

Qn. 7.1.5 Green campus initiatives:

Landscaping with trees and plants

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South Indian Children Education Society's
Degree College of Arts, Science and Commerce,
Ambarnath (W), Thane



FOR
GREEN CAMPUS

1. Restricted entry of vehicles:

- College sensitizes staff/students to use vehicles having Pollution under Control (PUC) certificates.
- The vehicles of staff/students need to be parked in the allotted parking area only.
- Staff and students are encouraged to participate in public transport related programmes organized by the college.

2. Use of Bicycle / Battery powered vehicles:

- Students/staff are encouraged to participate in Bicycle Day organized by the college.
- Students/staff are encouraged to use battery powered vehicles.

3. Ban on use of Plastic:

- The institution promotes students to minimize the use of plastics
- The staff/students are encouraged to participate and propagate the idea of minimum use of plastic.

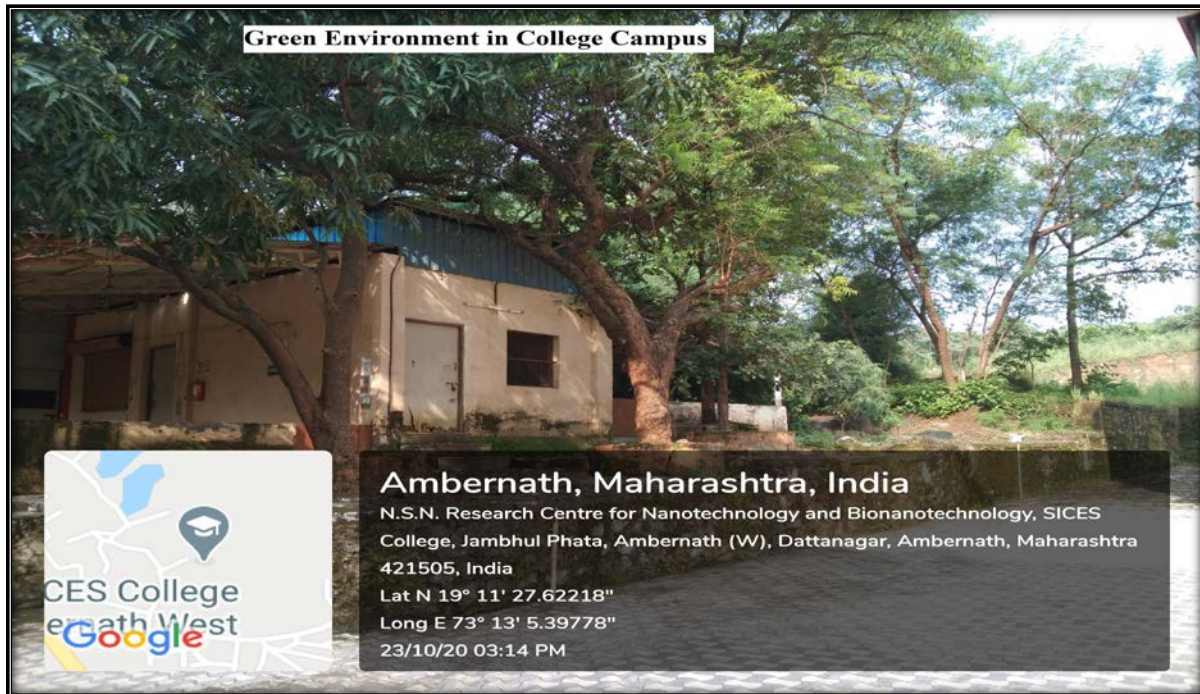
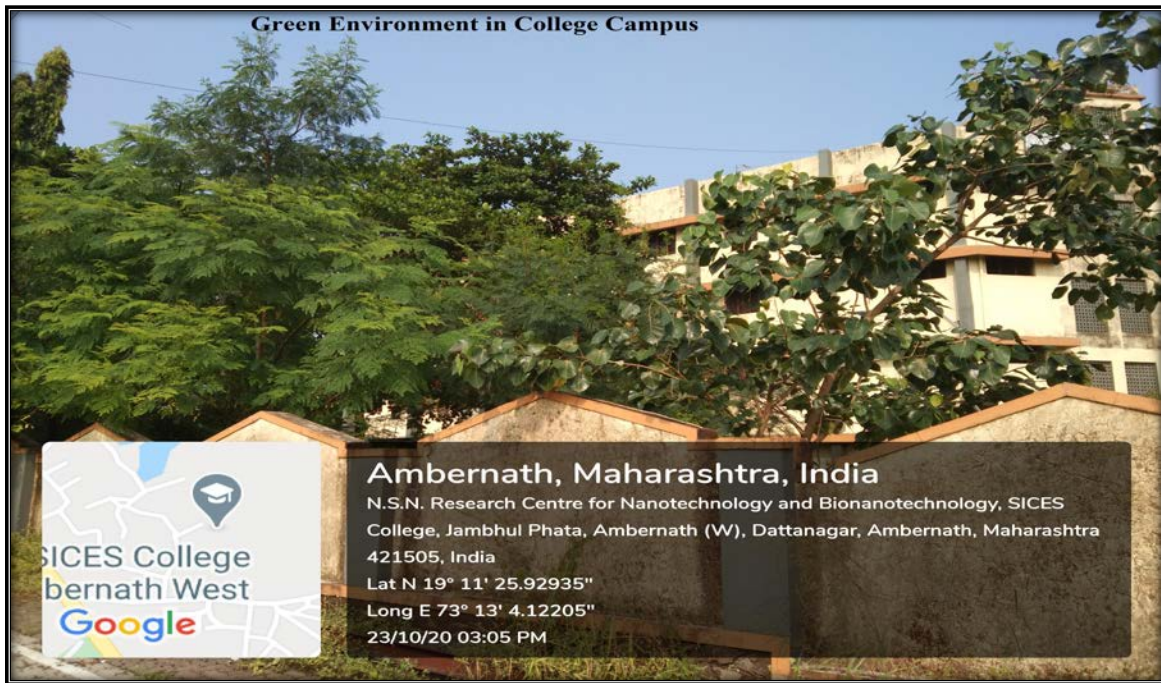
4. Landscaping with trees and plants

