ENSUS
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Transformation for a better tomorrow

# Green Audit Report

## Green Audit conducted at ...

K. K. Wagh Arts, Commerce, Science & Computer Science College, Chandori
Tal. Niphad, District - Nashik

- Dr. R K Datir and Team

## Green Audit conducted by ...

ENSUS Consultancy Services – Nashik

- Mr. Sameer Vaze and Team

| PO Reference – | | |
|---|---|---|
| **SR** | **Description** | **Dates** |
| 1 | Site Visit Audit Dates | February 20, 2021 |
| 2 | Field Trial Dates | NAP |
| 3 | Date of 0th Version Audit Report | February 25, 2021 |
| 4 | Audit Report Review Meeting Date | |
| 5 | | |
| 6 | | |

K.K. WAGH ARTS, COMMERCE, SCIENCE & COMPUTER SCIENCE COLLEGE
CHANDORI
422 201
TAL. NIPHAD,
DIST. NASHIK

# INDEX

# 1. Acknowledgement

ENSUS Consultancy Services, Nashik is thankful to the Management of **K. K. Wagh Arts, Commerce, Science & Computer Science College, Chandori** for giving an opportunity to conduct Green Audit at their premises.

We appreciate and extended our sincere thanks to following authorities of **K. K. Wagh Arts, Commerce, Science & Computer Science College, Chandori** for making all the Data, Facilities and personal support available during the Green Audit Activity.

- Dr. R K Datir, Principal
- Dr. S G Sawant, Vice Principal
- Prof. P P Aher, Vice Principal
- Dr. H T Waghmare, NAAC Coordinator
- Prof. A B Janjale, IQAC Coordinator
- Dr. N S Jadhav, Criteria 7 Coordinator
- Prf. P S Kadam, Criteria 7 Member
- Prof. Kolhe B B, Physical Director
- Shri. Ramdas Bute, Electrician

We are also thankful to other staff members who were actively involved while collecting the data and conducting field measurements.

During the audit, every attempt was made to understand the operational features and the actual working in the right perspective.

All analysis is based on the actual data collected, observations on site and data submitted by the Management.

## 2. Abbreviations

| Abbreviations |
|---|
| NAP – Not Applicable |
| NAS – Not Ascertained |
| NAV – Not Available |

# 3. Disclaimer

Green Audit Team of ENSUS Consultancy Services has prepared this report for **K. K. Wagh Arts, Commerce, Science & Computer Science College, Chandori** based on input data submitted by the representatives of college complemented with the best judgment capacity of the expert team.

It is further informed that the conclusions are arrived following best estimates and no representation, warranty or undertaking, express 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.

If College wishes to distribute copies of this report external to your organisation, then all pages must be included.

## 4. Green Audit Conduction Team

| Audit Coordinated by ... | | | | |
|---|---|---|---|---|
| 1 | Dr. R K Datir | Principal | 9420692111 | Principal-seniorchandori@kkwagh.edu.in |
| 2 | Dr. S G Sawant | Vice Principal | 9673090296 | |
| 3 | Prof. P P Aher | Vice Principal | 8698514894 | |
| 4 | Dr. H T Waghmare | NAAC Coordinator | 8421267599 | |
| 5 | Prof. A B Janjale | IQAC Coordinator | 9763745306 | |
| 6 | Dr. N S Jadhav | Criteria 7 Coordinator | 9730593787 | |
| 7 | Prf. P S Kadam | Criteria 7 Member | 7057035401 | |
| 8 | Prof. Kolhe B B | Physical Director | 9423115687 | |
| 9 | Shri. Ramdas Bute | Electrician | 9822916874 | |

| Audit Conducted by ... | | | | |
|---|---|---|---|---|
| 1 | Mr. Sameer Vaze | CEA - 7461 | 9850992234 | ensus.services@gmail.com |
| 2 | Mr. Harish Kathaley | CEA - 3014 | 9823087228 | harishkathaley@gmail.com |

# 5. Green, Environment and Energy Audit Concept

The term GREEN means eco-friendly or not damaging the environment. Green Audit can be defined as systematic identification, quantification, recording, reporting and analysis of components of environmental diversity.

Sometimes, **Green Audit**, is known by the name **Environmental Audit**. It aims to analyse environmental practices within and outside the college campus, which will have an impact on the eco-friendly ambience.

It was initiated with the motive of inspecting the work conducted within the organizations whose activities can cause risk to the health of inhabitants and the environment. Through Green / Environment Audit, one gets a direction as how to improve the condition of environment and there are various factors that have determined the growth of carrying out Green Audit.

In today's scenario, no activity can be done without the usage of Energy. Primarily Fossil Fuels like Coal, Oil and Gas further in the form of Electrical Energy as a Secondary Source. Unnecessary, Un-effective and less Efficient usage of Energy results into damaging effect on Environment and reduces the sustainability of Energy Resources found in nature. Hence **Energy Audit** is also very important aspect of Green or Environment Audit.

For simplicity, we have categorised various aspects of these Audits as mentioned below ...

| SR | Heading | Audit Category |
|---|---|---|
| 1 | Greening the Campus | **Green Audit** |
| 2 | Water | **Green Audit** |
| 3 | General | **Green / Environment Audit** |
| 4 | Waste minimizing | **Environment Audit** |
| 5 | Clean Air and Sound Levels | **Environment Audit** |
| 6 | Animal Welfare | **Environment Audit** |
| 7 | Environmental Legislative Compliance | **Environment Audit** |
| 8 | Energy | **Energy Audit** |

## 6. Objective and Scope

- Systematic Green, Environmental and Energy Consumption Assessment
- Listing of environmental protection initiatives and improvement therein
- Sustainable use of natural resource in the campus
- Financial savings through a reduction in resource use
- Development of ownership, personal and social responsibility
- Enhancement of College profile
- Developing an environmental ethic and value systems in young people

# 7. Overview of Parent Society and College

**Parent Society**

The K. K. Wagh Education Society started in the Year 1970; a small sapling planted started with only one institute has now spread its wings with 35 different institutes and has become the brand name in the field of education.

The courses like Engineering, Polytechnic, Traditional branches like Arts, Commerce, Science & Computer Science, Education, Nursing and Agricultural studies are offered and being chosen by high-ranking students.

Many of their past students are holding prestigious positions in the reputed organisations within the country and aboard. The K. K. Wagh Education Society is known for the moral values, ethics & contributing a lot for the overall upliftment of the society.

A Small sapling planted by Karmaveer Kakasaheb Wagh has grown in to a full tree with 35 different branches with 21,000 students engaged in studies from K.G to Ph.D. in various fields. there are over 1900 dedicated employees who have been engaged in maintaining quality education.

**Vision**
Empowering students from rural areas through quality education and to imbibe human values in them.

**Mission**
To educate youth through quality education for holistic development by imparting value based and skill-based education to transform students into competent responsible citizen.

## K. K. Wagh Arts, Commerce, Science & Computer Science College – Chandori

**K. K. Wagh Arts, Commerce, Science & Computer Science College – Chandori**

The college was established in the year 2004, this institute is started in rural area & the 16-year journey has been a story of hard work, sincere effort toward quality enhancement, quantitative growth & expansion.

During this short span the number of students has increased considerably & characteristically almost 70% of the students have been girl students. Visa-vis there's been growth in infrastructure - a large campus with Gymkhana, Smart Classroom, a large Playground, Computer Lab, well equipped Departments, Language Lab, Commerce Lab and Psychology Lab and experienced qualified faculty.

**Courses offered by college ...**

| SR | Course Name | Intake Capacity |
|---|---|---|
| 1 | Bachelor of Arts | 120 |
| 2 | Bachelor of Business Administration (Computer Application) | 80 |
| 3 | Bachelor of Commerce | 120 |
| 4 | Master of Commerce | 60 |
| 5 | Bachelor of Science | 120 |
| 6 | Bachelor of Computer Science | 80 |
| 7 | Master of Computer Science | 30 |

**Students Classification**

| SR | Category | Male | Female | Total | %Male | %Female |
|---|---|---|---|---|---|---|
| 1 | SC | 34 | 20 | 54 | 62.96 | 37.04 |
| 2 | ST | 25 | 23 | 48 | 52.08 | 47.92 |
| 3 | DT/NT | 26 | 20 | 46 | 56.52 | 43.48 |
| 5 | OBC | 158 | 137 | 295 | 53.56 | 46.44 |
| 6 | Open | 158 | 149 | 307 | 51.47 | 48.53 |
| | **Total** | **401** | **349** | **750** | **53.47** | **46.53** |

**Faculty Classification**

| Category | SR | Year | Male | Female | Total | % Male | % Female |
|---|---|---|---|---|---|---|---|
| Teaching Faculty | 1 | 2016-17 | 12 | 18 | 30 | 40 | 60 |
| Teaching Faculty | 2 | 2017-18 | 15 | 23 | 38 | 39.5 | 60.5 |
| Teaching Faculty | 3 | 2018-19 | 15 | 21 | 36 | 41.7 | 58.3 |
| Teaching Faculty | 4 | 2019-20 | 14 | 25 | 39 | 35.9 | 64.1 |
| Teaching Faculty | 5 | 2020-21 | 14 | 25 | 39 | 35.9 | 64.1 |

**Staff Classification**

| Category | SR | Year | Male | Female | Total | % Male | % Female |
|---|---|---|---|---|---|---|---|
| Non Teaching Faculty | 1 | 2016-17 | 9 | 3 | 12 | 75 | 25 |
| Non Teaching Faculty | 2 | 2017-18 | 12 | 2 | 14 | 85.7 | 14.3 |
| Non Teaching Faculty | 3 | 2018-19 | 10 | 2 | 12 | 83.3 | 16.7 |
| Non Teaching Faculty | 4 | 2019-20 | 12 | 4 | 16 | 75 | 25 |
| Non Teaching Faculty | 5 | 2020-21 | 11 | 4 | 15 | 73.3 | 26.7 |

**College Photos -**

**College Building – Side View**

**College Building – Veranda View**

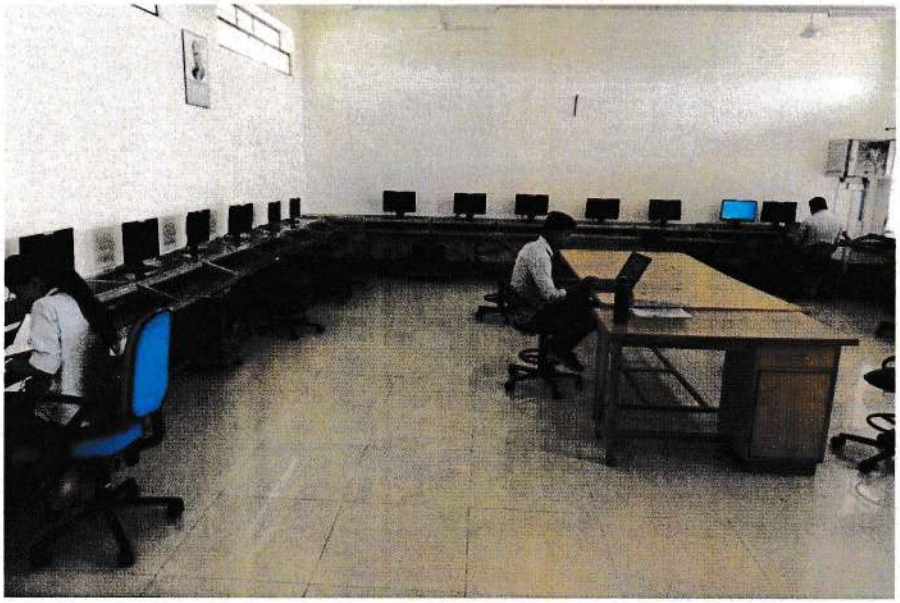
**College Photos -**

**Class Room – Smart Class Room with all Gadgets**

**Class Room – with Natural Light**

**College Photos -**

**Computer Lab**

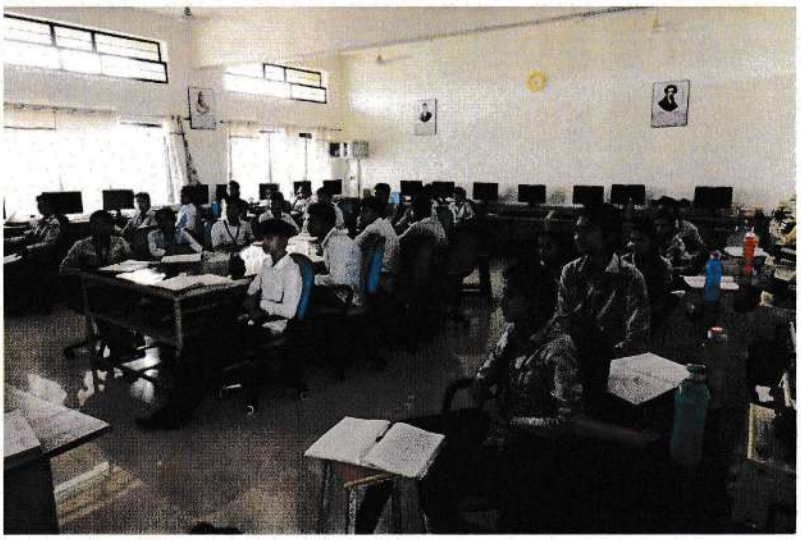


**Science Lab**

**College Photos -**

**Chemistry Lab**

**Electrical Lab**



**College Photos -**

**Language Lab**

**Office**

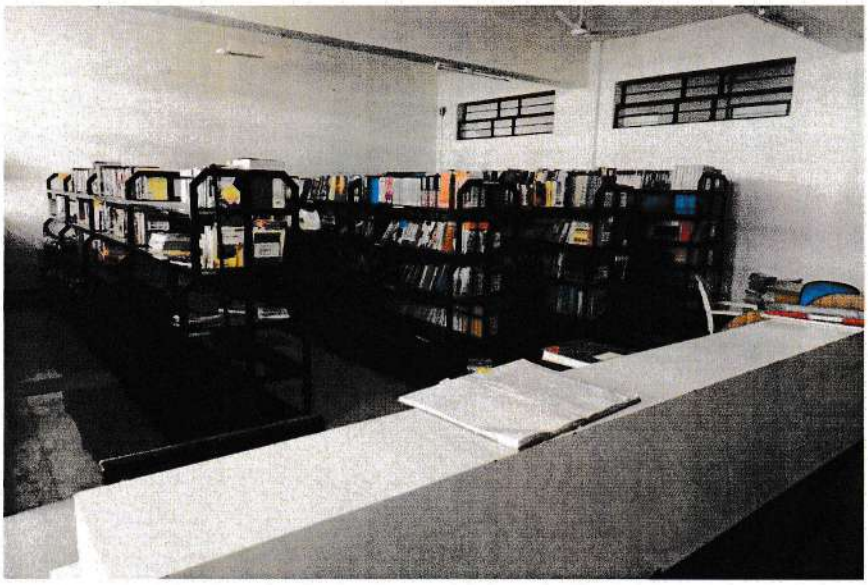
**College Photos -**

**Battery Room with Exhaust Facility**

**Fire Safety System**

**College Photos -**

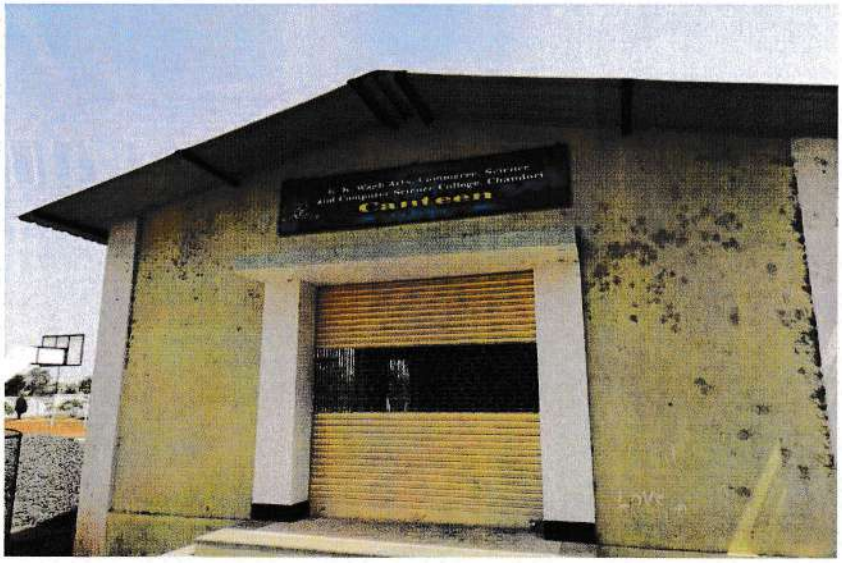
**Library**



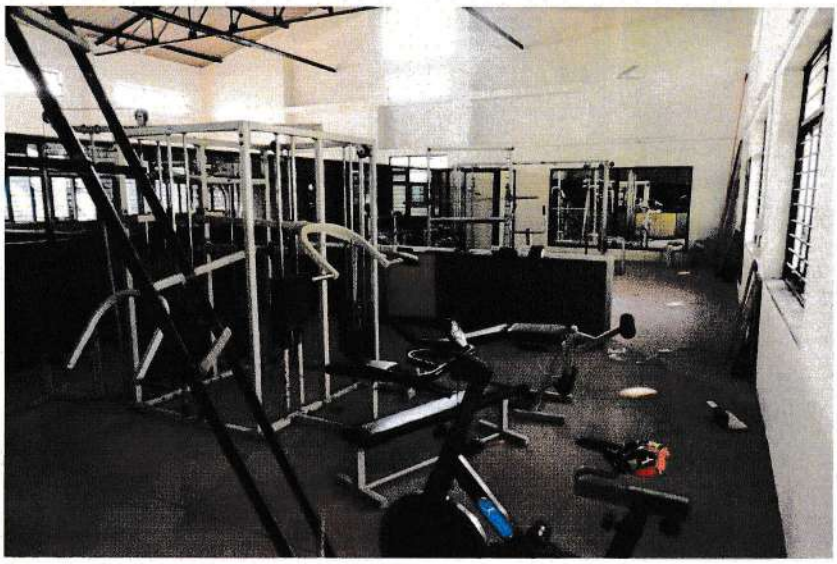
**Reading Room**

**College Photos -**

**Canteen**




**Gymkhana**



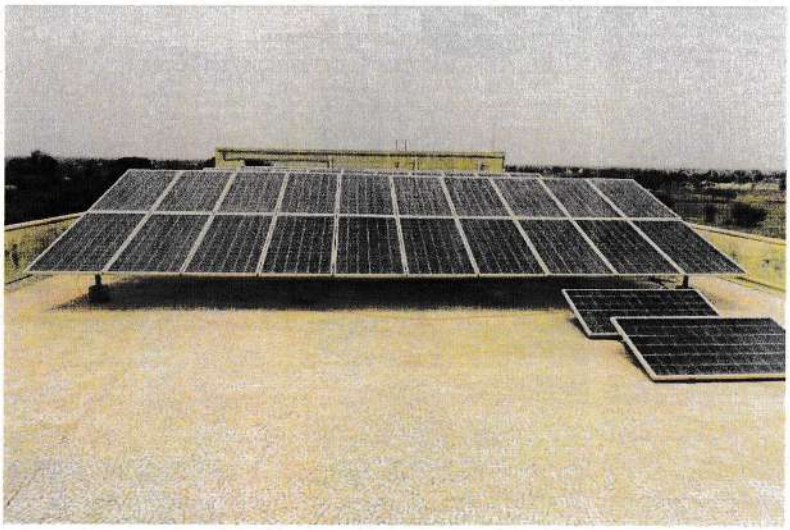
**College Photos -**

**Playground**

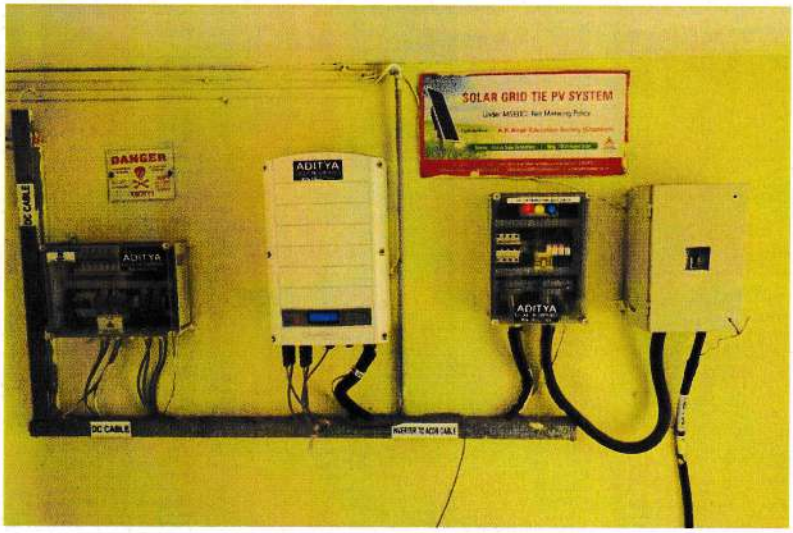

**Basket Ball Court**

**College Photos -**

**Solar Cell – 20 kW**



**Solar Cell Control**



# 8. Executive Summary of Green Audit

| SR | Heading | Audit Category |
|---|---|---|
| 1 | Greening the Campus | **Green Audit** |
| 2 | Water | **Green Audit** |
| 3 | General | **Green Audit** |

| Recommendations on Greening Campus | |
|---|---|
| 1 | Continue to increase plantation every year |
| 2 | Prepare the list of future plantation target |
| 3 | Conduct the Plantation Drives and provide Seeds and Saplings |
| 4 | Introduce QR Coding for all the Tress |

| Recommendations om Water Management | |
|---|---|
| 1 | Install the Water Meters at all Inputs |
| 2 | Recycle the Waste Water and use for Garden |
| 3 | Divert Storm Water for Harvesting |
| 4 | Use Air Jet Water Taps |
| 5 | Use Foot Operated Water Taps |
| 6 | Repair and maintain all leaky taps and pipe joints |
| 7 | Use Solar Powered Water Pumps |

| General Recommendations | |
|---|---|
| 1 | Participate in Local, State and National Events of Environment Protection |
| 2 | Adopt Village and introduce Water Conservation Mission |

