Vishnu Waman Thakur Charitable Trust's
Bhaskar Waman Thakur College of Science,
Yashvant Keshav Patil College of Commerce,
Vidhya Dayanand Patil College of Arts,
VIVA College

(Affiliated to University of Mumbai) NAAC ACCREDITED WITH "B" GRADE (CGPA 2.69)

Shri Hitendra V. Thakur	Ms. Aparna P. Thakur	Dr. V.S. Adigal
President	Secretary	Principal

Ref. No. :

Date : 17/02/2024

I the undersigned would like to certify and endorse that the given document for Criterion VII Pointer **7.1.3 Quality audits on environment and energy regularly undertaken by the Institution** from page no 2-100 is true to my knowledge.

Bhaskar Waman Thakur College of Science, Yashvant Keshav Patil College of Commerce, Vidhya Dayanand Patil College of Arts, Virar
VIVA COLLEGE ROAD, VIRAR (W) PIN-401303.

Principal
Bhaskar Waman Thakur College of Science
Yashvant Keshav Patil College of Commerce
Vidhya Dayanand Patil College of Arts
VIVA College Road, Virar (W), Pin-401303.

ENERGY AUDIT CERTIFICATE

This is to certify that Energy Audit has been successfully completed by M/s. Saur Engineers & Consultants Pvt. Ltd. Empanelled Energy Auditor(CLASS-A) MEDA, Government of Maharashtra and an ISO 14001:2015 company and suggestions for improvements have been given. The Audit activity has been executed for beneficiary with following Details:-

Vishnu Waman Thakur Charitable Truts's Bhaskar Waman Thakur College of Science, Yashvant Keshav Patil of Commerce, Vidhya Dayanand Patil College of Arts (VIVA College), Virar, Dist. Palghar, Maharashtra

Date of Audit: 26/05/2022
Assessment Period: 2020-2022 Valid till: 01/05/2025

SAUR ENGINEERS & CONSULTANTS PVT. LTD.
A step towards empowered Nation . . .

EA-28

ANUP A. SAMANT
TECHNICAL DIRECTOR

ASHUTOSH V. THAKUR
MANAGING DIRECTOR

Saur Engineers & Consultants Pvt. Ltd.
Registration No: EA-28 MEDA/ECN/2023-24/Class-A/EA 28
Empanelled Energy Auditor-CLASS A, MEDA, Government of Maharashtra

The report is generated from data, information, answer to asked questions, standards and procedures defined by different and concerned authorities time to time, available site condition, weather condition, operational and availability conditions provided by beneficiary on the day of survey. If any changes on above said measures on any other parameters affecting these measures may lead to change, alter, in-corrections even falsifying calculations, results, recommendations and suggestions. The values, figures, amounts mentioned are indicative to the site situation and condition; it may not reflect each and every aspect of it. The report is generated restricted to given scope and available conditions and measures.

ENVIRONMENT AUDIT CERTIFICATE

This is to certify that Environment Audit has been successfully completed by M/s. Saur Engineers & Consultants Pvt. Ltd. Empanelled Energy Auditor(CLASS-A) MEDA, Government of Maharashtra and an ISO 14001:2015 company and suggestions for improvements have been given. The Audit activity has been executed for beneficiary with following Details:-

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GREEN AUDIT CERTIFICATE

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Vishnu Waman Thakur Charitable Trust's Bhaskar Waman Thakur College of Science, Yashvant Keshav Patil of Commerce, Vidhya Dayanand Patil College of Arts (VIVA College), Virar, Dist. Palghar, Maharashtra

Date of Audit: 26/05/2022
Assessment Period: 2020-2022 Valid till: 01/05/2025

SAUR ENGINEERS & CONSULTANTS PVT. LTD.
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Empanelled Energy Auditor-CLASS A, MEDA, Government of Maharashtra

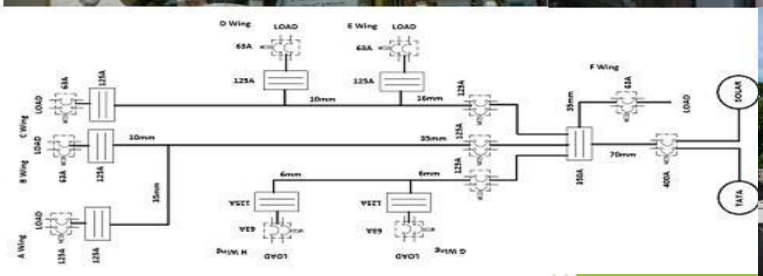
The report is generated from data, information, answer to asked questions, standards and procedures defined by different and concerned authorities time to time, available site condition, weather condition, operational and availability conditions provided by beneficiary on the day of survey. If any changes on above said measures on any other parameters affecting these measures may lead to change, alter, in-corrections even falsifying calculations, results, recommendations and suggestions. The values, figures, amounts mentioned are indicative to the site situation and condition; it may not reflect each and every aspect of it. The report is generated restricted to given scope and available conditions and measures.

SAUR ENGINEERS & CONSULTANTS PVT. LTD.

Registered Energy Auditor, Licensed Electrical Contractor, IE&L, Registered Electrical Contractor (A-GRADE) Channel Partner-MEDA, Govt. of Maharashtra, ISO 9001:2008, Certified Solar Grid Engineers Channel Partner-MNRE, GOI.

- Liasoning
- Energy Audit
- Safety Audit
- Electrical Projects
- Solar Projects

VIVA Degree College,
At & Post Virar, Palghar 401303.



Report By

M/s. Saur Engineers & Consultants Pvt. Ltd., Mumbai.

- Registered Energy Auditor
- Power Consultant
- Channel Partner-MNRE, Govt. of India.
- Channel Partner-MEDA, Govt. of Maharashtra.
- Solar Grid Engineers, NISE, Govt. of India
- Licensed Electrical Contractor,

Detailed Report

Energy-Green-Environment Audit

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Project Beneficiary

2022-2023

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VIVA COLLEGE (DEGREE)

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Virar West, Near D'Mart, At &
Post VirarPalghar 401303.

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Consultants & Auditor

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SAUR
Engineers & Consultants
Pvt. Ltd.

REGISTRATION NO. : EA-28

==========

D-8, Plot No. 108, Akshay, Rsc-16,
Gorai-1, Borivali (west), Mumbai-400092
MAHARASHTRA
+919867499812/+919168402909

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INDEX

Acknowledgement

This is to certify that Detailed Energy Audit has been successfully completed by M/s. Saur Engineers & Consultants Pvt. Ltd. Empanelled Energy Auditor(CLASS-A) MEDA, Government of Maharashtra and an ISO 14001:2015 company.

This activity is jointly executed by auditor and beneficiary to account energy use and conservation opportunity without sacrificing it's purpose. The main object was to assess the existing system for Energy saving opportunities, High quality professional and sustainable power quality management, Adopt best practices and Standard operating procedures.

Beneficiary premise is a leading educational service utility in semi-urban area. The college is run as per the norms and standards and having awareness and approach towards energy saving. The management and staff are keen on saving energy on every opportunity available.

We sincerely acknowledge efforts of Management and staff members for smooth execution of audit process. We sincerely acknowledge the leaders and guides of the activity who helped to design and supported to the execution of the process

- **Dr. V. S. Adigal — Principal**
- **Dr. Prajakta Paranjape — Vice-Principal**
- **Dr. Deepa Verma — Vice- Principal & IQAC Coordinator**
- **Dr. Rohan Gavankar — IQAC Co-coordinator**
- **Dr. Vaibhav Satvi — Member (Teaching)**
- **Dr. Anushri Kini — Member (Teaching)**
- **Dr. Niyanta Dave — Member (Teaching)**
- **Dr. Sampada Deshmukh — Member (Teaching)**
- **Mr. Mahendra Kajare — Member (Non-Teaching)**
- **Mr. Kunal Patil — Member (Non-Teaching)**
- **Student Representative — GS & AGS**

and all other technical, teaching, non-technical staff and students of college.

Certificate

This is to certify that Detailed Energy, Green and Environment Audits has been successfully completed by M/s. Saur Engineers & Consultants Pvt. Ltd. Empanelled Energy Auditor (CLASS-A) MEDA, Government of Maharashtra and suggestions for improvements have been given. This activity is jointly executed by auditor and beneficiary to account electrical safety, energy use and conservation opportunity without sacrificing purpose of the same. We sincerely acknowledge efforts of management and other staff members of beneficiary for smooth execution of audit process. The Audit activity has been executed for beneficiary with following Details:-

Name of Beneficiary: VIVA Degree College
Address: At & Post Virar, Palghar 401305
Contact Person: Dr. Deepa Verma
Contact Number:
Date of Audit: 26/05/2022
Valid Till: 01/05/2025

The report is generated from data, information, answer to asked questions, standards and procedures defined by different and concerned authorities time to time, available site condition, weather condition, operational and availability conditions provided by beneficiary on the day of survey. If any changes on above said measures on any other parameters affecting these measures may lead to change, alter, in-corrections even falsifying calculations, results, recommendations and suggestions. The values, figures, amounts mentioned are indicative to the site situation and condition; it may not reflect each and every aspect of it. The report is generated restricted to given scope and available conditions and measures.

EA-28

ENERGY AUDITOR "CLASS-A" No. EA-28
SAUR ENGINEERS & CONSULTANTS PVT. LTD.
Plot No. 108, D-8, Gorai-1, Borivali (W),
Mumbai - 400 091.

Sign & Seal

Saur Engineers & Consultants Pvt. Ltd.
Registration No: EA-28
Empanelled Energy Auditor-CLASS A,
MEDA, Government of Maharashtra

1. Introduction

1.1. Energy Audit

Energy Audit is a Basic essential activity to be done for saving in electrical billing and also allied with any energy saving projects like renewable energy project and solar projects. Energy Audit is an assessment of usage, consumption and pattern of energy used in the premises based on all above parameters along with conditions and benchmarks as resource and Building Envelope Analysis, working, operational and Maintenance Procedure Analysis, Utility Data Analysis, Load Data Analysis, Analysis of Energy Consumption, Load Evaluation, consumption pattern and billing history, back-up systems and also the administrative requirements, assessment of safety concerns, assessment of operating and occupancy schedules for Equipment, Power Quality and Environmental Parameters Analysis, Efficiency and Wastage Analysis and assessment of potential risk factors.

Energy Audit is a process of systematic identification, quantification, recording, reporting and analysis of energy usage properties of institute. It aims to analyze within and surrounding the place concerned, which will see interrelation with eco-friendly atmosphere. Energy audit is a valuable means for an Institution related to educational area to determine how and where they are connected with Energy conservation drive of nation. Understanding these conditions the institution can make plans for day to day working, future expansions as well as an eco-friendly view of life while making changes and planning for savings. It provides better understanding of impact of energy consumption on working conditions to staff and visitors. As the Energy availability is becoming an increasingly important issue for the nation, the role of higher education institute is more vital and prevalent in relation with the issue.

The rapid urbanization and economic development at local, regional and global level has led to Energy availability and quality crisis. On this background it becomes essential to adopt the system of Energy efficient and safe Campus for the institution which leads for sustainable development and at the same time persisting the quality of the same while travelling on the growth path. Moreover, it is social responsibility of a High energy consuming institution to ensure that they contribute towards the saving of Energy and thus making it available who are destitute in term of energy availability.

1.2. Green Audit

Green Audit is a process of systematic identification, quantification, recording, reporting and analysis of components of natural diversity properties of institute. It aims to analyse within and surrounding the place concerned, in purview of relationship with natural diversity around. Green audit is a valuable means for an Institution related to educational area to determine how and what natural resources or diversity of nature they are surrounded with or they are living with. Green Audit report includes assessment of premises which refers to nature friendly environment with lesser carbon emission in terms of initiatives, implementation, best practices, working environment, capacity utilization based on all above parameters observed during green audit along with conditions and benchmarks as Air Quality, Water Quality, Noise Data, Weather Data, Tree Diversity, Faunal Diversity as well as biodiversity conditions. Understanding these conditions the institution can make plans for day to day working, future expansions as well as a nature-friendly view of life while making changes and planning for savings.

It can create consciousness and awareness about natural diversities around and helps to standardize practices for working with observation of nature friendly work style. It provides better understanding of green diversity available surrounding conditions to staff and students. As the vanishing diversity of nature is becoming an increasingly important issue for the nation as well as the world, the role of higher education institute is more vital and prevalent in relation with the issue.

The rapid urbanization and economic development at local, regional and global level has led to several greenery and ecological crisis. On this background it becomes essential to adopt the system of Green Campus for the institution which leads for sustainable development and at the same time persisting the quality of the same while travelling on the growth path. The National Assessment & Accreditation Council, New Delhi (NAAC) has made it mandatory to all Higher educational institutions should submit a Green Audit Report. Moreover, it is social responsibility of a Higher educational institution to ensure that they contribute towards the saving of Green areas and maintaining good levels of qualities for natural resources available such as Air, water, atmosphere, flora, faunal, Etc.

1.3. Environment Audit

Environmental Audit is a process of systematic identification, quantification, recording, reporting and analysis of impact on components of environmental diversity properties of institute. It aims to analyse within and surrounding the place concerned, which will see interrelation with eco-friendly atmosphere. Environmental audit is a valuable means for an Institution related to educational area to determine how and where they are impacting on natural resources or diversity of nature. Environmental audit report includes assessment of premises which refers to impact on environment with carbon emission, wastages in terms of initiatives, implementation, best practices, working environment, capacity utilization based on all above parameters observed during Environmental audit along with conditions and benchmarks as Wastage types, recycling, Greenery, effect of impact, Carbon footprints as well as biodiversity conditions. Understanding these conditions the institution can make plans for day to day working, future expansions as well as an environment-friendly view of life while making changes and planning for savings.

It can create health consciousness, environmental awareness, practice green values and ethics. It provides better understanding of impact on surrounding conditions to staff and students. If self-enquiry is natural and necessary outgrowth of a quality education, it could also be stated that institutional self-enquiry is natural and necessary outgrowth of a quality educational institution. Thus it is imperative that the institution evaluates its own contributions towards a sustainable future. As the pollution and co_2 is becoming an increasingly important issue for the nation, the role of higher education institute is more vital and prevalent in relation with the issue.

The rapid urbanization and economic development at local, regional and global level has led to several greenery and ecological crisis. On this background it becomes essential to adopt the system of Green Campus for the institution which leads for sustainable development and at the same time persisting the quality of the same while travelling on the growth path. The National Assessment & Accreditation Council, New Delhi (NAAC) has made it mandatory to all Higher educational institutions should submit a Environmental audit Report. Moreover, it is social responsibility of a Higher educational institution to ensure that they contribute towards the saving of environment and reduce level of quantity for impact on natural resources available.

1.4. Objective

The Energy audit of an institution has becoming the paramount important for self-assessment of the Institution which reflects in the role of the institution in mitigation to current problem of reducing Energy availability and quality. The institution has been putting efforts to keep reducing and standardizing energy usage since its inception. Therefore the purpose of present Energy audit is to identification, quantification, recording, reporting and analysis of components of Energy utilization and electrical safety properties of institute framework of energy conservation in compliance with the applicable regulations, policies and standards. The main objectives to carrying out the energy audit are:-

- To have overview of premises
- To record and document Utility data
- To record and document Load profile data
- To record and document basic Electrical Safety observations data
- To record and document Energy Conservations (if any)

The green audit of an institution has becoming the paramount important for self-assessment of the Institution which reflects in the role of the institution in mitigation to current problem of reducing greenery and natural resources depletion. The institution has been putting efforts to keep clean and green atmosphere since its inception. Therefore the purpose of present green audit is to identification, quantification, recording, reporting and analysis of components of natural diversity properties of institute framework of Green atmosphere sustainability. The main objectives to carrying out the green audit are:-

- To record and document Air quality data
- To record and document Water quality data
- To record and document Weather/Meteorology data
- To record and document Noise Level data
- To record and document Tree Diversity data
- To record and document Faunal diversity data

The Environmental audit of an institution has becoming the paramount important for self-assessment of the Institution which reflects in the role of the institution in mitigation to current problem of reducing greenery and natural resources depletion. The institution has been putting efforts to keep clean and green atmosphere since its inception. Therefore the purpose of present Environmental audit is to identification, quantification, recording, reporting and analysis of components of surrounding environmental properties of institute framework as a part of global environment sustainability. The main objectives to carrying out the Environmental audit are:-

- To record and document Wastage type and management
- To record and document Recycling Procedures
- To record and document Impact on environment
- To record and document Carbon footprints

1.5. Methodology

The purpose of Energy Audit of is to ensure that the practices followed in the campus are in accordance with the Energy Conservation Policy of the Country. The methodology includes: collection of data, physical inspection of the campus, observation and review of the documentation and data analysis.

The report is based on the documents obtained while on site, visual inspection and data collection carried out during the assessment period. All the measurements recorded on site are indicative loads and duties. All readings are collected for analysis and improvement planning. Cost estimates are indicative only as more detailed design and acceptance of suggestions will be required to improve the accuracy of these estimates.

The units are selected from SI (international standards) with meters, Celsius degrees, Etc.

1.6. Audit Statement

The building is adopting the “Energy Efficient Campus” system for Energy conservation and sustainability. There are main three pillars i.e. Energy saving by technology and Operation & Maintenance procedures, safe working on occupational health and performance and 100% inmates demonstrating energy efficiency literacy. The goal is to maintain safe working environment, reduce energy consumption, while creating an atmosphere where inmates can work and live healthy.

1.7. About the Premises

About Vishnu Waman Thakur Charitable Truts’s Bhaskar Waman Thakur College of Science, Yashvant Keshav Patil of Commerce, Vidhya Dayanand Patil College of Arts (VIVA College). The college is affiliated to University of Mumbai and is fully supported financially by the Management (Self-Financed). We have many young and dynamic faculty having zeal to excel both personally and professionally. The college has been providing access to higher education to a diverse socioeconomic group of students with an objective of “EDUCATION TO ALL”. The college offers flexibility to the learners with regards to making a choice from various subjects of studies in Arts, Commerce and Science with a total number of 33 programs being offered. The college has introduced professional programmes such as BAMMC, BCAF, BCBI, BFM, BFMG, BIMG, BEME BMS, BA in Culinary Arts, FTNMP, B.Sc.in Hospitality Studies, CS, Data Science, IT and Biotechnology at UG level and several PG courses so as to enable the learner to have a varied choice.

