REPORT

GREEN AUDIT REPORT

CHEMBUR SARVANKASH SHIKSHANSHASTRA MAHAVIDYALAYA

Submitted to:

Chembur Education Society's
Chembur Sarvankash Shikshanshastra Mahavidyalaya
R.C. Marg, Chembur Naka, Chembur
Mumbai-400071
Tel No. 022-25272162/25221439/25278225

Submitted by:

Technocrats
104/402, C Wing,
Hanuman Chhaya CHS Ltd,
Tilak Nagar,
Mumbai-400089

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Green Audit Completion Certificate

Name of the Installation	Chembur Sarvankash Shikshanshastra Mahavidyalaya
Details of Facility Audited	Chembur Education Society's Chembur Sarvankash Shikshanshastra Mahavidyalaya March R.C. Marg, Chembur Naka, Chembur Mumbai-400071
Date of Green Audit	6th February 2024
Name of EMS Auditor	Mr. Kiran Shinde
Name of Co-Auditor	Mr. Mahesh Chhatre
Name of Auditing Company	Technocrats 104/402, C Wing, Hanuman Chhaya CHS Ltd, Tilak Nagar, Mumbai-400089
Validity of Report	30th April 2025
Signature of Auditor	
EMS Auditor	Mr. Kiran Shinde
Certification Number	: ISO 14001:2015 _ 35142852 02 Delegate No 168345 Dated 15.04.2019
Stamp of Company	Green Scientific Development (I) Pvt. Ltd.

Environmental Audit Committee

Prin. Chandrashekhar Chakradeo	Chairman
Dr. Umakant Deshmukh	Co-ordinator (Environmental)
Ms. Smita Ganatra	Member
Dr. Ravindra Ganurde	Member
Ms Pranoti Phatak	Member

1.0 INTRODUCTION

Chembur Sarvankash Shikshanshastra Mahavidyalya (CSSM) was established by Chembur Education Society in 1970.The college has now completed 45 years and has become vibrant centre for Teacher Education and Lead College of University of Mumbai. The college is Grant –in –Aid College comes under sections 2(f) and 12(B) of the UGC Act1956.The College is permanently affiliated to University of Mumbai & recognized by National Council of Teacher Education (NCTE).

The college has been accredited by National Assessment and Accreditation Council (NAAC) at "A" Level in January 23, 2017 and valid up to January 22, 2022 with CGP Score-3.20; in 2011.Cumulative Grade Point Average i.e., CGPA Score-3.35 in 2017 (Annexure 9.0).

The CSSM has done remarkable work in the field of Extension and has been awarded 'Best College Extension Award" three times by Department of Life Long Learning and Extension, University of Mumbai.

CSSM is the first institution to introduce "Certificate Course in Functional English" and "Diploma Course in Functional English" of University of Mumbai through English Language Laboratory.

The web telecasting of National level workshop on the Theme "Swami Vivekananda-The Universal Man "was viewed by people all over the world. With the support of A-View, it was possible for the college to telecast some of the lectures of eminent scientist organized by University of Mumbai through their programme "Enlighten everyone on Saturday".

The CSSM has established a cordial relationship with its stakeholders, parents, alumni, academic peers, schools, colleges of education, University of Mumbai, Department of Education, IDOL, DLLE, Community centers, NGOs.

List of teaching staff, non-teaching staff and students are given in Table 1 and 2. List of courses running in CSSM are given in Table 2.

Table 1: CSSM's College Staff & Students:

Sr. No.	Details	Numbers
1	Teaching Staff	18
2	Non-Teaching Staff	07
3	Students	208

Table 2: List of Courses Running in CSSM:

Sr. No.	Details
1	Bachelor of Education- B.Ed
2	Bachelor of Education- B.Ed. (YCMOU)
3	Diploma in Ele. Teacher Edu. D.EL.Ed.
4	Diploma in School Management-DSM
5	Ph.D.-Research Centre
6	Certificate Course in functional English

Table 3: Number of Students in CSSM:

Sr. No.	Details	Numbers
1	B.Ed. (English Medium)	70
2	B.Ed (Marathi Medium)	70
3	D.Ed	50
4	Ph.D.	18

1.1 VISION & MISSION

Vision:

A soul should enlighten another soul. A teacher is a lifelong learner.

Mission:

To produce teacher with a high purpose and intense pragmatism who will be the change agents in future.

Value of college:

To empower the teachers and teachers' trainees with life skills and value education that would help them cater to inclusive classroom.

Objectives:

- To be an academic centre for excellence amongst the teacher training institutions.
- To empower the teachers and teacher trainees with life skills and value education that would help them cater to inclusive classroom.
- To provide opportunities for broadening the experiences of teacher trainees through various scholastic and non-scholastic activities.
- To sensitize the teacher trainees towards the local and global issues.
- To develop critical and rational thinking abilities amongst the teacher trainees
- To inspire a lifelong passion for learning amongst the teacher trainees and teacher educators

1.2 PREAMBLE

Green audits serve as a means to identify opportunities to sustainable development practices, enhance environmental quality, improve health, hygiene and safety, reduce liabilities and save money and achieve values of virtue. Green audits can be a highly valuable tool for institutions in a wide range of ways to improve their environmental and economic performance and reputation while reducing wastages and operating costs. Once a baseline data is prepared after the auditing process, the data can serve as a point of departure for further action in campus greening. It will also help the institute to compare its programmes and activities with other peer institutes, identify areas for improvement and prioritise the implementation of future projects. The data will also provide a basis for calculating the economic benefits of resource conservation projects by establishing the current rates of resource use and their associated costs. Simple but effective system was devised and applied to prepare a baseline data and monitor the environmental performance of CSSM. The aim of green auditing is to help the institution to apply sustainable development practices and to set examples before the community. The present audit is focusing on the activities and environmental status of CSSM for the period academic year 2022-23.

