

**SRI VENKATESWARA  
COLLEGE OF  
ENGINEERING**



**Prepared by:  
ECO SERVICES INDIA  
PRIVATE LIMITED**

**GREEN, ENVIRONMENT &  
ENERGY AUDIT REPORT:  
2023 - 2024**



27<sup>th</sup> December 2024

### Certificate

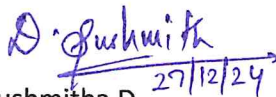
This is to certify that we have conducted a Green, Environment & Energy (GEE) Audit for the Academic Year 2023 – 2024 at the **Sri Venkateswara College of Engineering (SVCE)** campus located in Pennalur Village, Sriperumbudur Taluk, Kancheepuram District, Tamil Nadu

The audit broadly covered the following components in the campus,

- Biodiversity Aspects of Campus
- Solid Waste, Hazardous Waste and Bio-Medical Waste Management
- Water Conservation and Waste Water Management
- Operations of Sewage Treatment Plant (STP) Facilities
- Rain Water Harvesting Facilities
- Renewable Energy/Energy Conservation Aspects
- Transportation Facilities and Carbon Footprint Reduction
- Green Campus/Environmental Promotional Initiatives

The activities and management of various components mentioned above have been verified and found satisfactory. The efforts taken by the management, faculties and students towards Environmental Consciousness and Sustainability are highly appreciated and commendable.

For Eco Services India Pvt. Ltd.,

  
Sushmitha D. 27/12/24

Accredited EIA Coordinator (NABET)



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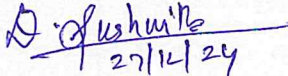
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## Declaration

Our team member has inspected the campus physically towards conducting Green Environment & Energy Audit. We hereby declared that the given audited information's regarding particulars of the Sri Venkateswara College of Engineering campus in the report is correct and we certified the same.

**For Eco Services India Private Limited**

  
27/12/24

NABET Accredited EIA Coordinator

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## **1.0 Introduction**

### **1.1. About SVCE**

Sri Venkateswara College of Engineering (SVCE), managed by Sri Venkateswara Educational and Health Trust (SVEHT) is the one of the pioneer engineering institution in the state inaugurated to foster the academic community since its inception in 1985. The institution implements Engineering programs to promote research, to disseminate knowledge, to exchange of ideas between the academic community & industrial organizations and to develop entrepreneurship skills among students. It strives to achieve academic excellence along with the harmonious development of personality of students for the nearly 4 decades.

SVCE spread over on the 95 acres vast lush green campus located at the Pennalur Village i.e at the western outskirts of Chennai. The campus houses in architecturally exquisite buildings with ample infrastructure such as Laboratories, Workshops, Faculty Rooms, Office, Conference Hall, Dispensary, Technology Innovation Centre, Staff Quarters, Guest House, Open Air Auditorium, Library, Canteen, Hostels, Swimming Pool, RO Plant, Gymnasium, Indoor Sports Facility and Play Grounds.

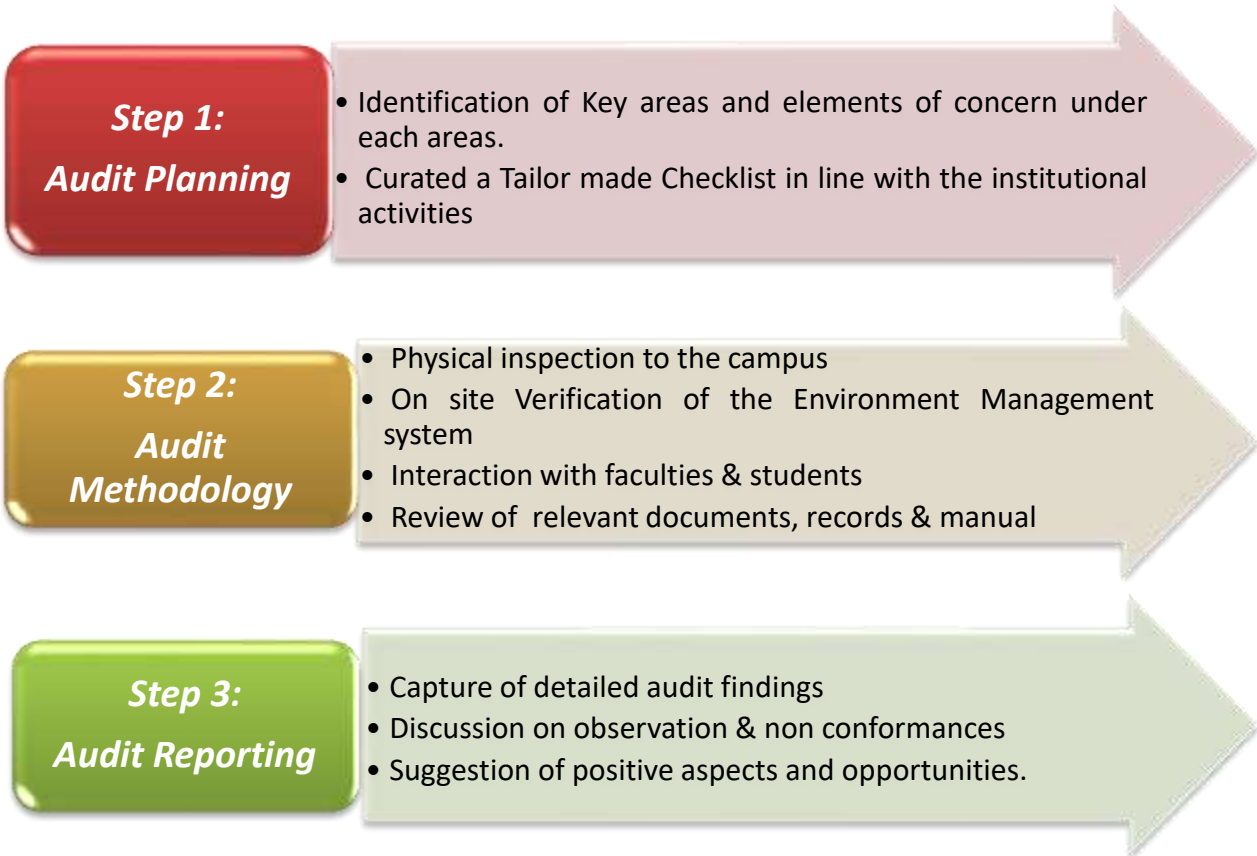
### **1.2. Environmental Framework of Institution**

SVCE prioritize its Environmental Consciousness and sustainability initiatives and have framed an Exclusive Environmental & Green Policy to adopt by the institution. In order to evaluate their commitment towards environment & sustainability, the Green & Environment Audit is being conducted in every Academic Year. Hence, SVCE has engaged Eco Services India Private Limited, an accredited Environmental Consultant & Advisory to evaluate, audit and report the Environmental Management & sustainability initiatives and efforts practiced at their institution.

The audit also reviews the extent to which the campus activities are in compliance with the applicable regulations, policies and standards pertaining to the environmental entirety of the campus. In addition, the specific Environmental objectives set for the institution were evaluated to ensure the Environment & Sustainability Framework of the institution is in place.

## 2.0 Audit Framework

The Audit Team understood the scope of work and framed the audit Framework as follows steps.