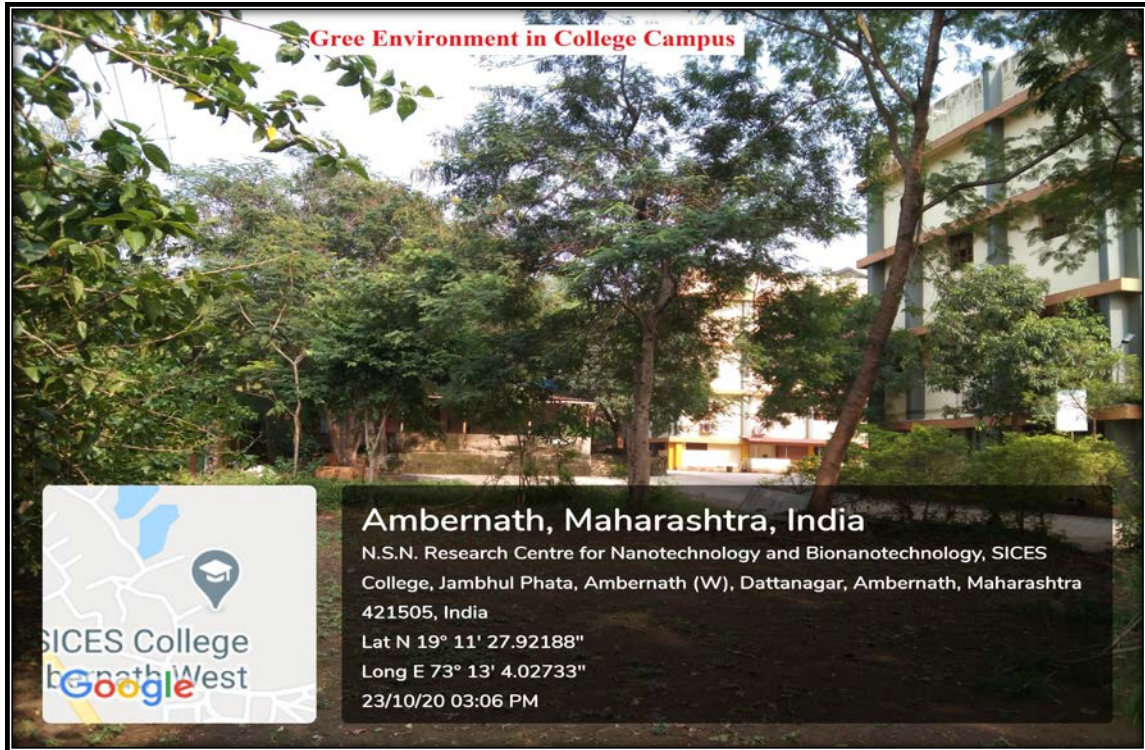
- As a key initiative, the college has a well maintained botanical garden of various medicinal plants
- The college is surrounded with the ample amount of trees
- The students are advised to take care of the tree and plants. Students/staff should damage the trees and plants.

BOTANICAL GARDEN



LANDSCAPING WITH TREES





**S.I.C.E. SOCIETY'S
DEGREE COLLEGE OF ARTS, SCIENCE AND COMMERCE
AFFILIATED TO THE UNIVERSITY OF MUMBAI
Jambhulphata, Ambarnath (W)**

Date: 09 /08/2018

BOTANY DEPARTMENT

The Internal audit of College Campus has been done with the Students of SYBSc on 09th August 2018 As the College is situated at hilly region as per the geographical condition has rich Biodiversity of flora.