Green Audit is assigned to the Criteria 7 of NAAC, National Assessment and Accreditation Council which is a self-governing organization of India that declares the institutions as Grade A, Grade B or Grade C according to the scores assigned at the time of accreditation. The intention of organizing Green Audit is to upgrade the environment condition in and around the institutes & colleges. It is carried out with the aid of performing tasks like waste management, energy saving and others to turn into a better environmentally friendly institute.

1.3 SCOPE OF WORK

The general objective of green audit is to prepare a baseline report on Environment and other resources, measures to mitigate resource wastage and improve resource quality and sustainable practices.

The specific objectives are:

i. To suggest measures to improve Environment within CSSM.

ii. To monitor the energy consumption pattern.

iii. To assess the quantity of water usage within CSSM.

iv. To suggest sustainable energy usage and water conservation practices.

v. To find out various sources of organic and solid waste generation and mitigation possibilities.

vi. To inculcate values of sustainable development practices through green audit mechanism.

1.4 BENEFITS OF GREEN AUDIT

- More efficient resource management,
- To provide basis for improved sustainability,
- To create a green activity premises,
- To enable waste management through reduction of waste generation, solid-waste and water recycling,
- Recognize the cost saving methods through waste minimizing and managing,
- Point out the prevailing and forthcoming complications,
- Authenticate conformity with the implemented laws,
- Empower the organizations to frame a better environmental performance,
- Enhance the alertness for environmental guidelines and duties,
- Impart environmental education through systematic environmental management approach and improving environmental standards,
- Benchmarking for environmental protection initiatives,
- Financial savings through a reduction in resource use,
- Enhancement of Institute profile,
- Developing an environmental ethic and value systems in stakeholders and society.

2.0 TARGATE AREAS OF GREEN AUDITING

Green audit forms the part of a resource management process. Although they are individual events, the real value of green audits is the fact that they are carried out, at defined intervals, and their results can illustrate improvement or change over time. Eco-campus concept mainly focuses on the efficient use of energy and water; minimize waste generation or pollution and also economic efficiency. All these indicators are assessed in process of "Green Auditing". Eco-campus focuses on the reduction of contribution to emissions, procure a cost effective and secure supply of energy, encourage and enhance energy use conservation, promotes personal action, reduce the institute's energy and water consumption, reduce wastes to landfill, and integrate environmental considerations into all contracts and services considered to have significant environmental impacts. Target areas included in this green auditing are water, energy, waste and carbon footprint.

❖ Auditing for Water Management

Water is a natural resource; all living matters depend on water. While freely available in many natural environments, in human settlements potable (drinkable) water is less readily available. We need to use water wisely to ensure that drinkable water is available for all, now and in the future. A small drip from a leaky tap can waste more than 180 litters of water to a day; that is a lot of water to waste - enough to flush the toilet eight times! Aquifer depletion and water contamination are taking place at unprecedented rates. It is therefore essential that any environmentally responsible entity should examine its water use practices. Water auditing is conducted for the evaluation of facilities of raw water intake and determining the facilities for water treatment and reuse. The concerned auditor investigates the relevant method that can be adopted and implemented to balance the demand and supply of water. It is therefore essential that any environmentally responsible entity examine its water use practices

❖ Auditing for Energy Management

Energy cannot be seen, but we know it is there because we can see its effects in the forms of heat, light and power. This indicator addresses energy consumption, energy sources, energy monitoring, lighting, appliances, and vehicles. Energy use is clearly an

important aspect of sustainability and thus requires no explanation for its inclusion in the assessment. An old incandescent bulb uses approximately 60W to 100W while an energy efficient light emitting diode (LED) uses only less than 10 W. Energy auditing deals with the conservation and methods to reduce its consumption related to environmental degradation. It is therefore essential that any environmentally responsible institution examine its energy use practices.

❖ Auditing for Waste Management

Pollution from waste is aesthetically unpleasing and results in large amounts of litter in our communities which can cause health problems. Plastic bags and discarded ropes and strings can be very dangerous to birds and other animals. This indicator addresses waste production and disposal, plastic waste, paper waste, food waste, and recycling. Solid waste can be divided into two categories: general waste and hazardous waste.

General wastes include what is usually thrown away in homes such as garbage, paper, tins and glass bottles. Hazardous waste is waste that is likely to be a threat to health or the environment like biomedical waste, cleaning chemicals and fuels. Unscientific landfills may contain harmful contaminants that leach into soil and water supplies and produce greenhouse gases contributing to global climate change.

Furthermore, solid waste often includes wasted material resources that could otherwise be channelled into better service through recycling, repair, and reuse. Thus the minimization of solid waste is essential for a sustainable operations of Institute. It is therefore essential that any environmentally responsible entities examine its waste processing practices.