## 3.0 Audit Findings & Recommendations

The Audit Findings against environmental objective/area/aspects were evaluated and enlisted in the table 3.1. The supporting documents & detailed information about the Environmental Management Measures and other initiatives is appended as Annexures.

Table 3.1 Detailed Audit Findings:

Area/Aspect	Objectives/Criteria	Audit observation on Implementation
Environmental Objectives	<ul style="list-style-type: none"> <li>To inculcate a strong sense of commitment and responsibility among students and members of faculty to follow an eco-friendly life style and habitats</li> </ul>	<ul style="list-style-type: none"> <li>The Plastic Free, Litter free &amp; lush green campus implies the understanding &amp; commitment of the management, students and faculty to the environmental &amp; sustainability initiatives.</li> <li>It is reported that Environmental Promotional activities such as Plantation programme, Speeches &amp; symposiums are regularly organized to inculcate a strong sense of commitment and responsibility among students and faculty.</li> </ul>
	<ul style="list-style-type: none"> <li>To make students aware of the sustainability goals at the micro and macro level and to strengthen their participation and involvement to promote and implement sustainability goals.</li> </ul>	<ul style="list-style-type: none"> <li>The "Environmental Science and Engineering (GE18251)" course is mandated in their curriculum, fostering environmental awareness and encouraging them to assess the quality of their surroundings.</li> <li>The institution has established an Environmental Committee comprising faculty and students, which meets regularly to promote and oversee environmental initiatives.</li> <li>Field visits are organized for students to deepen their understanding of environmental significance and cultivate a positive perception of ecosystem services.</li> <li>The committee provides guidance and monitors the environmental and sustainability practices implemented by the institution.</li> </ul>
	<ul style="list-style-type: none"> <li>To advance governance regarding environment compliance and employ methods to reduce the waste,</li> </ul>	<ul style="list-style-type: none"> <li>Students and faculty are encouraged to adopt the 3R principles (Reduce, Reuse, and Recycle) as part of the institution's sustainability efforts.</li> <li>Waste generated on campus is treated and reused, contributing to</li> </ul>

Area/Aspect	Objectives/Criteria	Audit observation on Implementation
	and conserve energy, and water consumption.	<p>effective waste management practices.</p> <ul style="list-style-type: none"> <li>Approximately 121 KLD of treated sewage is being reused for maintaining the campus green belt, indicating resource-efficient practices.</li> </ul>
	<ul style="list-style-type: none"> <li>To improve the biodiversity in the campus</li> </ul>	<ul style="list-style-type: none"> <li>During the assessment year 2023–2024, a total of 500 tree saplings were planted and are being well-maintained on the campus.</li> <li>Both flowering and non-flowering plant species have been cultivated to enhance the campus's aesthetics and provide a habitat for biodiversity. QR codes have been installed under each tree, offering detailed morphological information, which is an excellent initiative for students to learn about plant conservation.</li> <li>Mature deep-rooted trees, aged 20–30 years, were observed and are being effectively maintained.</li> <li>Nectar-yielding plants have been intentionally planted to attract insects and butterflies, supporting the pollination process.</li> <li>Two microhabitats have been created, providing shelter for insects, butterflies, dragonflies, squirrels, and birds.</li> <li>Naturally, fleets of butterflies were observed around the shrubs, indicating healthy biodiversity.</li> <li>Greenbelt development has been strategically planned and implemented around the campus periphery.</li> <li>Water bowls and feeder boxes were observed placed under trees, catering to the needs of birds and other small animals.</li> </ul> <p>(Photographs of flora and Fauna attached as Annexure I)</p>



Area/Aspect	Objectives/Criteria	Audit observation on Implementation
	<ul style="list-style-type: none"> <li>To be recognized as Eco Friendly and Green Campus.</li> </ul>	<ul style="list-style-type: none"> <li>A composting yard for managing horticultural waste was observed, reflecting effective waste management practices.</li> <li>The operation of a biogas plant treating food waste from the canteen was noted, indicating a sustainable approach to waste utilization.</li> <li>E-shuttles were employed on campus, supporting low-carbon transportation initiatives.</li> <li>Eco-friendly practices such as avoiding single-use plastics, maintaining a lush green belt, utilizing solar energy, and operating an in-situ STP (Sewage Treatment Plant) were observed, showcasing the institution's commitment to sustainability.</li> </ul>
Energy Conservation	<ul style="list-style-type: none"> <li>Utilization of Solar Energy</li> </ul>	<ul style="list-style-type: none"> <li>Photovoltaic Panels of 35 KW was installed over the Terrace in one of Academic blocks. The Photographs of solar panel &amp; Solar heater is enclosed as Annexure - II)</li> <li>Solar water heaters are installed in the hostel blocks</li> </ul>
	<ul style="list-style-type: none"> <li>Use of LED Bulbs/ energy saving Fixtures</li> </ul>	<ul style="list-style-type: none"> <li>All the lighting Fixtures inside the Admin Block, New Library Block, and Canteen and in some Hostel Blocks are LED types.</li> <li>It is informed that eventually all the CFL Lamps are being replaced with LED fixtures.</li> </ul>
	<ul style="list-style-type: none"> <li>Transportation &amp; Carbon Footprint Reduction</li> </ul>	<ul style="list-style-type: none"> <li>E – shuttles facilities could be seen in the campus</li> <li>Students &amp; staffs were encouraged to opt of common/ college bus &amp; E – Shuttle services to minimize the travel carbon foot print.</li> <li>Fuel Free - Material handling carts employed to save fuel</li> </ul> <p>The Photographs of transportation services (Diesel vehicles &amp; E-</p>

Area/Aspect	Objectives/Criteria	Audit observation on Implementation
	<ul style="list-style-type: none"> <li>Bio gas &amp; other alternative fuels</li> </ul>	shuttles) is enclosed herewith as Attached as Annexure - III <ul style="list-style-type: none"> <li>The institution operates a biogas plant with a capacity of 35 cu.m to treat food waste, supporting sustainable waste management.</li> <li>A biogas storage cylinder for reuse in the kitchens was observed, further enhancing the efficiency of the system.</li> </ul> The Photographs of biogas plant components enclosed as Annexure - V
Water Conservation	<ul style="list-style-type: none"> <li>Rain Water Harvesting</li> </ul>	<ul style="list-style-type: none"> <li>A large rainwater harvesting pond with a capacity of 4 MLD was observed.</li> <li>Internal storm water drains have been constructed to direct runoff to the rainwater harvesting pond.</li> </ul>
	<ul style="list-style-type: none"> <li>Recycling of treated sewage/ water</li> </ul>	<ul style="list-style-type: none"> <li>Excess storm runoff is collected, treated, and reused for purposes such as flushing and gardening.</li> <li>A Water Treatment Plant (WTP) is observed for the treatment of storm runoff.</li> </ul>
	<ul style="list-style-type: none"> <li>Water Quality</li> </ul>	<ul style="list-style-type: none"> <li>A Water Treatment Plant (WTP) with a capacity of 250 KLD is operational to treat raw water.</li> <li>The treated water from the WTP is utilized for toilet flushing and greenbelt, ensuring effective resource management as per water quality standards. The Photographs of WTP enclosed as Annexure IV</li> <li>Reports from NABL Accredited labs were reviewed and qualities of water samples are well within the ISO 10500:2012 standards.</li> </ul>
	<ul style="list-style-type: none"> <li>Water Distribution system</li> </ul>	<ul style="list-style-type: none"> <li>Drinking Water distributed through Water Dispenser bottles and</li> </ul>

