Environment 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 **2021-2022 and 2022-2023** to the Esteemed Institution

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

S. P. Mandali's

R. A. Podar College of Commerce and Economics (Autonomous)

L.N. Road, Matunga, Mumbai – 400019, Maharashtra, India

(Site visit held on 29 December 2023)

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 Environment Protection and Conservation.

Issued on **29 December 2023** and valid till **31 December 2024**

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 I Sustainability Department of Greenvio Solutions, Naigaon,
An environment Design and Consultancy developing Healthy and Sustainable Environments
Email: **sustainableacademe@gmail.com** I **greenviosolutions@gmail.com**

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Environment Audit

Study Period (Two Years) 2021 – 2022 & 2022 - 2023

Sustainability study

AUDIT REPORT

Studied for

S. P. Mandali's

R. A. Podar College of Commerce and Economics (Autonomous)

L.N. Road, Matunga,

Mumbai – 400019, Maharashtra, India

Studied in the capacity of

Accredited and Certified GBP

Studied by

Greenvio
Solutions

Disclaimer

The Audit Team has prepared this report for the **S. P. Mandali's R. A. Podar College of Commerce and Economics (Autonomous)** located at *L.N. Road, Matunga, Mumbai – 400019, 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.

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
sustainableacademe@gmail.com

Acknowledgement

The Audit Assessment Team extends its appreciation to the **S. P. Mandali's R. A. Podar College of Commerce and Economics (Autonomous), Maharashtra** for assigning this important work of Environment 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 extended to the Chairpersons of entire process **Dr. Shobana Vasudevan,** (Principal) and **Dr. Vinita Pimpale** (Vice Principal) for the valuable inputs.

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

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

Sustainable Academe

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Contents

1. Introduction

1.1 About the Institute

R.A.Podar College of Commerce and Economics (Autonomous), Mumbai has had a long history, which commenced with the freedom struggle of India. The visionaries of that time realized that they should start an institution which would inculcate the indigenous values and have the thrust of social and cultural value system that are typical to the grand heritage of our country.

In August 1940, the trust known as 'Shikshana Prasaraka Mandali', Pune, made an application to the Bombay University for permission to start a Commerce College. The Industrialist and Philanthropist and a visionary, Seth Ramdeoji Anandilal Podar was deeply interested in the cause of education. He wished to build an institution in the memory of his brother Ramniranjan Anandialal Podar who had died at a young age. At the cost of Rs.1,50,000/- he constructed the building that houses the college today, and gifted it to the S.P. Mandali on the 7th of February 1941.

The Senate of Bombay University granted permission to start the College initially for a period of two years, with 150 students on its rolls. The College building with its famed clock tower was handed over by Seth Ramdeoji Anandilal Podar to the S.P. Mandali. Barrister M.R. Jayankar inaugurated the college building formally. The college was named "Ramniranjan Anandilal Podar College of Commerce". The Mandali has been rendering notable service under its motto of unflinchingly carrying out the mission undertaken and has kept up its well-defined objectives. The objectives in regard to Commerce education has been to extend popular and reasonably affordable higher education in Maharashtra and to develop an institution that would impart appropriate education both in Commerce and Economics.

The institution first started the B. Com. Degree course in 1942 and the word Economics was added to the name of the College. It has now become 'Ramniranjan Anandilal Podar College of Commerce and Economics'. The College received permanent affiliation from the University of Mumbai on 17th August, 1950.

1.2   Assessment of the Institute

1.2.1 Affiliations

The courses provided by the College have received their affiliation through the **University of Mumbai,** a public state university in Mumbai.

1.2.2 Certification

The College has received the following Certifications

- ⮎ **AISHE** – The All India Survey of Higher Education code is C-34086

- ⮎ **NIRF** – Participated and received rank in National Institutional Ranking Framework

1.2.3 Recognitions

The College has achieved the following recognitions:

- ⮎ **Autonomous Status** - The College was conferred Autonomous status by the University Grants Commission (UGC).

- ⮎ **Recognition of UGC** – The College has been recognized under section *2 (f) and 12(b) of the UGC Act, 1956* by University Grants Commission, New Delhi.

1.2.4 Accreditation

The following are details of the accreditation awarded by the National Assessment & Accreditation Council (NAAC) to the College.

