GREEN AUDIT REPORT

2023-2024

VEER SURENDRA SAI UNIVERSITY OF TECHNOLOGY

ODISHA, BURLA-768018, INDIA

www.vssut.ac.in

Vice-Chancellor
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From the Desk of Chairperson, IQAC

Veer Surendra Sai University of Technology, Burla, Odisha, conducted a green audit for the year 2023-2024 to promote a sustainable future for the campus. The audit began with initial interviews with the management to understand policies, activities, records, and the participation of staff and students in implementing mitigation measures. This was followed by interviews with staff and students, data collection through questionnaires, record reviews, practice observations, and assessments of observable outcomes. The approach emphasized active involvement from both management and staff throughout the audit process.

The findings of this report highlight the University's commendable performance in addressing sustainability issues, including the successful implementation of recommendations from the previous audit within a year. The University has demonstrated a strong commitment to evaluating the environmental impacts of its actions and consistently strives to act responsibly. While the University has made notable progress in its sustainability efforts, the recommendations in this report identify key areas where further improvements can be made to advance its journey toward becoming a more sustainable institution.

Summary

The rapid pace of industrialization and urbanization has led to significant environmental challenges, posing a potential ecological crisis. In response, it is essential to incorporate sustainable practices into everyday activities. VSSUT Burla shares this vision and is committed to proactively addressing environmental concerns.

The green audit undertaken by the University aims to ensure that campus practices align with its adopted green policy. The audit methodology includes completing questionnaires, conducting physical inspections, observations, reviewing documentation, analyzing data, taking measurements, and providing recommendations. Key areas of focus include water conservation, tree plantation, waste management, and the use of alternative energy sources. The primary objective of the audit is to evaluate the University's adherence to its green policy and promote a sustainable campus environment.

1. About the University

The Veer Surendra Sai University of Technology (VSSUT) Odisha was formed vide Orissa Act 9 of 2009 by converting University College of Engineering (UCE), Burla to a non-affiliating unitary University and came into force vide notification of the Industries Department, Government of Odisha in1st July 2009(Vide memo No.IV/TTI-33/2009-8553 and 8564 dtd.10th June 2009). The statutes of VSSUT, Burla 2010 has been approved by the Odisha Government vide Industry Department notification No.V-FE-II-01/2010/8697 dated 21st June 2010. This state government University is also recognized by University Grants Commission (UGC), New Delhi vide UGC letter No. F.9-36/2009(CPP-I) dated5th Jan 2010. The University is empowered to award degrees as specified by the UGC under section 22 of the UGC Act. The University has been declared eligible to receive central assistance under Section 12B of the UGC Act vide letter F.No.9-36/2009(CPP-I/PU) dated 8th November 2012.

1.1. Vision of the University

To emerge as an internationally acclaimed technical University to impart futuristic technical education and creation of vibrant research enterprise to create quality engineers and researchers, truly world-class leader and unleashes technological innovations to serve the global society and improve the quality of life.

1.2. Mission of the University

The Veer Surendra Sai University of Technology, Odisha, Burla strives to create values and ethics in its products by inculcating depth and intensity in its education standards and need-based research through

- Participative learning in a cross-cultural environment that promotes the learning beyond the classroom.
- Collaborative partnership with industries and academia within and outside the country in learning and research.
- Encouraging innovative research and consultancy through the active participation and involvement of all faculty members.

- Facilitating technology transfer, innovation and economic development to flow as natural results of research where ever appropriate.
- Expanding curricula to cater broader perspectives.
- Creation of service opportunities for upliftment of the society at large.

1.3. University Administration

Chancellor	:	His Excellency Shri Raghubar Das, Governor of Odisha
Vice-Chancellor	:	Prof. Bibhuti Bhusan Pati
Registrar	:	Shri Pradeep Dang, OAS (S)
Comptroller of Finance	:	Sri Tularam Kalet, OFS-1 (SB)S
Director, IQAC	:	Prof. S K Swain
PIC Civil Maintenance	:	Dr. S K Panigrahi
Maintenance Engineer	:	Dr. R L Sahu