2. Topography

2.1. Overview

SL No	Head	Details
1	Name of Applicant Institution	VIVA Degree College
2	Address	At & Post Virar -401305
3	Contact Number	NA
4	Registration Certificate Number	NA
5	Sector Type	College
6	Senior Management Contact	Shri. Sanjay Pingulkar
7	Contact Number	8830164534
8	Status of Institution (Pvt./Public)	Private
9	Company Turnover (Rs. In Lakhs)	Not Applicable
10	Number of Employees	385
11	Year of Establishment	2000
12	Plot Area (ft^2)	As per given Map (Approximate 400000 ft2)
13	No of Buildings	1
14	Building Type	RCC
15	Age of Building	20 Years
16	Leakages/Cracks on wall/roof	Minor
17	No. of workers (Footfall)	280 – 300
18	No. of Customers (Footfall)	30,000 approx
19	Day Vs Night activity in %	Only Daytime
20	Shifts per day	1
21	Hours per shift	12 07:00 to 19:00
22	DG Set installed	Yes
23	Inverter Installed	Yes 80kva
24	Renewable Energy System installed	No
25	(Solar/Wind/Biomass/Biofuel/Etc.)	No

2.2. Location

SL No	Head	Details	Remark
1	Name of Institute	VIVA Degree College	New College
2	Category	College	Educational Institute
3	Address	At & Post Virar -401303 Dist. Palghar	
4	State	Maharashtra	
5	Nearest Railway Station	Virar	Western Railway
		Vasai	Central Railway
6	Nearest Bus Station	Virar	Interstate/Intrastate
7	Nearest Airport	CSIA, Mumbai	
8	Longitude	19.342761	
9	Latitude	72.808325	

2.3. Layouts

Sitemap

File Attached

2.4. About Premises

File Attached

3. Floral Diversity

VIVA Degree College, which was established in the year 2000, has eco-friendly environment since then. It has long legacy of healthy environmental practices periodic plantation, their preservation and maintenance. Its land use is about 40 % of total area is occupied by open land and plantation that generate better campus environment. Every year various departments organize the plantation programme with the help of faculty and students. College has well maintained botanical garden enriched with Medicinal Plants. The campus maintains the biodiversity of plants. There are plenty of plants in the college campus including tree, shrubs and herbs representing different family. List of plants in college campus as follows

Name	Family
• Cassia Fistula	Fabaceae
• Jasminum Sambac	Oleaceae
• Hibicus Rosa-Sinensis	Malvaceae
• Catharanthus Roseus	Apocynaceae
• Mimusops Eleni	Sapotaceae
• Rosa	Rosaceae
• Adenium Obesum	Apocynaceae
• Crotons	Euphorbiaceae
• Manifera Indica	Anacardiaceae
• Artocarpus Interifolia	Moraceae
• Phyllanthus Emblica	Phyllanthaceae
• Carica Papaya	Caricaceae
• Cocos Nucifera	Arecaceae
• Musa Indica	Musaceae
• Ocimum Tenuiflorum	Lamiaceae
• Cymbopogon	Poaceae
• Cinnamomum Verum	Lauraceae
• Aloe	Asphodelaceae
• Cactus	Cactaceae
• Acacia	Fabaceae
• Albizia Lebbeck	Legumeceae

4. Faunal Diversity

The college campus supports an immense diversity of plants and animals including native species as well as some rare species. A many animal species were observed in the college campus including invertebrates and vertebrates (different groups like Beetle, Moth, Bug, Bird, Ant, Spider, Wasp, Millipede, Slug, Louse, Earthworm, Snail, Butterfly, Dragonfly, Grasshopper etc.). The floral diversity in the campus serves as a roosting place for the different species of the bird, it also acts as a habitat for a variety of insects, and variety of flowering plants in the botanical garden supports a wide variety of butterflies and birds. The window shades of college building serve as a resting place for the birds like rock pigeon. The college environment has rich and abundant faunal diversity enlisted as below.

Diversity of Birds

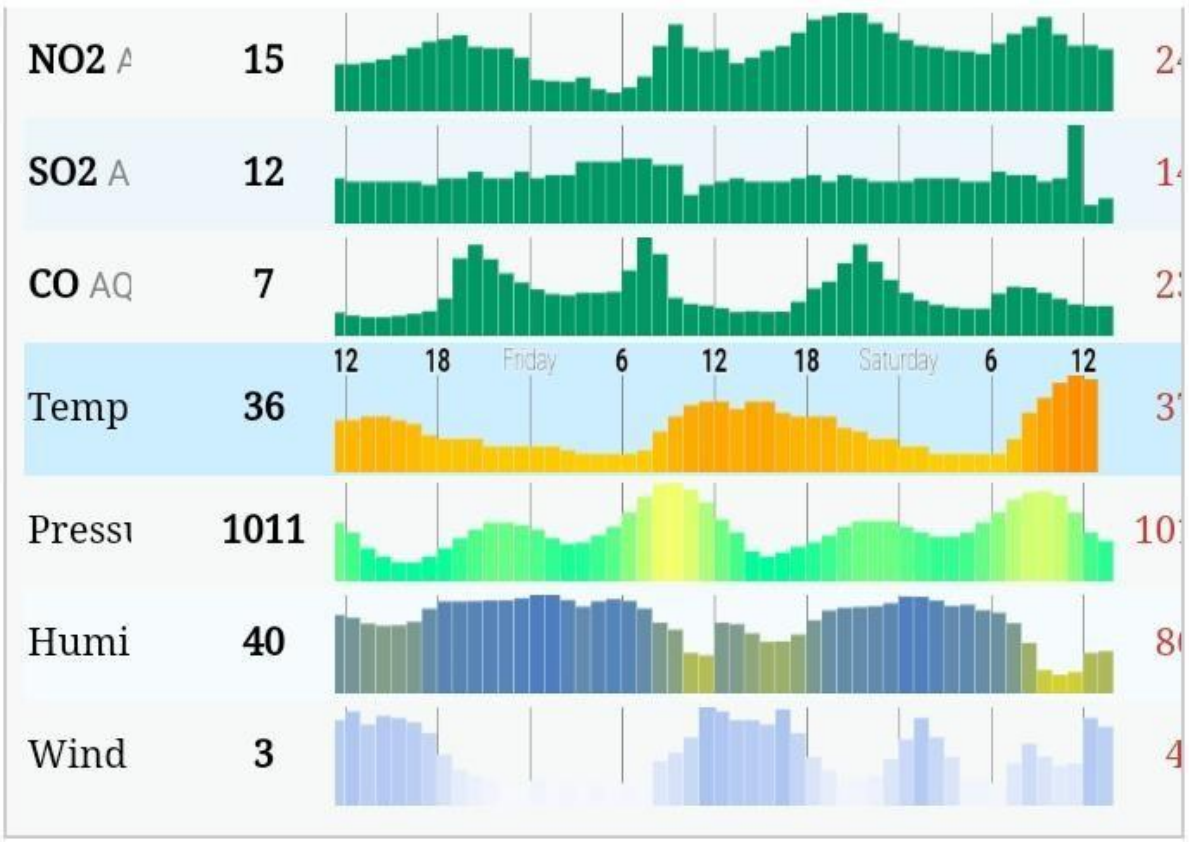
- Cattle Egret
- Feral Pigeon
- Shikra
- Greater Coucal
- Asian Koel
- Rose Ringed Parakeet
- Alexandrine Parakeet
- House Crow Oriental Magpie Robin
- Red Vented Bulbul
- Common Trailorbird
- Purple Sunbird
- Purple Rumped Sunbird
- Scaly Breasted Munia
- House Sparrow

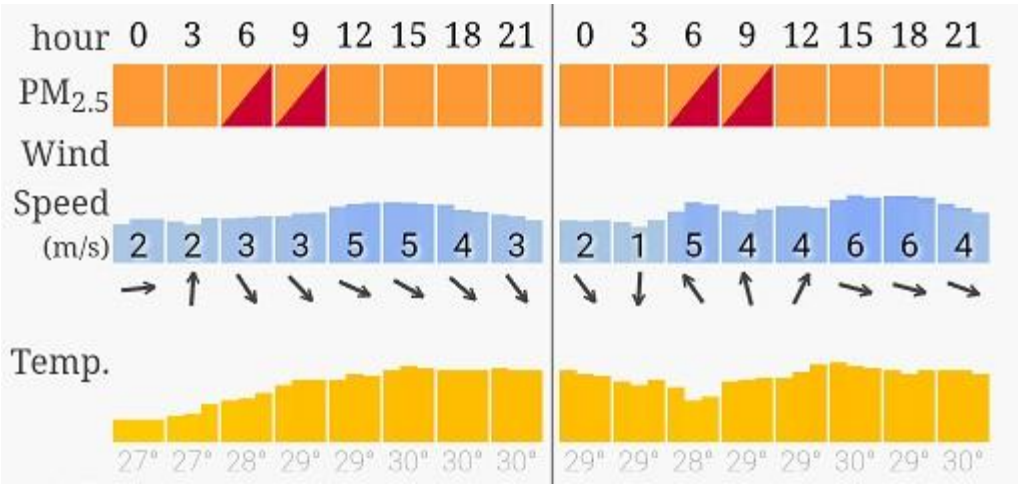
Diversity of Butterflies

- Striped Tiger
- Plain tiger
- Tailed Jay
- Common Palmfly
- Common Jay
- Common Mormon
- Common Rose
- Common Redeye
- Rice Swift
- Blue oakleaf
- Common cerulean
- Plains cupid
- Indian sunbeam
- Tawny coaster
- Common Sailor
- Common Banded Awl
- Blue Tiger
- Grass Blue
- Zebra Blue

5. Air Quality

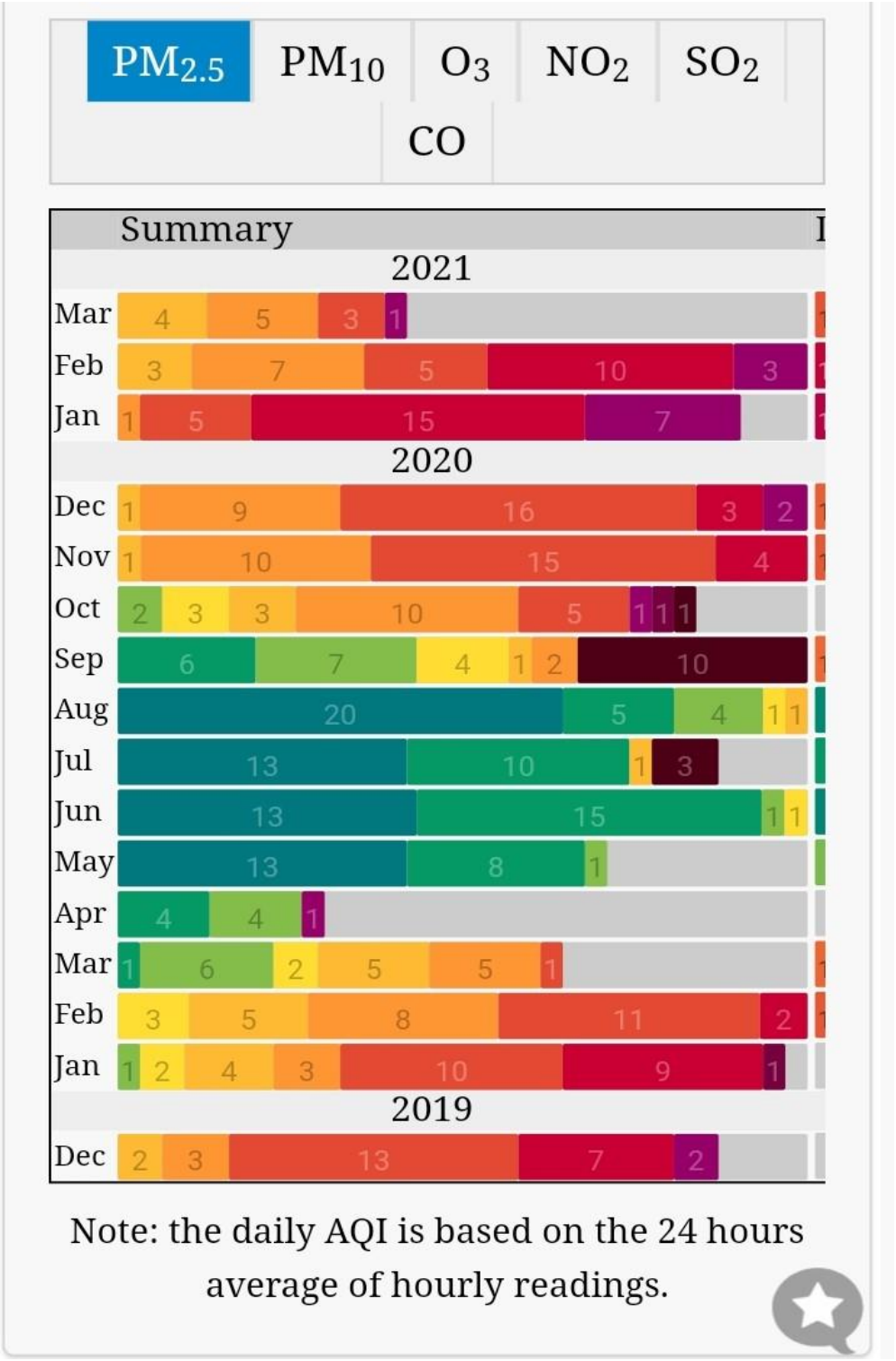
5.1. Air Quality Index





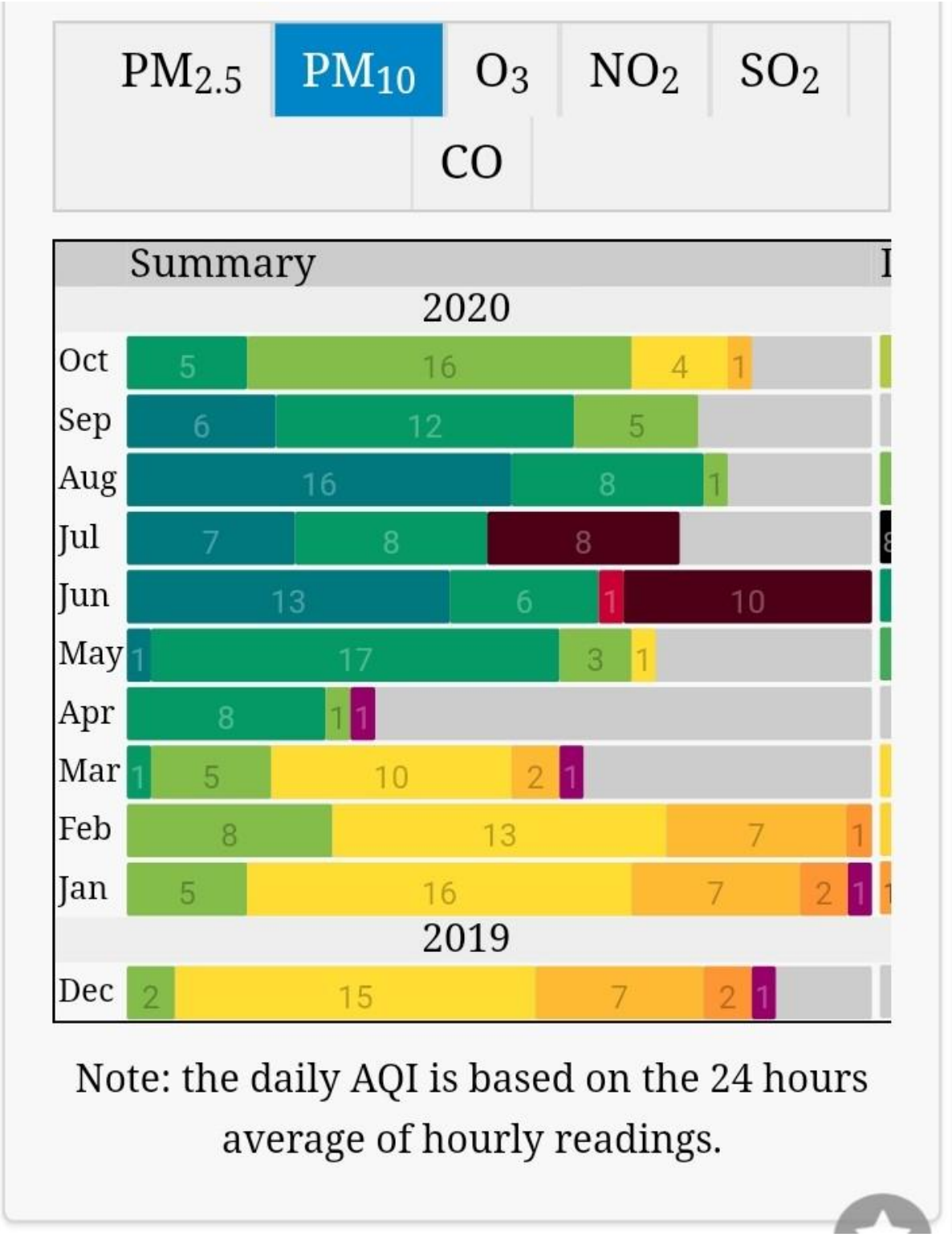
This table indicates quality of Air available for city where site is located, Area where the site is located and at actual site.

5.2. Table-2: Air Quality Annual PM 2.5



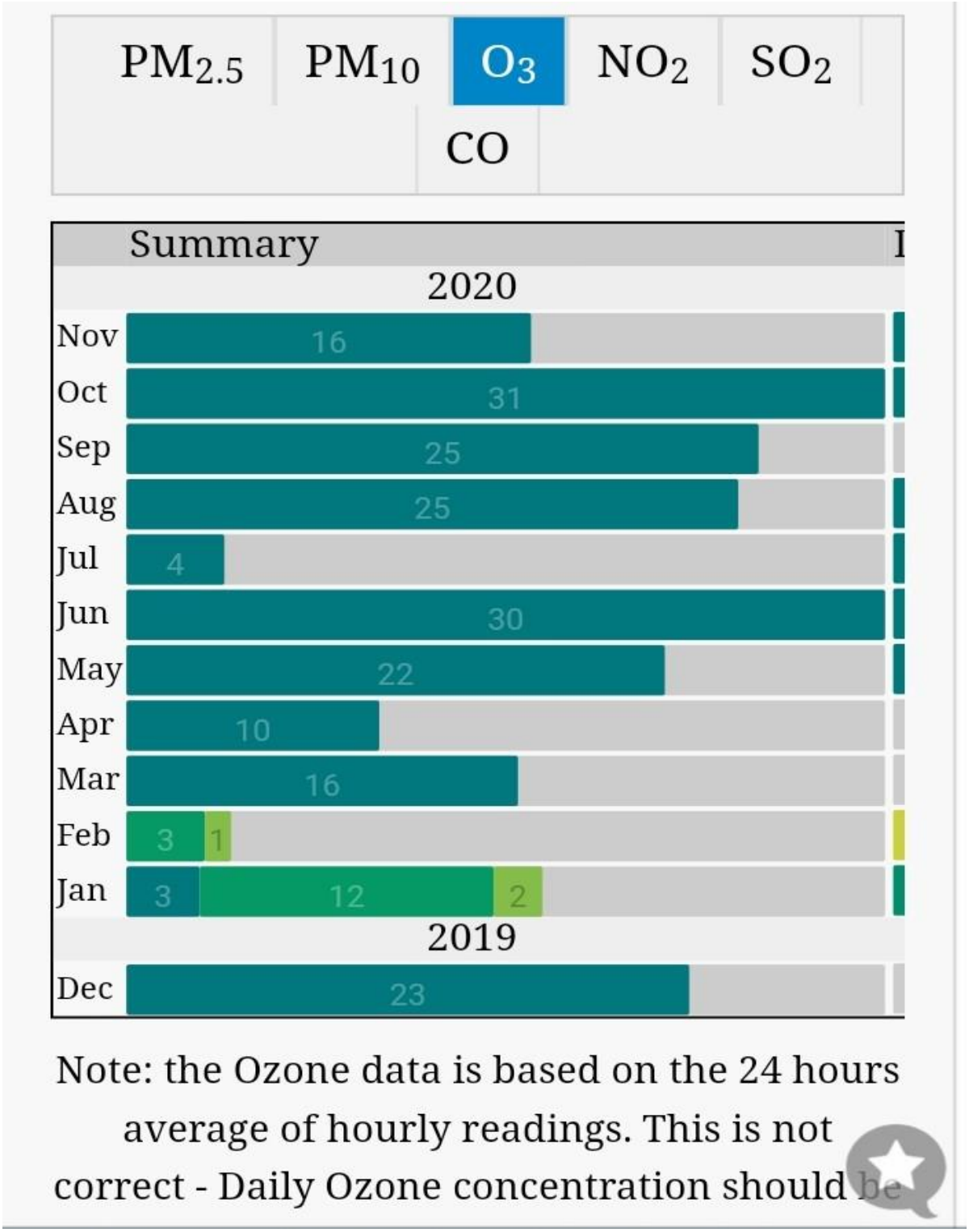
This table shows annual air quality level at PM2.5mcr. Different levels shown in different colors where numbers on colors show number of days with the same situation.

