

ENVIRONMENT AUDIT

STUDY PERIOD (TWO YEARS) 2020 – 2021 & 2021 – 2022

Sustainability study
AUDIT REPORT

Studied for
Marathwada Shikshan Prasarak Mandal's
Bhanudasrao Chavan College
Jewli road, Lohara Bk, 413608,
Maharashtra, India

Studied in the capacity of
Accredited with IGBC and Certified with ASSOCHAM GEM
Registered Architect & Green Building Professional



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

Email: greenviosolutions@gmail.com

Issued on **18 February 2023** and Valid till **February 2024**

Inferences of the Site visit

Audit conducted by : Nahida Shaikh, IGBC AP, GEM CP, Architect

Accredited and Certified Green Building Professional

ASSOCHAM GEM Certified Professional Registration number 22/718

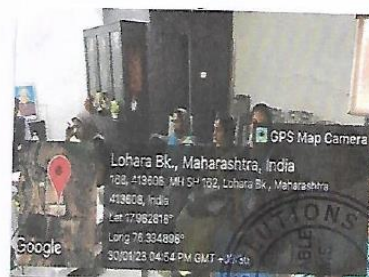
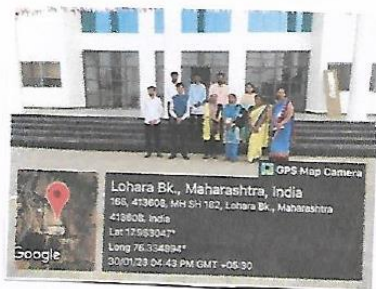
Link for the Verification website https://www.green-assochem.com/manage_gem_cp.php?page=12

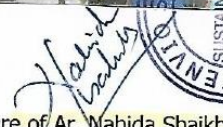
Institute: M.S.P Mandal's Bhanudasrao Chavan College, Lohara Date: 30/01/2023

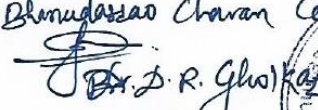
Audits covered: Green, Energy Environment Day: Monday

Observations [Positive]	Inferences
<ul style="list-style-type: none"> - Ambient fresh environment - Spacious infrastructure - 100% LED. - Suggestion box & first aid facility 	<ul style="list-style-type: none"> - Solar panels should be installed - Waste & Water management should be undertaken - Awareness posters & signages.

Evidence of the site visit




 Signature of Ar. Nahida Shaikh,
 ASSOCHAM GEM CP 22/718

College Name: Bhanudasrao Chavan College, Lohara
 Signature: 
 Name: Dr. S. R. Ghosh
 Designation: Principal
 Date: 30/01/2023



For Greenvio Solutions

Signature: 
 Name: Mrs F. A. Shaikh
 Designation: Manager
 Date: 30/01/2023



Disclaimer

The Audit Team has prepared this report for the **Marathwada Shikshan Prasarak Mandal's Bhanudasrao Chavan College** located at Jewli road, Lohara Bk, 413608, Maharashtra, India based on input data submitted by the College 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 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 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.

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

sustainableacademe@gmail.com

Acknowledgement

The Audit Assessment Team thanks the **Marathwada Shikshan Prasarak Mandal's Bhanudasrao Chavan College, Maharashtra, India** for assigning this important work of Environment Audit. We appreciate the cooperation extended to our team during the entire process.

Our special thanks are due to **Shri. Prakash Sundarrao Solanke**, President; **Shri. Satish Bhanudasrao Chavan**, Secretary and everyone from the Management.

Our heartfelt thanks to Chairperson of the entire process **Dr. Gholkar D. R.**, Principal for the valuable inputs.

We are also thankful to **College's Task force the faculty members** who have collected data required all the Assistant Professors - **Prof. Dr. More M. S., Prof. Chikate V. D., Prof. Patre R. S., Prof. Tunge V. A., Prof. Tour L. B., Prof. Kotnur R. M., Prof. Nikam. S. A., Prof. Ghodke V. N., Prof. Kadam P. P., Prof. Nikam R. D., Dr. Mane P. P., Prof. Kadam R. R., Prof. Wagmare R. B., Prof. Gaikwad S. M.**

We highly appreciate the assistance of Non-teaching staff members - **Mr. Hangargekar A. G., Mr. Vakil N. M., Mr. Amar Kirtane, Mr. Balaji Jagtap** and 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

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DETAILED REPORT

1. Introduction

1.1 About the Management

The Marathwada Shikshan Prasarak Mandal was established in 1959 at Aurangabad, the central place of the Marathwada. The base of the establishment was and is still the same, to provide knowledge to the poor and ignorant. The foundation lead the path of progress for the society in the region with numerous colleges, schools and various types of career oriented courses offered in them.