Area/Aspect	Objectives/Criteria	Audit observation on Implementation
		dispatched to classrooms and all other blocks.
Waste Management	<ul style="list-style-type: none"> <li>• Municipal Solid Waste Management</li> </ul>	<ul style="list-style-type: none"> <li>• Campus declared to be a Plastic Free Zone</li> <li>• Tri color Bin – Collection System near the entry/exit of can be found near Blocks, Canteens &amp; common areas.</li> <li>• Workers stated that Organic Waste generated is treated in Bio gas plant and the horticultural wastes were treated in a separate Composting Yard.</li> <li>• Bio Gas flow records reviewed and found effective.</li> <li>• It is informed that recyclable plastic and paper waste is stored and periodically handed over to ITC wealth out of Waste Recycling drive.</li> <li>• The Bio gas plant Photographs attached as Annexure – V</li> </ul>
	<ul style="list-style-type: none"> <li>• E-waste management</li> </ul>	<ul style="list-style-type: none"> <li>• Separate Room stacked with E waste components CPU, Monitors etc. is inspected.</li> <li>• The MOUs &amp; Photos of E Waste storage room were reviewed</li> </ul>
	<ul style="list-style-type: none"> <li>• Hazardous Waste Management</li> </ul>	<ul style="list-style-type: none"> <li>• The Spent lube oil derived from DG sets is stored separately.</li> </ul>
Air Emissions & Control	Stack Emissions	<ul style="list-style-type: none"> <li>• Exhaust Stack connected to for 3 Nos. of Diesel Generator sets.</li> <li>• Stack Height is in line with CPCB Norms and Consent issued.</li> <li>• Photographs showing the existing Exhaust of Chimney of DG Set, Acoustic enclosure are enclosed.</li> </ul>

Area/Aspect	Objectives/Criteria	Audit observation on Implementation
Waste Water Management	<ul style="list-style-type: none"> <li>Treatment options available</li> </ul>	<ul style="list-style-type: none"> <li>Conventional Activated Sludge Process Based STP is seen under operation.</li> <li>Tertiary Treatment systems Ultra Filtration installed to increase the quality of treated sewage.</li> </ul>
	<ul style="list-style-type: none"> <li>Waste water Quality</li> </ul>	<ul style="list-style-type: none"> <li>Month wise STP Outlet Sample Test Reports was reviewed.</li> <li>Environmental Monitoring Reports shows that the Treated Sewage meets the TNPCB Norms.</li> </ul>
Green Campus & Environment Initiatives	Environmental awareness workshops	<ul style="list-style-type: none"> <li>Environmental Committee formed with senior faculties.</li> <li>The Hierarchy chart with Qualification was verified.</li> <li>Institution has created the active CARE Eco club conducting activities.</li> <li>Tree Sapling plantation programs have been conducted to create environmental awareness.</li> <li>Institution is regularly conducting Seminars and awareness programme to highlight the principle of Sustainability in every seminars &amp; programs</li> <li>The Photos &amp; list of activities carried out to promote environmental awareness can be seen in Annexure – X.</li> </ul>
Statutory Compliance	Compliance with the Environmental Statutory Requirement.	<ul style="list-style-type: none"> <li>Renewed Consent To Operate under Air &amp; Water Acts is obtained from Tamil Nadu Pollution Control Board on 23.08.2022 valid till 31.03.2027.</li> <li>Environmental Clearance from State Environment Impact Assessment Authority dated 29.04.14 is available and reviewed.</li> </ul>

**Recommendations:**

- Hazardous Waste Authorization for Spent oil from DG sets to be renewed through TNPCB
- Vermicomposting Arrangements to be utilized to the maximum extent possible, considering the space availability.
- Plantation of Fruiting trees such Black Plum, Ficus, Berries, etc. will attract more birds and helps in the improving the micro habitat of the campus.

## Annexures

### Annexure I

#### Bio Diversity:

The educational Institution Campus has already developed adequate number of trees plantation all along the periphery and inside the campus, roadways and available open spaces. The major aim of greenbelt development plan is to attenuate air pollutants released into the environment but it can also help in overall improvement in maintaining the microclimate of the campus.

#### Floral Diversity:

A well designed green-belt helps in intercepting particulate matter and gaseous pollutants and helps in purifying the air. Trees acts as effective barrier and absorber of noise. The green belts developed around the campus provide habitats for a variety of flora & Fauna in the campus. It also promotes aesthetic values of the campus. Around 4500 no. of trees were planted in the entire campus. It is informed that Tree Plantation Programme is carried out each year, to further improve the green cover of the campus.

**Table 4.1 List of Native Tree saplings planted in AY 2023-2024:**

S. No	Common Name	Botanical Name	Vernacular Name
1	Ceylon ebony	<i>Diospyros ebenum</i>	Kurungali
2	Alexandrian laurel	<i>Calophyllum inophyllum</i>	Punnai
3	Wood-apple	<i>Limonia acidissima</i>	Vilampazham
4	Indian Almond	<i>Terminalia catappa</i>	Badham
5	Nandi Tree	<i>Lagerstroemia lanceolata</i>	Nandhi
6	Neem Tree	<i>Azadirachta indica</i>	Vembu
7	Ben Teak	<i>Lagerstroemia microcarpa</i>	Ven Thekku

**Table 4.2 - List of Tree Species Identified in the Campus:**

S. No	Common Name	Botanical Name	Vernacular Name	IUCN Category
1	Flame Tree	<i>Delonix regia</i>	Sengonrai Maram	LC
2	Fishing rod tree	<i>Pterospermum suberifolium</i>	Taddaemarum	LC
3	Flame of the forest	<i>Butea monosperma</i>	Kincukam	LC
4	Trumpet/ Yellow Snake tree	<i>Stereospermum colais</i>	Vasanth Rani	LC
5	Ceylon ebony tree, East Indian Ebony	<i>Diospyros ebenum</i>	Karungali	DD
6	Jodpakli	<i>Dimorphocalyx glabellus</i>	Thenthukk	LC

