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# JHARKHAND COLLEGE, DUMRI

GIRIDIH (JHARKHAND) 825106

PERMANENTLY AFFILIATED TO VINOBA BHAVE UNIVERSITY, HAZARIBAG

An ISO 9001:2015 Certified Institution

Registered: Under Section 2(F), 12(B) of the UGC Act 1956 & Society Registration Act 21, 1860

Email: [jharkhandcollege1985@gmail.com](mailto:jharkhandcollege1985@gmail.com) Website : [www.jharkhandcollege.ac.in](http://www.jharkhandcollege.ac.in)

Ref.No. ....



Date:.....

## Declaration

This is certify that Jharkhand College, Dumri is situated 5 k. m. far from the township area & where no pollution has been found till now. The campus is fully Eco friendly & surrounded with thousand of trees. Department of forest, Environment & climate change, Govt. of Jharkhand has given the certificate on environmental Audit report.

Institution has got a certificate for energy conservation from the Junior Engineer of JBVNL, Govt. of Jharkhand. We have Green Audit report also issued by forest deptt. Govt. of Jharkhand. Institution has organised several programme for maintaining the environment beyond the campus also.

All the evidence are being attached with this declaration in metrics 7.1.3.

*Pksinha*  
Principal-incharge  
Jharkhand College, Dumri  
Giridih



Department Of Forest, Environment and Climate Change

Beat Office, Dumri Range

Po- Dumri, Dist - Giridih, 825106

**TO Whom It May Concern**

This is to certify that Jharkhand College Dumri has conducted the Environmental Audit as follows:-

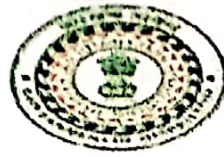
1. Calculated the number of different types of plants in the campus.
2. Calculated the oxygen generated from plants per day.
3. Calculated the amount of carbon dioxide generated by electrical, electronic components and human beings.
4. Differentiate the parameter of oxygen and carbon dioxide.
5. Calculate the production and consumption of energy in the campus.
6. Observed the use of water in the campus.

It is found that 546 plants including trees, shrubs, herbs, flowers and medicinal are available in the campus. Total production of oxygen per day is 182640 pounds and absorption of carbon dioxide is 80,000 pounds per day. The total production of carbon dioxide in campus in a year is 651000 pounds. The total demand of energy is supplied only by solar plant. Use of electric and generator energy is very low. The total use of water in the campus is 4 to 6 thousand liter per day. The whole campus is totally Eco- friendly.

*P. S. Ch*  
12/02/23

Forester I/C

Dumri Range



कार्यालय, वन परिसर पदाधिकारी डुमरी वन परिसर ।

पोस्ट - डुमरी, जिला - गिरिडीह, पिन कोड - 825106


**TO WHOM IT MAY CONCERN**

This is to certify that the Campus of Jharkhand College is ECo Friendly & the activities for maintaining this has been organized by Eco-Club of the College.

We have visited the Campus & impressed with the environment available so far.

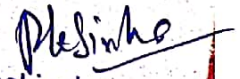
Thanks & regards.

Sincerely yours

  
07/02/2024

Forest Beat Officer

Dumri.

  
Principal-in-charge  
Jharkhand College, Dumri  
Giridih

Scanned with OKEN Scanner

Scanned with CamScanner

# **JHARKHAND COLLEGE, DUMRI GIRIDIH (JHARKHAND) 825106**

Permanently Affiliated to Vinoba Bhave University, Hazaribag

An ISO 9001:2015 Certified Institution

Registered: Under Section 2(F), 12(B) of the UGC Act 1956 & Society Registration Act 21,1860

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## **Green Audit Report**

*P. S. Singh*  
Principal-in-charge  
Jharkhand College, Dumri  
Giridih



# JHARKHAND COLLEGE, DUMRI

## GREEN-AUDIT

### Contents

1. Exordium
2. About the College
3. Certificate
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5. Introduction
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8. Observation and recommendation

#### 1. Exordium :-

Jharkhand college, Dumri is a permanently affiliated unit of U.G level education of Science, Commerce and Arts under V.B.U Hazaribag. Mainly college is students in forest area but it has a well maintained eco-friendly campus with all the views such as Vegetation, Water System, Energy System, Waste Management System. Under the IQAC direction and a green audit report prepared by the Eco-club of college inspection of officer forest authority R.O.F. Dumri.