The introduction of short term certificate courses under Career Development Programme is proving as add ons coordinating with a traditional curriculum for better employability prospects. In the last 56 years the society has remained trustworthy to the students, parents, and society in general.

1.2 Statements of the Institution

1.2.1 Vision

The College proposes "To Make quality the defining element of higher education in India through a combination of self and external evaluation, promotion and sustenance initiatives and eliminating the darkness and ignorance form the lives of people living in age long poverty and help to advance towards knowledge for all round development."

1.2.2 Mission

The College adheres and focuses "Providing quality education to socially and economically backward classes." Its prescribed mission statement includes:

- Spread of education in rural region, inculcation of values and overall personality development of student.
- Development of comradeship, leadership, sportsmanship and ideal service among the students.
- Providing quality education to socially and economically backward classes.
- Brining out educational and cultural development of rural people.
- To train the youth so that they would be selected in all sectors of services.

1.2.3 Aim

The College is working towards aim of being "To promote excellence in education and create an effective human resource."

1.2.4 Objective

It is the objective of the College is "To see our children moving towards success, which is possible only with good and proper education. The benefits of education from childhood, so that they can focus on better education in the future."

1.2.5 Goals

- Making rural youth to able to seek employment.
- Making rural youth responsible citizens.
- Availing necessary opportunities to outstanding students for brighter career prospects.

1.3 Assessment of the Institute

1.3.1 Affiliations

The Institute is affiliated to **Dr. Babasaheb Ambedkar Marathwada University, Aurangabad** has been making a major contribution to the field of education for many decades and today it has a world class reputation for research, for teacher education and for its Masters and doctoral programmes.

1.3.2 Certification

The College has received the following Certifications

- Academic Audit – The College has undertaken the Academic Audit through the Dr. Babasaheb Ambedkar Marathwada University and received 'B' Grade as on 17 May 2022.
- AISHE – The All India Survey of Higher Education code is C-66899.

2. Institution overview

2.1 Populace analysis for Academic year 2021 - 2022

2.1.1 Students data

The student data (shared by the College) shows there were a total of **212 male and 138 female students** on the premises.

2.1.2 Staff data

Type	Male	Female	Total
Admin staff	2	0	2
Teaching staff	8	6	14
Non-Teaching staff	9	1	10
Total Staff Members	19	7	26

Table 1: Staff data of the Institution for 2021 - 2022

The staff data shows the premises had a total of **26** Staff Members.

2.2 Populace analysis for Academic year 2020 - 2021

2.2.1 Students data

The student data (shared by the College) shows there were a total of **208 male and 181 female students** on the premises.

2.2.2 Staff data

Type	Male	Female	Total
Admin staff	2	0	2
Teaching staff	8	3	11
Non-Teaching staff	7	1	8
Total Staff Members	17	4	21

Table 2: Staff data of the Institution for 2020 - 2021

The staff data shows the premises had a total of **21** Staff Members.

2.3 Total College Area & College Building Spread Area

The **total site area is 3.38 acres & total Built-up area of College is 1,51,777 sq. ft. for around 376 populace footfalls.**

2.4 College Infrastructure

2.4.1 Establishment

The College was established in 2016-2017.

2.4.2 Spatial Organisation

The College has ample and wide open classes with facilities appropriate for an educational space. There are open spaces with a beautiful entrance approach. The balance of hardscape and softscape provides a landscape serene ambience. **Overall the Infrastructure of the Building is excellent in terms of the Architecture Design.**

2.4.3 Operation and maintenance of the premises

The data collection session was held with the staff regarding the operation and working hours. The schedule is mentions that the College is working Monday to Saturday with timings being 10:00 hours to 17:00 hours.

3. Green Building research approach

3.1 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.