❖ Auditing for Green Campus Management

Unfortunately, biodiversity is facing serious threats from habitat loss, pollution, over consumption and invasive species. Species are disappearing at an alarming rate and each loss affects nature's delicate balance and our quality of life. Without this variability in the living world, ecological systems and functions would break down, with detrimental consequences for all forms of life, including human beings. Newly planted and existing trees decrease the amount of carbon dioxide in the atmosphere. Trees play an important ecological role within the urban environment, as well as support improved public health and provide aesthetic benefits to cities. In one year, a single mature tree will absorb up to 21.77 kg. of carbon dioxide from the atmosphere and release it as oxygen. The amount of oxygen that a single tree produces is enough to provide one day's supply of oxygen for people. So, while students are busy studying and working on earning those good

grades, all the trees on campus are also working hard to make the air cleaner for us. Trees in the campus impact our mental health as well; studies have shown that trees greatly reduce stress, which a huge deal is considering many students are under some amount of stress.

❖ Auditing for Carbon Footprint

Commutation of stakeholders has an impact on the environment through the emission of greenhouse gases into the atmosphere consequent to burning of fossil fuels (such as petrol). The most common greenhouse gases are carbon dioxide, water vapour, methane, nitrous oxide and ozone. Of all the greenhouse gases, carbon dioxide is the most prominent greenhouse gas, comprising 402 ppm of the Earth's atmosphere. The release of carbon dioxide gas into the Earth's atmosphere through human activities is commonly known as carbon emissions.

An important aspect of doing an audit is to be able to measure the impact so that we can determine better ways to manage the impact. In addition to the water, waste, energy and biodiversity audits we can also determine what our carbon footprint is, based on the amount of carbon emissions created. One aspect is to consider the distance and method travelled between home and Institute every day. It undertakes the measure of bulk of carbon dioxide equivalents exhaled by the CSSM through which the carbon accounting is done. It is necessary to know how much the organization is contributing towards sustainable development. It is therefore essential that any environmentally responsible entity examine its carbon footprint.

3.0 METHODOLOGY OF GREEN AUDITING

The purpose of the audit was to ensure that the practices followed in the Institute campus are in accordance with the environmental standards adopted by CSSM. The criteria, methods and recommendations used in the audit were based on the identified gaps. The data studied for the academic year 2022-23.The methodology includes, preparation and filling up of questionnaire, physical inspection of the campus, observation and review of the document, interviewing responsible persons and data analysis, measurements and recommendations. The methodology adopted for this audit was a three-step process comprising of:

3.1 DATA COLLECTION

In preliminary data collection phase, exhaustive data collection was performed using different tools such as observation, survey communicating with responsible persons and measurements. Following steps were taken for data collection:

- The auditor visited each section and department such as classrooms, auditorium, office, Library, terrace etc.
- Data about the general information was collected through visual observation, photographs and interview with the concern persons.

3.2 DATA ANALYSIS

Detailed analysis of data collected include: analysis of latest water and electricity bill of the campus, understanding the tariff plan provided by the State Electricity Board (SEB) or Private company who is supplying electricity. Data related to water usages, waste generation and management aspects shall also be analysed.

3.3 RECOMMENDATION

On the basis of results of data analysis and observations, some steps for reducing Waste and water consumption will be recommended.

4.0 ENERGY POLICY STATMENT

CSSM is committed to minimize our environmental impact and adopted energy efficient lifestyle. The policy statement tells us how the energy consumption is perceived in the institution. Energy policy is an essential tool for promoting sustainable energy use and reducing greenhouse gas emission. Energy policy and standards can help to guide the behaviour towards sustainable energy sources and practices.

Objectives taken into accounts by CSSM

1. CSSM directs all its efforts towards the reduction of carbon footprint,
2. CSSM will ensure sustainable practices are being followed in the campus,
3. CSSM will educate students teachers towards the national energy mission and the role they can play as teachers,
4. CSSM will make the stakeholders aware about the energy consuming products and persuade them to switch to energy efficient products,
5. CSSM will make the student teachers reflect and work on personal energy habits,
6. CSSM will respond to emerging environmental and energy issues.

5.0 WASTE SEGREGATION POLICY

CSSM has waste segregation policy, which states that-

1. Keep separate containers for dry and wet waste on every floor,
2. Keep two bags/boxes for dry waste collection-paper and plastic. Glass will be segregated in a bin specified for the same,
3. Plastic if holds wet item should be rinsed and put in the bin provided for the same,
4. Sanitary waste should go in the paper bags specified for the same,
5. All the waste will be disposed-off as per the guideline of Mumbai Municipal Corporation from time to time.

6.0 AUDIT OBSERVATIONS AND FINDINGS

GOOD POINTS OBSERVED

1. In order to minimise conventional energy sources, CSSM has installed solar panels (10 kWp 3 Phase Solar system, 5 kWp 1 Phase Solar System) as renewable energy source.
2. Plantation and Environmental awareness drives are carried out in the campus,
3. CSSM has taken an initiative for E-waste collection and disposal,
4. CSSM has installed Rain Water Harvesting (RWH) system within the campus.
5. Student classrooms are designed in such a way that maximum natural light will be available in the classroom (no need of bulb and CFL in day time) with good ventilation (almost 40% of the area is occupied by window and doors).