1.4. Members of the Board of Management

- Prof. Bibhuti Bhusan Pati, Vice-Chancellor, VSSUT, Burla (Ex-officio)
- Principal Secretary to Government of Odisha, Skilled Development & Technical Education Department, Bhubaneswar (Ex-officio)
- The Director, Technical Education & Training, Odisha, (Ex-officio)
- Additional Secretary to Govt. (ES-II) Finance Dept., Govt. of Odisha (Ex-officio)
- Hon'ble Vice-Chancellor, Biju Pattnaik Univ. of Tech., Odisha (Ex-officio)
- Dr. Damodar Acharya, Ex-Director, IIT Kharagpur (AICTE Nominee)
- Prof. C. Mahapatra, Jawaharlal Nehru University, New Delhi (UGC Nominee)
- Prof. D.Mishra, Professor in Production Enginneringy, VSSUT, Burla.
- Prof. P R Dash, Professor in Mechanical Engineering VSSUT, Burla
- Prof. S. Panda, Professor in Electrical Engineering. VSSUT, Burla
- Prof. S Patra, Professor in Civil Engineering, VSSUT, Burla
- Er. Ashesh Padhy, VP & Head-Project, JSW Paradip Steel Project (Alumni)
- Prof. Sukumar Mishra, Professor in Electrical Engg., IIT, Delhi (Alumni)
- Shri Irasis Acharya, M.L.A., Bhatli

- Shri Prakash Chandra Sethi, Cuttack Sadar
- Registrar, VSSUT, Burla, Convener-cum-Secretary

2. Overview of the University:

Veer Surendra Sai University of Technology (VSSUT), Burla, established in 1956 as UCE, Burla, is the first engineering college in the state. Strategically located just 10 kilometers from the city center of Sambalpur Municipality, it enjoys excellent connectivity to the rest of India through national highways, railways, and airways. The university's prime location places it in close proximity to esteemed educational institutions such as Sambalpur University, VSS Medical College, IIM Sambalpur, GM University, and Odisha State Open University. It is also surrounded by numerous public and private sector industries, including MCL, OHPC, HINDALCO, NALCO, NTPC, OPTCL, Vedanta Aluminium Ltd, and Bhushan Steel Plant.

Over the years, VSSUT, Burla has emerged as one of India's premier technical institutions, attracting aspiring engineers nationwide. It offers a wide array of academic programs, including B.Tech. M.Tech. M.Sc., MCA, and doctoral research. The university has an impressive legacy, having produced over 25,000 graduate engineers and 5,000 postgraduate engineers, including doctorates, many of whom hold prestigious positions in public offices, educational institutions, industries, and research organizations globally.

The university is fully residential, featuring modern infrastructure and facilities such as administrative and academic buildings, an auditorium, a library, central internet and computing facilities, a workshop, an e-learning center, an innovation-cum-incubation center, halls of residence, guesthouses, and faculty accommodations. Additional amenities like a dispensary, bank, post office, park, playground, canteen, and cafeteria cater to the campus community. Recently added state-of-the-art facilities include a computer center, gymkhana, and swimming pool.

True to its philosophy of "learning in the lap of nature," VSSUT dedicates more than 60% of its campus to green spaces, featuring lush landscapes adorned with flowering plants and perennial trees. The university actively promotes sustainable practices by focusing on reducing, reusing, and recycling waste, thereby minimizing environmental impact and conserving natural resources. By encouraging students and staff to adopt a sustainable framework, VSSUT strives to reduce its carbon footprint and contribute to a greener, more sustainable future.

2.1. Key infrastructures:

Sl. No.	Description	Details	Area/Plinth Area
Land In Use			
1	University		36.5 Acres
2	Hall of Residences		28.0 Acres
3	Staff Quarters		69.1 Acres
4	Free Land		266.77Acres
5	Govt. Land Available for Extension		102.00 Acres
		Grand Total	502.37 Acres
Construction details			
1	University Building	Main building of plinth area	1,22,715 sft
2		Workshop plinth area	27858 sft
3		Workshop office	3100 sft
4		High voltage Laboratory	1200 sft
5		Cycle shed	4600 sft
6		Garage	1660 sft
7		Guest House	3120 sft
8		Robotic Club	2700 sft
9		Auditorium	14850 sft
10		N.C.C. Building	6000 sft
11		Gymnasium	3300 sft
12		Athletic Building	1730 sft
13		Maintenance office	3200 sft
14		Dispensary	2560 sft
15		Computer Science & Engg. Building	19010 sft
16		Workshop Extension	2610 sft
17		Hydraulics Laboratory extension	1140 sft
18		Cycle sheds	2120 sft
19		Library Building	14050 sft

