

GV/ENVT/03-24/276

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 **2022-2023 and 2023-2024** to the Esteemed Institution
(Analysed for 2 years and extended validity for 1 year, thus total 3 years)

Laxmi Charitable Trust's

Shri. Chinai College of Commerce & Economics

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

(Site visit held on 06 March 2024)

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

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

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"Elite 100 Green Architects of India" Econaur, 2022

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ENVIRONMENT AUDIT

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

Sustainability study
AUDIT REPORT

Studied for

Laxmi Charitable Trust's

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

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

Studied in the capacity of

Accredited and Certified GBP



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Disclaimer

The Audit Team has prepared this report for the **Laxmi Charitable Trust's Shri. Chinai College of Commerce & Economics** located Dr.S.Radhakrishnan Marg, Andheri (East) Mumbai - 400069, Maharashtra, India based on input data submitted by the Institute analysed by the team to the best of their abilities.

The details have been consolidated and thoroughly studied as per the various guidelines for Green Buildings available in National and International Standards; the report has been generated based on comparative analysis of the existing facilities and the prerequisites formulated by various standards. The inputs derived are a result of the inspection and research. These will further enhance and develop a Healthy and Sustainable Institution.

These can be implemented phase wise or as a whole depending on the decision taken by the internal team. The warranty or undertaking, expressed or implied is made and no responsibility is accepted by Audit Team in this report or for any direct or consequential loss arising from any use of the information, statements or forecasts in the report.

The audit is a thorough study based on the inspection and investigation of data collected over a period of time and should not be used for any legal action. This is the property of Greenvio Solutions and should not be copied or regenerated in any form.

The Report is prepared by the Team of Greenvio Solutions under their brand and department – Sustainable Academe as Consultancy firm with the Project Head - Ar. Nahida Shaikh who is as an Accredited and Certified Green Building Professional-Architect. Green Building consultancy is her forte and she is one of the most sought after names when it comes to providing excellent quality services within the stipulated time frame.

The Study is conducted in capacity of Accredited & Certified Green Building Professional with extensive experience.


Ar. Nahida Abdulla

Greenvio Solutions

Developing Healthy and Sustainable Environments

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Acknowledgement

The Audit Assessment Team extends its appreciation to the **Laxmi Charitable Trust's Shri. Chinai College of Commerce & Economics, Maharashtra** for assigning this important work of 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 are extended to the Chairperson of the entire process **Dr.B.B.Kamble** (Principal) for the valuable inputs.

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

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

Sustainable Academe

Brand of Greenvio Solutions, Palghar District, Maharashtra- 401208



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DETAILED REPORT



1. Introduction

1.1 About statements of the Institute

1.1.1 Vision

The Institute proposes

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

1.1.2 Mission

The Institute adheres and focuses

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



1.2 Assessment of the Institute

1.2.1 Affiliations

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

1.2.2 Certification

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

1.2.3 Recognitions

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

DETAILED REPORT



2. Overview

2.1 Summarised Populace analysis for 2023-2024

2.1.1 Students data

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

2.1.2 Staff data

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

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

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

2.2 Summarised Populace analysis for 2022-2023

2.2.1 Students data

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

2.2.2 Staff data

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

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

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



3. Research

3.1 Site Area

The **site area is 2.58 acres**

3.2 About the Green Building Study Audit

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

3.3 Analysis of the Green Building Study Audit

The procedure included detailed verification as follows:

- ⇒ Investigation
- ⇒ Technical
- ⇒ Observations
- ⇒ Inferences

3.4 Strategy adopted for Green Building Study Audit

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



4. Investigation

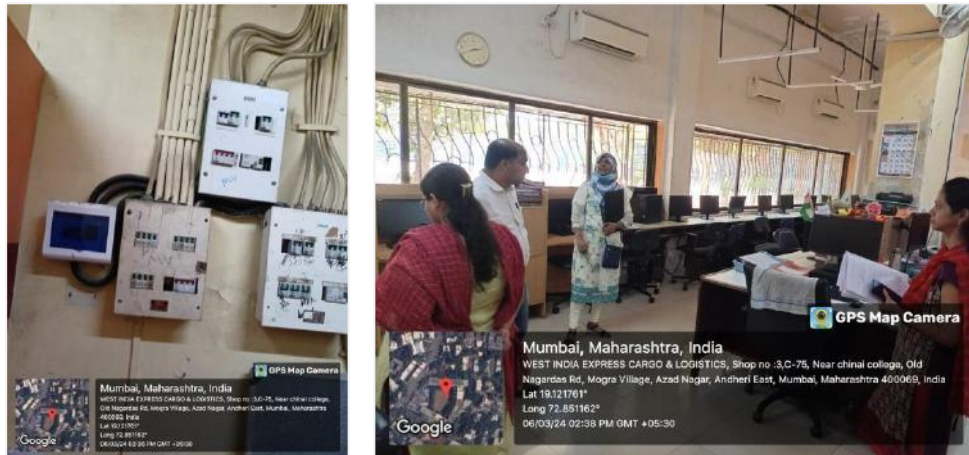


Plate 1: Assessment of the energy and electrical areas



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



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

5. Documentation

5.1 Open Spaces

The campus is located in an urban area, however it shares its premises with a sister Institute and has an exceptionally well-spaced open space surrounded with trees all over. This space is used as a recreational and sports activity area.