Cycle	First	Second	Third
CGPA	N.A.	3.63	3.68
Grade	A+	A	A+
Year	2004	2011	2017

Table 1: NAAC Accreditation details of the Institute

The College is due to enter its Fourth cycle of NAAC.

2. Overview

2.1 Summarised Populace analysis for 2022-2023

2.1.1 Students data

The data (shared by the Institute) shows there were **5,066 students.**

2.1.2 Staff data

S. No.	Type	Male	Female	Total
1	Teaching staff	15	30	**45**
2	Non-Teaching staff	30	09	**39**
Total Staff Members		**45**	**39**	**84**

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

The staff data shows the Institute premises **84 Staff Members.**

2.2   Summarised Populace analysis for 2021-2022

2.2.1 Students data

The data (shared by the Institute) shows there were **4,965 students**

2.2.2 Staff data

S. No.	Type	Male	Female	Total
1	Teaching staff	12	32	**44**
2	Non-Teaching staff	30	09	**39**
Total Staff Members		**42**	**41**	**83**

Table 3: Staff data of the Institution for 2021-2022

The staff data shows the Institute premises had **83 Staff Members.**

3. Research

3.1 Site & Institute Building Spread Area

The Institute spread over **0.62 acres** with a built-up area comprising of **5,055 sq. m.**

3.2 Institute Infrastructure - Spatial Organisation

2.3.1 Establishment

The Institute established and began its operations in **1941.**

2.3.2 Spatial Organisation

The Institute has the following spatial features:

- ⮑ Heritage and historic building made of stone with a striking feature of clock tower

- ⮑ Amenities such as common room for girls, hall for programmes, library and more

- ⮑ Facilities such as drinking water, washrooms, biometric, and more

- ⮑ Special features such as 'Green Gym' in outdoor areas

4. Evidence

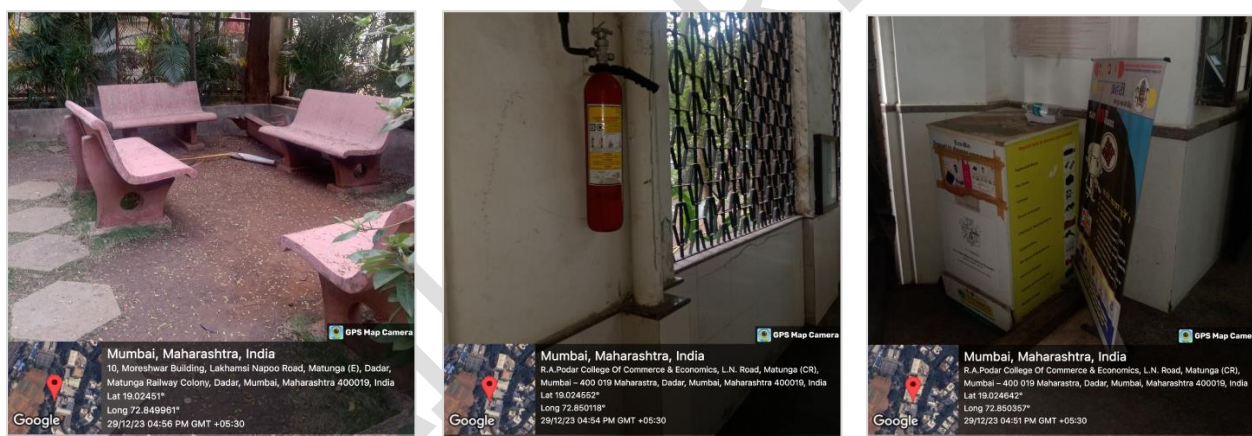**Plate 1: Group photo with the team and display about 'Tobacco free campus' measures undertaken**

