room	1	0	1	0	0
5	Faculty Room	1	0	1	1	0
6	Faculty Room	1	0	1	1	0
7	Faculty Room	1	0	1	1	0
8	MODROB Lab (6F-EE-Lab 8	4	0	4	16	0
9	Power Electronics Lab (6F-Lab 9)	9	0	6	1	0
10	Computer Lab-3(6F-Lab-10)	9	0	6	22	0
11	Computer Lab-4(6F-Lab-11)	9	0	6	24	0
12	Analog Electronics Lab (6F-Lab-12)	6	0	4	0	0
13	Seminar Hall (6F –L-8)	10	0	6	1	0
14	Department Library (6F-c-16)	6	0	4	1	0
15	Class Room 6FL5	9	0	6	0	0
16	Class Room 6FL6	9	0	6	0	0
17	Class Room 6FL7	9	0	6	0	0
18	Corridor	0	0	15	0	0
20	Toilets (Ladies)	0	0	2	0	0
Building No: Sir M. Visvesvaraya Block						Floor: Seventh Floor
S.No.	Name/Location	Fan	LED	Tube light	Computer	AC
1	Faculty Room	1	0	2	1	0
2	Faculty Room	1	0	1	1	0
3	Faculty Room	1	0	1	0	0
4	Faculty Room	1	0	1	1	0
5	Faculty Room	1	0	1	0	0
6	Faculty Room	1	0	1	0	0
7	Faculty Room	1	0	1	0	0

8	Microprocessor Lab (7F-Lab-13)	7	0	5	0	0
9	Power System Lab (7F-Lab 14)	9	0	6	1	0
10	Electric Drives Lab(7F-Lab-15)	9	0	6	1	0
11	Project Lab (7F-Lab-16)	12	0	8	9	0
12	Tutorial Room	6	0	4	0	0
13	Class Room 7FL9	9	0	6	0	0
14	class Room 7FL10	9	0	6	0	0
15	class Room 7FL11	9	0	6	0	0
16	Corridor	0	0	16	0	0
17	Toilets (Gents)	0	0	2	0	0
18	Toilets (Ladies)	0	0	2	0	0
Building No: Old Engineering Block					**Floor: Ground Floor**	
S.No.	**Name/Location**	**Fan**	**LED**	**Tube light**	**Computer**	**AC**
1	Central Store (M.R.)	3	0	3	2	0
2	Mech. Workshop	16	0	14	0	0
3	Toilet	0	0	1	0	0
4	Laundry	4	0	3	0	0
5	Store (Pareek Sb.)	1	0	3	0	0
6	H.O.Testing Lab.	6	0	4	0	0
7	Office 1 (H.K)	1	0	2	0	0
8	Office 2 (Maintenance)	2	0	4	1	0
9	Office 3 (Civil Faculty)	2	0	2	0	0
10	Reception Lobby.	4	0	2	0	0
11	Incubation cell	0	0	12	0	0
12	Corridor		0	5	0	0
13	Boys Dining Hall	14	14	0	0	0
14	Canteen	4	4	2	0	0
15	Mess Cooking Area	0	10	0	0	0
16	Manager	1	0	1	1	1
17	Preparation Room	1	3	0	0	0
18	Vegetable	1	3	1	0	0
19	Mess Store	1	5	0	0	0

20	Wash Room	3	4	0	0	0
21	Pot Wash	1	2	0	0	0
22	Canteen Store	1	1	1	0	0
23	Girls Dining hall	10	10	0	0	0
24	Girls Toilet	0	0	2	0	0
25	Drinking Area	0	0	2	0	0
26	Boys Toilet	0	0	1	0	0
27	stationary	1	0	2	0	0
Building No: Vishvakarma Block Floor: Basement Floor						
S.No.	**Name/Location**	**Fan**	**LED**	**Tube light**	**Computer**	**AC**
1	Class Room ME-101	6	0	5	0	0
2	Class Room ME-102	6	0	5	0	0
3	Class Room ME-103	10	0	7	0	0
4	Thermal Lab	25	0	24	0	3
5	Production Lab	24	11	29	0	0
6	MST Lab	7	0	6	0	0
7	IE Lab	8	0	9	2	0
8	Store-1 Thermal Lab	0	0	1	0	0
9	Store-2 Thermal Lab	0	0	1	0	0
10	Store-3 Thermal Lab	0	0	1	0	0
11	Store-4 Thermal Lab	0	0	1	0	0
12	Store-5 ME-103	0	0	1	0	0
13	Corridor	1	0	9	0	0
Building No: Vishvakarma Block Floor: Ground Floor						
S.No.	**Name/Location**	**Fan**	**LED**	**Tube light**	**Computer**	**AC**
1.	Faculty ME-101	1	0	4	1	1
2.	Faculty ME-102	5	0	3	1	1
3.	Faculty ME-103	1	0	1	1	0
4.	Faculty ME-104	1	0	1	1	1
5.	Faculty ME-105	1	0	2	0	0
6.	Faculty ME-106	1	0	1	1	0
7.	Faculty ME-107	1	0	1	1	0
8.	Faculty ME-108	1	0	2	1	0
9.	Faculty ME-109	1	0	1	1	0

10.	Faculty ME-110	1	0	1	1	0
11.	Faculty ME-111	1	0	1	1	0
12.	Faculty ME-112	2	0	2	1	0
13	Class Room ME-104	8	0	5	0	0
14	Class Room ME-105	7	0	4	0	0
15	Tutorial ME-1T1	6	0	4	0	0
16	Computer Lab-I	10	0	8	46	3
17	CNC Lab	4	0	3	0	0
18	Research Lab	4	0	2	0	0
19	Robotics Lab	2	0	2	1	0
20	Machine Drawing Lab	8	0	10	0	0
21	corridor		0	8	0	0
22	Toilets		0	2	0	0
Building No Vishvakarma Block Floor: First Floor						
S.No.	**Name/Location**	**Fan**	**LED**	**Tube light**	**Computer**	**AC**
1.	Faculty ME-201	1	0	1	1	0
2.	Faculty ME-202	1	0	1	1	0
3.	Faculty ME-203	2	0	3	3	0
4.	Faculty ME-301	4	0	5	2	0
5.	Faculty ME-302	1	0	1	1	0
6.	Faculty ME-303	1	0	1	1	0
7.	Faculty ME-304	1	0	1	0	0
8.	Faculty ME-305	1	0	1	0	0
9.	Faculty ME-306	1	0	1	0	0
10.	Faculty ME-307	4	0	2	1	0
11.	Tutorial ME-2T1	6	0	6	0	0
12.	Tutorial ME-2T2	6	0	5	0	0
13.	Seminar Hall	10	24	0	1	1
14	Seminar Hall (MBA)	8	16	0	1	2
16	HT Lab	9	0	7	0	0
17	FM Lab	8	0	7	0	0
18	Computer Lab-II	10	0	9	38	3
19	DOM Lab	8	0	4	6	0
20	Corridor	1	0	11	0	0
21	Toilets	0	0	2	0	0

Building No: Vishvakarma Block Floor: Second Floor						
S.No.	**Name/Location**	**Fan**	**LED**	**Tube light**	**Computer**	**AC**
1.	Faculty ME-401	1	0	1	1	0
2.	Faculty ME-402	1	0	1	1	0
3.	Faculty ME-403	1	0	1	1	0
4.	Faculty ME-404	1	0	1	1	0
5.	Faculty ME-405	1	0	1	1	0
6.	Faculty ME-406	5	0	3	1	0
7.	Class Room ME-301	8	0	8	0	0
8.	Class Room ME-302	6	0	6	0	0
9.	Vibration Lab	8	0	6	0	0
10.	Renewable Energy Lab	8	0	4	0	0
11.	Corridor	0	0	5	0	0
12	Toilets	0	0	2	0	0
Building No: Vishvakarma Block (MBA Floor) Floor:Second Floor						
S.No.	**Name/Location**	**Fan**	**LED**	**Tube light**	**Computer**	**AC**
1	Conference Room	3	0	4	0	1
2	MAh Hall	8	0	4	0	2
3	Library	8	0	12	1	0
4	MAH office	1	0	1	1	0
5	MAH Pantry	1	0	1	0	0
6	Faculty Room	2	0	2	1	1
7	Admission Cell	2	0	3	0	1
8	Faculty Room	1	0	2	1	0
9	Faculty Room	1	0	2	2	0
10	Faculty Room	1	0	2	2	1
11	Faculty Room	1	0	1	1	0
	Class Room 301	7	0	6	0	0
13	Class Room 302	7	0	6	0	0
14	Computer Lab	4	0	5	31	2
15	Seminar Hall (APJ)	8	16	0	0	0
16	Corridor	0	0	6	0	0
17	Toilet	0	0	2	0	0

Building No: Nirwana Boys Hostel Floor: B+G+I+II+III&IV Floor						
S.No.	Name/Location	Fan	LED	Tube light	Computer	AC
Basement						
1	Gym	0	0	4	0	0
2	Guest Room	2	0	3	0	0
3	Guest Room	2	0	3	1	0
4	Store	0	0	1	0	0
5	Corridor	0	0	5	0	0
6	Toilet	0	3	0	0	0
7	Toilet	0	3	0	0	0
8	Rooms	71	0	71	0	0
Ground Floor						
9	office	2	0	3	2	1
10	office	1	0	2	1	0
11	Corridor	4	0	15	0	0
12	Toilet	0	0	3	0	0
13	Toilet	0	0	2	0	0
14	Rooms	70	0	70	0	0
15	water Cooler	0	0	2	0	0
16	Guest Room	2	0	3	0	0
First Floor						
17	Corridor	0	0	9	0	0
18	Toilet	0	0	2	0	0
19	Toilet	0	0	2	0	0
20	Rooms	78	0	78	0	0
21	T.V. Rooms	8	1	4	0	0
22	Guest Room	2	0	3	0	0
23	Guest Room	2	0	3	0	0
24	Common Room	6	0	4	0	0
25	RO Plant	0	0	1	0	0
II Floor						
26	Corridor	0	0	10	0	0
27	Toilet	0	0	2	0	0
28	Toilet	0	0	2	0	0
29	Rooms	85	0	85	0	0

30	water Cooler	0	0	2	0	0
III Floor						
32	Corridor	0	0	10	0	0
33	Toilet	0	0	2	0	0
34	Toilet	0	0	4	0	0
35	Room	85	0	85	0	0
IV Floor						
36	Corridor	0	0	9	0	0
37	Toilet	0	0	2	0	0
38	Toilet	0	0	2	0	0
39	Room	68	0	68	0	0
40	water Cooler	0	0	0	0	0
Building No: Noran Girls Hostel (New) Floor: B+G+I+II+III&IV Floor						
S.No.	**Name/Location**	**Fan**	**LED**	**Tube light**	**Computer**	**AC**
1	Corridor	1	0	1	0	0
2	Gym	2	0	5	0	0
3	Rooms	18	0	18	0	0
4	Stairs	0	0	1	0	0
5	Main Gate	0	1	0	0	0
6	Reception Area	2	0	2	0	0
7	Office	2	0	2	1	0
8	Corridor	0	0	3	0	0
9	Rooms	12	0	12	0	0
10	Bathroom Area	0	0	2	0	0
11	Corridor	0	0	3	0	0
12	Rooms	12	0	12	0	0
13	Bathroom Area	0	0	2	0	0
14	Corridor	0	0	4	0	0
15	Rooms	22	0	22	0	0
16	Bathroom Area	0	0	2	0	0
17	Corridor	0	0	4	0	0
18	Rooms	21	0	21	0	0
19	Bathroom Area	0	0	2	0	0
20	Corridor	0	0	4	0	0
21	Rooms	20	0	20	0	0

22	Bathroom Area	0	0	2	0	0
Building No: Noran Girls Hostel (Old) Floor: B+G+I+II & III Floor						
S.No.	**Name/Location**	**Fan**	**LED**	**Tube light**	**Computer**	**AC**
1	T.V. Room	5	0	4	0	0
2	Corridor	3	0	3	0	0
3	Rooms	10	0	10	0	0
4	Bathroom Area	0	0	3	0	0
5	Corridor	0	0	2	0	0
6	Rooms	8	0	8	0	0
7	Corridor	0	0	1	0	0
8	Rooms	8	0	8	0	0
9	Corridor	0	0	2	0	0
10	Rooms	16	0	16	0	0
11	Bathroom Area	0	0	2	0	0
Building No: Other Area Floor: Ground Floor						
S.No.	**Name/Location**	**Fan**	**LED**	**Tube light**	**Computer**	**AC**
1	Guard Room (1)	2	0	2	0	0
2	Guard Room (2)	1	0	2	0	0
3	Guard Room (3)	1	0	2	0	0
4	Panel Room	3	0	4	0	0
5	Toilet Gate (1)	0	0	1	0	0
6	Toilet Gate (2)	0	0	2	0	0
7	Near Lib	0	0	2	0	0
8	Near Mess	0	0	1	0	0
9	LED	0	106	0	0	0
10	Metro	0	6	0	0	0
11	Sodium	0	9	0	0	0
12	Guest House	9	0	18	0	6

IX. Energy Performance Index

Energy performance index (EPI) is total energy consumed in a building over a year divided by total built up area in kWh/sq.m /year and is considered as the simplest and most relevant indicator to analyses the energy efficiency of a building.

The total energy kWh consumption by the facility includes the electricity consumption from the grid supply and kWh generated by the DG. The total built-up area doesn't include the parking area and open spaces.

