



LAXMI CHARITABLE TRUST

SHRI CHINAI COLLEGE OF COMMERCE & ECONOMICS

Dr. S. Radhakrishnan Marg, Andheri (East), Mumbai-400 069

Accredited by NAAC with B grade

7.1.3 Quality audits on environment and energy regularly undertaken by the Institution. The institutional environment and energy initiatives are confirmed through the following:

- 1. Green audit / Environment audit**
- 2. Energy audit**
- 3. Clean and green campus initiatives**
- 4. Beyond the campus environmental promotion activities**

Options:

A. All of the above

B. Any 3 of the above

C. Any 2 of the above

D. Any 1 of the above

E. None of the above



GV/GA/03-24/ 276

Green Audit Certificate (As per Green Building Parameters)

The study is conducted as per Indian and International Green Building Standards initiated in the capacity of an Accredited & Certified Green Building Professional

It is awarded for **2022-2023 and 2023-2024** to the Esteemed Institution

(Analysed for 2 years and extended validity for 1 year, thus total 3 years)

Laxmi Charitable Trust's

Shri. Chinai College of Commerce & Economics

Dr.S.Radhakrishnan Marg, Andheri (East) Mumbai - 400069, Maharashtra, India

(Site visit held on 06 March 2024)

As part of the Institution's initiatives for a Healthy & Sustainable Institute the audit was conducted.
We appreciate the immense efforts taken by Staff and students towards the Efficient Management of Premise.

Issued on **Monday, 18 March 2024** and valid till **28 February 2025**


Ar. Nahida Abdulla Shaikh

"Elite 100 Green Architects of India" Econaur, 2022

Certified G.B.P. (Registration. No. 22/718)

Project Head and Green Building Professional-Consultant

Sustainable Academe | Sustainability Department of Greenvio Solutions, Naigaon

An environment Design and Consultancy developing Healthy and Sustainable Environment

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GREEN AUDIT

STUDY PERIOD (TWO YEARS) 2022 – 2023 & 2023 - 2024

Sustainability study
AUDIT REPORT

Studied for
Laxmi Charitable Trust's

**Shri. Chinai College of
Commerce & Economics**

Dr.S.Radhakrishnan Marg, Andheri (East), Mumbai -
400069, Maharashtra, India

Studied in the capacity of
Accredited and Certified GBP



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Background reference image Sasin Tipchai on unsplash



Disclaimer

The Audit Team has prepared this report for the **Laxmi Charitable Trust's Shri. Chinai College of Commerce & Economics** located Dr.S.Radhakrishnan Marg, Andheri (East) Mumbai - 400069, Maharashtra, India based on input data submitted by the Institute analysed 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 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 internal team. 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 period of time 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 as an Accredited and Certified Green Building Professional-Architect. 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 in capacity of Accredited & Certified Green Building Professional with extensive experience.



Ar. Nahida Abdulla

Greenvio Solutions

Developing Healthy and Sustainable Environments

We are an Environmental and Architectural Design Consultancy firm
Sustainable Academe is our department for conducting Audits, Palghar
District, Maharashtra- 401208



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Acknowledgement

The Audit Assessment Team extends its appreciation to the **Laxmi Charitable Trust's Shri. Chinai College of Commerce & Economics, Maharashtra** for assigning this important work of Green Audit. We appreciate the cooperation extended to our team during the entire process.

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

Our heartfelt thanks are extended to the Chairperson of the entire process **Dr.B.B.Kamble** (Principal) for the valuable inputs.

We are also thankful to Institute's Task force who have played a major role in data collection.

- Teaching staff member – **Prof. Ashok Bharsakle, Prof. Geeta Rathod, Prof. Florency D'souza & Prof. Kirti Rajne**
- Non-teaching staff member – **Mr. Kiran L. Patil**
- Admin staff member – **Mrs. Shraddha Pednekar**

Sustainable Academe

Brand of Greenvio Solutions, Palghar District, Maharashtra- 401208



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1. Introduction

1.1 About statements of the Institute

1.1.1 Vision

The Institute proposes

- To inculcate values of regularity, punctuality and discipline so that students grow up to be responsible citizens.
- To promote overall personality development of students via extracurricular activities like sports, advertising event, etc.
- To develop and prepare students for facing challenges in the competitive world by using their potential in academic and co-curricular activities
- To generate a sense of belonging towards the institution by mutual interaction between past and present students
- To utilize the college infrastructure for well-being of the students as well as the neighbourhood community

1.1.2 Mission

The Institute adheres and focuses

- To provide foundation for academic excellence
- To provide growth of through various extracurricular activities by overall development
- To build a strong environment for continuous teaching learning progress
- Develop students mind from entrepreneurial perspective and ensure correct decision making
- To enable students become responsible citizens



1.2 Assessment of the Institute

1.2.1 Affiliations

The course provided by the College is affiliated to the **University of Mumbai**, a Public State University in Mumbai, one of the largest university systems in the world.

