

ENVIRONMENT AUDIT

STUDY PERIOD (TWO YEARS) 2020-2021 AND 2021-2022

Sustainability study

AUDIT REPORT

Studied for

Shri Vile Parle Kelavani Mandal's
Pravin Gandhi College of Law

8th Floor, Mithibai College Campus,
Bhaktivedanta Swami Marg, Vile Parle (W), Mumbai-400056

Studied in the capacity of

An accredited & Certified Green Building Professional



Studied by

Greenenvia
Solutions

Valid till **January 2024**

Disclaimer

The Audit Team has prepared this report for the **Shri Vile Parle Kelavani Mandal's Pravin Gandhi College of Law** located at 8th Floor, Mithibai College Campus, Bhaktivedanta Swami Marg, Vile Parle (W), Mumbai-400056 based on input data submitted by the Institute 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 Institute. 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-Architect; I.A.(IMS) 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

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Acknowledgment

The Audit Assessment Team thanks the **Shri Vile Parle Kelavani Mandal's Pravin Gandhi College of Law, Mumbai, 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 **Hon. Amrish R. Pate**, Hon. President & Trustee; **Hon. Bhupesh R. Patel**, Hon. Joint President & Trustee; **Hon. Bharat M. Sanghvi**, Hon. Vice President & Trustee; **Hon. Chintan A. Patel**, Hon. Vice President & Trustee; **Hon. Amit B. Sheth**, Hon. Secretary; **Hon. Harshad H. Shah**, Hon. Treasurer; **Dr. Jayant P. Gandhi**, Hon. Joint Secretary; **Hon. Shalin S. Divatia**, Hon. Joint Secretary; **Hon. Harit Chitalia**, Hon. Joint Treasurer; **Hon. Jagdish Parikh**, Hon. Joint Treasurer and everyone from the Management.

Our heartfelt thanks to the Chairperson of the entire process **Dr. Navasikha Dura**, I/C Principal, for the valuable input.

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Sustainable Academe

Brand of Greenvio Solutions, Palghar District, Maharashtra- 401208

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DETAILED REPORT

1. Introduction

1.1 About SVKM's Pravin Gandhi College of Law

The institution recognizes the fact that there lodges within the heart of every student that spark of creativity that is the essence of singularity in every individual. Beginning from this premise, the college structures its learning programme in order to identify, hone in on and unearth this reserve of creativity. To this effect the college harnesses modern methods of teaching which encourage students to learn inside and outside the classroom. This institution provides the students with varied platforms to develop their skills; by way of debates at the intra and inter collegiate levels; Seminars, workshops, trial advocacy through moot competitions, the Juris-cine club, L'avocat an in-house student's newsletter which enables students to air their passionate concerns on issues, topical or otherwise, and innovative interactive methods of study in the classroom create an ambience that fosters intellectual growth.

This methodology intersects a legal education with a contextualization that embraces social, political and economic systems. An excellent faculty serves as a facilitator in helping students materialize this vision. It is this holistic approach to education that justifies the claim SVKM's Pravin Gandhi College of Law makes, of being a law college with a DIFFERENCE. For at the end of their voyage of self-discovery students emerge confident, positive thinking individuals, ably equipped to discharge their assigned roles responsibly on a world stage.

The College Library, with its vast and eclectic collection of books and journals, satiates the thirst for knowledge of both staff and students and gives utmost attention to the overall development of the personality of students.

Students are also encouraged to participate in co-curricular activities and sports. While ensuring academic and co-curricular facilities to a vibrant student community, the institution is conscious of its role as a constructive and responsible component of the larger society. Its consistent and unstinting efforts in this direction are borne out by the fact that students enter the college, young, immature, uncertain, bewildered, but leave its portals still young, but much more mature, self-confident and focused, ready to lead rich lives of their own even while enriching that of society.

1.2 Mission Statement of the Institute

1.2.1 Vision

The College proposes "To be an institution of excellence in imparting law education in the country, catering to the needs of society by bringing out students who are sensitive to the societal needs and be zealous in upholding the rule of law with social compassion."