Plate 2: Investigation of the system – Seating areas, fire extinguisher and e-waste bins
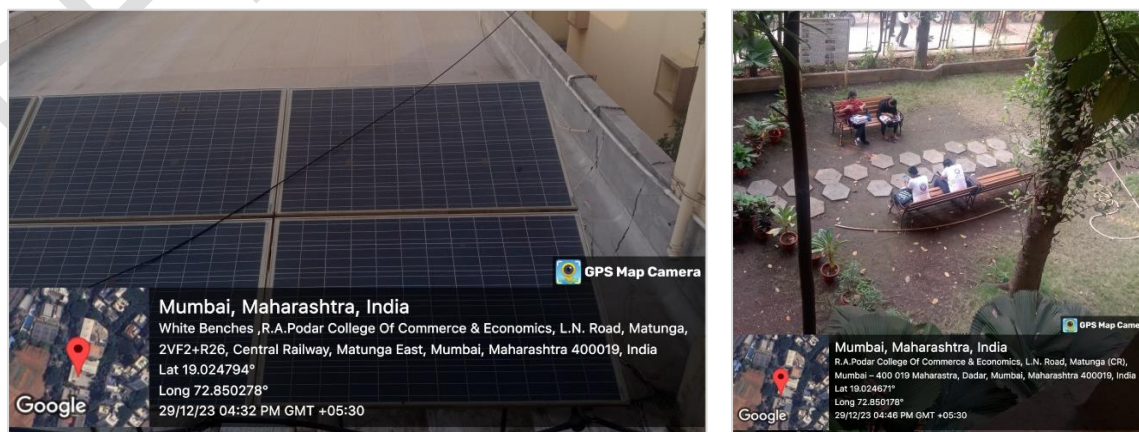

Plate 3: Rooftop solar panels and green gym

5. Documentation

5.1 Open Spaces

The first hand observations about the space documented below:

The campus has a small sized green open space in the front yard of the site that is well designed and maintained. This space is used for gym, learning, and breakout purposes.
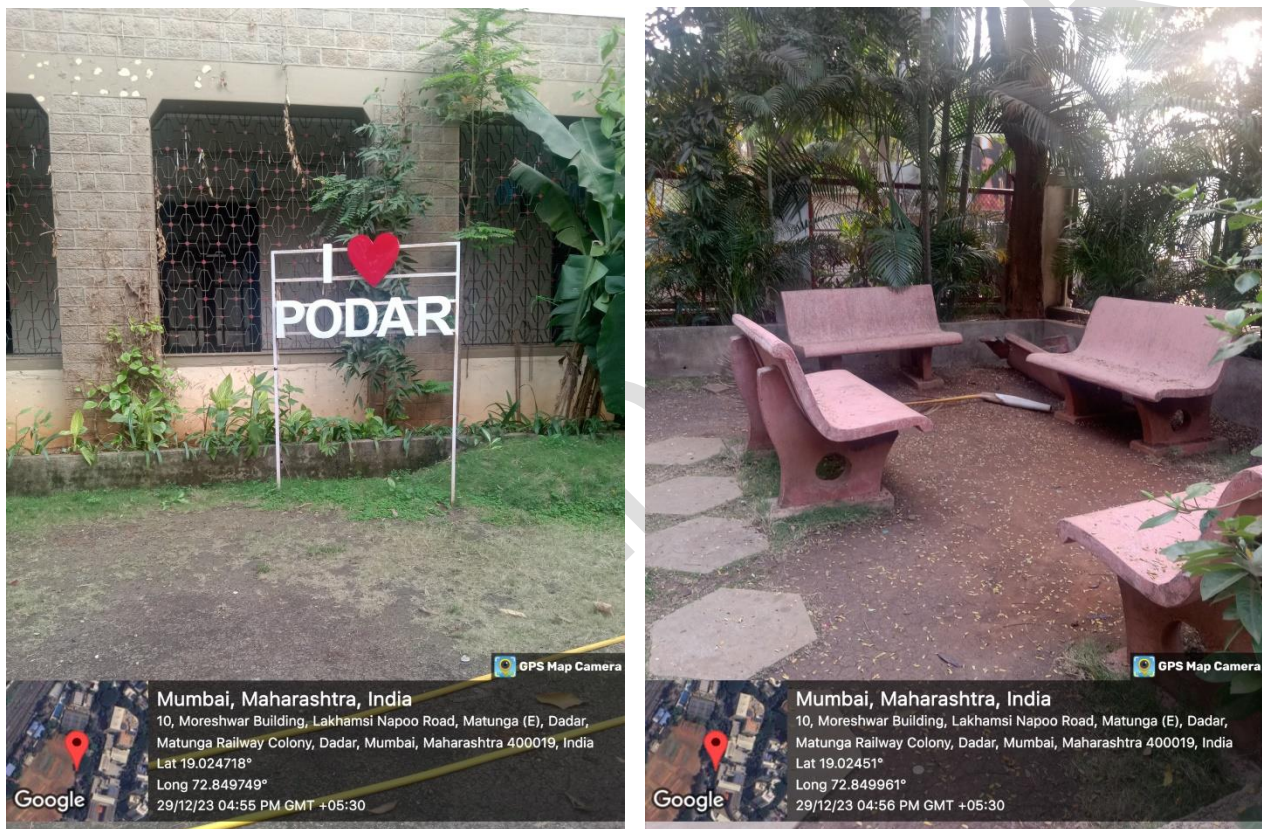