5.2 Flora audit

The common flora of the sister Institute and said premises as shared by the Internal team is documented below:

S. No.	Plant name	Type	Nos.	Planted by
1	Areca Palm	Plant	1	Gardener
2	Phyllanthus Emblica	Plant	1	Naturally
3	Canna Musaefoliarubra	Plant	2	Gardener
4	Manilkara Subsericea	Plant	1	Naturally
5	Dracaena Sp	Plant	1	Naturally
6	Singhoda Tanda	Tree	1	Naturally
7	Canna Musaefoliarubra	Plant	U.I.	Gardener
8	Euphorbia Tithymaloides	Shrub	3	Gardener
9	Schefflera	Plant	1	Gardener
10	Mimusops Balata	Plant	1	Naturally
11	Crinum Asiaticum	Plant	1	Gardener
12	Pedilanthus Tithymaloides	Plant	1	Gardener
13	Psychotrian Viridis	Plant	1	Gardener
14	Euphorbia Tithymaloides	Shrub	U.I.	Gardener
15	Fraxinus Americana	Tree	1	Naturally
16	Saraca Asoca	Tree	6	Naturally
17	Euphorbia Tithymaloides	Shrub	U.I.	Gardener
18	Mitragyna Speciosa	Tree	2	Gardener
19	Mitragyna Speciosa	Tree	U.I.	Gardener
20	Pithecellobium Dulce	Plant	1	Naturally



21	Cordyline Fruticosa	Plant	5	Gardener
22	Pritchardia Forbasiana	Plant	1	Naturally
23	Strobilanthes Crispa	Plant	1	Naturally
24	Manihot Esculant	Plant	1	Naturally
25	Aesculus Indica	Plant	1	Naturally
26	Chlorophytum Orchidastrum	Plant	1	Naturally
27	Strobilanthes Crispa	Plant	1	Naturally
28	Alstonia Macrophylla	Plant	1	Naturally
29	Prunus Amygdalus, Syn. Prunus Dulcis	Tree	1	Naturally
30	Acacia Mangium	Tree	1	Naturally
31	Asimina	Plant	1	Gardener
32	Monoon Longifolium	Plant	1	Gardener
33	Cordyline Fruticosa	Plant	U.I.	Gardener
34	Albizia Lebbeck (L.)Benth.	Plant	2	Gardener
35	Cordyline Fruticosa	Plant	U.I.	Gardener
36	Peltophorum Africanum	Tree	1	Naturally
37	Cordyline Fruticosa	Plant	U.I.	Gardener
38	Neolamarckia Cadamba	Plant	1	Naturally
39	Euphorbia Tirucalli	Plant	1	Naturally
40	Cordia Dichotoma	Plant	1	Naturally
41	Graptophyllum Pictum	Plant	1	Naturally
42	Betula Nigra	Plant	1	Naturally
43	Neem	Tree	2	Staff
44	Pritchardia Remota	Plant	1	Naturally
45	Japanese Laurel	Plant	1	Gardener
46	Neem	Tree	U.I.	Staff
47	Tamarindus Indica	Plant	1	Naturally
48	Cannonball Tree	Plant	1	Gardener
49	Pink Kapok Tree	Tree	1	Gardener
50	Eugenia Bojeri	Plant	1	Naturally
51	Terminalia Catappa	Plant	4	Gardener
52	Terminalia Catappa	Plant	U.I.	Gardener



53	Crinum Asiaticum	Plant	1	Naturally
54	Syzygium Aqueum	Plant	1	Naturally
55	Ficus Virens	Plant	1	Naturally
56	Terminalia Catappa	Plant	U.I.	Gardener
57	Murraya Paniculata	Plant	1	Naturally
58	Barringtonia	Plant	1	Naturally
59	Albizia Lebbeck	Plant	U.I.	Gardener
60	Common Ivy	Plant	1	Staff
61	Palm Tree	Tree	2	Gardener
62	Plum Tree	Tree	1	Gardener
63	Palm Tree	Tree	U.I.	Gardener
64	Indonesian Bay Leaf	Plant	1	Gardener
65	Dieffenbachia Seguine	Plant	1	Naturally
66	Prick Plant	Plant	1	Naturally
67	Ashok Plant	Tree	U.I.	Gardener
68	Dracaena Baby Doll	Plant	1	Gardener
69	Mangifera Indica	Plant	3	Staff
70	Caryota Mitis	Plant	1	Naturally
71	Mangifera Indica	Plant	U.I.	Staff
72	Mangifera Indica	Plant	U.I.	Staff
73	Terminalia Catappa	Plant	U.I.	Gardener
74	Shorea Robusta	Plant	1	Naturally
75	Magnolia Polyhypsophylla	Plant	1	Naturally
76	Cordyline Fruticosa	Plant	U.I.	Gardener
77	Cordyline Fruticosa	Plant	U.I.	Gardener
78	Ixora/West Indian Jasmine	Plant	1	Naturally
79	Dracaena	Plant	1	Naturally
80	Coconut Tree	Tree	1	Staff
81	Graptophyllum Pictum	Plant	1	Gardener
82	Pseuderanthemum	Plant	1	Naturally
83	Areca Concinna	Plant	1	Naturally
84	Tiger Orchid (Grammatophyllum Speciosum)	Plant	1	Gardener