EPI Calculation (2019) for SKIT, Jaipur

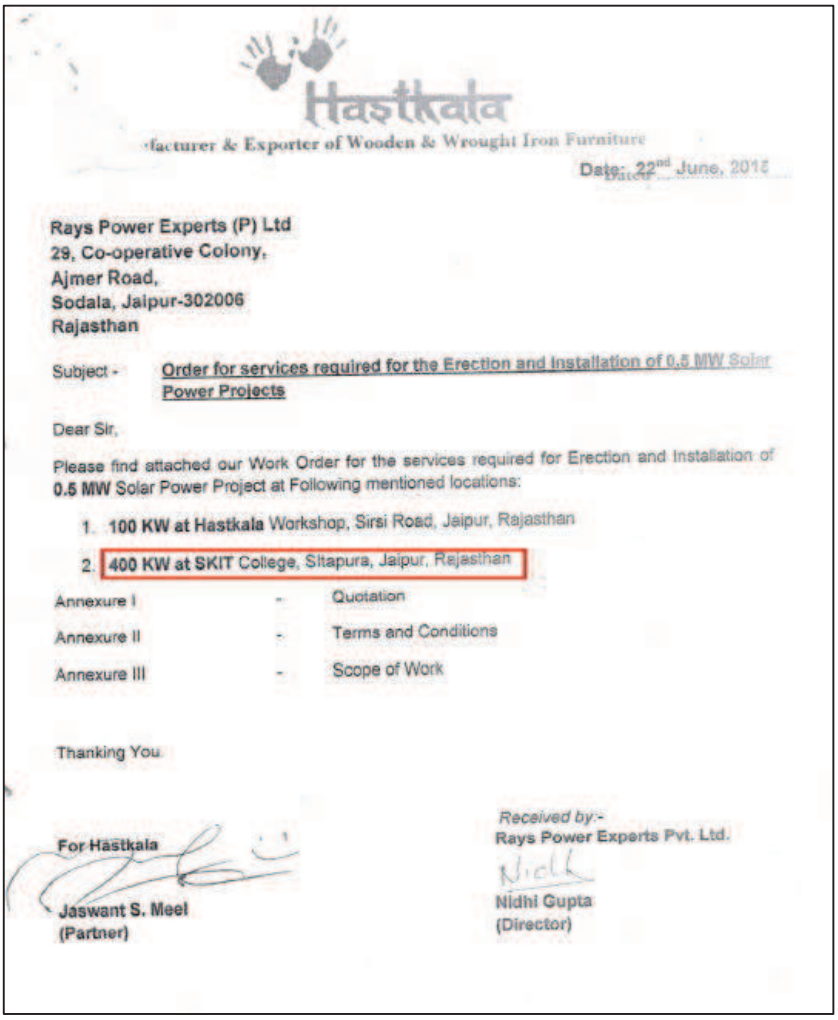
Energy Performance (2019)	
Total Consumption including solar (kWh)	992045
Total Built up Area (m^2)	70235.21
(kWh/m^2/year)	14.12

'The campus consumed 14.12 kWh/m^2 from January 2019 to December 2019.

X. Renewable Energy

Roof Top Solar

The Swami Keshvanand Institute of Technology, Management & Gramothan (SKIT) has installed a 400 kW solar roof top. This provides an alternate clean source of energy. It also provides shade on roof hence reducing the heat gain.



Hastkala

facturer & Exporter of Wooden & Wrought Iron Furniture

Date: 22nd June, 2018

Rays Power Experts (P) Ltd
29, Co-operative Colony,
Ajmer Road,
Sodala, Jaipur-302006
Rajasthan

Subject - Order for services required for the Erection and Installation of 0.5 MW Solar Power Projects

Dear Sir,

Please find attached our Work Order for the services required for Erection and Installation of 0.5 MW Solar Power Project at Following mentioned locations:

1. 100 KW at Hastkala Workshop, Sirsi Road, Jaipur, Rajasthan
2. 400 KW at SKIT College, Sitapura, Jaipur, Rajasthan

Annexure I	-	Quotation
Annexure II	-	Terms and Conditions
Annexure III	-	Scope of Work

Thanking You

For Hastkala

Jaswant S. Meel
(Partner)

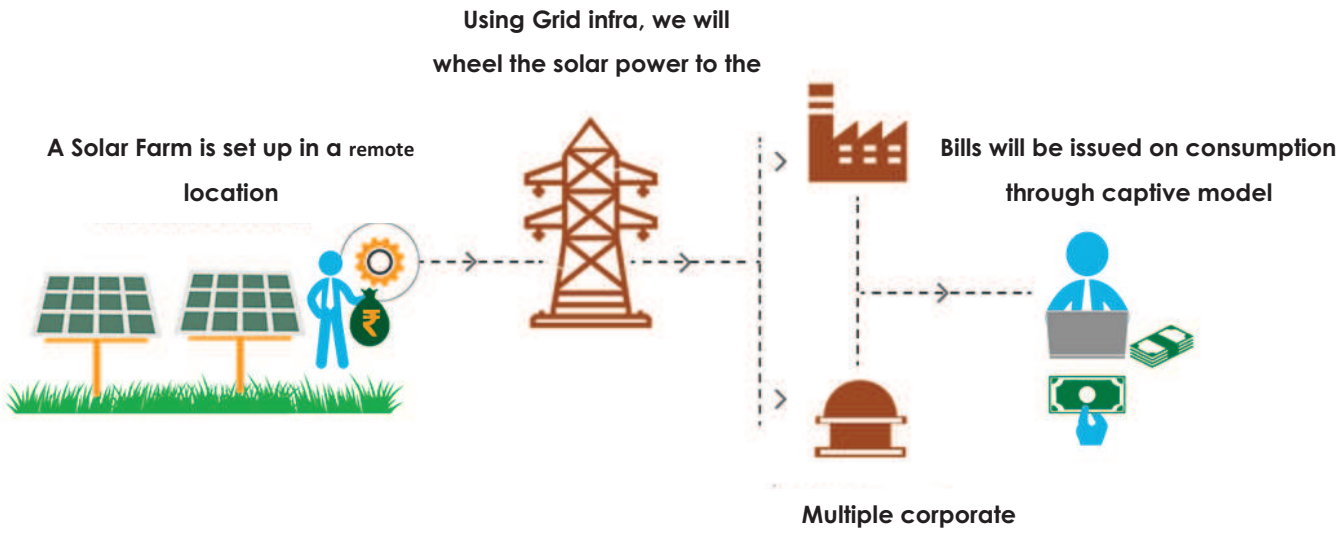
Received by:-
Rays Power Experts Pvt. Ltd.

Nidhi Gupta
(Director)

WO Confirming the installed 400kW Solar at SKIT

Captive Solar

In the captive capex model, the corporate buyer for a utility scale renewable project makes the upfront capital investment. The buyer owns the power generating asset and the solar power generated is used for the corporate buyer's self-consumption. A variant of the captive model is the group captive model. Under the group captive model, a project is developed for the collective usage of one or many corporate buyers.



Representation of Captive Solar

Benefits of usage of captive solar

]

1. Hedge against electricity charges

   Open Access charges from the grid are applicable, but unpredictable charges, such as cross-subsidy surcharge and additional surcharge, are waived in captive and group captive projects.

2. Tax benefits

   Under this structure, a corporate buyer who holds the asset on its balance sheet is also eligible to claim tax benefits through accelerated depreciation.

3. Minimum investment and risk

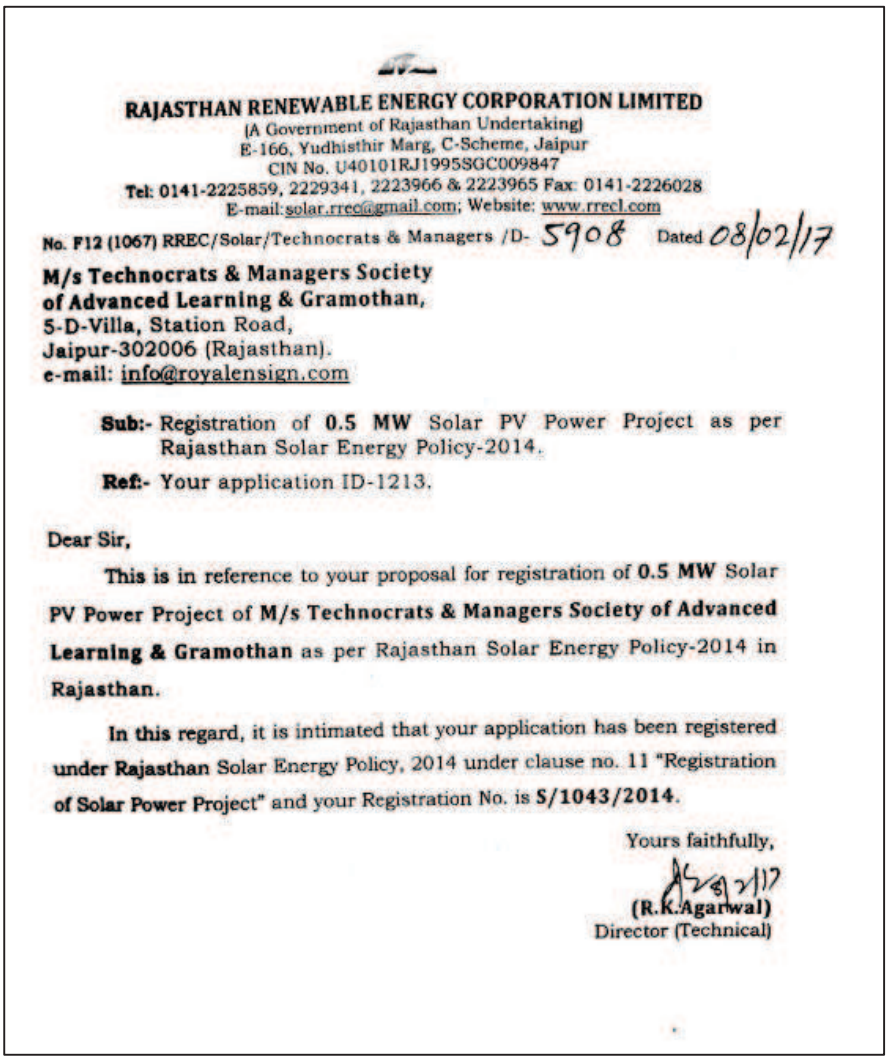
   The corporate buyer can avail open access benefits of a group captive project without being required to completely own the project. Here, contract company will bear 74% of the investment – with the corporate buyer holding at least 26% equity. This is

done to meet the ownership criteria that will allow exemption of cross-subsidy surcharge.

4. Guaranteed savings on electricity

   Even though the user is required to purchase electricity through a Power Purchase Agreement (PPA), it comes at much lower rates than prevailing grid tariffs, resulting in guaranteed savings on every unit consumed.

The Swami Keshvanand Institute of Technology, Management & Gramothan (SKIT) has installed a 500 kW solar PV Power plant at Deh (Sarah Kisanayat), Tehsil: Kolayat, District: Bikaner (Rajasthan) for "Captive Use" under Rajasthan Solar Energy Policy, 2014.



RAJASTHAN RENEWABLE ENERGY CORPORATION LIMITED
(A Government of Rajasthan Undertaking)
E-166, Yudhisthir Marg, C-Scheme, Jaipur
CIN No. U40101RJ1995SGC009847
Tel: 0141-2225859, 2229341, 2223966 & 2223965 Fax: 0141-2226028
E-mail:solar.rrec@gmail.com; Website: www.rrecl.com

No. F12 (1067) RREC/Solar/Technocrats & Managers /D- 5908 Dated 08/02/17

M/s Technocrats & Managers Society
of Advanced Learning & Gramothan,
5-D-Villa, Station Road,
Jaipur-302006 (Rajasthan).
e-mail: info@royalensign.com

Sub:- Registration of **0.5 MW** Solar PV Power Project as per Rajasthan Solar Energy Policy-2014.

Ref:- Your application ID-1213.

Dear Sir,

This is in reference to your proposal for registration of **0.5 MW** Solar PV Power Project of **M/s Technocrats & Managers Society of Advanced Learning & Gramothan** as per Rajasthan Solar Energy Policy-2014 in **Rajasthan.**

In this regard, it is intimated that your application has been registered under **Rajasthan** Solar Energy Policy, 2014 under clause no. 11 "Registration of Solar Power Project" and your Registration No. is **S/1043/2014.**

Yours faithfully,

(R.K.Agarwal)
Director (Technical)

Registration Letter with RRECL

Rays Experts
a solar culture...

Date: 22/06/2017

INSTALLATION CERTIFICATE

OF

M/S TECHNOCRATS & MANAGERS SOCIETY OF ADVANCE LEARNING & GRANMOTHAN

This is to certify that M/S TECHNOCRATS & MANAGERS SOCIETY OF ADVANCE LEARNING & GRANMOTHAN having its office at 5-D-Villa, Station Road, Jaipur, Rajasthan -302006, has successfully installed 0.5MW capacity of their Solar PV Power Generation project under captive use at village- Deh, Tehsil-Kolayat, & Distt. – Bikaner on dated 31/03/2017.

For Rays Power Experts

For Rays Power Experts Pvt.

Auth. Signatory

(Auth. Signatory)

Rays Power Experts Pvt. Ltd.