Green audit team protilc as :-

1. Manish Kumar Roy Beat officer Forest department dumri
2. Sumit Kumar Roy Forest guard, Forest Department
3. Prof. M.K. Tiwari Nodal officer of Eco-club
4. Sri. K.P. Choudhary Lab technician (Deptt. Of Botany)
5. N.C.C and N.S.S. Volunteers.

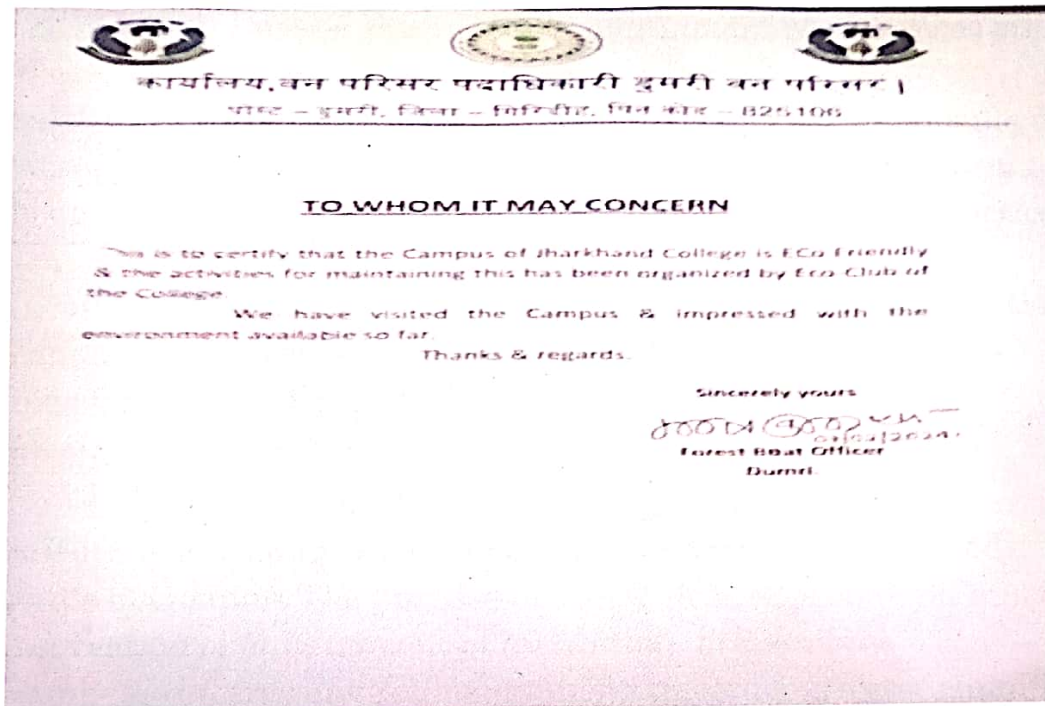
#### 2. About the College :-

Jharkhand college, Dumri is a permanently affiliated unit of U.G level education of Science, Commerce and Arts under V.B.U Hazaribag. It is situated in rural area of Giridih district in block Dumri. It build up about 4 KM. far from Dumri block office on the road side of Dumri Bokaro road. College has established in 1985 by local MLA Shiva Mahto and intellectuals and social workers of Dumri and its surroundings. The college is constructed on 7 acres lush green land which is surrounding by trees in the radius of 1 KM., A pleasant and calm place untouched by pollution which provides a perfect atmosphere for studies. The majority of population surroundings the college is unaware of education and mostly comes from SC/ST/OBC class. Jharkhand college, Dumri has been continuously burning the lamp of education in remote backward region since 1985 Numerous

*Manish Kumar Roy*  
Principal-in-charge  
Jharkhand College, Dumri  
Giridih

peoples of this remote area have been educated from this college and hold the prominent post of government and private sectors.

### 3. Certificate :-



### 4. Executive Summary :-

The rapid urbanization and economic development at local regional and global level has led to several environmental and ecological problems which directly or indirectly become adverse effective on the health. An educational institution is a place of gathering of teen-agers, youth and old persons. On this background it becomes essential to adopt the system of the green campus for the intuition which will lead for sustainable development and healthy environment.

The National Assessment and Accreditation Council New Delhi (NAAC) has made it mandatory that all higher educational institutions should submit a green audit report. It is the responsibility of the higher educational institutions to ensure that they contribute towards the reduction of global warming through carbon footprint reduction measures.

Jharkhand College, Dumri is deeply concerned and unconditionally believes that there is an urgent need to address these fundamental problems and reverses the trends. To provide the good environment and good health college adapts the programmers of green audit.

