



**BANGALORE UNIVERSITY**  
*Department of Environmental Science*  
Jnanabharathi, Bangalore – 560 056

☎ 080-2296 1365 (O)  
080-23473349 (R)  
09886490778 (M)

Email: [nagenvi@gmail.com](mailto:nagenvi@gmail.com)

Web: [www.bangaloreuniversity.ac.in](http://www.bangaloreuniversity.ac.in)

Dr. B.C.NAGARAJA  
Professor

Date: 25/09/2023

## CERTIFICATE

This is to certify that Environment, Green & Energy Audit have been carried out at Seshadripuram Institute of Commerce & Management on “Environment, Energy & Green Audit” by the expert team members from Department of Environmental Science, Bangalore University, Bangalore from 2019 to 2023 as per the NAAC accreditation requirements. The system present at the college have been verified and accepted. The efforts taken by the management & faculty towards Environment and Sustainability is highly appreciated and commendable

*B. C. Nagaraja*  
25/09/2023

(B. C. NAGARAJA)

**Dr. B.C. NAGARAJA** Ph.D.  
PROFESSOR  
Dept. of Environmental Science  
Bangalore University  
Bengaluru - 560 056.

# **GREEN, ENERGY AND ENVIRONMENT AUDIT REPORT**



**January 2019 – April 2023**

## **Contents**

<b>Introduction</b> .....	2
<b>Green Audit</b> .....	3
<b>Objectives of Green Audit</b> .....	3
<b>Methodology Adopted</b> .....	3
<b>Vertical Gardening</b> .....	4
<b>Energy Audit</b> .....	7
<b>Present Energy Scenario</b> .....	7
<b>Solar Panels</b> .....	8
<b>Environmental Audit</b> .....	10
<b>Water Consumption</b> .....	10
<b>Waste Management</b> .....	10
<b>Rain Water Harvesting (RHW) System</b> .....	11
Figure 1: Vertical Garden at Seshadripuram Institute of Commerce and Management .....	5
Figure 2: Landscaping at Seshadripuram Institute of Commerce and Management .....	5
Figure 3: Percentage of Different energy sources .....	8
Figure 4: Solar Panels at Seshadripuram Institute of Commerce and Management .....	8
Figure 5: Waste Segregation Bins at Seshadripuram Institute of Commerce and Management ..	10
Figure 6: Rainwater recharge pit .....	11
Table 1: Plants used for Vertical Garden and Landscaping at Seshadripuram Institute of Commerce and Management .....	5
Table 2: Different energy sources used at Seshadripuram Institute of Commerce and Management .....	8

## Introduction

In the context of rapid urbanisation and economic development at local, regional, and global scales, we grapple with many environmental and ecological crises. Against this backdrop, our institute's adoption of a Green Campus system has become essential and a driving force for sustainable development. The National Assessment and Accreditation Council (NAAC) has mandated that all Higher Educational Institutions submit a Green, Energy, and Environmental Audit Report annually. Furthermore, it is now integral to the Corporate Social Responsibility of Higher Educational Institutions to actively contribute to reducing global warming through effective carbon footprint reduction measures.

The Seshadripuram Educational Trust, whose roots date back to its establishment in 1930, has garnered a well-deserved reputation for producing high-quality students. In 2005, the Trust took a significant step by founding the Seshadripuram Institute of Commerce and Management, offering Bachelor of Commerce and Bachelor of Business Administration programs.

At Seshadripuram Institute of Commerce and Management, pursuing quality education is a hallmark of excellence. It is committed to fostering an institutional culture that continually evolves better to serve our learning community's ever-changing and dynamic needs. Our dedication to quality education and our resolve to adapt to a rapidly changing world positions us to excel in providing a holistic and relevant educational experience.

## **Green Audit**

Green Audit is a process of systematic identification, quantification, recording, reporting and analysis of components of the environmental diversity of the institute. It aims to analyse environmental practices within and outside of the concerned place, which will impact the eco-friendly atmosphere. The green audit is a valuable means for a college to determine how and where they use the most energy, 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.

Seshadripuram Institute of Commerce and Management, Seshadripuram, Bengaluru, Karnataka, is deeply concerned and unconditionally believes there is an urgent need to address these fundamental problems and reverse the trends. The purpose of the audit was to ensure that the practices followed on the campus follow the Green Policy adopted by the institution and, at the same time, reduce a sizable amount of atmospheric CO<sub>2</sub> from the environment.