1.2.2 Mission

The College adheres and focuses

- To formulate and implement a framework that is conducive to designing and conducting courses in legal subjects to meaningfully integrate, support and enhance professional knowledge of law.
- To employ multi-dimensional techniques to enhance legal information and awareness in order to facilitate exercise of choices for future legal careers.
- To inculcate a spirit of enquiry by promoting scientific research skills for advancement of knowledge in the field of law by integrating research, field action and capacity- building of teaching faculty.
- To transform conventional teaching-learning experience by adopting innovative pedagogy to develop cognitive abilities and nurture social sensitivity.
- To assimilate local and global standards for holistic advancement.

1.2.2 Aim

The College has channelizes its efforts "To impart holistic education aimed at creating well-rounded citizens.

1.2.4 Objective

It is the objective of the College is

- To provide quality education in law emphasizing the relationship between law and society.

- To inculcate the spirit of scientific enquiry and develop a problem-solving attitude.
- To sensitize students to equip them to address the changing needs of society.
- To create awareness among students towards sustainable development and to prepare them to be environmentally conscious citizens.

1.3 Assessment of the Institute

1.3.1 Affiliations

The College is affiliated with the **University of Mumbai**, a collegiate, state-owned, public research university and is known as one of the largest universities in the world situated in the city of Mumbai, Maharashtra, India.

1.3.2 Approval

The Colleges has received its approvals to conduct Law courses through the statutory body established under the section 4 of Advocates Act 1961 that regulates the legal practice and legal education in India - **Bar Council of India (B.C.I)**

1.4 Achievements of the Institute

The Institute has a tremendous track record of excellence in Built form and educational services provided, below are some of the achievements of the prestigious Institute.

- **Pravin Gandhi College of Law** was awarded a Letter of Appreciation awarded by the Public Concern for Governance Trust, 2022.
- **Pravin Gandhi College of Law** was awarded a **Letter of Appreciation** by the Vidyabhavan, Nerul for outreach activities 2022.
- **Pravin Gandhi College of Law** was awarded a **Letter of Appreciation** by the Chatrapati Shivaji Kala, Krida, Krushi And Gramin Vikas, Yavatmal for the outreach activities 2021.
- **Pravin Gandhi College of Law** was awarded a **Letter of Appreciation** by the Central Vigilance Commission, 2021.

- **Prof. Kavita Sharma** received a Letter of Appreciation awarded by the City Civil and Sessions Court, 2021.
- **Pravin Gandhi College of Law** was awarded a **Letter of Appreciation** by the Savitridevi Thirani High School for the Legal Awareness work, 2021.
- **Pravin Gandhi College of Law** was awarded a Letter of Appreciation awarded by the Sulochanadevi Singhania School for the Legal Awareness work, 2021.
- **Pravin Gandhi College of Law** was awarded a **Letter of Appreciation** by the Central Vigilance Commission, 2020.
- **Dr. Suman Kalani** received the **Best Research Paper at the 7th Innovation Summit and International Research Conference** on “Flexibility in Business: Opportunities, Issues, and Challenges” organized by Aditya Institute of Management Studies and Research, 25 February 2019.
- **Ms. Apurva Thakur** received the **Best paper Award at KC College Gender and Disability**, 2019.
- **Mrs. Kavita Sharma** received the **Letter of Appreciation for Mumbai suburban District Legal service authority**, 2019.
- **Ms. Anju Singh** received **Recognition for the Minor Research Project: Noise Levels in and Around Educational institutions in Juhu Vile Parle West: Legal and Educational Fallouts**, 2019.
- **Ms. Apurva Thakur** received **Recognition for the Minor Research Project: Shifting Research Focus from Legislation to Empathy While Defining Disability**, 2019.
- **Pravin Gandhi College of Law** was awarded the **Best Street Play Award** by University of Mumbai’s Department of Lifelong Learning & Extension (D.L.L.E), 2018-19.