20		Administrative Building	8530 sft
21		Extension of Electrical & ELTCE Building	2880 sft
22		Innovation and Incubation centre	15629 sft
23		Community centre	2700 sft
24		Swimmimg pool	2500 sft
		Total	**269762 sft.**
25	Halls of Residence	Atri Hall (Boys)	47260 sft
26		Kratu Hall (Boys)	47260 sft
27		Vasistha Hall (Boys)	47260 sft
28		Marichi Hall (Boys)	47260 sft
28		Pulastya Hall (Boys)	47260 sft.
29		Pulaha Hall (Boys)	363620 sft.
30		Angira Hall (Girls)	24160 sft.
31		Arundhati Hall (Girls)	58100 sft
32		Anuradha Hall (Girls)	35000 sft.
25		Visakha Hall (Girls)	35000 sft.
26		Rohini Hall (For Girls)	35000 sft.
27		Agastya Hall (Boys)	45000 sft
		Total	**832180 sft**
Details of Staff Quarters			
28	A-1 Bungalow	1 No.	4725 sft
29	C	4 Nos.	12352 sft
30	D/TD	11 Nos.	15400 sft
31	E	18 Nos	20880 sft
32	F	100 Nos.	88000 sft
33	G	29 Nos.	13050 sft
34	RS	7 Nos.	3805 sft
35	4R	5 Nos.	9750 sft
36	F4R	4 Nos.	7320 sft
37	M4R	4 Nos.	7200 sft
38	5R	6 Nos.	11220 sft

39	3R	27 Nos.	29750 sft
40	F 3R	8 Nos.	8448 sft
41	Modified E	4 Nos.	3280 sft
42	E(New)	4 Nos.	2640 sft
43	B.F	2 Nos.	1720 sft
44	B.F	14 Nos.	10640 sft
45	G.E	10 Nos.	4000 sft
		Total	**2,54,180 sft**

2.2. Selected Photographs:

Academic campus

Main entrance of Academic campus

Academic Block

Training & Placement Centre

Library building

Biju Patnaik e-learning center

Entrance of a hostel

Central park at hostel

Low cost building for coffee center

Swimming Pool

Guest House

Faculty Quarters

Road though academic block

Garden

Gymnasium

Parking space

3. Objectives of the Green Audit:

The purpose of the green audit is to promote environmental management and conservation within the University campus and its surrounding areas. It also aims to identify, quantify, describe, and prioritize a framework for achieving environmental sustainability while ensuring compliance with relevant regulations, policies, and standards. The main objectives of conducting the Green Audit are:

- To secure the environment and cut down the threats posed to human health by analyzing the pattern and extent of resource use on the campus.
- To establish a baseline data to assess future sustainability by avoiding the interruptions in environment that are more difficult to handle and their corrections require high cost.
- To bring out a status report on environmental compliance.

3.1. Methodology

The audit was conducted through a combination of questionnaires, physical inspections, observations, documentation reviews, and interviews with key personnel. The primary areas of focus in the audit report include the management of Water, Waste and Greeneries within and around the University campus.

4. Outcomes

4.1. Water audit

The water audit involves an on-site survey and assessment to evaluate current water usage, identify future requirements, and enhance efficiency in its utilization. The audit covered aspects such as water supply, consumption, and the performance of appliances and fixtures.

4.1.1.Observations

The University receives a daily water supply of 3,00,000 liters from the Sambalpur Municipal Corporation through the Public Health Department, which is utilized for various purposes such as laboratory activities, lavatories, gardening, and drinking. A well-maintained treatment plant is located at the water supply source, and multiple water purification filters are strategically placed across the campus to ensure the availability of safe drinking water. The survey found no evidence of water loss due to leakage or overflow from overhead tanks. Data collected from all departments has been thoroughly examined and verified.

The University's average daily water consumption is 3,00,000 liters, with 1,40,000 liters allocated for domestic use, 60,000 liters for gardening, and 1,00,000 liters for laboratories. The water supplied for drinking purposes meets the IS 10500:2012 specifications for drinking water quality and is confirmed to be potable.

Wastewater generated in laboratories is stored and treated prior to disposal, while domestic wastewater is managed through septic tanks and soak pits.