## **Objectives of Green Audit**

In recent years, a Green Audit of an institution has become increasingly significant for self-assessment, as it represents the organisation's participation in addressing current environmental issues. Since its establishment, the institution has worked to keep our surroundings clean. As a result, the current green audit's goal is to identify, quantify, explain, and prioritise a framework for environmental sustainability that complies with applicable rules, policies, and standards.

## **Methodology Adopted**

Process followed for Green Audit

### **Pre-Audit Process**

The college has shown a commitment towards green auditing during the pre-audit meeting. The college practised many green initiatives like environmental awareness programs, landscaping using potted plants, plans for installation of solar panels, and rainwater harvesting. The college has also formulated waste, e-waste, and plastic-free campus policies.

## **Audit by Team**

### *Audit Team*

1. Dr B C Nagaraja, Professor & Chairman, Department of Environmental Science, Bangalore University, Bengaluru
2. Dr Kumaraswamy T R, Assistant Professor, Chanakya University, Bengaluru
3. Ms. Kavana R, PhD Scholar, Department of Environmental Science, Bangalore University, Bengaluru

## **Vertical Gardening**

In sustainable construction, green architecture stands out as a vital approach to mitigating the environmental impact of new building projects on our natural surroundings. Green architecture goes beyond the mere preservation of on-site trees; it extends to integrating nature as an intrinsic component of the building itself. One innovative way to embrace nature in architectural design is by implementing "breathing walls," called vertical greening.

A vertical greening facade entails cultivating plants on an exterior wall, primarily for aesthetic and ecological purposes. Specific plant characteristics must be considered to create such a facade, and the wall or support structure should be equipped with soil and a watering system. Typically, plants suited for vertical greening facades include those with aerial roots, vines, and climbing varieties. The support structure enables these plants to climb or cascade down the facade.

Vertical gardens, also known as green facades, have become a distinctive landscape design element. It's well-known that plants absorb heat and sunlight for photosynthesis, making them a powerful solution for enhancing air quality in particular environments by absorbing carbon dioxide during daylight hours.

In the face of space limitations, Seshadripuram Institute of Commerce and Management has introduced a stunning vertical garden as a strategic move to reduce heat, lower temperatures, and enhance air quality. Below, is the table listing the specific plants employed at vertical garden.

Sl. No.	Botanical Name	Name of plant	Number of plants
1	Portulaca grandiflora	Table rose	22
2	Epipremnum aureum	Golden money plant	5
3	Epipremnum aureum	Money plant	5
4	Epipremnum aureum	Marble plant	5
5	Crassula ovata	Jade	2
6	Pentas lanceolata	Egyptian starcluster	6
7	Coleus scutellarioides	Coleus	6
8	Begonia	Wax Begonia	6
9	Syngonium	Arrow head vine	6
10	Origanum Majorana	Maraga	1
11	Ocimum Tenuflorum	Tulasi	4

Table 1: Plants used for Vertical Garden and Landscaping at Seshadripuram Institute of Commerce and Management

Figure 1: Vertical Garden at Seshadripuram Institute of Commerce and Management



Figure 2: Landscaping at Seshadripuram Institute of Commerce and Management

*V. K. Prasad*  
 PRINCIPAL  
 Seshadripuram Institute of  
 Commerce & Management  
 # 40, Girl's School Street,  
 Seshadripuram, Bangalore - 20

# ENERGY AUDIT



## **Energy Audit**

Energy audit at Seshadripuram Institute of Commerce and Management, Seshadripuram, Bengaluru, Karnataka, was conducted from 01/01/2019 to 31/04/2023. The goal of the assessment was primarily to identify existing equipment operational performance to find energy-saving opportunities on the campus and provide a report that will help the college select and implement the solutions. The scope of the detailed energy audit includes all fuel and electrical energy consumption at the campus. It will help increase utility systems' energy efficiency and reliability without compromising occupants' safety and comfort conditions.

The process adopted for conducting the audit included basic data collection, measurement of major electrical and fuel energy parameters, analysis of data collected, and identification of specific energy-saving proposals. The report describes the analysis and investigations undertaken for all the Energy Conservation Measures (ECMs), evaluated during the audit.

The college has put tenacious efforts towards achieving better efficiency in terms of energy. The college is conscious of its Energy Efficiency Levels, and they have initiated several measures to reduce energy consumption. Some of the measures implemented include:

- Good use of natural daylight in almost all the facility area offices and concise areas
- Installation of Energy Efficient LED Lights in some areas of campus
- Optimise Contract Demand
- Good Power Factor
- Plans to install solar panels

## **Present Energy Scenario**

The audit documented details of the various types of energy sources consumed in the college and its tariff structure. The college is currently utilising electricity provided by BESCO as a primary energy source to meet the lighting and other electrical load requirements. In addition to this, diesel is used in the generator set. Details of different energy sources are tabulated in Table 3.