[Signature]  
Principal-in-charge  
Jharkhand College, Dumri  
Giridih



## 5. Introduction :-

Green Audit is another name of environmental audit which focuses on the green campus, Waste Management, Water Management, Air Pollution, Animal Welfare Energy Management, Carbon Footprinted environment compliances etc. Green audit can be define as systematic identification, qualification, recording reporting and analyzing of components of environmental diversity. Green audit of an institution conforms the environment condition and analyze the environment practices with in and outside the campus which have an impact on educational ambience. Through the green audit we get a direction to improve the conditions of environment and effecting factors which determines the sustainable development.

## 6. Objectives :-

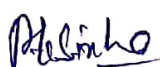
The main objective of the green audit of an institution is to create an eco-friendly environment inside and outside of campus. The purpose of the audit is to promotion and conservation of environment of institution. bringing the awareness towards environment among the students green audit plays an important role. It identify, quantify, describe and prioritize the framework of environment standards. The chief objectives of green audit are :-

- Establish the healthy environment inside and outside of the campus.
- To introduce and bringing awareness of students towards environment.
- To reduce waste.
- To improve risk management system.
- Development of environmental management control system.

## 7. Methodology :-

The process which applied to perform the green audit called methodology. In order to conduct green audit the methodology includes the tools are as preparation of questionnaire, physical inspection, data collection, documentation, observation, data analysis and recommendation. To summaries the present status of environment management in the campus studied the following areas –

- Water Management System
- Energy Management and Conservation System
- Waste Management System

  
Principal-in-charge  
Jharkhand College, Dumri  
Giridih

➤ Green area Management

**8. Observation and recommendation :-**

➤ Water Management System :-

Water is the most common part of life. Without water cannot be imagine of life. It is universal truth no water no life. Therefore water management system audit is essential for an institution which prevent the misuse of water. Thus a water audit is an on-site survey and assessment to determine the water use and hence improving the efficiency of its use.

In the college campus main source of water is deep boring. There are three deep boring in the campus in well condition. By plumbing water supply in college campus which are used in drinking, irrigation of garden, domestic purposes, canteen, toilet and laboratory. For staff and students there are three R.O. in college for potable water. The waste water from the R.O. is used in gardening purposes. For the recharging of ground water level, Rain water harvesting units are also in function in the college. During the survey no loss of water is observed neither by any leakages nor by over flow of water from overhead tanks. The data collected from all the departments is examined and verified. On an average the total use of water in the college is 4 to 6 thousand L/day which included 3000 L/day for domestic and gardening purposes and 1000 L/day for drinking purpose.

➤ Waste Management System :-

Waste management system plays an important role to prevent the environment damage. Proper waste disposal activities make the healthy environment of any institution. Jharkhand College, Dumri adopt a proper waste disposal management system for the creation of healthy environment in the college campus. The wastes from all around the campus are collected as wet and dry waste in different bags and containers which are disposed separately. Eco-club of college with N.C.C. and N.S.S. volunteers arrange the awareness programme for the neat and clean campus and minimizing the wastes. There are 10 dustbins are available in the campus for throwing the wastes. Dry wastes are used to land filling which is the general waste management strategy. But wet wastes as vegetables, food etc are disposed in vermin compost project which has been developed in the college.

  
Principal-in-charge  
Jharkhand College, Dumri  
Giridih



➤ E-Waste Management :-

E-waste and defective item from computer, laboratory is being stored properly in the college as solid waste. College has decided to contact approved E-waste management and disposal in order to disposal E-waste in scientific manner. E-waste generated in the campus is very less in quantity.

➤ Energy management and conservation system :-

Energy is the power of work. In an institution for doing proper work computers, fans, bulb, A.C. Motors are installed which cannot be in order without energy. Energy management and conservation system shows the source of energy and its use.

In Jharkhand College, Dumri energy used for light purpose in office, laboratory, library, canteen and lighting of whole campus in night. Computers, AC and motors are also consumed the energy on working time. Source of energy in our college are electric, generator and solar system. There are two generators in the well condition in our college. On the suggestion of eco-club college administration (management) installed the 50 KB solar plant system by state government.

In Jharkhand College Dumri the total demand of energy supply by only solar plant. Use of electric energy and generator energy is very low.

➤ Green Area Management :-

The green area fundamentally affect our wellbeing. It is an important determinant of Health and quality of life. For the getting of pure oxygen and minimizing the CO<sub>2</sub> quantity greenery management system responsible of any institution. Green area management system shows the position, condition and number of plants in campus of institution.

