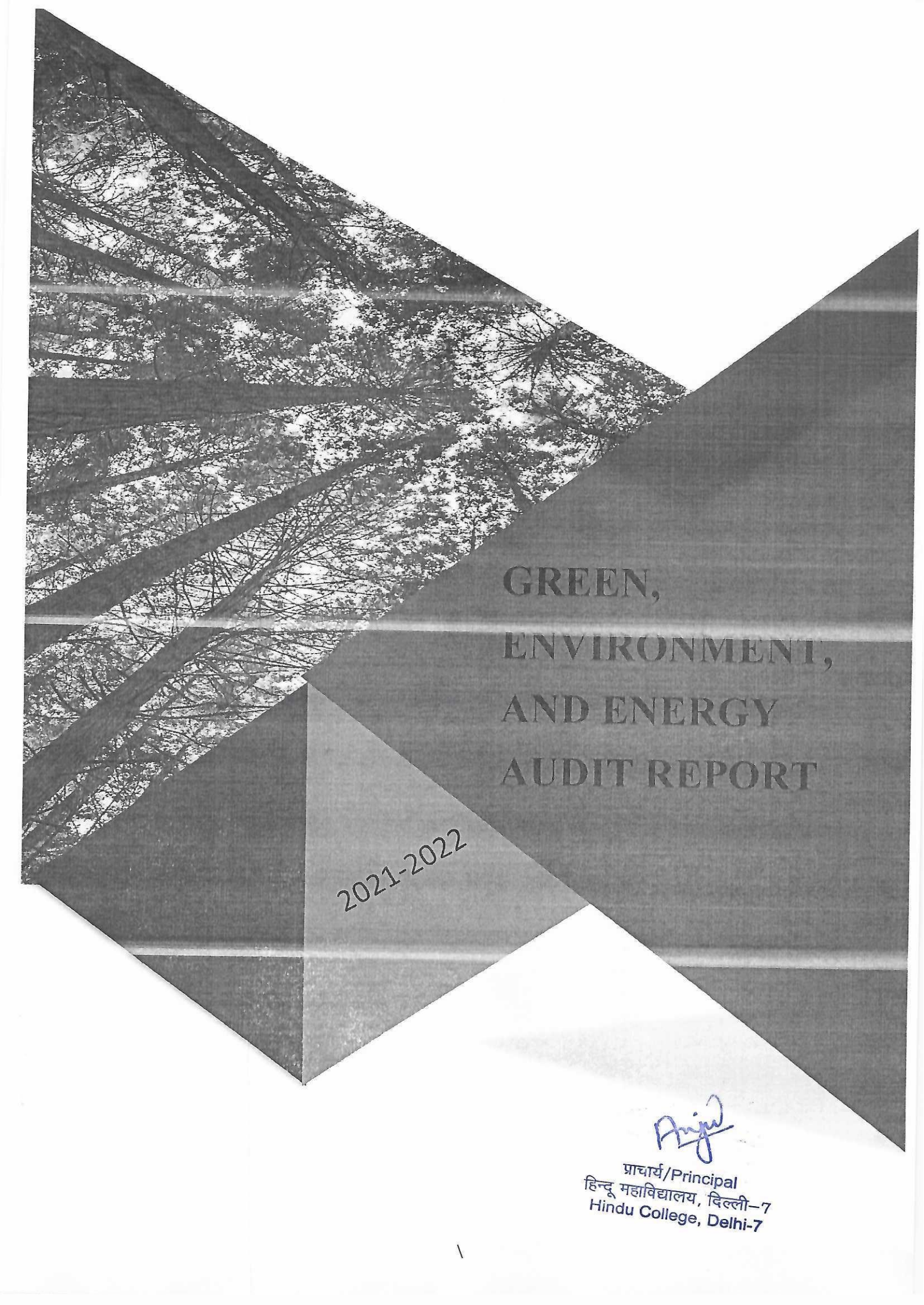




GREEN, ENVIRONMENT, AND ENERGY AUDIT REPORT

2021-2022



प्राचार्य/Principal
हिन्दू महाविद्यालय, दिल्ली-7
Hindu College, Delhi-7

Introduction

Hindu College was founded in 1899 by late Shri Krishan Dassji Gurwale along with a Board of Trustees who represented the prominent citizens of Delhi. The pre-eminent aim behind the founding of Hindu College was to provide modern and nationalist education to the youth of the Country. When the College was founded, India was a colony of Great Britain. The ruling ideology of the time was rooted in providing education to the elite. This was the time when Christian missionaries were trying to reestablish themselves by starting schools and colleges. The missionary institutions of higher education were thought to have an evangelising agenda. The aim of the founding fathers of Hindu College was to make it a centre of new ideas, whilst being non-elitist and non-sectarian. The College welcomed youth from all sections of society without any differentiation on grounds of religion, caste, creed and gender. Both arts and sciences were introduced as subjects from the beginning. Apart from modern education, the College also supported the oriental and traditional mode of education. It provided a common ground for the growth of secular culture by supporting Hindi, Sanskrit, and Persian in addition to religion and philosophy. Secularism and voluntary instruction were not seen as incompatible. This was the vision of the founders. The objective was to establish an institution which could spread modern education along with the awareness, consciousness, and zeal about nationalism and brotherhood among the Indian youth.

The role of the prominent citizens of Delhi to promote education in India, underscored the private and public attempts to expand education at the time. The founders and trustees of the College came mainly from the mercantile class and the rising professionals. They were philanthropists, who saw education as a learning experience. Krishan Dassji Gurwale's philanthropy predated Indian democracy and was intimately bound with nationalism. This was the high motivation for establishing Hindu College and ever since it has remained as a vector for nation-building. That aim has not been diverted till today.

Till today, Hindu College has the effect of integrating students from different backgrounds. It was one of the first co-ed colleges to include women in the educational programme and thus sowed the seeds for the empowerment of women early on. Students of the Hindu College have always favoured democracy – it being the only college continuing to be identified with this uniqueness– it is the only college in Delhi University that has a Student Parliament as an integral part of the institution.. Hindu College began as a small people's movement for higher education free of religious, missionary and elitist bias. Being born as part of the nationalist impulse, it actively participated in India's struggle for independence. That spirit was palpable. The College's ethos to survive and flourish as one of the premier institutions of the country today stems from its origins and roots.