1.2.2 Certification

The **All India Survey on Higher Education (AISHE)** code is C-34139

1.2.3 Recognitions

The College has been recognized under section [2 \(f\) and 12 \(B\) of the UGC Act, 1956](#) by University Grants Commission, New Delhi.

DETAILED REPORT



2. Overview

2.1 Summarised Populace analysis for 2023-2024

2.1.1 Students data

The data (shared by the Institute) shows there were **1,118 students**.

2.1.2 Staff data

S. No.	Type	Male	Female	Total
1	Admin staff	05	03	08
2	Teaching staff	09	08	17
3	Non-Teaching staff	04	00	04
Total Staff Members		18	11	29

Table 1: Staff data of the Institution for 2023-2024

The staff data shows the Institute premises had **29 Staff Members**.

2.2 Summarised Populace analysis for 2022-2023

2.2.1 Students data

The data (shared by the Institute) shows there were **1,179 students**.

2.2.2 Staff data

S. No.	Type	Male	Female	Total
1	Admin staff	05	03	08
2	Teaching staff	09	08	17
3	Non-Teaching staff	04	00	04
Total Staff Members		18	11	29

Table 2: Staff data of the Institution for 2022-2023

The staff data shows the Institute premises had **29 Staff Members**.



3. Research

3.1 Site Area

The **site area is 2.58 acres**

3.2 About the Green Building Study Audit

It is a systematic study of the aspects which make the Institution sustainable and healthy premises for its inhabitants.

3.3 Analysis of the Green Building Study Audit

The procedure included detailed verification as follows:

- ➔ Investigation
- ➔ Technical
- ➔ Observations
- ➔ Inferences

3.4 Strategy adopted for Green Building Study Audit

The strategies included data collection from the admin department, actual inventory, investigation to check the operation and maintenance, analysis of the data collection, and preparation of the Report.