500KW Installation Certificate for SKIT, Jaipur

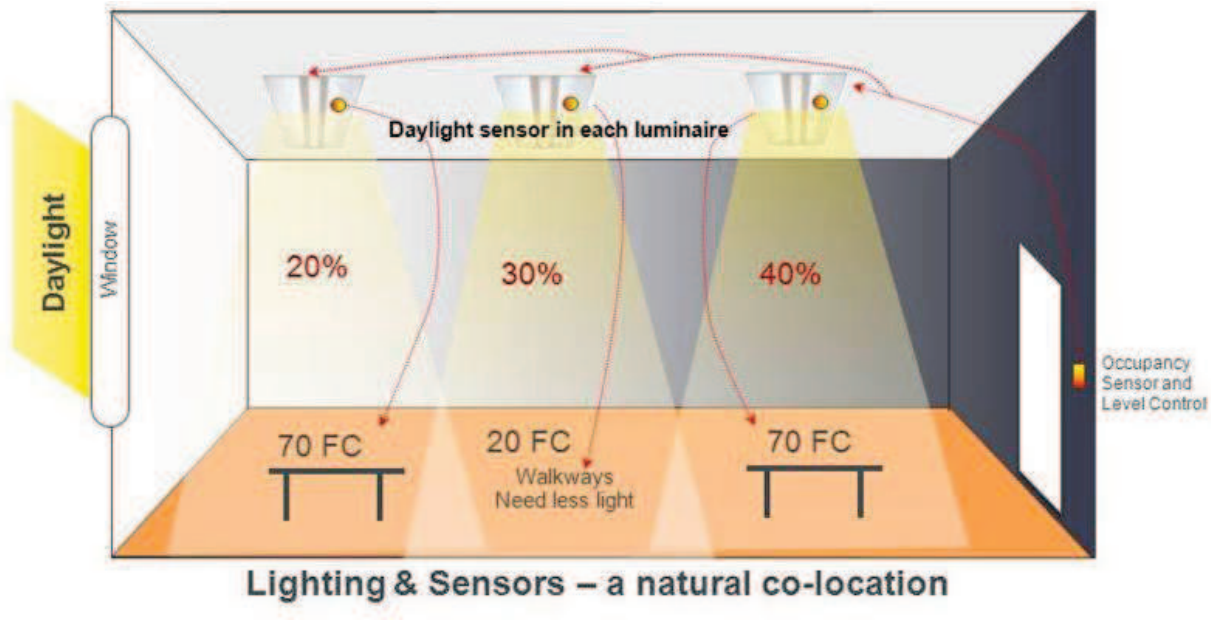
XI. Energy Efficient Measures

The SKIT Campus has set a high standard by being the first green campus in Rajasthan with 900 kW Solar Power Plant (400 kW Rooftop + 500 kW Captive). The solar power generation will annually generate nearly 14 lakh units of electricity.

Further, it as an opportunity to raise the bar by amending the following energy efficient measures in the facility to achieve more savings in electricity.

Occupancy and Daylighting Sensors

Occupancy Sensors provide automatic ON/OFF switching of lighting loads to enhance convenience, security and long-term energy savings. Daylight sensors are battery-powered sensors that save energy by dimming or turning off electric lighting when sufficient daylight is available. The sensor detects light in the space and then adjusts the lights to take advantage of daylight, thus conserving energy. These sensors are being incorporated into most projects and as many retrofit/retro commissioning projects as possible, with funding and electrical/mechanical application being key factors.



Lighting Sensor Illustration in a room with daylight

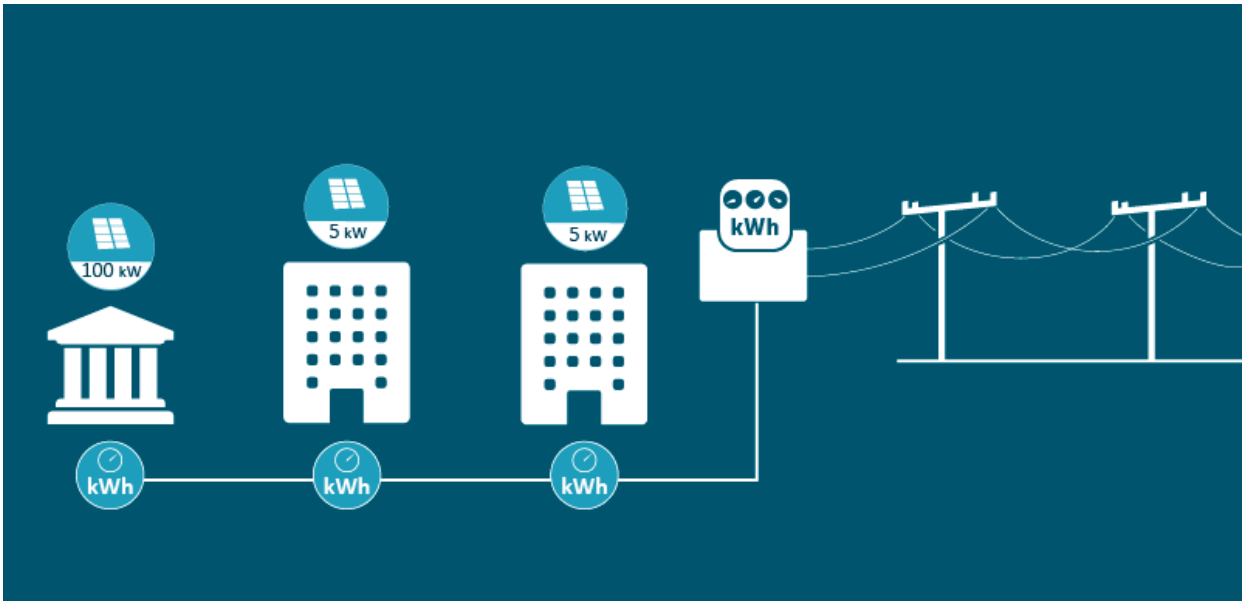
Sub Metering

Energy efficiency is the first step in achieving sustainability in buildings and helps to control increasing their energy costs while reducing their environmental footprint. An energy management system (EMS) or building automation system (BAS) can provide metering, sub metering and monitoring functions that allow facility managers to gather data that allows them to make more informed decisions about energy use.

Electrical sub metering involves the installation power meters (also called power monitors, electrical meters, or energy monitors) that can measure energy usage after it reaches the primary utility meter. Sub metering offers the ability to monitor energy usage for individual tenants, departments, pieces of equipment or other loads to account for their actual energy usage.

There are various Benefits of Sub metering, some are as follows:

- Accurate energy monitoring, real-time energy consumption
- Granular in-depth review of facility energy data
- Better informed to make decisions that can help optimize energy performance
- Ability to record actual energy usage (no estimates)
- Comparison of usage across similar facilities over time
- Ability to identify and eliminate wasted energy
- Early access to maintenance issues for repair before critical equipment fails



Depiction of sub metering installation at each building and floor

Retrofitting lighting and fan fixtures

Retro fitting with low wattage LED's and use of efficient fans for the whole campus can reduce the power consumption over this end.

Retrofitting the facility means that we are adding something new (such as a technology, component, or accessory) that the building didn't previously have or that wasn't a part of the original construction. The term "retrofit" is very much a synonym with the term "conversion." In the case of lighting, most retrofits that are happening today are LED lighting retrofits.

Benefits of Retrofitting

1.Energy efficiency improvements

2. reduce operating costs including recurring maintenance

3. improved lighting quality

Comparison of LED Lighting Fixtures with Other existing types

XII. Final Summary

D2O team has performed thorough energy analysis of the Swami Keshvanand Institute of Technology, Management & Gramothan. The calculations were done using all the measurement taken at all energy consuming units at the facility. The results obtained after the calculation were thoroughly observed. The possible energy efficiency measures were given for the units to reduce the energy consumption and to improve the overall energy efficiency of the facility building. The energy efficiency measures given for each unit are summarized in the below table with the saving and Details.

Summary of ECM Suggested to SKIT, Jaipur with energy savings

ECM	Description	Savings percentage	Remarks
1	ECM 1 – Use of Occupancy and Daylighting Sensors	10%	An occupancy sensor is an indoor motion detecting device used to detect the presence of a person to automatically control lights or temperature or ventilation systems.
2	ECM 2- Sub Metering	5% -10%	Will help in monitoring and logging
3	ECM 3 – Retrofitting lighting and fan fixtures	25%	
4	ECM 4 – Retrofitting of Exterior Lighting	10%	Retrofitting with low wattage LED's and using reflective shading for reduction in Night Pollution.

END OF REPORT

TEAM CREDENTIALS

CERTIFIED COURSE

CERTIFICATE OF ACHIEVEMENT

Avanta Global Pte Ltd

Certified by International Register of Certificated Auditors
Approved Training Partner ID: 01199246

hereby certify that

Ankur Mantri

has successfully completed and passed the exam towards the

ISO 50001:2018 Energy Management System
Auditor / Lead Auditor Course

CQI-IRCA Certified Course Reference No.: 17623

4th, 5th, 6th, 7th and 8th November 2020

D.N: 290184

Director
Training & Development

AG-EnMSLAC-2020-03
16 November 2020

Certificates of Achievement are only valid for three years for the purposes of auditor certification by CQI-IRCA.

Avanta Global Pte Ltd
72 Bendemeer Road, #03-29 Luzerne, Singapore 339941
Tel: +65 62952112 Fax: +65 62956683 Email: enquiry@avanta.com.sg

LEED AP BD+C

GREEN BUSINESS CERTIFICATION INC. CERTIFIES THAT

N Sai Balaji

HAS ATTAINED THE DESIGNATION OF

LEED AP® Building Design + Construction

by demonstrating the knowledge and understanding of green building practices and principles needed to support the use of the LEED® green building program.

11181524-AP-BD+C

CREDENTIAL ID

18 SEP 2018

ISSUED

17 SEP 2022

VALID THROUGH

Mahesh Ramanujam

MAHESH RAMANUJAM
PRESIDENT & CEO, U.S. GREEN BUILDING COUNCIL
PRESIDENT & CEO, GREEN BUSINESS CERTIFICATION INC.

IGBC

Confederation of Indian Industry

The Indian Green Building Council

hereby certifies that

Tanmay Sharma

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

IGBC Accredited Professional

K S Venkatagiri
Executive Director
CII-Godrej GBC

V Suresh
Chairman
Indian Green Building Council

Gurmit Singh Arora
Vice-Chairman
Indian Green Building Council

200432

05 September 2020

September 18, 2021

ENVIRONMENTAL AUDIT REPORT

Swami Keshvanand Institute of Technology, Management & Gramothan (SKIT Jaipur)

Ram Nagariya Rd, Shivam Nagar, Jagatpura, Jaipur, Rajasthan 302017

GSTIN : 08AAJFD9550B1ZH

Design2Occupancy Services LLP

D2O/EA/18092021 **Letter of Certification** Date: 18/09/2021

To,
The Director,
Swami Keshavanand Institute of Technology, Management & Gramothan
Ram Nagariya Rd, Shivam Nagar,
Jagatpura,
Jaipur, Rajasthan 302017

This letter is to certify that Swami Keshavanand Institute of Technology, Management & Gramothan has undergone Energy Audit, Green Audit and Environment Audit.

The audits have been performed by Design2Occupancy Services LLP, which is primarily a consulting firm which deals in Green energy, Energy Audits, Green Building Consultancy etc. We help clients in saving energy, operational costs while creating a sustainable environment.
Design2Occupancy Services LLP bears some of the most valued credentials in the industry such as LEED AP, IGBC AP, GRIHA trainer & evaluator, PQP Professional, ICP, and Certified Energy Auditors etc. and hold valuable experience in various areas like Green building facilitation, Energy Simulation and Analysis, Thermal & daylight modelling, CFD simulation, renewables, sustainability reporting, IAQ consulting, Energy audits & commissioning and several others. Our team's competence is our strength and our projects showcase our commitment towards a greener future.

This assignment is taken up for Swami Keshavanand Institute of Technology, Management & Gramothan, an environmentally responsible educational institution based out of Jaipur (Rajasthan) and embarking into this journey of sustainability. Therefore, we have independently conducted this entire assessment through step by step procedure prescribed for such practices. We have deployed our technical team to gather information and report the institution's effort towards sustainability in comprehensive manner.

We hereby submit these reports dated 18th September 2021. All assessments, results and reported facts are reliable, conservative and verifiable in all aspects.

for, Design2Occupancy Services LLP
Sai Balaji,
LEED AP and GEM Certified Professional
(Senior Counsellor)

Contents

Executive Summary

The Swami Keshvanand Institute of Technology, Management & Gramothan acknowledges the importance of Energy as an essential resource for successfully meeting its operational objectives. The Institute also realizes the need to use this resource in a responsible manner that is sustainable and complementary to its Environmental Management Policy.

This document explores how the Institute uses Energy, outlines its approach to managing Energy use and sets targets for Carbon footprint reduction. This strategy is intended to sit alongside the other strategies which together make up the Institute's overall sustainability strategy

The Swami Keshvanand Institute of Technology, Management & Gramothan, Jaipur (SKIT) is committed to improving sustainability. SKIT strives to sustain its local and global environment, organizational health and ability to create a positive, viable future. SKIT endeavors to include environmental sustainability principles and targets in all aspects of its decision-making. Through its research, teaching and learning, operations and community engagement, SKIT aims to:

Minimize the environmental impact of its operations and move towards restoring environmental integrity

- Promote social justice, equity and diversity
- contribute to human health and well-being
- Maintain its financial viability.

As part of its commitment to sustainability, SKIT developed a Sustainability Strategy. SKIT is now developing a series of Sustainability Action Plans on energy and greenhouse, water, transport and waste to support implementation of the Policy and Strategy. This document deals with Environmental Audit of SKIT.

About the Institute

Swami Keshvanand Institute of Technology, Management & Gramothan (SKIT) inspired from the leanings of Swami Keshvanand, was established in the year 2000 by Technocrats and Managers Society for Advanced Learning. In order to carry the same, they leaped forward to establish MRM Public School in Nirwana village of Sri Ganganagar district of Rajasthan in the year 1992. Pursuing the vision of the Great Saint Swami Keshavanand, who devoted his life for the cause of education and the uplift of the rural folk, the promoters added "Gramothan" to the name of the institute not only to epitomize his vision but also to extend their efforts to explore the use of engineering education for innovations for improving the scenario for the rural community. Today the institute is recognized as one of the centers of academic excellence in Northern India.

