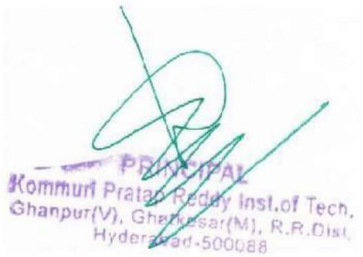
## 7.1.6 Quality audits on environment and energy regularly undertaken by the Institution.

**Reports on environment and energy audits submitted by the auditing agency:**





SD Enviro

# GREEN AND ENVIRONMENTAL AUDIT REPORT

of

## Kommuri Pratap Reddy Institute of Technology

2019-2020

SD Enviro

Ref: Green Audit/ Hyd/ 2019-20/ Sr.No.116/ KPRIT.

Green and Environment Audit is conducted at **Kommuri Pratap Reddy Institute of Technology, Hyderabad**. This report presents a detailed information regarding the Green and Environmental status of the campus. Suggestions & further improvement are also stated for the benefit of the institution which improves the ecological Biodiversity of the Institute. The self contained campus consists of Lush Green Lawns and beautiful scenaric pollution free environment which is suitable for students learning.

We wish them all success in near future.

Mr. B.Srinath

President

Date: 15/08/2019

SD Enviro Engineers

Mr. S. Naveen

Secretary

# Contents

# GREEN AND ENVIRONMENTAL AUDIT REPORT 2019-2020

## Introduction

The term "Green" means eco-friendly or not damaging the environment. This can acronymically is called as "Global Readiness in Ensuring Ecological Neutrality" (GREEN). Green accounting can be defined as systematic identification quantification, recording, reporting & analysis of components of ecological diversity & expressing the same in financial or social terms. "Green Auditing", an umbrella term, is known by another name "Environmental Auditing"

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

## Objectives of the study

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

- To introduce and aware students to real concerns of environment and its Sustainability.
- 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.
- 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.

- To bring out a status report on environmental compliance.

**Methodology**

In order to perform green audit, the methodology included different tools such as preparation of questionnaire, physical inspection of the campus, observation and review of the documentation, interviewing key persons and data analysis, measurements and recommendations. The study covered the following areas to summarize the present status of environment management in the campus:

- Plant diversity
- Faunal diversity
- Water management
- Noise Quality management
- Clean India mission in college

**About KPRIT**

Kommuri Pratap Reddy Institute of Technology is established in the year 2008 by the perseverance and cognizant efforts of our Chairman Shri Kommuri Pratap Reddy Garu to fulfill his motto "To Make Every Man a Success and No Man a Failure". The college was managed by the Kommuri Pratap Reddy Educational Society Governing Council (GC) consisting of members of the Management, eminent Academicians and Industrialists.

It persistently seeks and adopts innovative methods to improve the quality of higher education on a consistent basis. The campus has been set up in calm, quiet and pollution free atmosphere on a sprawling campus area of 22 acres next to NTPC power grid near Ghanpur Village, Ghatkesar Mandal. KPRIT is just 9 Kms from Uppal Bus Depot and Just 1 Km from Outer Ring Road leading to International airport. The College is well connected by TSRTC buses. Experienced and learned teachers are strongly encouraged to nurture the students. The global standards set at KPRIT in the field of teaching and research spurs us on in our relentless pursuit of excellence.

**Vision of the Institute**

To emerge as a premier institute for high quality professional graduates who can contribute to economic and social developments of the Nation.

**Mission of the Institute**

**IM1:** To have holistic approach in curriculum and pedagogy through industry interface to meet the needs of Global Competency.

**IM2:** To develop students with knowledge, attitude, employability skills, entrepreneurship, research potential and professionally ethical citizens.