Annual Energy Source	Values	Percentage
Electricity from BESCO	21528	97.07%
2.93%	650	2.93%

Table 2: Different energy sources used at Seshadripuram Institute of Commerce and Management

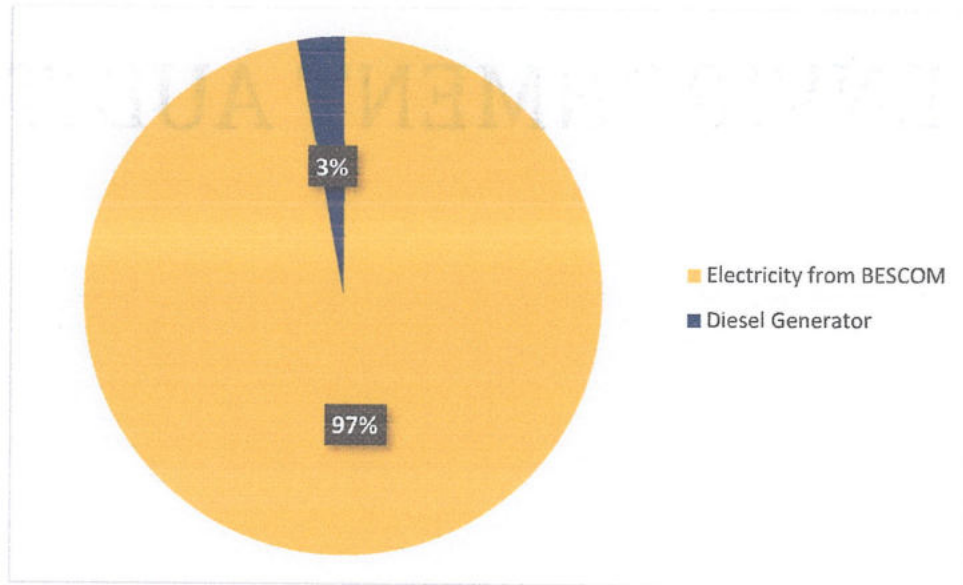


Figure 3: Percentage of Different energy sources

### Solar Panels

The college has installed a grid-connected solar power plant on the rooftop. The supply arrangement of a Solar Power Plant is such that it will first meet the in-house electricity consumption of the college and then supply surplus energy to the grid.



Figure 4: Solar Panels at Seshadripuram Institute of Commerce and Management

*Vijaya*  
**PRINCIPAL**  
 Seshadripuram Institute of  
 Commerce & Management  
 # 40, Girl's School Street,  
 Seshadripuram, Bangalore

# ENVIRONMENT AUDIT

## Environmental Audit

### Water Consumption

Seshadripuram Institute of Commerce and Management gets water from two sources: Bangalore Water Supply and Sewerage Board (BWSSB) and another from its own bore wells. College pays for the water tax from BWSSB. The college has installed water level indicator to avoid overflow from water tank.

### Waste Management

Seshadripuram Institute of Commerce and Management practices solid waste management which includes segregation of waste, the most important step in waste management. The college encourages the process of eco-friendly waste disposal methods. Maximum waste generated is recycled and reused. Non-biodegradable waste like wood, metal, glass etc. is collected and handed over to waste contractor. A machine is available in the college for sanitary napkin waste. The college has declared campus as a "Partial Plastic-free Campus".



Figure 5: Waste Segregation Bins at Seshadripuram Institute of Commerce and Management

## Rain Water Harvesting (RHW) System

Rainwater harvesting is a technology used to collect, convey and store rain water for later use from relatively clean surfaces such as a roof, land surface or rock catchment. RWH is the technique of collecting water from roof, Filtering and storing for further uses. Rainwater Harvesting is a simple technique of catching and holding rainwater where its falls. Depending upon the situation, it can either be stored in tanks for further use or can be used for recharge groundwater. RWH system provides sources of soft, high-quality water reduces dependence on well and other sources and in many contexts, are cost-effective.

The runoff from the terrace of the college building is channelised into recharge well located in the campus. All the rooftop rainwater outlets discharge into storm water drains and then to the recharge Layer of bricks filled inside the recharge well ensures proper filtration of harvested waste.



