

# ENVIRONMENT AUDIT

2019-20 & 2020-21

## AUDIT REPORT

Studied for

**D. S. Government Degree  
College for Women**

Bhagya Nagar – 4th line, 11th cross road, Ongole,  
Prakasam District, Andhra Pradesh. -523001, India

Analysed by



**21 March 2022**

## Disclaimer

The Audit Team has prepared this report for the **D. S. Government Degree College for Women** located at *Bhagya Nagar – 4<sup>th</sup> line, 11<sup>th</sup> cross road, Ongole, Prakasam District, Andhra Pradesh. -523001, India* based on input data submitted by the College analysed by the team to the best of their abilities.

The details have been consolidated and thoroughly studied as per the various guidelines for Green Buildings available in National and International Standards; the report has been generated based on comparative analysis of the existing facilities and the prerequisites formulated by various standards. The inputs derived are a result of the inspection and research. These will further enhance and develop a Healthy and Sustainable Institution.

These can be implemented phase wise or as a whole depending on the decision taken by the Hon'ble Management and College. The warranty or undertaking, expressed or implied is made and no responsibility is accepted by Audit Team in this report or for any direct or consequential loss arising from any use of the information, statements or forecasts in the report.

The audit is a thorough study based on the inspection and investigation of data collected over a period of time and should not be used for any legal action. This is the property of Greenvio Solutions and should not be copied or regenerated in any form.

The Report is prepared by the Team of Greenvio Solutions under their brand and department – Sustainable Academe as Consultancy firm with the Project Head - Ar. Nahida Shaikh who has completed audits of multiple Institutes including Technical, State University, Private University and Single Faculty Colleges for a total of more than 45 lakhs+ sq. ft. of Built-up area audited till date Pan India as an Accredited and Certified Green Building Professional-Architect. Green Building consultancy is her forte and she is one of the most sought after names when it comes to providing excellent quality services within the stipulated time frame.

The Study is conducted in capacity of Accredited & Certified Green Building Professional with extensive experience.

### Greenvio Solutions

*Developing Healthy and Sustainable Environments*

We are an Environmental and Architectural Design Consultancy firm

*Sustainable Academe* is our department for conducting Audits

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## Acknowledgement

The Audit Assessment Team thanks the **D. S. Government Degree College for Women, Prakasam District, Andhra Pradesh** for assigning this important work of Environment Audit. We appreciate the cooperation extended to our team during the entire process.

Our special thanks are due to **everyone from the Management.**

Our heartfelt thanks to Chairperson of the entire process **Dr. D. Kalyani**, Principal, for the valuable inputs.

We are also thankful to **College's Task force the faculty members - Green Audit Coordinators** who have collected data required **D. Anantha Lakshmi**, Vice Principal; **K. Kusuma Kumari**, IQAC Coordinator; **Dr. P. Indira**, Academic Coordinator; **Ch. Teresa Rani**, Senior Assistant.

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### Sustainable Academe

Brand of Greenvio Solutions, Palghar District, Maharashtra- 401208

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# 1. Introduction

## 1.1 About the functioning of the Institution

D.S Government Degree College for Women prides itself as an institution committed to quality education with a technology edge. It is affiliated to Nagarjuna University . The institution boasts of good infrastructure and well known academicians. In this regard, our college endeavours to harness excellence with a commitment to the ethos of 'Practical Learning' since 1984. Moreover it has been providing consistent training to its students to help them evolve as competent professionals across India. Since the world has become global, digital and herbal, success requires not only the ability to perform according to the requirements of the position, but also the ability to adjust and get along as a member of a working team. In addition, students have immensely benefitted from our innovative teaching as well as training.

## 1.2 Statements of the Institution

**Vision** - To become a center of educational excellence for empowering women in a variety of ways by realizing their capabilities so that they can take their rightful place in the society.

### **Mission**

- 1) To inculcate the spirit of quality in Higher Education.
- 2) To trigger the skills related to Education & life.
- 3) To Enhance physical wellbeing of the students.
- 4) To promote social awareness & community Services.
- 5) To Enlighten Women empowerment.
- 6) To inculcate values for betterment of women.
- 7) To train students for academic competition.