MAJOR RECOMMENDATIONS

1. CSSM do have Environmental Committees & Environmental Budgeting but target oriented environmental management plan (EMP) should be developed for achieving environmental sustainability,
2. Periodic cleaning (2 times in year) of solar panels are recommended to enhance its efficiency.
3. It is recommended to get reviewed the functionality of solar panels at regular interval.
4. In order to know the water usage pattern and wastewater generation, it is recommended to conduct water balance study in CSSM.
5. Currently conventional faucets and toilet flush tanks are installed in CSSM; therefore, it is recommended to install water saving faucets and toilet flush tanks to save water.
6. CSSM has taken initiative to collect E-Waste but disposal of E-Waste is not proper. It is recommended to tie-up with an authorised (having authority to recycle E-Waste by Maharashtra Pollution Control Board) recycler for disposal.
7. Drinking water, Ambient Air, and Lux monitoring should be carried out regularly (three times in a year i.e., summer, winter, and monsoon) from Environmental Laboratory which is having National Accreditation Board for

Testing and Calibration Laboratories (NABL) accredited and approved by Ministry of Environment, Forest and Climate Change (MoEF&CC),

8. It is recommended to add some plants (e.g., Aloevera, Medagascar periwinkle, Ashwagandha, and Tulsi) of medicinal value.
9. It is recommended to conduct external energy audit once in a year. CSSM's energy policy should be revised with implementation of sensor-based energy conservation system.
10. Waste management plan (WMP) should be revised and should not restricted to waste segregation only. Generation and disposal are also a subject of major concern.

6.1 WATER AND WASTEWATER

CSSM receives water from Municipal Corporation of Greater Mumbai (MCGM) which is metred and charged by MCGM. Water meter number is 8000875. Water aspect data in the CSSM is tabulated (in Table 4) as follows:

Table 4: Water aspect data is as follows:

SR. No.	Aspect	Details
1.	Borewell	01
2.	Water pumps	02
3.	Water cooler with drinking water filtration.	02
4.	Number of urinals and toilets	05
5.	Number of bathrooms	03
6.	Number of water taps	30
7.	Number of ponds	Nil
8.	Water pumps	Two Submersible Pump
9.	Water charges paid	Rs. 33415 paid to Municipal corporation for the period of academic year 2022-2023.
10.	Number of water tanks for water storage at terrace	Total 04 Tanks
11.	Water storage tank capacity	25000 Lit.
12.	Rain water storage tank	01

In order to utilise rain water, CSSM has installed rain water harvesting system in the campus.

Rain Water Harvesting pipes (visible in the adjacent photo) are available and connected to recharge pit to harvest rain water.	  Underground rain water harvesting tank

CSSM is aware of their responsibilities and do regular check for identifying water leakages or wastages.

OBSERVATIONS - WATER USAGES AND CONSERVATION PLAN

1. At present wastewater is not recycled or reused in any form within the college premises
2. Water meters are not installed in the building premises to monitor the precise water consumption within CSSM
3. Currently water pipe is used for watering tree. It is recommended to use drip irrigation and sprinklers for watering trees to save water,
4. CSSM does not have their own vehicle and hence there is no water usage for vehicle cleaning,
5. Currently conventional faucets and toilet flushes are used in CSSM, it is recommended to used water saving faucets and toilet flushes.

RECOMMENDATIONS

CSSM may consider theses on top priority: -

1. Install Water meters on each floor to monitor the water consumption
2. Leakages should be checked on regular basis and water efficient devices should be planned to install to conserve water.
3. Drinking water should be analyse as per IS 10500 at regular intervals.
4. Water conservation awareness campaigns should be organised for students.

6.2 ENERGY

In order to study the electricity consumption of CSSM, electricity bills that is purchased electricity of academic year 2022-2023 and installed solar panel (annexure 10.0) has been considered for analysis. Details of energy related aspects have been specified in Table 5.

Table 5: Collective data of Energy

Sr. No.	Aspect	Details
1.	Electricity charges per month	Average Rs. 16702.00/-
2.	Number of Gas cylinders used per annum	Not applicable
3.	Avg. Power Consumption	1451.75 kWH
4.	Total cost of energy	Rs. 200425.70/-
5.	Capacity of Solar Energy	10 Kwp 3 Phase Solar System 5 Kwp 1 Phase Solar System
6.	CFL bulbs	0
7.	LED Tube lights	56
8.	Tube lights with Choke	93
9.	Fans	109
10.	Air conditioners	05
11.	Laptops	03
12.	Computers	43
13.	Printers	07
14.	Projectors	04
15.	Photocopiers	01
16.	Televisions	01
17.	Microwave	01
18.	Sanitary Napkin Disposal Machine	01

OBSERVATIONS – ENERGY

1. CSSM has installed solar panels as an alternative energy source,
2. Energy sources used in the CSSM are purchased electricity (conventional) and solar (non-conventional) energy,
3. All the computers are set on a power saving mode,

RECOMMENDATIONS:

1. 5–star rated Air Conditioners & power saving fans should be used,
2. Cleaning of tube lights to be done periodically
3. Electricity consumption records should be maintained on monthly basis.

6.3 WASTE

Waste management is important for an eco-friendly campus. In CSSM different types of wastes are generated. The following data provide the details of the waste generated and the disposal method adopted by the CSSM.