The Institute is affiliated to Rajasthan Technical Institute, Kota for offering Postgraduate and Graduate Courses in Engineering and Management. Located in the Pink City Jaipur, which is a blend of traditional history and modern outlook, SKIT is putting in efforts for making industry ready engineers and managers through effective Industry –Institute Interface. Apart from Institute curriculum SKIT also pursues activities for research and development in various fields.

The green landscaping, aesthetic elegance of arches and the vibrant pursuit of knowledge by the young aspirants make the environment serene, pleasant and dynamic.

Students joining the institute share the box full of opportunities for professional and personal development through an environment of practical orientation, industrial interaction and student led activities which help the students to develop good communication skills, integrated personality and greater competitive spirit.

Objectives of the Study

The main objective of the green analysis is to promote the Environment Management and Conservation in the Institute Campus. The purpose of the analysis is to identify, quantify, describe and prioritize framework of Environment Sustainability in compliance with the applicable regulations, policies and standards. The main objectives of carrying out Green Analysis are:

1. To introduce and aware students to real concerns of environment and its Sustainability.
2. To secure the environment and cut down the threats posed to human health by analyzing the pattern and extent of resource use of the campus.
3. To establish a baseline data to assess future sustainability by avoiding the interruptions in environment that are more difficult to handle and their corrections requiring high cost.
4. To bring out a status report on environmental compliance.

Audit Inclusions

- Water Audit and Conservation
- Waste Audit and Remediation

Water Audit and Conservation

Definition

Water auditing is a method of quantifying water flows and quality in simple or complex systems, with a view to reducing water usage and often saving money on otherwise unnecessary water use. It provides the deviation existing in the actual water supply to the minimum required water in the respective premises. Also, water auditing is a mechanism for conserving water, which will grow in significance in the future as demand for water increases.

Objective of the Audit

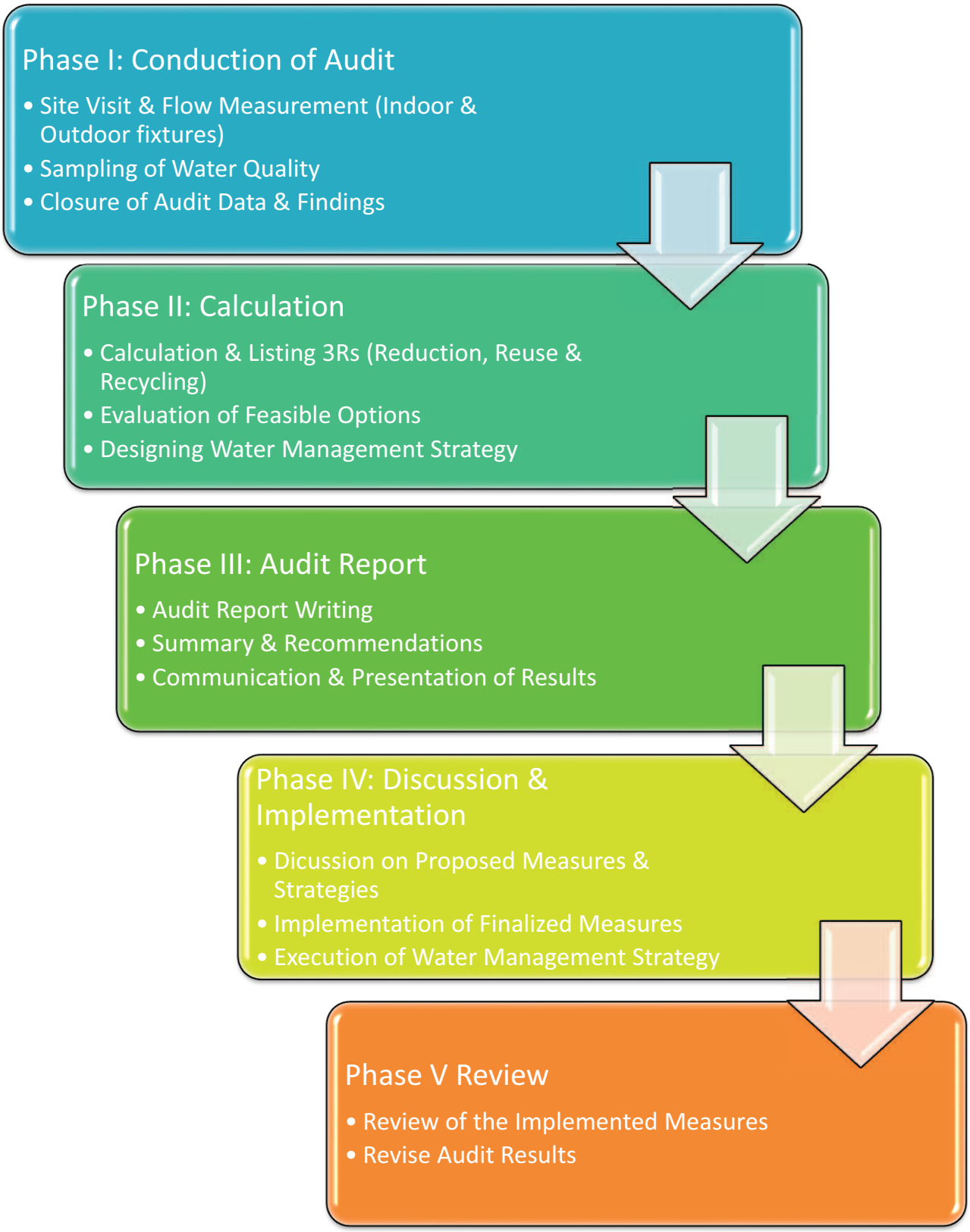
The objective of water audit is to assess the following:

1. Water Required (in accordance with National and/or State Bye Laws)
2. Water Used (as per the Existing Fixtures & Equipment)
3. Physical & Non-physical Losses
4. To identify and priorities areas which need immediate attention for control

Procedure

The different stages of the water audit have been depicted in form of below flow chart. The whole procedure is divided into five phase starting from the site inspection to review of the implemented measures.

Audit Procedure



Phase I: Conduction of Audit

At the beginning of water audit, it is must to observe the supply, storing & consuming facilities are provided on the site. The water audit team commits to:

- Conduct site visit to locate the water points & Map them
- Locate the water usage areas
- Take samples at various location to define water quality
- Mark storage tanks
- Compile the findings during visit
- Notice conditions of fixtures (dirty, stuck, leaking etc.)

Phase II: Calculation

After completion of site visit, the audit team performed calculation to analyze the acquired data with reference to local bye laws (in India: NBC 2016) as base line. This enables to determine whether the premise is consuming surplus water or not. The results will help to calculate the amount of water wasted or misused. Following goals are kept in mind during the calculation;

a) Estimating water use from different areas and activities of a building.
b) Estimate rate of flow of water from different outlets and inlets.
c) Determine the rate of flow of water for faucets and shower head.
d) Estimating shortage or surplus with reference to NBC 2016.

Based on the calculation, the water management strategies have to be define and implement in the respective premises.

Phase III: Audit Report

The team prepares detailed report based on procedure mentioned above. The audit report consists:

- Observations done during audit
- All the measurements, calculations
- Overview of the current working of water supply system
- Summary and conclusions based on the calculations

Phase IV: Discussion & Implementation

After formation of audit report, the audit team will hold meeting with the respective project team to discuss the current and future scenario towards the water management. The key discussion points are:

a) Possible water conservation measures & their implementation

b) Areas where water can be conserved & wastage of water can be minimized

Later, the project team will implement the measure that are finalized in accordance to the discussion and meetings held with audit team.

Phase V Review

After the implementation of measures, the review and maintenance of the same is much needed. Because, the continuous monitoring of the measures can only justify and revise the water savings occurring in the premises.

The formation of "Sustainable Cell" in the premises will help in proper & continuous execution of the measures. This cell is also responsible to educate the occupants regarding effects of water management along with the finding and installing any new techniques at the project site.

Water- Use

This indicator addresses water consumption, water sources, irrigation, storm water, appliances and fixtures. A water analysis is an on-site survey and assessment to determine the water use and hence improving the efficiency of its use.

Sr.No.	Name	Quantity (Nos)	Capacity (litres)	Location	Operating hours
1	Borewell	1	14000	Gate No-2	NA
2	Borewell	2	20000	Near Panel Room	NA
3	Borewell	1	9000	Saraswati mandir	NA
4	Borewell	1	13000	Opp. Canteen Parking	NA
5	Borewell	1	8000	Sir M. Visvesvaraya Block Ramp	NA
6	Borewell	1	5000	Back Side Of Director Academic Bungalow	NA
7	Borewell	1	6000	Back Side Of Noran Girls Hostel	NA

Observations

The study observed that the Water tanker supply system, Tube well and Municipal connection are major sources of water in college and hostels. Water is used for drinking purpose, toilets and gardening. The waste water from the RO water purifier is used for gardening purpose.

During the survey, no loss of water is observed, neither by any leakages, nor by over flow of water from overhead tanks. On an average the Institute consumes 250,000 Liters of Water per day.

The campus is installed with STP, which fosters the need for landscape irrigation of the campus. A part of treated water is used in the flushing purposes as well.

Underground water tank

Sewage Treatment Plant

Sr.No.	Name	Quantity (Nos)	Capacity (litres)	Location
1	Pump	1	3000 litres Per Hour	Saraswati mandir Water tank
2	Pump	2	4000 Litres Per Hour	S.T.P
3	Pump	1	2000 Litres Per Hour	Sewage Tank Back Side Nirwana Boys Hostel
4	Pump	1	2000 litres Per Hour	Sewage Tank Back Side Sir M. Visvesvaraya Block
5	Pump	1	22000 Litres per pump	Rain Water Tank Near Gate No-1
6	Pump	1	18000 litres per Hour	Rain Water Tank Back Side Vikram Sarabhai Block
7	Pump	1	8000 litres Per Hour	Water Tank (5000 Lit) Back Side Vikram Sarabhai Block
8	Pump	1	18000 litres Per Hour	Rain Water Tank opp. Noran Girls Hostel (Carpet Lawn)
9	Pump	1	20000 litres Per hour	S.T.P

Details of Pump installed at SKIT

Separate rainwater collection pits were installed in the campus for proper collection and transmitting the rainwater

Rainwater collection system at SKIT

Sr.No.	Name	Quantity (Nos)	Capacity (litres)	Location
1	Rainwater harvesting Tank	1	265000	Gate No-1
2	Rainwater harvesting Tank	1	11000	Back Side Of Vikram Sarabhai Block
3	Rainwater harvesting Tank	1	7000	Back Side Of Vikram Sarabhai Block
4	Rainwater harvesting Tank	1	28000	Out Side Of Saraswati Temple
5	Rainwater harvesting Tank	1	255000	OPP, Noran Girls Hostel (Carpet Lawn)

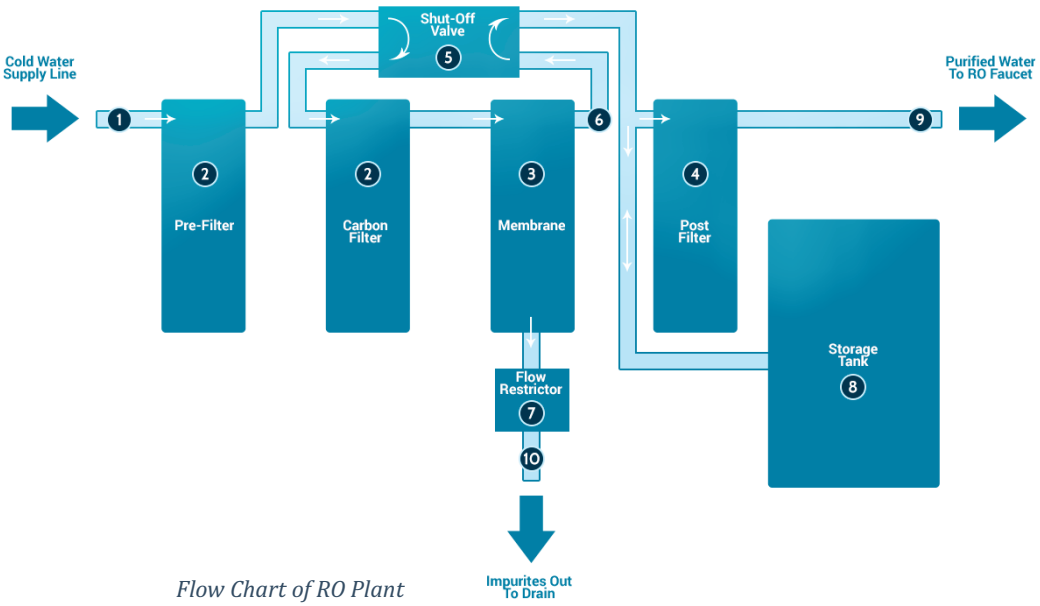
Details of Rainwater Storage tanks

Sr.No.	Name	Quantity (Nos)	Capacity (litres)	Location	Operating hours
1	Rain Water Recharge	1	30000	Gate No-3	NA
2	Rain Water Recharge	1	10000	Near Saraswati Temple	NA
3	Rain Water Recharge	4	4000	Dhanwantri Block Cut Out	NA
4	Rain Water Recharge	4	4000	Nirwana Boys Hostel cut Out	NA
5	Rain Water Recharge	3	4000	Vishvakarma Cut Out	NA
6	Rain Water Recharge	6	4000	Sir M. Visvesvaraya Block Cut Out	NA
7	Rain Water Recharge	3	4000	Noran Girls Hostel Chief Warden Residence	NA
8	Rain Water Recharge	6	4000	Vikram Sarabhai Block Cut Out	NA
9	Rain Water Recharge	1	30000	Vikram Sarabhai Block Back Side Of Amphitheatre	NA

Details of Rainwater Harvesting pits

The Total rainfall catchment in the site area of SKIT is 1000m^3 and by the method of rainwater recharge and harvesting, the Institute campus is able to save 660m^3 of rainwater. The rest of 340m^3 of water is used for landscape.