Control objective	Control(s)	Compliances (Please answer Yes/No). If Yes please explain the process and procedure.
Maximize the proportion of waste that is recycled & minimize the quantity of non-recyclable refuse	Reduce the absolute amount of waste that it produces from college kitchens, butterfly, staff offices and student accommodation.	- Yes - Use recycling facilities as much as possible
Maximize the proportion of waste that is recycled & minimize the quantity of non-recyclable refuse	Make full use of all recycling facilities provided by City Municipality and private suppliers, including glass, cans, white, colour and brown paper, plastic bottles, batteries, print cartridges, cardboard and furniture.	- Yes - College sells old paper to an NGO and gets bags and other stationery items in return.
Maximize the proportion of waste that is recycled & minimize the quantity of non-recyclable refuse	Compost, or cause to be composted, all organic waste, green waste and un-recycled cardboard produced in or collected from kitchens, gardens, offices and rooms.	- Yes - College has a compost pit to recycle biodegradable waste.
Maximize the proportion of waste that is recycled & minimize the quantity of non-recyclable refuse	Recycle or safely dispose of white goods, computers and electrical appliances.	- Yes - College has an E-waste Committee which sells all the waste to government authorized sellers.
Maximize the proportion of waste that is recycled & minimize the quantity of non-recyclable refuse	Use reusable resources and containers and avoid unnecessary packaging where possible.	Yes
Maximize the proportion of waste that is recycled & minimize the quantity of non-recyclable refuse	Always purchase recycled resources where these are both suitable and available.	Yes
Maximize the proportion of waste that is recycled & minimize the quantity of non-recyclable refuse	Provide sufficient, accessible and well-publicized collection points for recyclable waste, with responsibility for recycling clearly allocated.	Yes
Maximize the proportion of waste that is recycled & minimize the quantity of non-recyclable refuse	Make specific arrangements for events, such as cultural Events, internal and external seminars and conferences, where significant recyclable waste is likely to be produced, in order to both minimize the waste produced and maximize what is recycled/reused.	- Yes - Use disposable and bamboo based cutlery wherever possible in all college events.
Control objective	Control(s)	
Maximize the proportion of waste that is recycled & minimize the quantity of non-recyclable refuse	Promote reuse of items and waste recycling among staff, students and conference guests through training, posters and incentives.	- Yes - Awareness and donation drive by various college societies like: NSS, JVC, NCC etc.