### 1.3 About the Institution

The aim of the college is **“Cultivation of positive self - image and self-confidence, developing capacity for critical thinking and decision - making among the students”** and also to continuously enhance the teaching methods in order to provide students with an opportunity for their all-round development. It also strives for excellence in academics and makes an effort to induce passion for learning along with the inspiration for decisive thinking and assessment, thereby helping them to become the best professionals in their chosen careers. **The Institution is affiliated to Acharya Nagarjuna University a state university in Namburu, Guntur district, Andhra Pradesh and it offers the following courses.**

- **Graduation** – It offers the following Undergraduate courses.
  - Faculty of Humanities – B.A. in History, Economics and Political Science
  - Faculty of Commerce – B. Com in Banking and Insurance, Computers
  - Faculty of Science & Technology – B. Sc in Aquaculture technology; Cloud computing; Botany, Zoology, Chemistry (BZC); Maths, Physics, Computer Science (MPCs); Maths, Physics, Chemistry (MPC).
- **Post-Graduation** – It offers the Post-Graduation course in Telugu.

The College works towards training young women to be competent, committed and compassionate, and lead in all walks of life. Its motto is **“Upliftment of women by education for betterment of society”** and its objectives are:

- To train the students with skills.
- To provide career guidance.
- To give I.C.T edge to the reading and learning skills.
- To inculcate Value education system.
- To promote women empowerment.
- To provide job orientations.
- To reach social responsibilities for the welfare of the society.
- To give thrust to Research.

## 1.4 The surrounding premises around the Institution

The Premises is situated amidst the landscape serene of **Prakasam district of Andhra Pradesh State** with immense peace and calmness in the surroundings. The college is locate very close to the Andhra Pradesh State Irrigation Development corporation, ongole and has a huge ground adjacent to its location.

The College is surrounded by Educational Buildings, Residential and Commercial areas on the macro front from all the sides. There is a frontal approach which provides quite a beautiful appreciation space while approaching the premises; this area is surrounded by huge trees which positively complement the background-foreground aspect in terms of Natural space and built-form Architecture. It also provides ample shade which enhances the micro climate of the region. The location of College is feasible to the nearby essential amenities such as Public Health Center, Fire Station, Civic body-Public administrative buildings, Recreational gardens and Police Station.

## 1.5 Assessment of the College

### 1.5.1 Certification

The College has received ISO 9001:2015 Certification for providing educational services in August, 2021.

### 1.5.2 Accreditation

**NAAC** - The College received a CGPA of 2.10 with a B Grade in its first cycle of Accreditation in February 2014. The College is due to enter its second cycle of NAAC soon.

### 1.5.3 Recognitions

The college has achieved the following recognition from **University Grant Commission (UGC) under section 2 (f) & 12 (B) of the UGC Act, 1956 by University Grants Commission, New Delhi.**

## 2. Institution overview

### 2.1 Populace analysis for Academic year 2019-20

#### 2.1.1 Students data

The student data (shared by the College) shows there were a total of **258 Girls** students in the premises.

#### 2.1.2 Staff data

Type	Male	Female	Total
<b>Admin Staff</b>	01	00	<b>01</b>
<b>Teaching Staff</b>	06	11	<b>17</b>
<b>Non-Teaching Staff</b>	05	05	<b>10</b>
<b>Total Staff Members</b>	<b>11</b>	<b>16</b>	<b>28</b>

*Table 1: Staff data of the Institution for 2019-20*

The staff data shows the premises had a total of **28** Staff Members.

### 2.2 Populace analysis for Academic year 2020-21

#### 2.2.1 Students data

The student data (shared by the College) shows there were a total of **335 Girls** students in the premises.

#### 2.2.2 Staff data

Type	Male	Female	Total
<b>Admin Staff</b>	00	01	<b>01</b>
<b>Teaching Staff</b>	04	11	<b>15</b>
<b>Non-Teaching Staff</b>	05	04	<b>09</b>
<b>Total Staff Members</b>	<b>09</b>	<b>16</b>	<b>25</b>

*Table 2: Staff data of the Institution for 2020-21*

The staff data shows the premises had a total of **25** Staff Members.