Since Jharkhand College Situated in forest area yet it adopt the green area management system in campus. Time to time the plantation programme and eco-friendly environment awareness programme are organize in the college campus by eco-club, N.C.C. and N.S.S. volunteers. Forest department Dumri of State government also organise the plantation programme in the campus of college. College campus is full of numerous types of trees like shrubs and herbs. A well botanical garden with various types of flowers, orramental plants and medicinal plants has been established. A garden of only medicinal plants is also in the campus in developing stage. For the greenery and educationally purpose a millets farming area is also

*P. S. Singh*  
Principal-incharge  
Jharkhand College, Dumri  
Giridih

developed in the campus. Near about 546 plants including trees, shrubs, herbs, flowers and medicinal are planted in the campus. In our campus total oxygen produce per day is 182640 pounds, CO<sub>2</sub> absorbed by plants in campus per day is 80,000 pounds. The total production of CO<sub>2</sub> in campus in a year is 651000 Pounds.

*M. S. Singh*  
Principal-in-charge  
Jharkhand College, Dumri  
Giridih

## List of Plants Available in the Campus

S.No	Comman Hindi Name	Botanical Name	Family	Numbers	Hight	Amount of Released Oxygen in Pounds / day
1	महोगनी	Swietenia mahogani	Maliaceae	10	20'	12000
2	कदम्ब	Xanthocephalus codamba	Rubiaceae	2	20'	2400
3	वरगद	Ficus benghalensis	Moraceae	1	40'	2400
4	जामुन	Eugenia sambolana	Myrtaceae	8	10'	4800
5	छितवन	Alstonia scholaris	Apocynaceae	4	15'	3600
6	आम	Mangifera indica	Anacardiaceae	4	5'	1200
7	अमरुद	Psidium guava	Myrtaceae	6	5'	1800
8	नीम	Azadirachta indica	Meliaceae	3	4'	720
9	काजू	Anacardium occidentale	Anacardiaceae	6	10'	3600
10	गम्हार	Gmelina arborea	Verbenaceae	8	15'	7200
11	सागबान	Tectona grandis	Lamiaceae	20	20'	24000
12	शिरीस	Albizzia procera (lebbeck)	Fabaceae	2	20'	2400
13	घोडकरंज	Ailanthus excelsa	Simaroubaceae	40	15'	36000
14	महुआ	Madhuca indica	Sapotaceae	3	70'	12600
15	पीपल	Ficus religiosa	Moraceae	1	35'	2100
16	शीशम	Dalbergia sissoo	Fabaceae	5	15'	4500
17	शरीफा	Annona squamosa	Annonaceae	3	4'	720
18	पलाश	Butea monosperma	Fabaceae	10	5'	3000
19	गुलमोहर	Delonix monosperma	Fabaceae	1	5'	300
20	एकेशिया	Acacia dealbata	Fabaceae	2	20'	2400
21	अश्वगन्धा	Withania somnifera	Solanaceae	50	3'	9000
22	सदावहार	Catharanthus roseus	Apocynaceae	20	2'	2400
23	गेंदा	Tagetes erecta	Asteraceae	20	2'	2400

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Principal-in-charge  
Jharkhand College, Dumka  
Giridih



24	उड़हूल	Hibiscus rosasinensis	Malvaceae	8	4'	1920
25	गुलर	Ficus racemosa	Moraceae	1	15'	900
26	वेर	Ziziphus mauritiana	Rhamnaceae	3	10'	100
27	वेल	Aegle marmelos	Rutaceae	1	5'	300
28	लाजवन्ती	Mimosa pudica	Mimosaceae	200	1'	12000
29	केंद	Diospyros melanoxylon	Ebenaceae	7	6'	2520
30	एलोवेरा	Aloe vera	Liliaceae	7	1'	420
31	कनेर	Nerum olennder	Apocynaceae	10	6'	3600
32	रवर	Ficus elastica	Moraceae	2	3'	360
33	रुग्मिनी	Lxora coccinea	Rubiaceae	4	1'	240
34	मोरपंखी	Arbor vitae	Cu-pressaceae	6	4'	1440
35	क्रिशयश कैंडल	Euphorbia tithymaloides	Euphorbiaceae	50	3'	5000
36	रेनवो पिक	Dianthus chinensis	Caryophyllacea	4	1'	240
37	गुलाब	Rosa rubiginosa	Rosaceae	4	2'	480
38	अशोक	Saraca asoca	Fabaceae	6	3'	1080
39	सेमल	Bombay cebia	Malvaceae	07	20'	4800
Total				546		182640