Maximize the proportion of waste that is recycled & minimize the quantity of non-recyclable refuse	Dispose all waste, whether solid or otherwise, in a scientific manner and ensure that it is not released directly to the environment.	• Yes College has a Sewage Treatment plant with a capacity to treat 5 lakh litres per day
Reduce energy consumption, especially of energy derived from fossil fuels,	Support renewable and carbon-neutral electricity options on any energy-purchasing consortium, with the aim of supplying all college properties with electricity that can be attributed to renewable and carbon-neutral sources.	• Yes Solar panels are installed in girls' hostel.
Reduce energy consumption, especially of energy derived from fossil fuels,	Appreciate that it is preferable to purchase electricity from a company that invests in new sources of renewable and carbon-neutral electricity.	• Yes College has contributed towards setting up solar panels outside the city to provide renewable electricity and thereby gets a subsidy from the government on its electricity bill as a compensation for this initiative.
Reduce energy consumption, especially of energy derived from fossil fuels,	Look in to the possibility of on-site micro-generation of renewable electricity.	• Not Applicable • Extensive use of power saving LEDs
Reduce energy consumption, especially of energy derived from fossil fuels,	Give preference to the most energy efficient and environmentally sound appliances available, this includes only using energy-saving light bulbs.	• Yes College buys 5-star rating energy saving electrical appliances. All tube lights and sodium bulbs have been replaced by LED bulbs.
Control objective Reduce energy consumption, especially of energy derived from fossil fuels,	Control(s) Provide energy efficient heating systems, with adjustable controls for individual heating appliances wherever possible, and ensure that comprehensible instructions are available to staff and students on the use of heating controls.	• Yes Solar heaters installed in girls hostel of the college.
Reduce energy consumption, especially of energy derived from fossil fuels,	Encourage staff, students and conference guests to save energy through visible reminders, incentives and information to increase awareness. This particularly concerns turning off electrical appliances when not in use	• Yes Awareness drive by various college societies like: NSS, WDC, NCC, etc.


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	in both communal and residential rooms.	
Reduce energy consumption, especially of energy derived from fossil fuels,	Monitor and understand the importance of different sources of college energy consumption, and set appropriate and measurable targets for a reduction in certain areas of consumption and/or in the overall consumption of energy.	• Yes Heavy appliances switched off during peak hours of the college. Eg- Sewage Treatment plant is not operated during the day when the electricity load is already high
Reduce energy consumption, especially of energy derived from fossil fuels,	Conduct switch off drills at regular intervals.	• Yes
Reduce energy consumption, especially of energy derived from fossil fuels,	Ensures that all electronic and electrical equipment's, such as computers, are switched off when not in use, and is generally configured in power saving mode when such option is available.	• Yes
Reduce energy consumption, especially of energy derived from fossil fuels,	If there are equipment's running on standby mode, reduce the energy consumption on standby mode or minimize the running of equipment's on standby mode.	• Yes
Ensure that improvements, purchases and developments are environmentally sound	Seek and act upon professional advice in order to minimize the adverse environmental impact of any new developments and exceed government regulatory requirements. This includes efficient heating and water systems, appropriate space for recycling, and the use of recycled and/or sustainable building materials where possible.	• Yes Excess mud generated from any construction activity in college is used for earth filling to level the surface.
Control objective Ensure that improvements, purchases and developments are environmentally sound	Control(s) Purchase efficient and environmentally sound appliances in order to fulfil the commitments in section 2, and consider replacing old stock with 'greener', more efficient alternatives.	• Yes College buys 5-star rating energy saving electrical appliances. All tube lights and sodium bulbs have been replaced by LED bulbs.
Ensure that improvements, purchases and	Purchase food that has been produced and delivered with minimal impact on the environment, this includes buying	• Not applicable • Food is prepared on the premises for hostel students

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University of Delhi

developments are environmentally sound	locally produced, organic and free-range food wherever possible.	using fuel saving technologies All appliances purchased are BEE certified and star rated.
Ensure that improvements, purchases and developments are environmentally sound	<i>Optional [Investigate and understand the environmental impact of college investments. This implies a preference against companies whose 'core activity' contributes to: 1. Global warming through the extraction or production of fossil fuels, 2. the manufacture of chemicals which are dangerous or persistent in the environment, 3. The unsustainable harvest of natural resources.</i>	
Minimize the use of unsustainable transport	Make available information about bicycle and pedestrian routes, public transport services and car share schemes to staff and students.	- Yes - Electronic Rickshaws and E-bike stands around the college
Minimize the use of unsustainable transport	Reduce the proportion of travel on College business carried out in private transport and eliminate unnecessary and inefficient use of college vehicles.	- Not applicable - Within campus use of bicycles is encouraged - Electric vehicles are used as required - Yes
Minimize the use of unsustainable transport	Promote car sharing / car pool among the students and faculty members.	Yes
Minimize consumption of water.	Repair sources of water leakage, such as dripping taps and showers as quickly as possible.	Yes
Minimize consumption of water.	Install appliances which reduce water consumption.	- Yes - Lavatory flush has both less and high-water flow options to save on discharge of water. - Yes
Minimize consumption of water.	Encourage a decrease in water usage among staff, students and conference guests.	Yes
Minimize consumption of water.	Purchase the most efficient washing machines and dishwashers available which have an economy setting as default.	- Yes - Energy saving washing machines bought for the hostels
Control objective	Control(s)	