Reverse Osmosis Plant - Reverse osmosis (RO) is a membrane separation process, driven by a pressure gradient, in which the membrane separates the solvent (generally water) from other components of a solution. The membrane configuration is usually cross-flow. The Institute has provided purified R.O. drinking water to all the students and staff residing in the campus by setting up the R.O plants in the hostels and academic buildings. In additional to drinking purpose, R.O water is provided to the hostel mess for cooking foods.



Flow Chart of RO Plant

Sr.No.	Name	Quantity (Nos)	Capacity (litres)	Location
1	R.O Plant	1	250	Dhanwantri Block
2	R.O Plant	1	500	Mess
3	R.O Plant	1	25	Old Engineering Block
4	R.O Plant	1	1000	Nirwana Boys Hostel
5	R.O Plant	1	500	Sir M. Visvesvaraya Block
6	R.O Plant	1	15	Director Academic Bungalow
7	R.O Plant	1	15	Chief Warden Residence
8	R.O Plant	1	1000	Vikram Sarabhai Block

Details of RO Plants in SKIT

Water Conservation Measures

Swami Keshvanand Institute of Technology, Management & Gramothan (SKIT) utilizes 250,000 Liters of Water per day approximately. SKIT has set a good standard for water utilization by implementing 94000 Liters capacity of rain water harvesting by recharging the underground wells and 5,66,000 liters of rain water harvesting tank. This rainwater is used for various purposes like Landscaping.

Sub water Metering

Water sub meter is a utility meter solution that is put in place to separate the usage of water into consumption-based billing. Installed water sub-meters in the Institute is essential and advantageous. Here are some of the advantages:

1. Identify large and very costly leaks in the park's piping infrastructure, that, when fixed can drastically reduce the park's utility bill and improve the value of the property.
2. With all the water shortages and environmental problems, we face nowadays, water conservation is vital. With the help of water sub-meters, homeowners or tenants will be aware of their consumption and therefore find ways on how they can cut down their utility expenses while saving water at the same time.

Advances in meter communication, data collection and data analytics have changed sub metering at universities now have the information to understand their water usage, fix leaks, change behaviors and better manage this precious resource. All of this is now available in a cost effective and user-friendly platform, giving park owners capabilities previously only available to the largest municipal utilities.

The facility has a scope of smart metering where all the water meters can be clubbed over a single dashboard to monitor and record the daily consumption. This reduces human interference and recording errors associated with them.

It is suggested that in future if any meters are to be replaced a policy can be implemented supporting smart monitoring of the campus.

Detail of Water Sub-meter in the Campus

First: - Detail of incoming water for use

Sr. No.	Location of the meter	Number of meter	Image of meter
1	Gate No-2	1	
2	Near Panel Room	1	
3	Opp. Canteen Parking	1	

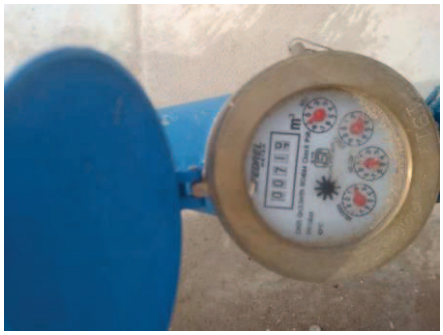
4	Sir M. Visvesvaraya Block Ramp	1	
5	Back Side Of Director Academic Benglow	1	
6	Back Side Of Noran Girls Hostel	1	
Total Meter in this category		**6**	**Six**

Second: - Detail of Block wise water meter

Sr. No.	Location of the meter	Number of meter	Image of meter
1	Nirwana Boys Hostel	2	 
2	Laundry	1	
			

3	Noran Girls Hostel	2	
4	Mess	2 (RO & Cleaning)	
			
			

5	M. Visvesvaraya Block	3 (Labs, RO, Toilet)	
			
6	Workers Area	1	
7	Vikram Sarabhai Block	1	

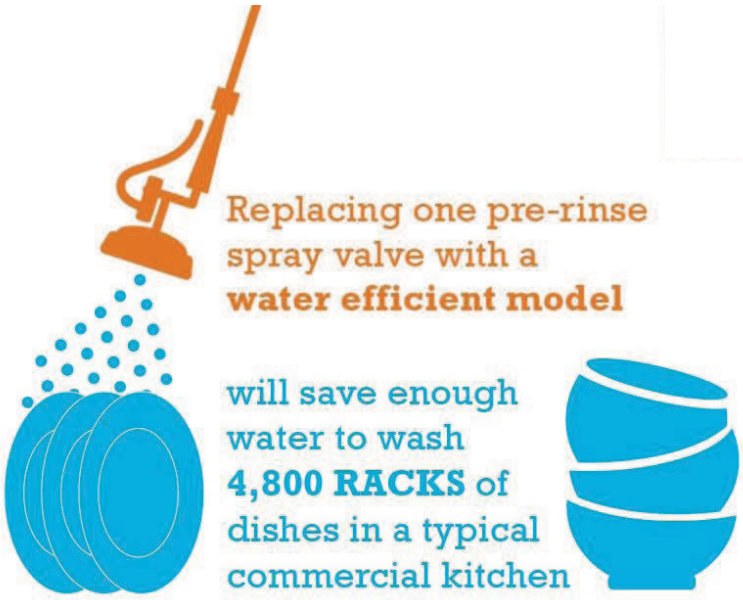
8	Vishvakarma Block	1	
9	Dhanvantari Block	1	
Total Meter in this category		**14**	**Fourteen**

Total water meter installed in SKIT campus for measuring the use of water

Sr. No.	Particulars	Count
1	Total Meter in first category:	6
2	Total Meter in second category:	14
Total Number of Meter in the campus:		**20**

Pre-rinse Spray

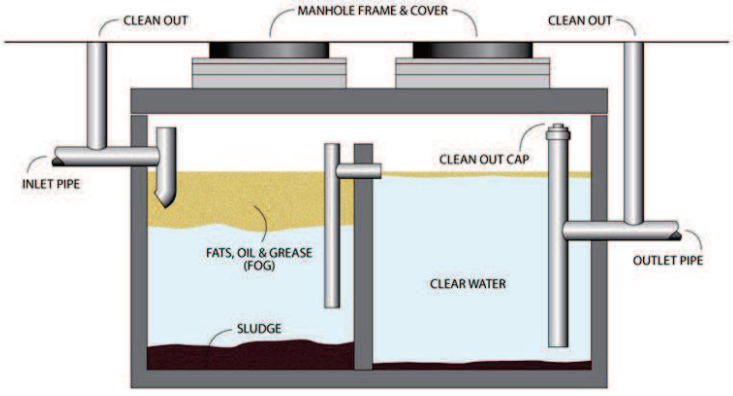
Pre-rinse spray valves—often used in commercial and institutional kitchens—are designed to remove food waste from dishes prior to dishwashing. By switching to a high-efficiency pre-rinse spray valve, a commercial or institutional kitchen can save more than $110(8,170.71 Indian Rupee) annually in energy and water costs as per EPA.



Pre-Rinse Spray

Oil & Grease Interceptor in Kitchen

An oil and grease interceptor is a waste treatment tank that uses only gravity and time to filter wastewater from kitchen sinks and drains.



- Prevent the blockage of kitchen drain pipe& Increase operating life cycle of STP
- Captured grease is actually recyclable! With no wastage, there will be monetary savings.
- Indirect benefits can be derived by utilizing this water measure

Oil and grease inceptor

Summary – Water Audit

The water audit was conducted by a team of experts and recommendations have been shared in the report above. The report is an analysis of the water inflows and outflows, and presents opportunities to save water across the facility. Incorporation of the measures suggested in this report shall bring up the water efficiency in the campus and would be a step further in rendering the education campus among the leading institutions in water efficiency. A summary of the identified water conservation measures is given below:

Water Conservation Measures details

WCM	Description	Remarks
1	Install pre-rinse spray valves	66 % savings
2	Use of Grease & Oil Interceptor in kitchen	Prevent the blockage of kitchen drain pipe & Increase operating life cycle of STP
3	Use of Irrigation System	40 % savings in landscaping water usage
4	Prevention of leakages in building taps	100 % Savings in leakages

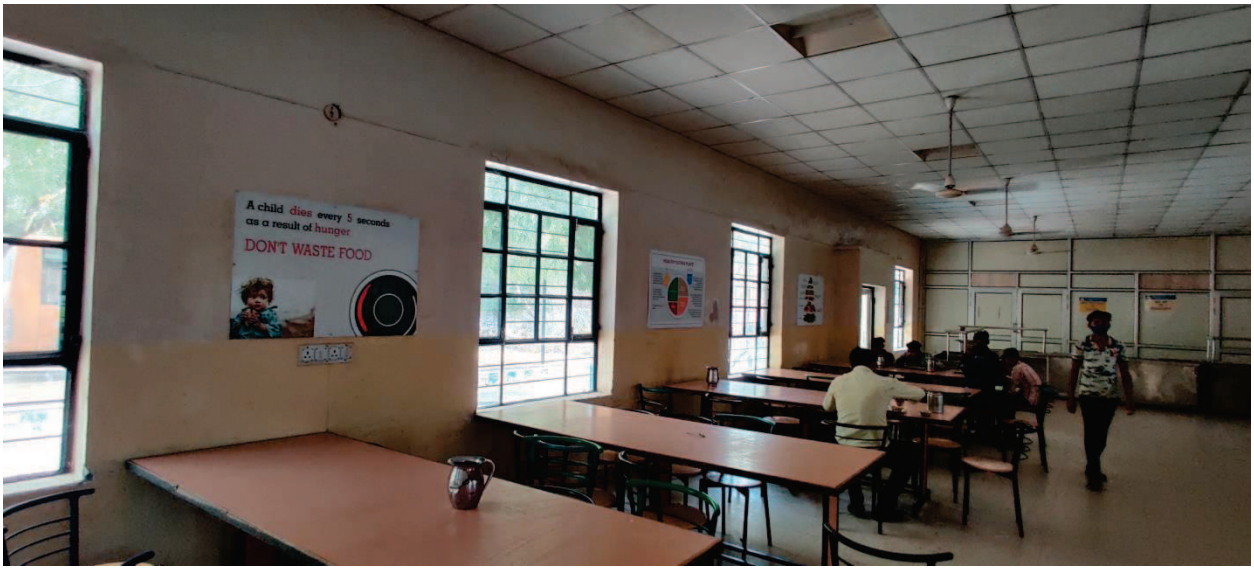
Waste Audit and Conservation

Questionnaire

1.	**Does your institute generate any waste? If so, what are they?**	**Yes, Solid waste Canteen waste, paper, plastic, Horticulture Waste etc.**
2.	How is the waste generated in the institute managed? By 1 Composting 2 Recycling 3 Reusing 4 Others (specify)	• Reuse of one side printed Paper for internal communication instead shredding • Domestic Waste is given to Municipal Corporation. • Two types of Waste bins are provided at campus for biodegradable and non-biodegradable waste.
3.	Do you use recycled paper in institute?	No
4.	Do you use reused paper in institute?	Yes
5.	Can you achieve zero garbage in your institute? If yes, how?	Not yet achieved. Possible through waste management plan.

Kitchen Waste

The Canteen in Swami Keshvanand Institute of Technology, Management & Gramothan (SKIT) runs for all the students, Staff and supporting Staff and has policy of zero food waste policy. It has created awareness for the same through posters in the canteen. The food waste log is maintained daily and makes sure people produce less food waste and as a community SKIT excels in reduction of food waste.



SKIT is committed to zero food waste policy and reduced significant amount of food through daily logging of wastage and its feeding capacity to needy people, it has resulted in daily update and awareness which triggers mentally in students and staff to reduce food waste.

Waste Remediation Methods

01

BIOGAS Plant

Cost (1000 Kg) : INR 30,00,000/-*
LPG Generation: 70 kg/ day
Energy Consumption : 40 kWh/day

- Producing biogas gives many advantages for the environment, companies and people involved. The advantages are: Biogas is a green energy source in form of electricity and heat for the local grid. Considerable environmental advantages - less emission of the greenhouse gasses methane, CO2 and nitrous oxide

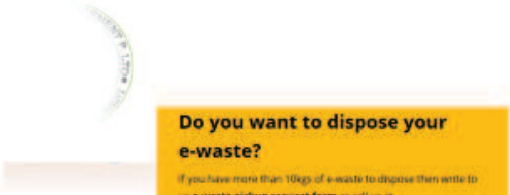
* Might vary based on actual requirement

02

Plastic Waste Convertor

Cost – INR 4,95,600 /-

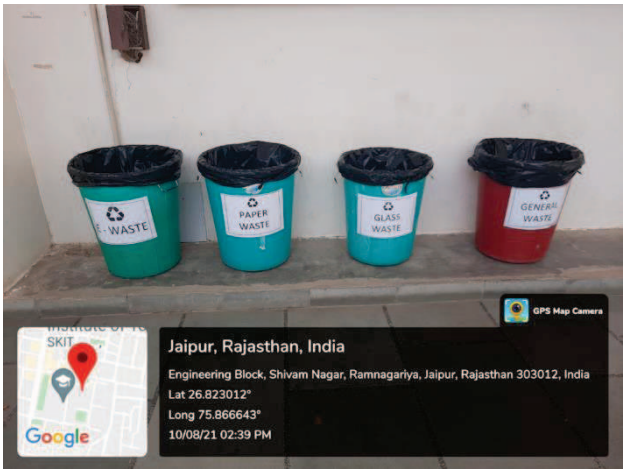
- **ZELENO- reverse vending machine** allows you to easily dispose of your plastic PET bottles and Aluminum/steel cans of different sizes. The machine automatically accepts the trash and crushes them to be recycled later.
- **ZELENO-RVM** generates an instant reward for the trash disposed and creates a receipt, which can be redeemed at the chosen outlets.

