

Green Audit Report–2021



St. Claret College, Bengaluru.



Acknowledgement

We would like to acknowledge and give our warmest thanks to the committee members of St. Claret College for their support and for providing us necessary facilities and co-operation during the audit process. This helped us in making the audit a success.

We hope this would help St. Claret with their future endeavors and help them achieve all their environmental aspirations and vision.

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28th December 2021

CERTIFICATE

This is to certify that **St. Claret College, Bangalore** has conducted detailed Environmental Green Audit of their campus and has submitted necessary data and credentials for scrutiny. The activities and measures carried out by the college have been verified based on the report submitted and was found to be satisfactory. The efforts taken by the faculty and students towards environment and sustainability is highly appreciated and commendable.

Director

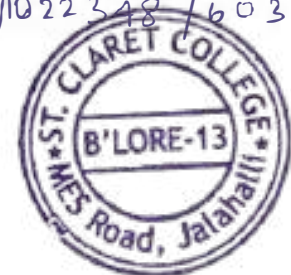

Vanalok Private Ltd

Green Audit conducted by



Anisha Udaykumar

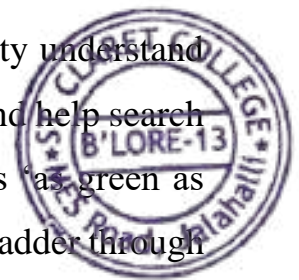
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Executive Summary

Nature encompasses fascinating inhabitants like microorganisms, plants, animals, insects, etc., who have as much right to live as we do. People all over the world see nature differently. With the climatic conditions going haywire all over the world, there is a need for resilient infrastructure, actions and a strong mindset for driving lifestyle change. Students being future citizens of the world can drive change and strive for a better existence and this would be possible only if educational institutions impart values and space for them to grow. They have also the ability to influence their families and the general public more effectively than even a learned motivator. Teachers play an undeniable role in imparting knowledge to the students. Hence, teachers are in a position to facilitate knowledge and promote the learners to achieve better awareness about what is happening in and around them. Teachers as professionals and influential individuals, supported by the management of institutions, can play an important role in shaping up students' attitudes through training and parading them - to be the role models in their communities. Educational Institutions thus can offer an ideal service in moulding the young minds in their impressionable age, towards promoting the health of nature, understanding the underlying causes of climate change and its impacts, and the conditions required to be maintained for sustaining life on earth.

Green Audit is, therefore to make the entire college and the society understand through the trained students, how heavy is their carbon footprint, and help search for remediation and make their campuses and living surroundings 'as green as one can make it'. It is also in search of newer ways to climb up the ladder through continuous efforts for the most sustainable ways of thriving.



The result of such an exercise would help their parents and other visitors to the campus in appreciating their responsible behaviour and admire the novel ways in which the campus team has strived to achieve their “shade of green”. A green audit can also be a useful tool for a college to know how and where they are using the most energy, water or other resources. The college can thus plan for the needed changes and ensure savings. It can also be used to improvise their waste minimization strategy. Green auditing and the implementation of mitigation measures will be a win-win situation for the college, the learners and the planet. It can also create health consciousness and promote awareness of the environment, ethics and values.

Eco-campus is a concept often used by educational institutions around the world to make campuses more sustainable by reducing wastages and enabling their safe disposal into the environment. Waste minimization plans for academic institutions are now mandatory to ensure that the campus is cleaned regularly. As an eco-campus, performing a green audit of the university is critical. The green auditing of St. Claret’s College in Bengaluru allows the assessment of lifestyle, actions, and their impact on the environment. The audit was primarily focused on greening factors such as energy consumption in terms of electricity, water management, waste management, and green spaces management. A series of methods were used to obtain information about the green practices of the college. A set of questions were formulated, reports and documents were verified and a series of interviews were conducted with people in charge of each criterion was done to ensure the accuracy of information. The information gathered was organized, tallied, and analyzed. Finally, a report on environmental observations and recommendations for improvement were listed out for the perusal of the management.