1.5 Academic status of the College

The College provides a wide range of professional courses related to law; the details are documented below:

- **Graduation** – It offers the Bachelor of Legal Studies B.L.S, LL.B program.
- **Post-Graduation** – It offers the Master of Laws (LL.M.) - One-year LL.M. Degree Programme for students committed to make career in law teaching.
- **Certificate Programmes and Courses** - It offers the Course in Cyber Law and Information Technology.

The College works toward training young men and women to be competent, committed, and compassionate, and lead in all walks of life.

1.6 Facilities

The College emphasizes on latest technological advancement through its educational initiatives. Our interaction with the staff members and team showed that they are keen for further upgrading and use of sustainable features. Some of the current key facilities are listed below.

- State of the art infrastructure
- Digital class set-up with latest smart boards
- Air-conditioned spaces for all areas
- Regular and frequent updated facilities for fires safety
- Social welfare activities
- Library (Computerized) with separate reading room for students and staff.
- Clean drinking water facility
- Lifts for vertical circulation

2. Institution overview

2.1 Populace analysis for the Academic year 2021-22

2.1.1 Students data

The student data (shared by the Institute) shows there were **a total of 213 Boys and 388 Girl students** on the premises.

2.1.2 Staff data

Type	Male	Female	Total
Admin Staff	04	04	08
Teaching Staff	02	11	13
Non-Teaching Staff	05	02	07
Total Staff Members	11	17	28

Table 1: Staff data of the Institution for 2021-22

The staff data shows the premises had a total of **28** Staff Members.

2.2 Populace analysis for the Academic year 2020-21

2.2.1 Students data

The student data (shared by the Institute) shows there were **a total of 221 Boys and 369 Girl students** on the premises.

2.2.2 Staff data

Type	Male	Female	Total
Admin Staff	04	04	08
Teaching Staff	02	12	14
Non-Teaching Staff	04	02	06
Total Staff Members	10	18	28

Table 2: Staff data of the Institution for 2020-21

The staff data shows the premises had a total of **28** Staff Members.

2.3 Total Institute Area & Institute Building Spread Area

The **total site area is 0.69 acres** and the **total Built-up area of the Institute is 21,804 sq. ft.** for a **total of 629 footfalls.**

2.4 Institute Infrastructure

2.4.1 Establishment

The Institute was established in 2004.

2.4.2 Spatial Organisation

The overall ambiance of the Institute is warm and inviting. The Architectural style of exposed bricks provides a soothing and contrasting feel to the built-form. The colour palate of earthy colours in the facades helps the building stand out positively.

There are provisions for lifts and a staircase for accessibility on the premises, whereas there are amenities such as CCTV, a first aid room, etc. The Institute is located pretty close to nature and hence has a very fresh environment which is absolutely pollution free and healthy. The Building is a Reinforced Cement Concrete (RCC) framework building.

2.5 Operation and Maintenance of the premises

The interview session was held with the staff regarding the operation and working hours. The Institution is open from Monday to Saturday. The schedule is mentioned below.

- **Main Institutional areas for lectures** - 8:00 am to 2:00 pm for around 250 days (Approximate).
- **General areas for office purpose** – 9:00 am to 5:00 pm for around 320 days (Approximate)

3. Green Building Study as a Research based technical audit

3.1 About the Green Building Study Audit

It is a systematic study of the aspects which make the Institution a 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

- 7 September 2022 - Allotment and Initiation by the Institute
- 8 September 2022 - Induction Meeting
- 16 September 2022 - Survey of students and staff completed
- 20 December 2022 - Site visit at the Institute
- 24 December 2022 - Data submitted by Institute

On-site investigation and physical verification Audit Team during the visit on 20 December 2022