4.1.2.Drinking water analysis report

A. Organoleptic and Physical Parameters

Sl.	Parameter	Result	Acceptable Limit as per IS 10500:2012
1	Colour (Cobalt Scale) (part 4 of IS 3025)	3 - 5 Unit	5 units
2	Odour (part5 of IS 3025)	agreeable	agreeable
3	pH Value (part 11 of IS 3025)	6.7 – 7.9	6.5-8.5
4	Turbidity	0.5 – 0.9 NTU	1NTU
5	Total Dissolved Solids(mg/l)	92 - 102 mg/l	500 mg/l
6	Calcium (as Ca) (mg/l)	9 - 14 mg/l	75 mg/l
7	Chloride (as Cl) (mg/l)	11 - 17 mg/l	250 mg/l
8	Fluoride (as F) (mg/l)	0.25 – 0.3 mg/l	1.0 mg/l
9	Iron (as Fe) (mg/l)	0.05 – 0.1 mg/l	0.3 mg/l
10	Magnesium (as Mg) (mg/l)	5 – 12 mg/l	30 mg/l
11	Nitrate (as NO3) (mg/l)	1.3 – 2.9 mg/l	45 mg/l
12	Sulphate (as SO4) (mg/l)	13 - 19 mg/l	200 mg/l
13	Total Alkalinity	55 - 75 mg/l	200 mg/l
14	Total Hardness (mg/l of $CaCO_3$)	35 – 50 mg/l	200 mg/l
15	Electrical Conductivity (µs/cm)	170 - 186	-

B. Bacteriological Analysis

Sl.	Parameter	Result	Acceptable Limit as perIS10500: 2012
16	*E.coli*	nil	nil
17	Total Coliforms	nil	nil

4.1.3.Recommendations

- Dependency on Municipal Corporation should be reduced. It can be achieved by minimizing the dependency for toilets and gardening.
- Dependency on rainwater harvesting need to be increased.

- Drip/sprinkler irrigation system should be used in gardens for minimizing the water consumption.
- In campus small scale/medium scale/ large scale reuse and recycle of the water system is necessary

4.2. Waste generation and treatment

The generation and management of solid waste are significant concerns, as improper handling can pose risks to both humans and the environment. This audit aims to examine the production and disposal of various types of waste, including paper, food, plastic, biodegradable materials, glass, and dust, while also exploring opportunities for recycling. Solid waste often contains valuable resources that can be better utilized through practices such as recycling, repair, and reuse. The survey focuses on analyzing the volume, types, and existing solid waste management practices to identify areas for improvement. Solid waste generation and its effective management remain a pressing issue.

4.2.1. Observations

The total solid waste collected on the campus amounts to approximately 250 kg per day. The predominant sources of solid waste in the campus are the waste generated from the office works, canteen and tree droppings. To address this, the waste is segregated at its source through the provision of separate dustbins for biodegradable (wet waste) and non-biodegradable (dry waste) waste.

Biodegradable waste, originating from the mess kitchen, canteen, and plant litters, is collected and utilized for composting by sending it to the processing unit. Paper waste, particularly cardboard, is typically sold to recyclers. In an effort to reduce paper consumption and waste generation, the University adopts double-sided printing for official purposes. Chemical waste generated in laboratories is also subject to segregation.

Solid Waste Collection at the corridor and wet and dry waste collection

Single-sided used papers find a second purpose for writing and printing across all departments. Important and confidential reports/papers are sent for recycling to authorized recycling departments once their preservation period concludes. In adherence to government regulations, the use of plastic has been prohibited. Metal and wooden waste are stored and provided to authorized scrap agents for further processing. Glass bottles generated in laboratories are reused, and food waste from the canteen and tree droppings is directed to vermin compost. All laboratories are equipped with fire extinguishers for emergency situations.

4.3. E-waste Generation

E-waste refers to consumer and business electronic equipment that is either nearing or at the end of its useful life. Despite constituting approximately 5% of all municipal solid waste globally, e-waste is considered significantly more hazardous than other types of waste. This heightened risk is attributed to the presence of substances such as cadmium, lead, mercury, and Poly-Chlorinated Biphenyls (PCBs) within electronic components. These elements pose substantial threats to both human health and the environment.

