

# GREEN 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 Green Building Professional**  
with the Indian Green Building Council



**Studied by**

**Greenvio**  
Solutions

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

*Background reference image Sasin Tipchai on unsplash*

### Inferences of the Site visit

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

Accredited and Certified Green Building Professional

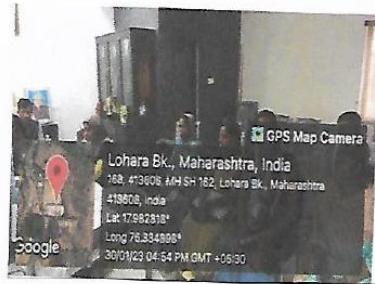
ASSOCHAM GEM Certified Professional Registration number 22/718

Link for the Verification website [https://www.green-assochem.com/manage\\_gem\\_cp.php?page=12](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"> <li>- Ambient fresh environment</li> <li>- Spacious infrastructure</li> <li>- 100% LED.</li> <li>- Suggestion box &amp; first aid facility</li> </ul>	<ul style="list-style-type: none"> <li>- Solar panels should be installed</li> <li>- Waste &amp; Water management should be undertaken</li> <li>- Awareness posters &amp; signages.</li> </ul>

#### Evidence of the site visit



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

College Name: Bhanudasrao Chavan College, Lohara  
 Signature: [Signature]  
 Name: Dr. S. R. Ghoshal  
 Designation: [Blank]  
 Date: 30/01/2023



For Greenvio Solutions

Signature: [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](mailto: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 Green 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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# 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
<b>Admin staff</b>	2	0	<b>2</b>
<b>Teaching staff</b>	8	6	<b>14</b>
<b>Non-Teaching staff</b>	9	1	<b>10</b>
<b>Total Staff Members</b>	<b>19</b>	<b>7</b>	<b>26</b>

*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
<b>Admin staff</b>	2	0	<b>2</b>
<b>Teaching staff</b>	8	3	<b>11</b>
<b>Non-Teaching staff</b>	7	1	<b>8</b>
<b>Total Staff Members</b>	<b>17</b>	<b>4</b>	<b>21</b>

*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  
Designation: Principal  
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 Date: 30/01/2023.  
College, Lohara.  
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  
Designation: Principal  
Date: 30/01/2023



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



## 4. 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.

### 4.1 Green practices

We observed the following points during the Site investigation and data verification of the premises; these are common for all the Buildings on the premises.

- **Social awareness** - *The College has taken up awareness drives on various social issues for rural upliftment and regeneration in the college and surrounding villages.*
- **Fresh environment** – *The College provides an eco-friendly ambience with fresh air and soothing environment which helps to maintain a physical and mental balance. This kind of a space it a must for an educational specially technical institute which is inviting and gives the stakeholders an opportunity to explore indoor and outdoor learning to a great extent.*
- **Team work** – *The best quality of the College which sets it apart is its coordinating, cooperative staff members; for a building the foundation plays the most important role for its future similarly for an educational institute its staff members do.*
- **Garden committee** – *The College has a distinguished garden committee who is responsible for the beautification for the premises. This team undertakes a lot of activities related to the enhancement of the landscape features of the premises. As part of our research what we observed as the best feature was the involvement and enthusiasm of each member in this activity.*
- **Energy management** – *100% of the premises has LED Lights.*

## 4.2 Community development

The College conducts environmental initiatives documented as follows:

- Tree plantation program undertaken in between NSS camp 2021, 10 April 2022 at Lohara BK, Maharashtra, India.
- Swacch Bharat Abhiyan takes place at Bhatagli, 26 October 2022.

## 4.3 Section-wise recommendations related to 'Green practices'

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.

- **Plant as a gift** - As a kind gesture, the guests visiting the premise can be asked to plant a small plant on the premise itself and they can be even given plants/bouquets from the flowers of the plants on the premise as a gift.
- **Environmental awareness** - There can be various artworks 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.
- **QR codes on the plants mentioning scientific names** - The practice of having the codes with details of each plant and tree will provide awareness among the staff and students.

## 5. 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. Here sustainability refers to a broader aspect to analyse whether the current techniques are having a positive or negative effect on the stakeholders of the premises.

### 5.1 Waste produced

At present, based on the observations we could analyse there are no specific measures practiced; however we have guided the team through interview sessions to undertake certain practices.

#### 5.1.2 Bins summary

There are 10 Dustbins on the premises with a volume of more than 10-15 liters (medium sized bins). The material of the bins is plastic.

### 5.3 Section-wise recommendation related to 'waste audit'

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.

- **Twin Dual Litter Dustbin Bins** - There should be more number of dual litter dustbins. This would inculcate the awareness of waste segregation among students.
- **Cutlery in the Canteen** – The regular plastic and steel plates, and spoons used in Canteen can be replaced with eco-friendly and organic leaves, paper straws, disposable plates, edible spoons, and tables made out of sugarcane waste or bamboo.