**IM3:** To contribute to advancement of Engineering & Technology that would help to satisfy the societal needs.

**IM4:** To preserve, promote cultural heritage, humanistic values and spiritual values thus helping in peace and harmony in the society

**Green and Environmental Auditing**

Kommuri Pratap Reddy Institute of Technology, is an Educational institution in Telangana region Which provides state of the art technology. The institution provides all facilities for our students to transform students into industry ready and professionally competentgraduates, entrepreneurs and socially well cultured individuals. Since its inception in 2008,it has tried to pursue excellence in educational arena. They have a beautiful green campus.We have prepared a green audit report after visiting the college campus by our team. The team was consisted of

1. Mr. B.Srinath
2. Mr. Raju
3. Mr. Sai Hari
4. Mr. Praveen

**Plant Diversity**

To create- green cover, eco-friendly atmosphere, pure oxygen at the college campus, plantation program is organized every year with involving all students, principal, and all departments faculty members. In this year about 100 ornamental, avenues, medicinal plant with rare and exotic beautiful trees was planted in botanical garden and other parts of college campus. To keep the greeneries in the campus, we regularly maintain the gardens which are looked after by paid staff under the guidance of garden committee members. Moreover, every year we try to plant new trees. Seasonal flower garden is also a unique feature of this college.

To maintain the college campus green and eco-friendly, more trees need to be planted.The choice of species is based on the adaptability to the site, early returns, multiple uses, complimentary role to the system and its possible role during the lean/critical periods. The key factor contributing to the success of tree planting is selection of suitable tree species. Some of the considerations for selection of tree species are:

- Adaptation to local soil and agro-climate condition.
- Drought resistant species that can survive long dry periods.
- Multipurpose use species.
- Species that can serve for soil and water conservation.
- Species that help in building up soil fertility.
- Species that have good coppicing ability.
- Eco-friendly management

The following table shows the different blocks along with the numbers of trees and its local scientific names.

| S.No | Scientific Names | Quantity |
|---|---|---|
| 1 | Palm trees | 15 |
| 2 | BetullaUtilus | 10 |
| 3 | Amelanchier Lamachiki | 18 |
| 4 | Liquidambar Styraciflua | 8 |
| 5 | AzadirachtaIbdica | 6 |
| 6 | Arecaceae | 19 |
| 7 | Citrus X sinensis | 43 |
| 8 | Psidium guava | 34 |
| 9 | Lawsoniainermis | 10 |
| 10 | Rosa | 30 |
| 11 | Citrus limon | 20 |
| 12 | Tamarindusindica | 5 |
| 13 | Citrus limetta | 5 |
| 14 | Flower Faux | 4 |
| 15 | Bambusoideae | 4 |

| | | |
|---|---|---|
| 16 | Punicagranatum | 3 |
| 17 | Mangiferaindica | 10 |
| 18 | Ficus religiosa | 6 |
| 19 | Phyllanthus emblica | 2 |
| 20 | Murrayakoenigii | 4 |
| 21 | Emblica officinalis | 5 |
| 22 | Plumeria alba | 3 |
| 23 | Grevillea robusta | 6 |
| 24 | Pithecolobium dulce | 7 |
| 25 | Pithecolobium dulce | 9 |
| 26 | Syzygiumcuminii | 10 |
| 27 | Anthocephalus | 3 |
| 28 | Gmelina Arborea | 5 |
| 29 | VitisVinifera | 2 |
| 30 | Prunus bokharensis | 8 |
| 31 | Melia azedarach | 3 |
| 32 | Melia azedarach | 2 |