S. No	Common Name	Botanical Name	Vernacular Name	IUCN Category
7	Seashor	<i>Pongamia pinnata</i>	Pongam	LC
8	Alexandrian laurel	<i>Calophyllum inophyllum</i>	Punnai maram	LC
9	Indian lilac	<i>Azadirachta indica</i>	Malai vembu	LC
10	Rain Tree	<i>Samanea saman</i>	Seema vaigai	LC
11	Banyan	<i>Ficus benghalensis</i>	Aalam	LC
12	Fig tree	<i>Ficus glomerata</i>	Atthi maram	LC
13	Strangler fig	<i>Ficus aurea</i>	Atthi maram	LC
14	Noni	<i>Morinda tinctoria</i>	Nuna maram	LC
15	Neem	<i>Melia dubia</i>	Malai Vembu	LC
16	Indian bael	<i>Aegle marmelos</i>	Vilva maram	NT
17	Tamarind tree	<i>Tamarindus Indica</i>	Puliyamaram	LC
18	Pink Poui	<i>Tabebuia rosea</i>	Vasantharani Tree	LC
19	Royal Palm	<i>Roystonea regia</i>	Panamaram	LC
20	Fishtail Palm	<i>Caryota urens</i>	Panamaram	LC
21	Table palm	<i>Livistona Rotundifolia</i>	Panamaram	NE
22	Areca palm	<i>Dyopsis lutescens</i>	Date Palm	NT
23	Date palm	<i>Phoenix dactylifera</i>	Date tree	LC
24	Copperpod	<i>Peltophorum pterocarpum</i>	Perungondraii maram	LC
25	Pheasantwood	<i>Cassia Siamea</i>	Sinnakennai	LC
26	Casuarina	<i>Casuarina junghuhniana</i>	Savukku maram	LC
27	Zebra wood	<i>Guettarda speciosa</i>	Panneer maram	LC
28	Devils Tree	<i>Alstonia scholaris</i>	Ezilai aalai	LC
29	Kadam	<i>Neolamarckia cadamba</i>	Kadamba maram	NT
30	Teak	<i>Tectona grandis</i>	Thekku maram	EN
31	Beach-almond	<i>Terminalia bellirica</i>	Than-dri kai maram	LC
32	Golden Shower, Indian Laburnum	<i>Cassia fistula</i>	Sarakondrai	LC
33	Indian cork tree	<i>Millingtonia hortensis</i>	Mara malli	LC
34	Cannon Ball Tree	<i>Couropita guianensis</i>	Nagalinga maram	LC
35	Indian ash tree	<i>Lannea coromandelica</i>	Othiyan maram	LC
36	Malabar plum	<i>Syzygium cumini</i>	Naval maram	LC
37	Indian medlar	<i>Mimusops elengi</i>	Makila maram	LC
38	Butter tree	<i>Madhuca longifolia</i>	Iluppai maram	LC
39	Mango tree	<i>Mangifera indica</i>	Maa amram	LC
40	Bastard poon tree	<i>Sterculia foetida</i>	Pootha karapaan	LC
41	Red Sandalwood	<i>Adenantha pavonina</i>	Annai kundrimani	LC
42	Karimaruthu	<i>Terminalia elliptica</i>	Neer mathi	LC
43	Sea almond	<i>Terminalia catappa</i>	Badam tree	LC
44	Gooseberry tree	<i>Phyllanthus emblica</i>	periya nelli maram	LC
45	Indian rock fig	<i>Ficus arnottiana</i>	Kallala maram	LC
46	Notched Leaf Soapnut	<i>Sapindus emarginatus</i>	Poovandikottai	LC

S. No	Common Name	Botanical Name	Vernacular Name	IUCN Category
			Maram	
47	Big Leaf Mahogany	<i>Swietenia macrophylla</i>	Mahogany	EN
48	Orchid tree	<i>Bauhinia variegata</i>	Mantharai	LC
49	Orchid tree	<i>Bauhinia racemosa</i>	Mantharai	LC
50	Malayan Cherry	<i>Muntingia calabura</i>	Malayan Cherry	LC
51	River tamarind	<i>Leucaena leucocephala</i>	Peru-n-takarai	LC
52	Nipa palm	<i>Nypa fruticans</i>	Panamaram	LC
53	Guava	<i>Psidium guajava</i>	Guava	LC
54	Pala indigo	<i>Wrightia tinctoria</i>	Veppalai	LC
55	Yellow Trumpetbush	<i>Tecoma stans</i>	Nagasambagam	LC
56	Earleaf acacia	<i>Acacia auriculiformis</i>	Kaththik karuvel	LC
57	Champak	<i>Magnolia champaca</i>	Sambagam	LC
58	Manorangitham	<i>Artabotrys hexapetalus</i>	Manoranidam	LC
59	copperleaf	<i>Acalypha wilkesiana</i>	Shrub	LC
60	ziricote	<i>Cordia dodecandra</i>	Tree	LC
61	Geiger Tree	<i>Cordia sebestena</i>	Tree	LC
62	Rattleweed	<i>Crotalaria retusa</i>	Shrub	LC
63	Flamboyant	<i>Delonix regia</i>	Tree	LC
64	Horse Bush	<i>Dendrolobium umbellatum</i>	Shrub	LC
65	Bamboo palm	<i>Dyopsis lutescens</i>	Tree	LC
66	Zigzag Plant	<i>Euphorbia tithymaloides</i>	Shrub	LC
67	Shortleaf fig	<i>Ficus citrifolia</i>	Tree	LC
68	Jasmine	<i>Gardenia jasminoides</i>	Herb	LC
69	jungle geranium	<i>Ixora coccinea</i>	Herb	LC
70	water lettuce	<i>Pistia stratiotes</i>	Floating	LC
71	Pink Trumpet Vine	<i>Podranea ricasoliana</i>	Shrub	LC
72	Guava Tree	<i>Psidium guajava</i>	Tree	LC
73	Siamese Cassia	<i>Senna siamea</i>	Tree	LC
74	Hazel Sterculia	<i>Sterculia foetida</i>	Tree	LC
75	Crepe Jasmine	<i>Tabernaemontana divaricata</i>	Shrub	LC
76	Arjun Tree	<i>Terminalia arjuna</i>	Tree	EN
77	Indian Almond	<i>Terminalia catappa</i>	Tree	LC
78	Madagascar Almond	<i>Terminalia mantaly</i>	Tree	LC
79	Grader grass	<i>Themeda quadrivalvis</i>	Grass	LC
80	Indian Privet	<i>Volkameria inermis</i>	Shrub	LC
81	Indian medlar	<i>Mimusops elengi</i>	Tree	LC
82	Madras thorn	<i>Pithecellobium dulce</i>	Tree	LC
83	Trumpet Tree	<i>Tabebuia pallida</i>	Tree	LC
84	sausage tree	<i>Kigelia africana</i>	Tree	LC
85	Tree River tamarind	<i>Leucaena leucocephala</i>	Periya Thagarai	LC



S. No	Common Name	Botanical Name	Vernacular Name	IUCN Category
LC: Least Concern, EN: Endangered, NT: Near Threatened, NE: Not Evaluated				





**Greenbelt activities in the campus**



**Kassod Tree**



**Geiger Tree**



**Arjuna Tree**



**Horse Bush**

**Ornamental Plants****QR code - information on Neem Tree****QR code - information on Banyan Tree**

QR code Boards carrying information on species, importance & medicinal properties of tree species has been installed near the prominent trees in the campus. This helps students, teachers and visitors to become familiarize and understand about importance of such trees in the campus.

**Faunal Diversity:**

It was also noted during the audit, a micro habitat was created within the campus with aim of marinating the biodiversity of the campus. Varieties of plant diversity such as larger trees, medium trees, small trees, shrubs, herbs and grasslands attracted varieties of terrestrial common birds in the campus. According to Prof.T.Murugavel a bird enthusiastic survey he has recorded around 82 bird species in the campus.