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Minimize consumption of water.	Use an efficient and hygienic water storage mechanism is to minimize the loss of water during storage.	• Yes
Minimize consumption of water.	Minimize wastage of water and use of electricity during water filtration process, if used, such as RO filtration process and ensure that the equipment's used for such usage, are regularly serviced, and the wastage of water is not below the industry average for such equipment's used in similar capacity.	• Yes College has a centralized RO plant
Minimize consumption of water.	Install Water recycling mechanism, such as rain water harvesting system.	• Yes College has rain water harvesting facility in every structure.
Minimize the use of chemical pollutants	Ensure that all cleaning products used by college staff have a minimal detrimental impact on the environment, i.e. are biodegradable and non-toxic, even where this exceeds the Control of Substances Hazardous to Health (COSHH) regulations.	• Yes College uses all BIS/ISI approved substances.
Minimize the use of chemical pollutants	Minimize the use of fertilizers and pesticides in college grounds, opting for the use of compost produced on site wherever possible.	• Yes Use manure from the compost-pit
Minimize the use of chemical pollutants	Dispose the chemical waste generated from the laboratories in a scientific manner.	• Yes
Minimize the use of chemical pollutants	Reduce the practice of burning plastic and other material that emits harmful gas on burning is prevented in the campus.	• Yes No burning of any substance in the college
Control objective	Control(s)	
Minimize the use of chemical pollutants	Establish a Garden in the campus.	• Yes
Minimize the use of chemical pollutants	Encourage the faculties and students to plant trees in the garden.	• Yes
Minimize the use of chemical pollutants	Reviews periodically the list of trees planted in the garden.	• Yes
Ensure that environmental awareness is created.	Conduct environmental awareness workshops as a part of the program.	• Yes
Ensure that environmental awareness is created.	Conduct events such as plant trees to spread environmental awareness among the students.	• Yes


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Ensure that environmental awareness is created.	Create awareness of environmental sustainability and takes actions to ensure environmental sustainability.	• Yes
Ensure that environmental awareness is created.	Reduce the rate at which the College contributes to the depletion and degradation of natural resources.	• Yes No activities conducted in college that degrades natural resources
Ensure that environmental awareness is created.	Promote environmental awareness as a part of course work in various curricular areas, independent research projects, and community service.	• Yes Environmental Studies taught to all the students as part of the curriculum in first year
Ensure that the buildings conform to green standards.	Review architecture of existing buildings and reviews ways, in consultation with experts, to reduce usage of energy for such buildings, offering greatest efficiency for energy and water usage, and reducing carbon emission.	• Yes The entire structure of the college is approved by the DUAC.
Control objective	Control(s)	
Ensure that the Environmental Policy is enacted, enforced and reviewed	Establish a College Environmental Committee that will hold responsibility for the enactment, enforcement and review of the Environmental Policy. The Environmental Committee shall be the source of advice and guidance to staff and students on how to implement this Policy.	• Yes College has a Garden and Horticulture Committee comprising of senior faculty members of the college.
Ensure that the Environmental Policy is enacted, enforced and reviewed	Ensure that on the Nature Club there will be appropriate representatives of the relevant college departments and authorities – such as catering, gardening, maintenance, cleaning and finance.	• Yes Students also have an Environmental Society, Panchtatva which conducts the Hindu Earth Summit annually to create awareness about environment conservation.
Ensure that the Environmental Policy is enacted, enforced and reviewed	Ensure that on the Environmental Committee there will be the Green Officer from an external agency who is engaged in the profession of providing guidance on environmental impact.	• Yes Faculty members of the Department of Botany are part of the committee since they have a deep understanding of the flora.
Ensure that the Environmental Policy is	Ensure that the Environmental Committee will review the Environmental Policy on an annual	• Yes