The list of the plants is attached.



Dr. Alpa K. Patel
Incharge of Department



Dr. Harshal M. Bachhav

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AMBERNATH (WEST)

Internal Audit done by Botany Department

Plant diversity of College Campus

A) Algae

1. *Nostoc*
2. *Anabaena*
3. *Spirogyra*
4. *Zygnema*
5. *Oedogonium*
6. *Volvox*

B) Fungi

1. *Agaricus*
2. *Aspergillus*
3. *Aspergillus*
4. *Mucor*
5. *Rhizopus*
6. *Erysiphe*

C) Bryophytes

1. *Riccia*
2. *Anthoceros*
3. *Funaria*

D) Gymnosperms

1. *Cycas*

E) Pteridophytes

1. *Adiantum*
2. *Pteris*
3. *Nephrolepis*



Incharge HEAD DEPARTMENT OF BOTANY
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F) Angiosperms

List of plant within Campus

SR.NO.	NAME OF PLANT	COMMON NAME	TOTAL NO PRESENT
1.	<i>Cocus nucifera</i>	Coconut	02
2.	<i>Azardirachta indica</i>	Neem	03
3.	<i>Caesalpinia pulcherrima</i>	Gulturra	05
4.	<i>Mangifera indica</i>	Mango	05
5.	<i>Delonix regia</i>	Gulmohar	06
6.	<i>Terminalia catappa</i>	Badam	04
7.	<i>Polyalthia longifolia</i>	Ashoka	02
8.	<i>Ficus glomerata</i>	Umber	02
9.	<i>Cycas revoluta</i>	Cycas	02
10.	<i>Ficus religiosa</i>	Pipal	01
11.	<i>Syzygium cumini</i>	Jamun	01
12.	<i>Hibiscus rosa sinensis</i>	Jaswant	15
13.	<i>Crossandra infundibuliformis</i>	Aboli	02
14.	<i>Bombax malabaricum</i>	Silk cotton tree	01
15.	<i>Tectona grandis</i>	Teak	02
16.	<i>Psidium gujava</i>	Guava	02
17.	<i>Phyllanthus emblica</i>	Amla	02
18.	<i>Madhuca longifolia</i>	Mahua	01
19.	<i>Cassia fistula</i>	Golden shower tree	02
20.	<i>Ceiba pentandra</i>	Kapok	01
21.	<i>bambusa arundinacea</i>	Bamboo	01
22.	<i>Millettia pinnata</i>	Karanj	01

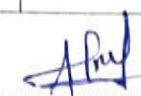


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List of plants in Botanical garden

Sr. No	Common Name	Botanical Name	Family
1	Madhumalti	<i>Combretum indicum/Quisqualis indica, Quisqualis grandiflora</i>	Combretaceae
2	Rakt Chandan	<i>Pterocarpus santalinus</i>	Fabaceae.
3	Mogra	<i>Jasminum sambac</i>	Oleaceae
4	Palash	<i>Butea monosperma</i>	<u>Fabaceae</u>
5	Bili patra	<i>Aegle marmelos</i>	<u>Rutaceae</u>
6	Rudraksh	<i>Elaeocarpus ganitrus</i>	Elaeocarpaceae
7	Chandan	<i>Santalum album</i>	<u>Santalaceae</u>
8	Phanas	<i>Artocarpus heterophyllus</i>	<u>Moraceae</u>
9	Harda	<i>Terminalia chebula</i>	Combretaceae
10	Behda	<i>Terminalia bellirica</i>	Combretaceae
11	Parijat	<i>Nyctanthes arbor-tristis</i>	Oleaceae
12	Sabja	<i>Ocimum basilicum</i>	Lamiaceae
13	Nirgundi	<i>Vitex negundo</i>	Lamiaceae
14	sweetleaf	<i>Stevia rebaudiana</i>	Asteraceae
15	Kapur	<i>Cinnamomum camphora</i>	Lauraceae
16	rubber plant	<i>Ficus elastica</i>	Moraceae
17	insulin plant	<i>Costus igneus</i>	Costaceae.
18	Adulsa	<i>Justicia adhatoda</i>	<u>Acanthaceae</u>
19	Lemon grass	<i>Cymbopogon citratus</i>	<u>Poaceae</u>
20	Tagar	<i>Tabernaemontana divaricata</i>	Poaceae