Principal  
Principal incharge  
Jharkhand College, Dumri  
Giridih



# **JHARKHAND COLLEGE, DUMRI**

## **GIRIDIH (JHARKHAND) 825106**

Permanently Affiliated to Vinoba Bhave University, Hazaribag

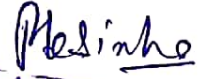
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## **Policy Document on Green Campus**

  
**Coordinator IQAC**  
**Jharkhand College**

  
**Principal-in-charge**  
**Jharkhand College, Dumri**  
**Giridih**

## Policy Document on the Green Campus

**Green Campus:** A Green Campus is a place where environmental friendly practices and education combine to promote sustainable and eco-friendly practices in the campus. The green campus concept offers an institution the opportunity to take the lead in redefining its environmental culture and developing new paradigms by creating sustainable solutions to environmental, social and economic needs of mankind.

**Objectives of the Go Green Programme:** The first step of the Go Green Programme involves establishing a viable Green-Campus Committee, within the organizational structure of the Institute. Hence, to give this initiative more clarity and authenticity, we now roll out a POLICY DOCUMENT spelling out the strategies, plans and other allied tasks to make this Program functional officially.

We believe that greening the campus is all about sweeping away wasteful inefficiencies and using conventional sources of energies for its daily power needs, correct disposal handling, purchase of environment friendly supplies and effective recycling program. The administration of the Institute believes that everyone has to work out the time bound strategies to implement green campus initiatives. These strategies need to be incorporated into the institutional planning and budgeting processes with the aim of developing a clean and green campus. Every individual of Jharkhand College Campus will work, may he/she be a student, faculty and support staff to foster a culture of self-sustainability and make the entire campus environmental friendly. The Green Campus Initiatives (GCI) will enable the institution to develop the campus as a living laboratory for innovation.

### Composition of the Go- Green Committee

1. Principal of the college- Chairperson
2. IQAC Coordinator- Secretary
3. Faculty Representative nominated by the Principal
4. Student Representative- General Secretary of the college
5. Non-Teaching Staff Representative- Office Superintendent
6. Parent Representative- Secretary of the Parent Teacher Association
7. Industry Representative- Member of Alumni Association

### B. Role of the Go- Green Campus Programme:

The impetus for a successful Green Campus must begin at the top and emanate throughout the rest of the campus. Without a strong message of commitment and involvement from both the Chairperson and Members of the Committee, well-intentioned initiatives may be too fragmented to allow for Institute-wide participation. Thus in view of this, the committee will plan and execute to:

1. Seek views of all the Stakeholders to make the Go Green Campus initiative functional throughout the year.
2. Conduct the Campus' environmental impacts to identify the targets for improvements.
3. Establish a Green Campus Environmental Ethic Awareness campaigns.
4. Set forth a Green Campus Mission and a Statement of Principles.

(1)

*Melina*  
Principal-In-charge  
Jharkhand College, Dhanbad  
GIRIAR



5. Link Green-Campus activities to Academics in the Institute.
6. Organize Awareness Programs for the students, faculty and society.
7. Chart out a yearly planner for the Institute, local community and Stakeholders.
8. Develop a strategic plan and create student teams to carry out specific tasks of the strategic plan. For instance, a plan to save energy at the institute level with time bound plan to install Solar Power Station mandatorily either at the top of Institute building or in open field. This will enable the institute to have 24x7 power supply.
9. Phase out the CFL and conventional light source such as bulbs and tube lights, halogen and mercury street/campus lights and get them replace by the LEDs.
10. Conduct an Annual Green, Environment and Energy Audit.
11. Purchase only Energy Efficient Computers viz: "ENERGY STAR" or any other equivalent.
12. Establish public/private partnerships with personnel from federal, state, and local environmental agencies, utilities, and the business community.
13. Evaluate daily operations in terms of pollution prevention, waste stream management, and energy efficiency reducing, reusing, recycling, and repairing wherever possible.
14. Secure a commitment up front from the people in charge that well-founded recommendations will be acted upon once audits are completed.

**C. Promotion of "Save Energy Tips" in and outside the Institute:**

- Activate power management features on your computer and monitor so that it will go into a low power "sleep" mode when you are not working on it.
- Turn off your monitor when you leave your Table.
- Activate power management features on your laser printer.
- Whenever possible, shut down rather than logging off.
- Turn off unnecessary lights and use daylight instead.
- Avoid the use of decorative lighting.
- Use LED or compact fluorescent bulbs.
- Keep lights off in conference rooms, classrooms, lecture halls when they are not in use.
- Use the fans only when they are needed.
- Unplug appliances not plugged into power strips (like TVs, Refrigerators, ACs, tea/coffeepots, printers, faxes, and chargers etc.)