During the campus study most common faunal species were recorded such as dogs (*Canis lupus*), squirrels (*Funambulus palmarum*), cats (*Felis catus*), common green pond frogs (*Rana hexadactylus*), garden lizards (*Calotes versicolor*) and geckos (*Hemidactylus frenatus*). Six most common butterflies were recorded in the campus which includes Common Rose (*Papilio helenus*), Red Helen (*Papilio demoleus*), Lime Butterfly (*Papilio polytes*), Common Mormon (*Catopsilia pyranthe*), Pieridae (*Catopsilia Pomona*), Common Jezebel (*Delias eucharis*) and White Cabbage (*Pachliopta aristolochiae*).



**Dog & puppies**



**Common Tiger**



**Photographs showing Microhabitat developed in the campus**

## Annexure II

### Power Requirements & Energy Sources

This criteria addresses energy consumption, energy sources, energy monitoring, lighting, appliances, and vehicles. Energy use is clearly an important aspect of campus sustainability and thus requires no explanation for its inclusion in the assessment. However, many may not realize how much influence the higher education sector has in the larger energy market. Energy sources utilized by all the departments and common facility centers include electricity.

The office, canteen, hostels and laboratories for lighting, and laboratory activities are the major energy users in the campus. The total connected load is 1089 kVA and sanctioned demand from TNEB is 9000 kVA. The campus is achieved utilizing the Solar Energy to generate 35 kwh out of the total consumption. Furthermore the followings are adopted as energy conservation measures in the campus.

**Table 4.3 Transformer and Diesel Generator Details**

S.No.	Power House	Transformer	Qty	Total Capacity
1	Sub Station	500 kVA	3	1500 KVA

S.No.	Generators	Capacity	Qty	Make	Status
1	DG sets 1	500 kVA	1 Ns	Powerica	Under Operation
2	DG sets 2	500 kVA	1 Ns	Powerica	Under Operation
3	DG sets 3	380 kVA	1 Ns	Powerica	Under Operation

#### Energy Conservation Measures:

- CFL and LED lamps have been installed in Library building, Academic & Hostel buildings to reduce energy consumption.
- Thermal comfort and humidity levels are maintained in accordance with applicable standards, and the building's thermal insulation is designed to minimize heating and cooling needs, considering the local climate.
- Solar panels of 35 kW capacity installed on the terraces of academic blocks, which helps in offset of CO<sub>2</sub> emissions from conventional energy sources. Solar energy is used for both lighting and water heating, with solar water geysers also installed in the hostel blocks.

- All lighting fixtures inside the Admin Block, New Library Block, Canteen, and some Hostel Blocks are LED types, with plans in place to replace all CFL lamps with LED fixtures.
- E-shuttle facilities are available on campus, and students and staff are encouraged to use the common/college bus and e-shuttles to reduce their travel carbon footprint.
- Fuel-free material handling carts are employed, supporting sustainability by reducing fuel consumption
- Biogas is used for cooking, significantly reducing LPG consumption.



**LED Lights installed in Library Block**



**Solar Geysers installed above Hostel blocks**



**Solar panels installed above Academic Block**



**Lightning Arrestor**





**DG sets with acoustic enclosures & Stack arrangements**

### **Annexure III Transportation Facilities**

Majority of the students in the campus rely on public transport, and the transport service provided by the educational institution indicating lesser carbon foot print of the student community. The institution has also provided E vehicles for commuting the students & staffs within the Campus. Diesel buses for commuting the students & staffs from various parts of city in daily basis. Bicycle usage is also introduced and prmoted in the Campus



**E – Shuttles operating inside the campus**



**Common Transportation facilities (E Shuttle & Buses)**



**Bicycle usage in the Campus**

### Annexure IV Water & Waste Water Management

The Campus Water Requirement is reported as 388 KLD and their Fresh Water Requirement is said to be 158 KLD (which is being sourced through the Private Tankers water supply and treated in Water Treatment Plant with a capacity of 250 KLD) and the Recycled water requirement is 230 KLD.

The Sewage generation from the campus is about 234 KLD which is being treated in Sewage Treatment Plant having 250 KLD Capacity. The details of water requirement and the water balance chart are shown in table below:

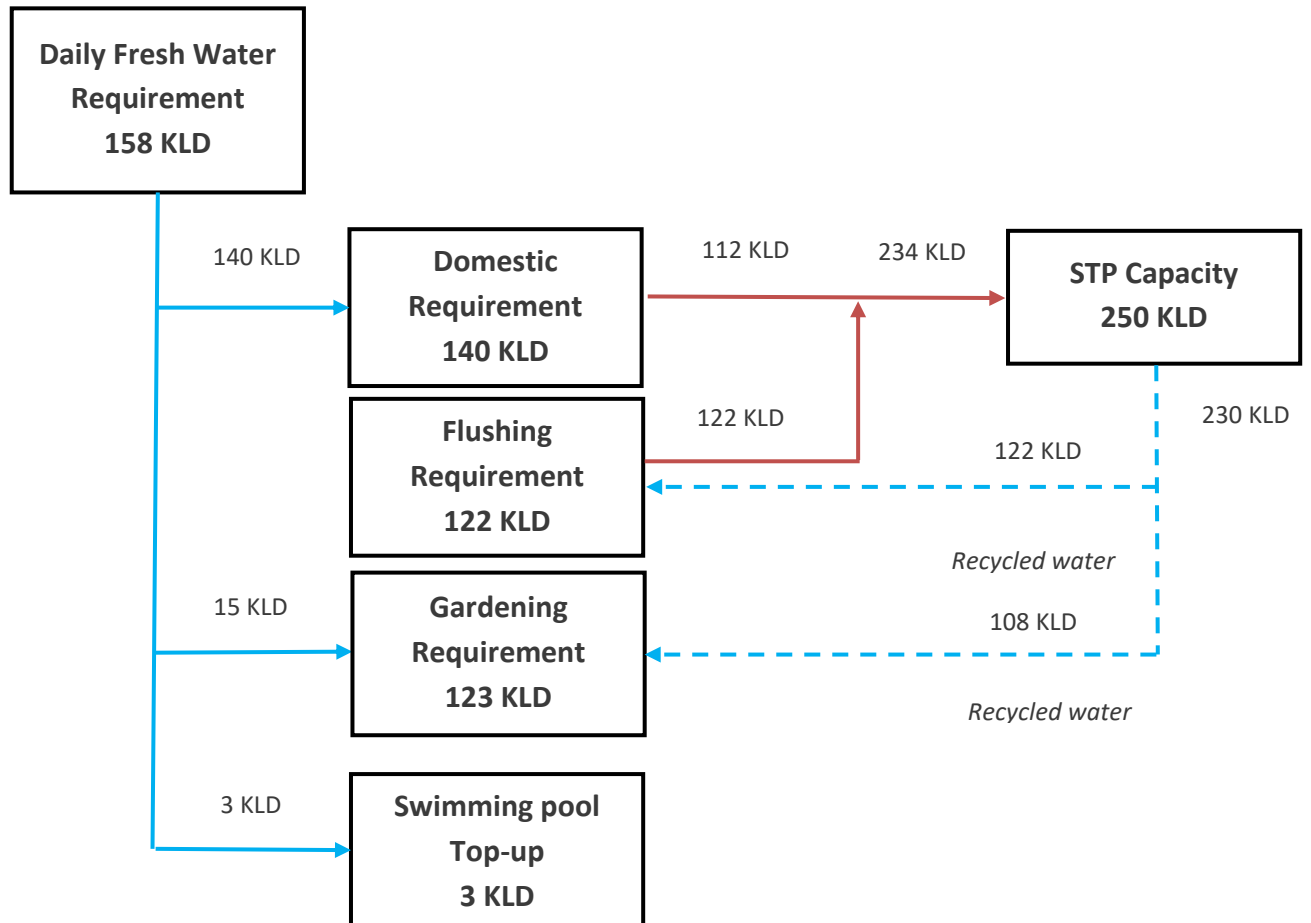
**Table 4.4 – Water requirement of the Campus**