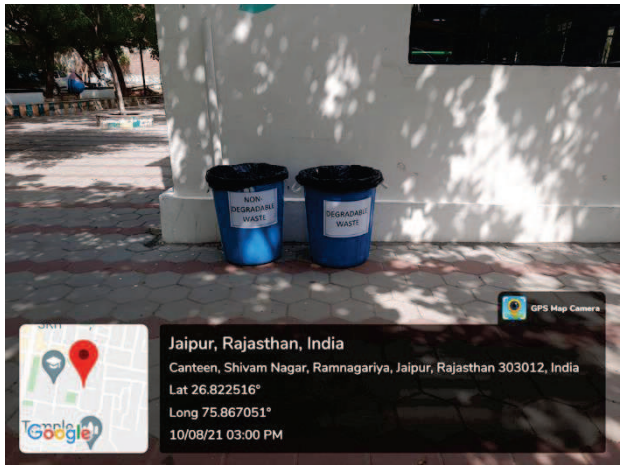


03

Association with Recycling/ Feed the Need Organizations

- Formed to facilitate recycling of all kinds of packaging waste and thus contribute towards cleaner and greener environment. We specialize in collection and aggregation of all packaging waste in a professional and organized manner backed by technology and we offer Pan India services.





Existing Segregated Dustbins

Existing Green Campus Policy

Eco-friendly practices and educational resources combine in a Green Campus to promote sustainable practices. It allows institutions to re-define their environmental culture and develop new paradigms for solving the social, economic, and environmental problems of mankind by utilizing a Green Campus concept.

Objectives of the Policy

- To safeguard the environment within and around the campus.
- To keep the campus clean and environment friendly.
- To motivate all stake holders to ensure judicious use of scarce natural resources.
- To increase awareness among staff and students regarding different issue and possiblesolutions related to environment and motivate them to adopt good practices for protection of environment.
- To frame the green policies that will enhance the ecological efficiency in the campus.
- To continually improve the efficient use of all natural resources including water and energy.
- To make sustainable efforts to make the campus plastic free and tobacco free.
- To improve resource use through reduction in material use by reducing waste and to identify recycling opportunities for west generated such as metal scrap, paper, e-wasteetc.
- To conduct in house environmental and energy audits from time to time.
- To make the campus self-reliant in energy using solar energy and to make the campus net zero.
- To recycle west water and utilize it for landscape irrigation.

Scope of the Policy

Green Campus develops new extracurricular and co-curricular practices that allow students to take leadership roles in creating positive change. As a result of these initiatives, all infrastructural and administrative activities will be reviewed from the viewpoints of energy, efficiency, sustainability, and environment.
The focus areas of the policy are

- Green Campus Initiatives

- Clean Campus Initiatives
- Tobacco free Campus
- Net Zero Campus
- Water Conservation Initiatives
- Waste Management Initiatives

Existing Plastic Ban Policy

The pollution of the environment by plastics has now been identified as a global problem. A quick-term advantage and ease of use have made plastic and plastic goods wildly popular. Plastic has grown more and more popular over the past century, outpacing trash management as a result. Our environment, as well as our health and well-being, suffer from plastic pollution. We have all contributed, consciously or unwittingly, to this issue, and we must work together to minimize and eradicate plastic pollution.

The government has chosen to implement a plastic ban on a nationwide scale in order to address the environmental dangers created by the widespread usage of plastic. Educational institutions must take the lead in this national effort. Educational institutions must take a leadership role in the fight to phase out single-use plastics.

Guidelines

The guideline aims to assist Indian higher education institutions in achieving a plastic-free campus. It is not intended to be comprehensive, but rather to offer basic guidelines and suggestions relevant to all institutions. The recommendations urge institutions to implement policies and practices that promote a more environmentally friendly and plastic-free campus environment.

- The institute will educate stakeholders about the need of reducing, reusing, and recycling plastic.
- All stakeholders are encouraged to reduce their reliance on plastic bags on campus.
- Stakeholders must adhere to rigorous waste segregation guidelines.
- As far as feasible, students should recycle the resources available for creative work at college festivals.
- Conducting events and poster contests, among other things, to promote the

creation of ecological and environmentally friendly products in order to reduce the use of single- use plastic.

Transport

Transport accounts for a significant and growing share of an Institute's carbon footprint. An increasing demand for international collaboration and knowledge sharing has led to rising CO2 emissions, with international flights being by far the biggest contributor to CO2 emissions from transport at universities.

To create healthier options, an overall campus plan needs to include transportation, and conflicts of overall objectives have to be taken into account, critically analyzed, and communicated transparently. Working alongside local government and planning authorities is also crucial to optimize local public transport solutions.

Internal Campus Transport

SKIT cover large areas, so transport to and from institute's campus are unavoidable. However, the method of transport is a choice and, rather than only thinking of the quickest way, universities need to consider the greenest way. While cars can sometimes prove necessary, cycling and walking is strongly encouraged. Following suggestions can be implemented at the institute.

- To offer people an alternative to using their cars: (More Electric buggy van can be provided)
- Facilitate bicycle use by installing bike racks/safe storage next to entrances, as well as safe paths.
- Offer access to free/cheap bikes, provide bike hire, etc.
- Offer interest-free loans to purchase public transport season tickets.

Transport facility at SKIT

Bicycle Racks

Are the Rooms in Campus are Well Ventilated?	**Yes**				
Window Floor ratio of the Rooms	**Very Good**				
What is the ownership of the vehicles used by your Institute? (Please Tick ✓ only one)		Yes			
		Operator-owned vehicles			
	✓	Institute-owned vehicles			
		A combination of campus-owned and operator-owned vehicles			
Provide details of school-owned motorized vehicles?	Buses	Cars	Vans	Other	Total
PUC done	Yes	Yes	Yes	Yes	Yes
Specify the type of fuel used by your school's vehicles:	Buses	Cars	Vans	Other	
Diesel	Y	Y	--	--	
Petrol	--	--	Y	--	
CNG	Y	--	--	--	
LPG	--	--	--	--	
Electric	--	--	--	Y	
Air Quality Monitoring Program (If Any)	Yes, Monitoring is being done by approved Laboratory				
Students suffer from respiratory ailments? (If Any)	No				
GENSET pollution prevention	Yes				

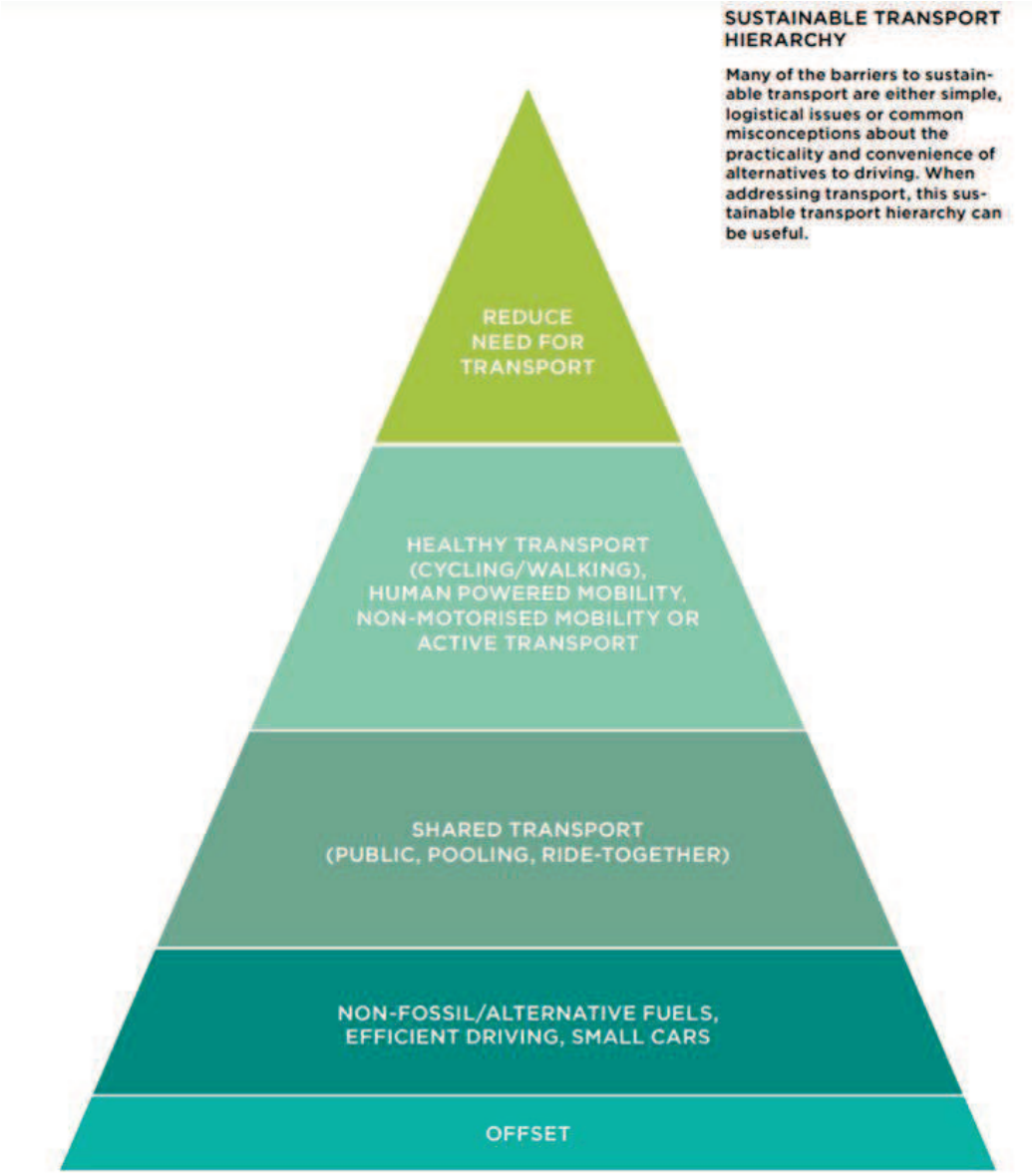
Sr.No.	Transportation Type	Distance travelled/Route	Fuel Type	Mileage	No.of passengers
1	College Bus Ashok Layland	90 K.M Per Day	Diesel	6 K.M Per Litre	51 Seater
2	College Bus-Swaraj Mazda	85 K.M Per Day	Diesel	6 K.M Per Litre	51 Seater
3	College Bus-Swaraj Mazda	82 K.M Per Day	Diesel	6 K.M Per Litre	51 Seater
4	College Bus-Swaraj Mazda	82 K.M Per Day	Diesel	6 K.M Per Litre	51 Seater
5	College Bus-Swaraj Mazda	60 K.M Per Day	Diesel	6 K.M Per Litre	51 Seater
6	College Bus-Swaraj Mazda	60 K.M Per Day	Diesel	7 K.M Per Litre	41 Seater
7	College Bus-Swaraj Mazda	52 K.M Per Day	Diesel	7 K.M Per Litre	41 Seater
8	College Bus-Swaraj Mazda	75 K.M Per Day	Diesel	7 K.M Per Litre	41 Seater
9	College Bus-Swaraj Mazda	50 K.M Per Day	Diesel	7 K.M Per Litre	41 Seater
10	College Bus-Swaraj Mazda	80 K.M Per Day	Diesel	7 K.M Per Litre	41 Seater
11	College Bus-Swaraj Mazda	40 K.M Per Day	Diesel	7 K.M Per Litre	41 Seater
12	College Bus-Swaraj Mazda	42 K.M Per Day	Diesel	7 K.M Per Litre	41 Seater
13	College Bus-Swaraj Mazda	60 K.M Per Day	Diesel	7 K.M Per Litre	41 Seater
14	College Bus-Swaraj Mazda	60 K.M Per Day	Diesel	7 K.M Per Litre	41 Seater

Transportation Details at SKIT

Swami Keshvanand Institute of Technology, Management & Gramothan (SKIT Jaipur) has 14 Swaraj mazda buses which ply on different routes totaling 918 kms per day which runs on diesel emits 0.3 Mt of tCO2/day

Electric bus can be used as a replacement to the old diesel buses when they become isolate.

SKIT will be able to successfully set new benchmark after replacement of this buses with electric bus.



Swami Keshvanand Institute of Technology, Management & Gramothan (SKIT Jaipur) has total on campus population of 5,500. In addition to this cars, bikes and bicycles are part of transport at SKIT. Ample amount of parking facilities is available at the campus.

The internal campus transport of students majorly takes place through walking as the paths are well shaded. It's the most preferable mode of transport. Saving a tons of emission and adding to the Sustainable strategy of the Institute. Also electric buggy van is available at campus for senior citizens

End of Report

Team Credentials

CERTIFIED COURSE

CERTIFICATE OF ACHIEVEMENT

Avanta Global Pte Ltd

Certified by International Register of Certificated Auditors
Approved Training Partner ID: 01199246

hereby certify that

Ankur Mantri

has successfully completed and passed the exam towards the

ISO 50001:2018 Energy Management System
Auditor / Lead Auditor Course

CQI-IRCA Certified Course Reference No.: 17623

4th, 5th, 6th, 7th and 8th November 2020

D.N: 290184

Director
Training & Development

AG-EnMSLAC-2020-03
16 November 2020

Certificates of Achievement are only valid for three years for the purposes of auditor certification by CQI-IRCA.