5.3. Table-3: Air Quality Annual PM 10



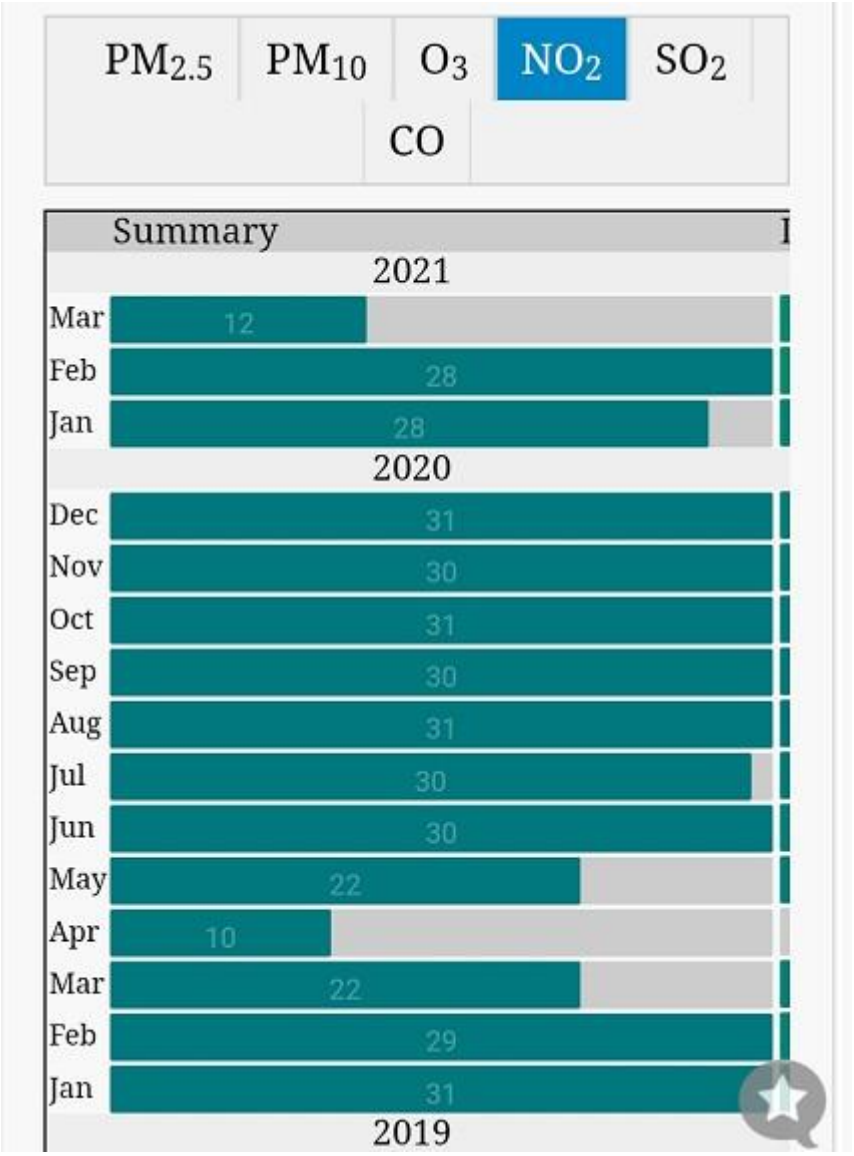
This table shows annual air quality level at PM10mcr. Different levels shown in different colors where numbers on colors show number of days with the same situation.

5.4 Table-4: Air Quality Annual O_3



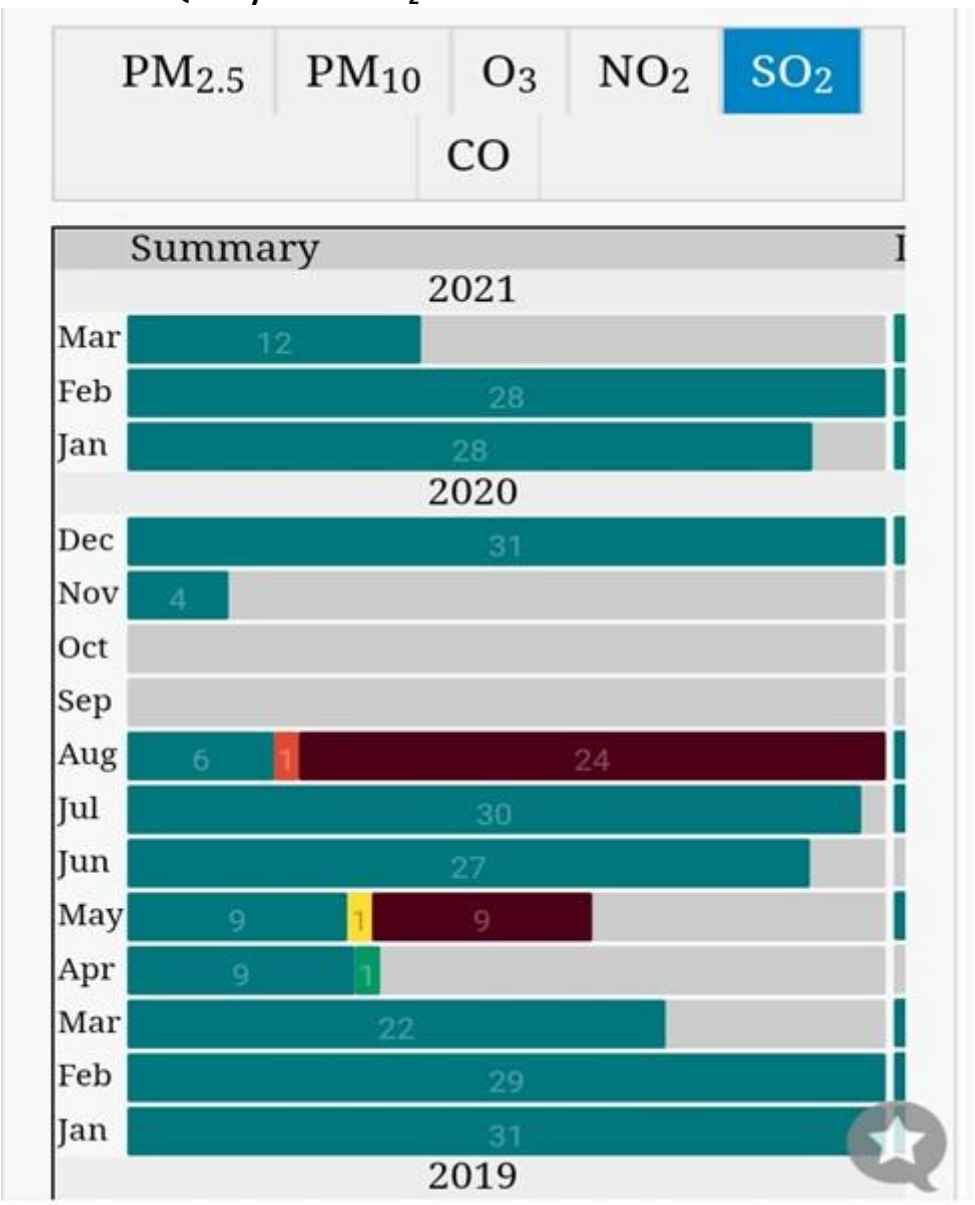
This table shows annual air quality level at O_3 (Ozone). Different levels shown in different colors where numbers on colors show number of days with the same situation.

5.5 Table-5: Air Quality Annual NO_2



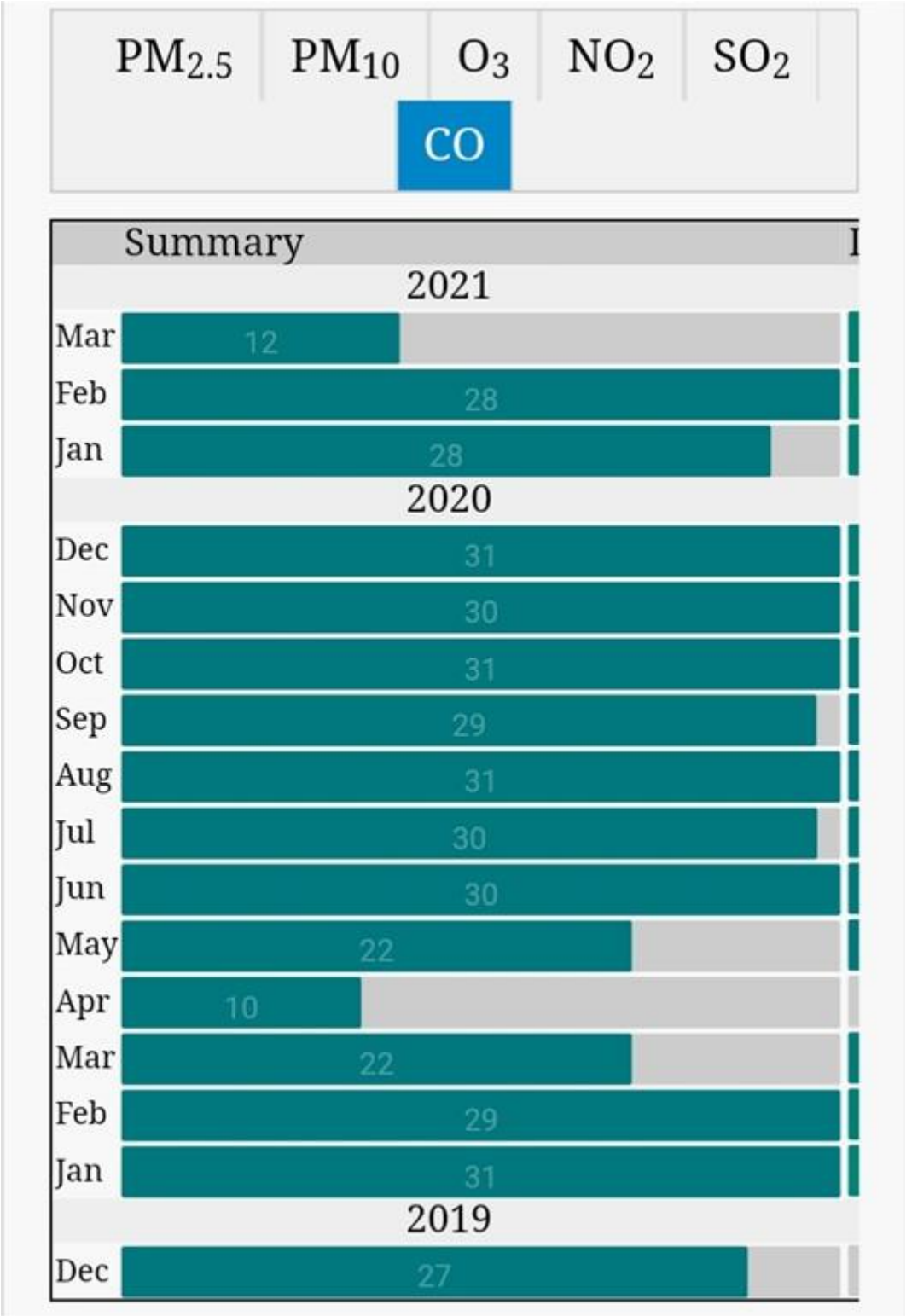
This table shows annual air quality level at NO_2 Nitrogen Di-Oxide. Different levels shown in different colors where numbers on colors show number of days with the same situation.

5.6 Table-6: Air Quality Annual SO_2



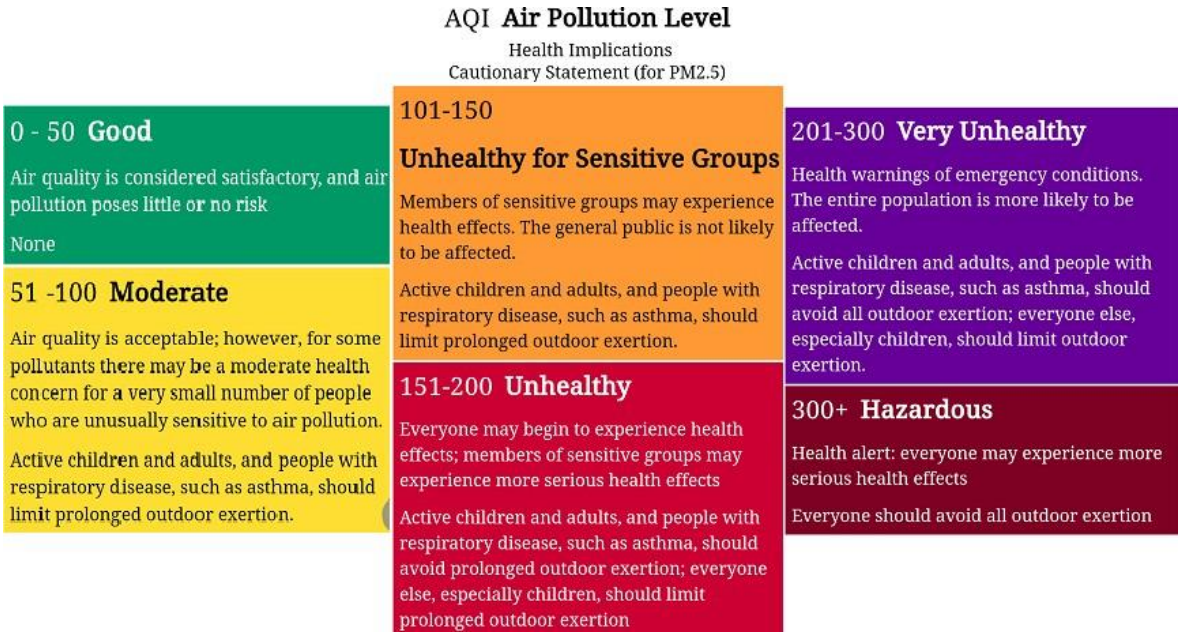
This table shows annual air quality level at SO_2 Sulphar Di-Oxide. Different levels shown in different colors where numbers on colors show number of days with the same situation.