4. Investigation

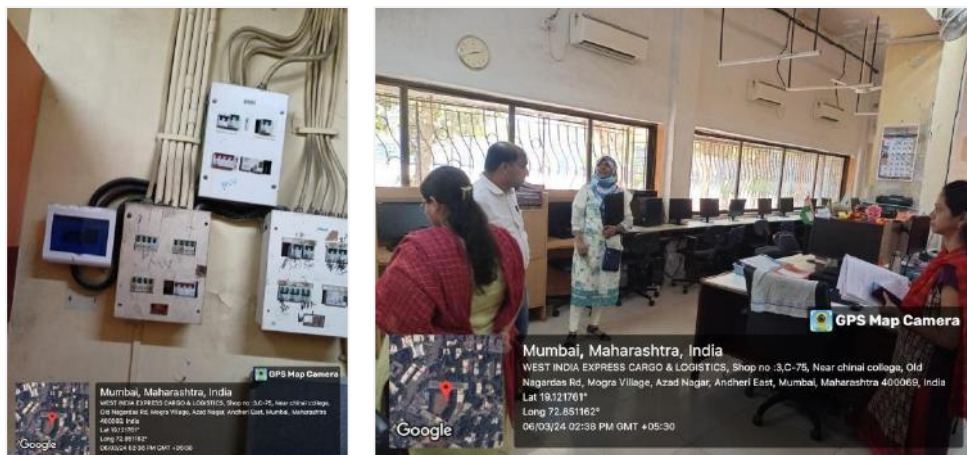


Plate 1: Assessment of the energy and electrical areas

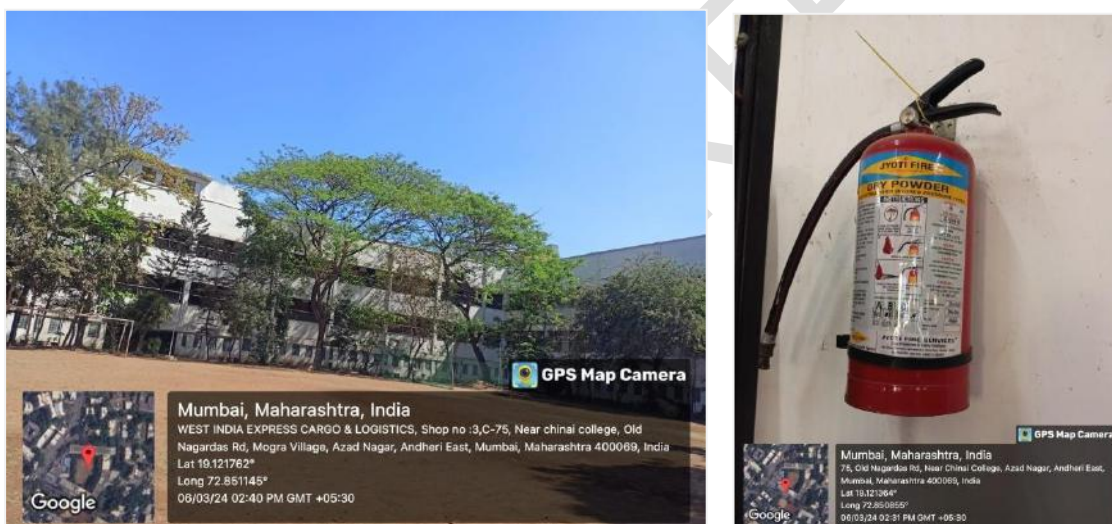


Plate 2: Open space with plantations and Fire and life safety measure through extinguishers in premises



Plate 3: Water areas including pipes and bore wells in the premises

5. Documentation

5.1 Green Practices Audit

The increasing global warming and climate change have made us realise that apart from the enormous strategies the individual small efforts need to be taken by individuals and Educational Institutes as the younger generations are the future of the world and once they are taught about these practices only then can we assume a better future.

5.1.1 Green practices

We observed the following points during the investigation data verification of the premises.

- **Team work** – The best quality of the Institute is its coordinating and cooperative staff members, as for a building the foundation plays the most important role for its future similarly for an educational institute its staff members do.

5.1.2 Community development

There are no **extension initiatives** undertaken by the Institute towards environment and social upliftment specifically through NSS/ NCC/ UBA etc.

The details of the **environmental activities** conducted as part of the extension initiatives by the Institute documented below:

S. No.	Initiative	Type	Date
Academic year 2023-2024 (June 2023 to February 2024)			
1	Tree Plantation	Physical	19/08/2023
Academic year 2022-2023 (June 2022 to May 2023)			
1	Tree Plantation	Physical	07-04-2022

Table 3: Details of the environmental initiatives undertaken by Institute

The study suggests to increase the initiatives and its documentation.



5.2 Waste Audit

Waste is an inevitable part of our lives. Over the years the awareness about waste management techniques has given a rise to rethink how the waste can be avoided being sent to the landfills. The audit provides an approximation of the types of waste generated, location of waste collections, disposal techniques used, waste segregation methodologies adopted, and waste management strategies that are implemented in addition to the newer ways that can be adopted aiming to make the premise clean and sustainable.

5.2.1 Waste produced

S. No.	Type	Current practice	Proposed practice
1	Solid waste (Toilets)	Let into storm water drain	Introduce a biogas plant that if functional and utilised
2	Organic waste (Regular)	Not managed	Introduce a compost pit
3	Liquid waste (Toilets, wash basins)	Let into storm water drain	Introduce a sewage treatment plant within the premises
4	Chemical waste from laboratories	N.A.	
5	Toxic waste from laboratories		
6	E-waste	No information provided	Tie-up with Ecoreco, Thereco
7	Plastic waste	No information provided	Tie-up with Bisleri's Bottles for change, undertake eco-walls project and other practices
8	Bio-waste (Sanitary)	Not managed	Introduce sanitary vending and incinerator machines along with sani bins in all female washrooms and common rooms
9	Construction waste and reuse	Not applicable	Not applicable

Table 4: Waste management system by the Institute

Currently, there are sixteen dustbins inside the premises and two outside.



5.3 Water Audit

Water is one of the basic needs. Pure drinking water is a resource that needs to be preserved efficiently. A water audit helps to identify the sources of water consumption, and the water requirement by the premises is met by these sources.

The effective usage of water without any wastage should be a mandatory practice. Understanding the techniques as per site context to increase water conservation in terms of awareness and practice can be identified and executed as part of this exercise.

5.3.1 Water availability and consumption

5.3.1.1 Source of Primary water supply

The Institute requires water from the Local Municipality for drinking water purposes. The documentation below related to water tanks in the premises.

S. No	Type	Capacity	Numbers
1	Underground water tank	20,000	1
2	Overhead water tank	9,000	4

Table 5: Water tanks in the premises

The study suggests that the space requires of tanks can be documented with mention of size, capacity usage, Institute name, colour coding and last maintenance date mentioned on each facility.

5.3.1.2 Source of Secondary water supply

The Institute uses the following sources of water supply for secondary usages such as watering plants, kitchen, toilets, and wash basins and other spaces. There is one bore well.

5.3.1.3 Source of Tertiary water supply

The tertiary source of water is the source of water harvesting.

We suggest adopting practice of rain water bunds around the block and connecting the overflow pipes of the rain water harvesting pits/ syntax tank with 10,000 – 50,000 litres capacity; however, as the building is located in a shared campus within the suburban locality of urban Mumbai there are certain restrictions of Management and Government approval to undertake both of these recommendations.