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21	wine creeper	<i>Vitis vinifera</i>	<u>Vitaceae</u>
22	ghanasvel	<i>Cissus quadrangularis</i>	Vitaceae
23	Fern	<i>Nephrolepis cordifolia</i>	<u>Nephrolepidaceae</u>
24	Akkal kara	<i>Acmella oleracea</i>	<u>Asteraceae</u>
25	<i>Dracaena Colorama</i> , Dragon plant	<i>Dracena marginata</i>	<u>Asparagaceae</u>
26	Guava	<i>Psidium guajava</i>	<u>Myrtaceae</u>
27	ashwagandha	<i>Withania somnifera</i>	Solanaceae
28	Aloe vera	<i>Aloe barbadensis</i>	Liliaceae
29	Dragan fruit	<i>Hylocereus undatus</i>	Cactaceae
30	Safed Gunj	<i>Abrus precatorius</i>	Fabaceae
31	Mayurpankhi	<i>Thuja occidentalis</i>	Cupressaceae
32	Kagazi nimbu	<i>Citrus aurantifolia</i>	Rutaceae
33	Arjun plant	<i>Terminalia arjuna</i>	Combretaceae
34	Krishna kamal	<i>Passiflora Incarnata</i>	Passifloraceae

Amul

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Jambhul Phata - 9/5/18
I/c Principal

SICES Degree College of Arts, Science & Commerce
Ambernath - 421505

Green and Environment Audit Report
S.I.C.E.S. Degree College of Arts, Science & Commerce

Report

On

GREEN & ENVIRONMENT AUDIT

For

S.I.C.E.S. Degree College of Arts, Science & Commerce
Ambernath (W)

Prepared

By

Senergy Consultants Pvt Ltd
Mumbai

December – 2020

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Green and Environment Audit Report
S.I.C.E.S. Degree College of Arts, Science & Commerce

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Green and Environment Audit Report
S.I.C.E.S. Degree College of Arts, Science & Commerce

I Introduction

Green & Environment Audit was undertaken at SICES Degree College of Arts, Science & Commerce, Jambhul Phata, Ambarnath West, Thane 421 505, during the month of December 2020.

The organization is very keen to promote green culture wherever possible, as a commitment towards better environment and conservation of energy. A lot of efforts have already been put up to bring down the carbon footprint. To further optimize consumption and identify saving opportunities, M/s Senergy Consultants was assigned to carry out Green & Environment Audit of the premises.

This Audit Report presents the analysis of the data collected, observations made at the facility and is governed by the objectives, scope of work, methodology etc. discussed in the ensuing paragraphs.

Team:

The team members of the audit study.

- Mr. Ravindra Datar
- Mr. Nitesh Kharche

Acknowledgment:

We wish to express our gratitude towards Dr Harshal Bachhav for having given us the opportunity for conducting the study and the support provided during the study.

We are also thankful to Dr Shrikant Chavan for extending the necessary help and co-operation from their side.



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II Executive Summary

The premises were evaluated against the various criterions laid down by the National Assessment and Accreditation Council (NAAC).

The major observations are

1. Air Quality & Ventilation

- The air ventilation is adequate.
- Several indoor and outdoor plants have been installed to improve air quality.

2. Water Quality & Conservation

- The water supplied by the Municipal Corporation is used for drinking after purification; which is a common practice in and around Mumbai & Navi Mumbai.
- A borewell water is used for other applications like toilets flushing, washing of utensils, etc.
- Water purifiers are provided at convenient locations.
- The various water conservation measures are initiated, and the water consumption is generally within the norms.

3. Waste Management

- The generation of waste is minimized through use of electronic communication and effective waste management system.
- The waste water is disposed of through common drainage system, which is usual practice in and around Mumbai.
- The organic waste converted in to manure in a composting pit, which is used for inhouse plants.

4. Infrastructure usage

- The on-campus movement is distributed with multiple entrances as well as staircases.
- There is adequate parking space for vehicles/four wheelers. However, almost all the students and many of the faculty members avail public transport system which is very convenient due to proximity to railway station and bus services.
- There are adequate fire extinguishers located at key areas. The college has initiated appropriate measures to meet the safety requirement.

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- d. The draining system for washrooms is efficient and effective.
- e. No seepages were observed in the building premises.

5. Green IT culture

- a. Energy efficient computers and laptops have been procured.
- b. In most of the cases, the computers are switched off, when not in use.
- c. Electronic communication is encouraged to minimize usage of papers.
- d. Most of the papers are reused for doubled sided printing.