Types of waste	Particulars	Disposal method
E-Waste	Computers, CPU, monitors, printers	Currently E-waste is disposed to general vendor, but it should be disposed through authorised recycler
Solid Waste	Paper waste, Metal Waste, food waste	Solid waste should be sold to local recycler. Food waste is disposed to municipal waste on daily basis.
Plastic Waste	Pen, Refill, Plastic water bottles and other plastic containers, wrappers etc	Disposed as municipal waste
Wastewater	Bathrooms, urinals, washing.	Discharge to municipal sewerage without treatment

An initiative has been taken by CSSM to collect all the E-Waste for its disposal (Annexure 11.0).

RECOMMENDATIONS:

1. Detailed monthly inventory of paper, plastic, metal and e-waste should be prepared and maintained,
2. Regular drives should be arranged in the campus for waste reduction awareness,

3. Recycle and reuse of paper and plastic waste should be promoted within the CSSM as well as families of students,
4. CSSM can plan for paperless communication to the maximum extend,
5. Separate storage area to be maintained for different categories of waste,
6. It is recommended to tie-up with authorised recycler for E-waste collection and disposal (Authorised by Maharashtra Pollution Control Board).
7. CSSM has its waste management policy but it is basically focusing on waste segregation. Waste water, solid waste, E-waste, hazardous waste, degradable and non-degradable waste, plastic waste and glass waste must be taken into account.
8. Biodegradable waste can be utilised for manure generation,
9. It is recommended to organise an educational sessions on biodegradable and non-biodegradable waste, waste segregation on basis of the colour coding of waste bins.

6.4 GREEN CAMPUS

The Green campus drive is an initiative for protecting the environment. The campus protects age old trees in addition to several new trees and plants planted. Total campus area and built area is mentioned in Table 6. Total number of plant and identified plant species have been specified in Table 7.

Table 6: Details of Green Campus:

Total campus area	10075 Sq.m
Built up area	4146.37 sq.m

Table 7: Type and number of trees planted in the CSSM premises:

Plant Species	Tree Name	Botanical Name	No. of Tree
1.	Jambhul	*Syzygium cumini*	1
2.	Coconut	*Cocos nucifera*	2
3.	Gulmohar	*Delonix regia*	3
4.	Guava	*Psidium guajava*	1
5.	Ashoka	*Saraca asoca*	4
6.	Jackfruit	*Artocarpus Heterophyllus*	2

Plant Species	Tree Name	Botanical Name	No. of Tree
7.	Mango	*Mangifera indica*	1
8.	Chinch	*Tamarindus indica*	1
9.	Cape Jasmine	*Gardenia Jasminoides*	1
10.	Suru	*Casuarina equisetifolia*	1
11.	Karanja	*Millettia ponnata*	3
12.	Umbar	*Ficus racemosa*	1
13.	Eucalyptus	*Eucalyptus globulus*	3
14.	Kandunim	Azadirachta indica	1
		Total	**25**

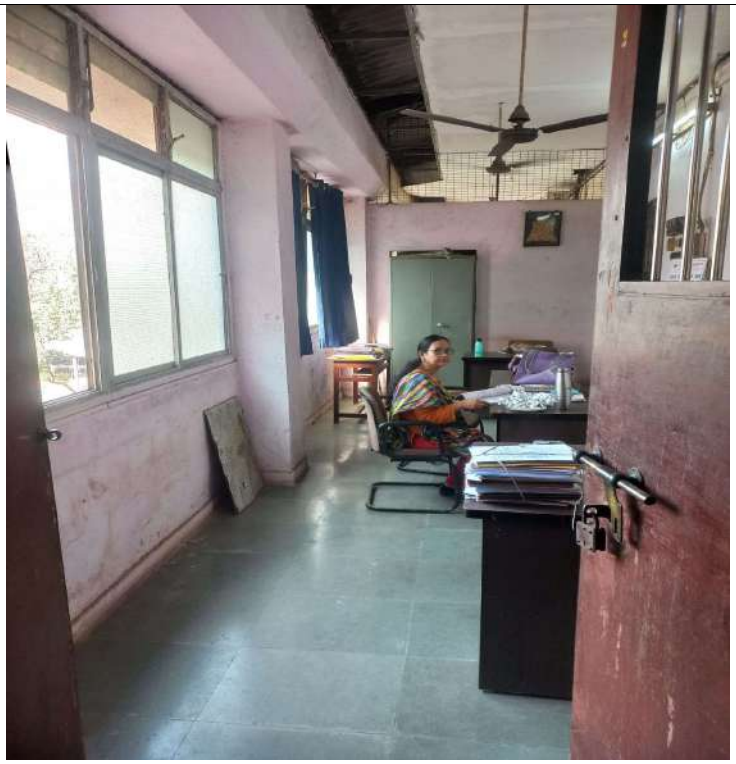
At present CSSM has total 25 plants out of which some are edible plants and some are of aesthetic value plant. It is recommended to avoid plantation of *Eucalyptus globulus* due to its extremely high rate of transpiration that causes detrimental effects on environment. *Eucalyptus globulus* contributes to draught through transpiration 18-20 times higher then other plants. Eucalyptus also restricts germination of other species and detrimental to soil micro and macrofauna due to its allelopathic properties. CSSM should add some plants of medicinal value like Tulsi, Aloevera.