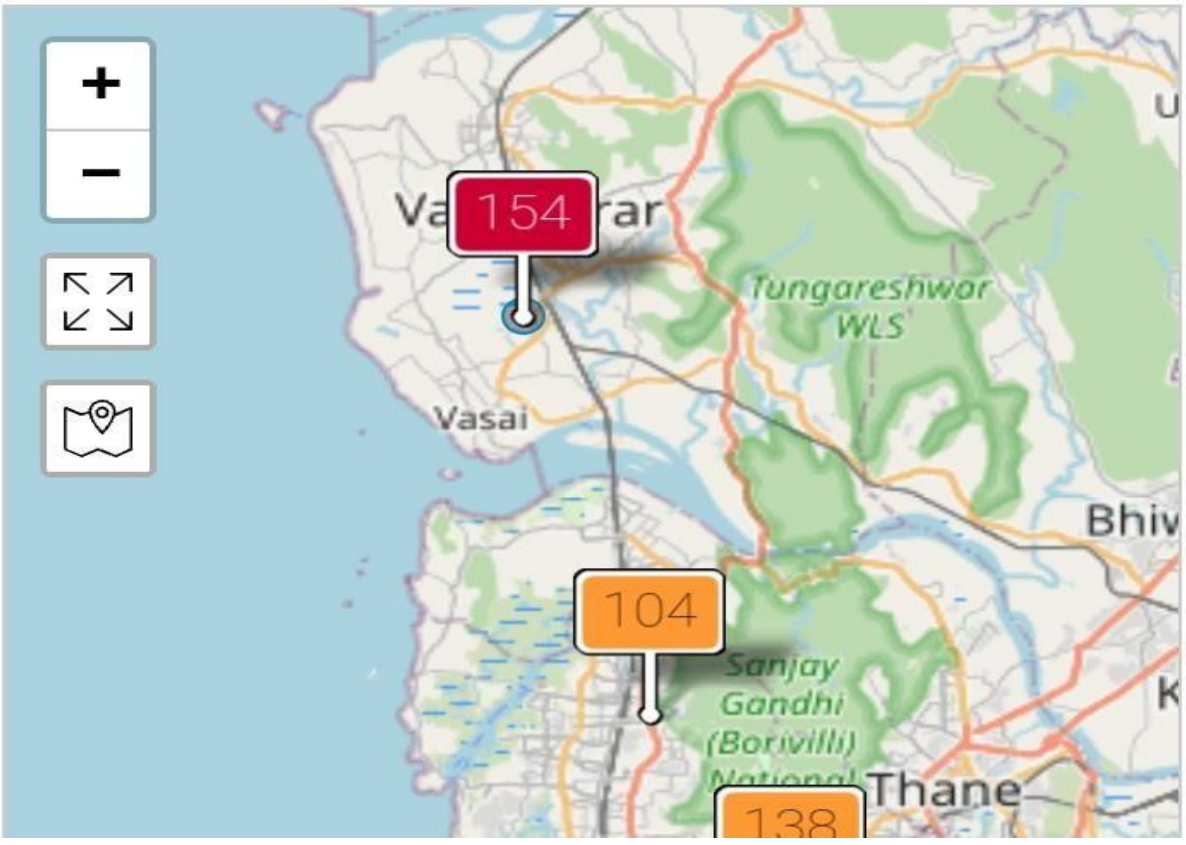
5.7 Table-7: Air Quality Annual CO_2

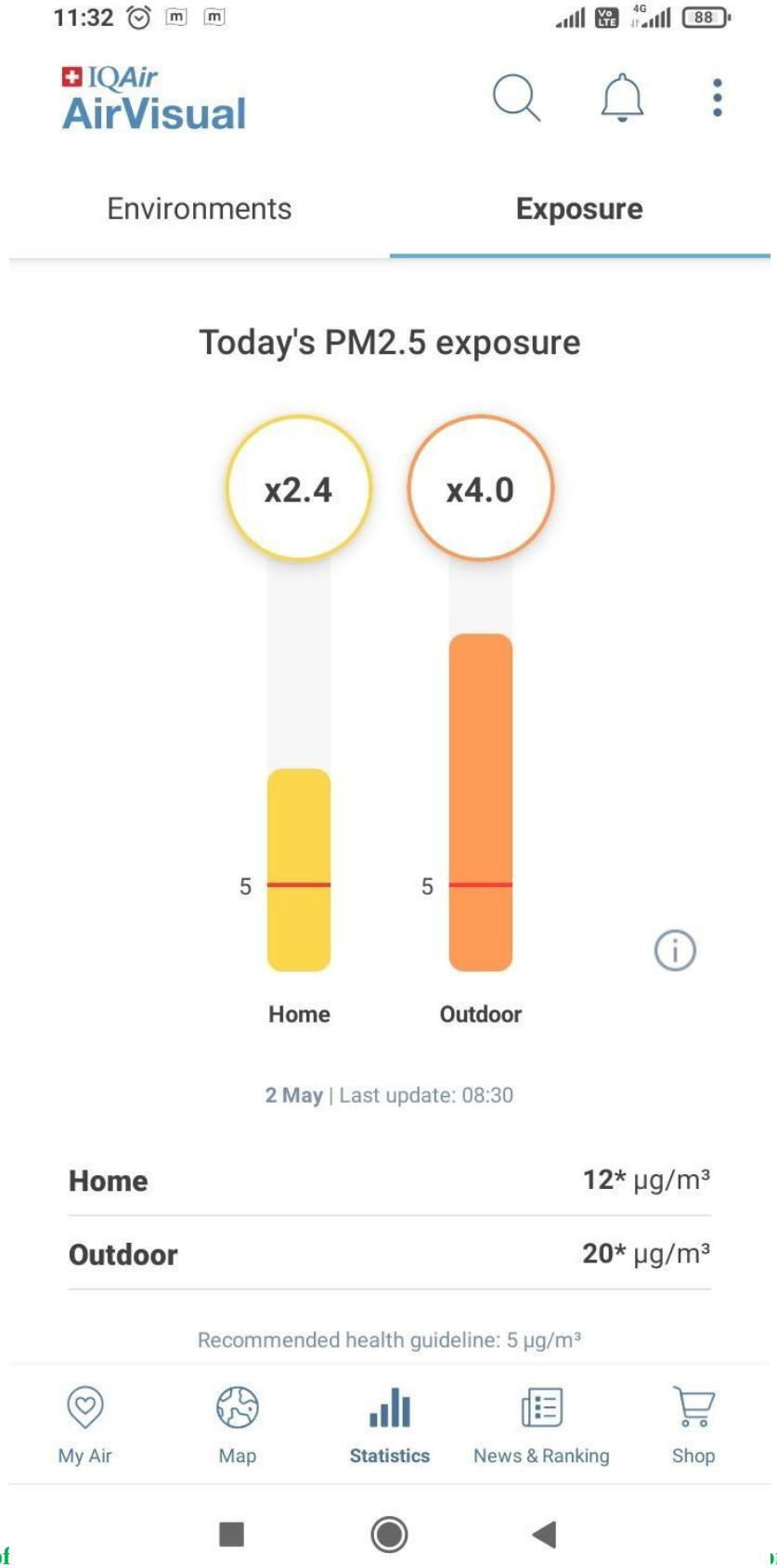


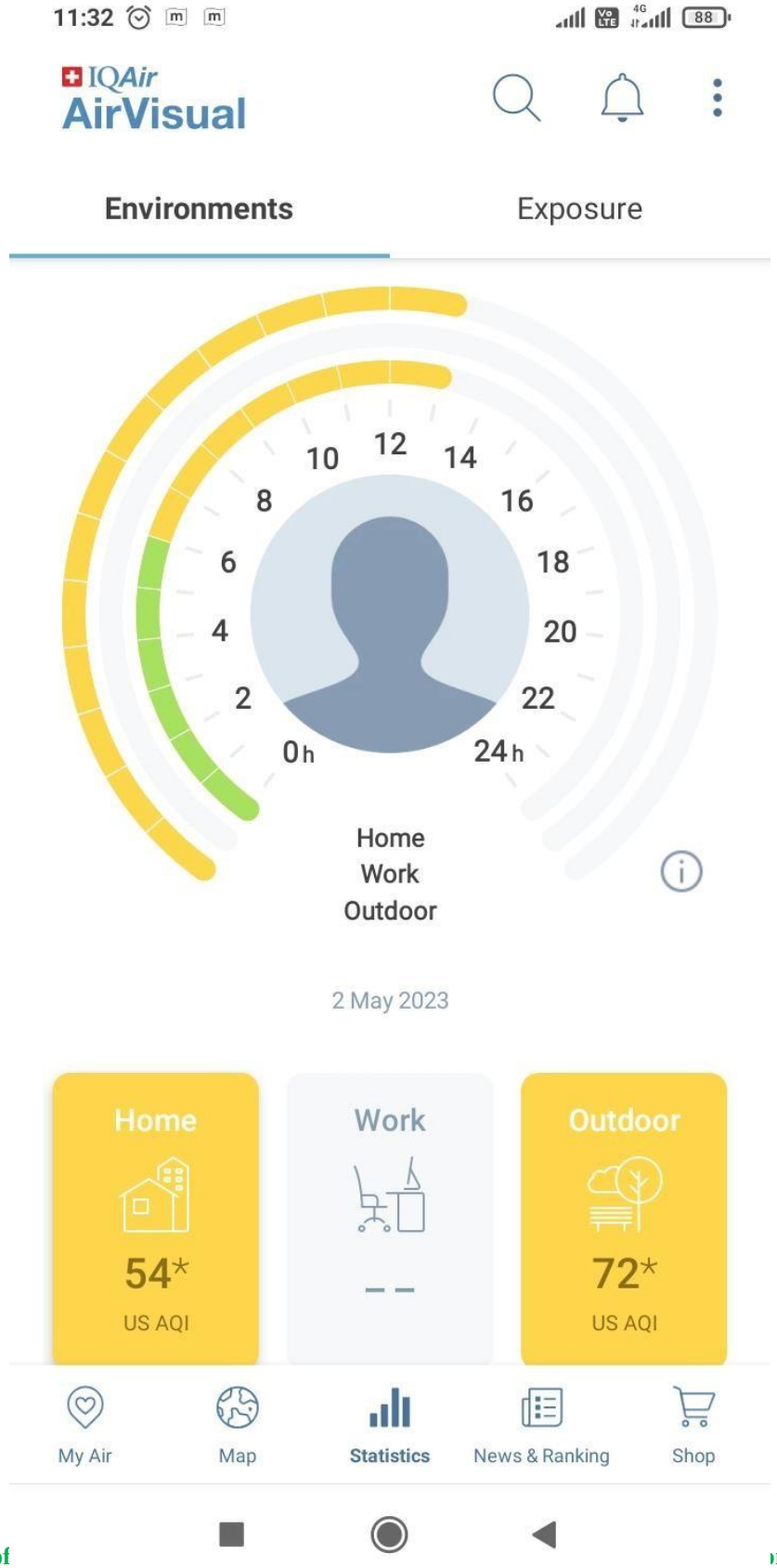
This table shows annual air quality level at CO_2 Carbon Di-Oxide. Different levels shown in different colors where numbers on colors show number of days with the same situation.

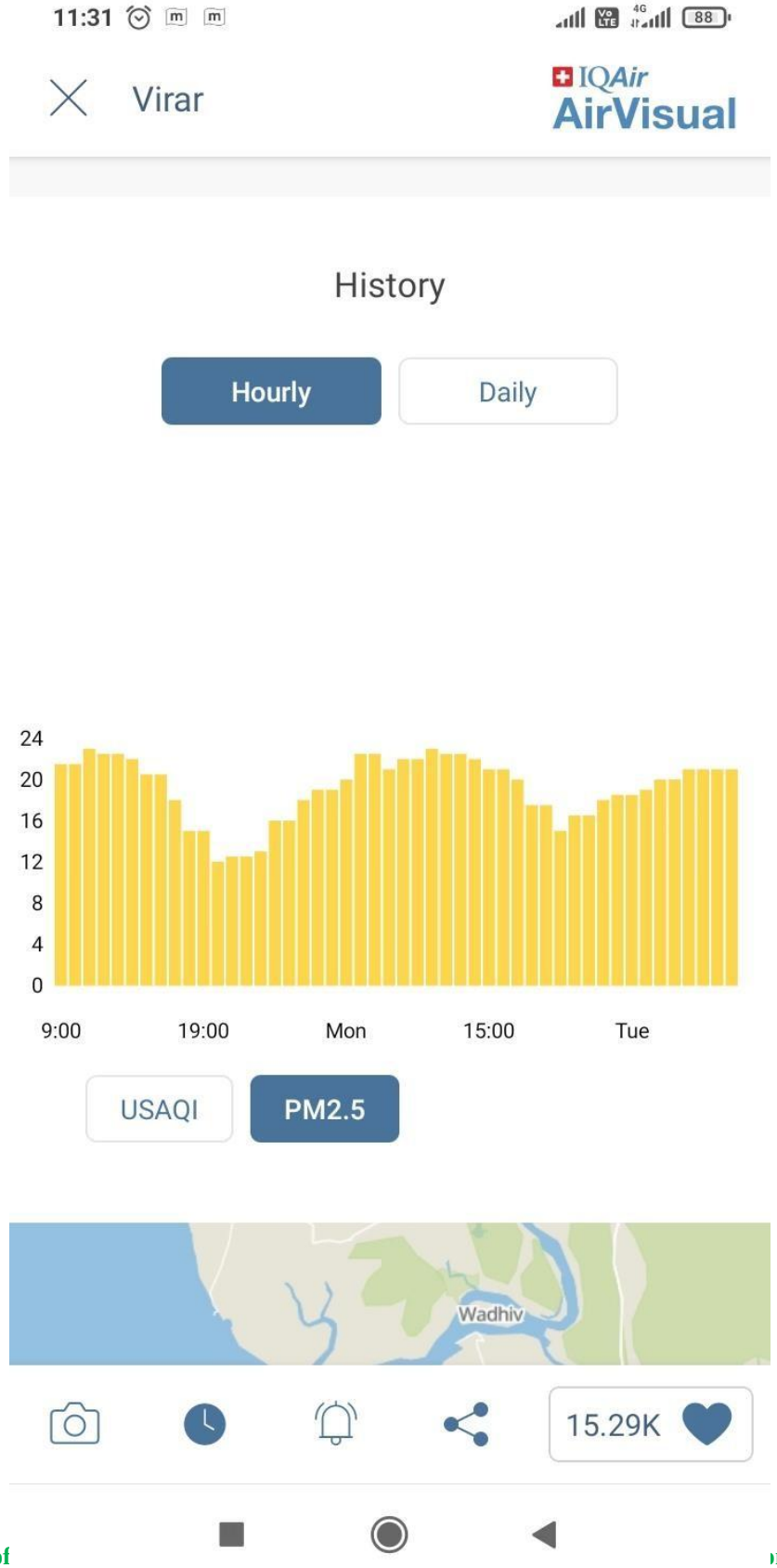
Colour Codes of different levels of pollution are as follows

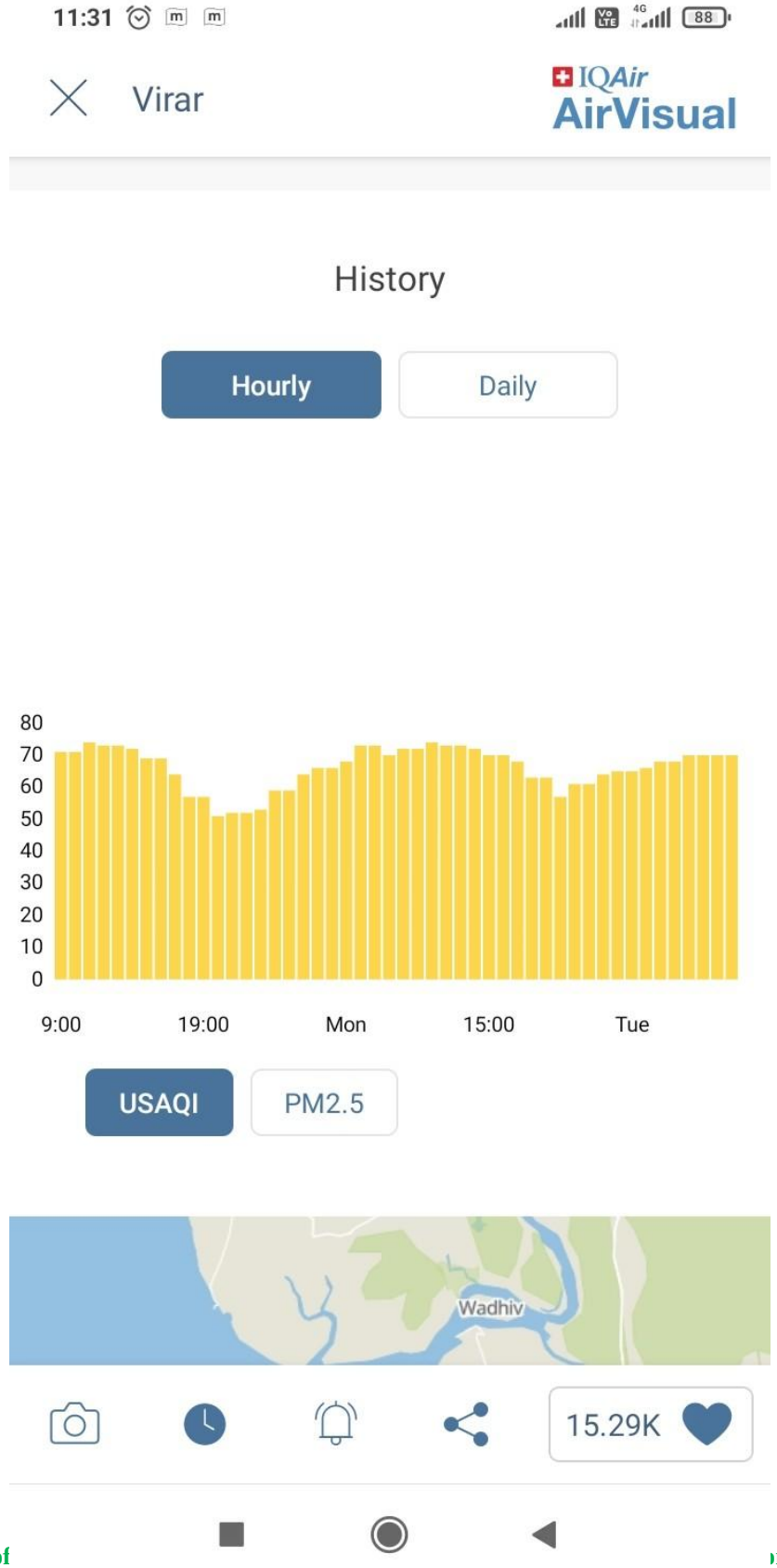


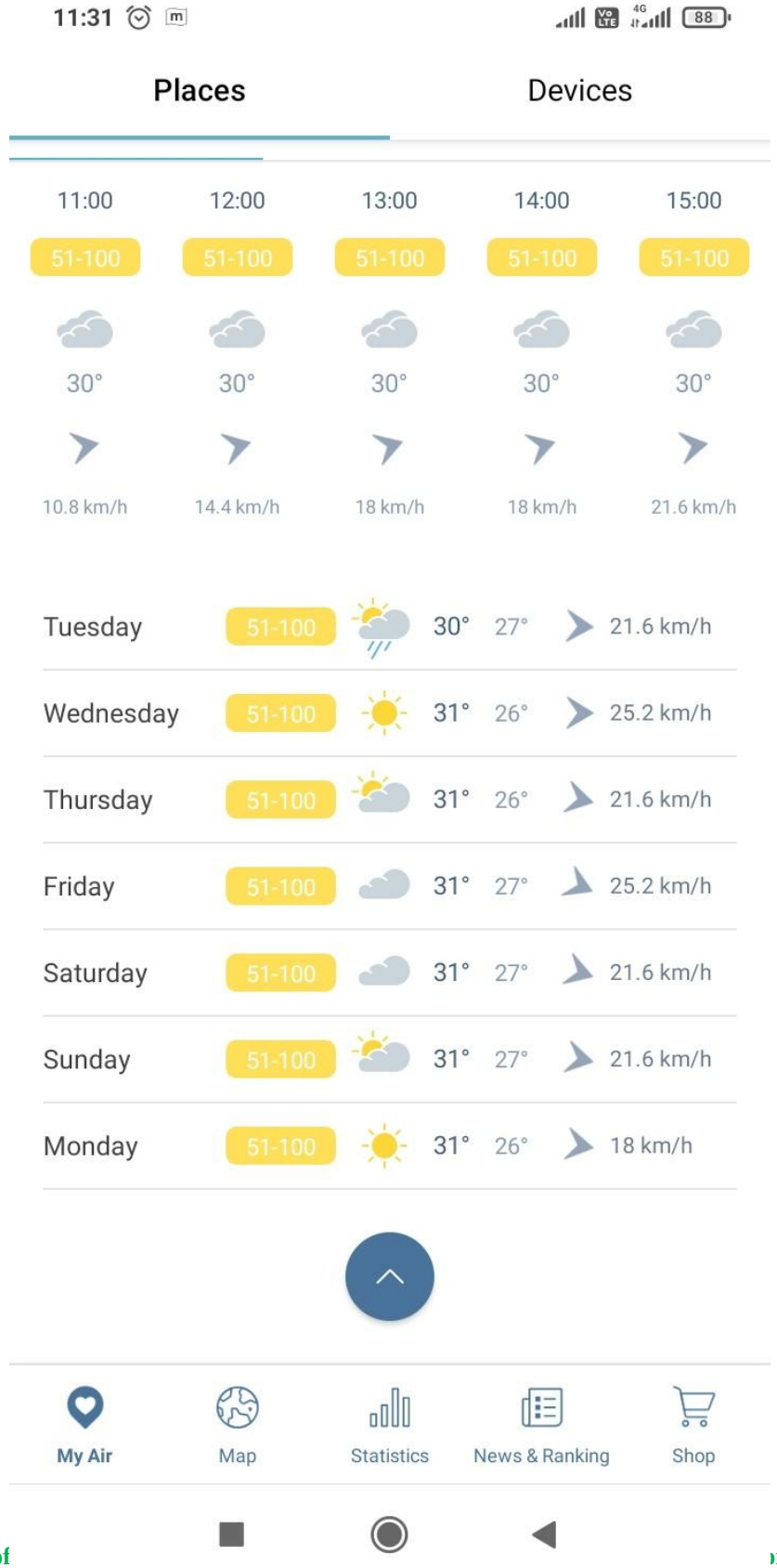



11:32
IQAir
AirVisual
Environments
Exposure
Today's PM2.5 exposure
x2.4
x4.0
5
5
Home
Outdoor
2 May | Last update: 08:30
Home 12* µg/m³
Outdoor 20* µg/m³
Recommended health guideline: 5 µg/m³
My Air
Map
Statistics
News & Ranking
Shop


11:32
IQAir
AirVisual
Environments
Exposure
0h
2
4
6
8
10
12
14
16
18
20
22
24h
Home
Work
Outdoor
2 May 2023
Home
54*
US AQI
Work
Outdoor
72*
US AQI
My Air
Map
Statistics
News & Ranking
Shop


11:31
Virar
IQAir
AirVisual
History
Hourly
Daily
24
20
16
12
8
4
0
9:00
19:00
Mon
15:00
Tue
USAQI
PM2.5
Wadhiv
15.29K


11:31
Virar
IQAir
AirVisual
History
Hourly
Daily
80
70
60
50
40
30
20
10
0
9:00
19:00
Mon
15:00
Tue
USAQI
PM2.5
Wadhiv
15.29K


11:31
Places
Devices
11:00 12:00 13:00 14:00 15:00
51-100
30°
10.8 km/h
14.4 km/h
18 km/h
18 km/h
21.6 km/h
Tuesday 51-100 30° 27° 21.6 km/h
Wednesday 51-100 31° 26° 25.2 km/h
Thursday 51-100 31° 26° 21.6 km/h
Friday 51-100 31° 27° 25.2 km/h
Saturday 51-100 31° 27° 21.6 km/h
Sunday 51-100 31° 27° 21.6 km/h
Monday 51-100 31° 26° 18 km/h
My Air
Map
Statistics
News & Ranking
Shop

6 Meteorology

1. Weather/Meteorology Data:-

Virar, Palghar 401305

The following are the site co-ordinates.

Latitude: 19. 342761

Longitude: 72.808325

Average Altitude: 57 m

Annual Solar radiation: 369.2 kWh/ Sq.m/year

Sunshine & Daylight Hours

- Hours of sunshine in range from 2:11 for every day in July to 9:48 per day in December
- The longest day of the year is 13:08 long and the shortest day is 10:51 long.
- The longest day is 2:16 longer than the shortest day.
- There is an average of 2680 hours of sunlight per year (of a possible 4383) with an average of 7:20 of sunlight per day.
- It is sunny 61.1% of daylight hours. The remaining 38.9% of daylight hours are likely cloudy or with shade, haze or low sun intensity.
- At midday the sun is on average 70.1° above the horizon at Mumbai/ Bombay.