## 2.3 Total College Area & College Building Spread Area

The **total site area is 6.72 Acres** and the **total Built-up area of College is 20,400 sq. ft.** for a **total of 360 footfalls.**

## 2.4 College Infrastructure

### 2.4.1 Establishment

**The College was established in 1984.** The college is located pretty close to nature and hence has very fresh environment which is absolutely pollution free and healthy. The Building is a Reinforced Cement Concrete (RCC) framework building. **Overall the Infrastructure of the Building is excellent in terms of the Architecture Design and Green Building Design. The Premises covers quite a few of the requirements for a Green Habitat.**

### 2.4.2 Spatial Organisation

The overall ambience of the College is warm and inviting. The classrooms and other spaces have ample natural ventilation in the form of clear glass windows with fresh air ventilation. The architecture of the building is quite well designed. The colour palette not just helps the building to stand out but also provides an Institutional arena. It balances with the local architecture with the natural landscapes of huge trees all around. The design emphasis on providing calmness to the built form and gradually merges with the serene landscape.

The floor to floor height is more than 10 feet. There is no provision for lifts in the premises, whereas there are amenities such as CCTV, Fire extinguishers, Library and first aid box.

### 2.4.4 Operation and Maintenance of the premises

The interview session with the staff regarding the operation and working hours is summarized in the table. The Institutions are open Monday to Saturday for full day.. The detail wise timing for each is mentioned below.

S. No.	Section	Spaces	Time	Hours/day	Days in a year
<b>1</b>	Main Institutional College	Student areas and Teaching faculty	Monday to Saturday (10:00 a.m. to 05:00 p.m.)	7	280
<b>2</b>	General areas	Admin areas and library, Passage, staircase, toilet	Monday to Saturday (09:00 a.m. to 05:00 p.m.)	8	300

*Table 3: Schedule of the timings of the premises*

**On-site investigation and physical verification**  
The Beautiful and Eminent Institution Building and premises



## 3. Green Building Study Audit

### 3.1 About the Green Building Study Audit

It is a systematic study of the aspects which make the Institution a sustainable and healthy premises for its inhabitants.

### 3.2 Analysis for the Green Building Study Audit

The procedure included detailed verification for the following:

#### Energy Audit

- Analysis of the Lights, Fans, AC, Equipment
- Renewable energy
- Scope for reducing the current energy bills if any
- Improvement in the thermal comfort of the campus

#### Green Audit

- Green initiatives
- Hygiene audit
- Water Audit - Analysis of the current water consumption of campus; Scope to include Rain water harvesting and Waste water treatment in campus
- Waste Audit - Current waste produced, its segregation and usage; Strategies to be adopted for waste management and awareness

#### Environmental Audit

- Analysis of the current landscape + hardscape of campus
- Analysis of the flora and fauna of campus
- Strategies adopted at present to enhance vegetation
- Measures that can be adopted for ecological improvement of the premises.

### 3.3 Strategy adopted for Green Building Study Audit

The strategies included data collection from admin department, actual inventory, investigation to check the operation and maintenance, analysis of the data collected and preparation of the Report.

### 3.4 Timeline of the activities for Green Building Study Audit

- 09 March 2022 – Discussion with the College
- 10 March 2022 – Allotment and Initiation by the College
- 10 March 2022 – Induction Meeting
- 12 March 2022 – Survey of the Student and staff submitted
- 19 March 2022 – Data submitted by College
- 21 March 2022 – Submission of the Report

## 4. Site Study

The following listed are some of the positive site elements which are beneficial to the college in terms of tangible and intangible benefits.

- **Location** - The D. S. Government Degree College for Women is located at Bhagya Nagar – 4th line, 11th cross road, Ongole, Prakasam District, Andhra Pradesh. - 523001, India and falls under the Ongole Municipal Corporation.
- **About the district** - Ongole is a city in Prakasam district of the Indian state of Andhra Pradesh. The Municipality was formed in the year 1876 and was Upgraded to Municipal Corporation on 25.01.2012. The city is one of the 13 municipal corporations in the state and also the Headquarters of Ongole mandal. It is the 13<sup>th</sup> largest city in the state by means of population.
- **Neighbourhood context** - The premises is surrounding by open spaces and Residential, Commercial and Educational areas on the immediate surroundings of the site.
- **Natural physical features** – The premises includes a rich biodiversity and huge number of plants in the adjacent open space. The site does not have major different in the land levels (contours).
- **Manmade features** – The premises is situated in a rural area amidst residential areas and open spaces with appropriate proximity to necessary amenities. There is sufficient appreciation space for entrance. The materials used for construction are RCC and the landscaping includes innumerable natural trees as well as potted plants.
- **Circulation** – There is a smooth transition of pedestrian traffic inside the premises due to the large entrance gate and the huge open space where vehicles of students and staff is parked.
- **Climate** – In Ongole, the wet season is oppressive and overcast; the dry season is muggy, windy, and partly cloudy; and it is hot year round. Over the course of the year, the temperature typically varies from 70°F to 101°F and is rarely below 66°F or above 108°F.