GREEN INITIATIVES BY CSSM TEAMS

Tree Plantation on World Environment Day

Clean up drive at adivashi Pada

Sufficient Natural Light in Library



Sufficient natural light in staff room

Class Room with Sufficient Light and Ventilation

Class Room with proper cross ventilation and sufficient window

6.5 CARBON FOOTPRINT

The carbon footprint data is important to estimate and minimise the carbon dioxide (CO_2) emission to the atmosphere. Carbon dioxide is one of the main greenhouse gases among others which are responsible for damaging ozone layer of the earth. In order to calculate greenhouse gas emission, operational boundaries of the CSSM must be defined. The operational boundary comprises all sources of emission that is scope 1 (direct emission and sources that are owned or controlled by the entity and hence occur within the organizational boundary), scope 2 (emissions occur within the organizational boundary. However, unlike scope 1 they are indirect emissions because they do not occur from sources that are owned by the entity), and scope 3 (unlike scope 1 and 2, scope 3 emissions occur outside the organizational boundary (*Reference: GHG Emission Reporting (handbook), Greenhouse Gas Protocol, March 2023*). In case of CSSM, scope 1 is not applicable, therefore, to calculate carbon footprint of CSSM, scope 2 that is purchased electricity and scope 3 that is employee, student commuting has been taken into account. Kg CO_2 Emission Per Year by purchased electricity and employee, students commuting have been mentioned in Table 8 and 9. The summary of conventional fuel usage observed in the campus as follows:

Number of persons using cars = 01
Number of persons using two wheelers = 01
Number of visitors per day = 10
Number of persons using train (public transport) = 174
Number of foot commuters = 57

Table 8: Kg CO_2 Emission/Y from Commuters:

Mode of Transport	Average distance Travelled (km)	Number of persons	Kg CO_2 Emission/Y
Train	60	174	131900.7
Auto	1	174	13098.72
Car	60	1	4517.04
Bike	120	1	6017.24
Foot commuters	60	57	0
	Total CO_2 Emission		**155533.7 Kg CO_2/Y**

Table 9: CO_2 Emissions from Purchased Electricity:

Purchased Electricity (kWH)	Emission Factor	Kg CO_2 Emission/Y
17421	0.97	16898.3

Reducing the fuel consumption, electricity consumption, paper waste generation, will lead to reduce carbon dioxide emissions in the atmosphere. Diesel generator and LPG is not used in CSSM campus.

RECOMMENDATION:

1) Feasibility study should be carried out to reduce the usage of purchased electricity by installing more solar panels.
2) Develop target-oriented energy reduction plan related minimise corban emission.

7.0 CONCLUSIONS AND RECOMMENDATIONS

Green Audit is the most efficient way to identify the strength and weakness of environmentally sustainable practices and to find a way to solve problem. Green Audit is one kind of professional approach towards a responsible way in utilising economic, financial, social and environmental resources. Green audits can "add value" to the management approaches being taken by the CSSM and is a way of identifying, evaluating and managing environmental risks (known and unknown). There is scope for further improvement, particularly in relation to wastewater and water management. CSSM in recent years consider the environmental impacts of most of its actions and makes a concerted effort to act in an environmentally responsible manner. The recommendations in this report highlighted more ways in which the CSSM can work to improve its actions and become a more sustainable entity.

CSSM does have Waste Management Policy and Energy Policy that showcase their environmental commitment. Waste Management Policy and Energy Policy is the commitment of an institute towards the laws, regulations, and other policy mechanisms concerning environmental issues. These issues generally include air and water pollution, waste management, ecosystem management, maintenance of biodiversity, the management of natural resources. Policy should be reviewed periodically based on revised environmental goals. CSSM can develop environmental management system to address above mentioned issues with specific reduction plan.

Water and wastewater management can be the areas of improvement for CSSM. At present CSSM is not treating and reusing/ recycling the sewage generated through the washing & toilet areas. CSSM can plan to install Sewage Treatment Plant and use the treated wastewater for gardening purpose or toilet flushing purpose. Further water quantification is not carried out anywhere in the CSSM except by MCGM for inlet water. It is recommended that CSSM can install water meters at each floor to monitor the water usage at microlevel. Monitoring the water flow will also help CSSM to plan water conservation targets. CSSM can plan for installing waterless urinals to reduce the water usage in the future.

E-waste disposal to authorised recycler (authorised by Maharashtra Pollution Control Board) should be in regular practise. Inventory management of different types of wastes are recommended. Colour coded waste segregation bins are recommended in the premises. Initiatives should be taken to make the CSSM campus Paper less communication to avoid burden overs trees. Also bio-composting units can be installed in the premises for manure generation.

Solar panels are installed in CSSM to minimise the dependency on conventional source of energy. The CSSM can plan to expand solar panel installation. Maximum LED tube lights are used in the premises. The fans of older generation and non-energy efficient present in the building premises can be phased out by replacing with new energy efficient fans.

8.0 ACKNOWLEDGEMENTS

Technocrats is thankful to the Management of the Chembur Sarvankash Shikshanshastra Mahavidyalaya and the Principal Dr. Chandrashekher Ashok Chakradeo, for entrusting processes of green auditing with us. We thank all other participant of the auditing team who took pain along with us to gather data through survey. We are also thankful to the office staff who helped us during the document verification.