Discussion with the Core Team



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



Tree plantation activity with students and staff members

4. Site Study

4.1 On-site observations study

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

- **Location** - The Shri Vile Parle Kelavani Mandal's Pravin Gandhi College of Law located at 8th Floor, Mithibai College Campus, Bhaktivedanta Swami Marg, Vile Parle (W), Mumbai-400056 and falls under Mumbai Municipal Corporation.
- **Neighbourhood context** - The premises is surrounding by Residential and Educational areas on the immediate surroundings of the site.
- **Natural physical features** – The premises lacks good biodiversity features; however it is very close to the Juhu beach and the climate is generally cooler owing to close proximity to the sea. Since the College is located in an urban area in the heart of the city; site does not have major difference in the land levels (contours).
- **Manmade features** – The premises is situated in an urban area amidst residential areas with appropriate proximity to necessary amenities. The materials used for construction are RCC and the landscaping includes few natural trees as well as potted plants.
- **Circulation** – There is a smooth transition of pedestrian traffic inside the premises due to the large entrance gate; however the parking facilities should be improved but since it is a shared campus this decision should be taken by the Management.
- **Climate** – Mumbai has a tropical climate. When compared with winter, the summers have much more rainfall. According to Köppen and Geiger, this climate is classified as Aw. The average annual temperature is 26.4 °C | 79.6 °F in Mumbai. In a year, the rainfall is 2012 mm | 79.2 inch.

(Source: <https://en.climate-data.org/asia/india/maharashtra/mumbai-29/>)

4.2 Positive site features as per our study

4.2.1 Actual positive points based on the site visit

The following points are based on the site visit observations:

- Innumerable actions undertaken for 'Fire and Life safety' these are in the form of fire alarms, sprinklers systems, smoke detectors, fire extinguishers etc.
- Smart class through digital boards.
- Drinking water facility
- Hygiene and cleanliness
- Social and legal aid provided to general public through outreach programs.

4.2.2 General positive points

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

- **User friendly movability in premises** - There are provisions of Kerb Ramp in the Building premises, also low height hand rail for ease of access.
- **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.
- **Paperless technologies** - The college has gone technology-friendly and paperless in the functioning of the Premises.
- **Resting places** - There are provisions for resting places on-premises outdoor and indoors.
- **Greenery in the indoors** - There are a lot of potted plants inside the premises.
- **Universally accessible premises** - In addition to availability of ramps, there are provisions for lifts, universal toilets, and braille name plates.

Ecological (Environment) Audit



Background reference image Yugal Shrivastava on pexels

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

The College is located in a plush locality and owing to the urban scenario there is a lack of open space within the premises boundary.

5.2 Flora audit - Research study

A flora survey was carried out to identify the total number of plants and trees. The landscape area has a variety of plantations constituting hundreds in numbers. Most of the trees have been planted by students, staff, management, Principal non-teaching staff, and office staff on several occasions and also during the plantation drives. **Some of them have grown naturally and have been conserved at their respective locations to maintain the beauty of the premises.** The detailed study is as follows.

S. No.	Plant name	Type	Nos
1	<i>Jade Plant</i>	Shrub	2
2	<i>Polyscias Frutucosa</i>	Shrub	4
3	<i>Syngonium Podophyllum</i>	Shrub	4
4	<i>Ficus Elastica</i>	Plant	3
5	<i>Red Velvet Coules</i>	Shrub	2
6	<i>Cordyline Fruticosa</i>	Shrub	2

7	<i>Areca Palm</i>	Plant	6
8	<i>Dumb Cane</i>	Plant	2
9	<i>Croton</i>	Plant	4
10	<i>Snake Plant</i>	Plant	2
11	<i>Philodendron</i>	Plant	1
12	<i>Cypress Golden Thuja</i>	Plant	2
13	<i>Red Sisters</i>	Plant	2
14	<i>Coleus Rainbow</i>	Plant	1
15	<i>Philodendron 'Congo Rojo'</i>	Plant	1
16	<i>Rubber Plant</i>	Plant	1
17	<i>Umbrella Tree</i>	Plant	2
18	<i>Norfolk Pine</i>	Plant	2
19	<i>Bamboo</i>	Plant	1
20	<i>Banyan</i>	Plant	1
21	<i>Aralia</i>	Plant	2
22	<i>Gerbera</i>	Plant	2
23	<i>Lemon</i>	Plant	1
24	<i>Neem</i>	Plant	1

Table 3: Details of the Flora in the premises

At present, there are 50+ plantations on the premises.

5.3 Noise Audit

The College is located adjacent to the road which is connecting to a major road of the city; thus to a great extent there are traffic and noise issues. However, the Architectural design and materials used in the interiors of the building result in a positive impact and thus there are no serious issues faced due to outdoor noise.