4.3.1. Observations

The generation of e-waste within the campus is minimal. The campus currently operates with a total of 1400 computers and laptops, 110 printers, 20 Xerox machines, and 35 scanners that are in working condition. To promote sustainability, the cartridges of printers are refilled and reused. The administration actively conducts awareness programs on e-waste management in collaboration with various departments.

Efforts are made to handle e-waste and defective items from the computer laboratory responsibly. Materials such as computers, computer peripherals, printers, scanners, etc., that can be safely reused or recycled are handed over to needy organizations or departments. For the remaining e-waste, it was handed over only to the registered recycler or collection centre as per E-Waste (Management) Rules, 2022.

4.3.2. Recommendations

- As far as possible electronics instruments from reputed companies, and with a better life span should be purchased.
- E-waste generated at the University should be sent to recycle and reuse.

Solar cell in the University campus

4.4. Land Use and Green area

This includes the available area under construction and open space available for plantation to ensure that the buildings conform to green standards. This helps in ensuring that the Environmental Policy is enacted, enforced and reviewed using various environmental awareness programmes.

4.4.1. Chart showing Available area and area under construction

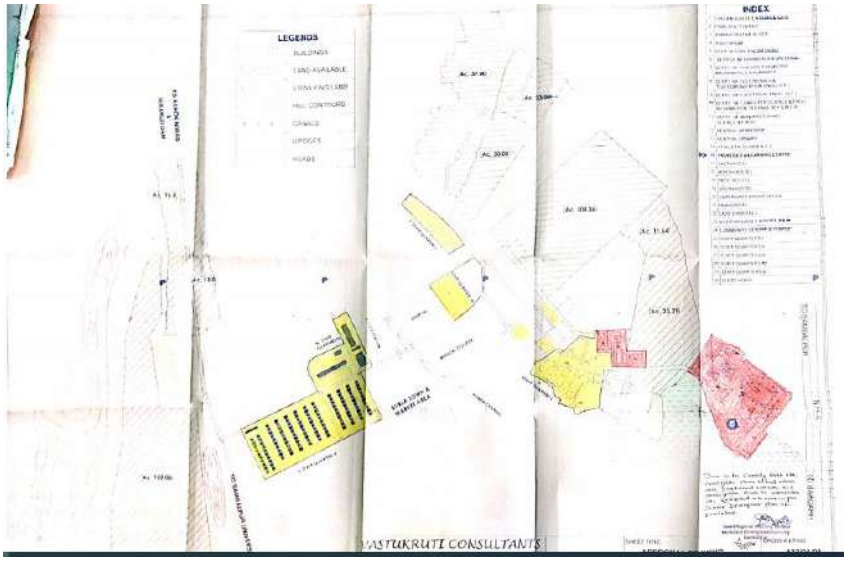
Facility	Rooms	Carpet area Sqm.
Large Class Rooms	12	700
Small Class Rooms	69	5824

Laboratories for UG and PG Programs	49	9500
Computer Lab	3	360
Library	1	1265
Workshop	1	1675
Administrative Block	20	3,771
Seminar Hall	6	639

4.4.2. Campus & Built-up Area

- Location : Urban area
- Campus area : 166.48 Acres
- Built-up area in sq.mts : 1,39,964 Sqm.

4.4.3. University Master Plan



4.4.4. Greenery

The University attempts to maintain eco-friendly atmosphere on thecampus; the number and variety of plant species help to maintain an eco-friendlyambience. Further, to create eco-friendly awareness among thestudents, the University arranges special programmes through where the students get clear idea and importance of trees in life. There are several perennial plantspecies in the campus. University has undertaken various activities likeplantation and beautification of campus through various drives.

4.4.5. List of Plants

Sl.No.	Name of the Plant	Habit	Family
1	Terminalia chebula	Tree	Combretaceae
2	Terminalia belerica	Tree	Combretaceae
3	Madhuca longifolia	Tree	Sapotaceae
4	Acacia auriculiformis	Tree	Mimosaceae
5	Anthocephalus Cadamba	Tree	Rubiaceae
6	Alstonia scholaris	Tree	Apocynaceae
7	Hamelia Patens	Shrubs	Rubiaceae
8	Bougainvillea spectabilis	Climbers	Nyctaginaceae
9	Ocimum sanctum	Herb	Lamiaceae
10	Carica papaya	Herb	Caricaceae
11	Cymbopogon citratus	Herb	Poaceae
12	Azadirachta indica	tree	Meliaceae
13	Tectona grandis	tree	Lamiaceae
14	Mangifera indica	tree	Anacardiaceae
15	Ficus benghalensis	tree	Moraceae
16	Millettia pinnata	tree	Fabaceae
17	Syzygium cumini	tree	Myrtaceae
18	Aegle marmelos	tree	Rutaceae
19	Caesalpinia pulcherrima	tree	Fabaceae
20	Peltophorum pterocarpum	tree	Fabaceae