**D. Waste water Management/ Rainwater harvesting:**

The Institute has to work in the direction of waste water management particularly in student's hostels. Water flow restrictors on bathroom faucets and showers, low water flow toilets and automated urinal flushers should be used to cut down campus water use. The Institute will take all necessary measures to implement waste water management /rain water harvesting.

**E. Major Green Campus Initiatives:**

- ISO Certification 9001:2015

- Installation of Solar Power Station
- Waste water Management/ Rainwater harvesting
- Development of Sewage Water Treatment Plant
- Use of Micro-scale techniques
- Sensor based energy conservation
- Displayed poster on E-waste Management
- Maintenance of water bodies and distribution system in the campus
- MIS to make paperless administration
- Plastic free Campus
- Tree Plantation Drive
- Cleanliness Drive
- Landscaping and gardens
- Use of LEDs only
- Digital Library/ E-Learning Centre
- Organization of sensitization programme for the stakeholders
- Establishment of Eco-Club
- Green, Environment and Energy Audit conducted
- Restricted entry of automobiles
- No Vehicle Day observed

The Institute will make all the necessary efforts to involve the students, faculty and staff in “Green Campus Initiatives” by designating the volunteers of Eco Club, NSS & NCC cadets.

  
**Coordinator IQAC**  
**Jharkhand College**

  
**Principal-in-charge**  
**Jharkhand College, Dumri**  
**Giridih**



## Jharkhand College, Dumri (Giridih)

### Report on Environmental Promotional Activities Conducted beyond The Campus

Environment effects on human beings directly or indirectly. A healthy environment can develop a healthy society and healthy education. Jharkhand College Dumri believes it and conducts environmental promotional activities in and out side of college campus. By the collaboration of NSS, NCC and Eco club under flagship of IQAC , Jharkhand College has a green and clean eco friendly campus and it also always time to time organizes environmental promotional programme beyond the campus like Plantation programme, Swachchhata Abhiyan. Mask and sanitizer Distribution programme in neighbouring villages.

#### ➤ **Mask Distribution Programme**

On 12<sup>th</sup> February 2021 thru the NSS unit 1 & 2. Jharkhand College Dumri organized a mask distribution programme in Ghujadih village against the infection of covid-19 in which principal IQAC coordinator , NSS officer and volunteers participated . This programme was to make aware against covid-19 and inspired to keet fit . Villagers were suggested to use mask.



*Principals*  
Principal-in-charge  
Jharkhand College, Dumri  
Giridih



## ➤ Plantation Programme

On 12<sup>th</sup> July 2022 with the collaboration of forest department Dumri, Jharkhand College Dumri organized a plantation programme in Naglo village of Madhgopali Panchayat against global warming. In this programme principal, teaching, non teaching staffs, students, DFO Giridih, Ranzor Dumri, Forester Dumri, and forest guard were Participated. Various types of plants were planted against global warming and make aware of public to save tree.



*M. Sinha*  
Principal  
Jharkhand College, Dumri  
Giridih



4

➤ **Swachchhata Abhiyan**

On 3<sup>rd</sup> March 2023. NSS, NCC and Eco club of Jharkhand College Dumri organized a swachchhata abhiyan in which principal, teaching, nonteaching staff, cadets of NCC, Volunteers of NSS and members of Eco club participated. In this abhiyan sweeping the road side, bazar and public places of neighbouring area.



*Principal*  
Principal-in-charge  
Jharkhand College, Dumri  
Giridih



# कार्यालय, वन क्षेत्र पदाधिकारी डुमरी वन प्रक्षेत्र ।

पोस्ट - डुमरी, जिला - गिरिडीह, पीन कोड - 825106

पत्रांक - 300 दिनांक - 08.09.2020

सेवा में,

प्राचार्य महोदय  
झारखण्ड कॉलेज, डुमरी

विषय - प्रशिक्षण कार्यक्रम के संबंध में ।

महाशय,

उपरोक्त विषयक सूचित करना है कि इस प्रक्षेत्र के विभिन्न ग्रामों में माइक्रोप्लॉन का निर्माण किया जा रहा है । उपरोक्त कार्यक्रम हेतु प्रशिक्षण अपेक्षित होता है । इस प्रक्षेत्र द्वारा निर्णय लिया गया है कि दिनांक - 15/09/2020 को प्रशिक्षण का कार्यक्रम आहूत किया जाये, जिसके लिए श्रीमान् के कॉलेज के प्रशिक्षण कक्ष का चयन किया गया है ।