3.2 Analysis of the Green Building Study Audit

The procedure included detailed verification for the following:

Energy Audit

- Analysis of the Lights, Fans, AC, Equipment
- Renewable energy
- Scope for reducing the current energy bills if any
- Improvement in the thermal comfort of the premises

Green Audit

- Green initiatives
- Hygiene audit
- Water Audit - Analysis of the current water consumption of campus; Rainwater harvesting and Wastewater treatment on the premises.
- Waste Audit - Current waste produced, its segregation, and usage; Strategies to be adopted for waste management and awareness

Environmental Audit

- Analysis of the current landscape + hardscape of the premises
- Analysis of the flora and fauna of the premises
- Strategies adopted at present to enhance vegetation
- Measures that can be adopted for ecological improvement of the premises.

3.3 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.

3.4 Activities undertaken for the Green Building Study Audit

- Allotment and Initiation by the Institute
- Survey of students and staff completed
- Site visit at the Institute
- Submission of the Certificate

Induction Meeting

Institute: M.S.P.Mandal's Bhanudasrao Chavan College, Lohara Date: 30/01/2023
Audits covered: Green Env - Energy Day: Monday

S. No	Name	Designation	Signature
1)	Dr. S. R. Gholkar	Principal	
2)	Mr. R. S. Nikam	Asst. Prof.	
3)	Mr. V. A. Tunge	Asst. Prof.	
4)	Mrs. P. P. Kadam	Asst. Prof.	
5)	Mr. R. R. Kadam	Asst. Prof.	
6)	Mr. L. B. Tawar	Asst. Prof.	
7)	Mr. R. S. Patre	Asst. Prof.	
8)	Mrs. V. N. Ghodke	Asst. Prof.	
9)	Mrs. R. M. Kotnur	Asst. Prof.	
10)	Mrs. M. S. More	Asst. Prof.	
11)	Mrs. R. R. Kadam	Asst. Prof.	
(External) 12)	Mrs. F. A. Shaikh	Manager	
(External) 13)	Ar. Nalida Abdulla	Project Head	

College Name: Bhanudasrao Chavan College, Lohara
Signature:
Name: Dr. S. R. Gholkar
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Date: 30/01/2023



For Greenvio Solutions
Signature:
Name: Mrs. F. A. Shaikh
Designation: Manager
Date: 30/01/2023



Exit Meeting

Institute: M.S.P. Mandal's Bhanudasrao Chavan College, Lohara Date: 30/01/2023
Audits covered: Green Energy Envt Day: Monday

S. No	Name	Designation	Signature
1)	Dr. D.R. Gholkar	Principal	
2)	Mr. R.D. Nikam	Asst. Prof.	
3)	Mr. V. A. Tunge	Asst. Prof.	
4)	Ms. P. P. Kadam	Asst. Prof.	
5)	Mr. R. R. Kadam	Asst. Prof.	
6)	Mr. L. B. Tare	Asst. Prof.	
7)	Mr. R.S. Patil	Asst. Prof.	
8)	Mr. V. N. Ghodke	Asst. Prof.	
9)	Mrs. R.M. Kotare	Asst. Prof.	
10)	Mrs. M.S. More	Asst. Prof.	
11)	Mr. R. R. Kadam	Asst. prof.	
[External] 12)	Mrs. F. A. Shaikh	Manager	
[External] 13)	As. Nalida Abdulla	Project Head	

College Name: Bhanudasrao Chavan College, Lohara
Signature:
Name: Dr. D.R. Gholkar
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Signature:
Name: Mrs F. A. Shaikh
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4. Site Study

The following listed are some of the positive site elements which are beneficial to the University in terms of tangible and intangible benefits.

4.1 Actual positive points based on the site visit

The following points are based on the site visit observations:

- State of the art auditorium
- Well planned roads for internal traffic and circulation
- No use of fossil fuels.
- Ban on use of tobacco and smoking products inside premises.
- Availability of a first aid box.
- Provision for a suggestion box.

4.2 General positive points

The following points are based on the general observations of discussions:

- **Eliminating the transmission signal inside the premise** - The College has eliminated transmission signal in the interiors to protect ecosystem.
- **OPAC system** - The system in the library is beneficial for the students.
- **Ample greenery** - There are provisions for the garden and plenty of traditional trees on the premises and in the surrounding areas.