85	Dracaena Angustifolia	Plant	1	Naturally
86	Catharanthus Roseus	Plant	1	Naturally
87	Acalypha Indica	Plant	1	Naturally
88	Ficus Microcarpa	Plant	1	Naturally
89	Ashoka Tree	Plant	U.I.	Naturally
90	Euphorbia Lactea	Plant	2	Gardener
91	Erythrina Subumbrans	Plant	1	Naturally
92	Ocotea Odorifera	Plant	1	Naturally
93	Calophyllum Inophyllum	Plant	1	Naturally
94	Argyrodendron Peralatum	Tree	1	Gardener
95	Euphorbia Lactea	Plant	U.I.	Gardener
96	Senna Surattensis	Tree	1	Naturally
97	Buchanania	Plant	1	Naturally
98	Berchemia Scandens	Plant	1	Naturally
99	Acacia Catechu	Plant	1	Naturally
100	Libidibia Ferrea, Dubbeld-Saamgestelde Blaar, Pretoria	Tree	2	Gardener
101	Taxus Wallichiana Zucc.	Plant	1	Naturally
102	Capparis Zeylanica	Shrub	1	Staff
103	Pterospermum	Plant	1	Naturally
104	Libidibia Ferrea, Dubbeld-Saamgestelde Blaar, Pretoria	Tree	U.I.	Gardener
105	Pseuderanthemum Maculatum	Plant	1	Gardener
106	Ficus Platyphylla	Tree	1	Naturally
107	Vonenina	herb/shrub	2	Gardener
108	Mango Tree Branch At Starting Stage	Tree	6	Naturally
109	Prioria Pinnata	Plant	1	Gardener
110	Cocos Capitata	Plant	1	Naturally
111	Cordyline Fruticosa	Plant	11	Gardener
112	Dracaena	Plant	12	Naturally
113	Jamun Tree	Tree	2	Naturally
114	Piper Mikanianum	Plant	1	Gardener
115	Pseuderanthemum Latifolium	Plant	3	Naturally



116	Dracaena Fragrans	Plant	2	Gardener
117	Askhok Tree	Tree	11	Gardener
118	Colomo	Plant	1	Gardener
119	Mambog Na Tinanom	Tree	1	Naturally
120	Archontophoenix Alexandrae	Plant	3	Gardener
121	Cleistocalyx Operculatus	Plant	1	Naturally
122	Polyscias Fruticosa	Plant	3	Naturally
123	Phytolacca Dioica	Tree	1	Naturally
124	Archontophoenix Alexandrae	Plant	3	Gardener
125	European Ash	Tree	1	Naturally
126	Archontophoenix Alexandrae	Plant	3	Gardener
127	Chinese Ixora	Shrub	1	Gardener
128	Pritchardia Remota	Plant	2	Gardener
129	Bigtooth Aspen	Plant	1	Naturally
130	Longevity Spinach	Plant	2	Gardener
131	Polyalthia Longifolia	Tree	12	Naturally
132	Graptophyllum Pictum	Plant	4	Gardener
133	Senna Auriculata	Tree	1	Naturally
134	Gymneme Sylvestre	Shrub	1	Gardener
135	Mangifera Indica	Tree	19	Naturally
136	Potato Foliage	Plant	1	Gardener
137	Adenantha Pavnina	Tree	1	Naturally
138	Arrowhead Plant	Plant	6	Gardener
139	Ravenea	Plant	3	Naturally
140	Longevity Spinach	Plant	2	Gardener
141	Polyalthia Longifolia	tree	12	Naturally
142	Ti/Cordyline Fruticosa	Plant	11	Naturally
143	Polyalthia Longifolia	tree	12	Naturally
144	145 Epipremnum Pinnatum	Tree	1	Naturally
145	Polyalthia Longifolia	tree	12	Naturally
146	Rhopaloblaste Singaporensis	Tree	1	Naturally
147	Areca Palm	Plant	4	Gardener
148	Mangifera Indica	Tree	18	Naturally



149	Polyalthia Longifolia	Tree	12	Naturally
150	Nyctanthes Arbor-Tristis Plant	Plant	1	Gardener
151	Fukuqi Tree	tree	1	Naturally
152	Paper Plant	Plant	1	Gardener
153	Kopsia Plant	Plant	1	Naturally
154	Jackfruit Tree	tree	1	Naturally
155	Tilef Plant	Plant	1	Gardener
156	Crecentia Alata	tree	1	Naturally
157	Cinnamomum Malabattrum Tree	tree	1	Naturally
158	Indian Almond	tree	3	Naturally
159	Jungle Geranium	tree	2	Naturally
160	Indian Almond	tree	3	Naturally
161	Monoon Longifolium	Plant	2	Gardener
162	Solanum Nigrum	plant	1	Gardener
163	Tecoma Stans	Plant	1	Gardener
164	Ravenea	Tree	3	Naturally
165	Polyalthia Longifolia	Plant	12	Naturally
166	Aidia	Plant	1	Gardener
167	Jungle Geranium	Plant	2	Naturally
168	Ponderosa Lemon	Plant	1	Gardener
169	Amalaki	Plant	1	Gardener
170	Solanum Diphyllum	Plant	2	Naturally
171	Draceana	plant	1	Gardener
172	Shoe Black Plant	shrub	4	Gardener
173	Cordyline Fruticosa	Plant	10	Naturally
174	Codiaum Variegattem	Plant	1	Gardener
175	Voacanga Africana	Tree	1	Naturally
176	Cassuarina Equisetifolia	tree	2	Naturally
177	Graprophwillum Pictum	Plant	1	Gardener
178	Ravenea	plant	3	Naturally
179	Syzygium Aqueum	tree	3	Naturally
180	Mangifera Indica	tree	18	Naturally
181	Populaer Alba	tree	1	Naturally