# 9. Site Briefs

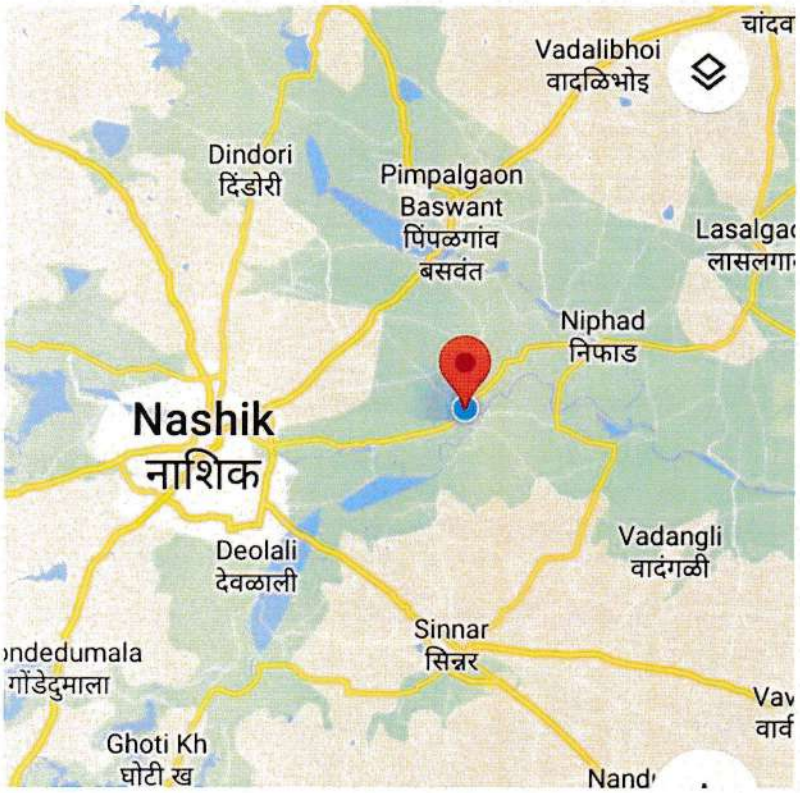
**Site in brief ...**

| SR | Title | Answer |
|---|---|---|
| 1 | Is Land a Farm Land | Yes |
| 2 | Elevation is lower than 5' of above the elevation of 100 Years Flood Levels | No |
| 3 | Land specified as habitat for any species by Wildlife Institute of India | No |
| 4 | Within 100' of any Wetland | No |
| 5 | Prior to allocation was allotted to any Parkland | No |

**Transportation to Site ...**

| |
|---|
| **By Road -**<br>The college is adjacent to Nashik-Aurangabad highway, the distance of the college from this highway is fifty meters, the distance of the college from the district of Nasik is 30 km and the distance of the college from the place of Niphad taluka is 15 km. |
| **By Train -**<br>The nearest railway station to reach the college is Niphad and the distance from Niphad to the college is 15 kms. |
| **By Air -**<br>The nearest airport to reach the college is Ozar and the distance from Ozar airport to the college is 15 kms. |
| **Inside City -**<br>The distance of the college from Chandori village is 500 meters |

**Google Map of College Location**




# 10. Greening the Campus

| SR | Heading | Audit Category |
|---|---|---|
| 1 | Greening the Campus | Green Audit |
| 2 | Water | Green Audit |
| 3 | General | Green / Environment Audit |

| 1. Greening the Campus | | | |
|---|---|---|---|
| 1.1 | Is there a garden in your institute? | Yes, State Area in Sq. Meters - 99.96 sq meter | |
| 1.2 | Do students spend time in the garden? | Yes | |
| 1.3 | Total number of Plants in Campus | **Plant Type** | **Approximate Numbers** |
| | | Total Campus Area (Sq. Meters) | 29906 (7.39 Acer) |
| | | Built up Area (Sq. Meters) | 6337 Sq miter |
| | | Barren Land Area ( Sq. Meters) | 1150 sq m |
| | | Play Ground Area ( Sq. Meters) | 12656 sq m |
| | | Open Theater Area ( Sq. Meters) | 3778 sq m |
| | | Parkg Area ( Sq. Meters) | 430 sq m |
| | | Street & Walkway Area ( Sq. Meters) | 600 sq m |
| | | Grass Cover Area ( Sq. Meters) | 4955 sq m |
| | | Trees | 380 |
| | | Shrubs | 27 |
| 1.4 | No. of Staff working in Gardening Departnment. | 2 | |
| 1.5 | Number of Plantation Drives conducetd per Year | 5 | |
| 1.6 | Number of Tree Shrubs Planted in last Academic | Tree / Shribs / Grass / Survival Rate | |
| | | Annexure GRA 1 | |
| 1.7 | Do you have Botanical / Medical Garden? | Yes | |
| 1.8 | List of exisitng Plants and new Suggested Plants | Annexure GRA 2 | |
| 1.9 | List of exisitng Plants and new Suggested Plants other than Botanical Garden | Not Available | |
| 1.10 | State details of Plant / Seed Distribution Program to Students, Staff and Comminity | As per the request from Staff and Students | |
| 1.11 | Do you have Plant Coding, Naming and Description Process? | Yes | |
| 1.12 | Do you have Plant Ownership Process? | yes | |
| 1.13 | Is Watering of Plants Manual / Auto / Drip Irrigation etc ... | Manual and Drip Irrigation | |

**Annexure GRA1 (Year wise Tree Plantation)**

| S. N. | Name of Tree | 2016-17 | 2017-18 | 2018-19 | 2019-20 | 2020-21 | 2021-22 | Total |
|---|---|---|---|---|---|---|---|---|
| 1 | Acacia catechu | 06 | - | - | - | - | | 06 |
| 2 | Pongamia Pinnata | | 06 | 14 | - | - | | 20 |
| 3 | Silver oak | 08 | - | | | | | 08 |
| 4 | Pam | | | 04 | 08 | | | 12 |
| 5 | Fishtail | | 06 | | 22 | | | 28 |
| 6 | Faikas | | | | 28 | | 80 | 108 |
| 7 | African khaya | | | | 26 | | | 26 |
| 8 | Bahava | | | 03 | 02 | | | 05 |
| 9 | Malesia | | | | 18 | | | 18 |
| 10 | Tamarind | | | | 08 | | | 08 |
| 11 | Phyllanthus emblica | | | 03 | 06 | | | 09 |
| 12 | *Terminalia arjuna* | | | | 22 | | | 22 |
| 13 | *Cestrum diurnum* | | | | 13 | | | 13 |
| 14 | *Plumeria btusa* | | | | 47 | | | 47 |
| 15 | *Plumeria Rubra/ aurelia* | | | | 02 | | | 02 |
| 16 | *Platycladus orientalis* | | | | 03 | | 03 | 06 |
| 17 | *Araucaria columnaris* | | | | 02 | | | 02 |
| 18 | *Polyalthiya longifolia* | | | | | | 10 | 10 |
| 19 | | | | | | | | |
| Total | | 14 | 12 | 24 | 207 | | 93 | 350 |

## Annexure GRA2 (List of Existing Plants)

| SR | Botanical Name | Common Name | Marathi Name | Number |
|---|---|---|---|---|
| 1 | *Terminalia arjuna* | Arjun | अर्जुन | 22 |
| 2 | *Adhatoda vasica* | Adulsa | अडुळसा | 1 |
| 3 | *Eugenia jambolana* | Jamun | जांभूळ | 3 |
| 4 | *Sapindus mukorossi* | Reetha | रिठा | 4 |
| 5 | *Aloe vera* | Aloe vera | कोरफड | 3 |
| 6 | *Moringa oelifera* | Drumstick Tree | शेवगा | 3 |
| 7 | *Hibiscus rosa sinensis* | Hibiscus | जास्वंद | 5 |
| 8 | *Murraya koenigii* | Curry Leaves | गोड लिंब | 4 |
| 9 | *Aegle marmelos* | Bael | बेल | 2 |
| 10 | *Pongamia pinnata* | Indian Beech tree | करंज | 20 |
| 11 | *Acacia nilotica* | Babul | बाभूळ | 9 |
| 12 | *Ocimum sanctum* | Tulsi/basil | तुळस | 5 |
| 13 | *Azadirachta indica* | Neem | कडूलिंब | 4 |
| 14 | *Khaya senegalensis* | Mahogany | | 26 |
| 15 | *Platycladus orientalis* | Junifer | | 6 |
| 16 | *Araucaria columnaris* | ChristmasTree | क्रिसमसचे झाड | 2 |
| 17 | *Caryota mitis* | Fishtail Palm | भेरली माड | 28 |
| 18 | *Plumeria obtusa* | White Frangipani | पांढरा चाफा | 37 |
| 19 | *Plumeria rubra/ aurelia* | Red Frangipani | लाल चाफा | 2 |
| 20 | *Tabebuia aurea* | Caribbean Trumpet Tree | | 15 |
| 21 | *Tamarindus indica* | Tamarin | चिंच | 8 |
| 22 | *Phyllanthus emblica* | Amla | आवळा | 9 |
| 23 | *Cestrum diurnum* | Jessamine | चमेली | 13 |
| 24 | *Ficus benjamina* | Banyan | वड | 108 |
| 25 | *Senegalia Catechu* | Black Catechu | काथ | 6 |
| 26 | *Castanospermum australe* | Black Bean | काळा घेवडा | 2 |
| 27 | *Psidium guajava* | Guava | पेरु | 1 |
| 28 | *Polyalthiya longifolia* | Ashoka | अशोक | 10 |
| 29 | *Annona squamosa* | Custard Apple | सीताफळ | 2 |
| 30 | *Sesbainia grandiflora* | Agathi | शेवरी | 3 |
| 31 | *Ekevergia capansis* | Cape ash | बिब्बा | 5 |
| 32 | *Tabebuia rosea* | Pink Tecoma | | 13 |
| 33 | *Nerium olender* | Nerium | कण्हेर | 1 |
| 34 | *Eucalyptus obliqua* | Nilgiri | निलगिरी | 6 |
| 35 | *Mangifera indica* | Mango | आंबा | 5 |
| 36 | *Dypsis wtescens* | Bamboo Palm | बांबू | 12 |
| 37 | *Dracaena draeo* | Dragon Tree | | 2 |
| | | | **Total Plants** | **407** |

**Trees around the Building**

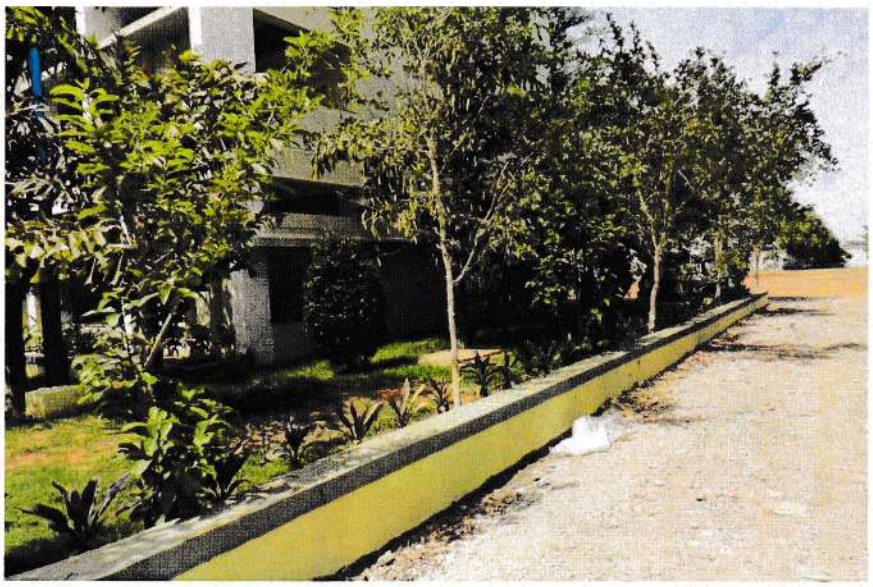
**Trees around the Entry**

**Botanical Garden**

**Botanical Garden**

**Trees and Shrubs**

**Trees and Shrubs**



**Trees and Shrubs**

**Trees and Shrubs**

**Tree Plantation Photos**

Tree Plantation by Professors and Students

Tree Plantation by Professors and Students

**Tree Plantation Photos**


Principal Dr. R. K. Datir & College Staff planting trees on the college campus

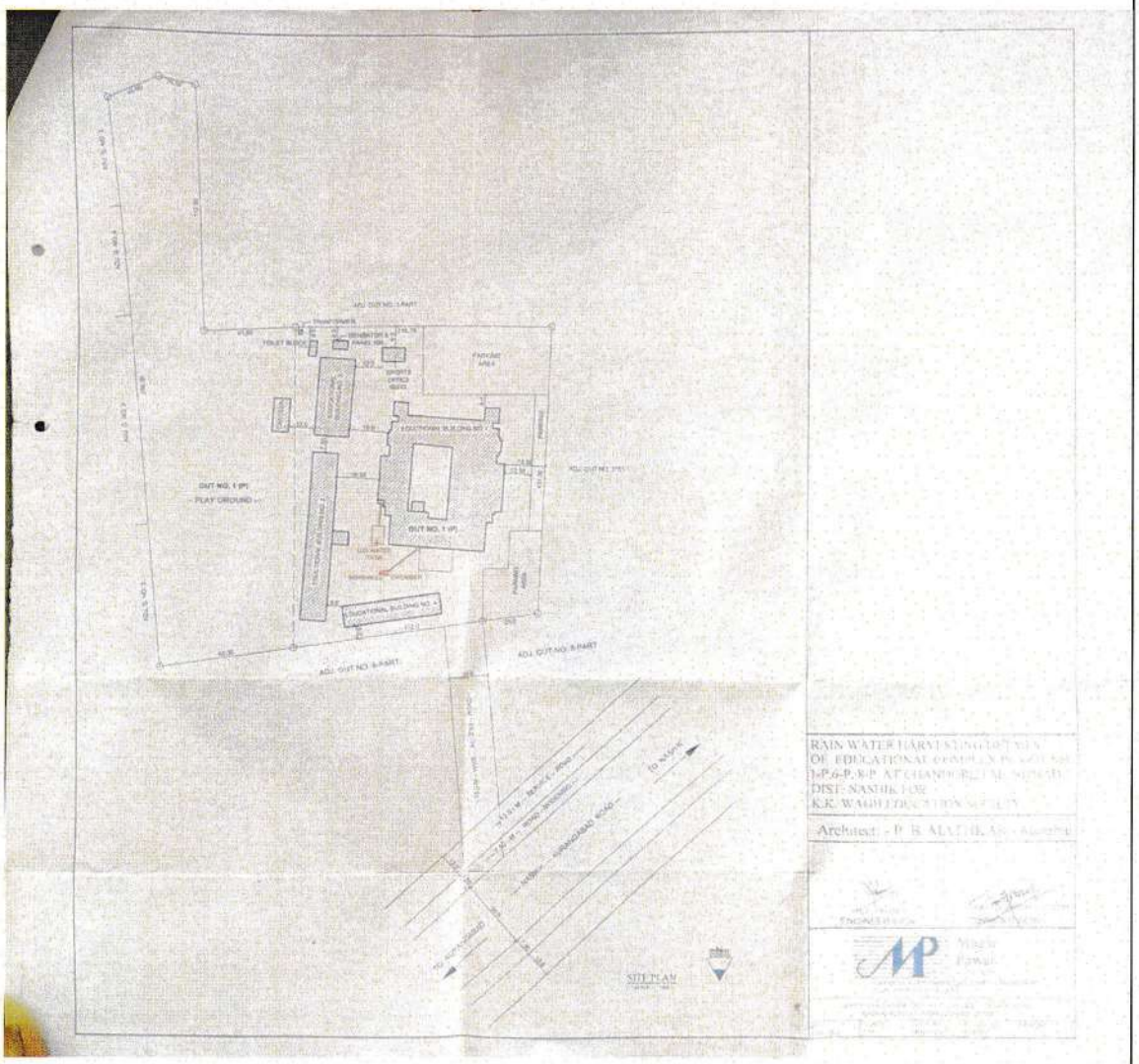

While planting trees in the college premises on the occasion of the golden jubilee year of K.K. Wagh Education Institute, Hon'ble B. R. Thackeray, Officer, Nandur Madhameshwar Forest Range, as well as the Principal of the College, Dr. R. K. Datir and college staff and students

# 11. Water Management

| 2. Water | | | | | |
|---|---|---|---|---|---|
| 2.1 | List the uses of Water in the Institute | Laboratory, Gardening, Drinking, Cooking, Cleaning, Toilets etc ... | | | |
| 2.2 | How many Connections you have from Municiple Corporation? | 1 | | | |
| 2.3 | How much water (kL/Year) you consume from Municiple Corporation? (Approximately) | 1460000 | | | |
| 2.4 | Do you get Water Tankers from Private Service Provider? | Nil | | | |
| 2.5 | How much water (kL/Year) you consume from | Nil | | | |
| 2.6 | How many Bore Wells you have? | 1 | | | |
| 2.7 | State the avarage Run Time of Bore Well per day.(approximately) | 8 Hrs / Day | | | |
| 2.8 | How much water (kL/Year) you consume from Bore Well?(Approximately) | 18250000 | | | |
| 2.9 | State Monthwise (April 2020 - Mar 2021) Water Consumption from All 3 Sources(Approximately) | 19710000 | | | |
| 2.10 | Is Rainwater Harvesting Done. If Yes, please provide details | Annexure GRA 3 | | | |
| 2.11 | Is Water Recycled and Reused? If Yes, provide | Not Available | | | |
| 2.12 | Is Water drained to Open Pond, Soak Pit, Municiple Corporation Drainage Line? | Municiple Corporation Drainage | | | |
| 2.13 | Is Water treated and neutyraliused before | Not Available | | | |
| 2.14 | Is In-Campus Drainage Line Open / Closed? | Closed | | | |
| 2.15 | Is Municiple Drainage Line Open / Closed? | Closed | | | |
| 2.16 | What are the measures taken to Conserve Water i.e. avoide Water Wastage | yes ( Drip Irrigation & etc ) | | | |
| 2.17 | State the Scheme for Storm Water | Rain Water Harvesting | | | |
| 2.18 | State the details of Water Bodies inside Campus | Water tank | Bower well | | |

## Annexure GRA3 - Rain Water Harvesting Details

**Annexure GRA3**



**Annexure GRA3**

B. L. Magar
B.E. Civil, M.I.E., F.I.V.

M. D. Pawar
B.E. Civil, M.I.E., F.I.V.

Magar Pawar ASSOCIATES
Building Planners & Designers
Structural Consultants
Govt. Approved Valuers.