9.0 ANNEXURE: NAAC CERTIFICATE

राष्ट्रीय मूल्यांकन एवं प्रत्यायन परिषद

विश्वविद्यालय अनुदान आयोग का स्वायत्त संस्थान

NATIONAL ASSESSMENT AND ACCREDITATION COUNCIL

An Autonomous Institution of the University Grants Commission

Certificate of Accreditation

The Executive Committee of the
National Assessment and Accreditation Council
on the recommendation of the duly appointed
Peer Team is pleased to declare the
Chembur Sarvankash Shikshanshastra Mahavidyalaya
Chembur, Mumbai, affiliated to University of Mumbai, Maharashtra as
Accredited
with CGPA of 3.35 on seven point scale
at A grade
valid up to January 22, 2022

Date : January 23, 2017

Director

EC(SC)/21/A&A/93

राष्ट्रीय मूल्यांकन एवं प्रत्यायन परिषद

विश्वविद्यालय अनुदान आयोग का स्वायत्त संस्थान

NATIONAL ASSESSMENT AND ACCREDITATION COUNCIL

An Autonomous Institution of the University Grants Commission

Quality Profile

Name of the Institution : Chembur Sarvankash Shikshanshastra Mahavidyalaya

Place : Chembur, Mumbai, Maharashtra

Criteria	Weightage (W_i)	Criterion-Wise Grade Point Averages (Cr_i GPA)	W_i X Cr_iGPA
I. Curricular Aspects	050	3.00	150
II. Teaching-Learning and Evaluation	450	3.10	1395
III. Research, Consultancy and Extension	100	3.50	350
IV. Infrastructure and Learning Resources	100	3.70	370
V. Student Support and Progression	100	4.00	400
VI. Governance and Leadership	150	3.23	485
VII. Innovative Practices	050	4.00	200
Total	$\sum_{i=1}^{7} w_i = 1000$		$\sum_{i=1}^{7}(W_i \text{ X } Cr_i GPA) = 3350$

$$\text{Institutional CGPA} = \frac{\sum_{i=1}^{7}(W_i \text{ X } Cr_i GPA)}{\sum_{i=1}^{7} W_i} = \frac{3350}{1000} = 3.35$$

Grade = A

Date : January 23, 2017

Director

- This certification is valid for a period of Five years with effect from January 23, 2017
- An institutional CGPA on seven point scale in the range of 3.76 - 4.00 denotes A⁺⁺ grade, 3.51 - 3.75 denotes A⁺ grade, 3.01 - 3.50 denotes A grade, 2.76 - 3.00 denotes B⁺⁺ grade, 2.51 - 2.75 denotes B⁺ grade, 2.01 - 2.50 denotes B grade, 1.51 - 2.00 denotes C grade
- Scores rounded off to the nearest integer

BC(SC)/21/A&A/9.3

10.0 ANNEXURE: DETAILS OF ISTALLED SOLAR PANAL

Novae Manufacturing Solutions Private Limited

NMS SOLAR
GO SOLAR, GO GREEN

Commercial/ Tax Invoice

To,
Chembur Sarvankash Shikshanshastra Mahavidyalaya
(Chembur Education Society)
R. C. Marg, Near Municipal Market,
Chembur Naka
Mumbai - 400 071
Maharashtra

Comm. Inv. No - 2016-17/ 011
Invoice Date- 03.12.2016
Transport Mode - By Road

Sr. No.	Description of Goods	Size (in Wp)	Value/Unit	Total Value
	Solar Power Generating System			
1	10 Kwp 3 Phase Solar System	10000	75.00	750,000.00
2	5 Kwp 1 Phase Solar System	5000	85.00	425,000.00
			Sub Total	1,175,000.00
			VAT	-
			ST	-
			Grand Total	1,175,000.00
Amount in Words : Eleven Lakhs Seventy Five Thousand Only				

VAT TIN No.-27741051118V w.e.f 30/03/2014
CST TIN No. -27741051118C w.e.f 30/03/2014
PAN - AADCN6990Q
CIN No. - U29248MH2011PTC220427
Bank Details - HDFC Bank, Vashi, Navi Mumbai
A/c No.- 05402000022728
RTGS/IFSC - HDFC0000540