Plate 4: Front yard of the campus

The study suggests that there is no suggestion for the space and design however, boards identifying these spaces as 'BREAKOUT ZONE' and 'GREEN ZONE' can be displayed around the site.

The campus has an additional open in the backyard that is used for gatherings and functions purposes, this space however requires certain up gradation.
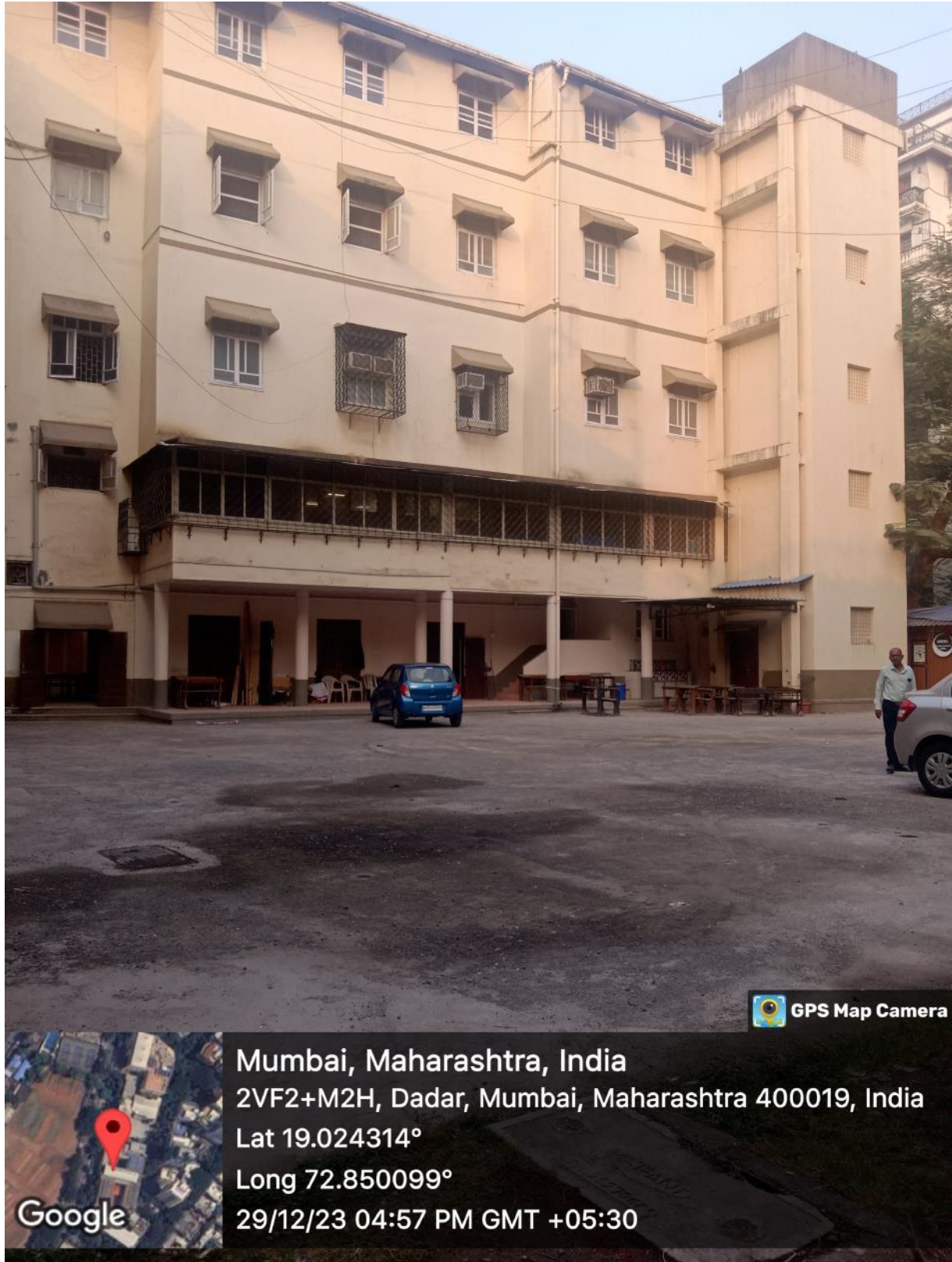
Plate 5: The back yard of the premises