182	Cinnamomum Heyneanumnees	Plant	1	Gardener
183	Mangifera Indica	tree	18	Naturally
184	Black Night Shade	Plant	1	Gardener
185	Ceiba Pentandra	tree	1	Naturally
186	Mangifera Indica	Tree	18	Naturally
187	India Almond	Tree	1	Gardener
188	Flacourtia Jangomas	Tree	1	Naturally
189	Mangifera Indica	tree	18	Naturally
190	Bread Fruit	tree	1	Naturally
191	Ceibapentandra	tree	1	Naturally
192	Shoe Black Plant	Plant	4	Naturally
193	Polyalthia Longifolia	tree	11	Naturally
194	Ehretia Laevis	plant	1	Gardener
195	Syeda Batool	Plant	1	Naturally
196	Mitzuri	Plant	1	Naturally
197	Bogiboma	Plant	1	Gardener
198	Polyalthia Longifolia	Tree	11	Naturally
199	Cassuarina Equisetifolia	tree	2	Naturally
200	Swartzia Cubensis	Tree	1	Naturally
201	Coca	tree	U.I.	U.I.
202	Hibiscus Tree	Plant	1	Naturally
203	Syzygium Aqueum	Tree	3	Naturally
204	Polyalthia Longifolia	Tree	11	Naturally
205	Pterocarya	Tree	1	Naturally
206	Gynura Procumbens	PLant	15	Gardener
207	Polyalthia Longifolia	Tree	11	Naturally
208	Coprelylile Fruticosa	PLant	1	Gardener
209	Keitmango	Tree	1	Naturally
210	Chrysophyllum	Tree	1	Naturally
211	Pseuderantheumum	Shrub	1	Gardener
212	Theos Charis	Plant	1	Gardener
213	Cadamba	Tree	1	Naturally
214	Yadra Areca Palm	Plant	1	Gardener



215	Ficus Hispida	Tree	1	Naturally
216	Angiosperms	Plant	1	Staff
217	Excoecaria	Shrub	1	Gardener
218	Ti Plant	Shrub	1	Staff
219	The Golar Tree	Tree	1	Naturally
220	Ti Plant	Shrub	1	Staff
221	Kottukonam Mango Grafted Live Plant Dwarf Variety	Plant	1	Gardener
222	Pseuderanthemum	Shrub	1	Staff
223	Mangifera Indica	Plant	1	Gardener
224	Senna Surattensis	Shrub	1	Staff
225	Catharanthus Raseus	herb	1	Gardener
226	Solanum Nudum Humb	Plant	1	Gardener
227	Mangifera Indica	Plant	1	Gardener
228	Chias Orchid	Plant	1	Gardener
229	Flame Vine	Plant	1	Gardener
230	Ambal	herb	1	Gardener
231	Euclea	Tree	1	Naturally
232	Pterospermum Acerifolicen	herb	1	Gardener
233	Therapeutic Tree	Plant	1	Staff
234	Piper Dilateum	Shrub	1	Gardener
235	Pandanus Tectorium	Plant	1	Gardener
236	Kanan Pendari	Plant	1	Gardener
237	Mangifera Indica	Plant	1	Gardener
238	Morus Rubra	Tree	1	Naturally
239	Arrowhead Plant	Plant	1	Gardener
240	Arrowhead Plant	Plant	1	Gardener
241	The Golar Tree	Plant	1	Gardener
242	Ti Plant	Shrub	1	Gardener
243	Sterculia Fotida	Tree	1	Naturally
244	Caryota Cilly	Herb	1	Gardener
245	Beach Spider	Plant	1	Staff
246	Mahogany	Tree	1	Naturally