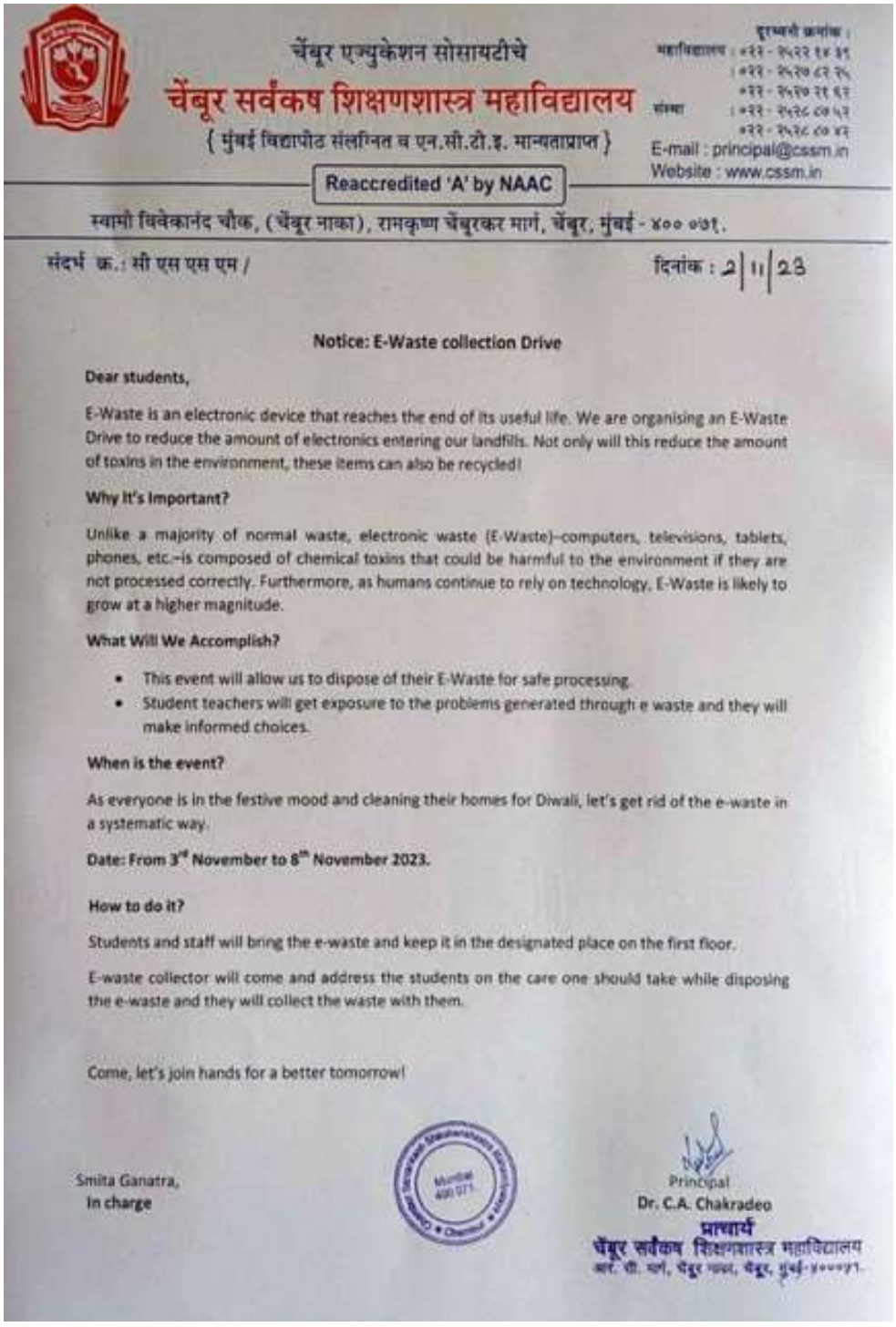
Novae Manufacturing Solutions Private Limited

Authorised Signatory

Declaration:"I/ we hereby certify that my/our registration certificate under the Maharashtra Value Added Tax Act 2002 is in force on the date on which the sale of goods specified in this Invoice is made by me / us and the transaction of sale covered by this Invoice has been effected by me/us and it shall be accounted for in the turnover of sales while filling of returns and the due tax, if any payable on the sale has been paid or shall be paid."

Regd. Office - 201, Ashirwad Complex, Plot No-83, Sector-01, Kopar Khairane, Navi Mumbai - 400709

11.0 ANNEXURE: INITIATIVE TAKEN FOR E-WASTE COLLECTION



चेंबूर एज्युकेशन सोसायटीचे

चेंबूर सर्वंकष शिक्षणशास्त्र महाविद्यालय

{ मुंबई विद्यापीठ संलग्नित व एन.सी.टी.इ. मान्यताप्राप्त }

Reaccredited 'A' by NAAC

दूरध्वनी क्रमांक :
महाविद्यालय : +२२ - २५२२ १४ ३९
: +२२ - २५२७ ८२ २५
संस्था : +२२ - २५२७ २१ ६२
: +२२ - २५२८ ८७ ५२
: +२२ - २५२८ ८७ ४२

E-mail : principal@cssm.in
Website : www.cssm.in

स्वामी विवेकानंद चौक, (चेंबूर नाका), रामकृष्ण चेंबूरकर मार्ग, चेंबूर, मुंबई - ४०० ०७१.

संदर्भ क्र.: सी एस एस एम /

दिनांक : २/११/२३

Notice: E-Waste collection Drive

Dear students,

E-Waste is an electronic device that reaches the end of its useful life. We are organising an E-Waste Drive to reduce the amount of electronics entering our landfills. Not only will this reduce the amount of toxins in the environment, these items can also be recycled!

Why It's Important?

Unlike a majority of normal waste, electronic waste (E-Waste)–computers, televisions, tablets, phones, etc.–is composed of chemical toxins that could be harmful to the environment if they are not processed correctly. Furthermore, as humans continue to rely on technology, E-Waste is likely to grow at a higher magnitude.

What Will We Accomplish?

- This event will allow us to dispose of their E-Waste for safe processing.
- Student teachers will get exposure to the problems generated through e waste and they will make informed choices.

When is the event?

As everyone is in the festive mood and cleaning their homes for Diwali, let's get rid of the e-waste in a systematic way.

Date: From 3rd November to 8th November 2023.

How to do it?

Students and staff will bring the e-waste and keep it in the designated place on the first floor.

E-waste collector will come and address the students on the care one should take while disposing the e-waste and they will collect the waste with them.

Come, let's join hands for a better tomorrow!

Smita Ganatra,
In charge

Principal
Dr. C.A. Chakradeo
प्राचार्य
चेंबूर सर्वंकष शिक्षणशास्त्र महाविद्यालय

12.0 CSSM LAYOUT