(Source: <https://weatherspark.com/y/110135/Average-Weather-in-Ongole-India-Year-Round>)

# Ecological (Environment) Audit



*Background reference image Yugal Shrivastava on pexels*

## 5. Ecological (Environmental) Audit

Environment is an essential part for human survival. We co-exist with the environment and it cannot be termed as a separate entity. The Ecological audit helps to understand the flora, fauna that exists and steps that can be taken to improve the same. To denote if there are problems related to sound in and around the surrounding. In terms of the carbon footprint it helps in keeping a tab on the eco-friendly habits incorporated by the inhabitants of the premises. Health today is the topmost priority, a general understanding of the initiatives undertaken along with sufficient hygiene practices adopted. Universal design is applicable to all built and unbuilt spaces.

As part of our study we could state that the Institution has developed eco-friendly practices and sustainable solutions which are well reflected in the rich biodiversity of the Premises. Being situated near the city the appreciation space towards the main entrance provides a welcoming approach to the College.

The college has huge open space used by all. The students use it for as a leisure place for study and college ground is used for sports activities. There are ample resting spaces as part of building design which provide a resting and warm welcoming approach in the premises.

### 5.1 Open Spaces

There is a beautiful balance of natural and open spaces in the premises and the open/vegetation spaces are balanced overall. The ground is used by students at present for sports and cultural gatherings. The design on the entire is such that the landscape and softscape spaces are very well oriented and located thus being extremely useful to Institutions in the site. **There are provisions for natural plantations which have enhanced the beauty of the space.**

There are adequate numbers of Maintenance staff allotted for the upgrading the open spaces and they have done an excellence job in terms of the duty allotted. The infrastructure committee too is involved in this process. The traditional tap and pipe facility is adopted for watering and the college has taken special provisions for the same. The spaces are watered daily in summer. **The efforts to maintain the existing space are commendable.**

## 5.2 Flora audit

A flora survey was carried out to identify the total numbers of plants and trees every year. The landscape area has a variety of plantations constituting hundreds of surveyed trees in premises in the last few years as follows with detail description of each.

S. No.	Plant Name	Type	Nos.	Planted By
1	Azadirachta indica	Tree	3	Naturally grown
2	Pongamia pinnata	Tree	12	Staff/Students
3	Syzygium jambolanum	Tree	8	Staff/Students
4	Conocarpus lancifolia	Tree	26	Staff/Students
5	Polyalthis longifolia	tree	2	Staff/Students
6	Annona squamosa	Shrub	1	Staff/Students
7	Bauhinia purpurea	Small Tree	1	Staff/Students
8	Hibiscus rosa sinensis	Shrub	3	Staff/Students
9	Durenta repens	Shrub	1	Staff/Students
10	Nerium	Shrub	11	Staff/Students
11	Aegle marmelos	Tree	1	Staff/Students
12	Bougainvillea spectabilis	Shrub	1	Staff/Students
13	Cassia peltophorum	Tree	2	Staff/Students
14	Dracaena	Herb	1	Staff/Students
15	Epipremnum aureum	Tree	1	Staff/Students
16	Ixora coccinia	Shrub	1	Staff/Students
17	Annona reticulata	Shrub	1	Staff/Students
18	Annona muricata	Shrub	1	Staff/Students
19	Vitex nigundo	Herb	1	Staff/Students
20	Ocimum sanctum	Herb	8	Staff/Students
21	Mentha piperata	Herb	1	Staff/Students
22	Piper longum	Herb	1	Staff/Students
23	Centella asiatica	Herb	3	Staff/Students
24	Phyllanthus niruri	Herb	Many	Staff/Students
25	Phyllanth emblicaus	Tree	1	Staff/Students