4.4.6. Recommendation

The University has ample green area and has utilized the available space generously in this regards. However, the University could make an understanding with local bodies to contribute to greening the spaces available with the local bodies.

4.5. Environmental Audit

This includes the assessment and monitoring of air quality, and noise levels in around the University.

4.5.1.Air Monitoring

Air quality in the academic institute is very important for the health of the students, faculty and staff of the institute. The air pollution sources in the University campus are wind, pollen grains, natural dust, vehicular emissions, and laboratory and AC fumes etc. All the pollutants were measured using standard air monitoring methods. The air pollutants monitored on regular basis are sulphur dioxide (SO_2), nitrogen oxide (NO_2), Suspended Particulate Matter (SPM), and Repairable Suspended Particulate Matter (RSPM) etc.Other relevant parameters such as temperature, humidity, pressure, and rainfall are also monitored.

Air quality near the main gate

A. Meteorological Data / Environmental Conditions

- Average wind velocity : 1.02 km/h
- Prominent wind direction : W-E
- Relative Humidity (Max./Min.) : 80/21 %

B. Air quality Report

Parameter	**Result**	**NAAQS #2019**
Sulphur Dioxide (SO_2)	2.8 – 5.4 µg/nm^3	20 µg/m3 24-hour mean
Nitrogen Dioxide (NO_2)	3.8 – 6.4 µg/nm^3	40 µg/m3 annual mean
Particulate Matter (size less than 10 µm) or PM10	6.4 – 9.5µg/nm^3	20 µg/m3 annual mean
Particulate Matter (size less than 2.5µm) or PM2.5	6.6 – 8.8 µg/nm^3	10 µg/m3 annual mean
Ozone (O_3)	Negligible	100 µg/m3 8-hour mean
Lead	nil	0.50 µg/m3 annual mean
Carbon Monoxide (CO)	negligible	2 µg/m3 8-hour mean
Ammonia (NH3)	negligible	100 µg/m3 annual mean

4.6. Noise Environment

The noise level measurements were carried out using the Noise Level Meter.The noise level survey was carried out at seven locations, both circulation area as wellasthe study area.The

University is 15kms away from the District Headquarters and 2 kms away from the National Highway and train line. The noise levels monitored in the University campus aswell as inside the classroom and found the noise level within the permissiblelimit.

Sl. No.	Location	**Minimum Reading IndB**	**Maximum Reading IndB**	Limits
1	Near Main Gate	26	47	75
2	Near back Gate	25	44	75
3	Inside Class room	26	46	75
4	Outside Class room	28	48	75
5	Inside Library	19	22	75
6	Inside Chemistry lab	21	27	75
7	Inside Computer Centre	22	29	75

4.6.1.Recommendation

- Stand of tall trees should be planted along the front boundary wall to reduce noise and air pollution from the roadside.
- Use proper acoustic in rooms installed with heavy machines. Improve damping for machine vibration and sound.
- A continuous air monitoring system should be procured for measurement of air pollution.

4.7. Rain Water Harvesting

Rainwater harvesting involves collecting and storing rainwater for later use. It is an eco-friendly and sustainable method that can be implemented on various scales, from individual households to large institutions like universities. The university has implemented rainwater harvesting systems on its buildings or infrastructure. Gutters and downspouts are used to direct rainwater from the collection surfaces to storage facilities. Rainwater is stored in storage. The size of the storage facility is sufficient considering the intensity of rainfall. Rainwater undergoes filtration to remove debris and contaminants before storage. Harvested rainwater is used for irrigation.