Parishram, Opp. H.P.T. College, College Road, Nashik - 5
Tel. : 0253 - 2576467, 2314205
E-mail : magarpawar@rediffmail.com

Date: 08/01/2022

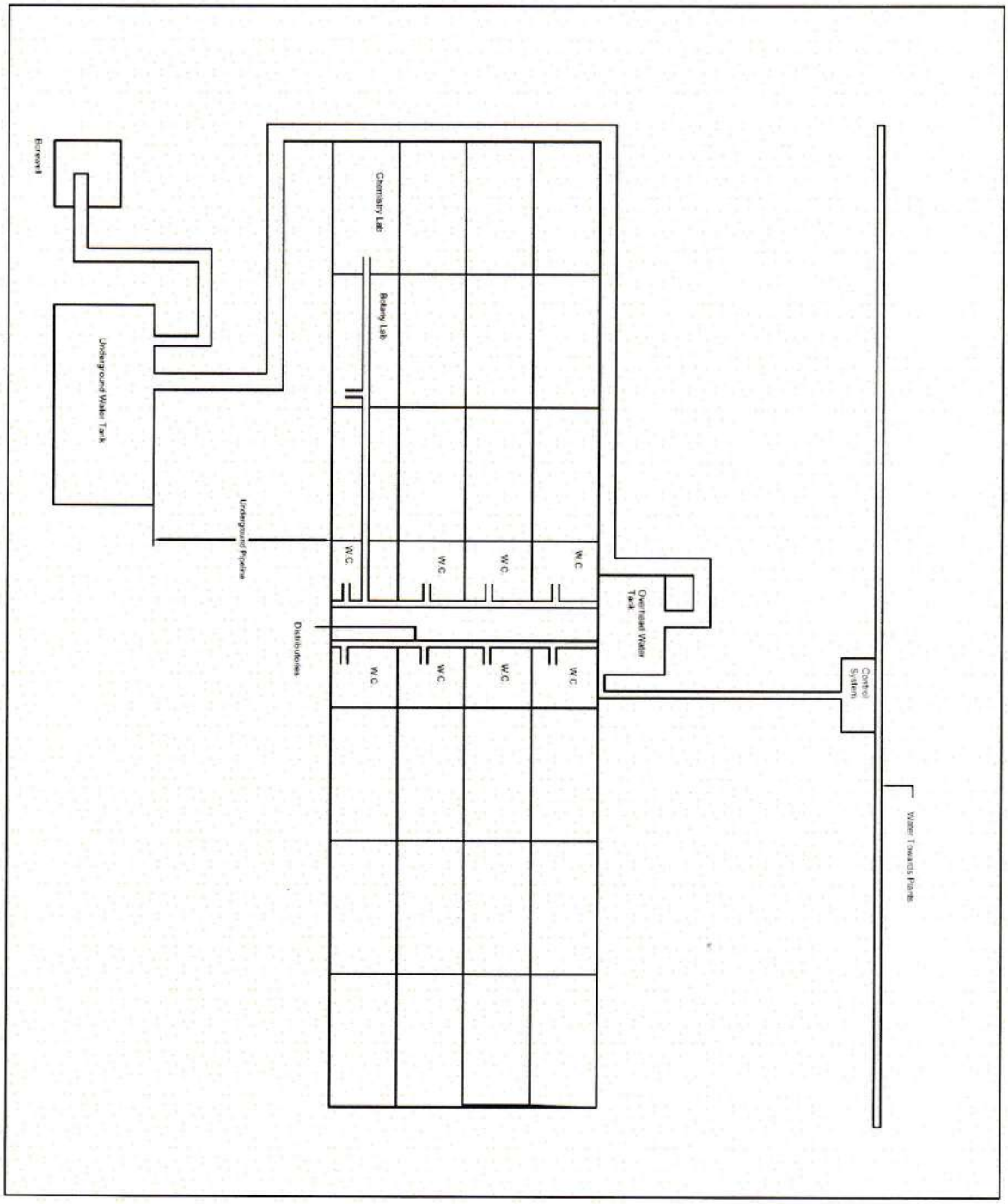
## Certificate for Rain Water Harvesting

This is to certify that the roof top rain water of Educational Building No.1 in G.No.1-P, 6-P, 8-P @ Chandori, Tal-Niphad, Dist-Nashik of K.K.Wagh Education Society is collected by down take rain water pipes & connected to Bore well & U/G Water storage tank thro' filtration chambers.

The filtered rain water is percolating to the resource thro' Bore well. The water stored from roof top in U/G water Tank is used for gardening & recharging the bore well.

**M. D. PAWAR**
FOR MAGAR PAWAR ASSOCIATES

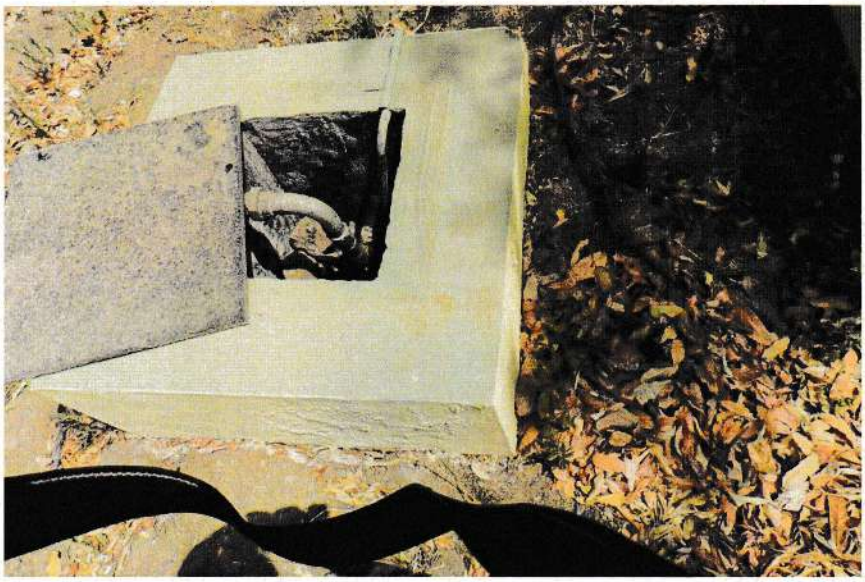
**Water Supply System**



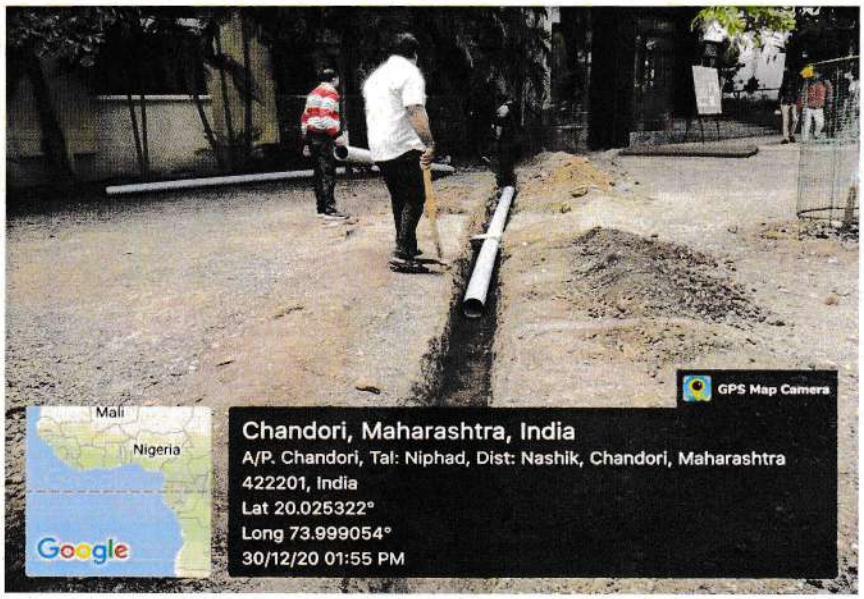
**Underground and Overhead Water Tank**

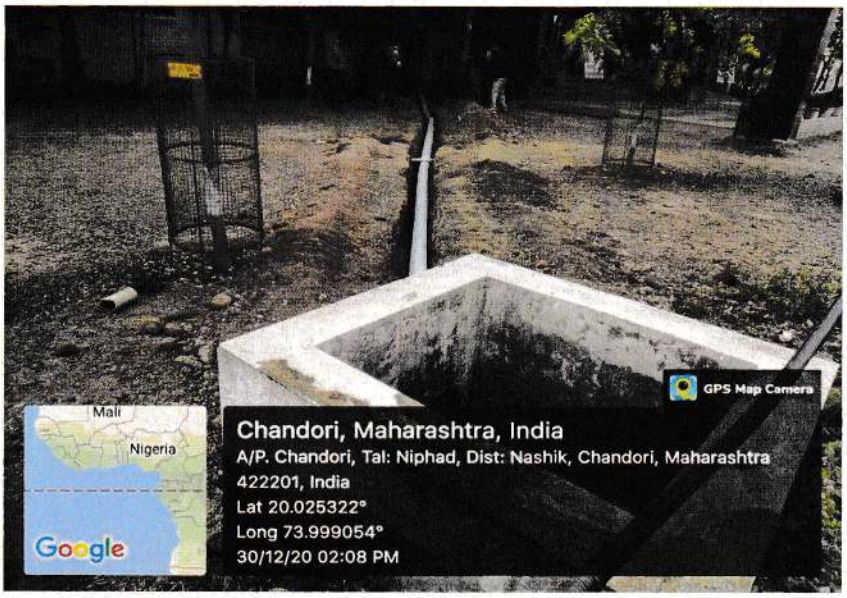
**Water Pumps**


**Bore Well**



**Rain Water Harvesting**



**Rain Water Harvesting**


**Rain Water Harvesting**


**Storm Water**

**Storm Water**

# 12. General Aspects

| 3. General | | |
|---|---|---|
| 3.1 | Does Important Days like Environment, Earth and Ozone Day are followed? | Yes |
| 3.2 | Does Institute participates in National and Local Environment Protection Events? | No |
| 3.3 | Any Certificate Institute is awarded for Environment Protection Initiative? | No |
| 3.4 | Does Institute conducts Energy and Green & Environment Audits? | Yes ( See Previous Audit Reports ) |
| 3.5 | Provide the List of Certificates like NABL, NABET, TQPM, ISO, NAAC etc ... | Going for NAAC Certification |
| 3.6 | Has Institute adopted any Village / Society for Environment Control Movement | No |

*END OF REPORT*

Ajinkyatara Consultants
architects & engineers

IGBC AP

Er. Yogesh Kasar Patil
B.E.(Civil), M.I.E., F.I.V., Chartered Engineer, M.A. (History & Archaeology)

Ar. Smita Kasar Patil
M.Arch.,A. I. I.A., I. G. B. C. A. P.,A.I.V., M.A. (History & Archaeology)

No.AT/95/2020-21

Date: 07/02/2020

# CERTIFICATE

This is to certify that the Green Audit for the '**K.K. Wagh Arts, Commerce, Science & Computer Science College, Chandori, Tal. Niphad, Dist. Nashik** was done by us. The building performs good on the criteria's studied through this report.We have covered the area of environmental consciousness, energy conservation, waste management, use of renewable energy, water efficiency etc. All necessary data is provided by institute and the analysis is enclosed in the report.

The aim of conducting green audit is to check the demand on non-renewable resources, check the utilization efficiency of these resources when in use, and check reuse, recycling, and utilization of renewable resources. While the baseline is good, there are many ways to exceed and achieve maximum standards, thereby achieving greater efficiency of the buildings energy performance, which are mentioned in the Report.

AJINKYATARA CONSULTANTS Architects & Engineers NASHIK

IGBC AP

**Ar. Smita Y. Kasarpatil**
M. Arch.
I.G.B.C. AP
M.A. (History & Archaeology)
P.G. Diploma in Heritage Management
& Scientific Conservation
M.I.I.A., A.I.V.

K.K. WAGH ARTS, COMMERCE & SCIENCE COLLEGE CHANDORI TAL. NIPHAD DIST. NASHIK

15, Poornam Center Point, Kanherewadi, Nashik - 422 001.
+91 253 2509271 094 222 55 730, 094 231 75 199
ajinkyataraconsultants@gmail.com

# Ajinkyatara Consultants

15, 'Poornam Center Point', Kanherewadi, C.B.S., Nashik 422001

GSTN:-27AAKFA1134D1ZZ

## TAX INVOICE

Original for Receipient
Duplicate for Supplier

| Details of Receiver:- | Invoice No. | Invoice Date. |
|---|---|---|
| **K. K.Wagh Education Society,**<br>**The Principal,**<br>**(K. K. Wagh Arts, Commerce, Science and Computer Science College,**<br>**Chandori, Tal. Niphad, Dist. Nashik)** | **2020-21/002** | **05/02/2020** |
| GSTIN:- 27AA ATK4127G1ZT<br>Address:- Chandori, Tal. Niphad, Dist. Nashik | | |
| State code:- 27 | | Place of Supply |

| S.N. | Description of Service | HSN/SAC | Quantity | Rate | per | Amount |
|---|---|---|---|---|---|---|
| 1 | Green Building Audit of K. K. Wagh Arts, Commerce, Science and Computer Science College, Chandori, Tal. Niphad, Dist. Nashik | | 1 | 22000.00 | | 22000.00 |
| | **Add C.G.S.T. 9%** | | | | | 1980.00 |
| | **Add S.G.S.T. 9%** | | | | | 1980.00 |
| | Total | | | | | **₹ 25960.00** |

Amount (in words) *E. & O.E*

**Rupees Twenty Five Thousand Nine Hundred Sixty Only.**

Firms PAN : **AAKFA1134D**

Declaration

Terms and Conditions

We declare that this invoice shows the actual price of the Services described and that all particulars are true and correct.

AJINKYATARA CONSULTANTS Architects & Engineers NASHIK

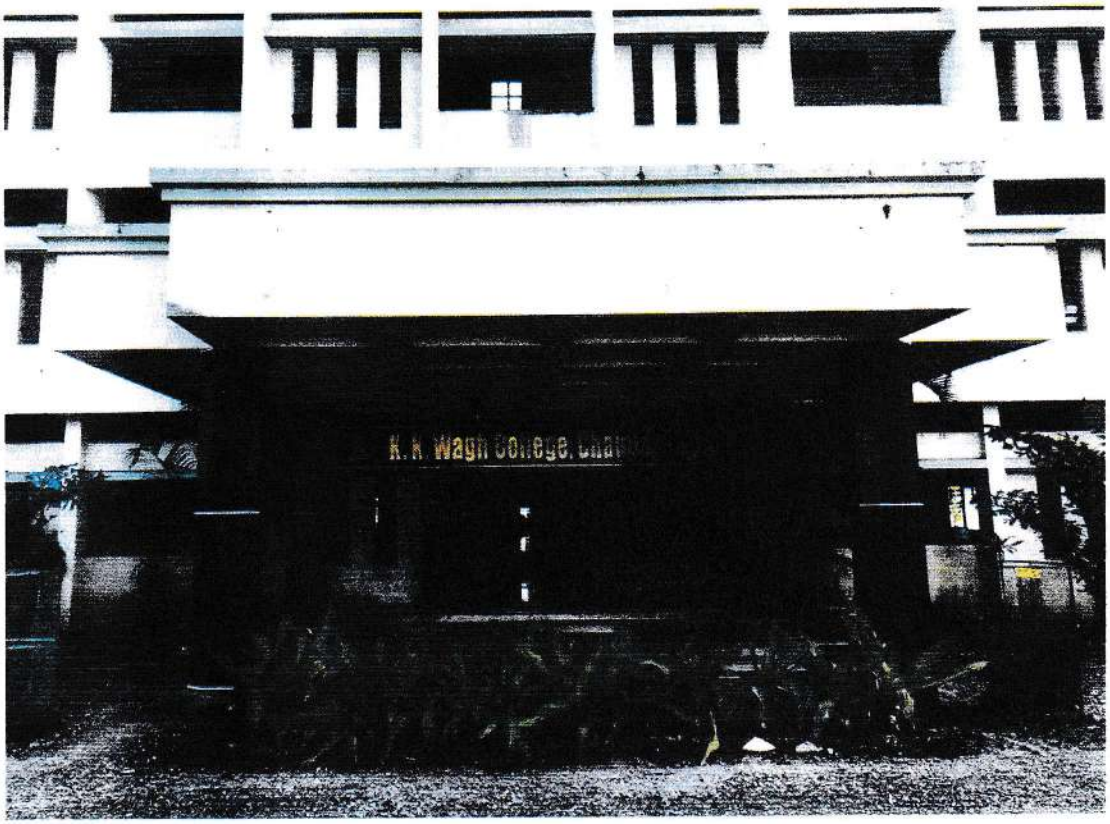
**Seal**

**For Ajinkyatara Consultants**

**Authorised Signatory**

K.K.WAGH ARTS, COMMERCE, SCIENCE & COMPUTER SCIENCE CHANDORI 422 201 TAL. NIPHAD DIST. NASHIK

# K. K. WAGH
# ARTS, COMMERCE, SCIENCE & COMPUTER SCIENCE COLLEGE, CHANDORI




## GREEN AUDIT REPORT
## 2019-2020

Ajinkyatara Consultants

IGBC AP

**Prepared By,**
**Ajinkyatara Consultants**
**15, Poornam Centre Point,**
**Kanherewadi, C.B.S.,**
**Nashik – 422001**

## Abstract

Buildings have major environmental impacts during their entire life cycle. The present scenario demands the need to design a responsive building, which address all the issues related to building environment in an integrated and scientific manner. It costs less to maintain a green building that has tremendous environmental benefits and provides a better place for the occupants to live and work in.

This report is comprised of the overall study of the educational campus of The "K. K. Wagh Education Society's Karmaveer Kakasaheb Wagh Arts, Commerce, Science & Computer Science College, Chandori. It includes site analysis, water efficiency, rainwater harvesting, landscaping, heat island effect, solar efficiency, waste management, work environment with respect to indoor light quality, ventilation, colour application on internal and exterior facades, carbon footprints etc. report also gives some suggestions to improve the performance of building with respect to environment.

## TABLE OF CONTENTS

## Introduction

In the present scenario organizations are facing numerous challenges, issues and risks. One of the biggest one is the 'Global Warming'. Environmental changes, depletion of natural resources. A flexible, secure, dynamic infrastructure has to be devised to help organizations address critical energy and power costs.

In the present scenario, it has become immensely essential to unearth that up to what extent an organization is contributing towards environmental sustainability by adoption of techniques like Green Audit. Green Audit emphasizes the role of methods and practices that reduce a institution's environmental impact. Green audit advantage enables and empowers an organization to meet all the Global warming related challenges and at the same time help to contribute back so even an organization can participate and contribute to environmental corporate responsibility.

Energy use in institutions has risen in recent years because of the growth in information technology and air-conditioning. As a result, there has been a strong increase in cooling in warm & cold countries and in electricity consumption.

The institutional sector is emerging as a critical player in India's development process. Driven by the rising scale and intensity of environmental pressures and the society's changing expectations from the institutions, education and the environment, traditionally seen as divergent issues, are steadily coming closer. Realizing the increasing complexities facing the environment, institutions have begun to recognize their responsibility towards maintaining a cleaner, greener environment.

Buildings have major environmental impacts during their entire life cycle. Resources such as ground cover, forests, water, and energy are dwindling to give way to buildings. Resource intensive materials provide structure to a building and landscaping adds beauty to it — in turn using up water and pesticides to maintain it. Energy-consuming systems for lighting, air conditioning, and water heating provide comfort to its occupants. Water, another vital resource for the occupants, gets consumed continuously during building construction and operation. Several building processes and occupant functions generate large amounts of waste, which can be recycled for use or can be reused directly Buildings are thus one of the major pollutants that affect urban air quality and contribute to climate change.

Hence the need to design a responsive building. The essence of which is to address all these issues in an integrated and scientific manner. It is also a proven fact that it costs less to maintain a green building that has tremendous environmental benefits and provides a better place for the occupants to live and work in.

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### 1.1 Aim

The aim of a green audit done is to check the demand on non-renewable resources, check the utilization efficiency of these resources when in use, and check the reuse, recycling, and utilization of renewable resources.

### 1.2 Objectives

The objectives of green audit are

- To become Energy Efficient
- Save Natural Resources
- Optimize Process
- Enhance Infrastructure
- Reduce dependency on Natural Resources
- Initiate Recycling Initiatives
- Imbibe in Institute's Environmental Responsibility Culture

### 1.3 Scope

The scope of an audit, and the methodologies used to uncover objective evidence, includes:

- Measuring key environmental parameters
- Analyzing raw and test data
- Reviewing purchase orders and invoices
- Inspecting facilities
- Interviewing stakeholders
- Communicating with contractors, vendors, customers, and regulators

### 1.4 Methodology

The process adopted for assessment of the site, included a primary inspection of the site, after which details related to site, facilities, services incorporated, analysis of building materials used on site and assessment of energy bills with respect to energy consumption was done.

## 1.5 Site Visit

| | |
|---|---|
| **Organization** | K. K. Wagh Education Society's Karmaveer Kakasaheb Wagh Arts, Commerce, Science & Computer Science College |
| **Site Address:** | Karmaveer Kakasaheb Wagh Arts, Commerce, Science & Computer Science College Chandori, Tal. Niphad, Dist. Nashik - 422 201 |
| **Buildings** | Arts, Commerce, Science & Computer Science College |
| **Date of visits** | 07 November 2020. |
| **Visits hosted by** | Dr. R.K. Datir<br>Mr. N.S. Jadhav |

A preliminary visit to the campus of K. K. Wagh Education Society's Karmaveer Kakasaheb Wagh Arts, Commerce, Science & Computer Science College Chandori is conducted by Ar. Smita Y. Kasarpatil along with Er. Yogesh N. Kasarpatil & Er. Gaurav S. Thakare and College campus is surveyed with respect to planning, climate, orientation, light quality during working hour, landscaping, water efficiency etc.

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### 1.5.1 Site Analysis:

The report asses on the basis of study and analysis of the following: -

1. **With respect to location of site: -**

A. Erosion and Sedimentation Control

B. Site Selection

C. Development density and Community connectivity

D. Alternative transportation

2. **Strategies incorporated towards achieving energy efficiency**

E. Innovative waste water technologies

a) Storm water design

b) Rain water harvesting

c) Water use reduction

3. **Factors considered to improve indoor environmental quality**

F. Heat Island Effect

G. Light pollution reduction

H. Materials and resources

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## 2.0 SITE INTRODUCTION

### 2.1 Erosion and sedimentation control

The site has effective sedimentation and erosion control plan..New trees and plants that are non-invasive native species appropriate to the site's location soils and microclimate are there on site. The newly planted trees are located to provide shading in the summer and allow for heat gain in the winter.

Intent Native vegetation is well adapted to the climate and provides excellent hold against erosion, sediment, and provides dust and pollution control. Hence there is preservation of topsoil and existing vegetation.

- ***Separate annexure attached along with report, which specifies the number and types of trees planted in the campus.*** *(Annexure II)*

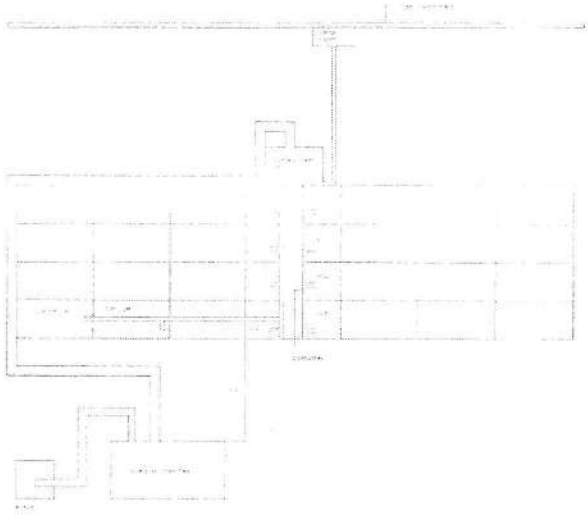
Methods incorporated on site:-

1. Provision of small shrubs, which not only holds the top soil but also helps penetration of rainwater into ground.
2. All the pavements and open area is blanketed with aggregate cover which reduces the erosion of soil, preserving the top soil.
3. Plantation of native varieties of plants and selection of such varieties has been done that consume not only less water for their growth but also belong to the microclimate and local vegetation.
4. Water efficiency

   Water efficiency can be described as the accomplishment of a function, task, process, or result with the minimal amount of water feasible. An indicator of the relationship between the amount of water required for a particular purpose and the amount of water used or delivered. It differs from water conservation in that it focuses on reducing waste. A proposition is that the key for efficiency is reducing waste not restricting use. It also emphasizes the influence consumers can have in water efficiency by making small behavioral changes to reduce water wastage and by choosing more water efficient products. Examples of water efficient steps include simple measures like, fixing leaking taps, by consumers.

**Methods incorporated:**

a) Water efficient Landscaping: - The water required for landscaping is given by watering system in which underground pipeline is done up to plants.



b) Strategies to avoid Soil Erosion: - Rain water is gathered using pipe network efficiently and sent through underground pipeline drain line which ultimately transfers it to nearby nala..

c) Water use reduction: - Efficient control measures adopted such as provision of point watering for landscaping, float valves, water meter to keep a check on inflow and control of water.

## 2.2 Site Selection

Site selection criteria in India, specifies the following criteria that are listed. The table below confirms these criteria with respect to the proposed site. As the site does not have any of the following parameters, it is suitable for development.

| | |
|---|---|
| Is a prime farm land | Yes |
| Elevation is lower than 5' above the elevation of 100-year flood levels | No |
| Land specified as habitat for any species by wildlife Institute of India | No |
| Within 100' of any wetland | No |
| Prior to acquisition was allotted for any public parkland | No |

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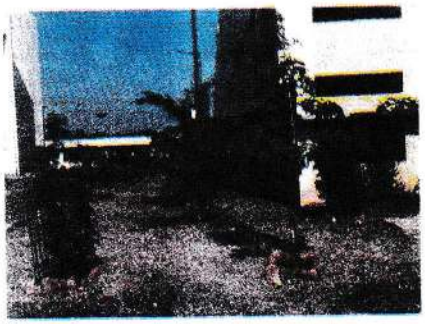
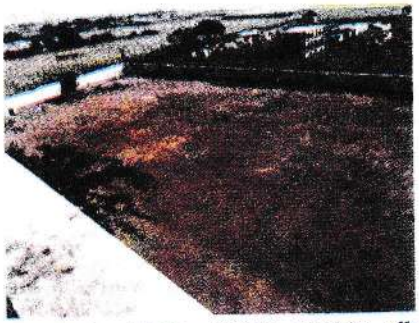
**Strategies incorporated to Reduce Site Disturbance**

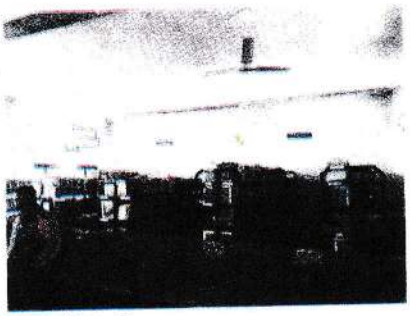
- Open spaces adjacent to building are 13 times of the building footprint.
- Compact parking provided away from the building
- Maximum (100%) of indoor areas are day lit, by effective building orientation.



Open areas provided around the building's academic blocks, which provide effective breathing space.



Ample day light in the reading areas as well as Classrooms

Effective use of day lighting by orientation of building;

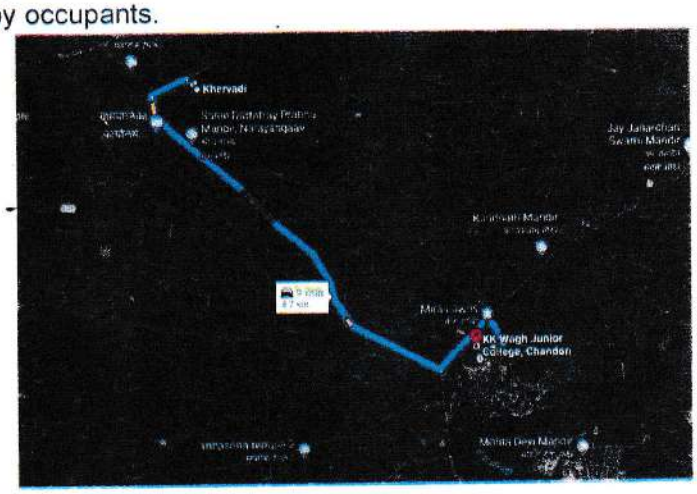
## 2.3 Development density and community connectivity

The college premise is located in the Chandori, which is the major city with rail, road and bus connectivity. Since it is located in well-developed area, the population density is very high. Though there are enough open spaces around the premises that help in functioning of day to day activities.

## 2.4 Alternative transportation

Public transportation Access

Campus is located 4.7 km from the railway station Kherwadi, well accessed by public bus network systems as campus is adjacent to Nashik-Aurangabad Highway., which can be used by occupants.




Transit systems

- Railway station: 4.7 km, Via Chandori Road.
- Mass transit (City Bus Stop): within 1.00 km
- Building within ½ mile of Residential zone/neighborhood.
- Basic services Include: - Hostel, Bank, Convenience store, Laundry, Medical, Pharmacy and Restaurants.

***Pedestrian access to nearly all the services mentioned above.***

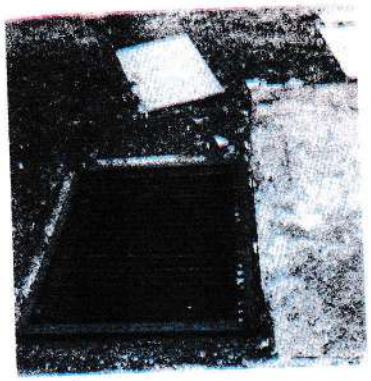
# 3. STRATEGIES INCORPORATED IN BUILDING

## 3.1 Innovative wastewater technologies

### 3.1.1 Storm water Design

**Strategies incorporated**

All Roofs are connected by Pipe network which with help of chambers and manholes connected to septic tank via underground pipes.so that all the rain water efficiently discharged without any soil erosion.



Use of chambers to collect Storm water

### 3.1.2 Rain water harvesting

Presently no provision for Rain water harvesting is done at site but the rain water from roof area is effectively collected by pipe network.

**Suggestions:**

Rain water can be harvested form terrace, and ground floor areas, and is left for percolation to the ground off rain water in their own premises. Whixh will reduce water demand and as the building is using bore well for water requirements it will help for ground water recharge.

**Calculation of Rain water harvesting**

| | |
|---|---|
| Building population | = Students+ Teaching, technical, Admin.& Clerical staff<br>= 805+39+16<br>= 860 No. |
| Water Consumption | = 45 X 860 .....for office use<br>= 38700 lit / day |
| Annual consumption | = 38700 x 317 (Working days)<br>= 1,22,67,900 lit / Annum.....A |

Total rainfall catchments of academic building (Terrace area)
= 851.71 Sqm.

| | |
|---|---|
| Annual average rainfall of Nashik | = 690.5 mm = 0.69 m |
| Water harvesting potential | = Rainfall (mm) x Collection |
| efficiency | |
| Total rain water collection | = 0.69 X 851.71<br>= 587.68 m3 / year<br>= 587.68 X 1000 lit<br>= 5,87,680.00 lit/ year.....B |

Water requirement that can be fulfill by rainwater harvesting ( in %)

(B / A) X 100 = (587680 / 12267900) X 100
= 4.79 %

**3.1.3 Water use reduction**

All the pumps are operated by dedicated personnel to avoid wastage / shortage of water .Almost 10% of water is saved by the occupants.

**Suggestions:**

While the baseline is good, there are many ways to exceed and achieve maximum standards, thereby achieving greater efficiency.

Methods should be adopted to reduce potable water use by including use of surface runoff water for non-potable applications. This will also benefit in reduced energy use and chemical inputs at municipal water treatment levels.

Water conservation can be achieved by:-

1. Using aerated flow type taps
2. Currently no provision is made for Rain water harvesting but if the provision is to be made in future it will reduce total water demand of institute nearly by 4.79%
3. Installing low flow flushing cistern (3 lit per flush)
4. Installing water efficient urinals
5. Use low flow irrigation systems for garden area.
6. Use of Recharge pits for rain water.
7. Pressure reducing valves.
8. Grey water reuse.

### 3.1.4 Solid Waste and Recycling

Solid waste is collected using pipeline and chambers and transferred to septic tank in campus area, from where it is lifted by Grampalika. However, if Sewage Treatment plant is considered and installed by the management, it will result into recycling of the consumed water and fresh water for gardening application will not be required at all. Also it will be very beneficial if segregation of waste into different types be done at institute level using color coded dustbins.

## Annual extrapolation of each waste category (by mass)

### A. Solid waste

Building population = 860 (Students, Teachers, Admin. & Clerical staff)

Solid waste generation = 0.042 cu m X 860 persons

= 36.12 cu m

A septic tank is provided to treat the waste.

### B. Organic waste

The organic wastes like, dry leaves, mulches, kitchen waste from canteen, is disposed off to the Gram-Palika after effective segregation of wet and dry wastes. Total 75% of site is landscaped. There are many evergreen and medicinal plant varieties planted in open areas. shrubs are planted along the pathway.


Color Coded Dust bins for Segregation of Waste

### C. Paper, Newsprint, and other stationery

All the waste papers of students work is reused for administrative purpose. Used stationery by mass found to be recyclable paper including cardboard and newsprint. Recyclable mixed paper and newsprint represent a strong opportunity for diverting a significant portion of Institute's waste and lowering its carbon and deforestation footprints. Some of the most common paper items from the college area that include: copy/printer paper, newspapers, and paper packaging. This waste paper is sent for recycling through the venders in city.

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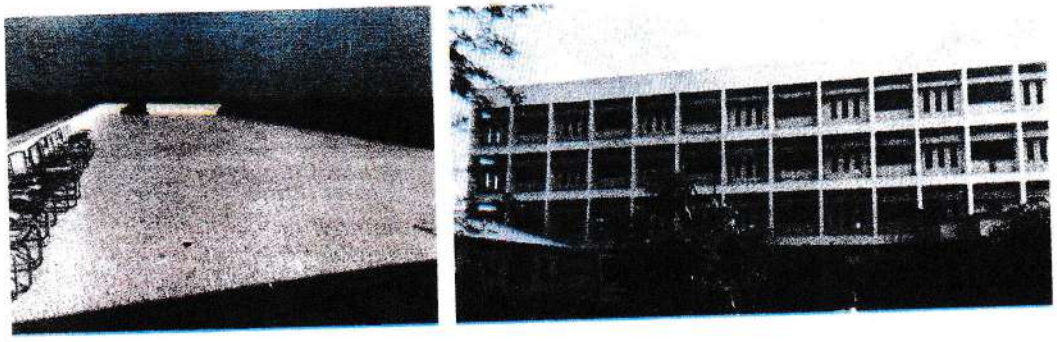
## 4.0 Indoor environment

### 4.1 Heat island Effect

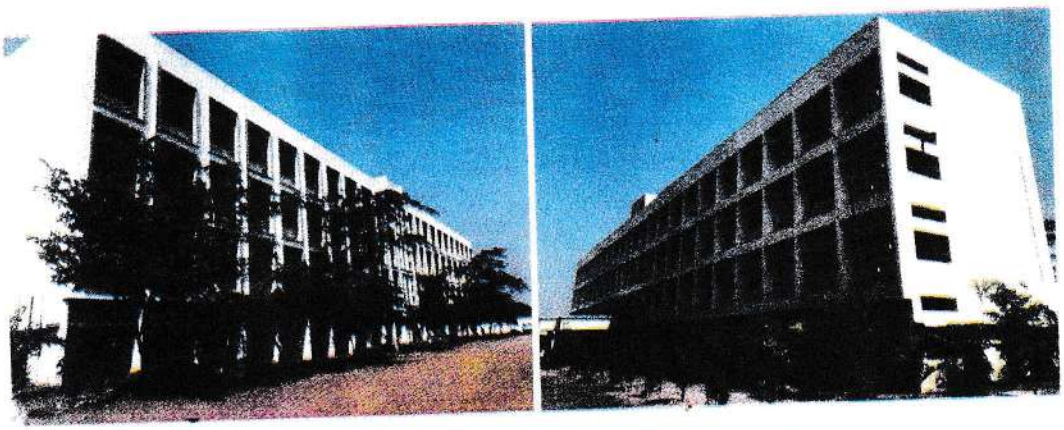
This occurs when warmer temperatures are experienced in urban landscapes, compared to adjacent rural areas as a result of solar energy retention on constructed surfaces. Principal surfaces that contribute to heat island effects are streets, sidewalks, pathways, parking lots and buildings.

Strategies incorporated:

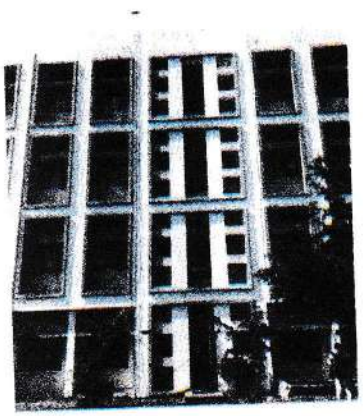
- Provision of shady trees within the premises
- Ground cover in the form of landscape, plantations
- Use of light colored high Albedo materials, on the external surfaces and on the roof to reflect off light and heat.
- Projections in the form of fins and chajjas which keep the building in shade.

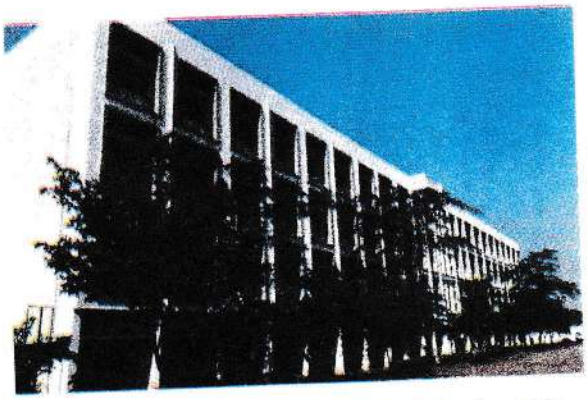


Use of light colors on façade to reflect light and heat



Use Shady Trees in premises to avoid Heat Island Effect





Projections in the form of fins and chajjas and vertical walls which keep the building in shade

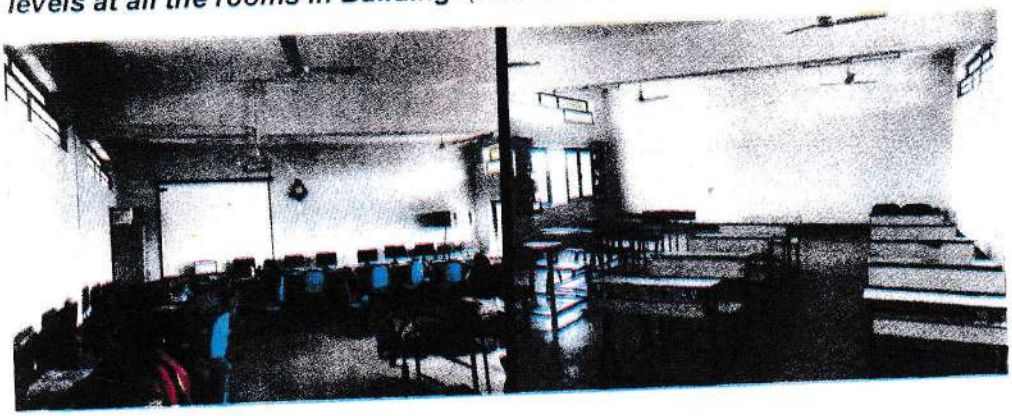
## 4.2 Light pollution reduction

**Details of lighting source: -Lighting fixtures and lamps (Artificial lighting)**

Use of single 20 W LED Tube & single tube 40 W, 230 V fluorescent light fixtures in the indoor areas.

Average artificial lighting lux of **260 lux** is observed inside the building. Which is well under limit set by National building code?

* ***Separate annexure attached along with report, which specifies the LUX levels at all the rooms in Building.*** *(Annexure I)*



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The above pictures show ample natural light conditions in the room

Note: -The calculations attached with annexure measure the lux level of natural lights provided in the rooms. It must be noted that the building has sufficient, unobstructed, natural light from all sides, which brings in plenty of natural light in the indoor spaces specially class rooms and labs. The natural light available in the rooms is over 200 lux, which makes it comfortable to use the space during day time, without artificial lights. *(Also shown in pictures above)*. The artificial lights hence support during cloudy weather days.

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## 5.0 Estimated Energy consumption

### 5.1 Electricity Consumption

Electricity for light, fan and laboratory equipment's is the main energy consumption in this institute. Ample amount of natural light as already shown reduces the dependency on artificial lights, and consequently energy.

### 5.2 Indoor Environment

The building is so planned and oriented that nearly all of its rooms have access to windows and ample amount of natural light. The rooms also face courtyards from internal side. Bilateral lighting system provides adequate natural light and cross ventilation for these most occupied spaces during working hours. This campus is located 0.5 km away from main roads. Adjoining road is internal road with very less vehicular traffic. Students are using public transport or buses provided by institution itself. Since the premises are off the main highway, no sound and air pollution observed.

### 5.3 Carbon foot print of institution

Emission factors

| Sr. No. | Item | Emission factor |
|---|---|---|
| 1 | Electricity | 0.85 kg $CO_2$ per KWh |
| 2 | Diesel | 2.653 kg $CO_2$ per liter |
| 3 | LPG | 1.983 kg $CO_2$ per kilogram |

Source:

1. $CO_2$ emission factor database, version 06, CEA (Government of India) http://www.cea.nic.in/reports/planning/cdm_co2/cdm_co2.htm
2. Emission factors are taken from the file "Emission factors from across the sector -tool", extracted from http://www.ghgprotocol.org/calculation-tools/alltools

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Annual consumption of resources

| | | |
|---|---|---|
| ▪ Electricity required per year | = 919 X 12 months | = 11,028 Kwh |
| ▪ Diesel required per year | = 5.08 lit X 12 months | = 60.96 lit. |
| ▪ LPG required per year | = 16 kg X 6 cylinders | = 32 kg |

*Above information is facilitated by administration Dept. of institute.

Actual carbon footprint

| | | |
|---|---|---|
| 1. Electricity | = 11,028 X 0.85 | = 9373.80 |
| 2. Diesel | = 60.96 X 2.653 | = 161.73 |
| 3. LPG | = 32 X 1.983 | = 63.46 |
| 4. Total (1+2+3+4) | | = 9598.99 kg i.e. 9.60 ton |
| 5. 9.60 ton / 860 (no of persons) | | = 0.011 ton per person |

### 5.4 Alternate energy resources

Winds in this area are generally light to moderate with some strengthening in the south-west monsoon season. In the south-west monsoon season winds are from directions between south-west and north-west. In the post-monsoon season winds from the north-west and north are common in the mornings while in the afternoons the winds blow from directions between north and east.

The skies are clear or lightly clouded rest of the year. It is recommended that the institute installs solar panels to harvest hot water and electricity for campus lighting.

These alternative energy resources will help in reducing connected load of electricity.

### 5.5 Solar energy

A building which not only makes use of efficient building technology but is also geared to energy savings potential, is completed by a façade which apart from its conventional function also contributes to energy generation. India is blessed with ample sunlight, that can be effectively harvested throughout the year. Solar energy if properly harvested can reduce the burden on energy consumption of the buildings, adding on to considerable savings for the users.

So taking this in account institute has installed the Rooftop Solar System of 10kWp Grid Tied Captive Solar PV Power Plant

**Solar energy calculations:**

Output from Rooftop Solar System = 10 KWp = 10 KWh

Total sunlight hours / day = 7 hours

Daily energy output = 10 X 7

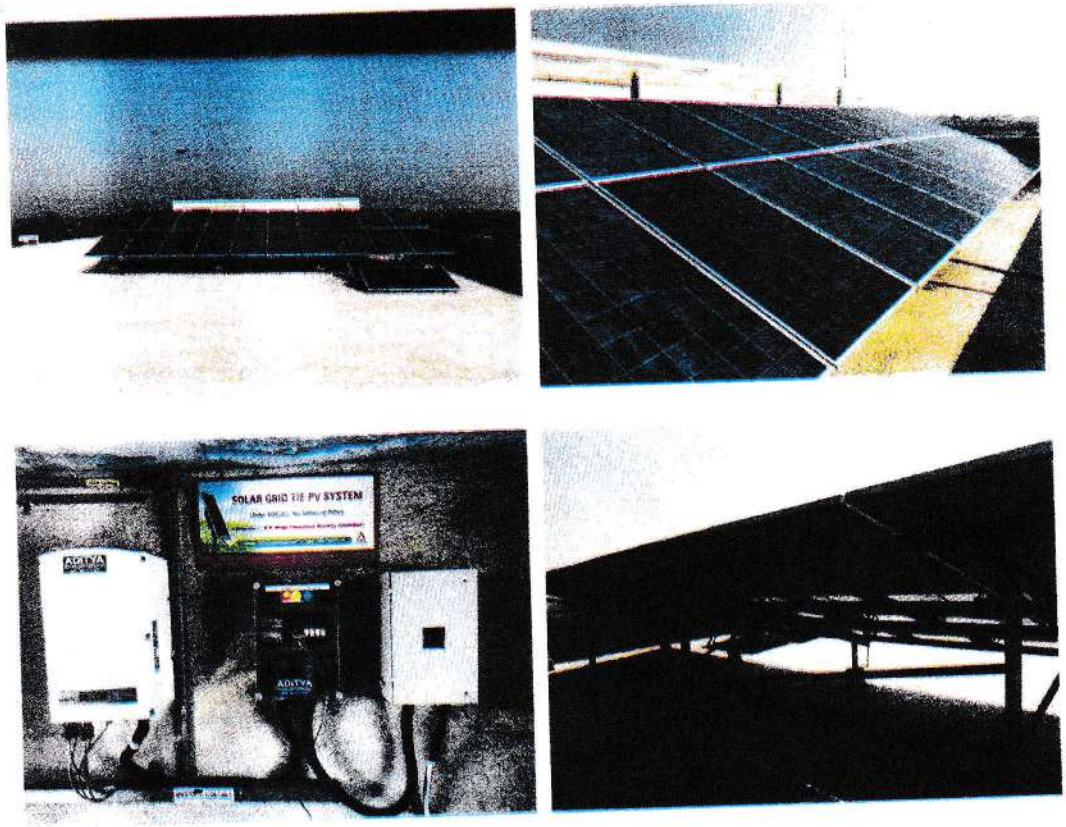
= 70 KW.

Estimated daily energy consumption = (919/30) = 30.63 KW

Extra energy generated = 70 – 30.63 KW

= 39.37 kw

Hence 39.37 KW extra energy is generated by employing solar PV panels on roof top.




10Kwp Roof Top Solar System

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## 6.0 Suggestions

The Strategies that can make the building energy efficient.

### 6.1 Implementation of green spaces

Incorporating and increasing green areas in building by providing green covers in the open to sky court areas of the building. The building plan has a lot of scope of incorporating green lawns/ landscaped areas. This will sufficiently reduce the heat island effect; the heat reflection that is happening right now, will also help in retention of ground water, besides beautifying the building.
Implementation of landscape in courts with native plant varieties will not only conserve the Trees but also enhance views, rendering cooler indoor environment.

## Conclusion

1. The building performs fairly well on the criteria studied through this report. The microclimate solves various heat gain issues which are otherwise a possibility in sites which are located in urban areas.
2. The site doesn't pose connectivity issues and is equally connected through, bus and road networks.
3. There have been measures undertaken by the designers and authorities to add on the existing plantation of the site, and to conserve top soil by landscaping. However, if ground cover and landscaping is increased which is possible by landscaping of open court areas around the building this will help in reducing the heat island effect of the building thereby contributing towards the microclimate.
4. The segregation of waste is a factor where it needs to work on positively as the organic waste generated by the site if be treated there itself by composting, will be beneficial and the waste will be treated at source itself
5. The building is very well oriented to fetch maximum day light in all indoor major function areas such as classrooms and labs. This saves on considerably on artificial lighting requirements.
6. The building doesn't show unutilized power sockets, more than the current need, which is a positive factor.
7. The institute measures and disposes the E-waste generated by selling to scrapyard.
8. The paper waste generated is being reused and sent to the recycling agencies instead of being burnt, thus helping and maintaining the green environment.
9. RO plants with water coolers are located at all suitable locations.
10. Fire extinguishers located at key areas. Fire Hydrant system is also installed. Fire alarm system provided.
11. No seepages were observed in the building premises.

12. Energy efficient computers and monitors have been procured. Approx. less than 1% computers are having CRT screen. Rest all is having TFT monitors.
13. Electronic communication is encouraged to minimize usage of papers.
14. Most of the paper waste generated by the campus is reused for doubled sided printing.
15. Air Conditioning usage is only limited less than 1% in the campus, thereby making it more 'Green'.
16. The garden areas partly use pipe line irrigation system.
17. The provision of impervious floors in the outdoor areas can further be increased by which ground water table of water will benefit, as of now it is only 80%, which should be increased to 90%, by employing perforated pavers, grass joints etc.
18. The building must replace the existing Fluorescent tube lights to LED light fixtures which will help in reducing the electricity consumption to a large extent. For this institute has taken steps and ordered LED tube lights.
19. The building is also harnessing solar energy which is very welcoming.
20. Students and Staff members are totally aware of pollution that is caused by use of vehicles & bicycles. Still a carbon consumption awareness programme must be undertaken to check and improve the carbon emissions at individual as well as campus level so that it avoids Air and Noise pollution in the campus due to vehicles or any activity in it.
21. The Institute must also provide Solar panels and harness lighting that can be used to lit outdoor areas of campus. Solar lights in the campus can also be provided. It can reduce electrical bills and contribute to Carbon neutrality.
22. The Institute must also take measures to install water closets and fixtures that use less water. Similarly, all the fixtures of the toilets which have water leakage must be checked and replaced. This will not only help in achieving maximum standards, but also greater efficiency.
23. The sewage water is disposed of through storm drainage to septic tank and eventually to nearby nala: However, the human intake in premises being very high, it is advisable to propose Sewage Treatment plant which will save the requirement of local water tankers and treated STP water can be used for gardening applications
24. For barrier free access, the ramp need to be provided in the campus at each floor, provision of barrier free toilets, equipped with grab bars and must be done.

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# CERTIFICATE

This is to certify that the Green Audit for year 2019-2020 for the **'K. K. Wagh Education Society's Karmaveer Kakasaheb Wagh Arts, Commerce, Science & Computer Science College, Chandori** was done by us. The building performs good on the criteria's studied through this report.We have covered the area of environmental consciousness, energy conservation, waste management, use of renewable energy, water efficiency etc. All necessary data is provided by institute and the analysis is enclosed in the report.

The aim of conducting green audit is to check the demand on non-renewable resources, check the utilization efficiency of these resources when in use, and check reuse, recycling, and utilization of renewable resources.

While the baseline is good, there are many ways to exceed and achieve maximum standards, thereby achieving greater efficiency of the buildings energy performance, which are mentionec in the Report.

AJINKYATARA CONSULTANTS Architects & Engineers NASHIK

**Ar. Smita Y. Kasarpatil**
M. Arch.
I.G.B.C. AP
M.A. (History & Archaeology)
P.G. Diploma in Heritage Management
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M.I.I.A., A.I.V.

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References

| No. of Teaching staff | No. of Non-teaching staff |
|---|---|
| 39 | 16 |

Total no. of students in campus = 805

Total occupancy in the campus = 860

Documents enclosed:

1. Annexure I: Light levels and electrical points in the rooms.
2. Annexure II: List of trees planted in the campus

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**Annexure I:**

| Sr. no. | Room | Artificial light | | | Fan | Power Points | | MCB | LUX level | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Fixture | lumens/ fixture | no. of fixtures | | 3 pin | power points | | | Near window | Centre of the Room | Passage/ Entrance Side |
| GROUND FLOOR | | | | | | | | | | | | |
| 1 | Class Room (Room1-Left Most) | Tube Light | | 5 | 1 | 5 | 0 | 0 | With Lights on | | | |
| | | LED Tube light | | | | | | | Without Lights | 2190 | 119 | 66 |
| 2 | Computer Lab (Room 2) | Tube Light | | 5 | 0 | 9 | 0 | 0 | With Lights on | | | |
| | | LED Tube light | | | | | | | Without Lights | 1437 | 206 | 74 |
| 3 | Class Room (Room 3) | Tube Light | | 5 | 2 | 1 | 0 | 0 | With Lights on | | | |
| | | LED Tube light | | | | | | | Without Lights | 2170 | 134 | 57 |
| 4 | NAAC Room (Room 4) | Tube Light | | 3 | 2 | 12 | 0 | 0 | With Lights on | | | |
| | | LED Tube light | | | | | | | Without Lights | 2450 | 171 | 77.2 |
| 5 | Staff Room (Room 5) | Tube Light | | 3 | 2 | 19 | 0 | 0 | With Lights on | | | |
| | | LED Tube light | | | | | | | Without Lights | 2710 | 128.9 | 35.4 |
| 6 | Electronics Lab (Room 6) | Tube Light | | 5 | 2 | 1 | 0 | 0 | With Lights on | | | |
| | | LED Tube light | | | | | | | Without Lights | 2480 | 148.3 | 72.6 |
| 7 | Seminar Hall (Room 7) | Tube Light | | 5 | 2 | 1 | 0 | 0 | With Lights on | | | |
| | | LED Tube light | | | | | | | Without Lights | 1950 | 202 | 79.2 |
| 8 | Class Room (Room 8) | Tube Light | | 4 | 3 | 1 | 0 | 0 | With Lights on | | | |
| | | LED Tube light | | | | | | | Without Lights | 1885 | 139 | 88 |
| 9 | Passage | Tube Light | | 2 | 0 | 0 | 0 | 0 | With Lights on | | | |
| | | LED Tube light | | | | | | | Without Lights | | 285 | |
| 10 | Stairs | Tube Light | | | 0 | 0 | 0 | 0 | With Lights on | | | |
| | | LED Tube light | | 0 | | | | | Without Lights | | 235 | |
| 11 | Toilet 1 | Tube Light | | | 0 | 0 | 0 | 0 | With Lights on | | | |
| | | LED Tube light | | 0 | | | | | Without Lights | | 158 | |
| 12 | Toilet 2 | Tube Light | | | 0 | 0 | 0 | 0 | With Lights on | | | |
| | | LED Tube light | | 0 | | | | | Without Lights | | 162 | |

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Ajinkyatara Consultants

| Sr. no. | Room | Artificial light | | | Fan | Power Points | | MCB | LUX level | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Fixture | lumens/ fixture | no. of fixtures | | 3 pin | power points | | | Near window | Centre of the Room | Passage/ Entrance Side |
| | FIRST FLOOR | | | | | | | | | | | |
| 1 | Class Room (Room1-Left Most) | Tube Light | | 5 | 1 | 1 | 0 | 0 | With Lights on | | | |
| | | LED Tube light | | | | | | | Without Lights | 3700 | 369 | 302 |
| 2 | Class Room (Room 2) | Tube Light | | 5 | 1 | 1 | 0 | 0 | With Lights on | | | |
| | | LED Tube light | | | | | | | Without Lights | 2070 | 296 | 422 |
| 3 | Class Room (Room 3) | Tube Light | | 5 | 1 | 1 | 0 | 0 | With Lights on | | | |
| | | LED Tube light | | | | | | | Without Lights | 1520 | 211 | 95 |
| 4 | Exam Room (Room 4) | Tube Light | | | 2 | 5 | 0 | 0 | With Lights on | | | |
| | | LED Tube light | | 4 | | | | | Without Lights | 2440 | 248 | 176 |
| 5 | Staff Room (Room 5) | Tube Light | | 4 | 2 | 21 | 1 | 1 | With Lights on | | | |
| | | LED Tube light | | | | | | | Without Lights | 2360 | 76 | 85 |
| 6 | Class Room (Room 6) | Tube Light | | 5 | 3 | 7 | 0 | 0 | With Lights on | | | |
| | | LED Tube light | | | | | | | Without Lights | 2340 | 108 | 125 |
| 7 | Class Room (Room 7) | Tube Light | | 5 | 5 | 1 | 0 | 0 | With Lights on | | | |
| | | LED Tube light | | | | | | | Without Lights | 2560 | 311 | 119 |
| 8 | Class Room (Room 8) | Tube Light | | 5 | 2 | 1 | 0 | 1 | With Lights on | | | |
| | | LED Tube light | | | | | | | Without Lights | 1940 | 139 | 84 |
| 9 | Passage | Tube Light | | 0 | 0 | 0 | 0 | 0 | With Lights on | | | |
| | | LED Tube light | | | | | | | Without Lights | | 250 | |
| 10 | Stairs | Tube Light | | 0 | | 0 | 0 | 3 | With Lights on | | | |
| | | LED Tube light | | | | | | | Without Lights | | 231 | |
| 11 | Toilet 1 | Tube Light | | 0 | 0 | 0 | 0 | 0 | With Lights on | | | |
| | | LED Tube light | | | | | | | Without Lights | | 154 | |
| 12 | Toilet 2 | Tube Light | | 0 | 0 | 0 | 0 | 0 | With Lights on | | | |
| | | LED Tube light | | | | | | | Without Lights | | 158 | |

| Sr. no. | Room | Artificial light | | | Fan | Power Points | | MCB | LUX level | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Fixtures | lumens/ fixture | no. of fixtures | | 3 pin | power points | | | Near window | Centre of the Room | Passage/ Entrance Side |
| | | | | | SECOND FLOOR | | | | | | | |
| 1 | Class Room (Room 1-Left Most) | Tube Light | | 5 | 0 | 1 | 0 | 0 | With Lights on | | | |
| | | LED Tube light | | | | | | | Without Lights | 2660 | 246 | 300 |
| 2 | Class Room (Room 2) | Tube Light | | 5 | 0 | 1 | 0 | 0 | With Lights on | | | |
| | | LED Tube light | | | | | | | Without Lights | 4170 | 252 | 284 |
| 3 | Class Room (Room 3) | Tube Light | | 5 | 0 | 1 | 0 | 0 | With Lights on | | | |
| | | LED Tube light | | | | | | | Without Lights | 3300 | 327 | 221 |
| 4 | Office (Room 4) | Tube Light | | | 3 | 9 | 0 | 0 | With Lights on | | | |
| | | LED Tube light | | 5 | | | | | Without Lights | 2390 | 130 | 253 |
| 5 | Office (Room 5) | Tube Light | | 2 | 2 | 3 | 0 | 0 | With Lights on | | | |
| | | LED Tube light | | | | | | | Without Lights | 3250 | 250 | 292 |
| 6 | Library (Room 6) | Tube Light | | 5 | 2 | 0 | 0 | 0 | With Lights on | | | |
| | | LED Tube light | | | | | | | Without Lights | 2750 | 271 | 252 |
| 7 | Study Room (Room 7) | Tube Light | | 5 | 0 | 1 | 0 | 0 | With Lights on | | | |
| | | LED Tube light | | | | | | | Without Lights | 2250 | 300 | 334 |
| 8 | Gymkhana (Room 8) | Tube Light | | 5 | 0 | 1 | 0 | 0 | With Lights on | | | |
| | | LED Tube light | | | | | | | Without Lights | 3890 | 283 | 311 |
| 9 | Passage | Tube Light | | 0 | 0 | 0 | 0 | 0 | With Lights on | | | |
| | | LED Tube light | | | | | | | Without Lights | | 304 | |
| 10 | Stairs | Tube Light | | 0 | 0 | 0 | 0 | 2 | With Lights on | | | |
| | | LED Tube light | | | | | | | Without Lights | | 271 | |
| 11 | Toilet 1 | Tube Light | | 0 | 0 | 0 | 0 | 0 | With Lights on | | | |
| | | LED Tube light | | | | | | | Without Lights | | 200 | |
| 12 | Toilet 2 | Tube Light | | 0 | 0 | 0 | 0 | 0 | With Lights on | | | |
| | | LED Tube light | | | | | | | Without Lights | | 210 | |

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| Sr. | Room | Artificial Light | lumens/ | no. of | Fan | Power Points | power | tube | LUX level | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | Near | Centre of the Room | Passage/ Entrance Side |
| | | | | | THROUGH | | | | | | | |
| 1 | Chemistry Lab (Room1-Left Most) | Tube Light | | 5 | 1 | 1 | 1 | 1 | With Lights on | | | |
| | | LED Tube light | | | | | | | Without Lights | 3270 | 344 | 288 |
| 2 | Botany Lab (Room 2) | Tube Light | | 5 | 4 | 28 | 4 | 0 | With Lights on | | | |
| | | LED Tube light | | | | | | | Without Lights | 4620 | 196 | 273 |
| 3 | Class Room (Room 3) | Tube Light | | 5 | 0 | 1 | 0 | 0 | With Lights on | | | |
| | | LED Tube light | | | | | | | Without Lights | 9790 | 446 | 253 |
| 4 | Office (Room 4) | Tube Light | | 1 | 2 | 4 | 0 | 0 | With Lights on | | | |
| | | LED Tube light | | | | | | | Without Lights | 3340 | 168 | 258 |
| 5 | Staff Room (Room 5) | Tube Light | | 2 | 2 | 1 | 0 | 0 | With Lights on | | | |
| | | LED Tube light | | | | | | | Without Lights | 3420 | 280 | 386 |
| 6 | Class Room (Room 6) | Tube Light | | 4 | 4 | 105 | 1 | 1 | With Lights on | | | |
| | | LED Tube light | | | | | | | Without Lights | 3420 | 387 | 386 |
| 7 | Class Room (Room 7) | Tube Light | | 4 | 5 | 1 | 0 | 1 | With Lights on | | | |
| | | LED Tube light | | | | | | | Without Lights | 4010 | 470 | 336 |
| 8 | Class Room (Room 8) | Tube Light | | 4 | 4 | 1 | 0 | 0 | With Lights on | | | |
| | | LED Tube light | | | | | | | Without Lights | 3570 | 545 | 515 |
| 9 | Passage | Tube Light | | 0 | 0 | 0 | 0 | 0 | With Lights on | | | |
| | | LED Tube light | | | | | | | Without Lights | | 1399 | |
| 10 | Stairs | Tube Light | | 0 | 0 | 0 | 0 | 0 | With Lights on | | | |
| | | LED Tube light | | | | | | | Without Lights | | 222 | |
| 11 | Toilet 1 | Tube Light | | 0 | 0 | 0 | 0 | 0 | With Lights on | | | |
| | | LED Tube light | | | | | | | Without Lights | | 186 | |
| 12 | Toilet 2 | Tube Light | | 0 | 0 | 0 | 0 | 0 | With Lights on | | | |
| | | LED Tube light | | | | | | | Without Lights | | 198 | |
| | | | Total | 142 | 60 | 246 | 7 | 10 | | Average | 261 | Lux |

## Annexure II:

**Plants on Campus**

| Sr.No. | Botanical name | Common Name | Nos. |
|---|---|---|---|
| 1 | Terminalia arjuna | अर्जन सागर | 13 |
| 2 | Adhatoda vasica | अडुळसा | 1 |
| 3 | Eugenia jambolana | जांभुळ | 3 |
| 4 | Sapindus mukorossi | रिठा | 4 |
| 5 | Aloe vera | कोरपड | 3 |
| 6 | Moringa oelifera | शेवगा | 3 |
| 7 | Hibiscus rosa sinensis | जास्वंद | 5 |
| 8 | Murraya koenigii | कढीपत्ता | 4 |
| 9 | Aegle marmelos | बेल | 2 |
| 10 | Pogamia pinnata | करज | 20 |
| 11 | Acasia Nilotica | बाभुळ | 9 |
| 12 | Ocimum sanctum | तुळसी | 5 |
| 13 | Azadirachta indica | नीम | 4 |
| 14 | Khaya senegalensis | आफ्रीकन खाया | 23 |
| 15 | Platycladus orientalis | मोरपंखी | 2 |
| 16 | Araucaria columnaris | खिसमस ट्री | 2 |
| 17 | Caryota mitis | फिशटेल | 22 |
| 18 | Plumeria btusa | पिवळा चाफा | 37 |
| 19 | Plumeria Rubra/ aurelia | लाल चाफा | 2 |
| 20 | Tabebuia aurea | ट्री ऑफ गोल्ड | 15 |
| 21 | Tamarindus indica | चिंच | 7 |
| 22 | Phyllanthus emblica | आवळा | 9 |
| 23 | Cestrum diurnum | दिन का राजा | 13 |
| 24 | Ficus benjamina | मलयान बनयान | 27 |
| 25 | Senegalia Catechu | खैर | 6 |
| 26 | Castanospermum australe | | 2 |
| 27 | Psidium guajava | पेरु | 1 |
| 28 | Polyalthiya longifolia | अशोका | 5 |
| 29 | Annona squamosa | सिताफळ | 2 |
| 30 | Sesbainia grandiflora | हदगा | 3 |
| 31 | Ekevergia capansis | बहावा | 5 |
| 32 | Tabebuia rosea | | 13 |
| 33 | Nenium olender | तांत्रिका | 1 |
| 34 | Eucalyptus obliqua | निलगिरी | 6 |

| Sr.No. | Botanical name | Common Name | Nos. |
|---|---|---|---|
| 35 | Mangifera indica | आंबा | 5 |
| 36 | Dypsis wtescens | पाम | 12 |
| 37 | Dracaena draeo | | 2 |
| | | | 298 |

K. K. Wagh Education Society's
**K. K. Wagh Arts, Commerce, Science & Computer Science College, Chandori**
Tal- Niphad, Dist- Nashik-422201, Phone 02550-233439, Fax 02550-233438
**(Affiliated to Savitribai Phule Pune University)**
ID : PU/NS/AC/079/2003 College Code : 755 A.I.S.H.E. Code : C-42064
Email : principal-seniorchandori@kkwagh.edu.in Website : www.ascc.kkwagh.edu.in

# Green Audit Action Taken Report

The Green Audit of the College was conducted in 2019-20 through Ajinkyatara Consultancy.

## Appreciate

Satisfaction has been expressed in the following cases as per Green Audit

1. The building performs fairly well on the criteria studied through this report. The microclimate solves various heat gain issues which are otherwise a possibility in sites which are located in urban areas .
2. The site doesn't pose connectivity issues and is equally connected through , bus and road networks .
3. There have been measures undertaken by the designers and authorities to add on the existing plantation of the site, and to conserve top soil by landscaping.
4. The building is very well oriented to fetch maximum day light in all indoor major function areas such as classrooms and labs. This saves on considerably on artificial lighting requirements .
5. The building doesn't show unutilized power sockets, more than the current need, which is a positive factor.
6. The institute measures and disposes the E-waste generated by selling to scrapyard.
7. The paper waste generated is being reused and sent to the recycling agencies instead of being burnt, thus environment . helping and maintaining the green environment.
8. RO plants with water coolers are located at all suitable locations.
9. Fire extinguishers located at key areas. Fire Hydrant system is also installed. Fire alarm system provided.
10. No seepages were observed in the building premises.
11. Energy efficient computers and monitors have been procured. Approx. less than 1 % computers are having CRT screen. Rest all is having TFT monitors.
12. Electronic communication is encouraged to minimize usage of papers .

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CHANDORI
422 201
TAL. NIPHAD,
DIST. NASHIK

13. Most of the paper waste generated by the campus is reused for doubled sided printing.

14. Air Conditioning usage is only limited less than 1 % in the campus, thereby making it more ' Green ' .

15. The building is also harnessing solar energy which is very welcoming.

## Recommendation

According to the Green Audit, the following suggestions have been made.

1. Incorporating and increasing green areas in building by providing green covers in the open to sky court areas of the building. The building plan has a lot of scope of incorporating green lawns/landscaped areas . This will sufficiently reduce the heat island effect; the heat reflection that is happening right now. will also help in retention of ground water, besides beautifying the building. Implementation of landscape in courts with native plant varieties will not only conserve the Trees but also enhance views, rendering cooler indoor environment. However, if ground cover and landscaping is increased which is possible by landscaping of open court areas around the building this will help in reducing the heat island effect of the building thereby contributing towards the microclimate .

2. The segregation of waste is a factor where it needs to work on positively as the organic waste generated by the site if be treated there itself by composting, will be beneficial and the waste will be treated at source itself.

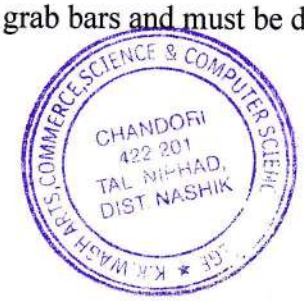
3. The building must replace the existing Fluorescent tube lights to LED light fixtures which will help in reducing the electricity consumption to a large extent .

4. Students and Staff members are totally aware of pollution that is caused by use of vehicles & bicycles. Still a carbon consumption awareness programme must be undertaken to check and improve the carbon emissions at individual as well as campus level so that it avoids Air and Noise pollution in the campus due to vehicles or any activity in it .

5. The Institute must also provide Solar panels and harness lighting that can be used to lit outdoor areas of campus. Solar lights in the campus can also be provided. It can reduce electrical bills and contribute to Carbon neutrality.

6. The Institute must also take measures to install water closets and fixtures that use less water. Similarly , all the fixtures of the toilets which have water leakage must be checked and replaced . This will not only help in achieving maximum standards , but also greater efficiency .

7. For barrier free access, the ramp need to be provided in the campus at each floor, provision of barrier free toilets, equipped with grab bars and must be done .



# Action taken in above recommendation

1. Lawns have been created in the open space in front of the college.
2. A vermin compost project has been set up at the college premises to collect and process tree litter and other organic waste.
3. LED tube lights are installed at all places in the college building.
4. PUC camp was organized to reduce pollution in the college premises. During this time, all types of vehicles coming to the college were inspected.
5. Solar energy project has been implemented in the college for power generation.
6. All the water related equipment's in the college building have been repaired and new equipment's have been installed.
7. Necessary arrangements have been made for free movement in the college building.

# के. के. वाघ शिक्षण संस्था, नाशिक

मध्यवर्ती कार्यालय,

जा. क्र.: के.के.वाघ एज्यु.सो./खरेदी विभाग/ 23 /२०२२ दिनांक :- 1 JAN 2022

## ऑफिस नोट

संदर्भ : १) कार्यकारी मंडळ मिटींग, मंगळवार, दि.१५/०९/२०२०, विषय व ठराव क्रं.२३/२.
२) के.के.वाघ वरिष्ठ महा. चांदोरी यांचे पत्र क्रं.के.के. वाघ महा.चांदोरी/८०५/२०२१, दि.१८/१२/२०२१.

अ) के. के. वाघ तंत्रनिकेतन, चांदोरी यांच्या डेडस्टॉक रजिस्टर वरून खालील प्रमाणे साहित्य कमी करुन के.के. वाघ कला, वाणिज्य, विज्ञान व संगणक विज्ञान महाविद्यालय चांदोरी यांच्या फर्निचर डेडस्टॉक रजिस्टला हस्तांतर करण्यास मंजुरी देण्यात येत आहे.

| अ.क्रं | साहित्य तपशिल | एकुण संख्या |
|---|---|---|
| 1. | U.P.S 7.5 KV UPS Agasti Online Sr.No. MSPL/2009/047 | 02 Nos. |
| 2. | Battery Rack | 01 Nos. |
| 3. | Printer HP Laserjet 1020/P1007 | 06 Nos. |

ब) के. के. वाघ तंत्रनिकेतन, चांदोरी यांचेकडून खालील प्रमाणे साहित्य के.के. वाघ कला, वाणिज्य व संगणक विज्ञान महाविद्यालय, चांदोरी यांना हस्तांतर करण्यास मंजुरी देण्यात येत आहे.

| अ.क्रं | साहित्य तपशिल | एकुण संख्या |
|---|---|---|
| 1. | Practical Steel Table with Glass Top (42'' x 21'' x 30'') | 04 Nos. |
| 2. | Centre Table | 02 Nos. |
| 3. | Computer Tables with Glass Top | 25 Nos. |
| 4. | Steel Library Book Case | 01 Nos. |
| 5. | Wooden Rack (60'' x 40'' x 33'') | 01 Nos. |
| 6. | Wooden Rack (71'' x 84'' x 60'' ) | 01 Nos. |
| 7. | Wooden Rack with 3 Self | 02 Nos. |
| 8. | Table Side Wooden Rack with Door | 02 Nos. |
| 9. | Library Reading Table with Glass | 06 Nos. |
| 10. | LED Tube | 110 Nos. |
| 11. | Readymade Plywood Table with one shelf | 06 Nos. |

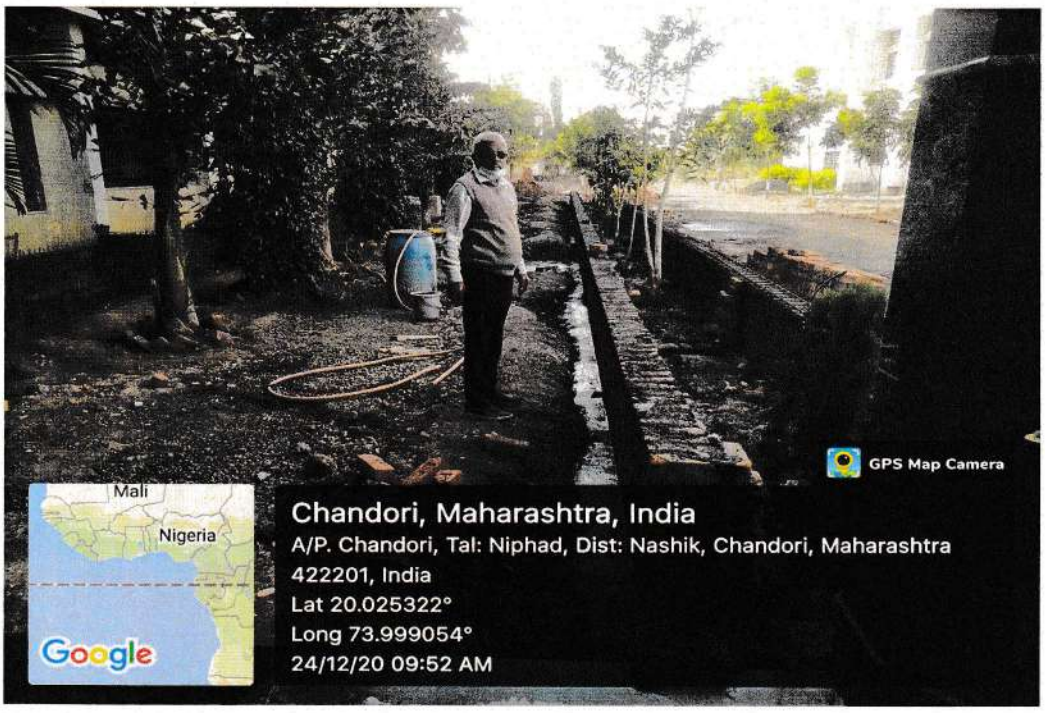
स्टोअर विभाग प्रमुख, के. के. वाघ शिक्षण संस्था, नाशिक यांना कळविण्यात येते की, डेडस्टॉक ट्रान्सफर फॉर्म भरुन पुढील कार्यवाही करावी.

टिप : वर नमुद वस्तु सध्या वापरात नाहीत. त्या वस्तुंचा वापर चालु न ठेवल्यास किंवा दिर्घ काळ बंद ठेवल्यास त्या निकामी व निरुपयोगी होतील, परिणामी संस्थेचे आर्थिक नुकसान होईल. त्यामुळे मे. उच्च न्यायालयाच्या अंतिम आदेशाला अधिन राहुन तात्पुरत्या स्वरूपात वरील संदर्भिय निर्णयानुसार हस्तांतर करण्यास मंजुरी देण्यात आलेली आहे.

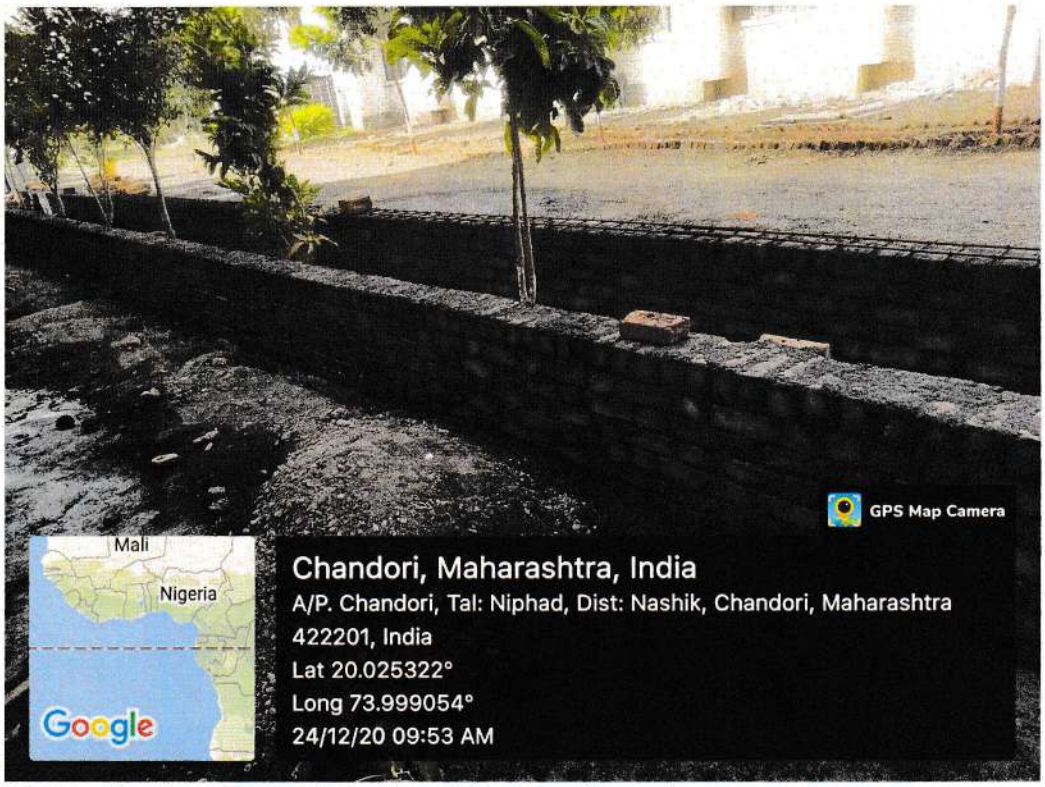
K. K. Wagh Senior College
Chandori, Tal. Niphad, Dist. Nashik
Date: 01/01/2022
Inward No. :.....
Initial:.....01.....