26	Curcuma longa	Herb	1	Staff/Students
27	Withania somifera	Herb	1	Staff/Students
28	Tinospora cordifolia	Climber	1	Staff/Students
29	Alastonia scolaris	Tree	1	Staff/Students
30	Bacopa monnera	Herb	1	Staff/Students
31	Kalanchoe pinnata	Herb	1	Staff/Students
32	Cymbopogon citratus	Shrub	1	Staff/Students
33	Costus igneus	Herb	1	Staff/Students
34	Trachyspermum ammi	Herb	1	Staff/Students
35	Adhatoda vasica	Shrub	1	Staff/Students
36	Mentha spicata	Herb	Many	Staff/Students
37	Lawsonia inermis	Shrub	3	Staff/Students
38	Lavendula officinalis	Herb	1	Staff/Students
39	Aloe vera	Shrub	7	Staff/Students
40	Euphorbia hirta	Herb	Many	Naturally grown
41	Albezzia lebeck	Tree	4	Staff/Students

*Table 4: Details of the Flora in the premises*

At present there are more than 116+ plantations comprising of plants, trees, shrubs. All of these are planted by the on various occasions and some have grown naturally. Timely maintenance with sufficient care has resulted in positive benefits for the surroundings.

## 5.3 Noise Audit

### 5.3.1 Macro level

On a macro level there are open grounds in the site. The approach road too has very minimal traffic. As the college is oriented amidst the residential areas with immense vegetation the noise levels do not affect the students and staff in their day to day functioning. The approach road too is pretty away. **Overall the noise level in terms of bad effect is extremely low and there are positive outcomes as per our analysis on macro level.**

### 5.3.2 Micro level

The college has an adequate open space covered with huge trees prevailing naturally in the premises which act as a noise barrier; in addition the Institution building is surrounded by Residential Buildings which further act as a benefit in reducing any noise pollution. There are bare minimum parking provisions provided in the premises which causes bare minimum noise as they are situated near the entrance which is a bit away from the College building. The college does not have generator thus there is no inconvenience or sound problem caused due to the same. There are no particular equipments which cause any noise effect. **Overall the noise levels inside the premises are low which is a good approach.**

## 5.4 Carbon Footprint Audit

### 5.4.1 Eco-friendly Commuting Practices

Based on data collection and discussion with staff the following points were noted:

- **Ease of commuting** – Owing to close proximity to public transport the access is very feasible and walk able.
- **Parent's commute** - There are 2 Parent-teacher meetings held in a year and the turn-out is around 40-60%
- **Vehicles details** – The provision provided by College includes s vehicle parking is allowed at present as follows.

S. No.	Type	Nos.	For (student/ Staff)
1.	Cars	5-8	Staff
2	Bikes	15-20	Staff and Students
3	Cycles	50-60	Students

*Table 5: Details of the Parking in the premises*

- **Commute details** – The students and staff commute from multiple places. The details are summarised below.

S. No	Name of the Place	Distance from college in kms
1	Vengamukkala palem	5 Kms
2	Vasepalli padu	10 kms

3	Cheruvukommu Palem	6 kms
4	Pelluru	5 kms
5	T.Naidupalem	12 kms
6	Sarvereddy palem	9 kms
7	Eethamukkala	21 kms
8	Alluru	13 kms
9	Mangamuru	12 kms
10	Bapatla	79 kms
11	Vetapalem	57 kms

*Table 6: Details of the places students and staff commute from*

### 5.4.2 Heat Island Reduction

The Institution has **adopted the following practices which are yielding positive results** in terms of Urban Heat Island Effect which refers to increase in temperature of the surrounding because of ineffective strategies.

- **Exposed roof areas** – The terrace is a flat roof which is absolutely clean and well maintained. The Buildings are covered with white paint and the Maintenance staff along with Management have taken ample measures to maintain the same. **There was no weathering of roof observed.** The current practices are well maintained.
- **Exposed non-roof hardscape areas** - There are pathway on all sides of the premises. These include some natural and potted plantations along the pathways. However, the trees are huge and the canopy is wide spread thus providing ample shade to the outdoor areas of the premises. Hence, there are no direct sunrays or similar effect affecting the students and staff. The college has an open space in the form of lush green carpet which acts as a solution for the urban heat island effect. This huge green space is a very good solution for reducing any harmful health consequences which may arise due to harsh sunlight.