247	Panagal Trees	Tree	1	Naturally
248	Arrowhead Plant	Plant	1	Gardener
249	Kacanjparazg	Tree	1	Naturally
250	Solanum Schumannianum	Shrub	1	Staff
251	Japanese Laurel Aucuba	Shrub	1	Staff
252	Dracaena American	Plant	1	Gardener
253	Minatigreehouse Mango Plant	Tree	1	Naturally
254	Pinanga Bicolana	Shrub	1	Gardener
255	Pinanga Coronata	Shrub	1	Gardener
256	Tabebuia	Shrub	1	Gardener
257	Lysimachia Mitnisnt Sun	Herb	1	Gardener
258	Solanum Diphyllum	Shrub	1	Gardener
259	Eurphorbia Tithymaloites	Shrub	1	Staff
260	Strelius Asper Evergreen	Tree	1	Naturally
261	Wild Tree	Tree	1	Naturally
262	Peregrina	Plant	1	Gardener
263	Holy Basil	Shrub	1	Staff
264	Hamelia	Herb	1	Gardener
265	Couva	Tree	1	Naturally
266	Rose Plant	Shrub	1	Staff
267	Arabian Jasmin	Herb	1	Staff
268	Lepidocaryom Tree	Plant	1	Gardener
269	Papay	Tree	1	Naturally
270	Green View Zardalu	Tree	1	Naturally
271	Ficus Religiosa	Tree	1	Naturally
272	Indian Almond	Tree	1	Naturally
273	Fenugreek	Herb	1	Staff
274	Chilli	Shrub	1	Staff
275	Curry Leave Tree	Shrub	1	Staff
276	Euphorbia Geroldii	Shrub	1	Gardener
277	Mangifera Indica	Plant	1	Gardener
278	Pseuderanthemum	Shrub	1	Gardener
279	Fire Thorn	Shrub	1	Gardener



280	Terminaliacatappapictum	Tree	1	Naturally
281	Graptophyllumu	Shrub	1	Gardener
282	Ficus Altissima	Tree	1	Naturally
283	Emily Collins	Plant	1	Gardener
284	Akebia Quinata	Shrub	1	Staff
285	Ti Plant	Shrub	1	Staff
286	Ficus Microcarpa	Tree	1	Naturally
287	Eucalyptus Species	Tree	1	Naturally
288	Sauropus Fruticosa	Shrub	1	staff
289	Polyscias Fruticosa	Shrub	1	Gardener
290	Sauropus Androgynus	Shrub	1	staff
291	Malavar Nut	Shrub	1	Gardener
292	Polyscias Fruticosa	Shrub	1	Gardener
293	Sauropus Fruticosa	Shrub	1	staff
294	Sauropus Fruticosa	Shrub	1	staff
295	Justicia Gondaerussa	Shrub	1	staff
296	Lemon Beebrush	Shrub	1	staff
297	Psychotria Viridis	Shrub	1	Gardener
298	Pseuderanthernum	Shrub	1	Gardener
299	Pseuderanthernum	Shrub	1	Gardener
300	Kalpueng	Shrub	1	Gardener
301	Kalpueng	Shrub	1	Gardener
302	Kalpueng	Shrub	1	Gardener
303	Kalpueng	Shrub	1	Gardener
304	Cirinum Asiaticum	Herb	1	staff
305	Cirinum Asiaticum	Herb	1	staff
306	Toona Ciliata	Tree	1	Naturally
307	Magnolia Champaca	Tree	1	Naturally
308	Justicia	Shrub	1	Gardener
309	Gynura Procumbens	Shrub	1	Gardener
310	Pollination	Plant	1	Staff
311	Gynura Procumbens	Shrub	1	Gardener
312	Gynura Procumbens	Shrub	1	Gardener



313	Gynura Procumbens	Shrub	1	Gardener
314	Gynura Procumbens	Herb	15	Gardener
315	Gynura Procumbens	Herb	15	Gardener
316	Gynura Procumbens	Herb	15	Gardener
317	Holy Basil	Herb	3	Gardener
318	Ocimum Tenuiflorum	Herb	3	Gardener
319	Justicia Brandegeana	Shrub	3	Gardener
320	Gynura Procumbens	Herb	15	Gardener
321	Gynura Procumbens	Herb	15	Gardener
322	Ocimum Tenuiflorum	Shrub	3	Gardener
323	Gynura Procumbens	Herb	15	Gardener
324	Gynura Procumbens	Herb	15	Gardener
325	Gynura Procumbens	Herb	15	Staff
326	Ocimum Tenuiflorum	Herb	3	Gardener
327	Gynura Procumbens	Herb	15	Gardener
328	Catharanthus Roseus	Shrub	7	Staff
329	Peacock Flower	Shrub	1	Gardener
330	Gynura Procumbens	Herb	15	Gardener
331	Catharanthus Roseus	Shrub	7	Gardener
332	Pacific Poison Oak	Shrub	1	Gardener
333	Hibiscus Rose	PLant	U.I.	U.I.
334	Aquilaria	Tree	1	Naturally
335	Euphorbia Tithymalodies	Shrub	5	Staff
336	Leaf Almond Tree	Tree	1	Naturally
337	Catharanthus Roseus	Shrub	7	Gardener
338	Arabian Jasmine	Shrub	1	Staff
339	Vernonica Amygdalina	Shrub	3	Staff
340	Vernonica Amygdalina	Shrub	3	Staff
341	Catharanthus Roseus	Shrub	7	Gardener
342	Shoebblack Plant	Shrub	3	Gardener
343	Vernonica Amygdalina	Shrub	3	Gardener
344	Perivincal	Shrub / Herb	1	Gardener
345	Chiuri Plant	Tree	1	Naturally