Figure 6: Rainwater recharge pit

  
**PRINCIPAL**  
Seshadripuram Institute of  
Commerce & Management  
# 40, Girl's School Street,  
Seshadripuram, Bangalore - 20

# Memorandum of Understanding (MoU)

Between



**Seshadripuram Institute of Commerce and Management**

And





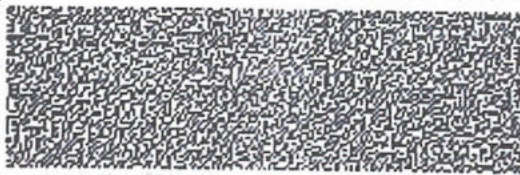
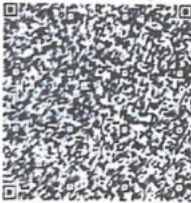
सत्यमेव जयते

INDIA NON JUDICIAL

Government of Karnataka

e-Stamp

Certificate No. : IN-KA45823106802450T  
 Certificate Issued Date : 11-Feb-2021 12:51 PM  
 Account Reference : NONACC (FI)/ kabacs108/ MAGISTRATE COURT/ KA-BA  
 Unique Doc. Reference : SUBIN-KAKABACSL0871468138445124T  
 Purchased by : SESHADRIPURAM INSTITUTE OF COMMERCE MANAGEMENT IND  
 Description of Document : Article 37 Note or Memorandum  
 Description : M O U  
 Consideration Price (Rs.) : 0  
 (Zero)  
 First Party : SESHADRIPURAM INSTITUTE OF COMMERCE MANAGEMENT IND  
 Second Party : CENTER FOR STUDY SCIENCE TECHNOLOGY POLICY BLORE  
 Stamp Duty Paid By : SESHADRIPURAM INSTITUTE OF COMMERCE MANAGEMENT IND  
 Stamp Duty Amount(Rs.) : 100  
 (One Hundred only)



Please write or type below this line

**MEMORANDUM OF UNDERSTANDING**

This Memorandum of Understanding (MoU) entered into on the 15<sup>th</sup> day of February 2021

Between

**Seshadripuram Institute of Commerce and Management, India** established in the year 2005 herein after referred to as "SICM", which expression shall, unless repugnant to the

**Statutory Alert:**

- 1 The authenticity of this Stamp certificate should be verified at [www.shoolestamp.com](http://www.shoolestamp.com) or using e-Stamp Mobile App of Stock Holding. Any discrepancy in the details on this Certificate and as available on the website / Mobile App renders it invalid.
- 2 The onus of checking the legitimacy is on the users of the certificate.
- 3 In case of any discrepancy please inform the Competent Authority.

context or meaning thereof, be deemed to mean and include its successors and permitted assigns as party of the **FIRST PART**.

And

**Center for Study of Science, Technology and Policy, Bengaluru**, a *not-for-profit* organisation incorporated under Section 25 of the Companies Act, 1956, represented by its **Executive Director** having their registered office at **No 18, 10<sup>th</sup> Cross, Mayura Street, Papanna Layout, Nagashettyhalli, RMV II Stage, Bengaluru – 560094, Karnataka, India**, herein after referred to as "**CSTEP**", which expression shall, unless repugnant to the context or meaning thereof, be deemed to mean and include its successors and permitted assigns as party of the **SECOND PART**.

**SICM** and **CSTEP** are hereinafter referred to individually as the "**Party**" and collectively as the "**Parties**".

#### 1. Preamble

- 1.1 CSTEP is engaged in the study of development of science and technology and associated issues of policy in India. It develops policies and supports initiatives to upgrade the standard of science and technology in the country. Toward achieving this goal, CSTEP plans to partner with major science organisations in the country.
- 1.2 SICM was established with the aim of providing quality higher education on par with international standards. It persistently seeks and adopts innovative methods to improve the quality of higher education on a consistent basis. Our Memorandum of Understanding with various national universities and organisations are our major strength. They provide for an exchange of students and faculty and encourage joint research projects for the mutual benefit.
- 1.3 CSTEP and SICM have agreed to sign this Memorandum of Understanding (MoU) to collaborate in the major areas of Environmental Awareness and Management (especially on climate change mitigation and adaptation but not limited to), which is critical for this country and where the synergy of both the Parties will benefit through implementation of well-defined programmes.
  - Outreach and workshops on topics of mutual interest
  - Faculty/student exchange for training and research



- Provide guidance to students conducting research in the area of environment and sustainability
- Indulging students in energy conservation projects, minor research projects and waste management techniques
- Organizing plantation drives and awareness camps on reducing carbon footprint and environmental issues
- To work in collaboration with each other as explained and defined in the following clauses.