5. Ecological (Environmental) Audit

Environment is an essential part for human survival. We co-exist with the environment and it cannot be termed as a separate entity. The Ecological audit helps to understand the flora, fauna that exists and steps that can be taken to improve the same.

To denote if there are problems related to sound in and around the surrounding. In terms of the carbon footprint it helps in keeping a tab on the eco-friendly habits incorporated by the inhabitants of the premises.

Health today is the topmost priority, a general understanding of the initiatives undertaken along with sufficient hygiene practices adopted. Universal design is applicable to all built and unbuilt spaces.

5.1 Open Spaces

There is an open space in the premises used by students at present for sports and cultural gatherings. **There are provisions for natural plantations which have enhanced the beauty of the space.**

5.2 Flora audit

A flora survey was carried out to identify the total numbers of plants and trees. The landscape area has a variety of plantations constituting hundreds of surveyed trees in premises documented as follows.

S. No.	Plant Name	Type	Nos.
1	<i>Chaina Rose</i>	Herbs	10
2	<i>Cactus</i>	Herbs	30
3	<i>Aloevara</i>	Herbs	20
4	<i>Turmeric</i>	Herbs	30
5	<i>Rose Mary</i>	Herbs	40
6	<i>Dill</i>	Herbs	25

7	<i>Red Basil</i>	Shrubs	45
8	<i>Tulsi</i>	Shrubs	36
9	<i>Lemon</i>	Shrubs	45
10	<i>Rose Mary</i>	Shrubs	28
11	<i>Mango</i>	Shrubs	54
12	<i>Jasmin</i>	Shrubs	32
13	<i>Common Lilcs</i>	Shrubs	21
14	<i>Birch</i>	Trees	20
15	<i>Poplar</i>	Trees	57
16	<i>Cedar</i>	Trees	28
17	<i>Palm</i>	Trees	54
18	<i>Tamarind</i>	Trees	54
19	<i>Gooseberry</i>	Trees	55

Table 3: Details of the Flora in the premises

At present, there are 684 nos. plantations on the premises. The overall ambience of premises has lots of plants.

5.3 Noise Audit

On a macro level the College is surrounded by huge farms and minimal residential blocks **thus there is a peaceful and noise free arena observed inside the premises.**

5.4 Carbon Footprint Audit

5.4.1 Eco-friendly Commuting Practices

The College in a rural set-up amidst lush green farms on all sides. Thus, practically there is a less frequency of diesel/ CNG operated vehicles in and around the premises.

Additionally, the College provides bus services to the students who reside outside the farm areas thereby the major reliance of the stakeholders is on shared commuting.

The students and staff members who reside in and around the farms (villages) walk up to

the premises or use bicycles. There are quite few nos. of staff members who commute using the bikes and cars.

Thus, the carbon footprint owing to polluting vehicles is quite less. The surrounding has innumerable acres of land covered with agricultural farms thus providing a pollution free ambience for the stakeholders.

5.4.2 Heat Island Reduction

The dense vegetative cover surrounding the premises leads to a lot of shaded area inside the premises. The atmosphere is cool and there are no heat island effects felt.

5.4.3 Outdoor Light Pollution Study

The College compound lights are not upward looking thus, these do not cause light pollution.

5.5 Universally accessible premises

As per World Report on Disability, 2011 there are 180 million approx. Persons with Disabilities that makes it 15% of total population of India.

The College is spread over a single block, there are provisions for ramp at the entrance; and this is the only source of provision provided for universal accessibility for the specially abled.

5.6 Fire Safety

Fire and life safety are an important consideration of the National Building Code 2016. This aspect is touched upon as part of this study in the capacity of an Architect registered with the Council of Architecture. As part of the research, fire safety audit was considered from the 'Building systems' perspective.

We have observed that fire extinguishers are the only source of fire safety measures at present.

5.7 Section-wise suggestions related to premises

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.

5.7.1 Site beautification

- ➔ **Bird house/ Feeders** - At appropriate locations there can be provisions for drinking water and some grains for birds as they visit the site much frequently.
- ➔ **Garden development** - The existing open space should be designed as an Architectural landscape.
 - **Nursery documentation, expansion and beautification** – The premises has should have a nursery, details can be decided as per the landscape beautification.
 - **Scientific name plates and QR codes** – The NSS and UBA team should undertake a project to have name plates with QR codes on every plant of the premises.
 - The roofs of the buildings should be turned into **Green roofs** (By introducing terrace or vertical gardens) or **Cool roofs** (By painting the same with Cooltop material for solar reflectivity).