5.2   Flora audit

A flora survey to identify the total numbers of plants and trees by internal team as documented below displays the verities of the plantations.

S. No.	Plant name	Type	Nos.
1	*Mango*	Tree	6
2	*Coconut*	Tree	4
3	*Amla*	Tree	3
4	*Banana*	Tree	1
5	*Bamboo*	Tree	2
6	*Basil*	Shrubs	5
7	*Jackfruit*	Tree	1
8	*Lime Tree*	Tree	2
9	*Neem Tree*	Tree	1
10	*Hibiscus*	Shrubs	12
11	*Mogra*	Shrubs	2
12	*Papaya*	Tree	2
13	*Curry Leaves Tree*	Tree	1
14	*Lily*	Shrubs	-
15	*Water Lily*	Shrubs	-
16	*Champa*	Tree	1
17	*Ginger*	Shrubs	1
18	*Turmaric*	Shrubs	1
19	*Table Plam*	Tree	6
20	*Money Plant*	Vines	1
21	*Green Chily*	Shrubs	2
22	*Pine Tree*	Tree	2
23	*Canna*	Shrubs	-
24	*Delonix Ragia*	Shrubs	2
25	*Ashoka Tree*	Tree	6
26	*Almond Plant*	Tree	4
27	*Custard Apple*	Tree	1
28	*Jamun Tree*	Tree	1

29	*Parijat*	Tree	1
30	*Umber Tree*	Tree	1
31	*Bakul Tree*	Tree	1
32	*Aglaonema Diamond*	Shrubs	15
33	*Petra Croton Plant*	Plant	30
34	*Bamboo*	Tree	1
35	*Lucky Bamboo*	Plant	2
36	*Ixora Plant*	Plant	-
37	*Nagphani*	Plant	-

Table 4: Details of the Flora in the premises

At present there are more than **120 numbers of plantations** in the premises.

The study suggests that there is scope to document the plantations further through coding, numbering and book.

Additionally, a display board about 'Green zone' could be undertaken.

Plate 6: Plantations surrounding the premises

5.3   Fauna audit

The campus is located in an urban area.

Fauna available	Names
Birds	Parrots , Squirrels, Crow
Insects	Ants, Mantis,
Invertebrates	Pond Snell, Butterfly, Earthworm, bees
Reptiles	Common Garden Lizard
Amphibians	Frog
Mammals	Cat, Rat

Table 5: Details of the fauna in the premises

The study suggests that no suggestions proposed for this section.

5.4   Noise Audit

Being surround by residential and educational there site is a peaceful place to be in. this was observed during the investigation that was carried for a sufficient duration.

The study suggests that no suggestions proposed for this section.

However, outside the campus a signboard could be displayed that highlights 'Silent zone' and 'No honking zone' being an Educational Institute.

5.5   Carbon Footprint Audit

5.5.1 Eco-friendly Commuting Practices

- ➲ The campus is 5 walking distance from the local Railway Station, bus stop and major roadways

- ➲ Thus, being close to public transport majority of the stakeholders commute using public mode. In this manner, eco-commuting practices are observed

The study suggests the current practices are fine and should be continued.

However, awareness banners, programs and stakeholder documentation of mode used for commuting should be undertaken for sensitization purposes.