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III

Electrical System

Gadget List

Lamps:

Location	LED Tube Light 18 W
Ground Floor	
Gymkhana Room NO.2	8
Passage Area	9
Security Room	2
Basement	
Electrical Panel Room	2
Class No.1	2
Passage Area-1	5
Passage Area-2	4
First Floor	
Room No.13	4
Room No.16	4
Passage 1	6
Passage 2	3
Boys Toilet	1
Girls Toilet	1
Second Floor	
Room No.35	8
Room No.33B	2
Room No.36	4
Room No.37	4
Room No.38	4
Room No.39	7
Room No.40	4
Room No.41	4
Room No.43	8
Room No.44	8
Room No.45	13
Passage 1	3
Passage 2	6
Girls Toilet	1
Boys Toilet	1
Third Floor	
Room No.20	6
Room No.21	4
Room No.22	4

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Location	LED Tube Light 18 W
Room No.23	4
Room No.24	4
Room No.25	4
Room No.26	4
Room No.27	4
Room No.28	4
Room No.29	4
Room No.30	14
Room No.31	8
Room No.32	8
Library	12
Passage 1	3
Passage 2	6
Girls Toilet	1
Boys Toilet	1

Ceiling Fans:

Location	Ceiling Fan 48 W
Ground Floor	
Gymkhana Room NO.2	4
Degree Office	12
Passage Area	2
Security Room	1
Basement	
Class No.1	3
First Floor	
Room No.13	2
Room No.16	2
Second Floor	
Room No.35	6
Room No.33B	2
Room No.36	4
Room No.38	1
Room No.39	2
Room No.40	2
Room No.41	2
Room No.43	5
Room No.44	4
Room No.45	4
Third Floor	
Room No.20	3
Room No.21	2
Room No.22	2

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Location	Ceiling Fan 48 W
Room No.23	2
Room No.24	2
Room No.25	3
Room No.26	2
Room No.27	2
Room No.28	2
Room No.29	2
Room No.30	6
Room No.31	4
Room No.32	4
Library	6

Air Conditioners:

Location	Type	Capacity	Quantity
Ground Floor Office	Split	1.5 Ton	2
CS Lab	Split	1.5 Ton	2
IT Lab	Split	1.5 Ton	2
Auditorium	Split	1.5 Ton	4

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IV Environmental System

Ventilation & Air Quality

- The air ventilation is adequate.
- Several indoor & outdoor plants have been installed to improve air quality.



- It has been a general practice to switch off the fans & lights in an unoccupied area.

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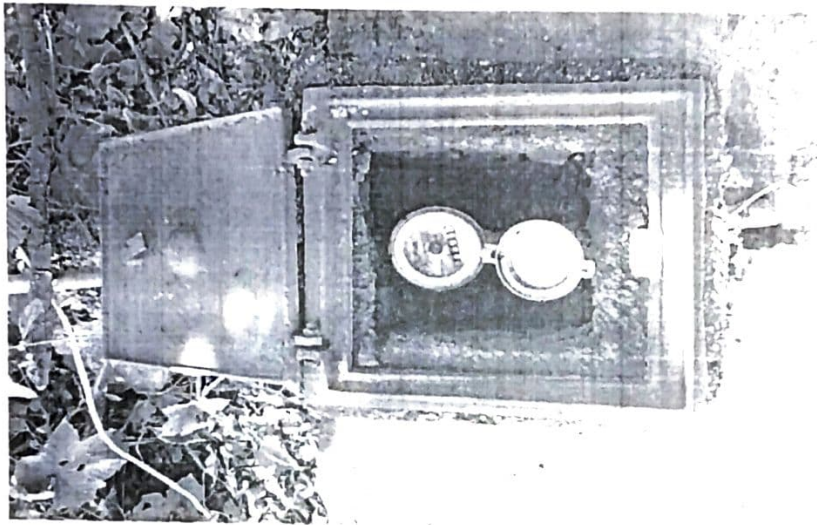
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V Water Management

Consumption Pattern:

The water supplied by the municipal corporation is used only for drinking; while borewell water is used for other applications like toilets, washing of utensils and other requirements.

The incoming water from the municipal corporation is metered.



The consumption pattern was analyzed by the water bills. The details are as under.

Municipal Water

There is one municipal water connection for College Campus. The details are as under.

Period	Days	Consumption	Amount	Cost
		KL	Rs	Rs/KL
Consumer No. 13030				
14/11/2019 to 14/01/2020	61	102	2713	26.60
14/09/2019 to 14/11/2019	61	102	2713	26.60
14/07/2019 to 14/09/2019	62	103	2740	26.60
14/03/2019 to 14/05/2019	61	102	2713	26.60
14/01/2019 to 14/03/2019	59	98	2372	24.20


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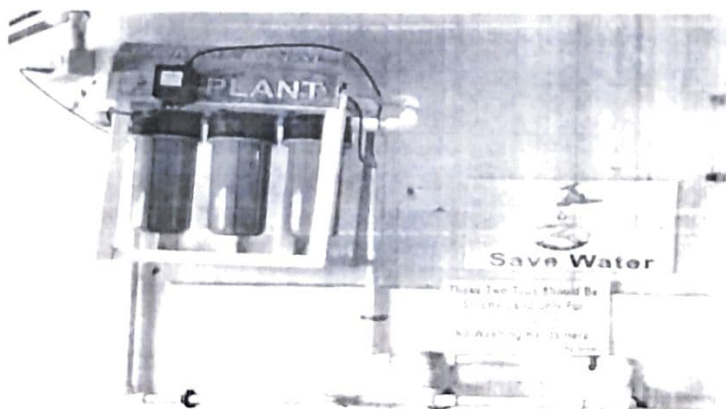
There are about 839 students and staff members. The specific water consumption was computed based on the number of persons and working days. The details are as under.