Avanta Global Pte Ltd
72 Bendemeer Road, #03-29 Luzerne, Singapore 339941
Tel: +65 62952112 Fax: +65 62956683 Email: enquiry@avanta.com.sg

LEED AP BD+C

GREEN BUSINESS CERTIFICATION INC. CERTIFIES THAT

N Sai Balaji

HAS ATTAINED THE DESIGNATION OF

LEED AP® Building Design + Construction

by demonstrating the knowledge and understanding of green building practices and principles needed to support the use of the LEED® green building program.

11181524-AP-BD+C

CREDENTIAL ID

18 SEP 2018

ISSUED

17 SEP 2022

VALID THROUGH

Mahesh Ramanujam

MAHESH RAMANUJAM
PRESIDENT & CEO, U.S. GREEN BUILDING COUNCIL
PRESIDENT & CEO, GREEN BUSINESS CERTIFICATION INC.

IGBC

Confederation of Indian Industry

The Indian Green Building Council

hereby certifies that

Tanmay Sharma

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

IGBC Accredited Professional

K S Venkatagiri
Executive Director
CII-Godrej GBC

V Suresh
Chairman
Indian Green Building Council

Gurmit Singh Arora
Vice-Chairman
Indian Green Building Council

200432

05 September 2020

September 18, 2021

GREEN AUDIT REPORT

Swami Keshvanand Institute of Technology, Management & Gramothan (SKIT Jaipur)

Ram Nagariya Rd, Shivam Nagar, Jagatpura, Jaipur, Rajasthan 302017

GSTIN : 08AAJFD9550B1ZH

Design2Occupancy Services LLP

D2O/EA/18092021 **Letter of Certification** Date: 18/09/2021

To,
The Director,
Swami Keshavanand Institute of Technology, Management & Gramothan
Ram Nagariya Rd, Shivam Nagar,
Jagatpura,
Jaipur, Rajasthan 302017

This letter is to certify that Swami Keshavanand Institute of Technology, Management & Gramothan has undergone Energy Audit, Green Audit and Environment Audit.

The audits have been performed by Design2Occupancy Services LLP, which is primarily a consulting firm which deals in Green energy, Energy Audits, Green Building Consultancy etc. We help clients in saving energy, operational costs while creating a sustainable environment.
Design2Occupancy Services LLP bears some of the most valued credentials in the industry such as LEED AP, IGBC AP, GRIHA trainer & evaluator, PQP Professional, ICP, and Certified Energy Auditors etc. and hold valuable experience in various areas like Green building facilitation, Energy Simulation and Analysis, Thermal & daylight modelling, CFD simulation, renewables, sustainability reporting, IAQ consulting, Energy audits & commissioning and several others. Our team's competence is our strength and our projects showcase our commitment towards a greener future.

This assignment is taken up for Swami Keshavanand Institute of Technology, Management & Gramothan, an environmentally responsible educational institution based out of Jaipur (Rajasthan) and embarking into this journey of sustainability. Therefore, we have independently conducted this entire assessment through step by step procedure prescribed for such practices. We have deployed our technical team to gather information and report the institution's effort towards sustainability in comprehensive manner.

We hereby submit these reports dated 18th September 2021. All assessments, results and reported facts are reliable, conservative and verifiable in all aspects.

for, Design2Occupancy Services LLP
Sai Balaji,
LEED AP and GEM Certified Professional
(Senior Counsellor)

Contents

Executive Summary

The Swami Keshvanand Institute of Technology, Management & Gramothan acknowledges the importance of Energy as an essential resource for successfully meeting its operational objectives. The Institute also realizes the need to use this resource in a responsible manner that is sustainable and complementary to its Environmental Management Policy.

This document explores how the Institute uses Energy, outlines its approach to managing Energy use and sets targets for Carbon footprint reduction. This strategy is intended to sit alongside the other strategies which together make up the Institute's overall sustainability strategy

The Swami Keshvanand Institute of Technology, Management & Gramothan, Jaipur (SKIT) is committed to improving sustainability. SKIT strives to sustain its local and global environment, organizational health and ability to create a positive, viable future. SKIT endeavors to include environmental sustainability principles and targets in all aspects of its decision-making. Through its research, teaching and learning, operations and community engagement, SKIT aims to:

Minimize the environmental impact of its operations and move towards restoring environmental integrity

- Promote social justice, equity and diversity
- contribute to human health and well-being
- Maintain its financial viability.

As part of its commitment to sustainability, SKIT developed a Sustainability Policy and Sustainability Strategy. SKIT is now developing a series of Sustainability Action Plans on energy and greenhouse, water, transport and waste to support implementation of the Policy and Strategy. This document deals with Green Audit of SKIT.

About the Institute

Swami Keshvanand Institute of Technology, Management & Gramothan (SKIT) inspired from the leanings of Swami Keshvanand, was established in the year 2000 by Technocrats and Managers Society for Advanced Learning. In order to carry the same, they leaped forward to establish MRM Public School in Nirwana village of Sri Ganganagar district of Rajasthan in the year 1992. Pursuing the vision of the Great Saint Swami Keshavanand, who devoted his life for the cause of education and the uplift of the rural folk, the promoters added "Gramothan" to the name of the institute not only to epitomize his vision but also to extend their efforts to explore the use of engineering education for innovations for improving the scenario for the rural community. Today the institute is recognized as one of the centers of academic excellence in Northern India.

The Institute is affiliated to Rajasthan Technical Institute, Kota for offering Postgraduate and Graduate Courses in Engineering and Management. Located in the Pink City Jaipur, which is a blend of traditional history and modern outlook, SKIT is putting in efforts for making industry ready engineers and managers through effective Industry –Institute Interface. Apart from Institute curriculum SKIT also pursues activities for research and development in various fields.

The green landscaping, aesthetic elegance of arches and the vibrant pursuit of knowledge by the young aspirants make the environment serene, pleasant and dynamic.

Students joining the institute share the box full of opportunities for professional and personal development through an environment of practical orientation, industrial interaction and student led activities which help the students to develop good communication skills, integrated personality and greater competitive spirit.

1. Introduction

Green Analysis can be defined as systematic identification, quantification, recording, reporting and analysis of components of environmental diversity. The 'Green Audit' aims to analyses environmental practices within and outside the college campus, which will have an impact on the eco-friendly ambience. It was initiated with the motive of inspecting the work conducted within the organizations whose exercises can cause risk to the health of inhabitants and the environment. Through Green Audit, one gets a direction as how to improve the condition of environment and there are various factors that have determined the growth of carrying out Green Analysis.

2. Objectives of the Study

The main objective of the green analysis is to promote the Environment Management and Conservation in the Institute Campus. The purpose of the analysis is to identify, quantify, describe and prioritize framework of Environment Sustainability in compliance with the applicable regulations, policies and standards. The main objectives of carrying out Green Analysis are:

1. To introduce and aware students to real concerns of environment and its Sustainability.
2. To secure the environment and cut down the threats posed to human health by analyzing the pattern and extent of resource use of the campus.
3. To establish a baseline data to assess future sustainability by avoiding the interruptions in environment that are more difficult to handle and their corrections requiring high cost.
4. To bring out a status report on environmental compliance.

3. Audit Inclusions

- Green Audit and Remediation
- Landscape use and Applicability

Green Audit and Conservation

Definition

Green Audit is a process of systematic identification, quantification, recording, reporting and analysis of components of environmental diversity of institute. It aims to analyses environmental practices within and outside of the concerned place, which will have an impact on the eco-friendly

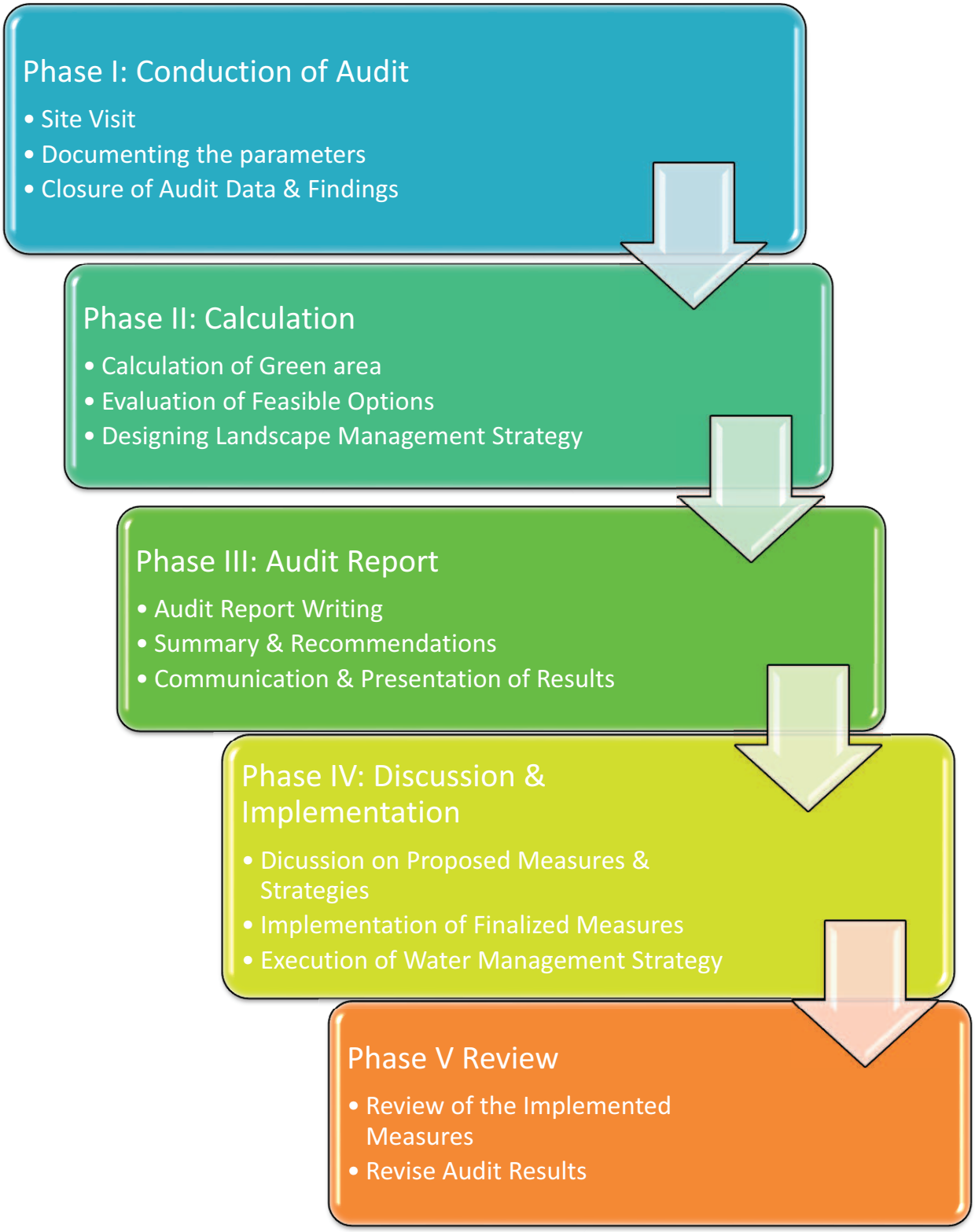
atmosphere. Green audit is a valuable means for a college to determine how and where they are using the most energy or water or other resources; the college can then consider how to implement changes and make savings. It can create health consciousness and promote environmental awareness, values and ethics. It provides staff and students better understanding of Green impact on campus. If self-enquiry is a natural and necessary outgrowth of a quality education, it could also be stated that institutional self-enquiry is a natural and necessary outgrowth of a quality educational institution. Thus it is imperative that the college evaluate its own contributions toward a sustainable future. As environmental sustainability is becoming an increasingly important issue for the nation, the role of higher educational institutions in relation to environmental sustainability is more prevalent

Objective of the Audit

The main objectives of carrying out Green Audit are:

1. To map the Geographical Location of the college.
2. To document the floral and faunal diversity of the college.
3. To record the meteorological parameter of Jaipur where college is situated.
4. To report the expenditure on green initiatives during the last five years.

Procedure


Phase I: Conduction of Audit
• Site Visit
• Documenting the parameters
• Closure of Audit Data & Findings
Phase II: Calculation
• Calculation of Green area
• Evaluation of Feasible Options
• Designing Landscape Management Strategy
Phase III: Audit Report
• Audit Report Writing
• Summary & Recommendations
• Communication & Presentation of Results
Phase IV: Discussion & Implementation
• Dicussion on Proposed Measures & Strategies
• Implementation of Finalized Measures
• Execution of Water Management Strategy
Phase V Review
• Review of the Implemented Measures
• Revise Audit Results

Phase I: Conduction of Audit

At the beginning of green audit, it is must to observe the supply, storing & consuming facilities are provided on the site. The Green audit team commits to:

Conduct site visit to locate the water points & Map them

1. Locate the green landscapes
2. Mark Native plants
3. Compile the findings during visit
4. Notice conditions of water fixtures (dirty, stuck, leaking etc.)

Phase II: Calculation

After completion of site visit, the audit team performed calculation to analyses the acquired data with reference to local bye laws (in India: NBC 2016) as base line. This enables to determine whether the premise is covered with green and well shaded.

Based on the calculation, the landscape management strategies have to be define and implement in the respective premises.

Phase III: Audit Report

The team prepares detailed report based on procedure mentioned above. The audit report consists:

- Observations done during audit
- All the measurements, calculations
- Summary and conclusions based on the calculations

Phase IV: Discussion & Implementation

After formation of audit report, the audit team will hold meeting with the respective project team to discuss the current and future scenario towards the landscape management. The key discussion points are:

Possible water conservation measures & their implementation in landscape

Areas where water can be conserved like rainwater harvesting & wastage of water can be minimized

Later, the project team will implement the measure that are finalized in accordance to the discussion and meetings held with audit team.

Phase V Review

After the implementation of measures, the review and maintenance of the same is much needed. Because, the continuous monitoring of the measures can only justify and revise the water savings occurring in the premises.

