ENERGY AUDIT

STUDY PERIOD (TWO YEARS) 2021 – 2022 AND 2022 – 2023

Sustainability study

RENEWAL AUDIT REPORT

Studied for

Asian Academy of Education and Research's

Asian College of Science and Commerce

Sr. No. 28/15/16, Narhe Dhayri Road, Pari Company Chowk,
Tal- Haveli, Pune-411005

Studied in the capacity of

Accredited and Certified

Green Building Professional

Studied by

Website: https://thegreenviosolutions.co.in/

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Valid till **31 March 2024**

Background reference image Janko Ferlic on pexels

Disclaimer

The Audit Team has prepared this report for the **Asian Academy of Education and Research's Asian College of Science and Commerce** located at *Sr. No. 28/15/16, Narhe Dhayri Road, Pari Company Chowk, Tal- Haveli, Pune-411005* based on input data submitted by the College and analyzed by the team to the best of their abilities.

The details have been consolidated and thoroughly studied as per the various guidelines for Green Buildings available in National and International Standards; the report has been generated based on a comparative analysis of the existing facilities and the prerequisites formulated by various standards. The inputs derived are a result of the inspection and research. These will further enhance and develop a Healthy and Sustainable Institution.

These can be implemented phase-wise or as a whole depending on the decision taken by the Hon'ble Management and College. The warranty or undertaking, expressed or implied is made and no responsibility is accepted by Audit Team in this report or for any direct or consequential loss arising from any use of the information, statements, or forecasts in the report.

The audit is a thorough study based on the inspection and investigation of data collected over a while and should not be used for any legal action. This is the property of Greenvio Solutions and should not be copied or regenerated in any form.

The Report is prepared by the Team of Greenvio Solutions under their brand and department – Sustainable Academe as Consultancy firm with the Project Head - Ar. Nahida Shaikh who is an Accredited and Certified Green Building Professional. Green Building consultancy is her forte and she is one of the most sought-after names when it comes to providing excellent quality services within the stipulated time frame.

The Study is conducted incapacity of an Accredited & Certified Green Building Professional with extensive experience.

Greenvio Solutions

Developing Healthy and Sustainable Environments

We are an Environmental and Architectural Design Consultancy firm

Sustainable Academe is our department for conducting Audits

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Acknowledgment

The Audit Assessment Team thanks the **Asian Academy of Education and Research's Asian College of Science and Commerce, Pune** for assigning this important work of Energy Audit. We appreciate the cooperation extended to our team during the entire process.

Our special thanks are due to **everyone from the Management.**

Our heartfelt thanks to Chairperson of the entire process **Asst. Prof. Shruti Rege,** Acting Principal for their valuable inputs.

We highly appreciate the assistance of the **entire Teaching, Non-teaching, and Admin staff** for their support while collecting the data.

Sustainable Academe
Brand of Greenvio Solutions, Palghar District, Maharashtra- 401208

Contents

1. Introduction

1.1 About the Institute

A trust registered under the Society's Act 1960, was started with an objective of providing quality education to enhance employability skills through innovation and persistence. Education and training in management has two aims.

Firstly, to increase the level of knowledge, understanding the factors which are dynamics and influence the organization. Secondly, to provide much systems, facilities, sharing, tools, techniques which students can use to influence the organization.

It is an existing field where we can have proper impact on the operations, works, business structure's etc. The team works towards constant up gradation in its working mechanism and has signed a total of 25 MoU's in academic year 2021-2022.

1.2 Academic arena of the Institute

The Institute provides a total of 19 courses as of now. Total 6 New Courses which got added in 2021 – 22 are as follows:

1. B.Sc.(Animation)
2. B.A. (Bachelor of Arts)
3. B.Sc. (Cyber and Digital Science)
4. M.Sc. (Analytical Chemistry)
5. M.Sc. (Inorganic Chemistry)
6. M.Sc. (Electronics)

1.3 Accreditation of the Institute

The Institute has received the following:

- NAAC accreditation with an B+ grade
- Recognition under UGC, Govt. of India section 2 (f)
- ISO Certification for 9001 – 2015

1.4 Timeline of activities for research

As the College had undergone a renewal for the Academic year 2021-2022 and 2022-2023, data collection processes for verification purposes were asked to be submitted.

- Discussion with the College
- Allotment and Initiation by the College
- Process discussion with team
- Data submitted by College
- Submission of the files

2. Compliance

The compliance study was carried out through investigative ways. This was done to understand the **extent of suggestions and their implementations based on previous report of Academic years 2019-2020 and 2020-2021.**

The details of the suggestions are based on the Original Report dated 29 September 2021 is further documented below. It is based on the data collection process.

The information for the current nos. of electrical appliances is documented below

- **Lights, Air conditioners, Equipment -** There have been a campus up gradation and better strategies for the newly constructed premises.
- **Fans –** The College has replaced regular ceiling fans with energy efficient fans.
- **Net metering devices** – The building has been replenished to a great extent and the solar system has been connected to the net metering device.
- **Solar panels have been installed in the premises**.

3. Inferences

3.1 Section-wise recommendations

The following suggestions are to be considered as a ***first priority*** for implementation. These **should be executed within the next 1.5 to 2.5 years from the date of the Report submission.** The Institute can execute a plan after discussion with Project Head.

3.1.1 Desktop computers to laptops

Among all equipment, it suggested replacing the desktop computers with laptops as this would be energy efficient. A normal desktop computer consumes an average of 250W and it is to be connected all time when it has to be used. On the contrary, a laptop consumes 40W and has a battery backup that lasts up to 4 hours. There is **an average 84% reduction** in energy consumption if replaced with an energy-efficient appliance which is a laptop in all the areas.

3.1.2 Ceiling Fans

The current Fans are in proper working conditions and maintained well. The ceiling fans are in more quantity and consume at least 60W when in use. These should be replaced with energy efficient fans consuming 35W when in use.

Our detailed study states that is all the **ceiling fans on all floors** if replaced with star rated appliance results in a reduction of average of **42% reduction** It will be suggested to replace when fans get damaged or are not in working condition.

3.2 Consolidated study recommendations related to 'entire Institute'

The following details are consolidated study recommendations related to 'entire Institute' and should be considered as ***second priority*** for implementation, once the section wise recommendations are implemented. The following recommendations should be ***implemented within 2.5 to 3.5 years from the date of the Report submission.***

3.2.1 Solar tree

Since there is availability of space and technical school; the option of providing an aesthetic beauty to the premises and benefit w.r.t to energy reduction can be provided with installation of solar tree in multiple places in the site.

Plate 1: Solar tree concept for the Institute (For reference purpose only)
Source: Image by https://timesofindia.indiatimes.com/india/cmeri-installed-the-worlds-largest-solar-tree-at-durgapur/articleshow/77856790.cms

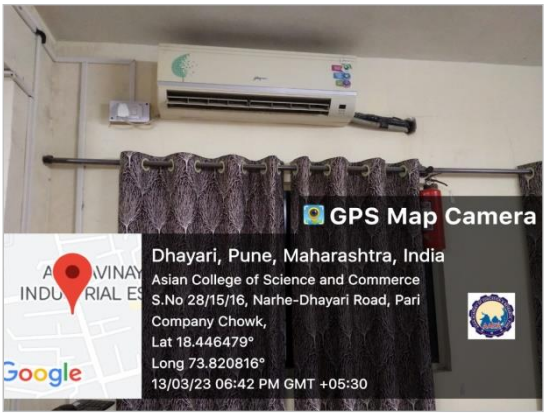
3.2.2 Smart gardening

The College can undertake a Smart Gardening system using IoT Technology. This will result in saving time by scheduling time for watering; saving money through automated water schedules tracking dampness of soil to know when, how much water garden needs.

Plate 2: Solar farm concept for the Institute (For reference purpose only)
Image source: https://housing.com/news/smart-gardening/
Data source: https://www.happysprout.com/inspiration/what-is-smart-gardening/

Net metering device in the premises

Energy efficient fan and solar roof top



Low VOC paints order, outdoor seating, fire extinguishers

Incinerator, separate dustbins and sealed septic tank

4. Compilation

The study is based on the data collected, analysed, rechecked, and confirmed through multiple modes. For the quality study, some standards/ notes have been referred to. These are listed and noted below. However, no direct references have been used anywhere. These are used as a base to analyse and study the data collected.

Specific references for study related to energy

- https://www.energy.gov/eere/buildings/zero-energy-buildings
- https://www.dsaarch.com/zero-net-positive-energy
- U.S. Energy Information Administration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