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
Average Sunlight Hours/ Day	09:00	09:24	09:05	09:18	09:17	05:24	02:11	02:36	04:54	08:00	09:12	09:48	07:20
Average Daylight Hours & Minutes / Day	11:06	11:29	12:00	12:33	13:00	13:14	13:07	12:44	12:12	11:40	11:12	10:59	12:00
Sunny & (Cloudy) Daylight Hours (%)	82 (18)	83 (17)	77 (23)	75 (25)	72 (28)	41 (59)	17 (83)	21 (79)	40 (60)	69 (31)	83 (17)	90 (10)	61 (39)
Sun altitude at solar noon on the 21st day (°).	51.1	60.4	71.3	83	88.5	85.4	87.8	83.2	71.7	60.2	51	47.7	70.1

Rainfall/ Precipitation

- It receives on balance 2168 mm (85.4 in) of rainfall per year, or 180.7 mm (7.1 in) per month.
- On average there are 107 days per year with more than 0.1 mm (0.004 in) of rainfall (precipitation) or 8.9 days with a quantity of rain, sleet, snow etc. per month.
- The driest weather is in January, February & March when an average of 0 mm (0 in) of rainfall (precipitation) occurs.
- The wettest weather is in July when an average of 682 mm (26.9 in) of rainfall (precipitation) occurs.

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annua
Average Mm	0	0	0	2	12	592	682	487	307	61	23	2	2168
Liters/m²	0	0	0	2	12	592	682	487	307	61	23	2	2168
Number of Wet Days	0	0	0	1	2	20	29	27	21	5	2	0	107
Percentage of Sunny (Cloudy) Daylight Hours	82 (18)	75 (25)	77 (23)	72 (28)	72 (28)	40 (60)	17 (83)	21 (79)	39 (61)	69 (31)	80 (20)	90 (10)	61 (39)

Average Temperatures

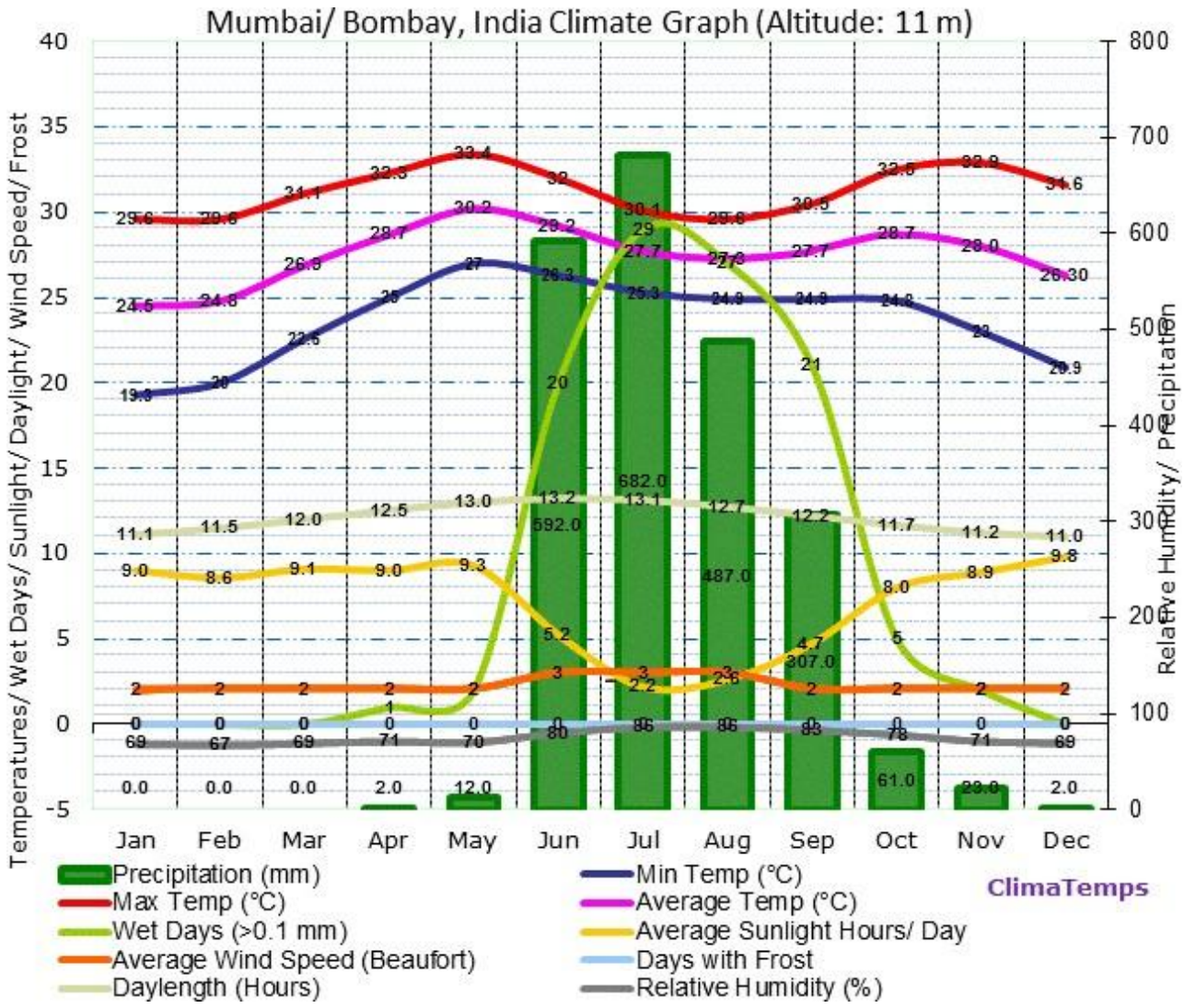
- The average temperature is hot at 27.5 Degree Celsius.
- Mean monthly temperatures have a variation of 5.7 Degree Celsius.
- Mean daily temperatures have a variation of 7.6 Degree Celsius.
- The hottest month (May) having mean temperature of 30.2 Degree Celsius.
- The coolest month (January) having mean temperature of 24.5 Degree Celsius.

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
Average Max Temp °C	29.6	29.6	31.1	32.3	33.4	32	30.1	29.6	30.5	32.5	32.9	31.6	31.3
Average Temp °C	24.5	24.8	26.9	28.7	30.2	29.2	27.7	27.3	27.7	28.7	28	26.3	27.5
Average Min Temp °C	19.3	20	22.6	25	27	26.3	25.3	24.9	24.9	24.8	23	20.9	23.7

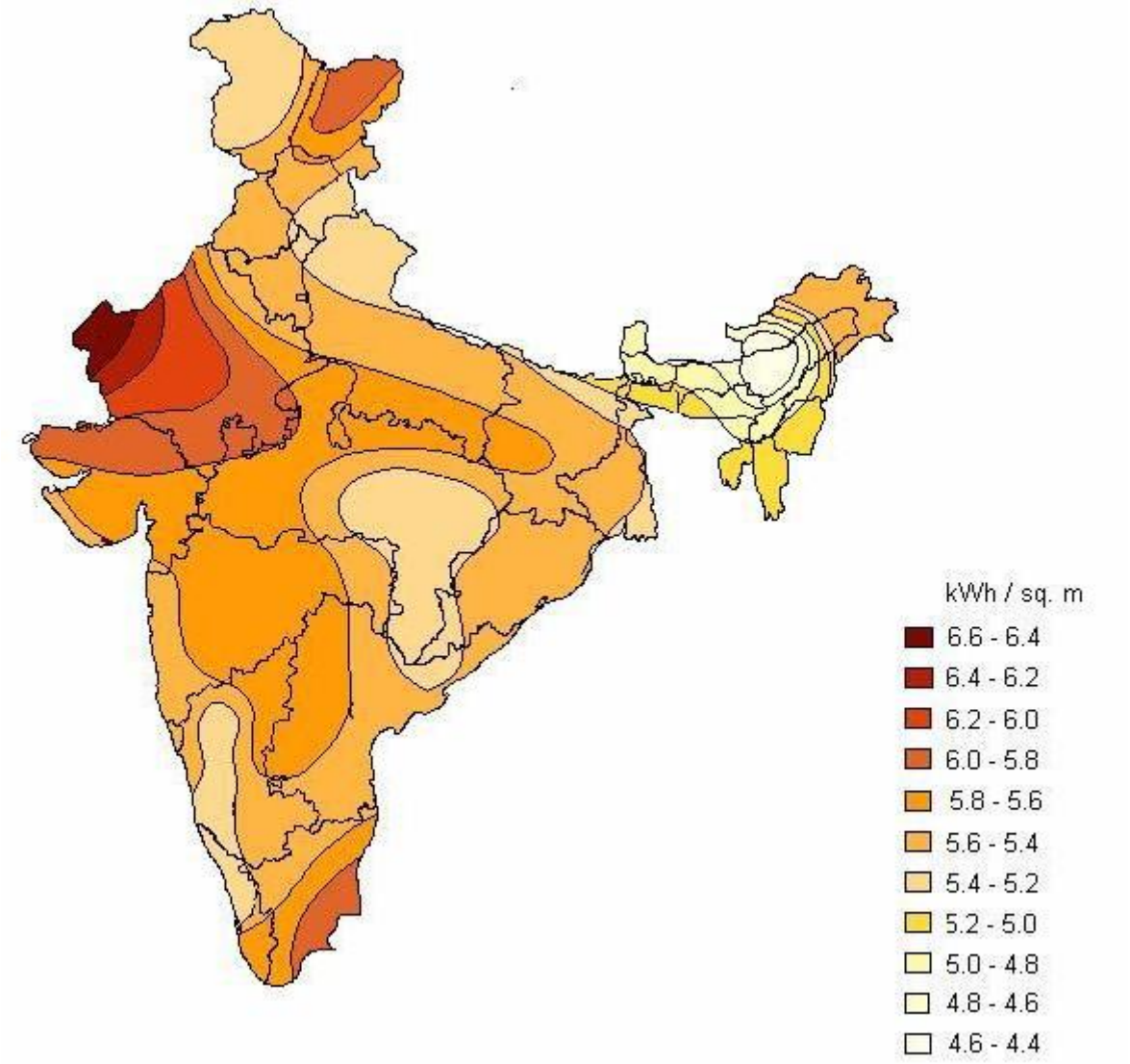
Relative Humidity

- The average annual relative humidity is 74.9% and average monthly relative humidity ranges from 67% in February to 86% in July.

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Avg
Relative Humidity (%)	69	67	69	71	70	80	86	86	83	78	71	69	74.9
Average Dew Point Temp °C	18.4	18.3	20.7	22.9	24.1	25.4	25.1	24.7	24.5	24.5	22.2	20.2	22.6


Mumbai/ Bombay, India Climate Graph (Altitude: 11 m)
Temperatures/ Wet Days/ Sunlight/ Daylight/ Wind Speed/ Frost
Relative Humidity/ Precipitation
Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
Precipitation (mm)
Max Temp (°C)
Wet Days (>0.1 mm)
Average Wind Speed (Beaufort)
Daylength (Hours)
Min Temp (°C)
Average Temp (°C)
Average Sunlight Hours/ Day
Days with Frost
Relative Humidity (%)
ClimaTemps

Radiation Data



Month	Irradiation(KWh)
Jan	5.32
Feb	6.25
Mar	7.05
Apr	7.38
May	7.33
Jun	5.64
Jul	5
Aug	5.12
Sep	5.65
Oct	5.72
Nov	5.38
Dec	5

Sun Position Report

Values obtained as:

Sun Position

Latitude:	19 5' N	Time zone: UTC +5.5
Longitude:	72 51' E	No DST
Magnetic declination:	0 37' W	

Magnetic North was used for this calculation.
Do not correct compasses for Magnetic declination, this has been accounted for in the calculations.

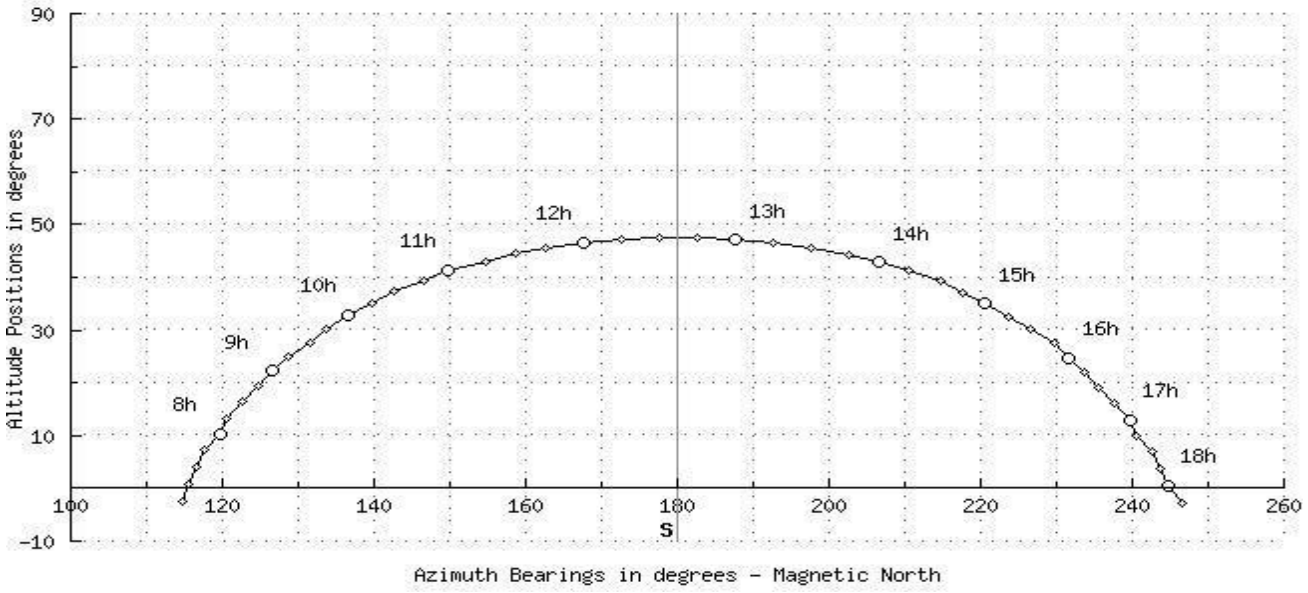
Daily Summary		C Dawn	Az'	Sunrise	Day Length	Sunset	Az'	C Dusk
Thu	**21/12/2020**	06:42	114.6°	**07:06**	**10:60**	**18:05**	245.6°	18:29
Fri	22/12/2020	*06:43*	*114.6°*	*07:06*	*10:60*	*18:05*	*245.6°*	*18:29*
Sat	23/12/2020	*06:43*	*114.6°*	*07:07*	*10:59*	*18:06*	*245.6°*	*18:30*
Sun	24/12/2020	*06:44*	*114.6°*	*07:07*	*10:60*	*18:06*	*245.6°*	*18:30*
Mon	25/12/2020	*06:44*	*114.6°*	*07:08*	*10:60*	*18:07*	*245.6°*	*18:31*
Tue	26/12/2020	*06:45*	*114.6°*	*07:08*	*10:60*	*18:08*	*245.6°*	*18:31*
Wed	27/12/2020	*06:45*	*114.6°*	*07:09*	*10:60*	*18:08*	*245.6°*	*18:32*

Thursday, 21st December 2020

	Az'	Alt'	*Shadow		Az'	Alt'	*Shadow		Az'	Alt'	*Shadow		Az'	Alt'	*Shadow
07:00	115°	-2°	-	10:00	137°	33°	1.54	13:00	188°	47°	0.93	16:00	232°	25°	2.14
	116°	1°	57.29		140°	35°	1.43		193°	46°	0.97		234°	22°	2.48
	117°	4°	14.3		143°	37°	1.33		198°	46°	0.97		236°	19°	2.9
	118°	7°	8.14		147°	40°	1.19		203°	44°	1.04		238°	16°	3.49
08:00	120°	10°	5.67	11:00	150°	41°	1.15	14:00	207°	43°	1.07	17:00	240°	13°	4.33
	121°	13°	4.33		155°	43°	1.07		211°	41°	1.15		241°	10°	5.67
	123°	16°	3.49		159°	44°	1.04		215°	39°	1.23		243°	7°	8.14
	125°	19°	2.9		163°	46°	0.97		218°	37°	1.33		244°	4°	14.3
09:00	127°	22°	2.48	12:00	168°	47°	0.93	15:00	221°	35°	1.43	18:00	245°	0°	-
	129°	25°	2.14		173°	47°	0.93		224°	33°	1.54		247°	-3°	-
	132°	28°	1.88		178°	47°	0.93		227°	30°	1.73				
	134°	30°	1.73		183°	47°	0.93		230°	27°	1.96				

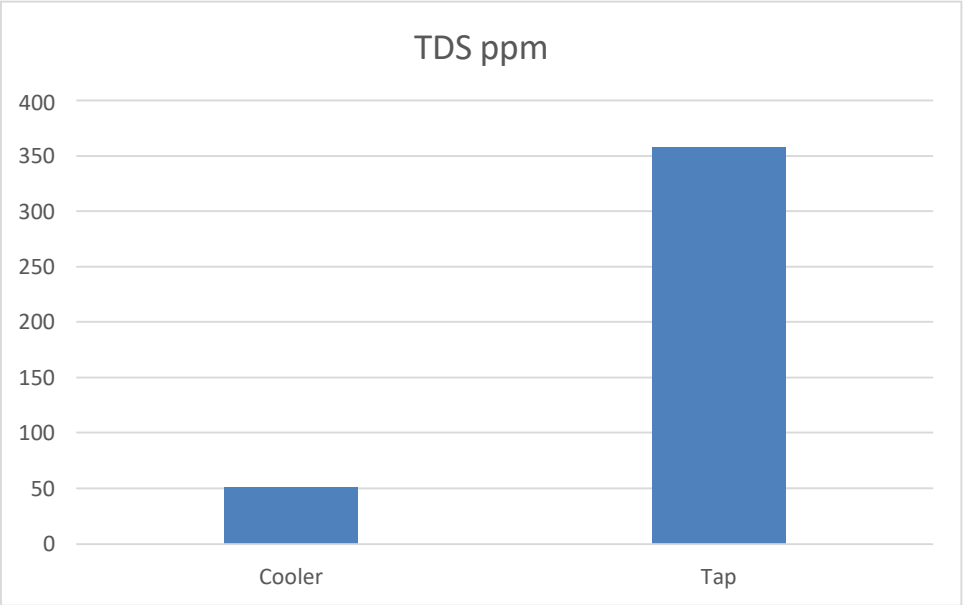
*Calculation intervals: Every 15 minutes :: Shadow length = (*Shadow x Object height)*

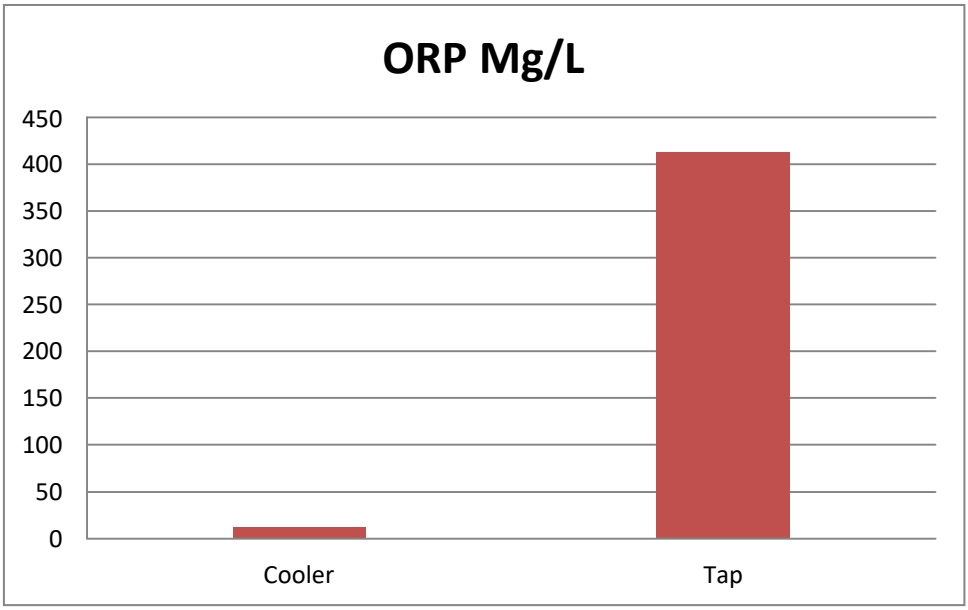
Sunrise: 07:06 - Az' 114.6° **Sunset: 18:05 - Az' 245.6°**