Project Component	Total Occupancy (Nos.)	Water Requirement (LPCD)			
		Water Requirement rate (LPCD)	Fresh Water for Domestic Requirement	Flushing Requirement	Total Water Requirement (L)
Students	3756	45	20	25	169,020
			75,120	93,900	
Teaching Staff	281	45	20	25	12,645
			5,620	7,025	
Boys Hostel	615	90	70	20	55,350
			43,050	12,300	
Girls Hostel	147	90	70	20	13,230
			10,290	2,940	
Non-Teaching Staff	200	45	20	25	9,000
			4,000	5,000	
Staff Quarters	26	135	90	45	3,510
			2,340	1,170	
Swimming pool Top-up	-	-	3,000	-	3,000
<b>Sub Total</b>	<b>5,025 Nos.</b>	-	<b>1,43,420</b>	<b>1,22,335</b>	<b>2,65,755</b>
Green belt Development	-	35000 @ 3.5 KL per Ha	15000	1,08,500	1,22,500
<b>Total</b>			<b>1,58,420 KLD</b>	<b>2,30,835 KLD</b>	<b>3,88,255 KLD</b>
			<b>(Say 158 KLD)</b>	<b>(Say 231 KLD)</b>	<b>(Say 389 KLD)</b>

About 60% of the total water demand is being met through the recycled water from the STP's which used for toilet flushing and green belt development within the premises. For

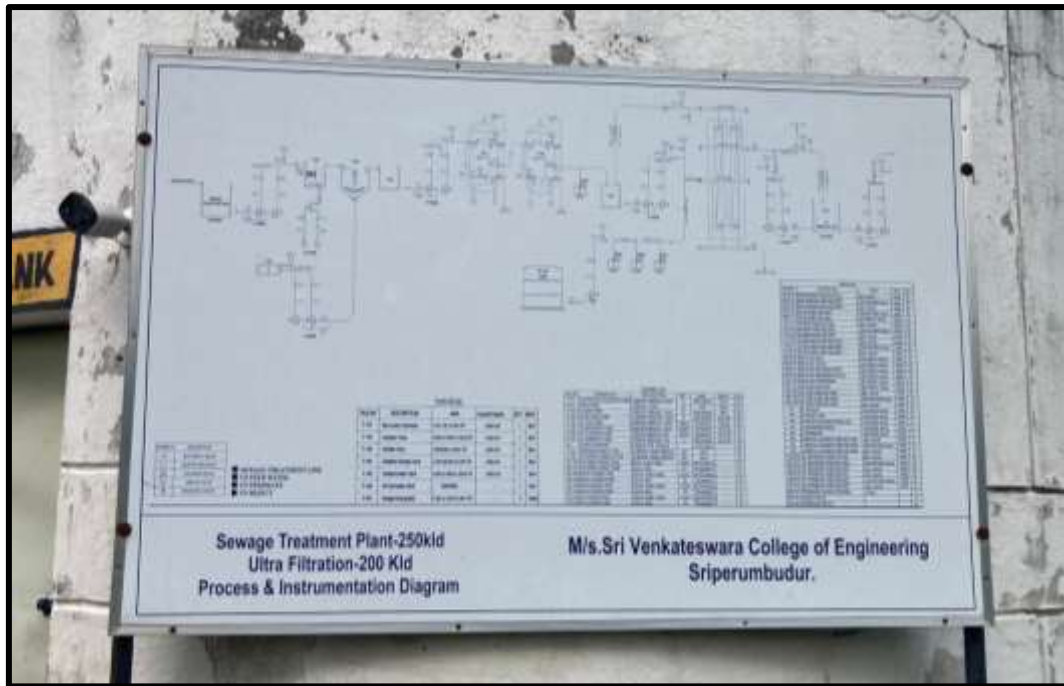
this dual piping system has been incorporated in the campus. The gardening water requirement totals to 123 KLD.

**Water Balance Chart:**





**Water Treatment Plant Facilities**



Photographs showing the Sewage Treatment Plant Scheme & Units



Bar Screen Chamber



**Collection Tank**



**Aeration Tank**





**Clarifier Tank**



**Clarified Water Storage Tank**



**Pressure Sand Filter & Activated Carbon Filter**



**Ultra Filtration Plant**



**Sludge Drying Bed**

**Annexure V**  
**Solid Waste Management**

The solid waste generation of the campus comprises of biodegradable waste e.g. domestic waste, food waste, horticultural waste etc. and recyclable waste, like plastics, paper etc., and inert fractions. The current scenario of solid waste is as follows:

**Table 4.5 – Solid Waste Generation in the Campus**

S. No	Project Component	Total Occupancy (Nos.)	Per Capita generation (Kg/P/D)	Total Solid Waste Generation (Kg/day)	Bio Degradable Waste (Kg/day)	Non Bio Degradable Waste (Kg/day)
1	Students	3,756	0.4	1502	901	601
2	Teaching Staff	281	0.4	112	67	45
3	Boys Hostel	615	1.2	738	443	295
4	Girls Hostel	147	1.2	176	106	70
5	Non-Teaching Staff	200	0.4	80	48	32
6	Staff Quarters	26	0.6	16	10	6
<b>Total Solid Waste Generation (Kg/day)</b>		<b>5,025 Nos.</b>	-	<b>2,624</b>	<b>1,575</b>	<b>1,049</b>
<b>Total (Tonnes/day)</b>			-	<b>2.62</b>	<b>1.6</b>	<b>1.1</b>

S. No.	Name of Solid Waste	Quantity T/day	Mode of Disposal
1.	Bio Degradable Waste (Food, vegetables, paper wastes etc.)	1.6	Treated in Bio Gas plant and Used in Hostel Kitchens/Canteen & through composting beds
2.	Non Bio Degradable Waste Plastics, Carton boxes, scraps etc.)	1.7	Handed over to Authorized Recyclers
3.	STP Sludge	0.03	Used as manure for greenbelt Development