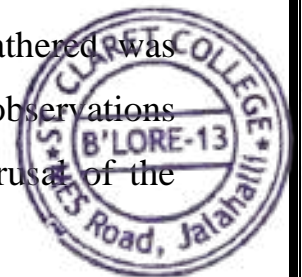


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1. Introduction

Green audits help analyse local environmental practices both inside and outside the university premises that influence the atmosphere of the campus. Therefore, ‘Green Audits’ can be defined as a systematic, identification, quantification, recording, reporting and analysis of components that constitute a university environment. Through such audits, the current status, scope for improvement, and recommendations for improvement can be made available which would further improve the structure of the environment and enhance the efficiency and atmosphere of the campus.

A green audit also serves as a means to identify opportunities for sustainable development practices, enhance environmental quality, improve health, hygiene and safety, reduce liabilities and save money and achieve values of virtue.

Green audits are assigned to criteria 7 of the National Assessment and Accreditation Council, which is a self-governing organization that provides various institutions with grades based on their criteria for accreditation. This accreditation provides a college with an opportunity to present itself as an esteemed institution without impeccable values, infrastructural advantage and endless opportunities it could provide its students.

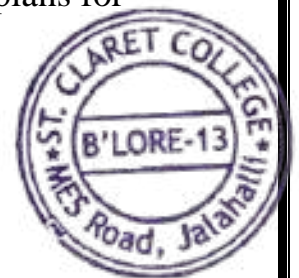


1.1. Need for Green Audits:

Green audits help analyse and determine good institutional practices; whether they are eco-friendly or sustainable. With the world constantly changing, development, unfortunately, results in large-scale utilization of natural resources. Now natural resources are not just used for the supply of products. Energy, water are all basic commodities that are used generously by all. With the threat of depleting resources looming over our heads, it is imperative to determine how much we use and where we waste resources to ensure efficient usage. Green audits provide opportunities to determine the same and help the organization to reflect, improve and expand their processes and shift to clean green resource utilization. Apart from this, it helps instil consciousness among people as part of the institution towards the environment and sustainable resource utilization.

1.2. Goals of Green Auditing:

- a) Identification of strengths and weaknesses in green practices.
- b) Analyse and suggest solutions for problems identified.
- c) Identify and assess environmental risk.
- d) Motivate staff for optimal sustainable use of available resources.
- e) Increase environmental awareness throughout the campus.
- f) Collect baseline data of environmental parameters and prepare plans for issues before they become problems.



1.3. Objectives of Green Audit:

- a) Analyse current practices and determine their impact on the environment.
- b) Identify and analyse significant environmental issues.
- c) Continuous assessment for better environmental performance.
- d) Establish and implement a green culture on the campus and sensitize the faculty and students.

1.4. Benefits to Educational Institutions:

- a) Improve the environment within and outside the campus premises.
- b) Help recognize cost-effective green strategies like waste minimization, energy conservation, water replenishment etc.
- c) Empower people linked to the organization to move towards conscious environmental thinking and practice.
- d) It helps improve the image and builds a positive impression of the institution for its green and clean approach.

2. Scope of Green Audits

The benefits of green auditing practices are the following:

- a) Environmental education through systems thinking and environmental management system approach.
- b) Benchmarking for environmental protection initiatives.
- c) Financial savings through efficient resource use.
- d) Enrichment of curriculum through hands-on experiences.
- e) Enhancement of college profile and improving environmental standards.
- f) Strengthening the environmental ethics and value systems in young people.



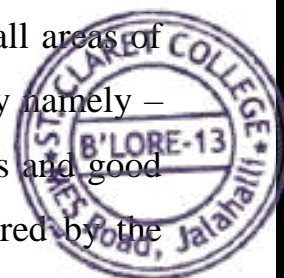
g) Developments of ownership, social and personal responsibility for the campus and its surrounding environment.

3. About the College

St. Claret College is situated in the Jalahalli Village area in Bengaluru city. The college is a catholic undergraduate institution established by Claretian Missionaries of the Bangalore Province. Founded in 2005, it is affiliated with Bangalore University. The college provides quality education offering undergraduate programmes in Arts and Commerce. Computer education is integrated into the UG curriculum thereby providing additional benefits to management studies. The college has also initiated post-graduate programmes recently providing opportunities for higher education for the student community.

The St. Claret Group of Institutions is spread over an area of 12 acres located amidst a pristine environment. The UG & PG College covers an area of 4 acres and is considered for the present study. The college is a three-storey facility with a terrace area of 315 sq. mt. It has amenities like an auditorium, seminar and conference halls, and a library facility with over 15000 books for perusal. Apart from academic requirements, there are facilities for extra-curricular interests like sports and athletics. There is a canteen on the premises that provides food at nominal rates and a sitting area facing the garden. The garden occupies an area of 1171 sq. m. and is well maintained.

With the 'Green Campus' vision playing an important role in decision making, the college has taken steps to adopt a green and clean mentality in all areas of functioning. The management strives to uphold three goals diligently namely – environmental literacy and awareness, health and safety of occupants and good environmental footprint. Four major parameters have been considered by the institution namely Energy, Water, Waste and Green Initiatives that promote their



‘Green Campus’ vision. The teaching and non-teaching staff along with the students are active participants in activities that drive their vision, to name a few: tree plantation drives, waste management, paperless work, maintaining a garden on the terrace, medicinal gardens, water conservation and managing biodiversity within the premises of the campus.

The institution has mindfully provided sufficient space for all the essential requirements of the student, such as bicycle parking, proper roads, a sitting area, well-maintained washrooms, clean filtered drinking water, good playgrounds and well-managed green space. The corridors are clean with provisions for dustbins and lights wherever necessary are present.



Figure 1: Bicycle parking in the Campus



Figure 2: Sitting area to relax



Figure 3: Canteen on premises



Figure 4: Well-lit Corridors



Figure 5: Spacious Libraries



Figure 6: College Courtyard



Figure 7. Aviary on the Campus

4. Observations and Recommendations

Green Spaces Management:

With the rapid increase in urbanization, the availability of green spaces for recreation and relaxation is slowly reducing leading to detrimental repercussions on student growth and health. Students need to grow and learn in environments that promote their physical health as well as their cognitive development to enhance their academic learning. Green spaces boost mental health among adults and can offset traffic emissions. Greenery can help reduce air pollution in several ways like filtering air, restoring water tables, reducing heat island effects and reducing noise levels.

a) Observations:

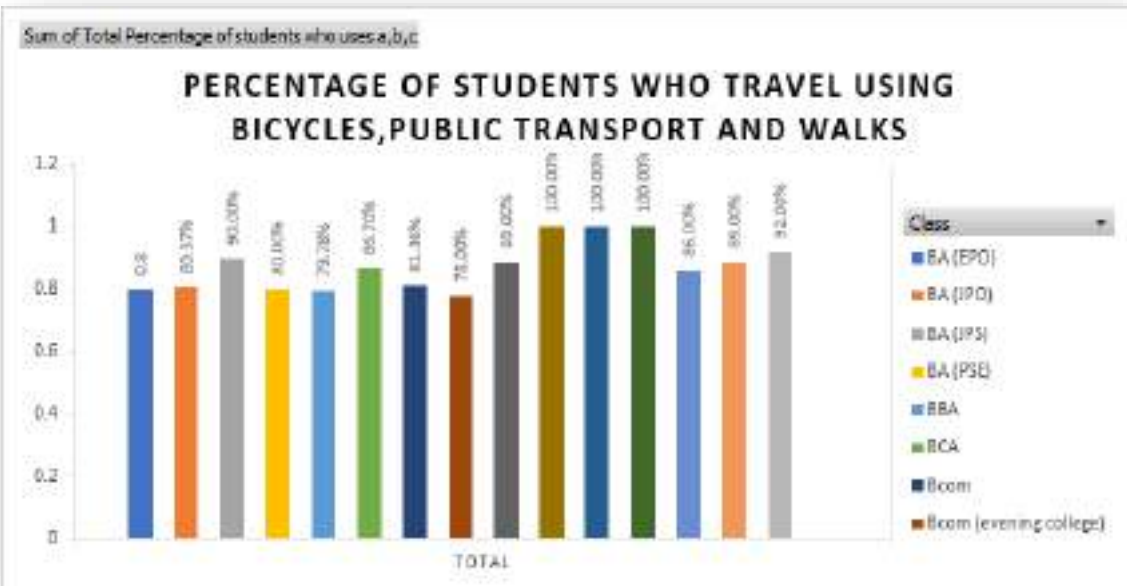
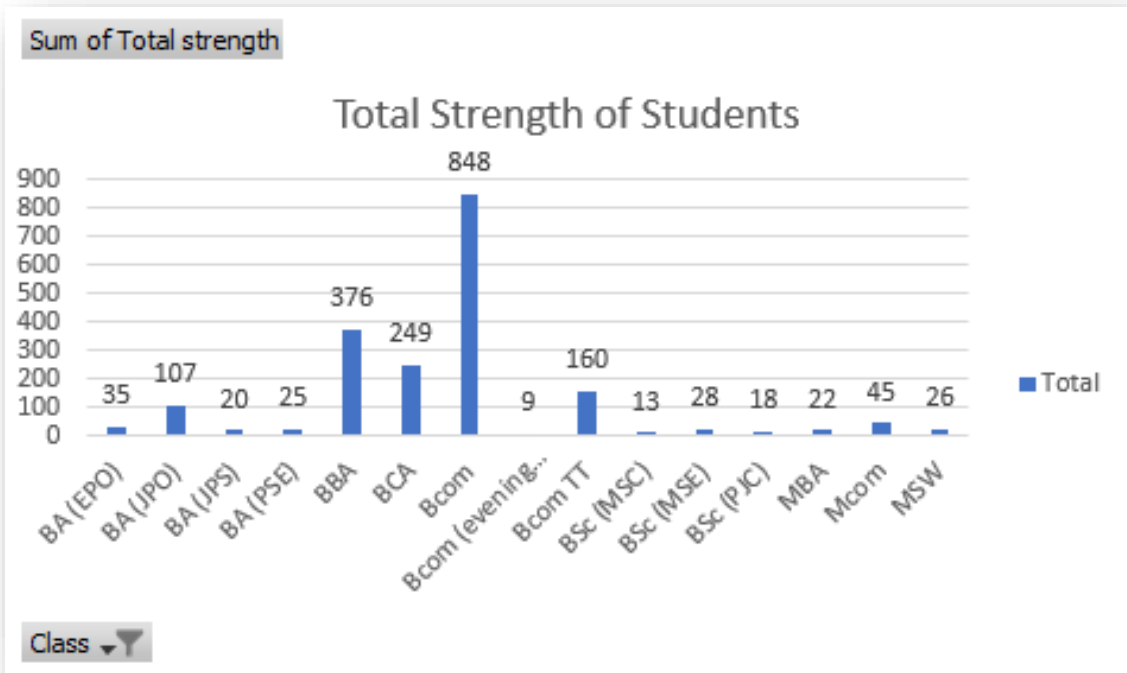
Claret college boasts a good amount of greenery with over 80 species of trees on the premises. The students have an established Environment Club that conducts activities to sensitize and spread awareness within the student community. They undertake responsibilities to care for the medicinal garden and the terrace gardens. The club also organizes various national seminars to instil environmental literacy with various eminent speakers sharing their knowledge for the benefit of the students. Some of the recent topics of discussion were health-related like the seminar on health and heredity, pollution-induced heritable mutations and activities like quizzes and competitions. A big portion of the student community as well as the teaching and non-teaching staff use eco-friendly modes of transport.



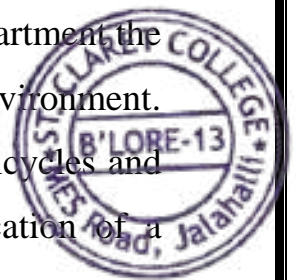
List of students who travel to college by respective Modes of Transport

Total Percentage of students who uses a,b,c	Class	Total strength	Total number of students who uses			Total a+b+c
			Bicycle (a)	Public Transport	Pedestrian Friendly roads (c)	
				(b)		
80.37%	BA (JPO)	107	6	70	10	86
80%	BA (PSE)	25	2	13	5	20
80%	BA (EPO)	35	3	22	3	28
90%	BA (JPS)	20	2	15	1	18
89%	B.Com TT	160	2	90	50	142
81.36%	B.Com	848	10	550	130	690
79.78%	BBA	376	10	170	120	300
86.70%	BCA	249	6	120	90	216
100%	BSc (MSE)	28	0	20	8	28
100%	BSc (MSC)	13	0	10	3	13
100%	BSc (PJC)	18	0	10	8	18
89%	M.Com	45	0	30	10	40
92%	MSW	26	0	20	4	24
86%	MBA	22	0	18	1	19
78%	B.Com (evening college)	9	1	5	1	7





The first graph gives us the total strength of the campus. A class-wise distinction of the students. It is clear from the second graph that almost every department the students opt for transportation that cause least possible harm to the environment. Most of the values like above 75%. They utilize public transports, bicycles and some close by even walk to their campus. This is a direct indication of a sustainably functioning society.