5.5.2 Heat Island Reduction

The following features add to low heat island effects of the campus:

Plate 7: Huge canopy plantations surrounding the premises

Plate 8: Recently fabricated rooftop that reflects the harsh sun rays

The study suggests that no suggestions proposed for this section.

5.5.3 Outdoor Light Pollution Study

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

5.6   Life 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. All provisions documented below:

- ⮑ **Fire extinguisher**
- ⮑ **Sand buckets**

The study suggests the current practices are fine; however, some aspects in the interiors require and up gradation as follows:

Plate 9: Exposed wiring on the clock tower area

The study suggests that the wiring should be concealed and there should be a display board stating 'Students or staff members not allowed'

Plate 10: Exposed switchboard in the interiors of the premises

The study suggests that:

➲ **The wiring should be concealed**

➲ **The students should not be allowed to decorate the spaces that have electrical connections**

➲ **There should be documentations of the switchboards and main boards such as SB1, MB1 further the switches should be documented appropriately.**

Plate 11: Fire extinguishers in the premises

The study suggests that there should be an increase in nos. of 'FIRE BALLS' in the premises for life safety purposes.
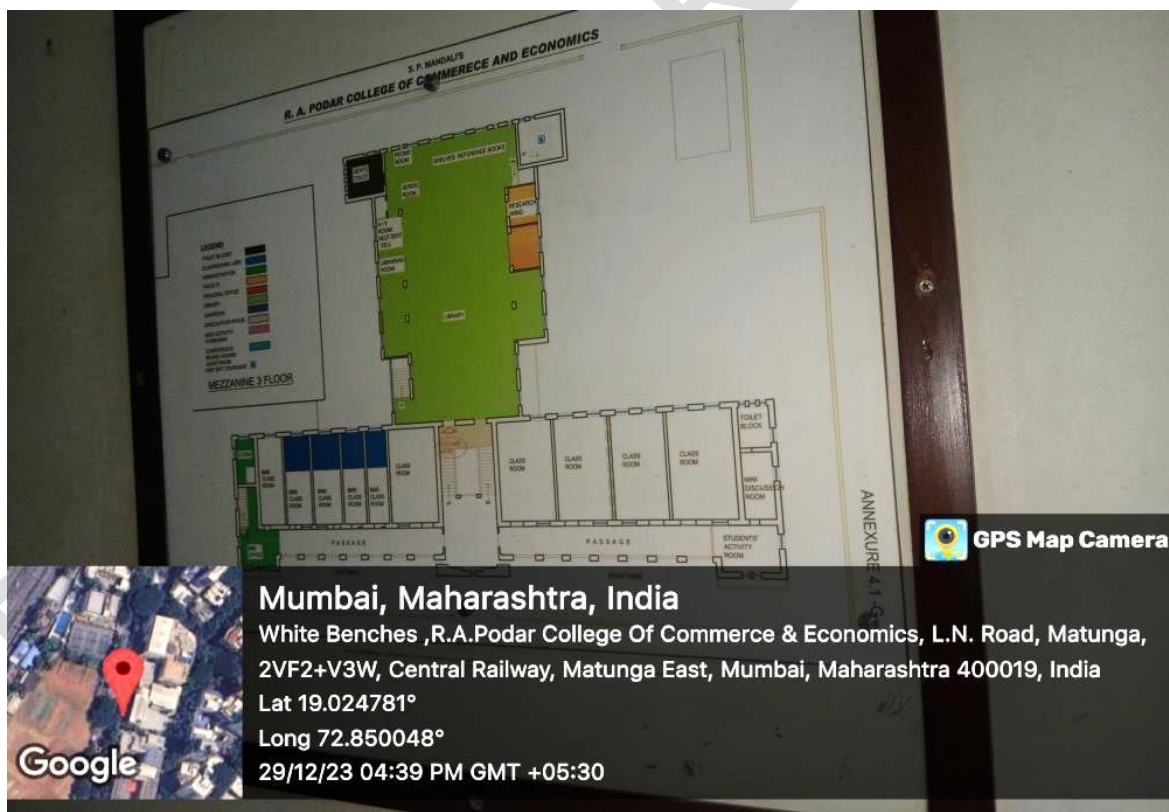

Plate 12: Layout of the Library at the entrance of the space

The study suggests that the floor should have a 'FIRE ESCAPE ROUTE LAYOUT' that highlights the position of stakeholders and nearest passage as well as staircase.