## 2. Scope

- a) The scope of this MoU will be to establish major collaborative programmes in the overall area of Environmental Awareness and Management especially in climate change mitigation, adaptation and greening of urban areas, and any other areas of science and policy (but not limited to). These are expected to make an impact on the welfare of the country. Both the Parties will actively and jointly develop outreach programs and workshops, faculty/student exchange programmes for training and research, minor research projects, awareness camps on greening and carbon foot print in institutions. The details of these collaborations—such as project description, funding, deliverables, milestones, intellectual property ownership, project investigator, term, etc., will be outlined in separate MoUs for each programme undertaken, which will be signed by both the Parties. Such signed MoUs will become an integral part of this MoU.
- b) Both the Parties will identify members from their organisations to pursue the programme of mutual interests as well as take steps for actual implementation.

## 3. Modalities & Tenure

The implementation of the provisions of the MoU will be monitored by a Core Committee comprising of designated Members from both CSTEP and SICM. The committee will be alternately chaired by the Director, CSTEP and the Principal of SICM over periods to be mutually decided, or by the designated representatives of CSTEP and SICM.

The MoU will come into effect on the date of signing by both CSTEP and SICM. The MoU would be valid for three years from the date of signing. At the end of the three year period, the committee will examine the achievements made under the MoU, and decide on continuation of the MoU, change of the composition of the core committee, and change in the scope of the MoU with additions or deletions, if any. This MoU may be terminated by mutual agreement by giving a prior written notice of 30 (thirty) days mentioning sufficient reasons of termination.

The activities of the core committee will be:

- a. To meet at least once in a year

- b. To review the activities already undertaken and/or completed
- c. To examine activities
- d. To co-opt members as and when required

#### **4. Financial & IPR aspects**

- The parties shall not impose any financial obligation on each other.
- Both the parties will decide on the status of IPR generated out of any of the joint activities based on mutual agreement.

#### **5. Confidentiality**

Both the parties hereunder agree that any information generated out of any of the provisions of the MoU should basically remain with them. The disclosure of any of such information could be given to a third party only with mutual concurrence of the two parties.

#### **6. Limitation of Liability**

In no event shall either party be liable to the other for any indirect, incidental, consequential, special or exemplary damages or for any damages as to lost profit, data, goodwill or business arising out of or in connection with or under this MoU.

#### **7. Settlement of Disputes & Arbitration**

All legal disputes or differences, whatsoever, arising between the parties out of or relating to the construction, meaning and operation or effect of this MoU or subsequent agreements or the breach thereof shall be settled by discussion within the Core Committee.

#### **8. Jurisdiction**

All legal disputes shall be subject to the jurisdiction of the courts in Vellore/Chennai/Bangalore only.

#### **9. Force Majeure**

Neither party shall be held responsible for non-fulfilment of the respective obligations under this agreement due to the exigency of one or more of the force majeure events such as but not limited to acts of God, War, Flood, Earthquakes, Strikes, Lockouts, Epidemics, Riots, Civil Commotions etc., provided on the occurrence and cessation of any such event. This kind of happening or occurrence shall be immediately brought to the attention of the Core Committee. If the force majeure continues beyond six months, the Core Committee will decide about the future course of action.

**10. Seal of Parties**

This Agreement is executed in two originals - with one of them retained by CSTEP and the other by SICM.

For and on behalf of CSTEP

For and on behalf of SICM

**Dr Indu K Murthy**  
Lead, Adaptation and Risk Analysis  
CSTEP

**Prof. Vidya Shivannavar**  
Principal, SICM

Witness (CSTEP)

1.

Witness (SICM)

1.

2.

2.

SESHADRIPURAM EDUCATIONAL TRUST  
**SESHADRIPURAM COMPOSITE PRE-UNIVERSITY COLLEGE**  
# 40, Girls' School Street, Seshadripuram, Bengaluru – 560 020

Proceedings of the Governing Council Meeting of Seshadripuram Composite Pre-University College, Bengaluru – 560 020, held on 28<sup>th</sup> September, 2015 (Monday), at 8.30 AM., at SICM Auditorium Hall, Bengaluru – 560 020.