List of trees/plants on the Campus

Common name	Scientific name	Count
Mango	<i>Mangifera indica</i>	15
Jack Fruit	<i>Artocarpus heterophyllus</i>	08
Coconut	<i>Cocos nucifera</i>	81
Hibiscus	<i>Hibiscus rosa-sinensis</i>	7
Weeping fig tree	<i>Ficus benjamina</i>	
Temple tree	<i>Plumeria rubra</i>	
Marigold	<i>Calendula officinalis</i>	
Bougainvillea	<i>Bougainvillea glabra</i>	
Garden mum	<i>Chrysanthemum morifolium</i>	
Firecracker flower	<i>Crossandra infundibuliformis</i>	

Indoor Plants: The campus also has over 60 indoor plants in the premises. A study published in the Journal of Physiological Anthropology found that indoor plants can bring a great difference in the reduction of stress levels and help provide comfort and sooth minds. It improves the overall mental well-being of students and help them concentrate and focus better in classes. They also improve the indoor air quality and improve outlook towards their work and life.





Terrace Garden: The Environment Club has initiated and care for a terrace garden. This is a good way to use the space available on the terrace and to promote the green culture around the campus. Terrace gardens are beautiful concepts that provide benefits like cooling the roof as well as improving the biodiversity. It is a good means for pollinators to carry out their work and also serve as a small buffer against harsh climatic conditions. Apart from this it instils compassion and perseverance amongst students as they are one with the plants on their growth journey. The harvest could also provide them optimism to continue the initiative and make their campus and consequently their houses green and clean.



Figure 8: Terrace Garden maintained by students



Figure 9. Students engaged in Terrace Gardening





Figure 10. Harvest from Vegetable Garden on the Terrace



Organic Vegetable Garden – The C-Wing of the college building houses the organic vegetable garden. The initiative was introduced in 2017, and is looked after by the students of the Environment Club. The harvest from the garden is utilized in the college premises itself. Vegetable gardens are a means for students to understand the impact of seasonal changes on plants. It provides them an understanding of the lifecycles of many organisms associated with the garden. It would also give them a small idea about how small changes cause by climate change can cause problems even at smaller levels of the food chain.