6. Suggestion

6.1   Section-wise suggestions

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 Report submission.

- **Extra care for the rooftop areas** - No changes for this section

- **Messages on the beam area**

  Include quotes and messages from eminent personalities all over the premises on beam for inspiration and beautification.

- **Inspirational timelines on the blank interior facades**

  Include quotes, messages, timelines, details about specific subject or career prospects in the interior areas for inspiration and beautification.

- **General aspects**
  - Introduce information boards everywhere
  - Placards and manuals for awareness
  - Upgrade the website w.r.t. green initiatives

6.2   General suggestions

The following are consolidated study related to 'entire Institute' should be considered as ***second priority*** once section wise recommendations are implemented.

6.2.1   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.

6.2.2 Heat island reduction

No changes proposed for this section

6.2.3 Life safety

⮕ **Mandate fire extinguisher in spaces** - One fire extinguisher should mandatorily be there in every space which has an air conditioner/ gas cylinder.

⮕ **Combustible equipment** - Every space which has a gas cylinder or combustible equipment should have a provision for the barricade around the gas cylinders, appropriate safety board's mentioning 'danger sign' and 'Do not touch' with an additional small fire extinguisher close by.

⮕ **Sensitization programs** - 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.

6.2.4 Pollution Control

⮕ **Promote the use of Eco-friendly vehicles -** There can be student and staff sensitization program on eco-friendly and battery-operated vehicles/ low emission vehicles for daily use.

⮕ **Bicycles as a gift -** As an appreciation gesture maybe the student's toppers/ staff best performers can be awarded a bicycle occasionally.

⮞ **Plant more radiation absorbing plants -** The following flora halps in redcuing the harmful effects to a cetain extent, the Institute can develop a radiation free zone and take to planting these through potted plants or permanent planting:

- – Spider plant

- – Rubber plant

- – Asparagus fern

- – Snake plant

- – Nelumbo nucifera (Includes colourful flowers)

- – Cactus

- – Areca palm

- – Mustard green

- – Betel

- – Aloe vera

- – Sprengers asparagus

- – Fiddle fig

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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.

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

Environment Policy (Usage Certificate)

As per the Indian Green Building Standards

Prepared by

External Expert: Ar. Nahida Abdulla

(ASSOCHAM GEM Certified Professional – Registration no. 22/718)

Greenvio Solutions

An environmental and architectural design consultancy (Socio-environ responsibility)

Motto: Developing Healthy and Sustainable Environments

greenviosolutions@gmail.com

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

Proposed for the prestigious

S. P. Mandali's

R. A. Podar College of Commerce and Economics (Autonomous)

L.N. Road, Matunga, Mumbai – 400019, Maharashtra, India

Date of preparation of policy: 29 December 2023

Policy no: GV/ PL/ 12-23/ZK-2

Environment Policy

Policy statement

The said policy is applicable for the **academic year 2021-2022 and 2022-2023.** The study helps to denote aspects of the site context w.r.t. ecological parameters.

Policy motive (Green cover)

- The site shall **increase the amount of green cover in the form of potted plantations, sapling distribution in and around the campus.**
- Detailed documentation shall be undertaken for the ecological extent (plantations) and **appropriate QR coding, plantation numbering etc. as a student activity for sensitization purposes.**

Policy objectives

- Regularize site context study as a consistent activity.
- Understand the scope for smart and responsible environmental systems.

Policy implementation

- Increase **stakeholder sensitization** about:
    - Scientific specifications of plantations
    - Display banner about the eco-zone for awareness in simple language
    - Eco-sensitive zones wit bird and water feeders in and around campus
    - Environment related materials in the library
- **Fire & Life safety practices** enhanced with cooperation of stakeholders and local government.
- **Explore opportunities to increase the vertical gardening using waste plastic bottles at multiple locations in premises.**
- **Undertake green zone development activities in urban areas in coordination with government, urban local bodies and other stakeholders.**

Policy history

The Indian and International Green Building Standards were referred to draft this policy.