(प्रा.के.एस.बंदी)
सचिव
के. के. वाघ शिक्षण संस्था,
नाशिक

**Green Lawns have been created in the open space in front of the college**

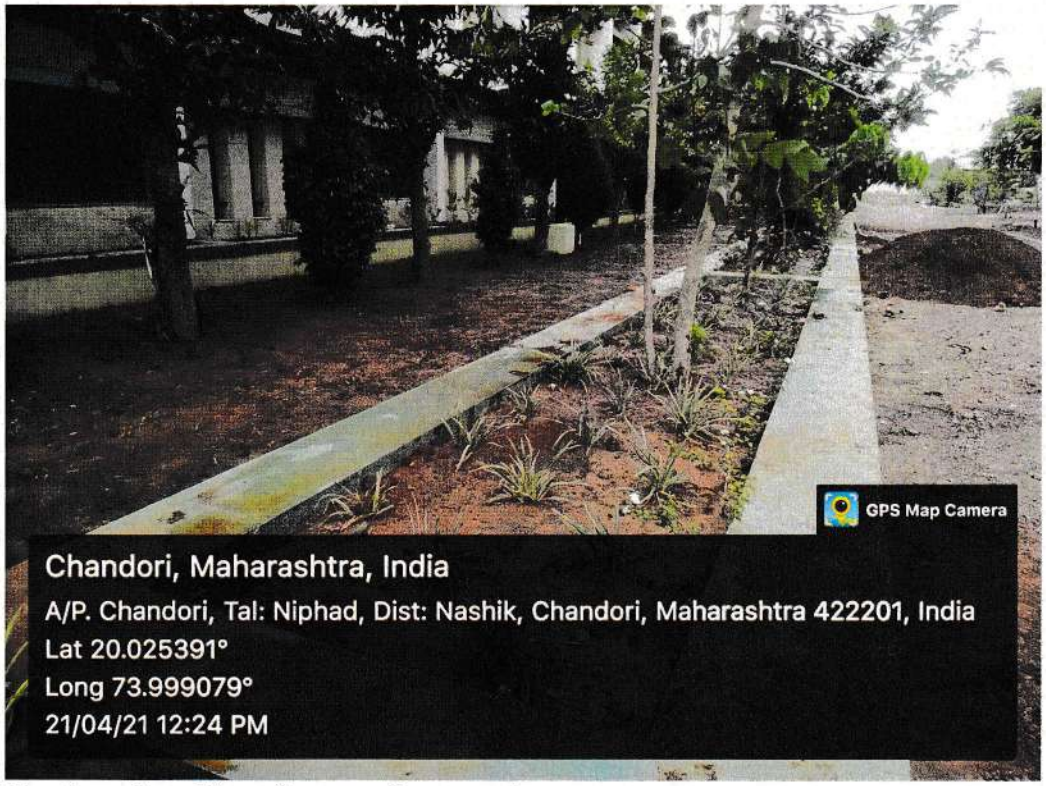
# Developing Green Lawns And Green Campus



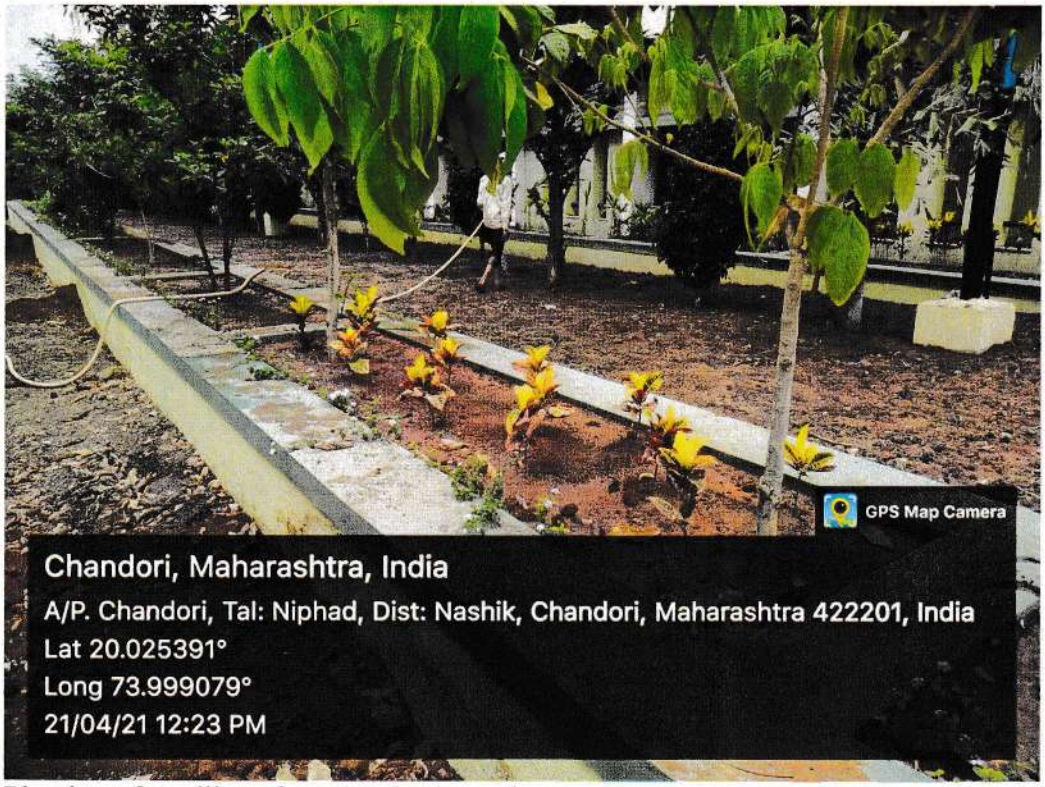

Preparation for construction of green lawns and green campus


Preparation for construction of green lawns and green campus

# Developing Green Lawns And Green Campus

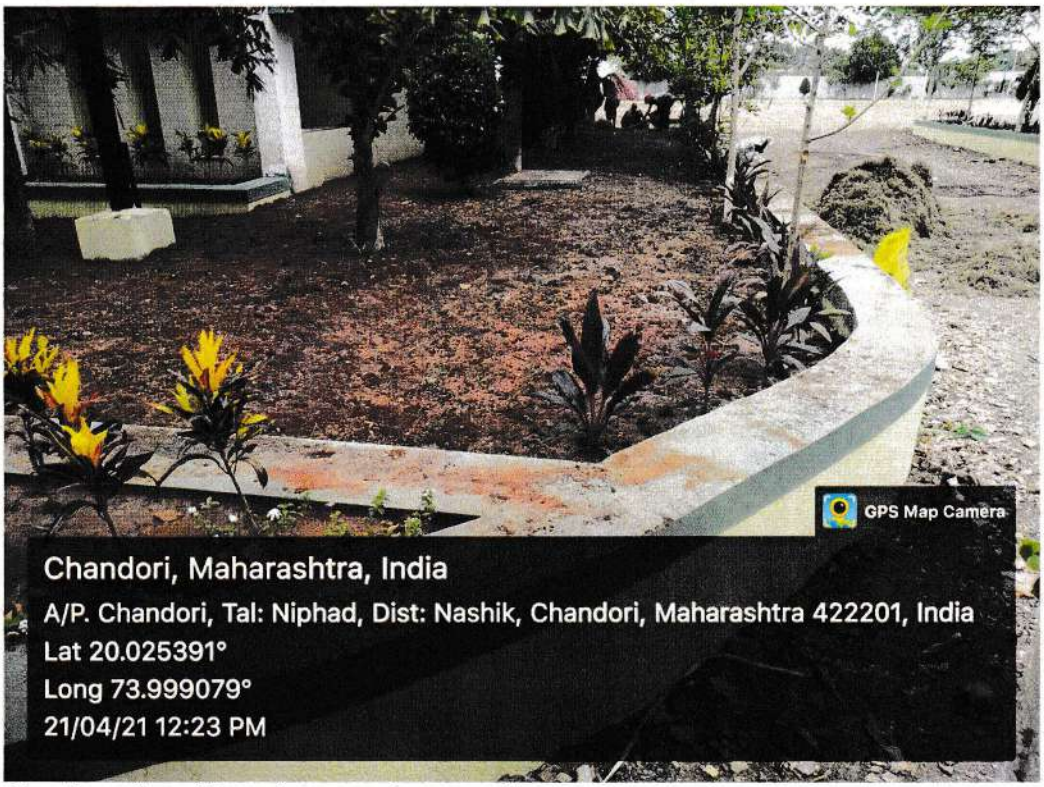



Planting of seedlings for green lawns and green campus

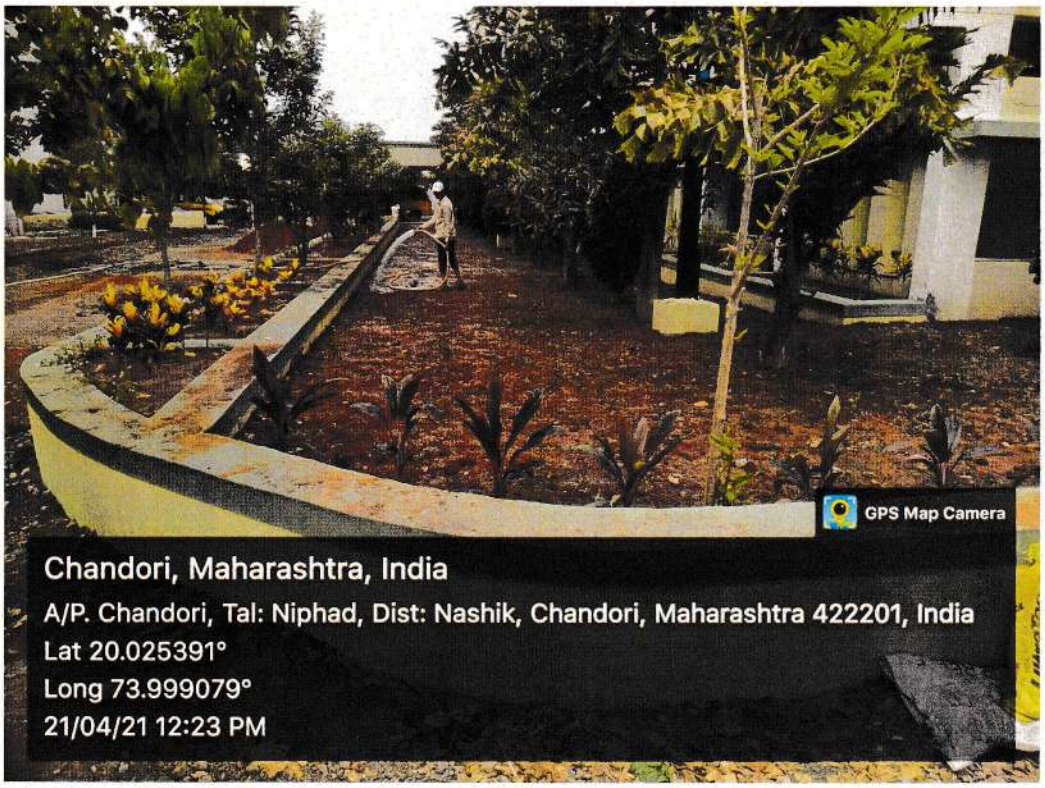



Planting of seedlings for green lawns and green campus

# Developing Green Lawns And Green Campus

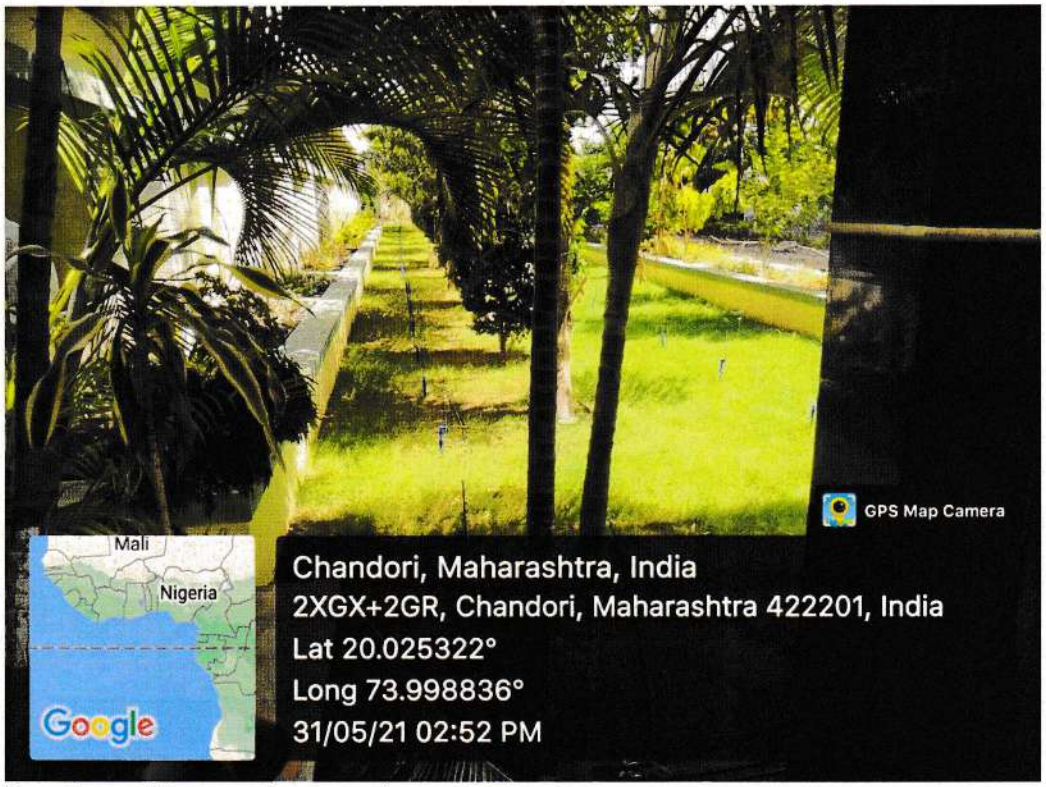



Planting of seedlings for green lawns and green campus

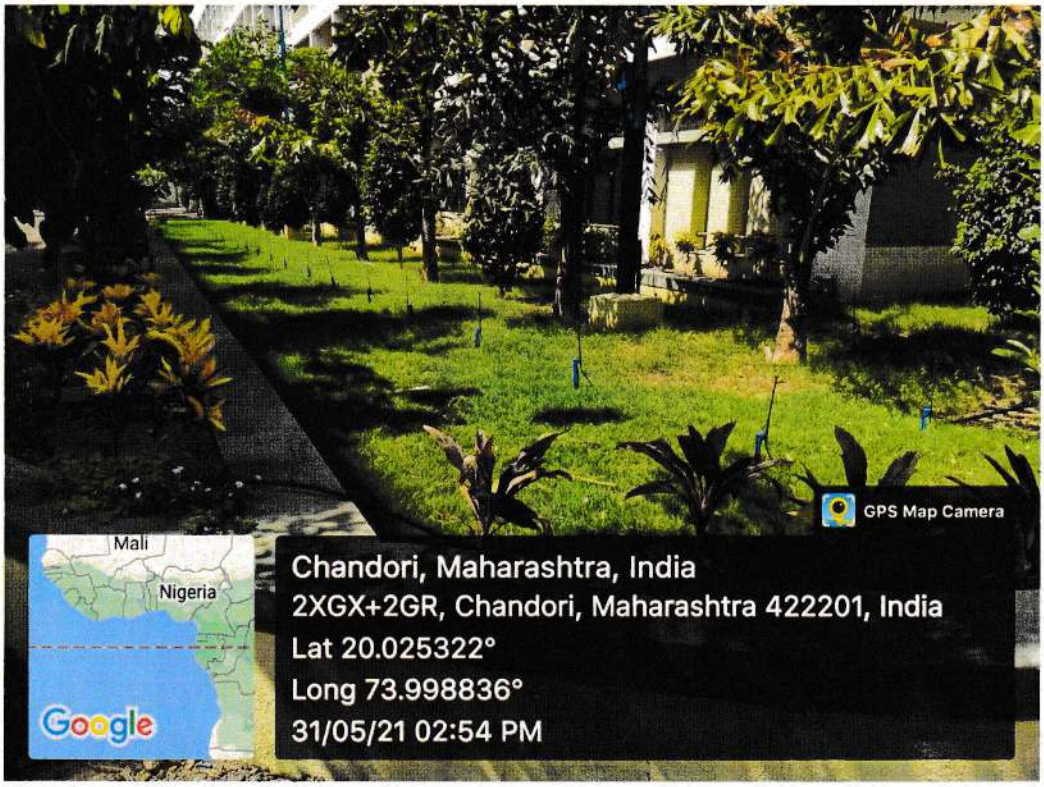



Planting of seedlings for green lawns and green campus

## Developing Green Lawns And Green Campus



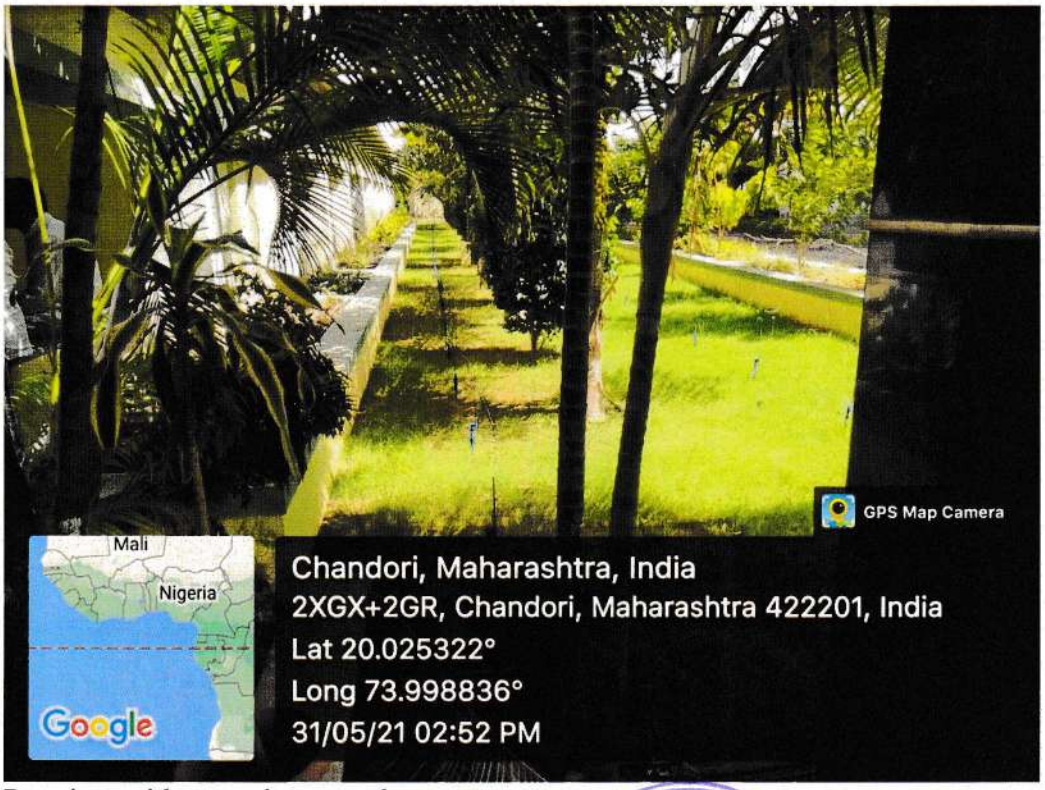

Premises with green lawns and green campus




Premises with green lawns and green campus

## Developing Green Lawns And Green Campus

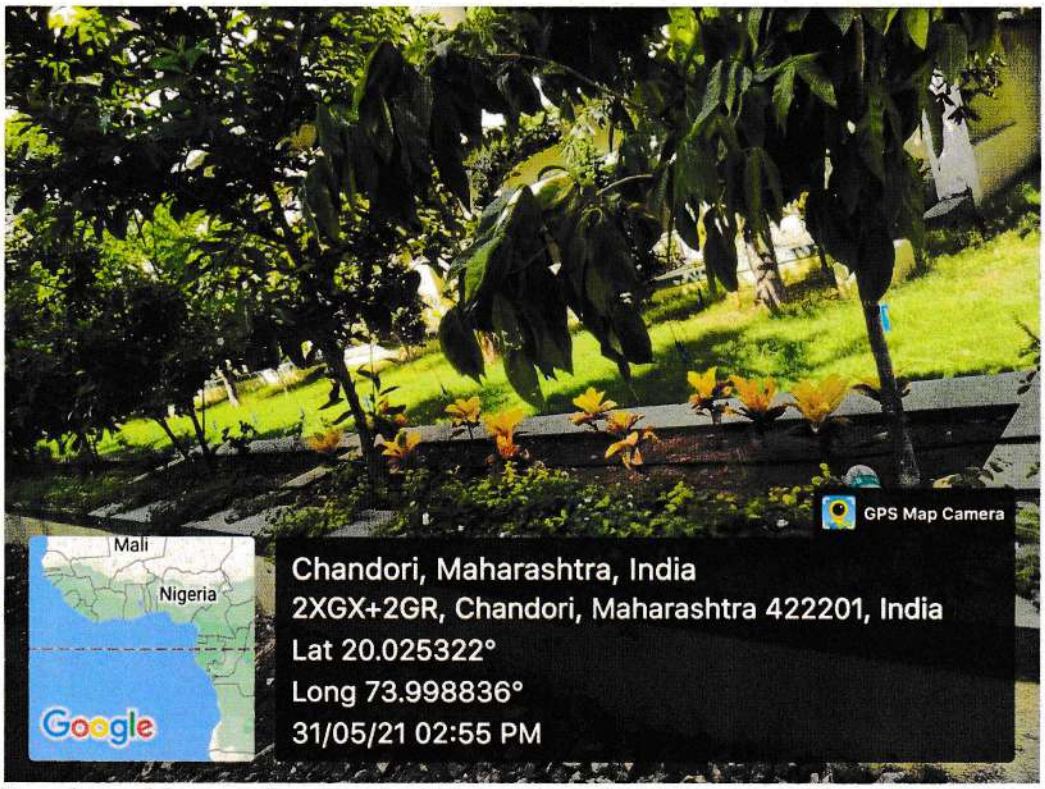

Premises with green lawns and green campus




Premises with green lawns and green campus

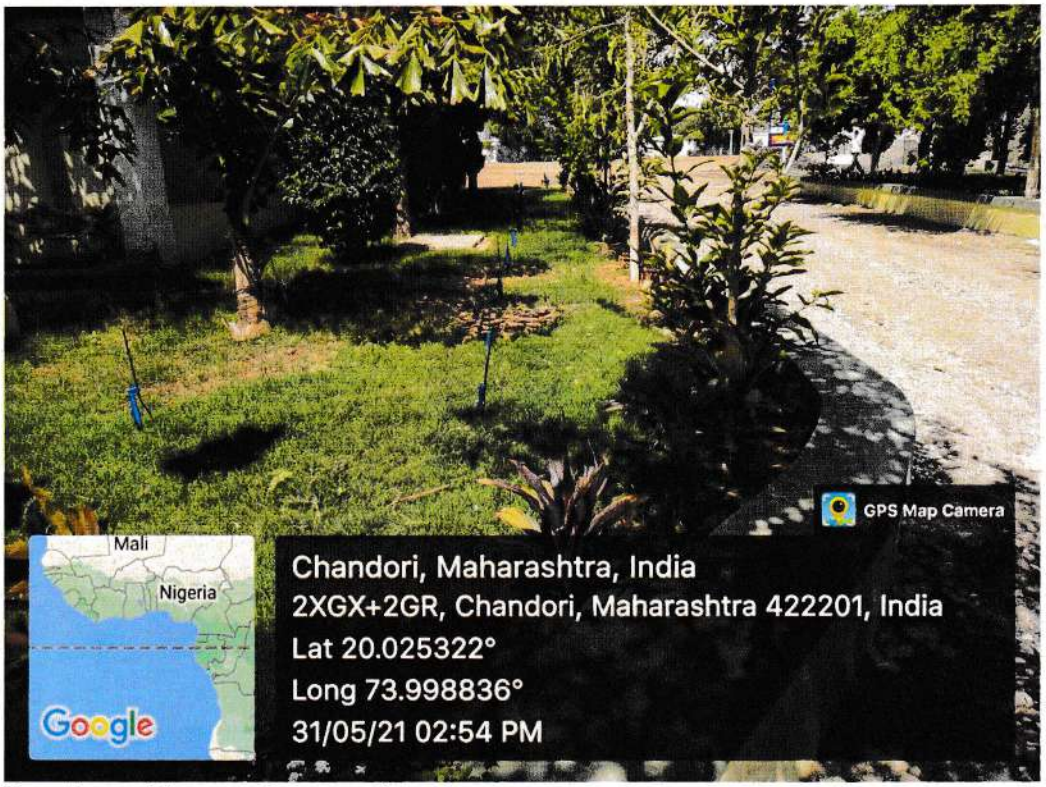
# Developing Green Lawns And Green Campus


Premises with green lawns and green campus

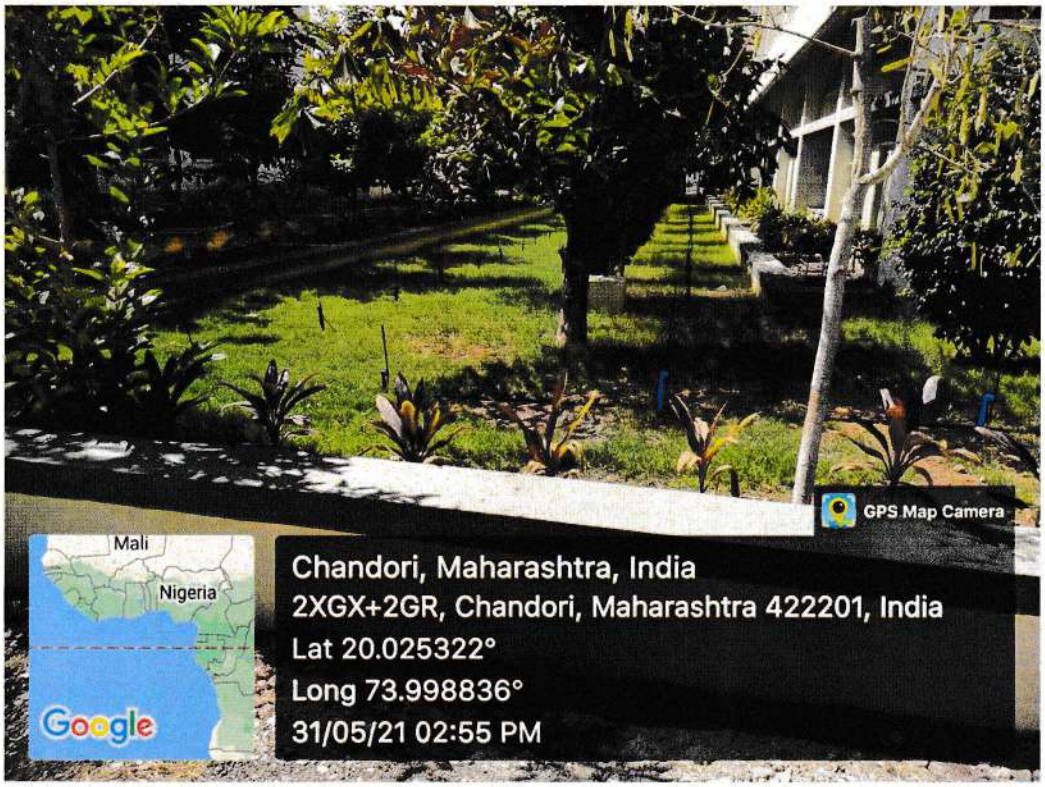



Premises with green lawns and green campus

## Developing Green Lawns And Green Campus



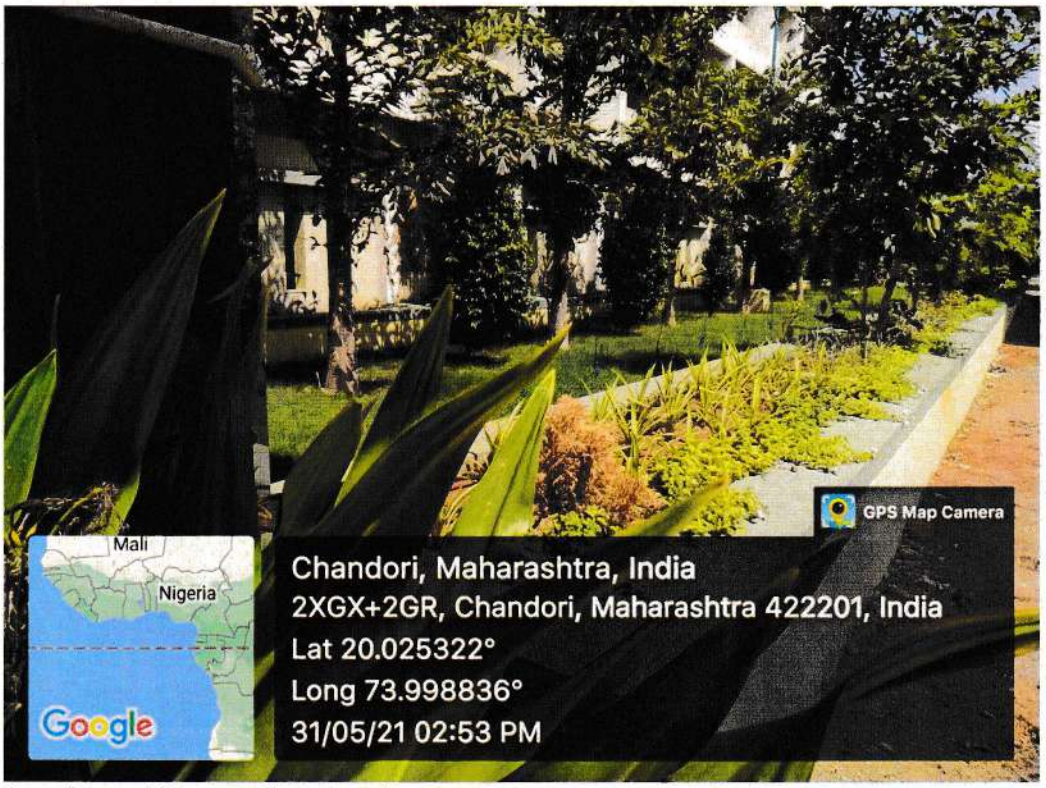

Premises with green lawns and green campus




Premises with green lawns and green campus

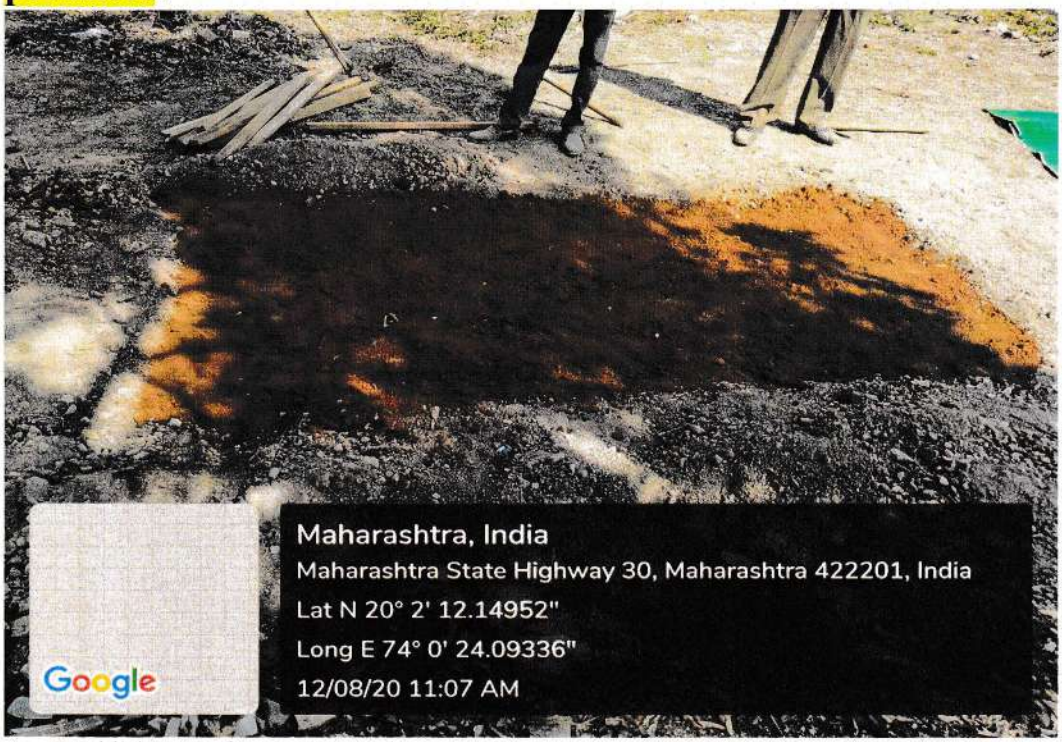
# Developing Green Lawns And Green Campus


Premises with green lawns and green campus

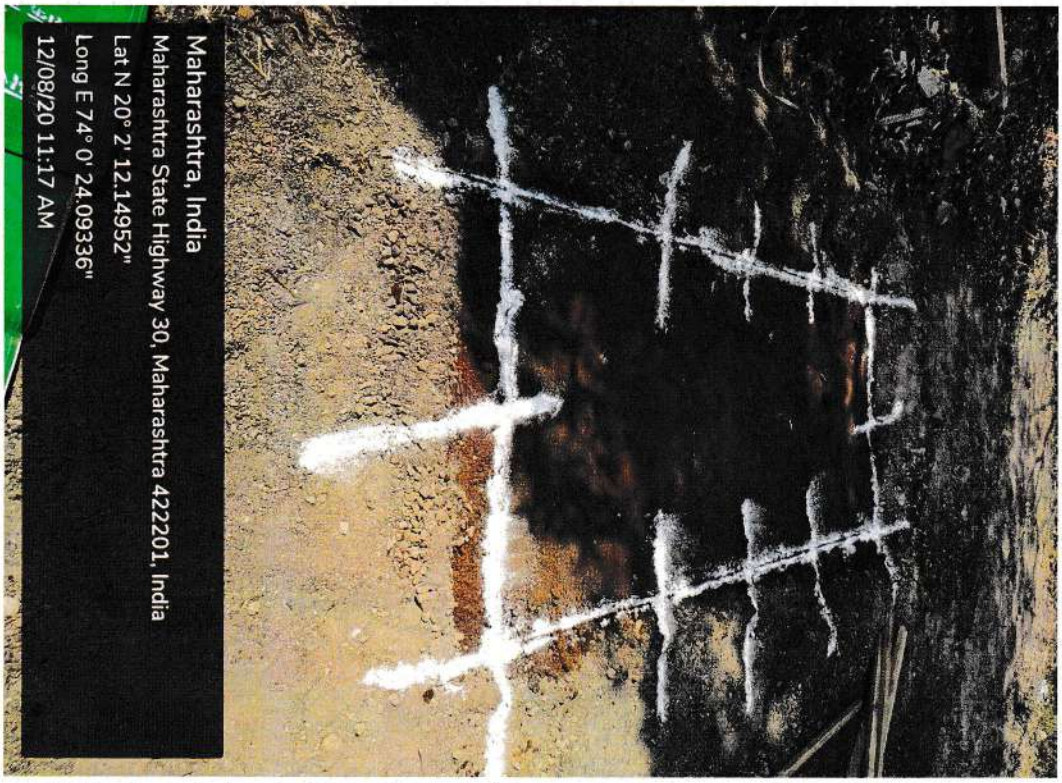



Premises with green lawns and green campus

**Vermin compost project has been set up at the college premises.**




Establishment of project to produce vermin waste compost manure from college campus




Establishment of project to produce vermin waste compost manure from college campus

# Vermin Compost Project


Erection of vermin compost beds


While leaving the worms in the vermin compost bed, the principal of the college, Dr. R. K. Datir and other staff

**LED tube lights are installed at all places in the college building.**


LED Tube Light In College Class Room


LED Tube Light In Principal Cabin

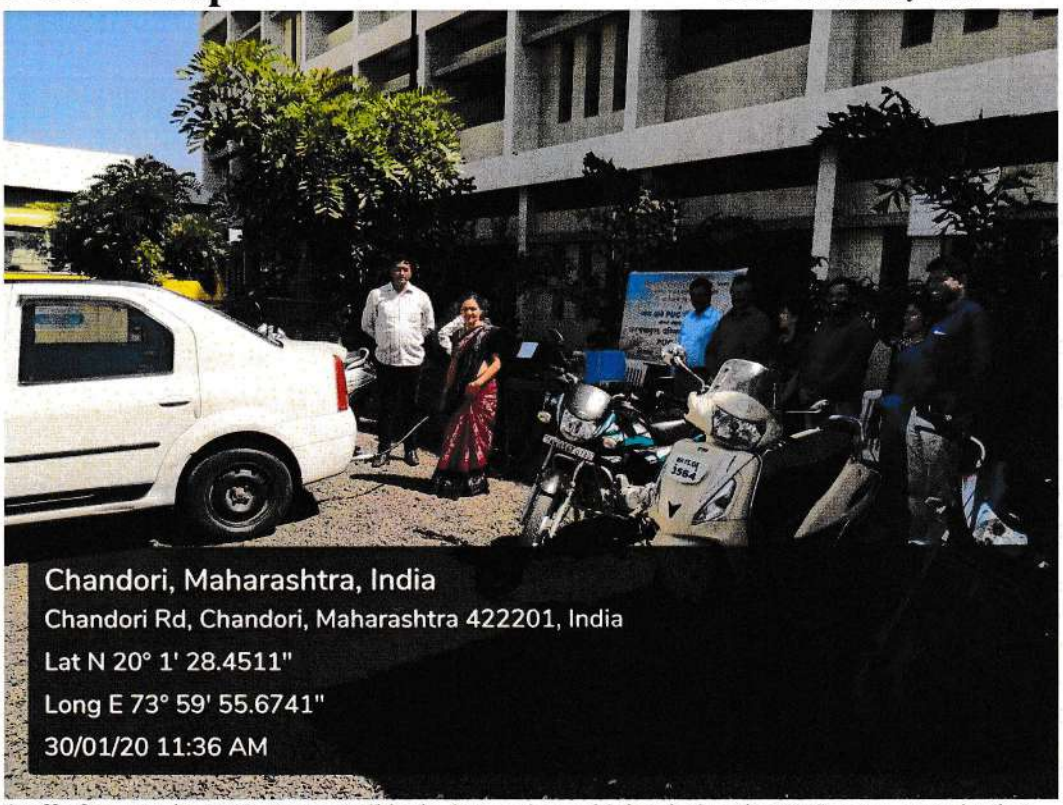
## PUC Camp was organized to reduce pollution in the college premises.


Staff of Jay Ambe PUC Center Saikheda, inspecting vehicles during the PUC camp organized at the college


Staff of Jay Ambe PUC Center Saikheda, inspecting vehicles during the PUC camp organized at the college

# PUC Camp

**Date -** 30 January 2020



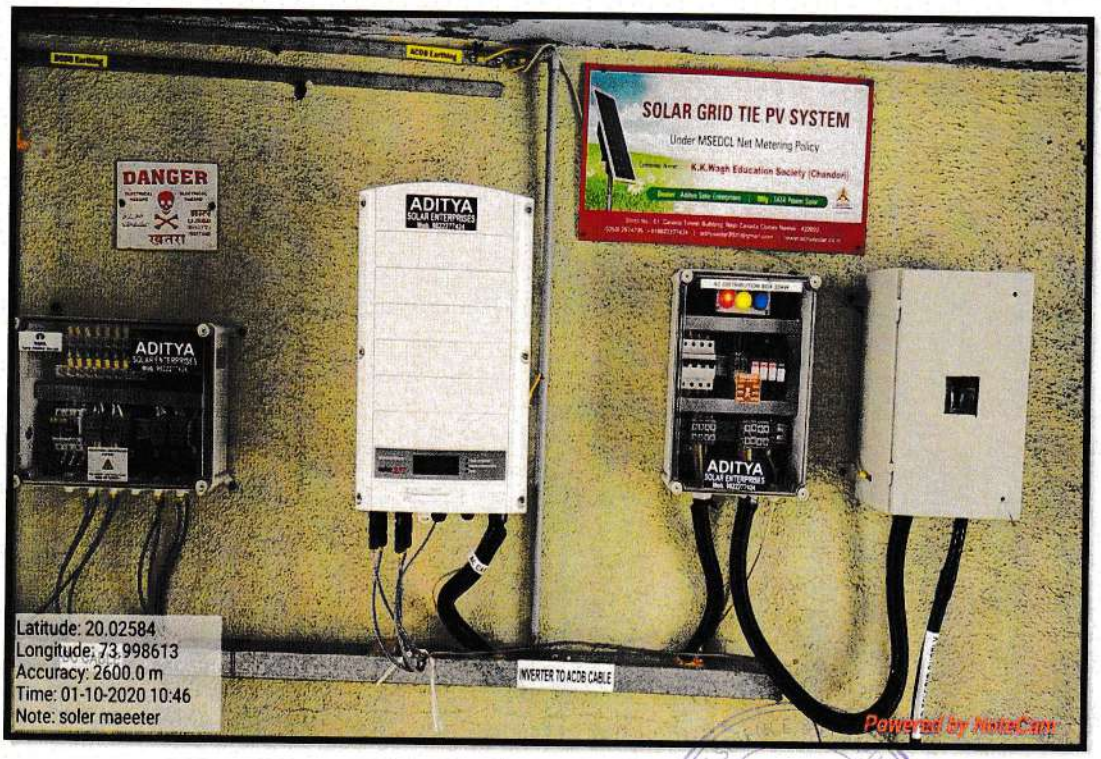

Staff of Jay Ambe PUC Center Saikheda, inspecting vehicles during the PUC camp organized at the college


Mrs. Kharde Vrushali, Director, Jay Ambe PUC Center, Saykheda when issuing PUC certificate to vehicle holder

**Solar energy project has been implemented in the college for power generation.**

**Solar energy**


Solar Panel Plate




Solar Panel Control Unit

**All the water related equipment's in the college building have been repaired and new equipment's have been installed.**