Main building roof area	84650 sft
Computer Science & Engg. Building roof area	13000 sft

Library Building roof area	9700 sft
Administrative Building roof area	6000 sft
Extension of Electrical & ELTCE Building roof area	2000 sft
Total roof area of University Building where RWH can be implemented =	**115350 sft.**
Total roof area of University Building where RWH is implemented in first phase =	**18000 sft.**
% of rainwater collected =	**15.6%**

The RWH is done in (i) Administrative Building and (ii) B-block (Main building) in First Phase. Avg Rainfall considered = 100 mm for 3 days. Runoff coefficient considered = 0.8 for roofed area

1. Area of Administrative Building = 6000 sqft =558 m^2

Volume of water will be received is = 558 × 100mm × 0.8 = 44.640 m^3

Adopting a further loss over the time period of 3 days is 40%. So a water storage over a period of 3 days will be= =44.640X0.6= 26.784 m^3

Where as the tank is designed for 44.64 m^3.

Height of tank = 2.85 m ☐(2.60m + 0.15m is freeboard)

Area of the base = 44.640 / 2.85 = 15.66 m^2= 16 m^2

Overall Dimension = (2.85m × 8m × 2m) ☐(height × length × width)

2. Area of B Block = 12000 sqft = 1115 m^2

Volume of water will be received is = 1115 × 100 × 0.8 = 89.200 m^3

Water storage over a period of 3 days will be of 40% loss. Which will be = 89.2X 0,6= 53.52 m3

Height of tank = 2.85 m ☐(2.60m + 0.15m is freeboard)

Area of the base = 89.200 / 2.85 = 31.30 m^2= 31 m^2

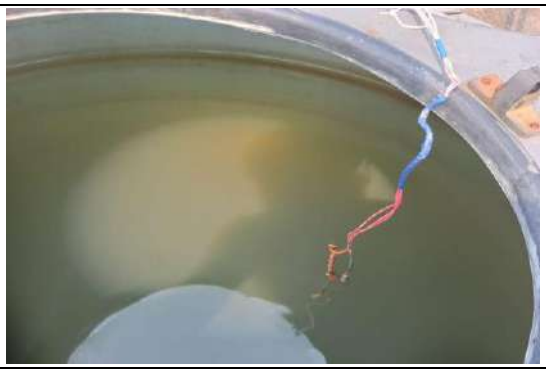
Overall Dimension = (2.85m × 8m × 4m) ☐(height × length × width)

The expenditure for the same is Rs. 4,99,770/-.

4.8. Water Conservation

A sensor-based water level detector is implemented in Rohini Hall of Residence as shown in figure below. It has the following advantages:

1. The overflow from overhead tank reduced.
2. Unnecessary wastage of water due to tap left open after end of storage and filling is minimized.
3. Due to saving of overflow or misuse the filling time of tank has reduced. The energy used for pumping of water to overhead tank is reduced.
4. Manpower for operation of valves and checking of filling of tanks is minimized.

	
Sensor inside the overhead tank	Control Circuit in the pump house

Expenditure: Total expenditure is Rs. 22,684.

Single Phase Pump Sensor: Rs. 6,990

14/38 Four Core Wire: Rs. 10,384

Single Phase 25a Electrical Contractor: Rs. 2,360

Installation: Rs. 2,950

5. Conclusions

The campus community, comprising faculty, staff, and students, demonstrates a commendable level of environmental awareness, with their proactive efforts making a significant impact. Initiatives such as the installation of solar panels, the adoption of a paperless workflow system, composting practices, and the introduction of an environmental awareness course by the administration highlight the campus's progress toward becoming a Green Campus. Additionally, recommendations have been provided to address waste management issues through eco-friendly and scientifically sound methods.

As part of the green audit, a detailed assessment was conducted on various parameters, including water usage, waste management, e-waste disposal, greenery, ventilation, illumination,

air quality, and noise levels on and around the campus. It was observed that the campus benefits from sufficient lighting and ventilation, leveraging natural light and airflow effectively. Noise levels were found to be well within acceptable limits.

The green audit report serves as an important tool, reflecting the University's commitment to transparency and accountability in its sustainability efforts. To promote continuous improvement, it is recommended to schedule the next green audit for the 2024-25 academic year, further advancing the institution's dedication to environmental responsibility and sustainability.

(Dr. R.K. Dandpat)
Maintenance Engineer

(Prof. P Mohapatra)
Professor in Chemistry

(Prof. R R Dash)
Prof. in Civil Engg.

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Registrar
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