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enacted, enforced and reviewed	basis, and will monitor progress and set measurable targets wherever possible.	Frequent meetings of the committee take place to monitor and solve the issues
Ensure that the Environmental Policy is enacted, enforced and reviewed	Ensure that the Environmental Policy is enforced regardless of whether its requirements exceed the mandate of the law.	• Yes - Trimming of trees for up to 4 inches is done in the presence of a supervisor.
Control objective	Control(s)	
Ensure that the Environmental Policy is enacted, enforced and reviewed	Require that every staff and student member recognizes their responsibility to ensure that the commitments in the Environmental Policy are properly put into practice.	• Yes
Ensure that the Environmental Policy is enacted, enforced and reviewed	Ensure that an audit is conducted annually and action is taken on the basis of audit report, recommendation and findings.	• Yes



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Green, Environment, and Energy Audit Report

Environment details

Hindu College Pioneering the Carbon Sequestration Potential for an Educational Institute

- through density - diameter (d-d) curve (Sep 2018 - Feb 2019)

Lakshay Singh* and Diksha Bagal*

Dr. Anuradha Sharma* and Dr. Gyan Prakash Sharma**

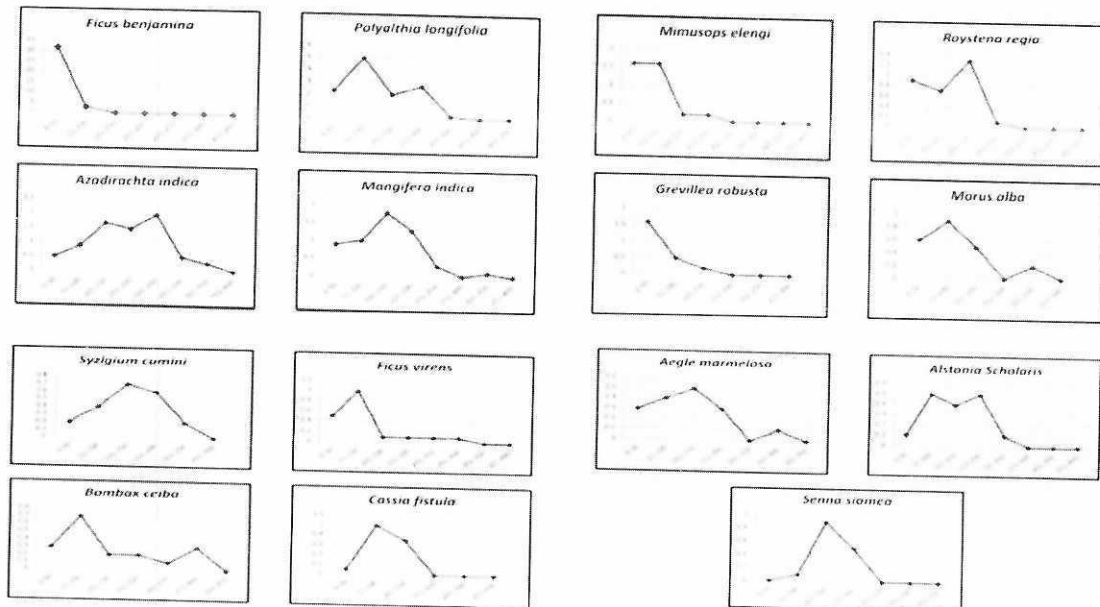
*Department of Botany, Hindu College, University of Delhi
**Department of Environmental Science, Hindu College, University of Delhi