## 6. 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 points and effective usage without any wastage. Understanding the techniques which are best suited to the site to increase water conservation in terms of awareness and practice.

### 6.1 Water availability and consumption

#### 6.1.1 Source of Primary water supply

The College requires water from the Local Municipality for drinking water purposes. There are 3 water tanks used for primary drinking water and connected to secondary usage as well.

#### 6.1.2 Source of Secondary water supply

The college uses the following sources of water supply for secondary usages such as watering plants, kitchen, toilets, and wash basins connected to the labs and other spaces. The specific source at present is 1 bore well which is available on the site. However, since the premise is a shared campus the facility is availed equally by all the Institutes in the premises.

#### 6.1.3 Source of Tertiary water supply

The tertiary source of water is the additional source of water harvesting. At present there is natural rain water harvesting practiced to increase recharge of groundwater by capturing, by rainwater harvesting from rooftop run-offs; collected water from rooftop is discharge in bore well.

#### 6.1.4 Source of Reusing waste water

The Waste water of the laboratories is filtered and then reused for watering the plants and the trees in the premises.



## 6.2 Water requirement

The main areas of water requirement and type of usage are as follows

- **Drinking water** – Consumption of around 2,000 liters of water through RO water plant available on the premise, the taps, and water cooler.
- **Toilet blocks**– General usage by occupants in toilets, urinals, bathrooms, and washbasins using approx. 1,000 liters of water daily
- **Cleaning of the premises** – The entire Institution is very well maintained concerning hygiene and cleaning is one of the major uses of water requirement. The toilet areas are cleaned twice daily.

## 6.3 Areas of water usage

Based on the inventory done and data shared by the staff it was found that the premise has the following facilities:

- Urinals – 34 Nos.
- Toilets – 32 Nos.
- Washbasins – 29 Nos.
- Taps (Indoors) – 66 Nos.

**As per the data shared by the College and on-site observation, it was noted that there is no water wastage of water in the form of Cleanliness of toilets.**

## 6.4 Recommendations for a Sustainable Habitat

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.

- **Rain water bunds** – There should be landscape beautification project undertaken to appropriate channelize the rain water through bunds and similar facilities.
- **Waterless urinals** - There can be the provision of waterless urinals as a Green Building initiative in the premise, either the existing ones can be replaced with such a facility or new toilets can be constructed in this manner.

## 7. 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.

### 7.1 Facilities available

The Institution has washroom facility, hand wash, drinking water and dustbin facilities in the premises.

### 7.2 Smoke Exposure

The Institution is a tobacco and smoke free premises which helps in adapting to a Healthy Institution

### 7.3 Hygiene

As per the Site visit the following analysis **has a positive impact on premises.**

- For overall hygiene of the students and staff there are facilities such as Washroom facility on hand wash.
- The staffs keep a regular check about the operation and maintenance of the equipments each floor.
- Water management initiative with appropriate hygiene is undertaken.
- The areas of water tanks in site on ground floor are clean
- However the hygiene around Aquaguard was not clean.
- The hygiene of toilet areas had smelling issues.

## 7.4 Section-wise recommendation related to 'Health and hygiene audit'

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.

- ➔ **Toilet hygiene** – There should be facilities such as potpourri, camphor tablets in the toilet to avoid smell and health related issues.
- ➔ **Designated staff for maintenance** - There should be a designated Hygiene specialist and Maintenance staff who can keep a regular check on the operation and maintenance of the toilet areas and the equipment, lights, and all facilities.
- ➔ **Signboards** – The Institute should have multiple signboards about 'No smoking' and 'Healthy premises' at every nook and corner of the Institute.
- ➔ **Compound wall** – The compound wall should have awareness messages about 'No Smoking' and 'No Tobacco'
- ➔ **Courtyards and duct areas** – These are located in the internal and setback should have vertical gardens for beautification.
- ➔ **Health related provisions** – There should be provisions for a dedicated health centre and 24x7 available ambulance services inside the premises.

# 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.

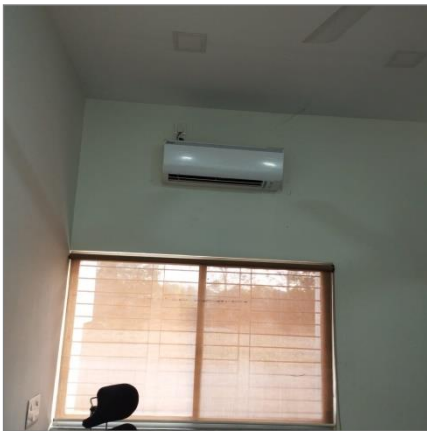
Inhouse Publication  
Feb 03, 2023

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

## 8. 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.