Period	Days	Consumption	Specific Consumption
		KL	L/Day/Person
Consumer No. 13030			
14/11/2019 to 14/01/2020	61	102	1.99
14/09/2019 to 14/11/2019	61	102	1.99
14/07/2019 to 14/09/2019	62	103	1.98
14/03/2019 to 14/05/2019	61	102	1.99
14/01/2019 to 14/03/2019	59	98	1.98
Overall	304	507	1.99

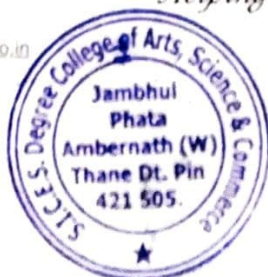
The consumption is generally within the norms.

Water Purifiers:

The water purifiers are installed on each floor and bottled water is not used in the campus.



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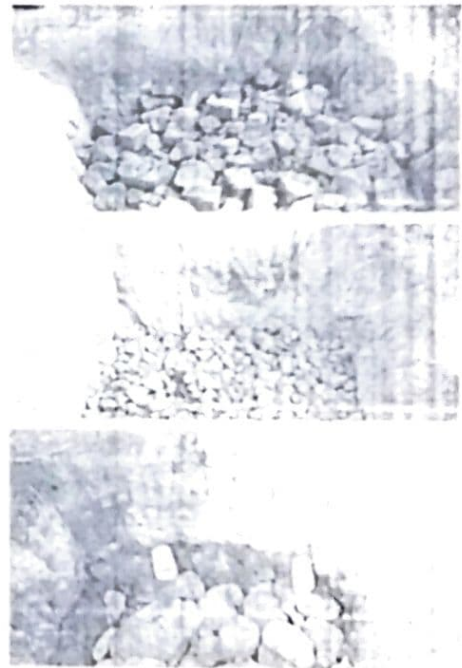
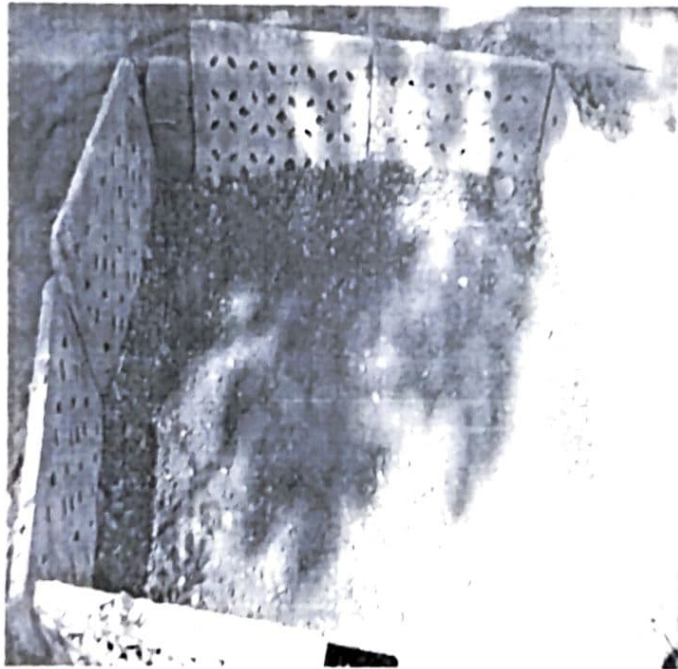
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Rain Water Harvesting:

The rain water from the terrace area of the college building is being drained in to municipal storm water system through requisite ducts and pipes.

However, considering proximity to the seashore, rain water harvesting may not be practical.

There is a provision to recharge the ground water by Water Soaking Pit near garden area.