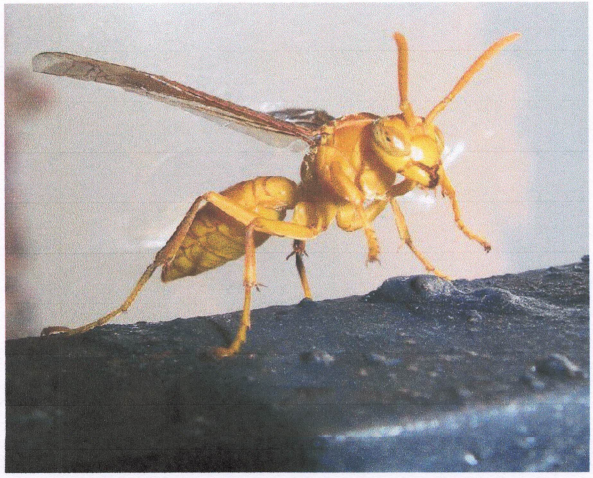
**Faunal Diversity**

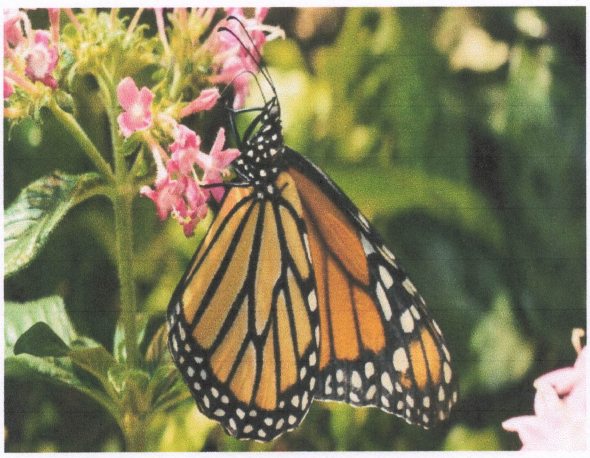
KPRIT is located in Ghanpur,Hyderabad. Summer rain is normal, and is principally caused from late June to August by the moisture-laden South-West Monsoon. The climatic condition of the Medchal district as a whole and KPRIT in particular is very suitable for a wide variedly of flora and fauna to support its rich biodiversity. The faunal Diversity of KPRIT campus has been studied and documented as below:

**Table: Common and Scientific names of birds and animals**

| S.No | Common Name | Scientific Name |
|---|---|---|
| 1 | House Sparrow | Passer Domesticus |
| 2 | Common Crow | CorvusSplendens |
| 3 | Yellow Wasp | RopalidiaMarginata |
| 4 | Butter Fly | Danaus Genutia |
| 5 | Common Woodshrike | TephrodornisPondicerianus |
| 6 | Garden Tiger Moth | ArctiaCaja |

| | | |
|---|---|---|
| 7 | Little Owl | Athene Brama |
| 8 | Oleander Moth | SyntomeidaEpilais |
| 9 | Slender Skimmer | Orthetrum Sabina |
| 10 | Rock pigeon | Columba livia |
| 11 | Common Myna | Acridotherestristis |
| 12 | Green Bee-eater | Meropsorientalis |
| 13 | Rose-ringed Parakeet | Psittaculakrameri |
| 14 | Common Babbler | Turdoidescaudata |
| 15 | Crow Pheasant | Centropussinensis |





**Water management**

This auditing indicator addresses water consumption, water sources, irrigation, appliances and fixtures. In survey water used at bathrooms, toilets, laboratory, garden, shower and as well as leakages and over flow of water from overhead tanks is also been evaluated. The data collected from all the sections is examined and verified. water crisis is very sensitive issue these days all over the world. But in this segment,Kommuri Pratap Reddy Institute of Technology, is in less concentrate zone. They have an open area near the hostel buildings, canteen buildings where the rain water gets absorb under the ground and maintain good ground water level.

The water supply in the Campus is provided by the Grampanchayath, Ghanapur and Bore water is being used for all water requirements at the campus, such as for drinking, cleaning, in the labs, gardening and flushing the toilets. The quality of water is good.

Key factors of good drinking water

1. Containment Free
2. Mineral Rich
3. pH Level-6.0-9.0
4. Micro Clustered
5. Good Taste

**Rain Water Harvesting**

The system of rain water harvesting is an integral part of institute.Rainwater harvesting is one of the simplest and oldest methods of self-supply of water for households, and residential and household scale projects usually financed by the user.However, larger systems for schools, hospitals and other facilities can run up costs only able to be financed by companies, organization and governmental units.This system helps the students to understand the basic concept of rain water harvesting system with their effective use in real life. This system helps to conserve the rain water and also to use during the time of its desirable.In the college they are successfully using the rain water harvesting system.

**Noise Quality Management**

The goal of noise management is to maintain low noise exposures, such that human health and well-being are protected. The specific objectives of noise management are to develop criteria for the maximum safe noise exposure levels, and .to promote noise assessment and control as part of environmental health programs.

Noise Quality Measurement is the most important part of the noise control program. It imparts information about potential noise generating places in workplace, students and staff likely to be affected. Noise measurement during busy hours gives valuable numbers which may be useful for planning, avoiding, controlling noise at the workplace. OSHA sets legal limits on noise exposure in the workplace. These limits are based on a worker's time weighted average over an 8-hour day. With noise, OSHA's permissible exposure limit (PEL) is 90 dBA for all workers for an 8-hour day. The OSHA standard uses a 5 dBA exchange rate. This means that when the noise level is increased by 5 dBA, the amount of time a person can be exposed to a certain noise level to receive the same dose is cut in half.

| **Limits for permissible noise Exposure (According to OSHA)** | |
|---|---|
| 8 hours | 90 dB |
| 6 hours | 92 dB |

| | |
|---|---|
| 4 hours | 95 dB |
| 3 hours | 97 dB |
| 2 hours | 100 dB |
| 1.5 hours | 102 dB |
| 1 hour | 105 dB |
| 30 minutes | 110 dB |
| 15 minutes | 115 dB |

**Clean India Mission in College**

The Prime Minister of India,Shri Narendra Bhai Modi Ji launched "Swachh Bharat Abhiyan" (Clean India Mission) on 2nd October 2014.The objectives of the mission also included eradication of manual scavenging, generating awareness and bringing about a behavior change regarding sanitation practices, and augmentation of capacity at the local level. Initiated by the Government of India, the mission aimed to achieve an "open-defecation free" (ODF) India by 2 October 2019, the 150th anniversary of the birth of Mahatma Gandhi. The mission aimed at progressing towards target 6.2 of the Sustainable Development Goals Number 6 established by the United Nations in 2015. In the mission the proper use of dustbins is one of the major priority. For the successful implementation of this missile collective mass effort is necessary. The higher education institution likeKommuri Pratap Reddy Institute of Technology, Ghanpur played a major role in this regard to keep their campus nest and clean. Proper use of dustbins in not only the solution for the collecting garbage in the college campus. The proper treatment should be given the major priority. In this regard KPRIT campus have been planning to setup a recreation center in the allocated plot near the canteen. The following table shows the number of dustbins along with their location.

| S.NO. | Location | Number of Dustbins |
|---|---|---|
| 1 | Administrative Block | 6 |
| 2 | Block A | 7 |
| 3 | Block B | 6 |
| 4 | Hostel Boys | 4 |
| 5 | Hostel Girls | 5 |
| 6 | Canteen | 3 |
| 7 | Garden | 3 |

# ENERGY AUDIT REPORT

# of

# Kommuri Pratap Reddy Institute of Technology

**Submitted By**

**Omega Envitech Innovations Pvt Ltd**

**# Flat No: 2/6-458,Omega Envitech Innovations Pvt. Ltd, Secunderabad, Hyderabad, Telangana- Contact us: +91 9491030513, 0404035124**

**Email Id: omegaenvitechinnovation@gmail.com**

# Energy Audit Summary

| SI.No | Equipment | Proposed action | Result for proposed action |
|---|---|---|---|
| 1 | Lightning equipment-40w | Replace 40w conventional light with 18w Led tube light | Total No. of light fitting=273<br>Total No. of presently operated=273<br>Total No. of light fitting to be replace=273<br>Presence energy consumption =1911<br>Expected energy consumption=859<br>Total energy saved per month=1911-859=1052 |
| 2 | Lightning equipment-72(2*2) | Replace 72w conventional light with 36w Led tube light | Total No. of light fitting=88<br>Total No. of presently operated=88<br>Total No. of light fitting to be replace=88<br>Presence energy consumption =1108<br>Expected energy consumption=492<br>Total energy saved per month=1108-492=616 |
| 3 | Fan system (Ceiling Fan) | Replace present ceiling fan consuming 78w with energy efficient fans consuming40w. In the campus where usage is high this conservation measure will produce good savings | Total number of fans in the campus=388<br>Total number of fans used in the campus=388<br>Number of fans to be replace (Considering usage factor) =368<br>The total current consumptions=5092<br>The expected fan consumption=3395<br>Total KWh saved per month=5092-3395=1697 |

## 2.1 ELECTRICITY BILL ANALYSIS

The following table shows the energy consumed in units from July 2019 to June 2020

| Sl.no | Bill month | CMD | Billed units |
|---|---|---|---|
| 1 | June-2020 | 90 | 12568 |
| 2 | May-2020 | 90 | 15677 |
| 3 | April-2020 | 90 | 14875 |
| 4 | March-2020 | 90 | 14675 |
| 5 | Feb-2020 | 90 | 12497 |
| 6 | Jan-2019 | 90 | 8864 |
| 7 | Dec-2019 | 90 | 14758 |
| 8 | Nov-2019 | 90 | 16584 |
| 9 | Oct-2019 | 90 | 9016 |
| 10 | Sep-2019 | 90 | 15635 |
| 11 | Aug-2019 | 90 | 18749 |
| 12 | July-2019 | 90 | 15846 |

### 2.1.1 Observation electricity bill analysis

From the above table observation that

Average monthly energy consumption of the college campus is 12,582

Total monthly billing is 110,469

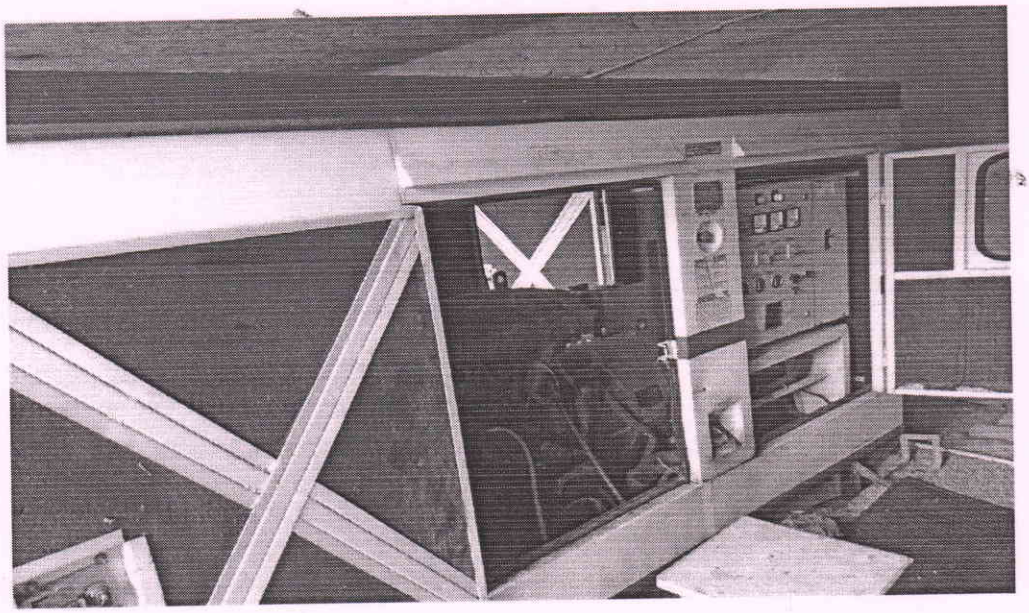
Average unit rate 8

## 2.2 Energy Audit

An energy is an inspection, survey and analysis if energy flows, for energy conservation in a building process or system to reduce the amount of energy input into the system without negatively affecting the output. In commercial and industrial real estate, an energy audit is the first step in identifying opportunities to reduce expense and carbon footprints.

### 2.2.1 Connected load list

In KPRIT there is one transformer, and one generator for 3 blocks electrical load. The following blocks are A block, B block, C block.



**Generator**

**Transformer**

## A- Block

| S. No. | Room No. | Light | | | | Fan | | | Computer | Printer | AC | | UPS | Projector |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 10 w | 40 w | 2*2(2)(72w) | 2*2(3)(108 W) | Ceiling (75 W) | Pedestal(50 W) | Exhaust (50 W) | 300 W | 250 W | 1ton | 1.5ton | In VA | 300W |
| 1 | ADMIN-001 | 1 | 9 | | | 7 | | | 7 | 3 | | | 1 | 1 |
| 2 | ADMIN-002 | 10 | | | | 2 | | | | | | 1 | | 1 |
| 3 | ADMIN-003 | 4 | 2 | | | 2 | | | | | | 1 | | 1 |
| 4 | ADMIN-004 | 4 | 2 | | | 2 | | | | | | 1 | | 1 |
| 5 | ADMIN-005 | 1 | | | | | | | | | | | | |
| 6 | ADMIN-006/1 | | 6 | | | 5 | | | 5 | 2 | | | 1 | |
| 7 | ADMIN-006/2 | | 1 | | | 1 | | | | | | | | |
| 8 | ADMIN-006/3 | | 1 | | | 1 | | | | | | | | |
| 9 | ADMIN-006/4 | | 1 | | | 1 | | | | | | | | |
| 10 | ADMIN-101 | | 1 | | | 1 | | | 1 | 1 | | | | |

| | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 11 | ADMIN-102 | | 2 | | | 5 | | | | | | | | |
| 12 | ADMIN-103 | | 3 | | | 4 | | | 4 | | | | | 1 |
| 13 | ADMIN-104 | | 2 | | | 4 | | | | | | | | |
| 14 | ADMIN-105 | | 2 | | | 4 | | | | | | | | |
| 15 | ADMIN-200 | | 15 | | | 10 | | | 14 | | | 1 | | |
| 16 | A-002 | 13 | 2 | | | 7 | | | 29 | 1 | | 1 | | 1 |
| 17 | A-003 | | 3 | | | 7 | | | | | | | | |
| 18 | A-004 | | 2 | | | 6 | | | | | | | | |
| 19 | A-005 | | 2 | | | 4 | | | | | | | | |
| 20 | A-006 | | 1 | | | 2 | | | | | | | | |
| 21 | A-008 | | 1 | | | 3 | | | | | | | | |
| 22 | A-007 | 1 | | | | | | 1 | | | | | | |
| 23 | A-102 | | 2 | | | 5 | | | | | | | | 1 |
| 24 | A-103 | | 3 | | | 4 | | | | 1 | | | | |
| 25 | A-104 | | 2 | | | 4 | | | | 1 | | | | 1 |
| 26 | A-105 | | 2 | | | 4 | | | | | | | | 1 |
| 27 | A-106 | | 5 | | | 8 | | | 30 | | | | | |
| 28 | A-107 | | 2 | | | 4 | | | | | | | | |
| 29 | A-108 | | 5 | | | 5 | | | | | | | | |
| 30 | A-109 | | 4 | | | 5 | | | | | | | | 1 |
| 31 | A-110 | | 2 | | | 1 | | | | | | | | |
| 32 | A-201 | | 2 | | | 2 | | | | | 1 | 1 | | |
| 33 | A-202 | | 2 | | | 4 | | | | | | | | 1 |
| 34 | A- | | 3 | | | 6 | | | | | | | | 1 |

| | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 203/A | | | | | | | | | | | | | |
| 35 | A-203/B | | 2 | | | 4 | | | | | | | | |
| 36 | A-204 | | 2 | | | 4 | | | | | | | | |
| 37 | A-205 | | 2 | | | 8 | | | | | | | | |
| 38 | A-206 | | 2 | | | 4 | | | | | | | | |
| 39 | A-207 | | - | | | 8 | | | | | | | | |
| 40 | A-208 | | 2 | | | 4 | | | | | | | | |
| 41 | A-209 | | 1 | | | | | | | | | | | |
| 42 | A-210 | | 3 | | | 2 | | | | | | 1 | | |
| 43 | A-301 | | 1 | | | 1 | | | | | | | 1 | |
| 44 | A-302 | | 2 | | | 4 | | | | | | | | |
| 45 | A-303 | | 4 | | | 8 | | | 30 | 1 | | | | |
| 46 | A-304 | | 2 | | | 4 | | | | | | | | 1 |
| 47 | A-305 | | 8 | | | | | | | | | | | |
| 48 | A-306 | | 2 | | | 4 | | | | | | | 1 | |
| 49 | A-307 | | 2 | | | 4 | | | | | | | | |
| 50 | A-308 | | 2 | | | 5 | | | | | | | | |