श्रीमान् से निवेदन है कि स्थापित तिथि को श्रीमान् के कॉलेज के प्रशिक्षण कक्ष में प्रशिक्षण कराने की अनुमति दी जाये ।

आपका विश्वासी



सहायक वन संरक्षक - सह  
प्रभारी वन क्षेत्र पदाधिकारी  
डुमरी वन क्षेत्र

*How*  
*Good*  
*13/09/2020*  
*Prof. M.K. Singh*  
*Prof. S. Thakur*  
*Please arrange*

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Jharkhand College, Dumri  
Giridih





**JHARKHAND COLLEGE, DUMRI**

**GIRIDIH (JHARKHAND)-825106**

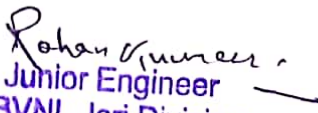
**ENERGY AUDIT REPORT**

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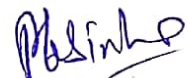
  
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## Preface

Data collection for energy audit of the Jharkhand College was conceded for the period of 01 August 2020 to 31 March 2024. The audit was over sighted to inquire about convenience to progress the energy competence of the campus. To drop of energy utilization whilst cultivate or humanizing comfort, health and safety were of prime anxiety. This audit required to recognize the mainly energy proficient appliances besides several each day process concerning common appliances have been provided facilitate sinking the energy expenditure. The energy audit survey was completed by department of physics Jharkhand College, Dumri, Giridih, Jharkhand. All data collected from each classroom, office room, Including entire campus. The work is completed by considering how much tubes, fan, electronic instruments etc. are available in each room to know how much was participation of each component in total electricity consumption.



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## Acknowledgement

Department of physics Jharkhand college, Dumri is very much thankful to the Principal Prof. Pramod Kumar Sinha and Co-ordinator, IQAC Jharkhand College, Dumri for their kind co-operation in the process of accomplishing the work of energy Audit of this college.

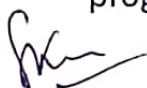
  
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## Energy Audit report 2020-2024.

1. **Name of the College:** Jharkhand college, Dumri , Giridih (Jharkhand)-825106
2. **Campus Area:** 3.06 Acres
3. **Build up Area:** 4844.78 Sq. mts.
4. **Date of Establishment:** 05 September, 1985.
5. **Brief History:** Jharkhand College, Dumri a pioneer institution of higher education, is located about 45 k.m. from the district head quarter Giridih. Established in 05 September 1985 with the permission from the Vinoba Bhave university, Hazaribag UGC Act 1956 under section 2(f) and 12 (B). The college offering a large number of subjects in Arts, Science and Commerce stream in the under graduate Programmes following the NEP curriculum 2020.
6. **Energy Auditing:** Energy Auditing is a routine procedure of monitoring power consumption of the institute performed on annual basis. As per the energy conservation act 2021. Energy audit is define as the verification, monitoring and analysis of use of energy including submission of technical report containing recommendations for improving energy efficiency with cost benefit analysis and an action plan to reduce energy consumption for the successful implementation of an energy efficient campus. Jharkhand College has focused a lot on the enhancement and awareness among the students, teacher and other member of the institution on energy alternatives such as solar energy. As the issue of saving hours environment has attained a global prominence in the contemporary time, Jharkhand college has also considered it extremely essential to work sincerely in the matter of environment green and energy efficient campus, every possible step is taken by every member or cell of the institution to create a sense of responsibility among the students to the sustenance of healthy environment in the form of various programmes and project work.



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### **Energy Conservation:**

With the rising awareness on the necessity to save energy, the college has resorted to ways and means for saving electricity. Efforts are made to shift to solar energy phase wise.

The classroom and other rooms are in such manner that they allow sufficient light and air during class hours and as a result much electricity is saved.

In its drive for saving energy Jharkhand college Dumri has taken steps to replace all existing bulbs and lights with LED lights phase wise. In fact all newly constructed building has been equipped with LED lights, AC and five star rating ceiling fans with a view to reducing the consumption of energy.

### **Use of Renewable Energy:**

- The college has adopted means to switch over from conventional source of electricity to renewable resource Solar Energy Plant with set up in the college to cater to the diverse needs of various departments during power cuts.