5.4 Carbon Footprint Audit

5.4.1 Eco-friendly Commuting Practices

Based on data collection and discussion with staff the following points were noted:

- **Ease of commuting** – Owing to close proximity to public transport the access is very feasible and walk able.
- **Parent's commute** - There are 2 Parent-teacher meetings held in a year and the turn-out is around 40-60%

5.4.2 Heat Island Reduction

The top floor has a flat roof which is absolutely clean and well maintained. The Buildings are covered with white paint and the Maintenance staffs along with Management have taken ample measures to maintain the same. **There was no weathering of roof observed.** The current practices are well maintained and thus there is no great extent of urban heat island effect felt in the building.

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 following facilities are available on the premises for the specially-abled as part of universally accessible premises initiatives.

- **Lifts for vertical circulation**
- **Wheelchair availability.**
- **Ramps at the entrance area**
- **Handrails along the staircase and Low height risers in the staircases**
- **Toilets for the disabled friendly**

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, as we have found that the College has taken care for adequate fire safety measures to be adopted. The following provisions are available at present.

- Fire extinguisher on every floor.
- Open staircase without any barriers and free of storage or combustible material.
- 1.5m and more width wide corridors with ample ventilation.
- Accessible fire exit areas such as staircase in case of an emergency as per the NBC norms.
- Fire safety practices such as signages, Fire hydrant cabinets, sand buckets.
- A fire drill and safety evacuation drill undertaken frequently for students and staff.

6. Inferences as Consolidated study

6.1 General suggestions based on the site visit

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

- Increase the zoning activities for eco-zone, orange zone, green zone – Although this has to be undertaken on an entire premises basis; since the College is a shared campus this will have to be undertaken after discussion with Management.
- Increase the number of dustbins.
- Certain areas tiles has a withering situation due to on-going repairs which were informed will be upgraded.
- Being a Law College certain manuals should be written and prepared for visually and hearing impaired.

6.2 Section-wise suggestions based on general study

The following suggestions are to be considered as a **second priority** for implementation. These **should be executed within the next 3.5 years from the date of the Report submission**. The Institute can execute a plan after discussion with Project Head.

6.2.1 Site beautification

Additional facilities for birds - There can be provision for drinking water and food facility for birds visiting the College premise.

6.2.2 Pollution Control

- **Promote the use of Eco-friendly vehicles** - There can be provision for battery-operated vehicles/ low emission vehicles such as electrically driven vehicles parking in open spaces along with battery charge points, this would inspire students to change their mode of transportation and adopt sustainable practices.
- **Bicycles as a gift** - As an appreciation gesture maybe the student's toppers/ staff best performers can be awarded a bicycle occasionally.

6.2.3 Responsible environment systems

Smart Gardening System - The College can undertake a Smart Gardening system using IoT Technology such as an automated watering system. This will result in saving time by scheduling time for watering; Saving money and water as smart irrigation systems have automated water schedules in addition to tracking dampness of soil which helps the irrigation system know when and how much the garden needs. It also helps in healthier plants as with the help of apps, smart irrigation systems, or even smart growing containers, these tasks can be provided evenly and allow the plants to be healthier and more productive. More information on this system can be checked here

<https://www.happysprout.com/inspiration/what-is-smart-gardening/>

6.2.4 Fire and life safety

- ➔ Special fire layouts in immediate spaces outside the lift.
- ➔ 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.