TREES OF HINDU COLLEGE, UNIVERSITY OF DELHI

- | | | | | |
|---------------------------------------|-------------------------------------|-------------------------------------|--------------------------------------|--------------------------------------|
| 1. <i>Polyalthia longifolia</i> | 13. <i>Ficus virens</i> | 25. <i>Plumera obtusa</i> | 37. <i>Bauhinia purpurea</i> | 49. <i>Citrus sp.</i> |
| 2. <i>Azadirachta indica</i> | 14. <i>Syzgium cumini</i> | 26. <i>Artocarpus heterophyllus</i> | 38. <i>Leucaena leucocephala</i> | 50. <i>Lagerstroemia speciosa</i> |
| 3. <i>Mangifera indica</i> | 15. <i>Alistonia scholaris</i> | 27. <i>Moringa oleifera</i> | 39. <i>Populus deltoides</i> | 51. <i>Madhuca longifolia</i> |
| 4. <i>Eucalyptus tereticornis</i> | 16. <i>Livistonia chinensis</i> | 28. <i>Sorona siamea</i> | 40. <i>Dalbergia sissoo</i> | 52. <i>Mitragyna parviflora</i> |
| 5. <i>Roystena regia</i> | 17. <i>Ficus benjamina</i> | 29. <i>Ficus religiosa</i> | 41. <i>Cinnamomum camphora</i> | 53. <i>Caryota urens</i> |
| 6. <i>Mimusops elengi</i> | 18. <i>Grevillea robusta</i> | 30. <i>Ficus benghalensis</i> | 42. <i>Haplophragma adenophyllum</i> | 54. <i>Rhopalostylis sp.</i> |
| 7. <i>Morus alba</i> | 19. <i>Delonix regia</i> | 31. <i>Ficus racemosa</i> | 43. <i>Drypetes roxburghii</i> | 55. <i>Bougainvillea spectabilis</i> |
| 8. <i>Aegle marmelos</i> | 20. <i>Callistemon viminalis</i> | 32. <i>Phoenix dactylifera</i> | 44. <i>Plumera rubra</i> | 56. <i>Albizia procera</i> |
| 9. <i>Bombax ceiba</i> | 21. <i>Jacrandia mimosifolia</i> | 33. <i>Kigelia pinnata</i> | 45. <i>Cordia roya</i> | 57. <i>Ehretia laevis</i> |
| 10. <i>Phyllanthus emblica</i> | 22. <i>Bauhinia racemosa</i> | 34. <i>Borassus flabellifer</i> | 46. <i>Dyopsis lutescens</i> | 58. <i>Chukrasia tabularis</i> |
| 11. <i>Tabernaemontana divaricata</i> | 23. <i>Ficus elastica</i> | 35. <i>Acacia nilotica</i> | 47. <i>Pinus roxburghii</i> | |
| 12. <i>Cassia fistula</i> | 24. <i>Nyctanthes arbor-tristis</i> | 36. <i>Psidium guajava</i> | 48. <i>Thevetia peruviana</i> | |

Density-Diameter (d-d) Curve of top 15 species

Y-axis = Diameter at Breast Height (dbh)
X-axis = No. of Individuals per hectre

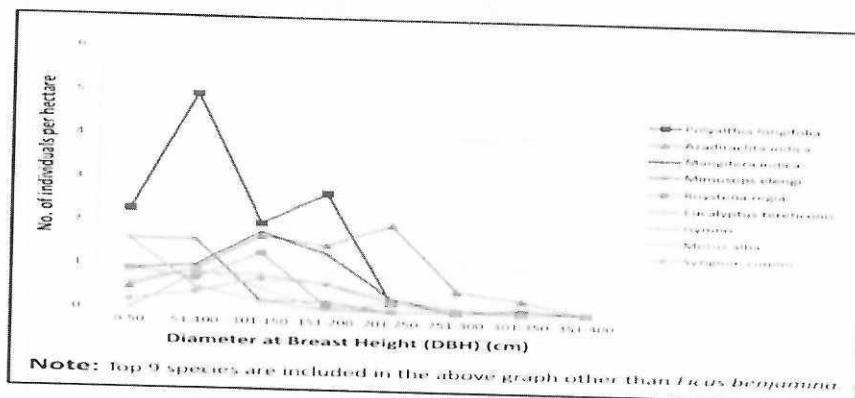


Anuradha Sharma

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UNIVERSITY OF DELHI



Recommendations:

- The College may frequently make the specific arrangements for garbage collection at events, such as cultural Events, fests, internal and external seminars and conferences, where significant recyclable waste is likely to be produced, in order to both minimize the waste produced and maximize what is recycled/reused to maximize the proportion of waste that is recycled and minimize the quantity of non-recyclable refuse.
- Try to Install more appliances which reduce water consumption and electricity.
- Try to provide sufficient, accessible and well-publicized collection points for recyclable waste, with responsibility for recycling clearly allocated.
- Try to ensure that in the Environmental Committee there will be a Green Officer from an external agency who is engaged in the profession of providing guidance on environmental impact.
- Always purchase recycled resources where these are both suitable and available.
- Try to ensure that the Environmental Committee reviews the Environmental Policy on an annual basis, and will monitor progress and set measurable targets wherever possible.
- Different varieties of birds, butterflies maybe identified and a record of the same maintained by the Eco Club.
- Watering schedule for plants and trees maybe planned according to different seasons.
- The institution may adopt practices like deciding number of saplings planted every year
- Periodical review of plants/trees added every year maybe carried out

Suman Nandy

Suman Nandy
CISA, CISSP, ITIL (Foundation)

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