5.3.1.4 Source of Reusing waste water

This initiative is not practiced.

The study suggests that keeping the site context and constraints in mind the waste water treatment plant can be explored.

5.3.2 Areas of water usage

Based on the inventory done and data shared by the staff we found that the premise has the facilities such as:

- ➔ General toilets for male, female
- ➔ Taps for gardens and toilet facilities
- ➔ Drinking water cooler

The study suggests that daily documentation of water supply should be undertaken.

5.4 Health and Hygiene Audit

The hygiene is a part and parcel of our daily life. It is extremely essential to keep the surroundings clean in the same manner as we would want our houses to be. Educational Institutes have a bigger role to play in order to affect the young minds in the positive manner through better hygienic practices.

Overall, the premise requires major up gradation in terms of cleanliness and hygiene, steps have to be undertaken on an immediate basis.



6. Inferences

6.1 Section-wise suggestions

The following suggestions can be implemented **in next 2.5 years** from the date of the Report submission.

6.1.1 Green practices audit

- **Environmental awareness** - There can be various slogans in local and national language on the compound wall giving the message of saving the environment through the joint efforts of the students and staff thereby making the student socially and environmentally responsible citizens.
- **Increase the green awareness practice** – This should be in terms of the physical and virtual events which will be beneficial for all stakeholders in the shared premises. (Basically the frequency of the lectures should be increased)

6.1.2 Waste Audit

- **Multi-colored waste management bins** - There should be more number of dual litter dustbins at various locations in areas such as Canteen, and open spaces. This would inculcate the awareness of waste segregation among students. Whereas a single type of dry waste dustbin should be available inside the teaching areas.



Reference suggestions 1: Twin litter dustbins in the premises

- **Signages** - Messages about avoiding wastage should be placed at appropriate locations.
- Tie up with **Bisleri International** regarding their '**Bottles for change program**' alsowith '**Thereco**' for their waste management.
- Invite companies such as '**Thaely**' and '**Recharkha**' to undertake skill development workshops.

6.1.3 Water Audit

Manual about the functioning of the system – There should be manual such as followsto increase sensitization about the facility and its operations.

Roof Rain water Harvesting System

For irrigating the plantation in campus

Rainwater harvesting is a technique used for collecting, storing, and using rainwater for landscape irrigation and other uses. The rainwater is collected from various hard surfaces such as rooftops and/or other manmade-aboveground hard surfaces. We have much potential of roof rain water harvesting from which we can collect this water and store it for different purposes.

In first phase we have collected the roof water 3000 sqft.

On that basis we can estimate the annual water collection which as follows

Roof Type	Co-efficient
Slab	0.8 to 0.9

Satara City annual rainfall in mm = 1200-1500, Consider rainfall -1300 mm. **Rainfall in meter =1.3**

Rainwater Harvesting Potential (In Cum) = Area (in Sq,Meter) X Annual Rainfall (m)X Co-efficient X Constant Co. eff (0.80)


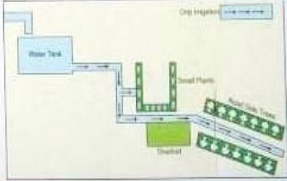
Rainwater Harvesting (3000 Sq.ft) =Area in Meter X Annual Rainfall (m) X Co-efficient X Constant Co. eff

278.7091	1.3	0.8	0.80
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Rainwater Harvesting (3000 Sq.ft) = 278.7091X 1.3 X 0.8 X 0.80

= 231,885.9712 Cum
= 231885.9712

We are using this water for irrigation plantations in campus by using drip irrigation system

Reference suggestions 2: Roof rain water harvesting system

6.1.4 Health and Hygiene Audit

- **Sanitary vending and incinerator** - There should be provision for sanitary vending, incinerator machine and incinerator in every ladies common room, and toilet on the premises.
- **Compound wall** – The compound wall should have awareness messages about 'No Smoking' and 'No Tobacco'
- **Toilet hygiene** – There should be facilities such as potpourri, camphor tablets in the toilet to avoid smell and health related issues.

7. Compilation

The study is based on the data collected, analyzed, 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 analyze and study the data collected.

- Uniform Plumbing Code – India, 2008
- IGBC Green Existing Buildings – Operation & Maintenance (O&M) Rating system, Pilot version, Abridged Reference Guide, April 2013
- IGBC Green Landscape Rating system, March 2013
- BOMA Canada Waste Auditing Guide, Best Environmental Standards, BOMA BEST – Canada
- Used only for understanding Universal design - Universal accessibility Guidelines for Pedestrian, Non-motorized vehicle and Public Transport Infrastructure – Report guidelines by Samarthyam (National centre for Accessible Environments) – an initiative supported by Shakti Sustainable Energy Foundation.

DETAILED REPORT



Balaji
Bhavan
rao
Kamble

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