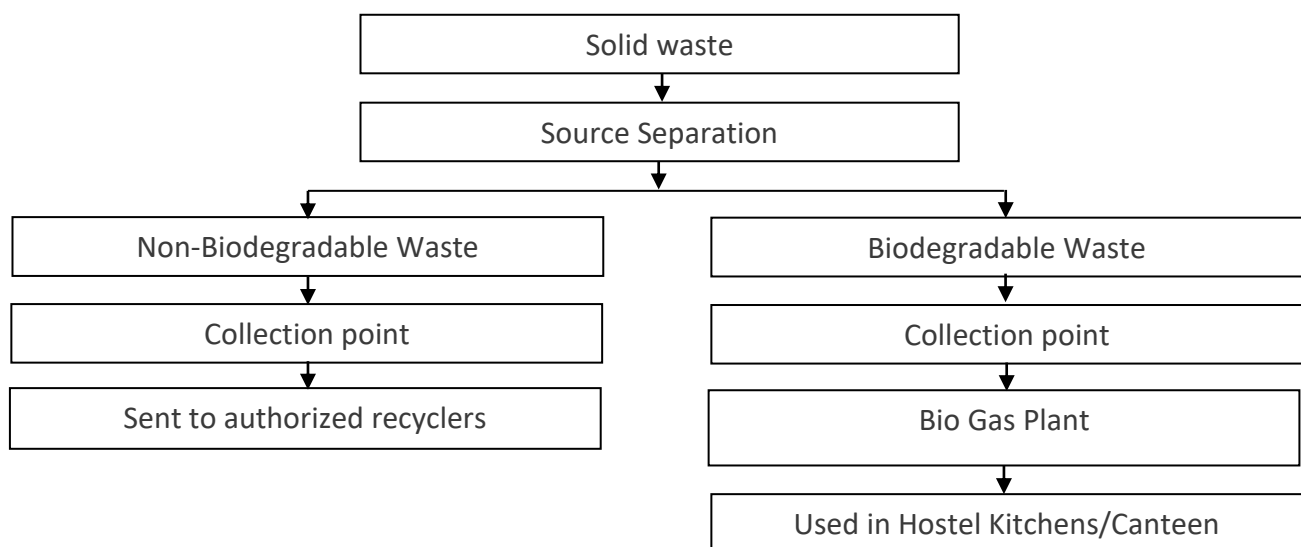
In the campus, sweepers are engaged for handling domestic waste. Adequate number of collection bins separately for biodegradable and non-biodegradable waste has been provided as per the Municipal Solid Waste (Management and Handling) Rule, 2016. Waste from such bins are collected separately on daily basis and taken to a separate centralized

collection facility. Final segregation of solid waste into biodegradable, non-biodegradable, and inert fraction are done in the centralized collection facility.

The biodegradable wastes are collected and feed into the Bio Gas Plant for Bio Gas Production and the Bio gas is used in hostel kitchen. Horticulture wastes leaves, grass and vegetative residues are being collected at the secured location such that it will not hinder daily activity schedule or washed away by the surface run-off causing choking of drains, etc. and they are treated in a separate composting Yard which are then used for manure in green belt development.

The non-biodegradable wastes are given to the ITC Limited for recycling Project called WOW (Well Being Out of Waste – A National Recycling Initiative).

The solidified sludge from the STP is being dewatered, and used as manure for the green belt.



SVCE also allocated space & developed Centre for Integrated Smart Waste Management – A Pilot Model developed in collaboration with Science and Engineering Research Board (SERB) to handle Liquid waste, Solid Waste & Storm runoff through a 3 tier Network. This model will be useful for Urban Local bodies and High rise Residential Buildings.

**Photograph showing Solid Waste Management facilities within the campus**



**Integrated Smart Waste Management – A Pilot Model developed in collaboration with SERB**



**Waste Segregation System in the campus**



**Organic waste collection bin within the campus**



**Food Waste Crusher**



**Bio Gas Plant**





**Gas Accumulator**



**Boiler with Bio-Gas Burner**



**Composting Yard**



**Composting bed**


The other non-biodegradable wastes are being handed over to the recyclers on a regular basis.

## **Annexure VI**

### **Hazardous Waste Management**

In an educational institution, the source for generation of Hazardous waste is mainly from Diesel Generators (DG) sets from which spent/used oil and filters will be hazardous in nature. These wastes are collected and segregated and disposed through the authorized vendor as per the Hazardous and Other Wastes (Management and Transboundary Movement) Amendment Rules, 2016.

The minimization, safe handling, and ultimate elimination of these materials are essential to the long-term health of the planet. For environmental sustainability the drainage of chemical laboratory collected in air tight cement chamber and frequently the chemical waste from chamber is sent for recycle or for scientifically destroy process.



भारतीय गैर न्यायिक  
एक सौ रुपये  
Rs. 100  
रु. 100  
ONE HUNDRED RUPEES  
भारत INDIA  
INDIA NON JUDICIAL

17 MAY 2017  
BM 020510

तमिलनाडु TAMILNADU 030686  
Sri Venkateswara Educational & Health Trust  
Ch.

M. KAILASH CHAND  
STAMP VENDOR-L.No.11727/C/91  
SAIDAPET, CHENNAI-15. ☎:9840173096

**AGREEMENT FOR DISPOSAL OF HAZARDOUS WASTE**

This agreement is made this 07<sup>th</sup> day of July 2017 between:

M/s. SRI VENKATESWARA EDUCATIONAL & HEALTH TRUST, having its educational Institution "SRI VENKATESWARA COLLEGE OF ENGINEERING" at S.F No 235/1, 235/2 etc. of Nemili Village & 94/1A, 94/1B etc. of Pennalur Village, Sriperumbudur Taluk, Kancheepuram District, Tamil Nadu. Represented by its Secretary herein referred to as "TRUST" which expression shall unless repugnant to the context and meaning thereof mean and include its successors and assign of the FIRST PART

AND

M/s. M.R. INDUSTRIES located at S.F. No 73, SIDCO Industrial Estate, Ammanur Village, Arakkonam Taluk, Vellore District, Tamil Nadu hereinafter called BUYER represented by its PROPRIETOR which expression unless repugnant to the subject or context shall include its successors and assignees of the SECOND PART

**SCOPE OF THE CONTRACT WORK:**

M/s. M.R. INDUSTRIES shall collect and dispose the used/spent oil from M/s. SRI VENKATESWARA EDUCATIONAL & HEALTH TRUST as per the terms as agreed under.

For SRI VENKATESWARA EDUCATIONAL AND HEALTH TRUST  
SECRETARY

M.R. Industries  
Proprietor

**Hazardous Waste Disposal agreement with M/s. M. R. Industries for disposal of Spent Oil from DG Sets**

## Annexure VII

### E – Waste Management

The E –Waste generated like, obsoleted Computers from laboratories, Administration Buildings, Electrical and Electronic Equipment from the Laboratories is being collected and stored in a centralized earmarked area which will be handed over to the authorized recyclers for Recycling and Disposal.

The Purchasing Department will be responsible for the disposal of defective equipment's and E Scrap by the method which obtains Best Value for money. Intimation to the authorized recyclers through mail/ telephone for collection will be given on a periodic basis.

The next E Waste Recycling will be done by the Month of December and they will be handed over to the authorized recyclers for Recycling and Disposal.



**Photographs of Collection and Storage Room of E – Waste generated in the campus**

## **Annexure VIII**

### **Rain Water Harvesting**

#### **Rainfall**

Kancheepuram district receives rainfall during North-East Monsoon (Oct - Dec) and South-West Monsoon (June - September). A major portion of the rainfall is during North-East Monsoon. Sometimes the city also receives rainfall during January and February, but that is quite rare.

The annual rainfall in Kancheepuram is in the range of 800- 1000 mm. The characteristics of our rainfall demands not only to conserve large quantity of rainwater during these few days but also to store wherever it rains in preferably for direct use and alternatively as ground water.