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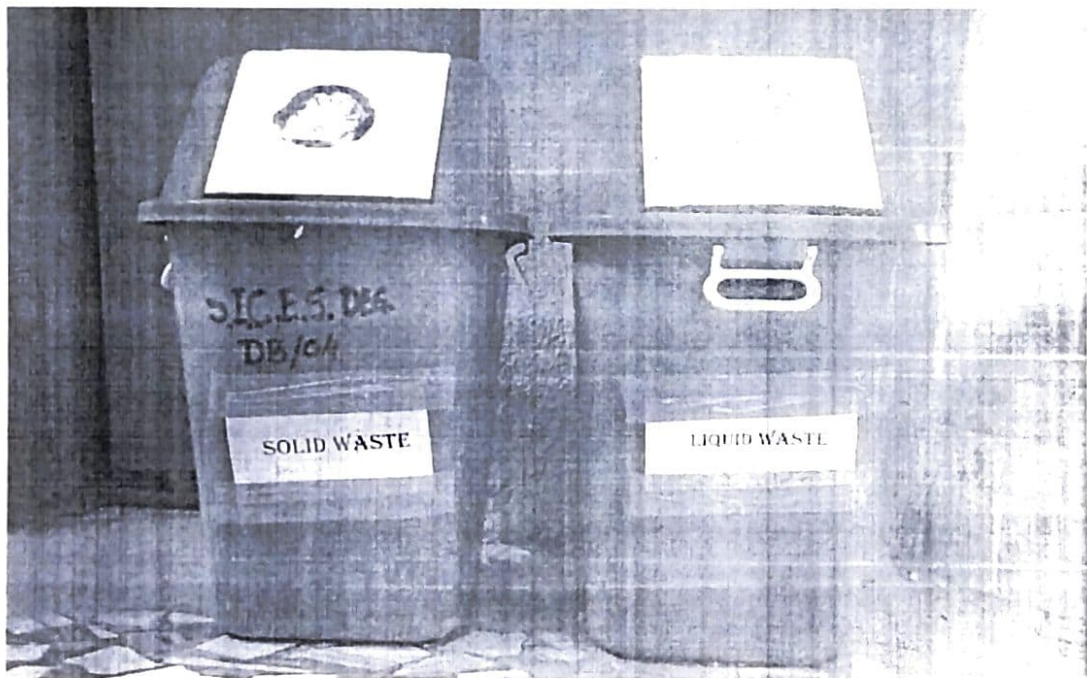
VI Waste Generation & Management

Sewage & Waste Water:

The sewage is fed in to the municipal drainage. This is a common practice and the municipal corporation which charges cess towards the sewage charges.

Solid Waste:

The organic as well as inorganic waste is segregated in the college premises and disposed of through Municipal system.

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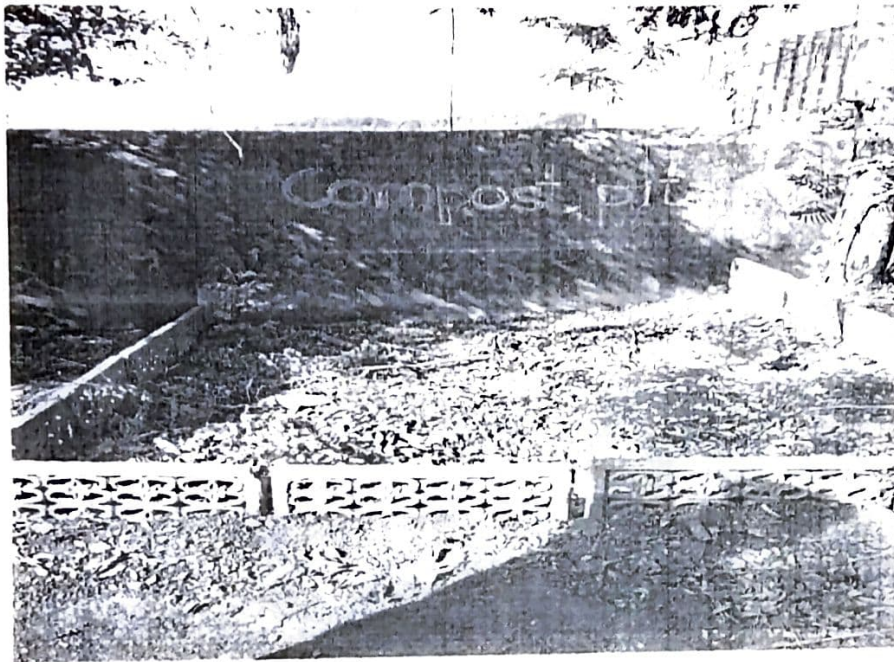
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The organic waste converted in to manure in a composting pit, which is used for inhouse plants.



Electronic waste collected is handed over to scrap collector/ Environmental Consultant.

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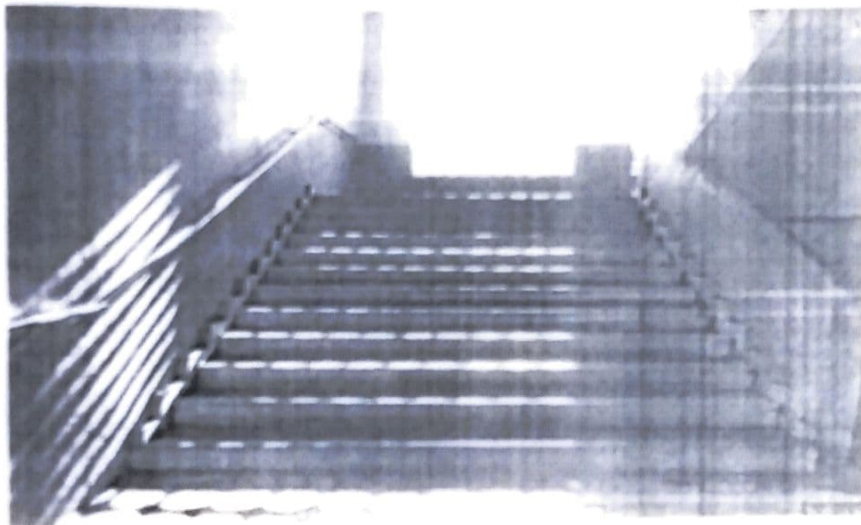
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VII