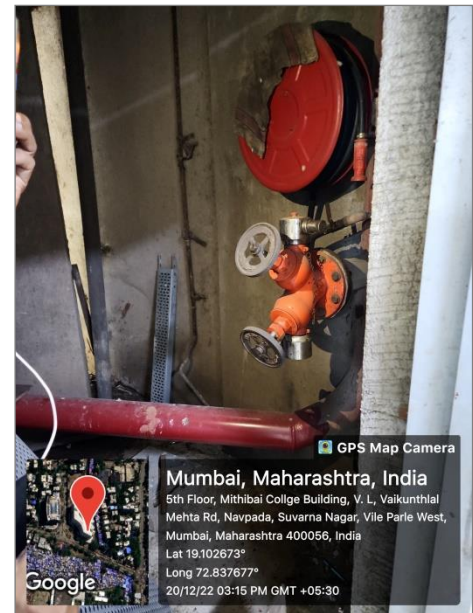
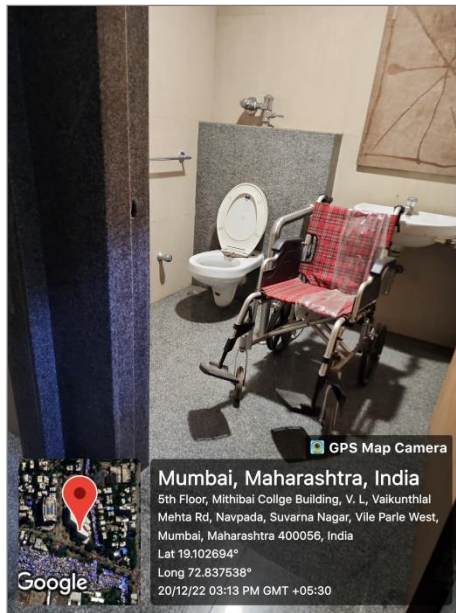
6.2.5 Sustainable features

- ➔ **Signages** – In addition to the signages being in regular language there can be additional signages in braille language for the especially abled students.
- ➔ **Cutlery in the Canteen** – The regular plastic and steel plates, spoons used in Canteen can be replaced with eco-friendly and organic leaves, paper straw, disposable plates, edible spoons and tables made out of sugarcane waste or bamboo. This will be first of its kind initiative to be adopted and practiced thus also inculcating the healthy practices in students.
- ➔ **Increase the green cover** – Practically it is not possible to increase the green cover on ground; however there can be provisions to improve the courtyard area; terrace gardens; vertical gardens along the duct areas.

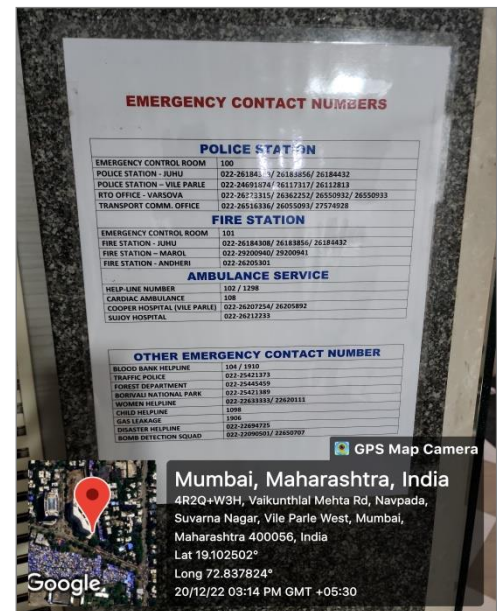
On-site investigation and physical verification
Audit Team during the visit on 20 December 2022



Water systems in the premises



Fire, life safety and universal accessibility (Wheelchair, toilet) facilities in the premises



Recreational and emergency facilities in the premises

7. 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.

➔ Local references

⇒ Climate data <https://en.climate-data.org/asia/india/maharashtra/mumbai-29/>

➔ National references

⇒ 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

➔ International references

⇒ 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 center for Accessible Environments) – an initiative supported by Shakti Sustainable Energy Foundation and www.umassd.edu

⇒ The city of Cheyenne, Streetscape/ Urban Design elements - Wyoming Planning Association, Gillette, Wyoming, United States

⇒ Streetscape elements – Chapter 6 on San Francisco

⇒ American lung association <https://www.lung.org/>

⇒ Study related to air pollution <https://www.airgle.com/>

⇒ Exploring the light pollution <https://education.nationalgeographic.org/>

⇒ Accessibility study <https://www.washington.edu/>

⇒ Urban heat island effect <https://www.epa.gov/heatislands/what-you-can-do-reduce-heat-islands>