The following Members were present :

1.	Sri W.H.Anil Kumar	..	Vice President	..	Invitee
2.	Dr.Wooday P.Krishna	..	Hon.Gen .Secretary	..	Invitee
3.	Sri K.Krishnaswamy	..	Trustee, SET	..	Invitee
4.	Sri N.Sudarshan	..	Member	..	Invitee
5.	Prof.V.R.Bhargavi	..	Principal, S.I.C.M.	..	Invitee
6.	Dr M.Prakash	..	Director, Studies	..	Special Invitee
7.	Prof.M.R.Santhanam	..		..	Special Invitee
8.	Prof.G.K.Manjunath	..	Principal and Convenor		
9.	Sri R.V.Manjunath	..	Vice Principal		
10.	Sri C.H.Manjunath	..	Office Superintendent		
11.	Sri Bhaskar T.K.	..	Parent Representative	..	Invitee
12.	Sri Vijayasimha N.S.	..	Parent Representative	..	Invitee

The Meeting commenced with a short prayer.

In the absence of the Chairman, Sri W.G.Ramakrishna, Vice President, Sri.W.H.Anil Kumar, chaired the Meeting and conducted the proceedings on the request of Hon.General Secretary.

Later, the subjects on the Agenda were taken up for discussion and decision taken as under :

**Subject No.1**

To read and confirm the Proceedings of the previous Governing Council Meeting held on 19<sup>th</sup> June, 2015.

**Resolution**

Read and confirmed.

**Subject No.2**

Briefing of Tests and Examinations.

**Resolution**

Principal briefed to Committee Members that :

- Two Tests for I and II PUC students are held.
- Mid Term Examination will be held from 3<sup>rd</sup> October, 2015 to 10<sup>th</sup> October, 2015.

**Subject No.3**

Details of Cultural, Literary and Sports Events for the academic year 2015-16

**Resolution**

Principal briefed to the Committee Members that :

- Cultural and Literary activities are held from 22.07.2015
- District Level sports are conducted from 31.08.2015 to 29.09.2015 organized by Karnataka Pre-University Education Department, Bengaluru.
- District Level Table Tennis was organized by SCPUC on 09.09.2015
- Annual Sports Meet of our College was held on 22.09.2015. Shri K.rishnaswamy, Trustee, inaugurated the Meet.

**Subject No.4**

Parent-Teachers Meetings

**Resolution**

- Parent Teachers Meet for II PUC was held on 13.09.2015 (Sunday). 825 students brought their parents out of 1040 students.
- Parent Teachers Meet for I PUC was held on 02.10.2015 (Friday). Gandhi Jayanthi was also celebrated on the same day. 950 students brought their parents out of 1023 students.

**Subject No.5**

Briefing of Shortage of Attendance

**Resolution**

Principal informed the Committee Members about the details of shortage of attendance. During the month of July, 2015 it was 12% and during August, 2015 it was 10% both for I and II PUC students..

**Subject No.6**

Any other Subject

**(a) Sharing of Diesel Purchased for Gen Set both by SCPUC and SICM**

Principal briefed to Committee Members that diesel consumption is on higher side due to frequent power cut. As of now both SCPUC and SICM sharing power bill and water bill as 60% by SCPUC and 40% by SICM.

After discussion the Committee Members agreed that the diesel for Gen.Set is to be shared between SCPUC 60% and SICM 40%. Copy of the bill/s to be forwarded to SICM for reimbursement.


**(b) Updating of Website**

College Website has been updated time to time about the activities held.

- (c) **Lesson Plan and work done diary every month**  
Reports will be collected from the lecturers during last week of every month.
- (d) **Educational Trip**  
An industrial trip has been organized from 14.10.2015 to 17.10.2015 for II PUC Commerce students - visit to - Ooty & Coonoor (Tamil Nadu). From 14.10.2015 to 17.10.2015 for II PUC Science students - visit to Chikamagalur, Agumbe, Kemmannugundi, Kudremukha, Malpe Beach, Mangalore, Dharmasthala and Kukke (Karnataka)
- (e) **Mid Term Vacation**  
Principal informed the Committee Members that Mid Term vacation of the College starts from 11<sup>th</sup> October, 2015 to 27<sup>th</sup> October, 2015.
- (f) **Reopening of College**  
Principal informed the Committee Members that College reopens on 28<sup>th</sup> October 2015.

Since, there was no other subject for consideration, the meeting came to a close with vote of thanks by the Principal

  
(Prof.G.K.MANJUNATH)  
Principal & Convenor

  
(W.H.ANIL KUMAR)  
Chairman of the Meeting