**There are adequate measures adopted in the premises to reduce heat island effect of Building roofs and in site.**

### 5.4.3 Outdoor Light Pollution Study

The college compound lights are not upward looking thus, these do not cause light pollution.

## 5.5 Universal Campus

*As per World Report on Disability, 2011 there are 180 million approx. Persons with Disabilities that makes it 15% of total population of India.*

**There are Ramps, Handrails along staircase and low height risers in the Staircases as part of universal campus initiatives.** The design of the premises is appropriate for access with passages and corridors being wide enough in size and naturally ventilated. The doubly and singly loaded corridors are safe from fire safety aspect. The college has resting places (seating areas) in the outdoor along the trees thereby making it user friendly for the specially abled students. **The college can plan to have 100% lifts in the future depending on the situation and facilities in addition to universal toilet.**

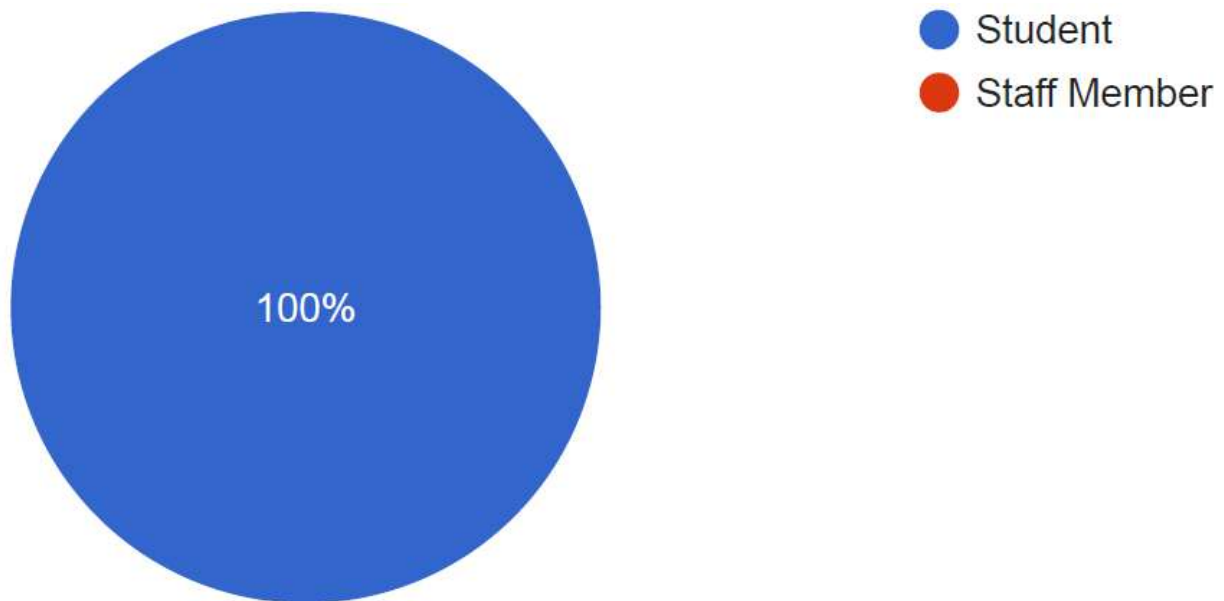
## 5.6 Fire Safety

The Institution has undertaken adequate fire safety measures. Each floor has an open staircase without any barriers for fire safety measures. These staircases are free of any kind of storage or combustible material. The windows in each classroom are at a low height with fresh air and natural light thereby adding to ample ventilation throughout the day. The college should adopt additional fire safety practices such as fire hydrant and others whenever the College undergoes further extension or renovation. The current facilities are however quite well maintained. **Our observation was that there are adequate Fire extinguishers in the premises.** Though, there can also be provision for additional fire safety signages.

## 5.7 Survey Results

An online survey was conducted to analyse the views about the premises, following are some of the reviews.

### 5.7.1 Participation



*Figure 1: Participation analysis in the survey*

A total of **108 responses** were received out of which 100% were students.

### 5.7.2 What according to you are the positive steps taken by the College towards Green Building/ Good maintenance?

We have listed some of the key responses below.