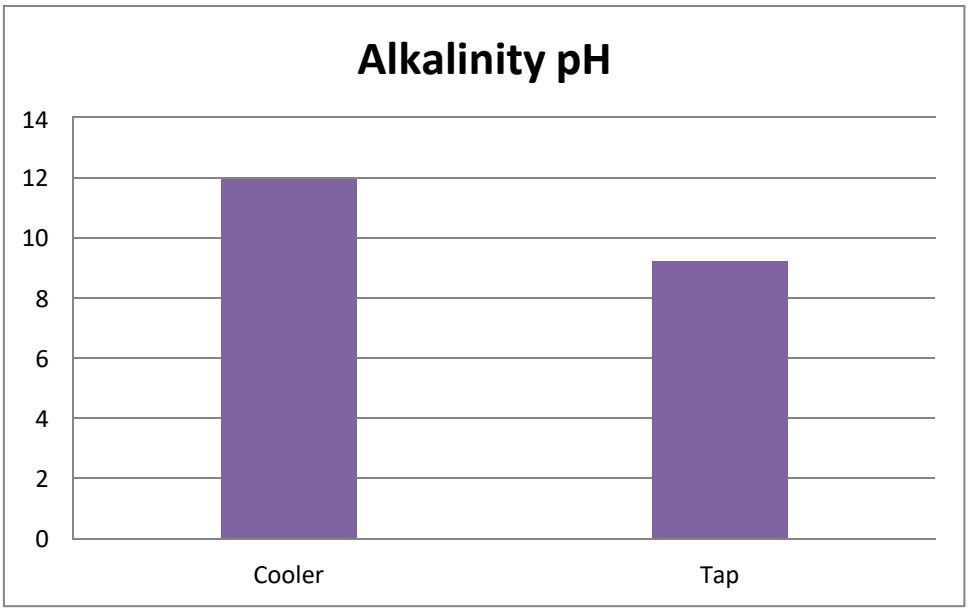


7 Water

SL No	Use	TDS	ORP	Alkalinity
No	Activity	ppm	Mg/L	pH
1	Cooler	51	12	11.8
2	Tap	358	413	9.2





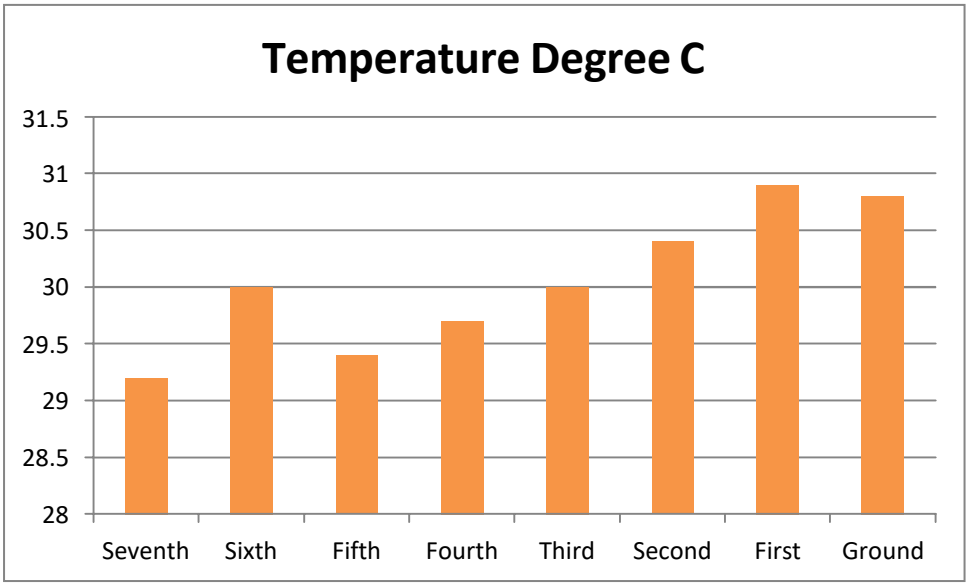

Alkalinity pH
14
12
10
8
6
4
2
0
Cooler
Tap

8 Atmosphere (Temperature, Humidity and Noise)

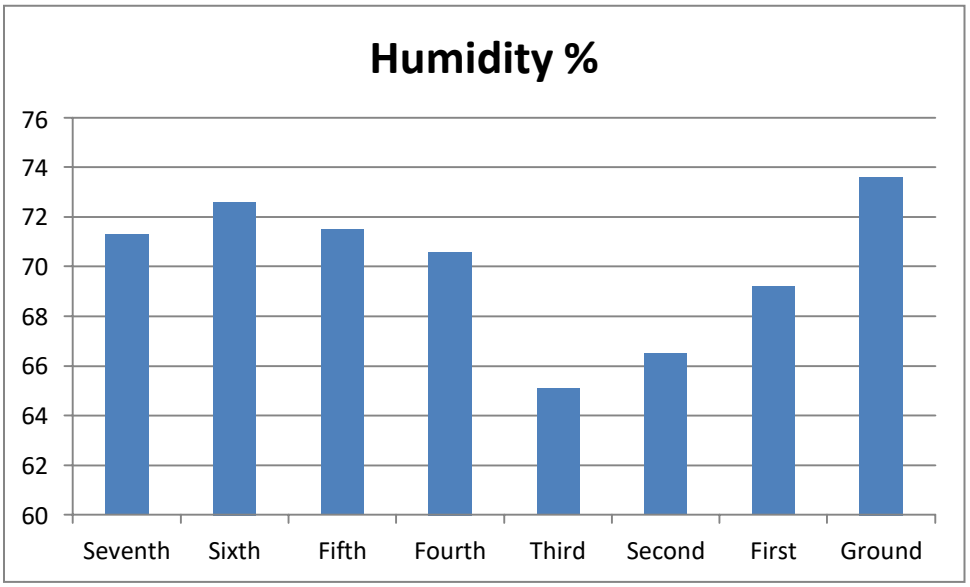
Building	Floor	Temperature	Humidity	Noise
		Degree C	%	dB
One	Seventh	29.2	71.3	58
One	Sixth	30	72.6	59
One	Fifth	29.4	71.5	59
One	Fourth	29.7	70.6	67
One	Third	30	65.1	49
One	Second	30.4	66.5	49
One	First	30.9	69.2	47
One	Ground	30.8	73.6	57

Charts

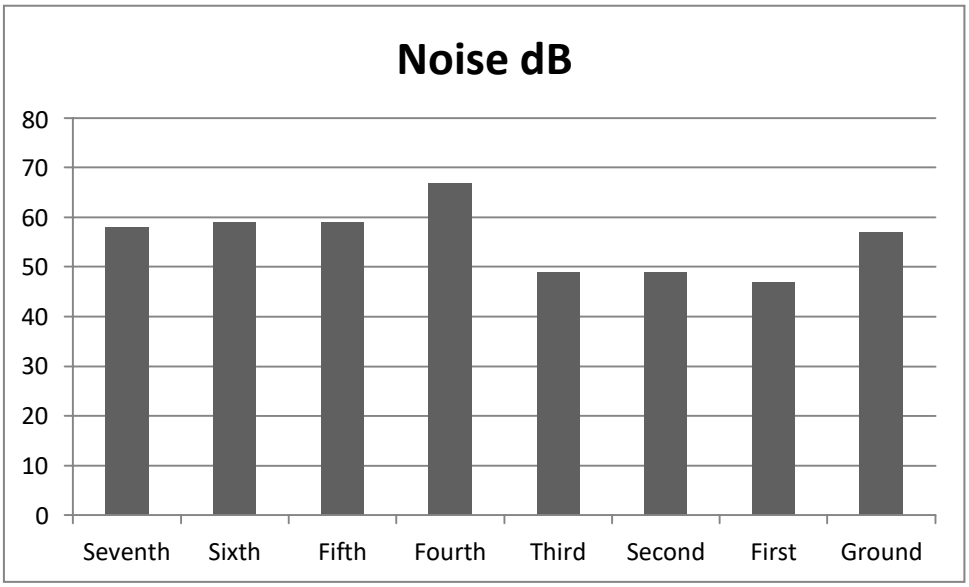
Temperature Data



Humidity Data

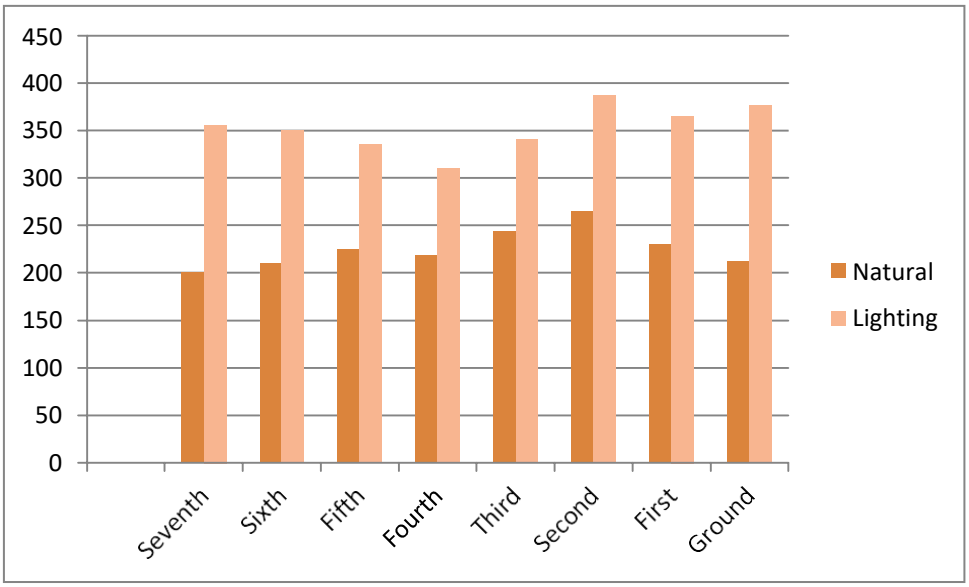


Noise Data



9 Illumination

Building	Floor	Natural	Lighting
One	Seventh	200	356
One	Sixth	210	350
One	Fifth	225	335
One	Fourth	218	310
One	Third	244	340
One	Second	265	387
One	First	230	365
One	Ground	212	376



10 Energy Audit

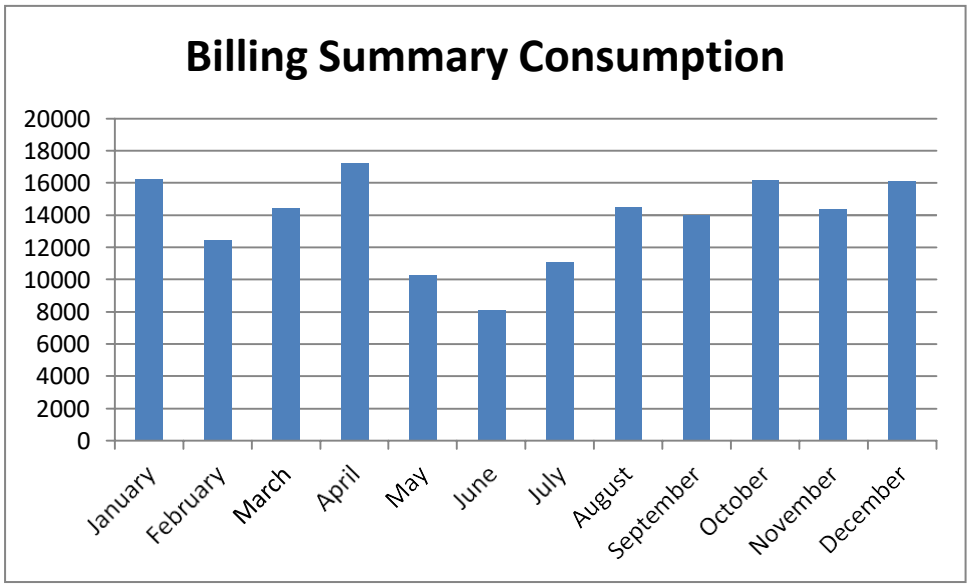
10.4 Electrical Energy System

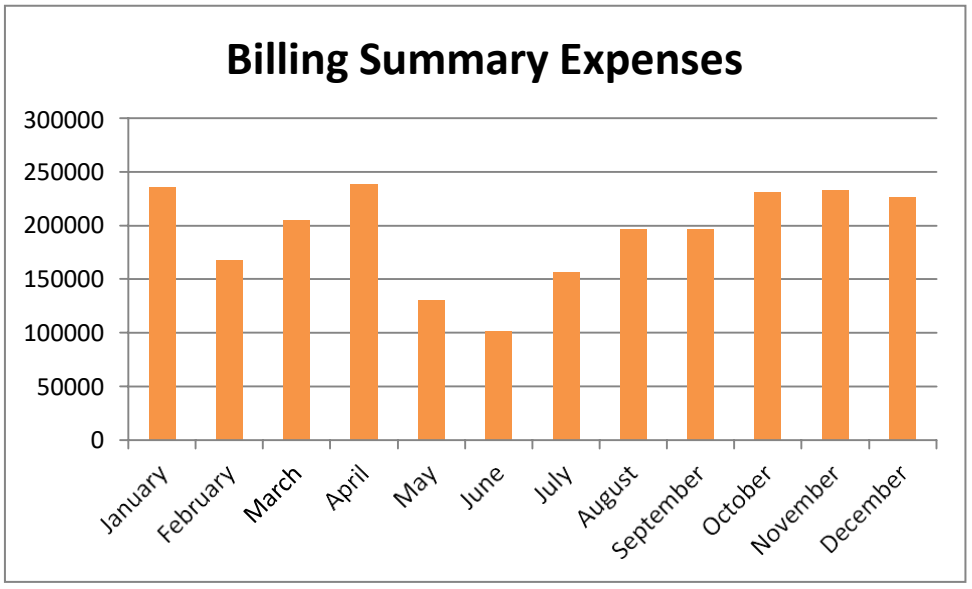
CA No	Meter No	Sanctioned Load	DISCOM	Phase
001521417435	055-MHD07133	68 KW	MSEDCL	Three

10.5 Electrical Bill Analysis

Billing Summary			
Month	Consumption	Expenses	Rate
(name)	(units/kwh)	(Rs)	(Rs/Kwh)
January	16271	234977	14.44
February	12442	167033	13.42
March	14440	204780	14.18
April	17255	238403	13.82
May	10273	129994	12.65
June	8100	100835	12.45
July	11056	156312	14.14
August	14478	196323	13.56
September	14009	195949	13.99
October	16174	230732	14.27
November	14400	232703	16.16
December	16100	226470	14.07

Head	Value	Remark
Sanctioned Demand	68KVA	Benchmark
Recorded Maximum Demand	82KVA	Over Limit
Power Factor	0.990	Low


Billing Summary Consumption
20000
18000
16000
14000
12000
10000
8000
6000
4000
2000
0
January
February
March
April
May
June
July
August
September
October
November
December


Billing Summary Expenses
300000
250000
200000
150000
100000
50000
0
January
February
March
April
May
June
July
August
September
October
November
December

10.6 Consumption Scenario

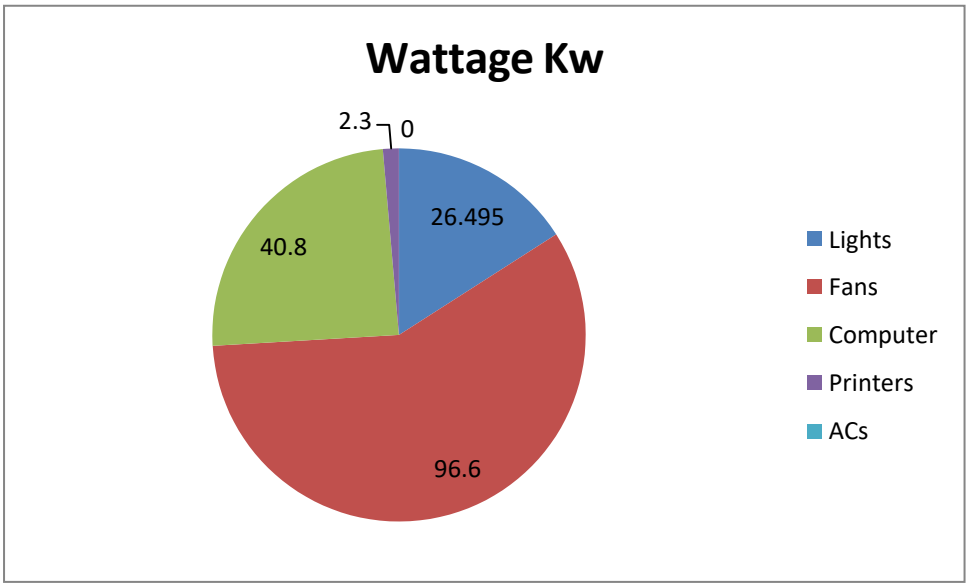
Summary	Usage (Kwh)	Payment (Rs)	Duration
Total	164998	2314511	Annual
Min	8100	100835	June
Max	17255	238403	April
Average	13750	192875.9	Annual

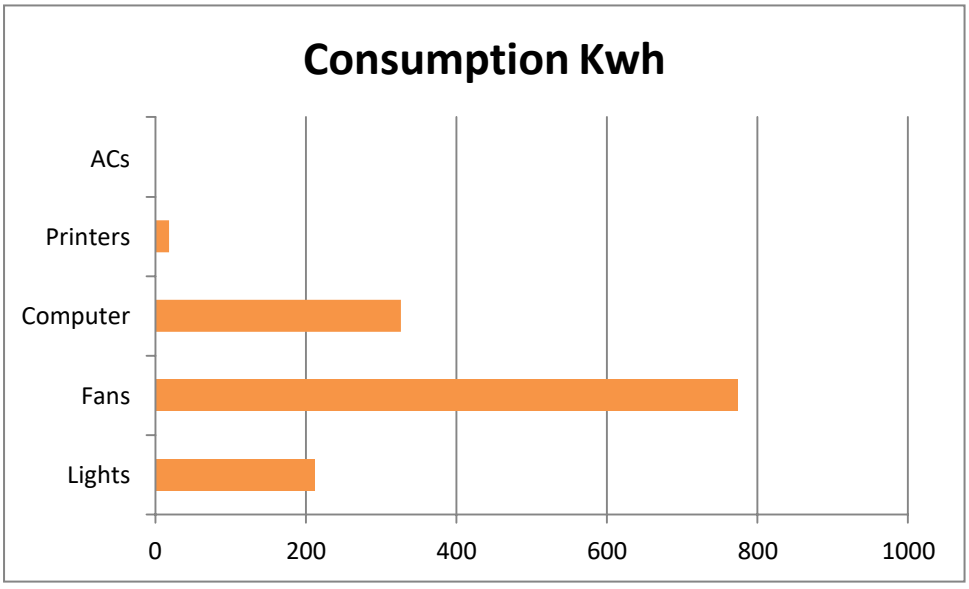
10.7 Assessment of Major Loads

SL No	Floor	Room No	Room Name	Lights	Fans	Computer	Printers	ACs	Daily working hours
1	Ground	13	Class rooms/ Labs	110	111	272	23	0	8
2	First	26	Class rooms/ Labs	96	119				
3	Second	22	Class rooms/ Labs	118	224				
4	Third	22	Class rooms/ Labs	98	156				
5	Fourth	22	Class rooms/ Labs	122	240				
6	Fifth	6	Class rooms/ Labs	120	232				
6	Sixth	6	Class rooms/ Labs	48	104				
7	Seventh	6	Class rooms/ Labs	45	102				