The formation of "Sustainable Cell" in the premises will help in proper & continuous execution of the measures. This cell is also responsible to educate the occupants regarding effects of water management along with the finding and installing any new techniques at the project site.

Landscape Use

The baseline landscape consumption is calculated as 4.8 Liters/m^2/day. Whereas, the actual landscape requirement is done as per the plantation species/trees/turf grass. Also, during the actual calculation the annual impending rainwater is also considered.

However, as the part of landscape demand is catered with the treated water from STP. Hence, the treated water is reduced from the total landscape demand for more feasible solution.

Landscape Area

Location	Length (ft.)	Width (Ft.)	Area (Sq-Ft.)
Before Old Noran Girls Hostel	143	148	21164
Before New Noran Girls Hostel	43	46	1978
	66	97	6402
	47	28	1316
	47	16	752
Near Mess R.O.	12	10	120
	37	22	814
	35	18	630
	14	43	602
N/P/Block North Side	36	9	324
	36	9	324
	25	19	475
N/P/Block West Side(Front)	12	8	96
	12	8	96
	10	12	120

	12	19	228
N/P/Block East Side(Behind)	20	23	460
	9	119	1071
Near Sir M. Visvesvaraya Block	20	40	800
	21.5	44	946
	21.5	44	946
	14	38	532
	10	39	390
Near Cricket Ground (tringle)	31.5	39	1228.5
	10	15	150
Vikram Sarabhai Block	88	36	3168
Vikram Sarabhai Block (North side)(22/7*88*88)/2	138.06	88	12149.28
Near Tea Post	117	57	6669
	44	19	836
Near Tennis Court	117	10	1170
Behind Surana Sir(residence)	49	50	2450
	56	13	728
Before Vishvakarma Block	56	74	4144
	56	5	280
Near S.T.P.	59	45	2655
	100	3	300
Before Nirwana Boys Hostel	43	3	129
Near Mech. Parking	171	3	513
Gate no.1 to Generator	200	3	600
Tennis Court Both Side	240	2.5	600
	240	2.5	600
Around Cricket Ground	360	5	1800
Behind Nirwana Boys Hostel	95	8.5	807.5
Plantation (near N/P/Block south side)	45	125	5625
Plantation M/Block West Side	228	31	7068
	46	25	1150

TOTAL			95406.28

The total landscape area in the campus premises utilises sprinklers and natural ditches to irrigate the green area which is more than 12.7% of the total site area i.e. 9540628 sq. ft.

Landscape Watering Schedule

Month	No. of Days	Remarks
Apr-19	15	Alternate Days
May-19	16	
Jun-19	15	
Jul-19	6	Once in a week
Aug-19	6	
Sep-19	10	Twice in a week
Oct-19	10	
Nov-19	10	
Dec-19	10	
Jan-20	10	
Feb-20	10	
Mar-20	15	Alternate Days

Different types Plantations

Green Audit – Questionnaire

Which of the following are available in the institute?

1	Garden area	Available
2	Play ground	Available
3	Kitchen	Available
4	Toilets	Available
5	Garbage or Waste Store Yard	Available
6	Laboratory	Available
7	Canteen	Available
8	Hostel Facility	Yes
9	Guest House	Available

Which of the following are found near your institute?

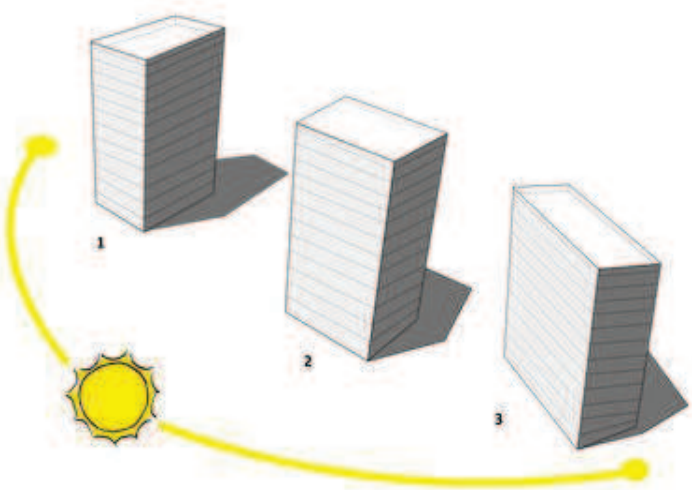
1	Municipal dump yard	Not in vicinity of institute
2	Garbage heap	No, Garbage heaps
3	Public convenience	Yes, public convenience is available
4	Sewer line	Sewer line within campus
5	Stagnant water	No stagnant water
6	Open drainage	No
7	Industry – (Mention the type)	No
8	Bus / Railway station	Faraway from campus
9	Market / Shopping complex / Public halls	Yes

Greening the Campus

1.	Is there a garden in your institute?	Yes, about 40 % of Campus area are developed as open spaces.	
2.	Do students spend time in the garden?	2-4 Hours during winters	
3.	Total number of Plants in Campus	Plant type	Approx. number
		Trees	20,000
4.	Suggest plants for your campus. (Trees, vegetables, herbs, etc.)	List added at the end of the report	
6.	Number of Tree Plantation Drives organized by Institute per annum. (If Any)	Yes, Two Tree Plantation Drives Are Organized Annually. 500 trees and 250 shrubs planted in this financial year also it has a separate green group.	
7.	Number of Trees Planted in Last FY.	500	
	Survival Rate	75%	
8.	Plant Distribution Program for Students and Community	Yes, Saplings are distributed to Students and visitors at various Occasions.	
9.	Plant Ownership Program	Various Trees are Planted and owned by Visitors as well as students.	

Passive Design Strategies

The physical planning norms addresses human settlements in terms of low rise with high density creating mutual shading, the hierarchy of common open spaces as courtyards used as public areas and also connecting one green space to another green thus creating walkable and cyclable Campus. The passive planning in terms of use of natural terrain and using low profile contoured land as storm water resource management evolving through the natural water resource features such as wells. A tested process through many era of civilizations to be adopted in modern eras as part of integrated planning



Sample Image

Existing Shading at SKIT Campus

Reduced Heat Island effect at Site

Heat Island Effect

An urban heat island is an urban area or metropolitan area that is significantly warmer than its surrounding rural areas due to human activities. The temperature difference is usually larger at night than during the day, and is most apparent when winds are weak. SKIT is quite successful in reducing this effect with the passive design strategies.

There are many locations in the Institute that has reduced heat effect and enhanced the livability of the spaces around. The images below show the same.

Landscape Best Practices

The Campus consists of 9540628 sq. ft. of landscape area which is 12.7% meets the requirement of landscape area requirement of minimum 10% of the total site area.

Native plant /adaptive/drought tolerance species are covering around 83% of landscape area and meet the essential requirements.






Landscape best practices at SKIT Campus

Landscape Water Usage

Irrigation

The present irrigation system is sprinkler which is one of effective way to save water, better yield and possibility of using soluble fertilizers and chemicals ¬ less problem of clogging of sprinkler nozzles due to sediment laden water

Recommendations

Pebbles near the hard cape not only store water and provide to the rainwater harvesting system but also maintain the landscape decorum. The use of such measure in landscape reduces the grass area and its related water demand. Water the plants in early morning or late evening to reduce evaporation loss.

Xeriscaping should be promoted at site. Xeriscaping is a method of garden design that involves choosing of plants that can be maintained with little supplemental watering. With a little common sense and aesthetics, landscape can be organized in harmony with the site by using drought tolerant plant species and mulch material in a way to minimize the water use

Rainwater Harvesting Pit

One of medium of harvesting rainwater is providing the incoming rainwater directly to the ground. This will increase the ground water table of the location and also helps in achieving the ground water at same or at less level than the existing level, Further the rainwater is reused in the landscape of SKIT campus

Sr.No.	Name	Quantity (Nos)	Capacity (litres)	Location
1	Rainwater harvesting Tank	1	2, 65,000	Gate No-1
2	Rainwater harvesting Tank	1	11,000	Back Side Of Vikram Sarabhai Block
3	Rainwater harvesting Tank	1	7,000	Back Side Of Vikram Sarabhai Block
4	Rainwater harvesting Tank	1	28,000	Out Side Of Saraswati Temple
5	Rainwater harvesting Tank	1	2,55,000	OPP, Noran Girls Hostal (Carpet Lown)

Observations

Matching with the green and sustainable practices, the Institute campus has facility for sewerage treatment plant, RO drinking water points, solid waste management system and separate parking facilities for 2 and 4 wheelers. Around 15 percent of the total campus area is covered with lush green lawns & plantation covering more than 15000 plants & tree species, thus giving pure oxygen to our students and making campus a treat to eyes.

ECO Friends Club

At SKIT in order to instill awareness about environment among students. Eco-Friends Club has been set up. The members of the Club, known as 'Eco-friends' strive to promote eco-friendly habits not only on the institute premises but also among the masses, in the whole of Jaipur. There have been supporters like the great environmentalist, social reformer and the founder of 'Chipko movement', Padma Bhushan Sunder Lal Bahugana, who has elevated the spirits of the students with his words of appreciation for the initiatives by SKIT ECO-FRIENDS CLUB.

Eco-friendly literally means earth-friendly or not harmful to the environment. This term most commonly refers to products that contribute to green living or practices that help conserve resources

like water and energy. EFC club mainly engage club members in eco-friendly habits or practices by being more conscious of how we use resources.

The Club has vision "To play a pivotal role in the metamorphosis of the earth from moribund planet to a greener one" and the mission of "To herald the essential coordination and harmony between environment, society and economy by endowing the 3 C's with scientific and technical approach"

Snippets of Environmental Awareness programs

Conclusions

Considering the diversity of Swami Keshvanand Institute of Technology, Management & Gramothan, there is significant environmental research both by faculty and students. The environmental awareness initiatives are substantial. The installation of solar panels and rain water harvesting system are noteworthy. Besides, environmental awareness program initiated by the administration shows how the campus is going green. Few recommendations are added to curb the menace of strategic management using eco-friendly and scientific techniques. This may lead to the prosperous future in context of Green Campus & thus sustainable environment and community development.

ANNEXURE -I

TYPES OF PLANT SPECIES		
Sr.No	**Species name**	**Quantity**
HERBS		
1	Lasora	2
2	Gawarpatha	150
SHRUBS		
3	Gurhal	150
4	Kaner	150
5	Chandini	37
6	Champa	83
7	Tulsi	50
8	Googal	6
9	Bijaura	3
TREES		
10	Aam	27
11	Babul	2
12	Banyan	8
13	Jamun	40
14	Khajur	5
15	Khejda	8
16	Neem	229
17	Aamla	9
18	Shisham	131
19	Lasura	2
Other (As per site)		
20	Cheeku	9
21	Neebu	7
22	Gullar	18
23	Amrood	5
24	Kela	10
25	Papita	7
26	Ramphal	3
27	Sitaphal	8
28	Anaar	11
29	Karuja	2
30	Aanwla	6

31	shahtoot	16
32	lehsooa	2
33	Badaam	3
34	Chaina Paam	10
35	Phiniks Paam	14
36	Shugar	4
37	Pathhar Chatta	10
39	Amaltaash	7
40	Shenjana	5
41	Kander	150
42	Z-Plant	5
43	Mani Plant	200
44	Mogra	25
46	Savera Bail	5
47	Elaichi	1
48	Enermi haij	13121
49	Sita Ashok	2
50	Morchatti	183
51	Gulmohar	18
52	Kachnaar	7
53	Papdi / Karanj	29
54	Pedola Ashok	483
55	Kalp Vriksh	2
56	Arjuna	2
57	Peepal	18
58	Phaikus	158
59	Phaikus Panda	108
60	Rudraksh	1
61	Sagwan	27
62	Chaleel	3
63	Chandan	4
64	Adoo	6
65	Haar Singaar	5
66	Bottle Paam	13
67	Eti Paam	19
68	X-Tree	11
TOTAL		**15855**

.

END OF REPORT

Team Credentials

CERTIFIED COURSE

CERTIFICATE OF ACHIEVEMENT

Avanta Global Pte Ltd

Certified by International Register of Certificated Auditors
Approved Training Partner ID: 01199246

hereby certify that

Ankur Mantri

has successfully completed and passed the exam towards the

ISO 50001:2018 Energy Management System
Auditor / Lead Auditor Course

CQI-IRCA Certified Course Reference No.: 17623

4th, 5th, 6th, 7th and 8th November 2020

D.N: 290184

Director
Training & Development

AG-EnMSLAC-2020-03
16 November 2020

Certificates of Achievement are only valid for three years for the purposes of auditor certification by CQI-IRCA.

Avanta Global Pte Ltd
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Tel: +65 62952112 Fax: +65 62956683 Email: enquiry@avanta.com.sg

LEED AP BD+C

GREEN BUSINESS CERTIFICATION INC. CERTIFIES THAT

N Sai Balaji

HAS ATTAINED THE DESIGNATION OF

LEED AP® Building Design + Construction

by demonstrating the knowledge and understanding of green building practices and principles needed to support the use of the LEED® green building program.

11181524-AP-BD+C

CREDENTIAL ID

18 SEP 2018

ISSUED

17 SEP 2022

VALID THROUGH

Mahesh Ramanujam

MAHESH RAMANUJAM
PRESIDENT & CEO, U.S. GREEN BUILDING COUNCIL
PRESIDENT & CEO, GREEN BUSINESS CERTIFICATION INC.

IGBC

Confederation of Indian Industry

The Indian Green Building Council

hereby certifies that

Tanmay Sharma

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

IGBC Accredited Professional

K S Venkatagiri
Executive Director
CII-Godrej GBC

V Suresh
Chairman
Indian Green Building Council

Gurmit Singh Arora
Vice-Chairman
Indian Green Building Council

200432

05 September 2020