- Celebrated many awareness programs on eco aspects.
- Conducting Eco tours and programmes. Plastic free premises.
- **Very good conditioned equipments, less power usage bulbs used in our college, we have solar panels on our college roof.**
- Through NSS our college is conducting many awareness and clean & green programs.
- **Punishment to late comers to college is planting a plant at our college premises. Maintenance of Botanical garden with good number of plants, waste water is turned into botany garden.**

## **5.8 Positive site features as per our study**

### **a) Avoid using plastic in premises**

There are provisions for ban on the use of plastic bags or products in the Premises.

### **b) OPAC system**

The system in the library is beneficial for the students.

### **c) Paperless technologies**

The college has gone technology friendly and paperless in the functioning of the Premises.

### **d) Resting places**

There are provisions for resting places in premises in outdoor and indoor.

### **e) Avoid using plastic in premise**

There are provisions for ban on the use of plastic bags or products in the Premise.

### **f) No vehicle days practiced**

The college practices no vehicle day in the premise on a periodical basis.

### **g) Ample greenery**

There are provisions for herbal garden, plenty of lawns with traditional trees and greenhouse in the premises.

## 5.9 Recommendations for a Sustainable Habitat by Greenvio Solutions

### Site beautification

#### a) Low VOC Paints and Adhesives

Whenever the College undergoes repairs or renovations there should be use of materials with low emissions so as to reduce the adverse health impacts on workmen and the students occupying the space thereafter.

#### b) Additional facilities for birds

There can be provision for drinking water and food facility for birds visiting in the College premise.

#### c) Nutrition pits

Certain pits can be demarcated as 'Nutrition pits' where the organic food from kitchen and Canteen fruit peels and fruits or vegetables can be degraded for making nutrition rich soil

### Heat island reduction

#### a) Cool rooftops

It is suggested that the College gets the Terrace roofs painted with Cooltop as it will help reduce the temperature of the spaces.

### Universal Campus

#### a) Universal Toilet

There should be minimum 1 toilet for the specially abled people as per guidelines prescribed by National Building Code 2016 with size being minimum or more than 1.5m x 1.5m

#### b) User friendly movability in premises

There should be provision of Kerb Ramp near the main entrance of the Building premises, also low height hand rail for ease of access.

#### c) Resting places

There should be increased provision for resting places in premises in outdoor and indoor.

## Pollution Control

### a) Promote the use of Eco-friendly vehicles

There can be provision for battery operated vehicles/ low emission vehicles such as electrically driven vehicles parking in open space along with battery charge points, this would inspire students to change mode of transportation and adopt sustainable practices.

### b) Bicycles as a gift

As an appreciation gesture may be the students toppers/ staff best performers can be awarded with a bicycle occasionally.

### c) Avoid paper wastage

The College can collect all old semester notebooks; these can either be converted to reusable paper in the premises through a workshop or using shredder machine or handed over to vendor for making fresh paper. Additionally the Students can be motivated to undertake similar practice on an individual note.

## Smart and responsible environment systems

### a) Smart Gardening System

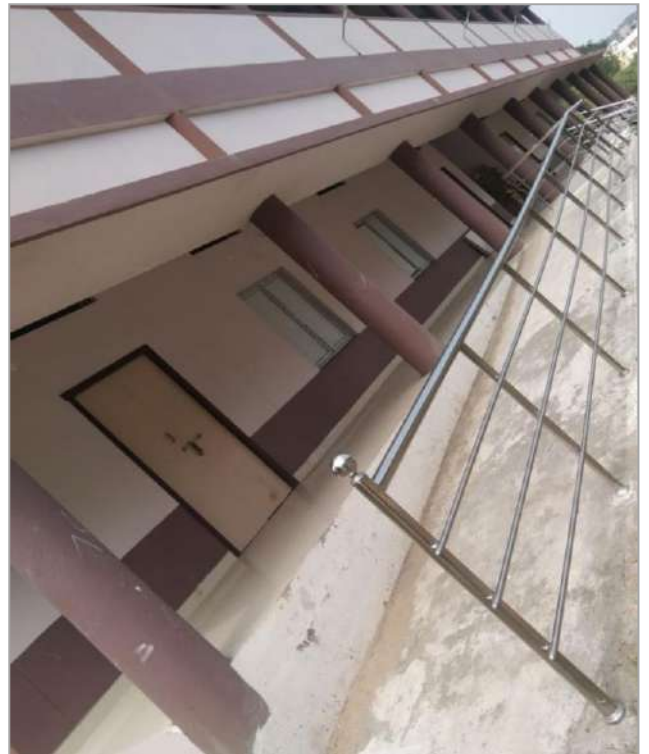
The College can undertake Smart Gardening system using IoT Technology such as an automated watering system. This will result in saving time by scheduling time for watering; Saving money and water as smart irrigation systems have automated water schedules in addition to tracking dampness of soil which helps the irrigation system know when and how much the garden needs. It also helps in healthier plants as with the help of apps, smart irrigation systems, or even smart growing containers, these tasks can be provided evenly and allow the plants to be healthier and more productive.

More information on this system can be checked here <https://www.happysprout.com/inspiration/what-is-smart-gardening/>



## On-site investigation and physical verification

The ecologically friendly ambience with facilities such as ramps, parking, greenhouse and botanical gardens.



## 6. Towards a Healthy & Sustainable Institution

### 6.1 Inputs by Greenvio Solutions

Based on the analysis of the study of premises in addition to the recommendations provided in each section of Ecological, Water, Waste and Energy Audit the College can adopt the following strategies towards a Healthy and Sustainable Institution practices.

- a) Kitchen garden** - There can be provision of kitchen garden practices in a designated area of the open space this would enhance the biodiversity and be useful in training students and staff about the healthy practices and vegetables grown which would be used in Canteen. It helps in capacity building. The smaller steps taken have huge impacts when each student would adopt these practices in their homes or societies and grow kitchen garden, terrace garden there will be a long term benefit for the environment as a whole.
- b) Cutlery in the Canteen** – The regular plastic and steel plates, spoons used in Canteen can be replaced with eco-friendly and organic leaves, paper straw, disposable plates, edible spoons and tables made out of sugarcane waste or bamboo. This will be first of its kind initiative to be adopted and practiced thus also inculcating the healthy practices in students.
- c) Signages** – In addition to the signages being in regular language there can be additional signages in braille language for the specially abled students.
- d) Waste vio** – Stepping up a little further an initiative can be undertaken wherein College can tie up with an organisation and students can be encouraged to collect dry waste and electronic waste such as newspapers, old computers and others and hand over to organisation on a weekly or monthly basis thereby making a waste reduction approach in the community. This has benefits such as awareness, eco-friendly habits in becoming a responsible citizen.

## 6.2 Survey Results

An online survey was conducted to analyse the student and staff views about what changes according to you can be undertaken for Green audit improvement in College premise and activity.

**Some of the suggestions by the Students and staff are listed below:**

- Everyday watering to the plants
- Throwing waste materials in dust bins
- More solar panels to reduce electricity bill
- more awareness to be created among surrounding area individuals as they are illiterates
- more solar inverters should be used

**However, it should be noted that the College has taken up multiple initiatives and because of Pandemic the students have not practically visited the campus so many of these points are not mandatory at the moment.**

## 7. References

1. Uniform Plumbing Code – India, 2008
2. IGBC Green Existing Buildings – Operation & Maintenance (O&M) Rating system, Pilot version, Abridged Reference Guide, April 2013
3. IGBC Green Landscape Rating system, March 2013
4. BOMA Canada Waste Auditing Guide, Best Environmental Standards, BOMA BEST - Canada
5. Climate data <https://weatherspark.com/y/110135/Average-Weather-in-Ongole-India-Year-Round>
6. Specific information about the district <https://cdma.ap.gov.in/en/about-us-60>
7. Used only for understanding Universal design - Universal accessibility Guidelines for Pedestrian, Non-motorized vehicle and Public Transport Infrastructure – Report guidelines by Samarthyam (National centre for Accessible Environments) – an initiative supported by Shakti Sustainable Energy Foundation.



# Environment Audit Certificate

is awarded for **2019-20 and 2020-21** to the Esteemed Institution

## **D. S. Government Degree College for Women**

Bhagya Nagar – 4th line, 11th cross road, Ongole, Prakasam District  
Andhra Pradesh. -523001, India

As part of the Institution's initiatives for a Healthy & Sustainable College the audit was conducted.  
We appreciate the immense efforts taken by Staff and students towards the Environment Protection and Conservation.

Issued on **Monday, 21 March 2022** valid till **March 2023**

  
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