Loads	Measures	Lights	Fans	Computer	Printers	ACs
Quantity	Nos	757	1288	272	23	0
Wattage	Kw	26.495	96.6	40.8	2.3	0
Consumption	Kwh	211.96	772.8	326.4	18.4	0

Percentage Share





10.8 Use of Renewable Energy System

Not Available

11 Safety Assessment

11.1 Status of presence of electrical safety hazards:

SL No	Safety Hazard Yes/No Remarks	Yes/No	Remarks
1)	Existence of non ISI/standardized appliances	No	
2)	Whether the existing wiring is more than 20 years old.(Wiring more than 20 years old must be recommended for replacement)	No	
3)	Whether Fire detection and Alarm system is installed?	**Yes**	
4)	Whether sufficient number of fire extinguishers is installed?	**Yes**	
5)	Segregated UPS room with proper ventilation/exhaust is provided?	NA	
6)	Is their display of emergency telephone number of nearest fire station, hospital and key person?	**No**	
7)	Whether frequent sparking at certain place(s) reported	No	
8)	Whether switches found with burnt marks	**Yes**	
9)	Existence of non standardized tube lights/CFLs/Bulbs and TL starters and chokes	**Yes**	CFL
10)	Dampness in walls and ceiling	**Yes**	
11)	Loose switches/plugs	**Yes**	
12)	Naked wiring or connections	**Yes**	
13)	All Electrical cables/wiring are in conduits and are protected by a fire proof insulation	**No**	
14)	Seepage /Leakage of water in walls or on and around electrical installations	**Yes**	
15)	Whether connection to each AC is provided through an individual MCB of appropriate rating & of standard make and ISI approved.	NA	
16)	Whether there are frequent tripping due to overloads ?	No	

11.2 Safety Survey:

11.2.1 Actual Cable Size (at meter): 3.5X185 Sqmm

11.2.2 Year of Installation: 2000

11.2.3 Actual Available Cut-out Size: 400A

11.2.4 Year of Installation: 2009

11.2.5 Actual Required ELCB Size: Present at Branches but many bypassed

11.2.6 Meter Cabin Condition: Bad

11.2.7 Availability of Fire extinguisher/ Sand Buckets: NO Sand Buckets

11.2.8 Water proofing/Seepage: Minor seepage

11.2.9 Damages/Tampering: YES

11.2.10 Adequacy in connections/Termination/Joints: **NO**

11.2.11 Ease of accessibility: **NO**

11.2.12 Danger Signs: **NO**

11.2.13 Smoke detectors : **NO**

11.2.14 Alarm system: Yes

11.2.15 Emergency Entry/Exit door: **NO**

11.2.16 Emergency evacuation plan: **NO**

11.2.17 Fire extinguishers: Yes

11.2.18 Public Address system : YES

11.2.19 Rodent arrester: **NO**

11.2.20 CCTV: Yes

11.2.21 Meter cabin: **Bad Condition**

- **11.2.21.1** Leakage: **YES**
- **11.2.21.2** Damaged/tempered/cracks: **YES**
- **11.2.21.3** Name plate: **No**
- **11.2.21.4** Water logging possibility: **YES**

11.2.22 Physical Inspection of Power source : Average Condition

- **11.2.22.1** Adequacy as per standards **No**
- **11.2.22.2** Rusting of panel **Yes**
- **11.2.22.3** Visible scaling **Yes**
- **11.2.22.4** Scaled/ Unclean wires breakers **Yes**
- **11.2.22.5** Wet / Dampness **NO**

11.3 IE/CEA Regulations compatibility

- Regulation-3 : Registers of Designated Persons made: **NO**
- Regulation-12:
  - **a.** Visible sign of overload: **NO**
  - **b.** Unauthorized/temporary connection: **NO (work in progress)**
  - **c.** Supply Lines & Equipments installed properly: **YES**
  - **d.** General remark: **Satisfactory**
- Regulation-13: Condition of Service line, cable, wires, Etc.: **Satisfactory**
- Regulation-14: Suitable Cut-outs/MCBs Provided: **YES**
- Regulation-15:
  - **a.** Switches on live conductor: **YES**
  - **b.** Color code: **YES**
  - **c.** Direct Line of Neutral: **YES**
- Regulation-16:
  - **a.** Earth Terminal By Supplier: **Satisfactory**
  - **b.** General Condition of Earthing: **Satisfactory**
- Regulation-17:
  - **a.** Inaccessible Bare wire/cable: **NO**
  - **b.** Readily accessible switches : **YES**
- Regulation-18: Danger Notices in Hindi & Local language: **NO**
- Regulation-19:
  - **a.** Availability of Floor mats: **NO**
  - **b.** Identification of Panel Front & Back: **NO**
- Regulation-21: Cables heavily insulated & mechanically protected for portable instruments: **NO**
- Regulation-22: Condition of Mechanical covering: **Not Satisfactory**
- Regulation-24: Permanent Voltage level indication for different levels: **NO**
- Regulation-26: Accidental Charging possibility beyond level: **NO**
- Regulation-27:
  - **a.** Fire Buckets: **NO**
  - **b.** First Aid Box: **NO**
  - **c.** First Aid Training: **NO**
- Regulation-28:
  - **a.** Electrical Shock Notices in Hindi & Local language: **NO**
  - **b.** Designated Person for resuscitation from Shock: **NO**
- Regulation-34: Insulation Resistance: **NA**
- Regulation-35:
  - **a.** Breaker at Point of Supply to Isolate the supply: **YES**
  - **b.** Every Circuit is Protected with suitable Breaker: **YES**
  - **c.** Breaker at Point of Supply for motor: **YES**
  - **d.** Precautions taken to ensure no live part exposed: **YES**
- Regulation-37:
  - **a.** 100cm Space in front of Panel: **YES**
  - **b.** 20cm to 75cm Space behind Panel: **YES**

c. Passage way from either end of 1.8 Meter height: **YES**

- Regulation-41:
  - **a.** Generator Earthing (2 Nos): **NO**
  - **b.** Metalic Frames Earthing: **NO**
  - **c.** Consumer Electrode Test: **Not Satisfactory**
  - **d.** Mechanical damage to Earth conductor: **NO**
  - **e.** Record of Earth resistance Maintained: **NO**
- Regulation-42: ELCB/RCCB Provision: **NO**

Critical safety Parameters:

Old Conduit and Hanging wire

Improper Earthing

Damaged Equipment

Rusted & Burned Risky Installations

In-accessible switchgear

Old Risky Installations

12 Wastage Types and Management

SL No	Wastage Type	Quantity	Action
1	Biomass	8-10Kg per day (as discussed)	ZERO WASTE
2	Paper	10-20Kg approx. per month	ZERO WASTE
3	Water	100-500Ltrs approx. per year due to leakage	Not considered
4	E-Waste	Un-quantified	ZERO WASTE
5	Bio-Hazardous	NIL	NIL
6	Fuel	Electricity Wastage by running fans and lights for uncounted time after room cleaning	NIL
7	Production	NIL	NIL
8	Process	Occasional electricity wastage by room user/s accidently keeping equipments switched On while leaving the room.	NIL
9	Food	Occasionally wastage in very low quantity	ZERO WASTE
10	Man-Hours	NIL	NIL

Best Practices

1. College runs ZERO WASTE with Municipal corporation (Certificate attached)
2. College Implemented Solar Water Heater system for captive consumption.
3. College Implemented Rain Water Harvesting system for captive consumption.
4. Fix all taps, replace old pipelines, use Teflon tapes on ties, and use sealants for joints to avoid leakage (point no.3).
5. Install a Bin in reception area to collect E- wastage like damaged or dead luminaries, mobiles, computer or spare-parts, Etc. hand over it to proper scrap vendor once bin is full (point no.4).
6. Update SOP of cleaning with statement “Switch OFF Fans after 5 Minutes once room is cleaned”. (point no.6)
7. Fix a Notice on Back-side of Exit Door of Room-“SWITCH OFF all electrical equipments and Taps”. (point no.8 and 6)
8. In present scenario observed there is no any recycling procedure is thought, documented or observed in premises.
9. Recycling of one side used papers to be observed.
10. Prepare and observed a Generalized SOP having attributes specialize on each type of wastage and it’s re-usage and/or recycling.

13 Environment Impact on Natural resources

13.1 Table-1: Overall

Environmental Impact Analysis Report		
Annual Consumption	164998	**KWh**
Annual Green- Impact		
Co2 Generated	905304	Kg
Coal Burned	822880.8	Kg
Diesel Burned	436099.8	Ltr
Natural Gas Burned	16638902	Cub Ft
Trees Cut	41211.6	Nos
Water Consumed	2968361.2	Ltr
Life Time Green- Impact		
Co2 Generated	16483514	Kg
Coal Burned	47318461	Kg
Diesel Burned	7941340.2	Ltr
Natural Gas Burned	302994439	Cub Ft
Trees Cut	750479	Nos
Water Consumed	54053855.2	Ltr

13.2 Table-2: Occupational Area Based

Environmental Impact Analysis Report		
Annual Consumption	164998	**KWh**
Annual Green- Impact		
Co2 Generated	9.43	Kg
Coal Burned	8.57	Kg
Diesel Burned	4.54	Ltr
Natural Gas Burned	173.32	Cub Ft
Trees Cut	0.43	Nos
Water Consumed	30.92	Ltr
Life Time Green- Impact		
Co2 Generated	171.70	Kg
Coal Burned	492.90	Kg
Diesel Burned	82.72	Ltr
Natural Gas Burned	3156.19	Cub Ft
Trees Cut	7.82	Nos
Water Consumed	563.06	Ltr

13.3 Table-3: Footfall Based

Environmental Impact Analysis Report		
Annual Consumption	164998	**KWh**
Annual Green- Impact		
Co2 Generated	226.33	Kg
Coal Burned	205.72	Kg
Diesel Burned	109.02	Ltr
Natural Gas Burned	4159.73	Cub Ft
Trees Cut	10.30	Nos
Water Consumed	742.09	Ltr
Life Time Green- Impact		
Co2 Generated	4120.88	Kg
Coal Burned	11829.62	Kg
Diesel Burned	1985.34	Ltr
Natural Gas Burned	75748.61	Cub Ft
Trees Cut	187.62	Nos
Water Consumed	13513.46	Ltr

13.4 Table-4: Carbon Footprints

Head	General	Per Square Foot	Per Person
Per Year	905304	9.43	226.33
Lifetime (20Years)	16483514	171.70	4120.88

Ranges:
Best: (Below 1800/Per Person per year)
Average: (Below 3000 and Above 1800/Per Person per year)
Bad: (Above 3000/Per Person per year)

Carbon Footprint found best category.

Plantation Drive:


NCC

Safe and Waste Free Environment Drive:

`

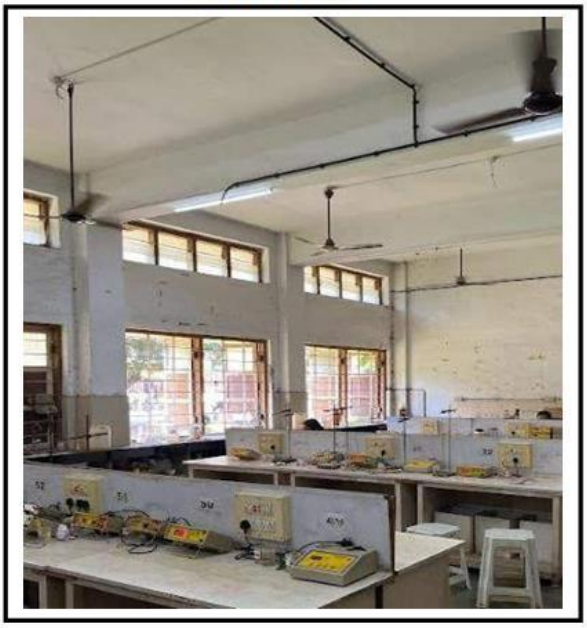
Greenery in Campus

Facilities and Infrastructure

IT LAB

LABORATORY

PHYSICS LAB



LIBRARY

Solar System

Rain water Harvesting

Fire Safety

FIRE EXTINGUISHER

GENERATOR

मुख्य कार्यालय विरार
विरार (पूर्व),
ता. वसई, जि. पालघर, पिन ४०१ ३०५.

दूरध्वनी : ०२५०-२५२५१०१/०२/०३/०४/०५/०६
फॅक्स : ०२५०-२५२५१०७
ई-मेल : vasalvirarcorporation@yahoo.com

जा.क्र. :वानिशा/बांध/३५८/२०२३
दिनांक :- ७६/७१/२०२३

TO WHOMSOEVER IT MAY CONCERN

This is to Certify that Late Shri Vishnu Waman Thakur Charitable Trust's Bhaskar Waman Thakur College of Science, Yashwant Keshav Patil College of Commerce, Vidhya Dayanand Patil College of Arts (Wings A & B) Situated on land bearing S.No.88A, S.No.369B H.No.3 & 4, Village Bolinj, Virar (w) Tal. Vasai, Dist. Palghar, has sewage disposal system in the campus.

Dy.Engineer
VVCMC

Executive Engineer
VVCMC

मुख्य कार्यालय, विरार
विरार (पूर्व),
ता. वसई, जि. पालघर - ४०१ ३०५.

दूरध्वनी : ०२५० - २५२५१९ / ०२/०३/०४/०५/०६
फैक्स : ०२५० - २५२५१०३
ई-मेल : vasaivirarcorporation@yahoo.com

जावक क्र. : व.वि.श.म./झोरो/१२२/२२-२४
दिनांक : १०/०२/२४

Zero Waste certificate

This is to certify that Viva College, located in Virar, has demonstrated exemplary commitment and efforts towards achieving zero waste within its campus premises. Viva College has established a sustainable waste management system in collaboration with the Vasai Virar Municipal Corporation for waste recycling.

The partnership between Viva College and the Vasai Virar Municipal Corporation has facilitated the efficient collection and recycling of waste generated within the college premises. Through dedicated initiatives and conscientious practices, Viva College has successfully minimized its environmental footprint and contributed significantly to the promotion of sustainable living.

Viva College has consistently adhered to the principles of reduce, reuse, and recycle, thereby ensuring that waste materials are managed in an environmentally responsible manner. By fostering a culture of waste segregation, recycling, and resource conservation, Viva College has set a commendable example for other educational institutions and the community at large.

In recognition of these commendable efforts and achievements, the Vasai Virar Municipal Corporation hereby awards this Zero Waste Certificate to Viva College, affirming its status as a leader in sustainable waste management practices.

(Shashikant Patil)
Assistant Municipal Commissioner
Ward A

14 Suggestions

1. Air quality is found moderate. There is scope to increase in Tree diversity; Plants like Tulsi, Camphora,Etc. can be planted for getting more pollution-free atmosphere. Also to increase the quality more greenery can be implemented. This can be done through gardening in empty places, terrace gardening and Green walls.
2. Water quality if found average. Quality is observed from RO output. To maintain the quality, water testing has to be done in every season (after every four months). A standard operating process has to be defined, documented and observed for tank and pipeline cleaning and maintenance.
3. Noise level is appropriate.
4. Illumination level found good. To maintain accurate level, windows to be cleaned regularly, obstacles on windows to be moved, Proper capacity and efficiency of luminaries to be used and luminaries also to be cleaned once in a week. For details refer illumination section.
5. The climatic conditions are hot and humid. This increases fan consumption.
6. The site has excellent solar irradiation which can be utilized for electricity generation.
7. To maintain green and eco-friendly college campus, more trees need to be planted. A thick green belt development along the fence is strongly recommended. The plant diversity shall be maintained. The plant species that are found suitable are suggested for plantation and greenbelt development. In addition to above, some flowering plants, shrubs, herbs and climber plant species suggested for beautification in the college campus.
8. Arrange Exhibitions and identification programs for students and locals to understand medicinal plants.
9. Gift small plants or seeds/seed-balls to students leaving or going to native place and encourage them to plant at their own premises.
10. Emergency evacuation plan to be prepared and displayed at centre place.
11. Generate awareness among user about environment conservation.
12. Prepare and observe SOPs for the same.
13. Use energy efficient Lighting.
14. Use Energy efficient fans.
15. Keep AC temperature to 26^0 C.
16. Clean Luminaries, Fans, ACs regularly to increase efficiency.
17. Prepare and observe SOPs for maintenance of equipments.
18. Avoid Draft printing, use email/Whatsapp maximum.
19. Following tests are to be conducted at-least annually
    - Earthing
    - Lightning Arrestor

- Grounding Continuity
- Voltage
- Polarity
- Neutral Current
- Load Unbalance
- Earth Resistance
- Insulation Resistance
- Illumination
- Power Quality
- Thermography

20. Safety Precautions
    a. Prepare and Display SLD of Installation
    b. Install New Earth pits and conductors.
    c. Replace all DBs and Feeders
    d. Install Sand Buckets, Insulation Mats in meter cabin and panel room
    e. Install IOT based Energy Monitoring system
21. Saving Opportunities (considering current average rate and six hours daily usage)
    A. Replacing Regular Tube lights with LED will save approximately Rs. 15,000 per month.
    B. Replacing Regular Fans with BLDC Energy saving Fans will save approximately Rs. Rs. 40,000 per month.
    C. Manage Power Factor to appropriate limit will save approximately Rs. 5,000 per month.
    D. Installation of SPVGCRT (Solar Photovoltaic Grid Connected Roof Top) System with Net Metering facility can save 80% of Electricity bill. (Solar Resource Analysis is required).
    E. Manage Power Demand to appropriate limit will save approximately Rs. 15,000 per month.

15 Disclaimer

The report is generated from data, information, answer to asked questions, standards and procedures defined by different and concerned authorities time to time, available site condition, weather condition, operational and availability conditions provided by beneficiary on the day of survey. If any changes on above said measures on any other parameters affecting these measures may lead to change, alter, in-corrections even falsifying calculations, results, recommendations and suggestions. The values, figures, amounts mentioned are indicative to the site situation and condition; it may not reflect each and every aspect of it. The report is generated restricted to given scope and available conditions and measures.

16 Conclusion

We hereby conclude report for “Energy Audit, Green Audit and Environment Audit” of the Work done under scope of work for “VIVA Degree College, Virar East, At & Post Virar, Dist. Palghar 401305”. Please study it thoroughly and implement recommendations and suggestions at earliest.

भारतीय गैर न्यायिक

एक सौ रुपये Rs. 100

रु. 100 ONE HUNDRED RUPEES

सत्यमेव जयते

भारत INDIA

INDIA NON JUDICIAL

07 AUG 2019

महाराष्ट्र MAHARASHTRA ◐ 2018 ◐ UT 562899

07 AUG 2019

Sub-Treasury Officer, Vasai.

26 JUL 2019

Sub-Treasury Officer, Vasai.

26/7/19

Memorandum of Understanding

Between

Rashmi Joshi, Environment Consultant

4/B, 141, Yoganand Society, Vazira Naka,

Borivali (West), Mumbai, 400 092

And

VIVA College, Virar

This Memorandum of Understanding (MOU) is entered on (12th Aug 2019) Between VIVA College, Virar and Ms. Rashmi Joshi, Environment Consultant; and are agreed that cooperation in conducting the various activities regarding the environment projects would be mutually beneficial. The areas of cooperation may include, subject to mutual consent, any desirable and

R. M. Joshi

07 AUG 2019

जोडपत्र-२ / Annexure II

प्रतिज्ञापत्र व्यतिरिक्त वापरण्यात येणाऱ्या मुद्रांकावर छपाई करावयाचा मजकूर

मुद्रांक विक्री अ.क्र. 9886 दस्ताचा प्रकार MOU

दस्त नोंदणी होणार असल्याचा दु.नि. कार्या. नांव .....