### **Efforts for Carbon Neutrality:**

- With a large green coverage, the college has always adopted all possible means to create a carbon neutral environment.
- The Environment has been formed to maintain carbon-neutrality. The collective effort of Green Earth Society, Bio tech hub and the students unions, in organizing seminars, talks and workshops has created a platform for generating awareness among the members of the college and sustaining the efforts for eco-friendly campus.
- The college authority has adopted measures to check carbon emission in the campus by banning the burning of wastepaper, dry leaves, and other such waste products. Emission certificates from pollution control board govt. of Jharkhand of cars and vehicles belonging to members of the college are also verified for the purpose.

  
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### E-waste Management:

- E-wastes such as damaged computer parts , batteries, electronic items, electrical appliances, empty toner containers are disposed as scrap and given away to agencies and NSS unit of the college, that recycle such product.

### Energy Consumption Data:

- The electricity supply for Jharkhand College is provided by Jharkhand Bijali Vitran Nigam Limited, Ranchi. The contracted demand is 10 KVA and the connected load is 10KW. The energy consumption of the whole campus. The energy efficiency assessment was conducted for the load connected to the mains supply.

### Consumer Details:

Consumer Name: Principal Jharkhand College, Dumri

Consumer Id: 4947324

Connection Number: DM00991

### Mainly Energy is used for the following purposes:

1. Lighting's load – 2505 watt.
2. Wi-Fi – 20 watt.
3. Fan – 2000 watt.
4. Operation of water pump: 746 watt.
5. To run the printers and xerox machines: 500watt.
6. Computer; 600 watt.
7. Projector; 150 watt.
8. CC camera: 50 watt.
9. Halogen: 500 watt.
10. Water Cooler: 300 watt.
11. Water filter: 150 watt.
12. LCD:- 100 watt.
13. Laptop ; 40 watt.
14. Cooler: 100 watt.
15. Digital Board- 200 watt.

  
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**Experimental and data collection:**

All required data collected by department of physics Jharkhand college, Dumri. As per survey following data are collected.

**Total Energy requirement in various departments:**

Fan	LED Light	Tube Light	Halogen	Computer & Laptop	Printer	Projector	Xerox Machin	CC Camera
77	60	24	03	11	03	02	01	15

  
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Energy consumption during 2020-21 to 2022-23 ,146 unit fixed by department of electricity board Jharkhand Government.

Now from 2023 July Solar Plant of 50 KVA has been installed and running successfully in campus. Production of Solar Power is much more than the consumption. So now our campus is green energy campus.

  
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## Report on Implementation of initiatives taken by Jharkhand College for the Clean & Green Campus.

### ➤ E-Waste Management :-

E-waste and defective item from computer, laboratory is being stored properly in the college as solid waste. College has decided to contact approved E-waste management and disposal in order to disposal E-waste in scientific manner. E-waste generated in the campus is very less in quantity.

### ➤ Energy management and conservation system :-

Energy is the power of work. In an institution for doing proper work computers, fans, bulb, A.C. Motors are installed which cannot be in order without energy. Energy management and conservation system shows the source of energy and its use.

In Jharkhand College, Dumri energy used for light purpose in office, laboratory, library, canteen and lighting of whole campus in night. Computers, AC and motors are also consumed the energy on working time. Source of energy in our college are electric, generator and solar system. There are two generators in the well condition in our college. On the suggestion of eco-club college administration (management) installed the 50 KB solar plant system by state government.

In Jharkhand College Dumri the total demand of energy supply by only solar plant. Use of electric energy and generator energy is very low.

### ➤ Green Area Management :-

The green area fundamentally affect our wellbeing. It is an important determinant of Health and quality of life. For the getting of pure oxygen and minimizing the CO<sub>2</sub> quantity greenery management system responsible of any institution. Green area management system shows the position, condition and number of plants in campus of institution.

Since Jharkhand College Situated in forest area yet it adopt the green area management system in campus. Time to time the plantation programme and eco-friendly environment awareness programme are organize in the college campus by eco-club, N.C.C. and N.S.S. volunteers. Forest department Dumri of State government also organise the plantation programme in the campus of college. College campus is full of numerous types of trees like shrubs and herbs. A well botanical garden with various types of flowers, orramental plants and medicinal plants has been established. A garden of only medicinal plants is also in the campus in developing stage. For the greenery and educationally purpose a millets farming area is also

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developed in the campus. Near about 546 plants including trees, shrubs, herbs, flowers and medicinal are planted in the campus. In our campus total oxygen produce per day is 182640 pounds, CO<sub>2</sub> absorbed by plants in campus per day is 80,000 pounds. The total production of CO<sub>2</sub> in campus in a year is 651000 Pounds.