#### **Rain harvesting system**

##### **Rain Water Harvesting Pond:**

Keeping in mind the importance of water and its scarcity it is implemented to conserve water by rainwater harvesting by which the subsoil water condition / moisture content is maintained / improved to a great extent. Also to harvest rainwater from the terrace area by collecting the same in a rainwater collection trench of suitable capacity and stored in a Rain water harvesting Pond.

Rainwater from the roof-top of the institution buildings which is about 2,400 Sq.m is being collected in the pond with a capacity of 40 lakh liters. The collected water is reused for the domestic purpose within the campus with the provision of a filtration unit.

**Photograph showing Rain Water harvesting pond**





**Lily (*Nymphaea nouchali*) aquatic plants introduced into rain water harvesting ponds**



**Annexure IX**  
**Medical/Clinical Facilities**

The Medical centre of SVCE was instituted in the year 2008 with 6 beds, a resident Medical Officer, a trained residential nurse and a qualified lab technician. Besides that, the college has first aid kits made available in almost all blocks. A 24-hour ambulance facility, adequate pharmaceutical support, medical lab services are a few of the mentionable services offered.



**Facilities in Medical Centre**

## **Annexure X**

### **Green Campus & Environmental Initiatives**

#### **Environmental Activities:**

The main objective of conducting the Environmental activities within the campus for the students, teachers and stakeholders to acquire knowledge of the environment beyond the immediate environment including distant environment. It helps the students understand how their decisions and actions affect the environment, builds knowledge and skills necessary to address complex environmental issues, as well as ways we can take action to keep our environment healthy and sustainable for the future.

**Concern, Awareness, and Responsibility (CARE)** Club for Environment is a student-run organization that works with peers, faculty, and community to create environmental consciousness among public, in general, and students, in particular. It motivates students to have an eco-friendly life style and attempts make the campus a more sustainable campus by converting green ideas into reality.

The activities carried out in the academic year related to Environmental is as follows:

1. CARE Club Meetings
2. Environmental Day – Session
3. Tree Plantation Programme

### Annexure XI Environmental Monitoring Programme

The environmental monitoring programme helps to continuously monitor the incremental increase in various pollutant concentration in the respective environment. It outlines the frequency of the pollutant concentration being measured in each environment and the parameters being monitored in respective environment.

**Table 4.5 – environmental monitoring programme**

S. No.	Description	Monitoring parameters	Frequency of Sampling and Analysis
<b>Operation Phase</b>			
1.	Ambient Air Quality	PM <sub>10</sub> , PM <sub>2.5</sub> , SO <sub>x</sub> , NO <sub>x</sub> and CO	Once in a month
2.	Stack Emissions from DG Set	PM, SO <sub>x</sub> , NO <sub>x</sub> , HC and CO	Once in a month
3.	Ambient Noise Level	Noise level in dB (A)	Once in a month
4.	Treated Sewage (STP)	pH, TSS, BOD and Fecal Coliform	Once in a month

All parameters shall be monitored; compilation and reporting is done by NABL Accredited Laboratory.

The Air Quality Index (AQI) has been calculated as per CPCB for the SVCE Campus once in six months and the AQI Index for May 2024 is found to be 66 (Satisfactory).

Calculation of AQI						
Date	21-May-24		Station	Sri Venkateswara College of Engineering (SVCE)		
			City	Sriperumbudur, Chennai		
			State	Tamil Nadu		
Pollutants	concentration in $\mu\text{g}/\text{m}^3$ (except for CO)	Sub-index			Air Quality Index	
PM10	24-hr avg 66.00	66	check	AQI = <span style="background-color: #90EE90; padding: 10px; font-size: 24px; font-weight: bold;">66</span>		
PM2.5	24-hr avg 29.00	48	1			
SO <sub>2</sub>	24-hr avg 5.70	7	1			
NO <sub>2</sub>	24-hr avg 19.00	24	1			
*CO (mg/m <sup>3</sup> )	max 8-hr 0.00	0	0			
O <sub>3</sub>	max 8-hr 11.00	11	1			
NH <sub>3</sub>	24-hr avg 0.00	0	0			
* Concentrations of minimum three pollutants are required; one of them should be PM10 or PM2.5						
* The check displays "1" when a non-zero value is entered.						
Good (0-50)	Minimal impact		Poor (201-300)	Breathing discomfort to people on prolonged exposure		
Satisfactory (51-100)	Minor breathing discomfort to sensitive people		Very Poor (301-400)	Respiratory illness to the people on prolonged exposure		
Moderate (101-200)	Breathing discomfort to the people with lung, heart disease, children and older adults		Severe (401-500)	Respiratory effects even on healthy people		

## **Annexure – XII**

### **Green and Environmental Policy & Environmental Committee**

#### **Green and Environmental Policy:**

The Green & Environmental Policy is adopted by the institution towards making it as one of Environmentally Conscious & Sustainable Institutions in the Country.

#### **Objectives**

- To inculcate a strong sense of commitment and responsibility among students and members of faculty to follow an eco-friendly life style and habitats.
- To make students aware of the sustainability goals at the micro and macro level and to strengthen their participation and involvement to promote and implement sustainability goals.
- To advance governance regarding environment compliance and employ methods to reduce the waste, and conserve energy, and water consumption.
- To improve the biodiversity in the campus.
- To be recognized as Eco Friendly and Green Campus.

During the Audit, the above objectives were reviewed and the findings were presented in Section 3 of this report.



Autonomous Institution, Affiliated to Anna University, Chennai.  
 Approved by the A.I.C.T.E, Accredited by NAAC  
 Post Bag No.1, Pennalur, Sriperumbudur Tk. 602117 India.  
 Phone : 91-44-27152000(20 lines)  
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 Email : acm@svce.ac.in URL : <https://www.svce.ac.in>



## Green and Environment Policy

### Statement

Sri Venkateswara College of Engineering (SVCE) is committed to making the Institution one of the most environmentally conscious and sustainable institutions in of the Country.

### Objectives

- To inculcate a strong sense of commitment and responsibility among students and members of faculty to follow an eco-friendly lifestyle and habits.
- To make students aware of the sustainability goals at the micro and macro level and to strengthen their participation and involvement to promote and implement sustainability goals.
- To advance governance regarding environmental compliance and employ methods to reduce the waste, and conserve energy, and water consumption.
- To improve the biodiversity of the Campus.
- To be recognized as Eco friendly and Green Campus.

### Process

- By introducing environmental sustainability concepts in the curriculum and research.
- By improving governance regarding environmental compliance; reduce its waste, energy, and water consumption proportionally against its growth in staff and student numbers.
- By enhancing, monitoring, and developing the biodiversity of the Campus by creating microhabitats, planting indigenous plant species.
- By promoting and creating smart, sustainable approach to the Institution's plans and projects.

### Provisions

The College will provide adequate funding, infrastructure and staff for implementing the Green and Environment policy.

  
 PRINCIPAL

**Environmental Committee:**

During the audit, members & functions of the Environmental committee were reviewed which mainly consist of faculties from various departments, who are frontline in maintaining the Environmental initiatives of the campus.

- The Minutes of Meeting (MOM) of Environmental Committee conducted in Last Academic Year & action taken on NCs (Eg. Promoting Bicycle usage in the Campus) were reviewed.

The details of the Environmental committee are as follows:

