

GREEN AUDIT REPORT



**CHIKKANNA GOVERNMENT ARTS COLLEGE
TIRUPUR 641602**

(ESTD.1966)

(Affiliated to Bharathiar University, Coimbatore)

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ABOUT GREEN AUDIT

- Green Audit is a process of systematic identification, quantification, recording, reporting and analysis of components of environmental diversity of various establishments.
- The aim is to analyse environmental audit within and outside of the Chikkanna Government Arts College Tirupur, which will have an impact on the eco-friendly ambience.

TABLE 1: DIVISION OF CAMPUS AREA

Green Auditing of college campus is the base line survey based on onsite visits and personal observations. Initially the campus is divided into main two sections (academic buildings and recreational area).

S.No.	Section	Area of the Campus
1	ACADEMIC BUILDING A Block	Administrative Block
		a) Principals Office
		b) Offices
		Faculty Rooms
		Library
		Laboratories
		Class Rooms
		Multipurpose Hall
	B Block	Washrooms
		Faculty Rooms
		Laboratories
		Class Rooms
	C Block	Open Air Auditorium
		Washrooms
		Faculty Rooms
		Laboratories
	D Block	Class Rooms
		Washrooms
		Faculty Rooms
		Laboratories
	E Block	Class Rooms
		Washrooms
		Faculty Rooms
		Laboratories
F Block	Class Rooms	
	Washrooms	
	Faculty Rooms	
	Laboratories	

		Faculty Rooms
	MGR Block	Faculty Rooms
		Class Rooms
		Multipurpose Hall
		Washrooms
2.	RECREATIONAL AREA	College Canteen
		College Indoor Gym
		Outdoor Courts/Rings
		Playground
		Streets

Emphasis is given to the green cover and best practices followed by the institution for sustainable development of the area.

GREEN COVER

Chikkanna Government Arts College is within the geo-position between latitude 11°06'29.5"N 77°18'58.8"E in Tirupur District, Tamilnadu, India (Fig 1). The area is enriched with diverse green cover in its close vicinity performing variety of ecological functions like providing oxygen, improving air quality, climate amelioration, conservation of water, preserving soil, and supporting wildlife, controlling climate by moderating the effects of the sun, rain and wind. Besides natural flora, many species are planted in different periods of time through various plantation programmes organised by the National Service Scheme and have become an integral part of the college. The vegetation display a seemingly endless variety of shapes, forms, texture, vibrant colors hence improving the aesthetic value of the region. Even individual plants vary their appearance throughout the course of the year as the seasons change. We often make an emotional connection with these plants and sometime become personally attached to the ones that we see every day. A recent study has revealed that the rich diversity of plant species growing naturally and planted has help in carbon sequestration of the area. Thus, the college has been playing a significant role in maintaining the environment with its surrounding areas.



Fig: 1 Satellite view of Chikkanna Government Arts College, Tirupur (Source: Google Map)

TABLE 2: FLORA OF THE CAMPUS

S.No	Common \ local name	Scientific Name
1	Neem	<i>Azadirachta indica</i>
2	Bamboo	<i>Bambusa indica</i>
3	Indian banyan	<i>Ficus benghalensis</i>
4	Jambolana	<i>Syzygium cumini</i>
5	Cypress	<i>Pongamia glabara</i>
6	Jack fruit	<i>Artocarpus integra</i>
7	Gooseberry	<i>Emblica officinalis</i>
8	Vazhai	<i>Musa paradisiaga</i>
9	Mango	<i>Mangifera indica</i>
10	Perungondrai	<i>Peltophorum</i>
11	Almond	<i>Terminalia cattappa</i>
12	Guava	<i>Psidium guava</i>
13	Jujube	<i>Indian jujube</i>
14	Peepul	<i>Ficus religiosa</i>
15	Tulip	<i>Tulipa</i>
16	Tamarind	<i>Tamarindus indica</i>
17	Red cotton tree	<i>Ailanthus excels</i>
18	Indian rose wood	<i>Dalbergia</i>
19	malai vembu	<i>Melia azedarach</i>
20	Black babul	<i>Vachellia nilotica</i>
21	Sandal tree	<i>indian sandal wood</i>
22	Babul	<i>Acacia nilotica</i>
23	Nochi	<i>Vitex negundo</i>
24	Sapota	<i>Mimusops elengi</i>
25	Savukku	<i>Casuarina</i>
26	Kuppai meni	<i>Acalypha indica</i>
27	Sea almond	<i>Terminalia cattappa</i>

28	Oomathai	<i>Datura fastuosa</i>
29	Nari viratti	<i>Crotalaria verucosa</i>
30	Kuppai keerai	<i>Amaranthus viridis</i>
31	Sotru katralai	<i>Aloe vera</i>
32	Coat buttons (vettu kaya poondu)	<i>Tridax procumbens</i>
33	Thumbai	<i>Leucas aspera</i>
34	Erukku	<i>Calotropis gigantean</i>
35	Lemon	<i>Citrus limon</i>
36	Kolinji	<i>Theprosea purpurea</i>
37	Teak	<i>Tectona grandis</i>
38	Visha padar kodi	<i>Percularia daemia</i>
39	Ban thulasi	<i>Croton sparsiflorus</i>
40	Persian silk	<i>Albizia julibrissin</i>
41	Ficus cordala	<i>Ficus benjamina</i>
42	Musumusukkai	<i>Mukia maderaspatana</i>
43	Tiruvachi	<i>Gallaphyllum pricilliance</i>
44	Ashoka	<i>Monoon longifolium</i>
45	Eucalyptus	<i>Eucalyptus globules</i>
46	Beans	<i>Psophocarpus tetragonolobus</i>
47	Elanji	<i>Mimusops elengi</i>
48	Malai nelli	<i>Embllica officinalis</i>
49	Amman pachaarisi	<i>Euphorbia hirta</i>
50	Turmerric	<i>Curcuma longa</i>
51	Maruthani	<i>Lawsonia inermis</i>
52	Senai kilangu	<i>Amorphophallus paeoniifolius</i>
53	Chilli	<i>Capsicum frutescens</i>
54	Lady finger	<i>Hibiscus esculentum</i>
55	White Poosani	<i>Benincasa hispida</i>
56	Yellow Poosani	<i>Cucurbita pepo</i>
57	Nettilingam	<i>Polyalthia longifolia</i>
58	Pungai	<i>Pongamia pinnata</i>
59	Indian Almond	<i>Terminalia catappa</i>
60	Vanni maram	<i>Prosopis spicigera</i>
61	Kontra	<i>Cassia Montana</i>
62	Peepal tree	<i>Ficus religiosa</i>
63	Cimaivel	<i>Acacia melanaxylon</i>
64	Teak	<i>Tectona grandis</i>
65	Aaavu tree	<i>Holoptea integrifolia</i>
66	Tamarind	<i>Tamarindus indica</i>
67	Vilvam	<i>Aegle marmelos</i>

Table 3 : Herbal plants

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1	Nilavembu	<i>Andrographis paniculata</i>	Acanthaceae	Paniculata has been used in sidha and ayurvedic medicine, and is promoted as a dietary supplement for cancer prevention and cure.
2	Thoothuvalai	<i>Solanum trilobatum</i>	Solanaceae	Treatment for cold and improved Immunity
3	Thulasi	<i>Ocimum tenuiflorum</i>	Lamiaceae	Cures mouth, stomach and intestinal Problems
4	Karunthulasi	<i>Ocimum sanctum</i>	Lamiaceae	Improves immunity
5	Maruthani	<i>Lawsonia inermis</i>	Lythraceae	Prevents nail infection "Nahasuthi"
6	Karunochchi	<i>Justica gendarussa</i>	Acanthaceae	Improves urine flow / Antipyretic
7	Katralai	<i>Aloe vera</i>	Asphodelaceae	Reduces constipation, gastritis and ulcer
8	Neer nochi	<i>Vitex negundo</i>	Lamiaceae	Antipyretic / antihelminthic
9	Manjal	<i>Curcuma longa</i>	Zingiberaceae	Antibiotic and treatment of skin diseases
10	Vallarai	<i>Centella asiatica</i>	Apiaceae	Increase the urine flow
11	Keela nelli	<i>Phyllanthus niruri</i>	phyllanthaceae	Hair growth and treatment of skin Diseases
12	Aththi	<i>Ficus racemosa</i>	Moraceae	Improves immunity
13	Amaan pacharisi	<i>Euphorbia hirta</i>	Euphorbiaceae	Treatment asthma and stomach and mouth ulcers along with allergies
14	Kuppaimeani	<i>Acalypha indica</i>	Euphorbiaceae	Treatment for skin diseases
15	Aamanakku	<i>Ricinus</i>	Euphorbiaceae	Treatment for skin diseases
16	Aada thodai	<i>Justica adhatoda</i>	Acanthaceae	It used as antispasmodic, antiseptic.
17	Manathakkali	<i>Solanum nigrum</i>	Solanaceae	Treatment for alzar
18	Nelli	<i>Phyllanthus emblica</i>	Phyllanthus	Improved immunity
19	Karpoora valli	<i>Coleus amboinicus</i>	Lamiaceae	Treatment for cold and fever
20	Arukambul	<i>Cynodon dactylon</i>	Poaceae	Treatment for stomach pain
21	Thyme	<i>Thymus vulgaris</i>	Lamiaceae	Treatment for bacterial and fungal infections

22	Mayweed	<i>Triplereospermum inodorum</i>	Asteraceae	Treatment for gastrointestinal pain
23	Geranium	<i>Sweet scented geranium</i>	Geraniaceae	Treatment for pain reliever, sedative, antimicrobial, antifungal and to relieve spasms.
24	Dusty miller	<i>Centaurea cineraria</i>	Asteraceae	Treatment for spots before the eyes and migraine headache
25	Rosemary	<i>Rosmarinus officinalis</i>	Lamiaceae	Reduce Pain and Inflammation.

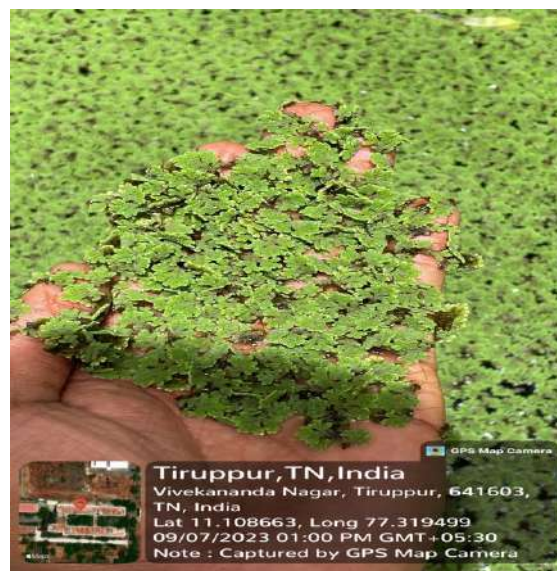


Table 4 : Butterflies in the college campus

S.no	Common name	Scientific name
1	Southern birdwing	<i>Troides minos</i>
2	Common wind mill	<i>Byasa polyeuctes</i>
3	Rose wind mill	<i>Byasa nevillei</i>
4	Cabbage white	<i>Pieris rapae</i>
5	Common buck eye	<i>Junonia coenia</i>
6	Orange tip	<i>Anthocharis cardamines</i>
7	Tawny emperor	<i>Asterocampa clyton</i>
8	Common rose	<i>Pachliopta aristolochiae</i>
9	Crismon rose	<i>Pachliopta hector</i>
10	Blue striped mime	<i>Papilio slateri</i>
11	Common mime	<i>Papilio clytia</i>
12	Common yellow swallowtail	<i>Papilio machaon</i>
13	Common raven	<i>Papilio polytes</i>
14	Malabar raven	<i>Papilio castor</i>
15	Common jay	<i>Graphium dason</i>
16	Tailed jay	<i>Graphium Agamemnon</i>
17	Spotted zebra	<i>Graphium megarus</i>
18	Brown gorgon	<i>Meandrusa lachinus</i>
19	Monarch Butterfly	<i>Danaus plexippus</i>
20	Viceroy Butterfly	<i>Limenitis archipus</i>

Table 5: List of ants available in the college campus

S No	Common name	Scientific Name
1	Crazy ant	<i>Paratrechina logicornis</i>
2	Little black Ant	<i>Monomorium minimum</i>
3	Cotton ant	<i>Solenopsis xyloni</i>
4	Fire ant	<i>Solenopsis geminate</i>
5	Harvestor ant	<i>Messor sp</i>
6	Acrobat Ant	<i>Crematogaster subnuda</i>
7	Indian black ant	<i>Camponotus compressus</i>
8	Toge-ari	<i>Polyrhachis sp</i>
9	Carpenter ant	<i>Camponotus sp</i>
10	Odour ant	<i>Tapinoma sp</i>

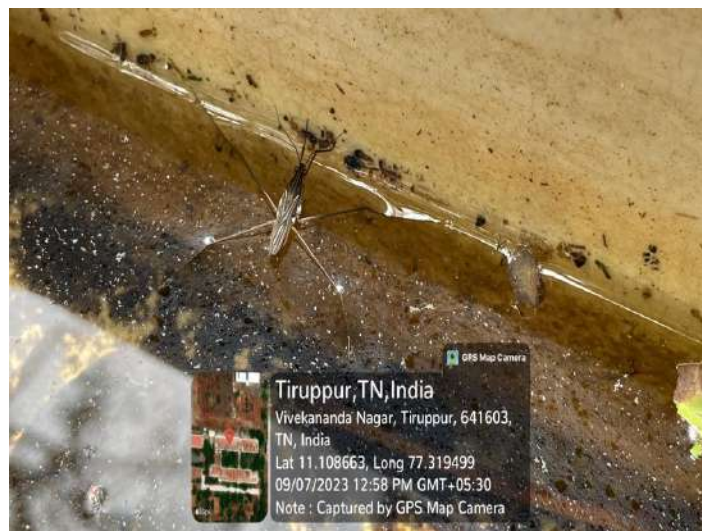
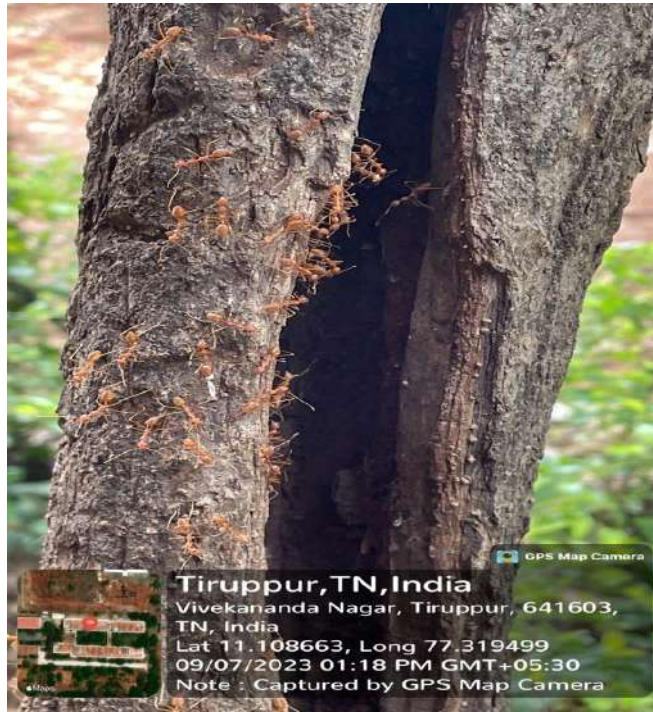


Table 6: List of Birds available in the college campus

S.No	Common name	Zoological Name
1	Bulbul	<i>Molpastes</i>
2	Sparrow	<i>Ploceidae passer</i>
3	Peacock	<i>Pava cristatus</i>
4	Parrot	<i>Phaethontidae psittaciformes</i>
5	Owl	<i>Nocturnali strigiformes</i>
6	Myna	<i>Acridotheres tristis</i>
7	House sparrow	<i>Passer domesticus</i>
8	House crow	<i>Corvus splenens</i>
9	Duck	<i>Anatidae colombiformes</i>
10	Cuckoo	<i>Cuculidae gruiformes</i>
11	Chicken	<i>Indio Gigante</i>
12	Turkey	<i>Guinea fowl</i>
13	Blue tailed Bee eater	<i>Merops phillippinus</i>
14	Greater Coucal	<i>Centropus sinensis</i>
15	House Sparrow	<i>Passer domesticus</i>
16	Jungle babbler	<i>Argna striata</i>
17	Woodpecker	<i>Picidae</i>
18	Pigeons	<i>Columbidae</i>
19	Red vented bulbul	<i>Pycnonotus cafer</i>
20	Barn owl	<i>Tyto alba</i>





Termites and Earthworms



List of spider species identified in the college campus

S. No	Scientific Name	Common Name	Family
1.	<i>Argiope pulchella</i>	Garden cross spider	Araneidae
2.	<i>Cyrtophora cicatrosa</i>	Garden tent spider	Araneidae
3.	<i>Neoscona mokerjei</i>	Common garden orbweaver	Araneidae
4.	<i>Hersilia savignyi</i>	Two- tailed spider	Hersiliidae
5.	<i>Lycosa sp.</i>	Soil lycosid spider	Lycosidae
6.	<i>Oxyopes shweta</i>	White lynx spider	Oxyopidae
7.	<i>Heteropoda venatoria</i>	Common house spider	Sparassidae
8.	<i>Hyllus semicupreus</i>	Heavy-bodied jumper	Salticidae
9.	<i>Argyrodes sp.</i>	Dew drop spider	Theridiidae
10.	<i>Plexippus sp.</i>	Jumping spider	Salticidae



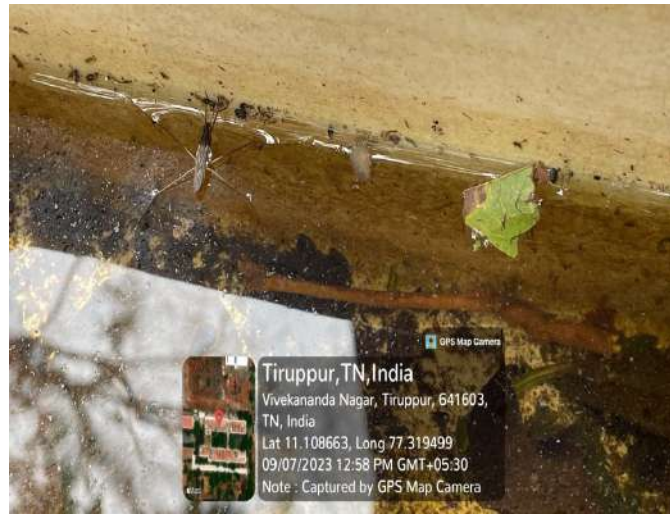




Figure 1 Swami Vivekananda Park

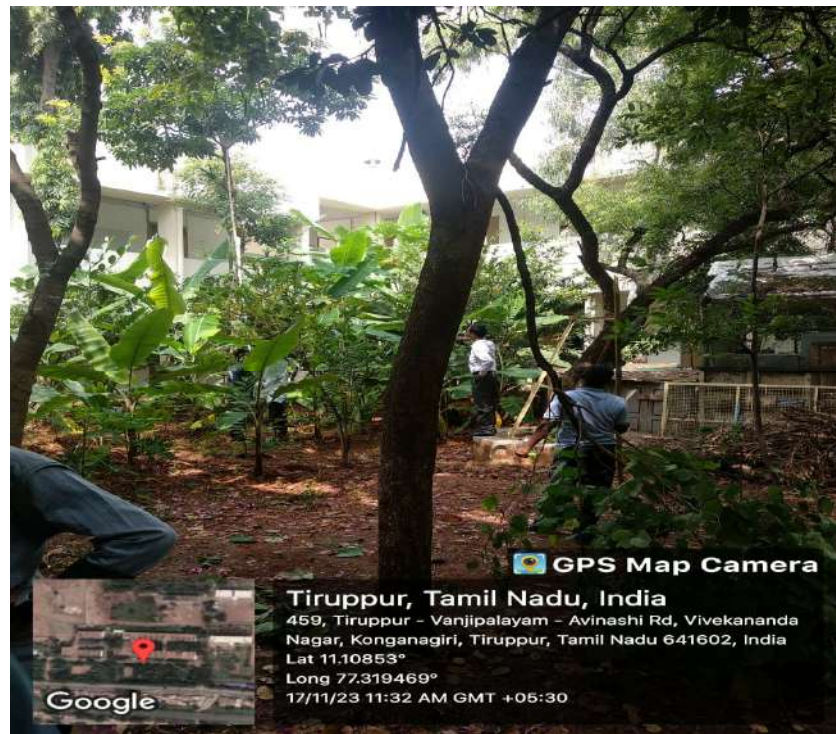


Figure 2 Vegetable garden



Figure 3 Making Nammalvar Herbal garden



Figure 4 One student one tree program



Figure 5. Kalam Dream Park

Waste management is one of the major problems not only in India but in the world. That's why it is essential to use the things properly and manage them with care. The focal purpose behind this audit is to analyze the best practices of solid and liquid waste management. In the same way, to make aware about their hazardous effects and to create awareness among the students, teachers about minimum use, reuse and recycle of the waste. The rate of generation of solid waste is high and we do not have adequate technology to dispose the generated waste. Unscientific disposal of solid waste create threats to public health and environment. Thus, it is necessary to manage the solid waste properly to reduce the load on waste management system. In the present report, the current management practice of solid waste generation in the campus has been presented that will help in green campus development.



Solid waste management

- Non-biodegradable waste is collected in dust bins installed at various locations outside and Inside College building.
- Efforts have taken to produce vermicompost from organic waste and waste from other sources and efficiently run by the students. Manure is used for the purpose of herbal garden as well or for planted tree.



Liquid waste management

Reduction in generation of Effluents, Emissions and Hazardous/Solid waste:

- The institution does not produce any effluents, emissions or solid waste which violates the environmental ethics.

- Our institution provides best academic environment which sensitizes everyone associated regarding the need to maintain a healthy ecological balance in their respective regions.
- Runoff rainwater is properly managed through under-ground soak-pits.

Hazardous waste management

- Plastic bags have been banned by the state by the Government of Tamilnadu and the ban is properly enforced within the college premises.
- Plastic waste is collected in the dustbins and disposed separately through the Municipal authorities.
- The College is trying to minimize the use of hazardous and toxic chemicals. The college is encouraging the use of safer alternatives.
- Dilute solutions are being used in quantitative analysis, which again minimises the use of chemicals.
- In Science laboratories, experiments are carried out with all precautions.
- Biological waste from life sciences laboratories are made harmless through autoclaving and then disposed.
- All glassware and microbial cultures used are first sterilised by autoclaving and then the cultures are discarded properly.

E-Waste management:

- Reuse is the most eco-friendly and cost effective method for e-waste disposal.
- The College maintains all its computer peripherals, all old systems are stored in safe place within the campus and are sold to the recycling agencies after fulfilling codal formalities.
- Defective systems are upgraded by replacing their parts.
- Awareness is also generated among the students by organizing the exhibitions and programs on waste management.
- There is an agreement with MSTC a government of India Enterprise for E-Waste management

WASTE MANAGEMENT INITIATIVES



Figure 6 Removing the Plastic wastes



Figure 7 Swachh Bharat Seva



Figure 8 Vermicomposting Unit



Figure 9 Plantation drive in the campus

மாநகரங்களும் செலுத்த வேண்டும்.
சென்னை மாநகரத்தில் கோரியை எடுக்கப்படுகிறது.

25.11.23 இந்து தமிழ்

துண்டாகக்கூடும்.
இவ்வாறு அதில் தெரிவிக்கப்பட்டுள்ளது.



↑ திருப்பூர் சிக்கண்ணா அரசு கலைக் கல்லூரி வளாகத்தில் மழை நீர் நிரம்பி காட்சியளிக்கும் என்எஸ்எஸ் குளம்.

சிக்கண்ணா அரசு கல்லூரி மாணவர்கள் வெட்டிய குளத்தில் மழை நீர் நிரம்பியது

● **திருப்பூர்**
திருப்பூர் மற்றும் அதன் சுற்றுவட்டாரப் பகுதிகளில் கடந்த சில தினங்களாக கனமழை பெய்தது. தாழ்வான பகுதிகளிலும், குடியிருப்புப் பகுதிகளிலும் மழைநீர் தேங்கியதால் பொதுமக்கள் அவதிபட ந்தனர்.
இந்நிலையில், கடந்த சில ஆண்டுகளுக்கு முன் திருப்பூர் சிக்கண்ணா அரசு கலைக் கல்லூரி நாட்டு நலப்பணித் திட்டம் அலகு-2 மாணவர்கள் மழை நீரை சேமிப்பதற்காக கல்லூரி வளாகத்தில் குளம் வெட்டினர். அதற்கு 'என்.எஸ்.எஸ் குளம்' என்று பெயரிட்டனர்.
கடந்த சில தினங்களாக பெய்த கனமழையால் இக்குளம் நிரம்பியுள்ளது. இதையறிந்து குளத்தின் முன் திரண்ட என்எஸ்எஸ் மாணவர்கள் பலர், புகைப்படம் எடுத்து மகிழ்ந்தனர். நாட்டு நலப்பணித்திட்ட அலகு 2 ஒருங்கிணைப்பாளர் மோகன்குமார் மற்றும் மாணவர்களை கல்லூரி முதல்வர் கிருஷ்ணன் பாராட்டினார்.

Figure 10 Reflection of our efforts in print media

RAIN WATER HARVESTING AND ITS USES

- Rain water harvesting is done by digging artificial ponds in the campus.
- It has been constructed by National Service Scheme.
- Roof top rain water is properly preserved in under-ground tank.
- The stored water is used for gardening purposes and also in the toilets. We have lush green campus having medicinal and various ornamental plants, this rain water harvesting tank caters the need of these plants especially in the days of water scarcity.

- This tank not only caters our water needs but saves our valuable soil from erosion.



Figure 11 Underground rain water harvesting tank



Figure 12 Artificial Pond

Our college follows green practices in letter and spirit as per resources available for the sustainable clean and green environment.

These are the Drinking water parameter standards as per Tirupur Corporation Report. The Parameters of the college were found to be almost same with $\pm 2\%$ deviation

Water quality Parameters	WHO (1993)		ISI (2012)		Analytical results of parameters			
	Most desirable	Maximum permissible limit	Most desirable	Maximum permissible limit	Minimum	Maximum	Mean	Median
pH	7-8.5	6.5-9.5	6.5-8.5	6.5-9.2	7.10	8.75	7.78	7.62
TDS (mg/l)	520	1,550	500	1,500	198	5,125	1,166	905
TH (mg/l)	100	500	300	600	114	2,558	696	560
Ca ²⁺ (mg/l)	75	200	75	200	18	1,035	151	110
Mg ²⁺ (mg/l)	50	150	30	100	15	322	76	71
Na ⁺ (mg/l)	-	200	-	-	9	222	91	90
K ⁺ (mg/l)	-	12	-	-	3	92	24	15
HCO ₃ ⁻ (mg/l)	-	-	-	300	55	653	188	265
Cl ⁻ (mg/l)	198	610	249	1000	2	2,255	366	228
NO ₃ ⁻ (mg/l)	45	-	-	-	0	129	36	33
T. Alk (mg/l)	-	-	300	600	118	699	403	397
SO ₄ ²⁻ (mg/l)	200	400	150	400	10	428	80	54
F ⁻ (mg/l)	-	1.5	0.6	1.2	0	1.00	0.40	0.40

ENERGY AUDIT

Total annual power requirement

There are six electricity connection in the campus. With an average consumption of 13133 units (bimonthly) and cost of Rs. 145337/- bimonthly. Due an increase in unit charges as well as the increase in the built up area a new F block was added there was increase in consumption but comparatively a slight decrease was noted from previous years.

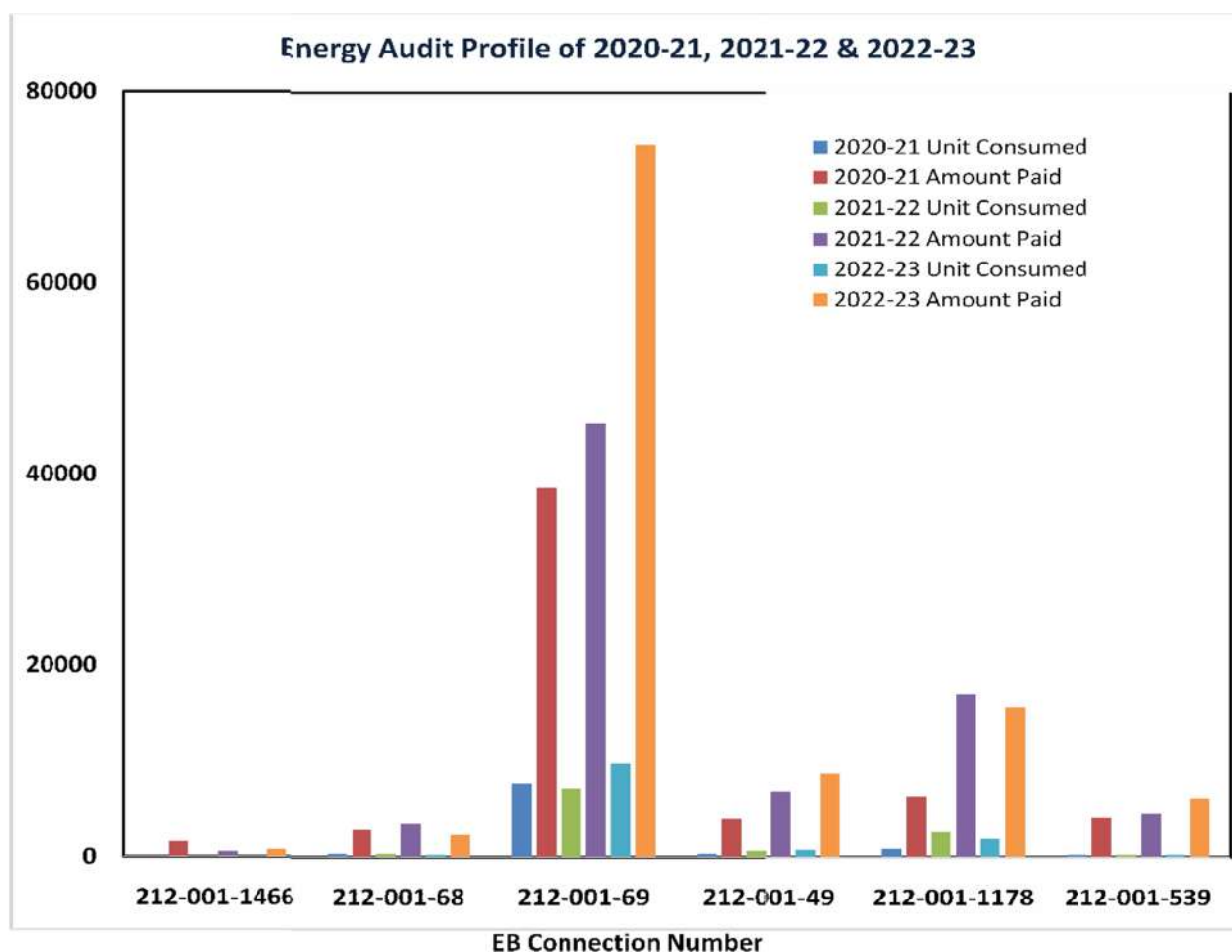
Energy Consumption details of College during 2022-23

S. No.	Connection Number	Blocks/Purpose	Unit Used			Amount Paid in Rupees		
			Lowest	Highest	Average	Lowest	Highest	Average
1	212-001-1466	Motor	0	0	0	600	1000	777
2	212-001-68	Motor	130	610	277	5611	3253	2411
3	212-001-69	A,B,E,F MGR & Canteen	7990	12440	9787	49783	101092	74531
4	212-001-49	Motor	640	1280	825	4319	11564	8732
5	212-001-1178	C & D	1350	2490	1967	9960	20256	15596
6	212-001-539	CLP	10	480	277	3298	8172	6097

Note: Since most of the administrative rooms are located in A Block and also the same EB line is connected to MGR, B, E, canteen and also the newly constructed F Block the consumption is higher. After the introduction of LED bulbs and electronic chokes, the consumption found to be reduced to some extent.





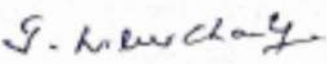
Energy consumption profile of the institution for last three years

Connection	2020-21		2021-22		2022-23	
	Unit Consumed	Amount Paid	Unit Consumed	Amount Paid	Unit Consumed	Amount Paid
212-001-1466	1	1644	1	603	0	777
212-001-68	323	2873	323	3495	277	2411
212-001-69	7667	38546	7219	45323	9787	74531
212-001-49	435	4042	702	6909	825	8732
212-001-1178	940	6309	2683	16950	1967	15596
212-001-539	225	4151	217	4486	277	6097



Note: Since most of the administrative rooms are located in A Block and also the same EB line is connected to MGR, B, E, canteen and also the newly constructed F Block the consumption is higher. After the introduction of LED bulbs and electronic chokes, the consumption found to be reduced to some extent.

MEMBERS OF THE GREEN AUDIT COMMITTEE

SI No	Name	Signature
1.	Dr V Krishnan Principal Chikkanna Government Arts College Tirupur – 641 602	 PRINCIPAL Chikkanna Govt. Arts College Tirupur
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