Infrastructure & Safety

Movement on-campus (Distributed / non-distributed leading to crowds)

The premises are provided with multiple staircases with necessary entrances to ensure quick and effective movement normal as well as emergency conditions.



Parking space:

There is adequate parking space for vehicles/four wheelers. However, almost all the students and many of the faculty members avail public transport system which is very convenient due to proximity to railway station and bus services.

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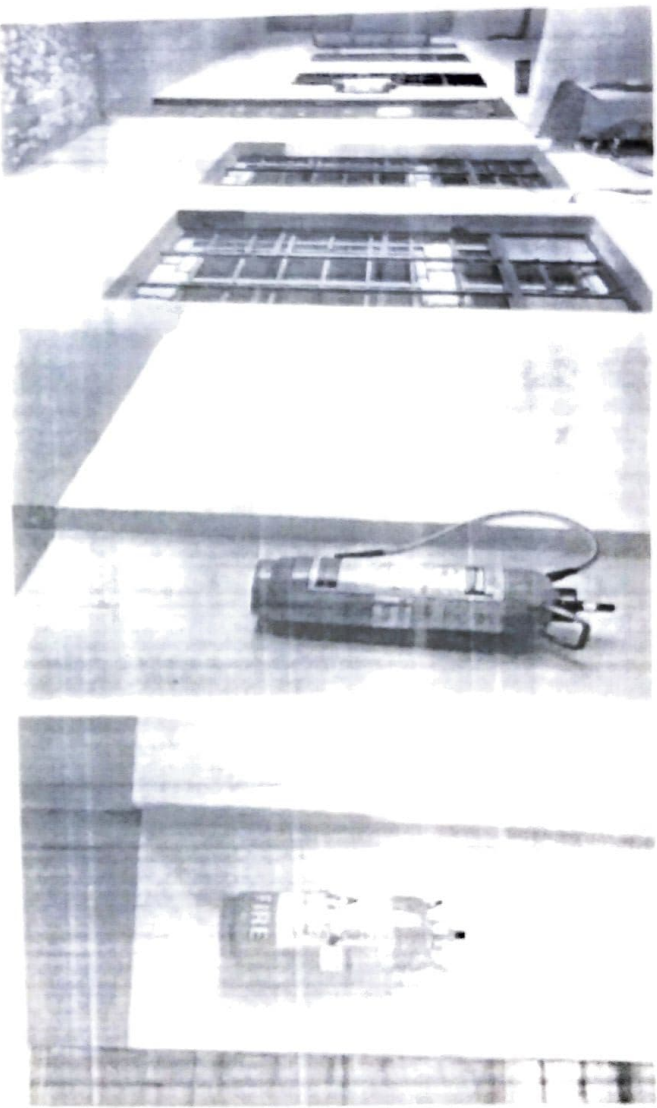


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Fire-fighting & fire escape system:

There are efficient fire extinguishers in the premises, which are checked / refilled as per the standard laid down.



The premise is provided with multiple staircases with requisite entrances to ensure quick and effective escape in emergency conditions.

Draining system:

The drains from the washrooms are connected to the municipal drainage, which is a common practice in the colleges in and around Mumbai.

It is neither feasible nor practical to segregate the drains, install a sewage treatment plant and recycle the treated water for toilet flushing and / or gardening.

Seepage in the building:

The premise was visually inspected for seepages.

No seepages were observed in any of the places.

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VIII Green Culture

Computers/Laptops:

1. The LED / LCD monitors & Laptops has been procured, which are energy efficient
2. These monitors are not only energy efficient but also generate minimal heat and cut down on electricity bills.

Recommendations:

The following steps may be initiated to further enhance efficiency of the systems

1. An efficient power management system may be incorporated to
 - a. Switch off the display if not in use.
 - b. Put the computer in Sleep mode / switching off the machines, if not used for prolonged period
2. Optimize brightness of the screen.
3. Discourage use of screen savers, which has similar power consumption.

Paper-less communication:

The major internal as well as external communication is through electronic medium.

Re-using one sided paper for printing:

It was observed that two side printing / printing on the back side of used paper in more than 80% of the cases



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