खिळकतीचे वर्णन Education

मुद्रांक रक्कम 900 / दिनांक [illegible] रक्कम रुपये

मुद्रांक विकत घेणाऱ्याचे नाव .....

दस्ताचा पक्षकाराचे नाव .....

दस्ते असल्यास त्याचे नांव [illegible] Deepa Dalvi

मुद्रांक विकत घेणाऱ्याची सही .....

परवानाधारक मुद्रांक विक्रेत्याची सही

सौ. देवयानी अं. तांडेल, परवाना क्र. १२०२००८.

ठिकाण : विरार, ता. वसई, जि. पालघर.

-: मुद्रांक खरेदी केल्यापासुन सात कार्यालयीन दिवसांचे आत वापरावे अन्यथा :-

07 AUG 2019

feasible activity that would further the goals of each party. Such interaction may include cooperation in a variety of joint academic and educational activities comprising of following responsibilities:

ARTICLE 1: RESPONSIBILITIES OF EACH PARTY

A) Roles and Responsibilities of Ms. Rashmi Joshi:

1. Conduct awareness sessions as well as activities amongst youth and students about the use of waste and water as resource and its relationship with climate change and global warming. {Promote knowledge and provide training for segregation at source and composting, among students, faculty and non-teaching staff.}

2. Encourage and promote environment related activities such as composting of canteen and garden waste, Organic Farming, Energy Conservation, Waste Management for Better Tomorrow, Plastic Waste Management, Green Initiatives for Healthy Life, E-waste Awareness and Collection Drives, Seed-balls Making, and Rainwater Harvesting.

3. Sensitize and involve students from the college for promoting the concept of the environment related projects.

4. Conduct various environmental competitions for the students.

B) Roles and Responsibilities of College

1. The college will make arrangements for the awareness lectures.

2. The students and teaching staff will actively participate in the recycling of the waste and waste water.

3. Environment projects are a part of college environmental activity and hence it will be monitored on a regular basis by DLLE /Green Club / NSS students and faculty members.

4. College will nominate a contact person to who will submit annual activity report at the end of the academic year.

ARTICLE 2: DURATION AND EVALUATION

2.1 This MOU shall be in effect for a period of five years from 2019 to 2024. Either party may request termination of this agreement, in writing, ninety (90) days prior to the proposed

at the time of termination shall be permitted to conclude as planned unless otherwise agreed in writing.

2.2 A joint evaluation of the MOU will be initiated by the designated representatives six (6) months prior to the expiration date. Following the evaluation, the MOU may be renewed and resigned for an additional five (5) year period.

2.3 Amendments to this MOU may be requested, in writing, by either party and approved by the authorized signatories.

2.4 The parties to this MOU undertake to treat as CONFIDENTIAL AND PRIVILEGED information of the other party, which is so classified in advance. The terms of confidentiality and mode of disclosure shall be as per mutually acceptable terms.

2.5 This MOU shall require the ratification of the competent academic/executive body of both the parties.

2.6 The Activities are purely for academic purpose and will not be used for monetary benefits by either party.

ARTICLE 3: CO-ORDINATORS & THEIR RESPONSIBILITIES

Coordinators shall be named by each party to serve as liaisons for implementing this MOU. All activities conducted under the auspices of this MOU must have the endorsement of the coordinators. At VIVA College Virar will be coordinator and Ms. Rashmi Joshi, Environment Consultant, Mumbai. Coordinators shall notify their counterparts should a new person be amed to the position. In witness thereof, the parties have offered their signatures hereto:

Coordinator

Ms. Rashmi Joshi R. M. Joshi

Environment Consultant

4/B, 141, Yoganand Society,

Vazira Naka, Borivali (West),

Mumbai- 400 092.

Bhaskar Waman Thakur College of Science & Commerce (Autonomous) Virar
Yashwant Keshav Patil College of Arts
Vidhya Dayanand Patil College of Commerce

PRINCIPAL

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Coordinator

Ms. Rashmi Joshi R. M. Joshi

Environment Consultant

4/B, 141, Yoganand Society,

Vazira Naka, Borivali (West).

Mumbai- 400 092.

Bhaskar Waman Thakur College of Science (Arts) Virar
Yashwant Keshav Patil College of Commerce
Vidhya Dayanand Patil College of Science

PRINCIPAL

Mrs. Rashmi Joshi
Consultant - Solid Waste Management
Expert Guidance on Composting
and E-Waste Collection

4B/141, Yoganand Society, Vazira Naka,
L.T.Road,Borivali(w). Mumbai - 400092
rashmijoshi72@rediffmail.com
+91 98195 99851

GREEN CAMPUS CERTIFICATE

Date : 18/07/2023

This is to certify that Viva College, situated in Virar, has demonstrated exceptional commitment to environmental sustainability by establishing and maintaining a green campus. Viva College has implemented various initiatives and policies aimed at minimizing its environmental impact and fostering a culture of sustainability.

Key initiatives undertaken by Viva College towards achieving a green campus include:

1. Zero Waste Policy: Viva College has established a comprehensive zero waste policy in collaboration with the Vasai Virar Municipal Corporation (VVMC). Through effective waste segregation, recycling programs, and responsible disposal practices, the college has significantly reduced its waste generation and diverted a substantial portion of its waste from landfills.

2. Afforestation Efforts: Viva College has embarked on a comprehensive beautification initiative within its campus premises by strategically placing numerous plants and trees on each floor. This deliberate effort not only enhances the aesthetic appeal of the campus but also serves to promote biodiversity and mitigate the impacts of climate change. The presence of plants throughout the college contributes to improving indoor air quality, conserving natural resources, and fostering a conducive environment for learning and recreational activities.

3. Rainwater Harvesting: The college has implemented rainwater harvesting systems to harness and utilize rainwater for various purposes such as irrigation, groundwater recharge, and

Mrs. Rashmi Joshi
Consultant - Solid Waste Management
Expert Guidance on Composting
and E-Waste Collection

4B/141, Yoganand Society, Vazira Naka,
L.T.Road,Borivali(w). Mumbai - 400092
rashmijoshi72@rediffmail.com
+91 98195 99851

landscaping. By harvesting rainwater, Viva College reduces its dependency on external water sources and contributes to water conservation efforts.

4. Solar water heaters at the college reduce reliance on traditional energy sources by using sunlight for heating, decreasing carbon emissions and energy costs. Their installation showcases a commitment to sustainability and offers educational opportunities on renewable energy technologies.

5. Minimization of Plastic and Paper Use: Viva College has adopted strategies to minimize the use of plastic and paper within its campus. Reusable alternatives are encouraged, and efforts are made to promote awareness among students and staff about the environmental impact of single-use plastics and paper products. Through these measures, the college strives to reduce waste generation and promote sustainable consumption practices.

In recognition of these commendable efforts and achievements towards creating a sustainable and eco-friendly campus environment, the Green Campus Certificate is hereby awarded to Viva College.

This certificate serves as a testament to Viva College's dedication to environmental stewardship and is valid for a period of one year, subject to renewal upon review of continued adherence to green campus initiatives.

Thanking you

Yours Sincerely

R. N. Joshi

Ms.Rashmi Joshi

Environment Consultant

पर्यावरण व वातावरणीय बदल विभाग, महाराष्ट्र शासन
माझी वसुंधरा अभियान
MY EARTH
माझी वसुंधरा

UNITED NATIONS DECADE ON
ECOSYSTEM
RESTORATION
2021-2030

3.Clean and green campus initiatives


PARADISE GRANDE
A PROJECT BY
PARIKH
GROUP

Tree Plantation

Name of the committee: NSS UNIT, VIVA COLLEGE.

Name of the event: Tree Plantation

Date of the event/program: 26th July 2021

No. of the participants: 11 volunteers

Male: 7 volunteers **Female**: 4 volunteers

Overall Report of event/program:

Tree Plantation event was conducted by VIVA NSS Unit in the adopted village Bhatane. Under the guidance of Program officer Prof. Komal Patil sir and the locals , villagers helped the volunteers throughout the event and the volunteers planted a total of 142 saplings. The volunteers actively participated in the event and made the successful.

Swachh Bharat Abhiyan

Name of the committee: NSS UNIT, VIVA COLLEGE

Name of the event: Azadi Ka Amrut Mahotsav Swachh Bharat Abhiyan

Date of the event/program: 18th February 2022

No. of the participants: 42 **volunteers**

Male: 21 volunteers **Female**: 21 volunteers

Overall Report of event/program:

As we are celebrating 75th Anniversary of our Independence i.e “Azadi Ka Amrut Mahotsav”, NSS unit of VIVA College has Organized Swachh Bharat Abhiyan. There were total 42 volunteers participated. In this event our Volunteers were cleaning New VIVA College playground. Prof. Komal Patil (P.O) and Prof. Deepa Dalvi (D.C) were also helping to Clean campus ground. Our motive while this was “PLASTIC FREE INDIA”


Virar, Maharashtra, India
D Mart Rd, Chintamani Vihar, Y K Nagar, Virar West, Virar, Maharashtra 401303, India
Lat 19.459497°
Long 72.800845°
18/02/22 08:48 AM
D Mart Rd
Google


N.S.S. UNIT
NOT ME BUT YOU
Virar, Maharashtra, India
Drums of heaven, shop no 5 ,paradise Grandeur, Bldg No.1, near new viva college, Chintamani Vihar, Y K Nagar, Virar West, Virar, Maharashtra 401303, India
Lat 19.458845°
Long 72.800771°
18/02/22 08:44 AM
Google

Environment Day

Name of the committee: NSS UNIT, VIVA COLLEGE.

Name of the event: Environment Day

Date of the event/program: 5th June 2021

No. of the participants: 19 volunteers

Male: 10 volunteers. **Female**: 09 volunteers

Overall Report of event/program:

On 5th June 2021, VIVA NSS Unit Organized a Tree Plantation Drive. The volunteers planted various Saplings in their respective homes to contribute to the great cause and Observed World Environment Day

Global Warming awareness

On 13th August 2021, Tree plantation program was organized by Viva College. This program was carried out jointly by NCC and NSS. The program was conducted at jivdani temple. It started at 8 AM,

In this program 30 cadets were present. And the program started from Panch Payari and covered Most of the area . In this Plantation around 300 trees were planted. And awareness about importance

Of trees was spread by cadets and the program concluded.

राष्ट्रीय तटीय अनुसंधान केन्द्र
पृथ्वी विज्ञान मंत्रालय, भारत सरकार
NCCR
NATIONAL CENTRE FOR COASTAL RESEARCH
MINISTRY OF EARTH SCIENCES, GOVERNMENT OF INDIA
ESSO

Swachhata Hi Seva

Report on international Coastal Clean-up day 21st September 2019

VIVA College Virar west District Palghar Maharashtra

Venue

Arnala beach Virar, Palghar

Coordinator: - Prof. Anushri Kini

VIVA College of Sci and Comm. and Arts

Introduction:-

Arnala beach is one of the many beaches along the western coast of Palghar district the black course sea sand beach is a place of traditional small fishing center Fish landing port & a residential area for the major koli population (Fisherman) residing in the area. The beach is approximately 11km away from the main city of virar.

Satellite view of Arnala beach

The beach is busy with fishing activity, sand mining business, boat travelling from one place to another (Transportation) and other religious activities like idol immersion's during Ganpati, Navratri etc and chatt puja.

Arnala beach was taken for cleaning on the occasion of International coastal cleanup day. The location since the residential area has a higher impact and effect on it in terms of pollution.
On the eve of ICC day, a cleanliness drive was organized at Arnala beach, on 23rd September 2019 by VIVA Nature club, VIVA college of Sci, Comm, and Arts in association with NCCR, Chennai under the Ministry of Earth Science (MOES) and was supported by the VIVA college management and great support was provided by local NGO's, VVMC, and Gram Sabha of the Arnala village.

More than 100volunteers including students, teacher's and Arnala Social group participated in the drive. The drive started by 7.00 am in the morning and ended by 1:00 pm noon.

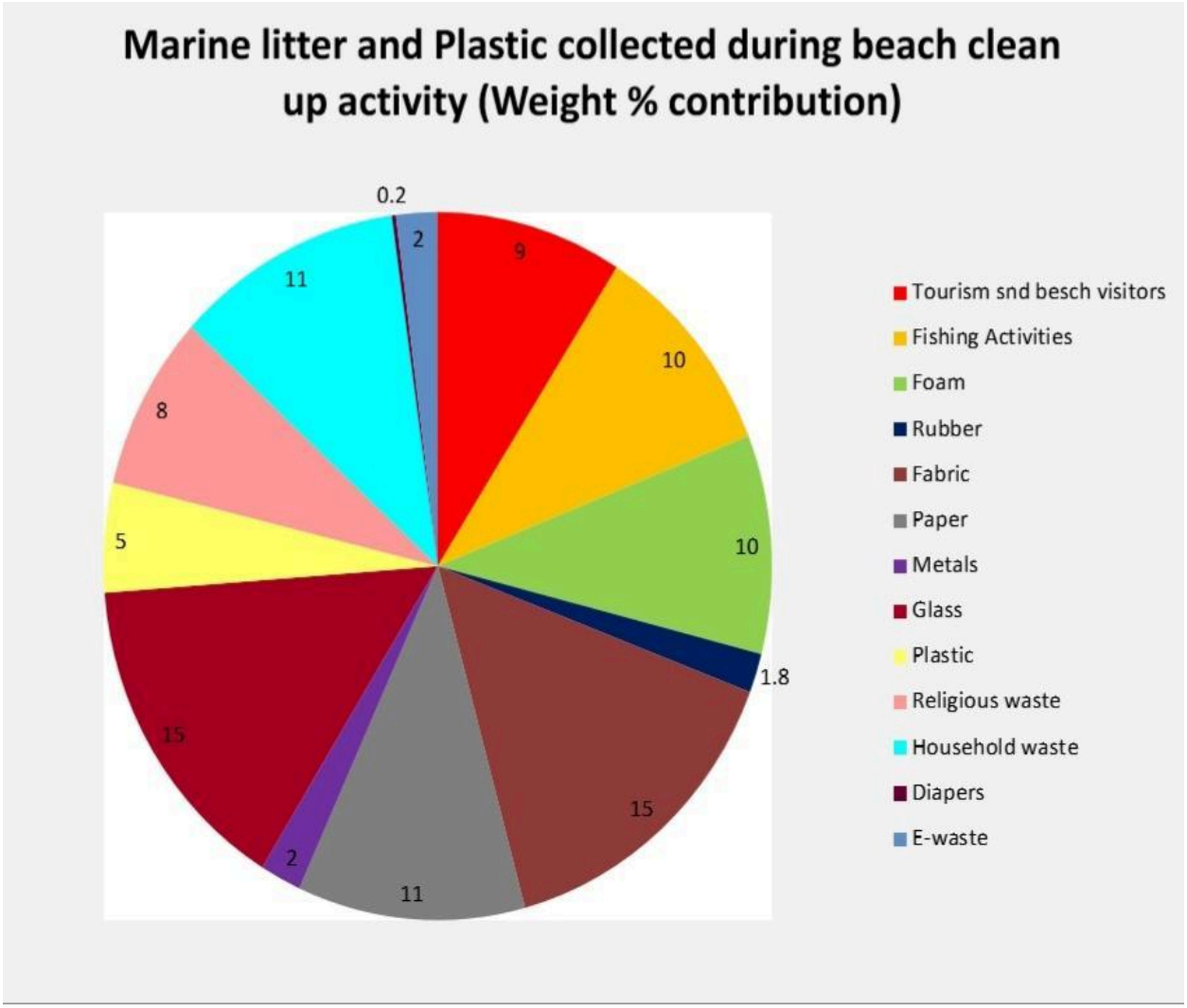
Trash collection:-

Approximately 2.5 tonnes of solid waste was collected by the volunteer's which has the segregation into local household waste, fishing equipments, dead and decomposed fishes, clothing and shoes, plastic wrappers, Religious waste, Thermocol and other decoration items, clothes glass bottles etc.

Images of beach before trash collection

Images of beach after trash collection

The % wise separation of the waste material included.



Arnala beach cleaning activity was undertaken on the occasion of International Costal clean Day 2019.

Due to residential area and tourist spot in and around Arnala beach has caused a significant impact on pollution levels.

Source of Thrash:-

Thrash originated was from tourism activity but major contributors to this ere the local's residing in the area around the beach where the awareness regarding the hygiene is little less. The celebration of different religious festivities and immersion of idol's also contributed to the source.

After the segregation, all the garbage waste was handed over to the virar city, VVMC for its further processing and disposal.

Awareness Programme

Other than beach cleaning activity we have also conducted awareness programme in three different schools off the same locality.

1) St. James English High School

2) Dr. D. J Galvankar Smarak Vidya Mandir

3) J.P School


ST. JAMES SHIKSHAN MANDAL'S
ST. JAMES ENGLISH HIGH SCHOOL
School Index No.18.08.233
Regd. No.VLS/1003/557/2003
Self Finance

We have donated hand gloves mask dust pan brooms dust bin (120 lit) which is made by biodegradable plastic to Arnala Social group.

Photo with Arnala social Group


Before


After


NCCR
UN environment
SACEP
Clean Seas Campaign
International Coastal Cleanup Day - 2019
Say no to plastic for a better and green tomorrow!
VIVA COLLEGE (VIVA NATURE CLUB), VIRAR
ARNALA BEACH

News paper cutting

विद्यार्थ्यांकडून अर्नाळा किनारा स्वच्छ, चकाचक

विवा महाविद्यालयातर्फे मोहीम

विरार, ता. २९ (बातमीदार) : आंतरराष्ट्रीय चौपाटी स्वच्छता दिनानिमित्त विरारमधील अर्नाळा चौपाटी येथे विवा महाविद्यालयाच्या विद्यार्थ्यांनी स्वच्छता मोहीम राबवली.

राष्ट्रीय किनारी संशोधन केंद्राचे समन्वयक डॉ. प्रवर मिश्रा, पृथ्वी विज्ञान मंत्रालय प्रमुख डॉ. सुनिता शिवदास आणि विवा महाविद्यालयाच्या नेचर क्लबच्या प्रमुख आणि झुलॉजीच्या विभागप्रमुख अनुश्री किणी यांच्या मार्गदर्शनाखाली कार्यक्रम झाला. अर्नाळा सोशल वर्क ग्रुपनेही विद्यार्थ्यांना मदत केली. राष्ट्रीय किनारी संशोधन केंद्रातर्फे कार्यक्रमाला निधी देण्यात आला होता. यातूनच येथे कार्यरत असलेले अर्नाळा सोशल वर्क ग्रुपला झाडू तसेच चार कचरा पेट्या आणि इतर सामग्री देण्यात आली. स्वच्छता मोहिमेमध्ये १० विद्यार्थ्यांबरोबर १० शिक्षकांनी अर्नाळा गावातील शाळांमध्ये जाऊन शाळकरी विद्यार्थ्यांना स्वच्छतेचे महत्त्व पटवून दिले. तसेच चौपाटीवरील अडीच टन कचरा जमा केला. संपूर्ण चौपाटीची स्वच्छता केल्यानंतर शेवटी विद्यार्थ्यांची फेरी काढण्यात आली.

अर्नाळा किनाऱ्यावरील मोहिमेत सहभागी झालेले विद्यार्थी.

Additional supporting links

- Letter By NCCR.pdf
- conformation mail for participation coastal clean up.jpeg