346	Aspidistra Elatior	Plant	1	Gardener
347	Arrowhead Plant	Plant	6	Gardener
348	Catharanthus Roseus	Shrub	7	Gardener
349	Morus Alba	Tree	1	Gardener
350	Peregrina	Shrub	2	Gardener
351	Holybasil	Herb	1	Gardener
352	Pinwheel Flour	Shrub	1	Staff
353	Justicia Plant	Shrub	1	Gardener
354	Pachсандra Axillaris	Plant	1	Staff
355	Graptophyllum	Shrub	6	Gardener
356	Holy Basil	Herb	3	Gardener
357	Premna Serratifolia	Shrub/Small Tree	1	Gardener
358	Chloranthus Erectus	Shrub	1	Gardener
359	Shoeblack Plant	Shrub	3	Gardener
360	Catharanthus Roseus	Shrub	7	Staff
361	Euphorbia Tithymalodies	Shrub	5	Gardener
362	Peregrina	Shrub	2	Gardener
363	Longevity Spinach	Plant	4	Gardener
364	Mango Tree	Tree	2	Gardener
365	Shoeblack Plant	Shrub	3	Gardener
366	Justicia	Shrub	10	Staff
367	Justica	Shrub	1	Gardener
368	Fokein Tea Tree	Shrub	2	Gardener
369	Justicia	Shrub	10	Gardener
370	Fokein Tea Tree	Shrub	2	Gardener
371	Justicia	Shrub	10	Staff
372	Pseuderanthemum Latifolium	Plant	3	Gardener
373	Pseuderanthemum Latifolium	Plant	3	Gardener
374	Caapi	Shrub	1	Gardener
375	Dracaena Fragrans	Plant	2	Gardener
376	Cirinum Asiaticum	Herb	4	Staff
377	Graptophyllum Pictum	Shrub	4	Naturally



378	Cirinum Asiaticum	Herb	4	Gardener
379	Euphorbia Tithymalodies	Shrub	5	Gardener
380	Euphorbia Tithymalodies	Shrub	5	Gardener
381	Euphorbia Tithymalodies	Shrub	5	Gardener
382	Grey Ghost Castus	Plant	1	Naturally
383	Albizia Acle	Plant	1	Naturally
384	Justicia Brandegeean	Shrub	3	Gardener
385	Justicia Brandegeean	Shrub	3	Gardener
386	Shoe Black Plant	Shrub	2	Gardener
387	Pyrostegia Venusta	Shrub	1	Gardener
388	Organic Salvia Oxyphora	Herb/Shrub	1	Gardener
389	Trichostigma Octandrum	Shrub	1	Gardener
390	Ti Plant	Shrub	1	Gardener
391	Longevity Spinach	Plant	4	Naturally
392	Shoe Black Plant	Shrub	2	Gardener
393	Cordyline Fruticosa	Shrub	10	Naturally
394	Justicia Gendarussa	Shrub	1	Gardener
395	Red Sandalwood Tree	Tree	1	Naturally
396	Bay Laurel	Tree/Shrub	1	Naturally
397	Chamaecostus Cuspidatus	Herb	1	Staff
398	Avacado Tree	Tree	U.I.	U.I.
399	Cordyline Fruticosa (L.) A.Chev.	Shrub	1	Naturally
400	Madagascar Periwinkle	Shrub/Herb	1	Gardener
401	Aloe Vera	Shrub	1	Gardener
402	Giant Ferns Of Bulusan	Herb	1	Staff
403	Terminalia Catappa	Tree	2	Naturally
404	Senna Surattensis	Shrub/small tree	3	Staff
405	Terminalia Bellirica	Tree	7	Naturally
406	Terminalia Bellirica	Tree	7	Naturally
407	Curry Leave Tree	tree	U.I.	U.I.
408	Mimusops Elengi	Tree	1	Naturally
409	Cyclantheropsis Parviflora	Herb	1	Gardener



410	Terminalia Catappa	Tree	2	Naturally
411	Cocos Nucifera	Tree	18	Naturally
412	Alangium Salviifolium	Shrub	2	Gardener
413	Alangium Salviifolium	Shrub	2	Gardener
414	Saraca Asoca	Tree	6	Naturally
415	Teak Tree	Tree	1	Naturally
416	Cocos Nucifera	Tree	U.I.	Naturally
417	Terminalia Bellirica	Tree	7	Naturally
418	Strychnos Pungens	Tree	U.I.	U.I.
419	Cocos Nucifera	Tree	U.I.	Staff
420	Neolamarckia Cadamba	Unidentified. Not known	U.I.	Naturally
421	Cocos Nucifera	Tree	U.I.	Staff
422	Cocos Nucifera	Tree	U.I.	Staff
423	Cocos Nucifera	Tree	U.I.	Staff
424	Oenocarpus Bacaba	Unidentified. Not known	U.I.	Naturally
425	Cocos Nucifera	Tree	U.I.	Staff
426	Bauhinia Picta	Plant	1	Naturally
427	Anthraxnose	Plant	1	Naturally
428	Mangifera Indica	Tree	1	Naturally
429	Calliandra Antioquiae	Plant	1	Naturally
430	Castilla Elastica	Plant	1	Naturally
431	Albizia Subdimidiata (Splitg.)	Tree	1	Naturally
432	Konkani	Tree	1	Naturally
433	Caryota Mitis	Plant	1	Naturally
434	Carica Papaya	Tree	5	Staff
435	Ficus Religiosa	Tree	1	Naturally
436	Cocos Nucifera	Tree	U.I.	Gardener
437	Carica Papaya	Tree	1	Staff
438	Cocos Nucifera	Tree	U.I.	Staff
439	Carica Papaya	Tree	1	Gardener
440	Terminalia Bellirica	Tree	1	Naturally



441	Saraca Asoca	Tree	U.I.	Naturally
442	Cocos Nucifera	Tree	U.I.	Naturally
443	Cocos Nucifera	Tree	U.I.	Naturally
444	Mangifera Indica	Tree	1	Naturally
445	Carica Papaya	Tree	1	Staff
446	Searsia Pyroides,	Tree	1	Naturally
447	Coconut Tree	Tree	U.I.	Gardener
448	Giant Calotrope	Plant	1	Naturally
449	Cocos Nucifera	Tree	U.I.	Gardener
450	Terminalia Bellirica	Plant	1	Naturally
451	Carica Papaya	Tree	1	Staff
452	Cocos Nucifera	Tree	U.I.	Staff
453	Cocos Nucifera	Tree	U.I.	Staff
454	Saraca Asoca	Tree	U.I.	Naturally
455	Cocos Nucifera	Tree	U.I.	Staff
456	Mangifera Indica	Tree	1	Naturally
457	Cocos Nucifera	Tree	U.I.	Staff
458	Saraca Asoca	Tree	U.I.	Naturally
459	Mangifera Indica	Tree	1	Naturally
460	Nakuda Tree	Tree	1	Gardener
461	Saraca Asoca	Tree	U.I.	Naturally
462	Quercus Arizonica	Tree	1	Naturally
463	Arrowhead Plant	Plant	1	Naturally
464	Mangifera Indica	Tree	1	Naturally
465	Cape Jasmine	Plant	1	Naturally
466	Quercus Arizonica	Tree	1	Naturally
467	Litsea Monopetala	Plant	1	Naturally
468	Dracaena Angustifolia Care	Tree	1	Naturally
469	Caryota Mitis	Plant	1	Naturally
470	Terminalia Bellirica	Plant	1	Naturally
471	Jamun Tree	Tree	U.I.	Naturally
472	Terminalia Bellirica	Plant	1	Naturally
473	Putranjiva	Plant	1	Naturally



474	Plathymenia	Tree	1	Naturally
475	Tilia	Tree	U.I.	U.I.
476	Ancistrocladus Heyneanus	Tree	1	Naturally
477	Veitchia	Plant	1	Naturally
478	Pedilanthus Tithymaloides	Plant	1	Naturally
479	Sageraea Laurina	Plant	1	Naturally
480	Polyalthia Longifolia	Tree	1	Naturally
481	Swietenia Mahagoni	Tree	1	Naturally
482	Caryota Urens	Plant	1	Gardener
483	Polyscias Cissodendron	Tree	1	Naturally
484	Kigelia Africana Susp.	TTree	U.I.	U.I.
485	Caryota Urens	Plant	1	Naturally
486	Jatropha	Plant	1	Naturally
487	Selenicereus Setaceus	Plant	1	Naturally
488	Afrocarpus Mannii	Tree	1	Naturally
489	Caryota Urens	Plant	1	Naturally
490	Terminalia Catappa	Tree	1	Naturally
491	Calophyllum Inophyllum L.	Tree	1	Naturally
492	Calophyllum Inophyllum L.	Tree	1	Naturally
493	Ficus Benghalensis	Tree	1	Naturally
494	Magnifera Indica	tree	U.I.	U.I.
495	Mango	Tree	1	Naturally
496	Caryota Mitis Lour	Tree	1	Naturally
497	Bursera Simaruba	tree	U.I.	U.I.
498	Devil's Ivy	Plant	1	Naturally
499	Caryota Mitis Lour	Plant	1	Naturally
500	Caryota Mitis Lour	Plant	1	Naturally
501	Caryota Mitis Lour	Plant	1	Naturally
502	Cocos Nucifera	Tree	U.I.	Staff
503	Cocos Nucifera	Tree	U.I.	Staff
504	Caryota Mitis Lour	Plant	1	Naturally
505	Ficus Religiosa	Tree	1	Naturally
506	Ficus Religiosa	Tree	1	Naturally



507	Rauvolfia Caffra	Tree	1	Naturally
508	Cocos Nucifera	Tree	U.I.	Gardener
509	Bamboos	Tree	1	Naturally
510	Neem	Tree	1	Naturally
511	Cyrtomium Falcatum	Plant	1	Gardener
512	Dracaena Sanderiana	Plant	1	Student
513	Catharanthus	Plant	1	Student
514	Potted White Ginger Lily Camis	Plant	1	Gardener
515	Euphorbia Tithymaloides	Plant	1	Staff
516	Areca Palm	Tree	1	Naturally
517	Dracaena Braunii: Ribbon Plant	Plant	1	Naturally
518	Dracaena Marginata	Plant	1	Naturally
519	Epipremnum Aureum	Plant	1	Naturally
520	Euphorbia Tithymaloides	Plant	1	Naturally

Table 3: Details of the Flora in the premises

At present there are more than 1,150 plantations in the premises.

5.3 Noise Audit

On a macro level the Institute is surrounded by residential and educational areas; however given close proximity to public modes of transport the noise levels are comparatively higher.

5.4 Carbon Footprint Audit - Heat Island Reduction

The heat island effect refers to the study of micro climatic feature within a site. There are multiple factors that add on to the feature such as external temperature, internal temperatures, site context including available and site adjacent facilities.

The site is located in an urban area with a lot of concretized spaces and congestion all over the suburb, to a certain extent the heat island effect is experienced. However, it cannot be overlooked that the site also has open spaces and plantation cover within the site.



5.5 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.

The available provisions include fire extinguishers, however their refilling date has passed and there is an urgent need to undertake fire and life safety measures including fabrication of open wiring, additional sand bucket in area with heavy electrical loads.

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6. Inferences

6.1 Section-wise suggestions

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

6.1.1 Site beautification

Garden development - The landscape redesign and ecological redesign – This should be done to increase the shade cover in the entire premises.

6.1.2 Heat island reduction

- ➔ **Cool rooftops** - The Terrace rooftops should be painted with Cooltop – reflective materials to reflect the harsh sun rays and reduce the heat absorption in the top most floor and surrounding areas of the building.

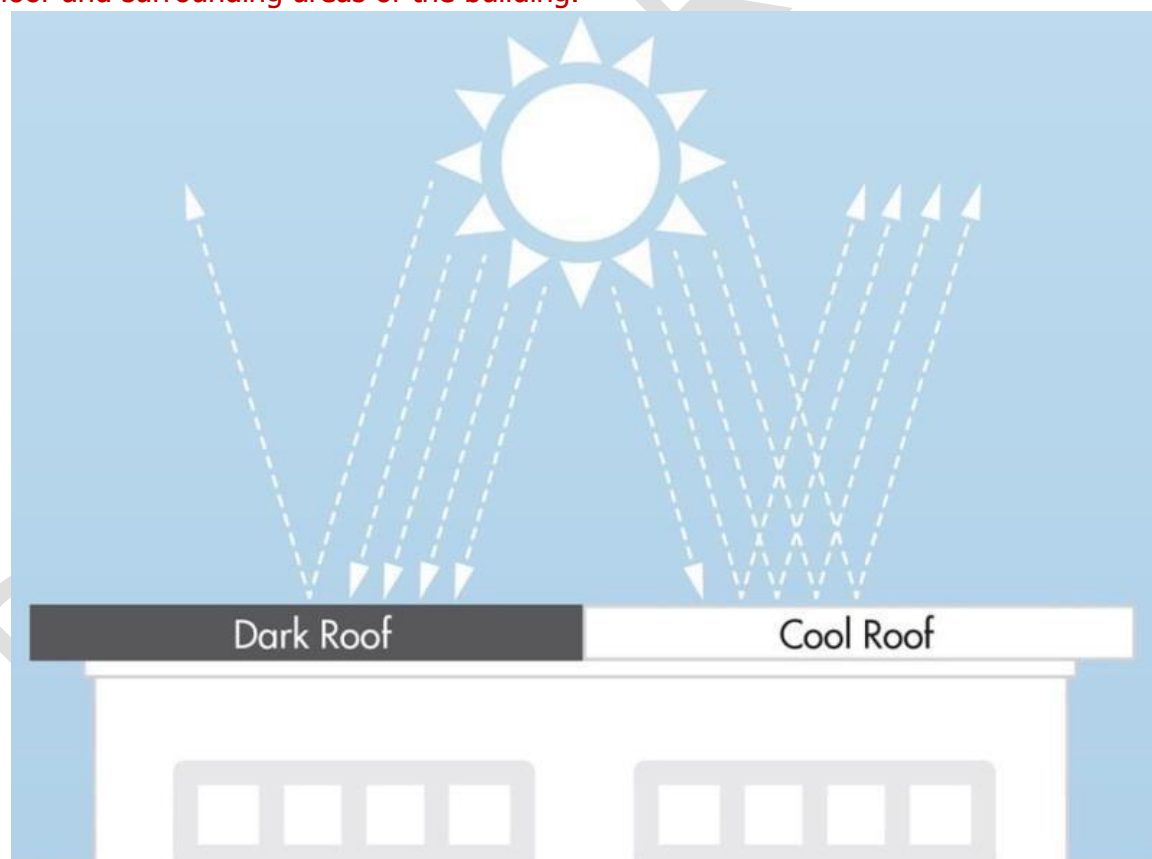


Plate 4: Cool roof comparative analysis (For reference purpose only)

Source: Image by <https://www.gaf.com/en-us/blog/six-truths-about-cool-roofs-281474980105387>

6.1.3 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.
- The **fire and life safety signages (Including exit signages)** should be increased and displayed.
- There should be a **PASS Board** alongside every fire extinguisher and a **RACE Board** at the location of extreme populace/ footfalls.



Reference suggestions 1: PASS Board display

6.1.4 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.

- ➔ **Battery charging points for Eco-friendly vehicles** - There can be provision for 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.

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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.

- ➔ 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.

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