5.7.2 Universally accessible premises

- ➔ **Universal Toilet** - There should be a minimum of 1 toilet in every block for the specially-abled people as per guidelines prescribed by the National Building Code 2016.
- ➔ **Design up gradation for Inclusive premises** – Information/materials provided in multiple forms (Standard, electronic, large print, Braille)

5.7.3 Life safety

- One fire extinguisher in every space which has an air conditioner.
- Every space which has a gas cylinder or combustible equipment should have a provision for additional safety including the barricade around the gas cylinders, appropriate safety boards.
- Regular seminars/ webinars by experts such as Architects, Govt. Fire department on subjects related to fire and life safety should be organized and the outputs should be adopted and documented.

5.7.4 Pollution Control

- **Avoid burning waste** - The waste produced on the premises should not be burned as it is dangerous to the health of students and staff
- **Bicycles as a gift** - As an appreciation gesture maybe the student's toppers/ staff best performers can be awarded a bicycle occasionally.

देवगिरी न्युज सच का साथ ...



महाविद्यालयाचे प्राचार्य डॉ. डी. आर. घोलकर, द ग्रीन विव सोल्युशन संचालक नाहीदा शेख समवेत प्राध्यापक आदी

भानुदासराव चव्हाण महाविद्यालयात द ग्रीन विव सोल्युशन मार्फत हरित ऊर्जा व पर्यावरण अंकेक्षण (शाश्वत अंकेक्षण) संपन्न.

लोहारा : दिनांक 30 रोजी शहरातील भानुदासराव चव्हाण महाविद्यालयात द ग्रीन विव सोल्युशन या अंकेक्षण कंपनी मार्फत हरित ऊर्जा व पर्यावरण अंकेक्षण (शाश्वत अंकेक्षण) करण्यासाठी वास्तुविशारद नाहीदा शेख यांची प्रमुख उपस्थिती होती. यादरम्यान मान्यताप्राप्त व प्रमाणित ग्रीन बिल्डिंग प्रोफेशनल नाहीदा शेख यांनी महाविद्यालयातील सोयी सुविधा, सोलर पॅनल, टॉयलेट, बाथरूम, डिजिटल सभागृह , स्वच्छ पाण्याची सुविधा, वॉटर कुलर, फॅन,

बल्ब, ए.सी. , परिसरातील वृक्ष व इतर सुविधांची पाहणी करून अत्यावश्यक बाबींच्या पूर्तता करण्याच्या सूचना केल्या. याप्रसंगी महाविद्यालयाचे प्राचार्य डॉ. डी. आर. घोलकर यांची प्रमुख उपस्थिती होती, तसेच याप्रसंगी महाविद्यालयातील सर्व प्राध्यापक, शिक्षकेत्तर कर्मचारी यांनी सहकार्य केले. द ग्रीन विव सोल्युशन मार्फत महाविद्यालयाचे हरित ऊर्जा व पर्यावरण अंकेक्षण (शाश्वत अंकेक्षण) यशस्वी संपन्न झाले.

Inhouse Publication

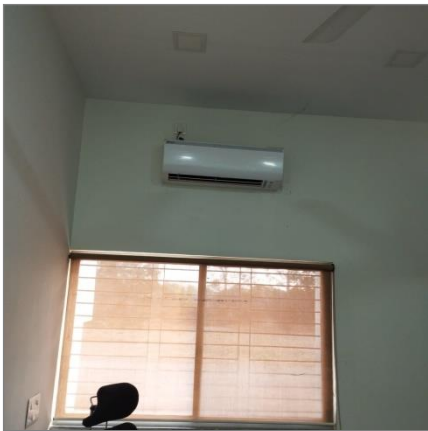
Feb 03, 2023

Powered by: M.S.P. Mandal's Bhanudasrao Chavan College,
Lohara Dist Osmanabad

On-site investigation and physical verification
Audit Team during the visit on Monday, 30 January 2023



Discussion with the Core Team



On-site review with the team for site management and other features



Group photo with the team

6. References

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.