**B- Block**

| S. No. | Room No. | Light | | | | Fan | | | Computer | Printer | AC | | UPS | Projector |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 10 w | 40 w | 2*2(2)(72w) | 2*2(3)(108 W) | Ceiling (75 W) | Pedestal(50 W) | Exhaust (50 W) | 300 W | 250 W | 1ton | 1.5ton | In VA | 300W |
| 1 | B-001 | | 2 | | | 4 | | | | | | | | |
| 2 | B-002 | | 6 | | | 10 | | | | | | | | |
| 3 | B-003 | | 3 | | | 4 | | | | | | | | |
| 4 | B-004 | | 4 | | | 5 | | | | | | | | |
| 5 | B-005 | | 1 | | | 3 | | | | | | | | |
| 6 | B-006 | | | | | | | | | | | | | |
| 7 | B-007 | | 1 | | | 1 | | | 1 | 1 | | | | |
| 8 | B-008 | | 2 | | | 6 | | | | | | | | 1 |
| 9 | B-101 | | 1 | | | 2 | | | | | | | | |
| 10 | B-102 | | 2 | | | 5 | | | | | | | | 1 |
| 11 | B-103 | | 4 | | | 12 | | | | | | | | |
| 12 | B-104 | | 2 | | | 8 | | | 30 | | | | 2 | |
| 13 | B-105 | | 2 | | | 6 | | | 40 | 2 | | | | |
| 14 | B-106 | | 1 | | | 3 | | | 1 | 1 | | 1 | | |
| 15 | B-107 | 1 | 1 | | | 2 | | | 1 | 1 | | | | |
| 16 | B-108 | | 2 | | | 6 | | | | | | | | 1 |
| 17 | B-109 | | 1 | | | 2 | | | | | | | | |
| 18 | B-110 | | 1 | | | 2 | | | | | | | | |
| 19 | B-201 | | 2 | | | 2 | | | | | | | | |
| 20 | B-202 | | 2 | | | 4 | | | | | | | | 1 |
| 21 | B-203/A | | 8 | | | 4 | | | 30 | | | | | 1 |

| | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 22 | B-203/B | | 8 | | | 5 | | | 32 | 1 | | | 2 | |
| 23 | B-206 | | 4 | | | 5 | | | | | | | | |
| 24 | B-207 | | 2 | | | 4 | | | 1 | 1 | | | 1 | |
| 25 | B-208 | | 3 | | | 7 | | | | | | | | 1 |
| 26 | B-209 | | 1 | | | 2 | | | | | | | | |
| 27 | B-210 | | 1 | - | | | | | | | | | | |
| 28 | B-301 | | 1 | | | | | | | | | | | 1 |
| 29 | B-302 | | 2 | | | 4 | | | | | | | | 1 |
| 30 | B-303 | | 2 | | | 6 | | | | | | | | |
| 31 | B-304 | | 2 | | | 4 | | | | | | | | 1 |
| 32 | B-305 | | 2 | | | 5 | | | | | | | | |
| 33 | B-306 | | 2 | | | 4 | | | 30 | | | | | |
| 34 | B-307 | | 2 | | | 5 | | | | | | | | |
| 35 | B-308 | | 2 | | | 4 | | | | | | | | |
| 36 | B-309 | | 2 | | | 4 | | | 30 | | | | | |
| 37 | B-310 | | 2 | | | 4 | | | | | | | | |

## C- Block

| S. No. | Room No. | Light | | | | Fan | | | Computer | Printer | AC | | UPS | Projector |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 10 w | 40 w | 2*2(2)(72w) | 2*2(3)(108W) | Ceiling (75 W) | Pedestal(50 W) | Exhaust (50 W) | 300 W | 250 W | 1ton | 1.5ton | In VA | 300W |
| 1 | K-01 | 2 | | | | 2 | | | | | | | | |
| 2 | K-02 | | 1 | | | | | | | | | | | |
| 3 | K-03 | 14 | | | | | | | 6 | 32 | | 2 | | |
| 4 | K-04 | 22 | | | | | | | 8 | 58 | | 1 | 1 | 1 |
| 5 | K-05 | | 2 | | | 2 | | | | 2 | 1 | | | |
| 6 | K-05/1 | | 1 | | | 1 | | | | | | | | |
| 7 | K-06 | | 4 | | | 2 | | | 30 | | | | | |
| 8 | K-07 | | 3 | | | 5 | | | | | | | | |
| 9 | K-08/A | | 1 | | | | | | | | | | | |
| 10 | K-08/B | | 2 | | | 1 | | | | | | | | |
| 11 | K-09 | | | | | | | | | | | | | |
| 12 | K-10 | | 3 | | | 2 | | | | | | | | |
| 13 | R-01 | | 2 | | | 2 | | | | | | | | |
| 14 | R-02 | | 2 | | | 1 | | | | | | | | |
| 15 | R-03 | | 4 | | | | | | | | | | | |
| 16 | R-03/1 | | 4 | | | | | | | | | | | |
| 17 | R-03/2 | | 4 | | | | | | | | | | | |
| 18 | R-04 | | 2 | | | | | | | | | | | |
| 19 | R-05 | | 1 | | | | | | | | | | | |
| 20 | R-06 | | 8 | | | | | | | | | | | |
| 21 | R-07 | | 1 | | | 1 | | | | | | | | |

| | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 22 | R-08 | | 2 | | | 4 | | | | | | | | |
| 23 | R-09 | | 2 | | | 2 | | | | | | | | |
| 24 | D-101 | | 1 | | | 1 | | | | | | | | |
| 25 | D-103 | | 3 | | | 3 | | | | | | | | |
| 26 | D-104 | | | | | 4 | | | | | | | | |
| 27 | D-105 | | - | - | - | - | - | - | - | - | - | - | - | - |
| 28 | D-106 | | 2 | | | 8 | | | | | | | | |
| 29 | D-107 | | - | - | - | - | - | - | - | - | - | - | - | - |
| 29 | D-108 | | 3 | | | 4 | | | | | | | | |

## 2.3 ENERGY SAVING MEASUREMENT

The following table represent the payback for proposal load

| Payback calculation | | |
|---|---|---|
| 40w FTL Vs18W LED tube light | | |
| A. Savings on operation (per month analysis) | | |
| **Particulars** | **FTL** | **LED** |
| Luminaire type | 40W | 18W |
| Wattage | 40 | 18 |
| Total number of luminaires | 273 | 273 |
| Working hours per day (HOURS) | 7 | 7 |
| Working days per month (DAYS) | 25 | 25 |
| Electrical units consumed per month (KWHR) | 1911 | 859 |
| Per unit electrical cost | 8 | 8 |
| Total electricity cost per month (Rs) | 15288 | 6872 |
| Electrical savings with use of LED (Rs) | | 8416 |
| | | |
| Investment | 152680.000 | |
| Payback in month | 10 months | |
| Per annum savings | 185856.00 | |

| Payback calculation | | |
|---|---|---|
| 72w fixture Vs 32W LED 2x2 fixture | | |
| A. Savings on operation (per month analysis) | | |
| **Particulars** | **FTL** | **LED** |
| Luminaire type | 72w | 32W |
| Wattage | 72 | 32 |
| Total number of luminaires | 88 | 88 |
| Working hours per day (HOURS) | 7 | 7 |
| Working days per month (DAYS) | 25 | 25 |
| Electrical units consumed per month (KWHR) | 1108 | 492 |
| Per unit electrical cost | 8 | 8 |
| Total electricity cost per month (Rs) | 8864 | 3936 |
| Electrical savings with use of LED (Rs) | | 4928 |
| | | |
| Investment | 145200.000 | |
| Payback in month | 28 months | |
| Per annum savings | 60708.00 | |

| Payback calculation | | |
|---|---|---|
| 75w existing fans Vs 50w fan | | |
| A. Savings on operation (per month analysis) | | |
| **Particulars** | **Existing fan** | **Proposed fan** |
| Luminaire type | 75w | 50w |
| Wattage | 75 | 50 |
| Total number of luminaires | 388 | 388 |
| Working hours per day (HOURS) | 7 | 7 |
| Working days per month (DAYS) | 25 | 25 |
| Electrical units consumed per month (KWHR) | 5092 | 3395 |
| Per unit electrical cost | 8 | 8 |
| Total electricity cost per month (Rs) | 40736 | 27160 |
| Electrical savings with use of fan (Rs) | | 13576 |
| | | |

| | |
|---|---|
| Investment | 1182000.000 |
| Payback in month | 38months |
| Per annum savings | 372096.00 |

# WORK COMPLETION REPORT

| | |
|---|---|
| Name of the work project | Energy Audit of<br>Kommuri Pratap Reddy Institute of Technology, Ghatkesar |
| Work order number | 369/2019-20 |
| Work Period | From 25/06/2020 to 07/07/2020 |

This is to certify that Omega Envitech Innovations Pvt. Ltd. has successfully completed Energy Audit at KPRIT College, Ghanpur, Ghatkesar. The work of Energy Audit is completed on 08/07/2020 for year 2019-20.

Thanking You and assuring you for our best services always.

Audit Report By:

Er. Anil S Dube

BEE Certified (EA-4973)

For KPRIT,

PRINCIPAL
Kommuri Pratap Reddy Institute of Technology
Ghanpur (V), Ghatkesar (M),
Medchal-Malkajgiri Dist-501301 T.S

Dr. D. Eshwar

Principal