Figure 11. Student engaged in Plantation

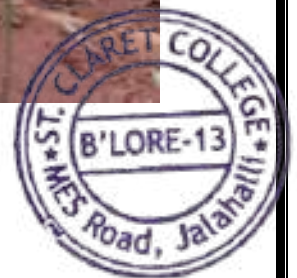


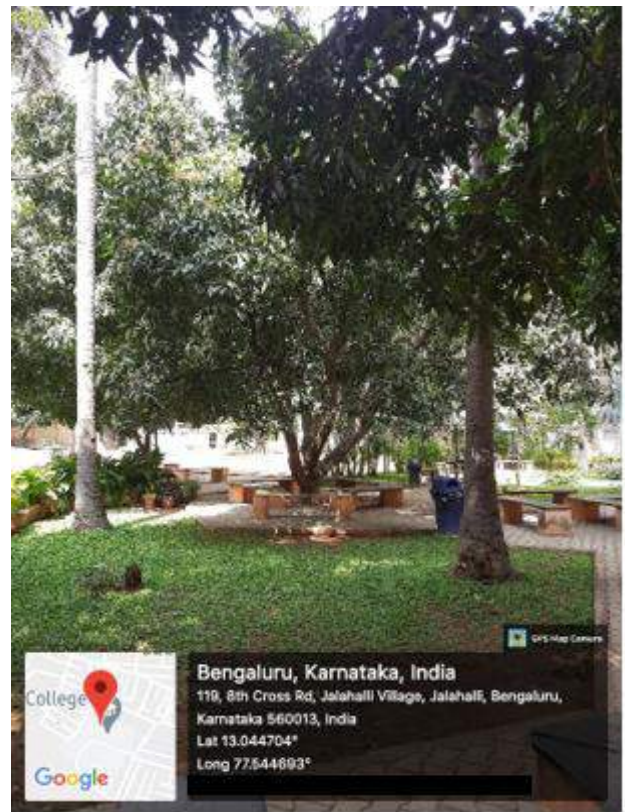
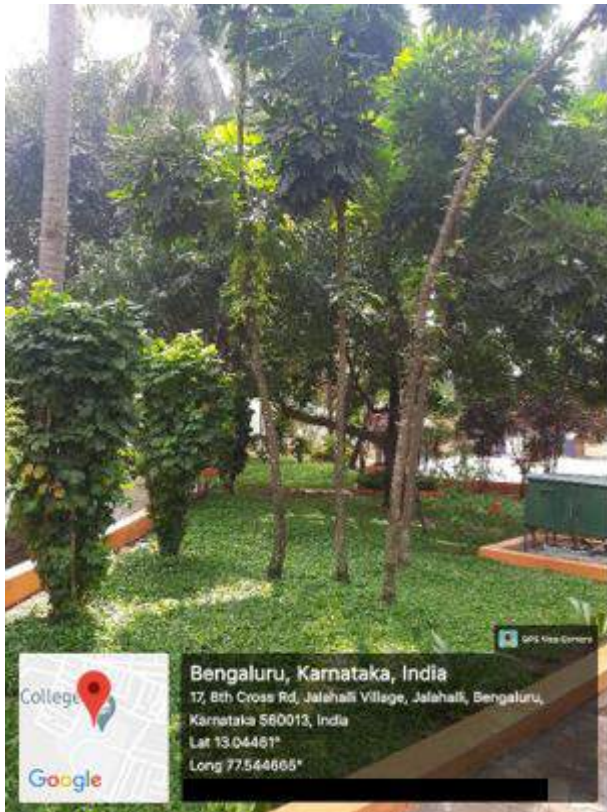


Figure 12: Medicinal Garden



Figure 13: Fruiting trees in the garden.





Saplings Nursery and Medicinal Plants:

The nursery is an area specifically set aside to nurture saplings who are not ready for the harsh environmental conditions of the natural earth. The students of the Environment Club take care of this section. A number of medicinal plants are also placed in the premises. This area acts as a smaller compact green house that helps trap sufficient heat in order for the saplings to grow in optimal conditions.





Figure 14. Nursery for Saplings and Medicinal Plants





Figure 15. Nursery for Saplings and Medicinal Plants





Figure 16. Greenery in the Campus

b) Recommendations:

- Keep records of the trees and plants on the campus and lookout for opportunities to increase their number.
- Include environmental sciences as an added subject in the curriculum for at least one module.
- Include opportunities for students to volunteer and be a part of environmental organizations by incentivizing the same for extra credits.
- Include projects that involve environmental concerns and what students can contribute from their respective fields as a part of the curriculum to enhance problem-based thinking capabilities.



5. Summary

An audit of natural resources is an important tool for ensuring that natural resources are being used in an eco-friendly and sustainable manner. Green auditing is the process of determining whether institutional practices are environmentally friendly and sustainable. It is a continuous process of identification, monitoring and discussion. There is scope for further improvement, particularly concerning waste, energy and water management. The college in recent years consider the environmental impacts of most of its actions and makes a concerted effort to act in an environmentally responsible manner. Even though the college does perform fairly well, the recommendations in this report highlight many ways in which the college can work to improve its actions and become a more sustainable institution.



Figure 17: Good Environmental Practices for Sustainable Development.



6. Corollary

From the green audit, the following conclusions can be made:

- ❖ Water management consists majorly of the rainwater harvesting systems that bring in a good amount of water that is used for gardening purposes. More thought could be put into rainwater recharge pits that could replenish the water tables.
- ❖ Food waste or wet waste, in general, can be turned into compost that can be used as enrichment for the green on the campus. This would help them institution lessen its dependence on the local authorities for disposal.
- ❖ E-waste is segregated, handled and disposed of properly in an eco-friendly and responsible manner.
- ❖ Reduction in the use of one-time-use plastics like bottles, cups, folders, pens and other decorations could help reduce the plastic waste menace on the campus.
- ❖ Almost the entire campus uses eco-friendly mode of transport.
- ❖ Wear masks signage were seen on the campus.

